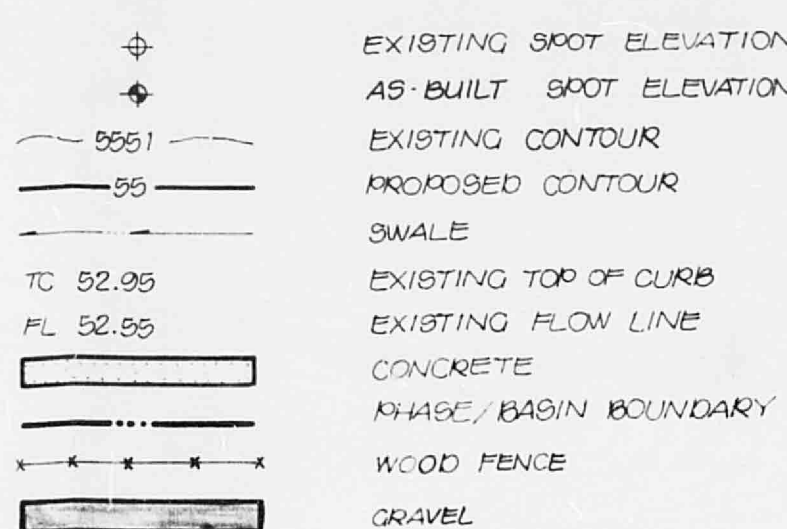


**VICINITY MAP**  
SCALE 1" = 800'  
**H-22**



**PROJECT BENCHMARK - TEM**  
TOP OF CURB ELEVATION @ SSW CURB  
RETURN @ THE INTERSECTION OF  
CHELWOOD PARK BLVD. N.E. & CLAREMONT  
AVE. N.E.  
ELEV. = 5696.75 FEET (MOUND)

### DRAINAGE PLAN

The following items concerning the revised Drainage Plan for Phase III of the Chelwood Apartments are contained herein:

1. Vicinity Map
2. Grading Plan
3. Calculations

This Drainage Plan is presented as an update to the previously approved plan for this project. At this time, the revisions deal with the certification of Phase III and a minor revision to the Phase II Plan.

The Grading Plan shows 1) existing (pre-construction) grades indicated by contours at 1' 0" intervals, 2) as-built grades indicated by spot elevations, and 3) the limit and character of the proposed improvements. As shown by this plan, the as-built grades are in substantial compliance with the approved drainage plan in that they define a drainage pattern which very closely resembles that of the approved plan. The finish floor elevation of Building G has been maintained above the design elevation of 5698.00. The finish floor elevations for Buildings H and I have been lowered 1 to 1.5 feet to facilitate to earthwork on the site. From a drainage standpoint, this has not created a problem. Furthermore, the finish floor elevation of Building G was maintained at the prescribed minimum 1-foot above corresponding top of curb elevation due to the present flooding of the street. Overflow runoff from the ponding area, if the outlet plugs, will spill at the northwest corner of the parking lot and flow within a swale to the alley.

The Calculations which appear below verify the pond volume provided. The previous drainage plan did evaluate the required pond volume for this phase by hydrograph analysis therefore, this volume has been maintained as a minimum requirement and has been provided as shown in the calculations.

#### Phase II

1. From approved Drainage Plan:

$Q_{100} = 1.6$  cfs  
 $V_{100} = 2844$  cf  
 $\% \text{ free discharge} = 30\%$   
 $V_{\text{release}} = 0.3$  cfs  
 $V_{\text{required}} = 1161$  cf

2.  $V_{\text{pond}} = 1640$  cf >  $V_{\text{required}}$   
 $V_{\text{pond}} = 1/2 (A_{98.12} + A_{96.98}) (96.08 - 95.19)$   
 $V_{\text{pond}} = 1/2 (0 + 3650) (0.9) = 1640$  cf



### DRAINAGE PLAN

The following items concerning the revised Drainage Plan for Phase I of the Chelwood Apartments are contained herein:

1. Vicinity Map
2. Grading Plan
3. Calculations

This Drainage Plan is presented as an update to the previously approved plan for this project. At this time, the revisions deal exclusively with the certification of Phase I.

The Grading Plan shows 1) existing (pre-construction) grades indicated by contours at 1' 0" intervals, 2) as-built grades indicated by spot elevations, and 3) the limit and character of the proposed improvements. As shown by this plan, the as-built grades are in substantial compliance with the approved drainage plan in that they define a drainage pattern which very closely resembles that of the approved plan. The finish floor elevation of Building A has been maintained at the design elevation of 5701.0. The finish floor elevations for Buildings B and C have been lowered to facilitate the earthwork on the site. From a drainage standpoint, this has not created a problem. Furthermore, the finish floor elevation of Building A was maintained at the prescribed 1-foot above corresponding top of curb elevation due to the present flooding of the street.

The calculations which appear below verify the pond volume provided. The previous drainage plan did not evaluate the required pond volume for this phase by hydrograph analysis. This analysis is provided at this time and it accompanies this submittal.

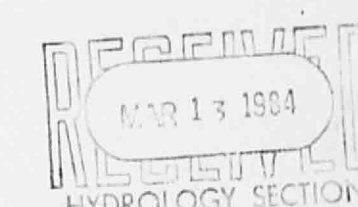
#### Calculations

##### Phase I.

1. From approved Drainage Plan:

$Q_{100} = 1.6$  cfs  
 $V_{100} = 2684$  cf  
 $\% \text{ free discharge} = 30\%$   
 $V_{\text{release}} = 0.4$  cfs

2. By hydrograph analysis,  $V_{\text{required}} = 1510$  cf  
Allowing for 30% free discharge,  $V_{\text{required}} = 1060$  cf
3.  $V_{\text{pond}} = 1250$  cf >  $V_{\text{required}}$   
 $V_{\text{pond}} = 1/2 (A_{98.9} + A_{98.0}) (98.9 - 98.0)$   
 $V_{\text{pond}} = 1/2 (0 + 2780) (0.9) = 1250$  cf



### DRAINAGE PLAN

The following items concerning the revised Drainage Plan for Phase II of the Chelwood Apartments are contained herein:

1. Vicinity Map
2. Grading Plan
3. Calculations

This Drainage Plan is presented as an update to the previously approved plan for this project. At this time, the revisions deal exclusively with the certification of Phase II.

The Grading Plan shows 1) existing (pre-construction) grades indicated by contours at 1' 0" intervals, 2) as-built grades indicated by spot elevations, and 3) the limit and character of the proposed improvements. As shown by this plan, the as-built grades are in substantial compliance with the approved drainage plan in that they define a drainage pattern which very closely resembles that of the approved plan. The finish floor elevation of Building D has been maintained at the design elevation of 5700.0. The finish floor elevations for Buildings E and F have been lowered 1 to 1.5 feet to facilitate the earthwork on the site. From a drainage standpoint, this has not created a problem. Furthermore, the finish floor elevation of Building D was maintained at the prescribed 1-foot above corresponding top of curb elevation due to the present flooding of the street. Overflow runoff from the ponding area, if the outlet plugs, will spill back into Chelwood Park Boulevard N.E. as shown by the plan.

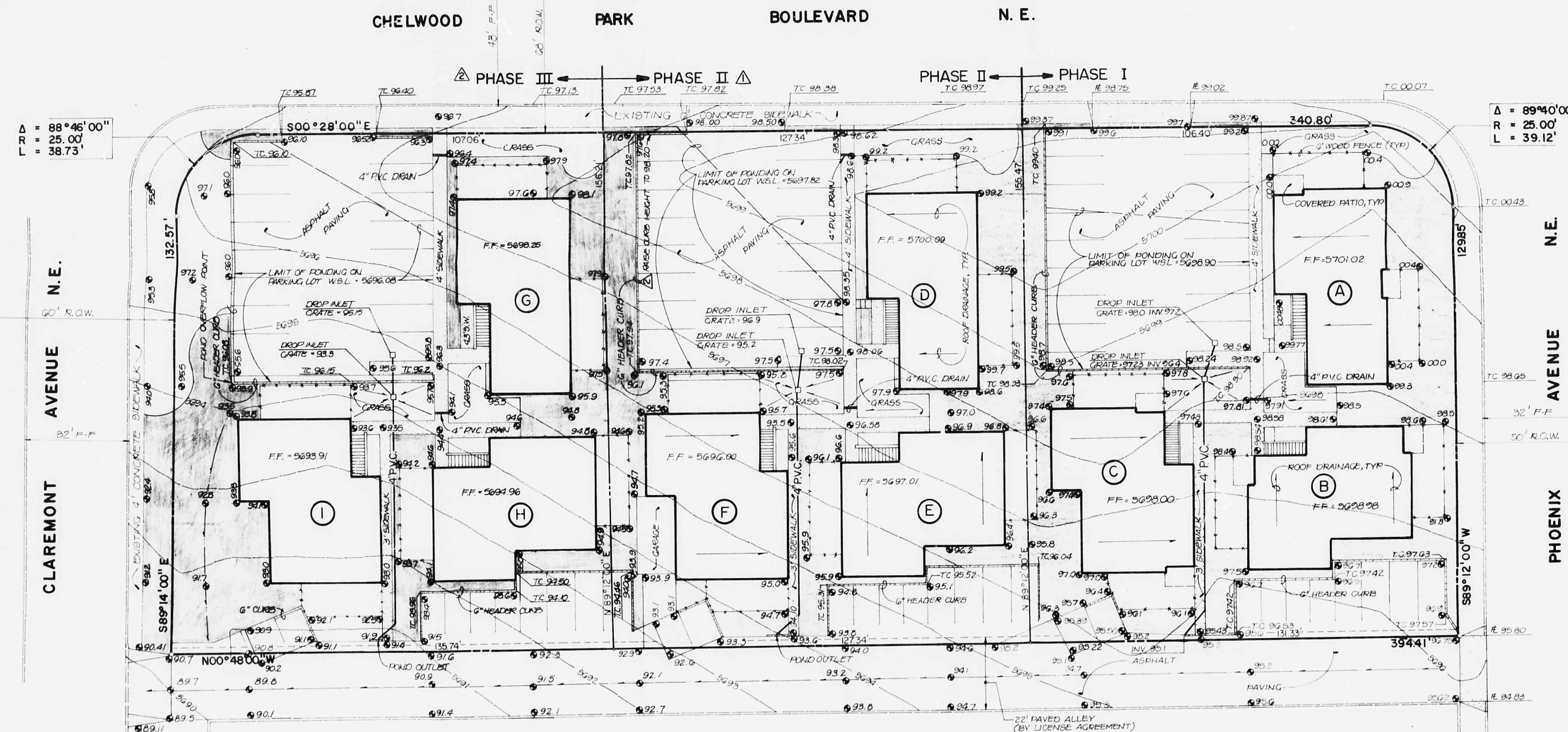
The Calculations which appear below verify the pond volume provided. The previous drainage plan did evaluate the required pond volume for this phase by hydrograph analysis therefore, this volume has been maintained as a minimum requirement and has been provided as shown in the calculations.

#### Phase II

1. From approved Drainage Plan:

$Q_{100} = 1.6$  cfs  
 $V_{100} = 2715$  cf  
 $\% \text{ free discharge} = 30\%$   
 $V_{\text{release}} = 0.3$  cfs  
 $V_{\text{required}} = 1120$  cf

2.  $V_{\text{pond}} = 1410$  cf >  $V_{\text{required}}$   
 $V_{\text{pond}} = 1/2 (97.82 + 96.9) (97.82 - 96.9)$   
 $V_{\text{pond}} = 1/2 (0 + 3140) (0.9) = 1410$  cf



811 DALLAS N.E. • ALBUQUERQUE • NEW MEXICO • 87110  
ENGINEERS

NO.	DATE	BY	REVISIONS
1	2/84	JGM	ADD PHASE II AS-BUILT & CERT.
2	3/84	JGM	ADD PHASE III AS-BUILT & CERT.

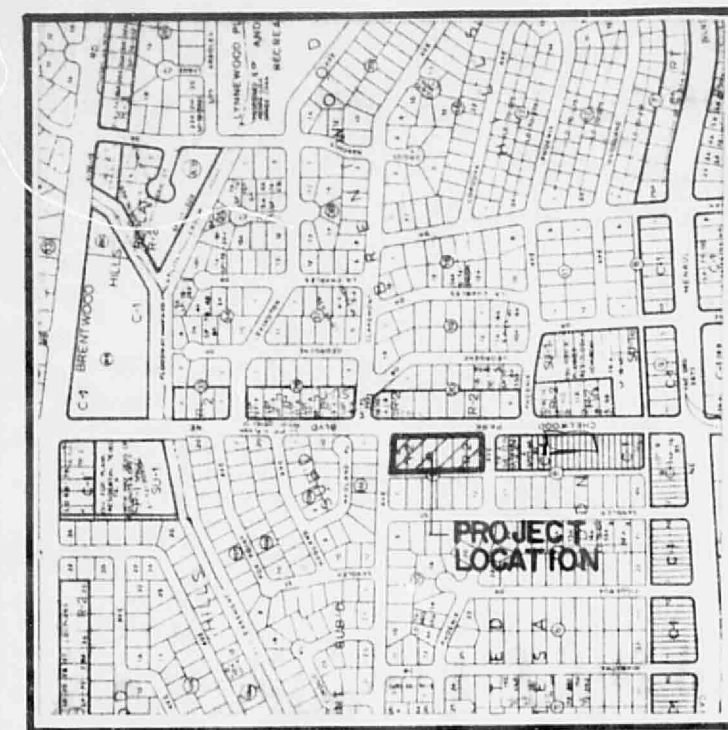
DESIGNED BY: JGM  
DRAWN BY: JMC  
APPROVED: T.T.M.

JOB NO.  
**30522**  
DATE  
**2-84**

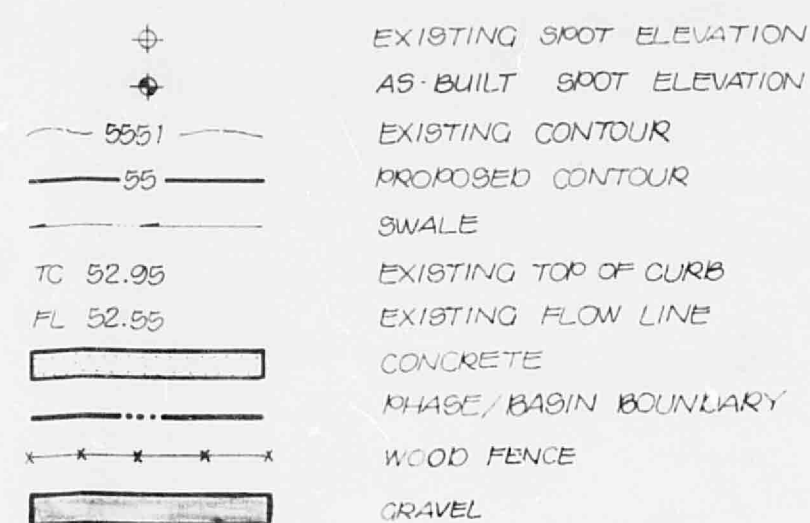
REVISED GRADING & DRAINAGE PLAN & CERTIFICATION  
CHELWOOD APARTMENTS PHASES I, II & III

FILE NO.  
SHEET 1 OF 1





**VICINITY MAP**  
SCALE 1" = 800'  
**H-22**



**PROJECT BENCHMARK-TEN**  
TOP OF CURB ELEVATION @ SSW CURB  
RETURN @ THE INTERSECTION OF  
CHELWOOD PARK BLVD. N.E. & CLAREMONT  
AVE. N.E.  
ELEV. = 5695.75 FEET (MOLD)

**△ DRAINAGE PLAN**  
The following items concerning the revised Drainage Plan for Phase III of the Chelwood Apartments are contained herein:

1. Vicinity Map
2. Grading Plan
3. Calculations

This Drainage Plan is presented as an update to the previously approved plan for this project. At this time, the revisions deal with the certification of Phase III and a minor revision to the Phase II Plan.

The Grading Plan shows 1) existing (pre-construction) grades indicated by contours at 1' 0" intervals, 2) as-built grades indicated by spot elevations, and 3) the limit and character of the proposed improvements. As shown by this plan, the as-built grades are in substantial compliance with the approved drainage plan in that they define a drainage pattern which very closely resembles that of the approved plan. The finish floor elevation of Building G has been maintained above the design elevation of 5698.00. The finish floor elevations for Buildings H and I have been lowered 1 to 1.5 feet to facilitate to earthwork on the site. From a drainage standpoint, this has not created a problem. Furthermore, the finish floor elevation of Building G was maintained at the prescribed minimum 1-foot above corresponding top of curb elevation due to the present flooding of the street. Overflow runoff from the ponding area, if the outlet plugs, will spill at the northwest corner of the parking lot and flow within a swale to the alley.

The Calculations which appear below verify the pond volume provided. The previous drainage plan did evaluate the required pond volume for this phase by hydrograph analysis therefore, this volume has been maintained as a minimum requirement and has been provided as shown in the calculations.

- Phase II
1. From approved Drainage Plan:  
 $Q_{100} = 1.6 \text{ cfs}$   
 $V_{100} = 2844 \text{ cf}$   
 $\% \text{ free discharge} = 30\%$   
 $\text{Release} = 0.3 \text{ cfs}$   
 $V_{\text{required}} = 1161 \text{ cf}$
  2.  $V_{\text{pond}} = 1640 \text{ cf} > V_{\text{required}}$   
 $V_{\text{pond}} = 1/2 (A_{98.19} + A_{96.08}) (96.08 - 95.19)$   
 $V_{\text{pond}} = 1/2 (0 + 3650) (0.9) = 1640 \text{ cf}$



**△ DRAINAGE PLAN**  
The following items concerning the revised Drainage Plan for Phase I of the Chelwood Apartments are contained herein:

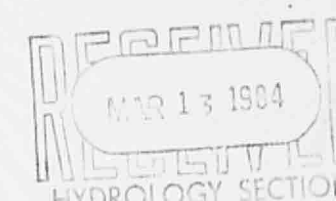
1. Vicinity Map
2. Grading Plan
3. Calculations

This Drainage Plan is presented as an update to the previously approved plan for this project. At this time, the revisions deal exclusively with the certification of Phase I.

The Grading Plan shows 1) existing (pre-construction) grades indicated by contours at 1' 0" intervals, 2) as-built grades indicated by spot elevations, and 3) the limit and character of the proposed improvements. As shown by this plan, the as-built grades are in substantial compliance with the approved drainage plan in that they define a drainage pattern which very closely resembles that of the approved plan. The finish floor elevation of Building A has been maintained at the design elevation of 5701.0. The finish floor elevations for Buildings B and C have been lowered to facilitate the earthwork on the site. From a drainage standpoint, this has not created a problem. Furthermore, the finish floor elevation of Building A was maintained at the prescribed 1-foot above corresponding top of curb elevation due to the present flooding of the street.

The calculations which appear below verify the pond volume provided. The previous drainage plan did not evaluate the required pond volume for this phase by hydrograph analysis. This analysis is provided at this time and it accompanies this submittal.

- Calculations
- Phase I.
1. From approved Drainage Plan:  
 $Q_{100} = 1.6 \text{ cfs}$   
 $V_{100} = 2694 \text{ cf}$   
 $\% \text{ free discharge} = 30\%$   
 $\text{Release} = 0.4 \text{ cfs}$
  2. By hydrograph analysis,  $V_{\text{required}} = 1510 \text{ cf}$   
 Allowing for 30% free discharge,  $V_{\text{required}} = 1060 \text{ cf}$
  3.  $V_{\text{pond}} = 1250 \text{ cf} > V_{\text{required}}$   
 $V_{\text{pond}} = 1/2 (A_{98} + A_{98.3}) (98.9 - 98.0)$   
 $V_{\text{pond}} = 1/2 (0 + 2780) (0.9) = 1250 \text{ cf}$



**△ DRAINAGE PLAN**  
The following items concerning the revised Drainage Plan for Phase II of the Chelwood Apartments are contained herein:

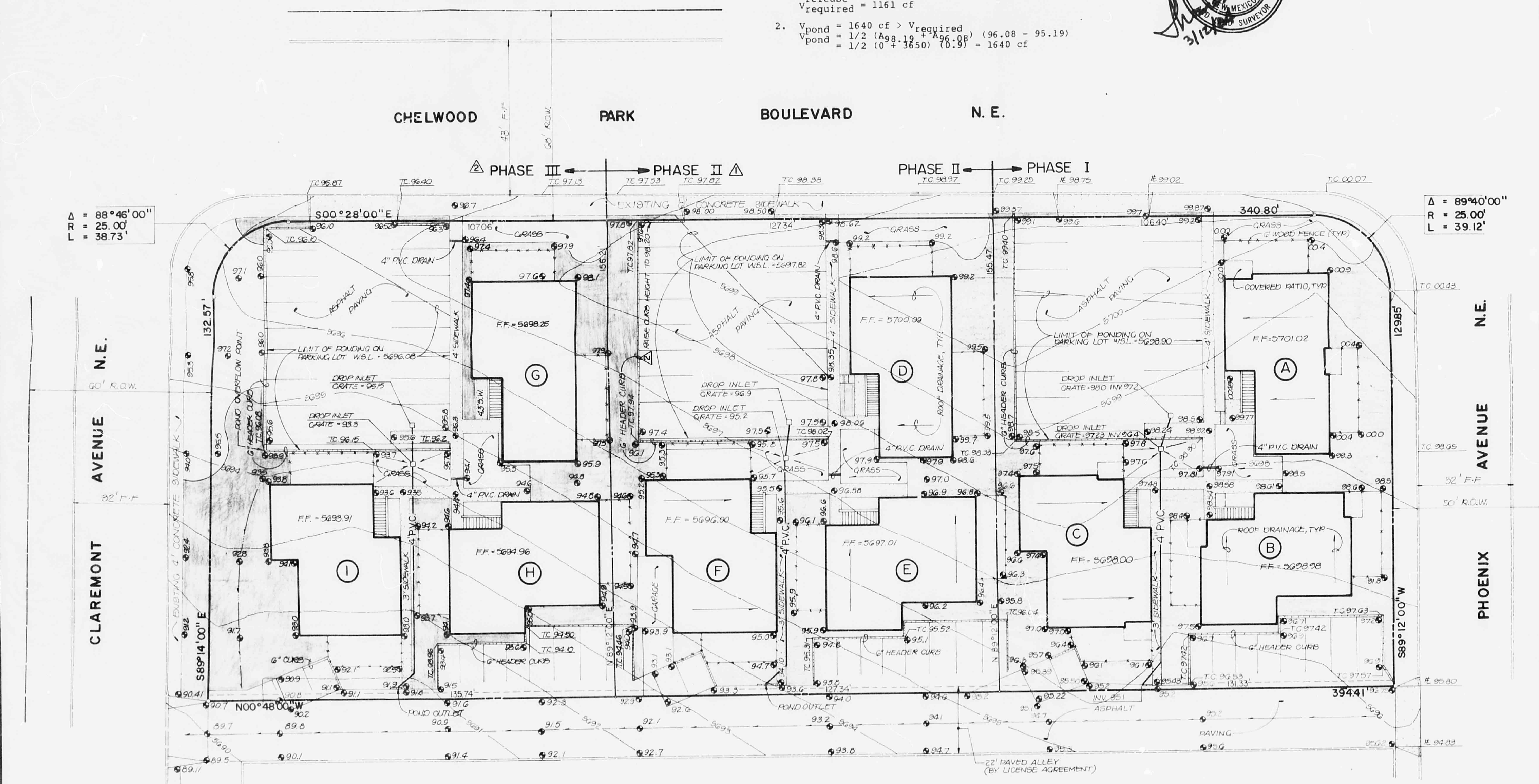
1. Vicinity Map
2. Grading Plan
3. Calculations

This Drainage Plan is presented as an update to the previously approved plan for this project. At this time, the revisions deal exclusively with the certification of Phase II.

The Grading Plan shows 1) existing (pre-construction) grades indicated by contours at 1' 0" intervals, 2) as-built grades indicated by spot elevations, and 3) the limit and character of the proposed improvements. As shown by this plan, the as-built grades are in substantial compliance with the approved drainage plan in that they define a drainage pattern which very closely resembles that of the approved plan. The finish floor elevation of Building D has been maintained at the design elevation of 5700.0. The finish floor elevations for Buildings E and F have been lowered 1 to 1.5 feet to facilitate the earthwork on the site. From a drainage standpoint, this has not created a problem. Furthermore, the finish floor elevation of Building D was maintained at the prescribed 1-foot above corresponding top of curb elevation due to the present flooding of the street. Overflow runoff from the ponding area, if the outlet plugs, will spill back into Chelwood Park Boulevard N.E. as shown by the plan.

The Calculations which appear below verify the pond volume provided. The previous drainage plan did evaluate the required pond volume for this phase by hydrograph analysis therefore, this volume has been maintained as a minimum requirement and has been provided as shown in the calculations.

- Phase II
1. From approved Drainage Plan:  
 $Q_{100} = 1.6 \text{ cfs}$   
 $V_{100} = 2715 \text{ cf}$   
 $\% \text{ free discharge} = 30\%$   
 $\text{Release} = 0.3 \text{ cfs}$   
 $V_{\text{required}} = 1120 \text{ cf}$
  2.  $V_{\text{pond}} = 1410 \text{ cf} > V_{\text{required}}$   
 $V_{\text{pond}} = 1/2 (97.82 + 96.9) (97.82 - 96.9)$   
 $V_{\text{pond}} = 1/2 (0 + 3140) (0.9) = 1410 \text{ cf}$



811 DALLAS N.E. • ALBUQUERQUE • NEW MEXICO • 87110  
ENGINEERS

NO.	DATE	BY	REVISIONS
1	2/84	JGM	ADD PHASE II AS-BUILT & CERT.
2	3/84	JGM	ADD PHASE III AS-BUILT & CERT.

DESIGNED BY	JGM
DRAWN BY	JMC
APPROVED	T.T.M.

JOB NO.	30522
DATE	2-84

REVISED GRADING & DRAINAGE PLAN & CERTIFICATION  
CHELWOOD APARTMENTS PHASES I, II & III

FILE NO.	
SHEET	1 OF 1