

Company, Sunoco Mid-Con (In) LLC, Sunoco Partners Real Estate Acquisition, LLC, have not appeared in this matter although properly served with service of process.

The Court, being fully advised, finds as follows:

1. The filing of this condemnation action, the appointment of the Commissioners, the Oaths of Commissioners and the Commissioners' subsequent Report are regular in all respects.

2. REIP does not contest the validity or propriety of the taking of the permanent drainage easement across the REIP property which is the subject of this matter, as described in Exhibit "A" attached hereto ["the Easement"], and agrees to accept the amount of \$155,000.00 and conveyance of the Pond, as full compensation and settlement of damages for the Easement so taken. REIP has waived its right to a trial on all issues dealing with the propriety of the taking and the damages sustained.

3. The taking of the Easement is necessary for the public purpose of the City for constructing a stormwater drainage and diversion facility within the Easement in accordance with the plans and specifications attached as Exhibit "B." The Easement is currently held in fee simple by REIP. The Easement is hereby ordered taken and condemned under the power of eminent domain, and the City is declared to be the owner of the Easement.

4. The Defendant, Board of County Commissioners, claims no right, title or interest in the Easement. The Defendant, Tulsa County Treasurer, claims no delinquent *ad valorem* taxes or delinquent personal property taxes through the date of the filing of this Journal Entry of Judgment. The defendants, Transok Pipeline Company, Gordon-Williams Development, Inc., Sunoco Mid-Con (In) LLC, Sunoco Partners Real Estate Acquisition, LLC, claim no right, title or interest in the Easement.

5. The City is prepared to pay REIP the sum of \$155,000.00 pursuant to the Report of the Court Appointed Commissioners, and the Court finds this amount, in addition to provision of the Pond, to be an appropriate award.

6. Service of process has been perfected as provided by law on all Defendants having any compensable interest in the Easement.

7. REIP and its successors and assigns shall have the right to construct two (2) permanent thirty foot [30'] wide by forty foot [40'] long bridges/box culverts/roadways traversing the Easement [the "Easement Crossings"] at locations reasonably determined by REIP or its successors and assigns, to provide for vehicular ingress, egress and travel over and across the Easement to and from the tracts of land owned by REIP located to the north and south of the Easement. The Easement Crossings shall be constructed in compliance with all City Codes, Regulations, and Ordinances.

8. REIP and its successors and assigns shall have the right to construct a roadway to connect to the "stubbed-in road" located on the property owned by St. John Hospital to the east of the REIP property ["the St. John Site"], including the ability to complete the paving within said "stubbed-in road" within the St. John site, to the east boundary line of the REIP property. The roadway and any connections shall be constructed in compliance with all City Codes, Regulations and Ordinances.

9. The City has declared the Pond surplus and fee simple title to the Pond, which is generally located to the south and west of the southernmost dam on the City's pond/water detention facility located within the Battle Creek Golf Course owned by the City and as described in Exhibit "C", shall be vested in REIP.

IT IS THEREFORE ORDERED, ADJUDGED AND DECREED that the taking of the Easement is hereby granted, approved and confirmed, with the duty of the City to maintain the Easement and all improvements therein in a reasonable and prudent manner.

IT IS FURTHER ORDERED, ADJUDGED AND DECREED that the City is the owner of the permanent drainage easement on the land described in Exhibit "A" for the purpose of the

City to construct a stormwater and drainage facility within the Easement in accordance with the plans and specifications attached as Exhibit “B.”

IT IS FURTHER ORDERED, ADJUDGED AND DECREED that upon the date of the tender of payment by the City to REIP, of the cumulative sum of \$155,000.00, REIP and all persons claiming by, through or under REIP, shall have no further right, title or interest in and to said Easement inconsistent with the City’s ownership of the Easement, subject only to the right to REIP to construct the above-described Easement Crossings, and REIP is hereby enjoined from ever asserting any claim to said Easement adverse to the rights of the City.

IT IS FURTHER ORDERED, ADJUDGED AND DECREED that the sum of \$155,000.00 and conveyance of the Pond includes full compensation to REIP for the Easement, any damages to the remainder of the land owned by REIP, any claims or causes of action known or unknown relating to this matter, as well as all attorney’s fees, engineering fees, appraisal fees, cost and expenses incurred or to be incurred by REIP in this matter.

IT IS FURTHER ORDERED, ADJUDGED AND DECREED that REIP and its successors and assigns shall have the right to construct two (2) permanent thirty foot [30’] wide by forty foot [40’] long bridges/box culverts/roadways traversing the Easement [the “Easement Crossings”] at locations reasonably determined by REIP or its successors and assigns, to provide for vehicular ingress, egress and travel over and across the Easement to and from the tracts of land owned by REIP located to the north and south of the Easement. The Easement Crossings shall be constructed in compliance with all City Codes, Regulations, and Ordinances.

IT IS FURTHER ORDERED, ADJUDGED AND DECREED that REIP and its successors and assigns shall have the right to construct a roadway to connect to the “stubbed-in road” located on the property owned by St. John Hospital to the east of the REIP property [“the St. John Site”], including the ability to complete the paving within said “stubbed-in road” within

the St. John site, to the east boundary line of the REIP property. The roadway and any connections shall be constructed in compliance with all City Codes, Regulations and Ordinances.

IT IS FURTHER ORDERED, ADJUDGED AND DECREED that fee simple title to the Pond as described in Exhibit “C” is vested in REIP.

IT IS FURTHER ORDERED, ADJUDGED AND DECREED that each party shall bear its respective costs and attorney’s fees included herein.

CAROLINE WALL
JUDGE OF THE DISTRICT COURT

APPROVED AS TO FORM AND CONTENT:

Beth Anne Childs, OBA No. 15138
City of Broken Arrow
P. O. Box 610
Broken Arrow, Oklahoma 74013
Telephone: (918) 259-8422
Fax: (918) 259-8218

Attorney for Plaintiff, City of Broken Arrow, Oklahoma

J. Douglas Mann, OBA No. 5663
ROSENSTEIN, FIST & RINGOLD
525 South Main, Suite 700
Tulsa, Oklahoma 74103-4508
(918) 585-9211
(918) 583-5617 (Facsimile)

Attorney for Defendant, REIP, LLC

Kim Hall, Assistant District Attorney
Tulsa County District Attorney's Office
500 South Denver Ave, #800
Tulsa, Oklahoma 74103-3840

*Attorney for Defendants, Board of County Commissioners
of Tulsa County and Tulsa County Treasurer*

EXHIBIT “A”

[Legal Description of Easement]

EXHIBIT "A" REIP, LLC PARCEL A - UTILITY EASEMENT

OWNER:

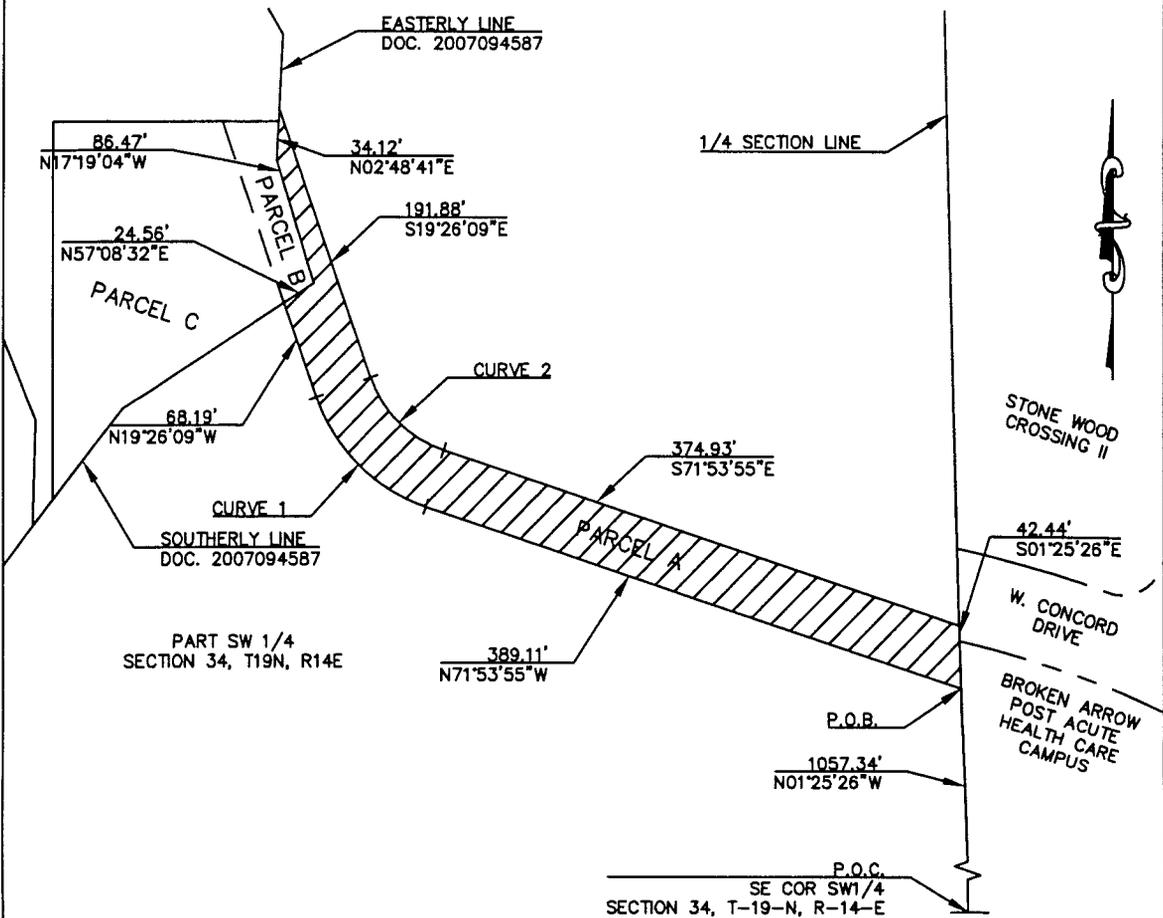
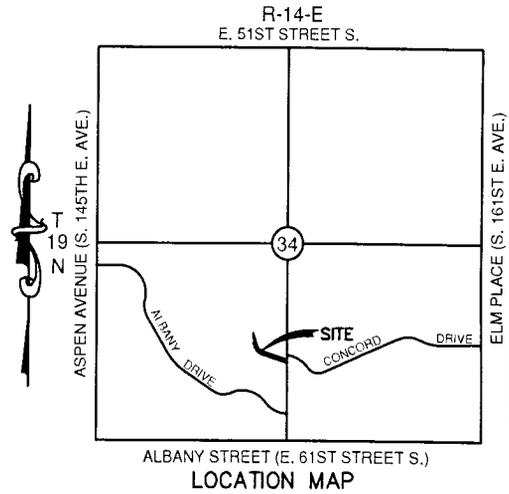
REIP LLC C/O COLEMAN ROBISON

ADDRESS:

525 S. MAIN AVENUE, SUITE 700
TULSA, OK 74103

STATEMENT OF BEARINGS:

BEARINGS ARE BASED ON A GRID BEARING ALONG THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW1/4) OF SECTION 34, TOWNSHIP 19 NORTH, RANGE 14 EAST (N88°41'15"E) BASED ON THE OKLAHOMA STATE PLANE COORDINATE SYSTEM, NORTH ZONE, U.S. SURVEY FEET.



CURVE TABLE					
NO.	LENGTH	RADIUS	CENTRAL ANGLE	CHORD BEARING	CHORD DISTANCE
C1	109.88'	120.00'	52°27'46"	N 45°40'02" W	106.88'
C2	73.25'	80.00'	52°27'46"	S 45°40'02" E	70.72'

(SEE EXHIBIT "B" FOR LEGAL DESCRIPTION)

THIS EXHIBIT IS NOT A LAND OR BOUNDARY SURVEY PLAT

<p style="font-size: small;">CITY OF BROKEN ARROW <i>Where opportunity lives</i></p>	PARCEL - A	DATE - MARCH 2015
	DRAWING - REIP, LLC - PARCEL A	DRAWN BY - FLK
	REV -	SCALE - 1" = 100'
		CHECKED BY - JWS

EXHIBIT "B"
REIP, LLC
PARCEL A - UTILITY EASEMENT

LEGAL DESCRIPTION:

A TRACT OF LAND LYING IN THE SOUTHWEST QUARTER (SW1/4) OF SECTION 34, TOWNSHIP 19 NORTH, RANGE 14 EAST OF THE INDIAN MERIDIAN, TULSA COUNTY, OKLAHOMA AND FURTHER DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHEAST CORNER OF SAID SW1/4;

THENCE N01°25'26"W ALONG THE EAST LINE OF SAID SW1/4 FOR A DISTANCE OF 1057.34 FEET TO THE POINT OF BEGINNING;

THENCE N71°53'55"W FOR A DISTANCE OF 389.11 FEET TO A POINT ON A CURVE TO THE RIGHT;

THENCE NORTHWESTERLY ALONG SAID CURVE TO THE RIGHT HAVING A CENTRAL ANGLE OF 52°27'46", HAVING A RADIUS OF 120.00 FEET FOR AN ARC LENGTH OF 109.88 FEET AND A LONG CHORD DISTANCE OF 106.08 FEET, BEARING N45°40'02"W;

THENCE N19°26'09"W FOR A DISTANCE OF 68.19 FEET TO A POINT ON THE SOUTHERLY LINE OF A GENERAL WARRANTY DEED RECORDED WITH THE TULSA COUNTY CLERK'S OFFICE AS DOCUMENT NO. 2007094587 ON AUGUST 22, 2007;

THENCE N57°08'32"E ALONG SAID SOUTHERLY LINE FOR A DISTANCE OF 24.56 FEET TO THE EASTERLY LINE OF SAID GENERAL WARRANTY DEED RECORDED WITH THE TULSA COUNTY CLERK'S OFFICE AS DOCUMENT NO. 2007094587 ON AUGUST 22, 2007;

(THE FOLLOWING 2 COURSES ARE ALONG SAID EASTERLY LINE)

1. THENCE N17°19'04"W FOR A DISTANCE OF 86.47 FEET;
2. THENCE N02°48'41"E FOR A DISTANCE OF 34.12 FEET;

THENCE S19°26'09"E FOR A DISTANCE OF 191.88 FEET TO A POINT ON A CURVE TO THE LEFT; THENCE SOUTHEASTERLY ALONG SAID CURVE TO THE LEFT HAVING A CENTRAL ANGLE OF 52°27'46", HAVING A RADIUS OF 80.00 FEET FOR AN ARC LENGTH OF 73.25 FEET AND A LONG CHORD DISTANCE OF 70.72 FEET, BEARING S45°40'02"E;

THENCE S71°53'55"E FOR A DISTANCE OF 374.93 FEET TO THE EAST LINE OF SAID SW1/4;

THENCE S01°25'26"E ALONG SAID EAST LINE FOR A DISTANCE OF 42.44 FEET TO THE POINT OF BEGINNING;

THE ABOVE DESCRIPTION CONTAINING 0.53 ACRES MORE OR LESS.

BEARINGS ARE BASED ON A GRID BEARING ALONG THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW1/4) OF SECTION 34, TOWNSHIP 19 NORTH, RANGE 14 EAST (N88°41'15"E) BASED ON THE OKLAHOMA STATE PLANE COORDINATE SYSTEM, NORTH ZONE, U.S. SURVEY FEET.

THIS DESCRIPTION WAS PREPARED ON MARCH 09, 2015 ON BEHALF OF COWAN GROUP ENGINEERING, LLC. BY JUSTIN SMITH, PLS 1868, CERTIFICATE OF AUTHORIZATION NUMBER CA6414, EXPIRES ON JUNE 30, 2016.

JUSTIN SMITH, PLS 1868, DATE



City of
BROKEN ARROW
Where opportunity lives

PARCEL - A	DATE - MARCH 2015
DRAWING -	DRAWN BY - FLK
REIP, LLC - PARCEL A	SCALE -
REV -	CHK'D BY - JWS

EXHIBIT “B”

[Plans and Specifications of Stormwater and Drainage Diversion Facility
which will be Constructed within the Easement]



STONE RIDGE AND ELM DRAINAGE IMPROVEMENTS

STORMWATER DIVERSION SYSTEM BROKEN ARROW, OKLAHOMA

PROJECT NUMBER SW1406(A)

SURVEY CONTROL DATA

- HORIZONTAL/VERTICAL CONTROL CONTROL WAS ESTABLISHED USING CONTROLS DATA FROM THE CITY OF BROKEN ARROW. HORIZONTAL DATA IS BASED ON THE OKLAHOMA STATE CO-ORDINATE SYSTEM (NORTH ZONE) AND IS BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
- BEARINGS ARE BASED ON GRID NORTH PRODUCTIONS AND DISTANCES ARE GRID DISTANCES.
- SECTION NUMERICAL DESCRIPTION (S.T.R.): SECTION 34 - 19-N, R-14-E OF THE INDIAN MERIDIAN, TULSA COUNTY, OK

UTILITY CONTACTS

CITY OF BROKEN ARROW (OKLAHOMA) CITY ENGINEER, TERRY ANDREWS 485 N. POPLAR AVE. BROKEN ARROW, OK 74006 (505) 259-3300 (OFFICE) (505) 259-3353 (FAX)	CITY OF BROKEN ARROW (OKLAHOMA) WATER & SEWER, ANTHONY DANIEL, PE 485 N. POPLAR AVE. BROKEN ARROW, OK 74006 (505) 259-3300 (OFFICE) (505) 259-3353 (FAX)	TULSA COUNTY (OKLAHOMA) MIDLAND GAS (CITY RECORDS) 300 S. POPLAR AVE. SUITE 100 TULSA, OKLAHOMA 74112 (918) 631-8208 (FAX)	OKLAHOMA MOBILE GAS (ELECTRIC SERVICE) ATTN: JIM WORGAN P.O. BOX 871 1915 S. 24TH AVE. SUITE 100 TULSA, OKLAHOMA 74112 (918) 251-0809 (FAX)	REP. PSC TRANSMISSIONS 2223 N. BURNATH BLVD. TULSA, OKLAHOMA 74112 (918) 250-6311 (918) 241-5656 (FAX)	REP. PSC TELEPHONE ATTN: TAMARON 2777 S. GARLAND TULSA, OKLAHOMA 74112 (918) 250-6311
WINDSTREAM COMMUNICATIONS 2336 SOUTH BAY BLVD. BROKEN ARROW, OKLAHOMA 74007 (918) 451-3651 (918) 451-3652 (FAX)	OKLAHOMA POWER & LIGHT ATTN: CARY HAMILTON 31351 E. 57TH STREET MIDWEST CITY, OKLAHOMA 73105 (918) 286-4668				

CONVENTIONAL SYMBOLS

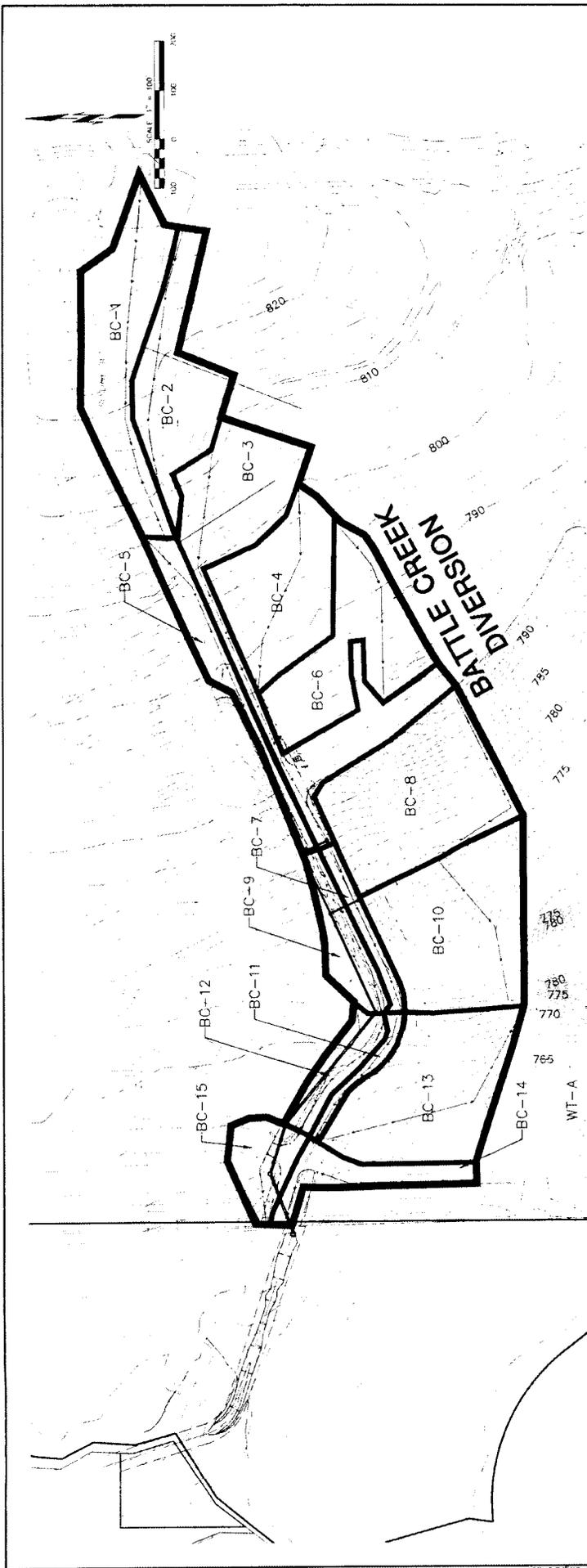
SECTION LINES	PROPERTY LINES	EXISTING	RIGHT-OF-WAY - PROPOSED	RIGHT-OF-WAY - EXISTING	OVERHEAD TELEPHONE LINES	OVERHEAD ELECTRIC LINES	MANHOLE SEWERS	GAS LINES	WATER LINES	UNDERGROUND TELEPHONE LINES	UNDERGROUND POWER LINES	WREN CHUTE	PROPOSED ROAD	ASPHALT - EXISTING	CONCRETE EXISTING	PIPE, DRAINAGE - EXISTING	LOW WREN	STORM SEWER - EXISTING	STORM SEWER - PROPOSED	EXISTING MANHOLE	PROPOSED CONCRETE	WATER SERVICE CONNECTION
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SOOT STANDARDS
PARTY DITCHES AND FLUMPS (DESIGN 2) BC-3-2

BROKEN ARROW STANDARDS
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3664, 3665, 3666, 3667, 3668, 3669, 3670, 3671, 3672, 3673, 3674, 3675, 3676, 3677, 3678, 3679, 3680, 3681, 3682, 3683, 3684, 3685, 3686, 3687, 3688, 3689, 3690, 3691, 3692, 3693, 3694, 3695, 3696, 3697, 3698, 3699, 3700, 3701, 3702, 3703, 3704, 3705, 3706, 3707, 3708, 3709, 3710, 3711, 3712, 3713, 3714, 3715, 3716, 3717, 3718, 3719, 3720, 3721, 3722, 3723, 3724, 3725, 3726, 3727, 3728, 3729, 3730, 3731, 3732, 3733, 3734, 3735, 3736, 3737, 3738, 3739, 3740, 3741, 3742, 3743, 3744, 3745, 3746, 3747, 3748, 3749, 3750, 3751, 3752, 3753, 3754, 3755, 3756, 3757, 3758, 3759, 3760, 3761, 3762, 3763, 3764, 3765, 3766, 3767, 3768, 3769, 3770, 3771, 3772, 3773, 3774, 3775, 3776, 3777, 3778, 3779, 3780, 3781, 3782, 3783, 3784, 3785, 3786, 3787, 3788, 3789, 3790, 3791, 3792, 3793, 3794, 3795, 3796, 3797, 3798, 3799, 3800, 3801, 3802, 3803, 3804, 3805, 3806, 3807, 3808, 3809, 3810, 3811, 3812, 3813, 3814, 3815, 3816, 3817, 3818, 3819, 3820, 3821, 3822, 3823, 3824, 3825, 3826, 3827, 3828, 3829, 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3996, 3997, 3998, 3999, 4000, 4001, 4002, 4003, 4004, 4005, 4006, 4007, 4008, 4009, 4010, 4011, 4012, 4013, 4014, 4015, 4016, 4017, 4018, 4019, 4020, 4021, 4022, 4023, 4024, 4025, 4026, 4027, 4028, 4029, 4030, 4031, 4032, 4033, 4034, 4035, 4036, 4037, 4038, 4039, 4040, 4041, 4042, 4043, 4044, 4045, 4046, 4047, 4048, 4049, 4050, 4051, 4052, 4053, 4054, 4055, 4056, 4057, 4058, 4059, 4060, 4061, 4062, 4063, 4064, 4065, 4066, 4067, 4068, 4069, 4070, 4071, 4072, 4073, 4074, 4075, 4076, 4077, 4078, 4079, 4080, 4081, 4082, 4083, 4084, 4085, 4086, 4087, 4088, 4089, 4090, 4091, 4092, 4093, 4094, 4095, 4096, 4097, 4098, 4099, 4100, 4101, 4102, 4103, 4104, 4105, 4106, 4107, 4108, 4109, 4110, 4111, 4112, 4113, 4114, 4115, 4116, 4117, 4118, 4119, 4120, 4121, 4122, 4123, 4124, 4125, 4126, 4127, 4128, 4129, 4130, 4131, 4132, 4133, 4134, 4135, 4136, 4137, 4138, 4139, 4140, 4141, 4142, 4143, 4144, 4145, 4146, 4147, 4148, 4149, 4150, 4151, 4152, 4153, 4154, 4155, 4156, 4157, 4158, 4159, 4160, 4161, 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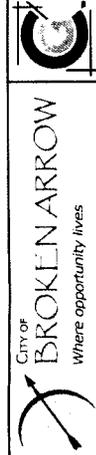


DRAINAGE SUMMARY TABLE

Basin	Slope	Area (a.c.)	Weighted Coefficient	Time (min)	Rainfall Intensity											
					2 Yr	5 Yr	10 Yr	25 Yr	50 Yr	100 Yr	25 Yr	50 Yr	100 Yr			
BC-1	1.1%	1.1	0.50	10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70
BC-2	1.2%	1.2	0.50	10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70
BC-3	1.3%	1.3	0.50	10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70
BC-4	1.4%	1.4	0.50	10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70
BC-5	1.5%	1.5	0.50	10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70
BC-6	1.6%	1.6	0.50	10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70
BC-7	1.7%	1.7	0.50	10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70
BC-8	1.8%	1.8	0.50	10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70
BC-9	1.9%	1.9	0.50	10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70
BC-10	2.0%	2.0	0.50	10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70
BC-11	2.1%	2.1	0.50	10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70
BC-12	2.2%	2.2	0.50	10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70
BC-13	2.3%	2.3	0.50	10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70
BC-14	2.4%	2.4	0.50	10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70
BC-15	2.5%	2.5	0.50	10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70
WT-A																

Q100 (CLOSED SYSTEM) = 131.4 CFS
 Q100 (OPEN SYSTEM) = 7.6 CFS
 Q100 (TOTAL SYSTEM) = 139.0 CFS

DATE	DRAWN BY	DATE	DATE	DATE	DATE
SCALE	SCALE	SCALE	SCALE	SCALE	SCALE
1"=100'	1"=100'	1"=100'	1"=100'	1"=100'	1"=100'
PROJECT NO.					
191	191	191	191	191	191
SHEET NO.					
14	14	14	14	14	14
DRAWING NAME					
UPPER HAIKEY CREEK WEST TRIBUTARY DRAINAGE AREA MAP	UPPER HAIKEY CREEK WEST TRIBUTARY DRAINAGE AREA MAP	UPPER HAIKEY CREEK WEST TRIBUTARY DRAINAGE AREA MAP	UPPER HAIKEY CREEK WEST TRIBUTARY DRAINAGE AREA MAP	UPPER HAIKEY CREEK WEST TRIBUTARY DRAINAGE AREA MAP	UPPER HAIKEY CREEK WEST TRIBUTARY DRAINAGE AREA MAP
PROJECT NO.					
191	191	191	191	191	191
SHEET NO.					
14	14	14	14	14	14
DRAWING NAME					
UPPER HAIKEY CREEK WEST TRIBUTARY DRAINAGE AREA MAP	UPPER HAIKEY CREEK WEST TRIBUTARY DRAINAGE AREA MAP	UPPER HAIKEY CREEK WEST TRIBUTARY DRAINAGE AREA MAP	UPPER HAIKEY CREEK WEST TRIBUTARY DRAINAGE AREA MAP	UPPER HAIKEY CREEK WEST TRIBUTARY DRAINAGE AREA MAP	UPPER HAIKEY CREEK WEST TRIBUTARY DRAINAGE AREA MAP
PROJECT NO.					
191	191	191	191	191	191
SHEET NO.					
14	14	14	14	14	14
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CITY OF BROKEN ARROW
 Where opportunity lives

COWAN GROUP ENGINEERING, LLC
 5416 S. VALLEY AVENUE, SUITE 210
 TULSA, OK 74128
 WWW.COWANENGINEERING.COM
 OAK 6614 EXP/SEE 6/30/18

STONE RIDGE & ELM DRAINAGE IMPROVEMENTS

UPPER HAIKEY CREEK WEST TRIBUTARY DRAINAGE AREA MAP

STORMWATER MANAGEMENT PLAN

SITE DESCRIPTION

LOCATION MAP:
LOCATION REFERENCE MAP IS PROVIDED ON THE COVER SHEET OF THESE DRAWINGS.

PROJECT DESCRIPTION:
STORMWATER DIVERSION PIPING AND CHANNELIZATION

LOCAL PROJECT CONTACT:

THOMAS TOIBERT
(918)259-7000, EXT. 5434

SEQUENCE OF CONSTRUCTION ACTIVITIES:

PRIOR TO INITIATING SOIL DISTURBING ACTIVITIES, THE CONTRACTOR SHALL INSTALL ALL PERIMETER TEMPORARY SEDIMENT CONTROLS SPECIFIED, CLEAR AND GRUB ONLY IN AREAS NECESSARY, PRESERVING AS MUCH NATIVE VEGETATION AS POSSIBLE. INSTALL, MAINTAIN AND/OR MOVE TEMP. SEDIMENT ITEMS AS PRACTICAL WITH CONSTRUCTION OPERATIONS. IF DIRECTED BY THE CONTRACT ADMINISTRATOR, REPLACE SALVAGED TOPSOIL AND DEVICES WITH AN ACCEPTABLE VEGETATION COVER (AT LEAST 70% MUST BE ATTAINED). THE CONTRACTOR MAY CHOOSE TO MODIFY THE TYPE OR ARRANGEMENT OF SPECIFIED PRACTICES TO IMPROVE THEIR EFFECTIVENESS AS APPROVED BY THE CONTRACT ADMINISTRATOR. THE CONTRACTOR SHALL MAINTAIN A LOG OF THE DATES OF MAJOR SOIL DISTURBANCE ACTIVITIES AND ALSO THE DATES OF INSTALLATION OF EROSION CONTROL MEASURES.

NOTE:

THIS SHOULD INCLUDE MAJOR ACTIVITIES REQUIRED TO CONSTRUCT THE PROJECT & EROSION CONTROL ITEMS.

TOTAL DISTURBED AREA (INCLUDING OFF-SITE BORROW AND FILL AREAS) 0.70 ACRES

PRE-CONSTRUCTION RUNOFF COEFFICIENT: 0.387

POST-CONSTRUCTION RUNOFF COEFFICIENT: 0.673 (FUTURE)

SOIL DESCRIPTION: COWETA-BATES, DENNIS-PHAROAH AND DENNIS-RADLEY COMPLEXES

RECEIVING WATERS: HANKEY CREEK

DISCHARGE FROM INDUSTRIAL ACTIVITY: N/A

DISCHARGE TO A FEDERALLY PROTECTED LAND: N/A

DISCHARGE TO A 303D/THREATENED/IMPAIRED SYSTEM: N/A

HISTORICAL PROPERTIES: N/A

ENDANGERED SPECIES: N/A

NOTE:

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

DATE: _____

BY: _____



EDWARD GROUP ENGINEERING, LLC
10000 W. 13TH AVENUE, SUITE 210
TULSA, OK 74135
918.456.6710 | 918.499.6747
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EROSION AND SEDIMENT CONTROLS

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. MAINTENANCE SHALL BE PERFORMED WITHIN 24 HOURS OF ANY WEATHER-INDUCED DAMAGE TO ANY EROSION CONTROL MEASURES. AFTER ANY STORM EVENT, GREATER THAN 0.5 INCHES OF 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. CONCRETE WASH WATER/WASTE IS CONSIDERED A HAZARDOUS MATERIAL AND MUST BE CONTAINED.

PROJECT COMPLETION:

ALL TEMPORARY SEDIMENT CONTROLS ARE TO BE REMOVED AFTER THE COMPLETION OF THE PROJECT. IF RE-VEGETATION OF THE DISTURBED SOILS IS INCLUDED IN THE CONTRACT, THE PROJECT IS NOT COMPLETE UNTIL VEGETATION HAS BEEN ACHIEVED ADEQUATE COVER.

NOTES:

GENERAL NOTES:

THE ENCLOSED STORMWATER POLLUTION PREVENTION PLAN (SWP3) COMPLIES WITH OPDES REGULATIONS UNDER THE CITY OF BROKEN ARROW OK044 STORMWATER PERMIT FOR SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS (MS4) OPTIONAL PERMIT FOR MUNICIPAL CONSTRUCTION ACTIVITIES ON LAND OWNED BY THE CITY THAT IS DIRECTLY CONTROLLED BY THE CITY.

OWNERS CERTIFICATION:

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECT SUPERVISION AND IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHERED AND EVALUATED THE INFORMATION SUBMITTED. BASED ON MY INQUIRY THIS INFORMATION IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE AND COMPLETE.

SIGNATURE: _____ DATE: _____

PRINT NAME AND TITLE: _____

(SIGNATURE PAGE OF SP3 TO BE KEPT IN THE OFFICE OF THE STORMWATER MANAGER, ENGINEERING AND CONSTRUCTION DEPARTMENT)

DATE	ISSUED	DATE	DATE	DATE

STONE RIDGE & ELM DRAINAGE IMPROVEMENTS

STORMWATER DIVERSION STORMWATER MANAGEMENT PLAN

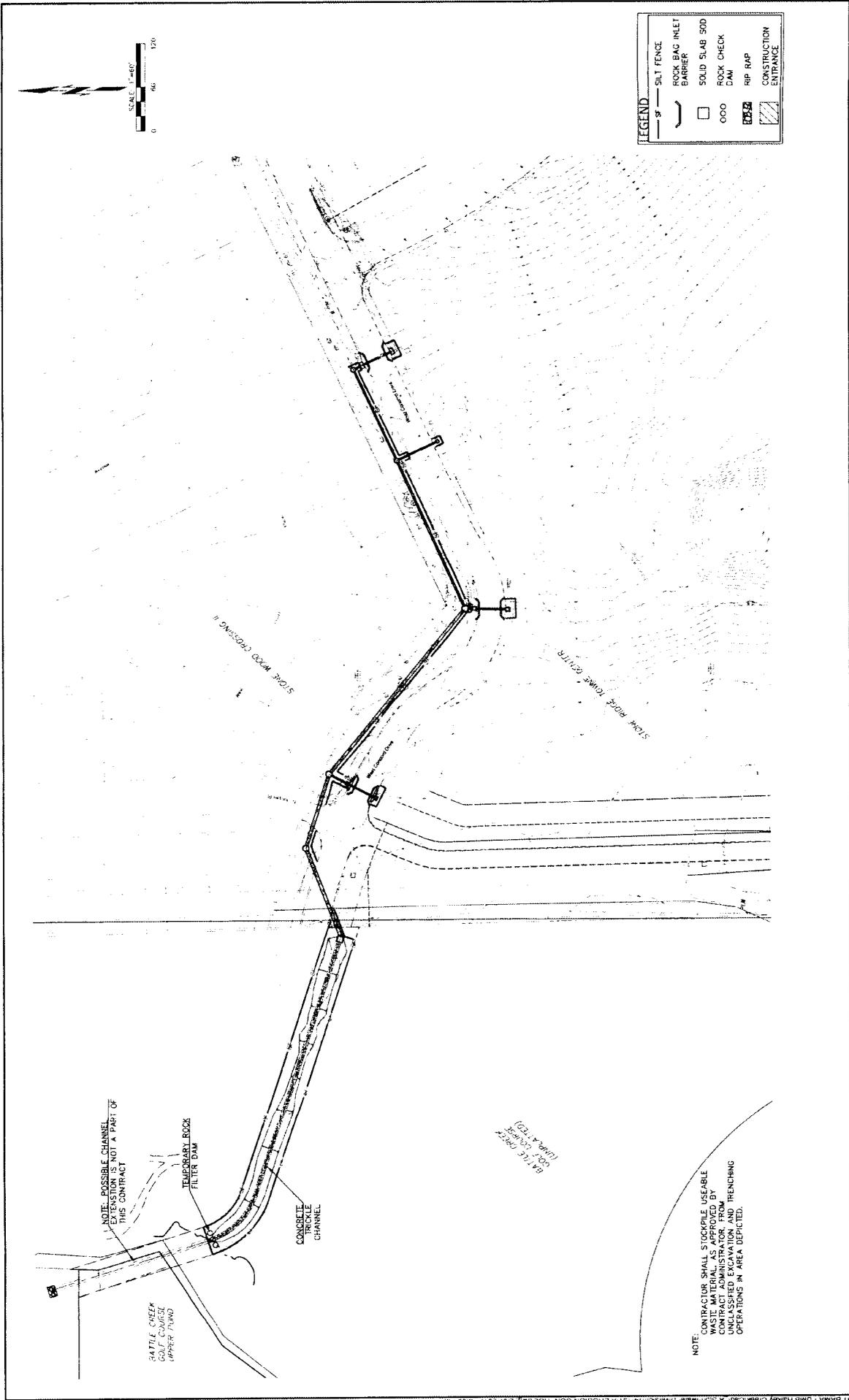
EDWARD GROUP ENGINEERING, LLC
10000 W. 13TH AVENUE, SUITE 210
TULSA, OK 74135
918.456.6710 | 918.499.6747
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TULSA, OK 74135
918.456.6710 | 918.499.6747
EPA 614 | EXP. 06/30/18

DATE: _____

BY: _____



DATE	IN CHARGE	 CITY OF BROKEN ARROW Where opportunity lives	STORMWATER DIVERSION EROSION CONTROL PLAN	STONE RIDGE & ELM DRAINAGE IMPROVEMENTS	PROJECT NO. _____ SHEET _____ OF _____ DRAWING NAME _____ DATE _____ REVISION _____ DESIGNER _____ CHECKED _____ DATE _____ DRAWN _____ DATE _____ PROJECT NO. _____ SHEET _____ OF _____ DRAWING NAME _____ DATE _____ REVISION _____ DESIGNER _____ CHECKED _____ DATE _____ DRAWN _____ DATE _____

CWAN GROUP ENGINEERING, LLC
 5415 D. WALKER AVENUE SUITE 210
 OKLAHOMA CITY, OK 73106
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 WWW.CWANENGINEERING.COM
 OK 0414 - LICENSE 603010

EROSION CONTROL NOTES:

- SILT FENCE SHALL BE MAINTAINED AND SEDIMENT BUILD-UP REGULARLY REMOVED UNTIL EARTHWORK OPERATIONS ARE COMPLETE AND/OR SEEDING IS IN PLACE OR 75% VEGETATION STABILIZATION IS OBTAINED.
- ALL DISTURBED AREAS SHALL BE RE-VEGETATED IN ACCORDANCE WITH PLANS.
- ALL FLOW LINES THAT ARE TO BE HELED SHALL BE THOROUGHLY COMPACTED TO PREVENT SETTLEMENT OR DENSITY BEFORE CONSTRUCTION OR EXTENSION OF DRAINAGE STRUCTURES.

IN ORDER TO ALLEVATE DUST CONDITIONS WITHIN THE CITY LIMITS DURING CONSTRUCTION, THE CONTRACTOR SHALL TAKE THE FOLLOWING MEASURES, BUT BEFORE FINISHED GRADING, PAVEMENT AND/OR PERMANENT EROSION CONTROL WORK IS STARTED, THE CONTRACTOR SHALL SPRINKLE GRADING AT INTERVALS APPROVED BY THE CITY.

- CONTRACTOR SHALL PROVIDE INLET EROSION CONTROL PROTECTION IN ACCORDANCE WITH DETAILS AS SHOWN ON THIS SHEET.
- BAGS OF WOVEN GEOTEXTILE FABRIC, FILLED WITH GRAVEL MUST BE LAYERED SUCH THAT NO GAPS ARE EVIDENT.

STABILIZED CONSTRUCTION SHALL BE CONSTRUCTED AND MAINTAINED DURING THE COURSE OF CONSTRUCTION IN ACCORDANCE WITH CITY STANDARDS.

- ALL SILT FENCING SHALL BE INSTALLED ON THE DOWNS-STREAM SIDE OF DISTURBED EARTH.
- LEAVE ONE ROCKBAG GAP IN THE TOP ROW ON THE SIDE AWAY FROM FLOW TO PROVIDE A SPILLWAY, OR IN THE CENTER IF PONDING IS NEEDED ON BOTH SIDES.

INSPECT BARRIERS AND REMOVE SEDIMENT AFTER EACH STORM EVENT. SEDIMENT AND GRAVEL MUST BE REMOVED FROM THE TRAVELED WAY IMMEDIATELY.

STABILIZED CONSTRUCTION ENTRANCE NOTES:

- CONTRACTOR SHALL REMOVE THE TOP 5" OF TOP SOIL, THEN SCARIFY THE TOP 8" OF SUBGRADE AND RE-COMPACT TO 90% STANDARD PROCTOR DENSITY IN ACCORDANCE WITH 0001 SPECIFICATIONS.
- CONTRACTOR SHALL DAMPEN ACCESS WAY, AS REQUIRED, TO CONTROL DUST. NO SEPARATE PAYMENT SHALL BE MADE. ALL COSTS ASSOCIATED WITH ACCESS WAY SHALL BE INCLUDED IN THE UNIT PRICE BID.
- STONE SIZE AASHTO DESIGNATION M43, SIZE NO. 2 (2-1/2" TO 1-1/2"). USE CRUSHED STONE.
- LENGTH-AS EFFECTIVE, BUT NOT LESS THAN 50 FEET.
- THICKNESS-NOT LESS THAN EIGHT (8) INCHES.
- WIDTH-NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS.

WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. THE CONTRACTOR SHALL PROVIDE CLEAN WHEELS AS REQUIRED BY PLANS. IT IS REQUIRED THAT ALL WHEELS BE CLEANED ON AN AREA STABILIZED WITH CRUSHED STONE. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STREET, STORM DRAIN, DITCH, OR WATERCOURSE THROUGH USE OF SAND BAGS, GRAVEL, BOARDS OR OTHER APPROVED METHODS.

THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY BE ACCOMPLISHED BY THE USE OF WHEEL CLEANERS, WASHERS, HOSE AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO CONTROL SEDIMENT. ALL SEDIMENT SPILLED, GROPPED, GROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY BY THE OWNER.

NO SEPARATE PAYMENT WILL BE MADE FOR MAINTENANCE. ALL MAINTENANCE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE CONSTRUCTION ENTRANCE.

CONSTRUCTION ROAD TO BE CONSTRUCTED WITH THE SAME MATERIAL AS THE STABILIZED CONSTRUCTION ENTRANCE.

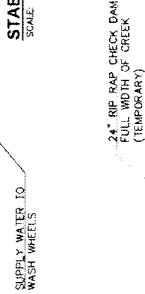
HAUL OPERATIONS SHALL ADHERE ALL TRAFFIC CONTROL MEASURES SPECIFIED BY THE MUTCD, 0001 STANDARD AND/OR AS SPECIFIED BY THESE PLANS.

SEDIMENT BASIN / TEMPORARY SILTATION TRAP NOTES:

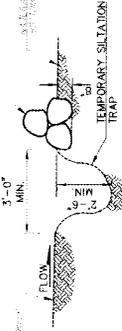
- TRAPPED SEDIMENT IS TO BE REMOVED FROM CATCHMENT ROUTINELY AND DISPOSED OF OFF-SITE IN A PROPER MANNER.
- SEDIMENT IS TO BE REMOVED BEFORE 1/3 OF THE STORAGE VOLUME IS REDUCED BY MATERIAL.



STABILIZED CONSTRUCTION ENTRANCE / EXIT
SCALE: N.T.S.



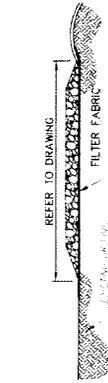
24" RIP RAP CHECK DAM FULL WIDTH OF CREEK (TEMPORARY)



ROCK CHECK DAM
SCALE: N.T.S.

3'-0" MIN.

TEMPORARY SILTATION TRAP



8" MAX SPACING
36" MAX FABRIC TIES

USE WIRE BRINGS TO ATTACH FILTER FABRIC TO RIP-RAP. WIRE BRINGS TO STEEL POST - TYPICAL.

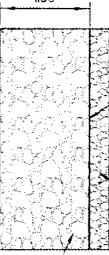
36" MIN. BURIED DEPTH

BOTTOM OF FILTER FABRIC IN TRENCH 6" MIN. BELOW EXISTING GROUND

SILT FENCE DETAIL
SCALE: N.T.S.

SCALE: N.T.S.

NOTE: TYPE 1 - A FILTER BLANKET SHALL CONSIST OF 4 COURSES AND 4 BOWES LOWER COURSE BACKING AS SPECIFIED BY 0001 SEC. 713.03



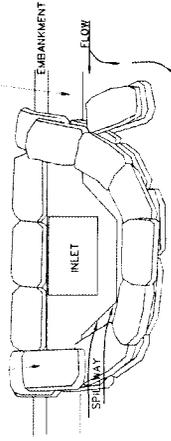
RIP RAP DETAIL
SCALE: N.T.S.

SCALE: N.T.S.

8" TYPE I, I.A. FILTER BLANKET

8" TYPE I, I.A. FILTER BLANKET

PLACE ROCK BARRIER BAGS SUCH THAT NO GAPS ARE EVIDENT



ROCK BAG INLET BARRIER
SCALE: N.T.S.

SCALE: N.T.S.

CAPTURED SEDIMENT

ROCK BAG DETAIL
SCALE: N.T.S.

SCALE: N.T.S.



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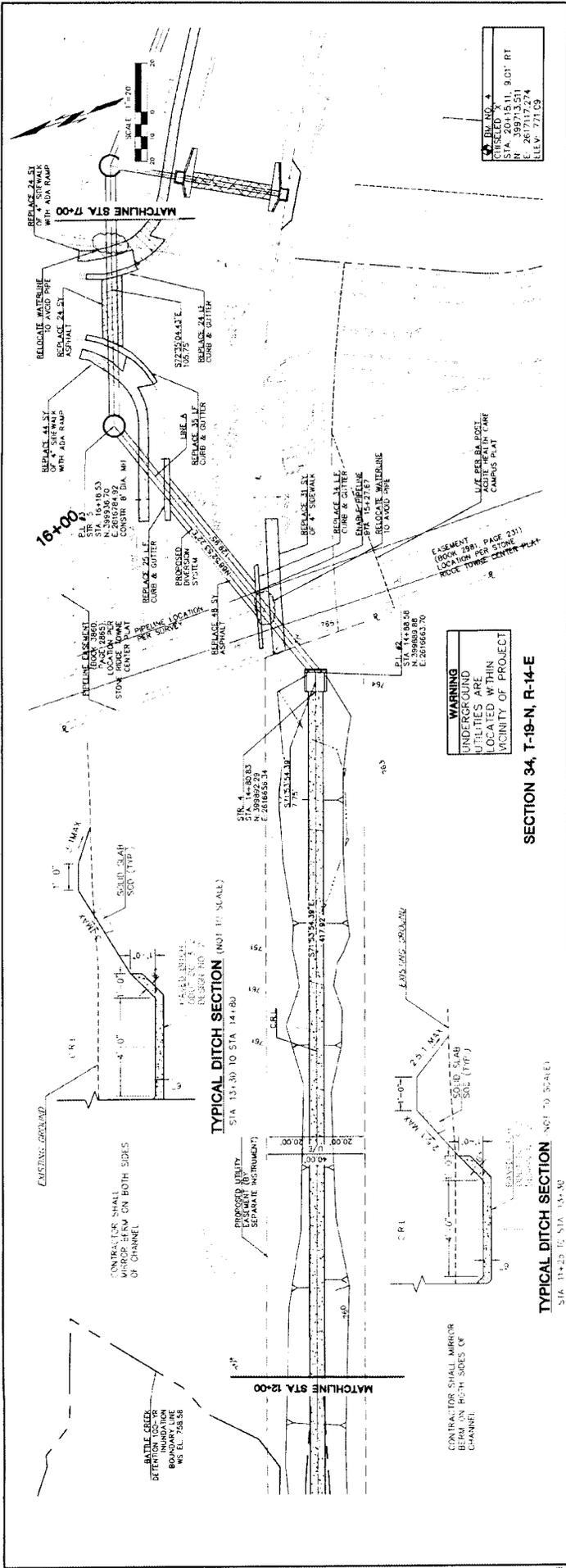
CDWMAN GROUP ENGINEERING, LLC
11111 N. UNIVERSITY BLVD., SUITE 210
TULSA, OK 74125
918.949.6171 | 918.949.6174 F
CDM 6014 - EXPRESS 00018

**STONE RIDGE & ELM
DRAINAGE
IMPROVEMENTS**

**STORMWATER DIVERSION
EROSION CONTROL
DETAILS**

DESIGN NO.	DATE	UNIT TITLE	DRAWN
18-0001	08/20/17	STORMWATER DIVERSION	CDWMAN
18-0002	08/20/17	EROSION CONTROL	CDWMAN
18-0003	08/20/17	STORMWATER DIVERSION	CDWMAN
18-0004	08/20/17	EROSION CONTROL	CDWMAN
18-0005	08/20/17	STORMWATER DIVERSION	CDWMAN
18-0006	08/20/17	EROSION CONTROL	CDWMAN

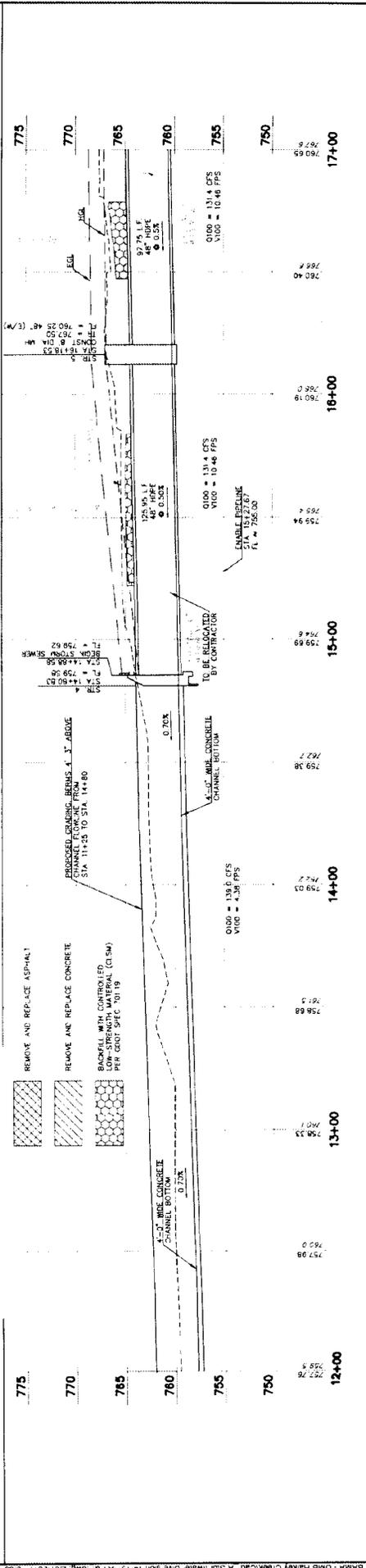
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1/8"=1'-0"	08/20/17	EROSION CONTROL	CDWMAN
1/8"=1'-0"	08/20/17	STORMWATER DIVERSION	CDWMAN
1/8"=1'-0"	08/20/17	EROSION CONTROL	CDWMAN
1/8"=1'-0"	08/20/17	STORMWATER DIVERSION	CDWMAN
1/8"=1'-0"	08/20/17	EROSION CONTROL	CDWMAN



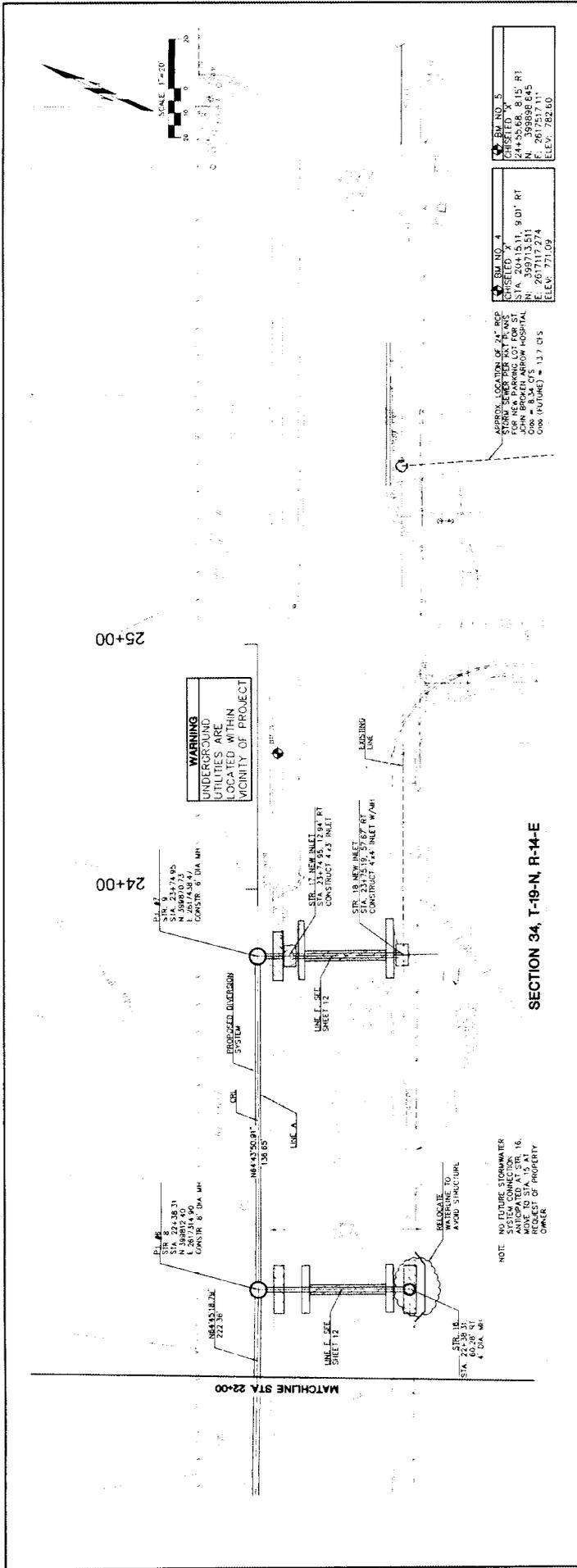
WARNING
 UNDERGROUND
 UTILITIES ARE
 LOCATED WITHIN
 VICINITY OF PROJECT

CD PLAN NO. 4
 CHECKED 15.11.9.01 RT
 N/A 398713.511
 E 267317.274
 LEV. 771.09

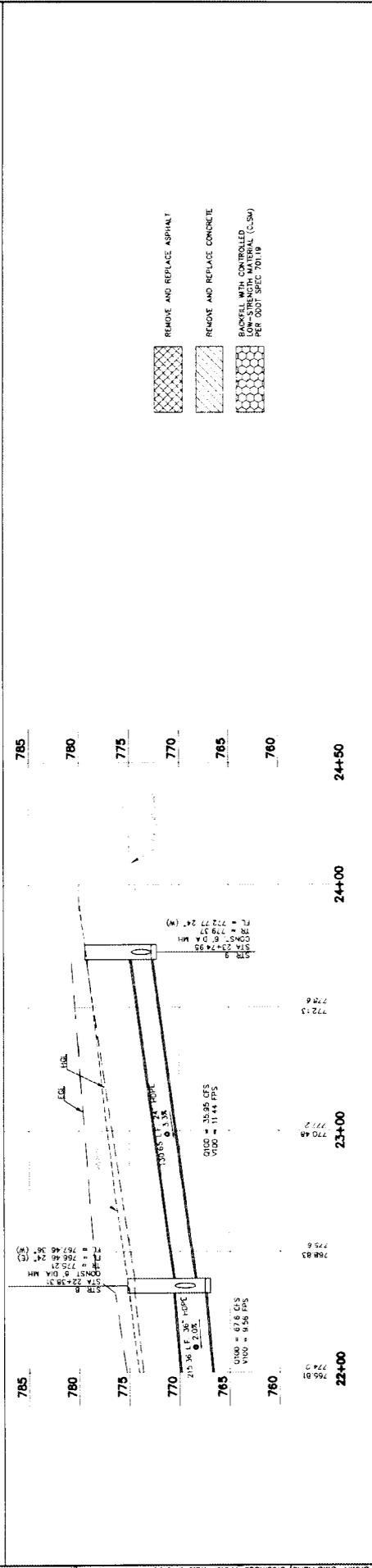
SECTION 34, T-19-N, R-14-E



DATE	REVISION	SCALE	DATE	DATE	DATE	DATE	DATE
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SECTION 34, T-19-N, R-14-E



GENERAL NOTES:

1.0 DESIGN CRITERIA

- 1.1 DESIGN MANUAL INTERNATIONAL BUILDING CODE, LATEST EDITION
- 1.2 AMERICAN CONCRETE INSTITUTE (ACI) BUILDING CODE REQUIREMENTS 318-LATEST EDITION
- 1.3 STEEL - HOT ROLLED AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), 9TH EDITION
- 1.4 STEEL JOIST FOR FLOOR AND ROOF DECKS STEEL CONSTRUCTION MANUAL, ASD, 9TH EDITION
- 1.4.1 STEEL JOIST INSTITUTE (SJI) DESIGN MANUAL, LATEST EDITION
- 1.4.2 STEEL DECK INSTITUTE (SDI) DESIGN MANUAL FOR COMPOSITE DECKS, FORM DECKS AND ROOF DECKS LATEST EDITION
- 1.5 STEEL - COLD FORMED, LIGHT GAUGE AMERICAN IRON AND STEEL INSTITUTE (AISI) COLD-FORMED STEEL DESIGN MANUAL, LATEST EDITION

2.0 GENERAL CONSTRUCTION NOTES

- 2.1 THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS BEFORE STARTING WORK AND THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES FOUND.
- 2.2 SPECIFIC DETAILS AND NOTES SHALL TAKE PRECEDENCE OVER STANDARD DETAILS AND NOTES.
- 2.3 WHEN CONSTRUCTION DETAILS ARE NOT SHOWN OR NOTED, WORK SHALL BE THE SAME AS FOR OTHER SIMILAR WORK.

3.0 CONCRETE CONSTRUCTION

- 3.1 THE MINIMUM ULTIMATE COMPRESSIVE STRENGTH AT THE END OF 28 DAYS SHALL BE 4000 PSI, UNLESS OTHERWISE NOTED.
- 3.2 REINFORCEMENT SHALL BE ASTM A-615 OR B0.
- 3.3 MINIMUM CONCRETE COVER FOR REINFORCEMENT SHALL BE IN ACCORDANCE TO ACI 318, SECTION 7.7.3.1: SLABS AND JOISTS:
 - TOP AND BOTTOM BARS FOR DRY CONDITIONS: 1-1/2 IN
 - #1 BARS AND SMALLER: 3/4 IN
 - FORMED CONCRETE SURFACES EXPOSED TO EARTH, WATER OR WEATHER, AND OVER OR IN CONTACT WITH SEWAGE AND FOR BOTTOMS BEARING ON WORK: 2 IN
 - #1 BARS AND SMALLER: 1-1/2 IN
 - #2 THROUGH #8 BARS: 2 IN
- 3.3.2 BEAMS AND COLUMNS:
 - FOR STIRRUPS OR TIES SPACED IN ACCORDANCE WITH ACI 7.7 THROUGHOUT LAP: 1-1/2 IN
 - PRINCIPAL REINFORCEMENT: 2 IN
 - EXPOSED TO EARTH, WATER, SEWAGE, OR WEATHER: 2 IN
 - PRINCIPAL REINFORCEMENT: 2 1/2 IN
- 3.3.3 WALLS:
 - FOR #4 BARS AND SMALLER: 3/4 IN
 - #4 AND #8 BARS: 1 1/2 IN
 - WEATHER EXPOSED SURFACES: 2 IN
 - CIRCULAR TANKS WITH RING TENSION: 2 IN
 - ALL OTHERS: 2 IN
- 3.3.4 FOOTINGS AND BASE SLABS:
 - AT UNIFORM SURFACES AND BOTTOMS BEARING ON CONCRETE WORK MAT: 2 IN
 - AT UNIFORM SURFACES AND BOTTOMS IN CONTACT WITH EARTH: 3 IN
 - OVER TOP OF PILES: 2 IN
 - SAME AS SLABS: 2 IN

- 3.4 ALL REINFORCEMENT ANCHOR BOLTS, DOMELS, INSERTS, ETC. SHALL BE WELL SECURED IN PLACE BEFORE PLACING CONCRETE.
- 3.5 NO CONDUIT SHALL BE PLACED BETWEEN THE BOTTOM REINFORCEMENT AND THE BOTTOM OF THE SLAB.
- 3.6 EXTERIOR SLAB SHALL SLOPE A MINIMUM OF 1/4" PER FOOT AWAY FROM THE BUILDING, UNLESS OTHERWISE NOTED.
- 3.7 WHEN BASEMENT WALLS SPAN FROM THE BASEMENT TO FIRST FLOOR, BOTH BASEMENT AND FIRST FLOOR WALLS SHALL BE IN PLACE BEFORE ANY BACK FILL IS PLACED.
- 3.8 ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 3/4" UNLESS DETAILED OTHERWISE.

3.0 CONCRETE CONSTRUCTION (cont.)

- 3.9 CONSTRUCTION JOINTS IN STRUCTURAL SLABS AND GRADE BEAMS SHALL BE AT MIDSPAN, UNLESS DETAILED OTHERWISE.
- 3.10 WELDED WIRE FABRIC SHALL HAVE END LAPS OF ONE FULL MESH AND EDGE LAPS BY OVERLAPPING SEWAGE WIRES AND WIRING ALL SLABS SECURELY TOGETHER.
- 3.11 NON-EPOXY REINFORCEMENT LAP SPACE LENGTH FOR NORMAL WEIGHT CONCRETE SHALL BE IN ACCORDANCE TO THE TABLE ON THIS SHEET.
- 3.12 COVER JOISTS SHALL BE 1/4 INCH (6mm) MINIMUM IN WIDTH AND SHALL BE SAW CUT TO A DEPTH EQUAL TO THE SLAB THICKNESS, UNLESS OTHERWISE NOTED. CONTROL JOINTS TO BE IN ACCORDANCE TO AMERICAN CONCRETE INSTITUTE STANDARD METHODS OF PRACTICE.
- 3.13 CONTROL JOISTS IN SLABS AND MATS SHALL BE LOCATED AT COLUMN LINES, WITH INTERMEDIATE JOISTS LOCATED BETWEEN COLUMN LINES OR EDGES OF SLAB AS REQUIRED IN ORDER TO PROVIDE MAXIMUM DISTANCES MEASURED IN FEET BETWEEN JOISTS OF 2 TO 3 TIMES THE SLAB THICKNESS MEASURED IN INCHES, UNLESS OTHERWISE NOTED. THE RESULTING PANELS SHOULD BE AS SQUARE AS POSSIBLE.
- 3.14 EXPANSION/CONTRACTION JOINTS SHALL BE 1/2" MINIMUM AND SHALL BE PLACED AT A DISTANCE MEASURED IN FEET OF NO GREATER THAN FIVE TIMES THE MINIMUM WALL/SLAB/FOOTING THICKNESS MEASURED IN INCHES. EXPANSION/CONTRACTION JOINTS SHALL BE PLACED IN ACCORDANCE WITH STANDARD DETAILS, AS SHOWN ON CONCRETE DETAILS.

4.0 STRUCTURAL STEEL NOTES

- 4.1 SHOP FABRICATOR SHALL SUPPLY ALL MATERIALS, UNLESS NOTED OTHERWISE.
- 4.2 ALL STRUCTURAL STEEL TO BE ASTM A-36. MINIMUM YIELD STRENGTH OF 36 KSI.
- 4.3 STRUCTURAL STEEL BOLTING SHALL CONFORM TO ASTM A-325.
- 4.4 MACHINE BOLTS CONFORMING TO ASTM A-325 SHALL BE USED FOR HANDRAIL AND LADDER ASSEMBLIES.
- 4.5 DETAILS AND WORKMANSHIP SHALL CONFORM TO THE BEST MODERN SHOP PRACTICE AND SHALL BE IN ACCORDANCE WITH AISC, 9TH EDITION.
- 4.6 ALL STRUCTURAL STEEL WELDING SHALL BE DONE WITH E70XX ELECTRODES IN ACCORDANCE WITH THE LATEST AWS STRUCTURE WELDING CODE AS MODIFIED BY AISC SPECIFICATION.
- 4.7 ALL SHOP WELDS TO BE SEAL WELDS ON GALVANIZED STRUCTURES.
- 4.8 ALL SHOP CONNECTIONS TO BE BOLTED. ALL SHOP CONNECTIONS TO BE WELDED, UNLESS NOTED OTHERWISE.
- 4.9 ALL GUSSET PLATES SHALL BE 3/8" MINIMUM THICKNESS.
- 4.10 ALL STIFFENER SURFACES SHALL BE 3/8" MINIMUM THICKNESS, UNLESS NOTED OTHERWISE.
- 4.11 ALL GALVANIZED SURFACES DAMAGED IN FIELD SHALL BE REPAIRED WITH "Z.R.C. COLD GALVANIZED COMPOUND (OR COMPANY APPROVED EQUAL), APPLIED PER MANUFACTURER'S RECOMMENDATIONS.
- 4.12 HOLES REQUIRED FOR FIELD ERECTION SHALL BE DRILLED. NO BURNING SHALL BE PERMITTED, UNLESS NOTED OTHERWISE.
- 4.13 REMOVE ALL BURRS AND SHARP EDGES AFTER FABRICATION.
- 4.14 GALVANIZED STRUCTURES SHALL BE FABRICATED WITH OVERSIZE HOLES, 1/8" LARGER THAN THE BOLT DIAMETER, FOR STEEL TO STEEL CONNECTIONS.

5.0 STEEL JOIST AND DECKING NOTES

- 5.1 ALL STEEL JOIST CONSTRUCTION SHALL COMPLY WITH RECOMMENDED CODE OF STANDARD PRACTICE FOR STEEL JOISTS AND JOIST GIRDERS EFFECTIVE AUGUST 1, 2002.
- 5.2 ALL STEEL JOISTS AND DECKS SHALL BE MANUFACTURED BY VULCRRAFT, UNLESS OTHERWISE NOTED.
- 5.3 STANDARD SPECIFICATIONS FOR OPEN WEB STEEL JOIST, LATEST EDITION.
- 5.4 ALL LH-SERIES AND DLH-SERIES JOIST SHALL BE DESIGNED, MANUFACTURED AND CONSTRUCTED IN ACCORDANCE TO SJI STANDARD SPECIFICATIONS FOR LONG SPAN STEEL JOIST AND DEEP LONG SPAN STEEL JOIST, RESPECTIVELY.
- 5.5 ALL SLH-SERIES JOIST SHALL BE DESIGNED, MANUFACTURED AND CONSTRUCTED IN ACCORDANCE TO VULCRRAFT SPECIFICATION FOR SUPER LONG SPAN STEEL JOIST UNLESS OTHERWISE NOTED.
- 5.6 ALL LH-SERIES JOIST SHALL BE DESIGNED, MANUFACTURED AND CONSTRUCTED IN ACCORDANCE TO SJI STANDARD SPECIFICATIONS FOR JOIST GIRDERS, LATEST EDITION.
- 5.7 ALL STRUCTURAL STEEL JOIST AND JOIST SUBSTITUTES SHALL CONFORM TO ASTM A592, GRADE 50 WITH YIELD STRESSES OF 50 KSI, UNLESS OTHERWISE NOTED.

6.0 LIGHT GAGE STEEL

- 6.1 ALL LIGHT GAGE SHEET SHALL BE ASTM A500-89 GRADE C (MINIMUM YIELD 50 KSI) FOR SHAPED TUBING AND GRADE C (MINIMUM YIELD 46 KSI) FOR ROUNDED TUBING, UNLESS OTHERWISE NOTED.

SIZE	LAP	CASE 1	CASE 2	CASE 3	CASE 1	CASE 2	CASE 3
3	A	19	28	12	15	22	12
	B	25	37	15	19	28	12
4	A	25	37	15	19	28	12
	B	33	49	20	25	37	15
5	A	31	47	19	24	36	15
	B	41	61	25	31	47	19
6	A	37	56	23	29	43	18
	B	49	73	29	37	56	23
7	A	54	81	33	42	63	25
	B	71	106	43	54	81	33
8	A	62	93	37	48	72	29
	B	81	121	49	62	93	37
9	A	70	105	42	54	81	33
	B	91	136	55	70	105	42
10	A	79	118	47	61	91	37
	B	102	153	62	79	118	47
11	A	87	131	53	67	101	41
	B	114	170	68	87	131	53
14							

TOP BARS ARE HORIZONTALLY PLACED BARS SUCH THAT MORE THAN 12" OF CONCRETE IS CAST IN THE MEMBER BELOW THE BAR.

A LAP 1.0 x CALCULATED LAP LENGTH (EMBEDMENT)
 B LAP 1.3 x CALCULATED LAP LENGTH (TENSION LAP)

CASE 1: ACI 12.2.2 THROUGHOUT LAP STIRRUPS OR TIES SPACED IN ACCORDANCE WITH ACI 7.7 CLEAR SPACING GREATER THAN D_b CLEAR COVER GREATER THAN D_b

CASE 2: ACI 12.2.2 ALL OTHER CASES THAN DESCRIBED IN CASE 1 MUST SATISFY THE SMALLER OF:
 (1) D_c GREATER THAN OR EQUAL TO 2.5 D_b OR
 (2) 1/2 CENTER TO CENTER SPACING GREATER THAN OR EQUAL TO 2.5D_b

FOR EPOXY COATED REINFORCEMENT MULTIPLY THE GIVEN LAP LENGTHS SHOWN IN THE TABLE BY 1.5.
 FOR LIGHT WEIGHT CONCRETE MULTIPLY THE GIVEN LAP LENGTHS SHOWN IN THE TABLE BY 1.3.

DATE	REVISIONS	DESCRIPTION	DATE	DATE	DATE

SCALE	DATE	DATE	DATE

**STORMWATER DIVERSION
 GENERAL STRUCTURAL
 NOTES**

**STONE RIDGE & ELM
 DRAINAGE
 IMPROVEMENTS**

CITY OF
BROKEN ARROW
 Where opportunity lives

DATE	REVISIONS	DESCRIPTION	DATE	DATE	DATE

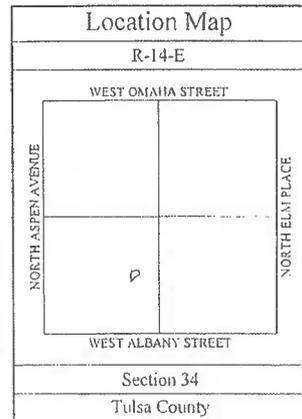
EXHIBIT “C”

[Legal Description of Land to be Conveyed by the City to REIP]

Exhibit "A"



29,194 S.F.
0.6702 Acres



N. Juniper Pl.

BROKEN ARROW
POST ACUTE HEALTH
CARE CAMPUS

W. Albany Dr.

STONE RIDGE
TOWNE CENTER

CITY OF BROKEN ARROW TRACT
A PART OF THE SW/4 OF SECTION 34, T-19-N, R-14-E



Tulsa Engineering & Planning Associates, Inc.
9820 East 41st Street, Suite 102 Tulsa, OK 74116
Phone: 918-252-9621 Fax: 918-250-4566
Civil Engineering • Land surveying • Land Planning
Certificate of Authorization No. CA 531 PEALS Renewal Date June 30, 2017



Job No: 15-095.00
Scale: 1" = 60'
Date: 06/15/2016

Exhibit "B"

Legal Description for City of Broken Arrow Tract

A tract of land located in the SW/4 of Section 34, T-19-N, R-14-E of the Indian Meridian, Tulsa County, State of Oklahoma, according to the Official U.S. Government Survey thereof, being more particularly described as follows:

Commencing at the southwest corner of the right of way for North Juniper Place as platted in "Broken Arrow Post Acute Health Care Campus", a subdivision in the City of Broken Arrow, Tulsa County, State of Oklahoma, according to the official recorded plat thereof, Plat No. 6565, as filed in the records of the Tulsa County Clerk's office, also lying on the northerly right of way for West Albany Drive as platted in "Stone Ridge Towne Center", a subdivision in the City of Broken Arrow, Tulsa County, State of Oklahoma, according to the official recorded plat thereof, Plat No. 6236, as filed in the records of the Tulsa County Clerk's office; Thence N 38°55'45" W a distance of 1017.67 feet to the "Point of Beginning";

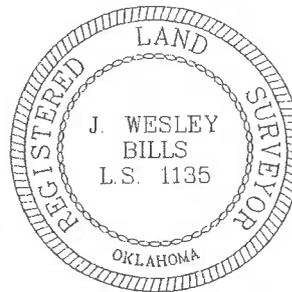
Thence N 06°39'44" W a distance of 166.16 feet; Thence N 25°34'56" E a distance of 71.28 feet; Thence N 85°25'34" E a distance of 162.57 feet; Thence S 15°56'14" E a distance of 86.47 feet; Thence S 58°31'23" W a distance of 156.76 feet; Thence S 39°26'55" W a distance of 100.10 feet to the "Point of Beginning".

Said tract contains 29,194 square feet or 0.6702 acres.

The non-astronomic bearings for said tract are based on an assumed bearing of S 00°03'00" E along the west line of "Stone Wood Crossing II", "Stone Ridge Towne Center" and "Broken Arrow Post Acute Health Care Campus", also being the east line of the SW/4 of Section 34, T-19-N, R-14-E of the Indian Meridian, Tulsa County, State of Oklahoma.

CERTIFICATE

I, J. Wesley Bills, of Tulsa Engineering & Planning Associates, Inc. and a Professional Land Surveyor registered in the State of Oklahoma, hereby certify that the foregoing legal description closes in accord with existing records and is a true representation of the real property as described and meets or exceeds the "Minimum Standards for Property Descriptions" as adopted by the Oklahoma State Board of Licensure for Professional Engineers and Land Surveyors.



J. Wesley Bills
J. Wesley Bills, P.L.S. 1135
Date 06-15-2016



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Scale: N/A
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