

CITY OF WICHITA, KANSAS

DRAINAGE IMPROVEMENTS

27TH STREET NORTH AND ESTELLE/VOLUTSIA

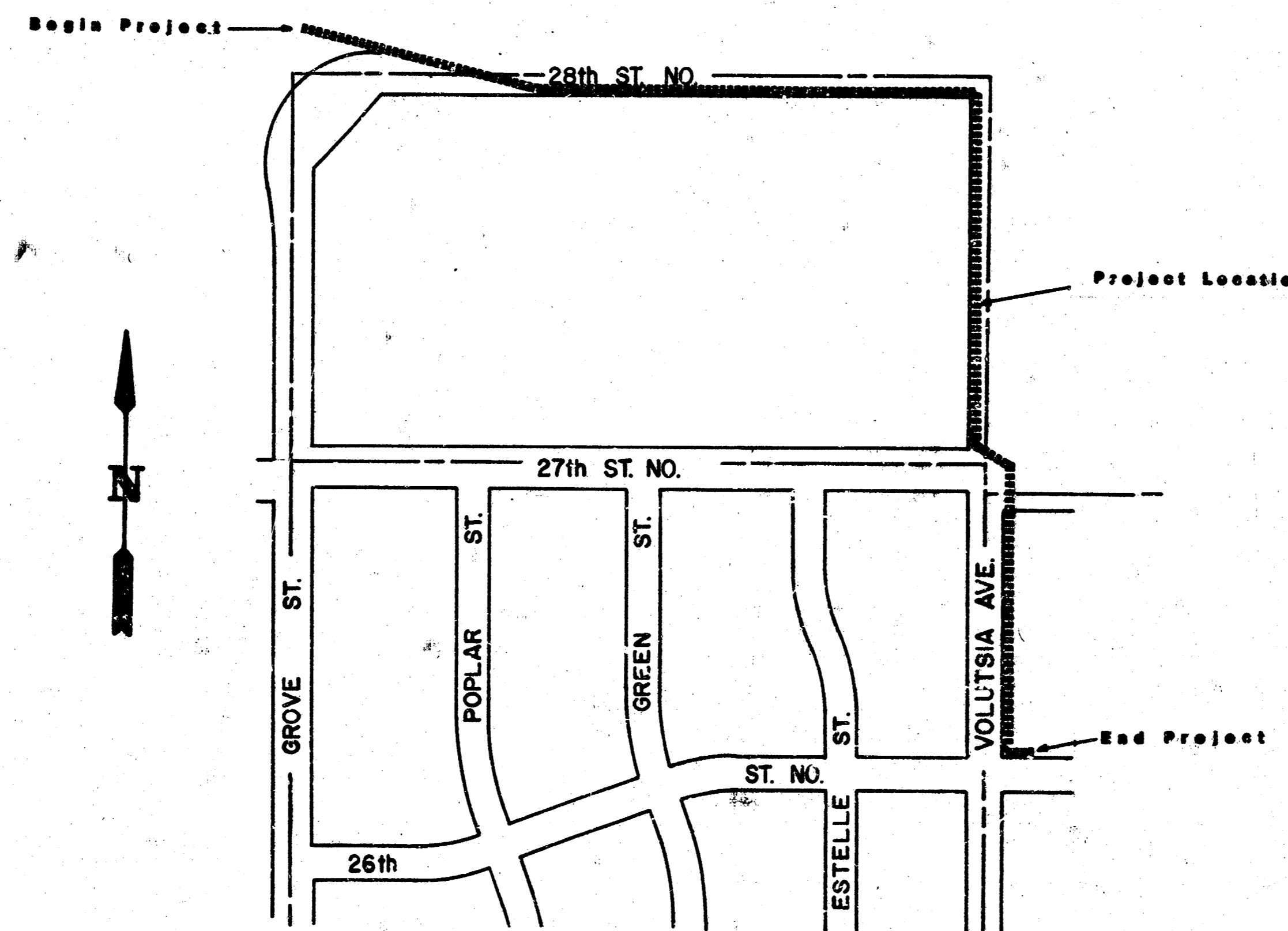
MICHAEL E. LINDEBAK, P.E. CITY ENGINEER

MARCH 1986

PROJ. NO. 826 68 365 50218 430 000 000

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3. Plan and Profile - Sta. 6+00 to Sta. 12+00
4. Plan and Profile - Sta. 12+00 to Sta. 18+50
5. Plan and Profile - Sta. 18+50 to Sta. 24+50
6. Plan and Profile - Sta. 24+50 to Sta. 24+93.36
7. 27th Street and Volutzia Intersection Details
8. Standard Manhole Detail
9. Standard Type IA Curb Inlet
10. Standard Manhole Frame and Cover Detail



AS BUILTS
12/87
MCG

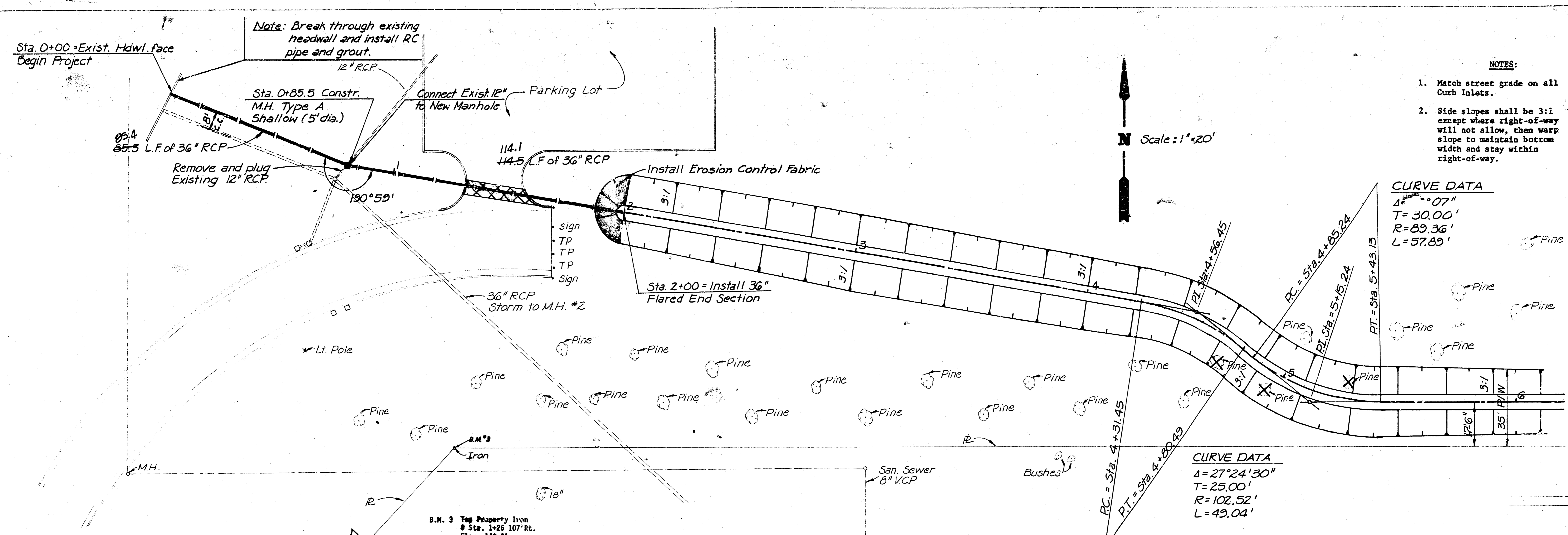
PLANS PREPARED BY

Booker/Freund
Engineers Architects Planners
WICHITA, KANSAS



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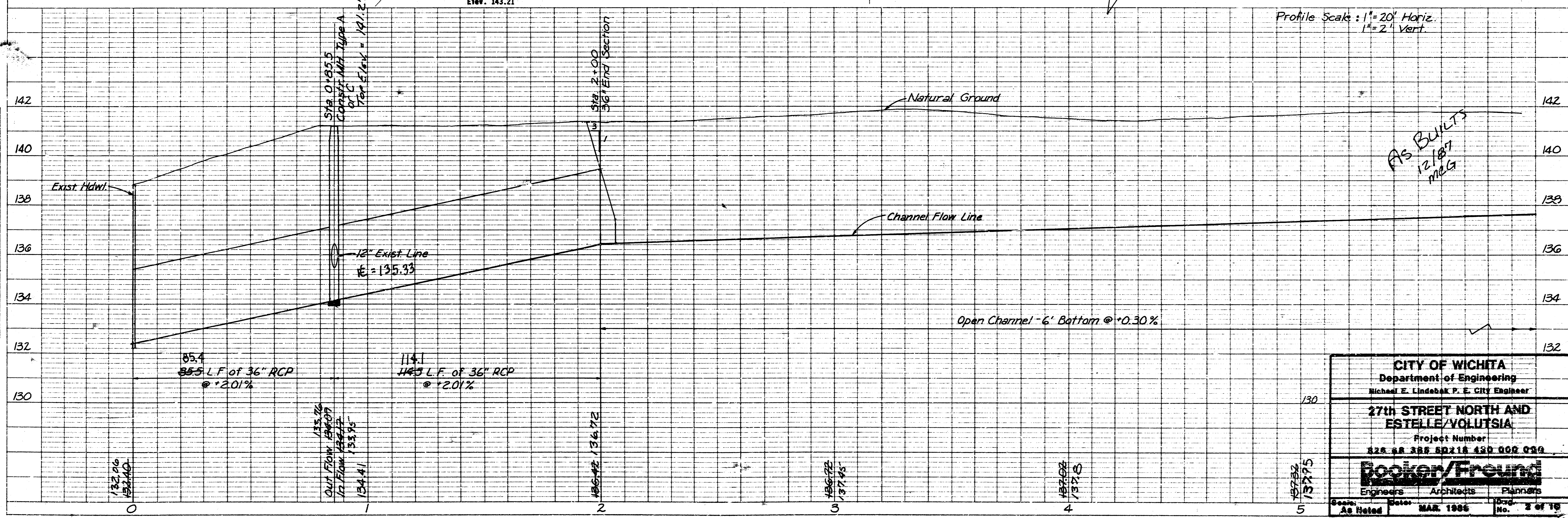
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- NOTES:**
1. Match street grade on all Curb Inlets.
 2. Side slopes shall be 3:1 except where right-of-way will not allow, then warp slope to maintain bottom width and stay within right-of-way.

PLAN SHEET NO. 1
 DATE: 12/87
 BY: M.E.G.
 CHECKED: M.E.G.
 APPROVED: M.E.G.

PROFILE SHEET NO. 1
 DATE: 12/87
 BY: M.E.G.
 CHECKED: M.E.G.
 APPROVED: M.E.G.



CITY OF WICHITA
 Department of Engineering
 Michael E. Lindabaek P. E. City Engineer

27th STREET NORTH AND ESTELLE/VOLUTSIA
 Project Number
 828 68 385 50216 450 002 030

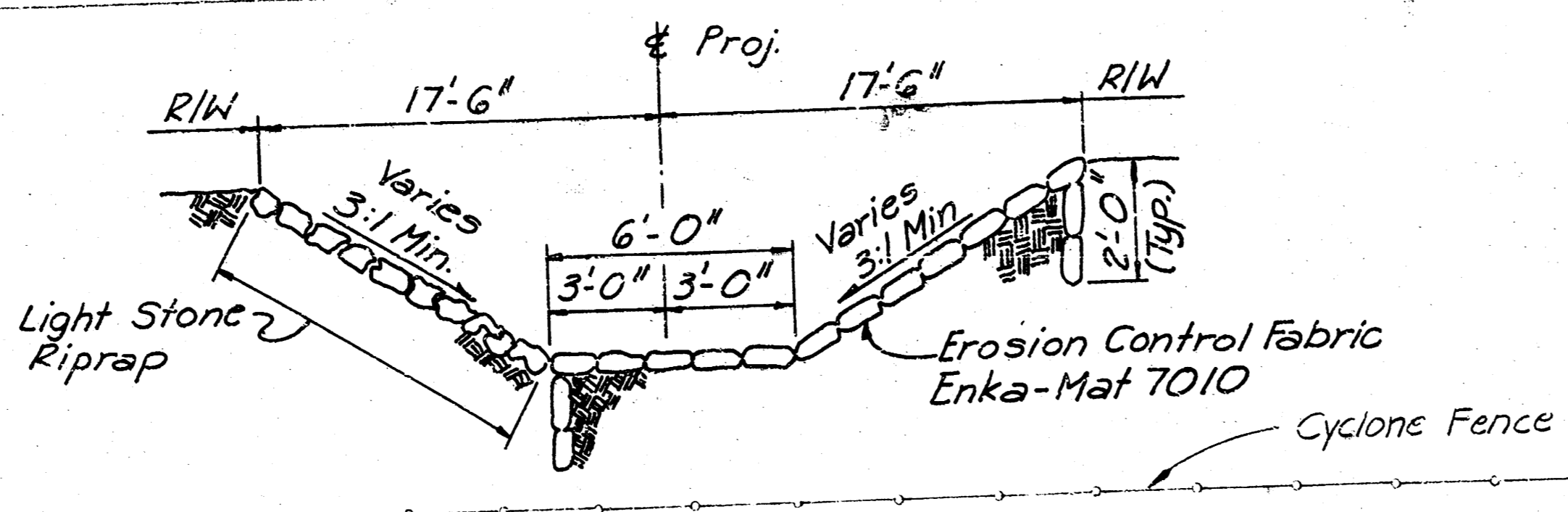
Booker/Freund
 Engineers Architects Planners

Date: MAR 1986 No. 2 of 10

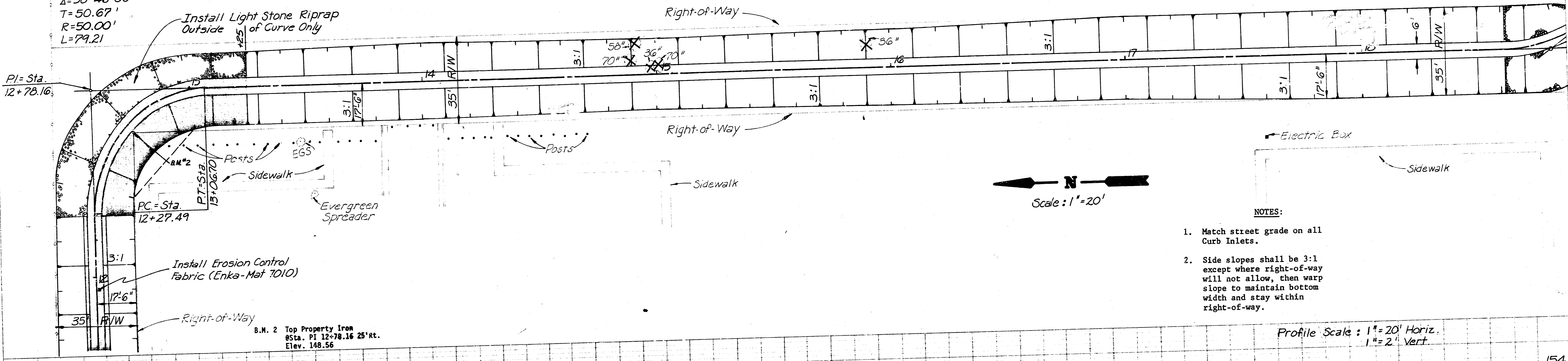
PLATE 1-SINGLE PLAN AND PROFILE-FULL LINE
 PRINTED IN U.S.A.

K0146

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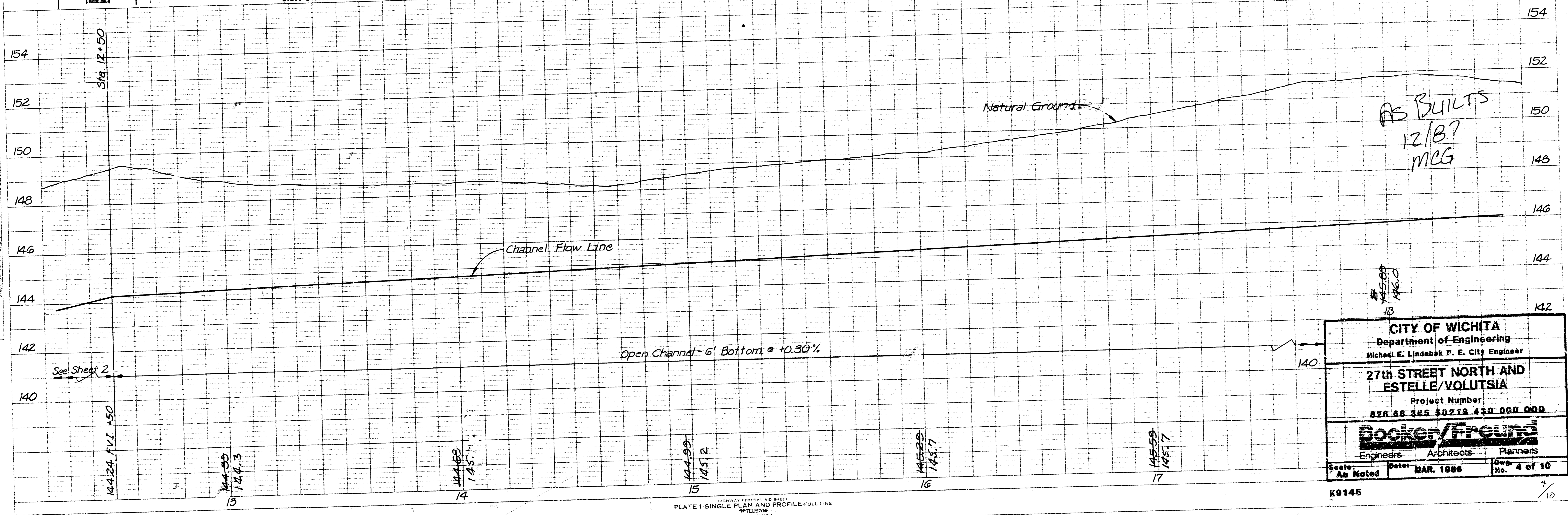


CURVE DATA
 $\Delta = 90^\circ 46' 00''$
 $T = 50.67'$
 $R = 50.00'$
 $L = 79.21'$



- NOTES:**
1. Match street grade on all Curb Inlets.
 2. Side slopes shall be 3:1 except where right-of-way will not allow, then warp slope to maintain bottom width and stay within right-of-way.

Profile Scale: 1" = 20' Horiz.
 1" = 2' Vert.



AS BUILTS
 12/87
 MCG

CITY OF WICHITA
 Department of Engineering
 Michael E. Lindabak P. E. City Engineer

27th STREET NORTH AND ESTELLE/VOLUTSIA
 Project Number
 826 66 365 50218 430 000 000

Booker/Freund
 Engineers Architects Planners

Scale: As Noted Date: MAR. 1986 Draw: No. 4 of 10

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PLAN
 SHEET NO. 10
 NOTE BOOK ATTACHMENT ENDED BY OF WAM THICK

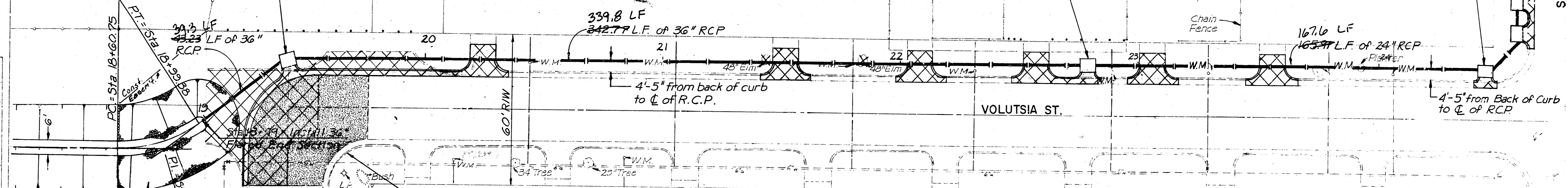
PROFILE
 SHEET NO. 11
 NOTE BOOK ATTACHMENT ENDED BY OF WAM THICK

CURVE DATA
 $\Delta = 36^\circ 34' 21''$
 $T = 20.00'$
 $R = 60.52'$
 $L = 36.63'$

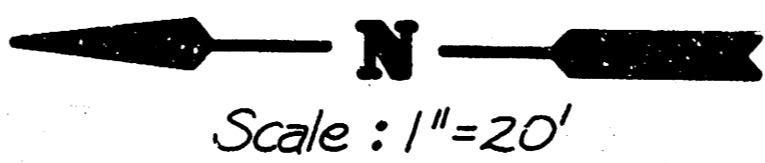
Sta. 19+42.23 Constr. Type IA
 Curb Inlet W=6'-4"
 Top Elev. = 150.88

Sta. 22+85 Constr. Type IA
 Curb Inlet W=6'-4"
 Match Exist. Curb Elev. = 152.51

Sta. 24+50.91 Constr. Type IA
 Curb Inlet W=5'-4"
 Top Elev. = 155.88



Install Light Stone Riprap
 For Intersection Improvements See Sheet 7



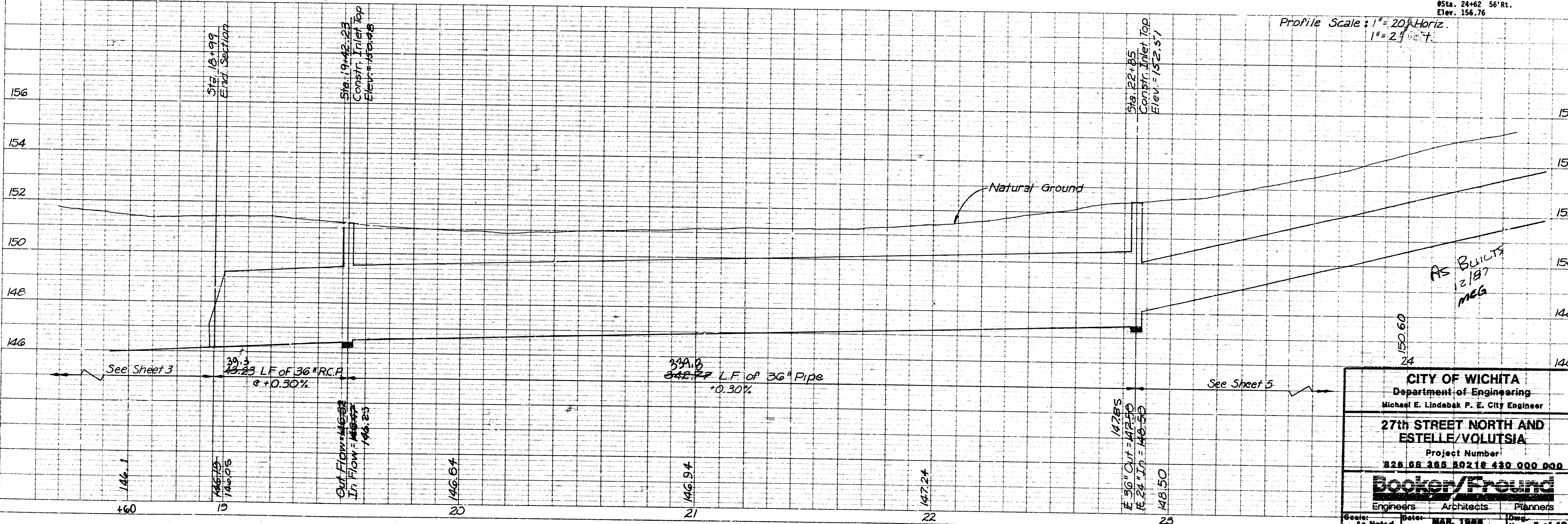
- LEGEND**
- Pavement Removal
 - Concrete Removal & Replacement
 - Pavement Removal & Replacement with 2" Asphaltic Conc. Surface and 6" Conc. Base
 - 2" Asphaltic Conc. Overlay

- NOTES:**
1. Match street grade on all Curb Inlets.
 2. Side slopes shall be 3:1 except where right-of-way will not allow, then warp slope to maintain bottom width and stay within right-of-way.

B.M. 1 Top Property Iron
 @ Sta. 19+00 30' R.C.
 Elev. 150.84

B.M. 1A Chis. "I" Top of Curb
 @ Sta. 24+62 56' R.C.
 Elev. 156.76

Profile Scale: 1" = 20' Horiz.
 1" = 2' Vert.



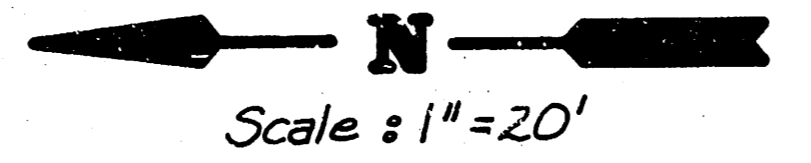
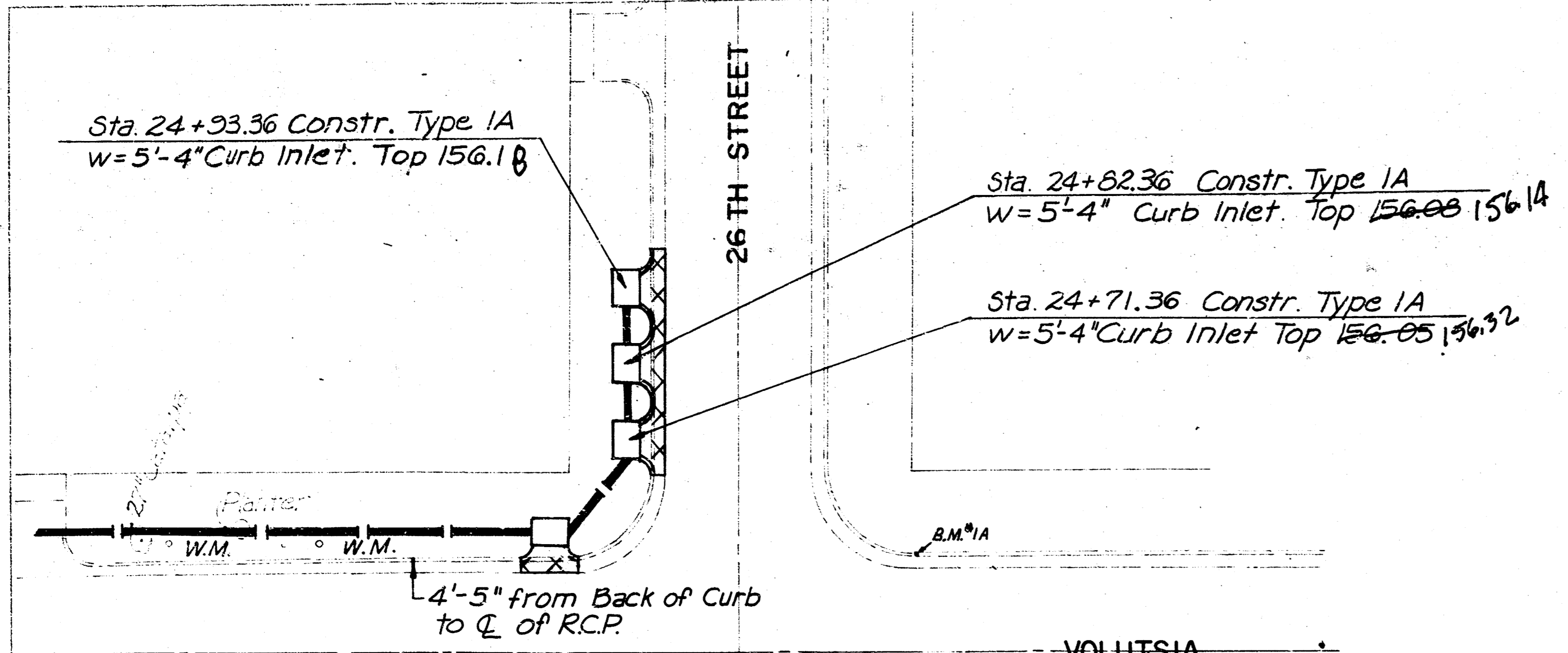
| | | |
|---|-----------------|------------------|
| CITY OF WICHITA | | |
| Department of Engineering | | |
| Michael E. Lindebak P. E. City Engineer | | |
| 27th STREET NORTH AND ESTELLE/VOLUTSIA | | |
| Project Number | | |
| 826 68 365 80218 430 000 000 | | |
| Booker/Freund | | |
| Engineers | Architects | Planners |
| Scale: As Noted | Date: MAR. 1988 | Dwg. No. 5 of 10 |

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 SHEET: _____
 PROJECT: _____
 DRAWING: _____
 SCALE: _____

DATE: _____
 SHEET: _____
 PROJECT: _____
 DRAWING: _____
 SCALE: _____



NOTES:
 1. Match street grade on all Curb Inlets.

- GENERAL NOTES**
1. Interurban traffic generated outside the project area and local business or apartment traffic generated within the project area are to be carried through construction.
 2. Underground utility service lines and overhead utility pole lines are to be adjusted as necessary by others prior to or during construction unless the plans specifically call for their adjustment by the Contractor. Existing utilities and their location, as shown on the plans, represent the best information obtainable for design. Location information has been obtained from the various utility companies and is either from company record drawings or company provided field locations. The plan locations shown are not guaranteed. Additional existing utilities may also be encountered. The Contractor will be required to work around existing utilities within the right-of-way which do not conflict with proposed construction.
 3. A saw cut of at least one-half the depth of existing surface courses or one-fourth the depth of the existing total pavement thickness shall be provided at locations where proposed construction abuts an existing surface course or pavement for which partial removal of that surface or pavement is required. Such saw cuts will not be paid for directly and this cost shall be considered as subsidiary to the removal of the surface or pavement.
 4. Rubble from the removal of miscellaneous structures and excess excavation which is to be wasted shall be disposed of off-site to be provided by the Contractor. These sites shall be approved by the Engineer as to suitability, appearance and site location. Locations that, in the opinion of the Engineer, will leave an unsightly appearance will not be approved.
 5. Trees and shrubs in public right-of-way which are in direct conflict with proposed new construction shall be removed by the Contractor with the Engineer's approval. Trees and shrubs which are not in conflict with proposed new construction shall be saved and protected from damage.
 6. The Contractor shall give all property owners and/or tenants of developed property directly affected by the construction of this project a minimum of 24 hours advance notice prior to start of construction.
 7. The Contractor shall be responsible for preserving property irons. The Contractor will be required to re-establish any property irons which are damaged or destroyed by his construction operations. Such irons shall be re-established by a licensed land surveyor or a licensed professional engineer in accordance with state laws.

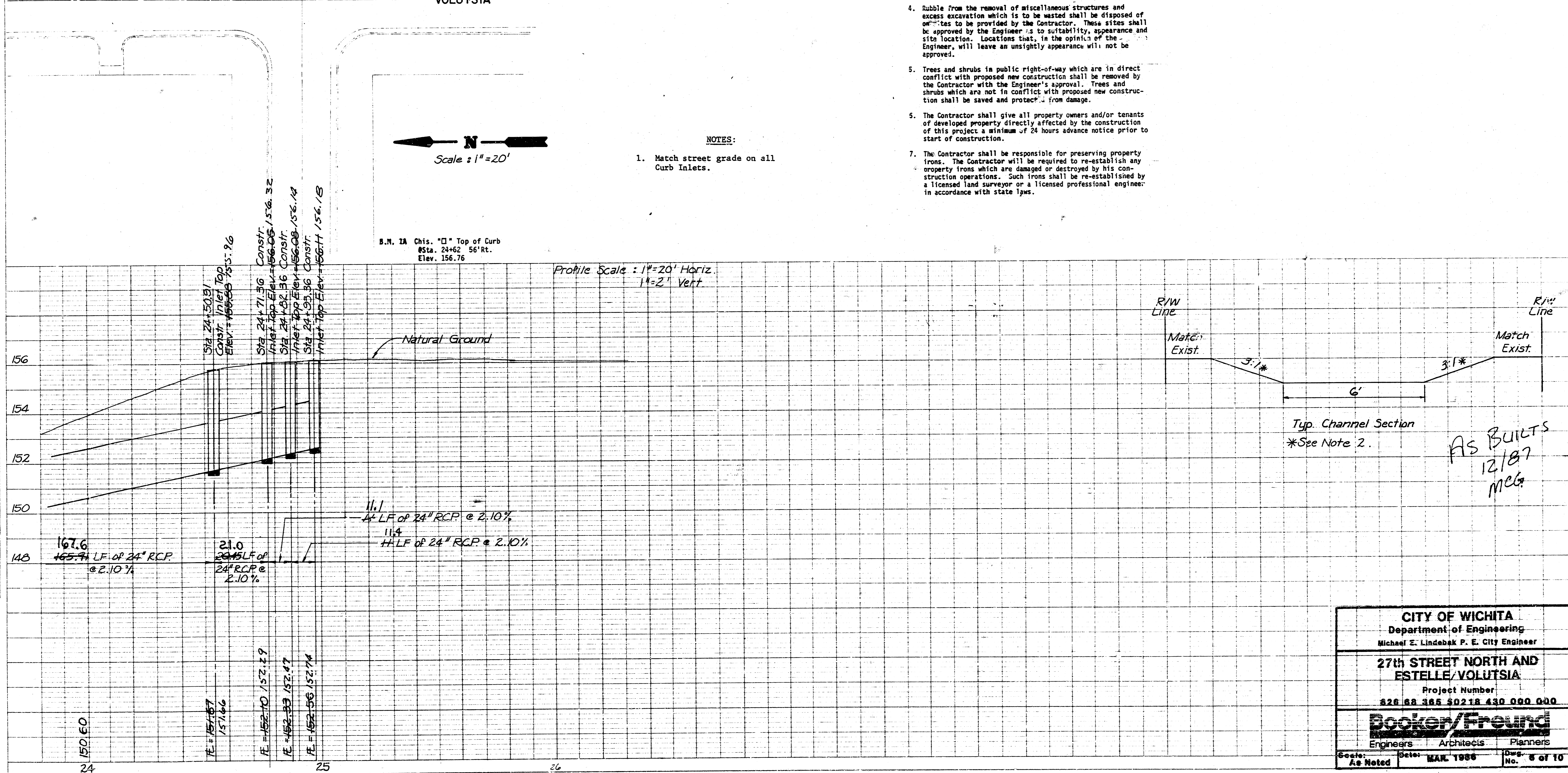


PLATE 1-SINGLE PLAN AND PROFILE-FULL LINE
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CITY OF WICHITA
 Department of Engineering
 Michael E. Lindabak P. E. City Engineer

27th STREET NORTH AND ESTELLE/VOLUTSIA

Project Number:
 826 68 365 802 18 430 000 000

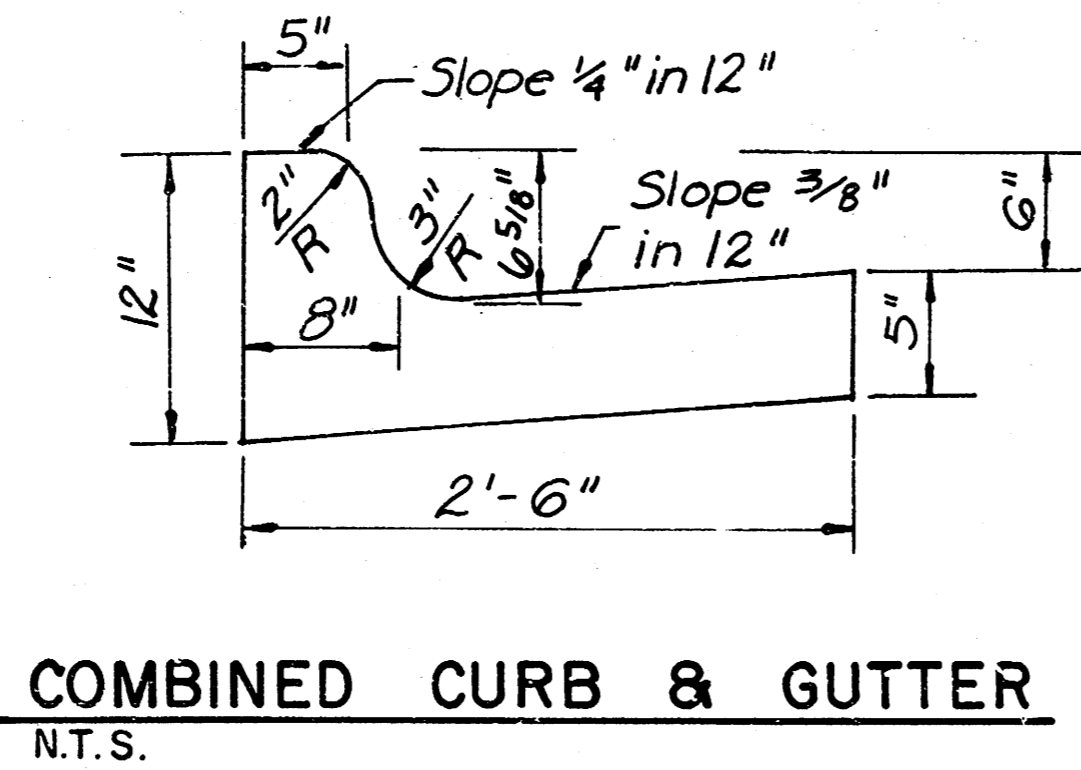
Booker/Freund
 Engineers Architects Planners

Scale: As Noted Date: MAR. 1986 Dwg. No. 8 of 10

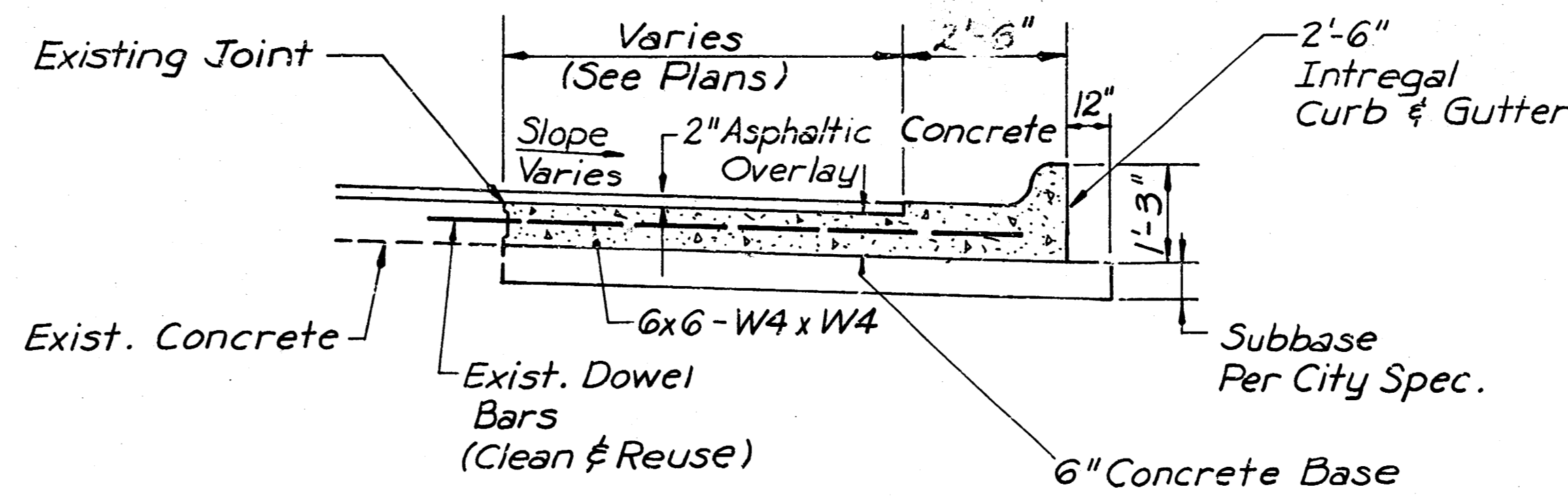
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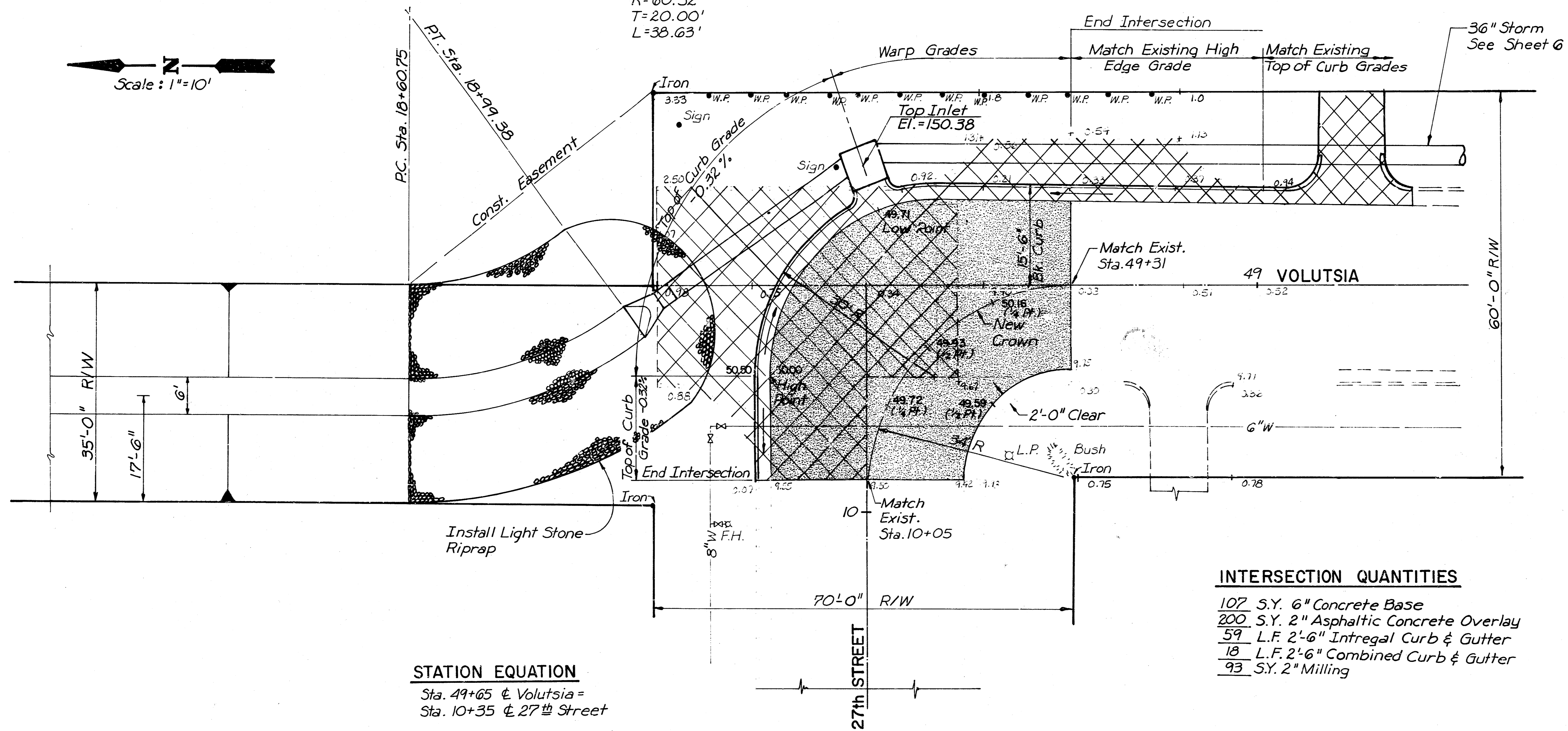
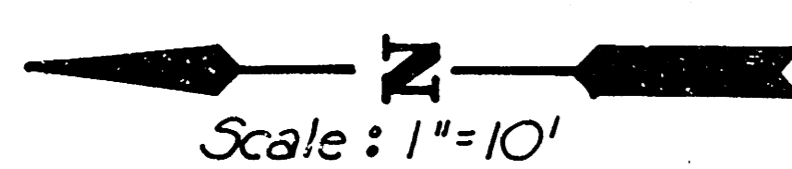
COMBINED CURB & GUTTER
N.T.S.



Note: Contractor shall mill the existing concrete to a depth of 2" to allow matching of existing grades.

TYPICAL SECTION
N.T.S.

Curve Data
 $\Delta = 36^{\circ}34'21''$
 $R = 60.52'$
 $T = 20.00'$
 $L = 38.63'$



STATION EQUATION
 Sta. 49+65 @ Volutsia =
 Sta. 10+35 @ 27th Street

INTERSECTION QUANTITIES

- 107 S.Y. 6" Concrete Base
- 200 S.Y. 2" Asphaltic Concrete Overlay
- 59 L.F. 2'-6" Integral Curb & Gutter
- 18 L.F. 2'-6" Combined Curb & Gutter
- 93 S.Y. 2" Milling

LEGEND

- Pavement Removal
- 2" Asphaltic Concrete Overlay
6" Concrete Base
- 2" Asphaltic Concrete Overlay
- +1.13 Existing Elevation
- 51.15 Proposed Elevation

SURV. D.V. PROT. DR. L.O. TR. C.D. S.L.S. APP. S.L.B.

CITY OF WICHITA / DEPT. OF ENGINEERING
 MICHAEL E. LINDEBAK P.E. CITY ENGINEER

27th STREET NORTH AND ESTELLE/VOLUTSIA

PROJECT NO. 826 68 365 50218 430 000 000

Booker/Freund
 Engineers Architects Planners

SCALE AS NOTED DATE MAR. 1986 DWG. NO. 7 of 10

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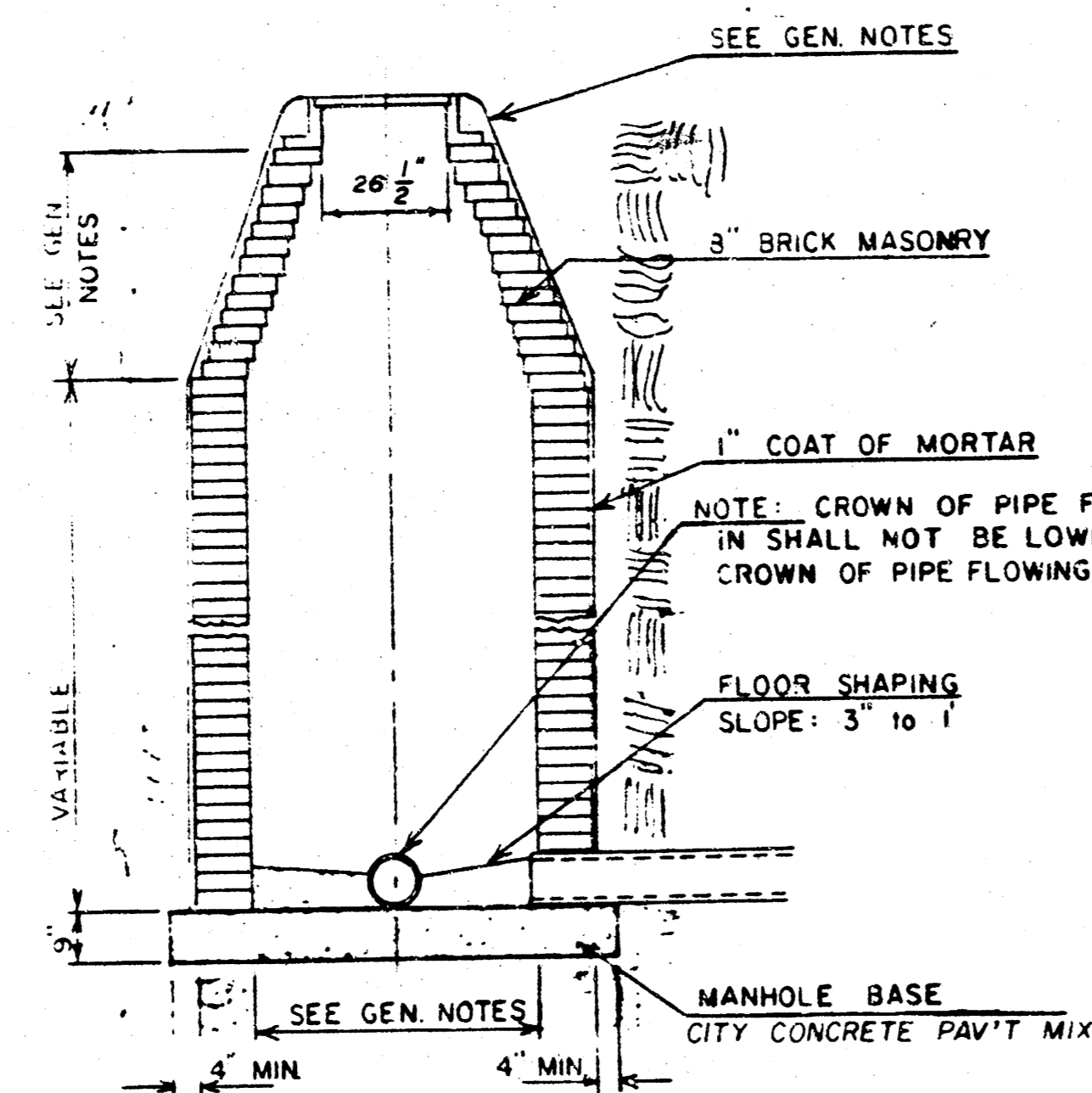
SEWER APPURTENANCES DETAILS

ADOPTED AS STANDARD DESIGN
BY

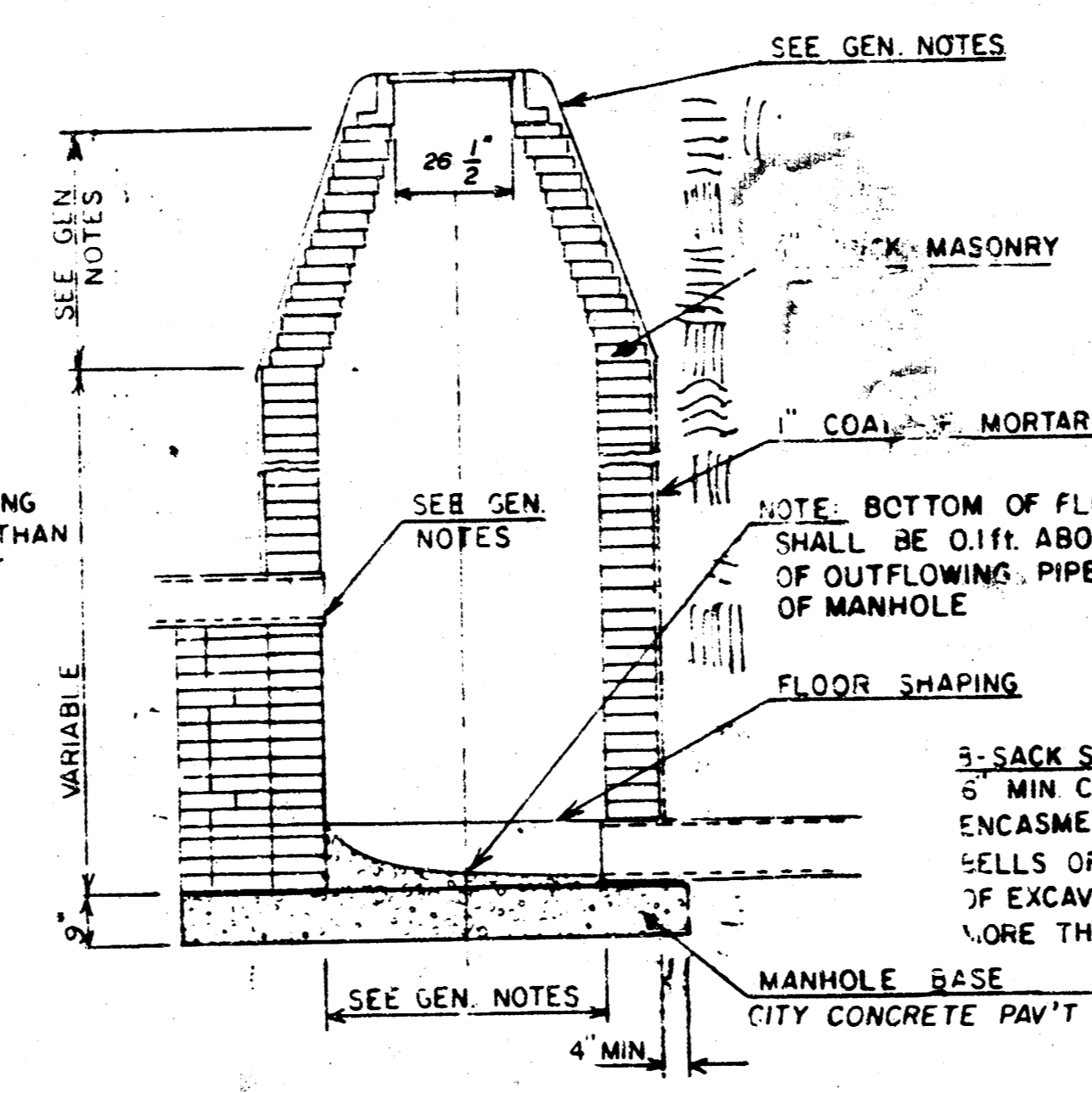
CITY of WICHITA, KANSAS

REVISED SEPTEMBER 1980
REVISED DECEMBER 1981

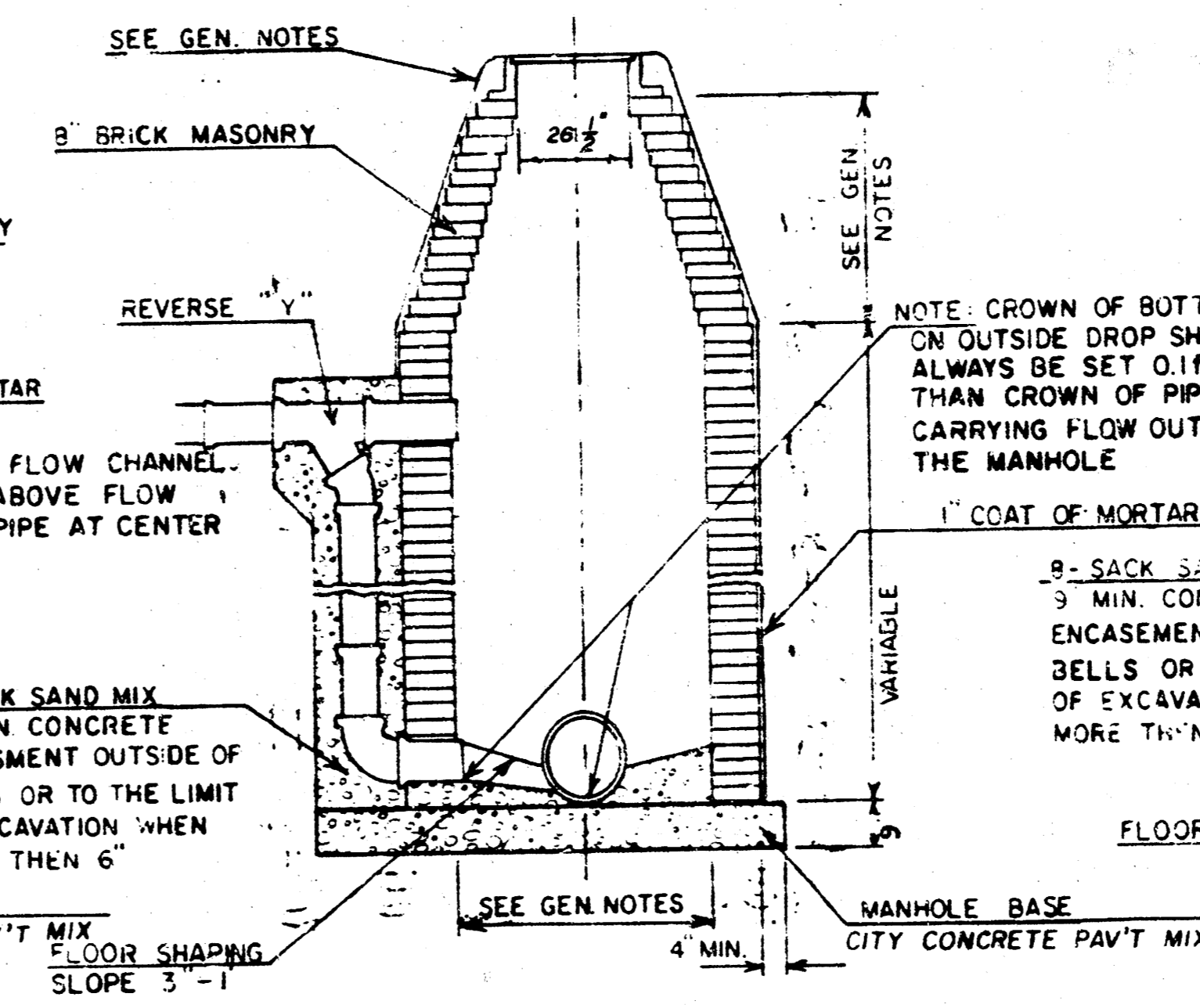
TYPE "A" MANHOLE



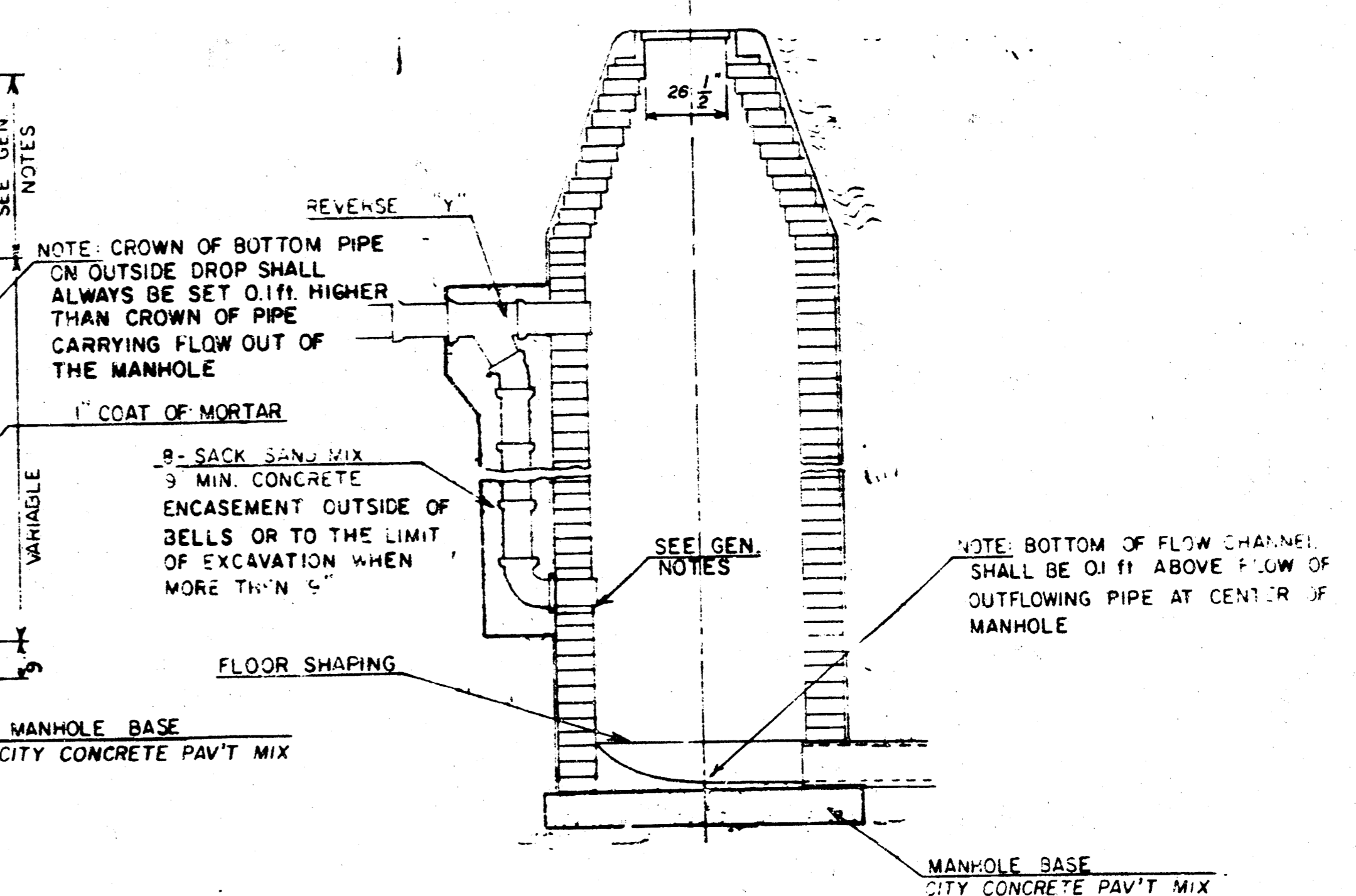
TYPE "A" INSIDE DROP MANHOLE



TYPE "A" OUTSIDE DROP MANHOLE



DETAIL OF OUTSIDE DROP
CONSTRUCTED ON EXISTING MANHOLE



GENERAL NOTES

- MORTAR USED IN MASONRY CONSTRUCTION SHALL CONTAIN 8 SACKS OF CEMENT PER CUBIC YARD. CONCRETE USED IN MANHOLE BASES SHALL CONFORM TO THE REQUIREMENTS OF CONCRETE FOR CONCRETE PAVEMENT CONSTRUCTION AS SPECIFIED IN THE CITY STANDARD PAVING SPECIFICATIONS USING CITY CONCRETE PAVEMENT MIX WITHOUT AIR ENTRAINING ADMIXTURE. MORTAR SHALL BE PLACED AROUND THE MANHOLE RING AS SHOWN ON THE DRAWINGS WHEN MANHOLES ARE CONSTRUCTED IN UNPAVED AREAS. TYPE "A" MANHOLES CAN BE USED ON SEWERS UP TO 16' IN DEPTH WHEN THE MANHOLE IS NOT LOCATED WITHIN PUBLIC STREET PAVEMENT. MANHOLES CONSTRUCTED WHERE PIPE SIZES ARE SMALLER THAN 24" SHALL HAVE AN INSIDE DIAMETER OF 4'. MANHOLES CONSTRUCTED WHERE PIPE SIZES ARE 24" OR LARGER SHALL HAVE AN INSIDE DIAMETER OF 5'. THE HEIGHT OF THE CORBELS ON 4' DIAMETER MANHOLES SHALL BE 4'. MANHOLES HAVING A DIAMETER OF 5' SHALL HAVE CORBELS 6' IN HEIGHT. COMPLETED MANHOLE SHALL BE WITHOUT LEAKS AND WATER TIGHT.
- REINFORCING STEEL SHALL BE INSTALLED IN THE MANHOLE BASES AND SHALL CONSIST OF NO. 4 BARS PLACED ON 9" CENTERS IN BOTH DIRECTIONS. THE MANHOLE BASE REINFORCEMENT SHALL BE PLACED 9" ABOVE THE BOTTOM OF THE MANHOLE BASE. ALL COSTS FOR FURNISHING AND INSTALLING REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE MANHOLE.
- OPENINGS SHALL BE CUT INTO THE MANHOLE WALL WHEN OUTSIDE DROPS ARE CONSTRUCTED ON EXISTING MANHOLES. SUCH OPENINGS CUT INTO EXISTING MANHOLES SHALL BE AS SMALL AS PRACTICAL TO FACILITATE INSTALLING AND ROUTING THE NEW PIPE IN PLACE. WATERSTOP GASKETS SHALL BE USED WITH P.V.C. AND A.B.S. COMPOSITE PIPE. THE NEW PIPE SHALL BE GROUDED INTO THE OPENING USING AN APPROVED NONSHRINK GRUNT FOR THE FULL MANHOLE WALL THICKNESS. THE EXTERIOR OF THE COMPLETED CONNECTION SHALL BE SEALED WITH AN APPROVED BITUMINOUS COATING SUCH THAT THE CONNECTION WILL BE WATER TIGHT. FLOOR OF MANHOLE SHALL BE MODIFIED TO FORM NEW FLOW CHANNEL FOR THE NEW CONNECTION AS INDICATED BY THE DRAWING. THE VERTICAL DROP FROM THE LOWER PIPE ON SUCH OUTSIDE DROP CONNECTIONS SHALL NOT EXCEED 4' FOR INFLOWING PIPES SIZED 12" OR SMALLER AND 2' FOR INFLOWING PIPES SIZED LARGER THAN 12". EXCEPT THE CROWN OF THE LOWER PIPE SHALL NEVER BE SET BELOW THE CROWN OF ANY LARGER OUTFLOWING PIPE. THIS WORK, INCLUDING ADJUSTMENT OF MANHOLE FLOOR, SHALL BE PAID FOR AT THE UNIT PRICE BID FOR OUTSIDE DROP STACK CONSTRUCTED ON EXISTING MANHOLE.
- THE FLOORS OF ALL MANHOLES SHALL BE SHAPED WITH FLOW CHANNELS SUCH THAT THE MANHOLES WILL BE SELF-CLEANING AND FREE OF AREAS WHERE SOLIDS COULD BE DEPOSITED AS SEWAGE FLOWS THROUGH THE MANHOLE FROM ALL INLET PIPES TO THE OUTLET PIPE. FLOW CHANNELS SHALL BE FORMED TO MATCH THE BOTTOM HALVES OF THE INFLOWING PIPES AND THE OUTFLOWING PIPE AS SHOWN BY THE DRAWINGS EXCEPT FOR INSIDE DROP MANHOLES. FLOW CHANNELS FOR INSIDE DROP MANHOLES SHALL BE CONSTRUCTED AS INDICATED BY THE DRAWING. MANHOLE FLOORS SHALL HAVE SLOPES OF 3 INCHES PER FOOT IN THE AREAS OUTSIDE OF THE FLOW CHANNELS SLOPED TOWARD THE FLOW CHANNELS. PIPES LAID THROUGH MANHOLES SHALL HAVE THE TOP HALF REMOVED TO NEAT LINES FOR THE FULL INSIDE DIAMETER OF THE MANHOLE. MANHOLE FLOORS SHALL THEN BE SHAPED AROUND THE BOTTOM HALF OF THE PIPE WHICH FORMS THE FLOW CHANNEL.
- PIPES INSTALLED WITHIN THE EXCAVATION MADE FOR THE MANHOLE SHALL BE CRADLED WITH CONCRETE TO THE LIMITS OF THE MANHOLE EXCAVATION. WHEN CLAY PIPE IS USED, THE CRADLE SHALL EXTEND TO THE FIRST JOINT OUTSIDE THE MANHOLE. THE CRADLE SHALL BE TERMINATED AT THE CLAY PIPE JOINT IN A MANNER WHICH WILL MAINTAIN THE FLEXIBILITY OF THE JOINT. COST OF CRADLE WITHIN MANHOLE EXCAVATION OR TO CLAY PIPE JOINTS ADJACENT TO MANHOLE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE MANHOLE.
- MANHOLE COVER CASTINGS AND MANHOLE FRAME CASTINGS SHALL CONFORM TO THE REQUIREMENTS AS INDICATED IN THE STANDARD SPECIFICATIONS AND AS SHOWN IN THE STANDARD DETAIL DRAWING.
- THE VERTICAL DROP IN INSIDE DROP MANHOLES SHALL NOT EXCEED 4' FOR INFLOWING PIPES SIZED 12" OR SMALLER AND 2' FOR INFLOWING PIPES LARGER THAN 12". THE CROWNS OF INFLOWING PIPES SHALL NEVER BE SET LOWER THAN THE CROWN OF THE OUTFLOWING PIPE.
- STANDARD MANHOLES TYPE "A" AND STANDARD INSIDE DROP MANHOLES TYPE "A" SHALL BE BID AS STANDARD MANHOLES FOR THE TYPE AND DIAMETER INDICATED. OUTSIDE DROP MANHOLES TYPE "A" SHALL BE BID AS STANDARD OUTSIDE DROP MANHOLES FOR THE TYPE AND DIAMETER INDICATED. ALL MANHOLE DIAMETERS WILL BE 4' UNLESS INDICATED OTHERWISE.

8/10

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MAR. 1986

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