

CITY OF ALBUQUERQUE

Planning Department
Alan Varela, Director



Mayor Timothy M. Keller

November 2, 2023

Dave Thompson, P.E.
Thompson Engineering Consultants
P O Box 65760
Albuquerque, NM 87193

RE: Roses SW Papers
TR D-6 PLAT OF TRACTS D-1 THRU D-7 MESA DEL SOL
INNOVATIONPARK II
Grading and Drainage Plan
Engineer's Stamp Date: 10/17/2023
Hydrology File: Q16DA5000C

Dear Mr. Thompson:

Based upon the information provided in your submittal received 10/18/2023, the Grading & Drainage Plan **is not** approved for action by the DFT on Site Plan for Building Permit. The following comments need to be addressed for approval of the above referenced project:

1. Please provide legend and benchmark information (location, description and elevation) for the survey contour information provided. Create drainage easements for the retention pond and future pond.
2. Sheet CD-0: what do the circled numbers mean in "Easement Notes".
3. Sheet CD-2: Add spillway with erosion protection plan to the retention pond.
4. Provide details for the SD pipes, e.g. material, size, length, drop inlets and manhole locations and rip-rap size and dimension information. Add rip-rap symbol to the legend.
5. Sheet CD-3, notes IV & V: Use the 100-year 10-day storm event for hydrologic calculations per the City of Albuquerque DPM section 6-11(I)2.

IV. PRECIPITATION

THE STORM EVENT USED FOR THE FOLLOWING CALCULATIONS IS THE 100YR-6HR STORM. THE PROJECT SITE IS LOCATED IN ZONE 3 (EAST OF RIO GRANDE, SOUTH

HISTORY PORTION, THE MASTER PLAN FOR MESA DEL SOL REQUIRES THAT ALL PARCELS PROVIDE FULL RETENTION OF EXCESS FOR OFF FOR THE 100 YEAR - 24 HOUR STORM RUNOFF EVENT (PROVIDED INFILTRATION WILL DRAIN THE POND

PO Box 1293

Albuquerque

NM 87103

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6. Note VI: Change the new building size from 100,000 SF to 100,600 SF.

VI. PROPOSED DRAINAGE CONDITIONS

THE NEW BUILDING WILL BE 100,000 SF WAREHOUSE/MANUFACTURING BUILDING.

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

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov



City of Albuquerque

Planning Department
Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 6/2018)

Project Title: Roses SW Papers **Building Permit #:** _____ **Hydrology File #:** Q16DA5000
DRB#: _____ **EPC#:** _____ **Work Order#:** _____
Legal Description: TR D-6 PLAT OF TRACTS D-1 THRU D-7 MESA DEL SOL INNOVATIONPARK II
City Address: Not yet established UPC 101605227405540202

Applicant: Thompson Engineering Consultants **Contact:** Dave Thompson
Address: PO Box 65760, Albuquerque, NM 87193
Phone#: 505-271-2199 **Fax#:** 505-830-9248 **E-mail:** tecnm@yahoo.com

Other Contact: _____ **Contact:** _____
Address: _____
Phone#: _____ **Fax#:** _____ **E-mail:** _____

TYPE OF DEVELOPMENT: _____ PLAT (# of lots) _____ RESIDENCE _____ DRB SITE ☒ ADMIN SITE

IS THIS A RESUBMITTAL? _____ Yes ☒ No

DEPARTMENT _____ TRANSPORTATION ☒ HYDROLOGY/DRAINAGE

Check all that Apply:

TYPE OF SUBMITTAL:

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

TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

☒ BUILDING PERMIT APPROVAL
_____ CERTIFICATE OF OCCUPANCY
_____ PRELIMINARY PLAT APPROVAL
_____ SITE PLAN FOR SUB'D APPROVAL
_____ 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: 10-18-2023 **By:** Dave Aube

COA STAFF:

ELECTRONIC SUBMITTAL RECEIVED: _____

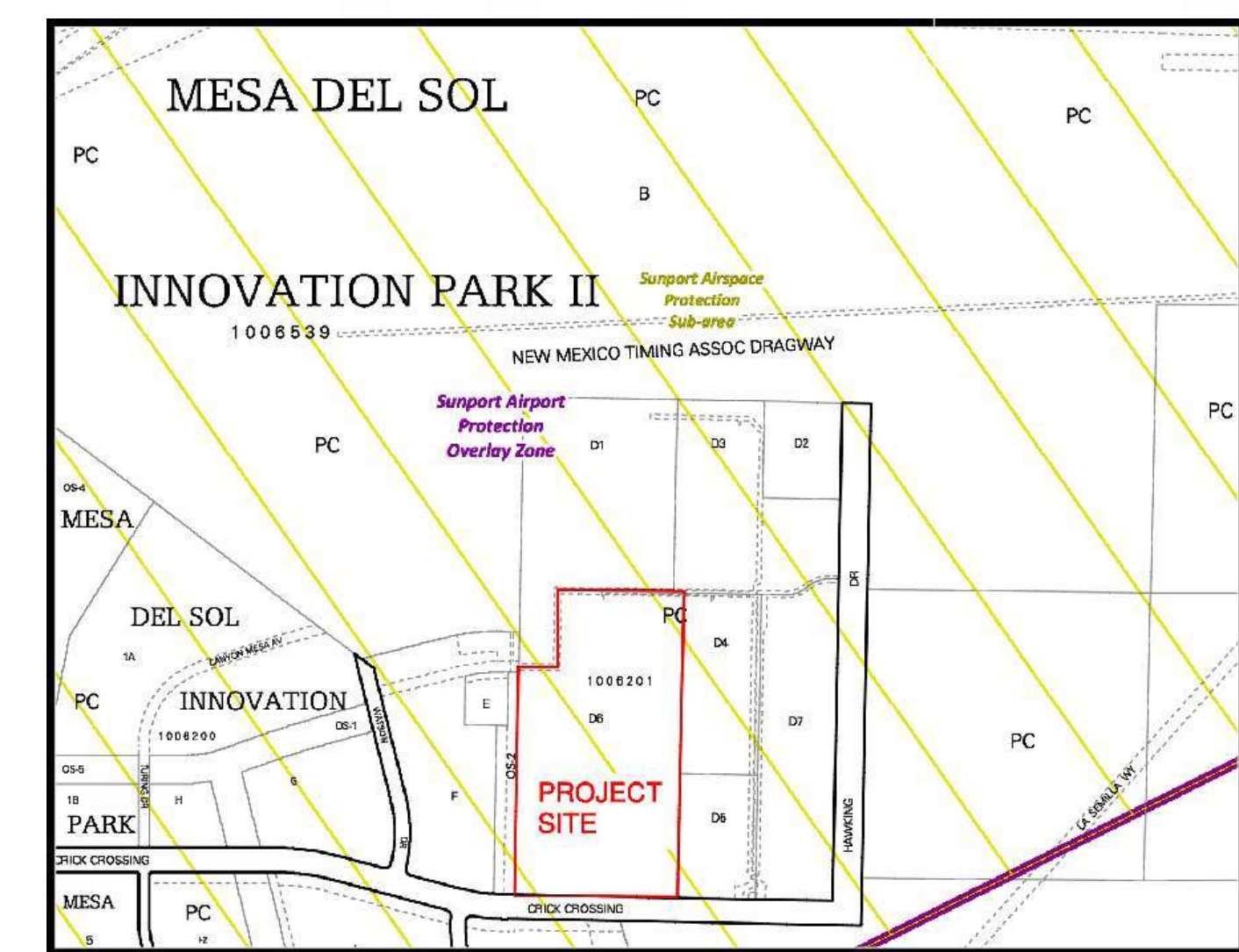
FEE PAID: _____

GENERAL NOTES

- A. ALL DIMENSIONS ARE FACE OF CURB UNLESS OTHERWISE NOTED.
B. FIELD VERIFY ALL DIMENSIONS.
C. DO NOT SCALE DRAWINGS, IF DIMENSIONS ARE IN QUESTION, REQUEST CLARIFICATION FROM ARCHITECT BEFORE PROCEEDING.

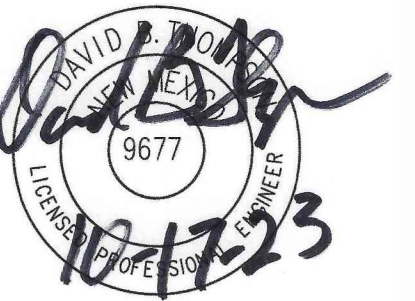
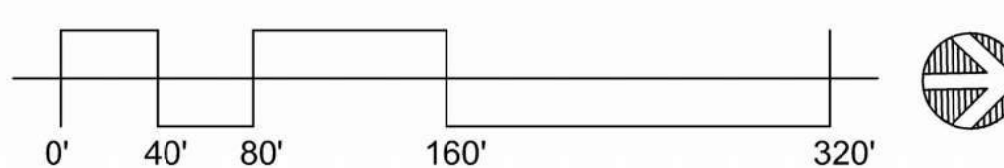
Easement Notes

- (20)(29) 1 EXISTING 10' P.U.E. (8/7/2008, 2008C-175) AND AS SHOWN ON PLAT (12/29/2017, 2017C-159)
- (20)(29) 2 EXISTING 30' PUBLIC PEDESTRIAN ACCESS EASEMENT (8/7/2008, 2008C-175) AND AS SHOWN ON PLAT AND AS SHOWN ON PLAT (12/29/2017, 2017C-159)
- (20)(29) 3 EXISTING 50' PUBLIC ROADWAY EASEMENT (8/7/2008, 2008C-175) AND AS SHOWN ON PLAT (12/29/2017, 2017C-159)
- (20)(29) 4 EXISTING 40' PNM TRANSMISSION LINE EASEMENT (8/7/2008, 2008C-175) AND AS SHOWN ON PLAT (12/29/2017, 2017C-159)
- (22)(29) 5 EXISTING 10' PNM EASEMENT (10/16/2008, DOC. NO. 2008113343) AND AS SHOWN ON PLAT (12/29/2017, 2017C-159)
- (29)(31) 6 EXISTING 30' PERMANENT PRIVATE ACCESS EASEMENT (12/29/2017, 2017C-159) AND AS SHOWN ON PLAT (12/29/2017, 2017C-159) SEE REPAIR AND MAINTENANCE AGREEMENT (2/21/2020, DOC. NO. 2020016464)
- (29) 7 EXISTING 20' PRIVATE UTILITY EASEMENT (12/29/2017, 2017C-159) AND AS SHOWN ON PLAT (12/29/2017, 2017C-159)
- (20)(29) 8 EXISTING 50' PNM TRANSMISSION LINE EASEMENT (8/7/2008, 2008C-175) AND AS SHOWN ON PLAT (12/29/2017, 2017C-159)
- (15) 9 EXISTING NON-EXCLUSIVE ACCESS EASEMENT OVER COMMON AREAS (4/16/2008, AS DOC. NO. 2008043398) AND RESTATED WITHIN DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS FOR MESA DEL SOL (12/28/2010, DOC. NO. 2010132684)
- (15) 10 EXISTING PERPETUAL NON-EXCLUSIVE UTILITY ACCESS EASEMENT (4/16/2008, AS DOC. NO. 2008043398) AND RESTATED WITHIN DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS FOR MESA DEL SOL (12/28/2010, DOC. NO. 2010132684)
- (15) 11 EXISTING EASEMENT FOR MAINTENANCE, EMERGENCY AND ENFORCEMENT OF UTILITIES AND STRUCTURES (4/16/2008, AS DOC. NO. 2008043398) AND RESTATED WITHIN DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS FOR MESA DEL SOL (12/28/2010, DOC. NO. 2010132684)
- (15) 12 EXISTING TEMPORARY CONSTRUCTION EASEMENTS OVER COMMON AREAS FOR INGRESS/EGRESS, SLOPE AND INSTALLATION OF DRAINAGE, WATER, STORM DRAINAGE, SANITARY SEWER AND OTHER UTILITIES AS WELL AS EQUIPMENT, MATERIALS AND SUPPLY STORAGE (4/16/2008, AS DOC. NO. 2008043398) AND RESTATED WITHIN DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS FOR MESA DEL SOL (12/28/2010, DOC. NO. 2010132684)
- (15) 13 EXISTING RECIPROCAL, APPURTENANT EASEMENTS OF ENCROACHMENTS, AND MAINTENANCE USE OF ALL PERMITTED ENCROACHMENTS (4/16/2008, AS DOC. NO. 2008043398) AND RESTATED WITHIN DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS FOR MESA DEL SOL (12/28/2010, DOC. NO. 2010132684)
- (15) 14 EXISTING RECIPROCAL, APPURTENANT EASEMENTS OVER, UNDER, ACROSS AND BETWEEN PARCELS AND COMMON AREAS FOR THE INSTALLATION AND MAINTENANCE OF FOOTINGS, FOUNDATION SUPPORT SYSTEMS, SHEETING ETC. (4/16/2008, AS DOC. NO. 2008043398) AND RESTATED WITHIN DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS FOR MESA DEL SOL (12/28/2010, DOC. NO. 2010132684)
- (15) 15 EXISTING RECIPROCAL APPURTENANT EASEMENT OVER AND BETWEEN PARCELS AND COMMON AREAS FOR THE USE OF AIR SPACE (4/16/2008, AS DOC. NO. 2008043398) AND RESTATED WITHIN DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS FOR MESA DEL SOL (12/28/2010, DOC. NO. 2010132684)
- (15) 16 EXISTING SIGHTLINE EASEMENT FOR THE PURPOSE OF PRESERVING OR PROTECTING VIEWS FROM OR TO PARTICULAR PARCELS (4/16/2008, AS DOC. NO. 2008043398) AND RESTATED WITHIN DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS FOR MESA DEL SOL (12/28/2010, DOC. NO. 2010132684)

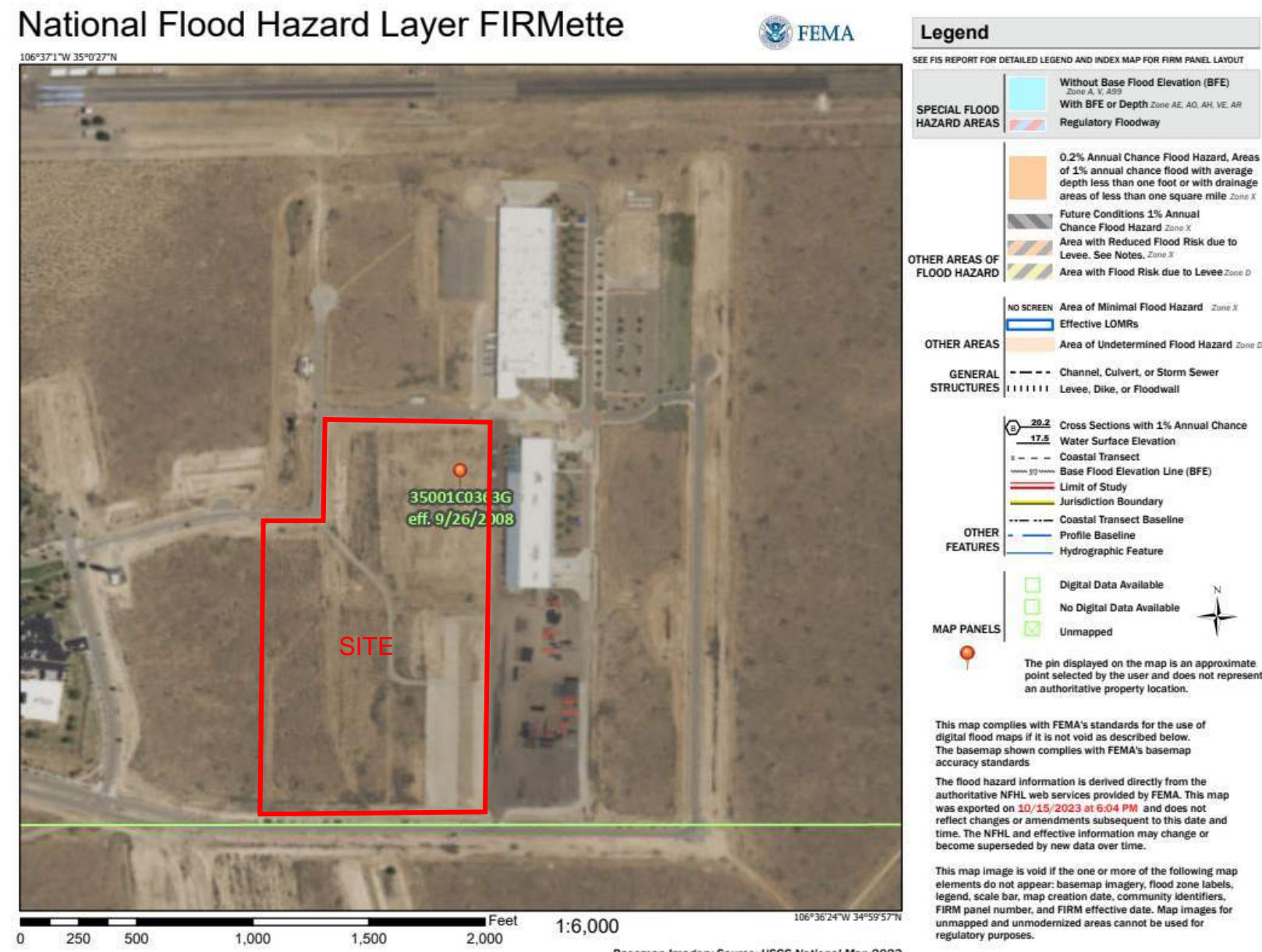
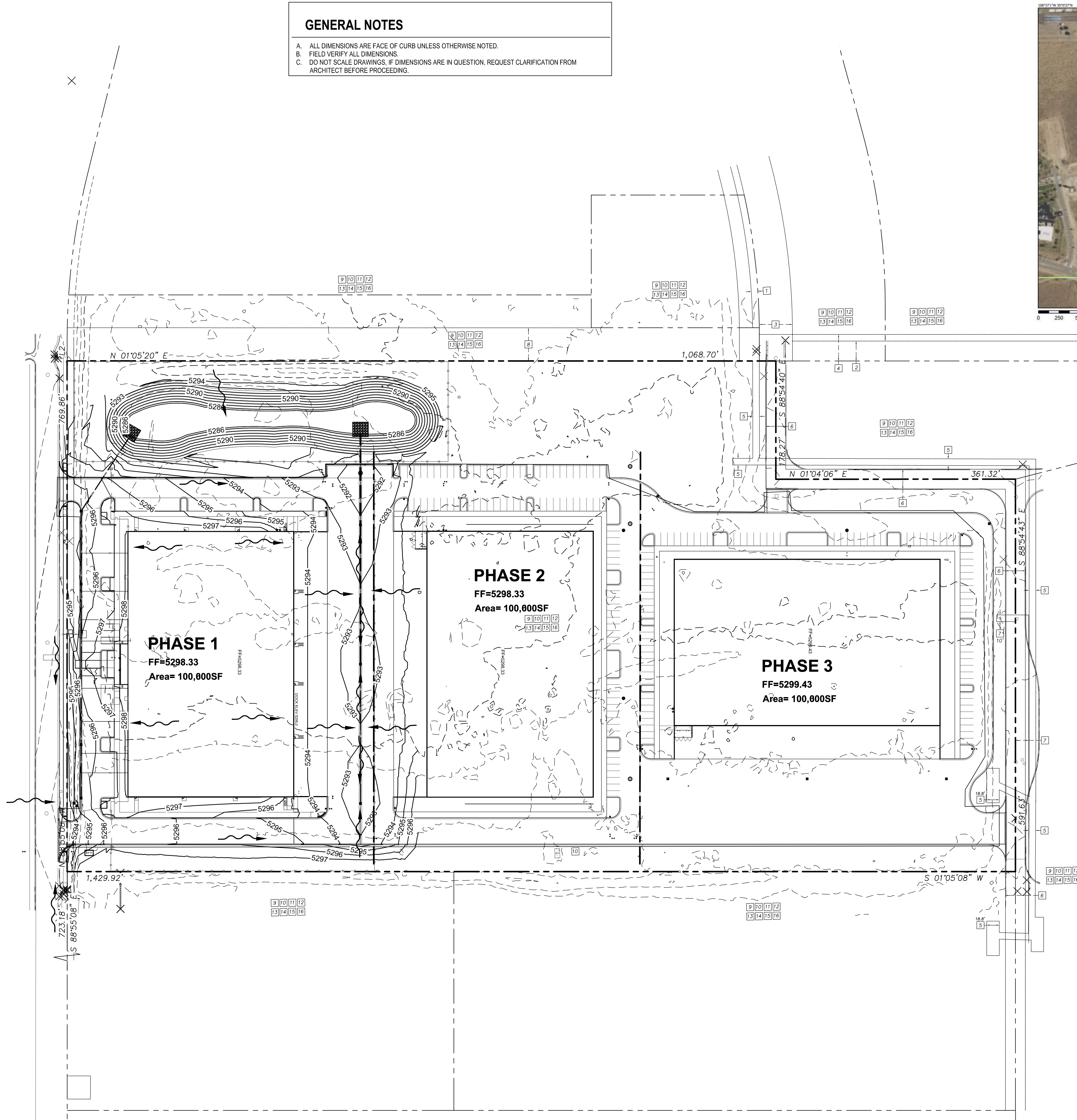


(D1) ZONE ATLAS PAGE Q-16-Z
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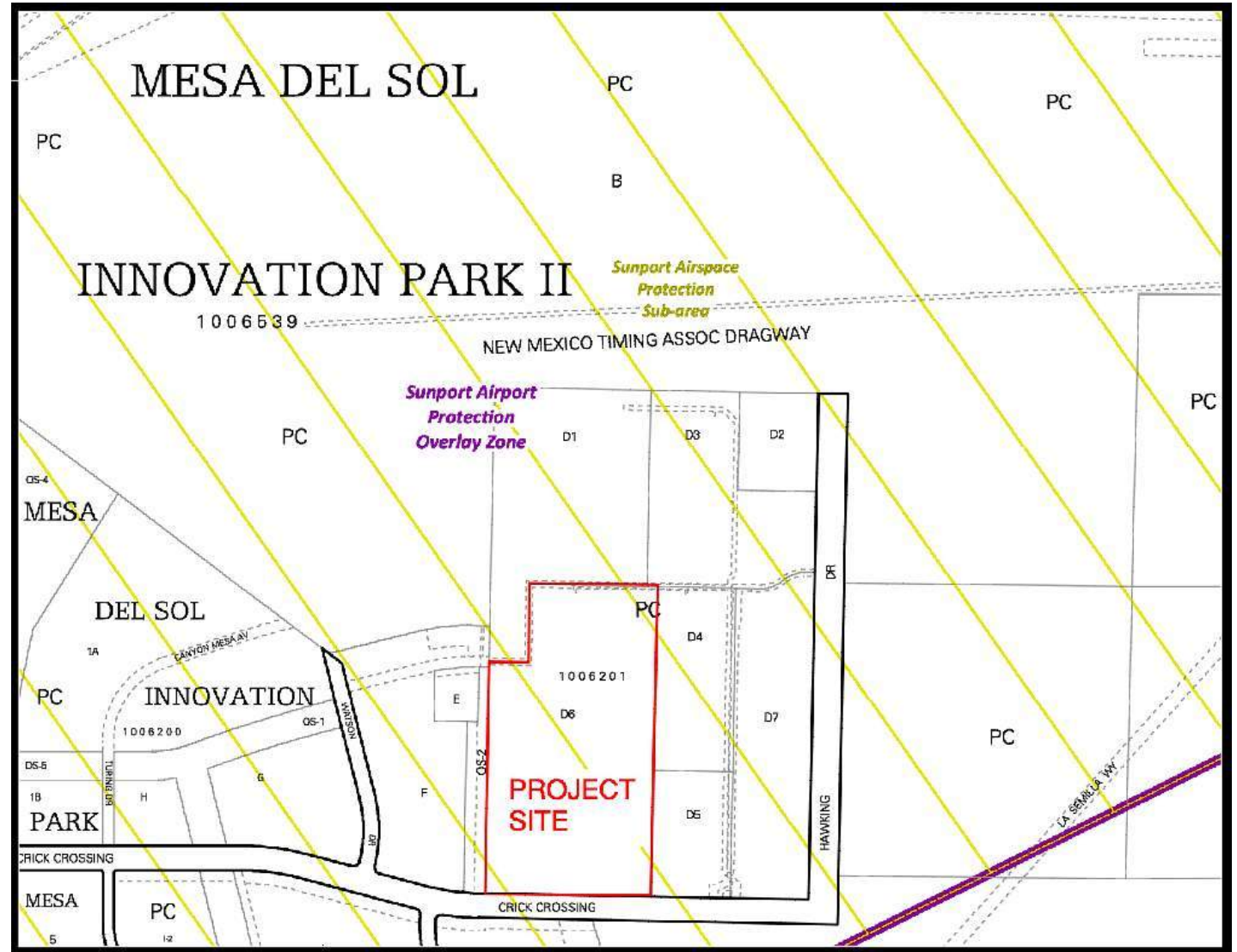
(A1) DRAINAGE PLAN - EXISTING CONDITIONS
SCALE: 1" = 80'-0"



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D4 FEMA FIRMETTE
NOT TO SCALE



D1 ZONE ATLAS PAGE Q-16-Z
NOT TO SCALE

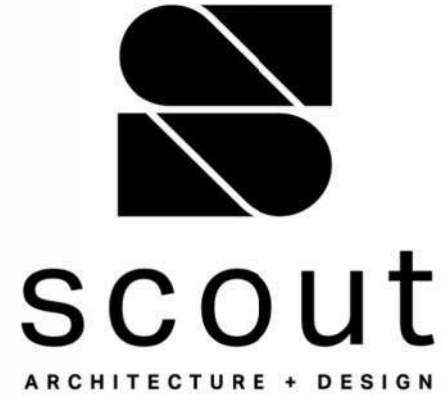
A1 DRAINAGE PLAN - OVERALL
SCALE: 1" = 80'-0"

Thompson Engineering Consultants, Inc.

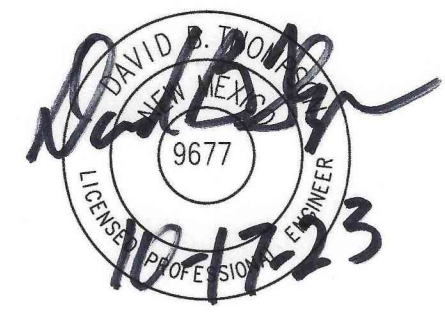
tecmm@yahoo.com

P.O. BOX 65760 ALBUQUERQUE, NM 87193

PHONE: (505) 271-2199 FAX: (505) 830-9248



ARCHITECT/ENGINEER



ROSES SOUTHWEST PAPERS
CRICK CROSSING
ALBUQUERQUE, NEW MEXICO

BUILDING PERMIT SET

REVISION DATE

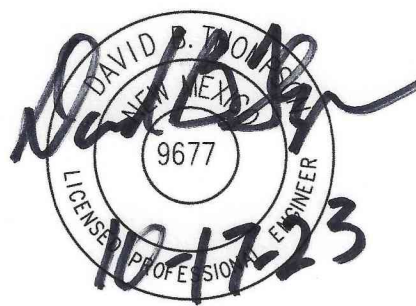
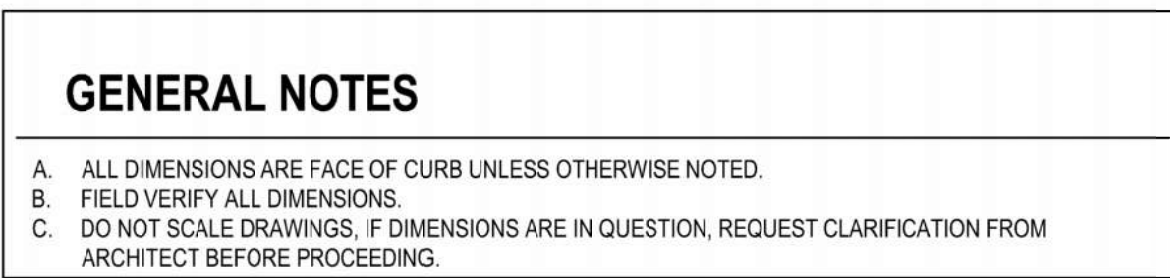
DATE 10/16/23

PROJECT NO

DRAINAGE PLAN - OVERALL

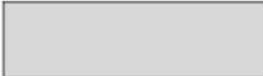






SHEET NO.

CD-1



ROSES SOUTHWEST PAPERS
CRICK CROSSING
ALBUQUERQUE, NEW MEXICO

MATERIAL LEGEND

	HEAVY DUTY ASPHALT PER DETAIL D1/C-501
	PARKING LOT ASPHALT PER DETAIL D1/C-501
	HEAVY DUTY CONCRETE PAVEMENT PER DETAIL D4/C-501
	4" THICK CONCRETE SIDEWALK PER DETAIL B4/C-501
	EROSION PROTECTION, SEE GRADING AND DRAINAGE PLANS (SHEET C-201 AND C-202)
	EARTHEN POND, SEE GRADING AND DRAINAGE PLANS (SHEET C-201 AND C-202)
	LANDSCAPING AREA.

BUILDING
PERMIT SET

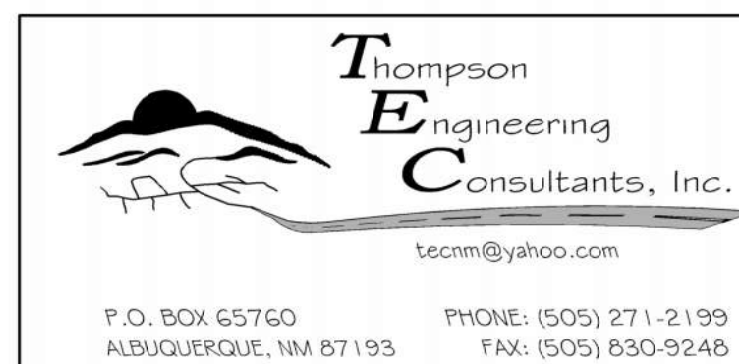
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DATE 10/16/23

PROJECT NO _____

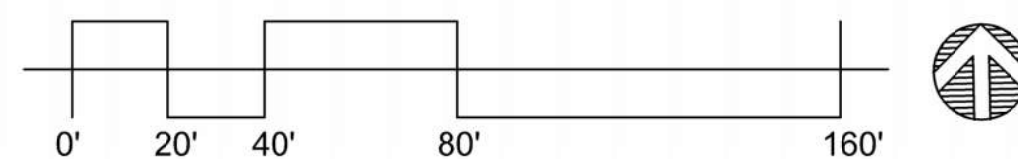
DRAINAGE
PLAN -
PHASE 1
ENLARGED

SHEET NO. _____



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A1 DRAINAGE PLAN - PHASE 1 ENLARGED
SCALE: 1" = 40'-0"



I. PURPOSE AND SCOPE

THE PURPOSE OF THIS DRAINAGE PLAN IS TO PRESENT THE EXISTING AND PROPOSED DRAINAGE CONDITIONS FOR THE PROPOSED ROSES SOUTHWEST PAPERS PROJECT. THE NEW BUILDING IS LOCATED ON CRICK CROSSING SW, IN MESA DEL SOL, IN SOUTHWEST ALBUQUERQUE, THE ZONE ATLAS PAGE FOR THE SITE IS Q-16-Z.

II. SITE DESCRIPTION AND HISTORY

THE PROJECT SITE IS LOCATED ON THE NORTH SIDE OF CRICK CROSSING SW, WEST OF HAWKING DRIVE SW, IN MESA DEL SOL. THE SITE IS CURRENTLY VACANT. PROPERTIES TO THE EAST AND NORTH HAVE BEEN DEVELOPED AND CONTAIN STORMWATER MANAGEMENT PONDS TO CONTROL RUNOFF. THE MESA DEL SOL COMMUNITY MASTER PLAN REQUIRES THAT ALL PARCELS CONTAIN THE 100 YEAR STORM RUNOFF EVENT IN RETENTION PONDS.

III. COMPUTATIONAL PROCEDURES

HYDROLOGIC ANALYSIS WAS PERFORMED UTILIZING THE DESIGN CRITERIA BASED ON CHAPTER 6, HYDROLOGY, OF THE DEVELOPMENT PROCESS MANUAL RELEASED 2020. TABLES WITHIN CHAPTER 6, WERE USED TO AID IN THE STUDY OF THE SITE HYDROLOGY.

IV. PRECIPITATION

THE STORM EVENT USED FOR THE FOLLOWING CALCULATIONS IS THE 100YR-6HR STORM. THE PROJECT SITE IS LOCATED IN ZONE 3 (EAST OF RIO GRANDE, SOUTH OF I40 AND WITHIN TOWNSHIP 4E).

V. EXISTING DRAINAGE CONDITIONS

THE SITE IS CURRENTLY UNDEVELOPED. THE SITE TO THE EAST IS FULLY DEVELOPED. THE SITE IS BOUNDED ON THE NORTH BY A PRIVATE DRIVE THAT IS UTILIZED BY KAIROS POWER FOR ACCESS. THE SITE IS BOUNDED ON THE SOUTH BY CRICK CROSSING THAT HAS THE NORTH HALF STREET SECTION DEVELOPED. NO RUNOFF FROM ADJACENT SITES IS ANTICIPATED.

THE SITE GENERALLY DRAINS FROM EAST TO WEST BUT HAS VERY LITTLE SLOPE. A MAJORITY OF EXCESS RUNOFF WOULD CURRENTLY BE CAUGHT IN LOCAL DEPRESSION AND ALLOWED TO SOAK INTO THE GROUND. INFILTRATION RATES WERE MEASURED BY THE GEOTECHNICAL ENGINEER AT 6" PER HOUR.

CRICK CROSSING CONTAINS PUBLIC STORMWATER COLLECTION AND CONVEYANCE PIPING BUT DISCHARGE INTO THE SYSTEM IF LIMITED TO THE ROADWAY AND MINOR DISCHARGE AT DRIVEWAYS. AS MENTIONED IN THE SITE DESCRIPTION AND HISTORY PORTION, THE MASTER PLAN FOR MESA DEL SOL REQUIRES THAT ALL PARCELS PROVIDE FULL RETENTION OF EXCESS FOR OFF FOR THE 100 YEAR - 24 HOUR STORM RUNOFF EVENT (PROVIDED INFILTRATION WILL DRAIN THE POND PRIOR TO THE NEXT STORM EVENT).

VI. PROPOSED DRAINAGE CONDITIONS

THE NEW BUILDING WILL BE 100,000 SF WAREHOUSE/MANUFACTURING BUILDING. THE FRONT AND SIDES WILL BE GENERALLY AT GRADE TO ALLOW FOR EASY ACCESS FOR PEDESTRIANS, AND DUE TO NFPA REQUIRING ACCESS DOORS AT 100' INTERVALS. THE NORTH SIDE OF THE BUILDING WILL BE A LOADING DOCK, SO THERE WILL BE A 4' DROP FROM FINISHED FLOOR TO DOCK GRADE.

THE SITE FOR PHASE 1 ALL DRAINS TO THE RETENTION POND ON THE WEST SIDE OF THE SITE. THE ROOF WILL DRAIN BOTH NORTH AND SOUTH. 60% OF THE ROOF WILL DRAIN TO THE DOCK SIDE. ALONG THE SOUTH SIDE OF THE SITE IN THE PARKING AREA, CATCH BASINS WILL COLLECT RUNOFF AND CONVEY STORM WATER TO THE RETENTION POND. CATCH BASINS HAVE BEEN SET AT CLOSE AS POSSIBLE TO THE DRIVEWAYS TO CAPTURE STORM RUNOFF. A SMALL AREA AT EACH DRIVEWAY WILL SPILL OUT INTO CRICK CROSSING AND WILL BE COLLECTED IN THE SUMP CONDITION TYPE A CATCH BASIN NEAR THE EASTERN ENTRANCE DRIVE. THE INCREASE TO THE STREET RUNOFF IS LESS THAN 2,000 SF AND THEREFORE LESS THAN 0.1 CFS. THIS IS A NEGLIGIBLE INCREASE. AN 18" HDPE STORM PIPE WILL CONVEY THE STORM RUNOFF FROM THE FOUR CATCH BASINS TO THE RETENTION POND.

APPROXIMATELY 25% OF BASIN PRO #1 FLOWS TO THE SOUTH TO THE CATCH BASINS. THERE ARE A TOTAL OF FOUR CATCH BASINS AND PER FIGURE 6.9.9 THE CAPACITY OF EACH TYPE "C" INLET FLOWING AT A MAXIMUM OF 0.5' DEEP (AND 1% SLOPE GOING TOWARD INLET ALONG CURB LINE) THE COLLECTION RATE IS APPROXIMATELY 6.6 CFS. WITH THE REQUIRED COLLECTION OF 8 CFS (25% OF 39.61 CFS) ONLY TWO INLETS WOULD BE REQUIRED. FOUR INLETS WILL ELIMINATE THE BYPASS OUT INTO THE PUBLIC STREET VIA THE DRIVEWAYS, EXCEPT FOR WHAT RAIN FALLS BEYOND THE CATCH BASINS.

NORTHERN (60% OF ROOF) ROOF RUNOFF WILL BE COLLECTED IN INTERNAL ROOF DRAINS AND ROUTED INTERNALLY TO DISCHARGE THROUGH THE 4' TALL STEM WALL AT THE LOADING DOCK. FROM THERE THE RUNOFF WILL SHEET FLOW OVER TO A SERIES OF SUMP CONDITION MEDIAN TYPE CATCH BASINS. HDPE STORM PIPES WILL CONVEY RUNOFF TO THE POND.

THERE ARE A TOTAL OF 3 TYPE "D" (MEDIAN TYPE) CATCH BASINS LOCATED IN THE TRUCK DOCK AREA. EACH AREA LOCATED IN A SUMP CONDITION WITH A MAXIMUM DEPTH OF 0.90'. BEYOND THAT DEPTH, THE WATER OVERTOPS FROM ONE CATCH BASIN TO THE NEXT AND FLOW WEST TOWARD THE RETENTION POND.

THE WEIR EQUATION ($Q=CLH^{3/2}$) WAS USED TO EVALUATE THE CAPACITY OF THE TYPE "D" CATCH BASINS. THE GRATE PERIMETER IS $(25' \times 40') = 10.83'$. AT A MAXIMUM DEPTH OF 0.90' THE CAPACITY OF THE INLET IS $(Q=2.77 \times 10.83^{3/2}) = 24.9$ CFS. THE FUTURE PHASE 2 WILL DOUBLE THE REQUIRED FLOW RATE OF THE BASIN CONTRIBUTING TO THE LINE OF TYPE "D" CATCH BASINS. THE TOTAL RUNOFF TO BE COLLECTED IN THIS SYSTEM WILL BE = 32.4 CFS (AFTER PHASE 2 IS CONSTRUCTED, AND ONLY 16.64 IN THIS PHASE, SEE NORTH SUB BASIN COMPUTATIONS). THE THREE INLETS WILL HAVE CAPACITY OF 74.7 CFS. PIPES HAVE BEEN SIZED TO KEEP THE ENERGY GRADE LINE BELOW GRADE.

CONVEYANCE PIPING WILL START WITH 18" HDPE AND BE UP-SIZED TO 30" HDPE AT THE SECOND CATCH BASIN, AND 36" HDPE AT THE THIRD INLET TO BE ABLE TO CONVEY THE EXCESS STORM RUNOFF TO THE RETENTION POND. THE ENERGY GRADE LINE WILL REMAIN BELOW THE SURFACE AT ALL INLETS.

INFILTRATION WAS CONFIRMED BY THE GEOTECHNICAL ENGINEER AS 6" PER HOUR. THE EXCESS RUNOFF FROM THE 100 YEAR 6 HOUR EVENT IS 39.61 CFS. THE RUNOFF VOLUME AS REQUIRED BY THE MESA DEL SOL COMMUNITY MASTERPLAN IS 2.1 ACRE-FEET FOR THE 100 YEAR - 24 HOUR EVENT. THE PROPOSED POND IS 3.0' DEEP TO THE MWSL (PLUS OVER 2 OF FREEBOARD). THE INFILTRATION OF 6" PER HOUR (4.16 CFS) WOULD REQUIRED OVER 11.2 HOURS TO SOAK IN COMPLETELY. THEREFORE THE POND HAS BEEN SIZED TO CONTAIN SINGLE 100 YEAR. THE EXCESS RUNOFF VOLUME ENTERING THE POND IS 2.1 ACRE FEET.

VII. CONCLUSIONS

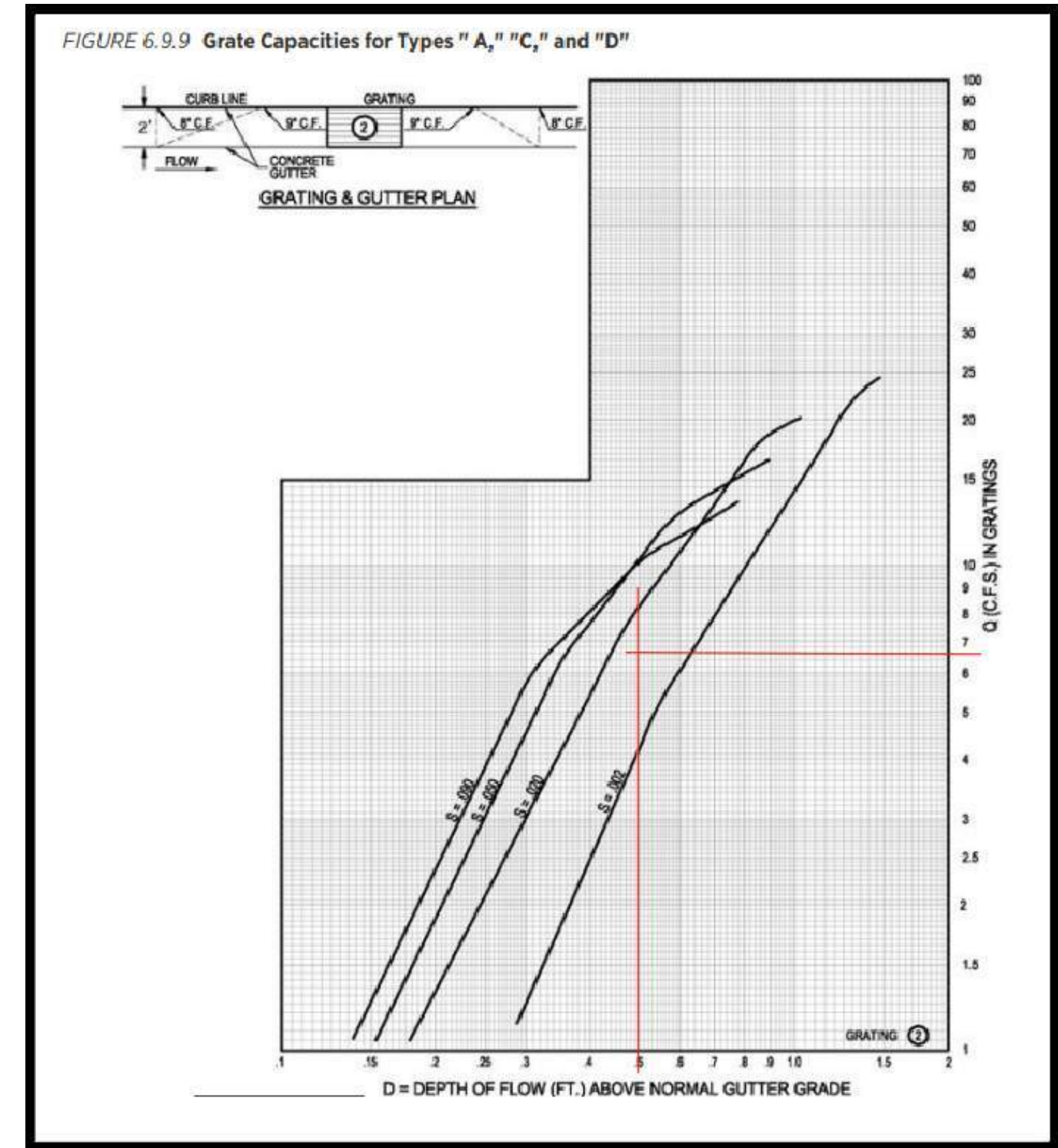
THE SITE HAS BEEN DESIGNED TO COLLECT AND CONVEY THE 100-YEAR, 6-HOUR PEAK RUNOFF RATE OF 39.61 CFS. THE FULL RETENTION POND AS REQUIRED BY THE MESA DEL SOL COMMUNITY MASTER PLAN HAS BEEN SIZED TO FULLY CONTAIN SINGLE 100-YEAR EVENT SINCE THE INFILTRATION RATE IS 6" PER HOUR AND WILL BE FULLY ABSORBED PRIOR TO THE NEXT POTENTIAL MONSOON EVENT.

FUTURE PHASES WILL REQUIRE THE EXPANSION OF THE STORM POND. COMPUTATIONS HAVE BEEN INCLUDED FOR THE FULL BUILDOUT AS CURRENTLY PLANNED, AND THE FULL RETENTION POND CAN EASILY BE ACCOMMODATED.

Pond Routing and Volumes		Full Buildout	Phase 1	
Incoming Flow Rate	Qin	94.93	39.61	cfs
Allowable Discharge Rate	Qout	3.5	4.19	cfs
Hyrdology Zone		3	3 per Figure A-1	
Area Total	At	23.792	10.181	acres
Area Type A	Aa	0	0	0 %
Area Type B	Ab	25	30	30 %
Area Type C	Ac	0	0	0 %
Area Type D Impenious	Ad	75	70	70 %
Excess runoff rates	A	0.67	0.67	
	B	0.86	0.86	
	C	1.09	1.09	
	D	2.58	2.58	
Weighted E (Exces Runoff)		2.15	2.06	
Time of Concentration		0.2	0.2	hours
Time to Peak		0.211	0.215	hours
$=0.7^*Tc + ((1.6-(Ad/At))^*12)$				
Time of Base		0.948	0.943	hours
$=2.107^*E^*At/Qp-(.25^*Ad/At)$				
Duration of Peak		0.198	0.175	hours
Time for end of peak		0.386	0.390	hours
Time when storage begins		0.008	0.023	hours
Time incoming is lesss than discharge		0.928	0.884	hours
Volume Required during storm	acre-inch	50.926	18.648	acre inch
Volume Required during storm	cf	184.862	67.691	cubic feet
Volume Stored in Pond during storm	cf	220,780	70,825	cubic feet

TABLE 6.2.7 Precipitation Zones	
Zone	Location
1	West of the Rio Grande
2	Between the Rio Grande and San Mateo
3	Between San Mateo and Eubank, North of Interstate 40 and between San Mateo and the East boundary of Range 4 East, South of Interstate 40
4	East of Eubank, North of Interstate 40 and East of the East boundary of Range 4 East, South of Interstate 40
Not including the Cibola National Forest	

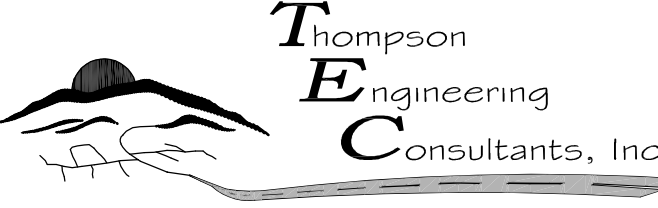
Infiltration Rates		
Per GeoMAT Report Perc Rate	6" per hour	inches per hour
	.5 ft / hour	ft/ hour
	0.0001389	ft/sec
Pond area	29,931	sf
Infiltration Flow Rate	4.16	cfs



Drainage Summary			
Project:	Roses Southwest Papers		
Project Number:	TEC Roses SW Papers		
Date:	09/16/23		
By:	MTD		
Site Location			
Precipitation Zone	3 Per COA DPM Chapter 6		
Existing summary			
Basin Name	Ex Basin 1		
Area (sf)	1036392.4		
Area (acres)	23.79		
%A Land treatment	0		
%B Land treatment	80		
%C Land treatment	20		
%D Land treatment	0		
Soil Treatment (acres)			
Area "A"	0.00		
Area "B"	19.03		
Area "C"	4.76		
Area "D"	0.00		
Excess Runoff (acre-feet)			
100yr. 6hr.	1.7963	acre-ft.	
10yr. 6hr.	0.7455	acre-ft.	
2yr. 6hr.	0.1546	acre-ft.	
100yr. 24hr.	1.7963	acre-ft.	
Peak Discharge (cfs)			
100 yr.	62.48	cfs	
10yr.	28.41	cfs	
2yr.	6.23	cfs	

Proposed summary				
Basin Name	Overall Site	Phase 1	North SubBasin	
Area (sf)	1036392.4	443500	168977.5	
Area (acres)	23.792	10.181	3.879	
%A Land treatment				
%B Land treatment	25	30	10	
%C Land treatment				
%D Land treatment	75	70	90	
Soil Treatment (acres)				
Area "A"	0.00	0.00	0.00	
Area "B"	5.95	3.05	0.39	
Area "C"	0.00	0.00	0.00	
Area "D"	17.84	7.13	3.49	
Excess Runoff (acre-feet)				
100yr. 6hr.	4.2628	1.7512	0.7784	acre-ft.
10yr. 6hr.	2.6072	1.0606	0.4881	acre-ft.
2yr. 6hr.	1.5862	0.6363	0.3071	acre-ft.
100yr. 24hr.	5.1342	2.0992	0.9489	acre-ft.
100yr. 10day	6.7461	2.7430	1.2643	acre-ft.
Peak Discharge (cfs)				
100 yr.	94.93	39.61	16.64	cfs
10yr.	56.51	23.29	10.23	cfs
2yr.	31.76	12.79	6.10	cfs
Water Quality Ponding Voulme (cf)	22023.3	8796.1	4308.9 cf	
Wter Quality Acre Feet	0.5056	0.2019	0.0989 acre-ft	

HYDRAULIC GRADELINE CALCULATIONS															BY: DAA						
STORM LINE ON LOADING DOCK SIDE															DATE: REVISED 9-27-23						
Roses Southwest Papers																					
LINE: Loading Dock																					
1	2	3	4	5	6	7	8	9	10		13	14	15	16	19	20	21	22			
STATION	STRUCT	D Inches	Q	A	V	K	Sf	L	DELTA	Q	LOSSES					F.G.	h	F.G.			
											hf	hb	Aavg	hj	hwh				SUM		
1+00.00	POND															5286.40	1.50	5286.40			
											0.21				0.21	5287.23	0.33	5286.90			
1+60.00	MB #1	36	32.44	7.069	4.589	667	0.002	90	10	0.00		0.02	7.07	0.00	0.02	0.04	5287.48	0.33	5287.11		
3+38.00	CB #1	36	32.44	7.069	4.589	667	0.002	78		0	10.81		0.18	0.00	5.99	0.28	0.00	0.28	5287.34	0.33	5287.34
		30	21.63	4.909	4.406	410	0.003	210				0.58				0.58	5288.52	0.30	5287.61		
5+48.00	CB #2										10.81		0.00	2.45	0.73	0.00	0.73	5289.26	0.30	5288.22	
		18	10.81	1.767	6.119	105	0.011	210				2.23				2.23	5291.48	0.58	5288.96		
7+58.00	CB #3										10.81		0.00	2.45	0.00	0.02	0.02	5291.50	0.58	5290.90	

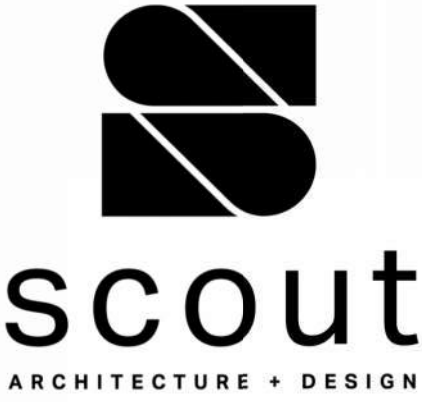


Thompson
Engineering
Consultants, Inc.

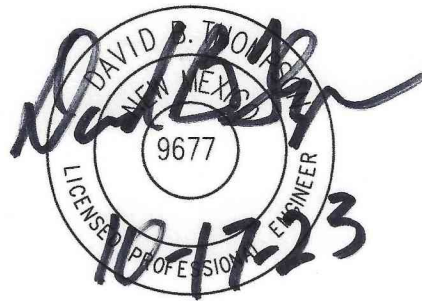
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ARCHITECT/ENGINEER



ROSES SOUTHWEST PAPERS

CRICK CROSSING
ALBUQUERQUE, NEW MEXICO

BUILDING
PERMIT SET

REVISION DATE

DATE 10/16/23

PROJECT NO

SITE DRAINAGE
PLAN -
NARRATIVE AND
CALCULATIONS

SHEET NO.

CD-3