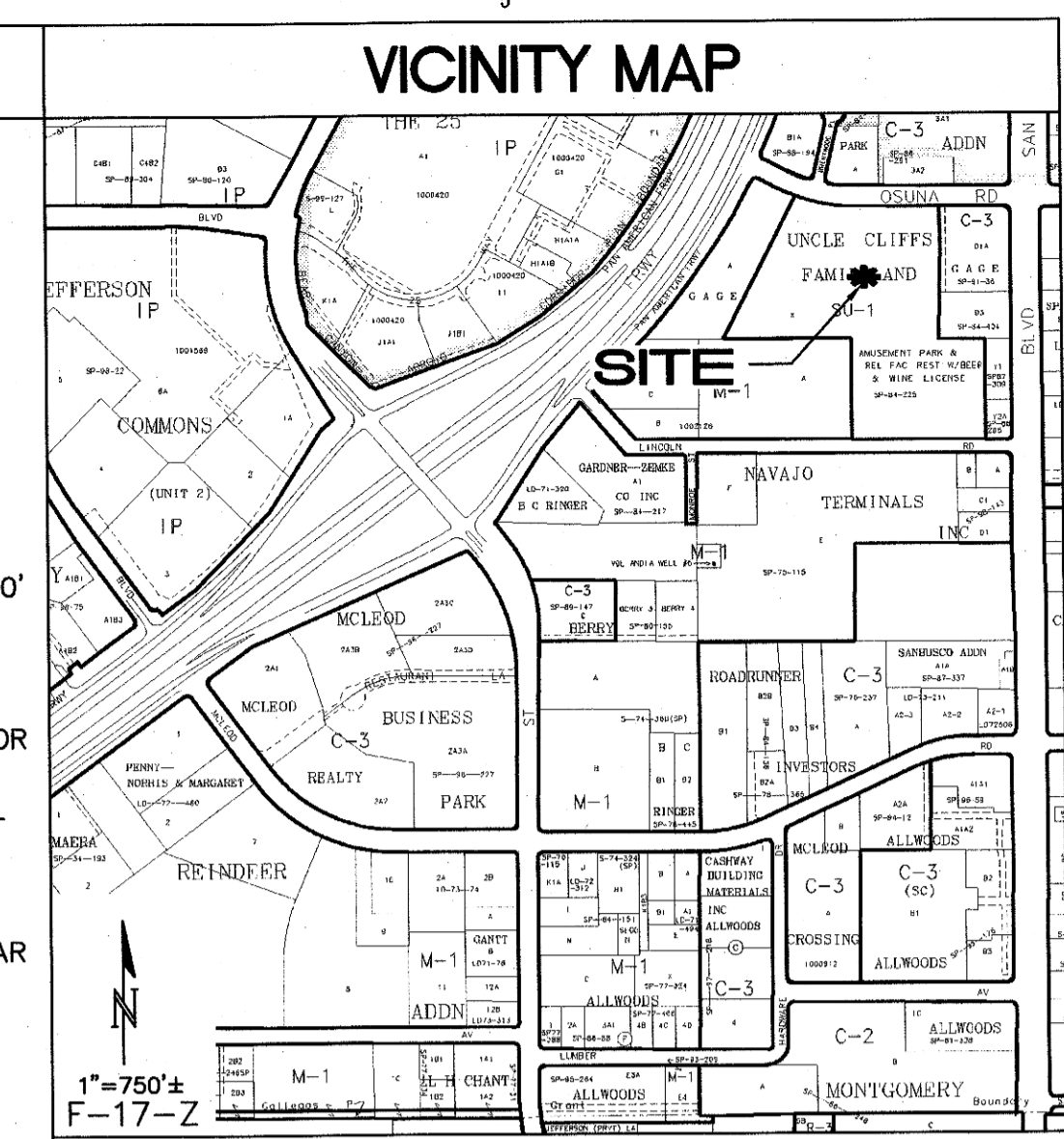




**Cliff's Amusement Park  
New Water Play Structure**  
4800 Osuna NE  
Albuquerque, New Mexico 87109



**CIVIL ENGINEER**

**ISAACSON & ARFMAN, P.A.**  
Consulting Engineering Associates  
128 Monroe Street N.E.  
Albuquerque, New Mexico 87108  
Ph. 505-268-8828 www.iacivil.com  
1888 CG-101.dwg Jan 05, 2012

**PROJECT DATA**

PROPERTY: THE SITE IS PART OF A DEVELOPED COMMERCIAL PROPERTY LOCATED WITHIN C.O.A. VICINITY MAP F-17. THE PROPOSED CONSTRUCTION IS AN INTERNAL PORTION OF CLIFF'S AMUSEMENT PARK BOUND ON ALL SIDES BY VARIOUS PARK AREAS. PAVED PARKING TO THE NORTH AND WEST, A PARTY PAVILION TO THE EAST AND ADDITIONAL AMUSEMENT PARK RIDES TO THE SOUTH.

PROPOSED IMPROVEMENTS: THE EXISTING WATER PLAY AREA AND TWO RIDES, TICKET BOOTH, CONCESSION STAND AND ASSOCIATED SITE PAVING AND LANDSCAPING ARE TO BE REMOVED. A NEW, LARGER WATER PLAY AREA, TICKET BOOTH, CONCESSION STAND, PUMP HOUSE, ASSOCIATED SITE PAVING AND LANDSCAPING WILL BE CONSTRUCTED.

LEGAL: A PORTION OF CLIFF'S AMUSEMENT PARK, ALBUQUERQUE, N.M. ADDRESS: 4800 OSUNA RD. NE, ALBUQUERQUE, NM 87109

BENCHMARK: BENCHMARK: CITY OF ALBUQUERQUE 15-E17. A METALLIC DISK ON CONCRETE CURB, NNW QUADRANT OF SAN MATEO & ACADEMY NE ELEVATION: 5208.108 NAVD88.

OFF-SITE: NO OFF-SITE DRAINAGE AFFECTS THIS PROPERTY.

FLOOD HAZARD: PER BERNALILLO COUNTY FIRM MAP #35001C0139G, DATED SEPTEMBER 26, 2008, THE SITE IS LOCATED WITHIN FLOODZONE 'X' (UNSHADED) DESIGNATED AS FLOOD INSURANCE RATE ZONES FOR AREAS OUTSIDE THE 0.2-PERCENT-ANNUAL-CHANCE FLOODPLAIN.

DRAINAGE PLAN CONCEPT:  
THE SITE DEMOLITION AND NEW CONSTRUCTION WILL NOT SIGNIFICANTLY ALTER EXISTING DRAINAGE PATTERNS. SITE DISCHARGE WILL CONTINUE TO PASS TO THE NORTH AND WEST PARKING AREAS TO CONTINUE ALONG HISTORIC FLOWPATHS. A MINOR DECREASE IN OVERALL SITE DISCHARGE IS EXPECTED DUE TO THE ENLARGING OF THE SELF-PONDING WATER PLAY AREAS AND THE REMOVAL / REPLACEMENT OF LANDSCAPING WHICH WILL INCLUDE SHALLOW WATER HARVESTING.

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128 MONROE ST NE, ABQ, NM 87108  
PHONE: (505) 268-8828

SURVEYOR: RON FORSTBAUER, NMP  
FORSTBAUER SURVEYING CO, L.L.C.  
4116 LOMAS BOULEVARD NE  
ALBUQUERQUE, NEW MEXICO 87110  
PHONE: (505) 268-2112

**LEGEND**

- 5199 — PROPOSED CONTOUR - 1' INCREMENT
- - - 99.5 - - PROPOSED CONTOUR - 0.5' INCREMENT
- - - 99.1 - - PROPOSED CONTOUR - 0.1' INCREMENT
- 78.3 ● PROPOSED SPOT ELEVATION
- FLOW ARROW
- FF=XXXXXX FINISH FLOOR ELEVATION
- 97.8 ● EXISTING ELEVATION (±) OF TREE TO BE PROTECTED. SEE LANDSCAPE PLAN FOR ADDITIONAL INFORMATION.
- ===== PROPOSED RETAINING WALL
- ~~~~~ GRADE BREAK

REVISIONS


DRAWN BY: BJB  
REVIEWED BY: GLD  
DATE: 12/23/2011  
PROJECT NO.: 11-0019  
DRAWING NAME: GRADING AND DRAINAGE PLAN

- KEYED NOTES**
- EXISTING PAVEMENT TO REMAIN. SAWCUT / REMOVE / REPLACE AS NECESSARY TO ENSURE TRANSITION BETWEEN EXISTING AND PROPOSED IS SMOOTH AND POSITIVE DRAINAGE IS UNIMPEDED.
  - CONSTRUCT NEW PAVING AT ELEVATIONS SHOWN. SEE ARCHITECTURAL FOR PAVEMENT TYPE, EXTENTS, SECTIONS, LAYOUT, ETC.
  - CONSTRUCT 6" HIGH CURB THIS AREA. SEE ARCHITECTURAL FOR SITE DETAILS.
  - PROVIDE SHALLOW DEPRESSION (4" TO 6" DEEP) WITHIN LANDSCAPING TO CAPTURE STORM WATER FOR WATER HARVESTING. NOTE: DO NOT DEPRESS LANDSCAPING WITHIN 10' OF ANY STRUCTURE.
  - CONSTRUCT NEW CONCRETE WALK. WHERE ADJACENT TO EXISTING CONCRETE WALK, MATCH EDGE OF EXISTING WALK. PROVIDE 2% CROSS SLOPE TO DRAIN. SEE ARCHITECTURAL FOR SITE DETAILS.
  - ALL ROOF DISCHARGE TO SHEETFLOW DIRECTLY TO PAVEMENT ON ALL SIDES OF BUILDINGS. OWNER TO PROVIDE EROSION PROTECTION AS NEEDED (SEE GENERAL NOTE H).
  - EXISTING COVERED SIDEWALK CULVERT. CONTRACTOR TO CLEAR ANY OBSTRUCTION TO DRAINAGE.
  - PROVIDE 12" WIDE CURB CUT AT PAVEMENT LOW POINT TO PASS FLOW TO LANDSCAPING. OWNER TO PROVIDE EROSION PROTECTION AS NEEDED (SEE GENERAL NOTE H).
  - LANDSCAPING THIS AREA TO INCLUDE SWALES TO DIRECT FLOW FROM CURB OPENING(S) TO EXISTING SIDEWALK CULVERT. (SEE GENERAL NOTE H)
  - CONSTRUCT STEPS TO ACHIEVE REQUIRED GRADE DIFFERENCE. SEE ARCHITECTURAL FOR DETAILS INCLUDING RAILING.
  - CONSTRUCT GARDEN WALL AROUND WATER PLAY AREA AS SHOWN TO ACHIEVE GRADE DIFFERENCE. MAX. 24" RETAINING. (DESIGN BY OTHERS).
  - CONSTRUCT RETAINING WALL (MAX. 4.5' RETAINING) TO ACHIEVE GRADE DIFFERENCE SHOWN. (DESIGN BY OTHERS). TOP OF RETAINING WALL = 97.5 TYP. SEE ARCHITECTURAL FOR ADDITIONAL HEIGHT / WALL / FENCE INFORMATION.
  - PROVIDE 24" WIDE X 6" HIGH (O.E.) OPENING IN RETAINING WALL AT FLOWLINE TO PASS FLOW TO CONCRETE CHANNEL.
  - SPOT ELEVATIONS AND CONTOURS SHOWN WITHIN PAVEMENT AREA REPRESENT TOP OF PAVEMENT. ADD 0.5' FOR ADJACENT TOP OF CURB ELEVATION.
  - CONSTRUCT 'U' SHAPED CONCRETE CHANNEL BETWEEN NEW BUILDING AND RETAINING WALL AT ELEVATIONS SHOWN. SEE DETAIL B THIS SHEET.
  - CONSTRUCT 2' WIDE (BOTTOM WIDTH) COVERED SIDEWALK CULVERT WITH STEEL PLATE TOP PER COA STD DWG #2236 TO PASS FLOW. SEE CAPACITY CALCULATIONS THIS SHEET.
  - GRADING AND DRAINAGE WITHIN THE WATER PLAY AREAS TO BE PROVIDED AS PART OF 'RIDE' CONSTRUCTION DOCUMENTS.
  - INSTALL ADS 12" DIA. DOME GRATE INLET WITHIN CONC. PAD. EXTEND OUTLET PIPE TO DISCHARGE DIRECTLY TO COVERED SIDEWALK CULVERT. PROVIDE WATER TIGHT CONNECTION TO COVERED SIDEWALK CULVERT. SEE DETAIL A THIS SHEET.

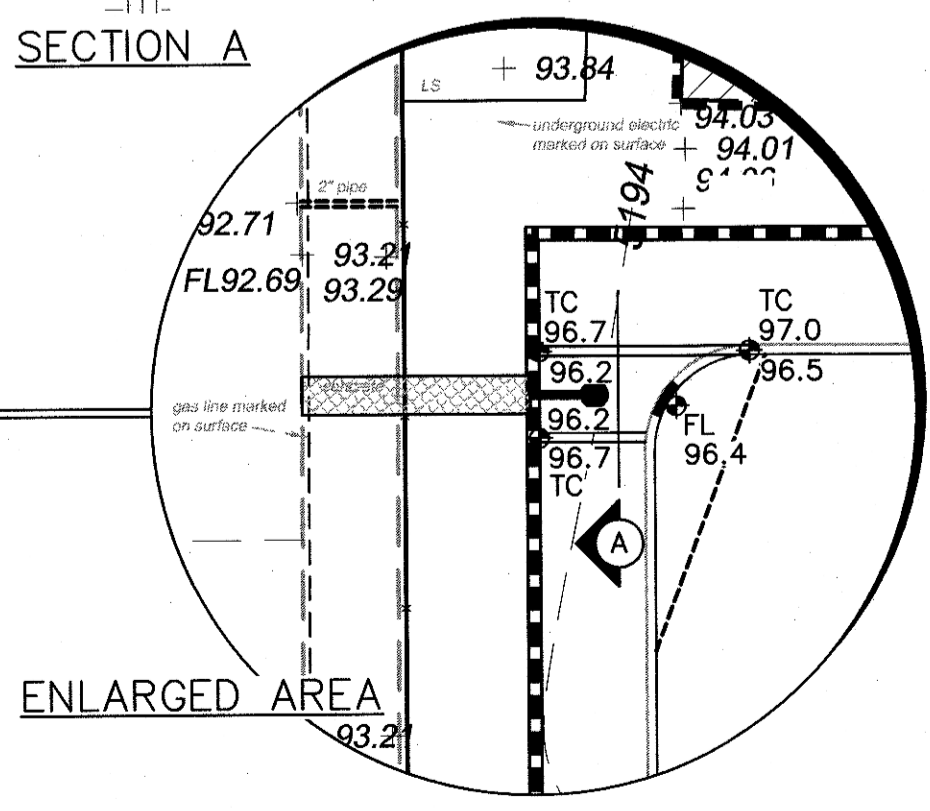
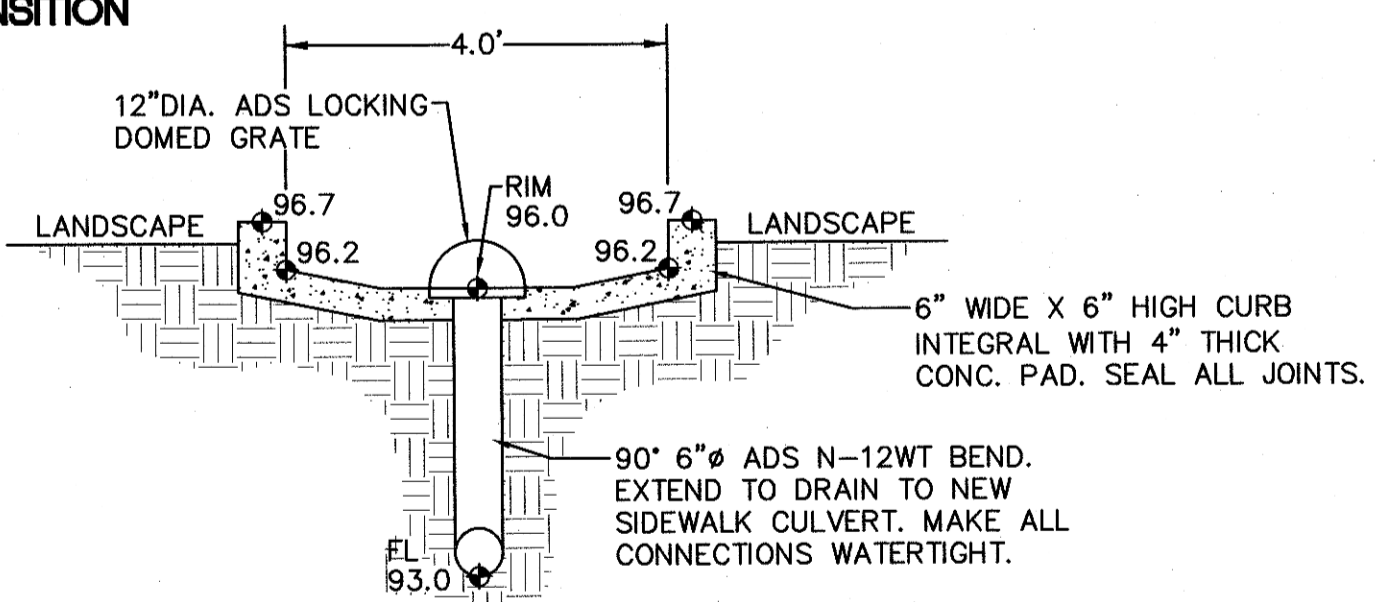
**GENERAL NOTES**

- COORDINATE WORK WITH SITE PLAN, UTILITY PLAN, DEMOLITION PLAN, AND LANDSCAPE PLAN.
- 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.
- PER THE OWNER PROVIDED TOPOGRAPHIC SURVEY NOTE:  
Underground utility locations are as marked on the ground by others. It is apparent that not all of the area covered by this survey was spotted for utilities.
- EXISTING UTILITY LINES ARE SHOWN ON THE TOPOGRAPHIC SURVEY 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 ALL EXISTING UTILITIES, PIPELINES, AND UNDERGROUND UTILITY LINES.
- NOTE REQUIRED BY COA: 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 1 ACRE OR MORE (BY OTHERS). A SWPPP MUST BE INCLUDED WITH THE CONTRACTOR'S SUBMITTAL FOR A ROUGH GRADING, GRADING, PAVING OR BUILDING PERMIT. THE SWPPP MUST BE IN PDF OR MS WORD FORMAT ON A CD.
- 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 AND POSITIVE SLOPE TOWARD EXISTING AND/OR PROPOSED DRAINAGE PATHS. WHERE NEW GRADES ARE SHOWN AS 'MATCH' OR '±', TRANSITIONS TO EXISTING SHALL BE SMOOTH.
- ALL FRACTURED FACE ROCK EROSION PROTECTION (F.F. ROCK) TO BE 6" AVG. DIA. ANGULAR FACED ROCK PLACED OVER GEOTEX 50 NON-WOVEN GEOTEXTILE (O.E.).
- ENGINEER RECOMMENDS THAT OWNER INSPECT SITE AFTER EACH RAINFALL TO MAINTAIN EROSION PROTECTION AND TO IDENTIFY ANY NEW AREAS OF EROSION AND INSTALL ADDITIONAL EROSION PROTECTION AS NEEDED BASED ON ACTUAL OCCURRENCES.
- ENGINEER RECOMMENDS THAT OWNER CONSULT WITH STRUCTURAL ENGINEER REGARDING EXISTING CONCRETE FOOTINGS FOR OVERHEAD TRACK (TYPICAL OF FOUR).

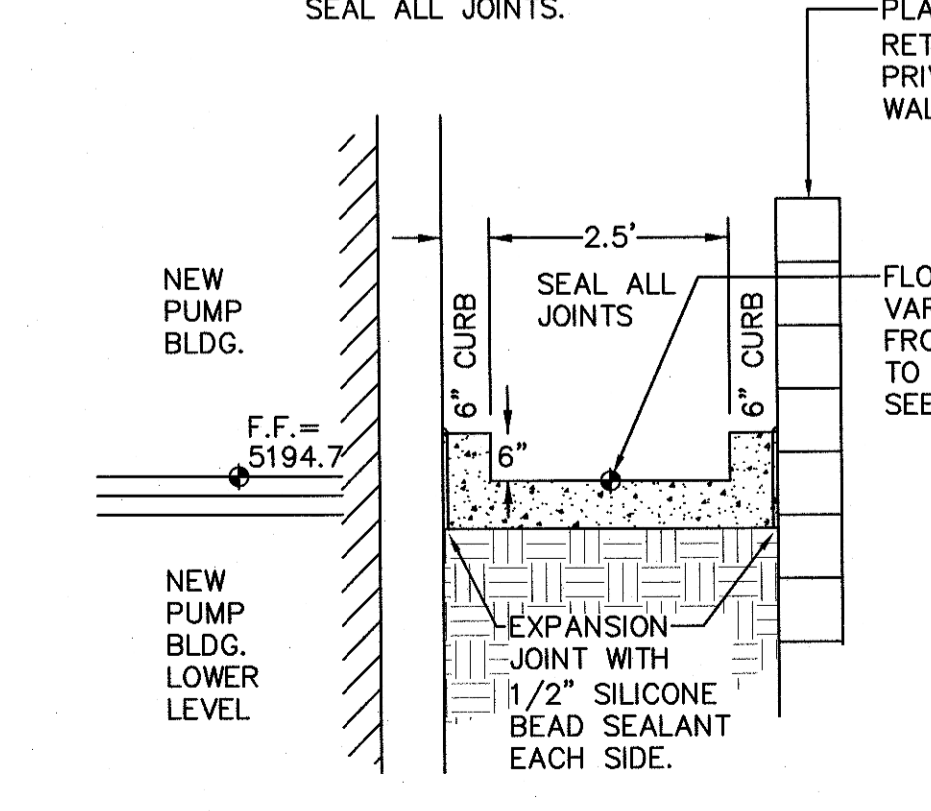


**COVERED SIDEWALK CAPACITY VERIFICATION**

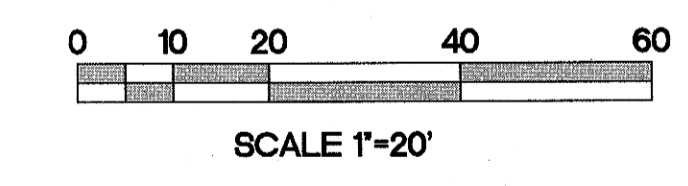
BASED ON HYDRAFLOW EXPRESS CHANNEL REPORT, A 2' WIDE X 6" HIGH CONCRETE RUNDOWN SLOPING AT 2% HAS A FULL FLOW CAPACITY OF APPROX. 9 CFS. EACH OF THE TWO PROPOSED SIDEWALK CULVERTS WILL BE REQUIRED TO PASS APPROX. 1.0 CFS DURING THE 100-YEAR, 6-HOUR STORM EVENT. [OKAY]



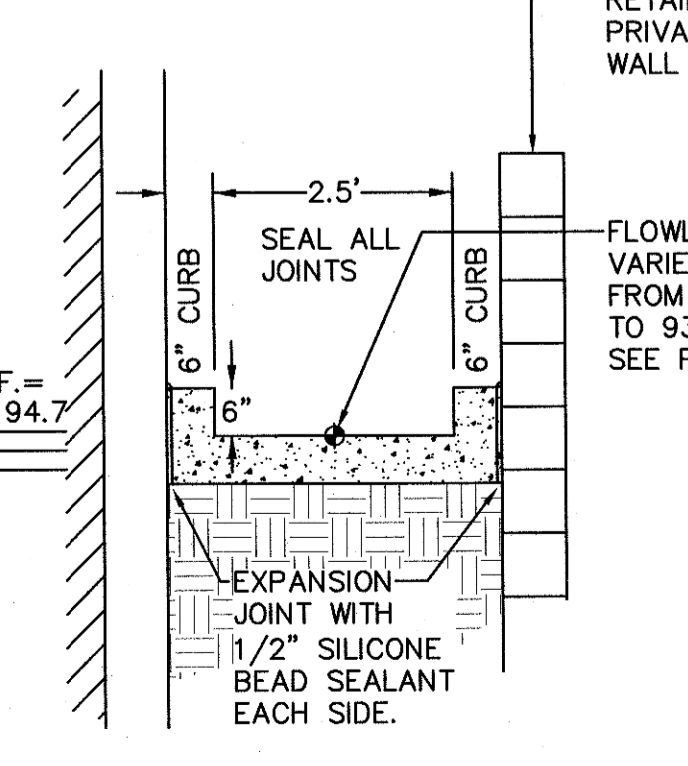
**A STORM DRAIN INLET** N.T.S.



**B CONC. RUNDOWN** N.T.S.



GENERAL NOTES  
PROVIDE CONST CONTROL JOINTS @ 6' O.C. MAX. SEAL ALL JOINTS.



**NEW PUMP BLDG. LOWER LEVEL**