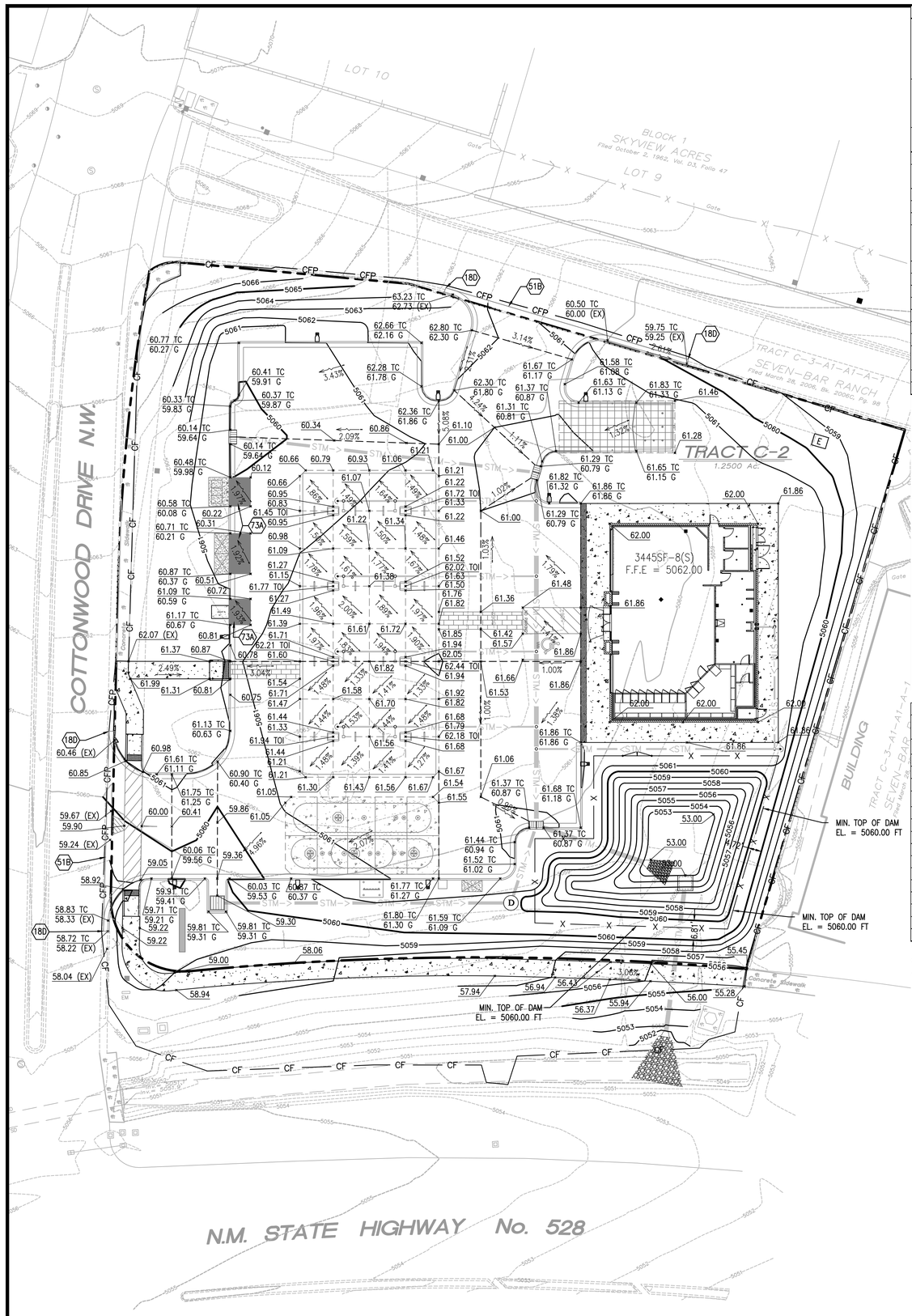
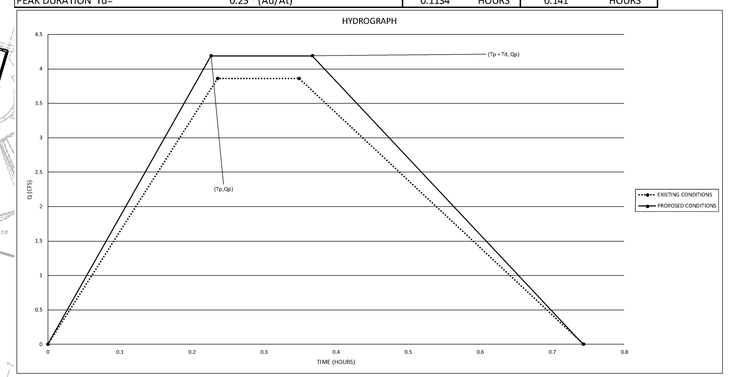


(ZONE 1)	PROCEDURE FROM CHAPTER 22, PART A (ALBUQUERQUE DEVELOPMENT PROCESS MANUAL) FOR 100-YEAR 24-HOUR						
	LAND CONDITIONS	EXCESS PRECIPITATION (INCHES) (100Y-YR; 6 HOUR EVENT)	PEAK DISCHARGE (Qp) 100-YEAR TREATMENT (CFS/ACRE)	EXISTING CONDITIONS		PROPOSED CONDITIONS	
	A	0.44	0.44	0	ACRES	0	ACRES
	B	0.67	0.67	0.683	ACRES	0.545	ACRES
	C	0.99	0.99	0	ACRES	0	ACRES
	D	1.97	1.97	0.567	ACRES	0.705	ACRES
RAINFALL DEPTH:	P360	2.20 INCHES		1.25	ACRES	1.25	ACRES
	P1440	2.66					
WEIGHTED E =	$\frac{EaAa + EbAb + EcAc}{Aa + Ab + Ac + Ad}$			1.256	INCHES	1.407	INCHES
V360 =	(WEIGHTED E) * (Aa + Ab + Ac + Ad)			0.131	ACRE-FT	0.147	ACRE-FT
V1440 =	V360 + Ad * $\frac{(P1440 - P360)}{12\ IN/FT}$			0.153	ACRE-FT	0.174	ACRE-FT
				6662.56	FT^3	7567.34	FT^3
PEAK DISCHARGE	Qp = (Qpa)(Aa) + (Qpb)(Ab) + (Qpc)(Ac) + (Qpd)(Ad)			3.86	CFS	4.19	CFS
Tc =	TIME OF CONCENTRATION < 0.2 THEREFORE USE 0.2			0.2	HOURS	0.2	HOURS
BASE TIME Tb =	(2.107 * E * (At/Qp)) - (0.25 * (Ad/At))			0.744	HOURS	0.743	HOURS
TIME TO PEAK Tp =	(0.7 * Tc) + $\frac{1.6-(Ad/At)}{12}$			0.236	HOURS	0.226	HOURS
PEAK DURATION Td=	0.25 * (Ad/At)			0.1134	HOURS	0.141	HOURS



POND STORAGE						ORIFICE DISCHARGE (SAD 223 ALLOWS 2.31 CFS/ACRE)				
Elevation	Incremental Depth	Contour Area	Average Area	Incremental Volume	Cumulative Volume	ALLOWABLE =	2.31 * At	=	2.89	CFS
(ft)	(ft)	(sf)	(sf)	(cf)	(cf)	ORIFICE RADIUS R		=	3	INCHES
5053		459			0	ORIFICE AREA A =	9(PI)in^2 / (144 in^2 / FT^2)	=	0.196	FT^2
	1		559.5	559.5		GRAVITY G		=	32.2	FT/SEC^2
5054		660			559.5	DEPTH OF WATER H =	5059 -5053 - (R/12)	=	5.75	FT
	1		782	782		COEFFICIENT OF DISCHARGE C*		=	0.62*	
5055		904			1341.5	DISCHARGE Q =	C*A*SQRT(2GH)	=	2.34 < 2.89	CFS
	1		1062.5	1062.5		*COEFFICIENT OF DISCHARGE - FUNDAMENTALS OF HYDRAULIC ENGINEERING SYSTEMS 2ND EDITION				
5056		1221			2404					
	1		1414.5	1414.5						
5057		1608			3818.5					
	1		1808	1808						
5058		2008			5626.5					
	1		2226.5	2226.5						
5059		2445			7853					
	1		2686.5	2686.5						
5060		2928			10539.5					

INTERPOLATION FOR ELEVATION OF TARGET 7567.34 FT^3 VOLUME GIVES 5058.89 FT. THEREFORE SET EMERGENCY OVERFLOW ELEVATION AT 5059 AND TOP OF DAM AT 5060 FOR 1 FT OF FREEBOARD

PRIOR TO ANY WORK WITHIN HIGHWAY 528 RIGHT-OF-WAY, A NEW MEXICO DEPARTMENT OF TRANSPORTATION (NMDOT) PERMIT WILL BE REQUIRED

PRIOR TO ANY WORK WITHIN COTTONWOOD RIGHT-OF-WAY, A CITY OF ALBUQUERQUE PERMIT WILL BE REQUIRED

NOT FOR CONSTRUCTION

N

20 0 10 20

(IN FEET)
1 inch = 20 ft

EXISTING

- Sanitary Sewer Manhole
- Power Pole w/underground feed
- Power Pole
- High Voltage Tower
- Guy Wire
- Overhead Wires
- Water Meter
- Water Valve
- Hydrant
- Electric Meter
- Traffic Box
- Overhead Traffic Light Pole
- Fence
- Hand Railing
- Light Pole
- Bollard
- Concrete Symbol
- Telephone Pedestal
- Underground Electric line
- Underground Communications Line
- Underground Gas Line
- Underground Water Line
- Sanitary Sewer Line
- Storm Drain Line
- Control Point
- Wall

PROPOSED

- PROPERTY LINE
- CONCRETE CURB AND GUTTER
- XXXX — PROPOSED CONTOUR
- CF — CONSTRUCTION FENCE
- CFP — CONSTRUCTION FENCE ON PAVEMENT (SEE DETAIL SHEETS)
- DRAINAGE SLOPE AND DIRECTION
- SPOT ELEVATIONS:
  - XXXX TC — TOP OF CURB
  - XXXX G — GUTTER
  - XXXX TOI — TOP OF ISLAND
  - XXXX EX. — EXISTING ELEVATION
  - XXXX TS — TOP OF SIDEWALK
- STM-> STM-> — PROPOSED STORM SEWER PIPE

GENERAL GRADING NOTES

A. PRIOR TO INSTALLATION OF STORM OR SANITARY SEWER, WATER MAIN OR ANY OTHER UTILITIES, THE CONTRACTOR SHALL EXCAVATE, VERIFY, AND CALCULATE ALL POINTS OF CONNECTION AND ALL UTILITY CROSSINGS AND INFORM THE OWNER AND THE ENGINEER OF ANY CONFLICTS OR REQUIRED DEVIATIONS FROM THE PLAN PRIOR TO CONSTRUCTION. NOTIFICATION SHALL BE MADE A MINIMUM OF 72 HOURS PRIOR TO CONSTRUCTION, THE ENGINEER AND ITS CLIENTS SHALL BE HELD HARMLESS IN THE EVENT THAT THE CONTRACTOR FAILS TO MAKE SUCH NOTIFICATION.

B. ALL SLOPES AND AREAS DISTURBED BY CONSTRUCTION SHALL BE GRADED SMOOTH AND FOUR INCHES OF TOPSOIL APPLIED. IF ADEQUATE TOPSOIL IS NOT AVAILABLE ON SITE, THE CONTRACTOR SHALL PROVIDE TOPSOIL, APPROVED BY THE OWNER, AS NEEDED. THE AREA SHALL THEN BE SEEDED/SODDED, FERTILIZED, MULCHED, WATERED AND MAINTAINED UNTIL HARDY GRASS GROWTH IS ESTABLISHED IN ALL AREAS. ANY RELOCATED TREES SHALL BE MAINTAINED UNTIL SUCH POINT AS TREE IS RE-ESTABLISHED. ANY AREAS DISTURBED FOR ANY REASON PRIOR TO FINAL ACCEPTANCE OF THE PROJECT SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

C. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES.

D. REFER TO GEOTECHNICAL REPORT FOR SPECIFIC SITE SOIL CONDITIONS AND CONSIDERATIONS.

E. CONTRACTOR SHALL COMPLY COMPLETELY WITH THE LATEST STANDARDS OF OSHA DIRECTIVES OR ANY OTHER AGENCY HAVING JURISDICTION FOR EXCAVATION AND TRENCHING PROCEDURES. THE CONTRACTOR SHALL USE SUPPORT SYSTEMS, SLOPING, BENCHING AND OTHER MEANS OF PROTECTION. THIS IS TO INCLUDE, BUT NOT LIMITED FOR ACCESS AND EGRESS FROM ALL EXCAVATION AND TRENCHING. CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH PERFORMANCE CRITERIA AS REQUIRED BY OSHA.

F. ALL HDPE SHALL BE N-12 WT IB (OR EQUIVALENT) WITH SMOOTH INTERIOR AND ANNULAR EXTERIOR CORRUGATIONS. 4"-60" PIPE SHALL MEET ASTM F2648 (OR AASHTO M252 TYPE S) REQUIREMENTS, AND SHALL HAVE A MINIMUM MANNINGS "n" DESIGN VALUE OF 0.012. JOINTS SHALL BE WATERTIGHT ACCORDING TO ASTM D3212 (OR AASHTO M252. M294) REQUIREMENTS. GASKETS SHALL MEET THE REQUIREMENTS OF ASTM F477. JOINT PERFORMANCE, FITTINGS, MATERIAL PROPERTIES, AND INSTALLATION SHALL BE DONE PER THE COMPLETE ADS SPECIFICATION FOR ADS N-12 WT IB PIPE FOUND IN THE ADS, INC. DRAINAGE HANDBOOK, LATEST EDITION.

G. IF USING HDPE PERFORATED PIPE FOR SUBSURFACE DRAINAGE AND DETENTION/RETENTION SYSTEMS, THE PERFORATIONS SHALL MEET THE AASHTO CLASS II STANDARD PERFORATION PATTERN REQUIREMENTS.

H. ALL STORM SEWER LINES 18"-54" DIAMETER ARE TO BE REINFORCED CONCRETE PIPE ACCORDING TO ASTM C-76 TYPE III UNLESS OTHERWISE INDICATED.

I. THIS PROPERTY IS NOT LOCATED WITHIN ANY PRESENTLY ESTABLISHED 100-YEAR FLOOD PLAIN AS SHOWN BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY, FLOOD INSURANCE RATE MAP 35001C0109H DATED AUGUST 16, 2012.

GRADING NARRATIVE

THE EXISTING TOPOGRAPHY ON THIS SITE SLOPES FROM NORTH TO SOUTH TOWARDS THE HIGHWAY. THERE ARE EXISTING STORMWATER FLUMES IN THE SOUTHEAST CORNER OF THE SITE THE ADJACENT STREET TO THE NORTH SHEET FLOWS FROM WEST TO EAST, AND THE STREET TO THE WEST SHEET FLOWS FROM NORTH TO SOUTH. THERE IS AN EXISTING STORMWATER TRENCH TO THE SOUTH OF THE SITE. ACCORDING TO FLOOD MAP 35001C0109H (YEAR 2012) THE SITE IS IN FLOOD ZONE X AND IS NOT IN AN ESTABLISHED FLOOD PLAIN. PROPOSED GRADING IMPROVEMENTS INCLUDE A FINISHED FLOOR ELEVATION OF 5062.00' WITH SURROUNDING DRIVE AISLES AND PARKING SLOPED TO DRAIN TO THE PROPOSED STORMWATER INLETS, AND THE CREATION OF A DETENTION POND AT THE SOUTHEAST CORNER OF THE SITE. AREAS IN FRONT OF THE ICE MACHINE, PROPANE CAGE, AIRVAC, BIKE RACK, AND ADA ACCESSIBLE PARKING SPACE ARE TO HAVE A MAXIMUM OF 2% CROSS SLOPE.

GRADING NOTES

18D MATCH EXISTING PAVEMENT ELEVATIONS
51B LIMITS OF SAWCUT AND PAVEMENT REMOVAL.
73A 2% MAXIMUM SLOPE AREA

SHEET NO. C-3

REV-3	01-23-18	JN	DS	DS	DS
	DATE	PRN	PM	DES	DRW

CONCEPTUAL GRADING PLAN
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ALBUQUERQUE NEW MEXICO

GreenbergFarrow
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ATLANTA, GA 30309
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