City of Corning

Construction Specifications
and
Standard Details
for
Public Works Projects

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CITY OF CORNING

NOTICE TO CONTRACTORS

Sealed proposals will be received at the office of the City Clerk of the City of Corning, 794 Third Street, Corning, California 96021 until _____ At that time, all bids will be publicly opened, examined and declared for construction of:

CITY OF CORNING

(Insert Project Name Here)

No proposal will be accepted unless it is made on a Proposal form furnished by the City of Corning. Each Proposal must be accompanied by cash, certified or cashier's check, or bidder's bond payable to the City of Corning for an amount equal to ten percent (10%) of the amount bid, such guaranty to be forfeited should the bidder to whom the Contract is awarded fail to execute the contract Documents.

Pursuant to Section 1770, and following, of the California Labor Code, the successful bidder shall pay not less than the prevailing rate of per diem wages as determined by the Director of the California Department of Industrial Relations. Copies of such prevailing rate of per diem wages are on file at the District office. The successful bidder shall post a copy of such determination at the job site.

No proposal will be accepted from a Contractor who is not currently licensed in accordance with the provisions of Chapter 9, Division III of the Business and Professions Code. Subcontractors shall also be licensed as required by said code. The work to be done will require a Class "A" General Engineering Contractor License.

Contract Documents, including Plans and Specifications, may be obtained at the office of the City Clerk, City Hall, 794 Third Street, Corning, CA 96021, (530-824-7029). *(Cost for Contract Documents varies depending on project).*

The Contract, if awarded, will be awarded to the lowest responsible bidder as determined by the City. The City of Corning reserves the right to waive irregularities, accept or reject any and all bids, and make that award which is in the best interest of the City.

Bidders are hereby notified that in accordance with the provisions of Government Code Section 4590, securities may be substituted for any monies which the City may withhold pursuant to the terms of the Contract to insure performance.

City of Corning
By _____
Darlene Dickison, City Clerk

A. INTRODUCTION

Each Proposal shall be in accordance with the Contract Documents prepared by :(Insert Engineer's Name Here). Contract Documents are available as specified in the Notice to Contractors.

B. DEFINITION OF TERMS

1. **CONTRACT DOCUMENTS:** The Contract Documents consist of the Notice to Contractors, Instructions to Bidders, Proposal, Contract, General Conditions, Special Conditions, Technical Specifications, Plans, and any Addenda.

2. **CONTRACT:** The Contract is the written agreement covering the performance of the work and the furnishing of labor, materials, tools, and equipment in the construction of the work. It includes supplemental agreements amending or extending the work contemplated and which may be required to complete the work agreements covering alterations, amendments or extensions to the Contract and includes Contract Change Orders.

3. **OWNER, CONTRACTOR AND ENGINEER:** The Owner, the Contractor and the Engineer are those mentioned as such in the Special Conditions. They are treated throughout the Contract Documents as if each were of the singular number and the masculine gender.

4. **BIDDER:** Any individual, firm, partnership, or corporation submitting a Proposal for the work contemplated, acting directly or through a duly authorized representative.

5. **PROPOSAL:** The offer of a Bidder for the work when made out and submitted on the prescribed Proposal form, properly signed and guaranteed.

6. **PROPOSAL GUARANTEE:** The cash, cashier's check, certified check or Bidder's Bond accompanying the Proposal submitted by the Bidder, as a guarantee that the Bidder will enter into a Contract with the Owner for the performance of the work if the Contract is awarded to him.

7. **DATE OF EXECUTION OF THE CONTRACT:** The date on which the Contract is signed by the Owner's authorized representative.

8. **DAYS:** Unless otherwise specifically stated, the term "days" will be understood to mean calendar days.

9. **WORK:** The term "work" means all the work specified, indicated, shown or contemplated in the Contract Documents, including all alterations, amendments or extensions thereto made by Contract Change Order or other written orders of the Engineer.

10. SPECIFICATIONS: The term "specifications" refers to the terms, provisions and requirements contained herein and referred to as General Conditions, Special Conditions and Technical Specifications. Where Standard Specifications such as those of ASTM, AASHO, etc., have been referred to, the applicable portions of such Standard Specifications shall become a part of these Contract Documents.

11. PLANS: The term "Plans" refers to the official Plans, profiles, cross sections, elevations, details and other working drawings and supplementary drawings, or reproductions thereof, signed by the Engineer, which show the location, character, dimensions, and details of the work to be performed. Plans may either be bound in the same book as the balance of the Contract Documents or bound in separate sets, and are a part of the Contract Documents regardless of the method of binding.

C. PREPARATION AND SUBMISSION OF PROPOSALS

Proposals must be submitted on the forms bound in the Contract Documents and must be signed by the Bidder or his authorized representative. Any corrections to the entries made on the Proposal forms must be initialed by the person signing the Proposal.

Bidders must bid on all items appearing on the Proposal form, unless specific directions allow for partial bids. Failure to bid all items may disqualify the Proposal. If bids on all items are not required, Bidders shall insert the words "No Bid" where appropriate. Alternate bids will not be considered unless specifically called for in the Proposal.

Telegraphic Proposals will not be considered. Modifications to Proposals already submitted will be allowed if received in writing or by telegram prior to the time fixed in the Notice to Contractors for opening of Proposals. Modifications shall be submitted as such, and shall not reveal the total amount of either the original or revised Proposal.

To insure consideration, the Proposal should be enclosed in a sealed envelope, clearly marked PROPOSAL which also bears the name of the project and the date and time set for opening Proposals. The sealed envelope containing the Proposal should be filed at the place and before the time set for opening of Proposals. Proposals received after the time indicated will be returned unopened.

D. WITHDRAWAL OF PROPOSALS

Any bidder may withdraw his Proposal, either personally or by telegraphic or written request at any time prior to the scheduled closing time for receipt of bids. No bidder may withdraw his bid for a period of 30 days after the date set for opening. Negligence on the part of the bidder in preparing his bid shall not constitute a right to withdraw his bid subsequent to the bid opening.

E. PROPOSAL GUARANTEE

Proposals shall be accompanied by cash, certified check, cashier's check or Bidder's Bond made payable to the Owner. The Proposal Guarantee must be enclosed in the same envelope with the Proposal. The amount of the Proposal Guarantee shall not be less than 10 percent of the total amount of the Proposal.

F. ADDENDA AND EXPLANATIONS TO BIDDERS

Any request for explanation or interpretation of the Contract Documents must be made in writing at least 7 days before the time set for opening of Proposals. Any explanation or interpretation will be made in the form of Addenda to the Contract Documents and shall be furnished to all Bidders. Bidders shall submit signed copies of all Addenda with their Proposals. Oral explanations and interpretations will not be binding.

G. DISCREPANCIES

In case of discrepancies between unit prices and totals, unit prices will prevail. In case of discrepancy between words and figures, words will prevail.

H. ACCEPTANCE OR REJECTION OF PROPOSALS

The Owner reserves the right to reject any or all Proposals and to waive any informality in any Proposal. The award of Contract, if made, will be to the lowest responsible Bidder whose Proposal complies with the requirements of the Contract Documents. The award, if made, will be made within 30 days after the opening of Proposals. If the lowest responsible Bidder fails to sign and return the Contract with acceptable bonds and certificates of insurance, the Owner may award the Contract to the next lowest responsible Bidder.

I. CONTRACT BONDS

The successful Bidder shall furnish a Performance Bond in the amount of 100 percent of the total Contract amount and a Payment Bond in the amount of 50 percent of the total Contract amount.

J. EXECUTION OF CONTRACT

The Bidder whose Proposal is accepted shall sign and return the Contract with acceptable bonds and certificates of insurance within 14 calendar days after receiving notice that the Contract has been awarded to him. Failure to do so shall be just cause for annulment of the award and for forfeiture of the Proposal Guarantee.

Within 7 days after receiving the signed Contract with acceptable bonds from the successful Bidder, the Owner's authorized agent will sign the Contract. Signature by both parties constitutes execution of the Contract.

K. RETURN OF PROPOSAL GUARANTEES

Within 15 days after the award of the Contract, the Owner will return the Proposal Guarantees, other than Bidder's Bonds, to all Bidders whose Proposals are not to be further considered in awarding the Contract. Retained Proposal Guarantees will be held until the Contract has been finally executed, after which all Proposal Guarantees, other than Bidder's Bonds and any guarantees which have been forfeited, will be returned to the respective Bidders whose Proposals they accompanied.

TO: THE CITY OF CORNING

The undersigned, as bidder, declares that he has carefully examined the contract forms, the plans, and specifications and hereby agrees that if this proposal is accepted he will furnish all the material, labor, tools, and equipment and perform all the work required to accomplish the work as follows:

(Insert Description of Project Here)

ITEM	APPROX. QUANTITY	DESCRIPTION OF WORK	BID UNIT PRICE	BID AMOUNT
1.	*(Insert Appropriate Quantities and Description Here)*			

The undersigned further declares that the only persons or parties interested in the Proposal as Principals are those named herein and that this Proposal is not made in collusion with any persons, firm or corporation.

Accompanying this Proposal is _____, (cash, cashier's check, certified check or Bidder's Bond) in the amount equal to at least 10 percent of the total amount of the Proposal, and signed copies of all Addenda.

The undersigned agrees that in case of default in signing and returning the required Contract with necessary bonds within 14 days after receiving notice of award, the proceeds of the cash, check or bond accompanying the Proposal shall be forfeited to the Owner.

Licensed in accordance with an act providing for the registration of Contractors, Class _____, License No. _____, Expires _____.

By my signature on this proposal, I certify under penalty of perjury under the laws of the State of California that the Contractor's License Information is true and correct.

Signature of Bidder:_____

_____

Business Address:_____

_____

Business Phone: _____

Dated: _____

Note: If the Bidder is a corporation, the legal name of the corporation shall be set forth above, together with the signature of the officer or officers authorized to sign Contracts on behalf of the corporation. If Bidder is a copartnership, the true name of the firm shall be set forth above, together with the signature of the partners authorized to sign Contracts on behalf of the copartnership; and if Bidder is an individual, his signature shall be placed above. If signature is by an agent, other than an officer of a corporation or a member of a partnership, a Power of Attorney must be on file with Owner prior to opening of Proposals or submitted with the Proposal; otherwise, the Proposal will be disregarded as irregular and unauthorized.

BIDDER'S BOND

KNOW ALL MEN BY THESE PRESENTS, THAT WE, THE UNDERSIGNED _____

_____ as Principal;

and_____ as Surety, are hereby

held and firmly bound unto_____,
hereinafter called the Owner, in the sum of_____

_____dollars ($ _____), which sum is equal
to

at least 10 percent of the total amount of the Proposal, payment of which sum, well and truly to be made, we hereby, jointly and severally bind ourselves, our heirs, executors, administrators, successors, and assigns.

The condition of the above obligation is such that whereas the Principal has submitted to the Owner a certain Proposal, attached hereto and hereby made a part thereof, to enter into a Contract in writing, for the construction of:

THEREFORE,

(a) If said Proposal shall be rejected, or in the alternate,

(b) If said Proposal shall be accepted and the Principal shall sign and deliver a Contract, in the Form of Contract attached hereto and shall execute and deliver Performance and Payment Bonds in the forms attached hereto (all completed in accordance with said Proposal), and shall in all other respects perform the agreement created by the acceptance of said Proposal.

Then, this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all default of the Principal hereunder shall be the amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall be in no way impaired or affected by any extension of the time within which the Owner may accept such Proposal, and said Surety does hereby waive notice of any such extension.

BIDDER'S BOND

IN WITNESS THEREOF, the above-bounded parties have executed this instrument under their several seals this_____day of _____, 19____, the name and corporate seal of each corporate party being hereto affixed and those presents duly signed by its undersigned representative pursuant to authority of its governing body.

IN PRESENCE OF:

_____	_____
	Individual Principal
_____	_____
Address	Business Address
_____	_____
	Individual Principal
_____	_____
Address	Business Address
	_____
	Corporate Principal
	_____
	Business Address
_____	By_____
	Affix Corporate Seal
ATTEST:	_____
	Corporate Surety
	_____
	Business Address
_____	_____
	Corporate Seal

The rate of premium on this bond is_____per thousand.
Total amount of premium charged is $_____.

LIST OF SUBCONTRACTORS

Each Bidder shall list below the name and business address of each subcontractor who will perform work under this Contract in excess of one-half of one percent of the total amount shown in the Proposal, and shall also list the portion of the work which will be done by such subcontractor.

PORTION OF WORK	SUBCONTRACTOR'S NAME AND ADDRESS
1. _____	_____
	_____
	_____
2. _____	_____
	_____
	_____
3. _____	_____
	_____
	_____
4. _____	_____
	_____
	_____
5. _____	_____
	_____
	_____
	_____

FORM OF CONTRACT

THIS AGREEMENT, made and entered into on the date below written, by and

between The City of Corning, hereinafter called the **OWNER**, and _____ hereinafter called the **CONTRACTOR**.

WITNESSETH, that, for the considerations hereinafter mentioned, the Owner and Contractor agree as follows:

ARTICLE I. The Contractor agrees to furnish all labor, materials, tools, and equipment and to perform all the work required to construct and complete in a good and workmanlike manner, and in strict accordance with the Contract Documents, those certain improvements entitled:

CITY OF CORNING

(Insert Project Name Here)

Contract Documents for which have been prepared by: ***(Insert Name, Address, and Title of Engineer Here)***

ARTICLE II. The Owner agrees to pay the Contractor for the performance of the Contract, subject to additions and deductions provided therein, the following prices, and the Contractor agrees to receive and accept said following prices as full compensation for furnishing all materials and for doing all the work contemplated and embraced in this agreement, and for all loss or damage arising out of the nature of the aforesaid work or from the action of the elements and from any unforeseen difficulties or obstructions which may arise or be encountered in the prosecution of the work until its acceptance by the Owner, and for all risks of every description connected with the work, and for all expenses incurred by or in consequence of the suspension or discontinuance of the work, and for well and faithfully completing the work and the whole thereof in the manner and according to the Contract Documents and the requirements of the Engineer under them, to wit:

As shown on the Proposal attached hereto and incorporated herein.

ARTICLE III. The Owner shall make payments on the account of the Contract as specified in Article F of the General Conditions.

ARTICLE IV. The Contractor shall commence work within the time period set forth in Article B.1 of the General Conditions and shall diligently prosecute the same to completion within_____ calendar days from the execution of the Contract.

IN WITNESS WHEREOF, the parties to these presents have hereunto set their hands on the date below written.

OWNER:

_____

Date

_____

(signature)

CITY OF CORNING

794 THIRD STREET

CORNING, CA 96021

CONTRACTOR:

_____

Date

_____

(Signature)

_____

_____

_____

(Address)

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: that _____

(Name of Contractor)

_____

(Address of Contractor)

a _____, hereinafter called
(Corporation, Partnership or Individual

Principal, and _____

(Name of Surety)

_____

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto _____

_____

(Name of Owner)

hereinafter called OWNER in the penal sum of _____

_____

Dollars, ($_____) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is that certain agreement entered into by and between _____

(Name of Owner)

and _____,

(Name of Contractor)

_____

(Description of Work)

_____,

said agreement being made pursuant to the bid approved by the _____

_____

(Governing Body of Owner)

on the _____ day of _____.

NOW THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions, and agreements of said Contract during the original term thereof, and any extension thereof which may be granted by the Owner, with or without notice to the Surety and during the one year guarantee period, and if he shall satisfy all claims and demands incurred under such Contract, and shall fully indemnify and save harmless the Owner from all costs and damages which they may suffer by reason of failure to do so, and shall reimburse and repay the Owner all outlay and expense which the Owner may incur in making good any default, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to Work to be performed thereunder, or the Specifications accompanying the same shall in any way effect its obligation on this Bond, and it does hereby waive notice of any such change, extension of time, alteration of or addition to the terms of the Contract or to the Work or to the Specifications.

IN WITNESS WHEREOF, this instrument is executed in _____ (number) counterparts, one of which shall be deemed an original, this the _____ day of _____,

ATTEST:

_____
Principal

_____ By _____
(Principal Secretary)

_____ _____
(Witness as to Principal) (Address)

_____ _____
(Address)

ATTEST:

_____
Surety

_____ By _____
(Surety Secretary) Attorney-in-Fact

_____ _____
(Witness as to Surety) (Address)

_____ _____

NOTE: If Contractor is a Partnership, all partners should execute the bond.

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: that _____

(Name of Contractor)

_____

(Address of Contractor)

a _____, hereinafter called
(Corporation, Partnership or Individual

Principal, and _____

(Name of Surety)

_____

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto _____

_____

(Name of Owner)

hereinafter called OWNER in the penal sum of _____

_____

Dollars, ($_____) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is that certain agreement entered into by and

between _____

(Name of Owner)

and _____,

(Name of Contractor)

_____

(Description of Work)

_____,

said agreement being made pursuant to the bid approved by the _____

_____

(Governing Body of Owner)

on the _____ day of _____.

NOW THEREFORE, if the Principal shall promptly make payment to all persons, firms, Subcontractors, and corporations furnishing materials for or performing labor in the prosecution of the Work provided for in such Contract, and any authorized extension or modification thereof, including all amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on machinery equipment and tools, consumed or used in connection with the construction of such Work, and for all labor, performed in such Work whether by Subcontractor or otherwise, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to Work to be performed thereunder, or the Specifications accompanying the same shall in any way effect its obligation on this Bond, and it does hereby waive notice of any such change, extension of time, alteration of or addition to the terms of the Contract or to the Work or to the Specifications.

IN WITNESS WHEREOF, this instrument is executed in _____ (number) counterparts, one of which shall be deemed an original, this the _____ day of _____.

ATTEST:

_____
Principal

_____
(Principal Secretary)

By_____

_____
(Witness as to Principal)

_____
(Address)

_____
(Address)

_____

ATTEST:

_____
Surety

_____
(Surety Secretary)

By_____
Attorney-in-Fact

_____
(Witness as to Surety)

_____
(Address)

_____

NOTE: If Contractor is a Partnership, all partners should execute the bond.

CERTIFICATION

[LABOR CODE SECTION 1861]

STATE OF CALIFORNIA)
) ss
COUNTY OF)

I, the undersigned, do hereby certify:

That I am aware of the provision of Section 3700 of the Labor Code of the State of California, which requires every employer to be insured against liability for Workers Compensation or to undertake self-insurance in accordance with the provisions of that section, and I will comply with such provision before commencing the performance of the work of this Contract.

Executed at _____

On _____.

I certify under penalty of perjury that the foregoing is true and correct.

_____

Contractor-Employer

GENERAL CONDITIONS

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A. SCOPE OF THE WORK

A.1 INTENT: The intent of the Plans and Specifications is to prescribe the details for the construction and completion of the work which the Contractor undertakes to perform in accordance with the terms of the Contract Documents. Where the Plans or Specifications describe portions of the work in general terms, but not in complete detail, it is understood that only the best general practice is to prevail and that only materials and workmanship of the first quality are to be used. Unless otherwise specified, the Contractor shall furnish all labor, materials, tools, equipment, and incidentals, and do all the work involved in executing the Contract in a satisfactory and workmanlike manner.

A.2 CHANGES IN THE WORK: The Owner reserves the right to make changes in the work, including alterations, additions, deductions and omissions, and to require extra work, all as may be deemed necessary by the Engineer. All such changes will be done under Contract Change Order which shall set forth the work to be done or the changes to be made, the value of the work or the method by which it will be determined and the change, if any, in the time of completion of the work.

The value of any such extra work or change shall be determined in one or more of the following ways:

(a) By unit prices named in the Contract or subsequently agreed upon.
(b) By estimate and acceptance in an agreed upon lump sum.
(c) By Force Account as provided for in Article F.4.

If none of the above methods is agreed on, or if the work is to be done by Force Account, the Contractor shall keep and present in the form prescribed in Article F.5 a correct account of the net cost of the labor and materials actually incorporated in the work.

Upon receipt of a Contract Change Order, the Contractor shall proceed with the ordered work. If ordered in writing by the Engineer, the Contractor shall proceed with the work so ordered prior to actual receipt of a Contract Change Order. A Contract Change Order executed by the Contractor and approved by the Engineer is an executed Contract Change Order as that term is used in Articles A.3 through A.5.

A Contract Change Order may be issued to the Contractor at any time. Should the Contractor disagree with any terms or conditions set forth in a Contract Change Order which he has not executed, he shall submit a written protest to the Engineer within 15 days after the receipt of such Contract Change Order. The protest shall state the points of disagreement, Specification references, and, if possible, the quantities and cost involved. If a written protest is not submitted, payment will be made as set forth in the Contract Change Order and such payment shall constitute full compensation for all work included therein or required thereby. Such unprotested Contract

Change Orders will be considered as executed Contract Change Orders as that term is used in Articles A.3 through A.5.

Where the protest concerning a Contract Change Order relates to compensation, the compensation payable for all work specified or required by said Contract Change Order to which such protest relates will be determined as provided in Articles A.3 through A.5. The Contractor shall keep full and complete records of the cost of such work and shall permit the Engineer to have access thereto as may be necessary to assist in the determination of the compensation payable for such work.

Where the protest concerning a Contract Change Order relates to the adjustment of time of completion of the work, the time to be allowed therefore will be determined as provided in Article B.3.

A.3 INCREASED OR DECREASED QUANTITIES: Increases or decreases in the quantity of a Contract item of work will be determined by comparing the total pay quantity of such item of work with the quantity shown in the Proposal for the same item of work.

If the total pay quantity of any item of work required under the Contract varies from the Proposal quantity therefore by 25 percent or less, payment will be made for the quantity of work performed at the Contract unit price, unless eligible for adjustment pursuant to Article A.4.

If the total pay quantity of any item of work required under the Contract varies from the Proposal quantity therefore by more than 25 percent, in the absence of an executed Contract Change Order specifying the compensation to be paid, the compensation payable to the Contractor will be determined in accordance with Articles A.3.a., A.3.b., or A.3.c. herein, as the case may be.

A.3.a. Increase of more than 25 percent: Should the total pay quantity of any item of work under the Contract exceed the Proposal quantity by more than 25 percent, the work in excess of 125 percent of the Proposal quantity (if not covered by an executed Contract Change Order specifying the compensation) will be paid for by adjusting the Contract unit price, or at the option of the Engineer, payment for the work involved in such excess will be made on the basis of Force Account as provided in Article F.4.

The Contractor's fixed costs which have been distributed over the Proposal quantity will be deemed to have been recovered by the Contractor from the payments made for 125 percent of the Proposal quantity, and will be excluded from the adjusted unit price.

A.3.b. Decreases of more than 25 percent: Should the total pay quantity of any item of work under the Contract be less than 75 percent of the Proposal quantity, the quantity performed (unless covered by an executed Contract Change Order specifying the compensation) will be paid for by adjusting the Contract unit price, or at the option of the Engineer, payment for the quantity

of the work of such item performed will be made on the basis of Force Account as provided in Article F.4.

The Contractor's fixed costs which have been distributed over the Proposal quantity will be redistributed over the pay quantity in determining the adjusted unit price.

The total payment for the final quantity of such item of work will in no case exceed the payment which would be made for the performance of 75 percent of the Proposal quantity at the original Contract unit price.

A.3.c. Deleted items: Should any Contract item of work be deleted in its entirety (in the absence of an executed Contract Change Order covering the deletion), payment will be made to the Contractor for actual and direct costs, excluding overhead and profit, incurred prior to the date of notification in writing by the Engineer of the deletion, except as provided for costs of handling materials.

If acceptable material is ordered by the Contractor for the deleted item prior to the date of notification of the deletion by the Engineer, and if orders for such material cannot be canceled, it will be paid for at the actual cost to the Contractor, excluding overhead and profit. In such case, the material paid for shall become the property of the Owner and the cost of any further handling will be paid for as extra work as provided in Article A.5. If the material is returnable to the vendor and if the Engineer so directs, the material shall be returned and the Contractor will be paid for charges made by the vendor for returning the material, excluding any markup for overhead and profit to the Contractor. The cost of handling returned material will be paid for as extra work as provided in Article A.5.

A.4 CHANGES IN CHARACTER OF WORK: If an ordered change in the Plans or Specifications materially changes the character of the work of a Contract item from that on which the Contractor based his Proposal price, and increases or decreases the actual unit cost of the changed item, an adjustment in compensation therefore will be made. Any such adjustment will apply only to the portion of the work of said item actually changed in character. At the option of the Engineer, the work of said item or portion of said item which is changed in character will be paid for by Force Account as provided in Article F.4.

Failure of the Engineer to recognize a change in character of the work at the time the Contract Change Order is issued shall in no way be construed as relieving the Contractor of his duty and responsibility of filing a written protest within the 15-day limit.

A.5 EXTRA WORK: New and unforeseen work will be classed as extra work when determined by the Engineer that such work is not covered by any of the various items for which there is a Contract price or by combinations of such items. In the event portions of such work are determined by the Engineer to be covered by some of the various items for which there is a

Contract price or combination of such items, the remaining portion of such work will be classed as extra work. Extra work also includes work specifically designated as extra work in the Plans or Specifications.

The Contractor shall do such extra work and furnish material and equipment therefore upon receipt of a Contract Change Order or other written order from the Engineer, and without a Contract Change Order or other written order of the Engineer, he shall not be entitled to payment for such extra work. Where such extra work is ordered by a written order other than a Contract Change Order, the Engineer will, as soon as practicable, issue a Contract Change Order. The provisions in Article A.2 shall be fully applicable to the subsequently issued Contract Change Order. Payment for extra work required to be performed pursuant to the provisions of this section, in the absence of an executed Contract Change Order, will be made by Force Account as provided in Article F.4, or as agreed to by the Contractor and the Engineer.

A.6 GUARANTEE: The Contractor shall guarantee all of his work against defective material or faulty workmanship for a period of one year after the date of acceptance of the work by the Owner.

The Contractor shall repair or replace to the satisfaction of the Engineer any or all such work that may prove defective in workmanship or materials within that period, ordinary wear and tear and unusual abuse or neglect excepted, together with any other work which may be damaged or displaced in so doing.

In the event of failure to comply with the above mentioned conditions within a reasonable time after being notified in writing, the Owner is authorized to have the defects repaired and made good at the expense of the Contractor who will pay the cost and charges therefore immediately upon demand.

The signing of the Contract by the Contractor shall constitute execution of the above guarantees. The Contract Performance Bond shall remain in full effect during the guarantee period and will not be released until the expiration of such period.

B. PROGRESS AND COMPLETION OF THE WORK

B.1 PROGRESS OF THE WORK AND TIME OF COMPLETION: The Contractor shall begin work within 15 days after the date of execution of the Contract. He shall diligently prosecute the same to completion within the number of days set forth in the Special Conditions.

B.2 LIQUIDATED DAMAGES: It is agreed by the parties of the Contract that in case all work called for under the Contract is not completed within the number of days specified in the

Special Conditions, damage will be sustained by the Owner; and it is further agreed that it is, and will be, impractical and extremely difficult to ascertain and determine the actual damage which the Owner will sustain by the delay. It is therefore agreed that the Contractor will pay to the Owner the sum of $350.00 per day for each and every day's delay in finishing the work. The Contractor agrees to pay said liquidated damages and further agrees that the Owner may deduct the amount thereof from the monies due or to become due the Contractor under this Contract.

It is further agreed that if the work called for under the Contract is not completed within the number of days specified in the Special Conditions, the Owner shall have the right to increase the number of days or not, as he decides will best serve his interest. If the Owner decides to increase the number of days, he shall further have the right to charge the Contractor, his heirs, assigns, or sureties, and to deduct from the final payment for the work, all or any part, as he may deem proper, of the actual cost of engineering, inspection, superintendence, and other overhead expenses which are directly chargeable to the Contract and which accrue during the period of such extension, except that the cost of final surveys and preparation of the final estimate shall not be included in such charges.

B.3 DELAYS AND EXTENSIONS OF TIME: The Contractor will be granted an extension of time and will not be assessed with liquidated damages or the cost of engineering, inspection, superintendence and other overhead expenses during any delay beyond the time named for the completion of the work caused by an act of God or by the public enemy, acts of the Owner, fire, floods, epidemics, quarantine restrictions, strikes, unusual shortage of materials and freight embargoes. In the event of such delay, the Contractor shall notify the Engineer in writing of the causes of delay within 10 days from the beginning of such delay, and his findings thereon shall be final.

B.4 PROGRESS SCHEDULE AND ORDER OF COMPLETION: Within 10 days after execution of the Contract, the Contractor shall submit to the Engineer a progress schedule showing a breakdown of the work into at least all of its major items, and showing the proposed dates of starting and completing these items of work. This schedule shall also conform to the requirements for completion of portions of the work as may be specified in the Special Conditions. The Contractor shall review and, if necessary, revise the progress schedule at least once a month and in any event shall submit a current schedule to the Engineer at his request at any time during the Contract period.

C. CONTROL OF THE WORK

C.1 ASSIGNMENT: Neither party of 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 due, or to become due to him hereunder, without the previous written consent of the Owner.

C.2 RIGHTS OF VARIOUS INTERESTS: Wherever work being done by the Owner's forces or by other contractors is contiguous to work covered by this Contract, the respective rights of the various interests involved shall be established by the Engineer, to secure the completion of the various portions of the work in general harmony.

C.3 SEPARATE CONTRACTS: The Owner reserves the right to let other contracts in connection with this work. The Contractor shall afford other contractors reasonable opportunity for the introduction and storage of their materials and the execution of their work, and shall properly connect and coordinate his work with theirs.

If any part of the Contractor's work depends upon the work of any other contractor, the Contractor shall inspect and promptly report to the Engineer any defects in such work that render it unsuitable. His failure to so inspect and report shall constitute an acceptance of the other contractor's work as fit and proper for the reception of his work except as to defects which may later develop in the other contractor's work. In addition, the Contractor shall measure work already in place and shall immediately report to the Engineer any discrepancy between the executed work and that shown on the Plans.

C.4 SUBCONTRACTS: No subcontractor will be recognized as such, and all persons engaged in the work will be considered as employees of the Contractor and he will be held responsible for their work, which shall be subject to the provisions of the Contract Documents. Nothing contained in the Contract Documents shall create any contractual relation between any subcontractor and the Owner.

C.5 CONTRACT DOCUMENTS: The various parts of the Contract Documents, as defined in the Instructions to Bidders, are complementary and a requirement stated in one is as binding as though stated in all. They are intended to be cooperative and to describe and provide for a complete work.

In the event of conflict between the Instructions to Bidders and the Special Conditions, the Special Conditions shall govern. In the event of conflict between the General Conditions and the Special Conditions, the Special Conditions shall govern. In the event of conflict between the Plans and the Technical Specifications, the Technical Specifications shall govern, except that where items are shown on the Plans and are not specifically included in the Technical Specifications, the Plans shall govern.

C.6 ENGINEER'S AUTHORITY: The Engineer is the representative of the Owner and has full authority to interpret the Contract Documents, to enforce the requirements thereof and to decide questions which arise during the course of the work. He has authority to stop the work whenever such stoppage may be necessary to insure the proper execution of the Contract. He shall also have authority to reject all work and materials which do not conform to the Contract Documents.

If at any time before the commencement or during the progress of the work, tools, plant or equipment appear to the Engineer to be insufficient, inefficient, or inappropriate to secure the quality of work required or the proper rate of progress, the Engineer may order the Contractor to increase their efficiency, or to improve their character, or to augment their number, or to substitute new tools, plant or equipment as the case may be, and the Contractor must conform to such order; but the failure of the Engineer to demand such increase of efficiency, number, or improvement shall not relieve the Contractor of his obligation to secure the quality of work and the rate of progress necessary to complete the work in accordance with the Contract Documents.

In giving instructions, the Engineer shall have authority to make minor changes in the work, not involving extra cost, and not inconsistent with the purpose of the work.

C.7 INSPECTION OF WORK: The Engineer and his representatives shall at all times have access to the work wherever it is in preparation or progress and the Contractor shall provide proper facilities for such access and for inspection. If the Specifications or the Engineer's instructions require any work to be specially tested or approved, the Contractor shall give the Engineer timely notice of its readiness for inspection. Inspection by the Engineer will be made promptly. If any work should be covered up without approval or consent of the Engineer, it must, if required by the Engineer, be uncovered for examination at the Contractor's expense.

The inspection of the work or materials shall not relieve the Contractor of any of his obligations to fulfill his Contract as prescribed. Work and materials not meeting such requirements shall be made good and unsuitable work or materials may be rejected, notwithstanding that such work or materials may have been previously inspected by the Engineer or that payment therefore has been included in a progress estimate.

Re-examination of questioned work may be ordered by the Engineer and if so ordered, the work must be uncovered by the Contractor. If such work is found to be in accordance with the Contract Documents, the Owner will pay the cost of re-examination and replacement. If such work is not found to be in accordance with the Contract Documents, the Contractor shall pay such cost.

Projects financed in whole or in part with State or federal funds shall be subject to inspection at all times by the State or federal agency involved. Where any part of the work is being done under an encroachment permit or building permit, or is subject to State, County or municipal codes, laws or ordinances, representatives of the governing agency shall have full access to the work and shall be allowed to make any inspection or tests in accordance with such permits, codes, laws or ordinances. If advance notice of the readiness of the work for inspection by the governing agency is required, the Contractor shall furnish such notice to the appropriate agency.

C.8 SUPERINTENDENCE: The Contractor shall designate in writing before starting work, an authorized representative who shall have complete authority to represent and to act for the

Contractor. Said authorized representative shall be present at the site of the work at all times while work is actually in progress on the Contract. During periods when work is suspended, arrangements acceptable to the Engineer shall be made for any emergency work which may be required.

Whenever the Contractor or his authorized representative is not present on any particular part of the work where it may be desired to give direction, orders will be given by the Engineer, which shall be received and obeyed by the superintendent or foreman who may have charge of the particular work in reference to which the orders are given.

Any order given by the Engineer, not otherwise required by the Contract Documents to be in writing will, on request of the Contractor, be given or confirmed by the Engineer in writing.

C.9 CHARACTER OF WORKMEN: If any subcontractor or person employed by the Contractor shall fail or refuse to carry out the directions of the Engineer or shall appear to the Engineer to be incompetent or to act in a disorderly or improper manner, he shall be removed immediately on the requisition of the Engineer, and such person shall not again be employed on the work.

The Contractor shall at all times enforce strict discipline and good order among his employees, and shall not employ on the work any unfit person or anyone not skilled in the work assigned to him.

Neither party shall employ or hire any employee of the other party without his consent.

C.10 PLANS, SPECIFICATIONS AND INSTRUCTIONS: Unless otherwise provided in the Special Conditions, the Engineer will furnish to the Contractor, free of charge, all copies of Plans and Specifications reasonably necessary for the execution of the work. He will also furnish with reasonable promptness additional instructions, either as supplemental drawings or otherwise, as may be necessary for the proper execution of the work. The Contractor shall keep one copy of all Plans and Specifications, including any Addenda and Contract Change Orders, on the work in good order available to the Engineer and his representatives.

Should the Contractor be in doubt as to the meaning of any provision in the Plans and Specifications, or should he find any errors or omissions therein, or should he find any errors or omissions in the layout or staking, he shall immediately notify the Engineer. The Engineer will promptly investigate and will furnish the Contractor with any additional instructions as may be required.

C.11 CONSTRUCTION STAKING: The Engineer will set such construction stakes and marks as he determines are necessary to establish the lines and grades required for the completion

of the work specified in the Contract Documents. Whenever the Contractor requires construction stakes, he shall notify the Engineer of his requirements at least two days in advance of starting operations that require such stakes.

Stakes and marks set by the Engineer shall be carefully preserved by the Contractor. In case such stakes or marks are destroyed or damaged, they will be replaced at the Engineer's earliest convenience. The Contractor shall be charged for the cost of replacing or restoring stakes and marks which are destroyed or damaged by his operations. This charge will be deducted from any monies due or to become due to the Contractor under the Contract.

C.12 PERMITS AND REGULATIONS: Permits and licenses of a temporary nature necessary for the prosecution of the work shall be obtained by the Contractor at his expense. Unless otherwise specified in the Special Conditions, permits and licenses for permanent structures or permanent changes in existing facilities will be secured and paid for by the Owner. Copies of any permits and licenses which are obtained by the Owner will be on file at his office and will be available for inspection by the Contractor. The Contractor shall acquaint himself with, and abide by, any requirements of these documents. The Contractor shall obtain any supplemental agreements or bonds required by any encroachment permit, and he shall give all notices and comply with all laws, ordinances, rules and regulations bearing on the conduct of the work. If the Contractor observes that the Plans and Specifications are at variance therewith, he shall promptly notify the Engineer in writing, and any necessary changes shall be adjusted as provided in the Contract Documents for changes in the work. If the Contractor performs any work, knowing it to be contrary to such laws, ordinances, rules and regulations, and without such notice to the Engineer, he shall bear all costs arising therefrom.

C.13 LANDS FOR WORK: The Owner shall provide the lands, easements and rights-of-way upon which the work under this Contract is to be done. Unless he specifically makes other arrangements, the Contractor shall confine his operations to the limits of the Owner's land and to the limits of the easements and rights-of-way. The Contractor shall provide land required for the erection of temporary construction facilities and storage of his material.

C.14 SUSPENSION OF WORK: The Owner may at any time suspend the work, or any part thereof, by giving one day's notice to the Contractor in writing. The work shall be resumed by the Contractor within 10 days after the date fixed in the written notice from the Owner to the Contractor to do so. The Owner will reimburse the Contractor for expense incurred by the Contractor in connection with the work under this Contract as a result of such suspension, except that no reimbursement will be made if the suspension is due to non-conformance with the Contract Documents on the part of the Contractor. If the work or any part thereof shall be stopped by notice in writing, and if the Owner does not give notice in writing to the Contractor to resume work within 30 days of the date fixed in written notice to suspend, the Contractor may

abandon the suspended portion of the work and will be entitled to payment for all work acceptably done on the abandoned portions.

C.15 THE OWNER'S RIGHT TO DO WORK: If the Contractor should neglect to prosecute the work properly or fail to perform any provision of the Contract, the Owner, after 3 days' written notice to the Contractor, may, without prejudice to any other course of action he may have, perform or have performed by other forces, all or any portion of the work and may deduct the cost thereof from the monies due or to become due the Contractor under this Contract.

C.16 THE OWNER'S RIGHT TO TERMINATE CONTRACT: If the Contractor should be adjudged bankrupt, or should make a general assignment for the benefit of his creditors, or if a receiver should be appointed because of his insolvency, or if he should persistently or repeatedly refuse or should fail to supply enough properly skilled workmen or proper materials, or if he should fail to make prompt payment to subcontractors or for materials or labor, or persistently disregard laws, ordinances or the instructions of the Engineer, or otherwise be guilty of a substantial violation of any provision of the Contract, then the Owner, upon the certification of the Engineer that sufficient cause exists to justify such action, may, without prejudice to any other right or remedy and after giving the Contractor 7 day's written notice, terminate the employment of the Contractor and take possession of the premises and of all materials, tools, and appliances thereon and finish the work by whatever method he may deem expedient. In such case, the Contractor shall not be entitled to receive any further payment until the work is finished. If the unpaid balance of the Contract price exceeds the expenses of finishing the work, including compensation for all attributable administrative costs and for damages incurred through the Contractor's default, such excess shall be paid to the Contractor. If such expenses exceed such unpaid balance, the Contractor shall pay the difference to the Owner. The expenses incurred by the Owner as herein provided, and the damage incurred through the Contractor's default, shall be certified by the Engineer.

C.17 REMOVAL OF EQUIPMENT: In the case of annulment of this Contract before completion for any cause, the Contractor, if notified to do so by the Owner, shall promptly remove any part or all of his equipment and supplies from the Owner's property. If not promptly done, the Owner shall have the right to remove such equipment and supplies at the expense of the Contractor.

C.18 CORRECTION OF WORK: The Contractor shall promptly remove from the premises all materials condemned by the Engineer as failing to conform to the Contract Documents whether incorporated in the work or not. The Contractor shall, at his own expense, promptly replace such materials and perform all work made necessary by such replacement, including making good all work of others destroyed or damaged by such removal or replacement.

If the Contractor does not remove such condemned work and materials within a reasonable time, fixed by written notice, the Owner may remove and store the material at the expense of the Contractor. If the Contractor does not pay for the expense of the removal within 10 days' time thereafter, the Owner may, upon 10 days' written notice, sell such materials at auction or at private sales and shall account for the net proceeds thereof, after deducting all the costs and expenses that should have been borne by the Contractor.

C.19 DEDUCTIONS FOR UNCORRECTED WORK: If the Engineer deems it inexpedient to correct work injured or done not in accordance with the Contract, an equitable deduction from the Contract price shall be made therefore.

C.20 USE OF COMPLETED PORTIONS: The Owner 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 taking possession and use shall not be deemed an acceptance of any work not completed in accordance with the Contract Documents. If such prior use increases the cost of or delays the work, the Contractor shall be entitled to extra compensation, or extension of time or both, as the Engineer may determine.

C.21 CLAIMS FOR EXTRA COSTS: It is hereby mutually agreed that the Contractor shall not be entitled to payment of additional compensation for any cause, including any act or failure to act by the Engineer, or of any event, thing or occurrence, unless he shall have given the Engineer due written notice of potential claim, provided however, that compliance with this Article shall not be a prerequisite as to matters within the scope of the protest provisions in Article A.2, nor to any claim which is based on differences in measurements or errors of computation of Contract quantities.

The written notice of potential claim shall set forth the reasons the Contractor believes additional compensation will or may be due, the nature of the costs involved, and, insofar as possible, the amount of the potential claim. The required notice must have been given to the Engineer prior to the time the Contractor performed the work giving rise to the potential claim for additional compensation, if based on an act or failure to act by the Engineer, or in all other cases within 15 days after the event, thing or occurrence giving rise to the potential claim.

In the event of an emergency endangering life or property, the Contractor shall act as stated in Article D.4, and after execution of the emergency work, shall present an accounting of labor, materials, and equipment in connection therewith. The procedure for any payment that may be due for emergency work will be as specified in Article A.2.

The Engineer shall, within a reasonable time after their presentation to him, state his decisions in writing on all claims of the Owner or the Contractor. All such decisions of the Engineer shall be final.

It is the intention of this Article that differences between the parties arising under and by virtue of the Contract be brought to the attention of the Engineer at the earliest possible time so that such matters may be settled, if possible, or other appropriate action promptly taken. The Contractor hereby agrees that he shall have no right to additional compensation for any claim that may be based on any act, failure to act, event, thing or occurrence for which no written notice of potential claim was filed.

C.22 CLEANING UP: The Contractor shall, at his own expense, promptly remove from the Owner's property, and from all other lands affected by his work, all temporary structures, rubbish and waste materials resulting from his operations. He shall leave such lands in a neat and orderly condition which is at least as good as the condition prior to his operations.

D. INSURANCE AND LIABILITY

D.1 CONTRACTOR'S LIABILITY INSURANCE: The Contractor shall maintain insurance to protect him from claims under workman's compensation acts and from any other claims for damages for personal injury, including death, which may arise from operations under this Contract, whether such operations are controlled by him, a subcontractor or by anyone directly or indirectly employed by either of them. The Owner shall be named as coinsured in all such insurance policies and the coverage shall include concurrent negligence of the Owner or his agents, employees, or representatives whether such concurrent negligence be active or passive, including specifically any liability based upon a violation of any non-delegable duties. Certificates of insurance and the certificate required by Labor Code Section 1861 shall be filed with the Engineer prior to commencing the work, and shall be subject to his approval for adequacy of protection.

The Contractor specifically obligates himself and hereby agrees to protect, hold free and harmless, defend and indemnify the Owner, the Engineer and his consultants, and each of their officers, employees and agents, from any and all liability, penalties, costs, losses, damages, expenses, causes of actions, claims or judgments, including attorney's fees, which arise out of or are in any way connected with the Contractor's performance of his work under this Contract. To the extent legally permissible, this indemnity and hold harmless agreement by the Contractor shall apply to any acts or omissions, whether active or passive, on the part of the Contractor or his agents, employees, representatives, or subcontractors, or his subcontractor's agents, employees and representatives, resulting in liability irrespective of whether or not any acts or omissions of the parties to be indemnified hereunder may have also been a contributing factor to the liability.

As a further precaution toward this end, the Contractor shall procure and maintain, in full force and effect during the performance of the work contemplated thereunder, insurance in his favor and also in favor of the Owner, with an insurance carrier approved by the Owner, as follows:

Liability for Personal Injury or Property Damage in the amount of $1,000,000.00 for any occurrence.

The Contractor shall, before the commencement of the work, take out and maintain in full force and effect, compensation insurance with an insurance carrier or carriers under an insurance policy or policies, satisfactory to the Owner covering his full liability under the "Worker's Compensation Insurance and Safety Act" of the State of California to any employee who may be injured during the course of said work and to the dependents of any employee who may be killed during the course of said work.

Such policy or policies shall expressly provide therein that they shall not be canceled by the insurer until 10 days after written notice of the intended cancellation thereof shall have first been given to the Owner by the insurer.

The Contractor shall file with the Owner, immediately after the signing of the Contract, certificates of all insurance. These certificates shall be fully executed and shall state that the policies cannot be canceled until 10 days after written notification of such intent of cancellation has been given to the Owner. All policies shall be with Insurance Companies acceptable to the Owner.

In case of the breach of any provision of this Article, the Owner may take out and maintain at the expense of the Contractor such insurance as the Owner may deem proper and may deduct the cost of such insurance from any monies which may be due or become due the Contractor under this Contract.

D.2 FIRE INSURANCE: The Contractor shall take out and maintain fire insurance on the entire structure on which work under this Contract is to be done. This insurance will be in the amount of 100 percent of the insurable value of the structure, including items of labor and materials during construction, and 100 percent of the insurable value of the completed structure. The coverage shall be maintained by the Contractor until final acceptance of the work by the Owner.

The loss, if any, is to be made adjustable with and payable to the Owner as Trustee for whom it may concern, except in cases which require payment of all or a portion of said insurance to be made to a mortgagee as his interest may appear.

The Contractor, on his written request, shall be named jointly with the Owner in all policies, all of which shall be open to his inspection. If the Owner fails to show them on request, or if he fails to

effect or maintain as above, the Contractor may insure his own interests and charge the cost thereof to the Owner. If the Contractor is damaged by failure of the Owner to maintain such insurance, he may recover as stipulated in the Contract for recovery of damages.

The Trustee shall deposit any money received from insurance in an account separate from all his other funds and he shall distribute it in accordance with such agreement as the parties in interest may reach. If after loss no special agreement is made, replacement of injured work shall be ordered and executed as provided for under changes in the work.

The Trustee shall have power to adjust and settle any loss with the insurers unless the Contractor shall object in writing within 3 days of the occurrence of loss, and thereupon arbitrators shall be chosen. The Trustee shall in that case make settlement with the insurers in accordance with the directions of the arbitrators, who shall also, if distribution by arbitration is required, direct such distribution.

EXCLUSION: This insurance does not cover any tools owned by mechanics, any tools, equipment, scaffoldings, stagings, towers, or supplies, and any temporary structures erected for the Contractor's operations.

D.3 PRESERVATION OF PROPERTY: The Contractor shall take whatever precautions necessary to prevent damage to all existing improvements, including aboveground and underground utilities, trees and shrubbery that are not specifically shown to be removed, fences, signs, mail boxes, survey markers and monuments, building and structures, the Owner's property, adjacent property and any other improvements or facilities within or adjacent to the work. If such improvements or property are injured or damaged by the Contractor's operations, they shall be replaced or restored, at the Contractor's expense, to a condition at least as good as the condition prior to the start of the Contractor's operations.

The Contractor shall examine all bridges, culverts, and other structures over which he will move his materials and equipment, and before using them, he shall properly strengthen such structures, where necessary. The Contractor will be held responsible for any and all injury or damage to such structures caused by his operations.

The fact that any pipe or other underground facility is not shown, or not accurately shown on the Plans, shall not relieve the Contractor of his responsibility under this Article. It shall be the Contractor's responsibility to ascertain the existence of any underground improvements or facilities which may be subject to damage by his operations.

D.4 PROTECTION OF WORK: The Contractor shall continuously maintain adequate protection of all his work from damage. He shall make good any such damage, injury or loss, except as may be directly due to errors in the Contract Documents or caused by agents or

employees of the Owner. He shall adequately protect adjacent property as provided by law and the Contract Documents. He shall provide and maintain all passage-ways, guard fences, lights and other facilities for protection required by public authority or local conditions.

In an emergency affecting the safety of life or of the work or of adjoining property, the Contractor, without special instruction or authorization from the Engineer, 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 for emergency work shall be determined as specified under Article A.2.

D.5 PUBLIC SAFETY: The Contractor shall be responsible for furnishing and maintaining all flagmen, warning signs, barricades, emergency lighting, shoring, etc. necessary to protect the public and workmen employed on the project. Safety provisions shall conform to all applicable federal, State, County and local laws, ordinances and codes and, in particular, to the rules and regulations established by OSHA and the California Division of Industrial Safety.

D.6 ACCIDENTS: The Contractor shall provide at the site such equipment and medical facilities as are necessary to give first-aid service to anyone who may be injured.

The Contractor must promptly report in writing to the Engineer all accidents arising from or in connection with the performance of the work on or adjacent to the site, giving full details and statements of witnesses. If death or serious injuries or serious damages are caused, the accident shall be reported immediately by telephone or messenger to both the Engineer and the Owner.

If any claim is made against the Contractor or any subcontractor because of any accident, the Contractor shall promptly report the facts in writing to the Engineer, giving full details of the claim.

E. LABOR AND MATERIALS

E.1 HOURS OF LABOR: The Contractor shall forfeit, as penalty to the Owner, $25.00 for each workman employed in the execution of the Contract by him or by any subcontractor under him for each calendar day any workman is required or permitted to labor more than 8 hours in violation of the provisions of the Labor Code and in particular, Section 1810 to Section 1817 thereof, inclusive.

E.2 EMPLOYMENT OF APPRENTICES: The Contractor's attention is directed to Section 1777.5 of the Labor Code; provisions of said section pertaining to employment of indentured apprentices are hereby incorporated by reference into these Specifications. As applicable, the Contractor or any subcontractor employed by him in the performance of the

Contract work shall take such actions as necessary to comply with the provisions of said Section 1777.5.

E.3 LABOR DISCRIMINATION: Attention is directed to Section 1735 of the Labor Code, which reads as follows:

> "No discrimination shall be made in the employment of persons upon public works because of the race, color or religion of such persons and every contractor for public works violating this section is subject to all the penalties imposed for a violation of this chapter."

E.4 PREVAILING WAGE: The Contractor shall forfeit as penalty to the Owner, $50.00 for each calendar day or portion thereof, for each workman paid less than stipulated prevailing rates for any work done under the Contract by him or by any subcontractor under him, in violation of the provisions of the Labor Code and in particular, Section 1770 to Section 1780 thereof, inclusive.

The Owner will not recognize any claim for additional compensation because of the payment by the Contractor of any wage rate in excess of the Prevailing Wages set forth in the Contract Documents. The possibility of wage increases is one of the elements to be considered by the Contractor in determining his Proposal, and will not be considered as the basis of a claim against the Owner on the Contract.

The Contractor and each Subcontractor shall keep an accurate record showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week and the actual per diem wages paid to each journeyman, apprentice, worker or other employee by him or her in connection with the work. These payroll records shall be certified and made available for inspection at all reasonable hours at the principal office of the Contractor and furnished by the Contractor to the Owner and others upon request in accordance with the provisions of Labor Code Section 1776. The Contractor's attention is called to the penalties provided for in Section 1776 for the failure to comply with its provisions.

E.5 MATERIALS: Unless otherwise specifically stated in the Special Conditions, the Contractor shall furnish all materials necessary for the execution and completion of the work. Unless otherwise specified, all materials shall be new and shall be manufactured, handled and installed in a workmanlike manner to ensure completion of the work in accordance with the Contract Documents. The Contractor shall furnish satisfactory evidence as to the kind and quality of materials.

Where materials are to be furnished by the Owner, the type, size, quantity and location at which they are available will be stated in the Special Conditions.

In certain instances, the Owner may have available power, water or other utilities or materials which the Contractor may wish to use. If the Owner intends to furnish these free of charge, it will be so stated in the Special Conditions. In the absence of such specific statement, the Contractor shall furnish all utilities and materials at his own expense.

E.6 RECORDS OF MATERIALS PURCHASED: If required by the Engineer, the Contractor shall furnish duplicate invoices to the Engineer for all materials furnished to the project.

E.7 PATENTS: The Contractor shall assume all costs arising from the use of patented materials, equipment, devices, or processes used on or incorporated in the work, and agrees to indemnify and save harmless the Owner and the Engineer from all suits at law, or actions of every nature for, or because of the use of any patented materials, equipment, devices, or processes.

E.8 OWNERSHIP OF REMOVED MATERIALS: Unless otherwise specifically stated in the Special Conditions or Technical Specifications, any existing equipment or material removed by the Contractor during the course of the work shall remain the property of the Owner. Equipment and materials shall be removed with care to prevent unnecessary damage and shall be neatly stored at a location adjacent to the site of the work as directed by the Engineer.

E.9 SUBSTITUTION OF MATERIALS: Where materials and equipment are specified in the Technical Specifications or are shown on the Plans as similar and equal to a certain proprietary brand, the intent is to establish the minimum quality and performance acceptable. If the Contractor proposes to substitute materials or equipment of another proprietary brand but of equal quality, he may submit a request to the Engineer for approval of the proposed substitution. No substitution may be made without prior approval and the Engineer shall be the final judge of equality.

If any tests are necessary for evaluation of the proposed substitution by the Engineer, the Contractor shall furnish all necessary test materials and shall pay the cost of the tests.

E.10 SUBMISSION OF WORKING DRAWINGS: Unless otherwise specifically stated in the Special Conditions or Technical Specifications, the Contractor shall submit to the Engineer, four sets of working drawings for all items of equipment or fabricated materials to be installed in the work. These drawings shall show any necessary details in fabrication or erection which are not shown on the Plans furnished by the Owner and shall verify details and dimensions of equipment. The Contractor shall verify these dimensions before starting any work dependent on or affected by them.

E.11 TESTS: Unless otherwise specified in the Special Conditions, the Owner will pay for the required testing of materials. The Contractor will furnish all samples at no cost to the Owner. In the event samples are submitted which fail to pass the specified tests, the Contractor will pay for all subsequent tests.

F. MEASUREMENT AND PAYMENT

F.1 MEASUREMENT OF QUANTITIES: Where the Contract provides for payment on a lump sum price basis, no measurement of quantities will be made. Where the Contract provides for payment on a unit price basis, the quantities of work performed will be computed by the Engineer on the basis of measurements taken by the Engineer, and these measurements shall be final and binding.

All work computed under the Contract shall be measured by the Engineer according to United States Measurements and Weights. Methods of measurement are specified in the Special Conditions and in the Technical Specifications.

F.2 SCOPE OF PAYMENT: The Contractor shall accept the compensation, as full payment for furnishing all labor, materials, tools, equipment, and incidentals necessary to the completed work and for performing all work contemplated and embraced under the Contract; also for loss or damage arising from the nature of the work, from the action of the elements, or from any unforeseen difficulties which may be encountered during the prosecution of the work until the acceptance by the Owner and for all risks of every description connected with the prosecution of the work, also for all expenses incurred in consequence of the suspension or discontinuance of the work; and for completing the work according to the Contract Documents. Neither the payment of any estimate nor any retained percentage shall relieve the Contractor of any obligation to make good any defective work or material.

No compensation will be made for loss of anticipated profits. Increased or decreased work involving supplemental agreements will be paid for as provided in such agreements.

F.3 CHANGES IN THE WORK: The value of changes in the work, including extra work, shall be determined in accordance with Articles A.2 through A.5.

F.4 FORCE ACCOUNT PAYMENT: Where work is to be paid for by Force Account, the Contractor shall be paid on the basis of the actual cost of labor, material, and equipment, furnished by him as shown on paid vouchers, plus 15 percent. However, the Owner reserves the right to furnish such materials and equipment as he deems expedient, and the Contractor shall have no claim for overhead and profit on the cost or such material and equipment.

The cost of labor as referred to above shall include the cost of the base wages paid to workmen, plus any additional payment paid to, or on behalf of, workmen as required by State or federal laws plus any benefits, subsistence and travel allowance as may be required by collective bargaining agreements.

The cost of material as referred to above shall be the net cost to the purchaser, whether Contractor, subcontractor or other forces, from the supplier thereof.

The cost of equipment as referred to above, shall conform to current equipment rental rates prevailing in the locality, as determined and agreed upon in writing by the Engineer and by the Contractor. This applies to both rental equipment and equipment owned by the Contractor.

F.5 RECORDS OF FORCE ACCOUNT WORK: The Contractor shall maintain his records in a manner to provide a clear distinction between the direct costs of extra work paid for on a Force Account basis and the costs of other operations. The Contractor shall furnish the Engineer report sheets in duplicate of each day's extra work no later than the working day following the performance of the work. The daily report sheets shall itemize the materials used, and shall cover the direct cost of labor and the charges for equipment rental, whether furnished by the Contractor, subcontractor, or other forces. The daily report sheets shall provide names or identifications and classifications of workmen, the hourly rate of pay and hours worked, and also the size, type and identification number of equipment and hours operated.

Material charges shall be substantiated by valid copies of vendor's invoices. Such invoices shall be submitted with the daily report sheets, or if not available, they shall be submitted with subsequent daily report sheets. Should vendor's invoices not be submitted within 15 days after acceptance of the work, the Owner reserves the right to establish the cost of such material at the lowest current wholesale prices at which the materials are available in the quantities concerned delivered to the location of the work.

Said daily report sheets shall be signed by the Contractor or his authorized agent.

The Engineer will compare his records with the daily report sheets furnished by the Contractor, make any necessary adjustments, and compile the costs of work paid for on a Force Account basis on daily extra work report forms. When these daily extra work reports are agreed upon and signed by both parties, they shall become the basis of payment for the work performed.

F.6 PAYMENTS WITHHELD: The Owner may withhold or, because of subsequently discovered evidence, nullify the whole or a part of any payment to such extent as may be necessary to protect himself from loss due to:

a. Defective work not remedied.
b. Claims filed or reasonable evidence indicating probable filing of claims.

c. Failure of the Contractor to make payments properly to subcontractors or for material or labor.
d. A reasonable doubt that the Contract can be completed for the balance then unpaid.
e. Damage to another Contractor.

When the above grounds are removed, payment shall be made for amounts withheld because of them.

The Contractor may, in accordance with the provisions of Government Code Section 4590, substitute securities for any monies which the Owner may withhold to insure performance under this Contract.

F.7 PROGRESS PAYMENTS: Once each month, the Engineer will make an estimate in written form of the total amount of work done and of the acceptable materials furnished and delivered by the Contractor on the site and not used to the time of such estimate, and the value thereof. To assist the Engineer in determining the value of acceptable materials which are on hand but not used, the Contractor shall furnish the Engineer with copies of invoices for all such materials. The Owner shall retain 10 percent of such estimated value of work done, and 50 percent of the value of materials so estimated to be on hand but not used.

This retention will serve as part security for the fulfillment of the Contract by the Contractor. The Owner shall pay monthly to the Contractor the balance not retained of the aforesaid, after deducting therefrom all previous payments and all sums to be retained.

When in the judgment of the Engineer, the work is not proceeding in accordance with the provisions of the Contract, or when in his judgment the total amount of the work done since the last estimate amounts to less than $500.00, no pay estimate will be prepared and no progress payment will be made.

No estimates or payment shall be construed to be an acceptance of any defective work or improper materials.

The Contractor may, in accordance with the provisions of Government Code Section 4590, substitute securities for any monies which the Owner may withhold to insure performance under this Contract.

F.8 FINAL PAYMENT: Within 10 days after the completion of the work and its acceptance by the Owner, the Engineer will make a final estimate in writing of the quantities of work done and the value thereof, and will prepare a Notice of Completion to be filed by the Owner. At this time, a semi-final payment will be made to the Contractor provided that such payment is warranted under the terms of Article F.7. The amount of this payment shall be based on the total

value of work acceptably performed under the Contract, subject to the same conditions and retentions as payments previously made under the monthly estimates.

Within 20 days after the date of the final estimate, the Contractor shall submit to the Engineer either his written approval of the final quantities, and value of work as determined by the Engineer, or a written statement of any and all claims for additional compensation claimed to be due under the Contract. No claim for which a notice of potential claim is required will be considered unless the Contractor has complied with the notice provisions of Article C.21, nor will any claim be considered that was not included in said written statement of claims.

Failure of the Contractor to submit claims within the specified 20-day period, regardless of whether or not he files written approval, shall constitute his acceptance of the quantities and value of work determined by the Engineer in the final estimate. No claim will be considered if filed after the specified 20-day period.

In the event the Contractor files claims within the specified 20-day period, the Engineer will, within 10 days after receipt of said claims, consider and investigate the Contractor's claims and make his final determination. Should he find any revision to be warranted as a result of his investigation, the Engineer will immediately notify the Owner and the final pay estimate will be revised accordingly.

Thirty-five days after the date of filing the Notice of Completion, the Owner will pay the entire sum found to be due, after deducting all previous payments and all amounts to be retained under the provisions of the Contract. As a condition of such payment, the Owner may require the Contractor to furnish a release of all claims against the Owner arising by virtue of the Contract. Payment will be withheld for any contract items for which a release is not furnished.

All prior partial estimates and payments shall be subject to correction in the final estimate and payments.

F.9 PAYMENT OF TAXES: The Contract prices paid for the work include full compensation for payment of federal, State or local taxes.

SPECIAL CONDITIONS

SCOPE OF WORK: The work consists, in general, of: ***(Insert Description of Work Here)***; in accordance with the Plans and specifications entitled:

CITY OF CORNING

(Insert Project Name Here)

DEFINITION OF TERMS:

Wherever in these documents the word "Owner" appears, it shall be understood to mean the City of Corning.

Wherever the word "Contractor" appears in these documents, it shall be understood to mean the party or parties contracting with the Owner to perform the work described by these documents.

Wherever in these documents the word "Engineer" or "City Engineer" appears, it shall be understood to mean (Insert City Engineer's Name Here), acting directly or through duly authorized agents.

STANDARD SPECIFICATIONS: Wherever standard specifications or testing methods have been referred to, such as NEMA , NEC or ASTM, it shall mean the latest applicable issue or revision.

Where the State Standard Specifications are referred to, it shall mean the latest issue of the Standard Specifications, State of California, relative to the type of work being performed.

AWARD OF CONTRACT: The award of Contract, if made, will be made within__ days after the opening of Proposals. The quantities shown are estimates, to be used for the comparison of bids only.

BASE BID, ALTERNATIVE BIDS, AND/OR ADDITIVE BIDS:

(Insert Description of Bids here if applicable.)

The lowest responsible bid will be as determined by the Director of Public Works to be in the best interest of the City of Corning.

TIME OF COMPLETION: Attention is directed to Article 15 of the General Conditions. The Contractor shall diligently prosecute the work to completion within __ calendar days from the date of execution of the contract.

ORDER OF WORK: The contractor shall remove and replace the concrete portion of the work adjacent to all pavement before installing the asphalt concrete overlay.

COORDINATION: The City and Public Utility Companies reserve the right to enter upon the work for the purpose of making changes necessitated by the improvements being constructed under this Contract. The Owner or Public Utility will coordinate such work with the Contractor and all parties shall cooperate to the fullest extent possible.

SHOP DRAWINGS: The Contractor shall submit manufacturer's or fabricator's drawings and specifications for materials and equipment to be incorporated in the work.

The Contractor shall submit a minimum of three copies of shop drawings to the City Engineer for approval. Material or equipment shall not be fabricated, assembled, or shipped until the shop drawings have been approved by the Engineer.

The Engineer will retain two copies of the shop drawings and return one copy to the Contractor. If the Contractor desires additional copies returned, more than three copies must be submitted.

TESTING: All required testing of materials and construction methods will be provided by the Owner. Should tests show materials or methods to be unacceptable however, and re-testing of the same material is required, the cost of such re-testing will be deducted from payments due the Contractor.

SAFETY REQUIREMENTS: The Contractor shall be **SOLELY RESPONSIBLE** for safety on the job. Inspection of the work being performed or payment for work completed does not imply any approval or acceptance by the Owner nor the Engineer of safety measures being used by the Contractor.

The Contractor shall furnish, erect, and maintain at all times substantial barricades, fences, signs, or other adequate protection, shall furnish and operate warning lights, and shall provide flagmen, all as may be necessary, to insure the safety of the public as well as those engaged in the work.

Warning lights shall be installed at suitable intervals and shall be in operation from sunset to sunrise. The Engineer will not inspect nor evaluate the Contractor's safety equipment. If the Engineer believes that a safety hazard exists, he will notify the Contractor. Any such action deemed necessary by the Engineer shall be advisory only to the Contractor and shall not relieve the Contractor of his sole responsibility for safety on the job and for full compliance with all safety regulations.

RIGHTS-OF-WAY: The Contractor shall confine his operations to the limits of the rights-of-way. The Contractor is advised that if additional working space is required outside the limits of the rights-of-way provided, such additional area must be obtained directly from the property owners by the Contractor for use during the construction period. The Owner shall be furnished with copies of **written agreements** or otherwise notified **in writing** if additional working space is acquired.

MAINTAINING TRAFFIC: The work shall be carried out in an orderly and systematic manner to present as little inconvenience as possible to public traffic. Detours around the construction area will be permitted, however, local traffic shall not be denied reasonable access during hours of operation. All roadways including driveways, cross-streets and alleys shall be restored to a condition which will allow normal vehicular traffic at the end of each day's work.

The Contractor shall notify all property owners or tenants at least 24 hours prior to the start of construction and coordinate the ingress and egress of their vehicles on a daily basis.

The Contractor shall maintain all existing traffic control signs, public information signs and street lighting during all phases of construction.

TRAFFIC CONTROL PLAN: Prior to beginning work, the Contractor shall submit to the City Engineer a Traffic Control Plan. The Traffic Control Plan shall include but not be limited to the following information: lane closures, delineation of lane closures, detours, sign type and placement, and location and number of flagpersons.

PERMITS: It shall be the responsibility of the Contractor to secure all licenses and permits and to pay all fees required for the work. The Contractor shall comply with all laws and regulations applicable to the work.

The Contractor shall obtain a business license from the City of Corning. The business license can be purchased at City Hall on Third Street at a cost of $5.00 for a quarterly license or $20.00 for a yearly license.

HOURS OF OPERATION: The Contractor shall restrict his activities to the hours between 7:00 a.m. and 7:00 p.m. unless specifically approved otherwise, in writing, by the City.

MATERIAL DISPOSAL: All excavated material including broken paving, concrete, and other miscellaneous materials shall be removed from the site and disposed of by the Contractor at his own expense. However, The Public Works Director will, if requested, assist the Contractor in locating a disposal location.

CONSTRUCTION WATER: Water for construction uses and dust control will be provided by the City, at existing fire hydrants. Transportation and distribution of the water shall be the responsibility of the Contractor. The Contractor shall furnish and use only proper hydrant wrenches when obtaining water from fire hydrants. No fire hydrant shall be obstructed in case of fire in the area served by the hydrant. There will be no charge for the water; however, it shall not be used wastefully.

DUST CONTROL: Where dust is created, either by the Contractor's vehicles or other vehicles, it shall be controlled by the Contractor through watering or preferably by cleaning up the material causing the dust. Dust control shall be continued as necessary until the work is accepted by the Owner.

NOISE CONTROL: The Contractor shall exercise every reasonable precaution to control the level of noise caused by work performed under this contract which shall include residential grade silencers on all equipment.

SANITATION: The Contractor shall provide temporary sanitation facilities at the work sites, and maintain such facilities throughout the period of work on the project.

CLEANUP: The work area shall be kept in a neat and orderly condition during construction. The Contractor shall remove and dispose of all trash, debris and waste material resulting from his operations.

Upon completion of the work, the Contractor shall remove all debris, surplus material, equipment and supplies, and shall leave the entire work area in a neat, orderly condition.

TECHNICAL SPECIFICATIONS

INDEX

SECTION	DESCRIPTION
1	ROADWAY EXCAVATION
2	AGGREGATE BASE - CLASS 2
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4	THEROMOPLASTIC TRAFFIC STRIPING AND PAVEMENT MARKINGS
5	CONCRETE WORK
6	TRENCH EXCAVATION AND BACKFILL
7	GRAVITY SEWER PIPE AND FITTINGS
8	SEWER MANHOLES, RODHOLES AND CLEANOUTS
9	ABANDONMENT OF MANHOLES. RODHOLES AND GATE VALVES
10	WATER PIPE AND FITTINGS
11	VALVES, FIRE HYDRANTS & APPURTENANCES
12	SERVICE CONNECTIONS & APPURTENANCES
13	TRENCH BRACING AND SHORING
14	WATER

A. SCOPE:

All roadway excavation shall be "unclassified" and shall consist of performing all operations necessary to excavate earth, rock, and all other materials upon which the aggregate base, or other material is to be constructed; to build embankment, in the location and to the elevation and form required; to backfill ditches and depressions caused by the removal of obstructions; to furnish all equipment necessary for these operations, and the performances of all incidental work of whatever nature that may be required to build the grade and maintain it in the form specified. Included in the work shall be all associated saw cutting of pavement, grading areas to drain, and the scarification and re-compacting to 95% relative density of the top 6 inches of the subgrade.

Disposal of all excavated material shall be collected, hauled and deposited by the Contractor and shall be included in the price paid for roadway excavation.

B. MEASUREMENT AND PAYMENT:

The approximate quantity of excavated material shown on the Bid Proposal Form shall be the final quantity to be used in calculating the lump sum bid price and no additional measurement will be made.

The lump sum price paid for roadway excavation shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in performing roadway excavation, including sawcutting of pavement and grading areas to drain, loading, hauling, depositing, preparing subgrade at the proper grading plane, and scarifying and compacting the top 6-inches of subgrade as shown on the plans and as specified in these specifications.

A. SCOPE:

Aggregate Base shall conform to the provisions in Section 26, "Aggregate Bases" of the Standard Specifications and these Specifications. The maximum size of aggregate shall be three-quarters (3/4) inch as set forth in Section 26, or as specified by the City.

B. MEASUREMENT AND PAYMENT:

The price paid per square foot for 12 inch thickness of Class 2 Aggregate Base shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals and for doing all the work involved in furnishing, placing and compacting the Aggregate Base, complete in place, as shown on the plans and as specified herein.

1. **ASPHALT CONCRETE:** Asphalt concrete shall be Type "A" ½-inch medium grading and shall conform to the provisions of Section 39 of the Standards Specifications.

2. **PAINT BINDER:** Paint Binder shall consist of a mixing type asphaltic emulsion with a bituminous base of paving asphalt Grade SSI. Paint binder shall be applied as a "tack coat" to the existing pavement to be surfaced, to vertical surfaces of existing pavement, and to other surfaces designated by the Engineer. Asphaltic paint binder shall conform to the requirements of Section 94 of the State Standard Specifications.

3. **A.C. OVERLAY OF EXISTING SURFACE:** The existing surface consists of asphalt concrete and/or a seal coat over an aggregate base course. All loose gravel, debris, grass and weeds shall be swept off the surfaces and any depressions or pot holes shall be filled and compacted with asphalt concrete, prior to placing the specified thickness of asphalt concrete overlay.

4. **RAISE EXISTING APPURTENANCE:** Existing manholes, and valve boxes shall be raised to within 1/8-inch below finished grade after paving in accordance with Std. S-13.

5. **STRIPING AND REFLECTOR BUTTONS:** A thermo-plastic yellow skip line shall be painted along the centerline of all streets. Two way amber reflectors shall be installed on the centerline. All materials and workmanship shall be in accordance with Cal-Trans Standard Specifications.

6. **GRINDING EXISTING A.C.:** A four-foot wide strip of the existing asphalt shall be ground out at the lip of gutters to result in a full 2-inches of A.C. at the lip of gutters. The finished surface of the A.C. at the lip shall be approximately 1/4-inch above the lip of gutter. Connecting streets adjacent to valley gutters shall be ground out for a distance of 25-feet from the valley gutter to provide a smooth driving transition to the new concrete valley gutter.

7. **PAYMENT:** The unit price paid per square foot for the asphalt concrete overlay shall include full compensation for furnishing all labor, materials, tools, and equipment and doing all the work involved in furnishing, placing, and construction the surfacing complete in place, as herein specified, and all incidental work connected therewith. Included in the unit price paid for asphalt concrete overlay shall be the cost of surface cleaning, filling in depressions and potholes areas with asphalt concrete prior to placing the overlay, raising manhole covers and valve boxes to grade, and applying paint binder as herein specified.

SECTION 4 THERMOPLASTIC TRAFFIC STRIPING AND PAVEMENT MARKINGS

A. SCOPE

This work consists of furnishing and applying thermoplastic traffic stripes and pavement reflectors along the centerline of various streets.

B. MATERIALS

Thermoplastic striping material shall consist of 100 percent solids, shall be of a type that is applied in a molten state by mechanical means, shall be reflectorized and shall be installed in accordance with Section 84 of the State Standard Specifications. Two-way reflectors shall be amber colored and shall be installed in accordance with the State Standards.

C. WORKMANSHIP

Thermoplastic material shall be applied only to dry pavement surfaces and only when the pavement surface is above 50°F. Thermoplastic material shall be applied in accordance with the manufacturers recommendations and the thickness shall be a minimum of 60 mils. A prime coat approved for use with thermoplastic material shall be applied to the pavement surface prior to applying the thermoplastic material.

D. PAYMENT

The Lump Sum price paid for pavement striping and reflectors and pavement markings shall include full compensation for furnishing all labor, materials, tools and equipment and related work involved in applying the thermoplastic striping and reflectors, complete in place.

A. **SCOPE:** This heading covers concrete work, complete.

B. **MATERIALS**

PORTLAND CEMENT shall be Type II and conform to ASTM Specification C-150. All cement shall be protected from moisture until used.

CONCRETE AGGREGATES

GENERAL: Concrete aggregate shall conform to ASTM Specification C-33. The sieves used in Sieve Analysis shall be square mesh wire cloth. Both coarse and fine aggregate shall be tested for soundness by ASTM Method C-88 when in the judgement of the Engineer such tests are necessary to determine the quality of the materials.

FINE AGGREGATE shall consist of natural sand having hard, strong and durable particles. It shall not contain more than 2 percent by weight of clay, shale, schist, alkali, or other deleterious substances. The grading of fine aggregate shall range uniformly from coarse to fine.

COARSE AGGREGATE shall consist of clean, hard, sound crushed rock or washed gravel. It shall not contain more than 2 percent by weight of clay, shale, schist, alkali, or other deleterious substances. The grading of coarse aggregate shall range uniformly from coarse to fine.

STORAGE: Fine and coarse aggregate shall be stored and measured separately. Aggregate shall be stored on the job so that various sizes do not become intermixed. They shall be protected from contamination with dust, dirt, or other foreign materials.

MOISTURE CONTENT of aggregate shall be such that no visible separation of moisture and aggregate will take place during transportation from the proportioning plant to the point of mixing. Aggregate containing excess moisture shall be stockpiled prior to use and sufficiently dried.

VARIATIONS in moisture content shall not exceed one percent of the weight of the aggregate in a saturated surface dry condition. Variations in specific gravity of any group of sizes shall not exceed one percent. Variations in grading of separate groups of sizes of aggregate shall not exceed 5 percent. Variations exceeding these maximums shall constitute cause for delaying the use of the materials until batch weights and mixing water can be adjusted.

AGGREGATE SIZE: The primary size of aggregate specified and used on any project shall be the maximum consistent with the dimensions and form of the section being placed, the location and spacing of the reinforcing bars, and with the method of compaction, but shall not be less than 3/4 inch.

WATER shall be clean and free of oil, acid, alkali, organic matter or other deleterious substances.

ADMIXTURES shall be used only where specifically required or where written approval has been granted by the Engineer.

EXPANSION JOINT FILLER shall be of the preformed nonextruding type and shall conform to ASTM Specification D-544, Type V, bituminous fibre.

LAMPBLACK of approved quality shall be added to all concrete used in the construction of curb and gutters, sidewalks, driveways, valley gutters and all structures at the rate of 1/2-pound per cubic yard of concrete.

C. WORKMANSHIP

CONCRETE PROPORTIONING AND MIXING:

PROPORTIONS: Amounts of cement and water and strength requirements shall be as follows:

(1)	Class of Concrete	Class A	Class B	Class C
(2)	Minimum Cement per cubic yard concrete	6 Sks.	5 Sks.	4.2 Sks.
(3)	Maximum total water per sack of cement including free moisture	54 Lbs.	62 Lbs.	
(4)	Minimum compressive strength at 28 days	3000 psi	2500 psi	2000 psi

The class of concrete used shall be specified on the drawings. However, if no class is shown, Class A concrete shall be used.

Cement shall be measured in the sack or weighed; broken sacks will not be allowed unless cement is batched by weight. Aggregate shall be proportioned by weight.

Proportions of fine and coarse aggregate shall be furnished by the Engineer or by an approved testing laboratory, and may be varied from time to time by the Engineer to produce a smooth, dense, workable mixture that will work readily into corners and angles without excessive spading or vibrating.

AMOUNT OF WATER AND SLUMP TEST: The amount of water required for the proper consistency of concrete shall be determined by means of the slump test, made in accordance with ASTM Method C 143.

The amount of water given in the above table is a maximum. The maximum allowable slump shall be as follows:

(1)	Thin sections and columns	Not more than 5"
(2)	Heavy sections, footings & slabs	Not more than 3"
(3)	Concrete placed under water	Not more than 8"
		Not less than 6"

The amount of water may be varied in accordance with the dampness of the materials and the requirements of the workability of the aggregate within the limits of the slump tests given above.

MEASURING WATER: The equipment for measuring and supplying the water to the mixer shall be so constructed and arranged that the amount of water to be added to the mixture can be measured positively and that the predetermined quantity of water required can be discharged rapidly in one operation into the mixing drum. The equipment shall be designed so that water from the source of supply cannot enter the measuring tank while the water is being discharged from the measuring tank into the mixer. Tanks or other equipment for measuring and discharging water into the mixer shall be sufficiently accurate that the amount of water delivered to the mixer for any batch shall not vary more than one percent from the required quantity of water for any position of the mixer. The tanks or other equipment shall be arranged to permit checking the amount of water delivered by discharging into measured containers.

JOB MIXING: The capacity of the mixer shall be adequate to handle one or more full sack batches. No split sack batches will be permitted, unless all materials are weighed. At no time shall the mixer be loaded beyond its capacity. The capacity of the mixer shall be considered to be the rated capacity as given in the manufacturer's catalog, provided that a quantity equal to the rated capacity can be thoroughly mixed in the prescribed time period and that there is no loss of ingredients during the mixing. Each batch shall be mixed not less than 1-1/2 minutes after all ingredients are in the mixer and until the mixture is uniform and homogeneous. It shall be completely discharged. The peripheral speed of concrete mixing drums shall be approximately 200 feet per minute. The mixer shall be equipped with an automatic time lock on the discharge control arranged to start the time cycle on the stroke of the material skip or on the closing of the hopper gate.

TRANSIT MIXING: Transit-mixed concrete shall be in accordance with ASTM C-94 and be of not less than 10 minutes at a peripheral drum speed of approximately 200 feet per minute. Mixing shall be continued until discharge is complete. At least three minutes of the mixing period shall be at the job site. The transit mixer shall be equipped with water measuring devices consisting of either accurately calibrated water tanks or water meters. Transit-mixed concrete will be rejected if not placed within 1-1/2 hours after water is first added to the batch.

Should the Contractor elect to utilize transit mixing equipment he shall make advance arrangements to prevent delays in delivery and placing of the concrete. An interval of more than 45 minutes between any two consecutive batches or loads, or a delivery and placing rate of less than 8 cubic yards of concrete per hour, shall constitute cause for shutting down the work for the remainder of the day, and if so ordered by the Engineer, the Contractor shall make, at his own expense, a construction joint at the location and of the type directed by the Engineer in the concrete already placed.

FORMS shall conform to the shape, lines and dimensions called for on the Plans and shall be substantial and mortar tight. All vertical surfaces shall be formed, except where specifically authorized to the contrary.

CONCRETE CONVEYING AND DEPOSITING: Concrete shall be conveyed from the mixer to the place of final deposit by methods which will prevent segregation or loss of material. Concrete shall not be deposited in a manner which shows segregation to occur, and shall be deposited as nearly as practicable in its final position to avoid segregation during rehandling.

No concrete which has partially hardened or been contaminated by foreign material shall be deposited on the work, nor shall retempered concrete be used. When concreting is started it shall be carried on as a continuous operation until the section is completed, maintaining the top surface level.

All concrete shall be compacted with mechanical vibrators in a manner satisfactory to the Engineer. At least two satisfactory vibrators shall be on the job during every pour and more if required by the Engineer. If it is deemed necessary by the Engineer, surfaces that are to be exposed shall be spaded and hammered to obtain a good surface.

Concrete shall not be permitted to fall from a height greater than 6 feet without the use of adjustable length pipes or "elephant trunks." The use of chutes in conveying and depositing concrete will be allowed only at the discretion of the Engineer, and wherever they are used, they shall be laid at an inclination that will permit the flow of concrete of the required consistency. Where necessary to prevent separation, chutes shall be provided with baffle boards or a reversed section at the outlets. The use of additional water in mixing the concrete to promote free flow in chutes of low inclination will not be allowed.

Where it is necessary to deposit concrete under water, concrete shall be placed by use of a tremie tube. Care shall be exercised to see that the lower end of the tremie tube does not rise above the surface of the concrete during the pour, to avoid contamination with water. Depositing of concrete under water shall be permitted only with the approval of the Engineer, where it is not possible to de-water.

COLD WEATHER WORK: Concrete shall not be mixed nor placed while the atmospheric temperature is at or below 35 degrees Fahrenheit, unless adequate means are employed to heat the aggregate and water, and satisfactory provisions have been made for protecting the work. All concrete shall be effectively protected from frost action for a period of five days after placing and will not be accepted before the expiration of a thirty day period during which the temperature of the concrete does not fall below 40 degrees Fahrenheit.

The concrete shall be maintained at a temperature of at least 50 degrees Fahrenheit, for not less than 72 hours after placing or until it has thoroughly hardened.

The temperature of the concrete as it leaves the mixer shall not be less than 50 degrees Fahrenheit, nor more than 120 degrees Fahrenheit. Upon written notice from the Engineer, all concrete which may have become damaged by frost action shall be replaced by the Contractor at his own expense.

CONSTRUCTION JOINTS AND EXPANSION JOINTS: Construction joints in structural concrete shall be level or vertical and shall be of the type and location as the Engineer directs or as shown on the Plans. Joints not indicated on the Plans shall be so made and located as to least impair the strength of the structure and shall conform to the typical details.

The contact surface must be thoroughly cleaned by chipping or sand blasting the entire surface not earlier than 5 days after initial pour or by an approved method that will assure equal bond such as a thorough hose washing of the surface not less than 2 nor more than 4 hours after the concrete is placed (depending on setting time). All wash and chalk like material shall be entirely cleaned from the surface.

In the event that the contact surface becomes coated with earth, sawdust, etc., after being cleaned, the entire surface so coated shall be recleaned.

All construction joints shall be slushed with neat cement grout immediately ahead of the pour.

Unreinforced slabs, walks, curbs, etc., shall have construction joints at not to exceed 4-foot centers and expansion joints at not to exceed 20-foot centers. Expansion joint material shall be placed along all walls and around each column and projection.

CONCRETE FINISHING:

SLABS, WALKS, STEPS, CURBS and GUTTERS: After concrete for slabs or sidewalks has been placed between the side forms, a strikeoff guided by the side forms shall be used to bring the surface to the proper section to be compacted. After screeding off, the surface shall be tamped with a heavy tamper consisting of a grid of metal bars until a layer of mortar not less than 3/8-inch thick has been brought to the surface.

The surface shall be rescreeded to a true surface, worked with a wood float as settling progresses and troweled with a steel trowel a sufficient number of times to produce a smooth, hard finish. After troweling, the surface shall be broomed if required. Care shall be taken to obtain a true surface on slabs, especially at walls and joints. Slab surfaces shall not vary more than 1/4-inch at any point from an 8-foot straight edge. The use of topping or dusting with dry cement and sand shall not be permitted unless it is desired to apply an integral color. No more slabs shall be poured in one day than can be finished to a satisfactory surface.

Curbs and gutters shall be screeded to true cross section and grade. The screed shall be operated parallel to the line of the curb. The surface shall then be worked with a wood float as setting progresses, troweled smooth and given a fine brush finish parallel to the line of the curb. Corners shall be rounded. The forms on the face of the curb shall be removed not more than 6 hours after concrete has been placed. The face shall be brushed with grout, troweled smooth and brushed to match the rest of the curb. The face of the finished curb shall be true and straight and the top surface of the curb and gutter shall be of uniform height and free from irregularities. The surface shall not vary more than 1/8-inch from the edge of a 10-foot straight edge except at grade changes and curves.

CURING: All concrete shall be protected from injury and shall be kept continuously wet for a period of 10 days after pouring. The use of curing compounds will not be permitted without the approval of the Engineer.

Concrete slabs and walks shall be covered with "Sisal-Kraft" paper, sand, or sawdust as soon as they are hard enough to walk on and shall be kept continuously wet for 10 days after pouring. Care shall be taken to prevent exposed slabs from becoming stained.

D. TESTS:

During progress of the work, compression tests shall be made at the discretion of the Engineer of samples of the concrete using the molded cylinder method. Materials for the samples will be furnished at the expense of the Contractor. Testing will be done by the Owner or authorized laboratory at the expense of the Owner.

E. MEASUREMENT AND PAYMENT:

No separate measurement of concrete work will be made. Payment for all work under this section shall be included in the payment made for the structure or item containing or constructed of the concrete.

A. SCOPE: This section covers trench excavation and backfill for water lines, sewer lines and appurtenances, complete.

B. MATERIALS:

IMPORTED BEDDING AND BACKFILL MATERIAL shall be sand, stream gravel or crushed rock free of loam or vegetable matter, and shall conform to the following:

1. Pipe bedding and shading material shall be clean washed sand with a maximum particle size of 1/4-inch and with a minimum of 70% passing a No. 20 screen.

2. Trench backfill material shall be 3/4-inch, Class 2, Aggregate Base Rock.

AGGREGATE BASE shall conform to the requirements of Section 26, of the State Standard Specifications for Class 2, 3/4-inch maximum size, Aggregate Base.

ASPHALT CONCRETE shall Type A, conforming to Section 39, Asphalt Concrete of the State Standard Specifications. Aggregate shall be ½-inch maximum size, medium grading. Prime coat shall consist of MC-250 liquid asphalt in accordance with Section 93, of the State Standard Specifications. Bituminous binder shall consist of AR 8000 Viscosity Grade steam-refined paving asphalt in accordance with Section 92 of the State Standard Specifications. Paint binder shall be an asphaltic emulsion, Type and Grade SS1, conforming to the requirements of Section 94 of the State Standard Specifications.

CUTBACK ASPHALT CONCRETE shall conform to Section 39, Asphalt Concrete, of the State Standard Specifications. It shall conform to the requirements for Type A Asphalt Concrete. Aggregate shall be ½-inch maximum size, medium grading. Prime coat shall consist of MC-250 liquid asphalt in accordance with Section 93 of the State Standard Specifications. Bituminous Binder shall consist of MC-800 or SC-800 liquid asphalt in accordance with
Section 93 of the State Standard Specifications.

CONCRETE for encasing pipe shall be Class C concrete in accordance with Section 90 of the State Standard Specifications. Cement/sand grout used for trench backfill shall be a 1 sack mixture of cement, sand, or chipped rock, and water.

C. EXCAVATION

GENERAL: The Contractor shall excavate whatever substance encountered to the lines and grades shown on the Plans. The Contractor shall do such grading as is necessary to prevent surface water from entering the excavation.

Except with the specific approval of the Engineer, no more than 200 feet of open trench shall be excavated in advance of laying the pipe. The pipe shall be laid to within one joint of the end of the trench. The open trench shall be covered with traffic plates and the remainder of the trench shall be backfilled, compacted, and opened to traffic. **NO OPEN TRENCH SHALL BE PERMITTED OVERNIGHT.** All operations shall be carried out in an orderly fashion. Backfilling, compacting, and cleanup work shall be accomplished as sections of the pipe installation are approved. Traffic through the work shall be impeded or obstructed as little as possible.

Where removal of grass, plants, or landscaping is required, sod shall be carefully cut and removed, and plants shall be carefully removed. Rock, cinder, or bark landscaping shall be carefully removed and stored for later replacement. Sod and plants removed shall be carefully shaded and watered until they can be replaced. Any plant or sod which does not survive the removal and replacement shall be replaced with new plants or sod of similar species of the largest available size.

Where removal of brush or trees is required, such removal shall be accomplished by the Contractor without damage to adjacent property. Where trees exist within a right-of-way adjacent to the trench, removal of the trees shall be subject to the approval of the City Council. Unless otherwise specifically approved by the Engineer, such removed material shall be disposed of away from the site.

EXPLOSIVES: If explosives are used for excavation, the Contractor shall obtain the necessary permits and comply with all local regulations. The utility companies or agencies supplying sewer, water, electrical, telephone, cable television, or gas service shall be informed if blasting is to be done in the vicinity of their facilities. Notice shall also be given to residents in the vicinity which may be affected by the explosive work.

WIDTH OF TRENCH: Except where otherwise specifically permitted, banks of trenches shall be vertical, and shall be of uniform width from top to bottom. Trenches shall be a minimum of 12 inches wider than the external diameter of the pipe. The maximum width of the trench, measured at the top of the pipe, shall not exceed the width allowed for various strengths of pipe as may be specified elsewhere in the applicable sections of these Standard Specifications.

If no maximum width is elsewhere specified, the width measured at the top of the pipe shall not exceed the external diameter of the pipe, exclusive of bells and collars, plus 24 inches.

BRACING OF TRENCHES: Where required to prevent caving of the trench, the Contractor shall furnish and install bracing and sheeting as necessary to protect the excavation and to meet safety regulations. If required by the Engineer, the Contractor shall install sheeting and bracing as required to permit the Engineer safe access to the trench for inspection of the work. However, this requirement does not relieve the Contractor of the responsibility for maintaining the trench to meet safety regulations.

DEPTH OF TRENCH: The bottom of the trench shall be carried to the lines and grades shown on the Plans with proper allowance for the thickness of the pipe and for the type of bedding specified. Any part of the trench excavated below the proper grade shall be corrected with approved bedding material compacted to 95 percent relative density, at the Contractor's expense.

APPURTENANCES: Excavations for manholes and other appurtenances shall be large enough to provide proper working room. Any over-depth in excavation shall be corrected with concrete or other approved material.

REMOVAL OF WATER: The Contractor shall remove and dispose of all water entering the excavation. Disposal of water shall be done in a manner to prevent damage or nuisance to adjacent properties. Sufficient pumping equipment shall be provided to maintain the trench in a dry condition during the bedding and initial backfilling of the pipe.

D. TYPES OF BEDDING

NATIVE BEDDING AND SHADING: Native material shall not be permitted for use as pipe bedding or pipe shading.

IMPORTED BEDDING AND SHADING: Imported bedding material shall be installed in a layer the full width of the trench and of proper thickness to form the bed for the pipe. After the imported bedding has been placed and spread, it shall be compacted to proper grade not less than 95 percent relative density.

CONCRETE ENCASEMENT: If concrete encasement is required it shall be installed at the locations determined by the Engineer. The pipe shall be temporarily supported on masonry blocks. Supports shall be set accurately to grade with a minimum of two supports per joint of pipe. After the pipe has been laid and approved for covering, the pipe shall be bedded and encased in concrete as detailed on the Plans. Great care shall be taken not to float or shift the pipe during the concreting operation.

E. BACKFILLING

NATIVE MATERIAL: Native material shall not be permitted for use as pipe backfill.

GENERAL: No backfilling shall be done until the installation to be covered has been inspected and approved for covering. Backfilling shall be carried out in an orderly fashion and, in general, shall be done as soon as approval has been given to cover the pipe. Compaction of the backfill shall proceed simultaneously with backfilling operations.

All excess backfill material shall be removed from within the right-of-way and disposed of at the Corning Airport. Removal of excess material shall be done immediately following backfilling. The exact disposal location at the airport shall be determined by the Public Works Director.

Where trenches cross public roads, backfilling shall be completed immediately following excavation. No trenches across roads shall remain open overnight. All crossings shall be backfilled, compacted, and open to traffic at the end of each day's work. Major road crossings shall be excavated and backfilled in half widths of the traveled way so that at least one-half of the roadway is open to controlled traffic at all times during the work.

BEDDING AND COVERING PIPE: The bed for the pipe shall be final-graded by hand to the line and grade to which the pipe is to be laid, making proper allowance for the thickness of the pipe. The bed shall be hand-raked ahead of the pipe laying operation to remove any stones or lumps which will interfere with smooth and proper bedding.

Bell holes shall be hand-dug at the location of the joints and shall be of sufficient size to allow proper making of the joint and to prevent the collar or bell of the pipe from bearing on the bottom of the trench. After the pipe has been laid and approved for covering, imported material shall be placed evenly on both sides of the pipe the full width of the trench. This material shall be placed by hand in 6-inch layers and each layer shall be compacted to 95 percent relative density by use of approved tampers. Regardless of the size of the pipe being installed, at least 12 inches of imported materials shall be placed over gravity pipelines. Particular care shall be taken to attain the required compaction in the material supporting the underside of the pipe. Compaction of bedding and material around the pipe and up to the top of the required selected backfill materials by jetting or ponding shall not be permitted.

TRENCH BACKFILL ABOVE THE PIPE COVER: The trench shall be backfilled in layers with suitable import material which may be placed by machine. Material shall be placed in 18-inch thick layers where compaction is by jetting or in 8-inch thick layers where compaction is by machine.

Prior to commencing backfilling operations, the Contractor shall notify the Engineer of the method of compaction which he intends to use.

No method will be approved until the Contractor has demonstrated, under actual field conditions, that such method will produce the degree of compaction required. Where jetting is permitted, the top layer of backfill material shall be mechanically tamped.

The trench backfill shall be compacted to a relative compaction of not less than 95 percent.

Immediately after backfilling, any excess material shall be removed and disposed of in an approved disposal area.

CEMENT/SAND GROUT: Cement/Sand grout backfill shall be a minimum, 1 sack mix of cement, sand, and water. Cement shall be Portland Cement conforming to Section 90-2.01 of the State Standard Specifications. Sand shall be well graded and of such size that 100% will pass a No. 8 sieve.

Cement/Sand grout backfill shall consists of backfilling the trench above the sand shading with a cement-sand grout mixture. An admixture of Calcium Chloride (C.C.) will be permitted in order to hasten the "setting up" time. The top 12-inches of trench backfill, below the asphalt concrete paving, within arterial and collector streets shall be capped with a 1-sack cement/sand grout.

F. TESTS:

Where a degree of relative compaction is specified, compaction tests will be made in accordance with the Standard ASTM D1557. All densities shall be expressed as a relative density in terms of the maximum obtained in the laboratory by the foregoing standard procedure.

Field density tests shall be performed in accordance with ASTM D2922, Method B, using nuclear methods, or D1556, using the sand cone.

The Contractor shall pay for all failing tests.

G. PROTECTION OF PAVING:

During the entire construction period, the Contractor shall protect existing pavement. Track-laying equipment shall be equipped with pavement pads when used on pavement. Any pavement damaged, cracked, or broken by the Contractor's operation shall be removed and replaced to at least the original condition. Damaged pavement shall be restored to the satisfaction of the Engineer.

H. REMOVAL AND REPLACEMENT OF PAVING AND BASE

GENERAL: Only such paving shall be removed as is necessary to excavate the trench and install the pipe. Cuts at manholes shall be no larger than necessary to install the structure.

REPLACEMENT OF PAVING: Paving shall be replaced in accordance with the Specifications and the details shown on the Plans. Pavement shall be replaced in all streets and highways as soon as possible after completion of backfilling. In no case shall any section of trench in public roads remain unpaved more than one week from the date that the excavation was made unless specifically approved otherwise by the City. Where trenches cross roadways, temporary pavement shall be replaced the same day the excavation was made.

TEMPORARY PAVEMENT: Where weather conditions or time preclude placing permanent pavement, temporary pavement will be installed. Temporary paving will consist of a 1-inch thick layer of premixed asphaltic surfacing material and shall be installed flush with the existing surface. Temporary pavement shall be removed prior to placing permanent pavement. Temporary paving shall be compacted with a steel roller.

PLACING AGGREGATE BASE: Where base material is required, an aggregate base shall be placed and compacted in even layers to the depth shown on the Plans, and extending the full width of the trench. Segregation shall be avoided and extra care shall be taken in compacting the base near the sides of the trench. Relative compaction shall be not less than 95 percent.

PREPARATION FOR ASPHALT CONCRETE PAVING: Edges of existing paving shall be neatly cut and shall be straight and vertical. All loose pieces or cracked sections of existing paving shall be cut along straight lines and removed.

PRIME COAT: A prime coat shall not be required.

TAC COAT: A tac coat consisting of SS-1 asphaltic emulsion or MC-250 liquid asphalt shall be applied to all vertical faces of existing pavement, curbs, gutters and sidewalks and all other vertical surfaces to receive pavement.

INSTALLING ASPHALT CONCRETE: Rolling equipment shall consist of power rollers equivalent to tandem rollers weighing not less than 8 tons.

The asphalt concrete shall be spread at a temperature suitable for workability and to a depth that will compact to the required thickness as shown on the Plans. No material shall be spread when the outside temperature is less than 40 degrees Fahrenheit. After spreading, the material shall be thoroughly compacted, with a steel roller and the surface shall be smooth, shall match the existing surface and shall be free of irregularities.

I. CLEAN UP:

The Contractor shall clean up and dispose of all trash, debris, and excess material, and shall remove his equipment from the site of the work as completed. The Contractor shall clean-up behind his work on a block by block basis, unless specifically approved otherwise by the City Director of Public Works.

J. GUARANTEE:

The Contractor shall guarantee all the work, including against settlement, for a period of one year after acceptance by the Owner.

K. MEASUREMENT AND PAYMENT:

No measurement of quantities shall be made. Payment for all work under this section shall be included in the unit prices bid for work requiring trench excavation and backfill.

A. MATERIALS

PVC GRAVITY SEWER PIPE shall be integral bell and spigot pipe conforming to ASTM Specification D-3033 or D-3034, with a maximum dimensional ratio (DR) of 35. Provision must be made for contraction and expansion at each joint with a rubber ring gasket conforming to ASTM F-477 and/or ASTM D-3212.

Fittings and accessories shall be as manufactured and furnished by the pipe supplier, or approved equal, and have bell and/or spigot configurations compatible with that of the pipe. Unless otherwise shown on the Plans, all laterals shall be 4-inch diameter. All laterals shall be furnished with end plugs which shall be adequately installed and/or braced to resist blowout or leakage during the watertightness tests.

Minimum "pipe stiffness" at 5% deflection shall be 46 psi for all sizes when tested in accordance with ASTM Test Method D-2412.

Maximum pipe deflection shall not exceed 5% of the nominal manufacturer's average inside pipe diameter, and shall be determined as specified in the sub-section **PIPE DEFLECTION TESTING** of the **GRAVITY SEWER PIPE AND FITTINGS** section of these Specifications.

B. WORKMANSHIP

PREPARATION OF THE TRENCH: The trench shall be prepared to receive the pipe as specified in the section of these specifications entitled, **TRENCH EXCAVATION, AND BACKFILL.** The excavation and preparation of the trench shall be completed a sufficient distance in advance of the pipe laying to prevent dislodged material from entering the pipe.

INSTALLATION OF THE PIPE: Before lowering into the trench, the pipe shall be inspected for defects, and all cracked or broken pipe shall be discarded. The ends and interior of the pipe shall be clean. Belled ends shall be laid upgrade. Handling of the pipe shall be accomplished in a manner that will not damage the pipe.

At manholes, pipe shall be installed so that there is a joint not more than 2 feet from the manhole wall.

After lowering the pipe into the trench, the bell or coupling end and spigot shall be cleaned of any foreign matter and a suitable lubricant applied to the joint. The joint shall be made in the manner recommended by the manufacturer. Care shall be taken not to buckle or disturb previously laid pipe.

Each joint shall be inspected to insure that it is properly made before backfilling. Care shall be taken to prevent any dirt or foreign matter from entering the open end of the pipe. Where it is necessary to cut pipe, such cuts shall be neatly made. The laid pipe shall be true to line and grade and, when complete, the sewer shall have a smooth and uniform invert.

Connections to pipe stubs of a different pipe material shall be made with a suitable connector. Connectors must be approved by the Engineer prior to installation.

WYES AND LATERALS: The location of laterals shall be set in the field by the Engineer. Wye branches shall be fully supported by firm material. Pipe and bends shall be installed to the same standards as specified above. Temporary plugs shall be installed at the ends of all laterals, and be adequately braced to withstand the watertightness tests without being dislodged or leaking.

BACKFILLING THE TRENCH: After the laid pipe has been inspected and approved by the Engineer, the trench shall be backfilled as required under the section of these Specifications entitled **TRENCH EXCAVATION AND BACKFILL.**

CLEANING SEWERS: The pipe shall be cleaned in the following manner:

The Contractor shall furnish an inflatable rubber ball of a size that will inflate to fit snugly into the pipe. The ball may, at the option of the Contractor, be used without a tag line; or a rope or cord may be fastened to the ball to enable the Contractor to know and control its position at all times. The ball shall be placed in the last cleanout or manhole on the pipe to be cleaned, and water shall be introduced behind it. The ball shall pass through the pipe with only the force of the water impelling it. All debris flushed out ahead of the ball shall be removed at the first manhole where its presence is noted. In the event cemented or wedged debris, or a damaged pipe shall stop the ball, the Contractor shall remove the obstruction.

C. WATERTIGHTNESS TEST

GENERAL: Tests for watertightness shall be made by the Contractor in the presence of the Engineer. The Contractor shall furnish all labor, tools, materials, and equipment required to make the tests. No testing for final acceptance of pipe will be done until the trench has been fully backfilled and acceptably compacted to finish grade, or if the sewer is under pavement, to the pavement subgrade.

All sections of pipe shall be tested, and tests shall be made from manhole to manhole. The sewer shall be complete with laterals installed, lateral plugs adequately braced, and trenches backfilled prior to testing.

Where leakage is in excess of the specified rate, the sewer shall immediately be uncovered and the amount of leakage reduced by the Contractor to a quantity within the specified rate before the sewer is accepted. In addition, the Contractor shall repair all visible leaks.

The Engineer will determine whether the test is to be by exfiltration or by infiltration. In most instances an exfiltration test will be required. Exfiltration tests shall be made with air except where the use of water is approved by the Engineer.

EXFILTRATION TEST:

AIR TESTING shall be done immediately following cleaning of the pipe. Air shall be slowly supplied to the plugged pipe installation until the internal air pressure reaches 4.0 psi greater than the average back pressure of any groundwater that may submerge the pipe. At least 2 minutes shall be allowed for temperature stabilization.

The rate of air loss shall then be determined by measuring the time interval required for the internal pressure to decrease from 3.0 to 2.5 psi greater than the average back pressure of any groundwater that may submerge the pipe.

The pipeline shall be considered acceptable when tested at an average pressure of 2.75 psi greater than the average back pressure of any groundwater that may submerge the pipe, if the section under test does not lose air at a rate greater than 0.0010 cubic feet per minute per square foot of internal pipe surface. **Test time in seconds = 42.5 times the internal diameter of the pipe in inches.**

TESTING WITH WATER shall be done by filling the upper manhole with water to a depth of at least 3 feet over the top of the pipe or groundwater level, whichever is higher, with the end plugged at the lower manhole. The rate of leakage shall be determined by measuring the amount of water required to maintain the water level in the upper manhole. The test shall be maintained for a period of at least 2 hours. The Engineer may, at his discretion, require a longer test period. Leakage shall not be in excess of the rate of 20 gallons per inch of pipe diameter per 1,000 feet of pipe per day.

INFILTRATION TEST: In the event that sufficient groundwater is present, an infiltration test may be made. In this case, the pipe shall be tested for watertightness by installing plugs at the upper end of the pipe and at the lower end on the exit side of a manhole. The rate of leakage will be determined by periodically removing and measuring the water accumulated at the lower manhole. Leakage shall not be in excess of the rate specified for water testing by exfiltration.

D. DEFLECTION TESTING AND INSPECTION

If flexible pipe material is used, the pipe installation shall be tested for excessive deflection after all backfill and resurfacing materials have been placed and the line has been cleaned.

The sewer lines shall be cleaned, ball tested, infiltration/exfiltration, or air tested, as appropriate, sight tested between manholes by inspector immediately after installation, mandrel deflection tested and television inspected with VHS recording. Mandrel testing shall be done 30 days or longer after installation and backfilling. It is estimated that approximately 20% of the sewer lines will be inspected using VHS recording camera at locations randomly selected by the Engineer.

1. Straightness: The full diameter of the pipe shall be visible when viewed between consecutive manholes, unless curved alignment is specified.

2. Alignment: Pipe shall not deviate from alignment by more than 3/4 the diameter and not have a change in alignment more than 2 inches in 20 feet.

3. Grade: Pipe invert grade shall not deviate from design grade by more than 1 inch for slopes less than or equal to 0.4 percent; 2 inches for slopes between 0.4 percent and 1.0 percent; and 3 inches for slopes of 1.0 percent or grater. Grade shall not change by more than 1 inch in 20 feet.

4. Sags (Standing Water in Pipe): (T.V. Inspection)

   The following observations from television inspections will be considered defects in the construction of sewer pipelines and will require correction and/or replacement:

   a. Low spot 0.125 x diameter of pipe or greater, i.e. 1" for 8" pipe.

   b. Joint separations (three quarters (3/4) inch or greater opening between pipe
   c. Cocked joints present in straight runs or on the wrong side of pipe curves.

   d. Chips in pipe ends.

   e. Cracked or damaged pipe.

   f. Offset joints.

   g. Infiltration.

   h. Debris or other foreign objects.

Television-inspection of installed pipe and the correction of observed defects will not relieve the Contractor of its responsibility for the one year guarantee period. The City may inspect and/or televise any portion of the work during said guarantee period. This inspection may include a televising of the pipelines and the checking of the pipeline deflection.

A mandrel having an outside diameter of 95% of the manufactured internal diameter shall be pulled through the pipeline. If the mandrel does not pass freely through the pipe, the pipe shall be re-excavated, bedded and backfilled to adequately support the pipe and reduce the pipe deflection to 5% or less. The pipeline shall then be retested for both deflection and watertightness.

E. MEASUREMENT AND PAYMENT

The sewer pipeline will be measured horizontally in feet from center of manhole to center of manhole, from center of manhole to the end of pipe, or to the limits of payment designated on the Plans. Payment for all work under this section shall be included in the unit prices bid for sewer pipe in the Proposal.

Payment of the unit price bid per horizontal linear foot for sewer pipe will constitute full compensation for furnishing and installing the sewer pipe and fittings, including trench excavation; bedding, shading and backfill, pavement replacement, concrete cradles for cross pipes, connection to existing pipes or manholes as shown on the Plans, and cleaning and testing, complete in place.

Payment for furnishing and installing service cleanout including fittings, wyes, sweeps, plugs, cleanout box and cover, shall be included in the unit price paid for 4-inch sewer lateral connection to the existing private sewer lateral at the property line.

The cost for any and all inspection using VHS recording cameras will be borne by the City. The cost is not to be included in the bid prices.

A. SCOPE

This section covers the construction of sewer manholes, rodholes, and cleanouts complete.

Excavation and backfill at manholes shall conform to the requirements in the section of these Specifications entitled **TRENCH EXCAVATION AND BACKFILL.**

B. MATERIALS

CAST-IN-PLACE CONCRETE: All materials used in cast-in-place concrete shall be Class B concrete in accordance with the applicable portions of these Specifications.

PRECAST CONCRETE MANHOLE SECTIONS: All precast sections, including manhole bases, riser sections, cones, grade rings, and flat slab tops, shall conform to ASTM C-478, and the dimensions shown on the Standard Details. Cones shall be eccentric. Grade rings shall be a standard product, manufactured particularly for use in manhole construction, sized to fit the cones on which they are to be placed, and the wall thickness shall not be less than that of the cones. Grade rings shall be not less than 2 inches, nor more than 6 inches high. All precast components shall have tongue and groove ends.

MANHOLE FRAMES AND COVERS: Iron castings shall conform to ASTM A-48, Class 30. The frame and cover shall be similar and equal to D&L A-1024, South Bay Foundary 1900, Phoenix Iron Works P-1090, or approved equal. Each cover shall have the word "SEWER" cast into the top with 2-inch high letters. Castings shall be of consistently high quality, and shall be free of material and manufacturing defects. Following cleanup and final machining, an asphaltic paint or similar protective coating shall be applied.

Covers shall have at least one blind pick hole or recessed lifting lug. Horizontal bearing surfaces shall be machined to smooth, plane surfaces providing for full contact between the frame and cover.

The minimum weight of the frame shall be 135 pounds.

HEAVY DUTY COVERS: Unless otherwise indicated on the Plans, covers shall be designed for heavy traffic duty and conform to the following minimum requirements:

Cover weight shall be not less than 130 pounds. Strength of the cover shall be verified by load tests. Load testing of covers shall be done by a recognized independent testing laboratory. The cover shall support a minimum load of 40,000 pounds applied at the center of the cover over a maximum bearing area of 50 square inches. During testing, the cover shall be supported in the same way as it would be under normal service conditions.

RODHOLE FRAME AND COVER shall be cast iron, conforming to ASTM A48, Class 30. The frame and cover shall be similar and equal to D&L H-6531, South Bay Foundry 1249, Phoenix

Iron Works P-7004, or approved equal and shall have the work "SEWER" cast into the cover with prominent letters.

JOINT SEALING COMPOUND COMPONENTS shall be RAM-NEK primer and joint sealing compound, KENT-SEAL primer and joint sealant, or approved equal.

MANHOLE WATERSTOPS shall be installed on PVC pipe with stainless steel bands, in the case of a poured-in-place base, to make a watertight seal between the pipe wall and the concrete manhole base. Waterstops shall be as manufactured by Fernco, or approve equal. Poured in place manhole bases shall not be constructed unless specifically approved by the City.

PIPE, BENDS AND FITTINGS used for manhole stubs shall conform to the applicable sections of these Specifications for sewer pipe.

MORTAR shall be proportioned with one part portland cement to two parts clean, well-graded sand which will pass a 1/8-inch screen. Admixtures may be used not exceeding the following percentages of weight of cement: Hydrated lime, 10 percent; diatomaceous earth or other inert materials, 5 percent. Consistency of mortar shall be such that it will readily adhere to the surfaces. Mortar mixed for longer than 30 minutes shall not be used.

CLEAN OUT BOXES shall be similar and equal to E.W. Cook No. C 12. The cover shall be marked "sewer".

C. WORKMANSHIP

CAST-IN-PLACE CONCRETE: Concrete work shall conform to the applicable portion of these Specifications.

GENERAL CONSTRUCTION: Cast-in-place manhole bases shall be constructed only when the temperature is above 32 degrees Fahrenheit. All work shall be protected against freezing. Water shall be removed from the excavation and the excavation maintained "dry" during construction of the manhole and during the time required for the concrete or mortar to develop sufficient strength to resist rupture by groundwater pressure. All pipes connected to manholes shall have a joint within 2 feet of the manhole wall.

The subgrade for the manhole base shall be carefully prepared to provide a firm support for the manhole, and prevent future settlement of the manhole. Particular care shall be taken with deep manholes, manholes located in wet locations and precast manhole bases.

Manhole inverts shall be formed either by laying pipe through and cutting out the top portion before completion of the base of the manhole, or by forming a "U" shaped channel in the concrete base slab.

Cut edges of pipe laid through the manhole shall be fully covered by concrete when the manhole invert is complete. The finished invert shall be smooth and true to grade. No mortar or broken pieces of pipe shall be allowed to enter the sewer pipe.

A groove shaped to match the tongue of the first precast concrete riser section of the manhole shall be formed in the base slab. A circular metal form suited to the particular precast manhole manufacturer's joint shall be used to form the groove.

Except as specified herein, all precast manhole sections shall be set in joint sealing compound. Joint sealing compound components shall be applied in the field. One brush coat of primer shall be applied to the tongue and groove surfaces to be sealed, then the preformed strip of sealing compound shall be pressed firmly to the dry, clean, primed joint surface (groove portion). Precast sections shall be set evenly in a full bed of sealing compound. After the precast sections have been placed, the interior joint surface shall be trimmed smooth with a trowel or sharp tool to remove any excess joint compound projecting into the manhole.

Grade rings may be set with mortar if necessary for adjustment of the final cover elevation. Mortar joints shall not be more than 3/4-inch thick. Excess mortar shall be trimmed flush. The outside of each mortar joint shall be sealed with an approved bituminous sealing compound.

INSTALLATION OF FRAMES AND COVERS NOT IN ROADWAYS: Frames and covers shall be joined to the top of the manhole or structure so that the cover, when placed, will be at the proper elevation and so that no ground or surface water may enter the manhole or structure. The finish grade at the tops of manholes will be established after the excavation has been backfilled and compacted to true subgrade.

INSTALLATION OF FRAMES AND COVERS IN ROADWAYS: Roadways are defined as the paved part of all roads, driveways, and parking areas, public or private, and in addition, the unpaved shoulders of public roads and unpaved alleys. Concrete collars shall be installed around frames of manholes in roadways.

After completion of the manhole, all plugs shall be completely removed from the sewers and all loose material shall be removed from the manhole.

LATERAL SEWER CONNECTIONS: Direct connections of laterals to manholes shall be installed only at terminal manholes, where specifically shown on the Plans, or where directed by the Engineer. The Top of the lateral sewer pipe shall be a minimum of 0.2 feet higher than the top of the downstream main sewer pipe. The manhole invert shall be channeled for lateral sewers in the same manner as for main sewers.

PIPE STUBS for future connections shall be not more than 2 feet long and shall be plugged with standard gasketed plugs.

RODHOLES shall be constructed as shown on the Standard Details of these Specifications. The end of the bottom wye shall be tightly plugged. The frame shall be joined to the riser pipe so that groundwater will be prevented from entering the sewer.

CLEANOUTS AND CLEANOUTS BOXES shall be installed as shown on the Standard Details. The end of the cleanout riser shall be plugged with a standard 4-inch PVC plug.

DROP CONSTRUCTION AT MANHOLES shall be installed as shown on the Standard Details. Particular care shall be taken to support the entering pipe on well-compacted material.

D. WATERTIGHTNESS TEST

All manholes shall be tested for watertightness by plugging all pipe outlets and filling the manhole to the top with water. After presoaking, leakage shall be determined by measuring the change in water level or by measuring the quantity of water necessary to maintain the water level. The test shall be conducted for a minimum of 4 hours, and may be conducted for a longer period if required by the Engineer. Total manhole leakage shall not be greater than 0.15 gallon per day per square foot of interior surface area. If leakage exceeds this amount, the Contractor shall repair the leaks to reduce the leakage to the specified amount or less. In addition to the specified leakage requirements, the Contractor shall repair all visible leaks. After all repairs have been made, the manhole shall be retested.

The Contractor shall provide all labor, equipment, and tools to perform the manhole tests. Particular care shall be taken to restrain test plugs in deeper manholes.

E. MEASUREMENT AND PAYMENT

Measurement of manholes and Rodholes will be based upon the number installed. Payment will be made at the unit price bid for each manhole constructed. Payment at the unit prices bid for sewer manholes will constitute full compensation for excavation and backfill, pavement replacement and for furnishing and installing manhole pipe sections, cones, grade rings and frames and covers, stubs and plugs as shown on the Plans and for testing the manholes, complete in place. Payment for furnishing and installing cleanout fittings and box and connecting to the existing house sewer lateral shall be included in the unit price paid for 4-inch sewer service cleanout.

SECTION 9 ABANDONMENT OF MANHOLES AND RODHOLES AND GATE VALVES

A. SCOPE:

This section covers the abandonment of existing sewer manholes and rodholes, complete.

Excavation and backfill at existing structures to be abandoned shall conform to the requirements in the section of these Specifications entitled **TRENCH EXCAVATION AND BACKFILL**.

B. MATERIALS:

CONCRETE shall conform to the requirements of Section entitled CONCRETE WORK.

C. WORKMANSHIP:

Abandonment of existing manholes shall consist of removing cast iron covers and casting, grade rings, and concrete taper section; plugging the sewer with concrete; breaking a hole in the bottom of the manhole for drainage, filling and compacting the manhole barrel and excavation with import backfill material.

Abandonment of existing rodholes shall consist of removing the existing rodhole cover and casting, plugging the riser with concrete and backfilling and compacting the excavation with import backfill material, concrete or asphalt concrete.

Abandonment of existing gate valves shall consist of removing the existing valve box and filling the opening with concrete or asphalt concrete.

D. MEASUREMENT AND PAYMENT:

The unit price for each manhole, rodhole, or gate valve abandonment shall include full compensation for furnishing all labor, materials, tools and equipment required to abandon the manholes, rodholes, or gate valves, complete in place.

A. MATERIALS

Water pipe shall be PVC. Pipe shall be a minimum of Class 150. All pipe shall be National Sanitation Foundation approved. All pipe and fittings shall conform to the following specifications:

POLYVINYL CHLORIDE (PVC) PIPE shall have a maximum SDR of 18 for "Class 150".

Pipe shall comply with AWWA Specification C900 and shall be of cast-iron-pipe-equivalent diameters and shall have solid cross-section rubber ring joints in accordance with ASTM D1869.

Fittings shall be PVC with the same pressure rating and hydrostatic test pressure as the pipe, or cast iron fittings with rubber gaskets sized for PVC pipe.

LOCATOR CONDUCTORS for non-metallic pipes shall be No. 6 copper wire. The locator wire shall be installed above the select backfill directly over the pipeline centerline, and shall be brought to within 6-inches of the top of all valves boxes. Locators within valve boxes shall be installed in 3/4-inch PVC pipe which is wired to the side of the valve box.

MECHANICAL COUPLINGS, including flexible couplings and flanged coupling adaptors, shall be as manufactured by Smith-Blair, Baker, Dresser, or approved equal. All mechanical couplings shall have the longest standard sleeve length.

CONCRETE: Concrete for thrust blocks shall be Class C concrete.

B. WORKMANSHIP

GENERAL: All materials shall be handled in a manner that will not damage the material or it's coating. Before installation, each article shall be inspected and any damaged material shall be discarded. Any damaged coating shall be repaired. The interior and ends of the pipe and appurtenances shall be clean. When it is necessary to cut pipe, such cuts shall be neatly made.

LAYING: All pipe shall be laid on a smooth bed, prepared in accordance with the provisions specified in the section of these Specifications entitled

EXCAVATING, BACKFILLING AND COMPACTING FOR UTILITIES: As soon as possible after the installation of the pipe, sufficient backfill material shall be placed on the pipe to protect it from temperature changes.

JOINTS: Bell and spigot joints shall be made up in accordance with the instructions of the manufacturer. Adjoining pipe sections shall be level and both bell and spigot shall be clean. The bell shall be lubricated and the rubber gasket properly installed. The spigot shall then be inserted and

seated in correct position by use of a joint puller or other approved method. After seating, each joint shall be checked with a feeler gauge to ensure that the gasket is not twisted and that the spigot is seated to the proper depth. Any improper joints shall be taken apart and correctly made. The maximum installed deflection at joints shall not exceed that recommended by the manufacturer.

FITTINGS: Joints of bell and spigot fittings shall be made up and sealed as specified for pipe joints. Joints of flanged fittings shall be made up true and square so that there is no strain on the pipe or fitting. Bolts shall be tightened uniformly around the joint.

ANCHORAGE: Concrete thrust blocks shall be provided at all angle points.

FLEXIBLE COUPLINGS: Flexible couplings shall be installed in accordance with the recommendations of the manufacturer. The finished joint shall be watertight under the test pressure of the pipeline. After completion of the connection, the entire coupling and any exposed steel shall be wrapped with a diaper and poured full so as to be completely encased using either hot asphalt or coal tar. As an alternative, the coupling and all exposed metal may be painted with two coats of coal tar epoxy.

C. HYDROSTATIC TESTS

All parts of the entire pipeline installation shall be tested at a pressure of 50 psi above maximum working pressure. Tests shall be made in the presence of the Engineer or designated representative.

Before the test, the pipeline shall be sufficiently anchored to withstand the test pressure. During the filling of the line with water, precautions shall be taken to prevent air pockets at high points. Water may be allowed to stand in the line for several hours prior to the test. During the test, which shall be conducted for the time period determined by the Engineer, but not less than 30 minutes, the leakage shall not exceed 5 gallons per 24 hours per thousand feet of pipe per inch of nominal diameter. Test sections shall be as short as valve configurations permit. If any valved section of pipe shows greater leakage than specified, the Contractor shall locate and repair the leaks and shall retest that section of line at no additional cost to the Owner.

The Contractor shall provide all labor, tools, and equipment required to perform the hydrostatic tests.

D. FLUSHING AND STERILIZATION OF COMPLETED MAINS

GENERAL: In general, the methods outlined in AWWA C651 entitled, "Disinfecting Water Mains," should be used as a guide in performing this operation where applicable.

FLUSHING COMPLETED LINES: Preliminary flushing of completed lines prior to chlorination shall be accomplished as thoroughly as possible with the water pressure and outlets available. The flushing shall be done after the pressure tests have been made.

CHLORINATION OF COMPLETED LINES: Before being placed in service, the entire line shall be chlorinated. Chlorine shall be applied by one of the following methods: Liquid chlorine, gas-water mixture, fed-chlorine gas, or calcium hypochlorite water mixture, unless another method (such as Chlorine "HTH" Tablets) is approved by the Engineer. The chlorinating agent shall be applied at the beginning of each section adjacent to the feeder connection and shall be injected through a corporation cock, hydrant, or other connection ensuring treatment of the entire line. Water shall be fed slowly into the line with chlorine applied in amounts to produce a dosage of 40-50 parts per million. Portions of the existing mains which have been connected to a new line or otherwise contaminated by construction shall be included in the system sterilized. A residual of not less than 10 parts per million after 24 hours shall be produced in all parts of the line. During the chlorination process, all valves shall be operated.

If disinfection by chlorine "HTH" tablets is permitted by the Engineer, the tablets shall be secured to the top of the pipe with an approved adhesive.

FINAL FLUSHING: After chlorination, the water shall be flushed from the lines at the extremities until the replacement water tests are equal, chemically and bacteriologically, to those of the permanent water supply.

E. MEASUREMENT AND PAYMENT

The length of water pipe and fittings will be measured horizontally in feet, along the centerline of the pipe. Payment will be made at the unit prices bid in the schedule for INSTALL NEW WATER MAIN, COMPLETE IN PLACE, and shall include full compensation for furnishing all materials, labor, tools, and equipment required to excavate and backfill trenches, install water pipe and fittings, install thrust blocks, and all appurtenances required for a complete installation, ready to operate.

A. MATERIALS:

GATE VALVES, 3 INCHES AND LARGER, shall be Resilient Seated Gate Valves conforming to AWWA C509. Valves shall be rated for a minimum working pressure of 150 psi, and shall have end fittings to conform to the pipe or fittings being connected. Valves shall be Waterous "Series 500", Mueller "Resilient Seat", Clow "Resilient Wedge", or approved equal. Valves shall be furnished with operating nuts when installed underground.

GATE VALVES, 2 INCHES AND SMALLER, shall be resilient seat, non-rising stem, screwed, bronzed-bodied valves. Valves shall be NIBCO T-22, or approved equal.

CHECK VALVES shall be slanting disc type similar and equal to Darling Dyne-Check or Mueller A-2600, or approved equal.

HOSE BIBS shall be similar and equal to Crane No. 117 with threaded male outlet for standard garden hose.

AIR RELEASE VALVES shall be similar and equal to Crispin, APCO, or approved equal.

VALVE BOXES FOR AIR RELIEF ASSEMBLY shall consist of a concrete enclosure and cast iron similar and equal to Ford C32H; cover to be marked "WATER".

VALVE BOXES shall be provided for all valves placed underground and shall be similar and equal to Brooks Products, Inc., No. 3-RT or Christy G5, with 8-inch concrete pipe extension sleeve; cover to be marked "WATER".

FIRE HYDRANTS shall conform to AWWA C502 and the following requirements: They shall have a 5 ¼-inch minimum valve opening with two 2 ½-inch hose nozzles and one 4 ½-inch pumper nozzle, threaded National Standard, with caps and chains. The hydrants shall be suited to a 42-inch bury (minimum) from ground line to the bottom of the connecting pipe, and shall have a National Standard 1-inch (1 ½-inch flat to Point) pentagon operating nut turning counter-clockwise to open. Hydrants shall be a breakaway traffic type which will not permit flooding when they are accidentally broken off at the ground, shall incorporate an automatically operated stop and drain, shall have "O-ring" seals. Fire hydrants shall be painted yellow, the color shall be Rust-oleum No. 7645, Industrial Enamel, "Equipment Yellow". Hydrants shall be Mueller "Modern Centurion" A-423, Waterous WB-67, or of a manufacturer approved by the Engineer. The Contractor shall furnish to the Owner one breakaway traffic set for every ten hydrants installed, one minimum.

B. WORKMANSHIP

GENERAL: All valves, fire hydrants, and appurtenances shall be thoroughly cleaned before installation and shall be installed in strict accordance with the manufacturer's recommendations.

SETTING VALVES AND APPURTENANCES: Valves and hydrants shall be set plumb and inspected in opened and closed positions to insure that all parts are in working condition. Above ground flanged valves and appurtenances shall be set with no stresses on the flanges.

All underground valves shall be provided with valve boxes. Valve boxes in the street shall be anchored with the Standard Details.

E. MEASUREMENT AND PAYMENT

The number of valves, hydrants, and appurtenances installed will be determined, and each will be paid for at the unit price bid in the proposal.

A. DEFINITION OF SERVICES: The standardized water services established by the City are as follows:

STANDARD SERVICE OR STANDARD 1-INCH SERVICE consists of 1-inch Poly tubing in iron pipe size.. (Suitable for 32 gpm.)

1½-INCH SERVICE consists of a 2-inch service pipe. (Suitable for 70 gpm)

2-INCH SERVICE consists of a 2-inch service pipe. (Suitable for 140 gpm)

3-INCH SERVICE consists of a 3-inch service pipe. (Suitable for 225 gpm)

4-INCH SERVICE consists of a 4-inch service pipe. (Suitable for 350 gpm)

B. MATERIAL:

SERVICE PIPE TWO INCH AND SMALLER shall be PE (Polyethylene).

PE (POLYETHYLENE) PIPE shall be iron pipe size, a minimum of 160 psi rated conforming to AWWA C901. It shall meet the requirements of Type III Class C Category 5-P34 polyethylene as defined by ASTM D1248; equal to the ultra-high molecular weight PE 3406 manufactured by Yardley.

Connections at fittings may be the conventional flare nut, compression type with stainless steel inserts, or the "stab" type made especially for polyethylene pipe (referred to as cold flaring) with iron pipe size fittings.

SERVICE PIPE LARGER THAN TWO INCH shall be PVC, schedule 40 (minimum).

ANGLE METER STOPS (CURB STOPS) shall be manufactured in accordance with AWWA C800, bronze body, sized per service line diameter, Type KV63-332W as manufactured by Ford Meter Box Company, or approved equal, with compression type inlet for use with P.E. pipe hose, and locking wings.

GATE VALVES AND BOXES for services 3-inch and larger shall be as specified under section 6 of these Standard Specifications.

CAST IRON TEES shall be used for 3-inch and larger service connections.

SERVICE SADDLES for two inch and smaller service connections shall be as recommended by the manufacturer of the pipe being saddled.

1. **METERS** larger than 1" shall be set in custom setters similar and equal to Ford Custom Setters. The proposed type and installation method shall be submitted to the City Engineer for approval prior to delivery and installation.

2. **METERS** shall be all brass "Sensus" Model SR for 3/4" and 1" meters. Three inch meters shall be Sensus Series "W" Turbo meters, Model W-350 DR. All meters shall have a dial face reading in gallons and shall have remote reading capabilities.

3. **METER BOXES:** 3/4-inch and 1-inch services with meters shall be housed in 12" x 22" meter boxes similar and equal to Christy box N16 with minimum 24" extension.

Lids shall be non traffic type similar and equal to Christy B16.

Boxes shall have knockout openings intact upon delivery. Openings shall be determined during installation.

1-1/2-inch and larger services shall have meter boxes similar and equal to those manufactured by Brooks Products, Inc. or Christy Concrete Products. Covers and lids shall be cast iron or steel with separate reading lid.

C. **WORKMANSHIP:** All workmanship shall conform to the requirements of applicable Sections of these Specifications. Service lines shall be installed, a minimum of 18-inch below grade. Connection shall be made to the existing meter or meter setter in the meter box including installation of an angle meter stop (curb stop) at the meter.

D. **MEASUREMENT AND PAYMENT:** The unit price paid per linear foot of water service pipe and per each water service connection shall include full compensation for furnishing all labor material, tools and equipment and for doing all the work necessary to install service saddle and install service line, and connect to existing main if applicable, complete in place.

A. DESCRIPTION OF WORK: Attention is directed to the provisions of the Labor Code of the State of California beginning with Section 6500, and particularly Section 7605, concerning the design of shoring, bracing, sloping, or other provisions to be made for worker protection from the hazard of caving ground during the excavation of such trench or trenches.

Excavation for any trench five feet or more in depth shall meet all of the requirements of the Construction Safety Orders of the Department of Industrial relations of the State of California.

The Contractor shall be fully responsible for providing, installing and removing an adequate shoring system in accordance with the requirements of the Construction Safety Orders of the Department of Industrial Relation of the State of California and the Labor Code of the State of California, and the Contractor is solely responsible for the safety of the workers and the public.

Shoring systems, hereinafter called shoring, shall consist of adequate sheeting, lagging, cribbing, piling, bracing, jacks, sloping excavations and other operations and equipment involved in protecting workers from the hazard of caving ground during or resulting from trench and other excavations in accordance with the Construction safety Orders. Insofar as possible, sheeting shall not extend below the bottom of pipe barrel. All sheeting, timbering, lagging, and bracing shall be removed during backfilling in such a manner as to prevent any movement of the ground or damage to the piping or structures, unless otherwise approved or required by the Engineer. When the Engineer requires that sheet piling, lagging, and bracing shall be left in place, such materials shall be cut off where designated and the upper part withdrawn. If steel sheet piling is utilized, it may be withdrawn, compaction to proceed as it is removed.

Excavation five feet or more in depth shall be supported in accordance with the requirements of the Construction safety Orders or supported in accordance with an approved plan signed and approved by a Civil or Structural Engineer registered in the State of California.

Excavations less than five feet in depth may not be shored unless such excavations are made at hazardous locations or in types of soil where hazardous earth movement may be expected in accordance with the Construction Safety Orders of the State of California.

Shoring for sloping excavations as set forth on Plate C-24-b and Plate C-24-c of the Construction Safety Orders shall not be done except at locations where requested by the Contractor and permitted by the Engineer. Permission to use shoring in accordance with said plates shall not constitute approval of that method of shoring, but shall be approved as to location only.

Not less the ten (10) days before beginning excavations requiring shoring, as specified herein, the Contractor shall designate a responsible supervising employee who shall be responsible for supervising the installation and removal of shoring.

In addition to the shoring requirements set forth herein, it shall be the Contractor's responsibility to provide any and all additional shoring required to support excavations which may fall or subside from the effects of loads which may exceed those contemplated by the Construction Safety Orders of the Department of Industrial Relations. The Contractor shall be responsible for any damage which may result from his failure to provide adequate shoring to support excavations under any condition of loading which may exist or arise during the construction of the project. Inspection of the performed work by the Engineer, or the approval of the completed work does not imply any approval or acceptance of the safety measures used by the Contractor. The Engineer shall not be responsible for shoring construction or for worker and public safety.

B. MEASUREMENT: Trench Bracing shall be measured per lineal foot.

C. PAYMENT: The contract price paid per lineal foot of Trench Bracing shall include full compensation for all labor, tools, materials and equipment and incidentals involved in installing and removing an adequate shoring system for lines five feet or more in depth shall be included in the contract price paid per linear foot for trench bracing. Payment for shoring trenches, if required, for lines less than five feet in depth shall be considered as included in the contract price paid per linear foot for the type of pipe involved, and no additional compensation will be allowed therefor.

Full compensations for all labor, tools, materials and incidentals involved in shoring excavations for structures (excluding trenches for pipes) shall be considered as included in the price paid for the structure and no additional compensation will be allowed therefor.

Attention is directed to Section 6502 of the Labor Code requiring issuance of a permit. A copy of any permit issued pursuant to Section 6502 of said Code shall be delivered to the Engineer five days before the commencement of trench excavations 5 feet or more in depth.

A. SCOPE:

Water required and as set forth under Sections 10, 17, 19, and 26 of the State of California Standard Specifications shall be furnished, free of charge, by the City, but shall not be used wastefully. See Special Conditions.

B. MEASUREMENT AND PAYMENT:

The price paid for applying water shall be considered as included in the price paid for the various items of work as specified in the specifications and no additional compensation will be forthcoming for applying water

CONSTRUCTION STANDARDS

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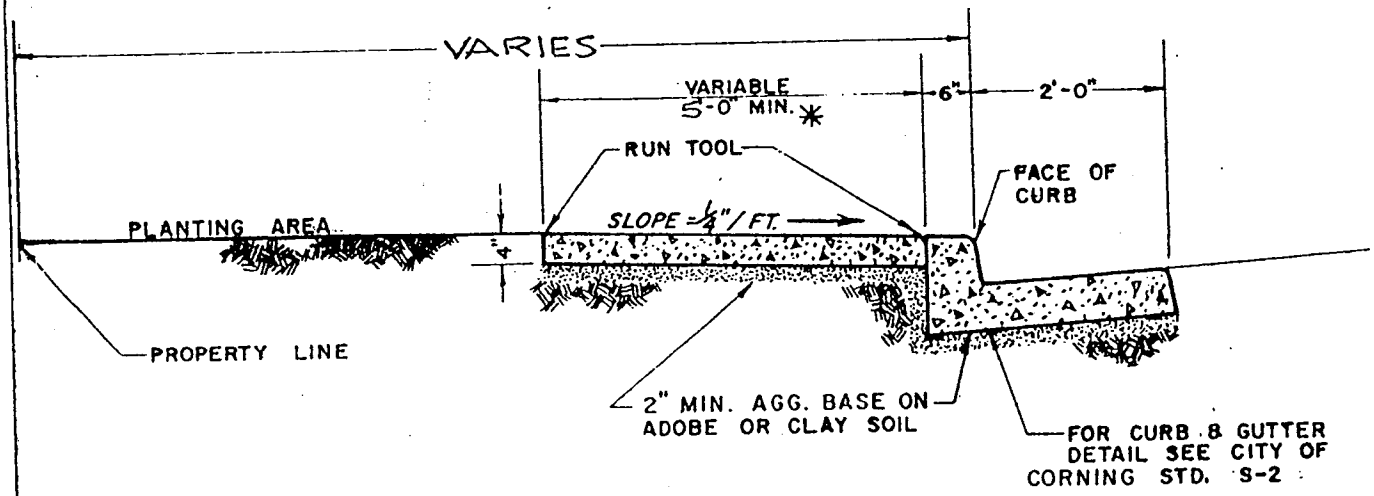
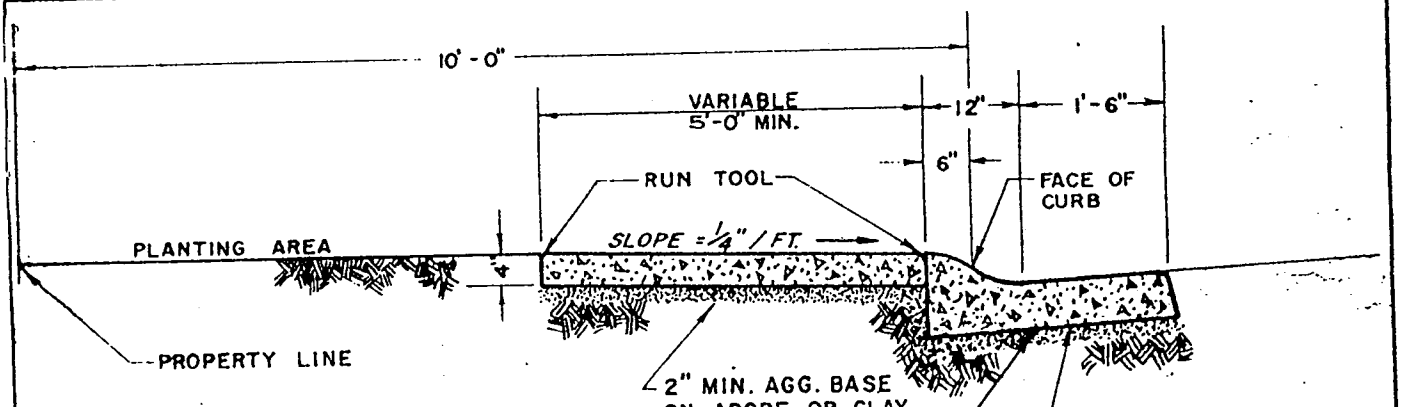
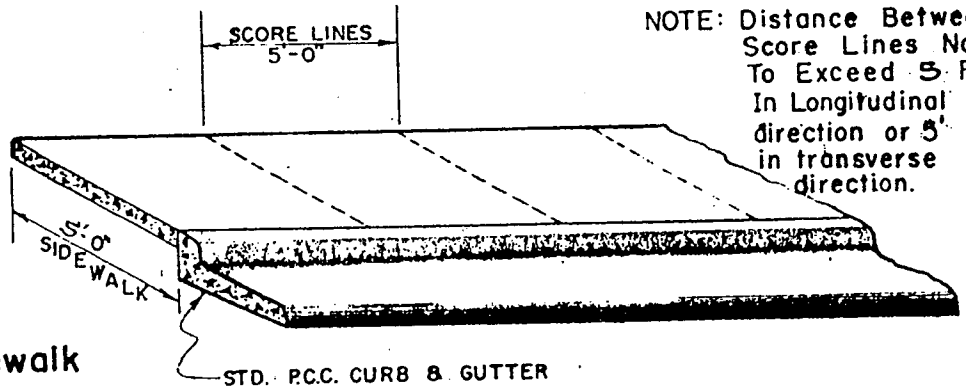


Section Through
STANDARD VERTICAL
CURB, GUTTER & SIDE-
WALK

EXTEND BACK OF SIDEWALK TO PROPERTY LINE IN COMMERCIAL AREAS.
INSTALL EXPANSION JOINTS @ 25-FEET O.C.



Section Through
STANDARD ROLLED CURB,
GUTTER & SIDEWALK



NOTE: Distance Between Score Lines Not To Exceed 5 Feet In Longitudinal direction or 5' in transverse direction.

DETAIL.. Sidewalk
Score Lines

REVISED MAR. 2002

CITY OF CORNING DEPARTMENT OF PUBLIC WORKS

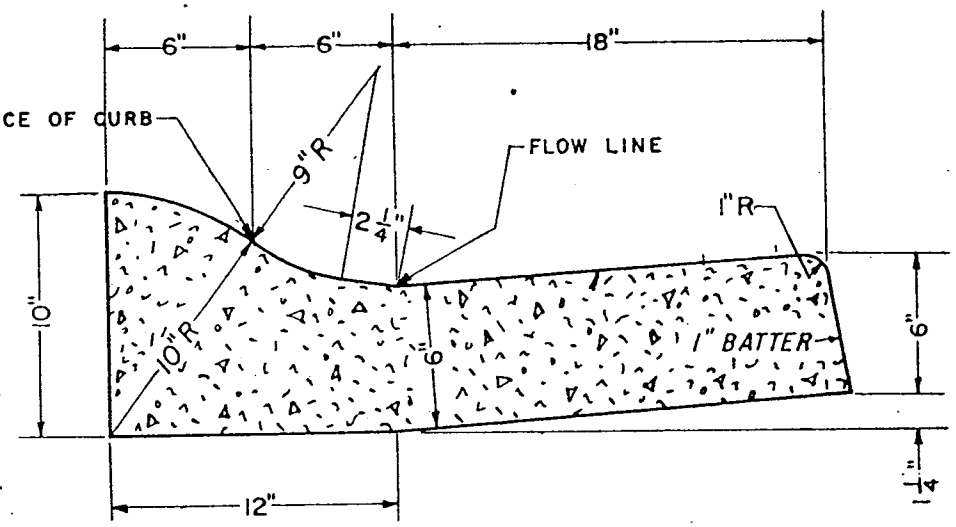
TITLE STANDARD P.C.C. SIDEWALK

DRAWN BY _____ CHECKED BY _____
DATE JAN. 1967 APPROVED BY _____
SCALE NONE Rev.

STANDARD NO. S-1

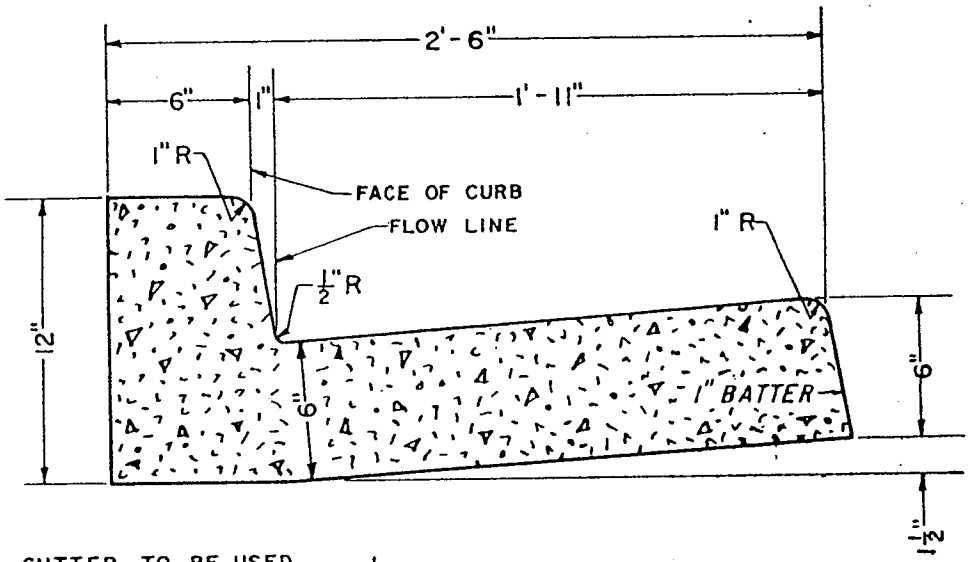
SECTION
ROLLED CURB & GUTTER

1-LIN. FT. = 1.44 CU. FT.

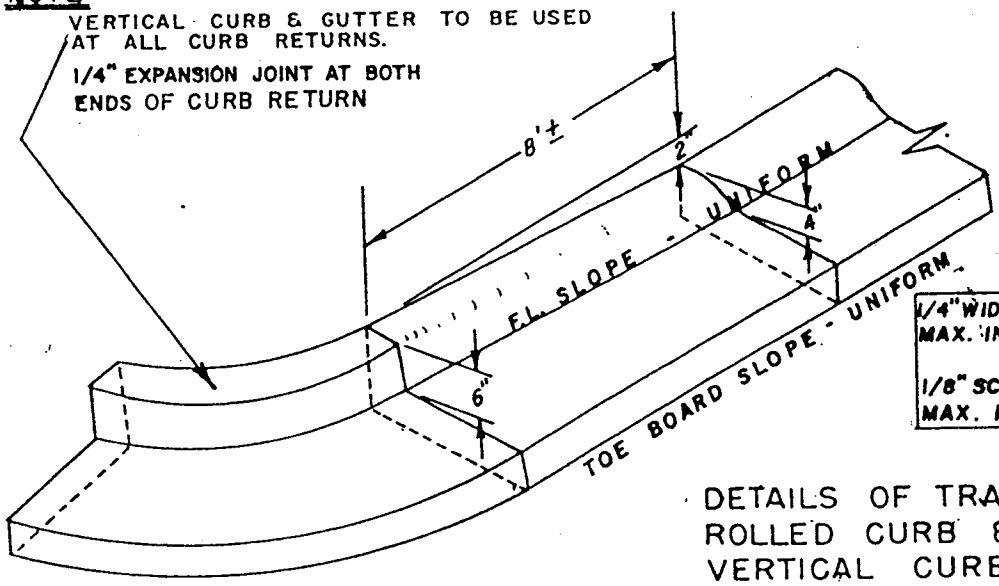


SECTION
VERTICAL CURB & GUTTER

1-LIN. FT. = 1.46 CU. FT.



NOTE:
VERTICAL CURB & GUTTER TO BE USED AT ALL CURB RETURNS.
1/4" EXPANSION JOINT AT BOTH ENDS OF CURB RETURN



1/4" WIDE EXP. JOINTS - MAX. INTERVAL 25'.

1/8" SCORED CONTROL JOINTS - MAX. INTERVAL 25'.

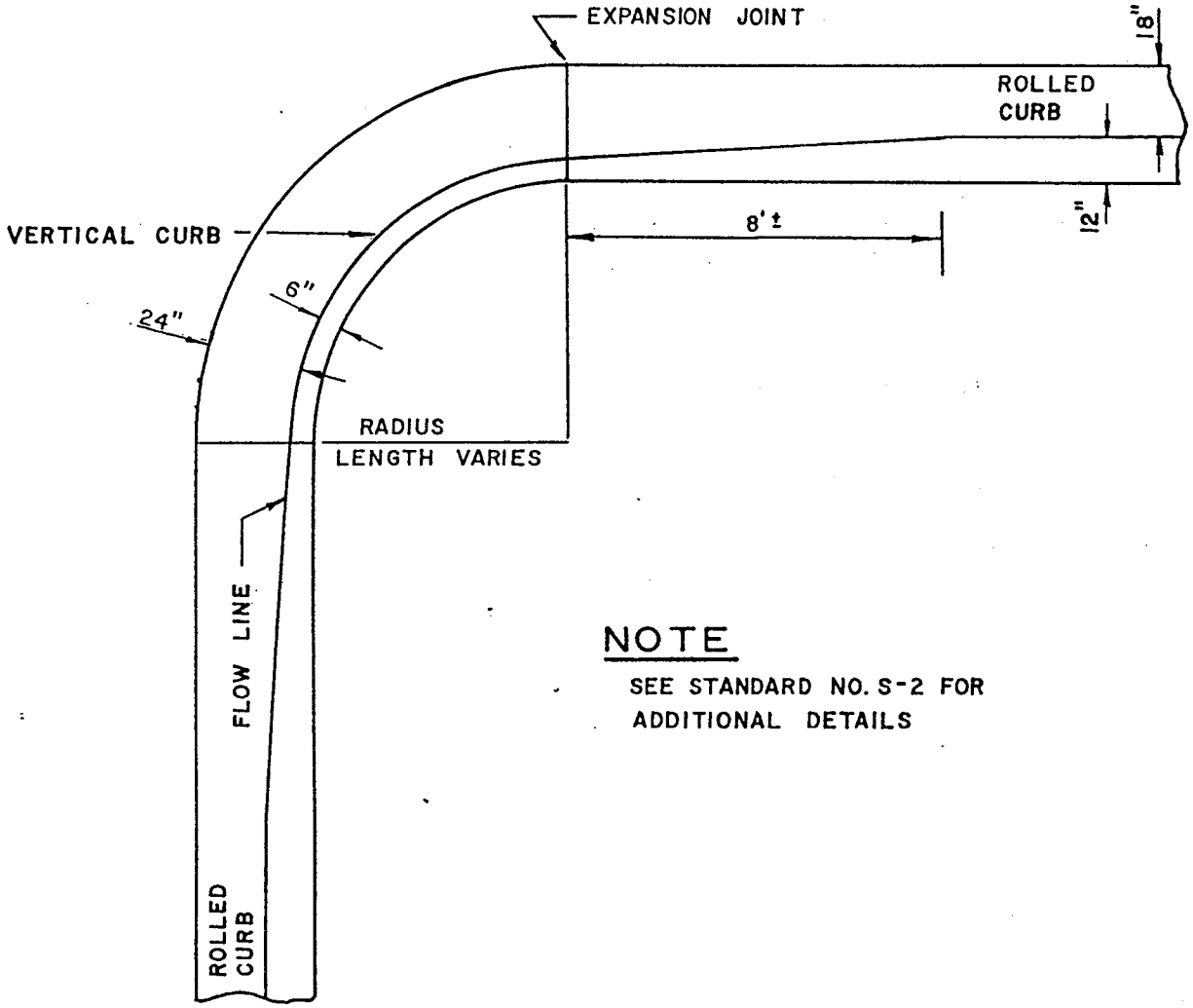
DETAILS OF TRANSITION FROM ROLLED CURB & GUTTER TO VERTICAL CURB & GUTTER AT CURB RETURNS

REVISED JUNE, 1983

CITY OF CORNING - DEPARTMENT OF PUBLIC WORKS

TITLE STD. CURB & GUTTER	DRAWN BY	CHECKED BY	
	DATE JAN. 1967	APPROVED	
	SCALE NONE	Rev. 4-75	

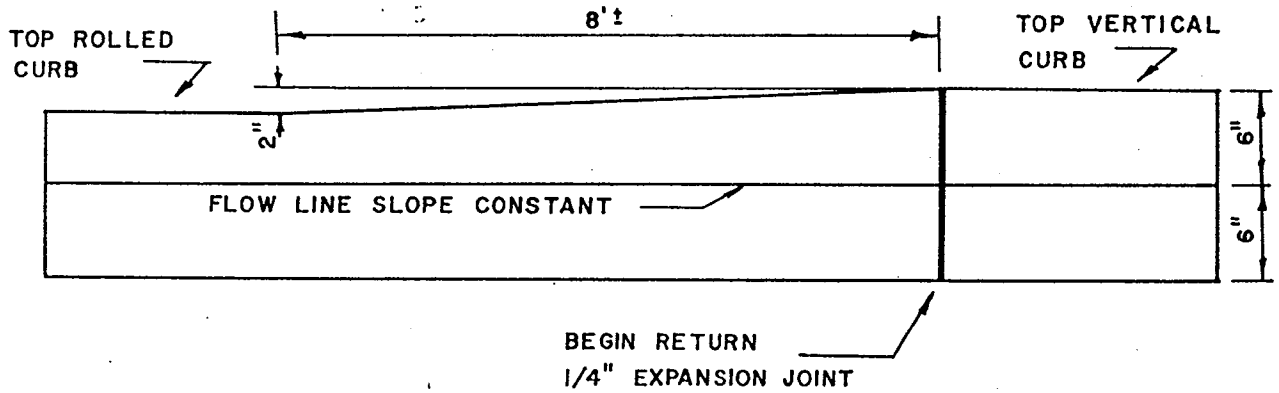
STANDARD NO 5-2



NOTE

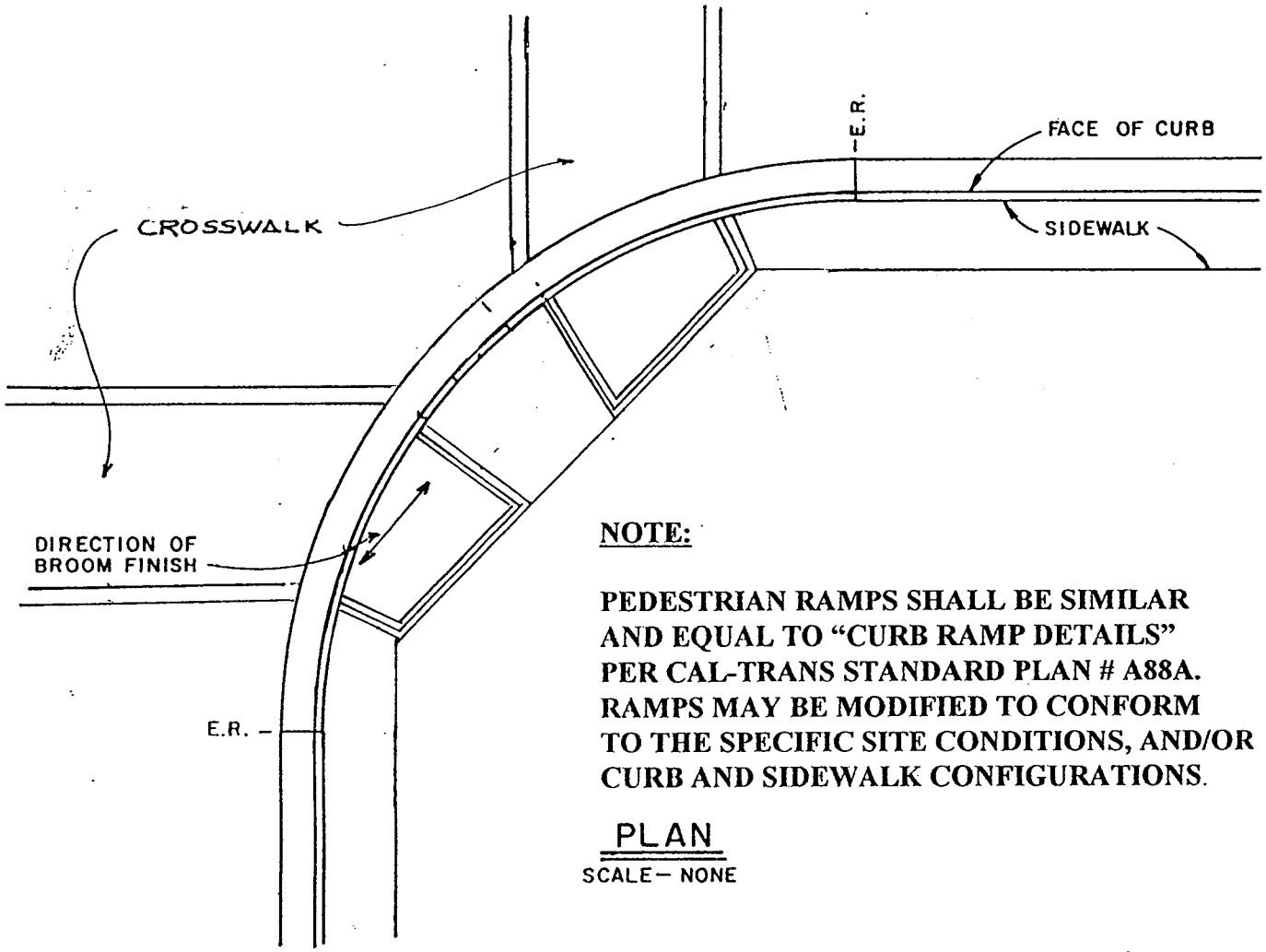
SEE STANDARD NO. S-2 FOR ADDITIONAL DETAILS

PLAN VIEW



SIDE VIEW

CITY OF CORNING	DEPARTMENT OF PUBLIC WORKS	
TITLE TRANSITION DETAIL	DRAWN BY M.L.A.	CHECKED BY
	DATE JAN. 1967	
	SCALE NONE	APPROVED BY
	STANDARD NO. S-2A	

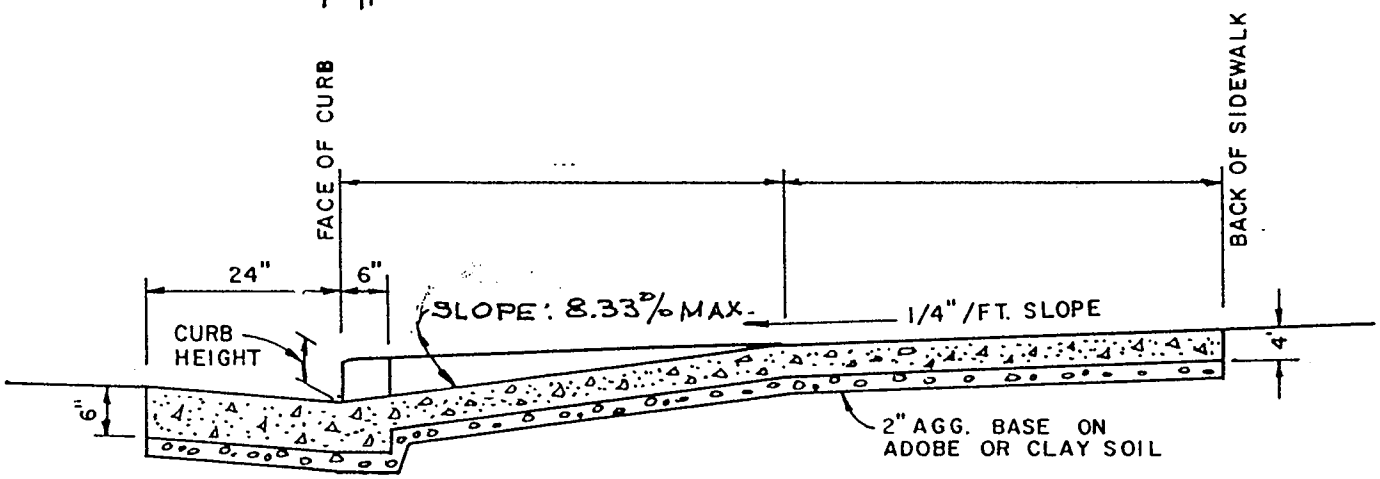


NOTE:

PEDESTRIAN RAMPS SHALL BE SIMILAR AND EQUAL TO "CURB RAMP DETAILS" PER CAL-TRANS STANDARD PLAN # A88A. RAMPS MAY BE MODIFIED TO CONFORM TO THE SPECIFIC SITE CONDITIONS, AND/OR CURB AND SIDEWALK CONFIGURATIONS.

PLAN

SCALE– NONE



SECTION "A"–"A"

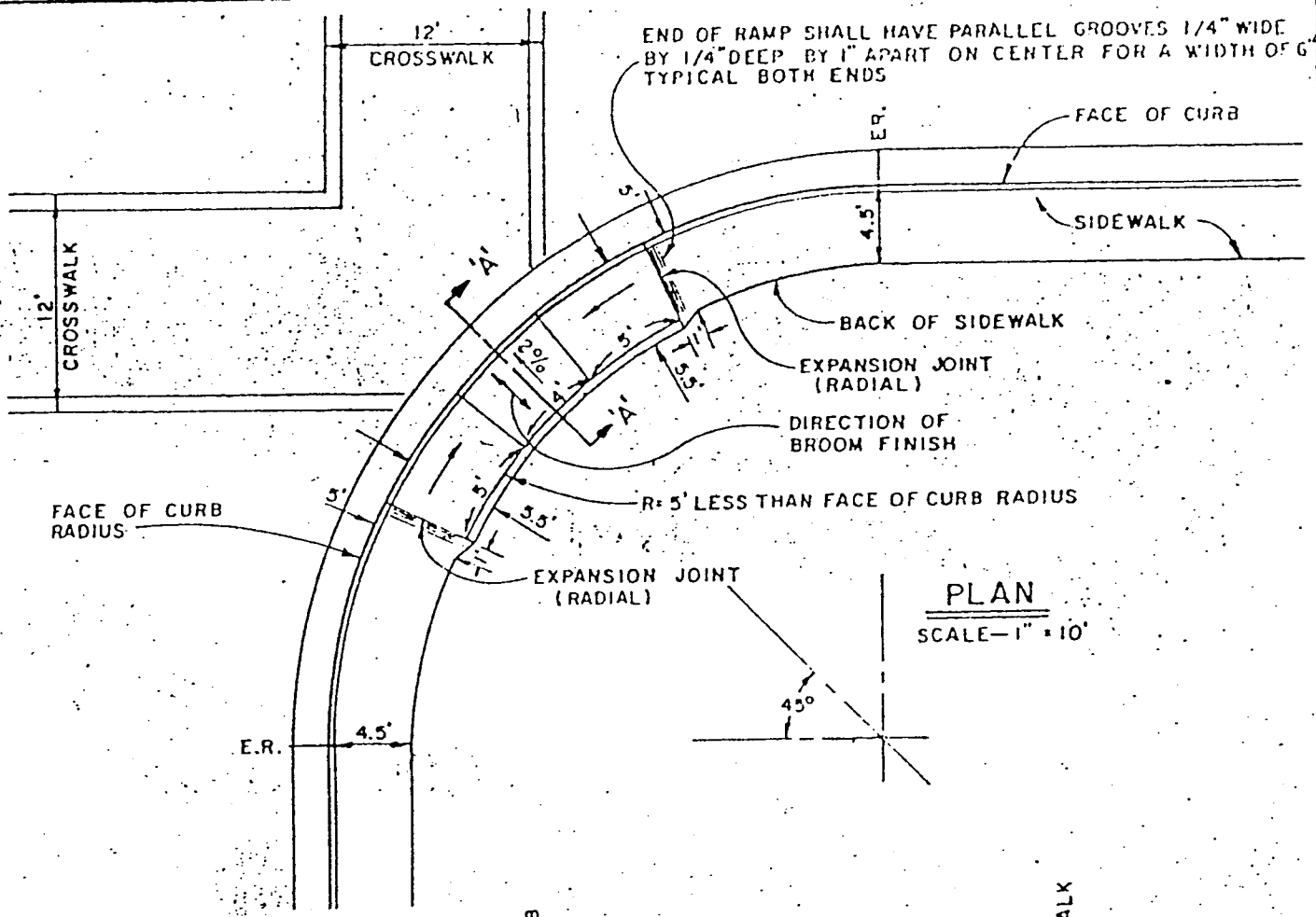
SCALE– NONE

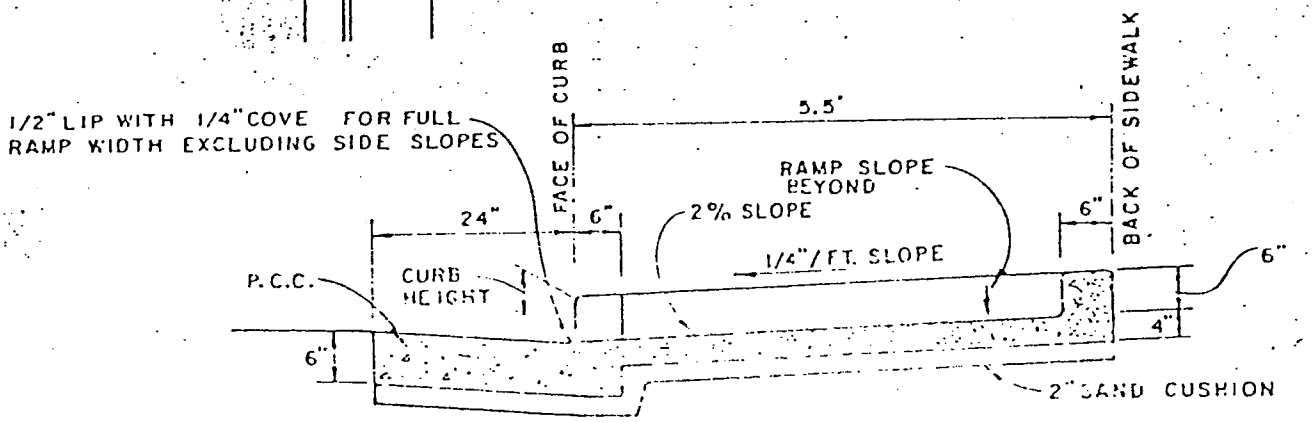
NOTE

RAMP AND GUTTER
POURED TOGETHER

CITY OF CORNING	DEPARTMENT OF PUBLIC WORKS	
Standard P.C.C. Pedestrian Ramp	DRAWN BY CV DATE APRIL 1975 SCALE	CHECKED BY E A APPROVED BY

STANDARD NO S-2B





NOTE

RAMP AND GUTTER PLACED TOGETHER

SECTION 'A-A'

SCALE—1" = 2'

NOTE:

PEDESTRIAN RAMPS SHALL BE SIMILAR AND EQUAL TO "CURB RAMP DETAILS" PER CAL-TRANS STANDARD PLAN # A88A. RAMPS MAY BE MODIFIED TO CONFORM TO THE SPECIFIC SITE CONDITIONS, AND/OR CURB AND SIDEWALK CONFIGURATIONS.

CITY OF CORNING — DEPARTMENT OF PUBLIC WORKS

Standard P.C.C. Handicapped Ramp

(SIDEWALK CONTIGUOUS WITH CURB & GUTTER)

DRAWN BY A.E. CHECKED BY

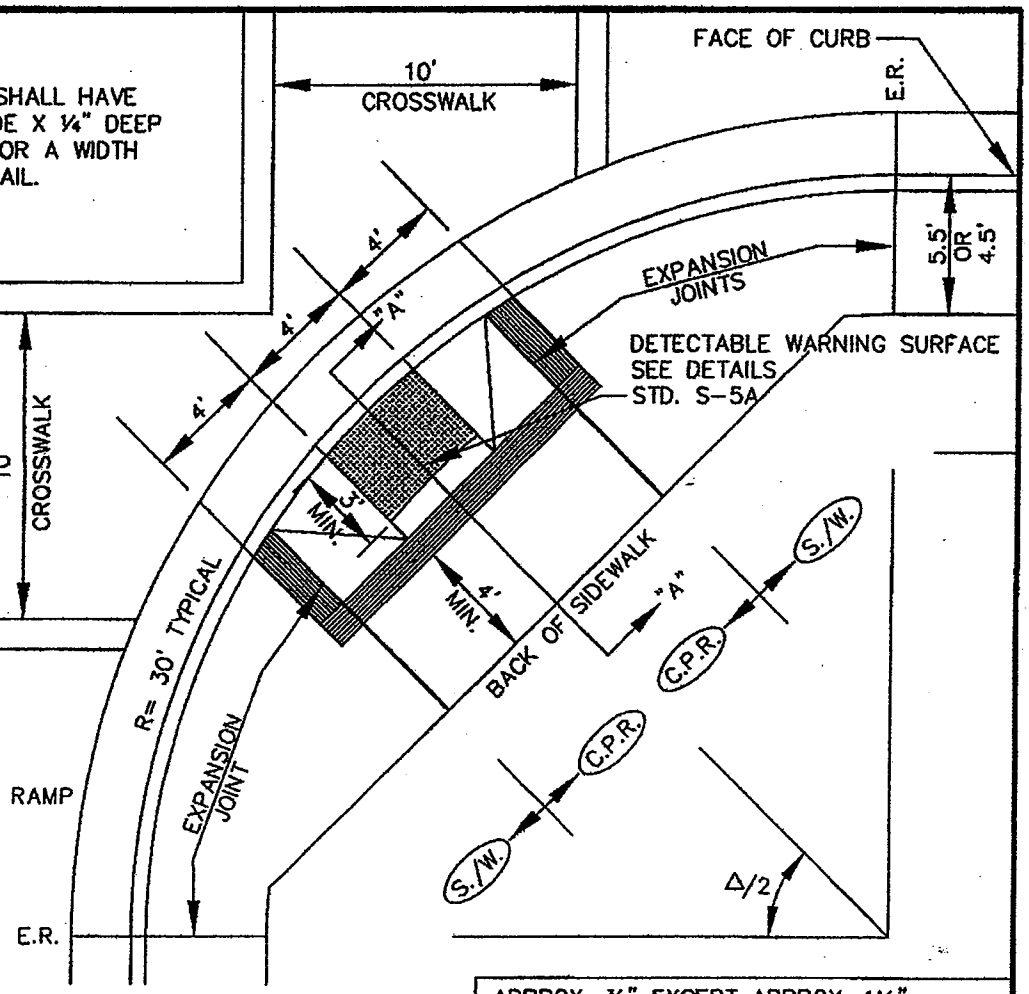
DATE JUNE 1981

APPROVED BY

STANDARD NO S-2C

S-2C

SIDE PERIMETER OF RAMP SHALL HAVE PARALLEL GROOVES ¼" WIDE X ¼" DEEP X ¾" APART ON CENTER FOR A WIDTH OF 12". SEE GROOVING DETAIL.



PLAN

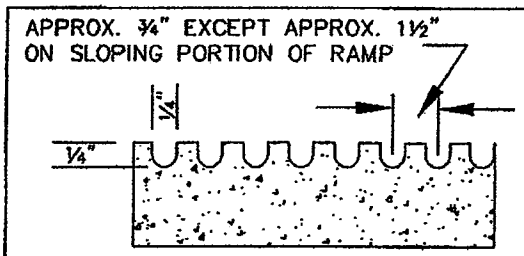
QUANTITY PAYMENT LIMITS:

(S./W.) = SIDEWALK

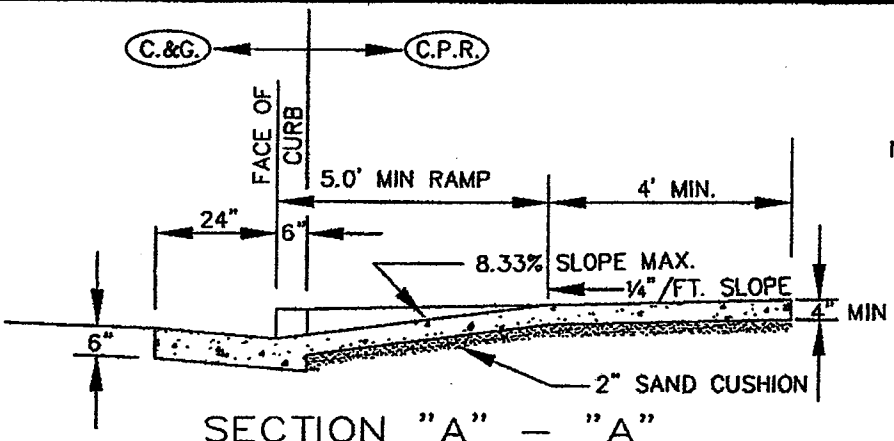
(C.P.R.) = CONCRETE PEDESTRIAN RAMP

(C.&G.) = CURB & GUTTER

NOTE: WHEN RAMP IS LOCATED IN CENTER OF CURB RETURN, IT SHALL BE GROOVED IN A HERRING BONE PATTERN WITH ¼" GROOVES APPROXIMATELY 1½" O.C. SEE GROOVING DETAIL. GROOVES SHOULD BE ALIGNED PARALLEL TO CROSSWALK STRIPES TO DIRECT BLIND PEDESTRIANS INTO APPROPRIATE CROSSWALK.



GROOVING DETAIL



SECTION "A" – "A"

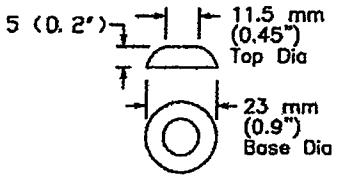
NOTE:
RAMP AND GUTTER POURED TOGETHER

USE THIS STANDARD WHERE SUFFICIENT RIGHT-OF-WAY IS AVAILABLE

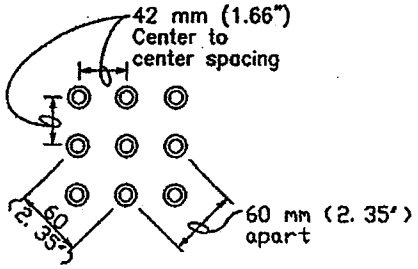
STANDARD FOR: CONCRETE PEDESTRIAN RAMP TYPE A

CITY OF CORNING
SCALE: NONE

MARCH, 2007
STANDARD NO. S-2D



RAISED TRUNCATED DOME



RAISED TRUNCATED DOME
PATTERN (IN-LINE)

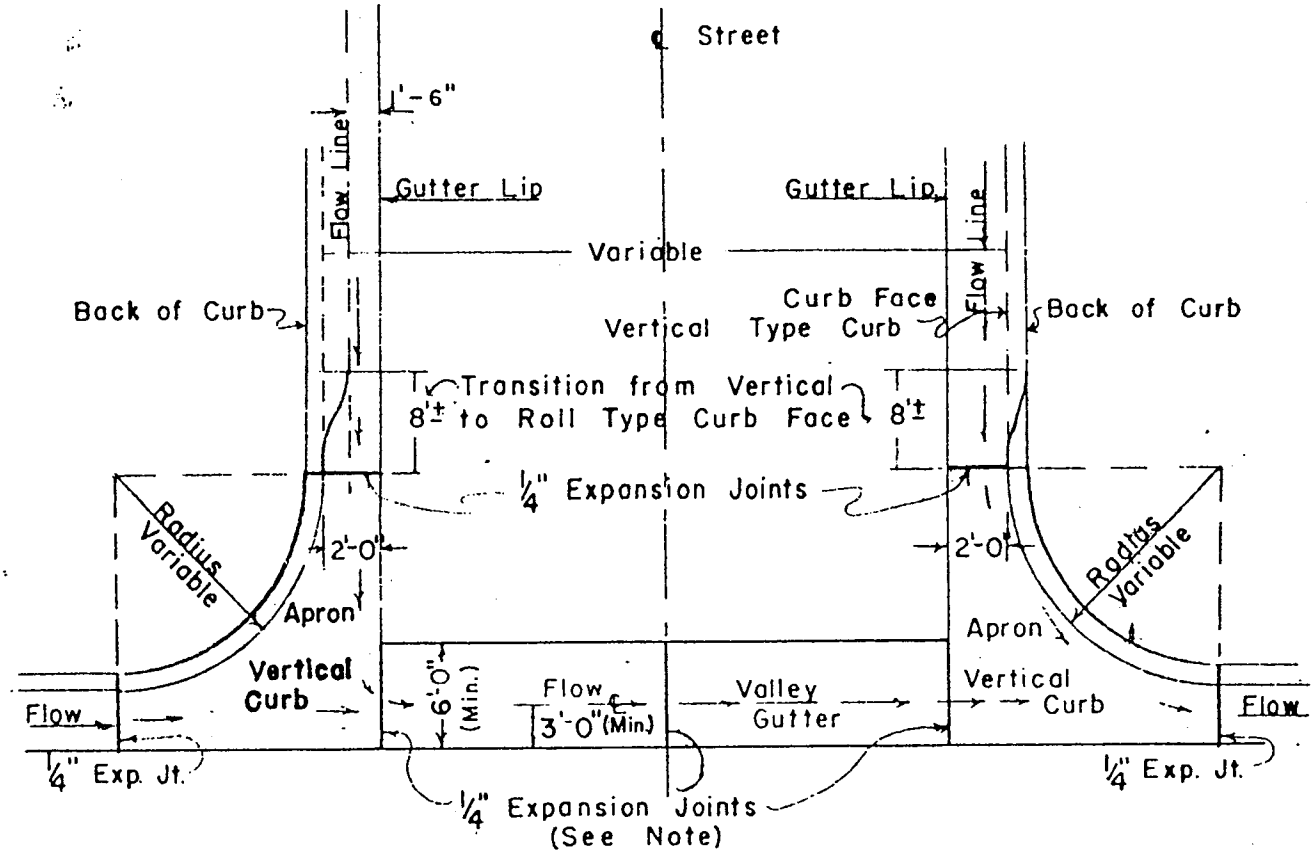
NOTES:

1. Pedestrian ramps shall have a detectable warning surface that extends the full width and 914 mm (3'-0") depth of the ramp. Detectable Warning Surfaces shall conform to the details on this plan and the requirements in the Special Provisions.
2. The edge of the detectable warning surface nearest the street shall be between 150 mm (6") and 205 mm (8") from the gutter flowline.

STANDARD FOR:
DETECTABLE WARNING SURFACE

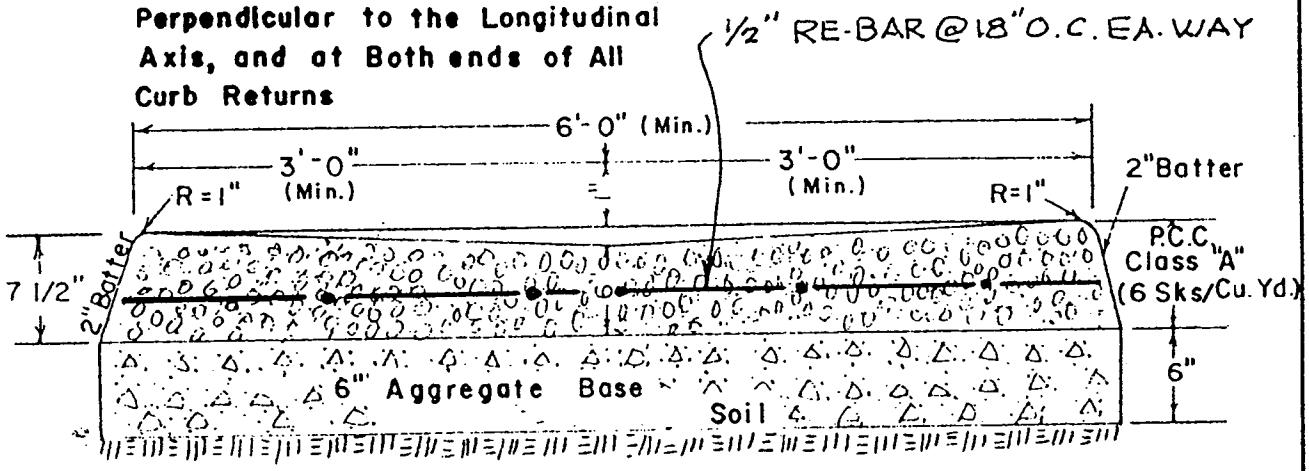
CITY OF CORNING
SCALE: NONE

MARCH, 2007
STANDARD NO. S-2E



ALL APRONS SHALL BE
CLASS "A" CONCRETE

NOTE: Expansion Joints Shall be Placed at Each End of Valley Gutters and at Mid-Spon Perpendicular to the Longitudinal Axis, and at Both ends of All Curb Returns



TYPICAL CROSS-GUTTER
Scale 1"=1'

REVISED MAR. 2002

CITY OF CORNING DEPARTMENT OF PUBLIC WORKS

TITLE STANDARD VALLEY GUTTER Typical Cross-Section Typical Intersection Plan	DRAWN BY _____ CHECKED BY _____ DATE JAN. 1967 SCALE AS SHOWN APPROVED BY _____ Rev. 4-75	
	STANDARD NO.	S-4

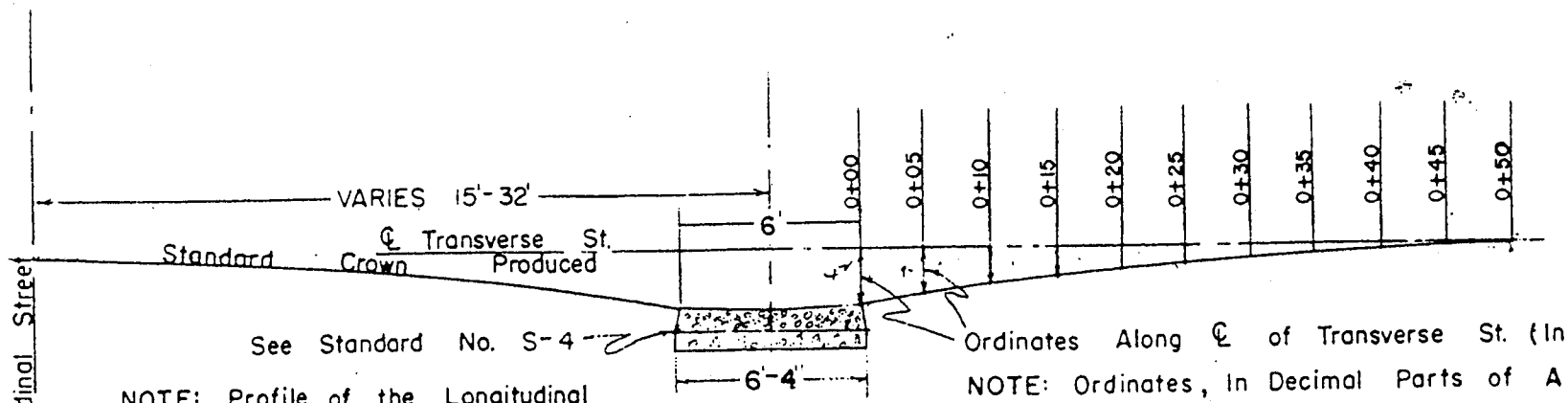
CITY OF CORNING · DEPARTMENT OF PUBLIC WORKS

TITLE STANDARD VALLEY GUTTER CONSTRUCTION DETAILS

DRAWN BY _____ DATE JAN. 1967 SCALE NONE

CHECKED BY _____ APPROVED BY _____

STANDARD NO. S-4A



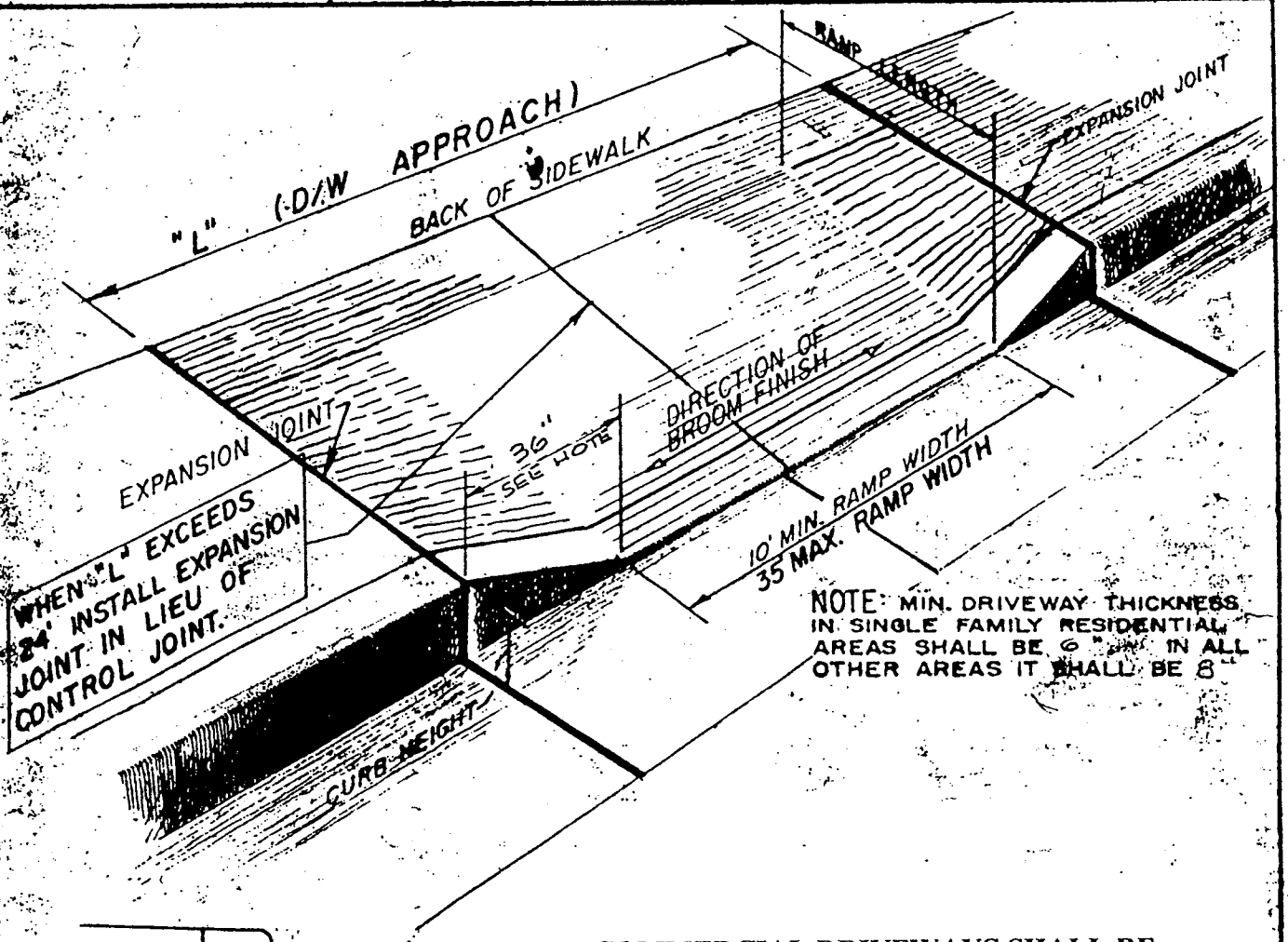
NOTE: Profile of the Longitudinal Center Line of the Valley Gutter Shall Approximately Parallel the Profile of the Center Line of the Longitudinal Street.

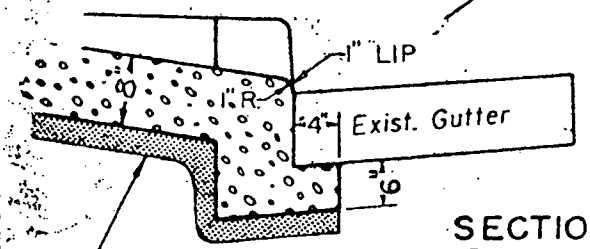
Ordinates Along ℄ of Transverse St. (In FT.)

NOTE: Ordinates, In Decimal Parts of A Foot, Establish the Distance of the Pavement Surface of the Transverse Street Below Its Normal Crown Produced to Intersection With the Longitudinal Street.

FOR ALL PAVEMENT TYPES

Sta.	0+00	0+05	0+10	0+15	0+20	0+25	0+30	0+35	0+40	0+45	0+50	Curb to Curb Width
Ordinate	0.37	0.25	0.16	0.09	0.04	0.01	0.00					30'
Ordinate	0.42	0.32	0.24	0.16	0.11	0.06	0.03	0.01	0.00			36'
Ordinate	0.42	0.32	0.24	0.16	0.11	0.06	0.03	0.01	0.00			40'
Ordinate	0.82	0.66	0.52	0.40	0.30	0.21	0.13	0.07	0.03	0.01	0.00	64'





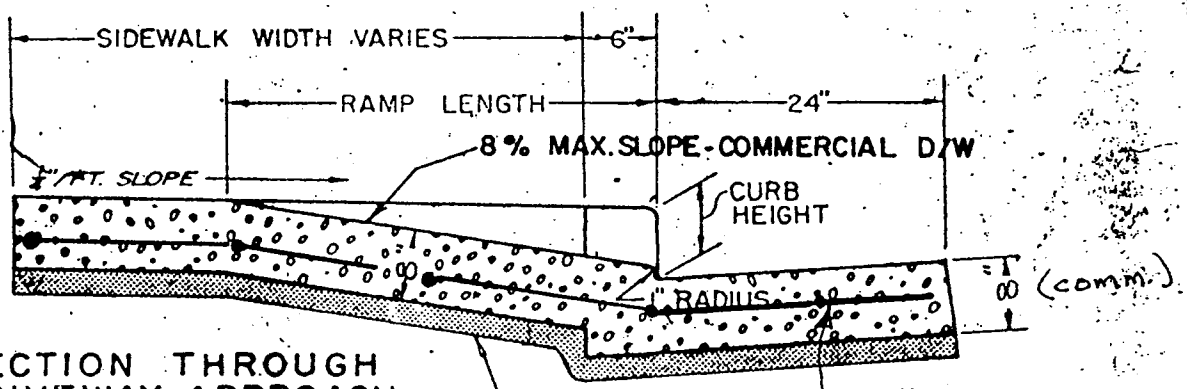
SECTION THROUGH DRIVEWAY APPROACH

GUTTER IS EXISTING OR POURED SEPARATELY

COMMERCIAL DRIVEWAYS SHALL BE REINFORCED WITH 1/2-INCH RE-BAR @ 18-INCHES O.C., EA. WAY.

NOTE:

SHOULDER LENGTH 60" FOR PARKING LOTS WITH MORE THAN 10 PARKING SPACES.



SECTION THROUGH DRIVEWAY APPROACH

APPROACH AND GUTTER POURED TOGETHER

REV. MAR. 2002

CITY OF CORNING DEPARTMENT OF PUBLIC WORKS

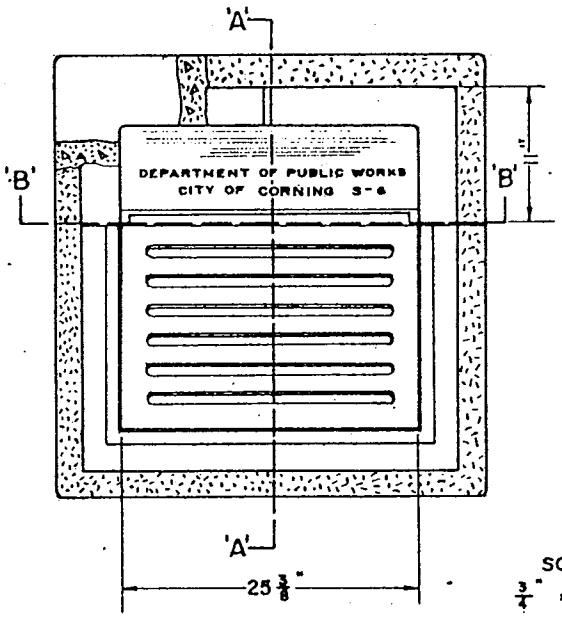
TITLE Standard Driveway Approach

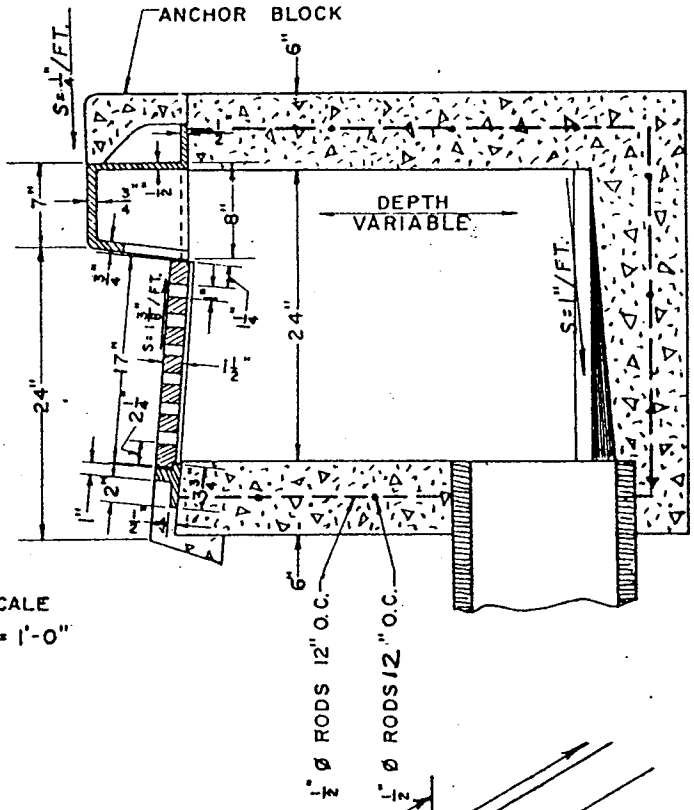
DRAWN BY _____ CHECKED BY _____

DATE JAN. 1967 APPROVED _____

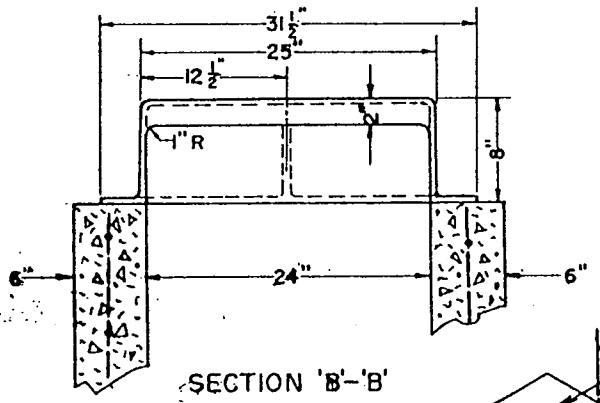
SCALE NONE Rev. _____

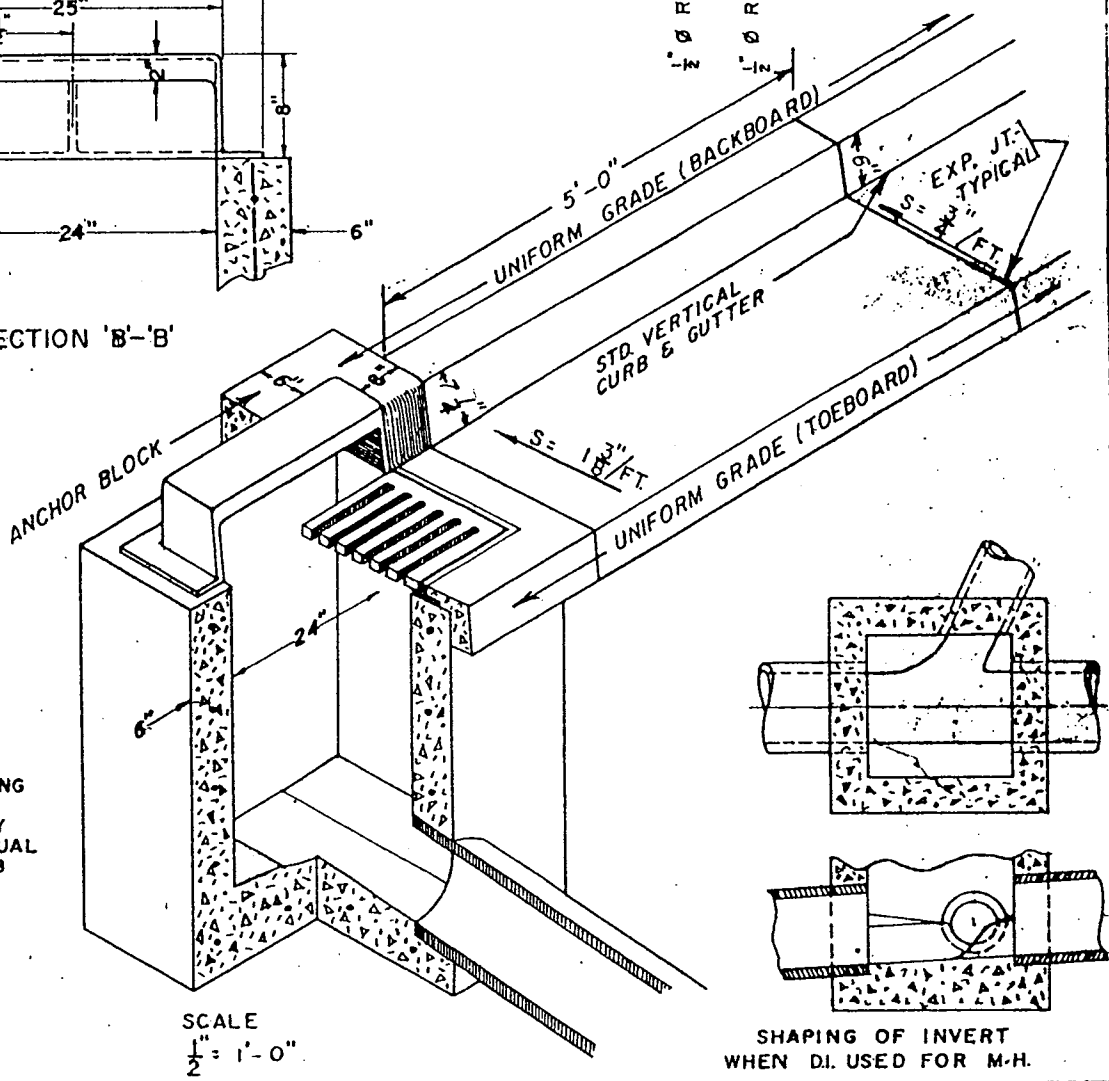
STANDARD NO. S-5





SCALE
3/4" = 1'-0"





SCALE
1/2" = 1'-0"

SHAPING OF INVERT
WHEN DI. USED FOR M.H.

NOTE: FRAME & GRATING SHALL CONFORM TO PINKERTON FOUNDRY TYPE A-279 OR EQUAL & A.S.T.M. SPEC. A-48 CLASS 25

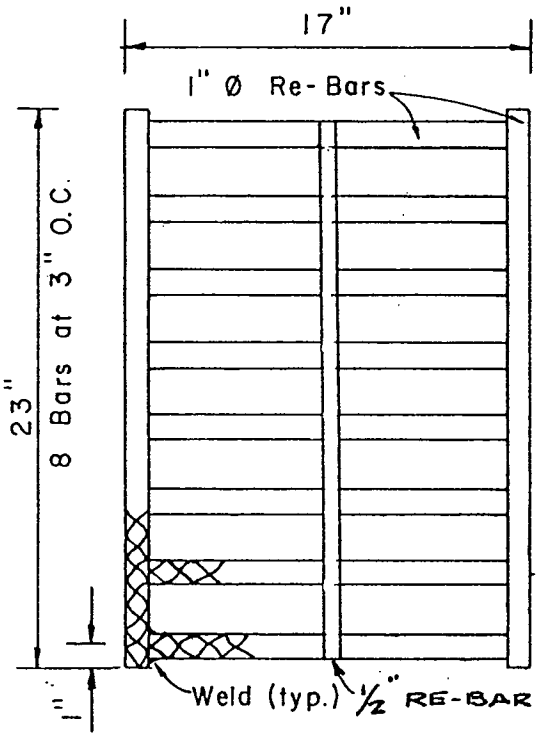
CITY OF CORNING DEPARTMENT OF PUBLIC WORKS

TITLE STANDARD 21" DROP INLET
FRAME & GRATING DETAILS

DATE JAN. 1967
SCALE AS SHOWN

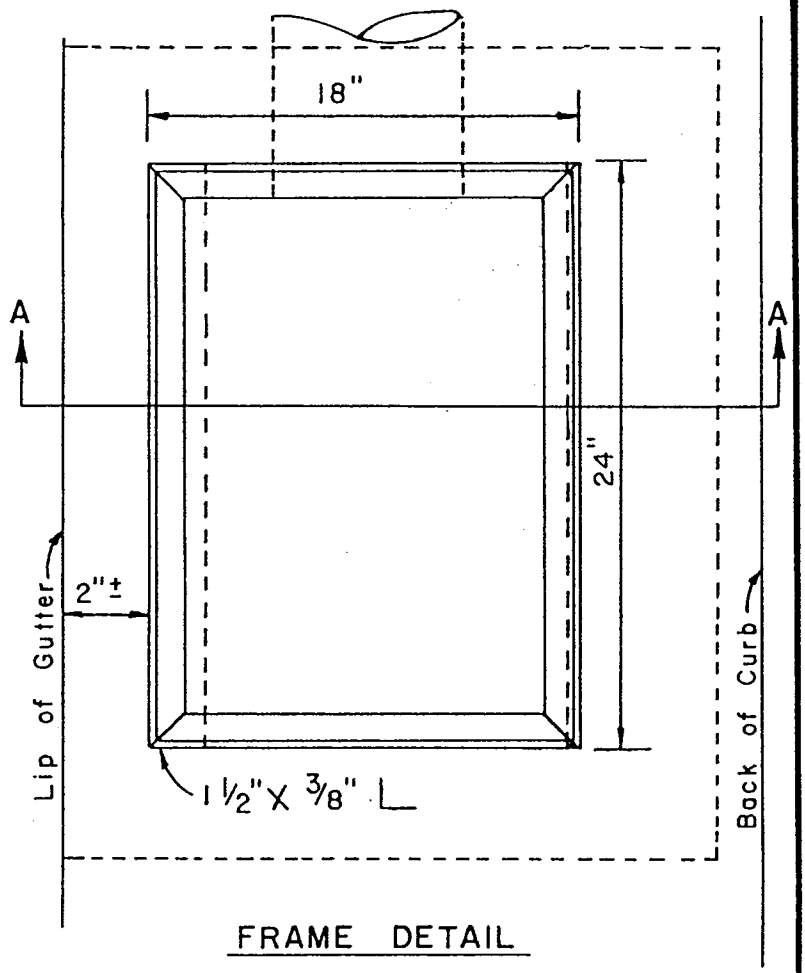
CHECKED BY
APPROVED

STANDARD NO S-6



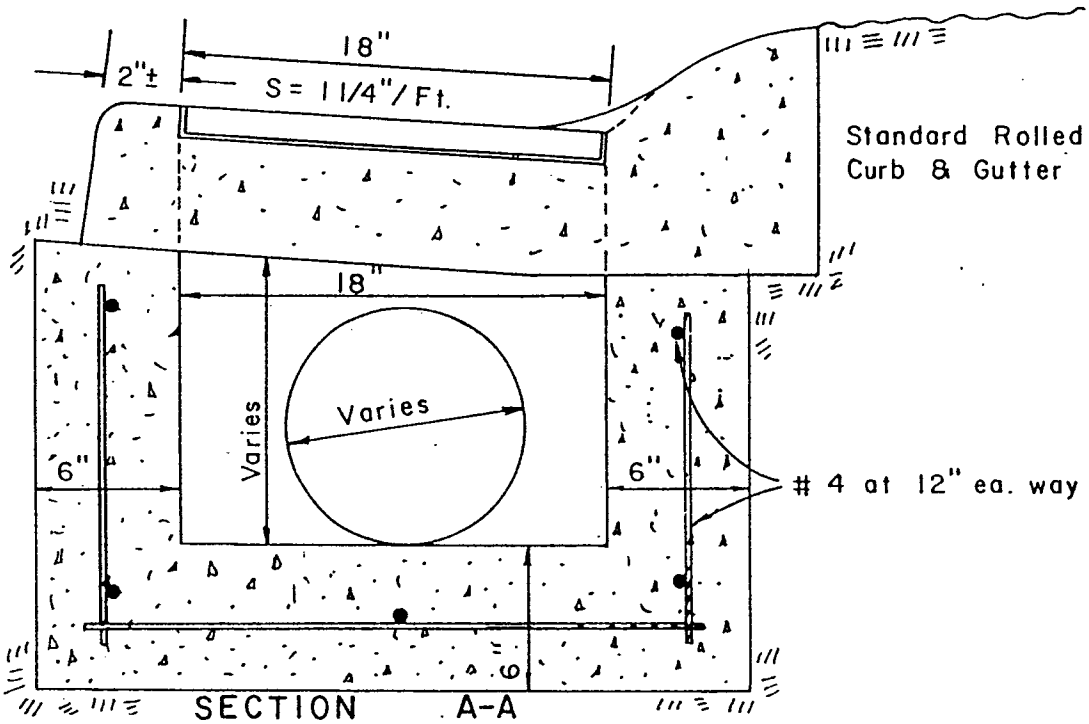
GRATE DETAIL

PLAN VIEW
No Scale



FRAME DETAIL

PLAN VIEW
No Scale



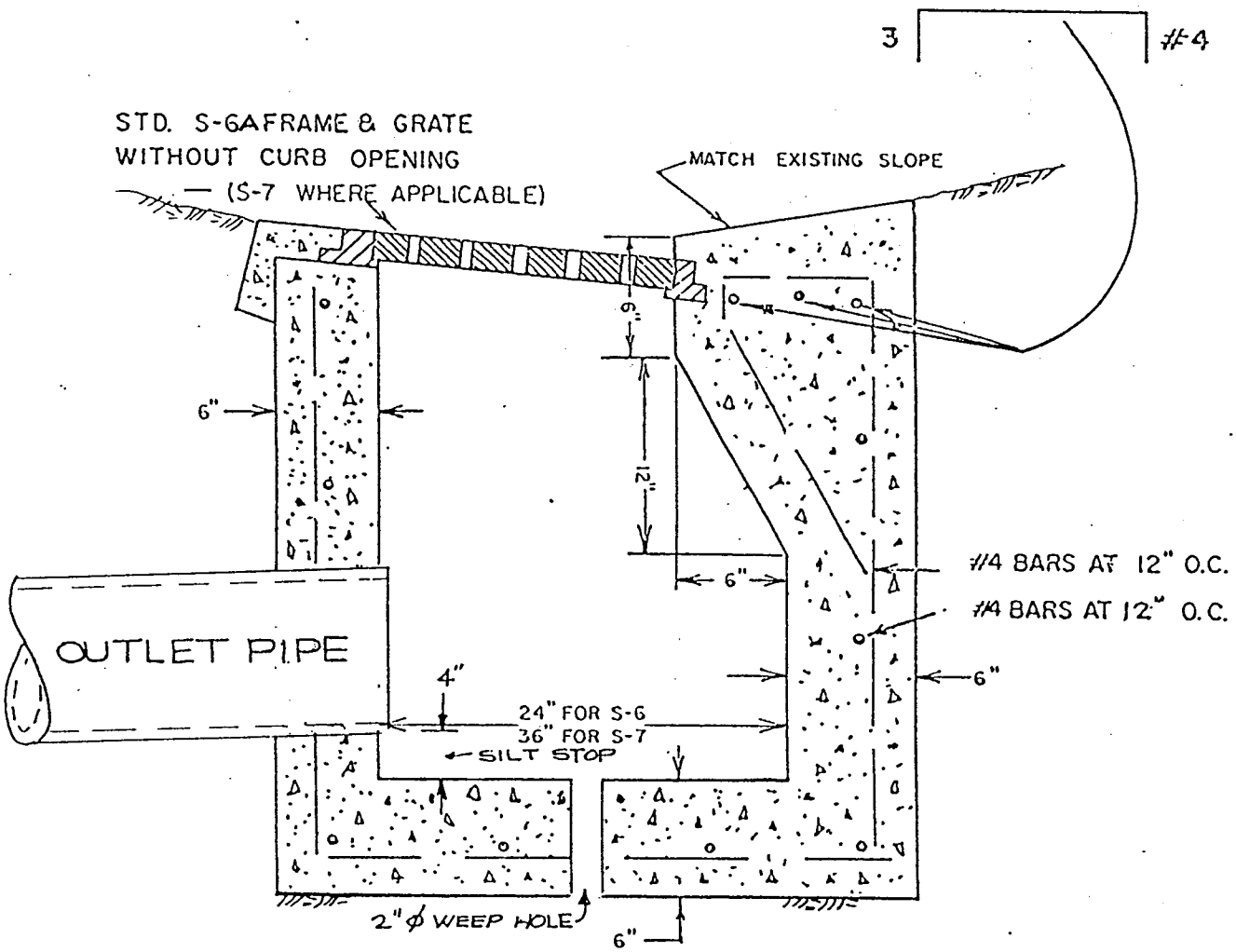
SECTION A-A

CITY OF CORNING DEPARTMENT OF PUBLIC WORKS

MODIFIED DROP INLET
for ROLLED CURB & GUTTER

DRAWN BY CBV
DATE APRIL 1975
SCALE NONE
CHECKED BY EA
APPROVED BY

STANDARD NO. S-6A



TYPICAL SECTION

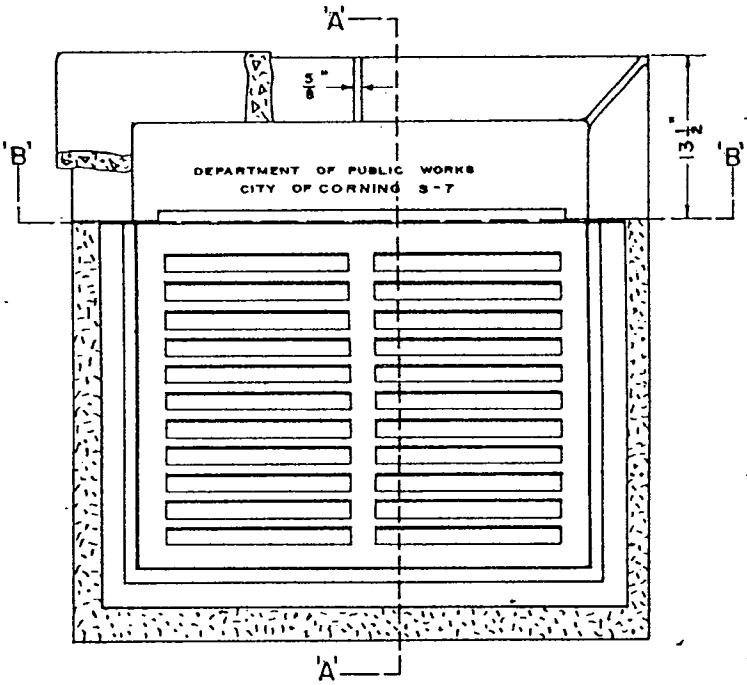
MODIFIED D.I.

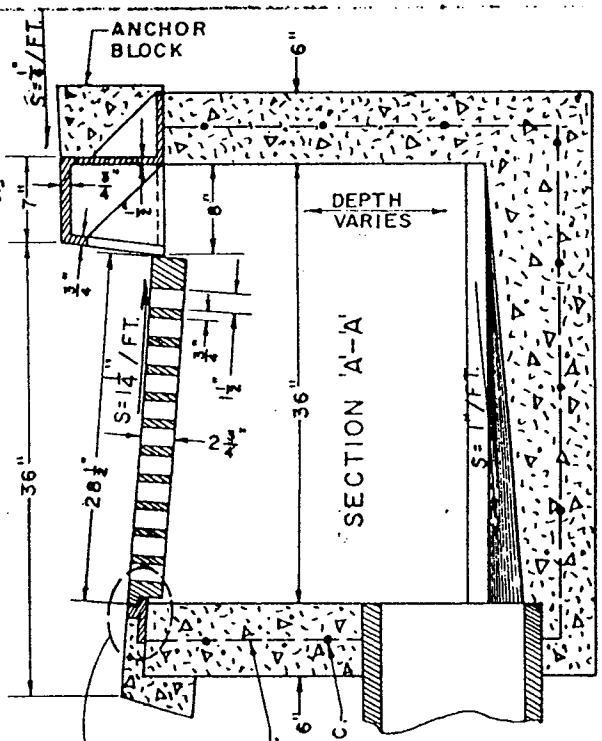
NOTE:

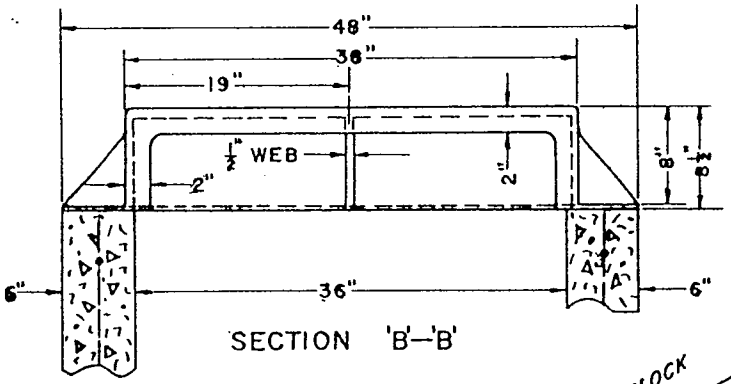
ROADSIDE DITCH SHALL BE FINAL GRADED TO MATCH FINISHED D.I. GRATE ELEVATION. OUTLET PIPE SHALL BE 4-INCHES ABOVE BOTTOM OF D.I. THE 2-INCH DIAMETER WEEP HOLE SHALL EXTEND THROUGH THE D.I. BOTTOM.

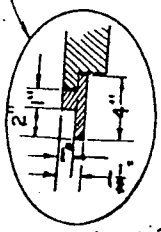
CITY OF CORNING	DEPARTMENT OF PUBLIC WORKS	
MODIFIED DROP INLET FOR ROADSIDE DITCH INSTALL.	DRAWN BY CBV DATE APRIL 1975 SCALE NONE	CHECKED BY EA APPROVED BY

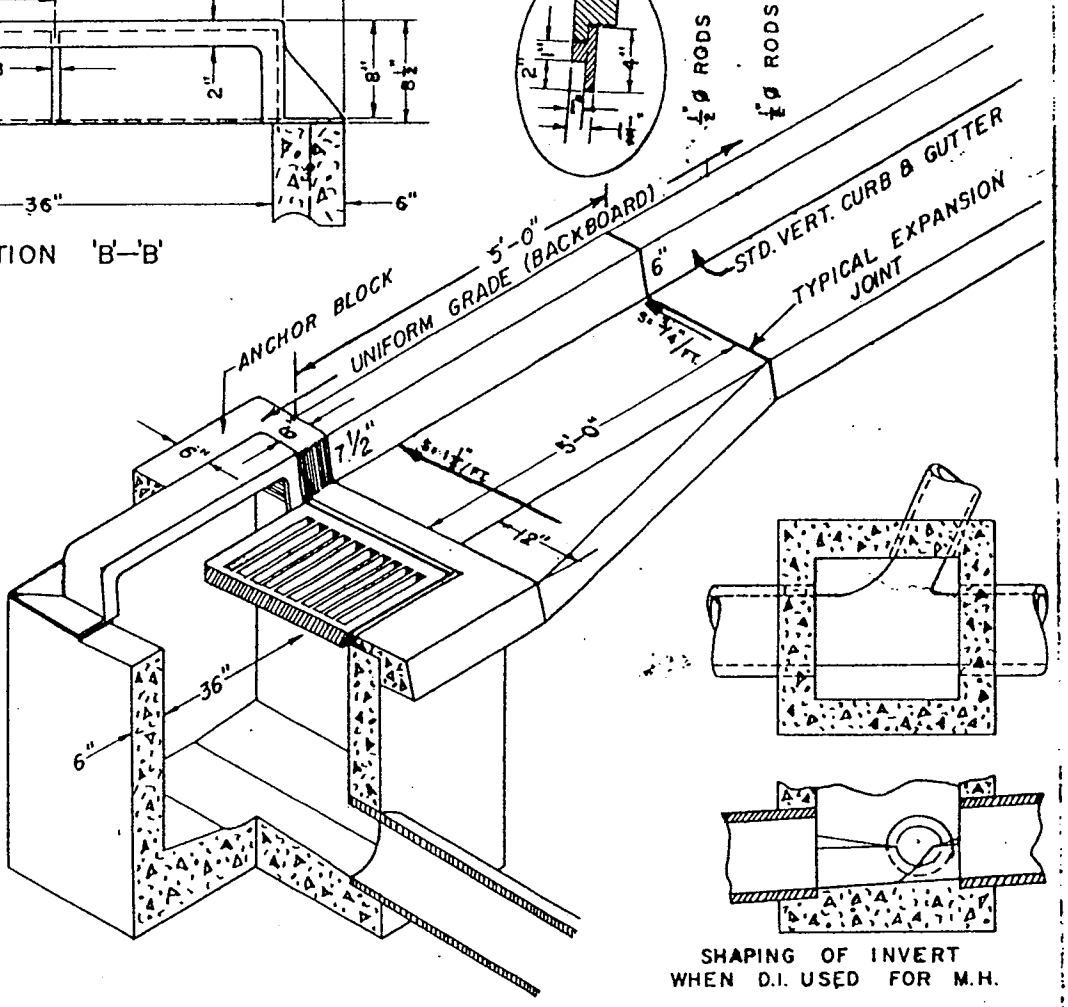
STANDARD NO. S-6B











SCALE
= 1'0"

NOTE: FRAME & GRATING SHALL CONFORM TO PINKERTON FOUNDRY TYPE A-285 OR EQUAL & A.S.T.M. SPEC. A-48 CLASS 25

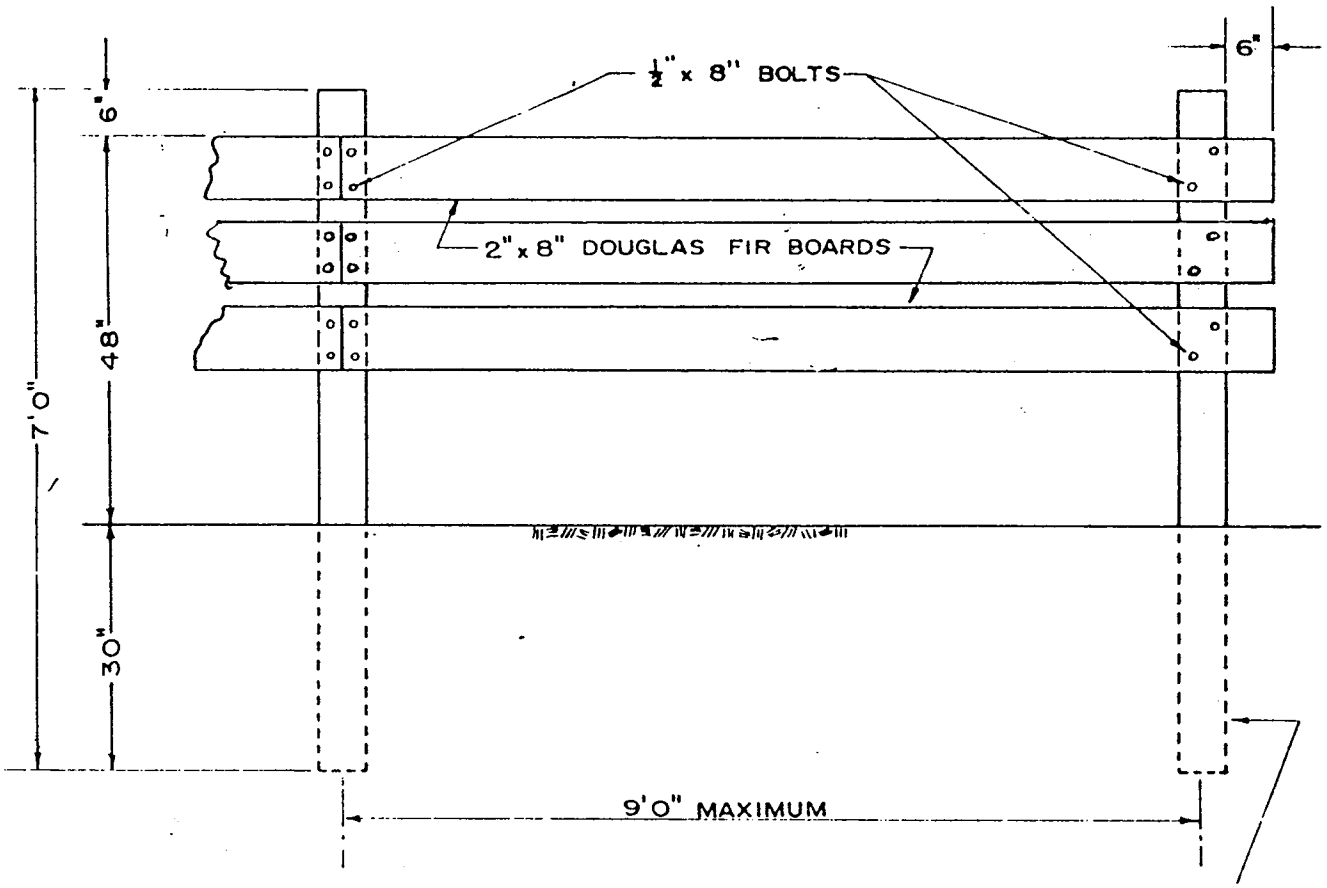
SHAPING OF INVERT
WHEN D.I. USED FOR M.H.

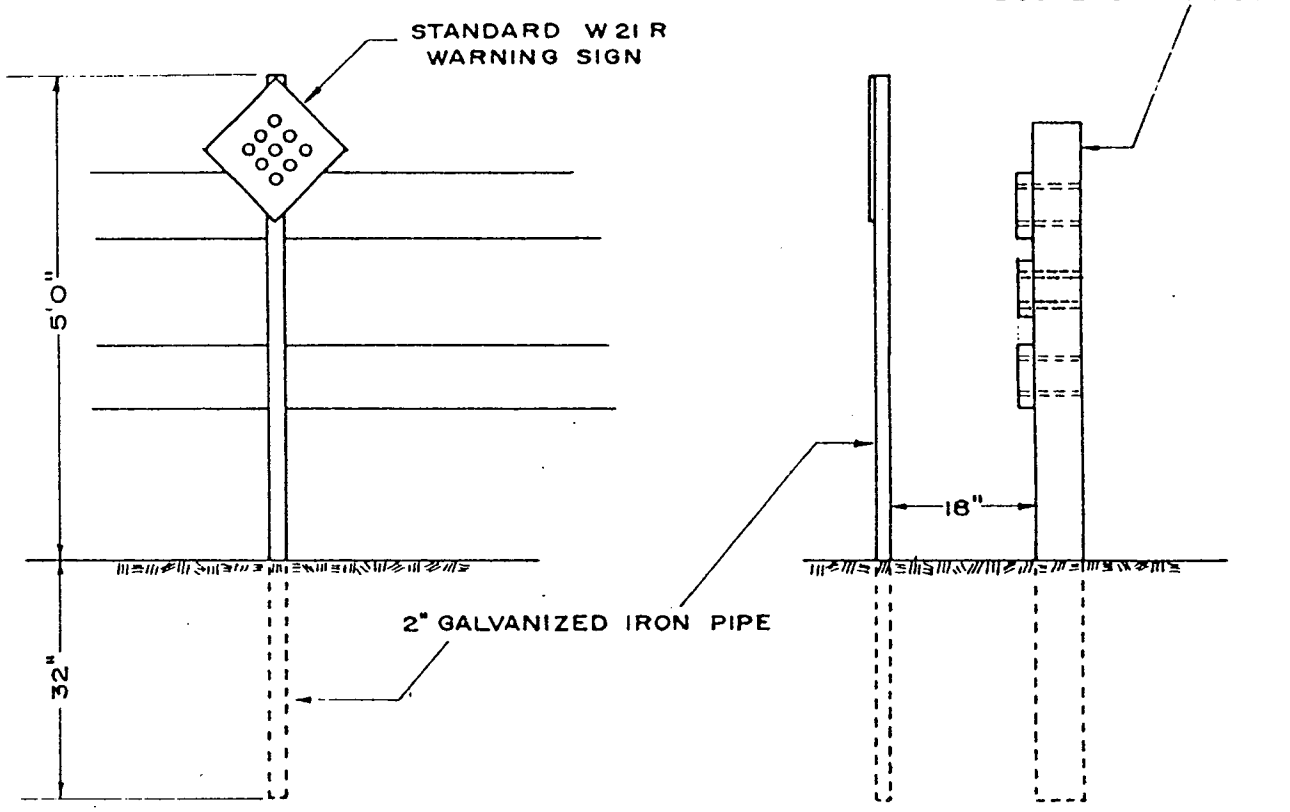
CITY OF CORNING DEPARTMENT OF PUBLIC WORKS

TITLE STANDARD 34" DROP INLET
FRAME & GRATING DETAILS

JAN. 1967
AS SHOWN

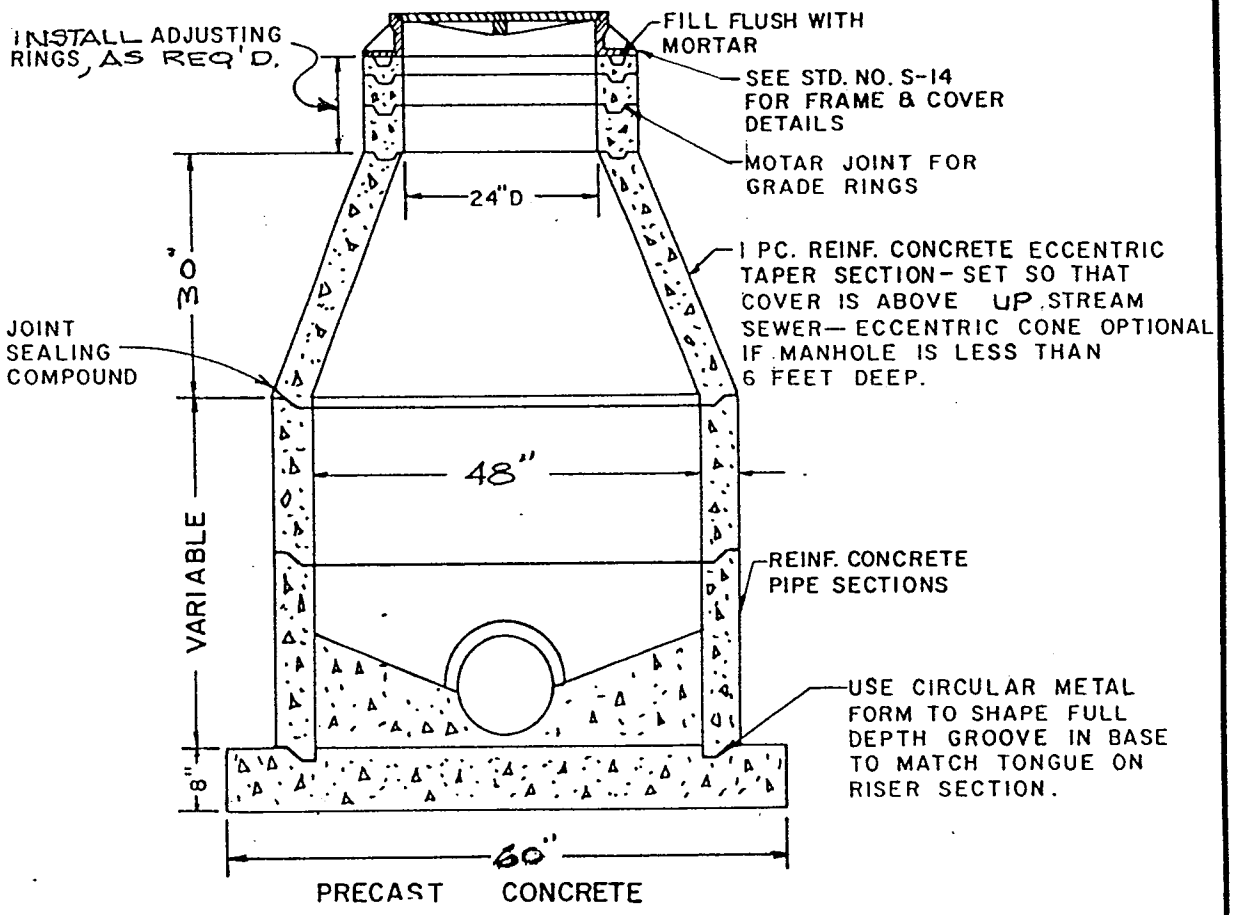
STANDARD NO S-7



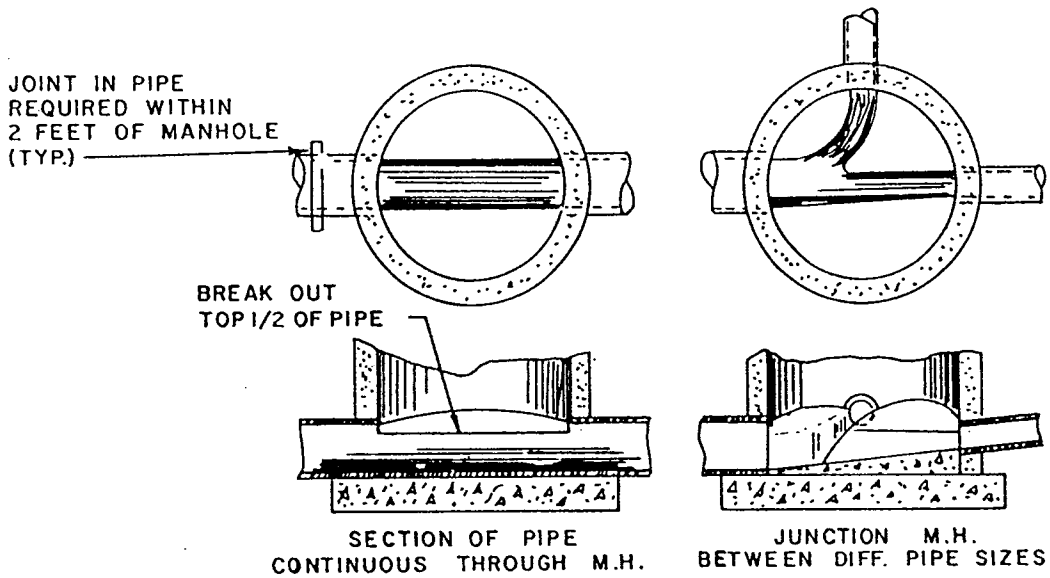


CITY OF CORNING	DEPARTMENT OF PUBLIC WORKS	
TITLE: STANDARD STREET BARRICADES	DRAWN BY:	CHECKED BY:
	DATE: JAN. 1967	APPROVED BY:
	SCALE: 3/4" = 1'0"	

STANDARD NO. S-8



MANHOLES SHALL BE SIMILAR AND EQUAL TO COOK CONCRETE PRODUCTS, INC. PRECAST 48-INCH ECCENTRIC MANHOLE ASSEMBLY, UNLESS SPECIFICALLY APPROVED OTHERWISE BY THE CITY PUBLIC WORKS DIRECTOR.



REVISED MAR. 2002

SHAPING BOTTOM OF MANHOLE

CITY OF CORNING DEPARTMENT OF PUBLIC WORKS

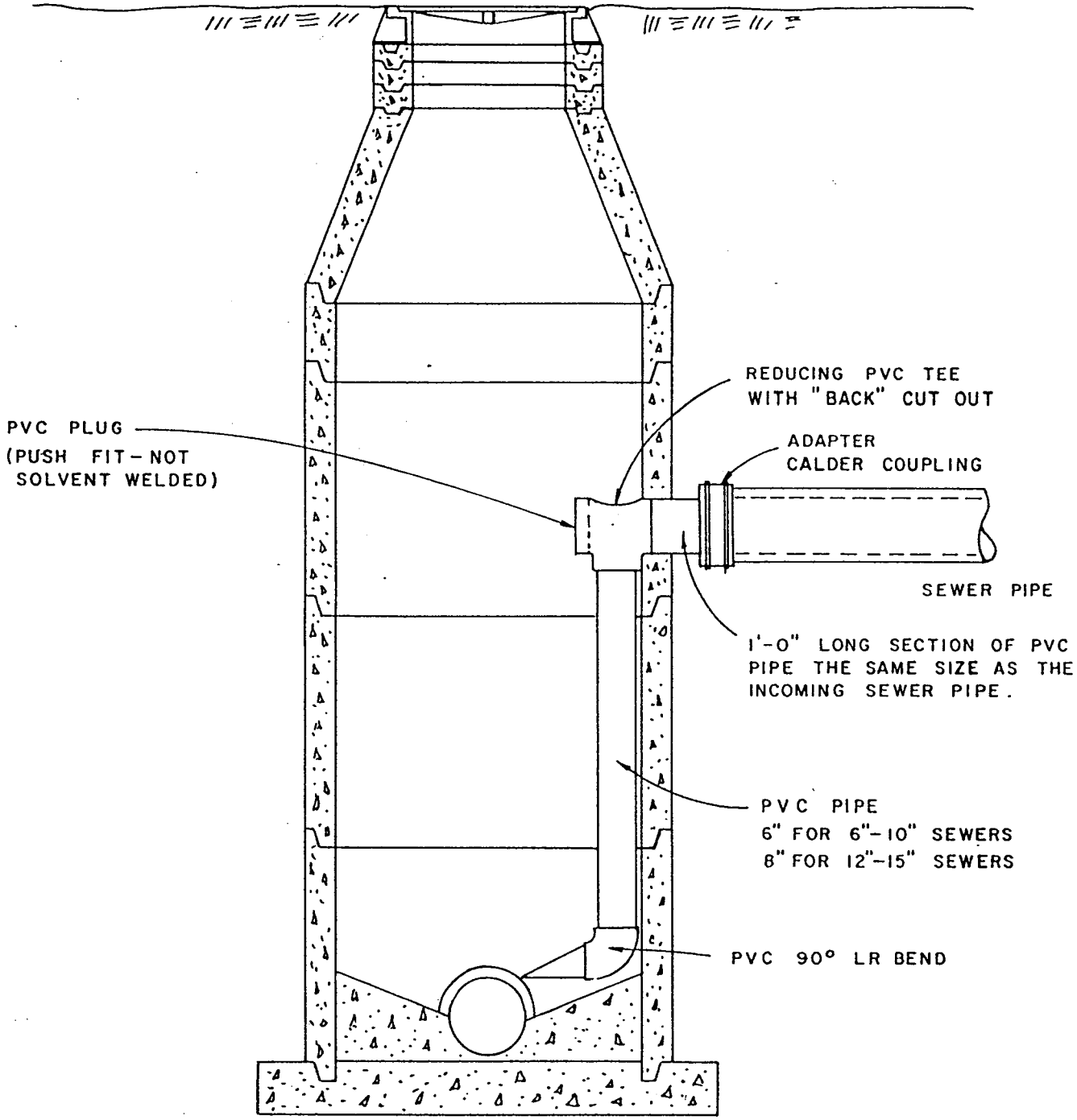
STANDARD MANHOLE PRECAST

DRAWN BY CV CHECKED BY EA

DATE APRIL 1975

SCALE NONE APPROVED BY

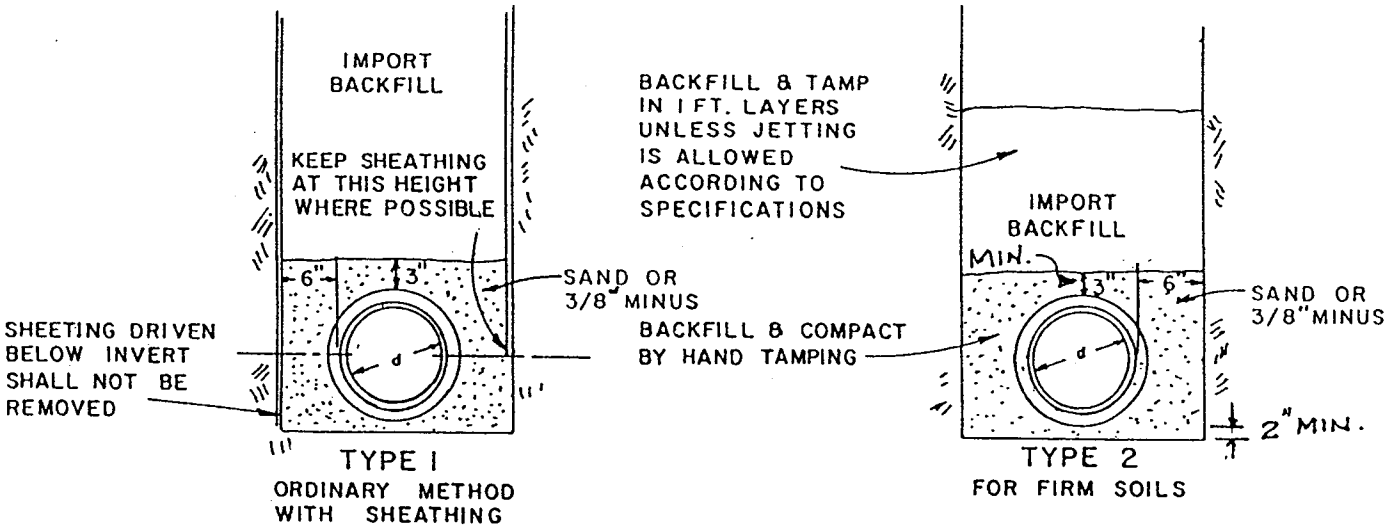
STANDARD NO. S-10



REVISED JUNE, 1983

CITY OF CORNING	DEPARTMENT OF PUBLIC WORKS	
DROP MANHOLE	DRAWN BY CV DATE APRIL 1975 SCALE NONE	CHECKED BY EA APPROVED BY

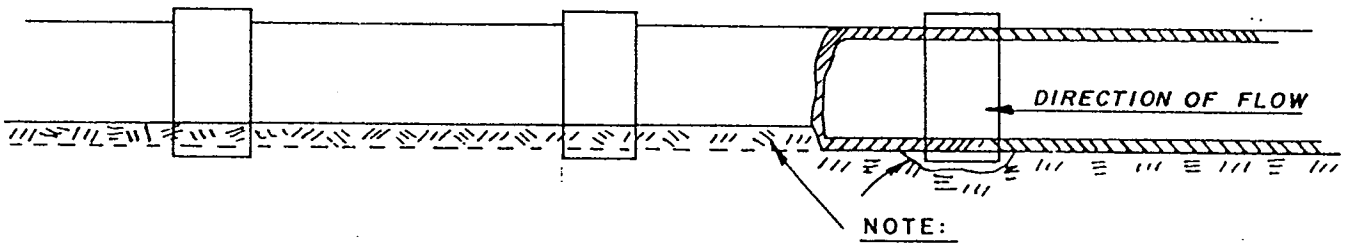
STANDARD NO. [illegible]



Note:

Install #10 shielded copper tracer wire on top of sand shading on both water and sewer mains, and both water and sewer service lines.

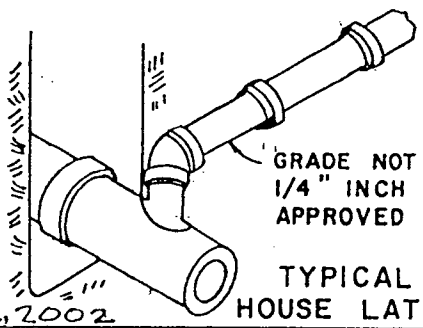
START LAYING PIPE AT LOW END
& BUILD AGAINST DIRECTION OF FLOW



NOTE:

PIPE SHALL BE SAND BEDDED AND SHADED.

TRENCH BACKFILL UP TO SUB-GRADE SHALL BE 3/4", CL.2, AB.



GRADE NOT LESS THAN 1/4" INCH PER. FT. UNLESS APPROVED BY DIR. PUBLIC WKS.

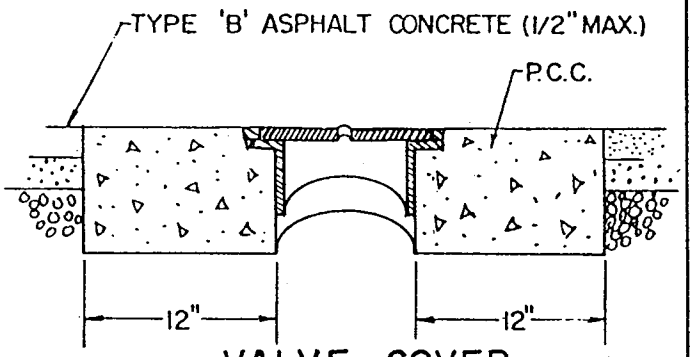
TYPICAL HOUSE LATERAL

REVISED MAR., 2002

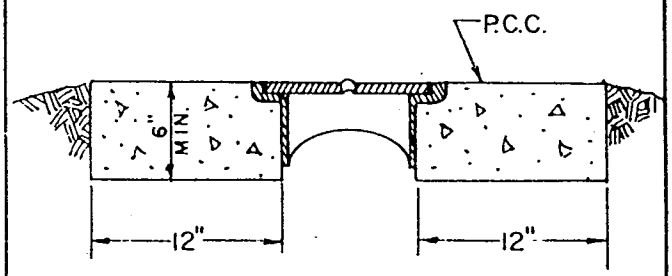
CITY OF CORNING DEPARTMENT OF PUBLIC WORKS

TITLE	APPROVED METHODS OF LAYING PIPE	DRAWN BY CV	CHECKED BY EA
		DATE APRIL 1975	
		SCALE NONE	APPROVED BY

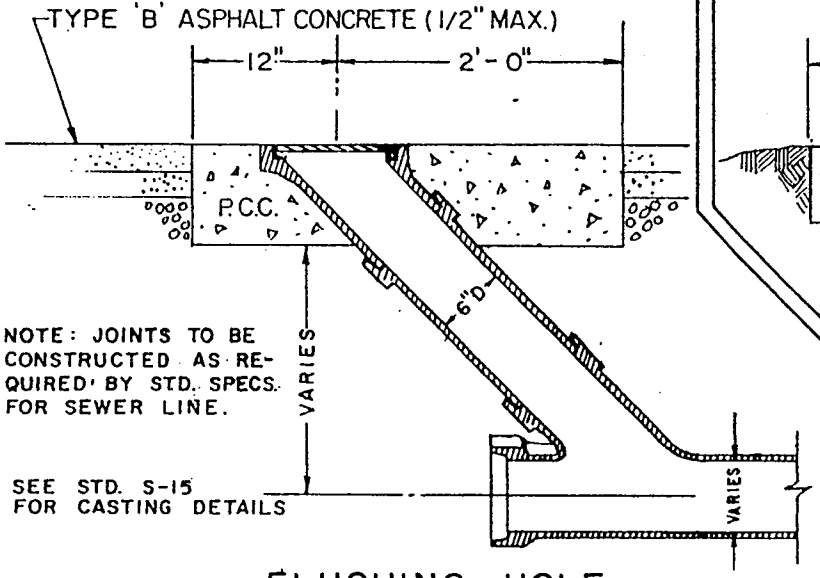
STANDARD NO. S-12



VALVE COVER
LOCATED IN STREET OR PAVED ALLEY



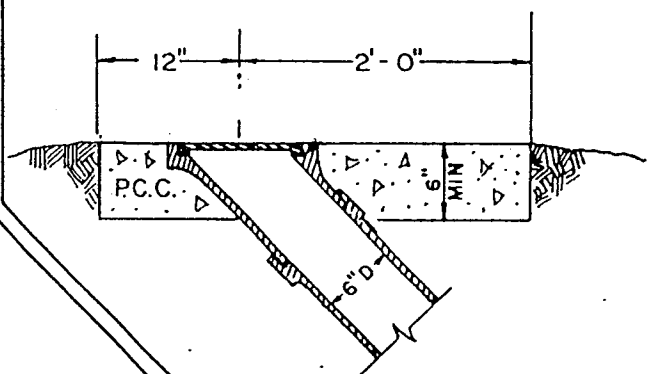
VALVE COVER
LOCATED IN UNPAVED AREAS



NOTE: JOINTS TO BE CONSTRUCTED AS REQUIRED BY STD. SPECS. FOR SEWER LINE.

SEE STD. S-15 FOR CASTING DETAILS

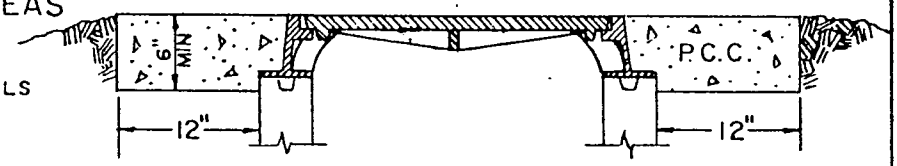
FLUSHING HOLE
LOCATED IN STREET OR PAVED ALLEY

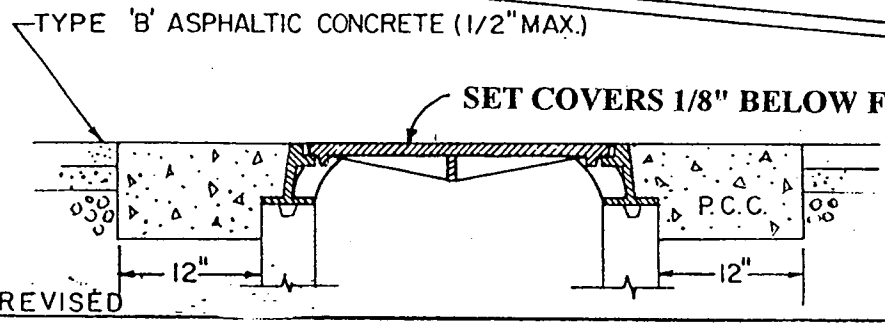


FLUSHING HOLE
LOCATED IN UNPAVED AREAS

MANHOLE
FRAME & COVER
LOCATED IN UNPAVED AREAS

SEE STD. S-14 FOR CASTING DETAILS





MANHOLE
FRAME & COVER
LOCATED IN STREET OR PAVED ALLEY

REVISED

CITY OF CORNING DEPARTMENT OF PUBLIC WORKS

TITLE TYPICAL METHOD FOR *SETTING APPURTENANCES*

DRAWN BY

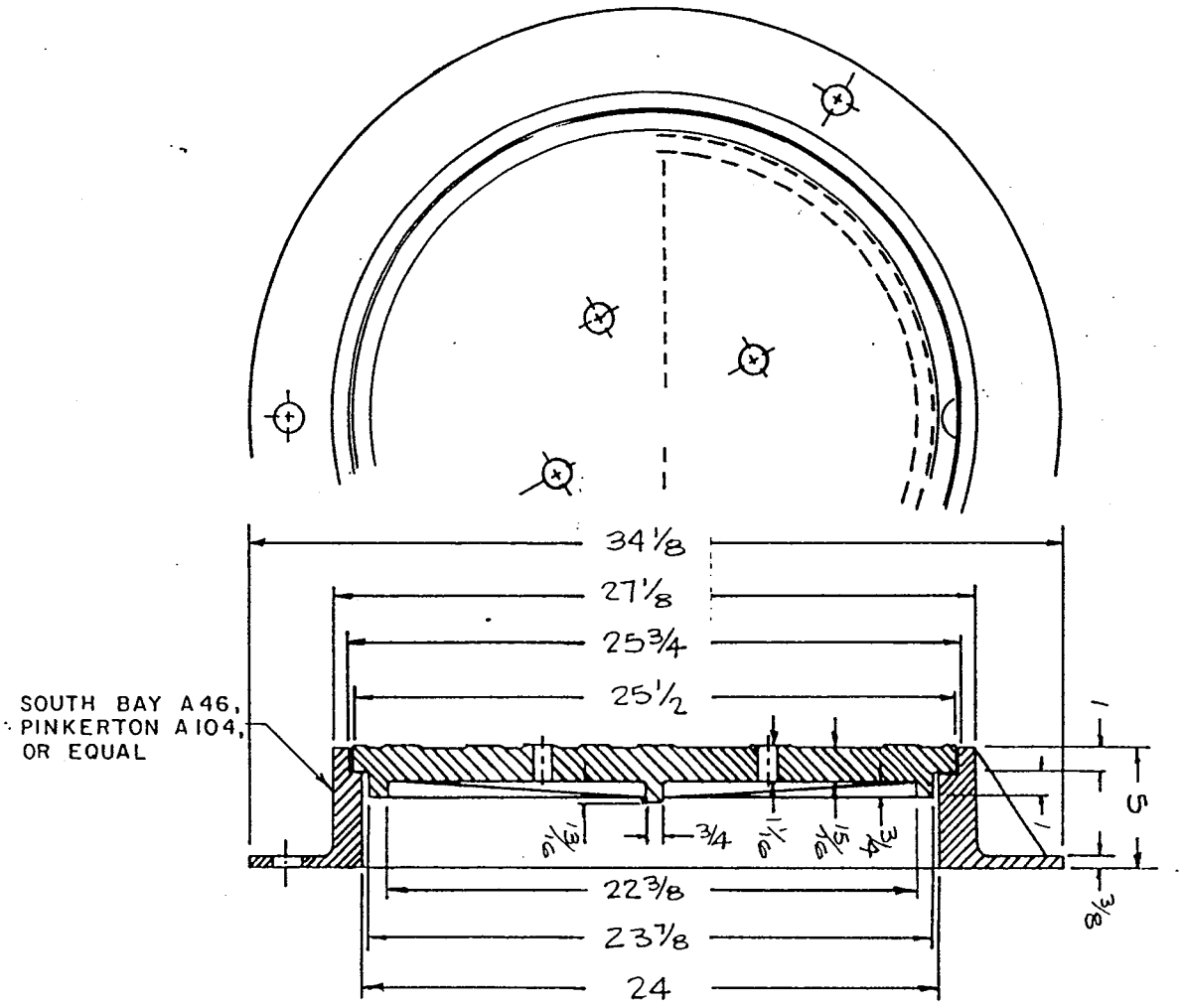
DATE JAN. 1967

SCALE VARIES

CHECKED BY

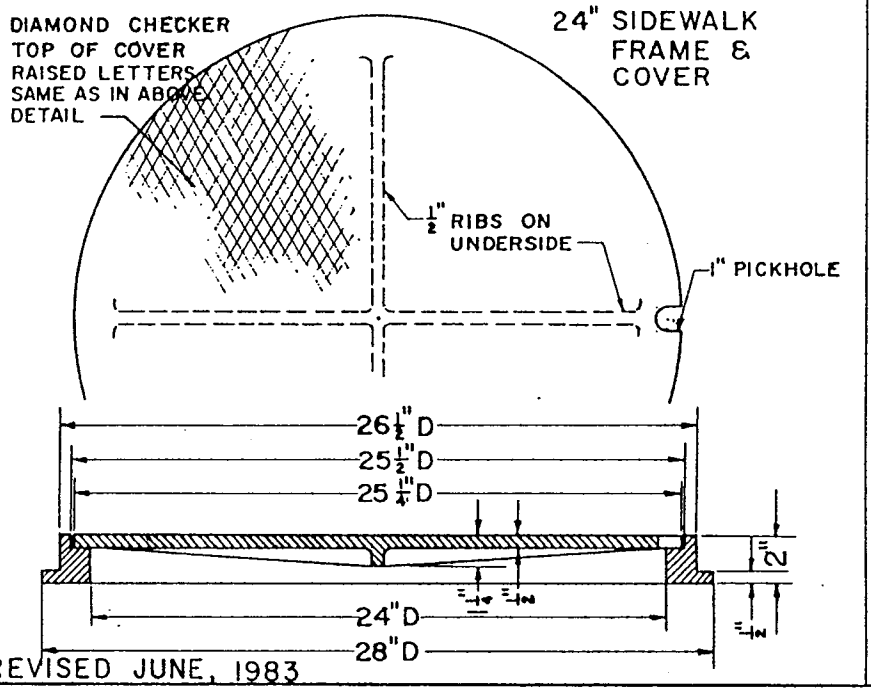
APPROVED

STANDARD NO. S-13

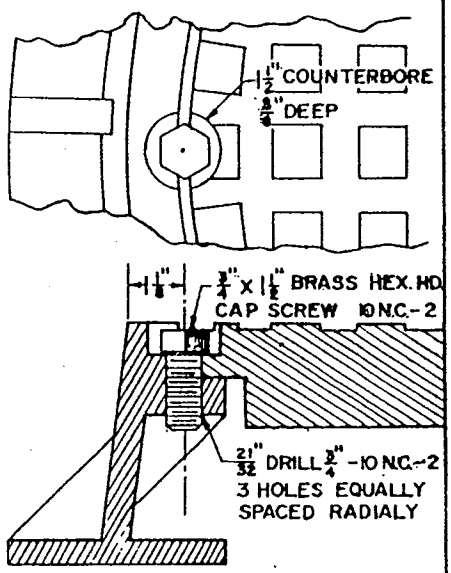


A-104 OR EQUAL

STREET COVER & FRAME



REVISED JUNE, 1983

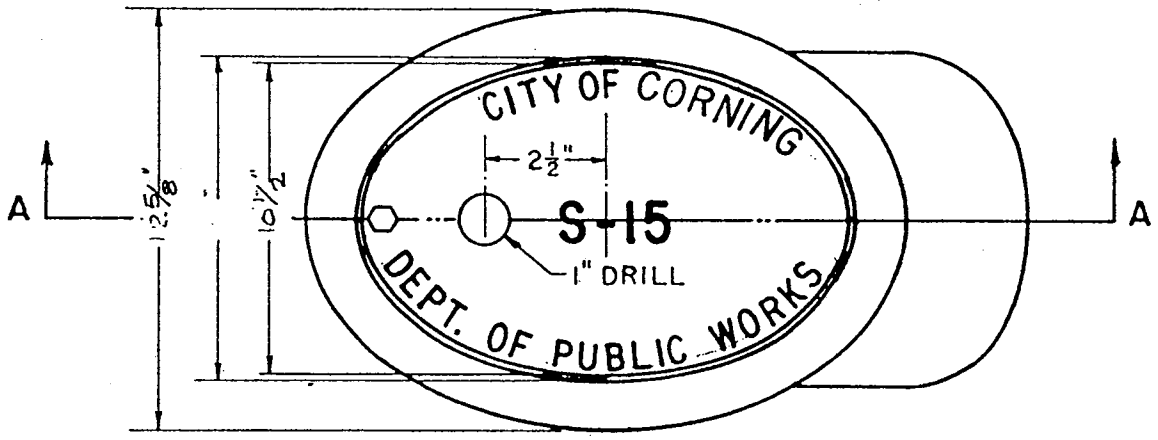


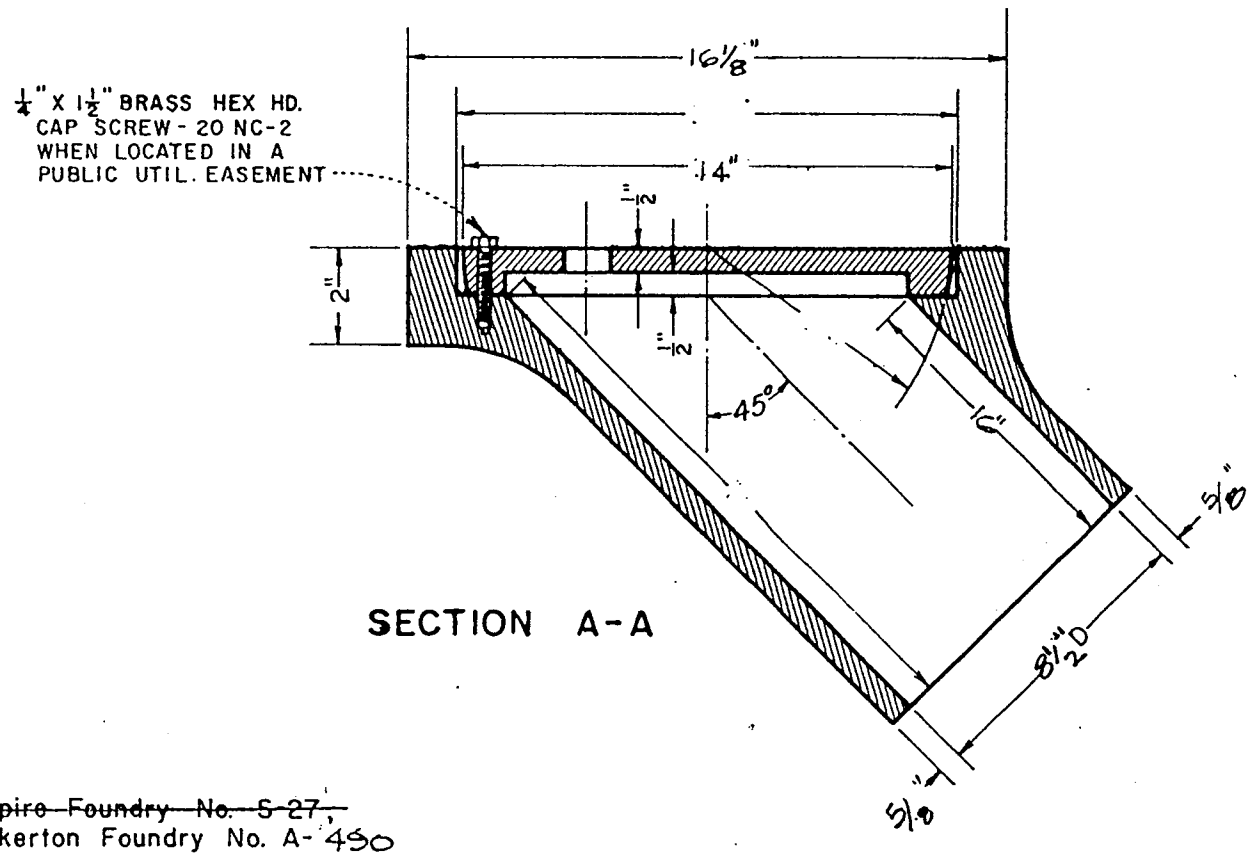
SPECIAL LOCKING COVER

CITY OF CORNING DEPARTMENT OF PUBLIC WORKS

TITLE STANDARD MANHOLE FRAME & COVER DETAILS	DRAWN BY ____ CHECKED BY ____
	DATE JAN. 1967 APPROVED BY ____
	SCALE AS SHOWN

STANDARD NO. S-14





SECTION A-A

~~Empire Foundry No. S-27,~~
Pinkerton Foundry No. A-450
Or Equal.

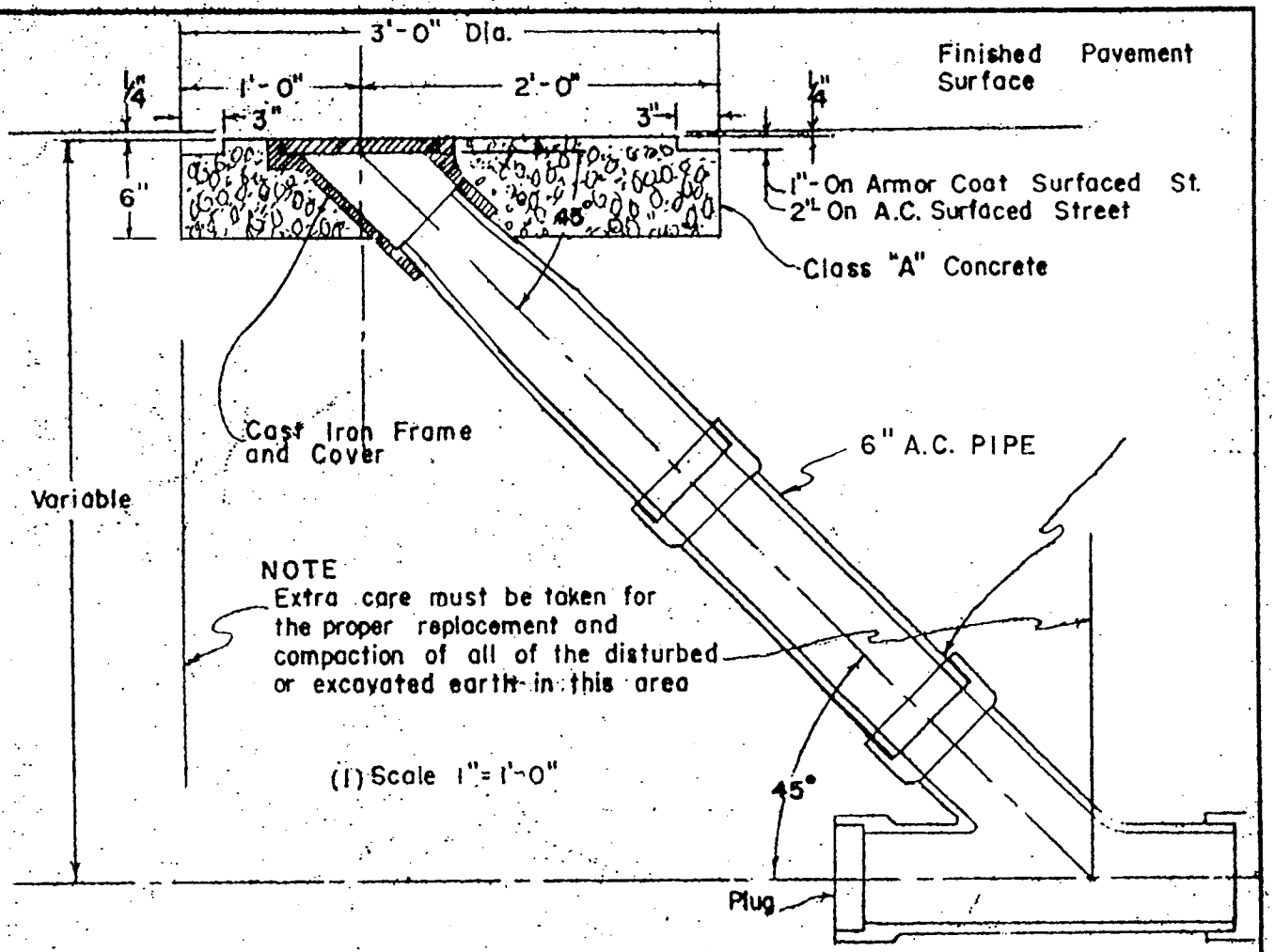
SEE STD. S-13 FOR METHOD OF INSTALLATION & RISER CONSTRUCTION

CITY OF CORNING — DEPARTMENT OF PUBLIC WORKS

TITLE: STANDARD FLUSHING HOLE
C.I. FRAME & COVER

DRAWN BY: _____ CHECKED BY: _____
DATE: JAN. 1967
SCALE: 3" = 1'-0" APPROVED BY: _____

STANDARD NO. S-15



CITY OF CORNING DEPARTMENT OF PUBLIC WORKS

STANDARD FLUSHING HOLE

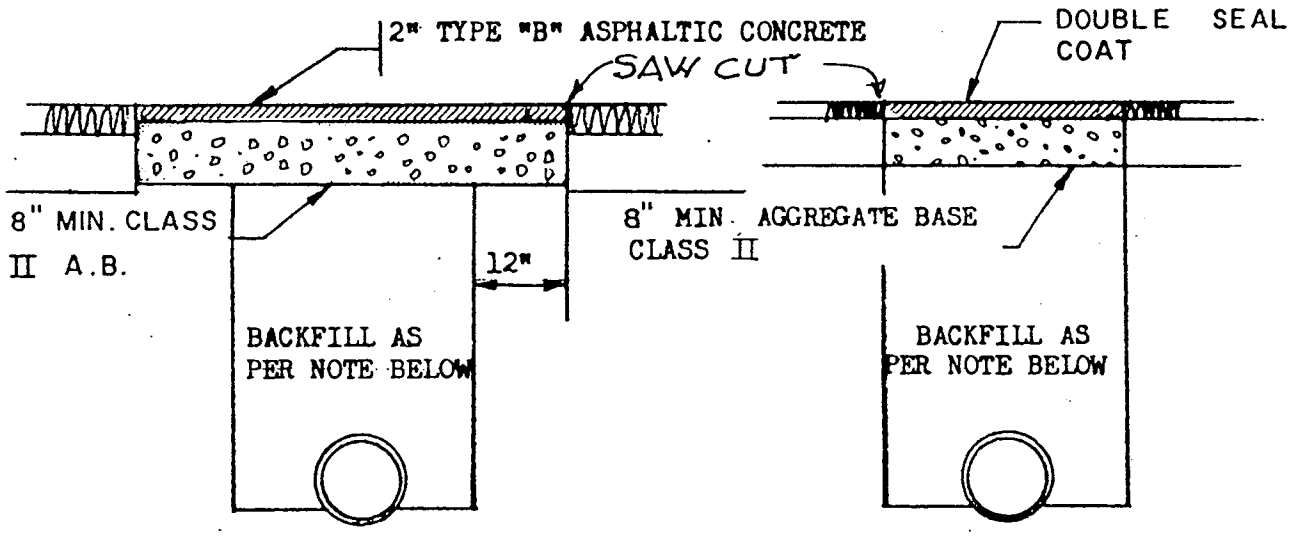
TITLE Riser Construction

DRAWN BY _____ CHECKED BY _____

DATE JAN. 1967

SCALE AS SHOWN APPROVED BY _____

STANDARD NO. S-16

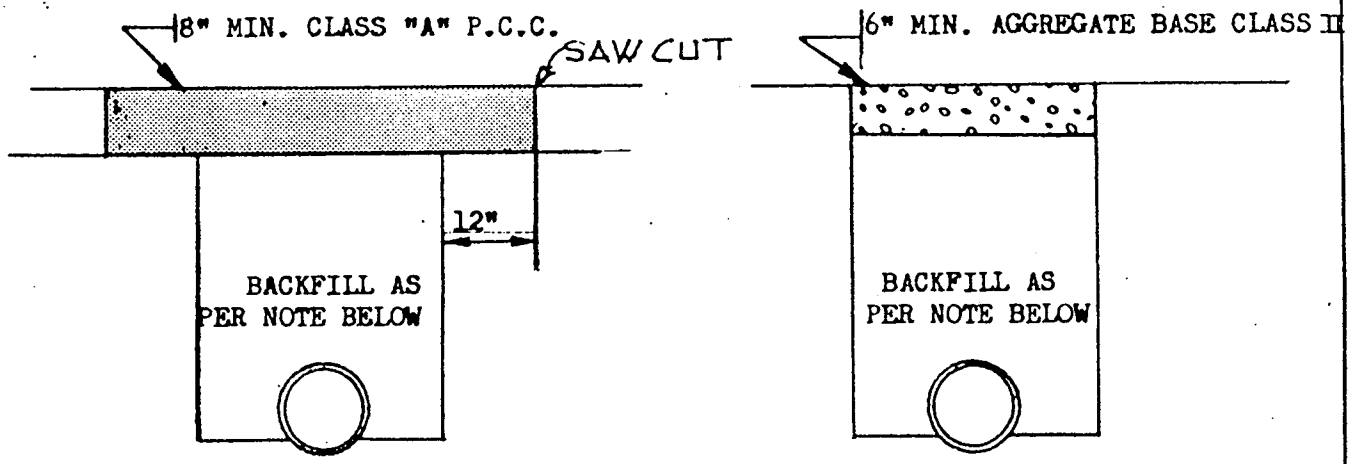


TYPE A

IMPROVED ASPHALTIC CONCRETE OR PLANT MIX CONCRETE

TYPE B

IMPROVED ARMOR COAT OR SEAL COAT STREETS



TYPE C

PORTLAND CEMENT CONCRETE STREETS

TYPE D

UNIMPROVED STREETS, ALLEYS OR EASEMENTS

NOTES: ALL WORK SHOWN ABOVE SHALL CONFORM TO THE APPLICABLE SECTIONS OF THE STANDARD SPECIFICATIONS.

ALL EXCAVATIONS WITHIN PUBLIC RIGHT OF WAY SHALL BE BACKFILLED IN ACCORDANCE WITH SECTION ENTITLED "TRENCH BACKFILL", CITY OF CORNING STANDARD SPECIFICATIONS, OR SEC. 19-3 OF THE STD. SPECICATIONS.

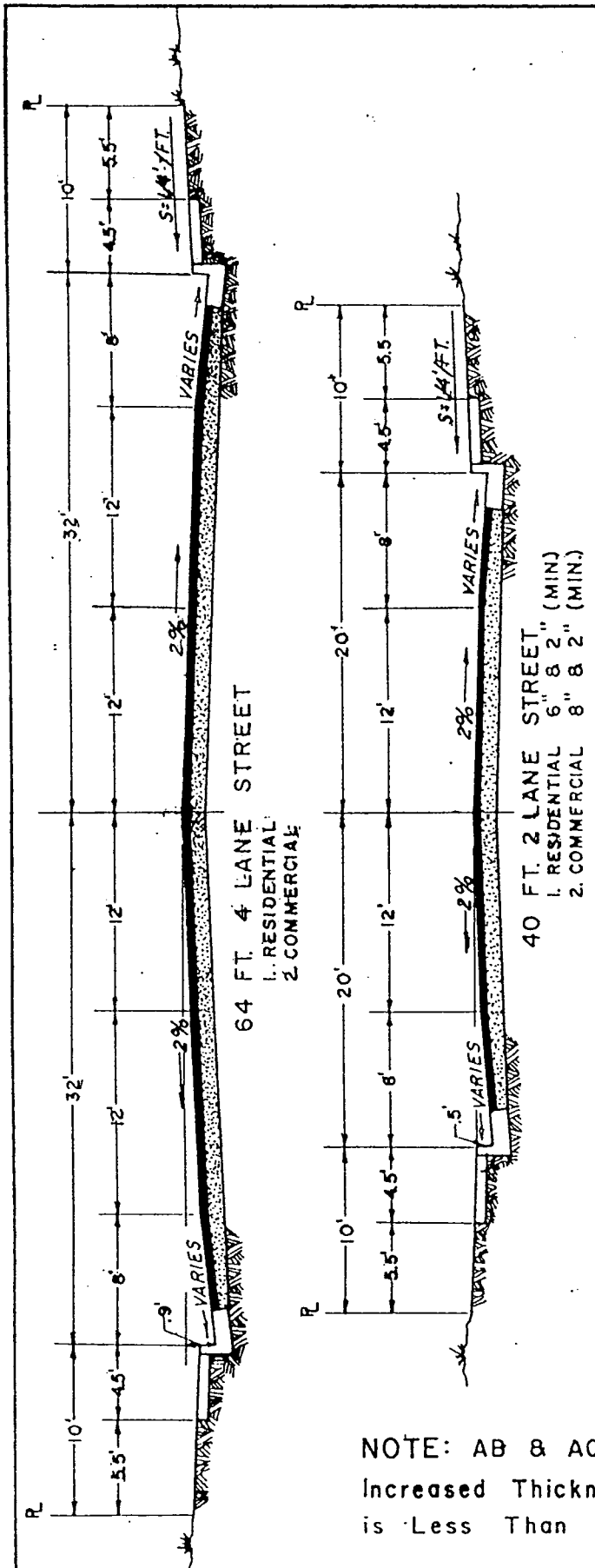
BACKFILL MATERIAL SHALL BE 3/4", CL.2, AGG. BASE

AREA ADJACENT TO THE TRENCH SHALL BE LEFT IN A CONDITION EQUAL TO OR BETTER THAN THAT EXISTING PRIOR TO CONSTRUCTION.

REVISED MAR. 2002

CITY OF CORNING	DEPARTMENT OF PUBLIC WORKS	
TITLE: TYPICAL DETAILS OF PAVEMENT REPLACEMENT	DRAWN BY _____ CHECKED BY DATE _____ SCALE 1/2"=1'-0" APPROVE Rev. 4-75	

STANDARD NO. S - 17

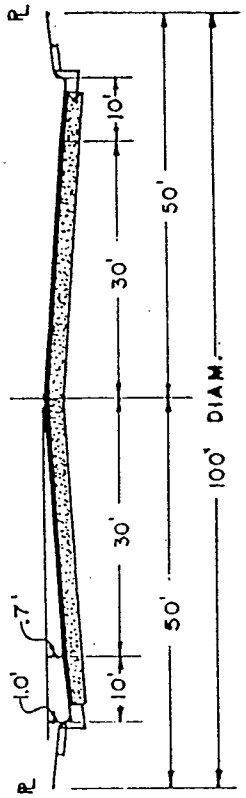


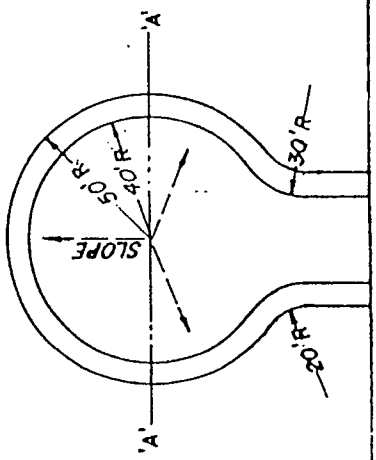
Note:

Structural Section, (minimum):

Residential: 8" A.B., Class 2 & 2" Asphalt Concrete, Type 'B'.
Collector: 8" A.B., Class 2 & 2" Asphalt Concrete, Type 'B'.
Commercial: 12" A.B., Class 2 & 3" Asphalt Concrete, Type 'B'.

CUL-DE-SAC
DIAMETRICAL SECTION 'A-A'





NOTE: AB & AC Thickness given are Minimum. Increased Thickness is Required if "R" Value is Less Than 25.

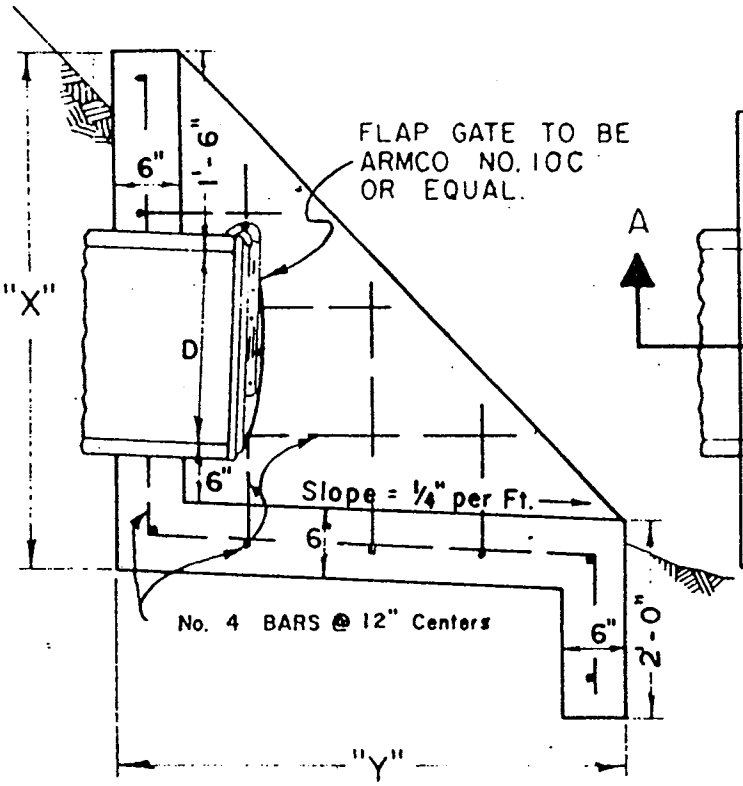
REVISED JUNE, 1983

CITY OF CORNING DEPARTMENT OF PUBLIC WORKS

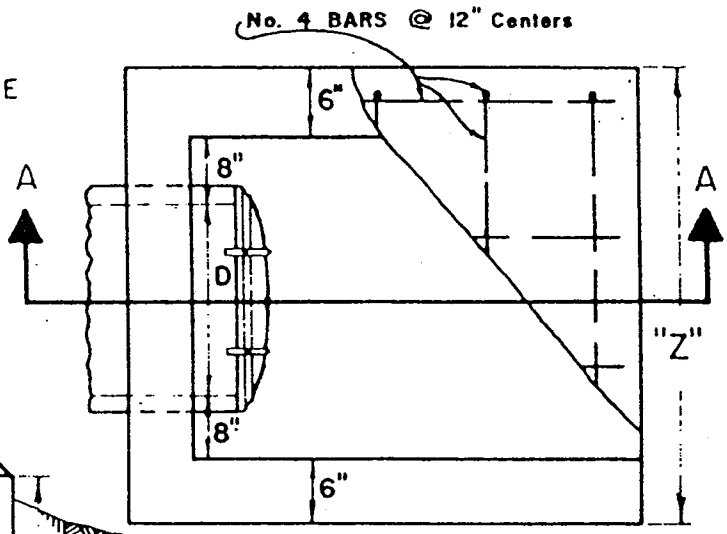
TITLE: TYPICAL ROADWAY CROSS-SECTIONS
PAVEMENT SLOPE DETAILS

DRAWN BY: CHECKED BY:
DATE:
SCALE: NONE APPROVED BY
Rev. 4-75

STANDARD NO. S-18



SECTION A-A



PLAN VIEW

PIPE DIAMETER	HEADWALL WIDTH	VARIABLE DIMENSIONS					
		SLOPE = 1 : 1		SLOPE = 1.5 : 1		SLOPE = 2 : 1	
D	"Z"	"X"	"Y"	"X"	"Y"	"X"	"Y"
	D + 2'-4"	D + 2'-6	D + 2'-6"	D + 2'-6"	1.5(D + 2'-6')	D + 2	2(D+2'-6")
8"	3'-0"	3'-2"	3'-2"	3'-2"	4'-9"	3'-2"	6'-4"
10"	3'-2"	3'-4"	3'-4"	3'-4"	5'-0"	3'-4"	6'-8"
12"	3'-4"	3'-6"	3'-6"	3'-6"	5'-3"	3'-6"	7'-0"
15"	3'-7"	3'-9"	3'-9"	3'-9"	5'-7½"	3'-9"	7'-6"
18"	3'-10"	4'-0"	4'-0"	4'-0"	6'-0"	4'-0"	8'-0"
21"	4'-1"	4'-3"	4'-3"	4'-3"	6'-4½"	4'-3"	8'-6"
24"	4'-4"	4'-6"	4'-6"	4'-6"	6'-9"	4'-6"	9'-0"
27"	4'-7"	4'-9"	4'-9"	4'-9"	7'-1½"	4'-9"	9'-6"
30"	4'-10"	5'-0"	5'-0"	5'-0"	7'-6"	5'-0"	10'-0"

CITY OF CORNING DEPARTMENT OF PUBLIC WORKS

TITLE STANDARD HEADWALL STRUCTURAL DETAILS

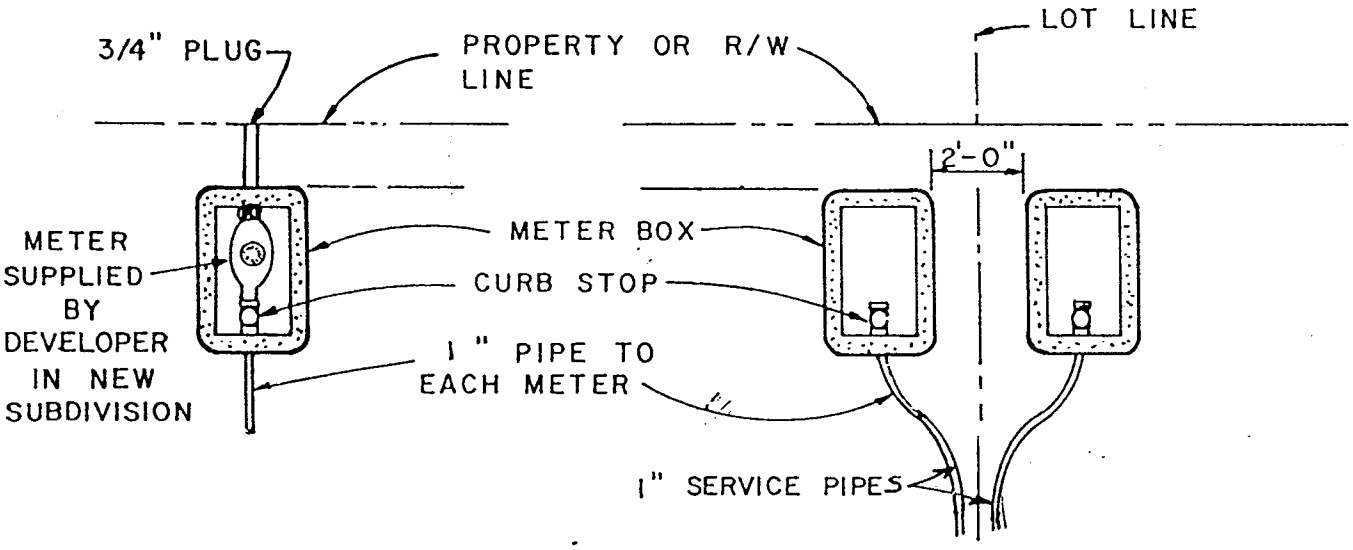
DRAWN BY ____ CHECKED BY ____

DATE JAN. 1967 APPROVED BY ____

SCALE None

STANDARD NO: S - 19

METER BOX LIDS SHALL BE SUITABLE FOR TOUCH READ CAPABILITIES.

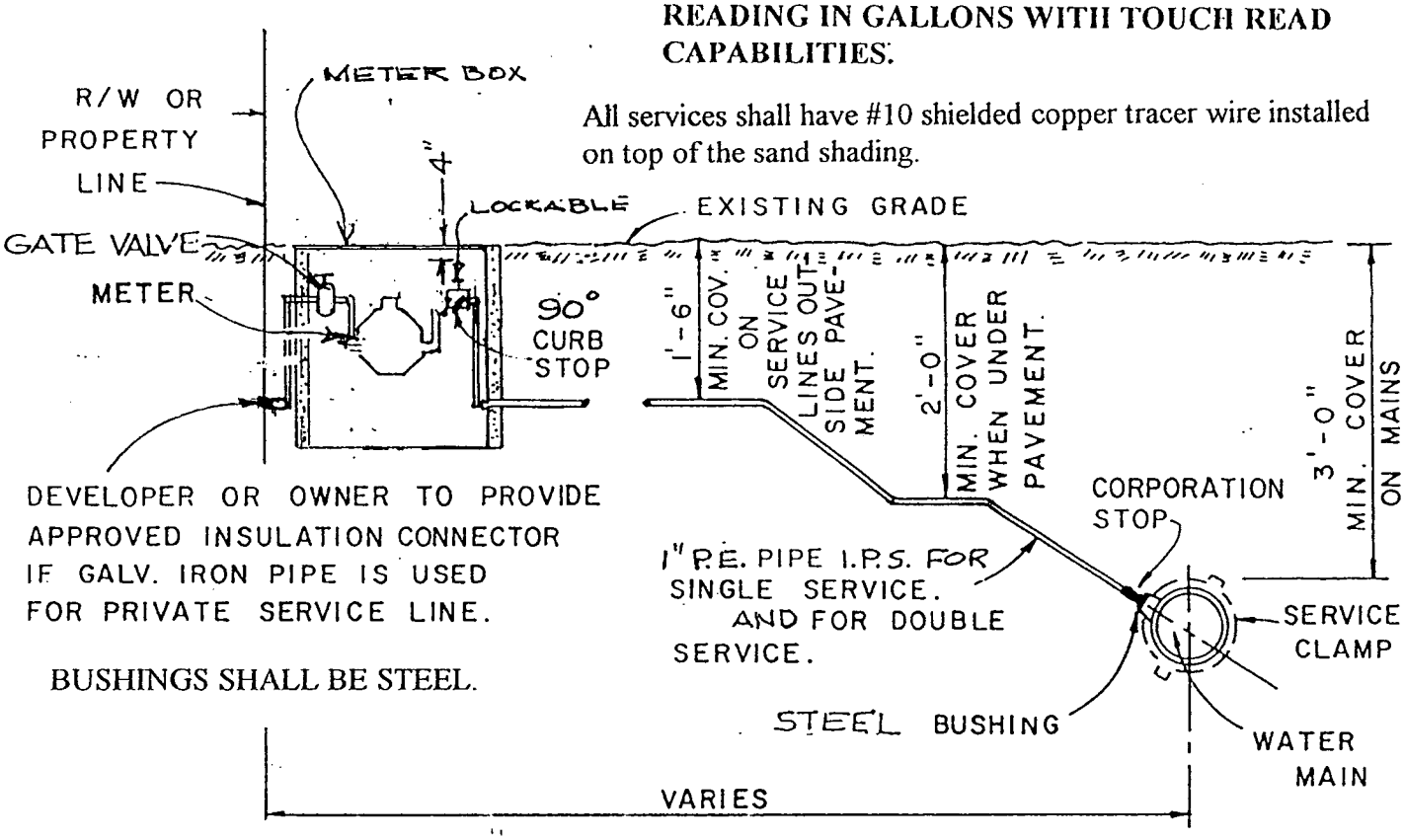


PLAN
SINGLE SERVICE

PLAN
DOUBLE SERVICE

ALL METERS SHALL BE "SENSUS", MODEL S-2, READING IN GALLONS WITH TOUCH READ CAPABILITIES.

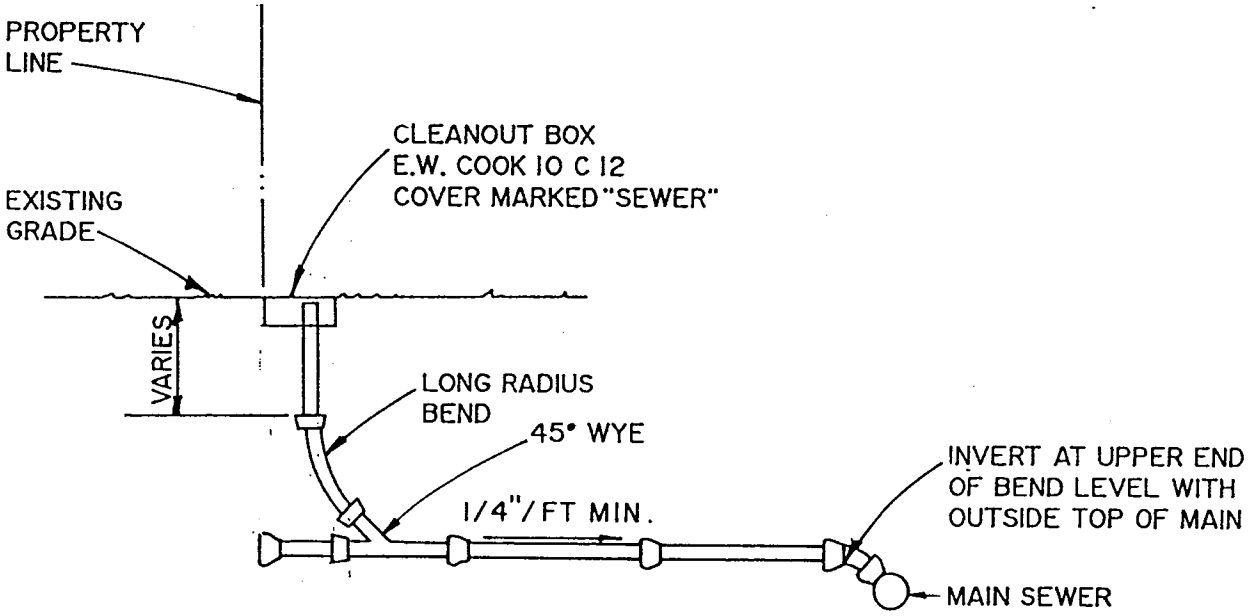
All services shall have #10 shielded copper tracer wire installed on top of the sand shading.



ELEVATION
TYPICAL WATER SERVICE

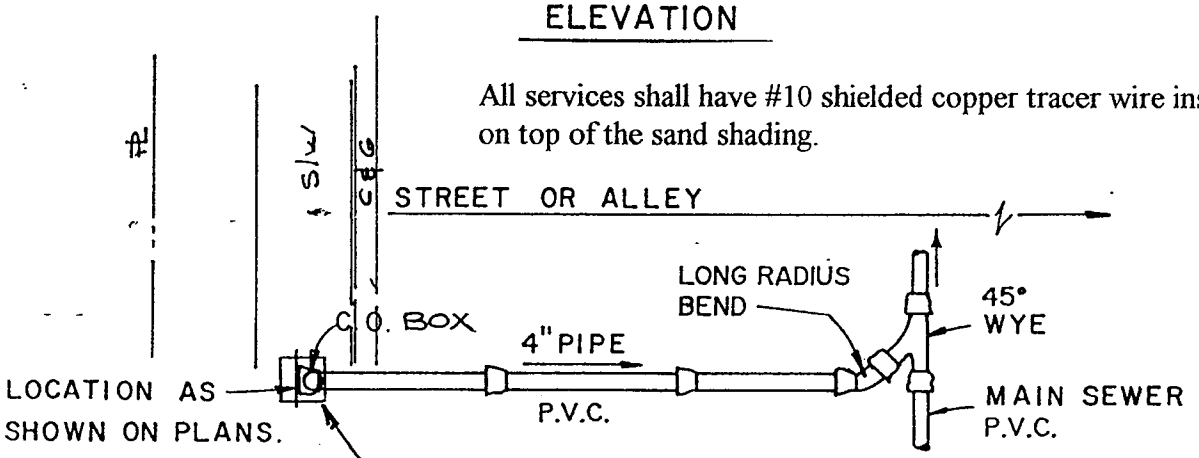
CITY OF CORNING	DEPARTMENT OF PUBLIC WORKS	
STANDARD WATER SERVICE DETAILS	DRAWN BY CBV DATE MARCH 1972 SCALE	CHECKED BY EA APPROVED BY

STANDARD NO 20



ELEVATION

All services shall have #10 shielded copper tracer wire installed on top of the sand shading.



SET CLEANOUT IN CENTER OF SIDEWALK IN NEW DEVELOPMENT, OR AT PROPERTY LINE IN ALLEY INSTALLATIONS.

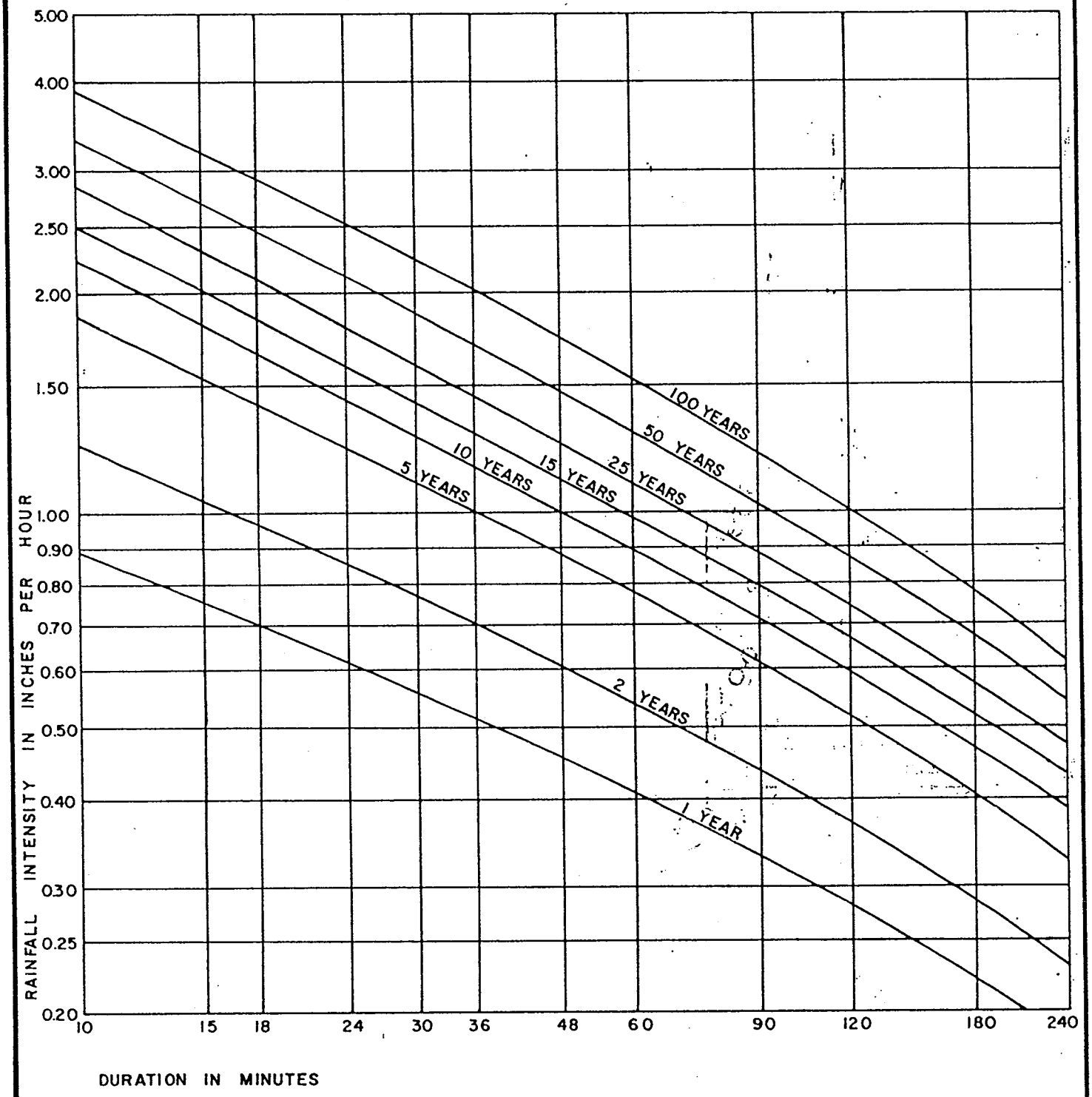
PLAN

TYPICAL LATERAL SEWER DETAILS

CITY OF CORNING	DEPARTMENT OF PUBLIC WORKS	
STANDARD SEWER SERVICE DETAILS	DRAWN BY CBV DATE MARCH 1975 SCALE	CHECKED BY EA APPROVED BY

STANDARD NO 21

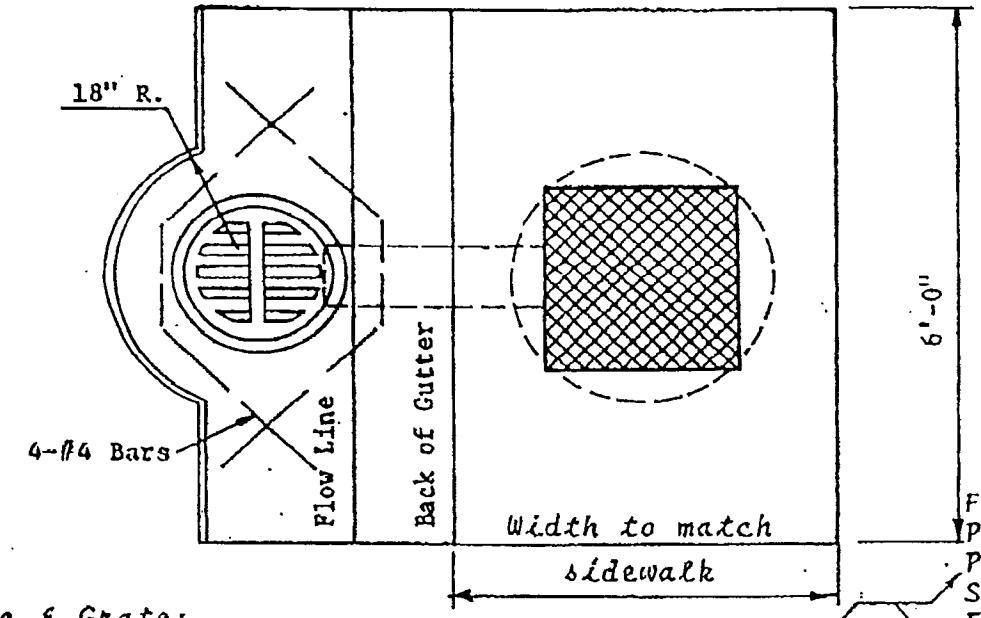
CITY OF CORNING
RAINFALL INTENSITY VS. DURATION



CITY OF CORNING	DEPARTMENT OF PUBLIC WORKS	
TITLE RAINFALL INTENSITY VS. DURATION ◇ Design Chart	DRAWN BY CV DATE MARCH 1975 SCALE	CHECKED BY EA APPROVED BY

STANDARD NO. 22

PLAN

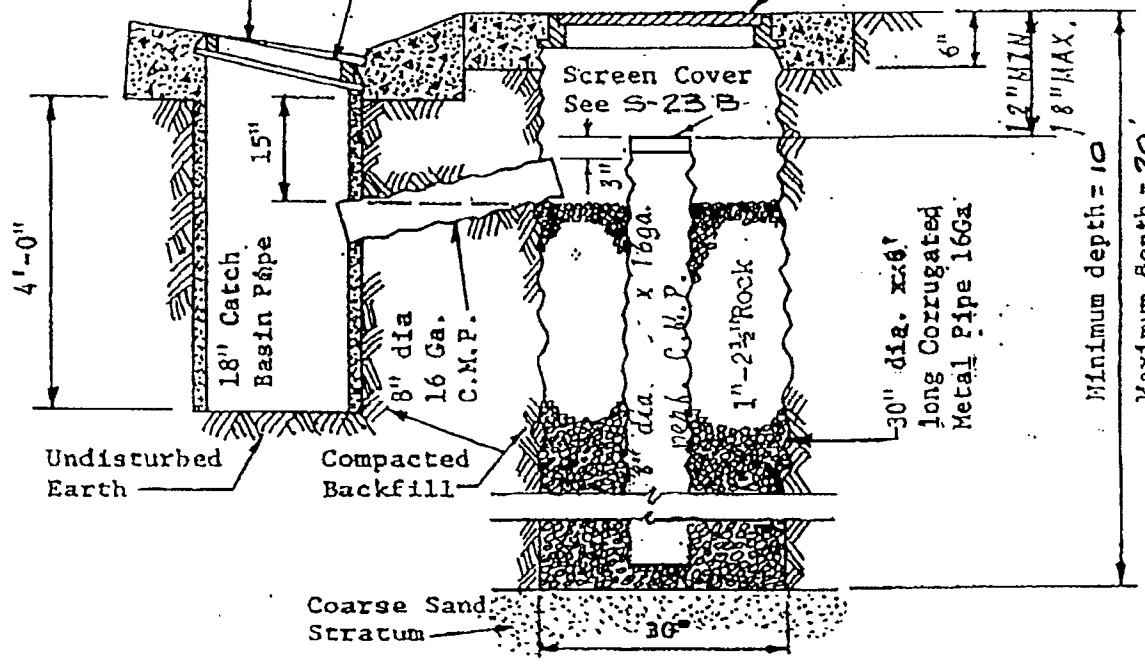


Frame & Cover:
Pinkerton A-588
Phoenix P-1090
South Bay
Foundry-SBF 190

Frame & Grate:
Pinkerton A-109
w/ "Bicycle-Proof"
Cover, as shown above

Top of Grate to
be 1½" below
gutter

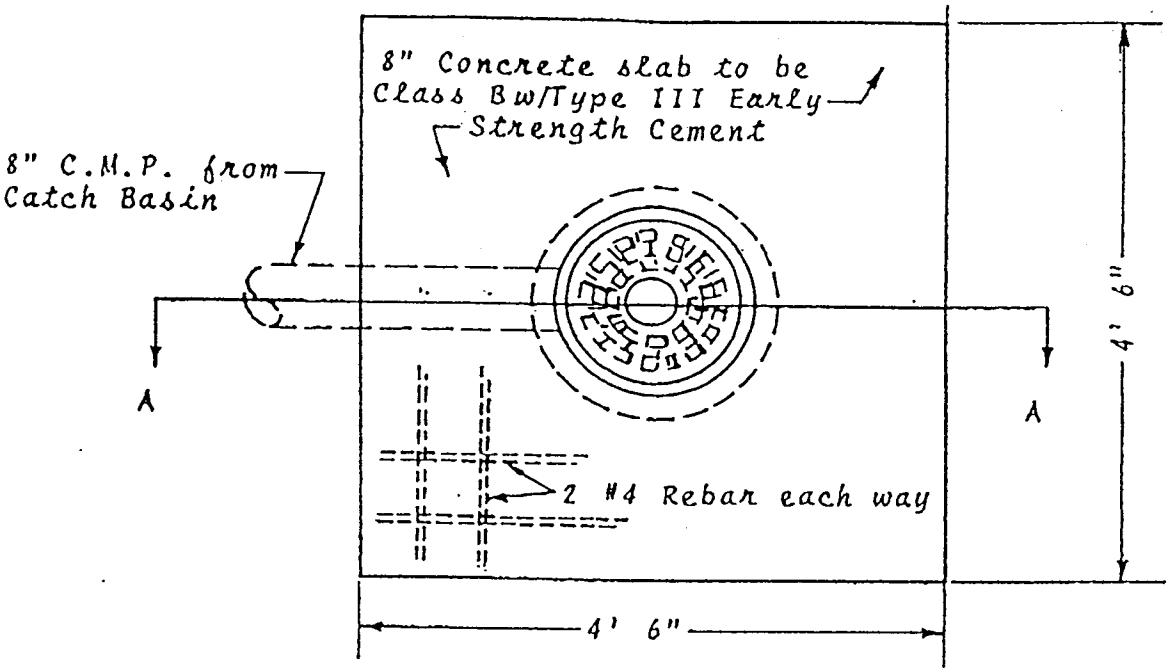
For Street Use:
See S-23A

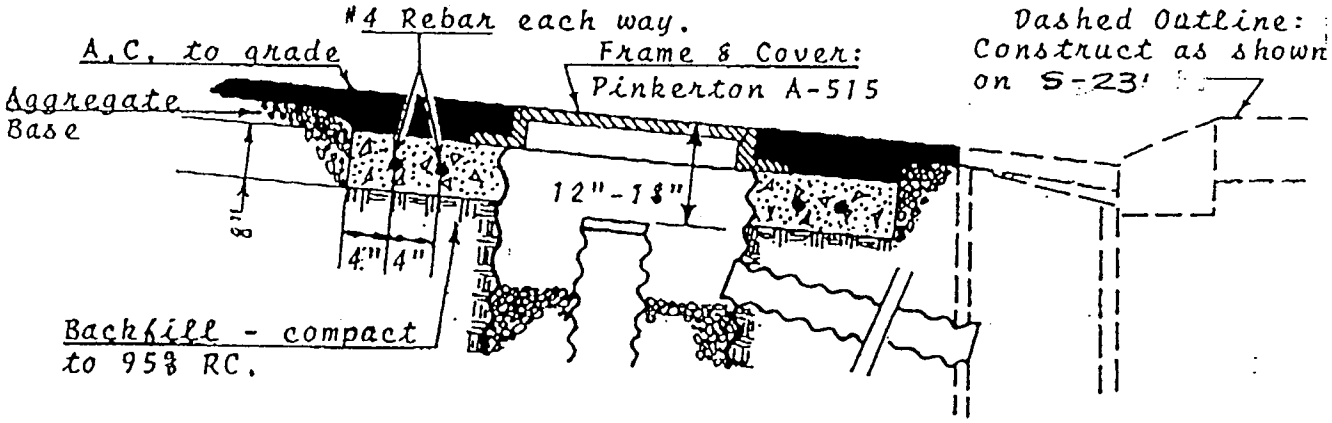


SECTION

CITY OF CORNING DEPARTMENT OF PUBLIC WORKS		
DRAWN BY _____ DATE Mar. 2002 CHECKED _____ SCALE _____ APPROVED _____	**DRY WELL** **NON-TRAFFIC AREA** **(Design per City of Modesto)**	STD. No. S-23

PLAN





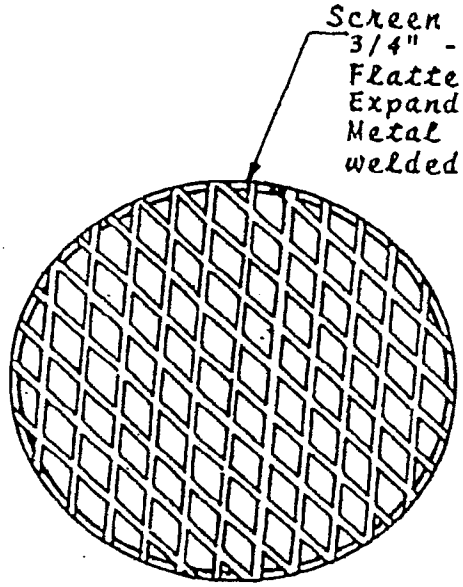
SECTION AA

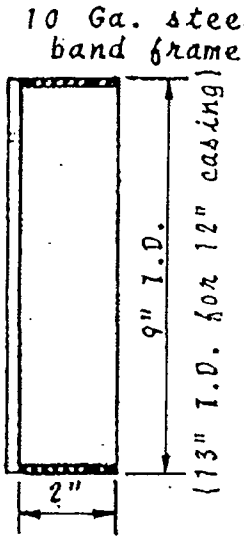
NOTES:

1. A manhole cone, with an appropriate footing, may be substituted for the above with the approval of the Engineer. Phoenix P-1090 or South Bay Foundry - SBF 1900 may be used with the manhole cone.

1

CITY OF CORNING	DEPARTMENT OF PUBLIC WORKS	
DRAWN BY ____ DATE Mar. 2002 CHECKED ____ SCALE ____ APPROVED ____	**DRY WELL** **VEHICULAR TRAFFIC AREA** **(Design per City of Modesto)**	STD. No. S-23 A

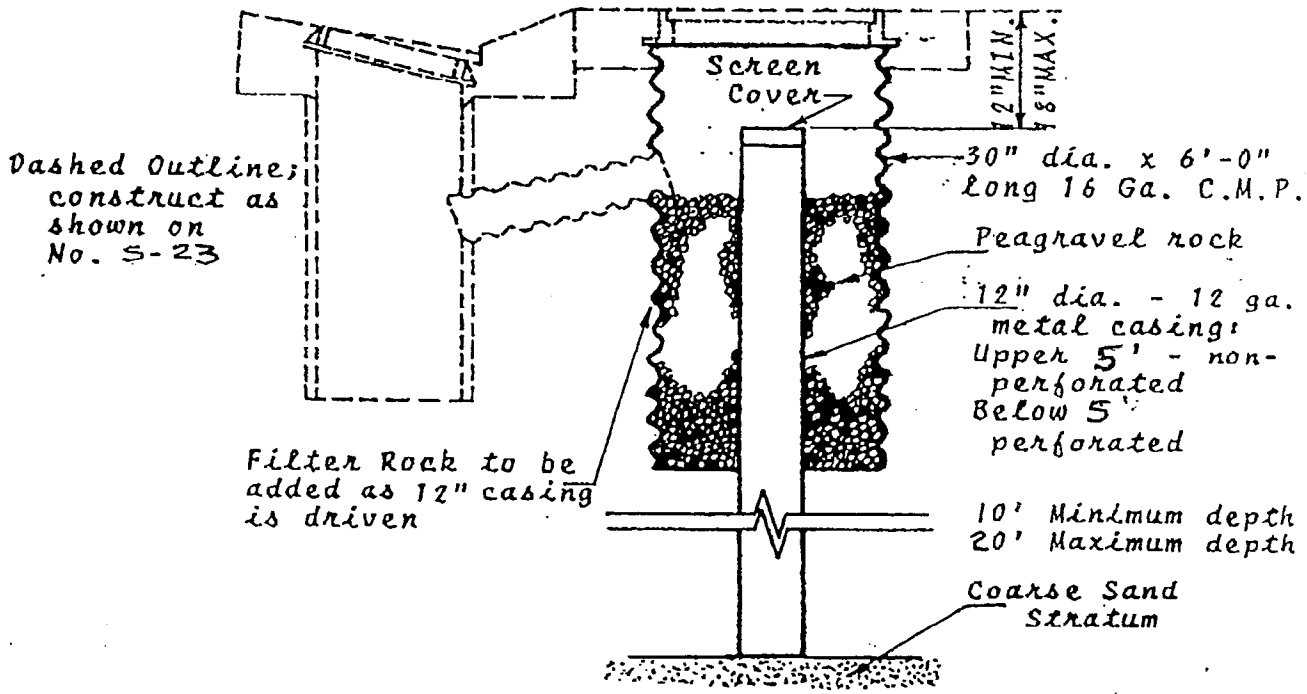




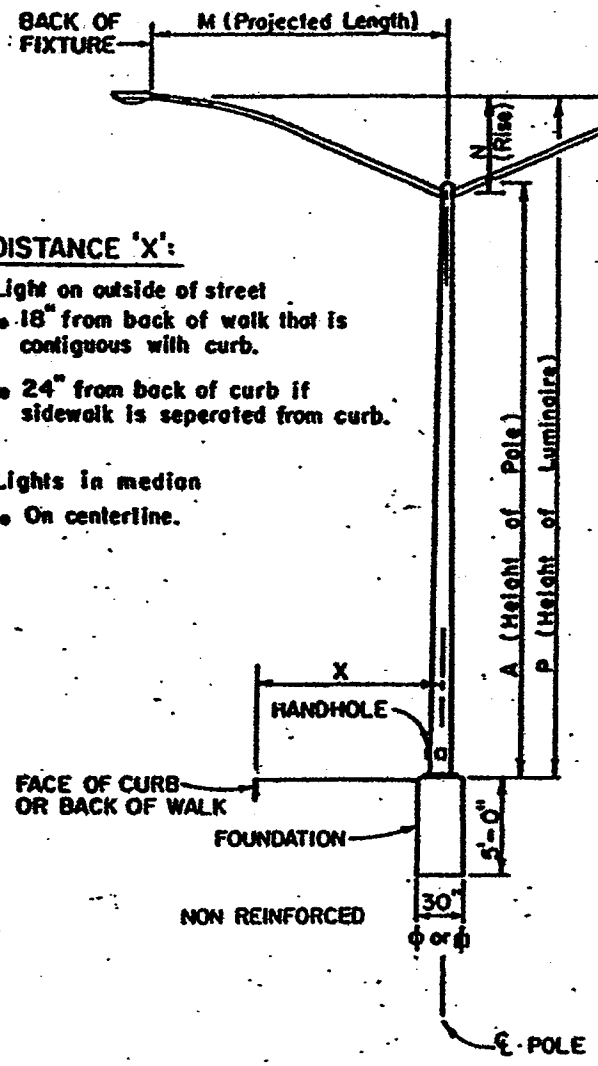
NOTES:

1. Unit to be Galvanized after manufacture.

SCREEN COVER



CITY OF CORNING DEPARTMENT OF PUBLIC WORKS		
DRAWN BY _____ DATE Mar. 2002 CHECKED _____ SCALE _____ APPROVED _____	**DRY WELL** **SCREEN COVER** **(Design per City of Modesto)**	STD. No. S-23 B



DISTANCE 'X':

Light on outside of street

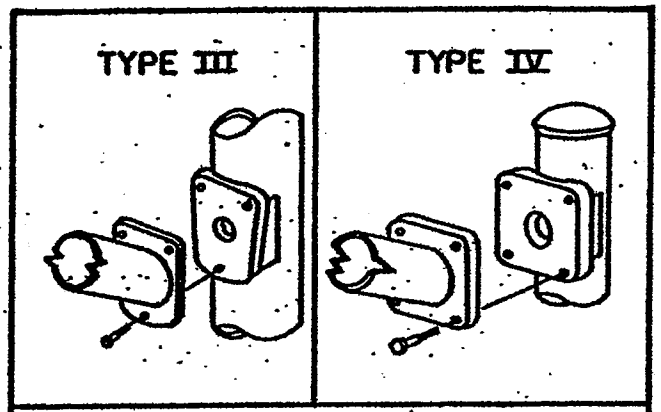
- 18" from back of walk that is contiguous with curb.
- 24" from back of curb if sidewalk is seperated from curb.

Lights in median

- On centerline.

POLE AND MAST ARM SHALL BE GALVANIZED STEEL

POLE ELEVATION



MAST ARM MOUNTINGS

STREET WIDTH feet	M* feet	A* feet	N* feet	WATTAGE	MAXIUM SPACING (see note 11, sheet 11) feet
20 - 32	6	30	1.5	70	150
36 - 40	6	30	1.5	100	150
44	6	30	1.5	150	110
60 - 68	12	30	2.5	200	100
74 - 80 LIGHTS IN MEDIAN	12	30	2.5	150	150

* MINOR VARIATIONS–ON APPROVAL BY DIRECTOR OF PUBLIC WORKS

STANDARD PLAN

CITY OF CORNING

DRAWN BY: City of Chico DATE: Oct., 1998

CHECKED BY: EA SCALE: None

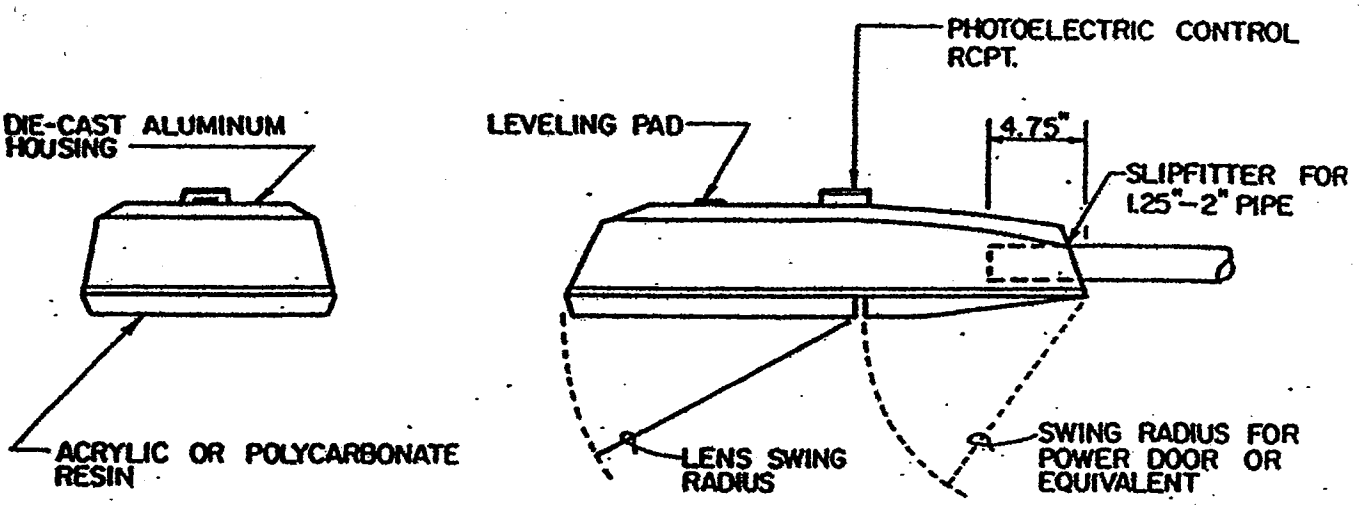
APPROVED: _____
DIRECTOR OF PUBLIC WORKS

STREET LIGHTS

POLE AND MAST ARM DETAIL

NO. SL-1

SHEET 1 OF 11



TYPICAL

ALL LUMINAIRES WILL BE ROADWAY TYPE (COBRA HEAD). ALL LUMINAIRES WILL BE INSTALLED WITH OPERATIONAL PHOTOCELL. PHOTOCELL WILL BE INSTALLED WITH SENSOR FACING NORTH. REFRACTOR SHALL HAVE I.E.S. TYPE III LIGHT DISTRIBUTION PATTERN EXCEPT WHERE DIRECTED BY THE DIRECTOR OF PUBLIC WORKS. ALL LUMINAIRES SHALL BE HIGH PRESSURE SODIUM.

LUMINAIRES SHALL OPERATE AT 120 VOLTS UNLESS OTHERWISE APPROVED BY THE D.P.W.

LUMINAIRES SHALL BE CUTOFF TYPE UNLESS OTHERWISE APPROVED BY D.P.W.

POLES AND LUMINAIRES SHALL BE FROM THIS LIST OF APPROVED MATERIALS.

POLES	LUMINAIRES
AMERON N SERIES	GENERAL ELECTRIC M2AC XX S 1 N 2 (G or A) MC3 I G = 200 watts P or A = others
ANY POLE OF CALTRANS TYPE 15	
	ANY MEETING CALTRANS SPECS FOR H.P.S. TYPE III

CITY OF CORNING

DRAWN BY: City of Chico DATE: Oct., 1998

CHECKED BY: EA SCALE: None

APPROVED: _____

DIRECTOR OF PUBLIC WORKS

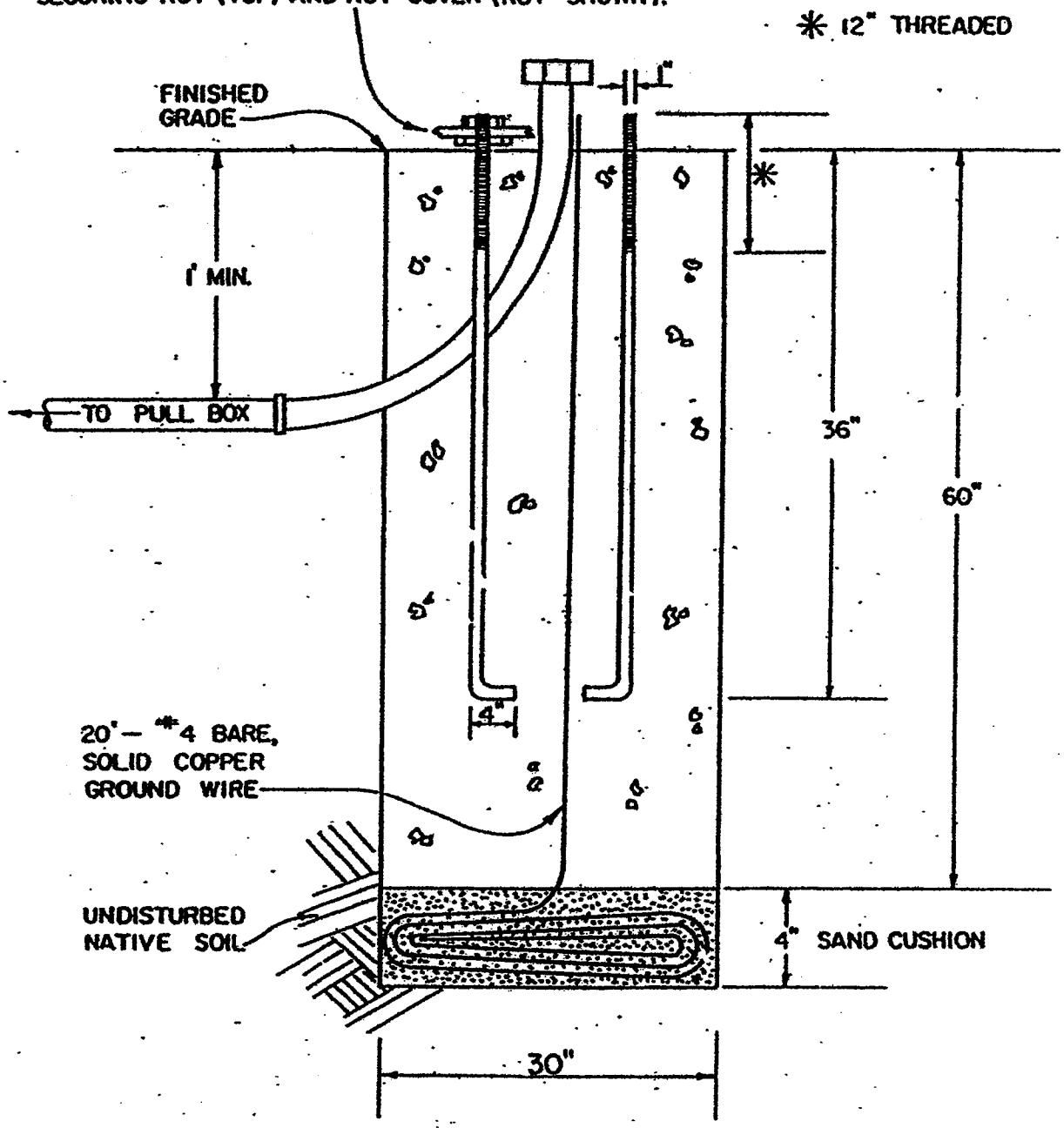
STANDARD PLAN

STREET LIGHTS

LUMINAIRE DETAIL

NO. SL-1A

SHEET 2 OF 11



NOTES:

1) PRECAST FOUNDATIONS
   a) may be used.
   b) must be backfilled with a one-sack of cement per cubic yard cement sand slurry.
2) BOLT-COVER SHALL BE PROVIDED
3) WITH PRECAST FOUNDATION, THE POLE MAY BE GROUNDED VIA A BARE NO. 4 SOLID COPPER WIRE CLAMPED TO A 1/2 INCH x 10 FOOT GROUNDING ROD INSTALLED IN PULL BOX. (SEE PULL BOX DETAIL)
4) INSTALLATION SHALL INCLUDE SECURING NUTS, LEVELING NUTS, WASHERS, AND NUT COVERS.

CITY OF CORNING

DRAWN BY: City of Chico DATE: Oct., 1998

CHECKED BY: EA SCALE: None

APPROVED: _____

DIRECTOR OF PUBLIC WORKS

STANDARD PLAN

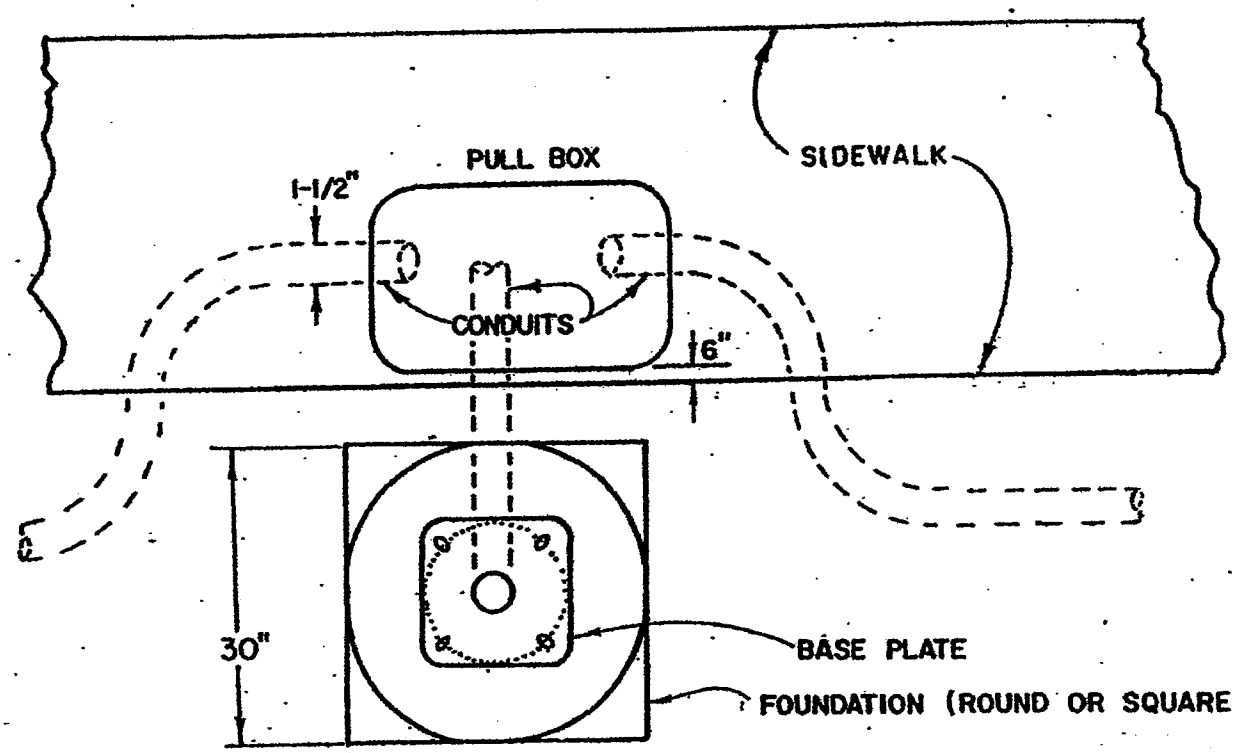
STREET LIGHTS

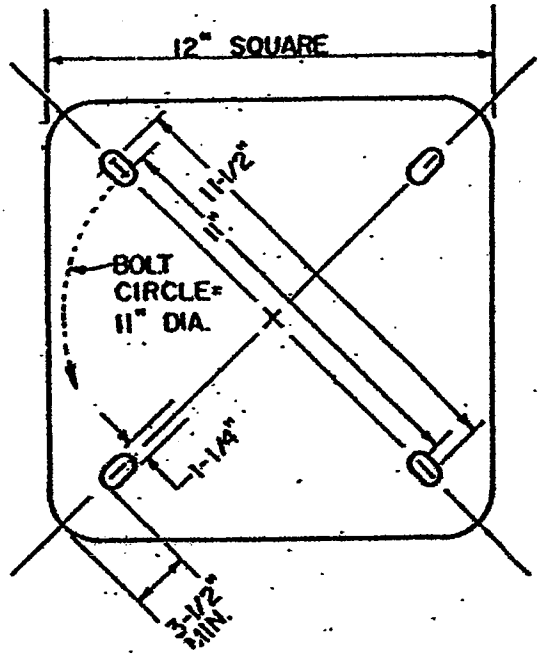
POLE FOUNDATION DETAIL

NO. SL-16

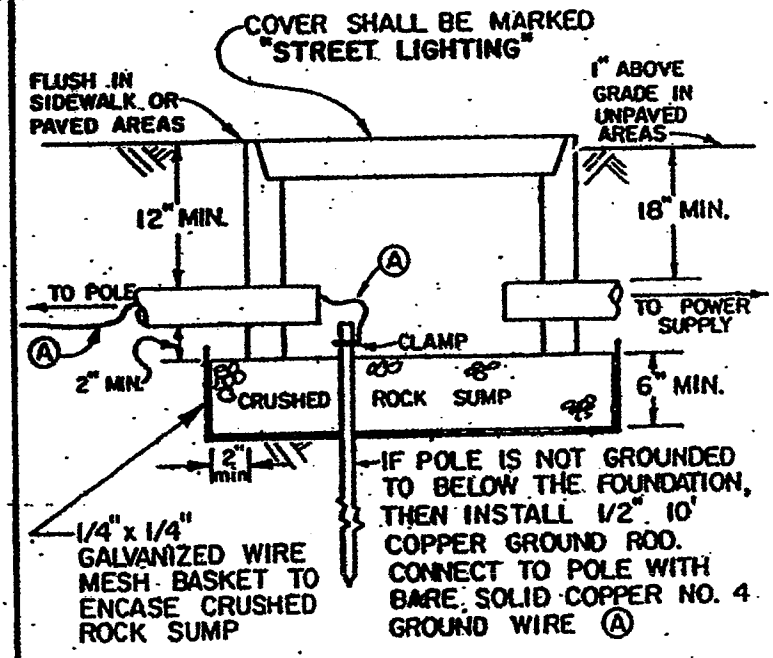
SHEET 3 OF 11

PLAN VIEW
N.T.S.





POLE BASE
N.T.S.



PULL BOX
N.T.S.

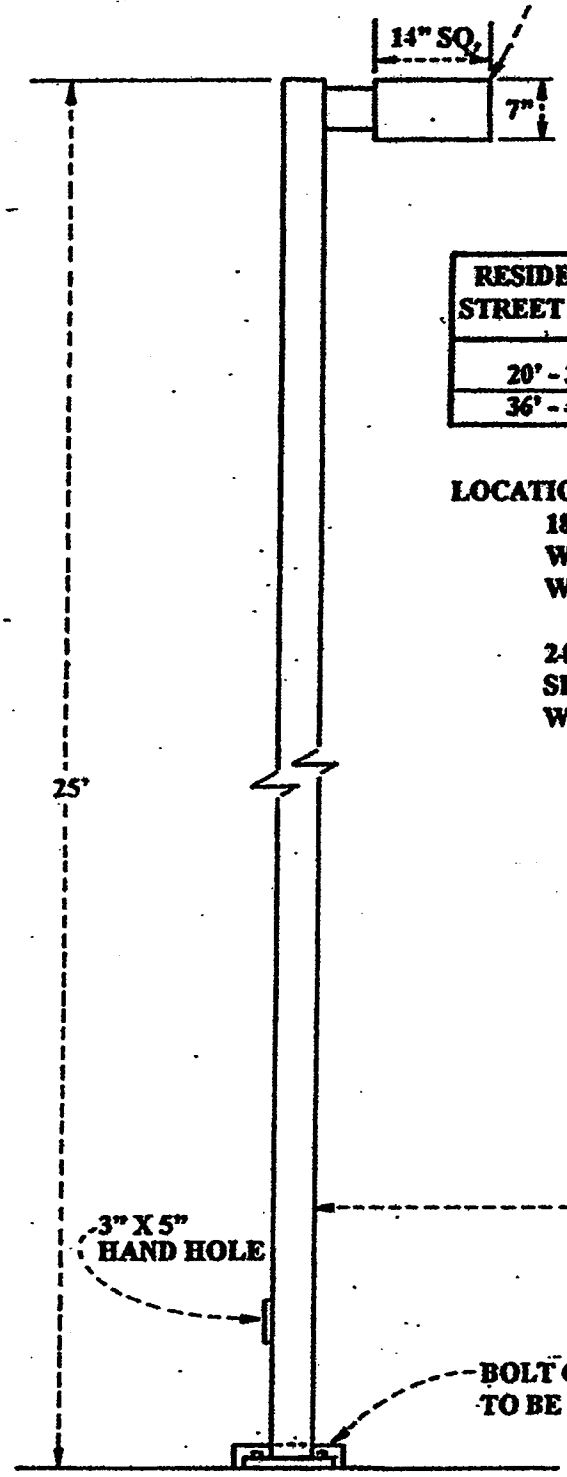
STANDARD PLAN

CITY OF CORNING
DRAWN BY: City of Chico DATE: Oct. 1998
CHECKED BY: EA SCALE: None

APPROVED: _____
DIRECTOR OF PUBLIC WORKS

STREET LIGHTS
POLE BASE AND PULL BOX DETAIL

NO. SL-1C
SHEET 4 OF 11



LUMINAIRE: GARDCO TYPE EH-14
DISTRIBUTION: TYPE III
LENS: POLYCARBON
FINISH: CODE BRA = BRONZE ANODIZED
LUMINAIRES SHALL BE INSTALLED WITH OPERATIONAL PHOTOCELL, AND INSTALLED WITH PHOTOCELL SENSOR FACING NORTH.

RESIDENTIAL STREET WIDTH	SPACING	WATTAGE
20' - 32'	150'	70W HPS
36' - 40'	200'	100W HPS

LOCATION:

18" FROM BACK OF SIDEWALK, WHERE SIDEWALK IS CONTIGUOUS WITH CURB AND GUTTER.

24" FROM BACK OF CURB, WHERE SIDEWALK IS NOT CONTIGUOUS WITH CURB AND GUTTER.

POLE: VALMONT DS 230-500L 300-PC
5" SQ. O.D. X 25' LONG
BRONZE ANODIZED

BOLT COVER
TO BE PROVIDED

STANDARD PLAN

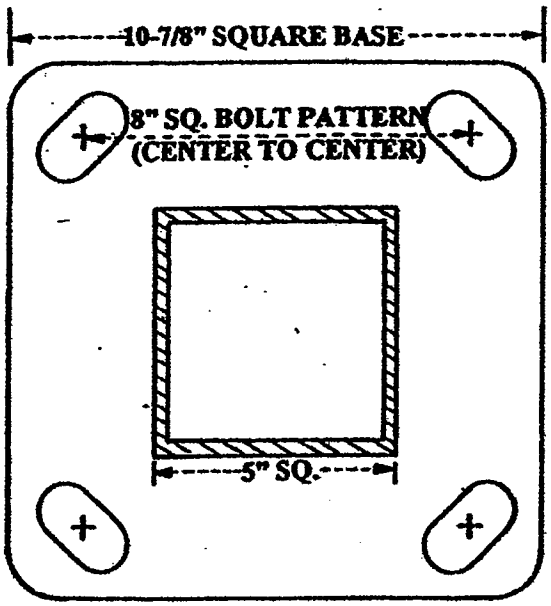
CITY OF CORNING
DRAWN BY: City of Chico DATE: Oct., 1998
CHECKED BY: EA SCALE: None

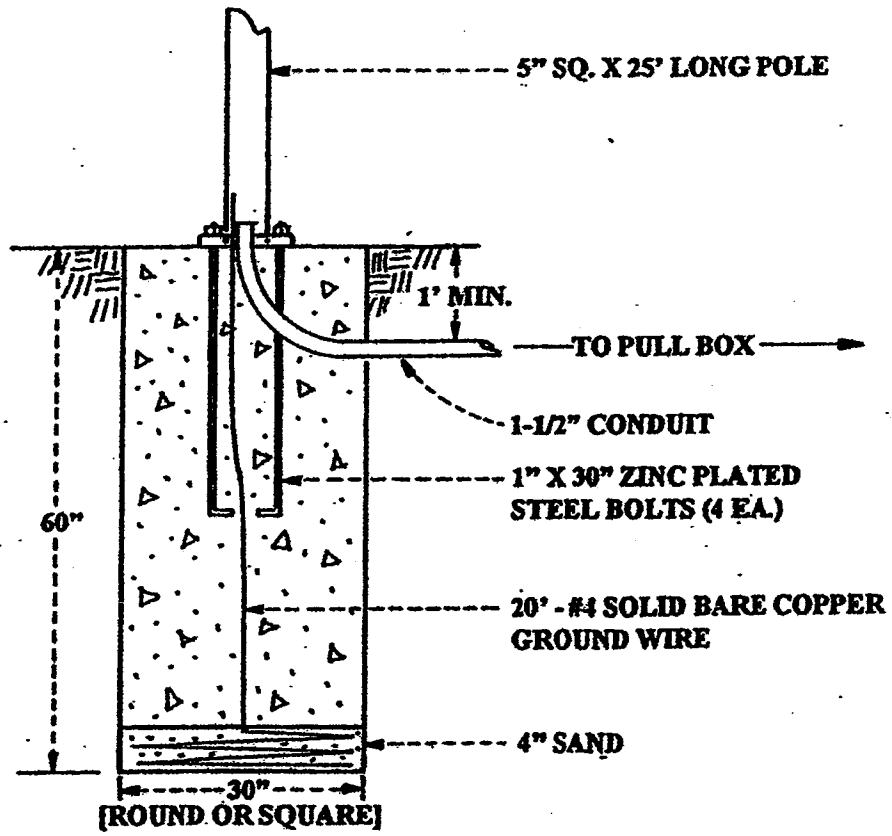
APPROVED: _____
DIRECTOR OF PUBLIC WORKS

RESIDENTIAL STREET LIGHTING
GARDCO LUMINAIRE
POLE AND LUMINAIRE DETAIL

SL - 1
D

SHEET 5 OF 11





STANDARD PLAN

CITY OF CORNING

DRAWN BY: City of Chico DATE: Oct., 1998

CHECKED BY: EA SCALE: None

APPROVED: _____

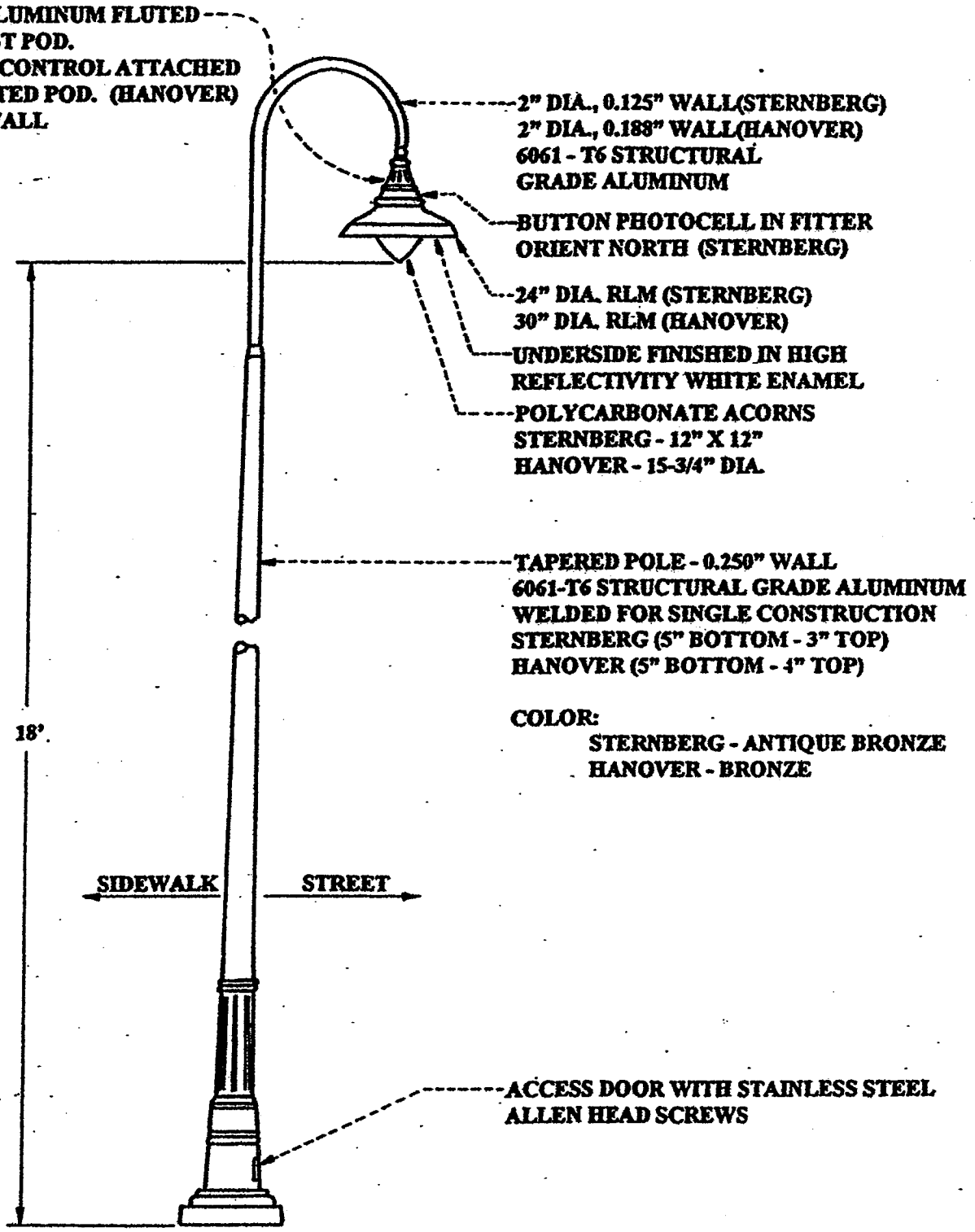
DIRECTOR OF PUBLIC WORKS

RESIDENTIAL STREET LIGHTING
GARDCO LUMINAIRE
FOUNDATION AND BASE DETAIL

SL - 1 E

SHEET 6 OF 11

LIGHT POLE DETAIL



STERNBERG MDL. 1910 - RLM 24 - 2518 RRT 508

OR

HANOVER MDL. L55390

STANDARD PLAN

CITY OF CORNING

DRAWN BY: City of Chico DATE: Oct., 1998

CHECKED BY: EA SCALE: None

APPROVED: _____

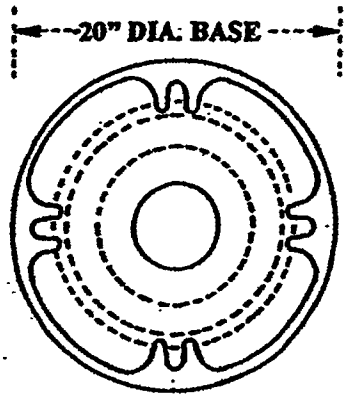
DIRECTOR OF PUBLIC WORKS

RESIDENTIAL STREET LIGHTING ARCHED INVERTED LANTERN TYPE LUMINAIRE AND POLE DETAIL

SL - 1 F

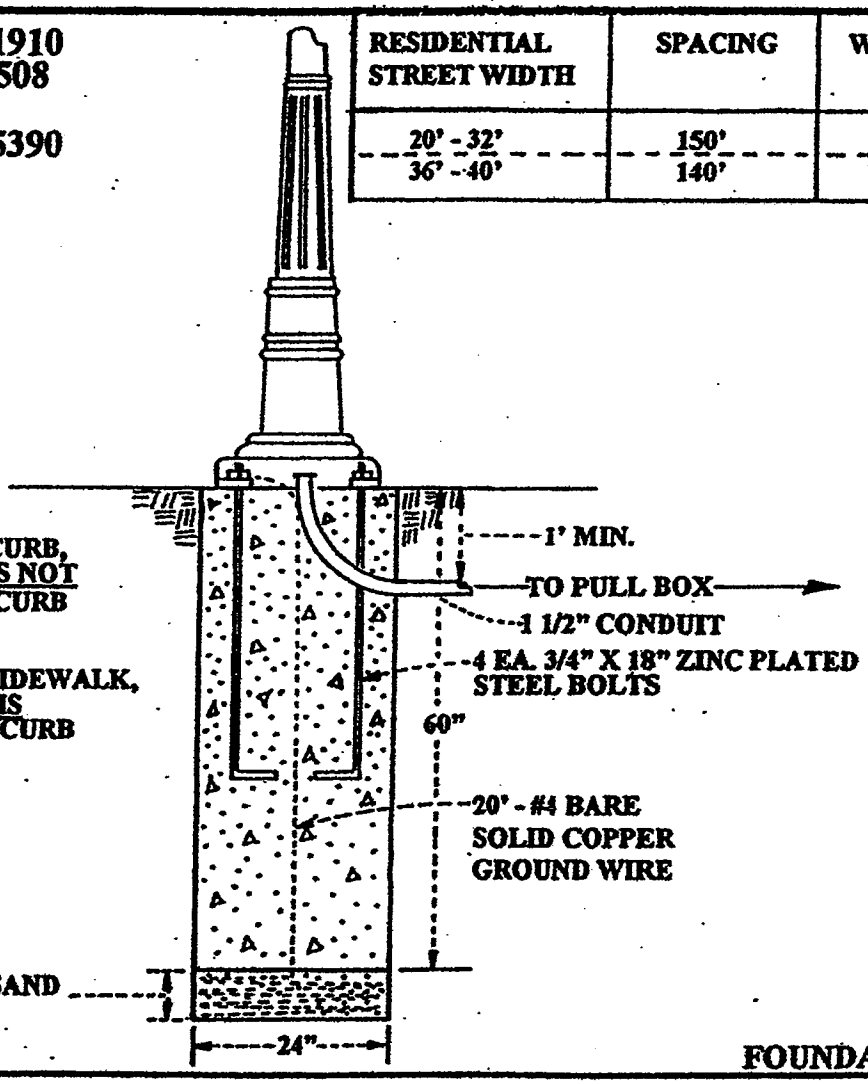
SHEET 7 OF 11

BOTTOM VIEW OF BASE



STERNBERG MDL. 1910
RLM 24 - 2518 RRT 508
OR
HANOVER MDL. L55390

RESIDENTIAL STREET WIDTH	SPACING	WATTAGE
20' - 32'	150'	70W HPS
36' - 40'	140'	70W HPS



LOCATION:

24" FROM BACK OF CURB, WHERE SIDEWALK IS NOT CONTIGUOUS WITH CURB AND GUTTER

18" FROM BACK OF SIDEWALK, WHERE SIDEWALK IS CONTIGUOUS WITH CURB AND GUTTER

FOUNDATION

STANDARD PLAN

CITY OF CORNING
DRAWN BY: City of Chico DATE: Oct., 1998
CHECKED BY: EA SCALE: None

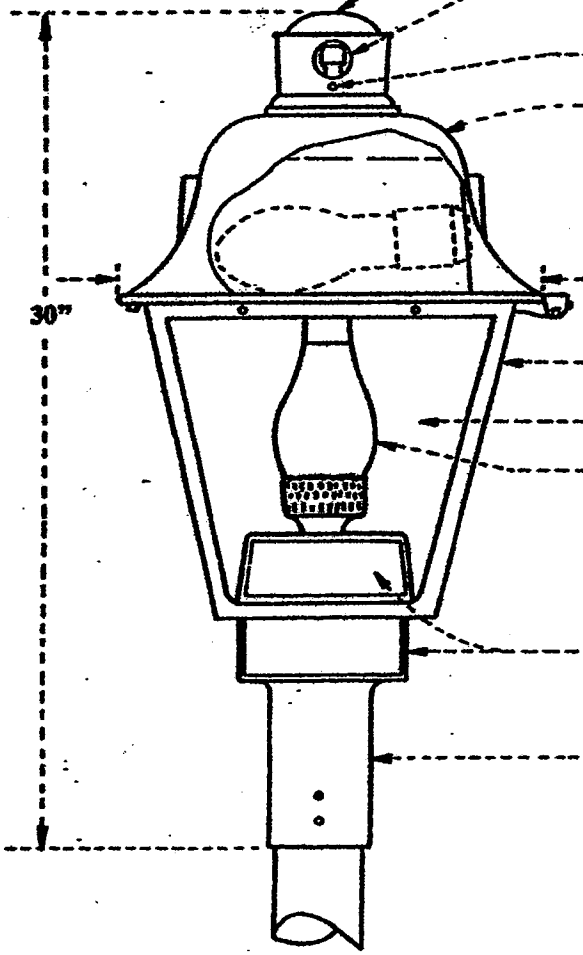
APPROVED: _____
DIRECTOR OF PUBLIC WORKS

RESIDENTIAL STREET LIGHTING
ARCHED INVERTED LANTERN TYPE
FOUNDATION AND BASE DETAIL

SL - 1
6

SHEET 8 OF 11

HANOVER GRANDE JEFFERSON MODEL NO. 8432R3



CAST ALUMINUM REMOVABLE TOP CAP

120 VOLT TWIST LOCK PHOTO CONTROL & RECEPTACLE

3 EA. 1/4-20 CAP SCREWS

CAST ALUMINUM SOLID HINGED ROOF

HORIZONTALLY MOUNTED TYPE III CUT-OFF OPTICAL ASSEMBLY WITH PORCELAIN MOGUL BASE 4KV SOCKET MOUNTED IN ROOF

14 3/4" SQ.

CAST ALUMINUM HINGED CAGE

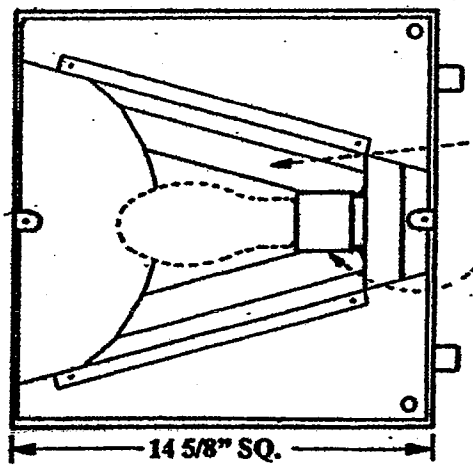
CLEAR ACRYLIC CAGE PANELS

3/4" FROSTED GLASS CHIMNEY & BURNISHED & LACQUERED BRASS CHIMNEY HOLDER

2 PIECE CAST ALUMINUM MOISTURE PROOF BALLAST COMPARTMENT

CAST ALUMINUM POST FITTER SLIPS OVER 3" POST OR TENON

MATERIAL: CAST ALUMINUM
PANELS: CLEAR ACRYLIC



TYPE III FABRICATED ALZAK REFLECTOR FOR HORIZONAL LAMP MOUNTING

PORCELAIN MOGUL BASE HORIZONTALLY MOUNTED SOCKET

BOTTOM VIEW OF TYPE III CUT-OFF REFLECTOR SYSTEM

CITY OF CORNING
DRAWN BY: City of Chico DATE: Oct., 1998
CHECKED BY: EA SCALE: None

APPROVED: _____
DIRECTOR OF PUBLIC WORKS

STANDARD PLAN

RESIDENTIAL STREET LIGHTING
POST TOP LANTERN TYPE
LUMINAIRE

SL -1 H

SHEET 9 OF 11

HANOVER POLE MODEL NO. 329 - 18'

RESIDENTIAL STREET WIDTH	SPACING	WATTAGE
20' - 32'	150'	70W HPS
36' - 40'	140'	70W HPS

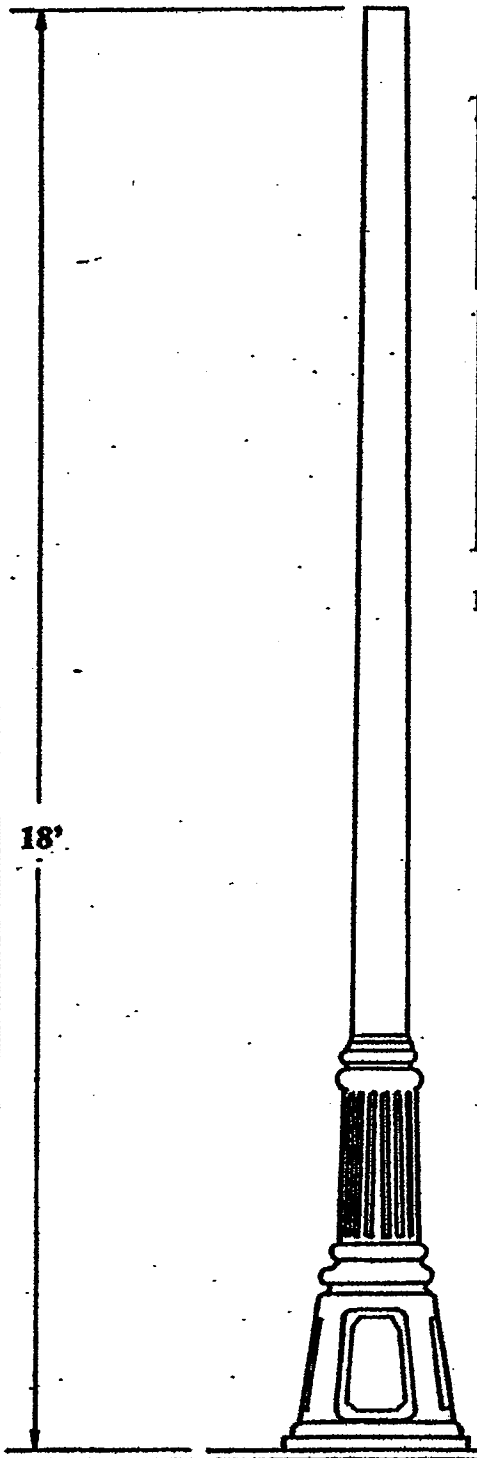
COLOR:	BRONZE
SHAFT MATERIAL:	TAPERED ALUMINUM
THICKNESS:	0.125"
DIAMETER:	3" O.D. TOP - 4" O.D. BOTTOM
BASE HEIGHT:	28 1/4"
BASE WIDTH:	13"
BASE DETAIL:	P-10L

LOCATION:

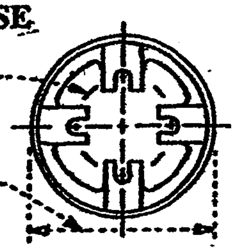
24" FROM BACK OF CURB, WHERE SIDEWALK IS NOT CONTIGUOUS WITH CURB AND GUTTER

18" FROM BACK OF SIDEWALK, WHERE SIDEWALK IS CONTIGUOUS WITH CURB AND GUTTER

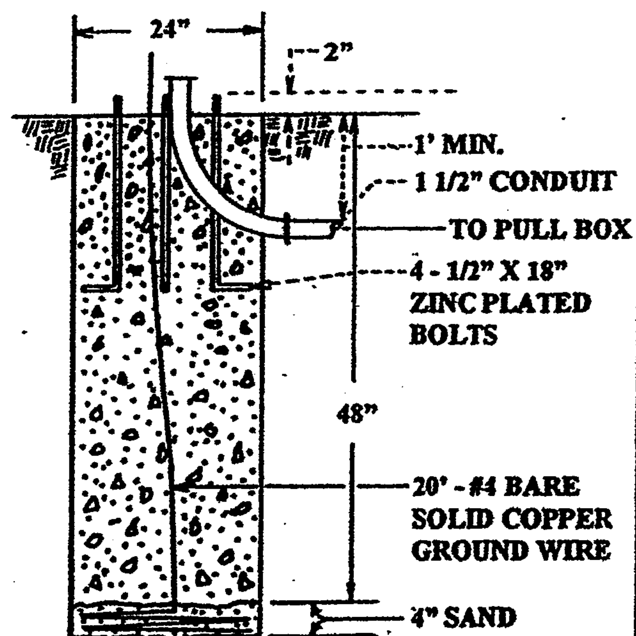
REVISION	BY	DATE	APP. BY COUNCIL
ORIGINAL	E.C.K.	[illegible]	



BOTTOM VIEW OF BASE



FOUNDATION



STANDARD PLAN

CITY OF CORNING
DRAWN BY: City of Chico DATE: Oct., 1998
CHECKED BY: EA SCALE: None

APPROVED: ____________
DIRECTOR OF PUBLIC WORKS

**RESIDENTIAL STREET LIGHTING
POST TOP LANTERN TYPE
POLE AND FOUNDATION**

SL -1

SHEET 10 OF 11

GENERAL NOTES:

1. All conduit to be used shall be rigid metal, or schedule 40 polyvinyl chloride, unless otherwise shown on the plans or stated in the Specifications. The minimum depth of cover for conduit shall be as follows:
   - A. Within sidewalk or landscape areas: 1'0" min.
     Between power supply and pull box: 18"min.
   - B. Within roadway areas: 24" min.

2. The underground conduit and all metal parts shall be continuously bonded and grounded.

3. Minimum radius of bends shall be 18" inches. All bends and/or offsets shall be made with factory fabricated sections. There shall be no more than three bends per run.

4. Unless otherwise approved by the Director of Public Works, a No. 5 pull box (Caltrans Std. ES-8) shall be used at all street light standards. Covers shall be inscribed "Street Lighting" and secured with solid brass hold-down bolts.

5. Long conduit runs are to be avoided. Direct power service from P.G. & E. Secondaries to the pull box shall be provided when possible. Junction boxes to be a maximum of 250 feet apart on long runs.

6. All splices shall be waterproof, made with approved solderless connectors of the proper size, and shall conform to Caltrans Std. Plan ES-13.

7. All empty conduits shall be capped and a 1/4" inch nylon pull rope shall be installed inside with each end secured in such a way as to assure that they will remain exposed.

8. When a private party is to develop a system and then dedicate the system to the City, the following shall apply: The private party shall be responsible for arrangements with P.G. & E., and all connection and service fees charged by the utility.

9. Each street light shall have a fuse-disconnect in the adjacent pull box.

10. All conductors shall be copper.

11. Lights to be placed on alternating sides of the street. Variations permitted with the approval of the Director of Public Works.

CITY OF CORNING

DRAWN BY: City of Chico DATE: Oct., 1998
CHECKED BY: EA SCALE: None

APPROVED: _____
DIRECTOR OF PUBLIC WORKS

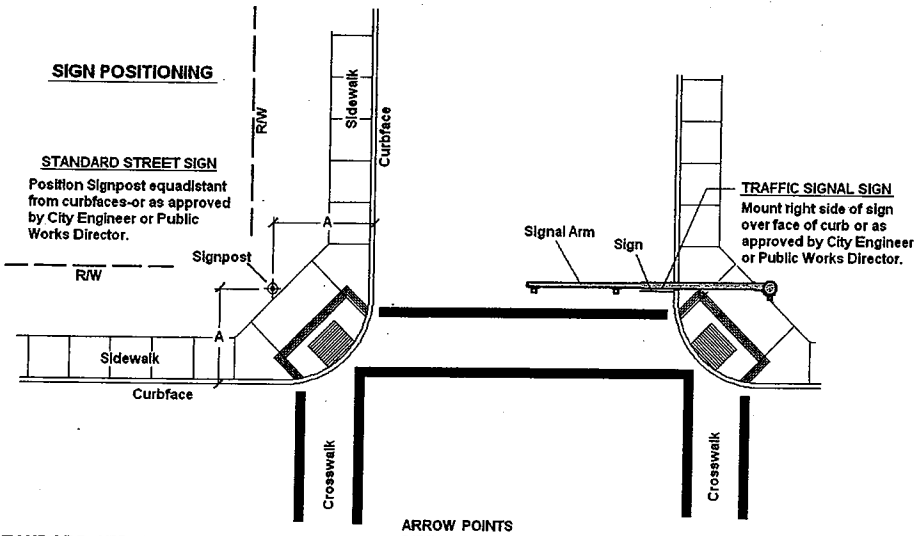
STANDARD PLAN

STREET LIGHTS GENERAL NOTES

SL - 1

SHEET 11 OF 11

SIGN POSITIONING



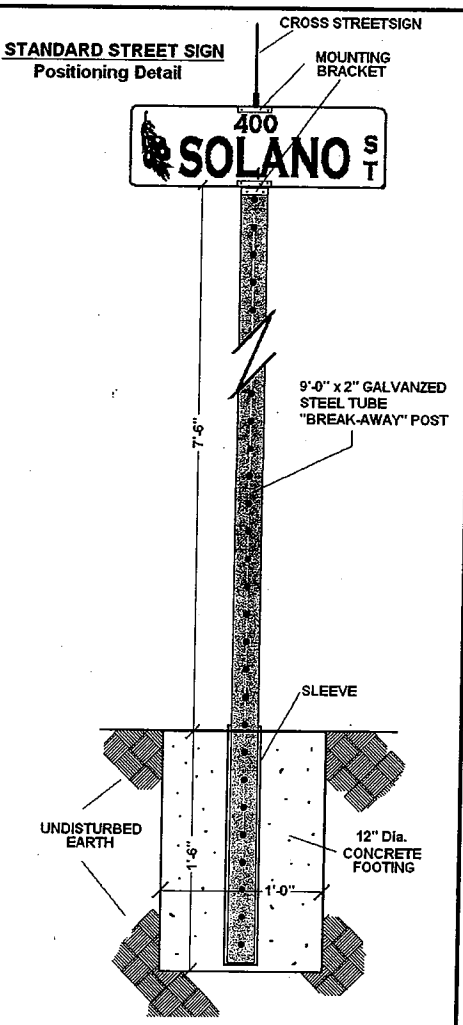
STANDARD STREET SIGN

Position Signpost equadistant from curbfaces-or as approved by City Engineer or Public Works Director.

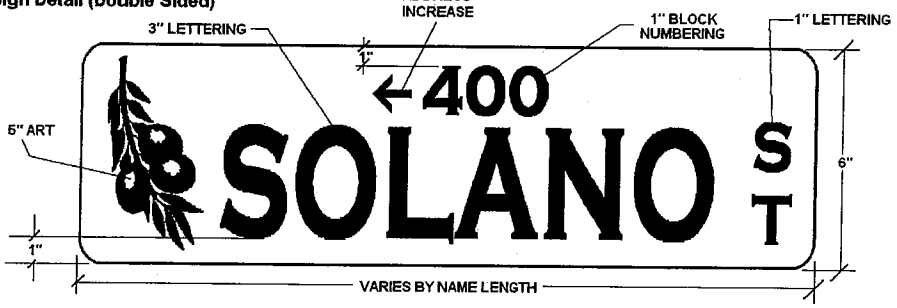
TRAFFIC SIGNAL SIGN

Mount right side of sign over face of curb or as approved by City Engineer or Public Works Director.

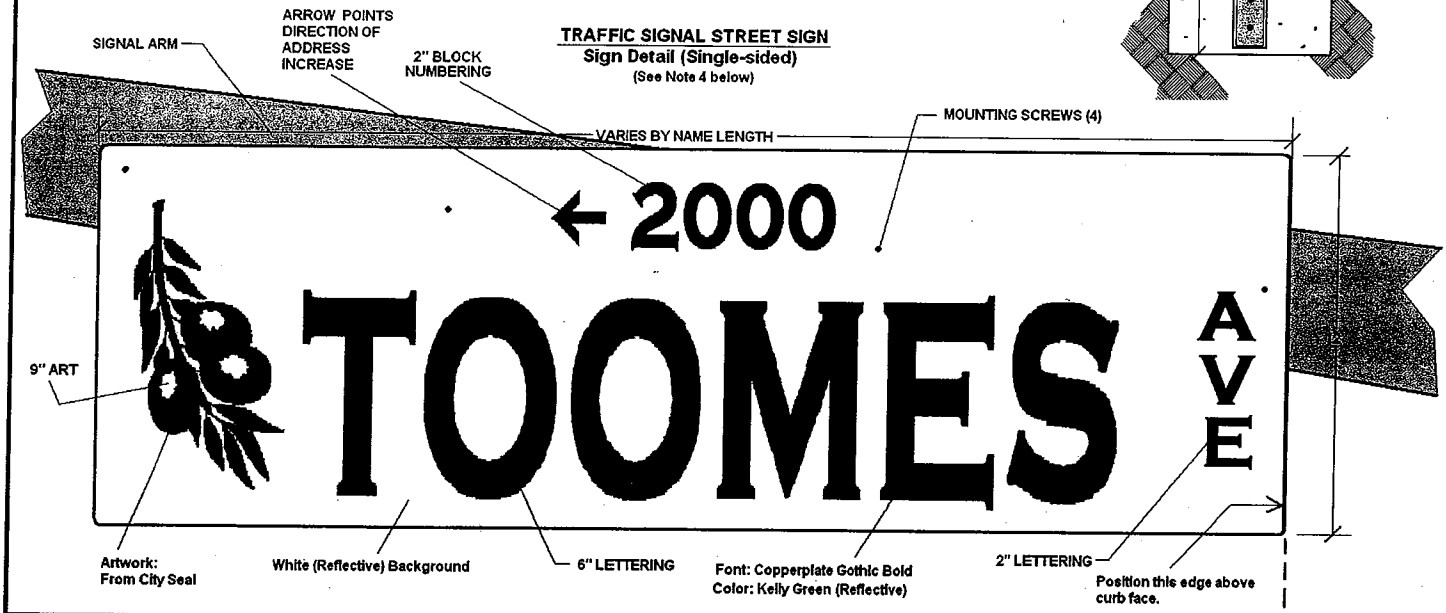
STANDARD STREET SIGN
Positioning Detail



STANDARD STREET SIGN
Sign Detail (Double Sided)



TRAFFIC SIGNAL STREET SIGN
Sign Detail (Single-sided)
(See Note 4 below)



City of Corning	Revision Resolution
Drawn by: P/W Dept. Date: Jan. 2011 Checked by: EA Scale: None Resolution No.: 02-08-2011-03 Approved: Public Works Director	Feb. 8, 2011

Notes:

1. Obtain Block Numbering from Building Official at City Hall.
2. Confirm Street names & spellings with Public Works Department before ordering signs.
3. Verify specific sign locations are within R/W prior to installing signposts.
4. Larger Traffic Signal Signs may be necessary for visibility at wider intersections. In those cases, sign dimensions, art and fonts shall be appropriately increased and approved by the Public Works Director.

STANDARD PLAN

S-24

Street Sign Details