WICHITA—SEDGWICK COUNTY
W.SC
METROPOLITAN AREA PLANNING COMMISSION
CITY HALL — TENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202
(316) 268-4561

June 7, 1985

Professional Engineering Consultants, P.A.
1440 East English
Wichita, KS 67211

Re: S/D 85-46 - Preliminary Plat of Timbrook 3rd Addition

Gentlemen:

At the regular meeting of the Subdivision Committee of the Metropolitan Area Planning Commission on Thursday, June 6, 1985, the above-captioned plat was considered. The action of the Committee was to approve the preliminary and authorize preparation of the final plat, subject to the following:

A. The applicant shall guarantee the pavement of Shadybrook Court and the cul-de-sac being dedicated to terminate 20th Street North. This guarantee should also provide for the reconstruction of the vacated intersection of Battin and Shadybrook as was included in the street paving petition for Timbrook 2nd Addition.

B. The applicant shall guarantee the drainage improvements required by this replat.

C. The applicant shall guarantee the extension of municipal water to serve each lot.

D. The applicant shall guarantee the extension of sanitary sewer to serve each lot.

E. Since the property is zoned "B" (multiple family), sidewalks shall be included in the street paving petitions.

F. If improvements are guaranteed by petition, a notarized certificate listing the petitions shall be submitted to the Planning Department for recording.

G. The final plat shall state in the plattor's text that Reserve "A" is platted for purposes of construction and maintenance of public utilities as well as for ingress and egress to the property to the south.

H. Since street rights-of-way and utility easements are being vacated and rededicated by this replat, proper reference to K.S.A. 12-512(b) shall be made on the final plat.

I. Closure computations shall be submitted with the final plat tracing.

J. Recording of the plat within 30 days after approval by the Board of City Commissioners.

K. Prior to, or at the time of submitting the final plat, the applicant shall submit a drainage plan to City Engineering for review and approval.

L. Prior to, or at the time of submitting the final plat, the applicant shall submit a sanitary sewer layout plan to City Engineering for review and approval. The final plat shall indicate appropriate utility easements to cover sanitary sewer line extensions.

The enclosed "marked" copy of the plat is for your information and files. If you should have any questions, please call.

Sincerely,

Forrest L. Nagley
Senior Planner

FLN:mlh

Enclosure

cc: Cerebral Palsy Research Foundation of Kansas, Inc., c/o Joe Korst, 2021 North Old Manor, Wichita, KS 67208
Gossen Livingston Associates, P.A., c/o Mike Kandt, 420 South Emporia, Wichita, KS 67202
Mike Lindebak, City Engineer

WICHITA—SEDGWICK COUNTY
W.S.C.
METROPOLITAN AREA PLANNING COMMISSION
CITY HALL — TENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202
(316) 268-4561

August 15, 1985

Professional Engineering Consultants, P.A.
1440 East English
Wichita, KS 67211

Re: S/D 85-46 - Final Plat of Timbrook 3rd Addition

Gentlemen:

At the regular meeting of the Subdivision Committee of the Metropolitan Area Planning Commission on Thursday, August 15, 1985, the above-captioned plat was considered. The action of the Committee was to approve the preliminary and authorize preparation of the final plat, subject to the following:

A. The applicant shall guarantee the pavement of Shadybrook Court and the cul-de-sac being dedicated to terminate 20th Street North. This guarantee should also provide for the reconstruction of the vacated intersection of Battin and Shadybrook as was included in the street paving petition for Timbrook 2nd Addition.

B. The applicant shall guarantee the storm sewers required by this replat.

C. The applicant shall guarantee the extension of municipal water to serve each lot.

D. The applicant shall guarantee the extension of sanitary sewer to serve each lot.

E. Since the property is zoned "B" (multiple family), sidewalks shall be included in the street paving petitions.

F. If improvements are guaranteed by petition, a notarized certificate listing the petitions shall be submitted to the Planning Department for recording.

G. On the final plat tracing, the 30-foot wide utility and drainage easement shall be separated. The west 10 feet shall be platted for utilities and the east 20 feet for drainage.

H. Closure computations shall be submitted with the final plat tracing.

1. Recording of the plat within 30 days after approval by the Board of City Commissioners.

Enclosed with the applicant's copy of this letter is a list of the five methods which have been adopted as being acceptable for guaranteeing improvements required in the approval of plats. The certificate will be required if petitions are submitted. Forms for the bond and irrevocable Letter of Credit are available from this office.

The enclosed "marked" copy of the final plat is for your information and files.

This matter will be forwarded to the Planning Commission for its consideration on Thursday, August 22, 1985 at 1:30 p.m. If you have any questions concerning this matter, please call.

Sincerely,

Forrest L. Nagley
Senior Planner

FLN:mlh

Enclosure

cc: Cerebral Palsey Research Foundation of Kansas, Inc., c/o Joe Korst, 2021 North Old Manor, Wichita, KS 67208
Gossen Livingston Associates, P.A., c/o Mike Kandt, 420 South Emporia, Wichita, KS 67202
Mike Lindebak, City Engineer

July 25, 1986

Mr. Michael Lindebak, P. E.
City Engineer's Office
City Hall - Seventh Floor
455 N. Main Street
Wichita, KS 67202

Mr. Lindebak,

This letter is in reference to the Timbrook Third Addition located near Shadybrook and Battin, property owned by the Cerebral Palsy Research Foundation of Kansas, Inc.

I understand there was a recent conflict concerning utility placement within the north/south easement bordering Timbrook Third on the east side. The conflict was engendered by a replat of that easement from a "30' Drainage and Utility Easement" to a "20' Drainage Easement" and a "10' Utility Easement."

As owners of the property, we have no objection to having the entire 30' easement designated as a "30' Drainage and Utility Easement." This would permit all utilities to remain as is and would preclude costly and unnecessary relocation.

Randy J. Putnam
Vice-President
Finance & Administration
Cerebral Palsy Research
Foundation of Kansas, Inc.

July 16, 1986

Mr. A. Greg Parish
Manager - Engineering (Design)
Southwestern Bell Telephone Company
154 North Broadway - Room 460
Wichita, KS 67202

Dear Mr. Parish:

This is in response to your letter dated July 9, 1986, concerning the 50 pair Southwestern Bell cable located in the drainage easement in Timbrook 3rd Addition. Our position is the City of Wichita will not pay for the expense to relocate the cable. However, we do not object the cable be left as is provided that a dedication is obtained from the owner to re-dedicate the drainage easement as drainage and utility easement. I believe this is the easiest solution to remedy the situation.

Should you have any questions, please do not hesitate to contact me.

Sincerely,

Mike Lindebak, P.E.
City Engineer/
Acting Director of Planning

/VH:ms
/03/04
cc: Larry Henry, Construction & Maintenance Engineer
Kevin Rood, Professional Engineering Consultants

Southwestern Bell Telephone

154 N. BROADWAY
ROOM 460
WICHITA, KS 67202

July 9, 1986

MR. MICHAEL E. LINDEBAK, P.E.
CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KS 67202

Mr. Lindebak,

Re: Attached Correspondence

The 50 pair Southwestern Bell cable alluded to in the attached correspondence was placed to provide telephone service to the Daniel M. Carney Engineering Rehabilitation Center. The engineering job order (R.O. 5601698), providing for that cable placement was issued December 27, 1985, based upon the preliminary plat for Timbrook III Addition. That plat, dated July 17, 1985, depicted a "30' drainage and utility easement" running north and south along the east lot lines of lots 3-7 of said addition. The cable question was placed in January 1986.

The revised plat of the Timbrook III Addition that Mr. Rood alludes to which sectioned the 30' drainage and utility easement into a "20' drainage easement" (eastern 20') and a "10' utility easement" (western 10') is dated March 1986, and was received by this office during that month. The replat resulted in our cable being within the 20' drainage easement. However, our cable was placed prior to the date of the revision and prior to our receipt of it.

Based upon an on-site meeting among Mr. Ken Tillotson, Southwestern Bell Telephone, Mr. Larry Schaller, City of Wichita, Mr. Kevin Rood, Professional Engineering Consultants and Mr. John Stansbury, Stannard Construction, the decision was made to redirect the storm water sewer inlet five feet west. Two other less costly alternatives were offered by Mr. Tillotson, i.e., Southwestern Bell Telephone to relocate the cable and bill the City or Stannard Construction to relocate the cable at

their expense. Those alternatives were not accepted. Additionally, at that on-site meeting, Mr. Tillotson was informed by Mr. Rood that it would not be necessary to move the Southwestern Bell Telephone cable, but that a separate instrument should be negotiated permitting the cable to remain as is.

We wish to cooperate with you and to resolve this misunderstanding to our mutual satisfaction.

Yours truly,

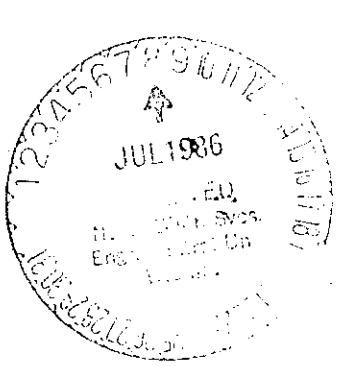
A. Greg Parish
Manager-Engineering (Design)

AGP/je

Enclosure

cc: Ken Tillotson, Ntwk.Svcs.Supv.-Engr.(Design)

WICHITA



CITY ENGINEER'S OFFICE
CITY HALL — SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202
(316) 268-4501

July 7, 1986

Mr. John R. Quinn
Manager - Engineering (Design)
Southwestern Bell Telephone Company
154 North Broadway, Room 460
Wichita, Kansas 67202

Subject: Storm Water Sewer No. 300
Timbrook 3rd Addition

Dear Mr. Quinn:

Transmitted herewith is a copy of a letter from Professional Engineering Consultants referencing a 50-pair cable belonging to Southwestern Bell that has been installed in an easement dedicated for drainage only.

It is our understanding that Mr. Ken Tillotson, of Southwestern Bell, has been advised of this matter.

Please consider this letter your notification to take the appropriate action to remedy this situation.

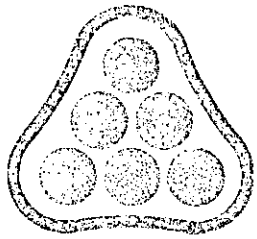
Yours truly,

Michael E. Lindebak, P.E.
City Engineer

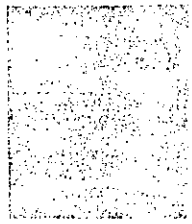
MEL:lgr

Enclosure

cc: Larry Henry, Construction and Maintenance Engineer



PROFESSIONAL
ENGINEERING
CONSULTANTS
PROFESSIONAL ASSOCIATION



MEMO

TO: Mr. Larry Henry, P.E.
City of Wichita
455 N. Main
Wichita, KS 67202

Attention: Mr. Larry Schaller, P.E.

FROM: Kevin L. Rood, P.E.
Project Engineer

DATE: June 18, 1986

REFERENCE: Timbrook 3rd Addition
Storm Water Sewer No. 300
C.O.W. Project No. 468-76-245-81511-000-000-001
PEC Project No. 34-86130-042

A meeting was held on the project site to determine the corrective action necessary due to conflicts with Southwestern Bell Telephone. The first location was concerning a 400 pr. cable located East and West within the confines of Shadybrook Street. Upon excavation it was found that adequate clearance can be maintained by keeping the storm water sewer elevation as designed. The second conflict is with a 50 pr. cable North and South located within the drainage easement installed between the time of design survey and construction of the project. To avoid this conflict the storm water sewer inlet at Sta. 0+81.6 was moved 5 feet to the west by mutual agreement. The center of the drainage swale will remain as designed and will be graded to the inlet at the north end of the project. The contractor is to have the storm sewer back to the as designed location at the manhole Sta. 4+07.24.

It is important to note that the 50 pr. Southwestern Bell cable recently installed is located in an easement dedicated only for drainage by replat signed October 15, 1985, and recorded December 5, 1985. It is recommended that Southwestern Bell be notified of this situation so they may take the appropriate corrective action.

cc: Mr. Carl Gipson, P.E.

JUN 24 1986

1440 EAST ENGLISH
WICHITA, KANSAS 67211
(316) 262-2691

CEREBRAL PALSY RESEARCH FOUNDATION OF KANSAS, INC.
2021 North Old Manor • P.O. Box 8217 • Wichita, Kansas 67208-0217 • (316) 688-1888

January 16, 1986

Mr. Mike Lindebak, City Engineer
7th Floor - City Hall
455 North Main
Wichita, Kansas 67202

RE: Phase I Improvements,
Timbrook 3rd Addition

Dear Mr. Lindebak:

Attached are the Letters of Credit and Affidavits for the following projects:

20th St., W.L. Lot 1, Blk B, Timbrook 3rd Addition to & incl. Cul-de-Sac
472 76 245 81058 000 000 001

Lateral 46, Main 5, Sanitary Sewer 23
468 76 245 81509 000 000 001

Storm Water Sewer 300
468 76 245 81511 000 000 001

Water Distribution System
448 76 245 88063 000 000 001

The Cerebral Palsy Research Foundation building project is under construction on Lot 8, Blk 1, Timbrook 3rd Addition. We will appreciate your expeditious handling to initiate the design and construction of these projects.

We request that the City enter into a two-party agreement with Professional Engineering Consultants, P.A., for design engineering services for these projects. PEC provided the engineering services in connection with the platting of Timbrook 3rd Addition.

Very truly yours,

John F. Jonas, Jr.
President and Founder

TRC preparing contracts
Contract to Dick 1-17-86 TRM

THE CITY OF WICHITA

OFFICE OF MAPD - Design Division DATE October 7, 1985

TO Forrest Nagley, Senior Planner

FROM Steven D. Palmer, Civil Engineer III

SUBJECT Dhon Addition
Golden Hills Addition
Timbrook 3rd Addition

The required petitions for the above referenced additions have been received.

Steven D. Palmer
Civil Engineer III

/WM:ms
/01/14

MEMO

PROFESSIONAL ENGINEERING CONSULTANTS
PROFESSIONAL ASSOCIATION
1440 EAST ENGLISH
WICHITA, KANSAS
ZIP CODE / 67211

TO: Mike Lindebak
City Engineer

ATTN: Steve Palmer

COPIES TO:

36-85160-757
PROJECT NO.

PROJECT: Timbrook 3rd Addn.

DATE: 8/30/85

FROM: Dick Linn

REFERENCE: Petitions for Public Improvements

PLEASE ADVISE IMMEDIATELY OF ANY MISCONCEPTIONS OR OMISSIONS YOU BELIEVE TO BE CONTAINED HEREIN.

Attached are the data sheets for preparation of the petitions for Timbrook 3rd Addn. Also attached is a copy of the proposed Final Plat showing the square footage of the lots. The Final Plat was approved by the Planning Commission on 8/22/85.

We will appreciate your efforts to expedite preparation of the petitions so that the Plat can be scheduled on the City Commission Agenda.

MEMO

TO: City of Wichita
City Engineer's Office
455 North Main 67202
ATTN: Chris Breitenstein, P.E.

PROJECT NO. 36-85160-757
PROJECT: Timbrook 3rd Addition
DATE: May 21, 1985

COPIES TO:
Forrest Nagley - MAPD

FROM: Charles S. Brown, P.E.
REFERENCE: Drainage Plan

PLEASE ADVISE IMMEDIATELY OF ANY MISCONCEPTIONS OR OMISSIONS YOU BELIEVE TO BE CONTAINED HEREIN.

Transmitted herewith is one (1) copy of the Drainage Plan and supporting calculations for the proposed Timbrook 3rd Addition to Wichita..

The Preliminary Plat has been submitted for hearing by the Subdivision Committee on June 6, 1985.

CSB/mkm

RECEIVED
MAY 23 1985
DESIGN DIVISION

PROFESSIONAL ENGINEERING CONSULTANTS
PROFESSIONAL ASSOCIATION
1440 EAST ENGLISH
WICHITA, KANSAS
ZIP CODE / 67211

Date May 20, 1985 Page 3 of 5

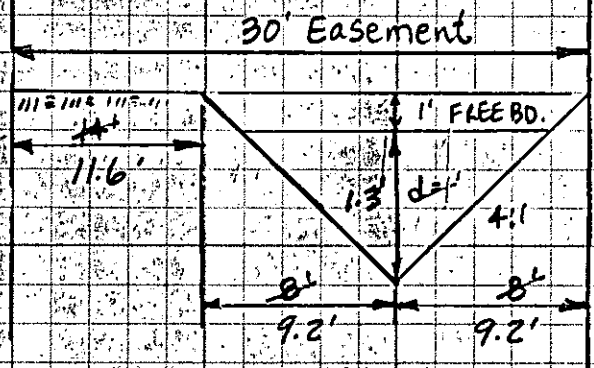
Project Timbrook 3rd Addition

Item Drainage

Revised 6-5-85

Determine Ditch Size Needed

$Q_{100} = 22$ cfs



$Q = \frac{1.486}{n} AR^{2/3} S^{1/2}$

$22 = \frac{1.486}{0.013} AR^{2/3} (0.015)^{1/2}$

$AR^{2/3}$ Required = ~~1.57~~ 4.23

where $Q = 22$ cfs
$n = 0.013$
$S = 1.5\%$ ±

d	A	P	R	$R^{2/3}$	$AR^{2/3}$	
1.0	1.4	8.24	0.485	0.62	2.4	~~Close Enough~~
1.1	4.84	9.05	0.535	0.66	3.2	$V = \frac{Q}{A} = \frac{22}{4} = 5.5$ fps
1.2	5.76	9.90	0.582	0.70	4.0	← USE d = 1.2'
1.3	6.76	10.72	0.631	0.74	4.97	$V = \frac{Q}{A} = \frac{22}{5.76} = 3.8$

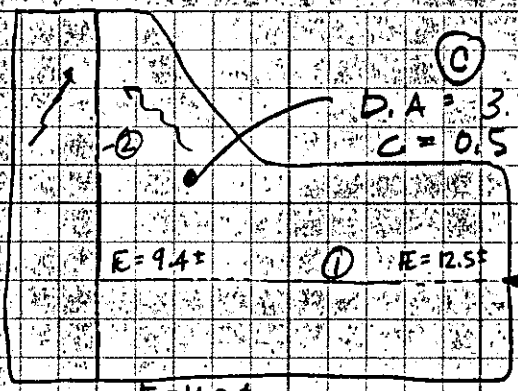
OK

PROFESSIONAL ENGINEERING CONSULTANTS
PROFESSIONAL ASSOCIATION
1440 EAST ENGLISH
WICHITA, KANSAS
ZIP CODE / 67211

Date May 20, 1985 Page 1 of 5

Project Timbrook 3rd Addition

Item Drainage



① Put 20th Street Drainage (A) in pipe (Design for Q_{100})
Pipe slope = 1% ±
USE 15" RCP @ 1.2%

② Total Q in ditch = A + B + C
use hydrograph - graphical method to find peak Q
(See sheet 2)

(A) 7.3 cfs @ (29 min + $\frac{630'}{3\text{ fps}}$ travel) = 7.3 cfs @ 32.5 min

(B) 12.0 cfs @ (41 min + $\frac{460'}{3\text{ fps}}$ travel) = 12.0 cfs @ 43.6 min

(C) Q = 0.5 × 8.98 × 3.3 = 14.8 cfs @ 15 min.

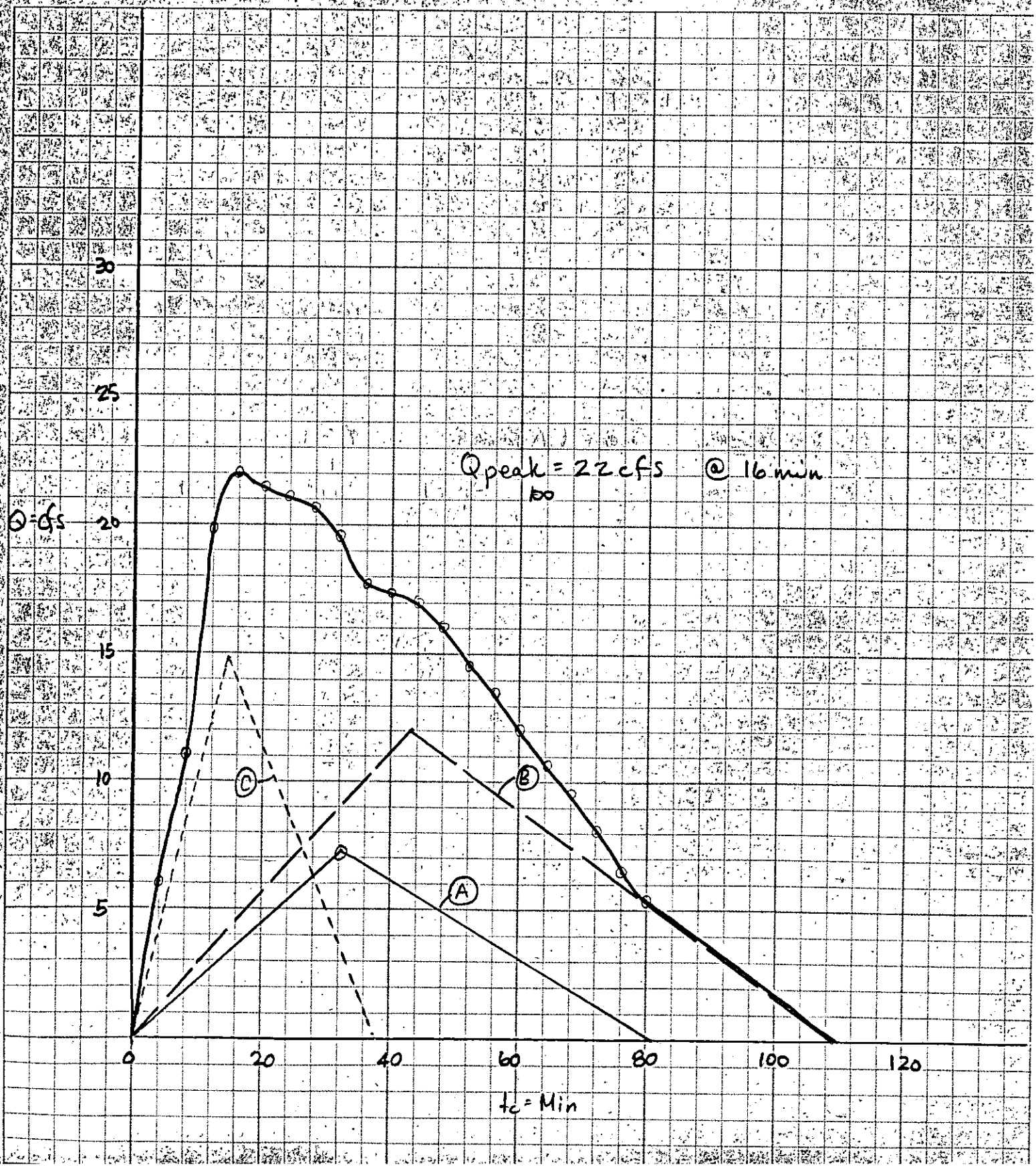
Composite Hydrograph: Q peak = 22 cfs @ 16 min

PROFESSIONAL ENGINEERING CONSULTANTS
PROFESSIONAL ASSOCIATION
1440 EAST ENGLISH
WICHITA, KANSAS
ZIP CODE / 67211

Date May 20, 1985 Page 2 of 5

Project Timbrook 3rd Addition

Item Drainage



PROFESSIONAL ENGINEERING CONSULTANTS
PROFESSIONAL ASSOCIATION
1440 EAST ENGLISH
WICHITA, KANSAS
ZIP CODE / 67211

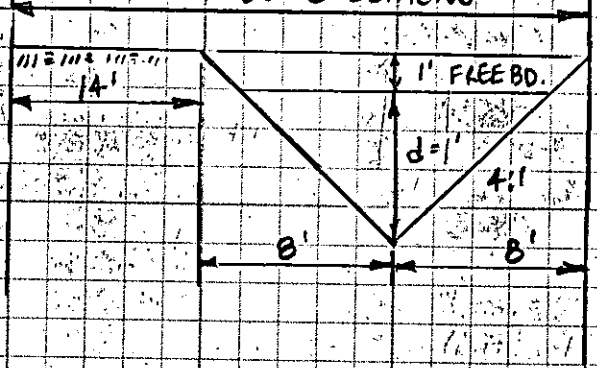
Date May 20, 1985 Page 3 of 5

Project Timbrook 3rd Addition

Item Drainage

Determine Ditch Size Needed

$Q_{100} = 22$ cfs



Do ditch going to be paved?

$Q = \frac{1.486}{n} AR^{2/3} S^{1/2}$

where $Q = 22$ cfs

$n = 0.013$ ~~0.035~~

$S = 1.5\%$ ~~1.84~~

$22 = \frac{1.486}{0.013} AR^{2/3} (0.015)^{1/2}$

$AR^{2/3}$ Required = 1.57

d	A	P	R	$R^{2/3}$	$AR^{2/3}$	
1.0	1.4	8.24	0.485	0.62	2.4	Close Enough

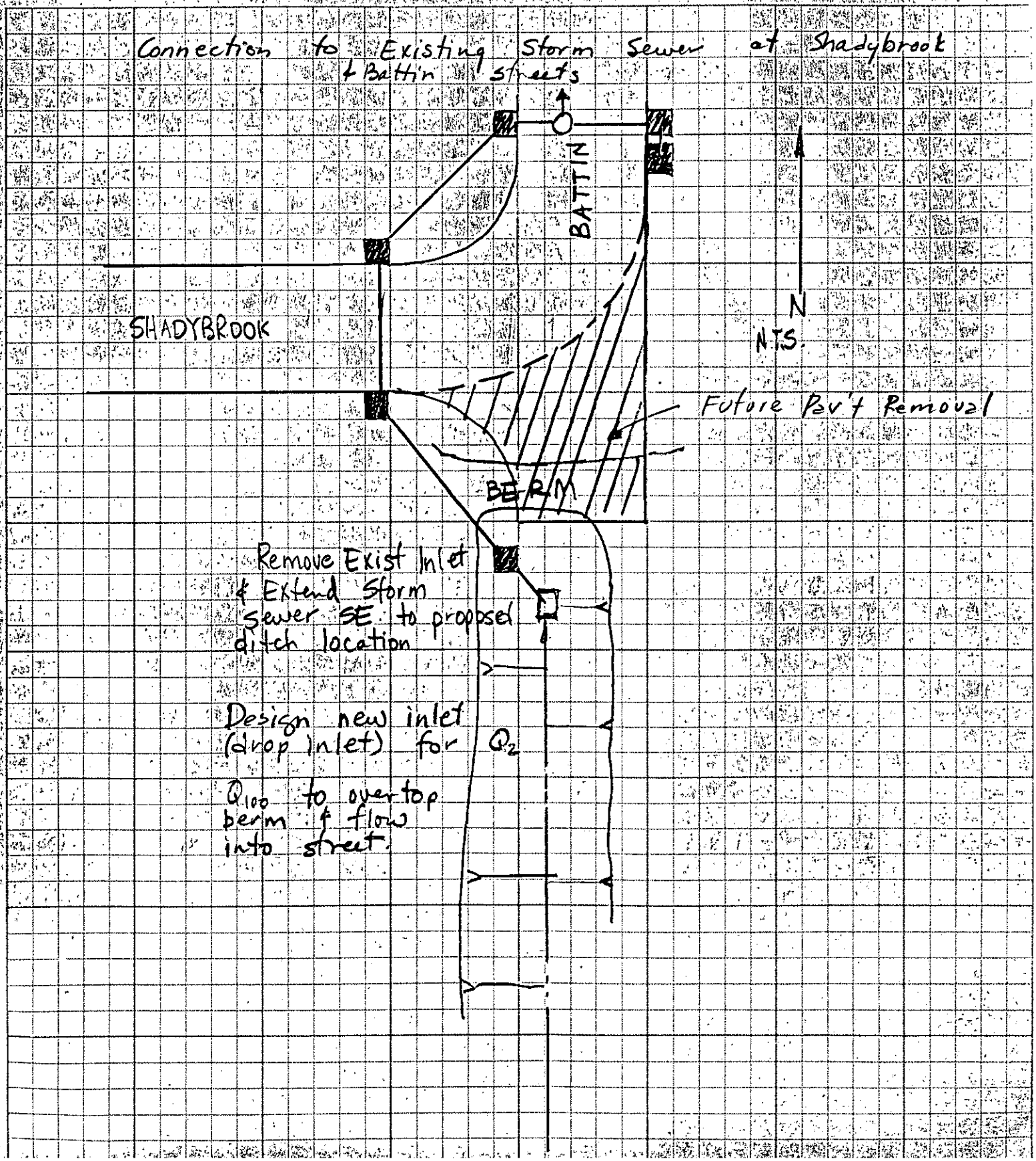
$V = \frac{Q}{A} = \frac{22}{4} = 5.5$ fps

PROFESSIONAL ENGINEERING CONSULTANTS
PROFESSIONAL ASSOCIATION
1440 EAST ENGLISH
WICHITA, KANSAS
ZIP CODE / 67211

Date May 20, 1985 Page 4 of 5

Project Timbrook 3rd Addition

Item Drainage



PROFESSIONAL ENGINEERING CONSULTANTS
PROFESSIONAL ASSOCIATION
1440 EAST ENGLISH
WICHITA, KANSAS
ZIP CODE / 67211

Date May 20 1985 Page 5 of 5

Project Timbrook 3rd

Item Drainage.

Inlet Design (Inlet Just So. of Shadybrook)

$Q_2 = A + B + C$

$Q_2 = 3.1 + 5.1 + 6.7$

$Q_2 = 14.9$ cfs (Q's added peak-on-peak for safety factor)

USE Allowable Head = 1.5'

Orifice Flow $Q = cA\sqrt{2gh}$

$14.9 = 0.6 \times A \sqrt{2 \times 32.2 \times 1.5'}$

$14.9 = 0.6 \times A \times 9.83$

$14.9 = 5.90\ A$

$A = 2.52$ SF

Weir Flow $Q = cLH^{3/2}$

$14.9 = 3.0 \times L \times 1$

$L = 4.96'$

USE 1 COW 2' x 4' Drop Inlet

$L = 12'$; $A = 2.56$ SF

Curb Inlet on 20th St. Use 1 COW Std 5' Curb Inlet

Prc. Sub June 6, 1985

1. Leslie Bills, Lot 34 Robsons Heights. No water in easement to be vacated. No water problem.

2. Edgar Griffin, Floodway vacation. No water in area. No water problem.

3. Timbrook 3rd Addition. Item C. Water to be extended as necessary.

4. Dhon Addition. Item C. Water to be extended as necessary. Existing 8" in Comp, Xistg 6" in 30th St. Xistg 12" in 31st St. 8" to be extended in Lawrence.

5. Thunderbird Fourth Addition. Existing water mains adjacent to the property. No water problems.

6. East Hampton Addition. Existing 24" Water Main on the West side of Woodlawn. Interior mains to be extended (Item B).

7. Windemere Addition. Item B. Mains to be extended from Oxford.

8. Ritchie Paving, Inc., Street Dedication. No city water in area. No water problem.

9. Charles S. Testerman, Strut dedication. No water mains in area. No water Problems.

10. Other Matters.

PROFESSIONAL ENGINEERING CONSULTANTS
PROFESSIONAL ASSOCIATION

1440 EAST ENGLISH
WICHITA, KANSAS 67211
(316) 262 2691

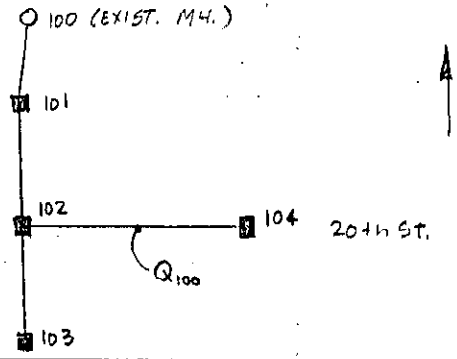
HYDROLOGY DATA SHEET

PROJECT: Timbrook 3rd Addition PROJECT NO. 36-85160-757

ITEM: Storm Drainage DATE: 7-9-85

RETURN PERIOD: 2 * COMPUTATIONS BY: CSB REVISIONS BY:

SCHEMATIC DIAGRAM:



* 2 yr in all basins except 104 &
100 yr in subbasin 104

TRIBUTARY AREA								HYDROLOGY SUMMATION				CONDUIT DATA					
SUB-BASIN (1)	C (2)	AREA (acres) (3)	SLOPE (%) (4)	LENGTH (feet) (5)	T_{c_o} (minutes) (6)	I_o in/hr. (7)	Q_o (cfs) (8)	T_c (minutes) (9)	I in/hr. (10)	Q (cfs) (11)	ΣQ (cfs) (12)	PIPE (inches) (13)	SLOPE (%) (14)	VELOCITY (ft/sec.) (15)	LENGTH (feet) (16)	T_t (minutes) (17)	$T_c + T_t$ (minutes) (18)
104	0.5	3.3		*	*.29	6.95	11.5	29	6.95	11.5	11.5	18"	1.2	6.5	275	0.7	29.7
103	0.5	4.5		*	* 41	2.27	5.1	41	2.27	5.1	5.1	15"	0.55	4.0	120	0.5	41.5
102	0.5	1.2			15	4.06	2.4	41.5	5.27 (104) = 8.7 2.25 (102+103) 6.4		15.1	21" 18"	0.85 2.00	6.1 8.4	320	0.9	42.4
101	0.5	1.0			15	4.06	2.0	42.4	5.19 (104) = 8.6 2.21 (102, 103, 101) = 7.4		16.0	21"	1.0	6.6	90'	0.2 to MH (100)	42.6
100	—	(Manhole)															

** From Timbrook 2nd Addition Approved Drainage Plan.

PROFESSIONAL ENGINEERING CONSULTANTS
PROFESSIONAL ASSOCIATION
1440 EAST ENGLISH
WICHITA, KANSAS 67211
(316) 262-2691

HYDROLOGY DATA SHEET

PROJECT: Timbrook 3rd Add'n PROJECT NO. 36-85160-757

ITEM: Storm Drainage DATE: 7-9-85

RETURN PERIOD: 100 COMPUTATIONS BY: CSB REVISIONS BY:

SCHEMATIC DIAGRAM:

TRIBUTARY AREA								HYDROLOGY SUMMATION				DITCH / CONDUIT DATA					
SUB-BASIN (1)	C (2)	AREA (acres) (3)	SLOPE (%) (4)	LENGTH (feet) (5)	T_{c_o} (minutes) (6)	i_o in/hr. (7)	Q_o (cfs) (8)	T_c (minutes) (9)	I in/hr. (10)	Q (cfs) (11)	Σ Q (cfs) (12)	PIPE (inches) (13)	SLOPE (%) (14)	VELOCITY (ft/sec.) (15)	LENGTH (feet) (16)	T_t (minutes) (17)	$T_c + T_t$ (minutes) (18)
104	0.5	3.3			29	6.95	11.5	29	6.95	11.5	11.5	18"	1.2	6.5	275	0.7	29.7
103	0.5	4.5			41	5.32	12.0	41	5.32	12.0	12.0	V 4:1	1.3%	4.0	120	0.5	41.5
102	0.5	1.2			15	8.98	5.4	41.5	5.27	104 8.7 103 11.9 102 3.2	23.8	V 4:1	1.3	4.0	320	1.3	42.8
101	0.5	1.0			15	8.98	4.5	42.8	5.15	104 8.5 103 11.6 102 3.1 101 2.6	25.8	V 4:1	1.3	4.0	40'	0.2	43.0
100	-	(Manhole)															

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WICHITA, KANSAS
ZIP CODE / 67211

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Project Timbrook 3rd Addition

Item Inlet Sizing

Node	Inlet Type	Design Q	
104	Curb Inlet	Q_{100}	11.5 cfs
103	Catch Basin	Q_2	5.1 cfs
102	" "	Q_2	2.4 cfs
101	" "	Q_2	2.0 cfs
100	(Existing Manhole to remain)		

104 Q = 11.5 cfs

Assume 1 COW Type 1A Inlet L = 5' h = 6"

$A = Lh = 5 \times 0.5 = 2.5$ sq ft

Using Chart 12 attached $d_i = 0.95'$

Max. d_i = Max d + a

= (Curb depth + 0.3') + (2")

= (0.55' + 0.3') + (0.16') = 1.01'

USE 1 CURB INLET L = 5'

103 Q = 5.1 cfs

use depth of water = 0.4'

Using Chart 11 attached P required = 7'

Use 1 COW Std 2'x4' Catch Basin

P Provided = 12'

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Project Timbrook 3rd Addition

Item Inlet Sizing

102 Q = 2.4 cfs

use depth of water = 0.4'

Using chart II attached, Prequired = 3'

Use 1 COW Std 2'x4' catch Basin

P provided = 12'

101 Q = 2.0 cfs

use depth of water = 0.4'

Using Chart II attached, Prequired = 3'

Use 1 COW Std 2'x4' Catch Basin

P provided = 12'

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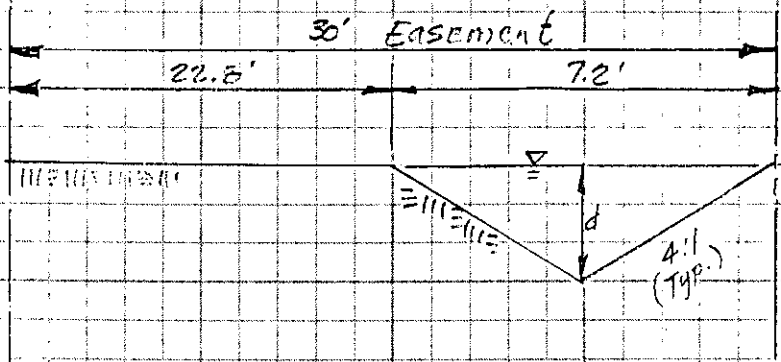
Project Timbrook 3rd Addition

Item Overflow Ditch Design.

Design ditches in back of lots to handle difference between 100 yr. Q & Q in pipe.

$Q_{ditch} = Q_{100} - Q_{pipe}$

Ditch Location	Q_{100}	Q_{pipe}	Q_{ditch}	
103 → 102	12.0 cfs	5.1 cfs	6.9 cfs	
104 → 102	11.5	11.5	0.0	No ditch req'd (Q_{100} in pipe)
102 → 101	23.8	15.1	8.7	
101 → 100	25.8	16.0	9.8	



TYPICAL DITCH SECTION

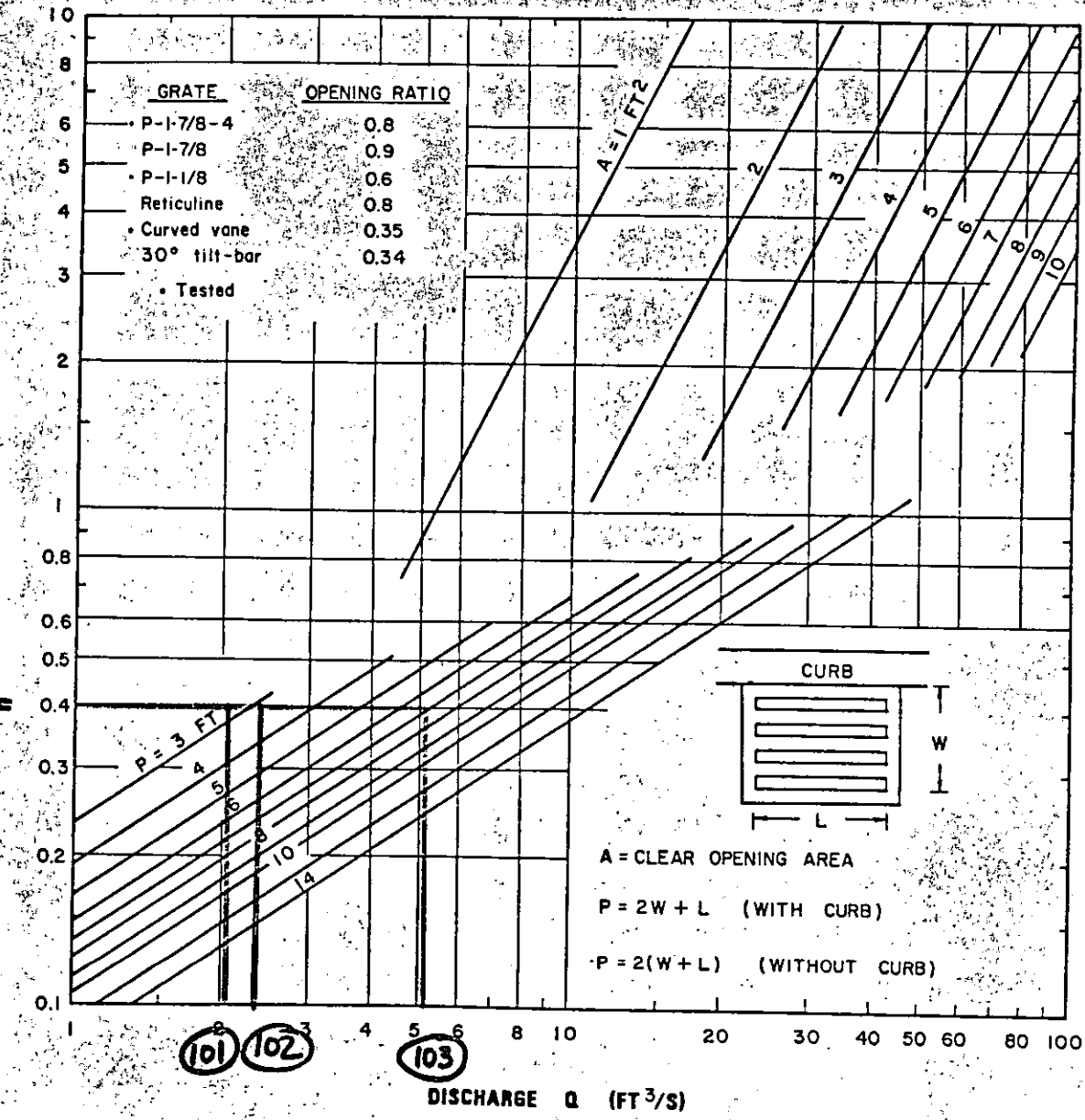
Use Mannings Eq'n for open channel flow

$Q = \frac{1.486}{n} A R^{2/3} S^{1/2}$ Where $Q = 9.8$ cfs, $n = 0.035$, $S = 0.015$ ft/ft

$9.8 = \frac{1.486}{0.035} A R^{2/3} (0.015)^{1/2}$

$AR^{2/3} = 1.88$

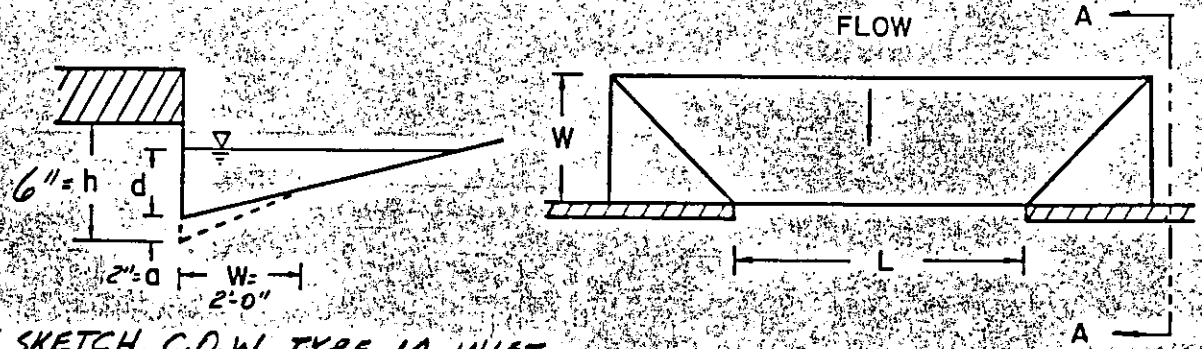
d	A	P	R	$R^{2/3}$	$AR^{2/3}$	
1.0	4.0	8.24	0.485	0.62	2.4	use d = 0.9'
0.9	3.24	7.42	0.437	0.58	1.86	$V = \frac{Q}{A} = \frac{9.8}{3.24} = 3.0$ fps



Assumed d =

CHART 11. Grate inlet capacity in sump conditions.

FROM: HEC-12, DRAINAGE OF HIGHWAY PAVEMENTS, F.H.W.A., MAR 1984



DEF. SKETCH, C.O.W. TYPE 1A INLET

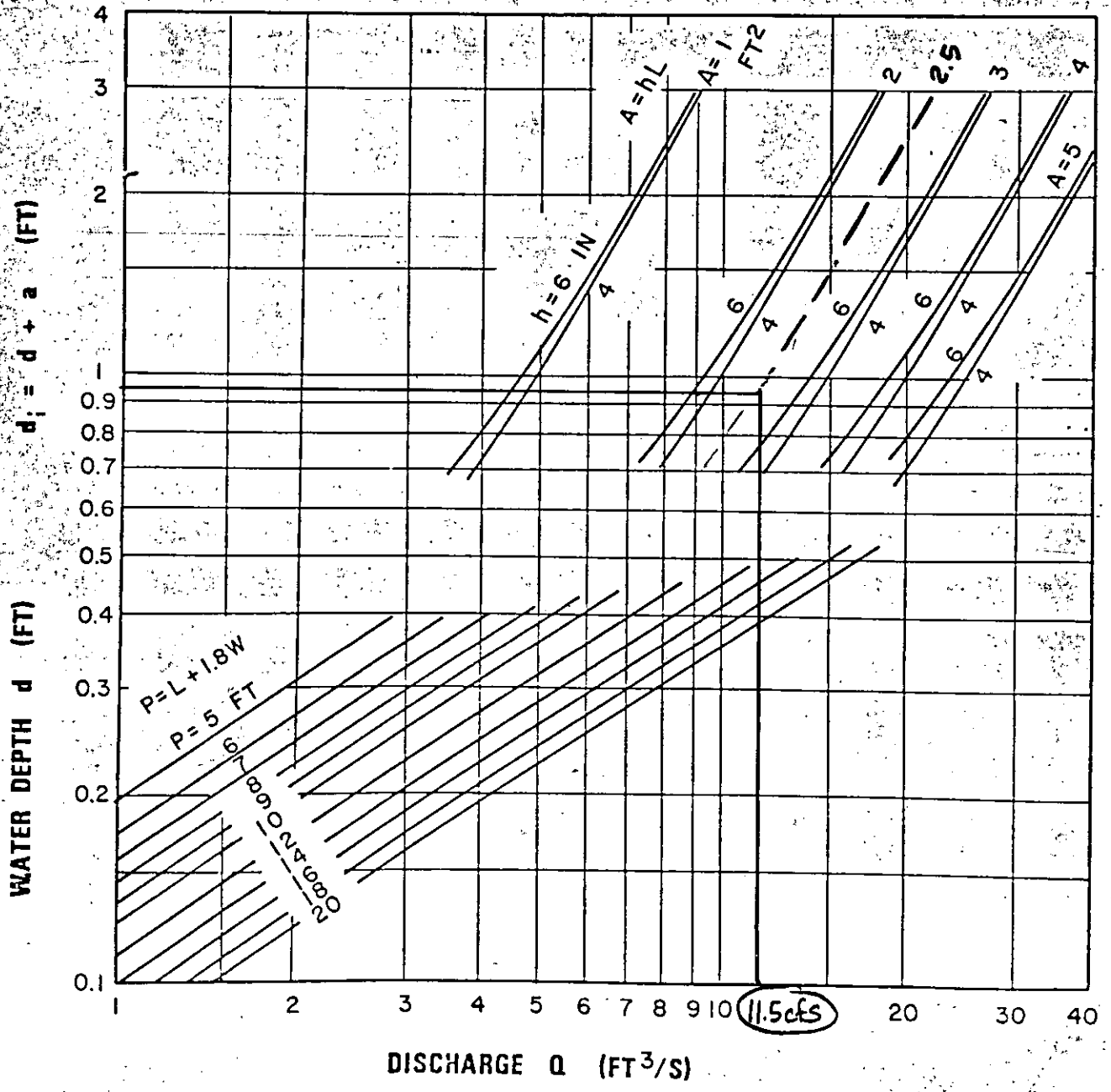


CHART 12. Depressed curb-opening inlet capacity in sump locations.

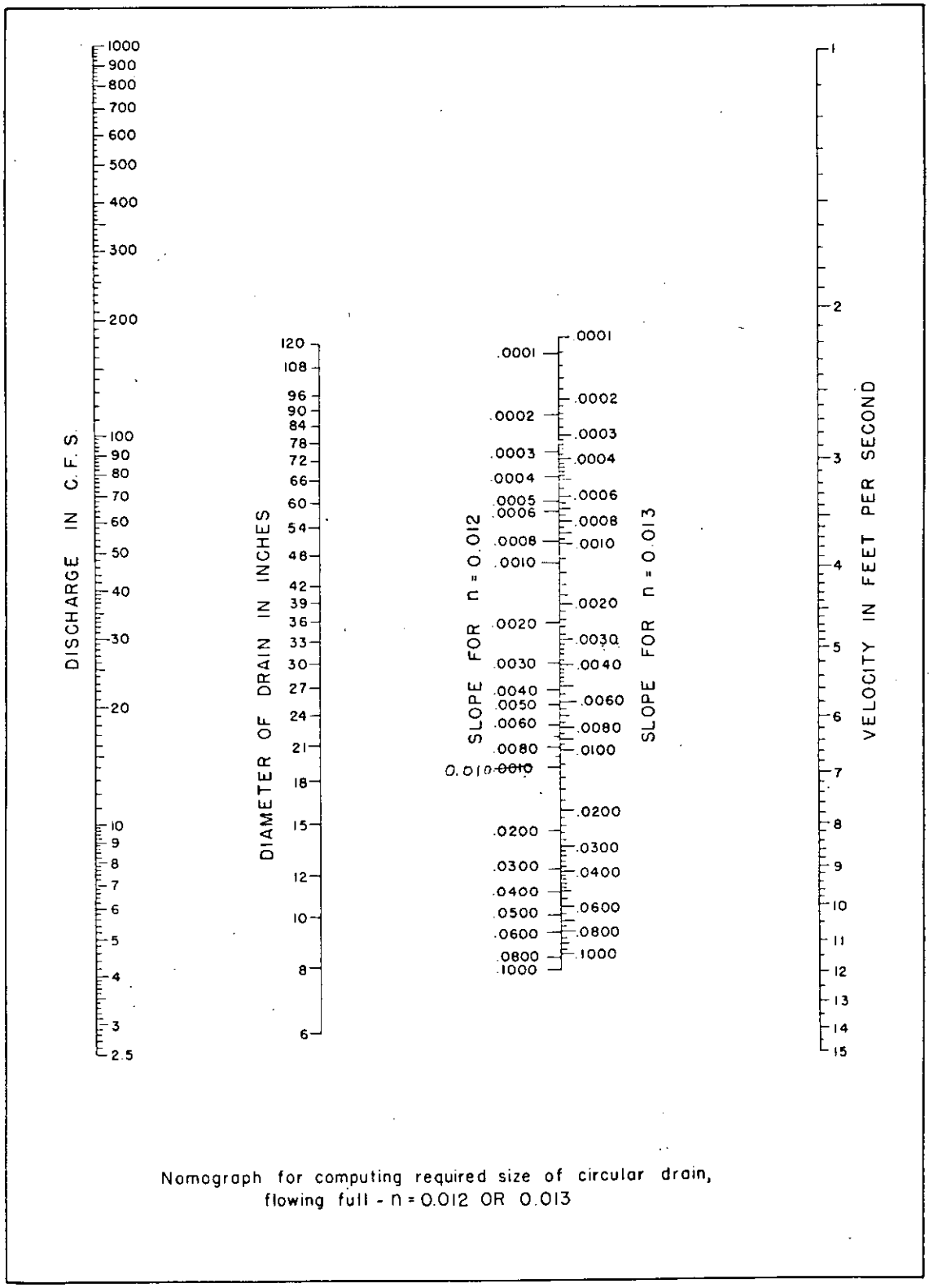
FROM: HEC-12, DRAINAGE OF HIGHWAY PAVEMENTS, F.H.W.A., MAR., 1984

onsideration of
nple, the apron
ldings. Inlets
uable flexibility
the likelihood
er inlets. Sec-
uld be isolated
r seal traps or
vent transmis-
the system.

Coeffic. "n"
0.012
0.012
0.021
0.023
0.026
0.024
0.027
0.031
0.012
0.015
0.017
.018 to 0.021

oeffic. "n"
1 to 0.020
3 to 0.017
7 to 0.030
). 020
). 020
. 020
. 020
.025
to 0.150*
o 0.08
o 0.06

l has light



Nomograph for computing required size of circular drain, flowing full - n = 0.012 OR 0.013

FIGURE 9. Nomograph for computing required size of circular drain for n 0.012 or 0.013.

RAINFALL INTENSITY TABLE

for

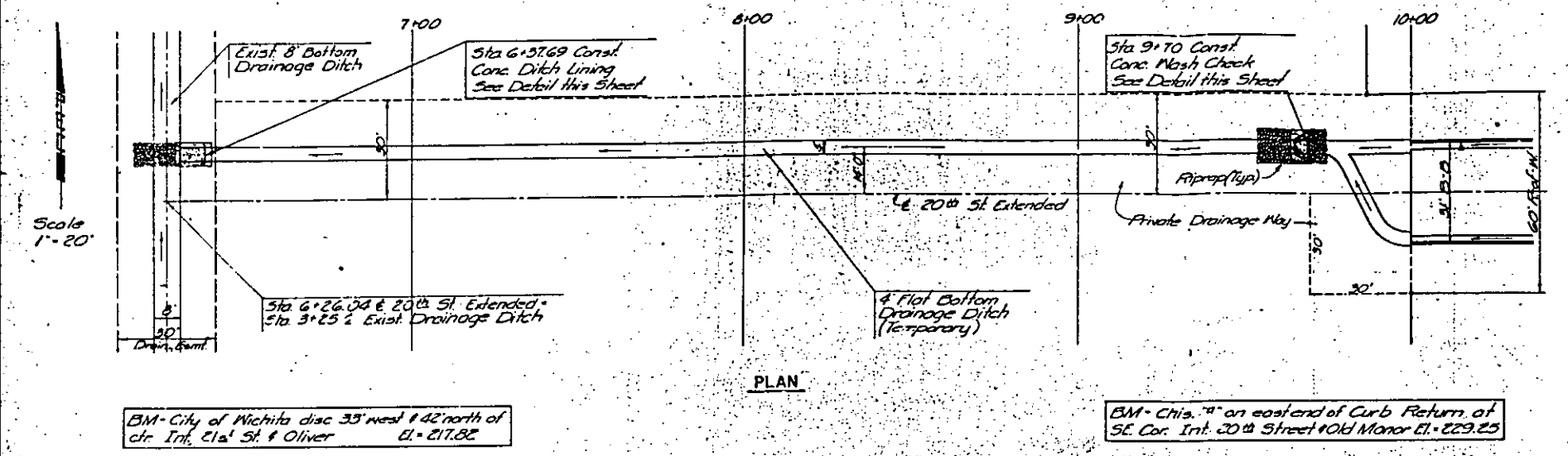
SEDGWICK COUNTY KANSAS

The following tabulation contains rainfall intensity in inches per hour as derived from ESSA Weather Bureau Technical Paper 40.

DURATION IN MINUTES	RETURN PERIODS OF 1-YR	2-YR	5-YR	10-YR	25-YR	50-YR	100-YR
5	4.67	6.23	8.00	9.34	10.67	12.23	13.79
6	4.35	5.80	7.45	8.70	9.94	11.39	12.84
7	4.09	5.46	7.02	8.19	9.36	10.72	12.09
8	3.88	5.18	6.66	7.77	8.89	10.18	11.48
9	3.71	4.95	6.36	7.43	8.49	9.72	10.96
10	3.56	4.75	6.11	7.13	8.15	9.33	10.52
11	3.43	4.58	5.89	6.87	7.85	8.99	10.14
12	3.32	4.43	5.69	6.64	7.59	8.69	9.80
13	3.21	4.29	5.51	6.43	7.35	8.42	9.50
14	3.12	4.17	5.36	6.25	7.14	8.18	9.23
15	3.04	4.06	5.21	6.08	6.95	7.97	8.98
16	2.96	3.96	5.09	5.93	6.78	7.77	8.76
17	2.90	3.86	4.97	5.79	6.62	7.59	8.55
18	2.83	3.78	4.86	5.67	6.48	7.42	8.37
19	2.77	3.70	4.76	5.55	6.34	7.27	8.19
20	2.72	3.63	4.66	5.44	6.22	7.12	8.03
21	2.67	3.56	4.57	5.34	6.10	6.99	7.88
22	2.62	3.49	4.49	5.24	5.99	6.86	7.74
23	2.57	3.43	4.41	5.15	5.89	6.74	7.60
24	2.53	3.38	4.34	5.07	5.79	6.63	7.48
25	2.49	3.32	4.27	4.99	5.70	6.53	7.36
26	2.45	3.23	4.21	4.91	5.61	6.43	7.25
27	2.42	3.13	4.15	4.84	5.53	6.33	7.14
28	2.38	3.05	4.09	4.77	5.45	6.25	7.04
29	2.35	2.97	4.02	4.68	5.38	6.16	6.95
30	2.32	2.89	3.92	4.56	5.31	6.08	6.79
31	2.29	2.82	3.82	4.44	5.19	6.00	6.62
32	2.26	2.75	3.73	4.33	5.07	5.87	6.45
33	2.24	2.68	3.64	4.23	4.95	5.73	6.30
34	2.19	2.62	3.55	4.13	4.83	5.60	6.16
35	2.14	2.57	3.47	4.04	4.73	5.47	6.02
36	2.09	2.51	3.40	3.95	4.62	5.35	5.89
37	2.05	2.46	3.33	3.87	4.52	5.23	5.76
38	2.00	2.41	3.26	3.79	4.43	5.13	5.64
39	1.96	2.36	3.19	3.71	4.34	5.02	5.53
40	1.92	2.32	3.13	3.64	4.26	4.92	5.42
41	1.89	2.27	3.07	3.57	4.18	4.83	5.32
42	1.85	2.23	3.01	3.51	4.10	4.74	5.22
43	1.82	2.19	2.96	3.44	4.02	4.65	5.13
44	1.78	2.15	2.91	3.38	3.95	4.56	5.03
45	1.75	2.11	2.86	3.32	3.88	4.48	4.95

DURATION IN MINUTES	RETURN PERIODS OF 1-YR	2-YR	5-YR	10-YR	25-YR	50-YR	100-YR
46	1.72	2.08	2.81	3.27	3.82	4.41	4.86
47	1.69	2.04	2.76	3.21	3.75	4.33	4.78
48	1.67	2.01	2.72	3.16	3.69	4.26	4.70
49	1.64	1.98	2.67	3.11	3.63	4.19	4.63
50	1.61	1.95	2.63	3.06	3.58	4.13	4.56
51	1.59	1.92	2.59	3.01	3.52	4.06	4.49
52	1.56	1.89	2.55	2.97	3.47	4.00	4.42
53	1.54	1.86	2.51	2.92	3.42	3.94	4.35
54	1.52	1.84	2.48	2.88	3.37	3.88	4.29
55	1.50	1.81	2.44	2.84	3.32	3.83	4.23
56	1.47	1.79	2.41	2.80	3.27	3.77	4.17
57	1.45	1.76	2.37	2.76	3.23	3.72	4.11
58	1.43	1.74	2.34	2.73	3.19	3.67	4.06
59	1.42	1.72	2.31	2.69	3.14	3.62	4.01
60	1.40	1.69	2.28	2.65	3.10	3.57	3.95
61	1.38	1.67	2.25	2.62	3.06	3.53	3.90
62	1.36	1.65	2.22	2.59	3.02	3.48	3.85
63	1.34	1.63	2.20	2.55	2.99	3.44	3.81
64	1.33	1.61	2.17	2.52	2.95	3.40	3.76
65	1.31	1.59	2.14	2.49	2.92	3.35	3.71
66	1.30	1.57	2.12	2.46	2.88	3.31	3.67
67	1.28	1.56	2.09	2.44	2.85	3.27	3.63
68	1.26	1.54	2.07	2.41	2.81	3.24	3.59
69	1.25	1.52	2.05	2.38	2.78	3.20	3.54
70	1.24	1.50	2.02	2.35	2.75	3.16	3.51
71	1.22	1.49	2.00	2.33	2.72	3.13	3.47
72	1.21	1.47	1.98	2.30	2.69	3.09	3.43
73	1.20	1.46	1.96	2.28	2.66	3.06	3.39
74	1.18	1.44	1.94	2.25	2.63	3.03	3.36
75	1.17	1.43	1.92	2.23	2.61	3.00	3.32
76	1.16	1.41	1.90	2.21	2.58	2.96	3.29
77	1.15	1.40	1.88	2.18	2.55	2.93	3.25
78	1.13	1.38	1.86	2.16	2.53	2.90	3.22
79	1.12	1.37	1.84	2.14	2.50	2.88	3.19
80	1.11	1.36	1.82	2.12	2.48	2.85	3.16
81	1.10	1.34	1.81	2.10	2.46	2.82	3.13
82	1.09	1.33	1.79	2.08	2.43	2.79	3.10
83	1.08	1.32	1.77	2.06	2.41	2.76	3.07
84	1.07	1.31	1.75	2.04	2.39	2.74	3.04
85	1.06	1.30	1.74	2.02	2.37	2.71	3.01
86	1.05	1.28	1.72	2.00	2.34	2.69	2.99
87	1.04	1.27	1.71	1.99	2.32	2.66	2.96
88	1.03	1.26	1.69	1.97	2.30	2.64	2.93
89	1.02	1.25	1.68	1.95	2.28	2.62	2.91
90	1.01	1.24	1.66	1.93	2.26	2.59	2.88

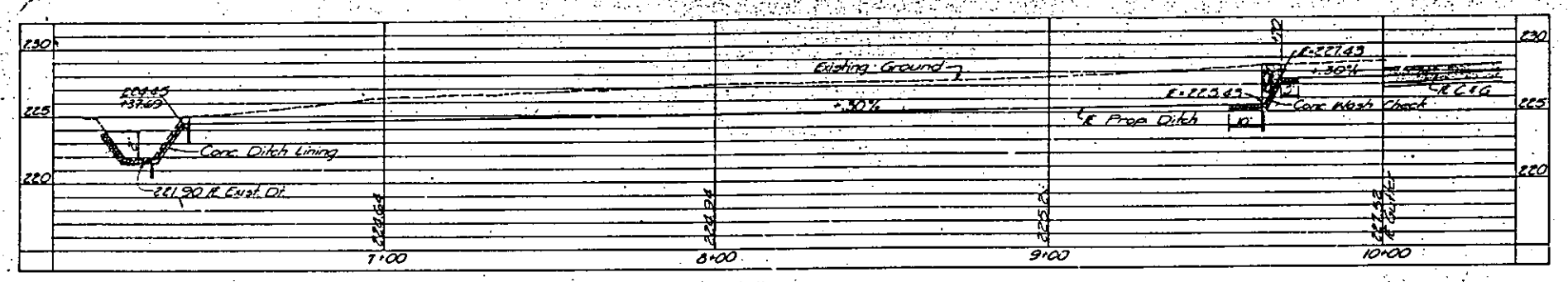
DURATION IN MINUTES	RETURN PERIODS OF 1-YR	2-YR	5-YR	10-YR	25-YR	50-YR	100-YR
91	1.00	1.23	1.65	1.92	2.24	2.57	2.86
92	1.00	1.22	1.63	1.90	2.22	2.55	2.83
93	0.99	1.21	1.62	1.89	2.20	2.53	2.81
94	0.98	1.20	1.61	1.87	2.19	2.51	2.79
95	0.97	1.19	1.59	1.85	2.17	2.49	2.76
96	0.96	1.18	1.58	1.84	2.15	2.46	2.74
97	0.96	1.17	1.57	1.82	2.13	2.44	2.72
98	0.95	1.16	1.56	1.81	2.12	2.42	2.70
99	0.94	1.15	1.54	1.80	2.10	2.41	2.67
100	0.93	1.14	1.53	1.78	2.08	2.39	2.65
101	0.93	1.13	1.52	1.77	2.07	2.39	2.65
102	0.92	1.13	1.51	1.75	2.05	2.35	2.61
103	0.91	1.12	1.50	1.74	2.04	2.33	2.59
104	0.90	1.11	1.49	1.73	2.02	2.31	2.57
105	0.90	1.10	1.47	1.72	2.01	2.30	2.55
106	0.89	1.09	1.46	1.70	1.99	2.28	2.54
107	0.88	1.09	1.45	1.69	1.98	2.26	2.52
108	0.88	1.08	1.44	1.68	1.96	2.25	2.50
109	0.87	1.07	1.43	1.67	1.95	2.23	2.48
110	0.87	1.06	1.42	1.65	1.93	2.21	2.46
111	0.86	1.06	1.41	1.64	1.92	2.20	2.45
112	0.85	1.05	1.40	1.63	1.91	2.18	2.43
113	0.85	1.04	1.39	1.62	1.89	2.17	2.41
114	0.84	1.03	1.38	1.61	1.88	2.15	2.40
115	0.84	1.03	1.37	1.60	1.87	2.14	2.38
116	0.83	1.02	1.36	1.59	1.86	2.12	2.36
117	0.82	1.01	1.36	1.58	1.84	2.11	2.35
118	0.82	1.01	1.35	1.57	1.83	2.09	2.33
119	0.81	1.00	1.34	1.56	1.82	2.08	2.32
120	0.81	0.99	1.33	1.55	1.81	2.07	2.30
121	0.80	0.99	1.32	1.54	1.80	2.05	2.29
122	0.80	0.98	1.31	1.53	1.78	2.04	2.27
123	0.79	0.97	1.30	1.52	1.77	2.03	2.26
124	0.79	0.97	1.30	1.51	1.76	2.01	2.24
125	0.78	0.96	1.29	1.50	1.75	2.00	2.23
126	0.78	0.96	1.28	1.49	1.74	1.99	2.22
127	0.77	0.95	1.27	1.48	1.73	1.98	2.20
128							
129							
130							
131							
132							
133							
134							
135							



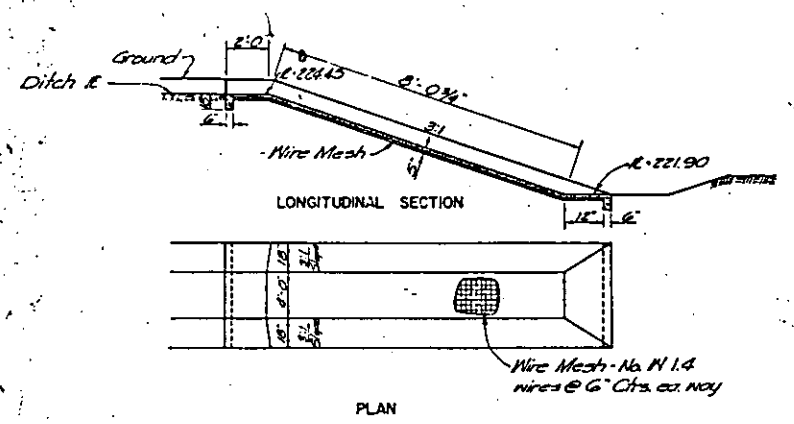
PLAN

BM- City of Wichita disc 35' west & 42' north of ctr. Int. 21st St. & Oliver El.= 217.82

BM- Chis. "9" on east end of Curb Return at SE Cor. Int. 20th Street & Old Manor El.= 229.25

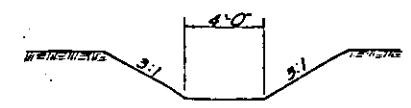


PROFILE

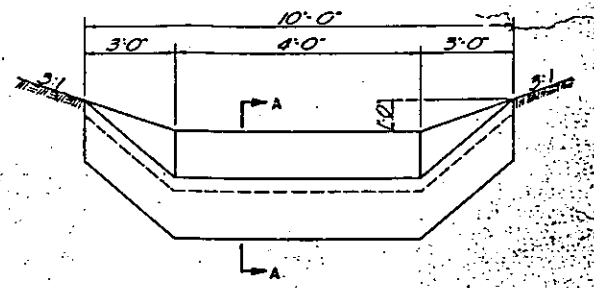


CONCRETE DITCH LINING DETAILS

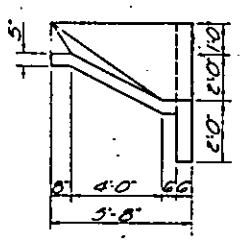
Note: Riprap to be broken concrete placed 12" thick with all protruding steel removed.



TYPICAL SECTION DRAINAGE DITCH



ELEVATION



SECTION A-A

CONCRETE WASH CHECK DETAILS

MARTIN D. EVERETT 6759 LICENSED PROFESSIONAL ENGINEER KANSAS

CITY OF WICHITA
SEDGWICK COUNTY, KANSAS
TIMBROOK
STREET & DRAINAGE IMPROVEMENTS
C of W Project No. 472-76-245-80182-000-000-00
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
WICHITA, KANSAS

Designed by	KE	Checked by	KE
Drawn by	DD	Date	Sept. 1978

Job No. 78003
Sheet 6 of 8

SCHEDULE OF DRIVES	
Station	Width
10+36.0 Rt.	28'-0"
10+73.5 Lt.	28'-0"
11+08.0 Rt.	28'-0"
11+80.0 Rt.	24'-0"
12+30.5 Rt.	10'-8"
12+43.5 Lt.	24'-0"
12+71.7 Rt.	10'-8"
12+85.8 Rt.	10'-8"
13+26.9 Rt.	10'-8"

Sta. 10+100 Begin Street Construction See Detail Below

Note: See Sh. No. 2 for Temp. Ditch Details

Sta. 13+73.05 Const. Conc. Valley Gutter See Detail Below

Sta. 13+77.06 End Street Construction

Contractor to saw cut & remove exist. Conc. Pvmt. in neat line 2'-6" from bk. of Curb. Exist. reinf. steel to be preserved to extend into new construction. Cut exist. steel where necessary to maintain 2" clearance from bk. of curb.

℄ Curve Data (Arc)
Δ = 22° 27' 27"
R = 200.00'
L = 124.62'
T = 89.35'

BM - City of Wichita disc 35' west & 42' north of ctr. Int. 21st St. & Oliver El. = 217.82'

BM - Chis. "C" on east end of Curb Return at SE Cor. Int. 20th St. & Old Manor El. = 229.85

PLAN

SECTION B-B

DRIVE APPROACH DETAIL

SECTION THRU DRIVE

TYPICAL SECTION
31' ASPHALTIC CONCRETE PAVEMENT WITH BITUMINOUS BASE

STANDARD CURB & GUTTER DETAIL

STANDARD INTEGRAL CURB DETAIL

BAR LIST (Valley Gutter)		
Quantity	Length	Shape
5	24'-0"	—
6	6'-0"	—
1	44'-6"	—
1	73'-0"	—
2	2'-0"	—
2	3'-0"	—
2	5'-6"	—
2	24'-0"	—
4	14'-0"	—
2	16'-0"	—

All bars are #6 bars except dowel bars.

HALF PLAN - REINFORCING

HALF PLAN - JOINTS

VALLEY GUTTER DETAIL

SECTION A-A

HOLD FOR BIDDS AND CONTRACT 4-20-78

NOTE TO CONTRACTOR
This project will be constructed under the supervision of the CITY ENGINEER and conforming to the SPECIFICATIONS of the CITY OF WICHITA. The CONTRACTOR will be required by the City of Wichita for all cost of Engineering, Plans, and Inspection.

NOTES

1. A tack coat of emulsified asphalt (SS-1H) shall be applied at an approx. rate 0.05 Gal. per sq. yd. between lifts of asphalt materials when ordered by the Engineer.
2. Bituminous Base and Asphaltic Concrete Wearing Surface shall be placed with a laydown machine having automatic electronic controls for crown and grade. Construction Joints in each lift shall be staggered a minimum distance of 12" with joints in preceding lifts and placed such that a joint will be constructed on the centerline in the top lift.
3. Integral Curb shall be tied to the pavement base with short deformed dowel bars spaced at 2'-6" intervals. These dowel bars shall be not less than ½" or more than ¾" in diameter.
4. All Construction & Materials to comply with Standard City of Wichita Specifications. Construction is to be inspected by the Dept. of Public Works Inspection.

KENNETH D. EVERETT LICENSED 6759 KANSAS PROFESSIONAL ENGINEER

CITY OF WICHITA
SEDGWICK COUNTY, KANSAS

TIMBROOK
STREET & DRAINAGE IMPROVEMENTS

C of W Project No. 472-76-246-80792-000-000-[illegible]

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
ENGINEERS
WICHITA, KANSAS

Designed by	KE	Checked by	KE
Drawn by	DD	Date	Sept 1978

Job No. 78303

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