CITY OF TULSA, OKLAHOMA, CONSTRUCTION PLANS FOR WATER LINE REPLACEMENT AND INSTALLATION

ON

NORTH BIRMINGHAM AVENUE

FROM

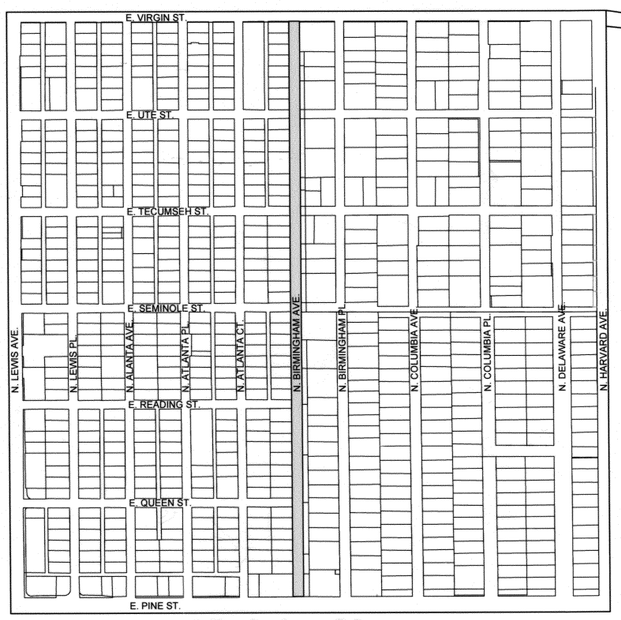
EAST PINE STREET TO EAST VIRGIN STREET

TMUA-W 15-29

ENGINEERING SERVICES DEPARTMENT TULSA, OKLAHOMA

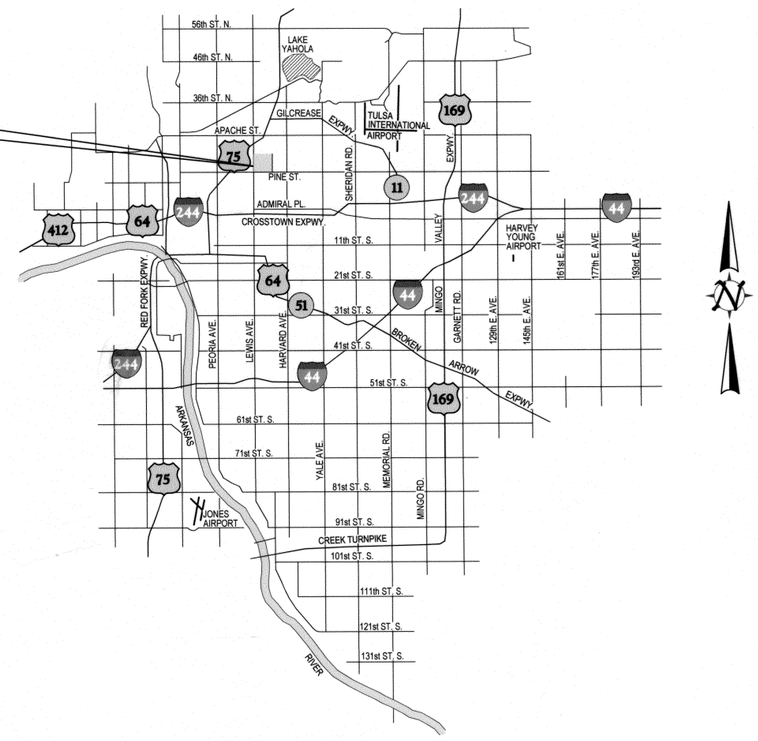
LEGEND

U/E	UTILITY EASEMENT
B/L	BUILDING LINE
IPF	IRON PIN FOUND
CY	CUBIC YARDS
SY	SQUARE YARDS
SF	SQUARE FEET
LF	LINEAR FEET
TC	TOP OF CURB
BC	BACK OF CURB
G	GUTTER
TR	MANHOLE TOP OF RIM
TG	TOP OF GRATE (INLET FLOWLINE)
CONC	CONCRETE
LP	LIGHT POLE
MB	MAILBOX
TS	TRAFFIC SIGN
SD	STORM SEWER PIPE
SGDI	SINGLE GRATE DROP INLET
DGDI	DOUBLE GRATE DROP INLET
STMH	STORM SEWER MANHOLE
SS	SANITARY SEWER PIPE
SSMH	SANITARY SEWER MANHOLE
WL	WATERLINE
WM	WATER METER
WV	WATER VALVE
FH	FIRE HYDRANT
BOP	BEGINNING OF PROJECT
EOP	END OF PROJECT
TW	TOP OF WALL
UG	UNDERGROUND GAS
FL	FLOWLINE
PP	POWER POLE
GUY	GUY WIRE DOWN
GRSR	GAS RISER
RCP	REINFORCED CONCRETE PIPE
ESMT	EASEMENT
TPED	TELEPHONE PEDESTAL
SPHD	SPRINKLER HEAD



Vicinity Map

SCALE: N.T.S.



Location Map

SCALE: N.T.S.

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STANDARDS INDEX

THE FOLLOWING CITY OF TULSA STANDARD DETAILS AND SPECIFICATIONS WILL BE USED FOR THIS PROJECT (MAY 2005):

STD. 102 - PROJECT SIGN
STD. 126 - STANDARD SILT FENCE, AND CONSTRUCTION ENTRANCE
STD. 301 - DUAL ¾" LONG SERVICE LINES
STD. 304 - BEDDING DETAIL - RIGID PIPE
STD. 305 - BEDDING DETAIL - SEMI RIGID PIPE
STD. 306 - TRENCH DETAIL CONSTRUCTION ADJACENT TO ROADWAY
STD. 307 - BORE DETAIL
STD. 309 - FIRE HYDRANT
STD. 311 - SAMPLING TAP ON 4" - 12" WATERLINE
STD. 313 - VALVE BOX
STD. 501 - STANDARD METER SETTINGS FOR ⅝" x¾" AND ¾" WATER SERVICE
STD. 701 - RESIDENTIAL CONCRETE DRIVEWAY CONCRETE STREET
STD. 702 - RESIDENTIAL CONCRETE DRIVEWAY ASPHALT STREET
STD. 713 - PAVEMENT REMOVAL AND REPLACEMENT
STD. 714 - PAVEMENT CUTS
STD. 725 - STANDARD PAVEMENT PATCH AND REPAIR

NOTE: THESE STANDARDS CAN BE OBTAINED FROM THE CITY OF TULSA.

SURVEY DATA

1. HORIZONTAL CONTROL:
   A. OKLAHOMA STATE PLANE COORDINATE SYSTEM, NAD '83 OKLAHOMA NORTH ZONE, ZONE 3501.
   B. ACCURACY - 3RD ORDER OR BETTER.
2. BEARINGS:
   A. THE BEARINGS SHOWN HEREIN ARE GRID BEARINGS DERIVED FROM THE OKLAHOMA STATE PLANE COORDINATE SYSTEM AND ARE NOT ASTRONOMICAL.
3. VERTICAL CONTROLS:
   A. LEVEL DATUM IS NORTH AMERICAN VERTICAL DATUM 1988
   B. ACCURACY - 3RD ORDER OR BETTER.

COT/ADS SITE BENCHMARK

3" BRASS CAP, SET IN CONCRETE FLUSH, STAMPED "63 RESET", SET ON THE EAST SIDE OF UTICA AVENUE AND NORTH OF PINE STREET APPROXIMATELY 200'.
N:434963.500, E:2568429.988,
ELEV = 685.61 (NAVD 1988)

ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH CURRENT CITY OF TULSA ENGINEERING DEPT. SPECIFICATIONS AND THE 2009 EDITION OF THE "STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION", PUBLISHED BY THE OKLAHOMA DEPARTMENT OF TRANSPORTATION, AND AS ADOPTED BY THE CITY OF TULSA. THE "SUPPLEMENT TO THE STANDARD SPECIFICATIONS", EXCLUDING SECTION 100, SHALL GOVERN OVER SAID STANDARD SPECIFICATIONS. ANY SPECIAL PROVISIONS IN THE CONTRACT DOCUMENTS AND SPECIFICATIONS FOR THIS PROJECT SHALL GOVERN OVER THE STANDARD SPECIFICATIONS AND SUPPLEMENTAL SPECIFICATIONS.

Approved By:

CITY OF TULSA

CLAYTON EDWARDS 7-25-16
DIRECTOR, WATER & SANITARY SEWER — DATE
CLAYTON EDWARDS, P.E.

07.28.16
CITY ENGINEER — DATE
PAUL ZACHARY, P.E.

08-26-16
ADVERTISEMENT DATE

Submitted By:

AAB ENGINEERING, LLC

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BEFORE YOU DIG CALL OKIE

PROJECT NOTES

THIS PROJECT COMPLIES WITH ALL OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY (ODEQ) REQUIREMENTS

THE ENTIRE PROJECT IS LOCATED WITHIN THE CORPORATE LIMITS OF THE CITY OF TULSA (COT)

LICENSED PROFESSIONAL ENGINEER — 25330 — OKLAHOMA

AAB Engineering, LLC
Engineering • Surveying • Land Planning
PO Box 2136 Sand Springs, OK 74063
OK CA#6318 Exp: June 30, 2018
KS CA#2292 Exp: Dec. 31, 2016
Office: (918) 514-4283 Fax: (918) 514-4288

PLOT DATE: Wed, 06 Jul 2016 FILE: P:\2015\25-COT WATERLINE BIRMINGHAM\BIRMINGHAM WL BASE
WATER LINE REPLACEMENT AND INSTALLATION TMUA-W 15-29

Base Bid-Waterline					
Item Number	COT Spec Number	Item Description	Pay Item Note	Units	Quantity
1	301	RIGHT-OF-WAY CLEARING AND RESTORING, COMPLETE IN PLACE	4, 5, 6, 7, 22,31	SY	637
2	302	EXCAVATION AND BACKFILL, UNCLASSIFIED	14	CY	232
3	303(A)	AGGREGATE BASE (TYPE A)	26, 27, 28	CY	298
4	304	CONSTRUCTION STAKING		EA	1
5	310(B)	SUBGRADE METHOD B	26	SY	623
6	325	SEPARATOR FABRIC	29	SY	1020
7	307	6 INCH DIP, CL51 POLYETHYLENE WRAPPED (RJ)	1,2,3,8,9,11	LF	62
8	307	6 INCH DIP, CL51 POLYETHYLENE WRAPPED	1,2,3,9,11	LF	74
9	307	16 INCH DIP, CL50 POLYETHYLENE WRAPPED (RJ)	1,2,3,8,9,11	LF	30
10	312	6 INCH DUCTILE IRON 45 DEGREE BEND (RJ)	2, 8	EA	4
11	312	6 INCH DUCTILE IRON SLEEVE (RJ)	2, 8, 12	EA	2
12	309(A)	8 INCH HDPE AWWA C906 PE4710 DR-11 (DIPS)	1,2,3,8,9,10,19	LF	2612
13	312(A)	8 INCH HDPE 45 DEGREE BEND (DIPS)		EA	6
14	312(A)	8 INCH X 8 INCH HDPE TEE (DIPS)	20	EA	9
15	312(A)	8 INCH X 6 INCH DUCTILE IRON REDUCER (RJ)	2, 8	EA	11
16	312A	8 INCH HDPE MJ ADAPTOR (DIPS) (RJ)		EA	28
17	312	16 INCH X 6 INCH DUCTILE IRON TEE (RJ)	2,8	EA	1
18	312	16 INCH DUCTILE IRON SLEEVE	2, 8, 12	EA	2
19	315	3/4 INCH WATER SERVICE CONNECTION (LONG)	15, 16	EA	4
20	315	3/4 INCH WATER SERVICE CONNECTION (SHORT)	15, 16	EA	29
21	315	3/4 INCH WATER METER CAN, LID, & RIM		LF	33
22	317	3-WAY FIRE HYDRANT, IN PLACE		EA	7
23	317	6 INCH GATE VALVE	8	EA	3
24	317	8 INCH GATE VALVE	8	EA	8
25	317	16 INCH GATE VALVE	8	EA	1
26	318	VALVE BOX	21	EA	12
27	325	SODDING AND SEEDING	23,32	SY	1340
28	328	6-INCH BORE		LF	52
29	328	8-INCH BORE		LF	2435
30	411(C)	SUPERPAVE, TYPE S4 (INSOLUBLE) (PG 64-22 OK)	41, 42, 43	TON	3
31	609(A)	CONCRETE CURB	35	LF	430
32	609(A)	COMBINE CURB AND GUTTER	27, 33, 35, 36, 37	LF	35
33	610(B)	CONCRETE DRIVEWAY	33, 36, 37, 38	SY	24
34	619(B)	REMOVAL OF CONCRETE DRIVEWAY	30, 34	SY	24
35	619(B)	REMOVAL OF CONCRETE CURB AND GUTTER	30, 34	LF	447
36	SPECIAL	TYPE I PCC PATCH (NON-ARTERIAL)	39, 40	CY	114
37	SPECIAL	TYPE I AC PATCH (NON-ARTERIAL)	39, 40	CY	7
38	SPECIAL	QUICK SET FLOWABLE FILL	40	CY	30
39	SPECIAL	OWNER ALLOWANCE	18	ALLOW	1
40	SPECIAL	CONSTRUCTION AS-BUILT	24, 25	EA	1
41	407	FOG SEAL		GAL	113

GENERAL CONSTRUCTION AND PAY NOTES

WATER PAY ITEM NOTES

1. TESTING AND CHLORINATION OF WATER MAINS SHALL BE PERFORMED BY THE CITY OF TULSA. TESTING, CHLORINATION, AND FLUSHING SHALL BE DONE IN ACCORDANCE WITH SECTION 109.3 OF THE GENERAL SPECIFICATIONS.

   A. CONTRACTOR SHALL FURNISH AND INSTALL TEMPORARY PLUGS WITH ADEQUATE BLOCKING OR RESTRAINTS, PLUS CORPORATION STOPS, AS DIRECTED BY CITY TESTING PERSONNEL, THEN, ONCE TESTING, CHLORINATION AND FLUSHING BY CITY PERSONNEL IS COMPLETED, REMOVE TEMPORARY BLOCKING AND TIE INTO EXISTING SYSTEM, USING FITTINGS SWABBED INTERNALLY WITH 2% BLEACH SOLUTION.

   B. TESTING, CHLORINATION, AND FLUSHING OF NEW WATER MAIN SHALL BE PERFORMED BY CITY PERSONNEL ON MAINS WHICH ARE PHYSICALLY DISCONNECTED FROM THE EXISTING WATER SYSTEM. TESTING, CHLORINATION, AND FLUSHING OF NEW WATER MAINS SHALL NOT BE PERFORMED AGAINST VALVES WHICH ARE PHYSICALLY CONNECTED TO EXISTING SYSTEM.

   C. ALL COSTS FOR TEMPORARY PLUGS, BLOCKING, RESTRAINING, CORPORATION STOPS, TUBING, THREADED CONNECTIONS, BLEACH AND OTHER INCIDENTALS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PIPE.

2. BURIED BOLTS, HARNESS LUGS, AND COUPLINGS SHALL BE GIVEN TWO COATS OF KOPPER'S BITUMASTIC 300-M (DRY MIL THICKNESS OF 16 MILS) OR EQUAL. COST TO BE INCLUDED IN UNIT PRICE BID FOR PIPE AND FITTINGS.

3. CONTRACTOR TO EXCAVATE ALL UTILITY CROSSINGS AHEAD OF PIPE LAYING SO THAT THE GRADES CAN BE ADJUSTED ON THE PROPOSED WATER MAIN TO AVOID UTILITY CONFLICTS. FAILURE TO DO SO SHALL NOT ENTITLE THE CONTRACTOR TO CLAIM EXTRA COMPENSATION FOR ADJUSTMENTS TO THE PROPOSED WATER MAIN. COST FOR EXCAVATING UTILITY CROSSINGS SHALL BE INCLUDED IN UNIT PRICE BID FOR PIPE.

4. CONTRACTOR SHALL INSURE ALL POLES WHICH ARE AFFECTED BY TRENCHING CONDITIONS ARE BRACED BY OWNERS. PAYMENT SHALL BE INCLUDED IN "RIGHT-OF-WAY CLEARING AND RESTORING". NO ADDITIONAL PAYMENT SHALL BE MADE.

5. ALL HYDRANTS, VALVES AND OTHER FITTINGS FROM ABANDONED WATER MAINS SHALL BE SALVAGED AND DELIVERED TO SOUTH YARD, 2317 S JACKSON. PAYMENT TO BE MADE UNDER RIGHT OF WAY CLEARING AND RESTORATION. NO ADDITIONAL PAYMENT SHALL BE MADE.

6. CONTRACTOR SHALL REPAIR ANY IRRIGATION SYSTEMS, ROOF DRAINS, AND FENCING DAMAGED IN THE ZONE OF CONSTRUCTION DURING THE COURSE OF CONSTRUCTION TO SATISFACTION OF THE PROPERTY OWNER. PAYMENT SHALL BE INCLUDED IN RIGHT-OF-WAY CLEARING AND RESTORING. NO ADDITIONAL PAYMENT SHALL BE MADE.

7. COST OF ANY TEMPORARY LIVESTOCK FENCING AND POLES SHALL BE INCLUDED IN COST OF RIGHT OF WAY CLEARING AND RESTORING. NO ADDITIONAL PAYMENT SHALL BE MADE.

8. ALL COSTS FOR COMPONENTS NECESSARY TO RESTRAIN JOINTS FOR PIPE AND FITTINGS DESIGNATED RESTRAINED JOINT ("RJ") SHALL BE INCLUDED IN UNIT PRICE BID FOR PIPE OR FITTINGS.

   A. DUCTILE IRON PIPE RESTRAINED JOINT SYSTEMS: US PIPE TRFLEX, GRIFFIN SNAPLOK, MCWANE THRUSTLOCK, AMERICAN FLEXRING, EBAA MEGALUG, SMITH-BLAIR CAMLOCK, CLOW TUFGRIP OR EQUAL SHALL BE USED ON THIS PROJECT. SHOULD RJ PIPE BE SPECIFIED THROUGH UNCASED BORES, ONLY USPIPE TRFLEX, GRIFFIN SNAPLOK, MCWANE THRUSTLOCK, OR AMERICAN FLEXRING IS TO BE USED. LOCKING GASKETS NOT PERMITTED;

   B. POLYVINYL CHLORIDE (PVC) RESTRAINED JOINT SYSTEMS: EBAA MEGALUG, STAR STARGRIP OR EQUAL SHALL BE USED ON THIS PROJECT. LOCKING GASKETS NOT PERMITTED; SHOULD RJ PIPE BE SPECIFIED ON BORE CASING IS REQUIRED.

   C. HIGH DENSITY POLYETHYLENE (HDPE) RESTRAINED JOINT SYSTEMS: EBAA MEGALUG, STAR STARGRIP OR EQUAL SHALL BE USED ON THIS PROJECT.

   NO ADDITIONAL PAYMENT SHALL BE MADE.

9. ALL CUT ENDS AND WHERE SALVAGED FITTINGS HAVE BEEN REMOVED FROM ABANDONED WATER LINES LEFT IN PLACE, SHALL BE PLUGGED WITH 24-IN OF CONCRETE INSIDE THE PIPE. COST OF CONCRETE PLUGGING TO BE INCLUDED IN UNIT PRICE BID FOR PIPE. NO ADDITIONAL PAYMENT SHALL BE MADE.

10. TRACER WIRE AND DETECTABLE MYLAR MARKING TAPE SHALL BE INSTALLED ABOVE ALL PVC AND HDPE PIPE, TERMINATING ONLY ONTO HYDRANTS JUST ABOVE GROUND LEVEL AS PER CONST SPEC 310. COST OF TRACER WIRE AND DETECTABLE MYLAR TAPE SHALL BE INCLUDED IN UNIT PRICE BID FOR PVC AND HDPE PIPE. CONST SPEC 310.1 NOW ALLOWS #12 COPPER-CLAD STEEL (CCS) WIRE, 21% CONDUCTIVITY, IN LIEU OF #8 COPPER WIRE AS TRACER WIRE ATOP PVC AND HDPE PIPE.

11. NOT USED

12. ALL LABOR, MATERIALS, AND EQUIPMENT TO CONNECT PROPOSED WATER MAINS TO EXISTING WATER MAINS ARE INCLUDED IN COST OF SLEEVES/ADAPTORS. CONTRACTOR TO EXCAVATE ALL EXISTING WATER MAINS AHEAD OF PIPE LAYING SO THAT THE GRADES CAN BE ADJUSTED ACCORDINGLY. FAILURE TO DO SO SHALL NOT ENTITLE THE CONTRACTOR TO CLAIM EXTRA COMPENSATION FOR ADJUSTMENTS TO THE PROPOSED WATER MAIN. COST FOR EXCAVATING EXISTING WATER MAINS SHALL BE INCLUDED IN UNIT PRICE BID FOR SLEEVES. NO ADDITIONAL PAYMENT SHALL BE MADE.

13. NOT USED

14. CONTRACTOR IS REMINDED TO BACKFILL ALL TRENCHES EXCAVATED ACROSS ANY EXISTING OR PROPOSED DRIVING OR PARKING SURFACE WITH 1½ -IN TYPE A AGGREGATE BASE, PLACED IN 8-INCH MAXIMUM LIFTS AND COMPACTED TO 98% MODIFIED PROCTOR DENSITY. COST TO BE INCLUDED IN COST OF EXCAVATION AND BACKFILL. NO ADDITIONAL PAYMENT SHALL BE MADE.

15. WATER SERVICE CONNECTIONS SHALL INCLUDE COST OF MATERIAL, LABOR AND EQUIPMENT TO REMOVE AND INSTALL SADDLES, SERVICE CLAMPS, CORPORATION STOPS, BENDS, 3-PART UNIONS, COUPLINGS, SETTERS AND ANY OTHER INCIDENTALS REQUIRED FOR A COMPLETE WATER SERVICE CONNECTION WITH EXCEPTION OF METER CANS, RIMS AND LIDS. NO ADDITIONAL PAYMENT SHALL BE MADE. METER CANS, LIDS AND RIMS SHALL BE PAID AS A SEPARATE BID ITEM.

    A. SHORT SERVICE SHALL BE ANY SERVICE LINE THAT IS 25-FEET OR LESS IN LENGTH. SHORT SERVICES DO NOT INCLUDE PAVEMENT REPLACEMENT. I.E. ¾-INCH WATER SERVICE CONNECTIONS (SHORT SERVICE)

    B. LONG SERVICE SHALL BE ANY SERVICE LINE THAT IS GREATER THAN 25-FEET UP TO 80-FEET IN LENGTH. LONG SERVICES INCLUDE PAVEMENT REPLACEMENT AND/ OR COST TO BORE. EXAMPLE: ¾-IN WATER SERVICE CONNECTIONS (LONG SERVICE)

    C. SHORT AND LONG SERVICE LINES EXCEEDING THE ABOVE PARAMETERS WILL BE COMPENSATED FOR LINEAR FOOTAGE ABOVE AND BEYOND. COMPENSATION SHALL BE PAID AS "SERVICE LINES, EXTENSION", PER LF

16. SERVICE LINES ON NON-ARTERIALS SHALL BE EITHER COPPER TUBING (TYPE K SOFT ANNEALED CONFORMING TO ASTM B 88) OR PEX TUBING (UPONOR AQUA PEX 5206 BLUE CONFORMING TO ASTM F876/F877/F2023). PEX TUBING IS NOT PERMITTED WITHIN ARTERIAL RIGHT OF WAY. WHEN PEX TUBING IS USED 3/4" SERVICE PIPE SHALL BE INSTALLED AS 1" SERVICE PIPE.

17. NOT USED

18. THE "OWNER ALLOWANCE" CAN BE USED FOR VARIOUS WORK AND MISCELLANEOUS ITEMS NOT IDENTIFIED IN THE CONTRACT DOCUMENTS WITH THE FOLLOWING PROVISIONS: THE ALLOWANCE SHALL BE USED FOR COST OF MATERIALS, LABOR, INSTALLATION AND OVERHEAD AND PROFIT FOR ADDITIONAL WORK AND MISCELLANEOUS ITEMS THAT ARE NOT IDENTIFIED IN THE CONSTRUCTION DOCUMENTS AND PLANS, AND NOT INCLUDED IN THE BID ITEMS OF THE CONTRACT.

    A. THE ALLOWANCE SHALL BE USED ONLY AT THE DISCRETION OF THE CITY. ANY ALLOWANCE BALANCE REMAINING AT THE COMPLETION OF THE PROJECT WILL BE CREDITED BACK TO THE CITY ON THE FINAL APPLICATION FOR PAYMENT SUBMITTED BY THE CONTRACTOR.

    B. THE CONTRACTOR SHALL PROVIDE, TO THE CITY, A WRITTEN REQUEST FOR THE USE OF ANY ALLOWANCE, WITH A SCHEDULE OF VALUES, AND ALL ASSOCIATED BACKUP INFORMATION, INCLUDING ANY TIME EXTENSIONS REQUIRED TO PERFORM THE WORK.

    C. THE CONTRACTOR SHALL PROCEED WITH THE WORK INCLUDED IN THE ALLOWANCE ONLY AFTER RECEIVING A WRITTEN ORDER, FROM THE ENGINEER AND CITY AUTHORIZING SUCH WORK. PROCEEDING WITH WORK IN THE ALLOWANCE WITHOUT A WRITTEN ORDER FROM THE CITY WILL BE AT THE CONTRACTOR'S EXPENSE.

19. WHERE PLANS IDENTIFY A 22.5-DEG OR 11.25-DEG VERTICAL OR HORIZONTAL BEND, HDPE WILL BE DEFLECTED PER MANUFACTURER'S MINIMUM ALLOWABLE BEND RADIUS.

20. WHERE PLANS IDENTIFY A CROSS, HDPE WILL USE TWO (2) TEE'S. NO ADDITIONAL PAYMENT SHALL BE MADE.

21. TOP OF VALVE BOX SHALL BE FLUSH WITH FINISHED GRADE.

22. THE CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS TO A CONDITION EQUAL TO OR BETTER THAN THE EXISTING IMPROVEMENTS. LIMITS OF DISTURBANCE SHALL NOT EXCEED 9-FEET CENTERED ON THE WATERLINE. ANY DISTURBANCE OUTSIDE OF THIS AREA SHALL BE RESTORED AT THE CONTRACTORS EXPENSE. STREETS, DRIVEWAYS AND ASSOCIATED ITEMS SHALL BE PAID FOR UNDER OTHER ITEMS OF WORK.

23. THE CONTRACTOR SHALL RESTORE ALL DISTURBED GRASS AREAS TO A CONDITION EQUAL TO OR BETTER THAN THE EXISTING CONDITION. THE CONTRACTOR SHALL REPLACE THE SOD TO MATCH IN-KIND AND QUALITY. LIMITS OF DISTURBANCE SHALL NOT EXCEED 9-FEET CENTERED ON THE WATERLINE. ANY DISTURBANCE OUTSIDE OF THIS AREA SHALL BE RESTORED AT THE CONTRACTORS EXPENSE.

24. SPOT ELEVATIONS ON THE MAIN WATER LINE RELATIVE TO FINISHED GRADE SHALL BE PROVIDED AT EACH 100-FT INTERVAL, COMPLETE WITH STATION AND OFFSET. IN ADDITION , ALL VALVES, FITTINGS, FIRE HYDRANTS (TOP OF NUT) AND OTHER MAJOR APPURTENANT ITEMS SHALL BE SHOWN WITH THE PROPER DESCRIPTION, STATION, OFFSET AND ELEVATION.

25. SPOT ELEVATIONS ON WATER METER CANS, VAULTS, SHALL BE SHOWN WITH THE PROPER DESCRIPTION (METER TYPE, METER SIZE, METER NUMBER, SERVICE MATERIAL, SERVICE SIZE), STATION, OFFSET AND ELEVATION.

26. THIS QUANTITY INCLUDES AN ADDITIONAL 10% ABOVE PLAN QUANTITY FOR UNDERCUTTING OF UNSUITABLE SUBGRADE MATERIAL OR ADDITIONAL PATCHING AS DIRECTED BY THE ENGINEER.

27. TYPE A AGGREGATE BASE WAS ESTIMATED TO BE USED AS THE BASE MATERIAL FOR 90% OF THE PATCHING. QUICK SET FLOWABLE FILL WAS ESTIMATED TO BE USED AS THE BASE MATERIAL FOR 10% OF THE PATCHING. ACTUAL QUANTITIES TO BE DETERMINED BY THE ENGINEER.

28. INCLUDES COMPACTION OF AGGREGATE TO 98% AASHTO T180 MODIFIED PROCTOR.

29. NOT USED

30. WASTE MATERIAL TO BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE IN A MANNER APPROVED BY THE ENGINEER.

31. CONTRACTOR SHALL REPAIR ANY IRRIGATION SYSTEMS DAMAGED OR REQUIRING RELOCATION DURING THE CONSTRUCTION OF THIS PROJECT TO THE SATISFACTION OF THE PROPERTY OWNER AND CITY ARBORIST. COST SHALL BE INCLUDED IN THE PRICE BID

32. THE PAY ITEM FOR SOLID SLAB SODDING INCLUDES QUANTITIES FOR PLACEMENT AND COMPACTION OF SUITABLE BACKFILL AND SOD AT EXISTING GRASS AREAS WHICH MAY BE DAMAGED DURING CONSTRUCTION OF CURBS, SIDEWALKS, DRIVEWAYS, AND OTHER MISCELLANEOUS ITEMS. THE QUANTITIES ARE BASED ON UTILIZING A 3 FOOT WIDE STRIP IN THESE AREAS. THE SOD SHALL BE OF LIKE KIND TO THE EXISTING SOD. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE REPAIR OR REPLACEMENT OF DAMAGE TO EXISTING GRASS THAT EXCEEDS THESE LIMITS.

33. THE USE OF FLY-ASH IN CONCRETE IS PROHIBITED.

34. ALL SAW CUTTING AND REMOVAL SHALL BE INCLUDED IN THE COST OF THE ITEM TO BE ADJUSTED, REMOVED, REPAIRED, OR REPLACED.

35. THIS ITEM SHALL BE MEASURED AS THE ACTUAL AMOUNT OF CURB AND/OR GUTTER INSTALLED. NO PAYMENT WILL BE MADE FOR CURB AND/OR GUTTER THROUGH DRIVEWAYS AND INLETS.

36. INCLUDES ALL COST OF SAWED JOINTS AND SEALING CONTROL JOINTS AND EXPANSION JOINTS.

37. CURB, GUTTER, AND/OR SIDEWALK ASSOCIATED WITH THE DRIVEWAY AND THROUGH THE DRIVEWAY IS INCLUDED IN THE COST OF THE DRIVEWAY.

38. ONE SIDEWALK PANEL ON EACH SIDE OF DRIVEWAYS SHALL BE A MINIMUM OF 6" THICK OR MATCH EXISTING DRIVEWAY THICKNESS, WHICHEVER IS GREATER. NO ADDITIONAL PAYMENT SHALL BE MADE FOR THE COST OF THE THICKENED SIDEWALK THROUGH THIS AREA.

39. THIS PAY ITEM INCLUDES THE FOLLOWING:

    A. SAW CUTTING
    B. REMOVAL OF THE EXISTING CONCRETE AND/OR ASPHALTIC CONCRETE ROADWAY (CY)
    C. TYPE S3 ASPHALTIC CONCRETE OR PC CONCRETE COMPLETE AND IN PLACE PER DETAIL
    D. SEALING OF EDGES AND TACK COAT

    DOES NOT INCLUDE THE FOLLOWING:

    A. UNCLASSIFIED EXCAVATION
    B. SUBGRADE METHOD B (SY)
    C. SEPARATOR FABRIC (SY)
    D. AGGREGATE BASE (TYPE A)
    E. ASPHALT CONCRETE LEVELING OR SURFACE COURSE

40. LOCATIONS TO BE DETERMINED IN THE FIELD AND WORK TO BE PERFORMED AT THE DIRECTION OF THE FIELD ENGINEER. QUANTITY IS ESTIMATED AND MAY BE OMITTED IN ITS ENTIRETY.

41. THE COST OF TACK COAT, EDGE JOINT SEAL MATERIAL AND SCREENINGS FOR BLOTTING, AND ALL LABOR ASSOCIATED WITH THESE ITEMS, SHALL BE INCLUDED IN ASPHALT CONCRETE.

42. ESTIMATED AT 112 LBS PER SQ YD PER 1 INCH THICK.

43. ODOT PAY FACTOR FOR AVERAGE LOT DENSITY SHALL NOT BE USED FOR THIS PROJECT. FAILURE TO REACH AVERAGE LOT DENSITY OF 92%-97% WILL RESULT IN REJECTION OF WORK.

WATER CONSTRUCTION NOTES

1. THE CITY OF TULSA FIELD ENGINEERING DEPARTMENT SHALL INSPECT ALL TRENCHING, BEDDING, PIPE INSTALLATION, BACKFILL AND COMPACTION.

2. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH CURRENT STANDARD SPECIFICATIONS AND STANDARD DETAILS, CITY OF TULSA ENGINEERING SERVICES DEPARTMENT.

3. EXISTING SERVICE CONNECTIONS ARE TO BE KEPT IN SERVICE UNTIL CONNECTIONS TO NEW MAIN ARE MADE. ALL SERVICE LINE RECONNECTIONS SHALL BE MADE BY THE CONTRACTOR. SERVICE RECONNECTIONS SHALL BE INSTALLED AS PER CITY OF TULSA STANDARD SPECIFICATIONS AND STANDARD DETAILS.

4. MINIMUM COVER OVER WATER LINES SHALL BE AS NOTED ON PLANS.

5. CONTRACTOR SHALL REPLACE EXISTING GRASS WITH SEED/SOD OF SAME TYPE AND VARIETY OR AS NOTED ON PLANS.

6. CONTRACTOR SHALL BORE EXISTING TREES UNDER DRIP LINE, UNLESS DIRECTED OTHERWISE BY ENGINEER.

7. CONTRACTOR SHALL BORE EXISTING DRIVEWAYS, UNLESS DIRECTED OTHERWISE BY ENGINEER.

8. CITY CREWS ONLY ARE TO OPERATE ALL VALVES. CONTRACTOR SHALL NOTIFY CITY THRU INSPECTOR.

9. CONTRACTOR SHALL PROVIDE AT LEAST 48 HOUR NOTICE TO ALL RESIDENTS OR BUSINESSES AFFECTED BEFORE TURNING OFF ANY WATER. CONTRACTOR SHALL BE RESPONSIBLE FOR PLACING DOOR HANGERS ON AFFECTED HOMES AND BUSINESSES.

10. 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.

11. LOCAL AND THROUGH TRAFFIC SHALL BE MAINTAINED THROUGH PROJECT AT ALL TIMES. OPEN CUT STREET CROSSINGS REQUIRE AN APPROVED TRAFFIC CONTROL PLAN WITH TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH CURRENT MUTCD REQUIREMENTS.1

12. ANY DAMAGE CAUSED BY CONTRACTOR TO ADJACENT TRAFFIC SIGNAL INFRASTRUCTURE SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE TRAFFIC ENGINEER.

13. PRIOR TO PAVEMENT SAWING AND EXCAVATION NEAR SIGNALIZED INTERSECTION, CONTRACTOR SHALL CONTACT ENGINEERING SERVICES, TRAFFIC OPERATIONS, 918-596-9766, FOR SITE SPECIFIC, UNDERGROUND TRAFFIC UTILITY LOCATES.

14. 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).

15. ALL EXCAVATED MATERIAL NOT REQUIRED IN OTHER AREAS OF THE PROJECT SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF BY THE CONTRACTOR IN A MANNER ACCEPTABLE TO THE ENGINEER WITHOUT COST TO THE CITY. 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 TULSA.

16. ANY CHANGES FROM APPROVED PLANS SHALL BE SUBMITTED TO THE CITY OF TULSA FOR WRITTEN APPROVAL PRIOR TO INSTALLATION.

BEFORE YOU DIG
CALLOKIE.COM
CALL OKIE

EXISTING UTILITIES SHOWN BASED ON DATA AVAILABLE AT THE DATE OF PLANS. ALL LINES MAY NOT BE SHOWN AND SHOULD BE VERIFIED PRIOR TO CONSTRUCTION. CALL OKIE AT 811 48 HOURS BEFORE YOU DIG.

ALL CONSTRUCTION SHALL BE PERFORMED IN CONFORMANCE WITH THE REGULATIONS OF ALL LOCAL AUTHORITIES HAVING JURISDICTION. ODOT STANDARDS AND SPECIFICATIONS SHALL GOVERN WHERE THOSE REGULATIONS DO NOT EXIST OR ARE SILENT.

LICENSED PROFESSIONAL ENGINEER
Alan Babbs
25330
7-2016
OKLAHOMA

PAY ITEMS & CONSTRUCTION NOTES

PROJECT # TMUA-W 15-29

WATERLINE REPLACEMENT & INSTALLATION

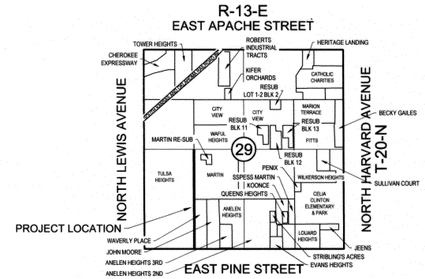
CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATE PREPARED BY: AAB Engineering•Surveying•Land Planning
AAB ENGINEERING, LLC
PO Box 2136 / 17 E 2nd ST, Sand Springs, OK 74063
OK, CA #6318 Exp: June 30, 2016
KA, CA #2292 Exp: Dec 31, 2016
Office: (918) 514-4283 Fax: (918) 514-4288

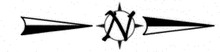
REVISION	BY	DATE

PLAN SCALE:				APPROVED:
20	DRAWN	JDW	11/15	
	DESIGNED	AAB	11/15	
	SURVEY	AAB	11/15	
PROFILE SCALE	PROJ. MGR.	SJ	7/16	
HORIZONTAL: 1"=20'	LEAD ENGR.	JTW	7/16	
	FIELD MGR.	RBV	7/16	
VERTICAL: 1"=5'	RECOMMENDED: HAS 7/16 DESIGN MANAGER			CITY ENGINEER
FILE: 2013-29	DRAWING: BASE			DATE: 07.28.16
ATLAS PAGE NO:				SHEET 2 OF 19 SHEETS

PLOT DATE: Wed, 06 Jul 2016 FILE: P:\2013\29- COT WATERLINE BIRMINGHAM\BIRMINGHAM WL BASE



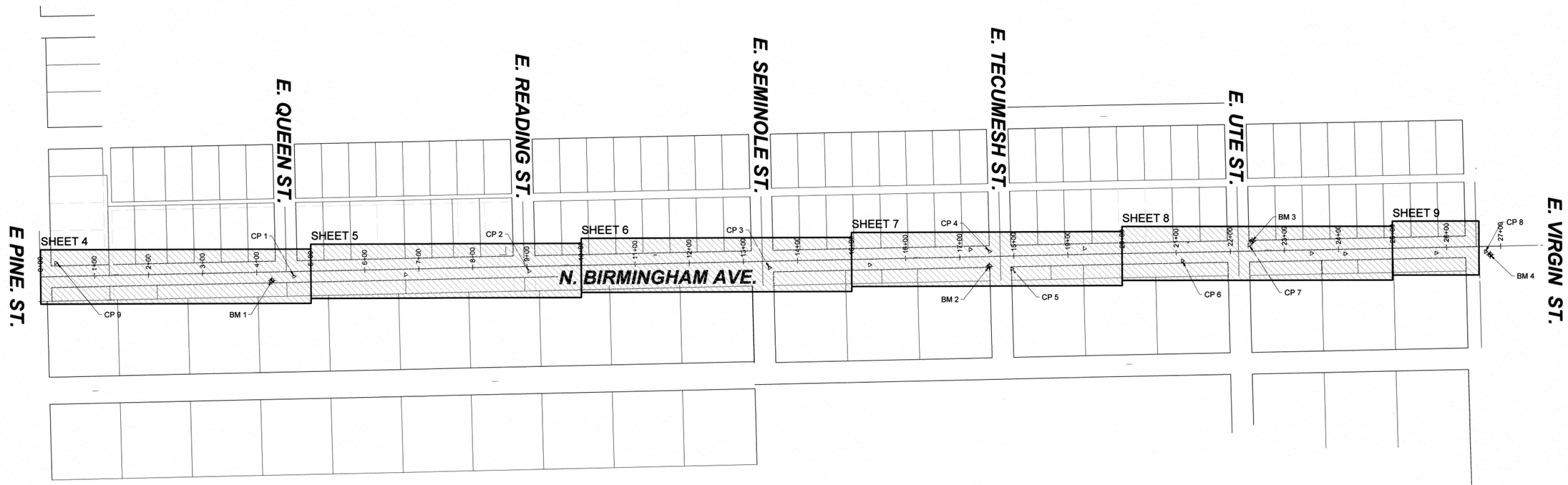
LOCATION MAP
SCALE: 1"=2000'



DRAWING SCALE: 1"= 100'

LEGEND

- BOUNDARY LINE
- LOT LINE
- EXISTING RIGHT OF WAY



BENCHMARKS

NAME	DESCRIPTION	NORTHING (Y)	EASTING (X)	ELEVATION (Z)	STATION	OFFSET
BM 1	BM RR E SPIKE E	435285.59	2572330.20	742.40	4+27.61	16.54
BM 2	BM RR E SPIKE E	436612.07	2572307.55	727.81	17+54.28	17.94
BM 3	BM RR E SPIKE E	437097.63	2572262.27	717.94	22+40.59	18.04
BM 4	BM RR E SPIKE E	437537.96	2572288.06	714.78	26+80.37	15.49

CONTROL POINTS

NAME	DESCRIPTION	NORTHING (Y)	EASTING (X)	ELEVATION (Z)	STATION	OFFSET
CP 1	CP CXS	435326.55	2572322.22	738.97	4+68.71	9.15
CP 2	CP MAGS	435761.32	2572313.93	734.08	9+03.56	8.86
CP 3	CP MAGS	436205.36	2572309.26	727.17	13+47.61	12.35
CP 4	CP MAGS	436612.81	2572280.23	724.81	17+55.53	9.17
CP 5	CP 60D	436653.80	2572298.80	726.70	17+95.92	23.91
CP 6	CP 60D	436968.93	2572312.75	718.72	21+11.25	15.94
CP 7	CP MAGS	437092.53	2572269.43	716.22	22+35.36	11.14
CP 8	CP MAGS	437529.44	2572282.55	713.68	26+71.96	10.00
CP 9	CP 09	434886.35	2572295.96	747.37	0+29.07	25.20

NOTE:

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH CURRENT CIYT OF TULSA ENGINEERING DEPT. SPECIFICATIONS AND THE 2009 EDITION OF THE "STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION", PUBLISHED BY THE OKLAHOMA DEPARTMENT OF TRANSPORTATION, AND AS ADOPTED BY THE CITY OF TULSA. THE "SUPPLEMENT TO THE STANDARD SPECIFICATIONS", EXCLUDING SECTION 100, SHALL GOVERN OVER SAID STANDARD SPECIFICATIONS ANY SPECIAL PROVISIONS IN THE CONTRACT DOCUMENTS AND SPECIFICATIONS FOR THIS PROJECT SHALL GOVERN OVER THE STANDARD SPECIFICATIONS AND SUPPLEMENTAL SPECIFICATIONS.

SURVEYOR'S STATEMENT

I Eric Rollston do hereby certify that the topographical survey was made on the ground, under my supervision and is true and correct to the best of my knowledge. This plat of survey meets the minimum technical standards, as adopted be the Board of Registration for Professional Engineers and Land Surveyors for the State of Oklahoma.

LICENSED PROFESSIONAL LAND SURVEYOR
Eric Rollston
1791
OKLAHOMA
11-19-2016

COT/ADS BENCHMARK

3" BRASS CAP - SET IN CONCRETE - FLUSH - STAMPED "63 RESET" SET ON THE EAST SIDE OF UTICA AVE, AND NORTH OF PINE ST APPROX. 200'.
N:434963.500, E:2568429.988
ELEV = 685.616' (NAVD1988)

EXISTING UTILITIES SHOWN BASED ON DATA AVAILABLE AT THE DATE OF PLANS. ALL LINES MAY NOT BE SHOWN AND SHOULD BE VERIFIED PRIOR TO CONSTRUCTION. CALL OKIE AT 811 48 HOURS BEFORE YOU DIG.

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BEFORE YOU DIG
OKLAHOMA ONE CALL SYSTEM
CALL OKIE

REVISION	BY	DATE

ROW WATERLINE KEY MAP

PROJECT # TMUA-W 15-29

WATERLINE REPLACEMENT & INSTALLATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATE PREPARED BY: AAB Engineering, Construction and Planning
AAB ENGINEERING, LLC
PO Box 2136 / 17 E 2nd ST Sand Springs, OK 74063 — OK, CA #6318 Exp: June 30, 2016; KA, CA #2262 Exp: Dec 31, 2016
Office: (918) 514-4283 Fax: (918) 514-4288

PLAN SCALE: 20	DRAWN	JDW	11/15
	DESIGNED	AAB	11/15
	SURVEY	AAB	11/15
PROFILE SCALE	PROJ. MGR.	SJJ	7/16
HORIZONTAL: 1"=20'	LEAD ENGR.	ZTM	7/16
	FIELD MGR.	BSM	7/16
VERTICAL: 1"=5'	RECOMMENDED: HAS 7/16 DESIGN MANAGER		

APPROVED:

CITY ENGINEER

DATE: 07.28.16

FILE: 2013-29 DRAWING: BASE

ATLAS PAGE NO: 118, 79

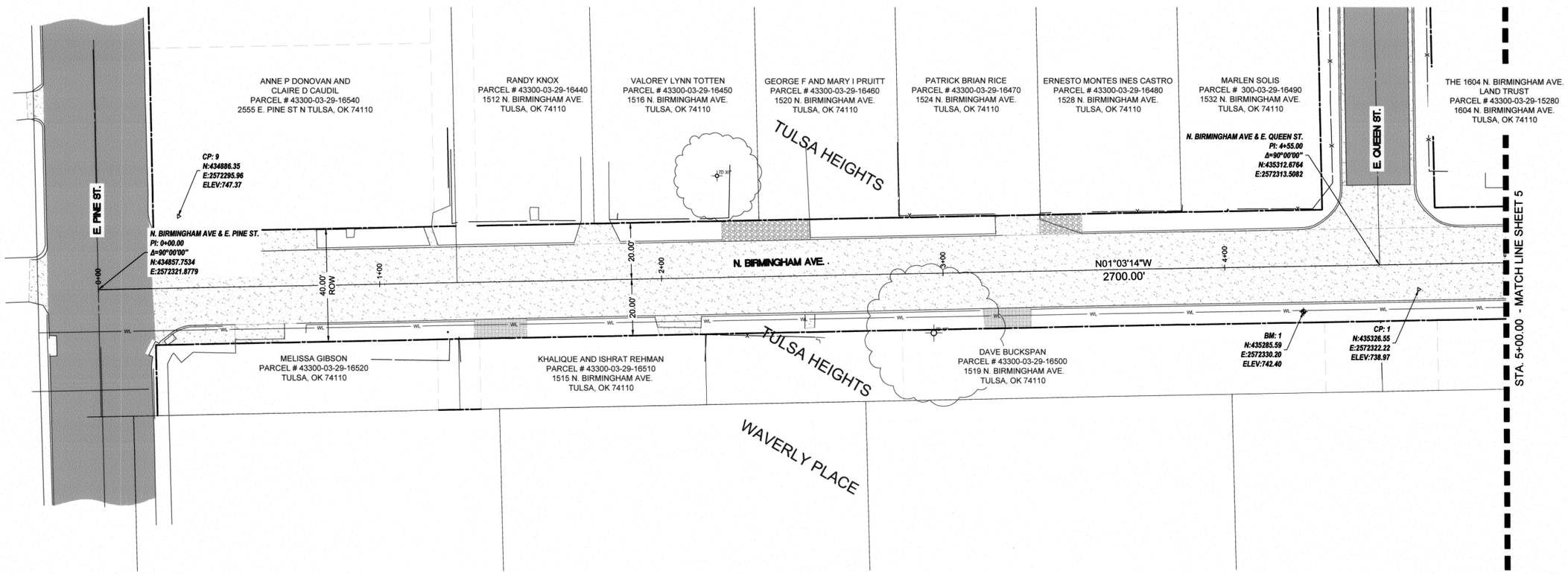
SHEET 3 OF 19 SHEETS

PLOT DATE: Wed, 09 Jul 2016 FILE: P:\2013\29- COT WATERLINE BIRMINGHAM\BIRMINGHAM V8. BASE

0 10 20 40
DRAWING SCALE: 1"= 20'

LEGEND

- BOUNDARY LINE
- LOT LINE
- EXISTING RIGHT OF WAY



CONTROL POINTS

NAME	DESCRIPTION	NORTHING (Y)	EASTING (X)	ELEVATION (Z)	STATION	OFFSET
CP 1	CP CXS	435326.55	2572322.22	738.97	4+68.71	9.15
CP 9	CP 09	434886.35	2572295.96	?47.37	0+29.07	25.20

BENCHMARKS

NAME	DESCRIPTION	NORTHING (Y)	EASTING (X)	ELEVATION (Z)	STATION	OFFSET
BM 1	BM RR E SPIKE E	435285.59	2572330.20	742.40	4+27.61	16.54

SURVEYOR'S STATEMENT

I, ERIC ROLLSTON, DO HEREBY CERTIFY THAT THE TOPOGRAPHICAL SURVEY WAS MADE ON THE GROUND, UNDER MY SUPERVISION AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE. THIS PLAT OF SURVEY MEETS THE MINIMUM TECHNICAL STANDARDS, AS ADOPTED BE THE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS AND LAND SURVEYORS FOR THE STATE OF OKLAHOMA.

REGISTERED PROFESSIONAL LAND SURVEYOR
Rollston
1761
OKLAHOMA

COT/ADS BENCHMARK

3" BRASS CAP - SET IN CONCRETE - FLUSH - STAMPED "63 RESET" SET ON THE EAST SIDE OF UTICA AVE, AND NORTH OF PINE ST APPROX. 200'.
N:434963.500, E:2568429.988
ELEV = 685.616' (NAVD1988)

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BEFORE YOU DIG
CALL OKIE

REVISION	BY	DATE

ROW DATA SHEET (1) - BIRMINGHAM AVE.

PROJECT # TMUA-W 15-29

WATERLINE REPLACEMENT & INSTALLATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

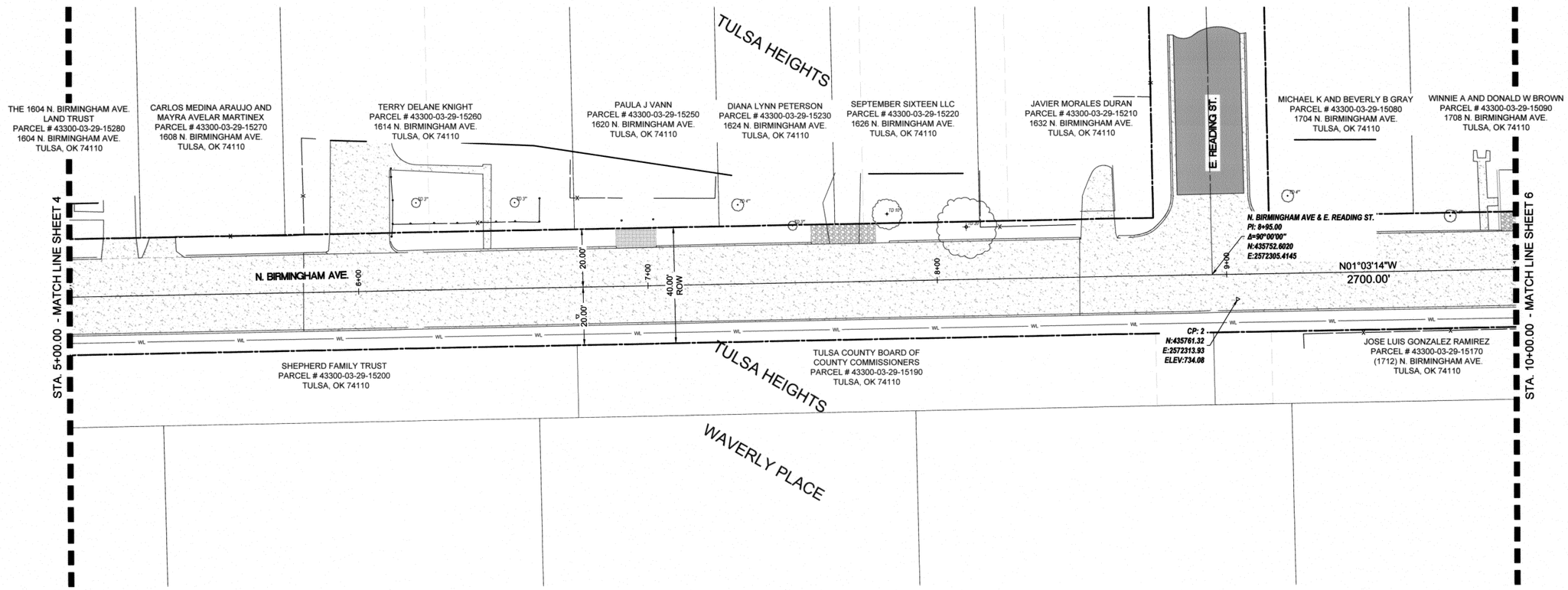
PLANS AND ESTIMATE PREPARED BY: AAB ENGINEERING, LLC
Engineering • Surveying • Mapping • Planning
PO Box 2136 / 17 E 2nd ST Sand Springs, OK 74063 — OK, CA #6318 Exp: June 30, 2016; KA, CA #2292 Exp: Dec 31, 2016
Office: (918) 514-4283 Fax: (918) 514-4288

PLAN SCALE: 20	DRAWN	JDW	11/15
	DESIGNED	AAB	11/15
	SURVEY	AAB	11/15
PROFILE SCALE	PROJ. MGR.	SJJ	7/16
HORIZONTAL: 1"=20'	LEAD ENGR.	EAR	7/16
	FIELD MGR.	FBR	7/16
VERTICAL: 1"=5'	RECOMMENDED: HAS 7/16 DESIGN MANAGER		

APPROVED:
CITY ENGINEER
DATE: 07-28-16

FILE: 2013-29 DRAWING: BASE
ATLAS PAGE NO: 118, 79
SHEET 4 OF 19 SHEETS

PLOT DATE: Wed, 06 Jul 2016 FILE: P:\2013\29-COT WATERLINE BIRMINGHAM\BIRMINGHAM V16, BASE



CONTROL POINTS

NAME	DESCRIPTION	NORTHING (Y)	EASTING (X)	ELEVATION (Z)	STATION	OFFSET
CP 2	CP MAGS	435761.32	2572313.93	734.08	9+03.56	8.86

SURVEYOR'S STATEMENT

I, ERIC ROLLSTON, DO HEREBY CERTIFY THAT THE TOPOGRAPHICAL SURVEY WAS MADE ON THE GROUND, UNDER MY SUPERVISION AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE. THIS PLAT OF SURVEY MEETS THE MINIMUM TECHNICAL STANDARDS, AS ADOPTED BE THE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS AND LAND SURVEYORS FOR THE STATE OF OKLAHOMA.

REGISTERED PROFESSIONAL LAND SURVEYOR
Eric Rollston
1791
OKLAHOMA
7/01/2016

COT/ADS BENCHMARK

3" BRASS CAP - SET IN CONCRETE - FLUSH - STAMPED "63 RESET" SET ON THE EAST SIDE OF UTICA AVE, AND NORTH OF PINE ST APPROX. 200'.
N:434963.500, E:2568429.988
ELEV = 685.616' (NAVD1988)

EXISTING UTILITIES SHOWN BASED ON DATA AVAILABLE AT THE DATE OF PLANS. ALL LINES MAY NOT BE SHOWN AND SHOULD BE VERIFIED PRIOR TO CONSTRUCTION. CALL OKIE AT 811 48 HOURS BEFORE YOU DIG.

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BEFORE YOU DIG CALL OKIE

REVISION	BY	DATE

ROW DATA SHEET (2) - BIRMINGHAM AVE.

PROJECT # TMUA-W 15-29

WATERLINE REPLACEMENT & INSTALLATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATE PREPARED BY: AAB Engineering•Surveying•Land Planning

AAB ENGINEERING, LLC
PO Box 2136 / 17 E 2nd ST Sand Springs, OK 74063 — OK, CA #6318 Exp: June 30, 2016; KA, CA #2292 Exp: Dec 31, 2016
Office: (918) 514-4283 Fax: (918) 514-4288

PLAN SCALE: 20	DRAWN	JDW	11/15
	DESIGNED	AAB	11/15
	SURVEY	AAB	11/15
PROFILE SCALE	PROJ. MGR.	SLT	7/16
HORIZONTAL: 1"=20'	LEAD ENGR.	ETM	7/16
	FIELD MGR.	BBH	7/16
VERTICAL: 1"=5'	RECOMMENDED: DESIGN MANAGER	HAS	7/16

APPROVED:

CITY ENGINEER

DATE: 07.28.16

FILE: 2013-29 DRAWING: BASE

ATLAS PAGE NO: 118, 79

SHEET 5 OF 19 SHEETS

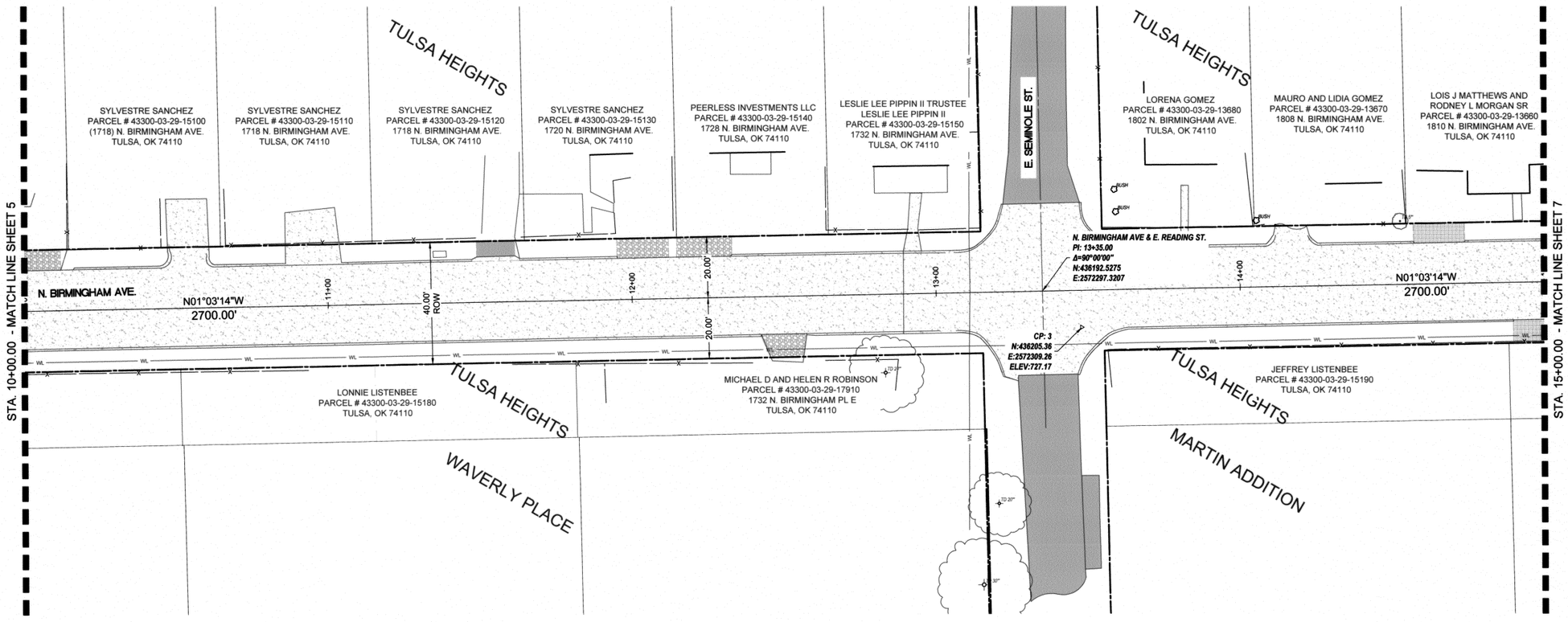
PLOT DATE: Wed, 06 Jul 2016 FILE: P:\2013\29-COT WATERLINE BIRMINGHAM\BIRMINGHAM V8, BASE

0 10 20 40

DRAWING SCALE: 1"= 20'

LEGEND

- BOUNDARY LINE
- LOT LINE
- EXISTING RIGHT OF WAY



CONTROL POINTS

NAME	DESCRIPTION	NORTHING (Y)	EASTING (X)	ELEVATION (Z)	STATION	OFFSET
CP 3	CP MAGS	436205.36	2572309.26	727.17	13+47.61	12.35

SURVEYOR'S STATEMENT

I, ERIC ROLLSTON, DO HEREBY CERTIFY THAT THE TOPOGRAPHICAL SURVEY WAS MADE ON THE GROUND, UNDER MY SUPERVISION AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE. THIS PLAT OF SURVEY MEETS THE MINIMUM TECHNICAL STANDARDS, AS ADOPTED BE THE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS AND LAND SURVEYORS FOR THE STATE OF OKLAHOMA.

LICENSED PROFESSIONAL LAND SURVEYOR
Eric Rollston
11761
OKLAHOMA
11/01/2016

COT/ADS BENCHMARK

3" BRASS CAP - SET IN CONCRETE - FLUSH - STAMPED "63 RESET" SET ON THE EAST SIDE OF UTICA AVE, AND NORTH OF PINE ST APPROX. 200'.
N:434963.500, E:2568429.988
ELEV = 685.616' (NAVD1988)

EXISTING UTILITIES SHOWN BASED ON DATA AVAILABLE AT THE DATE OF PLANS. ALL LINES MAY NOT BE SHOWN AND SHOULD BE VERIFIED PRIOR TO CONSTRUCTION. CALL OKIE AT 811 48 HOURS BEFORE YOU DIG.

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BEFORE YOU DIG CALL OKIE

REVISION	BY	DATE

ROW DATA SHEET (3) - BIRMINGHAM AVE.

PROJECT # TMUA-W 15-29

WATERLINE REPLACEMENT & INSTALLATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATE PREPARED BY: AAB Engineering,Surveying,Land Planning

AAB ENGINEERING, LLC
PO Box 2136 / 17 E 2nd ST Sand Springs, OK 74063 — OK, CA #6318 Exp: June 30, 2016; KA, CA #2292 Exp: Dec 31, 2016
Office: (918) 514-4283 Fax: (918) 514-4288

PLAN SCALE: 20	DRAWN	JDW	11/15
	DESIGNED	AAB	11/15
	SURVEY	AAB	11/15
PROFILE SCALE	PROJ. MGR.	SLJ	7/16
HORIZONTAL: 1"=20'	LEAD ENGR.	ZMU	7/16
	FIELD MGR.	RBI	7/16
VERTICAL: 1"=5'	RECOMMENDED: HAS 7/16 DESIGN MANAGER		

APPROVED:

CITY ENGINEER

DATE: 07.28.16

FILE: 2013-29 DRAWING: BASE

ATLAS PAGE NO: 118, 79

SHEET 6 OF 19 SHEETS

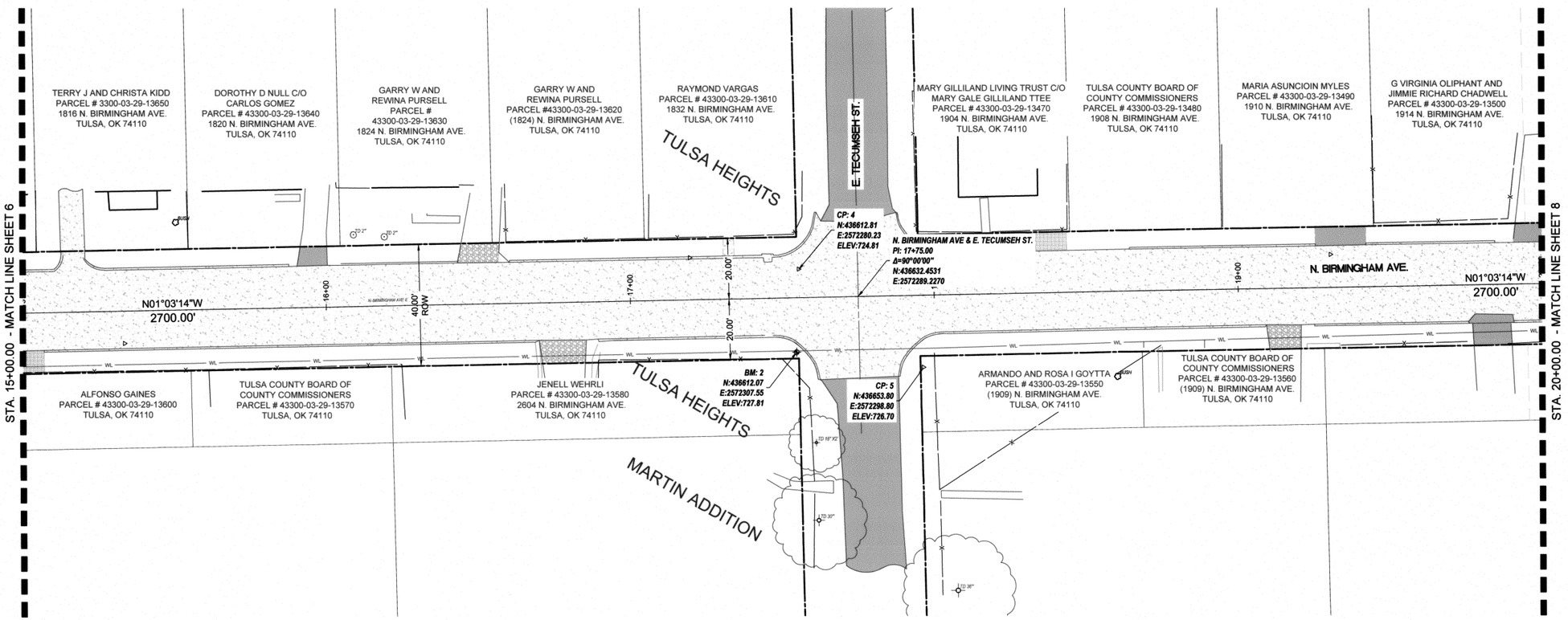
PLOT DATE: Wed, 06 Jul 2016 FILE: P:\2013\29-COT WATERLINE BIRMINGHAM\BIRMINGHAM V6, BASE

0 10 20 40

DRAWING SCALE: 1"= 20'

LEGEND

- BOUNDARY LINE
- LOT LINE
- EXISTING RIGHT OF WAY



CONTROL POINTS

NAME	DESCRIPTION	NORTHING (Y)	EASTING (X)	ELEVATION (Z)	STATION	OFFSET
CP 4	CP MAGS	436612.81	2572280.23	724.81	17+55.53	9.17
CP 5	CP 60D	436653.80	2572298.80	726.70	17+95.92	23.91

BENCHMARKS

NAME	DESCRIPTION	NORTHING (Y)	EASTING (X)	ELEVATION (Z)	STATION	OFFSET
BM 2	BM RR E SPIKE E	436612.07	2572307.55	727.81	17+54.28	17.94

SURVEYOR'S STATEMENT

I, ERIC ROLLSTON, DO HEREBY CERTIFY THAT THE TOPOGRAPHICAL SURVEY WAS MADE ON THE GROUND, UNDER MY SUPERVISION AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE. THIS PLAT OF SURVEY MEETS THE MINIMUM TECHNICAL STANDARDS, AS ADOPTED BE THE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS AND LAND SURVEYORS FOR THE STATE OF OKLAHOMA.

REGISTERED PROFESSIONAL LAND SURVEYOR
Eric Rollston
1781
7/01/2016
OKLAHOMA

COT/ADS BENCHMARK

3" BRASS CAP - SET IN CONCRETE - FLUSH - STAMPED "63 RESET" SET ON THE EAST SIDE OF UTICA AVE, AND NORTH OF PINE ST APPROX. 200'.
N:434963.500, E:2568429.988
ELEV = 685.616' (NAVD1988)

EXISTING UTILITIES SHOWN BASED ON DATA AVAILABLE AT THE DATE OF PLANS. ALL LINES MAY NOT BE SHOWN AND SHOULD BE VERIFIED PRIOR TO CONSTRUCTION. CALL OKIE AT 811 48 HOURS BEFORE YOU DIG.

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REVISION	BY	DATE

ROW DATA SHEET (4) - BIRMINGHAM AVE.

PROJECT # TMUA-W 15-29

WATERLINE REPLACEMENT & INSTALLATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATE PREPARED BY: AAB Engineering/Surveying/Land Planning

AAB ENGINEERING, LLC
PO Box 2136 / 17 E 2nd ST, Sand Springs, OK 74063 — OK, CA #6318 Exp: June 30, 2016; KA, CA #2292 Exp: Dec 31, 2016
Office: (918) 514-4283 Fax: (918) 514-4289

PLAN SCALE: 20	DRAWN	JDW	11/15
	DESIGNED	AAB	11/15
	SURVEY	AAB	11/15
PROFILE SCALE	PROJ. MGR.	SLJ	7/16
HORIZONTAL: 1"=20'	LEAD ENGR.	EJW	7/16
	FIELD MGR.	PBV	7/16
VERTICAL: 1"=5'	RECOMMENDED: HAS 7/16 DESIGN MANAGER		

APPROVED:

CITY ENGINEER

DATE: 07.28.16

FILE: 2013-29 DRAWING: BASE

ATLAS PAGE NO: 118, 79

SHEET 7 OF 19 SHEETS

BEFORE YOU DIG CALL OKIE

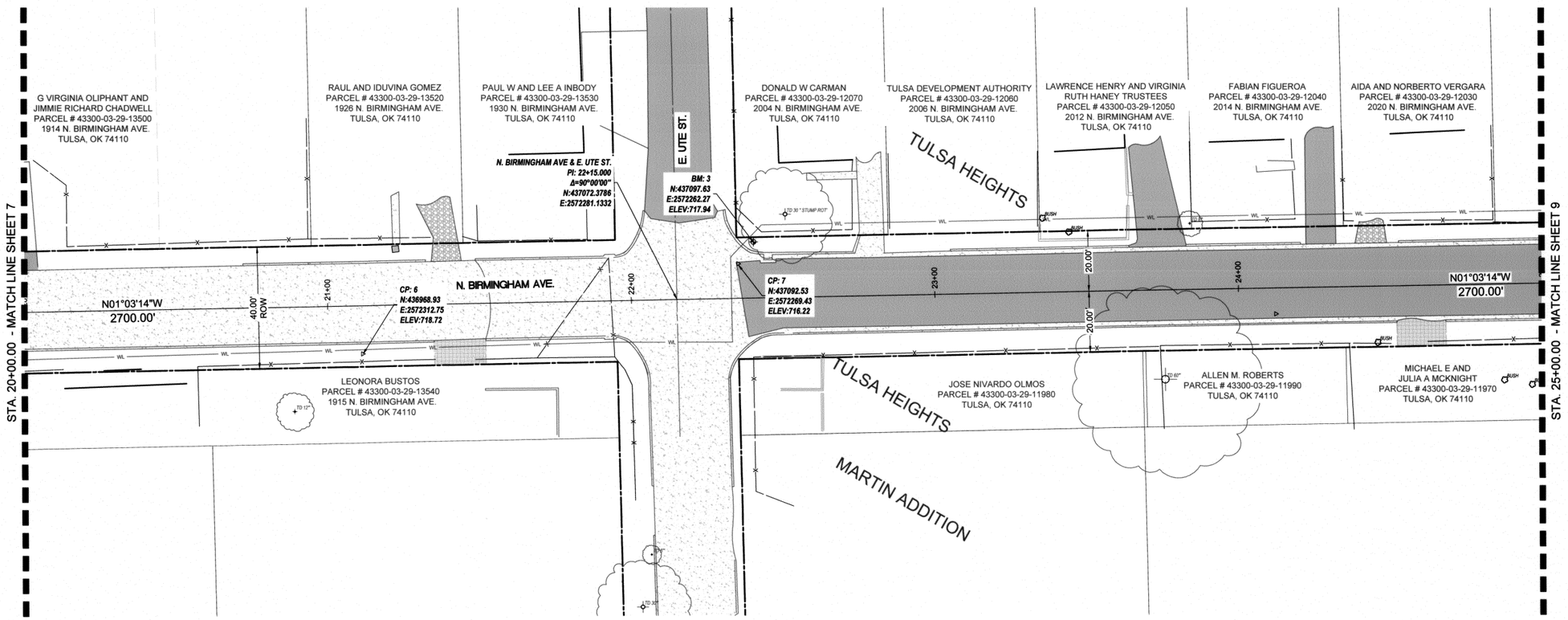
PLOT DATE: Wed, 06 Jul 2016 FILE: P:\2013\29-COT WATERLINE BIRMINGHAM\BIRMINGHAM V8, BASE

0 10 20 40

DRAWING SCALE: 1"= 20'

LEGEND

- BOUNDARY LINE
- LOT LINE
- EXISTING RIGHT OF WAY



CONTROL POINTS

NAME	DESCRIPTION	NORTHING (Y)	EASTING (X)	ELEVATION (Z)	STATION	OFFSET
CP 6	CP 60D	436968.93	2572312.75	718.72	21+11.25	15.94
CP 7	CP MAGS	437092.53	2572269.43	716.22	22+35.36	11.14

BENCHMARKS

NAME	DESCRIPTION	NORTHING (Y)	EASTING (X)	ELEVATION (Z)	STATION	OFFSET
BM 3	BM RR E SPIKE E	437097.63	2572262.27	717.94	22+40.59	18.04

SURVEYOR'S STATEMENT

I, ERIC ROLLSTON, DO HEREBY CERTIFY THAT THE TOPOGRAPHICAL SURVEY WAS MADE ON THE GROUND, UNDER MY SUPERVISION AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE. THIS PLAT OF SURVEY MEETS THE MINIMUM TECHNICAL STANDARDS, AS ADOPTED BE THE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS AND LAND SURVEYORS FOR THE STATE OF OKLAHOMA.

LICENSED PROFESSIONAL LAND SURVEYOR — Eric Rollston — 1791 — 7/27/2016 — OKLAHOMA

COT/ADS BENCHMARK

3" BRASS CAP - SET IN CONCRETE - FLUSH - STAMPED "83 RESET" SET ON THE EAST SIDE OF UTICA AVE, AND NORTH OF PINE ST APPROX. 200'.
N:434963.500, E:2568429.988
ELEV = 685.616' (NAVD1988)

EXISTING UTILITIES SHOWN BASED ON DATA AVAILABLE AT THE DATE OF PLANS. ALL LINES MAY NOT BE SHOWN AND SHOULD BE VERIFIED PRIOR TO CONSTRUCTION. CALL OKIE AT 811 48 HOURS BEFORE YOU DIG.

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REVISION	BY	DATE

ROW DATA SHEET (5) - BIRMINGHAM AVE.

PROJECT # TMUA-W 15-29

WATERLINE REPLACEMENT & INSTALLATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

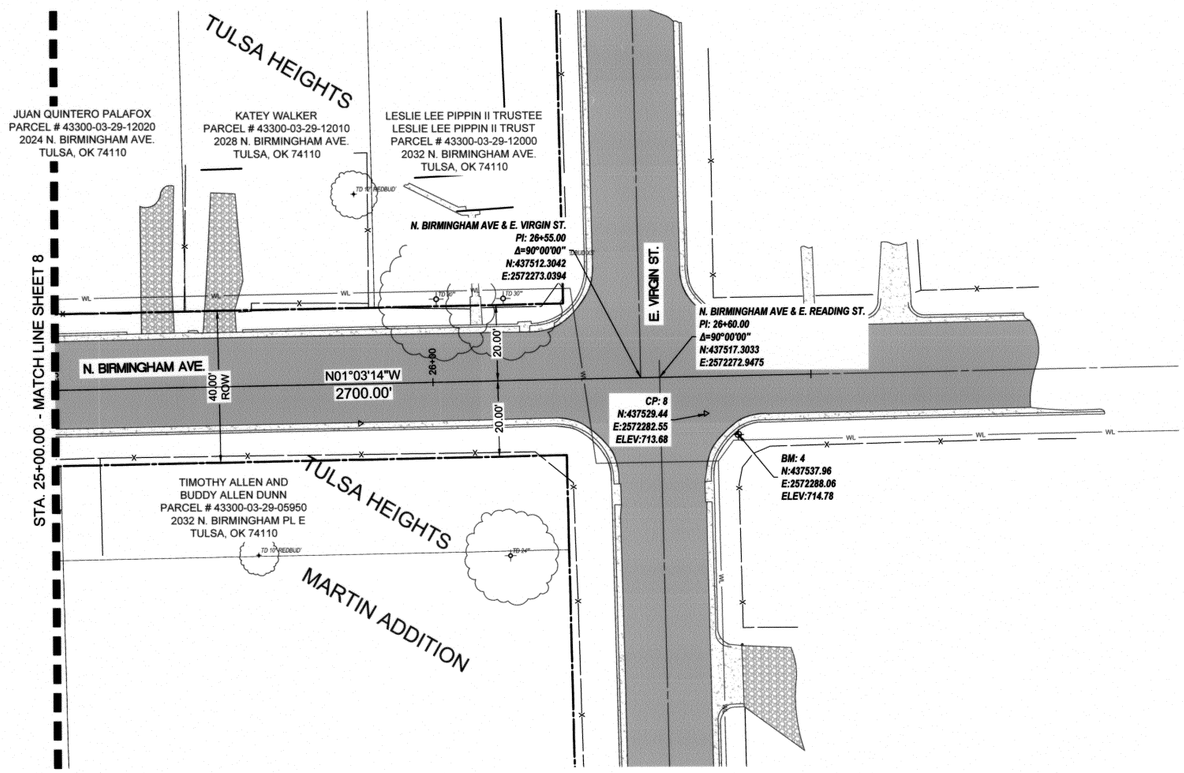
PLANS AND ESTIMATE PREPARED BY: AAB Engineering-Surveying-Land Planning

AAB ENGINEERING, LLC
PO Box 2136 / 17 E 2nd ST, Sand Springs, OK 74063 — OK, CA #6318 Exp: June 30, 2016; KA, CA #2292 Exp: Dec 31, 2016
Office: (918) 514-4283 Fax: (918) 514-4288

PLAN SCALE: 20	DRAWN	JDW	11/15	APPROVED:
	DESIGNED	AAB	11/15	
	SURVEY	AAB	11/15	
PROFILE SCALE	PROJ. MGR.	SLJ	7/16	
HORIZONTAL: 1"=20'	LEAD ENGR.	ZTW	7/16	
	FIELD MGR.	RBW	7/16	
VERTICAL: 1"=5'	RECOMMENDED: DESIGN MANAGER	HAS	7/16	CITY ENGINEER
FILE: 2013-29	DRAWING: BASE			DATE: 07.28.16
ATLAS PAGE NO: 118, 79				SHEET 8 OF 19 SHEETS

BEFORE YOU DIG — CALL OKIE

PLOT DATE: Wed, 06 Jul 2016 FILE: P:\2013\29-COT\WATERLINE BIRMINGHAM\BIRMINGHAM VIL BASE



0 10 20 40

DRAWING SCALE: 1"= 20'

LEGEND

- BOUNDARY LINE
- LOT LINE
- EXISTING RIGHT OF WAY

CONTROL POINTS

NAME	DESCRIPTION	NORTHING (Y)	EASTING (X)	ELEVATION (Z)	STATION	OFFSET
CP 8	CP MAGS	437529.44	2572282.55	713.68	26+71.96	10.00

BENCHMARKS

NAME	DESCRIPTION	NORTHING (Y)	EASTING (X)	ELEVATION (Z)	STATION	OFFSET
BM 4	BM RR E SPIKE E	437537.96	2572288.06	714.78	26+80.37	15.49

SURVEYOR'S STATEMENT

I, ERIC ROLLSTON, DO HEREBY CERTIFY THAT THE TOPOGRAPHICAL SURVEY WAS MADE ON THE GROUND, UNDER MY SUPERVISION AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE. THIS PLAT OF SURVEY MEETS THE MINIMUM TECHNICAL STANDARDS, AS ADOPTED BE THE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS AND LAND SURVEYORS FOR THE STATE OF OKLAHOMA.

LICENSED PROFESSIONAL LAND SURVEYOR
ERIC ROLLSTON
1761
OKLAHOMA
7/07/2016

COT/ADS BENCHMARK

3" BRASS CAP - SET IN CONCRETE - FLUSH - STAMPED "63 RESET" SET ON THE EAST SIDE OF UTICA AVE, AND NORTH OF PINE ST APPROX. 200'.
N:434963.500, E:2568429.988
ELEV = 685.616' (NAVD1988)

EXISTING UTILITIES SHOWN BASED ON DATA AVAILABLE AT THE DATE OF PLANS. ALL LINES MAY NOT BE SHOWN AND SHOULD BE VERIFIED PRIOR TO CONSTRUCTION. CALL OKIE AT 811 48 HOURS BEFORE YOU DIG.

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BEFORE YOU DIG CALL OKIE

REVISION	BY	DATE

ROW DATA SHEET (6) - BIRMINGHAM AVE.

PROJECT # TMUA-W 15-29

WATERLINE REPLACEMENT & INSTALLATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

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PLAN SCALE: 20	DRAWN	JDW	11/15
	DESIGNED	AAB	11/15
	SURVEY	AAB	11/15
PROFILE SCALE	PROJ. MGR.	SLJ	7/16
HORIZONTAL: 1"=20'	LEAD ENGR.	JTW	7/16
	FIELD MGR.	EBW	7/16
VERTICAL: 1"=5'	RECOMMENDED: DESIGN MANAGER	HAS	7/16

APPROVED:

CITY ENGINEER

DATE: 07.28.16

FILE: 2013-29 DRAWING: BASE

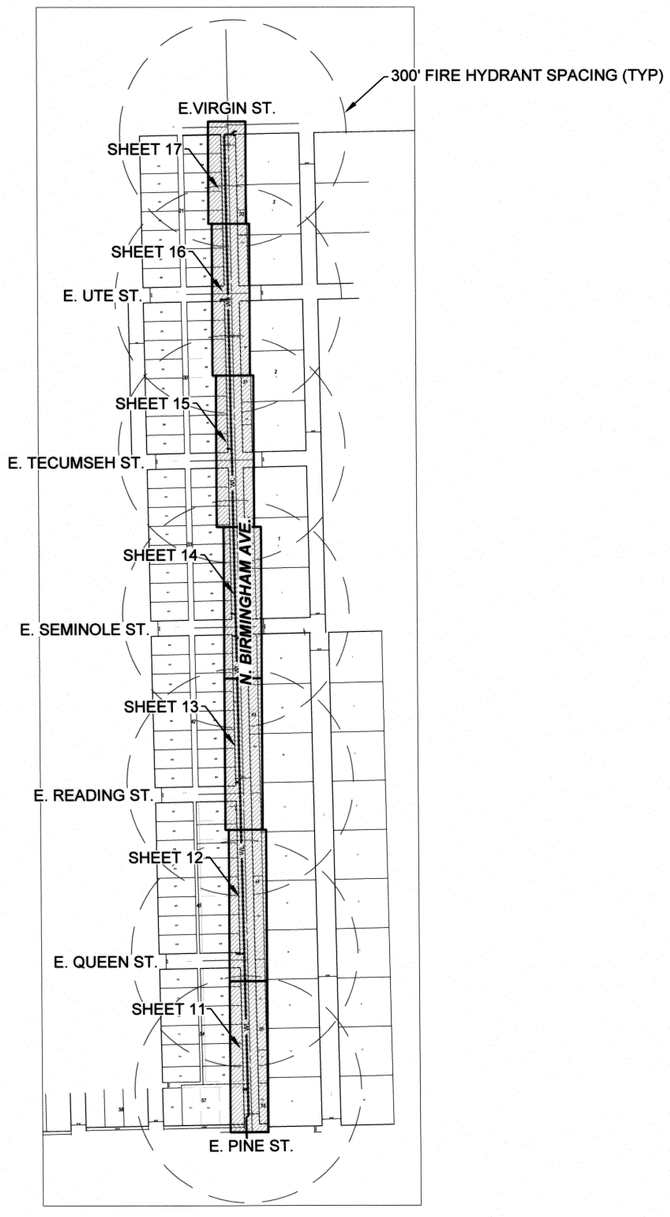
ATLAS PAGE NO: 118, 79

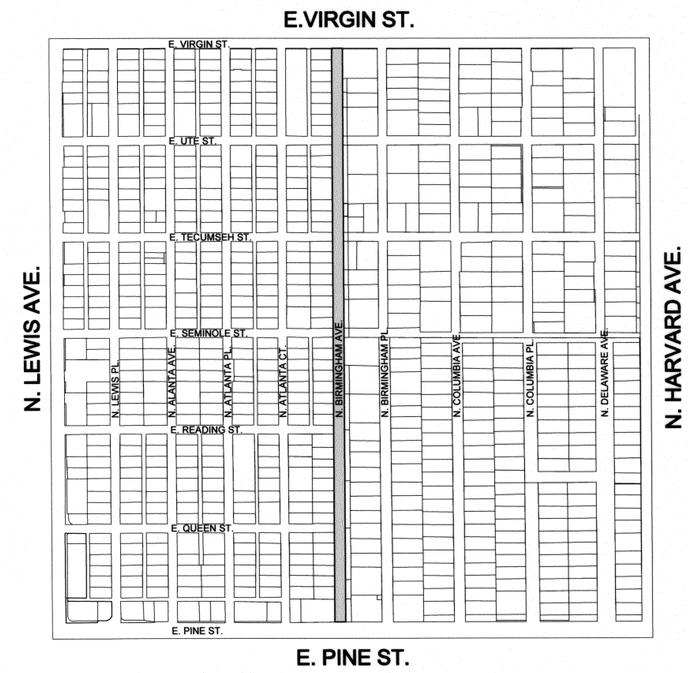
SHEET 9 OF 19 SHEETS

PLOT DATE: Wed, 06 Jul 2016 FILE: P:\2013\25- COT WATERLINE BIRMINGHAM\BIRMINGHAM VIL BASE

0 100 200 400

DRAWING SCALE: 1"= 200'





Location Map

SCALE: N.T.S.

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REVISION	BY	DATE

WATERLINE KEY MAP

PROJECT # TMUA-W 15-29

WATERLINE REPLACEMENT & INSTALLATION

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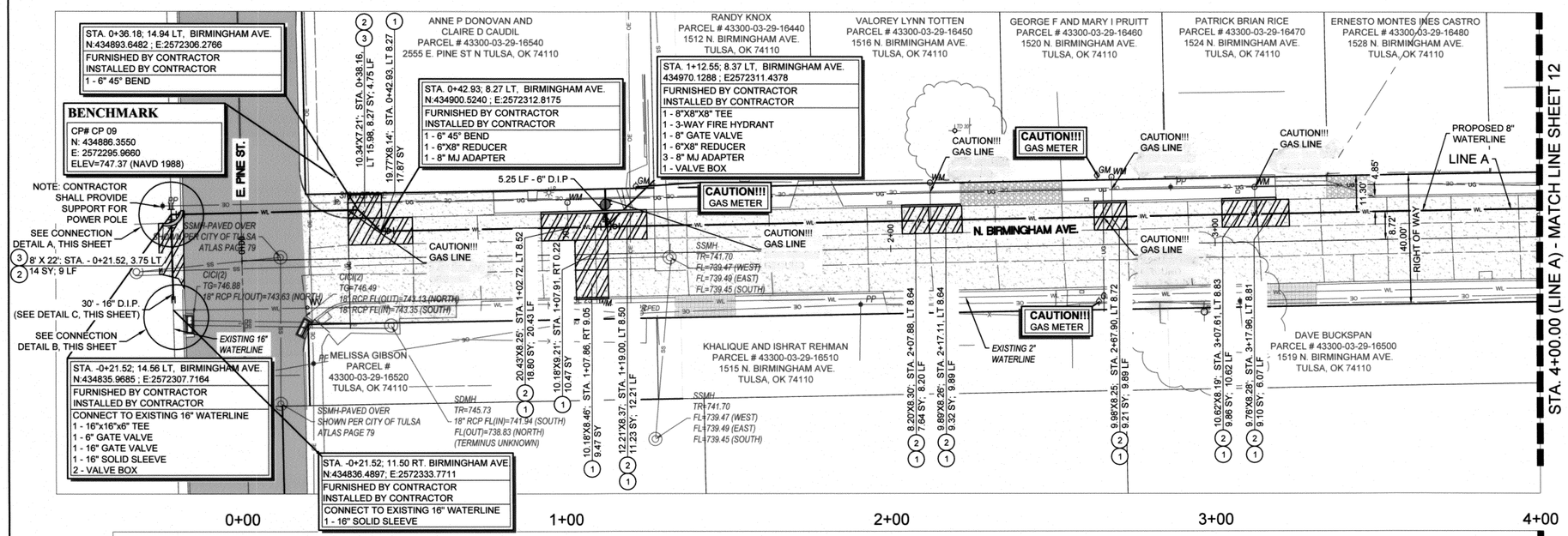
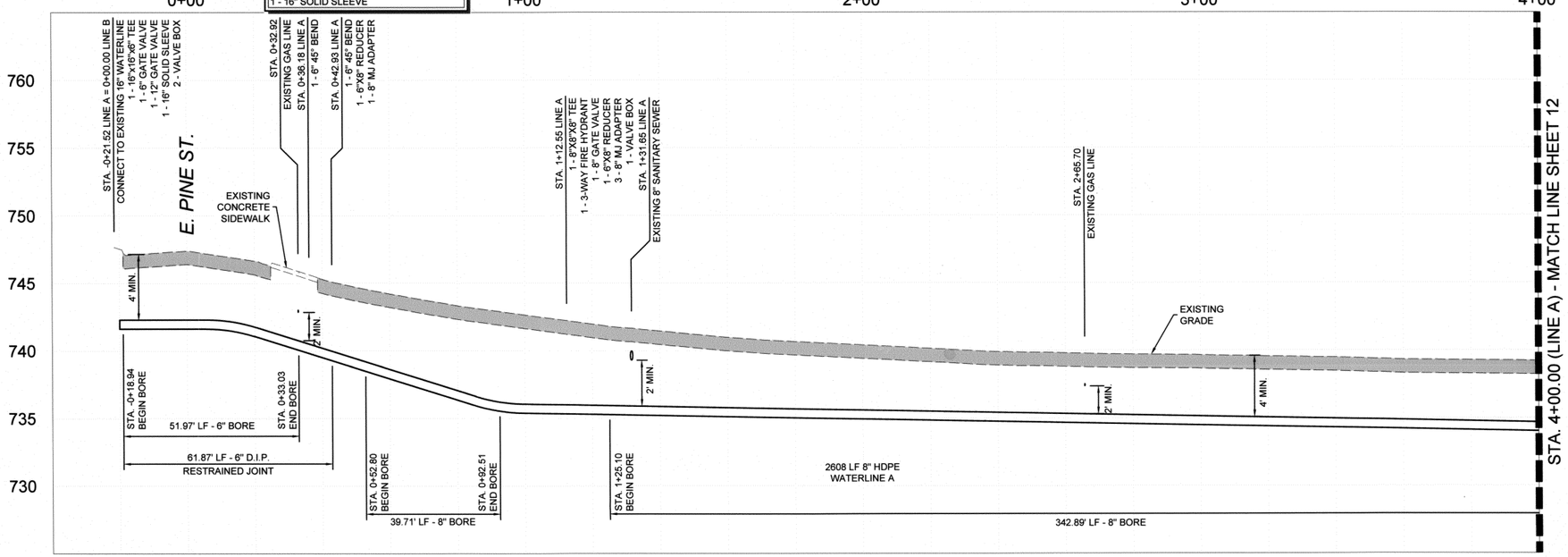
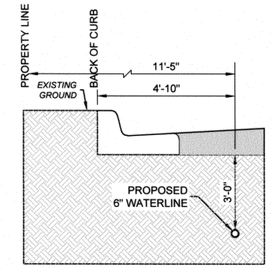
	DESIGNED	AAB	11/15	
	SURVEY	AAB	11/15	
PROFILE SCALE	PROJ. MGR.	SLJ	7/16	
HORIZONTAL: 1"=20'	LEAD ENGR.	DTM	7/16	
	FIELD MGR.	EBM	7/16	
VERTICAL: 1"=5'	RECOMMENDED: HAS 7/16 DESIGN MANAGER			CITY ENGINEER
FILE: 2013-29	DRAWING: BASE			DATE: 07-28-16
ATLAS PAGE NO: 118, 79				SHEET 10 OF 19 SHEETS

BEFORE YOU DIG CALL OKIE 811

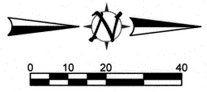
PLOT DATE: Wed, 06 Jul 2016 FILE: P:\2013\29-COT WATERLINE BIRMINGHAM\BIRMINGHAM V6, BASE

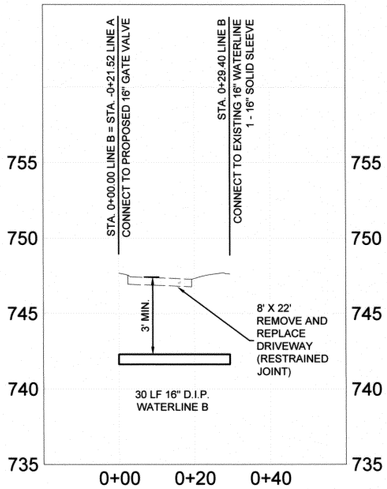




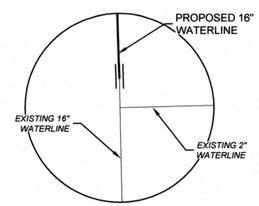


Typical Waterline Location Line A

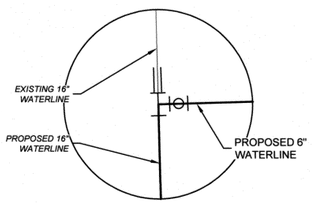




Detail C



Connection Detail B



Connection Detail A

METER LIST

SERVICE ADDRESS	OWNER	METER NO.	SIZE	STATION
2555 E. PINE ST. N.	ANNE P. DONOVAN AND CLAIRE D CAUDIL	NO METER #	NO SIZE LISTED	1+00.69
1512 N. BIRMINGHAM AVE.	MELISSA GIBSON	93284479	5/8"	1+09.26
1516 N. BIRMINGHAM AVE.	VALOREY LYNN TOTTEN	87734165	5/8"	2+12.49
1520 N. BIRMINGHAM AVE.	GEORGE F AND MARY I PRUITT	84631961	5/8"	2+68.47
1524 N. BIRMINGHAM AVE.	PATRICK BRIAN RICE	91402558	5/8"	3+12.50

Legend

- CONCRETE PATCH
- ASPHALT PATCH
- REMOVE AND REPLACE CURB AND GUTTER
- (1) TYPE 1 PCC PATCH (NON-ARTERIAL)
- (2) REMOVE AND REPLACE CONCRETE CURB
- (3) REMOVE AND REPLACE CONCRETE DRIVEWAY
- (4) TYPE I AC PATCH (NON-ARTERIAL)
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BEFORE YOU DIG CALL OKIE

REVISION	BY	DATE

WATERLINE A P&P (1) - BIRMINGHAM AVE.

PROJECT # TMUA-W 15-29

WATERLINE REPLACEMENT & INSTALLATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATE PREPARED BY: AAB ENGINEERING, LLC
PO Box 2136 / 17 E 2nd ST, Sand Springs, OK 74063
OK, CA #6318 Exp: June 30, 2016
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PLAN SCALE: 20	DRAWN	JDW	11/15
	DESIGNED	AAB	11/15
	SURVEY	AAB	11/15
PROFILE SCALE	PROJ. MGR.	SLJ	7/16
HORIZONTAL: 1"=20'	LEAD ENGR.	ZTM	7/16
	FIELD MGR.	PBH	7/16
VERTICAL: 1"=5'	RECOMMENDED: HAS		7/16
	DESIGN MANAGER		

APPROVED:

CITY ENGINEER

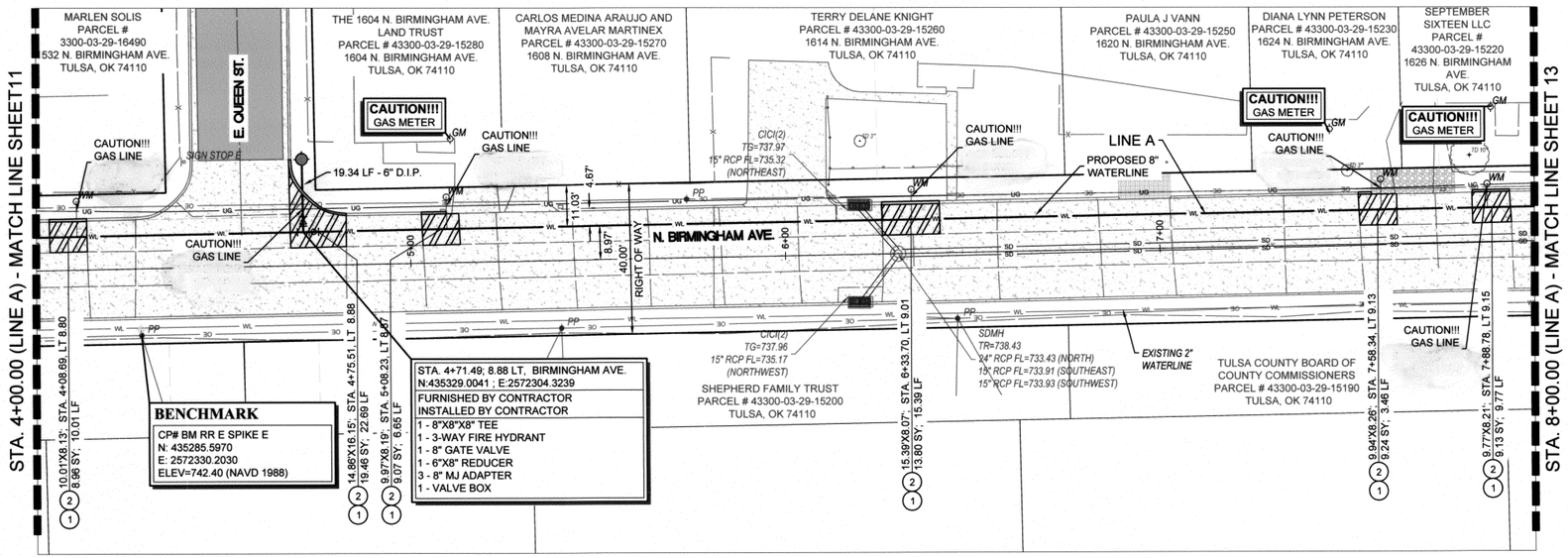
DATE: 07.28.16

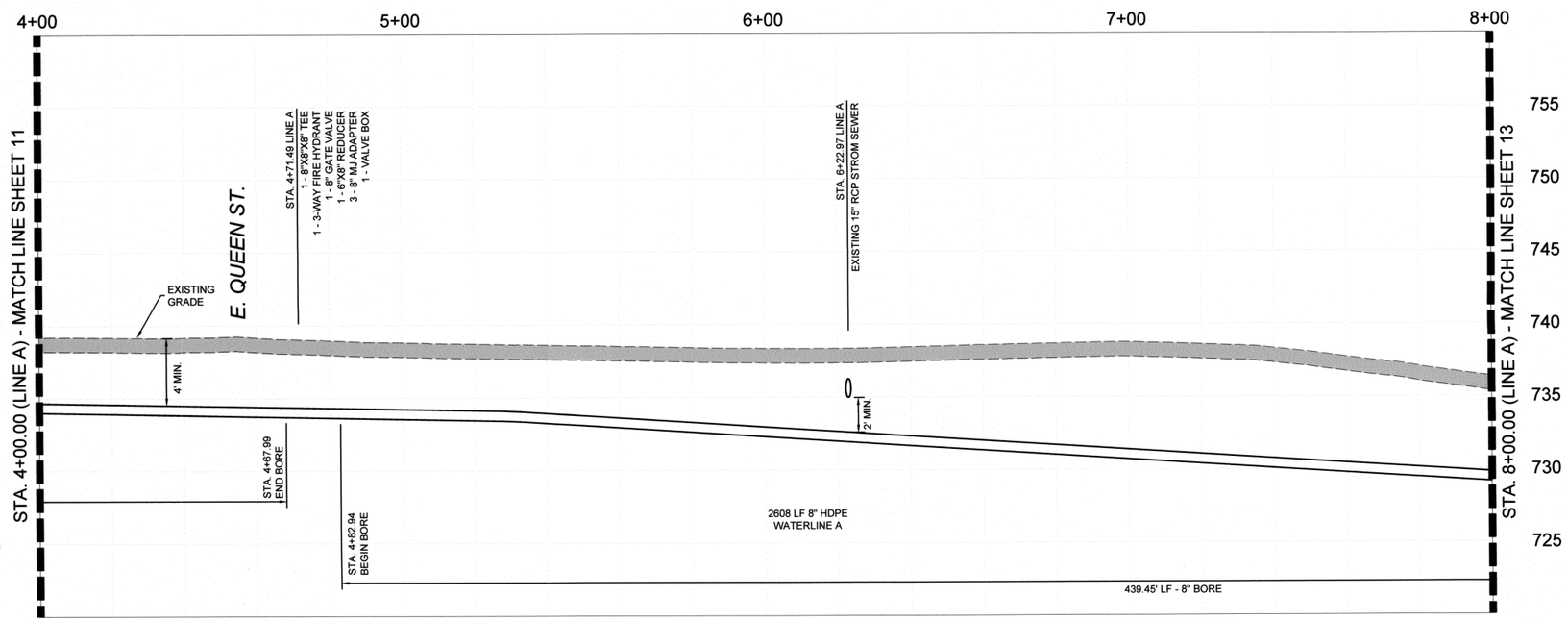
FILE: 2013-29 DRAWING: BASE

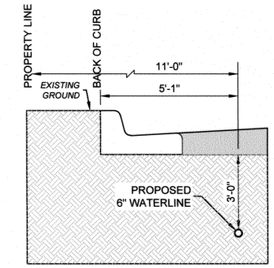
ATLAS PAGE NO: 79

SHEET 11 OF 19 SHEETS

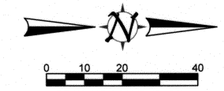
PLOT DATE: Wed, 06 Jul 2016 FILE: P:\2013\29-CGT WATERLINE BIRMINGHAM\BIRMINGHAM V4L BASE







Typical Waterline Location Line A



Legend

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- (4) TYPE I AC PATCH (NON-ARTERIAL)
- (5) REMOVE & REPLACE CURB AND GUTTER

METER LIST

SERVICE ADDRESS	OWNER	METER NO.	SIZE	STATION
1532 N. BIRMINGHAM AVE.	MARLEN SOLIS	86313395	5/8"	4+11.00
1604 N. BIRMINGHAM AVE.	THE 1604 BIRMINGHAM AVE. LAND TRUST	87757077	5/8"	5+09.82
1614 N. BIRMINGHAM AVE.	TERRY DELANE KNIGHT	92774117	5/8"	6+33.91
1624 N. BIRMINGHAM AVE.	DIANA LYNN PETERSON	93284435	5/8"	7+59.26
1626 N. BIRMINGHAM AVE.	SEPTEMBER SIXTEEN LLC	83245127	5/8"	7+87.63

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REVISION	BY	DATE

WATERLINE A P&P (2) - BIRMINGHAM AVE.

PROJECT # TMUA-W 15-29

WATERLINE REPLACEMENT & INSTALLATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATE PREPARED BY: AAB Engineering-Surveying-Land Planning
AAB ENGINEERING, LLC
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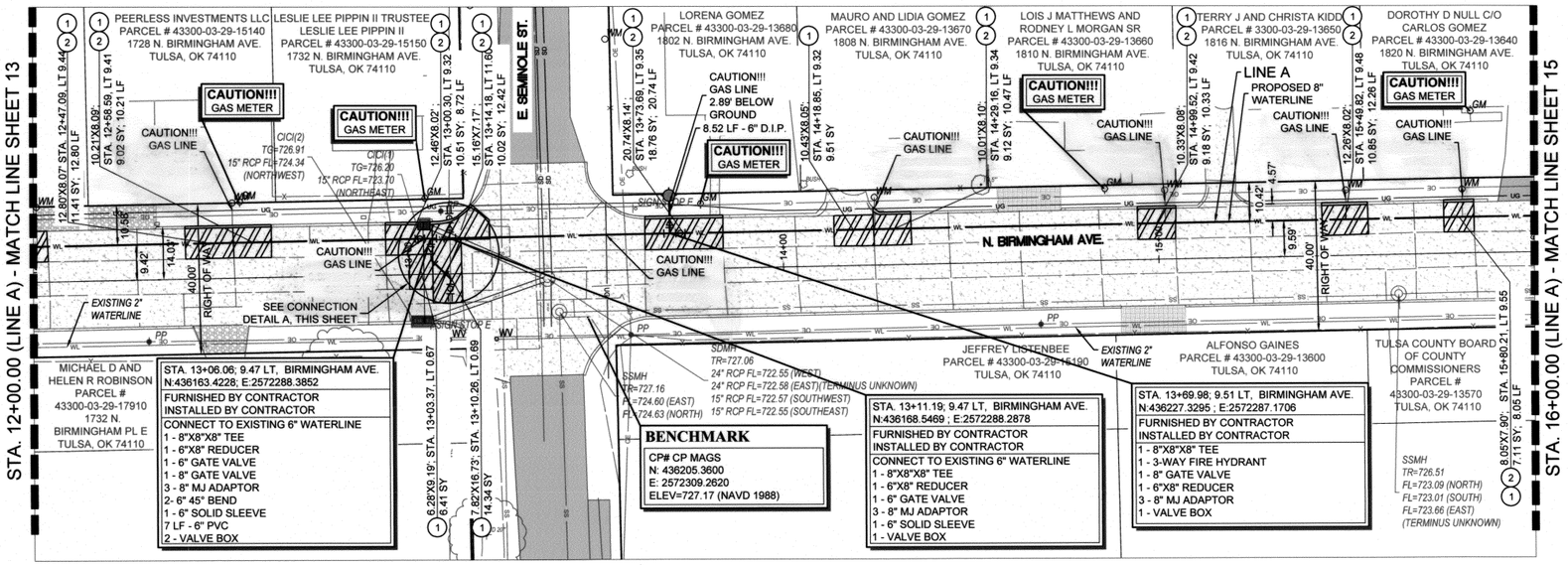
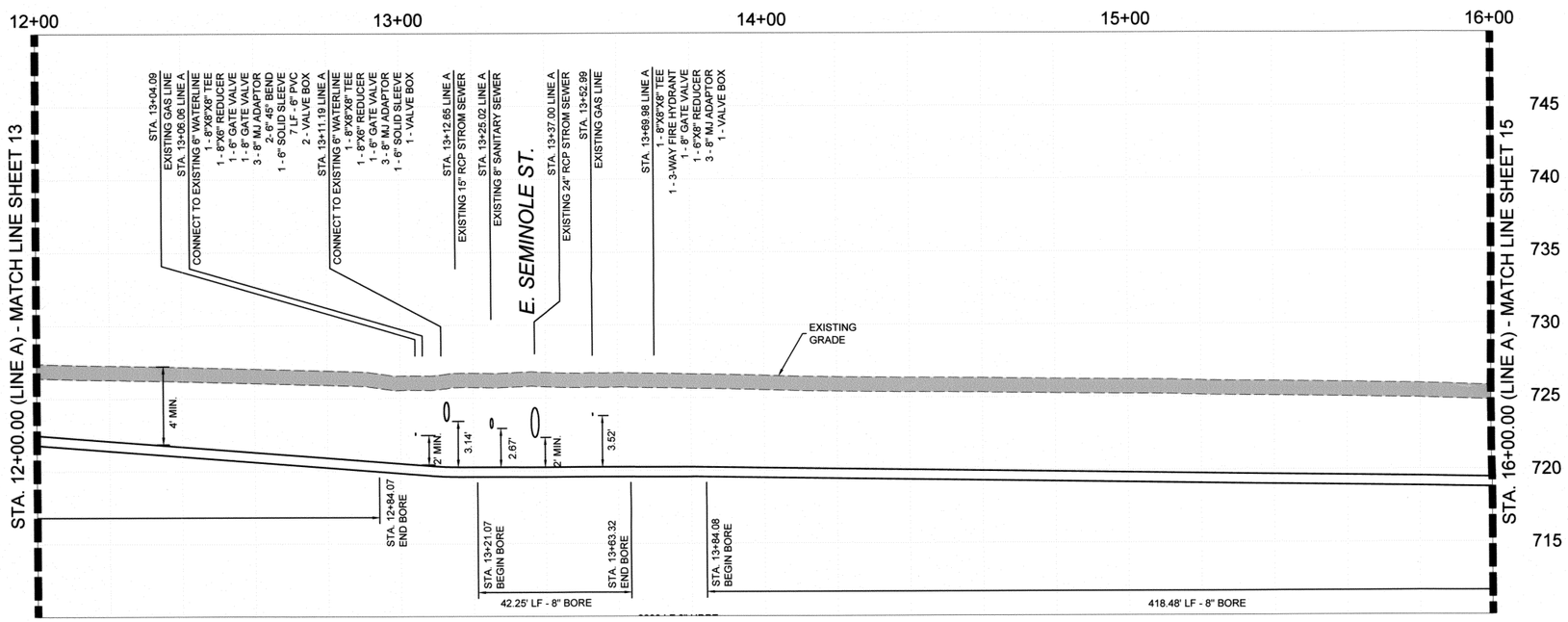
PLAN SCALE: 20	DRAWN	JDW	11/15	APPROVED:
	DESIGNED	AAB	11/15	
	SURVEY	AAB	11/15	
PROFILE SCALE	PROJ. MGR.	SLJ	7/16	
HORIZONTAL: 1"=20'	LEAD ENGR.	JTM	7/16	
	FIELD MGR.	EBW	7/16	
VERTICAL: 1"=5'	RECOMMENDED: DESIGN MANAGER	HAS	7/16	CITY ENGINEER
FILE: 2013-29	DRAWING: BASE			DATE: 07.28.16
ATLAS PAGE NO: 79				SHEET 12 OF 19 SHEETS

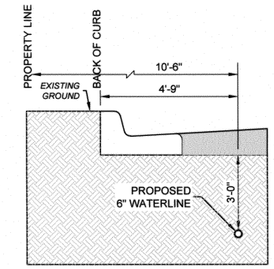
LICENSED PROFESSIONAL ENGINEER — Brian Bolthan — 25330 — OKLAHOMA

BEFORE YOU DIG — CALL OKIE

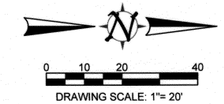
PLOT DATE: Wed, 06 Jul 2016 FILE: P:\2013\29-CIT WATERLINE BIRMINGHAM\BIRMINGHAM V6, BASE







Typical Waterline Location Line A



Legend

- CONCRETE PATCH
- ASPHALT PATCH
- REMOVE AND REPLACE CURB AND GUTTER
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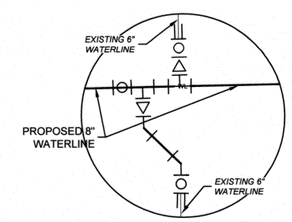
- (5) REMOVE & REPLACE CURB AND GUTTER

METER LIST

SERVICE ADDRESS	OWNER	METER NO.	SIZE	STATION
1720 N. BIRMINGHAM AVE.	SYLVESTRE SANCHEZ	52883471	3/4"	12+01.16
1728 N. BIRMINGHAM AVE.	PEERLESS INVESTMENTS LLC	91404579	5/8"	12+53.35
1808 N. BIRMINGHAM AVE.	MAURO AND LIDIA GOMEZ	86995719	5/8"	14+26.65
1810 N. BIRMINGHAM AVE.	LOIS J MATTHEWS AND RODNEY L MORGAN SR	NO METER #	5/8"	15+01.94
1816 N. BIRMINGHAM AVE.	TERRY J AND CHRISTA KIDD	93284970	5/8"	15+50.09
1820 N. BIRMINGHAM AVE.	DOROTHY D NULL C/O CARLOS GOMEZ	84928106	5/8"	15+81.14



Connection Detail A

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BEFORE YOU DIG CALL OKIE

REVISION	BY	DATE

WATERLINE A P&P (4) - BIRMINGHAM AVE.

PROJECT # TMUA-W 15-29

WATERLINE REPLACEMENT & INSTALLATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

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PLAN SCALE: 20	DRAWN	JDW	11/15
	DESIGNED	AAB	11/15
	SURVEY	AAB	11/15
PROFILE SCALE	PROJ. MGR.	SLJ	7/16
HORIZONTAL: 1"=20'	LEAD ENGR.	TTW	7/16
	FIELD MGR.	ZBV	7/16
VERTICAL: 1"=5'	RECOMMENDED: DESIGN MANAGER	HAS	7/16
FILE: 2013-29	DRAWING: BASE		
ATLAS PAGE NO: 79			

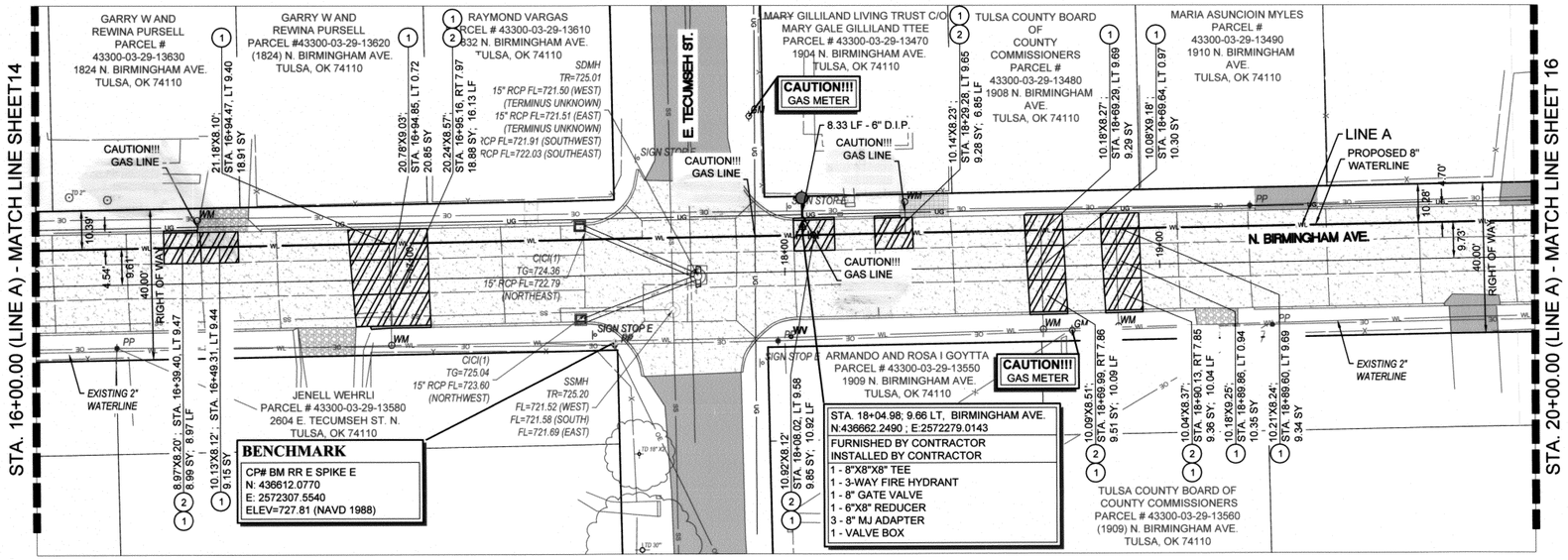
APPROVED:

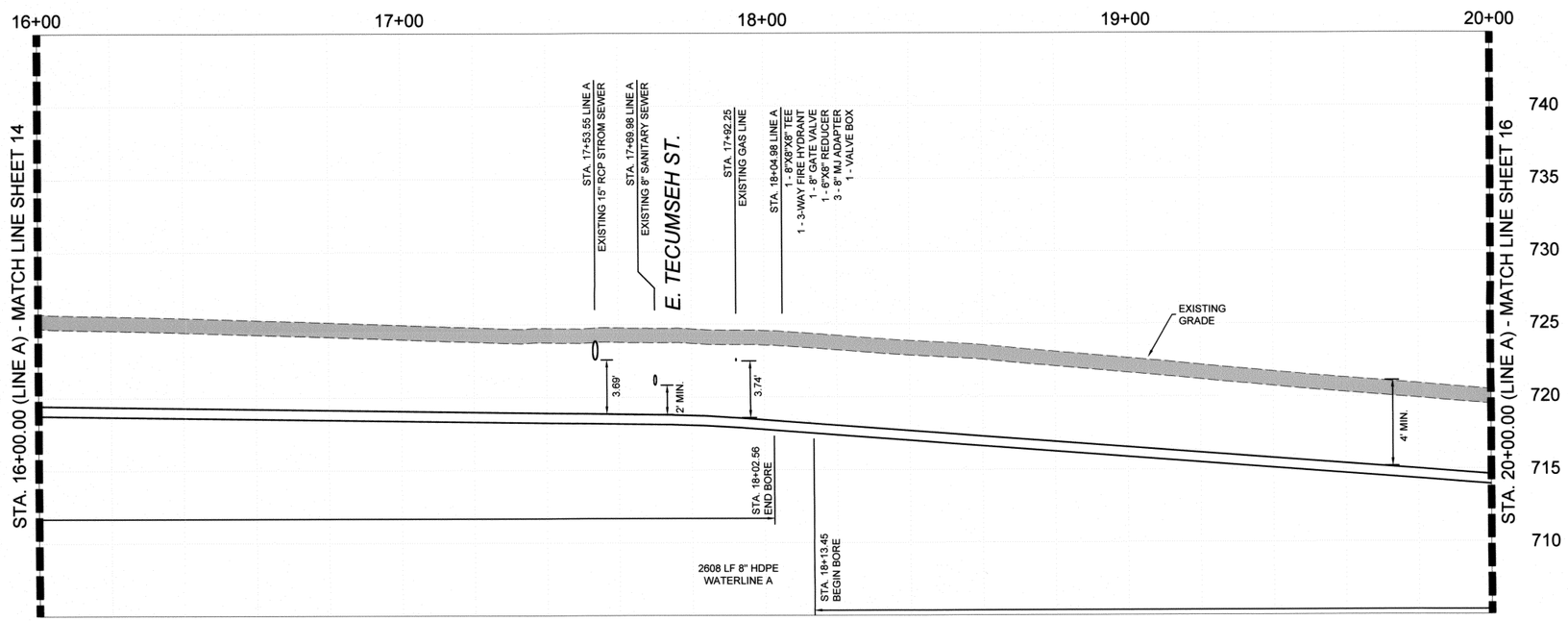
CITY ENGINEER

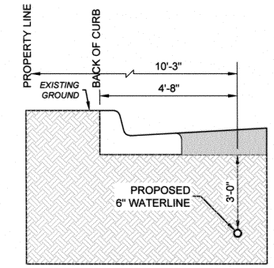
DATE: 07.28.16

SHEET 14 OF 19 SHEETS

PLOT DATE: Wed, 06 Jul 2016 FILE: P:\2013\29-COT WATERLINE BIRMINGHAM\BIRMINGHAM V6.BASE







Typical Waterline Location Line A

0 10 20 40
DRAWING SCALE: 1"= 20'

Legend

- CONCRETE PATCH
- ASPHALT PATCH
- REMOVE AND REPLACE CURB AND GUTTER
- (1) TYPE 1 PCC PATCH (NON-ARTERIAL)
- (2) REMOVE AND REPLACE CONCRETE CURB
- (3) REMOVE AND REPLACE CONCRETE DRIVEWAY
- (4) TYPE I AC PATCH (NON-ARTERIAL)
- (5) REMOVE & REPLACE CURB AND GUTTER

METER LIST

SERVICE ADDRESS	OWNER	METER NO.	SIZE	STATION
1824 N. BIRMINGHAM AVE.	GARRY W AND REWINA PURSELL	NO METER #	5/8"	16+43.52
NO ADDRESS LISTED	JENELL WEHRLI	NO METER #	NO SIZE LISTED	16+94.62
1904 N. BIRMINGHAM AVE.	MARY GILLILAND LIVING TRUST C/O MARY GALE GILLILAND TTEE	84268784	5/8"	18+32.40
1909 N. BIRMINGHAM AVE.	ARMANDO AND ROSA I GOYTTA	68012534	5/8"	18+68.55
NO ADDRESS LISTED	TULSA COUNTY BOARD OF COUNTY COMMISSIONERS	NO METER #	NO SIZE LISTED	18+88.60

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BEFORE YOU DIG CALL OKIE

REVISION	BY	DATE

WATERLINE A P&P (5) - BIRMINGHAM AVE.

PROJECT # TMUA-W 15-29

WATERLINE REPLACEMENT & INSTALLATION

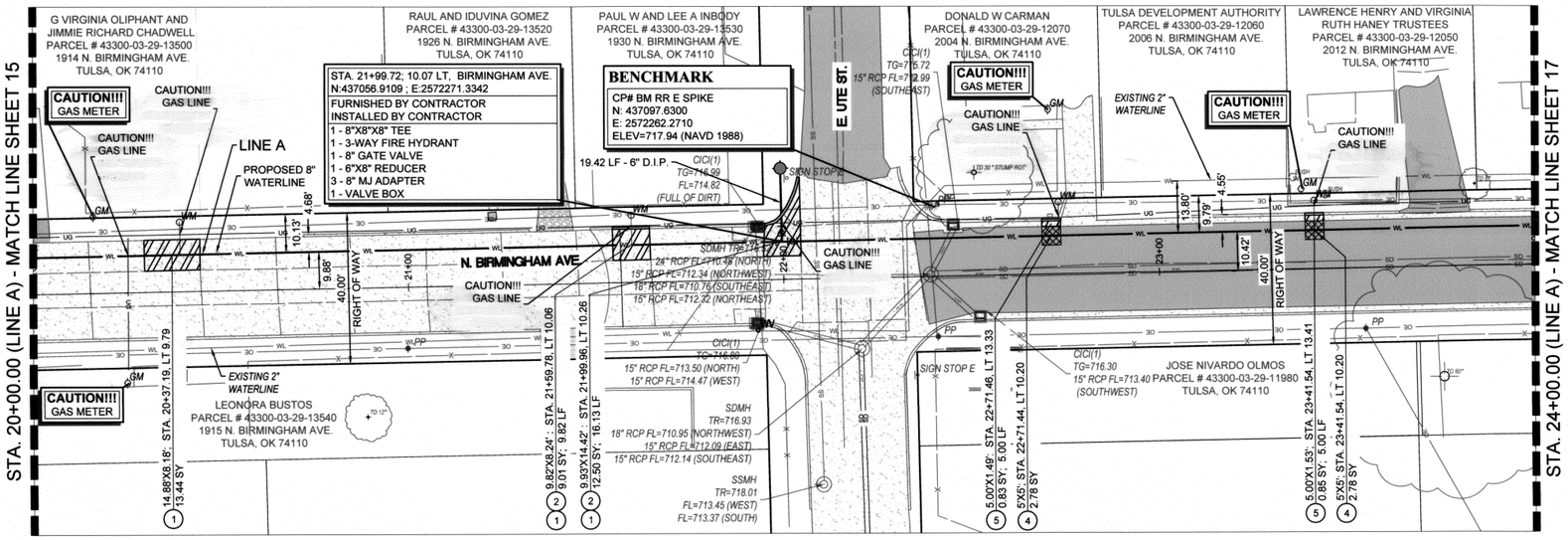
CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

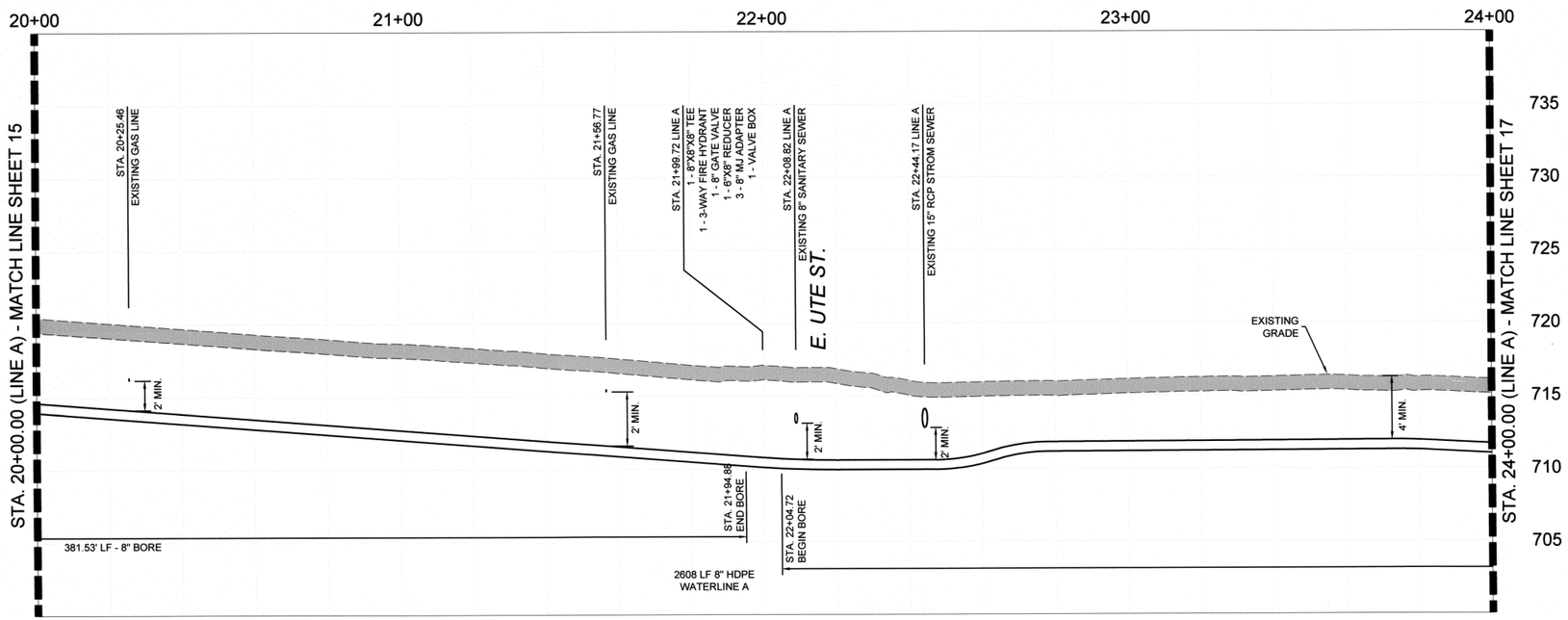
PLANS AND ESTIMATE PREPARED BY: AAB Engineering-Surveying-Land Planning
AAB ENGINEERING, LLC
PO Box 2136 / 17 E 2nd ST, Sand Springs, OK 74063 — OK, CA #6318 Exp: June 30, 2016; KA, CA #2292 Exp: Dec 31, 2016
Office: (918) 514-4283 Fax: (918) 514-4288

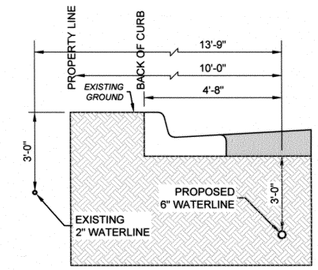
PLAN SCALE: 20	DRAWN	JDW	11/15	APPROVED:
	DESIGNED	AAB	11/15	
	SURVEY	AAB	11/15	
PROFILE SCALE	PROJ. MGR.	SLJ	7/16	
HORIZONTAL: 1"=20'	LEAD ENGR.		7/16	
	FIELD MGR.	CBH	7/16	
VERTICAL: 1"=5'	RECOMMENDED: DESIGN MANAGER	HAS	7/16	CITY ENGINEER
FILE: 2013-29	DRAWING: BASE			DATE: 07.28.16
ATLAS PAGE NO: 79				SHEET 15 OF 19 SHEETS

LICENSED PROFESSIONAL ENGINEER 25330 OKLAHOMA

PLOT DATE: Wed, 06 Jul 2016 FILE: P:\2013\29- CITY WATERLINE BIRMINGHAM\BIRMINGHAM V6. BASE







Typical Waterline Location Line A

0 10 20 40
DRAWING SCALE: 1"= 20'

Legend

- CONCRETE PATCH
- ASPHALT PATCH
- REMOVE AND REPLACE CURB AND GUTTER
- (1) TYPE 1 PCC PATCH (NON-ARTERIAL)
- (2) REMOVE AND REPLACE CONCRETE CURB
- (3) REMOVE AND REPLACE CONCRETE DRIVEWAY
- (4) TYPE I AC PATCH (NON-ARTERIAL)
- (5) REMOVE & REPLACE CURB AND GUTTER

METER LIST

SERVICE ADDRESS	OWNER	METER NO.	SIZE	STATION
1914 N. BIRMINGHAM AVE.	G VIRGINIA OLIPHANT AND JIMMIE RICHARD CHADWELL	NO METER #	NO SIZE LISTED	20+39.34
1930 N. BIRMINGHAM AVE.	PAUL W AND LEE A INBODY	91399689	5/8"	21+59.81
2004 N. BIRMINGHAM AVE.	DONALD W CARMAN	89948048	5/8"	22+68.46
2012 N. BIRMINGHAM AVE.	LAWRENCE HENRY AND VIRGINIA RUTH HANEY TRUSTEES	67426838	5/8"	23+41.53

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BEFORE YOU DIG CALL OKIE

LICENSED PROFESSIONAL ENGINEER Bellman 25330 OKLAHOMA

WATERLINE A P&P (6) - BIRMINGHAM AVE.

PROJECT # TMUA-W 15-29

WATERLINE REPLACEMENT & INSTALLATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATE PREPARED BY: AAB Engineering/Surveying/Land Planning
AAB ENGINEERING, LLC
PO Box 2136 / 17 E 2nd ST, Sand Springs, OK 74063 — OK, CA #6318 Exp: June 30, 2016; KA, CA #2292 Exp: Dec 31, 2016
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	DESIGNED	AAB	11/15
	SURVEY	AAB	11/15
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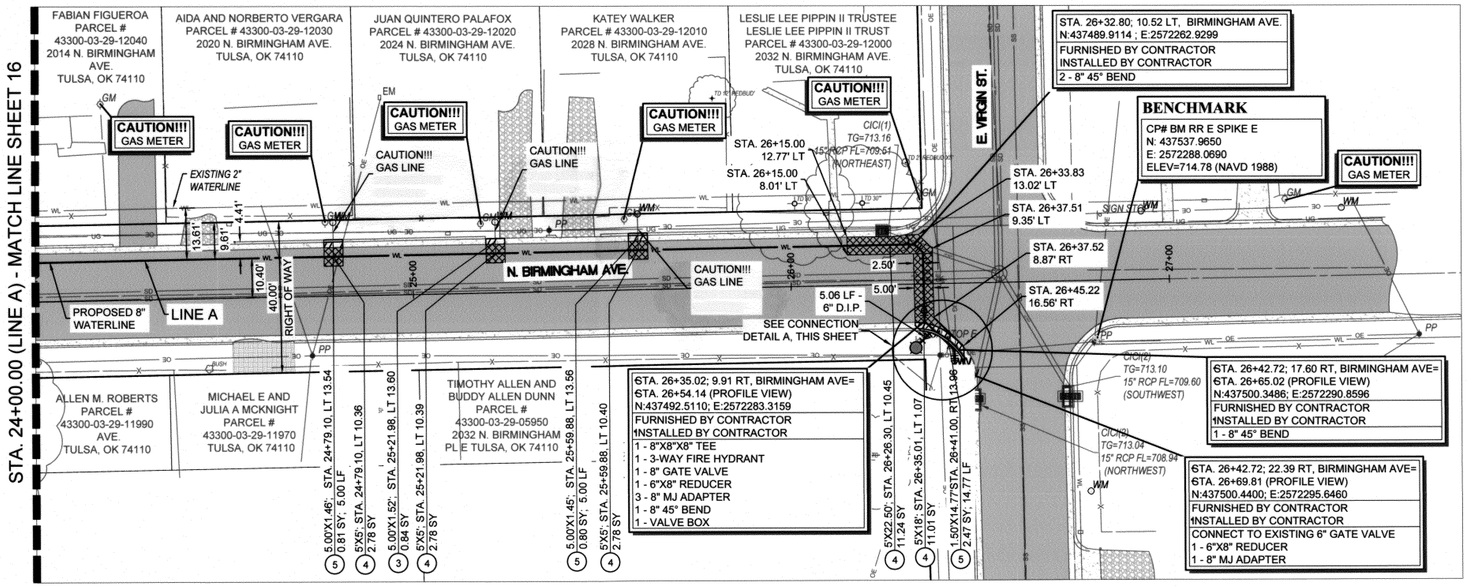
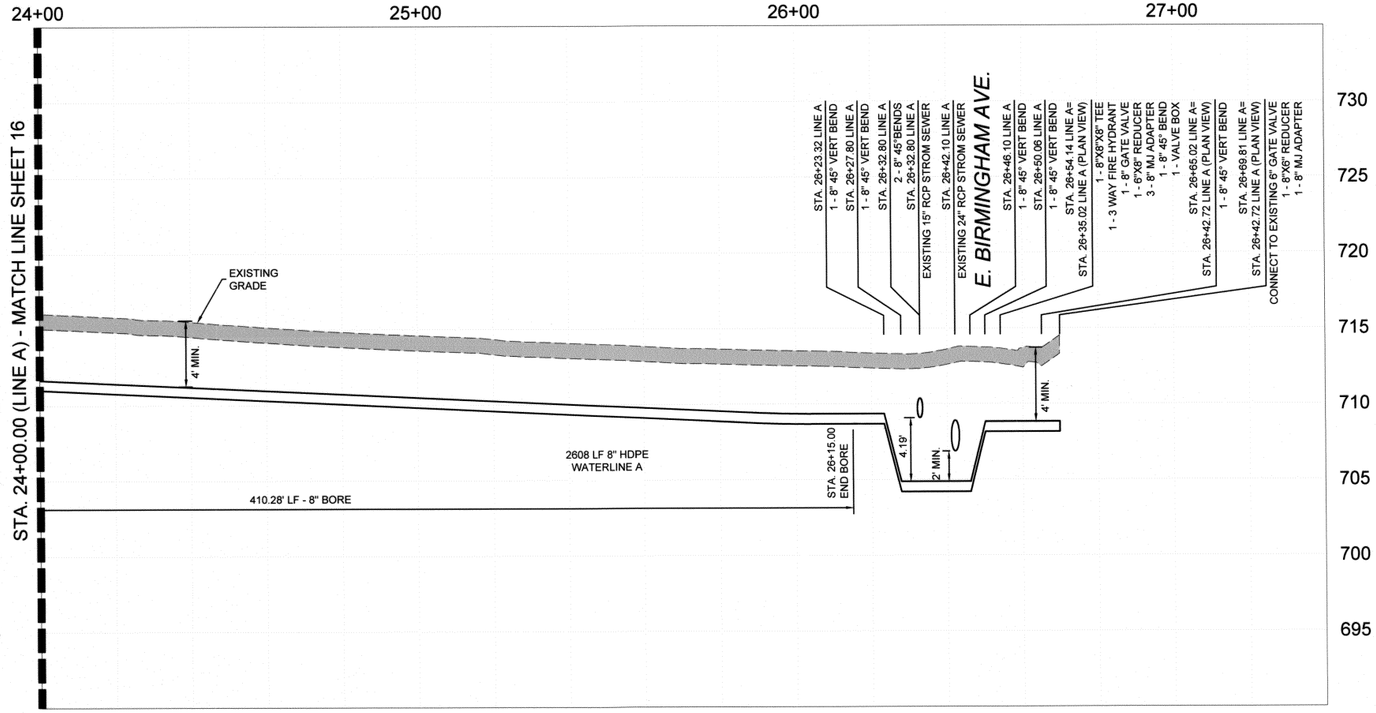
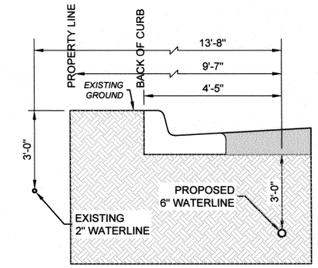
HORIZONTAL: 1"=20'	LEAD ENGR.	RTM	7/16
	FIELD MGR.	PGH	7/16
VERTICAL: 1"=5'	RECOMMENDED: HAS 7/16 DESIGN MANAGER		
FILE: 2013-29	DRAWING: BASE		
ATLAS PAGE NO: 79			

APPROVED:
CITY ENGINEER
DATE: 07.28.16
SHEET 16 OF 19 SHEETS

PLOT DATE: Wed, 06 Jul 2016 FILE: P:\2013\29-CDT WATERLINE BIRMINGHAM\BIRMINGHAM VAL BASE







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DRAWING SCALE: 1"= 20'

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- ASPHALT PATCH
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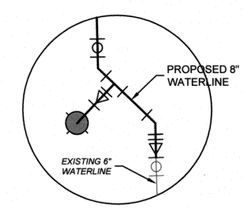
- (3) REMOVE AND REPLACE CONCRETE DRIVEWAY
- (4) TYPE I AC PATCH (NON-ARTERIAL)
- (5) REMOVE & REPLACE CURB AND GUTTER

METER LIST

SERVICE ADDRESS	OWNER	METER NO.	SIZE	STATION
2020 N. BIRMINGHAM AVE.	AIDA AND NORBERTO VERGARA	89308484	5/8"	24+79.10
2024 N. BIRMINGHAM AVE.	JUAN QUINTERO PALAFOC	87736850	5/8"	25+21.97
2028 N. BIRMINGHAM AVE.	KATEY WALKER	93283785	5/8"	25+59.88



Connection Detail A

LICENSED PROFESSIONAL ENGINEER 25330 OKLAHOMA

WATERLINE A P&P (7) - BIRMINGHAM AVE.
PROJECT # TMUA-W 15-29
WATERLINE REPLACEMENT & INSTALLATION
CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATE PREPARED BY: AAB Engineering•Surveying•Land Planning
AAB ENGINEERING, LLC
PO Box 2136 / 17 E 2nd ST Sand Springs, OK 74063 — OK, CA #6318 Exp: June 30, 2016; KA, CA #2292 Exp: Dec 31, 2016
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	SURVEY	AAB	11/15	
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FILE: 2013-29	DRAWING: BASE			DATE: 07.28.16
ATLAS PAGE NO: 118, 79				SHEET 17 OF 19 SHEETS

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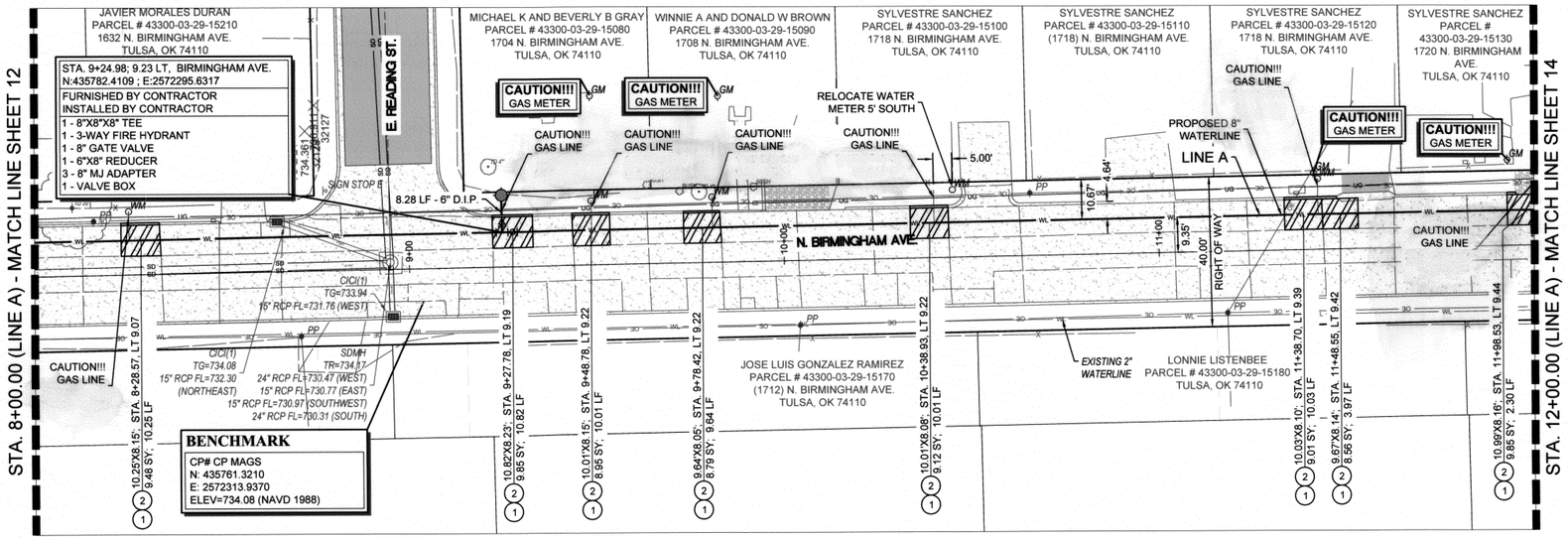
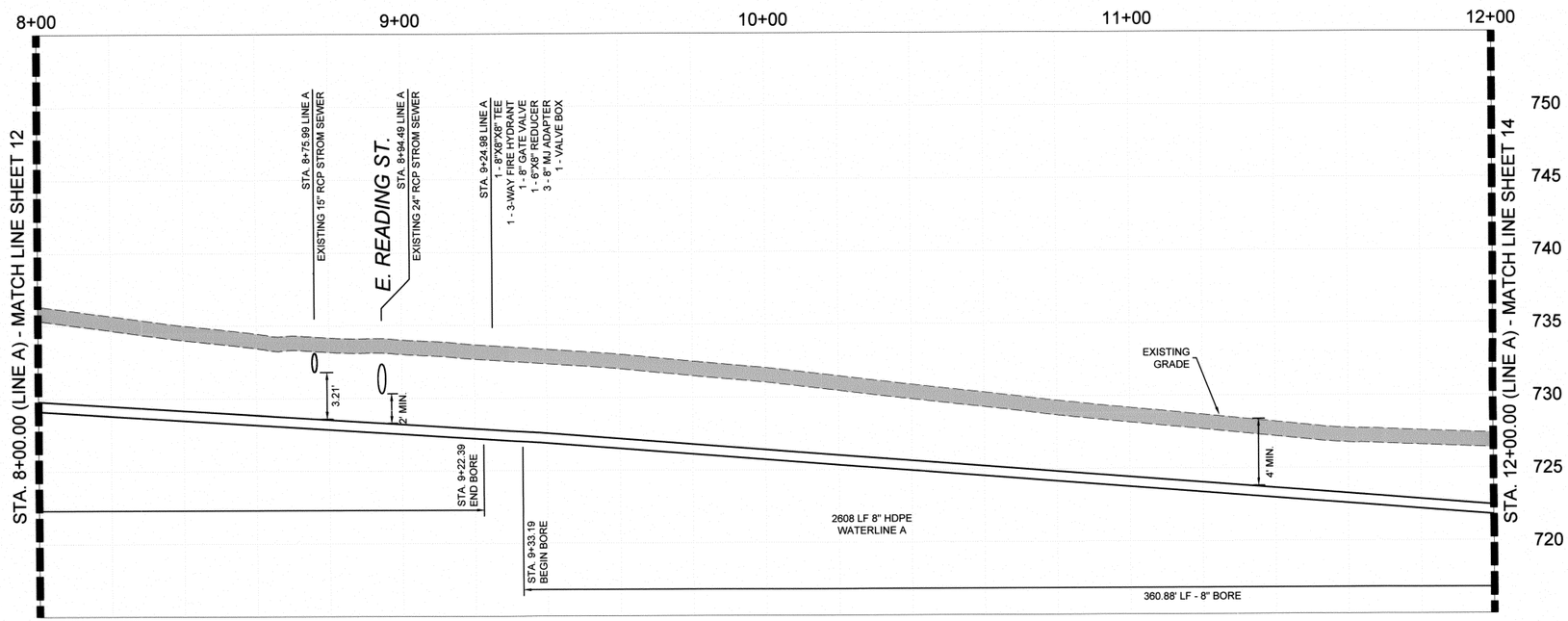
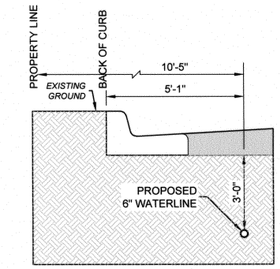
BEFORE YOU DIG CALL OKIE

PLOT DATE: Wed, 06 Jul 2016 FILE: P:\2013\29-CITY WATERLINE BIRMINGHAM\BIRMINGHAM V8, BASE







Typical Waterline Location Line A

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DRAWING SCALE: 1"= 20'

Legend

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- ASPHALT PATCH
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- (3) REMOVE AND REPLACE CONCRETE DRIVEWAY
- (4) TYPE I AC PATCH (NON-ARTERIAL)
- (5) REMOVE & REPLACE CURB AND GUTTER

METER LIST

SERVICE ADDRESS	OWNER	METER NO.	SIZE	STATION
1632 N. BIRMINGHAM AVE.	JAVIER MORALES DURAN	93287225	5/8"	8+25.45
1704 N. BIRMINGHAM AVE.	MICHAEL K AND BEVERLY B GRAY	67030275	5/8"	9+48.94
1708 N. BIRMINGHAM AVE.	WINNIE A AND DONALD W BROWN	84268813	5/8"	9+81.11
1718 N. BIRMINGHAM AVE.	SYLVESTRE SANCHEZ	89948027 NO METER #	5/8" -	10+40.20 11+42.62

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BEFORE YOU DIG CALL OKIE

LICENSED PROFESSIONAL ENGINEER Benchan 26330 OKLAHOMA

REVISION	BY	DATE

WATERLINE A P&P (3) - BIRMINGHAM AVE.

PROJECT # TMUA-W 15-29

WATERLINE REPLACEMENT & INSTALLATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATE PREPARED BY: AAB ENGINEERING, LLC
PO Box 2136 / 17 E 2nd ST Sand Springs, OK 74063
OK, CA #6318 Exp: June 30, 2016
KA, CA #2292 Exp: Dec 31, 2016
Office: (918) 514-4283 Fax: (918) 514-4288

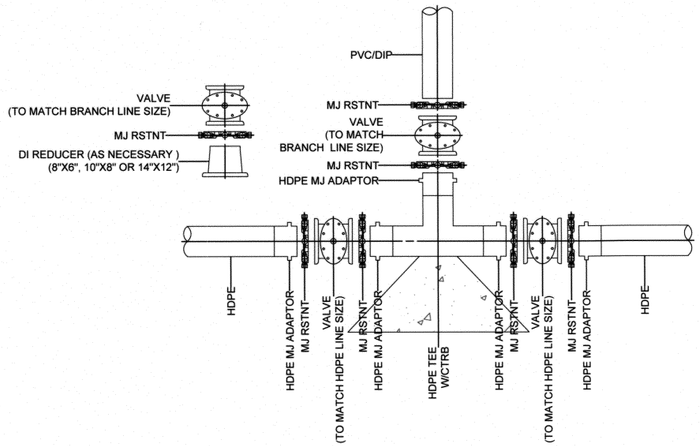
PLAN SCALE: 20	DRAWN	JDW	11/15
	DESIGNED	AAB	11/15
	SURVEY	AAB	11/15
PROFILE SCALE	PROJ. MGR.	BJT	7/16
HORIZONTAL: 1"=20'	LEAD ENGR.	RMK	7/16
	FIELD MGR.	PBV	7/16
VERTICAL: 1"=5'	RECOMMENDED: DESIGN MANAGER	HAS	7/16

APPROVED: CITY ENGINEER

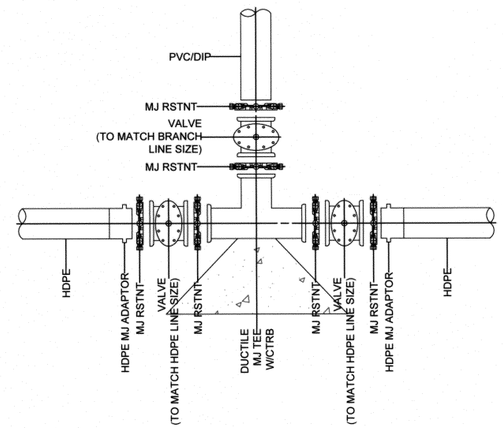
FILE: 2013-29 DRAWING: BASE DATE: 07-28-16

ATLAS PAGE NO: 79 SHEET 13 OF 19 SHEETS

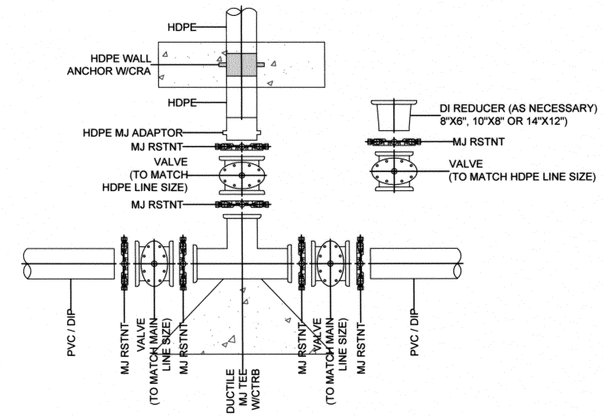
PLOT DATE: Wed, 06 Jul 2016 FILE: P:\2013\29-COT WATERLINE BIRMINGHAM\BIRMINGHAM WL BASE



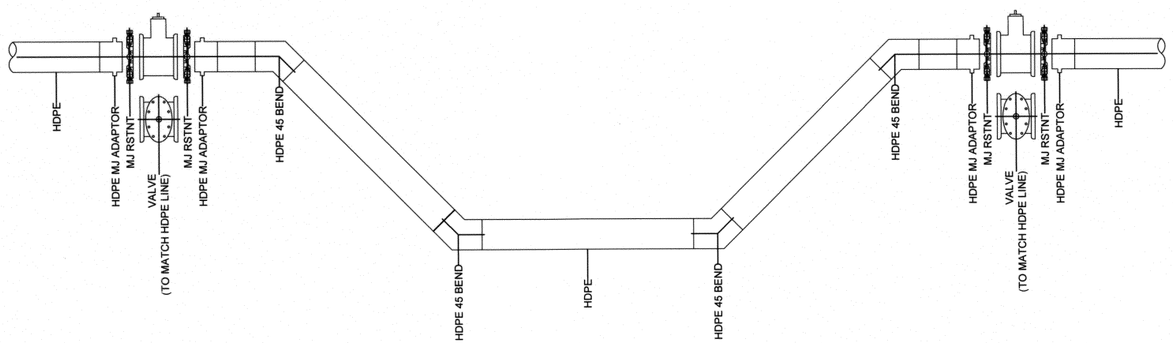
B HDPE TEE (HDPE MAIN / DIP OR PVC BRANCH)
Scale: None



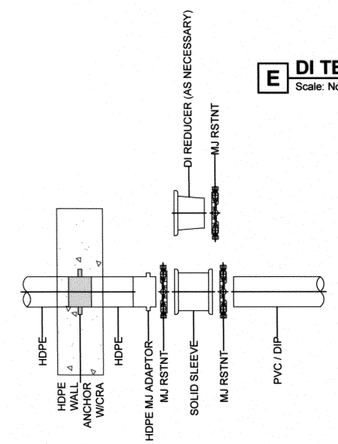
D DI TEE (HDPE MAIN / DIP OR PVC BRANCH)
Scale: None



E DI TEE (DI MAIN / HDPE BRANCH)
Scale: None



F HDPE HORIZONTAL / VERTICAL REALIGNMENT USING FITTINGS
Scale: None



D HDPE TO DI / PVC SPLICE
Scale: None

WHEN HDPE MAIN IS CONNECTED TO DI FITTING, USE HDPE MJ ADAPTER AND DI REDUCER AS NECESSARY TO MAKE CONNECTION.

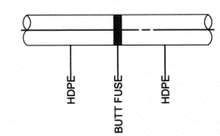
TYPICAL CONFIGURATIONS:

WHEN HDPE BRANCH IS 8" USE 8" GATE VALVE.

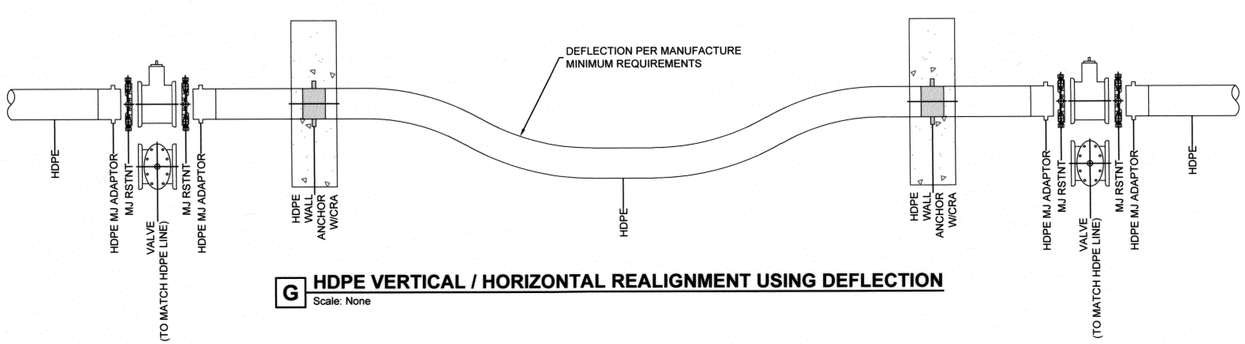
WHEN HDPE BRANCH IS 10"USE 10" GATE VALVE.

WHEN HDPE BRANCH IS 12". USE 12" GATE VALVE.

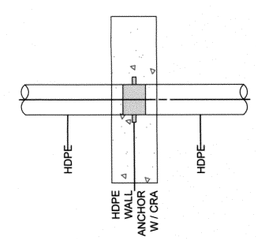
WHEN HDPE BRANCH IS 14". USE 14"X12" DI REDUCER AND 12" GATE VALVE.



B HDPE TO HDPE BUTT FUSE
Scale: None



G HDPE VERTICAL / HORIZONTAL REALIGNMENT USING DEFLECTION
Scale: None



E HDPE WALL ANCHOR
Scale: None

LICENSED PROFESSIONAL ENGINEER
Alan Batchan
25330
OKLAHOMA

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REVISION	BY	DATE

HDPE STANDARD DETAILS (1)

PROJECT # TMUA-W 15-29

WATERLINE REPLACEMENT & INSTALLATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

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Engineering/Surveying/Land Planning
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	FIELD MGR.	PBH	7/16
VERTICAL: 1"=5'	RECOMMENDED: DESIGN MANAGER	HAS	7/16

APPROVED:

CITY ENGINEER

DATE: 07.28.16

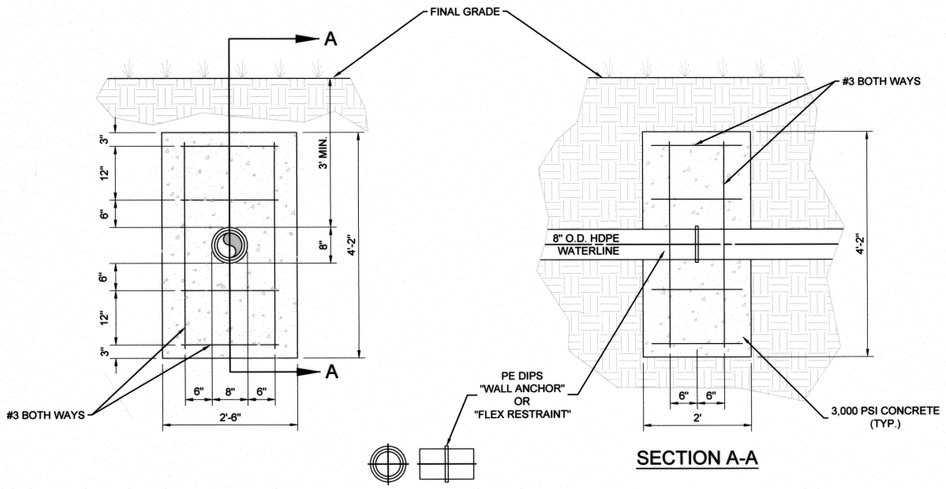
FILE: 2013-29 DRAWING: BASE

ATLAS PAGE NO: 118, 79

SHEET 18 OF 19 SHEETS

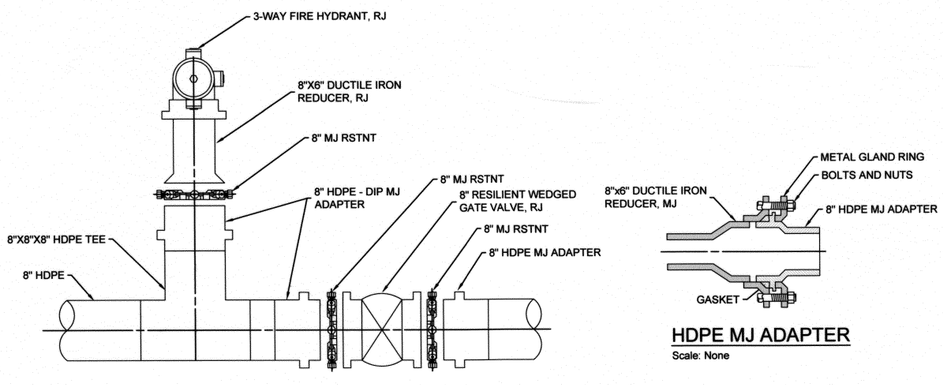
BEFORE YOU DIG CALL OKIE

PLOT DATE: Wed, 06 Jul 2016 FILE: P:\2013\29-CITY WATERLINE BRIANNA\AMBERWING\AMAYA, BASE



A CONCRETE ANCHOR DETAIL FOR 8" DR11 HDPE

Scale: None



HDPE MJ ADAPTER

Scale: None

B 3-WAY FIRE HYDRANT INSTALLATION FOR HDPE

Scale: None

NOTE: DETAIL APPLIES TO 8" AND 12" HDPE.
10" AND 14" HDPE WILL REQUIRE 10" X8" DUCTILE IRON
REDUCER AND 14" X 12" DUCTILE IRON REDUCER AT VALVE CONNECTION.

BEFORE YOU DIG CALL OKIE

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PROFESSIONAL ENGINEER — Alan Betchan — 25330 — OKLAHOMA

REVISION	BY	DATE

HDPE STANDARD DETAILS (2)

PROJECT # TMUA-W 15-29

WATERLINE REPLACEMENT & INSTALLATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATE PREPARED BY: AAB Engineering, Surveying, Land Planning

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