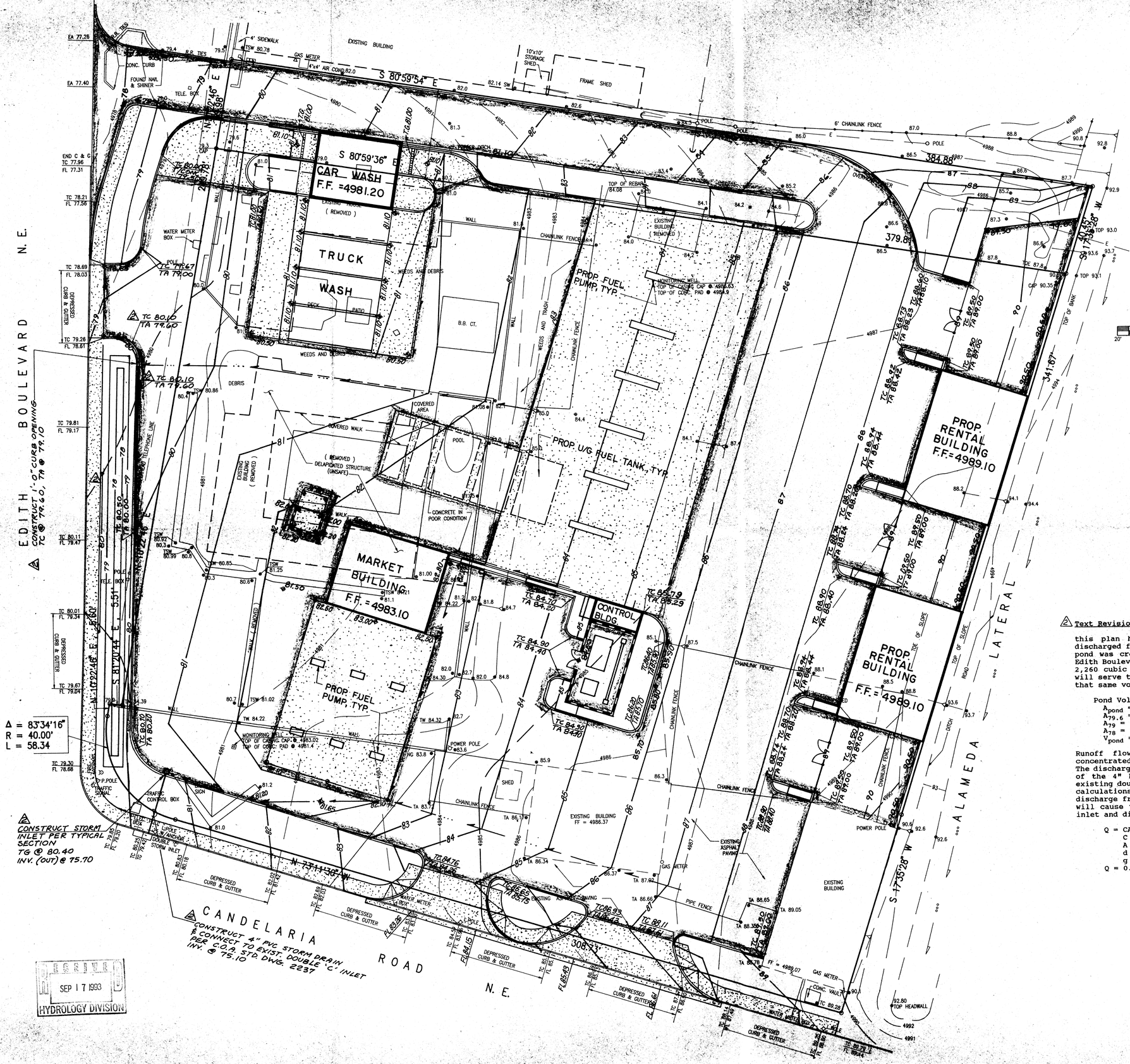
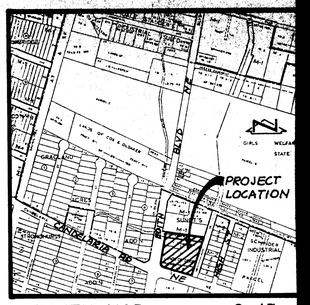




VICINITY MAP G-15

SCALE : 1"=800' (APPROX.)

LEGAL DESCRIPTION

LOTS 1 & 2, TRACT B, LANDS OF ZIEGER & SUNDT'S INDUSTRIAL AREA.

PROJECT BENCHMARK

BENCHMARK NO."3-H15" A SQUARE " " CHISELED ON TOP OF CONC. CURB AT THE ENE CURB RETURN AT THE INTERSECTION OF CANDELARIA RD. NE & HIGH ST. NE.
ELEV. = 4995.33 FT. (MSLD)

LEGEND

◆	EXIST. SPOT ELEV.
◆	PROPOSED SPOT ELEV.
4987	EXIST. CONTOUR
85	PROPOSED CONTOUR
···	PROPOSED FLOWLINE
	PROPOSED YARD WALL
	PROPOSED CONCRETE
	PROPOSED ASPHALT
TC	TOP OF CURB / CONCRETE
TA	TOP OF ASPHALT
FL	FLOWLINE

Text Revision and Additional Calculations

this plan has been modified to reduce the amount of runoff discharged from the site during more frequent rainfall events. A pond was created within the west landscaping area which fronts Edith Boulevard N.E. This pond has the capacity to hold the first 2,260 cubic feet of runoff created by a rainfall event and also will serve to reduce the total volume discharged from the site by that same volume.

Pond Volume Calcs:

$A_{pond} = (0.5)[(A_{78}+A_{79})(1.0)+(A_{79}+A_{79.6})(0.6)]$
$A_{79.6} = 2,300$ sf
$A_{79} = 1,640$ sf
$A_{78} = 520$ sf
$V_{pond} = 2,260$ cf

Runoff flowing west on the southern half of the site is concentrated into a flowline that is intercepted by a storm inlet. The discharge from this inlet is governed by the entrance condition of the 4" PVC storm drain which is connected directly to the existing double "C" storm inlet on Candelaria Rd. As shown by the calculations below, this storm drain system will lessen the discharge from this site by 0.9 cfs. Any flows exceeding 0.9 cfs will cause the inlet to back-up with runoff continuing past the inlet and discharge out onto Edith Boulevard.

$Q = CA(2gh)^{1/2}$
C = 0.6
A = 0.087 sf
d = 4.53 ft (from center of 4" PVC to top of grate)
g = 32.2 ft/s²
Q = 0.9 cfs

RECEIVED
SEP 17 1993
HYDROLOGY DIVISION

JEFFREY G. MORTENSEN NEW MEXICO 8547 REGISTERED PROFESSIONAL ENGINEER
08-09-93
09-16-93

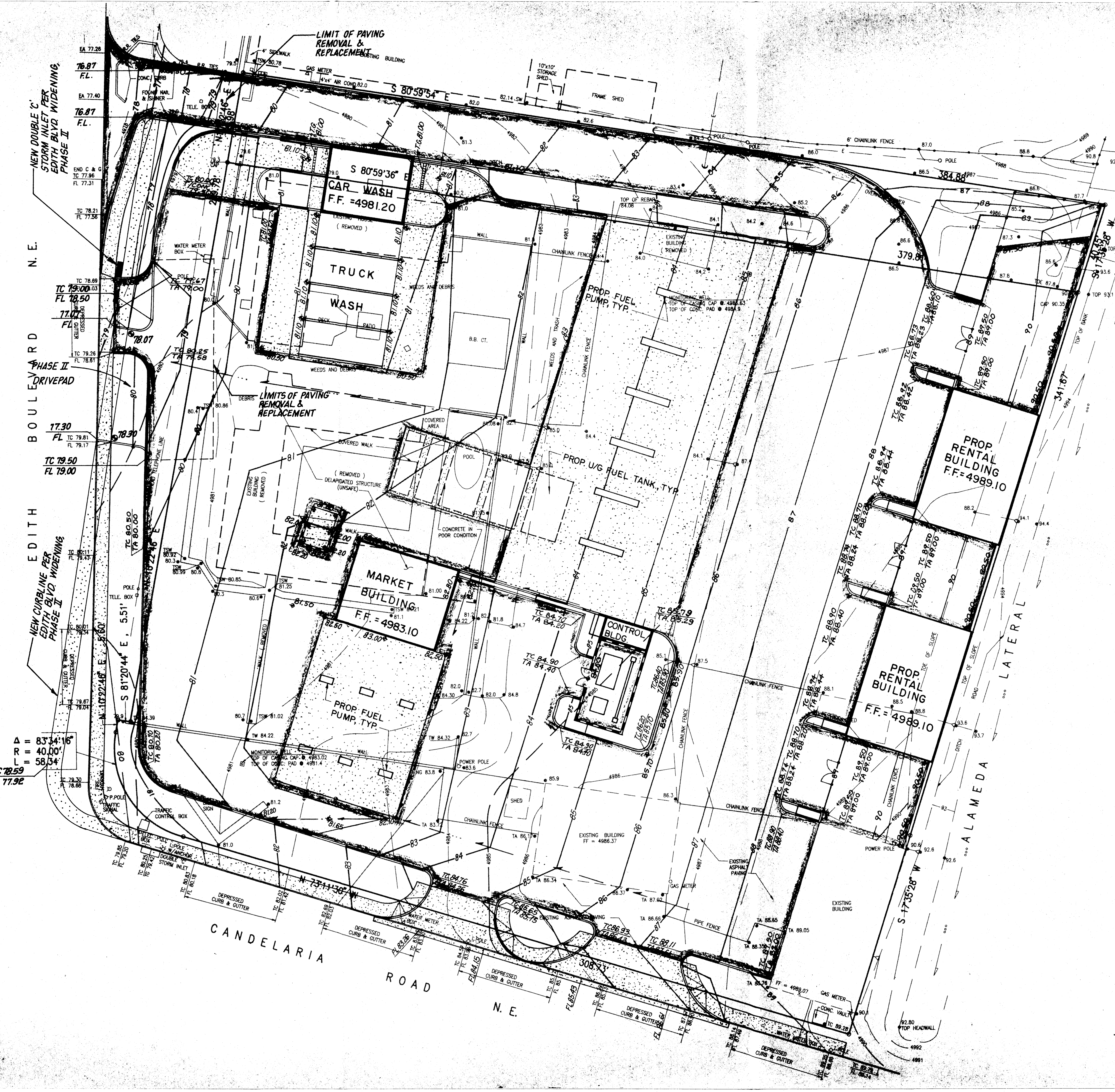
NO.	DATE	BY	REVISIONS
1	09/93	GM	TEXT REVISION, ADDITIONAL CALCS, REVISE GRADES
			POR NUISANCE FLOWS

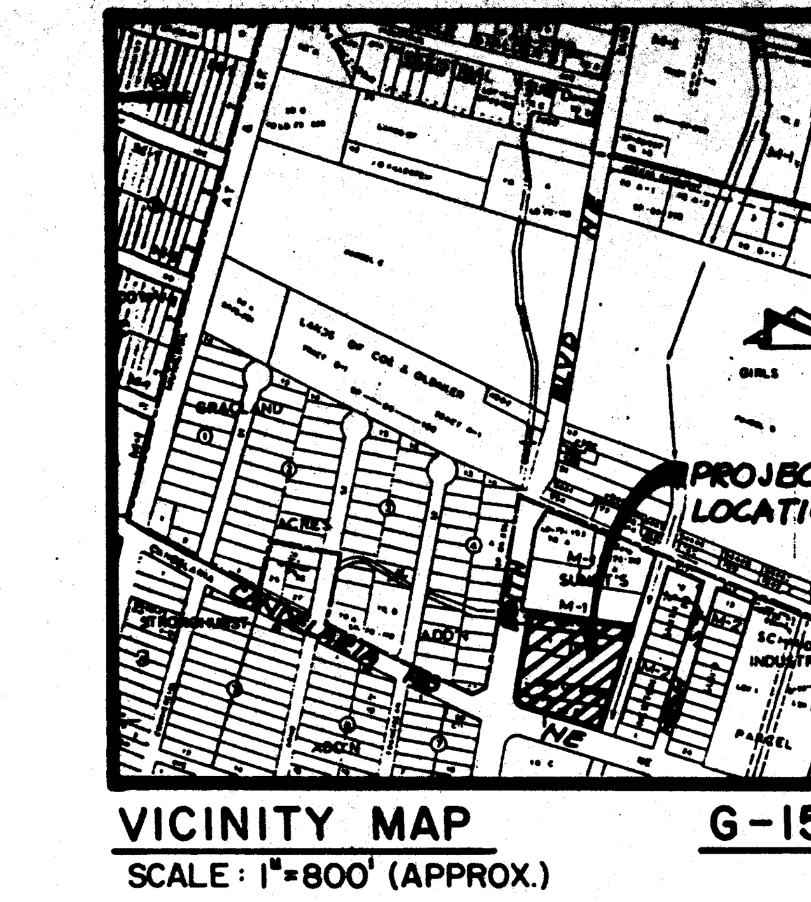
DESIGNED BY J.G.M.
DRAWN BY ACAD
APPROVED BY J.G.M.

PHASE I GRADING & DRAINAGE PLAN
EVER READY OIL
EDITH & CANDELARIA

JEFF MORTENSEN & ASSOCIATES, INC.
□ 6010-B MIDWAY PARK BLVD. N.E.
□ ALBUQUERQUE □ NEW MEXICO 87109
□ ENGINEERS □ (505) 345-4250

JOB NO. 920393
DATE 09-1993
SHEET 1 OF 2





VICINITY MAP G-15

SCALE: 1" = 800' (APPROX.)

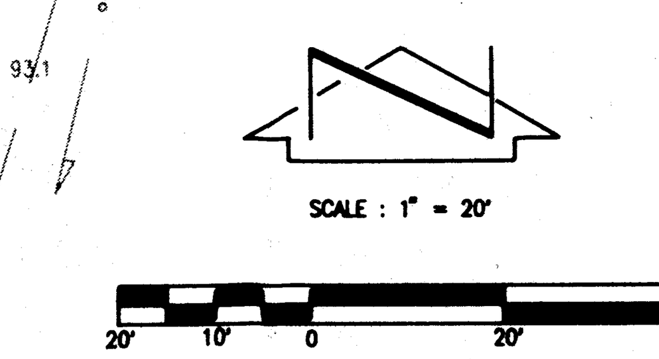
LEGAL DESCRIPTION

LOTS 1 & 2, TRACT B, LANDS OF ZIEGER & SUNDT'S INDUSTRIAL AREA.

PROJECT BENCHMARK

BENCHMARK NO. "3-H15", A SQUARE " " CHISELED ON TOP OF CONC. CURB AT THE ENE CURB RETURN AT THE INTERSECTION OF CANDELARIA RD. NE & HIGH ST. NE.

ELEV. = 4995.33 FT. (MSLD)



LEGEND

◆	EXIST. SPOT ELEV.
◆	PROPOSED SPOT ELEV.
—4987—	EXIST. CONTOUR
—85—	PROPOSED CONTOUR
	PROPOSED FLOWLINE
	PROPOSED YARD WALL
	PROPOSED CONCRETE
	PROPOSED ASPHALT
TC	TOP OF CURB / CONCRETE
TA	TOP OF ASPHALT
FL	FLOWLINE

PHASE II

The Phase II Grading and Drainage Plan for the Ever Ready Oil Edith and Candelaria Fueling Center shows the reconstruction of the two entrances along Edith Boulevard N.E. This reconstruction will be necessary to match the new grades and alignment of Edith Boulevard which are shown on this Phase II Plan and which are consistent with the Bernalillo County project "The Widening of Edith Boulevard Phase II." These changes will not alter the drainage patterns established by the Phase I Grading and Drainage Plan.

JEFFREY G. MORTENSEN 6547 REGISTERED PROFESSIONAL ENGINEER

NO.	DATE	BY	REVISIONS

DESIGNED BY J.G.M.
DRAWN BY ACAD.
APPROVED BY J.G.M.

PHASE II: GRADING & DRAINAGE PLAN
EVER READY OIL
EDITH & CANDELARIA

JEFF MORTENSEN & ASSOCIATES, INC.
6010-B MIDWAY PARK BLVD. N.E.
ALBUQUERQUE □ NEW MEXICO 87109
ENGINEERS □ (505) 345-4250

JOB NO. 920393

DATE 09-1993

SHEET 1A OF 2

⚠ CONSTRUCTION NOTES:

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 delay.

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 *ARTERIAL* street use.

8. Maintenance of these facilities shall be the responsibility of the owner of the property served.

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 plan.

APPROVALS	NAME	DATE
A.C.E. / DESIGN	Jeffrey Mortensen	9/24/93
INSPECTOR		
A.C.E. / FIELD		

Erosion Control Measures

1. The contractor shall ensure that no soil erodes from the site into public right-of-way or onto private property. This can be achieved by constructing temporary berms at the property lines and wetting the soil to keep it from blowing.

2. 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.

3. The contractor shall secure "Topsoil Disturbance Permit" prior to beginning construction.

DRAINAGE PLAN

The following items concerning the EverReady Oil Edith and Candelaria Fueling Center Drainage Plan are contained hereon:

1. Vicinity Map
2. Grading Plan
3. Calculations
4. Details

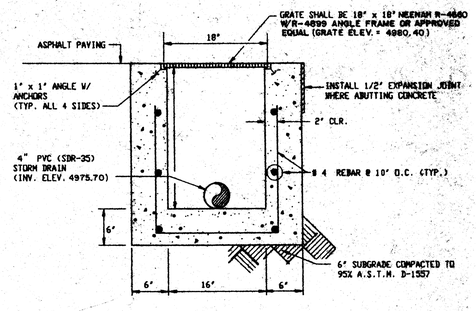
As shown on the Vicinity Map, the site is located at the northeast corner of the intersection of Edith Boulevard N.E. and Candelaria Road N.E. Each of these public streets is developed with curb and gutter and paving. The site is presently developed with commercial and residential uses. Phase I of this project consisted of the demolition of the existing improvements. Due to the current state of the site, there are no established drainage patterns as the stormwater ponds in low areas and runs off into the street at various other locations.

As shown by Panel 23 of 50 of the National Flood Insurance Rate Maps for the City of Albuquerque dated October 14, 1983, the site does not lie in a designated flood hazard area. Immediately downstream of the site on Candelaria Road, a flood hazard zone designated "AH" exists, however, the proposed Grading Plan discharges all runoff onto Edith Boulevard and will not contribute to the existing hazard zone referenced.

The Grading Plan shows 1) existing and proposed grades indicated by spot elevations and contours at 1'-0" intervals, 2) the limit and character of the existing improvements, 3) the limit and character of the proposed improvements, 4) continuity between existing and proposed grades, and 5) continuity between the proposed Grading Plan and the future improvements which consist of widening and lowering Edith Boulevard. As shown by this plan, the proposed improvements consist of the construction of a fueling center with associated paving and landscaping. Although this plan will increase the amount of runoff generated by this site, free discharge onto Edith Boulevard is appropriate as the County of Bernalillo will be constructing a storm drain system immediately downstream of the site as part of the Widening of Edith Boulevard Phase II project. The County has indicated through communication with Public Works Department staff and the Consultant, Boyle Engineering, that funds have been identified, and the project programmed with bidding in the Fall of 1993 and construction in the Spring of 1993. Based upon the above status, the Widening of Edith Boulevard, Phase II project is considered to be in place.

The storm drain system to be constructed was designed using data from the "Edith Boulevard Drainage Analysis" prepared by the Boyle Engineering Corporation dated November, 1990. The capacity of the system was designed to contain the 100-year runoff assuming fully developed conditions throughout the entire study area. Because this storm drain project is scheduled to be built with identified Bernalillo County funds, and designed to accept fully developed runoff, free discharge onto Edith Boulevard by the EverReady Oil Edith and Candelaria Fueling Center is justified.

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 August, 1991, has been used to quantify the peak rate of discharge and volume of runoff generated. As shown by these calculations, an increase of 4.7 cfs in the peak rate of runoff is anticipated due to the proposed construction.



⚠ TYPICAL STORM INLET SECTION

SCALE: 1" = 1' - 0"

CALCULATIONS

Site Characteristics

1. Precipitation Zone 2
2. $P_{6,100} = P_{360} = 2.36$ in.
3. Total Area (A_T) 2.97 Ac.
4. Existing Land Treatment

Treatment	Area (sf/ac)	%
B	89,500 / 2.05	69
C	8,700 / 0.20	07
D	31,150 / 0.72	24

5. Developed Land Treatment

Treatment	Area (sf/ac)	%
B	9,600 / 0.22	8
D	11,750 / 2.75	92

Existing Condition

1. Volume

$E_W = (E_A A_A + E_B A_B + E_C A_C + E_D A_D)/A_T$
$E_W = [(0.78)(2.05) + (1.13)(0.20) + (2.12)(0.72)]/2.97 = 1.13"$
$V_{100} = (E_W/12)A_T$
$V_{100} = (1.13/12)(2.97) = 0.280$ ac-ft $= 12,200$ cf

2. Peak Discharge

$Q_p = Q_{PA} A_A + Q_{PB} A_B + Q_{PC} A_C + Q_{PD} A_D$
$Q_p = Q_{100} = (2.28)(2.05) + (3.14)(0.20) + (4.70)(0.72) = 8.7$ cfs

Developed Condition

1. Volume

$E_W = (E_A A_A + E_B A_B + E_C A_C + E_D A_D)/A_T$
$E_W = [(0.78)(0.22) + (2.12)(2.75)]/2.97 = 2.02"$
$V_{100} = (E_W/12)A_T$
$V_{100} = (2.02/12)(2.97) = 0.500$ ac-ft $= 21,800$ cf

2. Peak Discharge

$Q_p = Q_{PA} A_A + Q_{PB} A_B + Q_{PC} A_C + Q_{PD} A_D$
$Q_p = Q_{100} = (2.28)(0.22) + (4.70)(2.75) = 13.4$ cfs

Comparison

1. $\Delta V_{100} = 21,800 - 12,200 = 9,600$ cf (increase)
2. $\Delta Q_{100} = 13.4 - 8.7 = 4.7$ cfs (increase)

⚠ Floodplain Analysis

Area of Floodplain = 1,398,502 sf
$\Delta V_{100} = 9,600$ cf
$\Delta V_{100}/A = 0.0069$ ft $= \Delta z$

This is negligible impact on existing floodplain elevation.

JEFFREY G. MORTENSEN — NEW MEXICO — 9347 — REGISTERED PROFESSIONAL ENGINEER
09-15-93
09-16-93

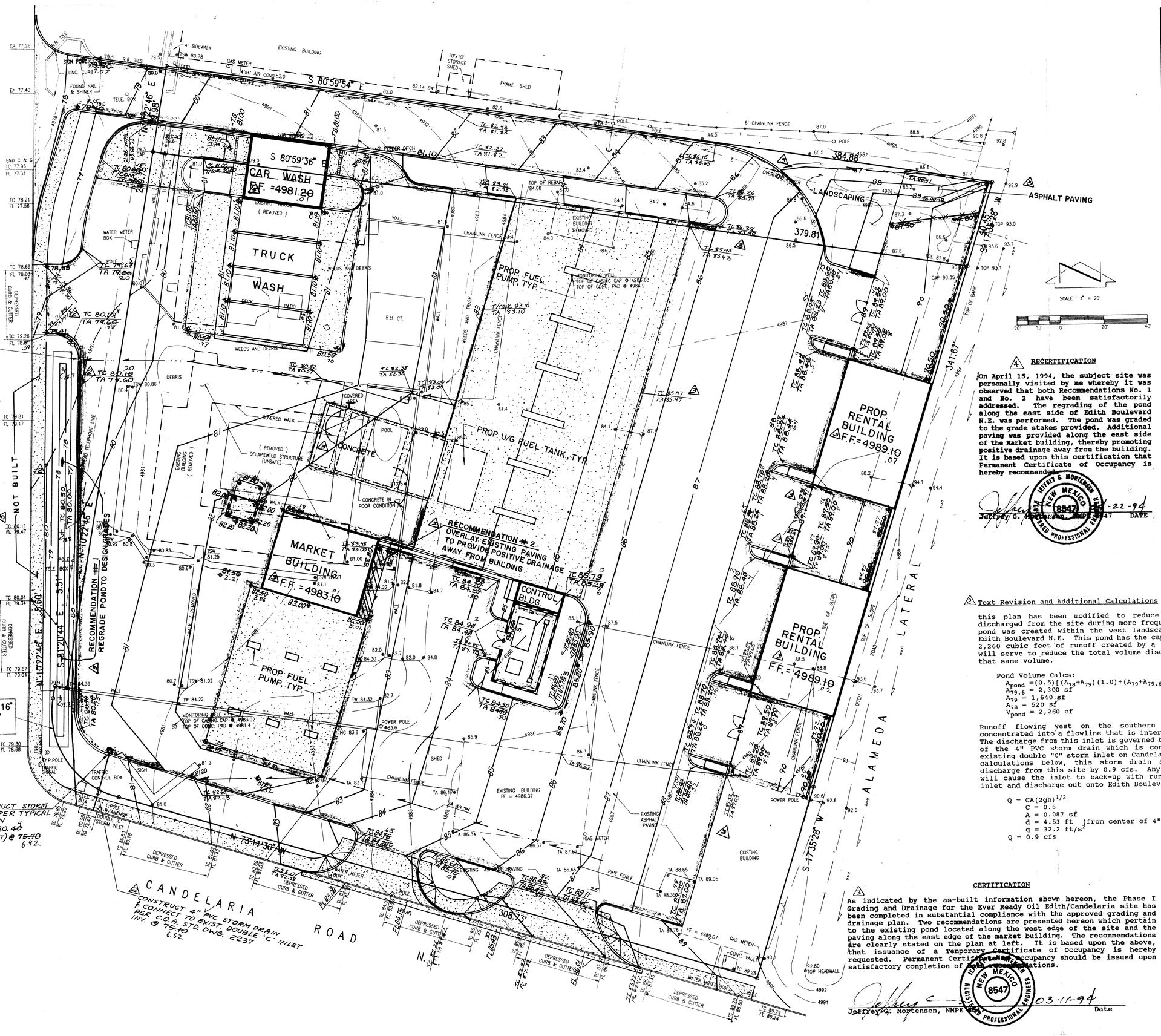
NO	DATE	BY	REVISIONS
⚠1	9/93	MFD	ADD FLOODPLAIN ANALYSIS
⚠2	9/93	GM	ADD TYPICAL INLET SECTION, S.O.#19

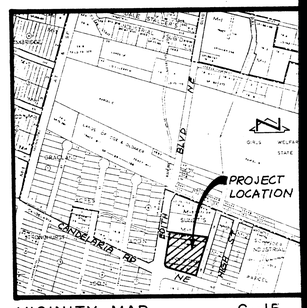
DESIGNED BY G.M. — DRAWN BY C.E.N. — APPROVED BY J.G.M.

DRAINAGE PLAN CALCULATIONS & NOTES
EVER READY OIL
EDITH & CANDELARIA

JEFF MORTENSEN & ASSOCIATES, INC.
□ 6010-B MIDWAY PARK BLVD. N.E.
□ ALBUQUERQUE □ NEW MEXICO 87109
□ ENGINEERS □ (505) 345-4250

JOB NO. 920393
DATE 09 - 1993
SHEET 2 OF 2





VICINITY MAP G-15

SCALE : 1"=800' (APPROX.)

LEGAL DESCRIPTION

LOTS 1 & 2, TRACT B, LANDS OF ZIEGER & SUNDT'S INDUSTRIAL AREA.

PROJECT BENCH MARK

BENCH MARK NO. "3-H15," A SQUARE " " CHISELED ON TOP OF CONC. CURB AT THE ENE CURB RETURN AT THE INTERSECTION OF CANDELARIA RD. NE & HIGH ST. NE.
ELEV. = 4995.33 FT. (MSLD)

LEGEND

- EXIST. SPOT ELEV.
- PROPOSED SPOT ELEV.
- 4987 EXIST. CONTOUR
- 85 PROPOSED CONTOUR
- PROPOSED FLOWLINE
- PROPOSED YARD WALL
- PROPOSED CONCRETE
- PROPOSED ASPHALT
- TC TOP OF CURB / CONCRETE
- TA TOP OF ASPHALT
- FL FLOWLINE
- 88.74 AS-BUILT ELEVATION
- + AS BUILT SPOT ELEVATION

4 RECERTIFICATION

On April 15, 1994, the subject site was personally visited by me whereby it was observed that both Recommendations No. 1 and No. 2 have been satisfactorily addressed. The regrading of the pond along the east side of Edith Boulevard N.E. was performed. The pond was graded to the grade stakes provided. Additional paving was provided along the east side of the Market building, thereby promoting positive drainage away from the building. It is based upon this certification that Permanent Certificate of Occupancy is hereby recommended.

Jeffrey G. Mortensen, NMPE 8547 — 4-22-94 DATE

2 Text Revision and Additional Calculations

this plan has been modified to reduce the amount of runoff discharged from the site during more frequent rainfall events. A pond was created within the west landscaping area which fronts Edith Boulevard N.E. This pond has the capacity to hold the first 2,260 cubic feet of runoff created by a rainfall event and also will serve to reduce the total volume discharged from the site by that same volume.

Pond Volume Calcs:

$A_{pond} = (0.5)[(A_{78}+A_{79})(1.0)+(A_{79}+A_{79.6})(0.6)]$
$A_{79.6} = 2,300$ sf
$A_{79} = 1,640$ sf
$A_{78} = 520$ sf
$V_{pond} = 2,260$ cf

Runoff flowing west on the southern half of the site is concentrated into a flowline that is intercepted by a storm inlet. The discharge from this inlet is governed by the entrance condition of the 4" PVC storm drain which is connected directly to the existing double "C" storm inlet on Candelaria Rd. As shown by the calculations below, this storm drain system will lessen the discharge from this site by 0.9 cfs. Any flows exceeding 0.9 cfs will cause the inlet to back-up with runoff continuing past the inlet and discharge out onto Edith Boulevard.

$Q = CA(2gh)^{1/2}$
$C = 0.6$
$A = 0.087$ sf
$d = 4.53$ ft (from center of 4" PVC to top of grate)
$g = 32.2$ ft/s^2
$Q = 0.9$ cfs

CERTIFICATION

2

As indicated by the as-built information shown hereon, the Phase I Grading and Drainage for the Ever Ready Oil Edith/Candelaria site has been completed in substantial compliance with the approved grading and drainage plan. Two recommendations are presented hereon which pertain to the existing pond located along the west edge of the site and the paving along the east edge of the market building. The recommendations are clearly stated on the plan at left. It is based upon the above, that issuance of a Temporary Certificate of Occupancy is hereby requested. Permanent Certificate of Occupancy should be issued upon satisfactory completion of the recommendations.

Jeffrey G. Mortensen, NMPE 8547 — 03-11-94 Date

RECEIVED
APR 22 1994

08-30-93
09-16-93

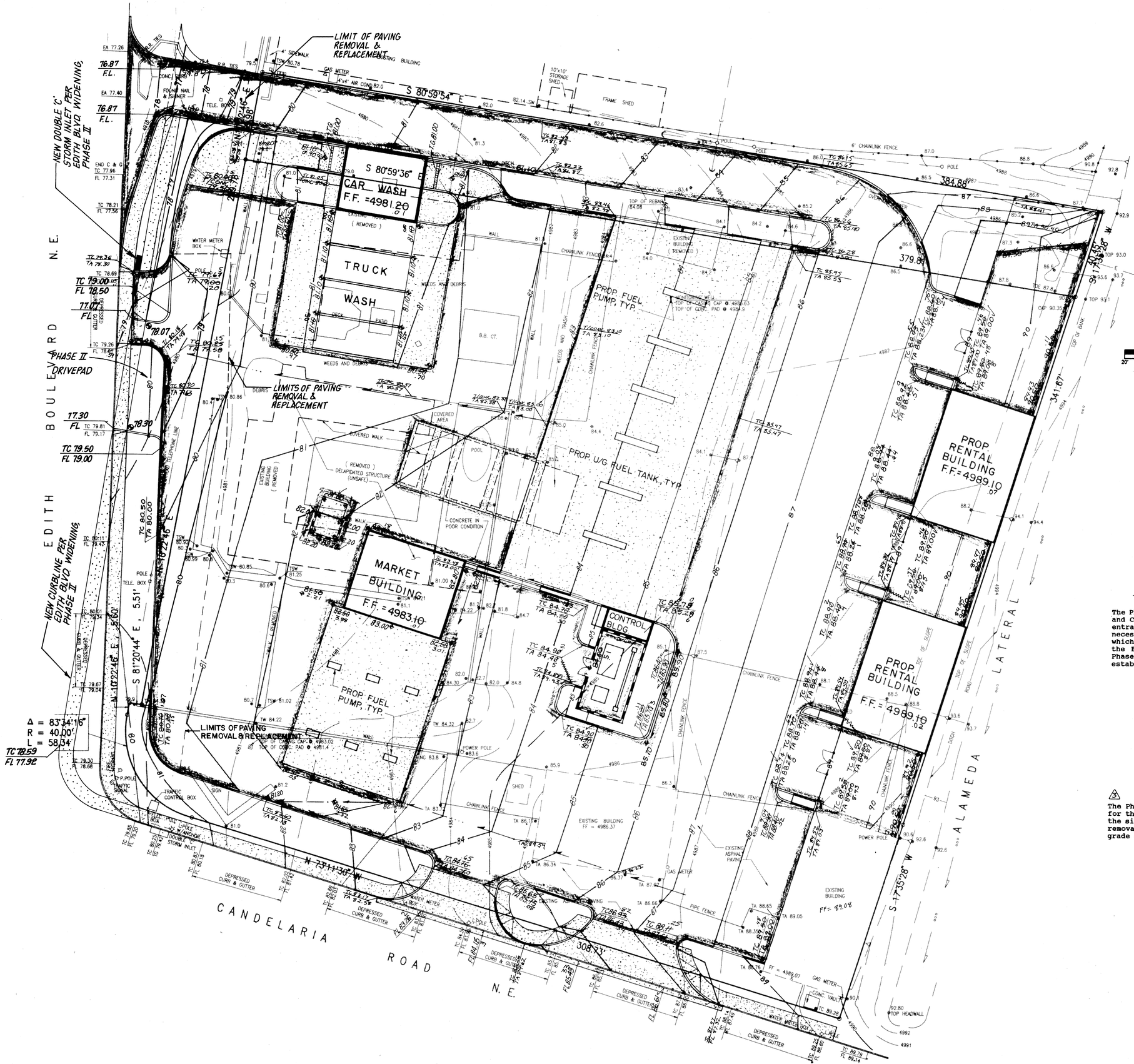
NO	DATE	BY	REVISIONS
	09/93	GM	TEXT REVISION, ADDITIONAL CALCS, REVISE GRADES FOR NUISANCE FLOWS
3	3/94	JM	AS BUILT & CERTIFY
4	4/94	JM	RECERTIFY

DESIGNED BY J.G.M.
DRAWN BY ACAD
APPROVED BY J.G.M.

PHASE I GRADING & DRAINAGE PLAN
EVER READY OIL
EDITH & CANDELARIA

JEFF MORTENSEN & ASSOCIATES, INC.
6010 RIDGEWAY PARK BLVD. N.E.
ALBUQUERQUE NEW MEXICO 87109
ENGINEERS (505) 345-4250

JOB NO. 920399
DATE 09-1993
SHEET 1 OF 2



SCALE : 1" = 20'

20' 10' 0 20' 40'

VICINITY MAP G-15

SCALE : 1"=800' (APPROX.)

LEGAL DESCRIPTION

LOTS 1 & 2, TRACT B, LANDS OF ZIEGER & SUNDT'S INDUSTRIAL AREA.

PROJECT BENCH MARK

BENCH MARK NO. "3-H15", A SQUARE " " CHISELED ON TOP OF CONC. CURB AT THE ENE CURB RETURN AT THE INTERSECTION OF CANDELARIA RD. NE & HIGH ST. NE.

ELEV. = 4995.33 FT. (MSLD)

LEGEND

◆	EXIST. SPOT ELEV.
◆	PROPOSED SPOT ELEV.
4987	EXIST. CONTOUR
85 →	PROPOSED CONTOUR
···	PROPOSED FLOWLINE
	PROPOSED YARD WALL
	PROPOSED CONCRETE
	PROPOSED ASPHALT
TC	TOP OF CURB / CONCRETE
TA	TOP OF ASPHALT
FL	FLOWLINE

PHASE II

The Phase II Grading and Drainage Plan for the Ever Ready Oil Edith and Candelaria Fueling Center shows the reconstruction of the two entrances along Edith Boulevard N.E. This reconstruction will be necessary to match the new grades and alignment of Edith Boulevard which are shown on this Phase II Plan and which are consistent with the Bernalillo County project "The Widening of Edith Boulevard Phase II." These changes will not alter the drainage patterns established by the Phase I Grading and Drainage Plan.

JEFFREY G. MORTENSEN NEW MEXICO 8547 REGISTERED PROFESSIONAL ENGINEER 09-08

⚠3 PHASE II REVISIONS

The Phase II Grading and Drainage Plan has been revised to account for the as-built curb and paving elevations along the west edge of the site. These changes are minor, however, the limits of pavement removal and replacement have been expanded to address the as-built grade of this portion of the site.

JEFFREY G. MORTENSEN NEW MEXICO 8547 REGISTERED PROFESSIONAL ENGINEER 09-08

RECEIVED
APR 22 1994

NO.	DATE	BY	REVISIONS
3	3/94	JM	REVISE PER AS-BUILT

DESIGNED BY J.G.M.
DRAWN BY ACAD.
APPROVED BY J.G.M.

PHASE II GRADING & DRAINAGE PLAN
EVER READY OIL
EDITH & CANDELARIA

JEFF MORTENSEN & ASSOCIATES, INC.
□ 6010-B MIDWAY PARK BLVD. N.E.
□ ALBUQUERQUE □ NEW MEXICO 87109
□ ENGINEERS □ (505) 345-4250

JOB NO. 920399
DATE 09-1993
SHEET 1A OF 2

CONSTRUCTION NOTES:

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 delay.

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 *ARTERIAL* street use.

8. Maintenance of these facilities shall be the responsibility of the owner of the property served.

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 plan.

APPROVALS	NAME	DATE
A.C.E. / DESIGN		
INSPECTOR		
A.C.E. / FIELD		

Erosion Control Measures

1. The contractor shall ensure that no soil erodes from the site into public right-of-way or onto private property. This can be achieved by constructing temporary berms at the property lines and wetting the soil to keep it from blowing.

2. 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.

3. The contractor shall secure "Topsoil Disturbance Permit" prior to beginning construction.

DRAINAGE PLAN

The following items concerning the EverReady Oil Edith and Candelaria Fueling Center Drainage Plan are contained hereon:

1. Vicinity Map
2. Grading Plan
3. Calculations
4. Details

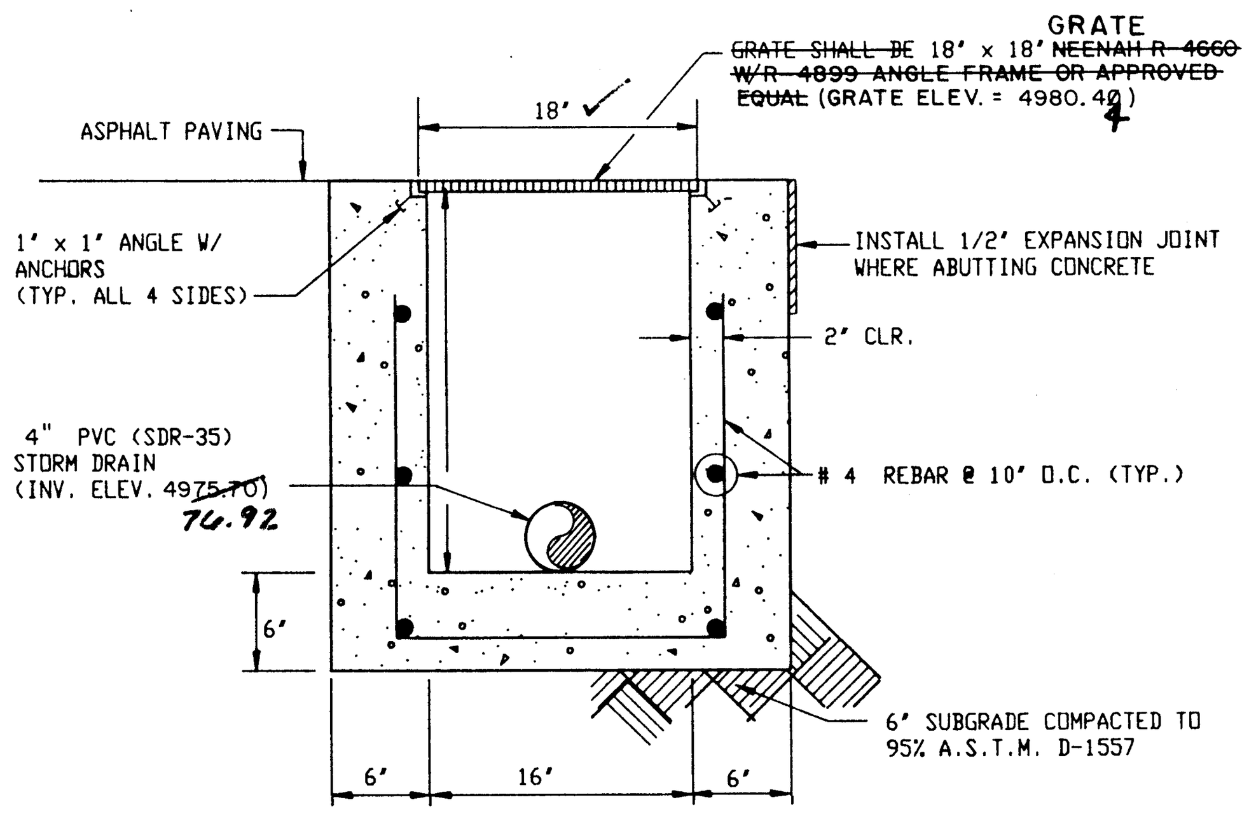
As shown on the Vicinity Map, the site is located at the northeast corner of the intersection of Edith Boulevard N.E. and Candelaria Road N.E. Each of these public streets is developed with curb and gutter and paving. The site is presently developed with commercial and residential uses. Phase I of this project consisted of the demolition of the existing improvements. Due to the current state of the site, there are no established drainage patterns as the stormwater ponds in low areas and runs off into the street at various other locations.

As shown by Panel 23 of 50 of the National Flood Insurance Rate Maps for the City of Albuquerque dated October 14, 1983, the site does not lie in a designated flood hazard area. Immediately downstream of the site on Candelaria Road, a flood hazard zone designated "AH" exists, however, the proposed Grading Plan discharges all runoff onto Edith Boulevard and will not contribute to the existing hazard zone referenced.

The Grading Plan shows 1) existing and proposed grades indicated by spot elevations and contours at 1'-0" intervals, 2) the limit and character of the existing improvements, 3) the limit and character of the proposed improvements, 4) continuity between existing and proposed grades, and 5) continuity between the proposed Grading Plan and the future improvements which consist of widening and lowering Edith Boulevard. As shown by this plan, the proposed improvements consist of the construction of a fueling center with associated paving and landscaping. Although this plan will increase the amount of runoff generated by this site, free discharge onto Edith Boulevard is appropriate as the County of Bernalillo will be constructing a storm drain system immediately downstream of the site as part of the Widening of Edith Boulevard Phase II project. The County has indicated through communication with Public Works Department staff and the Consultant, Boyle Engineering, that funds have been identified, and the project programmed with bidding in the Fall of 1993 and construction in the Spring of 1993. Based upon the above status, the Widening of Edith Boulevard, Phase II project is considered to be in place.

The storm drain system to be constructed was designed using data from the "Edith Boulevard Drainage Analysis" prepared by the Boyle Engineering Corporation dated November, 1990. The capacity of the system was designed to contain the 100-year runoff assuming fully developed conditions throughout the entire study area. Because this storm drain project is scheduled to be built with identified Bernalillo County funds, and designed to accept fully developed runoff, free discharge onto Edith Boulevard by the EverReady Oil Edith and Candelaria Fueling Center is justified.

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 August, 1991, has been used to quantify the peak rate of discharge and volume of runoff generated. As shown by these calculations, an increase of 4.7 cfs in the peak rate of runoff is anticipated due to the proposed construction.



TYPICAL STORM INLET SECTION

SCALE: 1' = 1' - 0'

CALCULATIONS

Site Characteristics

1. Precipitation Zone 2
2. $P_{6,100} = P_{360} =$ 2.36 in.
3. Total Area (A_T) 2.97 Ac.
4. Existing Land Treatment

Treatment	Area (sf/ac)	%
B	89,500 / 2.05	69
C	8,700 / 0.20	07
D	31,150 / 0.72	24

5. Developed Land Treatment

Treatment	Area (sf/ac)	%
B	9,600 / 0.22	8
D	11,750 / 2.75	92

Existing Condition

1. Volume

$E_W = (E_A A_A + E_B A_B + E_C A_C + E_D A_D)/A_T$
$E_W = [(0.78)(2.05)+(1.13)(0.20)+(2.12)(0.72)]/2.97 = 1.13"$
$V_{100} = (E_W/12)A_T$
$V_{100} = (1.13/12)(2.97) = 0.280$ ac-ft = 12,200 cf

2. Peak Discharge

$Q_p = Q_{PA} A_A + Q_{PB}A_B + Q_{PC}A_C + Q_{PD}A_D$
$Q_p = Q_{100} = (2.28)(2.05)+(3.14)(0.20)+(4.70)(0.72) = 8.7$ cfs

Developed Condition

1. Volume

$E_W = (E_A A_A + E_B A_B + E_C A_C + E_D A_D)/A_T$
$E_W = [(0.78)(0.22)+(2.12)(2.75)]/2.97 = 2.02"$
$V_{100} = (E_W/12)A_T$
$V_{100} = (2.02/12)(2.97) = 0.500$ ac-ft = 21,800 cf

2. Peak Discharge

$Q_p = Q_{PA} A_A + Q_{PB}A_B + Q_{PC}A_C + Q_{PD}A_D$
$Q_p = Q_{100} = (2.28)(0.22) + (4.70)(2.75) = 13.4$ cfs

Comparison

1. $\Delta V_{100} =$ 21,800 - 12,200 = 9,600 cf (increase)
2. $\Delta Q_{100} =$ 13.4 - 8.7 = 4.7 cfs (increase)

Floodplain Analysis

Area of Floodplain = 1,398,502 sf
ΔV_{100} = 9,600 cf
$\Delta V_{100}/A$ = 0.0069 ft = Δz

This is negligible impact on existing floodplain elevation.

09-08-93
09-15-93
09-16-93
03-11-94

RECEIVED APR 22 1994

NO	DATE	BY	REVISIONS
1	9/93	MFD	ADD FLOODPLAIN ANALYSIS
2	9/93	GM	ADD TYPICAL INLET SECTION, S.O #19
3	3/94	JM	AS-BUILT INFORMATION

DESIGNED BY G.M.
DRAWN BY C.E.N.
APPROVED BY J.G.M.

DRAINAGE PLAN CALCULATIONS & NOTES

EVER READY OIL

EDITH & CANDELARIA

JOB NO 920399

DATE 09 - 1993

SHEET 2 OF 2