PROPOSED REVISIONS TO THE

GOLF COURSE ROAD, NW (COA PROJECT #3875)

IMPROVEMENT PLANS

DIVERSION OF DRAINAGE FLOWS AROUND

TRACT C, LANDS OF PARADISE GENERAL PARTNERSHIP

PREPARED FOR:

MR. BRIAN PYE

GIANT INDUSTRIES, INC.

(602) 585-8888

PREPARED BY:

MICHAEL J. YOST, P.E.

COMMUNITY SCIENCES CORPORATION

(505) 897-0000

AUGUST, 1991

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I. INTRODUCTION

Currently, Tract C is traversed by the North Branch of the Piedras Marcadas Arroyo System. Based on recent drainage reports, it is estimated that the 100-Year, 6-Hour storm event generates a peak flow of approximately 475 cubic feet per second (CFS). This arroyo encumbers a portion of Tract C with a 100-Year flood plain as shown on FEMA Map # 350002 0002. The current design for the improvements of Golf Course Road in this vicinity does not contain features to re-route or, in any other fashion, change this flood plain as it crosses Tract C. Therefore, the purpose of this report is to present a conceptual design to divert the arroyo around Tract C and make it developable as a Gas Station/Convenience Store for Giant Industries, Inc.

II. SOLUTION

While the City of Albuquerque is not under a direct obligation to protect Tract C from flood plain hazards, the City is, of course, interested in accommodating development of Tract C. In addition, the City of Albuquerque is obligated to not exacerbate flooding problems for Tract C. It may be argued that the 54" CMP's drainage culvert currently designed to discharge flows onto Tract C has the potential of causing adverse affects, even if it is the best solution for road construction. A compromise that benefits all parties is for the City of Albuquerque to provide as many drainage improvements to the arroyo as it affects Tract C as is reasonable. During a meeting on July 23, 1991, it was generally agreed by the interested parties that an earthen diversion channel could be constructed to divert storm flows around Tract C and this earthen channel should be lined with anti-erosion armoring (Riprap). The City of Albuquerque would provide a bend at the end of the 54" CMP to redirect storm flows, and provide enough end treatment to insure the stability of the proposed roadway. The City, as part of the roadway earthwork operation, could grade the earthen channel. In turn, Giant Industries, Inc. will provide the anti-erosion armoring (Riprap). At the time of the development of their Tract they would provide culverts or some other drainage structure that would access their site over this drainage diversion channel.

A conceptual layout of this design is presented on the enclosed illustration. The hydraulic characteristics of the channel are as follows:

Q100 = 475 CFS from GCR drainage report?

Slope = 0.50%

Sideslopes = 2:1

n = 0.035

From Manning's Equation

Dn = 2.91'

Vn = 5.30 fps

Froude No. = 0.60

For a 50' CL Radius, Super elevation = 0.37'

Required Freeboard = 1.19'

Total Required Depth = 4.47', say 4.5'

Type VL Riprap on the sideslopes is adequate based on Tractive Force analysis. The bed is stable without treatment based on similar analysis (see Appendix A).

III. SUMMARY

The current design for the Golf Course Road NW improvements do not completely make Tract C developable. Although the City of Albuquerque is not directly obligated to make Tract C developable, it is in their interest to accommodate the developer as much as reasonably possible and certainly to not exacerbate any drainage problems. Therefore, a conceptual design is illustrated on the accompanying plate.

It seems that the best solution is to have the City provide the 54" CMP end section/bend, enough treatment at the CMP end to protect the roadway and to grade the diversion channel as part of the roadway grading operation. Giant Industries, Inc., in return, would provide anti-erosion armoring and whatever improvements are necessary for their access over this channel.

APPENDIX A

CALCULATIONS

7/30/91	M. J. Y.	218-01-610

UPDATED 8/19/91

LOOK @ SIMULATING EXISTING CONDITIONS FOR OVERLOND FLOW ~ USE 10-YEAR STORM FOR ANALYSIS BECAUSE IT IS WHAT CULVERT IS PRESENTLY DESIGNED FOR, AND BECAUSE THIS SCOPE OF STORM WOULD PROBABLY CAUSE HIGHER EXPECTED DAMAGES.

Q_{100} THROUGH THE 54" CMP = 398 cfs

Q_{10} = 200 cfs

FLOW IS ALREADY WELL CONFINED SO IT SHOULD PROBABLY BE SPLIT TO TWO CULVERTS ~ PREVIOUS ANALYSIS BASED ON ORIFICE EQN. ($C = 0.62$) ~ 2 - 42" CMPs WOULD BE APPROPRIATE

COST EST. AS DESIGNED (NOT INCL. MH)

54" X 66' CMP = $4,620

10' X 10' X 18" RIPRAP = $ 278

10' X 10' X 10" FILTER = $ 102

$ 5,000

W/ RE-DESIGN

2 - 42" X 66' CMP = $6600

20' X 10' X 18" RIPRAP = $556

20' X 10' X 10" FILTER = $204

$ 7,360

DIFF = $2360, say $3000

THIS COULD BE MORE - ~~XXXX~~ IF SAY, THE BETTER APPROX. = 3 OR MORE CULVERTS

INV. OF OUTFALL = 89.28 @ STA 122+94

PROBABLY HAVE TO GO 0.50% TO STA 120+50±

DESIGN Q_{100} = 475 CFS

USE MANNING'S TO DESIGN DITCH (n = 0.033)

TRY 20' BOTTOM AND 4:1 SIDE SLOPES

d = 2.88'
V = 5.24 fps
F = 0.64 fps } GOOD!

WHAT IF n = 0.030?

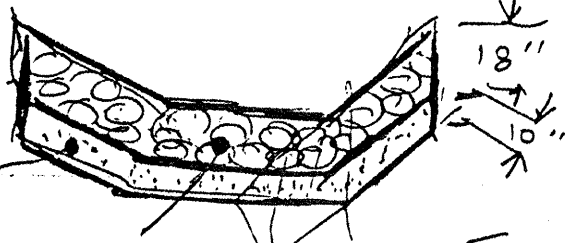
d = 2.74'
V = 5.61 fps
F = 0.70 } GOOD, TOO!

LENGTH = 250' ± TRANSITIONS, ETC., Say 350' TO INCLUDE

FIND CRIT. DEPTH (& VELOCITY)

d_c = 2.22'
V_c = 7.42 fps

FOR ROUGH EST - TRY LINING w/ RR



COST OF RR $\frac{350' \times [(20 \times 1.5) + 2(4.12)(1.5)]}{27}$ = 550 CY

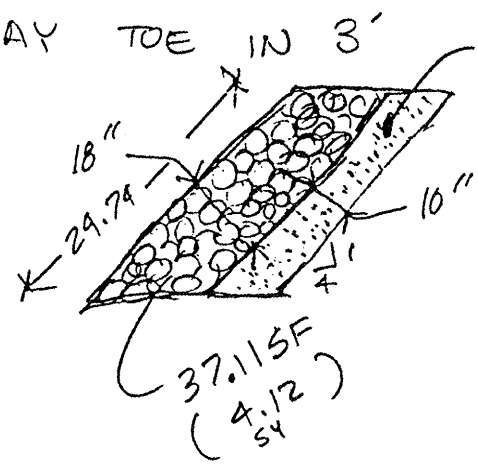
X $50

$27,500

COST OF FILL 350' 550 $\left(\frac{10}{18}\right)$ = 306 CY

X 33

COULD HALVE THIS COST IF JUST "TOED" IN THE RIPRAP



961.33 CY OF RIPRAP

TOO MUCH

→ TRY SOIL CEMENT IN 8" LIFTS ~ N.G. WILL BE OF SIMILAR EXPENSE TO LINE WHOLE THING.

TRY 25' BOTTOM ℄ 2:1 SIDESLOPES (n=.035)

Q=475CFS
Slope=.5%

d_n = 2.91'
V_n = 5.30 fps
= 0.60

} 522 CY OF RR.
(290 CY OF FILT. GRAVEL
OR
1043 SY OF FILT. MAT'L)

IF 12" THICK THEN 348 CY OF RR

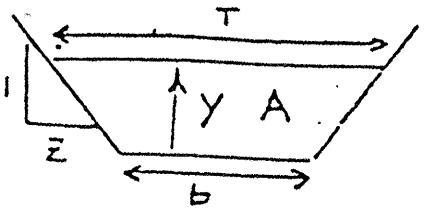
12" ÷ 1.75 = 6.86'

CALL IT TYPE VL RIPRAP

USE HEGGEN'S TRACTIVE FORCE METHOD FOR VERIFICATION - SEE ATTACHED WORKSHEET

CHANNEL STABILIT WORKSHEET

4/1



Given	b = 25 ft	z = 2
n = .035	S = 0.50%	Q = 475 cfs

y (by Mannings) = 2.91 ft	A = y(b + yz) = 89.62 ft²	
V = Q/A = 5.30 fps	T = b + 2zy = 36.64 ft	F = V/√(gA/T) = 0.60

	BED		TYPE VL RIPRAP BANK		
Particle d % passing	d_{75} natural / d_{50}, riprap, ft .0098* *resumed	SG 2.60	d_{75}, natural / d_{50} riprap, ft d_{50} = 6"	SG 2.60	φ, Fig 2, deg 38° ±
C (b, y, z) Fig. 3	1.0		0.78		
T_o, psf	$C\gamma ys$ 0.91		$C\gamma ys$ 0.71		
R^*	$d\sqrt{gys}/\nu$ 41,420		$d\sqrt{gys}/\nu$ 32,317		
$F_s(R^*)$ Fig. 1	0.56		0.56		
T_c, psf	$\gamma(SG-1)\,d\,F_s$ 40,527		$\gamma(SG-1)\,d\,F_s\sqrt{1-\frac{1}{(1+z^2)\sin^2\phi}}$ 19.21		
SR	$\frac{T_o}{T_c}$ 1.02 ✓		$\frac{T_o}{T_c}$ 0.04 ✓		
Remarks	STABLE		STABLE FACTOR OF SAFETY = $\frac{1}{.04}$ = 27.06		

CURRENT DESIGN FOR 54" CMP
@ STA 122+75±, INV = 89.5±

IT APPEARS INV. COULD BE RAISED (IF NEEDED)
TO EL. OF INV. = 90.5±, day 90

INV OF ~~CHANNEL~~ NATURAL ARROYO = 90-88 @
SOUTH BOUNDARY OF TRACT C - WORST CASE = 90

IF CHANNEL RUNS @ 0.50% SLOPE INV
= 90 - 1.5 = 88.5

NATURAL ARROYO IS @ 2½%± SO. OF TRACT C

$$\therefore \quad \frac{1.5'}{(.025-.005)} = 75' = \text{LENGTH TO DAYLIGHT}(\pm)$$

ESTIMATE SUPERELEVATION FOR VARIOUS CURVES

$$S = 1.15\left[\frac{V^2(b+2zD)}{2gr}\right] = \frac{18.38}{r}$$

r	S
100'	0.18
200'	0.09
50'	0.37

FREEBOARD (FROM DPM) = 1.2'

2.91' + 1.2 = 4.5' TOTAL

FOR END OF CULVERT - USE

APPENDIX B

SUPPORTING CORRESPONDENCE

218-01-610

Myers & Oliver

A PROFESSIONAL CORPORATION
LAWYERS
6400 UPTOWN BOULEVARD, N.E.
SUITE 300 WEST
ALBUQUERQUE, NEW MEXICO 87110

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July 17, 1991

Suzanne Busch, Engineering Group
Public Works Department
City of Albuquerque
P.O. Box 1293
Albuquerque, New Mexico 87103

JUL 18 '91

Re: Giant Industries Arizona, Inc.
Golf Course Road Drainage Easement

Dear Suzanne:

This office represents Giant Industries Arizona, Inc. They have provided us with a copy of Walter H. Nickerson's letter dated June 4, 1991, wherein he requests Giant to grant a drainage easement over its property located at the southern corner of Golf Course Road, NW, and Paradise Boulevard, NW.

As I believe you are aware, Giant recently purchased this property and dedicated right-of-way for Golf Course Road, NW, in reliance upon the City's plan to construct Golf Course Road and associated storm drainage improvements. It now appears that the drainage improvements programmed for Golf Course Road may not occur in the near future as a result of the City's change in plans with respect to the Golf Course Road improvements. Giant desires to have the City incorporate some temporary drainage solution into its present Golf Course Road construction plans so that the Giant property may be put to use.

We appreciate your willingness to meet with Brian Pye of Giant, and me, on Tuesday, July 23, 1991, at 2:00 PM. I have requested that Cliff Anderson and Mike Yost join us. I understand you will ask Fred Aguirre to attend the meeting.

Thank you.

Sincerely,
MYERS & OLIVER
A Professional Corporation

By: _____
John A. Myers

JAM:klw
cc: Mr. Brian Pye
Mr. Michael Yost
Mr. Cliff Anderson

MAR 2 3 1992

CITY OF ALBUQUERQUE

LEGAL DEPARTMENT
(505) 768-4500

March 19, 1992

INTER-OFFICE CORRESPONDENCE REF:

TO: Ted Pearson, Assistant City Attorney

FROM: Sylvia R. Fettes, Law Specialist

RE: **GIANT INDUSTRIES OF ARIZONA, INC. – GRANT OF EASEMENT**

Pursuant to your request, I reviewed the Grant of Easement from Giant Industries to the City.

I met with Dan Hogan, Fred Aguirre, Gilbert Aldaz and Carlos Montoya regarding the project to attempt to get some background information. What developed from the meeting is that the property is currently located in the county and the drainage facilities upstream and downstream belong to AMAFCA. These two points are important in that they affect the wording of the easement. With respect to the granting of the easement to the City and the agreement by the City to maintain the interim facility, it might be more appropriate if AMAFCA were to accept the easement and agree to maintain it. Gilbert Aldaz will coordinate with AMAFCA regarding that.

If AMAFCA declines to accept and maintain this property, the concurrence of AMAFCA will probably be necessary for discharge of waters from the interim facility through and across the downstream AMAFCA easements.

With respect to the last paragraph beginning on page one and continuing on page two, which I understand from our conversation John Myers requested be inserted, the City is in a difficult position in making the representation that development of the remaining Giant property will not be prevented because of flooding. The property is within a 100-year floodplain and the ultimate development of that property will require concurrence of the county and AMAFCA. In addition, language should be added specifically calling to Giant's attention that the City makes no representation that the interim facility will remove the 100-year floodplain designation from the property. The removal of the floodplain designation is up to FEMA to approve. The floodplain designation can impact on the requirement for flood insurance.

As a result of my meeting with Hydrology, Gilbert Aldaz has been designated as the point of contact in Hydrology for this easement and review of the interim facility plans. Please contact me if you have any questions regarding this memo.

SRF/lrn
3713LDF

cc: Gilbert Aldaz, Hydrology

SUMMARY OF DRAINAGE ANALYSIS FOR PHASE I — GOLF COURSE RD. (COA # 3875)

AT PARADISE / G.C.R. INTX.

DRAINAGE BASIN FROM PARADISE HILLS

1. REFER TO BASIN 2A-2 OF 2/90 REPORT

Q_{100} REPORT = 475 CFS

USE $Q_{10} = \frac{475}{2} =$ 238 CFS

{FROM PREVIOUS REPORT

→ $Q_{10} = 238(.16) =$ 38 CFS

$Q_{10} = 238 - 38 =$ 200 CFS ON SO. SIDE

→ CAPACITY OF 24" CULVERT = 47 CFS, OK

↳ 200 CFS, IF $H_W = 5'$

TRY 36" PIPE, $Q_{INLET} =$ 66 CFS

TRY 42" PIPE, $Q_{INLET} =$ 86 CFS

TRY 48" PIPE, $Q_{INLET} =$ 108 CFS

} FROM ORIFICE EQ. ($C = 0.62$)

CAN'T GET ANY BIGGER W/ OUT EXTRAORDINARY EXCAVATION / PROBLEMS THAT DO NOT ECONOMICALLY MAKE SENSE GIVEN TEMP. NATURE OF PROJECT.

∴ USE 48" PIPE & LET REST SHT. FLOW OVER INTX. ON TEMP BASIS — AND RETURN TO PIEDRAS MARCADAS (NO. BRANCH) ARROYO.

★ REVISE TO 54" ~ SEE SHT. 5

NEXT DRAINAGE ANALYSIS POINT IS AT ≈ STA 105+50, LT.

THIS DRAINS WESTERLY 60% OF BASIN 2A-1 AND IT IS UNDEVELOPED

$Q_{100} = .6(.5)169 =$ 51 CFS

↑ UNDEV FACTOR

FROM PREVIOUS ANALYSIS IT CAN BE SEEN THAT 36" PIPE IS ADEQUATE

NO WHERE TO OUTLET STORM DRAIN TO ARROYO — MUST CONSIDER DLT.

NEXT DRAINAGE IS @ STA 100+86 ±

∴ MUST SHEET FLOW ON ROAD TO THIS ONE

STREET SLOPE = 1.70% FOR THIS STRETCH — USE .2+ TOP OF CURB (0.87') AS MAXIMUM ALLOWABLE DEPTH

FROM PLATE 22.3 D-4, DPM CAPACITY = 100 CFS

FROM DRAINAGE PLATE FOR 2/90 REPORT

25% OF BASIN 2B GOES ONTO STREET, REST GOES TO MINOR ARROYO

$Q_{100} = .25(.50)$ (UNDEV. FACTOR) $202 =$ 25 CFS

STREET FLOW = 25+50 = 75 CFS < 100 CFS, OK

DEPTH = 0.82' } SAME PLATE AS BEFORE
VELOCITY = 5.5 fps }

TRY A TYPE "A", $Q_{CAPACITY} \cong$ 18 CFS (PLATE D-5)

$Q_{REMAIN} = 75 - 18 = 57$ CFS

DEPTH = 0.73' } PLATE D-4
VELOCITY = 5.4 fps }

NEXT USE "DBLE C", $Q_{CAP.} \cong$ 18 CFS (PLATE D-6)

$Q_{REMAIN} = 57 - 18 = 39$ CFS

DEPTH = 0.65' } PLATE D-4
VELOCITY = 4.9 fps }

REMAINDER OF BASIN 2B GOES IN CULVERT UNDER STREET

.75 (.50) 202 = 76 CFS, 42" PIPE OK

FOR INLET, ADD 36 CFS FROM CATCH BASINS

TOTAL Q_{100} = 76 + 36 = 112 CFS

IE ALLOWABLE HEAD FROM CENTER OF PIPE ≅ 6', AND ORIFICE EQN. C = 0.62 THEN CAPACITY = 117 CFS > 112 CFS, OK

TO SIZE EROSION CONTROL PADS (RIPRAP) FROM SIMONS, LI & ASSOCIATES

MIN. LENGTH = 3 X DIA

3 x $\frac{42}{12}$ = 10.5', ADD 10' BECAUSE

IT IS TEMPORARY ~ USE SOME REASONING FOR TYPE L RIPRAP - HOWEVER, CUT-OFF WALL IS ADVISABLE - WILL DO MORE THAN RIPRAP!

DISCUSSION:

IE, WHAT IS TO BE DESIGNED FOR? ANSWER = EXPECTED STORMS IN THE NEXT 3-5 YEARS, IMPLICATIONS IF RIPRAP IS TOO SMALL, OR PAD TOO SHORT ARE MINOR AND CAN BE DEALT W/ OVER TIME - NOT CATASTROPHIC

NEXT ANALYZE DRAINAGE AT PASEO ENTX. BECAUSE THERE IS NO MORE AVAILABLE OUTFALLS TO ARROYO (No. BRANCH PEDRO MARCADAS)

THERE IS 39 CFS (Q_{100}) IN GUTTER, FLOWS FROM BASIN C-2

Q_{100} = 46 CFS DEVELOPED
= 23 CFS CUN

∴ COMBINED FLOW IN GUTTER = 23 + 39 = 62 CFS

CAPACITY OF "DOUBLE C", SUMP CONDITION (C = 0.62)

$Q_{CAPACITY}$ = 34 CFS

$Q_{10} \cong \frac{62}{2} \cong 31$ CFS < 34 CFS OK

NO PROBLEM FOR 10 YEAR STORM, SOME OVER FLOW FOR 100 YEAR STORM TO SURFACE INLET ON OTHER SIDE

DAN HOGAN WANTS INLET AS IN WHAT'S SHOWN ON 2/91 VERSION OF PLAN

OTHERS WANT CMP RISER W/ HOLES

THIS IS SIGNIFCANT ARROYO — LARGE FLOWS, PROBABLY 400 CFS FOR Q100 IN CURRENT CONDITIONS ($Q10 \cong 200$ CFS)

NO ROOM FOR PONDING, DETENTION ETC. USE STRUCTURE AS SHOWN ~ NO CHANGES

HOWEVER, RE-EVALUATE PIPE SIZE — TO GET MAXIMUM PRACTICLE SIZE IN.

WHAT WAS ULTIMATELY PLANNED WAS A 24" AND A 36" LATERAL — BEST TO PUT IN ONE LATERAL NOW W/ EQUIV CAPACITY

FROM MANNINGS (5.00%, n=.013)

CAPACITY 24" = 51 CFS
CAPACITY 36" = 149 CFS

200 CFS, OK FOR 10 YEAR

FIND PIPE W/ SIMILAR CAPACITY = 42"
HAS 225 CFS CAPACITY @ 5%, OK

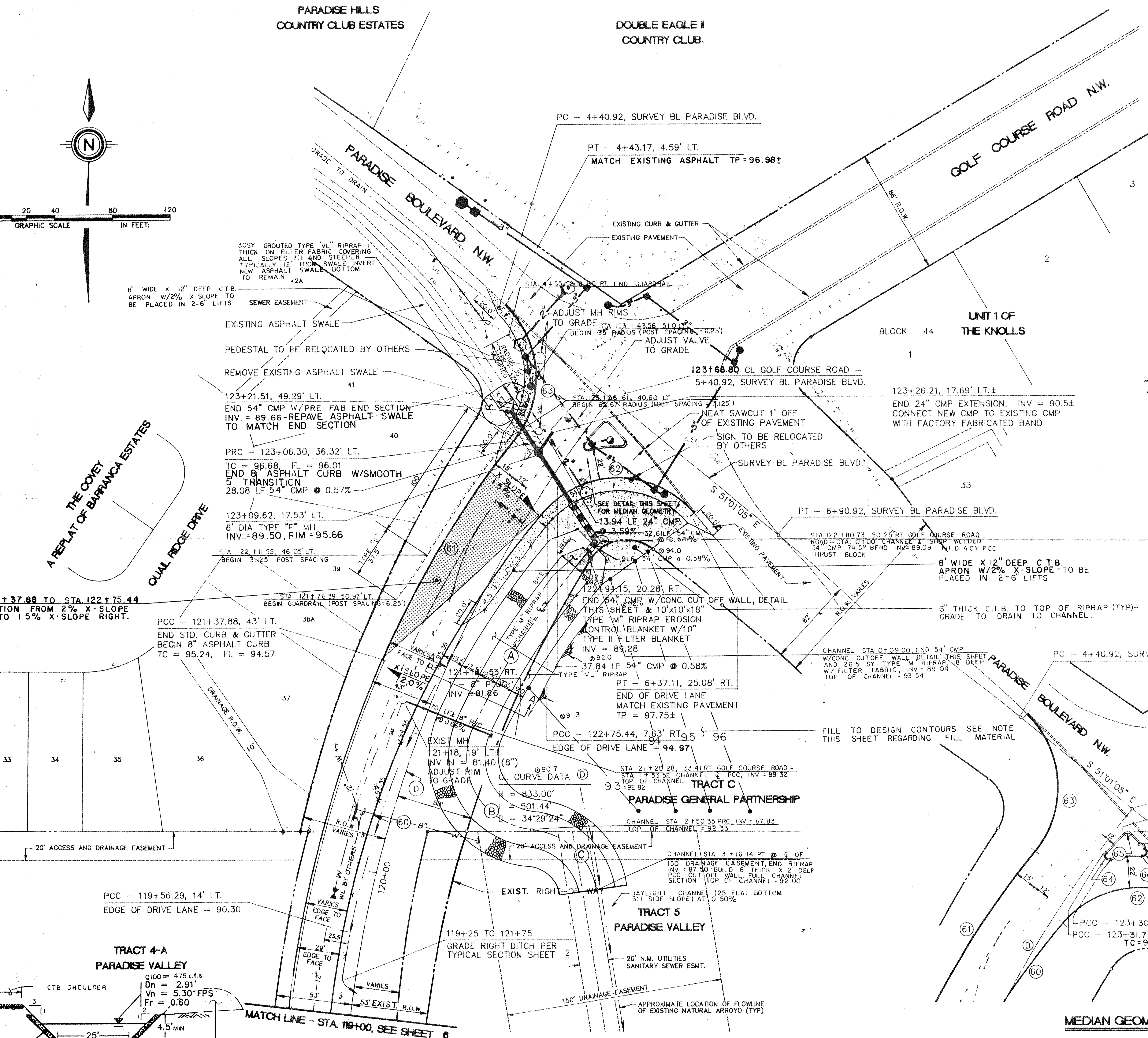
NOW SIZE OUTFALL FOR TOTAL CAPACITY OF LATERALS, IF CMP n=0.24, SLOPE WILL BE ≈ 6.5%

48" → Q = 198.9 CFS ≅ 200 CFS, GOOD

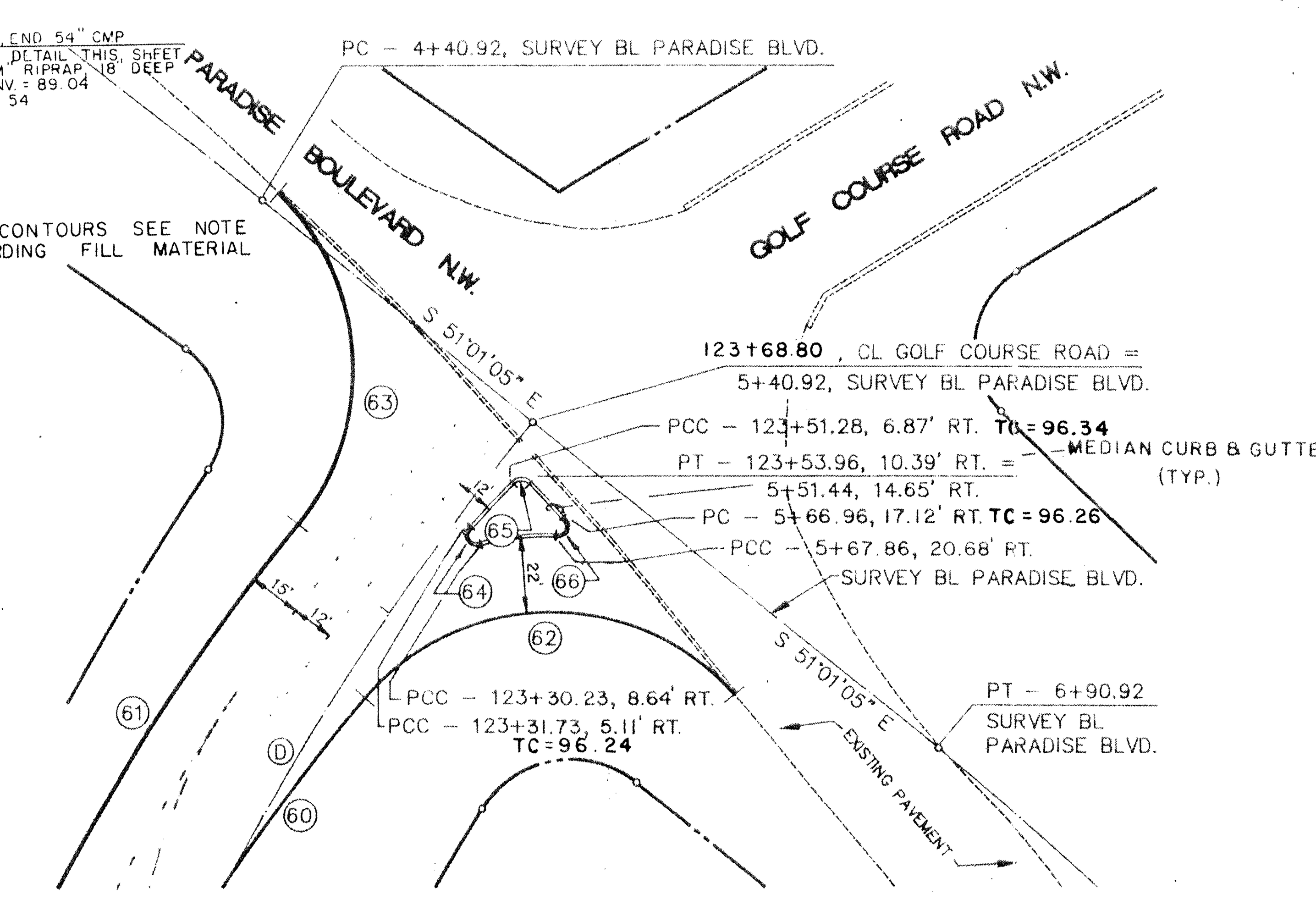
TOOK ANOTHER LOOK @ PARADISE INLET. AND IT SEEMS A 54" WILL FIT, RE-EVALUATE:

BUILDUP HEAD (FROM CENTER OF PIPE) = 4.10

∴ $Q_{CAPACITY}$ = 160 CFS ≅ 10 YEAR STORM, GOOD BECAUSE THE 34% IMPERVIOUS ASSUMED FOR THIS BASIN IS REALLY HIGHER THAN EX. CONDITION.



PARADISE HILLS
COUNTRY CLUB ESTATES
DOUBLE EAGLE II
COUNTRY CLUB
GRAPHIC SCALE IN FEET
PC – 4+40.92, SURVEY BL PARADISE BLVD.
PT – 4+43.17, 4.59' LT.
MATCH EXISTING ASPHALT TP = 96.98±
PARADISE BOULEVARD N.W.
GOLF COURSE ROAD N.W.
EXISTING CURB & GUTTER
EXISTING PAVEMENT
UNIT 1 OF
THE KNOLLS
BLOCK 44
ADJUST MH RIMS TO GRADE
ADJUST VALVE TO GRADE
123+68.80 CL GOLF COURSE ROAD = 5+40.92, SURVEY BL PARADISE BLVD.
123+26.21, 17.69' LT.±
END 24" CMP EXTENSION. INV = 90.5±
CONNECT NEW CMP TO EXISTING CMP WITH FACTORY FABRICATED BAND
8' WIDE X 12" DEEP C.T.B APRON W/2% X-SLOPE TO BE PLACED IN 2-6" LIFTS
SEWER EASEMENT
EXISTING ASPHALT SWALE
PEDESTAL TO BE RELOCATED BY OTHERS
REMOVE EXISTING ASPHALT SWALE
123+21.51, 49.29' LT.
END 54" CMP W/PRE-FAB END SECTION
INV. = 89.66-REPAVE ASPHALT SWALE TO MATCH END SECTION
NEAT SAWCUT 1' OFF OF EXISTING PAVEMENT
SIGN TO BE RELOCATED BY OTHERS
SURVEY BL PARADISE BLVD.
PRC – 123+06.30, 36.32' LT.
TC = 96.68, FL = 96.01
END 8" ASPHALT CURB W/SMOOTH 5' TRANSITION
28.08 LF 54" CMP @ 0.57%
123+09.62, 17.53' LT.
6' DIA TYPE "E" MH
INV. = 89.50, RIM = 95.66
THE COVEY
A REPLAT OF BARRANCA ESTATES
QUAIL RIDGE DRIVE
PT – 6+90.92, SURVEY BL PARADISE BLVD.
S 51°01'05" E
SEE DETAIL THIS SHEET FOR MEDIAN GEOMETRY
13.94 LF 24" CMP @ 3.59%
8' WIDE X 12" DEEP C.T.B APRON W/2% X-SLOPE TO BE PLACED IN 2-6" LIFTS
STA. 121 + 37.88 TO STA. 122 + 75.44
TRANSITION FROM 2% X-SLOPE LEFT TO 1.5% X-SLOPE RIGHT.
122+94.15, 20.28' RT.
END 54" CMP W/CONC. CUT-OFF WALL, DETAIL THIS SHEET & 10'x10'x18" TYPE "M" RIPRAP EROSION CONTROL BLANKET W/10" TYPE II FILTER BLANKET
INV = 89.28
6" THICK C.T.B. TO TOP OF RIPRAP (TYP) - GRADE TO DRAIN TO CHANNEL.
PCC – 121+37.88, 43' LT.
END STD. CURB & GUTTER
BEGIN 8" ASPHALT CURB
TC = 95.24, FL = 94.57
37.84 LF 54" CMP @ 0.58%
PT – 6+37.11, 25.08' RT.
END OF DRIVE LANE
MATCH EXISTING PAVEMENT
TP = 97.75±
PCC – 122+75.44, 7.63' RT.
EDGE OF DRIVE LANE = 94.97
FILL TO DESIGN CONTOURS SEE NOTE THIS SHEET REGARDING FILL MATERIAL
EXIST MH
121+18, 19' LT.
INV IN = 81.40 (8")
ADJUST RIM TO GRADE
CL CURVE DATA
R = 833.00'
L = 501.44'
Δ = 34°29'24"
TRACT C
PARADISE GENERAL PARTNERSHIP
20' ACCESS AND DRAINAGE EASEMENT
EXIST. RIGHT OF WAY
TRACT 5
PARADISE VALLEY
PCC – 119+56.29, 14' LT.
EDGE OF DRIVE LANE = 90.30
119+25 TO 121+75
GRADE RIGHT DITCH PER TYPICAL SECTION SHEET 2
20' N.M. UTILITIES SANITARY SEWER ESMT.
150' DRAINAGE EASEMENT
APPROXIMATE LOCATION OF FLOWLINE OF EXISTING NATURAL ARROYO (TYP)
MATCH LINE – STA. 119+00, SEE SHEET 6



PC – 4+40.92, SURVEY BL PARADISE BLVD.
PARADISE BOULEVARD N.W.
GOLF COURSE ROAD N.W.
123+68.80, CL GOLF COURSE ROAD = 5+40.92, SURVEY BL PARADISE BLVD.
PCC – 123+51.28, 6.87' RT. TC = 96.34
PT – 123+53.96, 10.39' RT. =
5+51.44, 14.65' RT.
MEDIAN CURB & GUTTER (TYP.)
PC – 5+66.96, 17.12' RT. TC = 96.26
PCC – 5+67.86, 20.68' RT.
SURVEY BL PARADISE BLVD.
S 51°01'05" E
PCC – 123+30.23, 8.64' RT.
PCC – 123+31.73, 5.11' RT.
TC = 96.24
PT – 6+90.92
SURVEY BL PARADISE BLVD.
EXISTING PAVEMENT

MEDIAN GEOMETRY DETAIL

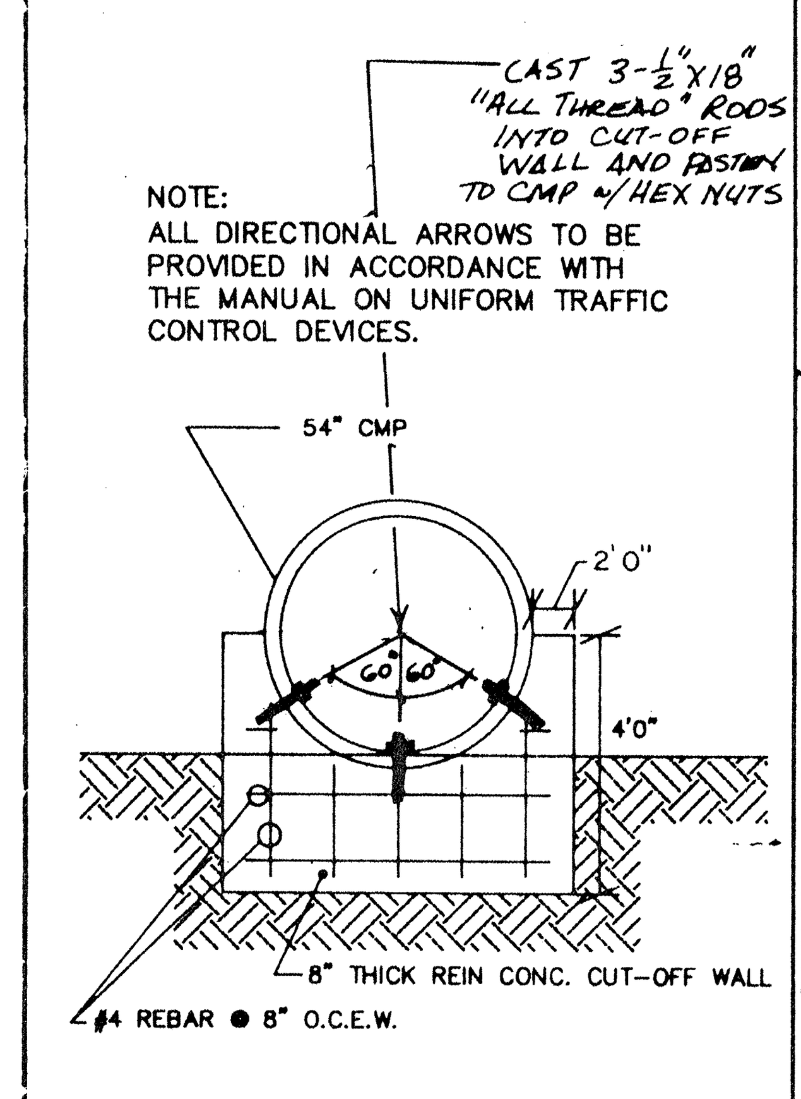
CURB & EDGE OF DRIVE LANE CURVE DATA			
CURVE NO.	RADIUS	ARC	DELTA
60	625.00	322.70	029°34'57"
61	637.00	176.83	015°54'19"
62	70.00	121.95	099°49'10"
63	70.00	103.85	085°00'08"
64	2.00	5.10	146°05'58"
65	3.00	4.94	094°25'27"
66	2.00	4.66	133°35'10"

TRAFFIC SIGNALIZATION LEGEND

- PROVIDE STREET LIGHT PULL BOX
- PROVIDE LARGE (17" x 30") TRAFFIC SIGNAL PULL BOX PER C.O.A. STD. DRWG. 2520
- PROVIDE MASTARM FOUNDATION TYPE II PER C.O.A. STD. DRWG. 2526
- PROVIDE PEDESTAL FOUNDATION TYPE I PER C.O.A. STD. DRWG. 2525
- PROVIDE CONTROLLER FOUNDATION TYPE I PER C.O.A. STD. DRWG. 2527
- 3" — PROVIDE 3" SCHD. 40 PVC ELEC. CONDUIT (TRAFFIC SIGNAL)
- 2" — PROVIDE 2" SCHD. 30 PVC ELEC. CONDUIT (LIGHTING)

NOTE FOR FUTURE REFERENCE: ALL CMP STORM DRAIN SHOWN ON THIS SHEET SHALL BE CONSIDERED TEMPORARY.

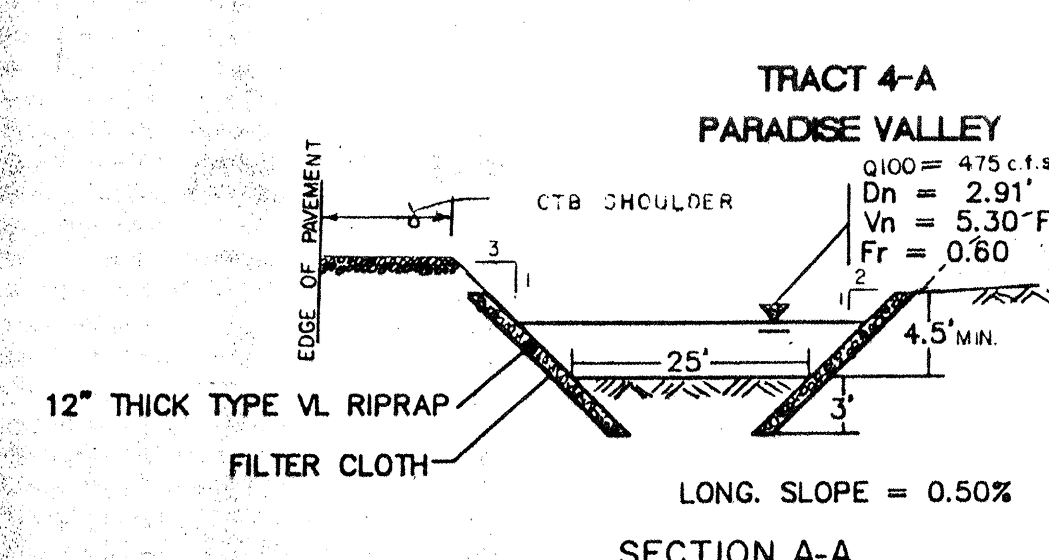
NOTE:
ALL DIRECTIONAL ARROWS TO BE PROVIDED IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.



CUT-OFF WALL DETAIL
NTS

TYPE II FILTER SPECS.

SIEVE SIZE	% PASSING BY WEIGHT
2"	90-100
3/4"	20-90
#4	0-20
#200	0-3



SECTION A-A
TYPICAL CHANNEL SECTION
NTS

EXCESS CHANNEL EXCAVATION IS TO BE WINDROWED ALONG THE EAST SIDE OF THE CHANNEL WITH SIDE SLOPE NOT STEEPER THAN 1:4. THIS STOCKPILED EXCESS SHALL BE FREE FROM WOOD, VEGETATION, OR OTHER DELETERIOUS MATTER, BUT SHALL CONTAIN SUFFICIENT SAND OR FILLER TO PERMIT PROPER COMPACTION. THE MAXIMUM SIZE OF THIS MATERIAL SHALL NOT BE GREATER THAN 4".

CHANNEL CENTERLINE CURVE DATA

NUMBER	RADIUS	DELTA	ARC
A	583.5'	15°04'29"	153.52'
B	50.0'	110°57'33"	96.83'
C	50.0'	75°23'44"	65.79'

AS BUILT INFORMATION

CONTRACTOR / DATE
WORK STAKED BY / DATE
INSPECTOR'S ACCEPTANCE BY / DATE
FIELD VERIFICATION BY / DATE
DRAWINGS CORRECTED BY / DATE
MICRO-FILM INFORMATION
RECORDED BY / DATE
NO.

BENCH MARKS

BENCHMARK USED FOR THIS PLAT IS A.C.S. "3-D-11", AN "X" CHISELED ON TOP OF THE CURB AT THE S.S.E. CURB RETURN LOCATED AT THE SOUTHEAST QUADRANT OF THE INTERSECTION OF TAYLOR RANCH DRIVE, N.W. AND CALLE NORTENA, N.W. ELEVATION 5198.95. (REVISED EL. = 5200.01 FT., MARCH, 1987).

SURVEY INFORMATION — FIELD NOTES

NO.	BY	DATE
1	CSC	5/89

ENGINEER'S SEAL

MICHAEL J. YOST, NEW MEXICO, 9665, REGISTERED PROFESSIONAL ENGINEER, 2/6/91

REVISIONS

NO.	DATE	REMARKS	BY
1.	3/92	DRAINAGE IMPROVEMENTS	CSC

DESIGN

		DATE
DESIGNED BY	MJY, MKS	1-91
DRAWN BY	MKS	1-91
CHECKED BY	MJY	

DATE 3-12-92
SCALE 1" = 40'
DESIGNED J D H
DRAWN D J T
JOB NO. 218-01-610

community sciences corporation
LANDPLANNING ENGINEERING SURVEYING
P.O. Box 1328 Corrales, N.M. 87048

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

TITLE: DRAINAGE IMPROVEMENTS CHANGE ORDER
GOLF COURSE ROAD, N.W. - PHASE I

APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
DRC CHAIRMAN	[signature]	8-15-91	WATER	[signature]	4-25-91
TRANSPORTATION	[signature]	4-24-91	WASTE WATER	[signature]	"
HYDROLOGY	[signature]	8-15-91			

PROJECT NO. 3875.90 | MAP NO. B8&C12 | SHEET 8 OF 9