CITY OF ALBUQUERQUE

Planning Department
Alan Varela, Director

Mayor Timothy M. Keller

June 27, 2025

Derek Bohannan, P.E.
Tierra West, LLC
5571 Midway Park Place NE
Albuquerque, NM, 87109

RE: 7 Bar Retail
10080 Coors Blvd NW
Grading & Drainage Plans
Engineer's Stamp Date: 05/27/2025
Hydrology File: B14D010D
Case # HYDR-2025-00160

Dear Mr. Bohannan:

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

Based upon the information provided in your submittal received 06/24/2025, the Grading Plans and Drainage Report are approved for action by the DFT for Site Plan amendments and for Building Permit, Grading Permit, and Work Order. Please note that Pad Certifications will not be required for this project. Please attach a copy of this approved plan in the construction sets for Building Permit processing along with a copy of this letter.

PRIOR TO CERTIFICATE OF OCCUPANCY:

1. Engineer's Certification, per the DPM Part 6-14 (F): *Engineer's Certification Checklist For Non-Subdivision* is required.
2. Please provide the executed paper Drainage Covenant (latest revision) printed on one-side only with Exhibit A and a check for **$25.00** made out to "**Bernalillo County**" for the stormwater retention ponds per Article 6-15(C) of the DPM to Hydrology for review at Plaza de Sol.

As a reminder, if the project total area of disturbance (including the staging area and any work within the adjacent Right-of-Way) is 1 acre or more, then an Erosion and Sediment Control (ESC) Plan and Owner's certified Notice of Intent (NOI) is required to be submitted to the Stormwater Quality Engineer (Doug Hughes, PE, jhughes@cabq.gov , 505-924-3420) 14 days prior to any earth disturbance.

If you have any questions, please contact me at 505-924-3314 or amontoya@cabq.gov.

Sincerely,

CITY OF ALBUQUERQUE

Planning Department
Alan Varela, Director

Mayor Timothy M. Keller

Anthony Montoya, Jr., P.E. CFM
Senior Engineer, Hydrology
Planning Department, Development Review Services

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

CONSTRUCTION PLANS FOR

7 BAR RETAIL

10088 COORS ROAD, NW

ALBUQUERQUE
BERNALILLO COUNTY, NEW MEXICO
MAY, 2025

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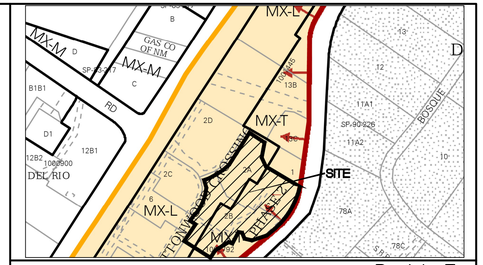

B–14–Z

SCALE NONE

NOTICE TO CONTRACTORS

1. ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED UNDER CONTRACT SHALL, EXCEPT AS OTHERWISE STATED OR PROVIDED FOR HEREON, BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1986 EDITION (UPDATE #9)

2. TWO WORKING DAYS PRIOR TO ANY EXCAVATION, THE CONTRACTOR MUST CONTACT NEW MEXICO ONE CALL SYSTEM (260–1990) FOR LOCATION OF EXISTING UTILITIES.

3. ANY WORK AFFECTING AN ARTERIAL ROADWAY REQUIRES 24–HOUR CONSTRUCTION.

4. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OR SURVEYOR IMMEDIATELY SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.

5. SEVEN (7) WORKING DAYS PRIOR TO BEGINNING OF CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT TO CONSTRUCTION COORDINATION DIVISION A DETAILED CONSTRUCTION SCHEDULE. TWO(2) WORKING DAYS PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL OBTAIN A BARRICADING PERMIT FROM THE CONST. COORDINATION DIVISION. CONTRACTOR SHALL NOTIFY BARRICADE ENGINEER (924–3400) PRIOR TO OCCUPYING AN INTERSECTION. REFER TO STANDARD SPECIFICATIONS.

6. ALL STREET STRIPING ALTERED OR DESTROYED SHALL BE REPLACED WITH PLASTIC REFLECTORIZED PAVEMENT MARKINGS BY THE CONTRACTOR TO LOCATION AS EXISTING OR AS INDICATED BY THIS PLAN SET.

7. CONTRACTOR SHALL NOTIFY THE ENGINEER NOT LESS THAN SEVEN (7) DAYS PRIOR TO STARTING WORK IN ORDER THAT THE ENGINEER MAY TAKE NECESSARY MEASURES TO INSURE THE PRESERVATION OF SURVEY MONUMENTS. CONTRACTOR SHALL NOT DISTURB PERMANENT SURVEY MONUMENTS WITHOUT THE CONSENT OF THE ENGINEER AND SHALL NOTIFY THE ENGINEER AND BEAR THE EXPENSE OF REPLACING ANY THAT MAY BE DISTURBED WITHOUT PERMISSION. REPLACEMENT SHALL BE DONE ONLY BY THE CITY SURVEYOR. WHEN A CHANGE IS MADE IN THE FINISHED ELEVATIONS OF THE PAVEMENT OF ANY ROADWAY IN WHICH A PERMANENT SURVEY MONUMENT IS LOCATED, CONTRACTOR SHALL, AT HIS OWN EXPENSE, ADJUST THE MONUMENT COVER TO THE NEW GRADE UNLESS OTHERWISE SPECIFIED. REFER TO SECTION 4.4 OF THE GENERAL CONDITIONS OF THE STANDARD SPECIFICATIONS. ANY PERMANENT SURVEY MONUMENT LOCATED WITHIN 50' OF THIS PROJECT THAT IS NOT SHOWN ON THE PLAN AND IS DESTROYED DURING CONSTRUCTION WILL BE REPLACED AT THE DESIGNERS EXPENSE.

8. CONTRACTOR SHALL MAINTAIN A GRAFFITI–FREE WORK SITE. CONTRACTOR SHALL PROMPTLY REMOVE ANY AND ALL GRAFFITI FROM EQUIPMENT, WHETHER PERMANENT OR TEMPORARY.

9. FOR STORM DRAIN CONSTRUCTION, RCP PIPE JOINTS SHALL NOT BE GROUTED PRIOR TO FINAL INSPECTION. FINAL INSPECTION WILL DETERMINE JOINTS TO BE GROUTED FOR FINAL ACCEPTANCE OF THE CONSTRUCTION.

10. ALL UTILITY WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH NEW MEXICO UTILITIES, INC. SPECIFICATIONS FOR WATER AND WASTEWATER FACILITIES (MOST RECENT REVISIONS).

11. THE CONTRACTOR SHALL COORDINATE WITH THE WATER AUTHORITY SEVEN (7) DAYS IN ADVANCE OF PERFORMING WORK THAT WILL AFFECT THE PUBLIC WATER OR SANITARY SEWER INFRASTRUCTURE. WORK REQUIRING SHUTOFF OF FACILITIES DESIGNATED AS MASTER PLAN FACILITIES MUST BE COORDINATED WITH THE WATER AUTHORITY 14 DAYS IN ADVANCE OF PERFORMING SUCH WORK. ONLY WATER AUTHORITY CREWS ARE AUTHORIZED TO OPERATE PUBLIC VALVES. SHUTOFF REQUESTS MUST BE MADE ONLINE AT http://www.abcwua.org/water_shut_off_and_turn_on_procedures.aspx

12. ALL EXCAVATION, TRENCHING, AND SHORING ACTIVITIES MUST BE CARRIED OUT IN ACCORDANCE WITH OSHA 29 CFR 1926.650 SUBPART P.

13. ELECTRONIC MARKER DEVICES (EMS) WILL BE PLACED ACCORDING TO SECTION 170 OF THE COA STANDARD SPECIFICATIONS.

14. CONTRACTOR WILL BE RESPONSIBLE FOR PROVIDING AND MAINTAINING ALL CONSTRUCTION SIGNING UNTIL PROJECT HAS BEEN ACCEPTED BY THE COA.

THE FOLLOWING NOTES ALSO APPLY WHEN CHECKED

- ☒ ALL UTILITIES AND UTILITY SERVICE LINES SHALL BE INSTALLED PRIOR TO PAVING.
- ☒ BACKFILL COMPACTION SHALL BE ACCORDING TO SPECIFIED STREET USE.
- ☐ TACK COAT REQUIREMENTS SHALL BE DETERMINED BY THE PROJECT ENGINEER.
- ☐ SIDEWALKS AND WHEELCHAIR RAMPS WITHIN THE CURB RETURNS SHALL BE CONSTRUCTED WHEREVER A NEW CURB RETURN IS CONSTRUCTED.
- ☐ IF CURB IS DEPRESSED FOR A DRIVEPAD, THE DRIVEPAD SHALL BE CONSTRUCTED PRIOR TO ACCEPTANCE OF CURB AND GUTTER.
- ☒ ALL STORM DRAINAGE FACILITIES SHALL BE COMPLETED PRIOR TO FINAL ACCEPTANCE.

City of Albuquerque
Planning Department
Development Review Services
HYDROLOGY SECTION
APPROVED
DATE: 6/27/2025
BY:
HydroTrans # B14D010D

THE APPROVAL OF THESE PLANS/REPORTS SHALL NOT BE CONSTRUED TO PERMIT VIOLATIONS OF ANY CITY ORDINANCE OR STATE LAW, AND SHALL NOT PREVENT THE CITY OF ALBUQUERQUE FROM REQUIRING CORRECTIONS FOR ERRORS OR DIMENSIONS IN PLANS, SPECIFICATIONS, OR CONSTRUCTION DOCUMENTS. SUCH APPROVED PLANS/REPORTS SHALL NOT BE CHANGED, MODIFIED OR ALTERED WITHOUT AUTHORIZATION.

THE APPROVAL OF THESE PLANS/REPORTS SHALL EXPIRE TWO (2) YEARS AFTER THE APPROVAL DATE IF NO BUILDING PERMIT HAS BEEN PULLED ON THE DEVELOPMENT.

DHO#PR–2023–008674

COVER SHEET

TIERRA WEST, LLC
5571 MIDWAY PARK PLACE NE
ALBUQUERQUE, NEW MEXICO 87109
505–858–3100
www.tierrawestllc.com

REV	SHEETS	CITY ENGINEER	DATE	USER DEPT.	DATE	USER DEPT.	DATE

ENGINEERS STAMP & SIGNATURE

RONALD R. BOHANNAN NEW MEXICO 7868 PROFESSIONAL ENGINEER
05/27/2025
RONALD R. BOHANNAN
P.E. #7868

APPROVALS	ENGINEER	DATE
DRC Chairman		
Transportation		
Water/Wastewater		
Hydrology		
AMAFCA		6/23/25
Constr. Mngmt.		
Constr. Coord.		

APPROVED FOR CONSTRUCTION

City Engineer Date

CITY PROJECT NO. 567683

SHEET 01 OF 44

AVAILABILITY STATEMENT #230531

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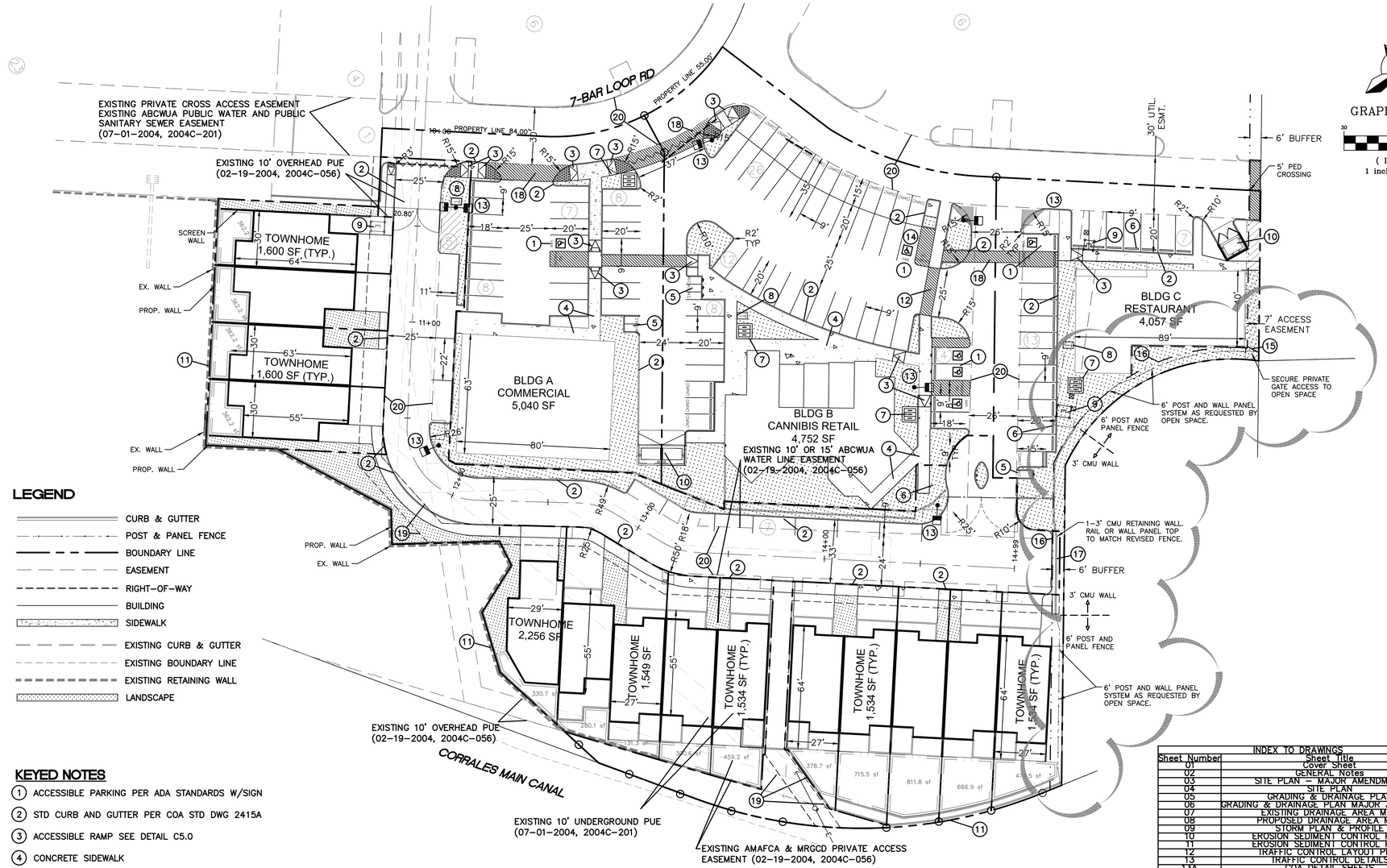
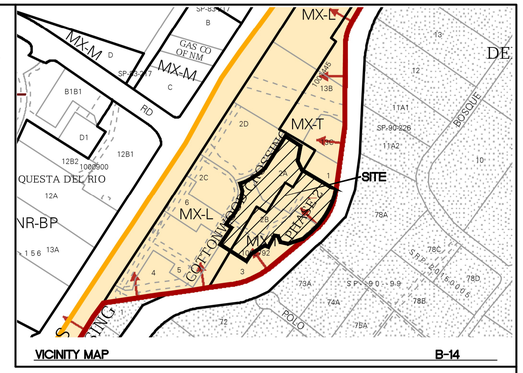


GRAPHIC SCALE

(IN FEET)
1 inch = 30 ft.



LEGEND

- CURB & GUTTER
- POST & PANEL FENCE
- BOUNDARY LINE
- EASEMENT
- RIGHT-OF-WAY
- BUILDING
- SIDEWALK
- EXISTING CURB & GUTTER
- EXISTING BOUNDARY LINE
- EXISTING RETAINING WALL
- LANDSCAPE

KEYED NOTES

1. ACCESSIBLE PARKING PER ADA STANDARDS W/SIGN
2. STD CURB AND GUTTER PER COA STD DWG 2415A
3. ACCESSIBLE RAMP SEE DETAIL C5.0
4. CONCRETE SIDEWALK
5. MOTORCYCLE SPACE W/SIGN (4'X8' MIN)
6. WHEEL STOP (TYP)
7. BICYCLE RACK SEE DETAIL SHEET 11
8. TRANSFORMER
9. TRANSFORMER TO BE REMOVED
10. DOUBLE / SINGLE DUMPSTER SEE DETAIL SHEET 11
11. EXISTING WALL
12. PEDESTRIAN CROSSING
13. SITE LIGHTING FIXTURES WITH FULL CUT OFF.
14. MPO VAN ACCESSIBLE PARKING
15. MPO PEDESTRAIN ACCESS GATE
16. MPO 6' LANDSCAPE BUFFER
17. WALLS & FOOTING ADJACENT TO MPO WILL BE WHOLLY CONTAINED WITHIN BUFFER
18. PER IDO 5-3(D)(3)(C) MATERIALS TO ALERT MOTORIST
19. PNM EASEMENT
20. EXISTING PRIVATE CROSS ACCESS EASEMENT. EXISTING ABCWUA PUBLIC WATER AND SANITARY SEWER EASEMENT (07-01-2004, 2004C-201)

PROJECT NUMBER: PR-2023009105

APPLICATION NUMBER: SI-2023-01402

This plan is consistent with the specific Site Development Plan approved by the Environmental Planning Commission (EPC), dated _____, and the Findings and Conditions in the Official Notification of Decision are satisfied.

Is an Infrastructure List required? ( ) Yes ( ) No If Yes, then a set of approved DRC plans with a work order is required for any construction within Public Right-of-Way or for construction of public improvements.

DFT SITE DEVELOPMENT PLAN SIGNOFF APPROVAL:

Traffic Engineer, Transportation Division	Date
Water Utility Development	Date
Parks & Recreation Department	Date
City Engineer	Date
* Environmental Health Department (conditional)	Date
Solid Waste Management	Date
DRB Chairperson, Planning Department	Date

* Environmental Health, if necessary

GENERAL NOTES - SITE PLANS:

1. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO COMMENCING THIS WORK. IN CASE OF ANY DISCREPANCIES, THE ARCHITECT SHALL BE NOTIFIED IMMEDIATELY AND WORK SHALL NOT COMMENCE WITHOUT APPROVAL FROM THE ARCHITECT.
2. WRITTEN DIMENSIONS OF DRAWINGS SHALL HAVE PRECEDENCE OVER SCALED DIMENSIONS. THE GENERAL CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS AT THE BUILDING SITE, AND REPORT ANY DISCREPANCIES TO THE ARCHITECT PRIOR TO PROCEEDING WITH THE WORK.
3. GC AND LIGHTING CONTRACTOR TO ENSURE SITE LIGHTING FIXTURE HEADS HAVE THE CORRECT ORIENTATION. REFER TO PHOTOMETRIC DRAWINGS FOR HEAD PLACEMENT.
4. GC TO COORDINATE SITE SECURITY LAYOUT AND CONDUIT SIZE & LOCATION WITH THE OWNER.
5. GC TO ENSURE PAVING AT ALL EXITS SHALL NOT EXCEED A 2% MAX SLOPE IN ALL DIRECTIONS.
6. PAVING SHALL BE LOWER THAN THE BUILDING SLAB BY THE FOLLOWING AMOUNTS UNO:
   - 1/2" @ ALL EXIT DOORS
   - 1/2" @ ALL SHOWROOM GLAZING LOCATIONS
   - 1 1/2" @ OVERHEAD DOORS
   - 1 1/2" @PRE-FAB METAL WALL PANELS
7. PARKING LOT SHALL BE ASPHALT PAVING
8. SITE ACREAGE IS 3.2 ACRE PORTION OF LARGER 10 ACRE CONTROLLING SITE DEVELOPMENT AREA
9. VARIANCE BEING REQUESTED FOR 45' BUFFER AT MPO EDGE TO BE REDUCED TO 6' BUFFER. VA-20236-000315 (MPOS VA)
10. REFERENCE VA-2023-000315 (MPOS VA)
11. GENERAL NOTE: HEIGHTS OF BUILDINGS SUBJECT FOR VARIANCE REQUEST TO VPO - BUILDINGS HEIGHT STANDARDS VA-2023-000314 (VPO-1 VA)
12. SITE PLAN DESIGNED IN COMPLIANCE W/ CPO-2 STANDARDS PURSUANT TO IDO 3-4 (c)
13. THE GENERAL CONTRACTOR/EARTHWORK CONTRACTOR SHALL NOTIFY THE CITY OF ALBUQUERQUE OPEN SPACE DIVISION AT LEAST SEVEN (7) DAYS PRIOR TO COMMENCING ANY GRADING OR EARTHWORK ACTIVITIES ADJACENT TO THE ARCHAEOLOGICAL SITE. THE CONTRACTOR SHALL DESIGNATE A REPRESENTATIVE TO MONITOR EARTHWORK ACTIVITIES FOR ANY POTENTIAL ARCHAEOLOGICAL ARTIFACTS. IF ANY ARTIFACTS OR CULTURALLY SIGNIFICANT MATERIALS ARE DISCOVERED, WORK SHALL CEASE IMMEDIATELY IN THE AFFECTED AREA, AND THE CITY OF ALBUQUERQUE OPEN SPACE DIVISION SHALL BE NOTIFIED FOR FURTHER GUIDANCE BEFORE RESUMING OPERATIONS.

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27	VIEW PLANE -1
28	VIEW PLANE -2
29	VIEW PLANE -3

APPROVED FOR CONSTRUCTION WITHIN AMAFCA ROW OR EASEMENT

AMAFCA APPROVED FOR CONSTRUCTION — DATE 6/23/2025

"AS THE DEVELOPMENT IS LOCATED OUTSIDE OF THE WATER AUTHORITY'S ESTABLISHED SERVICE AREA, WATER AND SANITARY SEWER SERVICE TO THE DEVELOPMENT IS CONTINGENT UPON A BOARD APPROVED DEVELOPMENT AGREEMENT BETWEEN THE WATER AUTHORITY AND THE DEVELOPER."

LEGAL DESCRIPTION:

LT 2-A LOTS 2-A, 2-B, 2-C AND 2-D COTTONWOOD CROSSINGPHASE II (BEING A REPLAT OF TRACT 2 COTTONWOOD CROSSINGPHASE II) CONT 1.5908 AC

LT 2-B LOTS 2-A, 2-B, 2-C AND 2-D COTTONWOOD CROSSINGPHASE II (BEING A REPLAT OF TRACT 2 COTTONWOOD CROSSINGPHASE II) CONT 1.5483 AC

3.20 ACRES OF THE CONTROLLING SITE DEVELOPMENT PLAN

SITE DATA

LOT AREA	136744 SF (3.20 ACRES)
ZONING	MX-L & MX-T
BUILDING A	
PROPOSED USE	COMMERCIAL
BUILDING FOOTPRINT	5040 SF
BUILDING B	
PROPOSED USE	CANNABIS RETAIL
BUILDING FOOTPRINT	4752 SF
TOTAL SF	8,121 SF
BUILDING C	
PROPOSED USE	RESTAURANT
BUILDING FOOTPRINT	4057 SF
DWELLING UNIT	
PROPOSED USE	RESIDENTIAL
14 OF UNITS	1740± SF EACH
TOTAL AREA	23951 SF

COMMERCIAL PARKING

BUILDING A

PARKING REQUIRED	17 SPACES (3.5 SPACES1000 SF GFA)
PARKING PROVIDED	22 SPACES
ACCESSIBLE SPACES REQUIRED	1 SPACE
ACCESSIBLE SPACES PROVIDED	1 SPACE VAN ACCESSIBLE
MOTORCYCLE SPACES REQUIRED AND PROVIDED	1 SPACE
BICYCLE SPACES REQUIRED AND PROVIDED	2

BUILDING B

TWO-STORY CANNABIS RETAIL

PARKING SPACES REQUIRED	32 SPACES (4 SPACES/1,000 SF GFA)
PARKING SPACES PROVIDED	50 SPACES (10 SHARED W/BLDG C)
ACCESSIBLE SPACES REQUIRED	2 SPACES
ACCESSIBLE SPACES PROVIDED	3 SPACES (1 VAN ACCESSIBLE)
MOTORCYCLE SPACES REQUIRED	1 SPACE
MOTORCYCLE SPACES PROVIDED	3 SPACES
BICYCLE SPACES REQUIRED AND PROVIDED	5

BUILDING C

PARKING SPACES REQUIRED	22 SPACES (5.6 SPACES/1,000 SF GFA)
PARKING SPACES PROVIDED	20 SPACES (10 SHARED W/BLDG B)
ACCESSIBLE SPACES REQUIRED AND PROVIDED	1 SPACE (1 VAN ACCESSIBLE)
MOTORCYCLE SPACES REQUIRED AND PROVIDED	1 SPACE
BICYCLE SPACES REQUIRED AND PROVIDED	3

RESIDENTIAL PARKING

TOWNHOMES	2 SPACE/PER UNIT
TOTAL PARKING REQUIRED	28 SPACES
GARAGE PARKING	28 SPACES
ON-STREET PARKING	11 SPACES
LANDSCAPE REQUIRED	14847 SF (15% NET AREA)
LANDSCAPE PROVIDED	19880 SF

THE REQUIRED 10% PARKING REDUCTION IS REQUESTED, NOT REQUIRED, PURSUANT TO IDO 5-5(C)(5)C FOR PROXIMITY TO TRANSIT. THE REQUEST IS TO ADD THE RESTAURAUNT, CANNABIS RETAIL, OFFICE, AND TOWNHOMES USES TO THE CONTROLLING SITE PLAN.

ALL SIGNAGE SHALL BE COMPLIANT WITH IDO SECTION 14-16-3-4(C)(5)(F)
SIGNS IN THE COORS BLVD. CPO-2

ENGINEER'S SEAL

RONALD R. BOHANNAN NEW MEXICO 7868 PROFESSIONAL ENGINEER

06/19/2025

RONALD R. BOHANNAN P.E. #7868

RETAIL AT 7 BAR
ALBUQUERQUE, NM

SITE PLAN - EPC

TIERRA WEST, LLC
5571 MIDWAY PARK PL NE
ALBUQUERQUE, NEW MEXICO 87109
(505) 858-3100
www.tierrawestllc.com

DRAWN BY: pm/as
DATE: 06/19/2025
DRAWING: 2023004-SP
SHEET #: 04
JOB #: 2023004

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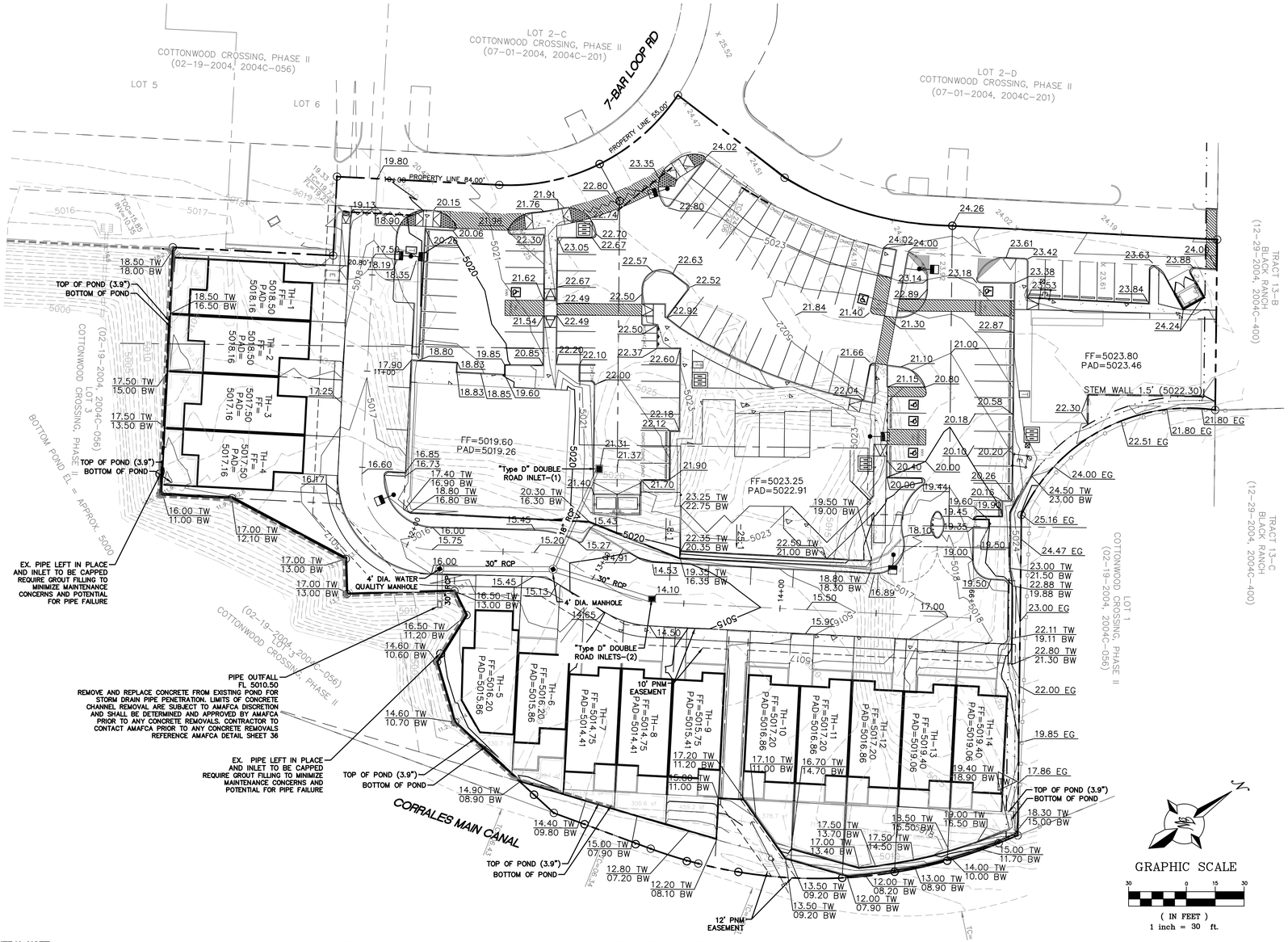
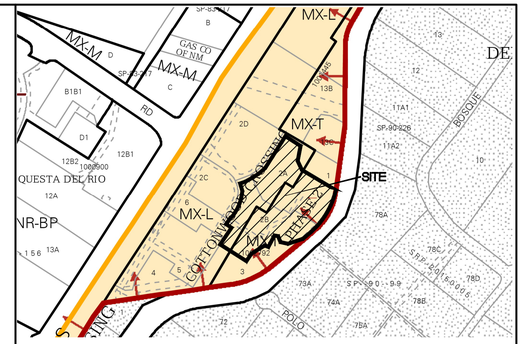
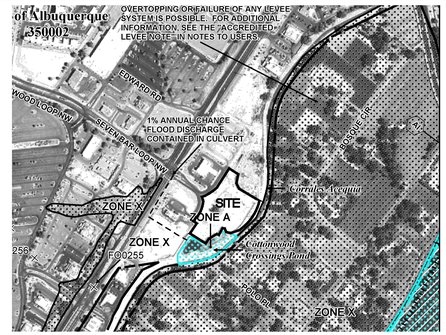




VICINITY MAP B-14



VICINITY MAP 35001C0109H

LEGAL DESCRIPTION:

LT 2-A LOTS 2-A, 2-B, 2-C AND 2-D COTTONWOOD CROSSINGPHASE II (BEING A REPLAT OF TRACT 2 COTTONWOOD CROSSINGPHASE II) CONT 1.5908 AC

LT 2-B LOTS 2-A, 2-B, 2-C AND 2-D COTTONWOOD CROSSINGPHASE II (BEING A REPLAT OF TRACT 2 COTTONWOOD CROSSINGPHASE II) CONT 1.5483 AC

3.20 ACRES OF THE CONTROLLING SITE DEVELOPMENT PLAN

DPM	
100yr	10day
Rainfall 3.9	in
0.325	ft

Backyard Ponding Requirements					
Townhome	Drainage Area (SF)	Total Volume (CF)	Ponding Area (SF)	Reqd Depth (FT)	Reqd. Depth (in
TH1	384.4	124.9	384.4	0.3	3.9
TH2	393.4	127.9	393.4	0.3	3.9
TH3	393.4	127.9	393.4	0.3	3.9
TH4	370.6	120.4	370.6	0.3	3.9
TH5	330.7	107.5	330.7	0.3	3.9
TH6	280.1	91.0	280.1	0.3	3.9
TH7	131.3	42.7	131.3	0.3	3.9
TH8	300.6	97.7	300.6	0.3	3.9
TH9	459.2	149.2	459.2	0.3	3.9
TH10	378.7	123.1	378.7	0.3	3.9
TH11	715.5	232.5	715.5	0.3	3.9
TH12	811.8	263.8	811.8	0.3	3.9
TH13	666.9	216.7	666.9	0.3	3.9
TH14	474.5	154.2	474.5	0.3	3.9
Totals	6,091.10	1,979.61	6,091.10		

GRAPHIC SCALE
30 0 15 30
(IN FEET)
1 inch = 30 ft.

Stormwater Qaulity Volume					
Acres	SF	Rainfall (in)	Rainfall (ft)	SWQV (CF)	SWQV (Acre-Ft)
1.76	76,779.22	0.42	0.035	2,687.3	0.06

GENERAL NOTE:

1. A DRAINAGE EASEMENT WILL BE GRANTED ON TRACT X (HOA) FOR THE BENEFIT OF TRACTS X THROUGH X (TOWNHOMES 1–14), TRACT X (BUILDING B), AND TRACT X (NUSENDA BANK). THE HOA WILL BE RESPONSIBLE FOR MAINTENANCE. THE EASEMENT WILL BE FORMALIZED THROUGH PLATTING ACTION PRIOR TO CONSTRUCTION, AT WHICH TIME LEGAL TRACT NAMES WILL BE ADDED TO THE CONSTRUCTION DRAWINGS.
2. TOP OF WALL (TOW) ELEVATIONS ARE INTENDED TO SHOW THE TOP OF RETAINING WALL ELEVATIONS WITH GARDEN WALLS INTENDED TO BE PLACED ON RETAINING WALLS AS REQUIRED FOR SCREENING, PRIVACY, ETC. ALL WALL HEIGHTS TO BE IN ACCORDANCE WITH CITY OF ALBUQUERQUE IDO WALL HEIGHT PROVISIONS.
3. THE INDIVIDUAL RETENTION PONDS LOCATED IN THE BACKYARDS OF THE TOWNHOMES ARE ESSENTIAL FOR THE PROPER DRAINAGE FUNCTION AND HYDROLOGY OF THE SITE. THESE PONDS ARE NOT TO BE ALTERED OR FILLED IN BY ANY OWNERS, LESSEE, RENTER, OR OCCUPENT AFTER DEVELOPMENT. ANY MODIFICATIONS MAY RESULT IN IMPROPER DRAINAGE AND POTENTIAL FLOODING ISSUES
4. WHERE THE EXISTING GARDEN WALL IS TO BE REMOVED AND THE NEW RETAINING WALL CONSTRUCTED, THE GAP BETWEEN THE FOOTING AND THE EXISTING POND LINING SHOULD BE ARMORED WITH ROCK AND FILTER FABRIC (OR EQUIVALENT) TO PREVENT UNDERCUTTING OF THE POND LINING FROM THE WEEP HOLES.

NOTICE TO CONTRACTORS

1. AN EXCAVATION/CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN CITY RIGHT-OF-WAY.
2. ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED, EXCEPT AS OTHERWISE STATED OR PROVIDED HERON, SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF ALBUQUERQUE INTERIM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1985.
3. TWO WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE, 765-1234, FOR LOCATION OF EXISTING UTILITIES.
4. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL CONNECTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
5. BACKFILL COMPACTION SHALL BE ACCORDING TO TRAFFIC/STREET USE.
6. MAINTENANCE OF THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY SERVED.
7. WORK ON ARTERIAL STREETS SHALL BE PERFORMED ON A 24-HOUR BASIS.
8. ALL FILL MATERIAL UTILIZED WITHIN THE TOWN HOME DETENTION POND AREA(S) MUST BE SUITABLE FOR DRAINAGE AND PERCOLATION. THE FILL SHALL CONSIST OF CLEAN, WELL-GRADED GRANULAR MATERIAL, FREE FROM CLAY, SILT, ORGANICS, OR OTHER DELETERIOUS SUBSTANCES THAT MAY IMPEDE DRAINAGE. NO CLAY OR EXPANSIVE MATERIALS ARE TO BE USED IN THE FILL TO ENSURE PROPER INFILTRATION AND PREVENT STANDING WATER.

EROSION CONTROL NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR OBTAINING A TOPSOIL DISTURBANCE PERMIT PRIOR TO BEGINNING WORK.
2. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING RUN-OFF ON SITE DURING CONSTRUCTION.
3. CONTRACTOR IS RESPONSIBLE FOR CLEANING ALL SEDIMENT THAT GETS INTO EXISTING RIGHT-OF-WAY.
4. REPAIR OF DAMAGED FACILITIES AND CLEANUP OF SEDIMENT ACCUMULATIONS ON ADJACENT PROPERTIES AND IN PUBLIC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR.
5. ALL EXPOSED EARTH SURFACES MUST BE PROTECTED FROM WIND AND WATER EROSION PRIOR TO FINAL (CITY) ACCEPTANCE OF ANY PROJECT.
6. ALL SLOPES NOT STABILIZED AT THE END OF THE PROJECT SHALL BE STABILIZED IN ACCORDANCE WITH COA SPECS OR ¾" GRAVEL

LEGEND

- CURB & GUTTER
- BOUNDARY LINE
- EASEMENT
- CENTERLINE
- RIGHT-OF-WAY
- BUILDING
- SIDEWALK
- EXISTING CURB & GUTTER
- EXISTING BOUNDARY LINE
- EXISTING RETAINING WALL

APPROVED FOR CONSTRUCTION WITHIN AMAFCA ROW OR EASEMENT

AMAFCA APPROVED FOR CONSTRUCTION — DATE 6/23/2025

PAD CERTIFICATION NOTE: PAD CERTIFICATIONS FOR ALL OCCUPIABLE STRUCTURES SHALL BE SUBMITTED TO THE CITY OF ALBUQUERQUE HYDROLOGY DEPARTMENT UPON COMPLETION OF ROUGH GRADING. CERTIFICATIONS SHALL BE PREPARED AND SIGNED BY A LICENSED GEOTECHNICAL OR CIVIL ENGINEER, VERIFYING THAT THE BUILDING PADS HAVE BEEN GRADED TO THE ELEVATIONS AND SPECIFICATIONS SHOWN ON THE APPROVED GRADING AND DRAINAGE PLAN.

CAUTION

ALL EXISTING UTILITIES SHOWN WERE OBTAINED FROM RESEARCH, AS-BUILTS, SURVEYS OR INFORMATION PROVIDED BY OTHERS. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CONDUCT ALL NECESSARY FIELD INVESTIGATIONS PRIOR TO AND INCLUDING ANY EXCAVATION, TO DETERMINE THE ACTUAL LOCATION OF UTILITIES AND OTHER IMPROVEMENTS, PRIOR TO STARTING THE WORK. ANY CHANGES FROM THIS PLAN SHALL BE COORDINATED WITH AND APPROVED BY THE ENGINEER.

ENGINEER'S SEAL
RONALD R. BOHANNAN NEW MEXICO 7868 PROFESSIONAL ENGINEER
06/19/2025
RONALD R. BOHANNAN P.E. #7868

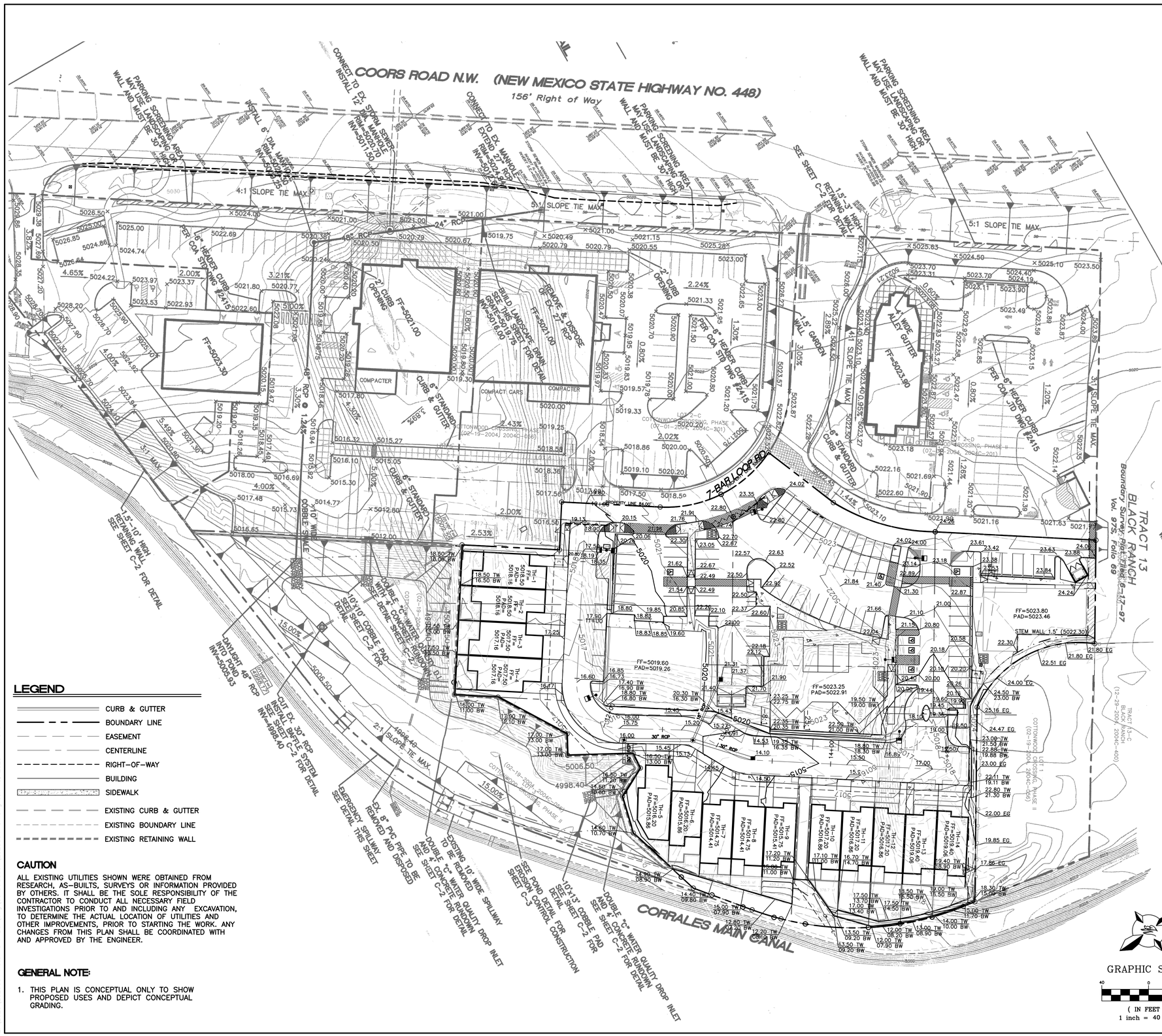
RETAIL AT 7 BAR
ALBUQUERQUE, NM

GRADING AND DRAINAGE PLAN

TIERRA WEST, LLC
5571 MIDWAY PARK PL NE
ALBUQUERQUE, NEW MEXICO 87109
(505) 858-3100
www.tierrawestllc.com

DRAWN BY pm/as
DATE 06/19/2025
DRAWING 2023004-GR
SHEET # 05
JOB # 2023004

Z:\2023\2023004 Retail @ 7 Bar\dwg\Construction\2023004-GR.dwg Jun 19, 2025 - 8:39am



LEGEND

- CURB & GUTTER
- BOUNDARY LINE
- EASEMENT
- CENTERLINE
- RIGHT-OF-WAY
- BUILDING
- SIDEWALK
- EXISTING CURB & GUTTER
- EXISTING BOUNDARY LINE
- EXISTING RETAINING WALL

CAUTION

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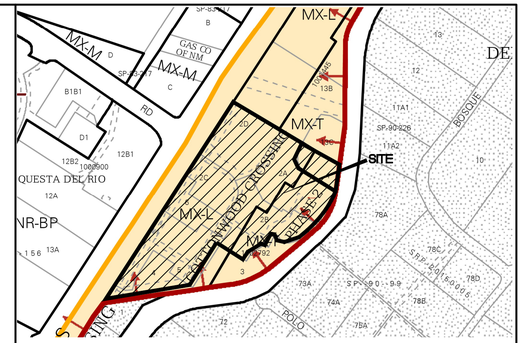
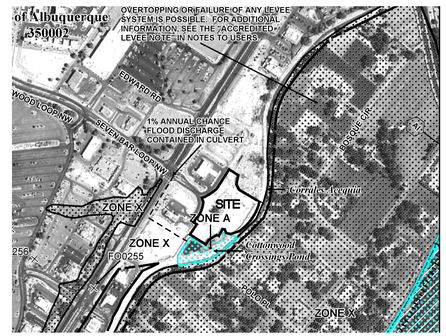
GENERAL NOTE:

1. THIS PLAN IS CONCEPTUAL ONLY TO SHOW PROPOSED USES AND DEPICT CONCEPTUAL GRADING.



VICINITY MAP B-14



VICINITY MAP 35001C0109H

LEGAL DESCRIPTION:

- LT 2-A LOTS 2-A, 2-B, 2-C AND 2-D COTTONWOOD CROSSINGPHASE II (BEING A REPLAT OF TRACT 2 COTTONWOOD CROSSINGPHASE II) CONT 1.5908 AC
- LT 2-B LOTS 2-A, 2-B, 2-C AND 2-D COTTONWOOD CROSSINGPHASE II (BEING A REPLAT OF TRACT 2 COTTONWOOD CROSSINGPHASE II) CONT 1.5483 AC
- 3.20 ACRES OF THE CONTROLLING SITE DEVELOPMENT PLAN

NOTICE TO CONTRACTORS

1. AN EXCAVATION/CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN CITY RIGHT-OF-WAY.
2. ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED, EXCEPT AS OTHERWISE STATED OR PROVIDED HERON, SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF ALBUQUERQUE INTERIM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1985.
3. TWO WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE, 765-1234, FOR LOCATION OF EXISTING UTILITIES.
4. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL CONNECTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
5. BACKFILL COMPACTION SHALL BE ACCORDING TO TRAFFIC/STREET USE.
6. MAINTENANCE OF THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY SERVED.
7. WORK ON ARTERIAL STREETS SHALL BE PERFORMED ON A 24-HOUR BASIS.

EROSION CONTROL NOTES:

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2. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING RUN-OFF ON SITE DURING CONSTRUCTION.
3. CONTRACTOR IS RESPONSIBLE FOR CLEANING ALL SEDIMENT THAT GETS INTO EXISTING RIGHT-OF-WAY.
4. REPAIR OF DAMAGED FACILITIES AND CLEANUP OF SEDIMENT ACCUMULATIONS ON ADJACENT PROPERTIES AND IN PUBLIC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR.
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APPROVED FOR CONSTRUCTION WITHIN AMAFCA ROW OR EASEMENT

6/23/2025

AMAFCA APPROVED FOR CONSTRUCTION DATE

GRAPHIC SCALE

40 0 20 40

(IN FEET)

1 inch = 40 ft.

ENGINEER'S SEAL

RONALD R. BOHANNAN NEW MEXICO 7868 PROFESSIONAL ENGINEER

06/19/2025

RONALD R. BOHANNAN P.E. #7868

RETAIL AT 7 BAR
ALBUQUERQUE, NM

GRADING AND DRAINAGE
EPC - MAJOR AMENDMENT

TIERRA WEST, LLC
5571 MIDWAY PARK PL NE
ALBUQUERQUE, NEW MEXICO 87109
(505) 858-3100
www.tierrawestllc.com

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DATE 06/19/2025

DRAWING 2023004-GR

SHEET # 06

JOB # 2023004

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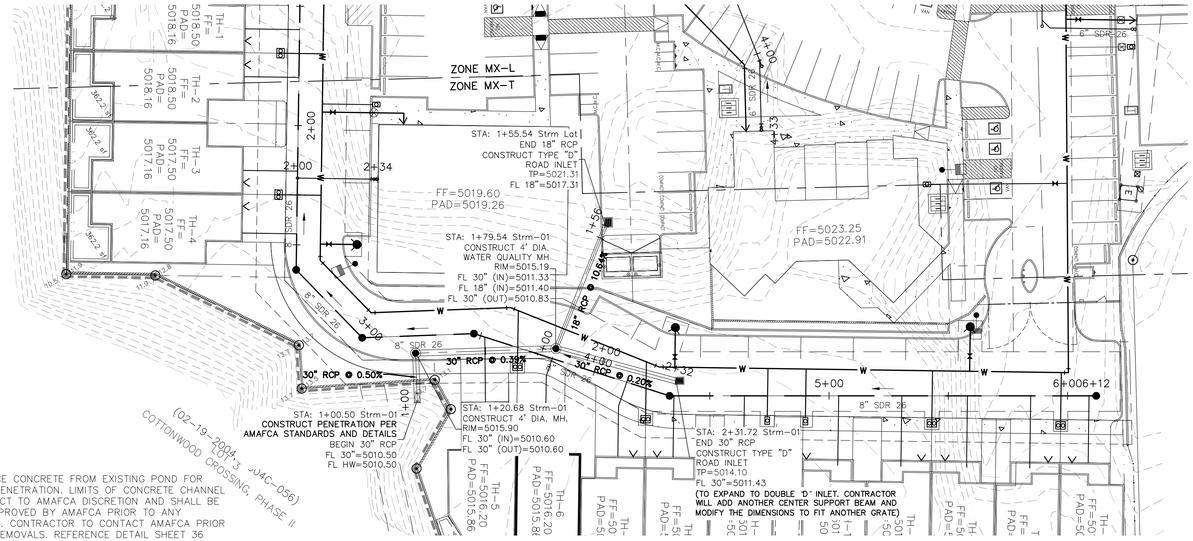


(02-19-2004 COT-3 JU4C-056)
COTTONWOOD CROSSING, PHASE II

REMOVE AND REPLACE CONCRETE FROM EXISTING POND FOR STORM DRAIN PIPE PENETRATION. LIMITS OF CONCRETE CHANNEL REMOVAL ARE SUBJECT TO AMAFCA DISCRETION AND SHALL BE DETERMINED AND APPROVED BY AMAFCA PRIOR TO ANY CONCRETE REMOVALS. CONTRACTOR TO CONTACT AMAFCA PRIOR TO ANY CONCRETE REMOVALS. REFERENCE DETAIL SHEET 36

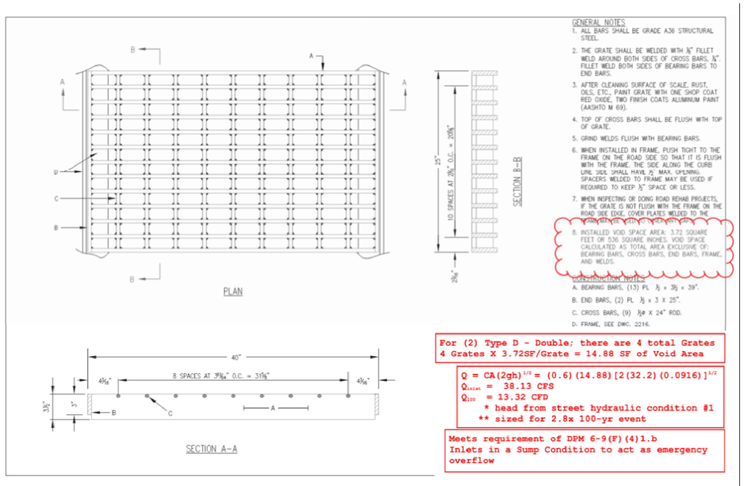
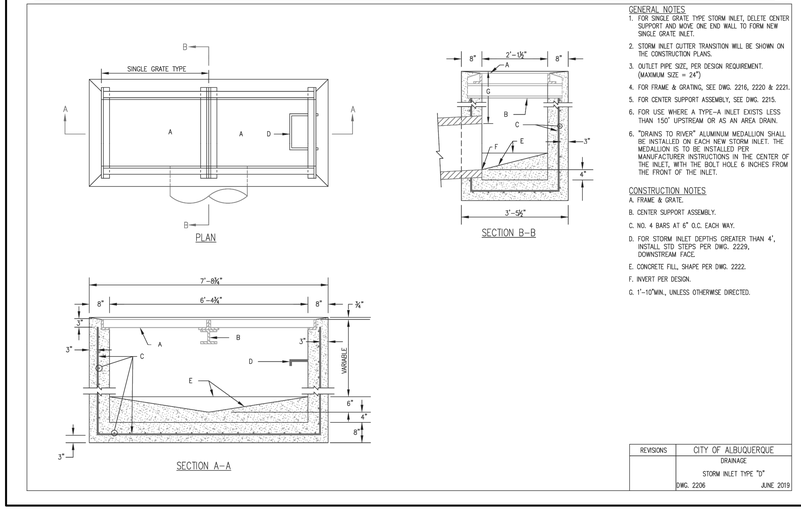
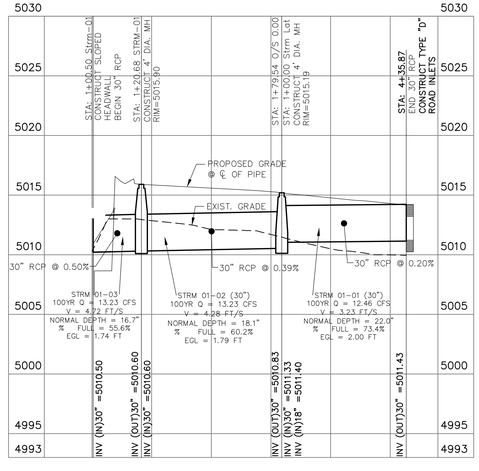
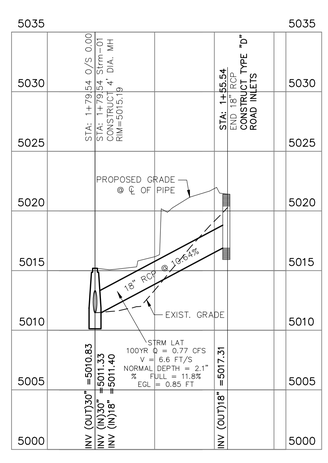


Figure 9 – COA Type D Grate Detail and Q calculation

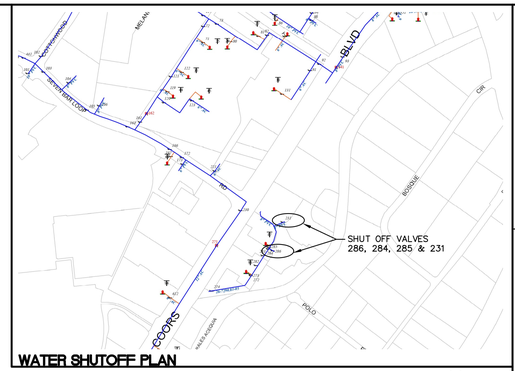




STRM-01



STRM LAT



WATER SHUTOFF PLAN

THE CONTRACTOR SHALL COORDINATE WITH THE WATER AUTHORITY SEVEN (7) DAYS IN ADVANCE OF PERFORMING WORK THAT WILL AFFECT THE PUBLIC WATER OR SANITARY SEWER INFRASTRUCTURE. WORK REQUIRING SHUTOFF OF FACILITIES DESIGNATED AS MASTER PLAN FACILITIES MUST BE COORDINATED WITH THE WATER AUTHORITY 14 DAYS IN ADVANCE OF PERFORMING SUCH WORK. ONLY WATER AUTHORITY CREWS ARE AUTHORIZED TO OPERATE PUBLIC VALVES. SHUTOFF REQUESTS MUST BE MADE ONLINE AT HTTP://ABCWUA.ORG/CONTENT/VIEW/463/729/.

LEGEND

- CURB & GUTTER
- BOUNDARY LINE
- EASEMENT
- CENTERLINE
- RIGHT-OF-WAY
- BUILDING
- SIDEWALK
- EXISTING CURB & GUTTER
- EXISTING BOUNDARY LINE
- RETAINING WALL
- 8" SAS — SANITARY SEWER LINE
- 8" WL — WATERLINE
- PROPOSED HYDRANT
- NEW SAS MH

APPROVED FOR CONSTRUCTION WITHIN AMAFCA ROW OR EASEMENT

AMAFCA APPROVED FOR CONSTRUCTION — DATE 6/23/2025

CAUTION
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AS BUILT INFORMATION
CONTRACTOR
WORK STAKED BY — DATE
INSPECTOR'S AS-BUILTS BY — DATE
FIELD VERIFICATION BY — DATE
CORRECTED BY: — DATE

BENCH MARKS
CITY OF ALBUQUERQUE SURVEY CONTROL
ACRS MONUMENT "NM-448-N12"
NEW MEXICO STATE PLANE COORDINATES
N=1528973.229
E=1521354.471
G-G=0.999679709 Δα = -00°13'47.11"
Z=ELEV=5026.132
CENTRAL ZONE (NAD83/NAVD88)

SURVEY INFORMATION
FIELD NOTES

NO.	BY	DATE

ENGINEER'S SEAL
RONALD R. BOHANNAN
NEW MEXICO
7868
PROFESSIONAL ENGINEER
06/19/2025

RECORDED BY
DATE
NO.

NO.	REMARKS	DATE	BY
	DESIGN	DATE: June 2025	
		DATE: June 2025	
		JOB NO.: 2023004	
		DATE: June 2025	

REVISIONS
DESIGNED BY: DB
DRAWN BY: AS
DRAWN NAME: Adolfo
CHECKED BY: RRB

GRAPHIC SCALE
30 0 15 30
(IN FEET)
1 inch = 30 ft.

TIERRA WEST, LLC
5571 MIDWAY PARK PLACE NE
ALBUQUERQUE, NEW MEXICO 87109
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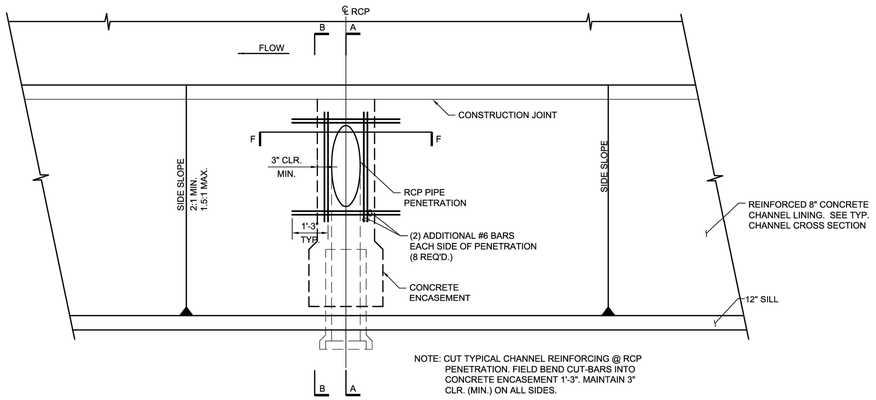
www.tierrawestllc.com

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

TITLE:
RETAIL AT 7 BAR
STORM IMPROVEMENTS STORM-01

DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL	LAST DESIGN UPDATE	MO./DAY/YR.	MO./DAY/YR.

CITY PROJECT NO. XXXXXX
ZONE MAP NO. B-14-Z
SHEET 09 OF 44



NOTE: CUT TYPICAL CHANNEL REINFORCING @ RCP PENETRATION. FIELD BEND CUT-BARS INTO CONCRETE ENCASEMENT 1'-3". MAINTAIN 3" CLR. (MIN.) ON ALL SIDES.

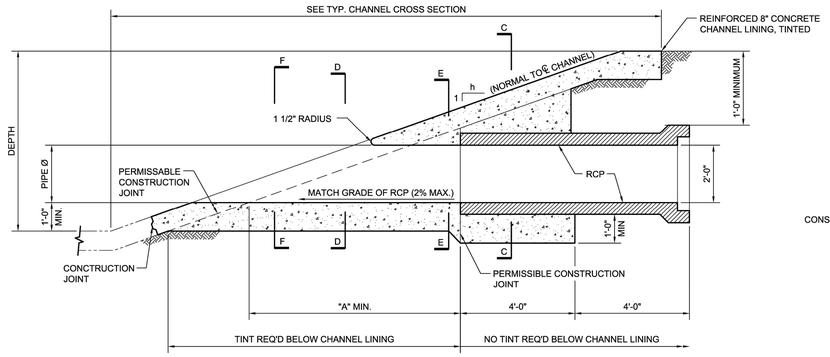
PIPE PENETRATION (PLAN VIEW)
NO SCALE

DIMENSION "A"								
SIDE SLOPE	PIPE DIAMETER (INCHES)							
	24	30	36	42	48	54	60	72
1.5:1	4'-8"	5'-5"	6'-2"	6'-11"	7'-8"	8'-5"	9'-2"	10'-8"
2:1	5'-8"	6'-8"	7'-8"	8'-8"	9'-8"	10'-8"	11'-8"	13'-8"

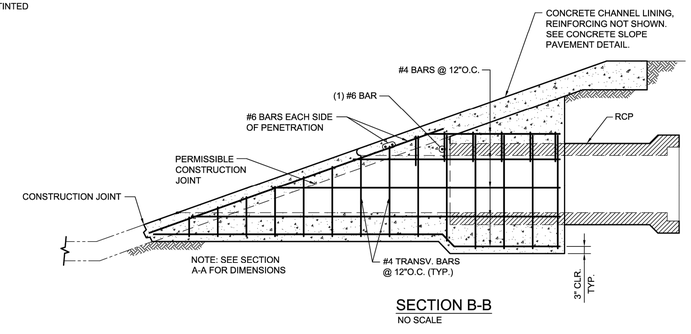
DIMENSION "B"							
PIPE DIAMETER (INCHES)							
24	30	36	42	48	54	60	72
10"	11"	1'-1"	1'-2"	1'-3"	1'-4"	1'-6"	1'-8"

GENERAL NOTES:

1. THE PIPE PENETRATION DETAILED HEREIN SHALL BE PAID FOR LUMP SUM AND SHALL BE COMPENSATION FOR THE PENETRATION COMPLETE AND IN PLACE. INCLUDED IN THIS WORK (BUT NOT LIMITED TO) IS GRADING, SUBGRADE PREPARATION, REINFORCED CONCRETE, CONSTRUCTION JOINTS, CONCRETE PLACEMENT AND FINISHING. NOTE THE MEASUREMENT FOR 8" CHANNEL LINING IS CONTINUOUS AND UNINTERRUPTED AT THE PENETRATION LOCATION.
2. ALL CULVERT PIPE PLACED UNDER THE CHANNEL LINING OR WITHIN AMAFCA RIGHT-OF-WAY SHALL BE RCP CLASS III MIN.
3. FOR PIPE PENETRATIONS INTO EXISTING CHANNELS, USE CHANNEL REMOVAL DETAILS FROM AMAFCA STANDARD DRAWING 102.



SECTION A-A
NO SCALE



SECTION B-B
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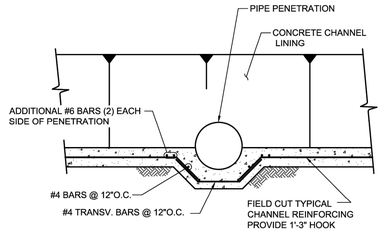

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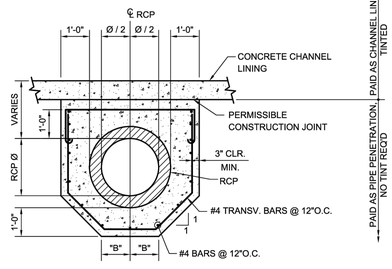
NO SCALE



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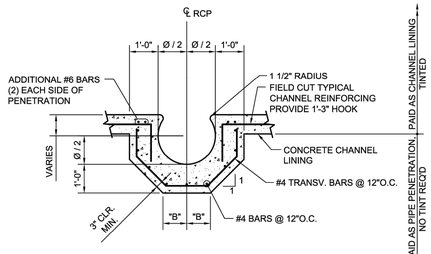
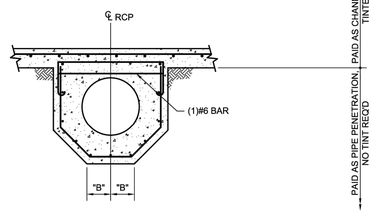


SECTION D-D
NO SCALE



SECTION E-E
NO SCALE

ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY

AMAFCA
STANDARD DETAILS

RCP CHANNEL PENETRATION
PIPE DIAMETER > 12", 0° SKEW

REV	DATE	DESCRIPTION	CHKD

DRAWING NO. 103 | MAP NO. | SHEET OF

ISSUE DATE: NOV. 2023

APPROVED FOR CONSTRUCTION WITHIN AMAFCA ROW OR EASEMENT

AMAFCA APPROVED FOR CONSTRUCTION — DATE 6/23/2025

ENGINEER'S SEAL
RONALD R. BOHANNAN NEW MEXICO 7868 PROFESSIONAL ENGINEER
06/19/2025
RONALD R. BOHANNAN P.E. #7868

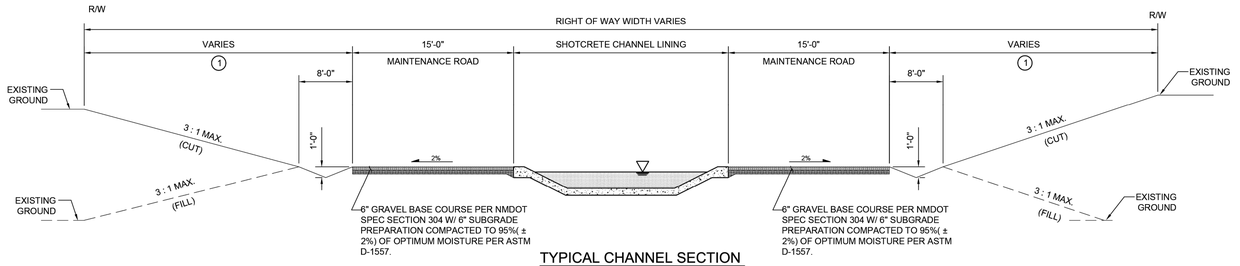
RETAIL AT 7 BAR
ALBUQUERQUE, NM

AMAFCA STANDARD DETAIL- RCP PENETRATION

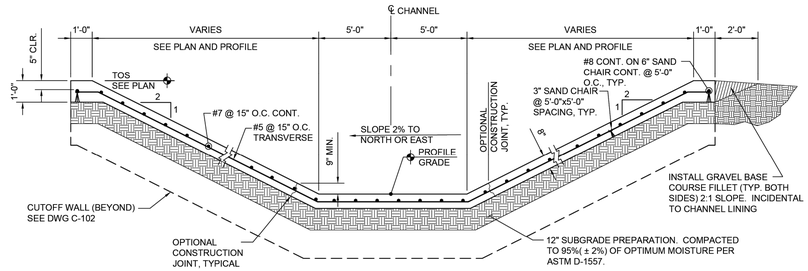
TIERRA WEST, LLC
5571 MIDWAY PARK PL NE
ALBUQUERQUE, NEW MEXICO 87109
(505) 858-3100
www.tierrawestllc.com

DRAWN BY pm/as
DATE 06/19/2025
DRAWING 2023004-GR
SHEET # 20A
JOB # 2023004

Z:\2023\2023004 Retail @ 7 Bar\dwg\Construction\2023004-GR.dwg Jun 19, 2025 - 8:39am



TYPICAL CHANNEL SECTION



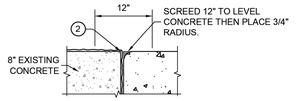
SHOTCRETE CHANNEL LINING

NOTES FOR SHOTCRETE CHANNEL CONSTRUCTION

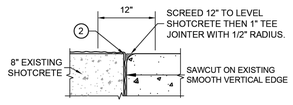
1. SHOTCRETE: CONCRETE SHALL BE IN ACCORDANCE WITH PROJECT SPECIFICATIONS. (f'c = 4000 psi MINIMUM). 3/4" CHAMFER ON ALL EXPOSED FORMED EDGES UNLESS NOTED OTHERWISE.
2. REINFORCING STEEL: STEEL REINFORCEMENT AND PLACEMENT SHALL BE IN ACCORDANCE WITH PROJECT SPECIFICATIONS AND SHALL CONFORM TO ASTM A615,GRADE 60. ALL LAP SPLICES SHALL BE CLASS "B" UNLESS NOTED OTHERWISE. REINFORCING STEEL SHALL BE INCIDENTAL TO CONCRETE BID ITEMS.
3. ALL EXPOSED CONCRETE SHALL BE TINTED WITH SAN DIEGO BUFF (DAVIS COLOR 5237) AT THE REDUCED DOSAGE OF 1 LB PER SACK OF CEMENT, OR APPROVED EQUAL. TINT SHALL BE INCIDENTAL TO THE COST OF THE RESPECTIVE CONCRETE.
4. NEW TO EXISTING CHANNEL CONSTRUCTION: EUCO ARC LITHIUM NITRATE OR APPROVED EQUAL TREATMENT IS REQUIRED FOR ANY EXISTING CONCRETE CHANNELS. SEE DETAILS FOR INSTALLATION REQUIREMENTS, THIS SHEET.
5. MINIMUM REBAR LAP LENGTH (CLASS B LAPS):
   #4 = 24"
   #5 = 26"
   #7 = 43"
   #8 = 54"
6. THE EARTH SIDE OF SILL WALLS SHALL BE WATERPROOFED AT IRRIGATED AREAS AND DAMP PROOFED AT ALL OTHER AREAS. WATERPROOFING SHALL BE CONWRAP BARRIER CS-212 AS MANUFACTURED BY CONCRETE SEALANTS, INC. (MEMBRANE THICKNESS 0.100 INCHES MINIMUM) OR APPROVED EQUAL. DAMP PROOFING SHALL BE HYDROCIDE 700B OR APPROVED EQUAL.
7. FOR SILL WALL AND CUT OFF WALL DETAILS SEE SHEET C-102.

◯ KEYED NOTES

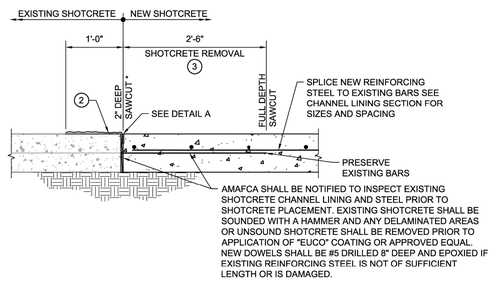
1. NATIVE RE-VEGETATION. SEE CITY OF ALBUQUERQUE SPECIFICATION SECTION 1012. GRAVEL MULCH IS REQUIRED FOR SLOPES GREATER THAN 3H:IV.
2. EUCO ARC LITHIUM NITRATE COATING OR APPROVED EQUAL APPLIED TO VERTICAL SURFACE AND 12" OF TOP SURFACE OF EXISTING CONCRETE TO REMAIN.
3. REMOVAL OF CONCRETE ADJACENT TO THE 2" SAWCUT WILL BE WITH A 30 LB., MAX. PNEUMATIC HAMMER. IN THE EVENT OF DAMAGE TO THE CONCRETE TO REMAIN, THE CONTRACTOR SHALL RE SAW THE 2" JOINT AND REMOVE AND REPLACE THAT CONCRETE AT NO COST.



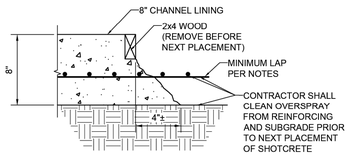
STANDARD PLACE CONCRETE TO NEW SHOTCRETE JOINT DETAIL



EXISTING SHOTCRETE TO NEW SHOTCRETE



NEW TO EXISTING CHANNEL LINING CONSTRUCTION JOINT



8" SHOTCRETE TYPICAL CONSTRUCTION JOINT

APPROVED FOR CONSTRUCTION WITHIN AMAFCA ROW OR EASEMENT

6/23/2025

AMAFCA APPROVED FOR CONSTRUCTION — DATE

ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY

AMAFCA STANDARD DETAILS

SHOTCRETE CHANNEL STRUCTURE SECTIONS AND DETAILS

REV	DATE	DESCRIPTION	CHKD

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February 19, 2020 - 9:27am

ISSUE DATE: 2-14-2020

DRAWING NO. C-102S | MAP NO. | SHEET | OF

ENGINEER'S SEAL

RONALD R. BOHANNAN NEW MEXICO 7868 PROFESSIONAL ENGINEER

06/19/2025

RONALD R. BOHANNAN P.E. #7868

RETAIL AT 7 BAR
ALBUQUERQUE, NM

AMAFCA STANDARD DETAIL-SHOTCRETE CHANNEL

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DRAWN BY pm/as
DATE 06/19/2025
DRAWING 2023004-GR
SHEET # 20B
JOB # 2023004

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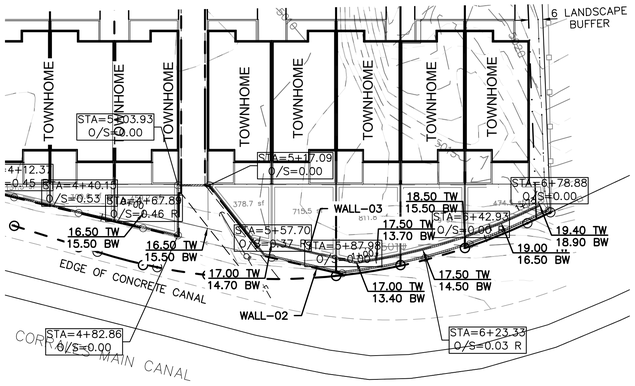
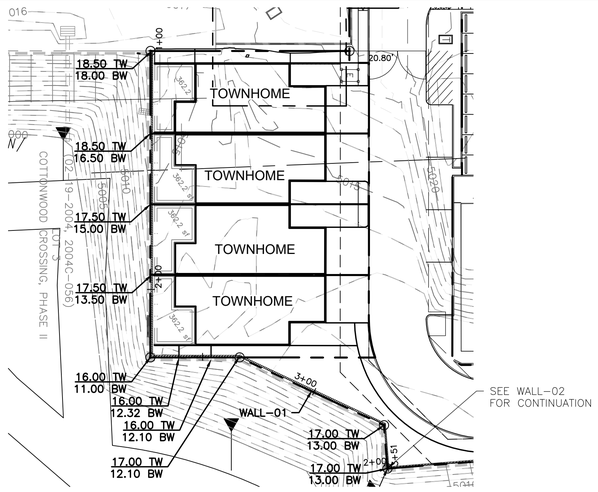
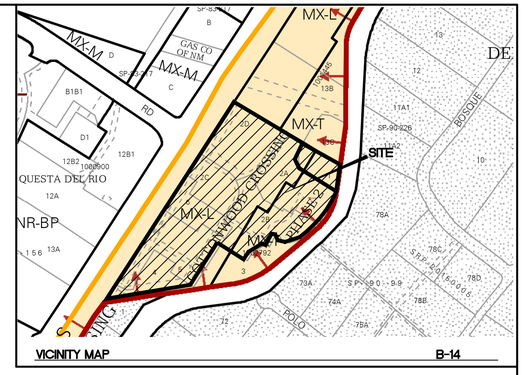
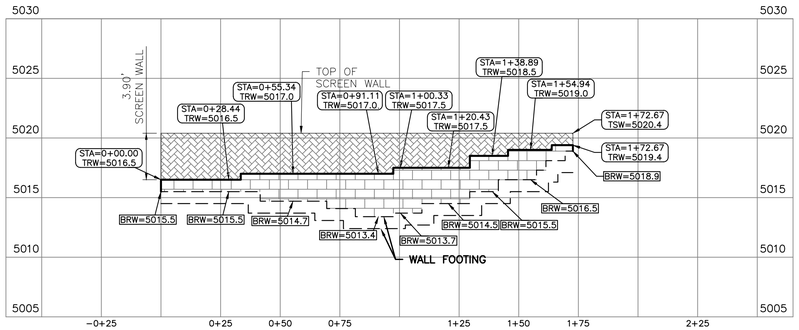
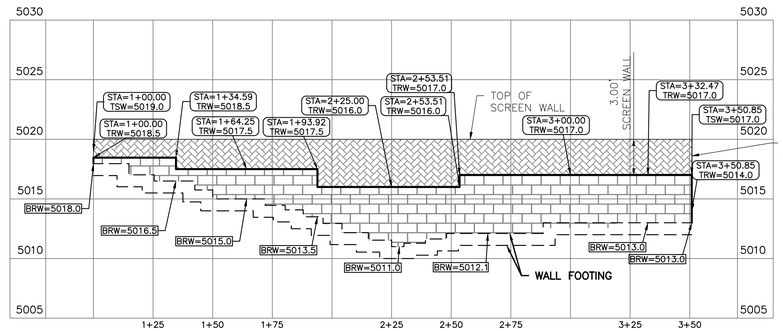








WALL-03



WALL-01

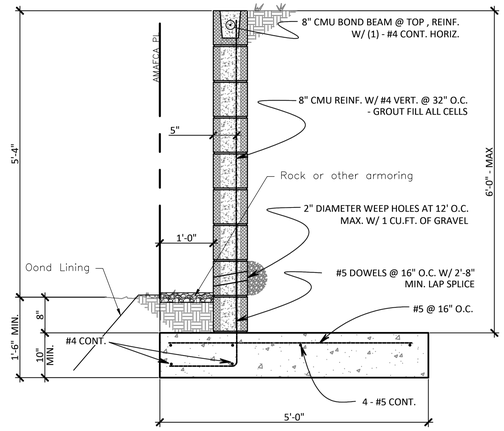
TRW – TOP RETENTION WALL
BRW – BOTTOM RETENTION WALL
TSW – TOP SCREEN WALL

0+00 1+00 2+00 2+50 1+00 2+00 3+00 3+70

GRAPHIC SCALE

30 15 0 15 30

SCALE: 1"=30'



1 WALL DETAIL FOR POND PROTECTION

3/4" = 1' - 0"

GENERAL NOTES:

1. FOR ALL RETAINING WALLS PLEASE REFERENCE STRUCTURAL WALL DETAILS.
2. WALL FOOTER TO BE WHOLLY CONTAINED ON SUBJECT PROPERTY, FOOTER SHALL NOT ENCROACH PROPERTY LINES OR ACCESS EASEMENTS

NOTICE TO CONTRACTORS

1. AN EXCAVATION/CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN CITY RIGHT-OF-WAY.
2. ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED, EXCEPT AS OTHERWISE STATED OR PROVIDED HERON, SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF ALBUQUERQUE INTERIM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1985.
3. TWO WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE, 765-1234, FOR LOCATION OF EXISTING UTILITIES.
4. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL CONNECTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
5. BACKFILL COMPACTION SHALL BE ACCORDING TO TRAFFIC/STREET USE.
6. MAINTENANCE OF THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY SERVED.
7. WORK ON ARTERIAL STREETS SHALL BE PERFORMED ON A 24-HOUR BASIS.

APPROVED FOR CONSTRUCTION WITHIN AMAFCA ROW OR EASEMENT

AMAFCA APPROVED FOR CONSTRUCTION — 6/23/2025 DATE

ENGINEER'S SEAL

RONALD R. BOHANNAN NEW MEXICO 7868 PROFESSIONAL ENGINEER

06/19/2025

RONALD R. BOHANNAN P.E. #7868

RETAIL AT 7 BAR
ALBUQUERQUE, NM

WALL PLAN AND PROFILE WALL 01 AND WALL 03

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DRAWN BY: pm/as

DATE: 06/19/2025

DRAWING

SHEET #: 21

JOB #: 2023004

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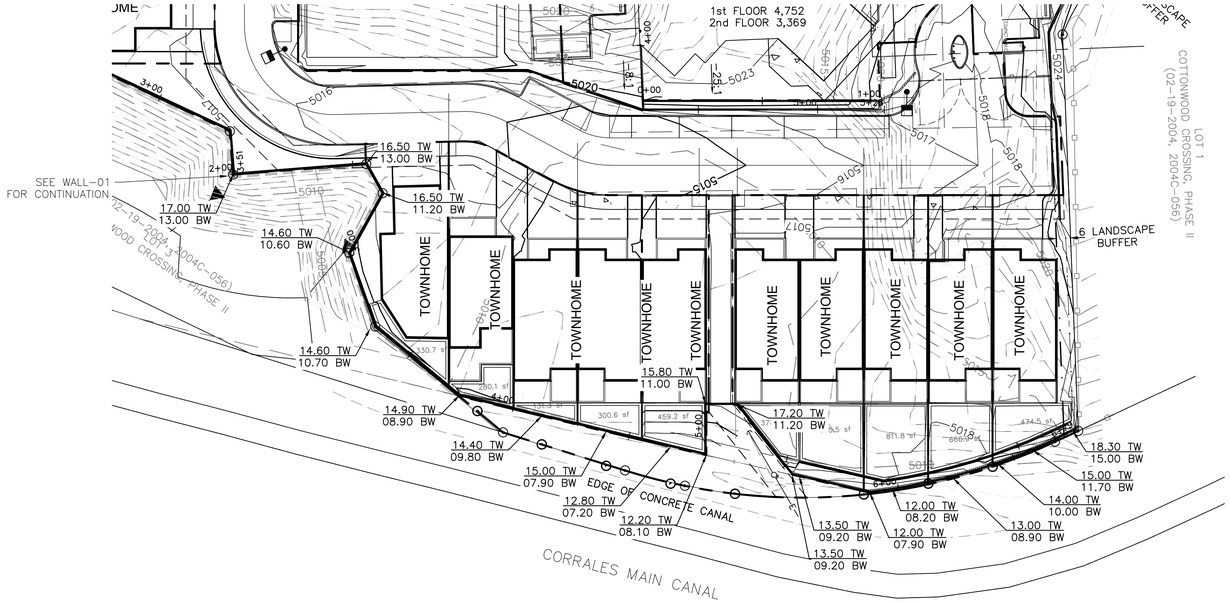

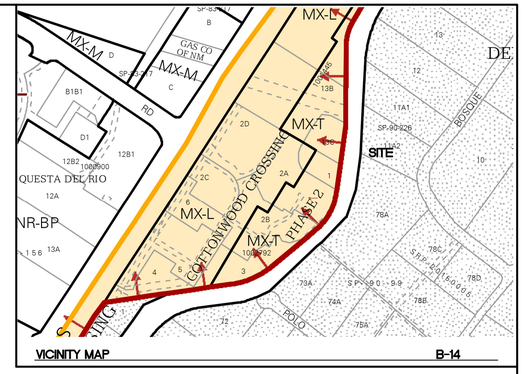

GENERAL NOTES:

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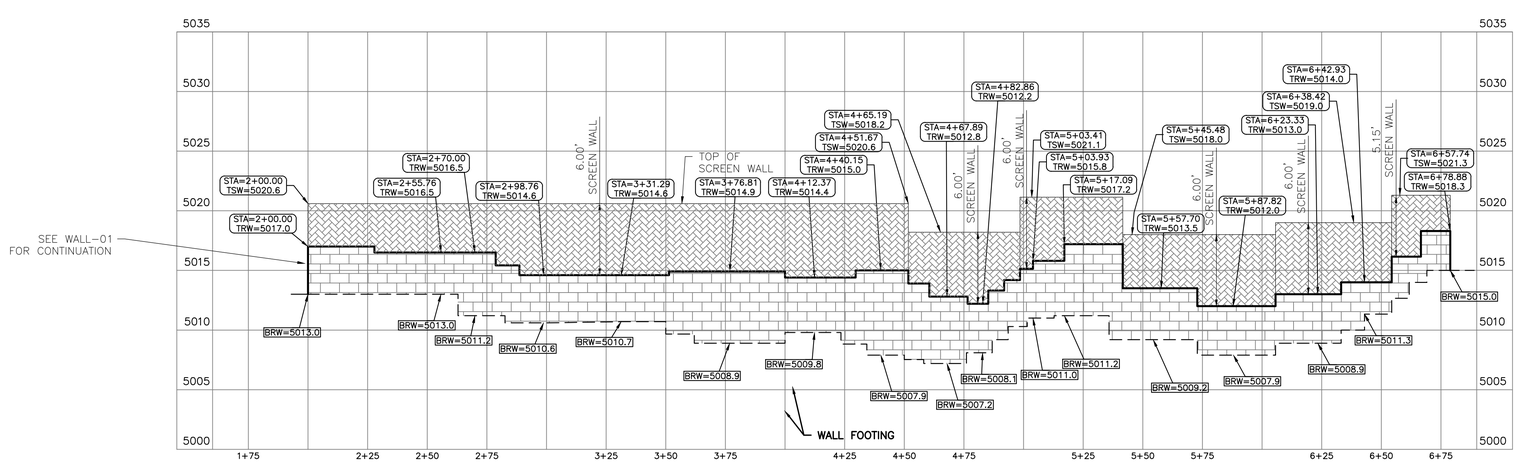

APPROVED FOR CONSTRUCTION WITHIN AMAFCA ROW OR EASEMENT

6/23/2025

AMAFCA APPROVED FOR CONSTRUCTION DATE

GRAPHIC SCALE

50 25 0 25 50

SCALE: 1"=50'

ENGINEER'S SEAL RONALD R. BOHANNAN NEW MEXICO 7868 PROFESSIONAL ENGINEER 06/19/2025 RONALD R. BOHANNAN P.E. #7868	**RETAIL AT 7 BAR** **ALBUQUERQUE, NM** **WALL PLAN AND PROFILE** **WALL 02**	DRAWN BY pm/as DATE 06/19/2025 DRAWING SHEET # 22 JOB # 2023004
	TIERRA WEST, LLC 5571 MIDWAY PARK PL NE ALBUQUERQUE, NEW MEXICO 87109 (505) 858-3100 www.tierrawestllc.com	

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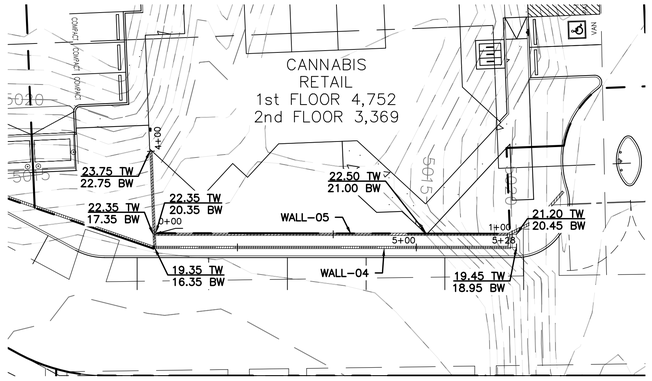

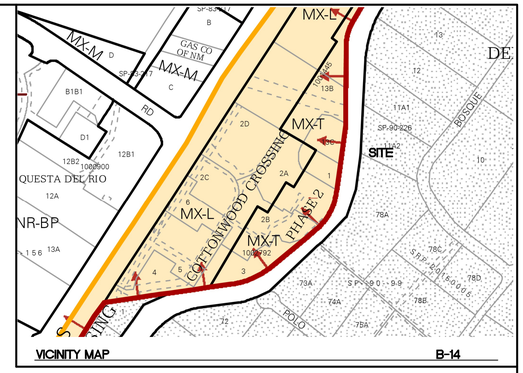

GENERAL NOTES:

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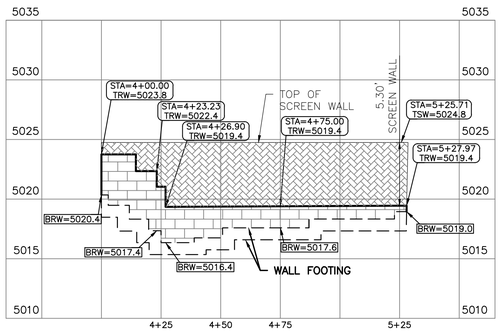
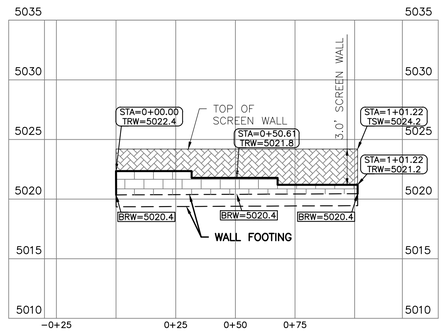


WALL-04

TRW – TOP RETENTION WALL
BRW – BOTTOM RETENTION WALL
TSW – TOP SCREEN WALL



WALL-05

TRW – TOP RETENTION WALL
BRW – BOTTOM RETENTION WALL
TSW – TOP SCREEN WALL

GRAPHIC SCALE

20 10 0 10 20

SCALE: 1"=20

APPROVED FOR CONSTRUCTION WITHIN AMAFCA ROW OR EASEMENT

6/23/2025

AMAFCA APPROVED FOR CONSTRUCTION — DATE

ENGINEER'S SEAL

RONALD R. BOHANNAN NEW MEXICO 7868 PROFESSIONAL ENGINEER

06/19/2025

RONALD R. BOHANNAN
P.E. #7868

RETAIL AT 7 BAR
ALBUQUERQUE, NM

WALL PLAN AND PROFILE
WALL 04 AND WALL 05

DRAWN BY: pm/as

DATE: 06/19/2025

DRAWING

SHEET #: 23

JOB #: 2023004

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ALBUQUERQUE, NEW MEXICO 87109
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STRUCTURAL NOTES

DESIGN CRITERIA

1. THE WALLS AND FOOTINGS SHOWN IN THESE DRAWINGS HAVE BEEN DESIGNED TO MEET THE REQUIREMENTS LISTED IN THE 2021 INTERNATIONAL BUILDING CODE WITH REQUIRED AMENDMENTS.
2. RETAINING WALLS HAVE BEEN DESIGNED TO SUPPORT UP TO A 6'-8" TALL GARDEN WALL. WHERE GARDEN WALLS OCCUR, DOWEL VERTICAL WALL STEEL 24" MINIMUM INTO THE GARDEN WALL. THE GARDEN WALL IS ASSUMED TO BE COMPRISED OF 6" NOMINAL CMU REINFORCED WITH #4 @ 32" ON CENTER. EXTEND VERTICAL BARS TO SECOND TO TOP COURSE.
3. THE RETAINING WALLS AND FOUNDATION DESIGN ARE BASED ON THE GEOTECHNICAL INFORMATION PROVIDED BYWESTERN TECHNOLOGIES, LLC., PROJECT NO. 32-223588-0 DATED NOVEMBER 27, 2023 WITH THE FOLLOWING DESIGN BASIS:
   - 3.1. ALLOWABLE BEARING PRESSURE = 2000 PSF BEARING 18 INCHES INTO COMPACTED SELECT FILL
   - 3.2. EQUIVALENT FLUID PRESSURE = 35 PSF (COMPACTED SITE SOILS -HYDROSTATIC PRESSURE NOT INCLUDED)
   - 3.3. PASSIVE PRESSURE = 250 PSF (STRUCTURAL FILL)
   - 3.4. COEFFICIENT OF FRICTION = 0.3

CONCRETE

1. PORTLAND CEMENT ASTM C 150, TYPE I/II
2. 28 DAY COMPRESSIVE STRENGTH OF CONCRETE F'c = 3000 PSI
3. 3-5 INCH SLUMP
4. MAXIMUM WATER TO CEMENT RATIO = 0.5
5. MAXIMUM AGGREGATE SIZE = 1 INCH
6. WATER SHALL CONFORM TO ASTM C 94 AND BE POTABLE

CONCRETE MASONRY UNITS (CMU)

1. THE NET AREA COMPRISSIVE STRENGTH FO MASONRY, F'M, SHALL BE A MINIMUM OF 1500 PSI AS DETERMINED BY THE UNIT STRENGTH METHOD.
2. MASONRY UNITS SHALL CONFORM TO ASTM C90 AND SHALL BE MEDIUM WEIGHT.
3. MORTAR SHALL BE TYPE S or M AND SHALL CONFORM TO ASTM C270 AND THE PROPORTION TABLE OF THE 2021 IBC.
4. 28 DAY COMPRESSIVE STRENGTH OF GROUT SHALL BE 2500 PSI
5. GROUT SHALL BE COURSE AND CONFORM TO ASTM C476 BY VOLUMETRIC PROPORTION. SLUMP SHALL BE WITHIN THE RANGE OF 8" to 11".
6. REINFORCING SHALL COMPLY WITH ASTM A615, GRADE 40
7. INSTALL CONTROL JOINTS WITH ONE VERTICAL BAR EACH SIDE OF JOINT AT A MAXIMUM SPACING OF 12'-0". AT BOND BEAMS DEBOND HORIZONTAL BARS.

DANTE ANGELINI NEW MEXICO 20353 PROFESSIONAL ENGINEER

09/09/2024

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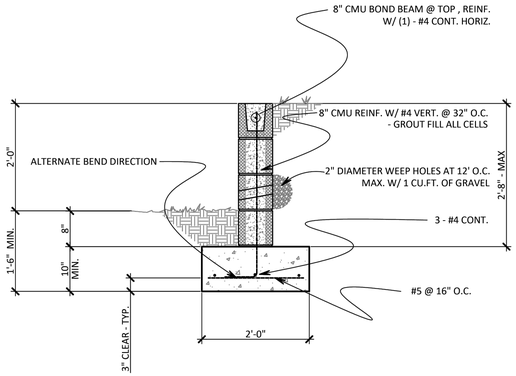
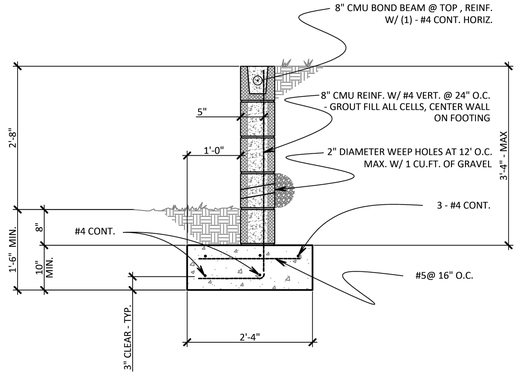
255 YORKS XING
DRIFTWOOD, TEXAS 78619
PH: (512) 565-2396

RETAIL AT 7 BAR
RETAINING WALLS
ALBUQUERQUE, NM



1 2'-0" CMU RETAINING WALL
3/4" = 1' - 0"



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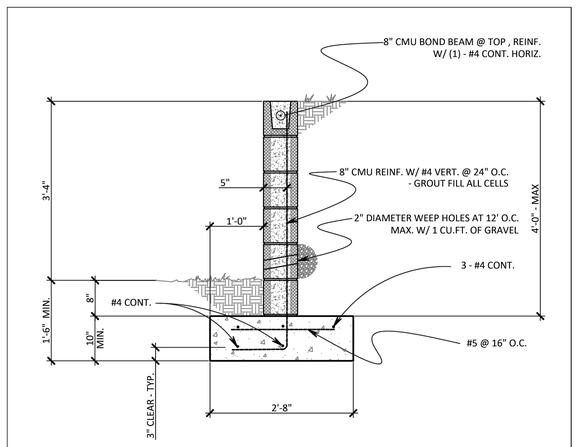
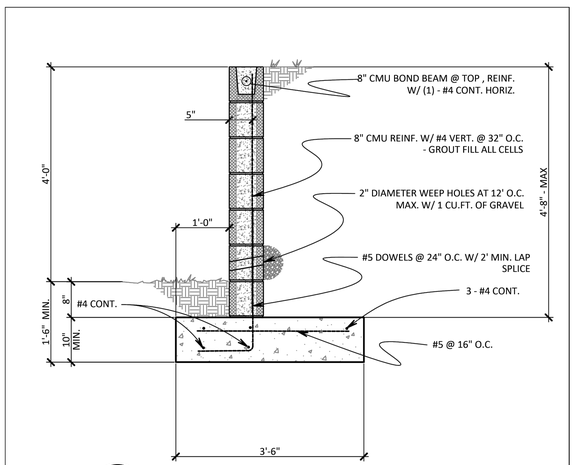


1 3'-4" CMU RETAINING WALL
3/4" = 1' - 0"



1 4'-0" CMU RETAINING WALL
3/4" = 1' - 0"

APPROVED FOR CONSTRUCTION WITHIN AMAFCA ROW OR EASEMENT

6/23/2025

AMAFCA APPROVED FOR CONSTRUCTION — DATE

ENGINEER'S SEAL

RONALD R. BOHANNAN NEW MEXICO 7868 PROFESSIONAL ENGINEER

06/19/2025

RONALD R. BOHANNAN
P.E. #7868

RETAIL AT 7 BAR
ALBUQUERQUE, NM

WALL PLAN AND PROFILE
WALL 04 AND WALL 05

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DATE: 06/19/2025
DRAWING
SHEET #: 24
JOB #: 2023004

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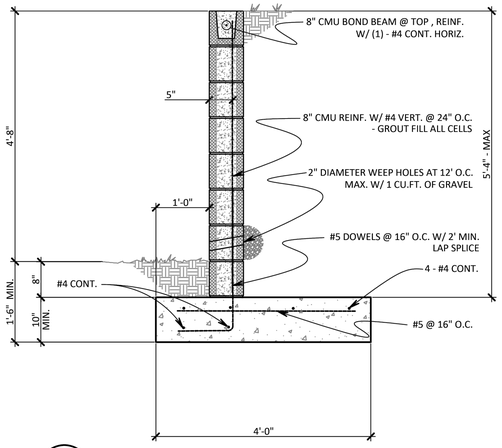
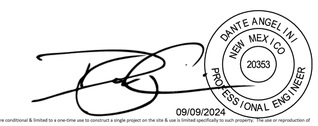


1 4'-8" CMU RETAINING WALL

3/4" = 1' - 0"



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255 YORKS XING
DRIFTWOOD, TEXAS 78619
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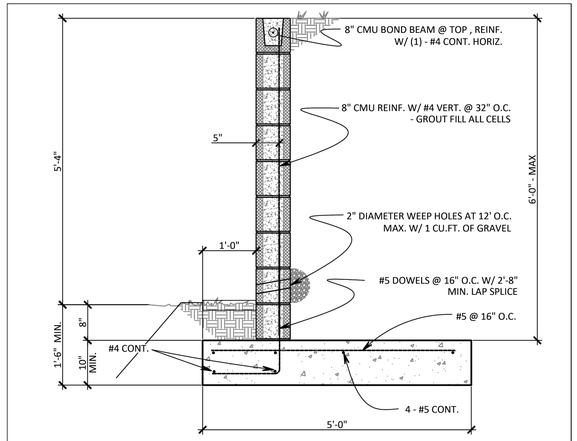
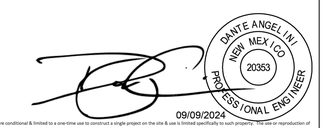
RETAIL AT 7 BAR
RETAINING WALLS
ALBUQUERQUE, NM



1 5'-4" CMU RETAINING WALL

3/4" = 1' - 0"



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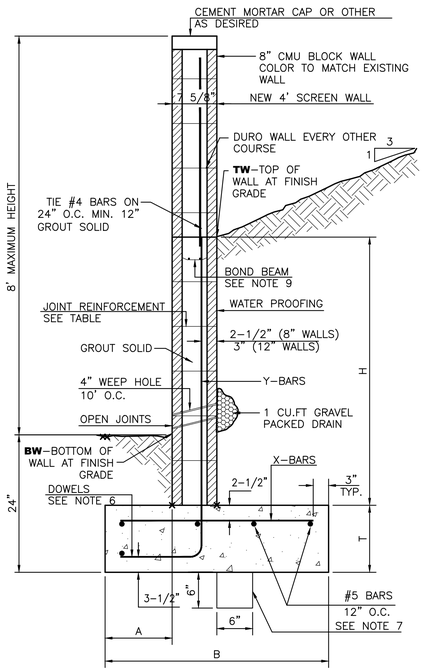
RETAIL AT 7 BAR
RETAINING WALLS
ALBUQUERQUE, NM



RETAINING WALL DETAIL

NTS

8 INCH REINFORCED CONCRETE MASONRY WALL

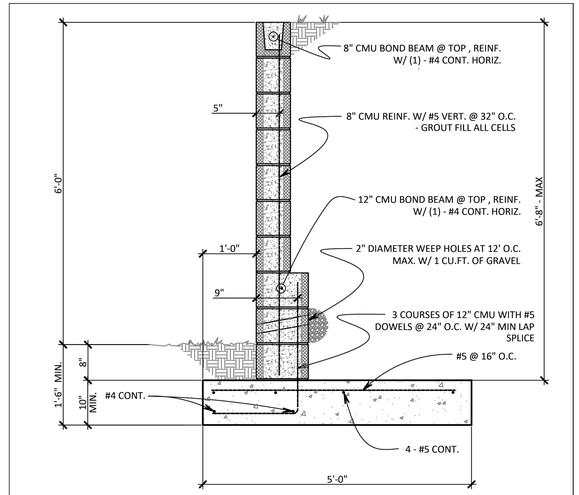
H	A	B	T	Y–BARS	X–BARS
ft.–in.	in.	ft.–in.	in.		
2'–0"	8"	2'–0"	9"	#4 @32" O.C.	
2'–8"	8"	2'–0"	9"	#4 @32" O.C.	#4 @24" O.C.
3'–4"	8"	2'–4"	9"	#4 @32" O.C.	#4 @24" O.C.
4'–0"	10"	2'–8"	9"	#4 @32" O.C.	#4 @24" O.C.
4'–8"	12"	3'–4"	10"	#5 @32" O.C.	#4 @18" O.C.
5'–4"	14"	3'–10"	10"	#6 @16" O.C.	#4 @18" O.C.
6'–0"	16"	4'–8"	12"	#6 @ 8" O.C.	#4 @12" O.C.

12 INCH REINFORCED CONCRETE MASONRY WALL

H	A	B	T	Y–BARS	X–BARS
ft.–in.	in.	ft.–in.	in.		
5'–4"	14"	3'–8"	12"	#6 @18" O.C.	#4 @24" O.C.
6'–0"	15"	4'–2"	12"	#4 @16" O.C.	#4 @18" O.C.
6'–8"	16"	4'–6"	12"	#6 @24" O.C.	#5 @18" O.C.
7'–4"	18"	4'–10"	12"	#6 @16" O.C.	#5 @18" O.C.
8'–0"	20"	5'–4"	12"	#7 @18" O.C.	#6 @12" O.C.
8'–8"	20"	5'–8"	12"	#7 @16" O.C.	#6 @12" O.C.

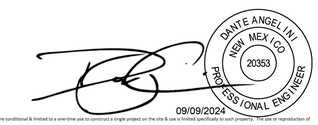
GENERAL NOTES:

1. ALL CONCRETE IS TO BE 4000 PSI @ 28 DAYS.
2. MINIMUM COMPACTION UNDER FOOTINGS IS TO BE 95% PER ASTM. D 1557 FOR A DEPTH OF 12" MOISTURE CONTENT IS TO BE ± 2.0%.
3. BACK FILL AGAINST WALLS IS TO BE HAND–PLACED AND COMPACTED.
4. ALL BARS ARE TO BE GRADE 60, ASTM 615.
5. TRUSS TYPE DUR–O–WALL EVERY OTHER COURSE.
6. DOWELS SHALL BE AT LEAST EQUAL IN SIZE AND SPACING TO V–BARS, SHALL PROJECT A MINIMUM OF 30 BAR DIA. INTO THE FILLED BLOCK CORES, AND SHALL EXTEND TO THE TOE OF THE FOOTING.
7. PROVIDE KEY FOR 8" AND 12" WALLS WHERE H EXCEEDS 6'–0"
8. USE EITHER EXPANSION JOINTS ON 20' CENTERS OR PILASTERS EVERY 16'.
9. BOND BEAM, 1–#4 BARS FOR WALLS UNDER 3'–4", 2–#4 BARS FOR WALLS UNDER 5'–4", 2–#5 BARS FOR WALLS OVER 5'–4".



1 6'-0" CMU RETAINING WALL

3/4" = 1' - 0"



09/09/2024

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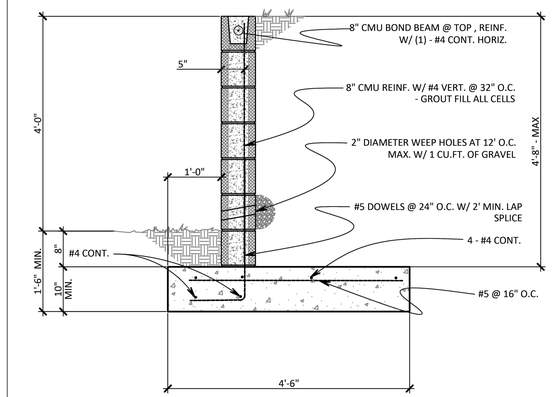
Angelini Engineers
255 YORKS XING
DRIFTWOOD, TEXAS 78619
PH: (512) 565-2396

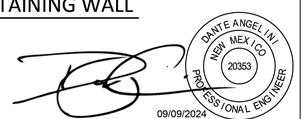
RETAIL AT 7 BAR
RETAINING WALLS
ALBUQUERQUE, NM

TIERED WALL DESIGN IS BASED ON TOP OF ADJACENT UPPER TIER WALL DOES NOT EXCEED 2' FROM TOP OF LOWER TIER WALL AND PLACED AT 5'-0" OR FURTHER FROM LOWER TIER



1 LOWER TIER
4'-0" CMU RETAINING WALL

3/4" = 1' - 0"



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DRIFTWOOD, TEXAS 78619
PH: (512) 565-2396

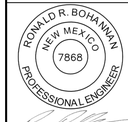
RETAIL AT 7 BAR
RETAINING WALLS
ALBUQUERQUE, NM

APPROVED FOR CONSTRUCTION WITHIN AMAFCA ROW OR EASEMENT

6/23/2025

AMAFCA APPROVED FOR CONSTRUCTION DATE

ENGINEER'S SEAL



06/19/2025

RONALD R. BOHANNAN
P.E. #7868

RETAIL AT 7 BAR
ALBUQUERQUE, NM

WALL PLAN AND PROFILE
WALL 04 AND WALL 05

DRAWN BY: pm/as

DATE: 06/19/2025

DRAWING:

SHEET #: 25

JOB #: 2023004

TIERRA WEST, LLC
5571 MIDWAY PARK PL NE
ALBUQUERQUE, NEW MEXICO 87109
(505) 858–3100
www.tierrawestllc.com

Z:\2023\2023004 Retail @ 7 Bar\dwg\Construction\2023004_Wall PnP.dwg, 6/19/2025 8:50:51 AM, DWG To PDF.pc3

City of Albuquerque
Planning Department
Development Review Services
HYDROLOGY SECTION
APPROVED
DATE: 6/27/2025
BY:
HydroTrans # B14D010D

THE APPROVAL OF THESE PLANS/REPORTS SHALL NOT BE CONSTRUED TO PERMIT VIOLATIONS OF ANY CITY ORDINANCE OR STATE LAW, AND SHALL NOT PREVENT THE CITY OF ALBUQUERQUE FROM REQUIRING CORRECTIONS FOR ERRORS OR DIMENSIONS IN PLANS, SPECIFICATIONS, OR CONSTRUCTION DOCUMENTS. SUCH APPROVED PLANS/REPORTS SHALL NOT BE CHANGED, MODIFIED OR ALTERED WITHOUT AUTHORIZATION.

THE APPROVAL OF THESE PLANS/REPORTS SHALL EXPIRE TWO (2) YEARS AFTER THE APPROVAL DATE IF NO BUILDING PERMIT HAS BEEN PULLED ON THE DEVELOPMENT.

7 Bar Retail
DRAINAGE REPORT

April 2025

PREPARED FOR:

A Management Inc.,
4461 Irving Blvd NW
Albuquerque, NM 87114

PREPARED BY:

Tierra West, LLC
5571 Midway Park Place NE
Albuquerque, NM 87109

RONALD R. BOHANNAN
NEW MEXICO
7868
PROFESSIONAL ENGINEER

04/29/2025

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1. Executive Summary

This Drainage Report updates the previously approved report for the site and defines the drainage strategy for the proposed 7 Bar Retail development in Albuquerque, NM. The development, envisioned by A Management Inc., aims to integrate a mix of residential and commercial entities, including 14 townhomes, a sit-down restaurant, a cannabis retail outlet, and an office building. Spanning an area of 3.14 acres within the Cottonwood Crossings Major Site Plan, the 7 Bar Retail site is set to leverage existing infrastructure to meet its drainage needs, thereby negating the necessity for additional ponding capacity. The site is located on the west side of Albuquerque west of the intersection of Seven Bar Loop and Coors Bypass. The overall site is partially developed with a Popeye's, a Take-5 car wash, Nusenda Credit Union.

The analysis builds upon previously established drainage frameworks, specifically referencing the Tract 14A and 14B Black Ranch Drainage Report from October 2003. Through detailed study, it is determined that the 7 Bar Retail development will not exceed previously approved discharge rates. This conclusion is supported by a thorough examination of the site's current and developed conditions, including land treatments, precipitation, flood hazard zones, street and storm drain hydraulics and stormwater quality considerations.

This analysis follows the original approval and analysis utilizing the Weighted E methodology, as per the City of Albuquerque's Development Process Manual (Revised September 2020), for runoff and volume calculations. This method, alongside the project's adherence to the city's IDO requirements, ensures that the development's impact on local drainage systems remains within acceptable limits.

Significant findings include the adjustment of on-site drainage basins to reflect recent developments, slight modifications to the drainage basins that ultimately results in a reduction in directed drainage area to the AMAFCA Pond. The original approval for the site allowed a discharge of 46.61 cfs and the updated flow rate shows a reduction of 9.63 cfs to 36.98 cfs., affirming that the current infrastructure is adequately equipped to handle the proposed development's drainage needs without additional modifications. A volume analysis/comparison was also completed via the weighted E method and it has been shown that there is an overall decrease of .05 ac-feet needed. The total volume of the pond remains unaffected.

In conclusion, the 7 Bar Retail Drainage Report presents a well-structured plan that harmonizes new development with existing drainage capabilities, ensuring environmental compliance and sustainable urban growth. The proactive approach to stormwater management exemplified in this report signifies a commitment to responsible development practices, highlighting the project's potential to contribute positively to the Albuquerque community.

2. Introduction

This drainage report is to present a final grading and drainage solution for the proposed mixed-use development of the 7 Bar Retail Development and highlight the effects on the previously approved Drainage Report titled *Tract 14A and 14B Black Ranch* dated October 2023. The analysis will show that

previous development within the Major Site Plan and the changes brought about by the 7 Bar Retail development to the Major Site Plan require no additional ponding capacity to the existing AMAFCA ponding facility within the Major Site Plan and that previously approved discharge rates are not exceeded.

3. Project Location & Major Site Plan Background

The proposed 7 Bar Retail development is located just East of the intersection of Coors Rd NW and Seven Bar Loop in Northwest Albuquerque. The exact location of the site is shown highlighted in Blue in Figure 1 below, which is wholly within the Cottonwood Crossings Major Site Plan shown in Red. The 7 Bar Retail site totals 3.1388 acres and are zoned MX-T (Mixed Use-Transition) and MX-L (Mixed Use-Low Intensity), legally described as Lot 2-A and 2-B of Lots 2-A, 2-B, 2-C and 2-D Cottonwood Crossing Phase II (Being a Replat of Tract 2 Cottonwood Crossing Phase II).

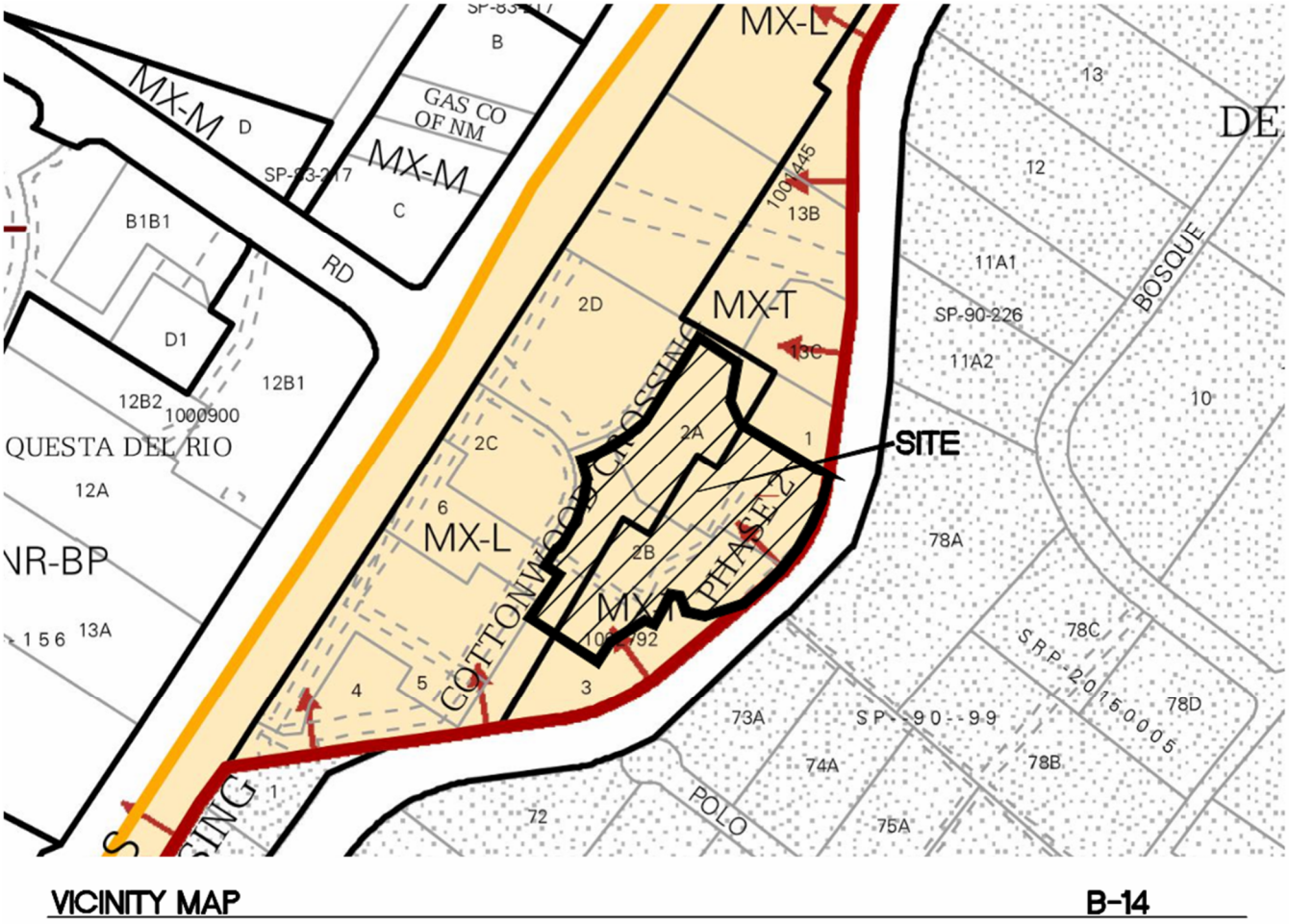
The limits of the Major Site Plan are located along Coors Blvd. It is bounded by Coors Blvd to the West, an undeveloped MX-T and MX-L lot to the North, Corrales Main Canal and Maintenance road to the East and South East, and a Bernalillo County commercial property to the South. The Major Site Plan is approximately 9.4 acres more or less. A Vicinity map can be seen in **Figure 1** for both the 7 Bar Retail Development and the Cottonwood Crossing Major Site Plan.

Since the approval of the Drainage Report for *Tract 14A and 14B Black Ranch* and the approval of the Cottonwood Crossing Major Site Plan the following uses have been developed;

Developed

- Commercial Services (Nusenda Bank)
- Fast Food Restaurant (Popeye's)
- Car Wash (Take 5)
- Drainage Pond (AMAFCA)

In addition, Lot 1 of the Major Site Plan is an Archeological Site that has been dedicated to the City of Albuquerque



VICINITY MAP B-14

Figure 1 - Vicinity Map

Figure 2 - Vicinity Map with Major Site Plan Boundary Delineated

4. Relevant Drainage Reports & Drainage Plans

- Drainage Report for "Tract 14A and 14B Black Ranch" dated October 2003. prepared by Tierra West LLC.
- Popeye's Chicken – Grading and Drainage Plan
- Take 5 – Cottonwood Crossings Car Wash - Drainage Plan prepared by RESPEC.
- Nusenda – Existing Drainage Plan

5. Flood Hazard Zones

The site is located on FEMA Map 35001C0109H as shown in figure 3 below. The map shows that the site lies within an unshaded Zone -X (minimal flood risk), but adjacent to a shaded Zone-X (protected by Levee) and an approximate Zone A (for the AMAFCA Drainage facility).

The following *italicized* text is directly from the Drainage Report for "Tract 14A and 14B Black Ranch" dated October 2003. *The offsite drainage area consists of fourteen (14) sub-basins as outlined in the*

- *Alameda West Shopping Center Drainage Report*
- *Questa Del Rio Drainage Management Plan*
- *North Coors Drainage Management Plan.*

All of the flows from the off-site drainage area are subsequently routed to the AMAFCA detention pond on Tract 14 via a storm sewer system. Nearly half of the off-site flows are collected in a detention pond located in the Alameda West Shopping Center where it is released into the existing storm sewer at a controlled rate of 42.14 cfs. The flow then combines with the peak flow of 66.14 cfs generated by Questa Del Rio and the adjacent sub-basins. The combined peak flow is then routed to Tract 14 for a resulting flow of 103.59 cfs, These flows are then contained in the AMAFCA detention pond where the outflow is controlled to release 14 cfs into the Corrales Main Canal. To our knowledge at the time of this report these off-site flows have not been changed and our project lies outside the limits of the above areas.

Note that the flows entering the AMAFCA pond from the new development on the subject site are shown to be less than the previously approved flows from the original EPC approved Site Plan referenced in the Drainage Report for "Tract 14A and 14B Black Ranch".

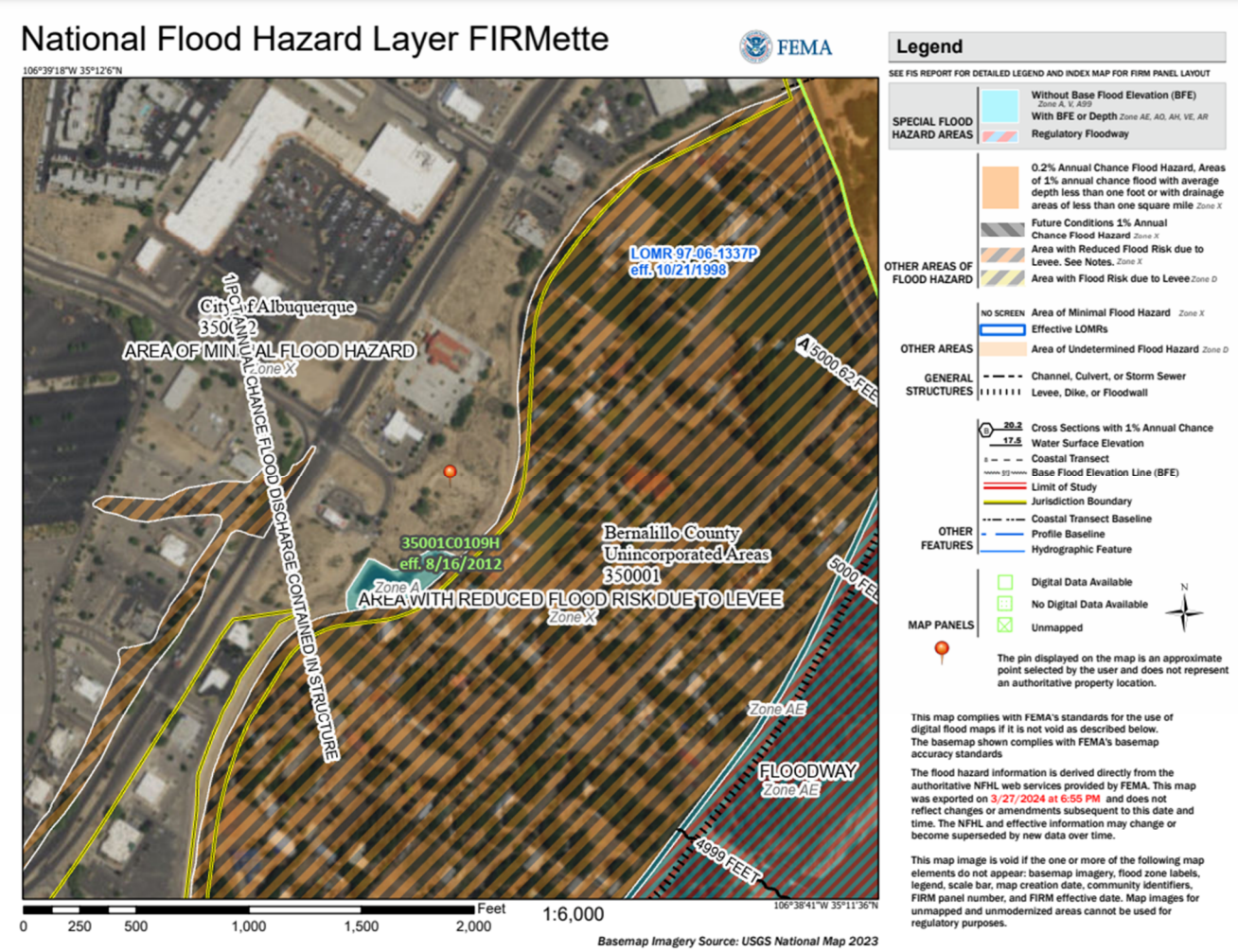


Figure 3 - FEMA FIRMette Map

6. Methodology

This drainage study is based on the procedures as outlined in the City of Albuquerque's Development Process Manual, Revised September 2020. This drainage study uses the Weighted E method and is used to calculate the runoff and volume for the site based on a 100-year, 6-hour storm event. The Weighted E Tables for On-Site and Off-Site flows can be referenced in this report and have also been provided in the Appendices.

7. Precipitation

The 100-yr 6-hr design storm was used for this analysis. These values were obtained from the COA Design Process Manual dated September 4th 2020 from Table 6.2.8 titled Precipitation for Zones 1-4. These values can be found in Appendix A.

8. Land Treatments

The land treatments used in the Weighted E are as described in the City of Albuquerque Development Process Manual, summarized below:

- Land Treatment A – Soil uncompacted by human activity with 0 to 10 percent slopes. Native grasses, weeds and shrubs in typical densities with minimal disturbance to grading, groundcover and infiltration capacity. Croplands. Unlined Arroyos.
- Land Treatment B – Irrigated lawns, parks and golf courses with 0 to 10 percent slopes. Soil uncompacted by human activity with slopes greater than 10 percent and less than 20 percent.
- Land Treatment C – Soil compacted by human activity. Unpaved parking, roads and trail. Most vacant lots. Gavel or rock on plastic (desert landscaping)
- Land Treatment D – Impervious areas, pavement and roofs.

The overall project contains a mixed use of proposed developments which includes both commercial, residential, and open space.

9. Approved Conditions

The approved Drainage Report for "Tract 14A and 14B Black Ranch" dated October 2003 which is associated with the Cottonwood Crossing Major Site Plan dated 10-20-2003 shows Eleven (11) drainage basins

associated with the Major Site Plan. Six (6) of these basins are on-site basins totaling 36.29 cfs and Five (5) off-site basins totaling 7.32 cfs for a combined total of 43.61 cfs.

In regards to the on-site basins, the site is divided into Six (6) Sub-Basins with Sub-Basins 1 - 3 sheet flowing to the AMAFCA Detention Pond. The AMAFCA detention pond is itself defined as Basin 5. Basin 4, which is mostly comprised of the Archeological site, also sheet flows into the Corrales Main Canal. It should be noted that in the original Drainage Report for "Tract 14A and 14B Black Ranch" dated October 2003 the flow from the Archeological site was attributed to the AMAFCA pond in error. The total developed discharge into the pond from all six on site basins is 36.29 cfs. Additionally In the above referenced drainage report The on-site AMAFCA Pond is shown to have a total volume of 3.3770 acre-feet | 187,308 ft^3

Since the approval of the Cottonwood Crossing Major Site Plan and associated Drainage Report for "Tract 14A and 14B Black Ranch" there have been a number of parcels within the Major Site Plan that had been developed without an update to the Major Site Plan or the above referenced Drainage Report. As noted in Section 3 of this report, the newly developed uses are as follows.

- Commercial Services (Nusenda Bank)
    - Overall Grading Plan shows that Off-Site Basin #5 from *DR Tract 14A and 14B Black Ranch* now sheet flows north and eventually sheet flows into Corrales Main Canal.
    - Remaining on-site flows sheet flow to the AMAFCA Pond.
- Fast Food Restaurant (Popeye's)
    - On-site flows sheet flow to AMAFCA Pond
- Car Wash (Take 5)
    - On-site flows sheet flow to AMAFCA Pond

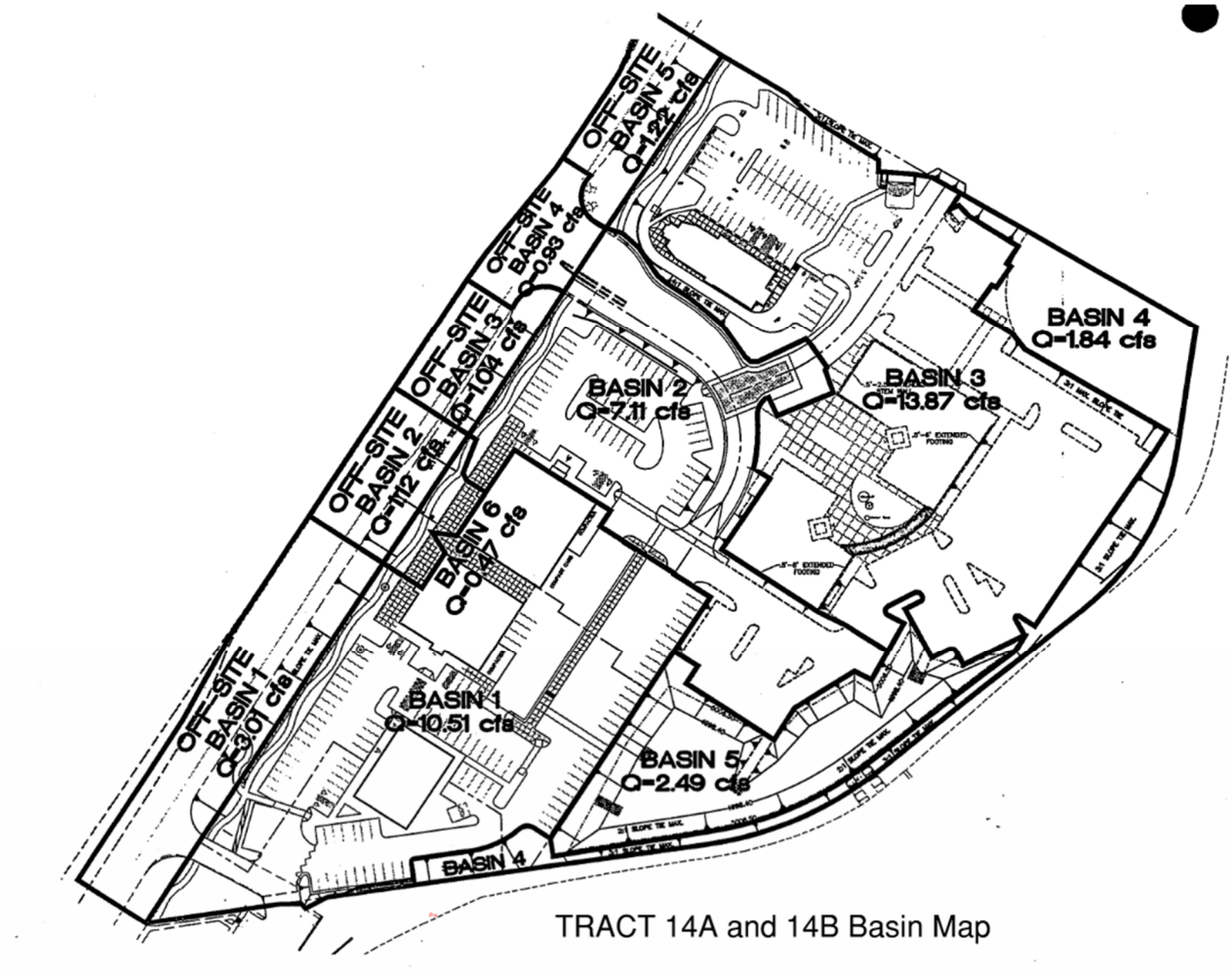


Figure 4: Tract 14A & 14B Basin Map from Original Drainage Report

10. Developed Conditions

The proposed project is a mixed-use development that will be comprised of 3 commercial spaces and 14 townhomes. In relation to Coors Boulevard the 3 proposed commercial spaces are situated approximately 250'-300' from Coors with 3 existing commercial uses between the site and Coors. The existing buildings west of the proposed development include a fast food drive through, a carwash facility, and credit union with drive through. The new uses to be developed are commercial office, restaurant, cannabis retail and residential town home lots that will include paved roads, curbs, and sidewalks within the Cottonwood Crossings Major Site Plan.

10.1. Basins

Within the recently updated and amended Major Site Plan that reflects recently developed projects and resulting changes to the basins there are now (16) Sixteen total basins within the major site plan boundary (5) five of which are off-site basins with (11) on-site basins. (Reference Basin map in Appendices or Drawing Set)

In regards to the AMAFCA ponding facility, (4) off-site basins and (8) on-site basins are contributing storm water runoff into the facility in the amounts of 6.41 CFS and 30.57 CFS as can be references in Table 1 below. Of the remaining (4) basins 6.41 CFS sheet flow into the Corrales Main Canal via other routes.

It should be noted that the Basin associated with the archeological site as well as the basin comprised of the AMAFCA Access easement along the canal were both removed from the developed conditions that contribute to the pond as the site sheet flows into the Corrales Main Canal. This results in overall less drainage area being directed to the AMAFCA Pond than identified in the previous study.

The on-site basins were figured to have 85% land Treatment D and 15% land Treatment B in line with City of Albuquerque IDO requirements. Note that Basin #9 the AMAFCA Pond was figured at 100% Treatment D to account for the Shotcrete impervious materials. For the (8) Eight on-site basins the resulting developed discharge was calculated to be 30.57 cfs which is 5.72 CFS below the 36.29 CFS originally designed for and approved in the Drainage Report for "Tract 14A and 14B Black Ranch"

Table 1: On-Site Developed Weighted E Table

DPM Weighted E Method
Precipitation Zone 1
COORS BLVD NW
RETAIL @ 7BAR
TWLLC **Date:** **09/25/2024**
Reference Document **DPM dated 09/2020**

Existing Contributing Off-Site Basins

Basin Descriptions													100-Year Excess Precipitation			10-Year Excess Precipitation		
Basin ID	Descriptor	Area (sf)	Area (acres)	Area (sq miles)	Treatment A %	Treatment A (acres)	Treatment B %	Treatment B (acres)	Treatment C %	Treatment C (acres)	Treatment D %	Treatment D (acres)	Weighted E (in)	Volume (ac-ft)	Flow cfs	Weighted E (in)	Volume (ac-ft)	Flow cfs
OFF-SITE BASIN #1	Coors Blvd	33,734.50	0.774	0.00121	0%	0.00	0%	0.00	0%	0.00	100%	0.77	2.24	0.14	3.19	1.43	0.09	1.99
OFF-SITE BASIN #2	Coors Blvd	15,064.40	0.346	0.00054	0%	0.00	0%	0.00	0%	0.00	100%	0.35	2.24	0.06	1.42	1.43	0.04	0.89
OFF-SITE BASIN #3	Coors Blvd	11,158.80	0.256	0.00040	0%	0.00	0%	0.00	0%	0.00	100%	0.26	2.24	0.05	1.06	1.43	0.03	0.66
OFF-SITE BASIN #4	Coors Blvd	7,793.50	0.179	0.00028	0%	0.00	0%	0.00	0%	0.00	100%	0.18	2.24	0.03	0.74	1.43	0.02	0.46
Total		**67,751.20**	**1.555**	**0.00243**		**0.00**		**0.00**		**0.00**		**1.56**	**V_{360} =**	**0.29**	**6.41**		**0.19**	**4.00**

Proposed Conditions - Updated Major Site Plan - Contributing

Basin Descriptions													100-Year Excess Precipitation			10-Year Excess Precipitation		
Basin ID	Descriptor	Area (sf)	Area (acres)	Area (sq miles)	Treatment A %	Treatment A (acres)	Treatment B %	Treatment B (acres)	Treatment C %	Treatment C (acres)	Treatment D %	Treatment D (acres)	Weighted E (in)	Volume (ac-ft)	Flow cfs	Weighted E (in)	Volume (ac-ft)	Flow cfs
BASIN #1	Undeveloped	101,659.50	2.334	0.00365	0%	0.00	15%	0.35	0%	0.00	85%	1.98	2.01	0.39	8.93	1.25	0.24	5.38
BASIN #2	Popeyes	25,915.70	0.595	0.00093	0%	0.00	15%	0.09	0%	0.00	85%	0.51	2.01	0.10	2.28	1.25	0.06	1.37
BASIN #3	Take 5	34,146.13	0.784	0.00122	0%	0.00	15%	0.12	0%	0.00	85%	0.67	2.01	0.13	3.00	1.25	0.08	1.81
BASIN #4	Nusenda	60,271.00	1.384	0.00216	0%	0.00	15%	0.21	0%	0.00	85%	1.18	2.01	0.23	5.29	1.25	0.14	3.19
BASIN #5	7 Bar - B, C, TH 8-14	68,859.35	1.581	0.00247	0%	0.00	15%	0.24	0%	0.00	85%	1.34	2.01	0.27	6.05	1.25	0.17	3.65
BASIN #6	7 Bar - Upper Inlet	8,742.27	0.201	0.00031	0%	0.00	15%	0.03	0%	0.00	85%	0.17	2.01	0.03	0.77	1.25	0.02	0.46
BASIN #7	Building A, TH 1-7	12,726.87	0.292	0.00046	0%	0.00	15%	0.04	0%	0.00	85%	0.25	2.01	0.05	1.12	1.25	0.03	0.67
BASIN #9	AMAFCA Pond	33,203.30	0.762	0.00119	0%	0.00	0%	0.00	0%	0.00	100%	0.76	2.24	0.14	3.14	1.43	0.09	1.96
Total		**345,524.12**	**7.932**	**0.01239**		**0.00**		**1.08**		**0.00**		**6.86**	**V_{360} =**	**1.35**	**30.57**		**0.84**	**18.49**

Non-contributing Basins (Sheet flow to Corrales Main Canal or Retained On-Site)

Basin Descriptions													100-Year Excess Precipitation			10-Year Excess Precipitation		
Basin ID	Descriptor	Area (sf)	Area (acres)	Area (sq miles)	Treatment A %	Treatment A (acres)	Treatment B %	Treatment B (acres)	Treatment C %	Treatment C (acres)	Treatment D %	Treatment D (acres)	Weighted E (in)	Volume (ac-ft)	Flow cfs	Weighted E (in)	Volume (ac-ft)	Flow cfs
OFF-SITE BASIN #5	*Coors Blvd*	14,353.10	0.330	0.00051	0%	0.00	0%	0.00	0%	0.00	100%	0.33	2.24	0.06	1.36	1.43	0.04	0.85
BASIN #8	*NR-PO-B*	18,807.10	0.432	0.00067	0%	0.00	100%	0.43	0%	0.00	0%	0.00	0.73	0.03	0.93	0.26	0.01	0.35
Access Easement Basins	*Access Easement Basins*	3,940.00	0.090	0.00014	0%	0.00	0%	0.00	100%	0.09	0%	0.00	0.95	0.01	0.26	0.43	0.00	0.13
Basin #11	*TH Backyards*	11,121.00	0.255	0.00040	0%	0.00	100%	0.26	0%	0.00	0%	0.00	0.73	0.02	0.55	0.26	0.01	0.21
Total		**48,221.20**	**1.107**	**0.00173**		**0.00**		**0.69**		**0.09**		**0.33**	**V_{360} =**	**0.11**	**3.10**		**0.06**	**1.54**

10.2. Pond Volume Comparison

Page 15 of the Drainage Report titled *Tract 14A and 14B Black Ranch* dated October 2023 shows the previous Weighted E Method table for the site post development and the resulting calculated Volume (V_{360}) as a result of both the 100-yr event and the 10-year event for the previously approved Site Plan. The existing off-site basins were shown to contribute volumes of 0.27 ac-ft and 0.16 ac-ft for the 100-yr and 10-yr event respectively. The Developed On-Site Sub-Basins, including the sidewalk culvert basins, were shown to contribute 1.43 ac-ft and 0.85 ac-ft for the 100-yr and 10-yr event respectively. In total the contributing flows resulted in a Volume of 1.69 ac-ft for the 100-yr event and 1.01 ac-ft for the 10-yr event.

The updated Weighted E Method table developed for the new site plan (reference Table 1) shows that the existing off-site basins will contribute volumes of 0.29 ac-ft and 0.19 ac-ft for the 100-yr and 10-yr event respectively. The new Developed On-Site Sub-Basins are shown to contribute 1.35 ac-ft and 0.84 ac-ft for the 100-yr and 10-yr event respectively. In total the contributing flows resulted in a Volume of 1.64 ac-ft for the 100-yr event and 1.03 ac-ft for the 10-yr event.

In Summary and as shown in Table 2 below the 100-yr volume from the proposed site plan is shown to have an overall decrease of .05 ac-feet and therefore does not adversely impact the designed storage capacity of the existing AMAFCA facility.

Table 2 - Volume Comparison from Previously Approved Drainage Report

	Contributing Volume Comparison			
	New - 7 Bar	Old - Cottonwood	New - 7 Bar	Old - Cottonwood
Basins	**100-yr**		**10-yr**	
Off Site Contributing (ac-ft)	0.29	0.27	0.19	0.16
On-Site Contributing (ac-ft)	1.35	1.43	0.84	0.85
	1.64	**1.69**	**1.03**	**1.01**

10.3. Backyard Ponding

Due to AMAFCA's direction that requires that the fenced in portion of the Private TH's not to drain into the access easement and drainage canal, individual backyard detention ponds have been sized to account for and hold the precipitation for a 100yr-10day rain event. The SF of the Backyard area and the pond depth required to accommodate this precipitation amount is shown in **Table 3 - Backyard Pond Size Tables**

below. The grading and drainage plan submitted with this narrative reflects backyard ponds with these minimum storage amounts accounted for in the grading and drainage of the properties.

Table 3 - Backyard Pond Size Tables

DPM		
100yr |10day		
Rainfall	3.9	in
	0.325	ft

	Backyard Ponding Requirements				
Townhome	Drainage Area (SF)	Total Volume (CF)	Ponding Area (SF)	Reqd Depth (FT)	Reqd. Depth (in)
TH1	384.4	124.9	384.4	0.3	3.9
TH2	393.4	127.9	393.4	0.3	3.9
TH3	393.4	127.9	393.4	0.3	3.9
TH4	370.6	120.4	370.6	0.3	3.9
TH5	330.7	107.5	330.7	0.3	3.9
TH6	280.1	91.0	280.1	0.3	3.9
TH7	131.3	42.7	131.3	0.3	3.9
TH8	300.6	97.7	300.6	0.3	3.9
TH9	459.2	149.2	459.2	0.3	3.9
TH10	378.7	123.1	378.7	0.3	3.9
TH11	715.5	232.5	715.5	0.3	3.9
TH12	811.8	263.8	811.8	0.3	3.9
TH13	666.9	216.7	666.9	0.3	3.9
TH14	474.5	154.2	474.5	0.3	3.9
Totals	6,091.10	1,979.61	6,091.10		

10.4. Street Hydraulics

For the analysis of Street Hydraulic Design the program Flow Master by Bentley was used and the most conservative street cross sections were used to show compliance with DPM section 6-9(A) Street Hydraulic Design Criteria;

- The calculated hydraulic grade line (HGL) for the 100-year design storm discharge may not exceed curb height.
    - Note that for a sump condition, which is present on the site, the HGL for the 100-year storm may extend to the street ROW.
- The calculated energy grade line (EGL) shall be contained within the street ROW.
- The product of depth x velocity shall not exceed 6.5 in any location in any street in the event of a 10-year design storm.

The design of the site has 3 unique conditions (See Figure 5 below) in which the analysis was performed in accordance with the requirements of section 6-9(A)

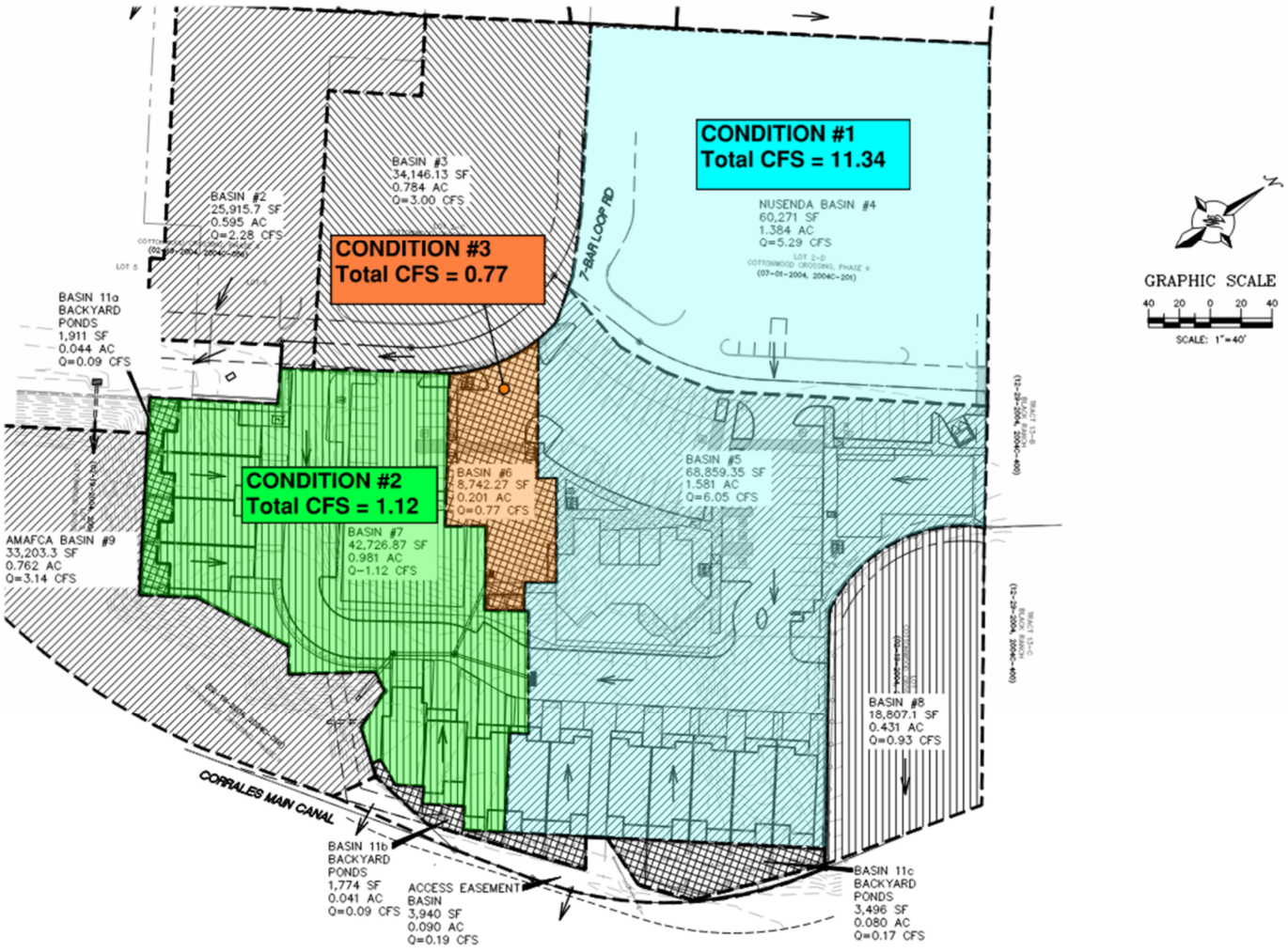


Figure 5 - Street Hydraulic Conditions

Condition #1 – Basins 4 & 5

In this condition Basin #4 (Nusenda Basin) sheet flows through and combines with proposed Basin #5. The combined 100-yr Q of these two basins is 11.34 CFS. The cross section 1 shown below occurs just upstream from the inlet and is where the greatest flow would occur. The analysis in flow master shows the following;

- 100-yr HGL: 3.4in | .28 ft
- 100-yr EGL: 6.0in | .50 ft
- Depth x velocity: | 3.75ft/s x .22ft = 0.825 < 6.5 **OK**

Cross Section for Condition - 1

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data	
Channel Slope	0.025 ft/ft
Normal Depth	3.4 in
Discharge	11.34 cfs

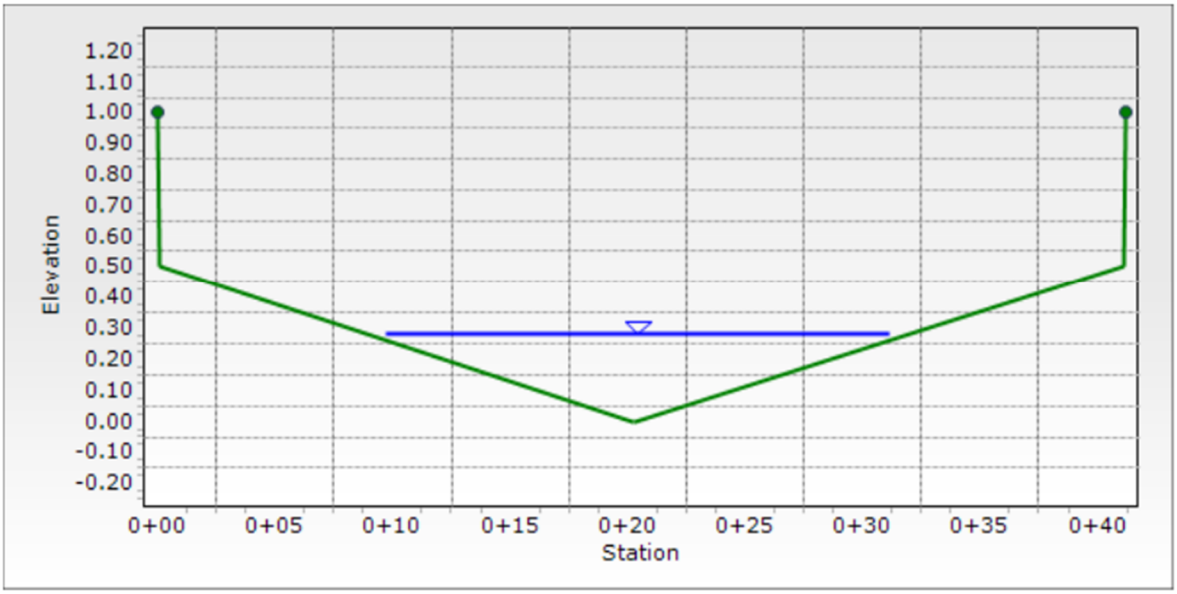


Figure 6 - Street Cross Section and Flow Master Results – Cross Section 1

Condition #2 – Basin #7

In this condition Basin #7 sheet flows through the parking lot and roadway to the drainage inlet. The 100-yr Q of this basins is 1.12 CFS. The cross section shown below occurs just upstream from the inlet and is where the greatest flow would occur. The analysis in flow master shows the following in compliance with 6-9(A);

- 100-yr HGL: 1.3 in | .11 ft
- 100-yr EGL: 2.0 in| 0.17 ft
- Depth x velocity: 1.99 ft/s x .11ft = .22 < 6.5 **OK**

Cross Section for Condition - 2

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data	
Channel Slope	0.025 ft/ft
Normal Depth	1.3 in
Discharge	1.12 cfs

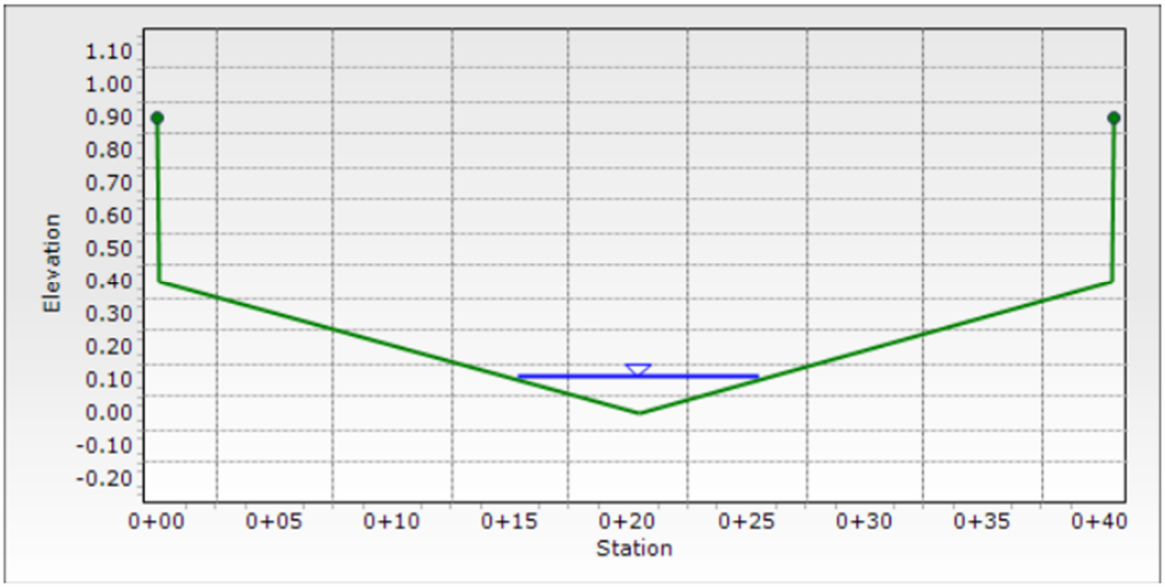


Figure 7 Street Cross Section and Flow Master Results – Cross Section 2

Condition #3 – Basin #6

In this condition Basin #6 sheet flows through the parking lot and drive aisle to the drainage inlet. The 100-yr Q of this basins is 0.77 CFS. The cross section shown below occurs just upstream from the inlet and is where the greatest flow would occur. The analysis in flow master shows the following in compliance with 6-9(A);

- 100-yr HGL: 1.1in | 0.1 ft
- 100-yr EGL: 1.92in | 0.16ft
- Depth x velocity: 2.18 ft/s x 0.1ft = .22 < 6.5 **OK**

Cross Section for Condition - 3

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data	
Channel Slope	0.040 ft/ft
Normal Depth	1.1 in
Discharge	0.77 cfs

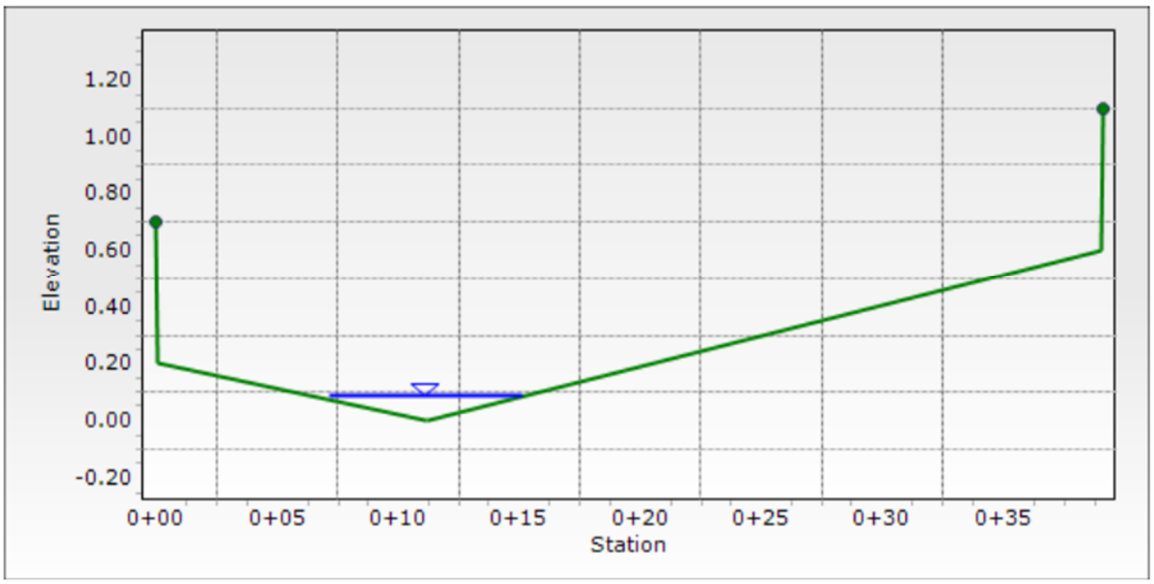


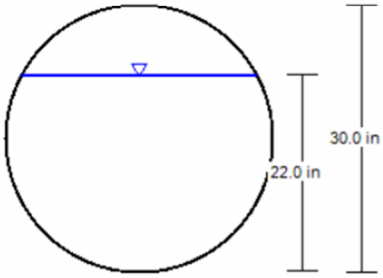
Figure 8 - Street Cross Section and Flow Master Results – Cross Section 3

10.5. Pipe Calculations

Cross Section for STRM01-01(30)

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data	
Roughness Coefficient	0.017
Channel Slope	0.002 ft/ft
Normal Depth	22.0 in
Diameter	30.0 in
Discharge	12.46 cfs

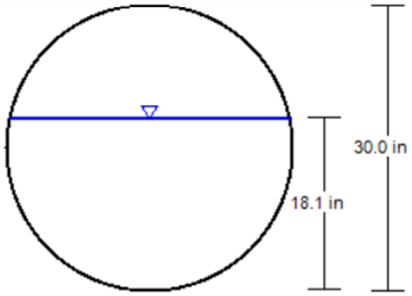


V: 1
H: 1

Cross Section for STRM01-02(30)

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data	
Roughness Coefficient	0.017
Channel Slope	0.004 ft/ft
Normal Depth	18.1 in
Diameter	30.0 in
Discharge	13.23 cfs

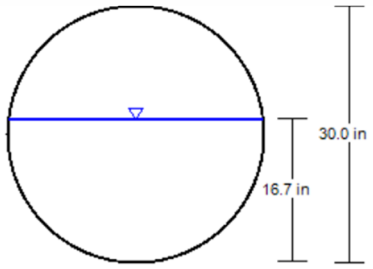


V: 1
H: 1

Cross Section for STRM01-03(30)

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data	
Roughness Coefficient	0.017
Channel Slope	0.005 ft/ft
Normal Depth	16.7 in
Diameter	30.0 in
Discharge	13.23 cfs

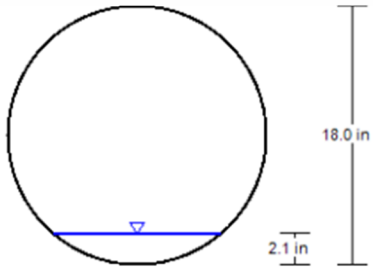


V: 1
H: 1

Cross Section for STRM-LAT

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data	
Roughness Coefficient	0.017
Channel Slope	0.106 ft/ft
Normal Depth	2.1 in
Diameter	18.0 in
Discharge	0.77 cfs



V: 1
H: 1

10.6. Inlets

Sheet flows will be captured via Type D – inlets at (2) locations. The first location of the drop inlets are located in Basin 6 and receives 0.77 cfs.

The second location straddles Basin #7 and Basin #5 where the inlets will receive a combined 12.46 cfs. We propose to place (2) Type D- Double D inlets such that the normal depth of .28 feet or 3.4 in shown in section *10.4 Street Hydraulics* results in a total flow capacity of 38.13 CFS. This is approximately 2.8x over-sized to the 100-year flow and meets the requirement of DPM 6-9(F)(4) 1b in which inlets in a sump condition can be doubled to act as an emergency overflow when grading configuration limit overflow discharge options.

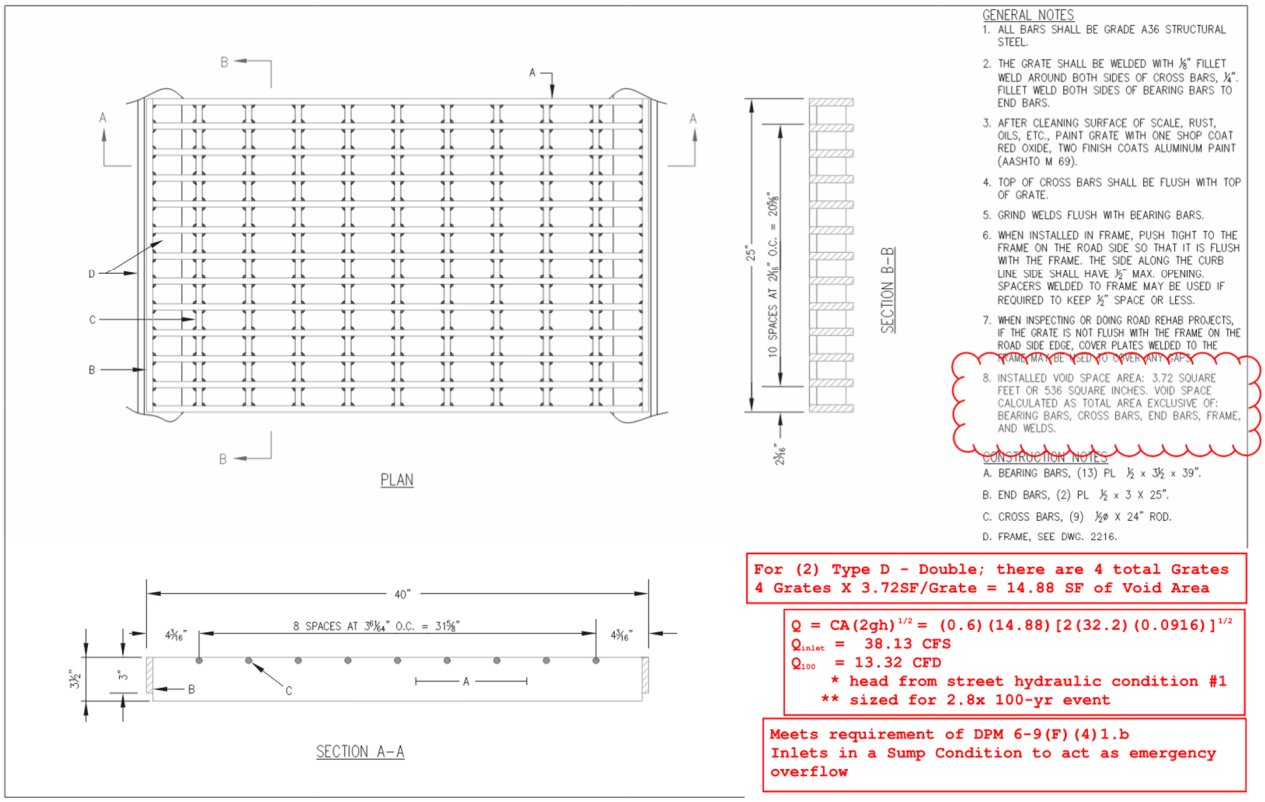


Figure 9 – COA Type D Grate Detail and Q calculation

10.7. Orifice

The storm drain system will convey flows to the AMAFCA pond from the inlets via 30" RCP pipe to a common point and then routed to the AMAFCA pond. The configuration of which can be referenced in the Grading and Drainage plan for the project, note that AMAFCA approved penetration details have

been used in the documents for outlet into the pond. The outlet into the pond has been sized to 30" via the previously provided SD hydraulic analysis above and via the Orifice equation as shown below referenced in the DPM Part 6-16(B). The Orifice flow capacity is shown to be 37.59 CFS, which is approximately 7.02 CFS in excess capacity of the 30.57 cfs generated by the proposed development.

Top of Inlet	5014.1	ft
Orrafice Center Elevation	5011.85	ft
Street Hydraulic Head	0.28	ft
Diameter	2.5	ft
A =	4.90874	ft^2
h =	2.53	ft
C =	0.6	
g =	32.2	
Q =	37.5945	

EQUATION 6.65 $\mathbf{Q} = CA(2gh)^{1/2}$

where:

Q = Discharge in cfs

C = Discharge coefficient use 0.6. If a discharge coefficient other than 0.6 is to be used, provide justification in the drainage submittal.

A = Area of opening in square feet

g = 32.2 ft/sec^2

h = Depth of water measured from the center of the opening

11. Stormwater Quality

The U.S. Environmental Protection Agency (EPA) Report, Estimating Predevelopment Hydrology in the Middle Rio Grande Watershed, New Mexico, TetraTech, April 2014, EPA Publication Number 832R-14-007, yields runoff values of 0.42 inches for the 90th percentile storm. To calculate the required stormwater quality volume (SWQV), we multiply the impervious area by 0.42 inches for new development sites. A summary table of the calculations is provided in Appendix B.

For this project we are seeking cash in-lieu to account for the SWQ treatment. There are numerous constraints on the site that are not typical of other lots seeking to build a mixed use development that hinder the ability to install a storm water quality treatment facility. These constraints include but are not limited to;

- Irregular lot geometries and reduced buildable areas as a result of
  - Irregular property line created by the adjacent AMAFCA Pond.
  - AMAFCA Access easement running through the eastern portion of the property.
  - PNM utility easement for 750 KV line running through the middle of the MX-T portion of the property and through the southern portion of the MX-L property.
  - MPOS buffer along the Northern portion of the property to protect the existing Archeological Site.

It is also worth noting that the existing pond is acting as a SWQ treatment facility for the flows that it receives.

Referencing the Proposed Conditions portion of the Weighted E table (Table 1) from section 10.1 in this report, it has been shown that the total new impervious area as a result of the new development (Basins

5, 6, and 7) is 1.76 acres. Using the DPM requirement of 0.42in of rainfall to account for the Storm Water Quality Volume of a new development, the resulting volume is 2,687.3 CF or 0.06 Acre-Feet.

Table 4 - SWQV Table

Stormwater Qaulity Volume					
Acres	SF	Rainfall (in)	Rainfall (ft)	SWQV (CF)	SWQV (Acre-Ft)
1.76	76,779.22	0.42	0.035	2,687.3	0.06

Per the DPM Section 6-12(C)(1) **Payment-in-lieu** The amount of payment in lieu for this project is $8/cubic-ft of impervious. The total calculated amount for this project is $21,498.00. The approved SWQV waiver can be found in the appendices.

12. Conclusion

This Drainage Report confirms that the 7 Bar Retail development aligns effectively with the existing drainage infrastructure, directing flows to the AMAFCA pond at 30.57 cfs—5.72 cfs below the originally approved 36.29 cfs. The storm drain (SD) system, featuring a 30" RCP pipe and orifice, provides a capacity of 37.59 cfs, exceeding the development's needs by 7.02 cfs, ensuring robust conveyance to the pond.

Street hydraulics analysis, conducted using Flow Master, demonstrates compliance with the City of Albuquerque's Development Process Manual, with hydraulic grade lines below curb height, energy grade lines within the right-of-way, and depth-velocity products well under 6.5 for the 10-year storm across all evaluated sections. The report also verifies a 0.05 acre-foot reduction in 100-year storm volume, negating the need for additional retention facilities.

Due to site constraints—such as irregular lot geometries, utility easements, and proximity to the AMAFCA pond—stormwater quality treatment is addressed through a $21,498 fee-in-lieu payment, calculated at $8 per cubic foot for 2,687.3 cubic feet of impervious area runoff, as approved by the City. By adhering to the Weighted E methodology and City standards, this project ensures sustainable stormwater management without surpassing prior discharge limits, facilitating responsible development within the Cottonwood Crossings Major Site Plan.

APPENDIX A

DRAINAGE REPORT
FOR

Tract 14A and 14B
Black Ranch

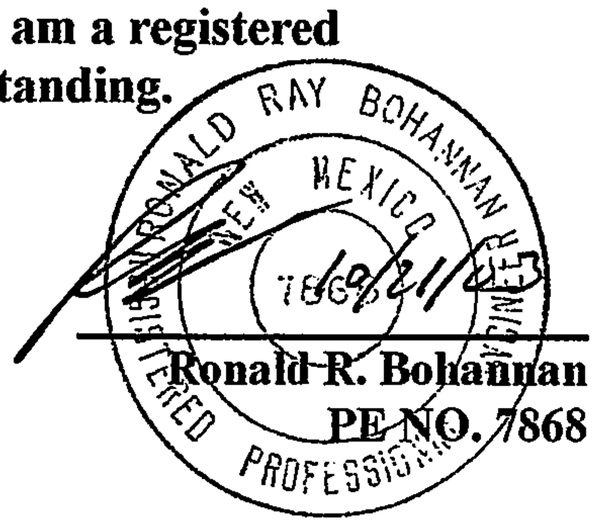
Prepared by:

Tierra West, LLC
8509 Jefferson NE
Albuquerque, New Mexico 87113

Prepared for:
John Black

October, 2003

I certify that this report was prepared under my supervision, and I am a registered professional engineer in the State of New Mexico in good standing.



Ronald R. Bohannan
PE NO. 7868

Job No 220097

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Section I

Report

Prelude

This report is being prepared at the request of the current owner, John Black, who proposes to develop a small commercial center containing three restaurants and three office buildings.

Location

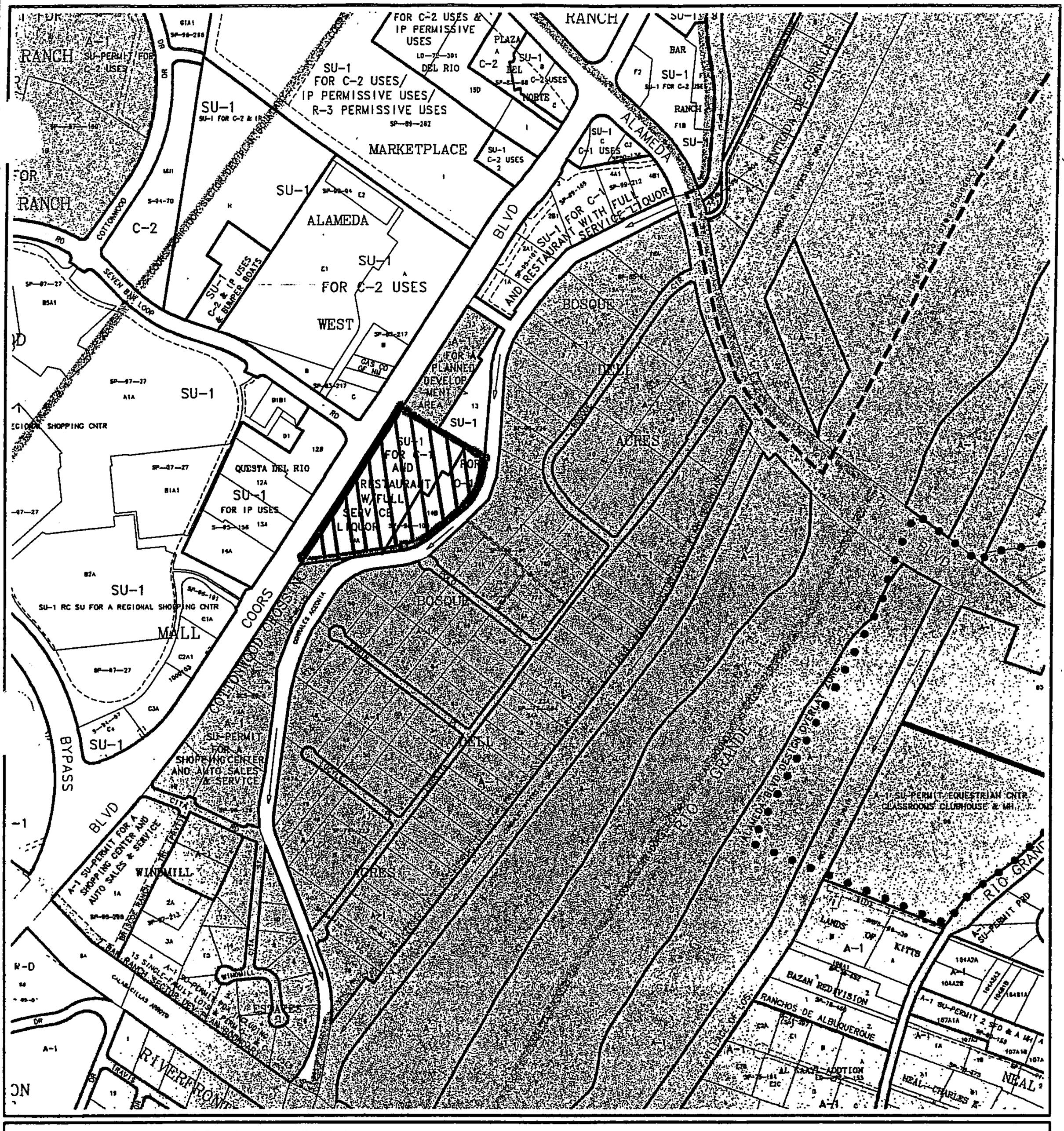
The subject site is located just east of the intersection of Coors Road NW and Seven Bar Loop in Northwest Albuquerque and consists of Tract 14-A and 14-B, Black Ranch. The exact location of the site is shown highlighted on the enclosed Zone Atlas page number B-14. The site will be built in one phase and contains 9.40 acres more or less.

Purpose

The purpose of this drainage report is to present a final grading and drainage solution for the proposed commercial center as well as deal with the off-site flows entering the site. The current pond is detention and is limiting the discharge. This report will also seek to discharge more flows into the Corrales Main Canal to the design capacity of that facility there by reducing the existing detention pond.

Existing Drainage Conditions

The site is currently undeveloped and existed, in the past, as a dairy farm with corrals and barns. Also, a portion of Tract 14 A and B consists of an archeological site believed to be an ancient pueblo.


RANCH
A-1
SU-PERMIT FOR C-2 USES
SU-1
FOR C-2 USES/
IP PERMISSIVE USES/
R-3 PERMISSIVE USES
SP-89-282
MARKETPLACE
FOR C-2 USES & IP PERMISSIVE USES
DEL RIO
PLAZA
C-2
SU-1
DEL NORTE
C-2 USES
SU-1
C-1 USES
SU-1
FOR C-1 AND RESTAURANT WITH FULL SERVICE LIQUOR
BAR
SU-1
SU-1 FOR C-2
RANCH
ALAMEDA
ENTRADA DE CORRALES
COTTONWOOD
C-2
SU-1
ALAMEDA
FOR C-2 USES
WEST
SEVEN BAR LOOP
SU-1
C-2 & IP USES & BUMPER BOATS
SU-1
SU-1 RC SU FOR A REGIONAL SHOPPING CNTR
MALL
SU-1
FOR A PLANNED DEVELOPMENT AREA
SU-1
FOR C-1 AND RESTAURANT W/FULL SERVICE LIQUOR
SU-1
FOR IP USES
QUESTA DEL RIO
BOSQUE
ACRES
COORS
BLVD
BYPASS
A-1 SU-PERMIT FOR SHOPPING CENTER AND AUTO SALES & SERVICE
A-1 SU-PERMIT FOR A SHOPPING CENTER AND AUTO SALES & SERVICE
WINDMILL
ESTATES
RIVERFRONT
A-1 SU-PERMIT EQUESTRIAN CNTR, CLASSROOMS CLUBHOUSE & MH
RIO GRANDE
BAZAN REDIVISION
RANCHOS DE ALBUQUERQUE
A-1 SU-PERMIT 2 SFD & A MH
LANDS OF KITTS
A-1
AL KAUL ADDITION
NEAL
NEAL CHARLES R.
A-1 SU-PERMIT PRD
Interstate 40
Interstate 25
River
NOTE: GREY SHADING REPRESENTS AREA OUTSIDE OF THE CITY LIMITS
CITY OF Albuquerque
Albuquerque Geographic Information System
PLANNING DEPARTMENT
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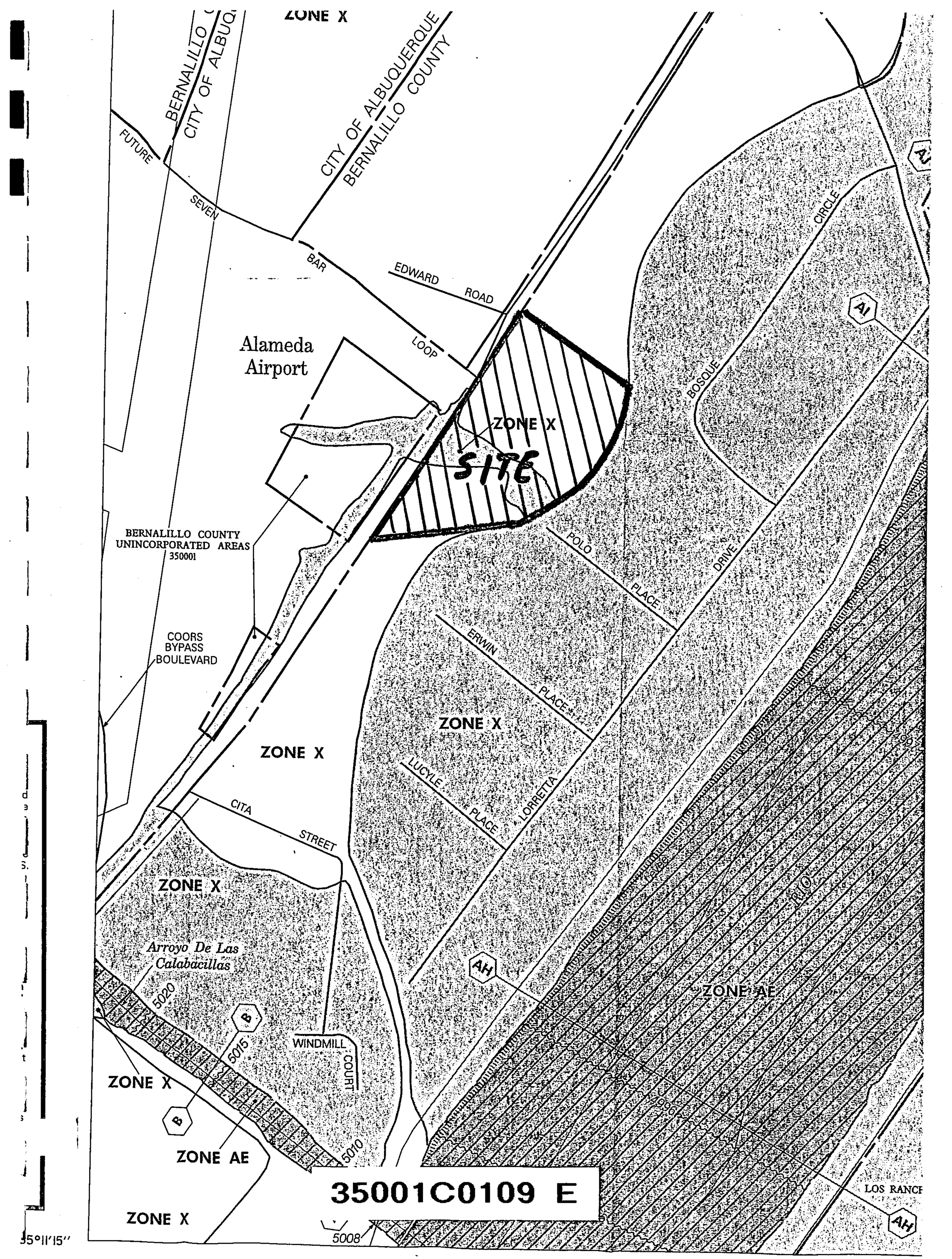
GRAPHIC SCALE IN FEET
250 0 750 1000
Zone Atlas Page
B-14-Z
Map Amended through July 27, 2000


ZONE X
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CITY OF ALBUQUERQUE
CITY OF ALBUQUERQUE
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FUTURE
SEVEN
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EDWARD
ROAD
LOOP
Alameda
Airport
ZONE X
SITE
BERNALILLO COUNTY
UNINCORPORATED AREAS
350001
COORS
BYPASS
BOULEVARD
ZONE X
CITA
STREET
ZONE X
Arroyo De Las
Calabacillas
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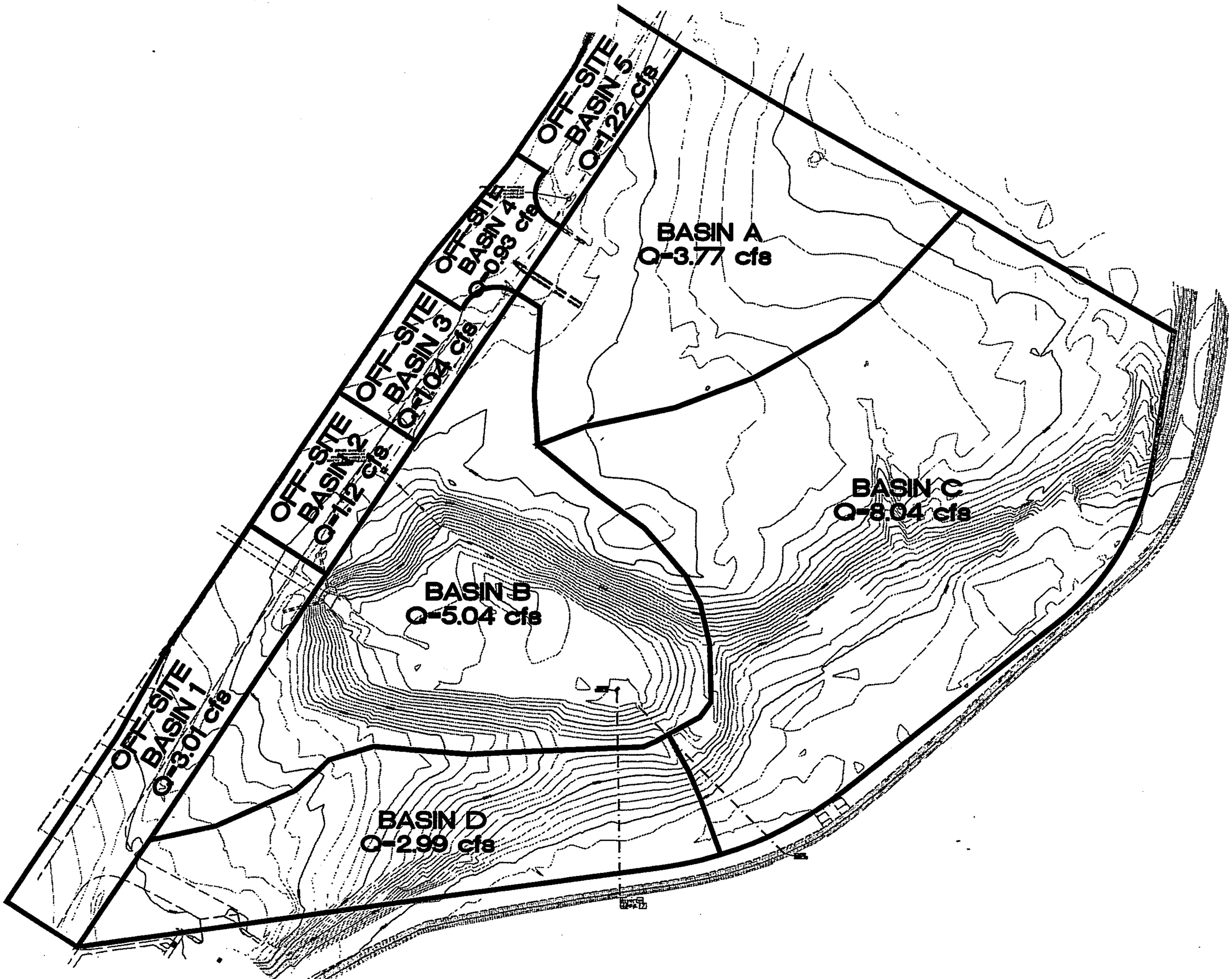


EXISTING BASIN MAP

The site currently receives storm runoff from four off-site areas through various storm sewer pipes ranging in size from 18 inches to 60 inches. The offsite drainage area consists of fourteen (14) sub-basins as outlined in the Alameda West Shopping Center Drainage Report, the Questa Del Rio Drainage Management Plan and the North Coors Drainage Management Plan. Exhibits 1 and 2 in Appendix C delineate these basins. All of the flows from the off-site drainage area are subsequently routed to a detention pond on Tract 14 via a storm sewer system. Nearly half of the off-site flows are collected in a detention pond located in the Alameda West Shopping Center where it is released into the existing storm sewer system at a controlled flow rate of 42.14 cfs. This flow then combines with the peak flow of 66.14 cfs generated by Questa Del Rio and the adjacent sub-basins. The combined peak flow is then routed to Tract 14 for a resulting flow of 103.59 cfs. These flow are then contained in a detention pond where the outflow is controlled to release 14 cfs into the Corrales Main Canal. The size of the existing pond is approximately 4.3 acre-feet.

The on-site drainage area consists of Tract 14 with most of the tract sheet flowing into the Corrales Main Canal and the rest draining to the existing pond.

Flood Plain

The site is located on FEMA Map 35001C0109 E as shown on the attached excerpt. The map shows that the site lies in a Zone X shaded area which is defined as areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood. However, the flows that dictate this area are now contained in a pipe and distributed to a new detention pond located on the east side of the property. A LOMR will be completed to revise the flood plain.

Proposed Conditions and On-Site Drainage Management Plan

The original detention pond on Tract 14 was required to release only 14 cfs into the canal based on calculations provided in the North Coors Drainage Management Plan (NCDMP) revised September 11, 1992 by Wilson & Co. However, this report will demonstrate that the original drainage solutions changed allowing for a greater discharge rate from Tract 14.

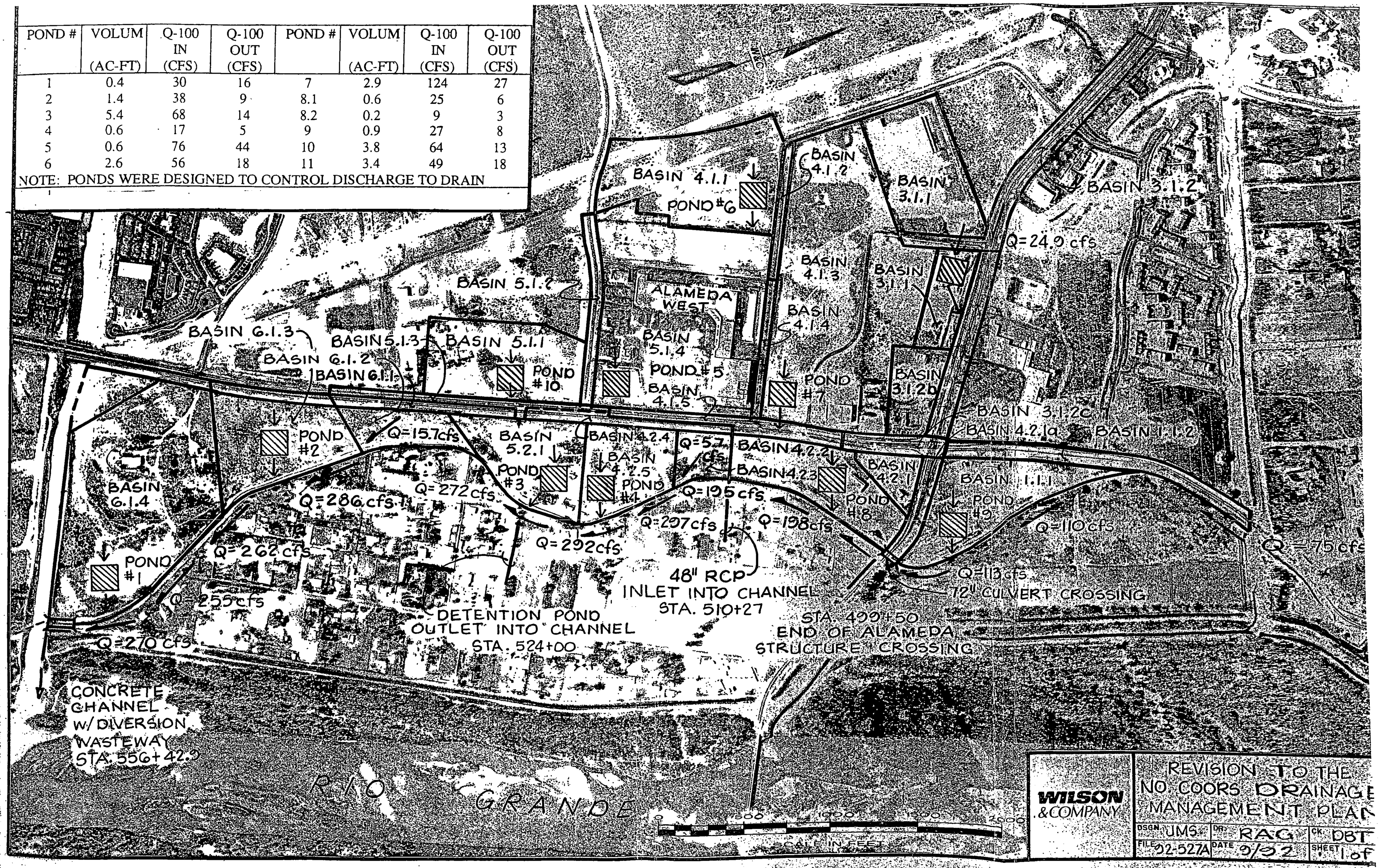
The NCDMP analyzed all of the areas contributing storm runoff to the Corrales Main Canal and assigned developed land treatments of 15% land area "B" and 85% land area "D." Since the report was completed, several of the basins were developed and the individual drainage solutions are different than what was proposed in the North Coors Drainage Management Plan.

According to the NCDMP, Tract 14 falls with in Basin 5.2.1 as well as a portion (approximately one-third) of Basin 4.2.5 as shown on the attached exhibit. Basin 5.2.1 is allowed a discharge rate of 14 cfs while Basin 4.2.5 is allowed a discharge rate of 5 cfs. This combination should allow Tract 14 a combined discharge rate of 15.67 cfs.

Also, the NCDMP shows Basin 6.1.2 and Basin 6.1.3 were allowed to contribute a combined total of 24.7 cfs to the Corrales Main Canal. Basin 6.1.2 was allowed to freely discharge 15.4 cfs directly to the canal while Basin 6.1.3 was allowed to discharge 9 cfs to the canal by way of a detention pond. These basins consist of the Cottonwood Corners commercial center, which was constructed in 1997. According to the approved drainage report completed by Tierra West Development Management Services in January 1996, all of the flows from these basins were captured in a storm sewer and directed to the Calabacillas Arroyo. This would allow for 24.7 cfs assigned to the Corrales Main Canal to be released from another site up stream.

POND #	VOLUM (AC-FT)	Q-100 IN (CFS)	Q-100 OUT (CFS)	POND #	VOLUM (AC-FT)	Q-100 IN (CFS)	Q-100 OUT (CFS)
1	0.4	30	16	7	2.9	124	27
2	1.4	38	9	8.1	0.6	25	6
3	5.4	68	14	8.2	0.2	9	3
4	0.6	17	5	9	0.9	27	8
5	0.6	76	44	10	3.8	64	13
6	2.6	56	18	11	3.4	49	18

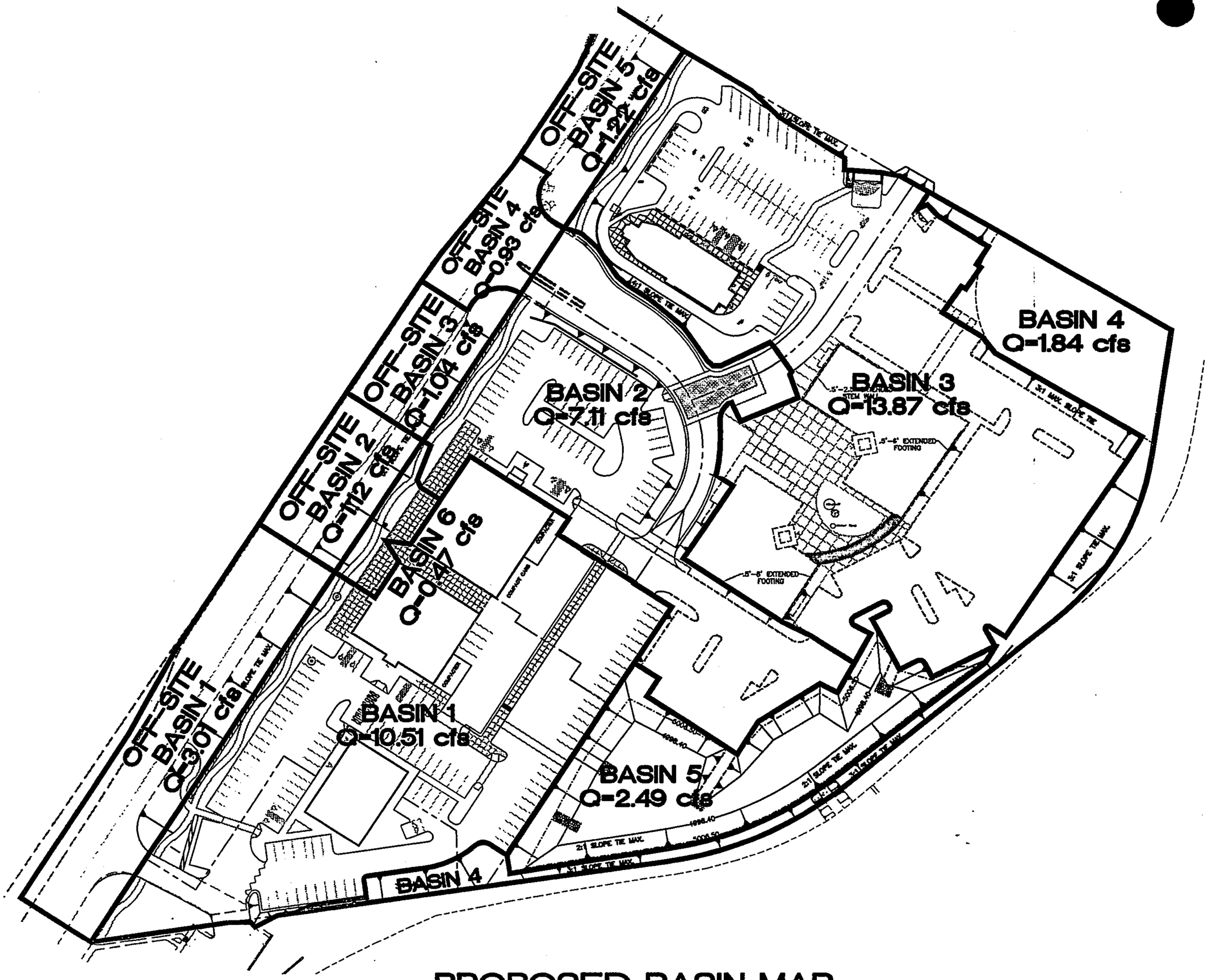
NOTE: PONDS WERE DESIGNED TO CONTROL DISCHARGE TO DRAIN



WILSON & COMPANY

REVISION TO THE NO COORS DRAINAGE MANAGEMENT PLAN

DSGN. UMS	DR. RAG	CK. DBT
FILE 92-527A	DATE 9/92	SHEET 1 of



PROPOSED BASIN MAP

With the assigned discharge of 15.67 cfs for Tract 14 and the 24.7 cfs from Basins 6.1.2 and 6.1.3 Tract 14 should be allowed to discharge 40.37 cfs. A check of the irrigation structure down stream of the site shows there is an additional capacity of 101.33 cfs available, far exceeding the additional 24.7 cfs proposed to pass through the structure. The additional 24.7 cfs only raises the flood elevation six inches.

There is currently an existing 30" RCP stubbed into Tract 14 from the Corrales Main Canal that has capacity for this amount of discharge. The existing canal will not need to be modified in any way to release a higher discharge from Tract 14.

The proposed site is divided into six basins with Basins 1-3 sheet flowing to the new detention pond, which consists of Basin 5. Basin 4 sheet flows into the Corrales Main Canal. A large portion of Basin 4 consists on an archeological site that will be left undisturbed from its present state. Basin 6 is a small Basin along Coors Boulevard that consists of a landscape area that will drain to an area drain and be routed through the storm sewer system to the retention pond. The total developed discharge into the pond from all six basins is 36.29 cfs.

The off-site flows will be collected into one storm sewer pipe and routed to the new detention pond. The new detention pond is sized to contain all of the off-site flows as well as the flows generated on site. The discharge to the Corrales Main Canal will be controlled to release at a rate of approximately 40.31 cfs.

Summary

There are six drainage basins for this tract with the storm runoff being directed to a detention pond on-site. The pond is sized to accept the on-site flows as well as the off-site flows and discharge at a rate of 40.31 cfs into the Corrales Main Canal. Based on the findings of this report

port, and the drainage reports mentioned previously, the pond on Tract 14 should be allowed an increased discharge rate from 14 cfs to 40.37 cfs.

Calculations

The weighted E method from the "City of Albuquerque Development Process Manual Volume 11 – Design Criteria, 1997 Revision" was used to calculate the runoff and volume for the site.

Section II

Runoff Calculations

Weigh E Method

Existing O.. ..e Basins

Basin	Area (sf)	Area (acres)	Treatment A		Treatment B		Treatment C		Treatment D		100-Year			10-Year		
			%	(acres)	%	(acres)	%	(acres)	%	(acres)	Weighted E (ac-ft)	Volume (ac-ft)	Flow cfs	Weighted E (ac-ft)	Volume (ac-ft)	Flow cfs
A	80,957	1.86	0%	0	100%	1.86	0%	0.00	0%	0.00	0.670	0.104	3.77	0.220	0.034	1.41
B	108,049	2.48	0%	0	100%	2.48	0%	0.00	0%	0.00	0.670	0.138	5.04	0.220	0.045	1.89
C	172,441	3.96	0%	0	100%	3.96	0%	0.00	0%	0.00	0.670	0.221	8.04	0.220	0.073	3.01
D	64,201	1.47	0%	0	100%	1.47	0%	0.00	0%	0.00	0.670	0.082	2.99	0.220	0.027	1.12
Total	425,648	9.77		0		9.77		0.00		0.00		0.546	19.84		0.179	7.43

Existing Off-Site Basins

Basin	Area (sf)	Area (acres)	Treatment A		Treatment B		Treatment C		Treatment D		100-Year			10-Year		
			%	(acres)	%	(acres)	%	(acres)	%	(acres)	Weighted E (ac-ft)	Volume (ac-ft)	Flow cfs	Weighted E (ac-ft)	Volume (ac-ft)	Flow cfs
1	33,559	0.77	0%	0	20%	0.15	0%	0.00	80%	0.62	1.710	0.110	3.01	1.036	0.067	1.90
2	12,478	0.29	0%	0	20%	0.06	0%	0.00	80%	0.23	1.710	0.041	1.12	1.036	0.025	0.71
3	11,646	0.27	0%	0	20%	0.05	0%	0.00	80%	0.21	1.710	0.038	1.04	1.036	0.023	0.66
4	9,287	0.21	0%	0	0%	0.00	0%	0.00	100%	0.21	1.970	0.035	0.93	1.240	0.022	0.62
5	13,614	0.31	0%	0	20%	0.06	0%	0.00	80%	0.25	1.710	0.045	1.22	1.036	0.027	0.77
Total	80,584	1.85		0		0.33		0.00		1.52		0.268	7.32		0.163	4.65

Developed On-Site Sub-Basins

Basin	Area (sf)	Area (acres)	Treatment A		Treatment B		Treatment C		Treatment D		100-Year			10-Year		
			%	(acres)	%	(acres)	%	(acres)	%	(acres)	Weighted E (ac-ft)	Volume (ac-ft)	Flow cfs	Weighted E (ac-ft)	Volume (ac-ft)	Flow cfs
1	113,877	2.61	0%	0	15%	0.39	0%	0.00	85%	2.22	1.775	0.387	10.51	1.087	0.237	6.72
2	77,101	1.77	0%	0	15%	0.27	0%	0.00	85%	1.50	1.775	0.262	7.11	1.087	0.160	4.55
3	150,335	3.45	0%	0	15%	0.52	0%	0.00	85%	2.93	1.775	0.510	13.87	1.087	0.313	8.87
4	39,456	0.91	0%	0	100%	0.91	0%	0.00	0%	0.00	0.670	0.051	1.84	0.220	0.017	0.69
5	39,676	0.91	0%	0	70%	0.64	0%	0.00	30%	0.27	1.060	0.080	2.49	0.526	0.040	1.27
6	5,103	0.12	0%	0	15%	0.02	0%	0.00	85%	0.10	1.775	0.017	0.47	1.087	0.011	0.30
Total	425,548	9.77		0		2.74		0.00		7.03		1.307	36.29		0.777	22.40

Developed On-Site Sidewalk Culvert Basin

Basin	Area (sf)	Area (acres)	Treatment A		Treatment B		Treatment C		Treatment D		100-Year			10-Year		
			%	(acres)	%	(acres)	%	(acres)	%	(acres)	Weighted E (ac-ft)	Volume (ac-ft)	Flow cfs	Weighted E (ac-ft)	Volume (ac-ft)	Flow cfs
SW	31,330	0.72	0%	0	0%	0.00	0%	0.00	100%	0.72	1.970	0.118	3.14	1.240	0.074	2.08

Equations:

Weighted E = Ea*Aa + Eb*Ab + Ec*Ac + Ed*Ad / (Total Area)

Volume = Weighted D * Total Area

Flow = Qa * Aa + Qb * Ab + Qc * Ac + Qd * Ad

Excess Precipitation, E (inches)		
Zone 1	100-Year	10 - Year
E_a	0.44	0.08
E_b	0.67	0.22
E_c	0.99	0.44
E_d	1.97	1.24

Peak Discharge (cfs/acre)		
Zone 1	100-Year	10 - Year
Q_a	1.29	0.24
Q_b	2.03	0.76
Q_c	2.87	1.49
Q_d	4.37	2.89

VOLUME CALCULATIONS
POND

Ab - Bottom Of The Pond Surface Area
At - Top Of The Pond Surface Area
D - Water Depth
Dt - Total Pond Depth
C - Change In Surface Area / Water Depth

Volume = $Ab * D + 0.5 * C * D^2$
C = (At - Ab) / Dt

Ab =	15,208.96
At =	30,100.00
Dt =	8.10
C =	1838.40

ACTUAL ELEV.	DEPTH (FT)	VOLUME (AC-FT)	Q (CFS)
5000.00	0.00	0.00	0.0000
5003.00	3.00	1.0474	21.3924
5004.00	4.00	1.4177	26.2002
5005.00	5.00	1.8302	30.2534
5006.00	6.00	2.2848	33.8243
5007.00	7.00	2.7817	37.0527
5008.10	8.10	3.3770	40.3063

Orifice Equation
Q = CA SQRT(2gH)

C =	0.6
Diameter (in)	24
Area (ft^2)=	3.142
g =	32.2
H (Ft) =	Depth of water above center of orifice
Q (CFS)=	Flow

```
**********************************************************************
*                                                                    *
*          TRACT 14 BLACK RANCH STORM DRAINAGE ANALYSIS              *
*                FOR ON-SITE DETENTION POND                          *
*             PROPOSED CONDITIONS (100-YEAR STORM)                   *
*                                                                    *
**********************************************************************
*
START                   TIME=0.0 HR
RAINFALL             -- --TYPE=1 RAIN QUARTER=0.0 IN
                        RAIN ONE=1.87 IN RAIN SIX=2.20 IN
                        RAIN DAY=0.00 IN DT=0.05 HR
*
**********************************************************************
*                          DEVELOPED CONDITION                       *
**********************************************************************
*
**********BASIN 4B ALAMEDA WEST*********************************
*
COMPUTE LT TP           LCODE=1  NK=0  ISLOPE=-1
                        LENGTH=750 FT        SLOPE=0.015      K=2.0
                        KN=0.033    CENTROID RATIO=0.50
COMPUTE NM HYD          ID=2  HYD NO=102 AREA=0.005359 SQ MI
                        PER A=0 PER B=15.00 PER C=0.00 PER D=85.00
                        TP=0 HR MASS RAINFALL=-1
PRINT HYD               ID=2  CODE=1
*
**********BASIN 4C ALAMEDA WEST*********************************
*
COMPUTE LT TP           LCODE=1     NK=0     ISLOPE=-1
                        LENGTH=950 FT        SLOPE=0.013      K=1.0
                        KN=0.033    CENTROID RATIO=0.50
COMPUTE NM HYD          ID=3  HYD NO=103 AREA=0.005359 SQ MI
                        PER A=0 PER B=15.00 PER C=0.00 PER D=85.00
                        TP=0 HR MASS RAINFALL=-1
PRINT HYD               ID=3  CODE=1
*
**********BASIN 4E ALAMEDA WEST*********************************
*
COMPUTE LT TP           LCODE=1     NK=0     ISLOPE=-1
                        LENGTH=385ft         SLOPE=0.028      K=3.0
                        KN=0.021    CENTROID RATIO=0.50
COMPUTE NM HYD          ID=4  HYD NO=104 AREA=0.001016 SQ MI
                        PER A=0 PER B=5.00 PER C=0.00 PER D=95.00
                        TP=0 HR MASS RAINFALL=-1
PRINT HYD               ID=4  CODE=1
*
**********BASIN 4F ALAMEDA WEST*********************************
*
COMPUTE LT TP           LCODE=1     NK=0     ISLOPE=-1
                        LENGTH=1070 FT       SLOPE=0.007      K=3.0
                        KN=0.021    CENTROID RATIO=0.50
COMPUTE NM HYD          ID=5  HYD NO=105 AREA=0.005531 SQ MI
                        PER A=0 PER B=5.00 PER C=0.00 PER D=95.00
                        TP=0 HR MASS RAINFALL=-1
PRINT HYD               ID=5  CODE=1
*
**********BASIN 4G ALAMEDA WEST*********************************
*
COMPUTE LT TP           LCODE=1     NK=0     ISLOPE=-1
                        LENGTH=1220 FT       SLOPE=0.016      K=3.0
                        KN=0.021    CENTROID RATIO=0.50
COMPUTE NM HYD          ID=6  HYD NO=106 AREA=0.012547 SQ MI
```

```
                                        TRACT14
                    PER A=0 PER B=5.00 PER C=0.00 PER D=95.00
                    TP=0 HR MASS RAINFALL=-1
PRINT HYD           ID=6  CODE=1
*
**********BASIN 4H ALAMEDA WEST**********************************
*
COMPUTE LT TP       LCODE=1     NK=0     ISLOPE=-1
                    LENGTH=850 FT        SLOPE=0.012     K=3.0
                          KN=0.021       CENTROID RATIO=0.50
COMPUTE NM HYD      ID=7  HYD NO=107 AREA=0.012375 SQ MI
                    PER A=0 PER B=5.00 PER C=0.00 PER D=95.00
                    TP=0 HR MASS RAINFALL=-1
PRINT HYD           ID=7  CODE=1
*
**********BASIN 4I ALAMEDA WEST**********************************
*
COMPUTE LT TP       LCODE=1     NK=0     ISLOPE=-1
                    LENGTH=280 FT        SLOPE=0.024     K=0.7
                          KN=0.025       CENTROID RATIO=0.50
COMPUTE NM HYD      ID=8  HYD NO=108 AREA=0.001313 SQ MI
                    PER A=0 PER B=100.00 PER C=0.00 PER D=0.00
                    TP=0 HR MASS RAINFALL=-1
PRINT HYD           ID=8  CODE=1
*
**********BASIN 4K ALAMEDA WEST**********************************
*
COMPUTE LT TP       LCODE=1     NK=0     ISLOPE=-1
                    LENGTH=320 FT        SLOPE=0.018     K=2.0
                          KN=0.025       CENTROID RATIO=0.50
COMPUTE NM HYD      ID=9  HYD NO=109 AREA=0.000938 SQ MI
                    PER A=0 PER B=46.00 PER C=0.00 PER D=54.00
                    TP=0 HR MASS RAINFALL=-1
PRINT HYD           ID=9  CODE=1
*
**********BASIN 4N ALAMEDA WEST**********************************
*
COMPUTE LT TP       LCODE=1     NK=0     ISLOPE=-1
                    LENGTH=500 FT        SLOPE=0.028     K=2.0
                          KN=0.025       CENTROID RATIO=0.50
COMPUTE NM HYD      ID=10  HYD NO=110 AREA=0.002422 SQ MI
                    PER A=0 PER B=46.00 PER C=0.00 PER D=54.00
                    TP=0 HR MASS RAINFALL=-1
PRINT HYD           ID=10  CODE=1
*
**********ADD HYDROGRAPHS FOR 4B AND 4E**************************
*
ADD HYD             ID=11  HYD=301 ID=2 ID=4
*
PRINT HYD                  ID=11  CODE=1
*
**********ROUTE 301 THROUGH PIPE*********************************
*
COMPUTE RATING CURVE CID=1 VS NO=101 CODE=-1 SLP=0.005
                           DIA=1.5 FT N=0.013
*
COMPUTE TRAVEL TIME  ID=12  REACH=1 NO VS=1 L=755 SLP=0.005
*
ROUTE                      ID=12  HYD NO=302 INFLOW ID=11   DT=0.0333
*
PRINT HYD                  ID=12  CODE=1
*
**********ADD HYDROGRAPHS FOR 302 AND 4G**********************
*
```

```
                                                TRACT14
ADD HYD              ID=13  HYD=303 ID=12 ID=6
*
PRINT HYD            ID=13  CODE=1
*
**********POND 5 ROUTING**********************************
*
ROUTE RESERVOIR      ID=14 HYD NO=304 INFLOW ID=13 CODE=6
                     OUTFLOW(CFS)      STORAGE(AC-FT)  ELEVATION(FT)
                         0.00              0.000           5024.30
                         1.05              0.100           5025.00
                         2.03              0.301           5026.00
                         2.67              0.648           5027.00
                         3.19              1.016           5028.00
                         3.87              1.690           5029.60
PRINT HYD            ID=14  CODE=1
*
**********ROUTE 4C THROUGH 4F**********************************
*
COMPUTE RATING CURVE CID=1 VS NO=101 NO SEGS=1
                           MIN ELEV=5031.0 MAX ELEV=5031.63
                           CH SLP=0.005 FP SLP=0.005 N=0.015
                           DIST=65
                           DIST          ELEV
                            0            5031.63
                           32.5          5031.00
                           65.0          5031.63
*
COMPUTE TRAVEL TIME  ID=15  REACH=4 NO VS=1 L=870 SLP=0.005
*
ROUTE                      ID=15  HYD NO=401 INFLOW ID=3 DT=0.0
*
PRINT HYD                  ID=15  CODE=1
*
**********ADD HYDROGAPHS FOR 401 AND 4F**********************
*
ADD HYD              ID=16  HYD=402 ID=15 ID=5
*
PRINT HYD                  ID=16  CODE=1
*
**********ROUTE 402 THROUGH PIPE******************************
*
COMPUTE RATING CURVE CID=1 VS NO=101 CODE=-1 SLP=0.005
                           DIA=2.25  FT  N=0.013
*
COMPUTE TRAVEL TIME  ID=17  REACH=5  NO VS=1  L=593 SLP=0.005
*
ROUTE                ID=17 HYD NO=403 INFLOW ID=16  DT=0.0
*
PRINT HYD            ID=17 CODE=1
*
*THIS IS WHERE BASIN 4H IS ROUTED THROUGH THE PARKING POND***
*BEFORE IT IS COMBINED WITH THE FLOWS FROM 4C AND 4F*********
*
**********PARKING LOT POND ROUTING****************************
*
ROUTE RESERVOIR      ID=18  HYD NO=501 INFLOW ID=7 CODE=4
                     OUTFLOW(CFS)      STORAGE(AC-FT)  ELEVATION(FT)
                         0.00              0.00000         5028.00
                         4.70              0.07202         5028.50
                         18.0              0.43354         5029.00
                         37.0              1.04375         5029.60
*
*PRINT HYD           ID=18  CODE=1
```

```
*
**********ADD HYDROGRAPHS FOR PARKING POND AND 403**********
*
ADD HYD              ID=19  HYD=601  ID=17  ID=18
*
PRINT HYD            ID=19  CODE=1
*
**********ADD HYDROGRAPHS FOR 4I AND 601**********************
*
ADD HYD              ID=20  HYD=701  ID=8  ID=19
*
PRINT HYD                   ID=20  CODE=1
*
**********ADD HYDROGRAPHS FOR 304 AND 701*********************
*
ADD HYD              ID=21  HYD=801  ID=14  ID=20
*
PRINT HYD            ID=21  CODE=1
*
*THIS MARKS THE END OF THE ALAMEDA WEST FLOWS THAT CONTRIBUTE
*TO THE DETENTION POND IN TRACT 14*****************************
*
**********BEGINNING OF QUESTA DEL RIO HYDROLOGY***************
*
**********QUESTA DEL RIO***************************************
*
COMPUTE NM HYD       ID=22  HYD NO=111 AREA=0.015627 SQ MI
                     PER A=0 PER B=19.00 PER C=12.00 PER D=69.00
                     TP=0.13333 HR MASS RAINFALL=-1
PRINT HYD            ID=22  CODE=1
*
**********SEVEN BAR LOOP ROAD**********************************
*FROM SEVEN BAR/COORS INTERSECTION TO 1520' WEST OF COORS CL
*
COMPUTE NM HYD       ID=23  HYD NO=112 AREA=0.004828 SQ MI
                     PER A=0 PER B=8.00 PER C=0.00 PER D=92.00
                     TP=0.13333 HR MASS RAINFALL=-1
PRINT HYD            ID=23  CODE=1
*
**********MONTGOMERY WARD AUTO CENTER**************************
**********COTTONWOOD MALL BASINS D-1, D-2, D-3*****************
*
COMPUTE NM HYD       ID=24  HYD NO=113 AREA=0.004300 SQ MI
                     PER A=0 PER B=15.00 PER C=0.00 PER D=85.00
                     TP=0.13333 HR MASS RAINFALL=-1
PRINT HYD            ID=24  CODE=1
*
**********FLOWS CONVEYED BY MALL TO QUESTA DEL RIO************
*
COMPUTE NM HYD       ID=25 HYD NO=114 AREA=0.000203 SQ MI
                     PER A=0 PER B=15.00 PER C=0.00 PER D=85.00
                     TP=0.13333 HR MASS RAINFALL=-1
PRINT HYD            ID=25 CODE=1
*
**********ADD AUTO CENTER AND SEVEN BAR FLOWS******************
*
ADD HYD              ID=26  HYD=201 ID=24 ID=23
*
PRINT HYD                    ID=26  CODE=1
*
**********ADD FLOWS FROM MALL TO SEVEN BAR FLOWS***************
*
ADD HYD              ID=27  HYD=202 ID=25 ID=26
```

```
*
PRINT HYD                          ID=17  CODE=1
*
***ROUTE 202 THROUGH STORM DRAIN TO 60" RCP UNDER COORS******
*
COMPUTE RATING CURVE CID=1 VS NO=101 CODE=-1 SLP=0.010
                           DIA=2.0 FT  N=0.013
*
COMPUTE TRAVEL TIME  ID=28  REACH=2 NO VS=1 L=38- SLP=0.10
*
ROUTE                      ID=28  HYD NO=203 INFLOW ID=27 DT=0.0333
*
PRINT HYD                  ID=28  CODE=1
*
**********ADD SD FLOWS (203) TO QUESTA DEL RIO***************
*
ADD HYD             ID=29  HYD=204  ID=28  ID=22
*
PRINT HYD                  ID=29  CODE=1
*
**********STREET FLOWS FROM COORS BLVD**********************
*
COMPUTE NM HYD      ID=30  HYD NO=115 AREA=0.002266 SQ MI
                    PER A=0 PER B=26.00 PER C=0.00 PER D=74.00
                    TP=0.13333 HR MASS RAINFALL=-1
PRINT HYD           ID=30  CODE=1
*
*****ADD STREET FLOWS FROM COORS TO FLOWS ENTERING 60" SD****
*
ADD HYD             ID=31  HYD=205  ID=30  ID=29
*
PRINT HYD                  ID=31 CODE=1
*
*****THIS IS THE EXTENT OF THE FLOWS GENERATED BY LANDS******
*****SURROUNDING QUESTA DEL RIO*****************************
*
**********ADD QUESTA DEL RIO AND ALEMEDA WEST FLOWS**********
*
ADD HYD             ID=32  HYD=206  ID=31  ID=21
*
PRINT HYD                  ID=32 CODE=1
*
**********PROPOSED TRACT 14 FLOW*****************************
*
COMPUTE LT TP       LCODE=1     NK=0    ISLOPE=-1
                    LENGTH=180ft  SLOPE=0.010   K=2.0
                    KN=0.033    CENTROID RATIO=0.50
COMPUTE NM HYD      ID=33  HYD NO=207 AREA=0.015375 SQ MI
                    PER A=0 PER B=15.00 PER C=0.00 PER D=85.00
                    TP=0 HR MASS RAINFALL=-1
PRINT HYD           ID=33  CODE=1
*
**********ADD TRACT 14 FLOWS TO OFF SITE FLOWS***************
*
ADD HYD             ID=34 HYD=208  ID=33  ID=32
*
PRINT HYD           ID=34 CODE=1
*
**********POND 3 (TRACT 14)**********************************
*
ROUTE RESERVOIR     ID=35  HYD NO=1 INFLOW ID=34 CODE=6
                    OUTFLOW(CFS)      STORAGE(AC-FT)  ELEVATION(FT)
                        0.00              0.00           5000.00
```

TRACT14

21.3924	1.0474	5003.00
26.2002	1.4177	5004.00
30.2534	1.8302	5005.00
33.8243	2.2848	5006.00
37.0527	2.7817	5007.00
40.3063	3.3770	5008.10

```
PRINT HYD              ID=35 CODE=1
*
*
*
*
FINISH
```

AHYMO PROGRAM SUMMARY TABLE (AHYMO_97) - - VERSION: 1997.02d RUN DATE (MON/DAY/YR) =06/13/2003
INPUT FILE = C:\AHYMOW~1\TRACT14.txt USER NO.= AHYMO-S-9702d1TierraW-AH

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION	
START										TIME=	.00
RAINFALL TYPE= 1										RAIN6=	2.200
COMPUTE NM HYD	102.00	-	2	.00536	13.58	.507	1.77241	1.500	3.958	PER IMP=	85.00
COMPUTE NM HYD	103.00	-	3	.00536	13.58	.507	1.77241	1.500	3.958	PER IMP=	85.00
COMPUTE NM HYD	104.00	-	4	.00102	2.73	.103	1.90254	1.500	4.205	PER IMP=	95.00
COMPUTE NM HYD	105.00	-	5	.00553	14.82	.561	1.90254	1.500	4.186	PER IMP=	95.00
COMPUTE NM HYD	106.00	-	6	.01255	33.60	1.273	1.90254	1.500	4.184	PER IMP=	95.00
COMPUTE NM HYD	107.00	-	7	.01238	33.14	1.256	1.90254	1.500	4.184	PER IMP=	95.00
COMPUTE NM HYD	108.00	-	8	.00131	1.70	.047	.66636	1.500	2.022	PER IMP=	.00
COMPUTE NM HYD	109.00	-	9	.00094	1.96	.068	1.36903	1.500	3.270	PER IMP=	54.00
COMPUTE NM HYD	110.00	-	10	.00242	5.05	.177	1.36903	1.500	3.255	PER IMP=	54.00
ADD HYD	301.00	2& 4	11	.00638	16.31	.610	1.79306	1.500	3.998		
ROUTE	302.00	11	12	.00638	14.82	.610	1.79311	1.532	3.632		
ADD HYD	303.00	12& 6	13	.01892	47.34	1.883	1.86561	1.499	3.909		
ROUTE RESERVOIR	304.00	13	14	.01892	3.65	1.883	1.86559	2.264	.301	AC-FT=	1.468
ROUTE	401.00	3	15	.00536	10.40	.507	1.77251	1.550	3.032		
ADD HYD	402.00	15& 5	16	.01089	23.55	1.068	1.83845	1.500	3.379		
ROUTE	403.00	16	17	.01089	23.30	1.068	1.83852	1.550	3.343		
ROUTE RESERVOIR	501.00	7	18	.01238	16.71	1.256	1.90251	1.650	2.110	AC-FT=	.398
ADD HYD	601.00	17&18	19	.02327	37.90	2.323	1.87251	1.550	2.546		
ADD HYD	701.00	8&19	20	.02458	39.51	2.370	1.80807	1.550	2.512		
ADD HYD	801.00	14&20	21	.04350	42.14	4.253	1.83306	1.565	1.514		
COMPUTE NM HYD	111.00	-	22	.01563	36.93	1.333	1.59944	1.500	3.692	PER IMP=	69.00
COMPUTE NM HYD	112.00	-	23	.00483	12.73	.480	1.86350	1.500	4.119	PER IMP=	92.00
COMPUTE NM HYD	113.00	-	24	.00430	10.90	.406	1.77241	1.500	3.959	PER IMP=	85.00
COMPUTE NM HYD	114.00	-	25	.00020	.53	.019	1.77241	1.500	4.056	PER IMP=	85.00
ADD HYD	201.00	24&23	26	.00913	23.62	.886	1.82053	1.500	4.044		
ADD HYD	202.00	25&26	27	.00933	24.15	.905	1.81946	1.500	4.044		
ROUTE	203.00	27	28	.00933	23.99	.905	1.81949	1.499	4.016		
ADD HYD	204.00	28&22	29	.02496	60.77	2.238	1.68167	1.499	3.805		
COMPUTE NM HYD	115.00	-	30	.00227	5.38	.197	1.62928	1.500	3.713	PER IMP=	74.00
ADD HYD	205.00	30&29	31	.02722	66.14	2.435	1.67729	1.499	3.796		
ADD HYD	206.00	31&21	32	.07072	103.59	6.688	1.77310	1.499	2.289		
COMPUTE NM HYD	207.00	-	33	.01538	38.92	1.453	1.77242	1.500	3.955	PER IMP=	85.00
ADD HYD	208.00	33&32	34	.08610	142.37	8.141	1.77297	1.499	2.584		
ROUTE RESERVOIR	1.00	34	35	.08610	40.05	8.141	1.77297	2.098	.727	AC-FT=	3.330
FINISH											

Channel Inlet Capacity

Weir Equation:

$$Q = CLH^{3/2}$$

Q= Flow
C = 2.95
L= Length of weir
H = Height of Weir

Irrigation Structure (Corrales Main Canal)

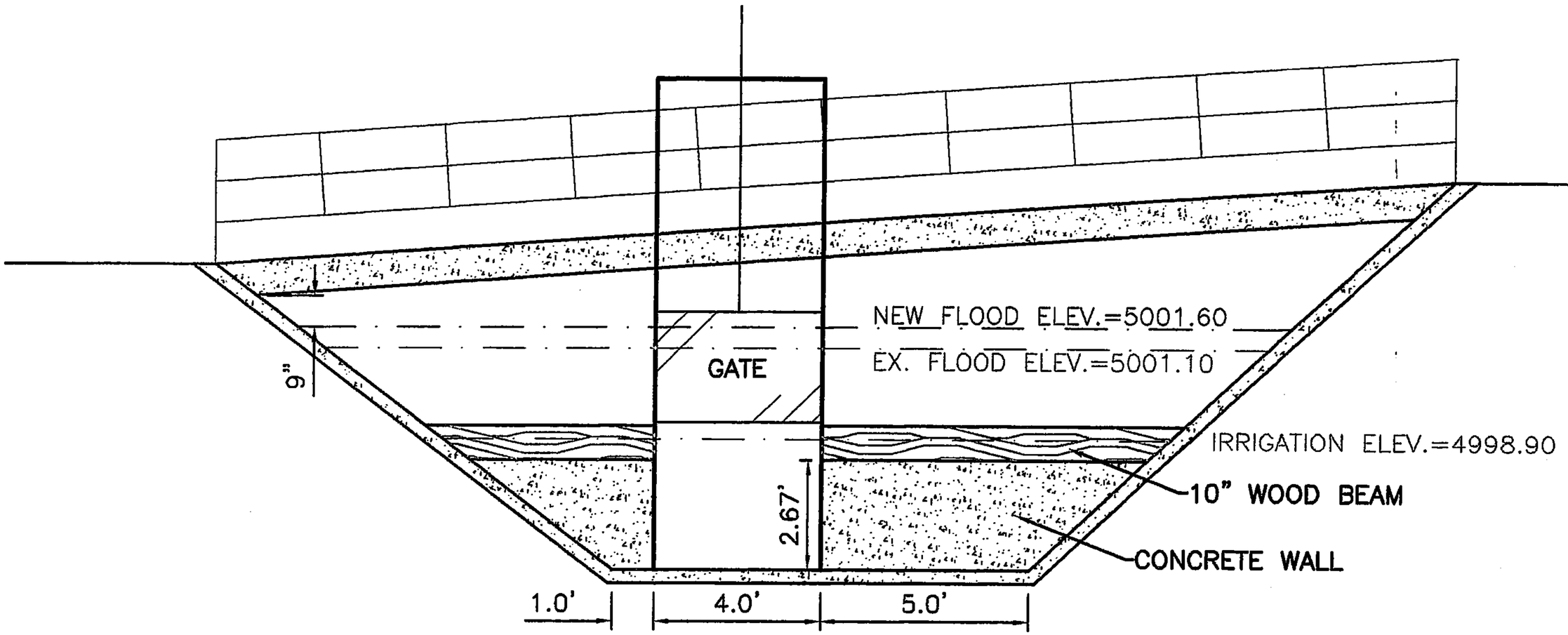
$$Q = 2.95 * 24 * 1.27^{3/2}$$

Q = 101.33 cfs
101.33 cfs > 24.70 cfs
Structure has capacity

Emergency Overflow

$$Q = 2.95 * 100 * 1.0^{3/2}$$

Q = 295.00 cfs
295.00 cfs > 284.74 cfs
Overflow has capacity



CHECK STRUCTURE CAPACITY ANALYSIS

SCALE: NTS

Channel Capacity

	Top Width (ft)	Bottom Width (ft)	Depth (ft)	Area (ft^2)	WP (ft)	R	Slope (%)	Q Provided (cfs)	Q Required (cfs)	Velocity (ft/s)
Basin 1	4	4	0.5	2.00	5.00	0.4000	50	88.00	13.52	6.76
Basin 2	10	10	0.5	5.00	11.00	0.4545	15	131.21	9.08	1.82
Basin 3	4	4	0.5	2.00	5.00	0.4000	50	88.00	15.09	7.55

Manning's Equation:

$Q = 1.49/n * A * R^{(2/3)} * S^{(1/2)}$

A = Area
R = D/4
S = Slope
n = 0.013

Pipe Capacity

Pipe	D	Slope	Area	R	Q Provided	Q Required	Velocity
	(in)	(%)	(ft^2)		(cfs)	(cfs)	(ft/s)
1	48	1.28	12.57	1.000	162.95	103.59	8.24
2	18	2	1.77	0.375	14.90	13.52	7.65

Manning's Equation:

Q = 1.49/n * A * R^(2/3) * S^(1/2)

A = Area
R = D/4
S = Slope
n = 0.013

Drop Inlet Calculations

Basin	TYPE OF INLET	AREA (SF)	Q (CFS)	H (FT)	H ALLOW (FT)
1	Single D	4.21	13.52	0.4459	0.67
2	Single C	4.36	9.08	0.1871	0.67
3	Single C	4.36	15.09	0.5167	0.67
6	Grate	0.81	1.59	0.1652	0.92

ORIFICE EQUATION

Q = CA sqrt(2gH)

C = 0.6

g = 32.2

STORM DRAIN INLET
EFFECTIVE AREA ASSUMING A 50% CLOGGING FACTOR

DOUBLE D:

Area at the grate:

L = 76.75" - 14 (1/2" middle bars) - 6" center piece
= 63.75"
= 5.3125'

W = 25.5" - 13 (1/2 middle bars)
= 19"
= 1.583'

Area = 1.583' x 5.3125'
= 8.410 ft^2

Effective Area = 8.410 - .5 (8.410)
= 4.205 ft^2

Single 'C" Drop Inlet
EFFECTIVE AREA

Area at the grate:

L = 38.375" - 7(2@ middle bars)
= 34.875"
= 2.906'

W = 25.5" - 13(2@ middle bars)
= 19"
= 1.583'

Area = 1.583' x 2.906'
= 4.601 ft^2

Effective Area: = 4.601- 4.601 (0.5 clogging factor)
= 2.30 ft^2 at the grate

Area at the throat:

L = 47.375@
= 3.95'

H = 10:@ - 42@
= 63@
= 0.5208'

Area = 3.95' x 0.5208'
= 2.06 ft^2 at the throat

Total Area:

Area = 2.30_{grate} + 2.06_{throat}
= 4.36 ft^2

APPENDIX B

COORS ROAD N.W. (NEW MEXICO STATE HIGHWAY NO. 448)

OFFSITE BASIN #1
33,734.5 SF
0.774 AC
Q=1.99 CFS

OFFSITE BASIN #2
15,064.4 SF
0.346 AC
Q=0.89 CFS

OFFSITE BASIN #3
11,153.8 SF
0.256 AC
Q=0.66 CFS

OFFSITE BASIN #4
7,793.5 SF
0.179 AC
Q=0.46 CFS

OFFSITE BASIN #5
14,353.1 SF
0.330 AC
Q=0.76 CFS

UNDEVELOPED BASIN #1
101,659.5 SF
2.333 AC
Q=5.38 CFS

BASIN #2
25,593.5 SF
0.588 AC
Q=1.35 CFS

BASIN #3
34,146.13 SF
0.784 AC
Q=1.81 CFS

7-BAR LOOP RD

NUSENDA BASIN #4
60,271 SF
1.384 AC
Q=3.19 CFS

BASIN 11a
BACKYARD
PONDS
1,911 SF
0.044 AC
Q=0.10 CFS

BASIN #7
42,392.50 SF
0.973 AC
Q=0.66 CFS

BASIN #6
9,321.20 SF
0.214 AC
Q=0.49 CFS

BASIN #5
68,928 SF
1.582 AC
Q=5.66 CFS

AMAFCA BASIN #9
33,203.3 SF
0.762 AC
Q=1.29 CFS

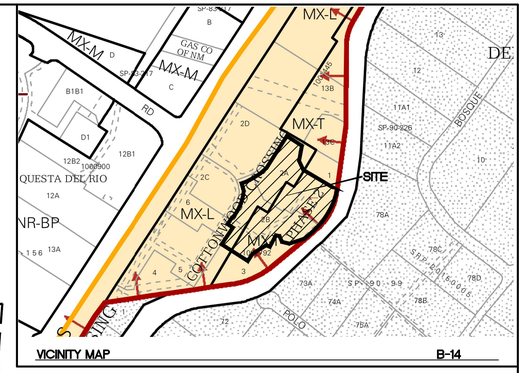
BASIN #8
18,807.1 SF
0.431 AC

CORRALES MAIN CANAL

BASIN 11b
BACKYARD
PONDS
1,774 SF
0.041 AC
Q=0.09 CFS

ACCESS EASEMENT
BASIN
3,940 SF
0.090 AC
Q=0.23 CFS

BASIN 11c
BACKYARD
PONDS
3,496 SF
0.080 AC
Q=0.19 CFS



GRAPHIC SCALE
40 20 0 20 40
SCALE: 1"=40'

CONCEPTUAL ONLY. NOT FOR CONSTRUCTION

ENGINEER'S SEAL
RONALD R. BOHANNAN NEW MEXICO 7868 PROFESSIONAL ENGINEER
04-08-24
RONALD R. BOHANNAN
P.E. #7868

RETAIL AT 7 BAR
ALBUQUERQUE, NM

BASIN EXHIBIT

TIERRA WEST, LLC
5571 MIDWAY PARK PL NE
ALBUQUERQUE, NEW MEXICO 87109
(505) 858-3100
www.tierrawestllc.com

DRAWN BY: pm/as
DATE: 04-08-24
DRAWING: 2023004-GR
SHEET #: 8
JOB #: 2023004

Y:\2023\2023004 Retail @ 7 Bar\dwg\Exhibits\2023004-Area Exh.dwg Jun 25, 2024 - 9:04am

APPENDIX C

DPM Weighted E Method

Precipitation Zone 1
COORS BLVD NW
RETAIL @ 7BAR
TWLLC **Date:** **06/17/2024**
Reference Document **DPM Version XX dated 09/2020**

Existing Contributing Off-Site Basins

Basin Descriptions													100-Year, 6-Hr			10-Year, 6-Hr		
Basin ID	Descriptor	Area (sf)	Area (acres)	Area (sq miles)	Treatment A %	Treatment A (acres)	Treatment B %	Treatment B (acres)	Treatment C %	Treatment C (acres)	Treatment D %	Treatment D (acres)	Weighted E (in)	Volume (ac-ft)	Flow cfs	Weighted E (in)	Volume (ac-ft)	Flow cfs
OFF-SITE BASIN #1	Coors Blvd	33,734.50	0.774	0.00121	0%	0.000	0%	0.000	0%	0.000	100%	0.774	2.240	0.145	3.19	1.430	0.092	1.99
OFF-SITE BASIN #2	Coors Blvd	15,064.40	0.346	0.00054	0%	0.000	0%	0.000	0%	0.000	100%	0.346	2.240	0.065	1.42	1.430	0.041	0.89
OFF-SITE BASIN #3	Coors Blvd	11,158.80	0.256	0.00040	0%	0.000	0%	0.000	0%	0.000	100%	0.256	2.240	0.048	1.06	1.430	0.031	0.66
OFF-SITE BASIN #4	Coors Blvd	7,793.50	0.179	0.00028	0%	0.000	0%	0.000	0%	0.000	100%	0.179	2.240	0.033	0.74	1.430	0.021	0.46
Total		**67,751.20**	**1.555**	**0.00243**		**0.000**		**0.000**		**0.000**		**1.555**	V_{360} =	**0.290**	**6.41**		**0.185**	**4.00**

Proposed Conditions - Updated Major Site Plan - Contributing

Basin Descriptions													100-Year, 6-Hr			10-Year, 6-Hr		
Basin ID	Descriptor	Area (sf)	Area (acres)	Area (sq miles)	Treatment A %	Treatment A (acres)	Treatment B %	Treatment B (acres)	Treatment C %	Treatment C (acres)	Treatment D %	Treatment D (acres)	Weighted E (in)	Volume (ac-ft)	Flow cfs	Weighted E (in)	Volume (ac-ft)	Flow cfs
BASIN #1	Undeveloped	101,659.50	2.334	0.00365	0%	0.000	15%	0.350	0%	0.000	85%	1.984	2.014	0.392	8.93	1.255	0.244	5.38
BASIN #2	Popeyes	25,593.50	0.588	0.00092	0%	0.000	15%	0.088	0%	0.000	85%	0.499	2.014	0.099	2.25	1.255	0.061	1.35
BASIN #3	Take 5	34,146.13	0.784	0.00122	0%	0.000	15%	0.118	0%	0.000	85%	0.666	2.014	0.132	3.00	1.255	0.082	1.81
BASIN #4	Nusenda	60,271.00	1.384	0.00216	0%	0.000	15%	0.208	0%	0.000	85%	1.176	2.014	0.232	5.29	1.255	0.145	3.19
BASIN #5	7 Bar - B, C, TH 8-14	68,928.00	1.582	0.00247	0%	0.000	15%	0.237	0%	0.000	85%	1.345	2.014	0.266	6.05	1.255	0.165	3.65
BASIN #6	7 Bar - Upper Inlet	9,321.20	0.214	0.00033	0%	0.000	15%	0.032	0%	0.000	85%	0.182	2.014	0.036	0.82	1.255	0.022	0.49
BASIN #7	Building A, TH 1-7	12,392.50	0.284	0.00044	0%	0.000	15%	0.043	0%	0.000	85%	0.242	2.014	0.048	1.09	1.255	0.030	0.66
BASIN #9	AMAFCA Pond	33,203.30	0.762	0.00119	0%	0.000	50%	0.381	0%	0.000	50%	0.381	1.485	0.094	2.39	0.845	0.054	1.29
Total		**345,515.13**	**7.932**	**0.01239**		**0.000**		**1.457**		**0.000**		**6.475**	V_{360} =	**1.297**	**29.82**		**0.803**	**17.82**

Non-contributing Basins (Sheet flow to Corrales Main Canal or Retained On-Site)

Basin Descriptions													100-Year, 6-Hr			10-Year, 6-Hr		
Basin ID	Descriptor	Area (sf)	Area (acres)	Area (sq miles)	Treatment A %	Treatment A (acres)	Treatment B %	Treatment B (acres)	Treatment C %	Treatment C (acres)	Treatment D %	Treatment D (acres)	Weighted E (in)	Volume (ac-ft)	Flow cfs	Weighted E (in)	Volume (ac-ft)	Flow cfs
OFF-SITE BASIN #5	*Coors Blvd*	14,353.10	0.330	0.00051	0%	0.000	0%	0.000	0%	0.000	100%	0.330	2.240	0.062	1.36	1.430	0.039	0.85
BASIN #8	*NR-PO-B*	18,807.10	0.432	0.00067	0%	0.000	100%	0.432	0%	0.000	0%	0.000	0.730	0.026	0.93	0.260	0.009	0.35
Access Easement Basins	*Access Easement Basins*	3,940.00	0.090	0.00014	0%	0.000	0%	0.000	100%	0.090	0%	0.000	0.950	0.007	0.26	0.430	0.003	0.13
Basin #11	*TH Backyards*	7,181.00	0.165	0.00026	0%	0.000	100%	0.165	0%	0.000	0%	0.000	0.730	0.010	0.36	0.260	0.004	0.13
Total		**44,281.20**	**1.017**	**0.00159**		**0.000**		**0.597**		**0.090**		**0.330**	V_{360} =	**0.105**	**2.91**		**0.055**	**1.46**

APPENDIX D

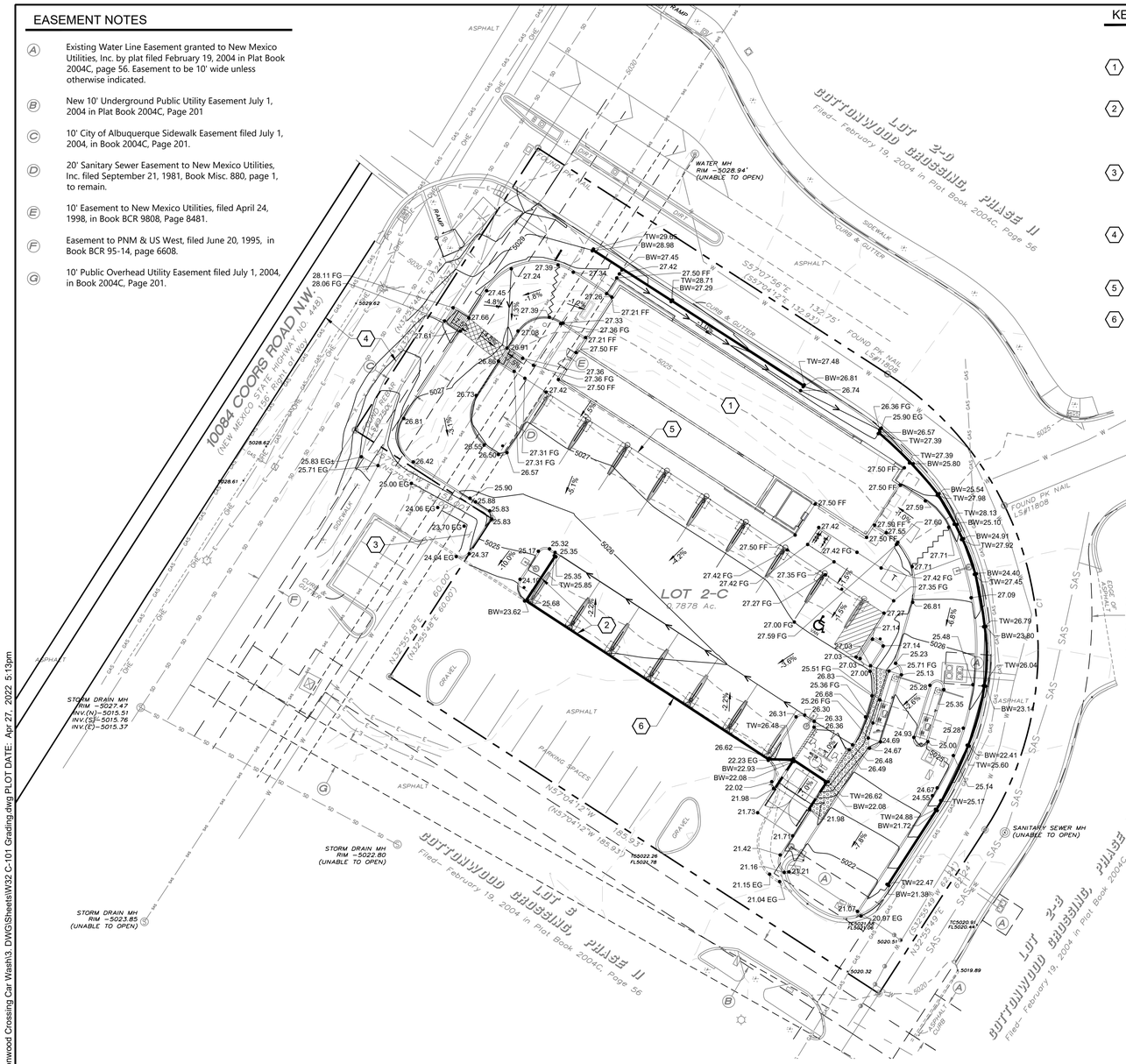
APPENDIX E

EASEMENT NOTES

- (A) Existing Water Line Easement granted to New Mexico Utilities, Inc. by plat filed February 19, 2004 in Plat Book 2004C, page 56. Easement to be 10' wide unless otherwise indicated.
- (B) New 10' Underground Public Utility Easement July 1, 2004 in Plat Book 2004C, Page 201
- (C) 10' City of Albuquerque Sidewalk Easement filed July 1, 2004, in Book 2004C, Page 201.
- (D) 20' Sanitary Sewer Easement to New Mexico Utilities, Inc. filed September 21, 1981, Book Misc. 880, page 1, to remain.
- (E) 10' Easement to New Mexico Utilities, filed April 24, 1998, in Book BCR 9808, Page 8481.
- (F) Easement to PNM & US West, filed June 20, 1995, in Book BCR 95-14, page 6608.
- (G) 10' Public Overhead Utility Easement filed July 1, 2004, in Book 2004C, Page 201.

KEYED NOTES

1. SEE BUILDING PLANS (BY OTHERS) FOR FINISHED FLOOR ELEVATIONS INTERNAL TO THE BUILDING.
2. EXTEND CONCRETE RETAINING WALL 6" ABOVE TOP OF ASPHALT (SEE TOP OF WALL DETAIL ON DETAIL SHEET) AND OMIT CONCRETE CURB AND GUTTER ALONG LENGTH OF RETAINING WALL.
3. WRITTEN PERMISSION FROM ADJACENT PROPERTY OWNER REQUIRED TO GRADE ON THE ADJACENT PROPERTY. THIS PERMISSION IS NEITHER STATED NOR IMPLIED BY THESE PLANS.
4. SIDEWALK AND ROADWAY STRIPING IS SHOWN FOR INFORMATION ONLY. DESIGN AND CONSTRUCTION OF THESE ELEMENTS SHALL BE BY A PUBLIC WORK ORDER.
5. ZERO HEIGHT CURB IN FRONT OF THE BUILDING
6. INSTALL FALL PROTECTION. TYPE AND STYLE PER ARCHITECTS DIRECTIONS.

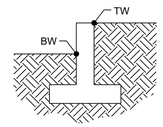


CIVIL LEGEND

- 7290 — MAJOR CONTOUR
- 7291 — MINOR CONTOUR
- 7290 — EXITING MAJOR CONTOUR
- 7291 — EXISTING MINOR CONTOUR
- 1.0% — SLOPE ARROW
- PROPERTY LINE
- CONCRETE RETAINING WALL
- CMU RETAINING WALL
- WATER BLOCK (HIGH POINT)
- FLOWLINE OF SWALE
- 4"-6" BROKEN ALL FACE ROCK INSTALLED 6" DEEP

SYMBOL LEGEND

- 20.00 FLOWLINE
- EG 20.00 EXISTING GROUND
- BW=20.00 BOTTOM WALL
- TW=20.00 TOP WALL
- FG 20.00 FINISHED GRADE
- FF 20.00 FINISHED FLOOR



City of Albuquerque
Planning Department
Development Review Services
HYDROLOGY SECTION
APPROVED
DATE: 05/06/22
BY: Ross Brissette
HydroTrans # B14D010C
THE APPROVAL OF THESE PLANS/REPORT SHALL NOT BE CONSTRUED TO BE A VIOLATION OF ANY ORDINANCE OR STATE LAW, AND SHALL NOT PREVENT THE CITY OF ALBUQUERQUE FROM REQUIRING CORRECTION OF ERRORS IN THE PLANS/REPORT, SPECIFICATIONS, OR CONSTRUCTION. SUCH APPROVED PLANS SHALL NOT BE CHANGED, MODIFIED OR ALTERED WITHOUT AUTHORIZATION.

GRADING NOTES

1. CONTRACTOR TO FIELD VERIFY LOCATION AND ELEVATION OF ALL EXISTING DRY AND WET UTILITIES PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER OF ANY ISSUES. UTILITY RELOCATION MAY BE REQUIRED.
2. PROVIDE SMOOTH VERTICAL TRANSITION OF CONCRETE CURB AT ALL GRADE BREAKS ALONG CURBS.
3. PROVIDE SMOOTH VERTICAL TRANSITION OF TOP OF CONCRETE RETAINING WALL AT ALL GRADE BREAKS ALONG TOP OF WALL.
4. GRADES SHOWN ARE FINAL SURFACE GRADES AFTER COMPLETION OF SURFACE IMPROVEMENTS.
5. GRADE AREAS AT SITE PERIMETER TO MATCH GRADES OF ADJACENT PARCELS.
6. REMOVE EXCESS SOIL FROM SITE AND DISPOSE OF PROPERLY IN ACCORDANCE WITH APPLICABLE REGULATIONS.
7. PROVIDE TEMPORARY GRADING FEATURES SUCH AS BERMS, SWALES, SUMPS AND BASINS TO MANAGE INTERIM STORM WATER RUNOFF DURING CONSTRUCTION PROCESS. STORM WATER RUNOFF LEAVING THE SITE SHALL MEET ALL FEDERAL, STATE AND LOCAL QUALITY REQUIREMENTS.
8. ALL DISTURBED AREAS TO BE RE-SEEDED PER LANDSCAPE PLAN PROVIDED BY OTHERS.
9. PROVIDE TEMPORARY GRADING FEATURES SUCH AS BERMS, SWALES, SUMPS AND BASINS TO MANAGE INTERIM STORM WATER RUNOFF DURING CONSTRUCTION PROCESS. STORM WATER RUNOFF LEAVING THE SITE SHALL MEET ALL FEDERAL, STATE AND LOCAL QUALITY REQUIREMENTS.
10. REFER TO GEOTECHNICAL EVALUATION REPORT 3220JJ138 BY ATC GROUP SERVICES ON FEBRARY 22, 2021
11. THE EXISTING SITE FEATURES WILL BE DEMOLISHED UNLESS OTHERWISE SPECIFIED ON THIS PLAN.
12. PAVEMENT SECTION BY OWNERS DIRECTION.
13. COMPOSITE SLOPE IN HANDICAP PARKING SPACES SHALL NOT EXCEED 2%.
14. CROSS SLOPE ON ADA CROSSWALKS SHALL NOT EXCEED 2%. LONGITUDINAL SLOPE SHALL NOT EXCEED 5%.
15. LONGITUDINAL SLOPE ON CURB RAMPS SHALL NOT EXCEED 8.33%. CROSS SLOPE SHALL NOT EXCEED 2%.
16. COMPOSITE SLOPE ON RAMP LANDINGS SHALL NOT EXCEED 2%.
17. FINISHED GRADE OF SOIL EDGES ALONG PAVEMENT TO BE 1/2" BELOW EDGE OF PAVEMENT.

DESIGNED	HF
DRAWN	JMS
CHECKED	HF
DATE	4.27.2022

REVISION

RESPEC
COMMUNITY DESIGN SOLUTIONS
5971 JEFFERSON STREET SUITE 101
ALBUQUERQUE, NEW MEXICO 87109
WWW.RESPEC.COM PHONE: (505)253-9718

STAMP

HUGH W. FLOYD
NEW MEXICO
16633
LICENSED PROFESSIONAL ENGINEER

04/27/2022

THIS DRAWING IS INCOMPLETE AND NOT TO BE USED FOR CONSTRUCTION UNLESS IT IS STAMPED, SIGNED AND DATED

nm811 Know what's below. Call before you dig.

PROJ. #: W0032.31002

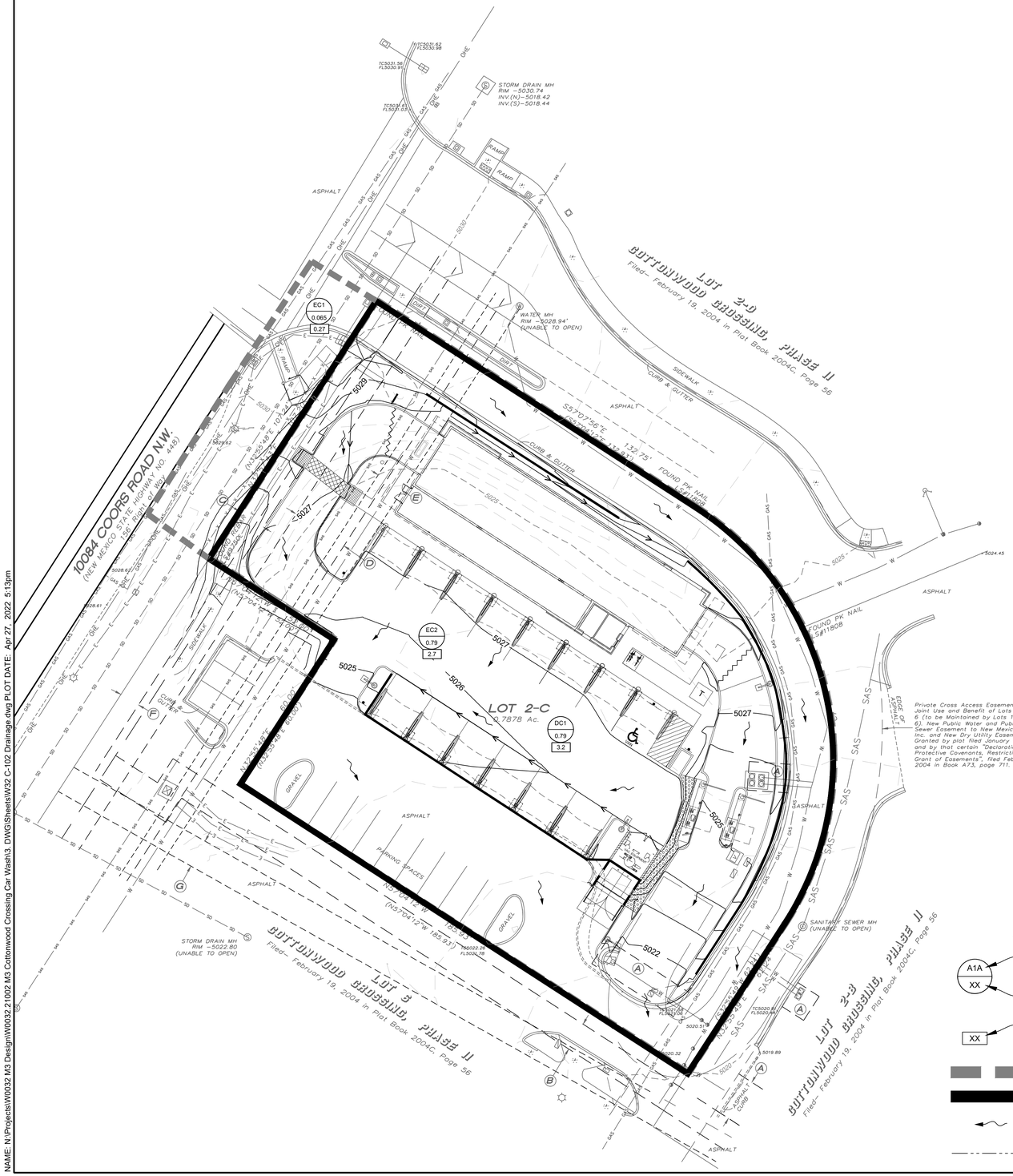
PROJECT NAME: COTTONWOOD CROSSING CAR WASH

SHEET TITLE: GRADING

SUBMITTED FOR: BUILDING PERMIT

SHEET NUMBER: C-101

NAME: N:\Projects\W0032 M3 Design\W0032.21002 M3 Cottonwood Crossing Car Wash\3. DWG\Sheets\W32 C-101 Grading.dwg PLOT DATE: Apr 27, 2022 5:13pm



LEGEND

- A1A / XX — BASIN DESIGNATION; BASIN AREA, ACRES
- XX — 100 YEAR STORM, CFS
- EXISTING SUB-BASIN BOUNDARY
- PROPOSED SUB-BASIN BOUNDARY
- DIRECTION OF DRAINAGE FLOW
- PROPERTY LINE

BACKGROUND

10084 COORS BLVD NORTHWEST IS APPROXIMATELY 0.788 ACRES IN THE CITY OF ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO. THIS LOCATION IS AT THE SOUTHEAST CORNER OF COORS BLVD AND SEVEN BAR LOOP ROAD NORTHWEST. THE INTENT FOR THIS PROPERTY IS TO BE USED AS A CAR WASH. THERE IS NO DESIGNATED 100-YR FLOOD ZONE SHOWN ON THE SITE.

METHODOLOGY

HYDROLOGY CALCULATIONS FOR THE SITE ARE PERFORMED IN ACCORDANCE WITH THE ALBUQUERQUE DEVELOPMENT PROCESS MANUAL (DPM) SECTION 6-2 USING THE PROCEDURE FOR 40 ACRE AND SMALLER BASINS TO CALCULATE PEAK FLOW RATES FOR THE 100-YEAR, 24-HOUR STORM TO ENSURE ALL FLOW PATHS ARE SUFFICIENT TO CARRY FLOWS. WATER QUALITY IS ACCOUNTED FOR THROUGH THE PAYMENT-IN-LIEU OPTION PER SECTION 6-12(C)(1) IN THE DPM. ALL HYDROLOGIC AND HYDRAULIC CALCULATIONS CAN BE FOUND ON THIS SHEET.

EXISTING CONDITIONS

THE EXISTING SITE IS PARTIALLY UNDEVELOPED WITH LOW VEGETATIVE COVER AND SEVERAL DISTURBED AREAS. THE SOUTH AREA OF THE SITE IS PAVED AND IN USE FOR PARKING. THE SITE, IN GENERAL, SLOPES FROM THE NORTH/NORTHWEST TO THE SOUTHEAST CORNER TOWARD AT APPROXIMATELY 1.5-3%. STORM WATER RUNOFF GENERATED IN THE EXISTING AREA FLOW GENERALLY TO THE SOUTHEAST, WITH EVENTUAL DISCHARGE INTO THE DRAINAGE POND INSTALLED IN THE "COTTONWOOD CROSSING PHASE II". THE SITE HAS BEEN DIVIDED INTO BASIN EC1 FOR ROW FLOWS AND EC2 FOR SITE FLOWS.

SUB-BASIN EC1 IS 0.788 ACRES AND SUB-BASIN EC2 IS 0.065 ACRES. THE EXISTING FLOW FOR EC2 IS 2.7 CFS. THE RUNOFF FREE DISCHARGES AT THE SOUTHEAST CORNER OF THE SITE TO THE POND LOCATED SOUTHEAST OF THE SITE VIA EXISTING SURFACE FLOWS.

DEVELOPED CONDITIONS

THE DRAINAGE INTENTION OF THE DEVELOPED CONDITIONS IS TO MATCH THE EXISTING DRAINAGE PATTERN WITH FREE DISCHARGE. USING THE COTTONWOOD CROSSING PHASE II DRAINAGE REPORT AS REFERENCE, THERE IS ALLOWED FREE DISCHARGE TO THE DOWNSTREAM POND. THE NEW CAR WASH WILL BE CONSTRUCTED, PRESERVING THE EXISTING PARKING LOT ON THE SITE. DEVELOPED FLOWS INCREASE FROM 2.7 TO 3.2 CFS.

SUB-BASIN DC1 IS 0.788 ACRES AND GENERATES 3.2 CFS WHICH IS CONVEYED TO THE SOUTHEAST CORNER OF THE SITE VIA SHEET FLOW. CALCULATIONS FOR THE DEVELOPED CONDITIONS ARE SHOWN BELOW.

Hydrology Calculations

The following calcualtions are based on Albuquerque's Development Process Manual, Seciton 6-2(A), using the 100-year, 24-hour design storm

Runoff Rate:

Treatment Type Areas

Subbasin	$Area_A$ (ac)	$Area_B$ (ac)	$Area_C$ (ac)	$Area_D$ (ac)	Total (ac)
EC1	0.00	0.00	0.00	0.07	0.07
EC2	0.00	0.00	0.47	0.32	0.79
DC1	0.00	0.00	0.07	0.72	0.79

Peak Discharge values based on Zone 1, Table 6.2.14

Q_A = 1.54 cfs/ac Q_B = 2.16 cfs/ac Q_C = 2.87 cfs/ac Q_D = 4.12 cfs/ac

Peak Discharge calculation for a 100-yr, 24-hr storm event from equation 6.6

Subbasin	Discharge (cfs)
EC1	0.3
EC2	2.7
DC1	3.2

Subbasin	Volume (cu. ft.)
EC1	N/A
DC1	678

STORMWATER QUALITY CALCULATIONS

IMPERVIOUS AREA = 0.72 ACRES X 0.42" DEPTH = 1098 CF

PAYMENT IN LIEU = $8/CF X 1098 = $8784

EASEMENT NOTES

(A) Existing Water Line Easement granted to New Mexico Utilities, Inc. by plat filed February 19, 2004 in Plat Book 2004C, page 56. Easement to be 10' wide unless otherwise indicated.

(B) New 10' Underground Public Utility Easement July 1, 2004 in Plat Book 2004C, Page 201

(C) 10' City of Albuquerque Sidewalk Easement filed July 1, 2004, in Book 2004C, Page 201.

(D) 20' Sanitary Sewer Easement to New Mexico Utilities, Inc. filed September 21, 1981, Book Misc. 880, page 1, to remain.

(E) 10' Easement to New Mexico Utilities, filed April 24, 1998, in Book BCR 9808, Page 8481.

(F) Easement to PNM & US West, filed June 20, 1995, in Book BCR 95-14, page 6608.

(G) 10' Public Overhead Utility Easement filed July 1, 2004, in Book 2004C, Page 201.

Manning Formula: FLOWS ALONG C&G

Irregular Section

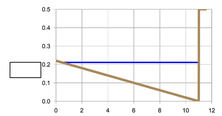
Input

Flow	3.2 cfs
Slope	0.02 ft/ft

Sta	Elev	n	Sta	Elev	n	Sta	Elev	n	Sta	Elev	n
0	0.22	0.017	10	0.02	0.017	11	0	0.013	11.02	0.5	0.013
11.52	0.5	.013									

Output

WSElev	0.211 ft
Flow Area	1.11 sf
Velocity	2.88 fps
Velocity Head	0.129 ft
Top Width	10.5 ft
Froude Number	1.56
Critical WSElev	0.248 ft
Critical Slope	ft/ft



Untitled 5/21/2021
ManningSolver v1.019
Copyright (c) 2000 Current Applications

City of Albuquerque
Planning Department
Development Review Services
HYDROLOGY SECTION
APPROVED
05/06/22
DATE:
BY: Randy C. Bruzuela
HydroTrans #: B14D010C

THE APPROVAL OF THESE PLANS/REPORT SHALL NOT BE CONSTRUED TO PERMIT VIOLATIONS OF ANY CITY ORDINANCE OR STATE LAW, AND SHALL NOT PREVENT THE CITY FROM REQUIRING THE CORRECTION OF ERRORS OR OMISSIONS IN PLANS, SPECIFICATIONS, OR CONSTRUCTIONS. SUCH APPROVED PLANS SHALL NOT BE CHANGED, MODIFIED OR ALTERED WITHOUT AUTHORIZATION

0 20 40
SCALE: 1" = 20'

DESIGNED HF
DRAWN JMS
CHECKED HF
DATE 4.27.2022

REVISION

RESPEC
COMMUNITY DESIGN SOLUTIONS
5971 JEFFERSON STREET SUITE 101
ALBUQUERQUE, NEW MEXICO 87109
WWW.RESPEC.COM PHONE (505)253-9718

STAMP

HUGH W. FLOOD
NEW MEXICO
16633
REGISTERED PROFESSIONAL ENGINEER
04/27/2022

THIS DRAWING IS INCOMPLETE AND NOT TO BE USED FOR CONSTRUCTION UNLESS IT IS STAMPED, SIGNED AND DATED

nm811 Know what's below. Call before you dig.

PROJ. #: W0032.31002

PROJECT NAME: COTTONWOOD CROSSING CAR WASH

SHEET TITLE: DRAINAGE

SUBMITTED FOR: BUILDING PERMIT

SHEET NUMBER: C-102

NAME: N:\Projects\W0032 M3 Design\W0032.21002 M3 Cottonwood Crossing Car Wash\3. DWG\Sheets\W32 C-102 Drainage.dwg PLOT DATE: Apr 27, 2022 5:13pm

APPENDIX F

CITY OF ALBUQUERQUE

October 21, 2005

Mr. Ronald Bohannan, PE
TIERRA WEST, LLC
8509 Jefferson St. NE
Albuquerque, NM 87113

Re: POPEYE'S CHICKEN
10074 Coors Blvd. NW
Approval of Permanent Certificate of Occupancy (C.O.)
Engineer's Stamp dated 06/21/2005 (B-14/D10)
Certification dated 10/21/2005

Dear Ron:

Based upon the information provided in your submittal received 10/21/2005, the above referenced certification is approved for release of Permanent Certificate of Occupancy by Hydrology.

If you have any questions, you can contact me at 924-3982.

Sincerely,

Arlene V. Portillo
Plan Checker, Planning Dept. - Hydrology
Development and Building Services

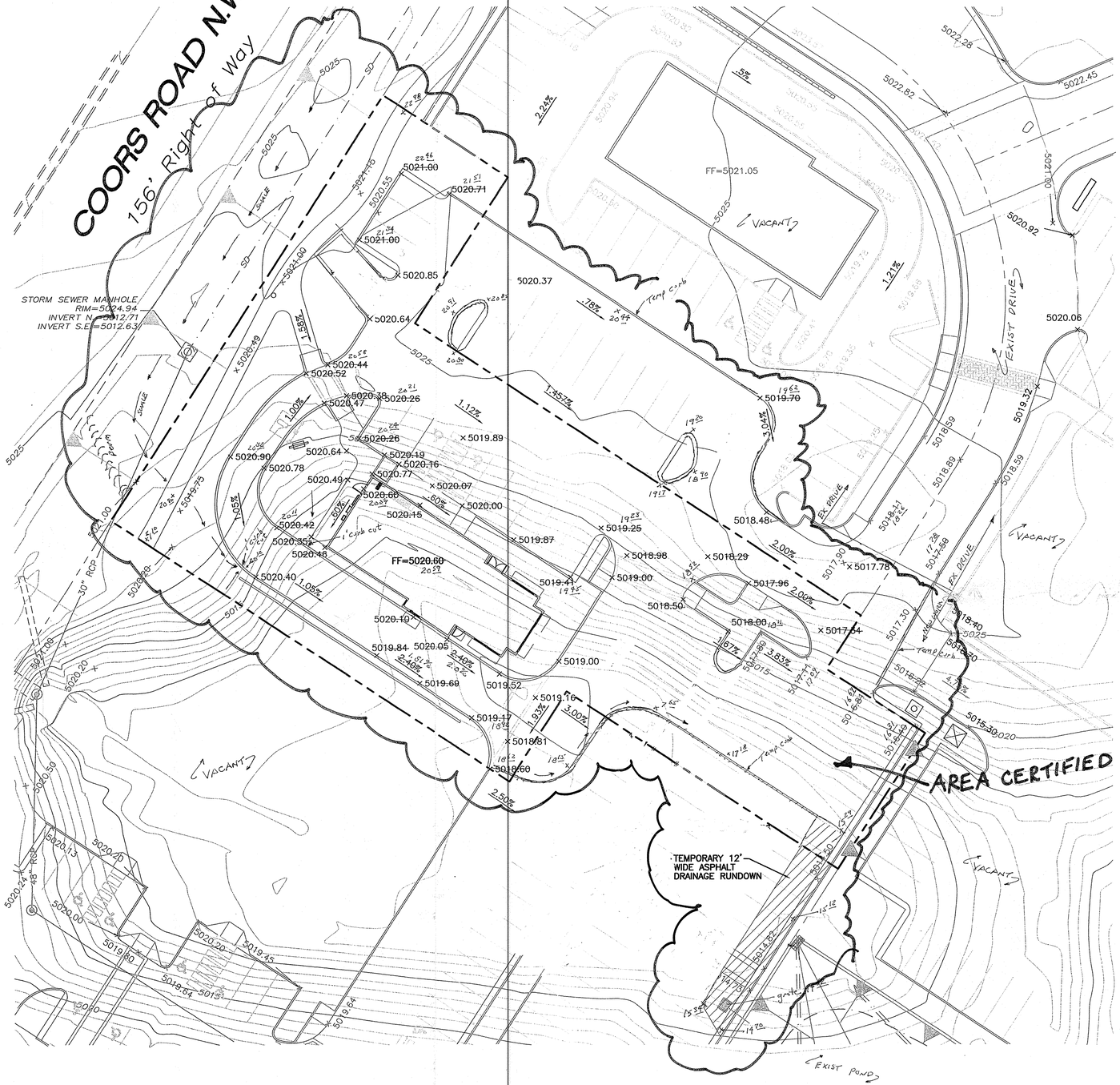
C: Phyllis Villanueva
File

P.O. Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov



EROSION CONTROL NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR OBTAINING A TOPSOIL DISTURBANCE PERMIT PRIOR TO BEGINNING WORK.

2. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING RUN-OFF ON SITE DURING CONSTRUCTION.

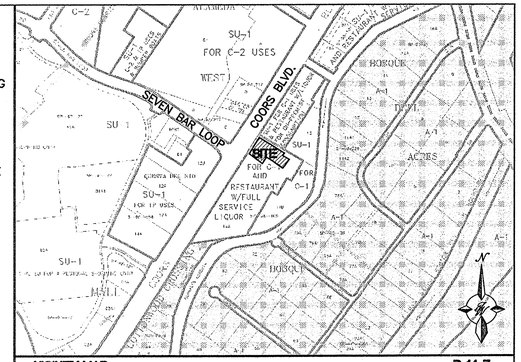
3. CONTRACTOR IS RESPONSIBLE FOR CLEANING ALL SEDIMENT THAT GETS INTO EXISTING RIGHT-OF-WAY.

4. REPAIR OF DAMAGED FACILITIES AND CLEANUP OF SEDIMENT ACCUMULATIONS ON ADJACENT PROPERTIES AND IN PUBLIC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR.

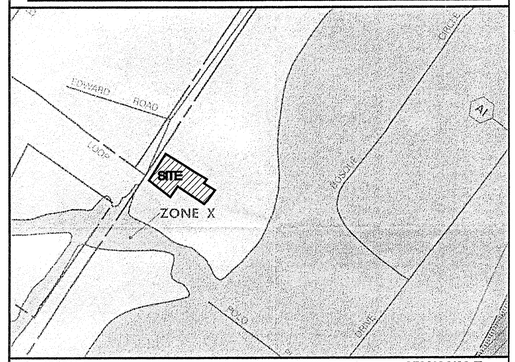
5. ALL EXPOSED EARTH SURFACES MUST BE PROTECTED FROM WIND AND WATER EROSION PRIOR TO FINAL (CITY) ACCEPTANCE OF ANY PROJECT.

CAUTION:

EXISTING UTILITIES ARE NOT SHOWN. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CONDUCT ALL NECESSARY FIELD INVESTIGATIONS PRIOR TO ANY EXCAVATION TO DETERMINE THE ACTUAL LOCATION OF UTILITIES & OTHER IMPROVEMENTS.



VICINITY MAP: B-14-Z



FIRM MAP: 35001C0109 E

NOTES:

1. ALL SPOT ELEVATIONS REPRESENT FLOWLINE ELEVATION UNLESS OTHERWISE NOTED.

LEGEND

○	EXISTING STORM SEWER MANHOLE
▭	EXISTING STORM SEWER INLET
—— EX. 24" RCP ——	EXISTING STORM SEWER LINE
◉	PROPOSED STORM SEWER MANHOLE
▣	PROPOSED 12" LANDSCAPE DRAIN
▭	PROPOSED DOUBLE "C" WATER QUALITY INLET
—— 24" RCP ——	PROPOSED STORM SEWER LINE
	EXISTING CURB & GUTTER
	PROPOSED CURB & GUTTER
	BOUNDARY LINE
	EXISTING SIDEWALK
	PROPOSED RETAINING WALL
	EXISTING RETAINING WALL
5011	EXISTING CONTOUR
5010	EXISTING INDEX CONTOUR
	FLOW ARROW
	SLOPE TIE
× 5048.25	EXISTING SPOT ELEVATION
× 5048.25	PROPOSED SPOT ELEVATION

DRAINAGE CERT W/SURVEY WORK BY OTHERS
12/28/01

DRAINAGE CERTIFICATION

I, RONALD R. BOHANNAN, NMPE 7868, OF THE FIRM TIERRA WEST LLC, HEREBY CERTIFY THAT THIS PROJECT HAS BEEN GRADED AND WILL DRAIN IN SUBSTANTIAL COMPLIANCE WITH AND IN ACCORDANCE WITH THE DESIGN INTENT OF THE APPROVED PLAN DATED 6/21/05. THE RECORD INFORMATION EDITED ONTO THE ORIGINAL DESIGN DOCUMENT HAS BEEN OBTAINED BY PRESTON HALL, NMPS 10342, OF THE FIRM HALL SURVEYS.

I FURTHER CERTIFY THAT I HAVE PERSONALLY VISITED THE PROJECT SITE ON 10/21/05 AND HAVE DETERMINED BY VISUAL INSPECTION THAT THE SURVEY DATA PROVIDED IS REPRESENTATIVE OF ACTUAL SITE CONDITIONS AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. THIS CERTIFICATION IS SUBMITTED IN SUPPORT OF A REQUEST FOR FINAL CERTIFICATION OF DRAINAGE FOR CERTIFICATE OF OCCUPANCY.

NOTE EXCEPTIONS HERE: NO EXCEPTIONS TAKEN

THE RECORD INFORMATION PRESENTED HEREON IS NOT NECESSARILY COMPLETE AND INTENDED ONLY TO VERIFY SUBSTANTIAL COMPLIANCE OF THE GRADING AND DRAINAGE ASPECTS OF THIS PROJECT. THOSE RELYING ON THE RECORD DOCUMENT ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE USING IT FOR ANY OTHER PURPOSE.

NMPE DATE

N

GRAPHIC SCALE
20 10 0 10 20
SCALE: 1"=20'

NO.	DATE	REMARKS	BY

REVISIONS

ENGINEER'S SEAL

VINCENT P. CARRICA
P.E. #16212

POPEYE'S CHICKEN

GRADING AND DRAINAGE PLAN

DRAWN BY SV
DATE 05-17-05
2308GRB-4-28-05
SHEET # C-1
JOB # 24103

TIERRA WEST, LLC
8509 JEFFERSON NE
ALBUQUERQUE, NEW MEXICO 87113
(505)858-3100

RECEIVED
OCT 21 2005
HYDROLOGY SECTION

APPENDIX G

EXISTING OFFSITE
BASIN #1
AREA= 18,481 sf
Q100=1.85 cfs
100% D

EXISTING OFFSITE
BASIN #2
AREA=12,782 sf
Q100=0.94 cfs
30% B
30% C
40% D

Q_{100} = 0.94 cfs

EXISTING ONSITE
BASIN #1
AREA=55,513 sf
Q100=3.12 cfs
50% B
50% C

Q_{100} = 1.85 cfs

Q_{100} = 3.12 cfs

COORS

SEVEN BAR LOOP

3:1 MAX.

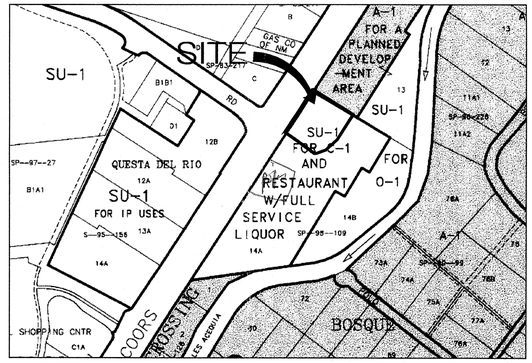
5025

5020

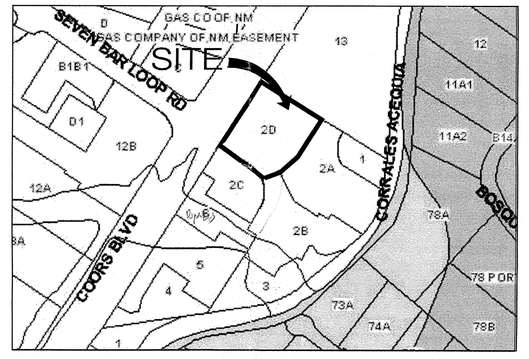
site looks like it is on top of papers

A1 Existing Drainage PLAN
SCALE: 1" = 20'-0"

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.



VICINITY MAP B-14-Z
NOT TO SCALE UPC# 101406519031820301



FLOOD ZONE MAP
NOT TO SCALE

Drainage Summary

Project:	NMEFCU Cottonwood			
Project Number:	2309			
Date:	05/25/06			
By:	Dave A			
Site Location				
Precipitaion Zone	1 Per Table A-1 COA DPM Section 22.2			
Existing summary				
Basin Name	Ex 1	Off Ex #1	Off Ex #2	
Area (sf)	55513	18481	12782	
Area (acres)	1.27	0.42	0.29	
%A Land treatment				
%B Land treatment	50		30	
%C Land treatment	50		30	
%D Land treatment		100	40	
Soil Treatment (acres)				
Area "A"	0.00	0.00	0.00	
Area "B"	0.64	0.00	0.09	
Area "C"	0.64	0.00	0.09	
Area "D"	0.00	0.42	0.12	
Excess Runoff (acre-feet)				
100yr. 6hr.	0.0881	0.0697	0.0314	
10yr. 6hr.	0.0350	0.0438	0.0170	
2yr. 6hr.	0.0069	0.0255	0.0080	
100yr. 24hr.	0.0881	0.0859	0.0359	
Peak Discharge (cfs)				
100 yr.	3.12	1.85	0.94	
10yr.	1.43	1.23	0.54	
2yr.	0.32	0.72	0.24	
Proposed summary				
Basin Name	Pro 1	Pro 2	Off Ex #1	Off Ex #2
Area (sf)	28229	27285	18481	12782
Area (acres)	0.65	0.63	0.42	0.29
%A Land treatment				
%B Land treatment	10	20		30
%C Land treatment	10			30
%D Land treatment	80	80	100	40
Soil Treatment (acres)				
Area "A"	0.00	0.00	0.00	0.00
Area "B"	0.06	0.13	0.00	0.09
Area "C"	0.06	0.00	0.00	0.09
Area "D"	0.52	0.50	0.42	0.12
Excess Runoff (acre-feet)				
100yr. 6hr.	0.0941	0.0893	0.0697	0.0314
10yr. 6hr.	0.0571	0.0541	0.0438	0.0170
2yr. 6hr.	0.0318	0.0302	0.0255	0.0080
100yr. 24hr.	0.1139	0.1085	0.0859	0.0359
Peak Discharge (cfs)				
100 yr.	2.58	2.44	1.85	0.94
10yr.	1.64	1.54	1.23	0.54
2yr.	0.91	0.85	0.72	0.24

RECEIVED
MAY 26 2006
HYDROLOGY SECTION

REV	DATE	BY	REVISION

GEORGE RAINHART, ARCHITECT AND ASSOCIATES P.C.
2325 SAN PEDRO NE., SUITE 2-B
ALBUQUERQUE, NEW MEXICO 87110
PHONE (505) 884-9110 FAX (505) 837-9877

DAVID A. AUBE
STATE OF NEW MEXICO
14227
REGISTERED PROFESSIONAL ENGINEER
5-25-06

PROJECT TITLE
NEW MEXICO EDUCATORS FEDERAL CREDIT UNION
NEC IF COORS BLVD. & SEVEN BAR LOOP
Albuquerque, NM

PROJECT MANAGER | JOB NO. | DRAWN BY:

SHEET TITLE
EXISTING DRAINAGE PLAN

DATE: 05-17-06
SCALE: 1"=20'
sheet- CD.1 of-

THE DESIGN GROUP
ARCHITECTS · PLANNERS · INTERIOR DESIGN
202 CENTRAL AVENUE SE SUITE 200
ALBUQUERQUE, NEW MEXICO 87102
PHONE: 505.242.6880 FAX: 505.242.6881

APPENDIX H

Derek Bohannan

From: Jared Romero <jromero@amafca.org>
Sent: Thursday, August 29, 2024 6:35 PM
To: Derek Bohannan
Cc: Ron Bohannan; Nicole M. Friedt; Brissette, Renee C.
Subject: RE: [#2023004] 7 Bar Retail - Revised Conceptual Drainage Report - AMAFCA No Adverse Comments

Good Evening Derek,

AMAFCA has no further adverse comments on the Conceptual Drainage Report and associated Conceptual Drainage Plan for the 7 Bar Retail Project dated August 2024. Below are items that must be addressed as this project moves into Building and Public Work Order approvals.

- AMAFCA will need to review and approve the final G&D and DRC Work Order Plans (for the infrastructure to be assumed by AMAFCA).
    - AMAFCA will require review of the structural design of the proposed retaining walls prior to building permit approval. There must also be a general note on the G&D stating as such. The design of the retaining wall must include an assumed 6ft CMU garden wall section on top of the retaining wall (above highest FG adjacent to the retaining wall).
    - Based on discussions with AMAFCA's Operations & Maintenance group, the existing pipe penetrations where the inlet is to be capped may require grout filling to minimize maintenance concerns and potential for pipe failure.
    - The pipe penetration is proposed to enter the pond at an elevation of 5007'. The 100-yr WSE from the as-builts of the pond is at an elevation of 5006.5' in **'29 vertical Datum**, putting the WSE in current datum at ~5009.2. If the pipe invert into the pond is below the 100-yr WSE, then it will have to be designed with backflow prevention and assume a higher tailwater condition than shown in the Drainage Report. A profile view showing the HGL & EGL of the pipe network is required. I recommend adjusting the alignment of the storm drain into the pond to be at a 90 degree angle (no skew) to make the connection a little simpler to construct.
- The G&D included in shows a new storm drain penetration into AMAFCA's regional drainage facility. This is subject to review and approval of AMAFCA's Board of Directors as AMAFCA is to assume maintenance of the pipe penetration into the facility via a Turnkey Agreement.
    - The project was introduced to the AMAFCA Board of Directors at the August 2024 meeting. There will be a subsequent presentation(s) to the Board at a future meeting for consideration of approval of the turnkey agreement. The final Turnkey agreement will need to utilize the final approved DRC plans with AMAFCA and the City 's approval signature.

Please let me know if there are any questions.

Best,
Jared

Jared Romero, P.E., CFM
AMAFCA Drainage Engineer
Phone: (505) 884-2215

From: Derek Bohannan <dbohannan@tierrawestllc.com>
Sent: Friday, August 16, 2024 9:00 AM
To: Jared Romero <jromero@amafca.org>
Cc: Ron Bohannan <rrb@tierrawestllc.com>; Nicole M. Friedt <nfriedt@amafca.org>; Brissette, Renee C. <rbrissette@cabq.gov>
Subject: RE: [#2023004] 7 Bar Retail - Drainage Report - AMAFCA Response

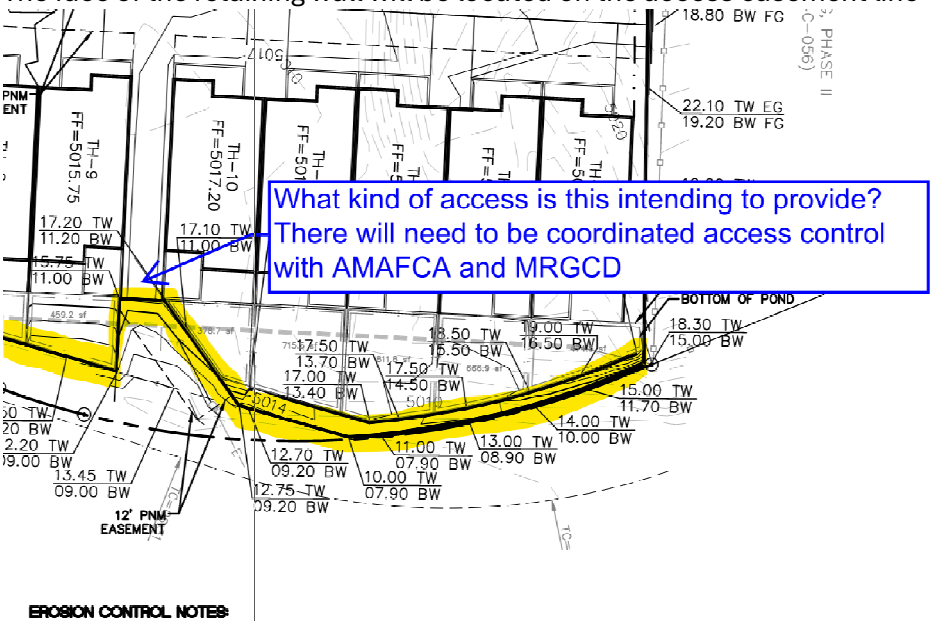
Good morning Jared,

Please see the attached revised drainage report and drawings. (The drawings are in the download link provided)
Drawings - https://we.tl/t-m4W5UGdNBh
Report and Appendices Items - https://we.tl/t-x0FyrsPlwT

At a minimum we are seeking a conceptual approval by AMAFCA such that the City of Albuquerque with your conceptual approval can too also provide conceptual approval so that we can start some of the mass grading activities. The need by the project to start moving dirt prior to final grading and drainage is due to the removal, relocation, and realignment of a 750kV line by PNM that needs to be completed prior to our pad and final grading activities.

Changes|Notes

- We take no exception to the bulleted points below.
- Street Hydraulic and Pipe Calculations were added to the report.
- Basin reconfiguration and water blocks added along Seven Bar per COA review/comments.
- Narrative on backyard ponding added to address COA comments.
- Pond Volumetric Comparison from Original Report added.
- Pond invert set to 0.5' above emergency spillway elevation at pond.
- Note that no access is proposed at the location in your drawing notes. This area is for a PNM easement for the relocation of the previously mentioned 750kV line that comes off of the existing OH line at this location.
    - The existing PNM drop and pole are to remain as currently located on the site with guy wire.
    - The face of the retaining wall will be located on the access easement line



- Single wall configurations along the pond have been called out as noted with L-footers to be wholly contained on the proposed developments property.

If you require any additional information please do not hesitate to contact me at anytime.

Thank you!

Derek R Bohannan.

From: Jared Romero <jromero@amafca.org>
Sent: Tuesday, July 9, 2024 1:24 PM
To: Derek Bohannan <dbohannan@tierrawestllc.com>
Cc: Ron Bohannan <rrb@tierrawestllc.com>; Nicole M. Friedt <nfriedt@amafca.org>; Brissette, Renee C. <rbrissette@cabq.gov>
Subject: RE: [#2023004] 7 Bar Retail - Drainage Report - AMAFCA Response

Good Afternoon Derek,

Below is a link to download AMAFCA's comments on the compiled Drainage Report for the 7 Bar Retail Project. Like we have discussed in the past, conceptually, AMAFCA does not have any adverse comments to the overarching plan for the subdivision, but there is cleanup in the report and plans that is needed. Below are also questions/conditions that will need to be addressed as this project advances (we've already discussed most of these, so they should not be surprising).

7 Bar Retail - Dranage Report - AMAFCA Comments.pdf

- It's a little unclear if Lot 2 is intended to be subdivided further. If so, AMAFCA will need to review the plat when prepared.
- AMAFCA will need to review the final G&D, DRC Work Order Plans (for the infrastructure to be assumed by AMAFCA), and the revised Drainage Report.
- The G&D included in shows a new storm drain penetration into AMAFCA's regional drainage facility. This is subject to review and approval of AMAFCA's Board of Directors as AMAFCA is to assume maintenance of the pipe penetration into the facility via a Turnkey Agreement.
    - The project will first have to be introduced to the AMAFCA Board of Directors at a regular meeting. Should the Board be in favor, there will be a subsequent presentation to the Board at a future meeting for consideration of approval of the turnkey agreement.
    - The project can be introduced with a preliminary G&D; however the final Turnkey agreement will need to utilize the final approved plans with AMAFCA and the City 's approval signature.

Please let me know if you have any questions.

Best,
Jared

Jared Romero, P.E., CFM
AMAFCA Development Review Engineer
Phone: (505) 884-2215

From: Derek Bohannan <dbohannan@tierrawestllc.com>
Sent: Friday, June 28, 2024 10:59 AM
To: Jared Romero <jromero@amafca.org>

Cc: Ron Bohannan <rrb@tierrawestllc.com>
Subject: RE: [#2023004] 7 Bar Retail - Drainage Report - Review request

I guess the link would help
https://we.tl/t-FRM4eJIFPc

Derek.

From: Derek Bohannan
Sent: Friday, June 28, 2024 10:47 AM
To: Jared Romero <jromero@amafca.org>
Cc: Ron Bohannan <rrb@tierrawestllc.com>
Subject: [#2023004] 7 Bar Retail - Drainage Report - Review request

Good afternoon Jared,

Can you begin to review the attached report for the 7 Bar Retail Mixed Use Development that we had previously discussed. This is the site located at 7 Bar and Coors Blvd. Renee at the City has stipulated that I need your approval prior to being able to re-submit to her department.

As discussed we are planning on creating an HOA to service and maintain all items/areas that are located within the access easement on the east side of the property adjacent to the canal. Also we are reviewing the turnkey agreement and will have one created for your review once we've been through this review and have everything to where you need it.

In the link below you will find the narrative and appendix items broken out individually, I've also created one PDF that has all items compiled into a single PDF. I'm not sure which of these is your preference for reviewing items so I thought I'd provide it to you both ways.

Please feel free to reach out to me anytime.

Derek R Bohannan.

APPENDIX I

Worksheet for STRM01-01(30)

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data	
Roughness Coefficient	0.017
Channel Slope	0.002 ft/ft
Diameter	30.0 in
Discharge	12.46 cfs

Results	
Normal Depth	22.0 in
Flow Area	3.9 ft²
Wetted Perimeter	5.1 ft
Hydraulic Radius	9.0 in
Top Width	2.21 ft
Critical Depth	14.2 in
Percent Full	73.4 %
Critical Slope	0.008 ft/ft
Velocity	3.23 ft/s
Velocity Head	0.16 ft
Specific Energy	2.00 ft
Froude Number	0.431
Maximum Discharge	15.09 cfs
Discharge Full	14.03 cfs
Slope Full	0.002 ft/ft
Flow Type	Subcritical

GVF Input Data	
Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0

GVF Output Data	
Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Average End Depth Over Rise	0.0 %
Normal Depth Over Rise	50.5 %
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	22.0 in
Critical Depth	14.2 in
Channel Slope	0.002 ft/ft
Critical Slope	0.008 ft/ft

Worksheet for STRM01-02(30)

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data	
Roughness Coefficient	0.017
Channel Slope	0.004 ft/ft
Diameter	30.0 in
Discharge	13.23 cfs

Results	
Normal Depth	18.1 in
Flow Area	3.1 ft²
Wetted Perimeter	4.4 ft
Hydraulic Radius	8.3 in
Top Width	2.45 ft
Critical Depth	14.7 in
Percent Full	60.2 %
Critical Slope	0.008 ft/ft
Velocity	4.28 ft/s
Velocity Head	0.29 ft
Specific Energy	1.79 ft
Froude Number	0.672
Maximum Discharge	21.07 cfs
Discharge Full	19.59 cfs
Slope Full	0.002 ft/ft
Flow Type	Subcritical

GVF Input Data	
Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0

GVF Output Data	
Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Average End Depth Over Rise	0.0 %
Normal Depth Over Rise	57.2 %
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	18.1 in
Critical Depth	14.7 in
Channel Slope	0.004 ft/ft
Critical Slope	0.008 ft/ft

Worksheet for STRM01-03(30)

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data	
Roughness Coefficient	0.017
Channel Slope	0.005 ft/ft
Diameter	30.0 in
Discharge	13.23 cfs

Results	
Normal Depth	16.7 in
Flow Area	2.8 ft²
Wetted Perimeter	4.2 ft
Hydraulic Radius	8.0 in
Top Width	2.48 ft
Critical Depth	14.7 in
Percent Full	55.6 %
Critical Slope	0.008 ft/ft
Velocity	4.72 ft/s
Velocity Head	0.35 ft
Specific Energy	1.74 ft
Froude Number	0.782
Maximum Discharge	23.86 cfs
Discharge Full	22.18 cfs
Slope Full	0.002 ft/ft
Flow Type	Subcritical

GVF Input Data	
Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0

GVF Output Data	
Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Average End Depth Over Rise	0.0 %
Normal Depth Over Rise	43.2 %
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	16.7 in
Critical Depth	14.7 in
Channel Slope	0.005 ft/ft
Critical Slope	0.008 ft/ft

Worksheet for STRM-LAT

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data		
Roughness Coefficient	0.017	
Channel Slope	0.106	ft/ft
Diameter	18.0	in
Discharge	0.77	cfs

Results		
Normal Depth	2.1	in
Flow Area	0.1	ft^2
Wetted Perimeter	1.1	ft
Hydraulic Radius	1.3	in
Top Width	0.97	ft
Critical Depth	3.9	in
Percent Full	11.8	%
Critical Slope	0.009	ft/ft
Velocity	6.59	ft/s
Velocity Head	0.67	ft
Specific Energy	0.85	ft
Froude Number	3.340	
Maximum Discharge	28.18	cfs
Discharge Full	26.20	cfs
Slope Full	0.000	ft/ft
Flow Type	Supercritical	

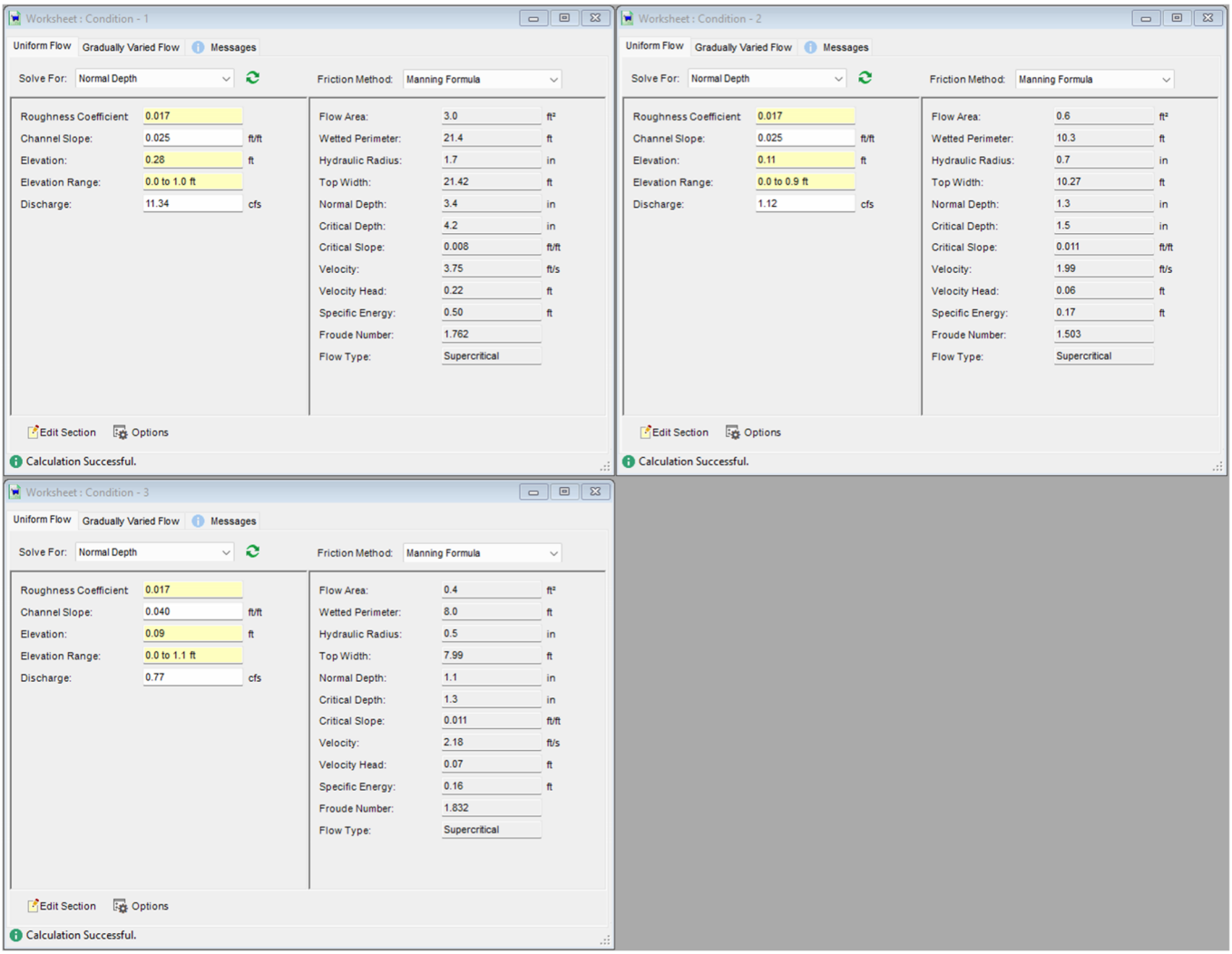
GVF Input Data		
Downstream Depth	0.0	in
Length	0.0	ft
Number Of Steps	0	

GVF Output Data		
Upstream Depth	0.0	in
Profile Description	N/A	
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.0	%
Normal Depth Over Rise	11.8	%
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	2.1	in
Critical Depth	3.9	in
Channel Slope	0.106	ft/ft
Critical Slope	0.009	ft/ft

Appendix I.

Flow Master Inputs and Results for Street Hydraulic Calculations and Pipe Hydraulics

Street Hydraulics



APPENDIX J

CITY OF ALBUQUERQUE

Planning Department
Alan Varela, Director

Mayor Timothy M. Keller

October 01, 2024

Ronald Bohannan, P.E.
Tierra West, LLC
5571 Midway Park Place NE
Albuquerque, NM 87109

RE: Retail at Bar 7
Conceptual Grading Plan and Conceptual Drainage Report
Engineer's Stamp Date: 09/25/2024
Hydrology File: B14D010D

Dear Mr. Bohannan:

Based upon the information provided in your submittal received 09/27/2024, the Conceptual Grading Plan and Conceptual Drainage Report are preliminarily approved for action by the Development Facilitation Team (DFT) on the Site Plan for a Building Permit.

PRIOR TO BUILDING PERMIT / WORK ORDER:

1. Please submit a more detailed Grading & Drainage Plan to Hydrology for review and approval. This digital (.pdf) is emailed to PLNDRS@cabq.gov along with the Drainage Transportation Information Sheet.

As a reminder, if the project total area of disturbance (including the staging area and any work within the adjacent Right-of-Way) is 1 acre or more, then an Erosion and Sediment Control (ESC) Plan and Owner's certified Notice of Intent (NOI) is required to be submitted to the Stormwater Quality Engineer (Doug Hughes, PE, jhughes@cabq.gov, 505-924-3420) 14 days prior to any earth disturbance.

If you have any questions, please contact me at 505-924-3362 or richardmartinez@cabq.gov.

Sincerely,

Richard Martinez, P.E.
Senior Engineer, Hydrology
Planning Department

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

City of Albuquerque

Planning Department
Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (DTIS)

Project Title: 7 Bar Retail Hydrology File # B14D010D
Legal Description: Lot 2-A and 2-B Lots 2-A, 2-B, 2-C and 2-D Cottonwood Crossing Phase II (Being a Replat of Tr 2 Cottonwood Crossing Phase II)
City Address, UPC, OR Parcel: 101406521531220323

Applicant/Agent: Tierra West, LLC Contact: Derek Bohannan
Address: 5571 Midway Park Pl NE, ABQ NM 87109 Phone: 505-858-3100
Email: dbohannan@tierrawestllc.com

Applicant/Owner: _____ Contact: _____
Address: _____ Phone: _____
Email: _____

(Please note that a DFT SITE is one that needs Site Plan Approval & ADMIN SITE is one that does not need it.)

TYPE OF DEVELOPMENT: ☐ PLAT (#of lots) _____ ☐ RESIDENCE
☑ DFT SITE ☐ ADMIN SITE

RE-SUBMITTAL: ☑ YES ☐ NO

DEPARTMENT: ☐ TRANSPORTATION ☑ HYDROLOGY/DRAINAGE

Check all that apply under Both the Type of Submittal and the Type of Approval Sought:

TYPE OF SUBMITTAL:

- ☐ ENGINEER/ARCHITECT CERTIFICATION
- ☐ PAD CERTIFICATION
- ☑ CONCEPTUAL G&D PLAN
- ☐ GRADING & DRAINAGE PLAN
- ☑ DRAINAGE REPORT
- ☐ DRAINAGE MASTER PLAN
- ☐ CLOMR/LOMR
- ☐ TRAFFIC CIRCULATION LAYOUT (TCL) ADMINISTRATIVE
- ☐ TRAFFIC CIRCULATION LAYOUT FOR DFT APPROVAL
- ☐ TRAFFIC IMPACT STUDY (TIS)
- ☐ STREET LIGHT LAYOUT
- ☐ OTHER (SPECIFY) _____

TYPE OF APPROVAL SOUGHT:

- ☐ BUILDING PERMIT APPROVAL
- ☐ CERTIFICATE OF OCCUPANCY
- ☐ CONCEPTUAL TCL DFT APPROVAL
- ☐ PRELIMINARY PLAT APPROVAL
- ☐ FINAL PLAT APPROVAL
- ☐ SITE PLAN FOR BLDG PERMIT DFT APPROVAL
- ☐ SIA/RELEASE OF FINANCIAL GUARANTEE
- ☐ FOUNDATION PERMIT APPROVAL
- ☑ GRADING PERMIT APPROVAL
- ☐ SO-19 APPROVAL
- ☐ PAVING PERMIT APPROVAL
- ☐ GRADING PAD CERTIFICATION
- ☐ WORK ORDER APPROVAL
- ☐ CLOMR/LOMR
- ☑ OTHER (SPECIFY) EPC Signoff

DATE SUBMITTED: 09/25/2024

REV. 09/13/23

7 Bar Retail
CONCEPTUAL DRAINAGE REPORT

August 2024

PREPARED FOR:

A Management Inc.,
4461 Irving Blvd NW
Albuquerque, NM 87114

PREPARED BY:

Tierra West, LLC
5571 Midway Park Place NE
Albuquerque, NM 87109

City of Albuquerque
Planning Department
Development Review Services
HYDROLOGY SECTION
PRELIMINARY APPROVED
DATE: 10/01/2024
BY:
HydroTrans # B14D010D

THESE PLANS AND/OR REPORT ARE CONCEPTUAL ONLY. MORE INFORMATION MAY BE NEEDED IN THEM AND SUBMITTED TO HYDROLOGY FOR BUILDING PERMIT APPROVAL.