CITY OF ALBUQUERQUE

Planning Department
Brennon Williams, Director

Mayor Timothy M. Keller

December 6, 2019

Jeremy Shell
Respec
5971 Jefferson St. NE
Albuquerque, NM 87109

RE: Carlisle Marketplace
2100 Carlisle NE
Conceptual Grading Plan Stamp Date: 12/3/19
Drainage Report Stamp Date: 12/3/19
Hydrology File: H17D097

Dear Mr. Shell:

Based on the submittal received on 12/3/19, the Conceptual Grading Plan and Drainage Report are approved for Site Plan for Building Permit.

Prior to Building Permit (For Information):

1. The storm drain (inlets manholes, pipes, inverts, etc…) in Carlisle and I-40 frontage needs to be surveyed and shown on the grading plan.

2. Required SWQV needs to be calculated for the impervious area only and using the redevelopment amount (0.26/12”). It looks like you multiplied .34/12” by the impervious area.

3. Please provide the stormwater quality volume (SWQV) calculations for each basin draining to each pond. The stormwater quality ponds need to be sized for the areas draining to them.

4. Payment in Lieu of onsite management of the SWQV must be made prior to Building Permit (Amount T.B.D).

5. Please show and label the pond(s) and include a label on each with the SWQV and elevation, the 100-year volume and elevation, the peak 100 year inflow and outflow, the spillway crest elevation, and the spillway flow depth.

6. 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, 924-3420) 14 days prior to any earth disturbance.

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

7. Additional comments should be expected, based on the outcome of the above remarks and level of detail shown on plans.

If you have any questions, please contact me at 924-3695 or dpeterson@cabq.gov.

Sincerely,

Dana Peterson, P.E.
Senior Engineer, Planning Dept.
Development Review Services

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 11/2018)

Project Title: Carlisle Market Place Building Permit #: _____ Hydrology File #: H17D097

DRB#: _____ EPC#: _____ Work Order#: _____

Legal Description: Tracts A and B, Carlisle and Indian School Subdivision

City Address: _____

Applicant: RESPEC Contact: _____

Address: 5971 Jefferson Street NE Suite 101 Albuquerque NM 87109

Phone#: (505) 253-9811 Fax#: _____ E-mail: Jeremy.shell@respec.com

Owner: Carlisle Associates LP Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

TYPE OF SUBMITTAL: ____ PLAT (___# OF LOTS) ____ RESIDENCE __X__ DRB SITE ____ ADMIN SITE

IS THIS A RESUBMITTAL?: __X__ Yes _____ No

DEPARTMENT: ____ TRAFFIC/ TRANSPORTATION __X__ HYDROLOGY/ DRAINAGE

Check all that Apply:

TYPE OF SUBMITTAL:

____ ENGINEER/ARCHITECT CERTIFICATION
____ PAD CERTIFICATION
__X__ CONCEPTUAL G & D PLAN
____ GRADING PLAN
____ DRAINAGE MASTER PLAN
__X__ DRAINAGE REPORT
____ FLOODPLAIN DEVELOPMENT PERMIT APPLIC
____ ELEVATION CERTIFICATE
____ CLOMR/LOMR
____ TRAFFIC CIRCULATION LAYOUT (TCL)
____ TRAFFIC IMPACT STUDY (TIS)
____ OTHER (SPECIFY) _____
____ PRE-DESIGN MEETING?

TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

____ BUILDING PERMIT APPROVAL
____ CERTIFICATE OF OCCUPANCY
____ PRELIMINARY PLAT APPROVAL
__X__ SITE PLAN FOR SUB'D APPROVAL
__X__ SITE PLAN FOR BLDG. PERMIT APPROVAL
____ FINAL PLAT 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
____ FLOODPLAIN DEVELOPMENT PERMIT
____ OTHER (SPECIFY) _____

DATE SUBMITTED: _____ By: _____

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED: _____

FEE PAID: _____

From:	Thompson, Keith, NMDOT
To:	Jeremy Shell
Cc:	Peterson, Dana M.; Morgenstern, Steven, NMDOT; Kubiak, Peter, NMDOT; Sheldon Greer
Subject:	RE: Carlisle Marketplace
Date:	Wednesday, December 04, 2019 9:01:02 AM

Jeremy,

NMDOT District 3 Drainage has no further comments regarding the Carlisle Marketplace development.

Thank you.

Keith Thompson, P.E.
NMDOT – District 3 Engineering Support
Cell: (505) 490-3752

From: Jeremy Shell <Jeremy.Shell@respec.com>
Sent: Tuesday, December 3, 2019 12:46 PM
To: Thompson, Keith, NMDOT <Keith.Thompson@state.nm.us>
Cc: Dana Peterson <dpeterson@cabq.gov>; Morgenstern, Steven, NMDOT <Steven.Morgenstern@state.nm.us>; Kubiak, Peter, NMDOT <Peter.Kubiak@state.nm.us>; Sheldon Greer <Sheldon.Greer@respec.com>
Subject: [EXT] RE: Carlisle Marketplace

Keith – See attached revised drainage report, grading plan, and utility plan. We have DRB tomorrow morning so I am hoping you can review this afternoon to verify that revisions have been made per our discussion below. Once the City receives approval from you, they will be ready to approve as well.

Dana – I will have hardcopies submitted to you this afternoon. I appreciate both of your efforts to have this approved before tomorrow's DRB.

Thanks!

Jeremy Shell
RESPEC
505.253.9811 office

From: Thompson, Keith, NMDOT <Keith.Thompson@state.nm.us>
Sent: Monday, December 2, 2019 10:23 AM
To: Jeremy Shell <Jeremy.Shell@respec.com>
Cc: Dana Peterson <dpeterson@cabq.gov>; Morgenstern, Steven, NMDOT <Steven.Morgenstern@state.nm.us>; Kubiak, Peter, NMDOT <Peter.Kubiak@state.nm.us>; Sheldon Greer <Sheldon.Greer@respec.com>
Subject: RE: Carlisle Marketplace

Hi Jeremy,

I agree with the approach indicated on the exhibit.

On the proposed plans please indicate that the wall opening is to remain and match existing spot elevations where indicated on the exhibit and also at the low point.

Thank you.

Keith Thompson, P.E.
NMDOT – District 3 Engineering Support
Cell: (505) 490-3752

From: Jeremy Shell <Jeremy.Shell@respec.com>
Sent: Wednesday, November 27, 2019 3:03 PM
To: Thompson, Keith, NMDOT <Keith.Thompson@state.nm.us>
Cc: Dana Peterson <dpeterson@cabq.gov>; Morgenstern, Steven, NMDOT <Steven.Morgenstern@state.nm.us>; Kubiak, Peter, NMDOT <Peter.Kubiak@state.nm.us>; Sheldon Greer <Sheldon.Greer@respec.com>
Subject: [EXT] RE: Carlisle Marketplace

Hello Keith,

Upon further review, I agree that flows should not be cutoff to the east. I have analyzed the existing conditions and have come to the following conclusion. See attached. Flows coming from Sub-basin C enter this area and collect to a low point in front of the dumpster. Once that low point fills up, water begins to spill both to the east and north due to the elevation being the same on either side of the low-point area. It is difficult to discern exactly how much flow goes in each direction, but I believe a reasonable assumption is an even split.

For the developed condition, I would propose to leave this area as is and not modify the existing grades in front of the dumpster, which will allow runoff to match the existing drainage pattern at this location. By doing this, the drainage area currently discharging to the existing inlet will not be increased with this development. Nor will the discharge be increased to the adjacent property to the east. Additionally, the wall opening is located on the adjacent property, which makes it difficult to modify the drainage regardless.

If this approach is agreeable to you, I will update the drainage report accordingly. Please let me know and I will send you a revised report. And in regards to keyed note #19, that is an error. I will fix that and resend as well.

Thank you,

Jeremy Shell
RESPEC
505.253.9811 office

From: Thompson, Keith, NMDOT <Keith.Thompson@state.nm.us>
Sent: Thursday, November 7, 2019 4:17 PM
To: Jeremy Shell <Jeremy.Shell@respec.com>
Cc: Dana Peterson <dpeterson@cabq.gov>; Morgenstern, Steven, NMDOT <Steven.Morgenstern@state.nm.us>; Kubiak, Peter, NMDOT <Peter.Kubiak@state.nm.us>
Subject: RE: Carlisle Marketplace

Jeremy,

In the existing conditions the Drainage Report states that the wall opening allows runoff to discharge into the adjacent property east of Sub-basin C and subsequent flows bypass the opening entering Sub-basin B.

The proposed conditions cutoff discharge to the adjacent property. Given the size of the opening and the existing Sub-Basin C primarily sloping to the east, the majority of runoff would discharge to the adjacent property prior to bypass flow occurring. Cutting off discharge to the property would result in substantially more runoff reaching the rundown/inlet north of proposed Sub-basin 2. To the best of my knowledge the rundown and inlet are under NMDOT jurisdiction. If you have contrary information please provide it.

The existing conditions and the delineation of Sub-basin B indicate that the rundown and inlet should be limited to a discharge of 4.5 cfs.

Please indicate how runoff would be mitigated to existing conditions or provide information that the rundown and inlet are not under NMDOT jurisdiction.

Additionally, keyed note 19 on sheet C-300 proposes a storm drain pipe at the existing inlet/rundown at the northeast corner of the property.

Please review.

Thank you.

Keith Thompson, P.E.
NMDOT – District 3 Engineering Support
Cell: (505) 490-3752

From: Jeremy Shell <Jeremy.Shell@respec.com>

Sent: Monday, November 4, 2019 5:06 PM
To: Thompson, Keith, NMDOT <Keith.Thompson@state.nm.us>
Cc: Dana Peterson <dpeterson@cabq.gov>; Morgenstern, Steven, NMDOT <Steven.Morgenstern@state.nm.us>; Kubiak, Peter, NMDOT <Peter.Kubiak@state.nm.us>
Subject: [EXT] RE: Carlisle Marketplace

Keith,
Please see attached revised grading plan, utility plan, and drainage report. We are proposing to match the historic condition and surface drain to the existing inlet. Please let me know if you have any additional comments.

Thank you,

Jeremy Shell
RESPEC
505.253.9811 office

From: Jeremy Shell
Sent: Wednesday, October 2, 2019 1:32 PM
To: Thompson, Keith, NMDOT <Keith.Thompson@state.nm.us>
Cc: Dana Peterson <dpeterson@cabq.gov>; Morgenstern, Steven, NMDOT <Steven.Morgenstern@state.nm.us>; Kubiak, Peter, NMDOT <Peter.Kubiak@state.nm.us>
Subject: RE: Carlisle Marketplace

Keith,
Thank you for your feedback. I will revise the plan to eliminate the storm drain connection and match the historic surface flow condition to the existing NMDOT inlet.

Thanks,

Jeremy Shell
RESPEC
505.253.9811 office

From: Thompson, Keith, NMDOT <Keith.Thompson@state.nm.us>
Sent: Wednesday, October 2, 2019 12:24 PM
To: Jeremy Shell <Jeremy.Shell@respec.com>
Cc: Dana Peterson <dpeterson@cabq.gov>; Morgenstern, Steven, NMDOT <Steven.Morgenstern@state.nm.us>; Kubiak, Peter, NMDOT <Peter.Kubiak@state.nm.us>
Subject: RE: Carlisle Marketplace

Jeremy,

Current NMDOT practice forbids changes/alterations to natural drainage patterns as well as private connections to NMDOT infrastructure.

This is partly due to maintenance and liability concerns of aging infrastructure that could potentially lead to failure during the construction phase.

Please reply/respond with any additional concerns.

Thank you.

Keith Thompson, P.E.
NMDOT – District 3 Engineering Support
Cell: (505) 490-3752

From: Jeremy Shell <Jeremy.Shell@respec.com>
Sent: Thursday, September 26, 2019 3:29 PM
To: Thompson, Keith, NMDOT <Keith.Thompson@state.nm.us>
Cc: Dana Peterson <dpeterson@cabq.gov>
Subject: [EXT] Carlisle Marketplace

Hello Keith,

We are doing the engineering for a new development at the northeast corner of Carlisle and Indian School. This is the site of the old Kmart building. See attached utility plan for your reference. The new development will renovate a portion of the existing building (previously Kmart) with an addition. The Burger King will remain and 3 retail pads will be added along Carlisle.

Historically, a portion of the site surface drains to the northwest corner of the property and discharges to an NMDOT inlet. From what I can tell from background information I have been able to dig up, runoff collected in this inlet heads west in a storm drain and, in one way or another, ends up in the Embudo Channel on the north side of I-40.

For the proposed conditions, we intend to collect runoff in a private drop inlet and storm drain that will connect to the same DOT inlet. The historic flow rate arriving at this inlet is 10.3 cfs. We are proposing 9.3 cfs to be discharged to this inlet via the new storm drain pipe, so the flows will not be increased. The new inlet and storm drain is shown on the attached utility plan. I have also attached the existing and proposed sub-basin exhibits for your reference. Existing Sub-basin A and proposed Sub-basin 1 are the areas I am referencing that discharge to the DOT inlet.

We have submitted to City Hydrology and one of the comments received requested that I obtain written concurrence from you in order to get approval from Hydrology since the runoff pattern is being modified from a surface flow to a new storm drain connection. **Please, by response to this email, confirm that the NMDOT concurs with the proposed conditions to connect to the existing inlet via storm drain where this portion of the site historically discharges to.**

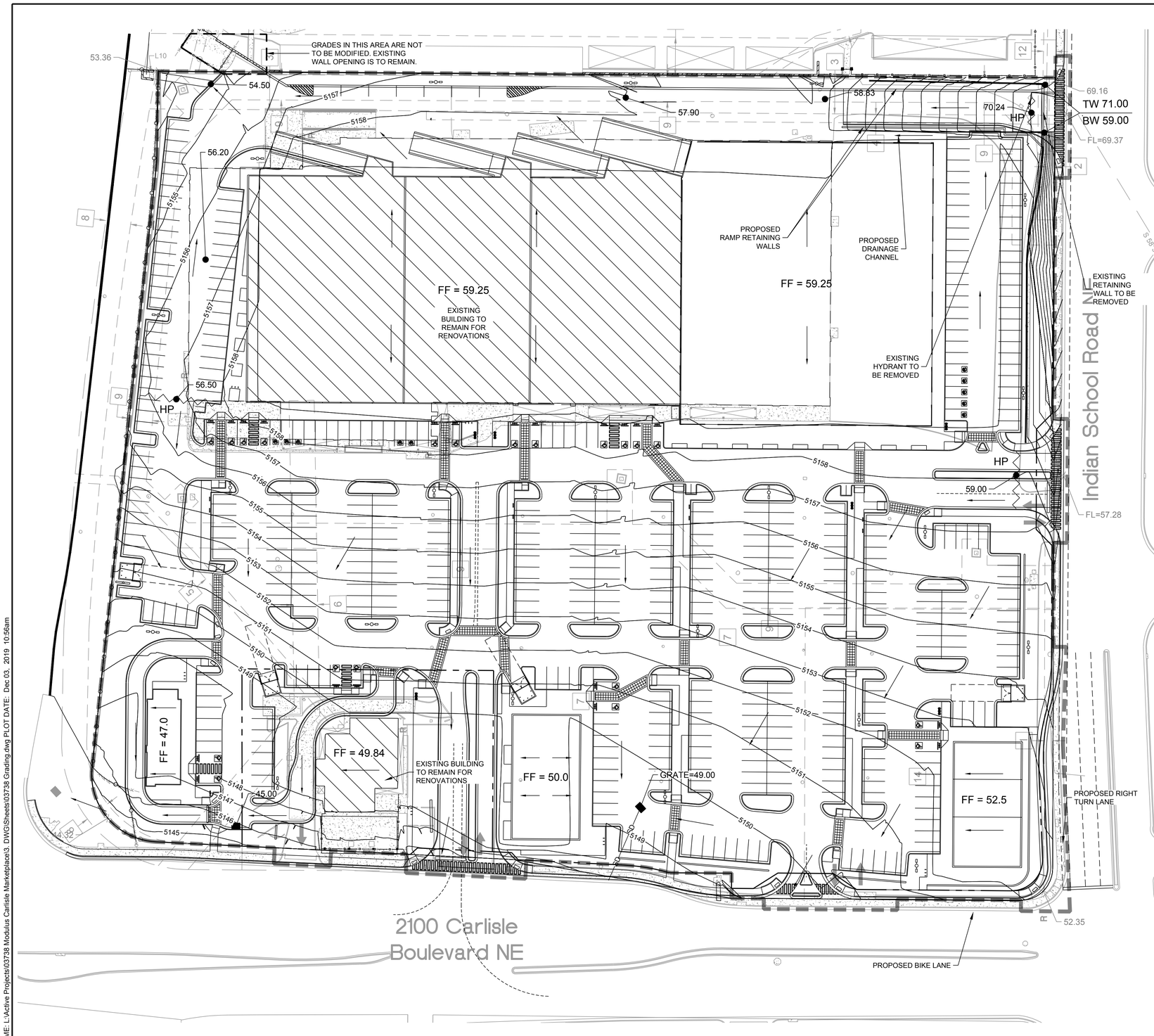
Please let me know if you would like to see additional information. Also feel free to reach out if you would like to discuss in more detail or meet to go through this. I am hoping to have this wrapped up

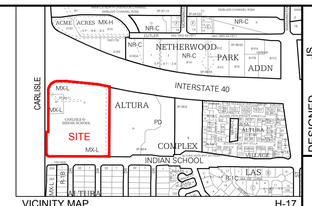
quickly so I appreciate your help in advance.

Thank you,

Jeremy Shell
Engineer

RESPEC
5971 Jefferson St. NE #101
Albuquerque, NM 87109
505.253.9811 office
respec.com





NOTE:

1. THE EXISTING PARKING LOT AND BUILDINGS WILL BE DEMOLISHED UNLESS OTHERWISE SPECIFIED ON THIS PLAN.
2. PROPOSED PUBLIC INFRASTRUCTURE WILL BE INCLUDED ON PUBLIC WORK ORDER

LEGEND

- PROPERTY LINE
- FLOW ARROW
- HIGH POINT (HP)
- GRADING LIMITS
- XX.XX — PROPOSED SPOT ELEVATIONS
- XX.XX — EXISTING SPOT ELEVATIONS
- EXISTING CONTOUR LINES
- 5280 — PROPOSED CONTOUR LINES

EASEMENT NOTES

1. EXISTING 7' PNM EASEMENT (12/29/1969, BK. MISC. 159, PG. 619) AND AS SHOWN ON PLAT (3/3/1994, 94C-65)
2. EXISTING 5' X 58.5' P.U.E. (6/6/1966, D-805, FOLIO 492-493) AND AS SHOWN ON PLAT (3/3/1994, 94C-65)
3. WEST 1/2 OF VACATED SOLANO AVENUE NE RETAINED AS P.U.E. PER VACATION ORDINANCE #2742 DATED 10/12/1965 AND AS SHOWN ON PLAT (3/3/1994, 94C-65)
4. EXISTING 7' X 500' P.U.E. (6/6/1966, BK. D805, PG. 492-493) AND AS SHOWN ON PLAT (3/3/1994, 94C-65)
5. EXISTING 7' UNDERGROUND PNM EASEMENT (3/3/1994, 94C-65)
6. EXISTING 20' UTILITY EASEMENT (3/3/1994, 94C-65)
7. EXISTING PERMANENT MUTUAL NON-EXCLUSIVE RECIPROCAL INGRESS, EGRESS AND CROSS-PARKING EASEMENT ACROSS TRACTS A AND B FOR THE USE OF PARKING AREAS, DRIVEWAYS, COMMON UTILITIES AND OTHER COMMON AREAS PER PARKING AGREEMENT (3/16/1971, BK. MISC. 208, PG. 117), RE-RECORDED (12/21/1971, BK. MISC. 241, PG. 404) AND AGREEMENT AND DECLARATION OF EASEMENT AND COVENANTS (8/23/2000, BK. A9, PG. 2693), BLANKET IN NATURE
8. EXISTING 20' PERPETUAL P.U.E. AND RIGHT-OF-WAY EASEMENT (11/8/1965, BK. D-790, PG. 7-9) AND AS SHOWN ON PLAT (3/3/1994, 94C-65)
9. EXISTING 20' PERMANENT PUBLIC WATERLINE EASEMENT (8/30/2001, BK. A24, PG. 647, DOC. NO. 2001102359)
10. EAST 1/2 OF VACATED SOLANO AVENUE NE RETAINED AS P.U.E. PER VACATION ORDINANCE #2742 DATED 10/12/1965
11. EXISTING 7' PRIVATE PNM AND US WEST COMMUNICATIONS EASEMENT FOR TRACT A, ALTURA COMPLEX (3/24/1980, BK. 761, PAGE 543, DOC. NO. 8017867)
12. EXISTING 10' P.U.E. (12/30/1997, 97C-368)
13. EXISTING 7' P.U.E. (3/23/1972, BK. MISC. 253, PG. 556-558) AND AS SHOWN ON PLAT (12/301997, 97C-368)
14. LEASE AREA WITHIN TRACT A (8/23/2000, BK. A9, PG. 2693, DOC. NO. 2000083026)

DESIGNED JS
DRAWN JS
CHECKED SG
DATE 12.03.2019

REVISION

RESPEC
5971 JEFFERSON STREET SUITE 101
ALBUQUERQUE NEW MEXICO 87109
WATER & NATURAL RESOURCES
WWW.RESPEC.COM 505.253.9718

STAMP

SHELDON E. GREER NEW MEXICO 17154 12/03/19 LICENSED PROFESSIONAL ENGINEER

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.

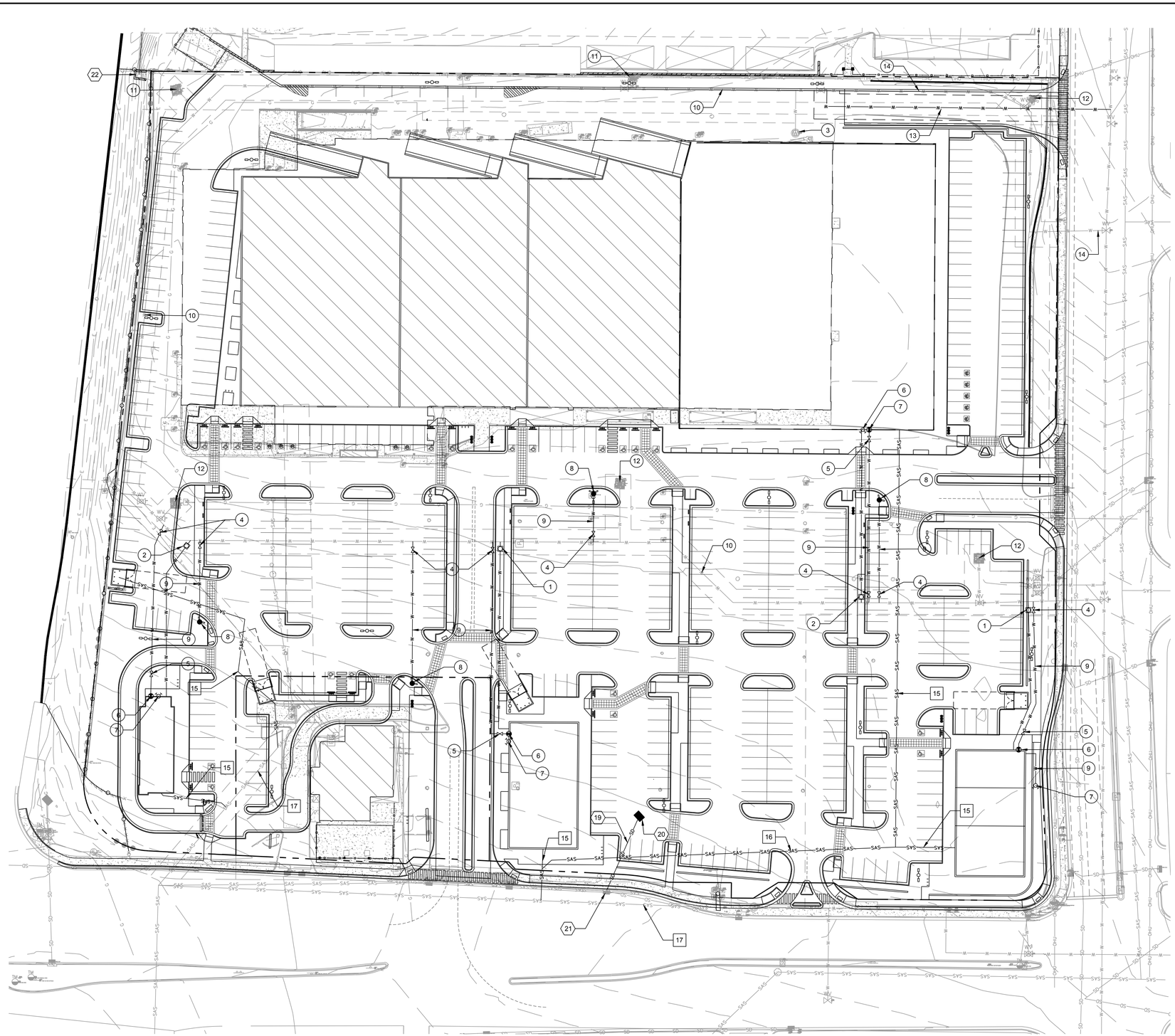
PROJECT NAME: CARLISLE MARKETPLACE

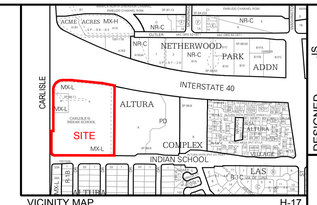
SHEET TITLE: CONCEPTUAL GRADING

SUBMITTED FOR: DRB SITE PLAN

SHEET NUMBER: C-200

NAME: L:\Active Projects\03738 Modulus Carlisle Marketplace\3. DWG\Sheets\03738 Grading.dwg PLOT DATE: Dec 03, 2019 10:56am





VICINITY MAP H-17

KEYED NOTES

1. INSTALL 1" WATER SERVICE
2. INSTALL 1 ½" WATER SERVICE
3. EXISTING WATER SERVICE
4. INSTALL PUBLIC 6" GATE VALVE & VALVE BOX
5. INSTALL PRIVATE 6" GATE VALVE & VALVE BOX
6. INSTALL WALL INDICATOR VALVE
7. INSTALL FIRE DEPARTMENT CONNECTION
8. INSTALL PRIVATE FIRE HYDRANT
9. INSTALL PRIVATE 6" WATER LINE
10. EXISTING 10" PVC PUBLIC WATER LINE
11. EXISTING PUBLIC FIRE HYDRANT TO BE CONVERTED TO PRIVATE HYDANT
12. EXISTING PUBLIC FIRE HYDRANT TO BE REMOVED
13. INSTALL 10" PVC PUBLIC WATER LINE
14. EXISTING 10" PVC PUBLIC WATER LINE TO BE REMOVED
15. INSTALL 4" SEWER SERVICE
16. INSTALL 6" SEWER SERVICE
17. EXISTING PUBLIC SEWER
18. INSTALL SEWER MANHOLE (NOT USED)
19. INSTALL STORM DRAIN PIPE
20. INSTALL DROP INLET
21. CONNECT TO EXISTING DROP INLET
22. EXISTING DROP INLET

LEGEND

- PROPERTY LINE
- WATER LINE
- SANITARY SEWER LINE
- STORM DRAIN
- EASEMENT
- WATER VALVE
- WATER METER
- FIRE HYDRANT
- POST / WALL INDICATOR VALVE
- FIRE DEPARTMENT CONNECTION
- SANITARY SEWER MANHOLE
- DROP INLET

GENERAL NOTE

1. TYPE RBPA BACKFLOW PREVENTERS FOR ALL PROPOSED PRIVATE WATER LINES WILL BE PROVIDED INTERNAL TO EACH PROPOSED BUILDING PER COA STD DTL 2385. THE BACKFLOW PREVENTERS WILL BE THE SAME SIZE AS THE TAP/CONNECTION AT THE MAIN LINE.

0 40' 80'

SCALE: 1" = 40'

DESIGNED JS
DRAWN JS
CHECKED SG
DATE 11.26.2019

REVISION

RESPEC
5971 JEFFERSON STREET SUITE 101
ALBUQUERQUE, NEW MEXICO 87109
WATER & NATURAL RESOURCES
WWW.RESPEC.COM 505.253.9718

STAMP

SHELDON E. GREER NEW MEXICO 17154 LICENSED PROFESSIONAL ENGINEER 11/26/19

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.

PROJECT NAME: CARLISLE MARKETPLACE

SHEET TITLE: CONCEPTUAL UTILITY

SUBMITTED FOR: DRB SITE PLAN

SHEET NUMBER: C-300

NAME: L:\Active Projects\03738 Modulus Carlisle Marketplace\3. DWG\Sheets\03738 Utility.dwg PLOT DATE: Nov 26, 2019 6:18pm

DRAINAGE REPORT FOR CARLISLE MARKETPLACE

PREPARED FOR
City of Albuquerque, Planning Department
Development Review Services, Hydrology Section

PREPARED BY
RESPEC, Inc.
5971 Jefferson St. NE, Suite 101
Albuquerque, NM 87109
505.253.9718

DECEMBER 2019

I, Sheldon Greer, do hereby certify that this report was duly prepared by me or under my direction and that I am a duly registered Professional Engineer under the laws of the State of New Mexico.

Sheldon Greer, P.E.
NMPE No. 17154

12 / 03 / 2019

Date

TABLE OF CONTENTS

1.0 INTRODUCTION

1.1 PURPOSE

The purpose of this drainage report is to demonstrate that the proposed re-development of Tracts A and B of Carlisle and Indian School Subdivision safely conveys the peak 100-year storm runoff. The drainage intent for proposed conditions is to match current existing conditions for the site.

1.2 LOCATION AND DESCRIPTION

Tracts A and B are located at the northeast corner of the Carlisle Boulevard and Indian School Road intersection and contain approximately 10.7 acres. See Figure 1.2.1 below. The existing site includes a Burger King restaurant located on Tract B and an old K-Mart building and parking lot on Tract A that is currently vacant. The existing conditions are described in more detail in Section 3.1 and the proposed conditions are described in Section 3.2.

FIGURE 1.2.1 – PROJECT LOCATION

2.0 METHODOLOGY

The hydrologic analysis was performed for the site in accordance with the Albuquerque Development Process Manual (DPM) Section 22.2 using the Rational Method to calculate peak flow rates for the 100-year, 24-hour design storm in order to ensure all flow paths are sufficient to carry flows. The required water quality volume was calculated by multiplying the impervious area by the first flush runoff value of 0.34". All hydrologic and hydraulic calculations are included in this report.

3.0 HYDROLOGY

3.1 EXISTING CONDITIONS

Tracts A & B do not receive any offsite flows. The existing site has approximately 93% impervious area and 7% landscaped. The total flow generated by the property under existing conditions is 48.9 cfs. The site appears to have free discharge and does not have any existing ponds. The existing property has been split into six sub-basins. Appendix A shows the existing sub-basin boundaries for the site.

Sub-basin A consists of the northwest corner of the property and is primarily made up of parking area and also the Burger King restaurant. In general, the sub-basin slopes from southeast to northwest at varying slopes between 3%-5%. Runoff exits the property at the northwest corner of the site and is collected in a drop inlet.

Sub-basin B contains the northeast corner of the property and accounts for surface runoff from the northern portion of the existing building and the drive aisle north of the building. This area accumulates to the northeast corner of the site and discharges out of the property into a concrete rundown. From there, runoff is collected in a drop inlet. Sub-basin B generates 4.5 cfs.

Sub-basin C consists of a majority of the existing building and the drive aisle east of the building. This area flows north along the eastern curb. Runoff collects at a low point in front of the dumpster area. Once the low point area has filled, water spills both through an existing opening in the wall to the east and to the north into Sub-basin B. Due to the elevation being the same at each point water is spilling, the flows split evenly between the east and the north. Therefore, 5.4 cfs discharges east through the existing wall opening, 5.4 cfs flows north into Sub-basin B, and a total of 9.9 cfs is collected by the existing drop inlet.

Sub-basin D contains the southwest corner of the existing building and a majority of the existing parking area. This Sub-basin, in general, sheet flows from southeast to northwest at varying slopes between 2%-5%. Runoff then flows north along a curb along the western property boundary and discharges in Carlisle Boulevard through an existing driveway. From there, flows enter storm inlets located along the eastern curb of Carlisle Boulevard.

Sub-basin E consists of a small portion of the parking area at the southwest corner of the property. This area slopes from southeast to northwest and discharges from the site through an existing driveway. The runoff generated by this Sub-basin is then collected in storm inlets located along the eastern curb of Carlisle Boulevard.

Sub-basin F contains a small area west of the existing Burger King restaurant the flows west into Carlisle Boulevard. Runoff from this Sub-basin is collected in the Carlisle Boulevard storm drain system. The hydrologic data table below depicts in further detail each sub-basin and its characteristics.

TABLE 3.1.1 – HYDROLOGIC DATA - EXISTING

HYDROLOGIC DATA - EXISTING						
		LAND USE PERCENTAGES				
SUB-BASIN	AREA (AC)	A	B	C	D	Q100
A	2.20	0%	0%	0%	100%	10.3
B	0.96	0%	0%	0%	100%	4.5
C	2.47	0%	8%	8%	84%	10.8
D	4.35	0%	4%	4%	92%	19.7
E	0.54	0%	0%	0%	100%	2.6
F	0.20	0%	0%	0%	100%	1.0
TOTAL	**10.72**					**48.9**

3.2 PROPOSED CONDITIONS

The proposed site development is to renovate the existing buildings and parking lot and add both commercial and retail pads along the Carlisle Boulevard property frontage. Under the proposed condition, approximately 87% of the site will consist of impervious area and 13% will be landscaped. The total flow generated by the proposed development is 47.6 cfs. Therefore, the discharge from the proposed site is less than the existing condition. The property has been split into five proposed sub-basins. Appendix B shows the proposed sub-basin boundaries for the site.

Sub-basin 1 consists of the northwest corner of the property and is made up of parking area, the existing Burger King restaurant, and a new commercial pad. In general, the sub-basin slopes from southeast to northwest. Runoff is collected in a proposed drop inlet in the new parking lot which discharges into a storm drain that will connect to the existing drop inlet, which is the location that this area is currently discharging to. The existing flow that reaches this inlet is 10.3 cfs while the proposed flow is 9.3 cfs.

Sub-basin 2A and 2B contain the roof drainage for the eastern half of the larger building and the truck dock area and drive aisle located east and north of the building. Sub-basin 2A drains directly to the existing drop inlet at the northeast corner of the property. Sub-basin 2B collects to the low point in front of the dumpster. The low point area in front of the dumpster will not be modified so that flows that reach this area continue to match the existing drainage pattern at that location.. The proposed flow from Sub-basin 2A is 4.4 cfs. The flow generated by Sub-basin 2B is 10.9 cfs, therefore, 5.45 cfs discharges east and 5.45 cfs flows north into Sub-basin 2A. The total proposed flow discharging to the existing drop inlet is 9.85 cfs. The total proposed flow discharging to the eastern property is 5.45 cfs. Therefore, the flow rate discharging through the wall opening and to the existing drop inlet is not increased

Sub-basins 3, 4, and 5 consist of the southwest corner of the property, which contains a majority of the parking lot and the roof drainage from the western half of the larger building as well as two new retail pads. Sub-basins 3 and 5 free discharge from the site through two new driveways. Sub-basin 4 is

collected in a drop inlet toward the northwest corner of the Sub-basin. These three Sub-basins all discharge to the existing storm drain system in Carlisle Boulevard. The existing flow that reaches the Carlisle storm drain under existing conditions is 23.3 cfs while the proposed flow is 23.0 cfs.

The hydrologic data table below depicts in further detail each sub-basin and its characteristics.

TABLE 3.2.1 – HYDROLOGIC DATA - PROPOSED

HYDROLOGIC DATA - PROPOSED						
		LAND USE PERCENTAGES				
SUB-BASIN	AREA (AC)	A	B	C	D	Q100
1	2.10	0%	6%	6%	87%	9.3
2A	0.99	0%	6%	6%	87%	4.4
2B	2.45	0%	6%	6%	87%	10.9
3	1.56	0%	6%	6%	87%	6.9
4	2.47	0%	6%	6%	87%	11.0
5	1.14	0%	6%	6%	87%	5.1
TOTAL	**10.71**					**47.6**

The total required water quality volume for the site is 11,512 cubic feet. The owner has elected to pay the fee in lieu for any required stormwater quality volume not provided in on-site ponds. More details regarding water quality will be provided at Building Permit review.

4.0 CONCLUSION

This drainage report is prepared in support of the new development for Tracts A and B. The existing buildings and parking area will be renovated and new commercial and retail pads will be added. The proposed conditions closely match the current conditions of the existing property. The hydrologic calculations are included in Appendix C.

APPENDIX A

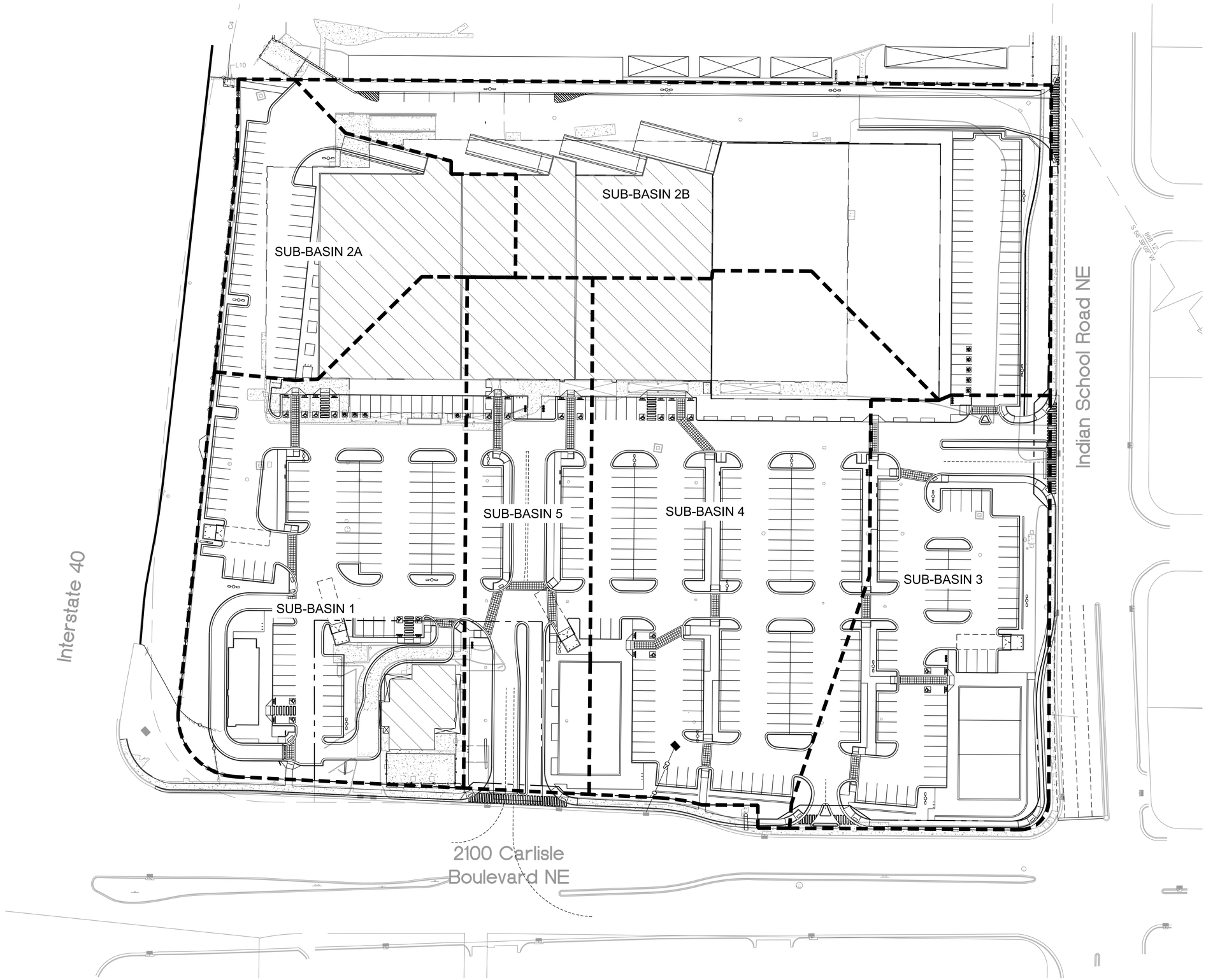
EXISTING SUB-BASINS

EXISTING SUB-BASINS

RESPEC
5971 JEFFERSON STREET SUITE 101
ALBUQUERQUE, NEW MEXICO 87109
WATER & NATURAL RESOURCES
WWW.RESPEC.COM 505.253.9718

APPENDIX B

PROPOSED SUB-BASINS



PROPOSED SUB-BASINS

RESPEC
5971 JEFFERSON STREET SUITE 101
ALBUQUERQUE, NEW MEXICO 87109
WATER & NATURAL RESOURCES
WWW.RESPEC.COM 505.253.9718

NAME: L:\Active Projects\03738 Modulus Carlisle Marketplace\3. DWG\Sheets\03738 Drainage.dwg PLOT DATE: Dec 03, 2019 12:01pm

APPENDIX C

HYDROLOGY CALCULATIONS

Hydrology Calculations

The following calcualtions are based on Albuquerque's Development Process Manual, Seciton 22.2

Existing Conditions

Runoff Rate:

Treatment Type Areas

Subbasin	$Area_A$ (ac)	$Area_B$ (ac)	$Area_C$ (ac)	$Area_D$ (ac)	Total (ac)
A	0.00	0.00	0.00	2.20	2.20
B	0.00	0.00	0.00	0.96	0.96
C	0.00	0.19	0.19	2.09	2.47
D	0.00	0.19	0.19	3.97	4.35
E	0.00	0.00	0.00	0.54	0.54
F	0.00	0.00	0.00	0.20	0.20
Total	0.00	0.38	0.38	9.96	10.72

Peak Discharge values based on Zone 2 from Table A-9

Q_A = 1.56 cfs/ac Q_B = 2.28 cfs/ac Q_C = 3.14 cfs/ac Q_D = 4.70 cfs/ac

Peak Discharge calculation for a 100-yr, 24-hr storm event from equation A-10

Subbasin	Discharge (cfs)
A	10.3
B	4.5
C	10.8
D	19.7
E	2.6
F	1.0
Total	48.9

Proposed Conditions

Runoff Rate:

Treatment Type Areas

Subbasin	$Area_A$ (ac)	$Area_B$ (ac)	$Area_C$ (ac)	$Area_D$ (ac)	Total (ac)
1	0.00	0.14	0.14	1.83	2.10
2A	0.00	0.06	0.06	0.86	0.99
2B	0.00	0.16	0.16	2.13	2.45
3	0.00	0.10	0.10	1.36	1.56
4	0.00	0.16	0.16	2.15	2.47
5	0.00	0.07	0.07	0.99	1.14
Total	0.00	0.69	0.69	9.33	10.71

Peak Discharge values based on Zone 2 from Table A-9

Q_A = 1.56 cfs/ac Q_B = 2.28 cfs/ac Q_C = 3.14 cfs/ac Q_D = 4.70 cfs/ac

Peak Discharge calculation for a 100-yr, 24-hr storm event from equation A-10

Subbasin	Discharge (cfs)
1	9.3
2A	4.4
2B	10.9
3	6.9
4	11.0
5	5.1
Total	47.6

Water Quality:

Required Water Quality volume for first flush of 0.34"

Subbasin	Volume (cu. ft.)
1	2,260
2A	1,061
2B	2,629
3	1,679
4	2,656
5	1,227
Total	11,512

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