CITY OF ALBUQUERQUE

Planning Department
Alan Varela, Interim Director

Mayor Timothy M. Keller

January 18, 2022

Scott Eddings, P.E.
Huitt-Zollars
333 Rio Rancho Blvd., Suite 101
Rio Rancho, NM 87124

RE: Winrock Town Center Park
2100 Louisiana Blvd.
Drainage Report Stamp Date: 1/17/2022
Hydrology File: J19D058G

Dear Mr. Eddings:

Based upon the information provided in your submittal received 1/18/2022, the Drainage Implementation Report Amendment is approved for action by the DRB for Site Plan for Building Permit and Platting.

Please note that for Building Permit and/or Work Order full detailed Grading and Drainage Plans will be required for review and approval prior to these actions moving forward.

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.

If you have any questions, please contact me at 924-3986 or earmijo@cabq.gov.

Sincerely,

Ernest Armijo, P.E.
Principal 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: Winrock Town Center Park Building Permit #:_____ Hydrology File #: J19D058G

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

Legal Description: Winrock Center Addition Parcel Z

City Address: 2100 Louisiana Blvd

Applicant: Huitt-Zollars, Inc Contact: Scott Eddings

Address: 333 Rio Rancho Blvd, NE Suite 101

Phone#: 505-235-7211 Fax#: _____ E-mail: seddings@huitt-zollars.co

Owner: Winrock Partners LLC Contact: Fred Gorenz

Address: 100 Sun Avenue

Phone#: 505-881-0100 Fax#: _____ E-mail: fgornenz@goodmanrealty.com

TYPE OF SUBMITTAL: X 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
____ DRAINAGE REPORT
____ FLOODPLAIN DEVELOPMENT PERMIT APPLIC
____ ELEVATION CERTIFICATE
____ CLOMR/LOMR
____ TRAFFIC CIRCULATION LAYOUT (TCL)
____ TRAFFIC IMPACT STUDY (TIS)
X OTHER (SPECIFY) Drainage Implementation Plan Amendment 1
Y PRE-DESIGN MEETING?

TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

____ BUILDING PERMIT APPROVAL
____ CERTIFICATE OF OCCUPANCY
____ PRELIMINARY PLAT APPROVAL
____ 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: December 19, 2021 By: Scott Eddings

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED:_____

FEE PAID:_____

HUITT-ZOLLARS

HUITT-ZOLLARS, INC. ı 333 Rio Rancho Dr. NE ı Suite 101 ı Rio Rancho, NM 87124-1450 ı 505.892.5141 phone ı 505.892.3259 fax ı huitt-zollars.com

Ernest Armijo, P.E.
City of Albuquerque
600 2nd NW
Albuquerque, NM 87102

RE: Winrock Submittal Review

Dear Mr. Armijo:

In response to your review comments dated, January 13, 2022 we are replying with the following:

Comment # 1: Please add a description in the opening narrative how the drainage is expected to flow with the new Town Center improvements. In the original Conceptual Drainage Plan you submitted last year, which I commented on, you planned on draining to the decorative ponds and I had a problem with that based on no volumes were calculated and no excess volumes were given in these ponds to accept this drainage. In a later meeting at my office you explained that the ponds would no longer be used for this purpose and would only take rainfall that landed within them. Please explain this in your narrative so there is no confusion as to how drainage will be handled in and around these ponds.

- Verbiage has been added to the Purpose Section and Exhibit 10 has been added with the necessary calculations.

Comment # 2: On the exhibit sheets when existing drainage easements are called out on the plan it appears that the line work outlining the easement is turned off as the leaders are pointing at empty space or one side of a curb. If you call out easements please show where these are.

- Easements are now showing.

Comment # 3: On Exhibit 4 the profile of Storm Drain AP-B 500 only the surface, EGL and HGL are shown, there is no storm drain line shown.

- The storm drain is now visible.

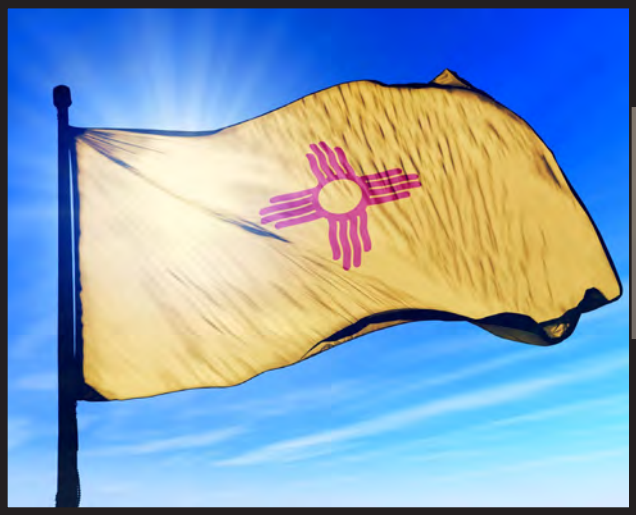
Respectfully yours
Huitt-Zollars, Inc

Kevin Banks

Kevin Banks, P.E.

WINROCK TOWN CENTER DRAINAGE IMPLEMENTATION PLAN AMENDMENT 1

PREPARED FOR:



Project Location:

Albuquerque, New Mexico

January 2022

PREPARED BY:

HUITT-ZOLLARS

333 RIO RANCHO DRIVE NE, SUITE 101
RIO RANCHO, NM 87124
505.892.5141; FAX 505.892.3259

WWW.HUITT-ZOLLARS.COM

WINROCK TOWN CENTER
DRAINAGE IMPLEMENTATION PLAN AMENDMENT 1

CITY OF ALBUQUERQUE
DRB PROJECT NO. PR2018-001579

PREPARED FOR:

PREPARED BY:

HUITT-ZOLLARS
333 RIO RANCHO BLVD., SUITE 101
RIO RANCHO, NEW MEXICO 87124

January 17, 2022

DRB Application Numbers SI-2021-00304 & SI-2021-00035

WINROCK TOWN CENTER
DRAINAGE IMPLEMENTATION PLAN AMENDMENT 1

I, Scott A. Eddings, being first duly sworn upon my oath, state that I am a registered professional engineer, qualified in civil engineering and that the accompanying report was prepared by me or under my supervision and is true and correct to the best of my knowledge and belief.

Scott Eddings

01/17/22

EXHIBITS

PURPOSE

The purpose of this Drainage Implementation Plan Amendment 1 is to: 1) Provide an overall map of the proposed drainage improvements for Winrock Town Center, 2) Identify the specific components of the drainage improvements, 3) Relate individual development tracts to associated drainage improvements, and 4) Identify the proposed drainage flows at major analysis points.

This Drainage Implementation Plan Amendment 1 presents a summary for the "Drainage Implementation Plan for Winrock Town Center" (DIP) and "Drainage Master Plan for Winrock Town Center" to facilitate planning and implementation of required storm drainage infrastructure for the development of this project.

This Drainage Implementation Plan Amendment 1 is intended to amend the DIP for minor drainage infrastructure modifications required as part of the Road E and Park Improvements, while the "Drainage Master Plan for Winrock Town Center" provides the design requirements for those improvements. As part of these improvements the decorative ponds will only collect the rainfall runoff within them (See Exhibit 10 for calculations).

EXECUTIVE SUMMARY

The "Drainage Implementation Plan for Winrock Town Center" was completed by Huitt-Zollars, Inc. in May 2019. The purpose of the DIP was to relate individual development tracts to associated drainage improvements.

The "Drainage Master Plan for Winrock Town Center" was completed by Isaacson & Arfman, PA with a final revision date of June 26, 2015. The purpose of the Drainage Master Plan was to provide analysis and a drainage framework for Winrock Town Center. All hydrology calculations were completed for the 100-year, 6-hour storm. The Drainage Master Plan defines allowable peak flowrates at major analysis points as shown on Exhibit 1. Site hydrology calculations from the Drainage Master Plan are accepted as-is for use in this Drainage Implementation Plan Amendment 1.

QUALIFICATION & DISCLAIMERS

The calculations and designs in the Drainage Master Plan provides adequate detail to ensure that the overall drainage system is sufficient to safely convey the 100-year storm event. Design of these drainage systems should be considered 50% complete for construction purposes, however, the detail required for construction is not presented in the Drainage Master Plan. Final hydraulic design calculations must be provided for all storm drainage improvements at the time of final engineering design.

This Drainage Implementation Plan Amendment 1 utilizes Bentley StormCAD V8i for the hydraulic modeling of the storm drain pipe system. For headloss calculations at junctions, the HEC-22 Energy Method (Third Edition) was chosen to comply with City of Albuquerque DPM requirements.

The City of Albuquerque approval of the DIP established the basis of hydraulic design of future improvement projects in Winrock Town Center.

SPECIAL CONDITIONS

Portions of the storm drain network have changed since the Drainage Master Plan was completed. The proposed changes will be implemented without altering the peak flowrates at the major analysis points. Please refer to Exhibit 2 through Exhibit 7 for detailed information regarding the updated storm drain network.

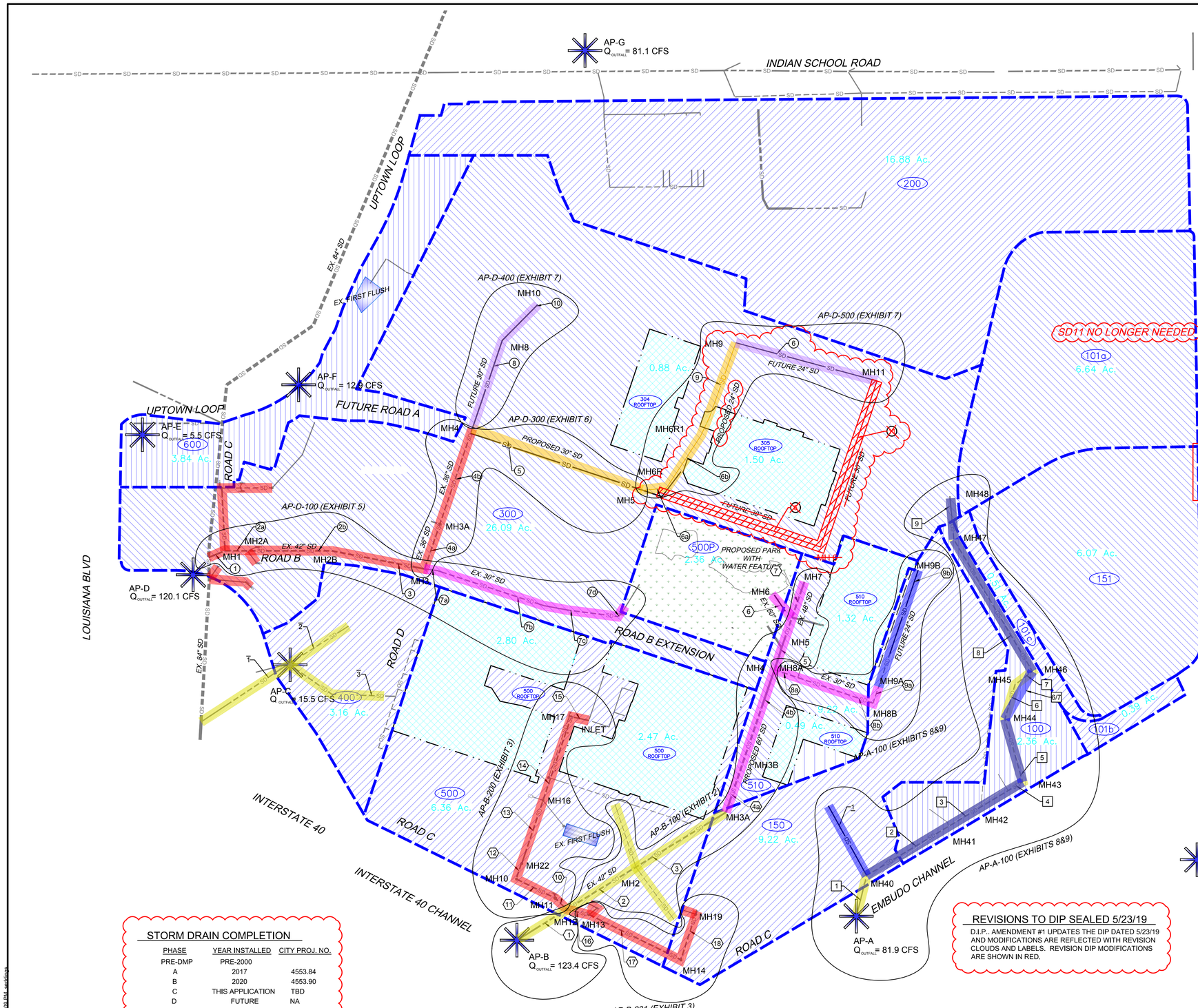
As presented within the DIP the existing storm drain network AP-A may have been incorrectly modeled for the revised flowrates in previous analyses. The existing storm drain pipes were originally designed to convey 46 CFS. With the revised development in that area, the peak flowrate of AP-A increased to 82 CFS which causes the existing pipes to have insufficient capacity during the 100-year storm event. Refer to Exhibit 8 for the existing condition of network AP-A. As a future solution to correct this pipe network, the storm drain should be upsized and/or replaced with an alternate material to safely convey the 100-year peak flowrate. Refer to Exhibit 9 for the proposed improvements to network AP-A.

INFRASTRUCTURE REQUIREMENTS BY PHASE

The storm drain systems presented in the Drainage Master Plan are intended to provide overall site storm water management and storm water quality control. The development of each phase will require final design of the onsite drainage system to convey flows to major analysis points. As part of Work Order approval for each phase, a detailed drainage report will be prepared to detail the hydraulics shown in this Drainage Implementation Plan Amendment 1, as well as address all grading and drainage criteria per the City of Albuquerque DPM, such as storm water quality and surface flow hydraulics. Please refer to Exhibit 1 for phasing of the proposed storm drain network.

OWNERSHIP & MAINTENANCE RESPONSIBILITIES

This drainage system, in its entirety, shall be dedicated to the City of Albuquerque. Maintenance of the system will be the responsibility of the developer as part of the TIDD agreement and defined by the TIDD infrastructure MOU.



BASIN	STORM DRAIN NO.	PIPE DIAMETER (in)	FLOW RATE (cfs)	CONSTRUCTION PHASE
150	1	24	10	E
100	1	36	82	E
100	2	48	71	E
100	3	48	71	E
100	4	36	51	E
100	5	36	51	E
100	6	36	51	E
100	7	36	51	E
100	6/7	36	51	E
100	8	36	49	E
100	9	36	30	E
300	1	42	120	A
300	2	42	113	A
300	3 a-b	42	94	A
300	4	36	70	A
300	5	30	28	C
300	6 a-b	~~30~~ 24	14	~~B~~ C
300	7 a-e	30	24	B
300	7f f-h	30	24	C
300	8	~~30~~ 30	42	~~C~~ C
300	9	24	14	D
~~300~~	~~10~~	~~24~~	~~18~~	~~D~~
300	11	24	14	D
400	1	24	15	PRE- DMP
400	2	18	7	PRE- DMP
400	3	18	8	PRE- DMP
500	1	42	123	PRE- DMP
500	2	42	85	PRE- DMP
500	3 a-b	42	75	PRE- DMP
500	4	60	75	B
500	5	60	58	~~B~~ B
500	6	60	51	C
500	19	60	51	C
500	20	60	51	~~C~~ B
500	7 a-b	48	8	C
500	8 a-b	36-30	17	B
500	9	24	10	B/E
500	10	36	24	A
500	11	36	22	A
500	12	(2) 24	22	A
500	13	36	22	A
500	14	36	22	A
500	15	36	22	A
500	16	36	14	A
500	17	36	10	A
500	18	24	10	A

STORM DRAIN PHASING

PHASE	DESIGNATION
PRE-DMP	
A	
B	
C	
D	
E	

LEGEND

- DRAINAGE BASIN BOUNDARY PER DMP
- DRAINAGE BASIN BOUNDARY PER DMP
- EXISTING STORM DRAIN LINE - PUBLIC
- EXISTING STORM DRAIN LINE - PRIVATE
- PROPOSED STORM DRAIN LINE - PUBLIC
- PROPOSED STORM DRAIN LINE - PRIVATE
- FUTURE STORM DRAIN LINE - PUBLIC
- FUTURE STORM DRAIN LINE - PRIVATE
- REMOVE STORM DRAIN LINE - PRIVATE
- REMOVE STORM DRAIN LINE - PRIVATE (FUTURE PHASE) PHASE B LIMITS
- EXISTING FIRST FLUSH FACILITY

AP-# ANALYSIS POINT PER WINROCK TOWN CENTER DMP PREPARED BY ISAACSON&ARFMAN DATED 6/26/15

STORM DRAIN COMPLETION

PHASE	YEAR INSTALLED	CITY PROJ. NO.
PRE-DMP	PRE-2000	
A	2017	4553.84
B	2020	4553.90
C	THIS APPLICATION	TBD
D	FUTURE	NA
E	FUTURE	NA

REVISIONS TO DIP SEALED 5/23/19

D.I.P.. AMENDMENT #1 UPDATES THE DIP DATED 5/23/19 AND MODIFICATIONS ARE REFLECTED WITH REVISION CLOUDS AND LABELS. REVISION DIP MODIFICATIONS ARE SHOWN IN RED.

SCALE: NTS

AS BUILT INFORMATION
CONTRACTOR — DATE
WORK STAKED BY — DATE
INSPECTOR'S ACCEPTANCE — DATE
FIELD VERIFICATION BY — DATE
DRAWINGS CORRECTED BY — DATE
MICRO-FILM INFORMATION
RECORDED BY — DATE
NO.

BENCH MARKS
FOUND MONUMENT "20_H18"
STANDARD 3 1/4" ALUMINUM DISC (FOUND IN PLACE)
NEW MEXICO STATE PLANE COORDINATES (CENTRAL ZONE-N.A.D. 1983)
N=1,493,154.978
E=1,545,048.210
PUBLISHED EL=5283.22 (NAVD 1988)
GROUND TO GRID FACTOR=0.999661580
DELTA ALPHA ANGLE=-0°11'00.11"

SURVEY INFORMATION
FIELD NOTES
NO. | BY | DATE

ENGINEER'S SEAL
CITY OF ALBUQUERQUE PROFESSIONAL ENGINEER 12856 REGISTERED NEW MEXICO

NO.	DATE	REMARKS	BY
REVISIONS			

DESIGN
DESIGNED BY: KB — DATE: December 19, 2021
DRAWN BY: LT — DATE: December 19, 2021
DWG NAME: DRAINAGE EXHIBIT 1 SUBMITTED.dwg — PROJ. No. R313479.01
CHECKED BY: SE — DATE: December 19, 2021

Designed By:
HUITT-ZOLLARS
Huitt-Zollars, Inc. Rio Rancho
333 Rio Rancho Drive NE, Suite 101
Rio Rancho, New Mexico 87124
Phone (505) 892-5141 Fax (505) 892-3259

WINROCK TOWN CENTER D.I.P. - AMENDMENT NO. 1

TITLE: BASIN MAP AND ULTIMATE STORM DRAIN NETWORK

Design Review Committee	City Engineer	Last Update	Mo./Day/Yr.	Mo./Day/Yr.

City Project No.	Zone Map No.	Sheet	Of
-	J-19-Z	EXHIBIT 1	

Plotted: 12/20/2021 8:18:08 PM, By:Eddings, Scott
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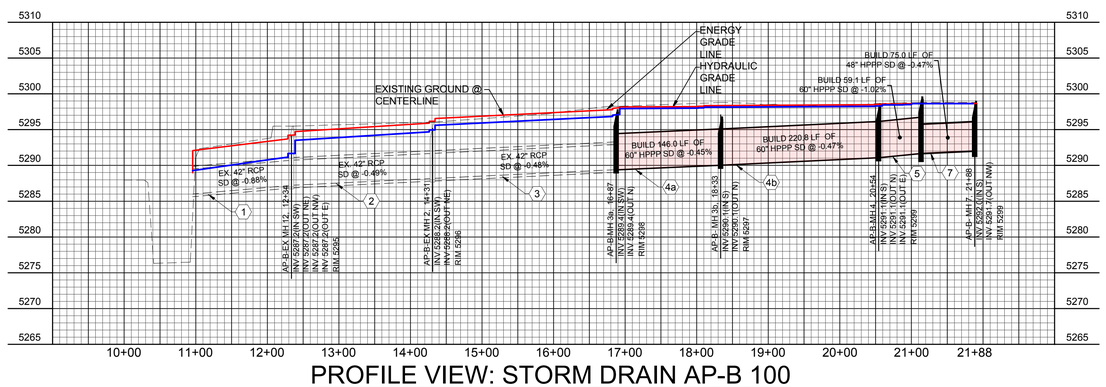
Last Saved: 12/20/2021 8:14:00 PM, seddings

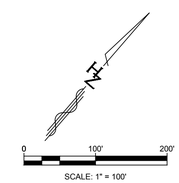
STORM DRAIN AP-B 100

STORM CAD OUTPUT

Label	Start Node	Stop Node	Diameter (in)	Length (ft)	Allowable Flow (cfs)	Velocity (ft/s)	Invert (Start) (ft)	Invert (Stop) (ft)	Elevation Ground (Start) (ft)	Elevation Ground (Stop) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)	Energy Grade Line (In) (ft)	Energy Grade Line (Out) (ft)
LINE 1	MH 12	AP-B	42.0	138.0	123.4	14.57	5,287.22	5,286.00	5,295.61	5,286.00	5,291.16	5,289.27	5,293.71	5,291.98
LINE 2	MH 2	MH 12	42.0	212.3	85.1	8.85	5,288.18	5,287.22	5,296.00	5,295.61	5,294.80	5,293.50	5,296.01	5,294.72
LINE 3	MH 3	MH 2	42.0	241.4	75.1	7.81	5,289.41	5,288.18	5,298.20	5,296.00	5,296.83	5,295.69	5,297.78	5,296.64
LINE 4A	MH 4B	MH 3	60.0	144.1	75.1	5.98	5,290.06	5,289.41	5,298.32	5,298.20	5,298.00	5,297.94	5,298.23	5,298.17
LINE 4B	MH 4	MH 4B	60.0	227.7	75.1	5.98	5,291.10	5,290.06	5,298.50	5,298.32	5,298.26	5,298.14	5,298.48	5,298.36
LINE 5	MH 5	MH 4	60.0	34.9	58.1	4.62	5,291.40	5,291.10	5,298.50	5,298.50	5,298.46	5,298.45	5,298.60	5,298.58
LINE 7	MH 7	MH 5	48.0	94.1	7.5	1.06	5,291.90	5,291.40	5,298.50	5,298.50	5,298.64	5,298.64	5,298.65	5,298.65



PROFILE VIEW: STORM DRAIN AP-B 100



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HUITT-ZOLLARS
Huitt-Zollars, Inc.
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333 Rio Rancho Drive NE, Suite 101
Rio Rancho, New Mexico 87124
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AS BUILT INFORMATION

CONTRACTOR
WORK STAKED BY — DATE
INSPECTOR'S ACCEPTANCE — DATE
FIELD VERIFICATION BY — DATE
DRAWINGS CORRECTED BY — DATE

MICRO-FILM INFORMATION
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BENCH MARKS
FOUND MONUMENT "20_H18"
STANDARD 3 1/4" ALUMINUM DISC (FOUND IN PLACE)
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N=1,493,154.978
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SURVEY INFORMATION
FIELD NOTES

NO.	BY	DATE

ENGINEER'S SEAL

NO.	REMARKS	BY	DATE
	REVISIONS		

DESIGN
DESIGNED BY: KB — DATE: December 19, 2021
DRAWN BY: LT — DATE: December 19, 2021
DWG NAME: DRAINAGE EXHIBIT 2-9.dwg — PROJ #: R3134.79.01
CHECKED BY: SE — DATE: December 19, 2021

WINROCK TOWN CENTER
PHASE C INFRASTRUCTURE IMPROVEMENTS

TITLE:
STORM DRAIN AP-B 100

Design Review Committee	City Engineer	Last Update	Mo./Day/Yr.	Mo./Day/Yr.

City Project No.	Zone Map No.	Sheet	Of
-	J-19-Z	EXHIBIT 2	

Plotted: 1/17/2022 4:11:19 PM, By:Eddings, Scott
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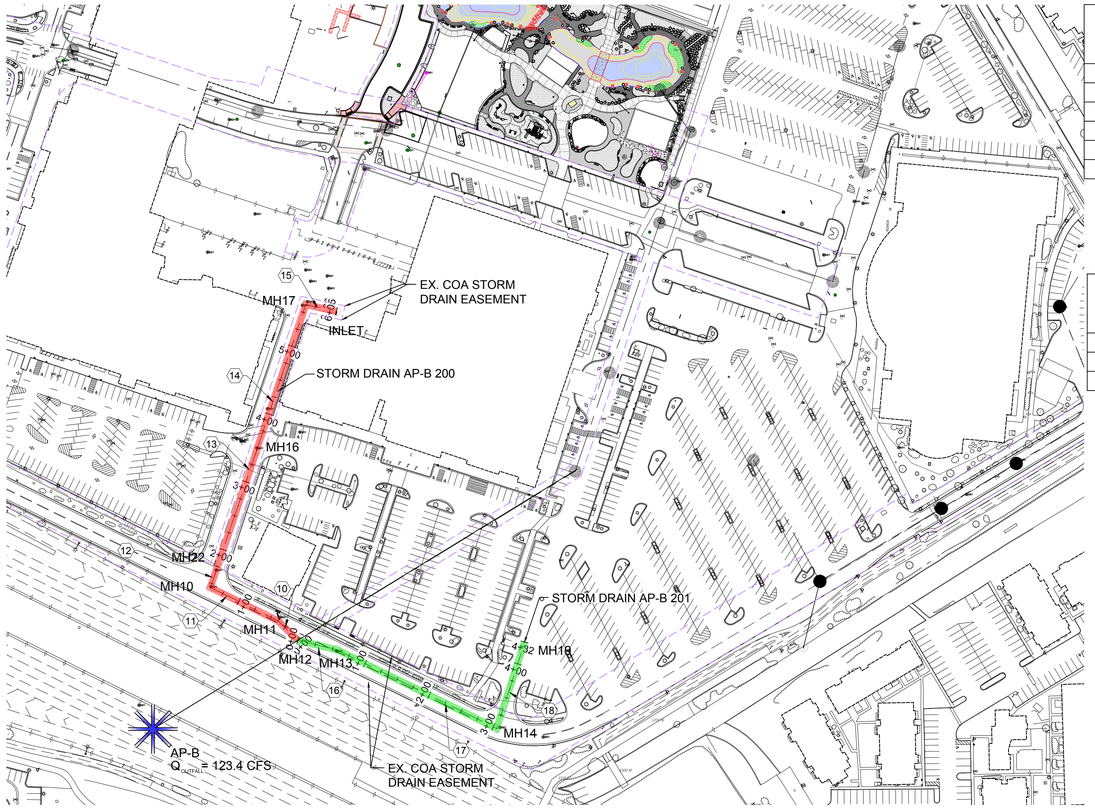
Last Saved: 1/17/2022 3:55:22 PM, seddings



STORM DRAIN AP-B 200 & 201

STORM CAD OUTPUT

Label	Start Node	Stop Node	Diameter (in)	Length (ft)	Allowable Flow (cfs)	Velocity (ft/s)	Invert (Start) (ft)	Invert (Stop) (ft)	Elevation Ground (Start) (ft)	Elevation Ground (Stop) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)	Energy Grade Line (In) (ft)	Energy Grade Line (Out) (ft)
LINE 10	MH 11	MH 12	36.0	39.3	24.0	3.40	5,287.40	5,287.22	5,295.02	5,295.61	5,294.16	5,294.13	5,294.33	5,294.30
LINE 11	MH 10	MH 11	36.0	106.0	22.0	3.11	5,287.68	5,287.40	5,294.68	5,295.02	5,294.35	5,294.28	5,294.50	5,294.43
LINE 12	MH 22	MH 10	24.0	40.0	22.0	3.50	5,287.90	5,287.68	5,294.70	5,294.68	5,294.53	5,294.48	5,294.72	5,294.67
LINE 13	MH 16	MH 22	36.0	162.0	22.0	3.11	5,288.29	5,287.90	5,297.58	5,294.70	5,294.77	5,294.67	5,294.92	5,294.82
LINE 14	MH 17	MH 16	36.0	215.3	22.0	3.11	5,288.93	5,288.29	5,295.17	5,297.58	5,295.00	5,294.86	5,295.15	5,295.01
LINE 15	INLET	MH 17	36.0	44.2	22.0	3.11	5,289.13	5,288.93	5,295.00	5,295.17	5,295.18	5,295.15	5,295.33	5,295.30

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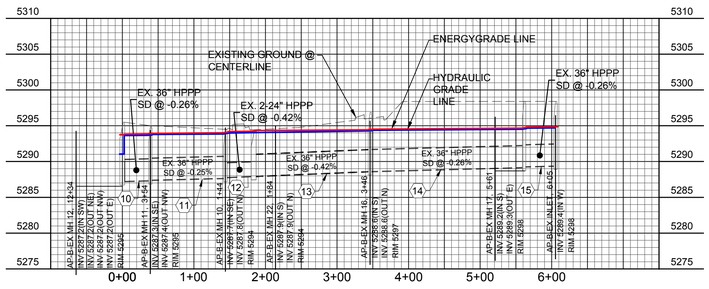
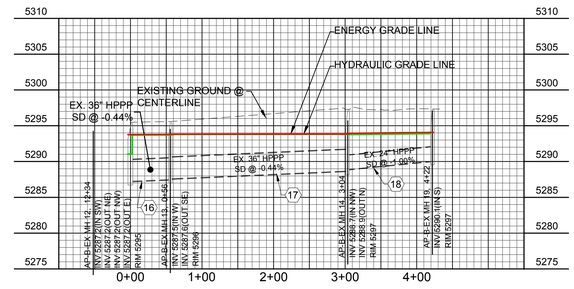
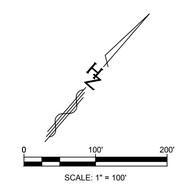
LINE 16	MH 13	MH 12	36.0	57.8	14.3	2.02	5,287.50	5,287.22	5,295.78	5,295.61	5,294.21	5,294.19	5,294.27	5,294.26
LINE 17	MH 14	MH 13	36.0	246.7	10.0	1.41	5,288.80	5,287.50	5,297.81	5,295.78	5,294.30	5,294.27	5,294.33	5,294.30
LINE 18	MH 19	MH 14	24.0	117.0	10.0	3.18	5,289.26	5,288.80	5,297.92	5,297.81	5,294.39	5,294.26	5,294.55	5,294.42



PROFILE VIEW: STORM DRAIN AP-B 200



PROFILE VIEW: STORM DRAIN AP-B 201



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SURVEY INFORMATION
FIELD NOTES

NO.	BY	DATE

ENGINEER'S SEAL
LEONARD T. KNOX III
NEW MEXICO
12856
REGISTERED PROFESSIONAL ENGINEER
12/17/21

NO.	DATE	REMARKS	BY

REVISIONS

DESIGN
DESIGNED BY: KB — DATE: December 19, 2021
DRAWN BY: LT — DATE: December 19, 2021
DWG NAME: DRAINAGE EXHIBIT 2-9.dwg — PROJ #: R313479.01
CHECKED BY: SE — DATE: December 19, 2021

Designed By:
HUITT-ZOLLARS
Huitt-Zollars, Inc. Rio Rancho
333 Rio Rancho Drive NE, Suite 101
Rio Rancho, New Mexico 87124
Phone (505) 892-5141 Fax (505) 892-3259

WINROCK TOWN CENTER
PHASE C INFRASTRUCTURE IMPROVEMENTS

TITLE:
STORM DRAIN AP-B 200 & 201

Design Review Committee	City Engineer	Last Update	Mo./Day/Yr.	Mo./Day/Yr.

City Project No.	Zone Map No.	Sheet	Of
-	J-19-Z	EXHIBIT 3	

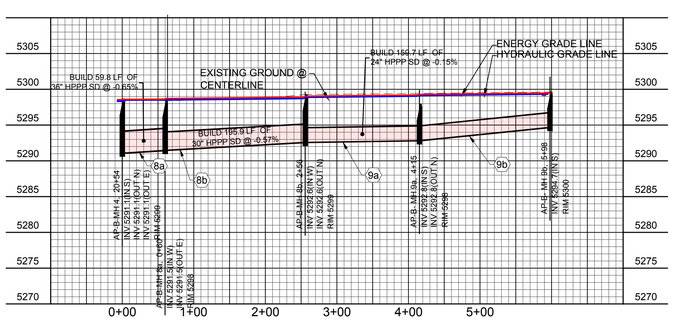
Plotted: 1/17/2022 4:12:35 PM, By:Eddings, Scott
H:\Projects\R313479.01 - Winrock Town Center Road EVS\Design\05.13 Drainage\05.13.3 Report\Exhibits\DRAINAGE EXHIBIT 2-9.dwg
Last Saved: 12/22/2021 3:28:27 PM, eddings

STORM DRAIN AP-B 400 & 500

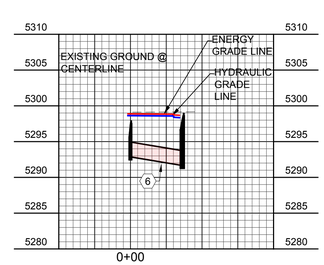
STORM CAD OUTPUT

Label	Start Node	Stop Node	Diameter (in)	Length (ft)	Allowable Flow (cfs)	Velocity (ft/s)	Invert (Start) (ft)	Invert (Stop) (ft)	Elevation Ground (Start) (ft)	Elevation Ground (Stop) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)	Energy Grade Line (In) (ft)	Energy Grade Line (Out) (ft)
LINE 8A	MH 8A	MH 4	36.0	59.8	17.0	3.46	5,291.49	5,291.10	5,298.68	5,298.50	5,298.50	5,298.48	5,298.59	5,298.57
LINE 8B	MH 8B	MH 8A	30.0	196.0	17.0	3.46	5,292.60	5,291.49	5,299.20	5,298.68	5,298.69	5,298.50	5,298.88	5,298.68
LINE 9A	MH 9A	MH 8B	24.0	159.0	9.5	3.02	5,293.20	5,292.60	5,299.18	5,299.20	5,299.03	5,298.86	5,299.17	5,299.00
LINE 9B	MH 9B	MH 9A	24.0	183.0	9.5	3.02	5,294.70	5,293.20	5,300.00	5,299.18	5,299.30	5,299.11	5,299.45	5,299.29

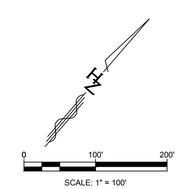
Label	Start Node	Stop Node	Diameter (in)	Length (ft)	Flow (cfs)	Velocity (ft/s)	Invert (Start) (ft)	Invert (Stop) (ft)	Elevation Ground (Start) (ft)	Elevation Ground (Stop) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)	Energy Grade Line (In) (ft)	Energy Grade Line (Out) (ft)
LINE 6	MH 6	MH 5	60.0	46.0	24.0	9.2	5291.5	5291.0	5298.4	5297.4	5294.2	5294.3	5294.3	5294.3
Line 6A	MH 6a	MH 6	24.0	120.0	24.0	11.1	5292.9	5291.5	5299.0	5298.4	5294.6	5293.8	5296.0	5294.3
Line 6B	INLET 6b	MH 6a	24.0	71.0	24.0	7.6	5293.5	5292.9	5300.0	5299.0	5296.6	5296.1	5297.5	5296.7



PROFILE VIEW: STORM DRAIN AP-B 400



PROFILE VIEW: STORM DRAIN AP-B 500



AS BUILT INFORMATION
CONTRACTOR — DATE
WORK STAKED BY — DATE
INSPECTOR'S ACCEPTANCE — DATE
FIELD VERIFICATION BY — DATE
DRAWINGS CORRECTED BY — DATE
MICRO-FILM INFORMATION
RECORDED BY — DATE
NO.

BENCH MARKS
FOUND MONUMENT "20_H18"
STANDARD 3 1/4" ALUMINUM DISC (FOUND IN PLACE)
NEW MEXICO STATE PLANE COORDINATES (CENTRAL ZONE-N.A.D. 1983)
N=1,493,154.978
E=1,545,048.210
PUBLISHED EL=5283.22 (NAVD 1988)
GROUND TO GRID FACTOR=0.999661580
DELTA ALPHA ANGLE=-0°11'00.11"

SURVEY INFORMATION
FIELD NOTES
NO. | BY | DATE

ENGINEER'S SEAL
NEW MEXICO REGISTERED PROFESSIONAL ENGINEER 12896 SCOTT E. SIEBERT

NO.	DATE	REMARKS	BY
		REVISIONS	

DESIGN
DESIGNED BY: KB — DATE: December 19, 2021
DRAWN BY: LT — DATE: December 19, 2021
DWG NAME: DRAINAGE EXHIBIT 2-9.dwg — PROJ #: R3134791.01
CHECKED BY: SE — DATE: December 19, 2021

Designed By:
HUITT-ZOLLARS
Huitt-Zollars, Inc. — Rio Rancho
333 Rio Rancho Drive NE, Suite 101
Rio Rancho, New Mexico 87124
Phone (505) 892-5141 Fax (505) 892-3259

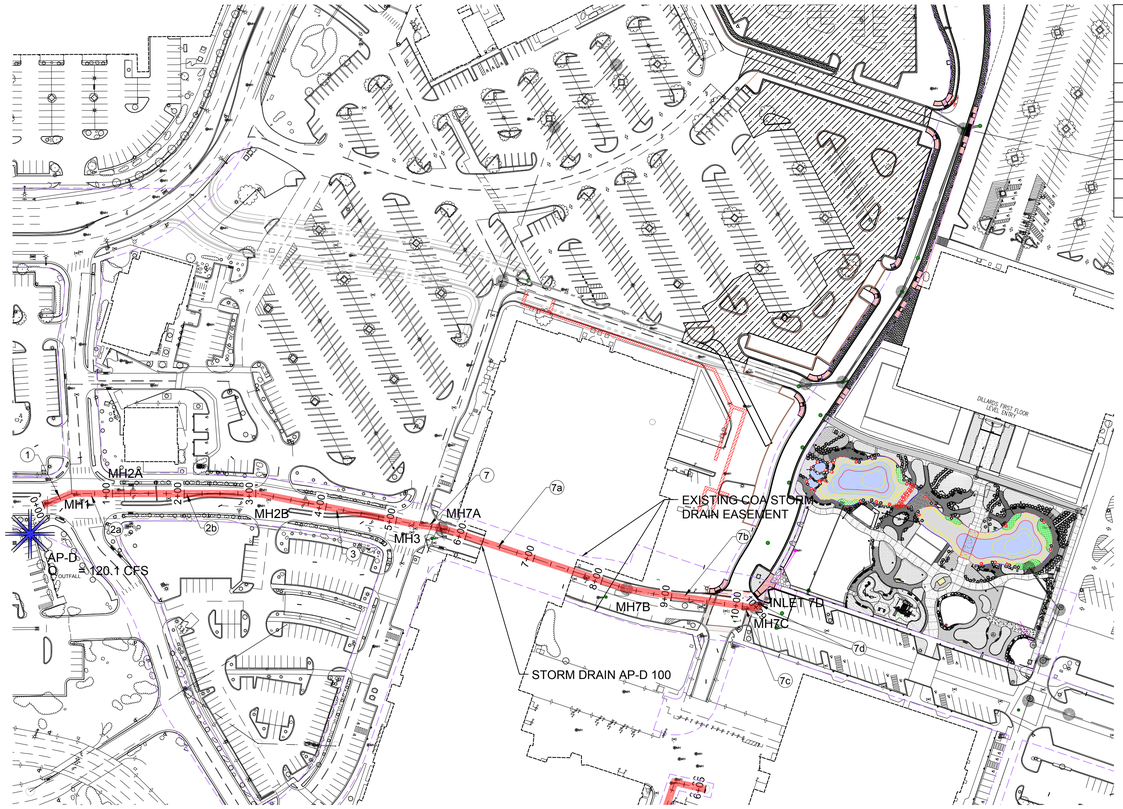
WINROCK TOWN CENTER
PHASE C INFRASTRUCTURE IMPROVEMENTS

TITLE: STORM DRAIN AP-B 400 & 500

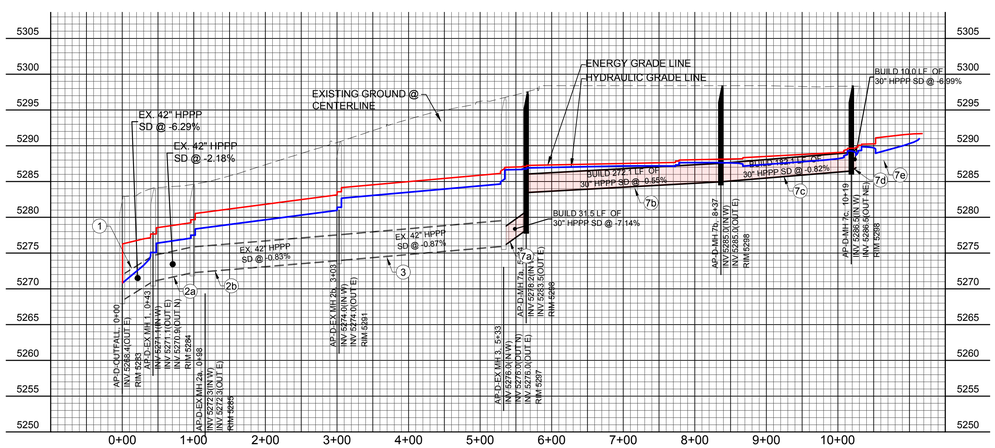
Design Review Committee	City Engineer	Last Update	Mo./Day/Yr.	Mo./Day/Yr.

City Project No.	Zone Map No.	Sheet	Of
-	J-19-Z	EXHIBIT 4	

Plotted: 1/17/2022 4:13:53 PM, By:Eddings, Scott
H:\proj\R3134791\01 - Winrock Town Center Road E\05 Design\05.13 Drainage\05.13.3 Report\Exhibits\DRAINAGE EXHIBIT 2-9.dwg
Last Saved: 1/17/2022 3:58:27 PM, eddings



STORM DRAIN AP-D 100



PROFILE VIEW: STORM DRAIN AP-D 100

STORM CAD OUTPUT

Label	Start Node	Stop Node	Diameter (in)	Length (ft)	Flow (cfs)	Velocity (ft/s)	Invert (Start) (ft)	Invert (Stop) (ft)	Elevation Ground (Start) (ft)	Elevation Ground (Stop) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)	Energy Grade Line (In) (ft)	Energy Grade Line (Out) (ft)
LINE 1	MH 1	AP-D	42	42.9	120.1	25.98	5271.1	5268.4	5284.1	5282.94	5274.36	5270.63	5277.52	(N/A)
LINE 2A	MH 2A	MH 1	42	55.4	113.4	11.92	5272.3	5271.1	5284.59	5284.1	5276.91	5276.19	5279.56	5277.52
LINE 2B	MH 2	MH 2A	42	204.6	113.4	11.92	5274	5272.3	5290.53	5284.59	5280.9	5278.24	5283.55	5279.56
LINE 3	EX MH 12	MH 2	42	230.1	93.8	9.88	5276	5274	5296.69	5290.53	5284.69	5282.63	5286.51	5283.55
LINE 7A	MH 7A	EX MH 12	24	31.4	23.5	7.89	5283.4	5283.18	5296.91	5296.69	5286.56	5286.34	5287.72	5286.92
LINE 7B	MH 7B	MH 7A	24	213.5	23.5	7.48	5285	5283.5	5297.26	5296.91	5288.56	5287.2	5289.61	5287.72
LINE 7C	MH 7C	MH 7B	24	225.4	23.5	7.48	5286.5	5285	5295.3	5297.26	5290.52	5289.08	5291.57	5289.61
LINE 7D	MH 7D	MH 7C	24	28.2	23.5	3.73	5287.2	5286.5	5294.87	5295.3	5291.61	5291.58	5291.87	5291.71

AS BUILT INFORMATION
CONTRACTOR
WORK STAKED BY DATE
INSPECTOR ACCEPTANCE BY DATE
FIELD VERIFICATION BY DATE
DRAWINGS CORRECTED BY DATE
MICRO-FILM INFORMATION
RECORDED BY DATE
NO.

BENCH MARKS
FOUND MONUMENT "20_H18"
STANDARD 3 1/4" ALUMINUM DISC (FOUND IN PLACE)
NEW MEXICO STATE PLANE COORDINATES (CENTRAL ZONE-N.A.D. 1983)
N=1,493,154.978
E=1,545,048.210
PUBLISHED EL=5283.22 (NAVD 1988)
GROUND TO GRID FACTOR=0.999661580
DELTA ALPHA ANGLE=-0°11'00.11"

SURVEY INFORMATION
FIELD NOTES
NO. BY DATE

ENGINEER'S SEAL
SCOTT A. SELLERS
12856
NEW MEXICO
REGISTERED PROFESSIONAL ENGINEER

NO.	BY	DATE	REMARKS
			REVISIONS

DESIGN
DESIGNED BY: KB DATE: December 19, 2021
DRAWN BY: LT DATE: December 19, 2021
DWG NAME: DRAINAGE EXHIBIT 2.9.dwg PROJ #: R313479.01
CHECKED BY: SE DATE: December 19, 2021

N
0 100' 200'
SCALE: 1" = 100'

Designed By:
HUITT-ZOLLARS
Huitt-Zollars, Inc. Rio Rancho
333 Rio Rancho Drive NE, Suite 101
Rio Rancho, New Mexico 87124
Phone (505) 892-5141 Fax (505) 892-3259

WINROCK TOWN CENTER
PHASE C INFRASTRUCTURE IMPROVEMENTS

TITLE:
STORM DRAIN AP-D 100

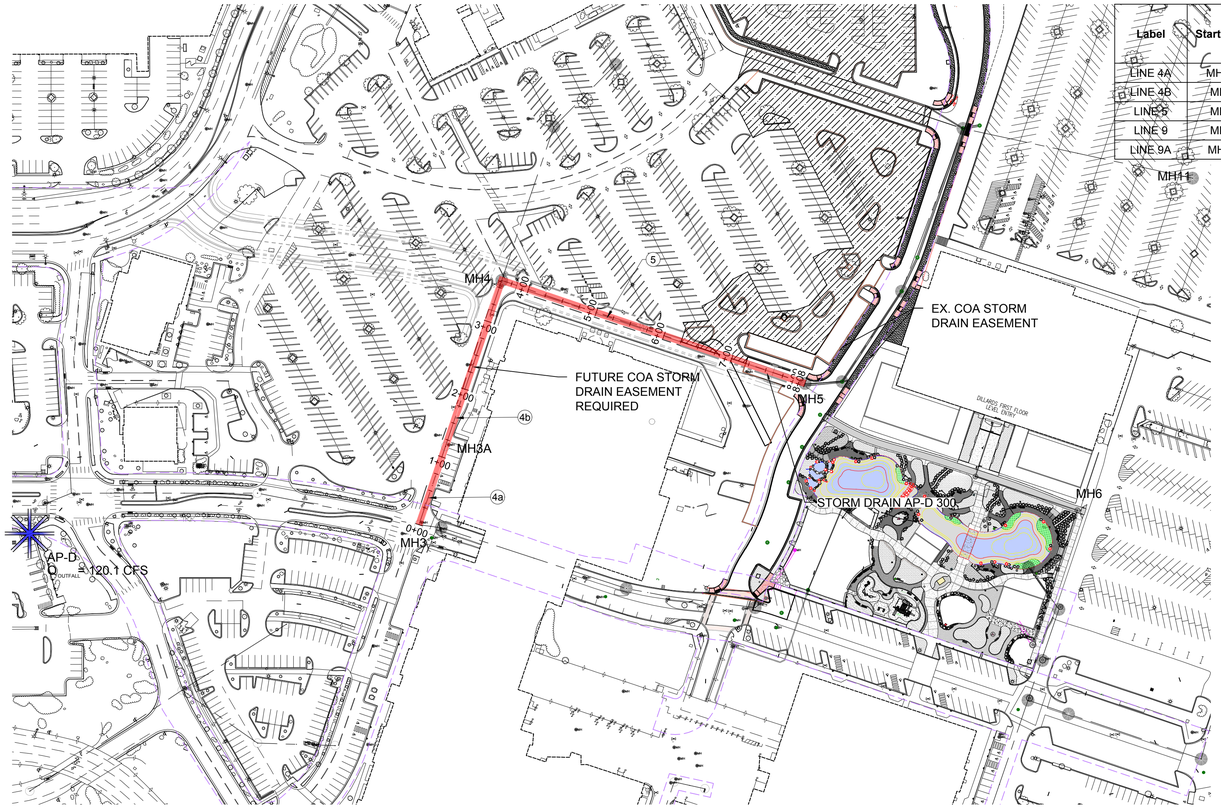
Design Review Committee	City Engineer	Last Update	Mo./Day/Yr.	Mo./Day/Yr.

City Project No.	Zone Map No.	Sheet	Of
-	J-19-Z	EXHIBIT 5	

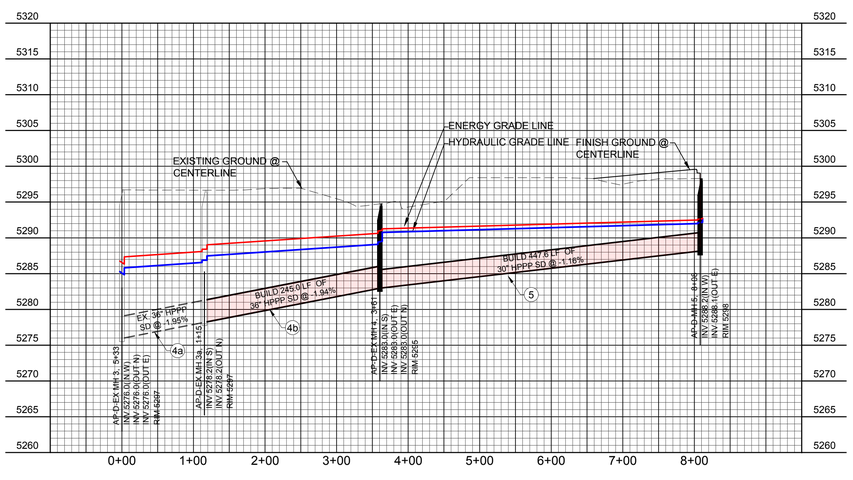
Plotted: 1/17/2022 4:16:34 PM, By:Eddings, Scott
P:\Proj\R313479.01 - Winrock Town Center Road EIOS Design\05.13 Drainage\05.13.3 Report\Exhibits\DRAINAGE EXHIBIT 2.9.dwg
Last Saved: 1/17/2022 4:16:00 PM, eddings

STORM CAD OUTPUT

Label	Start Node	Stop Node	Diameter (in)	Length (ft)	Flow (cfs)	Velocity (ft/s)	Invert (Start) (ft)	Invert (Stop) (ft)	Elevation Ground (Start) (ft)	Elevation Ground (Stop) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)	Energy Grade Line (In) (ft)	Energy Grade Line (Out) (ft)
LINE 4A	MH 4A	EX MH 12	36	118.6	70.3	9.95	5278.25	5276	5291.13	5288.62	5294.74	5296.06	5289.29	5287.7
LINE 4B	MH 4	MH 4A	36	242	70.3	9.95	5283	5278.25	5288.62	5286.92	5296.06	5296.69	5286.77	5286
LINE 5	MH 5	MH 4	30	447.6	28	5.7	5288.2	5283	5292.79	5291.26	5298	5294.74	5292.19	5290.95
LINE 9	MH 9	MH 5	24	361	28	13.03	5294	5288.2	5297.44	5293.02	5303	5298	5295.83	5292.28
LINE 9A	MH 11	MH 9	24	424.3	14	8.03	5296.92	5294	5298.87	5297.57	5303.8	5303	5298.27	5297.39



STORM DRAIN AP-D 300



PROFILE VIEW: STORM DRAIN AP-D 300

AS BUILT INFORMATION
CONTRACTOR — DATE
WORK STAKED BY — DATE
INSPECTOR'S ACCEPTANCE — DATE
FIELD VERIFICATION BY — DATE
DRAWINGS CORRECTED BY — DATE
MICRO-FILM INFORMATION
RECORDED BY — DATE
NO.

BENCH MARKS
FOUND MONUMENT "20_H18"
STANDARD 3 1/4" ALUMINUM DISC (FOUND IN PLACE)
NEW MEXICO STATE PLANE COORDINATES (CENTRAL ZONE-N.A.D. 1983)
N=1,493,154.978
E=1,545,048.210
PUBLISHED EL=5283.22 (NAVD 1988)
GROUND TO GRID FACTOR=0.999661580
DELTA ALPHA ANGLE=-01°00.11"

SURVEY INFORMATION
FIELD NOTES

NO.	BY	DATE

ENGINEER'S SEAL

NO.	DATE	REMARKS	BY

REVISIONS
DESIGN

DESIGNED BY: KB — DATE: December 19, 2021
DRAWN BY: LT — DATE: December 19, 2021
DWG NAME: DRAINAGE EXHIBIT 2-9.dwg — PROJ #: R313479.01
CHECKED BY: SE — DATE: December 19, 2021

SCALE: 1" = 100'

Designed By:
HUITT-ZOLLARS
Huitt-Zollars, Inc. Rio Rancho
333 Rio Rancho Drive NE, Suite 101
Rio Rancho, New Mexico 87124
Phone (505) 892-5141 Fax (505) 892-3259

WINROCK TOWN CENTER
PHASE C INFRASTRUCTURE IMPROVEMENTS

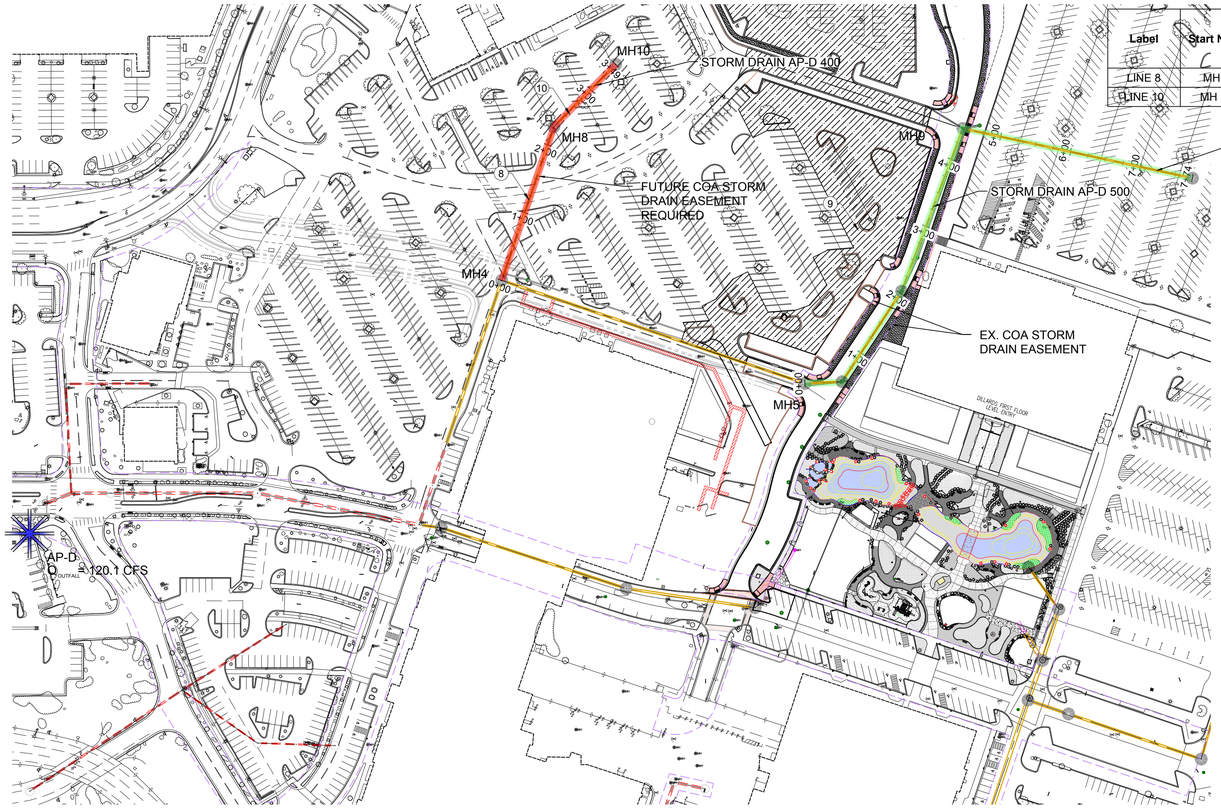
TITLE:
STORM DRAIN AP-D 300

Design Review Committee	City Engineer	Last Update	Mo./Day/Yr.	Mo./Day/Yr.

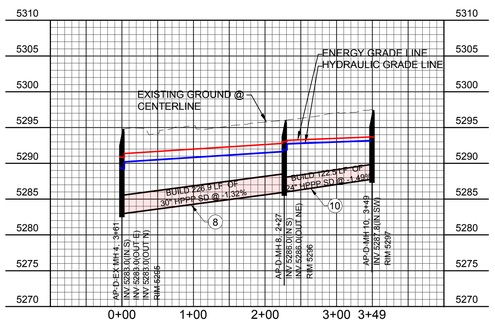
City Project No.	Zone Map No.	Sheet	Of
-	J-19-Z	EXHIBIT 6	

STORM CAD OUTPUT

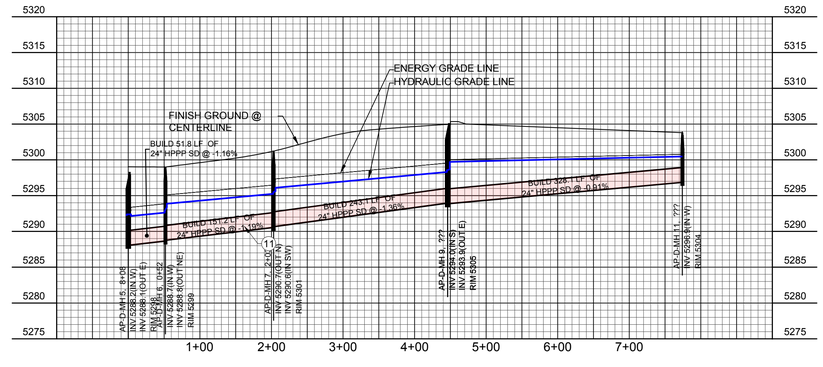
Label	Start Node	Stop Node	Diameter (in)	Length (ft)	Allowable Flow (cfs)	Velocity (ft/s)	Invert (Start) (ft)	Invert (Stop) (ft)	Elevation Ground (Start) (ft)	Elevation Ground (Stop) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)	Energy Grade Line (In) (ft)	Energy Grade Line (Out) (ft)
LINE 8	MH 8	MH 4	30.0	227.2	42.3	5.98	5,286.00	5,283.00	5,296.00	5,294.74	5,291.68	5,290.25	5,292.83	5,291.40
LINE 10	MH 10	MH 8	24.0	121.8	18.0	5.73	5,287.82	5,286.00	5,297.00	5,296.00	5,293.21	5,292.75	5,293.72	5,293.26



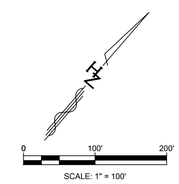
STORM DRAIN AP-D 400 & 500



PROFILE VIEW: STORM DRAIN AP-D 400



PROFILE VIEW: STORM DRAIN AP-D 500



AS BUILT INFORMATION

CONTRACTOR — DATE
WORK STAKED BY — DATE
INSPECTORS ACCEPTANCE BY — DATE
FIELD VERIFICATION BY — DATE
DRAWINGS CORRECTED BY — DATE

MICRO-FILM INFORMATION

RECORDED BY — DATE
NO.

BENCH MARKS

FOUND MONUMENT "20_H18"
STANDARD 3 1/4" ALUMINUM DISC (FOUND IN PLACE)
NEW MEXICO STATE PLANE COORDINATES (CENTRAL ZONE-N.A.D. 1983)
N=1,493,154.978
E=1,545,048.210
PUBLISHED EL=5283.22 (NAVD 1988)
GROUND TO GRID FACTOR=0.999661580
DELTA ALPHA ANGLE=-0°11'00.11"

SURVEY INFORMATION

FIELD NOTES

NO.	BY	DATE

ENGINEER'S SEAL

NO.	DATE	REMARKS	BY
		REVISIONS	

DESIGN

DESIGNED BY: KB — DATE: December 19, 2021
DRAWN BY: LT — DATE: December 19, 2021
DWG NAME: DRAINAGE EXHIBIT 2-9.dwg — PROJ #: R313479.01
CHECKED BY: SE — DATE: December 19, 2021

Designed By:
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Huitt-Zollars, Inc. Rio Rancho
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Rio Rancho, New Mexico 87124
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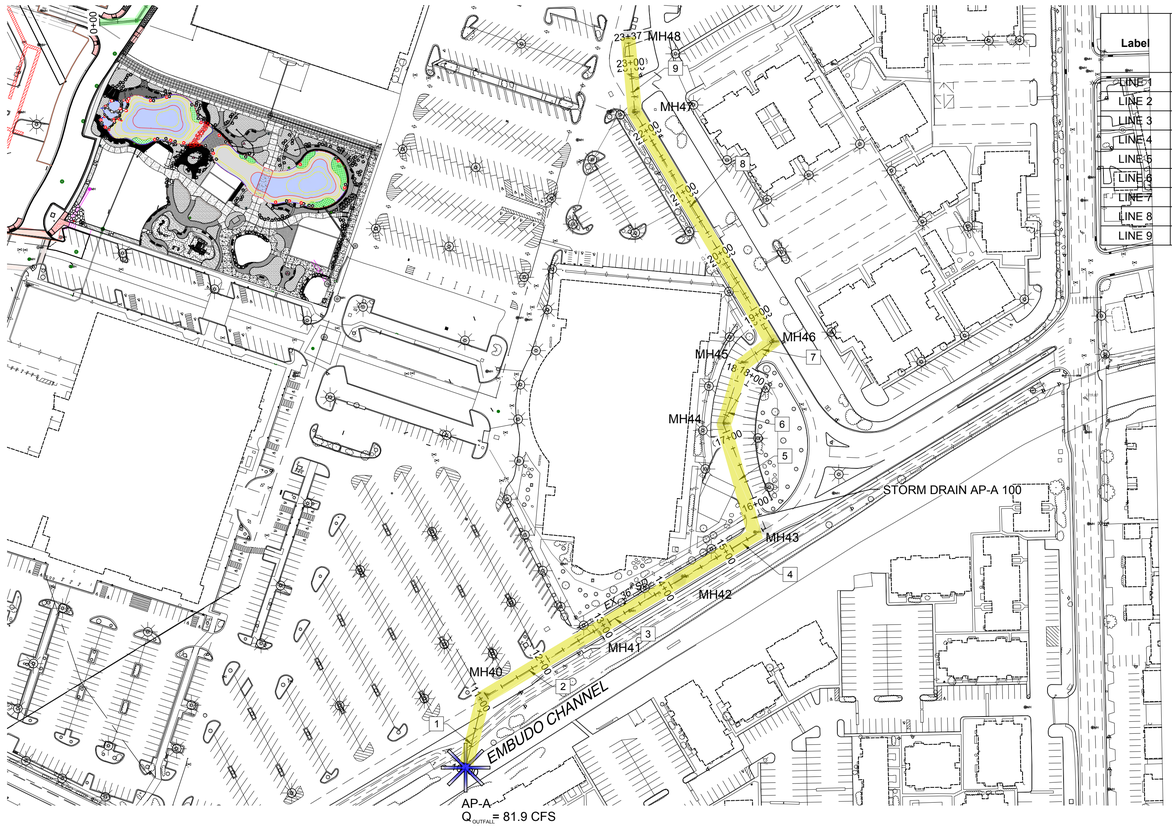
WINROCK TOWN CENTER
PHASE C INFRASTRUCTURE IMPROVEMENTS

TITLE:
STORM DRAIN AP-D 400 & 500

Design Review Committee	City Engineer	Last Update	Mo./Day/Yr.	Mo./Day/Yr.

City Project No.	Zone Map No.	Sheet	Of
-	J-19-Z	EXHIBIT 7	

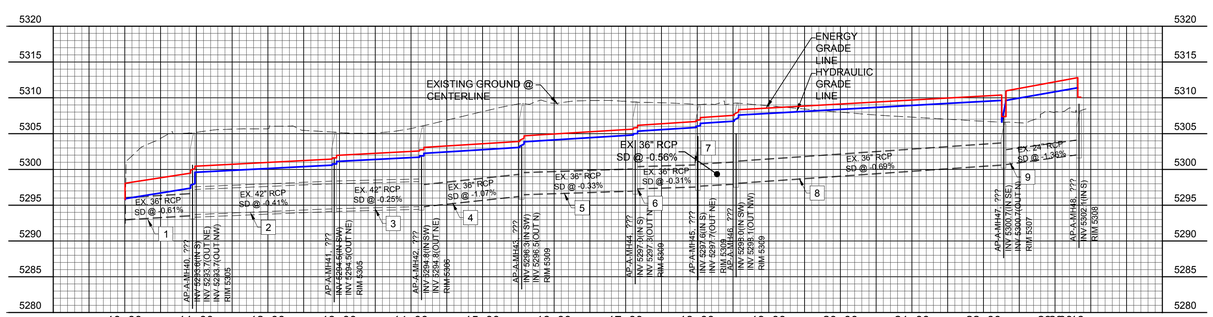
Plotted: 1/17/2022 4:22:06 PM, By:Edings, Scott
H:\Hoopp\R313479.01 - Winrock Town Center Road EVS Design\05.13 Drainage\05.13.3 Report\Exhibits\DRAINAGE EXHIBIT 2-9.dwg
Last Saved: 1/17/2022 4:21:27 PM, eddings



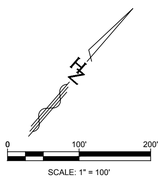
STORM DRAIN AP-A 100 EXISTING CONDITIONS

STORM CAD OUTPUT

Label	Start Node	Stop Node	Diameter (in)	Length (ft)	Flow (cfs)	Velocity (ft/s)	Invert (Start) (ft)	Invert (Stop) (ft)	Elevation Ground (Start) (ft)	Elevation Ground (Stop) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)	Energy Grade Line (In) (ft)	Energy Grade Line (Out) (ft)
LINE 1	MH 40	AP-A	36.0	94.6	81.9	11.59	5,293.58	5,293.00	5,305.13	5,302.00	5,297.34	5,295.79	5,299.42	5,298.01
LINE 2	MH 41	MH 40	42.0	198.0	71.4	7.42	5,294.50	5,293.58	5,305.55	5,305.13	5,300.54	5,299.54	5,301.40	5,300.40
LINE 3	MH 42	MH 41	42.0	122.0	71.4	7.42	5,295.00	5,294.50	5,306.53	5,305.55	5,301.67	5,301.06	5,302.53	5,301.91
LINE 4	MH 43	MH 42	36.0	140.0	51.4	7.27	5,296.30	5,295.00	5,308.94	5,306.53	5,303.04	5,302.20	5,303.86	5,303.03
LINE 5	MH 44	MH 43	36.0	158.7	51.4	7.27	5,297.02	5,296.30	5,309.32	5,308.94	5,304.76	5,303.82	5,305.58	5,304.64
LINE 6	MH 45	MH 44	36.0	87.6	51.4	7.27	5,297.59	5,297.02	5,309.34	5,309.32	5,305.82	5,305.30	5,306.64	5,306.12
LINE 7	MH 46	MH 45	36.0	53.4	51.4	7.27	5,298.09	5,297.59	5,309.44	5,309.34	5,306.70	5,306.38	5,307.52	5,307.20
LINE 8	MH 47	MH 46	36.0	373.8	49.4	6.99	5,300.67	5,298.09	5,306.57	5,309.44	5,309.59	5,307.54	5,310.35	5,308.30
LINE 9	MH 48	MH 47	24.0	105.3	30.1	9.58	5,302.10	5,300.67	5,308.62	5,306.57	5,311.36	5,309.49	5,312.78	5,310.92



PROFILE VIEW: STORM DRAIN AP-A 100



Designed By:

HUITT-ZOLLARS

Huitt-Zollars, Inc. Rio Rancho
333 Rio Rancho Drive NE, Suite 101
Rio Rancho, New Mexico 87124
Phone (505) 892-5141 Fax (505) 892-3259

AS BUILT INFORMATION
CONTRACTOR
WORK STAKED BY DATE
ASBUILT DRAWINGS INSPECTORS DATE
FIELD VERIFICATION BY DATE
DRAWINGS CORRECTED BY DATE
MICRO-FILM INFORMATION
RECORDED BY DATE
NO.

BENCH MARKS
FOUND MONUMENT "20_H18"
STANDARD 3 1/4" ALUMINUM DISC (FOUND IN PLACE)
NEW MEXICO STATE PLANE COORDINATES (CENTRAL ZONE-N.A.D. 1983)
N=1,493,154.978
E=1,545,048.210
PUBLISHED EL=5283.22 (NAVD 1988)
GROUND TO GRID FACTOR=0.999661580
DELTA ALPHA ANGLE=-0°11'00.11"

SURVEY INFORMATION
FIELD NOTES
NO. BY DATE

ENGINEER'S SEAL
LAWRENCE TAYLOR
NEW MEXICO
12556
REGISTERED PROFESSIONAL ENGINEER

NO.	BY	DATE	REMARKS

REVISIONS

DESIGN
DESIGNED BY: KB DATE: December 19, 2021
DRAWN BY: LT DATE: December 19, 2021
DWG NAME: DRAINAGE EXHIBIT 2-9.dwg PROJ #: R313479.01
CHECKED BY: SE DATE: December 19, 2021

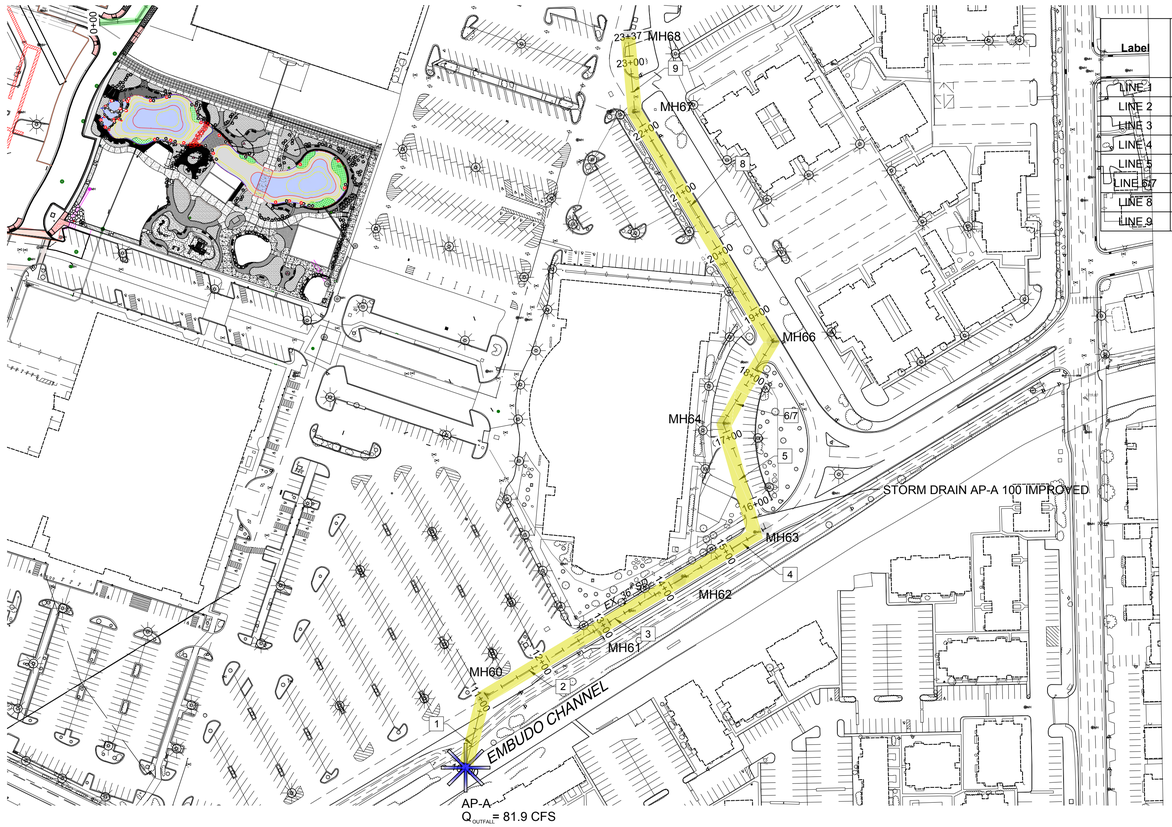
WINROCK TOWN CENTER
PHASE C INFRASTRUCTURE IMPROVEMENTS

TITLE:
STORM DRAIN AP-A 100 EX. CONDITIONS

Design Review Committee	City Engineer	Last Update	Mo./Day/Yr.	Mo./Day/Yr.

City Project No.	Zone Map No.	Sheet	Of
-	J-19-Z	EXHIBIT 8	

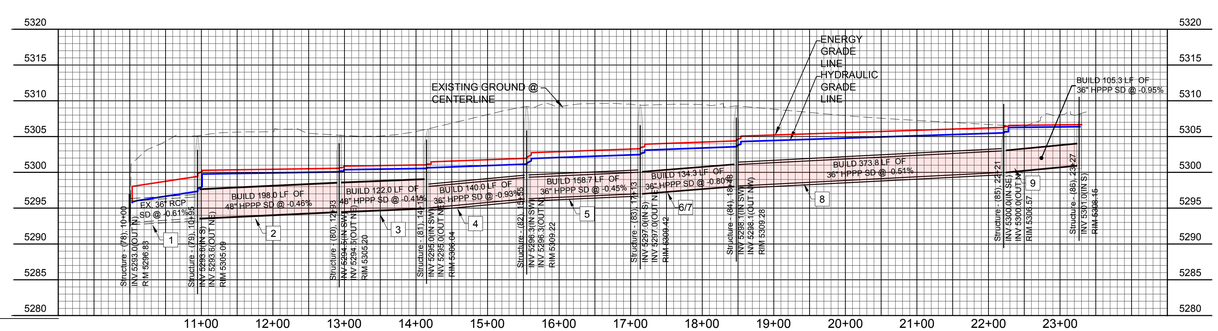
Plotted: 12/20/2021 6:15:49 PM, By: Eddings, Scott
H:\Projects\313479.01 - Winrock Town Center Road E\05 Design\05.13 Drainage\05.13.3 Report\Exhibits\DRAINAGE EXHIBIT 2-9.dwg
Last Saved: 12/20/2021 6:11:16 PM, eddings



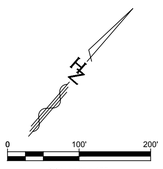
STORM DRAIN AP-A 100 IMPROVED

STORM CAD OUTPUT

Label	Start Node	Stop Node	Diameter (in)	Length (ft)	Flow (cfs)	Velocity (ft/s)	Invert (Start) (ft)	Invert (Stop) (ft)	Elevation Ground (Start) (ft)	Elevation Ground (Stop) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)	Energy Grade Line (In) (ft)	Energy Grade Line (Out) (ft)
LINE 1	MH 60	AP-A	36.0	94.6	81.9	11.59	5,293.58	5,293.00	5,305.13	5,302.00	5,297.34	5,295.79	5,299.42	5,298.01
LINE 2	MH 61	MH 60	48.0	198.0	71.4	5.68	5,294.50	5,293.58	5,305.55	5,305.13	5,300.05	5,299.76	5,300.55	5,300.26
LINE 3	MH 62	MH 61	48.0	122.0	71.4	5.68	5,295.00	5,294.50	5,306.53	5,305.55	5,300.53	5,300.35	5,301.03	5,300.85
LINE 4	MH 63	MH 62	36.0	140.0	51.4	7.27	5,296.30	5,295.00	5,308.94	5,306.53	5,301.13	5,300.64	5,301.95	5,301.46
LINE 5	MH 64	MH 63	36.0	158.7	51.4	7.27	5,297.02	5,296.30	5,309.32	5,308.94	5,302.47	5,301.91	5,303.29	5,302.73
LINE 6/7	MH 66	MH 64	36.0	134.4	51.4	7.27	5,298.09	5,297.02	5,309.44	5,309.32	5,303.56	5,303.09	5,304.38	5,303.91
LINE 8	MH 67	MH 66	36.0	373.8	49.4	6.99	5,300.00	5,298.09	5,306.57	5,309.44	5,305.50	5,304.29	5,306.26	5,305.05
LINE 9	MH 68	MH 67	36.0	105.3	30.1	4.26	5,301.00	5,300.00	5,308.15	5,306.57	5,306.37	5,306.24	5,306.65	5,306.52



PROFILE VIEW: STORM DRAIN AP-A 100 IMPROVED



Designed By:
HUITT-ZOLLARS
Huitt-Zollars, Inc. Rio Rancho
333 Rio Rancho Drive NE, Suite 101
Rio Rancho, New Mexico 87124
Phone (505) 892-5141 Fax (505) 892-3259

AS BUILT INFORMATION
CONTRACTOR
WORK STAKED BY DATE
INSPECTOR'S ACCEPTANCE BY DATE
FIELD VERIFICATION BY DATE
DRAWINGS CORRECTED BY DATE
MICRO-FILM INFORMATION
RECORDED BY DATE
NO.

BENCH MARKS
FOUND MONUMENT "20_H18"
STANDARD 3 1/4" ALUMINUM DISC (FOUND IN PLACE)
NEW MEXICO STATE PLANE COORDINATES (CENTRAL ZONE-N.A.D. 1983)
N=1,493,154.978
E=1,545,048.210
PUBLISHED EL=5283.22 (NAVD 1988)
GROUND TO GRID FACTOR=0.999661580
DELTA ALPHA ANGLE=-0°11'00.11"

SURVEY INFORMATION
FIELD NOTES
NO. BY DATE

ENGINEER'S SEAL
LICENSED PROFESSIONAL ENGINEER 12556 STATE OF NEW MEXICO

NO.	BY	DATE	REMARKS
			REVISIONS

DESIGN
DESIGNED BY: KB DATE: December 19, 2021
DRAWN BY: LT DATE: December 19, 2021
DWG NAME: DRAINAGE EXHIBIT 2-9.dwg PROJ #: R313479.01
CHECKED BY: SE DATE: December 19, 2021

WINROCK TOWN CENTER
PHASE C INFRASTRUCTURE IMPROVEMENTS

TITLE:
STORM DRAIN AP-A 100 IMPROVED

Design Review Committee	City Engineer	Last Update	Mo./Day/Yr.	Mo./Day/Yr.

City Project No.	Zone Map No.	Sheet	Of
-	J-19-Z	EXHIBIT 9	

DECORATIVE PONDS			
LAND TREATMENT AREAS			
Area	Sq. Ft.	%	Acres
Total	82903		
Isolated	4126		
Contributory	78777		1.81
concrete	7800	16.7%	0.30
roof	5328		
landscape	65649	83.3%	1.51
		100.00%	1.81

EXHIBIT 10.1

PONDS DRAINAGE AREA AREA = 1.81 ac.

DRAINAGE ZONE 3

PRECIPITATION:			
	360 =	2.60	in.
	1140 =	3.10	in.
	10day =	4.90	in.

	EXCESS PRECIPITATION:		PEAK DISCHARGE:	
TREATMENT A	0.66	in.	1.87	cfs/ac.
TREATMENT B	0.92	in.	2.60	cfs/ac.
TREATMENT C	1.29	in.	3.45	cfs/ac.
TREATMENT D	2.36	in.	5.02	cfs/ac.

EXISTING CONDITIONS:	AREA		PROPOSED CONDITIONS: AREA	
TREATMENT A	0.00	ac.	0.00	ac.
TREATMENT B	0.00	ac.	0.76	ac.
TREATMENT C	0.00	ac.	0.76	ac.
TREATMENT D	1.81	ac.	0.30	ac.

<u>EXISTING EXCESS PRECIPITATION:</u>

Weighted E = (0.66)x(0.00)+(0.92)x(0.00)+(1.29)x(0.00)+(2.36)x(1.81)/ 1.81 ac.
= 2.36 in.

V100-360 = (2.36)x(1.81)/ 12 = 0.355967 ac-ft = 15506 cf

<u>EXISTING PEAK DISCHARGE:</u>

Q100 = (1.87)x(0.00)+(2.60)x(0.00)+(3.45)x(0.00)+(5.02)x(1.81)= 9.09 cfs

<u>PROPOSED EXCESS PRECIPITATION:</u>

Weighted E = (0.66)x(0.00)+(0.92)x(0.76)+(1.29)x(0.76)+(2.36)x(0.30)/ 1.81 ac.
= 1.31 in.

V100-360 = (1.31)x(1.81)/ 12.0 = 0.198046 ac-ft = 8627 cf

V100-1440 = (0.20)+(0.30)x(3.10 - 2.60)/ 12 = 0.210546 ac-ft = 9171 cf

V100-10day = (0.20)+(0.30)x(4.90 - 2.60)/ 12 = 0.255546 ac-ft = 11132 cf

<u>PROPOSED PEAK DISCHARGE:</u>

Q100 = (1.87)x(0.00)+(2.60)x(0.76)+(3.45)x(0.76)+(5.02)x(0.30)= 6.07 cfs

EXHIBIT 10.2

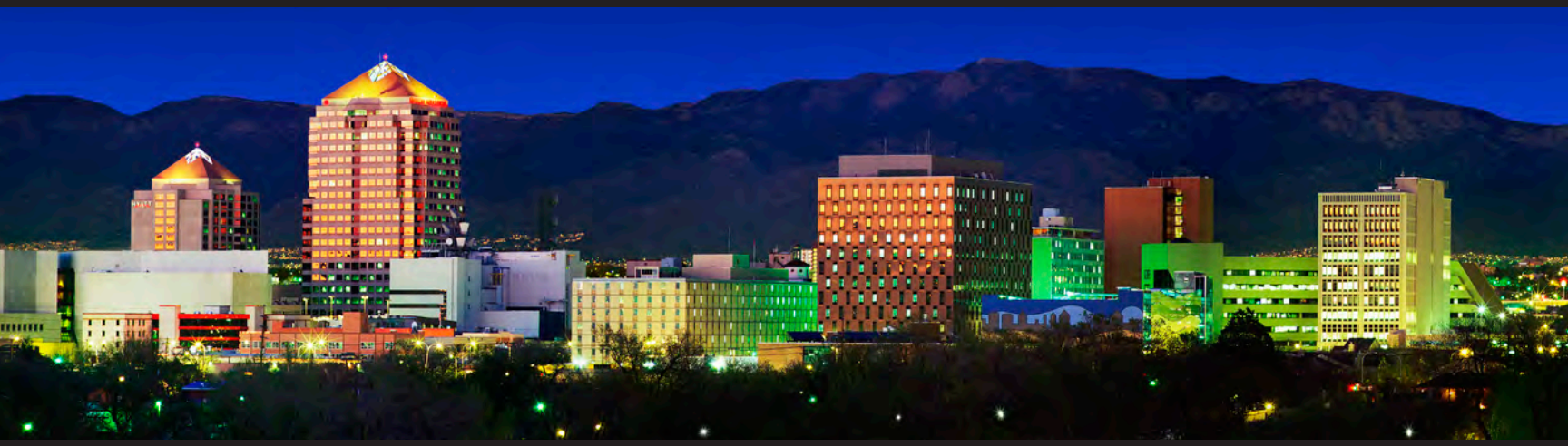
Decorative Ponds Stage/Storage/Surface Area Relationship

POND 1				
Elevation	Surface Area (SQ FT)	Surface Area (ACRES)	Incremental Volume (Acre-Feet)	Total Volume (Acre-Feet)
5289	615	0.01		
			0.02	0.02
5290	1434	0.03		
			0.05	0.07
5291	2815	0.06		
			0.08	0.15
5292	3855	0.09		
			0.10	0.25
5293	5128	0.12		
			0.13	0.38
5294	6018	0.14		
			0.15	0.53
5295	7107	0.16		

POND 2				
Elevation	Surface Area (SQ FT)	Surface Area (ACRES)	Incremental Volume (Acre-Feet)	Total Volume (Acre-Feet)
5287	800	0.02		
			0.02	0.02
5288	1125	0.03		
			0.03	0.05
5289	1658	0.04		
			0.05	0.10
5290	2811	0.06		
			0.09	0.20
5291	5355	0.12		
			0.14	0.34
5292	7163	0.16		
			0.18	0.52
5293	8757	0.20		
			0.24	0.77
5294	12549	0.29		
			0.34	1.10
5295	17077	0.39		

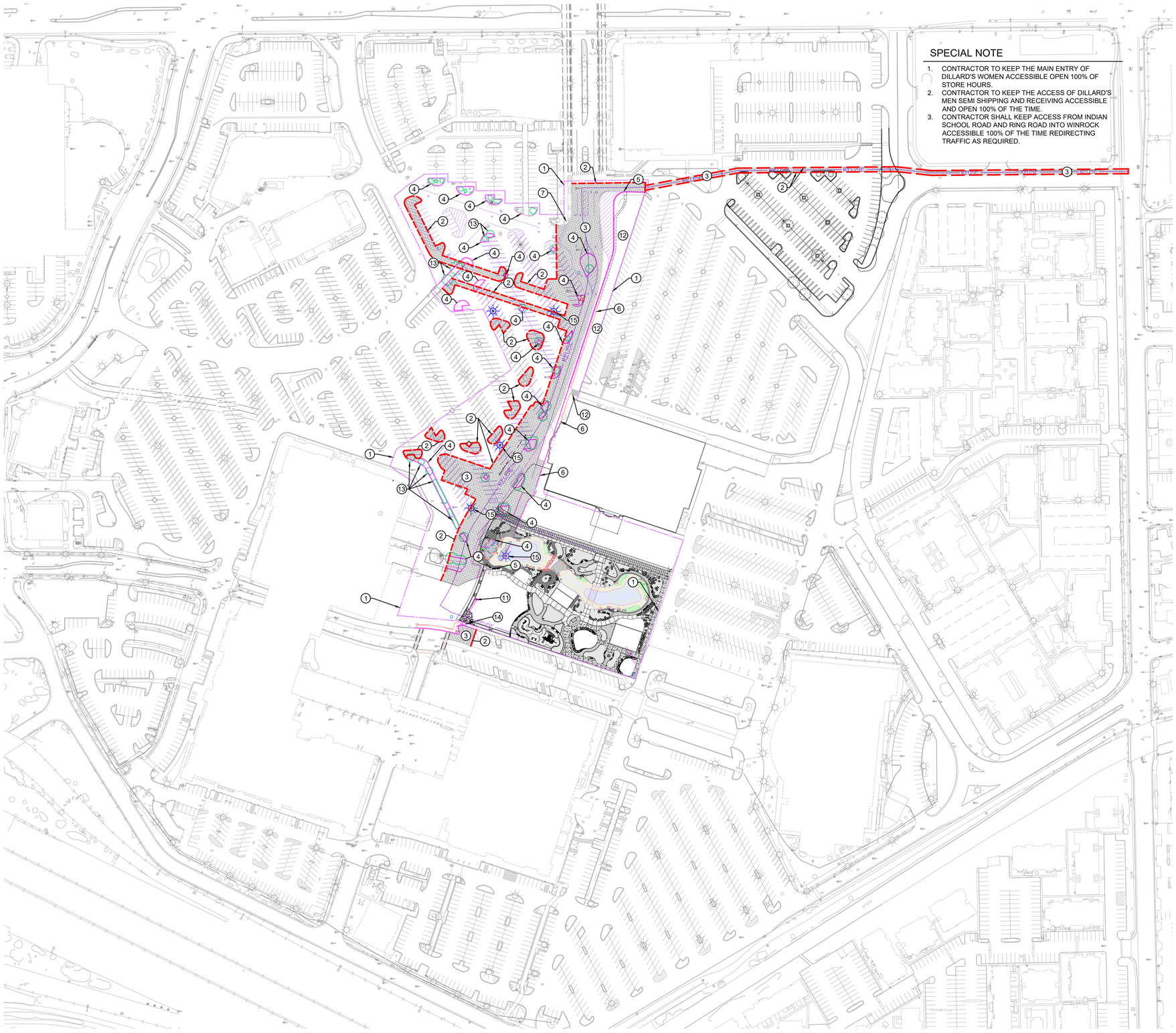
Total 1.63 ac.ft.

EX 10.3



Our *commitment* is to understand the needs of our clients and to meet those needs by delivering professional services with the highest level of ***quality & integrity.***

HUITT-ZOLLARS



SPECIAL NOTE

1. CONTRACTOR TO KEEP THE MAIN ENTRY OF DILLARD'S WOMEN ACCESSIBLE OPEN 100% OF STORE HOURS.
2. CONTRACTOR TO KEEP THE ACCESS OF DILLARD'S MEN SEMI SHIPPING AND RECEIVING ACCESSIBLE AND OPEN 100% OF THE TIME.
3. CONTRACTOR SHALL KEEP ACCESS FROM INDIAN SCHOOL ROAD AND RING ROAD INTO WINROCK ACCESSIBLE 100% OF THE TIME REDIRECTING TRAFFIC AS REQUIRED.

CONSTRUCTION NOTES

1. INSTALL SIX FOOT SCREENED CONSTRUCTION FENCE. COORDINATE WITH OWNER FOR SETUPS AND WORK ZONES.
2. NEAT CUT EXISTING ASPHALT.
3. REMOVE AND DISPOSE EXISTING ASPHALT PAVEMENT.
4. REMOVE EXISTING RAISED MEDIAN.
5. REMOVE EXISTING CONC. CURB AND GUTTER.
6. REMOVE EXISTING SIDEWALK.
7. REMOVE EXISTING PEDESTRIAN RAMP.
8. REMOVE EXISTING PUBLIC WATERLINE AND APPERTUNACES. PER APPROVED WORK ORDER.
9. REMOVE EXISTING PRIVATE SANITARY SEWER LINE. SEWER BYPASS PUMPING REQUIRED.
10. REMOVE EXISTING PUBLIC STORM DRAIN - PER APPROVED WORK ORDER.
11. REMOVE EXISTING STORM WATER QUALITY INLET - PER APPROVED WORK ORDER.
12. PROTECT IN PLACE - DO NOT DISTURB.
13. REMOVE EXISTING TREES/VEGETATION/IRRIGATION. IRRIGATION CUT/CAP AND MAINTAIN SERVICE.
14. REMOVE EXISTING SIDEWALK CULVERTS.
15. REMOVE EXISTING LIGHT POLE/FND/CONDUCTORS.

LEGEND

- NEW RIGHT-OF-WAY
- EX. RIGHT-OF-WAY
- EX. CURB & GUTTER
- EX. CURB & GUTTER TO BE REMOVED
- EX. CONC. SIDEWALK TO BE REMOVED
- EX. CONCRETE TO BE REMOVED
- EX. ASPHALT MILL AND RECONSTRUCT
- EX. ASPHALT MILL AND INLAY
- EX. TRAFFIC SIGNAL
- EX. SIGN TO REMAIN
- EX. SIGN TO BE REMOVED
- EX. STREET LIGHT
- EX. BOLLARD TO BE REMOVED
- EX. GAS VALVE
- EX. WATER VALVE
- EX. FIRE HYDRANT
- EX. PULLBOX
- EX. STORM DRAIN MANHOLE
- SD — EX. STORM DRAIN PIPE
- G — EX. GAS LINE
- W — EX. WATER
- SEWER — EX. SEWER LINE
- UGE — EX. UNDERGROUND ELECTRIC
- OHE — EX. OVERHEAD ELECTRIC
- FO — EX. FIBER OPTIC
- CATV — EX. CABLE TV
- TELE — EX. TELECOM
- CENTERLINE
- X — EX. FENCE
- 4" SOLID WHITE OR YELLOW STRIPE TO REMAIN
- EX. 4" DASHED WHITE STRIPE TO REMAIN
- EX. 4" SOLID WHITE OR YELLOW STRIPE TO BE REMOVED
- EX. 4" DASHED WHITE STRIPE TO BE REMOVED

N

0 100' 200'

SCALE: 1" = 100'

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PRICING SUBMITTAL

HUITT-ZOLLARS
Huitt-Zollars, Inc. Albuquerque
6501 Americas Pkwy NE, Suite 550
Albuquerque, New Mexico 87110
Phone (505) 883-8114 Fax (505) 883-5022

AS BUILT INFORMATION

CONTRACTOR	DATE
WORK STAKED BY	DATE
INSPECTOR'S ACCEPTANCE BY	DATE
FIELD VERIFICATION BY	DATE
DRAWINGS CORRECTED BY	DATE

MICRO-FILM INFORMATION

RECORDED BY	DATE
NO.	

BENCH MARKS

FOUND MONUMENT "1_H19A"
A CITY OF ALBUQUERQUE BRASS DISK SET IN A CONCRETE POST
0.1 FEET BELOWGROUND LEVEL AND IS STAMPED "1-H19A, 1989".
X = 1548358.44
Y = 1493076.47
ELEVATION IS 5326.611 (NAVD 1988)

SURVEY INFORMATION

FIELD NOTES

NO.	BY	DATE

ENGINEER'S SEAL

PRELIMINARY
NOT FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES. FOR REVIEW ONLY.
SCOTT A. EDINGS
12956
Date: 11/3/21
HUITT-ZOLLARS, INC.
Consulting Engineers

NO.	DATE	REMARKS	BY
		REVISIONS	

DESIGN

DESIGNED BY: SAE	DATE: November 3, 2021
DRAWN BY: VL	DATE: November 3, 2021
DWG NAME: 12-13 Removals.dwg	R313479.01
CHECKED BY: SAE	DATE: November 3, 2021

WINROCK TOWN CENTER
PARK & ROAD E

TITLE:
MISCELLANEOUS SURFACE REMOVALS

Design Review Committee	City Engineer	Last Update	Mo./Day/Yr.	Mo./Day/Yr.

City Project No.	Zone Map No.	Sheet	Of
XXXX.XX	J-19-Z	12	34

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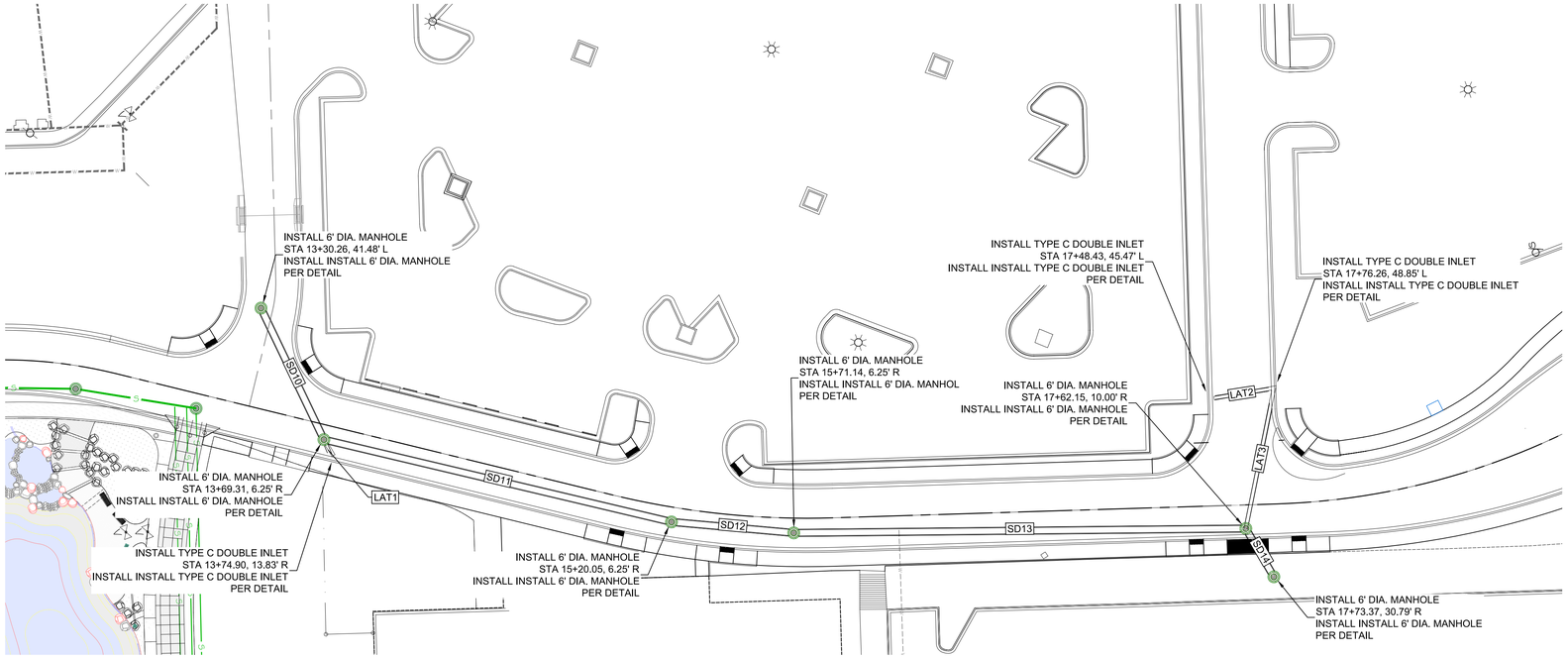
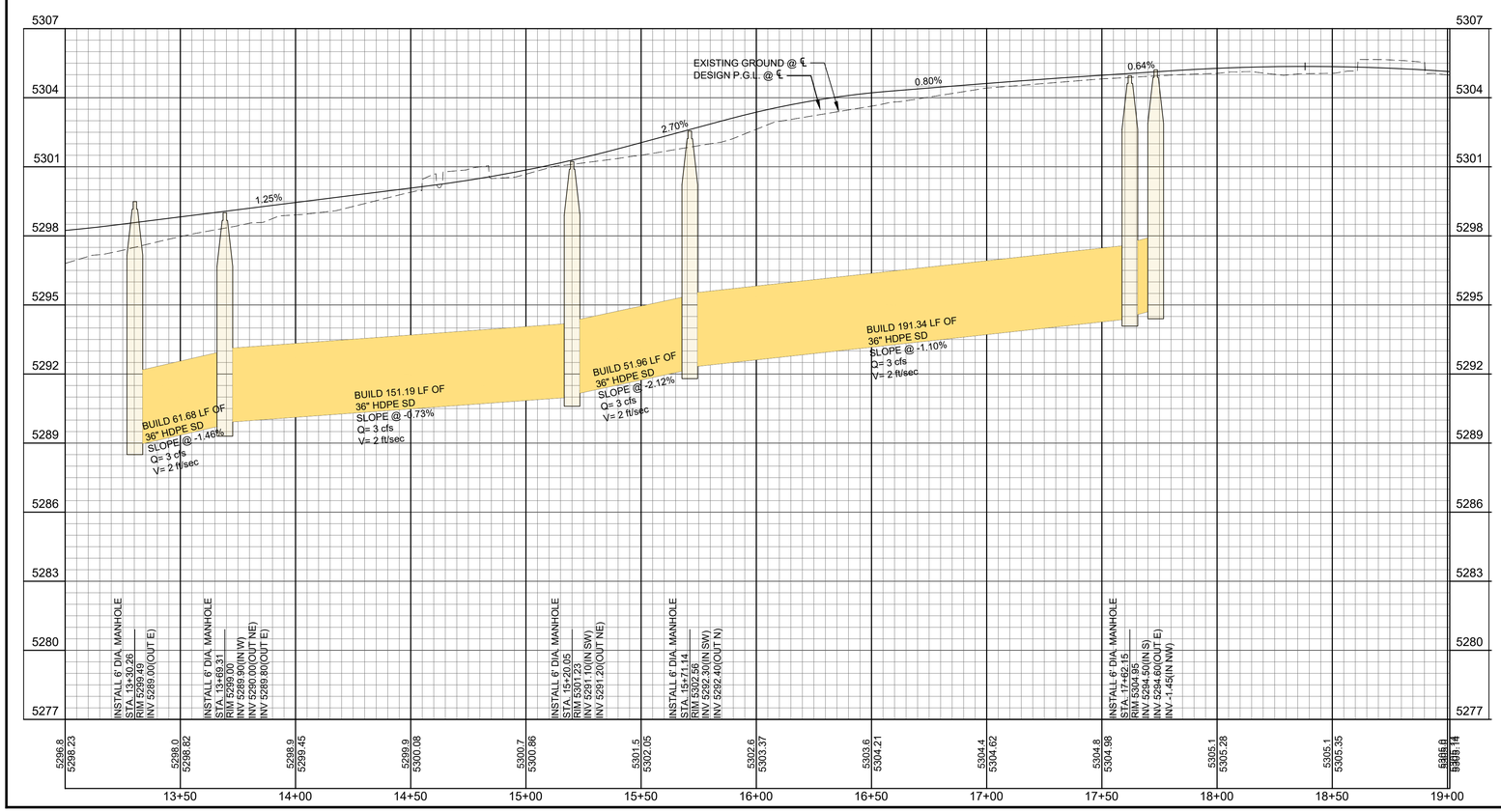


ROAD E



STORM DRAIN DATA				
PIPE	PIPE DIA	BEARING	LENGTH	SLOPE
SD10	36"	N84° 26' 15"E	61.68'	-1.46%
SD11	36"	N33° 19' 22"E	151.19'	-0.73%
SD12	36"	N25° 06' 39"E	51.96'	-2.12%
SD13	36"	N19° 26' 55"E	191.34'	-1.10%
SD14	36"	N79° 52' 02"E	23.62'	-1.27%

STORM DRAIN DATA				
PIPE	PIPE DIA	BEARING	LENGTH	SLOPE
LAT1	18"	N87° 21' 50"E	9.42'	1.00%
LAT2	18"	N11° 14' 26"E	27.88'	0.00%
LAT3	18"	S58° 27' 42"E	60.49'	1.00%

[redacted]

AS BUILT INFORMATION
CONTRACTOR — DATE
WORK STAKED BY — DATE
WORK INSPECTED FOR ACCEPTANCE BY — DATE
FIELD VERIFICATION BY — DATE
DRAWINGS CORRECTED BY — DATE
MICRO-FILM INFORMATION
RECORDED BY — DATE
NO.

BENCH MARKS
FOUND MONUMENT "1_H19A"
A CITY OF ALBUQUERQUE BRASS DISK SET IN A CONCRETE POST
0.1 FEET BELOWGROUND LEVEL AND IS STAMPED "1-H19A, 1989".
X = 1548338.44
Y = 1493076.47
ELEVATION IS 5326.611 (NAVD 1988)

SURVEY INFORMATION
FIELD NOTES

NO.	BY	DATE

ENGINEER'S SEAL

PRELIMINARY
NOT FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES. FOR REVIEW ONLY.
SCOTT A. EDDINGS
12856
Date: 11/3/21
HUITT-ZOLLARS, INC.
Consulting Engineers

NO.	DATE	REMARKS	BY
		REVISIONS	
		DESIGN	

DESIGNED BY: SAE — DATE: November 3, 2021
DRAWN BY: VL — DATE: November 3, 2021
DWG NAME: 27 ROAD E SD P& P.dwg — R313479.01
CHECKED BY: SAE — DATE: November 3, 2021

SCALES: HORZ. 1" = 30'
VERT. 1" = 3'

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PRICING SUBMITTAL

HUITT-ZOLLARS
Huitt-Zollars, Inc. Albuquerque
6501 Americas Pkwy NE, Suite 550
Albuquerque, New Mexico 87110
Phone (505) 883-8114 Fax (505) 883-5022

WINROCK TOWN CENTER
PARK & ROAD E

TITLE: ROAD E STORM DRAIN PLAN & PROFILE

Design Review Committee	City Engineer	Last Update	Mo./Day/Yr.	Mo./Day/Yr.

City Project No. XXXX.XX | Zone Map No. J-19-Z | Sheet 27 Of 34

Plotted: 11/3/2021 7:20:27 PM, By:Eddings, Scott
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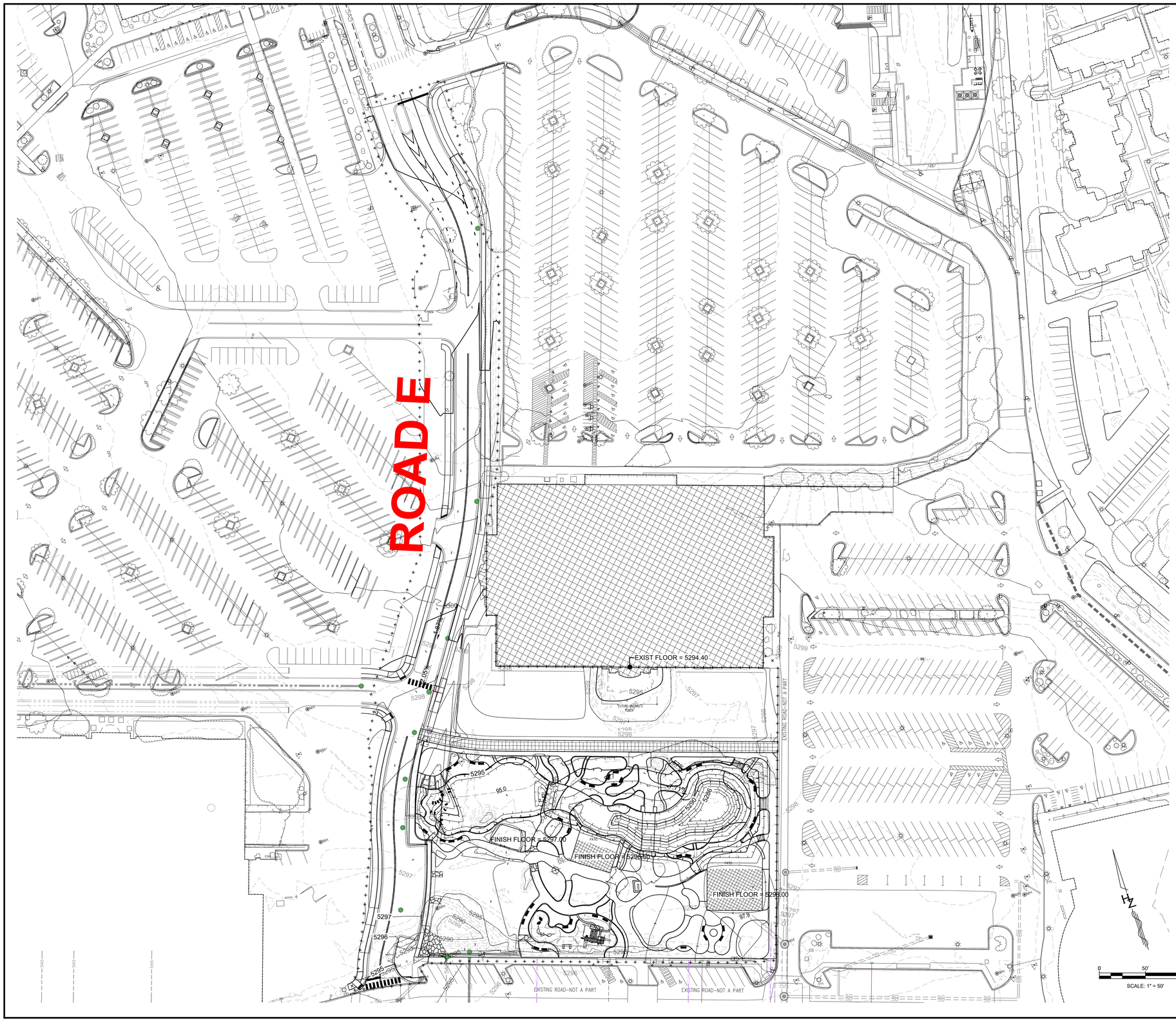

LEGEND

5050	EXISTING (INDEX) CONTOUR
5251	EXISTING (INTERMEDIATE) CONTOUR
5040	PROPOSED (INDEX) CONTOUR
5041	PROPOSED (INTERMEDIATE) CONTOUR
	WATER BLOCK
	NEW CURB & GUTTER
	FUTURE CURB & GUTTER
XX.XXTP	TOP OF PAVEMENT
XX.XXTC XX.XXFL	TOP OF CURB ELEVATION FLOW LINE ELEVATION
XX.XXTOC	TOP OF CONCRETE
	FLOW DIRECTION
	GRADING LIMITS
	GRAVEL MULCH

GENERAL NOTES

1. ALL DISTURBED COMMERCIAL LOTS AND NON-RESIDENTIAL LOTS AREAS NOT PROPOSED TO BE IMPROVED SHALL BE STRAW CRIMPED W/ NATIVE SEEDING PER COA SPECIFICATION 1011 & 1012.
2. SEE PLAT FOR LOT DIMENSIONS.
3. EARTHWORK SHALL BE PERFORMED IN ACCORDANCE WITH THE GEOTECHNICAL INVESTIGATION FOR THIS PROJECT.
4. CONTRACTOR SHALL PREPARE AND PROCESS DUST CONTROL AND EROSION SEDIMENT CONTROL PLAN THROUGH CITY OF ALBQUERQUE.
5. THE STORM WATER POLLUTION PREVENTION PLAN SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION PROJECT.

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PRICING SUBMITTAL

HUITT-ZOLLARS
Huitt-Zollars, Inc. Albuquerque
6501 Americas Pkwy NE, Suite 550
Albuquerque, New Mexico 87110
Phone (505) 883-8114 Fax (505) 883-5022

WINROCK TOWN CENTER
PARK & ROAD E

TITLE: ROAD E GRADING PLAN

Design Review Committee	City Engineer	Last Update	Mo./Day/Yr.	Mo./Day/Yr.

City Project No.	Zone Map No.	Sheet	Of
XXXX.XX	J-19-Z	20	34

AS BUILT INFORMATION

CONTRACTOR	DATE
WORK STAKED BY	
WORK INSPECTED BY	DATE
ACCEPTANCE BY	DATE
FIELD VERIFICATION BY	DATE
DRAWINGS CORRECTED BY	DATE
MICRO-FILM INFORMATION	
RECORDED BY	DATE
NO.	

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0.1 FEET BELOWGROUND LEVEL AND IS STAMPED "1-H19A, 1989".
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SCOTT A. EDDINGS
12856
Date: 11/3/21
HUITT-ZOLLARS, INC.
Consulting Engineers

NO.	DATE	REMARKS	BY
		REVISIONS	

DESIGN

DESIGNED BY: SAE	DATE: November 3, 2021	
DRAWN BY: VL	DATE: November 3, 2021	
DWG NAME: GRADING PLAN.dwg	R3134779.01	
CHECKED BY: SAE	DATE: November 3, 2021	

Plotted: 11/3/2021 7:16:37 PM, By:Eddings, Scott
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