

SITE PLAN

DRAINAGE PLAN

INTRODUCTION AND EXECUTIVE SUMMARY
 THIS PROJECT, LOCATED IN NORTHEAST ALBUQUERQUE, REPRESENTS A MODIFICATION TO AN EXISTING SITE WITHIN AN INFILL AREA. THE DRAINAGE CONCEPT FOR THE SITE WILL CONSIST OF THE DISCHARGE OF DEVELOPED FLOWS INTO THE FULLY IMPROVED BOREALIS CHANNEL WHICH IS LOCATED ADJACENT TO THE SITE. NO OFFSITE FLOWS IMPACT THE SITE. THIS SUBMITTAL IS MADE IN SUPPORT OF A GRADING AND PAVING PERMIT.

PROJECT DESCRIPTION
 AS SHOWN BY THE VICINITY MAP, THE SITE IS LOCATED ON SAN MATEO BLVD. NE JUST SOUTH OF INTERSTATE 25. THE CURRENT LEGAL DESCRIPTION IS TRACT A-2-A, RUST ADDITION. AS SHOWN BY F.I.R.M. PANEL 143 OF 825, THE SITE DOES NOT LIE WITHIN A DESIGNATE FLOOD HAZARD ZONE (ZONE A).

BACKGROUND DOCUMENTS
 THE FOLLOWING DOCUMENT WAS USED IN THE PREPARATION OF THIS PLAN:
 1. DRAINAGE REPORT FOR KIRKPATRICK MOTOR DEVELOPMENT, PREPARED BY T.T. BURNETT ENGINEERING, INC., MARCH 1978 (FILE # E18/D19A).
 THIS PLAN PROPOSED THE CURRENT EXISTING DEVELOPMENT OF THE SITE. THIS PLAN UTILIZED RETENTION PONDING AT THE SOUTHEAST PORTION OF THE SITE TO WHICH THE ENTIRE SITE DRAINS. RETENTION PONDING WAS APPLIED IN ORDER TO RESTRICT THE RUNOFF DISCHARGED INTO THE BOREALIS CHANNEL TO THAT OF THE SITE'S UNDEVELOPED CONDITION. THIS CRITERIA WAS ESTABLISHED BECAUSE THE BOREALIS CHANNEL WAS NOT FULLY IMPROVED AT THAT TIME.

EXISTING CONDITIONS
 AT PRESENT, THE SITE IS DEVELOPED AS A CAR DEALERSHIP. THE SITE CONSISTS OF A FREESTANDING BUILDING IN ADDITION TO AN ASPHALT PAVED PARKING LOT. AN EXISTING PRIVATE RETENTION POND IS LOCATED AT THE SOUTHEAST PORTION OF THE SITE. THE ENTIRE SITE DRAINS INTO THE PONDING AREA. AN EXISTING PRIVATE CONCRETE RUNDOWN DIRECTS OVERFLOW FROM THE RETENTION POND INTO THE BOREALIS CHANNEL LOCATED EAST OF THE SITE. THE BOREALIS CHANNEL IS OWNED, OPERATED, AND MAINTAINED BY THE CITY OF ALBUQUERQUE. BOTH THE ADJACENT PROPERTIES TO THE NORTH AND TO THE SOUTH ARE FULLY DEVELOPED AND HAVE BEEN GRADED IN SUCH A WAY THAT OFFSITE FLOWS DO NOT ENTER THE PROJECT SITE.

DEVELOPED CONDITIONS
 THE PROPOSED DEVELOPMENT CONSISTS OF RECLAIMING THE EXISTING RETENTION POND AND CONVERTING IT TO ASPHALT PAVING. IN ORDER TO ACCOMPLISH THIS, THE POND WILL BE BACKFILLED AND THE SITE WILL DISCHARGE DIRECTLY INTO THE BOREALIS CHANNEL UTILIZING A NEW CONCRETE RUNDOWN WHICH WILL REPLACE THE EXISTING RUNDOWN. IT IS ASSUMED THAT THE BOREALIS CHANNEL IS DESIGNED TO CONTAIN ALL DEVELOPED FLOWS FROM ADJACENT SITES INCLUDING THE PROJECT SITE. IN ADDITION, THE PEAK DEVELOPED FLOWRATE GENERATED BY THE SITE WILL OCCUR LONG BEFORE THE PEAK FLOWRATE OF THE BOREALIS CHANNEL OCCURS.

GRADING PLAN
 THE GRADING PLAN SHOWS: 1) EXISTING GRADES INDICATED BY SPOT ELEVATIONS AND CONTOURS AT 1' INTERVALS AS TAKEN FROM THE TOPOGRAPHIC SURVEY PREPARED BY THIS OFFICE, DATED AUGUST 2000, 2) PROPOSED GRADES INDICATED BY SPOT ELEVATIONS AND CONTOURS AT 1' INTERVALS, 3) THE LIMIT AND CHARACTER OF THE EXISTING IMPROVEMENTS, 4) THE LIMIT AND CHARACTER OF THE PROPOSED IMPROVEMENTS, AND 5) CONTINUITY BETWEEN EXISTING AND PROPOSED GRADES. THE GRADING PLAN APPEARS ON SHEET 2.

DRAINAGE PLAN (CONTINUED)

CALCULATIONS
 THE CALCULATIONS CONTAINED HEREON 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. THE WEIR EQUATION WAS USED FOR ANALYSIS OF THE ENTRANCE CONDITION FOR THE NEW CONCRETE RUNDOWN. MANNING'S EQUATION WAS USED FOR DETERMINATION OF THE RUNDOWN'S CAPACITY FOR STORMWATER WITHIN THE DRAINAGE STRUCTURE.

CONCLUSION
 THE FREE DISCHARGE OF DEVELOPED RUNOFF FROM THE SITE INTO THE BOREALIS CHANNEL IS APPROPRIATE DUE TO THE FOLLOWING FACTORS:
 1. NEGLIGIBLE INCREASE IN DEVELOPED RUNOFF
 2. PROXIMITY TO DOWNSTREAM FACILITIES AND APPARENT DOWNSTREAM CAPACITY
 3. NO IMPACT ON DOWNSTREAM FLOOD HAZARD ZONES
 THE BOREALIS CHANNEL IS PUBLICLY OWNED, OPERATED, AND MAINTAINED BY THE CITY OF ALBUQUERQUE. THE PROPOSED PRIVATE SIDE CHANNEL WHICH DISCHARGES INTO THE BOREALIS CHANNEL WILL BE PRIVATELY OWNED, OPERATED, AND MAINTAINED BY THE PROPERTY OWNER OF TRACT A-2-A, RUST ADDITION.

SITE CHARACTERISTICS

I. PRECIPITATION ZONE = 3

II. $P_{6,100} = P_{360} = 2.60$ IN.

III. TOTAL AREA (A_T) = 115,000 SF/2.64 AC

V. EXISTING LAND TREATMENT

TREATMENT	AREA (SF/AC)	%
B	3,500/0.08	03
C	11,840/0.27	10
D	99,660/2.29	87

DEVELOPED LAND TREATMENT

TREATMENT	AREA (SF/AC)	%
B	3,500/0.08	03
C	2,970/0.07	03
D	108,530/2.49	94

VI. EXISTING CONDITION

A. VOLUME

$$E_w = (E_{A^1}A^1 + E_{B^1}A^1 + E_{C^1}A^1 + E_{D^1}A^1) / A_T$$

$$E_w = [(0.92)(0.08) + (1.29)(0.27) + (2.36)(2.29)] / 2.64 = 2.21$$

$$V_{100} = (E_w / 12) A_T$$

$$V_{100} = (2.21 / 12) 2.64 = 0.486 \text{ AC FT.} = 21,180 \text{ CF}$$

B. PEAK DISCHARGE

$$Q_p = Q_{PA}A^1 + Q_{PB}A^1 + Q_{PC}A^1 + Q_{PD}A^1$$

$$Q_p = Q_{100} = (2.60)(0.08) + (3.45)(0.27) + (5.02)(2.29) = 12.6 \text{ CFS}$$

VI. EXISTING CONDITION

A. VOLUME

$$E_w = (E_{A^1}A^1 + E_{B^1}A^1 + E_{C^1}A^1 + E_{D^1}A^1) / A_T$$

$$E_w = [(0.92)(0.08) + (1.29)(0.07) + (2.36)(2.49)] / 2.64 = 2.29$$

$$V_{100} = (E_w / 12) A_T$$

$$V_{100} = (2.29 / 12) 2.64 = 0.503 \text{ AC FT.} = 21,930 \text{ CF}$$

B. PEAK DISCHARGE

$$Q_p = Q_{PA}A^1 + Q_{PB}A^1 + Q_{PC}A^1 + Q_{PD}A^1$$

$$Q_p = Q_{100} = (2.60)(0.08) + (3.45)(0.07) + (5.02)(2.49) = 12.9 \text{ CFS}$$

C. HYDRAULICS

1. ENTRANCE CONDITION CALCULATION

$$Q_{CAP} = CLH^{3/2} \text{ (BROAD CRESTED WEIR)}$$

C = 2.60

LET H = 1.2'

L = 4.0'

$$\text{THEN } Q_{CAP} = (2.60)(4.0)(1.2)^{3/2} = 13.7 \text{ CFS} > Q_{100} = 12.9 \text{ CFS}$$

2. OPEN CHANNEL FLOW

$$Q_{CAP} = (1.49/n) AR^{2/3} S^{1/2} \text{ (MANNING EQUATION)}$$

n = 0.013 (CONCRETE)

S = 0.0100 (MINIMUM)

DEPTH = 0.67'

WIDTH = 4.0'

A = 2.68 SF

P = 5.34'

R = A/P = 0.50'

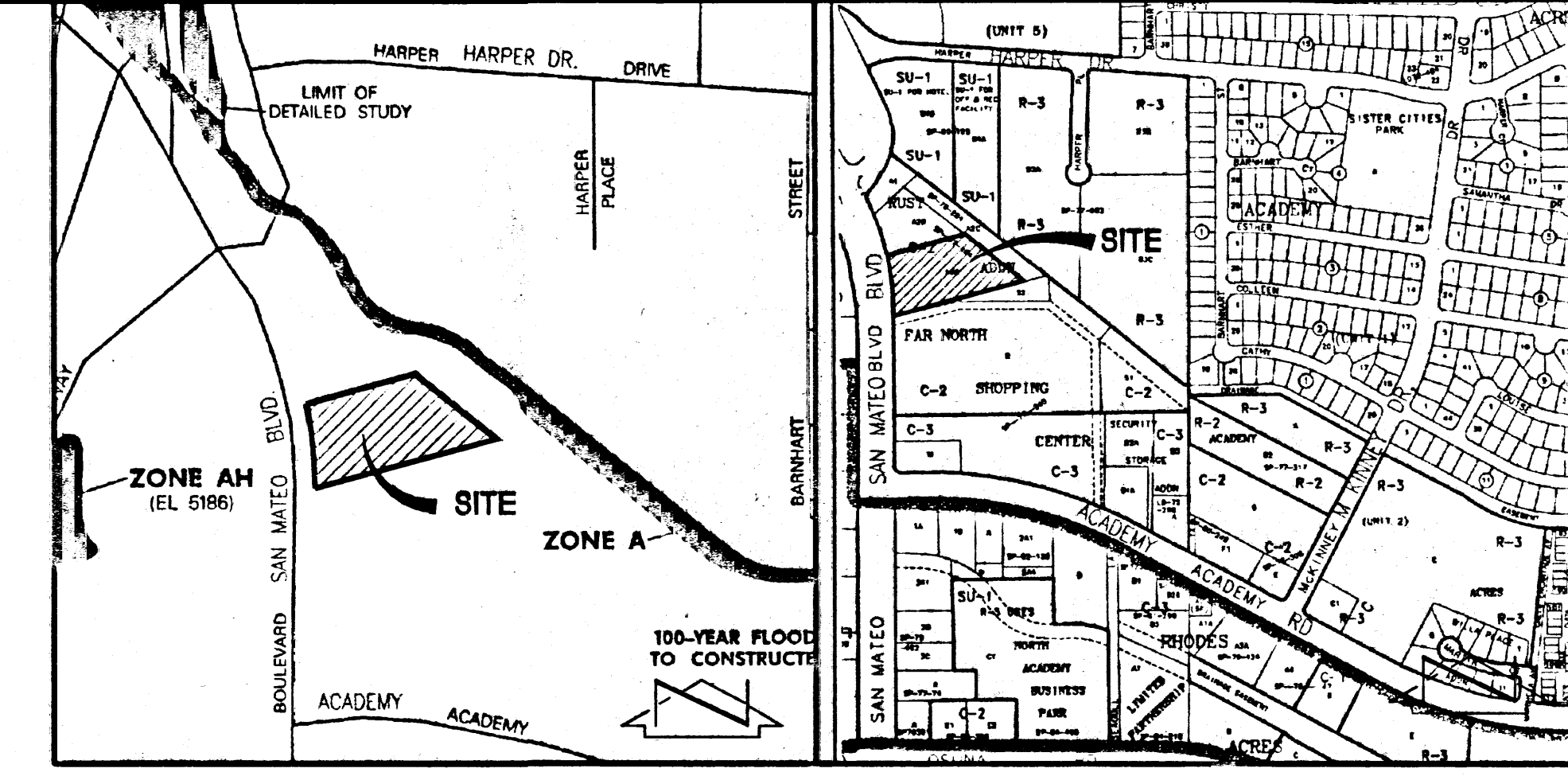
$$Q_{CAP} = (1.49/0.013)(0.50)^{2/3}(0.01)^{1/2} = 19.3 \text{ CFS} > Q_{100} = 12.9 \text{ CFS}$$

VII. COMPARISON

$$\Delta V_{100} = 21,930 - 12,290 = 9,640 \text{ CF (INCREASE)}$$

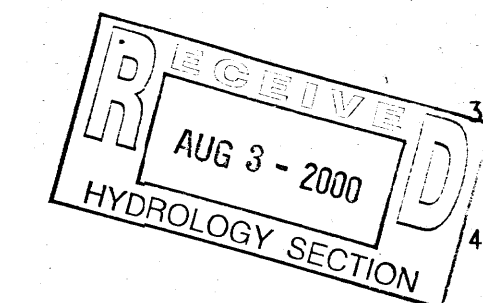
$$\Delta Q_{100} = 12.9 - 8.5 = 4.4 \text{ CFS (INCREASE)}$$

NOTE: EXISTING DISCHARGE PARAMETERS BASED UPON DRAINAGE REPORT FOR KIRKPATRICK MOTOR DEVELOPMENT, PREPARED BY T.T. BURNETT ENGINEERING, INC., MARCH 1978.

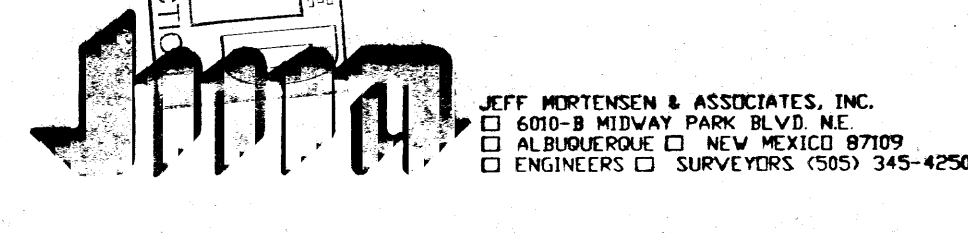


FLOODPLAIN MAP SCALE: 1" = 500'
 PANEL 143 OF 825
 VICINITY MAP SCALE: 1" = 750'

- 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 PERTAINING THERETO, AND ASSUMES NO RESPONSIBILITY OR 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
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 Plot Time: 3:07 pm
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 File Name: 0592SP.DWG



**SITE PLAN, DRAINAGE PLAN AND CALCULATIONS
 PREMIER MOTORCARS**

APPROVALS	NAME	DATE	NO.	DATE	BY	REVISIONS	JOB NO.
DESIGNED BY	J.G.M.						2000.059.2
INSPECTOR	S.G.H.						DATE 07-2000
APPROVED BY	J.G.M.						SHEET 1 OF 2

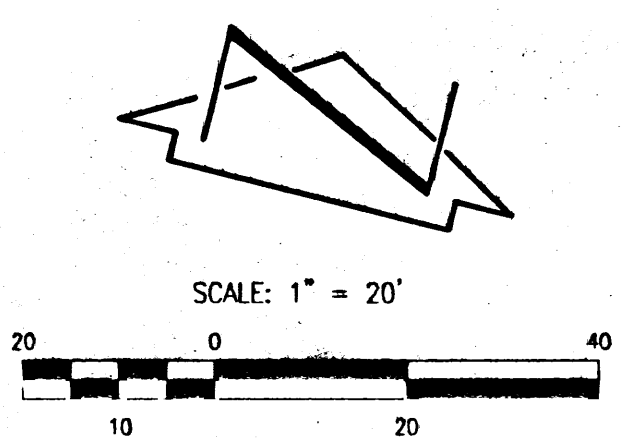
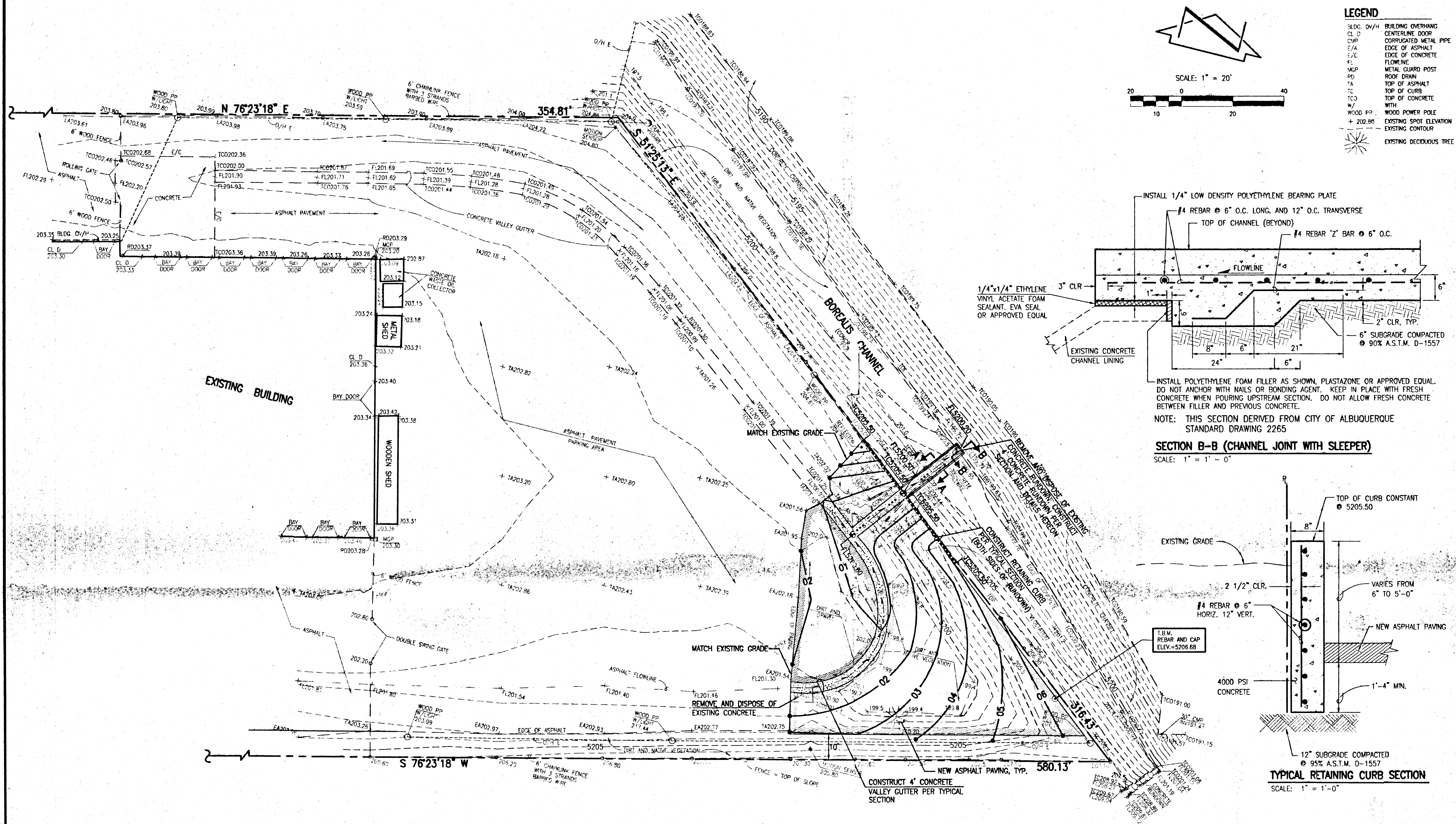
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 Plot Time: 13:18 pm
 File Name: 0592GD.DWG



JEFF MORTENSEN & ASSOCIATES, INC.
 600-B MIDWAY PARK, BLVD. N.E.
 ALBUQUERQUE, N.M. 87109
 ENGINEERS & SURVEYORS (2001) 343-4290

GRADING AND PAVING PLAN PREMIER MOTORCARS

APPROVALS	NAME	DATE	DESIGNED BY	NO.	DATE	BY	REVISIONS	JOB NO.
INSPECTOR			J.G.M.					2000.059.2
			S.G.H.					08-2000
			J.G.M.					2 OF 2



LEGEND

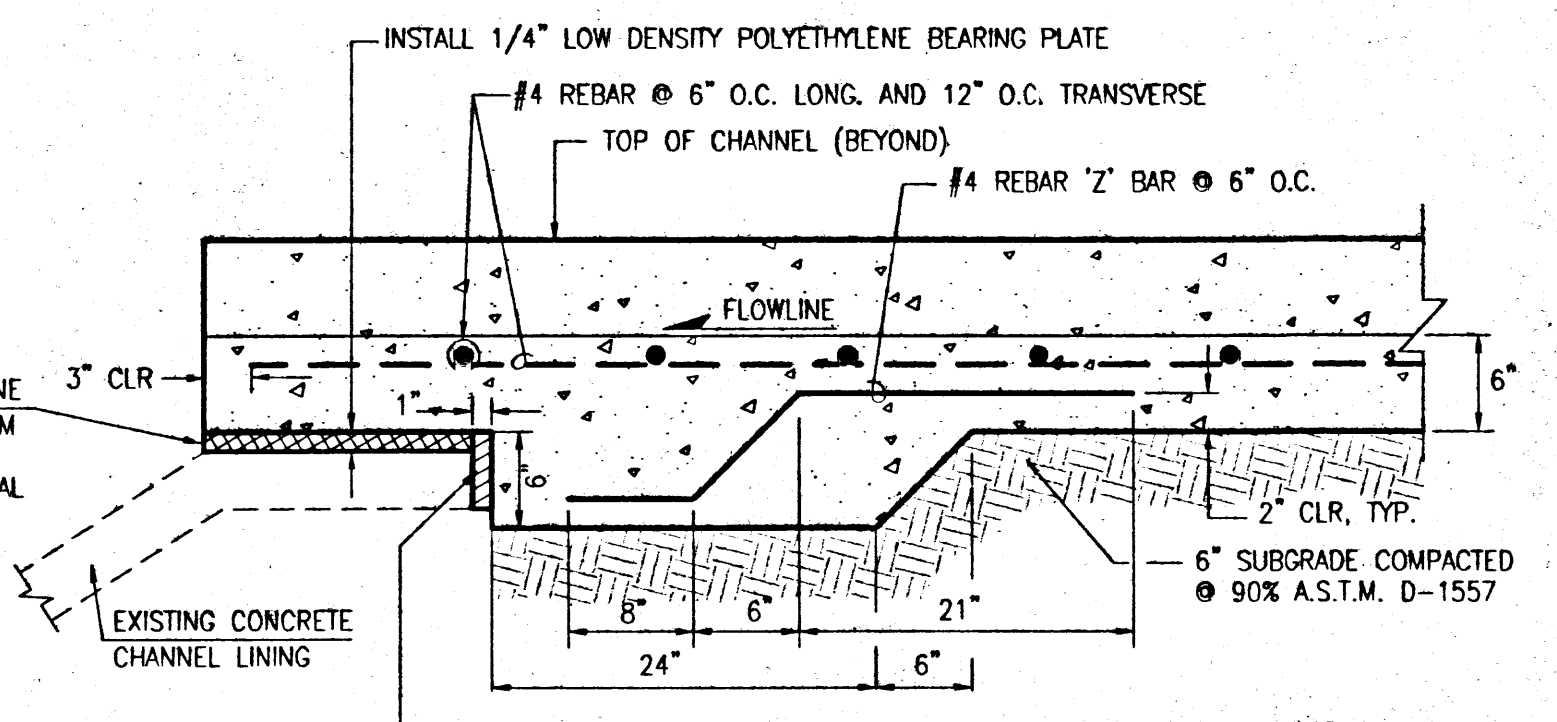
BLDG. O/W/H	BUILDING OVERHANG
CL D	CENTERLINE DOOR
CMP	CORRUGATED METAL PIPE
E/A	EDGE OF ASPHALT
E/C	EDGE OF CONCRETE
FL	FLOWLINE
MGP	METAL GUARD POST
PD	ROOF DRAIN
TA	TOP OF ASPHALT
TC	TOP OF CURB
TCO	TOP OF CONCRETE
W/	WOOD POWER POLE
+ 202.80	EXISTING SPOT ELEVATION
-	EXISTING CONTOUR
⊗	EXISTING DECIDUOUS TREE

PROJECT BENCHMARK
 BENCHMARK "10-E17", A SQUARE, CHISELED ON TOP OF CONCRETE CURB LOCATED AT THE SSE CURB RETURN OF THE INTERSECTION OF SAN MATEO BLVD. AND PAN AMERICAN N.E.
 ELEVATION = 5192.29 FEET (M.S.L.)

T.B.M.
 A #5 REBAR WITH CAP STAMPED "JMA CONTROL NMPS 11184" SET AT THE SE CORNER POINT OF THE SITE.
 ELEVATION = 5206.68 FEET (M.S.L.)

LEGAL DESCRIPTION
 TRACT A2A, RUST ADDITION, BOOK C13, PAGE 92.

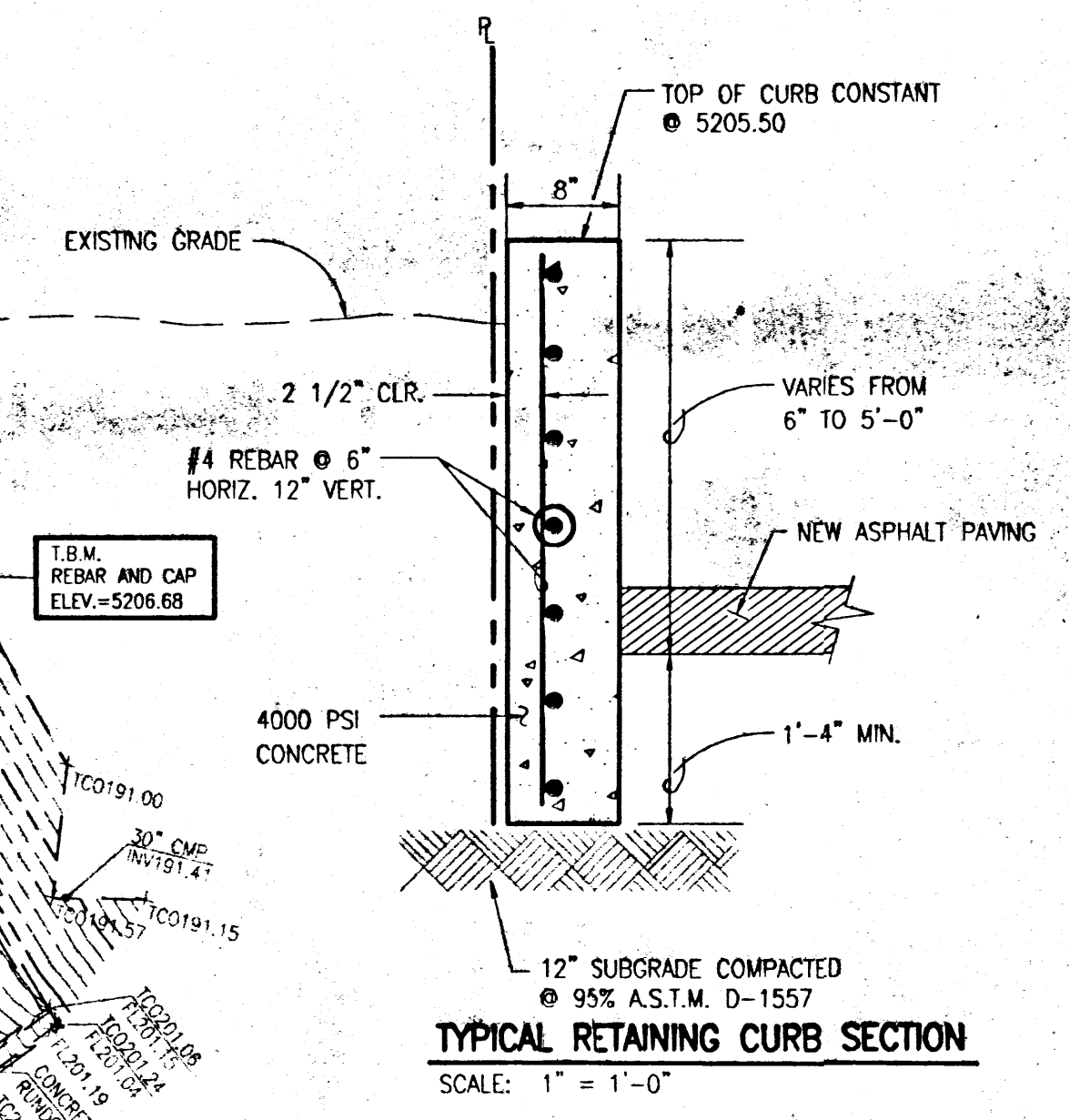
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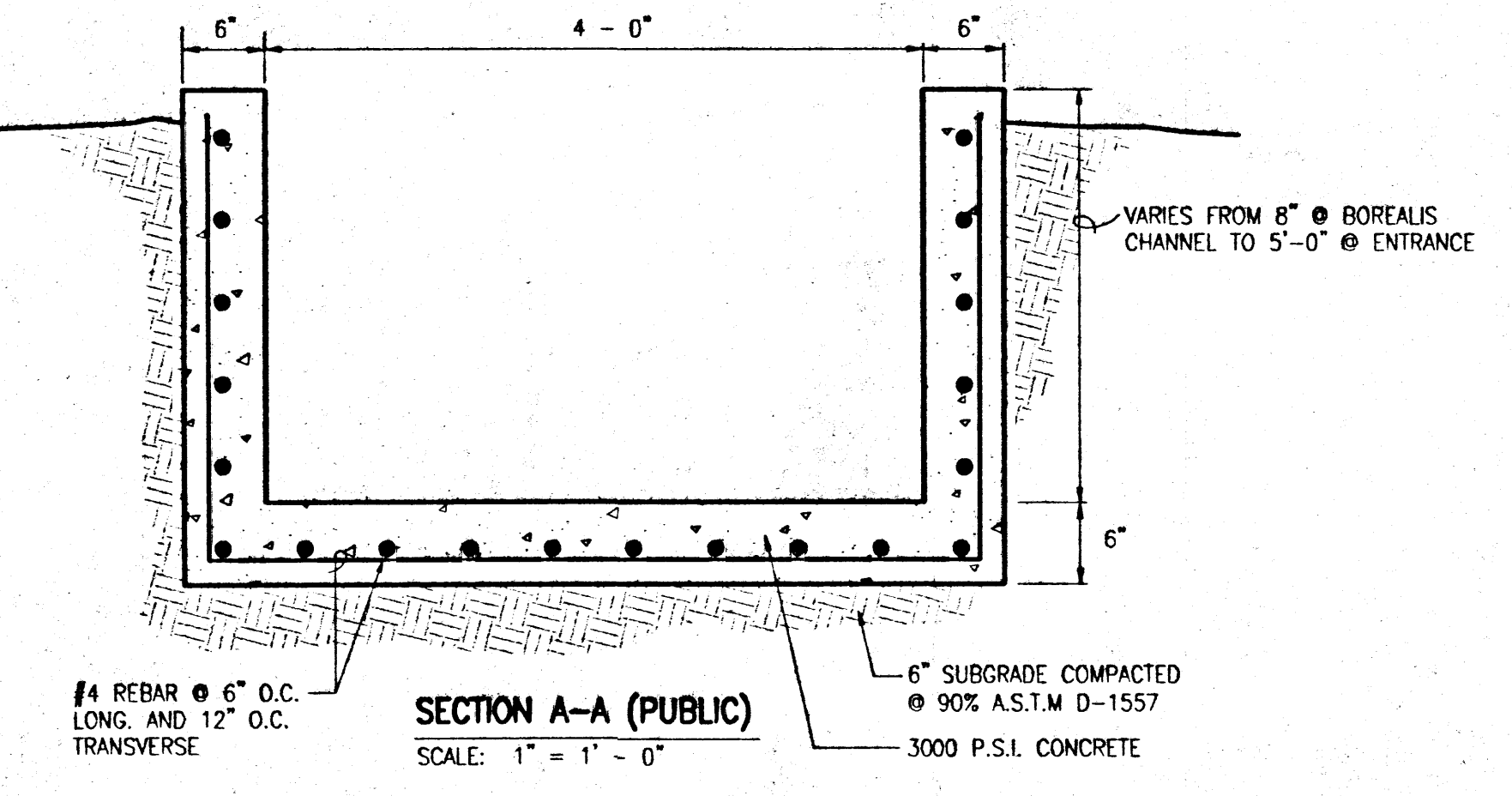
INSTALL POLYETHYLENE FOAM FILLER AS SHOWN, PLASTAZONE OR APPROVED EQUAL. DO NOT ANCHOR WITH NAILS OR BONDING AGENT. KEEP IN PLACE WITH FRESH CONCRETE WHEN POURING UPSTREAM SECTION. DO NOT ALLOW FRESH CONCRETE BETWEEN FILLER AND PREVIOUS CONCRETE.

NOTE: THIS SECTION DERIVED FROM CITY OF ALBUQUERQUE STANDARD DRAWING 2265

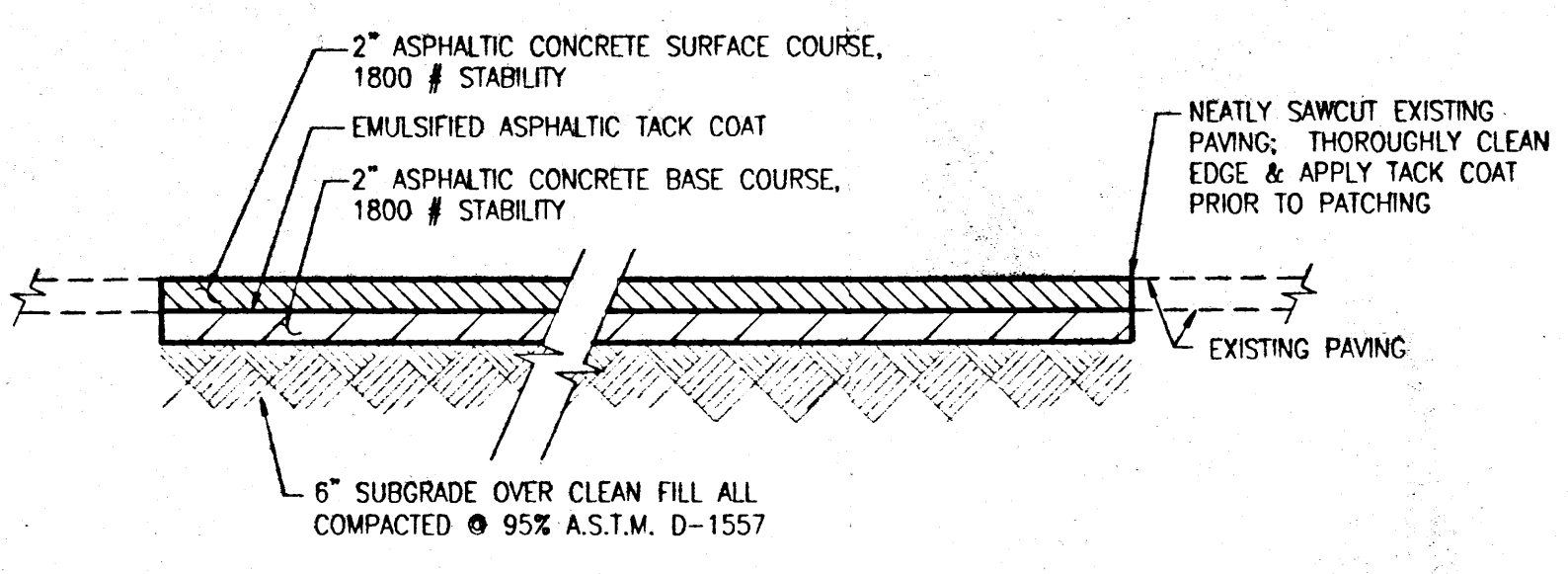
SECTION B-B (CHANNEL JOINT WITH SLEEPER)
 SCALE: 1" = 1'-0"



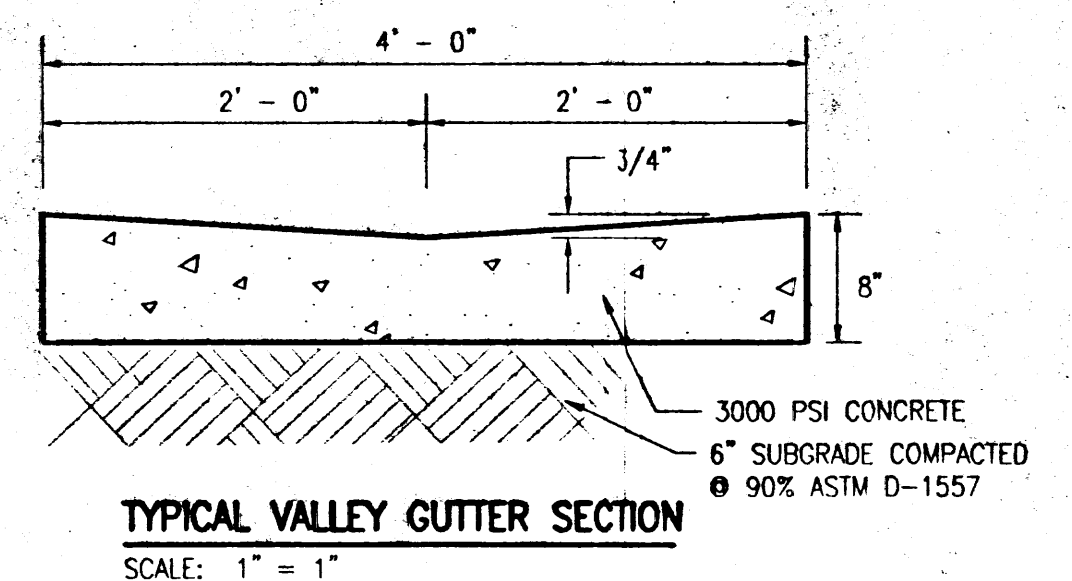
TYPICAL RETAINING CURB SECTION
 SCALE: 1" = 1'-0"



SECTION A-A (PUBLIC)
 SCALE: 1" = 1'-0"



TYPICAL PRIVATE PAVING SECTION
 SCALE: 1" = 1'-0"



TYPICAL VALLEY GUTTER SECTION
 SCALE: 1" = 1'-0"

NOTE:
 THIS IS NOT A BOUNDARY SURVEY. BOUNDARY DATA IS BASED UPON THE PLAT OF TRACT A2A, RUST ADDITION BOOK C13, PAGE 92.

