

SITE CRITERIA

LEGAL DESCRIPTION: LOT 2-A, REINDEER ADDITION

TOTAL = 54,000 SF.

OFFICE = 1,546 + 200 = 25.7 WAREHOUSE = 36,16 + 2000 = 18.1 PRINTING = 3511 + 1000 = 35

INCLUDING 4 HANDICAF.

THE CONTRACTOR SHALL REFER TO THE OWNER'S SURVEY FOR THE

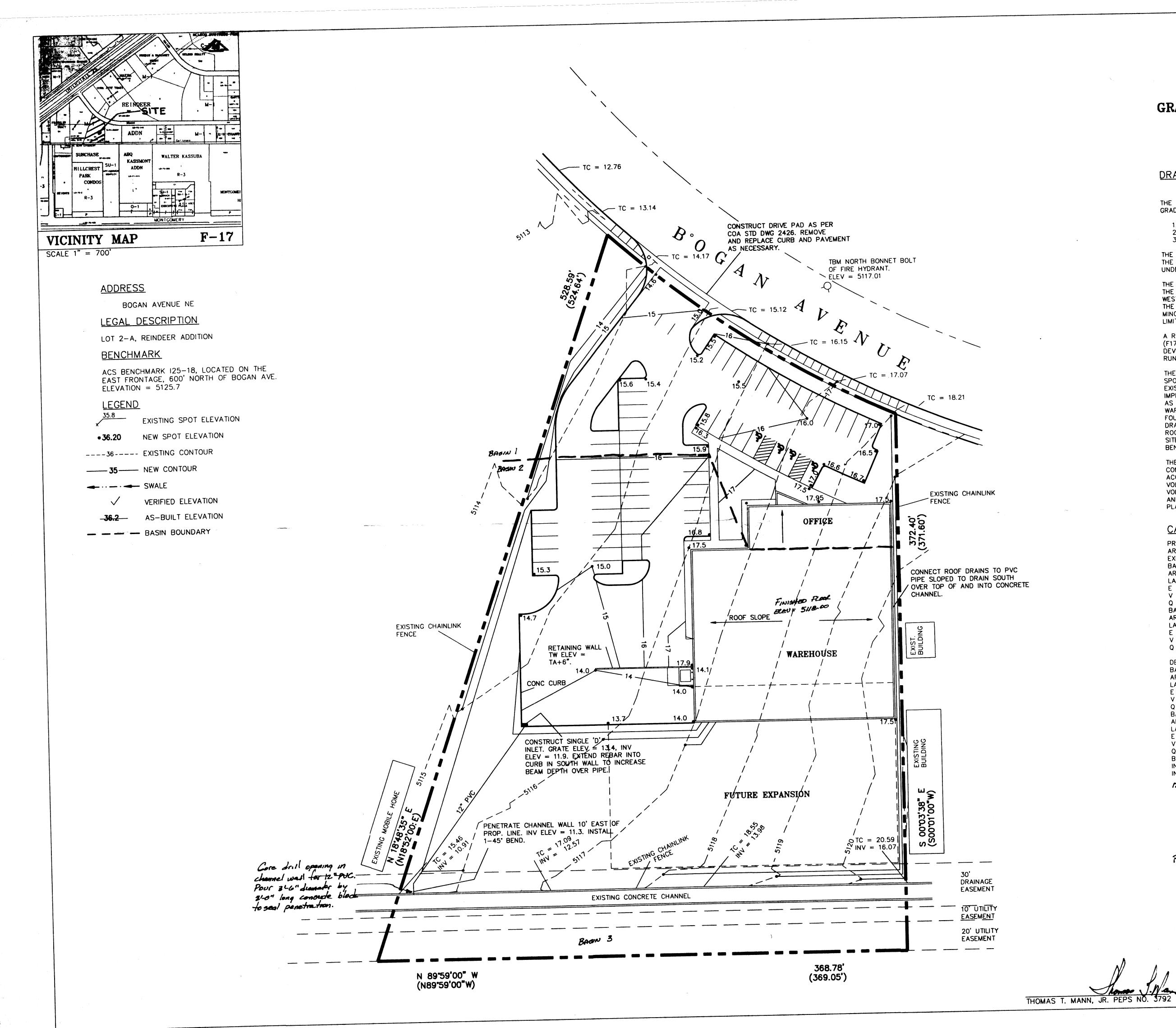
FIRE DEPARTMENT FOR APPROVAL AS REQUIRED, PER NEPA 13.

8. ALL SIDEWALK & CURB & GUTTER IN DISREPAIR SHALL BE REMOVE

SITE PLAN & DETAIL



PR JECT NUME 1305 Tijeras NW Albuquerque, NM 87102-288 Phone: 505/842-1113 Fax: 505/842 1336



ALBUQUERQUE PRINTING GRADING AND DRAINAGE PLAN

DRAINAGE PLAN

THE FOLLOWING ITEMS CONCERNING THE ALBUQUERQUE PRINTING OFFICE/WAREHOUSE GRADING AND DRAINAGE PLAN ARE CONTAINED HEREON:

1. VICINITY MAP
2. GRADING PLAN
3. CALCULATIONS

THE PROPSED IMPROVEMENTS, AS SHOWN BY THE VICINITY MAP, ARE LOCATED ON THE SOUTH SIDE OF BOGAN AVENUE, EAST OF THE FRONTAGE ROAD. THE SITE IS UNDEVELOPED. THE SITE DOES NOT LIE WITHIN A DESIGNATED FLOOD HAZARD ZONE.

THE SITE SLOPES FROM EAST TO WEST. THE SITE IS HIGHER THAN BOGAN AVENUE TO THE NORTH, LOWER THAN THE LOT TO THE EAST AND HIGHER THAN THE LOT TO THE WEST. A CONCRETE DRAINAGE CHANNEL TRAVERSES THE SOUTHERN ONE FOURTH OF THE SITE AND SEVERS APPROXIMATELY 0.39 ACRES FROM THE SITE. THEREFORE, ONLY MINOR OFFSITE RUNOFF CAN ENTER THE SITE FROM THE EAST AND THAT AMOUNT IS LIMITED SINCE THE SITE IS DEVELOPED AND GRADED TO DRAIN AWAY FROM THIS SITE.

A REVIEW OF THE APPROVED GRADING PLANS TO THE EAST AND WEST OF THIS SITE, (F17/D49A & F17/D62) INDICATE THAT THE CHANNEL TO THE SOUTH ACCEPTS FREE DEVELOPED DISCHARGES. THEREFORE, THIS SITE WILL BE GRADED TO CONVEY AS MUCH RUNOFF AS POSSIBLE TO THE CHANNEL AND LIMIT THE FLOWS TO BOGAN.

THE GRADING PLAN SHOWS 1) THE EXISTING AND PROPOSED GRADES, INDICATED BY SPOT ELEVATIONS AND CONTOURS AT 1'-0" INTERVALS, 2) CONTINUITY BETWEEN EXISTING AND PROPOSED CONTOURS, 3) THE LIMIT AND CHARACTER OF EXISTING IMPROVEMENTS AND 4) THE LIMIT AND CHARACTER OF PROPOSED IMPROVEMENTS. AS SHOWN BY THIS PLAN, THE PROPOSED IMPROVEMENTS CONSIST OF AN OFFICE/WAREHOUSE WITH ASSOCIATED PARKING AND LANDSCAPING. THE NORTHERN ONE FOURTH OF THE SITE WILL DRAIN TO BOGAN WHILE THE MIDDLE OF THE SITE WILL DRAIN TO THE CONCRETE CHANNEL VIA AN INLET AND PIPE. THE EAST HALF OF THE ROOF WILL BE PIPED DIRECTLY TO THE CHANNEL. THE SOUTHERN ONE FOURTH OF THE SITE WILL BE UNTOUCHED SINCE IT LIES SOUTH OF THE CHANNEL AND DOES NOT BENEFIT THE PROJECT.

THE CALCULATIONS, WHICH APPEAR BELOW, ANALYZE THE EXISTING AND PROPOSED CONDITIONS FOR THE 6-HOUR, 100-YEAR RAINFALL EVENT. THE ANALYSIS IS IN ACCORDANCE WITH THE CITY OF ALBUQUERQUE DEVELOPMENT PROCESS MANUAL, VOLUME II. AS SHOWN BY THE CALCULATIONS, THE RATE OF RUNOFF AND THE VOLUME OF RUNOFF WILL INCREASE. THE FLOWS INTO BOGAN WILL DECREASE AND THE REMAINING FLOWS WILL BE CONVEYED DIRECTLY TO THE CHANNEL. THIS PLAN IS SIMILAR TO PREVIOUSLY APPROVED PLANS FOR THIS AREA.

<u>CALCULATIONS</u>

PRECIPITATION ZONE = 2

AREA = 2.93 ACRES
EXISTING CONDITIONS

BASINS 1 & 2

AREA = 2.54 ACRES

LAND TREATMENT C = 100%

E = 1.13*1.00 = 1.13 INCHES

V = 1.13*2.54/12 = 0.24 ACRE FEET

Q = 3.14*1.00*2.54 = 7.98 CFS

BASIN 3

AREA = 0.39 ACRES

LAND TREATMENT C = 74% D = 26%

E = 1.13*0.74+2.12*0.26 = 1.39 INCHES

E = 1.13*0.74+2.12*0.26 = 1.39 INCHES V = 1.39*0.39/12 = 0.05 ACRE FEET Q = (3.14*0.74+4.70*0.26) = 1.38 CFS DEVELOPED CONDITIONS

BASIN 1

AREA = 0.64 ACRES

LAND TREATMENT B = 26% D = 74%

E = 0.78*0.26+212*0.74 = 1.77 INCHES

V = 1.77*0.64/12 = 0.09 ACRE FEET

Q = (2.28*0.26+4.70*0.74)0.64 = 2.61 CFS

BASIN 2

AREA = 1.90 ACRES

LAND TREATMENT B = 51% D = 49%

E = 0.78*0.51+2.12*0.49 = 1.44 INCHES

V = 1.44*1.90/12 = 0.23 ACRE FEET
Q = (2.28*0.51+4.70*0.49)1.90 = 6.59 CFS

BASIN 3 - UNCHANGED
INCREASE IN RATE OF RUNOFF = 10.58-9.36 = 1.22 CFS
INCREASE IN VOLUME OF RUNOFF = 0.37-0.29 = 0.08 ACRE FEET

12* Pipe Capacity = 1.49/0.013 * 0.785 * 0.004 = 2.86 CFS

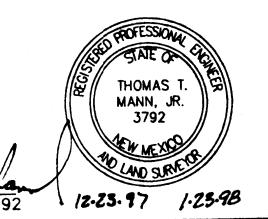
1=500 of 2.86 cfs
0 3.50 | 36.11 So.68

Pand Volume @ 15/00 = 615.00 =

A0+900*a1 + 8.7+40 + 400 + L0 = 6075 of DRAVING SCALE: 1' = 30'

6075 7 4128

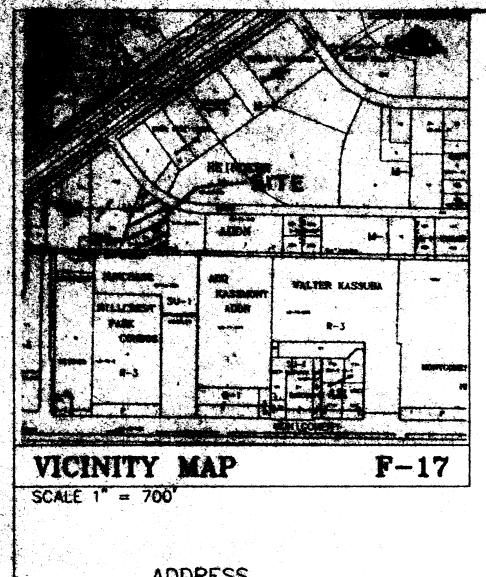
0 6 12 18 24 30 60 90



Engineering &
Surveying
Associates, Inc.

5312 Noreen Drive NE • Albuquerque, NM 87111
(505) 298-4651

1.



<u>ADDRESS</u>

BOGAN AVENUE NE

LEGAL DESCRIPTION

LOT 2-A, REINDEER ADDITION

BENCHMARK

ACS BENCHMARK 125-18, LOCATED ON THE EAST FRONTAGE, 600' NORTH OF BOGAN AVE. ELEVATION = 5125.7

FENCE

Channel was for 12 " PUC.

LEGEND

EXISTING SPOT ELEVATION

NEW SPOT ELEVATION

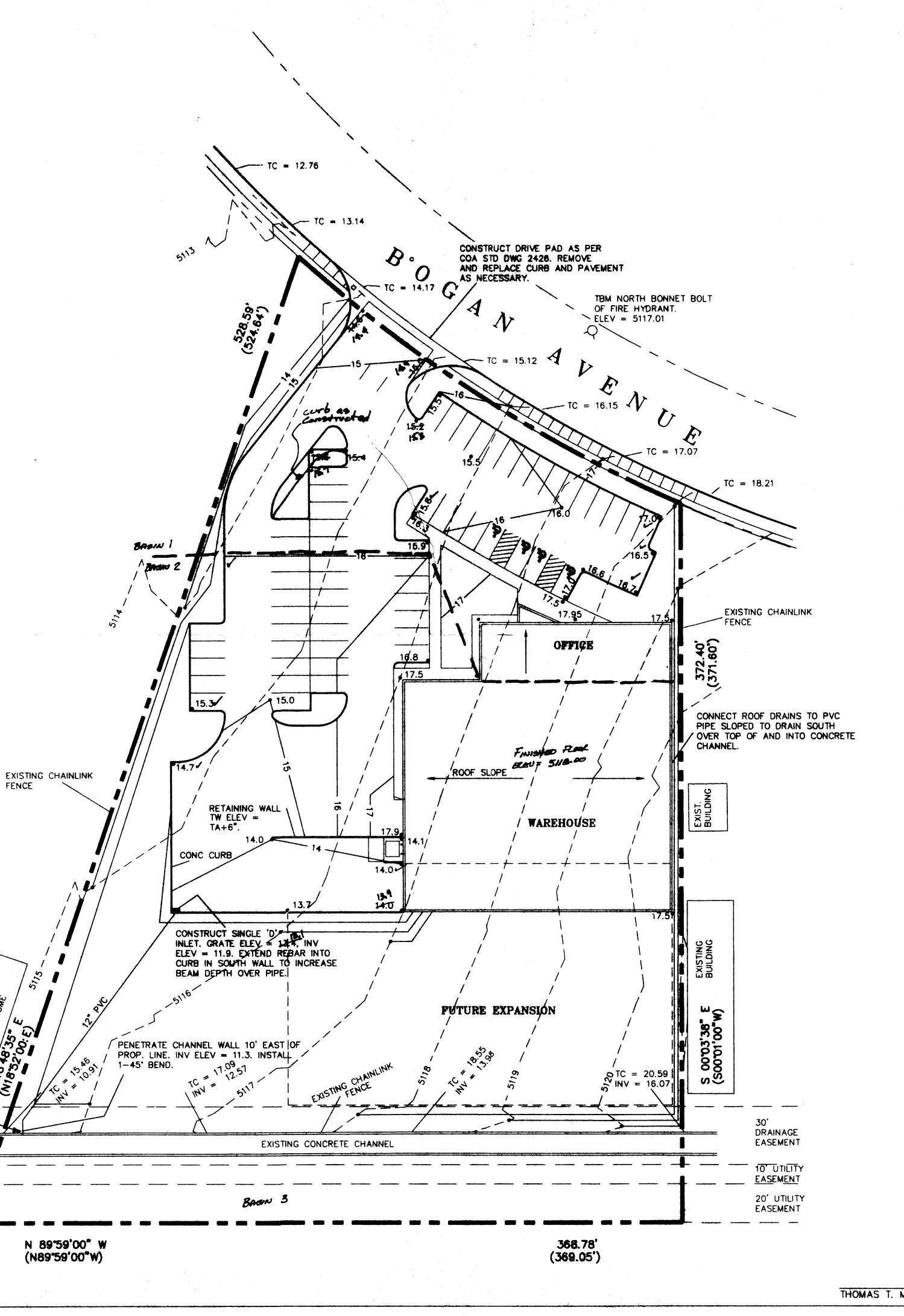
---- EXISTING CONTOUR

--- NEW CONTOUR

VERIFIED ELEVATION

AS-BUILT ELEVATION

- BASIN BOUNDARY



ALBUQUERQUE PRINTING GRADING AND DRAINAGE PLAN

DRAINAGE PLAN

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CALCULATIONS

PRECIPITATION ZONE = 2
AREA = 2.93 ACRES
EXISTING CONDITIONS BASINS 1 & 2 AREA = 2.54 ACRESLAND TREATMENT C = 100%

E = 1.13*1.00 = 1.13 INCHES V = 1.13*2.54/12 = 0.24 ACRE FEET Q = 3.14*1.00*2.54 = 7.98 CFS BASIN 3

AREA = 0.39 ACRESLAND TREATMENT C = 74% D = 26% E = 1.13 + 0.74 + 2.12 + 0.26 = 1.39 INCHES

V = 1.39*0.39/12 = 0.05 ACRE FEET Q = (3.14*0.74+4.70*0.26) = 1.38 CFS

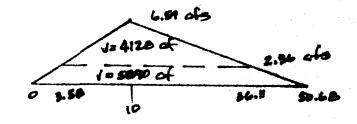
DEVELOPED CONDITIONS

AREA = 0.64 ACRESLAND TREATMENT B = 26% D = 74% $E = 0.78 \cdot 0.26 + 212 \cdot 0.74 = 1.77$ INCHES

V = 1.77*0.64/12 = 0.09 ACRE FEET $Q = (2.28 \cdot 0.26 + 4.70 \cdot 0.74)0.64 = 2.61 CFS$ BASIN 2 AREA = 1.90 ACRES

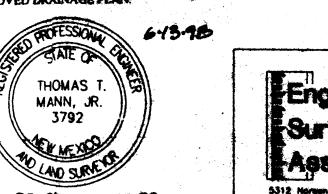
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INCREASE IN RATE OF RUNOFF = 10.58-9.36 = 1.22 CFS
INCREASE IN VOLUME OF RUNOFF = 0.37-0.29 = 0.08 ACRE FEET 12" PIDE CAPACITY = 1.49 / 0.018 + 0.786 + 0.40 + 0.006 = 2.86 of5



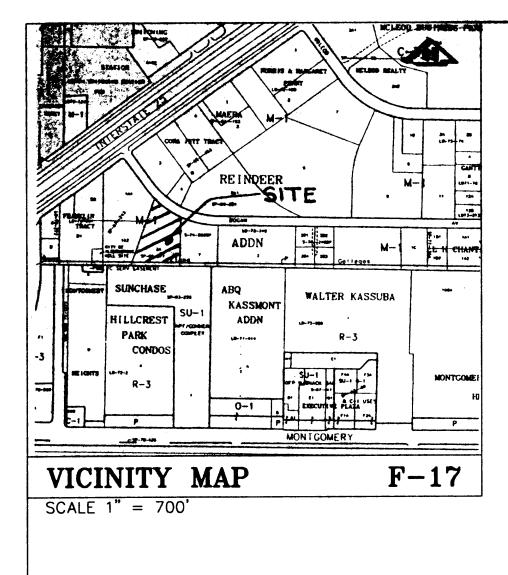
Pand Volume e toler 5115.00 = 104900 × 0.1 + 8.7+40 × 400 × LO = 6075 ef

6018 7 4128 THIS PROJECT WAS CONSTRUCTED IN SUBSTANTIAL COMPLIANCE WITH THE APPROVED DRAINAGE PLAN.



Engineering & Surveying Associates, Inc.

SHEET NO.



<u>ADDRESS</u>

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<u>LEGEND</u>

EXISTING SPOT ELEVATION

• 36.20 NEW SPOT ELEVATION

----36---- EXISTING CONTOUR

→·· SWALE

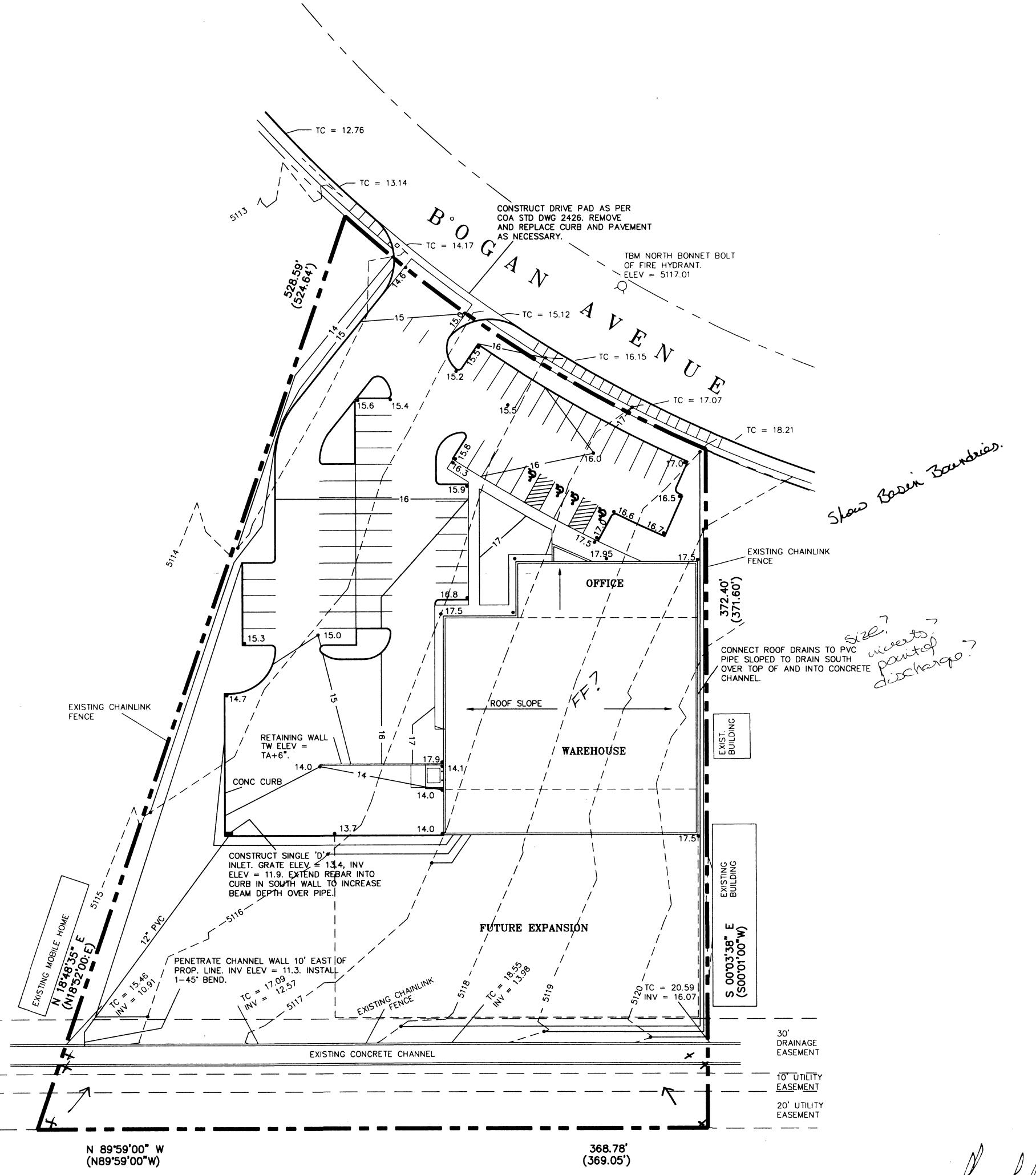
/

---- 35---- NEW CONTOUR

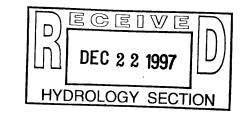
VERIFIED ELEVATION

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– – – BASIN BOUNDARY



ALBUQUERQUE PRINTING GRADING AND DRAINAGE PLAN



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PRECIPITATION ZONE = 2

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EXISTING CONDITIONS

BASINS 1 & 2

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LAND TREATMENT C = 100%

E = 1.13*1.00 = 1.13 INCHES

V = 1.13*2.54/12 = 0.24 ACRE FEET

Q = 3.14*1.00*2.54 = 7.98 CFS

BASIN 3

Where are these paseris.

AREA = 0.39 ACRES LAND TREATMENT C = 74% D = 26% E = 1.13*0.74+2.12*0.26 = 1.39 INCHES V = 1.39*0.39/12 = 0.05 ACRE FEET Q = (3.14*0.74+4.70*0.26) = 1.38 CFS

DEVELOPED CONDITIONS

BASIN 1

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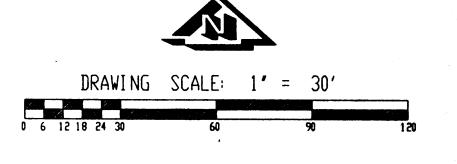
BASIN 2
AREA = 1.90 ACRES
LAND TREATMENT B = 51% D = 49%
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Q = (2.28*0.51+4.70*0.49)1.90 = 6.59 CFS

BASIN 3 - UNCHANGED

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INCREASE IN RATE OF RUNOFF = 10.58-9.36 = (.22 CF)

INCREASE IN VOLUME OF RUNOFF = 0.37-0.29 = 0.08 ACRE FEET



THOMAS T. MANN, JR. PEPS NO. 3792

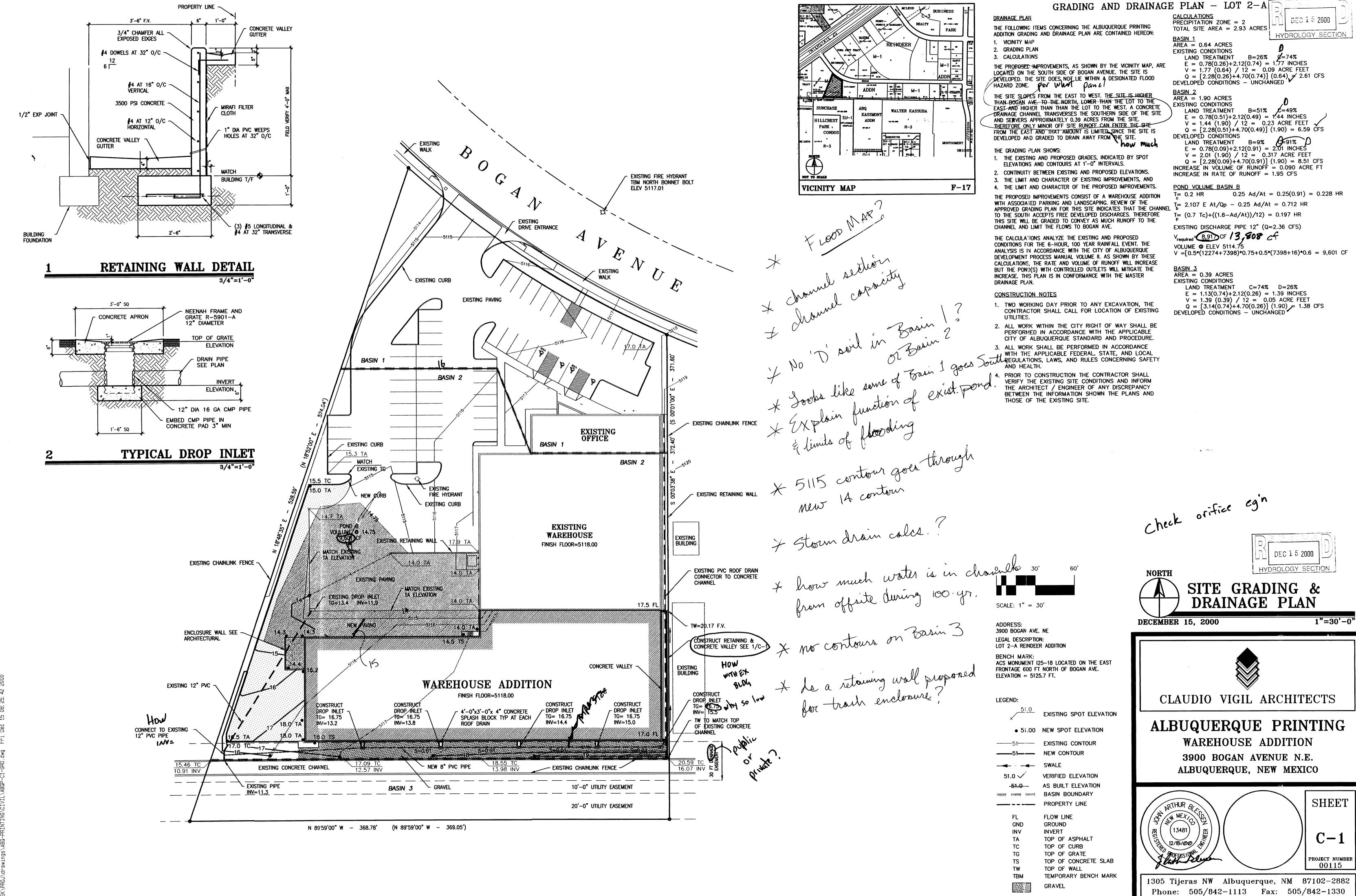
THOMAS T. MANN, JR. PEPS NO. 3792

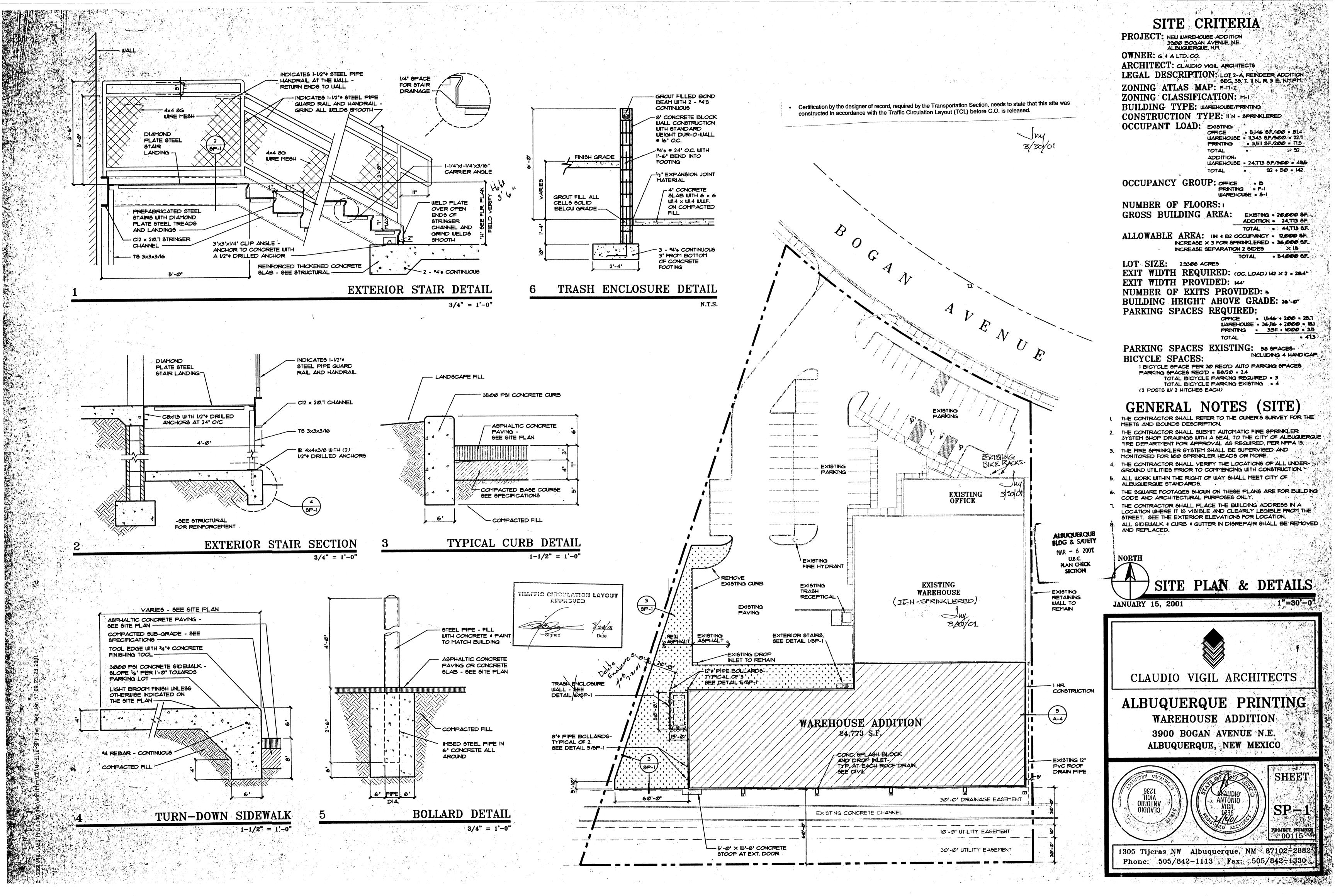
THOMAS T. MANN, JR. PEPS NO. 3792

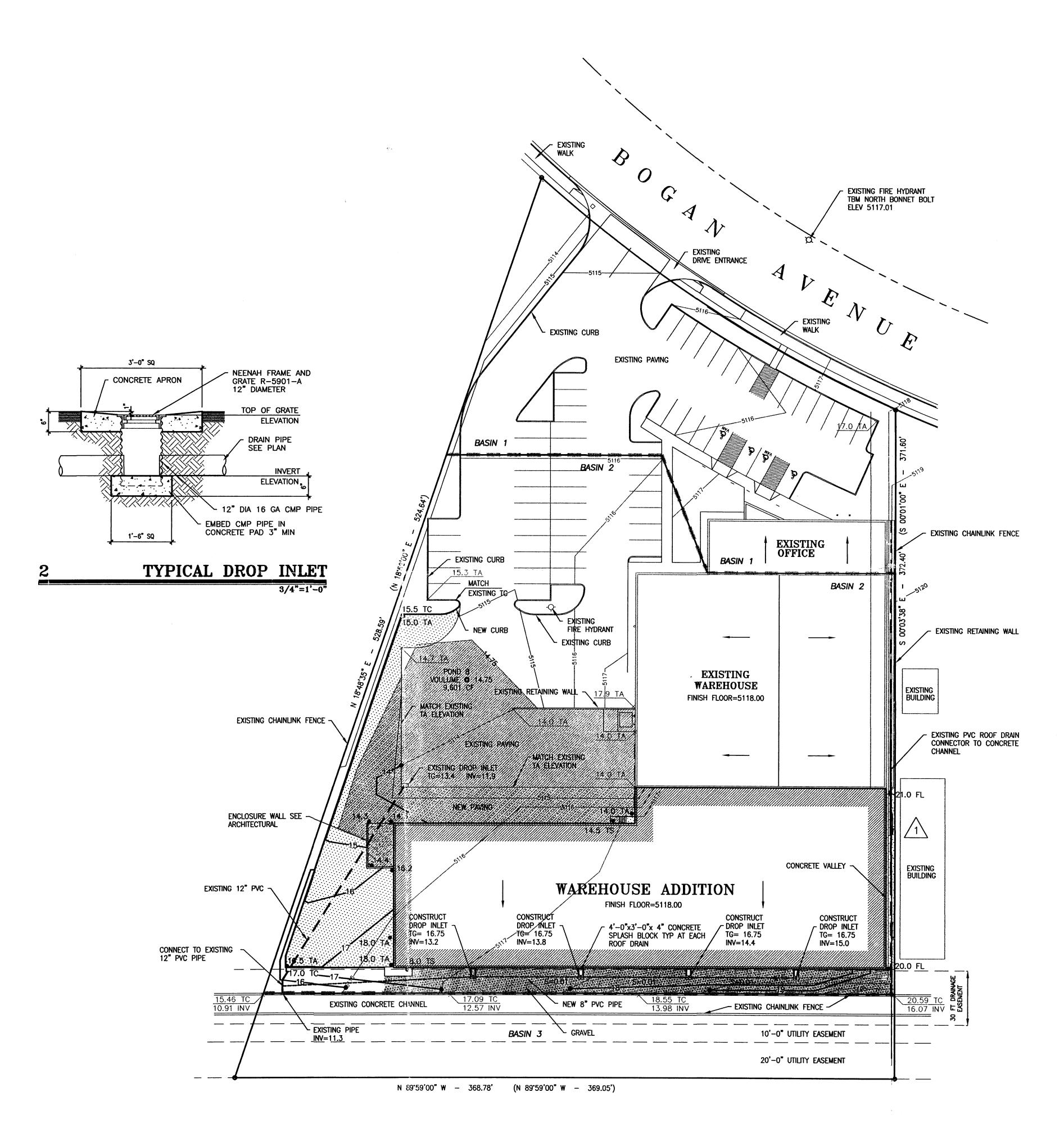
Engineering &
Surveying
Associates, Inc.

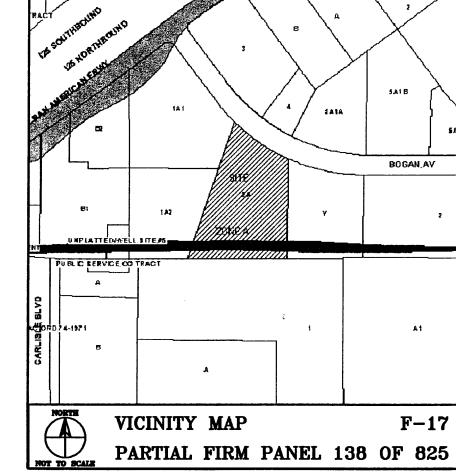
5312 Norsen Drive NE • Albuquerque, NM 87111
(505) 298-4651

1 SHEET NO.









GRADING AND DRAINAGE PLAN - LOT 2-A

DRAINAGE PLAN

THE FOLLOWING ITEMS CONCERNING THE ALBUQUERQUE PRINTING ADDITION GRADING AND DRAINAGE PLAN ARE CONTAINED HEREON:

2. GRADING PLAN

THE SITE SLOPES FROM THE EAST TO WEST. THE SITE IS HIGHER THAN BOGAN AVE. TO THE NORTH, LOWER THAN THE LOT TO THE EAST AND HIGHER THAN THAN THE LOT TO THE WEST. A CONCRETE DRAINAGE CHANNEL TRANSVERSES THE SOUTHERN SIDE OF THE SITE AND SERVERS APPROXIMATELY 0.39 ACRES FROM THE SITE. THEREFORE ONLY MINOR OFF SITE RUNOFF CAN ENTER THE SITE FROM THE EAST AND THAT AMOUNT IS LIMITED SINCE THE SITE IS DEVELOPED AND GRADED TO DRAIN AWAY FROM THE SITE.

THE GRADING PLAN SHOWS:

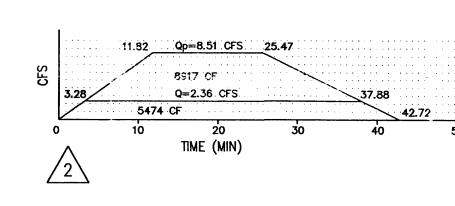
ELEVATIONS AND CONTOURS AT 1'-0" INTERVALS.

4. THE LIMIT AND CHARACTER OF THE PROPOSED IMPROVEMENTS.

THE CALCULATIONS ANALYZE THE EXISTING AND PROPOSED CONDITIONS FOR THE 6-HOUR, 100 YEAR RAINFALL EVENT, THE ANALYSIS IS IN ACCORDANCE WITH THE CITY OF ALBUQUERQUE DEVELOPMENT PROCESS MANUAL VOLUME II. AS SHOWN BY THESE CALCULATIONS, THE RATE AND VOLUME OF RUNOFF WILL INCREASE BUT THE POND(S) WITH CONTROLLED OUTLETS WILL MITIGATE THE INCREASE. THIS PLAN IS IN CONFORMANCE WITH THE MASTER DRAINAGE PLAN.

1. TWO WORKING DAY PRIOR TO ANY EXCAVATION, THE CONTRACTOR SHALL CALL FOR LOCATION OF EXISTING

3. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS, LAWS, AND RULES CONCERNING SAFETY AND HEALTH.



CALCULATIONS

3. CALCULATIONS

THE PROPOSED IMPROVEMENTS, AS SHOWN BY THE VICINITY MAP, ARE LOCATED ON THE SOUTH SIDE OF BOGAN AVENUE. THE SITE IS DEVELOPED. FIRM PANEL 138 OF 835 INDICATED THAT THE DRAINAGE CHANNEL LIES WITHIN FLOOD HAZARD ZONE A. THE REMAINDER OF THE SITE DOES NOT LIE WITHIN THE FLOOD HAZARD ZONE.

1. THE EXISTING AND PROPOSED GRADES, INDICATED BY SPOT

2. CONTINUITY BETWEEN EXISTING AND PROPOSED ELEVATIONS. 3. THE LIMIT AND CHARACTER OF EXISTING IMPROVEMENTS, AND

THE PRCPOSED IMPROVEMENTS CONSIST OF A WAREHOUSE ADDITION APPROVED GRADING PLAN FOR THIS SITE INDICATES THAT THE CHANNEL P

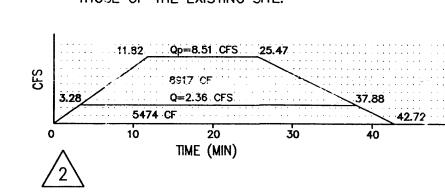
T = (0.7 Tc)+((1.6-Ad/At))/12) = 0.197 HR

TO THE SOLITH ACCEPTS EDEE DEVELOPED DISSUITE ACCEPTS EDEED DISSUITE ACCEPTS EDE TO THE SOUTH ACCEPTS FREE DEVELOPED DISCHARGES. THEREFORE THIS SITE WILL BE GRADED TO CONVEY AS MUCH RUNOFF TO THE CHANNEL AND LIMIT THE FLOWS TO BOGAN AVE.

CONSTRUCTION NOTES

2. ALL WORK WITHIN THE CITY RIGHT OF WAY SHALL BE PERFORMED IN ACCORDANCE WITH THE APPLICABLE CITY OF ALBUQUERQUE STANDARD AND PROCEDURE.

4. PRICR TO CONSTRUCTION THE CONTRACTOR SHALL VERIFY THE EXISTING SITE CONDITIONS AND INFORM THE ARCHITECT / ENGINEER OF ANY DISCREPANCY BETWEEN THE INFORMATION SHOWN THE PLANS AND THOSE OF THE EXISTING SITE.



PRECIPITATION ZONE = 2

TOTAL SITE AREA = 2.93 ACRES

 $\overline{AREA} = 0.64 \text{ ACRES}$ EXISTING CONDITIONS LAND TREATMENT B=26% D=74%

E = 0.78(0.26) + 2.12(0.74) = 1.77 INCHES V = 1.77 (0.64) / 12 = 0.09 ACRE FEETQ = [2.28(0.26) + 4.70(0.74)] (0.64) = 2.61 CFSDEVELOPED CONDITIONS - UNCHANGED

AREA = 1.90 ACRESEXISTING CONDITIONS

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V = 1.44 (1.90) / 12 = 0.23 ACRE FEET

Q = [2.28(0.51) + 4.70(0.49)] (1.90) = 6.59 CFSDEVELOPED CONDITIONS LAND TREATMENT B=9% D=91% E = 0.78(0.09) + 2.12(0.91) = 2.01 INCHES

V = 2.01 (1.90) / 12 = 0.317 ACRE FEETQ = [2.28(0.09) + 4.70(0.91)] (1.90) = 8.51 CFSINCREASE IN VOLUME OF RUNOFF = 0.090 ACRE FT INCREASE IN RATE OF RUNOFF = 1.95 CFS

POND VOLUME BASIN B

0.25 Ad/At = 0.25(0.91) = 0.228 HRT = 0.2 HR

T = 2.107 E At/Qp - 0.25 Ad/At = 0.712 HR

EXISTING DISCHARGE PIPE 12" (Q=2.36 CFS)

V_{required}= 8,917 CF

VOLUME @ ELEV 5114.75 V = [0.5*(12274+7398)*0.75+0.5*(7398+16)*0.6 = 9,601 CF]

AREA = 0.39 ACRESEXISTING CONDITIONS

LAND TREATMENT C=74% D=26% E = 1.13(0.74) + 2.12(0.26) = 1.39 INCHES V = 1.39 (0.39) / 12 = 0.05 ACRE FEETQ = [3.14(0.74) + 4.70(0.26)] (1.90) = 1.38 CFS

DEVELOPED CONDITIONS - UNCHANGED

PIPE HYDRAULICS

CAPACITY OF 12" DIAMETER PIPE (FROM EXISTING APPROVED DRAINAGE PLAN)

n=0.013 S=0.0044 $Q_{12}^{**} = 2.36$ CFS ORIFICE DISCHARGE 12" DIA PIPE

Q = 0.60 (.79) 2 (32.2) (2.85) = 6.38 CFSCAPACITY OF 8" DIAMETER PIPE

n=0.009 PVC PIPE (FROM pg 252 WATER RESOURCE ENGINEERING TABLE 10-1) S=0.01 $Q_{8^*\phi} = 1.74$ CFS

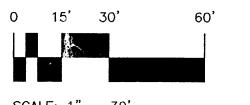
ROOF AREA 0.56 ACRES $Q_{100} = [0.56*4.70] = 2.63 \text{ CFS}$ $Q_{so} = [0.56*3.14] = 1.75 \text{ CFS}$

THE 100-YEAR STORM DISCHARGE FORM THE ROOF IS 2.63 CFS THE EXCESS ROOF DISCHARGE WILL FLOW OVER THE EDGE OF THE DRAINAGE CHANNEL.

ORIFICE DISCHARGE 8" DIA PIPE WATER LEVEL AT TOP OF GRATE ELEVATION 5116.75 Q = 0.60 (.35) 2 (32.2) (1.75) = 2.22 CFS

/2\ 3/1/01 REVISED FOR COA COMMENTS

1 1/15/01 DELETED RETAINING WALL AT PROPERTY LINE



SCALE: 1" = 30'

ADDRESS:

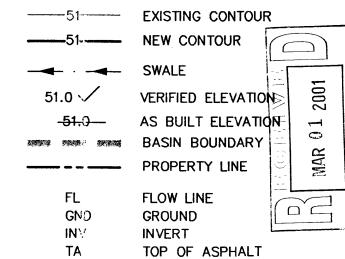
5909
BOCAN AVE. NE
LEGAL DESCRIPTION: LOT 2-A REINDEER ADDITION

BENCH MARK: ACS MONUMENT 125-18 LOCATED ON THE EAST FRONTAGE 600 FT NORTH OF BOGAN AVE. ELEVATION = 5125.7 FT.

LEGEND:

EXISTING SPOT ELEVATION

• 51.00 NEW SPOT ELEVATION



GRAVEL

TOP OF CURB TOP OF GRATE TOP OF CONCRETE SLAB TOP OF WALL TEMPORARY BENCH MARK



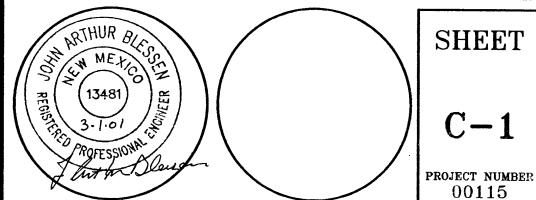
SITE GRADING & DRAINAGE PLAN 1"=30'-0"

JANUARY 15, 2001

CLAUDIO VIGIL ARCHITECTS

ALBUQUERQUE PRINTING WAREHOUSE ADDITION

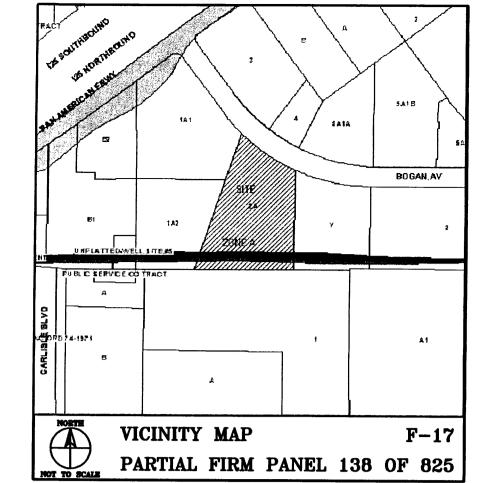
3838 BOGAN AVENUE N.E. ALBUQUERQUE, NEW MEXICO



1305 Tijeras NW Albuquerque, NM 87102-2882

Phone: 505/842-1113 Fax: 505/842-1330

N 89'59'00" W - 368.78' (N 89'59'00" W - 369.05')



GRADING AND DRAINAGE PLAN - LOT 2-A

DRAINAGE PLAN

THE FOLLOWING ITEMS CONCERNING THE ALBUQUERQUE PRINTING ADDITION GRADING AND DRAINAGE PLAN ARE CONTAINED HEREON:

THE SITE SLOPES FROM THE EAST TO WEST. THE SITE IS HIGHER

THAN BOGAN AVE. TO THE NORTH, LOWER THAN THE LOT TO THE EAST AND HIGHER THAN THAN THE LOT TO THE WEST. A CONCRETE

FROM THE EAST AND THAT AMOUNT IS LIMITED SINCE THE SITE IS

1. THE EXISTING AND PROPOSED GRADES, INDICATED BY SPOT

2. CONTINUITY BETWEEN EXISTING AND PROPOSED ELEVATIONS.

3. THE LIMIT AND CHARACTER OF EXISTING IMPROVEMENTS, AND

4. THE LIMIT AND CHARACTER OF THE PROPOSED IMPROVEMENTS.

THE PROPOSED IMPROVEMENTS CONSIST OF A WAREHOUSE ADDITION WITH ASSOCIATED PARKING AND LANDSCAPING. REVIEW OF THE

TO THE SOUTH ACCEPTS FREE DEVELOPED DISCHARGES. THEREFORE

THIS SITE WILL BE GRADED TO CONVEY AS MUCH RUNOFF TO THE

THE CALCULATIONS ANALYZE THE EXISTING AND PROPOSED

CONDITIONS FOR THE 6-HOUR, 100 YEAR RAINFALL EVENT. THE ANALYSIS IS IN ACCORDANCE WITH THE CITY OF ALBUQUERQUE DEVELOPMENT PROCESS MANUAL VOLUME II. AS SHOWN BY THESE

CALCULATIONS, THE RATE AND VOLUME OF RUNOFF WILL INCREASE

BUT THE POND(S) WITH CONTROLLED OUTLETS WILL MITIGATE THE

1. TWO WORKING DAY PRIOR TO ANY EXCAVATION, THE CONTRACTOR SHALL CALL FOR LOCATION OF EXISTING

2. ALL WORK WITHIN THE CITY RIGHT OF WAY SHALL BE

3. ALL WORK SHALL BE PERFORMED IN ACCORDANCE

4. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL VERIFY THE EXISTING SITE CONDITIONS AND INFORM

THOSE OF THE EXISTING SITE.

Qp=8.51 CFS

Q=2.36 CFS

5474 CF

PERFORMED IN ACCORDANCE WITH THE APPLICABLE

CITY OF ALBUQUERQUE STANDARD AND PROCEDURE.

WITH THE APPLICABLE FEDERAL, STATE, AND LOCAL

THE ARCHITECT / ENGINEER OF ANY DISCREPANCY

BETWEEN THE INFORMATION SHOWN THE PLANS AND

REGULATIONS, LAWS, AND RULES CONCERNING SAFETY

INCREASE. THIS PLAN IS IN CONFORMANCE WITH THE MASTER

AND SERVERS APPROXIMATELY 0.39 ACRES FROM THE SITE. THEREFORE ONLY MINOR OFF SITE RUNOFF CAN ENTER THE SITE

DEVELOPED AND GRADED TO DRAIN AWAY FROM THE SITE.

ELEVATIONS AND CONTOURS AT 1'-0" INTERVALS.

CHANNEL AND LIMIT THE FLOWS TO BOGAN AVE.

DRAINAGE CHANNEL TRANSVERSES THE SOUTHERN SIDE OF THE SITE

2. GRADING PLAN 3. CALCULATIONS

THE GRADING PLAN SHOWS:

DRAINAGE PLAN.

UTILITIES.

AND HEALTH.

CONSTRUCTION NOTES

THE PROPOSED IMPROVEMENTS, AS SHOWN BY THE VICINITY MAP. ARE LOCATED ON THE SOUTH SIDE OF BOGAN AVENUE. THE SITE IS DEVELOPED. FIRM PANEL 138 OF 835 INDICATED THAT THE DRAINAGE

V = 1.77 (0.64) / 12 = 0.09 ACRE FEETQ = [2.28(0.26) + 4.70(0.74)] (0.64) = 2.61 CFSDEVELOPED CONDITIONS - UNCHANGED CHANNEL LIES WITHIN FLOOD HAZARD ZONE A. THE REMAINDER OF THE SITE DOES NOT LIE WITHIN THE FLOOD HAZARD ZONE.

BASIN 2 AREA = 1.90 ACRES EXISTING CONDITIONS

PRECIPITATION ZONE = 2

AREA = 0.64 ACRES

EXISTING CONDITIONS

TOTAL SITE AREA = 2.93 ACRES

LAND TREATMENT B=51% D=49% E = 0.78(0.51) + 2.12(0.49) = 1.44 INCHES V = 1.44(1.90) / 12 = 0.23 ACRE FEET Q = [2.28(0.51) + 4.70(0.49)] (1.90) = 6.59 CFS

LAND TREATMENT B=26% D=74% E = 0.78(0.26) + 2.12(0.74) = 1.77 INCHES

DEVELOPED CONDITIONS LAND TREATMENT B=9% D=91% E = 0.78(0.09) + 2.12(0.91) = 2.01 INCHES V = 2.01 (1.90) / 12 = 0.317 ACRE FEET Q = [2.28(0.09) + 4.70(0.91)] (1.90) = 8.51 CFS

INCREASE IN VOLUME OF RUNOFF = 0.090 ACRE FT

POND VOLUME BASIN B T= 0.2 HR 0.25 Ad/At = 0.25(0.91) = 0.228 HR

T = 2.107 E At/Qp - 0.25 Ad/At = 0.712 HR

T = (0.7 Tc) + ((1.6 - Ad/At))/12) = 0.197 HR

APPROVED GRADING PLAN FOR THIS SITE INDICATES THAT THE CHANNEL P EXISTING DISCHARGE PIPE 12" (Q=2.36 CFS)

INCREASE IN RATE OF RUNOFF = 1.95 CFS

V_{required}= 8,917 CF VOLUME @ ELEV 5114.75

V = [0.5*(12274+7398)*0.75+0.5*(7398+16)*0.6 = 9,601 CF

AREA = 0.39 ACRESEXISTING CONDITIONS

LAND TREATMENT C=74% D=26% E = 1.13(0.74) + 2.12(0.26) = 1.39 INCHES V = 1.39 (0.39) / 12 = 0.05 ACRE FEET

Q = [3.14(0.74) + 4.70(0.26)] (1.90) = 1.38 CFSDEVELOPED CONDITIONS - UNCHANGED

PIPE HYDRAULICS $Q_{\text{FULL}} = \frac{1.486}{\text{n}} \sqrt{\text{S}} \text{ A R}_{\text{H}}^{\frac{2}{3}}$

CAPACITY OF 12" DIAMETER PIPE (FROM EXISTING APPROVED DRAINAGE PLAN) n=0.013 S=0.0044 Q_{12} = 2.36 CFS

ORIFICE DISCHARGE 12" DIA PIPE Q = 0.60 (.79) 2 (32.2) (2.85) = 6.38 CFS

CAPACITY OF 8" DIAMETER PIPE

n=0.009 PVC PIPE (FROM pg 252 WATER RESOURCE ENGINEERING TABLE 10-1)

S=0.01 $Q_{8''6} = 1.74$ CFS ROOF AREA 0.56 ACRES

 $Q_{100} = [0.56*4.70] = 2.63 \text{ CFS}$

 $Q_{10} = [0.56*3.14] = 1.75 \text{ CFS}$

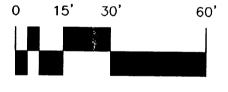
THE 100-YEAR STORM DISCHARGE FORM THE ROOF IS 2.63 CFS THE EXCESS ROOF DISCHARGE WILL FLOW OVER THE EDGE OF THE

DRAINAGE CHANNEL. ORIFICE DISCHARGE 8" DIA PIPE

WATER LEVEL AT TOP OF GRATE ELEVATION 5116.75 Q= 0.60 (.35) 2 (32.2) (1.75) = 2.22 CFS

2\ 3/1/01 REVISED FOR COA COMMENTS

/1\ 1/15/01 DELETED RETAINING WALL AT PROPERTY LINE



SCALE: 1" = 30'

ADDRESS:

3900 BOGAN AVE. NE LEGAL DESCRIPTION: LOT 2-A REINDEER ADDITION

BENCH MARK: ACS MONUMENT 125-18 LOCATED ON THE EAST FRONTAGE 600 FT NORTH OF BOGAN AVE. ELEVATION = 5125.7 FT.

LEGEND:

EXISTING SPOT ELEVATION • 51.00 NEW SPOT ELEVATION EXISTING CONTOUR

NEW CONTOUR VERIFIED ELEVATION AS BUILT ELEVATION BASIN BOUNDARY

PROPERTY LINE FLOW LINE GND GROUND INVERT TOP OF ASPHALT TOP OF CURB TOP OF GRATE TOP OF CONCRETE SLAB TOP OF WALL TEMPORARY BENCH MARK

GRAVEL



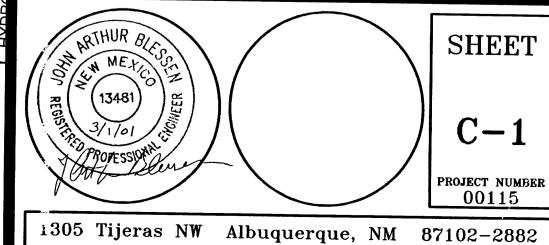
SITE GRADING & DRAINAGE PLAN

JANUARY 15, 2001

CLAUDIO VIGIL ARCHITECTS

ALBUQUERQUE PRINTING WAREHOUSE ADDITION

3838 BOGAN AVENUE N.E. ALBUQUERQUE, NEW MEXICO



Phone: 505/842-1113 Fax: 505/842-1330

Engineer's Certification for Permanent Certificate of Occupancy ALBUQUERQUE PRINTING - LOT 2-A

hereby certify that I have inspected the site grading and drainage improvements and that they have been completed in substantial compliance with the approved grading and drainage plan; and are expected to function as intended. Proposed contours have not been revised to reflect the as-constructed information and should be considered approximate. Spot elevations which have not been revise should be considered approximate.

> J Arthur Blessen, PE NM PE# 13481

TBM

1"=30'-0"