

## DRAINAGE CERTIFICATION FOR TEMPORARY CERTIFICATE OF OCCUPANCY

I, JEFFREY G. MORTENSEN, NMPE 8547, OF THE FIRM HIGH MESA CONSULTING GROUP HEREBY CERTIFY THAT THE CEI ENTERPRISES PAINT BOOTH PHASE 3A PROJECT HAS BEEN GRADED AND DRAINED IN SUBSTANTIAL COMPLIANCE WITH AND IN ACCORDANCE WITH THE DESIGN INTENT OF THE APPROVED PLAN DATED 05-11-2006 AND REVISED 09-21-2006 TO ADD SHEET 7 WITH EXCEPTIONS AS NOTED BELOW. 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 ISSUED BY RONALD A. FORSTBAUER, NMPS 6126, OF THE FIRM FORSTBAUER SURVEYING, LLC, AND AS SUPPLEMENTAL DATA TO THE RECORD DRAINAGE PLAN PREVIOUSLY SUBMITTED (NMPE 8547), CERTIFIED (8547) AND APPROVED (FILE NO. M14/D26).

THIS CERTIFICATION IS SUBMITTED IN SUPPORT OF THE FOLLOWING:

- A REQUEST FOR A 90-DAY TEMPORARY CERTIFICATE OF OCCUPANCY, AND
- A DPM VARIANCE TO MINIMUM GRADE FOR CONCENTRATED FLOW.

THE FOLLOWING ITEMS REQUIRE COMPLETION PRIOR TO ISSUANCE OF A PERMANENT CERTIFICATE OF OCCUPANCY:

1. VERIFICATION OF EXISTING RAIN GUTTERS ON THE NORTH SIDE OF THE EXISTING WAREHOUSE IMMEDIATELY SOUTH OF THE NEW PAINT BOOTH BUILDING ADDITION (SHEET 6A)
2. INSTALLATION OF RAIN GUTTERS ON THE SOUTH SIDE OF THE NEW PAINT BOOTH TO INTERCEPT ROOF RUNOFF AND DIVERT THAT ROOF RUNOFF TO THE EAST AND WEST AWAY FROM THE AREA BETWEEN THE EXISTING WAREHOUSE AND NEW PAINT BOOTH (SHEET 6A)
3. NEATLY TRIM NEW STORM DRAIN PENETRATION CONNECTION TO EXISTING STORM INLET AT THE EAST EDGE OF THE PROJECT (SHEET 6A)
4. NEATLY SAWCUT, REMOVE, REPROCESS SUBGRADE AND REPLACE NEW PAVING BETWEEN THE EXISTING WAREHOUSE BUILDINGS TO CORRECT PUDDLING IN FLOWLINE OF NEW PAVING (SHEET 7)
5. NEATLY SAWCUT, REMOVE, REPROCESS SUBGRADE AND REPLACE NEW PAVING AROUND NEW STORM INLET AT THE WEST SIDE OF PAINT BOOTH PROJECT LIMITS (WEST OF RAILROAD TRACKS) (SHEET 6A)
6. INSTALL WELL-SEALED (WATER TIGHT) AND STURDY (TO SUPPORT INDUSTRIAL VEHICULAR TRAFFIC) THRESHOLD AT 16-FOOT WIDE OVERHEAD DOOR IN NORTH FACE OF EXISTING WAREHOUSE FACING NEW PAINT BOOTH. THRESHOLD HEIGHT SHOULD BE A MINIMUM 1.5 INCHES IN HEIGHT AND PROVIDED WITH SUFFICIENT VISUAL CUES TO AVOID TRIP HAZARDS (SHEET 6A).
7. RAISE EARTHEN BERM AT THE DETENTION POND AT THE NORTHEAST CORNER OF THE SITE TO AT LEAST THE MINIMUM ELEVATION OF 4937.35. USE CLEAN FILL COMPACTED AT 95% ASTM D-1557.

A WATER FLOW TEST WAS CONDUCTED ON 11-30-2007 RESULTING IN WATER ENTERING THE EXISTING WAREHOUSE AT THE EXISTING 16-FOOT OVERHEAD DOOR REFERENCED IN ITEM 6 ABOVE. THE WATER FLOW TEST WAS NECESSARY TO CONFIRM THE VERIFICATION DATA EDITED ONTO THE APPROVED PLAN (SHEET 6A). THE WATER DID EVENTUALLY FLOW WEST WITH RESIDUAL PUDDLING IN FRONT OF THE REFERENCED OVERHEAD DOOR. THE PROPERTY OWNER IS WILLING TO ACCEPT THIS DEFICIENCY AS INDICATED BY SIGNATURE BELOW AND IS AWARE THAT THIS CONDITION MAY RESULT IN THE FOLLOWING:

- PUDDLING OF WATER ON THE SURFACE OF THE NEW PAVING
- ICING OF THE PUDDLING WATER
- DECREASED LIFECYCLE FOR THE EXISTING PAVING
- INCREASED MAINTENANCE RESPONSIBILITIES FOR THIS AREA OF THE SITE
- RESTRICTED USAGE OF THIS AREA OF THE SITE
- OTHER COMPLICATIONS AND RESTRICTIONS IN THE USE OF THIS AREA OF THE SITE
- FREQUENT INSPECTION AND MAINTENANCE OF THE RAIN GUTTERS ESSENTIAL TO THE MITIGATION OF THE POTENTIAL FLOODING OF THIS AREA OF THE SITE

ITEMS 1, 2 AND 6 LISTED ABOVE ARE REQUIRED IN RESPONSE TO THE FACT THAT THE NEW PAVING BETWEEN THE EXISTING WAREHOUSE AND THE NEW PAINT BOOTH HAS NOT BEEN GRADED IN COMPLIANCE WITH THE APPROVED PLAN AND IN COMPLIANCE WITH THE MINIMUM GRADE CRITERIA FOR CONCENTRATED FLOW SET FORTH IN THE DPM (S = 0.0050). ITEMS 1 AND 2 WILL DIVERT ROOF RUNOFF AWAY FROM THIS AREA TO AVOID/MINIMIZE FLOODING. THE BUILT-UP THRESHOLD WILL HELP DAM-UP THE SLOUGHISH, POOLING WATER THAT FALLS UPON THE "FLAT" PAVING IN AN EFFORT TO PREVENT IT FROM ENTERING THE EXISTING WAREHOUSE. ALL OTHER ITEMS ARE NECESSARY TO SATISFY THE DESIGN INTENT OF THE APPROVED PLAN.

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. THIS CERTIFICATION DOES NOT EVALUATE NOR ADDRESS ADA COMPLIANCE. THOSE RELYING ON THIS RECORD DOCUMENT ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE USING IT FOR ANY OTHER PURPOSE.

ACKNOWLEDGEMENT OF DEFICIENCIES BY OWNER:

ORIGINAL SIGNED BY  
MICHAEL BREMMER

12-20-07

MICHAEL BREMMER, PRESIDENT  
PROPERTY OWNER  
CEI ENTERPRISES

DATE

ENGINEER'S CERTIFICATION:

JEFFREY G. MORTENSEN, NMPE 8547



12-19-2007

DATE

## DRAINAGE CERTIFICATION FOR PERMANENT CERTIFICATE OF OCCUPANCY

I, JEFFREY G. MORTENSEN, NMPE 8547, OF THE FIRM HIGH MESA CONSULTING GROUP HEREBY CERTIFY THAT THE CEI ENTERPRISES PAINT BOOTH PHASE 3A PROJECT HAS BEEN GRADED AND DRAINED IN SUBSTANTIAL COMPLIANCE WITH AND IN ACCORDANCE WITH THE DESIGN INTENT OF THE APPROVED PLAN DATED 05-11-2006 AND REVISED 09-21-2006. 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 ISSUED BY RONALD A. FORSTBAUER, NMPS 6126, OF THE FIRM FORSTBAUER SURVEYING, LLC, AND AS SUPPLEMENTAL DATA TO THE RECORD DRAINAGE PLAN PREVIOUSLY SUBMITTED (NMPE 8547), CERTIFIED (8547) AND APPROVED (FILE NO. M14/D26) AND AS SUPPLEMENTAL DATA TO THE ENGINEER'S DRAINAGE CERTIFICATION FOR TEMPORARY CERTIFICATE OF OCCUPANCY DATED 12-19-2007.

THIS CERTIFICATION IS SUBMITTED IN SUPPORT OF A REQUEST FOR PERMANENT CERTIFICATE OF OCCUPANCY.

THE FOLLOWING ITEMS NOTED AS EXCEPTIONS IN THE ABOVE REFERENCED ENGINEER'S DRAINAGE CERTIFICATION FOR TEMPORARY CERTIFICATE OF OCCUPANCY DATED 12-19-2007 HAVE BEEN SATISFACTORILY ADDRESSED:

1. THE PRESENCE OF EXISTING RAIN GUTTERS ON THE NORTH SIDE OF THE EXISTING WAREHOUSE IMMEDIATELY SOUTH OF THE NEW PAINT BOOTH BUILDING ADDITION (SHEET 6A) HAS BEEN VERIFIED
2. THE INSTALLATION OF RAIN GUTTERS ON THE SOUTH SIDE OF THE NEW PAINT BOOTH TO INTERCEPT ROOF RUNOFF AND DIVERT THAT ROOF RUNOFF TO THE EAST AND WEST AWAY FROM THE AREA BETWEEN THE EXISTING WAREHOUSE AND NEW PAINT BOOTH (SHEET 6A) HAS BEEN DEEMED UNNECESSARY. THE ROOF OF THE NEW PAINT BOOTH HAS A RELATIVELY FLAT PITCH THAT DRAINS TO THE NORTH AND HENCE DOES NOT DISCHARGE ROOF RUNOFF TO THE SOUTH.
3. THE NEW STORM DRAIN PENETRATION CONNECTION TO EXISTING STORM INLET AT THE EAST EDGE OF THE PROJECT (SHEET 6A) HAS BEEN NEATLY TRIMMED
4. THE NEW PAVING BETWEEN THE EXISTING WAREHOUSE BUILDINGS HAS BEEN NEATLY SAWCUT, REMOVED, SUBGRADE REPROCESSED AND PAVEMENT REPLACED TO CORRECT PUDDLING IN FLOWLINE OF NEW PAVING (SHEET 7)
5. THE NEW PAVING AROUND NEW STORM INLET AT THE WEST SIDE OF PAINT BOOTH PROJECT LIMITS (WEST OF RAILROAD TRACKS) (SHEET 6A) HAS BEEN NEATLY SAWCUT, REMOVED, SUBGRADE REPROCESSED AND PAVEMENT REPLACED TO CORRECT SETTLING
6. A STEEL THRESHOLD HAS BEEN INSTALLED AT THE 16-FOOT WIDE OVERHEAD DOOR IN NORTH FACE OF EXISTING WAREHOUSE FACING NEW PAINT BOOTH. THE THRESHOLD ELEVATION HAS BEEN VERIFIED AT 38.10, EQUAL TO THE ELEVATION AT PERSON DOOR IMMEDIATELY TO THE WEST OF THE OVERHEAD DOOR WHERE WATER FROM THE WATER FLOW TEST DID NOT ENTER THE EXISTING WAREHOUSE BUILDING (SHEET 6A).
7. THE EARTHEN BERM AT THE DETENTION POND AT THE NORTHEAST CORNER OF THE SITE HAS BEEN RAISED ABOVE THE MINIMUM ELEVATION OF 4937.35.

AS INDICATED BY SIGNATURE HEREON AND AT LEFT, THE PROPERTY OWNER IS WILLING TO ACCEPT THOSE DEFICIENCIES AS IDENTIFIED BELOW WITH RESPECT TO THE NEW PAVED AREA THAT LIES BETWEEN THE NEW PAINT BOOTH AND THE EXISTING WAREHOUSE THAT LIES IMMEDIATELY SOUTH OF THE NEW PAINT BOOTH:

- PUDDLING OF WATER ON THE SURFACE OF THE NEW PAVING
- ICING OF THE PUDDLING WATER
- DECREASED LIFECYCLE FOR THE EXISTING PAVING
- INCREASED MAINTENANCE RESPONSIBILITIES FOR THIS AREA OF THE SITE
- RESTRICTED USAGE OF THIS AREA OF THE SITE
- OTHER COMPLICATIONS AND RESTRICTIONS IN THE USE OF THIS AREA OF THE SITE
- FREQUENT INSPECTION AND MAINTENANCE OF THE RAIN GUTTERS ESSENTIAL TO THE MITIGATION OF THE POTENTIAL FLOODING OF THIS AREA OF THE SITE

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. THIS CERTIFICATION DOES NOT EVALUATE NOR ADDRESS ADA COMPLIANCE. THOSE RELYING ON THIS RECORD DOCUMENT ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE USING IT FOR ANY OTHER PURPOSE.

ENGINEER'S CERTIFICATION:

JEFFREY G. MORTENSEN, NMPE 8547



12-20-2006

DATE

**HIGH MESA Consulting Group**

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## CERTIFICATIONS

CEI ENTERPRISES PAINT BOOTH ADDITION - PHASE 3A

DESIGNED BY JGM  
DRAWN BY JLE/RRV  
APPROVED BY JGM

REVISIONS				JOB NO. 2007.003.1
NO.	DATE	BY	REVISIONS	
1	02/20/08	JGM	DRAINAGE CERT FOR PERM C.O.	DATE 12-2007
				SHEET 1A OF 7







# MASTER DRAINAGE PLAN

The following items concerning the C.E.I. Enterprises Master Drainage Plan are contained herein:

1. Vicinity Map
2. Calculations
3. Grading Plan

The site is located on Woodward Street S.E. along the east side of the San Jose Lateral. Woodward Street S.E. is a paved roadway with no concrete curb and gutter. Asphalt paving in Woodward Street S.E. extends northerly to the site's property line. Descaño Road S.E. is a fully developed residential roadway with concrete curb and gutter, asphalt paving, and public storm drain facilities bordering the site at the northeast corner. The site is currently developed as a vehicle manufacturing facility.

As shown by FIRM Panel 342 of 825 published by the National Flood Insurance Program for Bernalillo County, New Mexico, and Incorporated Areas, dated September 20, 1996, this site does not lie within, nor upstream of, a designated flood hazard zone.

The existing site is approximately 14.3 acres and consists of an existing semi-trailer manufacturing facility. This facility consists of a manufacturing and assembly building, office building, and various storage and shop buildings. The remainder of the site is mostly paved. A small portion of the site located along the northern boundary has not been paved, but it is used for staging of materials and vehicles. The site generally slopes northerly from Woodward Street S.E. toward the northeastern corner of the site at Descaño Road S.E. However, many additions to the site have interrupted the general historic drainage patterns; it is noticeable that the site has many ponding areas. At the northeastern corner of the site, an existing storm inlet connects directly to the existing 30" public storm drain located within Descaño Road S.E. A site visit indicates that runoff is blocked by sediment and debris trapped in the discharge pipe.

The Grading Plan shows: 1) existing grades indicated by spot elevations as shown by the Topographic Survey prepared by Ronald A. Forstbauer Surveying Company, 2) proposed grades indicated by spot elevations and contours at 1' intervals, 3) the limit and character of the existing improvements as shown by the Topographic Survey prepared by Ronald A. Forstbauer Surveying Company, 4) the limit and character of the proposed improvements, and 5) continuity between existing and proposed grades. Development of this site consists of removal and replacement of the existing asphalt paving within the site. To alleviate existing drainage problems at the site, a private storm drain system will be constructed to intercept and convey storm runoff toward the proposed detention pond located at the northeastern corner of the site. Offsite flows enter the site from Woodward Street S.E. Pursuant to a pre-design conference with Mr. Fred Aguila, Hydrology Section, City of Albuquerque, 80 ft of slotted drain will be constructed within Woodward Street S.E. right-of-way, to be located at the south face of the existing office building at the southwestern corner of the site. This slotted drain will be constructed within a 4' concrete valley gutter, and will be constructed in accordance with City of Albuquerque Standard Specifications 1986 - Update No. 6. This will be performed under a S.O. 19. The slotted drain will discharge into the private storm drain system to be discharged at the previously mentioned detention facility. The slotted drain was selected in lieu of traditional inlets due to excessive cross-slopes from the existing paving in Woodward Street S.E. To facilitate this improvement, the owner will execute a Drainage Covenant (Type 1) with the City of Albuquerque. The offsite flows are quantified to be 2.8 cfs and will be passed through the detention facility. The outlet pipe of the detention pond is required to be 18 inches. An 18" x 12" reducer will attach the 18" pipe to the 12" discharge pipe to facilitate construction of an inlet penetration per C.O.A. Std. Deg. 2237. By the Office Equation, the pipe allows a total of 13.1 cfs to discharge from the detention pond. However, the 2.8 cfs will be allowed to pass through the pond because it is an offsite flow. Therefore, the pond is allowed to discharge at a rate of 10.3 cfs. Offsite flows do not enter from the east and west boundaries of the site because of existing berms on those boundaries. Offsite flows do not enter the site from the north because it is topographically lower. The detention pond has been sized to accommodate the required ponding for the site. The discharge pipe will be installed 0.2 feet above the bottom of the pond to accommodate sedimentation from the site. A concrete spillway will pass the 100-year storm event into Descaño Road S.E. in the event that the discharge pipe is obstructed. Additional ponding is provided onsite within the paving areas around the proposed storm drain inlets. This additional ponding has not been identified in the Pond Volume Calculations.

The Calculations herein identify the allowable discharge from the site. The existing 30" storm drain on the south side of Descaño Road S.E. is sloped at 0.3 percent and has a capacity of approximately 23 cfs. The Calculations show an approximate 30 acres that contribute to this storm drain system. If the 23 cfs capacity is divided over the 30 acres of contributing area, the maximum allowable discharge per acre is approximately 0.8 cfs per acre. Multiplying the allowable discharge by the total site area, would allow 11.4 cfs to be discharged from the site. The 10.3 cfs discharge rate proposed by this Plan is less than the allowable discharge.

The development of the site has been divided into three (3) phases. Phase 1 consists of the installation of a portable office building along Descaño Road S.W. with associated grading to create a temporary retention pond. Phase 2 includes approximately 66,000 square feet of new asphalt paving, the detention pond, and the main portion of the private storm drain system. Elimination of the Phase 1 Temporary Retention Pond will also occur during Phase 2 construction. Phase 3 will repave the remainder of the site and complete the remainder of the private storm drain system.

The Phase 1 development is anticipated to occur immediately with Phase 2 being constructed concurrently by separate contract. Phase 3 will be completed in the future when the existing assembly building is utilized at full capacity. Site specific separate drainage submittals for building permit will accompany each phase of construction.

The Calculations which appear herein analyze both the existing and developed conditions for the 100-year, 6-hour rainfall event. The Procedure for 40-acre and Smaller Basins, as set forth in the Revision of Section 22.2 Hydrology of the Development Process Manual, Volume 2, Design Criteria, dated January, 1993, has been used to quantify the peak rate of discharge and volume of runoff generated. As shown by these calculations, a decrease of peak rate of discharge from this site is expected by this development. No increase of runoff volume is anticipated. The pipe discharge rate of this site was assumed to be under pressure and therefore the pressure condition calculation was used to quantify the rate of discharge from the storm drain facility. The Pond Volume Calculations utilize the Average End Area Method. The minimum spillway width requirement was calculated using the Weir Equation.

PHASE 3 WILL BE IMPLEMENTED IN PHASES. REFER TO SHEET 6 FOR PHASE 3A. PHASE 3B IS FUTURE.

## CALCULATIONS

### Site Characteristics

- I. Precipitation Zone = 2
- II.  $P_{6,100} = P_{360} = 2.35$  in.
- III. Total Area ( $A_T$ ) = 14.3 acres

### IV. Existing Land Treatment

A. Onsite Treatment	Area (sf/ac)	%
C	207,880/4.76	33.3
D	415,770/9.54	66.7

B. Offsite Treatment	Area (sf/ac)	%
C	26,000/0.80	100.0

V. Developed Land Treatment	Area (sf/ac)	%
C	210,900/4.82	33.7
D	412,750/9.48	66.3

### VI. Existing Condition

- A. Onsite  
1. Volume  
 $E_W = (E_A A_A + E_B A_B + E_C A_C + E_D A_D) / A_T$   
 $E_W = (1.13(4.76) + 2.12(9.54)) / 14.3 = 1.79$  in.  
 $V_{100} = (E_W / 12) A_T$   
 $V_{100} = (1.79 / 12) 14.3 = 2.1331$  ac.ft.; 92,920 cf

2. Peak Discharge  
 $Q_p = Q_{PA} A_A + Q_{PB} A_B + Q_{PC} A_C + Q_{PD} A_D$   
 $Q_p = Q_{100} = 3.14(4.76) + 4.70(9.54) = 59.8$  cfs

- B. Offsite  
1. Volume  
 $E_W = (E_A A_A + E_B A_B + E_C A_C + E_D A_D) / A_T$   
 $E_W = (2.12(0.80)) / 0.80 = 2.12$  in.  
 $V_{100} = (E_W / 12) A_T$   
 $V_{100} = (2.12 / 12) 0.80 = 0.1060$  ac.ft.; 4,620 cf
2. Peak Discharge  
 $Q_p = Q_{PA} A_A + Q_{PB} A_B + Q_{PC} A_C + Q_{PD} A_D$   
 $Q_p = Q_{100} = 4.70(0.80) = 2.8$  cfs

### VII. Developed Condition

- A. Volume  
 $E_W = (E_A A_A + E_B A_B + E_C A_C + E_D A_D) / A_T$   
 $E_W = (1.13(4.82) + 2.12(9.48)) / 14.3 = 1.79$  in.  
 $V_{100} = (E_W / 12) A_T$   
 $V_{100} = (1.79 / 12) 14.3 = 2.1331$  ac.ft.; 92,920 cf

- B. Peak Discharge  
 $Q_p = Q_{PA} A_A + Q_{PB} A_B + Q_{PC} A_C + Q_{PD} A_D$   
 $Q_p = Q_{100} = 3.14(4.82) + 4.70(9.48) = 59.7$  cfs

### VIII. Hydrograph Analysis

- A. Time of Base  
 $t_b = 2.107 E (A_T / Q_p) - 0.25(A_D / D_p)$   
Let:  $E = 1.79$  in.  
 $A_T = 14.3$  ac  
 $Q_p = 59.7$  cfs  
 $A_D = 9.48$  ac  
Therefore:  $t_b = 0.7378$  Hr. = 44.3 min.

- B. Time to Peak  
 $t_p = 0.7 t_b + (1.6 - A_D / A_T) / 12$   
Let:  $t_b = 0.20$  hr  
 $A_D = 9.48$  ac  
 $A_T = 14.3$  ac  
Therefore:  $t_p = 0.2181$  Hr. = 13.1 min.

- C. Time of Peak  
 $t_{pk} = 0.25 A_D / A_T$   
Let:  $A_D = 9.48$  ac  
 $A_T = 14.3$  ac  
Therefore:  $t_{pk} = 0.1657$  Hr. = 9.9 min.

### D. Total Volume

- Area of Hydrograph  
 $A = t_b + t_{pk} / 2 Q_{100} (80 \text{ s/min})$   
Let:  $t_b = 44.3$  min  
 $t_{pk} = 9.9$  min  
 $Q_{100} = 59.7$  cfs  
Therefore:  $A = \text{Volume} = 97,072$  cf

### E. Discharge Volume

1. Discharge Pipe Capacity  
Pressure Condition  
 $Q = CA(2gh)^{1/2}$   
Let:  $C = 0.6$   
 $A = 1.77 \text{ sf (18" pipe)}$   
 $g = 32.2 \text{ ft/s}^2$   
 $h = \text{Max W.S.L.} - \text{Pipe Invert} - 18" / 2$   
 $= 36.3 - 33.2 - 0.75 = 2.35$  ft.  
Therefore:  $Q_{\text{pipe}} = 13.1$  cfs

2. Pond Discharge  
 $Q_{\text{rel}} = Q_{\text{pipe}} - Q_{\text{offsite}} = 13.1 - 2.8 = 10.3$  cfs

3. Allowable Discharge  
a. Public Storm Drain Capacity  
30" storm drain on South Side of Descaño Road S.E.  
 $s = 0.0030$   
 $n = 0.013$   
 $Q_{\text{cap}} = 23$  cfs  
b. Allowable Discharge per Contributing Area  
Contributing Area = 30.0 ac  
Discharge per Acre =  $23 / 30 = 0.8$  cfs/ac  
c. Site Discharge  
 $Q_{\text{allow}} = (\text{Site Area})(\text{Discharge per acre})$   
 $= 14.3 \text{ ac (0.8 cfs/ac)} = 11.4 \text{ cfs} > Q_{\text{rel}} = 10.3 \text{ cfs}$

### IX. Pond Volume Calculations

- Area of Release = Discharge Volume  
 $A = t_b + t_{pk} / 2 Q_{\text{rel}} (80 \text{ s/min})$   
 $= 44.3 + 36.3 / 2 (10.3) 80 = 25,523$  cf

- F. Ponding Required  
 $V_{\text{required}} = \text{Total Volume} - \text{Discharge Volume}$   
 $V_{\text{required}} = 71,549$  cf

### X. Pond Volume Calculations

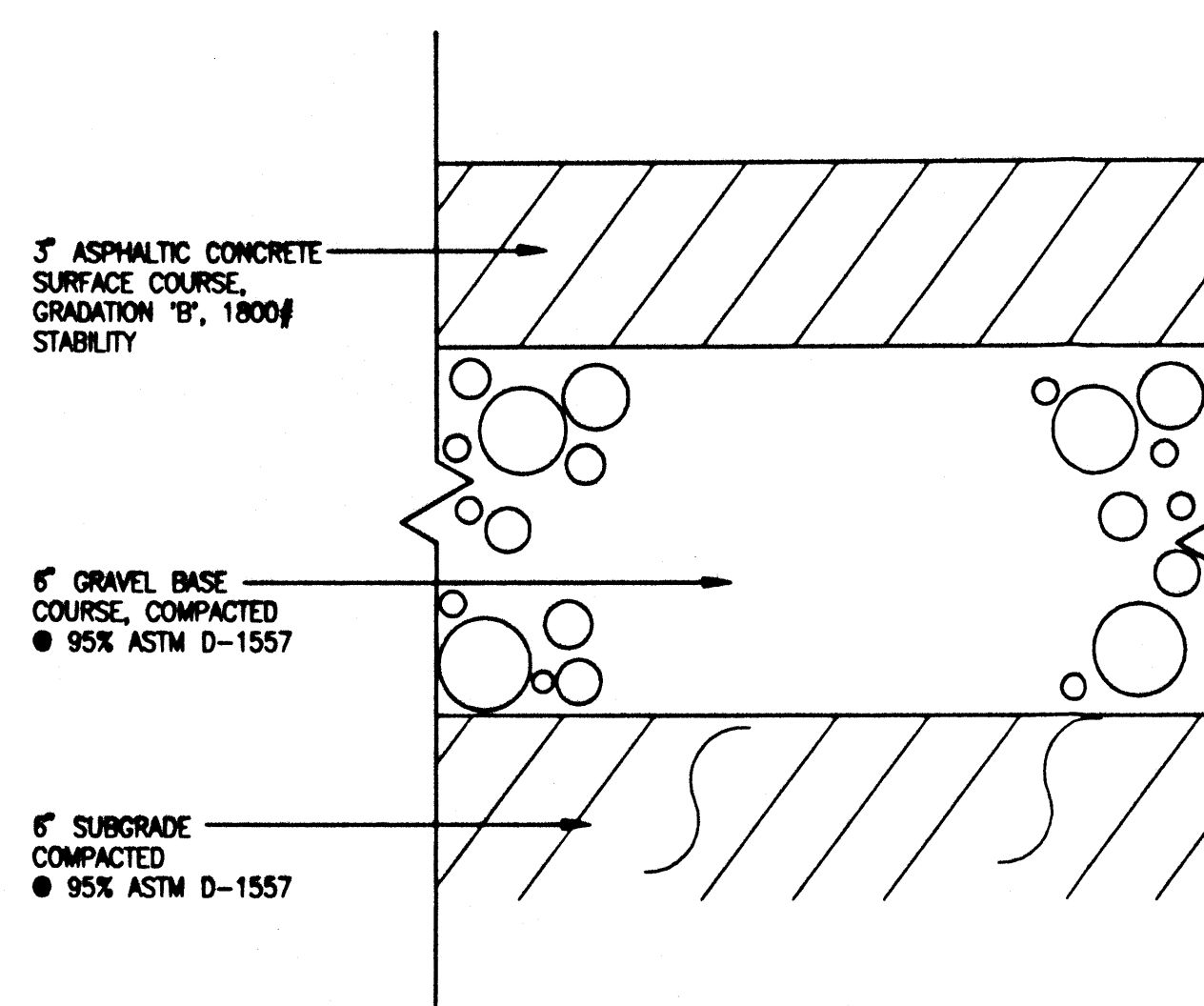
Elev.	Area (sf)	Volume (cf)	$\Sigma$ Volume (cf)
33.0	17,040	18,400	18,400
34.0	19,780	21,195	39,595
35.0	22,830	24,285	63,880
36.0	25,900	27,935	91,815
36.3	27,000	7,935	99,750

Pond Volume = 71,795 cf > 71,549 cf =  $V_{\text{required}}$

### XI. Comparison

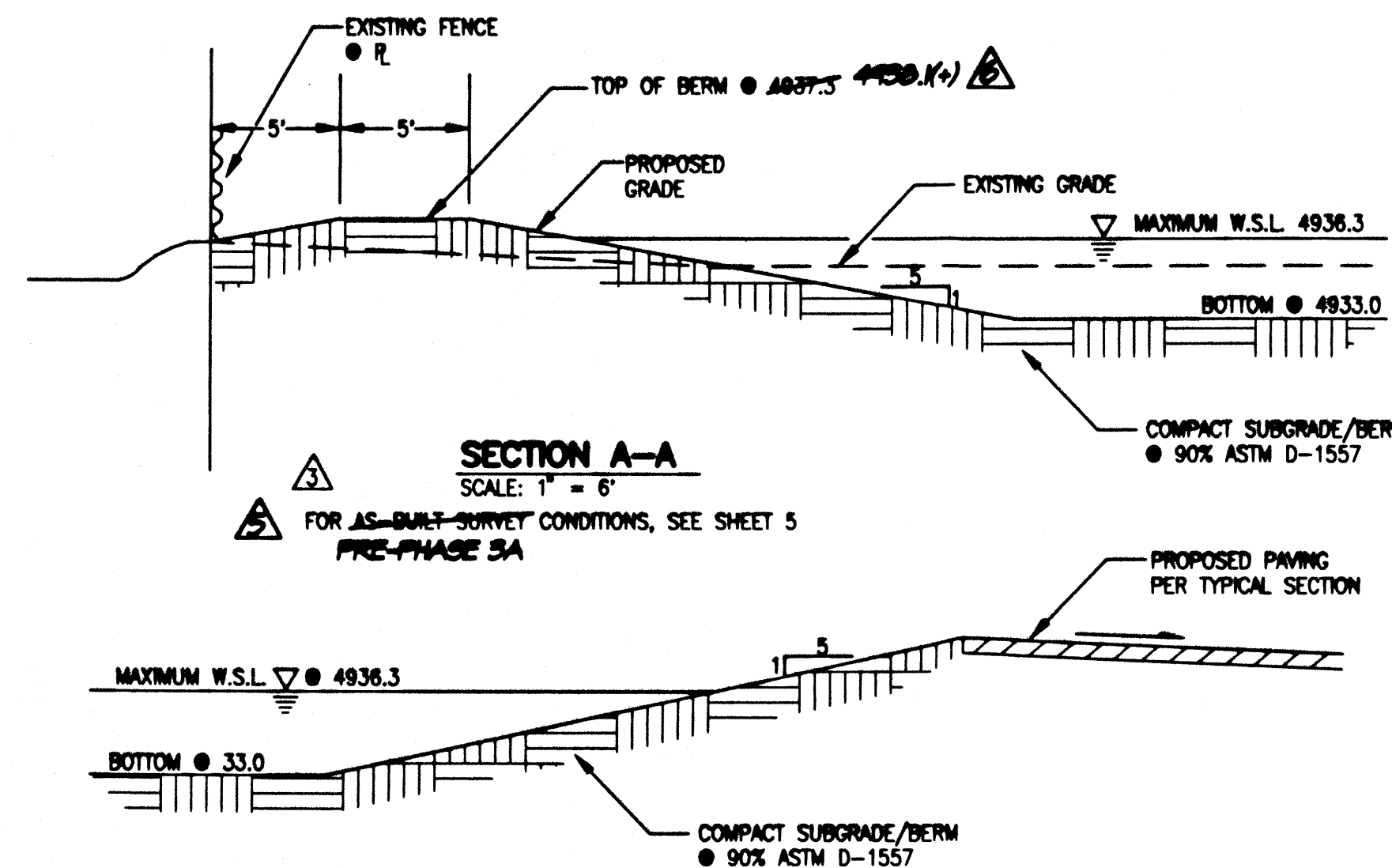
- A.  $\Delta V_{100} = 92,920 - 92,920 = 0$  cf (No change)
  - B.  $\Delta Q_{100} = 59.8 - 10.3 = 49.5$  cfs (decrease)
- Therefore:  $L = 23.15$  ft  
Use 23.5 ft.

CONSTRUCT SECTIONS C-C & D-D REQUIRED AS A CONDITION FOR C.O. FOR PHASE 3A PAINT BOOTH ADDITION

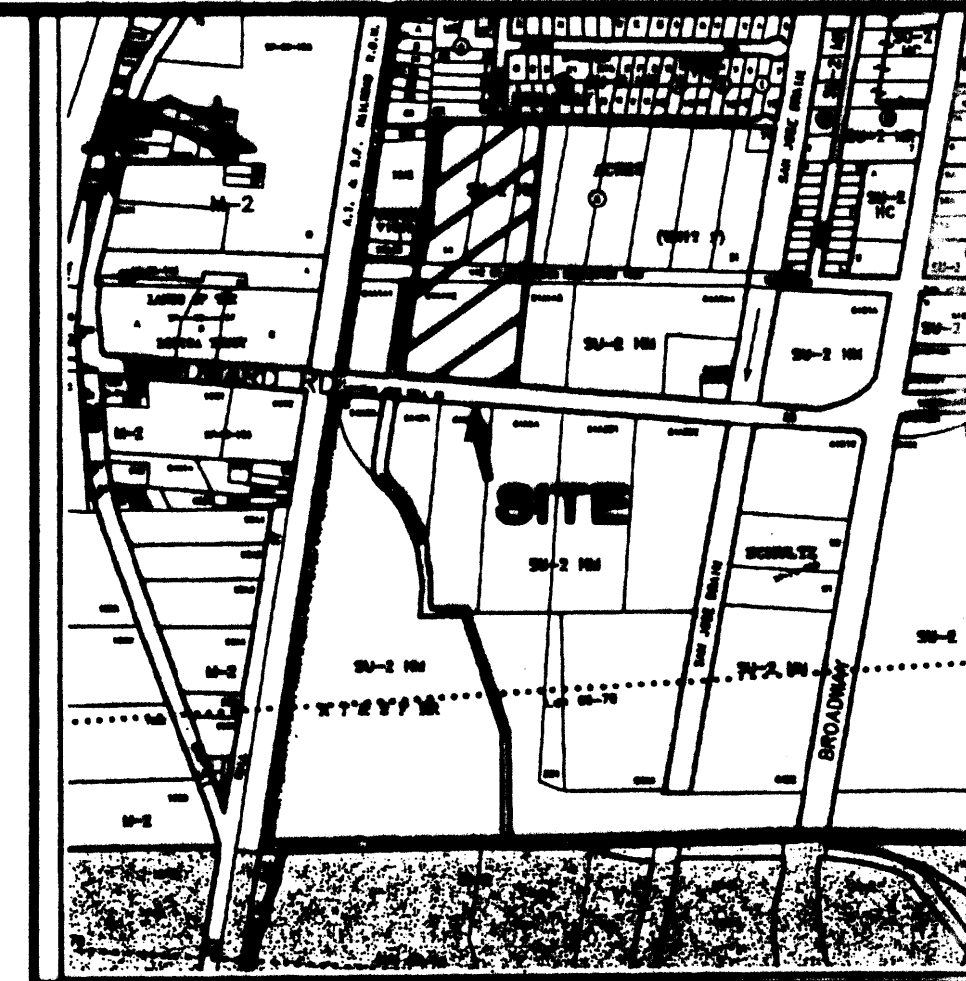
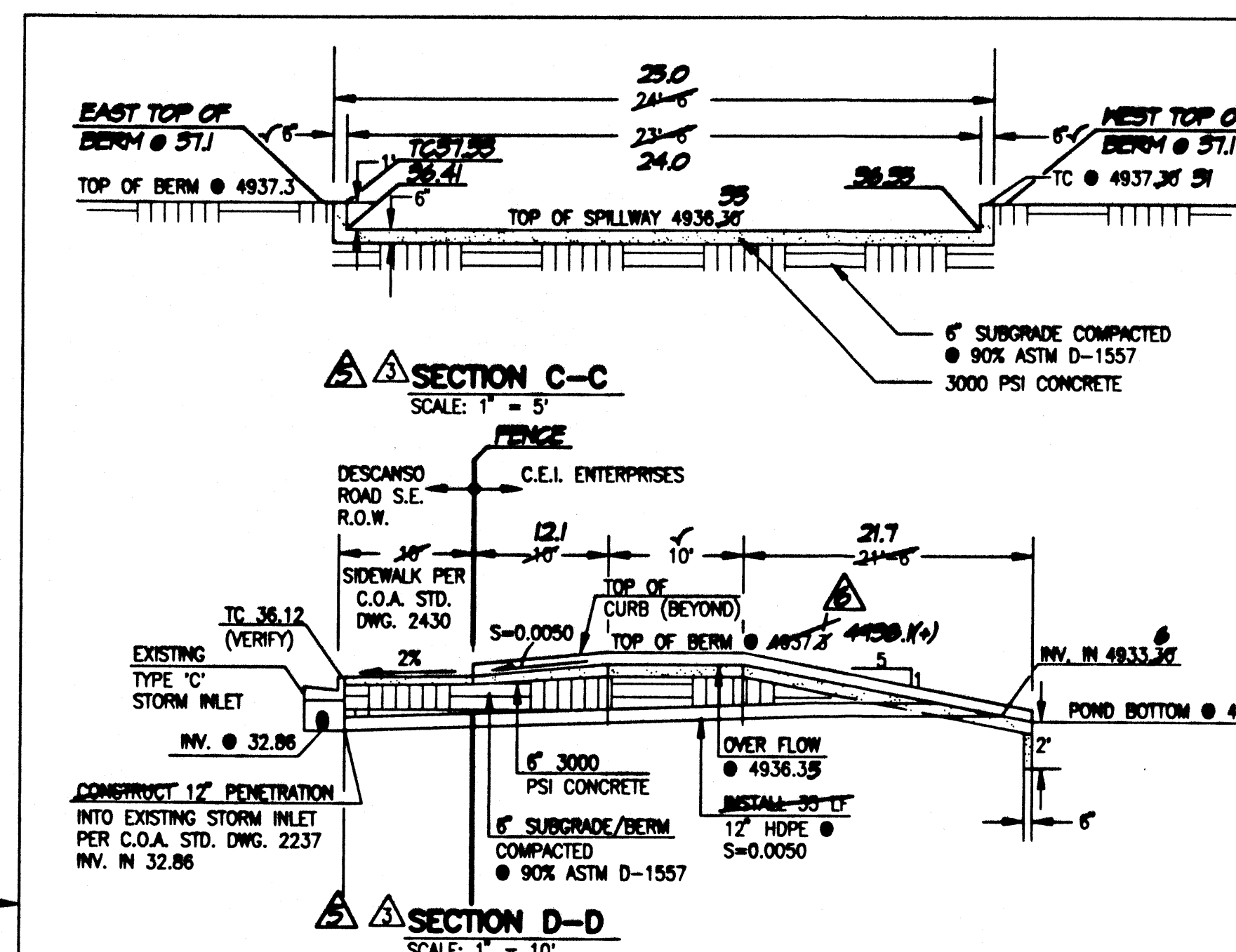


TYPICAL ASPHALT PAVING SECTION  
SCALE: 1" = 3"

## RECORD DRAWING FOR CERTIFICATION, SEE SHEET 1A



SECTION B-B  
SCALE: 1" = 6"



VICINITY MAP  
SCALE: 1" = 750'

### PROJECT BENCHMARK

C.O.A. BENCHMARK 9-M14 AN ACS 1 3/4" ALUMINUM DISK STAMPED "ACS BM 9-M14" SET IN TOP OF A CONCRETE HEAD WALL OF AN IRRIGATION DITCH AT THE N.E. QUADRANT OF THE INTERSECTION OF WOODWARD RD. S.E. AND WILLIAM STREET S.E.

### T.B.M.

THE TOP OF A PLASTIC CAP AT THE SOUTHEAST CORNER OF THE PROPERTY.  
ELEVATION = 4938.80 FEET (M.S.L.D.)

### LEGAL DESCRIPTION

LOTS 14 AND 15, BLOCK 4, SOUTH BROADWAY ACRES; A PORTION OF LOT 16, BLOCK 4, SOUTH BROADWAY ACRES; AND TRACT 6441A2 AS SHOWN ON M.R.G.C.D. MAP 44.

### CONSTRUCTION NOTES:

1. TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT NEW MEXICO ONE CALL SYSTEM 260-1990 (ALBUQUERQUE AREA), 1-800-321-ALERT(2537) (STATEWIDE), FOR LOCATION OF EXISTING UTILITIES.
2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL POTENTIAL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL INTERPRETATIONS IT MAKES WITHOUT FIRST CONTACTING THE ENGINEER AS REQUIRED ABOVE.
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 CONSTRUCTION WITHIN PUBLIC RIGHT-OF-WAY SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE CITY OF ALBUQUERQUE STANDARDS AND PROCEDURES.
5. IF ANY UTILITY LINES, PIPELINES, OR UNDERGROUND UTILITY LINES ARE SHOWN ON THESE DRAWINGS, THEY ARE SHOWN IN AN APPROXIMATE MANNER ONLY, AND SUCH LINES MAY EXIST WHERE NONE ARE SHOWN. IF ANY SUCH EXISTING LINES ARE SHOWN, THE LOCATION IS BASED UPON INFORMATION PROVIDED BY THE OWNER OF SAID UTILITY, AND THE INFORMATION MAY BE INCOMPLETE, OR MAY BE OBSOLETE BY THE TIME CONSTRUCTION COMMENCES. THE ENGINEER HAS CONDUCTED ONLY PRELIMINARY INVESTIGATION OF THE LOCATION, DEPTH, SIZE, OR TYPE OF EXISTING UTILITY LINES, PIPELINES, OR UNDERGROUND UTILITY LINES. THIS INVESTIGATION IS NOT CONCLUSIVE, AND MAY NOT BE COMPLETE, THEREFORE, MAKES NO REPRESENTATION PERTAINING THERETO, AND ASSUMES NO RESPONSIBILITY OR LIABILITY THEREOF. THE CONTRACTOR SHALL INQUIRE ITSELF OF THE LOCATION OF ANY UTILITY LINE, PIPELINE, OR UNDERGROUND UTILITY LINE IN OR NEAR THE AREA OF THE WORK IN ADVANCE OF AND DURING EXCAVATION WORK. 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. IN PLANNING AND CONDUCTING EXCAVATION, THE CONTRACTOR SHALL COMPLY WITH STATE STATUTES, MUNICIPAL AND LOCAL ORDINANCES, RULES AND REGULATIONS, IF ANY, PERTAINING TO THE LOCATION OF THESE LINES AND FACILITIES.
6. THE DESIGN OF PLANTERS AND LANDSCAPED AREAS IS NOT PART OF THIS PLAN. ALL PLANTERS AND LANDSCAPED AREAS ADJACENT TO THE BUILDING(S) SHALL BE PROVIDED WITH POSITIVE DRAINAGE TO AVOID ANY PONDING ADJACENT TO THE STRUCTURE. FOR CONSTRUCTION DETAILS, REFER TO LANDSCAPING PLAN.
7. AN EXCAVATION/CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN CITY RIGHT-OF-WAY. AN APPROVED COPY OF THESE PLANS MUST BE SUBMITTED AT THE TIME OF APPLICATION FOR THIS PERMIT.
8. BACKFILL COMPACTION SHALL BE ACCORDING TO RESIDENTIAL STREET USE.
9. MAINTENANCE OF THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY SERVED.

05-16-2006 09-21-2006  
12-19-2007  
02-20-2008  
01-19-98  
01-27-98  
04-16-98

Plot Path: J:\Projects\2003\103\_AB.DWG Plot Date: 02-20-2008 Plot Time: 11:26 am

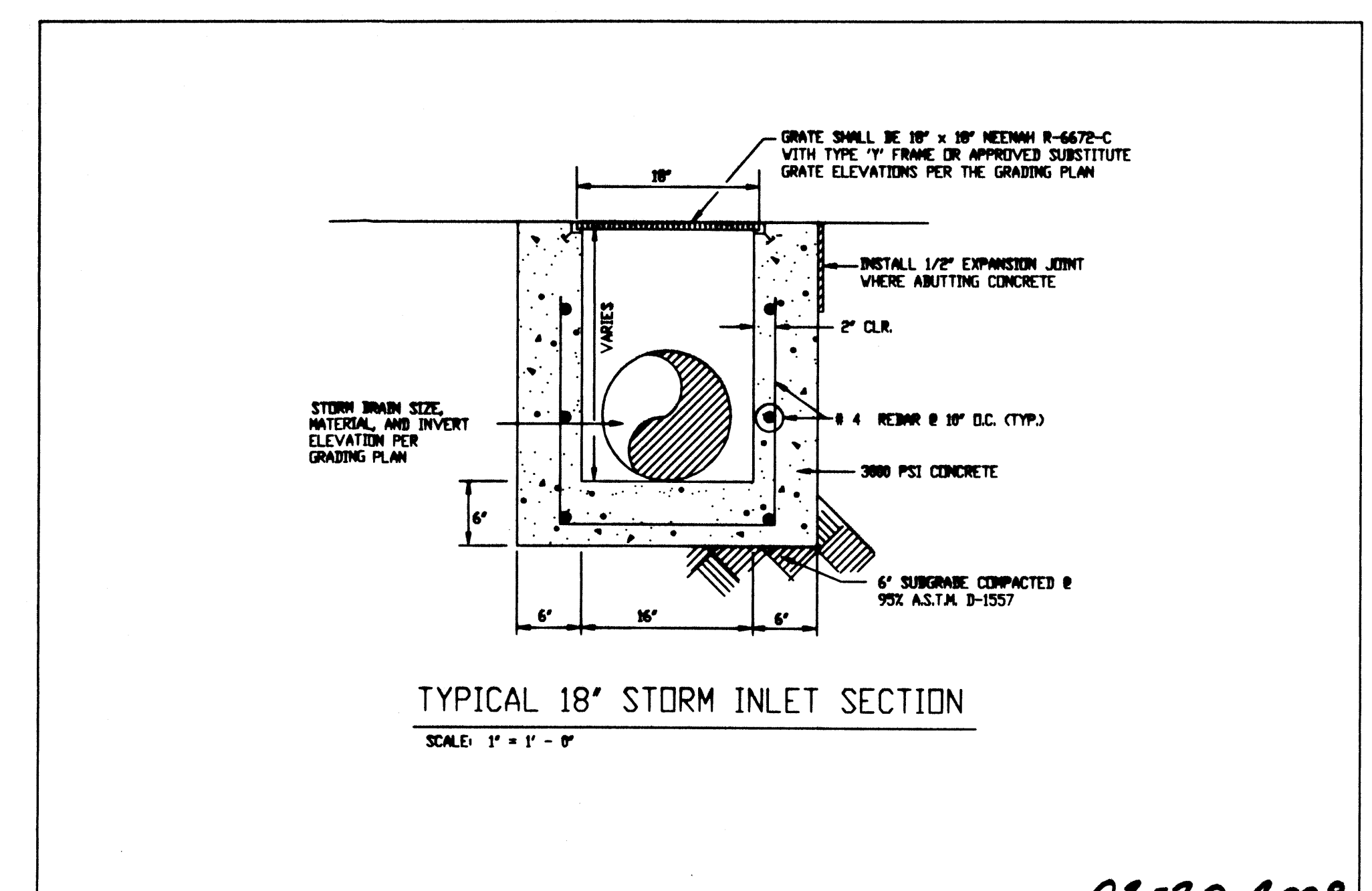
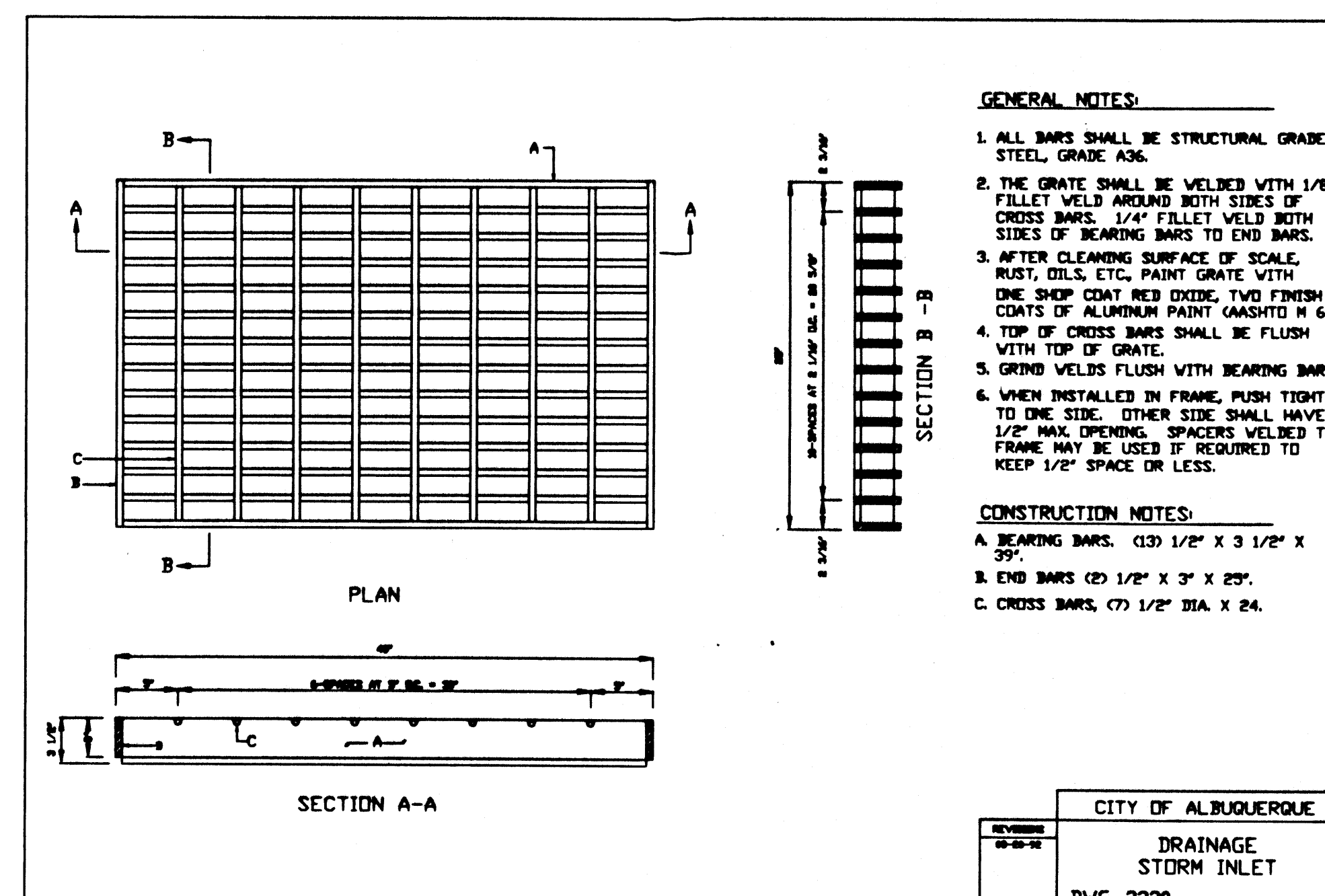
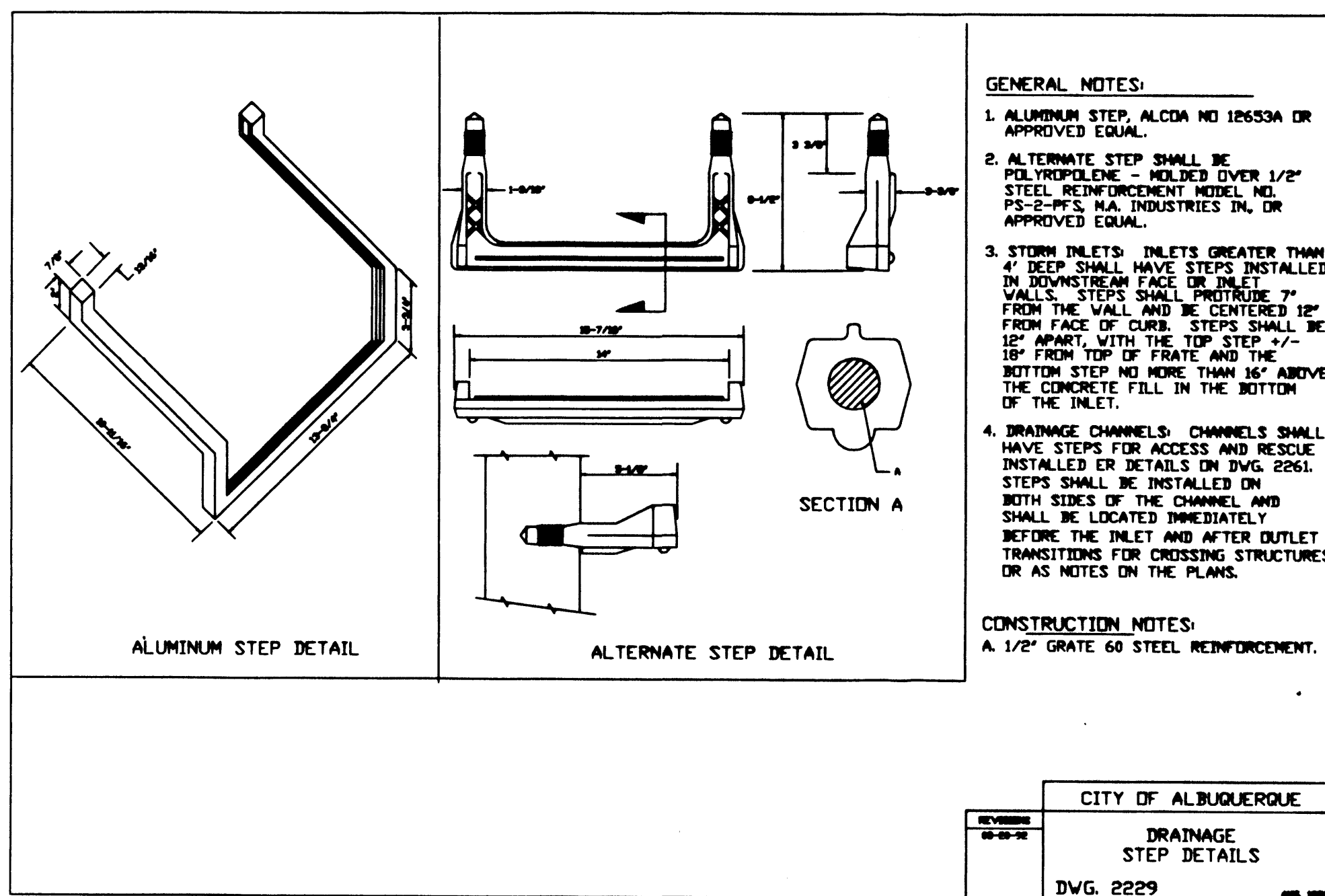
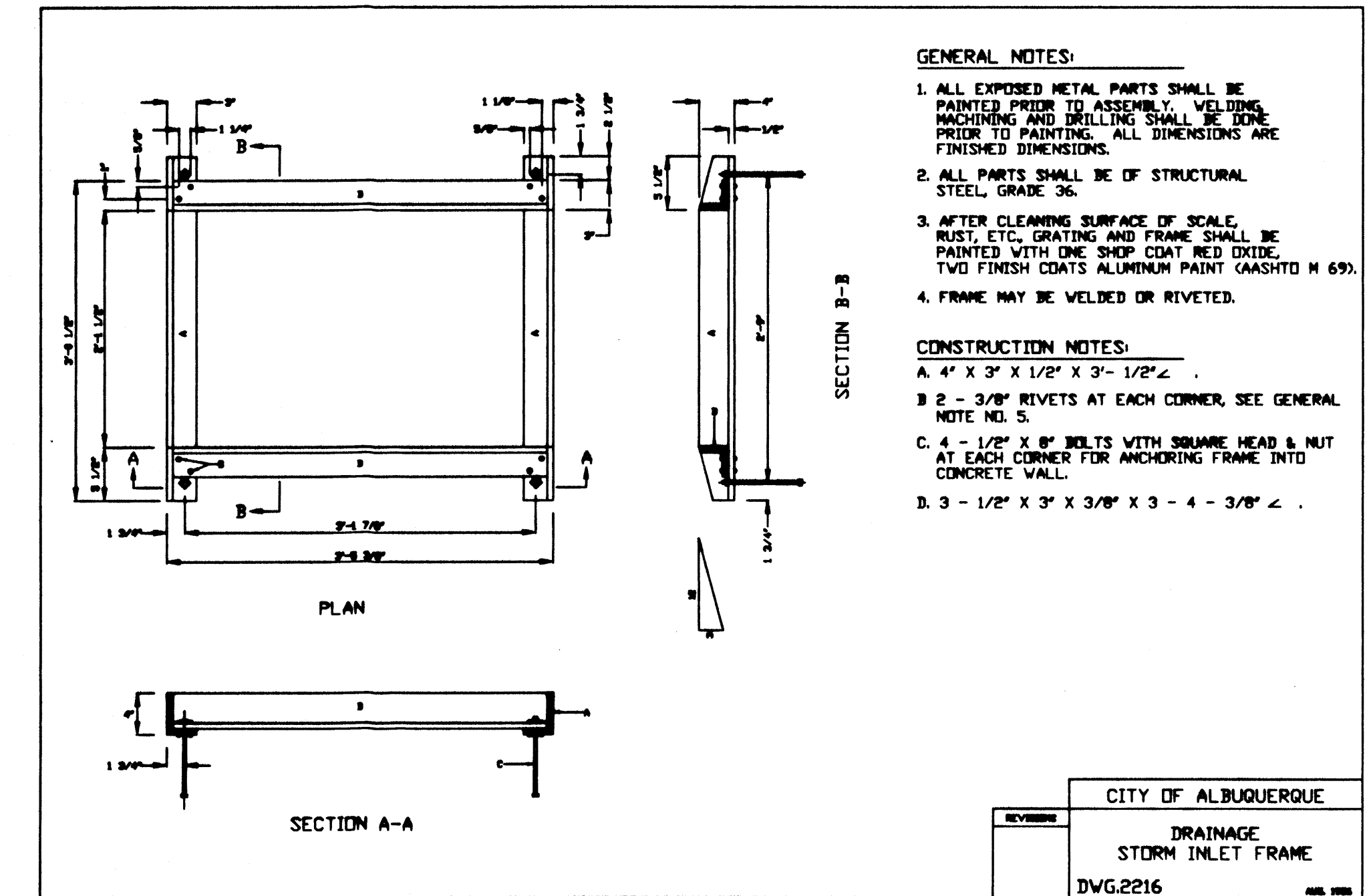
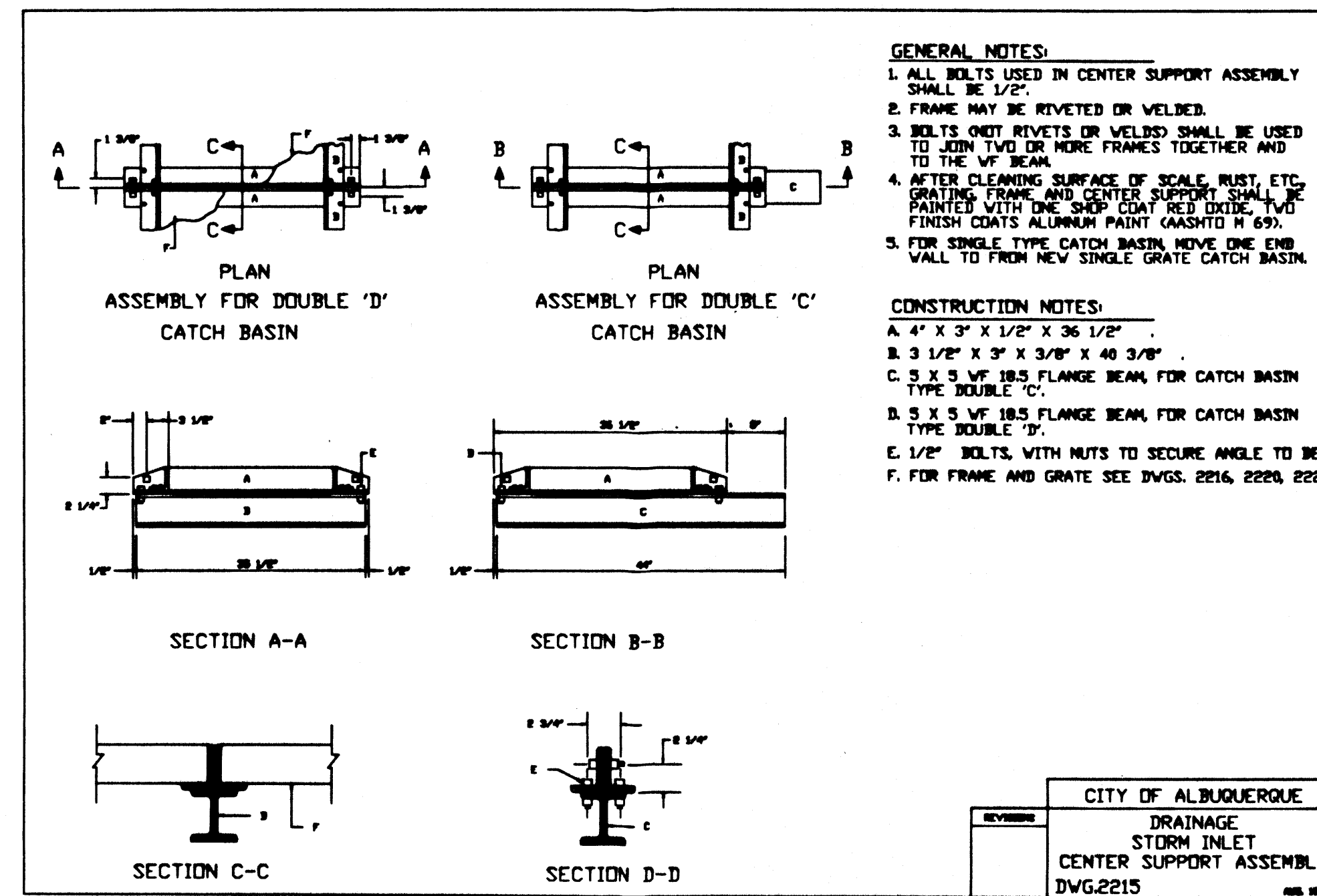
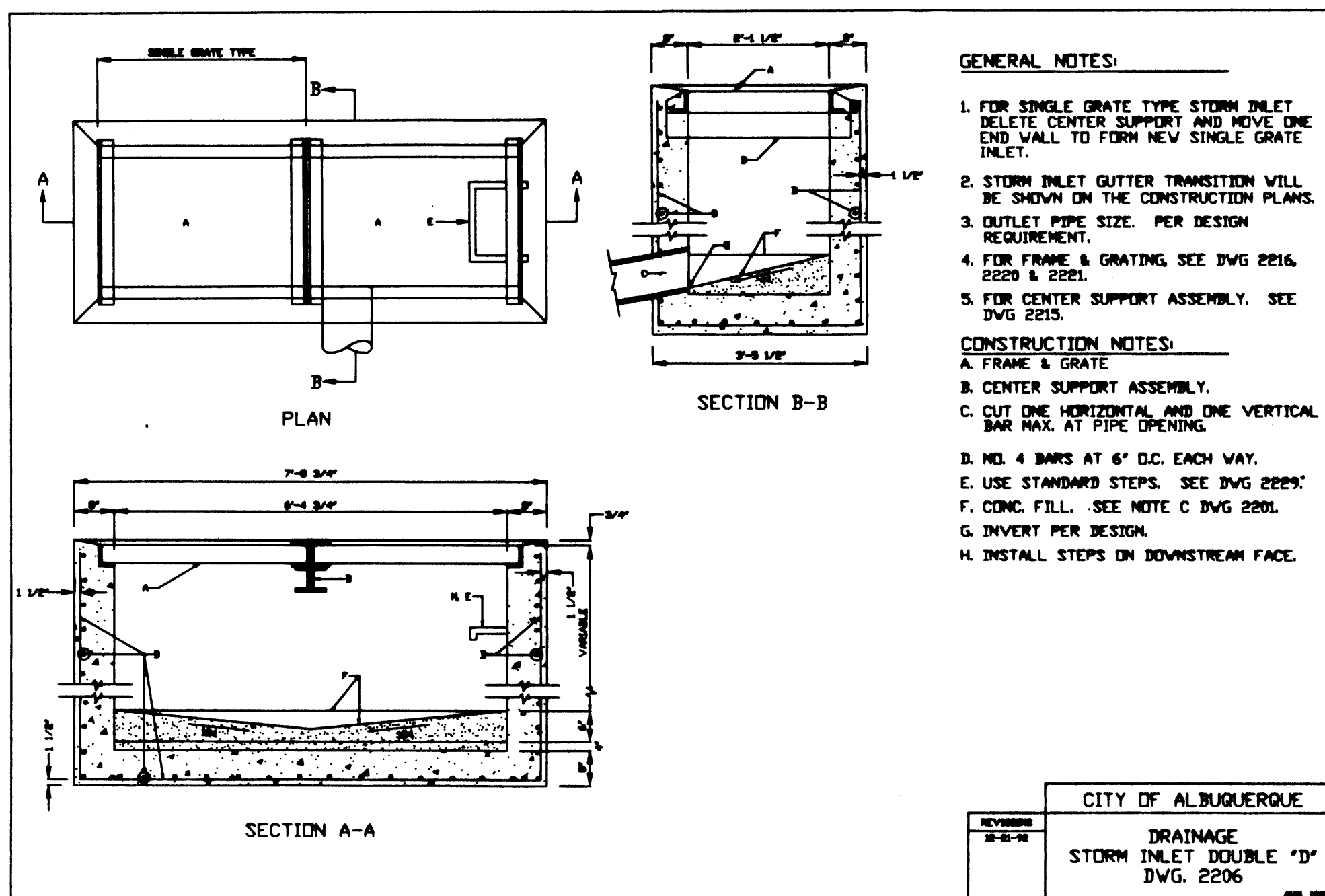


JMA  
JAMES MONTGOMERY & ASSOCIATES, INC.  
800-8 MONTGOMERY PARK BLVD. N.E.  
ALBUQUERQUE, N.M. 87108  
ENGINEERS & SURVEYORS (505) 346-4200

## MASTER DRAINAGE PLAN AND CALCULATIONS CEI ENTERPRISES

APPROVALS	NAME	DATE	DESIGNED BY	BY	REVISIONS	JOB NO.
HYDROLOGY			G.R.B.		02/98 GRB MASTER DRAINAGE PLAN (JMA NO. 970793)	2007098
SIDEWALK INSPECTOR			J.Y.R.		05/08 JGM UPDATE MASTER PLAN/REVISE C-C & D-D	
STORM DRAIN MAINTENANCE	SIGNED BY DUANE SCHMITZ	4-14-07	J.G.M.		08/08 JGM ADD SHEET 7	01-1998
					09/07 JGM PHASE 3A CERTIFICATION FOR TEMP C.O.	
					02/08 JGM RECERTIFICATION FOR PERM. C.O.	
						SHEET 2 OF 7





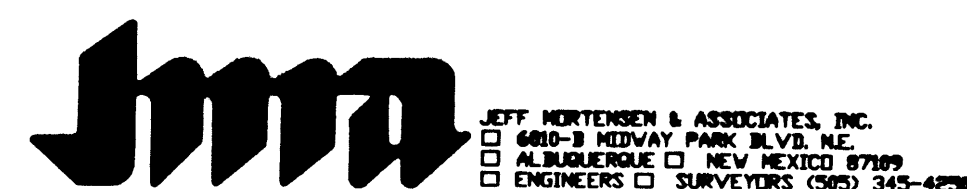
# RECORD DRAWING

NOTE: CONTRACTOR SUBSTITUTED A SINGLE GRATE (3.0' X 3.0') INLETS IN LIEU OF STD COA SINGLE 'D' INLETS

02-20-2008  
12-19-2007  
09-21-2006  
05-11-2006

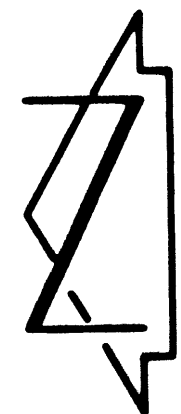


01-19-98  
02-26-98  
04-16-98



STORM INLET SECTIONS AND DETAILS  
CEI ENTERPRISES

DESIGNED BY	DATE	BY	NO UPDATES REQUIRED	REVISIONS	JOB NO.
JGM/GRB	05/06	JGM	NO UPDATES REQUIRED		2001008/1
DRAWN BY	DATE	BY	ADD SHEET 7		DATE
J.Y.R./RRV	09/06	JGM	ADD SHEET 7		03-1998
APPROVED BY	DATE	BY	RECORD DRAWING FOR TEMP. C.O.		SHEET
JGM	02/08	JGM	RECORD DRAWING FOR TEMP. C.O.		3 OF 7



SCALE: 1" = 20'



#### LEGEND

CLD CENTERLINE OF DOOR  
CLF CHAIN LINK FENCE  
CONC CONCRETE  
EA EDGE OF ASPHALT  
FL FLOWLINE  
INV INVERT  
MHR METAL HAND RAIL  
RR RAILROAD  
SAS SANITARY SEWER  
SD STORM DRAIN  
SI STORM INLET  
TA TOP OF ASPHALT  
TC TOP OF CURB  
TG TOP OF GRATE  
TCO TOP OF CONCRETE

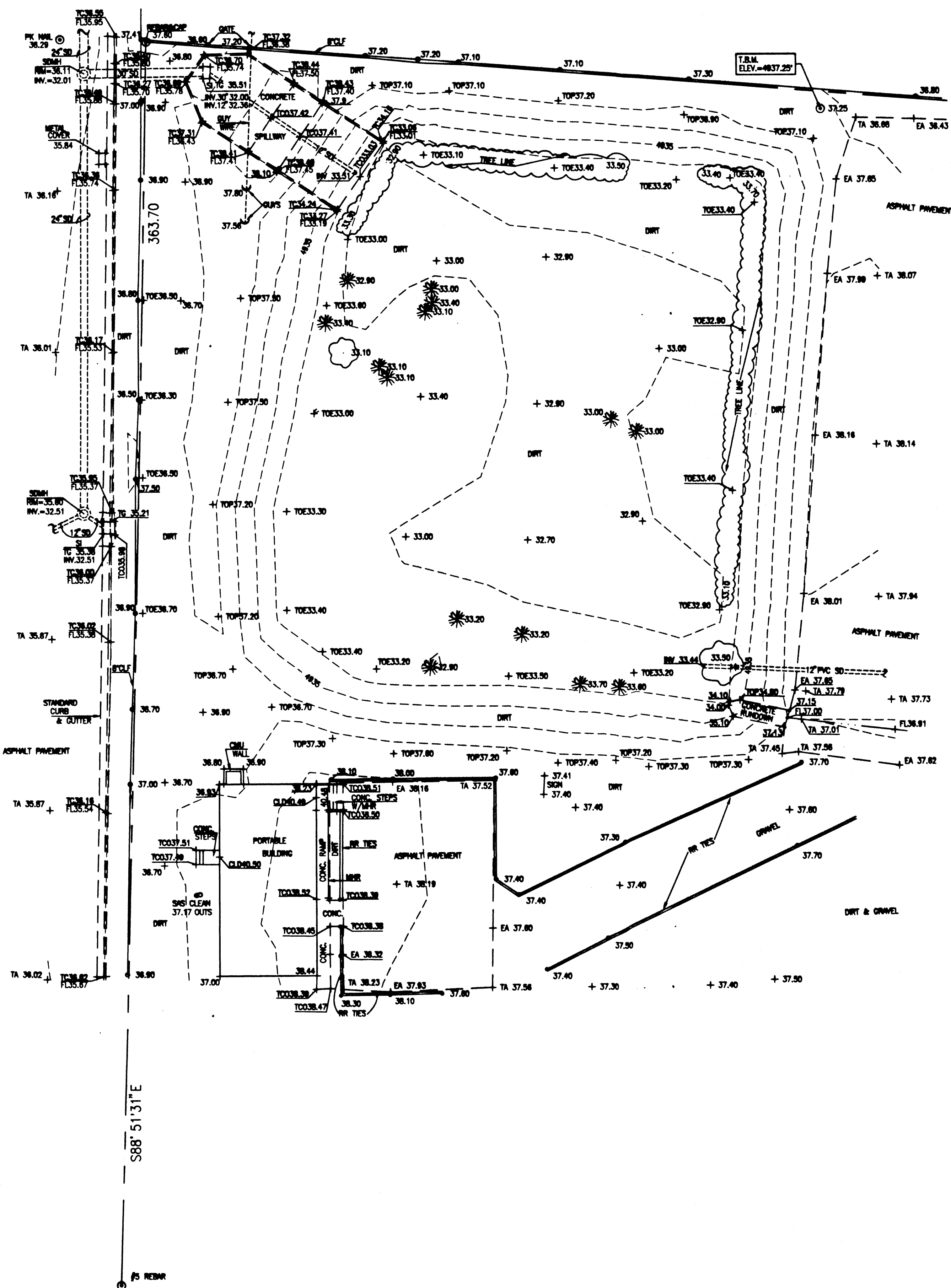
+ 24.5 EXISTING SPOT ELEVATION  
--- EXISTING CONTOUR

\* EXISTING SMALL DECIDUOUS TREE

EXISTING GROUP OF SMALL TREES

EXISTING TREE LINE

DESCANSO STREET S.E.



#### LEGAL DESCRIPTION

A PORTION OF LOTS 15 AND 16, BLOCK A, UNIT 1, SOUTH BROADWAY ACRES, AS THE SAME IS SHOWN AND DESIGNATED AS THE PLAT FILED IN THE OFFICE OF THE COUNTY CLERK OF BERNALILLO COUNTY, NEW MEXICO ON OCTOBER 13, 1932, VOLUME C2, FOLIO 134C.

#### PROJECT BENCHMARK

ACS 1 3/4" ALUMINUM DISK STAMPED "ACS BM, 13-M14", EPOXYED ON THE TOP OF THE NORTHWEST CORNER OF THE CONCRETE BASE OF A PEDESTRIAN CROSSING SIGNAL STATION ON THE SOUTH SIDE OF WOODWARD ST. S.E. 0.2 MILES WEST OF BROADWAY BLVD.  
ELEVATION = 4939.94 FEET (NGVD 1929)

#### T.B.M.

TOP OF A BRIDGE SPIKE NEAR THE SOUTHEAST CORNER OF THE POND AS SHOWN ON THE DRAWING  
ELEVATION = 4937.25 FEET (NGVD 1929)



#### VICINITY MAP

SCALE: 1" = 750'

M-14

## RECORD DRAWING

#### NOTES

- A topographic survey was performed in April, 2006. This is not a boundary survey, apparent property corners are shown for orientation only.
- All distances are ground distances.
- The Bearing Base shown hereon is based upon the record bearing between found property monuments on the north property line of CEI Enterprises as shown on a Topographic Survey of CEI Enterprises, dated November 1996, performed by Ronald A. Forstbauer Surveying Company.
- Site located within Section 32, Township 10 North, Range 3 East, N.M.P.M.
- Utility information shown hereon is based upon onsite surface evidence and City of Albuquerque Distribution Maps. Utility lines shown on this drawing are shown in an approximate manner only and such lines may exist where none are shown. If any such existing lines are shown, the location is based upon information provided by the owner of said utility, and the information may be incomplete, or may be obsolete by the time construction commences. The surveyor has conducted only preliminary investigation of the location, depth, size, or type of existing utility lines, pipelines, or underground utility lines. This investigation is not conclusive, and may not be complete, therefore, makes no representation pertaining thereto, and assumes no responsibility or liability therefor. The property owner, developer, or contractor shall inform itself of the location of any utility line, pipeline, or underground utility line in or near the area of the work in advance of and during excavation work. The property owner, developer, or 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. In planning and conducting excavation, the contractor shall comply with state statutes, municipal and local ordinances, rules and regulations, if any, pertaining to the location of these lines and facilities.

#### SURVEYORS CERTIFICATION

I, Charles G. Cala, Jr., New Mexico Professional Surveyor No. 11184, do hereby certify; that this survey and the actual survey on the ground upon which it is based were performed by me or under my direct supervision; that this survey meets the Minimum Standards for Surveying in New Mexico, and that it is true and correct to the best of my knowledge and belief.

ORIGINAL SURVEY SIGNED BY CHARLES G. CALA, JR.

Charles G. Cala, Jr., NMPS 11184

4-28-2006

Date



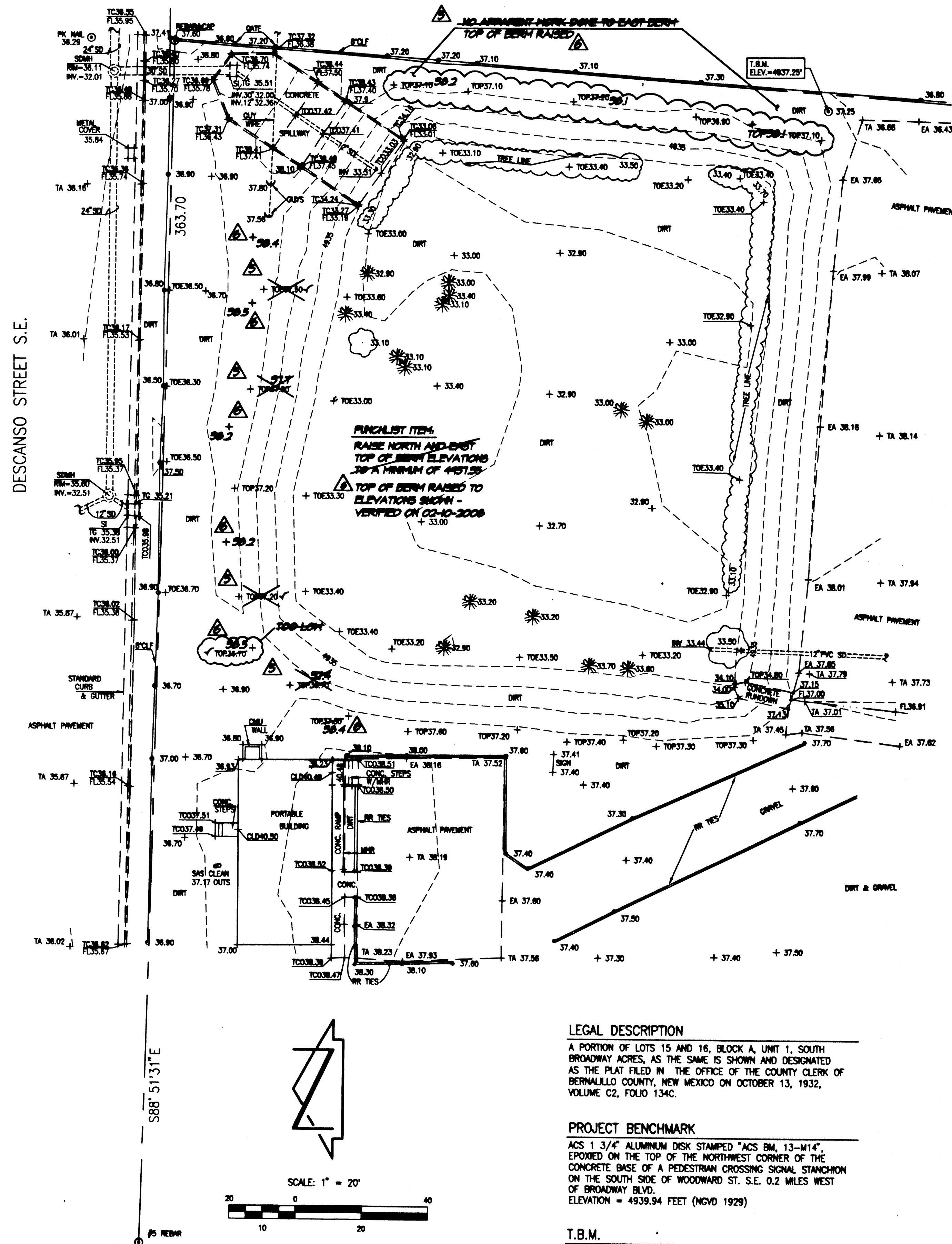
JEFF MORTENSON & ASSOCIATES, INC.  
6800-3 MIDWAY PARK BLVD. N.E.  
ALBUQUERQUE, N.M. 87109  
ENGINEERS & SURVEYORS (CSD) 945-4254  
FAX: 505 345-4254 ESTABLISHED 1977

### PARTIAL TOPOGRAPHIC SURVEY CEI ENTERPRISES POND TOPOGRAPHIC SURVEY

SURVEYED BY	DATE	BY	REVISIONS	JOB NO.	DATE	SHEET
R.J.E.	09/06	JCM	ADD SHEET 7	2007.008.1	04-2006	4
R.J.E.	09/07	JCM	RECORD DRAWING FOR TEMP. C.O.	978798		7
C.G.C.	02/08	JCM	RECORD DRAWING FOR PERM. C.O.			



NOTE:  
THIS IS NOT A BOUNDARY SURVEY; DATA IS SHOWN FOR ORIENTATION ONLY.  
THE BOUNDARY INFORMATION DEPICTED BY THIS PLAN IS BASED UPON A  
PREVIOUS SITE SURVEY PREPARED BY RONALD A. FORSTBAUER SURVEYING CO.  
NMPS NO. 6126, DATED NOVEMBER, 1996. TOPOGRAPHIC INFORMATION IS BASED  
UPON A PARTIAL TOPOGRAPHIC SURVEY PREPARED BY JEFF MORTENSEN &  
ASSOCIATES, INC. ON 4-25-2006, NMPS NO. 11184.



#### LEGAL DESCRIPTION

A PORTION OF LOTS 15 AND 16, BLOCK A, UNIT 1, SOUTH  
BROADWAY ACRES, AS THE SAME IS SHOWN AND DESIGNATED  
AS THE PLAT FILED IN THE OFFICE OF THE COUNTY CLERK OF  
BERNALILLO COUNTY, NEW MEXICO ON OCTOBER 13, 1932,  
VOLUME C2, FOLIO 134C.

#### PROJECT BENCHMARK

ACS 1 3/4" ALUMINUM DISK STAMPED "ACS BM, 13-M14",  
EXPONED ON THE TOP OF THE NORTHWEST CORNER OF THE  
CONCRETE BASE OF A PEDESTRIAN CROSSING SIGNAL STATION  
ON THE SOUTH SIDE OF WOODWARD ST. S.E. 0.2 MILES WEST  
OF BROADWAY BLVD.  
ELEVATION = 4939.94 FEET (NGVD 1929)

#### T.B.M.

TOP OF A BRIDGE SPIKE NEAR THE SOUTHEAST CORNER OF THE  
POND AS SHOWN ON THE DRAWING  
ELEVATION = 4937.25 FEET (NGVD 1929)

#### DRAINAGE PLAN

THIS PROJECT EVALUATES THE EXISTING DETENTION POND CREATED IN PHASE 2 OF THE APPROVED MASTER  
DRAINAGE PLAN (MDP) FOR CEI ENTERPRISES INC. (M14/D26) DATED 04-16-98 FOR THE FOLLOWING CRITERIA:

1. POND STORAGE CAPACITY
2. SPILLWAY OVERFLOW CAPACITY
3. 30" STORM DRAIN OVERFLOW CAPACITY
4. CONTROLLED OUTLET CAPACITY

THE POND CAPACITY IS EVALUATED AT TWO WATER SURFACE LEVELS FOR THE AS CONSTRUCTED SPILLWAY:

1. THE LOWEST ELEVATION OF THE AS CONSTRUCTED BERM (4936.7)
2. THE EXISTING CREST ELEVATION OF THE AS CONSTRUCTED CONCRETE SPILLWAY (4937.40)

THE POND CAPACITY IS ALSO EVALUATED AT A RECOMMENDED WATER SURFACE LEVEL OF 4936.3 FOR A NEW SPILLWAY

THE CALCULATIONS PRESENTED BELOW BEGIN WITH A TABULATION OF THE CRITERIA SPECIFIED IN THE APPROVED MDP.  
THE CALCULATIONS THAT APPEAR HEREON ANALYZE THE EXISTING POND STORAGE CAPACITY USING THE AVERAGE END-AREA  
METHOD. THE SPILLWAY OVERFLOWS AT ELEVATION 4937.4 TO AN ONSITE INLET THAT OUTLETS TO THE PUBLIC STORM DRAIN IN  
DESCANSO STREET SE VIA A 30" PIPE. AS A RESULT THE SPILLWAY CAPACITY WAS EVALUATED BY THE WEIR EQUATION FOR THE  
CREST OVERFLOW CONDITION AND BY THE ORIFICE EQUATION FOR THE 30" PIPE CAPACITY. THE AS CONSTRUCTED 12" POND  
OUTLET (CONTROLLED DISCHARGE) WAS EVALUATED BY THE ORIFICE EQUATION. BECAUSE A 12" OUTLET WAS INSTALLED IN LIEU  
OF THE 18" OUTLET DESIGNED, THE REQUIRED POND VOLUME MUST INCREASE. THE REQUIRED POND VOLUME WITH A 12"  
OUTLET PIPE WAS EVALUATED BY HYDROGRAPH ANALYSIS. A NEW SPILLWAY AND ADDITIONAL 12" OUTLET PIPE ARE  
RECOMMENDED AND WERE THEREFORE EVALUATED USING THE WEIR AND ORIFICE EQUATIONS RESPECTIVELY. THE NEW  
REQUIRED POND VOLUME DUE TO THESE RECOMMENDED IMPROVEMENTS WAS EVALUATED BY HYDROGRAPH ANALYSIS

THE FOLLOWING CONCLUSIONS WERE DETERMINED AS A RESULT OF THIS EVALUATION:

- THE SPILLWAY IS NOT BUILT IN THE LOCATION SHOWN ON THE APPROVED PLAN
- THE SPILLWAY CREST @ 4937.40 IS HIGHER THAN THE DESIGN ELEVATION @ 4936.30
- THE SPILLWAY DOES NOT DISCHARGE TO THE DESCANSO STREET SE. R.O.W. PER THE APPROVED PLAN; INSTEAD IT  
OUTLETS TO AN ONSITE 30" STORM DRAIN THAT HAS INSUFFICIENT CAPACITY
- THE SPILLWAY HAS AN OVERFLOW DISCHARGE CAPACITY EQUAL TO THE APPROVED DESIGN BUT IS LIMITED BY THE 30"  
PIPE CAPACITY
- THE AS CONSTRUCTED 12" OUTLET PIPE (CONTROLLED DISCHARGE) IS SMALLER THAN THE 18" PIPE SPECIFIED IN THE  
APPROVED PLAN AND THEREFORE RELEASES ONLY 6.5 CFS (AT WSL = 4936.7) AS OPPOSED TO 13.1 CFS (AS APPROVED)  
OR 14.2 CFS (AS ALLOWED)
- DUE TO THE REDUCED CONTROLLED DISCHARGE RATE, THE REQUIRED POND VOLUME MUST INCREASE TO 87,900 CF OR  
THE RELEASE RATE MUST BE INCREASED AS RECOMMENDED BELOW
- THE AS CONSTRUCTED POND WITH A CURRENT OVERFLOW ELEV @ 4936.70 HAS INSUFFICIENT STORAGE CAPACITY DUE  
TO THE REDUCED CONTROLLED DISCHARGE RATE

BASED ON THE CONCLUSIONS LISTED ABOVE, THE FOLLOWING RECOMMENDATIONS ARE PRESENTED:

- A NEW SPILLWAY SHOULD BE CONSTRUCTED AT THE ORIGINAL LOCATION SPECIFIED BY THE MDP (SHEETS 1 & 2)
- THE NEW SPILLWAY SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE ORIGINAL DESIGN WITH THE FOLLOWING  
ADJUSTMENTS REFLECTED IN REVISED SECTIONS C-C & D-D, SHEET 2:  
o THE 18" DISCHARGE PIPE SHALL BE REDUCED TO A 12" DISCHARGE PIPE WITH AN INVERT IN @ 4933.30 (SAME AS  
THE EXISTING 12" DISCHARGE PIPE) AND AN ASSOCIATED CAPACITY OF 6.0 CFS FOR A TOTAL RELEASE RATE (AT  
WSL = 4936.30) OF 6.0 CFS (NEW PIPE) + 6.0 CFS (EXIST PIPE) = 12.0 CFS.
- DUE TO THIS NEW RELEASE RATE, THE REQUIRED POND VOLUME MUST HAVE A CAPACITY OF 67,336 CF
- THE CREST ELEVATION SHALL REMAIN AT 4936.30 TO ALLOW FOR SUFFICIENT POND STORAGE CAPACITY OF 69,750 CF
- THE BERM AROUND THE POND SHALL BE RAISED TO A MINIMUM ELEVATION OF 4937.30

#### POND EVALUATION CALCULATIONS

##### I. APPROVED MASTER DRAINAGE PLAN CRITERIA

- A. REQUIRED POND VOLUME = 71,548 CF
- B. SPECIFIED POND VOLUME = 71,795 CF
- C. CONTROLLED DISCHARGE RATE = 13.1 CFS
- D. ALLOWABLE DISCHARGE RATE (MAX) = 14.2 CFS
- E. MAXIMUM WATER SURFACE LEVEL (MAX WSL) = 4,936.30
- F. TOTAL RUNOFF VOLUME =  $V_{100} = 97,072$  CF
- G. PEAK OVERFLOW DISCHARGE RATE =  $Q_{100} = 62.5$  CFS
- H. SPILLWAY CAPACITY = 63.5 CFS

##### II. AS CONSTRUCTED CONDITIONS

ELEV	AREA (SF)	VOLUME (CF)	TOTAL VOLUME (CF)
33	9200	$[(20615+9200)/2] \times 1 = 14910$	14910
34	20615	$[(23100+20615)/2] \times 1 = 21860$	36770
35	23100	$[(26550+23100)/2] \times 1 = 24830$	61600
36	26550	$[(27800+26550)/2] \times 0.3 = 8150$	69750
36.3	27800	$[(29390+27800)/2] \times 0.4 = 11440$	81190
36.7	29390	$[(30240+29390)/2] \times 0.3 = 8940$	90130
37	30240	$[(31250+30240)/2] \times 0.4 = 12300$	102430
37.4	31250		

1. 102,430 CF @ SPILLWAY CREST (4937.40)  $V_{required, 4937.40} = 80,985$  CF (SEE PONDING REQ'S BELOW)
2. 81,190 CF @ LOW POINT ON BERM (4936.70)  $V_{required, 4936.70} = 79,230$  CF (SEE PONDING REQ'S BELOW)

##### B. CONTROLLED DISCHARGE RATE

###### 1. DISCHARGE PIPE CAPACITY (12" PIPE)

SPILLWAY CREST @ 36.70  
 $Q = CA(2GH)^{1/2}$   
 $C = 0.6$   
 $A = 0.79$  SF  
 $G = 32.2$  FT/S<sup>2</sup>  
 $H = \text{MAX W.S.L.} - \text{PIPE INVERT} - 12' / 2$   
 $= 36.70 - 33.31 - 0.5 = 2.89$  FT  
 $Q_{12" \text{ PIPE}} = 6.5$  CFS

###### 2. POND DISCHARGE

$Q_{REL, 4936.70} = 6.5 \text{ CFS} < Q_{ALLOW} = 14.2 \text{ CFS}$        $Q_{REL, 4937.40} = 7.2 \text{ CFS} < Q_{ALLOW} = 14.2 \text{ CFS}$

SPILLWAY CREST @ 37.40  
 $Q = CA(2GH)^{1/2}$   
 $C = 0.6$   
 $A = 0.79$  SF  
 $G = 32.2$  FT/S<sup>2</sup>  
 $H = \text{MAX W.S.L.} - \text{PIPE INVERT} - 12' / 2$   
 $= 37.40 - 33.31 - 0.5 = 3.59$  FT  
 $Q_{12" \text{ PIPE}} = 7.2$  CFS

#### LEGEND

- |      |                    |        |                         |
|------|--------------------|--------|-------------------------|
| CLD  | CENTERLINE OF DOOR | TC     | TOP OF GRATE            |
| CLF  | CHAIN LINK FENCE   | TOO    | TOP OF CONCRETE         |
| CONC | CONCRETE           | + 24.5 | EXISTING SPOT ELEVATION |
| EA   | EDGE OF ASPHALT    | ---    | EXISTING CONTOUR        |
| FL   | FLOWLINE           |        |                         |
| INV  | INVERT             |        |                         |
| MHR  | METAL HAND RAIL    |        |                         |
| RR   | RAILROAD           |        |                         |
| SAS  | SANITARY SEWER     |        |                         |
| SD   | STORM DRAIN        |        |                         |
| SI   | STORM INLET        |        |                         |
| TA   | TOP OF ASPHALT     |        |                         |
| TC   | TOP OF CURB        |        |                         |

#### POND EVALUATION CALCULATIONS (CONT.)

##### 3. HYDROGRAPH ANALYSIS

- A. TIME OF BASE  
 $t_b = 2.107 E(A_p/Q_p) = 0.25(A_p/A_p)$   
 $t_b = 0.7378$  hr = 44.3 MIN
- B. TIME OF PEAK  
 $t_p = 0.7 t_b + (1.6 - A_p/A_p) / 12$   
 $t_p = 0.2181$  hr = 13.1 MIN
- C. TIME OF PEAK  
 $t_{pk} = 0.25 A_p/A_p$   
 $t_{pk} = 0.1657$  hr = 9.9 MIN

##### D. DISCHARGE VOLUME

AREA OF HYDROGRAPH = VOLUME  
 $A = t_b + t_{pk} / 2 \times Q_{REL, 4936.70}$  (60s/min)  
 $A = (44.3 + 38.3) / 2 \times (6.5) / 60$   
 $A_{WSL, 4936.70} = 15,107$  cf

AREA OF HYDROGRAPH = VOLUME  
 $A = (t_b + t_{pk}) / 2 \times Q_{REL, 4937.40}$  (60s/min)  
 $A = (44.3 + 38.3) / 2 \times (7.2) / 60$   
 $A_{WSL, 4937.40} = 17,842$  cf

##### 4. PONDING REQUIREMENTS

$V_{REQUIRED} = \text{TOTAL VOLUME} - \text{DISCHARGE VOLUME}$   
 $V_{REQUIRED, 4936.70} = 97,072 - 15,107 = 80,965$  cf

$V_{REQUIRED} = \text{TOTAL VOLUME} - \text{DISCHARGE VOLUME}$   
 $V_{REQUIRED, 4937.40} = 97,072 - 17,842 = 79,230$  cf

##### D. SPILLWAY CAPACITY

###### 1. SPILLWAY (WEIR EQUATION)

$Q_{SP} = CLH^{1.5}$   
 $C = 2.70$   
 $H = \text{TOP OF SPILLWAY CURB} - \text{CREST OF SPILLWAY}$   
 $= 4937.70 - 4936.70 = 1$  FT  
 $L = 23.5$  FT (WIDTH OF SPILLWAY, FACE TO FACE)  
 $Q_{SP} = 63.5$  CFS  $> Q_{100} = 62.5$  CFS

###### 2. 30-INCH PIPE (UNDER PRESSURE - ORIFICE EQUATION)

$Q = CA(2GH)^{1/2}$   
 $C = 0.6$        $A = 4.9$  SF  
 $G = 32.2$  FT/S<sup>2</sup>  
 $H = \text{MAX W.S.L.} - \text{PIPE INVERT} - 30' / 2$   
 $= 36.70 - 32.00 - 1.25 = 3.45$  FT  
 $Q_{30" \text{ PIPE}} = 43.8$  CFS  
 $Q_{30" \text{ PIPE}} = 43.8 \text{ CFS} < Q_{100} = 62.5 \text{ CFS}$

##### III. PROPOSED CONDITIONS

###### A. POND VOLUME

1. NEW SPILLWAY CREST ELEVATION @ 4936.30  
 $V_{ELEV, 4936.30} = 69,750$  CF (SEE AS CONSTRUCTED POND VOLUME CALC)  
 $V_{ELEV, 4936.30} = 69,750 \text{ CF} > V_{REQUIRED, 4936.30} = 67,336$  CF (SEE PONDING REQUIREMENTS BELOW)

###### B. CONTROLLED DISCHARGE RATE

1. DISCHARGE PIPES CAPACITY (NEW 12" OUTLET PIPE IN ADDITION TO EXISTING 12" PIPE WITH SAME INVERT IN @ 36.30 FOR BOTH PIPES)

$Q = CA(2GH)^{1/2}$   
 $C = 0.6$   
 $A = 0.79$  SF  
 $G = 32.2$  FT/S<sup>2</sup>  
 $H = \text{MAX W.S.L.} - \text{PIPE INVERT} - 12' / 2$   
 $= 36.30 - 33.30 - 0.5 = 2.50$  FT  
 $Q_{12" \text{ PIPE}} = 6.0$  CFS  
 $Q_{NEW 12" \text{ PIPE}} = Q_{EXISTING 12" \text{ PIPE}} = 6.0$  CFS

###### 2. POND DISCHARGE

$Q_{REL} = 6.0 + 6.0 = 12.0$  CFS  
 $Q_{REL, 4936.30} = 12.0 \text{ CFS} < Q_{ALLOW} = 14.2 \text{ CFS}$

###### 3. DISCHARGE VOLUME

AREA OF RELEASE = DISCHARGE VOLUME  
 $A = (t_b + t_{pk}) / 2 \times Q_{REL, 4936.30}$  (60s/min)  
 $A = (44.3 + 38.3) / 2 \times (12.0) / 60$   
 $A_{WSL, 4936.30} = 29,736$  cf

###### 4. PONDING REQUIREMENTS

$V_{REQUIRED} = V_{100} - \text{DISCHARGE VOLUME}$   
 $V_{REQUIRED, 4936.30} = 97,072 - 29,736 = 67,336$  cf

##### C. SPILLWAY CAPACITY

###### 1. OVERFLOW DISCHARGE (WEIR EQUATION)

$Q_{SP} = CLH^{1.5}$   
 $C = 2.70$   
 $H = \text{TOP OF SPILLWAY CURB} - \text{CREST OF SPILLWAY}$   
 $= 4937.30 - 4936.30 = 1$  FT  
 $L = 23.5$  FT (WIDTH OF SPILLWAY, FACE TO FACE)  
 $Q_{SP} = 63.5$  CFS  $> Q_{100} = 62.5$  CFS

RECORD DRAWING  
FOR CERTIFICATION, SEE SHEET 1A



02-20-2006  
05-11-2006  
09-21-2006  
12-19-2007

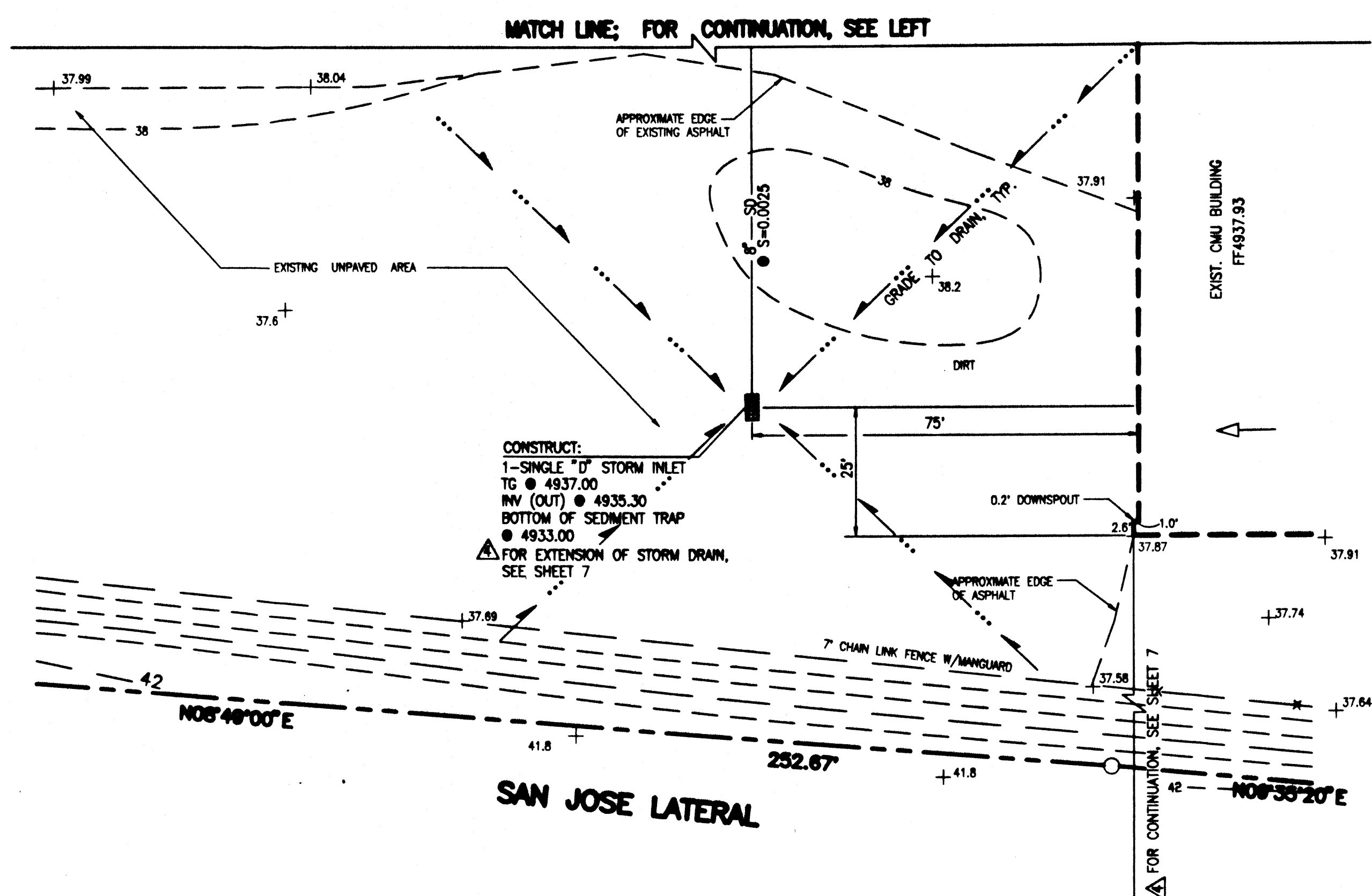
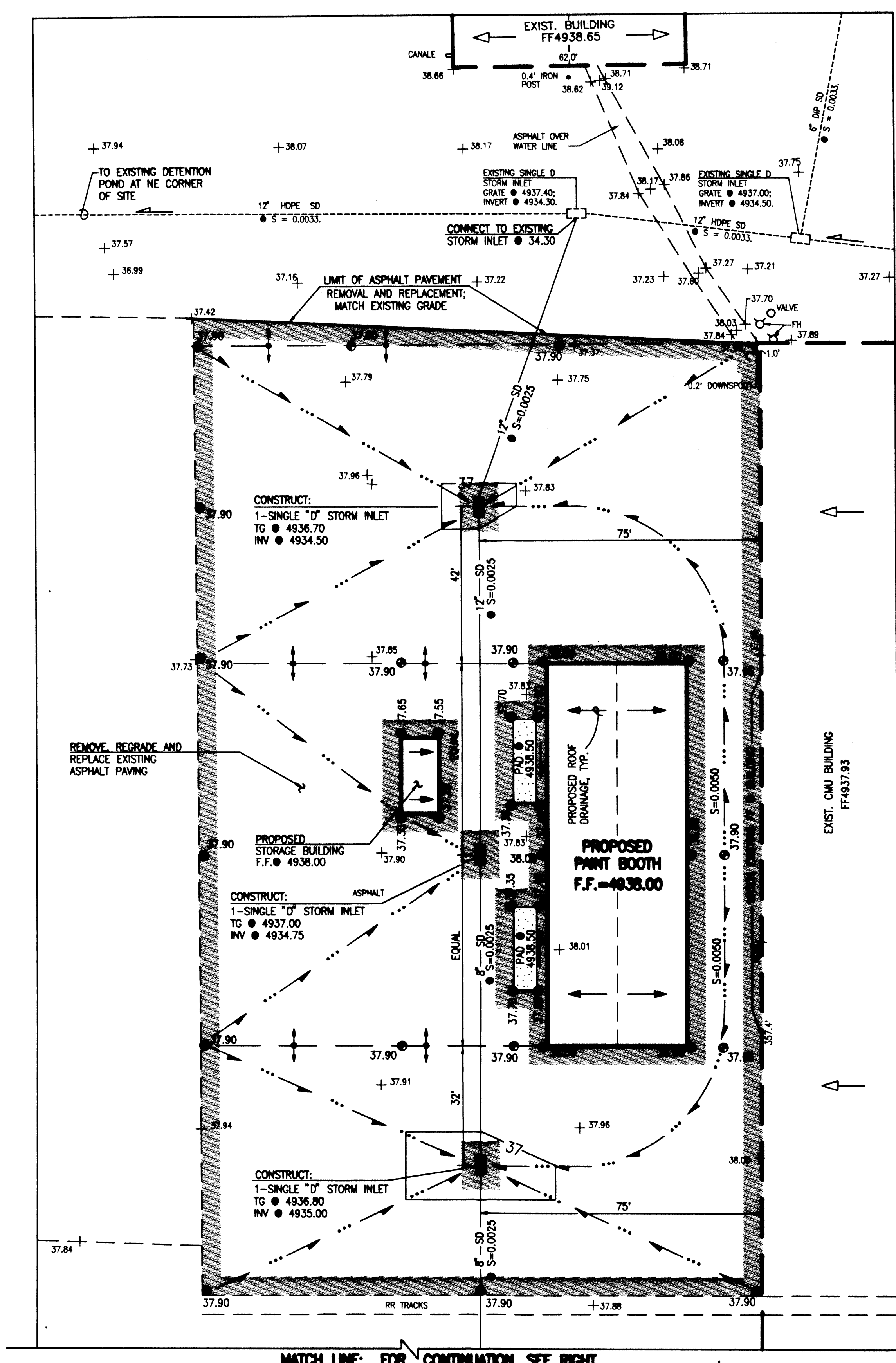
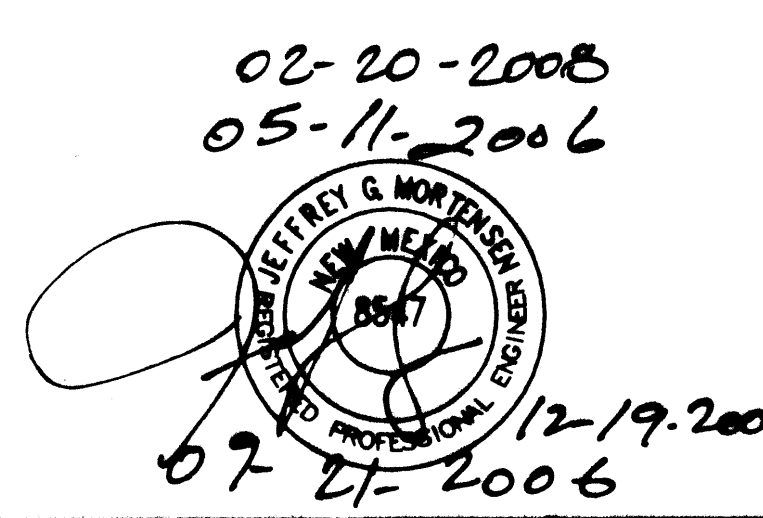
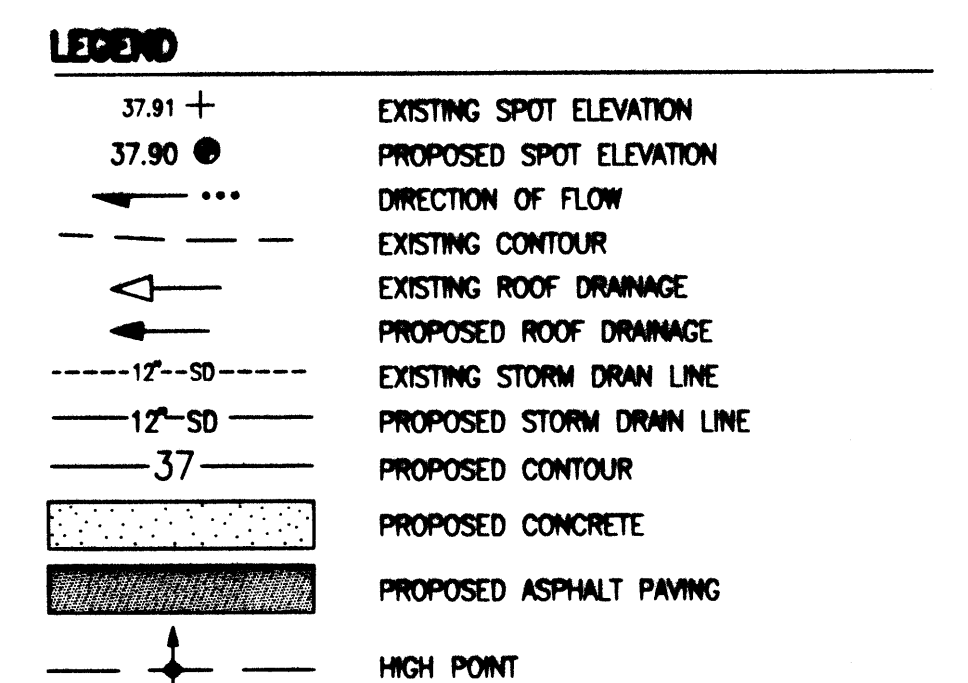
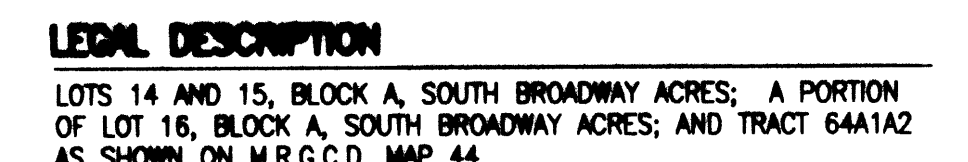
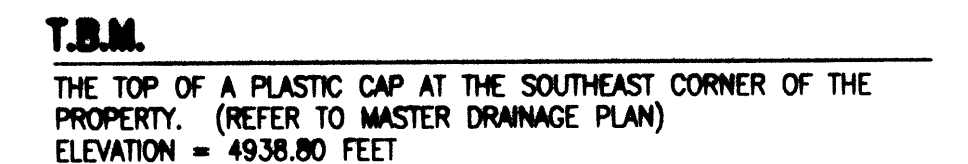
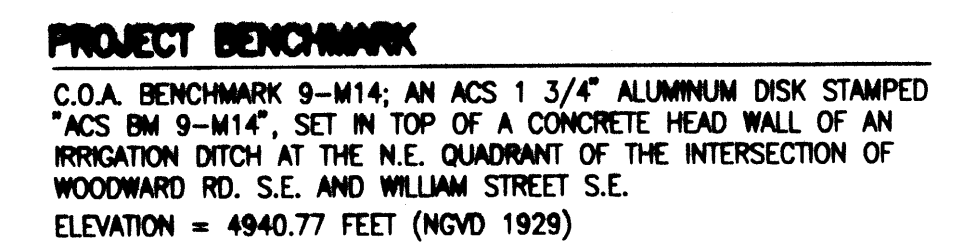
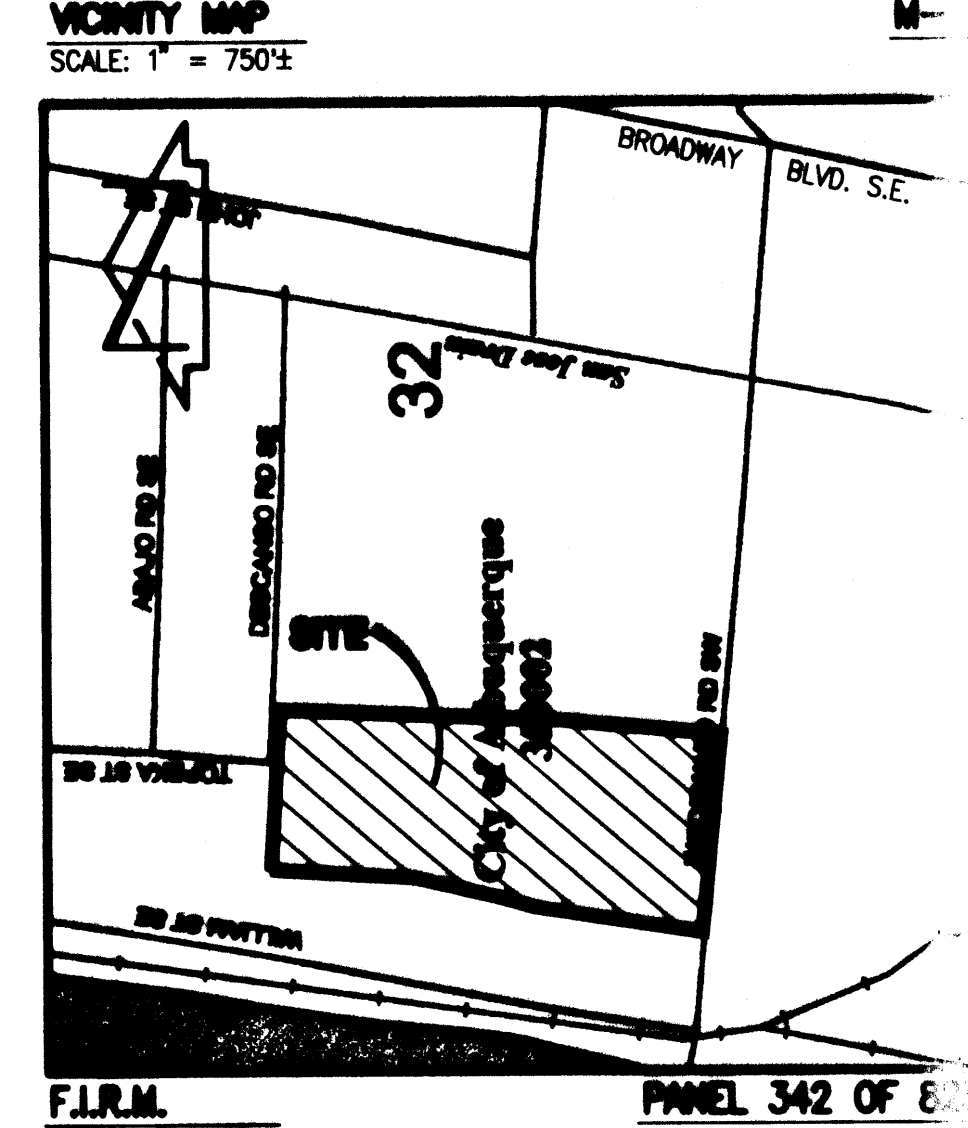
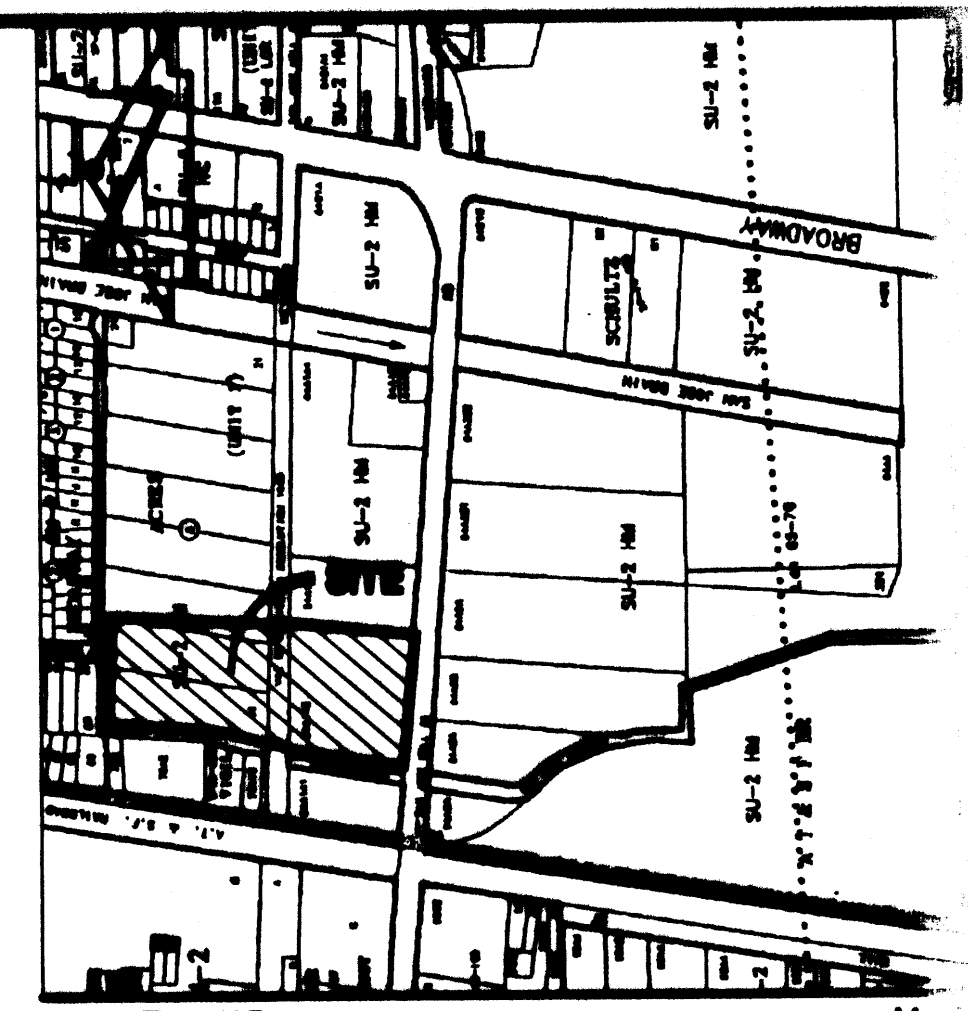
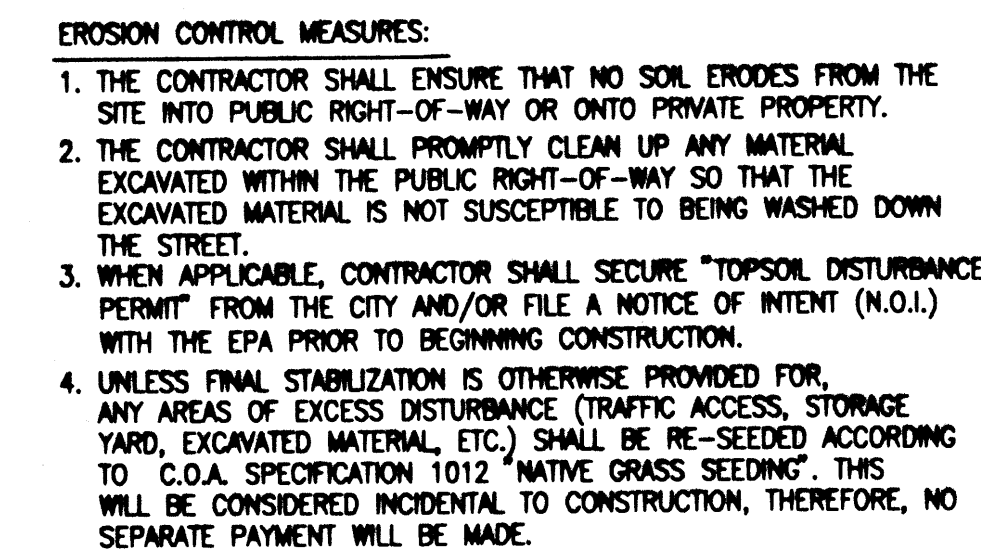
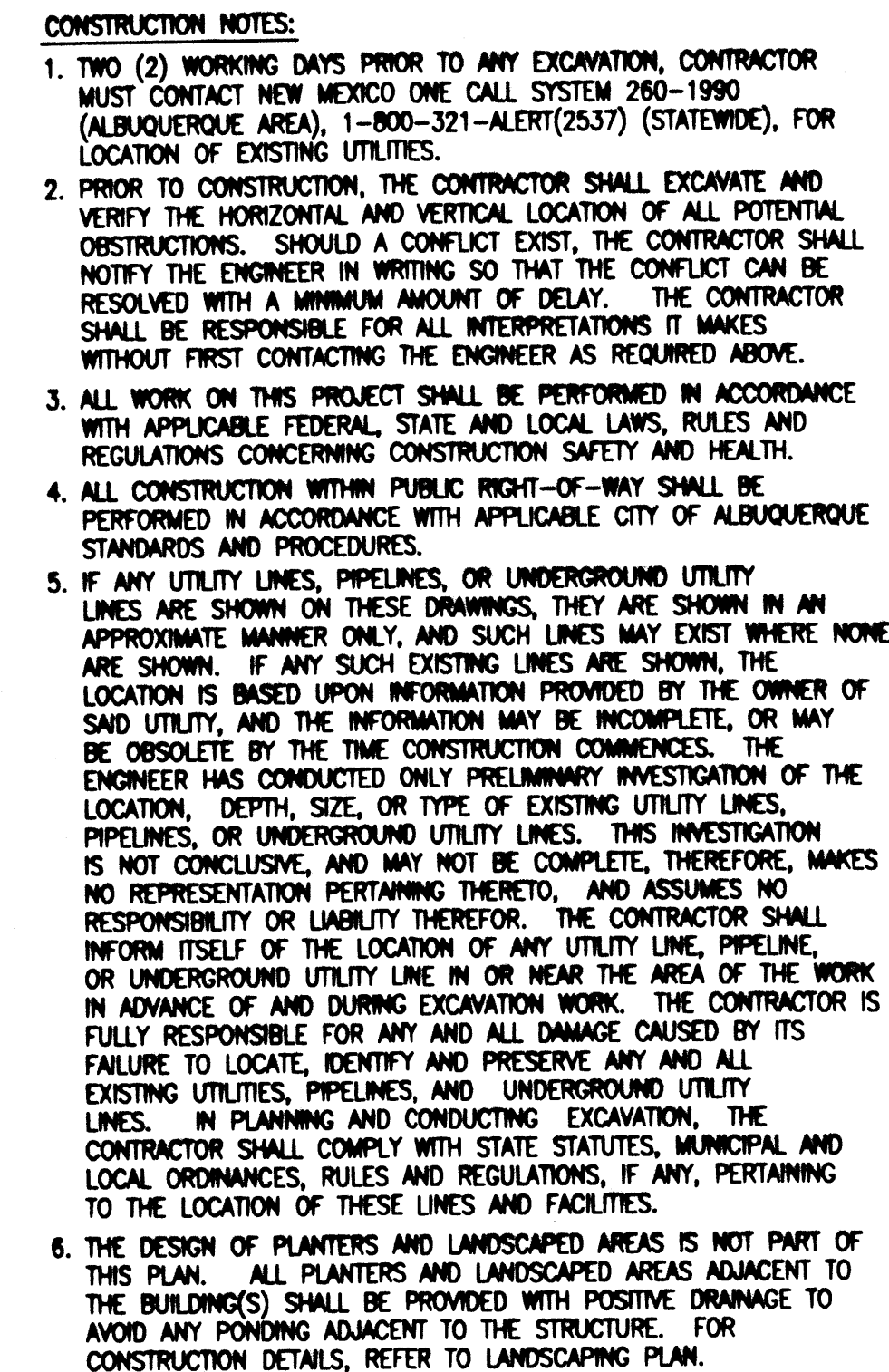
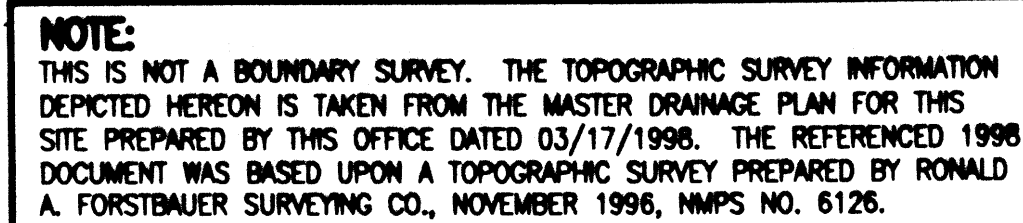


JEFF MORTENSEN & ASSOCIATES, INC.  
6802-B MIDWAY PARK BLVD. SE.  
ALBUQUERQUE, NM 87105  
ENGINEERS & SURVEYORS (0003) 345-4239  
FAX: 345-4254 © ESTABLISHED 1977

## DETENTION POND EVALUATION STUDY CEI ENTERPRISES MASTER DRAINAGE PLAN UPDATE


DESIGNED BY	DATE	BY	REVISIONS	JOB NO.
J.G.M.	09/06	J.G.M.	ADD SHEET 7	2001208/976798
DRWN BY	09/07	R.R.V.	CERTIFICATION FOR TEMP. C.O.	DATE
APPROVED BY	02/08	J.G.M.	CERTIFICATION FOR PERM. C.O.	05-2006
				SHEET 5 OF 7








**RECORD DRAWING**  
**SEE SHEET 6A**

**GRADING and DRAINAGE PLAN**  
**CEI ENTERPRISES PAINT BOOTH ADDITION-PHASE 3A**



**JEFF MONTGOMERY & ASSOCIATES, INC.**  
☐ 6910-B MIDWAY PARK BLVD. N.E.  
☐ ALBUQUERQUE ☐ NEW MEXICO 87108  
☐ ENGINEERS ☐ SURVEYORS (505) 346-6290  
☐ FAX: 505 346-4254 ☐ ESTABLISHED 1977

DESIGNED BY	<u>J.G.M.</u>	NO.	DATE	BY	REVISIONS	JOB NO.	2001.005.1
			09/06	J.G.M.	ADD SHEET 7		<del>978798</del>
			06/07	J.G.M.	RECORD DRAWING FOR TEMP. C.O.		
			02/08	J.G.M.	RECORD DRAWING FOR PERM. C.O.		
DRAWN BY	<u>LHA/RRV</u>					DATE	05-2006
APPROVED BY	<u>J.G.M.</u>					SHEET	6 OF 7

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File Name:	70031GD_AB.DWG	Plot Time:	11:31 am

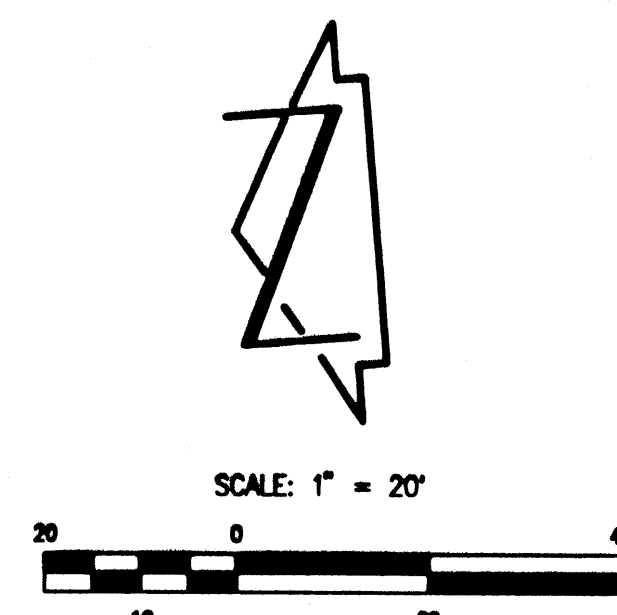


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File Name: 2003\0506A\_AB.DWG Plot Time: 11:32 am



JERRY MORTENSEN & ASSOCIATES, INC.  
6010-B AIRWAY PARK BLVD. N.E.  
ALBUQUERQUE, N.M. 87110  
ENGINEERS & SURVEYORS (C&D) 340-4250  
FAX: 340-4254 □ ESTABLISHED 1977

# GRADING and DRAINAGE PLAN CEI ENTERPRISES PAINT BOOTH ADDITION-PHASE 3A



**NOTE:**  
THIS IS NOT A BOUNDARY SURVEY. THE TOPOGRAPHIC SURVEY INFORMATION DEPICTED HEREON IS TAKEN FROM THE MASTER DRAINAGE PLAN FOR THIS SITE PREPARED BY THIS OFFICE DATED 03/17/1998. THE REFERENCED 1998 DOCUMENT WAS BASED UPON A TOPOGRAPHIC SURVEY PREPARED BY RONALD A. FORSTBAUER SURVEYING CO., NOVEMBER 1998, NMPS NO. 6126.

- CONSTRUCTION NOTES:**
- TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT NEW MEXICO ONE CALL SYSTEM 260-1990 (ALBUQUERQUE AREA), 1-800-321-ALERT(2537) (STATEWIDE), FOR LOCATION OF EXISTING UTILITIES.
  - PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL POTENTIAL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL INTERPRETATIONS IT MAKES WITHOUT FIRST CONTACTING THE ENGINEER AS REQUIRED ABOVE.
  - 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.
  - ALL CONSTRUCTION WITHIN PUBLIC RIGHT-OF-WAY SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE CITY OF ALBUQUERQUE STANDARDS AND PROCEDURES.
  - IF ANY UTILITY LINES, PIPELINES, OR UNDERGROUND UTILITY LINES ARE SHOWN ON THESE DRAWINGS, THEY ARE SHOWN IN AN APPROXIMATE MANNER ONLY, AND SUCH LINES MAY EXIST WHERE NONE ARE SHOWN. IF ANY SUCH EXISTING LINES ARE SHOWN, THE LOCATION IS BASED UPON INFORMATION PROVIDED BY THE OWNER OF SAID UTILITY, AND THE INFORMATION MAY BE INCOMPLETE, OR MAY BE OBSOLETE BY THE TIME CONSTRUCTION COMMENCES. THE ENGINEER HAS CONDUCTED ONLY PRELIMINARY INVESTIGATION OF THE LOCATION, DEPTH, SIZE, OR TYPE OF EXISTING UTILITY LINES, PIPELINES, OR UNDERGROUND UTILITY LINES. THIS INVESTIGATION IS NOT CONCLUSIVE, AND MAY NOT BE COMPLETE, THEREFORE, MAKES NO REPRESENTATION OR WARRANTY THEREON, AND ASSUMES NO RESPONSIBILITY OF LIABILITY THEREFOR. THE CONTRACTOR SHALL INFORM ITSELF OF THE LOCATION OF ANY UTILITY LINE, PIPELINE, OR UNDERGROUND UTILITY LINE IN OR NEAR THE AREA OF THE WORK IN ADVANCE OF AND DURING EXCAVATION WORK. 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. IN PLANNING AND CONDUCTING EXCAVATION, THE CONTRACTOR SHALL COMPLY WITH STATE STATUTES, MUNICIPAL AND LOCAL ORDINANCES, RULES AND REGULATIONS, IF ANY, PERTAINING TO THE LOCATION OF THESE LINES AND FACILITIES.
  - THE DESIGN OF PLANTERS AND LANDSCAPED AREAS IS NOT PART OF THIS PLAN. ALL PLANTERS AND LANDSCAPED AREAS ADJACENT TO THE BUILDING(S) SHALL BE PROVIDED WITH POSITIVE DRAINAGE TO AVOID ANY PONDING ADJACENT TO THE STRUCTURE. FOR CONSTRUCTION DETAILS, REFER TO LANDSCAPING PLAN.
  - THIS PLAN IS FOR GRADING & DRAINAGE PURPOSES ONLY. REFER TO ARCHITECTURAL SITE PLAN FOR LOCATION OF BUILDING AND PAVING IMPROVEMENTS.

- EROSION CONTROL MEASURES:**
- THE CONTRACTOR SHALL ENSURE THAT NO SOIL ERODES FROM THE SITE INTO PUBLIC RIGHT-OF-WAY OR ONTO PRIVATE PROPERTY.
  - THE CONTRACTOR SHALL PROMPTLY CLEAN UP ANY MATERIAL EXCAVATED WITHIN THE PUBLIC RIGHT-OF-WAY SO THAT THE EXCAVATED MATERIAL IS NOT SUSCEPTIBLE TO BEING WASHED DOWN THE STREET.
  - WHEN APPLICABLE, CONTRACTOR SHALL SECURE "TOPSOIL DISTURBANCE PERMIT" FROM THE CITY AND/OR FILE A NOTICE OF INTENT (N.O.I.) WITH THE EPA PRIOR TO BEGINNING CONSTRUCTION.
  - UNLESS FINAL STABILIZATION IS OTHERWISE PROVIDED FOR, ANY AREAS OF EXCESS DISTURBANCE (TRAFFIC ACCESS, STORAGE YARD, EXCAVATED MATERIAL, ETC.) SHALL BE RE-SEEDING ACCORDING TO C.O.A. SPECIFICATION 1012 "NATIVE GRASS SEEDING". THIS WILL BE CONSIDERED INCIDENTAL TO CONSTRUCTION, THEREFORE, NO SEPARATE PAYMENT WILL BE MADE.

THIS PROJECT REPRESENTS A PORTION OF PHASE 3 AS SET FORTH IN THE APPROVED MASTER DRAINAGE PLAN (MDP) FOR CEI ENTERPRISES INC. (M14/D26) DATED 03-17-98. BASED UPON A VISUAL SITE INSPECTION ON 04-25-2006, PHASES 1 AND 2 ARE COMPLETE. THOSE PORTIONS OF PHASE 3 THAT LIE ON THE EAST HALF OF THE SITE ARE NOW PHASE 3B, FUTURE PROJECTS. PHASE 3A, THE FOCUS OF THIS SUBMITTAL, IS GENERALLY SITUATED AT THE NORTHWEST CORNER OF THE SITE.

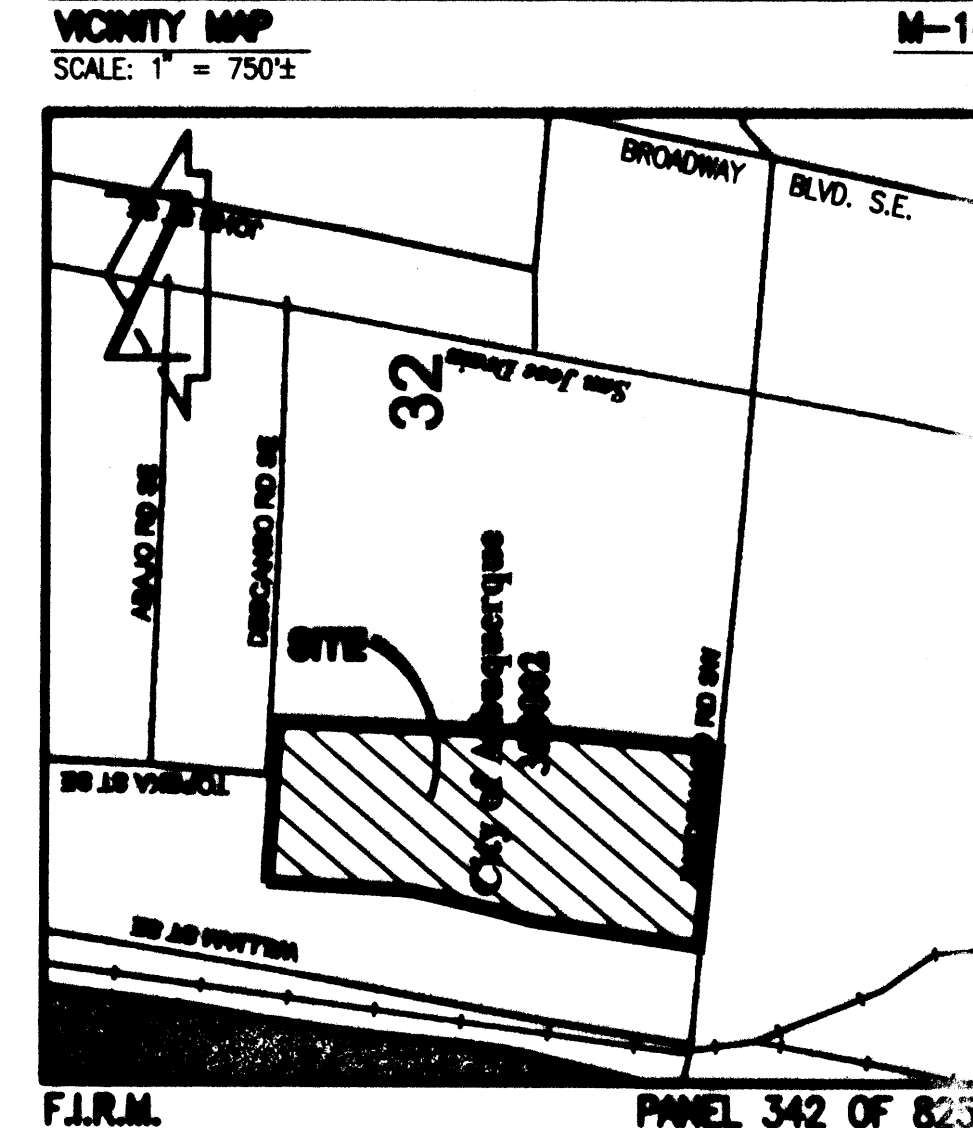
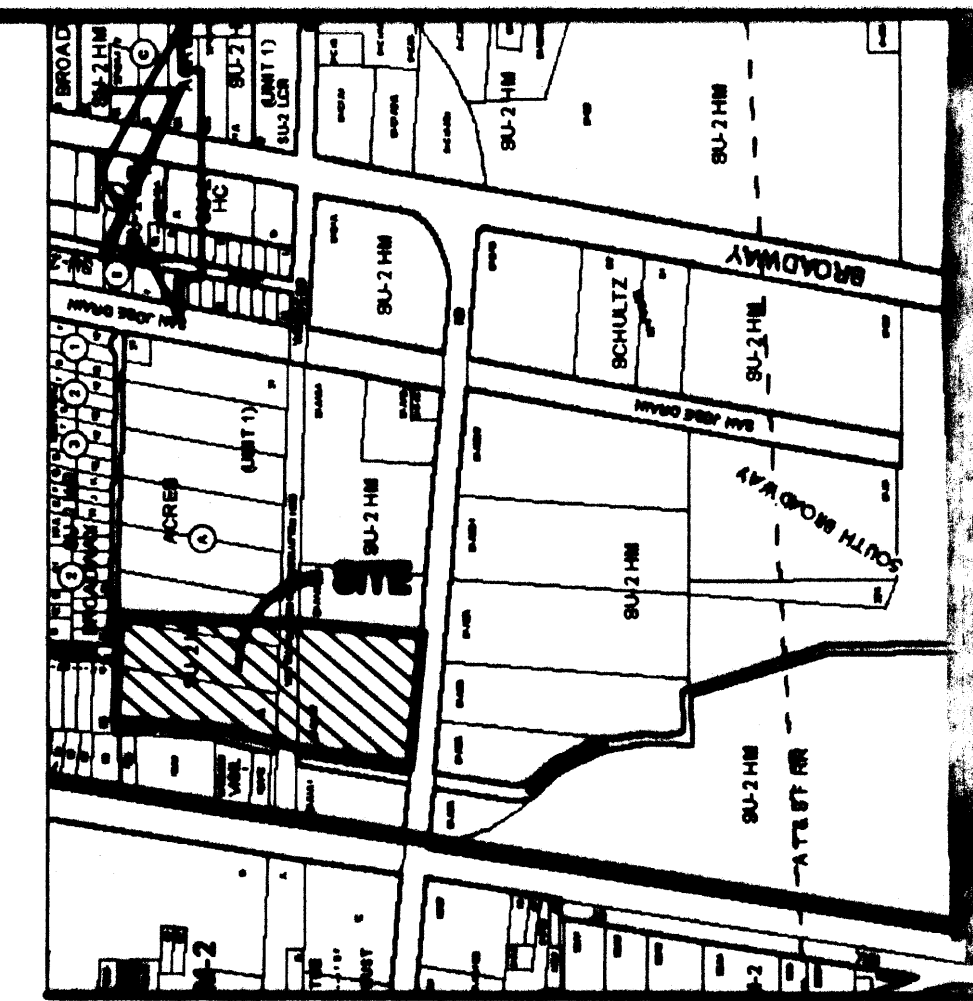
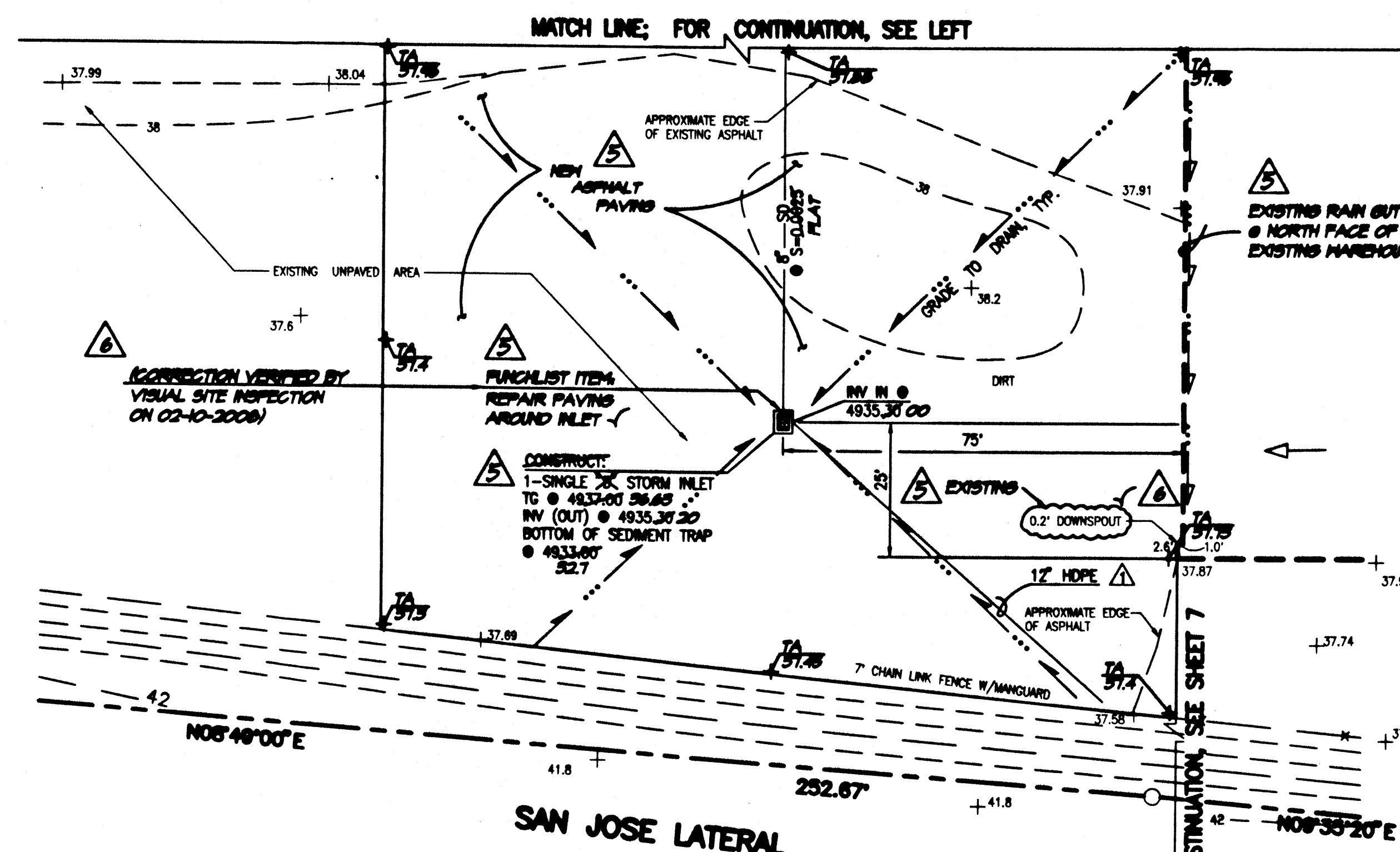
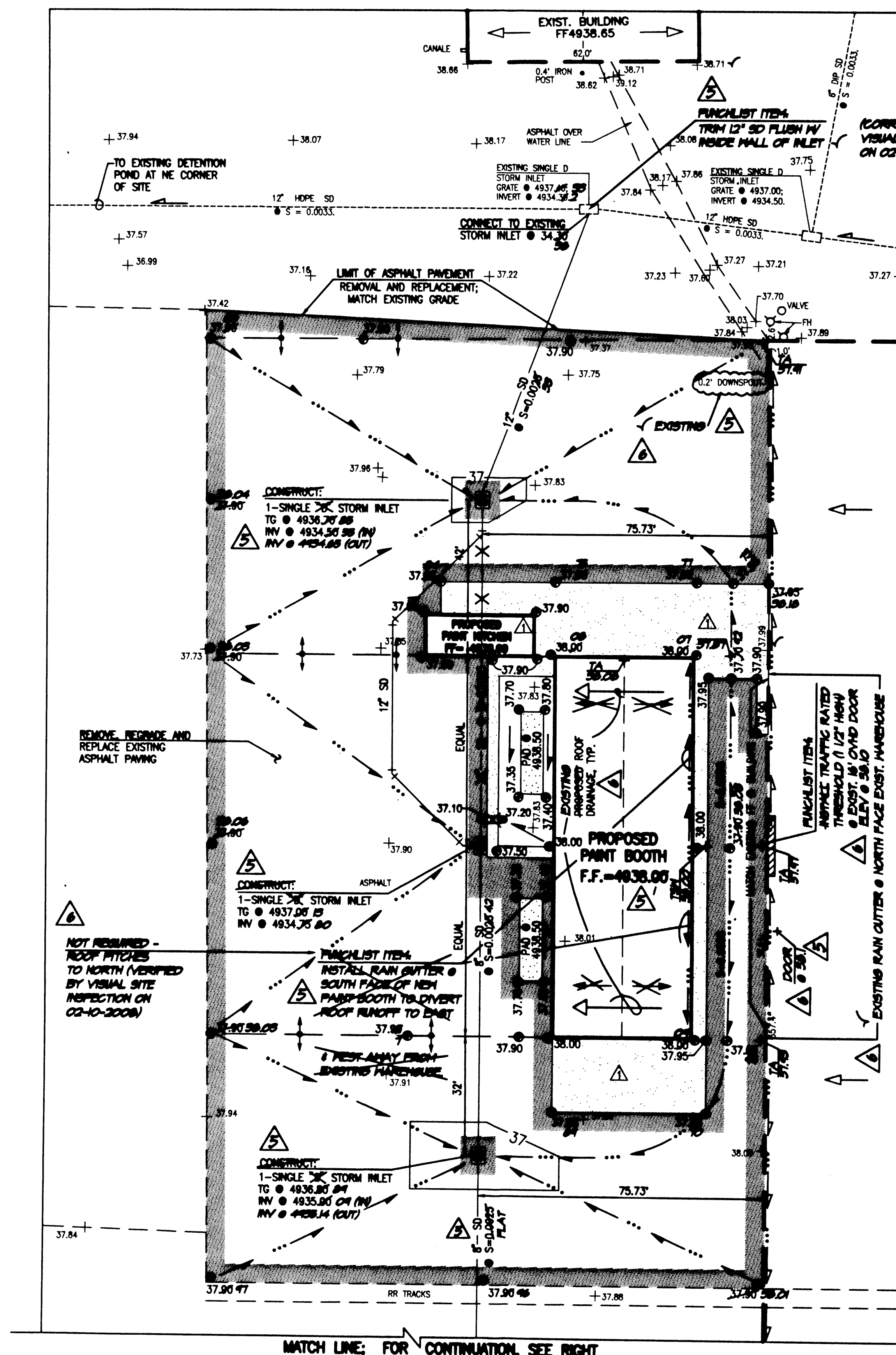
PHASE 3A INVOLVES THE REMOVAL, REGRADING AND REPAVING OF AN EXISTING PAVED AREA OF THE SITE. THIS PROPOSED WORK IS CONSISTENT WITH THE ABOVE REFERENCED APPROVED MDP. A SLIGHT DEPARTURE FROM THE MDP IS THE INCLUSION OF A PAINT BOOTH BUILDING AND A STORAGE BUILDING. BOTH WILL LIE WITHIN THE AREA PREVIOUSLY DESIGNATED FOR PAVING. HENCE WILL HAVE NO IMPACT ON THE HYDROLOGY OF THE SITE. THE RUNOFF FROM PHASE 3A WILL BE COLLECTED BY A PRIVATE STORM DRAIN SYSTEM AND CONNECTED THE PHASE 2 PRIVATE STORM DRAIN THAT DISCHARGES TO THE EXISTING PHASE 2 PRIVATE DETENTION POND LOCATED AT THE NORTHEAST CORNER OF THE SITE.

CONCURRENT WITH THIS SUBMITTAL, THE MDP WILL BE UPDATED TO REFLECT THE FOLLOWING:

- REFINEMENT TO PROJECT PHASING
- PAINT BOOTH AND STORAGE BUILDING ADDITION
- AS-BUILT SURVEY OF THE PRIVATE DETENTION POND
- EVALUATION OF POND STORAGE CAPACITY
- EVALUATION OF POND OUTLET CAPACITY
- EVALUATION OF POND OVERFLOW (SPILLWAY) CAPACITY

APPROVAL OF THE MDP UPDATE SHALL BE A CONDITION FOR CERTIFICATE OF OCCUPANCY FOR PHASE 3A. THIS SUBMITTAL IS FOR BUILDING PERMIT APPROVAL FOR PHASE 3A.

## RECORD DRAWING FOR CERTIFICATION, SEE SHEET 1A



**PROJECT BENCHMARK**  
C.O.A. BENCHMARK 9-M14; AN ACS 1 3/4" ALUMINUM DISK STAMPED "ACS BM 9-M14", SET IN TOP OF A CONCRETE HEAD WALL OF AN IRRIGATION DITCH AT THE N.E. QUADRANT OF THE INTERSECTION OF WOODWARD RD. S.E. AND WILLIAM STREET S.E. ELEVATION = 4940.77 FEET (NGVD 1929)

**T.B.M.**  
THE TOP OF A PLASTIC CAP AT THE SOUTHEAST CORNER OF THE PROPERTY. (REFER TO MASTER DRAINAGE PLAN) ELEVATION = 4938.00 FEET

**LEGAL DESCRIPTION**  
LOTS 14 AND 15, BLOCK A, SOUTH BROADWAY ACRES; A PORTION OF LOT 16, BLOCK A, SOUTH BROADWAY ACRES; AND TRACT 64A1A2 AS SHOWN ON M.R.G.C.D. MAP 44

LEGEND	
37.91 +	EXISTING SPOT ELEVATION
37.90 ●	PROPOSED SPOT ELEVATION
---	DIRECTION OF FLOW
---	EXISTING CONTOUR
---	EXISTING ROOF DRAINAGE
---	PROPOSED ROOF DRAINAGE
---	EXISTING STORM DRAIN LINE
---	PROPOSED STORM DRAIN LINE
---	PROPOSED CONTOUR
---	PROPOSED CONCRETE
---	PROPOSED ASPHALT PAVING
+	HIGH POINT

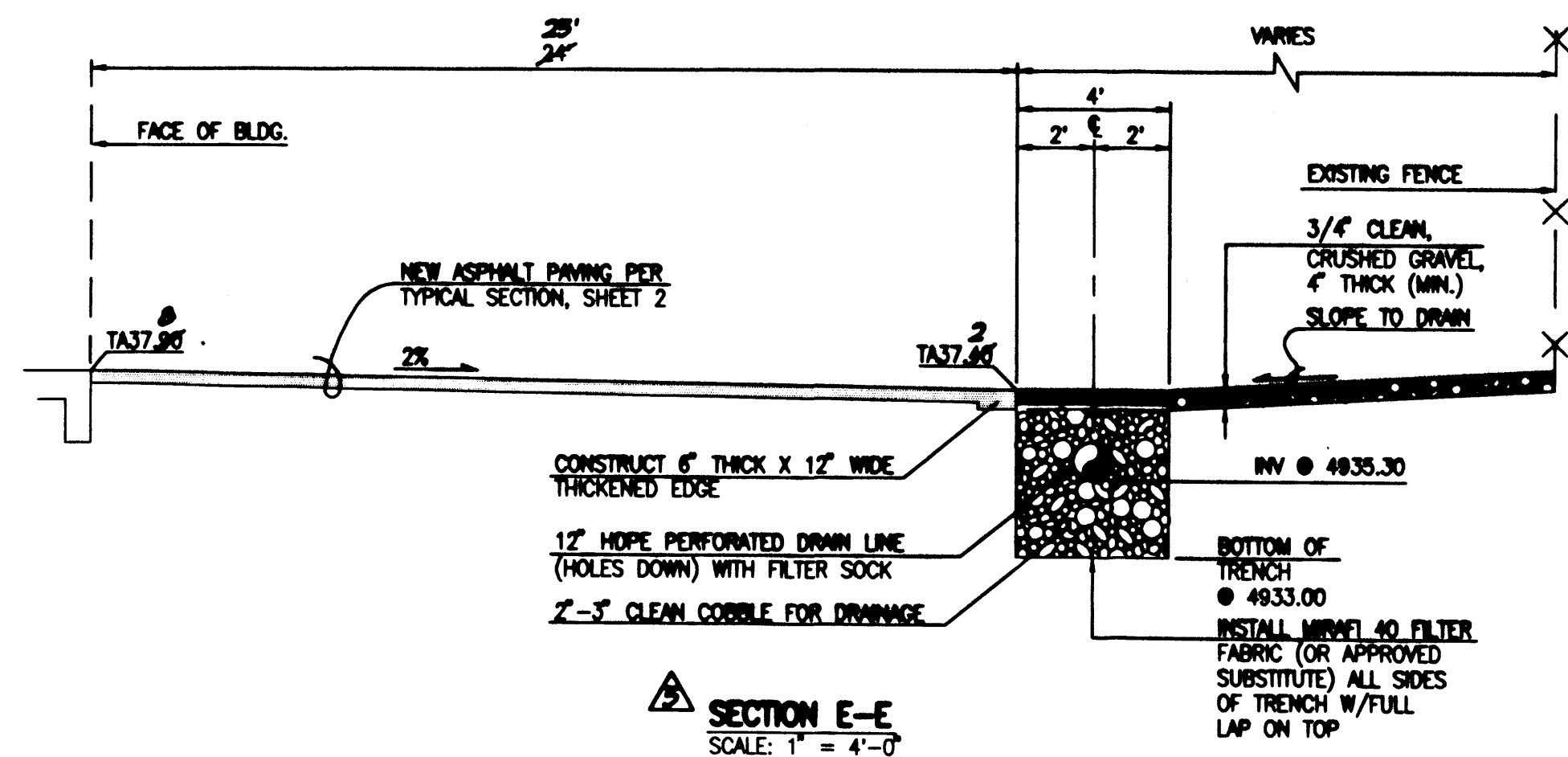
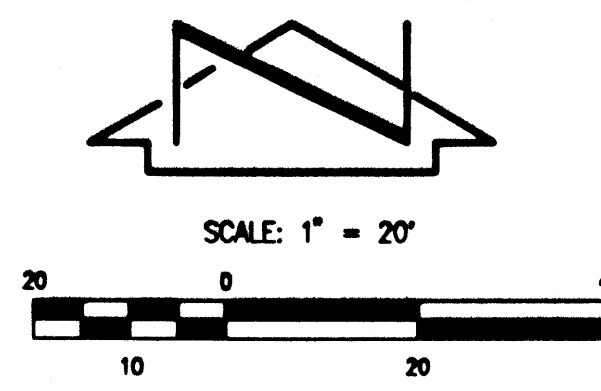
RECORD INFORMATION  
RECORD INFORMATION - AS-DESIGNED  
RECORD INFORMATION - AS-DESIGNED

05-11-2006  
02-20-2008  
12-19-2007  
09-21-2006

DESIGNED BY	DATE	BY	REVISIONS	JOB NO.
J.G.H.	11/06	J.G.H.	SITE PLAN REVISIONS - PAINT KITCHEN	2007.003.1
J.P.R.R.V.	11/06	J.P.R.R.V.	DRAINAGE CERTIFICATION FOR TEMP. C.O.	DATE 11-2006
J.G.H.	11/06	J.G.H.	RE-CERTIFICATION FOR PERM. C.O.	SHEET 6A OF 7



**NOTE:**  
THIS IS NOT A BOUNDARY SURVEY. THE TOPOGRAPHIC SURVEY INFORMATION DEPICTED HEREON IS TAKEN FROM THE MASTER DRAINAGE PLAN FOR THIS SITE PREPARED BY THIS OFFICE DATED 03/17/1998. THE REFERENCED 1998 DOCUMENT WAS BASED UPON A TOPOGRAPHIC SURVEY PREPARED BY RONALD A. FORSTBAUER SURVEYING CO., NOVEMBER 1996, NMPS NO. 6126.



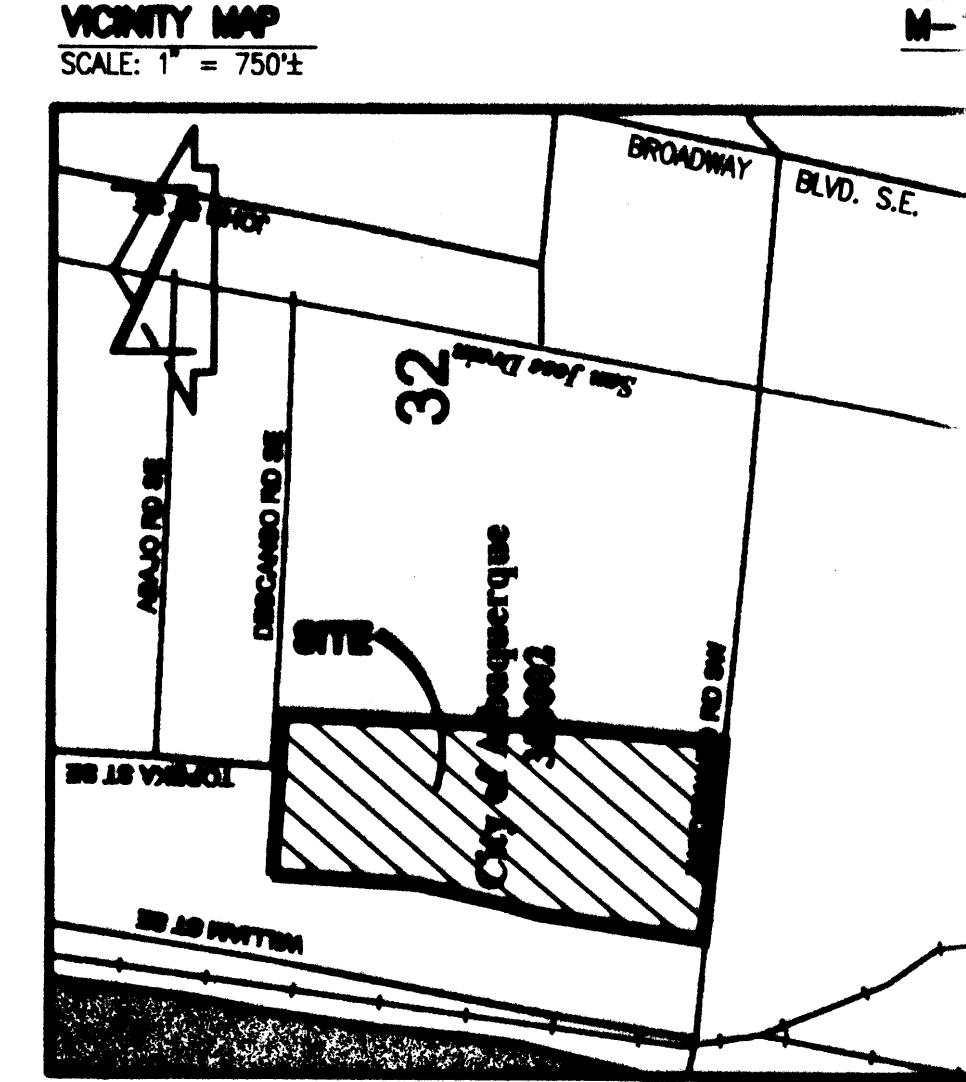
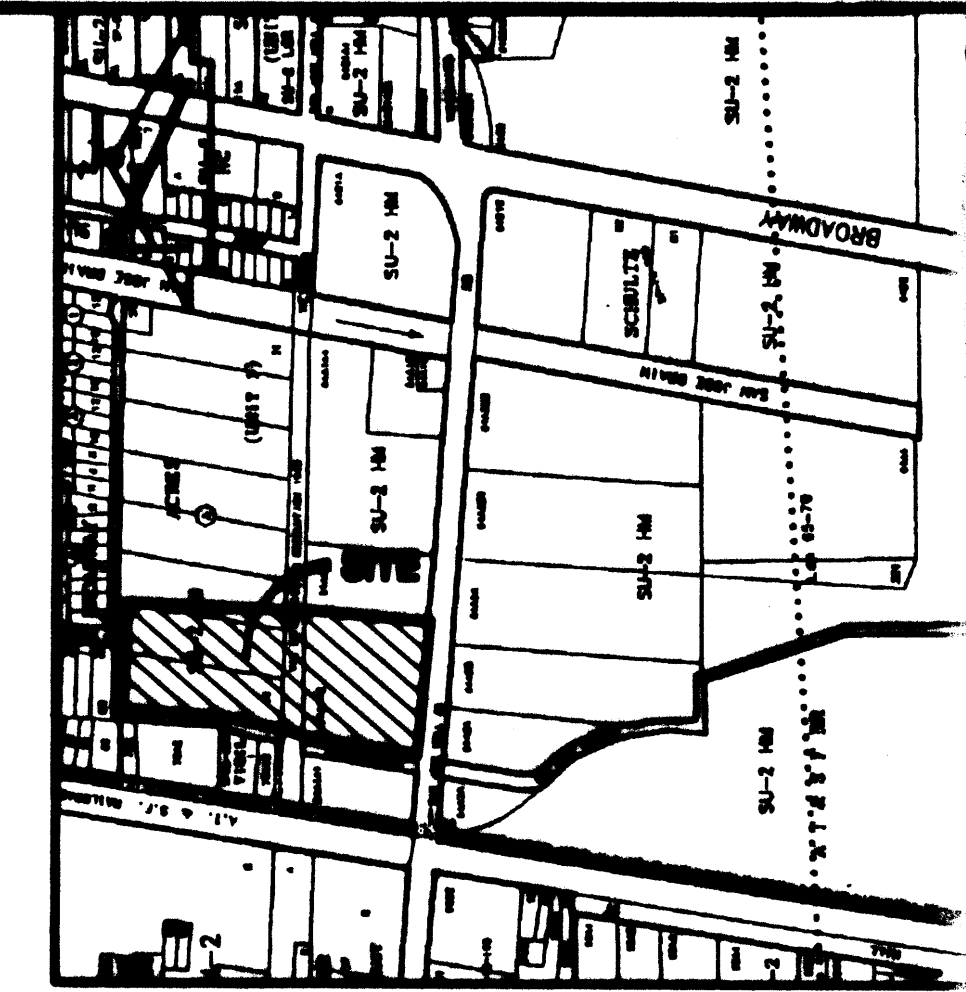
**NOTE:**  
COULD NOT VERIFY CONSTRUCTION OF GRAVEL INFILTRATION TRENCH OR 12" HDPE PERFORATED DRAIN LINE.

## **RECORD DRAWING FOR CERTIFICATION, SEE SHEET 1A**

**SECTION F-F**  
SCALE: 1" = 4'-0"

- CONSTRUCTION NOTES:**
- TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT NEW MEXICO ONE CALL SYSTEM 260-1990 (ALBUQUERQUE AREA), 1-800-321-ALERT(2537) (STATEWIDE), FOR LOCATION OF EXISTING UTILITIES.
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  - 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.
  - ALL CONSTRUCTION WITHIN PUBLIC RIGHT-OF-WAY SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE CITY OF ALBUQUERQUE STANDARDS AND PROCEDURES.
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  - SEE SHEET 2 FOR TYPICAL ASPHALT PAVING SECTION.

- EROSION CONTROL MEASURES:**
- THE CONTRACTOR SHALL ENSURE THAT NO SOIL ERODES FROM THE SITE INTO PUBLIC RIGHT-OF-WAY OR ONTO PRIVATE PROPERTY.
  - THE CONTRACTOR SHALL PROMPTLY CLEAN UP ANY MATERIAL EXCAVATED WITHIN THE PUBLIC RIGHT-OF-WAY SO THAT THE EXCAVATED MATERIAL IS NOT SUSCEPTIBLE TO BEING WASHED DOWN THE STREET.
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**PROJECT BENCHMARK**  
C.O.A. BENCHMARK 9-M14; AN ACS 1 3/4" ALUMINUM DISK STAMPED "ACS BM 9-M14", SET IN TOP OF A CONCRETE HEAD WALL OF AN IRRIGATION DITCH AT THE N.E. QUADRANT OF THE INTERSECTION OF WOODWARD RD. S.E. AND WILLIAM STREET S.E.  
ELEVATION = 4940.77 FEET (NGVD 1929)

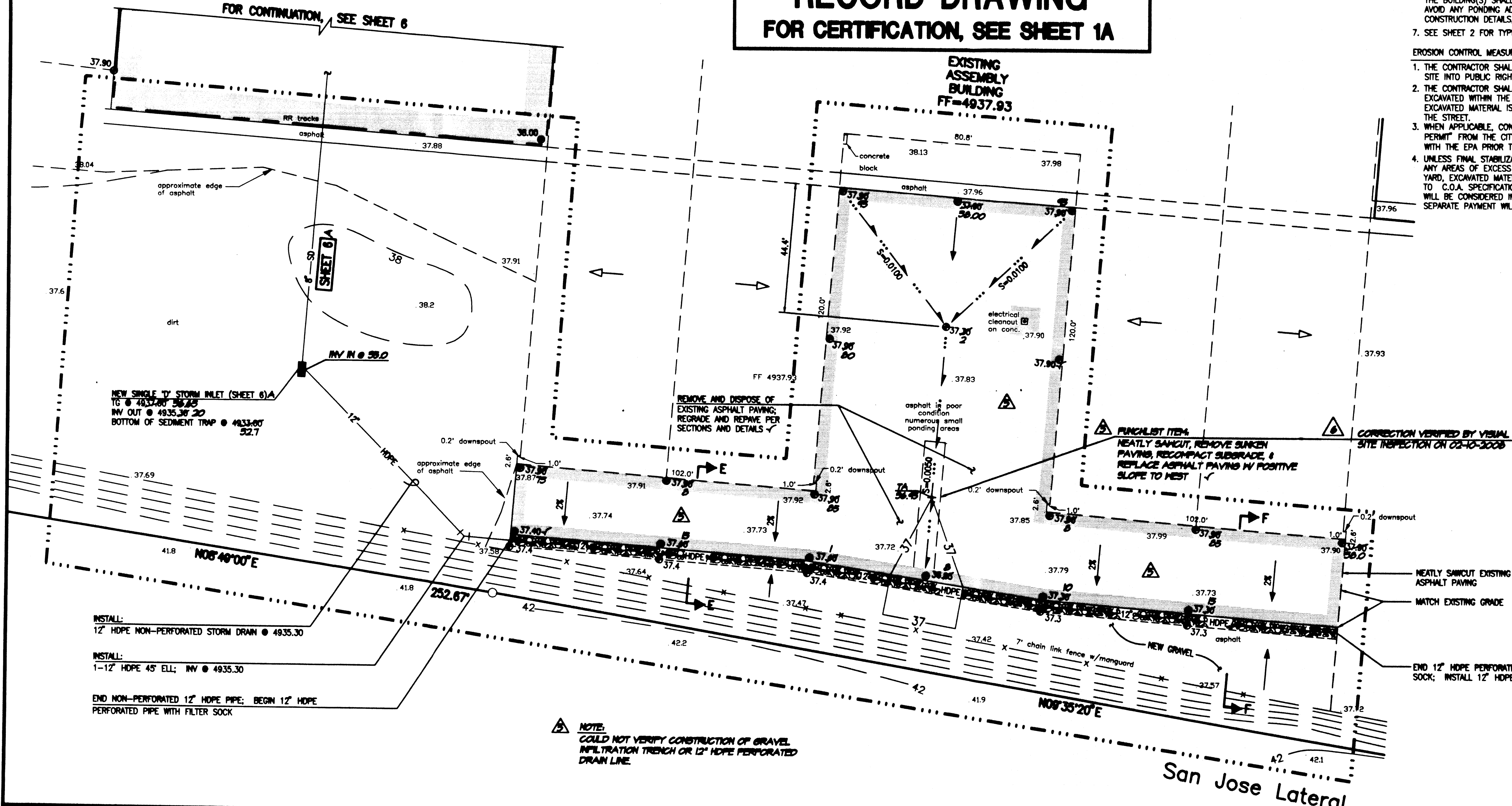
**T.B.M.**  
THE TOP OF A PLASTIC CAP AT THE SOUTHEAST CORNER OF THE PROPERTY. (REFER TO MASTER DRAINAGE PLAN)  
ELEVATION = 4938.80 FEET

**LEGAL DESCRIPTION**  
LOTS 14 AND 15, BLOCK 4, SOUTH BROADWAY ACRES; A PORTION OF LOT 16, BLOCK 4, SOUTH BROADWAY ACRES; AND TRACT 64A1A2 AS SHOWN ON M.R.G.C.D. MAP 44

- LEGEND**
- EXISTING SPOT ELEVATION
  - PROPOSED SPOT ELEVATION
  - DIRECTION OF FLOW
  - EXISTING CONTOUR
  - EXISTING ROOF DRAINAGE
  - PROPOSED ROOF DRAINAGE
  - EXISTING STORM DRAIN LINE
  - PROPOSED STORM DRAIN LINE
  - PROPOSED CONTOUR
  - PROPOSED CONCRETE
  - PROPOSED ASPHALT PAVING
  - HIGH POINT

**RECORD INFORMATION**

02-20-2008  
12-19-2007  
09-21-2006



Plot Date: 02-20-2008  
Plot Time: 11:33 am  
File Name: 70031GP.AB.DWG

**JMA**  
JEFF MORTENSEN & ASSOCIATES, INC.  
8016-B MURRAY PARK BLVD. N.E.  
ALBUQUERQUE, N.M. 87110  
ENGINEERS & SURVEYORS (S&S) 546-6880  
FAX: 505 348-4254 • ESTABLISHED 1977

**GRADING AND PAVING REPAIRS  
CEI ENTERPRISES**

DESIGNED BY	NO.	DATE	BY	KEYWORDS	JOB NO.
JGM	09/06	JGM	ADD THIS SHEET		2007.003.1
DRAWN BY	09/07	JGM	CERTIFICATION FOR TEMP. C.O.		DATE
APPROVED BY	02/08	JGM	RE-CERTIFICATION FOR PERM. C.O.		09-2006
					SHEET 7 OF 7