CITY OF Tulsa
A New Kind of *Energy*.

FAX TRANSMITTAL

Date: November 21, 2016

To: Plan Holders

Company: Contractors

Number of Pages: 22 (Including Cover)

From:

RE: Project No. **143120-4 & TMUA-W 16-43**
MINGO & CATFISH CREEKS CHANNEL IMPROVEMENTS

ADDENDUM NO. 2

Please fax or email a signed cover sheet to 918 699-3158 or pebrown@cityoftulsa.org as acknowledgement of receipt.

Thank you,

Priscilla Brown

Signature	Company	Date

CITY OF Tulsa
A New Kind of Energy.

ENGINEERING SERVICES DEPARTMENT

November 18, 2016

ADDENDUM NO. 2
TO
PROJECT NO. 143120-4 & TMUA-W 16-43
MINGO & CATFISH CREEKS CHANNEL IMPROVEMENTS

This Addendum No. 2, consisting of sixteen (16) items, submitted by Meshek & Associates, Inc., is hereby made a part of the Contract Documents to the same extent as though it were originally included therein, and shall supersede anything contained in the Plans and Specifications with which it might conflict. **This Addendum shall be attached to the Index Sheet of the Contract Documents and submitted with bid. Failure to do so shall result in the bid being deemed non-responsive.**

All other provisions of the Plans and Specifications shall remain in full force and effect.

CITY OF TULSA

Paul D. Zachary, P.E.
For City Engineer

HAS/BJJ/PEB/peb

2317 South Jackson Avenue • Tulsa, OK 74107 • Office 918.596.9565 • Fax 918.596.7277
www.cityoftulsa.org

MESHEK & ASSOCIATES, PLC
CIVIL & WATER RESOURCE ENGINEERING
GEOGRAPHIC INFORMATION SYSTEMS

November 15, 2016

ADDENDUM NO. 2
TO
MINGO & CATFISH CREEKS CHANNEL IMPROVEMENTS
PROJECT NO. 143120-4, TMUA-16-43

This Addendum No. 2, consisting of sixteen (16) items submitted by Meshek & Associates, is hereby made a part of the Contract Documents to the same extent as though it were originally included therein, and shall supersede anything contained in the Plans and Specifications with which it might conflict. **This Addendum shall be attached to the Index Sheet of the Contract Documents and submitted with the bid. Failure to do so shall result in the bid being deemed non-responsive.**

This Addendum No. 2 consists of the following:

PROPOSAL

1. Delete the existing Proposal in its entirety and replace with the revised Proposal found at:
   www.cityoftulsa.org / our-city / doing-business-with-the-city / construction-bids.aspx / projectno. 143120-4. It is the Bidder's responsibility to download the revised Proposal onto their existing thumb drive.

DRAWINGS

2. Remove Sheet 2 from the plans in its entirety and replace with attached Sheet 2a.
3. Remove Sheet 2A from the plans in its entirety and replace with attached Sheet 2Aa.
4. Remove Sheet 4 from the plans in its entirety and replace with attached Sheet 4a.
5. Remove Sheet 7 from the plans in its entirety and replace with attached Sheet 7a.
6. Remove Sheet 23 from the plans in its entirety and replace with attached Sheet 23a.
7. Remove Sheet 24 from the plans in its entirety and replace with attached Sheet 24a.
8. Remove Sheet 25 from the plans in its entirety and replace with attached Sheet 25a.
9. Remove Sheet 26 from the plans in its entirety and replace with attached Sheet 26a.
10. Remove Sheet 27 from the plans in its entirety and replace with attached Sheet 27a.

11. Remove Sheet 28 from the plans in its entirety and replace with attached Sheet 28a.
12. Remove Sheet 29 from the plans in its entirety and replace with attached Sheet 29a.
13. Remove Sheet 30 from the plans in its entirety and replace with attached Sheet 30a

CLARIFICATION

14. All riprap placement for this project will be for salvaged riprap only and will be paid for under Pay Item "RELOCATION OF SALVAGED RIPRAP. This Pay Item will include the cost of handling and placement of salvaged riprap only. There will be no additional riprap for this project.
15. Approved Suppliers for the Articulating Block Revetment System shall be as follows:
    a. International Erosion Control Systems Inc.
       4429 East 58th Place, Tulsa Oklahoma 74135
       Jason Trotter – Ph: 918-991-1256

    b. Contech Engineered Solutions LLC
       Sarah Kellert – Ph: 918-706-7792

SPECIAL PROVISIONS

16. Remove Special Provision Articulating Block Revetment System in its entirety and replace with attached Special Provision.

All other provisions of the Plans and Specifications shall remain in full force and effect.

BY: _____
Eric Zellers, PE, LSI

DATE/SEAL: 11/15/16

www.meshekengr.com
phone: 918-392-5620 • fax: 918-392-5621 • 1437 South Boulder Avenue, Suite 1080, Tulsa, OK 74119

PROPOSAL
PROJECT NO: 143120-4
MINGO & CATFISH CREEKS CHANNEL IMPROVEMENTS

TO: HONORABLE MAYOR
CITY OF TULSA, OKLAHOMA

THE UNDERSIGNED BIDDER, having carefully examined the drawings, specifications, and other Contract Documents of the above project presently on file in the City Clerk, City of Tulsa Oklahoma:

CERTIFIES THAT he has inspected the site of the proposed work and has full knowledge of the extent and character of the work involved, construction difficulties that may be encountered, and materials necessary for construction, class and type of excavation, and all other factors affecting or which may be affected by the specified work; and

CERTIFIES THAT he has not entered into collusion with any other bidder or prospective bidder relative to the project and/or bid: and

HEREBY PROPOSES: to enter into a contract to provide all necessary labor, materials, equipment and tools to completely construct and finish all the work required by the Contract Documents hereto attached and other documents referred to therein: to complete said work within **210** calendar days after the work order is issued; and to accept in full payment therefore the amount set forth below for all work actually performed as computed by the Engineer as set forth in the Contract.

Basis of Award
IT SHOULD BE NOTED THAT THE LOWEST RESPONSIBLE BID SHALL BE DETERMINED BY THE TOTAL BASE BID PLUS THE ADDITIVE ALTERNATE. THE ITEMS IN THE ADDITIVE ALTERNATE MAY OR MAY NOT BE INCLUDED IN THE CONTRACT AWARD AT THE SOLE DISCRETION OF THE CITY OF TULSA. ANY PROPOSAL SUBMITTED WITH THE ADDITIVE ALTERNATE INCOMPLETE SHALL BE CONSIDERED NON-RESPONSIVE

Note: - **Item numbers omitted are not a part of the Contract.**

PROPOSAL
PROJECT NO. 143120-4

BASE BID MINGO CREEK CHANNEL IMPROVEMENTS GRADING, CHANNEL & ROADWAY PAY ITEMS						
BID ITEM	SPEC NO.	DESCRIPTION	UNIT	QTY	UNIT PRICE	TOTAL EACH ITEM
1	201(A)	CLEARING AND GRUBBING	EA	1		
2	202(A)	UNCLASSIFIED EXCAVATION	CY	1166		
3	221(C)	TEMPORARY SILT FENCE	LF	990		
4	221(F)	TEMPORARY SILT DIKE	LF	124		
5	230(A)	SOLID SLAB SODDING (LIKE-KIND)	SY	971		
6	303(A)	AGGREGATE BASE TYPE A	CY	139		
7	310(B)	SUBGRADE METHOD "B"	SY	1572		
8	325	SEPARATOR FABRIC	SY	1730		
9	411(C)	SUPERPAVE, TYPE S4 (PG 64-22 OK)	TON	28		
10	501(F)	GRANULAR BACKFILL (#57 CRUSHED STONE)	CY	313		
11	509(B)	CLASS A CONCRETE	CY	72		
12	509(B)	CLASS C CONCRETE	CY	23		
13	510(A)	RETAINING WALL	SY	198		
14	602(C)	FILTER FABRIC	SY	2416		
15	609(B)	COMBINED CURB AND GUTTER (6" BARRIER)	LF	428		
16	610 (A)	4" CONCRETE SIDEWALK	SY	29		
17	610(A)	4" PC CONCRETE	SY	62		
18	610(B)	CONCRETE DRIVEWAY	SY	140		
19	611(G)	INLET MODIFIED RCI 1048, COMPLETE IN PLACE	EA	1		
20	611(G)	INLET RCI 1096, COMPLETE IN PLACE	EA	1		
21	611(H)	ADDITIONAL DEPTH IN INLET	VF	3		
22	613(A)	30" C76 CL III RCP W/ OMNIFLEX GASKETS, COMPLETE IN PLACE	LF	39		
23	613(A)	48" C76 CL III RCP W/ OMNIFLEX GASKETS, COMPLETE IN PLACE	LF	140		
24	619(A)	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	LS	1		
25	619(B)	REMOVAL OF CONCRETE DRIVEWAY	SY	140		
26	619(B)	REMOVAL OF CURB & GUTTER	LF	225		
27	619(B)	REMOVAL OF FENCE	LF	282		
28	619(B)	REMOVAL OF GUARDRAIL	LF	179		
29	619(B)	REMOVAL OF SIDEWALK	SY	29		
30	623(A)	BEAM GUARDRAIL W-BEAM SINGLE	LF	188		
31	623(G)	GUARDRAIL END TREATMENT	EA	4		
32	624(C)	6' CHAIN LINK W/ 3 STRANDS BARBED WIRE AND 1 STRAND RAZOR WIRE	LF	161		
33	624(C)	6' CHAIN LINK W/ 3 STRANDS BARBED WIRE	LF	119		
34	624(C)	4' BLACK VINYL COATED CHAIN LINK FENCE	LF	208		
35	641	MOBILIZATION	EA	1		
36	642	CONSTRUCTION STAKING, LEVEL I	EA	1		
37	SPECIAL	TYPE I AC PATCH	CY	48		
38	SPECIAL	RELOCATION OF SALVAGED RIPRAP	EA	1		
39	SPECIAL	PCC PATCH (6" PARKING LOT PATCHING)	CY	15		
40	SPECIAL	TRAFFIC CONTROL MEASURES	EA	1		
41	SPECIAL	PROJECT SIGN (CITY OF TULSA)	EA	1		
42	SPECIAL	QUICK SET FLOWABLE FILL	CY	12		
43	SPECIAL	ARTICULATING BLOCK REVETMENT SYSTEM	SY	1778		
44	SPECIAL	URBAN RIGHT-OF-WAY RESTORATION	EA	1		
45	SPECIAL	OWNER ALLOWANCE	ALLOW	1	$ 10,000.00	$10,000.00
				MINGO BASE BID GRADING, CHANNEL & ROADWAY SUBTOTAL		$10,000.00

BASE BID MINGO CREEK CHANNEL IMPROVEMENTS WATERLINE PAY ITEMS						
BID ITEM	SPEC NO.	DESCRIPTION	UNIT	QTY	UNIT PRICE	TOTAL EACH ITEM
46	230(A)	SOLID SLAB SODDING (LIKE-KIND)	SY	97		
47	COT 301	RIGHT-OF-WAY CLEARING AND RESTORING	LF	232		
48	COT 302	EXCAVATION AND BACKFILL, UNCLASSIFIED	CY	873		
49	303(A)	AGGREGATE BASE TYPE A	CY	47		
50	COT 307	10" DIP, CL51 POLYETHYLENE WRAPPED (RJ)	LF	232		
51	310(B)	SUBGRADE METHOD "B"	SY	255		
52	COT 312	10" SOLID SLEEVE (RJ)	EA	2		
53	COT 312	10" ROTATED 22.5 DEGREE BEND (RJ)	EA	4		
54	COT 317	10" GATE VALVE (RJ)	EA	2		
55	325	SEPARATOR FABRIC	SY	280		
56	501(F)	GRANULAR BACKFILL (#57 CRUSHED STONE)	CY	3		
57	509(B)	CLASS A CONCRETE	CY	3		
58	609(B)	COMBINED CURB AND GUTTER (6" BARRIER)	LF	24		
59	610(B)	CONCRETE DRIVEWAY	SY	206		
60	619(B)	REMOVAL OF CONCRETE DRIVEWAY	SY	166		
61	619(B)	REMOVAL OF CURB & GUTTER	LF	39		
62	SPECIAL	PCC PATCH (6" PARKING LOT PATCHING)	CY	8		
63	SPECIAL	CONSTRUCTION AS-BUILT	EA	1		
				MINGO BASE BID WATERLINE SUBTOTAL		

ADD ALTERNATE CATFISH CREEK CHANNEL IMPROVEMENTS						
GRADING, CHANNEL & ROADWAY PAY ITEMS						
BID ITEM	SPEC NO.	DESCRIPTION	UNIT	QTY	UNIT PRICE	TOTAL EACH ITEM
64	201(A)	CLEARING AND GRUBBING	EA	1		
65	202(A)	UNCLASSIFIED EXCAVATION	CY	777		
66	221(C)	TEMPORARY SILT FENCE	LF	750		
67	221(F)	TEMPORARY SILT DIKE	LF	172		
68	230(A)	SOLID SLAB SODDING (LIKE-KIND)	SY	747		
69	303(A)	AGGREGATE BASE TYPE A	CY	100		
70	310(B)	SUBGRADE METHOD "B"	SY	272		
71	325	SEPARATOR FABRIC	SY	300		
72	411(C)	SUPERPAVE, TYPE S4 (PG 64-22 OK)	TON	31		
73	501(F)	GRANULAR BACKFILL (#57 CRUSHED STONE)	CY	204		
74	509(B)	CLASS A CONCRETE	CY	49		
75	509(B)	CLASS C CONCRETE	CY	24		
76	510(A)	RETAINING WALL	SY	124		
77	602(C)	FILTER FABRIC	SY	1604		
78	609(B)	COMBINED CURB AND GUTTER (6" BARRIER)	LF	99		
79	611(A)	5' I.D. MANHOLE W/ FRAME AND COVER (STORM), COMPLETE IN PLACE	EA	2		
80	611(A)	6' I.D. MANHOLE W/ FRAME AND COVER (STORM), COMPLETE IN PLACE	EA	1		
81	611(B)	ADDITIONAL DEPTH IN MANHOLE (5' DIAMETER) (STORM)	VF	7		
82	611(B)	ADDITIONAL DEPTH IN MANHOLE (6' DIAMETER) (STORM)	VF	2		
83	611(G)	INLET COT CICI DES. 2 (2A), COMPLETE IN PLACE	EA	2		
84	611(G)	INLET COT CICI DES. 2 (B), COMPLETE IN PLACE	EA	2		
85	611(H)	ADDITIONAL DEPTH IN INLET	VF	4		
86	613(A)	18" C76 CL III RCP W/ OMNIFLEX GASKETS, COMPLETE IN PLACE	LF	117		
87	613(A)	24" C76 CL III RCP W/ OMNIFLEX GASKETS, COMPLETE IN PLACE	LF	26		
88	613(A)	36" C76 CL III RCP W/ OMNIFLEX GASKETS, COMPLETE IN PLACE	LF	14		
89	619(A)	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	LS	1		
90	619(B)	REMOVAL OF CURB & GUTTER	LF	142		
91	619(B)	REMOVAL OF FENCE	LF	106		
92	619(B)	REMOVAL OF GUARDRAIL	LF	151		
93	623(A)	BEAM GUARDRAIL W-BEAM SINGLE	LF	188		
94	623(G)	GUARDRAIL END TREATMENT	EA	4		
95	624(C)	6' CHAIN LINK FENCE	LF	106		
96	624(C)	4' BLACK VINYL COATED CHAIN LINK FENCE	LF	165		
97	642	CONSTRUCTION STAKING, LEVEL I	EA	1		
98	SPECIAL	TYPE I AC PATCH	CY	53		
99	SPECIAL	RELOCATION OF SALVAGED RIPRAP	EA	1		
100	SPECIAL	QUICK SET FLOWABLE FILL	CY	23		
101	SPECIAL	ARTICULATING BLOCK REVETMENT SYSTEM	SY	1127		
102	SPECIAL	URBAN RIGHT-OF-WAY RESTORATION	EA	1		
			CATFISH ADD ALTERNATE GRADING, CHANNEL & ROADWAY SUBTOTAL			

ADD ALTERNATE CATFISH CREEK CHANNEL IMPROVEMENTS						
WATERLINE PAY ITEMS						
BID ITEM	SPEC NO.	DESCRIPTION	UNIT	QTY	UNIT PRICE	TOTAL EACH ITEM
103	230(A)	SOLID SLAB SODDING (LIKE-KIND)	SY	195		
104	COT 301	RIGHT-OF-WAY CLEARING AND RESTORING	LF	198		
105	COT 302	EXCAVATION AND BACKFILL, UNCLASSIFIED	CY	390		
106	303(A)	AGGREGATE BASE TYPE A	CY	15		
107	COT 307	12" DIP, CL51 POLYETHYLENE WRAPPED (RJ)	LF	198		
108	310(B)	SUBGRADE METHOD "B"	SY	84		
109	COT 312	12" SOLID SLEEVE (RJ)	EA	2		
110	COT 312	12" ROTATED 22.5 DEGREE BEND (RJ)	EA	4		
111	COT 317	12" GATE VALVE (RJ)	EA	2		
112	325	SEPARATOR FABRIC	SY	92		
113	501(F)	GRANULAR BACKFILL (#57 CRUSHED STONE)	CY	8		
114	509(B)	CLASS A CONCRETE	CY	10		
115	510 (C)	CONCRETE HIGHWAY SLOPE WALL (4")	SY	76		
116	609(B)	COMBINED CURB AND GUTTER (6" BARRIER)	LF	30		
117	610 (A)	4" CONCRETE SIDEWALK	SY	54		
118	610(B)	CONCRETE DRIVEWAY	SY	84		
119	619(B)	REMOVAL OF CONCRETE DRIVEWAY	SY	72		
120	619(B)	REMOVAL OF SIDEWALK	SY	54		
121	619(B)	REMOVAL OF HIGHWAY CONCRETE SLOPE WALL	SY	76		
122	619(B)	REMOVAL OF CURB & GUTTER	LF	30		
123	SPECIAL	CONSTRUCTION AS-BUILT	EA	1		
			CATFISH ADD ALTERNATE WATERLINE SUBTOTAL			

BASE BID	$10,000.00
ADD ALT	$0.00
BASE BID PLUS ADDITIVE ALTERNATE	$10,000.00

Enclosed is a ( ) Bidder's Surety Bond, ( ) Certified Check, ( ) Cashier's Check for

_____ Dollars ($_____)
Figures

which the City of Tulsa may retain or recover as liquidated damages in the event that the undersigned fails to enter into contract for the work covered by this proposal., provided the Contract is awarded to the undersigned within thirty (30) days, or within ninety (90) days if Federal funds are utilized, from the date fixed for opening of bids and the undersigned fails to execute said Contract and furnish the required bonds and other requirements as called for in these Contract Documents within thirty (30) days after award of Contract.

Dated at Tulsa, Oklahoma, this _____ day of _____, 20__.

SAMPLE ONLY
LEAVE PAGE BLANK

Respectfully submitted,

_____
(Complete legal name of company)

_____
(State of Organization)

By: _____
Title:
Printed Name:

ATTEST: _____
Title: Corporate Secretary
Printed Name:
(SEAL)

Address: _____
_____
_____
_____
_____

Telephone Number: _____ Fax Number: _____

By signing above the bidder acknowledges receipt of the following Addenda (give number and date of each):

_____
_____
_____
_____

SPECIAL PROVISIONS
ARTICULATING BLOCK REVETMENT SYSTEM

1. Articulating Block Revetment System is made up of concrete blocks connected by cables to form mattresses in order to provide protection from erosion due to water in higher velocity areas.

2. The concrete blocks shall be approximately 15.5 inches square at the base and approximately 11.5 inches at the top face with a center open area consisting of at least 19% open area to provide for vegetation and siltation.

3. Block weight shall be a minimum 37.5-40.5 lbs/sf with a minimum height of 5.5 inches.

4. The mix design for the blocks shall be 4000 psi at 28 days concrete with 4%-7% air entrainment. All ASTM standards shall be met in the production of the concrete. The minimum density of the block shall be 140 lbs/cf.

5. The cables shall be made of polyester revetment cable, and shall be diamond braided polyester filament cord braided over a polyester core. Cables shall be integrally poured with the concrete block and shall traverse through each block in both longitudinal and lateral directions of the mat system. UV degradation protection must be maintained when polyester cord is used. If cables are not integrally poured with the concrete block, shop drawings must be provided showing methodology of how the revetment system's integrity will be maintained.

6. Aluminum "C" clips shall be used to secure loops of adjacent mattresses. The standard placement of clamps shall be placed on 4 foot centers interlocking adjoining mats together. Clamps are required only in applications exceeding 10' per section. In slope applications greater than 2 to 1 where the mats are placed end to end, clamps shall be placed on 4 foot centers interlocking adjoining mats together. If "C" clips are not used, shop drawings must be submitted showing how the mattresses will be locked together.

7. When placing the mattresses, the gap between the mattresses should not be any larger than a 2 inch maximum. If the mattresses are placed with a larger space than 2 inches, it is required to grout the seam between the mattresses.

8. The standard geotextile material used is an 8 oz. needle punched non-woven fabric. The geotextile shall be installed on the sub base prior to installation of the articulated concrete mat. An overlap of 2 ft. to 3 ft. shall be incorporated on three sides of the mat. The overlap shall provide an area for the adjoining mats to be placed upon and prevent undermining of the erosion control system.

9. The supplier shall have a technician experienced in the installation of articulating block revetment system available at the start of an installation where the engineer or contractor have not had experience with the product to assist in any special techniques needed to assure a proper installation.

10. Installation equipment shall have a lifting capacity, capable of completely lifting the concrete mat and the lifting bar during unloading, stockpiling and installing etc.

11. Prepared areas shall be graded to a smooth plane finish. Any roots, debris and stones must be removed and discarded. Specified geotextile to be placed according to manufacturer's recommendations. There shall not be any dragging, tearing or damaging of the geotextile. The mats shall be laid on the geotextile in such a manner to produce a smooth plane surface. Intimate contact with the subsurface is critical to the systems performance in the field. Place block in accordance with typical sections.

12. The outside edges of the mat system shall be keyed in at least one block to prevent undercutting.

13. After the installation of the mats the system shall be backfilled with native soil and struck level then seeded in accordance with Item No. 6 (Seeding Method A). The mat system will allow moisture to traverse back and forth from sub grade to vegetation. The mat system will lend support at an even grade for maintenance vehicles (mowers) to traverse over it. Any surface application should not be placed prior to the inspection of the systems clamping and anchoring if required.

14. Shop drawings must be submitted showing block layout and geometry to be approved by the engineer.

15. Payment shall be by the square yard. All labor, material, and supervision necessary for the installation of the articulating block revetment system shall be included in the price bid for ARTICULATED CONCRETE BLOCK REVETMENT SYSTEM.

16. Approved Suppliers

    a. International Erosion Control Systems Inc.
    4429 East 58th Place, Tulsa Oklahoma 74135
    Jason Trotter – Ph: 918-991-1256

    b. Contech Engineered Solutions LLC
    Sarah Kellert – Ph: 918-706-7792

PAY ITEM NOTES

1. ALL COSTS FOR REMOVING TREES, SHRUBS, STUMPS, POSTS, AND ALL OTHER DEBRIS AND/OR OBSTRUCTIONS NOT COVERED BY A SEPARATE PAY ITEM ARE INCLUDED IN THE PRICE BID.

2. THIS QUANTITY INCLUDES AN ADDITIONAL 10% ABOVE PLAN QUANTITY FOR UNDERCUTTING OF UNSUITABLE SUBGRADE MATERIAL.

3. NOT USED.

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

5. SEPARATOR FABRIC SHALL BE USED AT ALL PAVEMENT PATCHES AND RECONSTRUCTION SECTIONS. THE SEPARATOR FABRIC SHALL BE CUT AND OVERLAPPED A MINIMUM OF 2 FT AT ALL EDGES OF THE REPAIR.

6. NOT USED.

7. CONSTRUCTION STAKING SHALL INCLUDE SURVEYING AND THE FURNISHING, PLACING, AND MAINTAINING OF THE CONSTRUCTION LAYOUT STAKES NECESSARY FOR THE PROPER COMPLETION AND INSPECTION OF THE ENTIRE PROJECT.

8. NOT USED.

9. 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

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

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

12. EROSION PROTECTION SHALL BE PLACED AROUND DRAINAGE INLETS AS REQUIRED TO PREVENT ENTRANCE OF EROSION MATERIAL. EROSION PROTECTION SHALL BE PLACED AS NECESSARY TO PREVENT EROSION WASH TO ADJACENT PROPERTY. ALL EROSION PROTECTION INSTALLED MUST BE MAINTAINED BY THE CONTRACTOR FOR THE DURATION OF THE PROJECT. EROSION PROTECTION SHALL BE REMOVED AT THE END OF THE PROJECT AS DIRECTED BY THE ENGINEER, COST TO BE INCLUDED IN THE PRICE BID. THE PRICE INCLUDES THE COST OF SEDIMENT REMOVAL PER THE STORMWATER MANAGEMENT PLAN.

13. 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.

14. PAY ITEM INCLUDES ALL MOWING WITHIN THE RIGHT-OF-WAY AS DIRECTED DURING CONSTRUCTION.

15. COST OF WATERING AND FERTILIZING SHALL BE INCLUDED. FERTILIZERS SHALL BE 10-20-10 AND SHALL BE APPLIED AT THE RATE OF 1.5 LBS PER 10 SQ YDS. FERTILIZER SHALL BE APPLIED PER SECTION 230.04H OF ODOT STANDARD SPECIFICATIONS. WATERING SHALL BE APPLIED AS NECESSARY UNTIL VEGETATION IS ESTABLISHED OR UNTIL THE WORK IS ACCEPTED AS COMPLETE.

16. 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.

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

18. 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.

19. NOT USED.

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

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

22. 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.

23. INCLUDES ALL COST OF SAWED JOINTS AND SEALING OF ALL JOINTS INCLUDING LONGITUDINAL JOINTS.

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

25. NOT USED.

26. THIS ITEM SHALL INCLUDE THE COST OF NEW MANHOLE FRAME AND COVER PER CITY OF TULSA STD NO.752, STD NO. 753, STD NO., 754 STD NO. 761 AND STD NO. 762.

27. NOT USED.

28. THE TOTAL COST FOR RUBBERIZED ASPHALT AND/OR SILICONE AT MANHOLES, VALVE BOXES, INLETS, AND INLET APRONS, SHALL BE INCLUDED.

29. ALL HOUSE NUMBERS SHALL BE REPLACED/ REESTABLISHED THROUGHOUT PROJECT LIMITS. COST TO BE INCLUDED IN URBAN RIGHT OF WAY RESTORATION. CONTRACTOR SHALL REESTABLISH DRAINS, ROOF DRAINS AND OTHER DRAINAGE THROUGH THE CURBS IN ACCORDANCE WITH CITY OF TULSA STANDARD 758.

30. REINFORCED CONCRETE PIPE TO BE CLASS III. ALL REINFORCED CONCRETE PIPE AND MANHOLES TO BE SUPPLIED WITH AN OMNI-FLEX JOINT GASKET OR APPROVED EQUAL. MASTIC JOINT SEALANT SHALL NOT BE ALLOWED.

31. INCLUDES THE COST REQUIRED TO MAKE CONNECTION AND REMOVAL OF EXISTING INLETS. THE COST OF PC CONCRETE CURB AND GUTTER THROUGH THE INLET, 5' EACH SIDE OF THE INLET, AND THE PC CONCRETE INLET APRON SHALL BE INCLUDED. GRATE AND FLOWLINE ELEVATIONS SHALL MATCH EXISTING CONDITIONS UNLESS OTHERWISE NOTED IN THE PLANS.

32. QUICK SET FLOWABLE FILL TO BE USED TO BACKFILL AROUND STREET CURB INLETS AND PIPES AS DIRECTED BY THE ENGINEER. Δ2

33. ALL INLETS COMPLETE IN PLACE SHALL BE CAST IN PLACE CONCRETE OR PRECAST CONCRETE. NO BRICK INLETS SHALL BE ALLOWED. THIS PAY ITEM INCLUDES INLET FRAME, GRATE, HOOD AND CONCRETE.

34. NO MASONRY STRUCTURES SHALL BE CONSTRUCTED WITHIN THE RIGHT OF WAY.

35. ADDITIONAL DEPTH IN INLET SHALL BE MEASURED AND PAID FOR CICI INLETS EXCEEDING 3.71 VERTICAL FT. CALCULATED FROM THE CENTER ELEVATION OF THE LOWEST CAST IRON CURB TO THE FLOWLINE OF THE OUTLET PIPE AND FOR RECESSED CURB INLETS (RCI) EXCEEDING 3.00 VERTICAL FT FROM THE THROAT ELEVATION TO THE FLOWLINE OF THE OUTLET PIPE.

36. NOT USED.

37. REFLECTORIZED SHEETING ON SIGNS AND BARRICADES SHALL BE OF A CUBIC PRISMATIC TYPE AND SHALL MEET THE SPECIFICATIONS ESTABLISHED FOR ASTM D 4956-01 TYPE IX RETROREFLECTIVE SHEETING. REFLECTORIZED SHEETING ON DRUMS AND TUBE CHANNELIZERS SHALL BE OF A HIGH-INTENSITY TYPE AND SHALL MEET THE SPECIFICATIONS ESTABLISHED FOR ASTM D 4956-01 TYPE III RETROREFLECTIVE SHEETING.

38. IF WARNING LIGHTS ARE TO BE USED ON TRAFFIC CONTROL DEVICES, TYPE "A" LIGHTS SHALL ONLY BE USED ON DEVICES WARNING OF UNEXPECTED HAZARDS, AND SHALL NOT BE USED FOR DELINEATION OF THE TRAVELED WAY. ONLY TYPE "C" WARNING LIGHTS SHALL BE USED FOR DELINEATION OF THE TRAVELED WAY, AND TYPE "C" LIGHTS SHALL NOT BE USED FOR ANY OTHER PURPOSE.

39. NOT USED.

40. THE CONTRACTOR SHALL BE PAID FOR UNCLASSIFIED EXCAVATION ON THE BASIS OF PLAN QUANTITY. ANY ADDITIONAL EXCAVATION REQUIRED OR OVERRUN OF PLAN QUANTITY WILL BE PAID FOR ON THE BASIS OF UNIT PRICE BID FOR THE ITEM. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE SURVEY TO VERIFY ANY ADDITIONAL QUANTITIES.

41. NOT USED.
42. NOT USED.
43. NOT USED.

44. NOT USED.

45. THIS PAY ITEM SHALL BE COMPLETE IN PLACE AND SHALL INCLUDE ALL PIPE, STANDARD BEDDING MATERIAL AND TRENCH EXCAVATION, JOINT GASKETS AND ALL OTHER INCIDENTALS. NO ADDITIONAL COST WILL BE MADE.

46. PRICE BID FOR THIS ITEM SHALL BE PAYMENT IN FULL FOR THE INSTALLATION, MAINTENANCE AND SUBSEQUENT REMOVAL OF ALL NECESSARY CONSTRUCTION TRAFFIC CONTROL REQUIRED FOR COMPLETION OF THE PROJECT.

47. NOT USED.

48. ALL EXISTING DRAINAGE STRUCTURES SHALL BE CLEANED AND CLEARED OF ALL SEDIMENTATION AND DEBRIS TO THE RIGHT OF WAY. COST OF CLEARING SHALL BE INCLUDED IN THE PRICE BID.

49. NOT USED.
50. NOT USED.

51. PAY ITEM INCLUDES REMOVAL OF ALL STRUCTURES AND OBSTRUCTIONS WITHIN PROJECT LIMITS NOT SPECIFIED BY OTHER ITEMS OF WORK.

52. NOT USED.

53. INCLUDES SAWING NOT INCLUDED IN OTHER ITEMS OF WORK.

54. STANDARD BEDDING MATERIAL TO BE TYPE A AGGREGATE BASE COMPACTED TO 95% STANDARD PROCTOR DENSITY. AGGREGATE BASE IN THE ROADWAY SHALL BE 98% MODIFIED PROCTOR.

55. QUANTITY SHALL BE MEASURED AND PAID FOR AS FOLLOWS:
A. FOR ANY CAST-IN-PLACE OR PRECAST REINFORCED CONCRETE BOX (RCB) LARGER THAN 4' BY 4', USE NEAT LINES THAT ARE 4' BELOW THE BOTTOM OF THE RCB AND 4'-0" BEYOND THE OUTSIDE WALL.
B. UNDER ROADWAY PAY QUANTITY SHALL BE PAID FOR FROM THE BOTTOM OF TRENCH, AS DESCRIBED, TO THE BOTTOM OF ROADWAY AGGREGATE BASE.

56. NOT USED.

57. NOT USED.

58. MOBILIZATION FOR THE PROJECT IS TO BE INCLUDED IN THIS PAY ITEM. THE MAXIMUM ALLOWABLE AMOUNT WILL BE IN ACCORDANCE WITH THE OKLAHOMA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATION TABLE 641:1.

59. NOT USED.

60. UNCLASSIFIED EXCAVATION INCLUDES REMOVAL OF AGGREGATE BASE AND MODIFIED SUBGRADE UNDER EXISTING PAVEMENT TO BE REPAIRED. Δ2

61. PRICE BID SHALL INCLUDE MAINTENANCE, SEDIMENT REMOVAL, DISPOSAL, AND REMOVAL OF FILTERS AT PROJECT COMPLETION.

62. NOT USED.

63. SHALL INCLUDE ALL COSTS ASSOCIATED WITH PLUGGING/ PATCHING HOLES IN EXISTING STRUCTURES TO REMAIN.

64. NOT USED.

65. ITEMS TO BE REMOVED MAY OR MAY NOT BE PRESENT IN ANY SPECIFIED CONDITION.

66. ALL TRAFFIC MATERIALS REMOVED SHALL BE HANDLED PER COT SPECIFICATION 625 REMOVAL OF TRAFFIC ITEMS.

67. THIS PAY ITEM INCLUDES THE FOLLOWING:

A. SAW CUTTING
B. REMOVAL OF THE EXISTING CONCRETE PARKING LOT.
C. PC CONCRETE COMPLETE AND IN PLACE PER DETAIL
D. SEALING OF EDGES

DOES NOT INCLUDE THE FOLLOWING:

A. UNCLASSIFIED EXCAVATION
B. SUBGRADE METHOD B (SY)
C. SEPARATOR FABRIC (SY)
D. AGGREGATE BASE (TYPE A)

68. INCLUDES ALL COST FOR REINFORCEMENT FOR CONSTRUCTING SLOPE WALLS AND CHANNEL BOTTOM REPLACEMENTS. REINFORCEMENT INCLUDES REBAR AND WELDED WIRE AS SHOWN IN THE PLANS.

69. INCLUDES ALL COST OF CONSTRUCTING FIELD COLLARS WHEN TYING INTO EXISTING PIPES AS SHOWN IN THE PLANS.

70. PAY ITEM INCLUDES THE COST OF HANDLING AND PLACEMENT OF 80.9 S.Y. OF SALVAGED RIPRAP. Δ2

PAY ITEMS – BASE BID
MINGO CREEK DRAINAGE

ITEM NUMBER	SPEC NUMBER	ITEM DESCRIPTION	NOTES	UNIT	QUANTITY
1	201(A)	CLEARING AND GRUBBING	1,48	EA	1
2	202(A)	UNCLASSIFIED EXCAVATION	2,10,40,60	CY	1166
3	221(C)	TEMPORARY SILT FENCE	12,61	LF	990
4	221(F)	TEMPORARY SILT DIKE	12,61	LF	124
5	230(A)	SOLID SLAB SODDING (LIKE-KIND)	13,14,15	SY	971
6	303(A)	AGGREGATE BASE TYPE A	4	CY	139
7	310(B)	SUBGRADE METHOD "B"		SY	1572
8	325	SEPARATOR FABRIC	5	SY	1730
9	411(C)	SUPERPAVE, TYPE S4 (PG 64-22 OK)	16,17,18	TON	28
10	501(F)	GRANULAR BACKFILL (#57 CRUSHED STONE)		CY	313
11	509(B)	CLASS A CONCRETE	20,23,68	CY	72
12	509(B)	CLASS C CONCRETE	20,23	CY	23
13	510(A)	RETAINING WALL		SY	198
14	602(C)	FILTER FABRIC		SY	2416
15	609(B)	COMBINED CURB AND GUTTER (6" BARRIER)	20,22,23,24	LF	428
16	610 (A)	4" CONCRETE SIDEWALK	20,23,24	SY	29
17	610(A)	4" PC CONCRETE	20,23	SY	62
18	610(B)	CONCRETE DRIVEWAY	20,22,23,24	SY	140
19	611(G)	INLET MODIFIED RCI 1048, COMPLETE IN PLACE	26,31,32,33,34,35	EA	1
20	611(G)	INLET RCI 1096, COMPLETE IN PLACE	26,31,32,33,34,35	EA	1
21	611(H)	ADDITIONAL DEPTH IN INLET	35	VF	3
22	613(A)	30" C76 CL III RCP W/ OMNIFLEX GASKETS, COMPLETE IN PLACE	30,32,45,54,55,69	LF	39
23	613(A)	48" C76 CL III RCP W/ OMNIFLEX GASKETS, COMPLETE IN PLACE	30,32,45,54,55,69	LF	140
24	619(A)	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	10,21,51,53,65	LS	1
25	619(B)	REMOVAL OF CONCRETE DRIVEWAY	10,21	SY	140
26	619(B)	REMOVAL OF CURB & GUTTER	10,21	LF	225
27	619(B)	REMOVAL OF FENCE	10	LF	282
28	619(B)	REMOVAL OF GUARDRAIL	10	LF	179
29	619(B)	REMOVAL OF SIDEWALK	10,21	SY	29
30	623(A)	BEAM GUARDRAIL W-BEAM SINGLE		LF	188
31	623(G)	GUARDRAIL END TREATMENT		EA	4
32	624(C)	6' CHAIN LINK W/ 3 STRANDS BARBED WIRE AND 1 STRAND RAZOR WIRE		LF	161
33	624(C)	6' CHAIN LINK W/ 3 STRANDS BARBED WIRE		LF	119
34	624(C)	4' BLACK VINYL COATED CHAIN LINK FENCE		LF	208
35	641	MOBILIZATION	58	EA	1
36	642	CONSTRUCTION STAKING, LEVEL I	7	EA	1
37	SPECIAL	TYPE I AC PATCH	9	CY	48
38	SPECIAL	RELOCATION OF SALVAGED RIPRAP	70	EA	1
39	SPECIAL	PCC PATCH (6" PARKING LOT PATCHING)	20,67	CY	15
40	SPECIAL	TRAFFIC CONTROL MEASURES	37,38,46	EA	1
41	SPECIAL	PROJECT SIGN (CITY OF TULSA)	46	EA	1
42	SPECIAL	QUICK SET FLOWABLE FILL	32	CY	12
43	SPECIAL	ARTICULATING BLOCK REVETMENT SYSTEM		SY	1778
44	SPECIAL	URBAN RIGHT-OF-WAY RESTORATION	11,29	EA	1
45	SPECIAL	OWNER ALLOWANCE		ALLOW	1

REGISTERED PROFESSIONAL ENGINEER
ERIC ZELLERS
21545
OKLAHOMA
10/27/16

PAY ITEM NOTES-BASE BID
PROJECT #143120-4
MINGO & CATFISH CREEKS CHANNEL IMPROVEMENTS
CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
Meshek & Associates, P.L.C.
1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620

REVISION	BY	DATE
Δ2 ADD #2	EGZ	10/16

PLAN SCALE N/A	DRAWN	SMC	08/2016
	DESIGNED	EGZ	08/2016
	SURVEY	PDH	08/2016
PROFILE SCALE	PROJ. MGR.		
HORIZONTAL: N/A	LEAD ENGR.		
	FIELD MGR.		
VERTICAL: N/A	RECOMMENDED DESIGN MANAGER		
FILE:	DRAWING:		
ATLAS PAGE NO. 309			

APPROVED:

CITY ENGINEER

DATE:

SHEET 2a OF 52 SHEETS

M:\City_of_Tulsa\14TUL05_On_Call_Stormwater_Services\Task_Order_4_Mingo_and_Catfish_Creeks\Design\Drawings\14TUL05_T04_QUANTITIES_&_NOTES.dwg

PAY ITEM NOTES

1. ALL COSTS FOR REMOVING TREES, SHRUBS, STUMPS, POSTS, AND ALL OTHER DEBRIS AND/OR OBSTRUCTIONS NOT COVERED BY A SEPARATE PAY ITEM ARE INCLUDED IN THE PRICE BID.

2. THIS QUANTITY INCLUDES AN ADDITIONAL 10% ABOVE PLAN QUANTITY FOR UNDERCUTTING OF UNSUITABLE SUBGRADE MATERIAL.

3. NOT USED.

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

5. SEPARATOR FABRIC SHALL BE USED AT ALL PAVEMENT PATCHES AND RECONSTRUCTION SECTIONS. THE SEPARATOR FABRIC SHALL BE CUT AND OVERLAPPED A MINIMUM OF 2 FT AT ALL EDGES OF THE REPAIR.

6. NOT USED.

7. CONSTRUCTION STAKING SHALL INCLUDE SURVEYING AND THE FURNISHING, PLACING, AND MAINTAINING OF THE CONSTRUCTION LAYOUT STAKES NECESSARY FOR THE PROPER COMPLETION AND INSPECTION OF THE ENTIRE PROJECT.

8. NOT USED.

9. 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

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

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

12. EROSION PROTECTION SHALL BE PLACED AROUND DRAINAGE INLETS AS REQUIRED TO PREVENT ENTRANCE OF EROSION MATERIAL. EROSION PROTECTION SHALL BE PLACED AS NECESSARY TO PREVENT EROSION WASH TO ADJACENT PROPERTY. ALL EROSION PROTECTION INSTALLED MUST BE MAINTAINED BY THE CONTRACTOR FOR THE DURATION OF THE PROJECT. EROSION PROTECTION SHALL BE REMOVED AT THE END OF THE PROJECT AS DIRECTED BY THE ENGINEER. COST TO BE INCLUDED IN THE PRICE BID. THE PRICE INCLUDES THE COST OF SEDIMENT REMOVAL PER THE STORMWATER MANAGEMENT PLAN.

13. 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.

14. PAY ITEM INCLUDES ALL MOWING WITHIN THE RIGHT-OF-WAY AS DIRECTED DURING CONSTRUCTION.

15. COST OF WATERING AND FERTILIZING SHALL BE INCLUDED. FERTILIZERS SHALL BE 10-20-10 AND SHALL BE APPLIED AT THE RATE OF 1.5 LBS PER 10 SQ YDS. FERTILIZER SHALL BE APPLIED PER SECTION 230.04H OF ODOT STANDARD SPECIFICATIONS. WATERING SHALL BE APPLIED AS NECESSARY UNTIL VEGETATION IS ESTABLISHED OR UNTIL THE WORK IS ACCEPTED AS COMPLETE.

16. 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.

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

18. 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.

19. NOT USED.

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

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

22. 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.

23. INCLUDES ALL COST OF SAWED JOINTS AND SEALING OF ALL JOINTS INCLUDING LONGITUDINAL JOINTS.

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

25. NOT USED.

26. THIS ITEM SHALL INCLUDE THE COST OF NEW MANHOLE FRAME AND COVER PER CITY OF TULSA STD NO.752, STD NO. 753, STD NO., 754 STD NO. 761 AND STD NO. 762.

27. NOT USED. Δ2

28. THE TOTAL COST FOR RUBBERIZED ASPHALT AND/OR SILICONE AT MANHOLES, VALVE BOXES, INLETS, AND INLET APRONS, SHALL BE INCLUDED.

29. ALL HOUSE NUMBERS SHALL BE REPLACED/ REESTABLISHED THROUGHOUT PROJECT LIMITS. COST TO BE INCLUDED IN URBAN RIGHT OF WAY RESTORATION. CONTRACTOR SHALL REESTABLISH DRAINS, ROOF DRAINS AND OTHER DRAINAGE THROUGH THE CURBS IN ACCORDANCE WITH CITY OF TULSA STANDARD 758.

30. REINFORCED CONCRETE PIPE TO BE CLASS III. ALL REINFORCED CONCRETE PIPE AND MANHOLES TO BE SUPPLIED WITH AN OMNI-FLEX JOINT GASKET OR APPROVED EQUAL. MASTIC JOINT SEALANT SHALL NOT BE ALLOWED.

31. INCLUDES THE COST REQUIRED TO MAKE CONNECTION AND REMOVAL OF EXISTING INLETS. THE COST OF PC CONCRETE CURB AND GUTTER THROUGH THE INLET, 5' EACH SIDE OF THE INLET, AND THE PC CONCRETE INLET APRON SHALL BE INCLUDED. GRATE AND FLOWLINE ELEVATIONS SHALL MATCH EXISTING CONDITIONS UNLESS OTHERWISE NOTED IN THE PLANS.

32. QUICK SET FLOWABLE FILL TO BE USED TO BACKFILL AROUND STREET CURB INLETS AND PIPES AS DIRECTED BY THE ENGINEER.

33. ALL INLETS COMPLETE IN PLACE SHALL BE CAST IN PLACE CONCRETE OR PRECAST CONCRETE. NO BRICK INLETS SHALL BE ALLOWED. THIS PAY ITEM INCLUDES INLET FRAME, GRATE, HOOD AND CONCRETE.

34. NO MASONRY STRUCTURES SHALL BE CONSTRUCTED WITHIN THE RIGHT OF WAY.

35. ADDITIONAL DEPTH IN INLET SHALL BE MEASURED AND PAID FOR CICI INLETS EXCEEDING 3.71 VERTICAL FT. CALCULATED FROM THE CENTER ELEVATION OF THE LOWEST CAST IRON CURB TO THE FLOWLINE OF THE OUTLET PIPE AND FOR RECESSED CURB INLETS (RCI) EXCEEDING 3.00 VERTICAL FT FROM THE THROAT ELEVATION TO THE FLOWLINE OF THE OUTLET PIPE.

36. NOT USED.

37. NOT USED.

38. NOT USED.

39. NOT USED.

40. THE CONTRACTOR SHALL BE PAID FOR UNCLASSIFIED EXCAVATION ON THE BASIS OF PLAN QUANTITY. ANY ADDITIONAL EXCAVATION REQUIRED OR OVERRUN OF PLAN QUANTITY WILL BE PAID FOR ON THE BASIS OF UNIT PRICE BID FOR THE ITEM. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE SURVEY TO VERIFY ANY ADDITIONAL QUANTITIES.

41. NOT USED.

42. NOT USED.
43. NOT USED.

44. ADDITIONAL DEPTH IN A MANHOLE SHALL BE MEASURED FROM 6FT AS MEASURED FROM THE TOP OF RIM TO THE LOWEST FLOWLINE.

45. THIS PAY ITEM SHALL BE COMPLETE IN PLACE AND SHALL INCLUDE ALL PIPE, STANDARD BEDDING MATERIAL AND TRENCH EXCAVATION, JOINT GASKETS AND ALL OTHER INCIDENTALS. NO ADDITIONAL COST WILL BE MADE.

46. NOT USED.

47. NOT USED.

48. ALL EXISTING DRAINAGE STRUCTURES SHALL BE CLEANED AND CLEARED OF ALL SEDIMENTATION AND DEBRIS TO THE RIGHT OF WAY. COST OF CLEARING SHALL BE INCLUDED IN THE PRICE BID.

49. NOT USED.
50. NOT USED.

51. PAY ITEM INCLUDES REMOVAL OF ALL STRUCTURES AND OBSTRUCTIONS WITHIN PROJECT LIMITS NOT SPECIFIED BY OTHER ITEMS OF WORK.

52. NOT USED.

53. INCLUDES SAWING NOT INCLUDED IN OTHER ITEMS OF WORK.

54. STANDARD BEDDING MATERIAL TO BE TYPE A AGGREGATE BASE COMPACTED TO 95% STANDARD PROCTOR DENSITY. AGGREGATE BASE IN THE ROADWAY SHALL BE 98% MODIFIED PROCTOR.

55. QUANTITY SHALL BE MEASURED AND PAID FOR AS FOLLOWS:
A. FOR ANY CAST-IN-PLACE OR PRECAST REINFORCED CONCRETE BOX (RCB) LARGER THAN 4' BY 4', USE NEAT LINES THAT ARE 4" BELOW THE BOTTOM OF THE RCB AND 4'-0" BEYOND THE OUTSIDE WALL.
B. UNDER ROADWAY PAY QUANTITY SHALL BE PAID FOR FROM THE BOTTOM OF TRENCH, AS DESCRIBED, TO THE BOTTOM OF ROADWAY AGGREGATE BASE.

56. FOR INLET DESIGN NUMBERS AND CONFIGURATIONS REFER TO CITY OF TULSA STANDARD NO. 755. INLET DETAIL / LIST WILL BE PROVIDED IN THE PLANS FOR CONFIGURATIONS NOT SHOWN IN CITY OF TULSA STANDARDS.

57. ALL MANHOLES SHALL BE COMPLETE IN PLACE. THIS PAY ITEM INCLUDES FRAME, COVER, CONCRETE AND ALL OTHER INCIDENTALS REQUIRED FOR PLACEMENT.

58. NOT USED.

59. NOT USED.

60. UNCLASSIFIED EXCAVATION INCLUDES REMOVAL OF AGGREGATE BASE AND MODIFIED SUBGRADE UNDER EXISTING PAVEMENT TO BE REPAIRED. Δ2

61. PRICE BID SHALL INCLUDE MAINTENANCE, SEDIMENT REMOVAL, DISPOSAL, AND REMOVAL OF FILTERS AT PROJECT COMPLETION.

62. NOT USED.

63. SHALL INCLUDE ALL COSTS ASSOCIATED WITH PLUGGING/ PATCHING HOLES IN EXISTING STRUCTURES TO REMAIN.

64. NOT USED.

65. ITEMS TO BE REMOVED MAY OR MAY NOT BE PRESENT IN ANY SPECIFIED CONDITION.

66. ALL TRAFFIC MATERIALS REMOVED SHALL BE HANDLED PER COT SPECIFICATION 625 REMOVAL OF TRAFFIC ITEMS.

67. NOT USED.

68. INCLUDES ALL COST FOR REINFORCEMENT FOR CONSTRUCTING SLOPE WALLS AND CHANNEL BOTTOM REPLACEMENTS. REINFORCEMENT INCLUDES REBAR AND WELDED WIRE AS SHOWN IN THE PLANS.

69. INCLUDES ALL COST OF CONSTRUCTING FIELD COLLARS WHEN TYING INTO EXISTING PIPES AS SHOWN IN THE PLANS.

70. PAY ITEM INCLUDES THE COST OF HANDLING AND PLACEMENT OF 80.4 S.Y. OF SALVAGED RIPRAP. Δ2

PAY ITEMS - ADD ALTERNATE
CATFISH CREEK DRAINAGE

ITEM NUMBER	SPEC NUMBER	ITEM DESCRIPTION	NOTES	UNIT	QUANTITY
64	201(A)	CLEARING AND GRUBBING	1,48	EA	1
65	202(A)	UNCLASSIFIED EXCAVATION	2,10,40,60	CY	777
66	221(C)	TEMPORARY SILT FENCE	12,61	LF	750
67	221(F)	TEMPORARY SILT DIKE	12,61	LF	172
68	230(A)	SOLID SLAB SODDING (LIKE-KIND)	13,14,15	SY	747
69	303(A)	AGGREGATE BASE TYPE A	4	CY	100
70	310(B)	SUBGRADE METHOD "B"		SY	272
71	325	SEPARATOR FABRIC	5	SY	300
72	411(C)	SUPERPAVE, TYPE S4 (PG 64-22 OK)	16,17,18	TON	31
73	501(F)	GRANULAR BACKFILL (#57 CRUSHED STONE)		CY	204
74	509(B)	CLASS A CONCRETE	20,23,68	CY	49
75	509(B)	CLASS C CONCRETE	20,23	CY	24
76	510(A)	RETAINING WALL		SY	124
77	602(C)	FILTER FABRIC		SY	1604
78	609(B)	COMBINED CURB AND GUTTER (6" BARRIER)	20,22,23,24	LF	99
79	611(A)	5' I.D. MANHOLE W/ FRAME AND COVER (STORM), COMPLETE IN PLACE	26,28,34,44,57	EA	2
80	611(A)	6' I.D. MANHOLE W/ FRAME AND COVER (STORM), COMPLETE IN PLACE	26,28,34,44,57	EA	1
81	611(B)	ADDITIONAL DEPTH IN MANHOLE (5' DIAMETER) (STORM)	44	VF	7
82	611(B)	ADDITIONAL DEPTH IN MANHOLE (6' DIAMETER) (STORM)	44	VF	2
83	611(G)	INLET COT CICI DES. 2 (2A), COMPLETE IN PLACE	31,32,33,34,35,56	EA	2
84	611(G)	INLET COT CICI DES. 2 (B), COMPLETE IN PLACE	31,32,33,34,35,56	EA	2
85	611(H)	ADDITIONAL DEPTH IN INLET	35	VF	4
86	613(A)	18" C76 CL III RCP W/ OMNIFLEX GASKETS, COMPLETE IN PLACE	30,32,45,54,55,69	LF	117
87	613(A)	24" C76 CL III RCP W/ OMNIFLEX GASKETS, COMPLETE IN PLACE	30,32,45,54,55,69	LF	26
88	613(A)	36" C76 CL III RCP W/ OMNIFLEX GASKETS, COMPLETE IN PLACE	30,32,45,54,55,69	LF	14
89	619(A)	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	10,21,51,53,65	LS	1
90	619(B)	REMOVAL OF CURB & GUTTER	10,21	LF	142
91	619(B)	REMOVAL OF FENCE	10	LF	106
92	619(B)	REMOVAL OF GUARDRAIL	10	LF	151
93	623(A)	BEAM GUARDRAIL W-BEAM SINGLE		LF	188
94	623(G)	GUARDRAIL END TREATMENT		EA	4
95	624(C)	6' CHAIN LINK FENCE		LF	106
96	624(C)	4' BLACK VINYL COATED CHAIN LINK FENCE		LF	165
97	642	CONSTRUCTION STAKING, LEVEL I	7	EA	1
98	SPECIAL	TYPE I AC PATCH	9	CY	53
99	SPECIAL	RELOCATION OF SALVAGED RIPRAP	70	EA	1
100	SPECIAL	QUICK SET FLOWABLE FILL	32	CY	23
101	SPECIAL	ARTICULATING BLOCK REVETMENT SYSTEM		SY	1127
102	SPECIAL	URBAN RIGHT-OF-WAY RESTORATION	11,29	EA	1

REGISTERED PROFESSIONAL ENGINEER
ERIC ZELLERS
24545
OKLAHOMA

10/27/16

PAY ITEM NOTES-ADD ALTERNATE
PROJECT #143120-4
MINGO & CATFISH CREEKS CHANNEL IMPROVEMENTS
CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
Meshek & Associates, P.L.C.
1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620

REVISION	BY	DATE
Δ2 ADD #2	EGZ	10/16

PLAN SCALE: N/A
PROFILE SCALE: HORIZONTAL: N/A VERTICAL: N/A

DRAWN	SMC	08/2016
DESIGNED	EGZ	08/2016
SURVEY	PDH	08/2016
PROJ. MGR.		
LEAD ENGR.		
FIELD MGR.		

RECOMMENDED
DESIGN MANAGER

APPROVED:
CITY ENGINEER
DATE:

FILE: DRAWING:
ATLAS PAGE NO. 309
SHEET 2Aa OF 52 SHEETS

M:\City_of_Tulsa\14TUL05_On_Call_Stormwater_Services\Task_Order_4_Mingo_and_Catfish_Creeks\Design\Drawings\14TUL05_T04_QUANTITIES_&_NOTES.dwg

WATERLINE 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 RESTORING. 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. NOT USED.

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. NOT USED.

   C. NOT USED.

   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. NOT USED.
11. DETECTABLE MYLAR MARKING TAPE SHALL BE INSTALLED OVER DUCTILE IRON PIPE AS PER CONST SPEC 307.3 AND 307.4. COST WILL BE INCLUDED IN COST OF DUCTILE IRON PIPE.

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. NOT USED.
15. NOT USED.
16. NOT USED.
17. NOT USED.
18. NOT USED.
19. NOT USED.
20. NOT USED.
21. NOT USED.
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 PER PLAN SURVEY CONTROL DATUM.

26. NOT USED.
27. SEPARATOR FABRIC SHALL BE USED AT ALL PAVEMENT PATCHES AND RECONSTRUCTION SECTIONS. THE SEPARATOR FABRIC SHALL BE CUT AND OVERLAPPED A MINIMUM OF 2 FT AT ALL EDGES OF THE REPAIR.

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

29. 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.

30. PAY ITEM INCLUDES ALL MOWING WITHIN THE RIGHT–OF–WAY AS DIRECTED DURING CONSTRUCTION.

31. COST OF WATERING AND FERTILIZING SHALL BE INCLUDED. FERTILIZERS SHALL BE 10–20–10 AND SHALL BE APPLIED AT THE RATE OF 1.5 LBS PER 10 SQ YDS. FERTILIZER SHALL BE APPLIED PER SECTION 230.04H OF ODOT STANDARD SPECIFICATIONS. WATERING SHALL BE APPLIED AS NECESSARY UNTIL VEGETATION IS ESTABLISHED OR UNTIL THE WORK IS ACCEPTED AS COMPLETE.

32. THE USE OF FLY–ASH IN CONCRETE IS PROHIBITED..

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

34. 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.

35. INCLUDES ALL COST OF SAWED JOINTS AND SEALING OF ALL JOINTS INCLUDING LONGITUDINAL JOINTS.

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

37. THIS PAY ITEM INCLUDES THE FOLLOWING:

   A. SAW CUTTING
   B. REMOVAL OF THE EXISTING CONCRETE PARKING LOT.
   C. PC CONCRETE COMPLETE AND IN PLACE PER DETAIL
   D. SEALING OF EDGES

DOES NOT INCLUDE THE FOLLOWING:

   A. UNCLASSIFIED EXCAVATION
   B. SUBGRADE METHOD B (SY)
   C. SEPARATOR FABRIC (SY)
   D. AGGREGATE BASE (TYPE A)

38. INCLUDES ALL COST FOR REINFORCEMENT FOR CONSTRUCTING SLOPE WALLS AND CHANNEL BOTTOM REPLACEMENTS. REINFORCEMENT INCLUDES REBAR AND WELDED WIRE AS SHOWN IN THE PLANS.

WATER CONSTRUCTION NOTES

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

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

12. 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. Δ2

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

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

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

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

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

18. 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.

19. 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.

20. 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]

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

22. 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.

23. 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).

24. 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.

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

PAY ITEMS – BASE BID
MINGO CREEK WATERLINE

ITEM NUMBER	SPEC NUMBER	ITEM DESCRIPTION	NOTES	UNIT	QUANTITY
46	230(A)	SOLID SLAB SODDING (LIKE-KIND)	29,30,31	SY	97
47	COT 301	RIGHT-OF-WAY CLEARING AND RESTORING	4,5,6,22,23	LF	232
48	COT 302	EXCAVATION AND BACKFILL, UNCLASSIFIED	3,4	CY	873
49	303(A)	AGGREGATE BASE TYPE A	4	CY	47
50	COT 307	10" DIP, CL51 POLYETHYLENE WRAPPED (RJ)	1,2,3,8,9,11	LF	232
51	310(B)	SUBGRADE METHOD "B"		SY	255
52	COT 312	10" SOLID SLEEVE (RJ)	2,8,12	EA	2
53	COT 312	10" ROTATED 22.5 DEGREE BEND (RJ)	2,8	EA	4
54	COT 317	10" GATE VALVE (RJ)	2,8	EA	2
55	325	SEPARATOR FABRIC	27	SY	280
56	501(F)	GRANULAR BACKFILL (#57 CRUSHED STONE)		CY	3
57	509(B)	CLASS A CONCRETE	32,35,38	CY	3
58	609(B)	COMBINED CURB AND GUTTER (6" BARRIER)	32,34,35,36	LF	24
59	610(B)	CONCRETE DRIVEWAY	32,34,35,36	SY	206
60	619(B)	REMOVAL OF CONCRETE DRIVEWAY	28,33	SY	166
61	619(B)	REMOVAL OF CURB & GUTTER	28,33	LF	39
62	SPECIAL	PCC PATCH (6" PARKING LOT PATCHING)	32,35,37	CY	8
63	SPECIAL	CONSTRUCTION AS-BUILT	24,25	EA	1

PAY ITEMS – ADD ALTERNATE
CATFISH CREEK WATERLINE

ITEM NUMBER	SPEC NUMBER	ITEM DESCRIPTION	NOTES	UNIT	QUANTITY
103	230(A)	SOLID SLAB SODDING (LIKE-KIND)	29,30,31	SY	195
104	COT 301	RIGHT-OF-WAY CLEARING AND RESTORING	4,5,6,22,23	LF	198
105	COT 302	EXCAVATION AND BACKFILL, UNCLASSIFIED	3,4	CY	390
106	303(A)	AGGREGATE BASE TYPE A	4	CY	15
107	COT 307	12" DIP, CL51 POLYETHYLENE WRAPPED (RJ)	1,2,3,8,9,11	LF	198
108	310(B)	SUBGRADE METHOD "B"		SY	84
109	COT 312	12" SOLID SLEEVE (RJ)	2,8,12	EA	2
110	COT 312	12" ROTATED 22.5 DEGREE BEND (RJ)	2,8	EA	4
111	COT 317	12" GATE VALVE (RJ)	2,8	EA	2
112	325	SEPARATOR FABRIC	27	SY	92
113	501(F)	GRANULAR BACKFILL (#57 CRUSHED STONE)		CY	8
114	509(B)	CLASS A CONCRETE	32,35,38	CY	10
115	510 (C)	CONCRETE HIGHWAY SLOPE WALL (4")	32,35	SY	76
116	609(B)	COMBINED CURB AND GUTTER (6" BARRIER)	32,34,35,36	LF	30
117	610 (A)	4" CONCRETE SIDEWALK	32,35,36	SY	54
118	610(B)	CONCRETE DRIVEWAY	32,34,35,36	SY	84
119	619(B)	REMOVAL OF CONCRETE DRIVEWAY	28,33	SY	72
120	619(B)	REMOVAL OF SIDEWALK	28,33	SY	54
121	619(B)	REMOVAL OF HIGHWAY CONCRETE SLOPE WALL	28,33	SY	76
122	619(B)	REMOVAL OF CURB & GUTTER	28,33	LF	30
123	SPECIAL	CONSTRUCTION AS-BUILT	24,25	EA	1

REGISTERED PROFESSIONAL ENGINEER — ERIC ZELLERS 26545 — OKLAHOMA

10/27/16

WATERLINE NOTES
PROJECT #143120-4
MINGO & CATFISH CREEKS CHANNEL IMPROVEMENTS
CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
Meshek & Associates, P.L.C.
1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392–5620

REVISION	BY	DATE
Δ2 ADD #2	EGZ	10/16

PLAN SCALE N/A	DRAWN	SMC	08/2016
	DESIGNED	EGZ	08/2016
	SURVEY	PDH	08/2016
PROFILE SCALE	PROJ. MGR.		
HORIZONTAL: N/A	LEAD ENGR.		
	FIELD MGR.		
VERTICAL: N/A	RECOMMENDED DESIGN MANAGER		
FILE:	DRAWING:		
ATLAS PAGE NO. 309			

APPROVED:

CITY ENGINEER

DATE:

SHEET 4a OF 52 SHEETS

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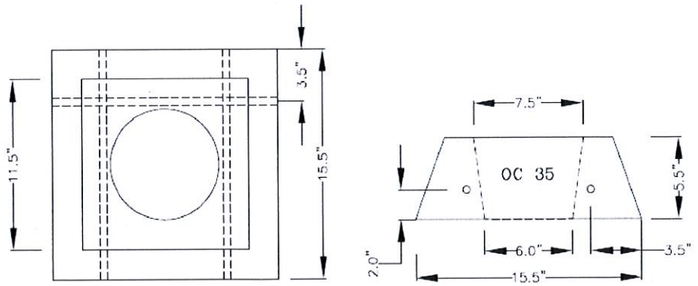
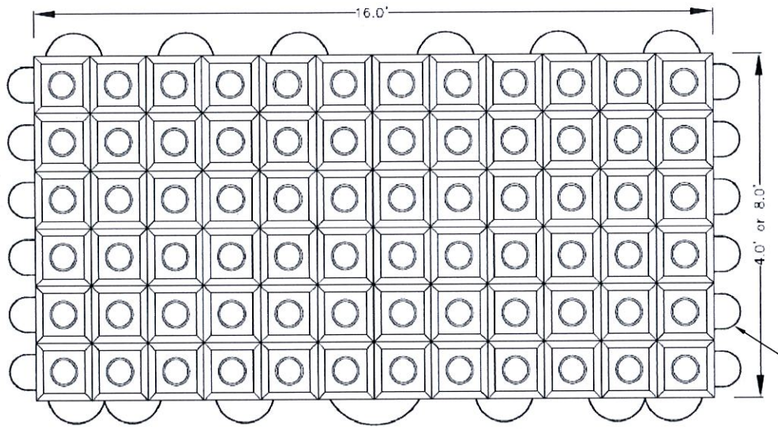
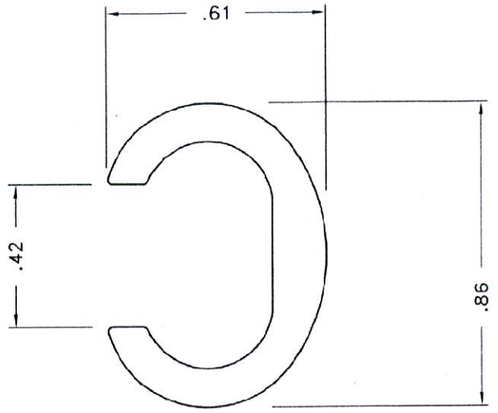


PLAN VIEW

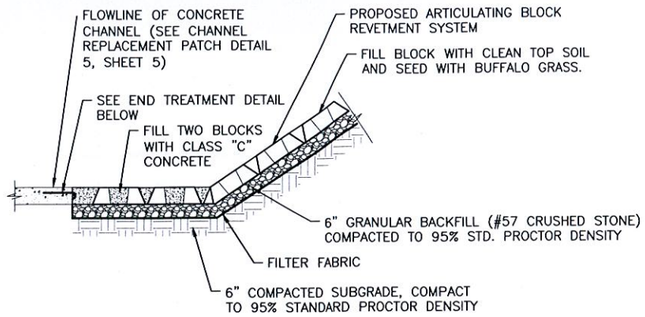


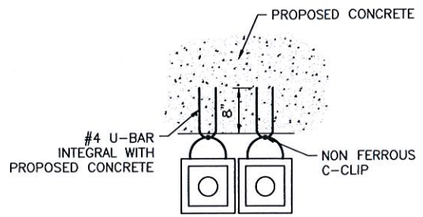
CONTRACTOR TO SUPPLY SHOP DRAWINGS FOR ARTICULATING BLOCK REVETMENT SYSTEM LAYOUT.

ARTICULATING BLOCK REVETMENT SYSTEM
BLOCK AND MAT DIMENSIONS
(1) SCALE: NONE

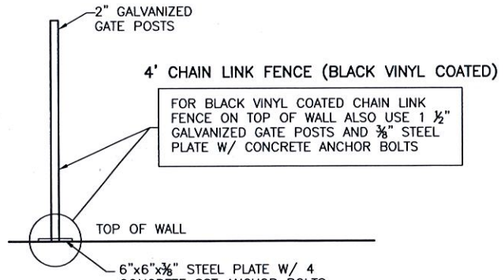


ARTICULATING BLOCK REVETMENT SYSTEM
NON-FERROUS C CLIP
(2) SCALE: NONE

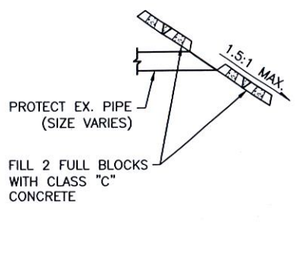


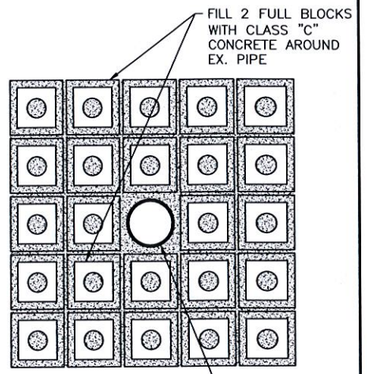


ABRS END TREATMENT
(3) SCALE: NONE

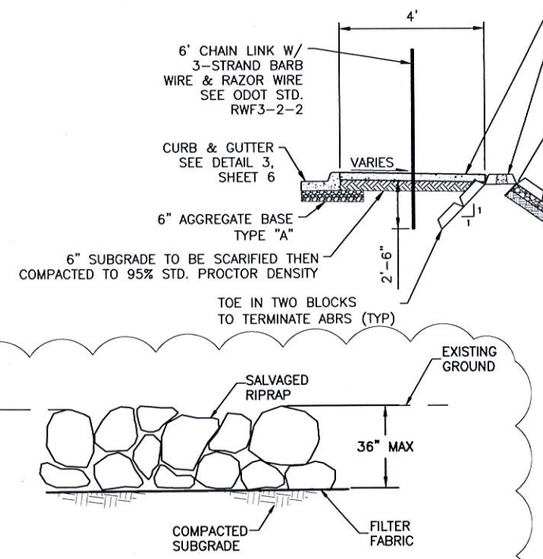


FENCE POST WALL ANCHOR
(5) SCALE: NONE





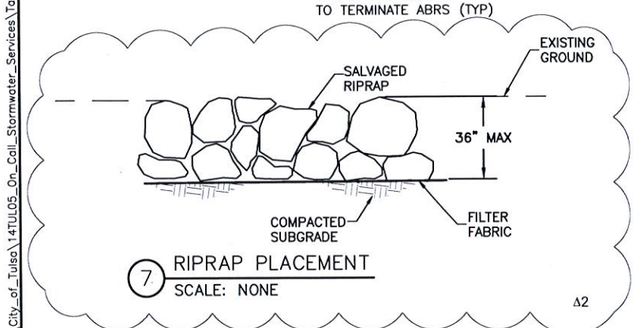
ABRS PIPE PENETRATION DETAIL
(6) SCALE: NONE



ARTICULATING BLOCK REVETMENT SYSTEM (ABRS) - MAIN CHANNEL
(4) SCALE: NONE

SW MINGO: STA. 10+23.79 TO 11+46.23
SE MINGO: STA. 10+20.48 TO 11+46.51
NW MINGO: STA. 12+38.80 TO 13+66.44
NE MINGO: STA. 12+38.82 TO 13+67.09

SW CATFISH: STA. 200+22.14 TO 201+18.55
SE CATFISH: STA. 200+19.63 TO 201+26.44
NW CATFISH: STA. 202+07.59 TO 203+15.42
NE CATFISH: STA. 202+15.64 TO 203+15.97



RIPRAP PLACEMENT
(7) SCALE: NONE

Δ2

REGISTERED PROFESSIONAL ENGINEER
ERIC ZELLERS 26545
OKLAHOMA

10/27/16

REVISION	BY	DATE
Δ2 ADD #2	EGZ	10/16

DETAILS
PROJECT #143120-4
MINGO & CATFISH CREEKS CHANNEL IMPROVEMENTS
CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

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FILE:	DRAWING:			DATE:
ATLAS PAGE NO. 309				SHEET 7a OF 52 SHEETS

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SEE SHEET 24

E. 55TH PL.

ASPHALT

(TO BE PROTECTED) 12'Wx9'H RCB FL=661.59

(TO BE PROTECTED) 12'Wx9'H RCB FL=661.55

(TO BE PROTECTED)

STA:11+69.98 OFF:17.79'L

STA:11+70.08 OFF:20.21'R

CONSTRUCT WALL 33 LF SEE WALL PROFILE SHEET 10

CONSTRUCT WALL 33 LF SEE WALL PROFILE SHEET 10

STA:11+66.18 OFF:16.33'R

STA:11+66.10 OFF:13.89'L

STA:11+64.04 OFF:15.94'L

STA:11+64.61 OFF:17.91'R

FIBER OPTIC VAULT

ATT SIGN

10" WL (AS-BUILTS)

CONC.

EX. ROW

DW-3

DW-4

STA:11+52.81 OFF:70.15'L

STA:11+45.39 OFF:18.34'L

STA:11+46.58 OFF:41.06'L

STA:11+38.93 OFF:16.88'L

STA:11+38.88 OFF:18.70'R

STA:11+45.75 OFF:20.50'R

STA:11+46.80 OFF:43.60'R

EASEMENT LINE

STA:11+41.31 OFF:70.18'L

STA:11+52.75 OFF:46.05'L FL=673.30

CONCRETE

3.5'

20.7 LF CURB & GUTTER

2' CURB CUT STA:11+31.02 OFF:46.16'L FL=672.88

STA:11+33.93 OFF:17.06'L

STA:11+33.88 OFF:18.86'R

SAW CUT

CONSTRUCT 104 LF 4' BLACK VINYL CHAIN LINK SEE DETAIL 5 SHEET 7

24.3 SY PCC PATCH

SEE SHEET 29 FOR WATERLINE RELOCATION

BUILDING LINE

2' CURB CUT STA:11+02.45 OFF:46.31'L FL=673.27

26.6 LF CURB & GUTTER

11+00

TOE OF SLOPE

PARKING LOT

P B HOIDALE CO INC

54.4 SY PCC PATCH

STA:10+79.69 OFF:51.42'L

STA:10+76.66 OFF:52.35'L

STA:10+71.97 OFF:44.01'R

EDUCATIONAL DEVELOPMENT CORPORATION

BUILDING

84.7 SY CHANNEL REPLACEMENT

C.R.L. MINGO CREEK

STA:10+71.75 OFF:41.08'L

397.7 SY ABRS

437.0 SY ABRS

STA:10+23.79 OFF:53.54'L

STA:10+20.13 OFF:23.01'L

STA:10+20.06 OFF:21.01'L

10+00

STA:10+20.04

STA:10+20.02 OFF:24.35'R

STA:10+20.02 OFF:22.35'R

STA:10+20.48 OFF:57.64'R

STATION=10+00.00
NORTHING=401206.75
EASTING=2600015.43

CAUTION
OVERHEAD ELECTRIC
UNDERGROUND TELE
GAS
WATERLINE
SANITARY SEWER
FIBER OPTIC

M:\City_of_Tulsa\14TUL05_On_Call_Stormwater_Services\Task_Order_4_Mingo_and_Catfish_Creeks\Design\Drawings\14TUL05_T04_P&P.dwg

LEGEND

- RIGHT-OF-WAY
- LOT LINE
- EXISTING BUILDING LINE
- EXISTING EASEMENT LINE
- PROPOSED VERTICAL WALL
- BM-## BENCHMARK
- SOLID SLAB SOD
- TYPE I AC PATCH
- PROPOSED 1.5:1 SLOPE WALL (SEE DETAIL 4 SHEET 5)
- PROPOSED CONCRETE DRIVEWAY (SEE DETAIL 1 SHEET 6)
- PROPOSED PCC PATCH (SEE DETAIL 6 SHEET 6)
- PROPOSED CHANNEL REPLACEMENT (SEE DETAIL 5 SHEET 6)
- ARTICULATING BLOCK REVETMENT SYSTEM (ABRS) (SEE DETAILS SHEET 7)
- Δ2 RELOCATED SALVAGED RIPRAP (SEE DETAIL 7 SHEET 7)
- PROPOSED P.C. CONCRETE SIDEWALK (SEE DETAIL 8 SHEET 6)
- PROPOSED HIGHWAY SLOPE WALL (SEE DETAIL 9 SHEET 6)

N

0 5 10 20
SCALE IN FEET

1 CONNECT TO EXISTING WALL. DRILL AND EPOXY BARS AND INSTALL RX WATERSTOP. (SEE DETAIL 8 SHEET 5)

2 CONSTRUCT 4.7 LF 2' DESIGN NO. 1 CONCRETE DITCH SEE ODOT STD. DC-3-2

3 CONSTRUCT 2' CURB CUT

BEFORE YOU DIG CALL OKIE

REGISTERED PROFESSIONAL ENGINEER ERIC ZELLERS 25545 OKLAHOMA

10/27/16

BENCHMARK
(SHEET 24) BM-920
CHISELED "X" SET
N=401417.03
E=2599956.89
EL=672.54

BENCHMARK
(SHEET 24) BM-921
CHISELED "X" SET
N=401419.30
E=2600065.55
EL=674.72

REVISION	BY	DATE
Δ2 ADD #2	EGZ	10/16

MINGO CREEK PLAN SHEETS
PROJECT #143120-4
MINGO & CATFISH CREEKS CHANNEL IMPROVEMENTS
CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
Meshek & Associates, P.L.C.
1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620

PLAN SCALE 1" = 10'	DRAWN	SMC	08/2016	APPROVED:
	DESIGNED	EGZ	08/2016	
	SURVEY	PDH	08/2016	
PROFILE SCALE	PROJ. MGR.			
HORIZONTAL: N/A	LEAD ENGR.			
	FIELD MGR.			
VERTICAL: N/A	RECOMMENDED DESIGN MANAGER			CITY ENGINEER
FILE:	DRAWING:			DATE:
ATLAS PAGE NO. 309				SHEET 23a OF 52 SHEETS

STA:13+94.58
OFF:60.50'L
STA:13+90.92
OFF:60.50'L
EASEMENT LINE
14+00
STATION=13+90.00
NORTHING=401596.63
EASTING=2600005.79
STA:13+66.29
OFF:21.58'L
STA:13+66.29
OFF:23.58'L
STA:13+66.29
STA:13+66.62
OFF:23.07'R
STA:13+66.66
OFF:25.07'R
EASEMENT LINE
STA:13+67.09
OFF:59.68'R
STA:13+66.71
OFF:67.77'L
STA:13+66.44
OFF:57.88'L
SAW CUT
LOT LINE
SAW CUT
58.1 SY
PCC PATCH
SS
32.8 SY
4" PC CONCRETE
TOE OF SLOPE
CONSTRUCT 79.3 LF
CURB & GUTTER
467.5 SY
ABRS
53.3 SY
CHANNEL
REPLACEMENT
475.3 SY
ABRS
REMOVE & RECONSTRUCT 118.5 LF
6' CHAIN LINK FENCE W/ 3-STRAND BARB WIRE
DANARA
PROPERTIES LLC
BUILDING
35.5 SY
CHANNEL
REPLACEMENT
REMOVE & RECONSTRUCT 160.7 LF
6' CHAIN LINK FENCE W/ 3-STRAND
BARB WIRE & RAZOR WIRE
STA:13+13.50
OFF:19.55'L
STA:13+10.00
OFF:15.99'L
3
2
SOLOMAN
PROPERTIES
LLC
BUILDING
2' CURB CUT
STA:13+14.98
OFF:52.35'L
FL=673.03
29.4 SY
4" PC CONCRETE
STA:12+97.17
OFF:46.65'R
CONSTRUCT 65.8 LF
CURB & GUTTER
13+00
STA:12+89.98
OFF:43.63'L
78.9 SY
PCC PATCH
CHAIN LINK FENCE
SS
SAW CUT
C.R.L.
MINGO CREEK
SAW CUT
STA:12+89.15
OFF:53.29'L
EASEMENT LINE
3.5'
SS
STA:12+64.33
OFF:14.23'L
STA:12+47.66
OFF:51.21'L
STA:12+60.57
OFF:17.50'L
SAW CUT
BUILDING LINE
EASEMENT LINE
SSMH
TR=672.40
FL=656.25
STA:12+38.45
OFF:41.46'L
STA:12+39.66
OFF:18.70'L
STA:12+39.72
OFF:20.36'R
STA:12+38.47
OFF:43.21'R
DW-2
OHE
STRAND
15" RCP WEST
FL=664.29
(TO BE REMOVED)
EX. ROW
GUY ANCHORS TO BE
RECONSTRUCTED BY OTHERS
CONSTRUCT 104 LF
BLACK VINYL CHAIN LINK FENCE
SEE DETAIL 5 SHEET 7
STA:12+20.74
OFF:15.97'L
STA:12+19.01
OFF:14.23'L
(TO BE PROTECTED)
12'Wx9'H RCB
FL=661.45
CONCRETE
GUY ANCHOR
PR. 48" RCP
CONSTRUCT WALL 33 LF
SEE WALL PROFILE
SHEET 10
STA:12+20.61
OFF:17.58'R
STA:12+19.02
OFF:15.99'R
CONSTRUCT WALL 33 LF
SEE WALL PROFILE
SHEET 10
1
TELE. PED. TELCO
UGT
BM-920
BM-921
RR. 48" RCP
CONC.
STA:12+15.12
OFF:18.12'L
12'Wx9'H RCB
FL=661.36
(TO BE PROTECTED)
12+00
12'Wx9'H RCB
FL=661.44
(TO BE PROTECTED)
STA:12+15.13
OFF:19.88'R
5 STRAND
ASPHALT
SEE SHEET 23
E. 55TH PL.
ASPHALT

CAUTION
OVERHEAD ELECTRIC
UNDERGROUND TELE
GAS
WATERLINE
SANITARY SEWER
FIBER OPTIC

LEGEND

- RIGHT-OF-WAY
- LOT LINE
- EXISTING BUILDING LINE
- EXISTING EASEMENT LINE
- PROPOSED VERTICAL WALL
- BM-## BENCHMARK
- SOLID SLAB SOD
- TYPE I AC PATCH
- PROPOSED 1.5:1 SLOPE WALL (SEE DETAIL 4 SHEET 5)
- PROPOSED CONCRETE DRIVEWAY (SEE DETAIL 1 SHEET 6)
- PROPOSED PCC PATCH (SEE DETAIL 6 SHEET 6)
- PROPOSED CHANNEL REPLACEMENT (SEE DETAIL 5 SHEET 6)
- ARTICULATING BLOCK REVETMENT SYSTEM (ABRS) (SEE DETAILS SHEET 7)
- Δ2 RELOCATED SALVAGED RIPRAP (SEE DETAIL 7 SHEET 7)
- PROPOSED P.C. CONCRETE SIDEWALK (SEE DETAIL 8 SHEET 6)
- PROPOSED HIGHWAY SLOPE WALL (SEE DETAIL 9 SHEET 6)
- [1] CONNECT TO EXISTING WALL. DRILL AND EPOXY BARS AND INSTALL RX WATERSTOP. (SEE DETAIL 8 SHEET 5)
- [2] CONSTRUCT 4 LF 2' DESIGN NO. 1 CONCRETE DITCH SEE ODOT STD. DC-3-2.
- [3] CONSTRUCT 2' CURB CUT.

N

0 5 10 20
SCALE IN FEET

BEFORE YOU DIG 811 OKIE CALL OKIE

REGISTERED PROFESSIONAL ENGINEER
ERIC ZELLERS 21545
OKLAHOMA
10/27/16

BENCHMARK
BM-920
CHISELED "X" SET
N=401417.03
E=2599956.89
EL=672.54

BENCHMARK
BM-921
CHISELED "X" SET
N=401419.30
E=2600065.55
EL=674.72

MINGO CREEK PLAN SHEETS
PROJECT #143120-4
MINGO & CATFISH CREEKS CHANNEL IMPROVEMENTS
CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
Meshek & Associates, P.L.C.
1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620

REVISION	BY	DATE
Δ2 ADD #2	EGZ	10/16

PLAN SCALE	DRAWN	SMC	08/2016	APPROVED:
1" = 10'	DESIGNED	EGZ	08/2016	
	SURVEY	PDH	08/2016	
PROFILE SCALE	PROJ. MGR.			
HORIZONTAL: N/A	LEAD ENGR.			
	FIELD MGR.			
VERTICAL: N/A	RECOMMENDED DESIGN MANAGER			CITY ENGINEER
FILE:	DRAWING:			DATE:
ATLAS PAGE NO. 309				SHEET 24o OF 52 SHEETS

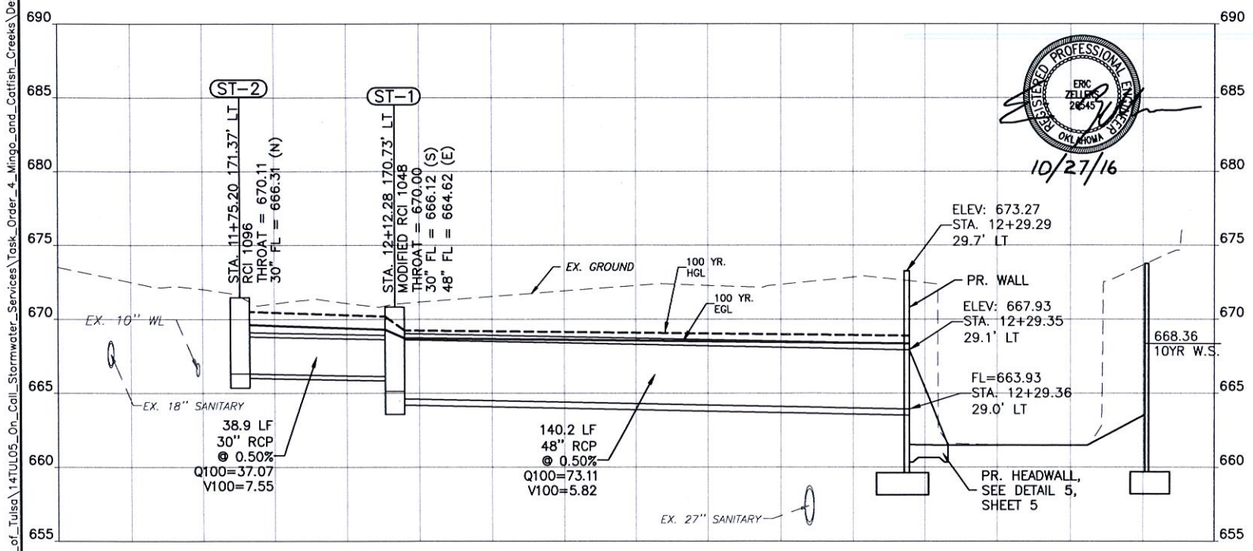
M:\City_of_Tulsa\14TUL05_On_Call_Stormwater_Services\Task_Order_4_Mingo_and_Catfish_Creeks\Design\Drawings\14TUL05_TO4_P&P.dwg

CAUTION
OVERHEAD ELECTRIC
UNDERGROUND TELE
GAS
WATERLINE
SANITARY SEWER
FIBER OPTIC

N
0 5 10 20
SCALE IN FEET

BUILDING LINE
EASEMENT LINE
EX. ROW
SAW CUT
CONCRETE
ASPHALT
E. 55TH PL.
LOT LINE
C.R.L. MINGO CREEK

GUY ANCHORS TO BE RECONSTRUCTED BY OTHERS
FIBER OPTIC VAULT
GRATE INLET TR=671.31 FL=666.51 (TO BE REMOVED)
GRATE INLET TG=670.12 FL=666.87 (TO BE REMOVED)
GRATE INLET TG=670.19 FL=666.49 (TO BE REMOVED)
TELE. PED.
TELE. PED. TELCO
SSMH TR=672.40 FL=656.25
BM-920
BM-921
ST-1
ST-2
DW-1
DW-2
DW-3
DW-4
RR. 48" RCP
RR. 30" RCP
15" RCP WEST FL=664.29 (TO BE REMOVED)
12'Wx9'H RCB FL=661.45 (TO BE PROTECTED)
12'Wx9'H RCB FL=661.39 (TO BE PROTECTED)
12'Wx9'H RCB FL=661.44 (TO BE PROTECTED)
12'Wx9'H RCB FL=661.59 (TO BE PROTECTED)
12'Wx9'H RCB FL=661.55 (TO BE PROTECTED)
77.7 SY PR. CONCRETE DRIVEWAY
6.0 LF CURB & GUTTER
62.0 SY PR. CONCRETE DRIVEWAY
12.8 SY SIDEWALK
CONSTRUCT 93.8 LF GUARDRAIL
75.0 LF CURB & GUTTER
83.3 SY TYPE I AC PATCH 75.0'X10.0'
88.9 LF CURB & GUTTER
16.3 SY SIDEWALK
101.3 SY TYPE I AC PATCH 29.3'X31.7'
82.5 SY PR. CONCRETE DRIVEWAY
123.5 SY PR. CONCRETE DRIVEWAY
10" WL (AS-BUILTS)
ATT SIGN
5 STRAND
UGT
OHE
SS
W
G
PP



REGISTERED PROFESSIONAL ENGINEER
ERIC ZELLERS 24545
OKLAHOMA
10/27/16

LEGEND

- RIGHT-OF-WAY
- LOT LINE
- EXISTING BUILDING LINE
- EXISTING EASEMENT LINE
- PROPOSED VERTICAL WALL
- BM-## BENCHMARK
- SOLID SLAB SOD
- TYPE I AC PATCH
- PROPOSED 1.5:1 SLOPE WALL (SEE DETAIL 4 SHEET 5)
- PROPOSED CONCRETE DRIVEWAY (SEE DETAIL 1 SHEET 6)
- PROPOSED PCC PATCH (SEE DETAIL 6 SHEET 6)
- PROPOSED CHANNEL REPLACEMENT (SEE DETAIL 5 SHEET 6)
- ARTICULATING BLOCK REVETMENT SYSTEM (ABRS) (SEE DETAILS SHEET 7)
- Δ2 RELOCATED SALVAGED RIPRAP (SEE DETAIL 7 SHEET 7)
- PROPOSED P.C. CONCRETE SIDEWALK (SEE DETAIL 8 SHEET 6)
- PROPOSED HIGHWAY SLOPE WALL (SEE DETAIL 9 SHEET 6)
- [1] CONSTRUCT HEADWALL (SEE DETAIL 5 SHEET 5)
- [2] TIE-IN EXISTING 2" CURB DRAIN

BENCHMARK
BM-920
CHISELED "X" SET
N=401417.03
E=2599956.89
EL=672.54

BENCHMARK
BM-921
CHISELED "X" SET
N=401419.30
E=2600065.55
EL=674.72

BEFORE YOU DIG 811 CALL OKIE

MINGO CREEK PLAN SHEETS
PROJECT #143120-4
MINGO & CATFISH CREEKS CHANNEL IMPROVEMENTS
CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

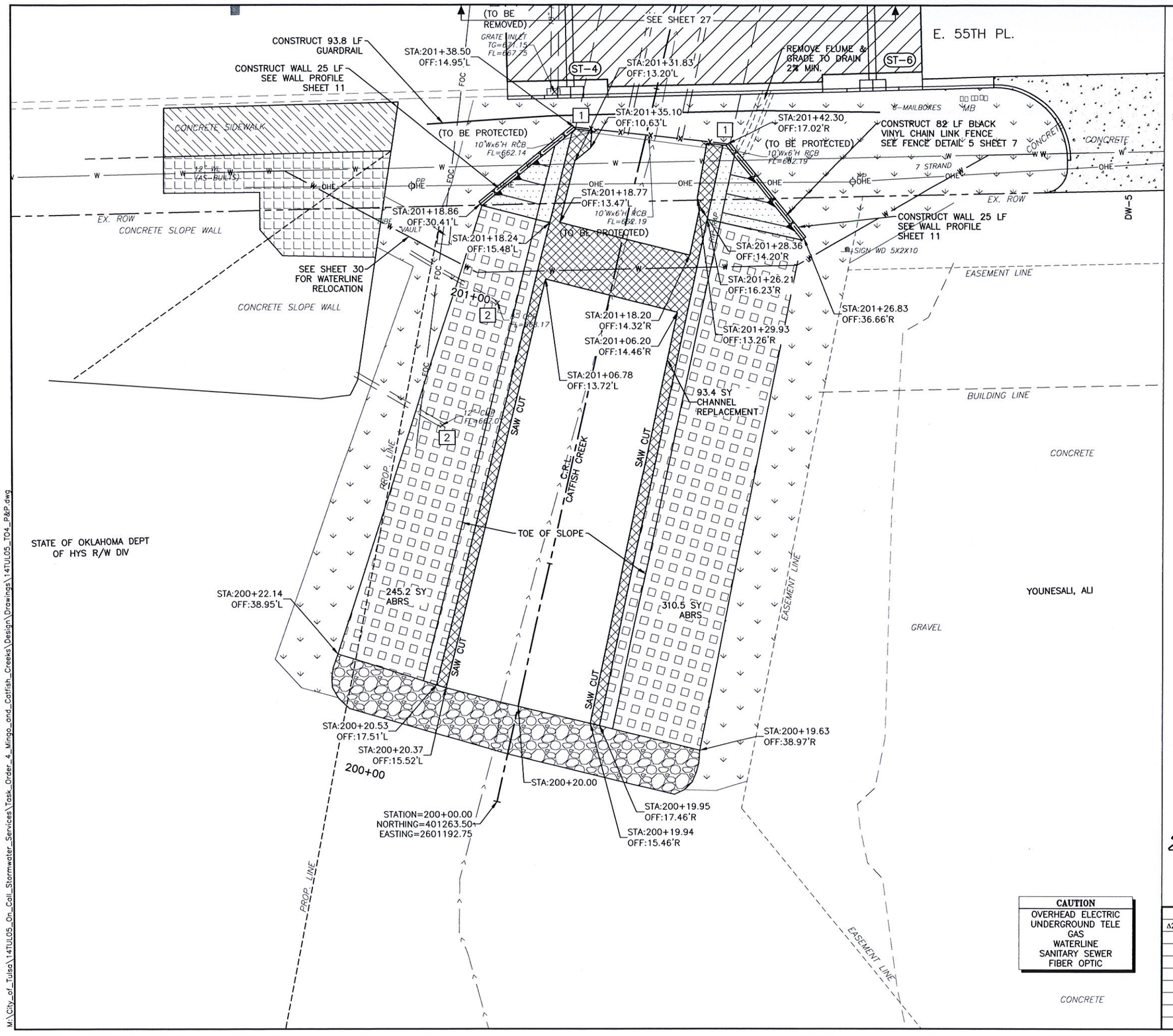
PLANS AND ESTIMATES PREPARED BY:
Meshek & Associates, P.L.C.
1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620

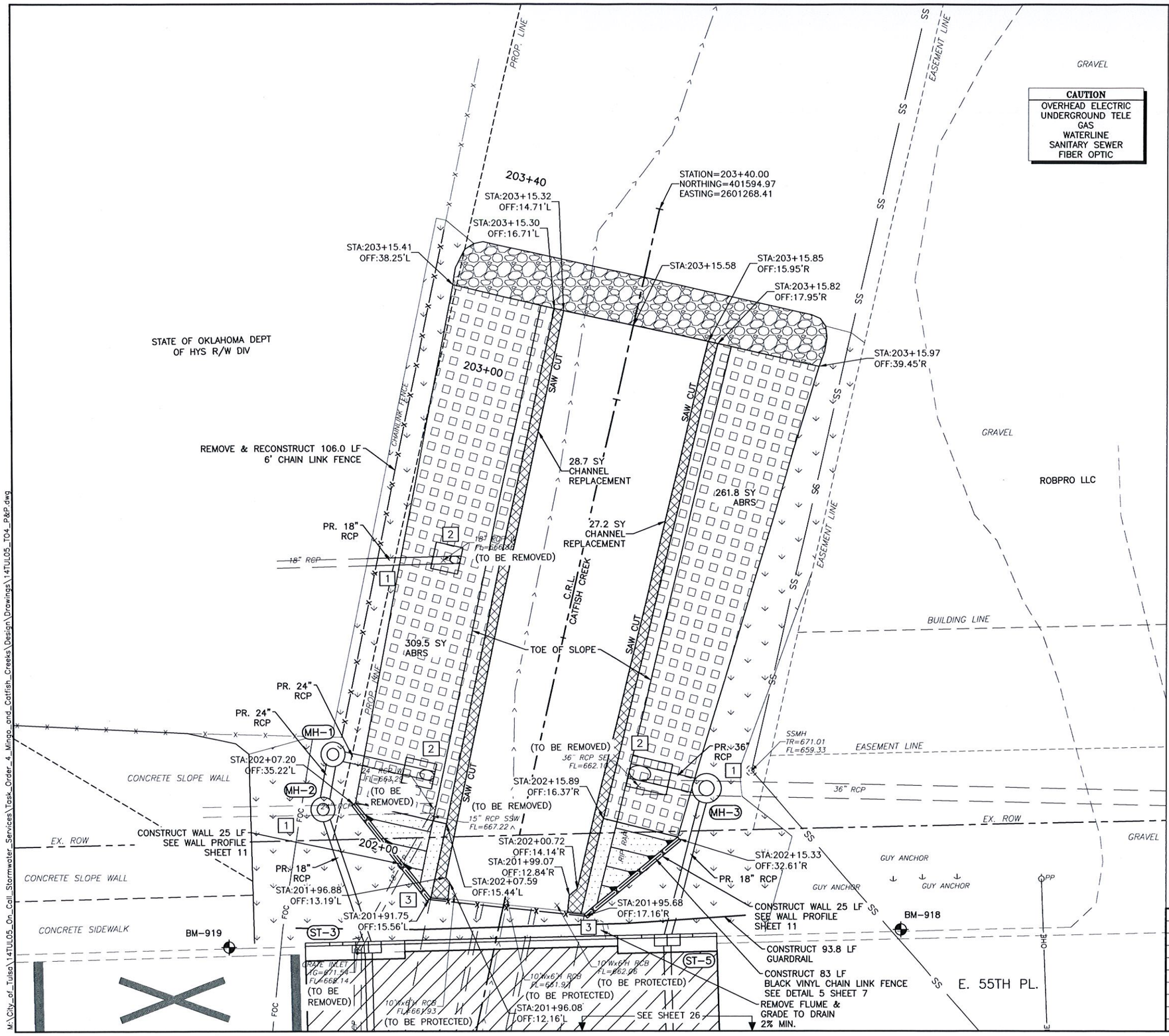
REVISION	BY	DATE
Δ2 ADD #2	EGZ	10/16

PLAN SCALE	DRAWN	SMC	08/2016
1" = 10'	DESIGNED	EGZ	08/2016
	SURVEY	PDH	08/2016
PROFILE SCALE	PROJ. MGR.		
HORIZONTAL: 1" = 20'	LEAD ENGR.		
	FIELD MGR.		
VERTICAL: 1" = 5'	RECOMMENDED DESIGN MANAGER		
FILE:	DRAWING:		
ATLAS PAGE NO. 309			

APPROVED:
CITY ENGINEER
DATE:
SHEET 25a OF 52 SHEETS

M:\City_of_Tulsa\147UL05_On_Call_Stormwater_Services\Task_Order_4_Mingo_and_Catfish_Creeks\Design\Drawings\147UL05_T04_P&P.dwg


(TO BE REMOVED)
GRATE INLET TG=671.15 FL=667.75
SEE SHEET 27
E. 55TH PL.
CONSTRUCT 93.8 LF GUARDRAIL
CONSTRUCT WALL 25 LF SEE WALL PROFILE SHEET 11
STA:201+38.50 OFF:14.95'L
ST-4
STA:201+31.83 OFF:13.20'L
REMOVE FLUME & GRADE TO DRAIN 2% MIN.
ST-6
8-MAILBOXES
MB
STA:201+35.10 OFF:10.63'L
STA:201+42.30 OFF:17.02'R
CONSTRUCT 82 LF BLACK VINYL CHAIN LINK FENCE SEE FENCE DETAIL 5 SHEET 7
(TO BE PROTECTED)
10'Wx6'H RCB FL=662.14
(TO BE PROTECTED)
10'Wx6'H RCB FL=662.19
CONCRETE SIDEWALK
12" WL (AS-BUILTS)
7 STRAND
CONCRETE
EX. ROW
CONCRETE SLOPE WALL
STA:201+18.77 OFF:13.47'L
10'Wx6'H RCB FL=662.19
STA:201+18.86 OFF:30.41'L
STA:201+18.24 OFF:15.48'L
(TO BE PROTECTED)
CONSTRUCT WALL 25 LF SEE WALL PROFILE SHEET 11
SIGN WD 5X2X10
STA:201+28.36 OFF:14.20'R
STA:201+26.21 OFF:16.23'R
STA:201+26.83 OFF:36.66'R
EASEMENT LINE
DW-5
SEE SHEET 30 FOR WATERLINE RELOCATION
201+00
STA:201+18.20 OFF:14.32'R
STA:201+06.20 OFF:14.46'R
STA:201+29.93 OFF:13.26'R
STA:201+06.78 OFF:13.72'L
93.4 SY CHANNEL REPLACEMENT
SAW CUT
CATFISH CREEK
BUILDING LINE
CONCRETE
PROP. LINE
TOE OF SLOPE
STATE OF OKLAHOMA DEPT OF HYS R/W DIV
STA:200+22.14 OFF:38.95'L
245.2 SY ABRS
310.5 SY ABRS
STA:200+20.53 OFF:17.51'L
STA:200+20.37 OFF:15.52'L
200+00
STA:200+20.00
STA:200+19.63 OFF:38.97'R
STA:200+19.95 OFF:17.46'R
STA:200+19.94 OFF:15.46'R
STATION=200+00.00
NORTHING=401263.50
EASTING=2601192.75
EASEMENT LINE
YOUNESALI, ALI
GRAVEL
CONCRETE
CAUTION
OVERHEAD ELECTRIC
UNDERGROUND TELE
GAS
WATERLINE
SANITARY SEWER
FIBER OPTIC
LEGEND
RIGHT-OF-WAY
LOT LINE
EXISTING BUILDING LINE
EXISTING EASEMENT LINE
PROPOSED VERTICAL WALL
BM-## BENCHMARK
SOLID SLAB SOD
TYPE I AC PATCH
PROPOSED 1.5:1 SLOPE WALL (SEE DETAIL 4 SHEET 5)
PROPOSED CONCRETE DRIVEWAY (SEE DETAIL 1 SHEET 6)
PROPOSED PCC PATCH (SEE DETAIL 6 SHEET 6)
PROPOSED CHANNEL REPLACEMENT (SEE DETAIL 5 SHEET 6)
ARTICULATING BLOCK REVETMENT SYSTEM (ABRS) (SEE DETAILS SHEET 7)
Δ2
RELOCATED SALVAGED RIPRAP (SEE DETAIL 7 SHEET 7)
PROPOSED P.C. CONCRETE SIDEWALK (SEE DETAIL 8 SHEET 6)
PROPOSED HIGHWAY SLOPE WALL (SEE DETAIL 9 SHEET 6)
1 CONNECT TO EXISTING WALL. DRILL AND EPOXY BARS AND INSTALL RX WATERSTOP. (SEE DETAIL 8 SHEET 5)
2 ABRS PIPE PENETRATION (SEE DETAIL 6 SHEET 7)
N
0 5 10 20
SCALE IN FEET
BENCHMARK (SHEET 27) BM-918
CHISELED "X" SET
N=401447.73
E=2601318.63
EL=671.35
BENCHMARK (SHEET 27) BM-919
CHISELED "X" SET
N=401444.22
E=2601178.43
EL=672.53
BEFORE YOU DIG 811 CALL OKIE
ADD ALTERNATE 1
REGISTERED PROFESSIONAL ENGINEER ERIC ZELLERS 26545 OKLAHOMA
10/27/16
CATFISH CREEK PLAN SHEETS
PROJECT #143120-4
MINGO & CATFISH CREEKS CHANNEL IMPROVEMENTS
CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT
PLANS AND ESTIMATES PREPARED BY:
Meshek & Associates, P.L.C.
1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620
REVISION | BY | DATE
Δ2 ADD #2 | EGZ | 10/16
PLAN SCALE 1" = 10'
PROFILE SCALE
HORIZONTAL: N/A
VERTICAL: N/A
DRAWN SMC 08/2016
DESIGNED EGZ 08/2016
SURVEY PDH 08/2016
PROJ. MGR.
LEAD ENGR.
FIELD MGR.
RECOMMENDED
DESIGN MANAGER
FILE: DRAWING:
ATLAS PAGE NO. 309
APPROVED:
CITY ENGINEER
DATE:
SHEET 26a OF 52 SHEETS
M:\City_of_Tulsa\14TUL05_On_Call_Stormwater_Services\Task_Order_4_Mingo_and_Catfish_Creeks\Design\Drawings\14TUL05_T04_P&P.dwg



LEGEND

- RIGHT-OF-WAY
- LOT LINE
- EXISTING BUILDING LINE
- EXISTING EASEMENT LINE
- PROPOSED VERTICAL WALL
- BM-## BENCHMARK
- SOLID SLAB SOD
- TYPE I AC PATCH
- PROPOSED 1.5:1 SLOPE WALL (SEE DETAIL 4 SHEET 5)
- PROPOSED CONCRETE DRIVEWAY (SEE DETAIL 1 SHEET 6)
- PROPOSED PCC PATCH (SEE DETAIL 6 SHEET 6)
- PROPOSED CHANNEL REPLACEMENT (SEE DETAIL 5 SHEET 6)
- ARTICULATING BLOCK REVETMENT SYSTEM (ABRS) (SEE DETAILS SHEET 7)
- Δ2 RELOCATED SALVAGED RIPRAP (SEE DETAIL 7 SHEET 7)
- PROPOSED P.C. CONCRETE SIDEWALK (SEE DETAIL 8 SHEET 6)
- PROPOSED HIGHWAY SLOPE WALL (SEE DETAIL 9 SHEET 6)
- [1] CONSTRUCT CONCRETE FIELD COLLAR (SEE DETAIL 4 SHEET 6)
- [2] CONSTRUCT ABRS PIPE END TREATMENT (SEE DETAIL 6 SHEET 5)
- [3] CONNECT TO EXISTING WALL. DRILL AND EPOXY BARS AND INSTALL RX WATERSTOP. (SEE DETAIL 8 SHEET 5)

N

0 5 10 20
SCALE IN FEET

ADD ALTERNATE 1

BENCHMARK
BM-918
CHISELED "X" SET
N=401447.73
E=2601318.63
EL=671.35

BENCHMARK
BM-919
CHISELED "X" SET
N=401444.22
E=2601178.43
EL=672.53

BEFORE YOU DIG CALL OKIE 811

REGISTERED PROFESSIONAL ENGINEER
ERIC ZELLERS 25545
OKLAHOMA
10/27/16

CATFISH CREEK PLAN SHEETS
PROJECT #143120-4
MINGO & CATFISH CREEKS CHANNEL IMPROVEMENTS
CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
Meshek & Associates, P.L.C.
1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620

REVISION	BY	DATE
Δ2 ADD #2	EGZ	10/16

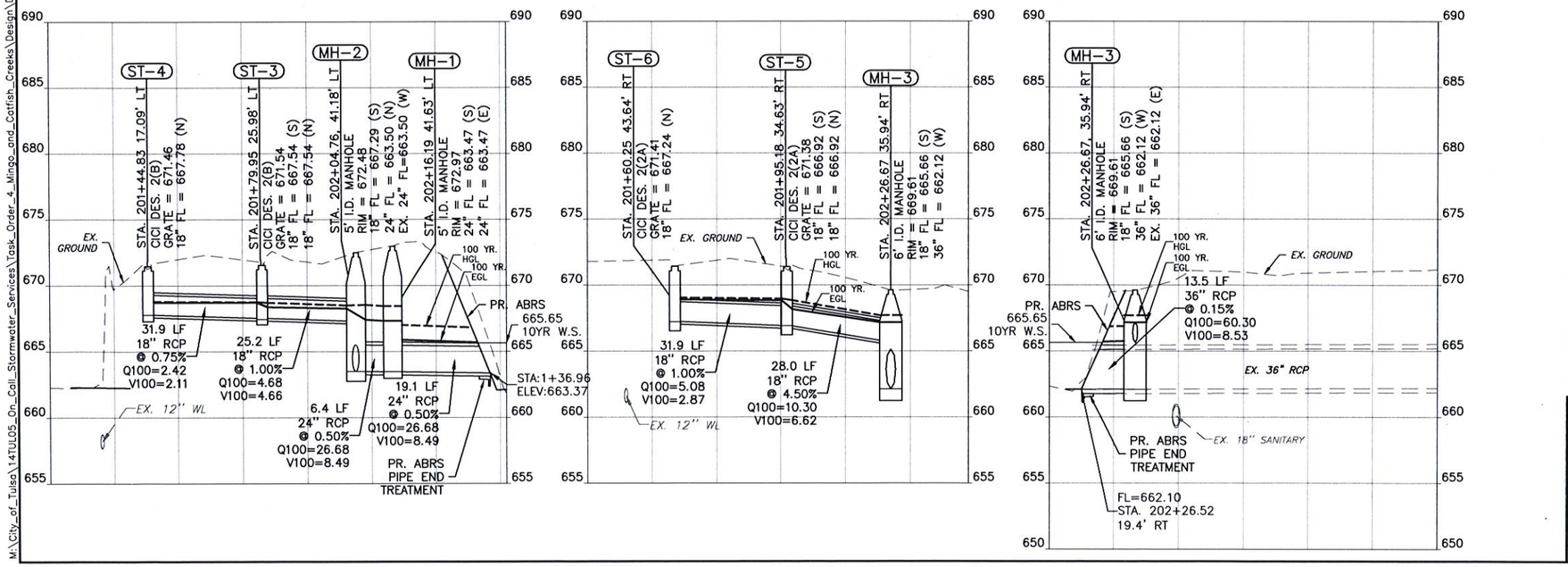
PLAN SCALE 1" = 10'	DRAWN	SMC	08/2016
	DESIGNED	EGZ	08/2016
	SURVEY	PDH	08/2016
PROFILE SCALE	PROJ. MGR.		
HORIZONTAL: N/A	LEAD ENGR.		
	FIELD MGR.		
VERTICAL: N/A	RECOMMENDED		
	DESIGN MANAGER		
FILE:	DRAWING:		
ATLAS PAGE NO. 309			

APPROVED:
CITY ENGINEER
DATE:
SHEET 27a OF 52 SHEETS

M:\City_of_Tulsa\14TUL05_On_Call_Stormwater_Services\Task_Order_4_Mingo_and_Catfish_Creeks\Design\Drawings\14TUL05_T04_P&P.dwg

CAUTION
OVERHEAD ELECTRIC
UNDERGROUND TELE
GAS
WATERLINE
SANITARY SEWER
FIBER OPTIC

CONCRETE SLOPE WALL
EX. ROW
CONCRETE SIDEWALK
BM-919
MH-1
MH-2
MH-3
PR. 24" RCP
PR. 18" RCP
PR. 36" RCP
(TO BE REMOVED)
15" RCP SSW FL=667.22
36" RCP SE FL=662.10
24" RCP W FL=663.23
SAW CUT
C.R.L. CATFISH CREEK
RIP RAP
46.6 LF CURB & GUTTER
CONSTRUCT 93.8 LF GUARDRAIL
GRATE INLET TG=671.54 FL=668.14
GRATE INLET TG=671.15 FL=667.75
10'Wx6'H RCB FL=661.93
10'Wx6'H RCB FL=661.91
10'Wx6'H RCB FL=662.06
(TO BE PROTECTED)
ST-3
ST-4
ST-5
ST-6
302.9 SY TYPE I AC PATCH 86.0'X33.2'
E. 55TH PL.
14.7 LF CURB & GUTTER
83.8 SY PR. CONCRETE DRIVEWAY
6.0 LF CURB & GUTTER
CONSTRUCT 53.5 SY SIDEWALK
CONSTRUCT 93.8 LF GUARDRAIL
8-MAILBOXES
MB
46.7 LF CURB & GUTTER
10'Wx6'H RCB FL=662.14
10'Wx6'H RCB FL=662.19
10'Wx6'H RCB FL=662.18
7 STRAND
CONCRETE
SSMH TR=671.01 FL=659.33
EASEMENT LINE
GUY ANCHOR
SS
OHE
FOC
PP
SIGN WD 5X2X10
FIBER OPTIC VAULT
CONSTRUCT 76.3 SY HIGHWAY SLOPE WALL
SEE SHEET 30 FOR WATERLINE RELOCATION



LEGEND

- RIGHT-OF-WAY
- LOT LINE
- EXISTING BUILDING LINE
- EXISTING EASEMENT LINE
- PROPOSED VERTICAL WALL
- BM-## BENCHMARK
- SOLID SLAB SOD
- TYPE I AC PATCH
- PROPOSED 1.5:1 SLOPE WALL (SEE DETAIL 4 SHEET 5)
- PROPOSED CONCRETE DRIVEWAY (SEE DETAIL 1 SHEET 6)
- PROPOSED PCC PATCH (SEE DETAIL 6 SHEET 6)
- PROPOSED CHANNEL REPLACEMENT (SEE DETAIL 5 SHEET 6)
- ARTICULATING BLOCK REVETMENT SYSTEM (ABRS) (SEE DETAILS SHEET 7)
- Δ2 RELOCATED SALVAGED RIPRAP (SEE DETAIL 7 SHEET 7)
- PROPOSED P.C. CONCRETE SIDEWALK (SEE DETAIL 8 SHEET 6)
- PROPOSED HIGHWAY SLOPE WALL (SEE DETAIL 9 SHEET 6)
- [1] CONSTRUCT CONCRETE FIELD COLLAR (SEE DETAIL 4 SHEET 6)
- [2] CONSTRUCT ABRS PIPE END TREATMENT (SEE DETAIL 6 SHEET 5)
- [3] CONNECT TO EXISTING WALL. DRILL AND EPOXY BARS AND INSTALL RX WATERSTOP. (SEE DETAIL 8 SHEET 5)

N

0 5 10 20
SCALE IN FEET

ADD ALTERNATE 1

BENCHMARK
BM-918
CHISELED "X" SET
N=401447.73
E=2601318.63
EL=671.35

BENCHMARK
BM-919
CHISELED "X" SET
N=401444.22
E=2601178.43
EL=672.53

BEFORE YOU DIG CALL OKIE

REGISTERED PROFESSIONAL ENGINEER ERIC ZELLERS 26545 OKLAHOMA
10/27/16

CATFISH CREEK PLAN SHEETS
PROJECT #143120-4
MINGO & CATFISH CREEKS CHANNEL IMPROVEMENTS
CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
Meshek & Associates, P.L.C.
1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620

REVISION	BY	DATE
Δ2 ADD #2	EGZ	10/16

PLAN SCALE 1" = 10'
PROFILE SCALE HORIZONTAL: 1" = 20' VERTICAL: 1" = 5'
ATLAS PAGE NO. 309

DRAWN	SMC	08/2016
DESIGNED	EGZ	08/2016
SURVEY	PDH	08/2016
PROJ. MGR.		
LEAD ENGR.		
FIELD MGR.		
RECOMMENDED		
DESIGN MANAGER		
FILE:	DRAWING:	

APPROVED:
CITY ENGINEER
DATE:
SHEET 28a OF 52 SHEETS

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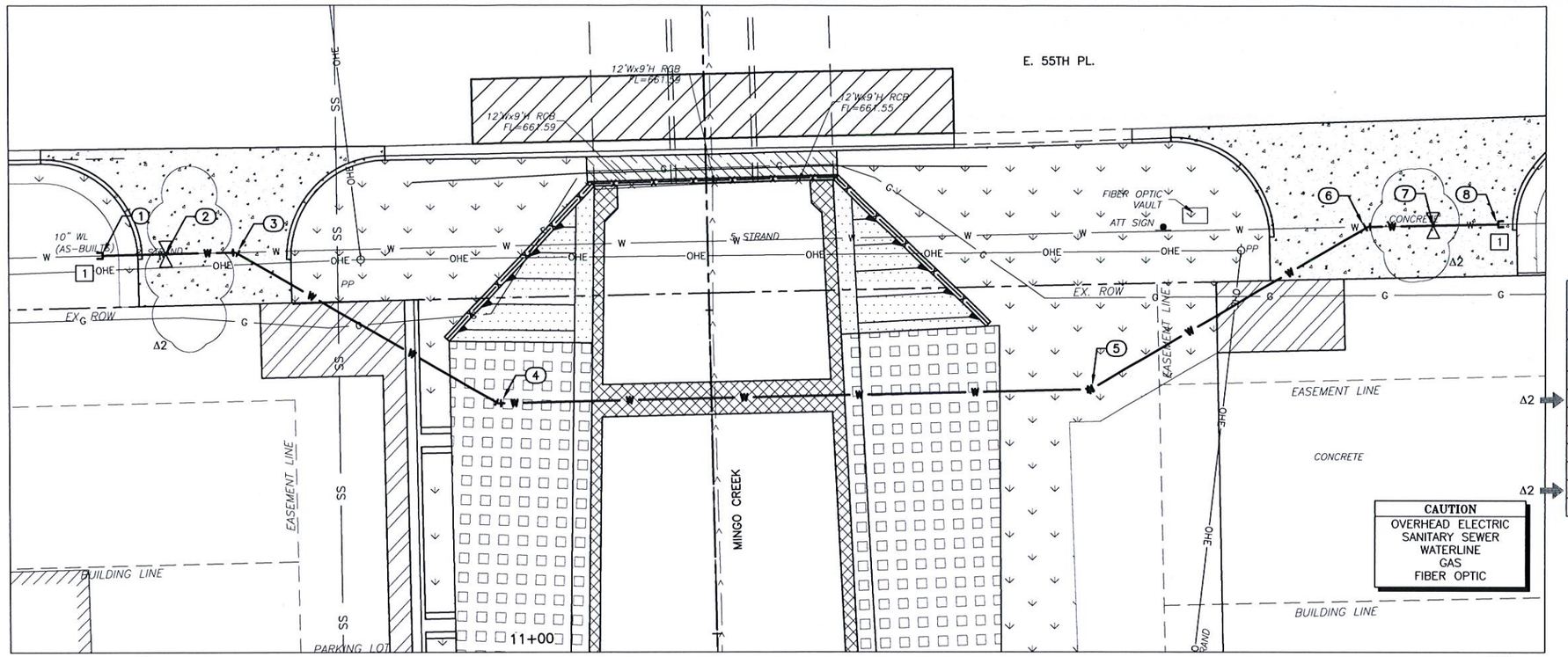
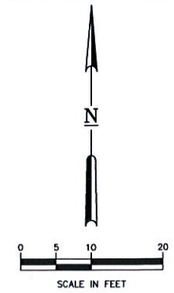
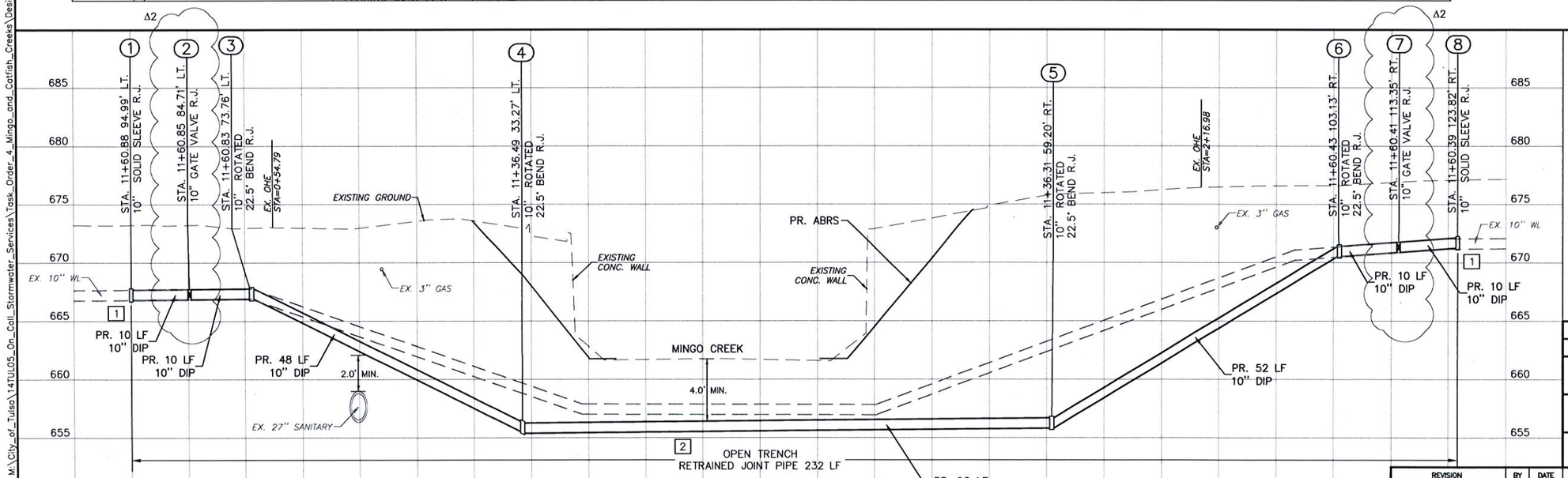




FURNISHED AND INSTALLED BY CONTRACTOR

TABLE OF FITTINGS

FITTING NUMBER	DESCRIPTION	NORTHING	EASTING
1	10" SOLID SLEEVE R.J.	401365.23	2599916.86
2	10" GATE VALVE R.J.	401365.46	2599926.77
3	10" ROTATED 22.5° BEND R.J.	401365.67	2599937.74
4	10" ROTATED 22.5° BEND R.J.	401342.42	2599978.74
5	10" ROTATED 22.5° BEND R.J.	401344.49	2600071.25
6	10" ROTATED 22.5° BEND R.J.	401369.65	2600114.59
7	10" GATE VALVE R.J.	401369.92	2600124.78
8	10" SOLID SLEEVE R.J.	401370.13	2600134.85



CONSTRUCTION NOTES:

1. CONNECT TO EXISTING WATERLINE
2. PIPE DEFLECTION NOT TO EXCEED 3° ON ANY FITTING OR JOINT

REGISTERED PROFESSIONAL ENGINEER
ERIC ZELLERS 26545
OKLAHOMA
10/27/16

TMUA-16-43

MINGO CREEK WATERLINE P&P
PROJECT #143120-4

MINGO & CATFISH CREEKS
CHANNEL IMPROVEMENTS

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
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1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620

REVISION	BY	DATE
Δ2 ADD #2	EGZ	10/16

PLAN SCALE 1" = 10'	DRAWN	SMC	08/2016
	DESIGNED	EGZ	08/2016
	SURVEY	PDH	08/2016
PROFILE SCALE	PROJ. MGR.		
HORIZONTAL: 1" = 20'	LEAD ENGR.		
	FIELD MGR.		
VERTICAL: 1" = 5'	RECOMMENDED		
	DESIGN MANAGER		
FILE:	DRAWING:		
ATLAS PAGE NO. 309			

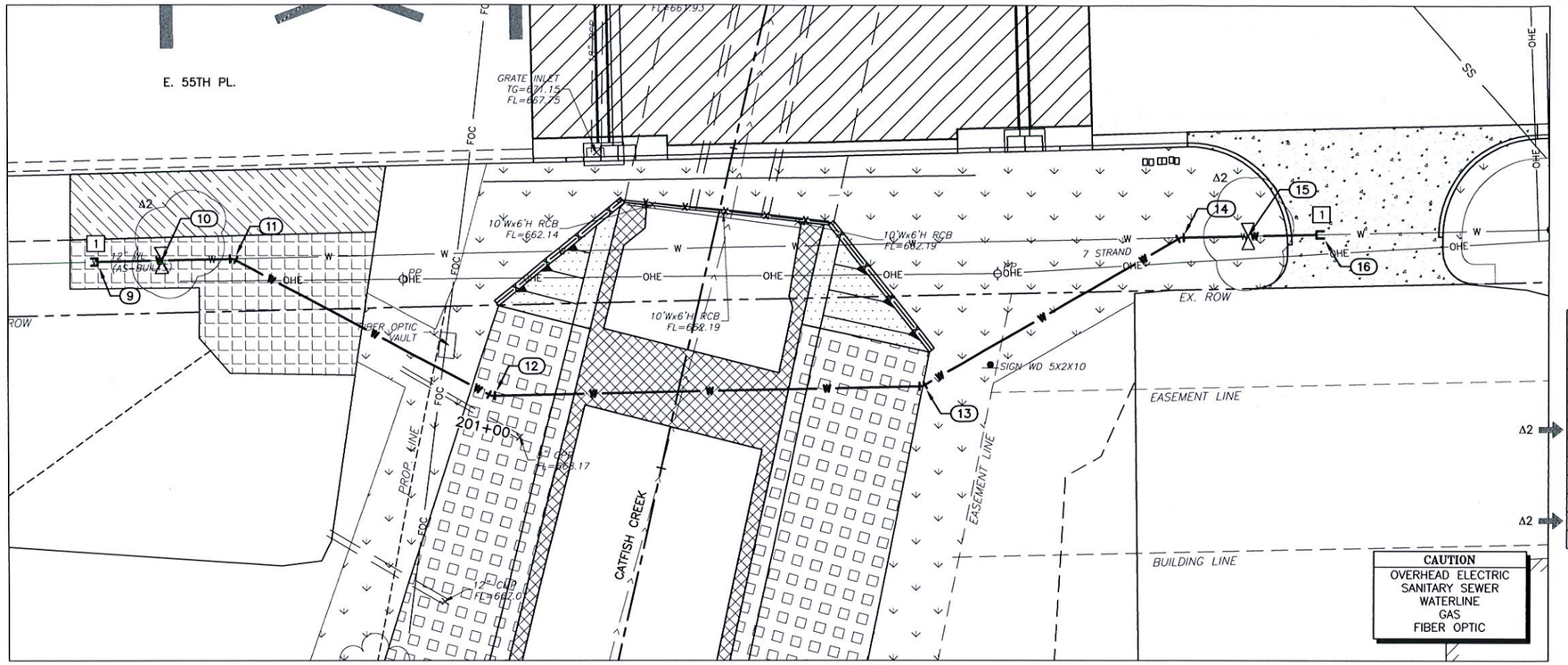
APPROVED:

CITY ENGINEER

DATE:

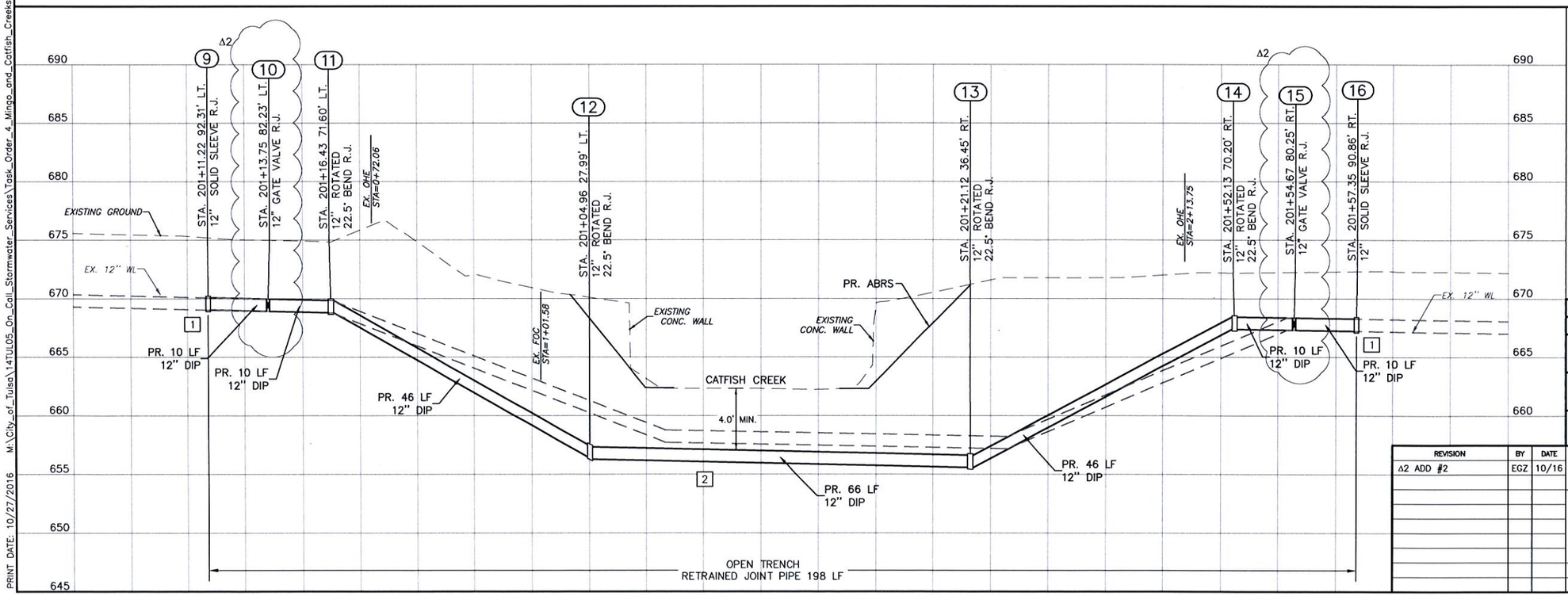
SHEET 29a OF 52 SHEETS

PRINT DATE: 10/27/2016 M:\City_of_Tulsa\14TUL05_On_Call_Stormwater_Services\Task_Order_4_Mingo_and_Catfish_Creeks\Design\Drawings\14TUL05_T04_PR_WL.dwg



FURNISHED AND INSTALLED BY CONTRACTOR			
TABLE OF FITTINGS			
FITTING NUMBER	DESCRIPTION	NORTHING	EASTING
9	12" SOLID SLEEVE R.J.	401392.46	2601127.95
10	12" GATE VALVE R.J.	401392.69	2601137.89
11	12" ROTATED 22.5° BEND R.J.	401392.90	2601148.86
12	12" ROTATED 22.5° BEND R.J.	401372.09	2601188.78
13	12" ROTATED 22.5° BEND R.J.	401373.47	2601255.23
14	12" ROTATED 22.5° BEND R.J.	401396.16	2601295.05
15	12" GATE VALVE R.J.	401396.42	2601305.42
16	12" SOLID SLEEVE R.J.	401396.68	2601315.90

CAUTION
OVERHEAD ELECTRIC
SANITARY SEWER
WATERLINE
GAS
FIBER OPTIC



CONSTRUCTION NOTES:

1. CONNECT TO EXISTING WATERLINE
2. PIPE DEFLECTION NOT TO EXCEED 3° ON ANY FITTING OR JOINT

REGISTERED PROFESSIONAL ENGINEER
ERIC ZELLERS 26545
OKLAHOMA
10/27/16

ADD ALTERNATE 1
TMUA-16-43

CATFISH CREEK WATERLINE P&P
PROJECT #143120-4
MINGO & CATFISH CREEKS CHANNEL IMPROVEMENTS

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

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1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620

REVISION	BY	DATE
Δ2 ADD #2	EGZ	10/16

PLAN SCALE	DRAWN	SMC	08/2016
1" = 10'	DESIGNED	EGZ	08/2016
	SURVEY	PDH	08/2016
PROFILE SCALE	PROJ. MGR.		
HORIZONTAL: 1" = 20'	LEAD ENGR.		
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VERTICAL: 1" = 5'	RECOMMENDED DESIGN MANAGER		
FILE:	DRAWING:		
ATLAS PAGE NO. 309			

APPROVED:
CITY ENGINEER
DATE:
SHEET 30o OF 52 SHEETS

PRINT DATE: 10/27/2016 M:\City_of_Tulsa\14TUL05_On_Call_Stormwater_Services\Task_Order_4_Mingo_and_Catfish_Creeks\Design\Drawings\14TUL05_T04_PR_WL.dwg