

CITY OF ALBUQUERQUE



July 8, 2011

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

**Re: Ingersoll Rand Trane
Grading and Drainage Plan
Engineer's Stamp dated 6-28-11 (B18/D005)**

Dear Mr. Arfman,

Based upon the information provided in your submittal received 6-28-11, the above referenced plan is approved for Building Permit and SO-19. This project requires a National Pollutant Discharge Elimination System (NPDES) permit for storm water discharge and a Topsoil Disturbance Permit since it is disturbing $\frac{3}{4}$ of an acre or more. Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology.

To obtain a temporary or permanent CO the connection to the inlet must be inspected and accepted. Contact Martin Pacheco, 235-8016, to schedule an inspection. Also, prior to Certificate of Occupancy release, Engineer Certification per the DPM checklist will be required

Hydrology is requesting that all proposed landscape areas are depressed to retain/infiltrate the moisture that falls on them.

If you have any questions, you can contact me at 924-3986 or Rudy Rael at 924-3977.

Sincerely,

Curtis Cherne, P.E., CFM.
Principal Engineer, Planning Dept.
Development and Building Services

C: Antoinette Baldonado, Excavation and Barricading
Martin Pacheco, Street/Storm Drain Maintenance
Kathy Verhage, DMD
File

DRAINAGE AND TRANSPORTATION INFORMATION SHEET
(Rev. 12/05)

PROJECT TITLE: Ingersoll Rand Office/Warehouse ZONE MAP/DRG. FILE# B-18 / D005
DRB#: _____ EPC#: _____ WORK ORDER#: _____

LEGAL DESCRIPTION: A Portion of Lot 28-A, Block 5, Tract A, Unit 8, NAA
CITY ADDRESS: 5501 SAN DIEGO AVE NE, ALBU. NM

ENGINEERING FIRM: ISAACSON AND ARFMAN CONTACT: FRED C. ARFMAN
ADDRESS: 128 MONROE N.E. PHONE: 268-8828
CITY, STATE: ALBUQUERQUE, NM ZIP CODE: 87108

OWNER: INGERSOLL RAND (TRANE) CONTACT: DON SCHAEDLBAUER
ADDRESS: _____ PHONE: _____
CITY, STATE: _____ ZIP CODE: _____

ARCHITECT: Claudio Vigil Architects CONTACT: Sandy Fairchild
ADDRESS: _____ PHONE: 842-1113
CITY, STATE: _____ ZIP CODE: _____

SURVEYOR: Surv-Tek CONTACT: Russ Hugg
ADDRESS: _____ PHONE: 897-3366
CITY, STATE: _____ ZIP CODE: _____

CONTRACTOR: REID ASSOCIATES CONTACT: BILL SMITH
ADDRESS: 6300 RIVERSIDE PARK LN. PHONE: 891-2528
CITY, STATE: ALBU. NM 87120 ZIP CODE: 87120

TYPE OF SUBMITTAL:

- ☐ DRAINAGE REPORT
- ☐ DRAINAGE PLAN 1st SUBMITTAL
- ☒ DRAINAGE PLAN RESUBMITTAL
- ☐ CONCEPTUAL G & D PLAN
- ☒ GRADING PLAN
- ☐ EROSION CONTROL PLAN
- ☐ ENGINEER'S CERT (HYDROLOGY)
- ☐ CLOMR/LOMR
- ☐ TRAFFIC CIRCULATION LAYOUT
- ☐ ENGINEER/ARCHITECT CERT (TCL)
- ☐ ENGINEER/ARCHITECT CERT (DRB S.P.)
- ☐ ENGINEER/ARCHITECT CERT (AA)
- ☐ OTHER (SPECIFY) _____

CHECK TYPE OF APPROVAL SOUGHT:

- ☐ SIA/FINANCIAL GUARANTEE RELEASE
- ☐ RELIMINARY PLAT APPROVAL
- ☐ S. DEV. PLAN FOR SUB'D APPROVAL
- ☐ S. DEV. FOR BLDG. PERMIT APPROVAL
- ☐ SECTOR PLAN APPROVAL
- ☐ FINAL PLAT APPROVAL
- ☐ UNDATION PERMIT APPROVAL
- ☒ BUILDING PERMIT APPROVAL
- ☐ CRTIFICATE OF OCCUPANCY (PERM)
- ☐ CRTIFICATE OF OCCUPANCY (TEMP)
- ☐ GADING PERMIT APPROVAL
- ☐ PAVING PERMIT APPROVAL
- ☐ WORK ORDER APPROVAL
- ☐ OTHER (SPECIFY) _____

WAS A PRE-DESIGN CONFERENCE ATTENDED:

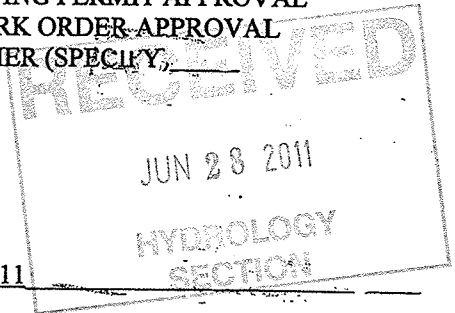
- ☐ YES
- ☐ NO
- ☐ COPY PROVIDED

SUBMITTED BY: Fred C. Arfman
Isaacson & Arfman, P.A.

DATE: 06-28-11

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location and scope to the proposed development define the degree of drainage detail. One or more of the following levels of submittal may be required based on the following:

1. **Conceptual Grading and Drainage Plan:** Required for approval of Site Development Plans greater than five (5) acres and Sector Plans.
2. **Drainage Plans:** Required for building permits, grading permits, paving permits and site plans less than five (5) acres.
3. **Drainage Report:** Required for subdivision containing more than ten (10) lots or constituting five (5) acres or more.



CALCULATIONS

CALCULATIONS: Ingersoll Rand Building : 3/10/11			
Based on Drainage Design Criteria for City of Albuquerque			
Section 22.2, DPM, Vol 2, dated Jan., 1993			
ON-SITE CALCULATIONS: 100-YEAR, 6-HOUR STORM			
AREA OF SITE:	69634.3921	SF	= 1.6
HISTORIC FLOWS:			

	Treatment SF	%	
Area A	17408.59803	25%	
Area B	34817.19605	50%	
Area C	0	0%	
Area D	17408.59803	25%	
Total Area	69634.3921	100%	

	Treatment SF	%	EXCESS PRECIP:
Area A	0	0%	Precip. Zone 3
Area B	0	0%	E _A = 0.66
Area C	10445	15%	E _B = 0.92
Area D	59189	85%	E _C = 1.29
Total Area	69634.3921	100%	E _D = 2.36

On-Site Weighted Excess Precipitation (100-Year, 6-Hour Storm)

$$\text{Weighted E} = \frac{E_A A_A + E_B A_B + E_C A_C + E_D A_D}{A_A + A_B + A_C + A_D}$$

$$\text{Historic I} = 1.22 \text{ in.} \quad \text{Developed E} = 2.20 \text{ in.}$$

$$\text{On-Site Volume of Runoff: } V_{360} = \frac{E^* A}{12}$$

$$\text{Historic } V_3 = 7050 \text{ CF} \quad \text{Developed } V_{360} = 12763 \text{ CF}$$

$$\text{On-Site Peak Discharge Rate: } Q_p = Q_{pA} A_A + Q_{pB} A_B + Q_{pC} A_C + Q_{pD} A_D / 43,560$$

For Precipitation Zone 3

$$Q_{pA} = 1.87 \quad Q_{pC} = 3.45$$

$$Q_{pB} = 2.60 \quad Q_{pD} = 5.02$$

$$\text{Historic } Q_p = 4.8 \text{ CFS} \quad \text{Developed } Q_p = 7.6 \text{ CFS}$$

BASIN NO.	A1	DESCRIPTION	
-----------	----	-------------	--

Area of basin flows = 6523 SF

The following calculations are based on Treatment areas as shown in table to the right

Sub-basin Weighted Excess Precipitation (see formula above)

$$\text{Weighted E} = 2.20 \text{ in.}$$

$$\text{Sub-basin Volume of Runoff (see formula above)}$$

$$V_{360} = 1196 \text{ CF}$$

$$\text{Sub-basin Peak Discharge Rate: (see formula above)}$$

$$Q_p = 0.7 \text{ cfs}$$

BASIN NO.	A2	DESCRIPTION	
-----------	----	-------------	--

Area of basin flows = 25431 SF

The following calculations are based on Treatment areas as shown in table to the right

Sub-basin Weighted Excess Precipitation (see formula above)

$$\text{Weighted E} = 2.20 \text{ in.}$$

$$\text{Sub-basin Volume of Runoff (see formula above)}$$

$$V_{360} = 4661 \text{ CF}$$

$$\text{Sub-basin Peak Discharge Rate: (see formula above)}$$

$$Q_p = 2.8 \text{ cfs}$$

BASIN NO.	A3	DESCRIPTION	
-----------	----	-------------	--

Area of basin flows = 22395 SF

The following calculations are based on Treatment areas as shown in table to the right

Sub-basin Weighted Excess Precipitation (see formula above)

$$\text{Weighted E} = 2.20 \text{ in.}$$

$$\text{Sub-basin Volume of Runoff (see formula above)}$$

$$V_{360} = 4105 \text{ CF}$$

$$\text{Sub-basin Peak Discharge Rate: (see formula above)}$$

$$Q_p = 2.5 \text{ cfs}$$

BASIN NO.	B	DESCRIPTION	
-----------	---	-------------	--

Area of basin flows = 12669 SF

The following calculations are based on Treatment areas as shown in table to the right

Sub-basin Weighted Excess Precipitation (see formula above)

$$\text{Weighted E} = 2.20 \text{ in.}$$

$$\text{Sub-basin Volume of Runoff (see formula above)}$$

$$V_{360} = 2322 \text{ CF}$$

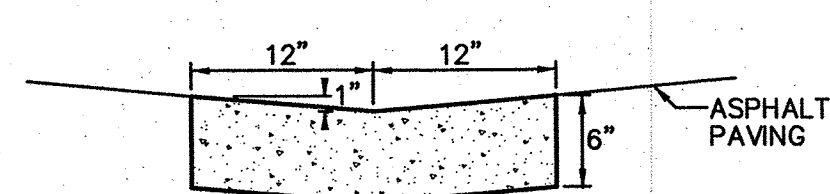
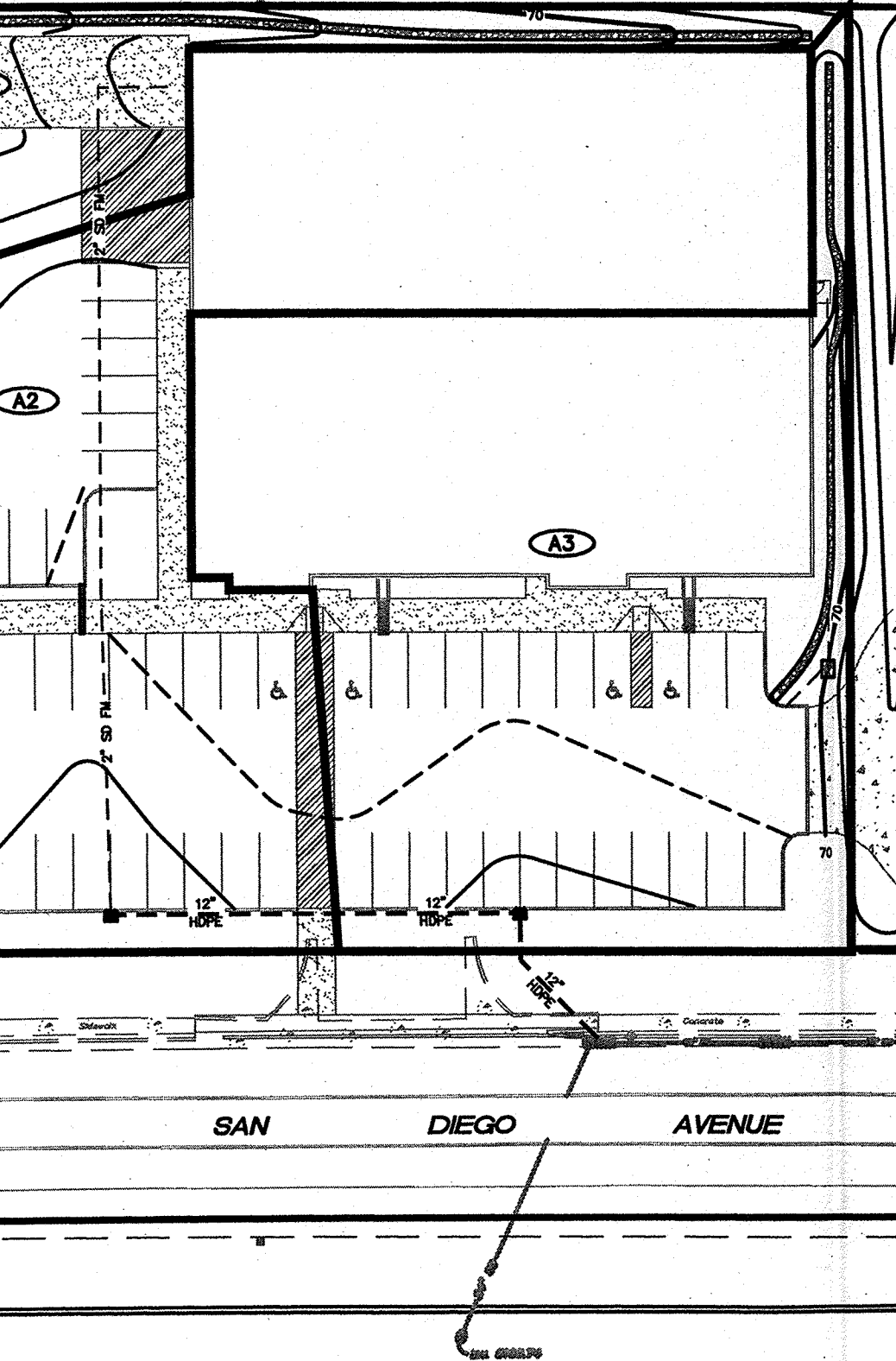
$$\text{Sub-basin Peak Discharge Rate: (see formula above)}$$

$$Q_p = 1.4 \text{ cfs}$$

BASIN MAP

BLOCK 5, TRACT A, UNIT B
NORTH ALBUQUERQUE ACRES

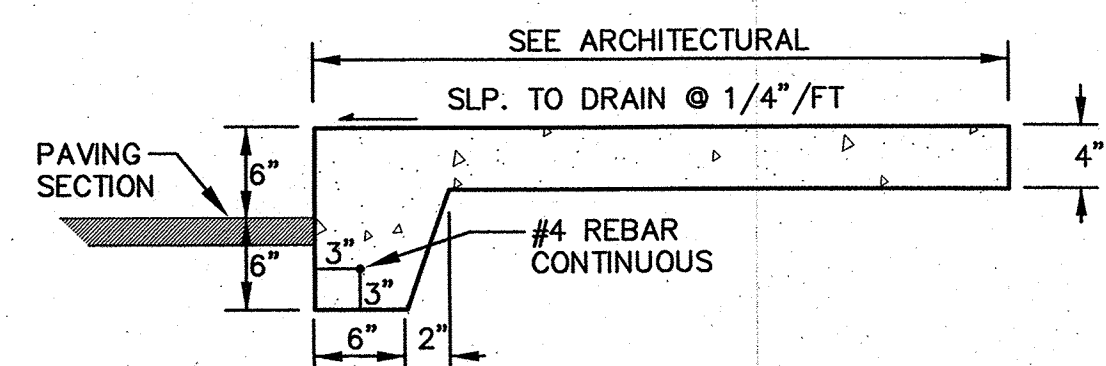
LOT 5
BLOCK 5, TRACT A, UNIT B
NORTH ALBUQUERQUE ACRES



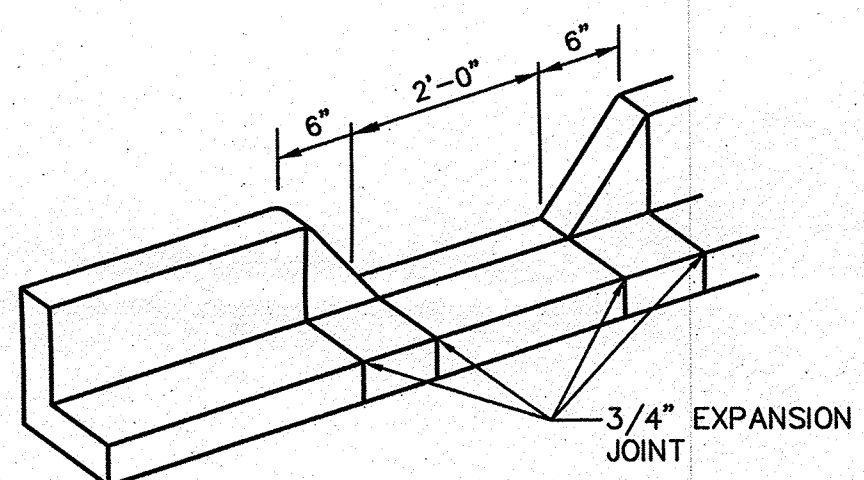
GENERAL NOTES

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

A CONCRETE ALLEY GUTTER N.T.S.



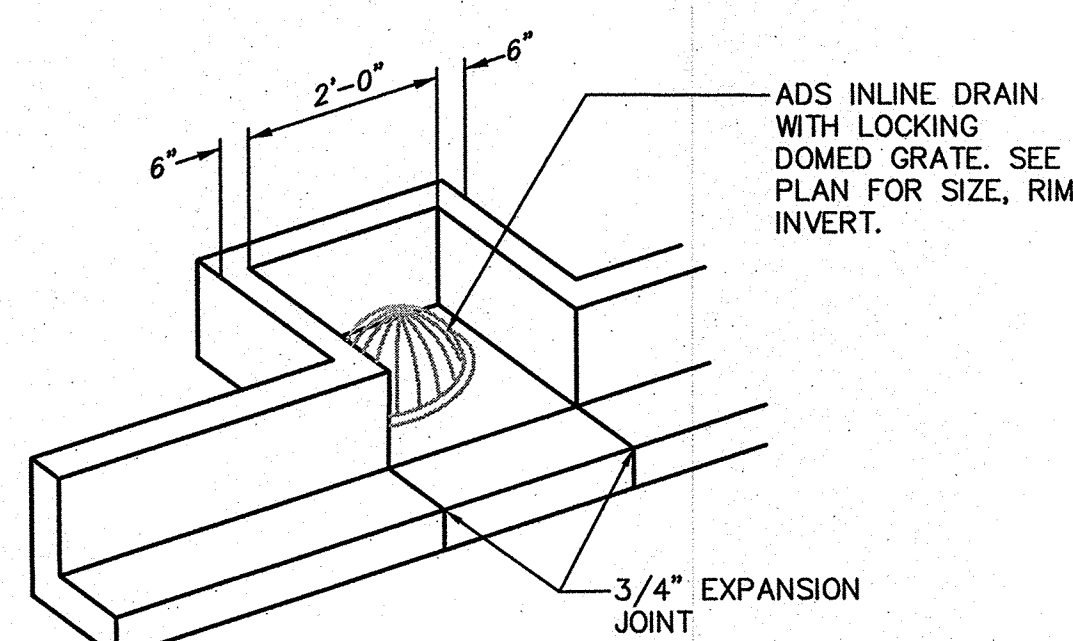
B TURNED DOWN WALK N.T.S.



GENERAL NOTES

1. EDGES SHOULD BE REMOVED WITH 3/8" EDGING TOOL

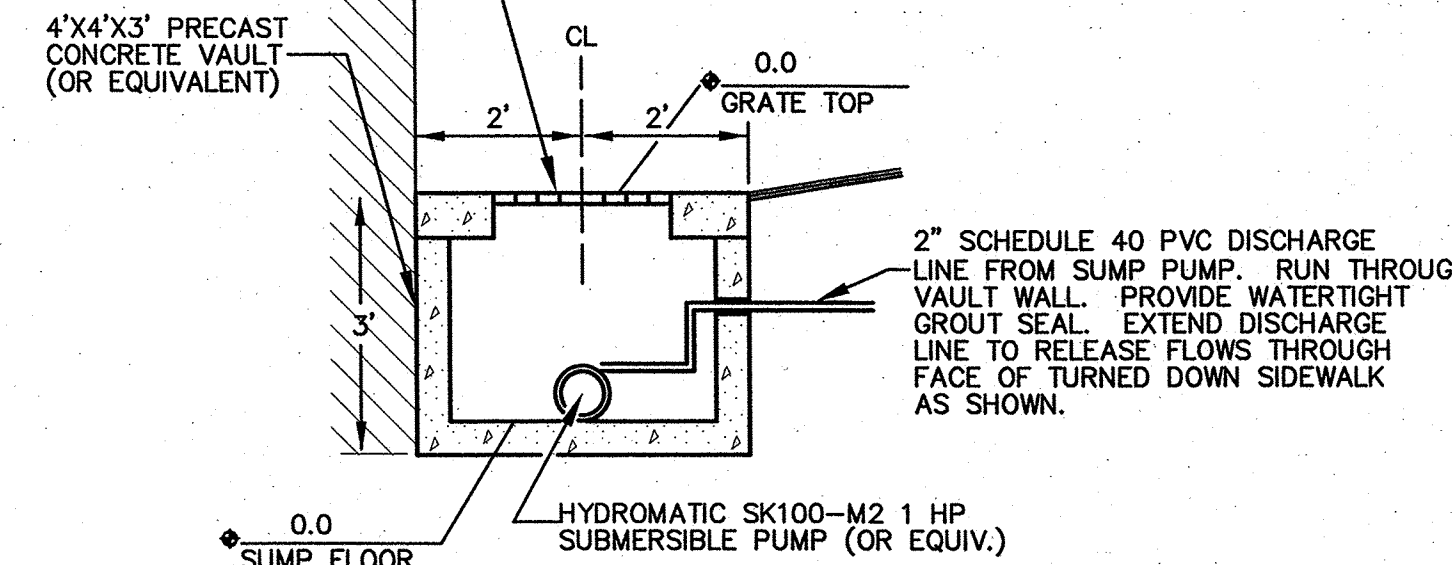
C CURB OPENING N.T.S.



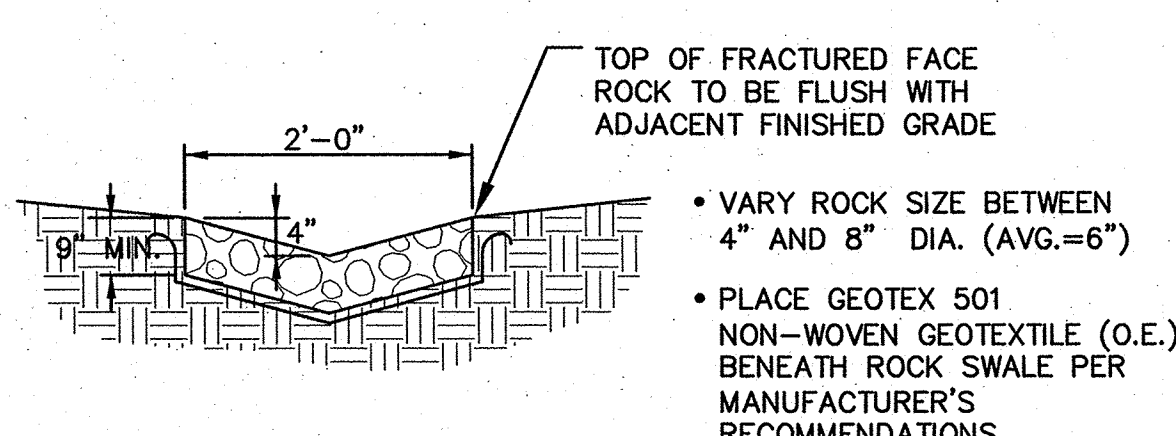
GENERAL NOTES

1. EDGES SHOULD BE REMOVED WITH 3/8" EDGING TOOL

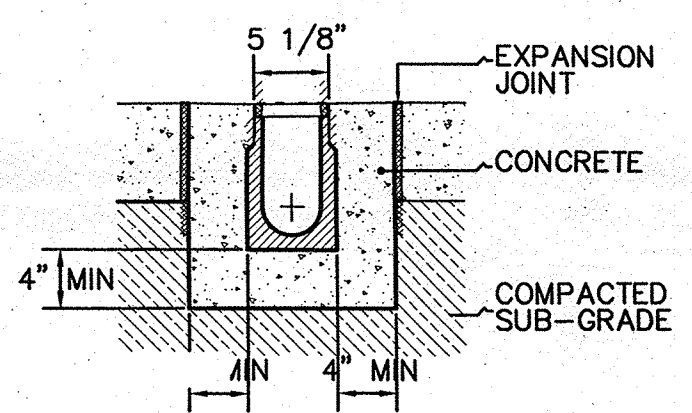
D CURB OPENING AT INLET N.T.S.



E LOADING RAMP SUMP PUMP N.T.S.

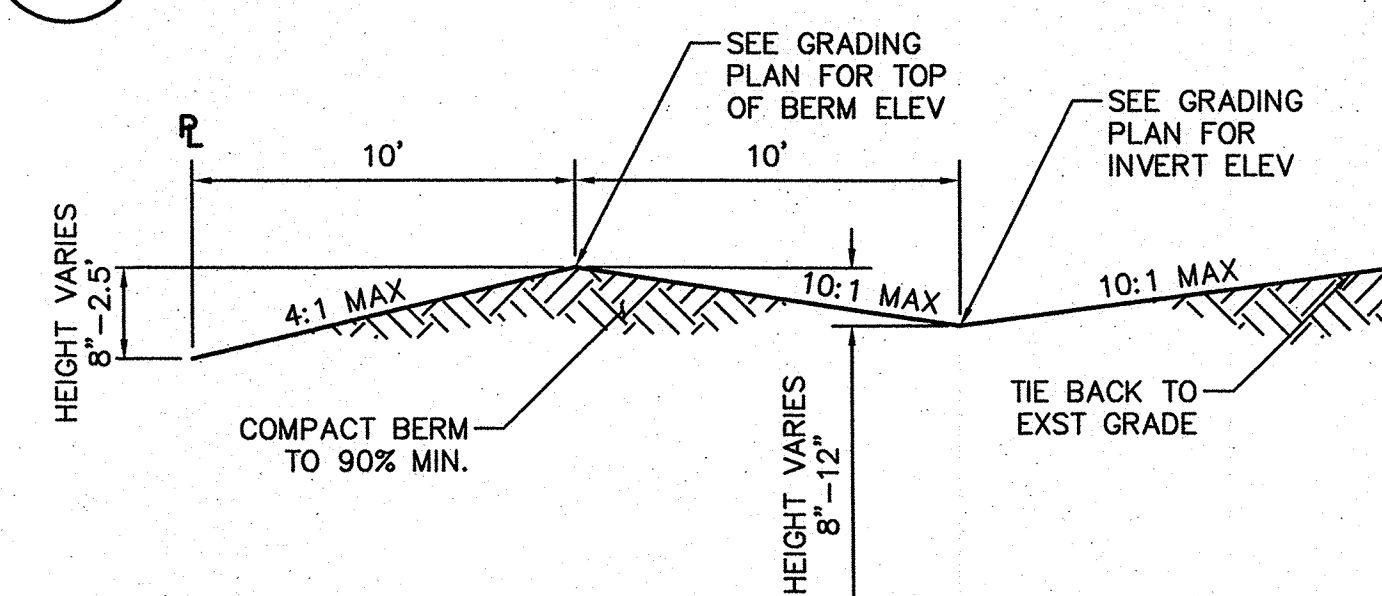


F RIP-RAP SWALE N.T.S.

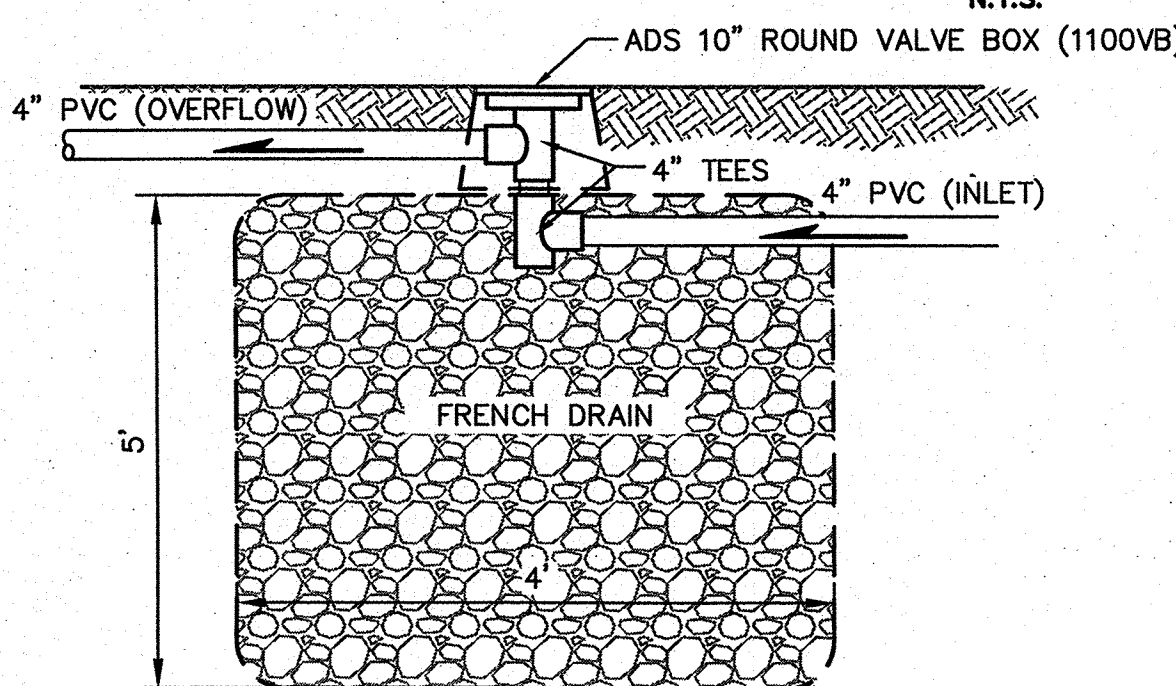


ACO-DRAIN K100S SIDEWALK TRENCH DRAIN (O.A.E.) WITH PEDESTRIAN GRATE. INSTALL PER MANUFACTURER'S SPECIFICATIONS.

G SIDEWALK TRENCH DRAIN N.T.S.



H OFFSITE SWALE N.T.S.



I FRENCH DRAIN CONNECTOR (INLET/OUTLET) CONNECTOR PIPING N.T.S.

GENERAL NOTES

- A. COORDINATE WORK WITH SITE PLAN, UTILITY PLAN, DEMOLITION PLAN, AND LANDSCAPE PLAN.
- B. ALL TRASH, DEBRIS, & SURFACE VEGETATION SHALL BE CLEARED AND LEGALLY DISPOSED OF OFFSITE.
- C. ALL SUBGRADE, OVEREXCAVATION, AND FILL SHALL BE PLACED AND/OR COMPACTED PER THE GEOTECHNICAL REPORT AND CITY OF ALBUQUERQUE SPECIFICATIONS.

- D. FINAL GRADES SHOWN REPRESENT TOP OF FINISH MATERIAL (I.E. TOP OF CONCRETE, TOP OF CONCRETE 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 FINISH MATERIAL THICKNESSES.

- E. UNIFORMLY GRADE AREAS WITHIN LIMITS OF GRADING AS SHOWN ON PLAN. COMPACT WITH UNIFORM SLOPES BETWEEN POINTS WHERE ELEVATIONS ARE INDICATED.

- F. MAXIMUM SLOPES SHALL BE 3:1. MINIMUM SLOPES SHALL BE 1% UNLESS OTHERWISE NOTED.

- G. EXISTING UTILITY LINES ARE SHOWN IN AN APPROXIMATE MANNER ONLY AND MAY BE INCOMPLETE OR OBSOLETE. SUCH LINES MAY OR MAY NOT EXIST WHERE SHOWN OR NOT SHOWN. ALL UTILITIES SHOULD BE FIELD VERIFIED AND LOCATED BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION. 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.

- H. OWNER WILL PROVIDE SOIL TESTING AND INSPECTION SERVICES DURING EARTHWORK OPERATIONS. CONTRACTOR SHALL ALLOW TESTING LABS TO INSPECT AND APPROVE COMPACTED SUBGRADES AND FILL LAYERS BEFORE FURTHER CONSTRUCTION WORK IS DONE. SHOULD COMPACTION TESTS INDICATE INADEQUATE DENSITY, CONTRACTOR SHALL PROVIDE ADDITIONAL COMPACTION AND TESTING AT THE CONTRACTOR'S SOLE EXPENSE.

- I. OWNER HAS ESTABLISHED PROPERTY BOUNDARY CORNERS. CONTRACTOR SHALL PROVIDE ALL OTHER CONSTRUCTION STAKING. CONTRACTOR SHALL LOCATE AND PRESERVE ALL BOUNDARY CORNERS AND REPLACE ANY LOST OR DISTURBED CORNERS AT CONTRACTOR'S SOLE EXPENSE.

- J. THE ENVIRONMENTAL PROTECTION AGENCY AND THE CITY OF ALBUQUERQUE REQUIRE A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) FOR PROJECTS WHERE CONSTRUCTION ACTIVITIES (INCLUDING OTHER LAND-DISTURBING ACTIVITIES) DISTURB ONE ACRE OR MORE (BY OTHERS). A SWPPP MUST BE INCLUDED WITH THE CONTRACTOR'S SUBMITTAL FOR A ROUGH GRADING, PAVING OR BUILDING PERMIT. THE SWPPP MUST BE IN PDF OR MS WORD FORMAT ON A CD.

- K. ADJUST RIMS OF EXISTING UTILITY FEATURES AS NECESSARY TO MATCH NEW GRADES, TYPICAL.

- L. ALL NEW PAVEMENT SURFACES SHALL BE CONSTRUCTED WITH POSITIVE SLOPE AWAY FROM BUILDINGS AND POSITIVE SLOPE TOWARD EXISTING AND/OR PROPOSED DRAINAGE PATHS. WHERE NEW GRADES ARE SHOWN AS 'MATCH' OR '±', TRANSITIONS SHALL BE SMOOTH AND LEVEL.

- M. ALL FRACTURED FACE ROCK (F.F. ROCK) TO BE 6" AVG. DIA. ANGULAR FACED ROCK PLACED OVER GEOTEX 50 NON-WOVEN GEOTEXTILE (O.E.). NOTE: PERMANENT TURF REINFORCEMENT MATERIAL (LANDLOK TRM 450 O.E.) MAY BE SUBSTITUTED AT ALL AREAS REFERENCING F.F. ROCK EROSION PROTECTION.

- N. SIDESLOPES STEEPER THAN 3:1 BUT LESS THAN 2:1 MUST HAVE PERMANENT EROSION CONTROL (F.F. ROCK OR LANDLOK TRM 450 O.E.) INSTALLED, TYPICAL. NO SLOPE SHALL BE STEEPER THAN 2:1.

- O. 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 DATA

LEGAL DESCRIPTION: A PORTION OF LOT 28-A, BLOCK 5, TRACT A, UNIT B, NORTH ALBUQUERQUE ACRES. (PROPOSED LOT 28-A-1)

SITE AREA: 1.5948 AC.

FLOOD ZONE: NO PORTION OF THIS SITE IS WITHIN THE 100-YEAR FLOODPLAIN AS DESIGNATED ON FEMA FIRM MAP #35001C0129G DATED SEPTEMBER 26, 2008.

ENGINEER: GENNY DONART
ISAACSON & ARFMAN, P.A.
128 MONROE ST NE, ABQ. NM 87108
PHONE: (505) 268-8828

SURVEYOR: SURV-TEK, INC.
9384 VALLEY VIEW DR. NW
ALBUQUERQUE, NM 87114
PHONE: (505) 897-3366
ATTN: RUSS HUGG

BENCHMARK: ACS MONUMENT "I-25-11"
ELEV = 5609.62 (NAVD 88)

EXISTING CONDITIONS: THIS SITE WAS PREVIOUSLY DEVELOPED AS THE PRAXAIR PLANT, AN INDUSTRIAL FACILITY. IT HAD APPROXIMATELY 25% IMPERVIOUS AREA, AND DISCHARGED ABOUT 5 CFS, WITH SOME DRAINING TOWARDS THE EXISTING PROPERTY TO THE WEST, AND THE REMAINDER DRAINING TO SAN DIEGO AVE TO THE SOUTH. THE SITE SLOPES AT APPROXIMATELY 3% SLOPE DOWNHILL TO THE WEST, WITH VERY LITTLE NORTH-SOUTH SLOPE.

AN EXISTING STORM DRAIN INLET IN THE EASTERLY PORTION OF SAN DIEGO AVE CAPTURES FLOWS, AND DIRECTS THEM TO THE NORTH LA CUEVA ARROYO ON THE SOUTH SIDE OF THE STREET.

PROPOSED CONDITIONS: A NEW XXX SF COMMERCIAL BUILDING IS PROPOSED FOR THE SITE. THE ENTIRE SITE WILL GENERATE 7.6 CFS. 1.4 CFS WILL FREE DISCHARGE TO SAN DIEGO AVE, WITH 6.0 CFS CAPTURED IN STORM DRAINS, AND DIRECTED TO THE EXISTING INLET IN SAN DIEGO AVE.

BASIN A1 IS DIRECTED TO THE LOADING DOCK. A SUMP PUMP AT THE LOADING DOCK DISCHARGES 0.7 CFS TO THE STORM DRAIN AS PART OF THE TOTAL 6.0 CFS SENT TO THE EXISTING INLET.

A BERM ALONG THE EASTERN EDGE OF THE PROPERTY WILL RE-DIRECT OFFSITE FLOWS.



CLAUDIO VIGIL
ARCHITECTS

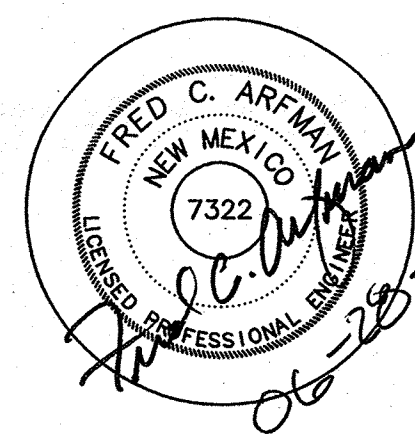
1801 Rio Grande Boulevard, N.W.
Albuquerque, New Mexico
Phone: (505) 842-1113
Fax: (505) 842-1330

OWNERSHIP OF INSTRUMENTS OF SERVICE
All design concepts, details, specifications, plans, computer files, field data, notes and other documents and instruments prepared by Ambysis P.C., D.B.A. Claudio Vigil Architects, as instruments of service shall remain the property of Ambysis P.C., Claudio Vigil Architects, P.C. Architect shall retain all common law, statutory and other reserved rights, including the copyright thereto.

CONSULTANTS

ISAACSON & ARFMAN, P.A.
Consulting Engineering Associates
128 Monroe Street N.E.
Albuquerque, New Mexico 87108
Ph. 505-268-8828 Fax. 505-268-2032
1742 CG-501.dwg Jun 27, 2011

PROFESSIONAL SEAL



INGERSOLL
RAND
TRANE
PROPOSED
NEW BUILDING
5501 SAN DIEGO AVENUE, N.E.
ALBUQUERQUE, NEW MEXICO

MARK	DATE	DESCRIPTION
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-

PROJECT NUMBER: 09225
DRAWING FILE: INGERSOLLRAND-SP5
DRAWN BY: SMF
CHECK BY: CAV
COPYRIGHT: CLAUDIO VIGIL ARCHITECTS 2011
DATE: JANUARY 21, 2011

SHEET TITLE
GRADING DETAILS
& CALCULATIONS

SHEET NUMBER
CG-501