CITY OF ALBUQUERQUE

Planning Department
Alan Varela, Director

Mayor Timothy M. Keller

February 13, 2024

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

RE: Mesa del Sol Innovation Park Ponding
Grading & Drainage Plans
Engineer's Stamp Date: 2/6/2024
Hydrology File: Q16DA5000D

Dear Mr. Bohannan:

Based upon the information provided in your submittal received 2/9/2024, this plan is approved for Grading Permit and for action by the DFT for Site Plan approval.

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

PRIOR TO BUILDING PERMIT:

- Provide more detailed design as needed in order to obtain Hydrology's approval.

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 505-924-3695 or tchen@cabq.gov.

Sincerely,

Tiequan Chen, P.E.
Principal Engineer, Hydrology
Planning Department, Development Review Services

City of Albuquerque

Planning Department
Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (DTIS)

Project Title: Mesa del Sol Innovation Park Ponding Hydrology File # _____
Legal Description: TR D-1 [;AT PF TRACTS D-1 TJRI D-7 MESA DEL SOL INNOVATION PARK II (A SUBDIVISION OF TRACT 3 MESA DEL SOL INNOVATION PARK II)
City Address, UPC, OR Parcel: 101605227017740201

Applicant/Agent: Tierra West LLC Contact: Luis Noriega
Address: 5571 Midway Park Pl NE Phone: 505-858-3100
Email: lnoriega@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:

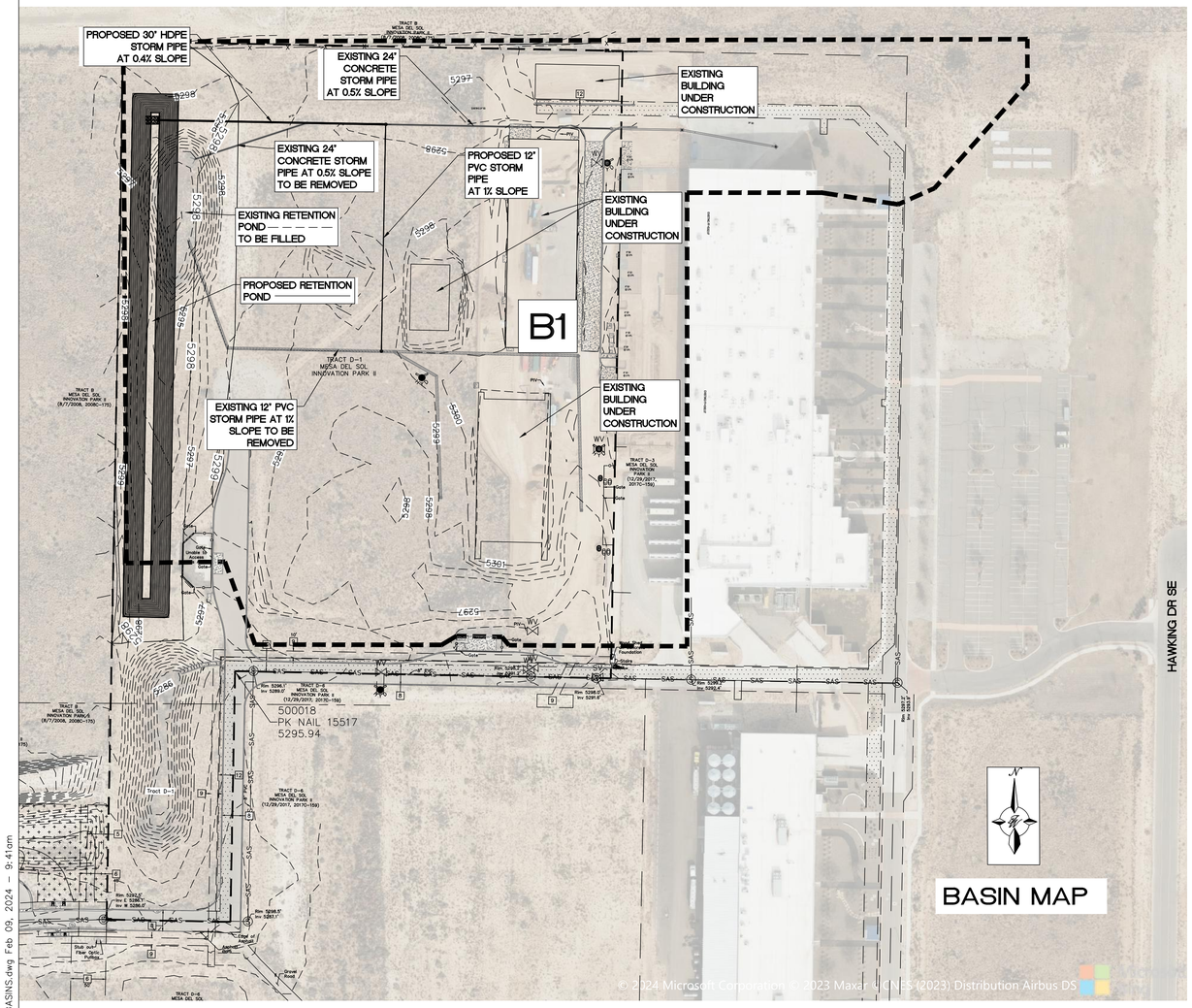
- ☐ ENGINEER/ARCHITECT CERTIFICATION
- ☐ PAD CERTIFICATION
- ☐ CONCEPTUAL G&D PLAN
- ☑ GRADING & DRAINAGE PLAN
- ☐ DRAINAGE REPORT
- ☐ DRAINAGE MASTER PLAN
- ☐ CLOMR/LOMR
- ☐ TRAFFIC CIRCULATION LAYOUT (TCL) ADMINISTRATIVE
- ☐ TRAFFIC CIRCULATION LAYOUT FOR DFT APPROVAL
- ☐ TRAFFIC IMPACT STUDY (TIS)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

DATE SUBMITTED: 02/09/2023

REV. 09/13/23



BASIN MAP

LEGEND

- CURB & GUTTER
- PROPERTY LINE
- EASEMENT
- BUILDING
- SIDEWALK/CONCRETE
- STORM DRAIN
- 5010 CONTOUR MAJOR
- 5011 CONTOUR MINOR
- x 5048.25 SPOT ELEVATION
- FLOW ARROW
- EXISTING CONCRETE STORM DRAIN PIPE
- EXISTING PVC STORM DRAIN PIPE
- 5010 EXISTING CONTOUR MAJOR
- 5011 EXISTING CONTOUR MINOR
- BASIN BOUNDARY LINE

HYDROLOGY NOTES

THE PROJECT SITE IS LOCATED ON THE EAST SIDE OF ALBUQUERQUE WITHIN THE MESA DEL SOL INNOVATION PARK. THE PROJECT BASIN AS OF 02/06/2024 HAS RECENTLY BEEN DEVELOPED AT ROUGHLY 50% WITH SEVERAL BUILDINGS AND INCLUDES PAVING, UTILITIES AND STORM DRAIN. STORM WATER WITHIN THE BASIN BOUNDARY CURRENTLY FLOWS TO A RETENTION POND LOCATED ON THE WEST SIDE OF THE BASIN BOUNDARY. THE INTEND OF THIS DRAINAGE REPORT IS TO IDENTIFY THE MINIMUM RETENTION POND SIZE REQUIRED TO CONTAIN THE 100 YR- 10 DAY STORM FOR FULLY DEVELOPED CONDITIONS.

THE SITE IS NOT LOCATED IN A 100YR FLOOD ZONE PER FEMA FIRM MAP

FIRM MAP: 35001C0363G

LEGAL DESCRIPTION

TR D-1 PLAT OF TRACTS D-1 THRU D-7 MESA DEL SOL INNOVATION PARK II (A SUBDIVISION OF TRACT D MESA DEL SOL INNOVATION PARK II) CONT 16.4161 AC

ACS BENCHMARK

A.G.R.S. MONUMENT "4-016"
NEW MEXICO STATE PLANE COORDINATES
(CENTRAL ZONE-N.A.D. 1983)
PUBLISHED EL=5298.643 US SURVEY FT (NAVD 1988)

DPM Weighted E Method

Precipitation Zone 2
Area Vicinity
Site Name and Address: Mesa Del Sol Kairos Pond
TWLLC **Date** 2/6/2024

Equations:

Weighted E = Ea*Aa + Eb*Ab + Ec*Ac + Ed
Volume = Weighted E * Total Area
Flow = Qa*Aa + Qb*Ab + Qc*Ac + Qd*Ad

HYDROLOGY CALCULATION TABLES

EXISTING CONDITIONS

Basin ID	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)	100-Year, 10-Day Weighted E (in)	Volume (ac-ft)	Flow cfs	Volume (cf)
B1	783,028	17.98	0.02809	0%	0.000	0%	0.000	60%	10.786	40%	7.190	1.550	3.119	64.10	135855.046
Total	**783,028.00**	**17.976**	**0.02809**		**0.000**		**0.000**		**0.000**		**7.190**		**3.119**	**64.10**	**135855.05**

FULLY DEVELOPED CONDITIONS

Basin ID	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)	100-Year, 10-Day Weighted E (in)	Volume (ac-ft)	Flow cfs	Volume (cf)
B1	783,028	17.98	0.02809	0%	0.000	0%	0.000	15%	2.696	85%	15.279	2.135	4.892	74.54	213081.005
Total	**783,028.00**	**17.976**	**0.02809**		**0.000**		**0.000**		**0.000**		**15.279**		**4.892**	**74.54**	**213081.01**

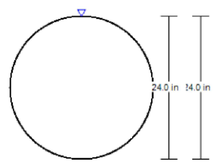
Retention Pond Volume Calculation		
Top Elevation	5,297.50	Ft.
Top Area	49,764	Sq. Ft.
Bottom Elevation	5,288.50	Ft.
Bottom Area	8,400	Sq. Ft.
Total Volume	261,738.00	Cubic Ft.
Max Water Elevation	5,296.50	Ft.
Max Water Elevation Area	44,880.00	Sq. Ft.
Max Water Volume	213,120.00	Cubic Ft.
Required Volume	213,081.01	Cubic Ft.
Design Free Board	1.00	Ft.
Note: Existing Pond Volume = 100,431 Cubic Ft.		

Pipe Sizing Calculation		
24" Conc Pipe Max Flow	16.00	CFS
12" PVC Pipe Max Flow	5.15	CFS
Combined Max Flow	21.15	CFS
30" HDPE Pipe Max Flow	28.10	CFS
Flow Required	21.15	CFS
Note: Previous Drainage Reports Q16DA5000A and Q16DA5000B indicate that the existing storm drain pipe system is flowing at max capacity. Note: See pipe capacity charts for additional pipe information.		

City of Albuquerque
Planning Department
Development Review Services
HYDROLOGY SECTION
APPROVED
DATE: 2/13/2024
BY:
HydroTrans # R16DA5000D
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.

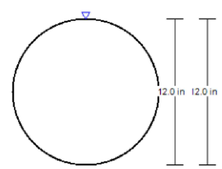
24" CONCRETE PIPE CAPACITY

Project Description	
Friction Method	Manning Formula
Solve For	Discharge
Input Data	
Roughness Coefficient	0.013
Channel Slope	0.005 ft/ft
Normal Depth	24.0 in
Diameter	24.0 in
Discharge	16.00 cfs



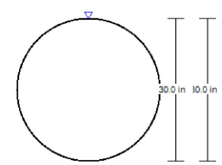
12" PVC PIPE CAPACITY

Project Description	
Friction Method	Manning Formula
Solve For	Discharge
Input Data	
Roughness Coefficient	0.009
Channel Slope	0.010 ft/ft
Normal Depth	12.0 in
Diameter	12.0 in
Discharge	5.15 cfs



30" HDPE PIPE CAPACITY

Project Description	
Friction Method	Manning Formula
Solve For	Discharge
Input Data	
Roughness Coefficient	0.012
Channel Slope	0.004 ft/ft
Normal Depth	30.0 in
Diameter	30.0 in
Discharge	28.10 cfs



ENGINEER'S SEAL
RONALD R. BOHANNAN NEW MEXICO 7868 PROFESSIONAL ENGINEER
02/06/2024
RONALD R. BOHANNAN P.E. #7868

KAIROS FULLY DEVELOEPD POND
ALBUQUERQUE, NM
GRADING AND DRAINAGE BASIN MAP

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

DRAWN BY: BF
DATE: 02/06/2024
2023103_BASINS
SHEET # GR-0
JOB # 2023103

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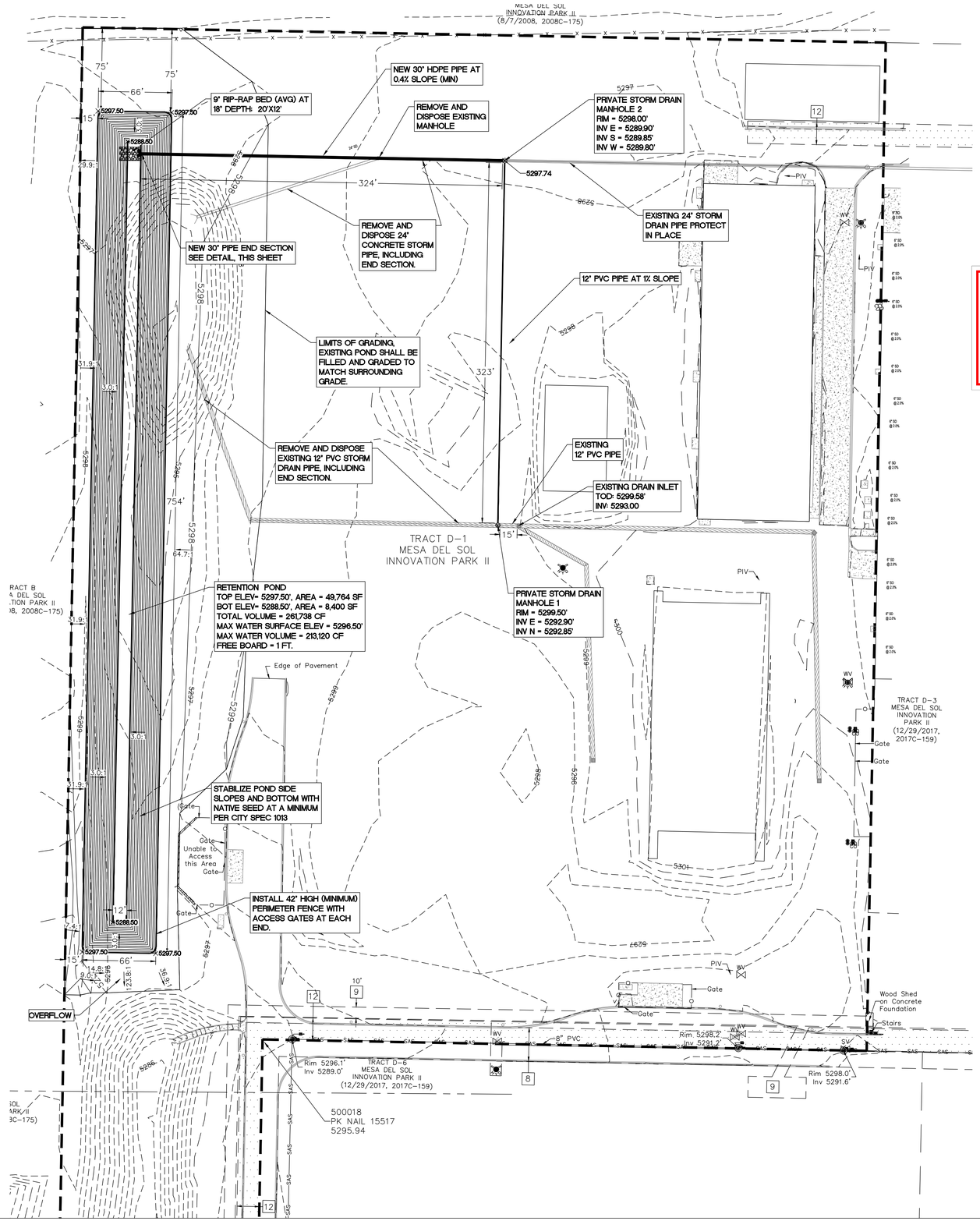

GRAPHIC SCALE

50 25 0 25 50

SCALE: 1"=50'

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LEGEND

CURB & GUTTER	x 5048.25 SPOT ELEVATION
BOUNDARY LINE	FLOW ARROW
EASEMENT	EXISTING CONCRETE STORM DRAIN PIPE
BUILDING	EXISTING PVC STORM DRAIN PIPE
SIDEWALK/CONCRETE	5010 EXISTING CONTOUR MAJOR
STORM DRAIN	5011 EXISTING CONTOUR MINOR
5010 CONTOUR MAJOR	
5011 CONTOUR MINOR	

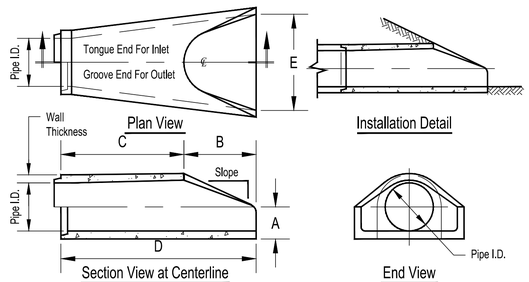
CAUTION

ALL EXISTING UTILITIES/TOPOGRAPHY 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.

EROSION CONTROL NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING RUN-OFF ON SITE DURING CONSTRUCTION.
2. CONTRACTOR IS RESPONSIBLE FOR CLEANING ALL SEDIMENT THAT GETS INTO EXISTING ROADWAY.
3. REPAIR OF DAMAGED FACILITIES AND CLEANUP OF SEDIMENT ACCUMULATIONS ON ADJACENT PROPERTIES AND IN PUBLIC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR.
4. ALL EXPOSED EARTH SURFACES MUST BE PROTECTED FROM WIND AND WATER EROSION PRIOR TO FINAL ACCEPTANCE OF ANY PROJECT.

Flared End Section
12" - 72" Diameter Pipe



Pipe Inner Diameter (inches)	Wall Thickness (inches)	A (inches)	B (inches)	C (inches)	D (inches)	E (inches)	Slope
12	2	4	24	48 7/8	72 7/8	30	3:1
15	2 1/4	6	27	46	73	30	3:1
18	2 1/2	9	27	46	73	36	3:1
24	3	9 1/2	43 1/2	30	73 1/2	48	3:1
30	3 1/2	12	54	19 3/4	73 3/4	60	3:1
36	4	15	63	34 3/4	97 3/4	72	3:1
42	4 1/2	21	63	35	98	78	3:1
48	5	24	72	26	98	84	3:1
54	5 1/2	27	65	35	100	90	2.4:1
60	6	30	60	39	99	96	2:1
66	6 1/2	32	78	21	99	102	2:1
72	7	34	78	21	99	108	2:1

Dimensions may vary depending upon equipment availability.

Notes:
1. Produced to meet ASTM specifications.
2. Contact a Concrete Pipe Division representative for details not listed on this sheet.

FLARED END SECTION DETAIL
NTS

Rinker

ENGINEER'S SEAL

RONALD R. BOHANNAN NEW MEXICO 7868 PROFESSIONAL ENGINEER

02/06/2024

RONALD R. BOHANNAN
P.E. #7868

KAIROS FULLY DEVELOEPD POND
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GRADING & DRAINAGE PLAN

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