

SYMBOL LEGEND

- - CONTROL POINT
- ◆ - SURVEYED BENCHMARK
- ⊕ - AIR RELEASE VALVE
- ⊞ - ELECTRIC CONTROL BOX
- ⊙ - MONITORING WELL
- ⊕ - ELECTRIC METER
- ⊕ - FIRE HYDRANT
- - FLAG POLE
- - GATE POST
- - GUARD RAIL POST
- - GUY ANCHOR
- - GUY POLE
- - LIGHT POLE
- - MAIL BOX
- - POWER POLE/TELEPHONE POLE
- - MANHOLE SANITARY, STORM
- - SIGN
- - SPIGOT
- - SANITARY SEWER CLEAN OUT
- - SANITARY SEWER LAMPHOLE
- - WATER VALVE
- - WATER METER
- - TELEPHONE BOX
- - TELEPHONE RISER
- - GAS METER
- - GAS VALVE
- - BUSH/HEDGE
- - SMALL CONIFEROUS TREE
- - LARGE CONIFEROUS TREE
- - SMALL DECIDUOUS TREE
- - LARGE DECIDUOUS TREE
- x-x-x- - Fence Line (All Types)
- OHE- - Overhead Electric
- UG- - Underground Electric
- OHT- - Overhead Telephone
- UGT- - Underground Telephone
- CATV- - Underground Cable Television
- G- - Natural Gas Line
- FOC- - Fiber Optic Cable
- W- - Water Line
- - - - Existing Storm Sewer
- SS- - Sanitary Sewer Line
- - - - Proposed C.R.L.

DRAWING REFERENCE LEGEND

- ⊗ REFERS TO A PROFILE OR ELEVATION
- 7/8 PROFILE NUMBER SHEET NUMBER ON WHICH IT IS LOCATED
- 1 DETAIL DESCRIPTION SCALE: 1"=XX'

DATUM INFORMATION

HORIZONTAL DATUM

VERTICAL DATUM

NOTE:

ALL CONSTRUCTION TO BE IN STRICT ACCORDANCE WITH CURRENT CITY OF TULSA ENGINEERING SERVICES DEPARTMENT, STANDARDS AND SPECIFICATIONS.

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

2009 OKLAHOMA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION SHALL GOVERN. CITY OF TULSA ENGINEERING SERVICES DEPARTMENT CURRENT STANDARDS WILL BE USED AS APPLICABLE.

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

UTILITY COORDINATION BOX

| | NUMBER | NOTIFIED |
|------------------------------------|--------------|----------|
| WATER DESIGN | 918-596-9580 | |
| WASTEWATER DESIGN | 918-596-9564 | |
| TRANSPORTATION DESIGN | 918-596-9636 | |
| UTILITY COORDINATION - CHRIS KOVAC | 918-596-9649 | |
| STORMWATER DESIGN | 918-596-9498 | |
| PSO - ADAM FIELDS | 877-250-6257 | |
| ONG - JONATHON MEADOWS | 918-831-8215 | |
| AT&T - AL NICHOLS | 918-596-4237 | |
| COX COMMUNICATION - BRANDON WADE | 918-286-4716 | |
| MTTA - ERIC SMITH | 918-830-0024 | |

CONSTRUCTION PLANS FOR

FEMA FLOOD DAMAGE PROJECT

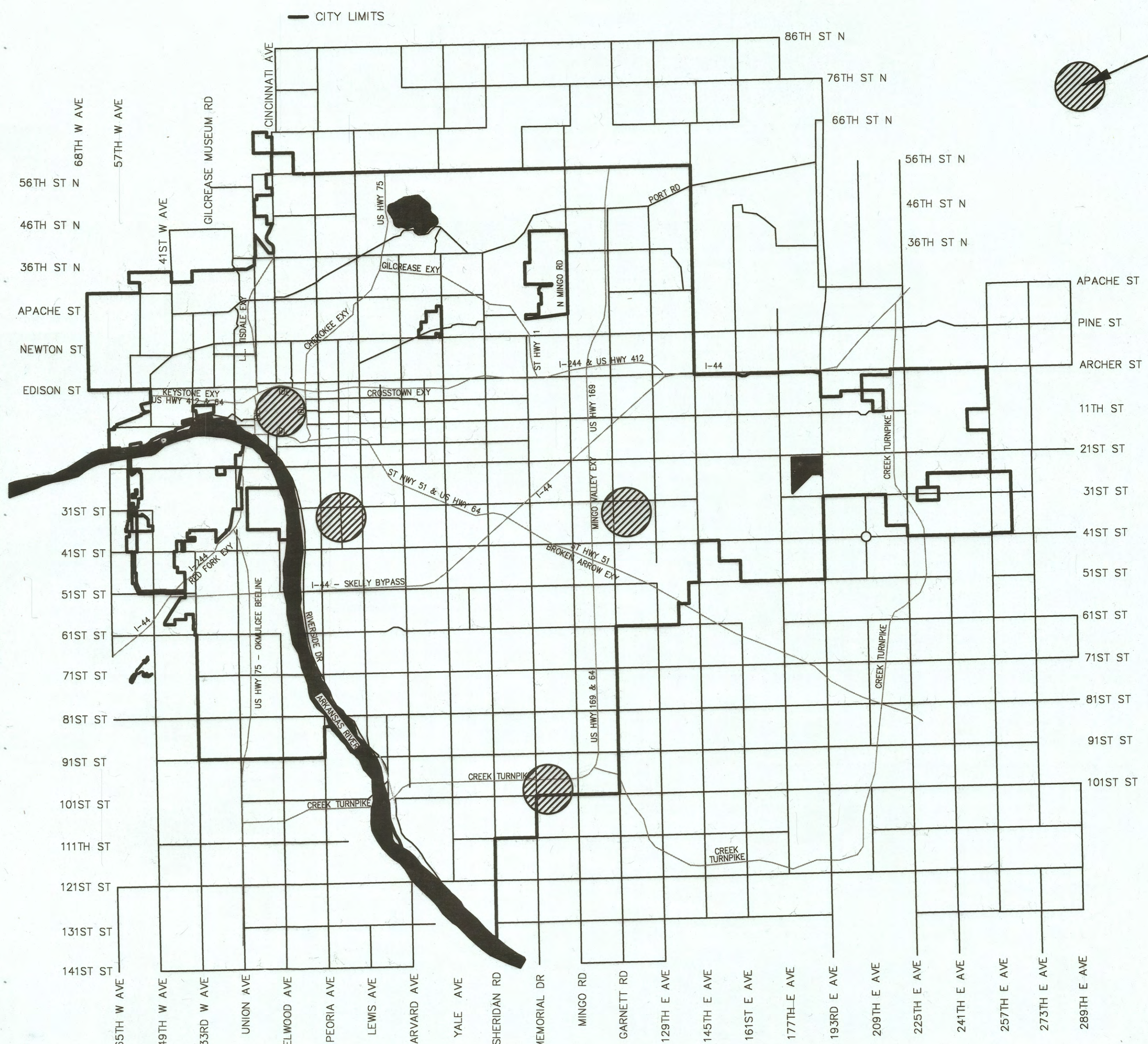
PROJECT NO. 173120-T021-117860

FEMA PROJECT NO. 117860 2031F00005.STRMSEWER.FLOOD.5618

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

DRAWING INDEX

- 1 - COVER SHEET
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- 12 - ZINK PARK SITE 4
- 13 - CHAPMAN GREEN PARK STORM WATER MANAGEMENT PLAN
- 14 - CHAPMAN GREEN PARK



PROJECT SITES

APPLICABLE STANDARDS:
CITY OF TULSA:
SEE SHEET 2

ODOT:
SEE SHEET 2

APPROVED BY
[Signature]
CITY ENGINEER

01.25.21
DATE

ADVERTISEMENT DATE

Prepared By:
MESHEK & ASSOCIATES, L.L.C.



[Signature]
RYAN PIERCE, P.E. #27211
MESHEK & ASSOCIATES, L.L.C.

12/16/2020
DATE



MESHEK & ASSOCIATES, L.L.C.
C.A. 1487 EXPIRES 6/30/21
1437 S. BOULDER AVE, STE. 1550
TULSA, OK 74119
(PH) 918-392-5620
(FAX) 918-392-5621

PRINT DATE: 12/17/2020
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2019 CITY OF TULSA, TULSA COUNTY, OKLAHOMA PROJECT NO. 173120-T021-117860 FEMA PROJECT NO. 117860

GENERAL (G1 - G10) (11/14/2018)

- G-1: 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.
- G-2: MAXIMUM OVERALL DOLLAR AMOUNT AND SCHEDULE OF PAYMENTS SHALL BE IN ACCORDANCE SECTION 641 OF THE OKLAHOMA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, CURRENT EDITION. EXCLUDES MOBILIZATION FOR WATERLINE WORK.
- G-3: 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.
- G-4: THE COST TO REPLACE REMOVED OR DAMAGED SECTION CORNERS AND ALL OTHER PERMANENT RIGHT OF WAY MARKERS SHALL BE INCLUDED IN THE PRICE BID FOR THIS ITEM. NO ADDITIONAL PAYMENT WILL BE MADE.
- G-5: CONTRACTOR SHALL REPAIR ANY IRRIGATION SYSTEMS DAMAGED OR REQUIRING RELOCATION DURING THE CONSTRUCTION OF THE PROJECT TO THE SATISFACTION OF THE PROPERTY OWNER AND CITY ARBORIST. COST SHALL BE INCLUDED IN THE PRICE BID.

PAY ITEM NOTES (11/14/2018)

EARTHWORK / EROSION CONTROL / SITE PREPARATION (E1 - E11)

- E-2: 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.
- E-3: 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.
- E-4: UNCLASSIFIED EXCAVATION INCLUDES REMOVAL OF AGGREGATE BASE AND MODIFIED SUBGRADE UNDER EXISTING PAVEMENT TO BE REPAIRED.
- E-5: THIS QUANTITY INCLUDES AN ADDITIONAL 10% ABOVE PLAN QUANTITY FOR UNDERCUTTING OF UNSUITABLE SUBGRADE MATERIAL OR ADDITIONAL PATCHING AS DIRECTED BY THE ENGINEER.
- E-6: THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTROL AND MAINTENANCE OF THE STORM WATER DRAINAGE FROM THE CONSTRUCTION SITE. STORM WATER PONDING ON THE CONSTRUCTION SITE THAT IS THE RESULT OF CONSTRUCTION WILL NOT BE ALLOWED. ALL COST ASSOCIATED WITH STORM WATER MANAGEMENT, AS WELL AS REMOVAL OF ALL SILT AND DEBRIS FROM ALL DRAINAGE STRUCTURES, STORM SEWER PIPES AND APPURTENANCES WITHIN THE PROJECT LIMITS AT END OF PROJECT, SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THIS ITEM.
- E-7: EROSION PROTECTION SHALL BE PLACED AS FOLLOWS:
 A) AROUND INLETS TO PREVENT INFLOW OF ERODED MATERIAL INTO STORM SEWER SYSTEM;
 B) IN LOCATIONS THROUGHOUT PROJECT SITE, AS DETERMINED BY THE ENGINEER, TO PREVENT WASH OF ERODED MATERIAL ONTO ADJACENT PROPERTY;
 C) FOR ENTIRE DURATION OF PROJECT, WITH MAINTENANCE AND REPLACEMENTS, AS DIRECTED BY THE ENGINEER;
 D) WITH PERIODIC REMOVAL OF SEDIMENT IN ACCORDANCE WITH STORMWATER MANAGEMENT PLAN.
 ALL COST FOR ITEMS A-D ABOVE SHALL BE INCLUDED IN UNIT PRICE BID FOR THIS ITEM.
- E-8: PRICE BID SHALL INCLUDE MAINTENANCE, SEDIMENT REMOVAL, DISPOSAL, AND REMOVAL OF FILTERS AT PROJECT COMPLETION.
- E-10: ESTIMATED QUANTITY IS BASED ON SODDING OF ALL DISTURBED AREAS OUTSIDE THE FINAL PAVING LIMITS AND WITHIN THE FINAL GRADING LIMITS AS INDICATED BY THE TOP-OF-CUT/TOE-OF-SLOPE LINE ON THE PLANS (EXCLUDING SURFACES OF STRUCTURES, FIXTURES AND APPURTENANCES). SOD SHALL BE OF LIKE-KIND TO EXISTING SOD. PRICE BID INCLUDES PLACEMENT AND COMPACTION OF SUITABLE BACKFILL. ANY EXISTING GRASSED AREAS BEYOND THE ABOVE STATED LIMITS THAT ARE DAMAGED AS A RESULT OF CONSTRUCTION OPERATIONS SHALL BE RESEEDDED TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S SOLE EXPENSE.
- E-11: 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.

SURFACING / STRUCTURES (S1 - S21)

- S-1: 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.
- S-2: INCLUDES COMPACTION OF AGGREGATE TO 98% AASHTO T180 MODIFIED PROCTOR.
- S-3: 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.
- S-4: FABRIC REINFORCEMENT SHALL BE USED ON OVERLAY AREAS. THE COST OF BITUMINOUS BINDER FOR FABRIC REINFORCEMENT SHALL BE INCLUDED IN THE UNIT COST OF THIS PAY ITEM. THE BITUMINOUS BINDER SHALL MEET ODOT STANDARD SPECIFICATIONS AND THE RECOMMENDATIONS OF THE FABRIC REINFORCEMENT MANUFACTURER.
- S-5: 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.
- S-6: ESTIMATED AT 112 LBS PER SQ YD PER 1 INCH THICK.
- S-7: 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.
- S-8: A HIGHER GRADE OF ASPHALT BINDER THAN IS INDICATED ON THE PLANS MAY BE USED, BUT AT NO ADDITIONAL COST TO THE CITY.

| BINDER GRADE | MESALs | ADT ¹ | NOTES |
|--------------|--------|------------------|---------------------------------------------------------------------------------------------------------------------------|
| PG 64-22 OK | 3 | <5,000 | USE WHEN MORE THAN 4-6 INCHES BELOW THE SURFACE. ALSO USE FOR SHOULDERS, DRIVEWAYS, BELOW PCC, AND TEMPORARY CONSTRUCTION |
| PG 70-28 OK | 10 | <10,000 | USE ONLY IN THE TOP 4-6 INCHES FOR DRIVING LANES |
| PG 76-28 OK | >=10 | >=10,000 | USE ONLY IN THE TOP 4-6 INCHES FOR DRIVING LANES |
| PG 76-28 E | - | - | CONTACT ODOT MATERIALS DIVISION FOR RECOMMENDED USE. |

1. USE ADT ONLY WHEN ESAL COMPUTATIONAL DATA IS NOT AVAILABLE. CALCULATE THE DESIGN ESALs BASED ON 20 YEARS.

2. PG 70-28 OK OR PG 76-28 OK MAY BE DESIRABLE IN HIGH VOLUME AREAS WHERE SLOW, STANDING, OR TURNING TRAFFIC OCCURS, SUCH AS URBAN INTERSECTIONS OR OFF-RAMPS. OFF RAMPS SHOULD AT LEAST USE THE SAME BINDER AS THE MAINLINE.

- S-11: CONCRETE PAVEMENT SHALL BE COMPLETE IN PLACE. NO PARTIAL OR FINAL PAYMENT SHALL BE MADE UNTIL PAVEMENT HAS BEEN SAWED AND SEALED. ANY SECTIONS OF PAVEMENT WITH UNAPPROVED DEVIATIONS FROM THE JOINT LAYOUT PROVIDED IN THE PLANS MAY BE REJECTED AT THE DISCRETION OF THE ENGINEER.
- S-12: THE USE OF FLY-ASH IN CONCRETE IS PROHIBITED.
- S-13: INCLUDES ALL COST OF SAWED JOINTS AND SEALING OF ALL JOINTS INCLUDING LONGITUDINAL JOINTS.

- S-15: 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.
- S-19: STANDARD BEDDING MATERIAL TO BE TYPE A AGGREGATE BASE COMPACTED TO 95% STANDARD PROCTOR DENSITY (AASHTO T-99). TYPE A AGGREGATE BASE IN THE ROADWAY SHALL BE COMPACTED TO 98% MODIFIED PROCTOR (AASHTO T-180).
- S-20: 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.
- S-21: THIS PAY ITEM INCLUDES THE FOLLOWING:
 A. SAW CUTTING
 B. REMOVAL OF THE EXISTING CONCRETE AND/OR ASPHALTIC CONCRETE ROADWAY (SY)
 C. TYPE S4 ASPHALTIC CONCRETE, H.E.S. CONCRETE, AND REINFORCING STEEL 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

REMOVAL / ADJUSTMENT (R1 - R6)

- R-1: WASTE MATERIAL TO BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE IN A MANNER APPROVED BY THE ENGINEER.
- R-2: ALL SAW CUTTING AND REMOVAL SHALL BE INCLUDED IN THE COST OF THE ITEM TO BE ADJUSTED, REMOVED, REPAIRED, OR REPLACED.
- R-3: PAY ITEM INCLUDES REMOVAL OF ALL STRUCTURES AND OBSTRUCTIONS WITHIN PROJECT LIMITS NOT SPECIFIED BY OTHER ITEMS OF WORK.
- R-4: INCLUDES SAWING NOT INCLUDED IN OTHER ITEMS OF WORK.
- R-5: ITEMS TO BE REMOVED MAY OR MAY NOT BE PRESENT IN ANY SPECIFIED CONDITION.
- R-6: SHALL INCLUDE ALL COSTS ASSOCIATED WITH PLUGGING/ PATCHING HOLES IN EXISTING STRUCTURES TO REMAIN.

DRAINAGE (D1 - D15)

- D-1: THIS ITEM SHALL INCLUDE THE COST OF NEW MANHOLE FRAME AND COVER PER CITY OF TULSA STD NOS.752, 753, 754, 761, 762, 769A, 769B AND 775.
- D-2: THE TOTAL COST FOR RUBBERIZED ASPHALT AND/OR SILICONE AT MANHOLES, VALVE BOXES, INLETS, AND INLET APRONS, SHALL BE INCLUDED.
- D-3: NO MASONRY STRUCTURES SHALL BE CONSTRUCTED WITHIN THE RIGHT OF WAY.
- D-7: 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.
- D-8: QUICKSET FLOWABLE FILL SHALL BE USED TO BACKFILL AROUND STREET CURB INLETS AND REINFORCED CONCRETE PIPE, AS NEEDED, AT THE DIRECTION OF THE ENGINEER.
- D-9: ALL INLETS, COMPLETE IN PLACE, SHALL BE CAST IN PLACE CONCRETE OR PRECAST CONCRETE. THIS PAY ITEM INCLUDES ANY INLET FRAME(S), GRATE(S), HOOD(S) AND CONCRETE REQUIRED FOR COMPLETE INSTALLATION OF STRUCTURE PER THE CONSTRUCTION DOCUMENTS.
- D-10: ADDITIONAL DEPTH QUANTITIES SHALL BE MEASURED AND PAID FOR ALL INLETS EXCEEDING STANDARD DEPTH. STANDARD DEPTHS ARE AS FOLLOWS:
 A) CAST IRON CURB INLET: 3.71 VF, MEASURED FROM CENTER ELEVATION OF LOWEST CAST IRON CURB TO FLOWLINE OF OUTLET PIPE.
 B) RECESSED CURB INLET: 3.00 VF, MEASURED FROM TOP OF SLAB TO FLOWLINE OF OUTLET PIPE.
 C) STANDARD DROP INLET: SEE STANDARD DETAILS 770, 771, 772 AND 773 - VARIES BASED ON PIPE SIZE, MEASURED FROM LOWEST ELEVATION OF INFLOW APRON TO FLOWLINE OF OUTLET PIPE.
- D-12: REINFORCED CONCRETE PIPE TO BE CLASS III. ALL REINFORCED CONCRETE PIPE AND MANHOLES TO BE SUPPLIED WITH ANJMI-FLEX JOINT GASKET OR APPROVED EQUAL. MASTIC JOINT SEALANT SHALL NOT BE ALLOWED.
- D-13: 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. PRIOR TO ACCEPTANCE, INTERIOR OF PIPE SHALL BE INSPECTED FOR DEFECTS USING SELF-PROPELLED MOBILE CLOSED-CIRCUIT CAMERA SYSTEM.
- D-14: WHERE CORRUGATED POLYPROPYLENE PIPE CONNECTS TO REINFORCED CONCRETE STRUCTURES, CONTRACTOR SHALL ENSURE CONNECTIONS ARE WATER-TIGHT AND FULLY SEALED AGAINST SOIL INFILTRATION.
- D-15: WHERE QUICKSET FLOWABLE FILL IS USED TO BACKFILL AROUND CORRUGATED POLYPROPYLENE PIPE, THE CONTRACTOR SHALL UTILIZE AN ANCHORING SYSTEM APPROVED BY THE ENGINEER PRIOR TO INSTALLATION. ALL COSTS FOR LABOR, EQUIPMENT AND MATERIALS REQUIRED TO IMPLEMENT APPROVED ANCHORING SYSTEM INCLUDED IN PRICE BID FOR CORRUGATED POLYPROPYLENE PIPE.

TRAFFIC (T1 - T7)

- T-1: ALL TRAFFIC MATERIALS REMOVED SHALL BE HANDLED PER COT SPECIFICATION 625 REMOVAL OF TRAFFIC ITEMS.
- T-2: 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.
- T-3: ALL PLASTIC PAVEMENT MARKINGS SHALL BE EITHER:
 EXTRUDED-APPLIED THERMOPLASTIC (USE ON ASPHALT PAVEMENT). THERMOPLASTIC PAVEMENT MARKINGS SHALL ONLY BE APPLIED WHEN THE SURFACE TEMPERATURE EXCEEDS 55°F FOR ALL OF THE SIX HOURS PRIOR TO INSTALLATION AND MAXIMUM WIND GUSTS ARE BELOW 15 MPH AT THE TIME OF APPLICATION. PRICE BID TO INCLUDE FLEX TABS OR LIKE KIND FOR POST CONSTRUCTION LANE MARKING/SEPARATION. MECHANICALLY APPLIED PREFORMED PLASTIC TAPE ("COLD TAPE") WILL NOT BE ACCEPTED.
- T-7: PRICE BID FOR THIS ITEM INCLUDES INSTALLATION, MAINTENANCE AND SUBSEQUENT REMOVAL OF PROJECT SIGN.

SPECIAL PAY ITEMS

- 1. THIS PAY ITEM SHALL INCLUDE THE COST OF REMOVAL OF EQUIVALENT PIPE SIZE DIAMETER AND LINEAL FOOT.

APPLICABLE CITY OF TULSA STANDARD DRAWINGS AND DETAILS REFERENCES:

- PAVEMENT CUTS FOR UTILITIES
 - STD NO. 713 - STANDARD DETAIL FOR PAVEMENT REMOVAL AND REPLACEMENT
 - STD NO. 714 - STANDARD DETAIL FOR PAVEMENT CUTS

- ASPHALT PAVEMENT - DETAILS
 - STD NO. 730 - STANDARD ASPHALT PAVEMENT CUT AND REPAIR

- P.C. CONCRETE PAVEMENT - CURB DETAILS
 - STD NO. 727 - CONCRETE PAVEMENT STANDARD DETAILS FOR RESIDENTIAL AND COLLECTOR STREETS

- STORM PIPES, DRAINAGE INLETS, GRATES, AND HOODS
 - STD NO. 751 - STANDARD PIPE BEDDING DETAIL FOR STORM SEWER
 - STD NO. 753 - FRAME AND LID FOR 4' AND 5' I.D. STORMWATER MANHOLE
 - STD NO. 754 - FRAME AND LID FOR 6' AND 8' I.D. STORMWATER MANHOLE AND JUNCTION BOXES
 - STD NO. 775 - STANDARD PRECAST CONCRETE STORMWATER MANHOLE

APPLICABLE ODOT STANDARDS:

- SMD-3-2 - STANDARD MEDIAN DRAINS

| PROJECT NO. 117860 | | | | | |
|---------------------|----------|---------------------------------------|--------------|------|----------|
| FEMA FLOOD PROJECTS | | | | | |
| ROADWAY BASE BID | | | | | |
| ITEM NO. | SPEC NO. | DESCRIPTION | NOTES | UNIT | QUANTITY |
| 1 | 202(D) | UNCLASSIFIED BORROW | | CY | 42 |
| 2 | 202(F) | EMBANKMENTS | E-3,4,R-1 | CY | 62 |
| 3 | 220 | SWPPP DOCUMENTATION AND MANAGEMENT | | EA | 1 |
| 4 | 230(A) | SOLID SLAB SODDING | E-10, 11 | SY | 36 |
| 5 | 411 | ASPHALT CONCRETE | S-5,6,7,8 | CY | 1 |
| 6 | 504(H) | ELASTOMERIC MORTAR | G-1 | CY | 0.11 |
| 7 | 510(A) | RETAINING WALL | | LS | 7 |
| 8 | 601(B) | TYPE I-A RIPRAP | | CY | 8 |
| 9 | 610(D) | REMOVE & RELAY BRICK/STONE SIDEWALK | R-1, 2, 5, 6 | CY | 17 |
| 10 | 619(B) | REMOVAL OF ASPHALT PAVEMENT | R-1, 2, 5, 6 | CY | 1 |
| 11 | 880(J) | CONSTRUCTION TRAFFIC CONTROL | | EA | 1 |
| 12 | SPECIAL | ELECTRONIC CONTROLS FOR FOUNTAIN PUMP | T-7 | EA | 1 |

[Handwritten Signature]
12/16/2020

GENERAL CONSTRUCTION NOTES & PAY ITEMS

PROJECT #173120-TO21-117860

FEMA PROJECT NO. 117860

**CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT**

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

| REVISION | BY | DATE | PLAN SCALE | DRAWN | KRP | 05/20 | APPROVED: |
|----------|----|------|---------------------------------|----------------|-------|-------|------------------------------------------------------------|
| | | | N/A | DESIGNED | RJP | 05/20 | CITY ENGINEER DATE: 1-23-21 SHEET 2 OF 14 SHEETS |
| | | | | SURVEY | N/A | N/A | |
| | | | PROFILE SCALE | PROJ. MGR. | 01/21 | | |
| | | | HORIZONTAL: N/A | LEAD ENGR. | 01/21 | | |
| | | | VERTICAL: N/A | FIELD MGR. | 01/21 | | |
| | | | | RECOMMENDED | 01/21 | | |
| | | | | DESIGN MANAGER | 01/21 | | |
| | | | FILE: | DRAWING: | | | |
| | | | ATLAS PAGE NO. 1, 95, 238, 1273 | | | | |

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PRINT DATE: 12/16/2020

PRINT DATE: 12/16/2020 M:\City_of_Tulsa\17TUL03_On_Coill_Stormwater_Services_2017_TO_21_FEMA_Flood_Damage\Design\Working\117860\Damage_331391.dwg

| DI# 331391 - RIGGS PARK | | | | | |
|-------------------------|------|---------------------|-------------|------|----------|
| ITEM | | ITEM DESCRIPTION | NOTES | UNIT | QUANTITY |
| 202(D) | 0184 | UNCLASSIFIED BORROW | | CY | 2.00 |
| 202(F) | 0110 | EMBANKMENTS | E-3,4,5,R-1 | CY | 24.00 |
| 230(A) | 2806 | SOLID SLAB SODDING | E-10,11 | SY | 36.00 |

| DI# 331393 - NORBERG PARK | | | | | |
|---------------------------|------|-----------------------------|-----------|------|----------|
| ITEM | | ITEM DESCRIPTION | NOTES | UNIT | QUANTITY |
| 202(D) | 0184 | UNCLASSIFIED BORROW | | CY | 2.00 |
| 411 | 5900 | ASPHALT CONCRETE | S-5,6,7,8 | CY | 1.00 |
| 510(A) | 6333 | RETAINING WALL | | SY | 7.00 |
| 619(B) | 4728 | REMOVAL OF ASPHALT PAVEMENT | R-1,2,5,6 | CY | 1.00 |

| DI# 331425 - CHAPMAN GREEN PARK | | | | | |
|---------------------------------|--|---------------------------------------|-------|------|----------|
| ITEM | | ITEM DESCRIPTION | NOTES | UNIT | QUANTITY |
| SPECIAL | | ELECTRONIC CONTROLS FOR FOUNTAIN PUMP | | EA | 1.00 |

| DI# 331403 - ZINK PARK - SITE 1 | | | | | |
|---------------------------------|------|-------------------------------------|-----------|------|----------|
| ITEM | | ITEM DESCRIPTION | NOTES | UNIT | QUANTITY |
| 504(H) | 6389 | ELASTOMERIC MORTAR | G-1 | CY | 0.05 |
| 610(D) | 2679 | REMOVE & RELAY BRICK/STONE SIDEWALK | R-1,2,5,6 | CY | 6.00 |

| DI# 331403 - ZINK PARK - SITE 2 | | | | | |
|---------------------------------|------|--------------------------------------------------|-----------|------|----------|
| ITEM | | ITEM DESCRIPTION | NOTES | UNIT | QUANTITY |
| 504(H) | 6389 | ELASTOMERIC MORTAR | G-1 | CY | 0.04 |
| 610(D) | 2679 | REMOVE & RELAY BRICK/STONE SIDEWALK - LOCATION 1 | R-1,2,5,6 | CY | 3.00 |
| 610(D) | 2679 | REMOVE & RELAY BRICK/STONE SIDEWALK-LOCATION 2 | R-1,2,5,6 | CY | 2.00 |
| 610(D) | 2679 | REMOVE & RELAY BRICK/STONE SIDEWALK - LOCATION 3 | R-1,2,5,6 | CY | 4.00 |

| DI# 331403 - ZINK PARK - SITE 3 | | | | | |
|---------------------------------|------|-------------------------------------|-----------|------|----------|
| ITEM | | ITEM DESCRIPTION | NOTES | UNIT | QUANTITY |
| 202(A) | 0184 | UNCLASSIFIED BORROW | | CY | 38.00 |
| 202(F) | 0110 | EMBANKMENTS | | CY | 38.00 |
| 504(H) | 6389 | ELASTOMERIC MORTAR | G-1 | CY | 0.01 |
| 601(B) | 0536 | TYPE I-A PLAIN RIPRAP | | CY | 8.00 |
| 610(D) | 2679 | REMOVE & RELAY BRICK/STONE SIDEWALK | R-1,2,5,6 | CY | 1.00 |

| DI# 331403 - ZINK PARK - SITE 4 | | | | | |
|---------------------------------|------|-------------------------------------|-----------|------|----------|
| ITEM | | ITEM DESCRIPTION | NOTES | UNIT | QUANTITY |
| 504(H) | 6389 | ELASTOMERIC MORTAR | G-1 | CY | 0.01 |
| 610(D) | 2679 | REMOVE & RELAY BRICK/STONE SIDEWALK | R-1,2,5,6 | CY | 1.00 |

[Signature]
12/16/2020

| | | | |
|------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-------------------------|-------------------------------------|
| GENERAL CONSTRUCTION NOTES & PAY ITEMS | | | |
| PROJECT #173120-T021-117860 | | | |
| FEMA PROJECT NO. 117860 | | | |
| CITY OF TULSA, OKLAHOMA ENGINEERING SERVICES DEPARTMENT | | | |
| PLANS AND ESTIMATES PREPARED BY: Meshek & Associates, L.L.C. 1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620 | | | |
| REVISION | BY | DATE | APPROVED: |
| | | | <i>[Signature]</i> CITY ENGINEER |
| PLAN SCALE | DRAWN | KRP 05/20 | |
| | DESIGNED | RJP 05/20 | |
| | SURVEY | N/A N/A | |
| PROFILE SCALE | PROJ. MGR. | <i>[Signature]</i> 1/21 | |
| HORIZONTAL: | LEAD ENGR. | <i>[Signature]</i> 1/21 | |
| | FIELD MGR. | <i>[Signature]</i> 1/21 | |
| VERTICAL: | RECOMMENDED | <i>[Signature]</i> 1/21 | |
| | DESIGN MANAGER | | |
| FILE: | DRAWING: | | |
| ATLAS PAGE NO. 1, 95, 239, 1273 | | | DATE: 1-28-21 |
| | | | SHEET 3 OF 14 SHEETS |

STORM WATER MANAGEMENT PLAN

SITE DESCRIPTION

EROSION AND SEDIMENT CONTROLS

PROJECT LIMITS: RIGGS PARK

PROJECT DESCRIPTION: BANK STABILIZATION

SUGGESTED SEQUENCE OF EROSION CONTROL ACTIVITIES:

1. TEMPORARY EROSION CONTROL.
2. PERMANENT EROSION CONTROL.

SOIL TYPE: LOAM, CLAY LOAM, SANDY CLAY LOAM, FINE SANDY LOAM

TOTAL AREA OF THE CONSTRUCTION SITE: 0.01 ACRE

ESTIMATED AREA TO BE DISTURBED: 0.01

OFFSITE AREA TO BE DISTURBED: (FOR CONTRACTOR USE)

TOTAL IMPERVIOUS AREA PRE-CONSTRUCTION: 0.01 ACRES

TOTAL IMPERVIOUS AREA POST-CONSTRUCTION: 0.01 ACRES

POST-CONSTRUCTION RUNOFF COEFFICIENT OF THE SITE: X.X

LATITUDE & LONGITUDE OF CENTER OF PROJECT: N36° 01' 08.4", W95° 52' 28.2"

PROJECT WILL DISCHARGE TO:

NAME OF RECEIVING WATERS: UNNAMED TRIBUTARY

SENSITIVE WATERS OR WATERSHEDS: YES NO

303 IMPAIRED WATERS: YES NO

IF YES, LIST IMPAIRMENT: FISHES BIOASSESSMENTS

LOCATED IN A TMDL: YES NO

LAKE THUNDERBIRD TMDL: YES NO

MS4 ENTITY YES NO

IF YES, LOCATION: TULSA COUNTY

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

SOIL STABILIZATION PRACTICES:

- TEMPORARY SEEDING
- PERMANENT SODDING, SPRIGGING OR SEEDING
- VEGETATIVE MULCHING
- SOIL RETENTION BLANKET
- PRESERVATION OF EXISTING VEGETATION

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

STRUCTURAL PRACTICES:

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

OFFSITE VEHICLE TRACKING:

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

NOTES:

THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE FOLLOWING:

MAINTENANCE AND INSPECTION:

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

WASTE MATERIALS:

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

HAZARDOUS MATERIALS:

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

GENERAL NOTES:

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

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

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

IN ADDITION:

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

STORM WATER MANAGEMENT PLAN

PROJECT #173120-T021-117860

DAMAGE #331391

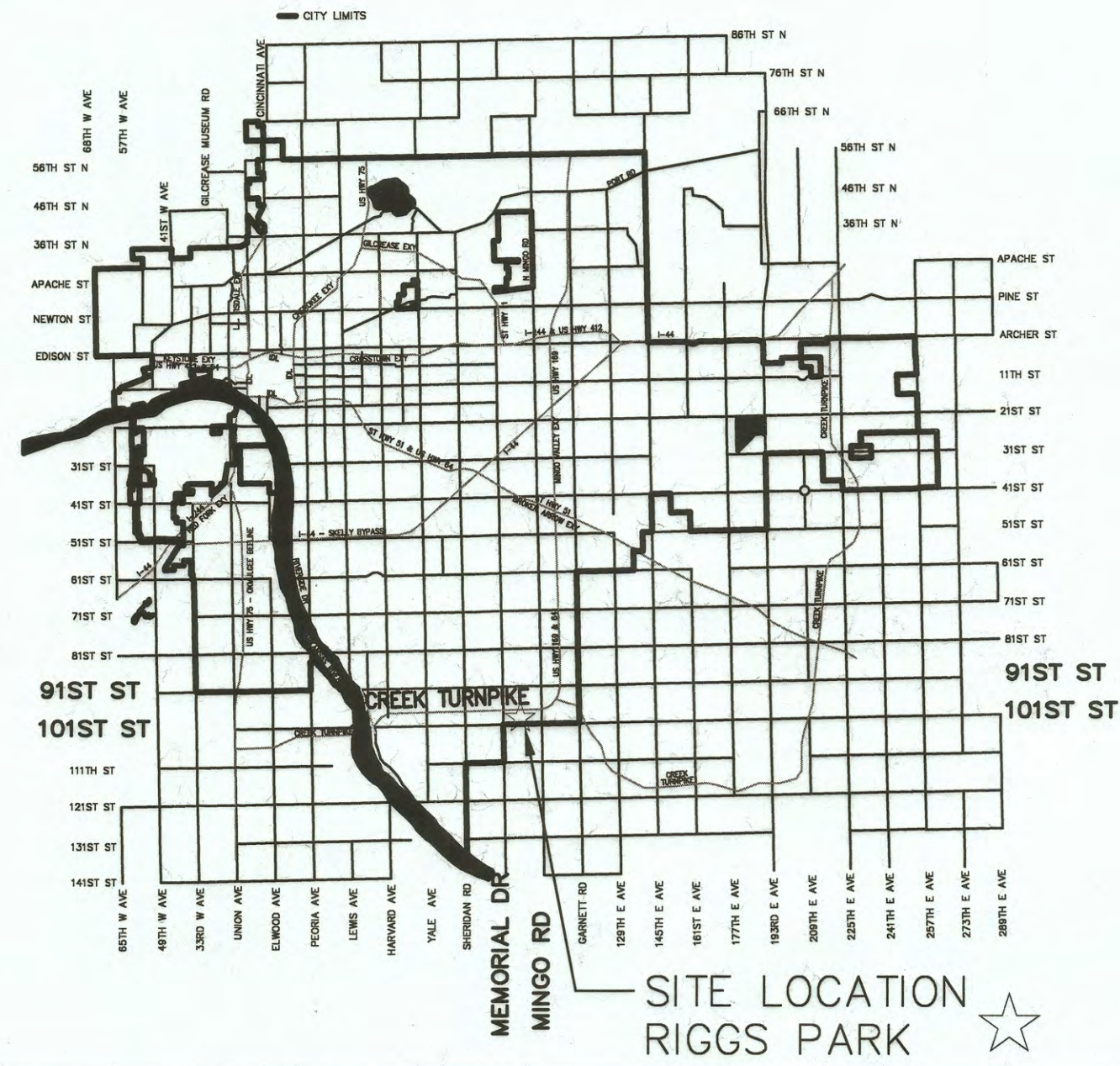
**CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT**

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

| REVISION | BY | DATE | PLAN SCALE | DRAWN | KRP | 05/20 | APPROVED: |
|----------|----|------|---------------------|----------------|------|-------|-------------------|
| | | | N/A | DESIGNED | RJP | 05/20 | CITY ENGINEER |
| | | | | SURVEY | N/A | N/A | |
| | | | HORIZONTAL SCALE | PROJ. MGR. | 1/16 | 1/21 | |
| | | | | LEAD ENGR. | 1/16 | 1/21 | |
| | | | VERTICAL: | FIELD MGR. | 1/16 | 1/21 | |
| | | | | RECOMMENDED: | 1/16 | 1/21 | |
| | | | FILE: | DESIGN MANAGER | | | |
| | | | ATLAS PAGE NO. 1273 | | | | DATE: 1-28-21 |

M:\City_of_Tulsa\17TUL03_On_Coil_Stormwater_Services_2017\TO_21_FEMA_Flood_Damage_Design_Working\117860\DRAWING_331391.dwg
PRINT DATE: 12/16/2020

CITY OF TULSA, OKLAHOMA



LOCATION MAP



RIGGS PARK - DAMAGE #331391 (36.01900, -95.87450)

CONSTRUCTION NOTES:

- * SIDEWALK BASE- 1.48 CY OF UNCLASSIFIED FILL, 20 FT LONG X 2 FT WIDE X 1 FT DEEP, HIGH VELOCITY SURFACE WATER FLOODING UNDERMINED SIDEWALK BASE MATERIAL.
- * SOD - 35.55 SY OF SOD TO REPLACE VEGETATION ON STEEP EMBANKMENT, 40 FT LONG X 8 FT WIDE, HIGH VELOCITY SURFACE WATER FLOODING ERODED VEGETATION FROM EMBANKMENT.
- * EMBANKMENT - 23.7 CY OF UNCLASSIFIED FILL, 40 FT LONG X 8 FT WIDE X 2 FT DEEP, HIGH VELOCITY SURFACE WATER FLOODING ERODED EMBANKMENT.

| DI# 331391 - RIGGS PARK | | | | | |
|-------------------------|------|---------------------|-------------|------|----------|
| ITEM | | ITEM DESCRIPTION | NOTES | UNIT | QUANTITY |
| 202(D) | 0184 | UNCLASSIFIED BORROW | | CY | 2.00 |
| 202(F) | 0110 | EMBANKMENTS | E-3,4,5,R-1 | CY | 24.00 |
| 230(A) | 2806 | SOLID SLAB SODDING | E-10,11 | SY | 36.00 |

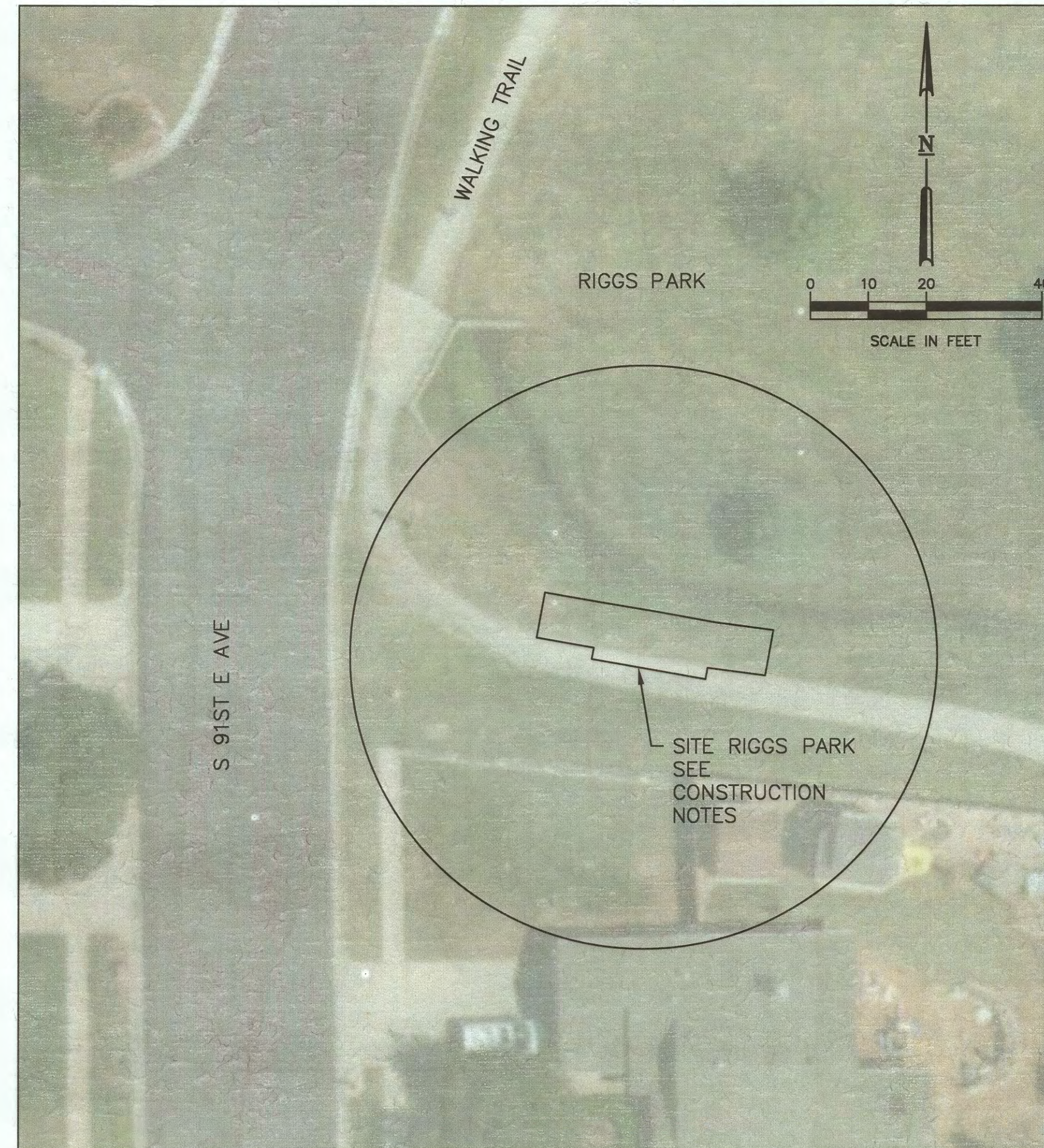
PROJECT NOTES:

1. ALL SITE ESTIMATES FOR WORK TO BE COMPLETED WERE GENERATED USING RS MEANS.
2. PROJECT CEF ESTIMATE WAS COMPLETED USING RS MEANS ESTIMATE COSTS.
3. ALL BORROW OR FILL MATERIAL MUST COME FROM PRE-EXISTING STOCKPILES, MATERIAL RECLAIMED FROM MAINTAINED ROADSIDE DITCHES (PROVIDED THE DESIGNED WIDTH OR DEPTH OF THE DITCH IS NOT INCREASED), OR COMMERCIALY PROCURED MATERIAL FROM A SOURCE EXISTING PRIOR TO THE EVENT. FOR ANY FEMA-FUNDED PROJECT REQUIRING THE USE OF A NON-COMMERCIAL SOURCE OR A COMMERCIAL SOURCE THAT WAS NOT PERMITTED TO OPERATE PRIOR TO THE EVENT (E.G. A NEW PIT, AGRICULTURAL FIELDS, ROAD ROWS, ETC.) IN WHOLE OR IN PART, REGARDLESS OF COST, THE APPLICANT MUST NOTIFY FEMA AND THE RECIPIENT PRIOR TO EXTRACTING MATERIAL. FEMA MUST REVIEW THE SOURCE FOR COMPLIANCE WITH ALL APPLICABLE FEDERAL ENVIRONMENTAL PLANNING AND HISTORIC PRESERVATION LAWS AND EXECUTIVE ORDERS PRIOR TO A SUBRECIPIENT OR THEIR CONTRACTOR COMMENCING BORROW EXTRACTION. CONSULTATION AND REGULATORY PERMITTING MAY BE REQUIRED. NONCOMPLIANCE WITH THIS REQUIREMENT MAY JEOPARDIZE RECEIPT OF FEDERAL FUNDING. DOCUMENTATION OF BORROW SOURCES UTILIZED IS REQUIRED AT CLOSEOUT.

SITE PHOTO



RIGGS PARK SITE



LEGEND
 FEMA SITE AREA



| | |
|------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| FEMA SITE RIGGS PARK | |
| PROJECT #173120-T021-117860 | |
| DAMAGE #331391 | |
| CITY OF TULSA, OKLAHOMA ENGINEERING SERVICES DEPARTMENT | |
| PLANS AND ESTIMATES PREPARED BY: Meshek & Associates, L.L.C. 1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620 | |
| PLAN SCALE | APPROVED: |
| 1" = ## | |
| DESIGNED: RJP 05/20 | CITY ENGINEER |
| SURVEY: N/A N/A | DATE: 1-08-21 |
| PROFILE SCALE | SHEET 5 OF 14 SHEETS |
| PROJ. MGR. JAG 1/21 | |
| LEAD ENGR. JAG 1/21 | |
| FIELD MGR. JAG 1/21 | |
| RECOMMENDED: HAS 1-21 | |
| DESIGN MANAGER | |
| FILE: DRAWING: | |
| ATLAS PAGE NO. 1273 | |

STORM WATER MANAGEMENT PLAN

SITE DESCRIPTION

EROSION AND SEDIMENT CONTROLS

PROJECT LIMITS: NORBERG PARK

PROJECT DESCRIPTION: REPLACING RETAINING WALL

SUGGESTED SEQUENCE OF EROSION CONTROL ACTIVITIES:

1. TEMPORARY EROSION CONTROL.
2. PERMANENT EROSION CONTROL.

SOIL TYPE: SILT LOAM, SILTY CLAY LOAM

TOTAL AREA OF THE CONSTRUCTION SITE: 0.029 ACRE

ESTIMATED AREA TO BE DISTURBED: 0.029

OFFSITE AREA TO BE DISTURBED: _____
(FOR CONTRACTOR USE)

TOTAL IMPERVIOUS AREA PRE-CONSTRUCTION: 0.01 ACRES

TOTAL IMPERVIOUS AREA POST-CONSTRUCTION: 0.01 ACRES

POST-CONSTRUCTION RUNOFF COEFFICIENT OF THE SITE: X.X

LATITUDE & LONGITUDE OF CENTER OF PROJECT: N36° 06' 57.7", W95° 50' 58.2"

PROJECT WILL DISCHARGE TO:

NAME OF RECEIVING WATERS: UNNAMED TRIBUTARY

SENSITIVE WATERS OR WATERSHEDS: YES NO

303 IMPAIRED WATERS: YES NO

IF YES, LIST IMPAIRMENT: _____

LOCATED IN A TMDL: YES NO

LAKE THUNDERBIRD TMDL: YES NO

MS4 ENTITY YES NO

IF YES, LOCATION: TULSA COUNTY

NOTE:

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

SOIL STABILIZATION PRACTICES:

- TEMPORARY SEEDING
- PERMANENT SODDING, SPRIGGING OR SEEDING
- VEGETATIVE MULCHING
- SOIL RETENTION BLANKET
- PRESERVATION OF EXISTING VEGETATION

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

STRUCTURAL PRACTICES:

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

OFFSITE VEHICLE TRACKING:

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

NOTES:

THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE FOLLOWING:

MAINTENANCE AND INSPECTION:

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

WASTE MATERIALS:

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

HAZARDOUS MATERIALS:

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

GENERAL NOTES:

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

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

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

IN ADDITION:

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

STORM WATER MANAGEMENT PLAN

PROJECT #173120-T021-117860

DAMAGE #331393

**CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT**

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

| REVISION | BY | DATE | PLAN SCALE | DRAWN | KRP | 05/20 | APPROVED: |
|----------|----|------|--------------------|----------------|------|-------|-----------|
| | | | N/A | DESIGNED | RJP | 05/20 | |
| | | | | SURVEY | N/A | N/A | |
| | | | PROFILE SCALE | PROJ. MGR. | 1/6 | 1/21 | |
| | | | HORIZONTAL: | LEAD ENGR. | 1/21 | 1/21 | |
| | | | N/A | FIELD MGR. | 1/21 | 1/21 | |
| | | | VERTICAL: | RECOMMENDED | 1/21 | 1/21 | |
| | | | N/A | DESIGN MANAGER | 1/21 | 1/21 | |
| | | | FILE: | DRAWING: | | | |
| | | | ATLAS PAGE NO. 238 | | | | |

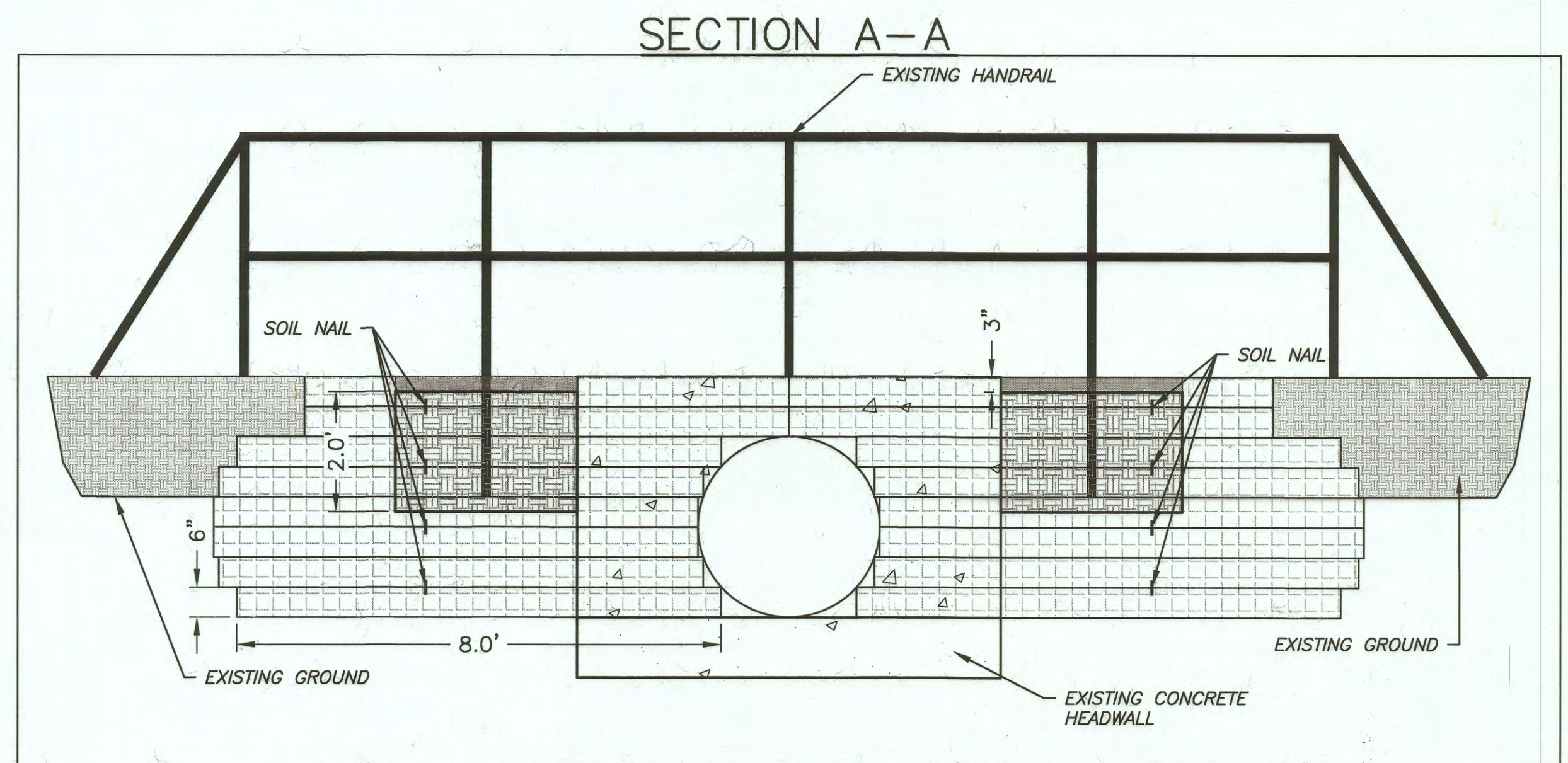
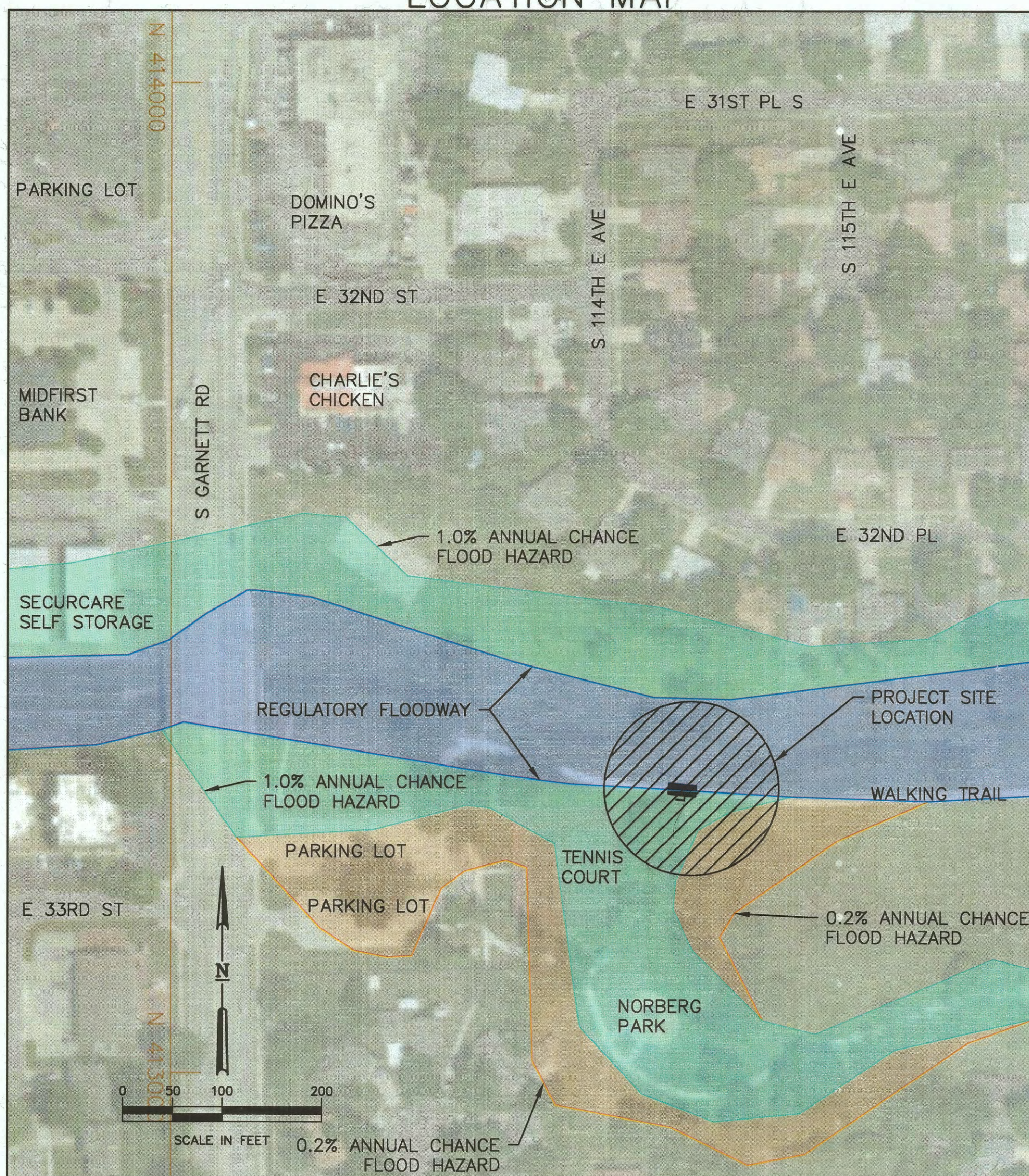
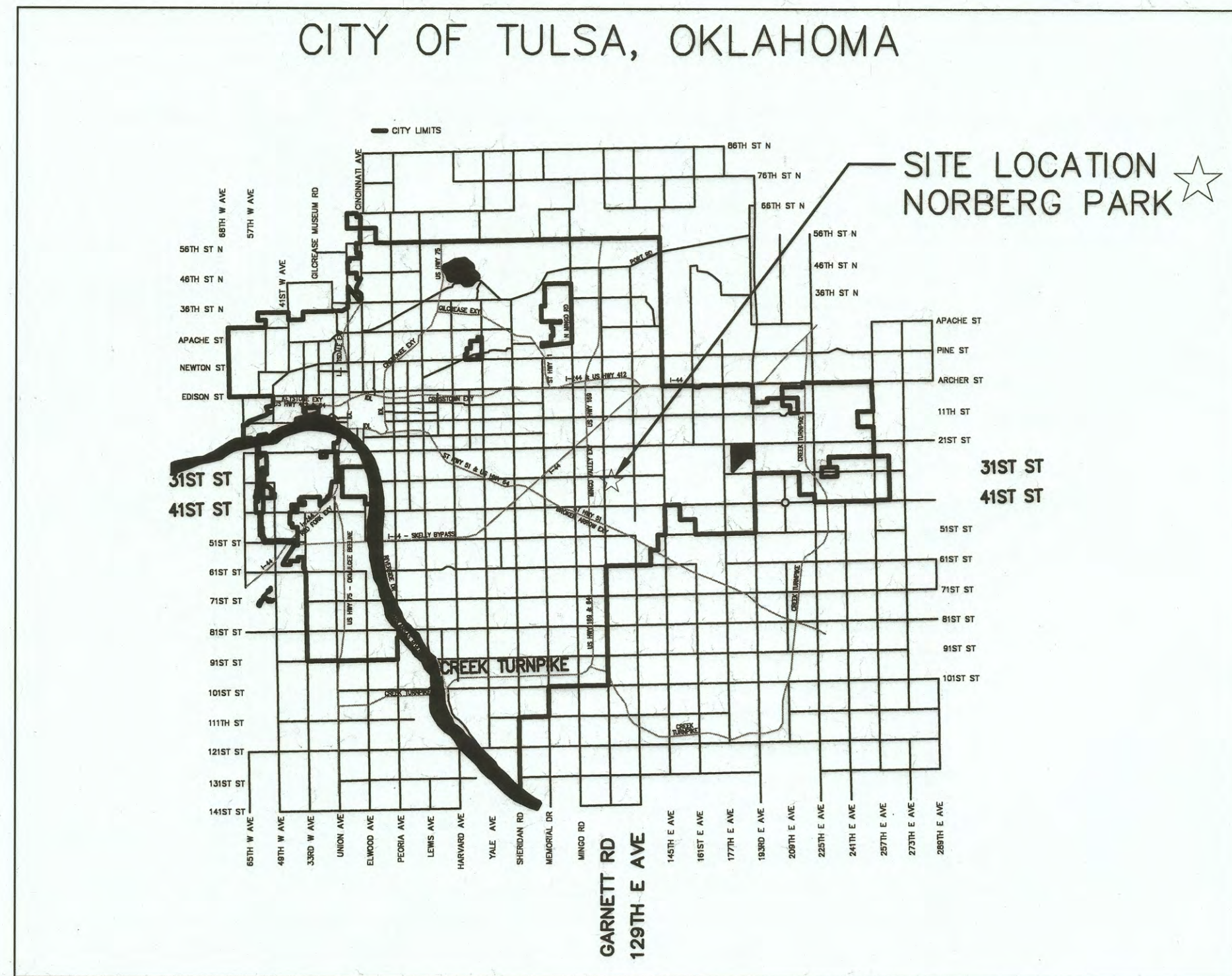


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PRINT DATE: 12/16/2020



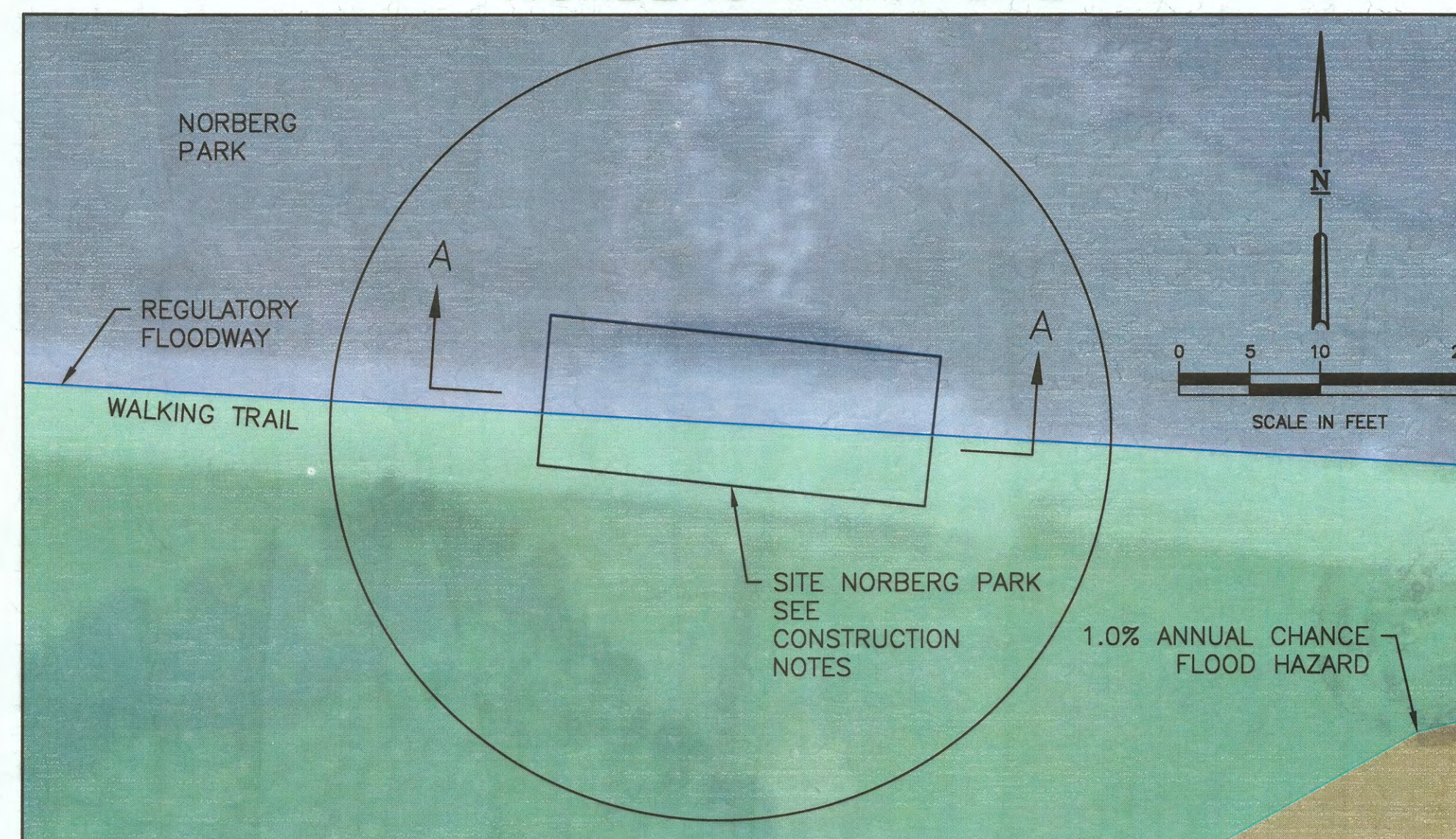
- NORBERG - DAMAGE #331393 (36.11603, -95.84951)**
- * WALKWAY BASE - 1.33 CY OF UNCLASSIFIED FILL, 6 FT LONG X 3 FT WIDE X 2 FT DEEP, HIGH VELOCITY SURFACE WATER FLOODING ERODED BRIDGE/CULVERT SURFACE MATERIAL, BASE MATERIAL AND DAMAGED RAILROAD TIE WALL.
 - * ASPHALT SURFACE MATERIAL - 0.16 CY OF ASPHALT SURFACE MATERIAL, 6 FT LONG X 3 FT WIDE X 3 IN DEEP, HIGH VELOCITY SURFACE WATER FLOODING ERODED BRIDGE/CULVERT SURFACE MATERIAL, BASE MATERIAL AND DAMAGED RAILROAD TIE WALL.
 - * RETAINING WALL - 8 EACH OF RAILROAD TIES, 8 FT LONG X 8 IN WIDE X 6 IN HIGH, HIGH VELOCITY SURFACE WATER FLOODING ERODED BRIDGE/CULVERT SURFACE MATERIAL, BASE MATERIAL AND RETAINING WALL.

| DI# 331393 - NORBERG PARK | | | | | |
|---------------------------|------|-----------------------------|-----------|------|----------|
| ITEM | | ITEM DESCRIPTION | NOTES | UNIT | QUANTITY |
| 202(D) | 0184 | UNCLASSIFIED BORROW | | CY | 2.00 |
| 411 | 5900 | ASPHALT CONCRETE | S-5,6,7,8 | CY | 1.00 |
| 510(A) | 6333 | RETAINING WALL | | SY | 7.00 |
| 619(B) | 4728 | REMOVAL OF ASPHALT PAVEMENT | R-1,2,5,6 | CY | 1.00 |



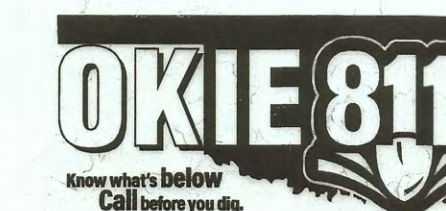
[Signature]
12/16/2020

NORBERG PARK SITE



LEGEND

- WALKWAY BASE
- EX. HEADWALL
- RAILROAD TIE RETAINING WALL
- ASPHALT SURFACE PATCH
- EX. HANDRAIL
- FEMA SITE AREA



**FEMA SITE
NORBERG PARK**

PROJECT #173120-T021-117860

DAMAGE #331393

**CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT**

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

| REVISION | BY | DATE | PLAN SCALE | DRAWN | KRP | 05/20 | APPROVED: |
|----------|----|------|--------------------|----------------|-----|-------|------------------------------------------------------------|
| | | | 1" = #' | DESIGNED | RJP | 05/20 | CITY ENGINEER DATE: 1-08-21 SHEET 7 OF 14 SHEETS |
| | | | | SURVEY | N/A | N/A | |
| | | | PROFILE SCALE | PROJ. MGR. | CAJ | 1/11 | |
| | | | HORIZONTAL: | LEAD ENGR. | WAS | 1/21 | |
| | | | N/A | FIELD MGR. | WAS | 1/21 | |
| | | | VERTICAL: | RECOMMENDED | WAS | 1/21 | |
| | | | N/A | DESIGN MANAGER | | | |
| | | | FILE: | DRAWING: | | | |
| | | | ATLAS PAGE NO. 238 | | | | |

STORM WATER MANAGEMENT PLAN

SITE DESCRIPTION

EROSION AND SEDIMENT CONTROLS

PROJECT LIMITS: ZINK PARK

PROJECT DESCRIPTION: STONE WALKWAY REPLACEMENT

SUGGESTED SEQUENCE OF EROSION CONTROL ACTIVITIES:

1. TEMPORARY EROSION CONTROL.
2. PERMANENT EROSION CONTROL.

SOIL TYPE: LOAMY FINE SAND, SANDY CLAY LOAM, CLAY LOAM, FINE SANDY LOAM, VARIABLE

TOTAL AREA OF THE CONSTRUCTION SITE: 0.2 ACRE

ESTIMATED AREA TO BE DISTURBED: 0.2

OFFSITE AREA TO BE DISTURBED: (FOR CONTRACTOR USE)

TOTAL IMPERVIOUS AREA PRE-CONSTRUCTION: 0.2 ACRES

TOTAL IMPERVIOUS AREA POST-CONSTRUCTION: 0.2 ACRES

POST-CONSTRUCTION RUNOFF COEFFICIENT OF THE SITE: X.X

LATITUDE & LONGITUDE OF CENTER OF PROJECT: N36° 07' 03.4", W95° 58' 14.6"

PROJECT WILL DISCHARGE TO:

NAME OF RECEIVING WATERS: CROW CREEK

SENSITIVE WATERS OR WATERSHEDS: YES NO

303 IMPAIRED WATERS: YES NO

IF YES, LIST IMPAIRMENT: E. COLI, FISHES BIOASSESSMENTS, MACROINVERTEBRATE BIO

LOCATED IN A TMDL: YES NO

LAKE THUNDERBIRD TMDL: YES NO

MS4 ENTITY: YES NO

IF YES, LOCATION: TULSA COUNTY

NOTE:

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

SOIL STABILIZATION PRACTICES:

- TEMPORARY SEEDING
- PERMANENT SODDING, SPRIGGING OR SEEDING
- VEGETATIVE MULCHING
- SOIL RETENTION BLANKET
- PRESERVATION OF EXISTING VEGETATION

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

STRUCTURAL PRACTICES:

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

OFFSITE VEHICLE TRACKING:

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

NOTES:

THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE FOLLOWING:

MAINTENANCE AND INSPECTION:

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

WASTE MATERIALS:

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

HAZARDOUS MATERIALS:

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

GENERAL NOTES:

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

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

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

IN ADDITION:

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

STORM WATER MANAGEMENT PLAN

PROJECT #173120-T021-117860

DAMAGE #331403

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

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



| REVISION | BY | DATE | PLAN SCALE | DRAWN | KRP | 05/20 | APPROVED: |
|----------|----|------|----------------|----------------|-----|-------|----------------------|
| | | | N/A | DESIGNED | RJP | 05/20 | |
| | | | | SURVEY | N/A | N/A | |
| | | | PROFILE SCALE | PROJ. MGR. | LAB | 1/11 | |
| | | | HORIZONTAL: | LEAD ENGR. | Bob | 1/21 | |
| | | | VERTICAL: | FIELD MGR. | Bob | 1/21 | |
| | | | N/A | RECOMMENDED | LAB | 1-21 | |
| | | | FILE: | DESIGN MANAGER | | | CITY ENGINEER |
| | | | ATLAS PAGE NO. | DRAWING: | | | DATE: 1-20-21 |
| | | | 95 | | | | SHEET 8 OF 14 SHEETS |

PRINT DATE: 12/16/2020 M:\City_of_Tulsa\17TUL03_On_Coll_Stormwater_Services_2017\TO_21_FEMA_Flood_Damage_Design\Working\117860\DRAWING_331391.dwg

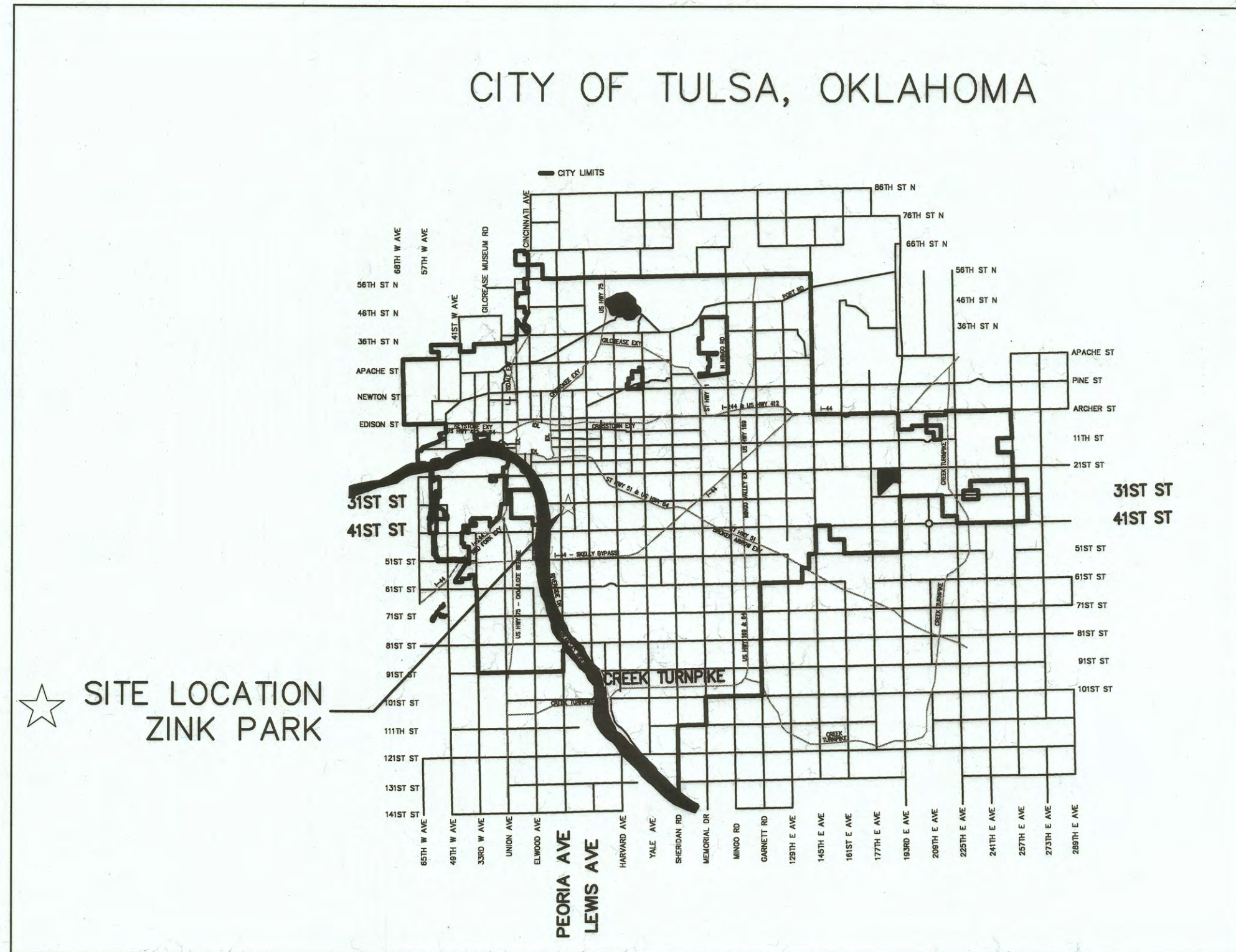


ZINK PARK - DAMAGE #331403 (36.11760, -95.97071)
SITE 1

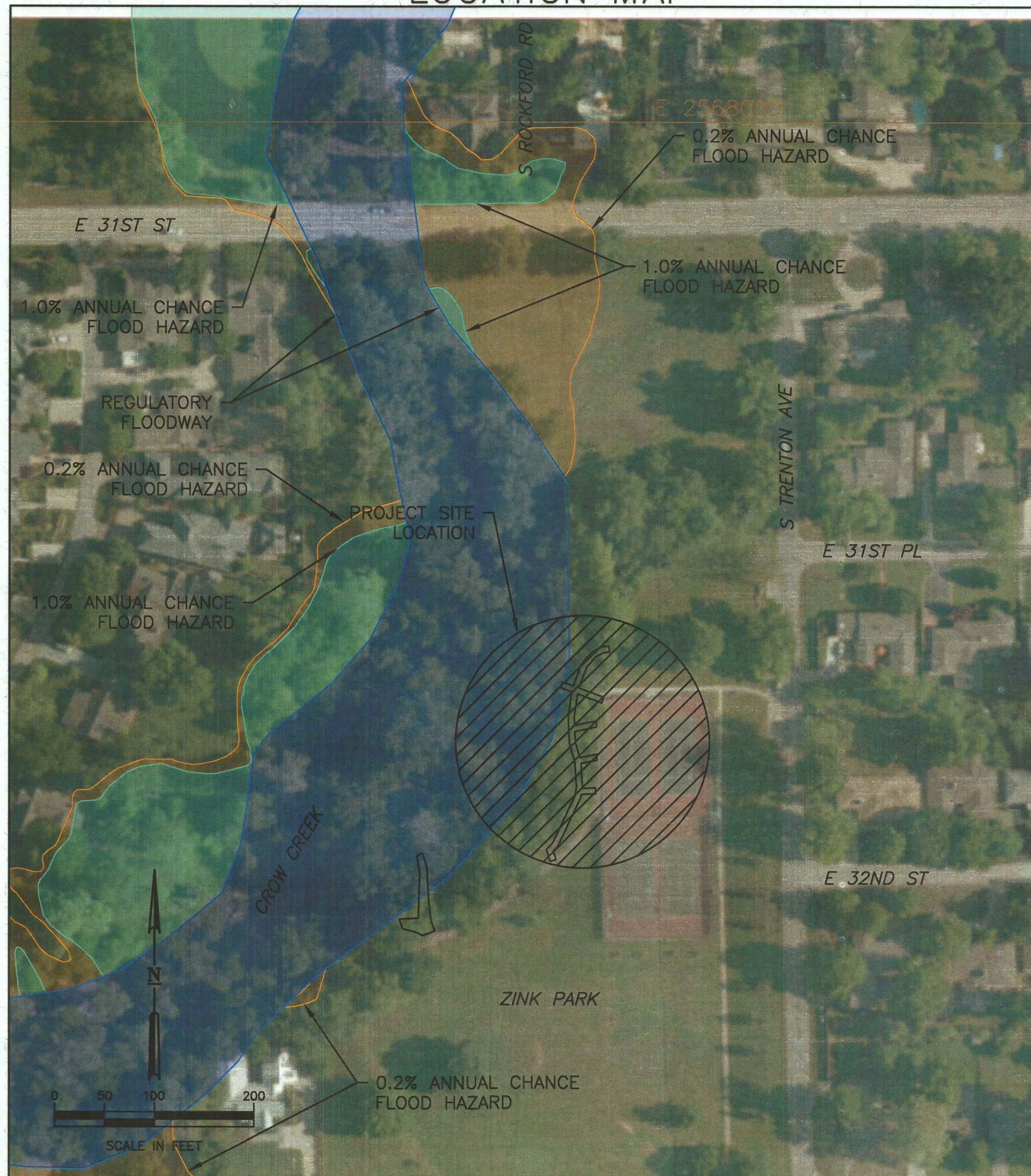
CONSTRUCTION NOTES:

- * STONE WALKWAY BASE - 5.77 CY OF CRUSHED STONE BASE MATERIAL FOR STONE WALKWAY, 52 FT LONG X 6 FT WIDE X 6 IN DEEP, HIGH VELOCITY SURFACE WATER FLOODING DISPLACED STONE WALKWAYS AND BASE MATERIAL.
- * MORTAR - 0.05 CY OF MORTAR BETWEEN STONES, 26 FT LONG X 2 IN WIDE X 4 IN DEEP, HIGH VELOCITY SURFACE WATER FLOODING DISPLACED STONE WALKWAYS AND BASE MATERIALS.

| DI# 331403 - ZINK PARK - SITE 1 | | | | | |
|---------------------------------|------|-------------------------------------|-----------|------|----------|
| ITEM | | ITEM DESCRIPTION | NOTES | UNIT | QUANTITY |
| 504(H) | 6389 | ELASTOMERIC MORTAR | G-1 | CY | 0.05 |
| 610(D) | 2679 | REMOVE & RELAY BRICK/STONE SIDEWALK | R-1,2,5,6 | CY | 6.00 |



LOCATION MAP



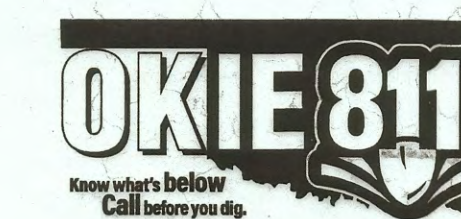
ZINK PARK - SITE 1



Handwritten signature and date: 12/16/2020

LEGEND

FEMA SITE AREA



FEMA SITE
ZINK PARK - SITE 1
PROJECT #173120-T021-117860
DAMAGE #331403

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

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

| REVISION | BY | DATE | PLAN SCALE | DRAWN | KRP | 05/20 | APPROVED: |
|-------------------|----|------|---------------|----------------|-----|-------|----------------------|
| | | | 1" = ##' | DESIGNED | RJP | 05/20 | |
| | | | | SURVEY | N/A | N/A | |
| | | | PROFILE SCALE | PROJ. MGR. | LSA | 1/21 | |
| | | | HORIZONTAL: | LEAD ENGR. | DLG | 1/21 | |
| | | | VERTICAL: | FIELD MGR. | DLG | 1/21 | CITY ENGINEER |
| | | | | RECOMMENDED | DLG | 1/21 | |
| | | | FILE: | DESIGN MANAGER | | | DATE: 1/20/21 |
| ATLAS PAGE NO. 95 | | | | | | | SHEET 9 OF 14 SHEETS |

ZINK PARK - DAMAGE #331403 (36.11760, -95.97071)

SITE 2. LOCATION 1

* BASE - 2.22 CY OF CRUSHED STONE BASE MATERIAL FOR STONE WALKWAY, 10 FT LONG X 12 FT WIDE X 6 IN DEEP, HIGH VELOCITY SURFACE WATER FLOODING DISPLACED STONE WALKWAYS AND BASE MATERIALS.

SITE 2. LOCATION 2

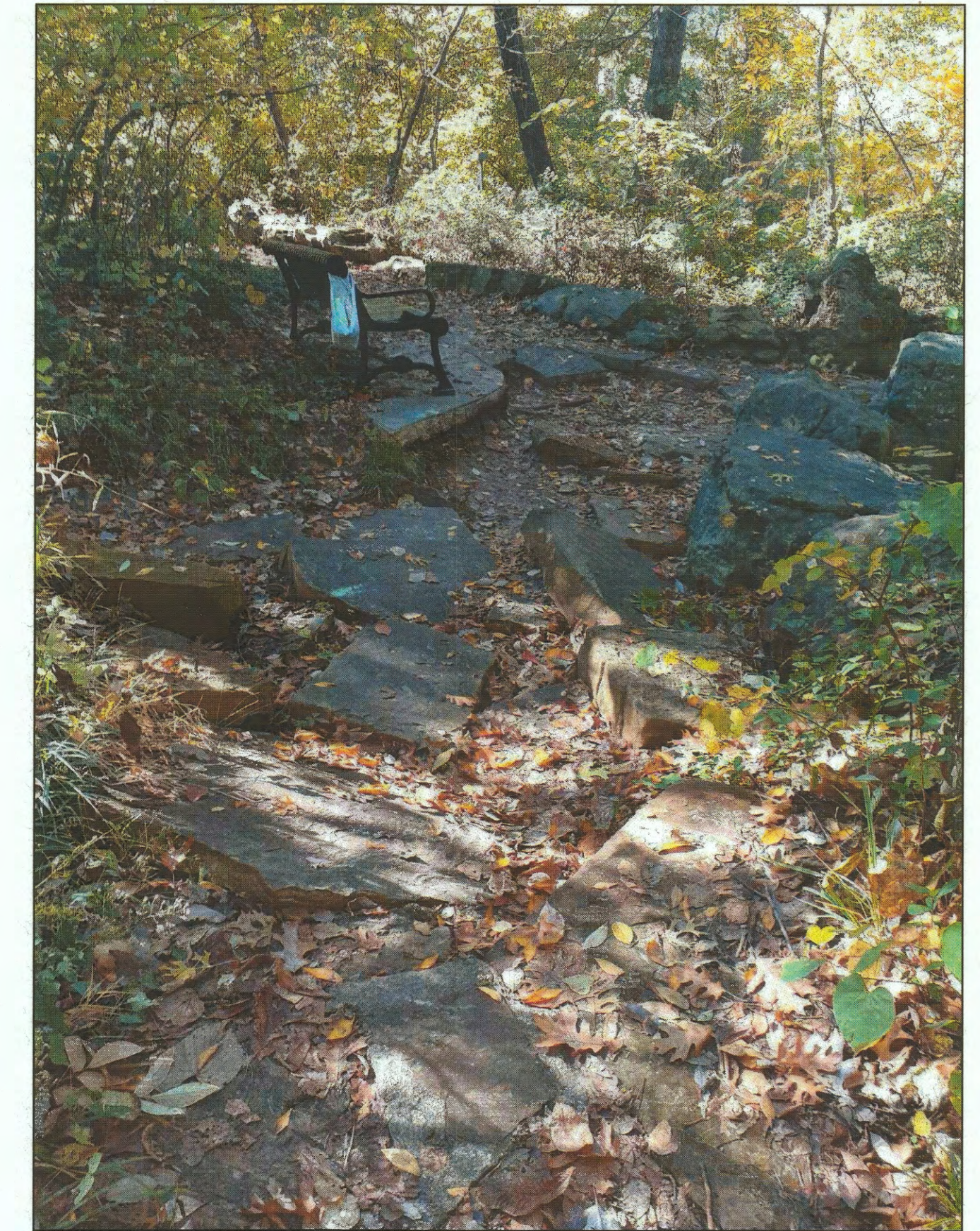
* BASE MATERIAL - 1.85 CY OF CRUSHED STONE BASE MATERIAL FOR STONE WALKWAY, 10 FT LONG X 10 FT WIDE X 6 IN DEEP, HIGH VELOCITY SURFACE WATER FLOODING DISPLACED STONE WALKWAYS AND BASE MATERIALS.

SITE 2. LOCATION 3

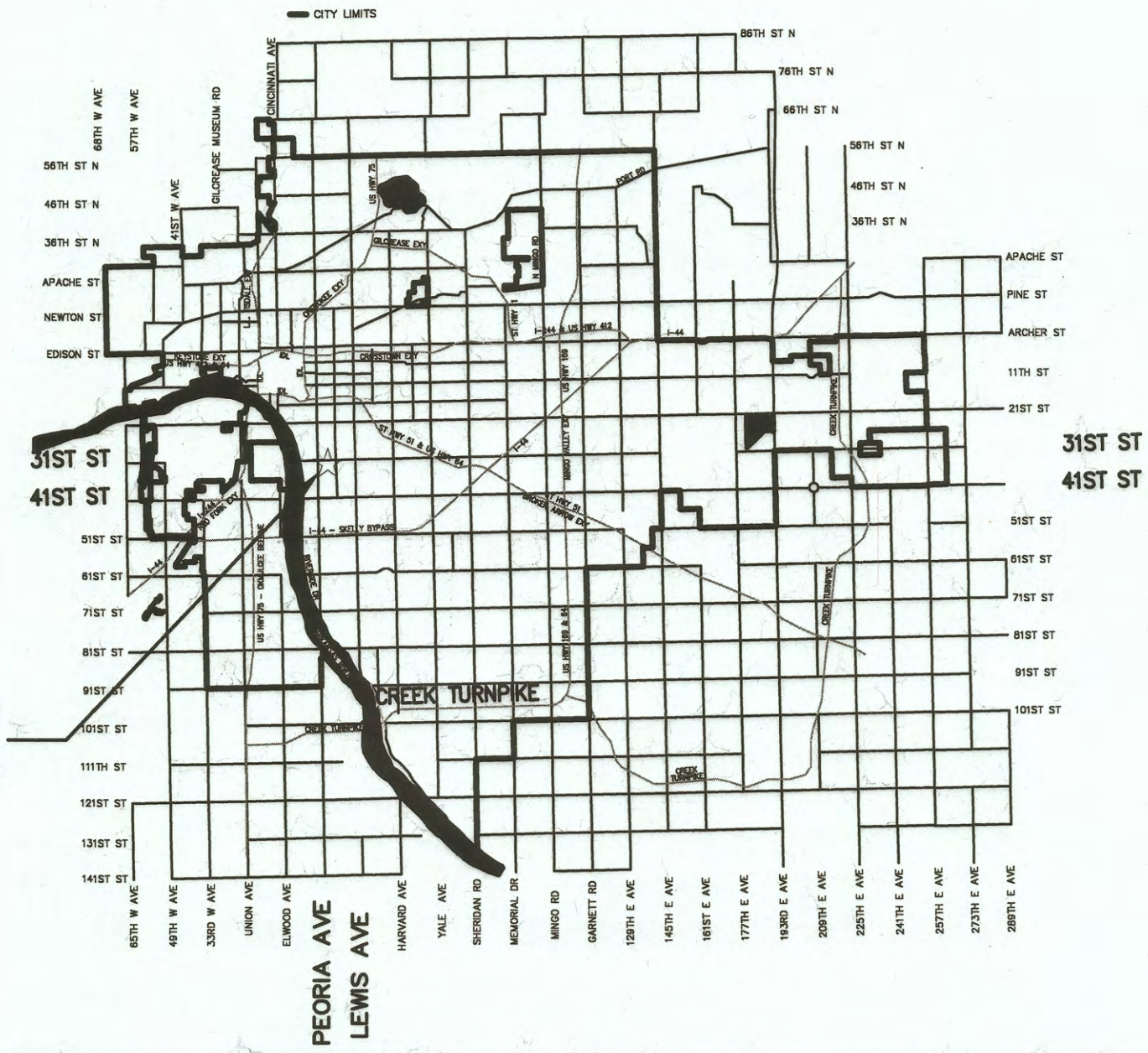
* BASE MATERIAL - 3.7 CY OF CRUSHED STONE BASE MATERIAL FOR STONE WALKWAY, 10 FT LONG X 20 FT WIDE X 6 IN DEEP, HIGH VELOCITY SURFACE WATER FLOODING DISPLACED STONE WALKWAYS AND BASE MATERIALS.

SITE 2. LOCATION 1,2,3

* MORTAR - 0.04 CY OF MORTAR BETWEEN STONES, 15 FT LONG X 2 IN WIDE X 4 IN DEEP, HIGH VELOCITY SURFACE WATER FLOODING DISPLACED STONE WALKWAYS AND BASE MATERIALS.

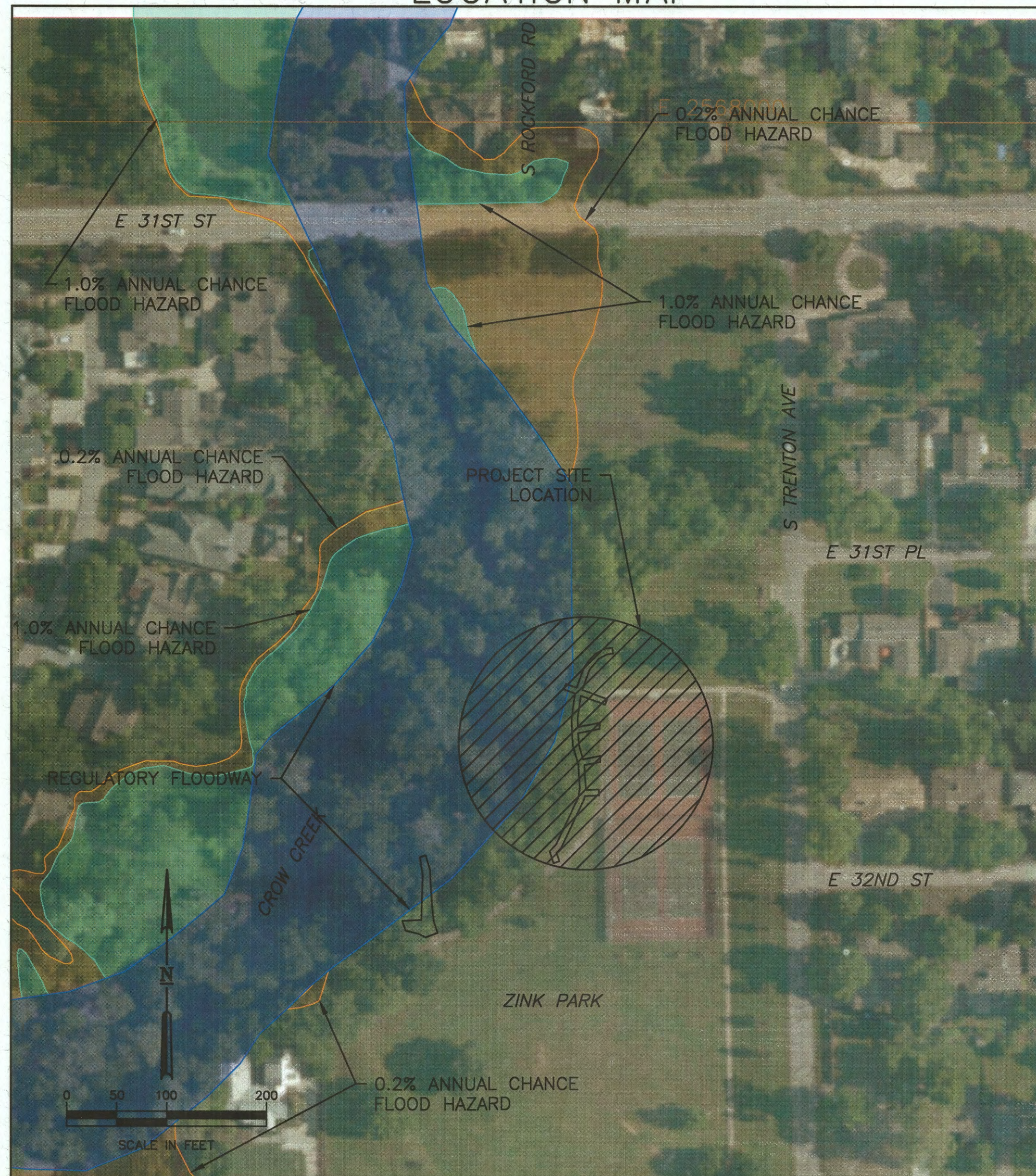


CITY OF TULSA, OKLAHOMA



☆ SITE LOCATION
ZINK PARK

LOCATION MAP



ZINK PARK - SITE 2

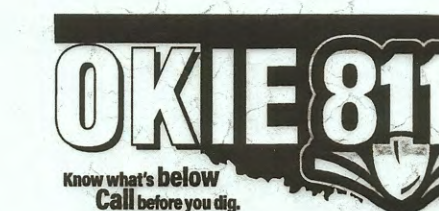


| DI# 331403 - ZINK PARK - SITE 2 | | | | | |
|---------------------------------|------|--------------------------------------------------|-----------|------|----------|
| ITEM | | ITEM DESCRIPTION | NOTES | UNIT | QUANTITY |
| 504(H) | 6389 | ELASTOMERIC MORTAR | G-1 | CY | 0.04 |
| 610(D) | 2679 | REMOVE & RELAY BRICK/STONE SIDEWALK - LOCATION 1 | R-1,2,5,6 | CY | 3.00 |
| 610(D) | 2679 | REMOVE & RELAY BRICK/STONE SIDEWALK-LOCATION 2 | R-1,2,5,6 | CY | 2.00 |
| 610(D) | 2679 | REMOVE & RELAY BRICK/STONE SIDEWALK - LOCATION 3 | R-1,2,5,6 | CY | 4.00 |

LEGEND

FEMA SITE AREA

[Signature]
12/16/2020



**FEMA SITE
ZINK PARK - SITE 2**
PROJECT #173120-T021-117860
DAMAGE #331403
CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT
PLANS AND ESTIMATES PREPARED BY:
Meshek & Associates, L.L.C.
1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620

| REVISION | BY | DATE | PLAN SCALE | DRAWN | KRP | 05/20 | APPROVED: |
|----------|----|------|-------------------|----------------|-----|-------|-------------------------------------|
| | | | 1" = 10' | DESIGNED | RJP | 05/20 | <i>[Signature]</i> CITY ENGINEER |
| | | | | SURVEY | N/A | N/A | |
| | | | PROFILE SCALE | PROJ. MGR. | LJA | 1/21 | DATE: 1.08.21 |
| | | | HORIZONTAL: N/A | LEAD ENGR. | RJA | 1/21 | |
| | | | VERTICAL: N/A | FIELD MGR. | RJA | 1/21 | |
| | | | | RECOMMENDED | RJA | 1/21 | |
| | | | | DESIGN MANAGER | RJA | 1/21 | |
| | | | FILE: | DESIGNER: | | | |
| | | | ATLAS PAGE NO. 95 | | | | |

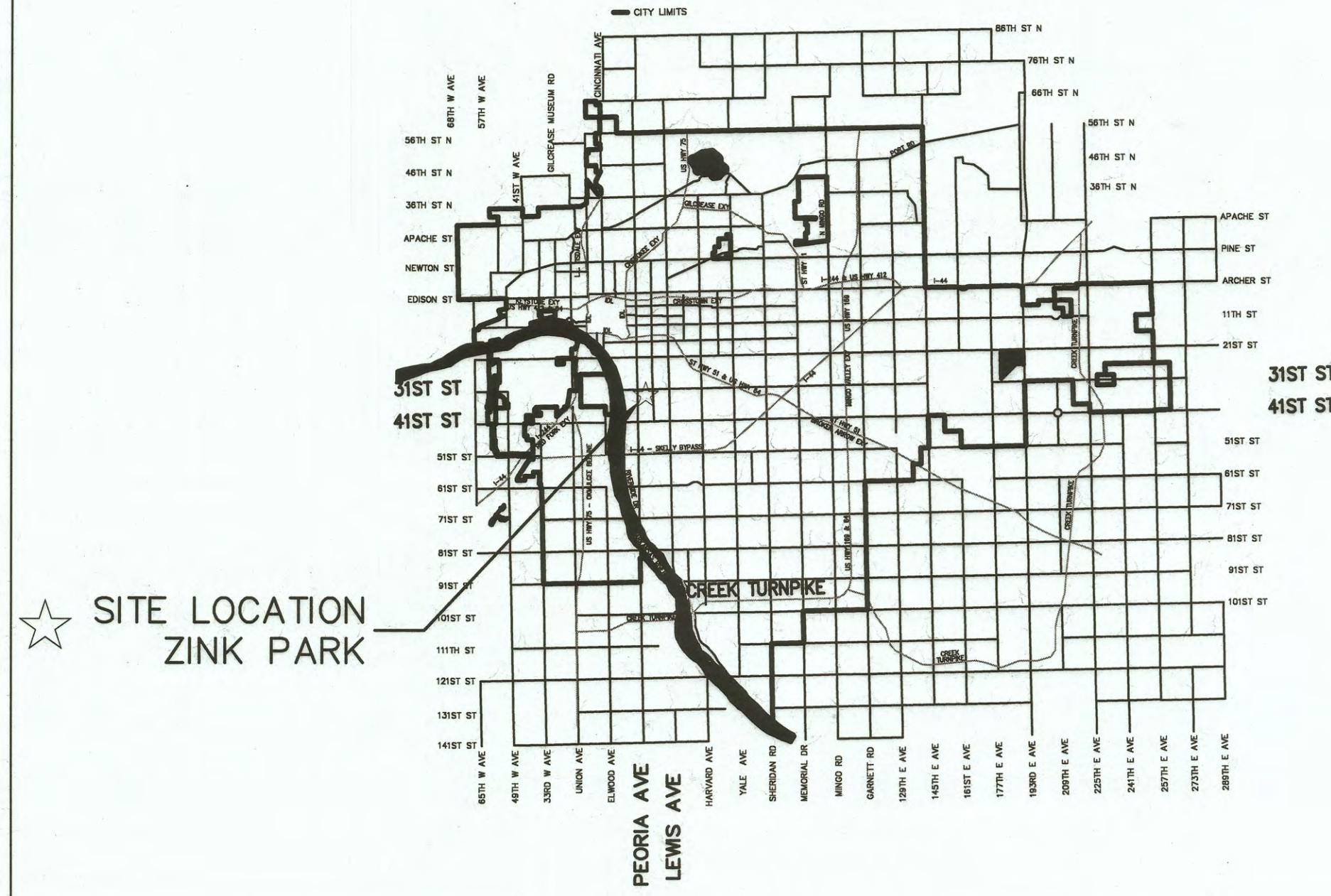


ZINK PARK - DAMAGE #331403 (36.11760, -95.97071) SITE 3

- * BASE MATERIAL - 0.14 CY OF CRUSHED STONE BASE MATERIAL FOR STONE WALKWAY, 4 FT LONG X 2 FT WIDE X 6 IN DEEP, HIGH VELOCITY SURFACE WATER FLOODING DISPLACED STONE WALKWAYS AND BASE MATERIALS.
- * MORTAR - 0.0062 CY OF MORTAR BETWEEN STONES, 3 FT LONG X 2 IN WIDE X 4 IN DEEP, HIGH VELOCITY SURFACE WATER FLOODING DISPLACED STONE WALKWAYS AND BASE MATERIALS.
- * EMBANKMENT - 37.03 CY OF UNCLASSIFIED FILL EMBANKMENT, 10 FT LONG X 10 FT WIDE X 10 FT DEEP, HIGH VELOCITY SURFACE WATER FLOODING CAUSED A LARGE WASHOUT AREA.

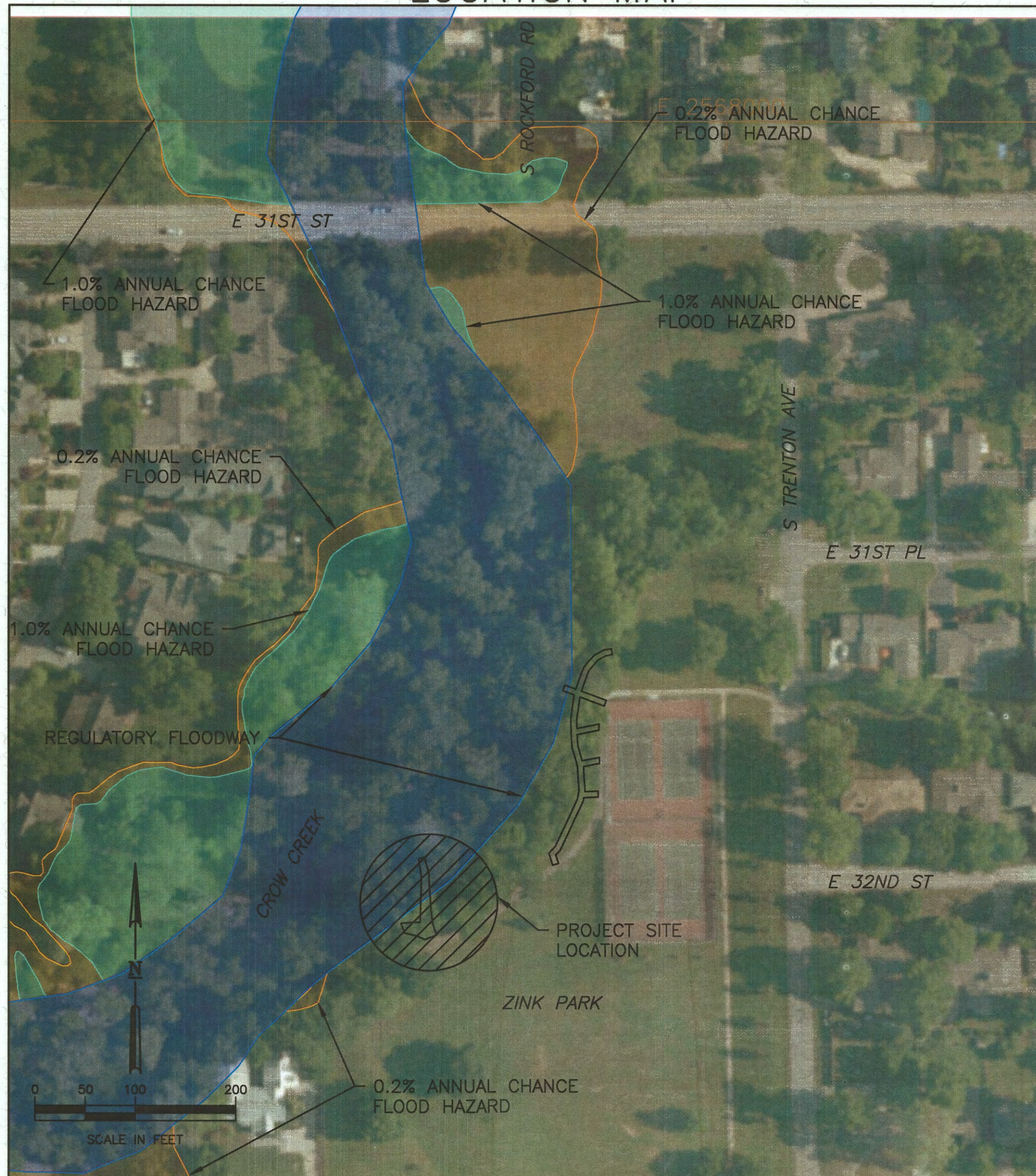
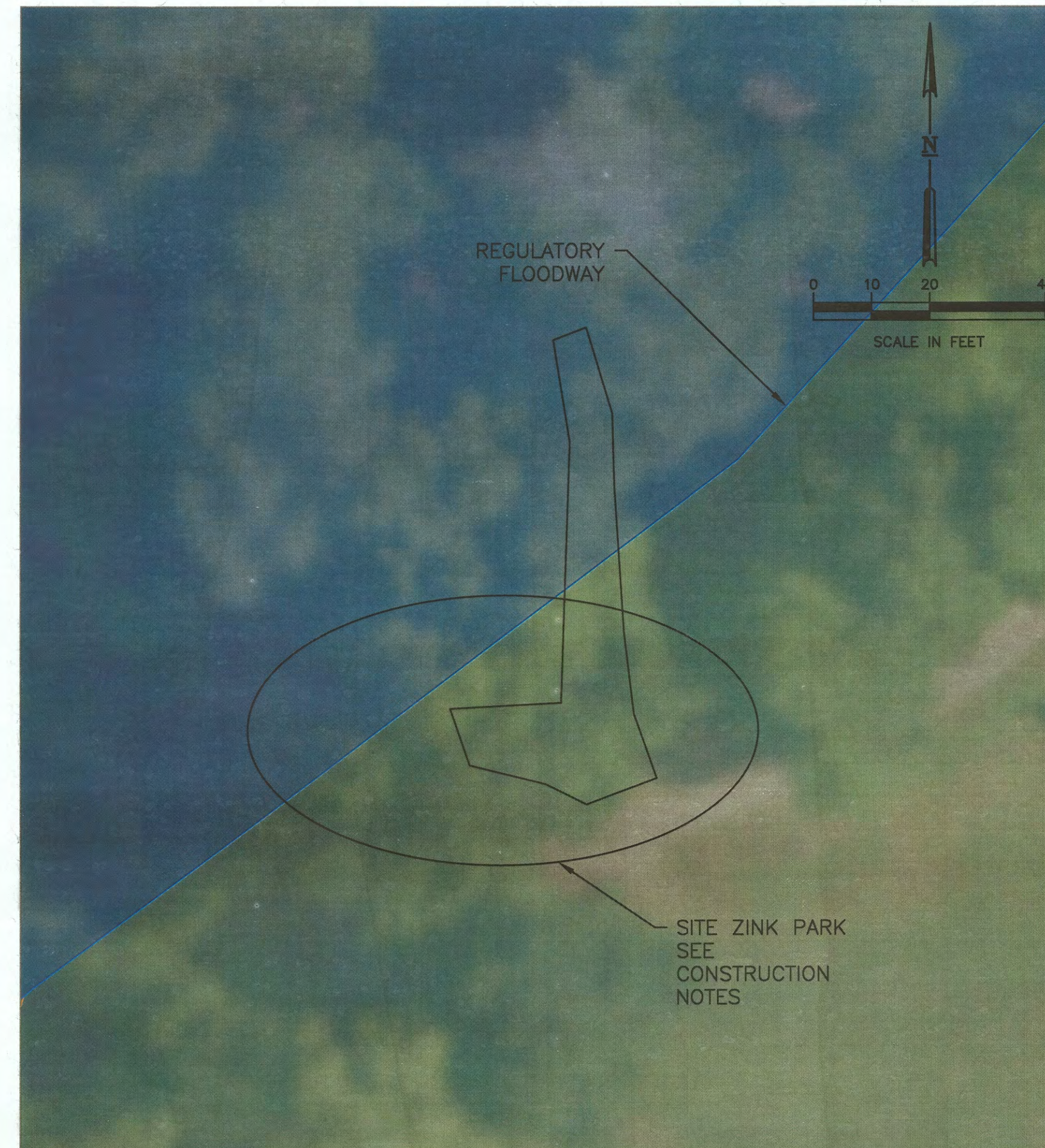
| DI# 331403 - ZINK PARK - SITE 3 | | | | |
|---------------------------------|------------------------------------------|-----------|------|----------|
| ITEM | ITEM DESCRIPTION | NOTES | UNIT | QUANTITY |
| 202(A) | 0184 UNCLASSIFIED BORROW | | CY | 38.00 |
| 202(F) | 0110 EMBANKMENTS | | CY | 38.00 |
| 504(H) | 6389 ELASTOMERIC MORTAR | G-1 | CY | 0.01 |
| 601(B) | 0536 TYPE I-A PLAIN RIPRAP | | CY | 8.00 |
| 610(D) | 2679 REMOVE & RELAY BRICK/STONE SIDEWALK | R-1,2,5,6 | CY | 1.00 |

CITY OF TULSA, OKLAHOMA



LOCATION MAP

ZINK PARK - SITE 3



18" TYPE I PLAIN RIPRAP

24" MIN.

COMPACTED BACKFILL

EXISTING GROUND/ FINISH GRADE

1 RIPRAP INSTALLATION

HAZARD MITIGATION NOTE DETAIL

LEGEND

FEMA SITE AREA

| REVISION | BY | DATE |
|----------|----|------|
| | | |
| | | |
| | | |
| | | |
| | | |

| | | | | |
|---------------|----------------|------|-------|-----------------------|
| PLAN SCALE | DRAWN | KRP | 05/20 | APPROVED: |
| 1" = ##' | DESIGNED | RJP | 05/20 | |
| | SURVEY | N/A | N/A | |
| PROFILE SCALE | PROJ. MGR. | 1/16 | 1/1/1 | CITY ENGINEER |
| HORIZONTAL: | LEAD ENGR. | 2/20 | 1/1/1 | |
| N/A | FIELD MGR. | 2/20 | 1/1/1 | DATE: 1.00.21 |
| VERTICAL: | RECOMMENDED | 4/16 | 1.21 | |
| N/A | DESIGN MANAGER | | | SHEET 11 OF 14 SHEETS |
| FILE: | DRAWING: | | | |

FEMA SITE

ZINK PARK - SITE 3

PROJECT #173120-T021-117860

DAMAGE #331403

CITY OF TULSA, OKLAHOMA

ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:

Meshek & Associates, L.L.C.

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

ATLAS PAGE NO. 95

PRINT DATE: 12/16/2020 M:\City of Tulsa\173120.03 On-Call Stormwater Services 2017\TO_21_FEMA_Flood_Damage_Design\Working\117860_DAMAGE_331391.dwg

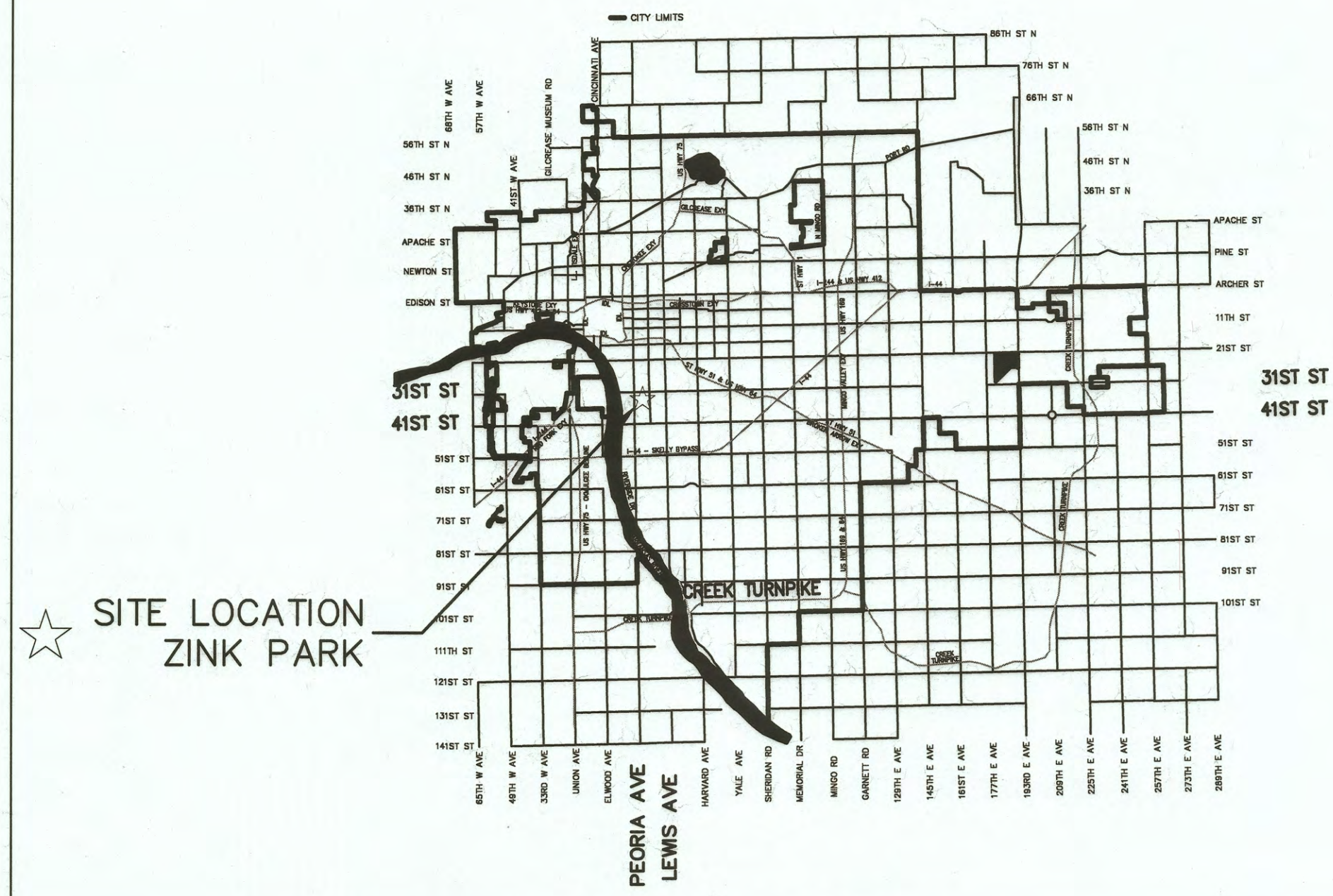


**ZINK PARK - DAMAGE #331403 (36.11760, -95.97071)
SITE 4**

- * BASE MATERIAL - 0.22 CY OF CRUSHED STONE BASE MATERIAL FOR STONE WALKWAY, 6 FT LONG X 2 FT WIDE X 6 IN DEEP, HIGH VELOCITY SURFACE WATER FLOODING DISPLACED STONE WALKWAYS AND BASE MATERIALS.
- * MORTAR - 0.01 CY OF MORTAR BETWEEN STONES, 5 FT LONG X 2 IN WIDE X 4 IN DEEP, HIGH VELOCITY SURFACE WATER FLOODING DISPLACED STONE WALKWAYS AND BASE MATERIALS.

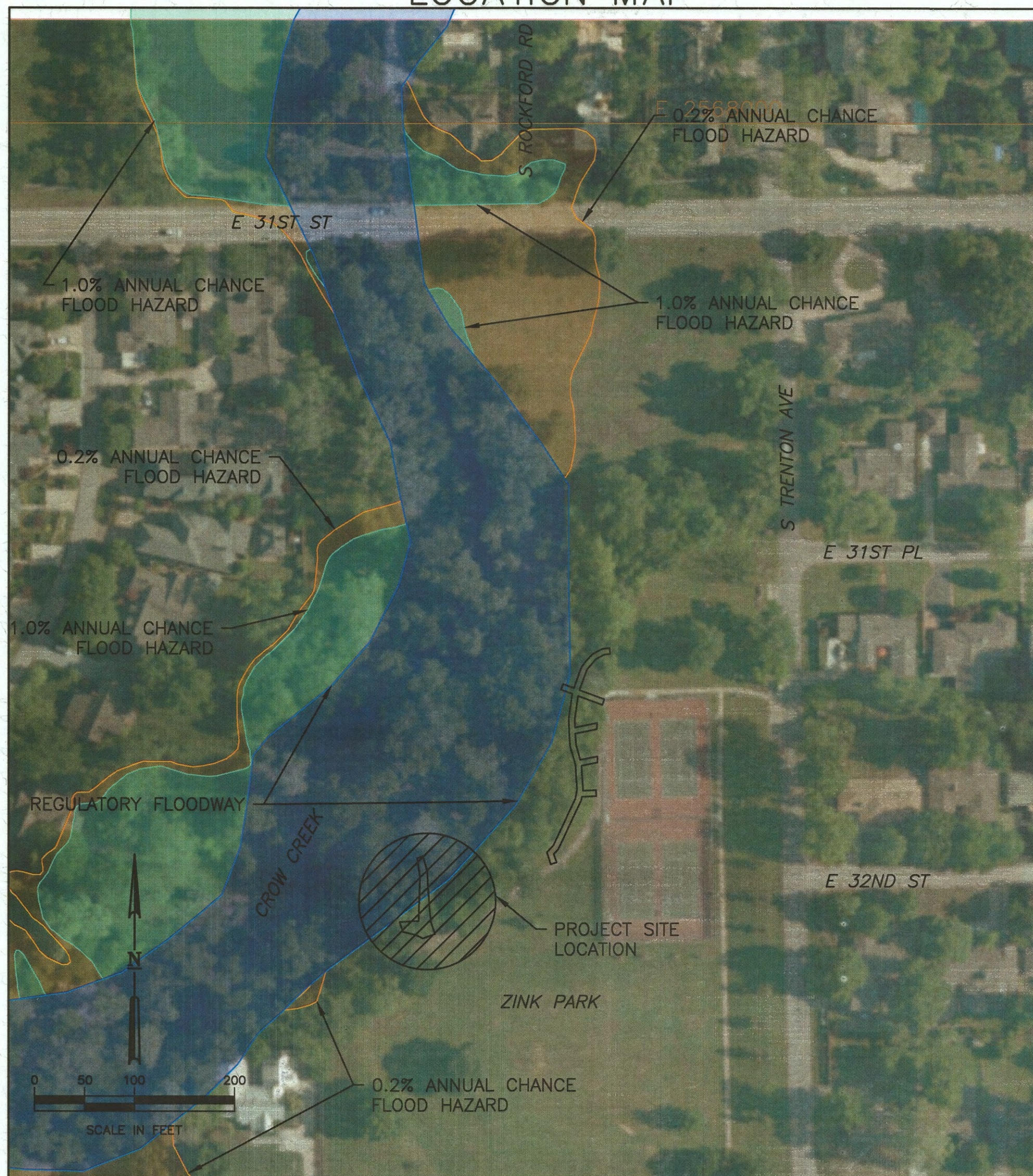
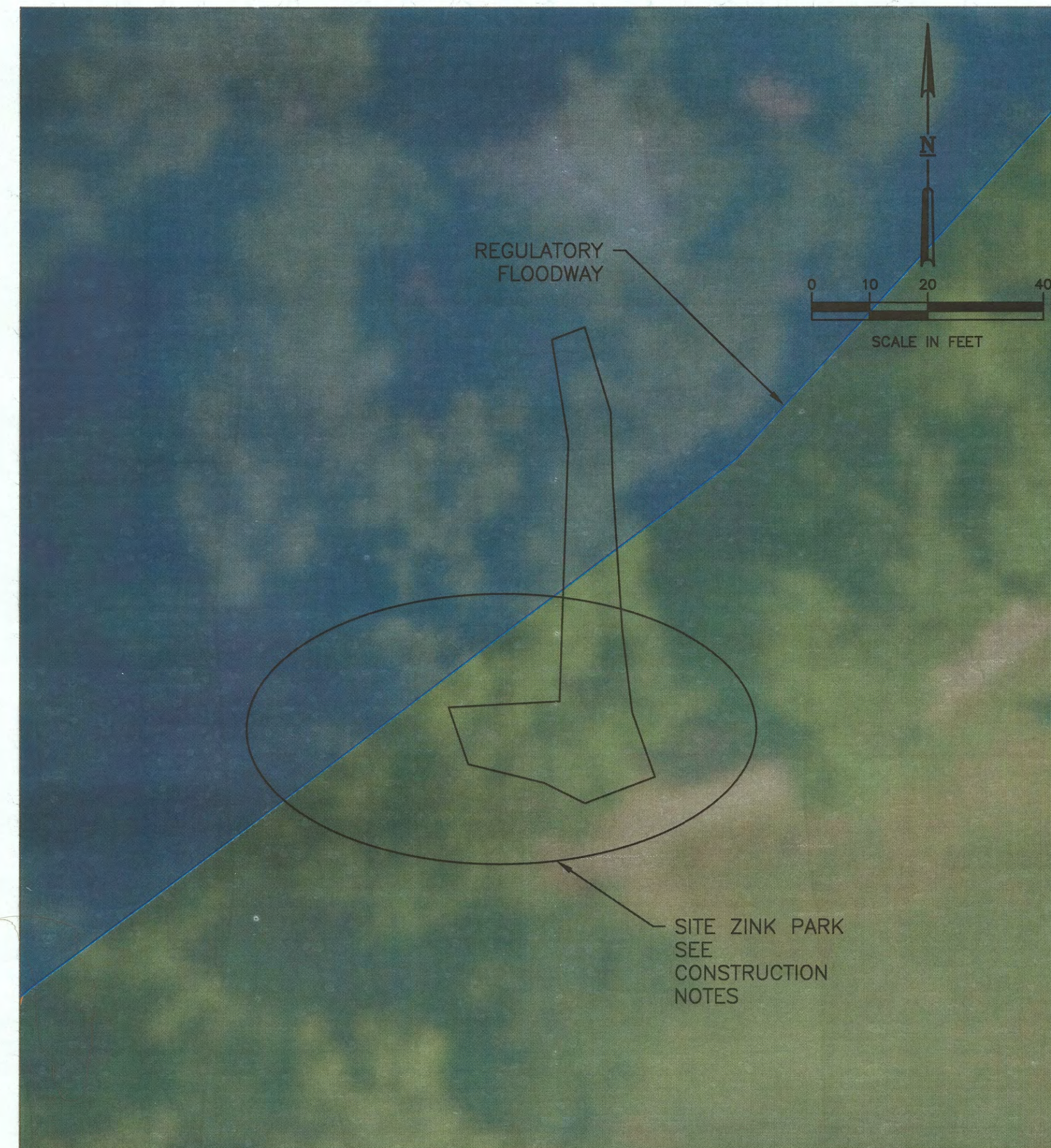
| DI# 331403 - ZINK PARK - SITE 4 | | | | | |
|---------------------------------|------|-------------------------------------|-----------|------|----------|
| ITEM | | ITEM DESCRIPTION | NOTES | UNIT | QUANTITY |
| 504(H) | 6389 | ELASTOMERIC MORTAR | G-1 | CY | 0.01 |
| 610(D) | 2679 | REMOVE & RELAY BRICK/STONE SIDEWALK | R-1,2,5,6 | CY | 1.00 |

CITY OF TULSA, OKLAHOMA



LOCATION MAP

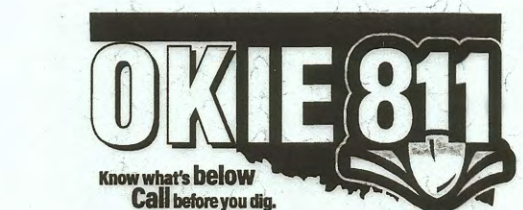
ZINK PARK - SITE 4



12/16/2020

LEGEND

FEMA SITE AREA



| FEMA SITE ZINK PARK - SITE 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|------|-------|-----------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-------|-----|-------|-----------|---------|----------|-----|-------|--|--|--------|-----|-----|---------------|------------|-----|-------|--|-------------|------------|-----|-------|-----|------------|--|--|--|-----------|-------------|-----|------|-----|----------------|--|--|---------------|-------|----------|--|--|---------------|-------------------|--|--|--|-----------------------|
| PROJECT #173120-T021-117860 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DAMAGE #331403 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CITY OF TULSA, OKLAHOMA ENGINEERING SERVICES DEPARTMENT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PLANS AND ESTIMATES PREPARED BY: Meshek & Associates, L.L.C. 1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th>REVISION</th> <th>BY</th> <th>DATE</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table> | REVISION | BY | DATE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | <table border="1"> <thead> <tr> <th>PLAN SCALE</th> <th>DRAWN</th> <th>KRP</th> <th>05/20</th> <th>APPROVED:</th> </tr> </thead> <tbody> <tr> <td>1" = ##</td> <td>DESIGNED</td> <td>RJP</td> <td>05/20</td> <td rowspan="2"></td> </tr> <tr> <td></td> <td>SURVEY</td> <td>N/A</td> <td>N/A</td> </tr> <tr> <td>PROFILE SCALE</td> <td>PROJ. MGR.</td> <td>LAG</td> <td>11/21</td> <td rowspan="2"></td> </tr> <tr> <td>HORIZONTAL:</td> <td>LEAD ENGR.</td> <td>BDE</td> <td>11/21</td> </tr> <tr> <td>N/A</td> <td>FIELD MGR.</td> <td> </td> <td> </td> <td rowspan="2"></td> </tr> <tr> <td>VERTICAL:</td> <td>RECOMMENDED</td> <td>HAS</td> <td>1-21</td> </tr> <tr> <td>N/A</td> <td>DESIGN MANAGER</td> <td> </td> <td> </td> <td>CITY ENGINEER</td> </tr> <tr> <td>FILE:</td> <td>DRAWING:</td> <td> </td> <td> </td> <td>DATE: 1-21-21</td> </tr> <tr> <td>ATLAS PAGE NO. 95</td> <td> </td> <td> </td> <td> </td> <td>SHEET 12 OF 14 SHEETS</td> </tr> </tbody> </table> | PLAN SCALE | DRAWN | KRP | 05/20 | APPROVED: | 1" = ## | DESIGNED | RJP | 05/20 | | | SURVEY | N/A | N/A | PROFILE SCALE | PROJ. MGR. | LAG | 11/21 | | HORIZONTAL: | LEAD ENGR. | BDE | 11/21 | N/A | FIELD MGR. | | | | VERTICAL: | RECOMMENDED | HAS | 1-21 | N/A | DESIGN MANAGER | | | CITY ENGINEER | FILE: | DRAWING: | | | DATE: 1-21-21 | ATLAS PAGE NO. 95 | | | | SHEET 12 OF 14 SHEETS |
| REVISION | BY | DATE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| PLAN SCALE | DRAWN | KRP | 05/20 | APPROVED: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1" = ## | DESIGNED | RJP | 05/20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | SURVEY | N/A | N/A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PROFILE SCALE | PROJ. MGR. | LAG | 11/21 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| HORIZONTAL: | LEAD ENGR. | BDE | 11/21 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| N/A | FIELD MGR. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| VERTICAL: | RECOMMENDED | HAS | 1-21 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| N/A | DESIGN MANAGER | | | CITY ENGINEER | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FILE: | DRAWING: | | | DATE: 1-21-21 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ATLAS PAGE NO. 95 | | | | SHEET 12 OF 14 SHEETS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

STORM WATER MANAGEMENT PLAN

SITE DESCRIPTION

EROSION AND SEDIMENT CONTROLS

PROJECT LIMITS: CHAPMAN GREEN PARK

PROJECT DESCRIPTION: ELECTRONIC PUMP CONTROL REPLACEMENT

SUGGESTED SEQUENCE OF EROSION CONTROL ACTIVITIES:

1. TEMPORARY EROSION CONTROL.
2. PERMANENT EROSION CONTROL.

SOIL TYPE: VARIABLE

TOTAL AREA OF THE CONSTRUCTION SITE: 0.007 ACRE

ESTIMATED AREA TO BE DISTURBED: 0.007

OFFSITE AREA TO BE DISTURBED:
(FOR CONTRACTOR USE)

TOTAL IMPERVIOUS AREA
PRE-CONSTRUCTION: 0.007 ACRES

TOTAL IMPERVIOUS AREA
POST-CONSTRUCTION: 0.007 ACRES

POST-CONSTRUCTION RUNOFF
COEFFICIENT OF THE SITE: X.X

LATITUDE & LONGITUDE
OF CENTER OF PROJECT: N36° 09' 02.3", W95° 59' 18.7"

PROJECT WILL DISCHARGE TO:

NAME OF RECEIVING WATERS: N/A

SENSITIVE WATERS OR WATERSHEDS: YES NO

303 IMPAIRED WATERS: YES NO

IF YES, LIST IMPAIRMENT:

LOCATED IN A TMDL: YES NO

LAKE THUNDERBIRD TMDL: YES NO

MS4 ENTITY YES NO

IF YES, LOCATION: TULSA COUNTY

NOTE:

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

SOIL STABILIZATION PRACTICES:

- TEMPORARY SEEDING
- PERMANENT SODDING, SPRIGGING OR SEEDING
- VEGETATIVE MULCHING
- SOIL RETENTION BLANKET
- PRESERVATION OF EXISTING VEGETATION

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

STRUCTURAL PRACTICES:

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

OFFSITE VEHICLE TRACKING:

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

NOTES:

THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE FOLLOWING:

MAINTENANCE AND INSPECTION:

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

WASTE MATERIALS:

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

HAZARDOUS MATERIALS:

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

GENERAL NOTES:

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

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

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

IN ADDITION:

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



STORM WATER MANAGEMENT PLAN

PROJECT #173120-T021-117860

DAMAGE #331425

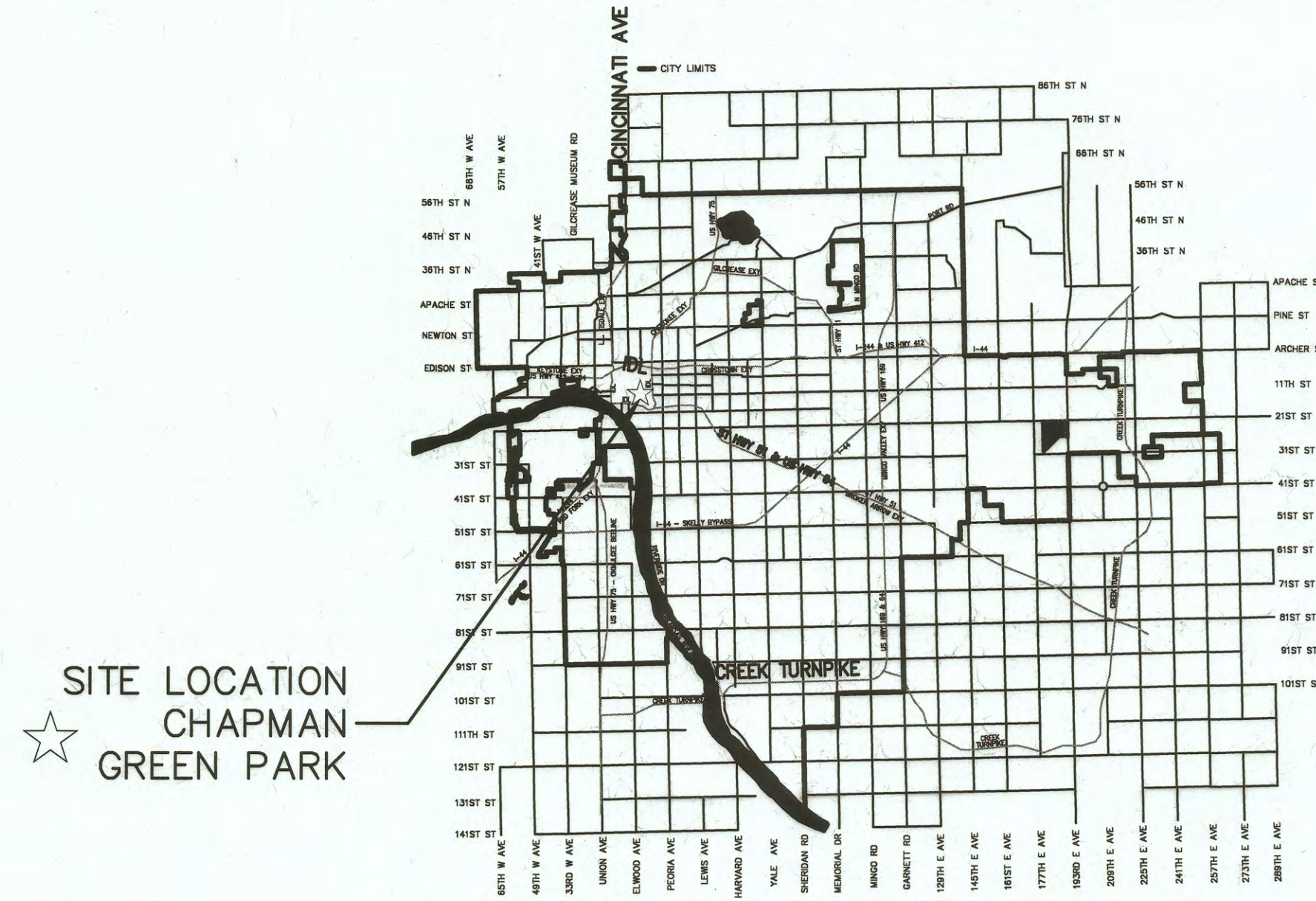
**CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT**

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

| REVISION | BY | DATE | PLAN SCALE | DRAWN | KRP | 05/20 | APPROVED: |
|----------|----|------|------------------|----------------|-----|-------|-----------------------|
| | | | N/A | DESIGNED | RJP | 05/20 | |
| | | | N/A | SURVEY | N/A | N/A | |
| | | | PROFILE SCALE | PROJ. MGR. | CA | 1/21 | |
| | | | HORIZONTAL: | LEAD ENGR. | | | |
| | | | N/A | FIELD MGR. | | | |
| | | | VERTICAL: | RECOMMENDED | | | |
| | | | N/A | DESIGN MANAGER | | | |
| | | | FILE: | | | | |
| | | | DRAWING: | | | | |
| | | | ATLAS PAGE NO. 1 | | | | DATE: 1-20-21 |
| | | | | | | | SHEET 13 OF 14 SHEETS |

PRINT DATE: 12/16/2020 M:\City_of_Tulsa\17TUL03_On_Call_Sternumwater_Services_2017\TO_21_FEMA_Flood_Damage\Working\117860\Damage_331391.dwg

CITY OF TULSA, OKLAHOMA



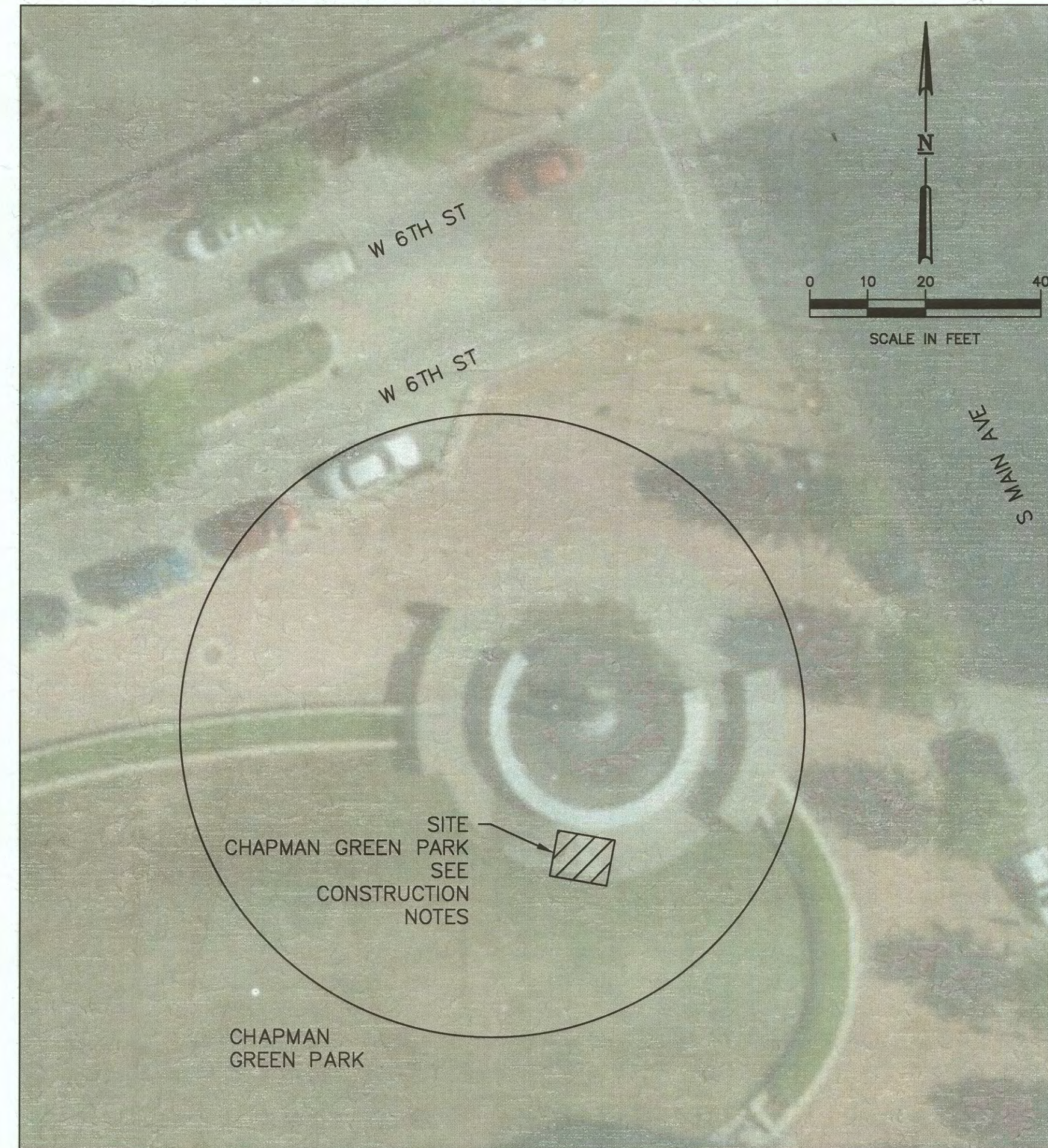
☆ SITE LOCATION
CHAPMAN
GREEN PARK

LOCATION MAP



PROJECT SITE
LOCATION

CHAPMAN GREEN PARK SITE



CHAPMAN
GREEN PARK

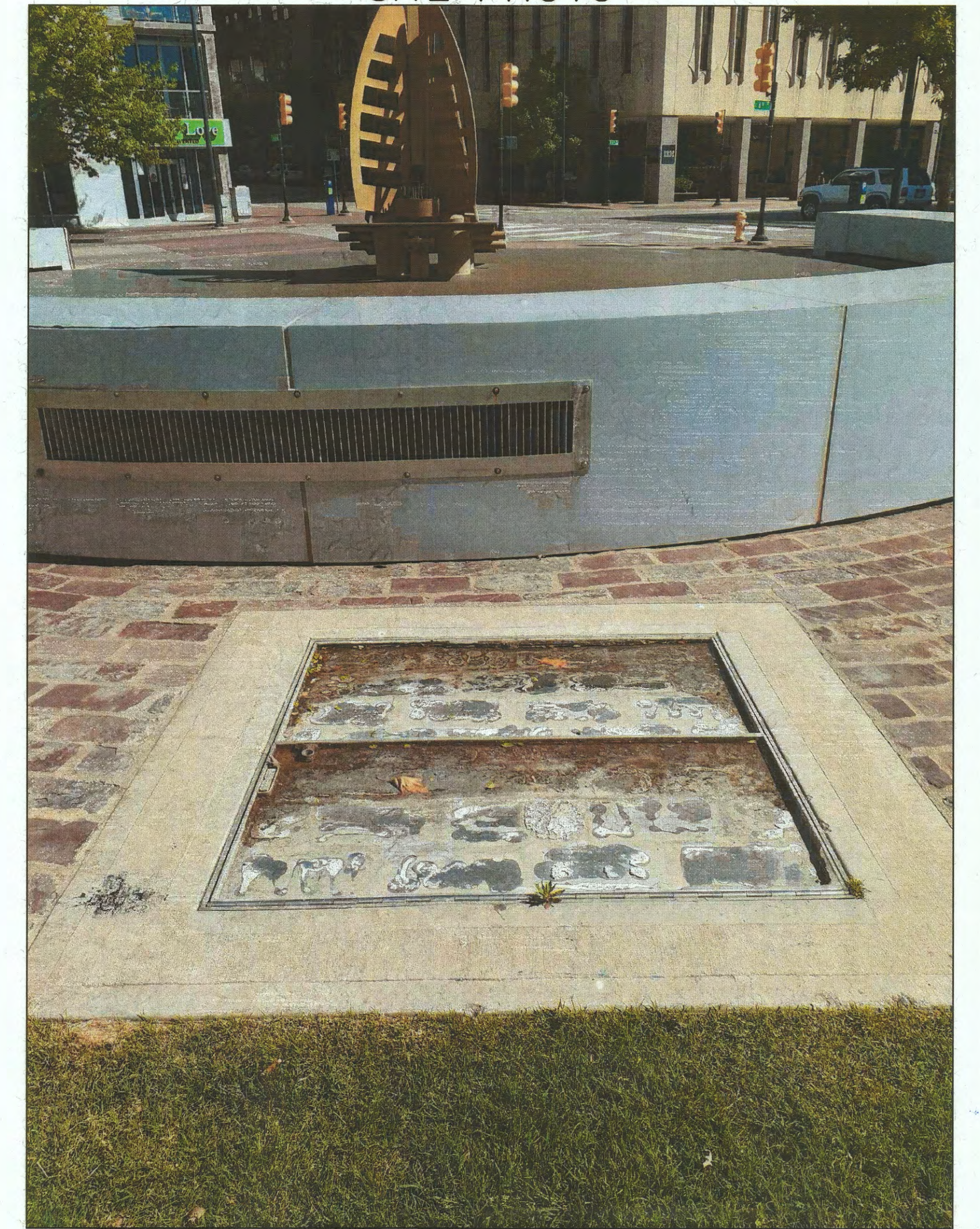
CHAPMAN GREEN PARK – DAMAGE #331425 (36.15063, -95.98852)

CONSTRUCTION NOTES:

- * VARIABLE FREQUENCY DRIVE CONTROLS – 1 EACH OF ELECTRONIC CONTROLS FOR FOUNTAIN PUMP, OTHER, SURFACE WATER FLOODING FLOODED UNDERGROUND VAULT AND DAMAGED COMPONENTS.

| DI# 331425 - CHAPMAN GREEN PARK | | | |
|---------------------------------|---------------------------------------|------|----------|
| ITEM | ITEM DESCRIPTION | UNIT | QUANTITY |
| SPECIAL | ELECTRONIC CONTROLS FOR FOUNTAIN PUMP | EA | 1.00 |

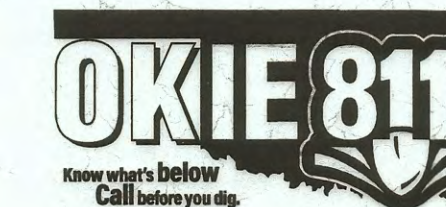
SITE PHOTO



Handwritten signature and date: 12/16/2020

LEGEND

FEMA SITE AREA



FEMA SITE
CHAPMAN GREEN PARK
PROJECT #173120-T021-117860
DAMAGE #331425

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT
PLANS AND ESTIMATES PREPARED BY:
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| REVISION | BY | DATE | PLAN SCALE | DRAWN | KRP | 05/20 | APPROVED: |
|----------|----|------|------------------|----------------|-------------|-------|------------------------------------|
| | | | 1" = 10' | DESIGNED | RJP | 05/20 | CITY ENGINEER DATE: 1-08-21 |
| | | | | SURVEY | N/A | N/A | |
| | | | PROFILE SCALE | PROJ. MGR. | CAH | 1/11 | |
| | | | HORIZONTAL: | LEAD ENGR. | BDC | 1/21 | |
| | | | N/A | FIELD MGR. | Handwritten | 1/21 | |
| | | | VERTICAL: | RECOMMENDED | Handwritten | 1/21 | |
| | | | N/A | DESIGN MANAGER | Handwritten | | |
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| | | | ATLAS PAGE NO. 1 | | | | |