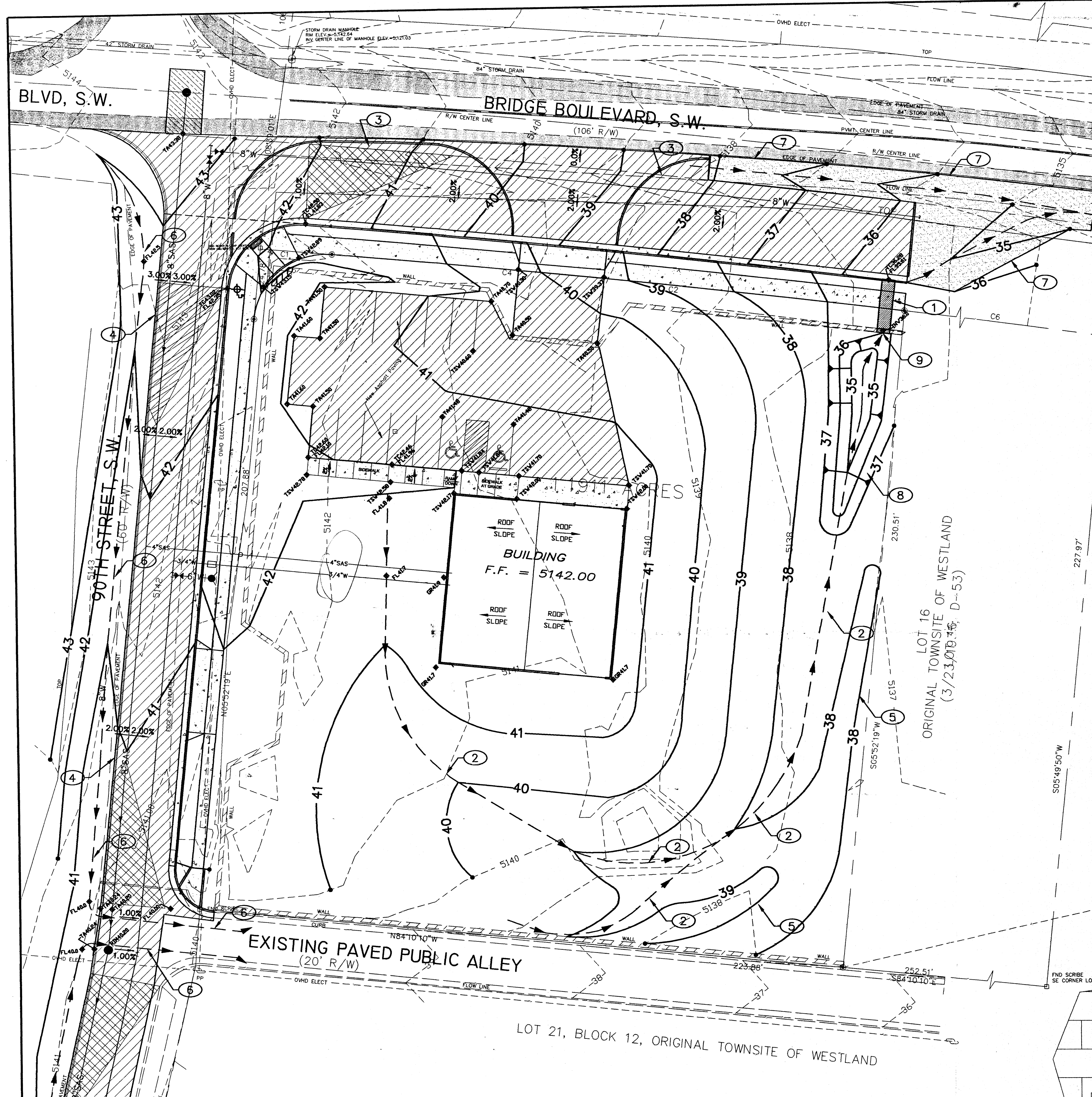


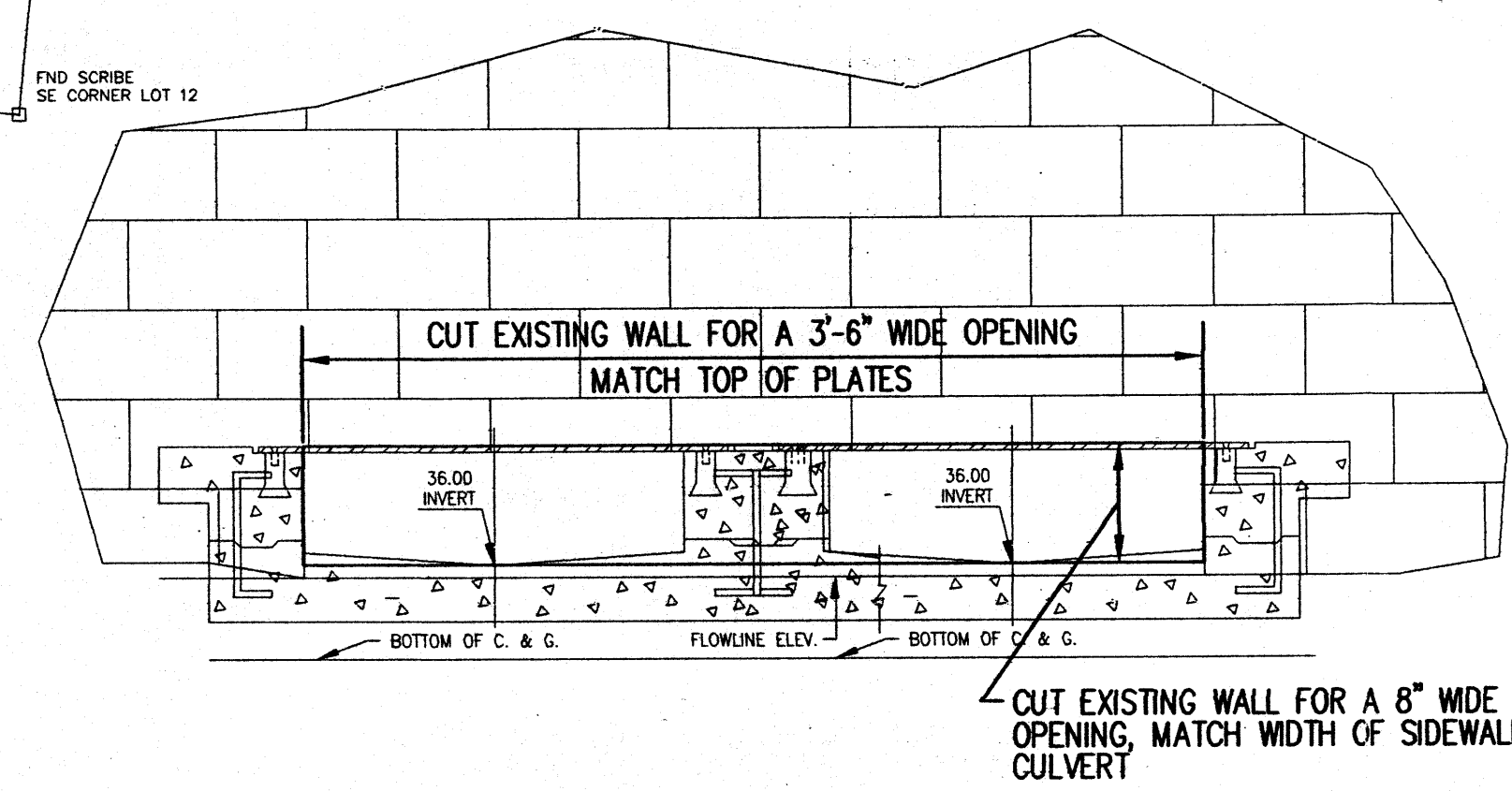
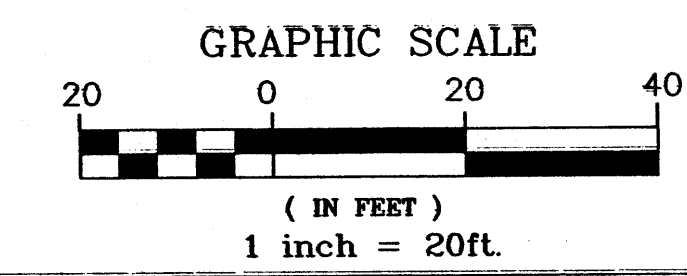


CONSTRUCTION NOTES:

- 1 CONSTRUCT 2'-18" WIDE SIDEWALK CULVERTS FROM FACE OF CURB TO EXISTING WALL PER CITY STD. DWG. 2236,
- 2 GRADE TO DRAIN FROM REAR YARD TO NORTHEAST CORNER.
- 3 CONSTRUCT ONE HALF STREET SECTION OF BRIDGE BOULEVARD TO CITY STANDARDS.
- 4 CONSTRUCT ONE HALF STREET SECTION OF 90TH STREET TO CITY STANDARDS.
- 5 CONSTRUCT 1 FOOT HIGH BERM TO DIRECT FLOWS TO BRIDGE BLVD.
- 6 FLOWS WEST OF 90TH STREET TO BE GRADED IN ORDER TO CONVEY FLOWS TO EXISTING LOW POINT OF 90TH STREET AND INTO EXISTING PAVED PUBLIC ALLEY.
- 7 GRADE ROADSIDE SWALE AND INSTALL 4' OF ASPHALT FINES COMPACTED TO +/-90%.
- 8 CONSTRUCT A DESILTING POND PER THE GRADES SHOWN TO PREVENT SEDIMENT FROM ENTERING THE ROW IN THE FUTURE.
- 9 CUT EXISTING WALL OPENING AT 3'-6" WIDE X 10' DEEP TO MATCH NEW SIDEWALK CULVERT OPENING ON WIDTH WITH A WALL INVERT ELEVATION = 36.00, SEE DETAIL.

LEGEND			
	NEW CONTOUR GRADE		NEW GRADE BREAK
	EXISTING CONTOUR GRADE		EXISTING GRADE ELEVATION
	DRAINAGE FLOW DIRECTION		NEW GRADE ELEVATION
	NEW TOP OF CURB ELEVATION		FLOWLINE GRADE ELEVATION
	NEW FLOWLINE OF CURB ELEVATION		NEW TOP OF WALL ELEVATION
	NEW TOP OF ASPHALT ELEVATION		NEW BOTTOM OF WALL ELEVATION
	NEW TOP OF SIDEWALK ELEVATION		NEW TOP OF CONCRETE ELEVATION
	DRAINAGE SWALE		

UTILITY PRECAUTIONS
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 SOCIAL ORDINANCES, RULES AND REGULATIONS, IF ANY, PERTAINING TO THE LOCATION OF THESE LINES AND FACILITIES.



SIDEWALK CULVERT/WALL DETAIL
Not To Scale

APPLIED ENGINEERING AND SURVEYING, INC. ENGINEERS AND PLANNERS 1600 Blue Ridge NE Albuquerque, NM 87112 Office: (505) 227-1100 Fax: (505) 227-1100		CITY OF ALBUQUERQUE PUBLIC WORKS DEPARTMENT ENGINEERING DEVELOPMENT GROUP	
TITLE: GRADING PLAN IBARRA GARAGE			
Design Review Committee	City Engineer Approval	Mo./Day/Yr.	Mo./Day/Yr.
City Project No.	Zone Map No.	Sheet	Of
735683	K-9	1	2

SURVEY INFORMATION			BENCH MARKS			AS-BUILT INFORMATION		
FIELD NOTES								
NO.	BY	DATE	THE BASIS OF ELEVATIONS FOR THIS SURVEY IS ACS BENCHMARK 14-K9, THE PUBLISHED ELEVATION OF WHICH IS 5118.017. NAVD83. BENCHMARK IS LOCATED ON THE NORTHWEST QUADRANT OF 66TH STREET AND BRIDGE BLVD.			CONTRACTOR	DATE	
1	Comm. Science	03/09				WORK PERFORMED BY STATED BY ACCEPTANCE BY FIELD CORRECTION BY DRAINAGES CORRECTED BY	DATE	
						MICRO-FILM INFORMATION		
						RECORDED BY	DATE	
						NO.		

DRAINAGE PLAN

THE FOLLOWING ITEMS CONCERN THE DEVELOPMENT OF A 3600SF GARAGE ADDITION TO 4 VACANT LOTS ON THE SOUTHEAST CORNER OF BRIDGE BOULEVARD SW AND 90TH STREET SW, ALBUQUERQUE, NEW MEXICO. THE FOLLOWING INFORMATION CONTAINED HEREON IS AS FOLLOWS:

1. DRAINAGE CALCULATIONS
2. VICINITY MAP K-9
3. FLOOD INSURANCE RATE MAP 35001C0328D

EXISTING CONDITIONS

AS SHOWN BY THE VICINITY MAP, THE SITE IS LOCATED ON THE SOUTHEAST CORNER OF BRIDGE BOULEVARD SW AND 90TH STREET SW ON THE WEST SIDE OF ALBUQUERQUE. THE PARCEL'S LEGAL DESCRIPTION IS LOTS 17-20, BLOCK 12, ORIGINAL TOWNSITE OF WESTLAND, NEW MEXICO. THE PROPERTY IS BOUNDED ON THE SOUTH BY A CITY IMPROVED ALLEY, ON THE EAST BY VACANT LAND AND ON THE NORTH BY BRIDGE BOULEVARD SW WHICH HAS 22 FEET OF TEMPORARY PAVING AND ON THE WEST BY 90TH STREET SW WHICH HAS 22 FEET OF TEMPORARY PAVING. THIS SITE CONTAINS APPROXIMATELY 1.21 ACRES AND IS UNDEVELOPED.

THE SITE IS CURRENTLY NOT IN A DESIGNATED 100-YEAR FLOODPLAIN PER FIRM MAP 35001C0328D

PROPOSED CONDITIONS

AS SHOWN BY THE PLAN, THE PROJECT CONSISTS OF A 3600SF GARAGE, ASPHALT PARKING LOT, SIDEWALKS, 1/2 STREET IMPROVEMENTS FOR BRIDGE BOULEVARD AND 90TH STREET TO INCLUDE REGRADE OF THE SITE TO DIVERT FLOWS TOWARDS BRIDGE BOULEVARD. THE PLAN WILL ALSO CONSIST OF CONSTRUCTING A SIDEWALK CULVERT AT THE NORTHEAST CORNER OF THE SITE TO DRAIN THE FLOWS FROM THIS SITE ONTO BRIDGE BOULEVARD.

THE PLAN ALSO SHOWS PROPOSED ELEVATIONS AND GRADES REQUIRED TO PROPERLY GRADE THE SIDE TO NEW DRAINAGE IMPROVEMENTS.

THE CALCULATIONS WHICH APPEAR HEREON, ANALYZE BOTH THE EXISTING AND DEVELOPED CONDITIONS FOR THE 100-YEAR, 6 HOUR RAINFALL RUNOFF FOR PEAK FLOWS AND STORM DURATION FOR VOLUME REQUIREMENTS. THE PROCEDURE FOR 40 ACRE AND SMALLER BASINS AS SET FORTH IN THE REVISION OF SECTION 22.7 HYDROLOGY OF THE DEVELOPMENT PROCESS MANUAL, VOLUME 2, DESIGN CRITERIA, DATED JANUARY 1993. THIS D.P.M. PROCEDURE IS USED FOR ANALYZING ONSITE FLOWS.

DOWNSTREAM CAPACITY

A REVIEW OF THE TOPOGRAPHIC SURVEY AND A FIELD VISIT TO THE SITE INDICATES THAT THERE IS AN EXISTING 84" STORM DRAIN IN BRIDGE BOULEVARD ALONG WITH SEVERAL DROP STRUCTURES TO CONVEY FLOWS FROM BRIDGE BOULEVARD INTO THE EXISTING STORM DRAIN.

BASED ON THIS MINIMAL SITE IN RELATIONSHIP TO THE OVERALL SITE THAT DRAINS INTO BRIDGE BOULEVARD, THIS SITE SHOULD NOT IMPACT DOWNSTREAM CAPACITY.

OFFSITE FLOWS

A REVIEW OF THE TOPOGRAPHIC SURVEY AND A FIELD VISIT TO THE SITE INDICATES THAT NO OFFSITE FLOWS ENTER THIS SITE.

EROSION CONTROL

THE CONTRACTOR WILL BE REQUIRED TO PROVIDE SILT FENCES AROUND THE PROPOSED CONSTRUCTION AREAS TO MINIMIZE SEDIMENT INTO THE PUBLIC ROADWAYS OR ALLEYS. CONTRACTOR WILL BE REQUIRED TO PREPARE A STORM WATER POLLUTION PREVENTION PLAN.

DRAINAGE CALCULATIONS

1. PRECIPITATION ZONE = 1
2. DESIGN STORM = DEPTH (INCHES) AT 100-YEAR STORM
6-HOUR = 2.20 INCHES
24-HOUR = 2.66 INCHES
10 DAY = 3.67 INCHES
3. PEAK DISCHARGE (CFS/ACRE) FOR 100-YEAR, ZONE 2, TABLE A-9:
 $Q = 1.29$ CFS/ACRE SOIL UNCOMPACTED "A"
 $Q = 2.03$ CFS/ACRE LANDSCAPED "B"
 $Q = 2.87$ CFS/AC COMPACTED SOIL "C"
 $Q = 4.37$ CFS/ACRE IMPERVIOUS AREA "D"
FOR WATERSHEDS LESS THAN OR EQUAL TO 40 ACRES

4. EXCESS PRECIPITATION, E (INCHES), 6 HOUR STORM, ZONE 2, TABLE A-8:

$E = 0.44$ INCHES SOIL UNCOMPACTED "A"
 $E = 0.67$ INCHES LANDSCAPED "B"
 $E = 0.99$ INCHES COMPACTED SOIL "C"
 $E = 1.97$ INCHES IMPERVIOUS AREA "D"

5. EXISTING CONDITIONS:

EXISTING AREA OF DEVELOPMENT = 1.21 ACRES
TREATMENT "A" AREA = 1.21 ACRES (UNCOMPACTED SANDY SOIL)

TREATMENT	AREA (ACRES)
A	1.21
B	0
C	0
D	0

$$Q(\text{EXISTING}-6\text{HR}) = (1.21 \times 1.29) \\ = 1.56\text{CFS (6HR) EXISTING ONSITE FLOW} \\ V(\text{EXISTING}-6\text{HR}) = (1.21 \times 0.44) / 12 \\ = 0.04\text{AC}-\text{FT} = 1.932\text{CF EXISTING ONSITE VOLUME}$$

6. PROPOSED CONDITIONS ONSITE:

PROPOSED AREA OF DEVELOPMENT = 1.21 ACRES
IMPERVIOUS AREA PROPOSED:
BUILDING AREA = 3600SF = 0.08 AC
ASPHALT PAVING AREA = 6649SF = 0.15 AC
SIDEWALK AREA = 789SF = 0.02 AC
TOTAL TREATMENT "D" AREA = (0.08 + 0.15 + 0.02)
= 0.25 AC THIS PLAN, ASSUME 90% "D" IN FUTURE
SINCE REMAINING SITE MAY BE PAVED = 0.90 X 1.21 AC
= 1.09 AC

TREATMENT "C" AREA = 1.21 - 0.25 AC = 0.96 AC THIS
PLAN, ASSUME 10% "C" IN FUTURE SINCE REMAINING
SITE MAY BE PAVED = 0.10 X 1.21 AC = 0.12 AC

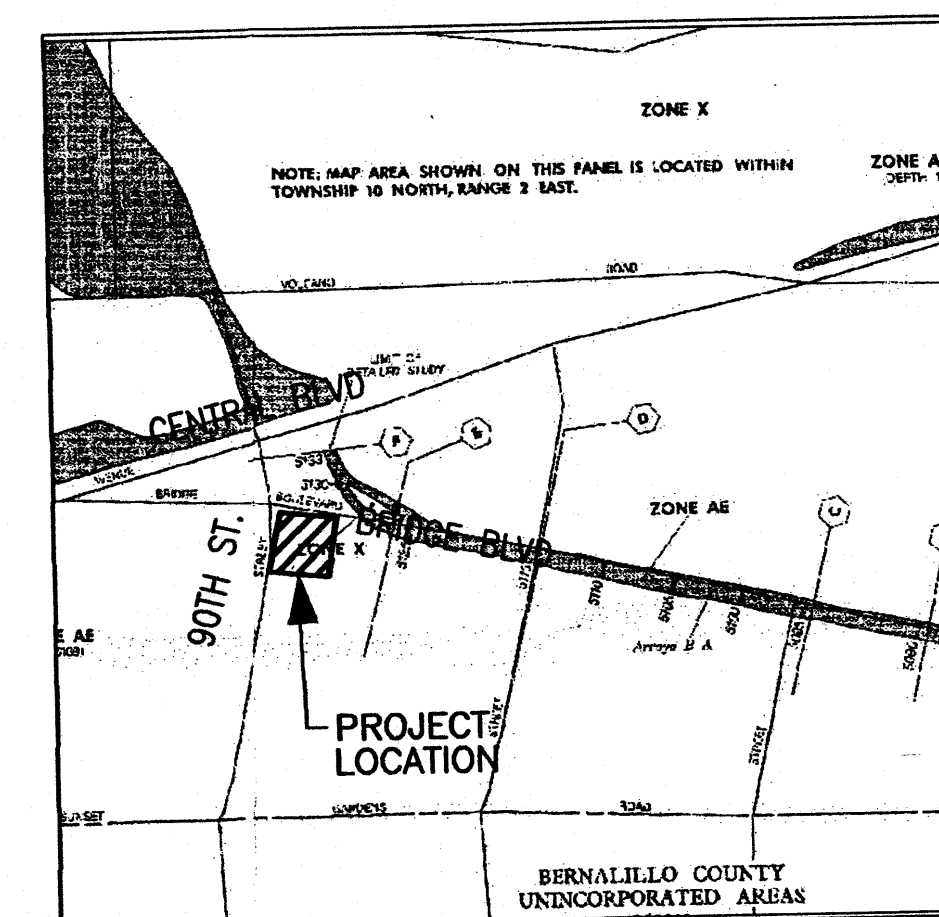
$$Q(\text{PROPOSED}-6\text{HR}) = (0.12 \times 2.87) + (1.09 \times 4.37) \\ = 5.11\text{CFS FUTURE ONSITE FLOW} \\ V(\text{PROPOSED}-6\text{HR}) = ((0.12 \times 0.99) + (1.09 \times 1.97)) \\ / 12 \times 43,560 \\ = 8,226\text{CF} = 0.19\text{AC}-\text{FT PROPOSED RUNOFF VOLUME}$$

7. DIFFERENCE BETWEEN EXISTING CONDITIONS AND THIS PROPOSED DEVELOPMENT:

$Q(\text{INCREASE}-6\text{HR}) = 5.11 - 1.56\text{CFS} = 3.55\text{CFS}$
INCREASE
 $V(\text{INCREASE}-6\text{HR}) = 0.19 - 0.04\text{AC}-\text{FT}$
= 0.05 AC-FT INCREASE

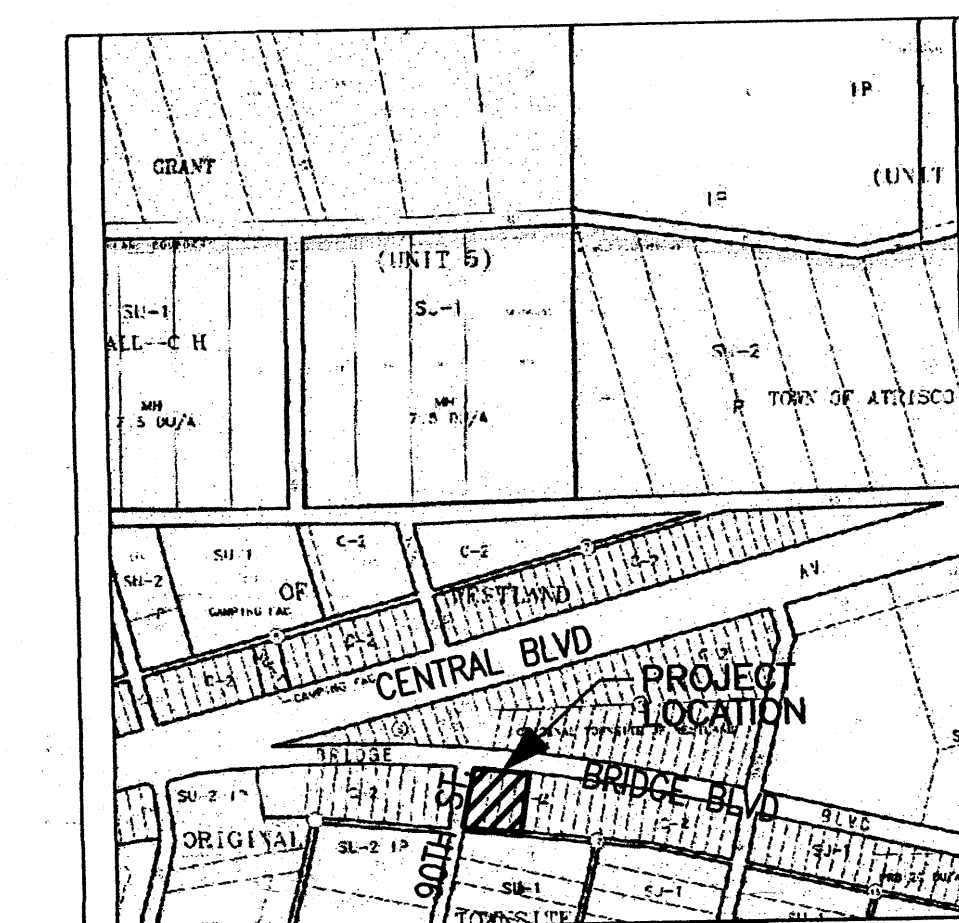
8. SIZE SIDEWALK CULVERT AT NORTHEAST CORNER OF PROPERTY:

$Q(\text{PROPOSED}-6\text{HR}) = 3.85\text{CFS PROPOSED ONSITE FLOW}$
CHECK WEIR CAPACITY:
 $Q(\text{CAPACITY}) = C \times L \times H^{3/2}$
 $L = Q / (C \times H^{3/2})$
 $Q = 3.85\text{CFS}, H = 0.67, C = 3$
 $L = 5.11 / (3 \times 0.67^{3/2}) = 3.11\text{FEET}$
USE 3 FEET CULVERT OPENING SINCE SIZED FOR THE
WORST CASE SCENARIO IF THEY SHOULD PAVE THE ENTIRE
SITE IN THE FUTURE.



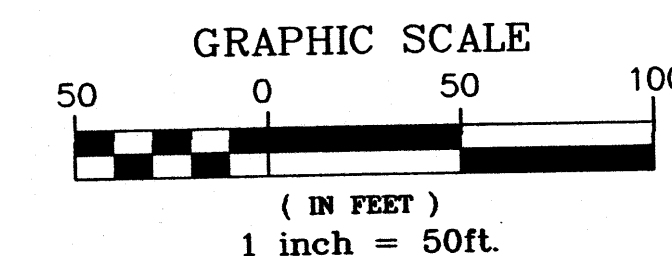
FIRM MAP 35001C0328D

SCALE: N.T.S.



VICINITY MAP K-9

SCALE: N.T.S.



FILE:	IBARRA GARAGE DRAINAGE CALCULATIONS	DATE/REVISIONS:
		SHEET NUMBER:
APPLIED ENGINEERING AND SURVEYING, INC. ENGINEERS AND PLANNERS 1400 East Drive NE Albuquerque, New Mexico 87112 Office (505) 496-8125 Fax (505) 496-8125 Email: info@aeandsp.com		2 of 2

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