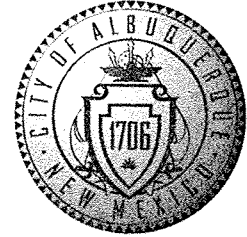


# CITY OF ALBUQUERQUE



DZP.  
1003815

September 2, 2009

Fred C. Arfman, P.E.  
Isaacson & Arfman, P.A.  
128 Monroe St. NE  
Albuquerque, NM 87108

**Re: Office/Warehouse Development, 9550 San Mateo Blvd NE, Grading and Drainage Plan**

**Engineer's Stamp date 8-19-09 (B18/D016)**

Dear Mr. Arfman,

Based upon the information provided in your submittal received 8-21-09, the above referenced plan is approved for Building Permit and SO 19 Permit. Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology.

A separate permit is required for construction within City ROW. A copy of this approval letter must be on hand when applying for the excavation permit.

To obtain a temporary or permanent CO, Engineer Certification of the Grading Plan per the DPM is required and the storm drain work in the City ROW must be inspected and accepted. Please contact Duane Schmitz, 235-8016, to schedule an inspection.

Include the TW elevation on the west end of the wall on the south side of the site on the Certification.

If you have any questions, you can contact me at 924-3695.

Sincerely,

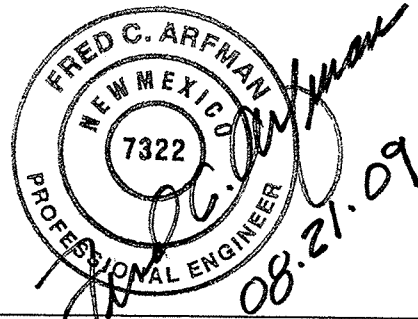
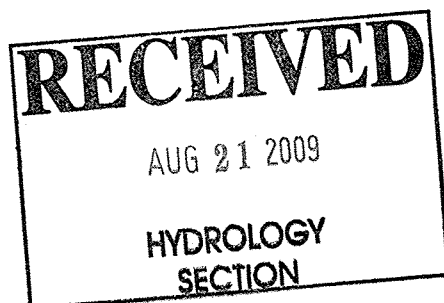
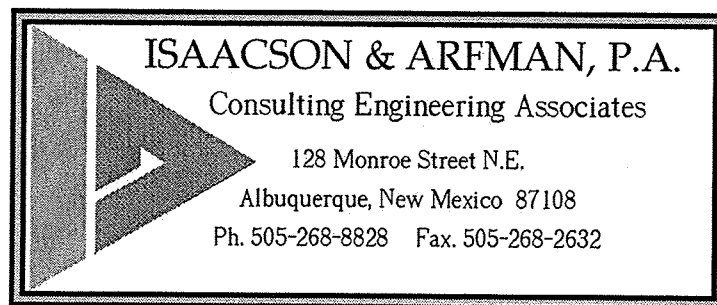
Curtis A. Cherne, P.E.  
Senior Engineer, Planning Dept.  
Development and Building Services

C: file  
Duane Schmitz, Street/Storm Drain Maintenance

AUGUST 20, 2009

SUPPLEMENTAL INFORMATION  
FOR  
OFFICE / WAREHOUSE DEVELOPMENT

BY



### CURB OPENING CAPACITY CALCULATION

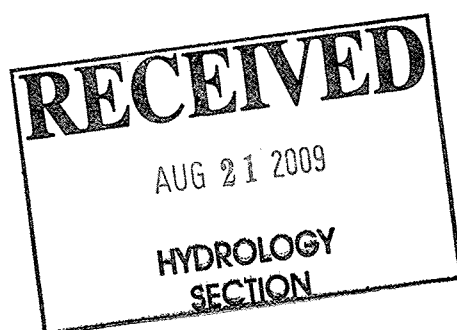
Weir equation:  $Q = CLH^{3/2}$

Constant                      C =            3.33

Curb height                  H =            0.5 feet

Opening Length              L =            6.00 feet

<b>Q = 7.1 cfs</b>
--------------------



# Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc.

Wednesday, Aug 19 2009

<Name>

## Rectangular

Bottom Width (ft) = 2.00

Total Depth (ft) = 0.50

Invert Elev (ft) = 10.00

Slope (%) = 6.89

N-Value = 0.012

## Calculations

Compute by: Known Q

Known Q (cfs) = 7.14 = 11.9 x 60%

## Highlighted

Depth (ft) = 0.30

Q (cfs) = 7.140

Area (sqft) = 0.60

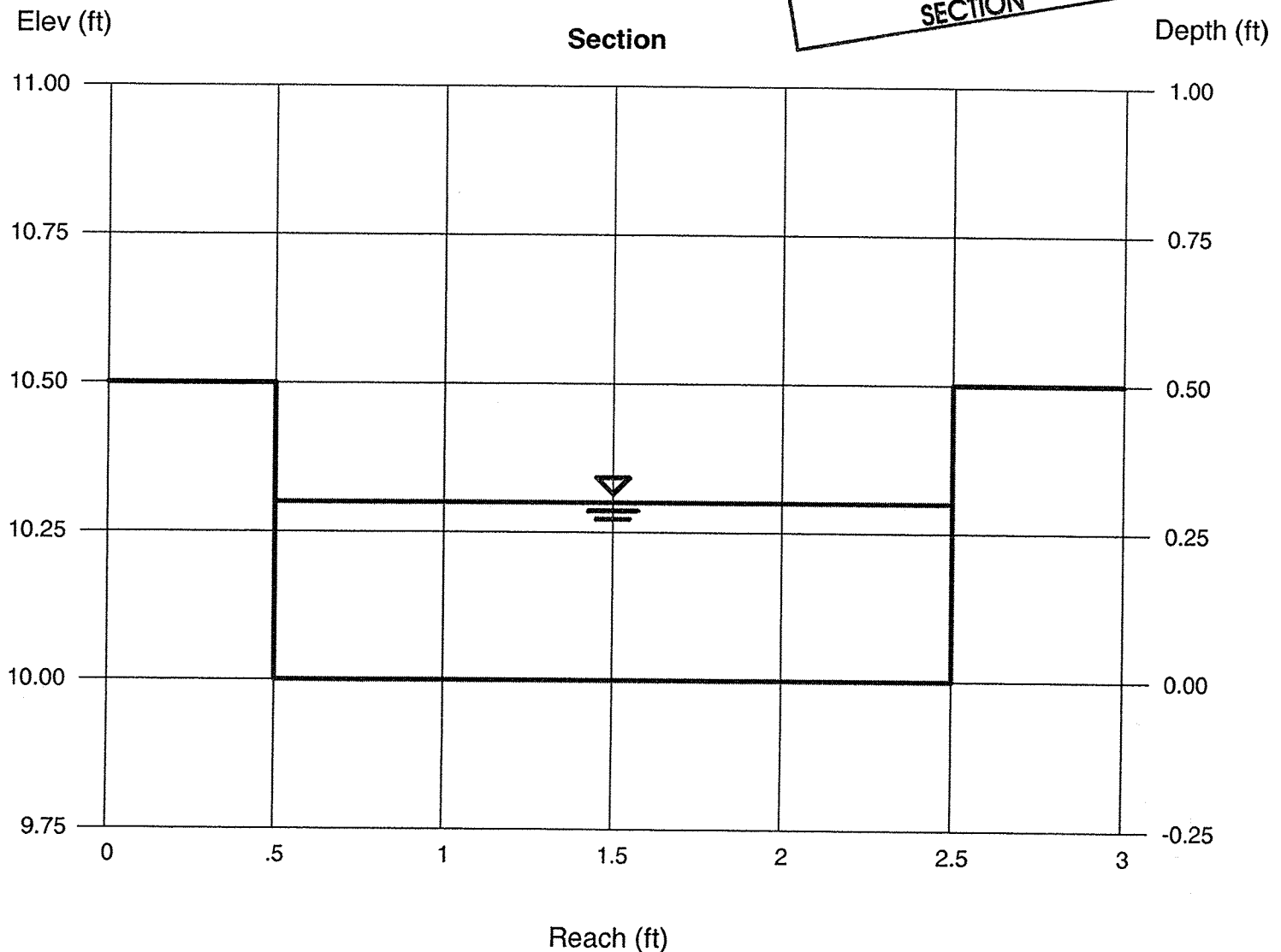
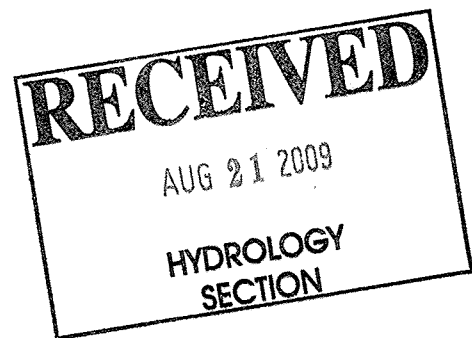
Velocity (ft/s) = 11.90

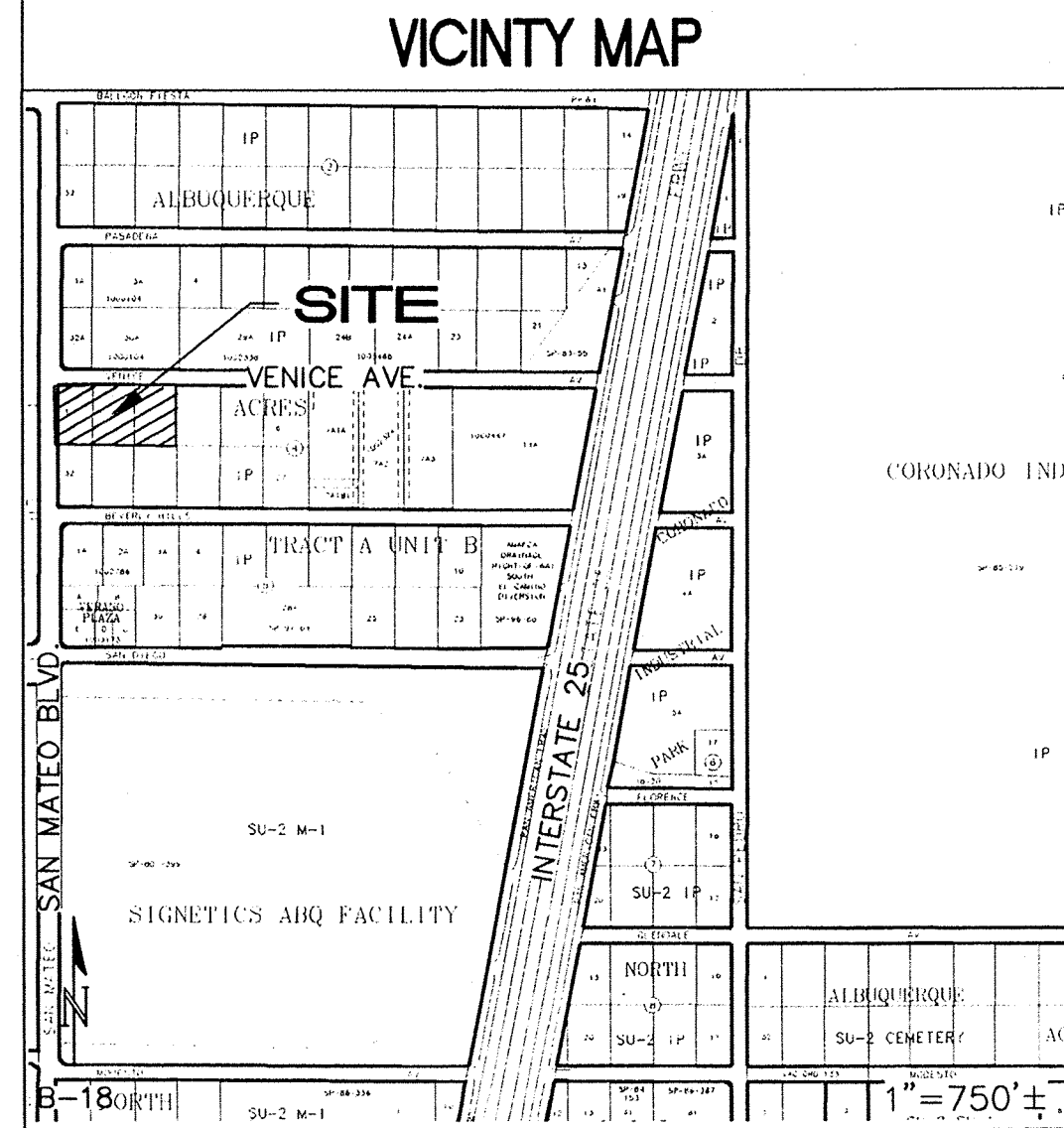
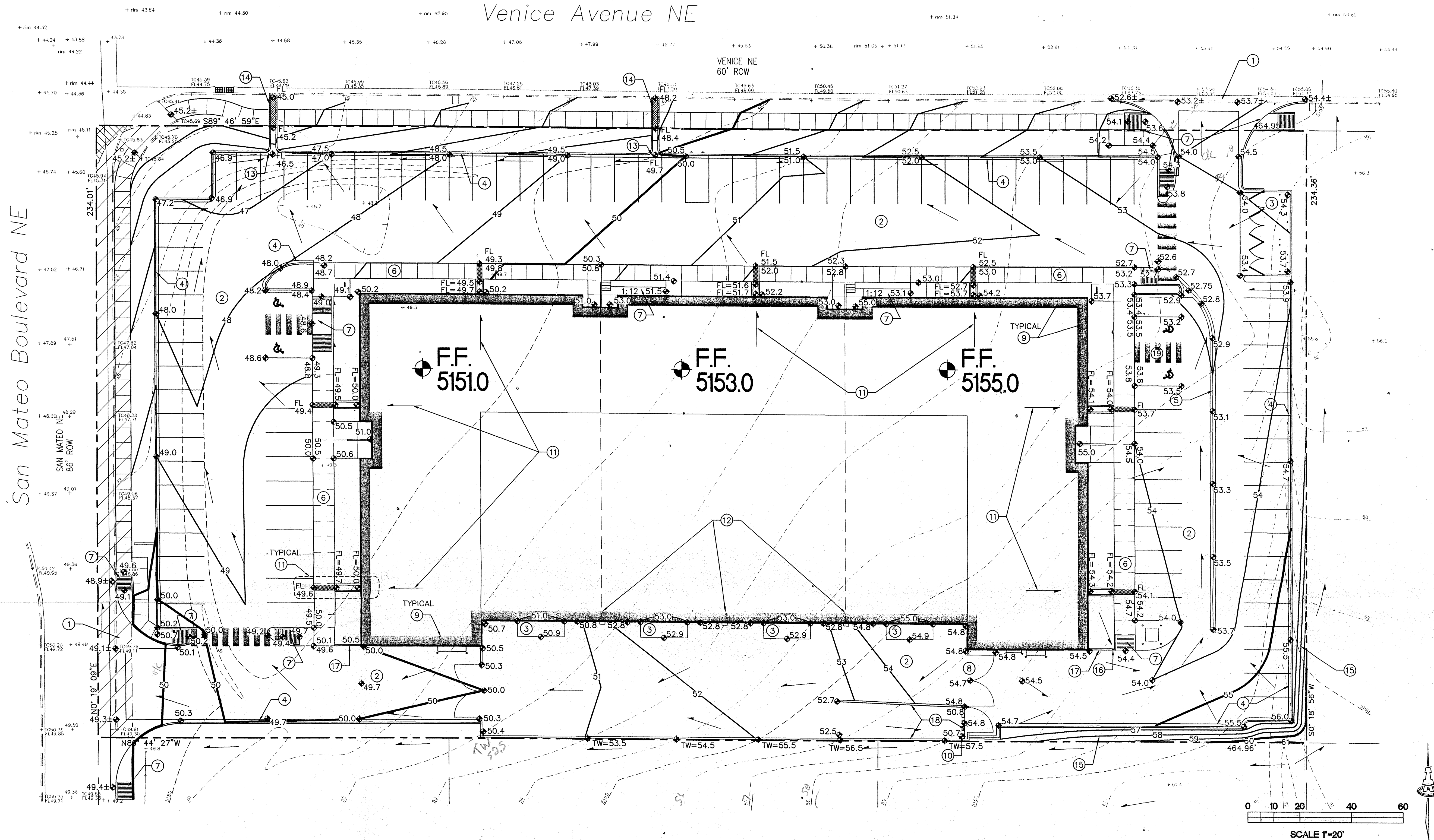
Wetted Perim (ft) = 2.60

Crit Depth, Yc (ft) = 0.50

Top Width (ft) = 2.00

EGL (ft) = 2.50





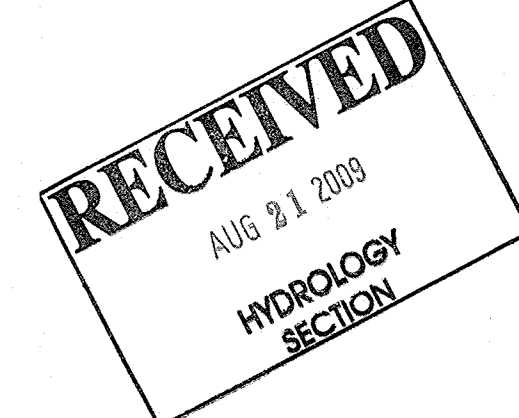
- ### KEYED NOTES
1. CONSTRUCT SITE ENTRANCE PER C.O.A. STANDARDS. MATCH EXISTING FLOWLINE ELEVATIONS TO PROVIDE A SMOOTH RIDING TRANSITION. CONSTRUCT CONCRETE VALLEY GUTTER / HANDICAP RAMPS (PER C.O.A. STD. DWG. 2426) MATCHING EXISTING TOP OF WALK / FLOWLINE ELEVATIONS. TRANSITION CURB HEIGHT FROM 8" TO 6" OVER LENGTH OF RADIUS. SEE ARCHITECTURAL FOR DIMENSIONS / DETAILS / DEMOLITION OF EXISTING CURBS.
  2. PROPOSED ASPHALT PAVING. SEE ARCHITECTURAL FOR SECTIONS, PARKING LAYOUT, DIMENSIONS, STRIPING, ETC.
  3. PROPOSED CONCRETE PAVING. SEE ARCHITECTURAL FOR JOINT INFORMATION, DIMENSIONS, ETC.
  4. CONSTRUCT 6" HIGH MEDIAN CURB AND GUTTER AT ALL ON-SITE LOCATIONS. SEE SHEET CG-102 FOR DETAIL.
  5. CONSTRUCT 2' WIDE CONCRETE ALLEY GUTTER AT 0.6% SLOPE. SEE DETAIL SHEET CG-102.
  6. CONSTRUCT TURNED DOWN CONCRETE WALK THIS AREA. SEE ARCHITECTURAL FOR DETAIL.
  7. ACCESS RAMP. SEE ARCHITECTURAL FOR RAMP LOCATIONS / DIMENSIONS AND ADDITIONAL INFORMATION.
  8. PAVING HIGH POINT THIS AREA.
  9. CONSTRUCT STEM WALL TRANSITIONS AS REQUIRED TO ACHIEVE GRADE DIFFERENCES SHOWN. SEE ARCHITECTURAL FOR ADDITIONAL INFORMATION (DESIGN BY OTHERS).
  10. CONSTRUCT LOADING DOCK SUMP PUMP INLET THIS AREA. SEE DETAIL SHEET CG-102. NOTE: ELECTRICITY REQUIRED. SEE ARCHITECTURAL.
  11. ROOF FLOW TO NORTH, EAST AND WEST TO BE PASSED TO ASPHALT PAVEMENT VIA 'U' SHAPED CONCRETE CHANNEL WITH COVERED SIDEWALK CULVERT (AS SHOWN).
  12. ROOF FLOW TO SOUTH SIDE TO BE COLLECTED AND RELEASED DIRECTLY TO PAVEMENT. SEE ARCHITECTURAL FOR SPECIFIC OUTFALL POINTS.
  13. CONSTRUCT 2' WIDE (BOTTOM WIDTH) 'U' SHAPED CONCRETE RUNDOWN WITH 2' CURB RADI AT OPENING FROM PARKING LOT. SEE SHEET CG-102 FOR DETAIL.
  14. CONSTRUCT 2' WIDE (BOTTOM WIDTH) COVERED SIDEWALK CULVERT PER C.O.A. STD. DWG. 2236 TO PASS FLOW TO VENICE AVE. NE. SLOPE = 2% SEPARATE PERMIT REQUIRED. SEE S.O.19 NOTICE ON SHEET CG-102.
  15. PROVIDE PERMANENT EROSION CONTROL ON ALL NEW 3:1 OR GREATER SLOPES. SEE EROSION CONTROL NOTES ON CG-102.
  16. PROVIDE 1' OPENING OR 2 IN. PIPE THROUGH CURB THIS AREA TO PASS FLOW TO PAVEMENT.
  17. CONSTRUCT 6" CONCRETE HEADER CURB THIS AREA. SEE SHEET CG-102 FOR DETAIL.
  18. DOCK RETAINING WALL. DESIGN BY OTHERS.
  19. HC PARKING PAVEMENT FLUSH WITH TOP OF CONCRETE WALK.

### CALCULATIONS

CALCULATIONS: Mechenbier Office / Warehouse : August 3, 2009									
Based on Drainage Design Criteria for City of Albuquerque Section 22.2, DPM, Vol 2, dated Jan., 1993									
ON-SITE									
AREA OF SITE:		108856 <sup>2</sup>		SF	=	2.5			
		100-year, 6-hour							
HISTORIC FLOWS:				DEVELOPED FLOWS:				EXCESS PRECIP:	
	Treatment SF	%		Treatment SF	%		Precip. Zone		
Area A	=	0	0%	Area A	=	0	0%	E <sub>1A</sub>	= 0.66
Area B	=	0	0%	Area B	=	5443	5%	E <sub>1B</sub>	= 0.92
Area C	=	108856	100%	Area C	=	10886	10%	E <sub>1C</sub>	= 1.29
Area D	=	0	0%	Area D	=	92528	85%	E <sub>1D</sub>	= 2.36
Total Area	=	108856	100%	Total Area	=	108856	100%		
On-Site Weighted Excess Precipitation (100-Year, 6-Hour Storm)									
Weighted E =		$E_{1A}A_A + E_{1B}A_B + E_{1C}A_C + E_{1D}A_D$							
		$A_A + A_B + A_C + A_D$							
Historic E	=	1.29 in.				Developed E	=	2.18 in.	
On-Site Volume of Runoff: V <sub>360</sub> = E <sup>2</sup> A / 12									
Historic V <sub>360</sub>	=	11702 CF				Developed V <sub>360</sub>	=	19785 CF	
On-Site Peak Discharge Rate: Q <sub>p</sub> = Q <sub>100</sub> A <sub>A</sub> + Q <sub>100</sub> A <sub>B</sub> + Q <sub>100</sub> A <sub>C</sub> + Q <sub>100</sub> A <sub>D</sub> / 43,560									
For Precipitation Zone 3									
Q <sub>100A</sub>	=	1.87				Q <sub>100C</sub>	=	3.45	
Q <sub>100B</sub>	=	2.60				Q <sub>100D</sub>	=	5.02	
Historic Q <sub>p</sub>	=	8.6 CFS				Developed Q <sub>p</sub>	=	11.9 CFS	

### LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED SPOT ELEVATION
- FLOW ARROW
- FF = 5151.0
- FINISH FLOOR ELEVATION
- FL = 54.0
- FLOWLINE ELEVATION
- INV = 72.5
- INVERT ELEVATION
- TW = 57.5
- TOP OF RETAINING WALL ELEVATION



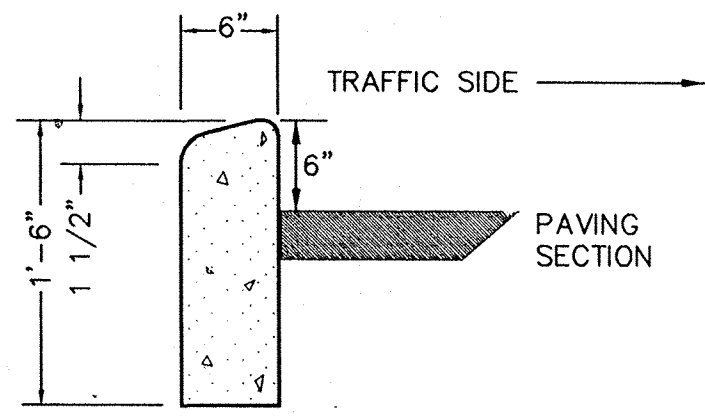
ALL SITE DISCHARGE WILL FREE DISCHARGE TO TO VENICE AVE. VIA 2 COVERED SIDEWALK CULVERTS. ALL DISCHARGE WILL ENTER THE EXISTING PUBLIC STORM DRAIN SYSTEM.

**ISAACSON & ARFMAN, P.A.**  
Consulting Engineering Associates  
128 Monroe Street N.E.  
Albuquerque, New Mexico 87108  
Ph. 505-268-8828 Fax. 505-268-2632  
1666 CG-101.dwg Aug 19, 2009

**OFFICE / WAREHOUSE DEVELOPMENT**  
**9550 SAN MATEO N.E.**  
**Mechenbier Const.**

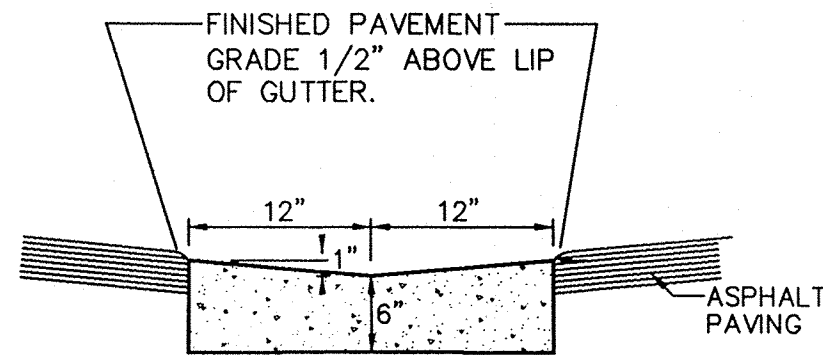
GRADING AND DRAINAGE PLAN			
Date:	8/19/09	Revision:	
Drawn By:	RR	Date:	
Chk By:	FCA	Job No.:	1666
			<b>CG-101</b>
			SH. OF





## D1 CONCRETE HEADER CURB

N.T.S.

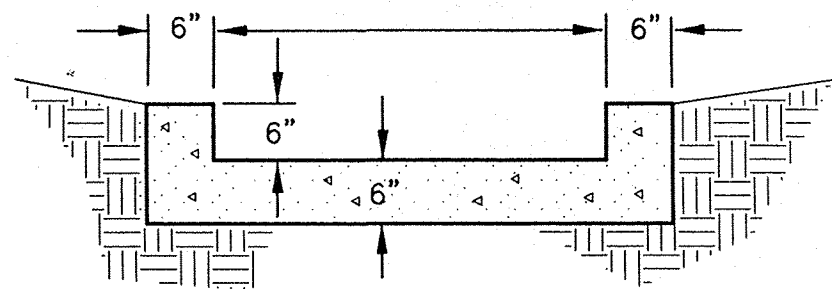


### GENERAL NOTES

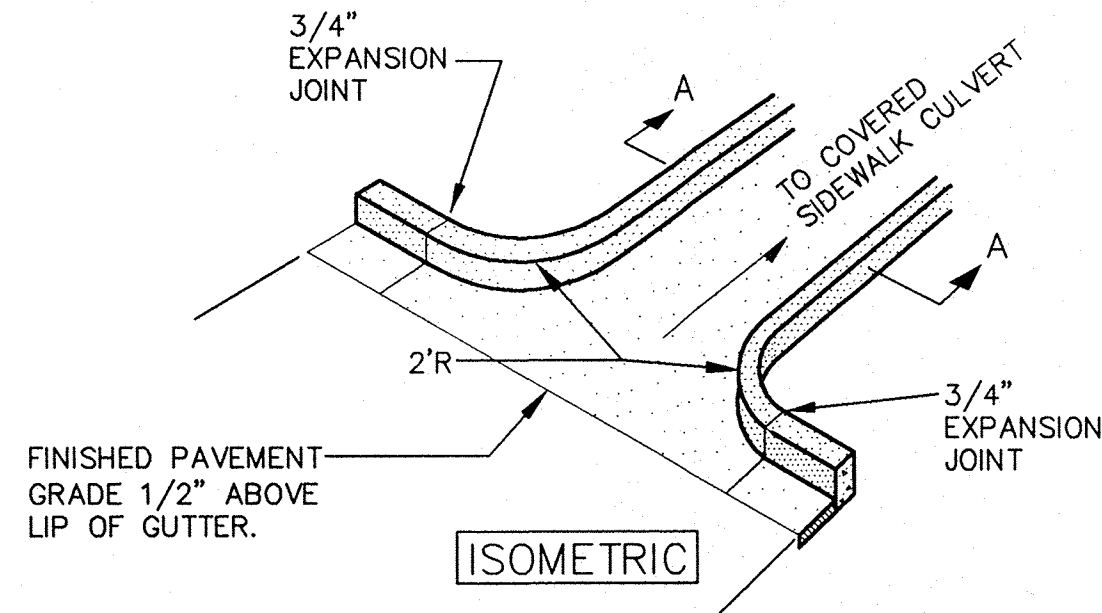
1. PROVIDE CONST. CONTROL JOINTS @ 7' O.C. MAX.
2. EDGES SHOULD BE REMOVED WITH 3/8" EDGING TOOL

## B1 CONCRETE ALLEY GUTTER

N.T.S.

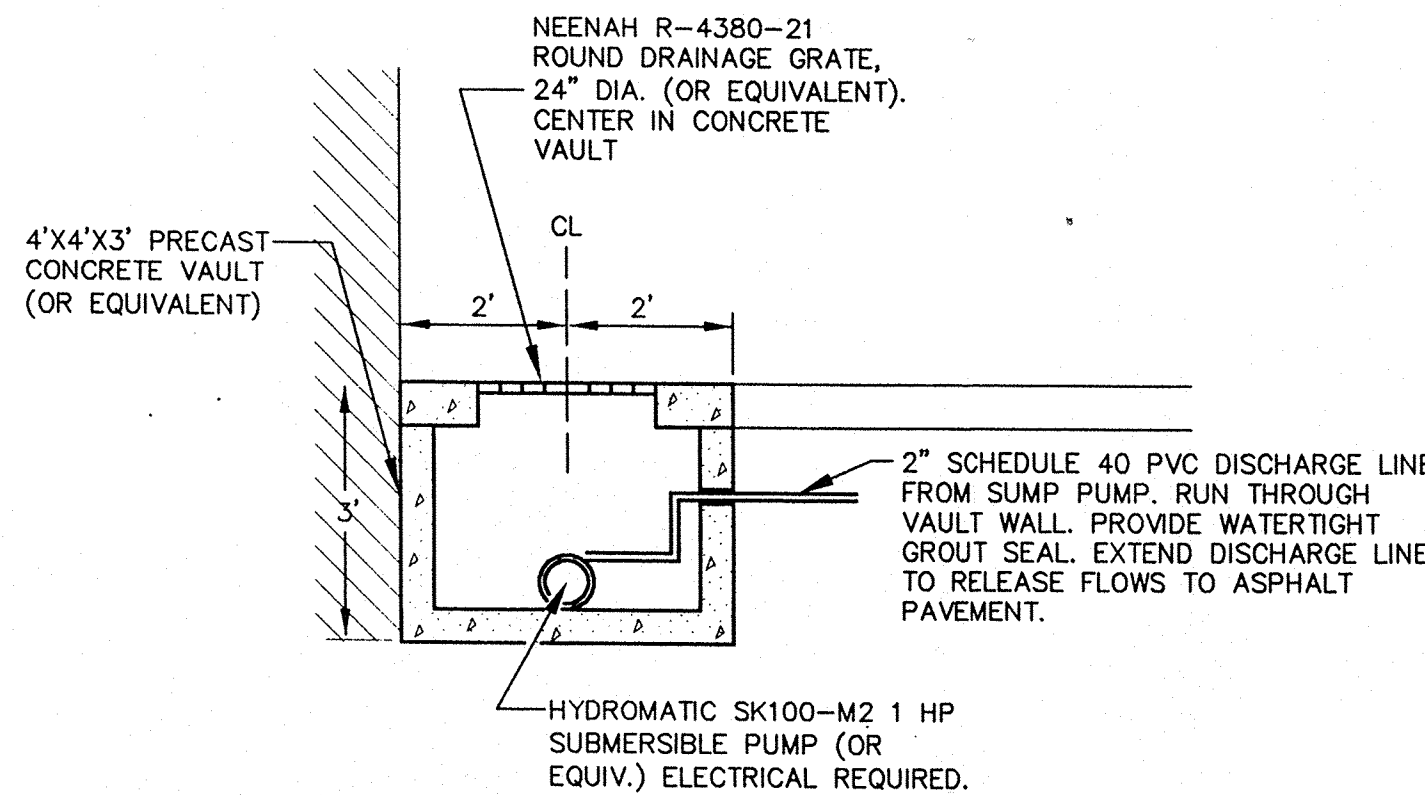


### SECTION A-A



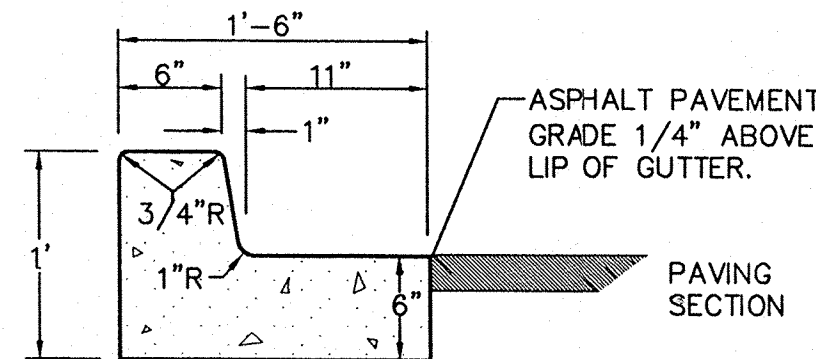
## A1 CURB CUT / RUNDOWN

N.T.S.



## C2 LOADING DOCK SUMP PUMP

N.T.S.



### GENERAL NOTES

1. PROVIDE CONST. CONTROL JOINTS @ 6' O.C. MAX. AND 1/2" EXPANSION JOINTS @ 48' O.C. MAX
2. EDGES SHOULD BE REMOVED WITH 3/8" EDGING TOOL
3. MEDIAN C & G REQUIRE FULL FORM ON ALL FACES

## A2 MEDIAN CURB AND GUTTER

N.T.S.

### EROSION CONTROL NOTES

- ALL COBBLE EROSION PROTECTION TO BE 6" AVG. DIA. ANGULAR FACED.
- OWNER SHALL INSPECT AND MAINTAIN DRAINAGE AND WATER HARVESTING IMPROVEMENTS ON AN ON-GOING BASIS. IN ADDITION, OWNER SHALL INSTALL / MAINTAIN ADDITIONAL EROSION PROTECTION ELEMENTS BASED ON ACTUAL EROSION PATTERNS WHICH DEVELOP OVER TIME.
- OWNER'S OPTION: IN PLACE OF COBBLE EROSION PROTECTION, OWNER MAY CHOOSE TO INSTALL PERMANENT TURF REINFORCEMENT MAT (LANDLOK TRM 1051 - INSTALL PER MANUFACTURER'S GUIDELINES) WITH RESEEDING.
- ALL DRAINAGE IMPROVEMENTS SHOWN ON THE APPROVED GRADING AND DRAINAGE PLAN MUST BE COMPLETED BEFORE AN ENGINEER'S CERTIFICATION CAN BE ISSUED.
- ALL SLOPES  $>3:1$  WILL REQUIRE PERMANENT EROSION PROTECTION AS FOLLOWS:
  - 8" (AVG.) ANGULAR FACED COBBLES OVER GEOTEX 501 NON-WOVEN GEOTEXTILE (O.E.).
  - PYRAMAT PERMANENT EROSION CONTROL MATRIX (O.E.) WITH RESEEDING

### GENERAL NOTES

- ALL TRASH, DEBRIS, & SURFACE VEGETATION SHALL BE CLEARED AND LEGALLY DISPOSED OF OFF-SITE.
- ALL SUBGRADE, OVEREXCAVATION, AND FILL SHALL BE PLACED AND / OR COMPACTED PER THE GEOTECHNICAL REPORT AND CITY OF ALBUQUERQUE SPECIFICATIONS.
- FINAL GRADES SHOWN REPRESENT TOP OF FINISH MATERIAL (I.E. TOP OF CONCRETE, TOP OF BUILDING PAD, TOP OF PAVEMENT MATERIAL, TOP OF LANDSCAPING MATERIAL, ETC.). CONTRACTOR SHALL GRADE, COMPACT SUBGRADE AND DETERMINE EARTHWORK ESTIMATES BASED ON ELEVATIONS SHOWN MINUS MATERIAL THICKNESSES.
- MAXIMUM SLOPES SHALL BE 3:1 AND MINIMUM SLOPES SHALL BE 1% UNLESS OTHERWISE NOTED.
- FIVE (5) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT NEW MEXICO ONE CALL SYSTEM, 260-1990, FOR LOCATION OF EXISTING UTILITIES. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE CAUSED BY ITS FAILURE TO LOCATE, IDENTIFY AND PRESERVE ANY AND ALL EXISTING UTILITIES, PIPELINES, AND UNDERGROUND UTILITY LINES.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY EXISTING CONDITIONS PRIOR TO CONSTRUCTION. REPORT ALL DISCREPANCIES TO THE ARCHITECT / ENGINEER AND VERIFY THE ARCHITECT / ENGINEER'S INTENT BEFORE PROCEEDING.
- OWNER HAS ESTABLISHED PROPERTY BOUNDARY CORNERS. CONTRACTOR SHALL LOCATE AND PRESERVE ALL BOUNDARY CORNERS AND REPLACE ANY LOST OR DISTURBED CORNERS AT CONTRACTOR'S SOLE EXPENSE.
- OWNER WILL PROVIDE A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AND INSPECTION. CONTRACTOR SHALL COMPLY WITH THE BEST MANAGEMENT PRACTICES (BMP'S) AS SPECIFIED IN THE SWPPP, AND WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS.
- COORDINATE WORK WITH SITE PLAN, UTILITY PLAN AND LANDSCAPE PLAN.
- ADJUST RIMS OF EXISTING UTILITY FEATURES AS NECESSARY TO MATCH NEW GRADES, TYPICAL.
- ALL NEW PAVEMENT SURFACES SHALL BE CONSTRUCTED WITH POSITIVE SLOPE AWAY FROM BUILDINGS TO DRAIN TOWARD EXISTING AND / OR PROPOSED DRAINAGE PATHS. WHERE NEW GRADES ARE SHOWN AS MATCH OR  $\pm$ , TRANSITIONS SHALL BE SMOOTH AND LEVEL. ANY NEW PAVING SURFACE HOLDING WATER (BIRDBATH) SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S SOLE EXPENSE.
- ALL AREAS REFERENCING EROSION PROTECTION SHALL BE 6" AVG. DIA. FRACTURED FACE ROCK (F.F. ROCK) PLACED OVER GEOTEX 50 NON-WOVEN GEOTEXTILE.
- SIDESLOPES STEEPER THAN 3:1 BUT LESS THAN 2:1 MUST HAVE PERMANENT EROSION CONTROL (FRACTURED FACE ROCK [F.F. ROCK] INSTALLED. NO SLOPE SHALL BE STEEPER THAN 2:1.
- ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE RESEED WITH NATIVE GRASS PER C.O.A. SPECIFICATIONS SECTION 1012 (FOR SANDY SOILS) OR AS SPECIFIED ON THE LANDSCAPE PLAN.
- OWNER SHALL MAINTAIN EROSION PROTECTION ELEMENTS. OWNER SHALL INSPECT SITE YEARLY AND AFTER EACH RAINFALL TO IDENTIFY NEW AREAS OF EROSION AND INSTALL ADDITIONAL EROSION PROTECTION AS NEEDED BASED ON ACTUAL OCCURRENCES.

### PROJECT NOTES

PROPERTY: THE SITE IS A 2.4 ACRE UNDEVELOPED COMMERCIAL PROPERTY LOCATED WITHIN C.O.A. VICINITY MAP B-18. THE SITE IS BOUND TO THE EAST BY UNDEVELOPED COMMERCIAL, TO THE WEST BY SAN MATEO, TO THE NORTH BY VENICE BLVD., AND TO THE SOUTH BY UNDEVELOPED COMMERCIAL PROPERTY.

THE PROPOSED IMPROVEMENTS INCLUDE APPROX. 35,500 SF COMMERCIAL BUILDING WITH ASSOCIATED ASPHALT PAVED ACCESS, PARKING, AND LANDSCAPING.

LEGAL: LOT 3-A, BLOCK 4, TRACT A, UNIT B, NORTH ALBUQUERQUE ACRES, CITY OF ALBUQUERQUE BERNALILLO COUNTY, NEW MEXICO

BENCHMARK: CITY OF ALBUQUERQUE 6-B17, AN ALUMINUM DISK ON CONCRETE CURB, WNW QUADRAT OF SAN MATEO BLVD. NE AND SAN DIEGO AVE. NE. ELEVATION = 5153.322 NAVD88.

OFF-SITE: APPROXIMATELY 2 ACRES (UNDEVELOPED COMMERCIAL PROPERTY - SAME OWNER) EAST OF THE PROPERTY CURRENTLY DRAINS TOWARDS THE PROPERTY. AN EARTHEN BERM WILL BE CONSTRUCTED ALONG THE EAST PROPERTY LINE TO DIVERT THESE FLOWS TO VENICE BLVD. TO CONTINUE ALONG THEIR HISTORIC FLOWPATH.

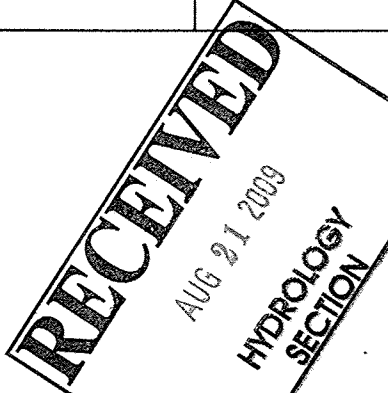
FLOOD HAZARD: PER BERNALILLO COUNTY FIRM MAP #129, THE SITE IS LOCATED WITHIN FLOODZONE 'X' DESIGNATED AS AREAS DETERMINED TO BE OUTSIDE 500-YEAR FLOODPLAIN. DRAINAGE PLAN CONCEPT: ALL SITE FLOW WILL FREE DISCHARGE TO THE ADJACENT PUBLIC STREETS AS FOLLOWS: APPROXIMATELY 30% WILL DRAIN WEST TO SAN MATEO BLVD. VIA THE PROPOSED ACCESS DRIVE. THIS FLOW WILL TRAVEL A SHORT DISTANCE NORTH AND ENTER THE EXISTING STORM DRAIN SYSTEM. APPROX. 20% WILL DRAIN OUT THE NORTH EAST ACCESS DRIVE TO VENICE BLVD. AND THE REMAINING 50% WILL DRAIN TO THE NORTHWEST CORNER OF THE PROPERTY TO PASS TO VENICE BLVD. VIA A PROPOSED CONCRETE SIDEWALK CULVERT. ALL DISCHARGE TO VENICE BLVD. WILL CONTINUE WEST A SHORT DISTANCE AND ENTER THE EXISTING STORM DRAIN SYSTEM.

FORMER LANDFILL: THE SUBJECT PROPERTY IS LOCATED ON A FORMER LANDFILL. DUE TO THE SUBJECT PROPERTY BEING ON A FORMER LANDFILL, CERTAIN PRECAUTIONARY MEASURES MAY NEED TO BE TAKEN TO ENSURE THE HEALTH AND SAFETY OF THE PUBLIC. RECOMMENDATIONS MADE BY A PROFESSIONAL ENGINEER WITH EXPERTISE IN LANDFILLS AND LANDFILL GAS ISSUES (AS REQUIRED BY THE MOST CURRENT VERSION OF THE INTERIM GUIDELINES FOR DEVELOPMENT WITHIN CITY DESIGNATED LANDFILL BUFFER ZONES) SHALL BE CONSULTED.

### S.O.19 : NOTICE TO CONTRACTORS

1. AN EXCAVATION / CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN THE CITY RIGHT-OF-WAY.
2. ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED, EXCEPT AS OTHERWISE STATED OR PROVIDED FOR HEREON, SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1986 EDITION AS REVISED THROUGH UPDATE #7 AMENDMENT 1.
3. TWO WORKING DAYS PRIOR TO ANY EXCAVATION, THE CONTRACTOR MUST CONTACT NEW MEXICO ONE CALL SYSTEM (260-1990) FOR LOCATION OF EXISTING UTILITIES.
4. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL CONSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
5. BACKFILL COMPACTION SHALL BE ACCORDING TO TRAFFIC / STREET USE.
6. MAINTENANCE OF THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY SERVED.
7. WORK ON ARTERIAL STREETS SHALL BE PERFORMED ON A 24-HOUR BASIS.

APPROVAL	NAME	DATE
INSPECTOR		



FRED C. ARFMAN  
NEW MEXICO  
7322  
08/19/09

**ISAACSON & ARFMAN, P.A.**  
Consulting Engineering Associates  
128 Monroe Street N.E.  
Albuquerque, New Mexico 87108  
Ph: 505-268-8828 Fax: 505-268-2632  
1666 CG-101.dwg Aug 19, 2009

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**OFFICE / WAREHOUSE DEVELOPMENT**  
**9550 SAN MATEO N.E.**

**Mechenbier Const.**

### GRADING AND DRAINAGE PLAN

Date:	No.	Revision	Date:	Job No.
7-27-09				1666
Drawn By:				CG-102
BUB				
Ckd By:				SH. OF
FCA				