

SUBDIVISION COMMITTEE  
METROPOLITAN AREA PLANNING COMMISSION

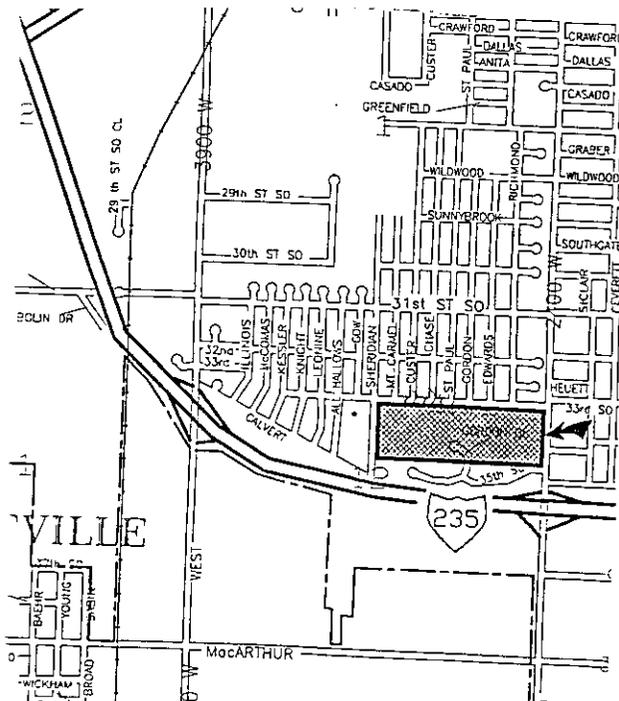
AGENDA ITEM NO. 14.

February 19, 1998

STAFF REPORT  
(Preliminary Plat)

- CASE NUMBER:** S/D 98-15 - YMCA SOUTH ADDITION
- OWNER/APPLICANT:** Builders, Inc., 1081 S. Glendale, Wichita, KS 67218
- SURVEYOR/ENGINEER:** Mid Kansas Engineering Consultants, Inc., 411 North Webb Road, Wichita, KS 67206
- LOCATION:** West side of Meridian, North of Interstate 235
- SITE SIZE:** 72.6 acres
- NUMBER OF LOTS**
- |              |   |
|--------------|---|
| Residential: |   |
| Office:      |   |
| Commercial:  | 4 |
| Industrial:  | 0 |
| Total:       | 4 |
- guarantee SS drainage w. Pav. 33<sup>rd</sup>*
- MINIMUM LOT AREA:** 70,000 square feet
- CURRENT ZONING:** MF-18, Multi-Family; TF-3, Two-Family; LC, Limited Commercial
- PROPOSED ZONING:** LC, Limited Commercial

VICINITY MAP



Note: For the portion of this property currently zoned MF-18 and TF-3, a zone change (Z-3266) to LC, Limited Commercial was approved by the MAPC on January 29, 1998 subject to platting. An amendment to the Meridian Outlet Mall CUP (DP-138 Amendment #1) was also approved on January 29, 1998.

STAFF COMMENTS:

- A. **City Engineering** needs to indicate if guarantees are required for sanitary sewer or City water to serve this site.
- B. If improvements are guaranteed by petition, a notarized certificate listing the petitions shall be submitted to the Planning department for recording.
- C. **City Engineering** needs to comment on the status of the applicant's drainage concept.
- D. The plat does not conform with the access controls approved for the CUP. The plat denotes five openings along Meridian; whereas the CUP restricted the site to four openings. The CUP also required a joint access between lots 1 and 2. The joint access easement will need to be established by separate instrument. Initial construction responsibilities and future maintenance of the driveway within the easement should also be addressed by the text of the instrument.
- E. On the final plat tracing, the platlor's text shall specifically note that the access controls are being dedicated to the City of Wichita.
- F. This property is within a zone identified by the City Engineers' office as likely to have groundwater at some or all times within 10 feet of the ground surface elevation. Building with specially engineered foundations or with the lowest floor opening above groundwater is recommended, and owners seeking building permits on this property will be similarly advised. More detailed information on recorded groundwater elevations in the vicinity of this property is available in the City Engineers' office.
- G. As required by the CUP, the applicant shall guarantee paving of the south half of 33rd Street South from Meridian to Gordon. **Traffic Engineering** needs to comment on the need for improvements to Meridian.
- H. As required by the CUP, the applicant shall request a vacation for the portion of 33rd Street South from Gordon to Mt. Carmel in conjunction with the

landowners to the north. The vacation should exclude an area (30' x 90') at the end of Custer, Chase and St. Paul to allow for a T-type turnaround for these streets.

- I. As required by the sidewalk ordinance, sidewalks shall be provided along 33rd Street South.
- J. The applicant is reminded that a platting binder is required with the final plat. Approval of this plat will be subject to submittal of the binder and any relevant conditions found by such a review.
- K. As required by the CUP, a cross lot circulation agreement shall be submitted.
- L. A CUP Certificate shall be submitted to MAPD for recording with the Register of Deeds prior to City Council consideration, identifying the approved CUP (referenced as DP-138 Amendment #1) and its special conditions for development on this property.
- M. 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. (Water service and fire hydrants required by Article 8 for fire protection shall be as per the direction and approval of the Chief of the Fire Department.)
- N. 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.
- O. 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 316-729-0102) prior to development of the plat so that the type of delivery, and the tentative mailbox locations can be determined.
- P. The applicant is advised that various State and Federal requirements [specifically but not limited to the Army Corps of Engineers, Kanopolis Project Office, Rt. 1, Box 317, Valley Center, KS 67147] for the control of soil and wind erosion and the protection of wetlands may impact how this site can be developed. It is the applicant's responsibility to contact all appropriate agencies to determine any such requirements.

S/D 98-15 - Preliminary Plat of YMCA South Addition  
February 19, 1998- Page 4

- Q. Perimeter closure computations shall be submitted with the final plat tracing.
- R. Recording of the plat within thirty (30) days after approval by the City Council and/or County Commission.
- S. The representatives from the utility companies should be prepared to comment on the need for any additional utility easements to be platted on this property.
- T. The applicant is reminded that a disk shall be submitted with the final plat tracing to the Planning Department detailing this plat. This will be used by the City and County GIS Department.

SUBDIVISION COMMITTEE  
METROPOLITAN AREA PLANNING COMMISSION

AGENDA ITEM NO. 5.

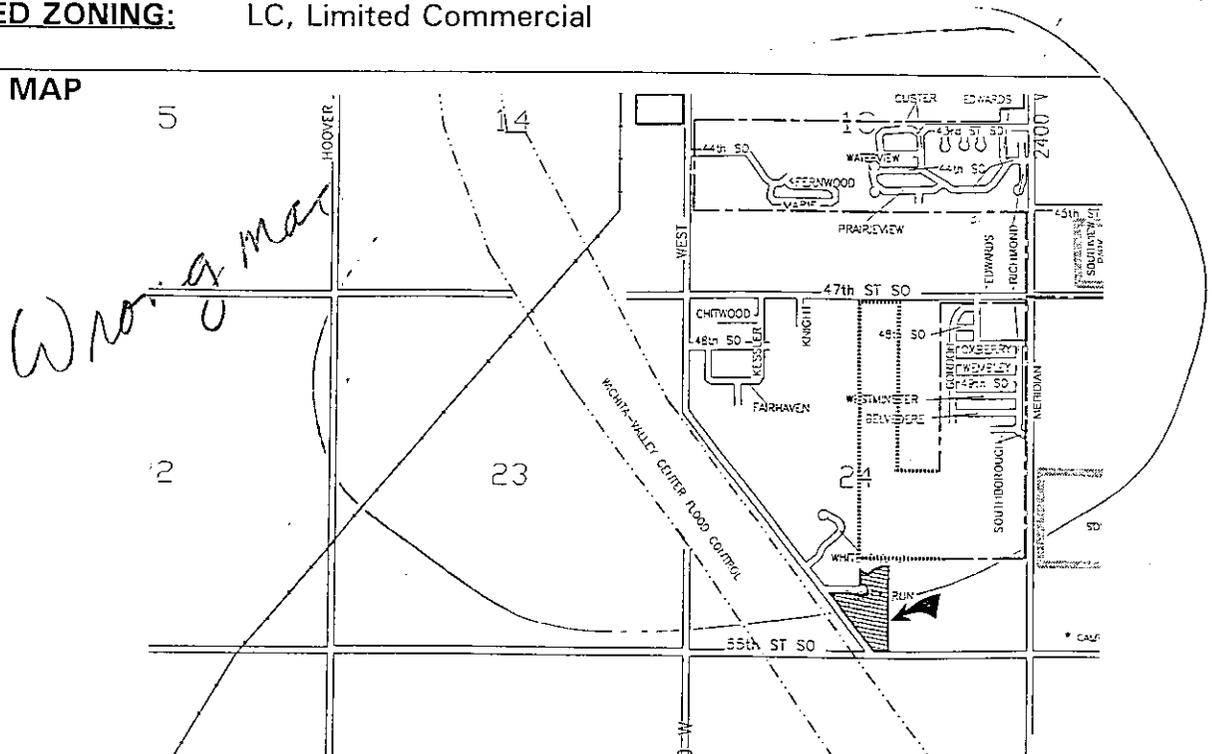
March 19, 1998.

STAFF REPORT

(Final Plat, Preliminary Plat approved 2/19/98)

- CASE NUMBER:** S/D 98-15 - YMCA SOUTH ADDITION
- OWNER/APPLICANT:** Builders, Inc., 1081 S. Glendale, Wichita, KS 67218
- SURVEYOR/ENGINEER:** Mid Kansas Engineering Consultants, Inc., 411 North Webb Road, Wichita, KS 67206
- LOCATION:** West side of Meridian, North of Interstate 235
- SITE SIZE:** 72.6 acres
- NUMBER OF LOTS**
- |              |   |
|--------------|---|
| Residential: |   |
| Office:      |   |
| Commercial:  | 4 |
| Industrial:  | = |
| Total:       | 4 |
- MINIMUM LOT AREA:** 70,000 square feet
- CURRENT ZONING:** MF-18, Multi-Family; TF-3, Two-Family; LC, Limited Commercial
- PROPOSED ZONING:** LC, Limited Commercial

VICINITY MAP



Note: For the portion of this property currently zoned MF-18 and TF-3, a zone change (Z-3266) to LC, Limited Commercial was approved by the MAPC on January 29, 1998 subject to platting. An amendment to the Meridian Outlet Mall CUP (DP-138 Amendment #1) was also approved on January 29, 1998.

STAFF COMMENTS:

- A. **City Engineering** needs to indicate if guarantees are required for sanitary sewer or City water to serve this site. **Guarantees for sanitary sewer and city water are required.**
- B. If improvements are guaranteed by petition, a notarized certificate listing the petitions shall be submitted to the Planning department for recording.
- C. **City Engineering** needs to comment on the status of the applicant's drainage concept. **The drainage concept is approved. A guarantee will need to be submitted for drainage improvements.**
- D. The plat does not conform with the access controls approved for the CUP. The plat denotes five openings along Meridian; whereas the CUP restricted the site to four openings. The CUP also required a joint access between lots 1 and 2. The joint access easement will need to be established by separate instrument. Initial construction responsibilities and future maintenance of the driveway within the easement should also be addressed by the text of the instrument. **Four openings, in conformance with the CUP, are required. Joint access between lots 2 and 3 will be needed - and an adjustment to the CUP will have to be made. Complete access control shall be required along the northern 150 feet of the northern lot (lot 4). Complete access control is required along the southern 150 feet of the southern lot (lot 1).**

The final plat denotes four openings along Meridian and a joint access between lots 2 and 3 in accordance with the above requirements.

- E. On the final plat tracing, the platator's text shall specifically note that the access controls are being dedicated to the City of Wichita.
- F. This property is within a zone identified by the City Engineers' office as likely to have groundwater at some or all times within 10 feet of the ground surface elevation. Building with specially engineered foundations or with the lowest floor opening above groundwater is recommended, and owners seeking building permits on this property will be similarly advised. More detailed information on

recorded groundwater elevations in the vicinity of this property is available in the City Engineers' office.

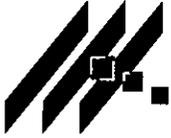
- G. As required by the CUP, the applicant shall guarantee paving of the south half of 33rd Street South from Meridian to Gordon. **Traffic Engineering** needs to comment on the need for improvements to Meridian. **A decel lane for the driveway to lot 4 is required. Decel lanes for other lots may be required when development plans are finalized by the applicant.**
- H. As required by the CUP, the applicant shall request a vacation for the portion of 33rd Street South from Gordon to Mt. Carmel in conjunction with the landowners to the north. The vacation should exclude an area (30' x 90') at the end of Custer, Chase and St. Paul to allow for a T-type turnaround for these streets. **If vacation cannot be accomplished, then a petition for paving shall be submitted for the future paving of the south half of 33rd Street South.**
- I. As required by the sidewalk ordinance, sidewalks shall be provided along 33rd Street South. **An alternate sidewalk plan will be provided to connect with the neighborhood.**
- J. Based upon the platting binder, property taxes for 1997 are still outstanding. Before the plat is forwarded to City Council for consideration, proof shall be provided indicating that all applicable property taxes have been paid.
- K. As required by the CUP, a cross lot circulation agreement shall be submitted.
- L. A CUP Certificate shall be submitted to MAPD for recording with the Register of Deeds prior to City Council consideration, identifying the approved CUP (referenced as DP-138 Amendment #1) and its special conditions for development on this property.
- M. 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. (Water service and fire hydrants required by Article 8 for fire protection shall be as per the direction and approval of the Chief of the Fire Department.)
- N. 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.

- O. 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 316-729-0102) prior to development of the plat so that the type of delivery, and the tentative mailbox locations can be determined.
- P. The applicant is advised that various State and Federal requirements [specifically but not limited to the Army Corps of Engineers, Kanopolis Project Office, Rt. 1, Box 317, Valley Center, KS 67147] for the control of soil and wind erosion and the protection of wetlands may impact how this site can be developed. It is the applicant's responsibility to contact all appropriate agencies to determine any such requirements.
- Q. Perimeter closure computations shall be submitted with the final plat tracing.
- R. Recording of the plat within thirty (30) days after approval by the City Council and/or County Commission.
- S. The representatives from the utility companies should be prepared to comment on the need for any additional utility easements to be platted on this property.
- T. The applicant is reminded that a disk shall be submitted with the final plat tracing to the Planning Department detailing this plat. This will be used by the City and County GIS Department.

RECEIVED

AUG 16 2001

CITY - ENGINEERING



August 15, 2001

Ms. Vicki Huang, P.E.  
City Engineer's Office  
City of Wichita  
455 N. Main, 7<sup>th</sup> Floor  
Wichita, KS 67202

Reference: YMCA South Addition – Wendy's and Village Inn  
Ditch Cross Section  
MKEC Project No. 01144

Dear Ms. Huang:

At Lisa Buckingham's request I have evaluated the conveyances for the existing and proposed channel configurations at the Meridian Avenue west ditch. The conveyance is evaluated for both sections below elevation 96.0 and west of the toe of the west bank. The evaluation is limited to this area because the Meridian Avenue top of curb is at approximately 95.9, and because proposed changes are limited to the west bank.

Constructing a vertical wall 12.5 ft west of the west bank's toe will increase both the flow area and the hydraulic radius of the channel. For that portion of the cross section west of the west bank toe, the existing conveyance is 6,340, while the conveyance for the proposed configuration is 8,680. Consequently, the proposed vertical retaining wall will improve channel function as long as a smooth transition is provided between the upstream and downstream sections.

Please feel free to call with any questions.

Very truly yours,

MKEC ENGINEERING CONSULTANTS, INC.

  
Timothy K. Meyer, P.E.

TKW/dm

c: Lisa Buckingham

CMCXmit

CALCULATIONS & SKETCHES

LOCATION: YMCA SOUTH ADDITION - CHANNEL RETAINING WALL

REFERENCE:

1. FROM ATTACHED FIGURE, PROPOSED CHANNEL CHANGES AFFECT ONLY THE WEST (LEFT LOOKING UPSTREAM) BANK, BEGINNING AT THE TDE OF THE SLOPE

2. THE ELEVATION AT WHICH CHANNEL CONVEYANCE IS NO LONGER CRITICAL IS ~96.0 SINCE FLOW BEGINS TO CROSS MERIDIAN ABOVE ELEVATION 95.9 (TOP OF CURB)

EVALUATE EXISTING AND PROPOSED SECTION CONVEYANCE WEST OF WEST BANK TDE BELOW ELEV. 96.0

$$C = \frac{1.486}{n} AR^{2/3} \quad R = \frac{A}{P}$$

EXISTING

$$C = \frac{1.486}{.030} \left[ \frac{16 \cdot (146)}{2} \left\{ \frac{56}{\sqrt{1675}} \right\}^{2/3} + \frac{26 \cdot 1}{2} \left\{ \frac{13}{\sqrt{2241}} \right\}^{2/3} \right] = \underline{\underline{6,336}}$$

56      22147      13      21249  
125.14      +      2.76

PROPOSED

$$C = \frac{1.486}{.030} \left[ \frac{12.96 (75)}{21} \right]^{2/3} = \underline{\underline{8,680}}$$

PROPOSED CHANNEL CONVEYANCE EXCEEDS EXISTING CHANNEL CONVEYANCE. PROVIDE SMOOTH TRANSITIONS UPSTREAM AND DOWNSTREAM TO AVOID EXPANSION/CONTRACTION LOSSES - USE 4:1 OR SMOOTHER

98-15 -- Final Plat of . MCA SOUTH ADDITION  
March 26, 1998 -- Page 2

Please call if you have any questions.

Sincerely,

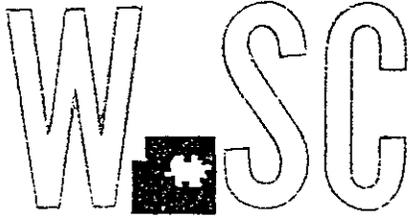


Neil Evan Strahl, AICP  
Senior Planner, Current Plans Division

NES\fb

CC: Mark W & Kelly J Springs, 3523 W 48th St South, Wichita, KS 67217  
Mike Lindebak, City Engineer, Mail Stop (1-71)  
Jim Weber, PE-Director, Sewer Operations & Maintenance Department,  
Bureau of Public Services, 1250 S. Seneca, Wichita, KS 67213

WICHITA — SEDGWICK COUNTY



METROPOLITAN AREA PLANNING  
DEPARTMENT

CITY HALL — TENTH FLOOR  
455 NORTH MAIN STREET  
WICHITA, KANSAS 67202-1688  
(316) 268-4421  
FAX (316) 268-4390

March 26, 1998

Mid Kansas Engineering Consultants, Inc.  
411 North Webb Road  
Wichita KS 67206

Re: S/D 98-15 -- Final Plat of YMCA SOUTH ADDITION

Gentlemen:

At the regular meeting of the Metropolitan Area Planning Commission on March 26, 1998, the above captioned plat was considered. The action of the Planning Commission was to recommend that the plat be approved as recommended by the Subdivision Committee subject to the conditions stated in our letter of March 20, 1998.

In addition to complying with those conditions, it is necessary that you meet the following requirements before this plat can be forwarded to the City Council and/or County Commission for consideration:

1. Submission of the fully completed and signed tracing of the subdivision, along with five (5) copies, to the Metropolitan Area Planning Department.
2. Submission of a check, made out to the Register of Deeds, covering the costs of any documents to be recorded as a requirement of platting.
3. Subdivision regulations now require a detailed Lot Grading Plan be submitted to Engineering prior to the tracing being released. This applies to all multi-lot and residential developments.
4. Submission of a disk to the Planning Department detailing this plat. This will be used by the City and County GIS Departments.

Preliminary Drainage Report  
YMCA South Addition  
MKEC Project 97156  
March 13, 1998

### **Location**

The site is in the northwest corner of Meridian Avenue and 35<sup>th</sup> Street South. Adjacent lands include Southwest Village Fourth Addition, Cleveland Elementary School, Southwest Village, Heuett Addition, P. J. Harper Addition, Parkview Southern Baptist Church 2<sup>nd</sup> Addition, Russell Addition, Joseph E. Hall Addition, and the Big Slough Drainage Way. Interstate 235 lies immediately south of the Big Slough Drainage Way.

### **Site Conditions**

#### **Soils**

According to the NRCS (SCS) Sedgwick County Soil Survey, the site's soils fall into two series. Roughly the north quarter of the parcel is in the Carwile Series: deep, somewhat poorly drained slowly permeable soils on uplands and terraces, with slopes 0 to 1 percent; Hydrologic Soil Group (HSG) D. The remainder of the parcel is in the Waldeck Series: somewhat poorly drained, moderately rapidly permeable, nearly level soils on flood plains and low terraces; moderately deep over sand, they grade to a coarse alluvium at a depth of 2 to 4 ft; slopes are 0 to 1 percent; HSG C.

#### **Current Development**

The parcel is currently undeveloped, and is essentially isolated from adjacent property by perimeter ditches. These ditches also protect the site from offsite stormwater flows. The ground surface is rough, with a few short rows of trees among the tall grasses that predominate. A cursory look at the site shows no evidence of farming.

On the north side of the parcel, the north half of 33<sup>rd</sup> St South is paved from Meridian west to Gordon, with a deep ditch (~4 ft) on the south side. A ditch lies on the apparent north side of the street right of way (no street exists) between Gordon and Mt. Carmel. From Mt. Carmel west to Sheridan, flow is in the street. The parcel's northwest corner is 2.5 to 3 ft higher than 33<sup>rd</sup> St. South at Mt. Carmel.

#### **Landform and Slope**

Elevations on approximately 80 percent of the parcel are within one foot of elevation 97 ft (City of Wichita Datum). A small sump area (elev. 95.8) lies near the southwest corner, and a slightly elevated area (elevation ~99) lies just west of the center. Across the site from the northwest corner (elevation ~100) to southeast corner (elevation 94), the slope is 0.2 percent. From the intersection of Sheridan and 33<sup>rd</sup> St South (elevation ~97.5) to the southeast corner, the slope is 0.1 percent.

## **Regional Drainage Conditions**

Terrain is extremely flat, with regional slopes on the order of 5 ft per mile or less from northwest to southeast. Soils in the area draining toward the site are in the Carwile series, with assigned hydrologic soil groups (HSG) D.

The major drainage feature in the area is Big Slough South, which flows eastward along the south boundary of the parcel. A series of ditches has been constructed in the area which drain the flat terrain to Big Slough South. Nearby channel bridges or box culverts are shown on the Drainage & Utility Concept.

Big Slough South was originally part of a series of FIS Restudies contracted by the City of Wichita. Early in the stream evaluation process, the contracting consultant and the City decided that the prospects for removing additional structures from the regulatory floodplain were not good, and the re-study for that stream was abandoned.

Base Flood Elevations (BFEs) on Big Slough South at the site's south boundary range from approximately 96.6 (1284 USGS) near the southeast corner to 99.6 (1287 USGS) near the southwest corner, as shown on the Drainage & Utility Concept. The effective Flood Insurance Study publishes a single flow rate (100-year = 1,900 cfs) for the entire stream. The reach at the site lies in the upper Big Slough South watershed, so that the flow rates in this area may be conservative, and the BFEs may be somewhat high. No attempt is made in this project to re-calculate the BFEs in Big Slough South.

## **Off-Site Drainage Conditions**

### ***Existing Characteristics***

The natural slope of the land is from northwest to southeast. The engineered channel along the site's west perimeter intercepts all flow from the west, so off-site flows approaching the site are from the north. A shallow ditch currently begins on the north side of the 33<sup>rd</sup> St right-of-way just east of Mt. Carmel, and flows to the east toward Meridian. The channel's cross section increases somewhat at Chase. Between St. Paul and Gordon, the cross section becomes significantly larger, and the channel shifts to the south side of the 33<sup>rd</sup> St right-of-way. The channel continues to the engineered channel on the site's east perimeter. In this manner all off-site flows are intercepted and carried around the site.

Large drainage channels lie along the west and east edges of the site. Reinforced Concrete Box (RCB) culverts allow flow under 33<sup>rd</sup> St South near the northeast and northwest corners. The sizes are 3-9.5x6 ft and 3-7x3 ft respectively.

Off-site watershed areas were not formally determined due to the lack of detailed elevation information. The watersheds are in extremely flat terrain. The apparent drainage boundaries for these watersheds (as indicated by valley gutters) are as shown in Figure 2. The valley gutters along 31<sup>st</sup> St appear to be effective, so that flow entering from north of 31<sup>st</sup> St is not considered possible. Other small systems along Sheridan on the west, and in the cul-de-sacs near Meridian on the east warrant modifying the watersheds as shown on the figure.

Times of concentration for the off-site watersheds were calculated assuming 2 ft of elevation change in 660 ft. This should provide conservatively high estimates of the actual flow rates from these areas to the north interceptor ditch.

### ***Proposed System***

The proposed off-site system comprises a channel entirely on the south side of the 33<sup>rd</sup> St right-of-way, beginning just east of the intersection of 33<sup>rd</sup> St and Mt. Carmel. This improvement will provide the proper location for a channel on 33<sup>rd</sup> St when the street is completed at some time in the future.

The channel will have a longitudinal slope of 0.1 percent and side slopes at 3:1. The channel bottom width will be 5 ft from the beginning (near Mt. Carmel) to St. Paul, and 10 ft from St. Paul to Meridian. Preliminary normal depth calculations are shown in the appendix. Note, however, that the Base Flood Elevation in Big Slough South is greater than 96 just upstream of Meridian. Consequently, 100-year water surface elevations in the north interceptor channel are likely to be higher than those calculated using normal depth.

### **Site Drainage Conditions**

#### ***Current Runoff Characteristics***

Site runoff is currently uncontrolled. As the ground is very flat with a rough surface, and the predominant soil falls within HSG C, current runoff from the 2-year storm should be negligible. Using City guidelines for Rational C selection, the 2- and 100-year values are 0.24 and 0.51 respectively. There is no apparent natural drainage channel on the site. Calculating Tc according to City criteria, from the northwest corner to southeast, the 2-year Tc is 1.5 hours, and the peak runoff is 15 cfs. Corresponding 100-year values are 114 minutes and 98 cfs.

Using Base Flood Elevations as a reference, most of the parcel's south half is inundated to some extent by the 100-year offsite flood.

#### ***Proposed Site Runoff Characteristics***

#### **Uncontrolled Discharge**

Uncontrolled discharge is proposed for on-site basins I and J. The total peak 100-year discharge from these two areas is 86.6 cfs, well below the calculated discharge under current conditions. The projected total peak 2-year discharge is 38.26 cfs, higher than the calculated runoff under current conditions.

#### **Storage**

As the site plan develops, storage characteristics should change somewhat. Eastern portions of the parcel will be filled to remove building sites from the 100-year floodplain (Letters of Map Revision will be sought from FEMA at the appropriate time). Athletic fields will be constructed in borrow areas, and the total local storage should increase. For preliminary purposes, an uncontrolled culvert is anticipated between the storage area/athletic fields and Big Slough South. If the final grading plan will cause the athletic fields to be too low and possibly wet for extended periods, a flap gate may be introduced to the plan.

Table  
Rating Table for Trapezoidal Channel

Project Description	
Project File	c:\haestad\fmw\ymcaso.fm2
Worksheet	YMCA South Perimeter N. Interceptor
Flow Element	Trapezoidal Channel
Method	Manning's Formula
Solve For	Channel Depth

TRM 3/12/98  
MKEC 97156  
NORMAL DEPTH CALCULATIONS

Constant Data	
Manning's Coefficient	0.035
Left Side Slope	3.000000 H : V
Right Side Slope	3.000000 H : V

Input Data			
	Minimum	Maximum	Increment
Channel Slope	0.001000	0.002000	0.001000 ft/ft
Bottom Width	5.00	10.00	5.00 ft
Discharge	50.00	250.00	25.00 cfs

Rating Table				
Discharge (cfs)	Bottom Width (ft)	Channel Slope (ft/ft)	Depth (ft)	Velocity (ft/s)
50.00	5.00	0.001000	2.39	1.72
50.00	5.00	0.002000	2.03	2.22
50.00	10.00	0.001000	1.92	1.65
50.00	10.00	0.002000	1.60	2.12
75.00	5.00	0.001000	2.88	1.91
75.00	5.00	0.002000	2.46	2.47
75.00	10.00	0.001000	2.37	1.85
75.00	10.00	0.002000	1.98	2.38
100.00	5.00	0.001000	3.28	2.05
100.00	5.00	0.002000	2.81	2.66
100.00	10.00	0.001000	2.74	2.01
100.00	10.00	0.002000	2.30	2.58
125.00	5.00	0.001000	3.62	2.17
125.00	5.00	0.002000	3.10	2.81
125.00	10.00	0.001000	3.06	2.13
125.00	10.00	0.002000	2.57	2.74
150.00	5.00	0.001000	3.93	2.28
150.00	5.00	0.002000	3.37	2.95
150.00	10.00	0.001000	3.35	2.24
150.00	10.00	0.002000	2.82	2.88
175.00	5.00	0.001000	4.20	2.37
175.00	5.00	0.002000	3.61	3.07

MT. CARMEL  
TO  
CHASE

66 ⇒ 2.7 FT  
DEPTH

CHASE  
TO  
ST. PAUL

122 ⇒ 3.6 FT  
DEPTH

ST. PAUL  
TO  
GORDON

140 ⇒ 3.5 FT  
DEPTH

Table  
Rating Table for Trapezoidal Channel

Rating Table						
Discharge (cfs)	Bottom Width (ft)	Channel Slope (ft/ft)	Depth (ft)	Velocity (ft/s)		
175.00	10.00	0.001000	3.61	2.33	197 ⇒ 3.8 FT DEPTH	GORDON TO EDWARDS
175.00	10.00	0.002000	3.04	3.00		
200.00	5.00	0.001000	4.45	2.45		
200.00	5.00	0.002000	3.83	3.17		
200.00	10.00	0.001000	3.85	2.42		
200.00	10.00	0.002000	3.25	3.11		
225.00	5.00	0.001000	4.68	2.52		
225.00	5.00	0.002000	4.03	3.27		
225.00	10.00	0.001000	4.07	2.49	- 4.1 FT	EDWARDS TO RICHMOND
225.00	10.00	0.002000	3.44	3.21		
250.00	5.00	0.001000	4.90	2.59		
250.00	5.00	0.002000	4.22	3.36		
250.00	10.00	0.001000	4.28	2.56	- 4.3 FT	RICHMOND TO MERIDIAN
250.00	10.00	0.002000	3.62	3.31		



MID-KANSAS ENGINEERING CONSULTANTS, INC.  
411 N. WEBB ROAD • WICHITA, KS 67206  
(316) 694-9600 • FAX (316) 694-5100

CALCULATIONS & SKETCHES

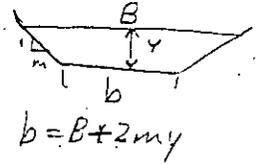
LOCATION: NORTH CHANNEL EASEMENT REQUIREMENTS

REFERENCE: YMCA SOUTH ADDITION

Proj. No. 97156  
By TKM Date 3/12/97  
Drawn By \_\_\_\_\_ Date \_\_\_\_\_  
Sheet \_\_\_\_\_ Of \_\_\_\_\_

CHANNEL / DRAINAGE EASEMENT REQUIRED WIDTH

$M=3$



<u>LOCATION</u>	<u>b</u>	<u>y*</u>	<u>CHANNEL WIDTH</u>
RICHMOND → MERIDIAN	10	4.8	38.8
RICHMOND → EDWARDS	10	4.6	37.6
EDWARDS → GORDON	10	4.3	35.8
GORDON → ST. PAUL	10	4.0	34.0
ST. PAUL → CHASE	5	4.1	31.6
CHASE → MT. CARMEL	5	3.2	24.2

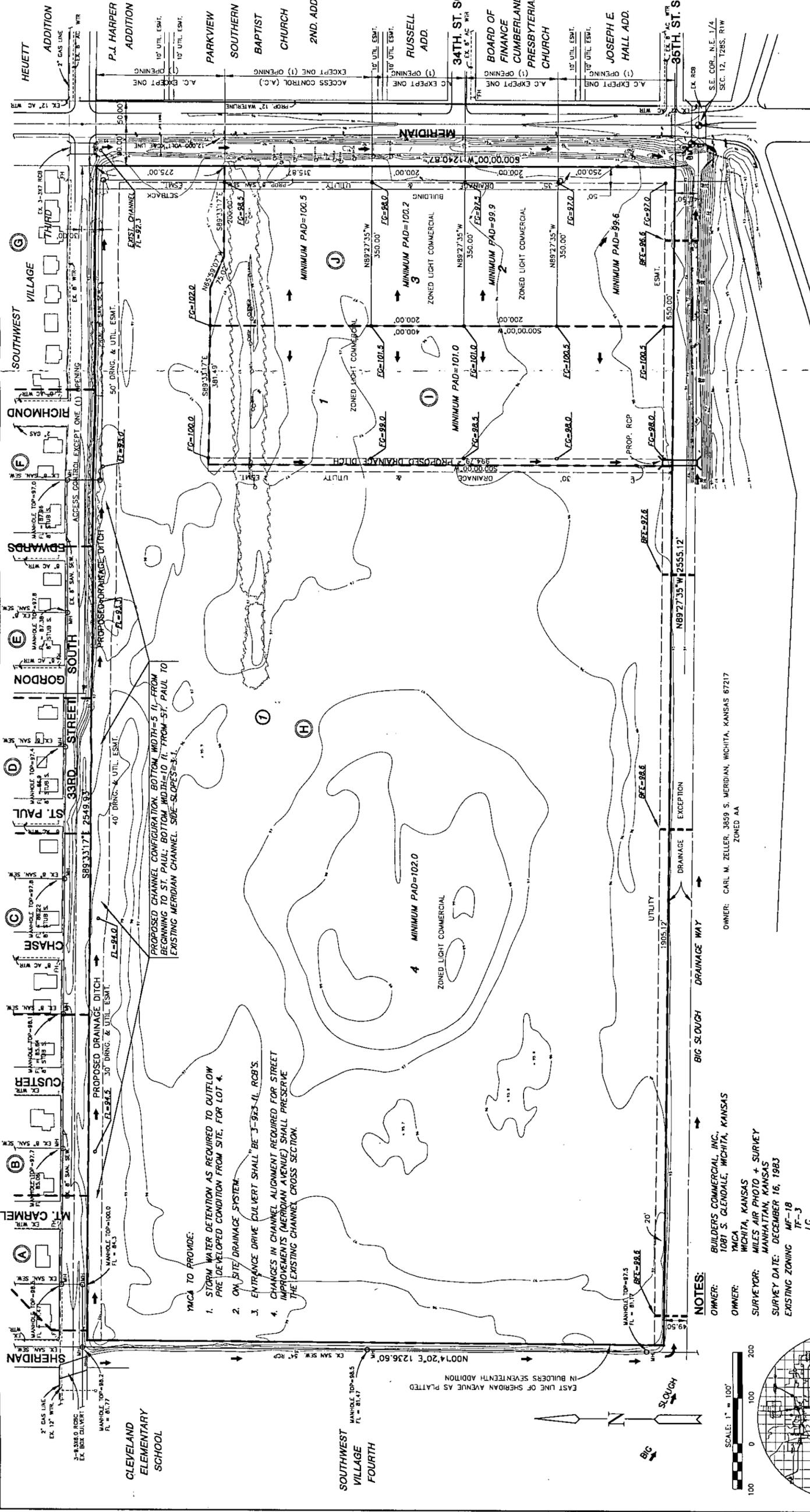
\* INCLUDES 1/2 FT FREEBOARD BASED ON NORMAL DEPTH CALCULATIONS.

**DRAINAGE ANALYSIS SUMMARY  
YMCA SOUTH ADDITION**

Area ID**	Area ac	Accum. Area ac	C2	C100	Tc2 min	Tc100 min	I2 in/hr	I100 in/hr	Q2 cfs	Q100 cfs	INLET		Pipe Size in	Min Slope %	COMMENTS
											Inlet Size ft	Qi cfs			
A*	2.50		0.50	0.76	41	23	2.21	6.13	2.76	11.65	Flume		0.10%	To Mt. Carmel, Beginning of North Perimeter Channel	
B*	15.00		0.50	0.76	64	36	1.61	4.93	12.08	56.20	pen Chann.			Intervening Flow	
A+B		17.5	0.50	0.76	64	36	1.61	4.93	14.09	65.57	pen Chann.		0.10%	Channel Flow at Chase	
C*	15.00		0.50	0.76	64	36	1.61	4.93	12.08	56.20	pen Chann.			Intervening Flow	
A+B+C		32.5	0.50	0.76	64	36	1.61	4.93	26.16	121.77	pen Chann.		0.10%	Channel Flow at St. Paul	
D*	10.00		0.50	0.76	64	36	1.61	4.93	8.05	37.47	pen Chann.			Intervening Flow	
A+B+C+D		42.5	0.50	0.76	64	36	1.61	4.93	34.21	159.24	pen Chann.		0.10%	Channel Flow at Gordon	
E*	10.00		0.50	0.76	64	36	1.61	4.93	8.05	37.47	pen Chann.			Intervening Flow	
A+B+C+D+E		52.5	0.50	0.76	64	36	1.61	4.93	42.26	196.71	pen Chann.		0.10%	Channel Flow at Edwards	
F*	7.50		0.50	0.76	64	36	1.61	4.93	6.04	28.10	pen Chann.			Intervening Flow	
A+B+C+D+E+F		60.0	0.50	0.76	64	36	1.61	4.93	48.30	224.81	pen Chann.		0.10%	Channel flow at Richmond	
G*	5.00		0.50	0.76	64	36	1.61	4.93	4.03	18.73	pen Chann.			Intervening Flow	
A+B+C+D+E+F+G		65.0	0.50	0.76	64	36	1.61	4.93	52.33	243.54	pen Chann.		0.10%	Discharge to Meridian Interceptor at Northeast Corner	
H	64.90		0.24	0.51	124	85	1.05	3.67	16.35	121.47	pen Chann.			To Athletic Fields	
I	6.85		0.68	0.80	15	15	3.83	7.37	17.84	40.39	Detention			To site channel draining south to Big Slough	
J	7.84		0.68	0.80	15	15	3.83	7.37	20.42	46.22	pen Chann.			To Meridian Interceptor Channel	
Undeveloped Site	80.00		0.24	0.51	166	114	0.78	2.40	14.98	97.92	pen Chann.			Existing Conditions for Entire Parcel	

From Sedgwick Co. Soil Survey, soils on site or just north draining to the site are HSG D.  
 Extent of offsite watersheds north of site visually checked. See assumptions in report text.  
 Watersheds A through G are single family 1/4 Acre areas  
 Watersheds I and J are Light Commercial areas  
 Watershed H is Urban Lawn Area





PROPOSED CHANNEL CONFIGURATION: BOTTOM WIDTH=5 FT., FROM BEGINNING TO ST. PAUL; BOTTOM WIDTH=10 FT. FROM ST. PAUL TO EXISTING MERIDIAN CHANNEL. SIDE SLOPES=3:1.

- YMCA TO PROVIDE:
1. STORM WATER DETENTION AS REQUIRED TO OUTFLOW PRE DEVELOPED CONDITION FROM SITE. FOR LOT 4.
  2. ON SITE DRAINAGE SYSTEM.
  3. ENTRANCE DRIVE CULVERT SHALL BE 3'-9 1/2" I.L. R.C.B.'S.
  4. CHANGES IN CHANNEL ALIGNMENT REQUIRED FOR STREET IMPROVEMENTS (MERIDIAN AVENUE) SHALL PRESERVE THE EXISTING CHANNEL CROSS SECTION.

**NOTES:**

- OWNER: BUILDERS COMMERCIAL INC., 1081 S. GLENDALE, WICHITA, KANSAS
- OWNER: YMCA, WICHITA, KANSAS
- SURVEYOR: MILES AIR PHOTO + SURVEY, MANHATTAN, KANSAS
- SURVEY DATE: DECEMBER 16, 1983
- EXISTING ZONING: MF-18, TC-3, LC
- PROPOSED ZONING: ZONE CASE Z-3266, LC
- SUBJECT TO C.U.P. DP138

NOTE: 33RD. STREET SOUTH IS PAVED ON THE NORTH SIDE FROM GORDON TO MERIDIAN AND IS NOT PAVED FROM MT. CARMEL TO GORDON. CUSTER, CHASE, & ST. PAUL ARE PAVED AND END AT 33RD. ST. SOUTH.

B.M. CITY STANDARD N.W. CORNER R.C.B. ON MERIDIAN N. OF I-235. ELEV. = 100.15 (1287.55)

OWNER: CARL M. ZELLER, 3859 S. MERIDIAN, WICHITA, KANSAS 67217 ZONED AA

ZONED AA

OWNER: CARL M. ZELLER, 3859 S. MERIDIAN, WICHITA, KANSAS 67217

ZONED AA

SCALE: 1" = 100'



LOCATION MAP

I - 235

YMCA SOUTH ADDITION

PROJECT NAME

DRAINAGE & UTILITY CONCEPT

SHEET TITLE

MID-KANSAS ENGINEERING CONSULTANTS, INC. 4111 N. WEBB ROAD WICHITA, KS. 67206 316-684-9400

DM/G/R GJA/TM DESIGN BY CHECKED BY

7156DRNG FEB, 1998

1/1 SHEET/01

B.M. 1285.64

B.M. 1285.64