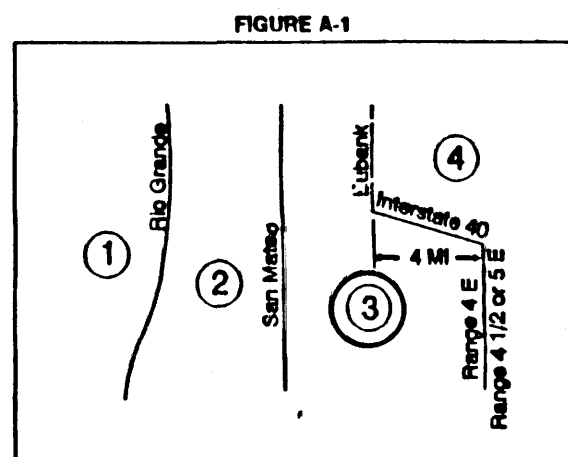


PRECIPITATION ZONES
Bernalillo County's four precipitation zones are indicated in TABLE A-1 and on FIGURE A-1.

Zone	Location
1	West of the Rio Grande
2	Between the Rio Grande and San Mateo
3	Between San Mateo and Eubank, North of Interstate 40, and between San Mateo and the East boundary of Range 4 East, South of Interstate 40
4	East of Eubank, North of Interstate 40, and East of the East boundary of Range 4 East, South of Interstate 40



Where a watershed extends across a zone boundary, use the zone which contains the largest portion of the watershed.

DPH SECTION 22-2 - HYDROLOGY
January, 1993 Page A-4

Treatment	Land Condition
A	Soil uncompacted by human activity with 0 to 10 percent slopes. Native grasses, weeds and shrubs in typical densities with minimal disturbance to grading, groundcover and infiltration capacity. Croplands. Unfired arroyos.
B	Irrigated lawns, parks and golf courses with 0 to 10 percent slopes. Native grasses, weeds and shrubs, and soil uncompacted by human activity with slopes greater than 10 percent and less than 20 percent.
C	Soil compacted by human activity. Minimal vegetation. Unpaved parking, roads, trails. Most vacant lots. Gravel or rock on plastic (desert landscaping). Irrigated lawns and parks with slopes greater than 10 percent. Native grasses, weeds and shrubs, and soil uncompacted by human activity with slopes at 20 percent or greater. Native grass, weed and shrub areas with clay or clay loam soils and other soils of very low permeability as classified by SCS Hydrologic Soil Group D.
D	Impervious areas, pavement and roofs.

Most watersheds contain a mix of land treatments. To determine proportional treatment, measure respective subareas. In lieu of specific measurement for treatment D, the area percentages in TABLE A-5 may be employed.

Zone	Treatment			
	A	B	C	D
1	1.29 [0.00, 0.24]	2.03 [0.03, 0.78]	2.87 [0.47, 1.49]	4.37 [1.89, 2.89]
2	1.58 [0.00, 0.38]	2.28 [0.08, 0.95]	3.14 [0.60, 1.71]	4.70 [1.88, 3.14]
3	1.87 [0.00, 0.58]	2.80 [0.21, 1.19]	3.45 [0.78, 2.00]	5.02 [2.04, 3.39]
4	2.20 [0.05, 0.87]	2.92 [0.38, 1.45]	3.73 [1.00, 2.26]	5.34 [2.17, 3.57]

Zone	Intensity
1	4.70 [1.84, 3.14]
2	5.05 [2.04, 3.41]
3	5.38 [2.21, 3.85]
4	5.61 [2.34, 3.83]

LEGAL DESCRIPTION:

LOTS "18-A", "18-B", "18-C", "18-D", "19-A", "20-A", "21-A", "22-A", "23-A", & "24-A", IN BLOCK SEVEN (7), MESA PARK ADDITION, ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO.

BENCH MARK REFERENCE: ACS STATION "11-K19A", N.S.L.D. ELEVATION = 5317.302; PROJECT T.B.M. AS SHOWN ON THE PLAN HEREON.

CONSTRUCTION NOTES:

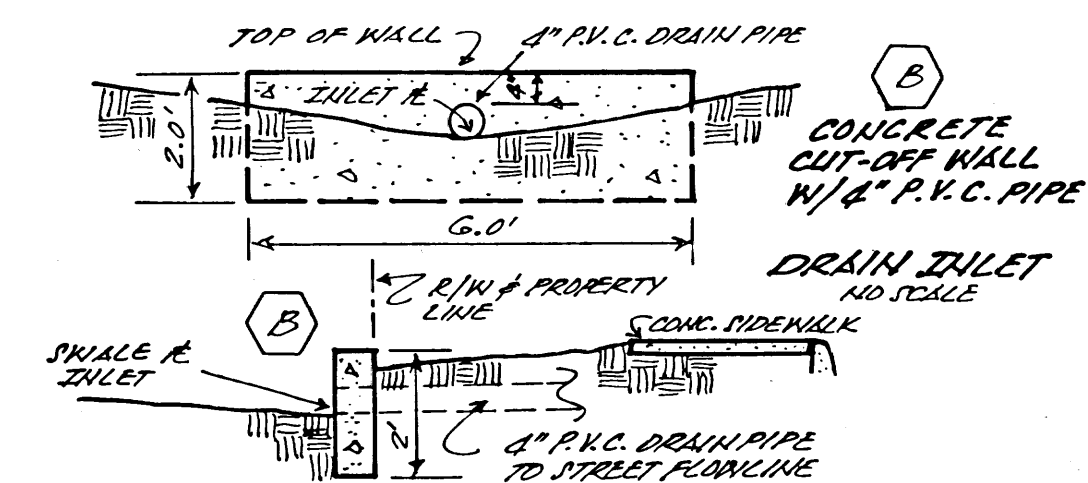
- 1.) TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE AT 765-1234 FOR LOCATION OF EXISTING UTILITIES.
- 2.) PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL POTENTIAL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM 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 CITY RIGHT-OF-WAY SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE CITY OF ALBUQUERQUE STANDARDS AND PROCEDURES.

EROSION CONTROL MEASURES:

THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR MANAGEMENT FOR STORM RUN-OFF DURING CONSTRUCTION; HE SHALL INSURE THAT THE FOLLOWING MEASURES ARE TAKEN:

- 1.) ADJACENT PROPERTY SHALL BE PROTECTED AT ALL TIMES BY CONSTRUCTION OF BERMS, DIKES, SHALES, PONDS, AND OTHER TEMPORARY GRADING AS REQUIRED TO PREVENT STORM RUNOFF FROM LEAVING THE SITE AND ENTERING ADJACENT PROPERTIES.
- 2.) ADJACENT PUBLIC RIGHT-OF-WAYS SHALL BE PROTECTED AT ALL TIMES FROM STORM WATER RUNOFF FROM THE SITE. NO SEDIMENT BEARING WATER SHALL BE PERMITTED TO ENTER PUBLIC STREETS.
- 3.) THE CONTRACTOR SHALL IMMEDIATELY AND THOROUGHLY REMOVE ANY AND ALL SEDIMENT WITHIN PUBLIC STREETS THAT HAS BEEN ERODED FROM THE SITE AND DEPOSITED THERE.

L-18-Z



LEGEND:

TOP OF CURB ELEVATION = 70' M.D.
CURB-FLOWLINE-ELEVATION = 15.28
EXISTING OR PROPOSED CONCRETE =
EXISTING SPOT ELEVATION = 15.32
PROPOSED SPOT ELEVATION = 15.20
EXISTING CONTOUR = 15
PROPOSED CONTOUR = 15.0

DRAINAGE COMMENTS AND CALCULATIONS:

AS SHOWN ON THE VICINITY MAP HEREON, THE SUBJECT SITE IS LOCATED AT THE NORTHEAST INTERSECTION OF INDIANA STREET S.E. AND BELL AVENUE S.E., (SOUTH OF ZUNI AVENUE S.E. AND WEST OF LOUISIANA BLVD. S.E.), IN THE CITY OF ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO.

THE SUBJECT SITE, 1.) IS ITSELF NOT LOCATED WITHIN A DESIGNATED FLOODPLAIN; HOWEVER, DOES LIE ADJACENT TO AN A0-1.0' DEPTH FLOOD-PLAIN THAT IS WITHIN AFOREMENTIONED BELL AVENUE S.E., (REFERENCE F.E.M.A. FLOODWAY AND FIRM MAP NO. 36 OF 50), 2.) DOES NOT LIE ADJACENT TO A NATURAL OR ARTIFICIAL WATER COURSE, 3.) DOES NOT CONTRIBUTE TO THE OFFSITE FLOWS OF ADJACENT PROPERTIES, 4.) DOES NOT ACCEPT OFFSITE FLOWS FROM ADJACENT PROPERTIES, 5.) IS PRESENTLY AN UNDEVELOPED VACANT PROPERTY THAT IS TO HAVE PROPOSED TOWNHOUSE UNITS CONSTRUCTED ONSITE, 6.) IS TO HAVE ALL DEVELOPED FLOWS FREE DIS-CHARGED INTO INDIANA STREET S.E. THROUGH 4" P.V.C. DRAIN PIPES AS SHOWN ON THE PLAN HEREON, SAID FLOWS WILL HAVE NO ADVERSE AFFECT TO DOWNSTREAM PROPERTIES.

CALCULATIONS:

PER SECTION 22-2, HYDROLOGY OF THE DEVELOPMENT PROCESS MANUAL, VOLUME 2, DESIGN CRITERIA FOR THE CITY OF ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO, DATED JANUARY 1993.

SITE AREA: 1.20 ACRE

PRECIPITATION ZONE: THREE (3), TABLE A-1

PEAK INTENSITY: IN./HR. AT T_c = TWELVE (12) MINUTES, 100-YR. = 5.38

LAND TREATMENT METHOD FOR CALCULATION OF " Q_p ", TABLES A-8 & A-9.

"LAND TREATMENT FACTORS", TABLE A-4.

EXISTING CONDITIONS: (VACANT PROPERTY)

TREATMENT	AREA/ACRES	FACTOR	CFS
C	1.20	X 3.45	= 4.15
" Q_p "	= 4.15 CFS		

PROPOSED DEVELOPED CONDITIONS:

TREATMENT	AREA/ACRES	FACTOR	CFS
C	0.86	X 3.45	= 2.97
D	0.34	X 5.02	= 1.71
" Q_p "	= 4.68 CFS		

*** INCREASE = 0.53 CFS

GENERAL NOTES:

- 1.) REFER TO "ARCHITECTURAL SITE PLAN" FOR FIELD LAYOUT DIMENSIONS OF THE PROPOSED IMPROVEMENTS.
- 2.) TOPOGRAPHY SURVEY SHOWN ON THE PLAN HEREON PERFORMED BY TORRES SURVEYING COMPANY, ALBUQUERQUE, NEW MEXICO.
- 3.) PROVIDE POSITIVE GRADE SLOPE AWAY FROM ALL PROPOSED BUILDING STRUCTURES.
- 4.) REFER TO ARCHITECTURAL PLANS FOR ROOF DRAIN SCUPPER(S) LOCATIONS; PROVIDE CONCRETE SPLASH BOXES AT REQUIRED LOCATIONS SO AS TO DIS-SIPATE FLOW ENERGY.

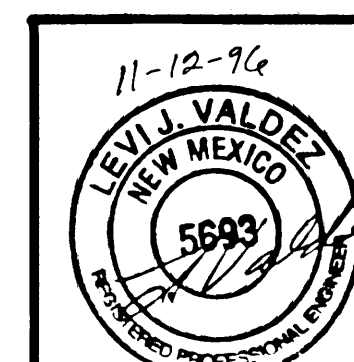
* NOTE: ALL INDIVIDUAL LOTS SHOWN ON THE PLAN HEREON ARE TO PROVIDE EACH ADJACENT LOT A "PERPETUAL BLANKET DRAINAGE EASEMENT" OVER AND ACROSS EACH SIDE YARD LOT LINE OF SAID DEVELOPMENT FOR THE PURPOSE OF ACCEPTING "DEVELOPED RUNOFF" WHICH IS TO BE DIVERTED TOWARD AND INTO INDIANA STREET S.E. VIA 4" P.V.C. DRAIN PIPE(S) PER CITY OF ALBUQUERQUE STANDARD DRAWING NO. 2235. (SEE ADDITIONAL DRAIN DETAILS ON THE PLAN HEREON).

* NOTE: PROVIDE ACCESS AND DRAINAGE BARRIER ALONG ALLEY PROPERTY (CONCRETE HIGH CURB OR 1-COURSE HIGH BLOCK), ALONG WITH CHAIN LINK FENCE OR CEDAR WOOD FENCE.

NOTICE TO CONTRACTOR:

- 1.) AN EXCAVATION/CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN CITY RIGHT-OF-WAY. AN APPROVED COPY OF THIS PLANS MUST BE SUBMITTED AT THE TIME OF APPLICATION OF THIS PERMIT.
- 2.) ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED UNDER CONTRACT SHALL, EXCEPT AS OTHERWISE STATED OR PROVIDED FOR HEREON, BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF ALBUQUERQUE INTERIM STANDARD SPECIFICATION - PUBLIC WORKS CONSTRUCTION - 1985.
- 3.) TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE, (765-1234) FOR LOCATION OF EXISTING UTILITIES.
- 4.) PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OR SURVEYOR SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
- 5.) BACKFILL COMPACTION SHALL BE ACCORDING TO RESIDENTIAL STREET USE.
- 6.) MAINTENANCE OF THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY SERVED.

* NOTE: "AS-BUILT" FINISH FLOOR ELEVATION = (F.F.)
"AS-BUILT" SPOT ELEVATION = $X-14.3$



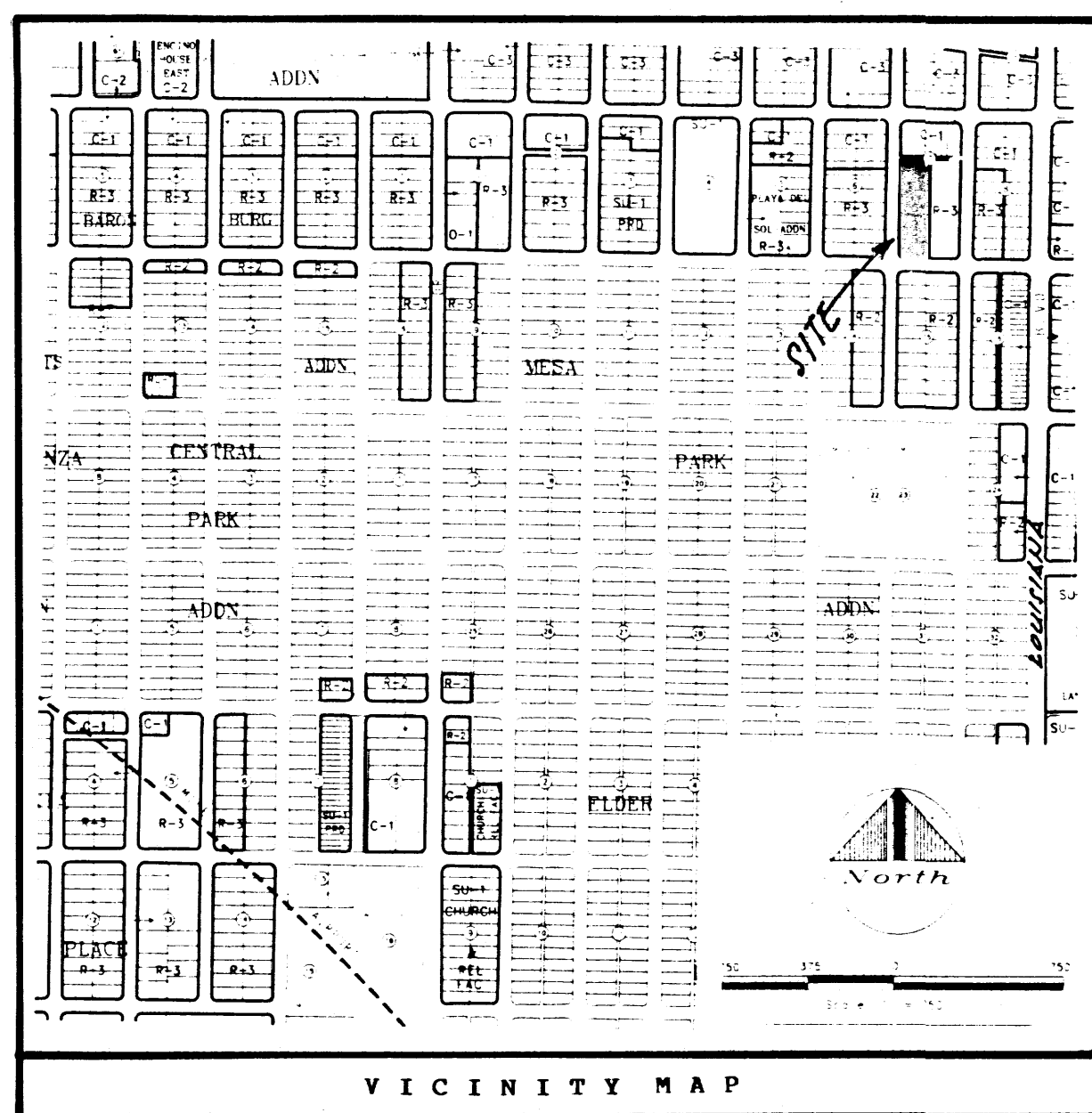
ENGINEER'S CERTIFICATION:

I, LEVI J. VALDEZ, NEW MEXICO REGISTERED PROFESSIONAL ENGINEER NO. 5693, LICENSED AND REGISTERED UNDER THE LAWS OF THE STATE OF NEW MEXICO, DO HEREBY CERTIFY THAT AN ACTUAL ON THE GROUND FIELD SURVEY OF THE NEW IMPROVEMENTS SHOWN ON THE PLAN HEREON VERIFIED THAT SAID IMPROVEMENTS WERE CON-STRUCTED IN "SUBSTANTIAL COMPLIANCE" WITH THE APPROVED DRAINAGE PLAN FOR SAID DE-VELOPMENT.

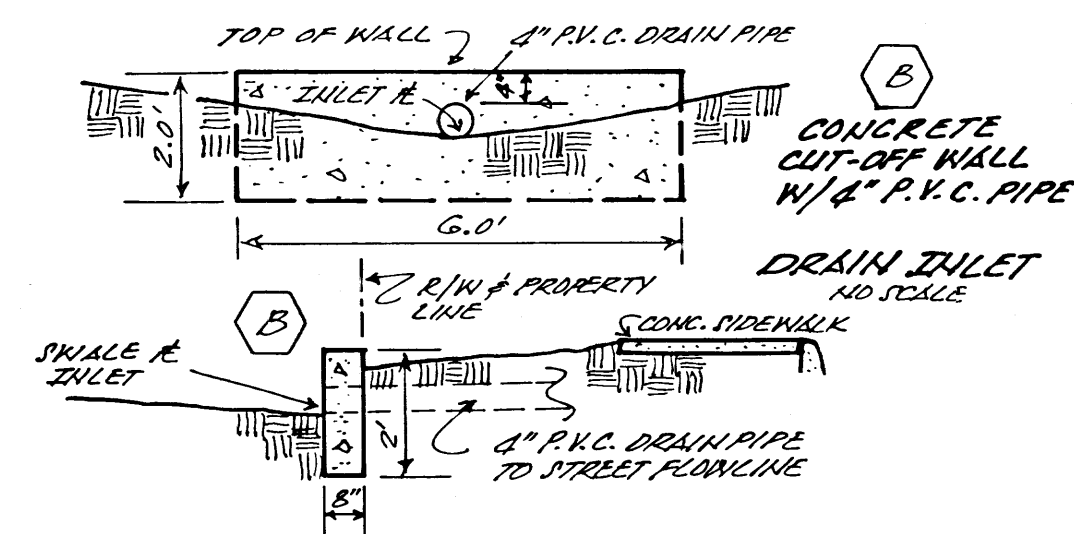
ENGINEER'S SEAL

(FINAL ENGINEER'S CERTIFICATION)
A GRADING AND DRAINAGE PLAN
FOR
INDIANA S.E. TOWNHOUSES
(N.E. CORNER OF INDIANA ST. S.E. & BELL AVE. S.E.)
ALBUQUERQUE, NEW MEXICO
NOVEMBER, 1995
(FIN. P.L.R. CERTIFICATION: 03-18-96)

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



L-18-Z



LEGEND:

TOP OF CURB ELEVATION = 70'-14.43
CURB FLOWLINE ELEVATION = 70'-13.78
EXISTING OR PROPOSED CONCRETE =
EXISTING SPOT ELEVATION = 70'-15.32
PROPOSED SPOT ELEVATION = 70'-15.22
EXISTING CONTOUR = 70'-15
PROPOSED CONTOUR = 70'-15.0

DRAINAGE COMMENTS AND CALCULATIONS:

AS SHOWN ON THE VICINITY MAP HEREON, THE SUBJECT SITE IS LOCATED AT THE NORTHEAST INTERSECTION OF INDIANA STREET S.E. AND BELL AVENUE S.E. (SCOUT OF ZUNI AVENUE S.E. AND WEST OF LOUISIANA BLVD. S.E.), IN THE CITY OF ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO.

THE SUBJECT SITE, 1.) IS ITSELF NOT LOCATED WITHIN A DESIGNATED FLOODPLAIN; HOWEVER, DOES LIE ADJACENT TO AN A0-1.0' DEPTH FLOODPLAIN THAT IS WITHIN AFOREMENTIONED BELL AVENUE S.E., (REFERENCE F.E.M.A. FLOODWAY AND FIRM MAP NO. 36 OF 50). 2.) DOES NOT LIE ADJACENT TO A NATURAL OR ARTIFICIAL WATER COURSE, 3.) DOES NOT CONTRIBUTE TO THE OFFSITE FLOWS OF ADJACENT PROPERTIES, 4.) DOES NOT ACCEPT OFFSITE FLOWS FROM ADJACENT PROPERTIES, 5.) IS PRESENTLY AN UNDEVELOPED VACANT PROPERTY THAT IS TO HAVE PROPOSED TOWNHOUSE UNITS CONSTRUCTED ON SITE, 6.) IS TO HAVE ALL DEVELOPED FLOWS FREE DISCHARGED INTO INDIANA STREET S.E. THROUGH 4" P.V.C. DRAIN PIPES AS SHOWN ON THE PLAN HEREON, SAID FLOWS WILL HAVE NO ADVERSE AFFECT TO DOWNSTREAM PROPERTIES.

CALCULATIONS:

PER SECTION 22.2, HYDROLOGY OF THE DEVELOPMENT PROCESS MANUAL, VOLUME 2, DESIGN CRITERIA FOR THE CITY OF ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO, DATED JANUARY 1993.

SITE AREA: 1.20 ACRE
PRECIPITATION ZONE: THREE (3), TABLE A-1
PEAK INTENSITY: IN./HR. AT T_c = TWELVE (12) MINUTES, 100-YR. = 5.38
LAND TREATMENT METHOD FOR CALCULATION OF " Q_p ", TABLES A-8 & A-9.
"LAND TREATMENT FACTORS", TABLE A-4.

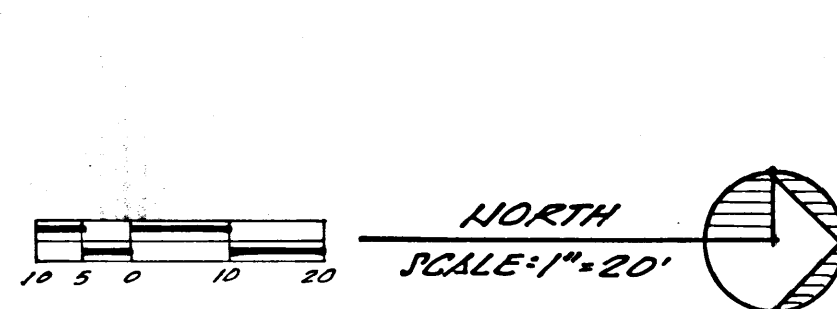
EXISTING CONDITIONS: (VACANT PROPERTY)

TREATMENT	AREA/ACRES	FACTOR	CFS
C	1.20	X 3.45	= 4.15
" Q_p "	= 4.15 CFS		

PROPOSED DEVELOPED CONDITIONS:

TREATMENT	AREA/ACRES	FACTOR	CFS
C	0.86	X 3.45	= 2.97
D	0.34	X 5.02	= 1.71
" Q_p "	= 4.68 CFS		

*** INCREASE = 0.53 CFS

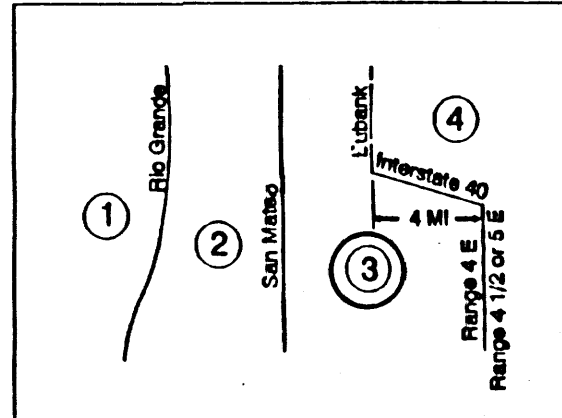


PRECIPITATION ZONES

Bernalillo County's four precipitation zones are indicated in TABLE A-1 and on FIGURE A-1.

Zone	Location
1	West of the Rio Grande
2	Between the Rio Grande and San Mateo
3	Between San Mateo and Eubank, North of Interstate 40; and between San Mateo and the East boundary of Range 4 East, South of Interstate 40
4	East of Eubank, North of Interstate 40; and East of the East boundary of Range 4 East, South of Interstate 40

FIGURE A-1



Where a watershed extends across a zone boundary, use the zone which contains the largest portion of the watershed.

DSM SECTION 22.2 - HYDROLOGY
January, 1993 Page A-4

Treatment	Land Condition
A	Soil uncompacted by human activity with 0 to 10 percent slopes. Native grasses, weeds and shrubs in typical densities with minimal disturbance to grading, groundwater and infiltration capacity. Croplands. Unfertilized.
B	Irrigated lawns, parks and golf courses with 0 to 10 percent slopes. Native grasses, weeds and shrubs, and soil uncompacted by human activity with slopes greater than 10 percent and less than 20 percent.
C	Soil compacted by human activity. Minimal vegetation. Unfertilized parking, roads, trails. Most vacant lots. Gravel or rock on plastic (desert landscaping). Irrigated lawns and parks with slopes greater than 10 percent. Native grasses, weeds and shrubs, and soil uncompacted by human activity with slopes at 20 percent or greater. Native grass, weed and shrub areas with clay or clay loam soils and other soils of very low permeability as classified by SCS Hydrologic Soil Group D.
D	Impervious areas, pavement and roofs.

Most watersheds contain a mix of land treatments. To determine proportional treatments, measure respective subareas. In lieu of specific measurement for treatment D, the areal percentages in TABLE A-5 may be employed.

Zone	Treatment			
	A	B	C	D
1	1.29 [0.00, 0.24]	2.03 [0.03, 0.76]	2.87 [0.47, 1.49]	4.37 [1.89, 2.89]
2	1.58 [0.00, 0.38]	2.28 [0.08, 0.95]	3.14 [0.80, 1.71]	4.70 [1.86, 3.14]
3	1.87 [0.00, 0.58]	2.60 [0.21, 1.19]	3.45 [0.78, 2.00]	5.02 [2.04, 3.39]
4	2.20 [0.05, 0.87]	2.92 [0.38, 1.45]	3.73 [1.00, 2.26]	5.26 [2.17, 3.57]

Zone	Intensity
1	4.70 [1.84, 3.14]
2	5.05 [2.04, 3.41]
3	5.38 [2.21, 3.85]
4	5.61 [2.34, 3.89]

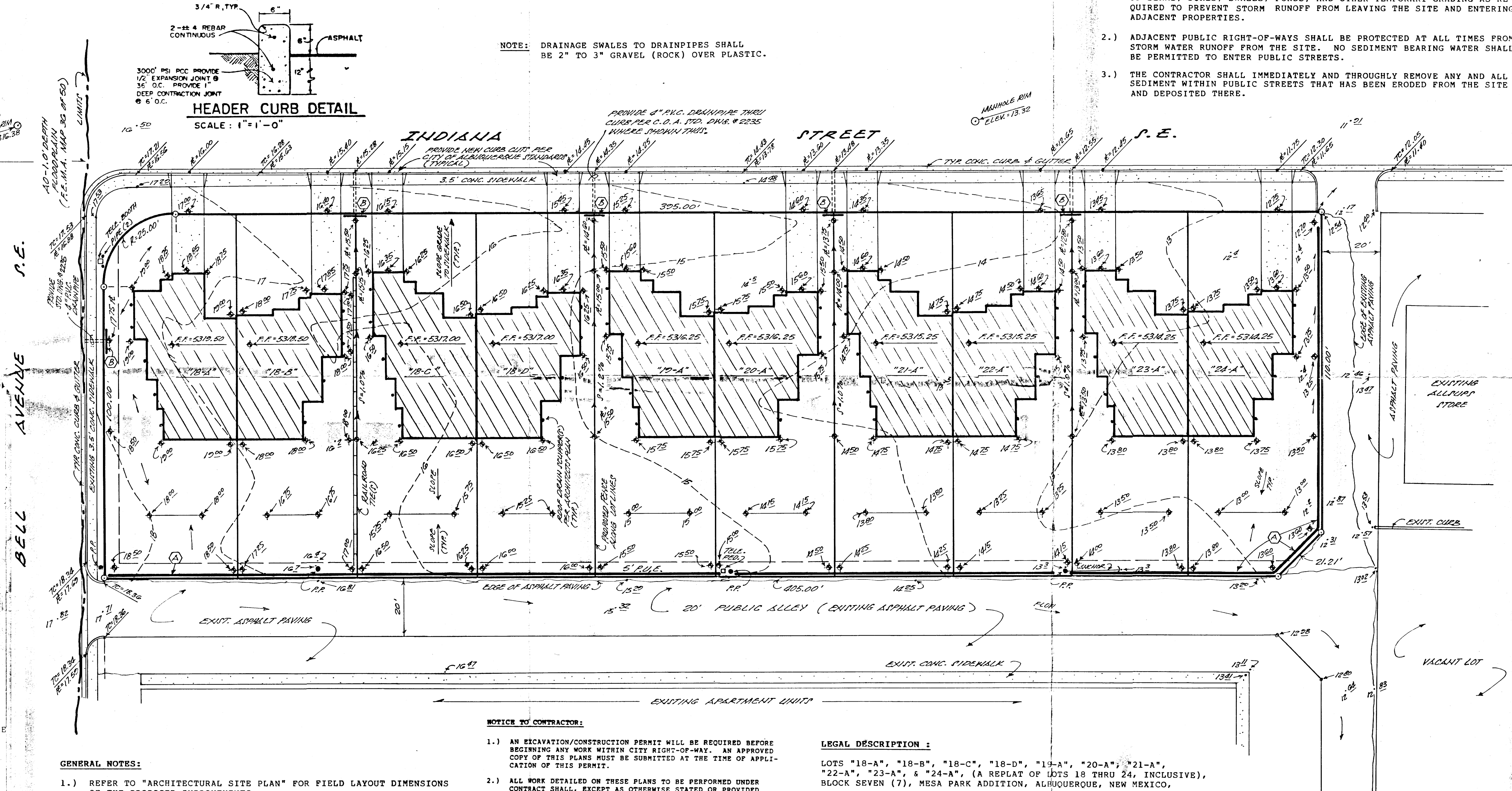
CONSTRUCTION NOTES:

- TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE AT 765-1234 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 SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM OF DELAY.
- 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 CITY RIGHT-OF-WAY SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE CITY OF ALBUQUERQUE STANDARDS AND PROCEDURES.

EROSION CONTROL MEASURES:

THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR MANAGEMENT FOR STORM RUN-OFF DURING CONSTRUCTION; HE SHALL INSURE THAT THE FOLLOWING MEASURES ARE TAKEN:

- ADJACENT PROPERTY SHALL BE PROTECTED AT ALL TIMES BY CONSTRUCTION OF BERMS, DIKES, SWALES, PONDS, AND OTHER TEMPORARY GRADING AS REQUIRED TO PREVENT STORM RUNOFF FROM LEAVING THE SITE AND ENTERING ADJACENT PROPERTIES.
- ADJACENT PUBLIC RIGHT-OF-WAYS SHALL BE PROTECTED AT ALL TIMES FROM STORM WATER RUNOFF FROM THE SITE. NO SEDIMENT BEARING WATER SHALL BE PERMITTED TO ENTER PUBLIC STREETS.
- THE CONTRACTOR SHALL IMMEDIATELY AND THOROUGHLY REMOVE ANY AND ALL SEDIMENT WITHIN PUBLIC STREETS THAT HAS BEEN ERODED FROM THE SITE AND DEPOSITED THERE.



NOTICE TO CONTRACTOR:

- AN EXCAVATION/CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN CITY RIGHT-OF-WAY. AN APPROVED COPY OF THIS PLAN MUST BE SUBMITTED AT THE TIME OF APPLICATION OF THIS PERMIT.
- ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED UNDER CONTRACT SHALL, EXCEPT AS OTHERWISE STATED OR PROVIDED FOR HEREON, BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF ALBUQUERQUE INTERIM STANDARD SPECIFICATION - PUBLIC WORKS CONSTRUCTION - 1985.
- TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE, (765-1234) FOR LOCATION OF EXISTING UTILITIES.
- PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL OBSTRUCTIONS, SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OR SURVEYOR SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
- BACKFILL COMPACTION SHALL BE ACCORDING TO RESIDENTIAL STREET USE.
- MAINTENANCE OF THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY SERVED.

LEGAL DESCRIPTION:

LOTS "18-A", "18-B", "18-C", "18-D", "19-A", "20-A", "21-A", "22-A", "23-A", & "24-A", (A REPLAT OF LOTS 18 THRU 24, INCLUSIVE), BLOCK SEVEN (7), MESA PARK ADDITION, ALBUQUERQUE, NEW MEXICO.

BENCH MARK REFERENCE:

ACS STATION "11-19A", LOCATED AT THE NORTHEAST INTERSECTION OF ZUNI AND LOUISIANA BLVD. S.E.; M.S.L.D. ELEVATION = 5317.302, PROJECT T.B.M. AS SHOWN ON THE PLAN HEREON.

NOTE: ALL WORK WITHIN PUBLIC EASEMENT SHALL BE PERFORMED UNDER SEPARATE PERMIT.

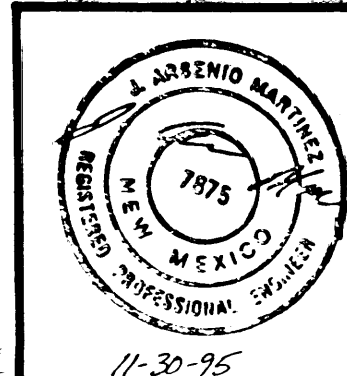
GENERAL NOTES:

- REFER TO "ARCHITECTURAL SITE PLAN" FOR FIELD LAYOUT DIMENSIONS OF THE PROPOSED IMPROVEMENTS.
- TOPOGRAPHY SURVEY SHOWN ON THE PLAN HEREON PERFORMED BY TORRES SURVEYING COMPANY, ALBUQUERQUE, NEW MEXICO.
- PROVIDE POSITIVE GRADE SLOPE AWAY FROM ALL PROPOSED BUILDING STRUCTURES.
- REFER TO ARCHITECTURAL PLANS FOR ROOF DRAIN SCUPPER(S) LOCATIONS; PROVIDE CONCRETE SPLASH BOXES AT REQUIRED LOCATIONS SO AS TO DISIPATE FLOW ENERGY.

* NOTE: ALL INDIVIDUAL LOTS SHOWN ON THE PLAN HEREON ARE TO PROVIDE EACH ADJACENT LOT A "PERPETUAL BLANKET DRAINAGE EASEMENT" OVER AND ACROSS EACH SIDE YARD LOT LINE OF SAID DEVELOPMENT FOR THE PURPOSE OF ACCEPTING "DEVELOPED RUNOFF" WHICH IS TO BE DIVERTED TOWARD AND INTO INDIANA STREET S.E. VIA 4" P.V.C. DRAIN PIPE(S) PER CITY OF ALBUQUERQUE STANDARD DRAWING NO. 2235, (SEE ADDITIONAL DRAIN DETAILS ON THE PLAN HEREON).

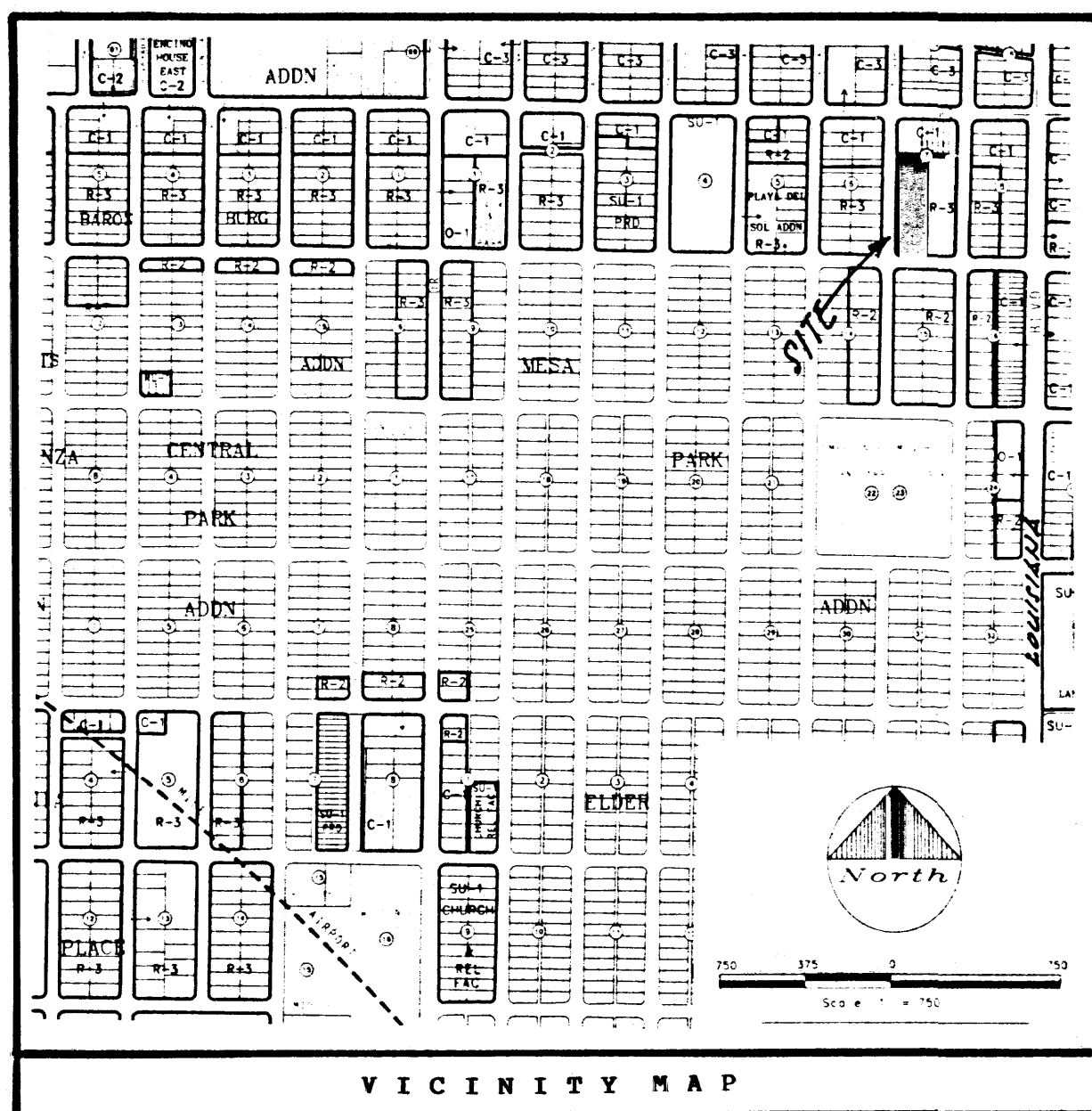
NOTE: PROVIDE ACCESS AND DRAINAGE BARRIER ALONG ALLEY PROPERTY, (CONCRETE HEADER CURB OR 1-COURSE HIGH BLOCK), ALONG WITH CHAIN LINK FENCE OR CEDAR WOOD FENCE.

APPROVALS	NAME	DATE
HYDROLOGY	B. Mada	11/15/95
INSPECTOR		
ACE/FIELD		

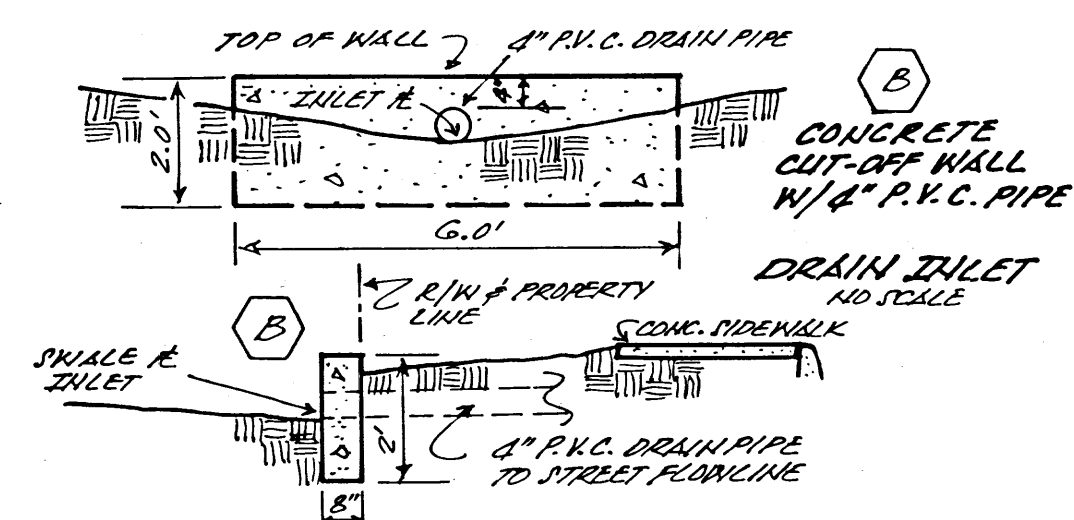


A GRADING AND DRAINAGE PLAN FOR

INDIANA S.E. TOWNHOUSES
(N.E. CORNER OF INDIANA ST. S.E. & BELL AVE. S.E.)
ALBUQUERQUE, NEW MEXICO
NOVEMBER, 1995



L-18-Z



LEGEND:

TOP OF CURB ELEVATION = 72.14.43
CURB FLOWLINE ELEVATION = 72.13.78
EXISTING OR PROPOSED CONCRETE =
EXISTING SPOT ELEVATION = 15.32
PROPOSED SPOT ELEVATION = 15.50
EXISTING CONTOUR = 15.0
PROPOSED CONTOUR = 15.0

DRAINAGE COMMENTS AND CALCULATIONS:

AS SHOWN ON THE VICINITY MAP HEREON, THE SUBJECT SITE IS LOCATED AT THE NORTHEAST INTERSECTION OF INDIANA STREET S.E. AND BELL AVENUE S.E., (SOUTH OF ZUNI AVENUE S.E. AND WEST OF LOUISIANA BLVD. S.E.), IN THE CITY OF ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO.

THE SUBJECT SITE, 1.) IS ITSELF NOT LOCATED WITHIN A DESIGNATED FLOODPLAIN; HOWEVER, DOES LIE ADJACENT TO AN AO-1.0' DEPTH FLOODPLAIN THAT IS WITHIN AFOREMENTIONED BELL AVENUE S.E., (REFERENCE F.B.M.A. FLOODWAY AND FIRM MAP NO. 36 OF 50), 2.) DOES NOT LIE ADJACENT TO A NATURAL OR ARTIFICIAL WATER COURSE, 3.) DOES NOT CONTRIBUTE TO THE OFFSITE FLOWS OF ADJACENT PROPERTIES, 4.) DOES NOT ACCEPT OFFSITE FLOWS FROM ADJACENT PROPERTIES, 5.) IS PRESENTLY AN UNDEVELOPED VACANT PROPERTY THAT IS TO HAVE PROPOSED TOWNHOUSE UNITS CONSTRUCTED ONSITE, 6.) IS TO HAVE ALL DEVELOPED FLOWS FREE DISCHARGED INTO INDIANA STREET S.E. THROUGH 4" P.V.C. DRAIN PIPES AS SHOWN ON THE PLAN HEREON, SAID FLOWS WILL HAVE NO ADVERSE AFFECT TO DOWNSTREAM PROPERTIES.

CALCULATIONS:

PER SECTION 22.2, HYDROLOGY OF THE DEVELOPMENT PROCESS MANUAL, VOLUME 2, DESIGN CRITERIA FOR THE CITY OF ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO, DATED JANUARY 1993.

SITE AREA: 1.20 ACRE

PRECIPITATION ZONE: THREE (3), TABLE A-1

PEAK INTENSITY: IN./HR. AT T_c = TWELVE (12) MINUTES, 100-YR. = 5.38

LAND TREATMENT METHOD FOR CALCULATION OF Q_p , TABLES A-8 & A-9.

"LAND TREATMENT FACTORS", TABLE A-4.

EXISTING CONDITIONS: (VACANT PROPERTY)

TREATMENT	AREA/ACRES	FACTOR	CFS
C	1.20	X 3.45	= 4.15

" Q_p " = 4.15 CFS

PROPOSED DEVELOPED CONDITIONS:

TREATMENT	AREA/ACRES	FACTOR	CFS
C	0.86	X 3.45	= 2.97
D	0.34	X 5.02	= 1.71

" Q_p " = 4.68 CFS

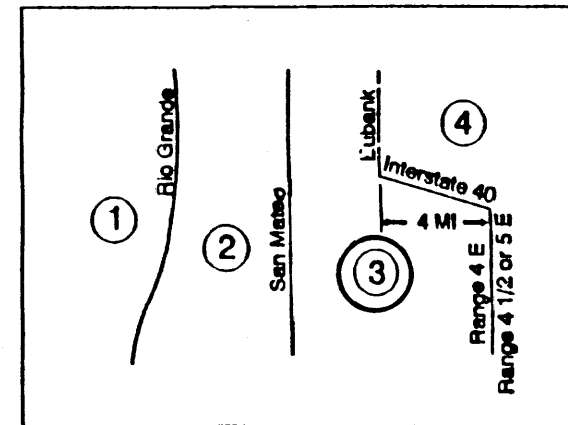
*** INCREASE = 0.53 CFS

PRECIPITATION ZONES

Bernalillo County's four precipitation zones are indicated in TABLE A-1 and on FIGURE A-1.

Zone	Location
1	West of the Rio Grande
2	Between the Rio Grande and San Mateo
3	Between San Mateo and Eubank, North of Interstate 40, and between San Mateo and the East boundary of Range 4 East, South of Interstate 40
4	East of Eubank, North of Interstate 40, and East of the East boundary of Range 4 East, South of Interstate 40

FIGURE A-1



Where a watershed extends across a zone boundary, use the zone which contains the largest portion of the watershed.

DPM SECTION 22.2 - HYDROLOGY
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Treatment	Land Condition
A	Soil uncompacted by human activity with 0 to 10 percent slopes. Native grasses, weeds and shrubs in typical densities with minimal disturbance to grading, groundcover and infiltration capacity. Croplands. Unfilled arroyos.
B	Irrigated lawns, parks and golf courses with 0 to 10 percent slopes. Native grasses, weeds and shrubs, and soil uncompacted by human activity with slopes greater than 10 percent and less than 20 percent.
C	Soil compacted by human activity. Minimal vegetation. Unpaved parking, roads, trails. Most vacant lots. Gravel or rock on plastic (desert landscaping). Irrigated lawns and parks with slopes greater than 10 percent. Native grasses, weeds and shrubs, and soil uncompacted by human activity with slopes at 20 percent or greater.
D	Impervious areas, pavement and roofs.

Most watersheds contain a mix of land treatments. To determine proportional treatments, measure respective subareas. In lieu of specific measurement for treatment D, the areal percentages in TABLE A-5 may be employed.

Zone	Treatment [2 YR, 10 YR]			
	A	B	C	D
1	1.29 [0.00, 0.24]	2.03 [0.03, 0.76]	2.87 [0.47, 1.49]	4.37 [1.89, 2.89]
2	1.56 [0.00, 0.38]	2.28 [0.08, 0.95]	3.14 [0.60, 1.71]	4.70 [1.86, 3.14]
3	1.87 [0.00, 0.58]	2.90 [0.21, 1.19]	3.45 [0.78, 2.00]	5.02 [2.04, 3.39]
4	2.20 [0.05, 0.87]	3.92 [0.38, 1.45]	5.38 [1.00, 2.26]	8.23 [2.17, 3.57]

Zone	Intensity [2 YR, 10 YR]
1	4.70 [1.84, 3.14]
2	5.06 [2.04, 3.41]
3	5.38 [2.21, 3.65]
4	5.61 [2.34, 3.83]

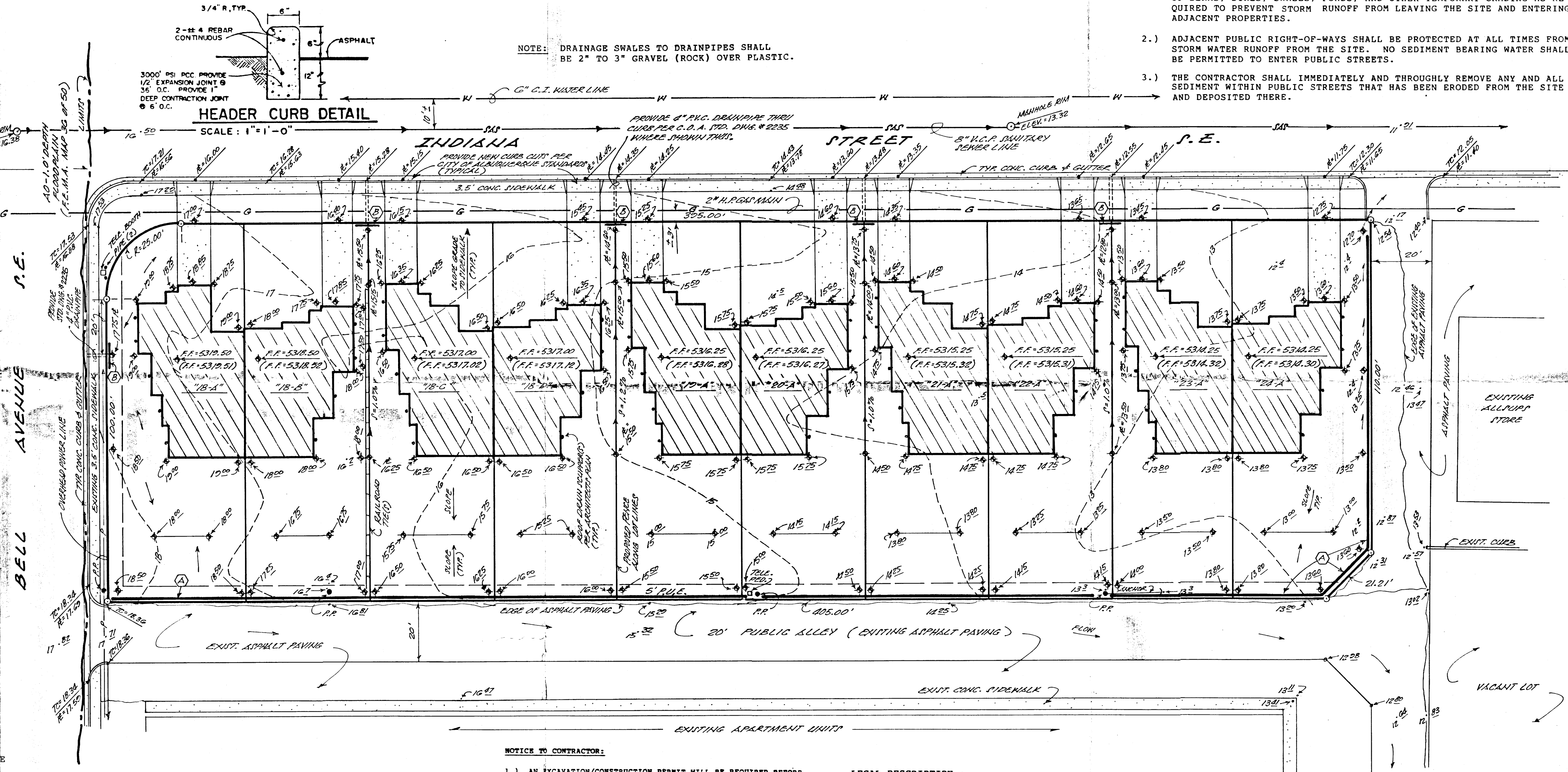
CONSTRUCTION NOTES:

- 1.) TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE AT 765-1234 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 SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM 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 CITY RIGHT-OF-WAY SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE CITY OF ALBUQUERQUE STANDARDS AND PROCEDURES.

EROSION CONTROL MEASURES:

THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR MANAGEMENT FOR STORM RUN-OFF DURING CONSTRUCTION; HE SHALL INSURE THAT THE FOLLOWING MEASURES ARE TAKEN:

- 1.) ADJACENT PROPERTY SHALL BE PROTECTED AT ALL TIMES BY CONSTRUCTION OF BERMS, DIKES, SWALES, PONDS, AND OTHER TEMPORARY GRADING AS REQUIRED TO PREVENT STORM RUNOFF FROM LEAVING THE SITE AND ENTERING ADJACENT PROPERTIES.
- 2.) ADJACENT PUBLIC RIGHT-OF-WAYS SHALL BE PROTECTED AT ALL TIMES FROM STORM WATER RUNOFF FROM THE SITE. NO SEDIMENT BEARING WATER SHALL BE PERMITTED TO ENTER PUBLIC STREETS.
- 3.) THE CONTRACTOR SHALL IMMEDIATELY AND THOROUGHLY REMOVE ANY AND ALL SEDIMENT WITHIN PUBLIC STREETS THAT HAS BEEN ERODED FROM THE SITE AND DEPOSITED THERE.



NOTICE TO CONTRACTOR:

- 1.) AN EXCAVATION/CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN CITY RIGHT-OF-WAY. AN APPROVED COPY OF THIS PLANS MUST BE SUBMITTED AT THE TIME OF APPLICATION OF THIS PERMIT.
- 2.) ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED UNDER CONTRACT SHALL, EXCEPT AS OTHERWISE STATED OR PROVIDED FOR HEREON, BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF ALBUQUERQUE INTERIM STANDARD SPECIFICATION - PUBLIC WORKS CONSTRUCTION - 1985.
- 3.) TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE, (765-1234) FOR LOCATION OF EXISTING UTILITIES.
- 4.) PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OR SURVEYOR SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
- 5.) BACKFILL COMPACTION SHALL BE ACCORDING TO RESIDENTIAL STREET USE.
- 6.) MAINTENANCE OF THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY SERVED.

LEGAL DESCRIPTION:

LOTS "18-A", "18-B", "18-C", "18-D", "18-E", "18-F", "18-G", "18-H", "18-I", "18-J", "18-K", "18-L", "18-M", "18-N", "18-O", "18-P", "18-Q", "18-R", "18-S", "18-T", "18-U", "18-V", "18-W", "18-X", "18-Y", "18-Z", "19-A", "19-B", "19-C", "19-D", "19-E", "19-F", "19-G", "19-H", "19-I", "19-J", "19-K", "19-L", "19-M", "19-N", "19-O", "19-P", "19-Q", "19-R", "19-S", "19-T", "19-U", "19-V", "19-W", "19-X", "19-Y", "19-Z", "20-A", "20-B", "20-C", "20-D", "20-E", "20-F", "20-G", "20-H", "20-I", "20-J", "20-K", "20-L", "20-M", "20-N", "20-O", "20-P", "20-Q", "20-R", "20-S", "20-T", "20-U", "20-V", "20-W", "20-X", "20-Y", "20-Z", "21-A", "21-B", "21-C", "21-D", "21-E", "21-F", "21-G", "21-H", "21-I", "21-J", "21-K", "21-L", "21-M", "21-N", "21-O", "21-P", "21-Q", "21-R", "21-S", "21-T", "21-U", "21-V", "21-W", "21-X", "21-Y", "21-Z", "22-A", "22-B", "22-C", "22-D", "22-E", "22-F", "22-G", "22-H", "22-I", "22-J", "22-K", "22-L", "22-M", "22-N", "22-O", "22-P", "22-Q", "22-R", "22-S", "22-T", "22-U", "22-V", "22-W", "22-X", "22-Y", "22-Z", "23-A", "23-B", "23-C", "23-D", "23-E", "23-F", "23-G", "23-H", "23-I", "23-J", "23-K", "23-L", "23-M", "23-N", "23-O", "23-P", "23-Q", "23-R", "23-S", "23-T", "23-U", "23-V", "23-W", "23-X", "23-Y", "23-Z", "24-A", "24-B", "24-C", "24-D", "24-E", "24-F", "24-G", "24-H", "24-I", "24-J", "24-K", "24-L", "24-M", "24-N", "24-O", "24-P", "24-Q", "24-R", "24-S", "24-T", "24-U", "24-V", "24-W", "24-X", "24-Y", "24-Z".

BENCH MARK REFERENCE:

ACS STATION "11-K19A", LOCATED AT THE NORTHEAST INTERSECTION OF ZUNI AND LOUISIANA BLVD. S.E.; M.S.L.D. ELEVATION = 5317.302, PROJECT T.B.M. AS SHOWN ON THE PLAT HEREON.

ENGINEER'S CERTIFICATION:

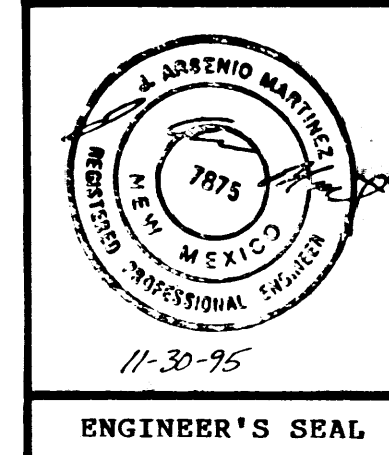
I, J. ARSENIO MARTINEZ, NEW MEXICO REGISTERED PROFESSIONAL ENGINEER NO. 7875, DO HEREBY CERTIFY THAT THE "AS-BUILT" FIELD SURVEY VERIFICATION OF THE EXISTING FINISHED FLOOR PAD ELEVATIONS OF THE SUBJECT DEVELOPMENT ARE IN "SUBSTANTIAL COMPLIANCE WITH THE CITY APPROVED DRAINAGE PLAN."

"AS-BUILT" FIN. F.L.R. = (F.F. = 5315.32)



A GRADING AND DRAINAGE PLAN FOR
INDIANA S.E. TOWNHOUSES
(N.E. CORNER OF INDIANA ST. S.E. & BELL AVE. S.E.)
ALBUQUERQUE, NEW MEXICO
NOVEMBER, 1995
(FIN. F.L.R. CERTIFICATION: 03-18-96)

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



* NOTE: ALL INDIVIDUAL LOTS SHOWN ON THE PLAN HEREON ARE TO PROVIDE EACH ADJACENT LOT A "PERPETUAL BLANKET DRAINAGE BASEMENT" OVER AND ACROSS EACH SIDE YARD LOT LINE OF SAID DEVELOPMENT FOR THE PURPOSE OF ACCEPTING "DEVELOPED RUNOFF" WHICH IS TO BE DIVERTED TOWARD AND INTO INDIANA STREET S.E. VIA 4" P.V.C. DRAIN PIPE(S) PER CITY OF ALBUQUERQUE STANDARD DRAWING NO. 2235, (SEE ADDITIONAL DRAIN DETAILS ON THE PLAN HEREON).

* NOTE: PROVIDE ACCESS AND DRAINAGE BARRIER ALONG ALLEY PROPERTY, (CONCRETE HEADER CURB OR 1-COURSE HIGH BLOCK), ALONG WITH CHAIN LINK FENCE OR CEDAR WOOD FENCE.