

GRADING AND DRAINAGE PLAN TRACT X-1, X-2, R-1, R-2 IN BLOCK 25 VIRGINIA PLACE ADDITION ALBUQUERQUE, N.M.

SITE DRAINAGE CRITERIA: THIS IS A GRADING AND DRAINAGE PLAN FOR TRACTS X-1 , X-2 , R-1 & R-2 , VIRGINIA PLACE ADDITION . THIS DRAINAGE REPORT AND PLAN CONSISTS OF A HYDROLOGIC STUDY OF THE PROBABLE 100-YEAR STORM AFFECTING THIS EXISTING SITE. THE PURPOSE FOR THIS PLAN IS TO ROUTE THE GENERATED RUNOFF THROUGH AN ALLEY WAY DEVELOPED BY THIS PROJECT AND DESIGN A POSITIVE DISCHARGE INTO ORTIZ STREET. THE FOLLOWING ITEMS ARE REQUIRED BY THE CITY OF ALBUQUERQUE DRAINAGE SECTION CONCERNING THIS UPDATED DRAINAGE PLAN:

**APRIL 1985** 

A. VICINITY MAP
B. GRADING AND DRAINAGE PLAN
C. SITE DRAINAGE CRITERIA THE PLAN SHOWS:

A. EXISTING CONTOURS AT ONE FOOT INTERVALS.
B. PROPOSED GRADES INDICATED BY CONTOURS AND SPOT ELEVATIONS
C. SWALES AS INDICATED BY THE LEGEND SHOWN.
D. GRADING AND DRAINAGE PLAN.

THIS SITE DOES NOT LIE WITHIN A DESIGNATED FLOOD HAZARD ZONE AS IS SHOWN ON THE FLOOD HAZARD MAP  $350002 \cdot 0036$  C .

#### DRAINAGE NOTES AND CALCULATIONS

- 1. LEGAL DESCRIPTION: A CERTAIN TRACT OF LAND BEING TRACT X-1, X-2, R-1, R-2 VIRGINIA PLACE ADDITION, AN ADDITION TO THE CITY OF ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICONTAINING 1.10 ACRES MORE OR LESS.
- 2. ZONING: C-1, C-2 , ZONE ATLAS L-18-Z
- 3. SOIL TYPE: AS PER THE U.S.D.A. SOIL CONSERVATION REPORT ON SOILS OF BERNALILLO COUNTINES AREA IS DEFINED AS A SANDY LOAM OF THE HYDROLOGIC GROUP B. HENCE, THE C VALUE AS PER THE D.P.M. FOR THE USE IN THE RATIONAL EQUATION = 0.34
- 4. OFFSITE: THIS SITE HAS ONE AREA CONTRIBUTING OFFSITE FLOWS. THIS AREA IS DESIGNATED AS DRAINAGE AREA "A". DRAINAGE AREA "A" IS THE AREA ADJACENT TO THE SOUTHSIDE OF TRACT X-1 BEING KNOWN AS TRACT M, VIRGINIA PLACE ADDITION AND IS THE EXISTING MCDONALD'S RESTAURANT. THE OFFISTE FLOW IS OF THE SHEET FLOW MODE, SINCE IT IS NOT CONCENTRATED AT ANY ONE POINT. THE MCDONALD'S RESTAURANT SITE DISPOSES OF IT'S FLOWS THRU THE CURB ALONG THE NORTHSIDE OF IT'S PAVED AREA. THERE ARE SEVERAL OPENINGS ALONG THE CURB, ALLOWING THE FLOWS TO FLOW OVER AN EXISTING 15 FEET WIDE GRAVEL LANDSCAPED AREA.

#### THE OFFSITE FLOWS ARE CALCULATED TO BE AS FOLLOWS:

AREA OF TRACT 'M' = 270' X 175' = 47,250 SQ FT OR 1.08 ACRE . ABOUT 3,690 SQ FT OF THE TOTAL AREA IS LANDSCAPED HAVING A RUNOFF FACTOR C = 0.60 WHILE THE REMAINING PORTION OF 43 SQ FT IS PAVED OR COVERED BY ROOF AREA AND HAS A RUNOFF FACTOR OF C = 0.90 . THERE ISN'T ANY DRAINAGE REPORT OR PLAN ON RECORD AT THE CITY'S HYDROLOGY SECTION FOR THE MCDONALD'S RESTAURANT. THEREFORE BY USING RATIONAL FORMUL-Q100 = (0.60)(4.86)(0.08) + (0.90)(4.86)(1.0) = 4.60 cfs DRAINAGE AREA "B" IS THE EXISTING NAPA AUTO PARTS AND HAS AN EXISTING POND CONTAINS IT'S ONSITE FLOWS. THE POND IS LOCATED ON THE EAST SIDE OF IT'S PAVED AREA AS CAN ESEEN ON THE PLAN HEREON.

. UNDEVELOPED CONDITIONS: THE SITE IS A VACANT UNDEVELOPED LOT. THE TERRAIN SLOPE WEST TO EAST AND IT'S GENERATED FLOW ARE IN SLEET FLOW MODE. THE PURPOSE OF THIS DRAINAGE REPORT AND PLAN IS TO PROVIDE POSITIVE DRAINAGE FROM THE SITE INTO ORTIZ STREET. THE TOTAL AREA OF THIS TRACT IS 1.10 ACRES OR 48,060 SQUARE FLET WHICH IS CONTRIBUTING RUNDEF. THE UNDEVELOPED RINDEF: UNDER AN UNDEVELOPED CONDITION I SHOWN HEREON:

USING P = 2.3" (DPM VALUE)

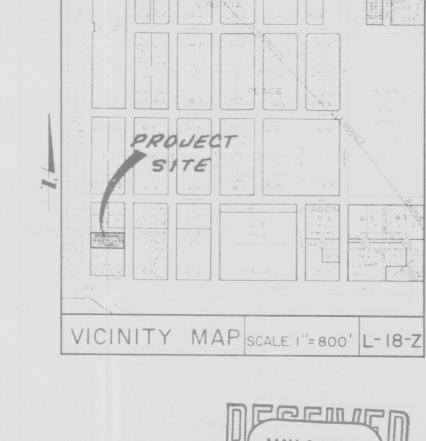
 $I = P(6.84)t_C^{(0.81)} = 4.86 \text{ in/hr}, t_C = 10 \text{ min}$ 

OVERFLOW CALCULATIONS FOR EMERGENCY SPILLWAY:

L = 14.46 FT

# EROSION CONTROL

The Contractor shall be responsible for any sediment that runs out into any public street. He shall be responsible for maintaing all of the sediment deposits within the limits of the property throughout the duration of the construction.





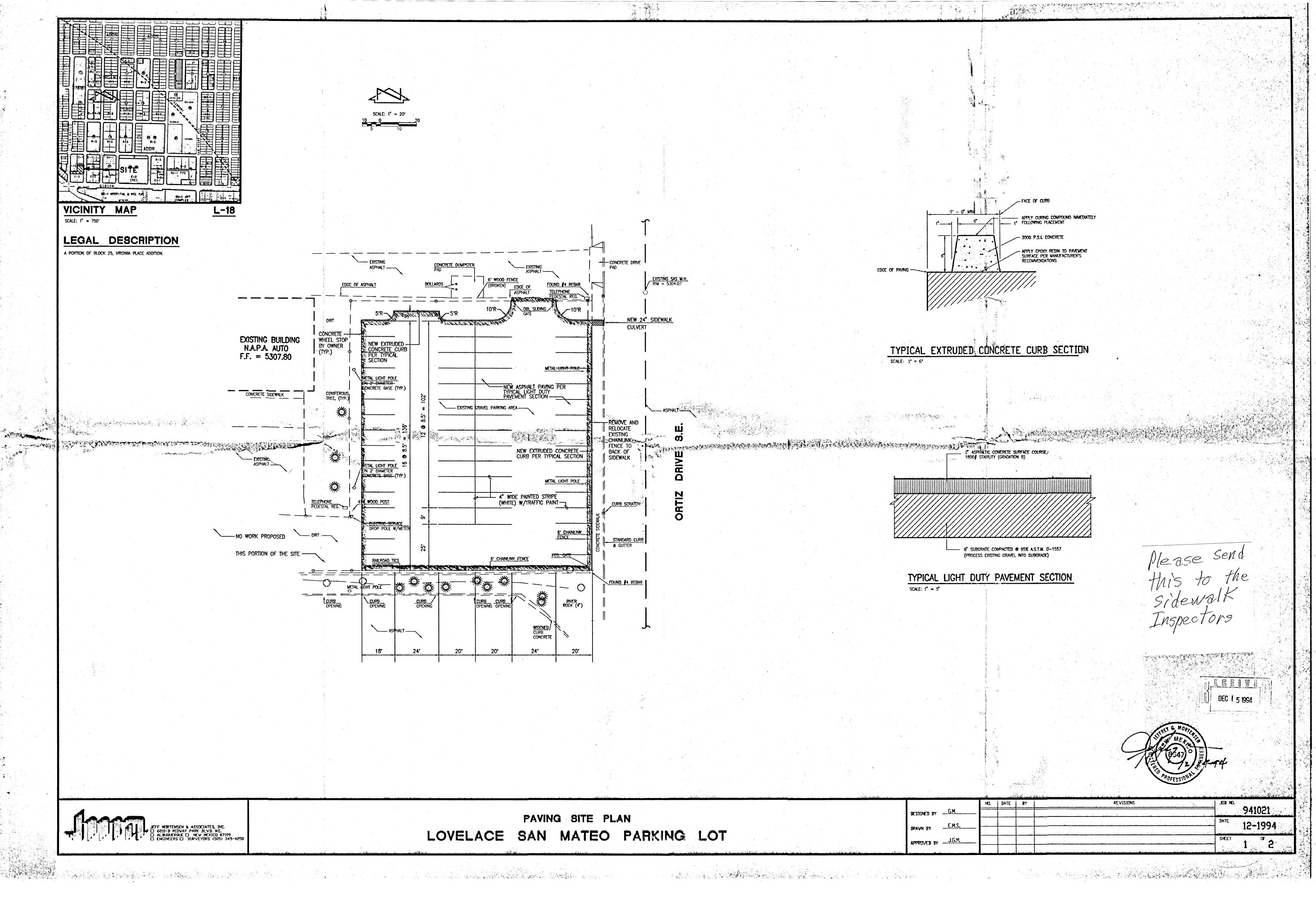
I, JOHN F. ESQUIBEL, UNDER THE LAWS OF NEW MEXICO, AM A REGISTERED LAND SURVEYOR NUMBER 5949 AND CERTIFY THAT THIS PLAT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION, SHOWS ALL EASEMENTS OF RE-CORD, MEETS MINIMUM REQUIREMENTS FOR MONUMENTATION AND SURVEYS OF THE ALBUQUERQUE SUBDIVISION ORDINANCE, AND IS TRUE AND COR-RECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

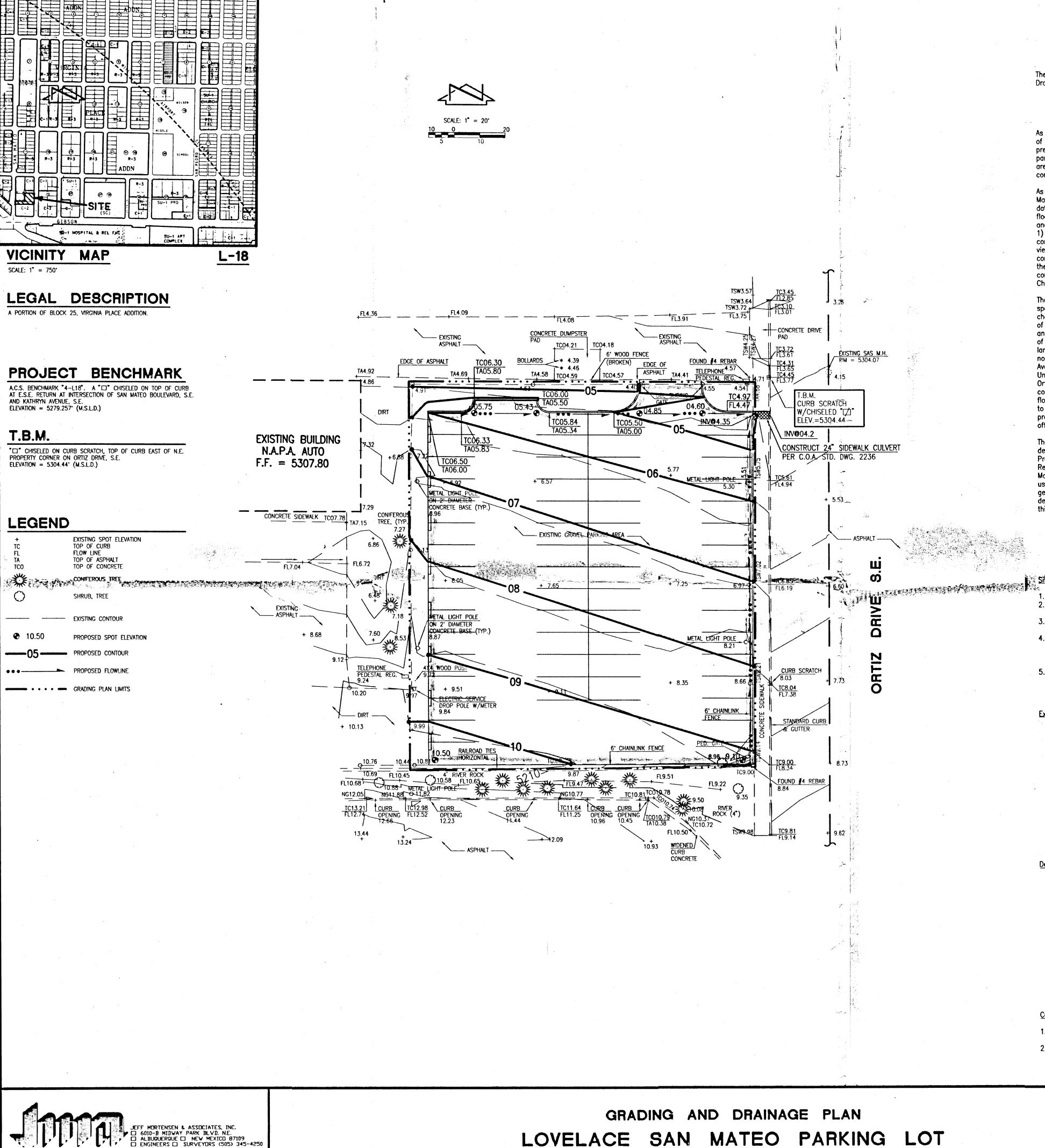
JOHN F. ESQUIBEL, N.M. R. L.S. NO. 5949



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DRAINAGE PLAN

The following items concerning the Lovelace San Mateo Parking Lot Drainage Plan are contained hereon:

> Vicinity Map Grading Plan Calculations

As shown by the Vicinity Map, the site is located on the west side of Ortiz Drive S.E., just north of Gibson Boulevard S.E. At present, the site is undeveloped and serves as an existing gravel parking area. The proposed development will be a paved parking area. Adjacent properties are developed for multi-family and commercial uses, thereby making this an infill site.

As shown by Panel 36 of 50 of the National Flood Insurance Rate Maps published by F.E.M.A. for the City of Albuquerque, New Mexico dated October 14, 1983, this site does not lie within a designated flood hazard zone. The site currently drains to Ortiz Drive S.E. and north to Eastern Avenue S.E. which drains east to an AO (depth 1) zone. This flooding condition has been alleviated by the recent construction of the Highland Detention Basin, Phase II project. In view of the fact that this is an infill site, and the recent construction of the above referenced storm drainage improvements, the free discharge of runoff from this site is appropriate and consistent with other recent development in this area (see Lovelace Childcare Center; Public Works Hydrology File L18-D29).

The Grading Plan shows 1) existing and proposed grades indicated by spot elevations and contours at 10° intervals, 2) the limit and character of the existing improvements, 3) the limit and character of the proposed improvements, and 4) continuity between existing and proposed grades. As shown by this plan, the project consists of the construction of a paved parking lot with associated landscaping. At present, the site drains from southwest to northeast onto Ortiz Drive S.E. where it flows north to Eastern Avenue S.E., which drains to the east as previously described. Under developed conditions, the site will continue to drain to Ortiz Drive S.E. through a new sidewalk culvert which will be constructed under Special Order 19 Permit. Currently no offsite flows enter the site as the west and south boundaries are adjacent to swales which convey offsite flows parallel to the west and south project limits. This proposed construction will not block any offsite flows.

The Calculations which appear 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. As shown by these calculations, the proposed development will result in a net increase in runoff generated by this site of 0.6 cfs.

#### CALCULATIONS

Site Characteristics Precipitation Zone = 3

2.  $P_{6,100} = P_{360} = 2.60 \text{ in.}$ 

3. Total Area  $(A_T) = 20,100 \text{ sf}$ 

4. Existing Land Treatment

5. Developed Land Treatment

Area (sf/ac) 2,200/0.05 17,900/0.41 89.0

## **Existing Condition**

1. Volume

 $E_W = (E_A A_A + E_B + E_C A_C + E_D A_D)/A_T$ 

 $E_W = (1.29)(0.46)/(0.46) = 1.29$  in.

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

 $V_{100} = (1.29/12)(0.46) = 0.0495$  ac.ft. = 2,160 cf

2. Peak Discharge

 $Q_D = Q_{PA} A_A + Q_{PB} A_B + Q_{PC} A_C + Q_{PD} A_D$ 

 $Q_{\rm p} = Q_{100} = (3.45)(0.46) = 1.6 \text{ cfs}$ 

## **Developed Condition**

1. Volume

 $E_{\mathbf{W}} = (E_{\mathbf{A}} A_{\mathbf{A}} + E_{\mathbf{B}} + E_{\mathbf{C}} A_{\mathbf{C}} + E_{\mathbf{D}} A_{\mathbf{D}}) / A_{\mathbf{T}}$ 

 $E_{W} = [(0.92)(0.05)+(2.36)(0.41)]/(0.46) = 2.20 in.$ 

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

 $V_{100} = (2.20/12)(0.46) = 0.0843$  ac.ft. = 3,670 cf

2. Peak Discharge

 $Q_{p} = Q_{PA} A_{A} + Q_{PB}A_{B} + Q_{PC}A_{C} + Q_{PD}A_{D}$ 

 $Q_{p} = Q_{100} = (2.60)(0.05)+(5.02)(0.41) = 2.2 \text{ cfs}$ 

## Comparison

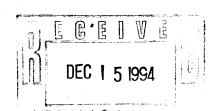
1.  $\Delta V_{100} = 3,670 - 2,160 = 1,510 \text{ cf (increase)}$ 

2.  $\Delta Q_{100} = 2.2 - 1.6 = 0.6$  cfs (increase)

- 1. Two (2) working days prior to any excavation, contractor must contact New Mexico One Call System 260-1990, 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
- 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 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.
- 6. 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.
- 7. Backfill compaction shall be according to residential street use.
- 8. Maintenance of these facilities shall be the responsibility of the owner of the property
- 9. 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

## Erosion Control Measures

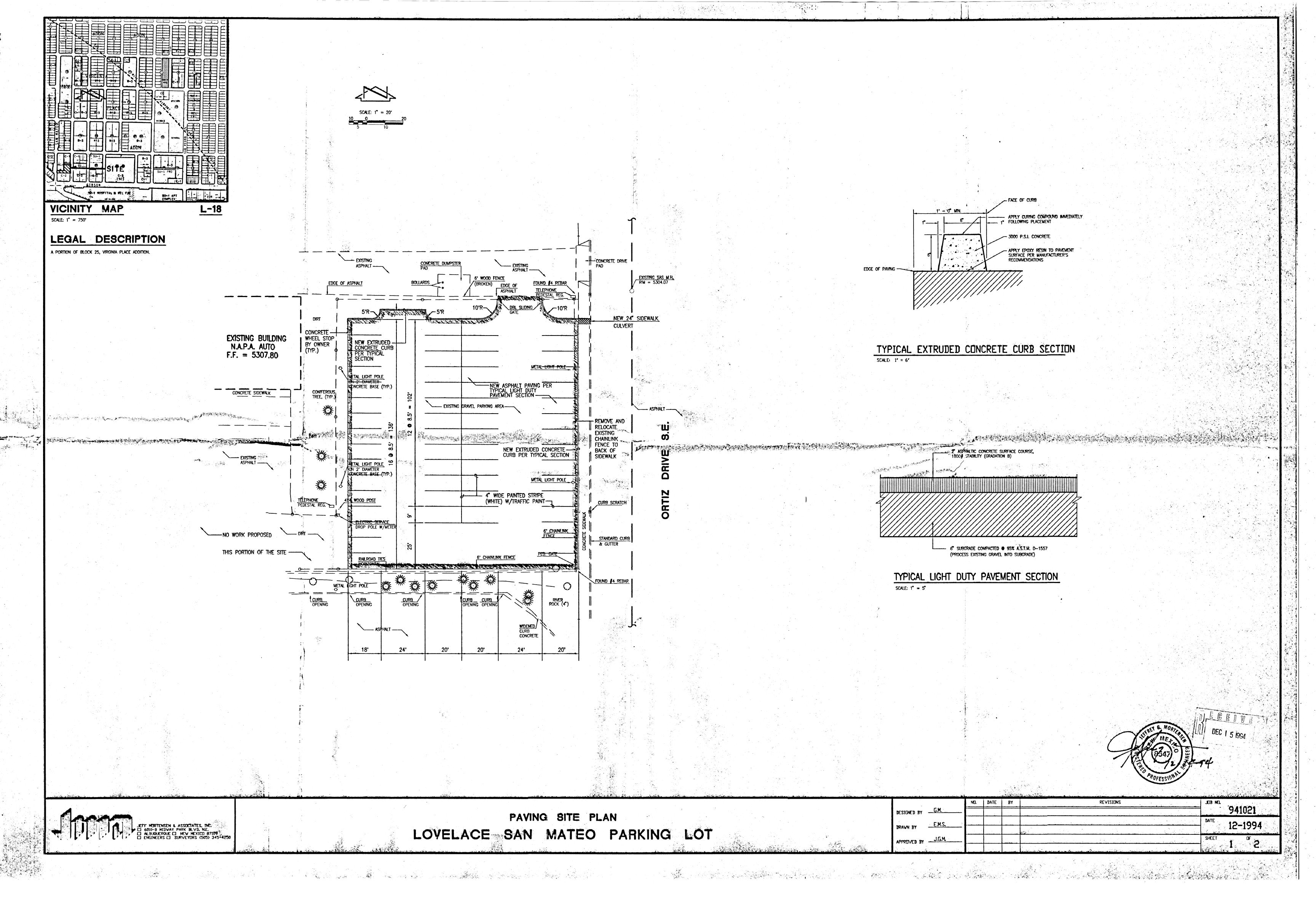
- 1. The contractor shall ensure that no soil erodes from the site into public right-of-way or onto private property.
- 2. The contractor shall promptly clean up any material excavated within the public right-ofway so that the excavated material is not susceptible to being washed down the street.
- 3. The contractor shall secure Topsoil Disturbance Permit' prior to beginning construction.

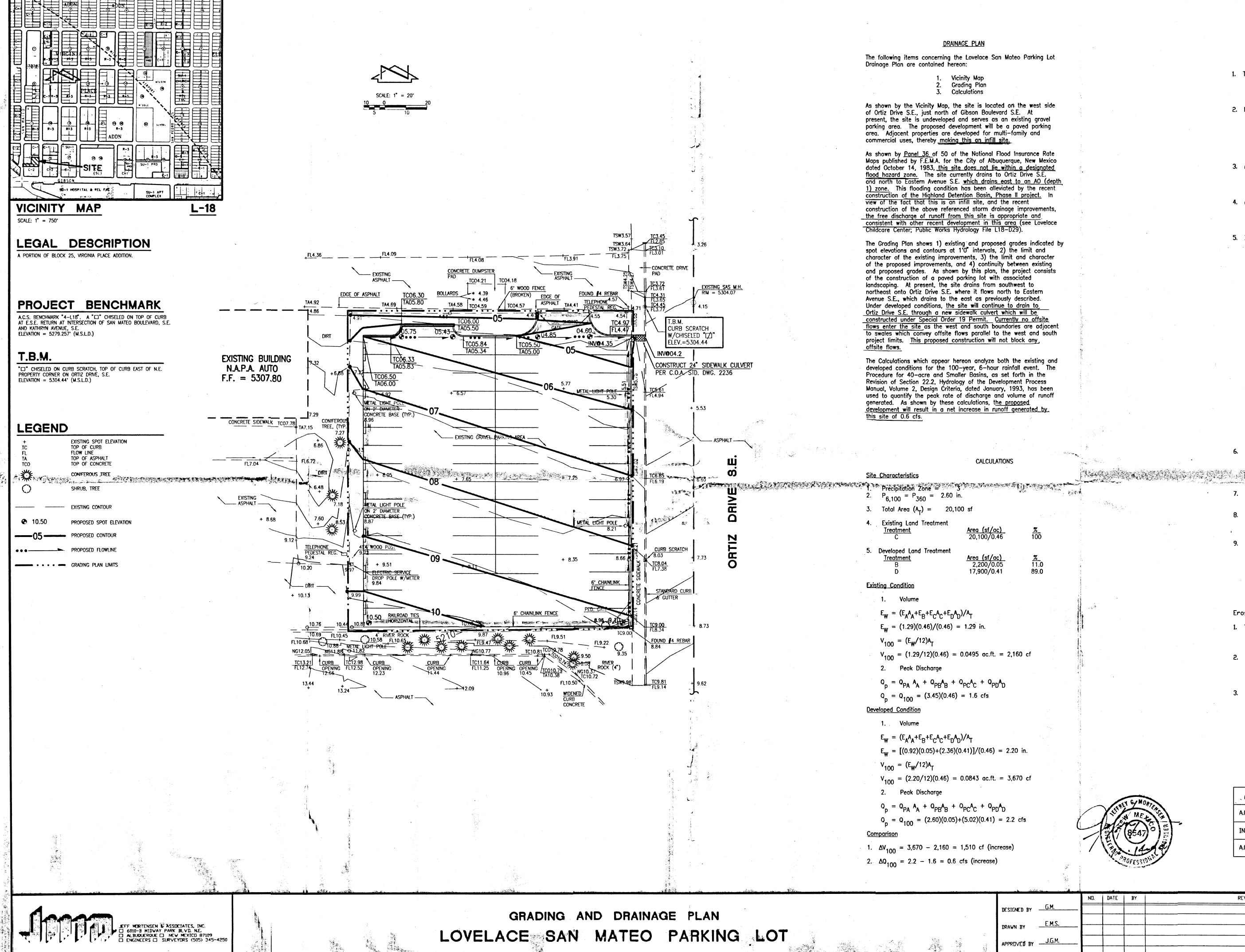


APPROVALS Ihm Curtin A.C.E./DESIGN INSPECTOR A.C.E./FIELD

LOVELACE SAN MATEO PARKING LOT

REVISIONS 941021 DESIGNED BY G.M. 12-1994 DRAWN BY E.M.S. APPROVED BY J.G.M. 5 2

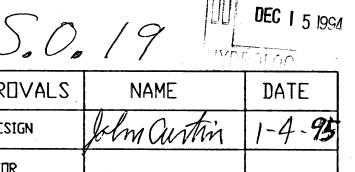




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APPROVALS 1-4-95 A.C.E./DESIGN INSPECTOR A.C.E./FIELD

941021 12-1994

A COMPANY OF