

July 24, 1998

Dan S. Aguirre, P.E. Wilson & Company 4775 Indian School Road, NE - Suite 200 Albuquerque, NM 87110

Attn: Kristine Susco

RE: YOUTH DEVELOPMENT INC. MODULAR BUILDING SITE (K20-D36). GRADING & DRAINAGE PLAN FOR BUILDING PERMIT APPROVAL.

ENGINEER'S STAMP DATED JUNE 29, 1998.

Dear Mr. Aguirre:

Based on the information provided on your June 30, 1998 submittal, the above mentioned project is approved for Building Permit.

As I discussed with Ms. Susco today, please note on the plan that Basins 101 / 201 and 102 / 202 are essentially the same. Also, highlight General Bradley on Location Map.

Prior to Certificate of Occupancy approval, an Engineer's Certification will be required.

If I can be of further assistance, please feel free to contact me at 924-3984.

Sincerely,

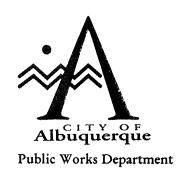
John P. Murray, P.E.

Hydrology

Andrew Garcia

DRAINAGE INFORMATION SHEET

PROJECT TITLE:	YDI– MODULAR Z BUILDING SITE	ONE ATLAS/DRNG.	FILE#: K-70	
	DOILDING SITE			
DRB#: EPC#:		WORK ORDER #:		
LEGAL DESCRIPT		-30, BLOCK 3, WAGG	OMAN-DENISON	
147				
CITY ADDRESS:	GENERAL BRADLEY Albuque	rque, NM 87106		
ENGINEERING FI	RM: Wilson & Company	CONTACT:	Kristine Susco	
	5 Indian School Rd. Suite 200	PHONE:	(505) 254-405 9	
Alb	uquerque, NM 87110		•	
OWNER: You	th Development Inc	CONTACT:		
ADDRESS: 6301 NM	Central Ave NW Albuquerque,	PHONE:		
	ACF Architects	CONTACT:	Wayne Connel	
ADDRESS: 119	930 Menaul NE suite 213 Alb. NM	PHONE:	505-292-9260	
SURVEYOR:		_ CONTACT:		
ADDRESS:		PHONE:		
CONTRACTOR:		_ CONTACT:		
ADDRESS:		PHONE:		
TYPE OF SUBMIT	TAL:	CHECK TYPE OF A	PPROVAL SOUGHT:	
X DRAINAGE RI	EPORT	SKETCH PLAT A	APPROVAL	
DRAINAGE PI	LAN	PRELIMINARY I	PLAT APPROVAL	
CONCEPTUAI	L GRADING & DRAINAGE PLAN	S. DEV. PLAN FOR SUB'D. APPROVAL		
X GRADING PLAN		S. DEV. PLAN FOR BLDG. PERMIT APPROVAL		
EROSION CONTROL PLAN		SECTOR PLAN APPROVAL		
ENGINEER'S (CERTIFICATION	FINAL PLAT APPROVAL		
OTHER		FOUNDATION PERMIT APPROVAL		
		X BUILDING PERM	MIT APPROVAL	
PRE-DESIGN MEET	NG EGELVE	CERTIFICATE O	F OCCUPANCY APPROVAL	
YES	1 2 2 2000	GRADING PERM	IIT APPROVAL	
X NO	JUN 3 0 1998	PAVING PERMI	T APPROVAL	
COPY PROVID	HYDROLOGY SECTION	S.A.D. DRAINAG	GE REPORT	
	HTDIOL C	DRAINAGE REQ	QUIREMENTS	
		OTHER		
D-1- C.1- '41 1	(/20 /09	1. 0		
Date Submitted:	6/29/98 Denial C. April R. P. F.			
By:	Daniel S. Aguirre, P.E.	111		
DIS		V '		



Martin J. Chávez, Mayor

Robert E. Gurulé, Director

May 8,1997

Jeff Mortensen Jeff Mortensen & Associates Inc. 6010-B Midway Park Blvd. NE Albuquerque, New Mexico 87109

RE: DRAINAGE PLAN FOR CHICO CHILD DEVELOPMENT CENTER (K20-D36) ENGINEER'S STAMP DATED 4/11/97

Dear Mr. Mortensen:

Based on the information provided on your April 15,1997 submittal, the above referenced site is approved for Building Permit & Work Order.

Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology.

Also, prior to Certificate of Occupancy release, Engineer Certification per the DPM checklist will be required, along with the copy of the letter of acceptance for the Work Order.

If I can be of further assistance, please feel free to contact me at 924-3986.

C: Andrew Garcia File

Sincerely

Bernie J. Montoya CE Associate Engineer



DRAINAGE INFORMATION SHEET

CHICO CHILD	730906
PROJECT TITLE: BEVELOPMENT CNT	Z zone atlas/drng. file #: K20/D30
DRB #: EPC #:	WORK ORDER #: 5501.90
DRB #: EPC #: LEGAL DESCRIPTION: LOT 23A BO	LOCIC3, WAGGOMAN - DEN/180N
CITY ADDRESS: CHOO & GOVER	AL PRADISY NE
ENGINEERING FIRM: JEFF Moerensen &	ASSOC. CONTACT: JEFF MORTENSEN
ADDRESS: 6010-B MIDWAY PARK BO	NO NE PHONE: 345-4250
OWNER: CITY DEST OF FAMILY &	CONTACT: ARCHITECT
ADDRESS: COMMUNITY SOLVI	
•	
ARCHITECT: TERRAMAR	CONTACT: TELESITA BLOCK
ADDRESS: 209 PALOMAS DR	NE PHONE: 265-1572
SURVEYOR: JEFF MORTENSEN & ASSOC	
ADDRESS: 4010-B MIDWAY PARK E	440 NE PHONE: 345-4250
CONTRACTOR: NOT SELECTE	CONTACT:
ADDRESS:	PHONE:
TYPE OF SUBMITTAL: DRAINAGE REPORT CONCEPTUAL GRADING & DRAINAGE PLAN CRADING PLAN EROSION CONTROL PLAN ENGINEER'S CERTIFICATION OTHER PRE-DESIGN MEETING: YES NO COPY PROVIDED	CHECK TYPE OF APPROVAL SOUGHT: SKETCH PLAT APPROVAL PRELIMINARY PLAT APPROVAL S. DEV. PLAN FOR SUB'D. APPROVAL S. DEV. PLAN FOR BLDG. PERMIT APPROVAL SECTOR PLAN APPROVAL FINAL PLAT APPROVAL FOUNDATION PERMIT APPROVAL CERTIFICATE OF OCCUPANCY APPROVAL GRADING PERMIT APPROVAL PAVING PERMIT APPROVAL S.A.D. DRAINAGE REPORT DRAINAGE REQUIREMENTS
DATE SUBMITTED: 04-14-97	OTHER WOLF OR SETTIVE (SPECIFY) APR 15 1997



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

January 20, 1994

Jeff Mortensen Jeff Mortensen & Associates 6010-B Midway Park Blvd. NE Albuquerque, NM 87109

> RE: DRAINAGE PLAN FOR A SITE AT GENERAL BRADLEY NE (K20-D36) ENGINEER'S STAMP DATED 1/17/94.

Dear Mr. Mortensen:

Based on the information provided on your January 18, 1994 submittal, the above referenced site is approved for Building Permit.

Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology.

Prior to Certificate of Occupancy release, Engineer Certification per the D.P.M. checklist will be required.

Also, a separate permit is required for construction within City Right-of-Way. A copy of this approval letter must be on hand when applying for the excavation permit.

If I can be of further assistance, please feel free to contact me at 768-2667.

Sincerely,

Bernie J. Montoya, CE

Engineering Associate

BJM/d1/WPHYD/8251

xc: Inspector

Darlene Saavedra

File

PUBLIC WORKS DEPARTMENT

DRAINAGE REPORT

Site Location: The Youth Development, Inc. Head Start Program Modular Classroom Building is located in the Southeast corner of Chico Road and General Bradley.

Existing Conditions: The existing site is an undeveloped lot. The existing lot drains from south to north with a 2 to 3 % slope. Approximately half the site drains to General Bradley and the other half to Chico NE. The discharge then enters the storm drain system through inlets at the corners of General Bradley and Chico Road.

EXISTING CONDITIONS

		Treatment					
Basin	Area	%A	%B	%C	%D	V ₁₄₄₀ (ac-ft)	Q _p (cfs)
101	0.245	91.5%	0%	0%	8.5%	0.017	0.527
102	0.234	80.0%	0%	0%	20.0%	0.022	0.589
TOTAL	0.479	85.75%	0%	0%	14.2%	0.039	1.116

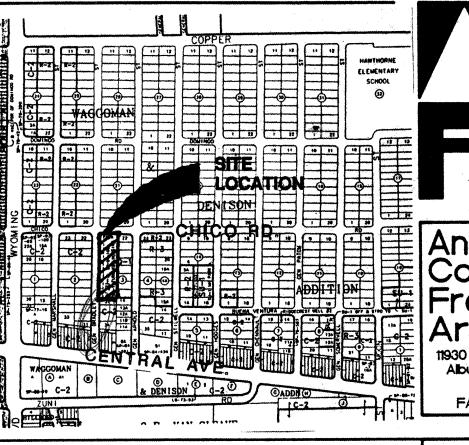
<u>Proposed Conditions</u>: The site will be developed as a Youth Development, Inc. Day Care Facility using a modular building, sand play area and paved parking. The lot will continue to drain to both Chico Road and General Bradley.

PROPOSED CONDITIONS

		Treatment					
Basin	Area	%A	%B	%C	%D	V ₁₄₄₀ (ac-ft)	Q _p (cfs)
101	0.147	0	43.39	0	56.61	0.0248	0.5827
102	0.332	0	32.61	0	67.39	0.0616	1.119
TOTAL	0.479	0%	38%	0%	62%	0.0864	1.702

Methodology: For this site, Section 22.2 of the City of Albuquerque DPM was followed to calculate the peak rate of discharge and volume of runoff generated. The charts and formulas in Part A were followed using the 100-year frequency 6-hour rainfall volume as the design storm. The site is located in Zone 3 as determined from Table A-1. The total storm volume was calculated as per subsection A.5. Peak discharge rate was calculated as per sub-section A.6.

Conclusions: The increase in discharge is less than 1cfs. This increase should not have a significant impact on the Chico Storm Drain System.

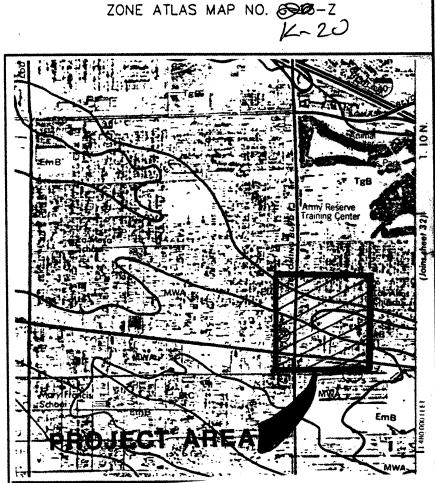


Anderson Connell Frederkind Architects 11930 Menaul NE, Suite 213 Albuquerque, NM 87111 (505)292-9260 FAX (505)292-9261

JUN 3 0 1998

HYDROLOGY SECTIC

LOCATION MAP



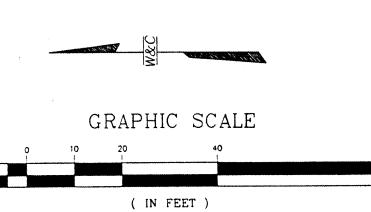
SOILS MAP

REFERENCE: SCS BERNALILLO COUNTY SOIL SURVEY



FLOOD INSURANCE MAP

REFERENCE: FLOOD INSURANCE STUDY
PANEL 30



1 inch = 20 ft.

WILSON & COMPANY

4775 INDIAN SCHOOL ROAD N.E.
SUITE 200
ALBUQUERQUE, NEW MEXICO
87110
(505) 254-4000

Sheet Title: GRADING AND DRAINAGE PLAN

Project No: 9801

Drawn by: H.T.R.

hecked by: W.A.C.

Revision(s):

4/20/98 AS NOTED

C1_{of:}

GRADING AND DRAINAGE PLAN

SCALE: 1=20'

LEGAL DESCRIPTION

A PORTION OF LOTS 23-30 BLOCK 3
WAGGOMAN-DENISON ADDITION

BENCH MARK

A CHISLED "X" ON THE NORTHWEST CORNER OF CHICO ROAD AND GENERAL BRADLEY, WITH A ELEVATION OF 5390.51.

Vicinity Map
 Grading Plan
 Calculations
 Sections and Details

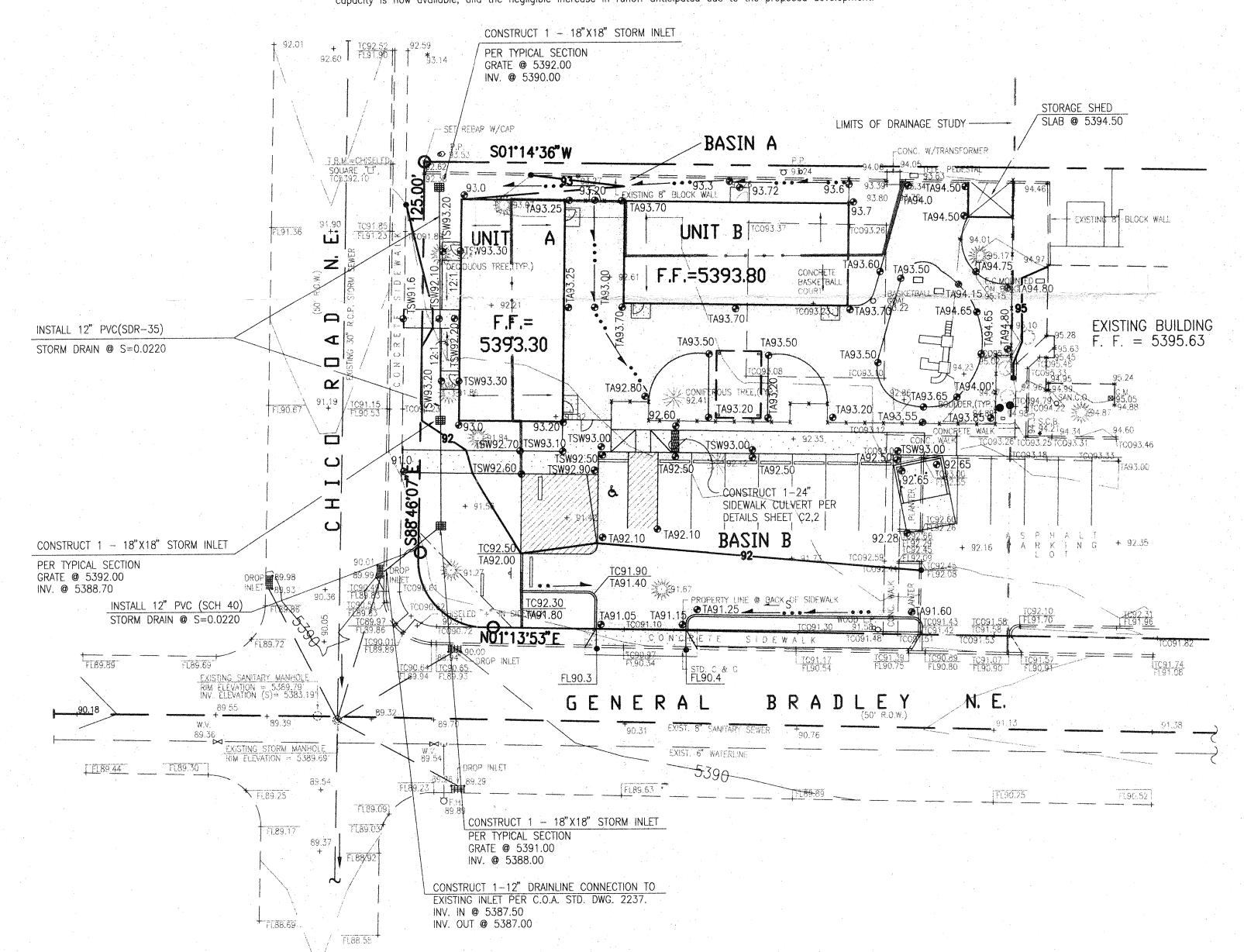
As shown by the Vicinity Map, the site is located at the southeast corner of the intersection of Chico Avenue N.E. and General Bradley Street N.E. At present, approximately two—thirds of the site is developed as a City Housing Project (K20/D36). Much of the surrounding area is also developed, making this a modification to an existing site within an infill area.

Review of Panel 358 of 825 of the National Flood Insurance Program Flood Insurance Rate Maps published by F.E.M.A. for the County of Bernalillo, New Mexico, and Incorporated Areas dated September 20, 1996, indicates that this site does not lie within a designated flood hazard zone. This site does, however, drain to a designated flood hazard zone. That flood zone has been eliminated by the construction of the Fairgrounds Storm Water Relief System Improvements, hence downstream capacity is now available.

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, and 4) continuity between existing and proposed grades. As shown by this Plan, the proposed construction consists of the placement of two portable classroom buildings, along with associated paving and landscaping. In the existing condition, the entire site discharges its runoff directly to the adjacent streets, Chico Road N.E. and General Bradley N.E. In the developed condition, two basins will be created. Basin "A" will discharge its runoff directly to the existing storm drain system within Chico Road N.E. Basin "B" will continue to discharge into General Bradley N.E. The developed discharge from Basin "B" will enter the street via a new drivepad. Runoff from Basin "A" will be intercepted by three private storm inlets which will be interconnected by a 12" private storm drain. The 12" private storm drain will discharge directly into the back of an existing storm inlet located at the East North East return of the intersection of Chico Road N.E. and General Bradley N.E. As indicated by these Calculations, Basin "A", which does not exist in the "Existing Condition", will experience a slight increase in runoff. That increase will discharge directly into the existing storm drain system. Basin "B", on the other hand, will experience a slight decrease in the peak discharge of runoff. Overall, a slight increase is anticipated.

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 by this portion of the site. Calculations for the entire site appear on the Conceptual Grading and Drainage Plan bearing the date of 11/22/96. As shown by these Calculations, a negligible increase in runoff is anticipated due to the proposed development.

As indicated by the above referenced Conceptual Grading and Drainage Plan, offsite flows do not impact this site. This is due to the presence of CMU walls on the east and south sides of the property. Existing public streets lie to the north and west which do not contribute runoff to the site. Those streets are topographically lower than the site and are improved with curb and gutter and asphalt paving. Lastly, the drainage pattern set forth on this plan is consistent with the approved Conceptual Plan. That Plan provides for the free discharge of runoff from this site due to the fact that this is a modification to an existing site within an infill area, the downstream flood hazard zone has been mitigated by the construction of the Fairgrounds Storm Water Relief System, downstream capacity is now available, and the negligible increase in runoff anticipated due to the proposed development.

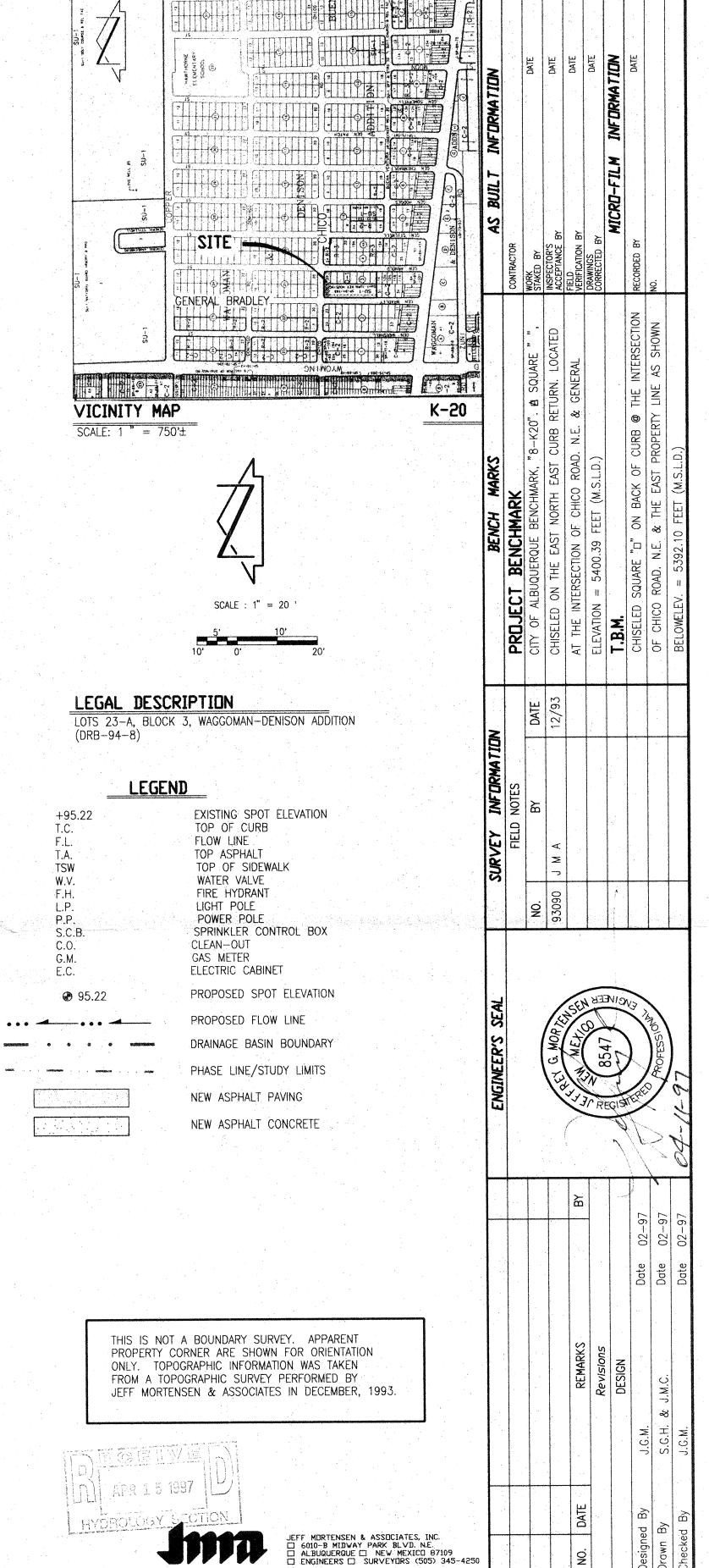


Construction Notes:

- 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 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.
- Backfill compaction shall be according to residential 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.

Erosion Control Measures:

- 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—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.



CITY OF ALBUQUERQUE
DEPARTMENT OF FAMILY
AND COMMUNITY SERVICES—YDI, INC.

TITLE:

GRADING AND DRAINAGE PLAN
CHICO CHILD DEVELOPMENT CENTER
CHICO AND GENERAL BRADLEY N.E.

Design Review Committee

City Engineer Approval

930906

City Project No. 5501.90

Zone Map No. Sheet C

9

CALCULATIONS

Site Characteristics 1. Precipitation Zone = 3 2. $P_{6,100} = P_{360} = 2.60$ in. 3. Total Area $(A_T) = 20,000 \text{ sf}/0.46 \text{ ac}$ 4. Existing Land Treatment Area (sf/ac) 950/0.03 Treatment 06 7,690/0.17 11,360/0.26 5. Developed Land Treatment A. Basin A (5,350 sf; 0.12 ac.) Area (sf/ac) Treatment 3,370/0.08 67 1,980/0.04 33 B. Basin B (14,650 sf; 0.34 ac.) Area (sf/ac) Treatment 880/0.02 06 1,200/0.03 09 12,570/0.29 Existing Condition Volume $E_W = (E_A A_A + E_B A_B + E_C A_C + E_D A_D)/A_T$ $E_W = (0.66)(0.03) + (1.29)(0.17) + (2.36)(0.26)/0.46 = 1.85 in.$ $V_{100} = (E_W/12)A_T$ $V_{100} = (1.85/12)0.46 = 0.07$ ac.ft.; 3,090 cf 2. Peak Discharge $Q_{p} = Q_{PA}A_{A} + Q_{PB}A_{B} + Q_{PC}A_{C} + Q_{PD}A_{D}$ $Q_{\rm p} = Q_{100} = (1.87)(0.03) + (3.45)(0.17) + (5.02)(0.26) = 1.9 \text{ cfs}$

A. Basin A

Developed Condition

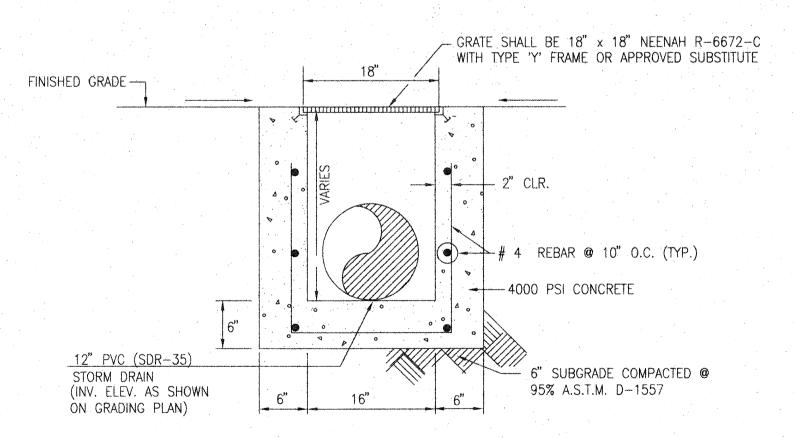
- 1. Volume
- $E_{W} = (E_{A}A_{A} + E_{B}A_{B} + E_{C}A_{C} + E_{D}A_{D})/A_{T}$
- $E_W = (1.29)(0.08) + (2.36)(0.04) / 0.12 = 1.65$ in.
- $V_{1.00} = (E_W/12)A_T$
- $V_{100} = (1.65/12)0.12 = 0.02$ ac.ft.; 720 cf
- 2. Peak Discharge
- $Q_{p} = Q_{PA}A_{A} + Q_{PB}A_{B} + Q_{PC}A_{C} + Q_{PD}A_{D}$
- $Q_p = Q_{100} = (3.45)(0.08) + (5.02)(0.04) = 0.5 \text{ cfs}$
- Hydraulics
- Using Feild's Hydraulics Calculator for Gravity Flow in Pipes
- For S = 0.0220D = 12"

n = 0.013

- $Q = 5.3 \text{ cfs} >> Q_{100} = 0.5 \text{ cfs}$
- B. Basin B
 - 1. Volume
 - $E_{W} = (E_{A}A_{A} + E_{B}A_{B} + E_{C}A_{C} + E_{D}A_{D})/A_{T}$
- $E_W = (0.66)(0.02) + (1.29)(0.03) + (2.36)(0.29)/0.34 = 2.17 in.$
- $V_{100} = (E_W/12)A_T$
- $V_{100} = (2.17/12)0.34 = 0.06 \text{ ac.ft.}; 2,680 \text{ cf}$
- 2. Peak Discharge
- $Q_p = Q_{PA}A_A + Q_{PB}A_B + Q_{PC}A_C + Q_{PD}A_D$
- $Q_p = Q_{100} = (1.87)(0.02) + (3.45)(0.03) + (5.02)(0.29) = 1.6 \text{ cfs}$

Comparison

- A. Basin A
- 1. $\Delta V_{100} = 720 0 = 720$ cf (increase)
- 2. $\Delta Q_{100} = 0.5 0 = 0.5$ cfs (increase)
- - 1. $\Delta V_{100} = 3,090 2,680 = 410 \text{ cf (decrease)}$
 - 2. $\Delta Q_{100} = 1.9 1.6 = 0.3 \text{ cfs (decrease)}$



TYPICAL STORM INLET SECTION

TYPICAL SIDEWALK CULVERT DETAILS NOT TO SCALE

NO.3 DEFORMED BAR

DOWEL DETAIL

CONSTRUCTION NOTES:

PLACE 1/2" EXPANSION JOINT MATERIAL.

B. SIDEWALK OR SETBACK, (VARIABLE).

D. 3/8" CHECKERED STEEL PLATE.

H. DOWEL AND JOINT, (OPTIONAL). J. ASPHALT PAVING GRADE

M. DRAIN WIDTH, 24" MAX. 12" MIN. N. SLOPE 1/4" PER FT. MIN.

3" RADIUS, (TYPICAL).

ROD ANCHOR 1" x 5"

F. "V" INVERT

G. SIDEWALK GRADE

L. 4000 PSI CONCRETE

A. JOIN NEAREST SCORE LINE OR WEAKENED PLANE JOINT,

K. 3/8" x 1" F.H. C'SUNK STAINLESS STEEL MACHINE SCREW.

SCALE: 1'' = 1' - 0''

Construction Notes: DATE DATE DATE DATE 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 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-ofway 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

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.

advance of and during excavation work. The contractor is fully responsible for

all existing utilities, pipelines, and underground utility lines. In planning and conducting excavation, the contractor

shall comply with state statutes,

any and all damage caused by its failure to locate, identify and preserve any and

municipal and local ordinances, rules and regulations, if any, pertaining to the location of these lines and facilities.

- 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 plan.

Erosion Control Measures:

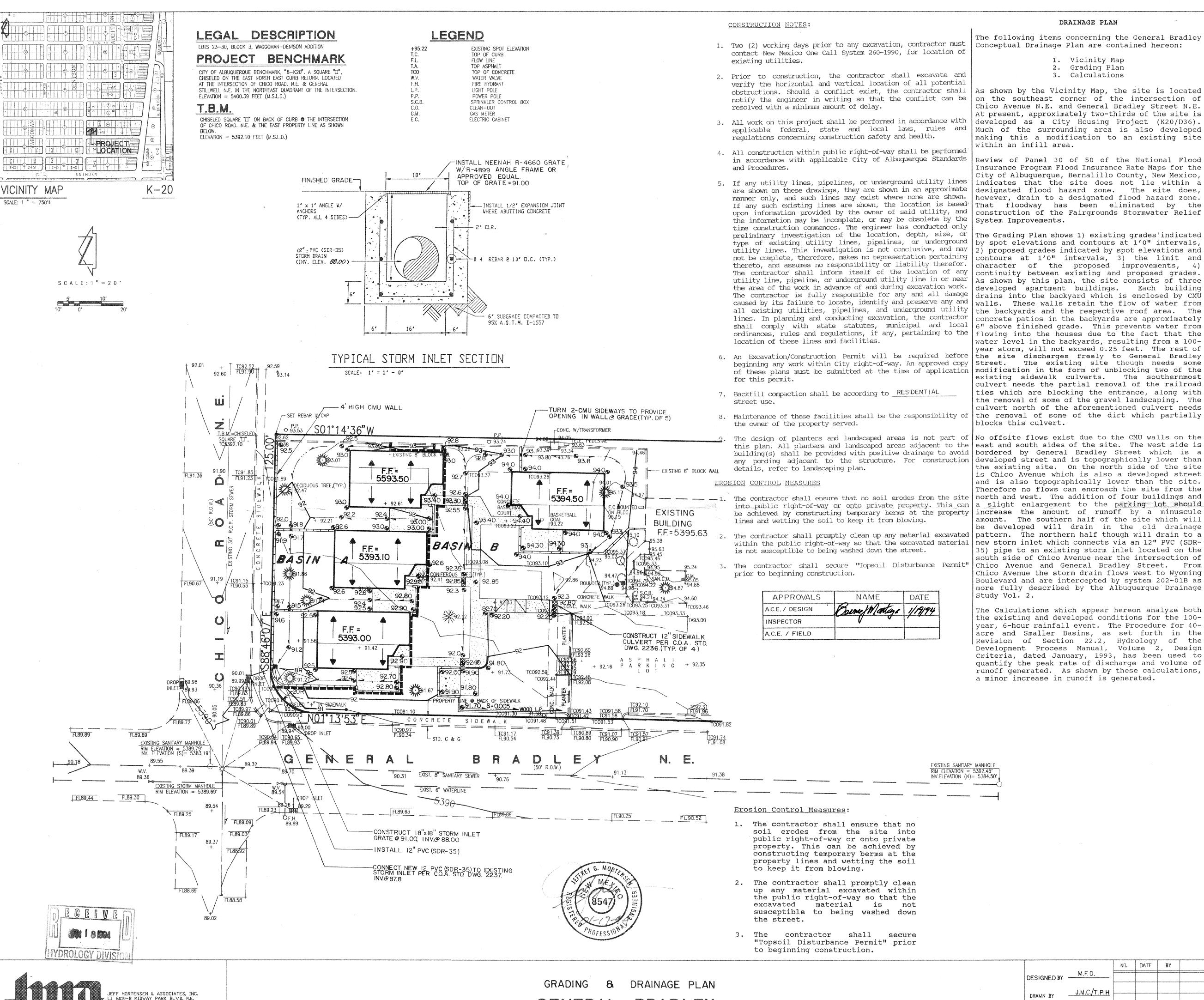
- 1. The contractor shall ensure that no soil erodes from the site into public rightof-way or onto private property.
- 2. The contractor shall promptly clean up any material excavated within the public right-of-way so that the excavated material is not susceptible to being washed down the street.
- 3.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

4		
1111		
☐ 601 ☐ ALI		
0-B MIDWA BUQUERQUE		
& ASSICIATE Y PARK BLVI I NEW MEX SURVEYORS		
. N.E. ICD 87109		
1250		
NO.	DATE	
Designed	By	J.C
Drawn By	Á	S.(
Checked	æ Æ	J.C

	CITY OF ALBUQUED DEPARTMENT OF FA AND COMMUNITY SE	AMILY	3	
CHICO	CALCULATIONS, SECTOR OF CHILD DEVELOPMED GENERAL BRADLE	INT C	ENTER	
Design Review Committee	City Engineer Approval	Last Design Update	Mo./Doy/Yr.	Mo / Day/Yr
City Project No. 550	1 90 Zone Ma	p No. -20	Sheet	0f

930906

3301.30 N ZU



DRAINAGE PLAN

The following items concerning the General Bradley Conceptual Drainage Plan are contained hereon:

1. Vicinity Map

2. Grading Plan 3. Calculations

Chico Avenue N.E. and General Bradley Street N.E. At present, approximately two-thirds of the site is Much of the surrounding area is also developed making this a modification to an existing site

Review of Panel 30 of 50 of the National Flood Insurance Program Flood Insurance Rate Maps for the City of Albuquerque, Bernalillo County, New Mexico, indicates that the site does not lie within a designated flood hazard zone. The site does, however, drain to a designated flood hazard zone. construction of the Fairgrounds Stormwater Relief System Improvements.

water level in the backyards, resulting from a 100year storm, will not exceed 0.25 feet. The rest of existing sidewalk culverts. The southernmost culvert needs the partial removal of the railroad ties which are blocking the entrance, along with the removal of some of the gravel landscaping. The culvert north of the aforementioned culvert needs blocks this culvert.

the existing site. On the north side of the site is Chico Avenue which is also a developed street and is also topographically lower than the site. Therefore no flows can encroach the site from the amount. The southern half of the site which will be developed will drain in the old drainage 35) pipe to an existing storm inlet located on the south side of Chico Avenue near the intersection of Chico Avenue and General Bradley Street. From Chico Avenue the storm drain flows west to Wyoming Boulevard and are intercepted by system 202-01B as more fully described by the Albuquerque Drainage

The Calculations which appear hereon analyze both the existing and developed conditions for the 100year, 6-hour rainfall event. The Procedure for 40acre 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,

NO. DATE BY

___<u>J.M.C./T.P.H</u>

Site Characteristics

Precipitation Zone $P_{6,100} = P_{360} =$ Total Area (A_T) 2.60 3. 0.43 Ac Existing Land Treatment Treatment Area (sf/ac) 2,180/0.05 12 16,550/0.38

CALCULATIONS

5. Developed Land Treatment Basin A 7,840/0.18 100 Treatment Area (sf/ac) 3,480/0.08 44 4,360/0.10 56 Basin B 10,890/0.25 100 Treatment Area (sf/ac) 52 5,660/0.13

5,230/0.12

48

Existing Condition

1. Volume

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

 $E_W = [(0.92)(0.05)+(1.29)(0.38)]/(0.43) = 1.25 in.$ $V_{100} = (E_W/12)A_T$ $V_{100} = (1.25/12)(0.43) = 0.0448 \text{ Ac.Ft.} = 1,950 \text{ cf}$

2. Peak Discharge

 $Q_{p} = Q_{PA} A_{A} + Q_{PB}A_{B} + Q_{PC}A_{C} + Q_{PD}A_{D}$ $Q_{p} = Q_{100} = (2.60)(0.05) + (3.45)(0.38) = 1.4 cfs$

Developed Condition

A. Basin A

1. Volume

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

= [(0.92)(0.08)+(2.36)(0.10)]/(0.18) = 1.72 in $V_{100} = (E_W/12)A_T$

 $V_{100} = (1.72/12)(0.18) = 0.0258 \text{ Ac.ft.} = 1,130 \text{ cf}$ 2. Peak Discharge

 $Q_p = Q_{PA} A_A + Q_{PB} A_B + Q_{PC} A_C + Q_{PD} A_D$ $Q_p = Q_{100} = (2.60)(0.08) + (5.02)(0.10) = 0.7 cfs$

Basin B

1. Volume

 $= (E_{\lambda}A_{\lambda} + E_{\mu}A_{\mu} + E_{\mu}A_{\mu} + E_{\mu}A_{\mu}) / A_{\mu}$ = [(0.92)(0.13)+(2.36)(0.12)]/(0.25) = 1.61 in.

 $V_{100} = (E_W/12) A_T$ $V_{100} = (1.61/12)0.25 = 0.0336 \text{ Ac.ft.} = 1,460 \text{ cf}$

2. Peak Discharge

 $Q_p = Q_{PA} A_A + Q_{PB} A_B + Q_{PC} A_C + Q_{PD} A_D$ $Q_p = Q_{100} = (2.60)(0.13) + (5.02)(0.12) = 0.9 cfs$

Comparison

A. Basin A

1. $\Delta V_{100} = 2,065 - 1,130 = 935$ cf (decrease) 2. $\Delta Q_{100}^{-1} = 1.5 - 0.7 = 0.8$ cfs (decrease)

Basin B

1. $\Delta V_{100} = 1,460 - 0 = 1,460$ cf (increase) 2. $\Delta Q_{100} = 0.9 - 0 = 0.9$ cfs (increase)

Orifice Equation for 12" PVC (SDR-35)

Orifice Equation for Two Turned CMU Blocks

 $Q = CA(2gh)^{\frac{1}{2}}$

 $Q = 0.6 * \pi (0.5)^{2} (2(32.2)(0.50)^{\frac{1}{2}})$ Q = 2.7 cfs

 $Q = CA(2gh)^{\frac{1}{2}}$

 $Q = 0.6*(0.59)(2(32.2)(0.208))^{\frac{1}{2}}(2)$

Q = 2.6 cfs

APPROVED BY J.G.M.

REVISIONS 930904 12-1993 SHEET

GENERAL BRADLEY