

**SUBDIVISION COMMITTEE
METROPOLITAN AREA PLANNING COMMISSION**

AGENDA ITEM NO. 3

January 9, 1992

STAFF REPORT
(Preliminary Plat)

CASE NUMBER: S/D 91-66 - CONQUEST NORTH ADDITION

OWNER/APPLICANT: Time Quest North Development & Investment Corp., 1341 N. Grove, Wichita, KS 67214

SURVEYOR/ENGINEER: DuBois Consultants, Inc., Attn: Ajamu Webster or Edward Ieans, 1103 E. 47th St., Suite 225, Wichita, KS 64110

LOCATION: Northeast corner of Grove and 27th St. North.

SITE SIZE: 19 Acres

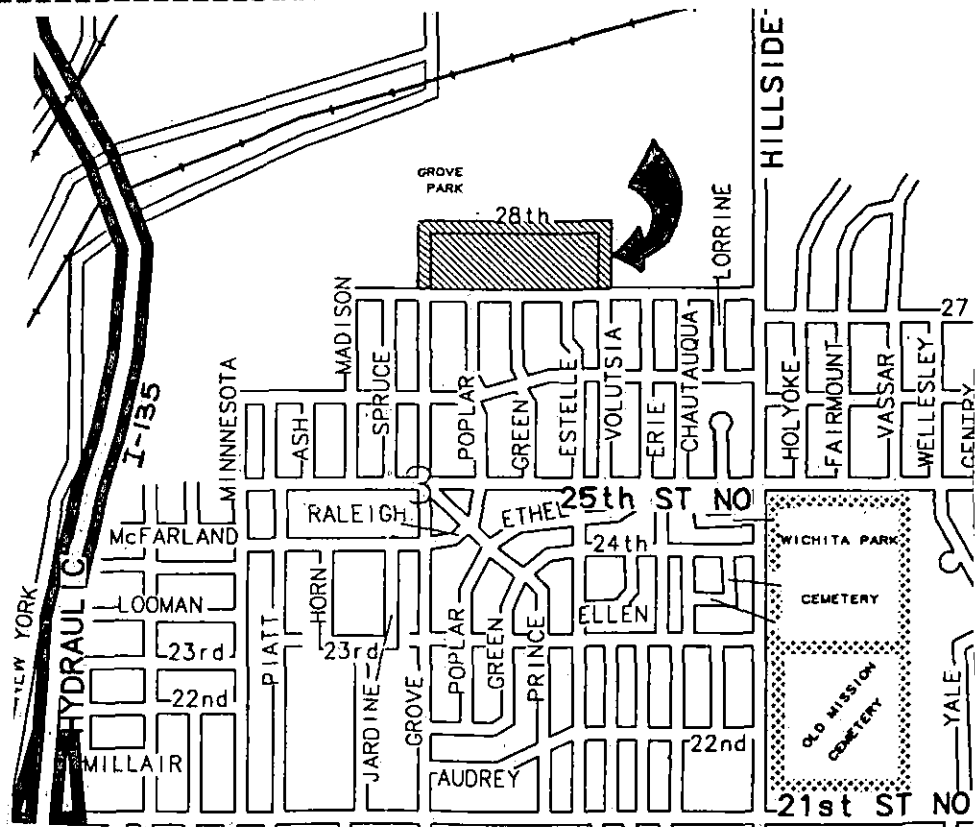
NUMBER OF LOTS

Residential:	37
Office:	
Commercial:	
Industrial:	
Total:	37

MINIMUM LOT AREA: 5,222 sq. ft.

CURRENT ZONING: "A" Two Family Dwelling (DP-24)

VICINITY MAP:



NOTE: This property has been acquired by the City of Wichita for purposes of redeveloping the site for affordable housing. This site is presently zoned "A" Two-family but under a 1967 Community Unit Plan (DP-24) a one lot plat was created with apartment type development being constructed within the site's 16.9 acres. A non-public or private street system was built to serve the apartment (attached town-house) type structures. Various utilities, particularly sanitary sewer lines were also provided largely within or along the private street system.

This site is now being proposed to be developed with a more typical one family form of development. However, lots in the eastern portion of the site do not meet present standards allowed by standard zoning or subdivision regulations. Such narrow frontage lots or lots of under 6,000 square feet can be created if allowed for by a CUP or if the development is submitted under a cluster development concept. As can be noted by the plat the arrangement of lots and lot sizes is largely being dictated by the intention to use the existing street system and existing utility layout.

STAFF COMMENTS:

- A. In order to provide for the type of development now being proposed for this site and to specifically allow for the unconventional lots platted in the eastern portion of this site, the applicant shall pursue an amendment to the current CUP, DP-24. Since this site involves both existing nonstandard type streets and is proposing other non-conventional access to certain of the platted lots (24 foot ingress-egress easements), the CUP should be the means to determine and establish if a private or public street system is to be provided. The final plat shall not be submitted until the CUP is amended.
- B. If a public street system is intended to be provided, the City Engineer's Office shall be contacted to determine the acceptability of the existing street system. The present street system was constructed with a 24 foot driving surface with 90 degree paved parking areas provided in front of the apartment structures. As required by City Engineering guarantees will be provided to reconstruct or repair this street system to a public paving standard.
- C. The use of an ingress and egress easement for access to residential lots is allowed by the Subdivision regulations but was intended for situations where unusual conditions restrict the use of normal public streets. Further, such easements were intended for access to one or a limited number of lots. Private streets or drives may also be used in such situations when provided for under a CUP.

Rather than using the ingress-egress easements shown in Block D and between lots, 5, 6, 7 & 8 of Block C, either the CUP should be used to determine the form of access to be provided for these

lots or the plat shall provide for 50 foot streets. Such streets are intended for short distances, with no parking on either side and may be terminated by a "T" or "Y" type cul-de-sac. For lots 11 and 12 of Block D, access can be provided from 27th St. North, with consequently no need for the access easement or a street between these two lots and lots 9 and 10.

- D. Although an existing sanitary sewer system was provided for the previous development, certain lots being created by this plat will not have direct access to a sewer line. Further, the existing line is now and may continue to be located under street pavement which is generally not considered as allowing an abutting property to have proper access to the sewer line. Finally, the lines were installed privately and the condition or acceptability of these lines will need to be determined.

City Engineering shall be contacted to determine what improvements and guarantees will be required to provide for the development now being planned.

- E. Guarantees shall also be provided for any needed drainage and storm sewer improvements. This guarantee shall include any needed improvements within the drainage dedication.
- F. Certain public utilities are apparently to be abandoned due to this development consequently the abandonment of these utilities shall be guaranteed.
- G. Guarantees shall be provided for the extension of municipal water to all of the platted lots.
- H. For any non-municipal utilities being left out of easements, and therefore requiring relocation, letters shall be provided from the utilities indicating that satisfactory arrangements have been made for any needed relocations.
- I. If improvements are guaranteed by petition, a notarized certificate listing the petitions shall be submitted to the Planning Department for recording.
- J. Since lots 8 and 9, Block A involve a double frontage but with access intended from Conquest St., the final plat shall indicate complete access control across these lots south lines to 27th St. North. Similarly, complete access control to Grove St. shall be indicated across the west line of lots 1, 2, and 3, Block B.
- K. Setbacks may be determined or established through the CUP. However, while front yard setbacks and side yard setbacks from adjacent public streets should be shown on the plat, other side and rear yard setbacks need not be indicated on the plat. For the narrow lots in the eastern portion of this site, the platting of side yard setbacks seems to be an unnecessary restriction and

may be deleted. The setbacks form the common lot lines for lots 11, 12 and 9, 10 may also be deleted if no street, drive, or private easement is created between these lots. The rear yard setbacks also may be deleted particularly since 29th St. along the north line of this plat and Volutsia along the east line are no longer needed and may be vacated by this replat.

- L. City Engineering needs to indicate the acceptability or any requirements associated with the drainage dedication noted along the north and east lines of this plat. If this property is being dedicated to the City it shall be noted in the plat's text, that is, "The drainage dedication is hereby provided for drainage purposes."
- M. Provisions shall be made for ownership and maintenance of the proposed reserve. The applicant shall either form a lot owners' association prior to recording the plat or shall submit a covenant stating when the association will be formed, when the reserve will be deeded to the association and who is to own and maintain the reserve prior to the association taking over those responsibilities.
- N. The final plat shall state in the plat's text the purposes of the proposed reserve as well as who is to own and maintain the reserve.
- O. If a swimming pool is being considered for the Reserve, this must be noted as a use for the Reserve and a site development plan must be provided for review and approval. Among the items that this site plan must address is parking at the site. If the applicant chooses, the swimming pool use may also be addressed in the CUP.
- P. If this plat results in the platting of streets with less than the 64 foot standard right-of-way (and paving of 29 feet or less), the applicant shall submit a covenant which provides for four (4) off-street parking spaces per dwelling unit on each lot which abuts a narrow street (under 64 foot right-of-way). The covenant shall inventory the affected lots by lot and block number and shall state that the covenant runs with the land and is binding on future owners and assigns.
- Q. On the original plat for this site, a minimum building pad elevation was established. If the present drainage plan still indicates the need for a minimum building pad, such elevation shall be noted both in the plat's text and on the face of the plat. On site and off site bench marks shall also be indicated and it shall be noted if the elevation(s) refer to the lowest opening or level.
- R. On the final plat, in order to better locate the easements crossing lot 4, Block B and lots 8, and 9 Block A dimensions shall be shown from lot carriers to the easements.

- S. 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.
- T. Requirements for a final plat (see pages 24-29, Part 4, Article 5 of the MAPC Subdivision Regulations).
- U. The applicant shall install or guarantee the installation of all utilities and facilities which are applicable and described in Article 8 of the MAPC Subdivision Regulations.
- V. The applicant's engineer is advised that the Register of Deeds is requiring the name(s) of the notary public, who acknowledges the signatures on this plat, to be printed beneath the notary's signature.
- W. To receive mail delivery without delay, and to avoid unnecessary expense, the applicant is advised of the necessity to meet with the U.S. Postal Service Growth Management Coordinator (phone 316-946-4527) prior to development of the plat so that the type of delivery, and the tentative mailbox locations can be determined.
- X. The representatives from the utility companies should be prepared to comment on the need for utility easements to be platted on this property.
- Y. The representative from City Engineering should be prepared to comment on the status of the applicant's drainage concept. Also, Engineering needs to indicate any other requirements or concerns that have for this plat, including; needed guarantees, street right-of-way and the need for minimum building pad elevations.

**SUBDIVISION COMMITTEE
METROPOLITAN AREA PLANNING COMMISSION**

AGENDA ITEM NO. 3

January 9, 1992

**STAFF REPORT
(Preliminary Plat)**

CASE NUMBER: S/D 91-66 - CONQUEST NORTH ADDITION

OWNER/APPLICANT: Time Quest North Development & Investment Corp., 1341 N. Grove, Wichita, KS 67214

SURVEYOR/ENGINEER: DuBois Consultants, Inc., Attn: Ajamu Webster or Edward Teans, 1103 E. 47th St., Suite 225, Wichita, KS 64110

LOCATION: Northeast corner of Grove and 27th St. North.

SITE SIZE: 19 Acres

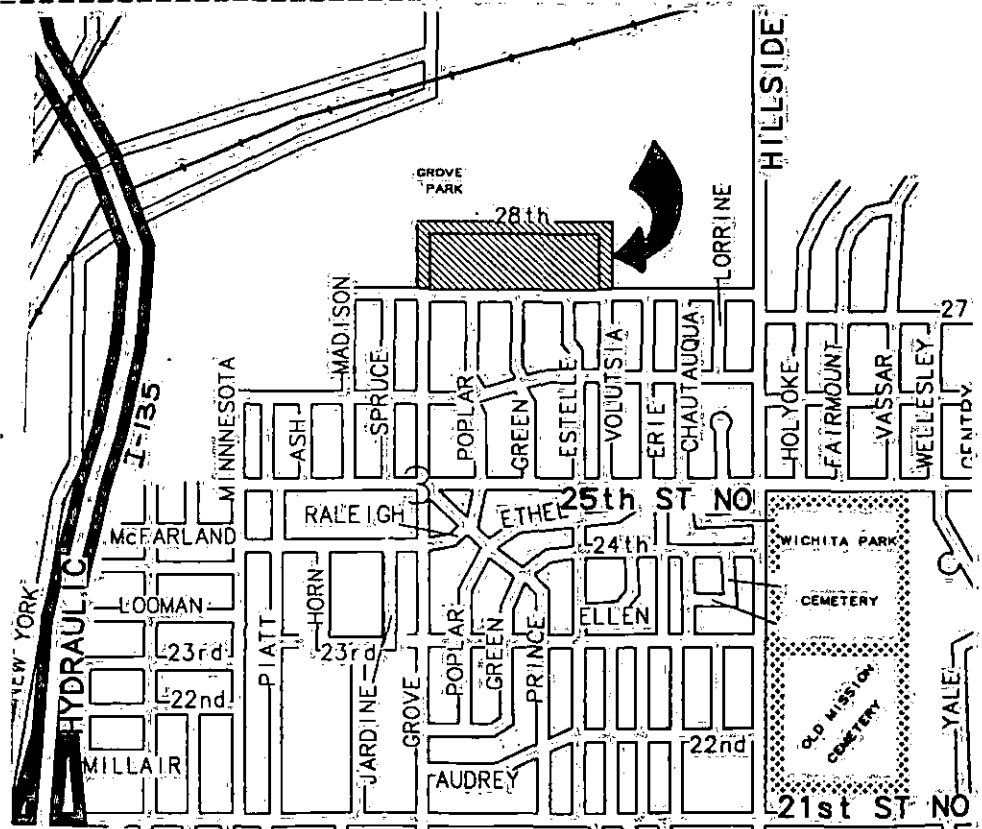
NUMBER OF LOTS

Residential:	37
Office:	
Commercial:	
Industrial:	
Total:	37

MINIMUM LOT AREA: 5,222 sq. ft.

CURRENT ZONING: "A" Two Family Dwelling (DP-24)

VICINITY MAP:



NOTE: This property has been acquired by the City of Wichita for purposes of redeveloping the site for affordable housing. This site is presently zoned "A" Two-family but under a 1967 Community Unit Plan (DP-24) a one lot plat was created with apartment type development being constructed within the site's 16.9 acres. A non-public or private street system was built to serve the apartment (attached town-house) type structures. Various utilities, particularly sanitary sewer lines were also provided largely within or along the private street system.

This site is now being proposed to be developed with a more typical one family form of development. However, lots in the eastern portion of the site do not meet present standards allowed by standard zoning or subdivision regulations. Such narrow frontage lots or lots of under 6,000 square feet can be created if allowed for by a CUP or if the development is submitted under a cluster development concept. As can be noted by the plat the arrangement of lots and lot sizes is largely being dictated by the intention to use the existing street system and existing utility layout.

STAFF COMMENTS:

- A. In order to provide for the type of development now being proposed for this site and to specifically allow for the unconventional lots platted in the eastern portion of this site, the applicant shall pursue an amendment to the current CUP, DP-24. Since this site involves both existing nonstandard type streets and is proposing other non-conventional access to certain of the platted lots (24 foot ingress-egress easements), the CUP should be the means to determine and establish if a private or public street system is to be provided. The final plat shall not be submitted until the CUP is amended.
- B. If a public street system is intended to be provided, the City Engineer's Office shall be contacted to determine the acceptability of the existing street system. The present street system was constructed with a 24 foot driving surface with 90 degree paved parking areas provided in front of the apartment structures. As required by City Engineering guarantees will be provided to reconstruct or repair this street system to a public paving standard.
- C. The use of an ingress and egress easement for access to residential lots is allowed by the Subdivision regulations but was intended for situations where unusual conditions restrict the use of normal public streets. Further, such easements were intended for access to one or a limited number of lots. Private streets or drives may also be used in such situations when provided for under a CUP.

Rather than using the ingress-egress easements shown in Block D and between lots 5, 6, 7 & 8 of Block C, either the CUP should be used to determine the form of access to be provided for these

lots of the plat shall provide for 50 foot streets. Such streets are intended for short distances, with no parking on either side and may be terminated by a "T" or "Y" type cul-de-sac. For lots 11 and 12 of Block D, access can be provided from 27th St. North, with consequently no need for the access easement or a street between these two lots and lots 9 and 10.

- D. Although an existing sanitary sewer system was provided for the previous development, certain lots being created by this plat will not have direct access to a sewer line. Further, the existing line is now and may continue to be located under street pavement which is generally not considered as allowing an abutting property to have proper access to the sewer line. Finally, the lines were installed privately and the condition or acceptability of these lines will need to be determined.

City Engineering shall be contacted to determine what improvements and guarantees will be required to provide for the development now being planned.

- E. Guarantees shall also be provided for any needed drainage and storm sewer improvements. This guarantee shall include any needed improvements within the drainage dedication.
- F. Certain public utilities are apparently to be abandoned due to this development consequently the abandonment of these utilities shall be guaranteed.
- G. Guarantees shall be provided for the extension of municipal water to all of the platted lots.
- H. For any non-municipal utilities being left out of easements, and therefore requiring relocation, letters shall be provided from the utilities indicating that satisfactory arrangements have been made for any needed relocations.
- I. If improvements are guaranteed by petition, a notarized certificate listing the petitions shall be submitted to the Planning Department for recording.
- J. Since lots 8 and 9, Block A involve a double frontage but with access intended from Conquest St., the final plat shall indicate complete access control across these lots south lines to 27th St. North. Similarly, complete access control to Grove St. shall be indicated across the west line of lots 1, 2, and 3, Block B.
- K. Setbacks may be determined or established through the CUP. However, while front yard setbacks and side yard setbacks from adjacent public streets should be shown on the plat, other side and rear yard setbacks need not be indicated on the plat. For the narrow lots in the eastern portion of this site, the platting of side yard setbacks seems to be an unnecessary restriction and

may be deleted. The setbacks form the common lot lines for lots 11, 12 and 9, 10 may also be deleted if no street, drive, or private easement is created between these lots. The rear yard setbacks also may be deleted particularly since 29th St. along the north line of this plat and Volutsia along the east line are no longer needed and may be vacated by this replat.

- L. City Engineering needs to indicate the acceptability or any requirements associated with the drainage dedication noted along the north and east lines of this plat. If this property is being dedicated to the City it shall be noted in the plat's text, that is, "The drainage dedication is hereby provided for drainage purposes."
- M. Provisions shall be made for ownership and maintenance of the proposed reserve. The applicant shall either form a lot owners' association prior to recording the plat or shall submit a covenant stating when the association will be formed, when the reserve will be deeded to the association and who is to own and maintain the reserve prior to the association taking over those responsibilities.
- N. The final plat shall state in the plat's text the purposes of the proposed reserve as well as who is to own and maintain the reserve.
- O. If a swimming pool is being considered for the Reserve, this must be noted as a use for the Reserve and a site development plan must be provided for review and approval. Among the items that this site plan must address is parking at the site. If the applicant chooses, the swimming pool use may also be addressed in the CUP.
- P. If this plat results in the platting of streets with less than the 64 foot standard right-of-way (and paving of 29 feet or less), the applicant shall submit a covenant which provides for four (4) off-street parking spaces per dwelling unit on each lot which abuts a narrow street (under 64 foot right-of-way). The covenant shall inventory the affected lots by lot and block number and shall state that the covenant runs with the land and is binding on future owners and assigns.
- Q. On the original plat for this site, a minimum building pad elevation was established. If the present drainage plan still indicates the need for a minimum building pad, such elevation shall be noted both in the plat's text and on the face of the plat. On site and off site bench marks shall also be indicated and it shall be noted if the elevation(s) refer to the lowest opening or level.
- R. On the final plat, in order to better locate the easements crossing lot 4, Block B and lots 8, and 9 Block A dimensions shall be shown from lot carriers to the easements.

- S. 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.
- T. Requirements for a final plat (see pages 24-29, Part 4, Article 5 of the MAPC Subdivision Regulations).
- U. The applicant shall install or guarantee the installation of all utilities and facilities which are applicable and described in Article 8 of the MAPC Subdivision Regulations.
- V. The applicant's engineer is advised that the Register of Deeds is requiring the name(s) of the notary public, who acknowledges the signatures on this plat, to be printed beneath the notary's signature.
- W. To receive mail delivery without delay, and to avoid unnecessary expense, the applicant is advised of the necessity to meet with the U.S. Postal Service Growth Management Coordinator (phone 316-946-4527) prior to development of the plat so that the type of delivery, and the tentative mailbox locations can be determined.
- X. The representatives from the utility companies should be prepared to comment on the need for utility easements to be platted on this property.
- Y. The representative from City Engineering should be prepared to comment on the status of the applicant's drainage concept. Also, Engineering needs to indicate any other requirements or concerns that have for this plat, including; needed guarantees, street right-of-way and the need for minimum building pad elevations.

I N T E R O F F I C E M E M O R A N D U M

Date: 09-Jan-1992 03:37pm CST
From: Marvin Krout
KROUT M
Dept: Planning
Tel No: 268-4425

TO: Mike Lindebak (LINDEBAK_M)
CC: Chris Cherches (CHERCHES_C)
CC: Steve Lackey (LACKEY_S)

Subject: Conquest plat

This afternoon the subdivision committee reviewed the preliminary plat for the Conquest Addition, prepared by Baughman based on plans drawn by Charles McAfee, for the property which the city has contracted to sell to McAfee. The plat failed to conquer the members of the subdivision committee; they felt that there were too many unanswered questions, even for a preliminary plat, and voted to defer it for a four-week period. McAfee was out of town and the engineer wasn't able to do a very good job of defending their plan. I imagine that when he gets back, he will call you and us and others in city hall to find out what's going on. Manager: any more information you have on what was said about issues below during land sale negotiations will be helpful.

Issues raised include:

- street width. Fire raised the question of adequacy of 24 foot existing width. We tried to explain that the existing street provided 90 degree parking in addition to that 24 feet, so it is more than the normal standard, but no one at the meeting could say for sure whether the developer intends to retain some or all of those parking bays. Surely they're not going to leave it looking just the way it does today, with all that head-in parking, and there will have to be driveway cuts for each of the new lots. But I got the impression that they want to do use the street pretty much as it looks today, to save costs.

- street construction. No one could say to what standard the existing street is paved. Even though it is proposed to remain public, it should be built to some minimum acceptable standard that will not require constant maintenance, to allow MAPC to waive the normal requirement that private streets be built to the same standard as public streets.

- sewer. The sewer was built privately, and is in the middle of the street. Will Public Works allow the street to be cut up to get access to the sewer for each future lot connection? Will

you accept maintenance responsibility for this sewer?

- drainage dedication. The plat shows outright dedication to the city of drainage ditches on the perimeter. The city's policy has been not to accept this maintenance responsibility; is Public Works prepared to make an exception in this case?

- affordable housing. Someone asked if we were trying to use existing street and sewer because this is going to be "affordable housing". We couldn't say, but my impression was that McAfee wanted at least some of this to be "estate"-type housing.

We can go with the private streets, with the substandard (less than 6,000 square foot) lots on the western portion, and with whatever street standard Public Works finds acceptable, and incorporate those changes in an adjustment to the CUP. But I do have some concern here about whether a single family subdivision with lots ranging from over one acre to under 6000 square feet, with this odd-looking substandard street, patched up every place that it is cut for a sewer connection, is ever going to appeal to anyone, and if it does develop, will we have to come back and tear it all down again some day?!

I N T E R O F F I C E M E M O R A N D U M

Date: 13-Jan-1992 07:42am CST
From: Mike Lindebak
LINDEBAK_M
Dept: Public Works
Tel No: 268-4266

TO: Marvin Krout

(KROUT_M)

CC: Steve Lackey

(LACKEY_S)

CC: Chris Cherches

(CHERCHES_C)

Subject: RE: Conquest plat

If the streets in the plat are going to be public they need to be brought up to a standard equivalent to our public streets. Since the sewers are under the streets today, they will need to extend the sewer connections to the new lots prior to upgrading the streets. The drainage dedication was never proposed to be sold to the Sanders group, therefore it should not be an issue. The city will maintain it and probably will enlarge it when the park is developed to the north and east.

Table of Contents

Introduction.....	1
Drainage Basin Maps	
USGS Quadrangle map.....	2
Street Map.....	3
Rational Method Runoff Calculations.....	4
Peak Runoff Reduction for Existing Storm Water Drainage Improvements.....	4
Alternative Storm Water Improvements.....	5
Appendix	
Rainfall Intensity Table for Sedgwick County, Kansas.....	i
City of Wichita Curb Inlet Capacity Chart.....	ii
Circular Concrete Concrete Pipe Nomograph (Chart 1).....	iii
Horizontal Elliptical Concrete Pipe Nomograph (Chart 3).....	iii
Circular Concrete Concrete Pipe Nomograph (Chart 2).....	iv
Trapezoidal Channel Rating Curve.....	v
Trapezoidal Channel Cross-Section.....	vi
Valley Gutter Rating Curve.....	vii
Valley Gutter Cross-Section.....	viii

April 15, 1986

ATTACHMENT A
DRAINAGE CRITERIA MANUAL

CITY OF WICHITA, KANSAS

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 Modified to NWS Hydro-35, 1977 During First Hour

DURATION IN MINUTES	RETURN PERIODS OF						
	1-YR	2-YR	5-YR	10-YR	25-YR	50-YR	100-YR
5	4.18	5.57	6.53	7.41	8.52	9.48	10.32
6	3.99	5.32	6.25	7.09	8.16	9.09	9.89
7	3.81	5.09	5.99	6.81	7.84	8.74	9.50
8	3.66	4.89	5.75	6.55	7.55	8.42	9.15
9	3.52	4.70	5.54	6.31	7.28	8.13	8.83
10	3.39	4.52	5.34	6.09	7.04	7.86	8.54
11	3.27	4.36	5.16	5.89	6.81	7.61	8.27
12	3.18	4.21	4.99	5.71	6.60	7.38	8.02
13	3.05	4.08	4.84	5.53	6.41	7.17	7.79
14	2.96	3.95	4.69	5.37	6.23	6.97	7.57
15	2.87	3.83	4.56	5.22	6.06	6.78	7.37
16	2.78	3.72	4.43	5.08	5.90	6.60	7.18
17	2.71	3.61	4.31	4.95	5.75	6.44	7.00
18	2.63	3.51	4.20	4.83	5.61	6.29	6.84
19	2.56	3.42	4.10	4.71	5.47	6.14	6.68
20	2.50	3.33	4.00	4.60	5.35	6.00	6.53
21	2.44	3.25	3.90	4.50	5.23	5.87	6.39
22	2.38	3.17	3.81	4.40	5.12	5.75	6.26
23	2.32	3.10	3.73	4.31	5.01	5.63	6.13
24	2.27	3.03	3.65	4.22	4.91	5.52	6.01
25	2.22	2.96	3.57	4.13	4.81	5.41	5.90
26	2.20	2.90	3.50	4.05	4.72	5.31	5.79
27	2.16	2.84	3.43	3.98	4.63	5.21	5.69
28	2.14	2.78	3.37	3.90	4.55	5.12	5.59
29	2.11	2.72	3.30	3.83	4.47	5.03	5.49
30	2.08	2.67	3.24	3.76	4.39	4.94	5.40
31	2.05	2.62	3.19	3.70	4.32	4.86	5.32
32	2.02	2.57	3.10	3.63	4.25	4.79	5.22
33	1.99	2.52	3.05	3.57	4.18	4.71	5.14
34	1.96	2.48	3.01	3.51	4.11	4.63	5.07
35	1.93	2.44	2.98	3.46	4.05	4.56	5.00
36	1.91	2.39	2.93	3.41	3.99	4.50	4.93
37	1.89	2.35	2.88	3.36	3.93	4.43	4.86
38	1.87	2.32	2.84	3.31	3.87	4.37	4.79
39	1.85	2.28	2.80	3.26	3.82	4.31	4.73
40	1.83	2.24	2.76	3.22	3.76	4.25	4.66
41	1.81	2.21	2.72	3.17	3.71	4.19	4.60
42	1.79	2.18	2.68	3.13	3.66	4.13	4.54
43	1.77	2.14	2.64	3.09	3.61	4.08	4.49
44	1.75	2.11	2.61	3.05	3.57	4.03	4.43
45	1.73	2.08	2.57	3.01	3.52	3.98	4.38

INLET CAPACITY vs DEPTH

CITY OF WICHITA
 TYPE JA CURB INLET
 5'0" x 16" OPENING

INLET CAPACITY (in cfs.)

WEIR FLOW

ORIFICE FLOW

DEPTH OF WATER ABOVE LIP (in ft.)

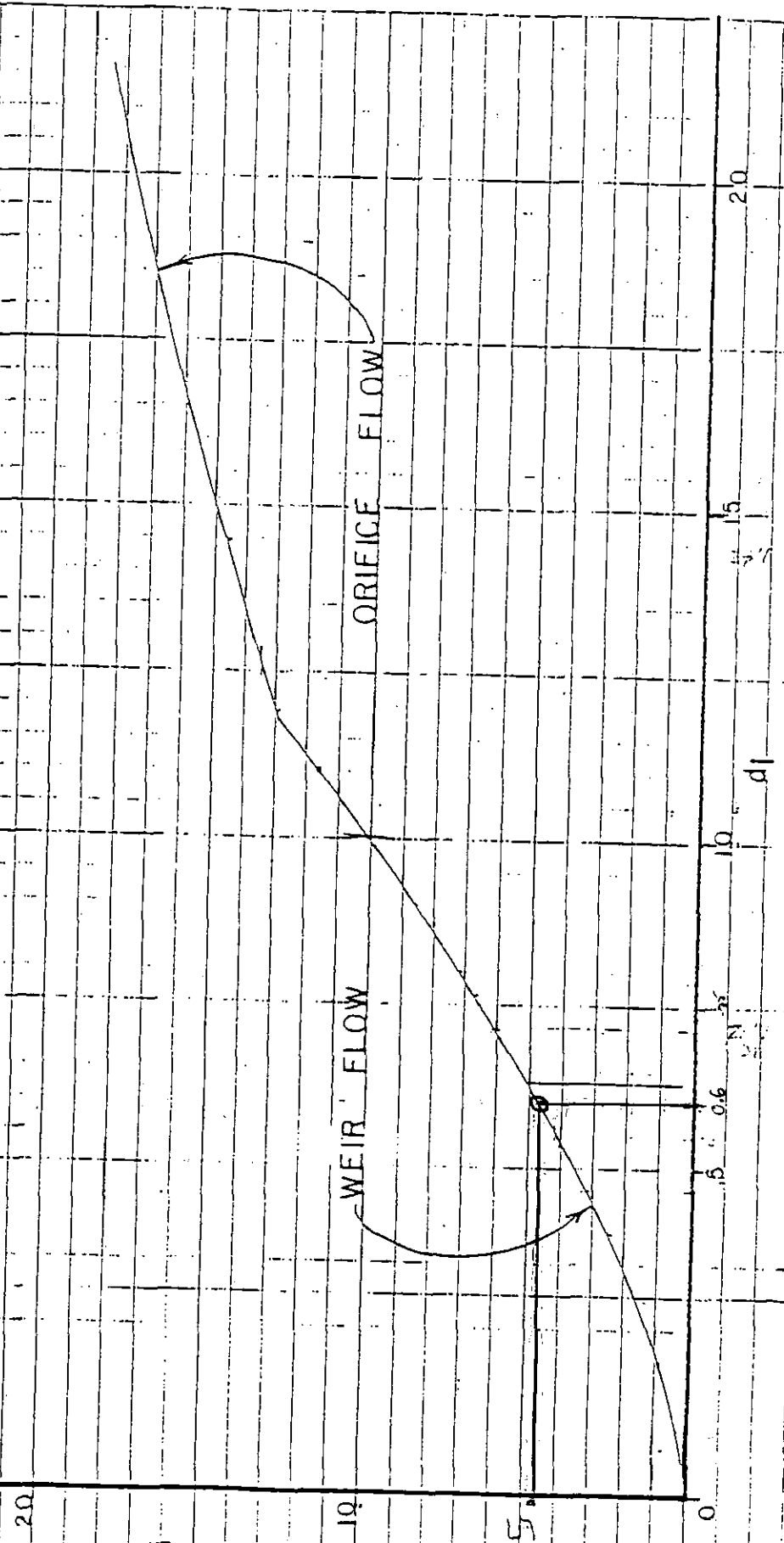
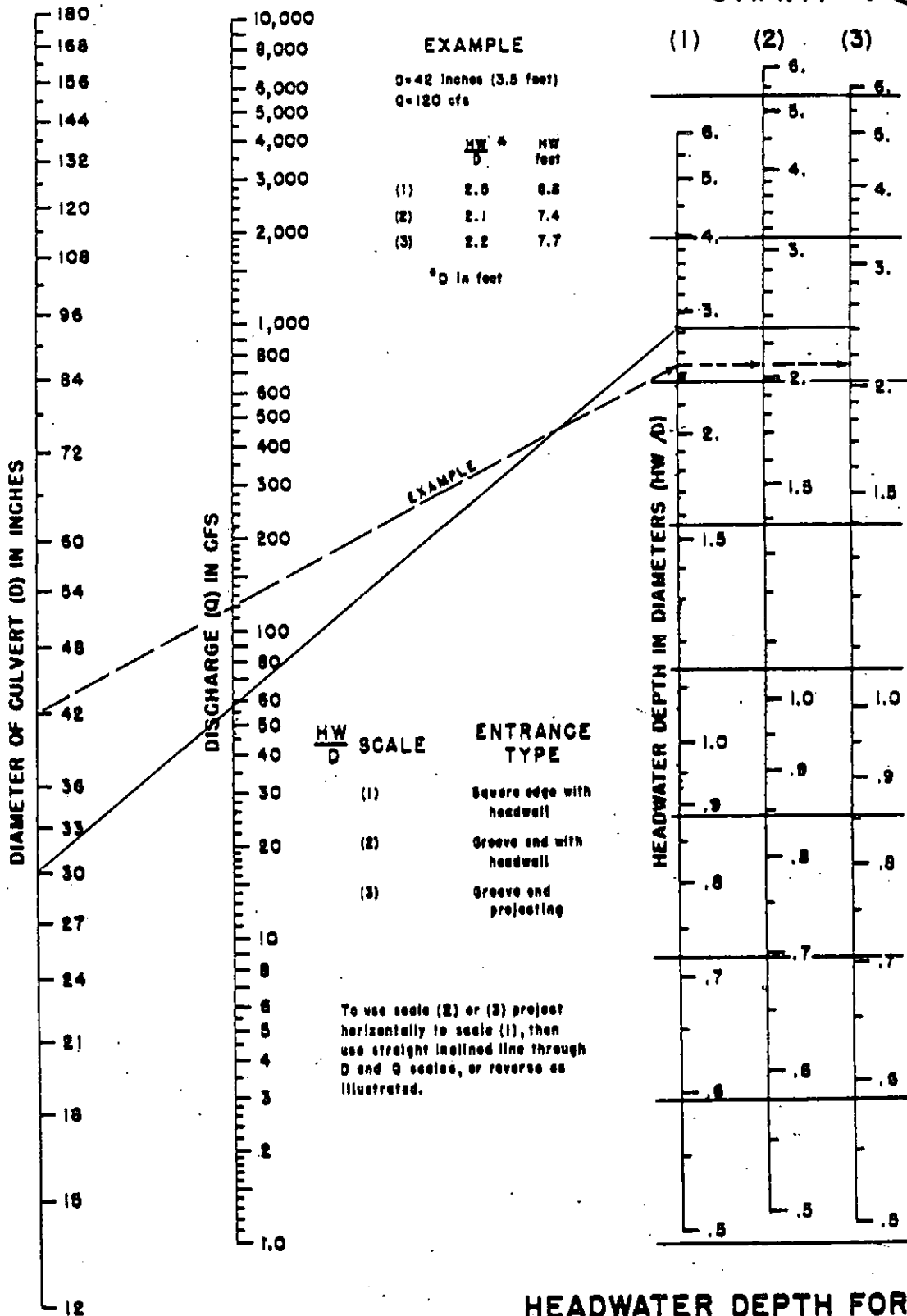


CHART 1



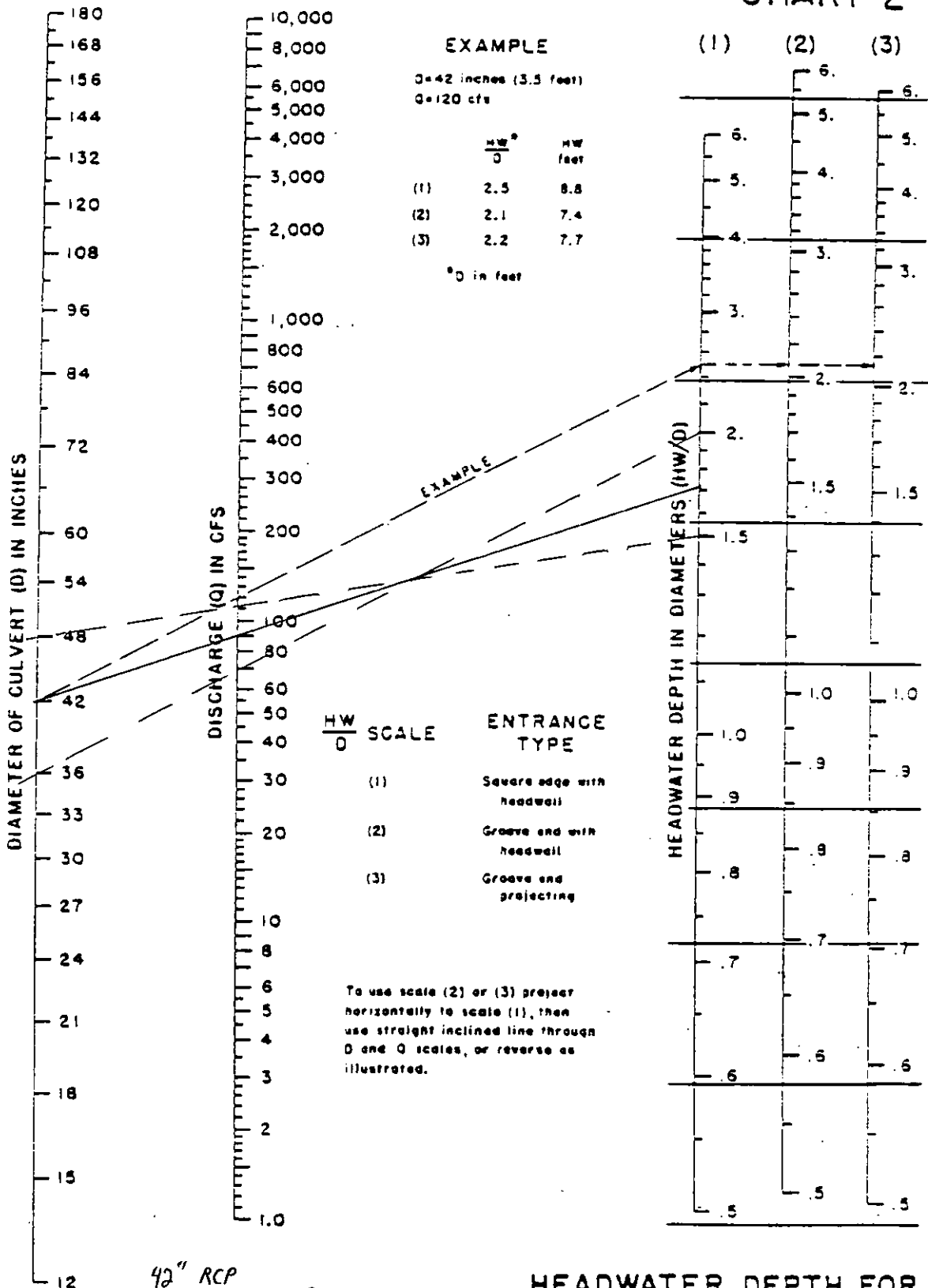
CAPACITY ≈ 60 cfs
 $\frac{HW}{D} = \frac{6.04}{2.5} = 2.4$
 30" RCP
 $HW = 6.04'$
 Inlet top @ 144.89
 $FL = 138.85$

HEADWATER DEPTH FOR CONCRETE PIPE CULVERTS WITH INLET CONTROL

HEADWATER SCALES 2 & 3
 REVISED MAY 1964

BUREAU OF PUBLIC ROADS JAN. 1963

CHART 2



42" RCP
cap. = 90 cfs

HEADWATER DEPTH FOR CONCRETE PIPE CULVERTS WITH INLET CONTROL

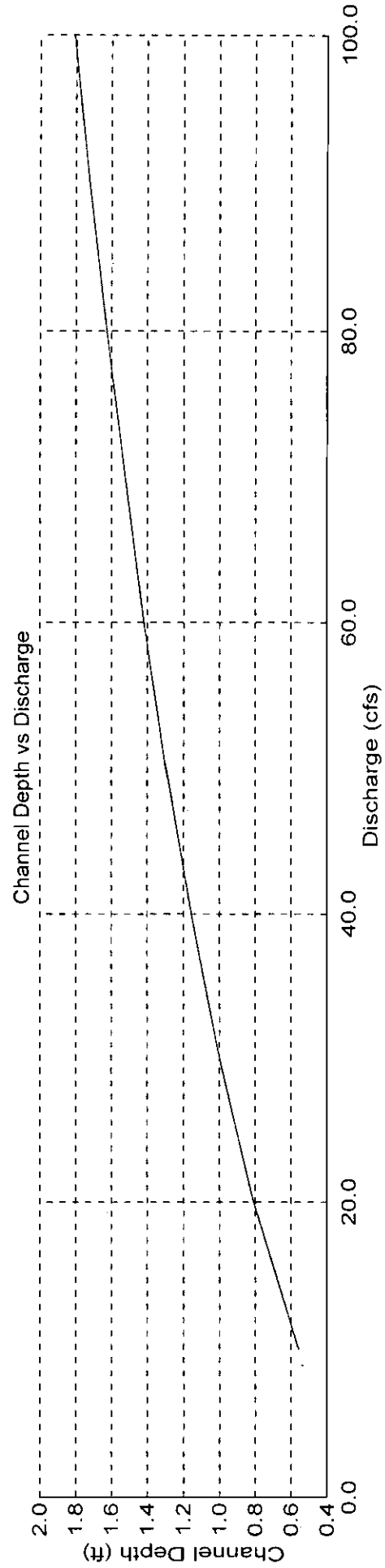
HEADWATER SCALES 283
REVISED MAY 1964

Curve Plotted Curves for Trapezoidal Channel

Project Description	
Project File	untitled.fm2
Worksheet	Conquest
Flow Element	Trapezoidal Channel
Method	Manning's Formula
Solve For	Channel Depth

Constant Data	
Mannings Coefficient	0.030
Channel Slope	0.006000 ft/ft
Left Side Slope	4.000000 H : V
Right Side Slope	4.000000 H : V
Bottom Width	6.00 ft

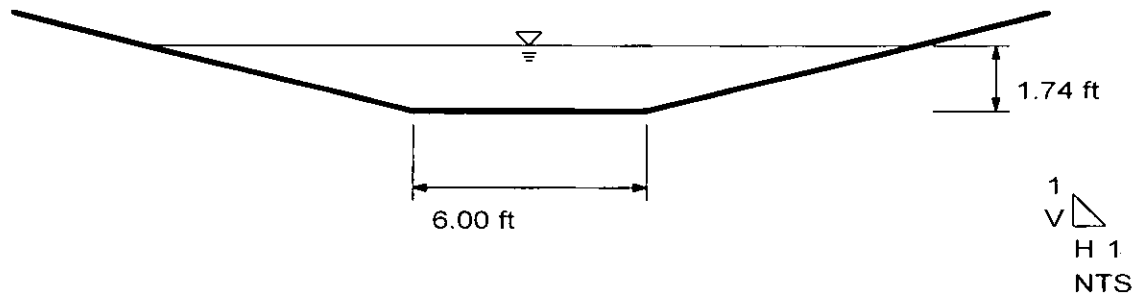
Input Data			
	Minimum	Maximum	Increment
Discharge	0.00	100.00	10.00 cfs



Cross Section
Cross Section for Trapezoidal Channel

Project Description	
Project File	untitled.fm2
Worksheet	Conquest
Flow Element	Trapezoidal Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data	
Mannings Coefficient	0.030
Channel Slope	0.006000 ft/ft
Depth	1.74 ft
Left Side Slope	4.000000 H : V
Right Side Slope	4.000000 H : V
Bottom Width	6.00 ft
Discharge	93.00 cfs

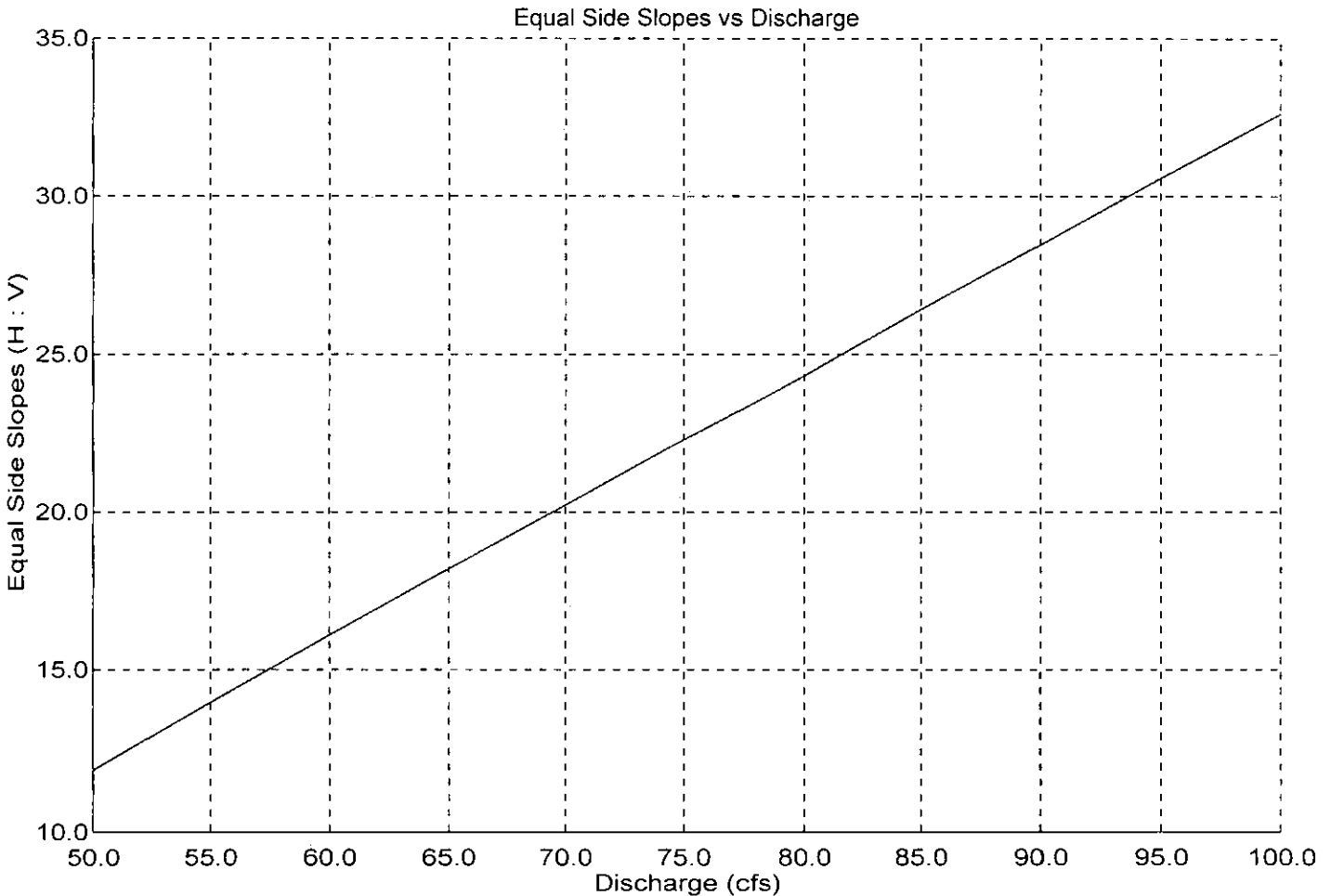


Curve
Plotted Curves for Trapezoidal Channel

Project Description	
Project File	untitled.fm2
Worksheet	Conquest
Flow Element	Trapezoidal Channel
Method	Manning's Formula
Solve For	Equal Side Slopes

Constant Data	
Mannings Coefficient	0.015
Channel Slope	0.005000 ft/ft
Depth	0.80 ft
Bottom Width	5.00 ft

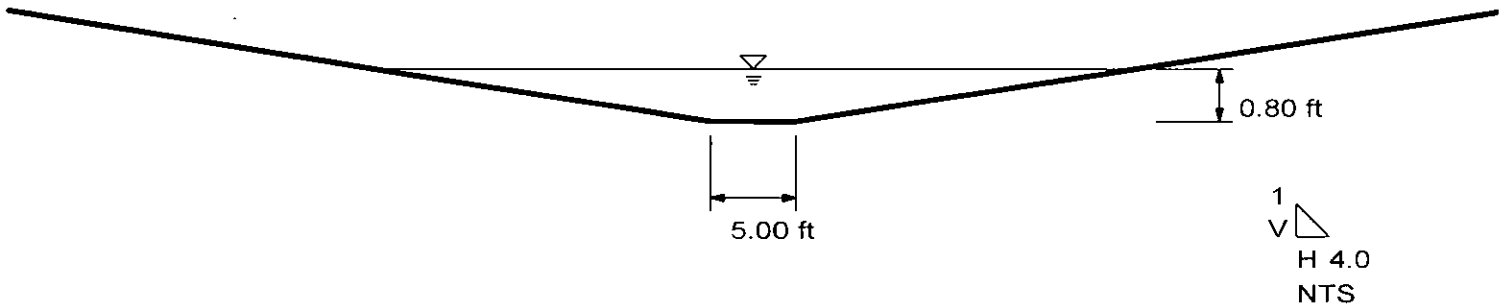
Input Data			
	Minimum	Maximum	Increment
Discharge	50.00	100.00	5.00 cfs



Cross Section
Cross Section for Trapezoidal Channel

Project Description	
Project File	untitled.fm2
Worksheet	Conquest
Flow Element	Trapezoidal Channel
Method	Manning's Formula
Solve For	Equal Side Slopes

Section Data	
Mannings Coefficient	0.015
Channel Slope	0.005000 ft/ft
Depth	0.80 ft
Left Side Slope	25.599231 H : V
Right Side Slope	25.599231 H : V
Bottom Width	5.00 ft
Discharge	83.00 cfs



CALCULATION OF RUNOFF

Drainage Area converging on 27th St. N. at Conquest North Addition = 68 acres

Time of concentration = 30 min.

$$I_2 = 2.67 \text{ inches per hour}$$

$$I_5 = 3.24 \text{ inches per hour}$$

$$I_{10} = 3.76 \text{ inches per hour}$$

$$I_{100} = 5.40 \text{ inches per hour}$$

Average land usage of one-half acre single family residential lots (Hydrologic soil type B)

$$C_2 = 0.36$$

$$C_5 = 0.38$$

$$C_{10} = 0.44$$

$$C_{100} = 0.54$$

Rational Method Flowrates $Q=CIA$

$$Q_2 = 65 \text{ cfs}$$

$$Q_5 = 84 \text{ cfs}$$

$$Q_{10} = 113 \text{ cfs}$$

$$Q_{100} = 198 \text{ cfs}$$

PEAK RUNOFF REDUCTIONS

3 - 5' curb inlets on the north side of 26th St. N, east of Volutsia.

ponding depth of 0.6' per City of Wichita capacity chart for curb inlet

$$Q_{in} = 5 \text{ cfs each.}$$

1 - 5' curb inlet on east side of Volutsia, north of 26th St.

ponding depth of 0.6' per City of Wichita capacity chart for curb inlet

$$Q_{in} = 5 \text{ cfs.}$$

4 - 5' curb inlets at intersection of Volutsia and 27th St. N.

ponding depth of 0.6' per City of Wichita capacity chart for curb inlet

$$Q_{in} = 5 \text{ cfs each.}$$

existing curb break (5') at intersection of Volutsia and 27th St. N. assume equal capacity as 5' curb inlet at sump location.

$$Q_{in} = 5 \text{ cfs.}$$

System Capacity = 45 cfs

8 - 5' curb inlets at sump location on 27th St. N., north of Conquest North Addition discharge directly into 30" RCP.

Capacity of 30" RCP (see attached nomograph, Chart 1, pg iia) = 60 cfs

System Capacity = 60 cfs

Total interception of stormwater improvements = 105 cfs

2-yr R.P.

$Q_{total} = 65 \text{ cfs}$, SWS capacity is greater than runoff.

5-yr R.P.

$Q_{total} = 84 \text{ cfs}$, SWS capacity is greater than runoff.

10-yr R.P.

$Q_{total} = 113 \text{ cfs}$, SWS capacity is less than runoff.

Capacity exceeded by 8 cfs.

100-yr R.P.

$Q_{total} = 198 \text{ cfs}$, SWS capacity is less than runoff.

Capacity exceeded by 93 cfs.

An alternate drainage passage must be provided to convey the excess runoff during the 100-yr event.

ALTERNATIVE STORM WATER IMPROVEMENTS

The following alternate designs represent a few of the possible solutions that may accommodate the development of the Chilsolm II Assisted Care Complex.

- A. Increase the capacity of the existing drainage system, i.e. increase the pipe sizes.
Required pipe size to convey 153 cfs with 6' of head water
= 68" x 43" HERCP (see attached nomograph, chart 3, pg. iii)
- B. Add an additional storm water sewer line paralleling the existing 30" RCP.
Required pipe size to convey 93 cfs with 6' of head water
= 42" RCP (see attached nomograph, chart 2, pg. iv)
- C. Accommodate a drainage swale within the existing 20' drainage easement crossing Lots 8 & 9 both of Block A.
Channel characteristics to pass 93 cfs
within 20' easement (see attached, pgs. v & vi)
Bottom Width = 6 ft
Manning's n value (maintained grass) = 0.030
Side Slopes = 4:1
Bottom Slope = 0.60% = 0.006 ft/ft
Uniform Flow Depth = 1.74 ft
Top Width = 19.92 ft
- D. Restructure the intersection of Volutsia and 27th St. North.
Increase the length of the curb break located on the north side of 27th St. N. to the width of the drainage swale located to the east of Conquest North Addition.

Length of curb break to intercept 84 cfs

$$Q = K * \sqrt{2g} * (L - 0.20H) * H^{\frac{3}{2}}$$

solve for L

$$Q = 84 \text{ cfs}$$

$$K = 0.40$$

$$g = 32.2$$

$$H = 0.8 \text{ ft}$$

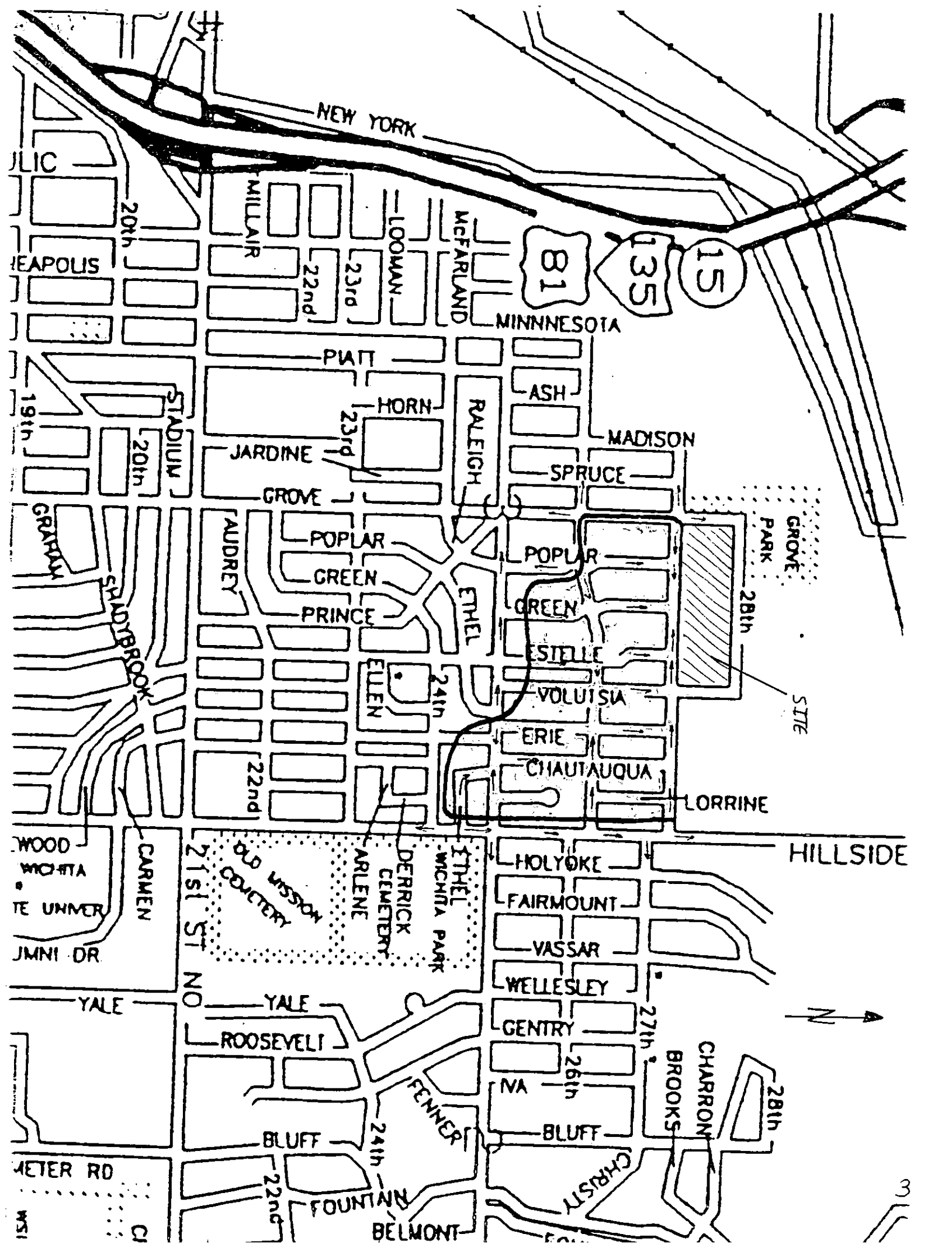
$$\text{solve for L, } L = 36.7 \text{ ft}$$

By increasing the size of the curb break and the valley gutter crossing 27th St. N. The existing 30" RCP located near the intersection of 27th St. N. and green would be capable of conveying the 100-yr rainfall.

INTRODUCTION

This report provides information and supporting documentation to support the vacation of a drainage easement for the property located in the Northwest Quarter of the Northeast Quarter of Section 3, T-27-S, R-1-E in Sedgwick County, Kansas.

The drainage calculations being submitted herein are intended to serve as a guide for the design of storm water sewer improvements to the proposed developments. Modifications to structures, pipes, etc. may be made as necessary during the final design in order to obtain the most economical design and construction possible.



NEW YORK

81

135

15

MINNESOTA

OLIC
20th
HEAPOLIS

MILLAIR
22nd
23rd
LOOMAN

McFARLAND

PLATT

HORN

ASH

MADISON

19th
20th
STADIUM

JARDINE

GROVE

RALEIGH

SPRUCE

GRAHAM
SHADYBROOK

FAUDREY

POPLAR

GREEN

PRINCE

ETHEL

POPLAR

GREEN

ESTELLE

VOLUTSIA

28th

GROVE PARK

SITE

EILEEN

24th

ERIE

CHAUTAQUA

LORRINE

WOOD MOUNTAIN
TE UNMER
JIMNI DR

CARMEN

21st ST NO

OLD WISCONSIN CEMETERY

ARLENE
DERRICK CEMETERY

ETHEL
MICHIGAN PARK

HOLYOKE

FAIRMOUNT

VASSAR

WELLESLEY

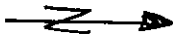
GENTRY

MA

BLUFF

27th
CHARRON
BROOKS

28th



YALE

YALE

ROOSEVELT

BLUFF

FENNER

METER RD

22nd

FOUNTAIN

BELMONT

CHRISTY

31

**SUBDIVISION COMMITTEE
METROPOLITAN AREA PLANNING COMMISSION**

AGENDA ITEM NO. 5

February 20, 1992

STAFF REPORT

(Final Plat, Preliminary Plat Approved 1/23/92)

CASE NUMBER:

S/D 91-66 - CONQUEST NORTH ADDITION

OWNER/APPLICANT:

Time Quest North Development & Investment Corp., 1341 N. Grove, Wichita, KS 67214

SURVEYOR/ENGINEER:

Baughman Company, 315 Ellis, Wichita, KS 67211; DuBois Consultants, Inc., Attn: Ajamu Webster or Edward Jeans, 1103 E. 47th St., Suite 225, Kansas City, MO 64110

LOCATION:

Northeast corner of Grove and 27th St. North.

SITE SIZE:

19 Acres

NUMBER OF LOTS

Residential: 37
Office:
Commercial:
Industrial:
Total: 37

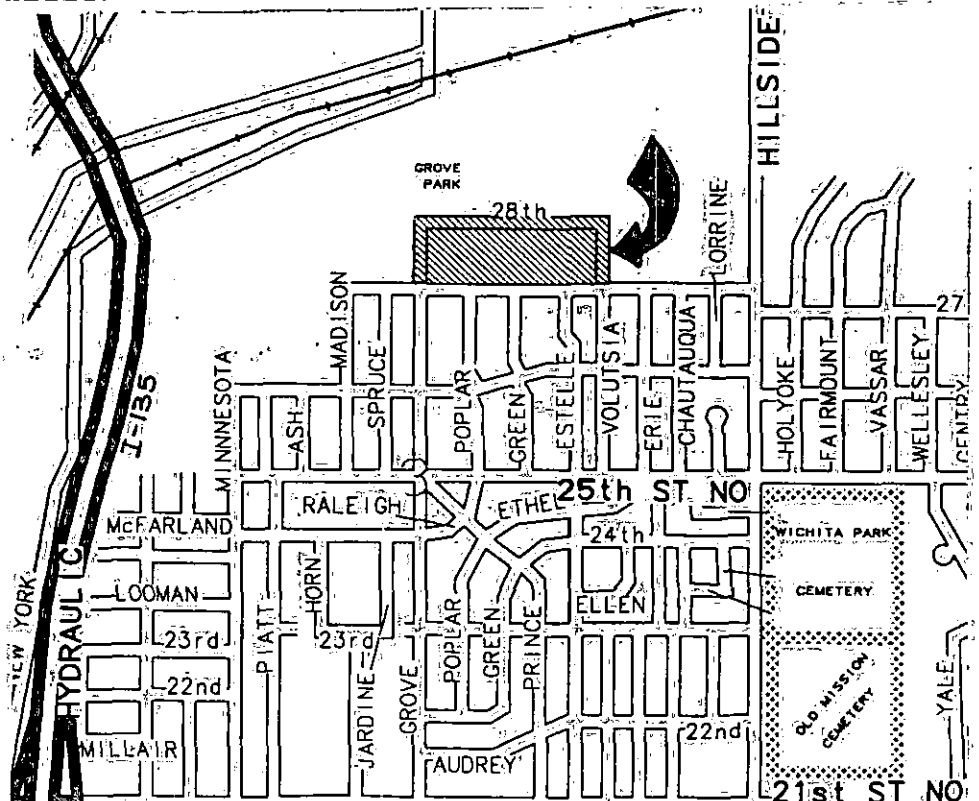
MINIMUM LOT AREA:

5,222 sq. ft.

CURRENT ZONING:

"A" Two Family Dwelling (DP-24)

VICINITY MAP:



NOTE: This property has been acquired by the City of Wichita. This site is presently zoned "A" Two-family but under a 1967 Community Unit Plan (DP-24) a one lot plat was created with apartment type development being constructed within the site's 16.9 acres and allowing up to 200 units. A non-public or private street system was built to serve the apartment (attached townhouse) type structures. Various utilities, particularly sanitary sewer lines were also provided largely within or along the private street system.

This site is now being proposed to be developed with single family development. However, lots in the eastern portion of the site do not meet present standards allowed by usual zoning or subdivision practice. Such narrow frontage lots or lots of under 6,000 square feet can be created if allowed for by a CUP or if the development is submitted under a cluster development concept. As can be noted by the plat, the arrangement of lots and lot sizes is largely being dictated by the intention to use the existing street system and existing utility layout.

STAFF COMMENTS:

- A. In order to provide for the type of development now being proposed for this site, to specifically change the use to single family, and to allow for the unconventional lots platted in the eastern portion of this site, the applicant shall pursue an adjustment to the current CUP, DP-24. Since this site involves both existing nonstandard type streets and is proposing other non-conventional access to certain of the platted lots (24 foot ingress-egress easements), the CUP should be the means to establish a private street system. The final plat shall not be submitted for City Council review until the CUP is adjusted.
- B. The present street system was constructed with a 24 foot driving surface with 90 degree paved parking areas provided in front of the apartment structures. As required by City Engineering, guarantees will be provided to reconstruct or repair this street system to a public paving standard.
- C. The use of an ingress and egress easement for access to residential lots is allowed by the subdivision regulations but was intended for situations where unusual conditions restrict the use of normal public streets. Further, such easements were intended for access to one or a limited number of lots. Private streets or drives may also be used in such situations when provided for under a CUP, and are subsequently platted as a Reserve.

However, if the applicant elects to use the ingress-egress easements for access for the lots in the eastern portion of this plat, agreements shall be submitted with the final plat tracing for recording, which indicates for each easement: the lots benefiting, the means by which a hard surfaced, 20 foot or wider

- driving surface will be installed and maintained, and that such drives will not be fenced, blocked, used for parking, or in any other way obstructed.
- D. The applicant shall submit a covenant which provides for four (4) off-street parking spaces per dwelling unit on each lot which abuts a narrow street or uses an ingress-egress easement for access. The covenant shall inventory the affected lots by lot and block number and shall state that the covenant runs with the land and is binding on future owners and assigns.
- E. The applicant shall provide "No Parking/Fire Lane" signs along the private streets and ingress/egress easements as recommended by the Fire Department.
- F. Although an existing sanitary sewer system was provided for the previous development, certain lots being created by this plat will not have direct access to a sewer line. Further, the existing line is now and may continue to be located under street pavement which is generally not considered as allowing an abutting property to have proper access to the sewer line. Sewer shall be extended and provided for each lot prior to the paving reconstruction required in Comment "B".
- G. Guarantees shall also be provided for any needed drainage and storm sewer improvements. This guarantee shall include any needed improvements within the drainage dedication.
- H. If certain public utilities are to be abandoned, that shall be guaranteed.
- I. Guarantees shall be provided for the extension of municipal water to all of the platted lots.
- J. For any non-municipal utilities, and storm sewers, being left out of easements, and therefore requiring relocation, letters shall be provided from the utilities indicating that satisfactory arrangements have been made for any needed relocations, or easements shall be provided.
- K. If improvements are guaranteed by petition, a notarized certificate listing the petitions shall be submitted to the Planning Department for recording.
- L. Provisions shall be made for ownership and maintenance of the proposed reserve. The applicant shall either form a lot owners' association prior to recording the plat or shall submit a covenant stating when the association will be formed, when the reserve will be deeded to the association and who is to own and maintain the reserve prior to the association taking over those

responsibilities. The final plat shall state in the platton's text the purposes of the proposed reserve as well as who is to own and maintain the reserve.

- M. Since a swimming pool is being considered for the Reserve, this must be noted as a use for the Reserve and a site development plan must be provided for review and approval. Among the items that this site plan must address is parking at the site. If the applicant chooses, the swimming pool use may also be addressed in the CUP.
- N. Since this plat is establishing minimum building pad elevations, this shall also be noted in the platton's text.
- O. The applicant shall install or guarantee the installation of all utilities and facilities which are applicable and described in Article 8 of the MAPC Subdivision Regulations.
- P. The applicant's engineer is advised that the Register of Deeds is requiring the name(s) of the notary public, who acknowledges the signatures on this plat, to be printed beneath the notary's signature.
- Q. To receive mail delivery without delay, and to avoid unnecessary expense, the applicant is advised of the necessity to meet with the U.S. Postal Service Growth Management Coordinator (phone 316-946-4527) prior to development of the plat so that the type of delivery, and the tentative mailbox locations can be determined.
- R. Perimeter closure computations shall be submitted with the final plat tracing. Section 5-101(c).
- S. Recording of the plat within 30 days after approval by the City Council.
- T. The representatives from the utilities should be prepared to indicate any requirements they may have involving the relocation of facilities.
- U. The representative from City Engineering should be prepared to comment on the status of the applicant's drainage plan. Engineering also need to indicate the acceptability of the minimum pad elevations. Also, Engineering should be prepared to discuss the status of the requirements for the private street reconstruction, extension of sanitary sewer and any other needed improvements.

```

=====
      0001          CONQUEST      CONQUEST NORTH ADDITION
=====
  4              N      20040.039 E      20000.638 S      0+00
  N 00-33'07.8"E      493.163
  5              N      20533.177 E      20005.677 S      4+93.163
  N 45-14'07.4"E      234.766
  7              N      20698.498 E      20172.362 S      7+27.929
  N 89-53'07.8"E      1113.078
  8              N      20700.722 E      21285.438 S      18+41.007
  S 00-39'57.0"W      660.726
  10             N      20040.039 E      21277.952 S      25+01.732
      WEST          1277.314
  4              N      20040.039 E      20000.638 S      37+79.047
LENGTH=      3779.047 AREA=      828898.897 SF      19.029 ACRES
=====

```

CITY OF WICHITA, KANSAS

WATER MAINS

27TH STREET NORTH AND ESTELLE/VOLUTSIA

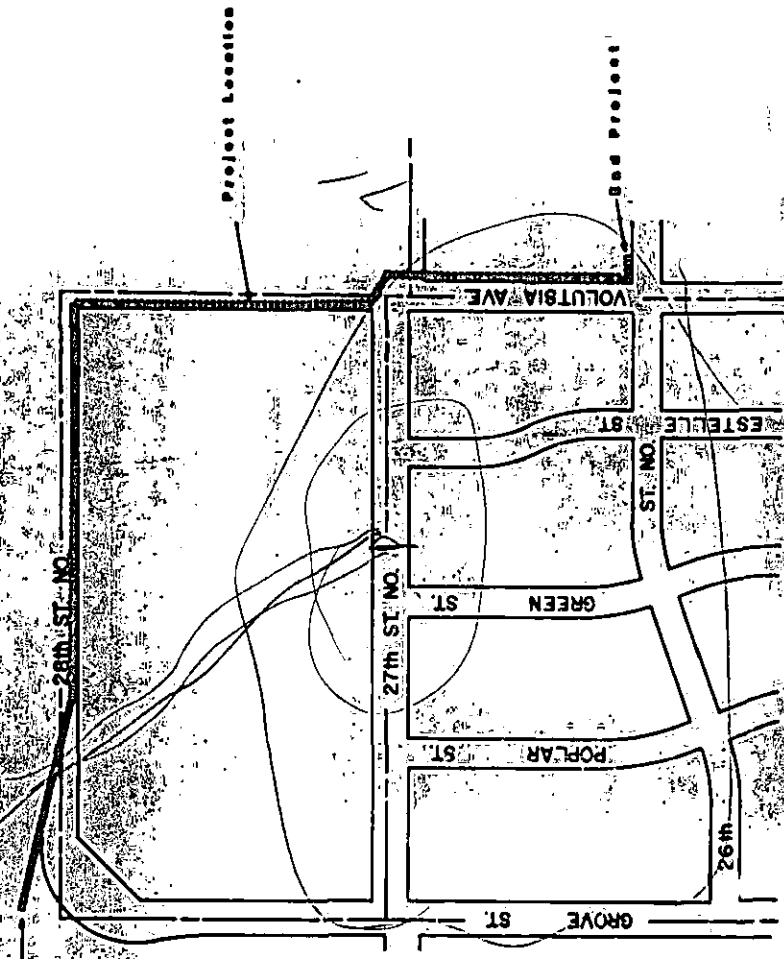
MICHAEL E. LINDEBAK, P.E. CITY ENGINEER

MARCH 1986

PROJ. NO. 826 68 365 50218 430 000 000

- INDEX TO SPECIFICATIONS
1. Title Sheet
 2. Plan and Profile - Sta. 0+00 to Sta. 6+00
 3. Plan and Profile - Sta. 6+00 to Sta. 12+00
 4. Plan and Profile - Sta. 12+00 to Sta. 18+00
 5. Plan and Profile - Sta. 18+00 to Sta. 24+00
 6. Plan and Profile - Sta. 24+00 to Sta. 30+00
 7. 27th Street and Volutzia Intersections
 8. Standard Plans and Details
 9. Standard Type A Corb Inlet
 10. Standard Manhole Frame and Cover Data

As Built
12/87
MCG



PLANS PREPARED BY

Michael E. Lindebak
Engineer

WICHITA, KANSAS

REGISTERED PROFESSIONAL ENGINEER
STATE OF KANSAS
70117