

PROJECT REPORT

DATE:	October 14, 2024
NAME	Bristol Ponds Channel / Patty Pitcock
ADDRESS / LOCATION	North of Washington St. West of Elm Pl. (West of 1730 S Elm Pl.)
WATERSHED	Haikey Creek
ESTIMATE	\$50,000 (Un-named Funds)
CASE NO.	24-016

DESCRIPTION

Bristol Ponds is located North of Washington St. and West of Elm Pl. Bristol Ponds subdivision was platted and designed in 2005 and is the most recent development in its respective drainage area. Bristol Ponds is a private, gated subdivision.

The Bristol Ponds south detention area was designed to act as a conveyance area, provide additional storage for offsite stormwater runoff, and to serve as a private amenity to the Bristol Ponds subdivision. Reserve H, which contains the detention pond, is privately owned and maintained by the Bristol Ponds HOA.

The channel flows between Bristol Ponds and Village Park subdivisions and conveys offsite runoff through the Bristol Ponds detention area as designed. Approximately 346 CFS at 13.2 FPS (erosive) was originally conveyed through the channel towards the detention area prior to the Bristol Ponds development. The Metroland (commercial) development plans showed slowing the velocities to 5.96 FPS (6 fps is considered erosive). Per the Bristol Ponds drainage plans, the flow velocity was then reduced to 3.67 FPS (non-erosive) as the channel neared the pond. However, the Bristol Ponds detention area was not constructed as designed. The concrete lined channel does not extend to the pond as designed and energy dissipators were not constructed per plan. Current conditions of the channel and pond appear to be in part, a result of erosive velocities of stormwater flows.

Neither offsite development nor actions by the City have been linked to the current concerns of the applicant. However, the channel flowing into Bristol Ponds detention area is now owned by the City of Broken Arrow. Therefore, staff is requesting the expenditure of \$50,000 of un-named funds to investigate and design mitigation for existing erosion and erosive velocities of stormwater flows in the channel between Elm Pl. and Bristol Ponds south detention area.

The City owns the channel between Bristol Ponds and Elm Place. The City owns property adjacent to Reserve H. The pond, its structures, and utilities are privately owned by the Bristol Ponds POA.

Case No. 24-016

BENEFIT

The potential benefit of the erosion mitigation investigation and design is to ensure that the drainage system is functioning as designed with respect to volume capacity, velocity and confirm offsite drainage areas are being served as intended.

RECOMMENDATION

Staff recommends approval of \$50,000.00 in funds to investigate and design mitigation for existing erosion and erosive velocities in the Bristol Ponds south detention pond and in the channel between Elm Pl. and Bristol Ponds south detention area.

COMPLETED BY: Chuck Collins**DATE: 10/14/24**


City of Broken Arrow

Drainage Advisory Committee



APPLICATION

DATE:	October 22, 2024
OWNER NAME:	Bristol Ponds/City of Broken Arrow
PHONE NUMBER:	918-808-3290
EMAIL ADDRESS:	pattijpit@hotmail.com
OWNER MAILING ADDRESS:	905 W Urbana St BA, Ok 74012
ADDRESS OF PROPERTY WITH DRAINAGE PROBLEM:	Bristol Ponds south pond to the side of Arvest Bank running east tp Elm
LOCATION OF DRAINAGE ISSUE ON PROPERTY:	see above

DESCRIPTION OF PROBLEM:	(*PHOTOS SHOULD ACCOMPANY APPLICATION)
<p>Per communication with Mr. Wilson, we, as a homeowners group, were urged to complete this form for consideration of assistance since the city os onvolved and met with us previously. Per his last email, in October, "the city has reviewed existing plans for the concrete channel and Bristol Ponds subdivision. The plans for the channel DO SHOW velocities leaving Elm Place to be erosive. There is riprap included to slow the velocities down. Also, plans for Bristol Ponds showed more energy dissipators at the end of the channel. From aerial photos, it appears these dissipators were not ever constructed. Mr. Wilson recommended that we, as homeowners, complete this form.</p> <p>The south bank of our pond, has rapidly deteriorated due to this absence of dissipators. We realize natural erosion will occur over time, but within this last year, it has deteriorated more than the 5 years beforehand combined. We are hoping for some options to limit/lessen our concerns. Part of the land on the south bank belongs to the city per what we have been told.</p> <p>Charles and Patti Pitcock</p> <p>Signature:  October 22, 2024</p>	

RETURN TO STORMWATER DIVISION MANAGER'S OFFICE, PO BOX 610 Broken Arrow, OK 74013

Aerial Map

IMPROVEMENTS NOT CONSTRUCTED PER BRISTOL PONDS DEVELOPMENT PLANS

S. ELM PLACE

E. 91st St.



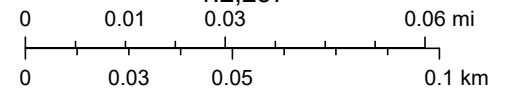
Utility Map



10/14/2024, 9:39:07 AM

1:2,257

Parcels	BMP Boundary	Pipe	Wall	Fitting	Junction Box
Blue Line Streams (ODOT)	Linear Drain	Gravity	Unknown	Wye	Manhole
FEMA Streams	Slotted Drain	Catch Basin	Headwall	Outlet	Manhole
Address Points	Open Channel	Drop Inlet		Pipe Outlet	
	Spillway Channel				



Copyright nearmap 2015. Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community, City of Tulsa, US Census Bureau, INCOG, & unknown, City of Broken Arrow Geospatial Services Division

City of Broken Arrow

CHANNEL PHOTOS

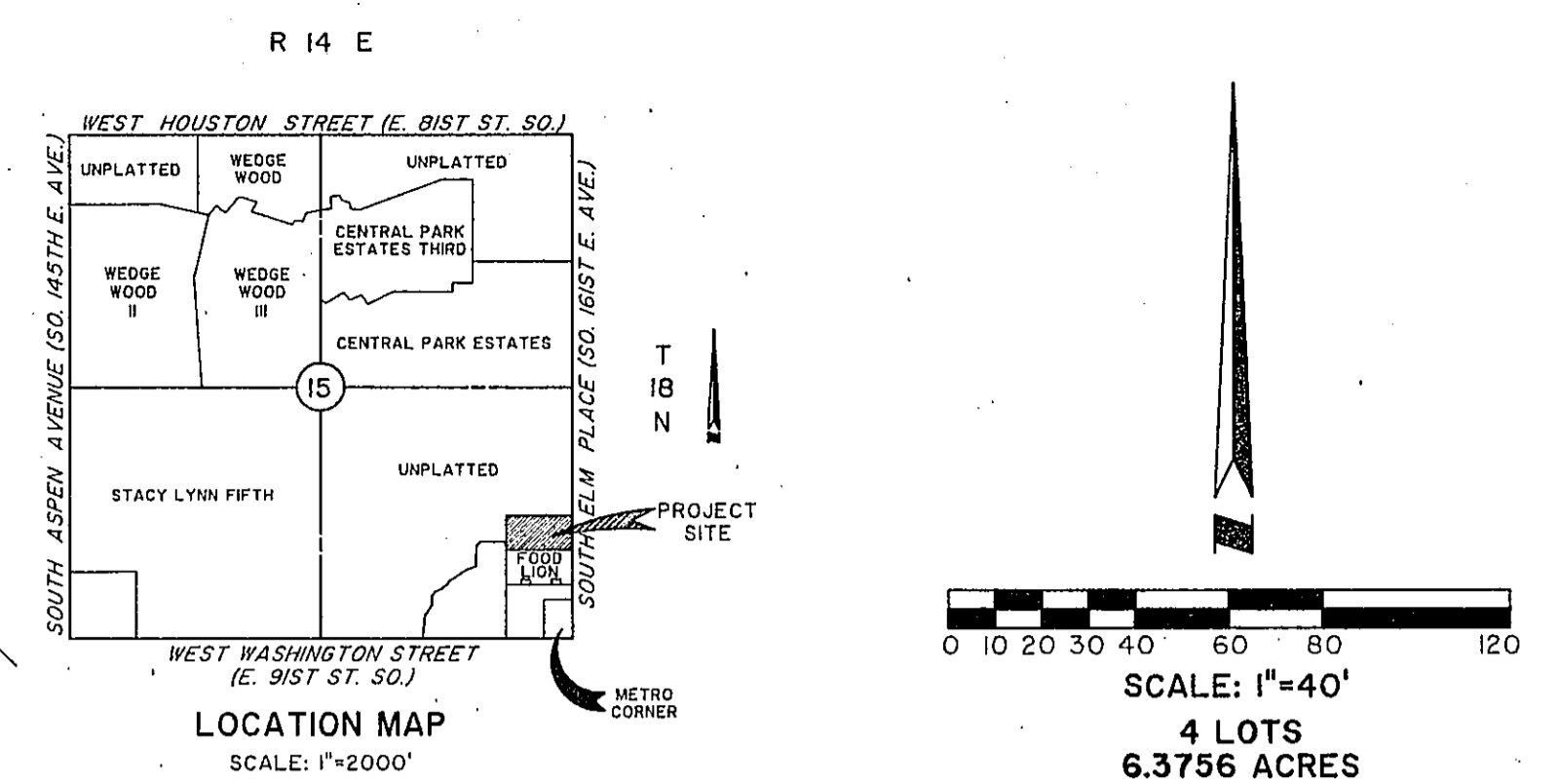




DETENTION POND PHOTOS



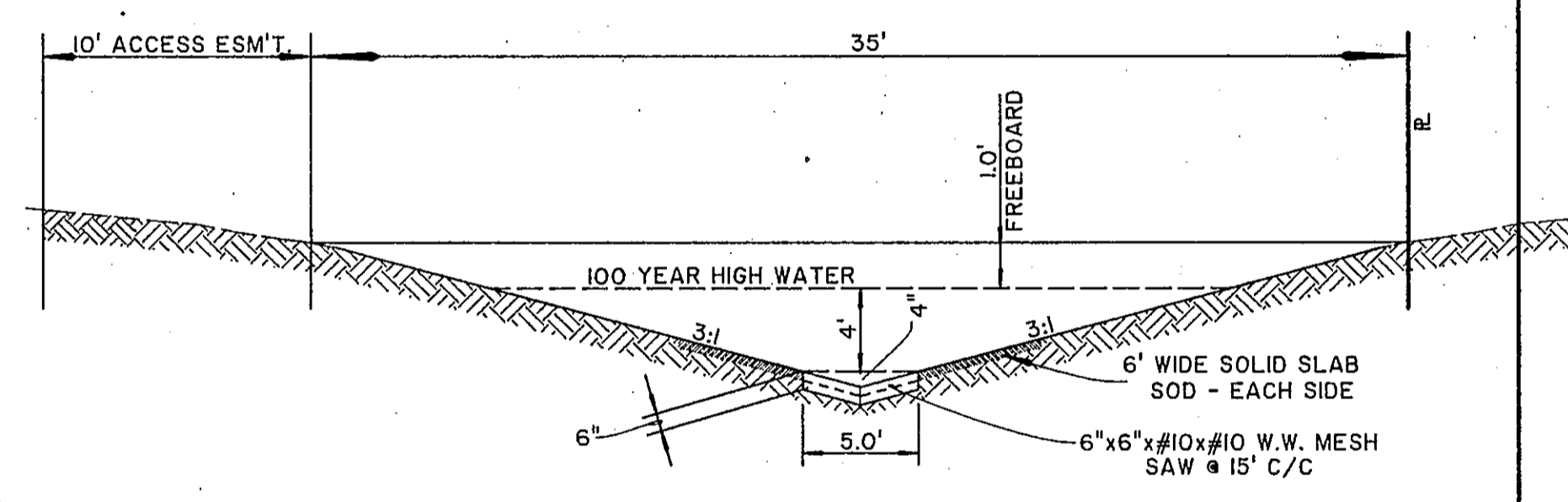
METROLAND COMMERCIAL CENTER



- LEGEND**
- B.L. - DENOTES BUILDING LINE
 - U/E - DENOTES UTILITY EASEMENT
 - L.A. - DENOTES LIMITS OF ACCESS
 - L.N.A. - DENOTES LIMITS OF NO ACCESS
 - D/E - DENOTES DRAINAGE EASEMENT
 - P - DENOTES PAVING
 - T.C. - DENOTES TOP OF CURB
 - N.G. - DENOTES NATURAL GROUND
 - ⊙ - DENOTES SOIL BORING
 - R/W - DENOTES RIGHT-OF-WAY
 - ▨ - DENOTES STRAW BALES
 - ⋯ - DENOTES SILT FENCE

OWNER:
METROLAND DEVELOPMENT PARTNERSHIP
AN OKLAHOMA GENERAL PARTNERSHIP
9168 SOUTH FLORENCE PLACE
TULSA, OKLAHOMA 74137
TEL. (918) 481-8838

ENGINEERS:
COX & ASSOCIATES, INC.
7935 EAST 57TH STREET SOUTH
TULSA, OKLAHOMA 74145
TEL. (918) 664-3337



NOTE:
EXISTING 7"x4" R.C.B. ON 0.80% V=13.2 F.P.S. Q=346 C.F.S.

SECTION A-A PAVED DITCH CROSS SECTION
SCALE 1" = 4' H. & V.

D.A. = 76.6 ACRES
Q100 = 363 C.F.S.
Q10 = 203 C.F.S.
FLOW DEPTH = 4.33 FT.
AREA = 69.64 SQ. FT.
WP = 30.30 FT.
SLOPE = 0.65%
N = 0.035
V = 5.96 F.P.S.
Q = 415 C.F.S.
QREQ = 363 C.F.S.

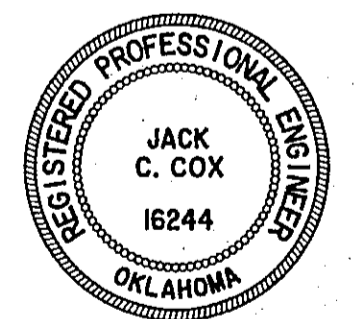
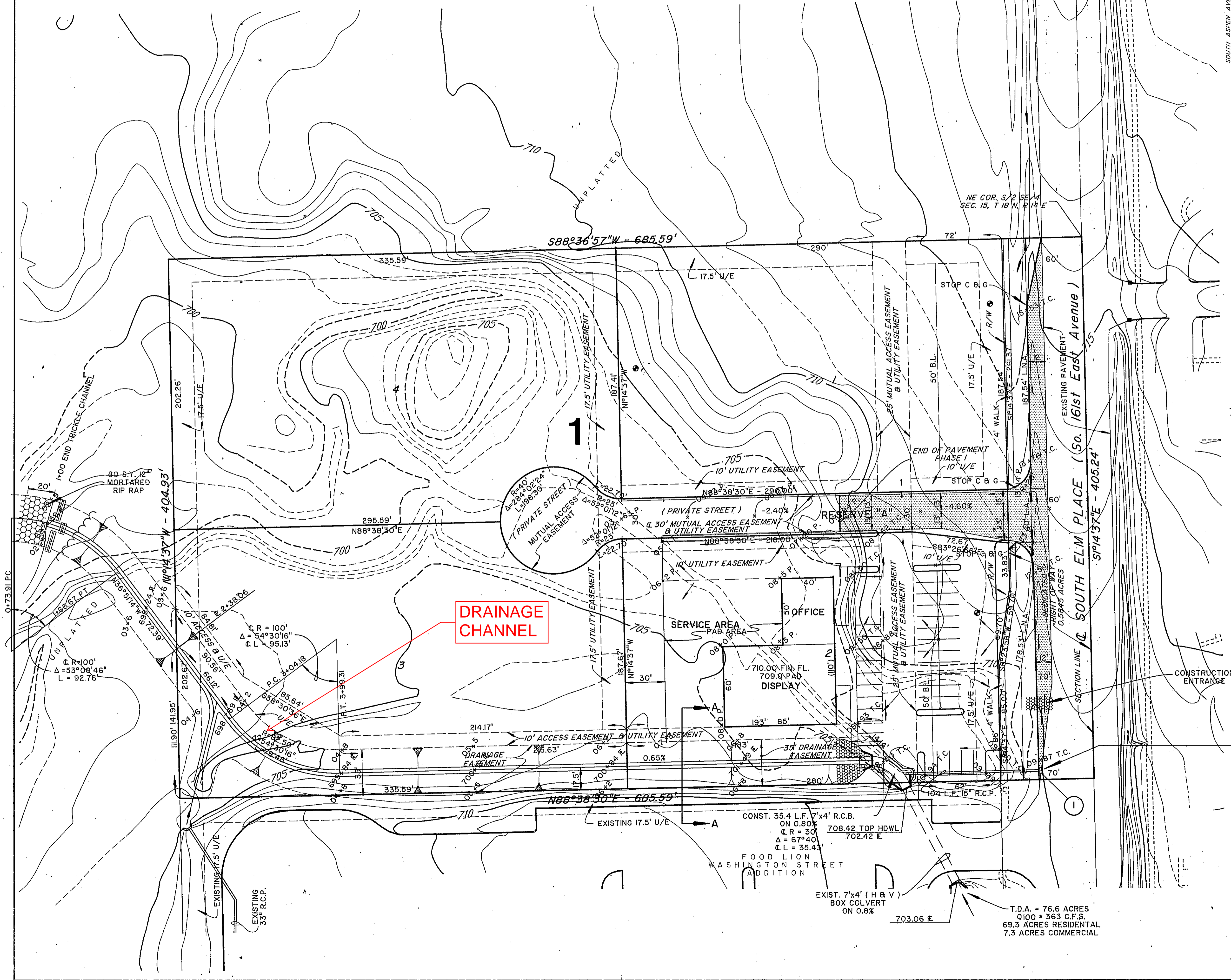
BENCH MARK: 5/8" REBAR - ALUM. CAP STAMPED "106", 11.5' WEST OF ELM PLACE & 75' NORTH OF TOLEDO PLACE ELEVATION 715.97 U.S.G.S. DATUM.

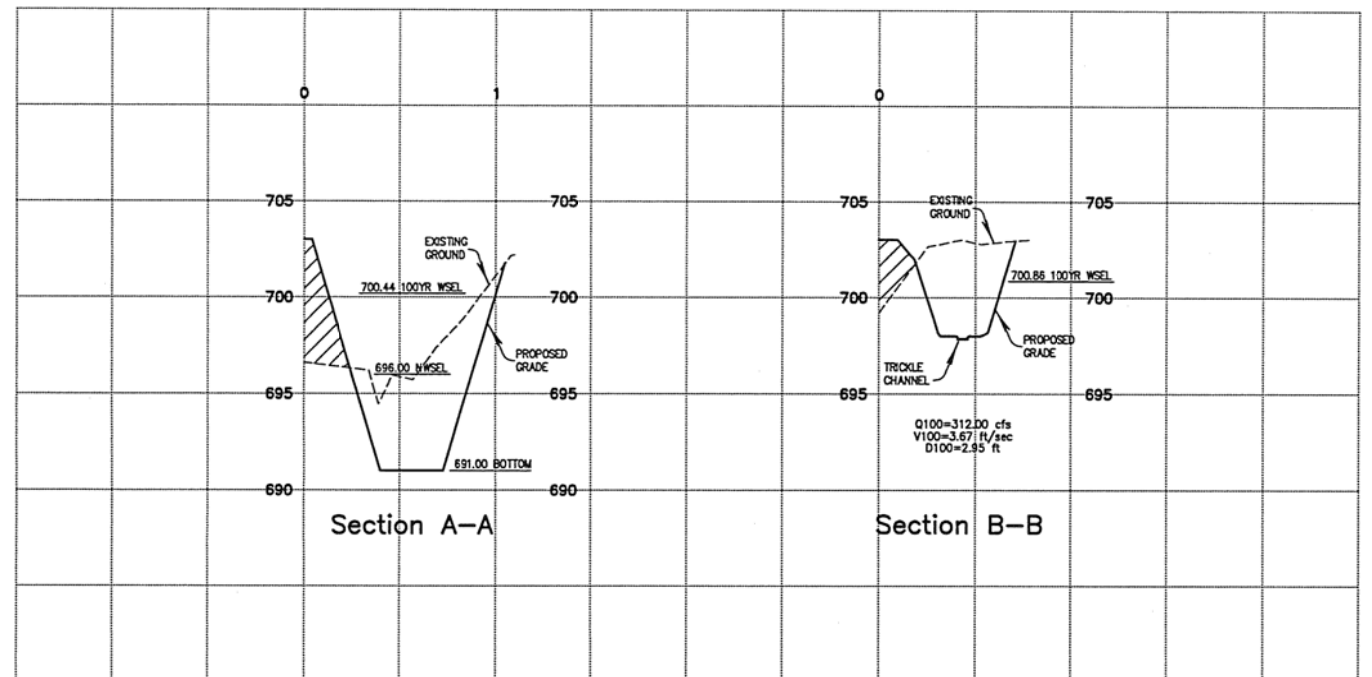
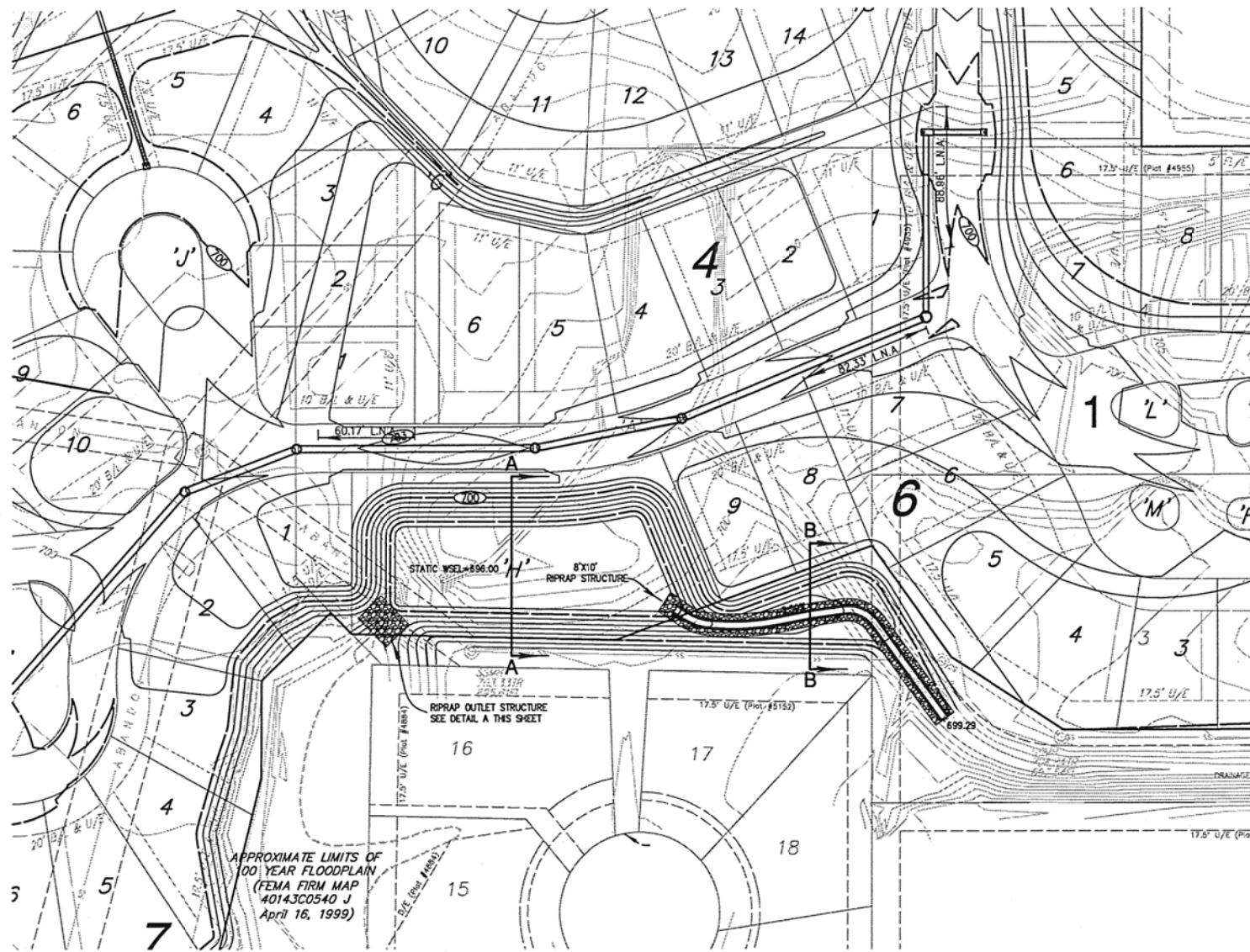
0+07.00
D.G.D.I.
D.A. = 0.94 AC

CITY OF BROKEN ARROW
ENGINEERING DEPARTMENT
No Exceptions Taken
Make Corrections Noted
Revised and Resubmit
Approved: *[Signature]*
CITY ENGINEER
DATE: 09-21-93

GRADING & DRAINAGE PLAN
METROLAND COMMERCIAL CENTER
LOT 2, BLOCK 1
CITY OF BROKEN ARROW, OKLAHOMA
PLANS & ESTIMATES PREPARED BY: COX & ASSOCIATES, INC. ENGINEERS
7935 East 57th Street South Tulsa, Oklahoma 74145

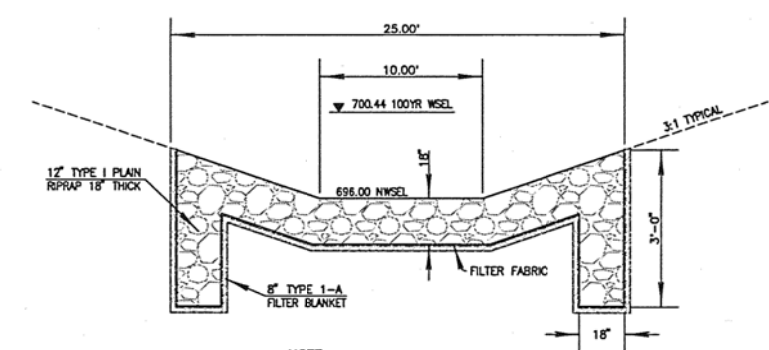
REVISION	BY	DATE	PLAN SCALE:	DR. BY:	APPROVED:
			1" = 40'	CK. BY:	
			PROFILE SCALE:	APP. BY:	
			Horizontal:	DATE:	
			Vertical:	RECOMMENDED:	CITY ENGINEER
			FILE:	DRAWING:	DATE:
			ATLAS PAGE NO.		SHEET 1 OF 6 SHEETS



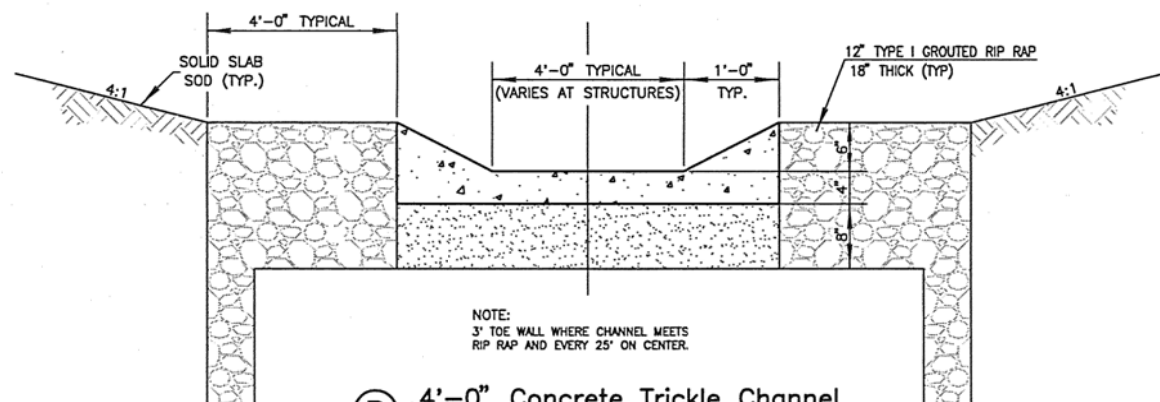


RETURN PERIOD	5 YEAR	10 YEAR	25 YEAR	50 YEAR	100 YEAR	500 YEAR
DETENTION VOLUME (acre-ft)	1.34	1.56	1.77	1.95	2.12	2.52
PEAK INFLOW (cfs)	149.5	194.8	238.5	275.7	311.9	395.6
PEAK OUTFLOW (cfs)	147.8	192.7	236.1	273.0	308.7	391.8
PEAK ELEVATION (ft)	698.71	699.24	699.71	700.09	700.44	701.20

- GENERAL NOTES:**
- ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT OKLAHOMA STANDARD SPECIFICATION.
 - REINFORCING STEEL IN BOTTOM SLAB SHALL BE SUPPORTED ON METAL BAR CHAIRS. CHAIRS SHALL BE SUPPORTED ON TIMBER PLANK OR CLASS "C" CONCRETE STRIPS SPACED AT 4' CENTER TO CENTER. THE TOP OF SUPPORTS SHALL BE AT THE ELEVATION OF THE BOTTOM OF THE FOOTING.
 - REINFORCING STEEL IN TOP SLAB SHALL BE SUPPORTED ON METAL BAR CHAIRS SPACED AT 4' CENTER TO CENTER.
 - ALL CONCRETE EDGES SHALL HAVE A 1 1/2 INCH CHAMFER UNLESS OTHERWISE SHOWN OR NOTED. ALL CHAMFER STRIPS SHALL BE SIZED LUMBER.
 - ALL REINFORCING STEEL SHALL BE GRADE 60 AND HAVE A 2 INCH MINIMUM CLEARANCE UNLESS OTHERWISE SHOWN ON THE PLANS.
 - REINFORCING STEEL IN THE WALLS SHALL BE HELD IN PLACE BY METAL BAR CHAIRS. MAXIMUM SPACING OF CHAIRS SHALL BE 6' CENTER TO CENTER.
 - COST OF METAL CHAIRS, WOOD PLANK, OR CONCRETE STRIPS SHALL BE INCLUDED IN OTHER ITEMS OF WORK.
 - ROUGHEN SURFACE AT ALL CONSTRUCTION JOINTS.
 - ALL BAR BEND DIMENSIONS ARE OUT TO OUT.
 - MINIMUM REINFORCING STEEL LAP 4'-0" UNLESS OTHERWISE SHOWN (ALL COST BID FOR REINFORCING STEEL).
 - CONCRETE RETAINING WALLS SHALL BE STAINED UPON COMPLETION OF DETENTION FACILITY WITH COLOR OF STAIN TO BE SELECTED BY OWNER (ALL COSTS INCLUDED IN PRICE BID FOR CLASS A CONCRETE).



A Rip Rap Outlet Structure
SCALE: NONE



B 4'-0 inch Concrete Trickle Channel
SCALE: N.T.S.



DATE: 7-1-05

Case # PT04-130 Development # 04-175

**Bristol Ponds
Detention Facility Plan (South)
City of Broken Arrow, Oklahoma**

ALL CONSTRUCTION TO BE IN STRICT ACCORDANCE WITH CURRENT CITY OF BROKEN ARROW ENGINEERING DEPARTMENT SPECIFICATIONS, INCLUDING O.D.O.T. 1999 EDITION AND APPLICABLE SUPPLEMENTS.

REVISION	BY	DATE

PLANS AND ESTIMATE PREPARED BY: **HRA** HALL, ROSENBAUM, ALMON & ASSOCIATES, INC.
1913 WEST TACOMA - SUITE C BROKEN ARROW, OKLAHOMA 74015
VOICE: (918) 258-3737 FAX: (918) 258-2554
CITY 3641 629. DATE: 6-22-2005

WO NO. 10693 FILE 1814.1520 APPROVED
DRAFTED BY: RWB
DATE: 12/22/04
PROFILE SCALE: RECOMMENDED
HORIZONTAL: DEVELOPMENT SERVICES
1"=50' RECOMMENDED
VERTICAL: ENGINEERING SERVICES
1"=5' PUBLIC WORKS DIRECTOR

FILE: ATLAS PAGE NO: 999 DATE: SHEET 8 OF 13 SHEETS

PATH: K:\10693\storm\ FILE: SD_pond.dwg DATE: Jul 01, 2005 4:22PM

Call Okie!
EXISTING UNDERGROUND LINES HAVE BEEN SHOWN TO THE EXTENT KNOWN. BEFORE YOU DIG, CONTACT OKLAHOMA ONE-CALL: 1-800-522-6543.