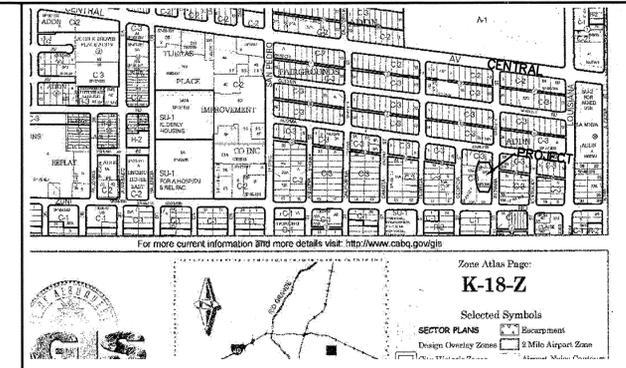


GRADING & DRAINAGE PLAN

LEGEND

- EXIST. SPOT ELEVATION (As-Built) +24.0 11.3 or 11.2
- EXIST. CONTOUR 10
- NEW SPOT ELEVATION +24.0
- NEW CONTOUR 12
- NEW SWALE
- DRAINAGE DIRECTION, EXISTING
- BASIN BOUNDARY
- NEW CONCRETE CURB (0.5' HEIGHT)
- NEW P.C.C., CONCRETE
- TOP OF CURB, EXISTING TC
- FLOWLINE FL
- EXISTING CURB POLE O
- FACE OF CURB/FACE OF CURB F-F



VICINITY MAP ZONE K-18-Z
1" = 750'

NOTES

1. ALL WORK WITHIN THE RIGHT-OF-WAY SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF ALBUQUERQUE STANDARD SPECS. FOR PUBLIC WORKS CONSTRUCTION, 1986 EDITION, W/ 8 UPDATES.
2. AN EXCAVATION/CONSTRUCTION PERMIT IS REQUIRED BEFORE BEGINNING ANY WORK WITHIN CITY R.O.W. AN APPROVED COPY OF THIS PLAN MUST BE SUBMITTED AT THE TIME OF APPLICATION.
3. ALL WORK ON THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS, RULES, AND REGULATIONS CONCERNING CONSTRUCTION SAFETY AND HEALTH.
4. ALL LANDSCAPING AREA SHALL BE SOFT-LINED WITH NATIVE VEGETATION AND/OR GRAVEL. ASPHALT PARKING AREA SHALL DRAIN DIRECTLY ALONG EXISTING HISTORIC LOCATION.
5. CONTRACTOR SHALL ENSURE THAT NO SITE SOILS/SEDIMENT OR SILT ENTER THE RIGHT-OF-WAYS DURING CONSTRUCTION.
6. REVEGETATE ALL AREAS DISTURBED DUE TO CONSTRUCTION PER CITY OF ALBUQ. SPEC. 1011, NATIVE SEED MIX.
7. MAXIMUM SITE GRADING WITHOUT EROSION PROTECTION: 3' HORIZONTAL TO 1' VERTICAL, 3:1. ALL DIMENSIONS TO FACE OF CURB, UNLESS NOTED OTHERWISE.

PROJECT IS NOT LOCATED WITHIN A FEDERALLY DESIGNATED FLOOD HAZARD ZONE

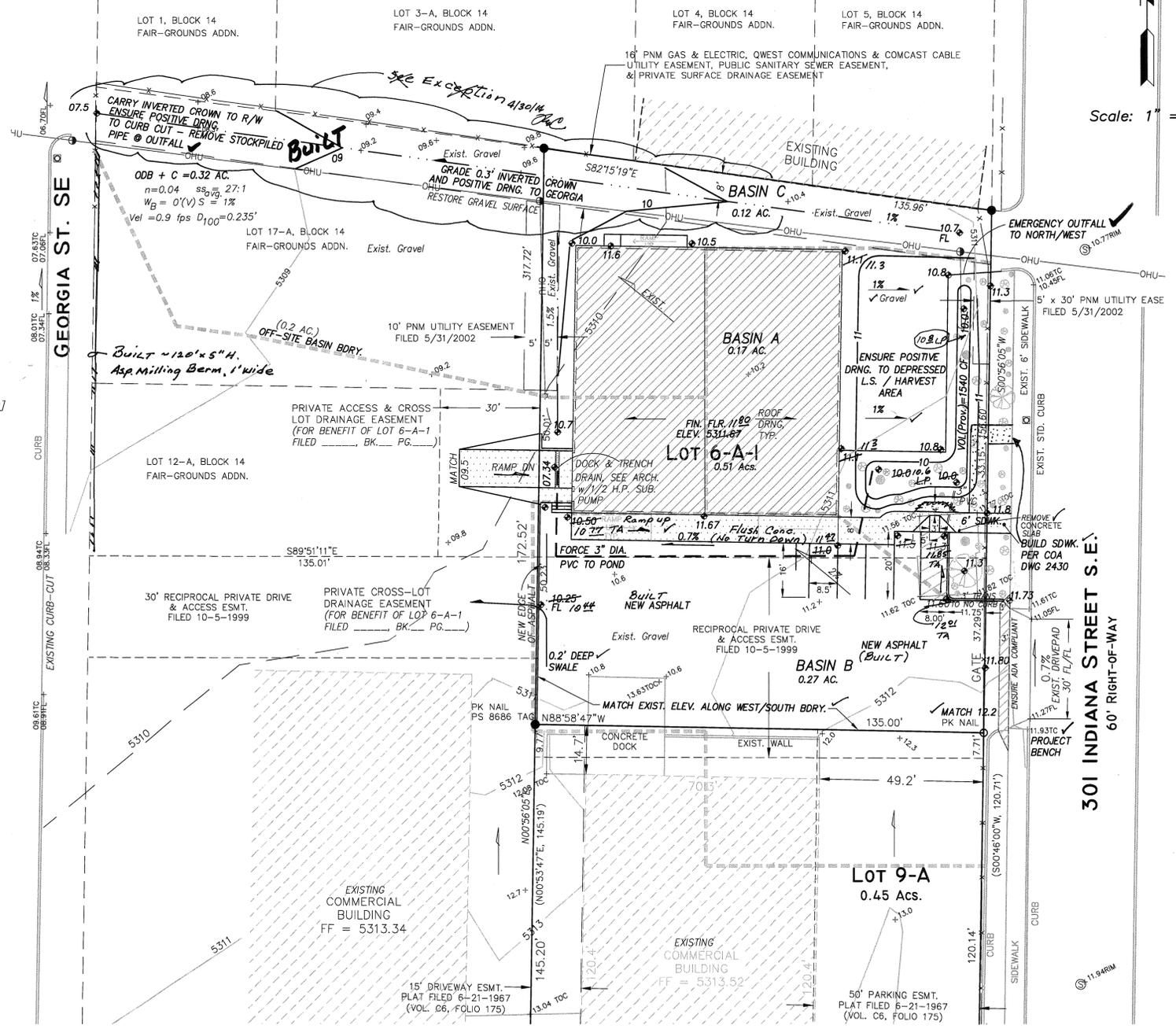
FIRM MAP PANEL # 354 H

THE COMMERCIAL WAREHOUSE PROJECT IS LOCATED IN THE FAIR-GROUNDS ADDN. OF ALBUQUERQUE APPROXIMATELY 5 MILES EAST OF THE DOWNTOWN CORE OF ALBUQUERQUE, NM. THE GRADING & DRAINAGE SCHEME HEREON IS IN COMPLIANCE WITH THE BERNALILLO COUNTY FLOOD HAZARD ORDINANCE, NO.88-46, AND THE CITY STORM DRAINAGE ORDINANCE. THE PLAN IS REQUIRED IN ORDER TO FACILITATE THE OWNER'S REQUEST FOR BUILDING PERMIT. THE PLAN SHOWS:

1. EXISTING CONTOURS, AND SPOT ELEVATIONS AND EXISTING DRAINAGE PATTERNS AND IMPROVEMENTS.
2. PROPOSED IMPROVEMENTS: SINGLE 6400 SF STRUCTURE ASPHALT DRIVES AND PARKING, NEW GRADE ELEVATIONS AND LANDSCAPING / WATER HARVESTING AREAS.
3. CONTINUITY BETWEEN EXISTING AND PROPOSED ELEVATIONS.
4. QUANTIFICATION AND ACCEPTANCE OF UPSTREAM OFF-SITE FLOWS WHICH CONTRIBUTE TO THE DEVELOPED FLOWS GENERATED BY THE IMPROVEMENTS.

THE PURPOSE OF THE PLAN IS TO ESTABLISH CRITERIA FOR CONTROLLING STORM RUNOFF AND EROSION, AND ESSENTIALLY ALLOWING HISTORIC FLOWS TO CONTINUE TO DRAIN THROUGH THE PROPERTY. PRESENTLY, THE SITE IS BOUNDED ON THE NORTH AND SOUTH BY DEVELOPED PROPERTY, INDIANA & GEORGIA STREETS ON THE EAST AND WEST ARE PAVED WITH CURB, GUTTER AND SIDEWALK, AND MAINTAINED BY THE CITY OF ALBUQUERQUE. THE SITE FALLS GENERALLY AT 2% FROM SOUTHEAST TO NORTHWEST.

HISTORICAL SITE RUNOFF OUTFALL LOCATIONS WILL REMAIN UNCHANGED. SINCE THE EXIST. DRIVEWAY WILL BE USED ONLY MINIMAL GRADING IS PROPOSED WITHIN THE CITY R.O.W. FREE DISCHARGE OF DEVELOPED FLOW IS ACCEPTABLE SINCE THE TOTAL GENERATED DEVELOPED FLOW IS MINIMAL. WATER HARVESTING IS PROPOSED IN ORDER TO MITIGATE STORM RUNOFF (DISCHARGE) FROM THE SITE DUE TO THE IMPROVEMENTS, MINIMIZE OUTFALL POLLUTANTS, AND TO INCORPORATE LEED-TYPE/"GREEN" SITE ELEMENTS.



CALCULATIONS

DESIGN CRITERIA
HYDROLOGIC METHODS PER SECTION 22.2, HYDROLOGY OF THE DEVELOPMENT PROCESS MANUAL REVISED JANUARY 1993 FOR CITY OF ALBUQUERQUE ADOPTED BY THE COUNTY OF BERNALILLO
DISCHARGE RATE: $Q = Q_{PEAK} \times AREA$, "Peak Discharge Rates For Small Watersheds"
VOLUMETRIC DISCHARGE: $VOLUME = E_{Weighted} \times AREA$
 $P100 = 2.60$ inches, Zone 3 Time of Concentration, TC = 10 Minutes
DESIGN STORM: 100-YEAR/6-HOUR, 10-YEAR/6-HOUR [] = 10 YEAR VALUES

EXISTING CONDITIONS
LOT AREA = 0.51 ACRES, WHERE EXCESS PRECIP. 'C' = 1.29 IN. [0.62]
PEAK DISCHARGE, $Q100 = 1.76$ CFS [1], WHERE UNIT PEAK DISCHARGE 'C' = 3.45 CFS/AC. [2.0]
THEREFORE: $VOLUME 100 = 2388$ CF [1148]

DEVELOPED CONDITIONS
DETERMINE LAND TREATMENTS, PEAK DISCHARGE AND VOLUMETRIC DISCHARGE FOR STUDY AREA

AREA	LAND TREATM'T	Q_{Peak}	E
UNDEVELOPED	---	1.87 [0.58]	0.66 [0.19]
LANDSCAPING	0.06 Ac. (12%)	2.60 [1.19]	0.92 [0.36]
GRAVEL & COMPACTED SOIL	0.04 Ac. (8%)	3.45 [2.00]	1.29 [0.62]
ROOF - PAVEMENT	0.41 Ac. (80%)	5.02 [3.39]	2.36 [1.50]

THEREFORE: $E_{Weighted} = 2.10$ IN. [1.29] & $VOLUME 100 = 3887$ CF
 $Q100 = 2.36$ CFS
 $Q10 = 1.53$ CFS

DETERMINE CAPACITY OF EAST BASIN TO HARVESTING AREA
BASIN AREA = 0.20 AC. THEREFORE @ $E100 \sim 2.1$ IN = 1500 C.F.±
THEN: 3887 CF - 1500 CF = 2390 ± CF VOL. TO WEST. OK

AREA	$\sim Q100$
BASIN A	0.17
BASIN B	0.27
BASIN C+ODB	0.32

CHANNEL CALCULATOR

GIVEN INPUT DATA:
SHAPE: TRAPEZOIDAL
SOLVING FOR: FLOWRATE
SLOPE: 0.0100 FT/FT
MANNING'S N: 0.0400
DEPTH: 0.2320 FT
HEIGHT: 0.3000 FT
BOTTOM WIDTH: 0.0000 FT
LEFT SLOPE: 0.0370 FT/FT (V/H)
RIGHT SLOPE: 0.0370 FT/FT (V/H)

COMPUTED RESULTS:
FLOWRATE: 1.2848 CFS
VELOCITY: 0.8832 FPS
FULL FLOWRATE: 2.5499 CFS
FLOW AREA: 1.4547 FT²
FLOW PERIMETER: 12.4391 FT
HYDRAULIC RADIUS: 0.1159 FT
TOP WIDTH: 12.5405 FT
AREA: 2.4324 FT²
PERIMETER: 16.2273 FT
PERCENT FULL: 77.3333 %

I, PHILIP W. CLARK, A PROFESSIONAL ENGINEER LICENSED IN ACCORDANCE WITH THE LAWS OF THE STATE OF NEW MEXICO, DO HEREBY CERTIFY THAT I HAVE VISITED THE SITE SHOWN HEREON, AND THAT THE CONTOURS SHOWN REPRESENT THE EXISTING GROUND CONDITIONS, AND DO FURTHER CERTIFY THAT NO EARTHWORK OF ANY KIND, NOR ANY DISTURBANCE OF THE EXISTING GROUND HAS OCCURRED ON THIS SITE SINCE THE CONTOURS WERE DETERMINED.

PHILIP W. CLARK NMPE #10265

DRAINAGE CERTIFICATION

I, Philip W. Clark, NMPE #10265 OF THE FIRM Clark Consulting Engineers HEREBY CERTIFY THAT THIS PROJECT HAS BEEN GRADED AND WILL DRAIN IN SUBSTANTIAL COMPLIANCE WITH AND IN ACCORDANCE WITH THE DESIGN INTENT OF THE APPROVED PLAN DATED 8/18/13. THE RECORD INFORMATION EDITED ONTO THE ORIGINAL DESIGN DOCUMENT HAS BEEN OBTAINED BY ME OR UNDER MY DIRECT SUPERVISION (+AS SUPPLEMENTAL DATA TO THE ORIGINAL TOPOGRAPHIC SURVEY PREPARED BY ALPHA PRO SURVEYING, NMPE #2686 OF THE FIRM (Grisako) AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. THIS CERTIFICATION IS SUBMITTED IN SUPPORT OF A REQUEST FOR Permanent Certificate of Occupancy.

(DESCRIBE ANY EXCEPTIONS) Grading in Former Gravel Alley Area, Not Built 4/30/14
(DESCRIBE ANY DEFICIENCIES)

THE RECORD INFORMATION PRESENTED HEREON IS NOT NECESSARILY COMPLETE AND INTENDED ONLY TO VERIFY SUBSTANTIAL COMPLIANCE OF THE GRADING AND DRAINAGE ASPECTS OF THIS PROJECT. THOSE RELYING ON THIS RECORD DOCUMENT ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BY REQUEST FOR ANY OTHER PURPOSE.

Philip W. Clark, NMPE: 10265
12/12/13

PROJECT DATA

LEGAL DESCRIPTION
LOT 6-A-1, BLOCK 14, FAIRGROUNDS ADDITION
Albuquerque, Bernalillo County, New Mexico

PROJECT BENCHMARK
Top of Curb at the Projection of the Project Southeast Corner
MSL Elevation = 5311.93, As Tied From COA BRASS
CAP, 7_K19, MSL 5325.99, NAVD88.

TOPOGRAPHIC DESIGN SURVEY
PERFORMED BY ALPHA PRO SURVEYING, LLC, Date DEC. 2012

Edgewood, New Mexico 87015 Tel: (505) 281-2444 Fax: (505) 281-2444	
DATE: 12/12/13 REVISION: As-Built 4/30/14 Phil As-Built Berm + Grade	LOT 6-A-1, BLOCK 14, FAIRGROUNDS ADDITION 301 INDIANA STREET, NE ALBUQUERQUE A KIPCO PROJECT Grading & Drainage Plan
DESIGNED BY: PWC CHECKED BY: PWC	DRAWN BY: CCE DATE: 6/17/13
JOB #: KIPCO_GD FILE #: G/D	1 OF 1

