

City of Broken Arrow

Drainage Advisory Committee



PROJECT REPORT

DATE:	2/17/2021
NAME	Pembrooke Park HOA
ADDRESS / LOCATION	In vicinity of 3704 West Boston Street, Pembrooke Park Subdivision
WATERSHEAD	Haikay Creek – East Branch
ESTIMATE	\$0.00
CASE NO.	21-002

DESCRIPTION

Erosion has occurred on the west bank of the E Branch of Haikay Creek at Pembrooke Park pond. This may have been caused by undermining of a large tree that fell into the creek and forced high waters into the west bank at this section. The pond existed prior to the construction of the subdivision.

On October 28, 2019, the Drainage Advisory Committee approved \$10,000.00 for tree removal and riprap. City Council approved these funds on November 18, 2019.

Tree removal has been completed at a cost of \$3,000.00, leaving \$7,000.00 remaining for riprap. The Pembrooke Park Homeowners Association hired Keithline Engineering Group, PLLC, (Keithline) to design a set of construction documents for erosion control at the pond. Keithline opened the bids for this project on February 15, 2021.

Keithline's construction cost estimate is \$31,355.00. The portion of the project associated with the riprap is estimated at \$15,770.00. Pembrooke Park is requesting additional funds for the construction of the erosion control.

The stormwater utility fees mentioned in the application are a Broken Arrow Municipal Authority revenue source used for funding the stormwater utility function of the City, examples include storm sewer maintenance, equipment for maintenance, and the Streets & Stormwater Department as well as the Stormwater Division of Engineering and Construction.

BENEFIT

Addressing the erosion control on the private pond does not have a benefit to the City of Broken Arrow.

RECOMMENDATION

Reject Pembrooke Park's request for additional funds for construction of erosion control items on a private pond.

COMPLETED BY: *Patrick P. Wilson*

DATE: 2/17/21

City of Broken Arrow

Drainage Advisory Committee

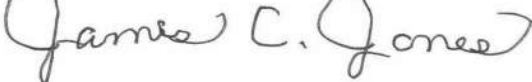


APPLICATION

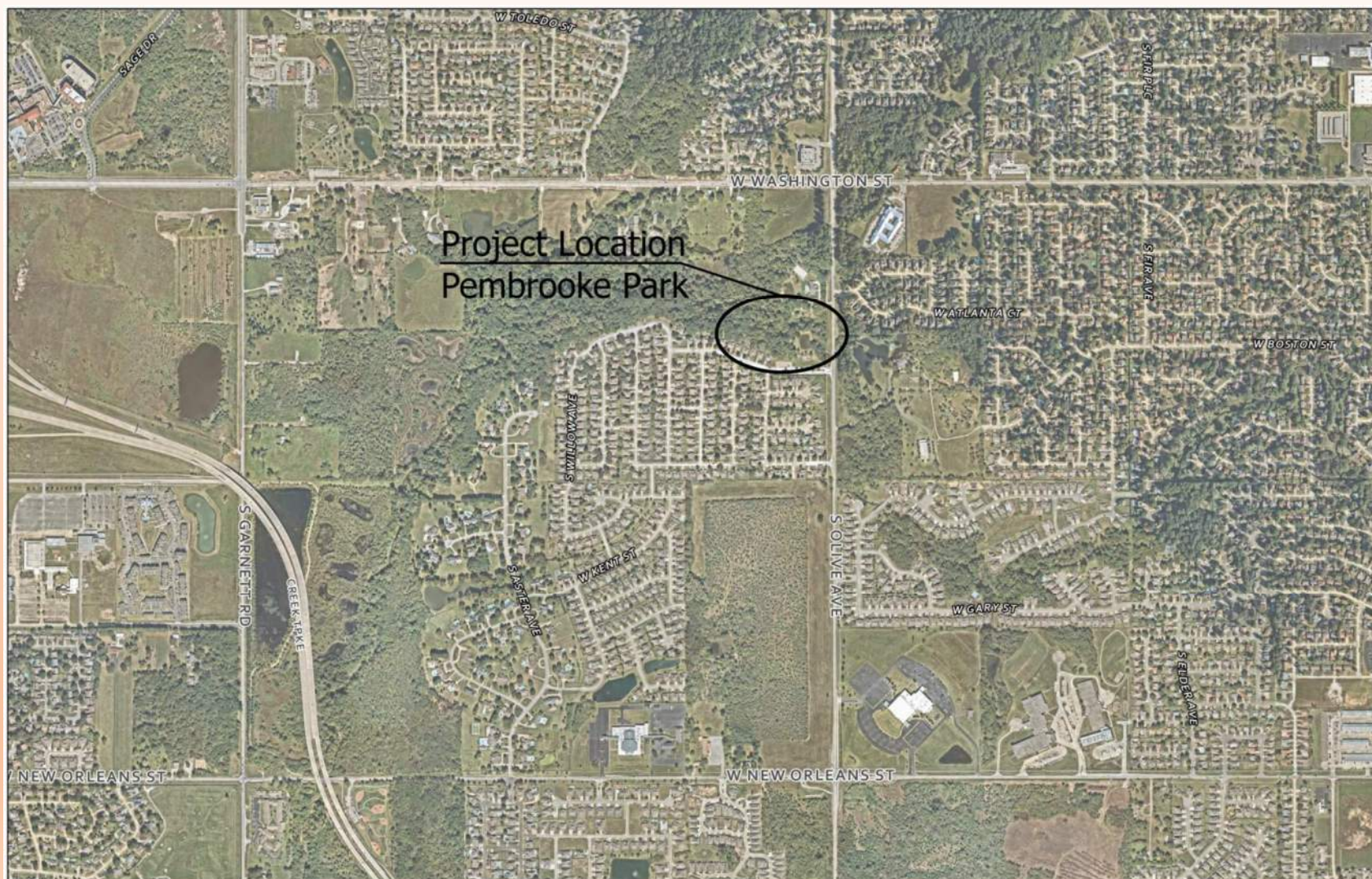
DATE:	1/22/2021
OWNER NAME:	PEMBROOKE PARKHOA (HOMEOWNER REPRESENTATIVE: JIM C. JONES)
PHONE NUMBER:	918-231-5029
EMAIL ADDRESS:	dem3bars@windstream.net
OWNER MAILING ADDRESS:	P.O. BOX 3031 B.A. OKLA. 74013
ADDRESS OF PROPERTY WITH DRAINAGE PROBLEM:	IN THE VICINITY OF 3704 WEST BOSTON STREET (NOT A LISTED ADDRESS)
LOCATION OF DRAINAGE ISSUE ON PROPERTY:	NE CORNER POND IN PEMBROOKE PARK'S PARK. ENTER PEMBROOKE PARK FROM OLIVE AVE.; WEST ON W. BOSTON ST. PARK ON NORTH SIDE OF W. BOSTON ST. ISSUE IS EAST SIDE OF POND'S PERIMETER FENCE.

DESCRIPTION OF PROBLEM: (*PHOTOS SHOULD ACCOMPANY APPLICATION)

MASSIVE EROSION TO STRUCTURE EAST OF PEMBROOKE PARK'S POND EAST FENCE. FROM THE CITY OF BROKEN ARROW ITEM OF CONSENT DOC REFERENCING FILE # 19-1364; UPON REQUEST OF ASSISTANT CITY MANAGER KENNETH SCHWAB IN THE LAST BADAC MEETING ON 10/28/2019; PEMBROOKE PARK HAS MET THE BURDEN OF OBTAINING OUR OWN PERSONAL ENGINEERING FIRM; KEATHLINE ENGINEERING GROUP, PLLC. KEATHLINE ENGINEERING WORKING IN CONJUNCTION WITH STAFF AT BA STORMWATER; HAS SUBMITTED A REPAIR PLAN TO BA STORMWATER STAFF. PEMBROOKE PARK HOA IS RE-SUBMITTING THIS APPLICATION TO ONCE AGAIN APPEAR BEFORE BADAC FOR ADDITIONAL FUNDS. AFTER CONFERRING WITH DAN KEATHLINE OF KEATHLINE ENGINEERING HE HAS OFFERED THE SUGGESTION THAT PEMBROOKE PARK SHOULD ASK BA STAFF CONSIDER PAST SORMWATER UTILITY FEES THE PEMBROOKE PARK HAVE PAID OVER THE YEARS SINCE INCEPTION OF SUCH FEES UPON THE RESIDENCE OF PEMBROOKE PARK. THANK YOU!

Signature: 

RETURN TO CITY MANAGER'S OFFICE, 220 S. 1ST St. Broken Arrow, OK 74012



BEFORE TREE REMOVAL



AFTER TREE REMOVAL



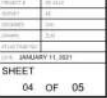
LOOKING DOWNSTREAM AT POND AND CHANNEL



POND AND CHANNEL CONTOURS



1/22/2021 4:13:19 PM



PEMBROOKE PARK

BLOCKS 1 THRU 5

A SUBDIVISION OF PART OF THE S/2 NE/4,
SECTION 20, TOWNSHIP 18 NORTH, RANGE 14 EAST,
CITY OF BROKEN ARROW, TULSA COUNTY, OKLAHOMA

OWNER:
C & I DEVELOPMENT COMPANY L.L.C.
4032 East 11th
Tulsa, Oklahoma 74137
Tel. (918) 299-1661

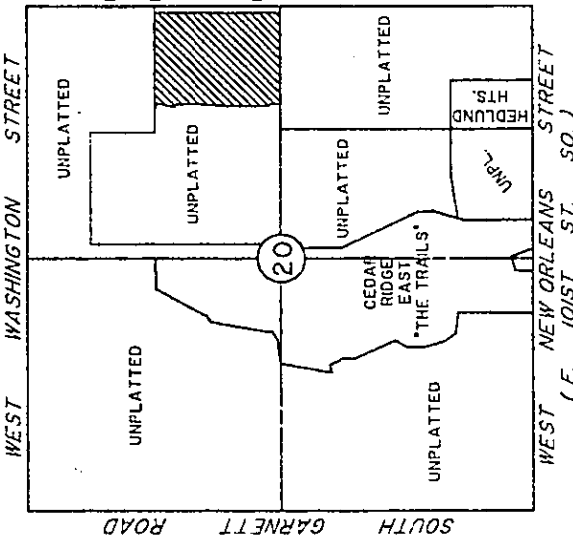
ENGINEER:
COX & ASSOCIATES, INC.
7935 East 37th Street South
Tulsa, Oklahoma 74145
Tel. (918) 664-3337

DEED OF DEDICATION
DRAINAGE
AND
RESTRICTIVE COVENANTS

SCALE: 1" = 100'

81 LOTS
29.4056 ACRES

STATE OF OKLAHOMA } ss.
COUNTY OF TULSA }
I, Joan Hastings, Tulsa County Clerk, in and
hereby certify that the foregoing is a true
and correct copy of a like instrument now
on file in my office.
Dated the 1st day of April, 1996
JOAN HASTINGS, Tulsa County Clerk



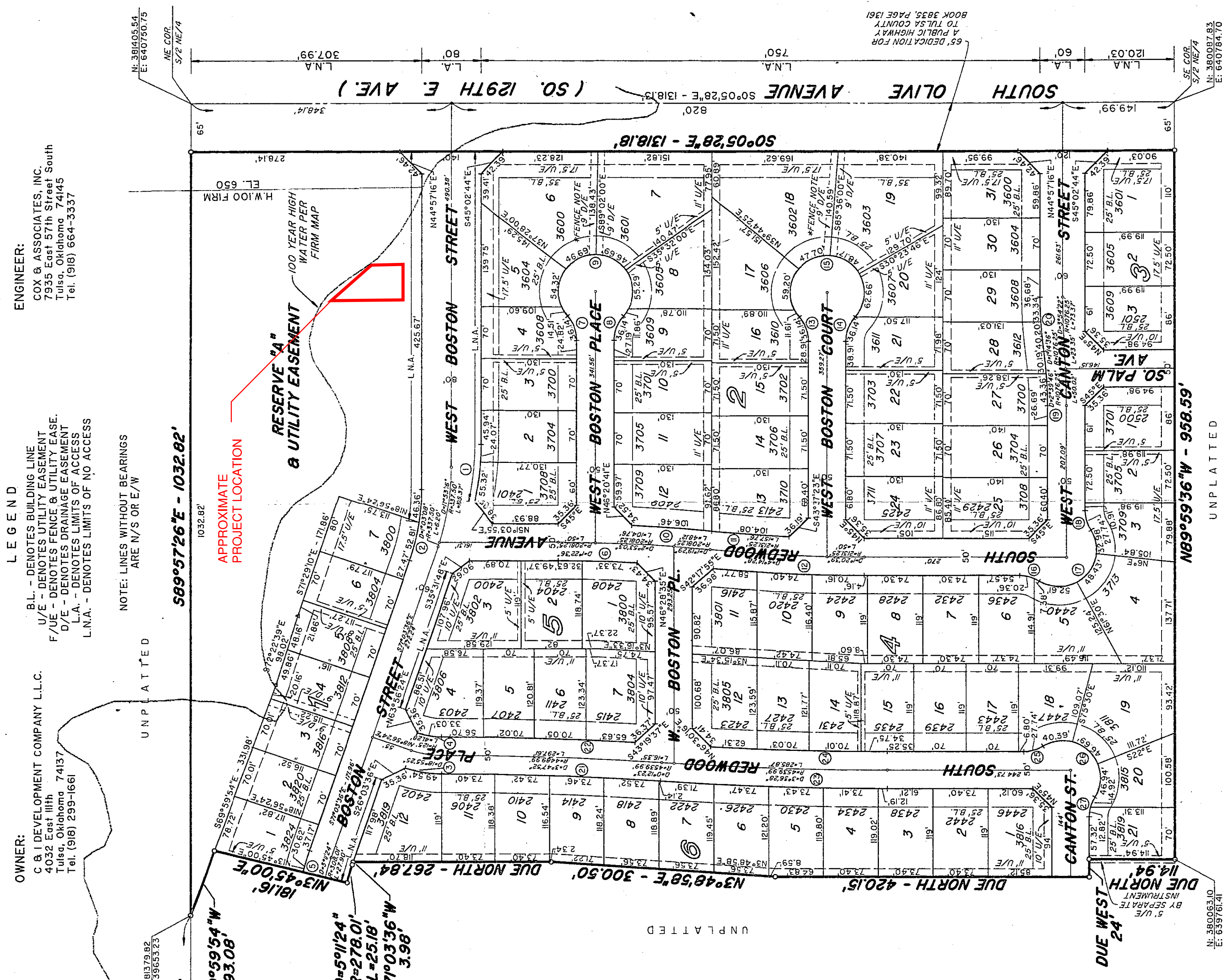
CURVE DATA TABLE

CURVE NO.	RADIUS	DELTA	LENGTH
1	375'	129°15'00"	78.40'
2	375'	129°15'00"	78.40'
3	150'	18°55'25"	49.54'
4	150'	18°55'25"	49.54'
5	338.01'	2°57'09"	105.96'
6	2056.25'	4°24'35"	36.14'
7	2056.25'	4°24'35"	36.14'
8	2056.25'	4°24'35"	36.14'
9	2056.25'	4°24'35"	36.14'
10	2056.25'	4°24'35"	36.14'
11	2056.25'	4°24'35"	36.14'
12	2056.25'	4°24'35"	36.14'
13	2056.25'	4°24'35"	36.14'
14	2056.25'	4°24'35"	36.14'
15	2056.25'	4°24'35"	36.14'
16	2056.25'	4°24'35"	36.14'
17	2056.25'	4°24'35"	36.14'
18	2056.25'	4°24'35"	36.14'
19	2056.25'	4°24'35"	36.14'
20	2056.25'	4°24'35"	36.14'
21	2056.25'	4°24'35"	36.14'
22	2056.25'	4°24'35"	36.14'
23	2056.25'	4°24'35"	36.14'
24	2056.25'	4°24'35"	36.14'
25	2056.25'	4°24'35"	36.14'
26	2056.25'	4°24'35"	36.14'
27	2056.25'	4°24'35"	36.14'

NOTE:
3/8" IRON PINS, 18" LONG, HAVE
BEEN SET IN THE GROUND AT ALL
CORNERS OF THE LOT LINES.
P.T.S. AND P.C.S. OF THE LOT LINES.

BENCHMARK:
TOP OF CAP AT THE INTERSECTION
OF WEST 1ST STREET AND
CANTON STREET (12TH E. AVE.)
ELEVATION 651.53 U.S.G.S.

CERTIFICATE
I hereby certify that all real estate taxes in-
volved in this plat have been paid as reflected
by the current tax rolls. Security as required
has been provided in the amount of \$20,000.00
per 1/2 acre, receipt no. 10181 to be applied to
1996 taxes.
This certificate is NOT to be construed as
payment of 1996 taxes in full but is given
in order that this plat may be filed of record.
1996 taxes could exceed the amount of the
security deposit.
Dated 4/1, 1996
Dennis Seidler
Tulsa County Treasurer
by [Signature]
Deputy

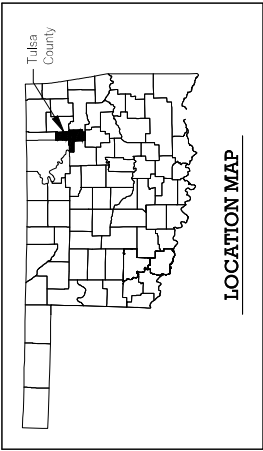


KNOW ALL MEN BY THESE PRESENTS:
THAT C & I DEVELOPMENT COMPANY L.L.C., hereinafter referred to as the
"Owner", is the Owner of the following described land:
Part of the S/2 NE/4 of Section 20, Township 18 North, Range 14 East of the
Indian Base and Meridian, according to the U.S. Government Survey thereof
in the City of Broken Arrow, Tulsa County, Oklahoma, more particularly
described as follows, to-wit:
Beginning at a point in the South boundary of said S/2 NE/4, a distance of
65.00 feet West of the Southeast corner thereof; thence N89°59'59"W along
said South boundary a distance of 958.59 feet; thence Due North a distance
of 114.94 feet; thence Due West a distance of 24.00 feet; thence Due North
a distance of 420.15 feet; thence N3°48'58"E a distance of 300.50 feet;
thence Due North a distance of 287.84 feet; thence N71°03'36"W a distance
of 181.16 feet to a point of beginning; thence N71°03'36"W a distance
of 181.16 feet to a point of beginning; thence N3°48'58"E a distance of
300.50 feet; thence Due North a distance of 420.15 feet; thence N3°48'58"E
a distance of 287.84 feet; thence N71°03'36"W a distance of 181.16 feet;
thence Due North a distance of 114.94 feet; thence N89°59'59"W along
boundary of said S/2 NE/4; thence S89°57'26"E along said North boundary a
distance of 1032.82 feet to a point lying 65.00 feet West of the Northeast
corner of said S/2 NE/4; thence S0°05'28"E a distance of 1318.18 feet to
the point of beginning, containing 29.4056 acres more or less.
and has caused the same to be surveyed, staked and plotted into blocks,
lots and streets and has designated the same as PEMBROOKE PARK BLOCKS 1
THRU 5, a subdivision in the City of Broken Arrow, Tulsa County, State of
Oklahoma (the "Subdivision").

SECTION 1 STREETS, EASEMENTS AND UTILITIES

- A. Public Streets and General Utility Easements:
- The undersigned OWNER does hereby dedicate for public use all of
the streets as shown on the accompanying plat.
 - The undersigned OWNER does hereby dedicate for public use the
easements and right-of-way shown on the accompanying plat for the
several purposes of constructing, maintaining, operating, repair-
ing, any and all public utilities including storm sewers, sanitary
sewers, water lines, gas lines, electric lines, and cable televi-
sion lines, together with all fittings, including the poles, wires,
conduits, pipes, valves, meters and equipment for each of such
facilities and any other appurtenances thereto with the rights of
ingress and egress to and upon the utility easements and right-
of-way for the uses and purposes aforesaid; PROVIDED, HOWEVER,
that the easements and right-of-way shall not be used for the
operation, laying and relaying over, across and along the public
street and utility easements shown on the plat for the purpose of
furnishing water and sewer services to the area included in the
plat.
 - No building structure, or other above or below ground obstruction
that will interfere with the purposes aforesaid, shall be placed,
erected, installed or permitted upon the easements or right-of-
ways as shown.
 - The foregoing covenants concerning streets and easements shall be
in effect from the date of recording of this plat, and the owner of each lot
agrees to be bound hereby.
- B. Underground Electric and Communication Service:
- Overhead lines for the supply of electric and communication ser-
vice may be located along the East and South perimeters
of the subdivision. The easements and right-of-way reserved for general
utility services and in the street rights-of-way shown on the at-
tached plat. Service pedestals and transformers, as sources of the
supply of secondary voltages, may also be located in the
easement-ways. Street light poles or standards may be served by
underground cable.
 - Underground service cables to all structures which may be located
on all lots in the Subdivision may be run from the nearest ser-
vice pedestal or transformer to the point of usage determined by
the location and construction of such structure as may be located
upon each lot; PROVIDED, that upon the installation of such a
service cable to a particular structure, the supplier of electric
service shall have the right to install and maintain a permanent
definitive, permanent effective and exclusive right-of-way easement
on the lot, covering a five (5) foot strip extending 2.5
feet on each side of such service cable, extending from the ser-
vice pedestal or transformer to the service entrance on the
structure.
 - The supplier of electric or communication service, through its
proper agents and employees, shall at all times have right of
access to all such easements shown on the plat, or provided for

APPROVED 3/4/96 by the City
Council of the City of Broken Arrow,
Oklahoma.
James C. Ryndell
Mayor
Brenda Senehat
Attest: City Clerk



Broken Arrow, Oklahoma

This entire project is located within the corporate and urban city limits of Broken Arrow.

LEGEND

These standard symbols will be found in the drawing.

	WATER VALVE		HANDI-CAP RAMP
	WATER MANHOLE		RETAINING WALL
	FIRE HYDRANT		LANDSCAPE HATCH
	SHRUB		STORM GRATE
	DECIDUOUS TREE		BUILDING
	VEGETIOUS TREE		ASPHALT
	POWER POLE		CONCRETE
	GUY WIRE		GRAVEL
	TELEPHONE UNDERGROUND MARKER		DIRT
	TELEPHONE PEDESTAL		UNDERGROUND PETROLEUM LINE
	TELEPHONE MANHOLE		UNDERGROUND TELEPHONE
	SIGN		UNDERGROUND SANITARY SEWER
	MAIL BOX		UNDERGROUND GAS
	GAS METER		UNDERGROUND CABLE
	FIBER OPTIC PEDESTAL		UNDERGROUND WATER
	TRAFFIC SIGNAL POLE		UNDERGROUND STORM SEWER
	ELECTRIC METER		OVERHEAD ELECTRIC
	LIGHT POLE		CENTER LINE OF ROAD or CRL
	TRAFFIC JUNCTION BOX		PROPERTY LINE
	FLOOD LIGHT		SECTION LINE
	CABLE TV PEDESTAL		1/4 SECTION LINE
	CABLE TV UNDERGROUND MARKER		PROPOSED / NEW RIGHT OF WAY
	ELECTRIC OUTLET		EX. RIGHT OF WAY
	BOLLARDS		UTILITY EASMENT
	SANITARY SEWER MANHOLE		
	STORM SEWER MANHOLE		
	FOUND MONUMENTS		
	UTILITY MARKER		
	VENT		
	FIBER OPTICS		
	NOT FIELD VERIFIED		

NOTE: This Design is Specifically prepared for use at the location shown. Use in any other manner exceeds the intended purpose of these drawings and any accompanying specifications.

UTILITY COORDINATION			
UTILITY COORDINATION	CONTACT	PHONE NO.	E-MAIL
SBC	Brian Smith	(918) 596-4283	bysmith@sbc.com
AEF/PSO	Tien Phan	(918) 250-6261	typhan@aep.com
Oklahoma Natural Gas - Tulsa	Dewayne Hallinan	(918) 831-8821	Dewayne.Hallinan@onegas.com
ONG/Gas Transmission	Jonathan Meadows	(918) 831-8215	Jonathan.Meadows@onegas.com
Cox Communications	John Vanscoy	(918) 286-4542	John.Vanscoy@cox.com
AT&T Communications	Roger Hurst	(918) 596-0321	rh7687@att.com
Broken Arrow - Water			

Note: Names and Numbers could Change.



ENTIRE PROJECT IS WITHIN CORPORATE LIMITS OF BROKEN ARROW
THIS PROJECT COMPLIES WITH ALL OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY (ODEQ) REQUIREMENTS

PEMBROOKE PARK SUBDIVISION

PROPOSED PLANS

HOME OWNERS ASSOCIATION (HOA) CREEK EMBANKMENT PROTECTION AT PLAYGROUND

BID PLANS (FINAL)

DATE: JANUARY 11, 2021

DRAWING INDEX

SHEET NUMBER	SHEET TITLE
01	TITLE SHEET
02	PAY ITEMS & NOTES
03	PROJECT OVERVIEW
04	DETAILS
05	SWMP

ODOT STANDARDS	
R-5 TSC-2.4	TEMPORARY SEDIMENT CONTROLS
T-506 TCS-6-1	TRAFFIC CONTROL STANDARD CHANNELIZING DEVICES

GOVERNMENT SPECIFICATIONS:

- 1) CURRENT 2009 OKLAHOMA STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION - ENGLISH GOVERN. APPROVED BY THE U.S. DEPARTMENT OF TRANSPORTATION. FEDERAL HIGHWAY ADMINISTRATION. JAN. 4TH. 2010.
- 2) CITY OF BROKEN ARROW ENGINEERING DESIGN CRITERIA AND STANDARD SPECIFICATIONS.
- 3) PROJECT SPECIFICATIONS
- 4) ODOT CONSTRUCTION DIRECTIVES
- 5) LASTEST EDITION OF MUTCD FOR TRAFFIC CONTROL

PLANS PREPARED BY:

KEITHLINE ENGINEERING GROUP, PLLC **KE**

8556 East 101st Street, Suite C
Tulsa, OK 74133
(918) 520-0069

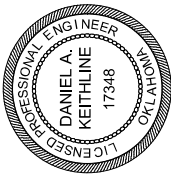
CERTIFICATE OF AUTHORIZATION NO. 5736

RENEWAL DATE - June 30, 2021

Daniel A. Keithline
Daniel A. Keithline, P.E.
OKLA. REG. P.E. No. 17348

01 / 11 / 2021

DATE



GENERAL NOTES:

1. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST 2009 OKLAHOMA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION AND THE CURRENT CITY OF BROKEN ARROW STANDARD SPECIFICATIONS AND STANDARD DETAILS AND STANDARD DRAWINGS AND CITY OF BROKEN ARROW SPECIAL PROVISIONS.

2. THE CONTRACTOR SHALL COMPLY WITH ALL FEDERAL, STATE AND LOCAL LAWS GOVERNING SAFETY, HEALTH AND SANITATION. THE CONTRACTOR SHALL PROVIDE ALL SAFEGUARDS, SAFETY DEVICES AND PROTECTIVE EQUIPMENT, AND TAKE ANY OTHER NEEDED ACTION ON AS HIS OWN RESPONSIBILITY OR AS THE ENGINEER MAY DETERMINE REASONABLY NECESSARY TO PROTECT PROPERTY DURING PERFORMANCE OF WORK UNDER THIS CONTRACT.

3. THE 11" X 17" PLANS ARE CONSIDERED HALF SIZE PLANS AND 22" X 34" IS FULL SIZE PLANS

4. THE CONTRACTOR WILL HAVE 20 CALENDAR DAYS FOR MATERIALS PROCUREMENT AND 10 CALENDAR DAYS FOR CONSTRUCTION, FOR A TOTAL OF 30 CALENDAR DAYS, TO COMPLETE THE WORK IN THE PROJECT. LIQUIDATED DAMAGES OF \$100.00 PER DAY WILL BE ASSESSED AGAINST THE CONTRACT AMOUNT UNTIL THE WORK IS COMPLETE IF THE PROJECT IS NOT COMPLETED IN THE AGREED TIME.

5. THE CONTRACTOR SHALL EXECUTE THE NOI AND EXECUTE ALL WORK ACCORDANTLY.

6. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK IN EACH AREA. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ALL DAMAGES WHICH MIGHT RESULT FROM HIS FAILURE TO LOCATE AND PRESERVE ALL UTILITIES AND PROPERTIES.

7. THE LOCATIONS OF THE UTILITIES ARE SHOWN ACCORDING TO ALL AVAILABLE INFORMATION. THE CONTRACTOR SHALL NOTIFY EACH UTILITY OWNER PRIOR TO COMMENCEMENT OF WORK TO VERIFY BOTH HORIZONTAL AND VERTICAL LOCATIONS. THE FOLLOWING IS A LIST OF UTILITY OWNERS:

A. SOUTHWESTERN BELL 918-495-2200

B. PUBLIC SERVICE COMPANY OF OKLAHOMA (AEP) 918-599-2217

C. OKLAHOMA NATURAL GAS (ONG) 918-588-7000 EXT. 676

D. COX COMMUNICATIONS 918-628-3635

E. MCI 918-590-2160

F. WELLSCO VALLOR TELECOM 918-451-3441

8. THE CONTRACTOR SHALL GIVE THE NOTIFICATION CENTER OF OKLAHOMA ONE-CALL SYSTEM, INC. NOTICE OF ANY EXCAVATION NO SOONER THAN TEN DAYS NOR LATER THAN 48 HOURS, EXCLUDING SATURDAYS, SUNDAYS AND LEGAL HOLIDAYS, PRIOR TO THE COMMENCEMENT OF WORK. THE PHONE NUMBER IS 1-800-522-6543.

9. APPLICABLE ODOT STANDARDS ARE LISTED ON THE TITLE SHEET.

10. SOIL INVESTIGATION WAS NOT PERFORMED ON THIS SITE.

CONSTRUCTION NOTES:

1. PRIOR TO CONSTRUCTION, A WORK PLAN SHALL BE SUBMITTED ON EACH SIGNIFICANT TASK, MANUFACTURES LIFTING, STORAGE AND INSTALLATION PROTOCOLS AND PROCEDURES SHALL BE INCLUDED ALONG WITH EQUIPMENT, MANPOWER, INSTALLATION PARAMETERS.
2. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH CURRENT STANDARD SPECIFICATIONS AND STANDARD DETAILS. CITY OF BROKEN ARROW ENGINEERING SERVICES DEPARTMENT.
3. CONTRACTOR SHALL GIVE THE NOTIFICATION CENTER OF THE OKLAHOMA ONE-CALL SYSTEM, INC. NOTICE OF ANY EXCAVATION NO SOONER THAN 48 HOURS OR LATER THAN 10 DAYS, EXCLUDING SATURDAYS, SUNDAYS, LEGAL HOLIDAYS PRIOR TO COMMENCEMENT OF WORK, PHONE 1-800-522-6543.
4. CONSTRUCTION FOR ALL ENGINEERING SERVICES FACILITIES SHALL BE IN COMPLIANCE WITH THE LATEST EDITION OF TITLE 252, DEPARTMENT OF ENVIRONMENTAL QUALITY, CHAPTER 626, PUBLIC WATER SUPPLY CONSTRUCTION STANDARDS, OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY (ODEQ).
5. ANY CHANGES FROM APPROVED PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR WRITTEN APPROVAL PRIOR TO INSTALLATION.
6. THE CONTRACTOR SHALL NOT WASTE ANY EXCESS SPOILS UNTIL ALL PLANNED EMBANKMENTS AND BACKFILLS ARE COMPLETE.
7. STOCKPILES ON SITE SHALL BE PROTECTED WITH SILT FENCE.
8. PHYSICAL TESTING FOR QUALITY ASSURANCE SHALL BE FURNISHED BY CITY.
9. ALL WORK AND/OR MATERIALS NOT CLASSIFIED AS A "CONTRACT PAY ITEM" SHALL BE CONSIDERED INCIDENTAL AND THE COST THEREOF SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEMS WHICH ARE CLASSIFIED FOR PAYMENT.
10. CONTRACTOR SHALL NOTIFY ENGINEER, CITY OF BROKEN ARROW FIELD ENGINEERING AND CITY SECURITY A MINIMUM OF 48 HRS PRIOR TO COMMENCING WORK.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE TO EXISTING PUBLIC AND PRIVATE PROPERTY AFFECTED BY HIS CONSTRUCTION OPERATIONS. RESTORATION OF ALL DAMAGED PROPERTY, BOTH PUBLIC AND PRIVATE, TO ITS ORIGINAL CONDITION SHALL BE PERFORMED BY AND AT THE EXPENSE OF THE CONTRACTOR.
12. BLASTING SHALL NOT BE ALLOWED.
13. CONTRACTOR SHALL DOCUMENT PRE-CONSTRUCTION SITE CONDITIONS BY MEANS OF PHOTOGRAPHS AND VIDEO WITH CITY REPRESENTATIVES BEFORE START OF CONSTRUCTION. COST SHALL BE CONSIDERED PART OF MOBILIZATION.
14. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY EXISTING UTILITIES DAMAGES WITHIN THE PROJECT AREA AS A RESULT OF HIS TRENCHING, DIGGING, ETC.
15. ALL ADJACENT PUBLIC, PRIVATE STREETS AND DRIVES SHALL BE ACCESSABLE AT ALL TIMES.
16. ALL MATTERS NECESSARY TO ENSURE THAT CONSTRUCTION IS ACCOMPLISHED IN A RESPONSIBLE MANNER WILL BE ESTABLISHED AS REQUIRED BY LOCAL, STATE AND FEDERAL LAWS AND REGULATIONS. IN ADDITION, OWRB RULES, CHAPTER 25 SECTION 785:25-7-2 SHALL BE OBSERVED TO ENSURE CONSTRUCTION OF A SAFE STRUCTURE.
17. AREA OUTSIDE THE PROJECT LIMITS SHALL NOT BE DISTURBED.
18. CONSTRUCT TEMPORARY SILT FENCE BARRIERS AROUND EARTHWORK STOCKPILES AND DOWNSTREAM OF DISTURBED AREAS
19. THE CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE IN ALL OPEN EXCAVATION AREAS OVERNIGHT. COST SHALL BE INCLUDED IN OTHER ITEMS OF WORK.
20. 0.25-INCH DIA. 10-FOOT LONG CABLE

PART 'A'				
NO.	PAY NOTE	ODOT ITEM NO.	DESCRIPTION OF WORK (FURNISH AND INSTALL)	UNIT
1	4	201	SELECTIVE CLEARING (FOR ACCESS)	LSUM
2	1	201 (A)	CLEARING AND GRUBBING (RIPRAP AREA)	LSUM
3	5	220	SWPPP DOCUMENTATION & MANAGEMENT	LSUM
4	6,10	221 (C)	TEMPORARY SILT FENCE	LF
5	9	326 (A)	GEOTEXTILE REINFORCEMENT (WOVEN)	SY
6	7	641	MOBILIZATION	LSUM
7	8	880 (J)	CONSTRUCTION TRAFFIC CONTROL (IF REQUIRED)	LSUM
8			VINYL COATED CHAIN LINK FENCE (2" MESH, 11 GUAGE)	SY
9	11		SOIL ANCHORS CLAMPED TO 1/2FT CABLE (1/4" Dia)	EA
10	2,3	601 (A)	TYPE I PLAIN RIPRAP (18")	TON
PART 'B'				
NO.	PAY NOTE	ODOT ITEM NO.	DESCRIPTION	UNIT
10	2,3	601 (A)	TYPE I PLAIN RIPRAP (18")	TON
				166

PAY NOTES:

1. CLEARING AND GRUBBING INCLUDES COSTS OF LABOR, MATERIALS, PLANT, AND EQUIPMENT TO CLEAR AND GRUB AREAS INSIDE EQUIPMENT ACCESS ROUTE.

A. THE CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS TO A CONDITION EQUAL TO OR BETTER THAN THE EXISTING CONDITION. ANY DISTURBANCE OUTSIDE OF THIS AREA SHALL BE RESTORED AT THE CONTRACTORS EXPENSE AND SHALL BE PAID FOR UNDER CLEARING AND GRUBBING.

B. COST INCLUDES REMOVAL AND OFFSITE DISPOSAL OF ALL TREES WITHIN THE AREA DESIGNATED.

C. DEBRIS BURNS WILL NOT BE PERMITTED.

D. ALL CONSTRUCTION WASTE SHALL NOT BE USED AS RIP-RAP CONTRACTOR AND SHALL BE DISPOSED OF BY THE CONTRACTOR IN A MANNER ACCEPTABLE TO THE ENGINEER WITHOUT COST TO THE OWNER. THE CONTRACTOR SHALL BE REQUIRED TO OBTAIN AN EARTH CHANGE PERMIT IF ANY EXCESS MATERIAL IS TO BE DISPOSED OF WITHIN THE CITY LIMITS OF BROKEN ARROW.

E. COST INCLUDES SEASONAL SEEDING OF DISTURBED AREAS OF SAME TYPE AND VARIETY OR AS NOTED ON PLANS.
2. TYPE I PLAIN RIPRAP (18") INCLUDES COSTS OF LABOR, MATERIALS, PLANT, AND EQUIPMENT TO PLACE RIPRAP BY HAND OR MACHINE TO ACHIEVE THE LINES AND THICKNESS SHOWN ON THE PLANS.
3. 2,000 LBS PER TON. RIPRAP TON IS MEASURED AT 150 LBS/CF. SEE ODOT SPEC BOOK, TABLE 713:1 FOR STONE SIZING.
4. SELECTIVE CLEARING INCLUDES ALL COSTS OF LABOR, MATERIALS, PLANT, AND EQUIPMENT TO COMPLETE WORK ON THE HOA POND EMBANKMENT AS SHOWN ON PLANS.

A. COST INCLUDES REMOVAL AND DISPOSAL OFF SITE OF ALL TREES WITHIN THE AREA DESIGNATED.

B. DEBRIS BURNS WILL NOT BE PERMITTED.

C. COST INCLUDES SIDE AND BOTTOM KEYWAY EXCAVATION

D. COST INCLUDES MINOR GRADING OF EMBANKMENT SURFACE AFTER VEGETATION IS REMOVED. USE KEYWAY SPOILS TO FILL IN DIVOTS.

E. COST EXCESS EMBANKMENT SPOILS TO BE SPREAD OUT OF EQUIPMENT ACCESS ROUTE.
5. SWPPP DOCUMENTATION / MANAGEMENT, SAFETY PLAN, AND WORK PLAN INCLUDES ALL COSTS OF LABOR, MATERIALS, AND EQUIPMENT TO COMPLETE SWPPP DOCUMENTATION / MANAGEMENT, SAFETY PLAN, AND WORK PLAN FOR DURATION OF PROJECT. SAFETY PLAN SHALL ADDRESS BUT NOT BE LIMITED TO ISSUES AS TRAFFIC CONTROL, WORK SITE SAFETY, WORKER EQUIPMENT, FIRST AID, HYGIENE, ETC. CONTRACTOR IS EXPECTED TO PERFORM WORK IN A MANNER THAT BEST PROTECTS SAFETY OF WORKERS, INSPECTORS, BYSTANDERS, AND OTHERS WHO MAY BE IN THE VICINITY OF WORK. SAFETY PLAN SHALL INCLUDE SEQUENCE OF CONSTRUCTION, PROVISIONS TO PROTECT INTEGRITY OF PROPERTIES, FAILURE TO PERFORM WORK, AND MAINTAIN SITE IN A SAFE MANNER. WORK PLAN SHALL ADDRESS SEQUENCE OF CONSTRUCTION PLUS MEANS AND METHODS TO PERFORM EACH TASK. WORK AND SAFETY PLANS TO BE APPROVED PRIOR TO CONSTRUCTION.
6. SILT FENCE SHALL BE INSTALLED PER STANDARD.
7. MOBILIZATION INCLUDES COSTS OF ALL LABOR, MATERIALS, PLANT AND EQUIPMENT TO:

A. INSURE ALL POWER POLES WHICH ARE AFFECTED BY CONSTRUCTION ARE BRACED BY OWNERS.

B. REPAIR ANY FENCE DAMAGED IN THE ZONE OF CONSTRUCTION DURING THE COURSE OF CONSTRUCTION TO SATISFACTION OF THE PROPERTY OWNER.

C. PROTECT PAVEMENT, CURB, OR DRIVEWAY. DAMAGE SHALL BE PAID UNDER THIS BID ITEM.
8. TRAFFIC CONTROL AND CONSTRUCTION SIGNING INCLUDES COSTS TO WORK IN COOPERATION WITH THE CERTIFIED TRAFFIC CONTROL INSTALLER TO ESTABLISH, INSTALL, MAINTAIN, AND OPERATE COMPLETE, ADEQUATE, AND SAFE TRAFFIC CONTROLS DURING THE ENTIRE CONSTRUCTION PERIOD IN ACCORDANCE WITH THE CURRENT EDITION MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. ALL FLAGMEN, BARRICADES, AND TRAFFIC CONTROL DEVICES SHALL BE INSTALLED AND MAINTAINED BY A CERTIFIED SUBCONTRACTOR.
9. GEOTEXTILE REINFORCEMENT (WOVEN) INCLUDES COSTS OF ALL LABOR, MATERIALS, PLANT AND EQUIPMENT TO INSTALL WOVEN TENGATE MIRAFI EW404, OR APPROVED EQUAL, UNDER RIPRAP. INCLUDES PINNING TO RESTRICT MOVEMENT DURING RIPRAP PLACEMENT.
10. TEMPORARY SILT FENCE INCLUDES COSTS OF ALL LABOR, MATERIALS, PLANT AND EQUIPMENT TO INSTALL PER PLANS. INCLUDES COST TO DISPOSE OF SILT ACCUMULATION.
11. 10-ft LONG x 1/4" CABLE WITH SOIL HOOK ANCHOR ON EACH END



Plans and Estimates Prepared by:	
KEITHLINE ENGINEERING GROUP	REVISION
8556 E. 101ST ST., STE C Tulsa, Oklahoma 74133 (918) 369-7911	BY
	DATE



PEMBROOKE PARK SUBDIVISION
HOA POND EMBANKMENT MAINTENANCE
CITY OF BROKEN ARROW, OKLAHOMA

PAY ITEMS
& NOTES

PROJECT #	KE 2814
SURVEY	KE
DESIGNED	DAK
DRAWN	ZLM
ATLAS PAGE NO.	
DATE: JANUARY 11, 2021	
SHEET	02 OF 05



NOTES:
1. WOVEN GEOTEXTILE TO HAVE A MINIMUM LAP OF 2'-0".



STORM WATER MANAGEMENT PLAN

SITE DESCRIPTION

PROJECT LIMITS: _____
APPROX. 60FT WIDE AND 125FT LONG BETWEEN THE RIGHT-OF-WAY AND HOA POND.

PROJECT DESCRIPTION: _____
A MAINTENANCE CONTRACT TO INSTALL 18-INCH RIPRAP ALONG THE HOA POND EMBANKMENT TO PREVENT SLOPE EROSION.

SUGGESTED SEQUENCE OF EROSION CONTROL ACTIVITIES: _____

1. CLEAR EQUIPMENT ACCESS ROUTE THROUGH HEAVY VEGETATION

2. INSTALL TEMPORARY SILT FENCE DOWNSTREAM OF DISTURBED AREAS.

3. REMOVE TREE/VEGETATION ON THE HOA POND EMBANKMENT.

4. INSTALL PERMANENT GEOTEXTILE FABRIC AND 18-INCH RIPRAP ON EMBANKMENT.

5. GRADE EQUIPMENT ACCESS ROUTE AND PLACE SEASONAL SEEDING.

6. REMOVE TEMPORARY SILT FENCE AFTER GRASS GROWTH.

SOIL TYPE: RADLEY & DENNIS SILT

TOTAL AREA OF THE CONSTRUCTION SITE: APPROX. 0.17 ACRES

ESTIMATED AREA TO BE DISTURBED: APPROX. 0.07 ACRES (3,000 SF)

OFFSITE AREA TO BE DISTURBED: N/A
(FOR CONTRACTOR USE)

TOTAL IMPERVIOUS AREA PRE-CONSTRUCTION: N/A

TOTAL IMPERVIOUS AREA POST-CONSTRUCTION: N/A

POST-CONSTRUCTION RUNOFF COEFFICIENT OF THE SITE: NO CHANGE

LATITUDE & LONGITUDE OF CENTER OF PROJECT: LAT 36.028033, LONG -95.833792

PROJECT WILL DISCHARGE TO:

NAME OF RECEIVING WATERS: EAST BRANCH OF HAIKEY CREEK

SENSITIVE WATERS OR WATERSHEDS: YES ☐ NO ☒

303(d) IMPAIRED WATERS: YES ☐ NO ☒

IF YES, LIST IMPAIRMENT: _____

LOCATED IN A TMDL: YES ☐ NO ☒

LAKE THUNDERBIRD TMDL: YES ☐ NO ☒

MS4 ENTITY: YES ☐ NO ☒

IF YES, LOCATION: _____

NOTE:
THIS SHEET SHOULD BE USED IN CONJUNCTION WITH A DRAINAGE MAP THAT ILLUSTRATES THE DRAINAGE PATTERNS/PATHWAYS AND RECEIVING WATERS FOR THIS PROJECT. THIS SHEET SHOULD ALSO BE USED WITH THE EROSION CONTROL SUMMARIES, PAY ITEMS, & NOTES.

EROSION AND SEDIMENT CONTROLS

SOIL STABILIZATION PRACTICES:

X TEMPORARY SEEDING

X PERMANENT SODDING, SPRIGGING OR SEEDING

_____ VEGETATIVE MULCHING

_____ SOIL RETENTION BLANKET

_____ PRESERVATION OF EXISTING VEGETATION

NOTE: TEMPORARY EROSION CONTROL METHODS MUST BE USED ON ALL DISTURBED AREAS WHERE CONSTRUCTION ACTIVITIES HAVE CEASED FOR OVER 14 DAYS. METHODS USED WILL BE AS SHOWN ON PLANS, OR AS DIRECTED BY THE ENGINEER.

STRUCTURAL PRACTICES:

- _____ STABILIZED CONSTRUCTION EXIT
- X TEMPORARY SILT FENCE
- _____ TEMPORARY SILT DIKES
- _____ TEMPORARY FIBER LOG
- _____ DIVERSION, INTERCEPTOR OR PERIMETER DIKES
- _____ DIVERSION, INTERCEPTOR OR PERIMETER SWALES
- _____ ROCK FILTER DAMS
- _____ TEMPORARY SLOPE DRAIN
- _____ PAVED DITCH W/ DITCH LINER PROTECTION
- _____ TEMPORARY DIVERSION CHANNELS
- _____ TEMPORARY SEDIMENT BASINS
- _____ TEMPORARY SEDIMENT TRAPS
- _____ TEMPORARY SEDIMENT FILTERS
- _____ TEMPORARY SEDIMENT REMOVAL
- X RIP RAP
- _____ INLET SEDIMENT FILTER
- _____ TEMPORARY BRUSH SEDIMENT BARRIERS
- _____ SANDBAG BERMS
- _____ TEMPORARY STREAM CROSSINGS

OFFSITE VEHICLE TRACKING:

- X HAUL ROADS DAMPENED FOR DUST CONTROL
- X LOADED HAUL TRUCKS TO BE COVERED WITH TARPAULIN
- X EXCESS DIRT ON ROAD REMOVED DAILY

NOTES:

THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE FOLLOWING:

MAINTENANCE AND INSPECTION:

ALL EROSION AND SEDIMENT CONTROLS WILL BE MAINTAINED IN GOOD WORKING ORDER FROM THE BEGINNING OF CONSTRUCTION UNTIL AN ACCEPTABLE VEGETATIVE COVER IS ESTABLISHED. INSPECTION BY THE CONTRACTOR AND ANY NECESSARY REPAIRS SHALL BE PERFORMED ONCE EVERY 7 CALENDAR DAYS AND WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN 0.5 INCH AS RECORDED BY A NON-FREEZING RAIN GAUGE TO BE LOCATED ON SITE. POTENTIALLY ERODIBLE AREAS, DRAINAGEWAYS, MATERIAL STORAGE, STRUCTURAL DEVICES, CONSTRUCTION ENTRANCES AND EXITS ALONG WITH EROSION AND SEDIMENT CONTROL LOCATIONS ARE EXAMPLES OF SITES THAT NEED TO BE INSPECTED.

WASTE MATERIALS:

PROPER MANAGEMENT AND DISPOSAL OF CONSTRUCTION WASTE MATERIAL IS REQUIRED BY THE CONTRACTOR. MATERIALS INCLUDE STOCKPILES, SURPLUS, DEBRIS, AND ALL OTHER BY-PRODUCTS FROM THE CONSTRUCTION PROCESS. PRACTICES INCLUDE DISPOSAL, PROPER MATERIALS HANDLING, SPILL PREVENTION AND CLEANUP MEASURES. CONTROLS AND PRACTICES SHALL MEET THE REQUIREMENTS OF ALL FEDERAL, STATE AND LOCAL AGENCIES.

HAZARDOUS MATERIALS:

PROPER MANAGEMENT AND DISPOSAL OF HAZARDOUS WASTE MATERIALS IS REQUIRED. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING MANUFACTURER'S RECOMMENDATIONS, STATE AND FEDERAL REGULATIONS TO ENSURE CORRECT HANDLING, DISPOSAL, SPILL PREVENTION AND CLEANUP MEASURES. EXAMPLES INCLUDE BUT ARE NOT LIMITED TO: PAINTS, ACIDS, CLEANING SOLVENTS, CHEMICAL ADDITIVES, CONCRETE CURING COMPOUNDS AND CONTAMINATED SOILS.

GENERAL NOTES:

A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) IS REQUIRED TO COMPLY WITH THE OKLAHOMA POLLUTION DISCHARGE ELIMINATION SYSTEM (OPDES) REGULATIONS. THIS PLAN IS INITIATED DURING THE DESIGN PHASE, CONFIRMED IN THE PRE-WORK MEETINGS AND AVAILABLE ON THE JOB SITE ALONG WITH COPIES OF THE NOTICE OF INTENT (NOI) FORM AND PERMIT CERTIFICATE THAT HAVE BEEN FILED WITH THE OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY (ODEQ). THE PLAN MUST BE KEPT CURRENT WITH UP-TO-DATE AMENDMENTS DURING THE PROGRESSION OF THE PROJECT. ALL CONTRACTOR OFF-SITE OPERATIONS ASSOCIATED WITH THE PROJECT MUST BE DOCUMENTED IN THE SWPPP, I.E., BORROW PITS, WORK ROADS, DISPOSAL SITES, ASPHALT/CONCRETE PLANTS, ETC. THE BASIC GOAL OF STORM WATER MANAGEMENT IS TO IMPROVE WATER QUALITY BY REDUCING POLLUTANTS IN STORM WATER DISCHARGES. RUNOFF FROM CONSTRUCTION SITES HAS A POTENTIAL FOR POLLUTION DUE TO EXPOSED SOILS AND THE PRESENCE OF HAZARDOUS MATERIALS USED IN THE CONSTRUCTION PROCESS. THE PREVENTION OF SOIL EROSION, CONTAINMENT OF HAZARDOUS MATERIALS AND/OR THE INTERCEPTION OF THESE POLLUTANTS BEFORE LEAVING THE CONSTRUCTION SITE ARE THE BEST PRACTICES FOR CONTROLLING STORM WATER POLLUTION.

THE FOLLOWING SECTIONS OF THE 2009 ODOT STANDARD SPECIFICATIONS SHOULD BE NOTED:

- 103.05 BONDING REQUIREMENTS
- 104.10 FINAL CLEANING UP
- 104.12 CONTRACTOR'S RESPONSIBILITY FOR WORK
- 104.13 ENVIRONMENTAL PROTECTION
- 106.08 STORAGE AND HANDLING OF MATERIAL
- 107.01 LAWS, RULES AND REGULATIONS TO BE OBSERVED
- 107.20 STORM WATER MANAGEMENT
- 220 MANAGEMENT OF EROSION, SEDIMENTATION AND STORM WATER POLLUTION PREVENTION AND CONTROL
- 221 TEMPORARY SEDIMENT CONTROL

IN ADDITION:

"ODEQ GENERAL PERMIT (OKR10) FOR STORM WATER DISCHARGES FROM CONSTRUCTION ACTIVITIES WITHIN THE STATE OF OKLAHOMA." ODEQ, WATER QUALITY DIVISION, SEPTEMBER 13, 2017.



Plans and Estimates Prepared by:

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REVISION

BY

DATE



PEMBROOKE PARK SUBDIVISION

HOA POND EMBANKMENT MAINTENANCE

CITY OF BROKEN ARROW, OKLAHOMA

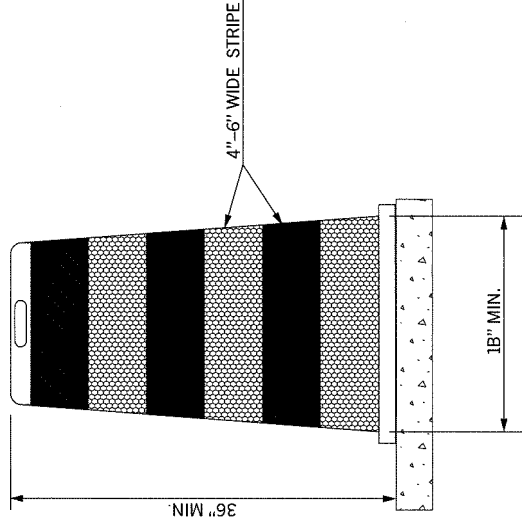
STORMWATER

MANAGEMENT

PLAN

PROJECT #	KE 2814
SURVEY	KE
DESIGNED	DAK
DRAWN	ZLM
ATLAS PAGE NO.	
DATE:	JANUARY 11, 2021
SHEET	05 OF 05

DESCRIPTION	REVISIONS	DATE
ADD NOTE TO VERTICAL PANEL		07/19/10
CHANGED TYPE 'C' LIGHT TO OPTIONAL		3/15/2011



DRUM

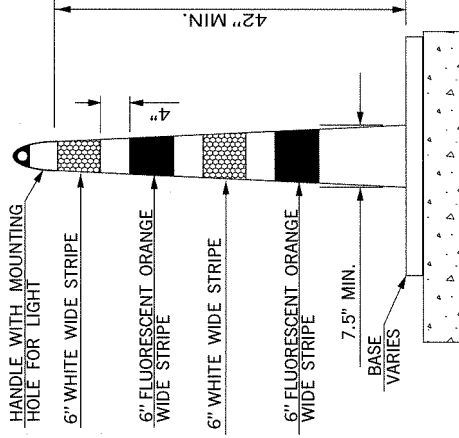
NOTES:

METAL DRUMS SHALL NOT BE USED.

EACH DRUM SHALL HAVE A MINIMUM OF TWO (2) FLUORESCENT ORANGE STRIPES ALTERNATING WITH A MINIMUM OF TWO (2) WHITE STRIPES. THESE STRIPES SHALL CONSIST OF RETROREFLECTIVE SHEETING.

BALLAST SHALL NOT BE PLACED ON TOP OF A DRUM.

DRUMS SHALL NOT BE USED TO DELINEATE AN EDGE DROP OFF IF THEY MUST BE PLACED IN THE DROP OFF AREA BELOW THE LEVEL OF THE DRIVING SURFACE.



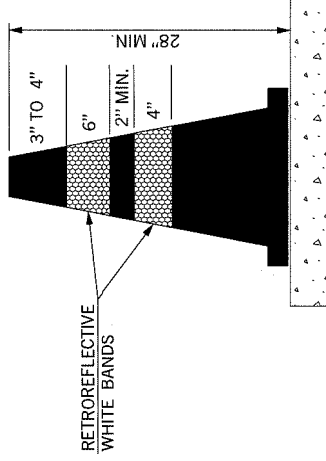
CHANNELIZER CONE

NOTES:

CHANNELIZER CONES USED ON HIGH SPEED ROADWAYS, ON ALL HIGHWAYS DURING NIGHTTIME, OR WHENEVER MORE CONSPICUOUS GUIDANCE IS NEEDED SHALL BE A MINIMUM OF 42 INCHES HIGH.

EACH CHANNELIZERS CONES SHALL HAVE A MINIMUM OF TWO (2) FLUORESCENT ORANGE STRIPES ALTERNATING WITH A MINIMUM OF TWO (2) WHITE STRIPES. THESE STRIPES SHALL CONSIST OF RETROREFLECTIVE SHEETING.

BASE SHALL WEIGH 30 LBS. OR MORE.

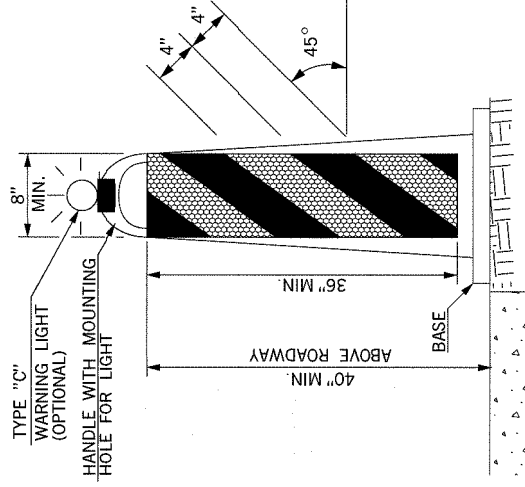
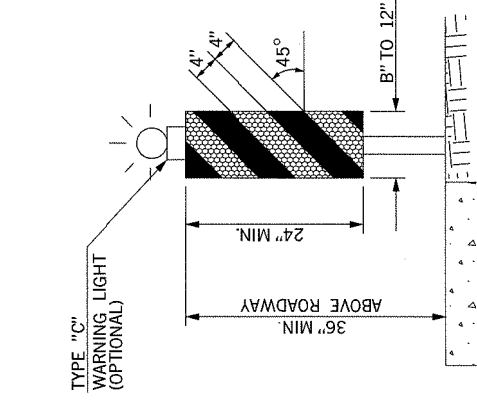


CONE

NOTES:

CONES USED ON HIGH SPEED ROADWAYS, ON ALL HIGHWAYS DURING NIGHTTIME, OR WHENEVER MORE CONSPICUOUS GUIDANCE IS NEEDED SHALL BE A MINIMUM OF 2B INCHES HIGH.

CONES SHALL BE PREDOMINANTLY ORANGE, WITH WHITE RETROREFLECTIVE SHEETING.



VERTICAL PANEL

W/NO DROP OFF

NOTES:

PANEL STRIPE WIDTHS SHALL BE 6 INCHES EXCEPT WHERE PANELS LENGTHS ARE LESS THAN 36 INCHES, THEN 4 INCH WIDE STRIPES MAY BE USED.

MARKINGS FOR VERTICAL PANELS SHALL BE ALTERNATING FLUORESCENT ORANGE AND WHITE RETROREFLECTORIZED STRIPES (SLOPING DOWNWARD AT AN ANGLE OF 45 DEGREES IN THE DIRECTION TRAFFIC IS TO PASS).

SHALL HAVE A MINIMUM OF TWO (2) FULL FLUORESCENT ORANGE STRIPES.

VERTICAL PANEL

W/DROP OFF

ON UNDIVIDED HIGHWAYS, VERTICAL PANELS SHALL HAVE A MINIMUM OF 192 SQUARE INCHES OF RETROREFLECTIVE SHEETING ON EACH PANEL (FRONT AND BACK). WHEN USED ON HIGH SPEED ROADWAYS, VERTICAL PANELS SHALL HAVE MINIMUM OF 270 SQUARE INCHES OF RETROREFLECTIVE SHEETING ON EACH PANEL (FRONT AND BACK). THIS SHALL CONSTITUTE ONE (1) COMPLETE VERTICAL PANEL.

ON DIVIDED HIGHWAYS A VERTICAL PANEL MAY HAVE SHEETING ON ONLY ONE SIDE.



BASIS OF PAYMENT		
ITEM NO.	ITEM	UNIT
880(D)	VERTICAL PANEL	SD
880(E)	WARNING LIGHTS	SD
880(F)	DRUMS	SD
880(G)	TUBE CHANNEL IZERS	SD
880(H)	CONES	SD
880(G)	CHANNEL IZER CONES	SD

