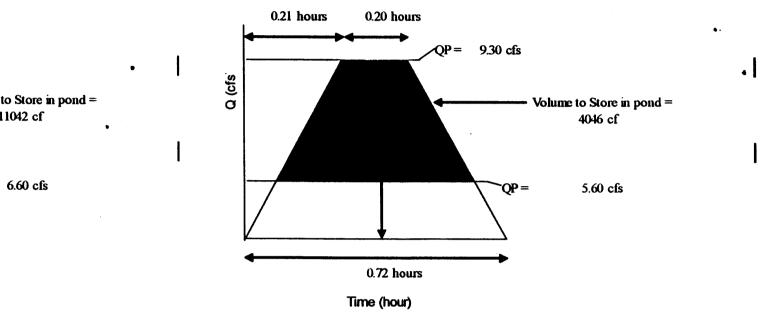
CALCULATIONS CALCULATIONS: Jefferson Plaza Office Bldg: 01-May-07 CALCULATIONS: Jefferson Plaza Office Bldg: 01-May-07 HYDROGRAPH FOR SMALL WATERSHED HYDROGRAPH FOR SMALL WATERSHED DPM SECTION 22-2 * PAGE A-13/14 DPMSECTION 22-2 * PAGE A-13/14 POND #1 POND #2 Base time, tB, for a small watershed hydrograph is Base time, tB, for a small watershed hydrograph is, tB = (2.107 * E * AT / QP) - (0.25 * AD / AT)tB = (2.107 * E * AT / QP) - (0.25 * AD / AT)1.85 inches 1.85 inches 2.90 acres 2.20 acres 2.32 acres 1.76 acres 17.8 cfs 9.3 cfs tB = ' 0.43 hours = 0.72 hours E is the excess precipitation in inches (from DPM TABLE A-8). OP is the peak flow. E is the excess precipitation in inches (from DPM TABLE A-8), OP is the peak flow, AD is the area (acres) of treatment D, and AT is the total area in acres. Using the AD is the area (acres) of treatment D, and AT is the total area in acres. Using the time of concentration, tC (hours), the time to peak in hours is: time of concentration, tC (hours), the time to peak in hours is: tP = (0.7 * tC) + ((1.6 - (AD / AT)) / 12)tP = (0.7 * tC) + ((1.6 - (AD/AT))/12)tC = 0.20 hours0.20 hours tC = 0.21 hours Continue the peak for 0.25 * AD / AT hours. When AD is zero, the hydrograph will be triangular. When Continue the peak for 0.25 * AD/AT hours. When AD is zero, the hydrograph will be triangular. When AD is not zero, the hyrograph will be trapezoidal see the graph below: AD is not zero, the hyrograph will be trapezoidal. see the graph below: 0.20 hours 0.21 hours $\mathbf{OP} = 9.30 \text{ cfs}$ 11042 cf



INFLOW / OUTFLOW HYDROGRAPH

INFLOW / OUTFLOW HYDROGRAPH STANDPIPE CALCULATIONS

0.43 hours

Time (hour)

100 year WSEL - 5127 5 6

100-year vvSEL =		П
Bottom of Pond ELEV =		ft
Maximum discharge $(Q_{max}) =$		cfs
Diameter of Standpipe =	24	in

0.60 (sharp edged hole) 32.2 ft/s^2

HOLE CALCULATIONS									
	HOLE	HOLE	# OF HOLES		Q PER	TOTAL Q AT	SPACE BETWEEN	SPACE BETWEEN	
ELEVATION AT	DIAMETER	AREA	AT THIS		HOLE	THIS LEVEL	HOLES AT THIS	HOLES ON THIS	
CENTER OF HOLE	(in.)	(sq. ft.)	LEVEL	H (ft)	(cfs)	(cfs)	LEVEL (in)	LEVEL AND NEXT (in)	
5127.00	6	0.196	4	0.50	0.67	2.67	12.85	5.72	
5126.42	6	0.196	4	1.08	0.98	3.93	12.85	7.69	
TOTAL Q WITHOUT CLOGGING =			6.60						

TOTAL Q WITH 50% CLOGGING = 3.30

EXISTING CONDITIONS

THIS SITE IS A 5.3 ACRE UNDEVELOPED PROPERTY EAST OF JEFFERSON BLVD. AND NORTH OF JEFFERSON PLAZA. IT IS BOUNDED TO THE EAST AND WEST BY EXISTING OFFICE BUILDINGS. AND TO THE NORTH BY A CONSTRUCTION EQUIPMENT YARD. IT IS COVERED IN NATIVE VEGETATION. AND SLOPES GENERALLY TO THE NORTHWEST.

THERE ARE EXISTING STORM DRAINS IN JEFFERSON PLAZA WITH INLETS AT THE EAST AND WEST ENDS OF THE PROPERTY. THESE STORM DRAINS OUTLET TO THE BEAR ARROYO. A 48" STORM DRAIN PARALLELS THE EAST BOUNDARY, AND A 24" STORM DRAIN CROSSES THE SOUTHWEST CORNER FOR THE B.F. GOODRICH PROERTY TO THE

THERE IS AN EXISTING POND ON THE SOUTHWEST CORNER THAT CAPTURES UNDEVELOPED FLOWS BEFORE THEY ENTER THE B.F. GOODRICH PROPERTY. A STANDPIPE COLLECTS A MAXIMUM OF 7.9 CFS FROM THE POND AND DIRECTS THE FLOWS TO THE WESTERLY STORM DRAIN.

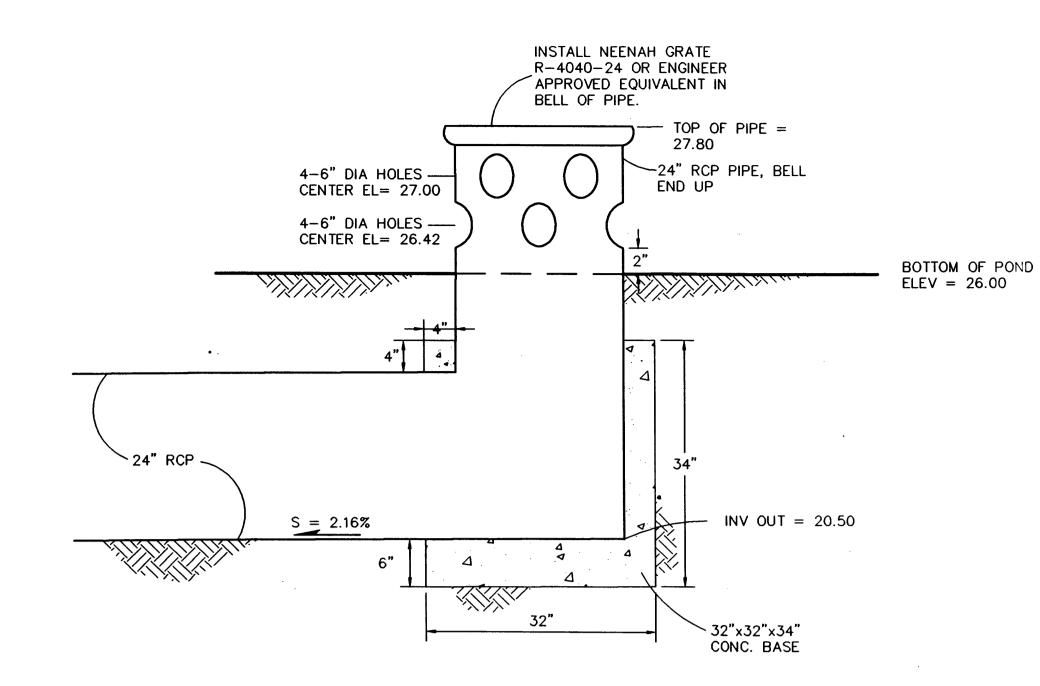
PROPOSED CONDITIONS

A 76,000 SF OFFICE BUILDING IS PROPOSED FOR THIS SITE. TOTAL ONSITE FLOWS OF 22.5 CFS ARE GENERATED BY THE DEVELOPMENT OF THE PROJECT. 21.5 CFS OF FLOWS WILL BE DIRECTED TO TWO DETENTION PONDS THROUGH SURFACE FLOW: 12.2 CFS DRAINS DIRECTLY TO POND #1 ON THE WEST SIDE OF THE PROPERTY, AND 9.3 CFS DRAINS TO POND #2 ON THE NORTH SIDE OF THE SITE. 1.0 CFS FLOWS DIRECTLY TO THE EXISTING INLETS IN JEFFERSON PLAZA RD. FROM AREAS ALONG THAT ROAD.

THERE IS A TOTAL ALLOWABLE DISCHARGE TO THE EXISTING STORM DRAIN OF 7.9 CFS. 1.0 CFS OF THIS TOTAL DISCHARGE IS TAKEN UP WITH ADDITIONAL FLOWS FROM JEFFERSON PLAZA RD. SINCE THE STANDPIPE RELEASES 6.6 CFS. THE TOTAL DISCHARGE IS 7.6 CFS, WHICH ADEQUATELY RESTRICTING THE DEVELOPED STORM WATERS ENTERING THE EXISTING 24" STORM DRAIN. THE PONDS WILL RETAIN THE DIFFERENCE BETWEEN THE DEVELOPED FLOWS OF 21.5 CFS AND THE REMAINING 6.9 CFS.

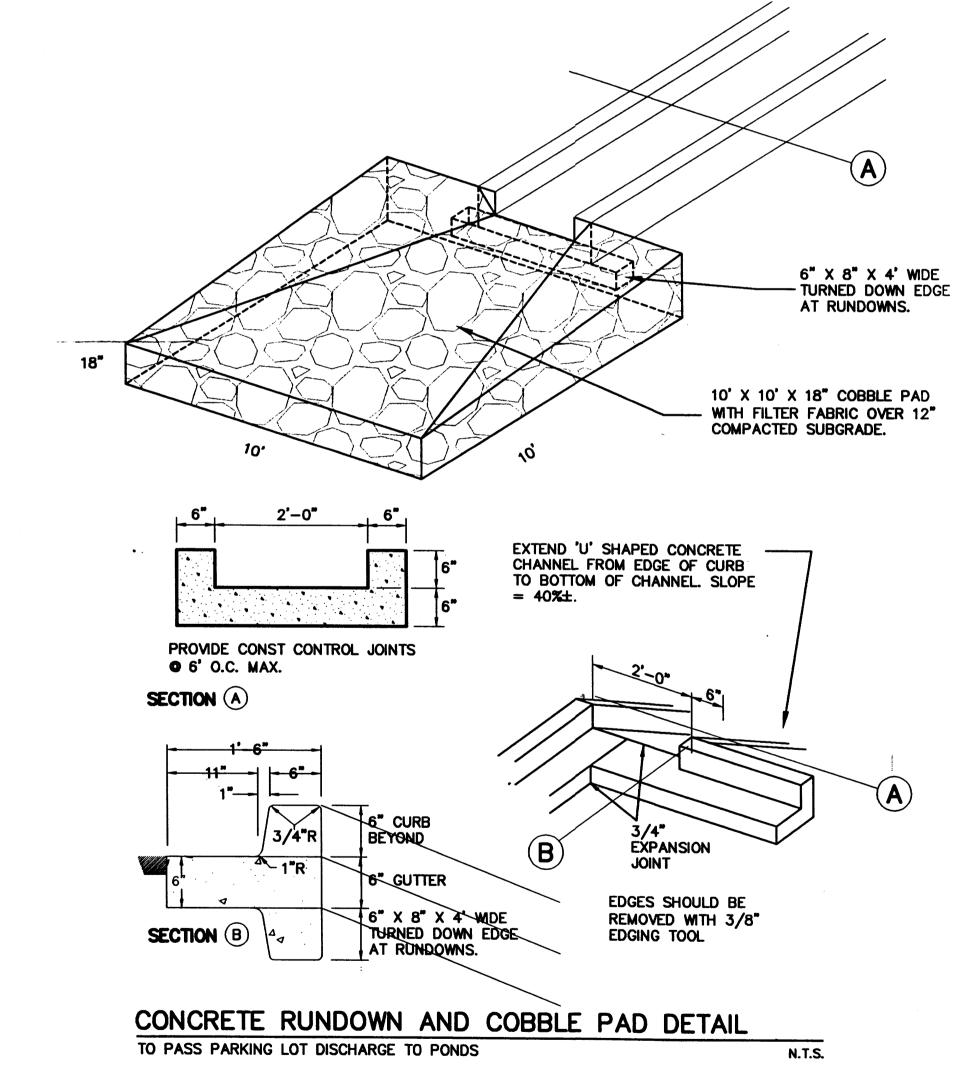
ROOF DRAINS WILL DISCHARGE THROUGH SIDEWALK CULVERTS TO THE PARKING LOT. ALL STORM WATER SUFACE FLOWS TO EITHER THE NORTH OR WEST EDGE OF THE PARKING LOT, WHERE IT IS COLLECTED IN 8 CONCRETE RUNDOWNS, AND DISCHARGED TO THE PONDS. AN 18" CMP PIPE BETWEEN THE UPPER AND LOWER PONDS (PONDS #2 AND #1 RESPECTIVELY) HAS A CAPACITY OF 5.60 CFS. THEREBY RESTRICTING THE DISCHARGE FROM THE UPPER POND TO LESS THAN THAT RELEASED BY THE STANDPIPE. THE TOP OF THE STANDPIPE WILL SERVE AS AN EMERGENCY OVERFLOW WEIR.

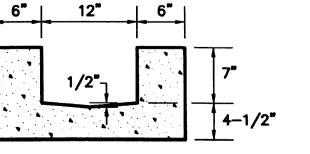
THE EXISTING INLETS ON THE EAST SIDE OF JEFFERSON PLAZA WILL NOT BE CHANGED, AND NO PROPOSED FLOWS ENTER THE EXISTING 48" STORM DRAIN ON THE EAST SIDE OF THE PROPERTY. THERE IS AN EXISTING INLET ON THE WEST END OF THE PROPERTY THAT IS IN THE MIDDLE OF A PROPOSED DRIVEWAY. THIS INLET WILL BE CONVERTED TO A TYPE 'D' DOUBLE GRATE INLET. THE EXISTING STANDPIPE AND ITS DRAIN WILL BE REMOVED.



STANDPIPE DETAIL

FOR DISCHARGE FROM POND





PROVIDE CONST CONTROL JOINTS **6** 6' O.C. MAX.

CONCRETE RUNDOWN

TO PASS ROOF DRAIN DISCHARGE TO SIDEWALK CULVERTS N.T.S.



ARCHITECTS - PLANNERS - ALA

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ARCHITECT

CONSULTANT



JEFFERSON PLAZA OFFICE BLDG.

4041 JEFFERSON PLAZA, N.E. ALBUQUERQUE. **NEW MEXICO**

REVISIONS:

MK DATE DESCRIPTION DRAWN BY: CHECKED B

PROJECT NUMBER:

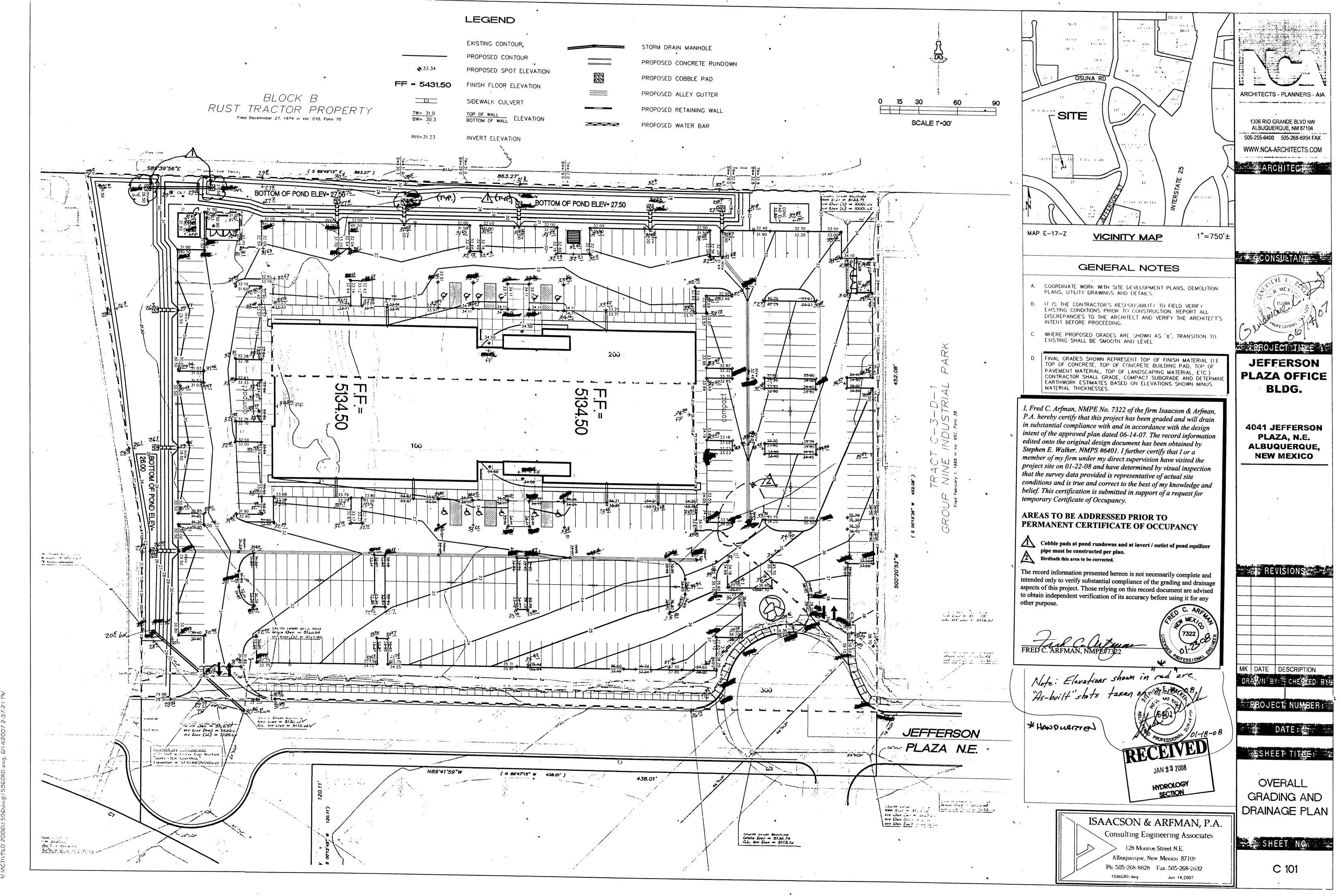
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SHEET TITLE:

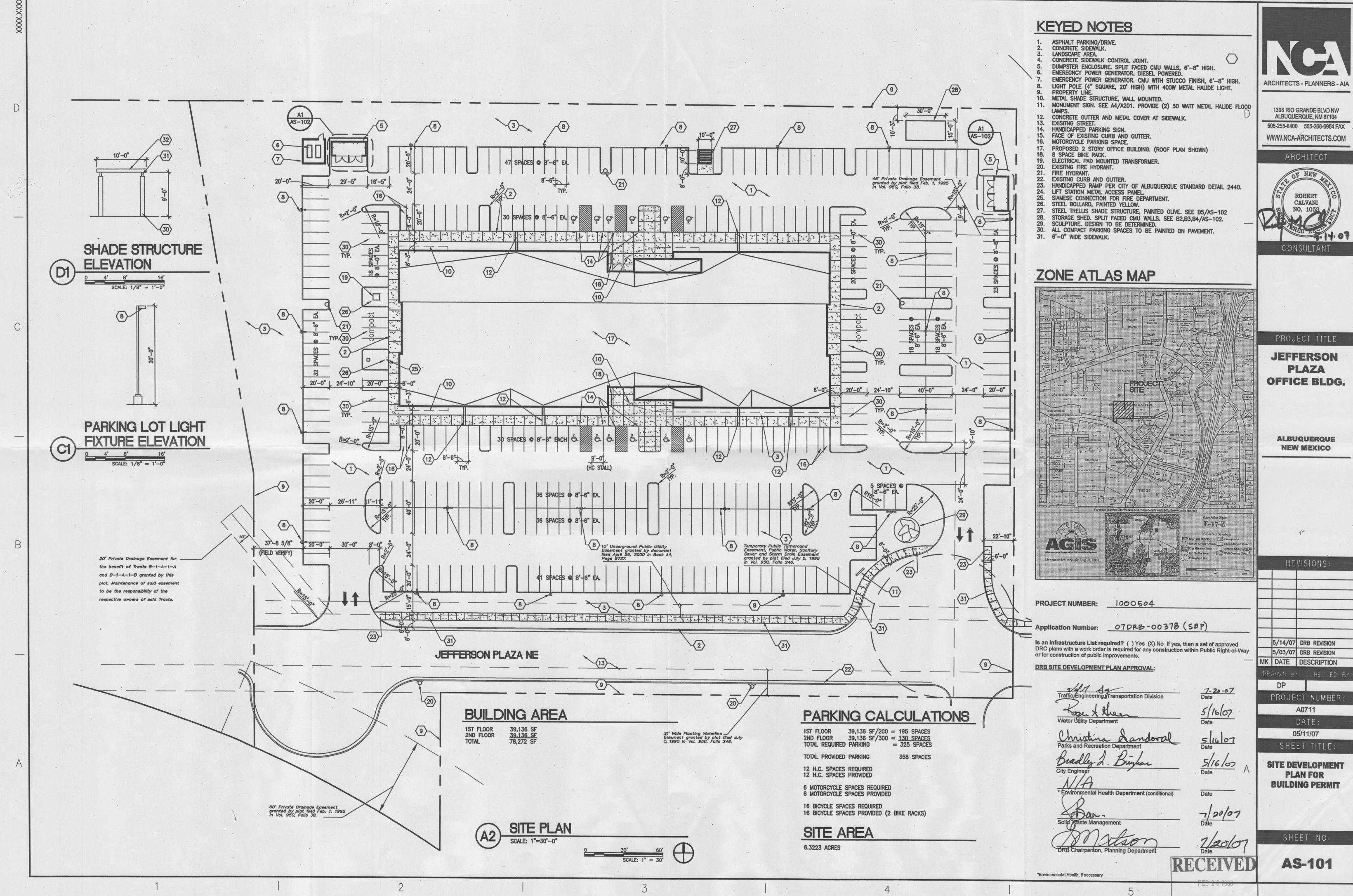
GRADING **DETAILS AND CALCULATIONS**

SHEET NO:

C104



LOTTER TOOCH IN THE DESCRIPTION OF THE PROPERTY OF THE PROPERT



HYDROLOGY SECTION