SOIL STABILIZATION PRACTICES:

- Temporary Seeding
- Permanent Seeding, Sodding or Seeding
- Vegetable Mulching
- Soil Retention Blanket
- Preservation of Existing Vegetation

NOTE: Temporary Erosion Control Methods must be used on all disturbed areas where construction activities are expected to cease for more than 14 days. Methods used will be as shown on plans, or directed by the engineer.

EROSION AND SEDIMENT CONTROLS


PROJECT DESCRIPTION:
- WOOD 30, EROSION CONTROL AND RIP RAP
- WOOD 31, EROSION CONTROL, RIP RAP AND REPLACE Flagstone

SUGGESTED SEQUENCE OF EROSION CONTROL ACTIVITIES:
1. Temporary Erosion Control
2. Permanent Erosion Control

SOIL TYPE: Loamy Fine Sand, Silty Clay Loam, Very Fine Sandy Loam, Silt Loam, Stratified

TOTAL AREA OF THE CONSTRUCTION SITE: LESS THAN 1 ACRE COMBINED

ESTIMATED AREA TO BE DISTURBED: LESS THAN 1 ACRE COMBINED

OFFSITE AREA TO BE DISTURBED:

- Total Impervious Area Pre-Construction: 0.09 Acres
- Total Impervious Area Post-Construction: 0.16 Acres
- Post-Construction Runoff Coefficient of the Site: 0.8
- Latitude & Longitude of Center of Project: N36°08'04.1", W96°51'58.4"
  N36°08'47.5", W96°04'52.3"

PROJECT WILL DISCHARGE TO:
- Bigheart Creek

NAME OF RECEIVING WATERS:

SENSITIVE WATERS OR WATERSHEDS: YES [X] NO

303 IMPAILED WATERS: YES [X] NO

IF YES, LIST IMPAIRMENT: E. coli, fish bioassessments

LOCATED IN A TMDL: YES [X] NO

LAKE THUNDERBIRD TMDL: YES [X] NO

MS4 ENTITY: YES [X] 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.

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:

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-Construction Meetings and Available on the Job Site in Accordance with 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 Erosion, Contamination 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 CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR:
- 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 Inches of Rainfall Occurs. Inspections Shall Be Located on Site. Potentially Erodisible Areas: Drainageways, Material Storage, Structural Devices, Construction Entrances and Exit 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:

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-Construction Meetings and Available on the Job Site in Accordance with 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 Erosion, Contamination 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 (ORR10) for Storm Water Discharges from Construction Activities Within the State of Oklahoma; ODEQ, Water Quality Division, September 13, 2017.
SITE LOCATION
WOOD 30 SITE

CITY OF TULSA, OKLAHOMA

CONSTRUCTION NOTES:
WOOD 30 SITE (36.19115, -95.0640)
- SOL - 9 CY OF UNEQUIPPED FILL - 30 FT LONG X 4 FT WIDE X 2 FT DEEP, SURFACE WATER FLOWING ERODED SOIL.
- STONE - 9 CY OF 200 LB RAP - 30 FT LONG X 4 FT DEEP, SURFACE WATER FLOWING DISPLACED STONE.

HAZARD MitIGATION PROPOSAL (HMP) SCOPE OF WORK:
- ADDING 10.58 CY RAP FOR THE ONE SIZE LARGER TO MITIGATE DAMAGE DUE TO RAPIDLY FLOWING FLOOD WATERS.
- ADDING 20 SY GEOSYNTHETIC FABRIC TO MITIGATE DAMAGE DUE TO RAPIDLY FLOWING FLOOD WATERS.

HMP SCOPE NOTE:
1. THE MITIGATION PROPOSAL ESTIMATES WERE GENERATED USING RS MEANS.

PROJECT NOTES:
1. SITE ESTIMATES FOR WORK TO BE COMPLETED WERE GENERATED USING RS MEANS.
2. ALL BORROW OR FILL MATERIAL MUST COME FROM PRE-EXISTING STOCKPILES, MATERIAL RECLAIMED FROM MAINTAINED ROADSIDE STITCHES (PROVINCE THE DESIGNED WIDTH OR DEPTH OF THE DITCH IS NOT INCREASED), OR COMMERCIAL SOURCES 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 FRT, AGRICULTURAL FIELDS, ROAD ROWS, ETC.) IN WHOLE OR IN PART, REGARDLESS OF COST, THE APPLICANT MUST NOTIFY FEMA AND THE RECIPROCAL PRIOR TO EXTRACTING MATERIAL. FEMA MUST REVIEW THE SOURCES FOR PRESERVATION LAWS AND EXECUTE ORDERS PRIOR TO A SUBRECIPIENT OR THEIR CONSTRUCTION COMMENCING RAPID EXTRATION. CONSULTATION AND REGULATORY PERMITTING MAY BE REQUIRED. NONCOMPLIANCE WITH THIS REQUIREMENT MAY JEOPARDIZE RECEIPT OF FEDERAL FUNDS. DOCUMENTATION OF BORROW SOURCES UTILIZED IS REQUIRED AT CLOSEOUT.

LOCATION MAP

WOOD 30 SITE

CONSTRUCTION NOTE DETAIL

RIPRAP INSTALLATION

LEGEND
- FEMA SITE AREA

SITE PHOTO

WOOD 30 SITE

PROJECT #174120-021116205
DAMAGE #331000

OKIE 811

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

Mesbeck & Associates, LLC.
STORM WATER MANAGEMENT PLAN

SITE DESCRIPTION


PROJECT DESCRIPTION:
Woods 16. Removal of Sediment
Woods 14. Erosion Control and Removal of Sediment
Woods 10. Replace Flag Mat Cover
Woods 13. Erosion Control
Woods 16. Removal of Sediment
Woods 17. Removal of Sediment

SUGGESTED SEQUENCE OF EROSION CONTROL ACTIVITIES:
1. Temporary Erosion Control
2. Permanent Erosion Control

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
- Diverse Interceptor or Perimeter Dikes
- Diversion, Interceptor or Perimeter Swales
- Rock filter Ditches
- 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 dampered 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 inches recorded by a non-freezing rain gauge to be located on site. Potentially erodible areas, drainage ways, 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 (SWAPP) 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-construction 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 (DEQ). 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 SWAPP, 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 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 Bunding Requirements
104.10 Final Cleaning Up
104.12 Contractor’s Responsibility for Work
104.13 Environmental Protection
109.08 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 (OK10) for Storm Water Discharges from Construction Activities within the State of Oklahoma.
- ODEQ Water Quality Division, September 13, 2017.

STORM WATER MANAGEMENT PLAN
PROJECT #735120-0211-126205
DAMAGE #331007

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

MEWhite & Associates, LLC

REVISED 09/19/2017
CONSTRUCTION NOTES:
WOOD 10 SITE (36.14068, -95.03605)
* FLOOD CONTROL COVER – 1 EACH OF 54 IN (DIA) STEEL FLAP GATE,
  FLOOD WATER FORCED MISALIGNED/CRACKED COVER.

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LEGEND:
[Map symbols indicating flood hazard and site location]
CONSTRUCTION NOTES:

WOOD 9–13 SITE (36.14586, -96.03605)
- SOL: 722 CY OF UNCLASSIFIED FILL - 85 FT LONG X 25 FT WIDE X 12 FT DEEP, SURFACE WATER FLOODED ERODED SOIL.

WOOD 9–13 SITE - (36.14586, -96.03605)
HAZARD MITIGATION PROPOSAL (HMP) SCOPE OF WORK:
- ADDING 10.05 CY RIP RAP TO MITIGATE DAMAGE DUE TO RAPIDLY FLOWING FLOOD WATERS.
- ADDING 20 CY GEOSYNTHETIC FABRIC TO MITIGATE DAMAGE DUE TO RAPIDLY FLOWING FLOOD WATERS.

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LEGEND

| FEMA SITE AREA |

WOOD 9–13 SITE

PROJECT #173120-1021-116205
DAMAGE #331007
CITY OF TULSA, OKLAHOMA ENGINEERING SERVICES DEPARTMENT

PLAN AND ENGINEERED PREPARED BY:
Menick & Associates, LLC
1300 South Broadway, Suite 100, Tulsa, Oklahoma 74114

OKIE 811
CITY OF TULSA, OKLAHOMA ENGINEERING SERVICES DEPARTMENT

LOCATION MAP

EXISTING
GROUND/FINISH
GRADE

16" TYPE 1 PLAIN
RIPRAPP

COMPACTED
BACKFILL

RIPRAPP INSTALLATION

HAZARD MITIGATION NOTE DETAILS

12/16/2020
CONSTRUCTION NOTES:

WOOD 17 SITE (36.14862, -96.02925)

* OUTFALL - 11 CY OF SEGMENT - 300 FT LONG X 3 FT WIDE X 6 IN DEEP, SURFACE WATER FLOODING DEPOSITED DEBRIS INTO PIPE.
STORM WATER MANAGEMENT PLAN

SITE DESCRIPTION

PROJECT LIMITS: DAMAGE INVENTORY #331006. SITES ALONG THE EAST SIDE OF THE ARKANSAS RIVER INCLUDING: SITE 392, SITE 388, SITE 384, SITE 219, SITE 406, SITE 216 AND SITE 421. ALL APPROXIMATELY LOCATED IN THE NEAR SECTION 11 OF T64S R 12 E WITHIN THE CITY LIMITS OF TULSA, OKLAHOMA.


SUGGESTED SEQUENCE OF EROSION CONTROL ACTIVITIES:
1. TEMPORARY EROSION CONTROL.
2. PERMANENT EROSION CONTROL.

SOIL STABILIZATION PRACTICES:
- TEMPORARY SEEDING
  - PERMEABLE SEEDING, SPRINKLING OR SEEDING
  - VEGETATIVE MULCHING
  - SOIL RETENTION BLANKET
  - PRESERVATION OF EXISTING VEGETATION

NOTE: TEMPORARY EROSION CONTROL MEASURES 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.

EROSION AND SEDIMENT CONTROLS

THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE FOLLOWING:

MAINTENANCE AND INSPECTION: ALL EROSION AND SEDIMENT CONTROLS WILL BE MAINTAINED IN GOOD WORKING ORDER FROM THE BEGINNING OF CONSTRUCTION UNTIL AN ACCEPTABLE VEGETATIVE COVER IS ESTABLISHED. 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 STOCKPILE, SUPPLIES, DEBRIS, AND ALL OTHER BY-PRODUCTS FROM THE CONSTRUCTION PROCESS. PRACTICES INCLUDE DISPOSAL, PROPER MATERIAL 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 AND FEDERAL, STATE AND LOCAL 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, COMPLETED IN THE PRE-CONSTRUCTION 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 (DEQ). 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 CONTAMINATION OF HAZARDOUS MATERIALS WILL BE ENSURED. THE METHODS TO BE USED TO ENSURE THE ADEQUATE REMOVAL OF 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
127.20 STORM WATER CONTROL

MANAGEMENT OF EROSION, SEDIMENTATION AND STORM WATER POLLUTION PREVENTION AND CONTROL

IN ADDITION:
- ODEQ GENERAL PERMIT (CR10) FOR STORM WATER DISCHARGES FROM CONSTRUCTION ACTIVITIES WITHIN THE STATE OF OKLAHOMA
- ODEQ WATER QUALITY DIVISION, SEPTEMBER 13, 2017

STORM WATER MANAGEMENT PLAN
PROJECT #713120-TO21-116205
DAMAGE #331006
CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT
TULSA, OKLAHOMA

STORM WATER MANAGEMENT PLAN
PROJECT #331006
DAMAGE #331006

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT
TULSA, OKLAHOMA

REVISED 09/10/2017
SITE 392

CONSTRUCTION NOTES:
SITE 392 (36.14340, -96.00140)

* OUTFALL — 15 in. (Dia) REINFORCED CONCRETE PIPE (RCP) ~ 100 FT LONG. SURFACE WATER FLOODING FORCES SEPARATION TO SECTIONS OF PIPE.

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LOCATION MAP

SITE 392

SITE LOCATION

CITY OF TULSA, OKLAHOMA

NOTES:

OKIE 811

DAMAGE #351006

CITY OF TULSA, OKLAHOMA

ENGINEERING SERVICES DEPARTMENT

PROJECT #175120-T021-116205

Hoback & Associates, L.L.C.

1-1/2"-12 FT

1-1/2"-12 FT
CONSTRUCTION NOTES:

SITE 388 (36.14280, -96.00070)

- OUTFALL - 18 IN (Dia) REINFORCED CONCRETE PIPE (RCP) - 72 FT LONG. SURFACE WATER FLOWING FORCE CAUSED SEPARATIONS TO SECTIONS OF PIPE.
- DEBRIS - 67 CY OF VEGETATIVE DEBRIS - 60 FT LONG X 10 FT WIDE X 3 FT DEEP. SURFACE WATER FLOWING DEPOSITED DEBRIS BETWEEN THE OUTFALL AND THE ARKANSAS RIVER.

ROADWAY SLD:

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PROJECT #17312C-T021-116205

DAMAGE #331006

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

Meeske & Associates, LLC.
CONSTRUCTION NOTES:
SITE 215 (36.14245, -96.00049)
* OUTFALL — 24 IN (Dia) REINFORCED CONCRETE PIPE (RCP) — 8 FT LONG. SURFACE WATER FLOODING FORCE CAUSED SEPARATIONS TO SECTIONS OF PIPE.
**CONSTRUCTION NOTES:**

SITE 406 (36.14213, -96.99990)

**OUTFALLS:** 18 in (508 mm) RCP - 40 ft long, surface water flooding force causes separations to sections of pipe.

**ROADWAY SLIDEBAR**

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**SITE 406**

- 0.2% annual change flood hazard

**SITE LOCATION**

- Project Site Location

**LOCATION MAP**

- River Ridge Dr
- Wilson Ave

**SITE 406 CUT AND REPAIR (ARTERIAL)**

**SITE 406**

- Project #175120-021-116205
- Damage #307000
- City of Tulsa, Oklahoma Engineering Services Department

**PLANS AND ESTIMATES PREPARED BY:**

Menendez & Associates, LLC.
CONSTRUCTION NOTES:
SITE 216 (36.1470°, -95.69905°)
- Soil: 33 CY of unclassified fill, 15 ft long x 15 ft wide x 4 ft deep, surface water flooding eroded soil.

HAZARD MITIGATION PROPOSAL (HMP) SCOPE OF WORK:
- Adding 17 CY rip rap to mitigate damage due to rapidly flowing flood waters.
- Adding 25 sq. yd geosynthetic fabric to mitigate damage due to rapidly flowing flood waters.

ROADWAY E100S - SITE 216

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RIPRIP INSTALLATION
HAZARD MITIGATION NOTE DETAIL

EXISTING GROUND GRADING

PROJECT #173120-TP1116205
DAMAGE #331006

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT
PLANS AND SPECIFICATIONS PREPARED BY:
Menbeck & Associates, L.L.C.
CONSTRUCTION NOTES:
SITE 421 (36.14122, -96.99685)
* OUTFLOW - 15 IN CDIA; RCP - 30 FT LONG, SURFACE WATER FLOODING FORCE CAUSED SEPARATIONS TO SECTIONS OF PIPE.

ROADWAY EDDIE

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<th>ITEM</th>
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SITE 421

PROJECT Site Location

LOCATION MAP

SITE 421

PROJECT #173120-TO21-116205
DAMAGE #331006
CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT
PLANS AND ESTIMATES PREPARED BY
Wenbeck & Associates, LLC.

0.2% ANNUAL CHANCE FLOOD HAZARD

TYPE 1 PCC CUT AND REPAIR (ARterial)

SCALE: 1" = 100'
STORM WATER MANAGEMENT PLAN

SITE DESCRIPTION

PROJECT LIMITS: DAMAGE INVENTORY #331144 SITES ALONG THE EAST SIDE OF THE ARKANSAS RIVER INCLUDING: SITE 213, SITE 427, SITE 406, SITE 404, SITE 419, SITE 417, SITE 365 AND SITE 466. ALL APPROXIMATELY LOCATED IN THE 0.25% OF SECTION 11 AND W2 OF SECTION 12 OF OK TIBER N 12 E. WITHIN THE CITY LIMITS OF TULSA, OKLAHOMA.

PROJECT DESCRIPTION: SITE 213, REMOVAL OF SEDIMENT

PROJECT 406, REPLACE PIPE

PROJECT 406, REPLACE PIPE

PROJECT 419, REPLACE PIPE

PROJECT 417, EROSION CONTROL AND REPLACE PIPE

PROJECT 365, REPLACE PIPE

PROJECT 466, REPLACE PIPE

SUGGESTED SEQUENCE OF EROSION CONTROL ACTIVITIES:
1. TEMPORARY EROSION CONTROL
2. PERMANENT EROSION CONTROL

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.

EROSION AND SEDIMENT CONTROLS

STRUCTURAL PRACTICES:
- Stabilized Construction Exit
- Temporary Silt Fence
- Temporary Silt Dikes
- Temporary Fiber Log
- Rock Dike Dam
- Rock Rock Dam
- Temporary Slope Drain
- Sediment Trap
- Temporary Sediment Basins
- Temporary Sediment Traps
- Temporary Sediment Filters
- Temporary Sediment Removal
- Rip Rap
- Inlet Sediment Filter
- Temporary Brush-Silt Sediment Barriers
- Temporary Drainage Crossings

OFFSITE Vehicle TRACKING:
- Haul Roads Dampered for Dust Control
- Loaded Haul Trucks to be Covered with Tarps
- Excess Soil 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 VEGATIVE COVER IS ESTABLISHED. INSPECTION BY THE CONTRACTOR AND ANY NECESSARY REPAIRS SHALL BE PERFORMED EVERY 7 CALENDAR DAYS AND WITHIN 24 HOURS AFTER A STORM EVENT GREATER THAN 0.5 INCHES OF RAIN GAUGE TO BE LOCATED ON SITE. POTENTIALLY ERODIBLE AREAS, DRAINAGEWAYS, MATERIAL STORAGE, STRUCTURAL DEVICES, CONSTRUCTION ENTRANCES AND EXIT AREAS WITH EROSION AND SEDIMENT CONTROL LOCATIONS ARE EXAMPLES OF SITES THAT NEED TO BE INSPECTED.

WASTE MATERIALS:
PROPER MANAGEMENT AND DISPOSAL OF CONSTRUCTION WASTE MATERIALS IS REQUIRED BY THE CONTRACTOR. MATERIALS CAN 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 AND GENERAL GUIDELINES TO ENSURE CORRECT HANDLING, DISPOSAL, SPILL PREVENTION AND CLEANUP MEASURES. EXAMPLES INCLUDE BUT ARE NOT LIMITED TO PAINTS, ACREOINS, CLEANING SOLVENTS, CHEMICAL ADDITIVES, CONCRETE CURING COMPOUNDS AND CONTAMINATED SOILS.

GENERAL REQUIREMENTS:
A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) IS REQUIRED TO COMPLY WITH THE OKLAHOMA POLLUTION DISCHARGE ELIMINATION SYSTEM (ODPS) REGULATIONS. THIS PLAN IS INATED DURING THE DESIGN PHASE, CERTIFIED IN THE PRE-WORK MEETINGS, AND AVAILABLE ON THE JOB SITE WITH A COPY OF THE NOTICE OF INTENT (NOI) AND PERMIT CERTIFICATE THAT HAVE BEEN FILED WITH THE OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY (ODEQ). THE PLAN MUST BE UPDATED CURRENT WITH UP-TO-DATE AMENDMENTS DURING THE PROGRESSION OF THE PROJECT. ALL CONTRACTOR ON-SITE OPERATIONS ASSOCIATED WITH THE PROJECT MUST BE DOCUMENTED IN THE SWPPP. IE., BORROW PITS, WORK ROADS, DISPOSAL SITES, ASPHALT/CONCRETE PLANTS, ETC. THE BASE SOIL OF STORM WATER MANAGEMENT IS TO IMPROVE WATER QUALITY BY REDUCING POLLUTANTS IN STORM WATER DISCHARCS RUN-OFF FROM CONSTRUCTION SITES HAS BEEN DEVELOPED TO MEET THE REQUIREMENTS OF THE ODEQ STORM WATER MANAGEMENT PLAN. THE PLAN INCLUDES THE CONSTRUCTION PROCESS. THE PREVENTION OF SEDIMENT EROSION, CONTAMINATION OF HAZARDOUS MATERIALS AND THE RESTRICTION OF DISCHARGES OF THESE POLLUTANTS BEFORE LEAVING THE CONSTRUCTION SITE ARE THE BEST PRACTICES FOR CONTROLLING STORM WATER POLLUTION.

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

101.09 Bonding Requirements
104.10 Final Cleaning Up
104.12 Contractor's Responsibility for Work
104.13 Environment Protection
106.08 Storage and Handling of Material
117.01 Laws, Rules and Regulations to be Observed
120.20 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.
SITE 213 (36.13330, -96.90940)

- Storm Drain – 1.75 CY of vegetative debris (in pipe) – 50 ft long x 12 in wide x 6 in deep, surface water flooding deposited debris in pipe (clean out only).
- Storm Drain – 0.4115 CY of vegetative debris (in pipe) – 50 ft long x 12 in wide x 6 in deep, surface water flooding deposited debris in pipe.
CITY OF TULSA, OKLAHOMA

CONSTRUCTION NOTES:
SITE 427 (36.13670,-95.90306)
- STORM DRAIN - 20 IN (DIA) RCP - 30 FT LONG, SURFACE WATER FLOODED CAUSED PIPE SEPARATION.

LOCATION MAP

ROADWAY (0120)
ITEM       DESCRIPTION                      NOTES       UNITS     QUANTITY
02023       2000                   SOD & SLAB SODDING          E-01, 12       SF       56.00
06239       2490                   15" X 5'CAST, COMP. IN PLACES                  30.00
61531       5726                   18" PIPE, EL, EL 20 ENDS, ROUND          EA       1.00

SITE 427

SITE PHOTO

SITE PHOTO

OKIE 811
CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT
PLANS AND CONTRACTS PREPARED BY Mesheick & Associates, L.L.C.

SITE 427
PROJECT #P79120-7021-116205
DAMAGE #331144

REVISION 1/77 DRAWN 1/77 CHECKED 1/77 APPROVED 1/77
idianite - 1.00
CONSTRUCTION NOTES:
SITE 408 (36.13710, -95.99390)
- STORM DRAIN - 12 IN (30.5 CM) RCP - 60 FT LONG, SURFACE WATER FLOODING CAUSED PIPE SEPARATION/CRACKING.

LOCATION MAP

SITE 408

LOCATION OF PROJECT SITE

100 YEAR ANNUAL CHANCE FLOOD HAZARD

50 YEAR ANNUAL CHANCE FLOOD HAZARD

REGULATORY FLOODWAY

SITE 408
SEC. CONSTRUCTION NOTES
CONSTRUCTION NOTES:
SITE 409 (36.1370, -95.9930)
- STORM DRAIN - 18 IN (DIA) RCPC - 25 FT LONG, SURFACE WATER FLOODING CAUSED SEPARATION/CrackING.

LOCATION MAP

SITE 409

ROADWAY FLOOR

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SITE 409

LOCATION: SITE 409

TYPE I PCC CUT AND REPAIR (ARTERIAL)

PROJECT #173120-221116205
DAMAGE #331144
CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT
FLOOD AND EROSION PREPARED BY: Moxley & Associates, LLC

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT
FLOOD AND EROSION PREPARED BY: Moxley & Associates, LLC
CONSTRUCTION NOTES:

SITE 404 (36°12′79″, -95°9′30″)

- STORM DRAIN - 12 IN. X (24X) RCP - 140 FT LONG, SURFACE WATER FLOODING CAUSED SEPARATION/CRAZZING.

ROADWAY WORK

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SITE 404

LOCATION MAP

SITE 404

SCALE: NONE

TYPE I DPC CUT AND REPAIR (NON-ARTTERIAL)
**CONSTRUCTION NOTES:**

SITE 419 (36.13886, -95.98506)

- STORM DRAIN - 18 IN (24A) RCP - 27 FT LONG, SURFACE WATER FLOODING CAUSED SEPARATION.

**ROADWAY EACH**

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**SITE LOCATION SITE 419**

**LOCATION MAP**

**SITE 419**

**TYPE 1 PCP CUT AND REPAIR (ARTERIAL)**
CONSTRUCTION NOTES:
SITE 417 (3613902, -95.98605)
- STORM DRAIN - 36 IN (34A) RCP - 8 FT LONG, SURFACE WATER FLOODING CAUSED CRACKING AT OUTLET.
CONSTRUCTION NOTES:
SITE 426 (36.14104, -95.99036)
- STORM DRAIN - 24 IN (DIA) PIP - 40 FT LONG, SURFACE WATER FLOODING CAUSED SEPARATION.

ROADWAY DRAW

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LOCATION MAP

SITE 426

CITY OF TULSA, OKLAHOMA

OXIE 811

DAMAGE #351144

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

WEBB & ASSOCIATES, LLC

PROJECT #36120-1021-116208

PLACE AND ENGINEERS PREPARED BY

PLANS CONFORM TO "A" SCALE

PLAN SCALE 1" = 20' 1" = 20' 1" = 20' 1" = 20' 1" = 20' 1" = 20' 1" = 20' 1" = 20'