

NOTICE  
CITY OF MOORE  
LITTLE RIVER PARK DRAINAGE IMPROVEMENTS  
BID #1718-06

The City of Moore is currently seeking bids from interested parties for construction services for drainage improvements at the Little River Park, as deemed necessary by the City of Moore.

Bid Responses will be received until 1:30pm, local time, March 26, 2018 , in the Purchasing Division, 301 N Broadway, Moore, Oklahoma 73160.

Late responses will not be accepted under any circumstances. Any bid received after the scheduled time for closing will be returned to the proposing firm unopened. Sole responsibility rests with the proposing firm to see that their bid is received on time.

There will be a mandatory Pre-Bid Meeting held at 2:00pm on March 7, 2018, Moore City Hall, City Council Chambers, 301 North Broadway, Moore, Oklahoma 73160.

Responses will be made in accordance with the specifications, and these specifications are on file and available for examination, or may be obtained from the office of the Purchasing Agent, Moore City Hall.

Four (4) bound copies and one (1) PDF copy on CD or thumb drive, addressed to the Office of the City Clerk, Purchasing Division will be submitted, and that copy must be sealed and clearly marked with the name of the bidding vendor and identified as follows:

“BID #1718-06 LITTLE RIVER PARK DRAINAGE IMPROVEMENTS”

The City of Moore/Moore Public Works Authority reserves the right to accept the bid which, in the judgement of staff and Trustees of the Authority, is the best for the application of needs, materials and services as covered in the specifications, and determined the best, overall, for the good of the City of Moore/Moore Public Works Authority.

The City of Moore/Moore Public Works Authority reserves the right to reject any and all responses; waive irregularities and formalities in any response submitted.

The City of Moore/Moore Public Works Authority is an equal opportunity employer.

Barbara Furgiani, Purchasing Agent (405) 793-5023

**The City of Moore  
Moore, Oklahoma**



**LITTLE RIVER PARK DRAINAGE IMPROVEMENTS**

**BID #1718-06**

**Due Date: March 26, 2018**

**1:30pm CST**

**City Clerk's Office**

**301 N. Broadway Avenue**

**Moore, Oklahoma 73160**



## **SOLICITATION OVERVIEW**

**The City of Moore is soliciting Sealed Bids for:**

**TITLE:** Little River Park Drainage Improvements

**BID Number:** 1718-06

**Mandatory Pre-Bid Meeting:** March 7, 2018, 2:00pm, Moore City Hall, Council Chambers

**Due Date:** 1 :30 p.m., March 26, 2018

**Location:** City of Moore, Purchasing Division  
301 N. Broadway Ave. Suite 142  
Moore, OK 73160

**Public Opening of Bids:**

There will be a public opening of bid responses in the City Council Chambers immediately following the submission due time/date, March 26, 2018 at 2:00pm. Interested parties are invited to attend.

**Submit written questions to:** [cdbg@cityofmoore.com](mailto:cdbg@cityofmoore.com)

**Questions may be submitted through 5:00 p.m., March 12, 2018.**

- No verbal questions will be accepted.
- Questions of a substantial nature will be addressed in an addendum, posted on the City's Purchasing Web page for all interested parties.

# I. Overview

## A. INVITATION

The City of Moore is currently seeking bids for construction services for drainage improvements at the Little River Park, as deemed necessary by the City of Moore.

## B. PROJECT FUNDING

Firms should note that all construction activities will be funded through the U.S. Department of Housing and Urban Development Community Development Block Grant Disaster Recovery (“CDBG-DR”) program. Accordingly, the construction contract will include specific federal grant requirements for completion and payment.

## C. FEDERAL REQUIREMENTS

### **Laws and Regulations**

The Community Development Block Grant – Disaster Recovery (CDBG-DR) allocation to the City of Moore is governed by the following laws and regulations:

- (a) The Housing and Community Development Act of 1974;
- (b) Section 312 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42U.S.C.5155), as amended;
- (c) Section 18 of the Small Business Act, as amended (14U.S.C.647) 44 CFR 206.191 Duplication of Benefit
- (d) Duplication of Benefits Federal Register, Vol.76, No.221, November 16, 2011 (76 FR 71060) Public Law 113-2:
- (e) Disaster Relief Appropriations Act, 2013 (at HR 152-34)
- (f) The HUD Federal Register Notice at 78 FR 14329 published March 5, 2013
- (g) HUD Federal Register Notice at 78 FR 23578 published April 19, 2013
- (h) HUD Federal Register Notice at 78 FR 76154 published December 16, 2013
- (i) The applicable laws of the State of Oklahoma; and
- (j) By the laws and regulations promulgated by the City for the CDBG-DR program.
- (k) In addition to the citations noted, the CDBG-DR allocation is also subject to “cross-cutting” Federal requirements referenced herein and contained in 2 CFR 200 Sub-part F – Appendix

### **Federal Changes**

Contractor shall at all times comply with all applicable Federal regulations, policies, procedures and directives, including without limitation to those listed directly or by reference in this Contract between the City of Moore Department of Capital Planning and Resiliency and the Contractor. The City of Moore shall provide the contractor direction as to the applicable Federal regulations, policies, and procedures that apply to the contract, and any new directives or changes to existing directives as they may be

amended or promulgated from time to time during the term of this contract. Contractor's failure to comply shall constitute a material breach of this contract. Reference: (49 CFR Part 18)

### **Labor Requirements**

- (a) Compliance with the Copeland "Anti-Kickback" Act (18 U.S.C. 874) as supplemented in Department of Labor regulations.
- (b) Compliance with the Davis-Bacon Act (40 U.S.C. 276a to 276a-7) as supplemented by Department of Labor regulations (29 CFR part 5). The Contractor's labor wages should meet or exceed Davis Bacon prevailing wages and shall be based on: General Wage Decision OK 180029. (Attachments included are: U.S. Department of Housing and Urban Development Form 4010 and OK 180029). Labor rates shall be in conformance with the above standards on any project that incorporates direct federal funding to a City of Moore project. Contractors will be required to submit weekly certified payrolls documenting these payroll payments.
- (c) Compliance with Sections 103 and 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 327-330) as supplemented by Department of Labor regulations (29 CFR part 5).

### **Assignability**

The Contractor shall not assign or transfer any interest in this Contract without the prior written consent of the City thereto; provided, however, that claims for money due or to become due to the contractors from the City under this contract may be assigned to a bank, trust company, or other financial institution without such approval. Notice of any such assignment or transfer shall be furnished promptly to the City.

### **Access to Records**

The Contractor agrees that the U.S. Department of Housing and Urban Development ("HUD"), the Inspectors General, the Comptroller General of the United States, the City Moore, or any of their authorized representatives, have the right of access to any documents, papers, or other records of the Contractor which are pertinent to the Federal award, in order to make audits, examinations, excerpts, and transcripts. The right also includes timely and reasonable access to the Contractor's personnel for the purpose of interview and discussion related to such documents. Reference: (2 CFR 200.336)

### **Record Retention Requirements**

The Contractor agrees financial records, supporting documents, statistical records, and all other Contractor records pertinent to the HUD CDBG-DR award shall be retained for a period of three years from the date of submission of the final expenditure report. HUD and the City may not impose any other record retention requirements upon the Contractor. The only exceptions are the following:

- (a) If any litigation, claim, or audit is started before the expiration of the 3-year period, the records must be retained until all litigation, claims, or audit findings involving the records have been resolved and final action taken.
- (b) When the Contractor is notified in writing by HUD, the cognizant agency for audit, oversight agency for audit, cognizant agency for indirect costs, or City of Moore to extend the retention period.

(c) Records for real property and equipment acquired with Federal funds must be retained for three years after final disposition.

(d) When records are transferred to or maintained by the HUD or the City of Moore, the 3-year retention requirement is not applicable to the Contractor. Reference: (2 CFR 200.333)

### **Remedies for Noncompliance**

If a Contractor fails to comply with Federal statutes, regulations or the terms and conditions of a Federal award, HUD or the City of Moore may impose additional conditions, as described in 2 CFR 200.207 Specific Conditions. If HUD or the City of Moore determines that noncompliance cannot be remedied by imposing additional conditions, HUD or the City of Moore may take one or more of the following actions, as appropriate in the circumstances:

(a) Temporarily withhold cash payments pending correction of the deficiency by the Contractor or more severe enforcement action by HUD or City of Moore.

(b) Disallow (that is, deny both use of funds and any applicable matching credit for) all or part of the cost of the activity or action not in compliance.

(c) Wholly or partly suspend or terminate the Federal award.

(d) Initiate suspension or debarment proceedings as authorized under 2 CFR part 180 and HUD regulations, or in the case of a City of Moore, recommend such a proceeding be initiated by HUD.

(e) Withhold further Federal awards for the project or program.

(f) Take other remedies that may be legally available.

Reference: (2 CFR 200.338)

### **Breaches and Dispute Resolution**

(a) Disputes - Disputes arising in the performance of this Contract which are not resolved by agreement of the parties shall be decided in writing by the authorized representative of the City's Department of Capital Planning and Resiliency. This decision shall be final and conclusive unless within [ten (10)] calendar days from the date of receipt of its copy, the Contractor mails or otherwise furnishes a written appeal to authorized representative. In connection with any such appeal, the Contractor shall be afforded an opportunity to be heard and to offer evidence in support of its position. The decision of the authorized representative shall be binding upon the Contractor and the Contractor shall abide by the decision.

(b) Performance During Dispute - Unless otherwise directed by to the City of Moore Department of Capital Planning and Resiliency, the Contractor shall continue performance under this Contract while matters in dispute are being resolved.

(c) Claims for Damages - Should either party to the Contract suffer injury or damage to person or property because of any act or omission of the party or of any of his employees, agents or others for whose acts he is legally liable, a claim for damages therefore shall be made in writing to such other party within a reasonable time after the first observance of such injury of damage.

(d) Remedies - Unless this contract provides otherwise, all claims, counterclaims, disputes and other matters in question between the City and the Contractor arising out of or relating to this Contract

or its breach will be decided by arbitration in the City of Moore Department of Capital Planning and Resiliency if the parties mutually agree, or in a court of competent jurisdiction in Cleveland County, Oklahoma.

- (e) Rights and Remedies - The duties and obligations imposed by the Contract Documents and the rights and remedies available there under shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law. No action or failure to act by the City of Moore or the Contractor shall constitute a waiver of any right or duty afforded any of them under the Contract, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach there under, except as may be specifically agreed in writing. Reference: 49 CFR Part 18

### **Equal Opportunity**

The following equal employment opportunity requirements apply to the Contract:

- a) Race, Color, Creed, National Origin, Sex - In accordance with Title VII of the Civil Rights Act, as amended, 42 U.S.C. § 2000e, and Federal transit laws at 49 U.S.C. § 5332, the Contractor agrees to comply with all applicable equal employment opportunity requirements of U.S. Department of Labor (U.S. DOL) regulations, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor," 41 C.F.R. Parts 60 et seq ., (which implement Executive Order No. 11246, "Equal Employment Opportunity," as amended by Executive Order No. 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," 42 U.S.C. § 2000e note), and with any applicable Federal statutes, executive orders, regulations, and Federal policies that may in the future affect construction activities undertaken in the course of the Project. The Contractor agrees to take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, creed, national origin, sex, or age. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. In addition, the Contractor agrees to comply with any implementing requirements HUD may issue.
- b) Age - In accordance with section 4 of the Age Discrimination in Employment Act of 1967, as amended, 29 U.S.C. § § 623 and Federal transit law at 49 U.S.C. § 5332, the Contractor agrees to refrain from discrimination against present and prospective employees for reason of age. In addition, the Contractor agrees to comply with any implementing requirements HUD may issue.
- c) Disabilities - In accordance with section 102 of the Americans with Disabilities Act, as amended, 42 U.S.C. § 12112, the Contractor agrees that it will comply with the requirements of U.S. Equal Employment Opportunity Commission, "Regulations to Implement the Equal Employment Provisions of the Americans with Disabilities Act," 29 C.F.R. Part 1630, pertaining to employment of persons with disabilities. In addition, the Contractor agrees to comply with any implementing requirements HUD may issue.

References: Executive Order 11246 September 24, 1965 as amended by Executive Order 11375 of October 13, 1967, and as supplemented in Department of Labor regulations 41 CFR chapter 60

### **Civil Rights**

- 1) Nondiscrimination - In accordance with Title VI of the Civil Rights Act, as amended, 42 U.S.C. § 2000d, section 303 of the Age Discrimination Act of 1975, as amended, 42 U.S.C. § 6102, section

202 of the Americans with Disabilities Act of 1990, 42 U.S.C. § 12132, and Federal transit law at 49 U.S.C. § 5332, the Contractor agrees that it will not discriminate against any employee or applicant for employment because of race, color, creed, national origin, sex, age, or disability. In addition, the Contractor agrees to comply with applicable Federal implementing regulations and other implementing requirements HUD may issue.

- 2) The Contractor agrees to comply with the non-discrimination in employment and contracting opportunities laws, regulations, and executive orders referenced in 24 CFR 570.607, as revised by Executive Order 13279. The applicable non-discrimination provisions in Section 109 of the HCDA are still applicable.
- 3) The Contractor agrees to comply with Title VI of the Civil Rights Act of 1964 as amended, Title VIII of the Civil Rights Act of 1968 as amended, Section 104(b) and Section 109 of Title I of the Housing and Community Development Act of 1974 as amended, Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act of 1990, the Age Discrimination Act of 1975, Executive Order 11063, and Executive Order 11246 as amended by Executive Orders 11375, 11478, 12107 and 12086.

References: 29 U.S.C. § 623, 42 U.S.C. § 2000, 42 U.S.C. § 6102, 42 U.S.C. § 12112, 42 U.S.C. § 12132, 49 U.S.C. § 5332, 29 CFR Part 1630, 41 CFR Parts 60 et seq.

#### **Conflict of Interest**

Any person who is an employee, agent, consultant, officer, or elected official or appointed official of the City of Moore, or of any of the City's subsidiaries, who exercises or have exercised any functions or responsibilities with respect to CDBG activities assisted, or who are in a position to participate in a decision making process or gain inside information with regard to such activities, may obtain a financial interest or benefit from a CDBG-assisted activity, or have a financial interest in any contract, subcontract, or agreement with respect to a CDBG-assisted activity, or with respect to the proceeds of the CDBG-assisted activity, either for themselves or those with whom they have business or immediate family ties, during their tenure or for one year after such decision making responsibilities have ended.

Reference: 2 CFR 200.112

#### **Copyrights**

HUD and the City of Moore reserve a royalty-free, nonexclusive, and irrevocable license to reproduce, publish or otherwise use, and to authorize others to use, for Federal Government purposes: The copyright in any work developed under the Contract, and to any rights of copyright to which a Contractor or Sub-contractor purchases ownership with grant support. Reference: 24 CFR Subtitle A. 85.34 Copyrights

#### **Lobbying**

Contractors who apply or bid for an award of \$100,000 or more shall file the certification required by 49 CFR Part 20, "New Restrictions on Lobbying." Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier shall also disclose the name of any registrant under the Lobbying Disclosure Act of 1995 who has made lobbying contacts on its behalf with non-Federal funds with respect to that Federal contract, grant or award covered by 31 U.S.C. 1352. Such disclosures are forwarded from tier to tier up to the City of Moore.



References: (31 U.S.C. 1352as amended by the Lobbying Disclosure Act of 1995, P.L. 104-65; 49 CFR Part 19, 49 CFR Part 20)

## **Environmental Requirements**

### **Clean Air**

1) The Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. §§ 7401 etseq. The Contractor agrees to report each violation to the Purchaser and understands and agrees that the Purchaser will, in turn, report each violation as required to assure notification and the appropriate EPA Regional Office.

2) The Contractor also agrees to include these requirements in each subcontract exceeding \$100,000 financed in whole or in part with Federal Assurances provided by HUD.

References: 42 U.S.C. 7401 et seq., 40 CFR 15.61, 49 CFR Part 18 (over \$100,000)

### **Clean Water**

1) The Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq. The Contractor agrees to report each violation to the City of Moore Department of Capital Planning and Resiliency and understands and agrees that the Purchaser will, in turn, report each violation as required to assure notifications the appropriate EPA Regional Office.

2) The Contractor also agrees to include these requirements in each subcontract exceeding \$100,000 financed in whole or in part with HUD.

References: 33 U.S.C. 1251 (over \$100,000)

### **Energy Conservation**

The Contractor agrees to comply with mandatory standards and policies relating to energy efficiency, which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act.

References: 42 U.S.C. 6321 et. Seq., 49 CFR Part 18

### **Recycled Products**

The Contractor agrees to comply with all the requirements of Section 6002 of the Resource Conservation and Recovery Act (RCRA), as amended (42 U.S.C. 6962), including but not limited to the regulatory provisions of 40 CFR Part 247, and Executive Order 12873, as they apply to the procurement of the items designated in Subpart B of 40 CFR Part 247.

References: 42 U.S.C. 6962, 40 CFR Part 247, Executive Order 12873 (More than \$10,000)

### **Environmental Conditions Discovered During Construction**

1) The Contractor agrees to cease work and immediately notify the City should a previously unknown environmental condition be discovered in the course of construction;

2) The Contractor understands that the discovery of an environmental condition requires the City to revise the Environmental Review Record (ERR) and that work on the portion of the project designated by the City must cease until the ERR is revised.

3) The City will issue a new Notice to Proceed once the Environmental Review has been updated or the environmental condition has been cleared

References: 24 CFR Part 58.47

**Section 504 and Americans with Disabilities Act**

The Contractor agrees and understands the requirements of the Americans with Disabilities Act (ADA) and Section 504 of the Rehabilitation Act of 1973 and requirement that: sidewalks, pedestrian overpasses, underpasses, and ramps constructed with Federal financial assistance must be accessible.

References: 36 CFR Part 1190 Minimum Guidelines and Requirements for Accessible Design

**D. INSURANCE REQUIREMENTS**

Contractors will be required to meet insurance requirements of not less than the following limits;

General Liability	\$5,000,000.00
Auto Liability	\$1,000,000.00
Excess Liability	\$1,000,000.00

The City of Moore will be required to be named as additional insured on all policies.

**E. BONDING REQUIREMENTS**

No surety will be accepted by the City from a Contractor that is now in default or delinquent on any bond or has an interest in any litigation against the City. All bonds shall be executed by surety companies licensed to do business in the State of Oklahoma and acceptable to the Council. Each bond shall be executed by the Contractor and the Surety.

The City requires the following bonds:

**Bid Bond**

Bidders will include with the return bid form, the non-collusion affidavit that has been properly executed, and a bid bond, bank check or irrevocable letter of credit for 5% of the bid if bid is over \$50,000. A bid bond must be included in the bid submittal.

**Maintenance Bond:**

A good and sufficient Maintenance Bond shall be required in an amount equal to one hundred (100) percent of the total amount of the contract Work Order, guaranteeing such improvements against defective workmanship and/or materials for a period of one (1) year from and after the time of completion and acceptance by the City of said improvements.

**Performance Bond:**

A good and sufficient Performance Bond shall be required in an amount equal to one hundred (100) percent of the total contract Work Order amount guaranteeing execution and completion of the work in accordance with the specifications

Statutory Bond:

A good and sufficient Statutory Bond shall be required in an amount equal to one hundred (100) percent of the total contact Work Order amount guaranteeing payment in full for all materials and labor used in the construction of the work.

F. PROJECT SCHEDULE

Work is to be completed (1) year from the signed Notice to Proceed-provided site conditions meet those specified as appropriate for installation.

The City of Moore is an equal opportunity employer.

## II. Scope of Services

The work will consist of the construction of drainage improvements at the Little River Park, Moore, Oklahoma. Bid #1718-06 Little River Park Drainage Improvements will follow the Construction Plans for Little River Park Drainage Improvements prepared by Meshek & Associates (Exhibit A).

This project will be federally funded by the U.S. Department of Housing and Urban Development (HUD) and will adhere to federal regulations. The Contractor will provide all necessary construction crews with adequate staffing to complete assigned projects.

The Contractor's bid response will need to include all equipment that will be provided to complete the assigned construction projects or construction tasks. This equipment shall all be in good operating condition. The contractor shall also provide its own tools, fuel, safety equipment, communications equipment, and manually operated tools, local or mobile field office, and office equipment.

All work and materials will comply with the current version of the City of Oklahoma City Standard Specification for the Construction of Public Improvements with all amendments and revisions included (hereafter referred to as "standard specifications") and the City of Oklahoma City Construction Standard Details (hereafter referred to as "standard details"). When these standard specifications and standard details do not address certain construction tasks or certain required construction materials, then the Oklahoma Department of Transportation Standard Specifications for Highway Construction will govern.

**GENERAL CONSTRUCTION NOTES:**

All work performed and materials supplied shall conform to the plans and/or project specifications. Any work not covered in the plans or specifications shall conform to the City of Moore's "Standard Specifications and Construction Drawings" or the "Standard Specifications for Highway Construction, Oklahoma Department of Transportation, Edition of 2009" and Supplementals".

The contractor shall be responsible for notifying all utility companies and governmental agencies who might have utility lines on or about the premises, or who might be affected by the construction. The contractor shall also coordinate their activities with the utility companies to ensure compliance with the

project schedule. The contractor shall make every effort to protect existing utility lines, and shall repair any damages at their own expense.

All construction and materials shall be in accordance with the 2009 Oklahoma Department of Transportation standard specifications for highway construction and the current City of Moore's standard specifications and standard details and standard drawings.

The contractor shall comply with all federal, state and local laws governing safety, health and sanitation. The contractor shall provide all safeguards, safety devices and protective equipment, and take any other needed action on as his own responsibility or as the engineer may determine reasonably necessary to protect property in connection with the performance of work covered by the contract.

Pay items shall be as specified on the City of Moore or ODOT standard drawings except as modified by the contract.

The locations of the utilities are shown according to all available information. The contractor shall notify each utility owner prior to commencement of work to verify both horizontal and vertical locations. The following is a list of utility owners; AT&T, Oklahoma Electric Cooperative (OEC), Oklahoma Natural Gas (ONG), OG&E, and the City of Moore.

The contractor shall give the Notification Center Of Oklahoma One-Call System, INC. Notice of any excavation no sooner than ten days nor later than 48 hours, excluding Saturdays, Sundays and legal holidays, prior to the commencement of work. Phone 1-811-522-6543.

The contractor shall take reasonable precautions to prevent excess moisture from inclement weather or other sources from entering any street excavation. If excess moisture does enter the excavation through the negligence of the contractor and the adjoining pavement is adversely effected by the excess moisture, the contractor shall replace the adjoining pavement and subbase at his sole expense.

The contractor shall preserve the integrity of the existing structures within the project extents.

The contractor shall work in cooperation with the City of Moore to establish, install, maintain, and operate complete, adequate, and safe traffic controls during the entire construction period. All flagmen, barricades, and traffic control devices shall be approved by the field engineering representative.

Construction signage will be installed in a manner approved by the engineer, in accordance with chapter VI of the manual on uniform traffic control devices, current addition, and applicable ODOT standard drawings. The contractor shall provide a proposed traffic control plan for approval by the engineer prior to beginning work.

The contractor shall notify the City of Moore, 405-793-5070, a minimum of 48 hours prior to commencing work or prior to removing traffic signs.

All broken concrete, waste material, and other debris shall become the property of the contractor, shall be removed from the limits of the project and disposed of in a manner approved by the engineer. No additional payment will be made for the disposal of this material.

All excavated material not required in the project as fill, shall become the property of the contractor and shall be disposed of by the contractor in a manner acceptable to the engineer without cost to the city.

The contractor will be required to obtain an earth change permit if any material is stored on the project site and/or disposed of within the city limits.

All trees, brush and other debris that might interfere with the flow of water is to be cleaned out to the right-of-way line in a manner approved by the engineer. All cost to be included in the price bid for other items of work. Trees outside the fill slopes and the top of cut slopes shall not be disturbed except with the written approval of the engineer.

Where materials are transported in the prosecution of work, vehicles shall not be loaded beyond the capacity recommended by the vehicle manufacturer or as prescribed by any federal, state or local law or regulation.

Any damage to the roadway pavement, curb, driveways or sidewalk caused by the contractor's operation shall be repaired to the engineer's satisfaction and shall be accomplished at the contractor's sole expense. All disturbed items shall be repaired to match existing materials and patterning.

Contractor shall be responsible for all necessary quality control testing to ensure that project requirements are met. The testing lab shall be submitted for approval.

Masonry structures shall not be constructed within the street right-of-way.

All concrete curb and gutters shall be monolithic pours. Doweled-on curbs will not be allowed.

No lifting holes will be allowed on any reinforced concrete pipes or reinforced concrete boxes.

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.

The contractor shall replace any section corners or other permanent right of way markers removed or disturbed as a result of the construction of this project. Replacement of section corners or any other monuments shall be performed by a licensed land surveyor authorized to perform work in the State of Oklahoma.

The contractor shall be responsible for the control and maintenance of the stormwater drainage. Stormwater ponding on the construction site that is the result of construction will not be allowed.

Straw or hay bales as stormwater best management practices are no longer allowed on construction projects.

The contractor must call 1-800-458-4251 immediately if a natural gas pipeline is cut, damaged, or otherwise disturbed.

Prior to final acceptance, all exposed curb surfaces shall be cleaned of all discoloration such as asphalt stain, tire marks, or other disfigurement.

All trench widths & bedding materials shall be as shown on ODOT standard pipe installation detail, standard spi-4-0. Specified trench widths shall be maintained full depth from the flowline to the grading template. The contractor shall keep the open trench drained.

**As-builts:**

The contractor shall keep on site a current set of the approved construction working drawings at all times. The contractor shall mark (in red ink) all approved changes incurred following public works department approval of the initial drawings. These changes may be initiated from field conditions or changes made by the design engineer or the public works engineer. Except for minor field adjustments, all changes shall be reviewed and agreed to by the design engineer and the public works engineer prior to final approval of the project. The contractor shall submit the working drawings to the engineer of record (design engineer) after final inspection of project to serve as a basis for development of final as-built record drawings.

## **ROADWAY & DRAINAGE**

All costs for removing trees, shrubs, stumps, posts, and all other debris and/or obstructions not covered by a separate pay item are included in the price bid.

Includes compaction of base to 98% AASHTO STD. Proctor. Cost shall include 12% cement kiln dust, subgrade processing and compaction, final grading.

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.

Waste material to become the property of the contractor and shall be removed from the site in a manner approved by the engineer.

Contractor shall repair any irrigation systems damaged or requiring relocation during the construction of this project to the satisfaction of the property owner. Cost shall be included in the price bid.

Erosion protection shall be placed around drainage inlets as required to prevent entrance of erosion material. Erosion protection shall be placed as necessary to prevent erosion wash to adjacent property. All erosion protection installed must be maintained by the contractor for the duration of the project. Erosion protection shall be removed at the end of the project as directed by the engineer, cost to be included in the price bid. The price includes the cost of sediment removal per the stormwater management plan.

The pay item for solid slab sodding includes quantities for placement and compaction of suitable backfill and sod at existing grass areas which may be damaged during construction of curbs, sidewalks, driveways, and other miscellaneous items. The quantities are based on utilizing a 3 foot wide strip in these areas. The sod shall be of like kind to the existing sod. The contractor will be responsible for the repair or replacement of damage to existing grass that exceeds these limits.

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.

All saw cutting and removal shall be included in the cost of the item to be adjusted, removed, repaired, or replaced.

All excess excavation is to be removed from job site and to become property of the contractor.

This item shall include the cost of new manhole frame and cover per City of Moore standards.

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.

Additional depth in a manhole shall be measured from 6 ft. as measured from the top of rim to the lowest flowline.

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.

Standard bedding material to be type A aggregate base compacted to 95% standard proctor density. Aggregate base in the roadway shall be 98% modified proctor.

Unclassified excavation includes removal of aggregate base and subgrade under existing pavement to be repaired.

CLSM, low strength concrete shall be used as backfill around all inlets, junction boxes, and manholes in paving.

Contractor shall notify the city prior to installation of sod.

## **WATERLINE**

Existing service connections are to be kept in service until connections to new main are made. All service line reconnections shall be made by the contractor. Service reconnections shall be installed as per City of Moore standard specifications and standard details.

City crews only are to operate all valves. Contractor shall notify City of Moore.

Contractor shall provide at least 48 hour notice to all residents or businesses affected before turning off any water. Contractor shall be responsible for placing door hangers on affected homes and businesses.

Local and through traffic shall be maintained through project at all times. Open cut street crossings require an approved traffic control plan with traffic control devices in accordance with current MUTCD requirements.

Buried bolts, harness lugs, and couplings shall be given two coats of Kopper's Bitumastic 300-m (dry mil thickness of 16 mils) or equal. Cost to be included in unit price bid for pipe and fittings.

Contractor to excavate all utility crossings ahead of pipe laying so that the grades can be adjusted on the proposed water main to avoid utility conflicts. Failure to do so shall not entitle the contractor to claim extra compensation for adjustments to the proposed water main. Cost for excavating utility crossings shall be included in unit price bid for pipe.

Contractor shall insure all poles which are affected by trenching conditions are braced by owners. Payment shall be included in "clearing and restoring". No additional payment shall be made.

All hydrants, valves and other fittings from abandoned water mains shall be salvaged and delivered to the City of Moore, 405-793-5070. Payment to be made under "removal of fire hydrant". No additional payment shall be made.

Contractor shall repair any irrigation systems, roof drains, and fencing damaged in the zone of construction during the course of construction to satisfaction of the property owner. Payment shall be included in "clearing and restoring". No additional payment shall be made.

Cost of any temporary livestock fencing and poles shall be included in cost of "clearing and restoring". No additional payment shall be made.

All costs for components necessary to restrain joints for pipe and fittings designated restrained joint ("RJ") shall be included in unit price bid for pipe or fittings.

Ductile iron pipe restrained joint systems: US Pipe Trflex, Griffin Snaplok, Mcwane Thrustlock, American Flexring, Ebaa Megalug, Smith-Blair Camlock, Clow Tufgrip or equal shall be used on this project. Should RJ pipe be specified through uncased bores, only US Pipe Trflex, Griffin Snaplok, Mcwane Thrustlock, or American Flexring is to be used. Locking gaskets not permitted.

All cut ends and where salvaged fittings have been removed from abandoned water lines left in place, shall be plugged with 24-in of concrete inside the pipe. Cost of concrete plugging to be included in unit price bid for pipe. No additional payment shall be made.

Detectable Mylar marking tape shall be installed over ductile iron pipe. Cost will be included in cost of ductile iron pipe.

All labor, materials, and equipment to connect proposed water mains to existing water mains are included in cost of sleeves. Contractor to excavate all existing water mains ahead of pipe laying so that the grades can be adjusted accordingly. Failure to do so shall not entitle the contractor to claim extra compensation for adjustments to the proposed water main. Cost for excavating existing water mains shall be included in unit price bid for sleeves. No additional payment shall be made.

Contractor is reminded to backfill all trenches excavated across any existing or proposed driving or parking surface with 1½-in type A aggregate base, placed in 8-inch maximum lifts and compacted to 98% modified proctor density. Cost to be included in cost of "trench excavation and backfill". No additional payment shall be made.

Water service connections shall include cost of material, labor and equipment to remove and install saddles, service clamps, corporation stops, bends, 3-part unions, couplings, setters and any other incidentals required for a complete water service connection with exception of meter cans, rims and lids. No additional payment shall be made. Meter cans, lids and rims shall be paid as a separate bid item.

Short service shall be any service line that is 25-feet or less in length. Short services do not include pavement replacement.

Long service shall be any service line that is greater than 25-feet up to 80-feet in length. Long services include pavement replacement and/ or cost to bore.

Short and long service lines exceeding the above parameters will be compensated for linear footage above and beyond. Compensation shall be paid as "service lines, extension", per linear foot.

Service lines on non-arterials shall be either copper tubing (type K soft annealed conforming to ASTM B 88) or PEX tubing (Uponor aqua PEX 5206 blue conforming to ASTM f876/f877/f2023). PEX tubing is not permitted within arterial right of way.



Top of valve box shall be flush with finished grade.

The contractor shall restore all disturbed areas to a condition equal to or better than the existing improvements. Limits of disturbance shall not exceed 9-feet centered on the waterline. Any disturbance outside of this area shall be restored at the contractor's expense. Streets, driveways and associated items shall be paid for under other items of work.

The contractor shall restore all disturbed grass areas to a condition equal to or better than the existing condition. The contractor shall replace the sod to match in-kind and quality. Limits of disturbance shall not exceed 9-feet centered on the waterline. Any disturbance outside of this area shall be restored at the contractor's expense.

### **SANITARY**

Pay items shall include the cost of all labor and materials required to encase sanitary sewer ductile iron pipe as shown on the plans.

Sewer flushing shall be in accordance with 1107.2 flushing of sanitary sewers.

Pipe connections shall be in strict accordance with restraint / thrust blocks, hydrostatic testing and flushing LS.

## **III. Submittal Requirements**

### **DOCUMENTS TO BE SUBMITTED**

The following forms/documents must be completed and submitted in a sealed envelope listing the following information on the outside:

“BID #1617-03 Little River Park Drainage Improvements”

Items to be included in submittal:

- **Exhibit C** Non-Collusion Affidavit
- **Exhibit D** Certification Regarding Lobbying
- **Exhibit E** Certification Regarding Debarment, Suspension, and Other Responsibility Matters
- **Exhibit F** MOB/WOB/Section 3 Business (if Applicable)
- **Exhibit G** Form 4400
- **Exhibit H** Conflict of Interest Certification
- **Proof of Insurance**
- **Bid Bond**
- **W-9**

## **NUMBER OF COPIES**

Four (4) paper copies and one (1) electronic copy of their completed BID response. All responses must be submitted in an 8 ½" x 11" format

Costs for developing a response and contract negotiations are entirely the obligation of the proposer and shall not be charged in any manner to the City.

The contractor shall submit resumes of the proposed project manager and superintendent for the base crew. If the contractor has a surveyor on staff or a contractual agreement for services with a surveying firm, please submit those qualifications as well. The City of Moore will require pre-employment and random drug screens of these employees. The City of Moore will also require that the employees submit to background checks for felony convictions, sex crimes, and US resident status. The contractor will be required to remove and replace any employee that does not pass the background checks, drug tests, or perform to the satisfaction of the City of Moore.

## **V. Miscellaneous**

All materials submitted by any proposer in response to the bid will become the property of the City and will be returned only at the option of the City.

Contractors shall prepare and develop submittals at the sole cost and expense of the Contractor.

The City reserves the right to reject any kind and all submittals and re-solicit for new qualifications, or to reject any and all submittals and temporarily or permanently abandon the project. The City makes no representations, written or oral, that it will enter into any form of agreement with any Contractor to the bid for any project and no such representation is intended or should be construed by the issuance of this bid.

A bid response may be modified or withdrawn in person at any time before the scheduled due date and time of responses provided a receipt for the withdrawn response is signed by the Contractor's authorized representative. The City reserves the right to request proof of authorization to withdraw a bid response.

All responding contractors must meet all Federal requirements for the duration of the contract and must meet record retention requirements for a three year period after contract closeout. On federally funded projects the contractor must comply with all applicable federal requirements including but not limited to: Civil Rights, Affirmative Action, Employment Restrictions, Conduct, Lobbying, Copyrights, Religious Activities, Housing and Community Development (HCD) Act of 1974, and all applicable Office of Management and Budget (OMB) Circulars.

# Schedule

The following is a detailed schedule of events for the Bid process, which is subject to modification by the City:

- **February 23, 2018:** Advertise Bid
- **March 2, 2018:** Advertise Bid
- **March 7, 2018:** **Mandatory** Pre-Bid Meeting, 2:00pm at Moore City Hall
- **March 12, 2018:** Questions due to the City
- **March 15, 2018:** Responses to submitted questions posted online
- **March 26, 2018:** Bids due to the City
- **March 27-April 4, 2018:** Contract Negotiation
- **April 16, 2018:** City Council meeting
- **April 17, 2018:** Contract execution / notice to proceed

# LIST OF EXHIBITS

- Exhibit A Construction Plans for Little River Park Drainage Improvements prepared by Meshek & Associates
- Exhibit B Standard Federal Requirements: Language for Construction Bidding
- Exhibit C Non-Collusion Affidavit
- Exhibit D Certification Regarding Lobbying
- Exhibit E Certification Regarding Debarment, Suspension, and Other Responsibility Matters
- Exhibit F MOB/WOB/Section 3 Business
- Exhibit G Form 4400 A – Uniform Cost/Price Analysis (Excel Document)
- Exhibit H Conflict of Interest Certification
- Exhibit I Sample Construction Contract

**DRAWING REFERENCE LEGEND**

- REFERS TO A SECTION
- REFERS TO A DETAIL
- REFERS TO A PROFILE OR ELEVATION
- SECTION, DETAIL OR PROFILE NUMBER  
SHEET NUMBER ON WHICH IT IS LOCATED
- DETAIL DESCRIPTION**  
SCALE: 1"=XX'

**DATUM INFORMATION**

HORIZONTAL DATUM  
NAD '83  
VERTICAL DATUM  
NAVD '88

# CITY OF MOORE, OKLAHOMA

## CONSTRUCTION PLANS FOR LITTLE RIVER PARK DRAINAGE IMPROVEMENTS

PROJECT # I-15-W-LMA  
THE CITY OF MOORE,  
CLEVELAND COUNTY

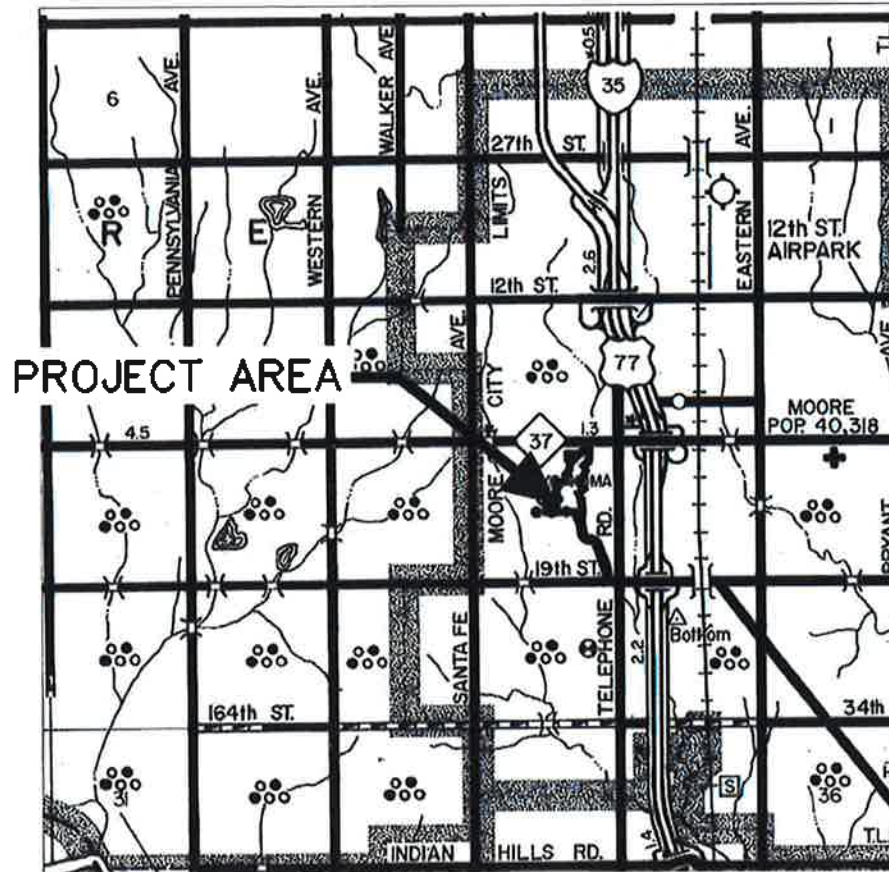
R 3 W

**DRAWING INDEX**

1 - COVER	57 - SITE GRADING PLAN
2 - GENERAL CONSTRUCTION NOTES	58-59 - 17th ST ROADWAY P&P
3 - ROADWAY & DRAINAGE PAY ITEM NOTES	60-62 - 17th ST WATERLINE P&P
4 - WATERLINE PAY ITEMS	63 - PARKING LOT DETAIL
5-6 - BRIDGE CONSTRUCTION NOTES	64-65 - HANDICAP RAMP DETAILS
7-8 - BRIDGE TYPICAL SECTIONS & DETAILS	66 - CONCRETE TRICKLE CHANNEL P&P
9 - PAY QUANTITIES AND NOTES (BRIDGE)	67 - TRAIL & DAM CONNECTION
10-17 - TYPICAL SECTIONS & DETAILS	68-69 - STORM P&P
18-20 - SURVEY DATA / RIGHT OF WAY MAP	70 - ACCESS RAMPS P&P
21 - STORM WATER MANAGEMENT PLAN	71-80 - CHANNEL PLAN AND PROFILES
22-29 - EROSION CONTROL PLAN	81 - INTERSECTION DETAILS
30-35 - GEOMETRIC DATA	82-105 - CHANNEL CROSS SECTIONS
36 - KEY MAP	106-122 - POND CROSS SECTIONS
37 - DEMOLITION PLAN	123-129 - EMERGENCY SPILLWAY SECTIONS
38-49 - PEDESTRIAN BRIDGE G,P,&E	130-133 - DAM SECTIONS
50-56 - POND OUTLET STRUCTURE & DETAILS	

**SYMBOL LEGEND**

- Electric Meter
- Electric Box
- Electric Transformer
- Junction Box
- Gas Meter
- Gas Valve
- Irrigation Control Valve
- Water Meter
- Water Valve
- Sprinkler Head
- Fire Hydrant
- Sanitary Sewer Manhole
- Storm Water Manhole
- Cleanout
- Power Pole
- Guy Anchor
- Light Pole
- Telephone Pedestal
- Sign
- Mailbox
- Deciduous Tree
- Coniferous Tree
- Bush
- Fence Line (All Types)
- Overhead Electric
- Underground Electric
- Overhead Telephone
- Underground Telephone
- Underground Cable Television
- Natural Gas Line
- Fiber Optic Cable
- Water Line
- Stormwater Line
- Sanitary Sewer Line
- Bench Mark
- Single Gate Drop Inlet
- Manhole



LOCATION MAP  
SECTION 22  
T-10-N, R-3-W

**APPLICABLE ODOT STANDARDS:**

- EROSION CONTROL**  
SSS-1 SOLID SLAB SODDING
- PAVEMENTS**  
ASCD-5 ASPHALT SURFACING CONSTRUCTION DETAILS  
CSCD-5 CONCRETE SURFACING CONSTRUCTION DETAILS  
LECS-4 JOINTS & SEALERS  
WCR-3 WHEELCHAIR RAMPS  
TWD-1 TACTILE WARNING DEVICES  
DC-3-2 PAVED DITCHES AND FLUMES
- DRAINAGE STRUCTURES**  
MFC-4 MANHOLE FRAME AND COVER  
MJB-3 MANHOLES AND JUNCTION BOXES
- CULVERT INSTALLATION**  
SPB-1 STANDARD PIPE BEDDING  
SBI-4 STANDARD PIPE INSTALLATION

**APPLICABLE SPECIFICATIONS:**

CURRENT OKLAHOMA DEPARTMENT OF TRANSPORTATION LATEST EDITION (O.D.O.T.) STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION SHALL BE USED FOR THE TECHNICAL SPECIFICATIONS.

CITY OF MOORE STANDARD SPECIFICATIONS FOR CONSTRUCTION.

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY (DEQ) REGULATIONS SHALL APPLY FOR ALL WASTE AND SEWER RELATED WORK.

**ONE CALL UTILITY LOCATION NUMBER**

846-5032  
1-800-522-6543

THIS NUMBER IS TO BE USED FOR INFORMATION ON THE LOCATION OF ALL UNDERGROUND UTILITIES. CONTACT THIS NUMBER AND OTHER NUMBERS SPECIFIED IN THE PLANS PRIOR TO ANY EXCAVATION.



- |                                      |  |  |
|--------------------------------------|--|--|
| <b>ADAM WEBB</b><br>Council Member   | <b>GLENN LEWIS</b><br>Mayor            | <b>DANIELLE MCKENZIE</b><br>Council Member |
| <b>MARK HAMM</b><br>Council Member   | <b>STEPHEN O. EDDY</b><br>City Manager | <b>MELISSA HUNT</b><br>Council Member      |
| <b>JASON BLAIR</b><br>Council Member | <b>RANDY BRINK</b><br>City Attorney    | <b>TERRY CAVNAR</b><br>Council Member      |

**CONTACT INFORMATION**

- |   |   |
|---|---|
| <b>MOORE POLICE</b><br>117 E. MAIN ST.<br>MOORE, OK 73160<br>405-793-5171 | <b>CITY OF MOORE<br/>PUBLIC WORKS DEPARTMENT</b><br>512 NW. 27TH<br>MOORE, OK 73160<br>405-793-5070 |
| <b>OG&amp;E</b><br>405-553-5785   | <b>ONG</b><br>405-556-6411  |
| <b>AT&amp;T</b><br>405-291-3106   | <b>COX</b><br>405-600-6336  |



**CP&Y, Inc.**  
2000 N. CLASSEN BLVD., SUITE 1410  
OKLAHOMA CITY, OK 73106  
(405) 848-2346  
CERTIFICATE OF AUTHORIZATION NO. 4006  
EXP. DATE: JUNE 30, 2018

SHEETS 1-8  
SHEETS 10-37  
SHEETS 57-133  
Prepared By:  
**MESHEK & ASSOCIATES, L.L.C.**

*Benjamin W. Fletcher*  
BENJAMIN W. FLETCHER, P.E., (L.S.)  
MESHEK & ASSOCIATES

SHEETS 9  
SHEETS 38-40  
SHEETS 46-56  
Prepared By:  
**CP&Y**

*David M. Neuhauser*  
DAVID M. NEUHAUSER, P.E.  
CP&Y

2.5.2018  
DATE

1437 S Boulder Ave Ste 1550 | Tulsa, OK 74119 | 918-392-5620

**MESHEK & ASSOCIATES, L.L.C.**  
C.A. 1487 EXPIRES 8/30/19  
1437 S. BOULDER AVE, STE. 1550  
TULSA, OK  
(PH) 918-392-5620  
(FAX) 918-392-5621

**GENERAL NOTES**

1. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE 2009 OKLAHOMA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION AND THE CURRENT CITY OF MOORE'S STANDARD SPECIFICATIONS AND STANDARD DETAILS AND STANDARD DRAWINGS.
2. THE CONTRACTOR SHALL COMPLY WITH ALL FEDERAL, STATE AND LOCAL LAWS GOVERNING SAFETY, HEALTH AND SANITATION. THE CONTRACTOR SHALL PROVIDE ALL SAFEGUARDS, SAFETY DEVICES AND PROTECTIVE EQUIPMENT, AND TAKE ANY OTHER NEEDED ACTION ON AS HIS OWN RESPONSIBILITY OR AS THE ENGINEER MAY DETERMINE REASONABLY NECESSARY TO PROTECT PROPERTY IN CONNECTION WITH THE PERFORMANCE OF WORK COVERED BY THE CONTRACT.
3. PAY ITEMS SHALL BE AS SPECIFIED ON THE CITY OF MOORE OR ODOT STANDARD DRAWINGS EXCEPT AS MODIFIED BY THE CONTRACT.
4. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK IN EACH AREA. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT RESULT FROM HIS FAILURE TO LOCATE AND PRESERVE ANY AND ALL UTILITIES.
5. THE LOCATIONS OF THE UTILITIES ARE SHOWN ACCORDING TO ALL AVAILABLE INFORMATION. THE CONTRACTOR SHALL NOTIFY EACH UTILITY OWNER PRIOR TO COMMENCEMENT OF WORK TO VERIFY BOTH HORIZONTAL AND VERTICAL LOCATIONS. THE FOLLOWING IS A LIST OF UTILITY OWNERS; AT&T, OKLAHOMA ELECTRIC COOPERATIVE (OEC), OKLAHOMA NATURAL GAS (ONG), OG&E, AND THE CITY OF MOORE. SEE TITLE SHEET FOR CONTACT INFORMATION.
6. THE CONTRACTOR SHALL GIVE THE NOTIFICATION CENTER OF OKLAHOMA ONE-CALL SYSTEM, INC. NOTICE OF ANY EXCAVATION NO SOONER THAN TEN DAYS NOR LATER THAN 48 HOURS, EXCLUDING SATURDAYS, SUNDAYS AND LEGAL HOLIDAYS, PRIOR TO THE COMMENCEMENT OF WORK. PHONE 1-811-522-6543.
7. THE CONTRACTOR SHALL TAKE REASONABLE PRECAUTIONS TO PREVENT EXCESS MOISTURE FROM INCLEMENT WEATHER OR OTHER SOURCES FROM ENTERING ANY STREET EXCAVATION. IF EXCESS MOISTURE DOES ENTER THE EXCAVATION THROUGH THE NEGLIGENCE OF THE CONTRACTOR AND THE ADJOINING PAVEMENT IS ADVERSELY EFFECTED BY THE EXCESS MOISTURE, THE CONTRACTOR SHALL REPLACE THE ADJOINING PAVEMENT AND SUBBASE AT HIS SOLE EXPENSE.
8. THE CONTRACTOR SHALL PRESERVE THE INTEGRITY OF THE EXISTING STRUCTURES WITHIN THE PROJECT EXTENTS.
9. THE CONTRACTOR SHALL WORK IN COOPERATION WITH THE CITY OF MOORE TO ESTABLISH, INSTALL, MAINTAIN, AND OPERATE COMPLETE, ADEQUATE, AND SAFE TRAFFIC CONTROLS DURING THE ENTIRE CONSTRUCTION PERIOD. ALL FLAGMEN, BARRICADES, AND TRAFFIC CONTROL DEVICES SHALL BE APPROVED BY THE FIELD ENGINEERING REPRESENTATIVE.
10. CONSTRUCTION SIGNAGE WILL BE INSTALLED IN A MANNER APPROVED BY THE ENGINEER, IN ACCORDANCE WITH CHAPTER VI OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CURRENT ADDITION, AND APPLICABLE ODOT STANDARD DRAWINGS. THE CONTRACTOR SHALL PROVIDE A PROPOSED TRAFFIC CONTROL PLAN FOR APPROVAL BY THE ENGINEER PRIOR TO BEGINNING WORK.
11. THE CONTRACTOR SHALL NOTIFY THE CITY OF MOORE, 405-793-5070, A MINIMUM OF 48 HOURS PRIOR TO COMMENCING WORK OR PRIOR TO REMOVING TRAFFIC SIGNS.
12. ALL BROKEN CONCRETE, WASTE MATERIAL, AND OTHER DEBRIS SHALL BECOME THE PROPERTY OF THE CONTRACTOR, SHALL BE REMOVED FROM THE LIMITS OF THE PROJECT AND DISPOSED OF IN A MANNER APPROVED BY THE ENGINEER. NO ADDITIONAL PAYMENT WILL BE MADE FOR THE DISPOSAL OF THIS MATERIAL.
13. ALL EXCAVATED MATERIAL NOT REQUIRED IN THE PROJECT AS FILL, SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF BY THE CONTRACTOR IN A MANNER ACCEPTABLE TO THE ENGINEER WITHOUT COST TO THE CITY. THE CONTRACTOR WILL BE REQUIRED TO OBTAIN AN EARTH CHANGE PERMIT IF ANY MATERIAL IS STORED ON THE PROJECT SITE AND/OR DISPOSED OF WITHIN THE CITY LIMITS.
14. ALL TREES, BRUSH AND OTHER DEBRIS THAT MIGHT INTERFERE WITH THE FLOW OF WATER IS TO BE CLEANED OUT TO THE RIGHT-OF-WAY LINE IN A MANNER APPROVED BY THE ENGINEER. ALL COST TO BE INCLUDED IN THE PRICE BID FOR OTHER ITEMS OF WORK. TREES OUTSIDE THE FILL SLOPES AND THE TOP OF CUT SLOPES SHALL NOT BE DISTURBED EXCEPT WITH THE WRITTEN APPROVAL OF THE ENGINEER.
15. WHERE MATERIALS ARE TRANSPORTED IN THE PROSECUTION OF WORK, VEHICLES SHALL NOT BE LOADED BEYOND THE CAPACITY RECOMMENDED BY THE VEHICLE MANUFACTURER OR AS PRESCRIBED BY ANY FEDERAL, STATE OR LOCAL LAW OR REGULATION.
16. ANY DAMAGE TO THE ROADWAY PAVEMENT, CURB, DRIVEWAYS OR SIDEWALK CAUSED BY THE CONTRACTOR'S OPERATION SHALL BE REPAIRED TO THE ENGINEER'S SATISFACTION AND SHALL BE ACCOMPLISHED AT THE CONTRACTOR'S SOLE EXPENSE. ALL DISTURBED ITEMS SHALL BE REPAIRED TO MATCH EXISTING MATERIALS AND PATTERNING.
17. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL NECESSARY QUALITY CONTROL TESTING TO ENSURE THAT PROJECT REQUIREMENTS ARE MET. THE TESTING LAB SHALL BE SUBMITTED FOR APPROVAL
18. MASONRY STRUCTURES SHALL NOT BE CONSTRUCTED WITHIN THE STREET RIGHT-OF-WAY.
19. ALL CONCRETE CURB AND GUTTERS SHALL BE MONOLITHIC POURS. DOWELED-ON CURBS WILL NOT BE ALLOWED.
20. NO LIFTING HOLES WILL BE ALLOWED ON ANY REINFORCED CONCRETE PIPES OR REINFORCED CONCRETE BOXES.
21. 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.

22. THE CONTRACTOR SHALL REPLACE ANY SECTION CORNERS OR OTHER PERMANENT RIGHT OF WAY MARKERS REMOVED OR DISTURBED AS A RESULT OF THE CONSTRUCTION OF THIS PROJECT. REPLACEMENT OF SECTION CORNERS OR ANY OTHER MONUMENTS SHALL BE PERFORMED BY A LICENSED LAND SURVEYOR AUTHORIZED TO PERFORM WORK IN THE STATE OF OKLAHOMA.
23. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTROL AND MAINTENANCE OF THE STORMWATER DRAINAGE. STORMWATER PONDING ON THE CONSTRUCTION SITE THAT IS THE RESULT OF CONSTRUCTION WILL NOT BE ALLOWED.
24. STRAW OR HAY BALES AS STORMWATER BEST MANAGEMENT PRACTICES ARE NO LONGER ALLOWED ON CONSTRUCTION PROJECTS.
25. THE CONTRACTOR MUST CALL 1-800-458-4251 IMMEDIATELY IF A NATURAL GAS PIPELINE IS CUT, DAMAGED, OR OTHERWISE DISTURBED.
26. PRIOR TO FINAL ACCEPTANCE, ALL EXPOSED CURB SURFACES SHALL BE CLEANED OF ALL DICOLORATION SUCH AS ASPHALT STAIN, TIRE MARKS, OR OTHER DISFIGUREMENT.
27. ALL TRENCH WIDTHS & BEDDING MATERIALS SHALL BE AS SHOWN ON ODOT STANDARD PIPE INSTALLATION DETAIL, STANDARD SPI-4-0. SPECIFIED TRENCH WIDTHS SHALL BE MAINTAINED FULL DEPTH FROM THE FLOWLINE TO THE GRADING TEMPLATE. THE CONTRACTOR SHALL KEEP THE OPEN TRENCH DRAINED.

**AS-BUILTS:**

THE CONTRACTOR SHALL KEEP ON SITE A CURRENT SET OF THE APPROVED CONSTRUCTION WORKING DRAWINGS AT ALL TIMES. THE CONTRACTOR SHALL MARK (IN RED INK) ALL APPROVED CHANGES INCURRED FOLLOWING PUBLIC WORKS DEPARTMENT APPROVAL OF THE INITIAL DRAWINGS. THESE CHANGES MAY BE INITIATED FROM FIELD CONDITIONS OR CHANGES MADE BY THE DESIGN ENGINEER OR THE PUBLIC WORKS ENGINEER. EXCEPT FOR MINOR FIELD ADJUSTMENTS, ALL CHANGES SHALL BE REVIEWED AND AGREED TO BY THE DESIGN ENGINEER AND THE PUBLIC WORKS ENGINEER PRIOR TO FINAL APPROVAL OF THE PROJECT. THE CONTRACTOR SHALL SUBMIT THE WORKING DRAWINGS TO THE ENGINEER OF RECORD (DESIGN ENGINEER) AFTER FINAL INSPECTION OF PROJECT TO SERVE AS A BASIS FOR DEVELOPMENT OF FINAL AS-BUILT RECORD DRAWINGS.

**APPLICABLE CITY OF OKLAHOMA CITY STANDARD DRAWINGS:**

- PAVING**  
D-600 - GUARDRAIL EXTRUDER TERMINAL  
D-700A - ADA CURB RAMP DETAILS  
D-700B - ADA CURB RAMP DETAILS  
D-800 - STANDARD REPAIR DETAILS
- WATERLINE**  
W-02 - BEDDING & TRENCHING DETAILS - DIP LESS THAN OR EQUAL TO 12"  
W-05-06 - FIRE HYDRANT INSTALLATION ON NEW MAIN  
W-09 - FIRE HYDRANT NOZZLES THREAD DETAILS  
W-10-11 - CAST IRON VALVE BOX, LID & EXTENSION  
W-21 - SINGLE LONG SERVICE REPLACEMENT  
W-29 - METER RELOCATION FOR STREET RESURFACING, SIDEWALKS, & ADA RAMPS  
W-41-43 - HORIZONTAL THRUST BLOCK - BENDS  
W-44-45 - HORIZONTAL THRUST BLOCK - TEES, PLUGS, VALVES  
W-46-47 - VERTICAL THRUST BLOCK - BENDS

**SANITARY SEWER**  
S-STD-01-05 - SANITARY SEWER STANDARD DETAILS

**APPLICABLE ODOT STANDARDS:**

- EROSION CONTROL**  
SSS-1-1 - SOLID SLAB SODDING  
TSC2-3-2 - TEMPORARY SEDIMENT CONTROLS

- DRAINAGE STRUCTURES**  
SMD-3-1 - STANDARD MEDIAN DRAINS  
CI-1-2 - CURB INLETS  
SSIF-4-0 - STORM SEWER INLET FRAMES (CURB INLETS)  
CIG-3-0 - CAST IRON GRATES (CURB INLETS)  
MFC-4-1 - MANHOLE FRAME AND COVER  
MJB-3-1 - MANHOLES AND JUNCTION BOXES  
SPI-4-1 - STANDARD PIPE INSTALLATION  
SPB-1-4 - STANDARD PIPE BEDDING  
GPI-4-0 - GRATED PIPE DROP INLET

- TRAFFIC CONTROL**  
TCS1-1-01 - TRAFFIC CONTROL CONSTRUCTION NOTES  
TCS2-1-00 - TRAFFIC CONTROL TABLES AND CHARTS  
TCS3-1-01 - TEMPORARY TRAFFIC CONTROL ELEMENTS  
TCS4-1-01 - TRAFFIC CONTROL DEVICES  
TCS5-1-00 - TYPICAL SIGN INSTALLATION  
TCS6-1-02 - CHANNELIZING DEVICES  
TCS7-1-02 - PLACEMENT OF ADVANCE WARNING SIGNS  
TCS8-1-00 - CONSTRUCTION SIGNS  
TCS9-1-01 - TRAFFIC CONTROL STANDARD CONSTRUCTION SIGNS  
TCS11-1-01 - TRAFFIC CONTROL STANDARD CONSTRUCTION SIGNS

ER:\NET\DATE\Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\_Design\Drawings\15MOR05\_NOTES\_QUANTITIES.dwg

**GENERAL CONSTRUCTION NOTES**

**LITTLE RIVER PARK DRAINAGE IMPROVEMENTS**

**CITY OF MOORE**

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	JCL	Value	APPROVED:
				DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
				RECOMMENDED			
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	DEVELOPMENT SERVICES			
			VERTICAL:	RECOMMENDED			
				DEPUTY DIRECTOR			PUBLIC WORKS DIRECTOR
			FILE:	DRAWING:			DATE:
			ATLAS PAGE NO. ###				SHEET 2 OF 133 SHEETS



LITTLE RIVER PARK DRAINAGE IMPROVEMENTS PAY ITEMS					
ITEM NUMBER	OKC SPEC	ITEM DESCRIPTION	UNIT	Notes	QUANTITY
1	109	SWPPP DOCUMENTATION AND MANAGEMENT	LS	6,37	1
2	200	EARTHWORK	CY	4,25,36	174862
3	213	GRANULAR BACKFILL (1" CRUSHED STONE CLEAN WASHED)	CY	2	5204
4	217	PRECAST ARCH CULVERT W/ AESTHETICS	EA		1
5	220	8" COMPACTED SUBGRADE (WALL)	SY	2	4045
6	225	AGGREGATE BASE (TYPE A)	CY		422
7	301	PORTLAND CEMENT CONCRETE PAVEMENT (9" DOWEL JOINTED)	SY	12	1901
8	305	CONC. CURB (6" BARRIER-INTEGRAL)	LF	11	1124
9	314	BRICK PAVERS (SP)	SF		298
10	403	24" CONCRETE END TREATMENT (CLASS A CONC.)	EA		1
11	451	(SP) 8" CORRUGATED POLYPROPYLENE PIPE	LF		25
12	451	(SP) 16" CORRUGATED POLYPROPYLENE PIPE	LF		19
13	451	(SP) 18" CORRUGATED POLYPROPYLENE PIPE	LF		5
14	451	(SP) 21" CORRUGATED POLYPROPYLENE PIPE	LF		8
15	451	(SP) 24" CORRUGATED POLYPROPYLENE PIPE	LF		42
16	451	(SP) 36" CORRUGATED POLYPROPYLENE PIPE	LF		27
17	451	(SP) 48" CORRUGATED POLYPROPYLENE PIPE	LF		16
18		6' X 3' C76 CL III RCB, COMPLETE IN PLACE	LF		81
19	451	36" C76 CL III RCP, COMPLETE IN PLACE	LF		57
20	454	STORM SEWER MANHOLE (5' DIA.)	EA	14,33	11
21	454	STORM SEWER MANHOLE (6' DIA.)	EA	14,33	3
22	454	STORM SEWER MANHOLE ADDED DEPTH (5' DIA.)	VF	26	21
23		STORM SEWER MANHOLE ADDED DEPTH (6' DIA.)		26	4
24	454	INLET SMD (TYPE 2B)	EA	16	2
25	459	ADJUST MANHOLE TO GRADE	EA	10	7
26	505	4" PERFORATED SUBDRAIN PIPE	LF		6723
27	611(G)	INLET CI DES. 2 (D)	EA	16	5
28		ST-95 STORM OUTLET STRUCTURE (COMPLETE)	EA	47	1
29	735	TRAFFIC STRIPE (PLASTIC) (WHITE) (4" WIDE)	LF	45	356
30	735	TRAFFIC STRIPE (PLASTIC) (WHITE) (24" WIDE)	LF	45	80
31	735	TRAFFIC STRIPE (PLASTIC) (WHITE) (SYMBOLS)	EA	45	2
32	735	PAVEMENT MARKING REMOVAL (TRAFFIC STRIPE)	LF		223
33	735	PAVEMENT MARKING REMOVAL (SYMBOLS)	EA		1
34	801	CONSTRUCTION STAKING, LEVEL II	LSUM	3,28	1
35	809	FIELD OFFICE	EA	34	1
36	809	MOBILIZATION	EA		1
37	810	CLEARING AND RESTORING	LSUM	1,4,5,8,29,30	1
38	811	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	LSUM	4,10,30	1
39	811	REMOVE EXIST. HEADWALL & WINGWALL	EA	4,10	4
40	812	REMOVAL OF 17TH STREET BRIDGE	LS	4,10,30	1
41	812	REMOVE SIDEWALK	SY	4,10	3167
42	812	REMOVE CURB & GUTTER	LF	4,10	1124
43	812	CONCRETE PAVEMENT REMOVAL	SY	4,10	1901
44	812	REMOVE DRIVEWAY	SY	4,10	48
45	823	SIDEWALK	SY	12	314
46	823	6" P.C. CONC. DRIVEWAY (HES)	SY	12	48
47	828	4' BLACK VINYL COATED CHAIN LINK FENCE	LF		6067
48	830	WHEELCHAIR RAMP (TYPE B)	SY		47
49	830	WHEELCHAIR RAMP (TYPE D)	SY		136
50	830	TACTILE MARKERS/TRUNCATED DOMES	SF		120
51	840	SOLID SLAB SODDING (U-3 BERMUDA)	SY	7,9,49	120287
52	900	TEMPORARY SILT FENCE	LF	6	15100
53	900	FILTER FABRIC	SY	6	1935
54	932	10" WIDE CONCRETE TRAIL (4" THICK)	SY	12	14044
55	988	TURF REINFORCEMENT MATS (TRMS)	SY	31	11833
56	988	TURF REINFORCEMENT MATS (ARMS)	SY	31	333
57	SPECIAL	BOLLARD POST (REMOVABLE RECEIVER W/ LID)	EA	48	4
58	SPECIAL	36" FLAP GATE	EA		2
59	SPECIAL	RECON BLOCK CHANNEL WALL (NO AESTHETICS)	SFF		54237

**ROADWAY & DRAINAGE PAY ITEM NOTES**

- ALL COSTS FOR REMOVING TREES, SHRUBS, STUMPS, POSTS, AND ALL OTHER DEBRIS AND/OR OBSTRUCTIONS NOT COVERED BY A SEPARATE PAY ITEM ARE INCLUDED IN THE PRICE BID.
- INCLUDES COMPACTION OF BASE TO 98% AASHTO STD. PROCTOR. COST SHALL INCLUDE 12% CEMENT KILN DUST, SUBGRADE PROCESSING AND COMPACTION, FINAL GRADING.
- 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.
- WASTE MATERIAL TO BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE IN A MANNER APPROVED BY THE ENGINEER.
- CONTRACTOR SHALL REPAIR ANY IRRIGATION SYSTEMS DAMAGED OR REQUIRING RELOCATION DURING THE CONSTRUCTION OF THIS PROJECT TO THE SATISFACTION OF THE PROPERTY OWNER. COST SHALL BE INCLUDED IN THE PRICE BID.
- EROSION PROTECTION SHALL BE PLACED AROUND DRAINAGE INLETS AS REQUIRED TO PREVENT ENTRANCE OF EROSION MATERIAL. EROSION PROTECTION SHALL BE PLACED AS NECESSARY TO PREVENT EROSION WASH TO ADJACENT PROPERTY. ALL EROSION PROTECTION INSTALLED MUST BE MAINTAINED BY THE CONTRACTOR FOR THE DURATION OF THE PROJECT. EROSION PROTECTION SHALL BE REMOVED AT THE END OF THE PROJECT AS DIRECTED BY THE ENGINEER, COST TO BE INCLUDED IN THE PRICE BID. THE PRICE INCLUDES THE COST OF SEDIMENT REMOVAL PER THE STORMWATER MANAGEMENT PLAN.
- THE PAY ITEM FOR SOLID SLAB SODDING INCLUDES QUANTITIES FOR PLACEMENT AND COMPACTION OF SUITABLE BACKFILL AND SOD AT EXISTING GRASS AREAS WHICH MAY BE DAMAGED DURING CONSTRUCTION OF CURBS, SIDEWALKS, DRIVEWAYS, AND OTHER MISCELLANEOUS ITEMS. THE QUANTITIES ARE BASED ON UTILIZING A 3 FOOT WIDE STRIP IN THESE AREAS. THE SOD SHALL BE OF LIKE KIND TO THE EXISTING SOD. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE REPAIR OR REPLACEMENT OF DAMAGE TO EXISTING GRASS THAT EXCEEDS THESE LIMITS.
- PAY ITEM INCLUDES ALL MOWING WITHIN THE RIGHT-OF-WAY AS DIRECTED DURING CONSTRUCTION.
- 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.
- ALL SAW CUTTING AND REMOVAL SHALL BE INCLUDED IN THE COST OF THE ITEM TO BE ADJUSTED, REMOVED, REPAIRED, OR REPLACED.
- 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.
- INCLUDES ALL COST OF SAWED JOINTS AND SEALING OF ALL JOINTS INCLUDING LONGITUDINAL JOINTS, SHALL BE INCLUDED IN THE PRICE BID FOR PORTLAND CEMENT CONCRETE PAVEMENT. ALL MATERIALS AND LABOR REQUIRED TO CONSTRUCT.
- ALL EXCESS EXCAVATION IS TO BE REMOVED FROM JOB SITE AND TO BECOME PROPERTY OF THE CONTRACTOR.
- THIS ITEM SHALL INCLUDE THE COST OF NEW MANHOLE FRAME AND COVER PER CITY OF MOORE STANDARDS.
- NOT USED.
- THE TOTAL COST FOR RUBBERIZED ASPHALT AND/OR SILICONE AT MANHOLES, VALVE BOXES, INLETS, AND INLET APRONS, SHALL BE INCLUDED.
- 17-22. NOT USED
- 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.
- IF WARNING LIGHTS ARE TO BE USED ON TRAFFIC CONTROL DEVICES, TYPE "A" LIGHTS SHALL ONLY BE USED ON DEVICES WARNING OF UNEXPECTED HAZARDS, AND SHALL NOT BE USED FOR DELINEATION OF THE TRAVELED WAY. ONLY TYPE "C" WARNING LIGHTS SHALL BE USED FOR DELINEATION OF THE TRAVELED WAY, AND TYPE "C" LIGHTS SHALL NOT BE USED FOR ANY OTHER PURPOSE.
- 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.
- ADDITIONAL DEPTH IN A MANHOLE SHALL BE MEASURED FROM 6 FT AS MEASURED FROM THE TOP OF RIM TO THE LOWEST FLOWLINE.
- PRICE BID FOR THIS ITEM SHALL BE PAYMENT IN FULL FOR THE INSTALLATION, MAINTENANCE AND SUBSEQUENT REMOVAL OF ALL NECESSARY CONSTRUCTION TRAFFIC CONTROL REQUIRED FOR COMPLETION OF THE PROJECT.
- 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.
- 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.

- PAY ITEM INCLUDES REMOVAL OF ALL STRUCTURES AND OBSTRUCTIONS WITHIN PROJECT LIMITS NOT SPECIFIED BY OTHER ITEMS OF WORK.
- TURF REINFORCEMENT MAT (TRMS) TO BE USED ON CHANNEL BOTTOM ONLY, AS SHOWN IN TYPICAL SECTION SHEETS. TURF REINFORCEMENT MAT (ARMS) TO BE USED IN SPECIFIED AREAS INSIDE POND. SEE SHEETS 67-68 FOR (ARMS) AREAS.
- STANDARD BEDDING MATERIAL TO BE TYPE A AGGREGATE BASE COMPACTED TO 95% STANDARD PROCTOR DENSITY. AGGREGATE BASE IN THE ROADWAY SHALL BE 98% MODIFIED PROCTOR.
- ALL MANHOLES SHALL BE COMPLETE IN PLACE. THIS PAY ITEM INCLUDES FRAME, COVER, CONCRETE AND ALL OTHER INCIDENTALS REQUIRED FOR PLACEMENT. SEE 14.
- NOT USED.
- NOT USED.
- UNCLASSIFIED EXCAVATION INCLUDES REMOVAL OF AGGREGATE BASE AND SUBGRADE UNDER EXISTING PAVEMENT TO BE REPAIRED.
- 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 SHALL BE INCLUDED IN THE PRICE BID FOR THIS ITEM.
45. NOT USED.
- ITEM SHALL INCLUDE ALL LABOR AND MATERIALS REQUIRED TO PLACE SEPARATOR FABRIC ON COMPACTED SUBGRADE BENEATH AGGREGATE BASE. FABRIC SHALL CONFORM TO AASHTO M 288-17. MIRAFI 160N OR APPROVED EQUAL. LONGITUDINAL AND TRANSVERSE OVERLAP SHALL NOT BE LESS THAN 3 FEET.
- CLSM, LOW STRENGTH CONCRETE SHALL BE USED AS BACKFILL AROUND ALL INLETS, JUNCTION BOXES, AND MANHOLES IN PAVING.
- REMOVABLE BOLLARD RECEIVER WITH LID (RELANCE FOUNDRY BOLLARD POST R-7902, OR APPROVED EQUAL.)
- CONTRACTOR SHALL NOTIFY THE CITY PRIOR TO INSTALLATION OF SOD.

**NOTE:**

PAY ITEMS LISTED AS OKC ARE FROM THE OKLAHOMA CITY STANDARD CONSTRUCTION SPECIFICATIONS. ALL OTHER ITEMS SHALL REFER TO THE 2009 ODOT STANDARD SPECIFICATION FOR CONSTRUCTION.

ADD ALTERNATE 1 - TRAIL EAST OF CHANNEL (CRL_STA: 24+33 - 44+32)			UNIT	Notes	QUANTITY
1	932	10" WIDE CONCRETE TRAIL (4" THICK)	SY	12	2243

ADD ALTERNATE 2 - TRAIL INSIDE POND AREA			UNIT	Notes	QUANTITY
1	932	10" WIDE CONCRETE TRAIL (4" THICK)	SY	12	2618
2	403	42" CONCRETE END TREATMENT (CLASS A CONC.)	EA	47	1
3	451	36" C76 CL III RCP, COMPLETE IN PLACE	LF	37	40

ADD ALTERNATE 3 - RECON BLOCK CHANNEL WALL W/ AESTHETICS			UNIT	Notes	QUANTITY
1	SPECIAL	RECON BLOCK W/ WEATHERED EDGE & STAINING	SFF		54237

LITTLE RIVER SUMMARY OF EARTHWORK					
LOCATION	UNCLASSIFIED EXCAVATION	EMBANKMENTS	EXCESS EXCAVATION	UNCLASSIFIED BORROW	NOTES
STATION TO STATION	202(A)			202(D)	
	CY	CY	CY	CY	
POND/SPILLWAY	162857.34	22075.79	140781.55	0.00	13
CHANNEL	13128.49	9334.55	3793.94	0.00	13
<b>TOTALS=</b>	<b>175985.83</b>	<b>31410.34</b>	<b>144575.49</b>	<b>0.00</b>	

**NOTE:**

SEE PAY ITEM NOTE #13 FOR EXCESS EXCAVATION REMOVAL.

<b>PAY ITEM NOTES</b>					
<b>LITTLE RIVER PARK DRAINAGE IMPROVEMENTS</b>					
<b>CITY OF MOORE</b>					
PLANS AND ESTIMATES PREPARED BY: <b>Meshek &amp; Associates, L.L.C.</b> 1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620					
REVISION	BY	DATE	PLAN SCALE	DRAWN	JCL Value
				DESIGNED	BWF Value
				SURVEY	PDH Value
			PROFILE SCALE	RECOMMENDED	
			HORIZONTAL:	DEVELOPMENT SERVICES RECOMMENDED	
			VERTICAL:	RECOMMENDED	
			FILE:	DRAWING:	DATE:
			ATLAS PAGE NO. ###		SHEET 3 OF 133 SHEETS



BRN15MOR05\_Little\_River\_Park\_Drainage\_Improvements\_Design\_Drawings\_15MOR05\_NOTES\_QUANTITIES.dwg

**WATERLINE CONSTRUCTION NOTES**

- ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH CURRENT STANDARD SPECIFICATIONS AND STANDARD DETAILS, CITY OF MOORE ENGINEERING SERVICES DEPARTMENT.
- EXISTING SERVICE CONNECTIONS ARE TO BE KEPT IN SERVICE UNTIL CONNECTIONS TO NEW MAIN ARE MADE. ALL SERVICE LINE RECONNECTIONS SHALL BE MADE BY THE CONTRACTOR. SERVICE RECONNECTIONS SHALL BE INSTALLED AS PER CITY OF MOORE STANDARD SPECIFICATIONS AND STANDARD DETAILS.
- CITY CREWS ONLY ARE TO OPERATE ALL VALVES. CONTRACTOR SHALL NOTIFY CITY OF MOORE.
- CONTRACTOR SHALL PROVIDE AT LEAST 48 HOUR NOTICE TO ALL RESIDENTS OR BUSINESSES AFFECTED BEFORE TURNING OFF ANY WATER. CONTRACTOR SHALL BE RESPONSIBLE FOR PLACING DOOR HANGERS ON AFFECTED HOMES AND BUSINESSES.
- LOCAL AND THROUGH TRAFFIC SHALL BE MAINTAINED THROUGH PROJECT AT ALL TIMES. OPEN CUT STREET CROSSINGS REQUIRE AN APPROVED TRAFFIC CONTROL PLAN WITH TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH CURRENT MUTCD REQUIREMENTS.

**WATERLINE PAY ITEM NOTES**

- BURIED BOLTS, HARNESS LUGS, AND COUPLINGS SHALL BE GIVEN TWO COATS OF KOPPER'S BITUMASTIC 300-M (DRY MIL THICKNESS OF 16 MILS) OR EQUAL. COST TO BE INCLUDED IN UNIT PRICE BID FOR PIPE AND FITTINGS.
- CONTRACTOR TO EXCAVATE ALL UTILITY CROSSINGS AHEAD OF PIPE LAYING SO THAT THE GRADES CAN BE ADJUSTED ON THE PROPOSED WATER MAIN TO AVOID UTILITY CONFLICTS. FAILURE TO DO SO SHALL NOT ENTITLE THE CONTRACTOR TO CLAIM EXTRA COMPENSATION FOR ADJUSTMENTS TO THE PROPOSED WATER MAIN. COST FOR EXCAVATING UTILITY CROSSINGS SHALL BE INCLUDED IN UNIT PRICE BID FOR PIPE.
- CONTRACTOR SHALL INSURE ALL POLES WHICH ARE AFFECTED BY TRENCHING CONDITIONS ARE BRACED BY OWNERS. PAYMENT SHALL BE INCLUDED IN "CLEARING AND RESTORING". NO ADDITIONAL PAYMENT SHALL BE MADE.
- ALL HYDRANTS, VALVES AND OTHER FITTINGS FROM ABANDONED WATER MAINS SHALL BE SALVAGED AND DELIVERED TO THE CITY OF MOORE, 405-793-5070. PAYMENT TO BE MADE UNDER "REMOVAL OF FIRE HYDRANT". NO ADDITIONAL PAYMENT SHALL BE MADE.
- CONTRACTOR SHALL REPAIR ANY IRRIGATION SYSTEMS, ROOF DRAINS, AND FENCING DAMAGED IN THE ZONE OF CONSTRUCTION DURING THE COURSE OF CONSTRUCTION TO SATISFACTION OF THE PROPERTY OWNER. PAYMENT SHALL BE INCLUDED IN "CLEARING AND RESTORING". NO ADDITIONAL PAYMENT SHALL BE MADE.
- COST OF ANY TEMPORARY LIVESTOCK FENCING AND POLES SHALL BE INCLUDED IN COST OF "CLEARING AND RESTORING". NO ADDITIONAL PAYMENT SHALL BE MADE.
- ALL COSTS FOR COMPONENTS NECESSARY TO RESTRAIN JOINTS FOR PIPE AND FITTINGS DESIGNATED RESTRAINED JOINT ("RJ") SHALL BE INCLUDED IN UNIT PRICE BID FOR PIPE OR FITTINGS.
  - DUCTILE IRON PIPE RESTRAINED JOINT SYSTEMS: US PIPE TRFLEX, GRIFFIN SNAPLOK, MCWANE THRUSTLOCK, AMERICAN FLEXRING, EBAA MEGALUG, SMITH-BLAIR CAMLOCK, CLOW TUFGRIP OR EQUAL SHALL BE USED ON THIS PROJECT. SHOULD RJ PIPE BE SPECIFIED THROUGH UNCASSED BORES, ONLY US PIPE TRFLEX, GRIFFIN SNAPLOK, MCWANE THRUSTLOCK, OR AMERICAN FLEXRING IS TO BE USED. LOCKING GASKETS NOT PERMITTED;
- ALL CUT ENDS AND WHERE SALVAGED FITTINGS HAVE BEEN REMOVED FROM ABANDONED WATER LINES LEFT IN PLACE, SHALL BE PLUGGED WITH 24-IN OF CONCRETE INSIDE THE PIPE. COST OF CONCRETE PLUGGING TO BE INCLUDED IN UNIT PRICE BID FOR PIPE. NO ADDITIONAL PAYMENT SHALL BE MADE.
- DETECTABLE MYLAR MARKING TAPE SHALL BE INSTALLED OVER DUCTILE IRON PIPE. COST WILL BE INCLUDED IN COST OF DUCTILE IRON PIPE.
- ALL LABOR, MATERIALS, AND EQUIPMENT TO CONNECT PROPOSED WATER MAINS TO EXISTING WATER MAINS ARE INCLUDED IN COST OF SLEEVES. CONTRACTOR TO EXCAVATE ALL EXISTING WATER MAINS AHEAD OF PIPE LAYING SO THAT THE GRADES CAN BE ADJUSTED ACCORDINGLY. FAILURE TO DO SO SHALL NOT ENTITLE THE CONTRACTOR TO CLAIM EXTRA COMPENSATION FOR ADJUSTMENTS TO THE PROPOSED WATER MAIN. COST FOR EXCAVATING EXISTING WATER MAINS SHALL BE INCLUDED IN UNIT PRICE BID FOR SLEEVES. NO ADDITIONAL PAYMENT SHALL BE MADE.
- CONTRACTOR IS REMINDED TO BACKFILL ALL TRENCHES EXCAVATED ACROSS ANY EXISTING OR PROPOSED DRIVING OR PARKING SURFACE WITH 1½-IN TYPE A AGGREGATE BASE, PLACED IN 8-INCH MAXIMUM LIFTS AND COMPACTED TO 98% MODIFIED PROCTOR DENSITY. COST TO BE INCLUDED IN COST OF "TRENCH EXCAVATION AND BACKFILL". NO ADDITIONAL PAYMENT SHALL BE MADE.
- WATER SERVICE CONNECTIONS SHALL INCLUDE COST OF MATERIAL, LABOR AND EQUIPMENT TO REMOVE AND INSTALL SADDLES, SERVICE CLAMPS, CORPORATION STOPS, BENDS, 3-PART UNIONS, COUPLINGS, SETTERS AND ANY OTHER INCIDENTALS REQUIRED FOR A COMPLETE WATER SERVICE CONNECTION WITH EXCEPTION OF METER CANS, RIMS AND LIDS. NO ADDITIONAL PAYMENT SHALL BE MADE. METER CANS, LIDS AND RIMS SHALL BE PAID AS A SEPARATE BID ITEM.
  - SHORT SERVICE SHALL BE ANY SERVICE LINE THAT IS 25-FEET OR LESS IN LENGTH. SHORT SERVICES DO NOT INCLUDE PAVEMENT REPLACEMENT.
  - LONG SERVICE SHALL BE ANY SERVICE LINE THAT IS GREATER THAN 25-FEET UP TO

80-FEET IN LENGTH. LONG SERVICES INCLUDE PAVEMENT REPLACEMENT AND/ OR COST TO BORE.

- SHORT AND LONG SERVICE LINES EXCEEDING THE ABOVE PARAMETERS WILL BE COMPENSATED FOR LINEAR FOOTAGE ABOVE AND BEYOND. COMPENSATION SHALL BE PAID AS "SERVICE LINES, EXTENSION", PER LF
- SERVICE LINES ON NON-ARTERIALS SHALL BE EITHER COPPER TUBING (TYPE K SOFT ANNEALED CONFORMING TO ASTM B 88) OR PEX TUBING (UPONOR AQUA PEX 5206 BLUE CONFORMING TO ASTM F876/F877/F2023). PEX TUBING IS NOT PERMITTED WITHIN ARTERIAL RIGHT OF WAY.
  - TOP OF VALVE BOX SHALL BE FLUSH WITH FINISHED GRADE.
  - THE CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS TO A CONDITION EQUAL TO OR BETTER THAN THE EXISTING IMPROVEMENTS. LIMITS OF DISTURBANCE SHALL NOT EXCEED 9-FEET CENTERED ON THE WATERLINE. ANY DISTURBANCE OUTSIDE OF THIS AREA SHALL BE RESTORED AT THE CONTRACTORS EXPENSE. STREETS, DRIVEWAYS AND ASSOCIATED ITEMS SHALL BE PAID FOR UNDER OTHER ITEMS OF WORK.
  - THE CONTRACTOR SHALL RESTORE ALL DISTURBED GRASS AREAS TO A CONDITION EQUAL TO OR BETTER THAN THE EXISTING CONDITION. THE CONTRACTOR SHALL REPLACE THE SOD TO MATCH IN-KIND AND QUALITY. LIMITS OF DISTURBANCE SHALL NOT EXCEED 9-FEET CENTERED ON THE WATERLINE. ANY DISTURBANCE OUTSIDE OF THIS AREA SHALL BE RESTORED AT THE CONTRACTORS EXPENSE.

**SANITARY PAY ITEM NOTES**

- PAY ITEM SHALL INCLUDE THE COST OF ALL LABOR AND MATERIALS REQUIRED TO ENCASE SANITARY SEWER DUCTILE IRON PIPE AS SHOWN ON THE PLANS.
- SEWER FLUSHING SHALL BE IN ACCORDANCE WITH 1107.2 FLUSHING OF SANITARY SEWERS.
- PIPE CONNECTIONS SHALL BE IN STRICT ACCORDANCE WITH RESTRAINT / THRUST BLOCKS, HYDROSTATIC TESTING AND FLUSHING LS.

LITTLE RIVER PARK DRAINAGE IMPROVEMENTS WATER LINE PAY ITEMS					
ITEM NUMBER	SPEC NUMBER	ITEM DESCRIPTION	UNIT	Notes	QUANTITY
1	OKC-212	TRENCH EXCAVATION AND BACKFILL (0' TO 10')	CY		677
2	OKC-215	ROCK BACKFILL	CY		622
5	OKC-505	8" PVC PIPE C-900	LF	1,2,7,8,9,10,11	708
6	OKC-505	8" DUCTILE IRON PIPE AWWA 151, CL 51 (RJ)	LF	1,2,7,8,9,10,11	210
8	OKC-505	8" SOLID SLEEVE (RJ)	EA	1,7,8,9,10,11	3
12	OKC-505	8" x 8" x 6" TEE	EA	1,7,8,9,10,11	1
13	OKC-505	8" x 8" x 8" TEE	EA	1,7,8,9,10,11	4
14	OKC-505	8" 11.25° BEND (RJ)	EA	1,7,8,9,10,11	9
15	OKC-505	8" 22.5° BEND (RJ)	EA	1,7,8,9,10,11	5
16	OKC-505	8" 45° BEND (RJ)	EA	1,7,8,9,10,11	10
18	OKC-520	8" GATE VALVE (RJ) AND VALVE BOX	EA	1,7,13	5
19	OKC-516	FIRE HYDRANT	EA		2
21	OKC-810	CLEARING AND RESTORING	LSUM	3,4,5,6,12,14,15,16	1

SUMMARY OF MATERIAL QUANTITIES (SANITARY)					
NO.	PAY ITEM	DESCRIPTION	NOTES	UNIT	QUANTITY
1	OKC-212	TRENCH EXCAVATION AND BACKFILL (0' TO 10')		CY	64
2	OKC-215	ROCK BACKFILL		CY	21
3	616(A)	12" C-900 AWWA 151, CL 51 POLY WRAPPED	3	LF	91
4	OKC-528	24" STEEL CASING	1	LF	75

SUMMARY OF DRAINAGE STRUCTURES					
Structure No.	NORTHING	EASTING	Description	Top of Cover/Grate Elev.	PIPE Flow Line Elevation
ST45	726941.0977	2117999.128	CONST. 5' STORM MANHOLE & 21.8 LF OF 36" PIPE	1212.00	UP STREAM= 1204.28 DOWN STREAM= 1204.10
ST46	N/A	N/A	CONST. ODOT DESIGN 3 CURB INLET & 13.4 LF OF 30" PIPE	1211.60	UP STREAM= 1207.02 DOWN STREAM= 1206.00
ST47	N/A	N/A	CONST. ODOT DESIGN 3 CURB INLET & 13.4 LF OF 30" PIPE	1211.60	UP STREAM= 1207.02 DOWN STREAM= 1206.00
ST48	N/A	N/A	CONST. ODOT DESIGN 2 CURB INLET & 13.8 LF OF 24" PIPE	1211.18	UP STREAM= 1207.62 DOWN STREAM= 1207.00
ST49	726859.6514	2117992.641	CONST. 5' STORM MANHOLE & 81.5 LF OF 24" PIPE	1211.50	UP STREAM= 1206.00 DOWN STREAM= 1205.50
ST50	726787.1764	2117124.464	CONST. 5' STORM MANHOLE & 49.4 LF OF 36" PIPE	1221.00	UP STREAM= 1209.00 DOWN STREAM= 1204.80
ST51	726791.1721	2117173.705	CONST. 5' STORM MANHOLE & 37.5 LF OF 36" PIPE	1210.87	UP STREAM= 1202.19 DOWN STREAM= 1202.00
ST74	724010.3241'	2118933.7408'	CONST. 5' STORM MANHOLE & 8.2 LF OF 24" PIPE	1199.00	UP STREAM= 1188.00 DOWN STREAM= 1187.60
ST75	724360.3056'	2118812.0062'	CONST. 5' STORM MANHOLE & 5.4 LF OF 18" PIPE	1199.00	UP STREAM= 1188.00 DOWN STREAM= 1187.60
ST76	724818.3320'	2118599.1207'	CONST. 5' STORM MANHOLE & 7.9 LF OF 24" PIPE	1201.00	UP STREAM= 1193.50 DOWN STREAM= 1193.00
ST78	725329.1887'	2118160.4089'	CONST. 5' STORM MANHOLE & 7.1 LF OF 24" PIPE	1202.33	UP STREAM= 1193.50 DOWN STREAM= 1193.00
ST79	723401.7380'	2119121.4240'	CONST. 5' STORM MANHOLE & 8.1 LF OF 30" PIPE	1199.00	UP STREAM= 1192.35 DOWN STREAM= 1192.00
ST80	723374.9603'	2119108.0302'	CONST. 18"x24" SMD & 28.7 LF OF 30" PIPE	1196.00	UP STREAM= 1188.17 DOWN STREAM= 1187.00
ST86	724608.4669'	2118814.6897'	CONST. 6' STORM MANHOLE & 19.6 LF OF 48" PIPE	1200.00	UP STREAM= 1192.60 DOWN STREAM= 1191.50
ST89	725968.3658'	2117927.0223'	CONST. 5' STORM MANHOLE & 13.8 LF OF 24" PIPE	1203.67	UP STREAM= 1196.00 DOWN STREAM= 1195.50
ST90	724702.4313'	2118828.5688'	CONST. 48"x48" SMD & 26.4 LF OF 36" PIPE	1199.41	UP STREAM= 1194.20 DOWN STREAM= 1194.10
ST91	724686.3498'	2118851.2240'	CONST. CICI DES. 2 & 23.0 LF OF 36" PIPE	1199.59	UP STREAM= 1194.10 DOWN STREAM= 1194.00
ST92	724664.3332'	2118857.9013'	CONST. CICI DES. 2 & 17.4 LF OF 36" PIPE	1199.59	UP STREAM= 1194.00 DOWN STREAM= 1193.90
ST93	724647.2429'	2118865.9500'	CONST. 6' STORM MANHOLE & 61.2 LF OF 48" PIPE	1200.57	UP STREAM= 1192.90 DOWN STREAM= 1192.60
ST95	723473.5374'	2119087.6024'	CONST. STORM JUNCTION BOX W/ ACCESS LID & 18.6 LF OF 15" PIPE	1200.80	UP STREAM= 1196.00 DOWN STREAM= 1195.07
ST96	723574.7724'	2119050.6180'	CONST. 5' STORM MANHOLE & 25.6 LF OF 12" PIPE	1199.50	UP STREAM= 1190.96 DOWN STREAM= 1190.90
ST99	725986.6708'	2117798.2960'	CONST. 5' STORM MANHOLE & 26.8 LF OF 36" PIPE	1204.59	UP STREAM= 1196.44 DOWN STREAM= 1195.90
ST101	724613.8743'	2118688.8858'	CONST. CICI DES. 2 & 20.0 LF OF 24" PIPE	1201.03	UP STREAM= 1194.90 DOWN STREAM= 1194.80
ST102	724593.3496'	2118699.1925'	CONST. CICI DES. 2 & 18.2 LF OF 24" PIPE	1201.03	UP STREAM= 1194.80 DOWN STREAM= 1194.50
ST103	725950.5037'	2117934.4966'	CONST. 6' STORM MANHOLE & 14.7 LF OF 48" PIPE	1203.67	UP STREAM= 1196.11 DOWN STREAM= 1195.50

**PAY ITEMS**

**LITTLE RIVER PARK DRAINAGE IMPROVEMENTS**

**CITY OF MOORE**

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	JCL	Value	APPROVED:
				DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	RECOMMENDED			
			VERTICAL:	RECOMMENDED			
			FILE:	DRAWING:			PUBLIC WORKS DIRECTOR
			ATLAS PAGE NO. ###				DATE:

ERNET\BEE\Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\_Design\Drawings\15MOR05\_NOTES\_QUANTITIES.dwg





# SPECIFICATIONS FOR MANUFACTURE AND INSTALLATION OF CON/SPAN® O-SERIES BRIDGE SYSTEMS (CONT'D)

11. MARKING  
EACH BRIDGE UNIT SHALL BE CLEARLY MARKED BY WATERPROOF PAINT. THE FOLLOWING SHALL BE SHOWN ON THE INSIDE OF THE VERTICAL LEG OF THE BRIDGE SECTION:  
BRIDGE SPAN x BRIDGE RISE  
DATE OF MANUFACTURE  
NAME OR TRADEMARK OF THE MANUFACTURER
12. INSTALLATION PREPARATION  
TO ENSURE CORRECT INSTALLATION OF THE PRECAST CONCRETE BRIDGE SYSTEM, CARE AND CAUTION MUST BE EXERCISED IN FORMING THE SUPPORT AREAS FOR BRIDGE UNITS, HEADWALL, AND WINGWALL ELEMENTS. EXERCISING SPECIAL CARE WILL FACILITATE THE RAPID INSTALLATION OF THE PRECAST COMPONENTS.

- 12.1. FOOTINGS  
DO NOT OVER EXCAVATE FOUNDATIONS UNLESS DIRECTED BY SITE SOIL ENGINEER TO REMOVE UNSUITABLE SOIL.
- THE SITE SOILS ENGINEER SHALL CERTIFY THAT THE BEARING CAPACITY MEETS OR EXCEEDS THE FOOTING DESIGN REQUIREMENTS, PRIOR TO THE CONTRACTOR POURING OF THE FOOTINGS.

THE BRIDGE UNITS AND WINGWALLS SHALL BE INSTALLED ON EITHER PRECAST OR CAST-IN-PLACE CONCRETE FOOTINGS. THE SIZE AND ELEVATION OF THE FOOTINGS SHALL BE AS DESIGNED BY THE ENGINEER. A KEYWAY SHALL BE FORMED IN THE TOP SURFACE OF THE BRIDGE FOOTING AS SPECIFIED ON THE PLANS. NO KEYWAY IS REQUIRED IN THE WINGWALL FOOTINGS, UNLESS OTHERWISE SPECIFIED ON THE PLANS.

THE FOOTINGS SHALL BE GIVEN A SMOOTH FLOAT FINISH AND SHALL REACH A COMPRESSIVE STRENGTH OF 2,000 PSI BEFORE PLACEMENT OF THE BRIDGE AND WINGWALL ELEMENTS. BACKFILLING SHALL NOT BEGIN UNTIL THE FOOTING HAS REACHED THE FULL DESIGN COMPRESSIVE STRENGTH.

THE FOOTING SURFACE SHALL BE CONSTRUCTED IN ACCORDANCE WITH GRADES SHOWN ON THE PLANS. WHEN TESTED WITH A 10'-0" STRAIGHT EDGE, THE SURFACE SHALL NOT VARY MORE THAN 1/4" IN 10'-0".

IF A PRECAST CONCRETE FOOTING IS USED, THE CONTRACTOR SHALL PREPARE A 4" THICK BASE LAYER OF COMPACTED GRANULAR MATERIAL THE FULL WIDTH OF THE FOOTING PRIOR TO PLACING THE PRECAST FOOTING.

THE FOUNDATIONS FOR PRECAST CONCRETE BRIDGE ELEMENTS AND WINGWALLS MUST BE CONNECTED BY REINFORCEMENT TO FORM ONE MONOLITHIC BODY. EXPANSION JOINTS SHALL NOT BE USED.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONSTRUCTION OF THE FOUNDATIONS PER THE PLANS AND SPECIFICATIONS.

13. INSTALLATION  
13.1. GENERAL - THE INSTALLATION OF THE PRECAST CONCRETE ELEMENTS SHALL BE AS EXPLAINED IN THE PUBLICATION CON/SPAN BRIDGE SYSTEMS INSTALLATION HANDBOOK.

13.1.1. LIFTING - IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT A CRANE OF THE CORRECT LIFTING CAPACITY IS AVAILABLE TO HANDLE THE PRECAST CONCRETE UNITS. THIS CAN BE ACCOMPLISHED BY USING THE WEIGHTS GIVEN FOR THE PRECAST CONCRETE COMPONENTS AND BY DETERMINING THE LIFTING REACH FOR EACH CRANE UNIT. SITE CONDITIONS MUST BE CHECKED WELL IN ADVANCE OF SHIPPING TO ENSURE PROPER CRANE LOCATION AND TO AVOID ANY LIFTING RESTRICTIONS. THE LIFT ANCHORS OR HOLES PROVIDED IN EACH UNIT ARE THE ONLY MEANS TO BE USED TO LIFT THE ELEMENTS. THE PRECAST CONCRETE ELEMENTS MUST NOT BE SUPPORTED OR RAISED BY OTHER MEANS THAN THOSE GIVEN IN THE MANUALS AND DRAWINGS WITHOUT WRITTEN APPROVAL FROM CONTECH® ENGINEERED SOLUTIONS.

13.1.2. CONSTRUCTION EQUIPMENT WEIGHT RESTRICTIONS - IN NO CASE SHALL EQUIPMENT OPERATING IN EXCESS OF THE DESIGN LOAD (HS20 OR HS25) BE PERMITTED OVER THE BRIDGE UNITS UNLESS APPROVED BY CONTECH® ENGINEERED SOLUTIONS.

13.1.2.1. IN THE IMMEDIATE AREA OF THE BRIDGE UNITS, THE FOLLOWING RESTRICTIONS FOR THE USE OF HEAVY CONSTRUCTION MACHINERY DURING BACKFILLING OPERATIONS APPLY:

NO CONSTRUCTION EQUIPMENT SHALL CROSS THE BARE PRECAST CONCRETE BRIDGE UNIT.  
AFTER THE COMPACTED FILL LEVEL HAS REACHED A MINIMUM OF 4" OVER THE CROWN OF THE BRIDGE, CONSTRUCTION EQUIPMENT WITH A WEIGHT OF LESS THAN 10 TONS MAY CROSS THE BRIDGE.  
AFTER THE COMPACTED FILL LEVEL HAS REACHED A MINIMUM OF 1'-0" OVER THE CROWN OF THE BRIDGE, CONSTRUCTION EQUIPMENT WITH A WEIGHT OF LESS THAN 30 TONS MAY CROSS THE BRIDGE.  
AFTER THE COMPACTED FILL LEVEL HAS REACHED THE DESIGN COVER, OR 2'-0" MINIMUM, OVER THE CROWN OF THE PRECAST CONCRETE BRIDGE, CONSTRUCTION EQUIPMENT WITHIN THE DESIGN LOAD LIMITS FOR THE ROAD MAY CROSS THE PRECAST CONCRETE BRIDGE.

13.2. LEVELING PAD/SHIMS - THE BRIDGE UNITS AND WINGWALLS SHALL BE SET ON HARDBOARD SHIMS CONFORMING TO ASTM D1037 OR PLASTIC SHIMS (DAYTON SUPERIOR P-80, P-81 OR APPROVED EQUAL) MEASURING 5" x 5", MINIMUM, UNLESS SHOWN OTHERWISE ON THE PLANS. A MINIMUM GAP OF 1/2" SHALL BE PROVIDED BETWEEN THE FOOTING AND THE BOTTOM OF THE BRIDGE'S

VERTICAL LEGS OR THE BOTTOM OF THE WINGWALL. ALSO, A SUPPLY OF 1/2", 3/4" AND 1" THICK HARDBOARD OR PLASTIC SHIMS FOR VARIOUS SHIMMING PURPOSES SHALL BE ON SITE.

13.3. PLACEMENT OF BRIDGE UNITS - THE BRIDGE UNITS SHALL BE PLACED AS SHOWN ON THE ENGINEER'S PLAN DRAWINGS. SPECIAL CARE SHALL BE TAKEN IN SETTING THE ELEMENTS TO THE TRUE LINE AND GRADE. THE JOINT WIDTH BETWEEN ADJACENT PRECAST UNITS SHALL NOT EXCEED 3/4".

13.4. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN THE STRUCTURE SPAN DURING ALL PHASES OF INSTALLATION. DUE TO THE ARCH SHAPE, BRIDGE ELEMENTS WILL TEND TO SPREAD UNDER SELF-WEIGHT. IT IS IMPERATIVE THAT ANY LATERAL SPREADING OF THE BRIDGE ELEMENTS BE AVOIDED DURING AND AFTER THEIR PLACEMENT. GENERALLY, HORIZONTAL CABLE TIES OR TIE RODS ARE SHIPPED IN THE LARGER BRIDGE ELEMENTS TO ASSIST IN PREVENTING THIS SPREADING. CABLE TIES/TIE RODS SHALL NOT BE REMOVED UNTIL BRIDGE UNITS ARE GROUTED AND GROUT HAS CURED. IT IS RECOMMENDED THAT TEMPORARY HARDWOOD BLOCKS BE USED IN CONJUNCTION WITH THE CABLE TIES/TIE RODS TO MAINTAIN SPAN. IF, HOWEVER, DUE TO SITE RESTRICTIONS, THESE CABLE TIES/TIE RODS MUST BE REMOVED PRIOR TO PLACEMENT OF THE BRIDGE ELEMENTS, THE CONTRACTOR MUST NOTIFY CONTECH (MANUFACTURER) AND REQUEST A SUGGESTED INSTALLATION PROCEDURE.

IN ADDITION, IF THE CABLE TIES/TIE RODS MUST BE REMOVED PRIOR TO SETTING ARCH UNITS, THE FOLLOWING QUALITY CONTROL PROCEDURE MUST BE FOLLOWED:

- 1) FIND "MEASURED SPAN" UPON ARCH UNIT'S DELIVERY TO SITE. PRIOR TO LIFTING FROM TRUCK AND REMOVING CABLE TIES/TIE RODS, "MEASURED SPAN" SHALL BE THE AVERAGE OF:
  - (1) SPAN MEASUREMENTS ALONG THE LAY LENGTH OF THE ARCH UNIT.
  - (2) AFTER SETTING OF BRIDGE UNIT ON THE FOUNDATION, VERIFY THE SPAN. THIS "INSTALLED SPAN MEASUREMENT" SHALL NOT EXCEED THE MAXIMUM OF:
    - A) THE NOMINAL SPAN + 1/2" OR
    - B) THE "MEASURED SPAN"

IF THE "INSTALLED SPAN MEASUREMENT" EXCEEDS THIS AMOUNT, THE ARCH UNIT SHALL BE LIFTED AND RE-SET UNTIL THE "INSTALLED SPAN MEASUREMENT" MEETS THE LIMITS.

13.5. PLACEMENT OF WINGWALLS, HEADWALLS AND FOUNDATION UNITS - THE WINGWALLS, HEADWALLS AND FOUNDATIONS SHALL BE PLACED AS SHOWN ON THE PLAN DRAWINGS. SPECIAL CARE SHALL BE TAKEN IN SETTING THE ELEMENTS TO THE TRUE LINE AND GRADE.

13.6. WATERPROOFING/JOINT PROTECTION AND SUBSURFACE DRAINAGE

13.6.1. EXTERNAL PROTECTION OF JOINTS - THE BUTT JOINT MADE BY TWO ADJOINING BRIDGE UNITS SHALL BE COVERED WITH A 1/4" x 1 1/2" PREFORMED BITUMINOUS JOINT SEALANT AND A MINIMUM OF A 9" WIDE JOINT WRAP. THE SURFACE SHALL BE FREE OF DIRT BEFORE APPLYING THE JOINT MATERIAL. A PRIMER COMPATIBLE WITH THE JOINT WRAP TO BE USED SHALL BE APPLIED FOR A MINIMUM WIDTH OF 9" ON EACH SIDE OF THE JOINT. THE EXTERNAL WRAP SHALL BE CS212 BY CONCRETE SEALANTS INC., EZ-WRAP RUBBER BY PRESS-SEAL GASKET CORPORATION, SEAL WRAP BY MAR MAC MANUFACTURING CO. INC. OR APPROVED EQUAL. THE JOINT SHALL BE COVERED CONTINUOUSLY FROM THE BOTTOM OF ONE BRIDGE SECTION LEG, ACROSS THE TOP OF THE BRIDGE AND TO THE OPPOSITE BRIDGE SECTION LEG. ANY LAPS THAT RESULT IN THE JOINT WRAP SHALL BE A MINIMUM OF 6" LONG WITH THE OVERLAP RUNNING DOWNHILL.

13.6.2. IN ADDITION TO THE JOINTS BETWEEN BRIDGE UNITS, THE JOINT BETWEEN THE END BRIDGE UNIT AND THE HEADWALL SHALL ALSO BE SEALED AS DESCRIBED ABOVE. IF PRECAST WINGWALLS ARE USED, THE JOINT BETWEEN THE END BRIDGE UNIT AND THE WINGWALL SHALL BE SEALED WITH A 2'-0" STRIP OF FILTER FABRIC. ALSO, IF LIFT HOLES ARE FORMED IN THE BRIDGE UNITS, THEY SHALL BE PRIMED AND COVERED WITH A 9" x 9" SQUARE OF JOINT WRAP.

13.6.3. DURING THE BACKFILLING OPERATION, CARE SHALL BE TAKEN TO KEEP THE JOINT WRAP IN ITS PROPER LOCATION OVER THE JOINT.

13.6.4. SUBSOIL DRAINAGE SHALL BE AS DIRECTED BY THE ENGINEER.

13.7. GROUTING

13.7.1. GROUTING SHALL NOT BE PERFORMED WHEN TEMPERATURES ARE EXPECTED TO GO BELOW 35° FOR A PERIOD OF 72 HOURS. FILL THE BRIDGE-FOUNDATION KEYWAY WITH CEMENT GROUT (PORTLAND CEMENT AND WATER OR CEMENT MORTAR COMPOSED OF PORTLAND CEMENT, SAND AND WATER) WITH A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3000 PSI. VIBRATE AS REQUIRED TO ENSURE THAT THE ENTIRE KEY AROUND THE BRIDGE ELEMENT IS COMPLETELY FILLED. IF BRIDGE ELEMENTS HAVE BEEN SET WITH TEMPORARY TIES (CABLES, BARS, ETC.) GROUT MUST ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 1500 PSI BEFORE TIES MAY BE REMOVED.

13.7.2. ALL GROUT SHALL HAVE A MAXIMUM AGGREGATE SIZE OF 1/4".

13.7.3. LIFTING AND ERECTION ANCHOR RECESSES SHALL BE FILLED WITH GROUT.

13.7.4. AFTER GROUT HAS REACHED ITS DESIGN STRENGTH THE TEMPORARY HARDWOOD WEDGES SHALL BE REMOVED AND THEIR HOLES FILLED WITH GROUT.

13.8. BACKFILL

13.8.1. DO NOT PERFORM BACKFILLING DURING WET OR FREEZING WEATHER.

13.8.2. NO BACKFILL SHALL BE PLACED AGAINST ANY STRUCTURAL ELEMENTS UNTIL THEY HAVE BEEN APPROVED BY THE ENGINEER.

13.8.3. BACKFILL SHALL BE CONSIDERED AS ALL REPLACED EXCAVATION AND NEW EMBANKMENT ADJACENT TO THE PRECAST CONCRETE ELEMENTS. THE PROJECT CONSTRUCTION AND MATERIAL SPECIFICATIONS, WHICH INCLUDE THE SPECIFICATIONS FOR EXCAVATION FOR STRUCTURES AND ROADWAY EXCAVATION AND EMBANKMENT CONSTRUCTION, SHALL APPLY EXCEPT AS MODIFIED IN THIS SECTION.

13.8.4. BACKFILL ZONES:  
• IN-SITU SOIL  
• ZONE A: CONSTRUCTED EMBANKMENT OR OVERFILL.  
• ZONE B: FILL THAT IS DIRECTLY ASSOCIATED WITH PRECAST CONCRETE BRIDGE INSTALLATION.  
• ZONE C: ROAD STRUCTURE.

13.8.5. REQUIRED BACKFILL PROPERTIES  
13.8.5.1. IN-SITU SOIL - NATURAL GROUND IS TO BE SUFFICIENTLY STABLE TO ALLOW EFFECTIVE SUPPORT TO THE PRECAST CONCRETE BRIDGE UNITS. AS A GUIDE, THE EXISTING NATURAL GROUND SHOULD BE OF SIMILAR QUALITY AND DENSITY TO ZONE B MATERIAL FOR MINIMUM LATERAL DIMENSION OF ONE BRIDGE SPAN OUTSIDE OF THE BRIDGE FOOTING.

13.8.5.2. ZONE A - ZONE A REQUIRES FILL MATERIAL WITH SPECIFICATIONS AND COMPACTING PROCEDURES EQUAL TO THAT FOR NORMAL ROAD EMBANKMENTS.

13.8.5.3. ZONE B - GENERALLY, SOILS SHALL BE REASONABLY FREE OF ORGANIC MATTER, AND, NEAR CONCRETE SURFACES, FREE OF STONES LARGER THAN 3" IN DIAMETER. SEE CHARTS FOR DETAILED DESCRIPTIONS OF ACCEPTABLE SOILS.

13.8.5.4. ZONE C - ZONE C IS THE ROAD SECTION OF GRAVEL ASPHALT OR CONCRETE BUILT IN COMPLIANCE WITH LOCAL ENGINEERING PRACTICES.

13.8.5.5. GEOTECHNICAL ENGINEER SHALL REVIEW GRADATIONS OF ALL INTERFACING MATERIALS AND, IF NECESSARY, RECOMMEND GEOTEXTILE FILTER FABRIC (PROVIDED BY CONTRACTOR)

13.8.6. PLACING AND COMPACTING BACKFILL  
DUMPING FOR BACKFILLING IS NOT ALLOWED ANY NEARER THAN 3'-0" FROM THE BRIDGE LEG.

THE FILL MUST BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 8". THE MAXIMUM DIFFERENCE IN THE SURFACE LEVELS OF THE FILL ON OPPOSITE SIDES OF THE BRIDGE MUST NOT EXCEED 2'-0".

THE FILL BEHIND WINGWALLS MUST BE PLACED AT THE SAME TIME AS THAT OF THE BRIDGE FILL. IT MUST BE PLACED IN PROGRESSIVELY PLACED HORIZONTAL LAYERS NOT EXCEEDING 8" PER LAYER.

THE BACKFILL OF ZONE B SHALL BE COMPACTED TO A MINIMUM DENSITY OF 95% OF THE STANDARD PROCTOR, AS REQUIRED BY AASHTO T-99.

SOIL WITHIN 1'-0" OF CONCRETE SURFACES SHALL BE HAND COMPACTED. ELSEWHERE, USE OF ROLLERS IS ACCEPTABLE. IF VIBRATING ROLLER-COMPACTORS ARE USED, THEY SHALL NOT BE STARTED OR STOPPED WITHIN ZONE B AND THE VIBRATION FREQUENCY SHOULD BE AT LEAST 30 REVOLUTIONS PER SECOND.

THE BACKFILL MATERIAL AND COMPACTING BEHIND WINGWALLS SHALL SATISFY THE CRITERIA FOR THE BRIDGE BACKFILL, ZONE B.

BACKFILL AGAINST A WATERPROOFED SURFACE SHALL BE PLACED CAREFULLY TO AVOID DAMAGE TO THE WATERPROOFING MATERIAL.

13.8.7. BRIDGE UNITS  
FOR FILL HEIGHTS OVER 12 FEET (AS MEASURED FROM TOP CROWN OF BRIDGE TO FINISHED GRADE), NO BACKFILLING MAY BEGIN UNTIL A BACKFILL COMPACTION TESTING PLAN HAS BEEN COORDINATED WITH AND APPROVED BY CONTECH® ENGINEERED SOLUTIONS.

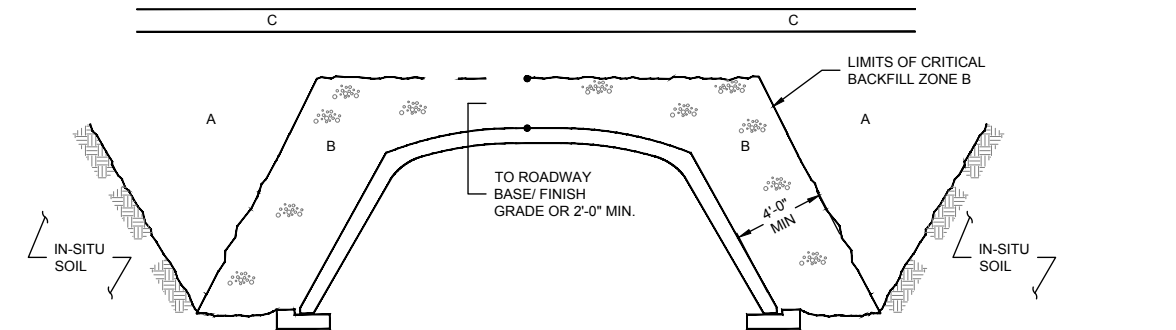
13.8.8. WINGWALLS  
BACKFILL IN FRONT OF WINGWALLS SHALL BE CARRIED TO GROUND LINES SHOWN IN THE PLANS.

13.8.9. MONITORING  
THE CONTRACTOR SHALL CHECK SETTLEMENTS AND HORIZONTAL DISPLACEMENT OF FOUNDATION TO ENSURE THAT THEY ARE WITHIN THE ALLOWABLE LIMIT PROVIDED BY THE ENGINEER. THESE MEASUREMENTS SHOULD GIVE AN INDICATION OF THE SETTLEMENTS AND DEFORMATIONS ALONG THE LENGTH OF THE FOUNDATIONS.

THE FIRST MEASUREMENT SHOULD TAKE PLACE AFTER THE ERECTION OF ALL PRECAST BRIDGE SYSTEM ELEMENTS, A SECOND AFTER COMPLETION OF BACKFILLING, AND A THIRD BEFORE OPENING OF THE BRIDGE TO TRAFFIC. FURTHER MEASUREMENTS MAY BE MADE ACCORDING TO LOCAL CONDITIONS.

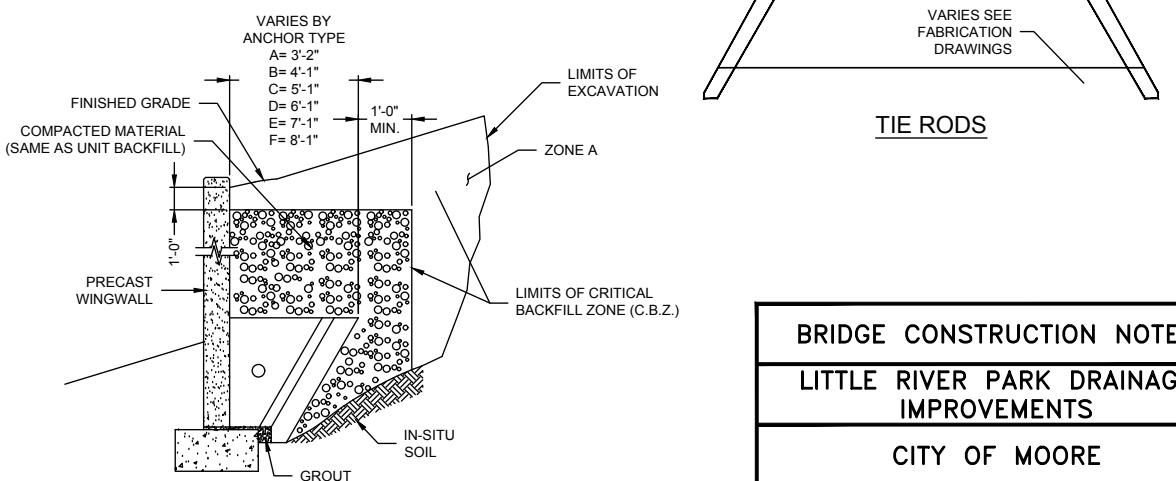
## ACCEPTABLE SOILS FOR USE IN ZONE B BACKFILL

TYPICAL USCS MATERIALS	AASHTO GROUP	AASHTO SUBGROUP	PERCENT PASSING US SIEVE NO.			CHARACTER OF FRACTION PASSING NO. 40 SIEVE		SOIL DESCRIPTION
			#10	#40	#200	LIQUID LIMIT	PLASTICITY INDEX	
GW, GP, SP	A1	A-1a	50 MAX	30 MAX	15 MAX	6 MAX		LARGELY GRAVEL BUT CAN INCLUDE SAND AND FINES
GM, SW, SP, SM		A-1b	50 MAX		25 MAX	6 MAX		GRAVELLY SAND OR GRADED SAND, MAY INCLUDE FINES
GM, SM, ML, SP, GP	A2	A-2.4	35 MAX			40 MAX	10 MAX	SANDS, GRAVELS WITH LOW-PLASTICITY SILT FINES
SC, GC, GM		A-2.5	35 MAX			41 MIN	10 MAX	SANDS, GRAVELS WITH PLASTIC SILT FINES
SP, SM, SW	A3		51 MIN	10 MAX		NON-PLASTIC		FINE SANDS
ML, SM, SC	A4		36 MIN			40 MAX	10 MAX	LOW-COMPRESSIBILITY SILTS



SPAN	FILL HEIGHT	ACCEPTABLE MATERIAL INSIDE ZONE B
≤ 24'-0"	≥ 12'-0"	A1, A3
≤ 24'-0"	< 12'-0"	A1, A2, A3, A4
> 24'-0"	ALL	A1, A3

## BACKFILL REQUIREMENTS



## WALL BACKFILL REQUIREMENTS

**BRIDGE CONSTRUCTION NOTES**

**LITTLE RIVER PARK DRAINAGE IMPROVEMENTS**

**CITY OF MOORE**

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	JCL	Value	APPROVED:
				DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	RECOMMENDED			
			VERTICAL:	RECOMMENDED			
			FILE:	DRAWING:			PUBLIC WORKS DIRECTOR
			ATLAS PAGE NO. ###				DATE:



BRN\NET\DATE\Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_NOTES\_QUANTITIES.dwg

M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_TYP\_SECTIONS\_DETAILS.dwg

**NOTES**

**GENERAL NOTES:**

- THIS BRIDGE HAS BEEN DESIGNED FOR GENERAL SITE CONDITIONS. THE PROJECT ENGINEER SHALL BE RESPONSIBLE FOR THE STRUCTURE'S SUITABILITY TO THE EXISTING SITE CONDITIONS AND FOR THE HYDRAULIC EVALUATION - INCLUDING SCOUR AND CONFIRMATION OF SOIL CONDITIONS.
- PRIOR TO CONSTRUCTION, CONTRACTOR MUST VERIFY ALL ELEVATIONS SHOWN THROUGH THE ENGINEER.
- ONLY CONTECH ENGINEERED SOLUTIONS LLC, THE CON/SPAN® APPROVED PRECASTER IN OKLAHOMA MAY PROVIDE THE STRUCTURE DESIGNED IN ACCORDANCE WITH THESE PLANS. CONTACT: SARAH KELLERT, (918) 706-7792 OR SKELLERT@CONTECHES.COM
- THE USE OF ANOTHER PRECAST STRUCTURE WITH THE DESIGN ASSUMPTIONS USED FOR THE CON/SPAN® STRUCTURE MAY LEAD TO SERIOUS DESIGN ERRORS. USE OF ANY OTHER PRECAST STRUCTURE WITH THIS DESIGN AND DRAWINGS VOIDS ANY CERTIFICATION OF THIS DESIGN AND WARRANTY. CONTECH ASSUMES NO LIABILITY FOR DESIGN OF ANY ALTERNATE OR SIMILAR TYPE STRUCTURES.
- ALTERNATE STRUCTURES MAY BE CONSIDERED, PROVIDED THAT DRAWINGS AND CALCULATIONS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER, REGISTERED IN THE STATE OF OKLAHOMA, EMPLOYED BY THE PRECAST CONCRETE BRIDGE SUPPLIER, ARE SUBMITTED TO THE ENGINEER 2 WEEKS PRIOR TO THE BID DATE FOR REVIEW AND APPROVAL.
- ALTERNATE STRUCTURES MAY BE CONSIDERED, PROVIDED THAT THE ALTERNATE DESIGN DOES NOT REDUCE THE HYDRAULIC OPENING OF THE STRUCTURE AS SHOWN ON THE DRAWINGS. AT A MINIMUM THE ALTERNATE STRUCTURE MUST PROVIDE THE SAME OR LARGER SPAN AND RISE AS THE STRUCTURE SHOWN ON THE DRAWINGS.
- THE PRECAST ARCH SUPPLIER MUST ATTEND THE PRE-BID MEETING, IF ONE IS HELD.
- SUPPLIER OF PROPOSED ALTERNATES TO A CON/SPAN® BRIDGE SYSTEM MUST SUBMIT AT LEAST TWO (2) INDEPENDENTLY VERIFIED FULL SCALE LOAD TESTS THAT CONFIRM THE PROPOSED DESIGN METHODOLOGY OF THE THREE SIDED/ARCH STRUCTURE(S). THE PROPOSED ALTERNATE, UPON SATISFACTORY CONFIRMATION OF DESIGN METHODOLOGY, MAY BE CONSIDERED AN ACCEPTABLE ALTERNATE.
- PROPOSED ALTERNATE STRUCTURES MAY BE CONSIDERED, PROVIDED THAT THE PRECAST CONCRETE BRIDGE STRUCTURES ARE PROVIDED BY A SUPPLIER THAT HAS A MINIMUM OF TWO (2) REGISTERED PROFESSIONAL ENGINEERS ON STAFF THAT ARE DEDICATED TO THE DESIGN OF THESE TYPES OF STRUCTURES. SUPPLIER MUST PROVIDE THESE NAMES, P.E. LICENSE NUMBERS AND DATES OF HIRE AT TIME OF ALTERNATE SUBMITTAL.

**DESIGN DATA**

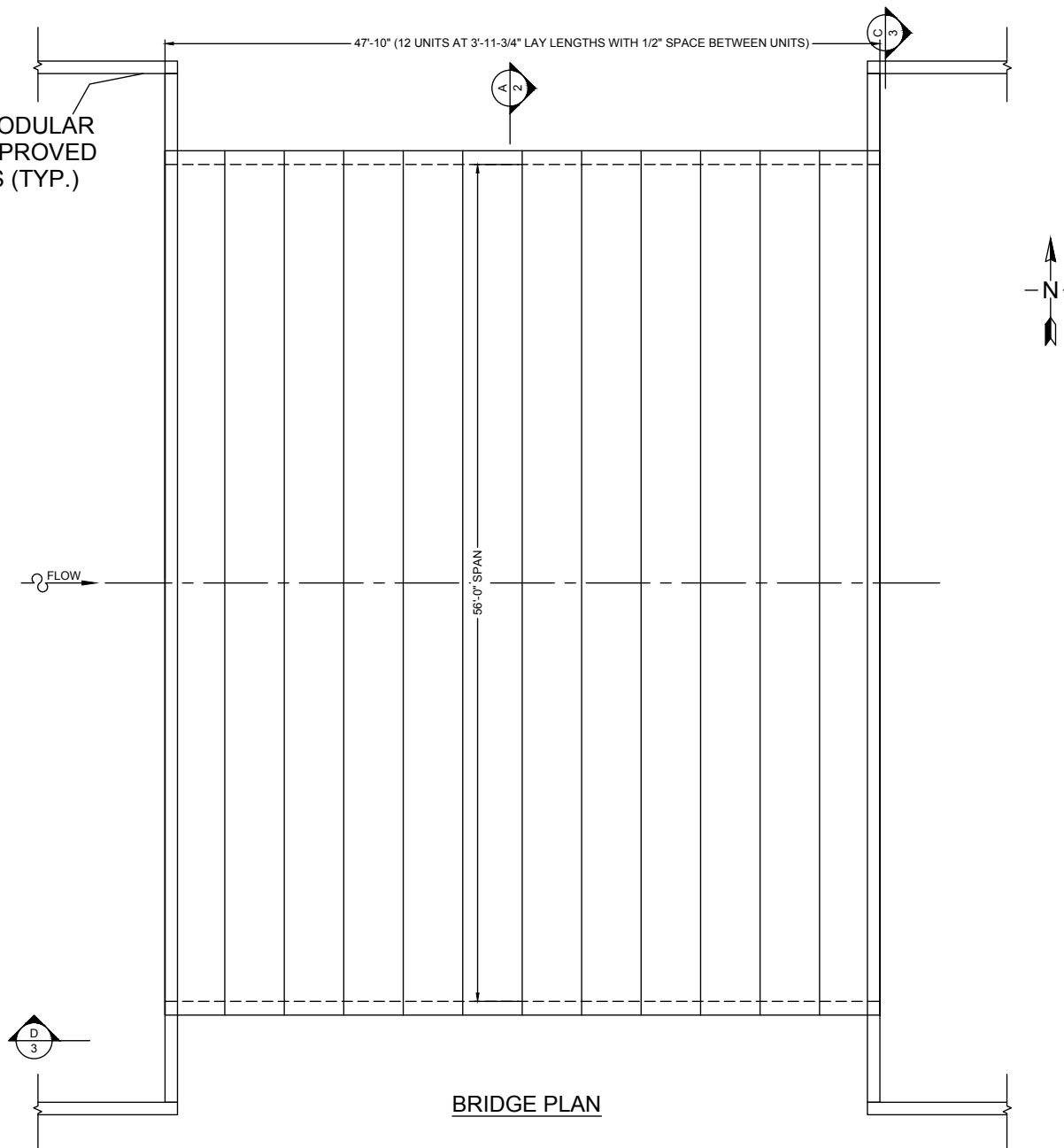
DESIGN LOADING:  
 BRIDGE UNITS: HL-93  
 HEADWALLS: EARTH PRESSURE + LIVE LOAD IMPACT (TL-1)  
 WINGWALLS: BY OTHERS  
 DESIGN FILL HEIGHT: 2'-0" TO 3'-0" FROM TOP OF CROWN TO TOP OF PAVEMENT.  
 DESIGN METHOD: LOAD RESISTANCE FACTOR DESIGN PER AASHTO LRFD SPECIFICATION  
 ASSUMED NOMINAL BEARING RESISTANCE: 2000 PSF  
 ASSUMED FACTORED BEARING RESISTANCE: 2000 PSF

\*AT THE TIME OF DESIGN, A GEOTECHNICAL REPORT FOR THE PROJECT SITE WAS PROVIDED BY TERRACON CONSULTANTS. IT IS THE PROJECT ENGINEER'S, OWNER'S AND/OR THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THAT THE ACTUAL SITE CONDITIONS AT THE TIME OF CONSTRUCTION ARE CONSISTENT WITH THE ASSUMED ALLOWABLE SOIL BEARING PRESSURE.

**MATERIALS**

PRECAST UNITS SHALL BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH CON/SPAN® SPECIFICATIONS. CONCRETE FOR FOOTINGS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI. REINFORCING STEEL FOR FOOTINGS SHALL CONFORM TO ASTM A615 OR A996-GRADE 60.

RECON PRECAST MODULAR  
 BLOCK WALL OR APPROVED  
 EQUAL - BY OTHERS (TYP.)



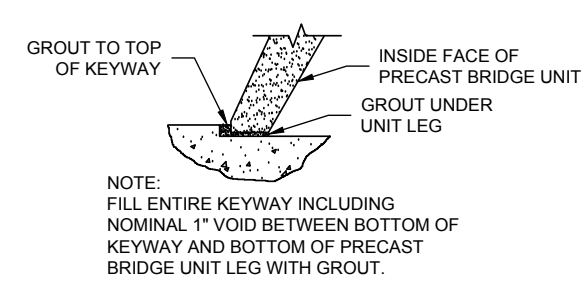
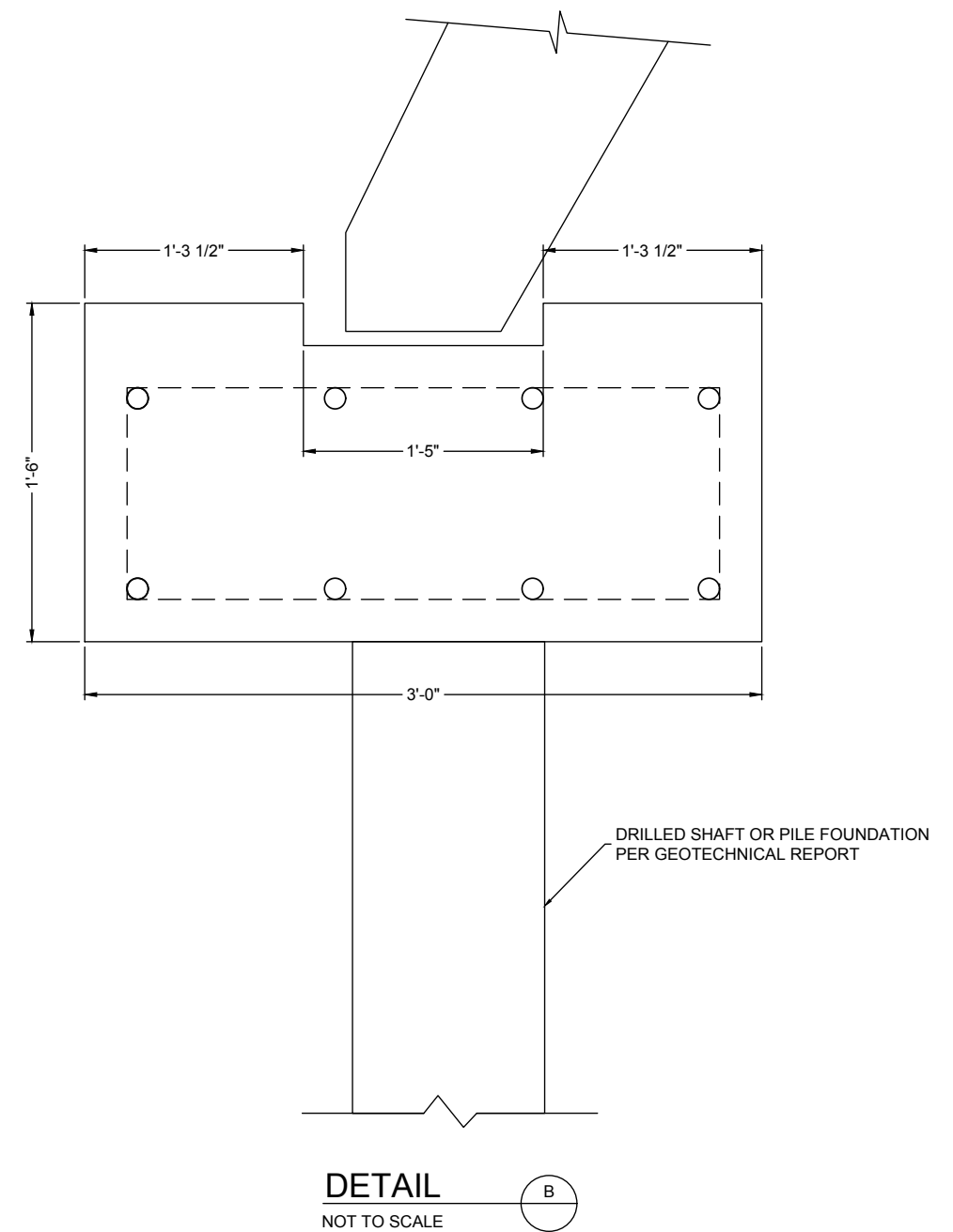
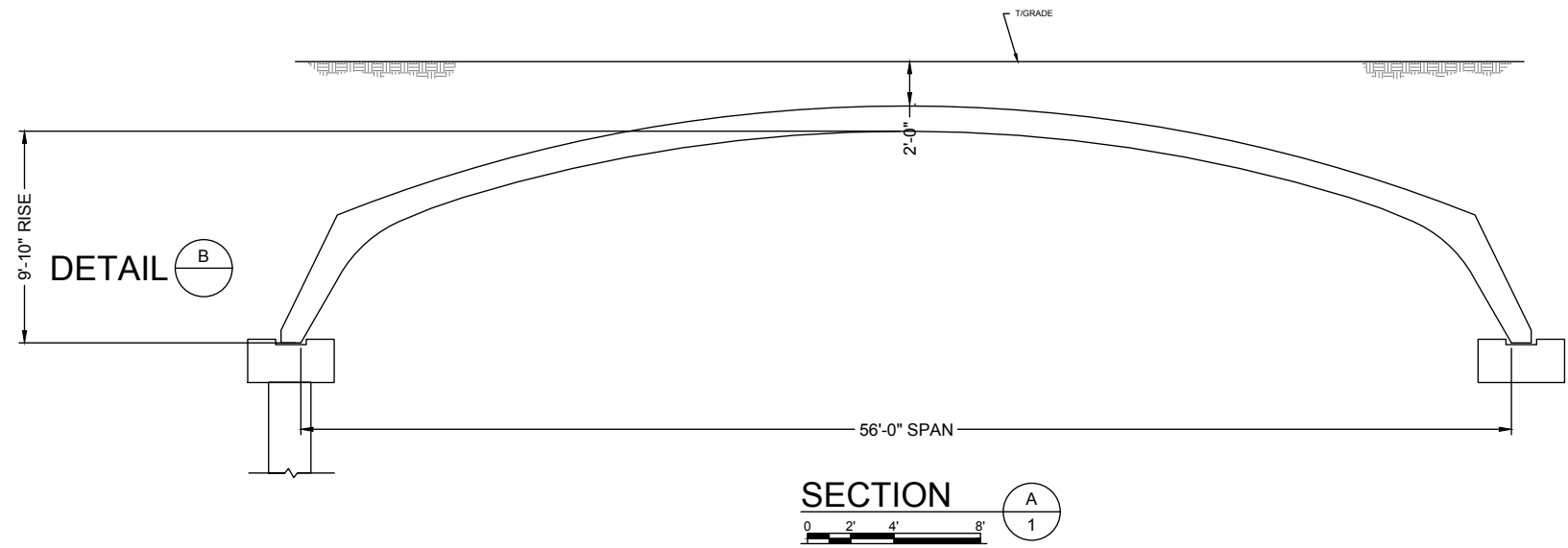
BRIDGE PLAN

<b>BRIDGE DETAILS</b>	
<b>LITTLE RIVER PARK DRAINAGE IMPROVEMENTS</b>	
<b>CITY OF MOORE</b>	
PLANS AND ESTIMATES PREPARED BY: <b>Meshek &amp; Associates, L.L.C.</b> 1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620	

REVISION	BY	DATE	PLAN SCALE	DRAWN	JCL	Value	APPROVED:
			N/A	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	RECOMMENDED			PUBLIC WORKS DIRECTOR
			VERTICAL:	RECOMMENDED			
			FILE:	DRAWING:			DATE:
			ATLAS PAGE NO. .				SHEET 7 OF 133 SHEETS



M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_TYP\_SECTIONS\_DETAILS.dwg



**TYPICAL BRIDGE UNIT GROUT DETAIL**

- NOTES**
- FOOTING DIMENSIONS AND DETAILS SHOWN ARE CONCEPTUAL ONLY
  - FINAL DIMENSIONS & DETAILS TO BE FURNISHED BY CONTECH OR APPROVED BRIDGE MANUFACTURER.
  - FOUNDATION REINFORCING TO BE DETERMINED

**BRIDGE TYPICAL SECTIONS**  
**LITTLE RIVER PARK DRAINAGE IMPROVEMENTS**  
**CITY OF MOORE**

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	JCL	Value	APPROVED:
			N/A	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	DEVELOPMENT SERVICES			PUBLIC WORKS DIRECTOR
			VERTICAL:	RECOMMENDED			
			FILE:	DEPUTY DIRECTOR			
			ATLAS PAGE NO.	DRAWING:			DATE:
							SHEET 8 OF 133 SHEETS



7:04:05 AM  
 cpyb&w\_ANSIB.tbl  
 cpybdf\_ANSIB.plt  
 2/5/2018  
 Plans and Drawings/8.30 Cut Sheets/8.3.01 General/15280BRQY01.dgn  
 Projects/MEAS1500380.00/MEAS1500380.01/8.00

PAY QUANTITIES				
PEDESTRIAN BRIDGE – BRIDGE A				
ITEM NUMBER	OKC SPEC	DESCRIPTION	UNIT	TOTAL
	402	DRILLED SHAFTS (18" DIAMETER)	LF	196.00
	404	STRUCTURAL CONCRETE	CY	11.10
	411	REINFORCING STEEL	LB	850.00
	SPECIAL	INSTALLATION OF BRIDGE ITEMS	(3) EA	1.00

PAY QUANTITIES				
PEDESTRIAN BRIDGE – BRIDGE B				
ITEM NUMBER	OKC SPEC	DESCRIPTION	UNIT	TOTAL
	402	DRILLED SHAFTS (18" DIAMETER)	LF	156.00
	404	STRUCTURAL CONCRETE	CY	6.90
	411	REINFORCING STEEL	LB	740.00
	SPECIAL	INSTALLATION OF BRIDGE ITEMS	(3) EA	1.00

PAY QUANTITIES				
OUTLET STRUCTURE				
ITEM NUMBER	OKC SPEC	DESCRIPTION	UNIT	TOTAL
	401	STRUCTURAL EXCAVATION	(1) CY	5,260.00
	404	STRUCTURAL CONCRETE	CY	1,041.30
	411	REINFORCING STEEL	LB	99,660.00
	826	(PERFORATED UNDERDRAIN) PIPE CONDUIT (6")	(2) LF	262.00
	828	4 FT. PEDESTRIAN RAILING	LF	310.00

### GENERAL NOTES

#### DESCRIPTION OF WORK:

THE WORK TO BE PERFORMED UNDER THIS CONTRACT CONSISTS OF INSTALLATION OF PREFABRICATED PEDESTRIAN BRIDGES AT BRIDGE "A" AND BRIDGE "B" AND CONSTRUCTION OF AN OUTLET STRUCTURE WALL AND RETAINING WALLS AT BRIDGE "B".

#### BRIDGE "A":

CONSTRUCT ABUTMENT CAP, BACKWALL, AND WINGWALLS. DRILLED SHAFTS WILL BE INSTALLED TO SUPPORT ABUTMENT CAP AND WINGWALLS. INSTALL PREFABRICATED PEDESTRIAN BRIDGE UNITS AVAILABLE ON SITE. INSTALL ARMOR JOINT BETWEEN ABUTMENT BACKWALL AND TRAIL SECTION.

#### BRIDGE "B":

CONSTRUCT ABUTMENT CAP, BACKWALL, AND WINGWALLS. DRILLED SHAFTS WILL BE INSTALLED TO SUPPORT ABUTMENT CAP. WINGWALLS WILL EXTEND TO BACK FACE OF RETAINING WALL. SLOPE WALL WILL BE CONSTRUCTED BETWEEN THE FRONT FACE OF THE ABUTMENT CAP AND THE BACK FACE OF THE RETAINING WALL. INSTALL PREFABRICATED PEDESTRIAN BRIDGE UNITS AVAILABLE ON SITE. INSTALL ARMOR JOINT BETWEEN ABUTMENT BACKWALL AND TRAIL SECTION.

#### OUTLET STRUCTURE AND RETAINING WALLS:

CONSTRUCT A 17' TALL OUTLET STRUCTURE WALL ON SPREAD FOOTING FOUNDATIONS WITH OPENINGS AT BRIDGE "B". INSTALL CONSTRUCTION JOINTS BETWEEN WALL PANELS. CONSTRUCT VARIABLE HEIGHT RETAINING WALLS ON EAST AND WEST ENDS OF OUTLET STRUCTURE ON SPREAD FOOTING FOUNDATIONS. INSTALL CONSTRUCTION JOINTS BETWEEN WALL PANELS. CONSTRUCT SLOPED CONCRETE APRON BETWEEN RETAINING WALLS. INSTALL WATERSTOP JOINTS BETWEEN OUTLET STRUCTURE, RETAINING WALLS, AND CONCRETE APRON.

#### GEOTECHNICAL ENGINEERING REPORT:

FOR DETAILED INFORMATION SEE THE GEOTECHNICAL ENGINEERING REPORT: "LITTLE RIVER PARK DRAINAGE IMPROVEMENTS AND PEDESTRIAN BRIDGES" DATED JULY 7, 2017 PREPARED BY TERRACON CONSULTANTS, INC.

#### VERIFICATION OF EXISTING CONDITIONS:


CONSTRUCTION PLANS FOR THE CONTECH PREFABRICATED PEDESTRIAN BRIDGE UNITS AVAILABLE ON SITE ARE PROVIDED IN THE PLANS ON SHEETS 41 TO 45 FOR CONTRACTOR INFORMATION ONLY.

PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL INSPECT THE STRUCTURAL CONDITION AND VERIFY ALL DIMENSIONS OF THE PEDESTRIAN BRIDGE UNITS. THE CONTRACTOR MUST SUBMIT ANY DEFICIENCIES AND DISCREPANCIES TO THE ENGINEER FOR REVIEW. NO WORK SHALL BEGIN UNTIL APPROVAL FROM THE ENGINEER HAS BEEN RECEIVED.

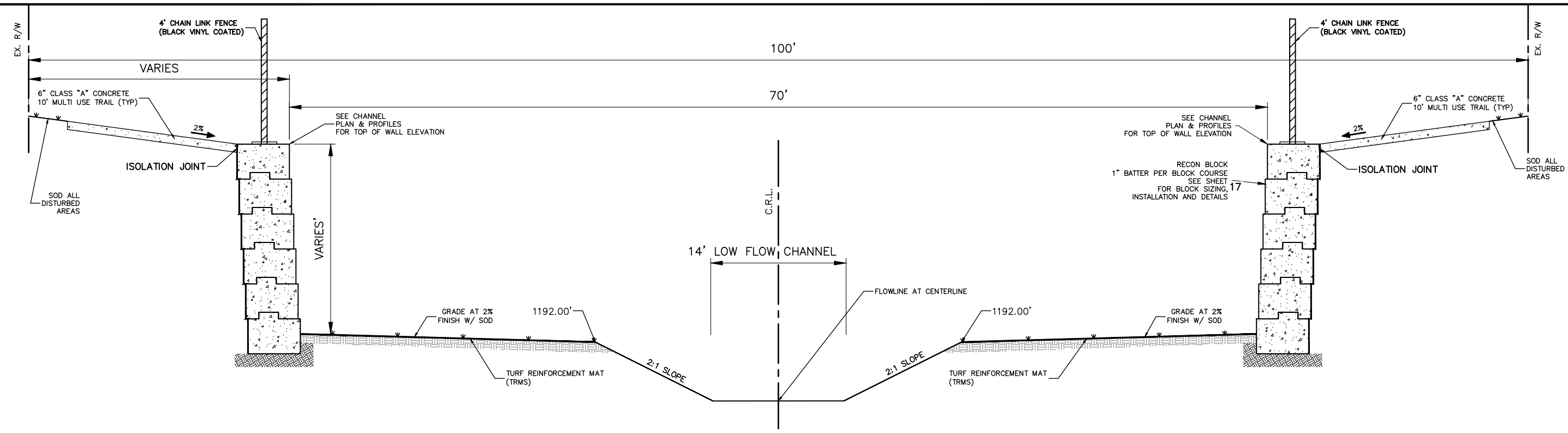
THE CONTRACTOR IS RESPONSIBLE FOR FULLY UNDERSTANDING THE NATURE OF THE WORK AND CONDITIONS UNDER WHICH THE WORK WILL BE PERFORMED. THE CONTRACTOR SHALL ADOPT METHODS CONSISTENT WITH GOOD CONSTRUCTION PRACTICE AND SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT DAMAGE TO THE PEDESTRIAN BRIDGE UNITS OR ATTACHMENTS. ANY DAMAGE TO THE PEDESTRIAN BRIDGE UNITS DUE TO THE CONTRACTOR'S NEGLIGENCE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE, TO THE SATISFACTION OF THE ENGINEER.

### BRIDGE PAY ITEM NOTES

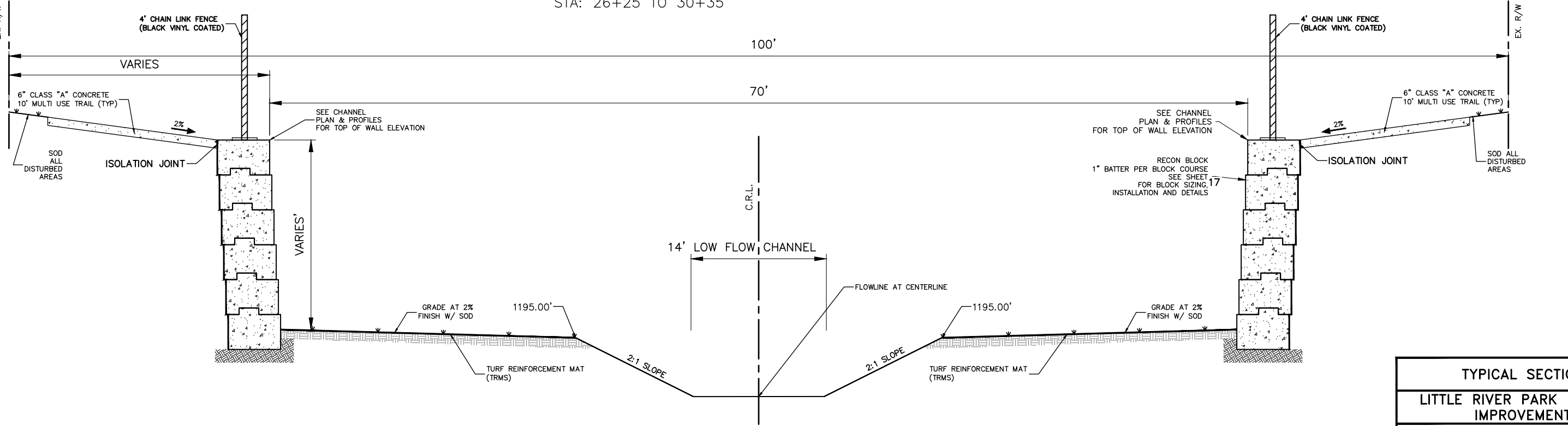
- (1) STRUCTURAL EXCAVATION IS ESTIMATED AT 4,540 CY COMMON AND 720 CY ROCK.
- (2) SHALL INCLUDE ALL COSTS ASSOCIATED WITH CONSTRUCTING THE PIPE UNDERDRAIN COVER MATERIAL AS SHOWN ON PLANS.
- (3) INSTALLATION OF BRIDGE ITEMS SHALL INCLUDE ALL COSTS ASSOCIATED WITH ERECTING THE PREFABRICATED CONTECH PEDESTRIAN BRIDGE STRUCTURES LOCATED AT THE SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TRANSPORTING THE EXISTING STRUCTURES TO THE LOCATIONS FOR BRIDGE "A" AND BRIDGE "B" AND PLACING THEM AS SHOWN ON THE PLANS. PAY ITEM SHALL ALSO INCLUDE COST OF PROVIDING AND INSTALLING ANCHOR BOLTS AND EXPANSION JOINT ASSEMBLY AS SHOWN ON THE PLANS.

PAY QUANTITIES AND NOTES (BRIDGE)				
LITTLE RIVER PARK DRAINAGE IMPROVEMENT				
CITY OF MOORE				
				
PLAN SCALE	DRAWN	CPY	APPROVED:	
	DESIGNED	CPY		
	SURVEY			
PROFILE SCALE	RECOMMENDED			
HORIZONTAL:	DEVELOPMENT SERVICES			
VERTICAL:	RECOMMENDED			
	DEPUTY DIRECTOR			PUBLIC WORKS DIRECTOR
FILE:	DRAWING:			DATE:
SHEET NO. 9 of 112				

M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_TYP\_SECTIONS\_DETAILS.dwg



1 LITTLE RIVER SECTION GRADED ABOVE NATURAL CHANNEL  
 SCALE: NONE  
 STA: 26+25 TO 30+35



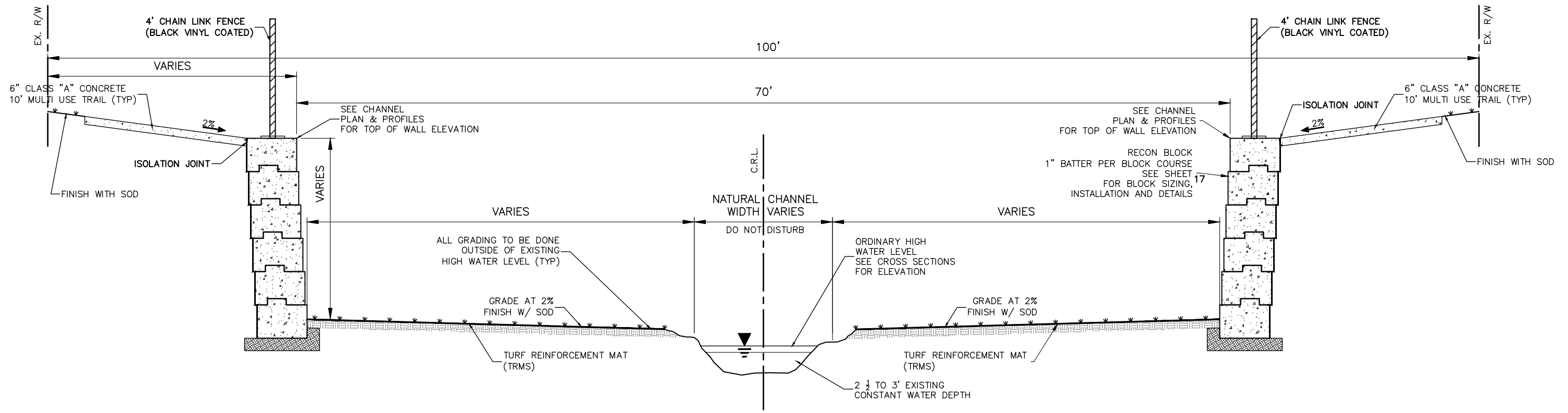
2 LITTLE RIVER SECTION GRADED ABOVE NATURAL CHANNEL  
 SCALE: NONE  
 STA: 40+10 TO 42+60

**TYPICAL SECTIONS**  
**LITTLE RIVER PARK DRAINAGE IMPROVEMENTS**  
**CITY OF MOORE**  
 PLANS AND ESTIMATES PREPARED BY:  
**Meshek & Associates, L.L.C.**  
 1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620

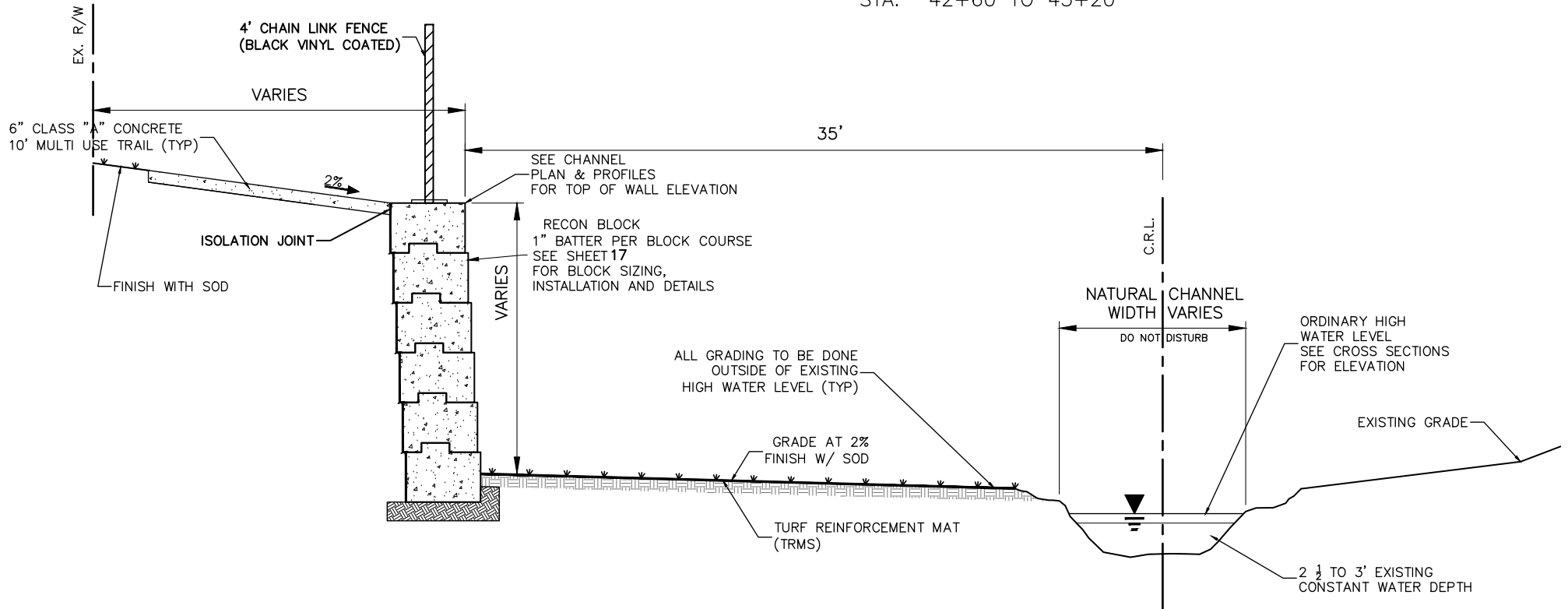
REVISION	BY	DATE	PLAN SCALE	DRAWN	JCL	Value	APPROVED:
			N/A	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	RECOMMENDED			
			N/A	DEVELOPMENT SERVICES			
			VERTICAL:	RECOMMENDED			
			N/A	DEPUTY DIRECTOR			PUBLIC WORKS DIRECTOR
			FILE:	DRAWING:			DATE:
			ATLAS PAGE NO. .				SHEET 10 OF 133 SHEETS



M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_TYP\_SECTIONS\_DETAILS.dwg



**1** LITTLE RIVER SECTION GRADED ABOVE NATURAL CHANNEL  
 SCALE: NONE  
 STA: 23+10 TO 23+75  
 STA: 24+33 TO 26+25  
 STA: 30+35 TO 40+00  
 STA: 42+60 TO 45+20



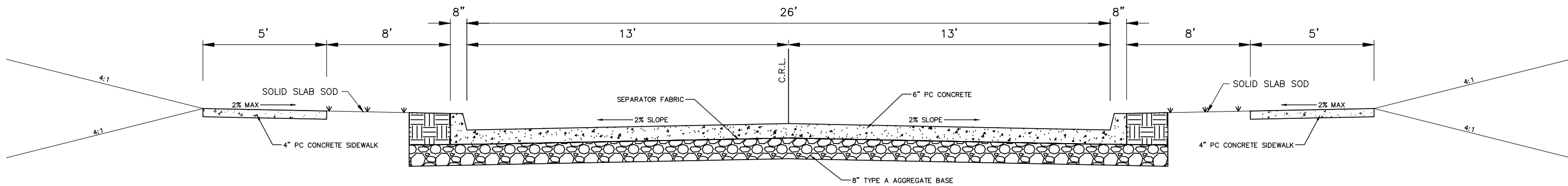
**2** LITTLE RIVER SECTION GRADED ABOVE NATURAL CHANNEL  
 SCALE: NONE  
 STA: 10+80 TO 23+10

**TYPICAL SECTIONS**  
**LITTLE RIVER PARK DRAINAGE IMPROVEMENTS**  
**CITY OF MOORE**  
 PLANS AND ESTIMATES PREPARED BY:  
**Meshek & Associates, L.L.C.**  
 1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620

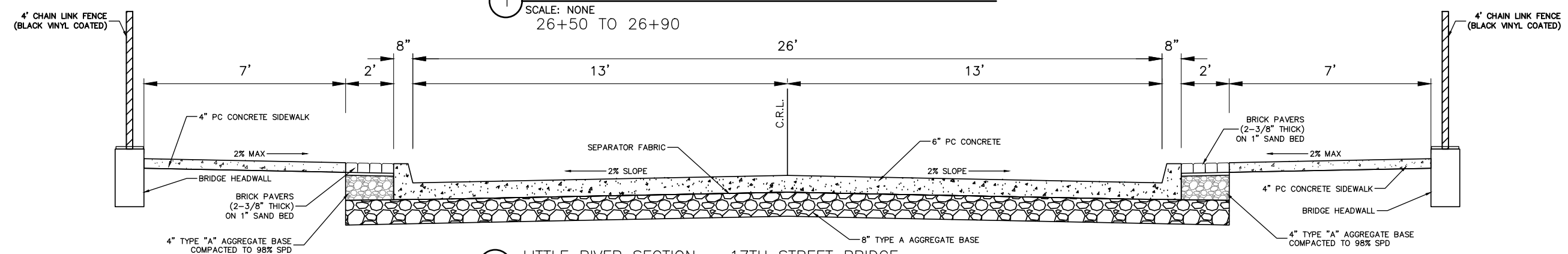
REVISION	BY	DATE	PLAN SCALE	DRAWN	JCL	Value	APPROVED:
			N/A	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	DEVELOPMENT SERVICES			PUBLIC WORKS DIRECTOR
			VERTICAL:	RECOMMENDED			
			FILE:	DEPUTY DIRECTOR			
			DRAWING:	DATE:			
			ATLAS PAGE NO. .	SHEET 11 OF 133 SHEETS			



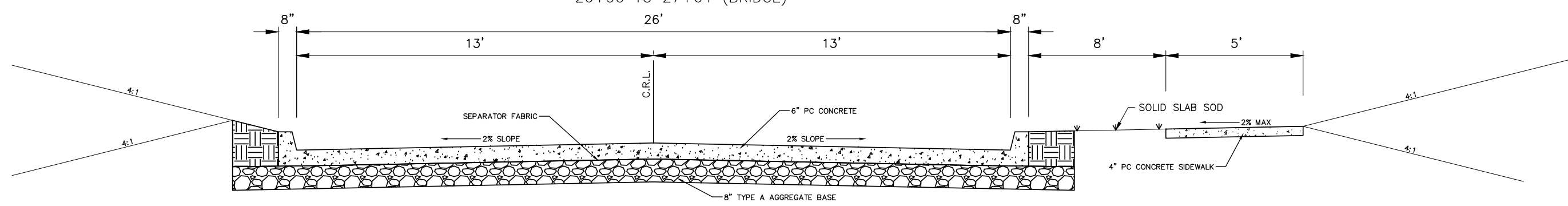
M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_TYP\_SECTIONS\_DETAILS.dwg



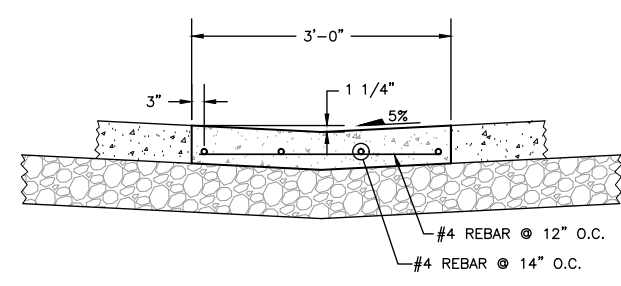
1 LITTLE RIVER SECTION - 17TH STREET  
SCALE: NONE  
26+50 TO 26+90



2 LITTLE RIVER SECTION - 17TH STREET BRIDGE  
SCALE: NONE  
26+90 TO 27+64 (BRIDGE)

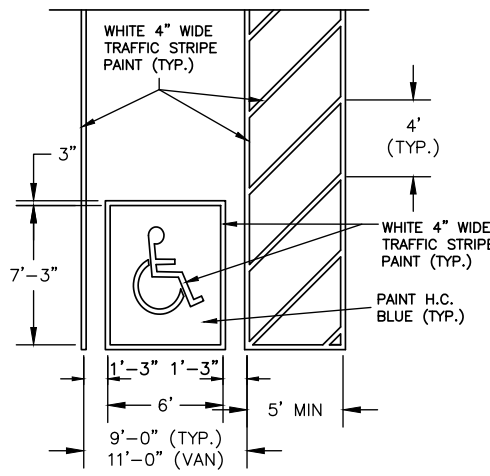


3 LITTLE RIVER SECTION - 17TH STREET  
SCALE: NONE  
27+90 TO 31+50



3 VALLEY GUTTER DETAIL  
SCALE: NONE

- NOTES:
1. OMIT GUTTER AROUND APRON. SLOPE ALL PARTS OF APRON FROM CURB TO NEAREST FLOW LINE WITHIN LIMITS OF VALLEY GUTTER. TRANSITION RETURN GUTTER TO FALL AWAY SECTION AS NECESSARY TO DRAIN TO VALLEY GUTTER FLOW LINE.
  2. VALLEY GUTTER AND APRON TO BE 7" THICK CLASS "AA" (4000 PSI) P.C.C. (H.E.S.) OVER 9" COMPACTED TYPE "A" AGG. BASE.
  3. PLACE VALLEY GUTTER SEPARATE FROM APRONS. PROVIDE EXPANSION JOINT AT COLD JOINT.
  4. VALLEY GUTTER AND APRONS SHALL BE INSTALLED PRIOR TO PAVING.
  5. REFERENCE INTERSECTION DETAILS FOR SPOT ELEVATIONS AT GUTTER AND APRON.
  6. REINFORCE APRON W/ #4 BARS @ 12" O.C.
  7. PRICE BID FOR CLASS "AA" CONCRETE TO INCLUDE ALL REINFORCING STEEL FOR VALLEY GUTTER.



4 ACCESSIBLE PARKING  
SCALE: NONE

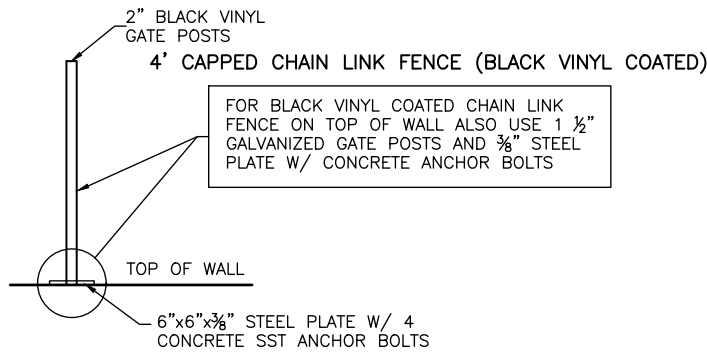


REVISION		BY	DATE	PLAN SCALE	DRAWN	JCL	Value	APPROVED:
				N/A	DESIGNED	BWF	Value	
					SURVEY	PDH	Value	
					RECOMMENDED			
				PROFILE SCALE	RECOMMENDED			
				HORIZONTAL:	DEVELOPMENT SERVICES			
				VERTICAL:	RECOMMENDED			
				FILE:	DEPUTY DIRECTOR			PUBLIC WORKS DIRECTOR
				DRAWING:				DATE:
				ATLAS PAGE NO. .				SHEET 12 OF 133 SHEETS

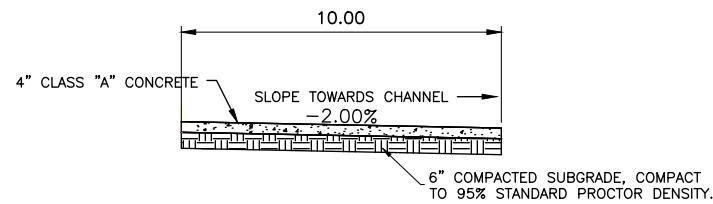
TYPICAL SECTIONS  
LITTLE RIVER PARK DRAINAGE IMPROVEMENTS  
CITY OF MOORE

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



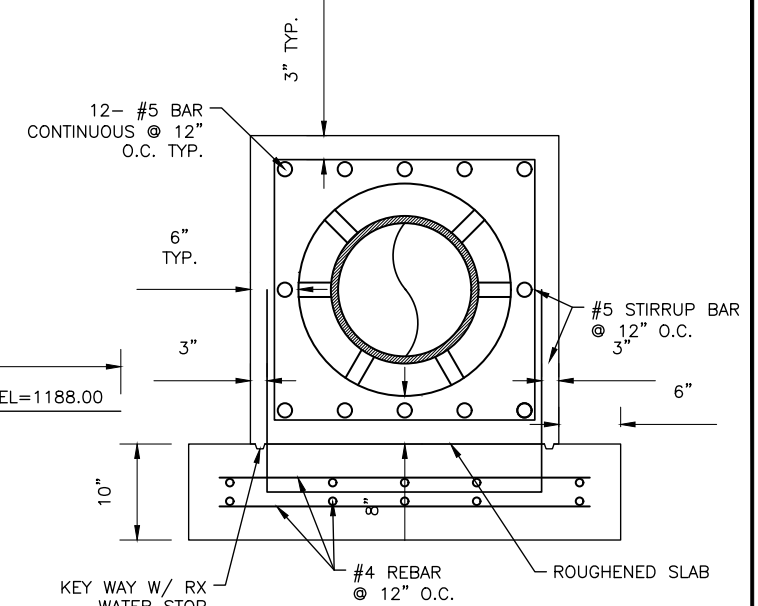
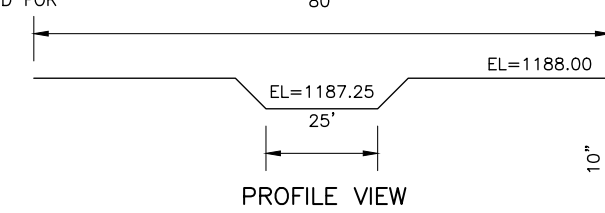
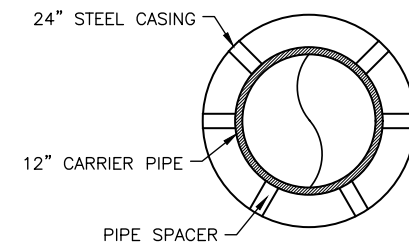


7 FENCE POST WALL ANCHOR  
SCALE: NONE

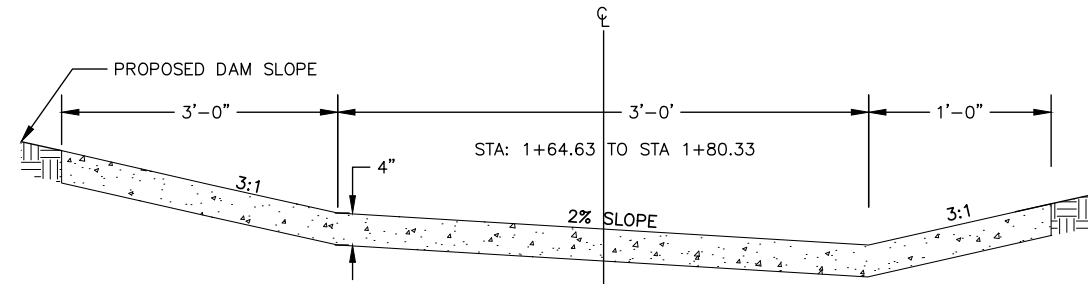


6 PROPOSED TRAIL SECTION  
SCALE: NONE

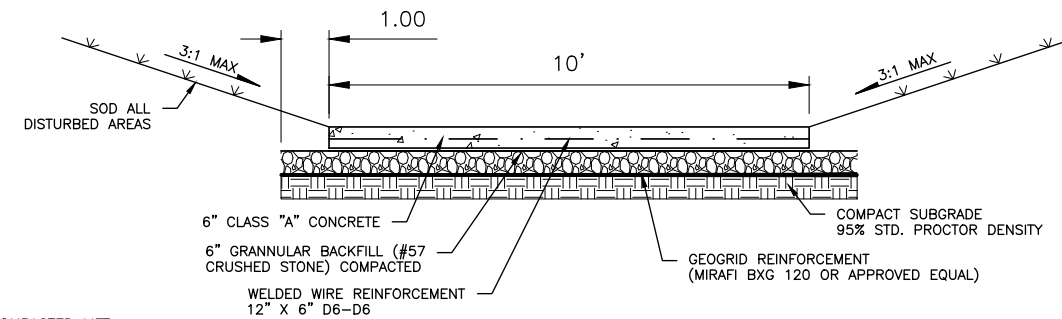
1. CASING SHALL BE .375 WALL THICKNESS AWWA C 200 STEEL UNCOATED WITH FILLET WELDED SPLICE JOINTS AS CASING IS ADVANCED. CAP ENDS WITH A-36 STEEL PLATE. SEAL AROUND WITH APPROVED COAL TAR PITCH SEALANT.
2. PIPE SPACERS SHALL BE MADE OF AN INERT MATERIAL.
3. SPACERS SHALL BE CONNECTED TO PIPE WITH AN APPROVED MATERIAL.
4. CASING ENDS SHALL BE SEALED WITH NYOPRENE SEALER.
5. CONTRACTOR TO SUBMIT PIPE SUPPORT METHOD FOR APPROVAL.
6. COST OF ALL MATERIALS AND LABOR REQUIRED TO PLACE CASING SHALL BE INCLUDED IN THE UNIT PRICE BID FOR 24" STEEL CASING.



5 SANITARY ENCASEMENT DETAIL  
SCALE: NONE



3 MODIFIED PAVED DITCH  
SCALE: NONE



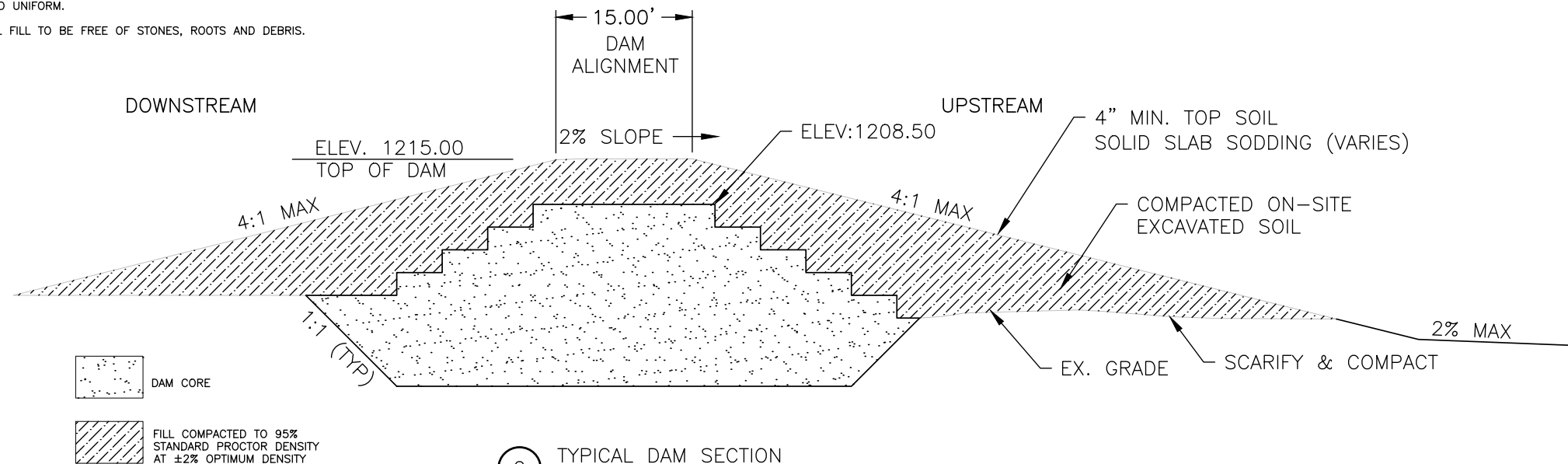
8 ACCESS RAMP  
SCALE: NONE  
STATION: 30+57.90 TO 30+76.90

THE FILL SHALL MEET THE FOLLOWING REQUIREMENTS:

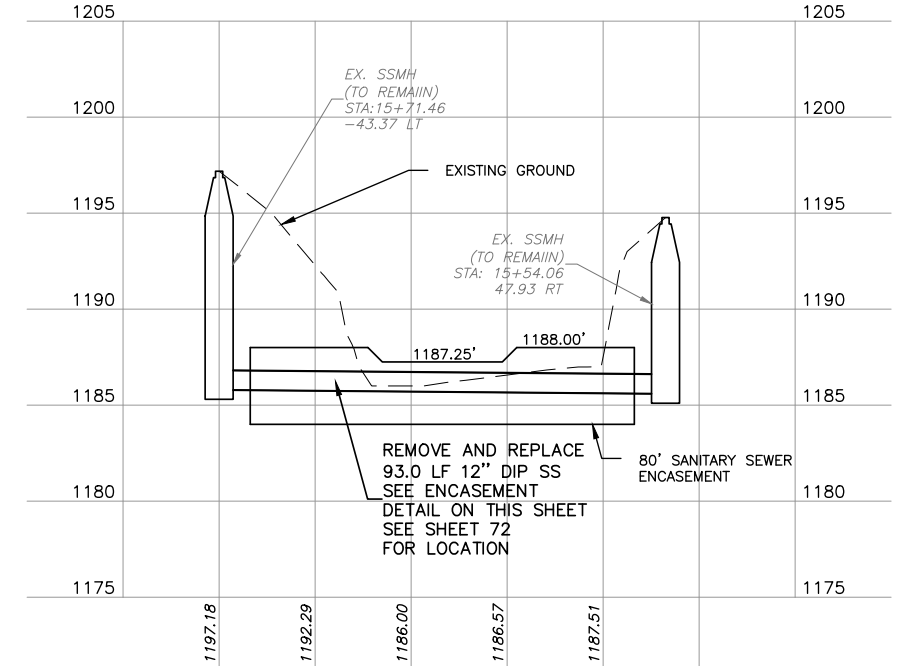
1. DAM CORE SHALL BE CONSTRUCTED FROM CLAY MATERIAL EXCAVATED AT THE SITE (OR SELECT BORROW IF NO SUITABLE MATERIAL IS ENCOUNTERED). PI RANGE - 25 TO 30
2. MINIMUM OF 50% FINES (MATERIAL PASSING THE #200 SIEVE)
3. 3" MAXIMUM PARTICLE SIZE IN THE TOP 3 FEET OF FILL.
4. MAXIMUM PARTICLE SIZE BELOW THE TOP 3 FEET OF FILL SHALL BE NO GREATER THAN THE COMPACTED LIFT DIMENSION (±9")
5. COMPACT FILL IN-PLACE TO 95% OF STANDARD PROCTOR DENSITY AT ±2% OF OPTIMUM MOISTURE CONTENT.
6. ON-SITE FILL MATERIALS SHALL BE BLENDED TO INSURE A MAXIMUM DRY DENSITY OF THE COMPACTED, CONSTRUCTED FILL BETWEEN 106 AND 110 POUNDS PER CUBIC FOOT.
7. IMPORTED SOILS SHALL CONTAIN NO DISPERSIVE CLAY.

PLACE FILL IN 9" MAXIMUM LOOSE LIFTS AT 95% SPD - MINIMUM OF 3 LIFTS PER 2'X4' BENCH. BENCH FILL INTO IMPERVIOUS CORE AND ADJACENT UNDISTURBED SOIL AS INDICATED IN THE CROSS SECTIONS. ALL LIFTS SHALL BE LEVEL AND UNIFORM.

ALL FILL TO BE FREE OF STONES, ROOTS AND DEBRIS.



2 TYPICAL DAM SECTION  
SCALE: NONE  
SEE CROSS SECTIONS SHEETS 130 TO 133



9 SANITARY REPLACEMENT  
SCALE: NONE

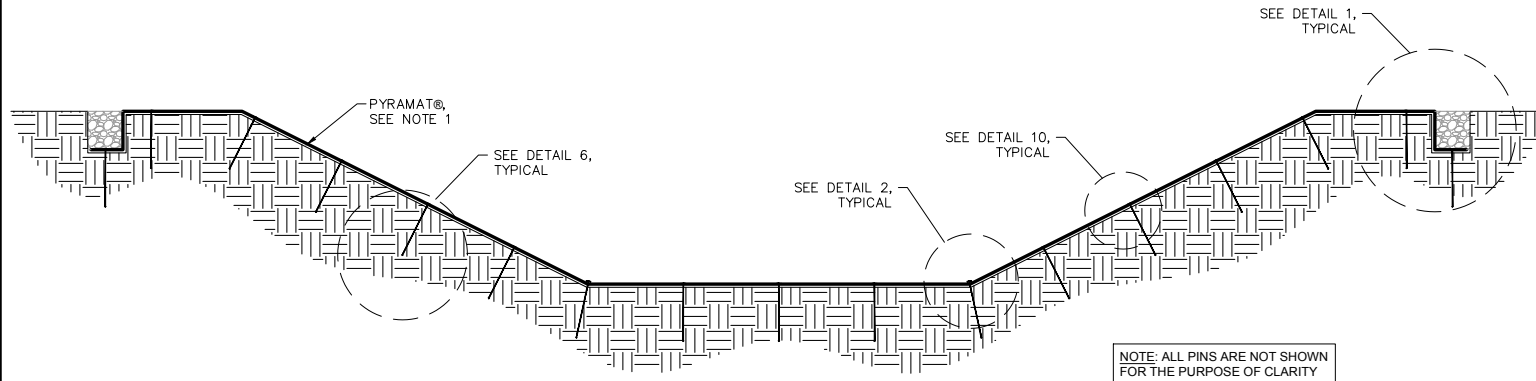
REVISION		BY	DATE	PLAN SCALE	DRAWN	JCL	Value	APPROVED:
				N/A	DESIGNED	BWF	Value	PUBLIC WORKS DIRECTOR
					SURVEY	PDH	Value	
				PROFILE SCALE	RECOMMENDED			
				HORIZONTAL:	RECOMMENDED			
				VERTICAL:	RECOMMENDED			
				FILE:	DRAWING:			DATE:
				ATLAS PAGE NO.				SHEET 13 OF 133 SHEETS



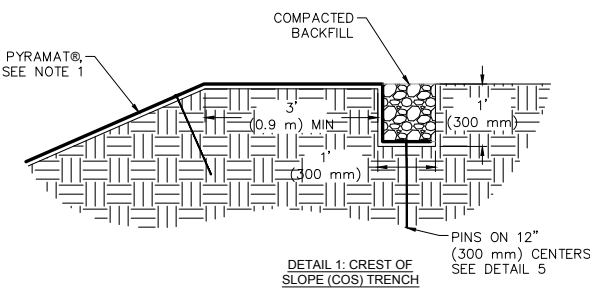
M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_TYP\_SECTIONS\_DETAILS.dwg

PRINT DATE: 02/06/2018

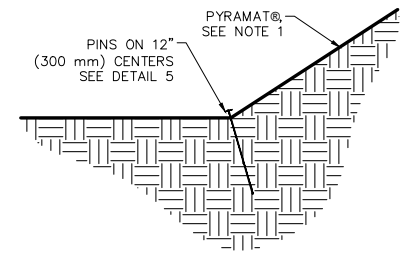
PRINT DATE: 02/05/2018 M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_TYP\_SECTIONS\_DETAILS.dwg



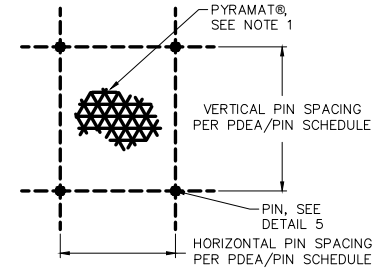
ELEVATION 1: PERPENDICULAR INSTALLATION OF PYRAMAT® HPTRM IN A CHANNEL



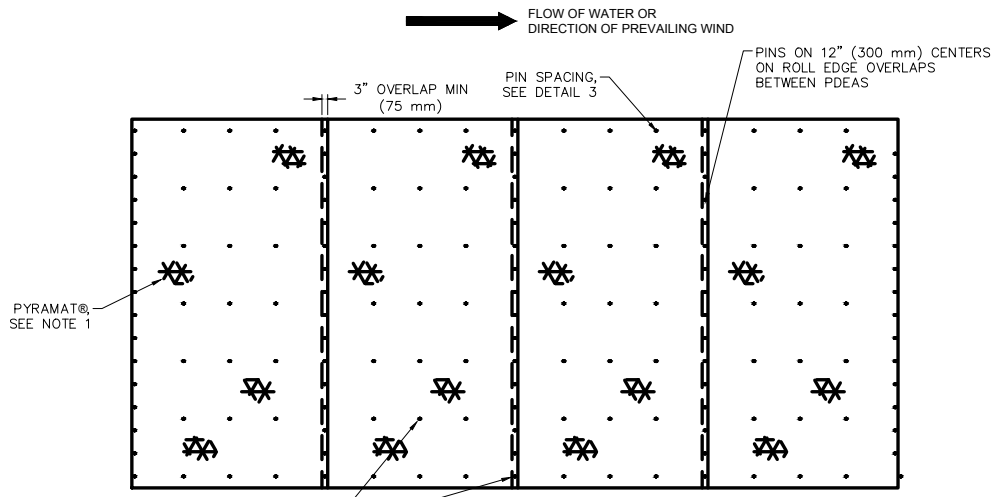
DETAIL 1: CREST OF SLOPE (COS) TRENCH



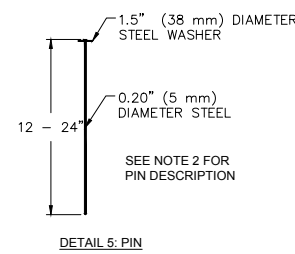
DETAIL 2: BREAK IN SLOPE INTERFACE



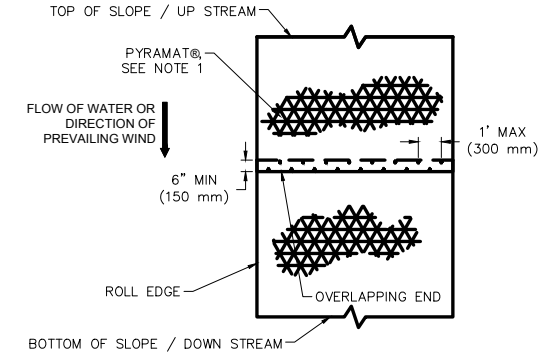
DETAIL 3: PIN PATTERN



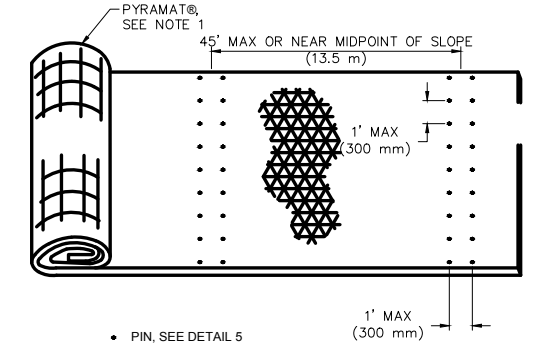
DETAIL 4: PIN PATTERN



DETAIL 5: PIN

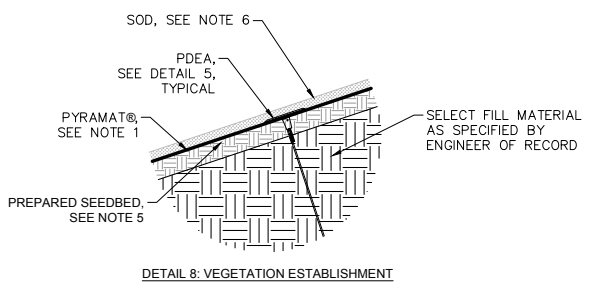


DETAIL 6: OVERLAP AT ROLL END DETAIL

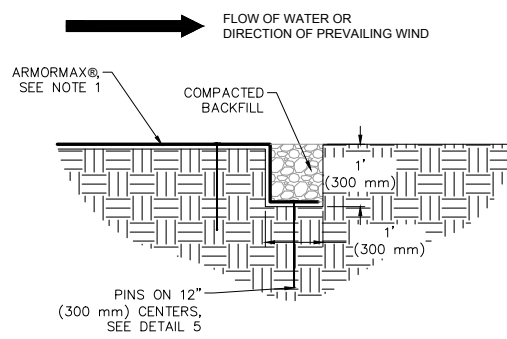


DETAIL 7: SIMULATED CHECK SLOT DETAIL

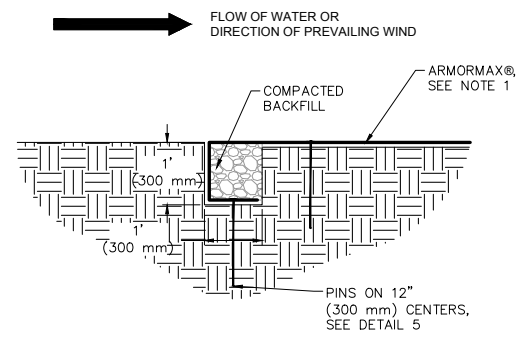
OFFSET PDEA AS SHOWN TO CREATE A CHECKERBOARD PATTERN



DETAIL 8: VEGETATION ESTABLISHMENT



DETAIL 9: INITIAL CHANNEL (IC) TRENCH (DOWNSTREAM)



DETAIL 10: TERMINAL CHANNEL (TC) TRENCH (UPSTREAM)

**PYRAMAT® HPTRM IN A CHANNEL FOR EROSION CONTROL GENERAL INSTALLATION GUIDELINES**

**GENERAL NOTES**

- Pyramat HPTRM is a three-dimensional, lofty, woven polypropylene geotextile that is available in green or tan which is specially designed for erosion control applications on steep slopes and vegetated waterways. The matrix is composed of polypropylene monofilament yarns featuring X3® technology woven into a uniform configuration of resilient pyramid-like projections. The material exhibits very high interlock and reinforcement capacity with both soil and root systems, demonstrates superior UV resistance, and enhances seedling emergence.
- The 12", 18", and 24" Securing Pins are composed of a wire, mushroomed at the top. A washer is then placed on the wire and the wire is crimped or swaged about 3-1/2" below the top so the washer will not slide off. The end of the wire is cut at a 45 degree angle for easy penetration of the soil. These Pins with washers conform to industry standards for erosion control pins with washers.
- Landlok® S2 Erosion Control Blankets consist of 100% wheat straw mechanically bound and covered on both sides by netting. The straw is homogeneously blended and evenly distributed throughout the blanket. The netting is photodegradable polypropylene with mesh openings of approximately 3/8 in. by 3/8 in. (11 mm by 11 mm). The blanket is sewn on approximately 2 in. (51 mm) centers with photodegradable polypropylene thread. This product is NTPEP approved for AASHTO standards.

**BEFORE INSTALLATION BEGINS**

- Coordinate with a Propex Representative: A pre-construction meeting is suggested with the construction team and a representative from Propex. This meeting should be scheduled by the contractor with at least a two week notice.
- Gather the Tools Needed: Tools that you will need to install Pyramat include a pair of industrial shears to cut Pyramat and tape measure.
- Determine how to Establish Vegetation: The method of vegetation establishment should be determined prior to the start of installation. Different vegetation establishment methods require different orders of installation. Refer to Establish Vegetation for further guidance.
- Please consult the Propex Website for the most up to date installation guidelines.

**Vegetation Establishment**

- Prepare seedbed by loosening 50 to 75 mm (2 to 3 in) of soil above final grade. Select and apply soil amendments and fertilizer to scarified surface prior to installation of the ArmorMax ARVS. A site specific soil test should be performed to help determine what soil amendments, such as lime and fertilizer, need to be incorporated into the soil to promote healthy vegetation.
- Upon installation of the ArmorMax ARVS, sod should be placed atop the ArmorMax ARVS using sod staples.
- Irrigate as necessary to establish and maintain vegetation until 75% of vegetation has established and has reached a height of 2 inches. Frequent, light irrigation will need to be applied to seeded areas if natural rain events have not occurred within two weeks of seeding. When watering seeded areas, use a fine spray to prevent erosion of seeds or soil. Do not over irrigate.

**DETAILS**  
**LITTLE RIVER PARK DRAINAGE IMPROVEMENTS**  
**CITY OF MOORE**

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

**EROSION CONTROL INSTALLATION DETAILS**

Please note that the information presented herein is general information only. It is for conceptual use only and not intended to be used for construction. While every effort has been made to ensure its accuracy, this information should not be used for a specific application without independent professional examination and verification of its suitability, applicability, and accuracy. This engineering drawing is protected by the Copyright Act, 17 U.S.C. §101 et seq. and may be used ONLY with the express written permission of Propex in connection with Propex products. Any copying, distributing, and/or creation of a derivative work without permission of Propex is prohibited and is subject of actual damages, statutory damages and attorney's fees under the Copyright Act.



© 2014 Propex Operating Company, LLC



**HIGH PERFORMANCE TURF REINFORCEMENT MAT (HPTRM) PYRAMAT® INSTALLATION DETAILS FOR CHANNELS**

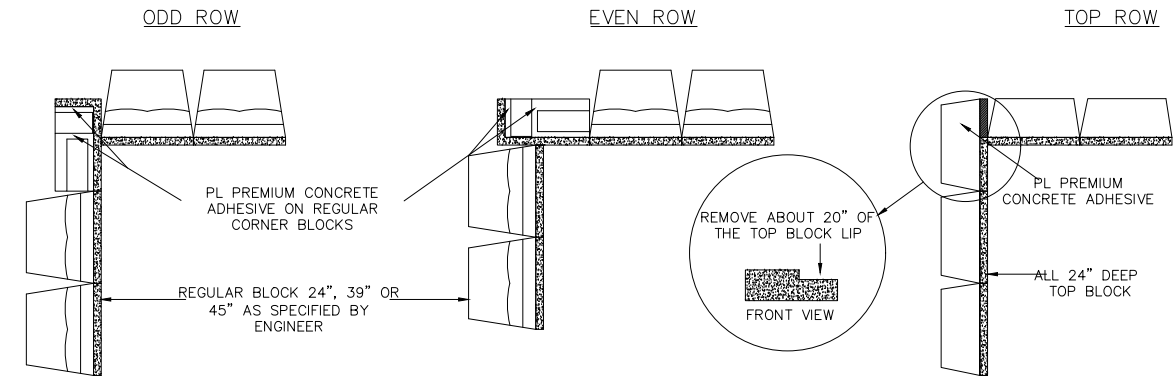
Date: 11/07/2014 Drawn By: D.LOIZEAUX Scale: NTS \*ALL DIMENSIONS ARE TO BE VERIFIED BY ENGINEER OF RECORD

PIN SCHEDULE	
SECURING DEVICE	PIN
HORIZONTAL PDEA SPACING	2' (0.60 m)
VERTICAL PDEA SPACING	2.5' (0.75 m)
EMBEDMENT DEPTH	PER MANUFACTURES DESIGN

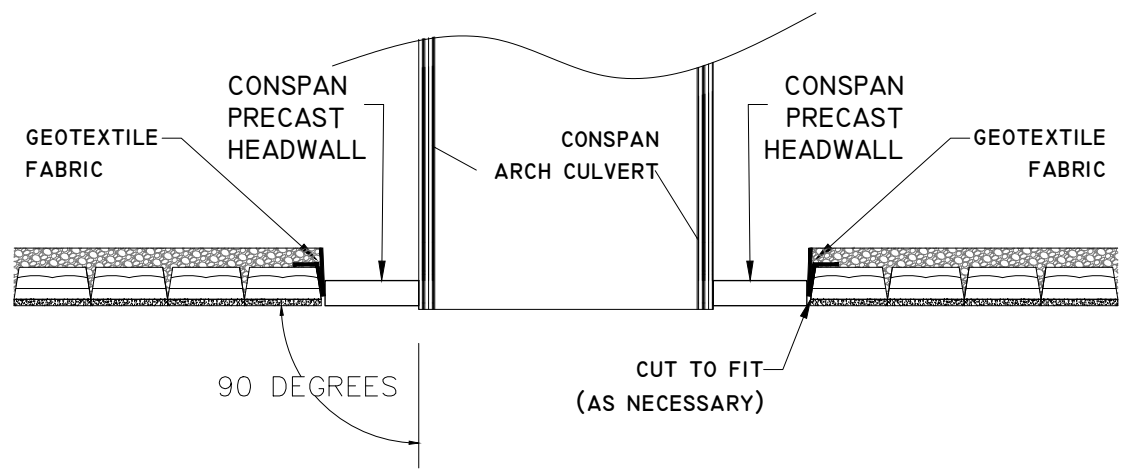
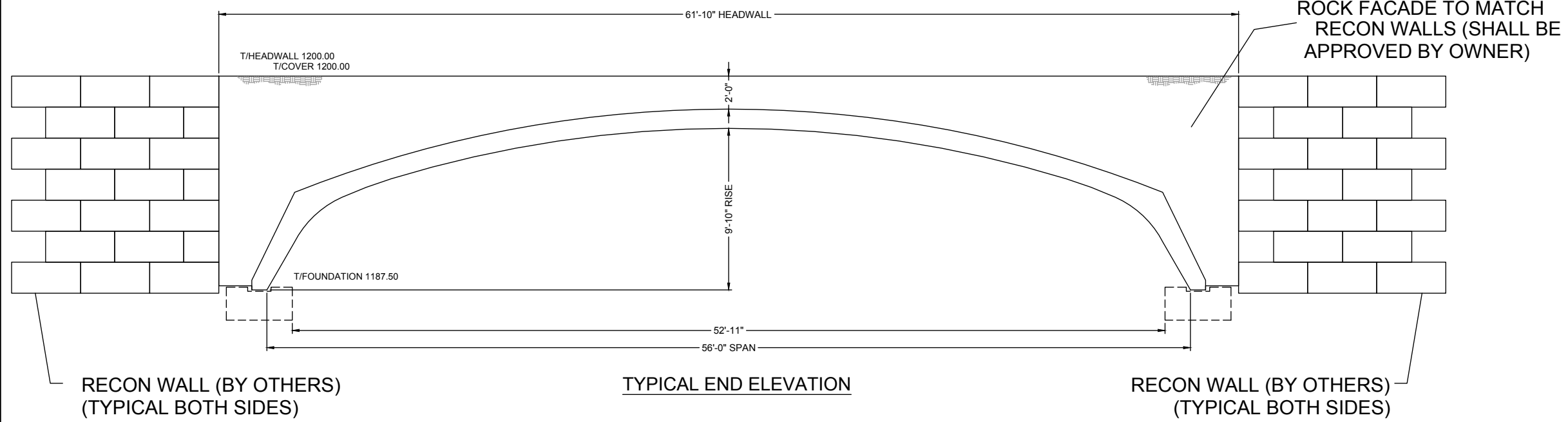


REVISION	BY	DATE	PLAN SCALE	DRAWN	JCL	Value	APPROVED:
			N/A	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL: N/A	DEVELOPMENT SERVICES RECOMMENDED			
			VERTICAL: N/A	DEPUTY DIRECTOR			PUBLIC WORKS DIRECTOR
			FILE:	DRAWING:			DATE:
			ATLAS PAGE NO. .				SHEET 14 OF 133 SHEETS

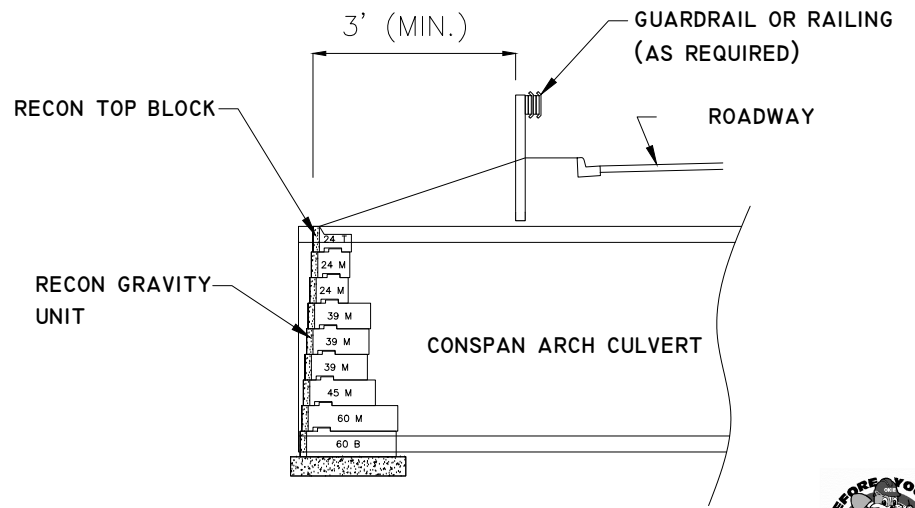
PRINT DATE: 02/05/2018 M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_TYP\_SECTIONS\_DETAILS.dwg



Note: When building an Inside 90° Corner, it is recommended that once the contractor gets to the base row of the inside corner, the contractor should then start each subsequent row at the corner and lay block out from the corner. Remember, the block has a 1" setback built into it for each row of block. This will have two different effects on the finished wall. First, at the point of the 90° corner, the wall will not be vertical, but rather the actual line at the corner will be laying back at the same 3.6° of batter as the face of each of the sides of the wall that come together at the corner. Second, as each new row of block is placed at the corner, the block will be set back not only 1" along the vertical axis but also will be placed 1" inside toward the corner along the horizontal axis. If you were to follow the second row of block out from the corner, you would see that the end of this row of block in the wall is 1" shorter in the horizontal / lineal direction than the base row. The third row of block will be 2" shorter in the horizontal / lineal direction than the base row, and so on. For taller walls, you may notice that the "running bond joint" is sliding off center by 2" for every other row. This is an aesthetic matter, not a structural issue.



SECTION C  
NOT TO SCALE



SECTION D  
NOT TO SCALE



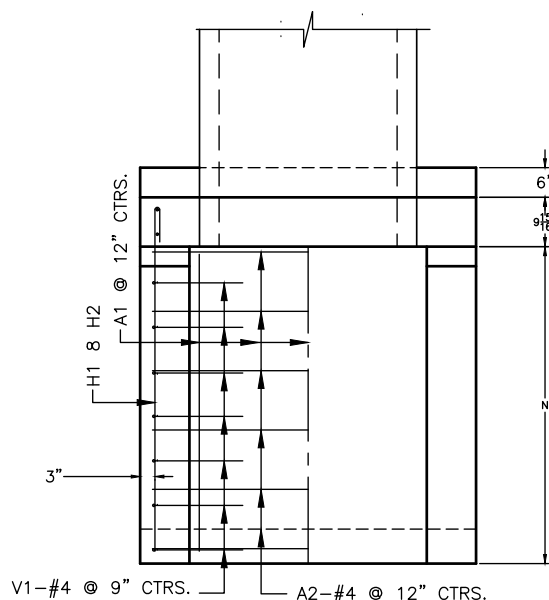
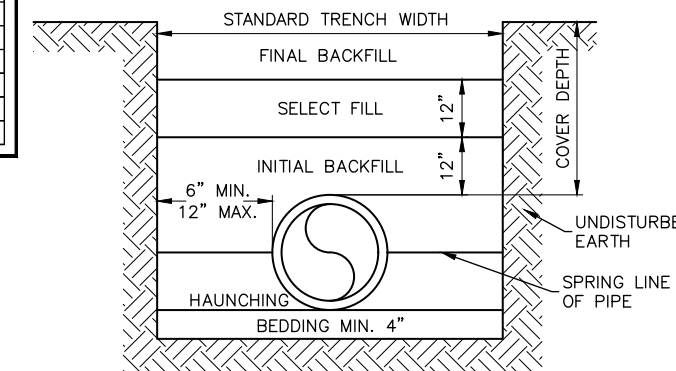
**DETAILS**  
**LITTLE RIVER PARK DRAINAGE IMPROVEMENTS**  
**CITY OF MOORE**

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

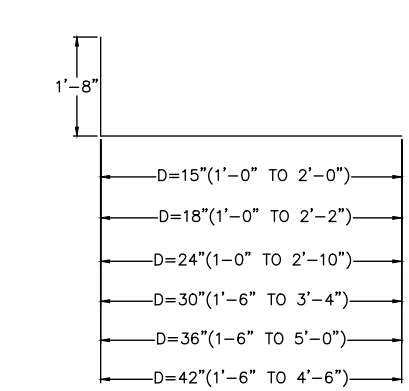
REVISION	BY	DATE	PLAN SCALE	DRAWN	JCL	Value	APPROVED:
			N/A	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	RECOMMENDED			
			N/A	DEVELOPMENT SERVICES			
			VERTICAL:	RECOMMENDED			
			N/A	DEPUTY DIRECTOR			PUBLIC WORKS DIRECTOR
			FILE:	DRAWING:			DATE:
			ATLAS PAGE NO.				SHEET 15 OF 133 SHEETS

**DIMENSIONS & QUANTITIES FOR HEADWALL WITH U-TYPE WINGS**

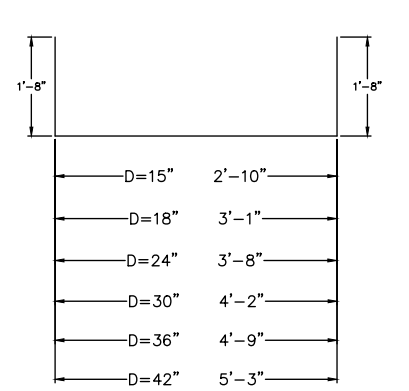
DIMENSIONS						REINFORCING STEEL										QUANTITIES							
D	AREA SQ. FT.	T	H	L	N	A1 - #4		A2 - #4		B - #4		C - #4		H1 - #4		H2 - #4		V1 - #4		V2 - #4		CLASS "A" CONC., C.Y.	REINFORCING STEEL, LBS.
						No.	LENGTH	No.	LENGTH	No.	LENGTH	No.	LENGTH	No.	LENGTH	No.	LENGTH	No.	LENGTH	No.	LENGTH		
15"	1.23	2 1/4"	2'-5 1/4"	3'-11"	2'-6"	3	2'-2"	3	3'-7"	7	3'-7"	3	1'-6"	2	3'-6"	2	2'-0"	8	3'-0" AV.	4	5'-10"	0.95	71
18"	1.77	2 1/4"	2'-8 1/2"	4'-2"	3'-1"	3	2'-9"	4	3'-10"	7	3'-10"	3	1'-6"	2	4'-1"	2	2'-8"	8	4'-2" AV.	4	6'-1"	1.15	79
24"	3.14	3"	3'-3"	4'-8"	4'-2"	4	3'-10"	5	4'-4"	7	4'-4"	4	1'-6"	2	5'-2"	4	2'-11" AV.	12	3'-5" AV.	4	6'-8"	1.60	109
30"	4.91	3 1/2"	3'-9 1/2"	5'-2"	4'-3"	4	3'-11"	5	4'-10"	7	4'-10"	4	1'-6"	2	5'-3"	4	3'-5" AV.	12	3'-11" AV.	4	7'-2"	1.91	120
36"	7.07	4"	4'-4"	5'-8"	5'-4"	5	5'-0"	6	5'-4"	7	5'-4"	5	1'-6"	2	6'-4"	6	3'-11" AV.	14	4'-2" AV.	4	7'-9"	3.65	194
42"	9.62	4 1/2"	4'-10 1/2"	6'-2"	6'-5"	5	6'-5"	7	5'-10"	7	5'-10"	5	1'-6"	2	7'-5"	6	4'-10" AV.	18	4'-6" AV.	4	8'-3"	3.12	186



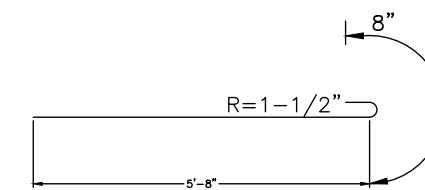
**PLAN**



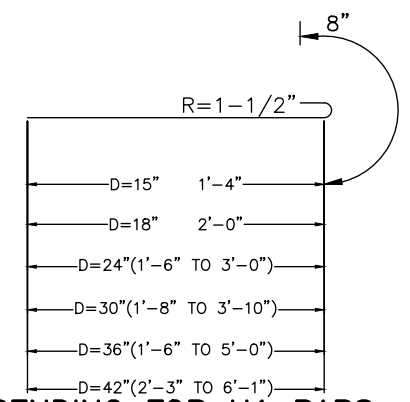
**BENDING FOR V1 BARS**



**BENDING FOR V2 BARS**



**BENDING FOR H1 BARS**



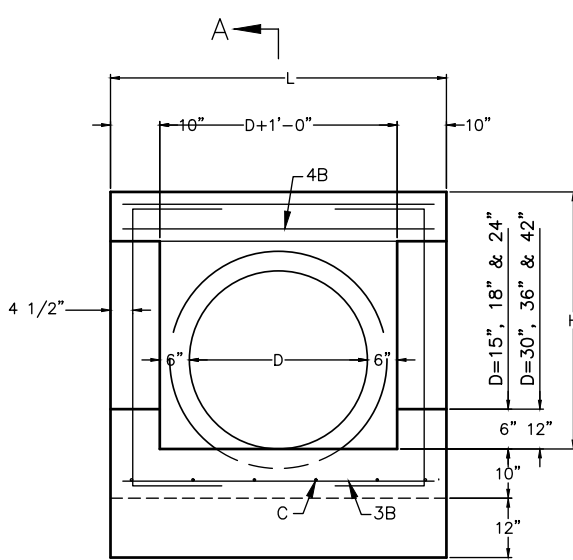
**BENDING FOR H1 BARS**

PIPE INSIDE DIAMETER	STANDARD TRENCH WIDTH	
	IN.	IN.
≤6	30	
8	30	
10	30	
12	30	
15	36	
18	36	
21	42	
24	42	
27	48	
30	48	
36	54	

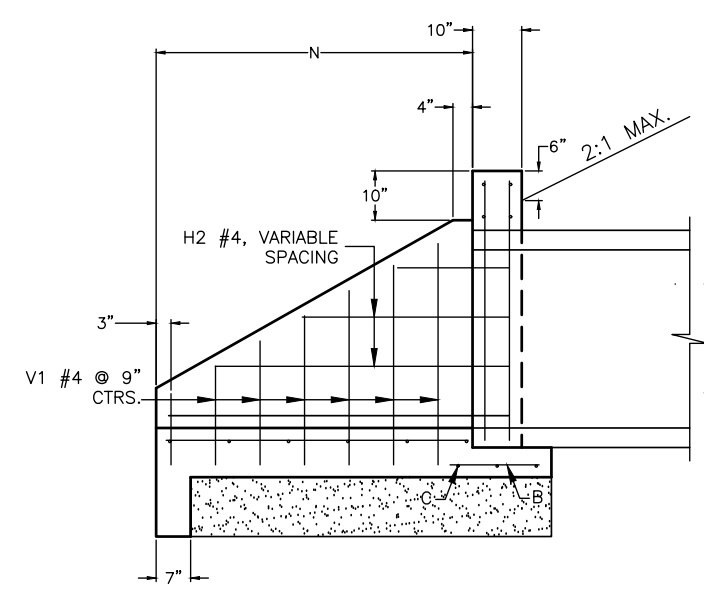
BACKFILL DESCRIPTION	BEDDING MATERIALS					
	NON-PAVED AREAS			PAVED AREAS (SEE NOTE 8)		
	PVC	DIP	HDPE	PVC	DIP	HDPE
FINAL BACKFILL	EXCAVATED MATERIAL	EXCAVATED MATERIAL	EXCAVATED MATERIAL	SBM	SBM	SBM
SELECT BACKFILL	SELECT FILL (SF)	SELECT FILL	SELECT FILL	SBM	SBM	SBM
INITIAL BACKFILL	COVER ≤10' SAND OR SMB >10' SBM	SELECT FILL	COVER ≤10' SAND OR SMB >10' SBM	SBM	SBM	SBM
HAUNCHING	COVER ≤10' SAND OR SMB >10' SBM	SELECT FILL	COVER ≤10' SAND OR SMB >10' SBM	SBM	SBM	SBM
BEDDING	SEE NOTE 5	SEE NOTE 5	SEE NOTE 5	SEE NOTE 5	SEE NOTE 5	SEE NOTE 5

- NOTES:
- INSTALLATION AND BACK FILLING SHALL MEET MANUFACTURERS RECOMMENDATIONS.
  - SELECT FILL CONSISTS OF EXCAVATED MATERIALS CONTAINING NO ROCKS LARGER THAN 2".
  - STANDARD BEDDING MATERIAL (SBM) SHALL CONFORM TO ODOT 703.01, TYPE A AGGREGATE BASE, OR FLOWABLE FILL PER SECTION 501.02(B).
  - COMPACTION REQUIREMENTS:
    - NON-PAVED AREAS: 90% MAXIMUM STANDARD PROCTOR DENSITY FOR COHESIONLESS SOILS AND 85% FOR COHESIVE SOILS.
    - PAVED AREAS: 95% MAXIMUM STANDARD PROCTOR DENSITY FOR COHESIONLESS SOILS.
  - IF TRENCH IS DRY, BEDDING SHALL BE 4" SAND OR TYPE A AGGREGATE BASE, AND IF WET SHALL BE NO. 57 OR NO. 67 ROCK PER SECTION 701.06(C).
  - IN SANDY SOIL, CONTRACTOR MAY BACKFILL WITH NATIVE MATERIAL AND USE WARNING TAPE 18" ABOVE PIPE.
  - NO WATER JETTING ALLOWED.
  - THE BACKFILL MATERIAL SHALL EXTEND A MINIMUM OF 2- FEET BEHIND THE BACK OF CURB, OR THE EDGE OF PAVEMENT WHERE NO CURB EXISTS..

**2 WATER PIPE TRENCHING AND BEDDING**  
SCALE: NONE



**ELEVATION**



**SECTION A-A**

**GENERAL NOTES**

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH CITY OF TULSA STANDARD SPECIFICATIONS.
- ALL EXPOSED CONCRETE SURFACES SHALL HAVE A CARBORUNDUM FINISH.
- ALL EXPOSED CONCRETE EDGES SHALL HAVE A 3/4" CHAMFER.
- REINFORCED CONCRETE PIPE SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-170 (ASTM C-76) CLASS III UNLESS OTHERWISE DESIGNATED.
- MINIMUM DEPTH OF FILL OVER CULVERTS SHALL BE 1'-0".
- WALL THICKNESS (DIMENSION "T") OF PIPES SHOWN, ARE TAKEN FROM "WALL B" COLUMN OF ATSM & AASHTO TABLES.

**1 U-TYPE HEADWALL DETAILS**  
NOT TO SCALE



REVISION	BY	DATE	PLAN SCALE	DRAWN	JCL	Value	APPROVED:
			N/A	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	RECOMMENDED			
			VERTICAL:	RECOMMENDED			
			FILE:	DRAWING:	DEPUTY DIRECTOR		PUBLIC WORKS DIRECTOR
			ATLAS PAGE NO.				DATE:

**DETAILS**

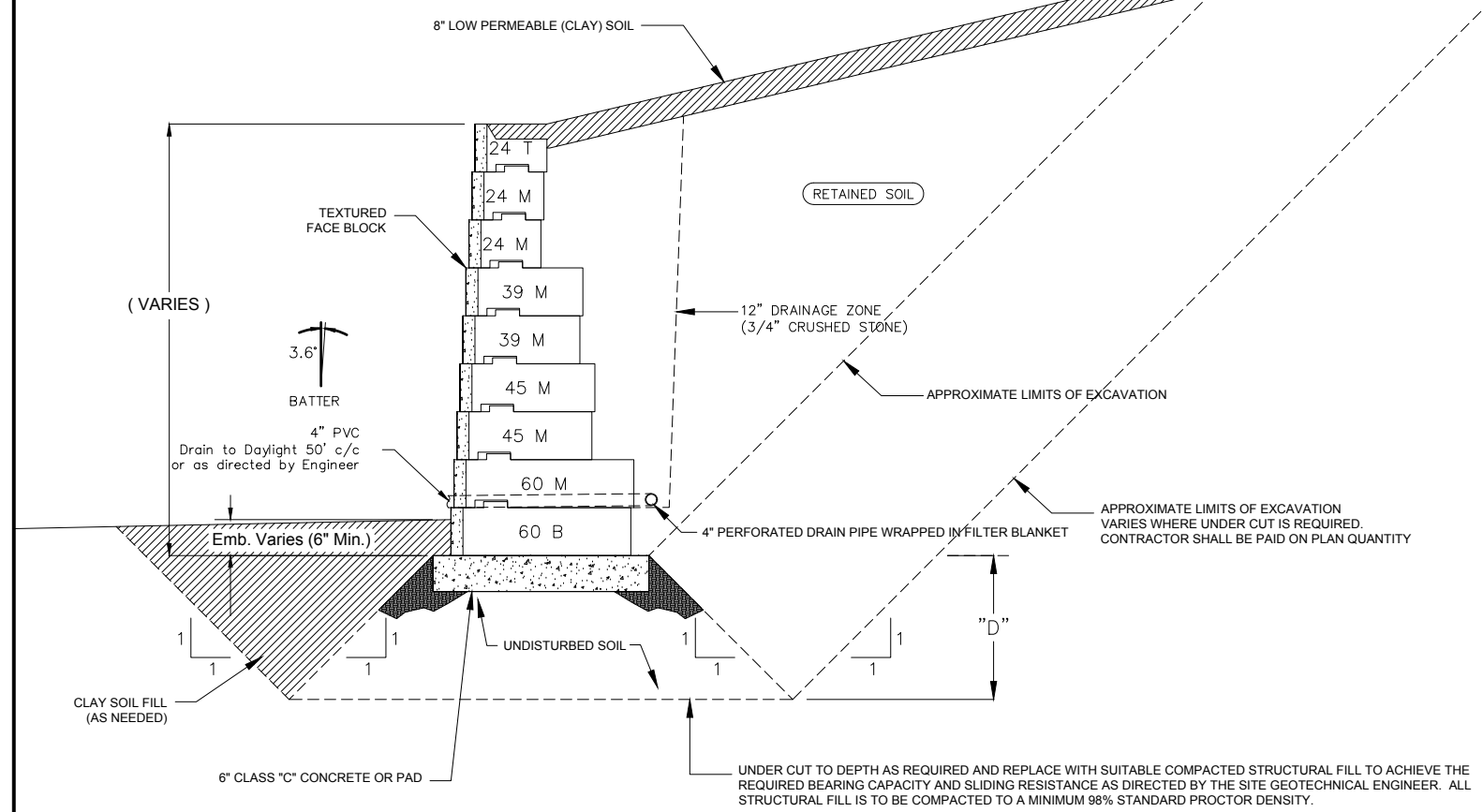
**LITTLE RIVER PARK DRAINAGE IMPROVEMENTS**

**CITY OF MOORE**

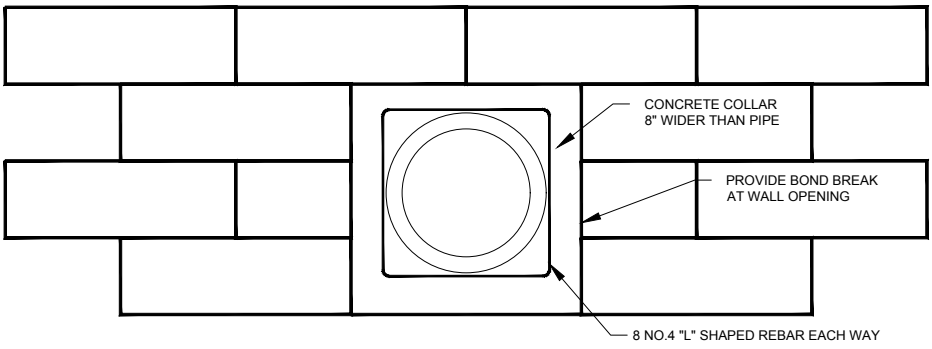
PLANS AND ESTIMATES PREPARED BY:  
**Meshek & Associates, L.L.C.**  
1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620

M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_TYP\_SECTIONS\_DETAILS.dwg PRINT DATE: 02/05/2018

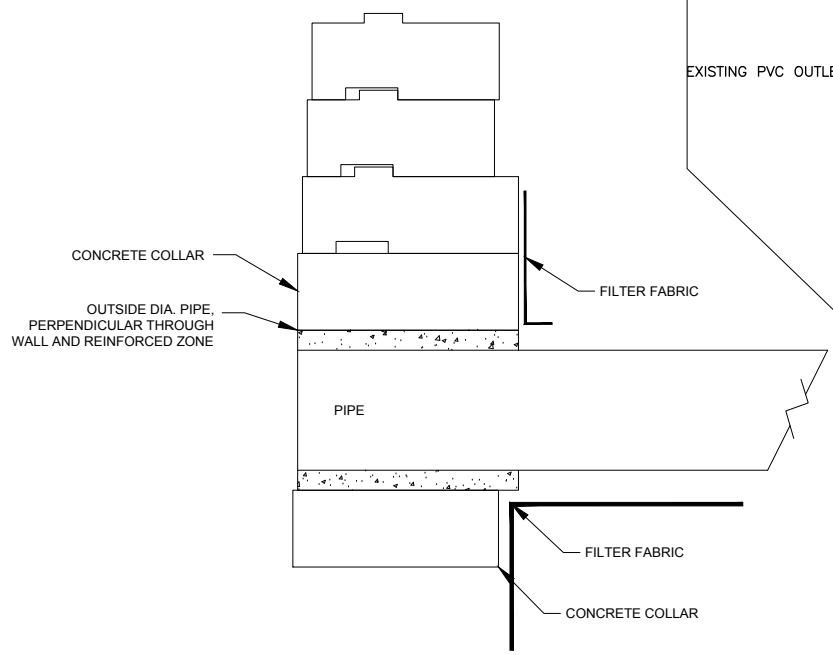
M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\_Design\Drawings\15MOR05\_DETAIL.dwg



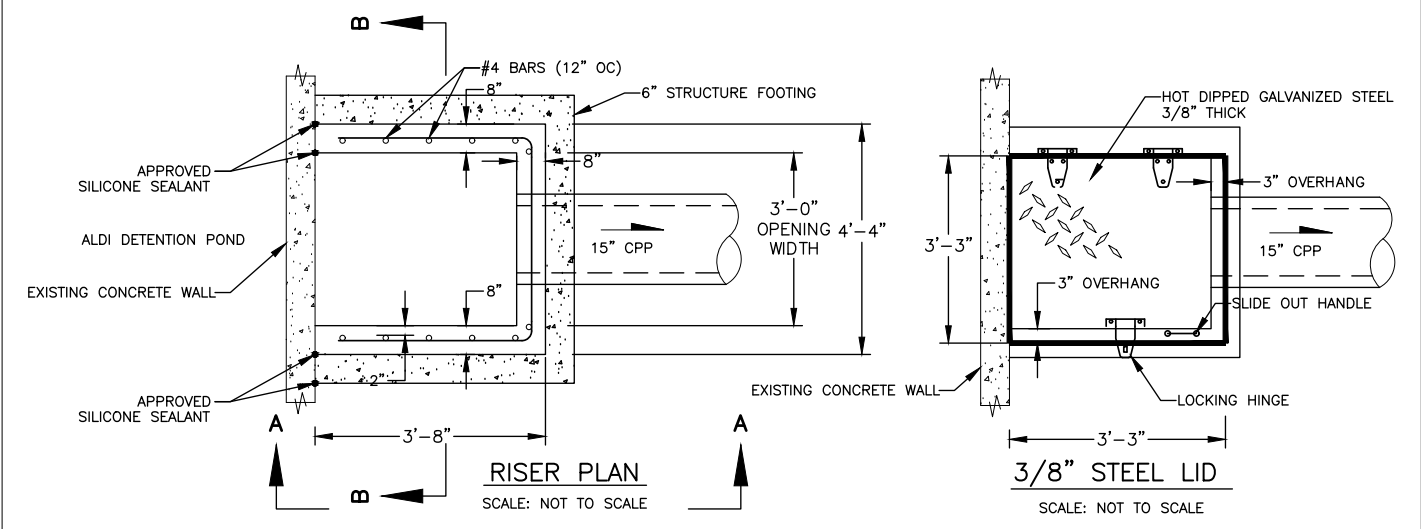
**1 WALL ELEVATION DETAIL**  
SCALE: NONE



**1A WALL PIPE PENETRATION DETAIL**  
SCALE: NONE

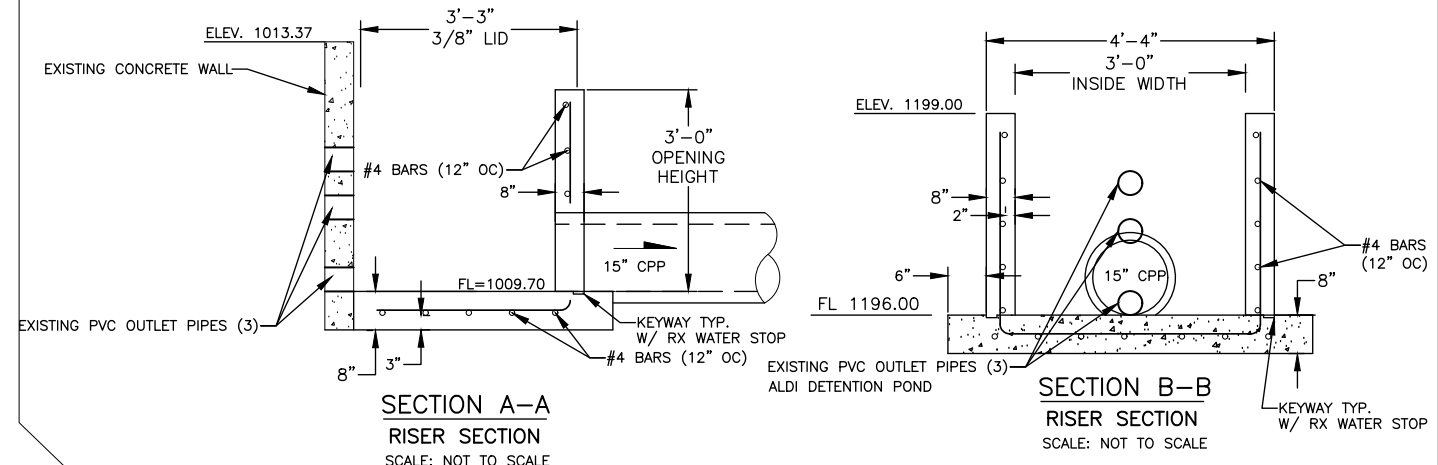


**1B WALL PIPE PENETRATION DETAIL**  
SCALE: NONE



**RISER PLAN**  
SCALE: NOT TO SCALE

**3/8\"/>**



**SECTION A-A**  
RISER SECTION  
SCALE: NOT TO SCALE

**SECTION B-B**  
RISER SECTION  
SCALE: NOT TO SCALE

**2 ST-95 STORM OUTLET STRUCTURE**  
SEE SHEET 71 FOR LOCATION

**NOTES:**  
ALL CONSTRUCTION SHALL BE IN STRICT ACCORDANCE WITH CURRENT CITY OF TULSA PUBLIC WORKS DEPARTMENT STANDARDS AND SPECIFICATIONS.

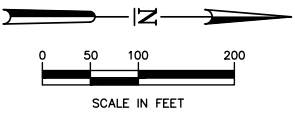


**RECON WALL / STRUCTURE DETAILS**  
**LITTLE RIVER PARK DRAINAGE IMPROVEMENTS**  
**CITY OF MOORE**

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

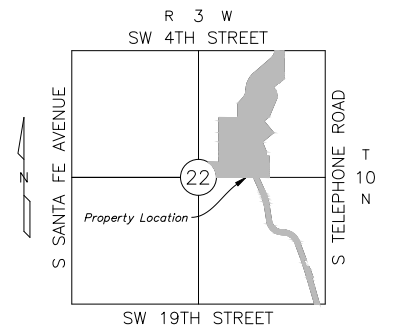
REVISION	BY	DATE	PLAN SCALE	DRAWN	JCL	Value	APPROVED:
			N/A	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	DEVELOPMENT SERVICES			PUBLIC WORKS DIRECTOR
			VERTICAL:	RECOMMENDED			
			FILE:	DEPUTY DIRECTOR			
			ATLAS PAGE NO. ###	DRAWING:			DATE:

BASIS OF BEARINGS:  
GRID NORTH BASED ON THE OKLAHOMA STATE PLANE  
COORDINATE SYSTEM (NAD83), SOUTH ZONE.



**LEGEND**

- SECTION LINE
- - - - - RIGHT-OF-WAY
- - - - - LOT LINE
- - - - - EXISTING BUILDING LINE
- - - - - EXISTING EASEMENT LINE
- ⊕ BENCHMARK
- ▲ B-## BORING LOCATION
- CP-## CONTROL POINT
- MONUMENT SET
- MONUMENT FOUND



IN CONJUNCTION WITH PLAT OF SURVEY,  
PREPARED BY ROBBY L. JOHNSON, PLS 1539 ON 1-19-2016,  
THIS SURVEY MEETS OR EXCEEDS THE REQUIREMENTS SET FORTH BY  
THE "OKLAHOMA MINIMUM STANDARDS FOR THE PRACTICE OF LAND  
SURVEYING" AS ADOPTED BY THE OKLAHOMA STATE BOARD OF  
LICENSURE FOR PROFESSIONAL ENGINEERS AND LAND SURVEYORS.

SEE THE REFERENCED 1-19-2016 PLAT OF SURVEY FOR ADDITIONAL  
INFORMATION INCLUDING MONUMENT TYPES BOTH FOUND AND SET.

Last Date of Survey: January 18, 2016

SURVEY CONTROL					
POINT	STATION	OFFSET	NORTHING	EASTING	ELEVATION
CP#503	14+35.01	242.81L	723643.1100	2118836.0850	1207.6600
CP#71013	25+41.52	53.08R	724775.4450	2118696.5900	1198.5200
CP#71011	28+91.63	66.24L	724767.3030	2118306.5380	1198.5700
CP#71018	36+18.87	65.71R	725498.6050	2118150.7500	1201.5700
CP#LLS1	44+58.61	106.83R	726268.6600	2117894.5800	N/A
CP#LLS2	44+58.61	106.83R	728483.4100	2117811.8400	N/A

... CONTINUED FROM SHEET 19

THENCE North 00°39'06" West, along the East line of said Moore Cemetery, a distance of 935.79 feet to the Southwest corner of the Southgate Baptist Church property;

THENCE along the easterly lines of the Southgate Baptist Church property for the following seven calls;

THENCE North 89°32'41" East a distance of 395.47 feet;

THENCE North 00°38'55" West a distance of 294.49 feet;

THENCE North 41°29'18" East a distance of 160.77 feet;

THENCE on a curve to the Left, having a radius of 233.03 feet, a chord bearing of North 20°22'15" East, a chord length of 167.91 feet, an arc distance of 171.78 feet;

THENCE on a curve to the Right, having a radius of 470.25 feet, a chord bearing of North 23°49'23" East, a chord length of 391.07 feet, an arc distance of 403.31 feet;

THENCE North 48°23'36" East a distance of 491.67 feet;

THENCE on a curve to the Left, having a radius of 194.50 feet, a chord bearing of North 23°58'09" East, a chord length of 160.85 feet, an arc distance of 165.82 feet to a point on the North line of said Section 22;

THENCE North 89°32'42" East, along said North line, a distance of 196.08 feet to the POINT OF BEGINNING, containing 2,517,707 square feet or 57.80 acres, more or less.

AND

Lots 14 and 15, Block 18, Bonnie Brae Blocks 16-18, Moore, Cleveland County, Oklahoma, according to the recorded plat thereof.

This Legal Description prepared by Robby L. Johnson, PLS 1539 on January 18th, 2016.

END LEGAL DESCRIPTION

Steven K. Lemke, PLS 1349  
Lemke Land Surveying, LLC  
3226 Bart Conner Drive  
Norman, OK 73072  
405.366.8541  
CA#6975



January 19, 2018



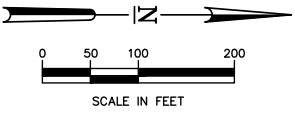
**BOUNDARY SURVEY DATA**  
**LITTLE RIVER PARK DRAINAGE IMPROVEMENTS**  
**CITY OF MOORE**

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	JCL	Value	APPROVED:
			1" = 100'	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	RECOMMENDED			
			VERTICAL:	RECOMMENDED			
			FILE:	DRAWING:	DEPUTY DIRECTOR		PUBLIC WORKS DIRECTOR
			ATLAS PAGE NO. ###				DATE:

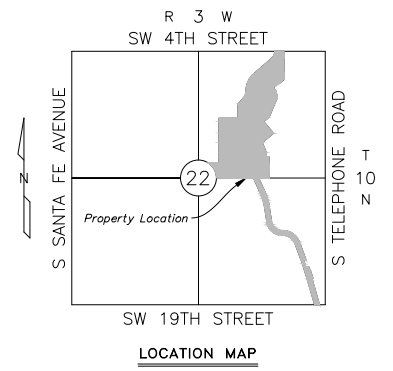
M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_SURVEY\_DATA.dwg





**LEGEND**

- SECTION LINE
- - - - RIGHT-OF-WAY
- - - - LOT LINE
- - - - EXISTING BUILDING LINE
- - - - EXISTING EASEMENT LINE
- ⊕ BENCHMARK
- ▲ B-## BORING LOCATION
- CP-## CONTROL POINT
- MONUMENT SET
- MONUMENT FOUND



IN CONJUNCTION WITH PLAT OF SURVEY, PREPARED BY ROBBY L. JOHNSON, PLS 1539 ON 1-19-2016, THIS SURVEY MEETS OR EXCEEDS THE REQUIREMENTS SET FORTH BY THE "OKLAHOMA MINIMUM STANDARDS FOR THE PRACTICE OF LAND SURVEYING" AS ADOPTED BY THE OKLAHOMA STATE BOARD OF LICENSURE FOR PROFESSIONAL ENGINEERS AND LAND SURVEYORS.

SEE THE REFERENCED 1-19-2016 PLAT OF SURVEY FOR ADDITIONAL INFORMATION INCLUDING MONUMENT TYPES BOTH FOUND AND SET.

Last Date of Survey: January 18, 2016

Steven K. Lemke, PLS 1349  
 Lemke Land Surveying, LLC  
 3226 Bart Conner Drive  
 Norman, OK 73072  
 405.366.8541  
 CA#6975

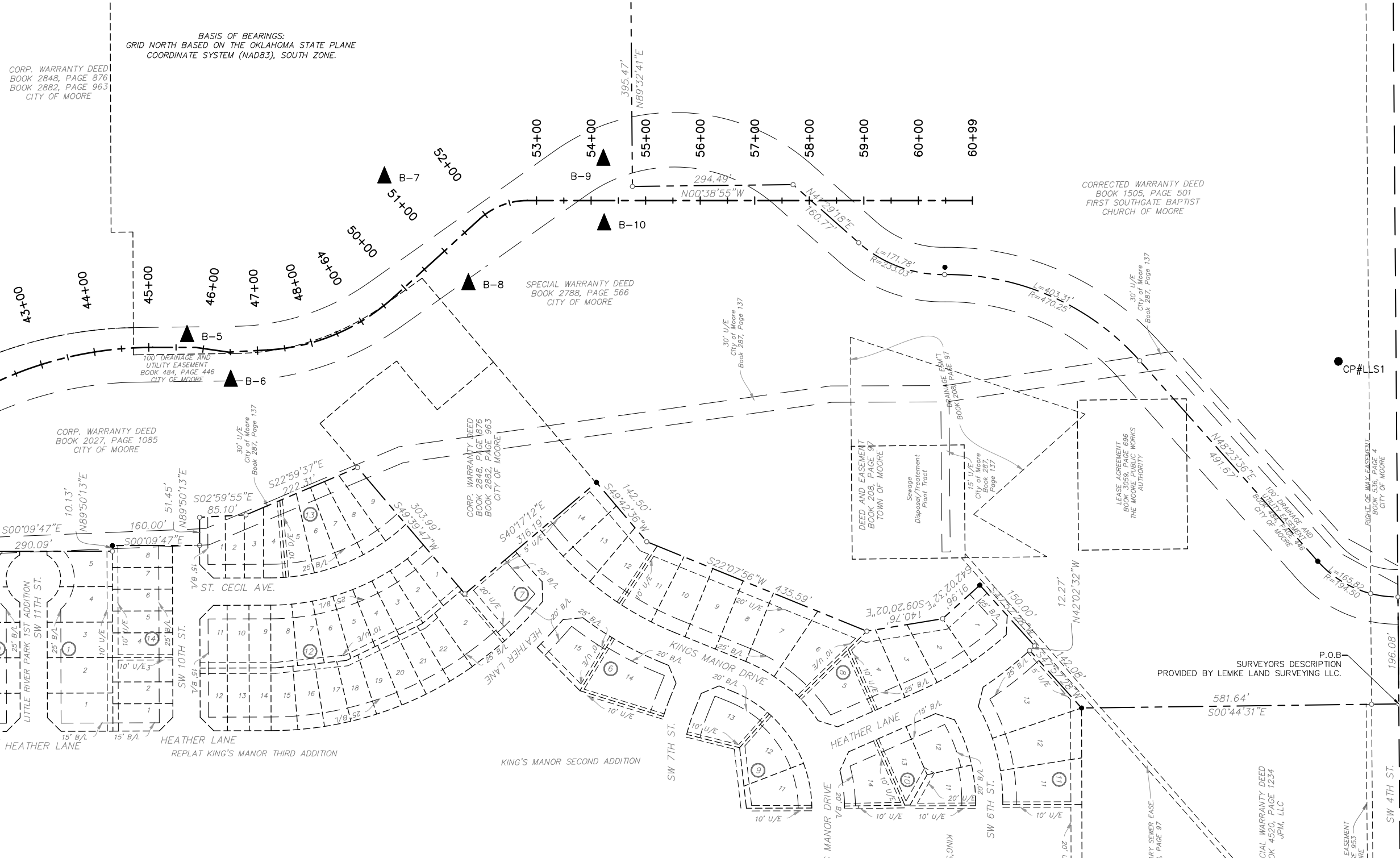
January 19, 2018



**BOUNDARY SURVEY DATA**  
**LITTLE RIVER PARK DRAINAGE IMPROVEMENTS**  
**CITY OF MOORE**

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	JCL	Value	APPROVED:
			1" = ###'	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
PROFILE SCALE			RECOMMENDED				
HORIZONTAL:			N/A		DEVELOPMENT SERVICES		
VERTICAL:			N/A		RECOMMENDED		
FILE:			DRAWING:		PUBLIC WORKS DIRECTOR		
ATLAS PAGE NO. ###			DATE:		SHEET 20 OF 132 SHEETS		



...BEGIN LEGAL DESCRIPTION ...  
 Surveyor's Description.

A tract of land located in the East Half (E/2) of Section Twenty-Two (22), Township Ten North (10N), Range Three West (R3W) of the Indian Meridian, Cleveland County, Oklahoma, being more particularly described as follows;

COMMENCING at the Northeast Corner of said Section 22;

THENCE South 89°32'42" West, along the North line of said Section 22, a distance of 841.75' to the POINT OF BEGINNING;

THENCE South 00°44'31" East a distance of 581.64 feet to the Northwest corner of Lot 12, Block 11, King's Manor Second Addition;

THENCE along the westerly lines of King's Manor Second Addition for the following eight calls;

THENCE South 47°57'28" West a distance of 142.08 feet;

THENCE North 42°02'32" West a distance of 12.27 feet;

THENCE South 47°57'28" West a distance of 150.00 feet;

THENCE South 42°02'32" East a distance of 91.96 feet;

THENCE South 09°20'02" East a distance of 140.76 feet;

THENCE South 22°07'56" West a distance of 435.59 feet;

THENCE South 49°42'36" West a distance of 142.50 feet;

THENCE South 40°17'12" East a distance of 316.19 feet to the Southwest corner of Lot 1, Block 7, King's Manor Second Addition;

THENCE along the westerly lines of the Replat of King's Manor Third Addition for the following six calls;

THENCE South 49°39'47" West a distance of 303.99 feet;

THENCE South 22°59'37" East a distance of 222.31 feet;

THENCE South 02°59'55" East a distance of 85.10 feet;

THENCE North 89°50'13" East a distance of 51.45 feet;

THENCE South 00°09'47" East a distance of 160.00 feet;

THENCE North 89°50'13" East a distance of 10.13 feet to the Northwest corner of Lot 5, Block 1, Little River Park 1st Addition;

THENCE South 00°09'47" East, along the West line of said Little River Park 1st Addition, a distance of 290.09 feet to a point on the South line of the Northeast Quarter of said Section 22;

THENCE South 89°46'23" West, along said South line, a distance of 219.56 feet;

THENCE South 24°53'07" East a distance of 316.72 feet;

THENCE on a curve to the Right, having a radius of 1163.00 feet, a chord bearing of South 17°12'35" East, a chord length of 310.67 feet, an arc distance of 311.60 feet;

THENCE South 09°32'00" East a distance of 322.00 feet;

THENCE on a curve to the Left, having a radius of 224.28 feet, a chord bearing of South 50°43'12" East, a chord length of 295.38 feet, an arc distance of 322.45 feet;

THENCE on a curve to the Right, having a radius of 370.73 feet, a chord bearing of South 57°22'31" East, a chord length of 420.31 feet, an arc distance of 446.87 feet;

THENCE South 21°00'49" East a distance of 417.26 feet to a point on the North line of Lot 1, Block 1, Royalpark Business Development Section 1;

THENCE South 89°16'31" West, along said North line, a distance of 53.30 feet;

THENCE South 20°59'26" East a distance of 74.68 feet;

THENCE South 17°36'51" East a distance of 72.10 feet;

THENCE North 89°15'40" East a distance of 59.64 feet;

THENCE South 25°20'51" East a distance of 72.63 feet;

...CONTINUED ON SHEET 19 ...

M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_SURVEY\_DATA.dwg



# STORM WATER MANAGEMENT PLAN

## SITE DESCRIPTION

## EROSION AND SEDIMENT CONTROLS

PROJECT LIMITS: CONSTRUCTION AREA TO BE LIMITED TO CITY OF MOORE PROPERTY AND ANY TEMPORARY CONSTRUCTION EASEMENTS GRANTED THERETO.

PROJECT DESCRIPTION: POND AND CHANNEL RECONSTRUCTION ABOVE THE ORDINARY HIGH WATER MARK OF AND NOT TO DISTURB THE LITTLE RIVER WATERSHED, WITH DESIGNATED EXCEPTED AREAS.

- SUGGESTED SEQUENCE OF EROSION CONTROL ACTIVITIES:
1. TEMPORARY EROSION CONTROL
  2. SITE EXCAVATION
  3. NEW DAM AND SPILLWAY CONSTRUCTION
  4. FINAL GRADING
  5. INSTALL PERMANENT SODDING AND SEEDING

SOIL TYPE: B,C,D

AREA TO BE DISTURBED: 31.60 ACRES

OFFSITE AREA TO BE DISTURBED: \_\_\_\_\_  
(FOR CONTRACTOR USE)

MAXIMUM ACRES TO BE DISTURBED AT ANY ONE TIME: \_\_\_\_\_  
(FOR CONTRACTOR USE)

LATITUDE & LONGITUDE OF CENTER OF PROJECT: N35°19'43.50" W97°29'58.40"

NAME OF RECEIVING WATERS: LITTLE RIVER

SENSITIVE WATERS OR WATERSHEDS: YES  NO   
303(d) IMPAIRED WATERS: YES  NO

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 ITEM, & 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 IN 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 MATERIAL 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, 2012.

**STORM WATER MANAGEMENT PLAN**

**LITTLE RIVER PARK DRAINAGE IMPROVEMENTS**

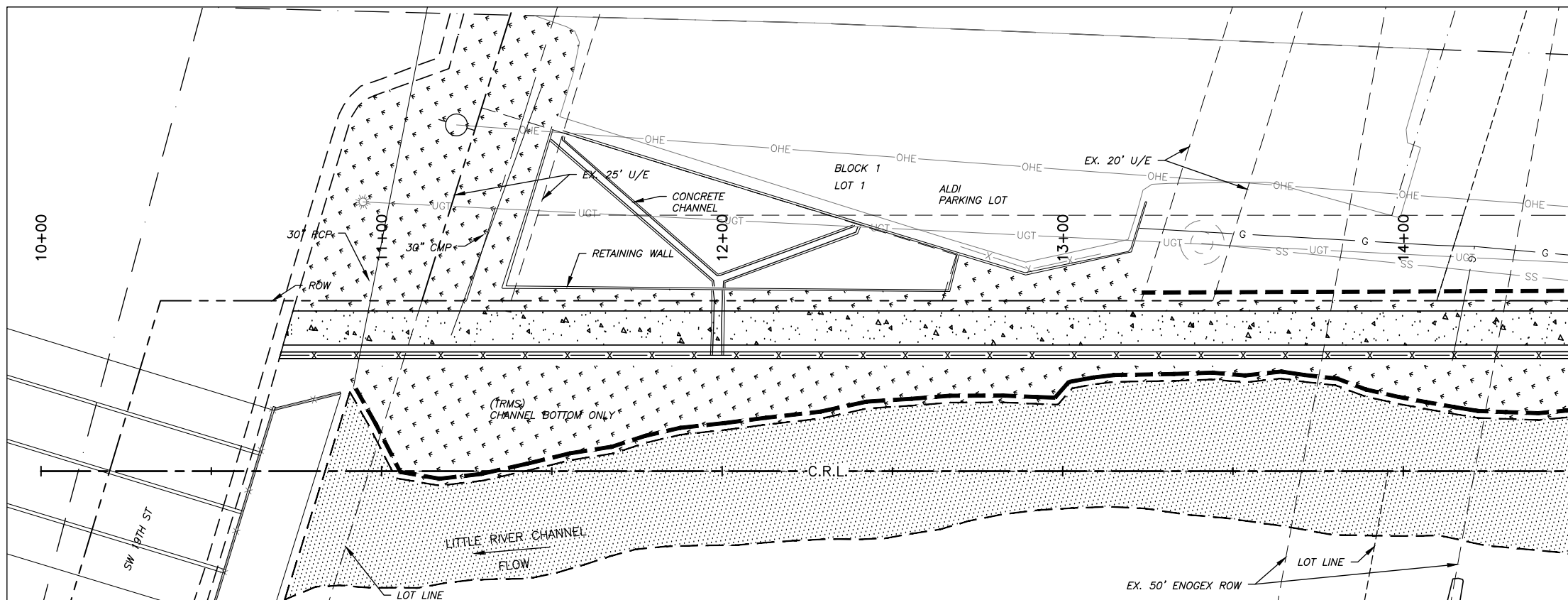
**CITY OF MOORE**

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

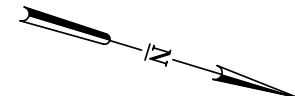
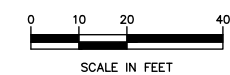
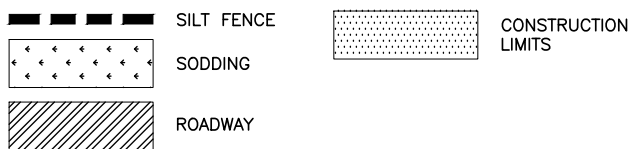
REVISION	BY	DATE	PLAN SCALE	DRAWN	JCL	Value	APPROVED:
			N/A	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	DEVELOPMENT SERVICES			PUBLIC WORKS DIRECTOR
			N/A	RECOMMENDED			
			VERTICAL:	DEPUTY DIRECTOR			
			N/A				
			FILE:	DRAWING:			DATE:
			ATLAS PAGE NO. .				SHEET 21 OF 133 SHEETS

M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_SWMP.dwg PRINT DATE: 02/05/2018

M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_EROSION.dwg



**LEGEND**



**TEMPORARY EROSION CONTROL MEASURES**

TEMPORARY VEGETATION TO CONTROL EROSION SHALL BE USED IN AREAS WHERE THE SOIL IS LEFT EXPOSED FOR A PERIOD OF TIME.

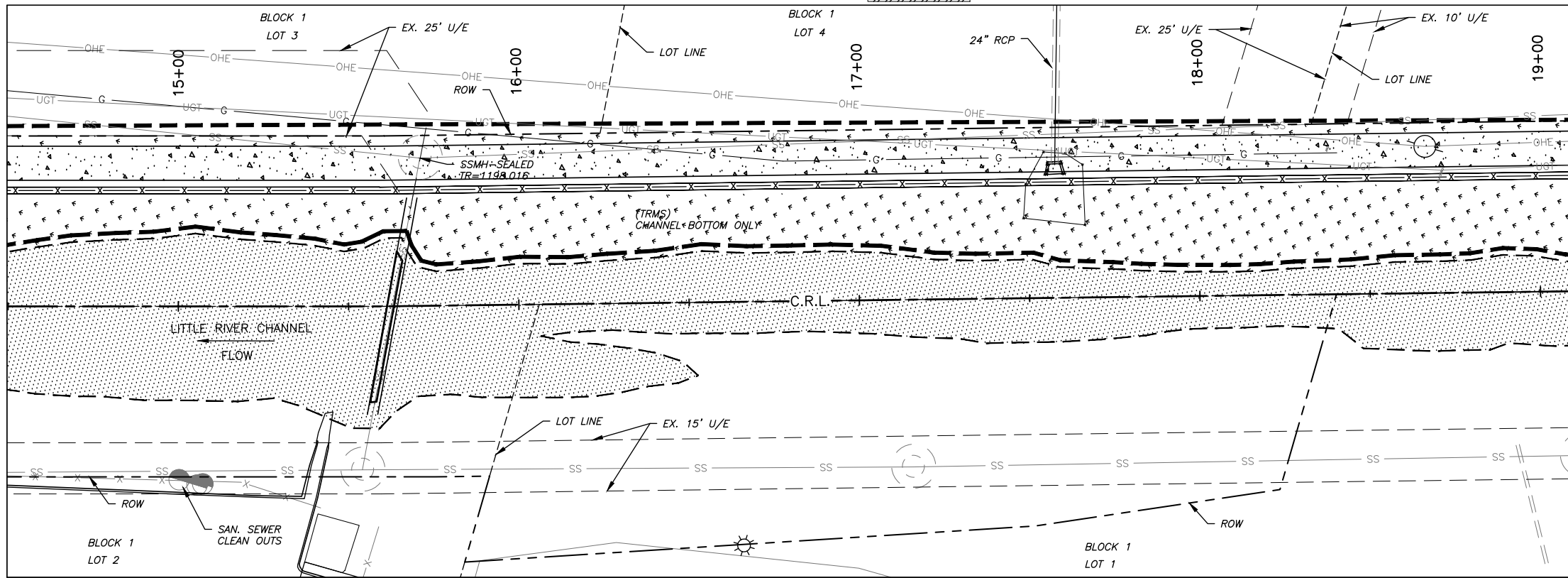
- PRIOR TO SEEDING, NEEDED EROSION CONTROL PRACTICES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, BERMS, DIKES, ETC., SHALL BE INSTALLED.
- TEMPORARY VEGETATIVE COVER SHOULD BE APPLIED PRIOR TO THE COMPLETION OF FINAL GRADING OF THE SITE.
- IF THE AREA TO BE SEEDDED HAS BEEN RECENTLY LOOSENEED TO THE EXTENT THAT AN ADEQUATE SEEDBED EXISTS, NO ADDITIONAL TREATMENT IS REQUIRED. HOWEVER IF THE AREA TO BE SEEDDED IS PACKED, CRUSTED, AND/OR HARD, THE TOP LAYER OF SOIL SHALL BE LOOSENEED BY DISKING OR OTHER SUITABLE MEANS.
- FERTILIZER SHALL BE APPLIED AT A RATE OF 600 POUNDS PER ACRE OR 15 POUNDS PER 1000 SQUARE FOOT USING 10-20-10 OR EQUAL.
- SEEDING OPTIONS ARE AS FOLLOWS:

PLANT	ACRE	QUANTITY PER 1000 S.F.	PLANTING DATE	DEPTH
ANNUAL ELBON RYE	40 LBS.	0.90 LBS.	09/15 TO 11/30	1/4 IN.
WHEAT	2 BU.	3.00 LBS.	08/15 TO 11/30	2 IN.
OATS	2 BU.	3.00 LBS.	08/15 TO 11/30	2 IN.
SUDAN	3 BU.	2.50 LBS.	08/15 TO 11/30	2 IN.
	40 LBS.	0.90 LBS.	04/01 TO 09/15	2 IN.
- SEEDS SHALL BE BROADCAST BY AN APPROVED METHOD UNIFORMLY.
- SEEDING IMPLEMENTS SHALL BE USED AT RIGHT ANGLES TO THE GENERAL SLOPE TO MINIMIZE EROSION.
- 1 TO 3 MONTHS AFTER PLANTING, THE SEEDDED SITE SHALL BE TOP DRESSED WITH 8 POUNDS PER 1000 SQUARE FEET OR 350 POUNDS PER ACRE OF 33-0-0.
- AREAS WHICH DO NOT DEVELOP A SUFFICIENT COVER SHALL BE REPLANTED.
- THE SEEDDED AREA SHALL BE WATERED UNTIL THE GROWTH IS AT LEAST 1.5".

**PERMANENT EROSION CONTROL MEASURES**

BERMUDA SOD, BUFFALO GRASS AND WEEPING LOVEGRASS ARE SOME OF THE TYPES OF PERMANENT VEGETATION THAT MAY BE EFFECTIVELY USED TO CONTROL EROSION.

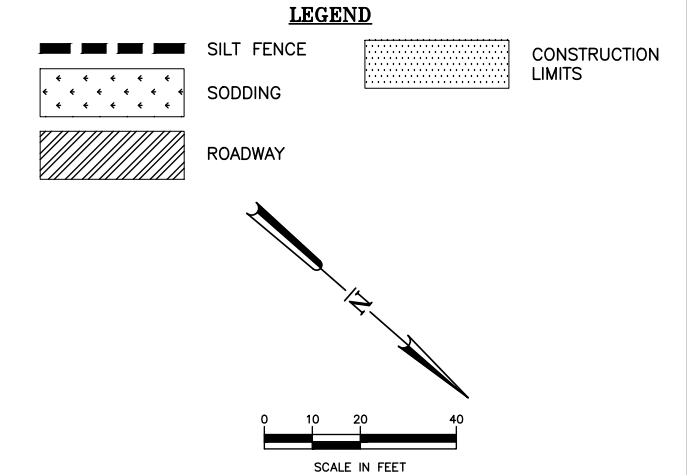
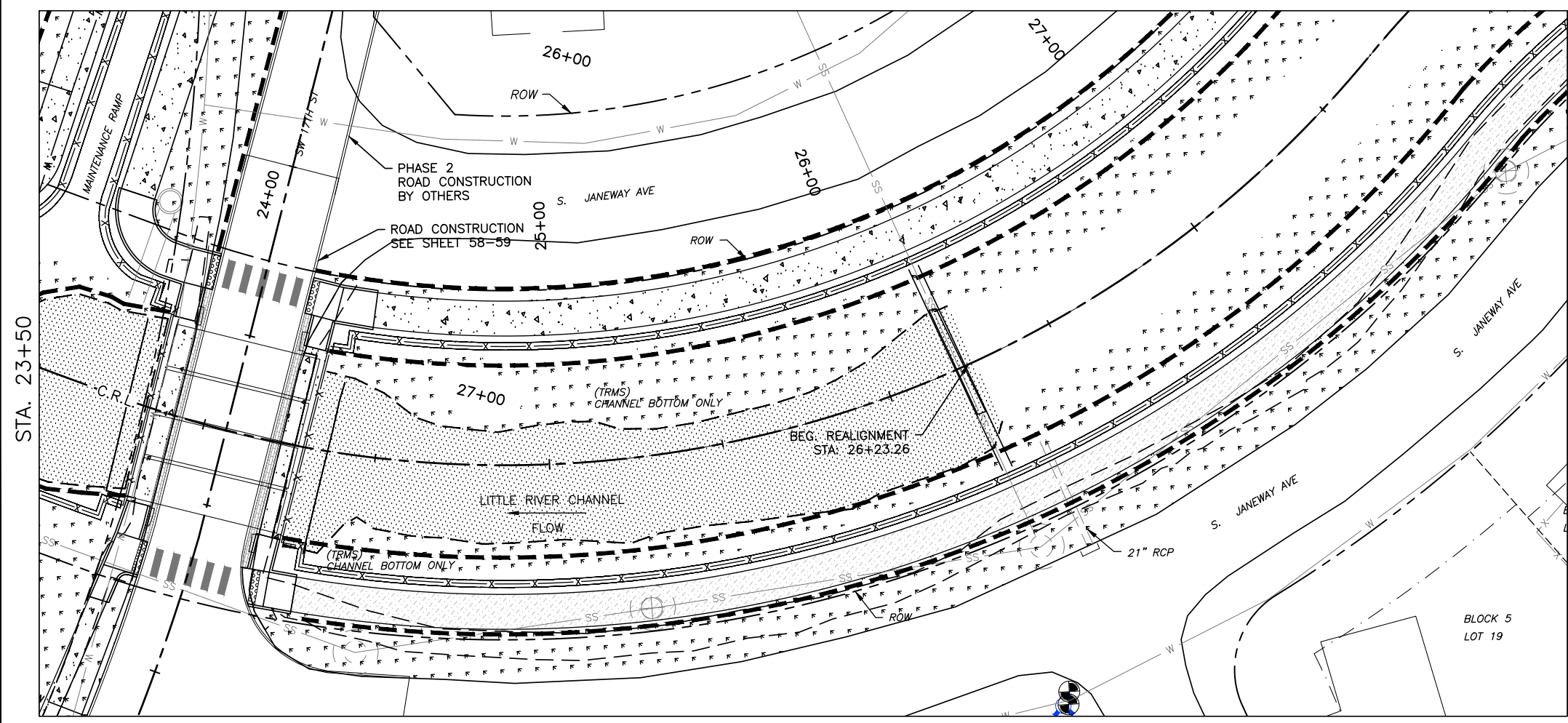
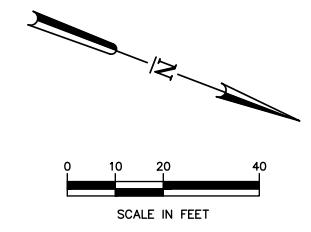
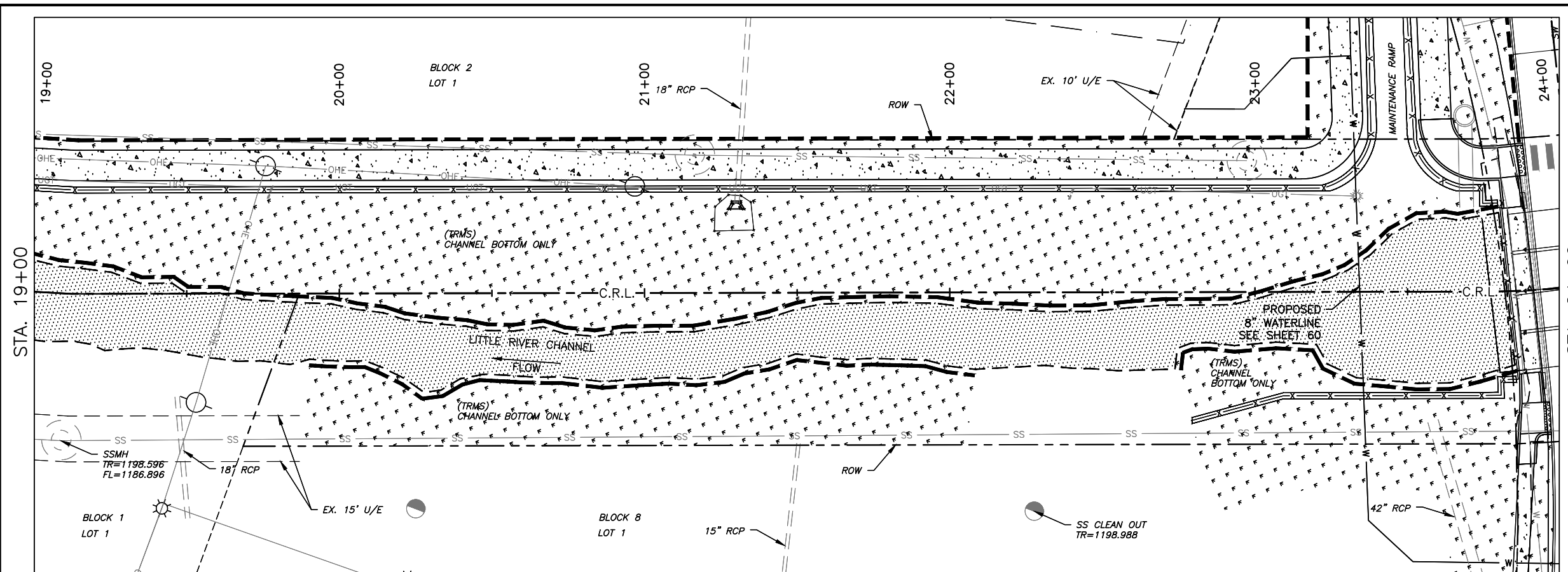
- PRIOR TO SODDING, NEEDED EROSION CONTROL PRACTICES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, BERMS, DIKES, SILT DIKES, ETC., SHALL BE INSTALLED.
- THE SUBGRADE SHALL BE LOOSENEED EVENLY TO A DEPTH OF 2 TO 3 INCHES AND 10-20-10 FERTILIZER (10 POUNDS PER 1000 SQUARE FOOT OR 450 POUNDS PER ACRE) SHALL BE MIXED WITH THE LOOSENEED SURFACE SOIL BY DISKING OR OTHER SUITABLE MEANS.
- THE AREA SHALL BE WATERED DAILY OR AS OFTEN AS NECESSARY TO MAINTAIN ADEQUATE SOIL MOISTURE UNTIL THE PLANTS GROW 1/2 TO 1 INCH. THEN, THE CONTRACTOR IS RESPONSIBLE FOR WATERING UNTIL THE END OF THE WARRANTY PERIOD, ONE YEAR AFTER THE DATE OF ACCEPTANCE. CONTRACTOR SHALL PROVIDE MOWING UNTIL ACCEPTANCE.
- AREAS TO BE SEEDDED SHALL BE LOOSENEED TO A DEPTH OF 3". SEEDS SHALL BE PLANTED 0.5 INCHES DEEP. SEEDING SHALL BE NO LESS THAN 1.5 POUNDS PER 1.00 S.F. FERTILIZE USING 33-0-0 AT A RATE OF 10 POUNDS PER LANE S.F.



<b>EROSION CONTROL</b>	
<b>LITTLE RIVER PARK DRAINAGE IMPROVEMENTS</b>	
<b>CITY OF MOORE</b>	
PLANS AND ESTIMATES PREPARED BY:	
<b>Meshek &amp; Associates, L.L.C.</b>	
1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620	

REVISION	BY	DATE	PLAN SCALE	DRAWN	JCL	Value	APPROVED:
			1" = ##'	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	RECOMMENDED			
			VERTICAL:	RECOMMENDED			
			FILE:	DRAWING:	DEPUTY DIRECTOR		PUBLIC WORKS DIRECTOR
			ATLAS PAGE NO. ###				DATE:





**EROSION CONTROL**  
**LITTLE RIVER PARK DRAINAGE IMPROVEMENTS**  
**CITY OF MOORE**

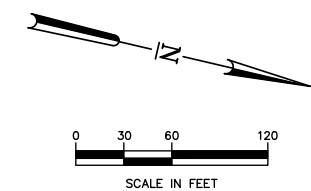
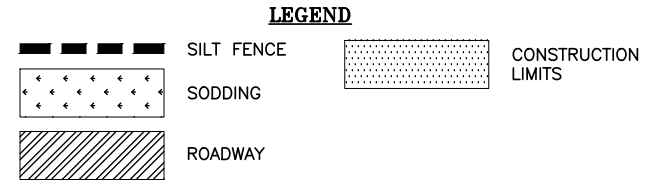
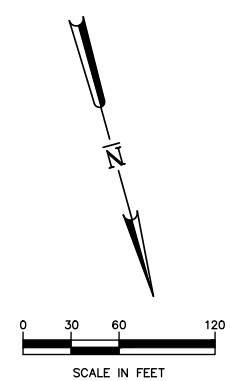
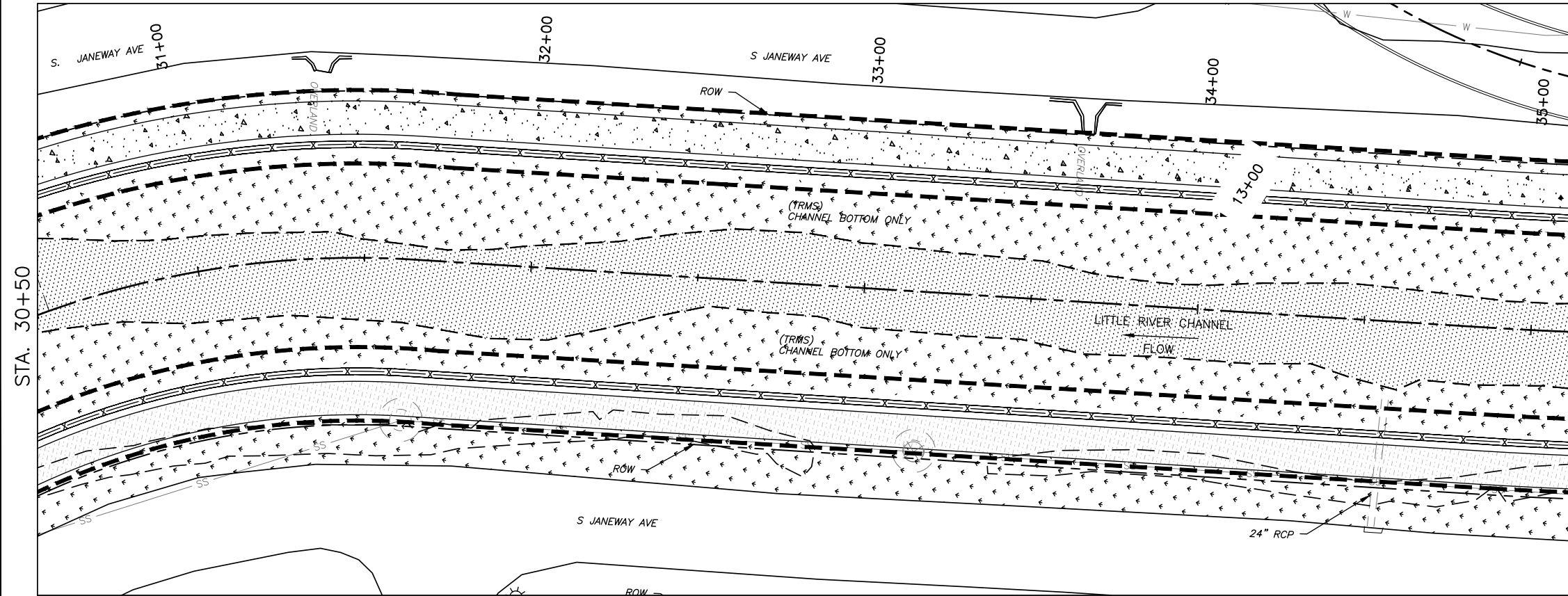
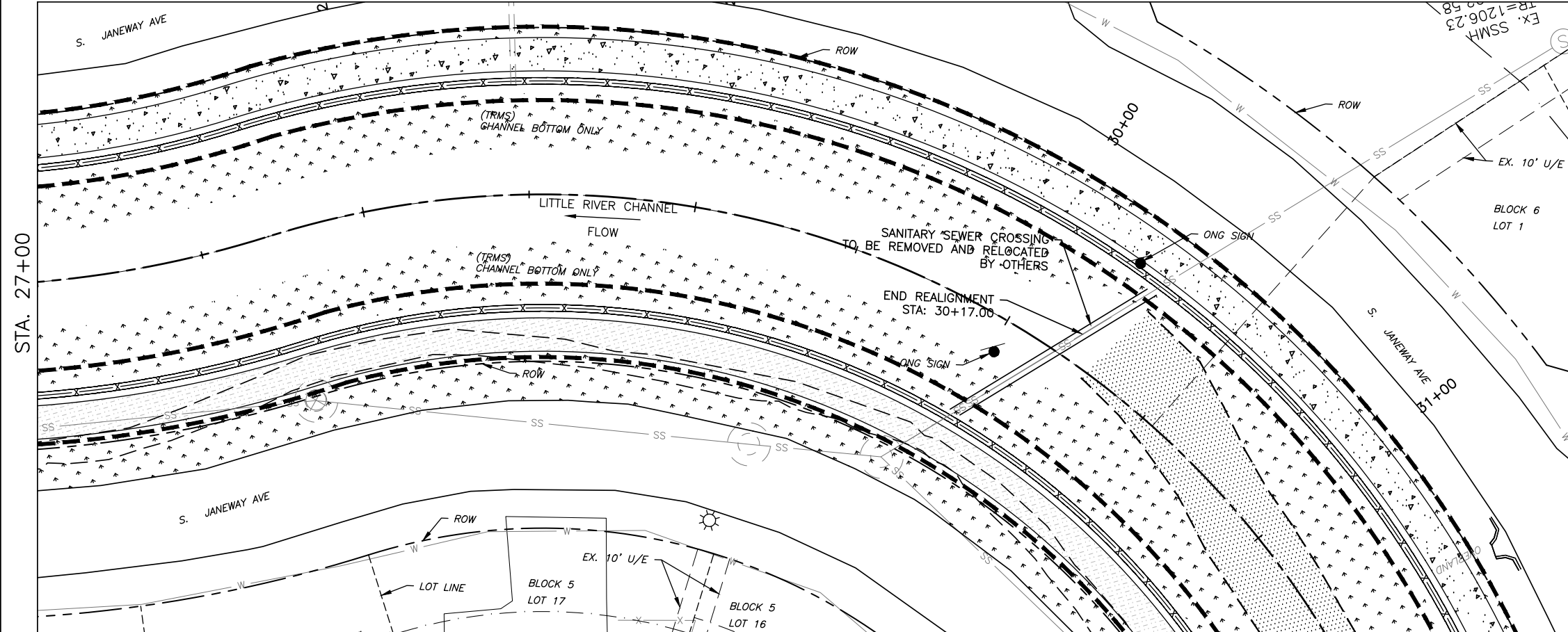
PLANS AND ESTIMATES PREPARED BY:  
**Meshek & Associates, L.L.C.**  
 1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620

REVISION	BY	DATE	PLAN SCALE	DRAWN	JCL	Value	APPROVED:
			1" = ##'	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	DEVELOPMENT SERVICES			PUBLIC WORKS DIRECTOR
			VERTICAL:	RECOMMENDED			
			FILE:	DRAWING:			DATE:
			ATLAS PAGE NO. ###				SHEET 23 OF 133 SHEETS

M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_EROSION.dwg



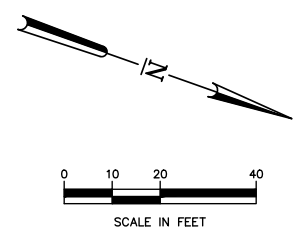
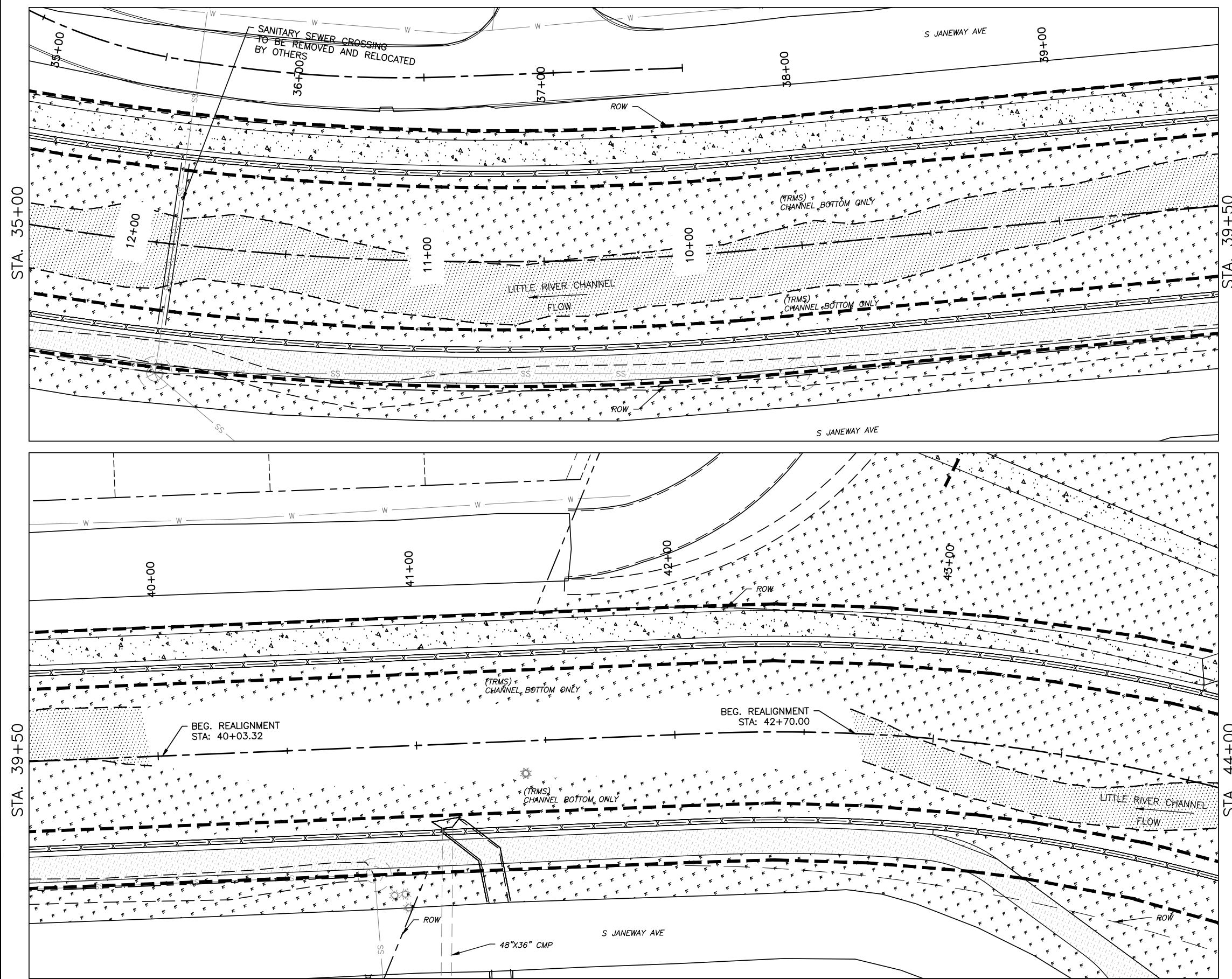
M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_EROSION.dwg



<b>EROSION CONTROL</b>							
<b>LITTLE RIVER PARK DRAINAGE IMPROVEMENTS</b>							
<b>CITY OF MOORE</b>							
PLANS AND ESTIMATES PREPARED BY:							
<b>Meshek &amp; Associates, L.L.C.</b>							
1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620							
REVISION	BY	DATE	PLAN SCALE	DRAWN	JCL	Value	APPROVED:
			1" = ##'	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
			PROFILE SCALE	RECOMMENDED			PUBLIC WORKS DIRECTOR
			HORIZONTAL:	DEVELOPMENT SERVICES			
			VERTICAL:	RECOMMENDED			
			FILE:	DRAWING:			DATE:
			ATLAS PAGE NO. ###				SHEET 24 OF 133 SHEETS

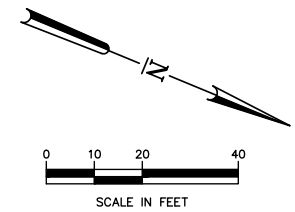


M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_EROSION.dwg



**LEGEND**

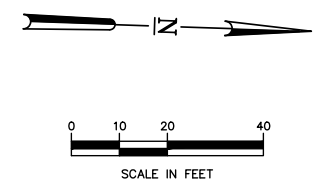
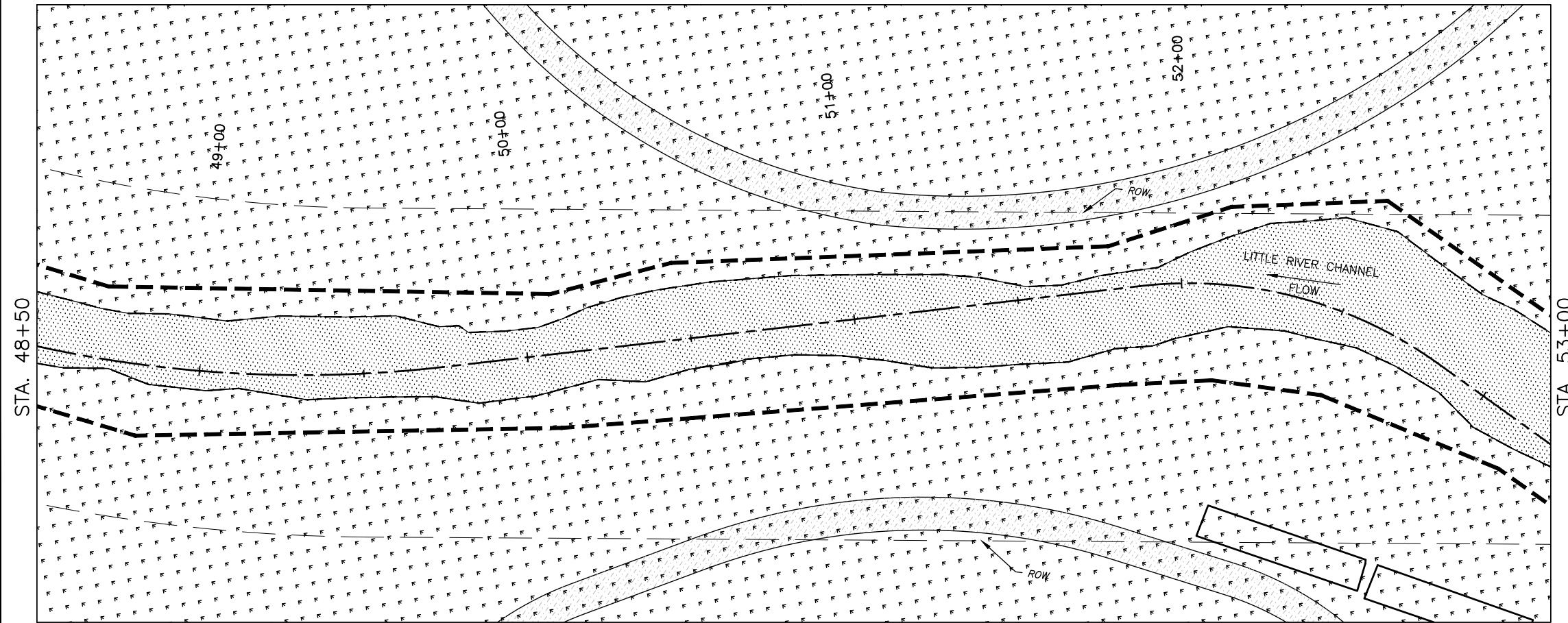
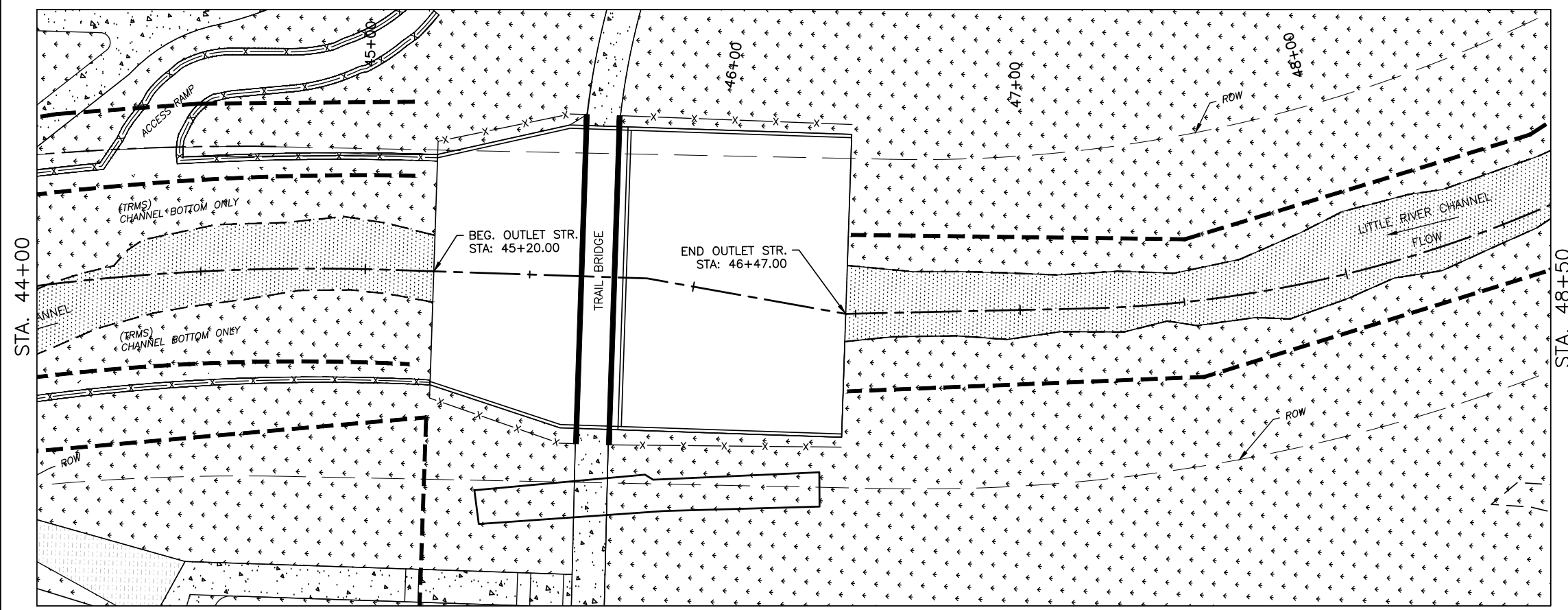
	SILT FENCE		CONSTRUCTION LIMITS
	SODDING		
	ROADWAY		



<b>EROSION CONTROL</b>			
<b>LITTLE RIVER PARK DRAINAGE IMPROVEMENTS</b>			
<b>CITY OF MOORE</b>			
PLANS AND ESTIMATES PREPARED BY: <b>Meshek &amp; Associates, L.L.C.</b> 1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620			
	DRAWN	JCL	Value
	DESIGNED	BWF	Value
	SURVEY	PDH	Value
PROFILE SCALE: RECOMMENDED			
HORIZONTAL: N/A			
DEVELOPMENT SERVICES RECOMMENDED			
VERTICAL: N/A			
DEPUTY DIRECTOR			
FILE:	DRAWING:	DATE:	
ATLAS PAGE NO. ###		SHEET 25 OF 133 SHEETS	

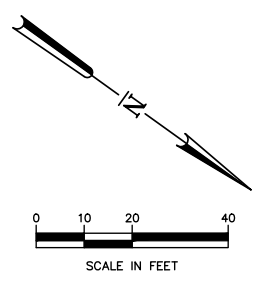


M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_EROSION.dwg



**LEGEND**

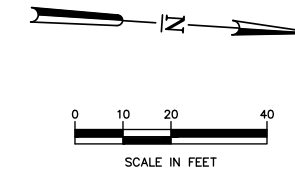
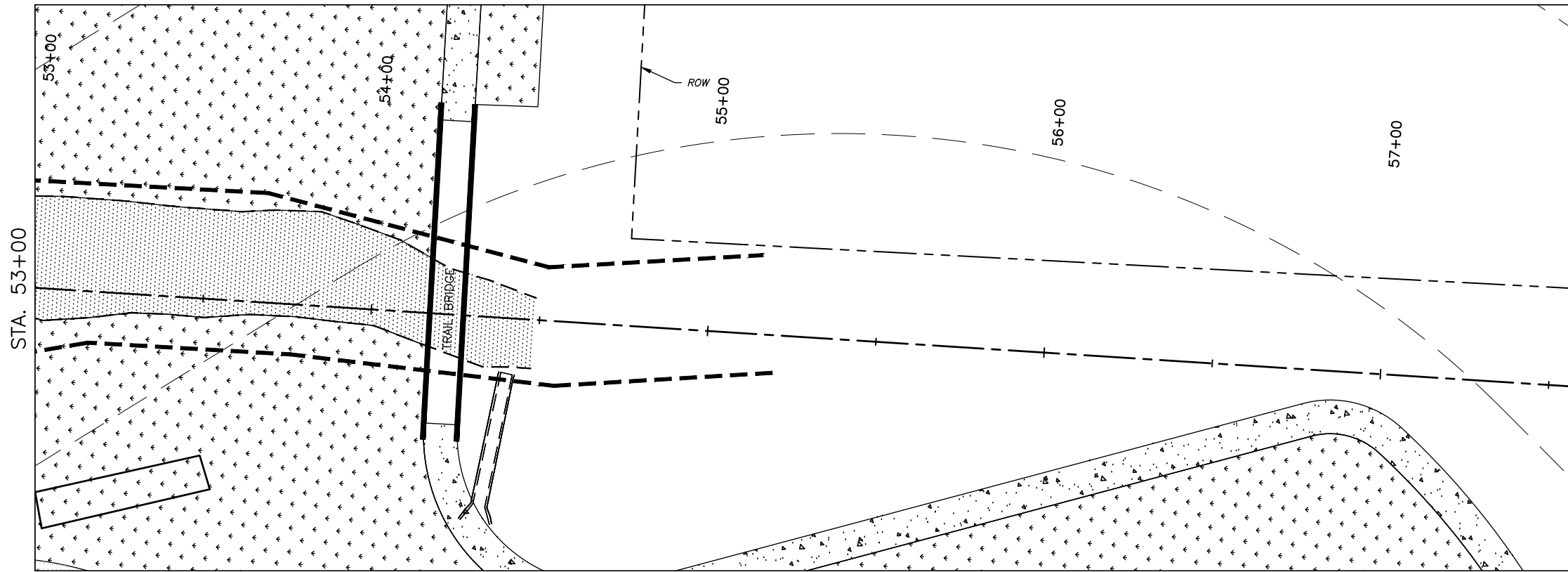
	SILT FENCE		CONSTRUCTION LIMITS
	SODDING		ROADWAY



<b>EROSION CONTROL</b>			
<b>LITTLE RIVER PARK DRAINAGE IMPROVEMENTS</b>			
<b>CITY OF MOORE</b>			
PLANS AND ESTIMATES PREPARED BY:			
<b>Meshek &amp; Associates, L.L.C.</b>			
1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620			
			APPROVED:
PLAN SCALE	DRAWN	JCL	Value
1" = ##'	DESIGNED	BWF	Value
	SURVEY	PDH	Value
PROFILE SCALE	RECOMMENDED		
HORIZONTAL:	DEVELOPMENT SERVICES		
N/A	RECOMMENDED		
VERTICAL:	DEPUTY DIRECTOR		
N/A	PUBLIC WORKS DIRECTOR		
FILE:	DRAWING:	DATE:	
ATLAS PAGE NO. ###		SHEET 26 OF 133 SHEETS	



M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_EROSION.dwg



**LEGEND**

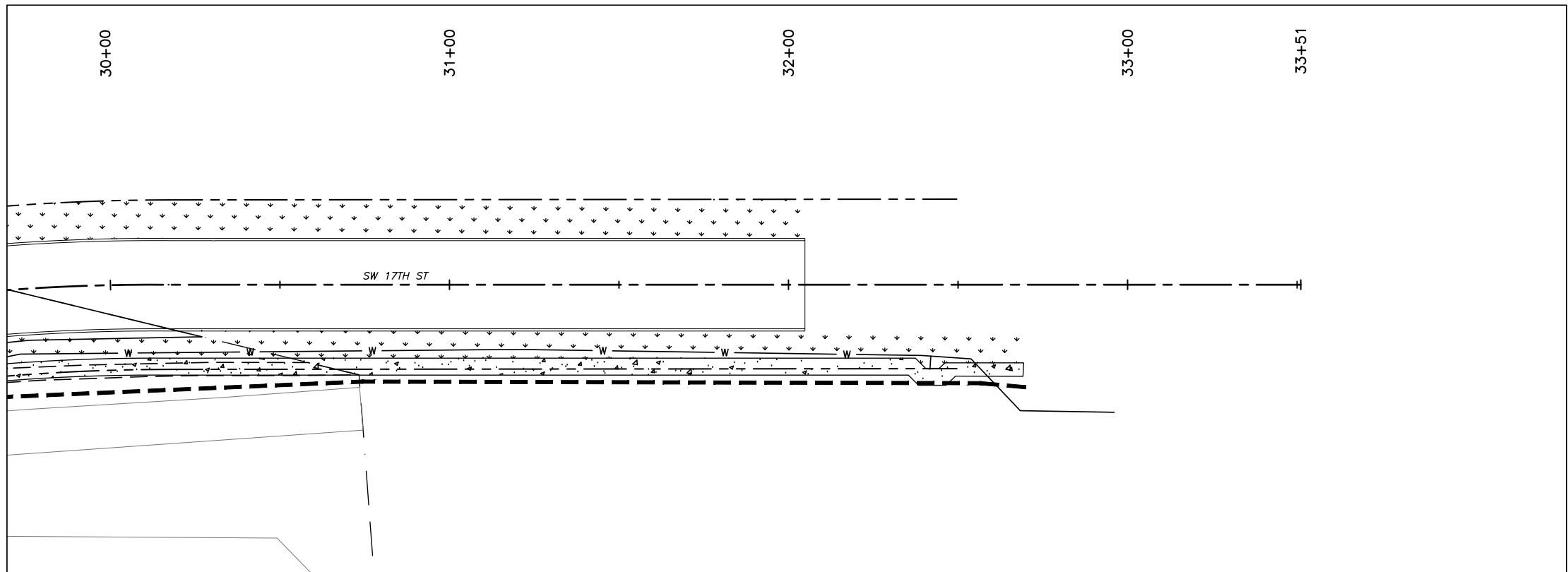
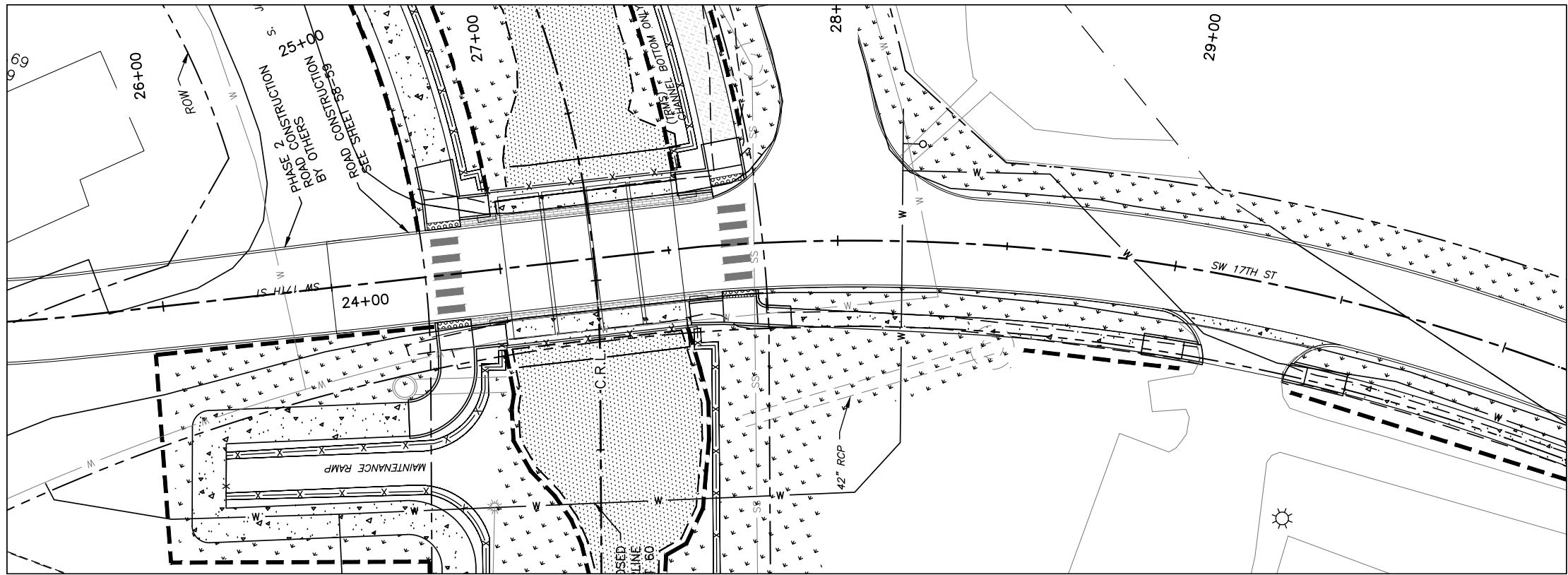
- SILT FENCE
- SODDING
- ROADWAY
- CONSTRUCTION LIMITS

<b>EROSION CONTROL</b>	
<b>LITTLE RIVER PARK DRAINAGE IMPROVEMENTS</b>	
<b>CITY OF MOORE</b>	
PLANS AND ESTIMATES PREPARED BY: <b>Meshek &amp; Associates, L.L.C.</b> <small>1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620</small>	

REVISION	BY	DATE	PLAN SCALE	DRAWN	JCL	Value	APPROVED:
			1" = ##'	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	RECOMMENDED			
			VERTICAL:	RECOMMENDED			
			FILE:	DRAWING:			PUBLIC WORKS DIRECTOR
			ATLAS PAGE NO. ###	DATE:			



M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_EROSION.dwg



STA. 14+50

STA. 19+00

**LEGEND**

- SILT FENCE
- SODDING
- ROADWAY
- CONSTRUCTION LIMITS

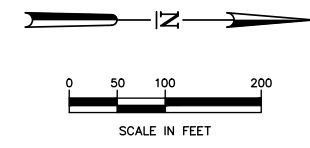
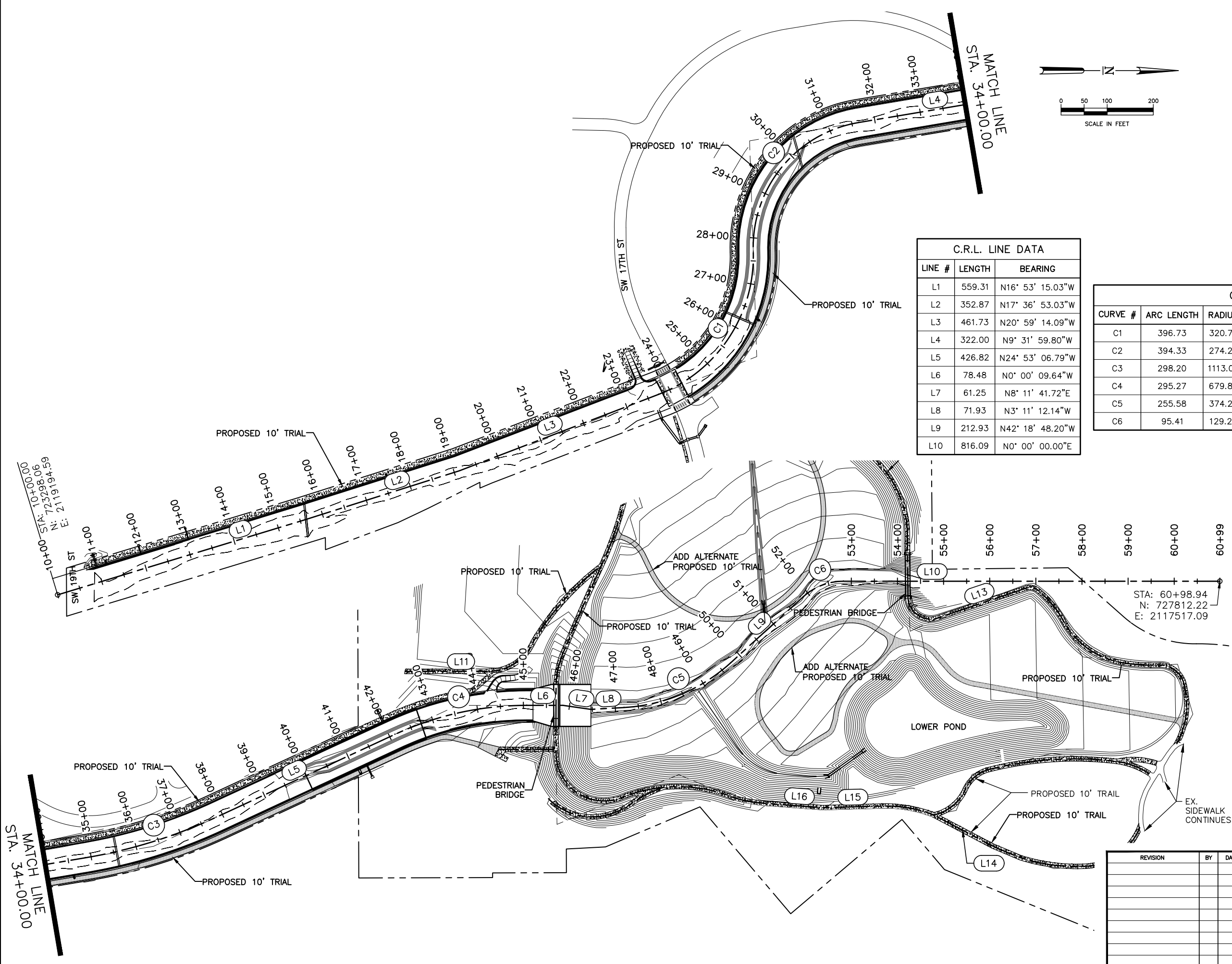
<b>EROSION CONTROL</b>									
<b>LITTLE RIVER PARK DRAINAGE IMPROVEMENTS</b>									
<b>CITY OF MOORE</b>									
PLANS AND ESTIMATES PREPARED BY: <b>Meshek &amp; Associates, L.L.C.</b> 1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620									
REVISION	BY	DATE	PLAN SCALE	DRAWN	JCL	Value	APPROVED:		
			1" = ##'	DESIGNED	BWF	Value			
				SURVEY	PDH	Value			
			PROFILE SCALE	RECOMMENDED					
			HORIZONTAL:	DEVELOPMENT SERVICES					
			VERTICAL:	RECOMMENDED					
				DEPUTY DIRECTOR					PUBLIC WORKS DIRECTOR
			FILE:	DRAWING:					DATE:
			ATLAS PAGE NO. ###						SHEET 28 OF 133 SHEETS







M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_GEOMETRIC\_DATA.dwg



C.R.L. LINE DATA		
LINE #	LENGTH	BEARING
L1	559.31	N16° 53' 15.03"W
L2	352.87	N17° 36' 53.03"W
L3	461.73	N20° 59' 14.09"W
L4	322.00	N9° 31' 59.80"W
L5	426.82	N24° 53' 06.79"W
L6	78.48	N0° 00' 09.64"W
L7	61.25	N8° 11' 41.72"E
L8	71.93	N3° 11' 12.14"W
L9	212.93	N42° 18' 48.20"W
L10	816.09	N0° 00' 00.00"E

C.R.L. CURVE DATA					
CURVE #	ARC LENGTH	RADIUS	DELTA ANGLE	CHORD LENGTH	CHORD BEARING
C1	396.73	320.76	70.86	371.92	N56° 28' 12.69"W
C2	394.33	274.28	82.37	361.24	N50° 43' 12.37"W
C3	298.20	1113.00	15.35	297.31	N17° 12' 35.01"W
C4	295.27	679.82	24.89	292.96	N12° 26' 32.58"W
C5	255.58	374.27	39.13	250.64	N22° 45' 00.17"W
C6	95.41	129.20	42.31	93.26	N21° 09' 24.10"W

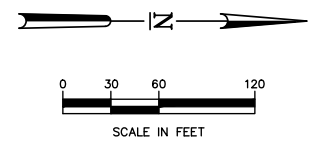
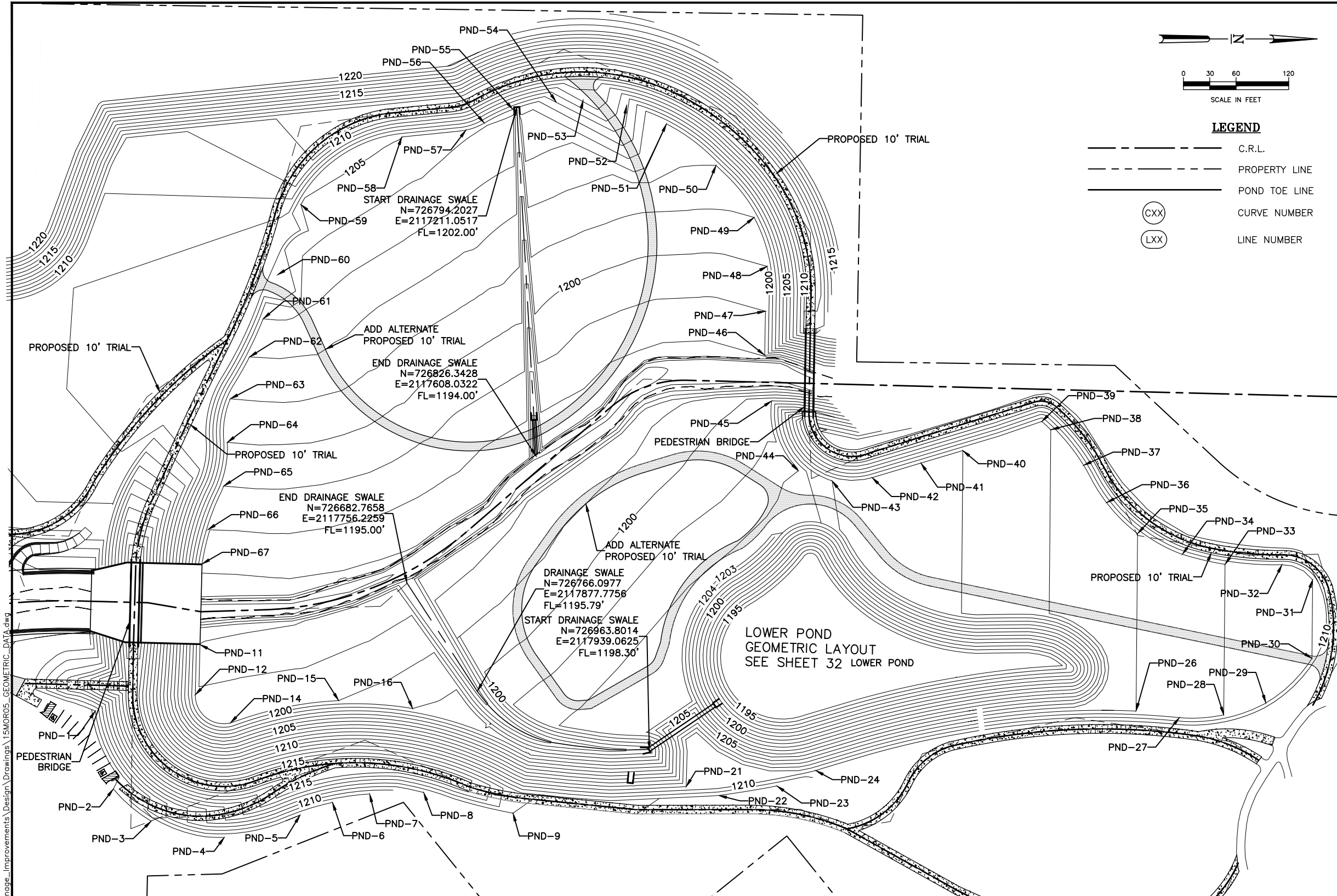
**LEGEND**

- C.R.L.
- PROPERTY LINE
- POND TOE LINE
- (CXX) CURVE NUMBER
- (LXX) LINE NUMBER

**CHANNEL GEOMETRIC DATA**  
**LITTLE RIVER PARK DRAINAGE IMPROVEMENTS**  
**CITY OF MOORE**

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	JTS	Value	APPROVED:
			1" = 100'	DESIGNED	JTS	Value	
				SURVEY	PDH	Value	
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	DEVELOPMENT SERVICES			PUBLIC WORKS DIRECTOR
			VERTICAL:	RECOMMENDED			
			FILE:	DEPUTY DIRECTOR			DATE:
			ATLAS PAGE NO. ###	DRAWING:			SHEET 30 OF 133 SHEETS



**LEGEND**

- C.R.L.
- - - - - PROPERTY LINE
- POND TOE LINE
- (CXX) CURVE NUMBER
- (LXX) LINE NUMBER

POND GEOMETRIC DATA TABLE			
PNT #	NORTHING	EASTING	ELEVATION
PND-41	727265.06	2117604.73	1205.00
PND-42	727209.95	2117622.71	1205.00
PND-43	727164.44	2117627.62	1204.00
PND-44	727125.53	2117617.04	1202.00
PND-45	727093.26	2117538.13	1201.00
PND-46	727083.93	2117486.27	1199.00
PND-47	727083.54	2117436.09	1199.00
PND-48	727084.19	2117384.93	1200.00
PND-49	727067.89	2117329.47	1201.00
PND-50	727023.00	2117271.25	1202.00
PND-51	726965.29	2117225.39	1203.00
PND-52	726919.43	2117205.46	1204.00
PND-53	726869.67	2117200.59	1204.00
PND-54	726838.84	2117203.38	1204.00
PND-55	726789.81	2117213.20	1205.00
PND-56	726757.72	2117229.65	1205.00
PND-57	726736.98	2117238.24	1205.00
PND-58	726663.94	2117247.94	1205.00
PND-59	726551.01	2117327.92	1205.00
PND-60	726526.26	2117408.76	1204.00
PND-61	726511.29	2117459.25	1203.00
PND-62	726496.83	2117503.10	1202.00
PND-63	726476.16	2117551.40	1201.00
PND-64	726474.03	2117601.11	1200.00
PND-65	726471.14	2117651.02	1199.00
PND-66	726454.32	2117701.27	1198.00
PND-67	726448.71	2117740.49	1198.00

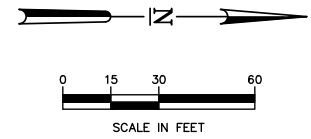
POND GEOMETRIC DATA TABLE				POND GEOMETRIC DATA TABLE				POND GEOMETRIC DATA TABLE				POND GEOMETRIC DATA TABLE			
PNT #	NORTHING	EASTING	ELEVATION	PNT #	NORTHING	EASTING	ELEVATION	PNT #	NORTHING	EASTING	ELEVATION	PNT #	NORTHING	EASTING	ELEVATION
PND-1	726331.33	2117911.22	1206.00	PND-9	726810.35	2118015.69	1212.00	PND-23	727110.25	2117977.02	1212.00	PND-33	727614.68	2117711.42	1208.00
PND-2	726354.05	2117999.66	1205.00	PND-11	726448.73	2117832.49	1198.00	PND-24	727154.21	2117958.27	1210.00	PND-34	727565.74	2117701.20	1208.00
PND-3	726398.18	2118035.19	1205.00	PND-12	726444.73	2117889.92	1199.00	PND-27	727567.08	2117887.47	1208.00	PND-35	727514.09	2117678.94	1207.00
PND-4	726481.78	2118051.67	1206.00	PND-14	726485.59	2117921.02	1199.00	PND-28	727617.52	2117883.05	1208.00	PND-36	727477.86	2117644.48	1207.00
PND-5	726567.67	2118024.16	1207.00	PND-15	726608.38	2117892.33	1199.00	PND-29	727665.28	2117868.26	1209.00	PND-37	727450.63	2117602.55	1207.00
PND-6	726604.28	2118008.62	1208.00	PND-16	726692.90	2117899.28	1200.00	PND-30	727716.42	2117816.05	1209.00	PND-38	727412.16	2117562.97	1206.00
PND-7	726646.40	2117997.89	1209.00	PND-21	727006.98	2117980.44	1209.00	PND-31	727714.93	2117726.43	1209.00	PND-39	727401.65	2117553.89	1206.00
PND-8	726707.97	2117994.73	1211.00	PND-22	727044.33	2117989.52	1212.00	PND-32	727679.59	2117710.24	1209.00	PND-40	727312.59	2117589.23	1205.00

**POND GEOMETRIC DATA**  
**LITTLE RIVER PARK DRAINAGE IMPROVEMENTS**  
**CITY OF MOORE**

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	JCL	Value	APPROVED:
			1" = 60'	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	DEVELOPMENT SERVICES			
			N/A	RECOMMENDED			
			VERTICAL:	DEPUTY DIRECTOR			PUBLIC WORKS DIRECTOR
			N/A				
			FILE:	DRAWING:			DATE:
			ATLAS PAGE NO. ###				SHEET 31 OF 133 SHEETS

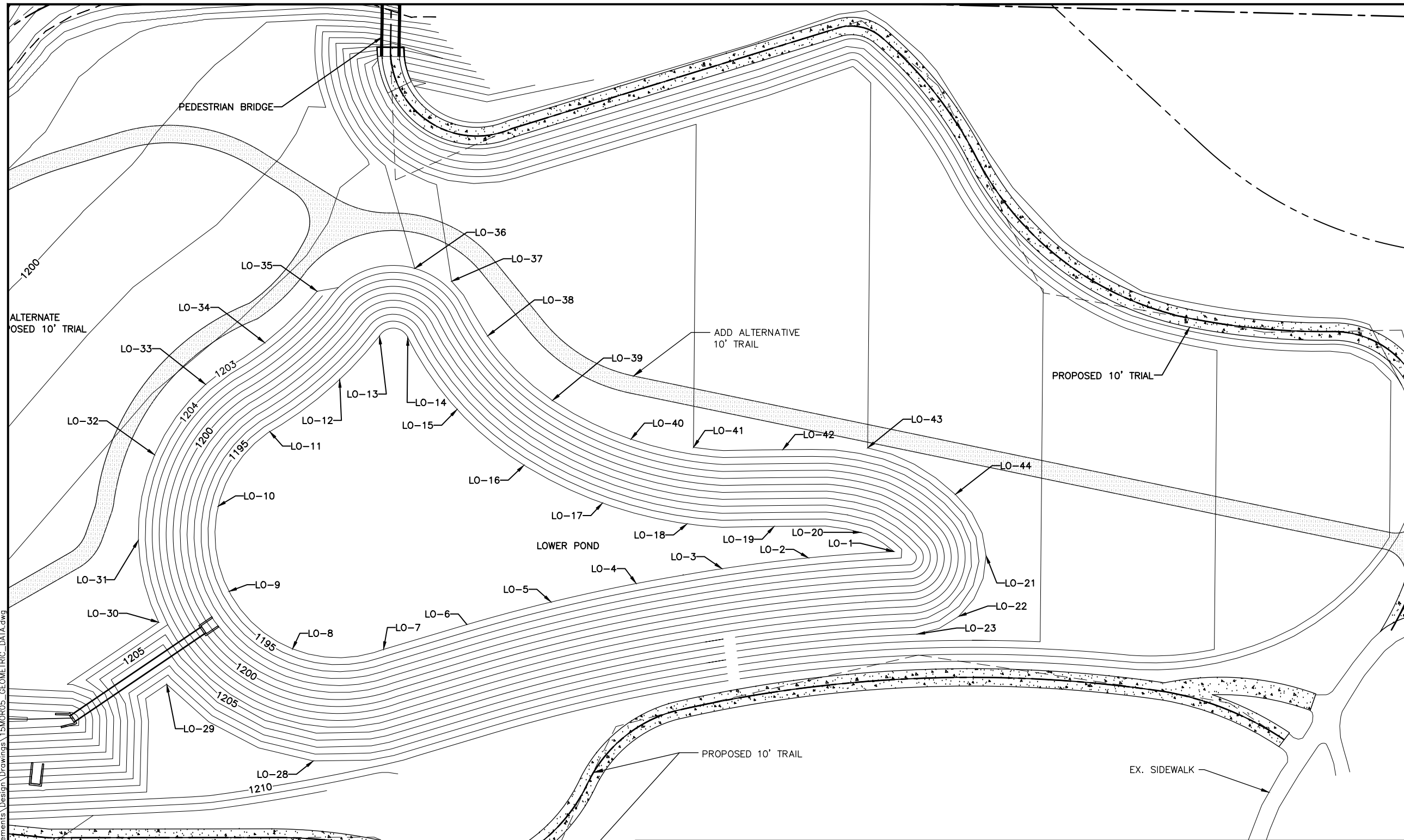
M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_GEOMETRIC\_DATA.dwg



**LEGEND**

- C.R.L.
- - - - - PROPERTY LINE
- POND TOE LINE
- (CXX) CURVE NUMBER
- (LXX) LINE NUMBER

LOWER POND DATA TABLE			
PNT #	NORTHING	EASTING	ELEVATION
LO-21	727485.17	2117832.61	1206.00
LO-22	727470.33	2117867.84	1206.00
LO-23	727446.70	2117878.63	1206.00
LO-28	727102.11	2117960.15	1209.00
LO-29	727016.88	2117918.31	1209.00
LO-30	727011.41	2117882.88	1203.00
LO-31	726998.51	2117836.08	1203.00
LO-32	727006.61	2117786.84	1203.00
LO-33	727034.82	2117745.68	1203.00
LO-34	727068.21	2117720.91	1203.00
LO-35	727097.48	2117690.59	1203.00
LO-36	727153.21	2117676.06	1203.00
LO-37	727174.50	2117682.95	1204.00
LO-38	727195.95	2117713.77	1204.00
LO-39	727234.06	2117749.86	1204.00
LO-40	727279.70	2117770.93	1204.00
LO-41	727315.69	2117774.72	1205.00
LO-42	727366.98	2117774.72	1205.00
LO-43	727415.66	2117772.48	1206.00
LO-44	727466.66	2117797.91	1206.00



LOWER POND DATA TABLE			
PNT #	NORTHING	EASTING	ELEVATION
LO-1	727432.31	2117831.59	1194.00
LO-2	727383.31	2117836.44	1194.00
LO-3	727333.87	2117843.93	1194.00
LO-4	727284.83	2117853.68	1194.00
LO-5	727236.26	2117865.54	1194.00
LO-6	727188.30	2117879.67	1194.00
LO-7	727140.76	2117895.19	1194.00
LO-8	727088.54	2117896.27	1194.00
LO-9	727051.19	2117864.16	1194.00
LO-10	727043.73	2117815.47	1194.00

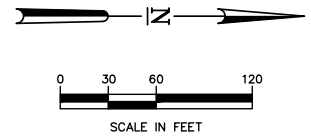
LOWER POND DATA TABLE			
PNT #	NORTHING	EASTING	ELEVATION
LO-11	727072.30	2117771.74	1194.00
LO-12	727111.68	2117740.93	1194.00
LO-13	727133.93	2117715.53	1194.00
LO-14	727150.19	2117715.85	1194.00
LO-15	727179.52	2117756.34	1194.00
LO-16	727218.72	2117787.38	1194.00
LO-17	727264.28	2117807.98	1194.00
LO-18	727313.11	2117818.72	1194.00
LO-19	727363.11	2117818.90	1194.00
LO-20	727413.07	2117821.02	1194.00

**LOWER POND GEOMETRIC DATA**  
**LITTLE RIVER PARK DRAINAGE IMPROVEMENTS**  
**CITY OF MOORE**

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

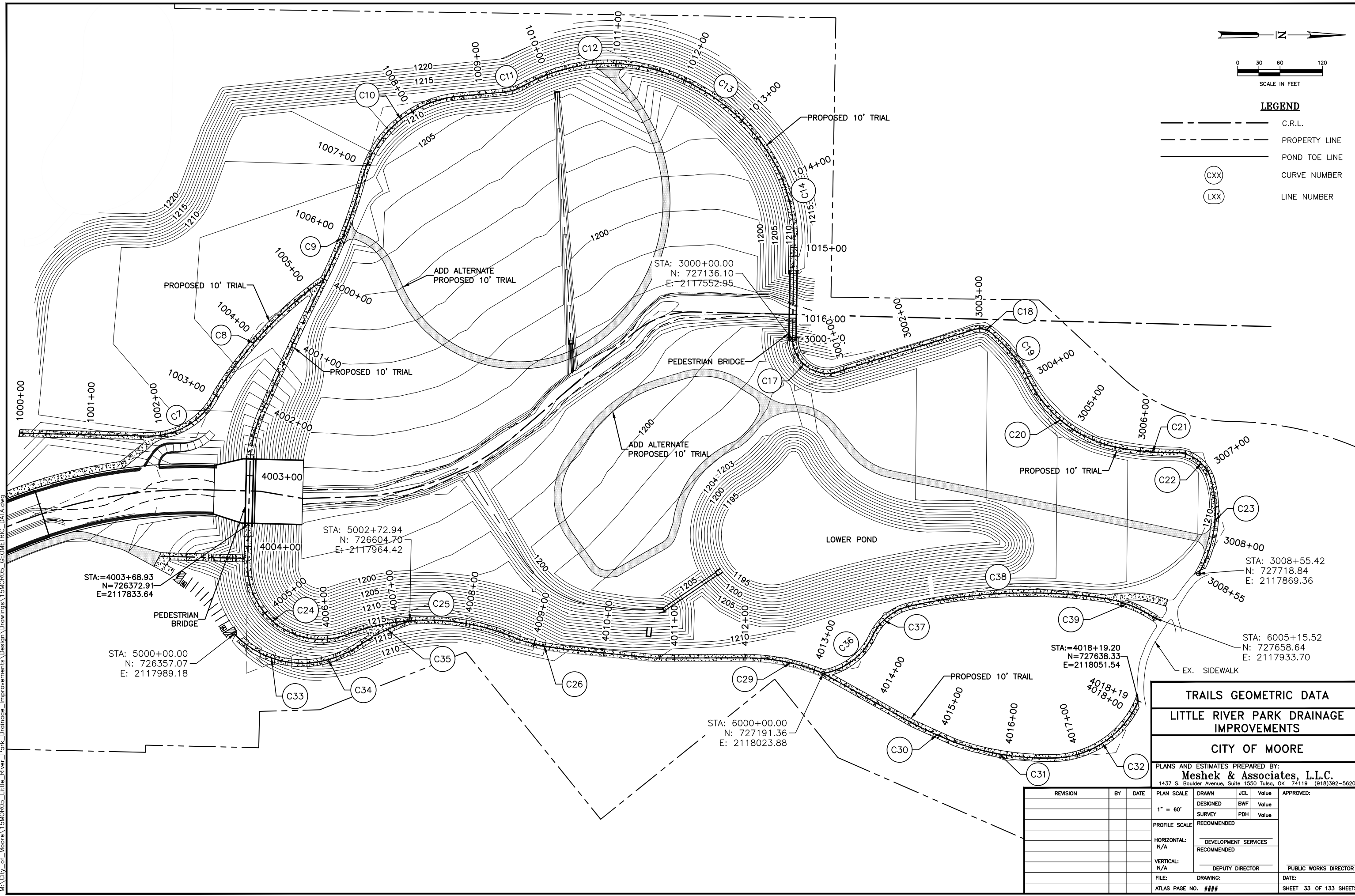
REVISION	BY	DATE	PLAN SCALE	DRAWN	JCL	Value	APPROVED:
			1" = 30'	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	DEVELOPMENT SERVICES			PUBLIC WORKS DIRECTOR
			N/A	RECOMMENDED			
			VERTICAL:	DEPUTY DIRECTOR			
			N/A				
			FILE:	DRAWING:		DATE:	
			ATLAS PAGE NO. ###			SHEET 32 OF 133 SHEETS	

M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\_Design\Drawings\15MOR05\_GEOMETRIC\_DATA.dwg



**LEGEND**

- C.R.L.
- - - - - PROPERTY LINE
- POND TOE LINE
- (CXX) CURVE NUMBER
- (LXX) LINE NUMBER



STA: 4003+68.93  
N: 726372.91  
E: 2117833.64

STA: 5000+00.00  
N: 726357.07  
E: 2117989.18

STA: 5002+72.94  
N: 726604.70  
E: 2117964.42

STA: 3000+00.00  
N: 727136.10  
E: 2117552.95

STA: 6000+00.00  
N: 727191.36  
E: 2118023.88

STA: 4018+19.20  
N: 727638.33  
E: 2118051.54

STA: 3008+55.42  
N: 727718.84  
E: 2117869.36

STA: 6005+15.52  
N: 727658.64  
E: 2117933.70

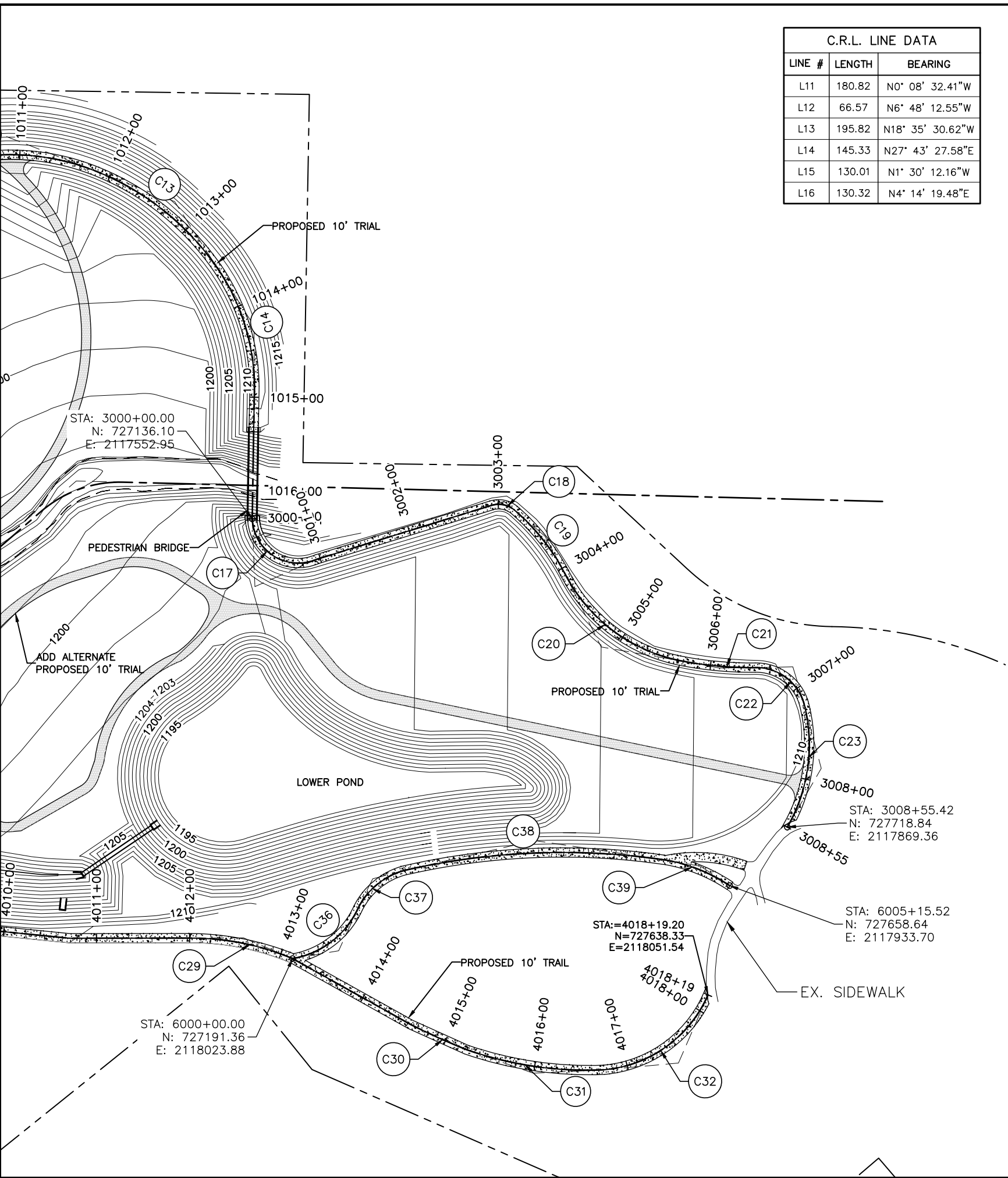
**TRAILS GEOMETRIC DATA**  
**LITTLE RIVER PARK DRAINAGE IMPROVEMENTS**  
**CITY OF MOORE**

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	JCL	Value	APPROVED:
			1" = 60'	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	DEVELOPMENT SERVICES			PUBLIC WORKS DIRECTOR
			RECOMMENDED	RECOMMENDED			
			VERTICAL:	DEPUTY DIRECTOR			
			FILE:	DRAWING:			DATE:
			ATLAS PAGE NO. ###				SHEET 33 OF 133 SHEETS

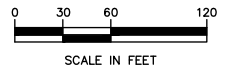
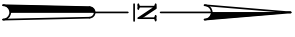
M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_GEOMETRIC\_DATA.dwg

M:\City\_of\_Moore\15MOR05\_Little\_River\_Drainage\_Improvements\Design\Drawings\15MOR05\_GEOMETRIC\_DATA.dwg



C.R.L. LINE DATA		
LINE #	LENGTH	BEARING
L11	180.82	N0° 08' 32.41"W
L12	66.57	N6° 48' 12.55"W
L13	195.82	N18° 35' 30.62"W
L14	145.33	N27° 43' 27.58"E
L15	130.01	N1° 30' 12.16"W
L16	130.32	N4° 14' 19.48"E

C.R.L. CURVE DATA					
CURVE #	ARC LENGTH	RADIUS	DELTA ANGLE	CHORD LENGTH	CHORD BEARING
C7	122.68	104.98	66.95	115.81	N33° 11' 54.24"W
C8	222.60	564.63	22.59	221.17	N48° 09' 19.38"W
C9	157.52	798.28	11.31	157.26	N70° 47' 55.29"W
C10	178.40	156.63	65.26	168.91	N42° 31' 01.21"W
C11	33.61	74.02	26.02	33.33	N16° 50' 01.70"W
C12	218.80	247.24	50.70	211.73	N5° 40' 49.09"W
C13	180.86	287.24	36.08	177.89	N37° 43' 21.06"E
C14	126.23	228.54	31.65	124.63	N72° 11' 19.68"E
C17	96.38	49.49	111.57	81.86	N30° 30' 35.18"E
C18	26.50	26.38	57.56	25.40	N9° 40' 02.76"E
C19	85.42	228.56	21.41	84.92	N49° 45' 40.49"E
C20	166.94	177.89	53.77	160.88	N35° 20' 05.74"E
C21	77.04	394.91	11.18	76.92	N3° 32' 01.82"E
C22	69.09	53.30	74.27	64.35	N34° 30' 17.59"E
C23	138.24	176.17	44.96	134.72	S83° 53' 55.08"E
C24	202.65	103.84	111.82	171.99	N33° 26' 10.02"E
C25	250.41	322.42	44.50	244.17	N0° 23' 22.48"E
C26	61.05	336.90	10.38	60.96	N10° 26' 13.75"E
C29	112.79	279.82	23.09	112.03	N9° 51' 39.49"E
C30	65.14	857.53	4.35	65.13	N22° 48' 51.87"E
C31	151.11	390.04	22.20	150.17	N6° 53' 36.91"E
C32	144.09	134.58	61.34	137.30	N37° 18' 43.86"W
C33	113.52	133.93	48.57	110.15	N20° 37' 44.14"E
C34	76.94	151.07	29.18	76.11	N19° 32' 41.14"W
C35	82.48	282.81	16.71	82.19	N27° 37' 21.02"W
C36	92.25	94.70	55.81	88.65	N38° 58' 52.94"W
C37	66.45	78.18	48.70	64.47	N40° 37' 25.32"W
C38	282.76	757.95	21.37	281.12	N3° 41' 46.77"W
C39	74.05	179.33	23.66	73.53	N20° 26' 29.94"E



**LEGEND**

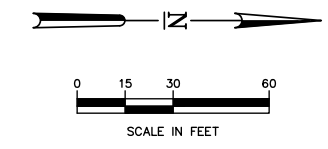
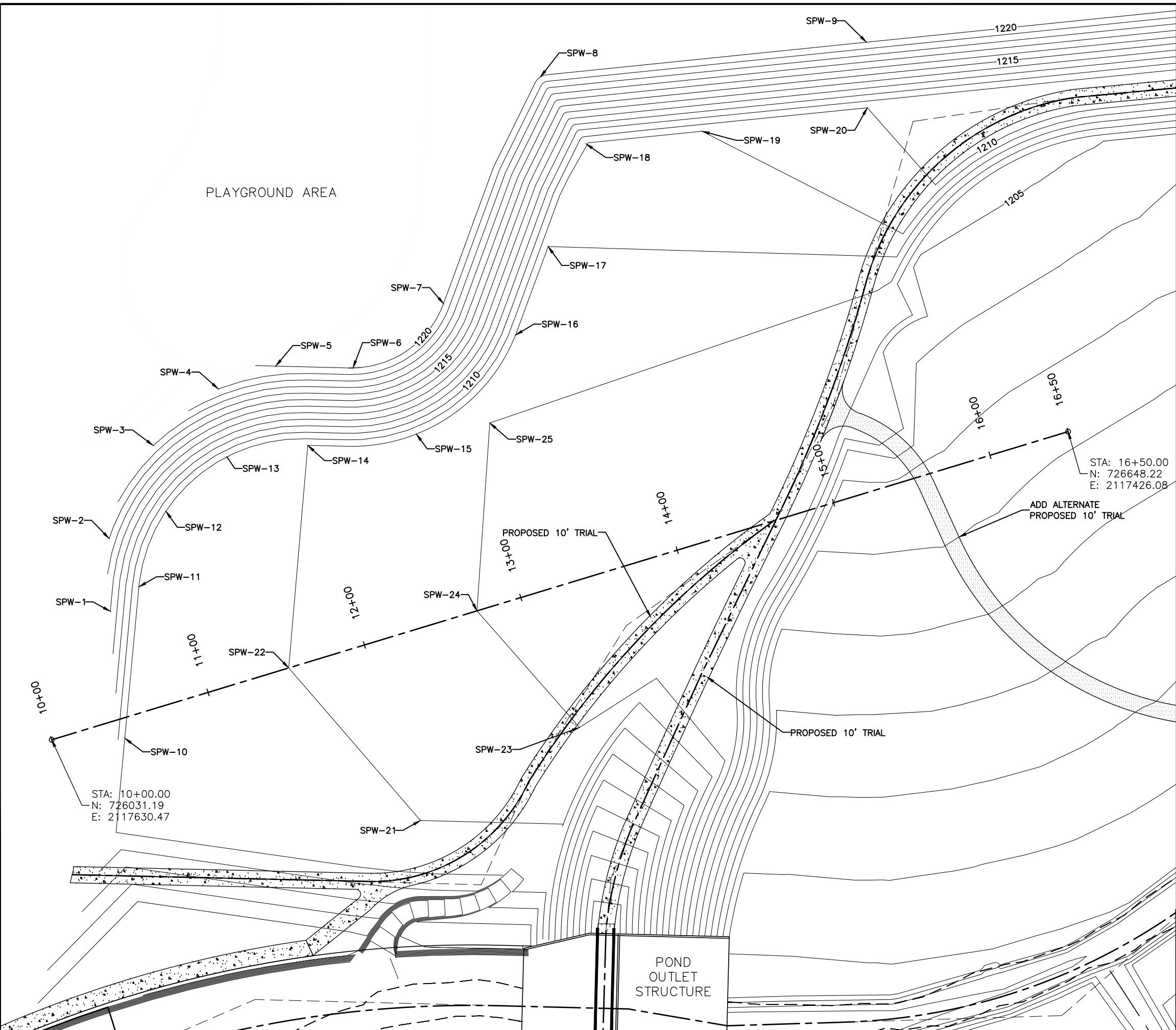
- C.R.L.
- PROPERTY LINE
- POND TOE LINE
- (CXX) CURVE NUMBER
- (LXX) LINE NUMBER

**TRAILS GEOMETRIC DATA**  
**LITTLE RIVER PARK DRAINAGE IMPROVEMENTS**  
**CITY OF MOORE**

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	JCL	Value	APPROVED:
			1" = 60'	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	DEVELOPMENT SERVICES			PUBLIC WORKS DIRECTOR
			RECOMMENDED				
			VERTICAL:	DEPUTY DIRECTOR			
			FILE:	DRAWING:			DATE:
			ATLAS PAGE NO. ###				SHEET 34 OF 133 SHEETS

M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_GEOMETRIC\_DATA.dwg



**LEGEND**

- C.R.L.
- - - - - PROPERTY LINE
- POND TOE LINE

SPILLWAY GEOMETRIC DATA TABLE			
PNT #	NORTHING	EASTING	ELEVATION
SPW-1	726065.06	2117550.94	1213.00
SPW-2	726063.20	2117506.42	1215.00
SPW-3	726088.72	2117448.78	1217.00
SPW-4	726127.72	2117413.19	1219.00
SPW-5	726162.42	2117398.27	1220.00
SPW-6	726209.70	2117398.21	1220.00
SPW-7	726264.13	2117357.45	1220.00
SPW-8	726319.85	2117217.21	1220.00
SPW-9	726518.80	2117190.85	1220.00
SPW-10	726075.87	2117628.33	1209.00
SPW-11	726082.14	2117535.53	1209.00
SPW-12	726097.47	2117488.72	1209.00
SPW-13	726133.95	2117454.53	1209.00
SPW-14	726183.26	2117446.26	1208.00
SPW-15	726249.50	2117437.67	1208.00
SPW-16	726308.63	2117375.56	1208.00
SPW-17	726327.24	2117320.85	1208.00
SPW-18	726348.73	2117257.35	1209.00
SPW-19	726419.59	2117247.90	1209.00
SPW-20	726520.35	2117230.99	1210.00
SPW-21	726258.04	2117674.14	1208.00
SPW-22	726175.07	2117582.80	1208.00
SPW-23	726353.88	2117614.74	1207.00
SPW-24	726289.33	2117544.95	1207.00
SPW-25	726294.27	2117429.76	1207.00

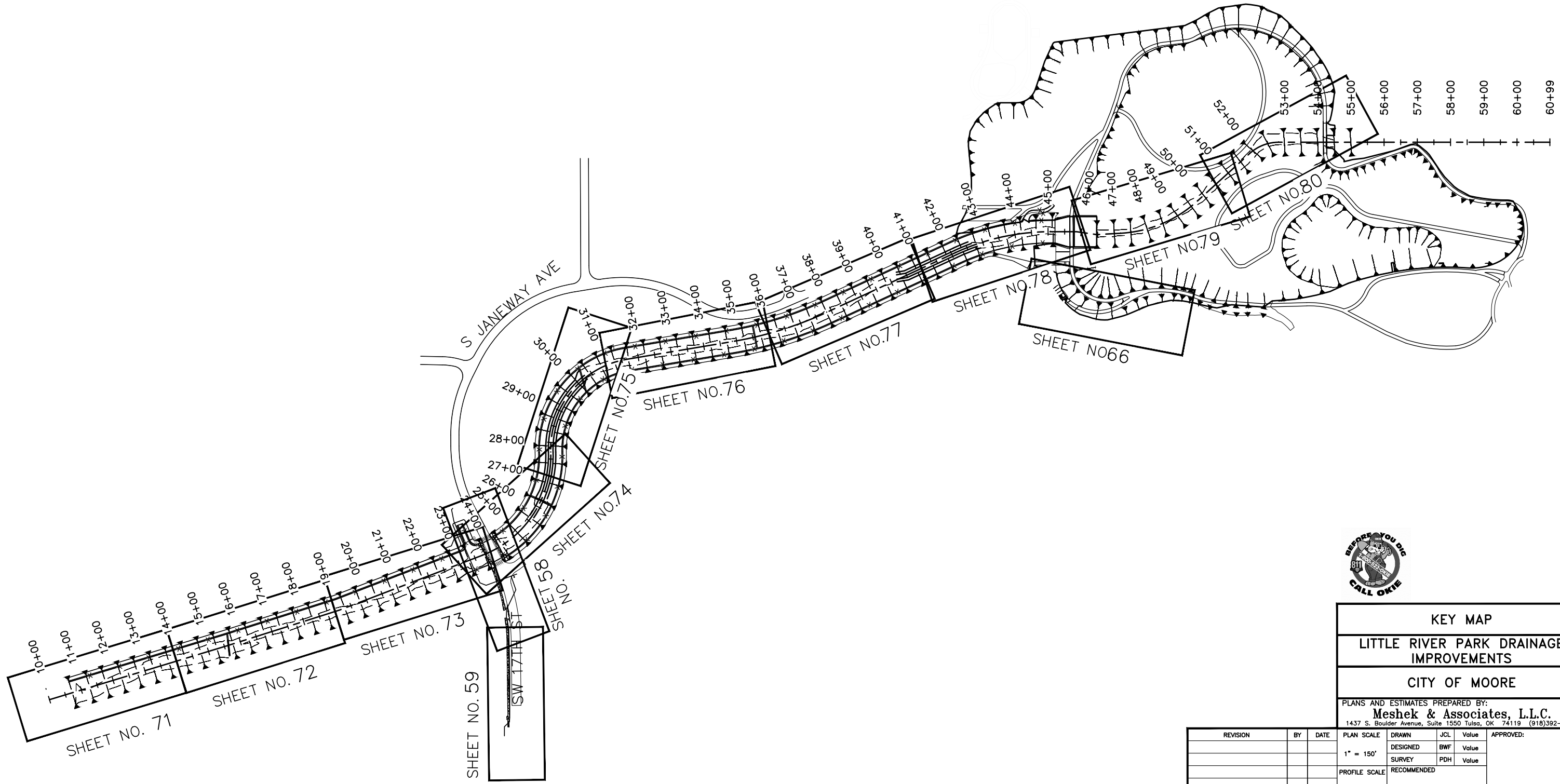
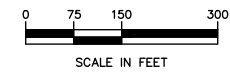
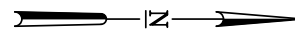
**SPILLWAY  
GEOMETRIC DATA  
LITTLE RIVER PARK DRAINAGE  
IMPROVEMENTS**

**CITY OF MOORE**

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	JCL	Value	APPROVED:
			1" = 30'	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	DEVELOPMENT SERVICES			PUBLIC WORKS DIRECTOR
			RECOMMENDED	RECOMMENDED			
			VERTICAL:	DEPUTY DIRECTOR			DATE:
			N/A				
			FILE:	DRAWING:			
			ATLAS PAGE NO. ###				SHEET 35 OF 133 SHEETS

M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_KEY\_MAP.dwg

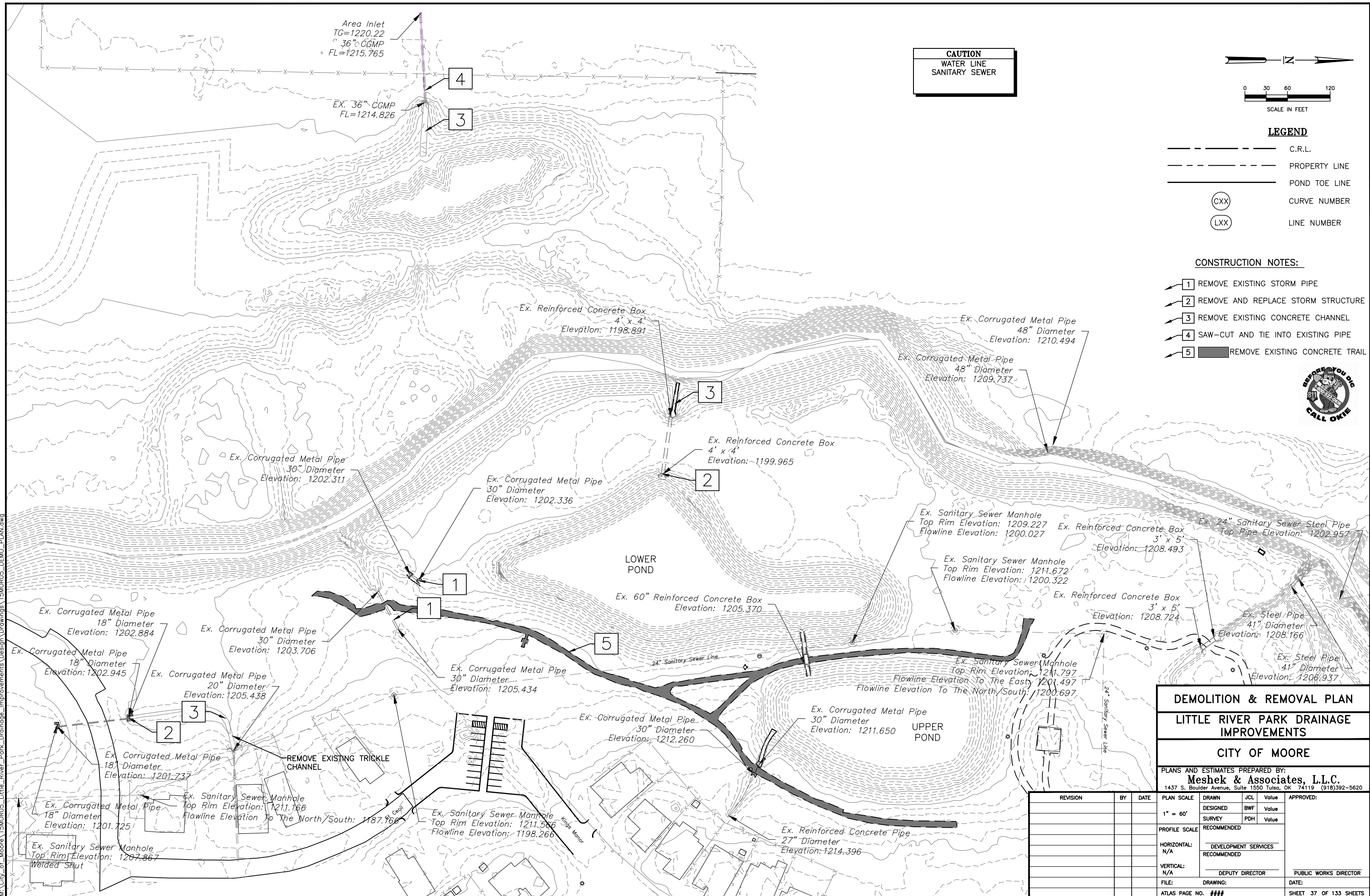


**KEY MAP**  
**LITTLE RIVER PARK DRAINAGE IMPROVEMENTS**  
**CITY OF MOORE**  
 PLANS AND ESTIMATES PREPARED BY:  
**Meshek & Associates, L.L.C.**  
 1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620

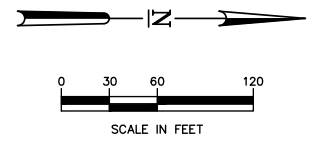
REVISION	BY	DATE	PLAN SCALE	DRAWN	JCL	Value	APPROVED:
			1" = 150'	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	DEVELOPMENT SERVICES			PUBLIC WORKS DIRECTOR
			VERTICAL:	RECOMMENDED			
			FILE:	DEPUTY DIRECTOR			
			DRAWING:	DATE:			
			ATLAS PAGE NO. ###	SHEET 36 OF 133 SHEETS			



M:\City of Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_DEMO\_PLAN.dwg



**CAUTION**  
 WATER LINE  
 SANITARY SEWER



**LEGEND**

- C.R.L.
- PROPERTY LINE
- POND TOE LINE
- (CXX) CURVE NUMBER
- (LXX) LINE NUMBER

**CONSTRUCTION NOTES:**

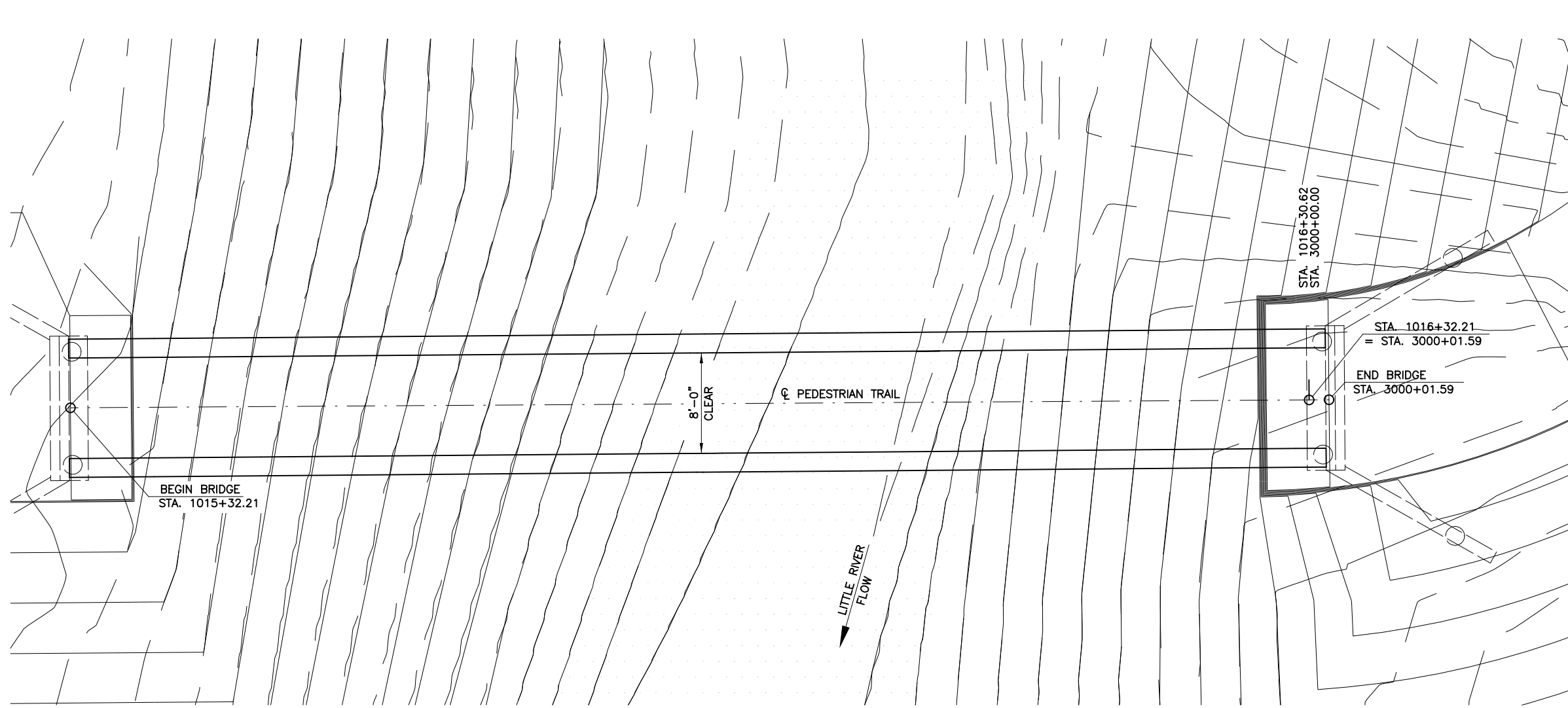
- 1 REMOVE EXISTING STORM PIPE
- 2 REMOVE AND REPLACE STORM STRUCTURE
- 3 REMOVE EXISTING CONCRETE CHANNEL
- 4 SAW-CUT AND TIE INTO EXISTING PIPE
- 5 REMOVE EXISTING CONCRETE TRAIL



**DEMOLITION & REMOVAL PLAN**  
**LITTLE RIVER PARK DRAINAGE IMPROVEMENTS**  
**CITY OF MOORE**

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	JCL	Value	APPROVED:
			1" = 60'	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	DEVELOPMENT SERVICES			PUBLIC WORKS DIRECTOR
			VERTICAL:	RECOMMENDED			
			FILE:	DEPUTY DIRECTOR			DATE:
			ATLAS PAGE NO. ###				SHEET 37 OF 133 SHEETS

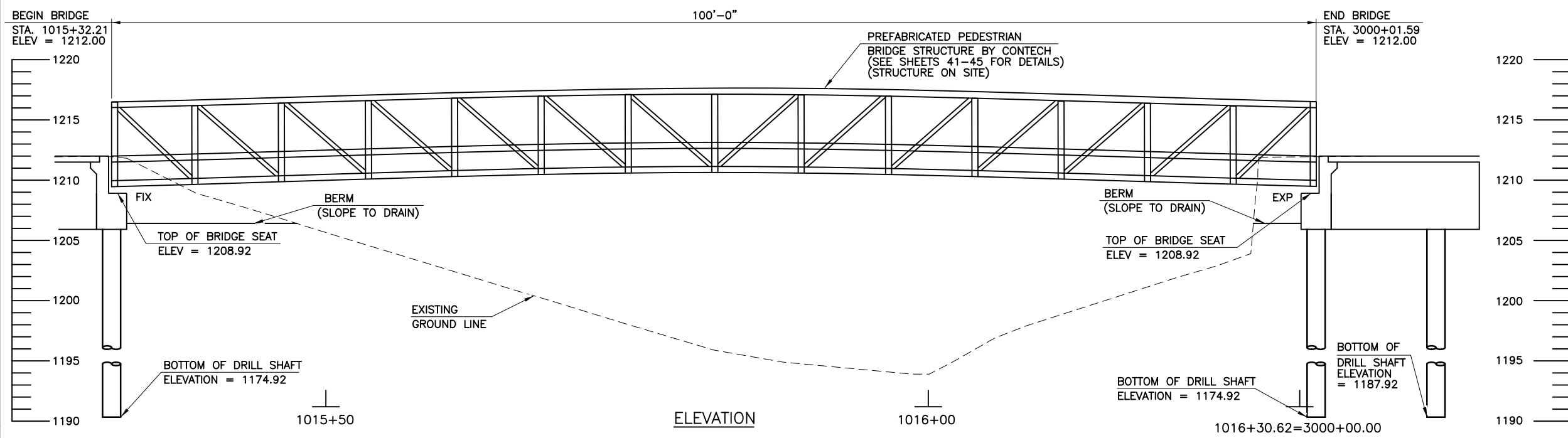


PLAN

**DESIGN DATA**  
 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS,  
 7TH EDITION WITH CURRENT INTERIMS

**INDEX OF SHEETS**  
 38 GENERAL PLAN AND ELEVATION  
 39-40 BRIDGE "A" DETAILS

**FOUNDATION DATA**  
 FOR FOUNDATION GEOTECHNICAL DATA, SEE  
 GEOTECHNICAL ENGINEERING REPORT PREPARED  
 BY TERRACON JULY 7, 2017.

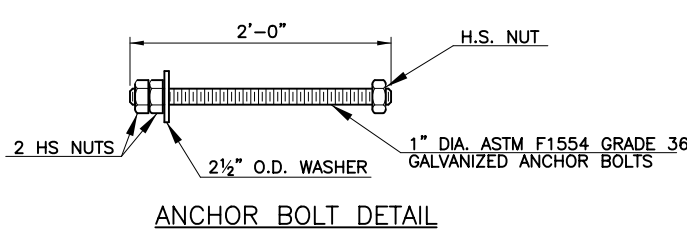
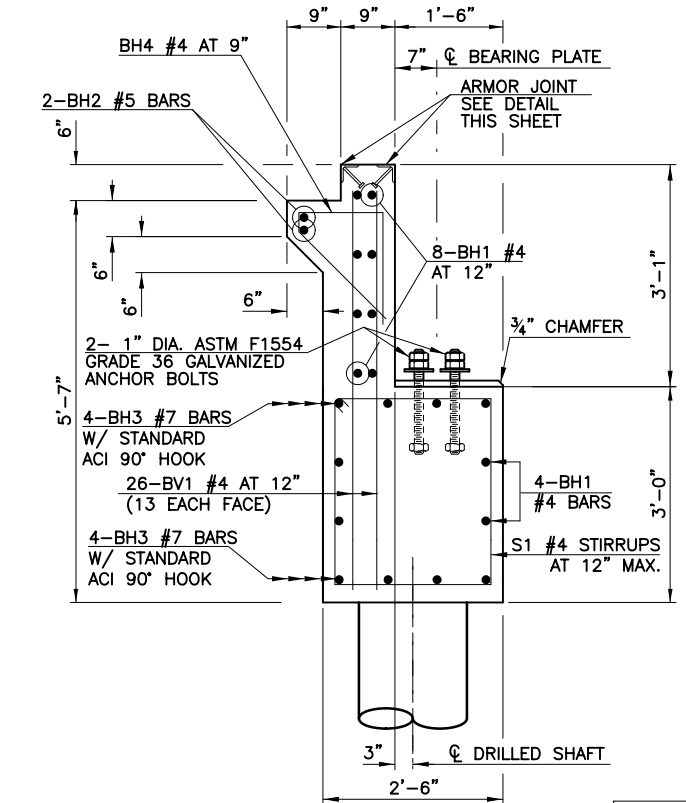
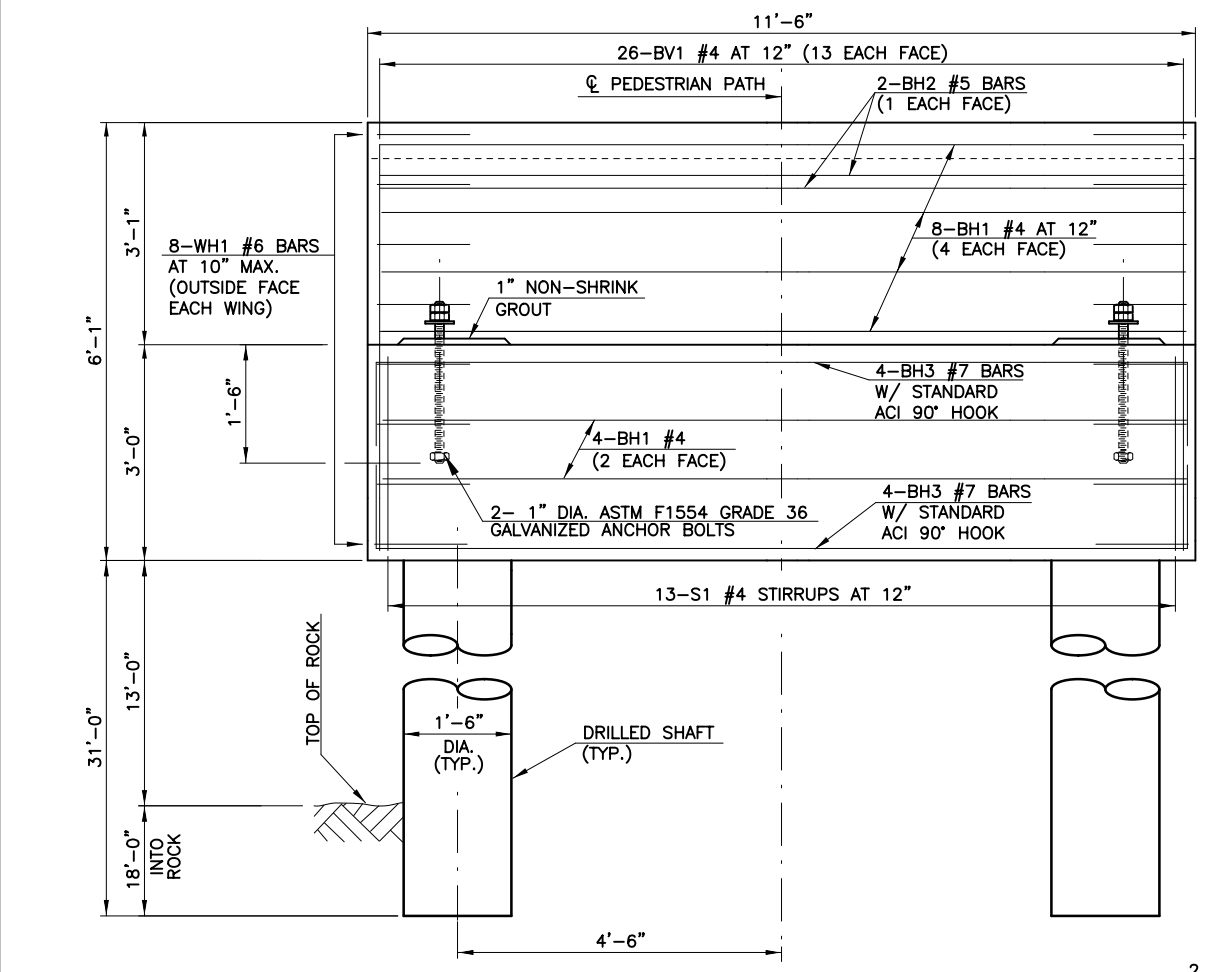
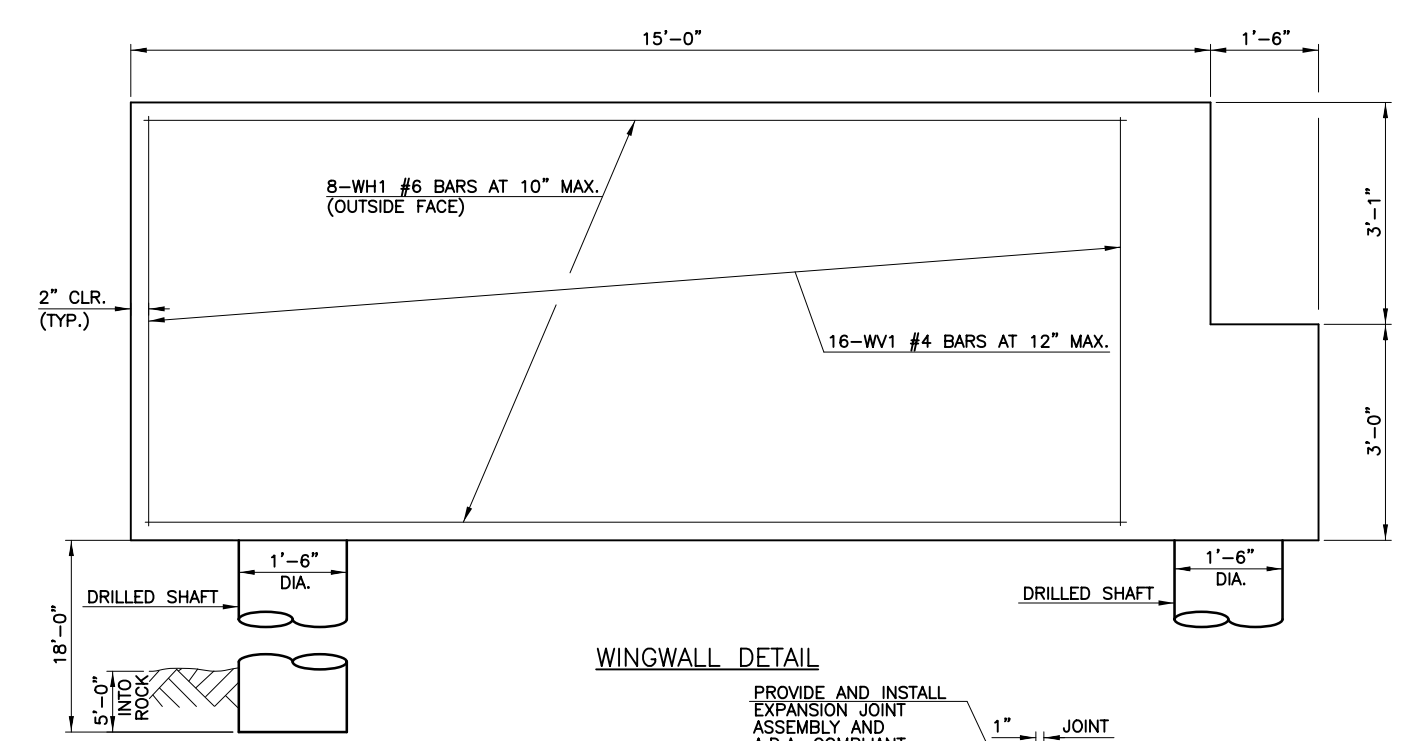
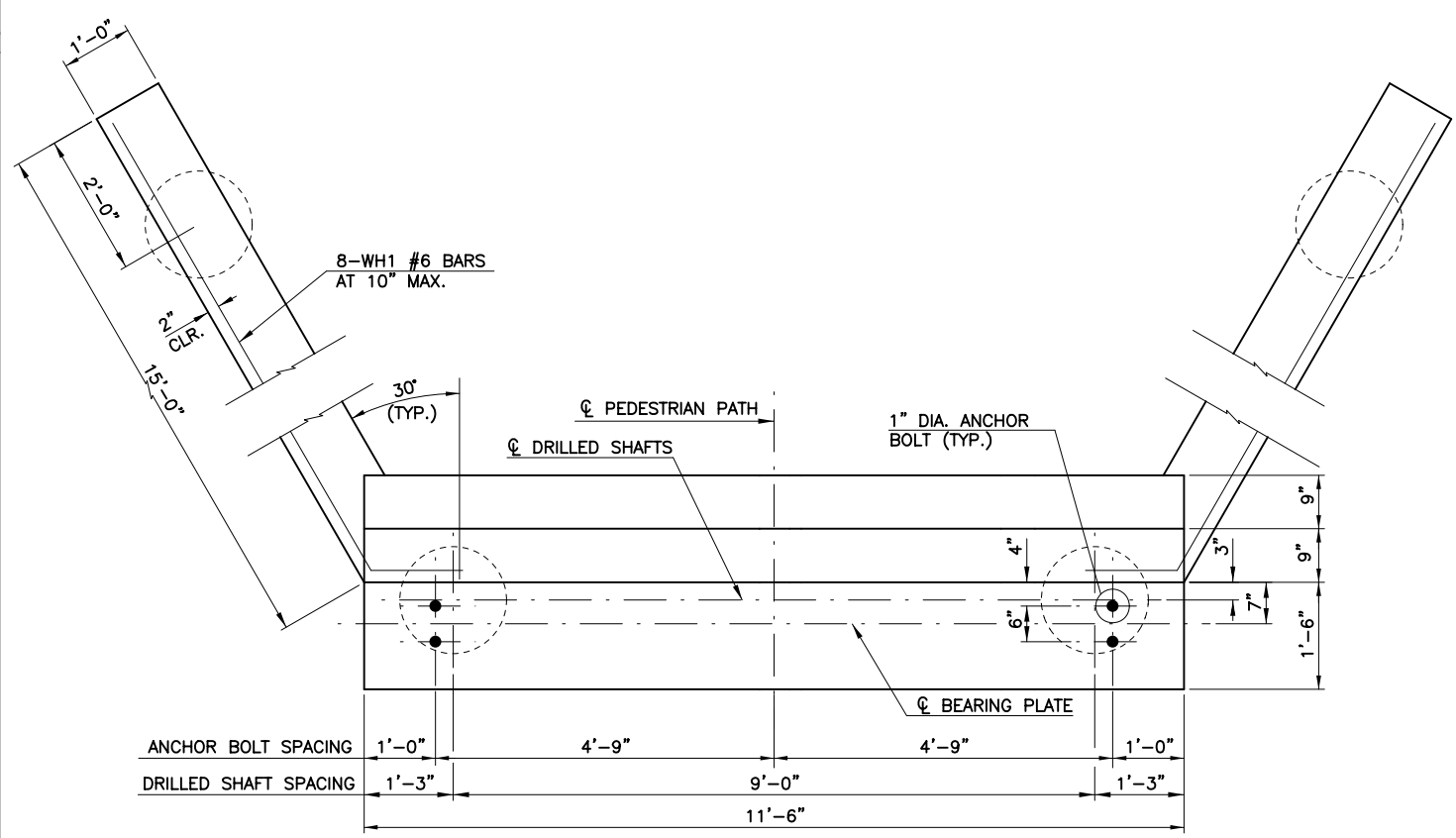


ELEVATION

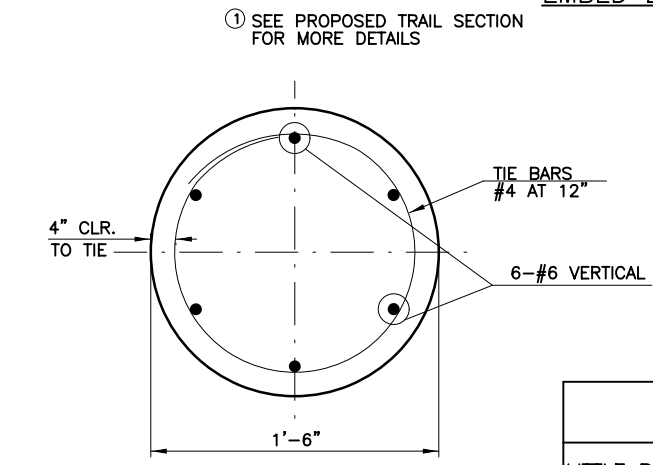
GENERAL PLAN AND ELEVATION BRIDGE "A"			
LITTLE RIVER PARK DRAINAGE IMPROVEMENT			
CITY OF MOORE			
<b>CP&amp;Y</b>			
PLAN SCALE	DRAWN	CPY	APPROVED:
	DESIGNED	CPY	
	SURVEY		
PROFILE SCALE	RECOMMENDED		
HORIZONTAL:	DEVELOPMENT SERVICES		
VERTICAL:	RECOMMENDED		
	DEPUTY DIRECTOR		PUBLIC WORKS DIRECTOR
FILE:	DRAWING:	DATE:	
SHEET NO. 38 OF 112			

7:04:07 AM  
 cpy&w\_ANSIB.tbl  
 2/5/2018  
 cpy&w\_ANSIB.tbl  
 pw:/Active Projects/MEAS1500380.00/MEAS1500380.01/8.00 Plans and Drawings/8.30 Cut Sheets/8.3.07 Bridge/15280GPE-10.dgn

7:04:10 AM  
 cpyb&w\_ANSIB.tbl  
 2/5/2018  
 cpyb&w\_ANSIB.plt  
 MEAS1500380.00/MEAS1500380.01/8.00 Plans and Drawings/8.30 Cut Sheets/8.3.07 Bridge/15280BRAAB01.dgn  
 jenkins  
 p:\Active Projects\MEAS1500380.00/MEAS1500380.01/8.00 Plans and Drawings/8.30 Cut Sheets/8.3.07 Bridge/15280BRAAB01.dgn



**NOTE:**  
 HEADED STUDS AND ANGLES SHALL BE HOT DIP GALVANIZED AFTER WELDING STUDS TO ANGLES

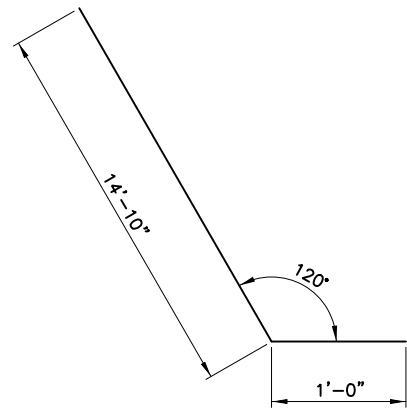


- PLAN NOTES:**
- ALL CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3,000 P.S.I.
  - ALL REINFORCING SHALL BE ASTM A615 GRADE 60.
  - ALL REBAR BENDS SHALL CONFORM TO CURRENT ACI DETAILING REQUIREMENTS.
  - ALL DRILLED SHAFTS SHALL BEAR IN MODERATELY HARD FOUNDATION LOCATED 13" BELOW GRADE.
  - ALL COSTS ASSOCIATED WITH PROVIDING AND INSTALLING ANCHOR BOLTS AND EXPANSION JOINT ASSEMBLY SHALL BE INCLUDED IN THE PRICE BID FOR "INSTALLATION OF BRIDGE ITEMS".

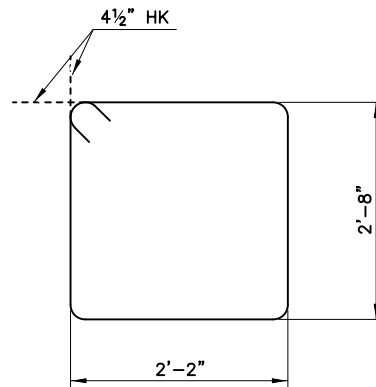
FOR FOUNDATION GEOTECHNICAL DATA, SEE GEOTECHNICAL ENGINEERING REPORT PREPARED BY TERRACON JULY 7, 2017.

BRIDGE "A" DETAILS			
LITTLE RIVER PARK DRAINAGE IMPROVEMENT			
CITY OF MOORE			
<b>CP&amp;Y</b>			
PLAN SCALE	DRAWN	CPY	APPROVED:
	DESIGNED	CPY	
	SURVEY		
PROFILE SCALE	RECOMMENDED		
HORIZONTAL:	DEVELOPMENT SERVICES		
VERTICAL:	RECOMMENDED		
	DEPUTY DIRECTOR	PUBLIC WORKS DIRECTOR	
FILE:	DRAWING:	DATE:	
SHEET NO. 39 OF 112			

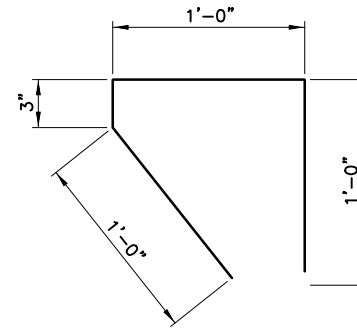
jenkins 2/5/2018 7:04:12 AM  
 cpyb&w\_ANSIB.tbl cpypdf\_ANSIB.plt  
 pw:/Active Projects/MEAS1500380.00/MEAS1500380.01/8.00 Plans and Drawings/8.30 Cut Sheets/8.3.07 Bridge/15280BRAB02.dgn



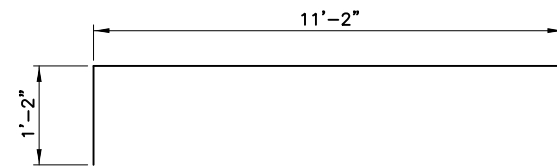
WH1 #4x15'-10"



S1 #4x10'-5"



BH4 #4x3'-3"



BH3 #7x13'-6"

ABUTMENT REINFORCING BAR LIST					
MARK	SIZE	NO.	FORM	LENGTH	LENGTH VARIATION
BH1	#4	12	STR.	11'-2"	
BH2	#5	2	STR.	11'-2"	
BH3	#7	8	BNT.	13'-6"	
BH4	#4	16	BNT.	3'-3"	
BV1	#4	26	STR.	5'-9"	
S1	#4	13	BNT.	10'-5"	
WH1	#4	16	BNT.	15'-10"	
WV1	#4	32	STR.	5'-9"	

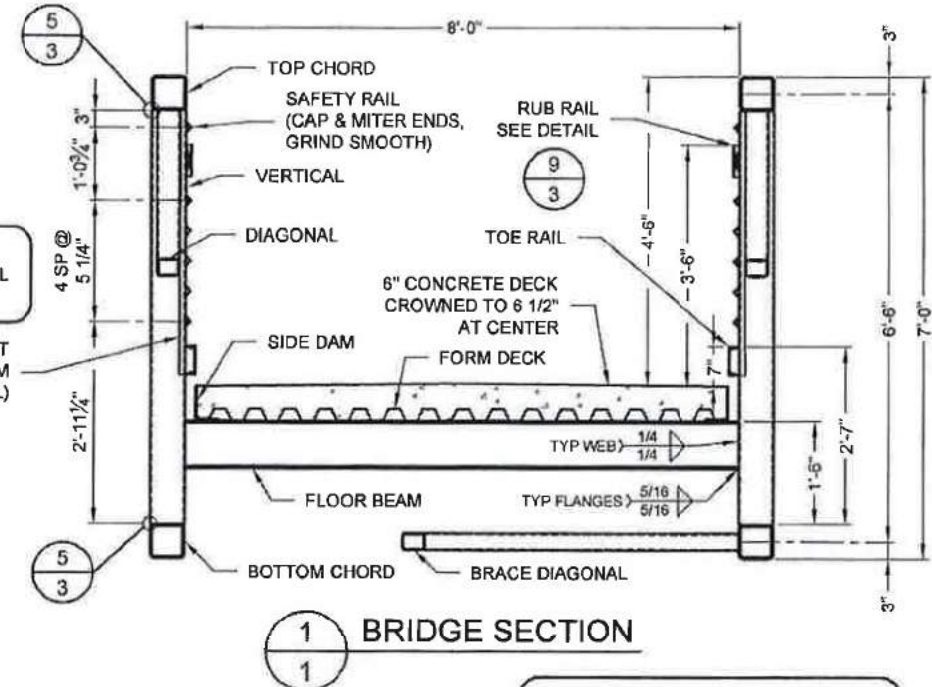
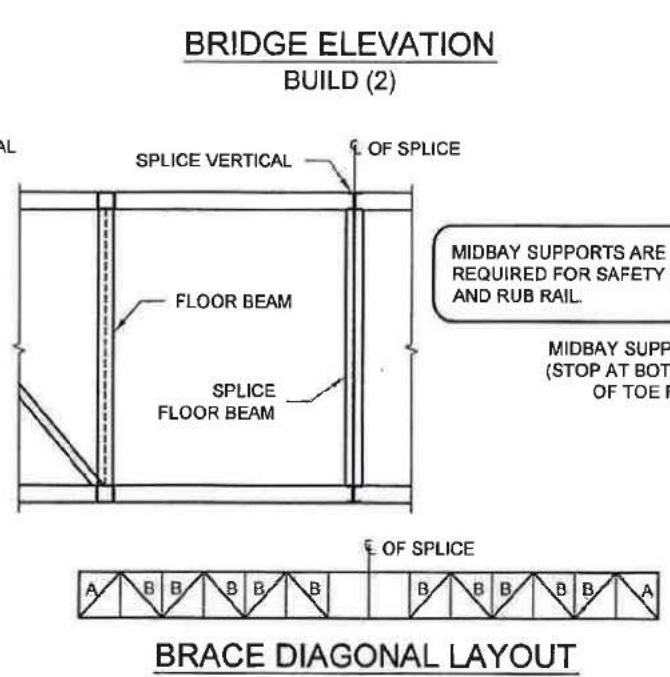
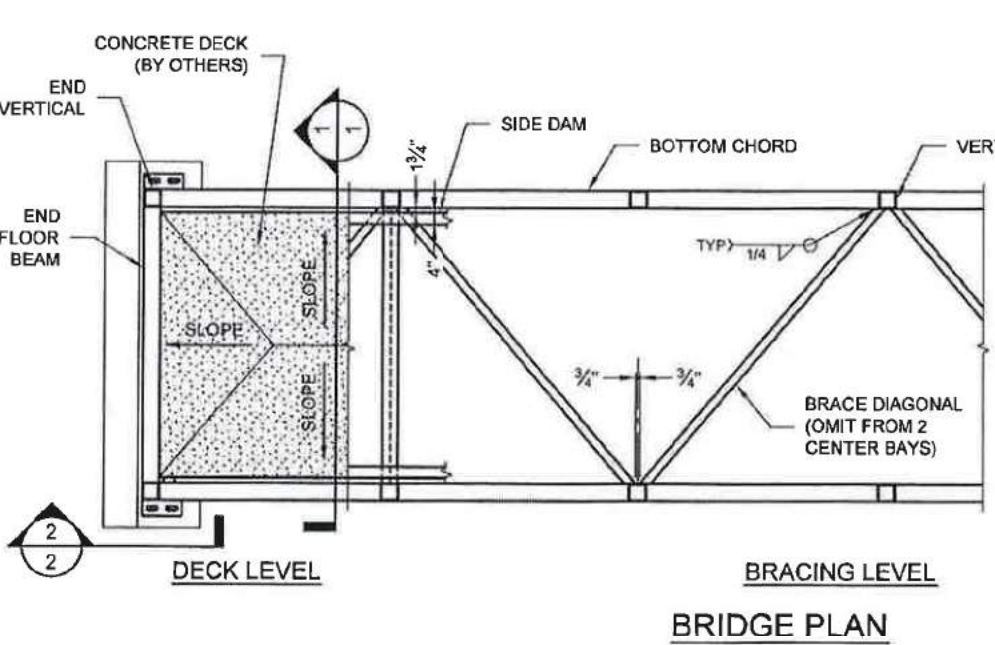
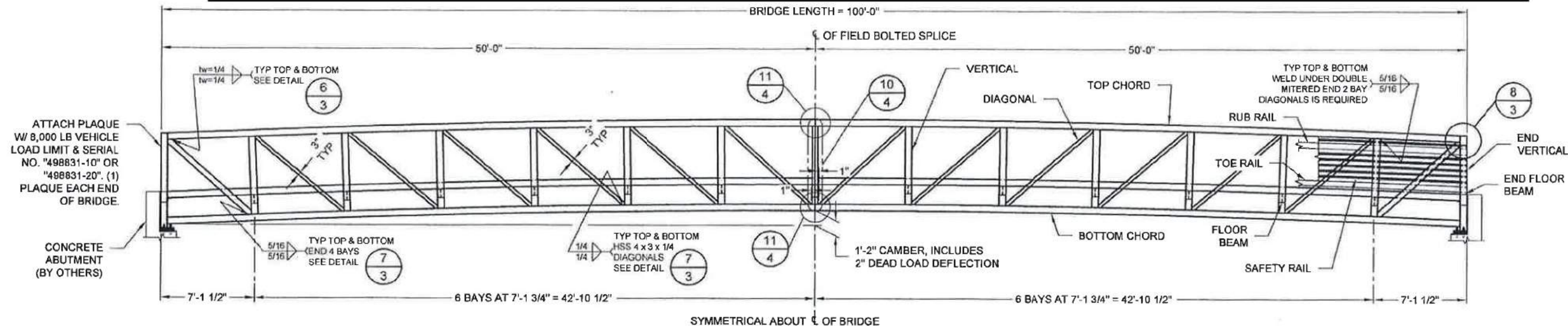
ABUTMENT QUANTITIES		
DESCRIPTION	UNIT	TOTAL
DRILLED SHAFTS 18" DIAMETER	LF	196.00
STRUCTURAL CONCRETE	CY	11.10
REINFORCING STEEL	LB	850.00

①

① ALL COSTS ASSOCIATED WITH EXCAVATION FOR CONSTRUCTING THE ABUTMENTS SHALL BE INCLUDED IN THE PRICE BID PER CUBIC YARD OF STRUCTURAL CONCRETE.

BRIDGE "A" DETAILS			
LITTLE RIVER PARK DRAINAGE IMPROVEMENT			
CITY OF MOORE			
<b>CP&amp;Y</b>			
PLAN SCALE	DRAWN	CPY	APPROVED:
	DESIGNED	CPY	
	SURVEY		
PROFILE SCALE	RECOMMENDED		
HORIZONTAL:	RECOMMENDED		
VERTICAL:	RECOMMENDED		
	DEPUTY DIRECTOR		PUBLIC WORKS DIRECTOR
FILE:	DRAWING:		DATE:
SHEET NO. 40 OF 112			

# FOR CONTRACTOR INFORMATION ONLY - PEDESTRIAN BRIDGE UNITS AVAILABLE AT SITE



### GENERAL NOTES

1. DESIGN PROCEDURE IS IN ACCORDANCE WITH "LRFD BRIDGE DESIGN SPECIFICATIONS" 4TH EDITION & "GUIDE SPECIFICATIONS FOR DESIGN OF PEDESTRIAN BRIDGES" BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO).
2. BRIDGE MEMBERS ARE FABRICATED FROM HIGH STRENGTH, LOW ALLOY, ENHANCED ATMOSPHERIC CORROSION RESISTANT ASTM A847 COLD-FORMED WELDED SQUARE AND RECTANGULAR TUBING, AND ASTM A588, ASTM A606, OR ASTM A242 PLATE AND STRUCTURAL SHAPES (Fy=50,000 PSI).
3. CONCRETE DECK: GALVANIZED FORM DECK SUPPLIED BY CONTECH. CONCRETE, REINFORCING AND EXPANSION MATERIAL SUPPLIED BY OTHERS. SEE CONCRETE DECK SHEET.
4. THE GAS METAL ARC WELDING PROCESS OR FLUX CORED ARC WELDING PROCESS WILL BE USED.
5. ALL TOP AND BOTTOM CHORD SHOP SPLICES TO BE COMPLETE PENETRATION TYPE WELDS. WELD BETWEEN TOP CHORD AND END VERTICAL SHALL BE AS DETAILED.
6. UNLESS OTHERWISE NOTED, WELDED CONNECTIONS SHALL BE FILLET WELDS (OR HAVE THE EFFECTIVE THROAT OF A FILLET WELD) OF A SIZE EQUAL TO THE THICKNESS OF THE LIGHTEST GAGE MEMBER IN THE CONNECTION. WELDS SHALL BE APPLIED AS FOLLOWS:
  - A. BOTH ENDS OF VERTICALS, DIAGONALS, AND FLOOR BEAMS SHALL BE WELDED ALL AROUND.

- B. BRACE DIAGONALS WILL BE WELDED ALL AROUND.
- C. MISCELLANEOUS NON-STRUCTURAL MEMBERS WILL BE STITCH WELDED TO THEIR SUPPORTING MEMBERS.
7. BRIDGE DESIGN WAS ONLY BASED ON COMBINATIONS OF THE FOLLOWING LOADS WHICH WILL PRODUCE MAXIMUM CRITICAL MEMBER STRESSES.
  - A. 90 PSF UNIFORM LIVE LOADING ON THE FULL DECK AREA OR ONE 8,000 LB VEHICLE LOAD. THE LOAD SHALL BE DISTRIBUTED AS A FOUR-WHEEL VEHICLE WITH 80% OF THE LOAD ON THE REAR WHEELS. THE WHEEL TRACK WIDTH OF THE VEHICLE SHALL BE 5'-0" AND THE WHEEL BASE SHALL BE 8'-6". THE VEHICLE SHALL BE POSITIONED SO AS TO PRODUCE THE MAXIMUM STRESSES IN EACH MEMBER, INCLUDING DECKING.
  - B. 35 PSF WIND LOAD ON THE FULL HEIGHT OF THE BRIDGE, AS IF ENCLOSED.
  - C. 20 PSF UPWARD FORCE APPLIED AT THE WINDWARD QUARTER POINT OF THE TRANSVERSE BRIDGE WIDTH (AASHTO 3.15.3).
8. CLEANING: ALL EXPOSED SURFACES OF STEEL SHALL BE CLEANED IN ACCORDANCE WITH STEEL STRUCTURES PAINTING COUNCIL SURFACES PREPARATION SPECIFICATIONS NO. 7 BRUSH-OFF BLAST CLEANING, SSPC-SP7-LATEST EDITION.
9. MINIMUM MATERIAL THICKNESS OF 1/4" ON ALL STRUCTURAL MEMBERS.

### SCHEDULE OF MEMBERS

TOP CHORD	HSS 6 x 6 x 3/8
BOTTOM CHORD	HSS 6 x 6 x 3/8
VERTICAL	HSS 6 x 6 x 1/4
SPLICE VERTICAL	(2) MC 6 x 12
END VERTICAL	HSS 6 x 6 x 3/8
DIAGONAL	HSS 4 x 3 x 1/4 ①
BRACE DIAGONAL	HSS 3 x 3 x 1/4
FLOOR BEAM	W 8 x 21
SPLICE FLOOR BEAM	(2) C 12 x 20.7
END FLOOR BEAM	HSS 10 x 6 x 1/4
DECK SUPPORT	L 3 x 3 x 1/4
TOE RAIL	C 5 x 6.7
SAFETY RAIL	L 1 1/4 x 1 1/4 x 1/8
SIDE DAM	L 6 x 4 x 5/16

① USE HSS 5 x 5 x 1/4 FOR END BAY ONLY, TYP EACH END. USE HSS 5 x 3 x 1/4 2nd, 3rd & 4th BAYS, TYP EACH END. DOUBLE MITER ALL DIAGONALS, EXCEPT 2 AT CENTER TO BE DOUBLE MITERED ON TOP, 1" GAP ON BOTTOM.

SPACING OF SAFETY RAIL, RUB RAIL AND TOE PLATE PRODUCES MAXIMUM OPENINGS OF LESS THAN 4 INCHES.

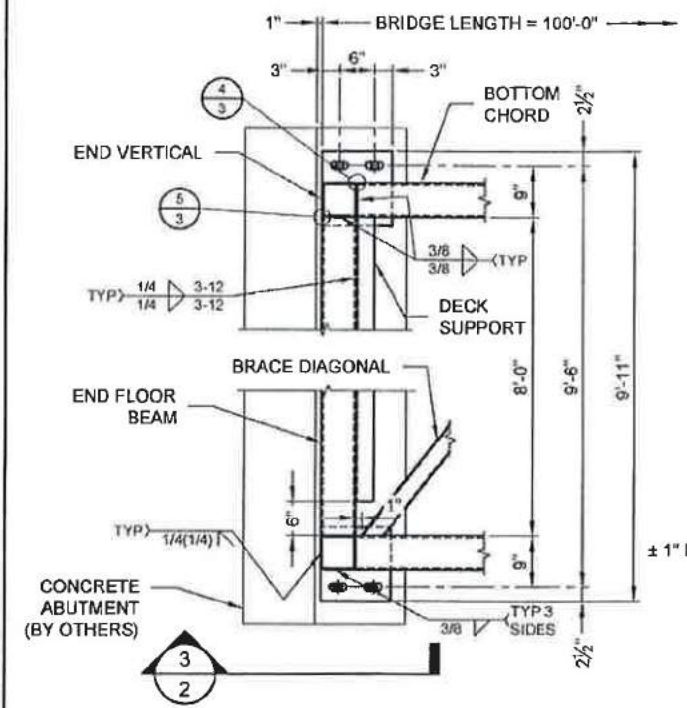


The design and information shown on this drawing is the property of Contech Engineering, Professional Corporation. No part of this drawing, or any part thereof, may be used, reproduced or modified in any way without the written consent of Contech Engineering, Professional Corporation. Failure to comply in some way with the terms of this agreement shall constitute a breach of contract and Contech Engineering, Professional Corporation shall not be liable for damages based on resulting claims or for any other information supplied by Contech Engineering, Professional Corporation.

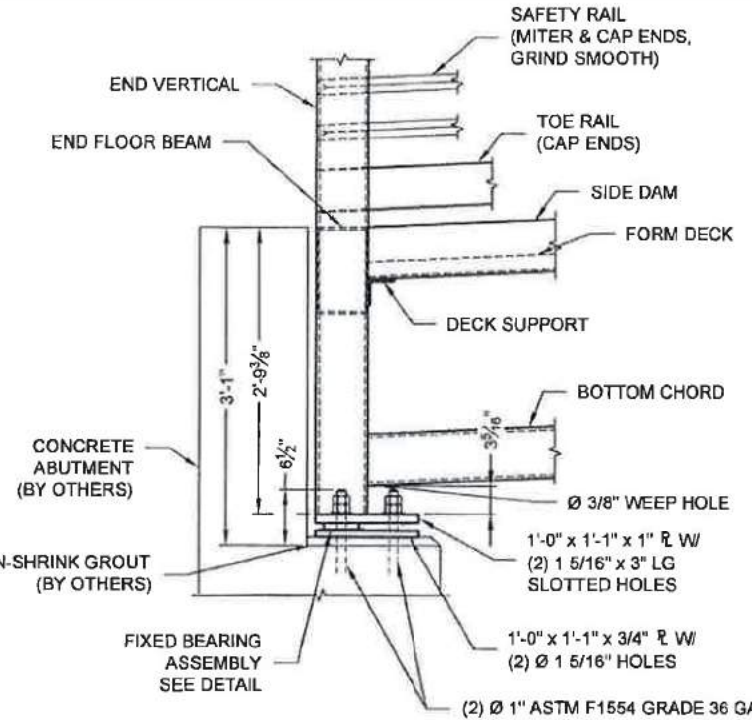
<p style="text-align: center;"><b>100'-0" x 8'-0" (BUILD 2)</b> CITY OF MOORE PEDESTRIAN BRIDGE MOORE, OK</p>	<p style="text-align: center;">CONTECH ENGINEERING, PROFESSIONAL CORPORATION</p> <p style="font-size: x-small;">8001 State Highway 28 North, Okemah, OK 74450 800-329-2047 304-652-7500 304-652-7007 FAX</p> <p style="text-align: center;">CONTINENTAL BRIDGE</p>
<p>DATE: 3/28/2014</p>	
DESIGNED: GHM	DRAWN: KBK
CHECKED: GHM	APPROVED: BAH
PROJECT No: 498831	SEQUENCE No: 10 & 20
SHEET 1 OF 5	

I:\MELN\PROJECTS\ACTIVE\6880C\88831\16\CONTINENTAL\PEDESTRIAN\DRAWINGS\FABRICATION\498831.DWG 1/28/2014 1:45 PM

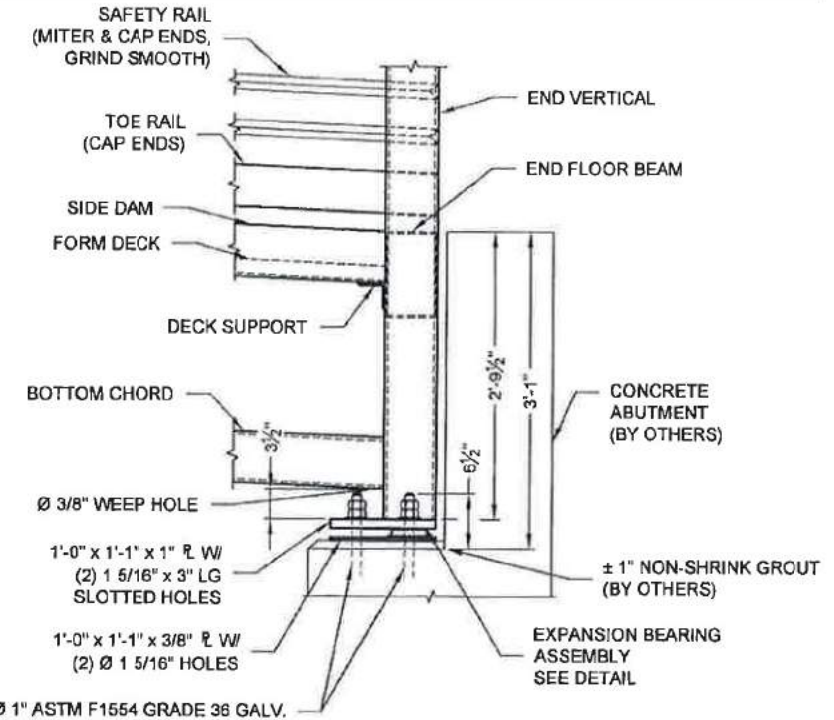
**FOR CONTRACTOR INFORMATION ONLY - PEDESTRIAN BRIDGE UNITS AVAILABLE AT SITE**



**2** BEARING ASSEMBLY - PLAN VIEW

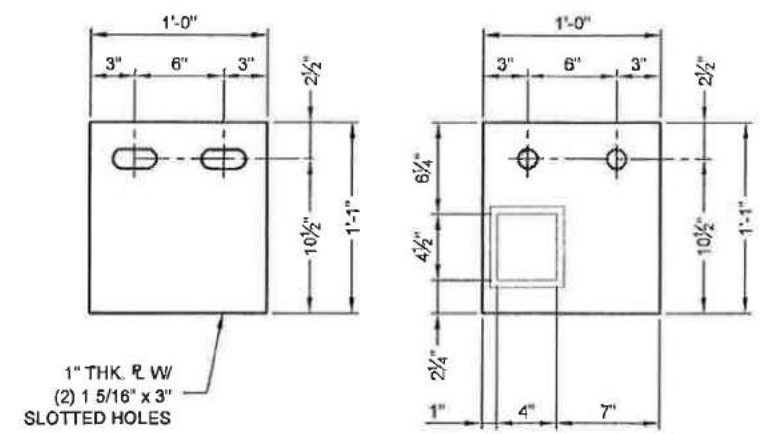
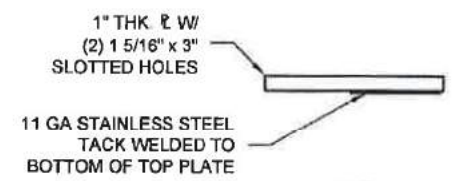
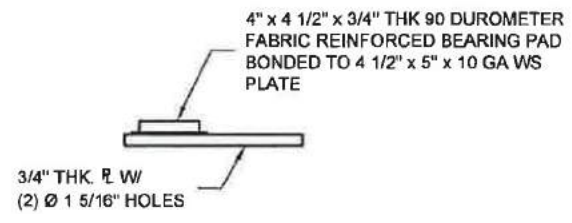


**3** FIXED END



**3** EXPANSION END

**3** BEARING ASSEMBLY - SIDE VIEW

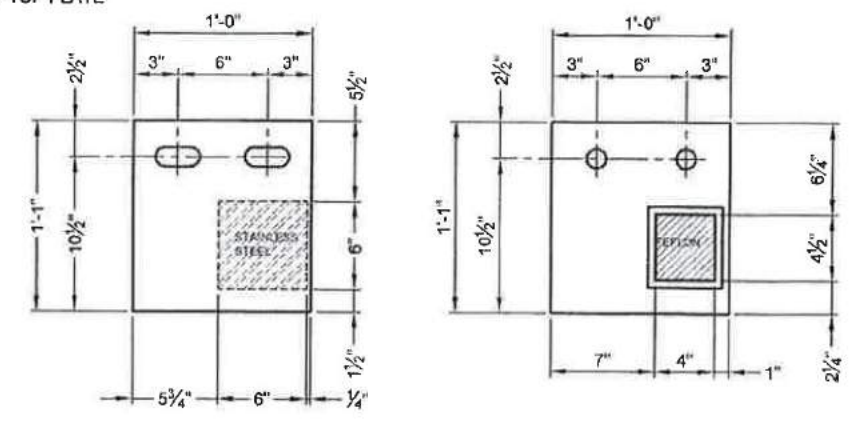


**FIXED BEARING ASSEMBLY**

**BEARING PAD SPECIFICATIONS**  
 PREFORMED FABRIC REINFORCED ELASTOMERIC TYPE PF

**PHYSICAL PROPERTIES:**  
 -ELASTOMER DUROMETER: 60±5 (SHORE A)  
 -FINISHED PAD DUROMETER: 90±5 (SHORE A)  
 -COMPRESSIVE STRENGTH: 13,000 PSI MAX  
 -MAXIMUM DESIGN PRESSURE: 1500 PSI  
 -AASHTO GRADE

**GUIDE SPECIFICATIONS:**  
 -MEETS DESIGN REQUIREMENTS OF AASHTO LRFD 2008  
 -COMPLIES WITH MIL-C882-E MILITARY SPECIFICATION AND P.C.I.

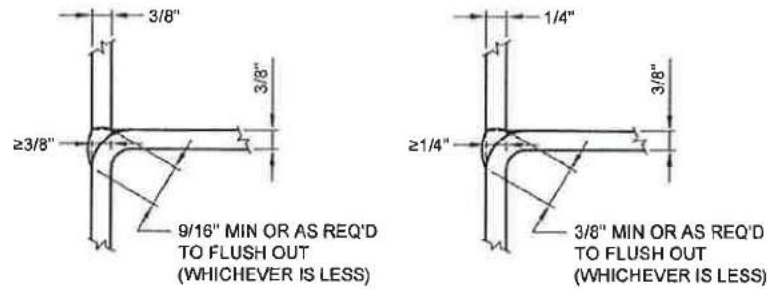


**EXPANSION BEARING ASSEMBLY**



<p>100'-0" x 8'-0" (BUILD 2)                  CITY OF MOORE                  PEDESTRIAN BRIDGE                  MOORE, OK</p>	
DATE	3/28/2014
DESIGNED	GHM
DRAWN	KBK
CHECKED	GHM
APPROVED	BAH
PROJECT No.	498831
SEQUENCE No.	10 & 20
SHEET	2 OF 5

# FOR CONTRACTOR INFORMATION ONLY - PEDESTRIAN BRIDGE UNITS AVAILABLE AT SITE



MATCHED EDGES OF:

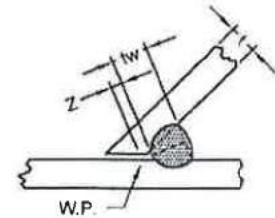
1. CHORDS TO END VERTICALS
- TO BE PARTIAL PENETRATION WELDS.

**4** WELD DETAIL  
2,3

MATCHED EDGES OF:

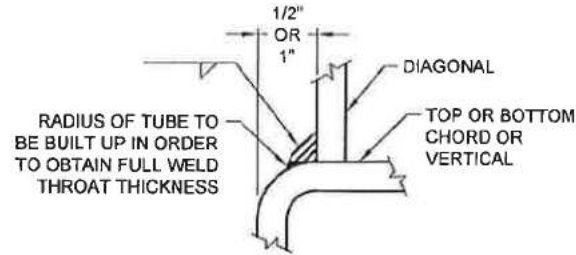
1. VERTICALS TO BOTH CHORDS
  2. END FLOOR BEAMS TO END VERTICALS
- TO BE PARTIAL PENETRATION WELDS.

**5** WELD DETAIL  
1,2



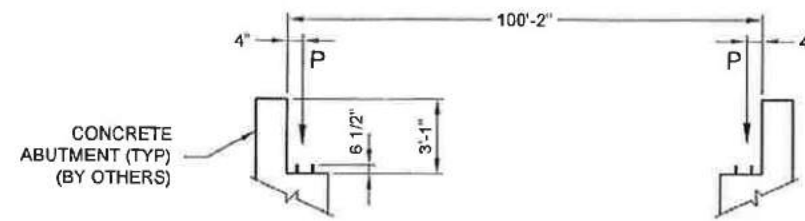
"Z" LOSS DIMENSION TO BE DETERMINED IN ACCORDANCE WITH AWS D1.1 - TABLE 2.9

**6** WELD DETAIL  
1,3



RADIUS OF TUBE TO BE BUILT UP IN ORDER TO OBTAIN FULL WELD THROAT THICKNESS

**7** WELD DETAIL  
1,3



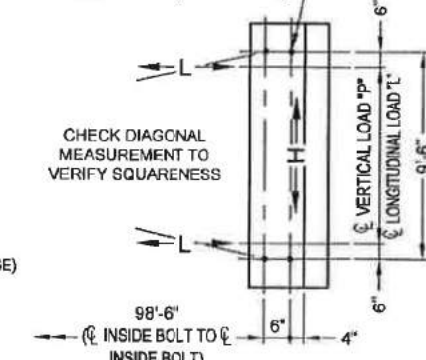
CONCRETE ABUTMENT (TYP) (BY OTHERS)

**ANCHOR BOLT ELEVATION**

COMBINE REACTIONS AS PER LOCAL OR GOVERNING BUILDING CODES AS REQUIRED

BRIDGE REACTIONS	DOWNWARD LOAD		
	P (LBS)	H (LBS)	L (LBS)
DEAD LOAD ②	22,550		
UNIFORM LIVE LOAD	18,000		
VEHICLE LOAD	4,000		
WIND UPLIFT 20 PSF	-8,750		
WIND LEeward	-2,250		
WIND	-6,310	12,250	
THERMAL ②			3,363

(8) Ø 1" ASTM F1554 GRADE 36 GALV. ANCHOR RODS W/(2) NUTS AND (1) 2 1/2" O.D. WASHER EACH. (BY OTHERS)



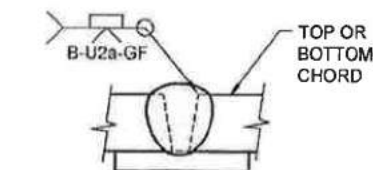
CHECK DIAGONAL MEASUREMENT TO VERIFY SQUARENESS

**PLAN**

\*P\* - VERTICAL LOAD EACH BASE PLATE (4 PER BRIDGE)  
\*H\* - HORIZONTAL LOAD EACH FOOTING (2 PER BRIDGE)  
\*L\* - LONGITUDINAL LOAD EACH BASE PLATE (4 PER BRIDGE)

- ① BRIDGE LIFTING WEIGHT: 28,800 LBS
- ② FINAL BRIDGE WEIGHT: 90,200 LBS

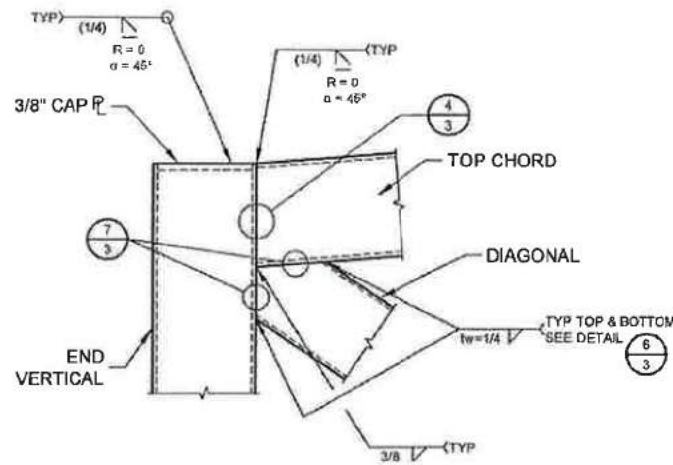
- ① DOES NOT INCLUDE WEIGHT OF CONCRETE DECK.
- ② INCLUDES WEIGHT OF CONCRETE DECK.



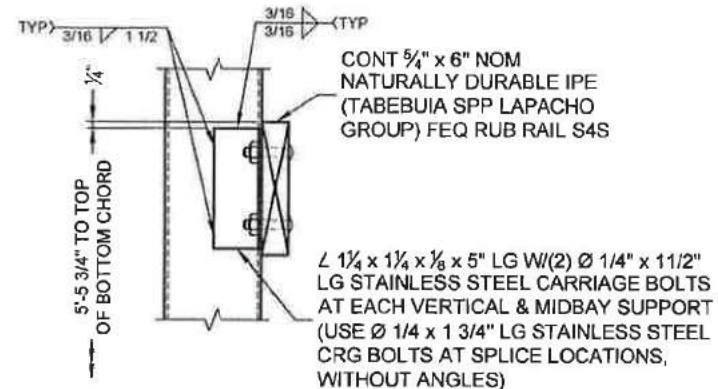
**CHORD SHOP SPLICE**

TYPICAL

SHOP NOTE:  
IF CHORD SPLICE IS REQUIRED,  
NOTIFY ENGINEER OF PREFERRED LOCATION.



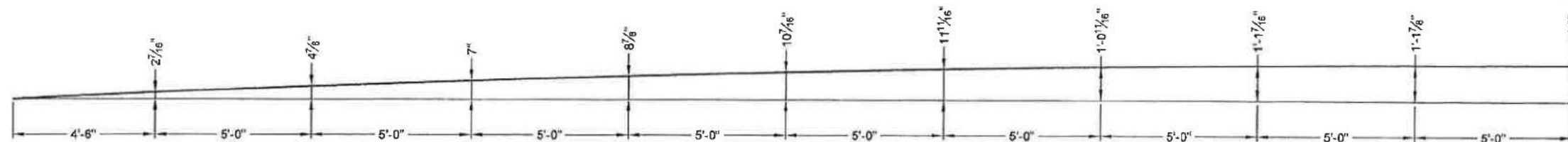
**8** WELD DETAIL  
1



**9** RUB RAIL DETAIL  
1

CONT 5/4" x 6" NOM NATURALLY DURABLE IPE (TABEBUIA SPP LAPACHO GROUP) FEQ RUB RAIL S4S

∠ 1 1/4 x 1 1/4 x 1/8 x 5" LG W/(2) Ø 1/4" x 1 1/2" LG STAINLESS STEEL CARRIAGE BOLTS AT EACH VERTICAL & MIDBAY SUPPORT (USE Ø 1/4 x 1 3/4" LG STAINLESS STEEL CRG BOLTS AT SPLICE LOCATIONS, WITHOUT ANGLES)



**SHOP CAMBER DETAIL**

The design and information shown on this drawing is provided as a service to the project owner. Professional liability insurance is not a substitute for the professional engineer's seal and signature. It is the responsibility of the contractor to verify the accuracy of the information shown on this drawing. If discrepancies between the information shown on this drawing and the actual field conditions are discovered, the contractor shall be responsible for the design and construction. The contractor shall accept full responsibility for the design and construction of the project.

MARK	DATE	REVISION DESCRIPTION	BY

100'-0" x 8'-0" (BUILD 2)  
CITY OF MOORE  
PEDESTRIAN BRIDGE  
MOORE, OK

CONTECH  
CONTRACT  
DRAWING

Brent Alan Hulsey  
25744  
OKLAHOMA  
2014

**CONTECH**  
ENGINEERING, PROFESSIONAL CORPORATION

8301 State Highway 28 North, Newcastle, MN 55359  
800-325-3047 320-432-7500 320-952-7087 FAX

**CONTINENTAL**  
BRIDGE

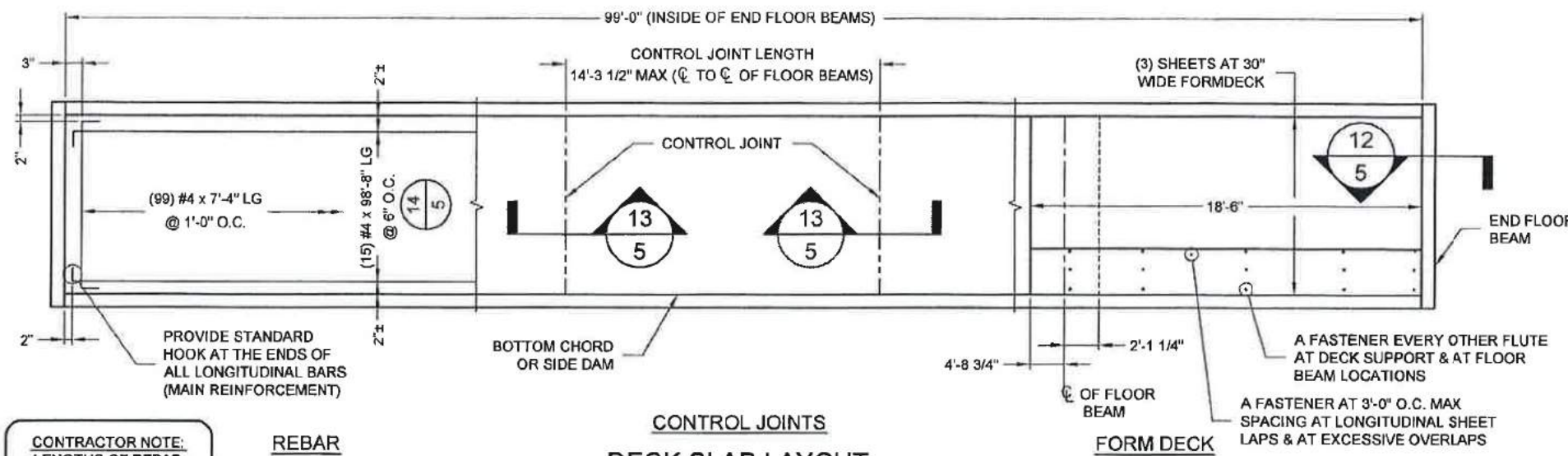
DATE	3/28/2014	
DESIGNED	GHM	KBK
DRAWN	GHM	BAH
CHECKED	APPROVED:	
PROJECT No.	496831	SEQUENCE No.:
		10 & 20
SHEET	3 of 5	

I:\WORK\PROJECTS\ACTIVE\89004\8831\496831-10\CONTINENTAL\_PEDESTRIANBRIDGES\FABRICATION\8831.DWG 3/28/2014 1:48 PM



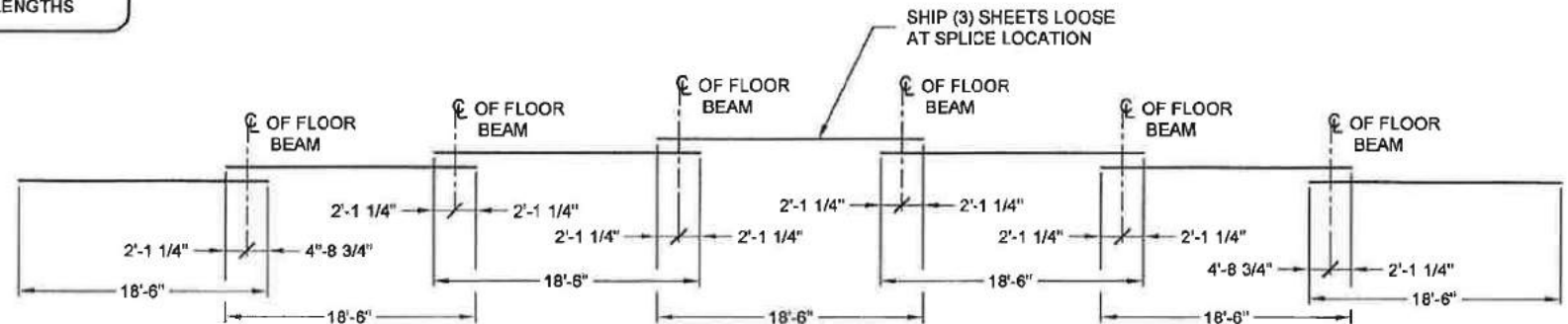


# FOR CONTRACTOR INFORMATION ONLY - PEDESTRIAN BRIDGE UNITS AVAILABLE AT SITE



**CONTRACTOR NOTE:**  
LENGTHS OF REBAR  
DO NOT INCLUDE  
HOOK LENGTHS

**REBAR**



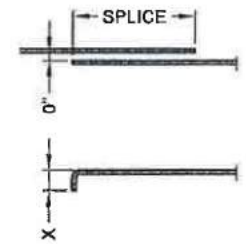
**DECK & CONCRETE NOTES**

- GALVANIZED FORM DECK SHALL BE CANAM STEEL DECK UF2X-20 GAGE. FORM DECK WILL BE SHOP ATTACHED TO FLOOR BEAMS WITH #12-24 X 1 1/4" SELF-DRILLING FASTENERS WITH 1" O.D. WASHERS OR 1" X 3/16" POWER ACTUATED FASTENERS.
  - BAR REINFORCEMENT SHALL BE GRADE 60 MINIMUM AND CONFORM TO THE REQUIREMENTS OF ASTM A 615.
  - CONCRETE DECK AND REINFORCING TO BE AS SHOWN ON DRAWINGS AND TO BE FURNISHED AND INSTALLED BY OTHERS. THE COMPRESSIVE STRENGTH OF THE CONCRETE (F<sub>c</sub>) MUST BE A MINIMUM OF 4,000 PSI (28 DAY STRENGTH). BRIDGE IS DESIGNED FOR NORMAL WEIGHT (145 PCF) CONCRETE WITH A MAXIMUM AGGREGATE SIZE OF 3/4". INSTALL BRIDGE PRIOR TO POURING CONCRETE.
  - CONCRETE COVER OF 2 1/4" ABOVE LONGITUDINAL REINFORCEMENT SHALL BE STRICTLY MAINTAINED.
  - CONCRETE DESIGN, QUALITY, MIXING, AND PLACING SHALL BE IN ACCORDANCE WITH BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE ACI 318-99 AND SPECIFICATIONS FOR STRUCTURAL CONCRETE ACI 301-89.
  - COMPRESSION TEST SPECIMENS SHALL BE TAKEN DURING CONSTRUCTION TO INSURE COMPLIANCE WITH CONCRETE STRENGTH REQUIREMENTS. EVALUATION AND ACCEPTANCE OF THE COMPRESSIVE STRENGTH OF CONCRETE SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF ACI 318-99, CHAPTER 5 "CONCRETE QUALITY, MIXING, AND PLACING." ALL CONCRETE WHICH FAILS TO MEET THE ACI REQUIREMENTS IS SUBJECT TO REMOVAL AND REPLACEMENT AT THE COST OF THE CONTRACTOR.
  - THE CONTRACTOR MUST EXERCISE CARE TO CONTROL TRAFFIC AND STORAGE OF MATERIALS ON THE FORM DECK BEFORE POURING THE SLAB. SPANS MUST BE PLANKED OR OTHERWISE PROTECTED AGAINST DAMAGE FROM WORKERS WALKING ON THE MATERIAL, CONSTRUCTION TRAFFIC AND CONCRETE PLACING EQUIPMENT.
- THESE SPECIFICATIONS SHALL BE THE MINIMUM REQUIREMENTS FOR THE BRIDGE DECK SLAB. MORE STRINGENT REQUIREMENTS SPECIFIED BY LOCAL GOVERNING BODIES MAY BE APPLICABLE.

**CAUTION:**  
WE ARE PROVIDING STAY-IN-PLACE FORM DECKING TO ACCEPT A CONCRETE DECK ON THIS STRUCTURE IN ACCORDANCE WITH THE SPECIFICATIONS AND/OR THE CONTRACT DOCUMENTS. BE AWARE THAT MOST PEDESTRIAN BRIDGE LIABILITY CLAIMS ARE STATISTICALLY SLIP AND FALL CLAIMS. IT IS THE OWNER'S AND/OR THE CONCRETE INSTALLER'S RESPONSIBILITY TO PROVIDE A NON-SKID FINISH ON THE CONCRETE DECK. WE RECOMMEND, AS A MINIMUM, A ROUGHENED BROOM FINISH BE USED ON ALL DECK SURFACES.

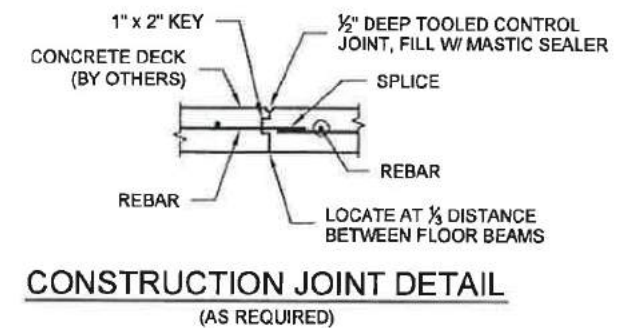
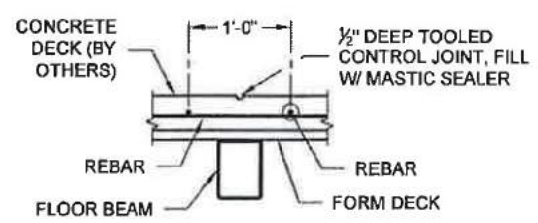
**NOTE:**  
IF SPLICE IS REQUIRED IN LONGITUDINAL REBARS, LAP SPLICE LENGTH WILL BE AS SHOWN. STAGGER SPLICED REBAR EVERY OTHER LONGITUDINAL BAR AND LOCATE AT 1/2 DISTANCE BETWEEN FLOOR BEAMS.

LENGTH (INCHES)		
BAR SIZE	HOOK X	SPLICE
#3	6"	19"
#4	8"	25"
#5	9"	31"
#6	10"	37"



THE TABLES SHOWN ARE FOR f<sub>c</sub> = 4,000 PSI (MINIMUM) AND f<sub>y</sub> = 60,000 PSI

**STANDARD SPLICE AND HOOK LENGTH DETAILS**  
NORMAL WEIGHT CONCRETE (145 PCF)



The design and information shown on this drawing is the property of Contech Engineering, Professional Corporation ("Contech"). Neither this drawing, nor any part hereof, shall be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or by any information storage and retrieval system, without the prior written permission of Contech. Failure to comply is cause for the user's own liability and Contech expressly disclaims any liability or responsibility for such use.

If discrepancies between the supplied information and the actual field conditions are noted, the contractor shall immediately report to Contech. Contech shall have the right to investigate the discrepancy and to require the contractor to incorporate or fabricate information supplied by others.

MARK	DATE	REVISION DESCRIPTION	BY

**100'-0" x 8'-0" (BUILD 2)**  
**CITY OF MOORE**  
**PEDESTRIAN BRIDGE**  
**MOORE, OK**

CONTECH CONTRACT

**BRENT ALAN HULSEY**  
25744  
LICENSED PROFESSIONAL ENGINEER  
OKLAHOMA

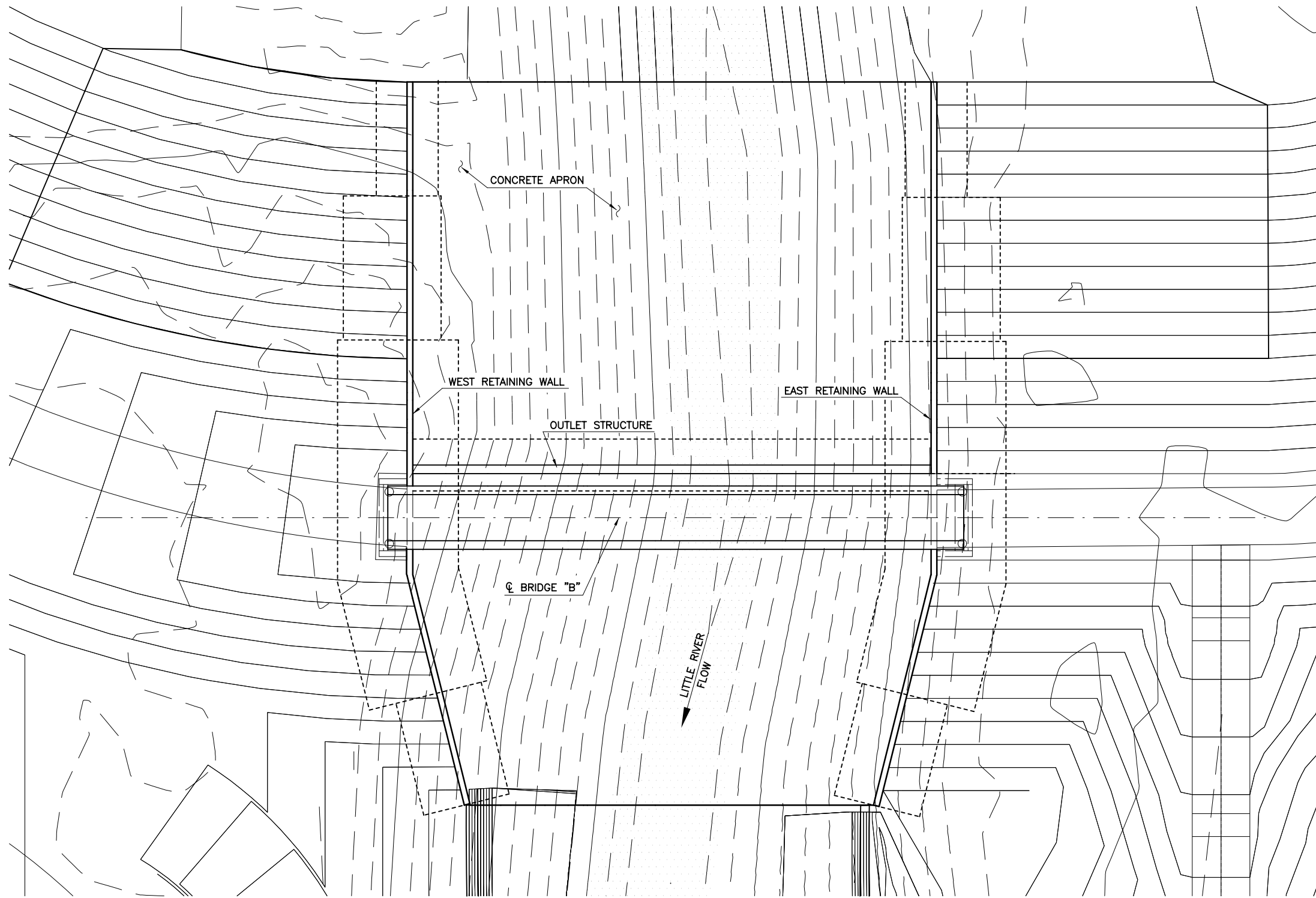
28 MAR 2014

CONTECH ENGINEERING, PROFESSIONAL CORPORATION  
5071 State Highway 28 North, Moore, OK 73160  
800-328-2047 202-462-7000 329-462-7007 FAX

CONTINENTAL BRIDGE

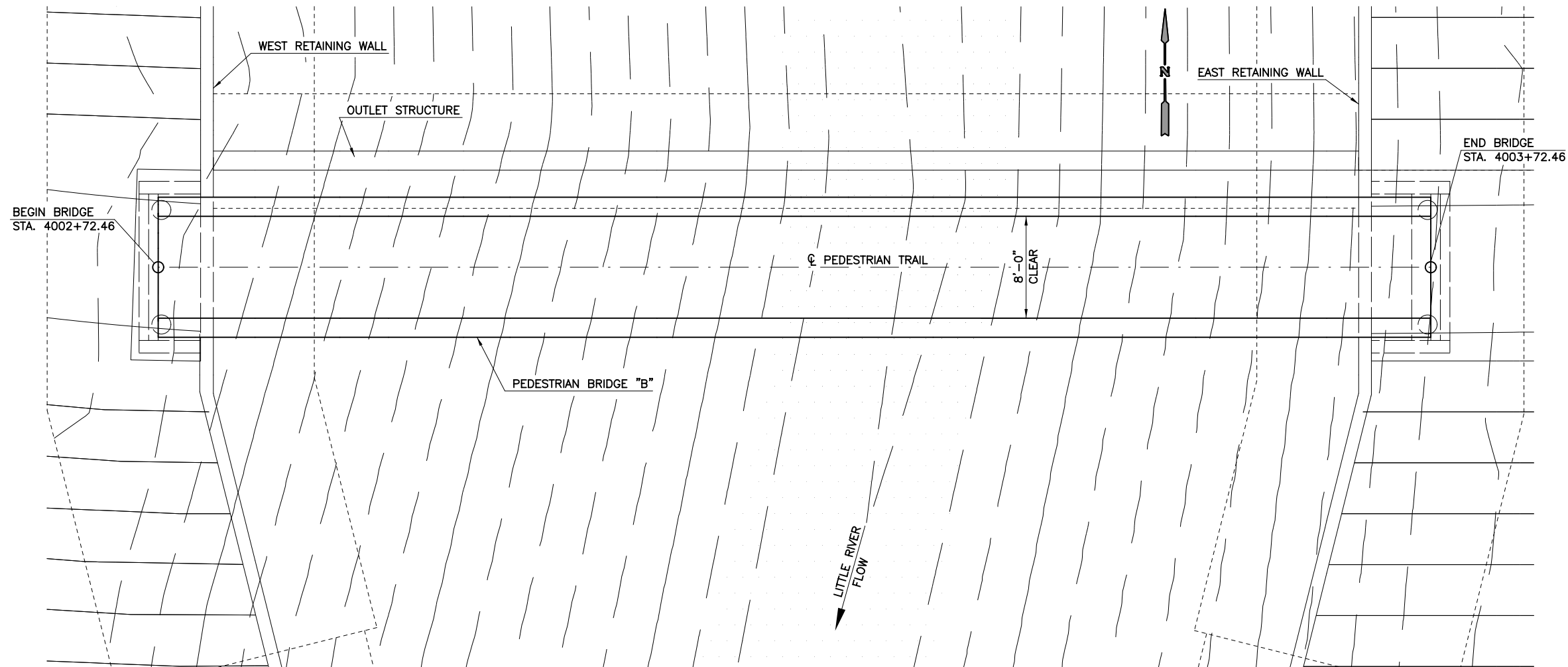
DATE:	3/28/2014	
DESIGNED:	GHM	DRAWN: KBK
CHECKED:	GHM	APPROVED: BAH
PROJECT No:	498831	SEQUENCE No.: 10 & 20
SHEET:	5 of 5	

jenkins 2/5/2018 7:04:39 AM  
 cpyb&w\_ANSIB.tbl cpypdf\_ANSIB.plt  
 pw:/Active Projects/MEAS1500380.00/MEAS1500380.00/Plans and Drawings/8.30 Cut Sheets/8.3.07 Bridge/152800OUTLET-Gen-Plan.dgn



LOCATION PLAN

GENERAL PLAN OUTLET STRUCTURE AND BRIDGE "B"			
LITTLE RIVER PARK DRAINAGE IMPROVEMENT			
CITY OF MOORE			
<b>CP&amp;Y</b>			
PLAN SCALE	DRAWN	CPY	APPROVED:
	DESIGNED	CPY	
	SURVEY		
PROFILE SCALE	RECOMMENDED		
HORIZONTAL:	DEVELOPMENT SERVICES		
VERTICAL:	RECOMMENDED		
	DEPUTY DIRECTOR		PUBLIC WORKS DIRECTOR
FILE:	DRAWING:	DATE:	
SHEET NO. 46 OF 112			



PLAN

DESIGN DATA

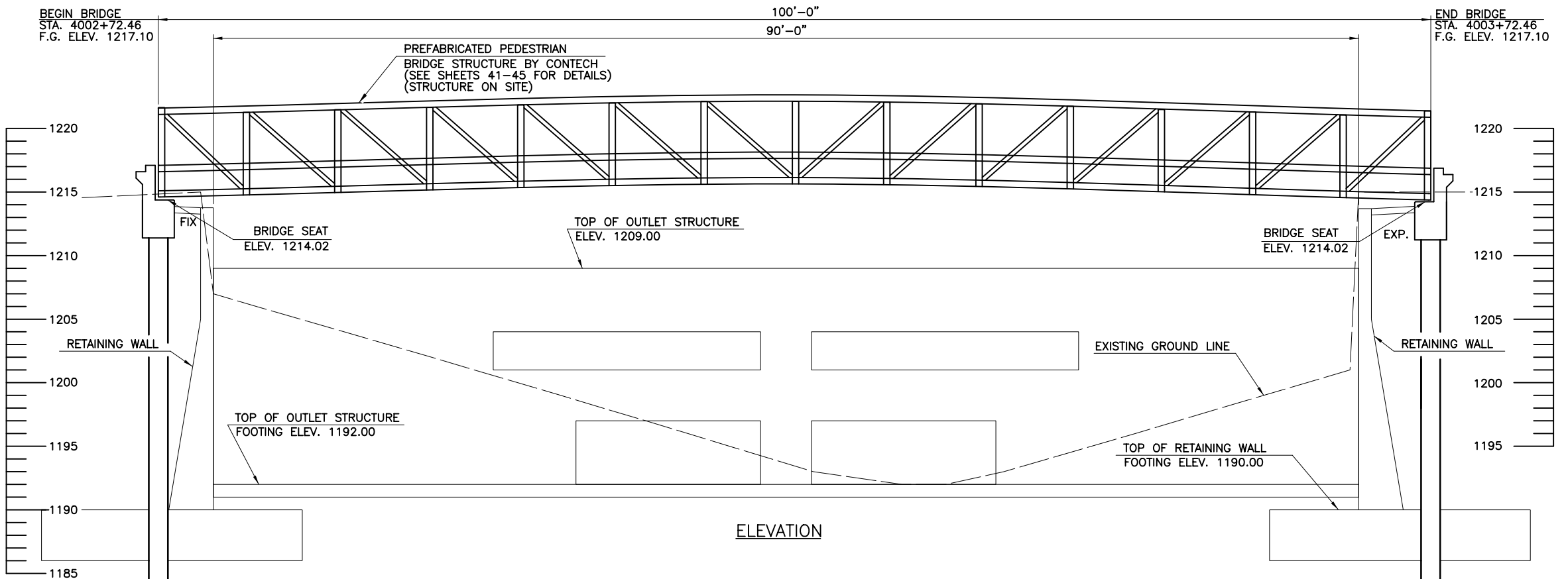
AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 7TH EDITION WITH CURRENT INTERIMS

INDEX OF SHEETS

47 GENERAL PLAN AND ELEVATION  
48-49 BRIDGE "B" DETAILS

FOUNDATION DATA

FOR FOUNDATION GEOTECHNICAL DATA, SEE GEOTECHNICAL ENGINEERING REPORT PREPARED BY TERRACON JULY 7, 2017.



GENERAL PLAN AND ELEVATION  
BRIDGE "B"

LITTLE RIVER PARK DRAINAGE IMPROVEMENT

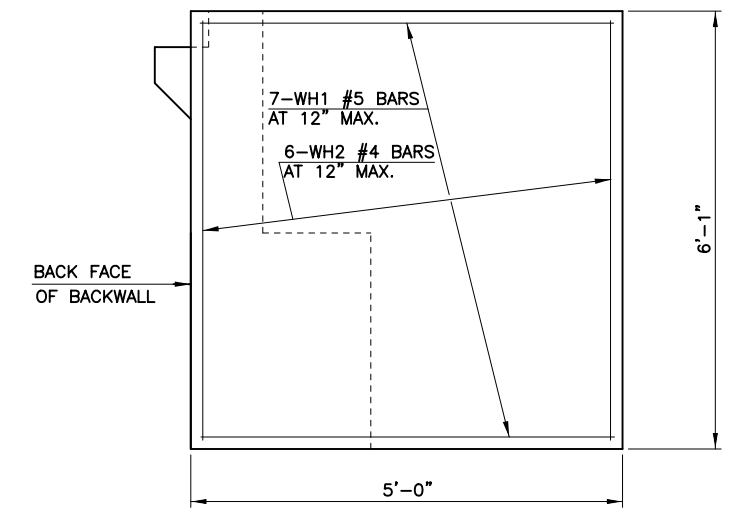
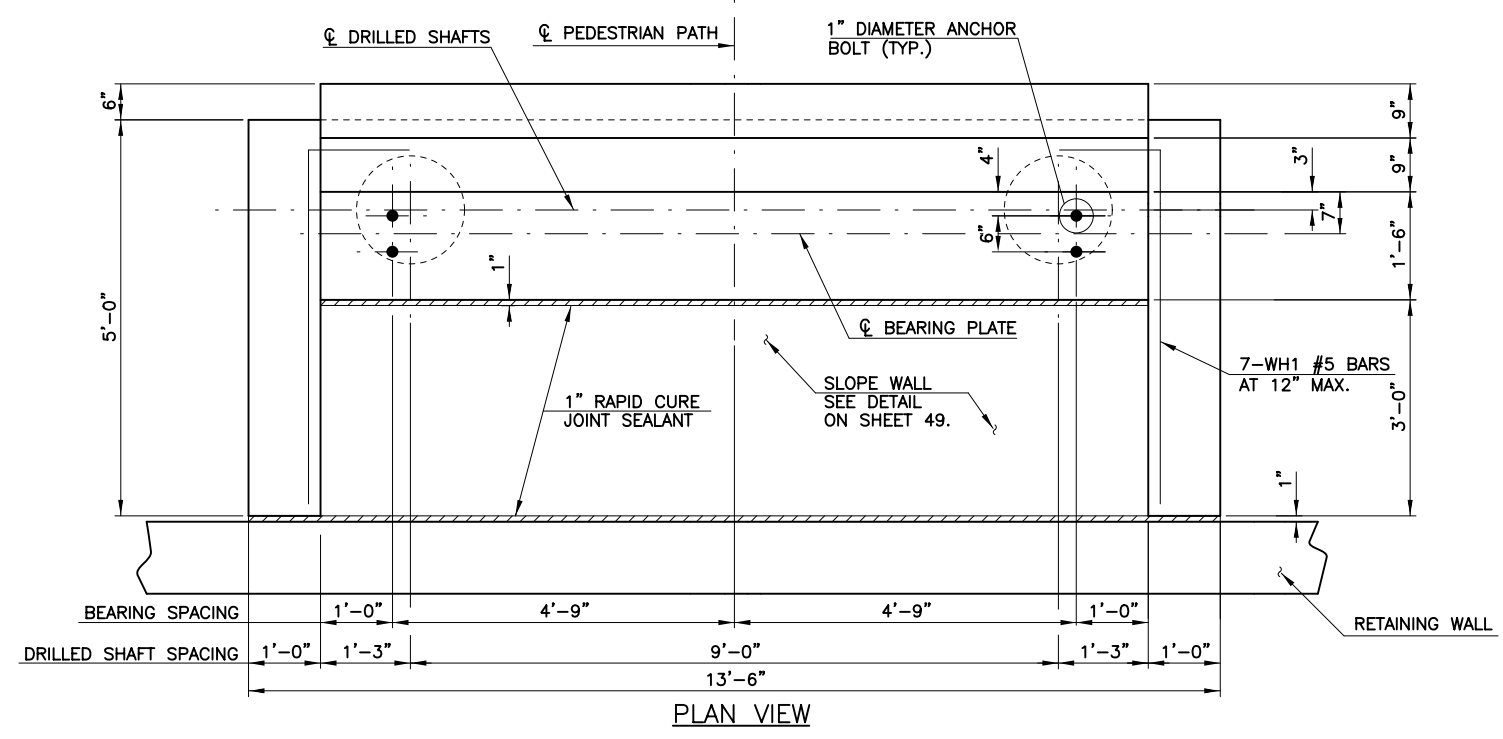
CITY OF MOORE



PLAN SCALE	DRAWN	CPY	APPROVED:
	DESIGNED	CPY	
	SURVEY		
PROFILE SCALE	RECOMMENDED		
HORIZONTAL:	DEVELOPMENT SERVICES		
VERTICAL:	RECOMMENDED		
	DEPUTY DIRECTOR		PUBLIC WORKS DIRECTOR
FILE:	DRAWING:	DATE:	
SHEET NO. 47 OF 112			

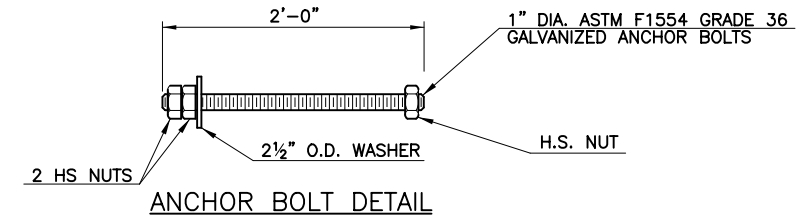
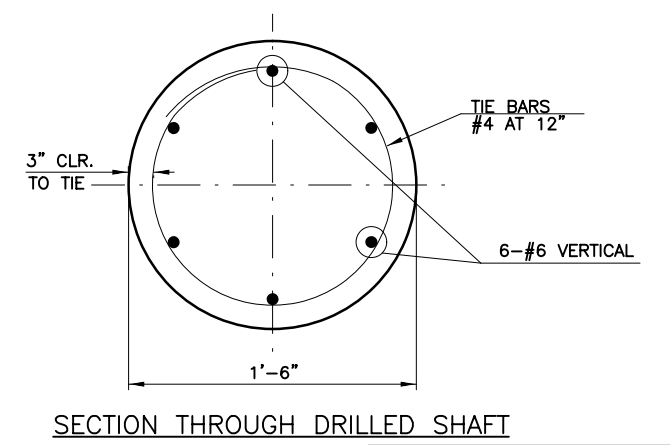
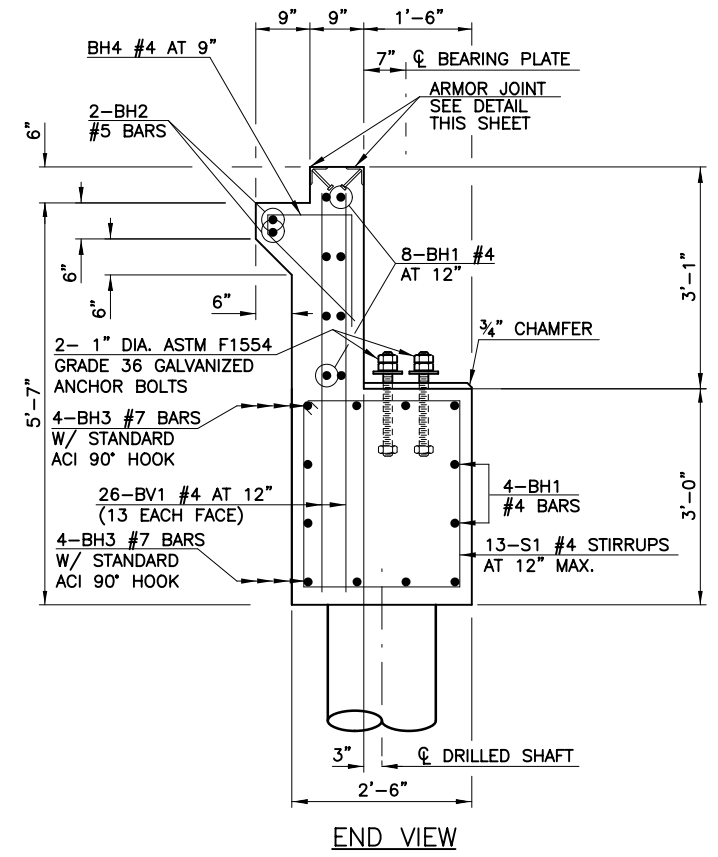
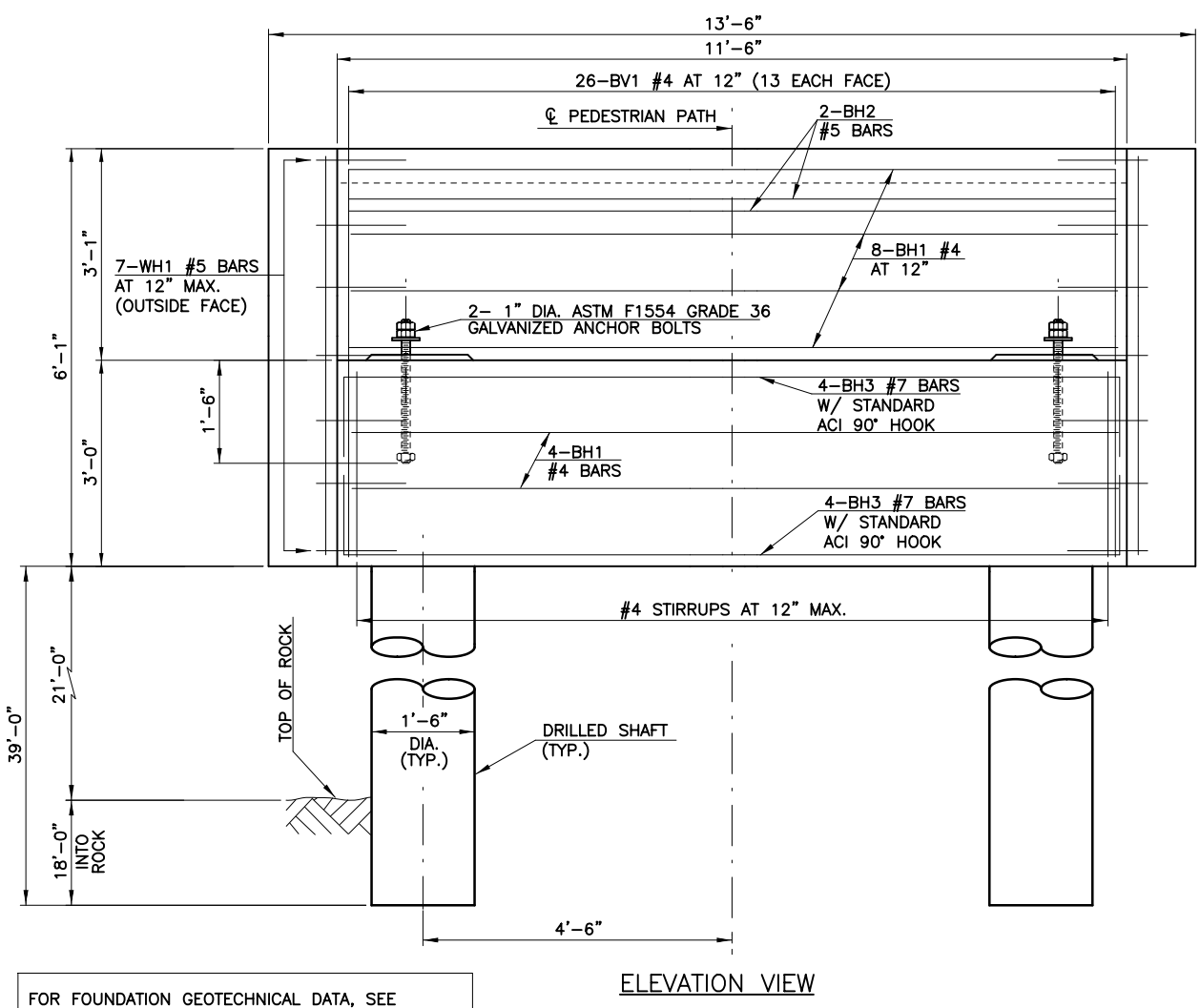
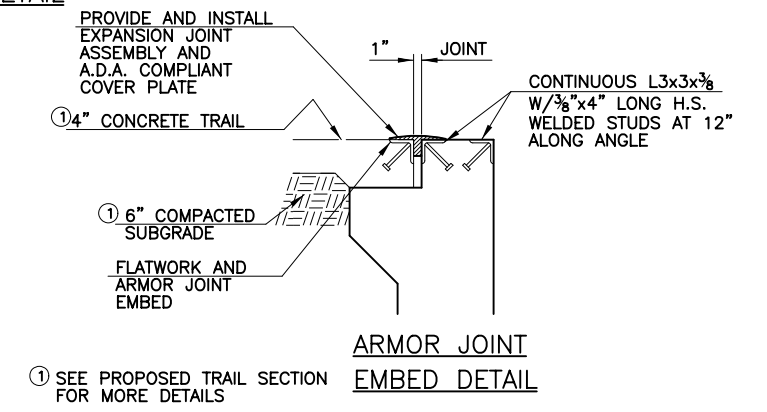
jenkins 7:04:41 AM 2/5/2018  
 cpyb&w\_ANSIB.tbl cpypdf\_ANSIB.plt  
 pw:/Active Projects/MEAS1500380.00/MEAS1500380.01/8.00 Plans and Drawings/8.30 Cut Sheets/8.3.07 Bridge/15280GPE-south-10.dgn

jenkins 2/5/2018 7:04:43 AM  
 cpyb&w\_ANSIB.tbl  
 cpybdf\_ANSIB.plt  
 MEAS1500380.00/MEAS1500380.01/8.00 Plans and Drawings/8.30 Cut Sheets/8.3.07 Bridge/15280BRB01.dgn



- PLAN NOTES:**
1. ALL CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3,000 P.S.I.
  2. ALL REINFORCING SHALL BE ASTM A615 GRADE 60.
  3. ALL REBAR BENDS SHALL CONFORM TO CURRENT ACI DETAILING REQUIREMENTS.
  4. ALL DRILLED SHAFTS SHALL BEAR IN MODERATELY HARD FOUNDATION LOCATED 21' BELOW GRADE.
  5. ALL COSTS ASSOCIATED WITH PROVIDING AND INSTALLING ANCHOR BOLTS AND EXPANSION JOINT ASSEMBLY SHALL BE INCLUDED IN THE PRICE BID FOR "INSTALLATION OF BRIDGE ITEMS".

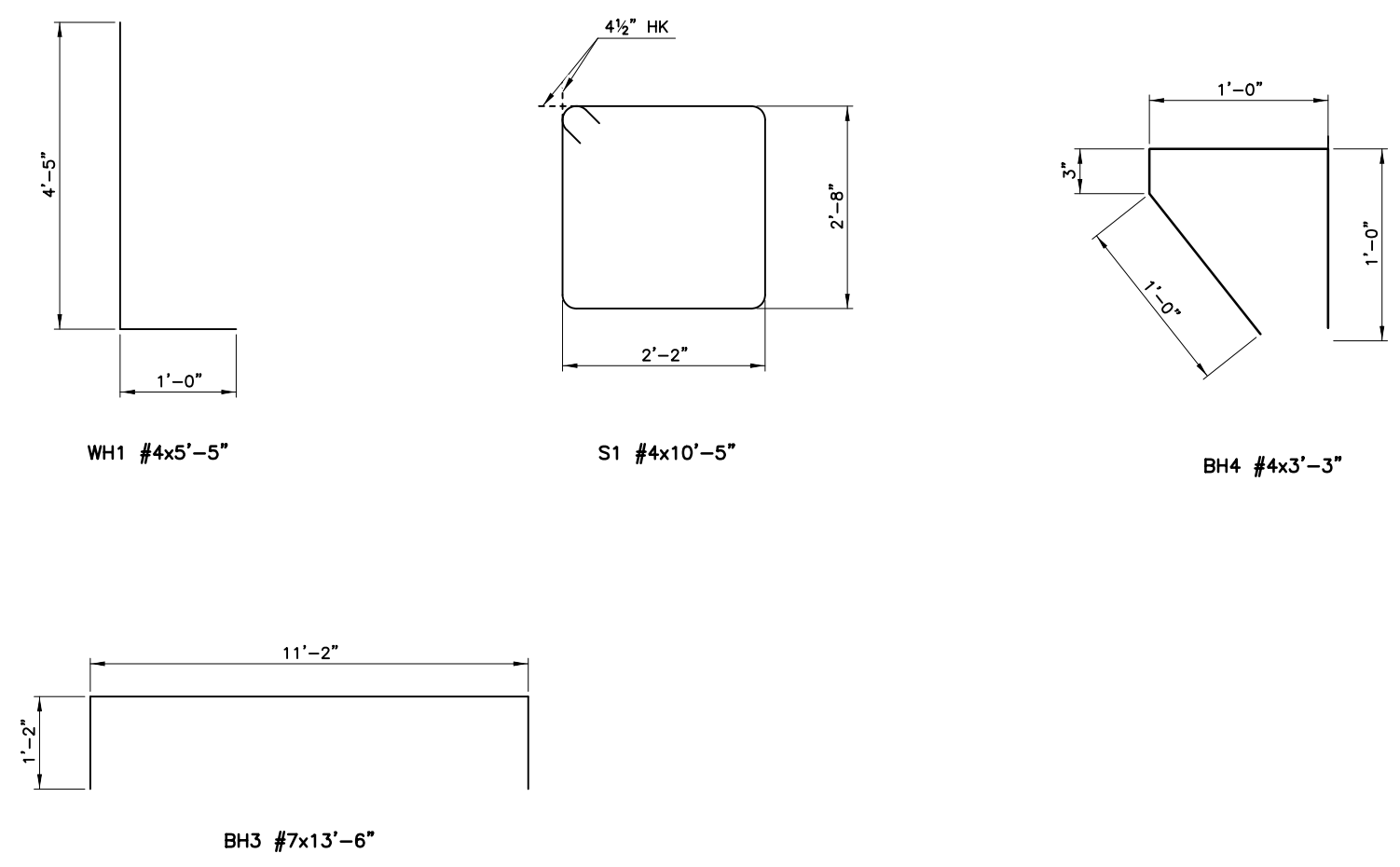
**NOTE:**  
 HEADED STUDS AND ANGLES SHALL BE HOT DIP GALVANIZED AFTER WELDING STUDS TO ANGLES



FOR FOUNDATION GEOTECHNICAL DATA, SEE GEOTECHNICAL ENGINEERING REPORT PREPARED BY TERRACON JULY 7, 2017.

BRIDGE "B" DETAILS			
LITTLE RIVER PARK DRAINAGE IMPROVEMENT			
CITY OF MOORE			
<b>CP&amp;Y</b>			
PLAN SCALE	DRAWN	CPY	APPROVED:
	DESIGNED	CPY	
	SURVEY		
PROFILE SCALE	RECOMMENDED		
HORIZONTAL:	DEVELOPMENT SERVICES		
VERTICAL:	RECOMMENDED		
	DEPUTY DIRECTOR		PUBLIC WORKS DIRECTOR
FILE:	DRAWING:	DATE:	
SHEET NO. 48 OF 112			

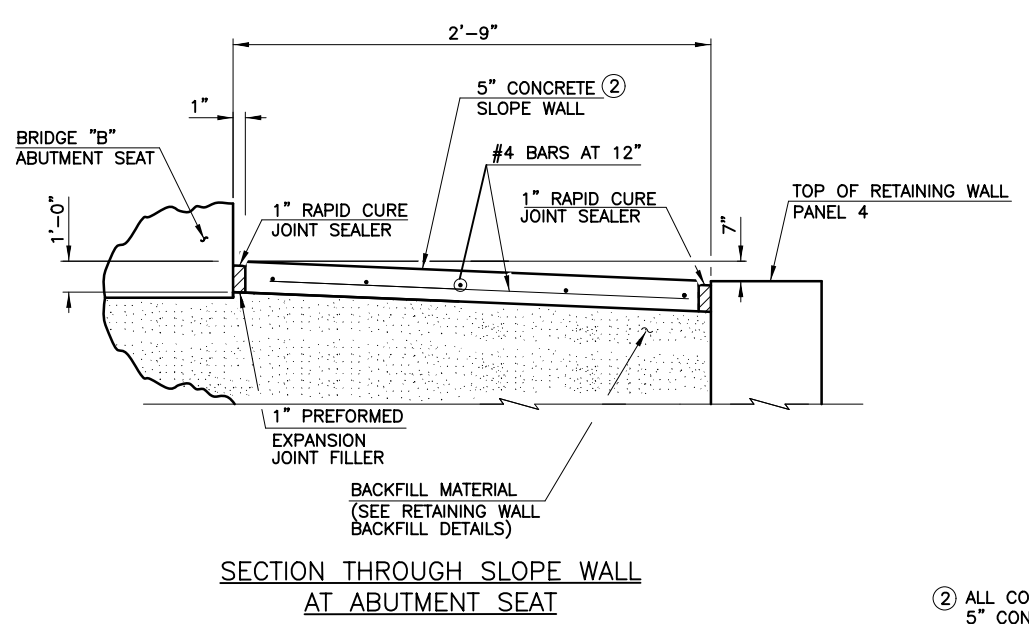
7:04:45 AM  
 cpyb&w\_ANSIB.tbl  
 2/5/2018  
 cpyb&w\_ANSIB.plt  
 MEAS1500380.00/MEAS1500380.01/8.00 Plans and Drawings/8.30 Cut Sheets/8.3.07 Bridge/15280BRB02.dgn



ABUTMENT REINFORCING BAR LIST					
MARK	SIZE	NO.	FORM	LENGTH	LENGTH VARIATION
BH1	#4	12	STR.	11'-2"	
BH2	#5	2	STR.	11'-2"	
BH3	#7	8	BNT.	13'-6"	
BH4	#4	16	BNT.	3'-2"	
BV1	#4	26	STR.	5'-9"	
S1	#4	13	BNT.	10'-5"	
WH1	#4	16	BNT.	5'-5"	
WV1	#4	32	STR.	5'-9"	

ABUTMENT QUANTITIES		
DESCRIPTION	UNIT	TOTAL
DRILLED SHAFTS 18" DIAMETER	LF	156.00
STRUCTURAL CONCRETE	CY	6.90
REINFORCING STEEL	LB	740.00

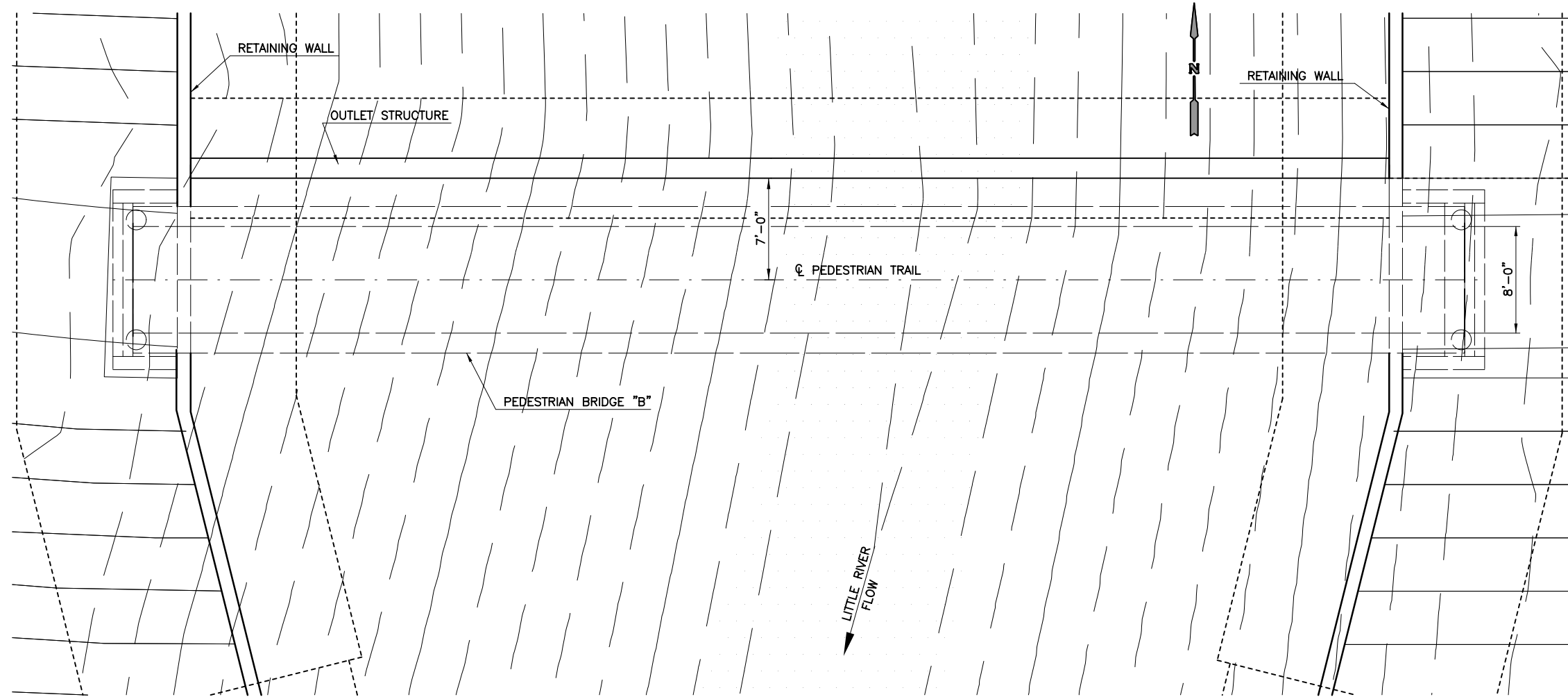
① ALL COSTS ASSOCIATED WITH EXCAVATION FOR CONSTRUCTING THE ABUTMENTS SHALL BE INCLUDED IN THE PRICE BID PER CUBIC YARD OF STRUCTURAL CONCRETE.



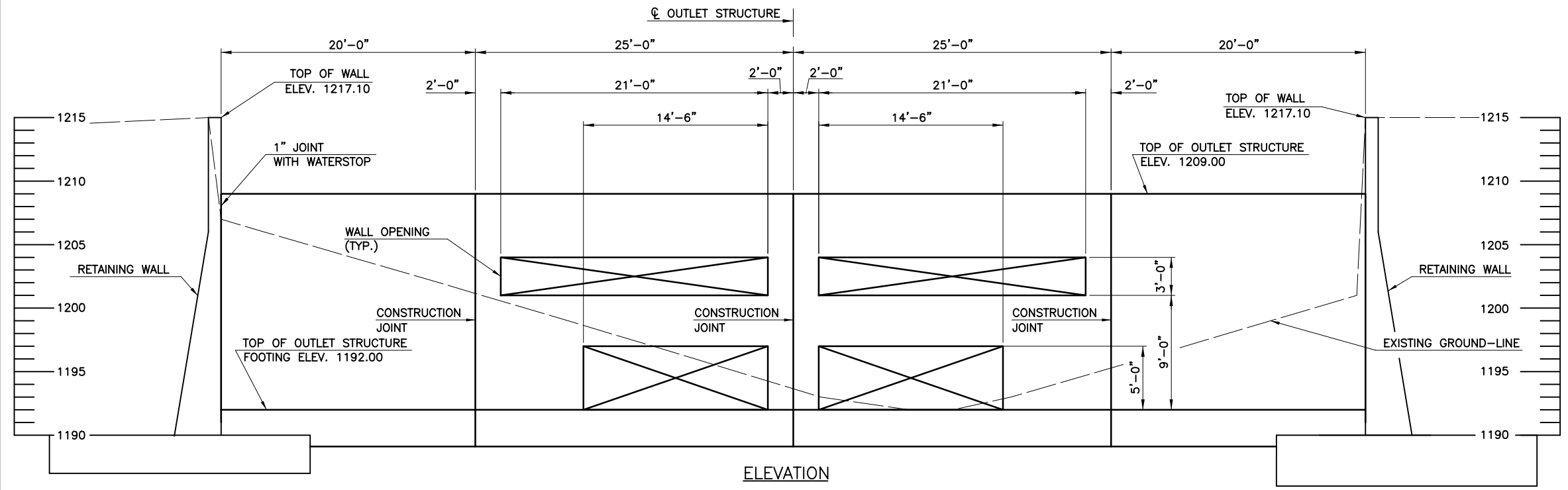
② ALL COSTS ASSOCIATED WITH CONSTRUCTING THE 5" CONCRETE SLOPE WALL AS SHOWN, INCLUDING THE RAPID CURE JOINT SEALER AND PREFORMED EXPANSION JOINT FILLER, SHALL BE INCLUDED IN THE PRICE BID PER CUBIC YARD OF STRUCTURAL CONCRETE AND PRICE BID PER POUND OF REINFORCING STEEL.

BRIDGE "B" DETAILS			
LITTLE RIVER PARK DRAINAGE IMPROVEMENT			
CITY OF MOORE			
<b>CP&amp;Y</b>			
PLAN SCALE	DRAWN	CPY	APPROVED:
	DESIGNED	CPY	
	SURVEY		
PROFILE SCALE	RECOMMENDED		
HORIZONTAL:	DEVELOPMENT SERVICES		
VERTICAL:	RECOMMENDED		
	DEPUTY DIRECTOR		PUBLIC WORKS DIRECTOR
FILE:	DRAWING:	DATE:	
SHEET NO. 49 OF 112			

jenkins 7:04:48 AM 2/5/2018  
 cpyb&w\_ANSIB.tbl cpybdf\_ANSIB.plt  
 pw:/Active Projects/MEAS1500380.00/MEAS1500380.01/8.00 Plans and Drawings/8.30 Cut Sheets/8.3.07 Bridge/152800OUTLET-GPE-South.dgn



PLAN



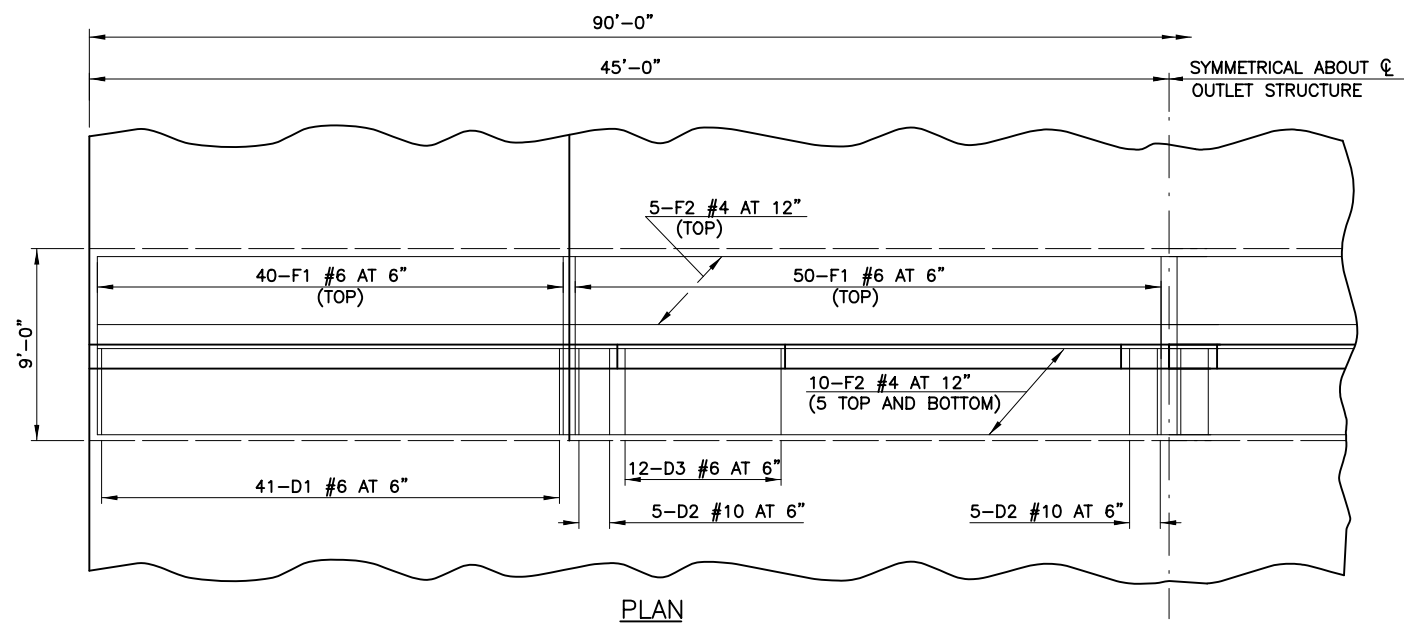
ELEVATION

**DESIGN DATA**  
 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS,  
 7TH EDITION WITH CURRENT INTERIMS

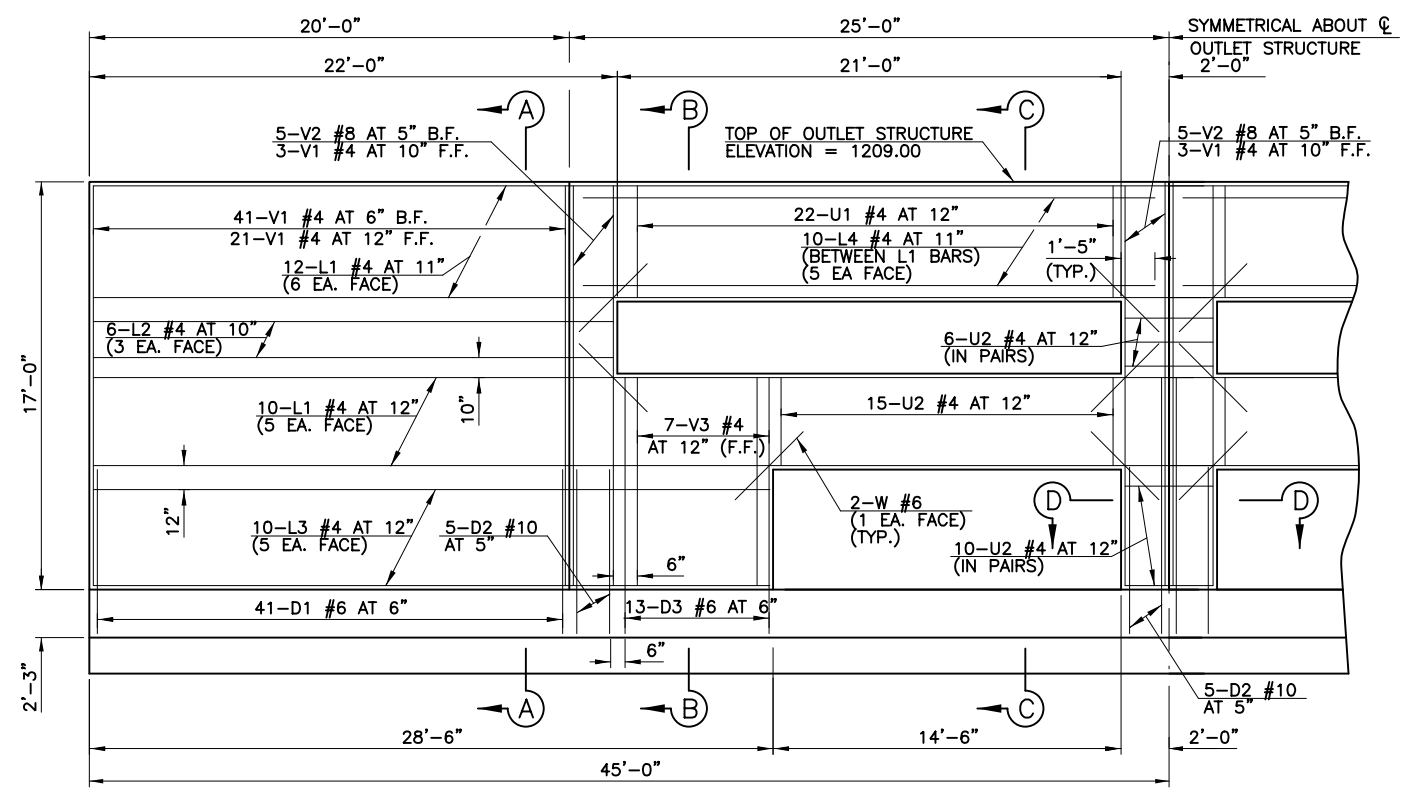
**INDEX OF SHEETS**  
 50 GENERAL PLAN AND ELEVATION  
 51-52 BRIDGE "B" DETAILS

GENERAL PLAN AND ELEVATION OUTLET STRUCTURE			
LITTLE RIVER PARK DRAINAGE IMPROVEMENT			
CITY OF MOORE			
<b>CP&amp;Y</b>			
PLAN SCALE	DRAWN	CPY	APPROVED:
	DESIGNED	CPY	
	SURVEY		
PROFILE SCALE	RECOMMENDED		
HORIZONTAL:	DEVELOPMENT SERVICES		
VERTICAL:	RECOMMENDED		
	DEPUTY DIRECTOR		PUBLIC WORKS DIRECTOR
FILE:	DRAWING:	DATE:	
SHEET NO. 50 OF 112			

7:04:50 AM  
 cpyb&w\_ANSIB.tbl  
 2/5/2018  
 cpyb&w\_ANSIB.plt  
 MEAS1500380.00/MEAS1500380.00/MEAS1500380.01/8.00 Plans and Drawings/8.30 Cut Sheets/8.3.07 Bridge/15280OUTLET-STR.dgn

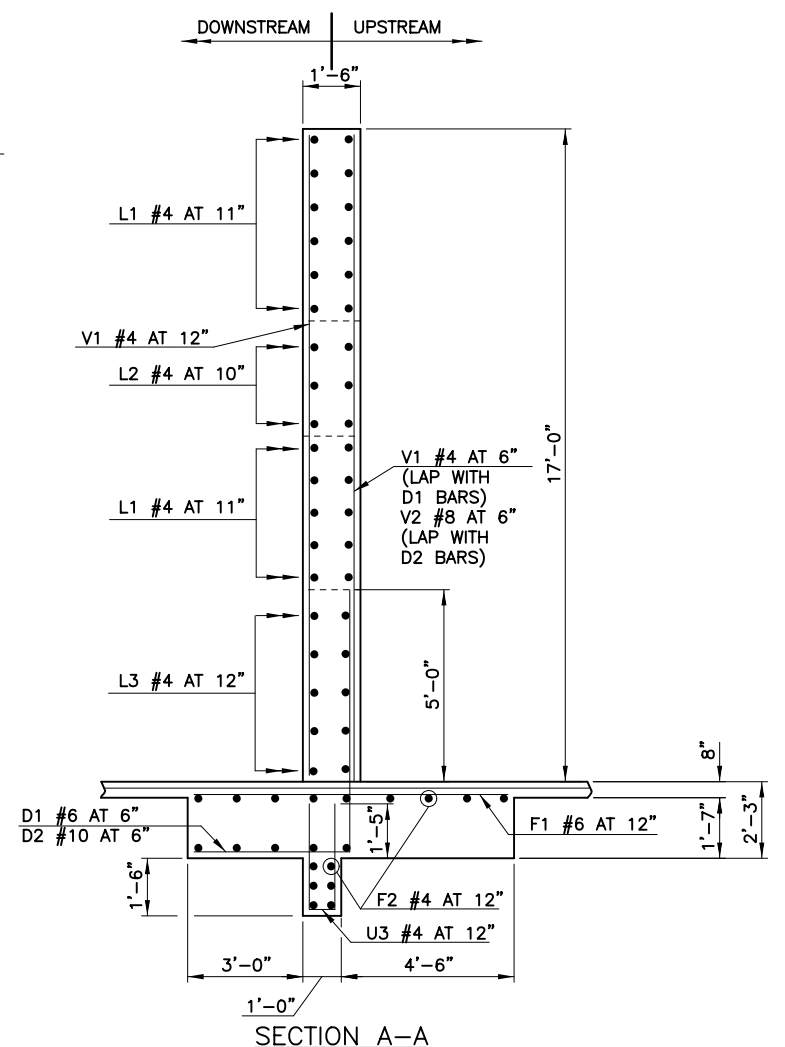
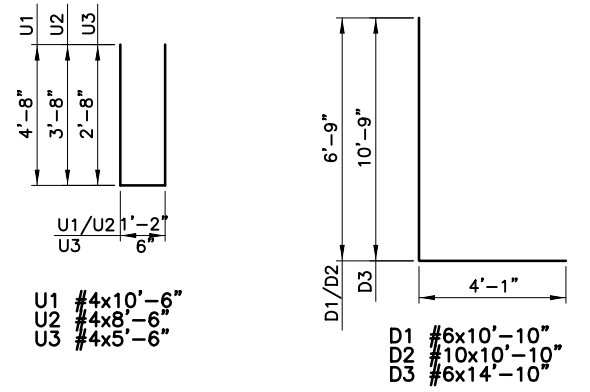


PLAN

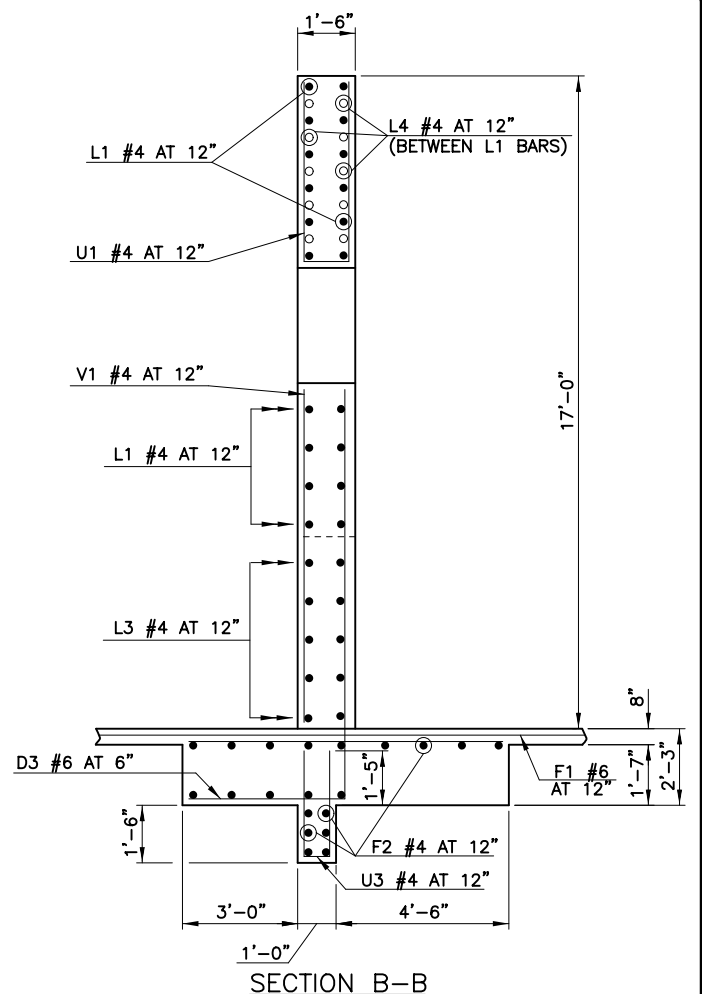


ELEVATION

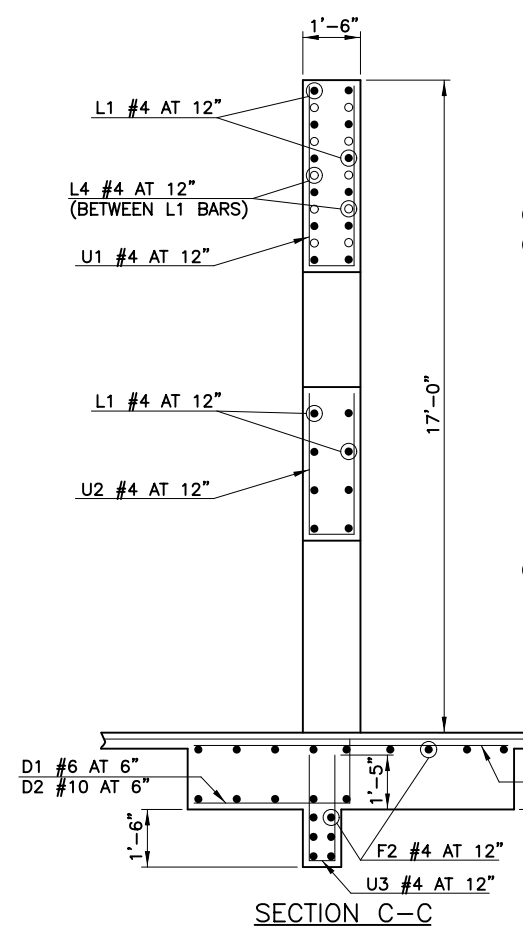
OUTLET STRUCTURE QUANTITIES		
DESCRIPTION	UNIT	TOTAL
STRUCTURAL EXCAVATION	CY	65.00
STRUCTURAL CONCRETE	CY	127.70
REINFORCING STEEL	LB	12,360.00



SECTION A-A



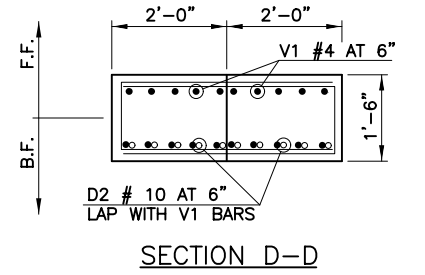
SECTION B-B



SECTION C-C

REINFORCING BAR LIST				
MARK	SIZE	NO.	FORM	LENGTH
D1	#6	82	BNT.	10'-10"
D2	#10	20	BNT.	10'-10"
D3	#6	26	BNT.	14'-10"
F1	#6	180	STR.	8'-6"
F2	#4	19	STR.	89'-6"
L1	#4	20	STR.	89'-6"
L2	#4	12	STR.	21'-8"
L3	#4	24	STR.	28'-2"
L4	#4	20	STR.	23'-10"
U1	#4	44	BNT.	10'-6"
U2	#4	46	BNT.	8'-6"
U3	#4	180	BNT.	5'-10"
V1	#4	136	STR.	16'-10"
V2	#8	20	STR.	16'-10"
V3	#4	14	STR.	8'-10"
W	#6	24	STR.	4'-2"

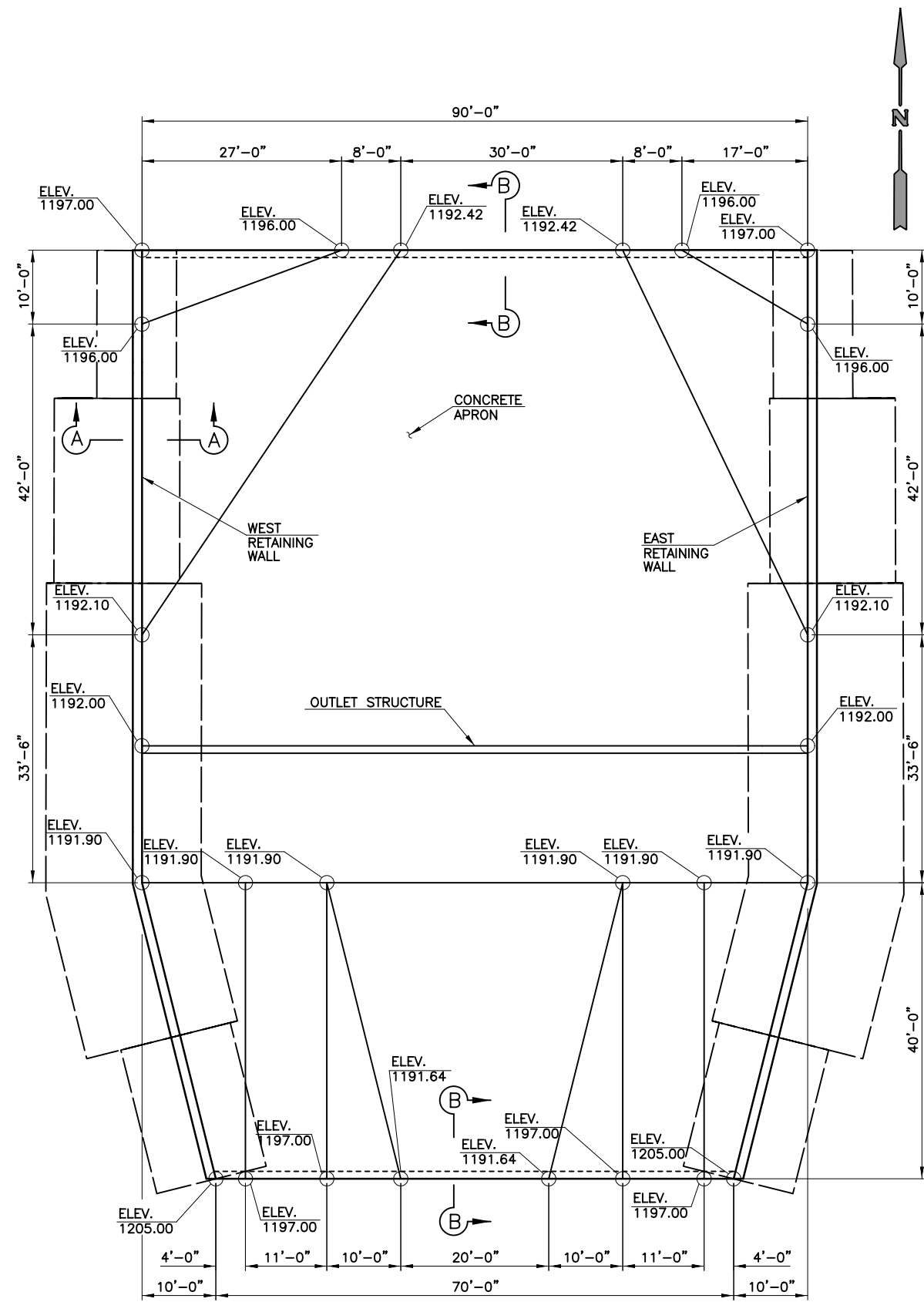
① INCLUDES ONE 1'-11" SPLICE



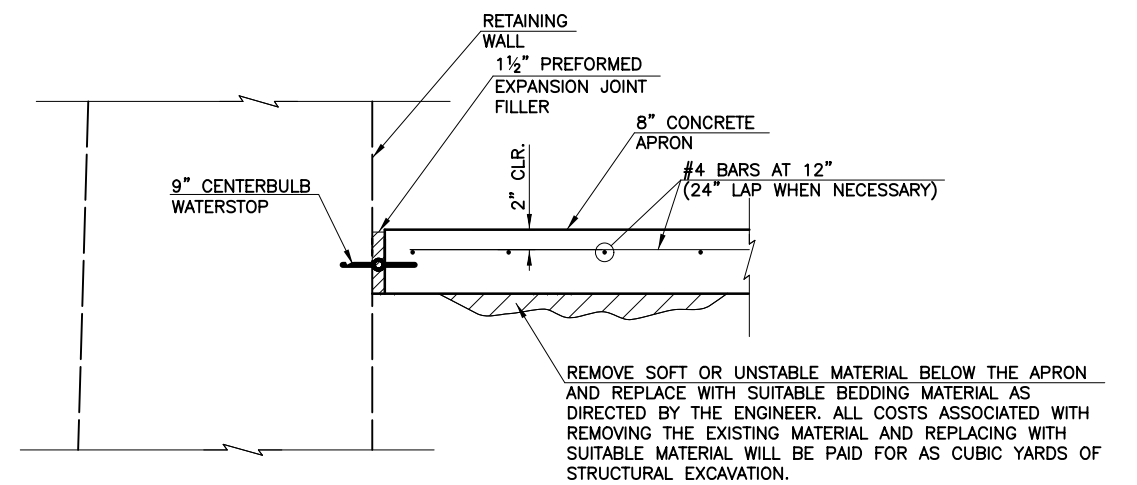
SECTION D-D

<b>OUTLET STRUCTURE DETAILS</b>			
LITTLE RIVER PARK DRAINAGE IMPROVEMENT			
CITY OF MOORE			
<b>CP&amp;Y</b>			
PLAN SCALE	DRAWN	CPY	APPROVED:
	DESIGNED	CPY	
	SURVEY		
PROFILE SCALE	RECOMMENDED		
HORIZONTAL:	DEVELOPMENT SERVICES		
VERTICAL:	RECOMMENDED		
	DEPUTY DIRECTOR		PUBLIC WORKS DIRECTOR
FILE:	DRAWING:	DATE:	
SHEET NO. 51 OF 112			

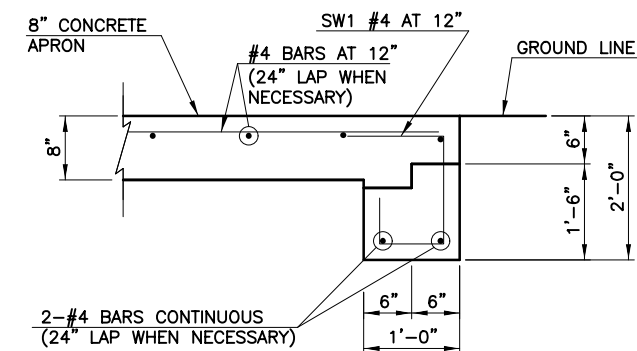
jenkins 2/5/2018 7:04:52 AM  
 cpyb&w\_ANSIB.tbl  
 cpybdf\_ANSIB.plt  
 pw:/Active Projects/MEAS1500380.00/MEAS1500380.00/MEAS1500380.01/8.00 Plans and Drawings/8.30 Cut Sheets/8.3.07 Bridge/15280BRBSW02.dgn



CONCRETE APRON LAYOUT AND ELEVATIONS



SECTION A-A

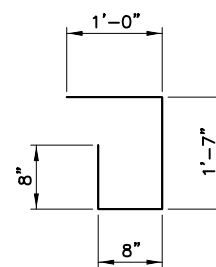


SECTION B-B

- NOTES:
1. WATERSTOP SHALL BE PLACED THE FULL LENGTH OF APRON ADJACENT TO RETAINING WALL.
  2. ALL COSTS ASSOCIATED WITH INSTALLING THE THE EXPANSION JOINT MATERIAL AND WATERSTOP SHALL BE INCLUDED IN THE PRICE BID PER CUBIC YARD OF STRUCTURAL CONCRETE.
  3. CLASS A CONCRETE SHALL BE USED TO CONSTRUCT THE CONCRETE APRON.

CONCRETE APRON QUANTITIES

ITEM	UNIT	TOTAL
STRUCTURAL CONCRETE	CY	278.10
REINFORCING STEEL	LB	16,200.00



SW1 #4x3'-11"

OUTLET STRUCTURE DETAILS

LITTLE RIVER PARK DRAINAGE IMPROVEMENT  
CITY OF MOORE

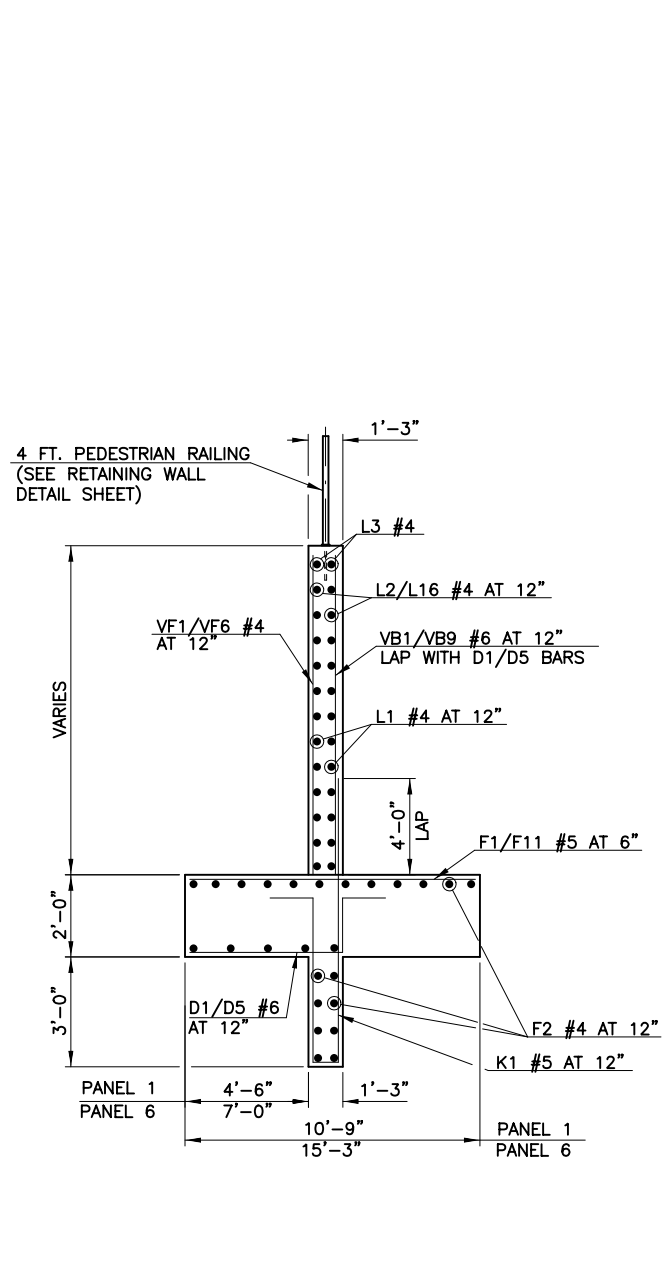


PLAN SCALE	DRAWN	CPY	APPROVED:
	DESIGNED	CPY	
	SURVEY		
PROFILE SCALE	RECOMMENDED		
HORIZONTAL:	DEVELOPMENT SERVICES		
VERTICAL:	RECOMMENDED		
	DEPUTY DIRECTOR		PUBLIC WORKS DIRECTOR
FILE:	DRAWING:	DATE:	
SHEET NO. 52 OF 112			



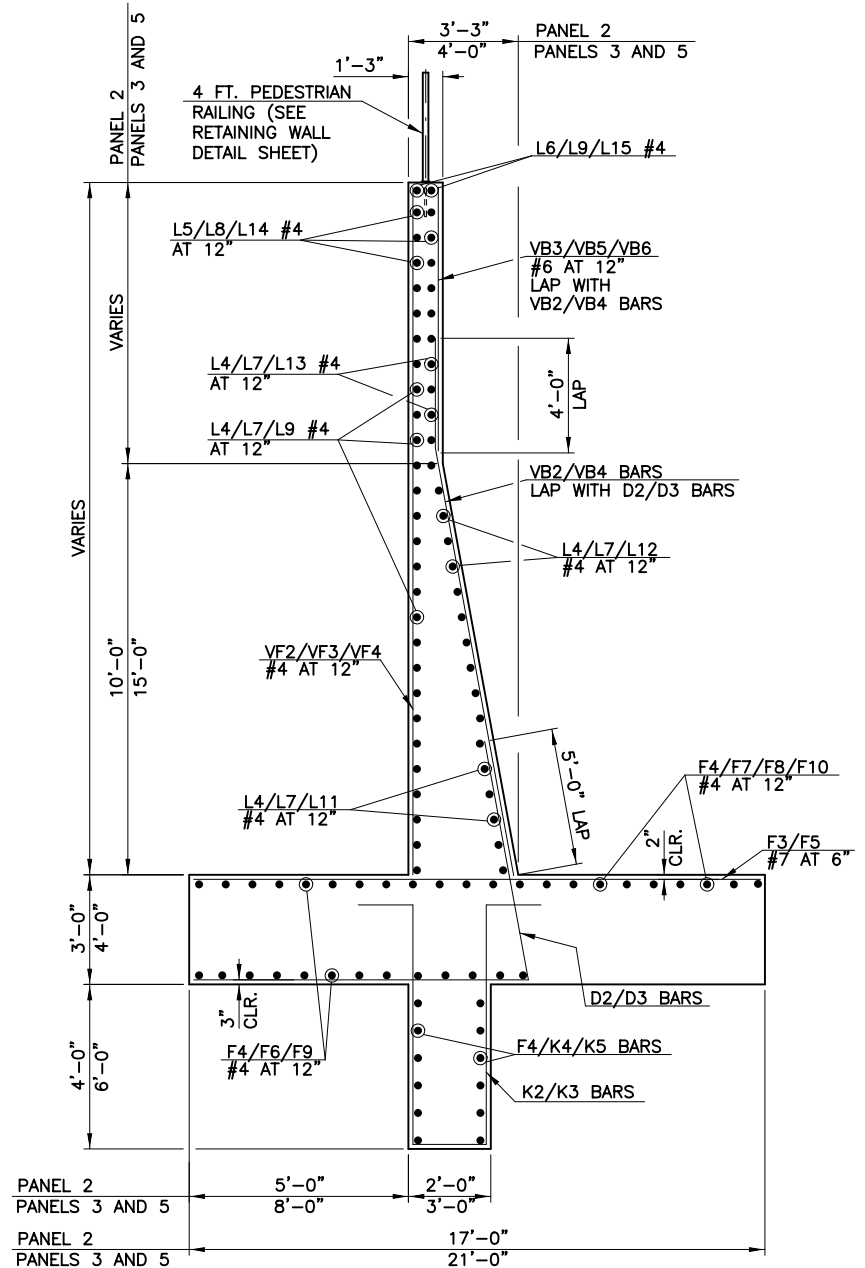


7:04:56 AM  
 cpyb&w\_ANSIB.tbl  
 2/5/2018  
 cpybdf\_ANSIB.plt  
 MEAS1500380.00/MEAS1500380.01/8.00 Plans and Drawings/8.30 Cut Sheets/8.3.07 Bridge/15280RETW02.dgn



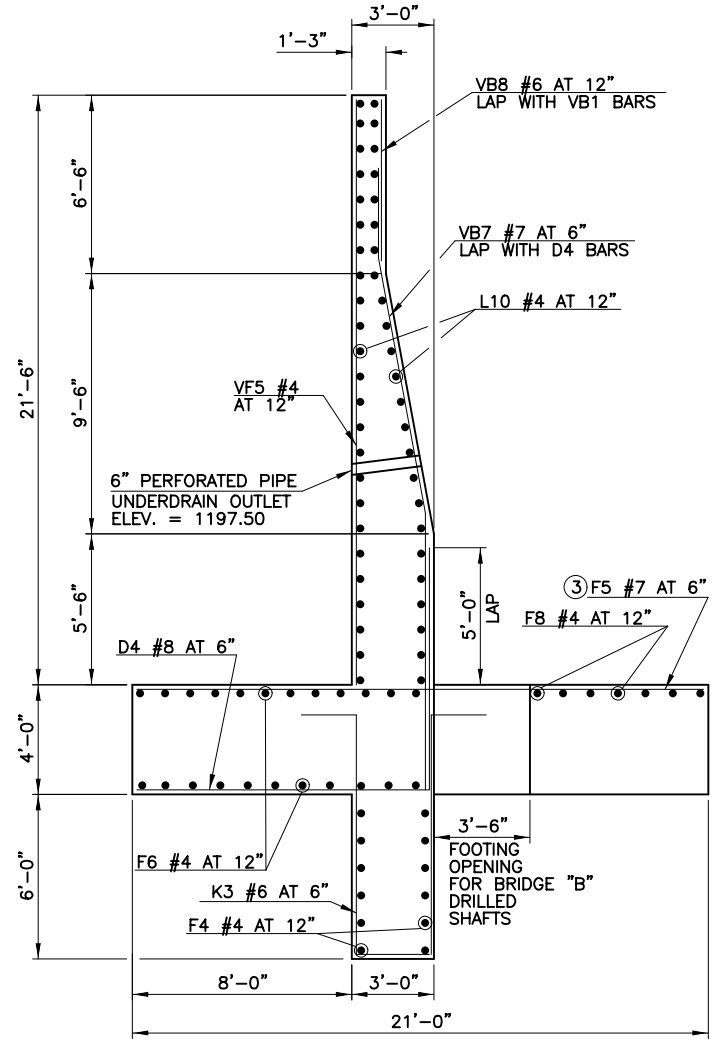
RETAINING WALL TYPE A

PANEL 1  
PANEL 6



RETAINING WALL TYPE B

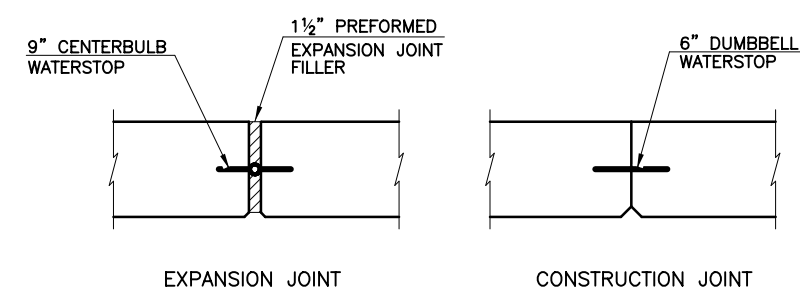
PANEL 2  
PANEL 3  
PANEL 5



RETAINING WALL TYPE C

PANEL 4

③ OMIT REINFORCING STEEL BARS AT FOOTING OPENINGS FOR BRIDGE "B" DRILLED SHAFTS.



NOTE:  
WATERSTOP SHALL BE PLACED THE FULL HEIGHT OF WALL. COST SHALL BE INCLUDED IN STRUCTURAL CONCRETE PAY ITEM.

JOINT DETAILS

DESCRIPTION	UNIT	QUANTITY		TOTAL
		WEST WALL	EAST WALL	
STRUCTURAL CONCRETE	CY	456.80	456.80	913.60
REINFORCING STEEL	LB	35,550.00	35,550.00	71,100.00
STRUCTURAL EXCAVATION, COMMON	CY	2,670.00	1,870.00	4,540.00
STRUCTURAL EXCAVATION, ROCK	CY	360.00	360.00	720.00
(PERFORATED UNDERDRAIN) PIPE CONDUIT (6")	LF	131.00	131.00	262.00
4 FT. PEDESTRIAN RAILING	LF	155.00	155.00	310.00
PIPE UNDERDRAIN COVER MATERIAL	CY	130.60	130.60	261.20
① LOW-PLASTICITY BACKFILL MATERIAL	CY	2,150.70	2,150.70	4,301.40

① FOR CONTRACTOR INFORMATION ONLY. ALL COSTS ASSOCIATED WITH CONSTRUCTING THE PIPE UNDERDRAIN COVER MATERIAL AS SHOWN SHALL BE INCLUDED IN LINEAR FOOT PAY ITEM FOR PIPE CONDUIT.  
 ② FOR CONTRACTOR INFORMATION ONLY. IT IS ANTICIPATED THAT CONTRACTOR WILL USE EXCAVATION SOIL AS BACKFILL MATERIAL.

RETAINING WALL DETAILS			
LITTLE RIVER PARK DRAINAGE IMPROVEMENT			
CITY OF MOORE			
<b>CP&amp;Y</b>			
PLAN SCALE	DRAWN	CPY	APPROVED:
	DESIGNED	CPY	
	SURVEY		
PROFILE SCALE	RECOMMENDED		
HORIZONTAL:	DEVELOPMENT SERVICES		
VERTICAL:	RECOMMENDED		
	DEPUTY DIRECTOR	PUBLIC WORKS DIRECTOR	
FILE:	DRAWING:	DATE:	
SHEET NO. 54 OF 112			

7:04:58 AM  
 cpyb&w\_ANSIB.tbl  
 2/5/2018  
 cpybdf\_ANSIB.plt  
 MEAS1500380.00/MEAS1500380.01/8.00 Plans and Drawings/8.30 Cut Sheets/8.3.07 Bridge/15280RETW03.dgn

**RETAINING WALL-PANEL 1 REINFORCING BAR LIST**

MARK	SIZE	NO.	FORM	LENGTH	VARIANCE
L1	#4	14	STR.	19'-8"	
L2	#4	8	STR.	11'-3" AVG	5'-9" TO 16'-9"
L3	#4	2	STR.	20'-4"	
VB1	#6	21	STR.	9'-0" AVG	6'-4" TO 11'-8"
VF1	#4	21	STR.	9'-0" AVG	6'-4" TO 11'-8"

**RETAINING WALL-PANEL 2 REINFORCING BAR LIST**

MARK	SIZE	NO.	FORM	LENGTH	VARIANCE
L4	#4	28	STR.	24'-8"	
L5	#4	14	STR.	14'-2" AVG	5'-0" TO 23'-4"
L6	#4	2	STR.	25'-6"	
VB2	#6	50	BNT.	14'-2"	
VB3	#6	25	STR.	7'-1 1/2" AVG	3'-9" TO 10'-6"
VF2	#4	26	STR.	17'-1 1/2" AVG	13'-9" TO 20'-6"

**RETAINING WALL-PANEL 3 REINFORCING BAR LIST**

MARK	SIZE	NO.	FORM	LENGTH	VARIANCE
L7	#4	42	STR.	24'-5"	
L8	#4	12	STR.	13'-3" AVG	4'-1" TO 22'-5"
L9	#4	2	BNT.	25'-2"	
U1	#4	2	BNT.	5'-11"	
VB4	#7	50	BNT.	19'-3"	
VB5	#6	21	STR.	8'-3" AVG	5'-7" TO 10'-11"
VB6	#6	5	STR.	11'-11"	
VF3	#4	21	STR.	23'-3" AVG	20'-7" TO 25'-11"
VF4	#4	5	STR.	26'-11" AVG	

**RETAINING WALL-PANEL 4 REINFORCING BAR LIST**

MARK	SIZE	NO.	FORM	LENGTH	VARIANCE
L10	#4	44	STR.	11'-2"	
VB7	#7	23	BNT.	19'-3"	
VB8	#6	12	STR.	6'-4"	
VF5	#4	12	STR.	21'-4"	

**RETAINING WALL-PANEL 5 REINFORCING BAR LIST**

MARK	SIZE	NO.	FORM	LENGTH	VARIANCE
L9	#4	21	BNT.	25'-2"	
L11	#4	5	BNT.	25'-10"	
L12	#4	7	BNT.	25'-6"	
L13	#4	9	BNT.	25'-4"	
L14	#4	10	BNT.	17'-8" AVG	12'-2" TO 23'-2"
L15	#4	2	BNT.	25'-10"	
U1	#4	2	BNT.	5'-11"	
VB4	#7	50	BNT.	19'-3"	
VB5	#6	21	STR.	8'-3" AVG	5'-7" TO 10'-11"
VB6	#6	5	STR.	11'-11"	
VF3	#4	21	STR.	23'-3" AVG	20'-7" TO 25'-11"
VF4	#4	5	STR.	26'-11"	

**RETAINING WALL-PANEL 6 REINFORCING BAR LIST**

MARK	SIZE	NO.	FORM	LENGTH	VARIANCE
L1	#4	24	STR.	19'-8"	
L3	#4	2	STR.	20'-4"	
L16	#4	10	STR.	10'-11" AVG	3'-4" TO 18'-6"
VB9	#6	21	STR.	14'-5" AVG	11'-10" TO 17'-0"
VF6	#4	21	STR.	14'-5" AVG	11'-10" TO 17'-0"

**FOOTING-PANEL 1 REINFORCING BAR LIST**

MARK	SIZE	NO.	FORM	LENGTH	VARIANCE
D1	#6	21	BNT.	11'-2"	
F1	#5	40	STR.	10'-3"	
F2	#4	25	STR.	19'-6"	
K1	#5	21	BNT.	9'-11"	
FS1	#4	6	STR.	10'-3"	
FS2	#4	11	BNT.	11'-10"	

**FOOTING-PANEL 2 REINFORCING BAR LIST**

MARK	SIZE	NO.	FORM	LENGTH	VARIANCE
D2	#6	50	BNT.	16'-4"	
F3	#7	50	STR.	16'-6"	
F4	#4	35	STR.	24'-6"	
K2	#5	50	BNT.	14'-8"	

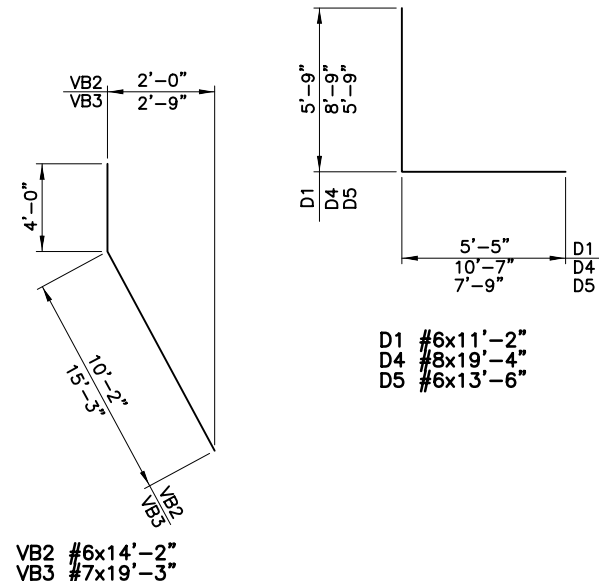
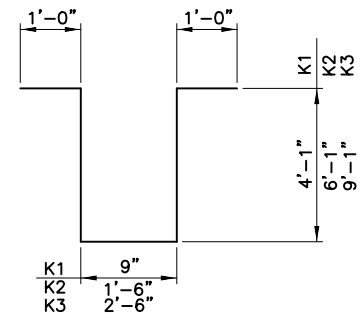
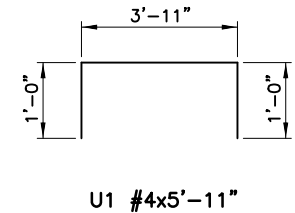
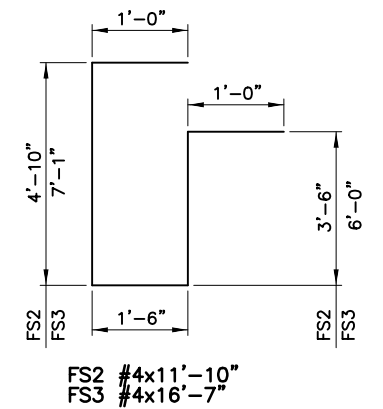
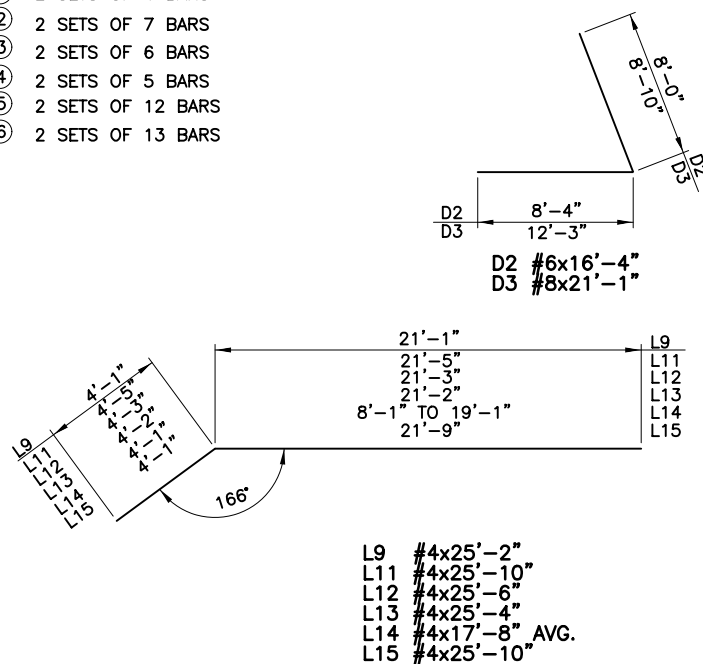
**FOOTING-PANEL 3, 4, 5 REINFORCING BAR LIST**

MARK	SIZE	NO.	FORM	LENGTH	VARIANCE
D3	#8	101	BNT.	21'-1"	
D4	#8	23	BNT.	19'-4"	
F5	#7	115	STR.	20'-6"	
F6	#4	24	STR.	39'-11" AVG	39'-3" TO 40'-7"
F7	#4	3	STR.	24'-3"	
F8	#4	7	STR.	41'-5" AVG	41'-1" TO 41'-9"
F9	#4	26	STR.	20'-9" AVG	20'-0" TO 21'-6"
F10	#4	8	STR.	22'-1" AVG	21'-7" TO 22'-7"
K3	#6	50	BNT.	21'-8"	
K4	#4	12	STR.	40'-7"	
K5	#4	12	STR.	21'-3"	

**FOOTING-PANEL 6 REINFORCING BAR LIST**

MARK	SIZE	NO.	FORM	LENGTH	VARIANCE
D4	#6	21	BNT.	13'-6"	
F2	#4	31	STR.	19'-6"	
F11	#5	40	STR.	14'-9"	
K1	#5	21	BNT.	9'-11"	
FS1	#4	12	STR.	19'-6"	
FS3	#4	11	BNT.	16'-7"	

- ① 2 SETS OF 4 BARS
- ② 2 SETS OF 7 BARS
- ③ 2 SETS OF 6 BARS
- ④ 2 SETS OF 5 BARS
- ⑤ 2 SETS OF 12 BARS
- ⑥ 2 SETS OF 13 BARS



RETAINING WALL DETAILS			
LITTLE RIVER PARK DRAINAGE IMPROVEMENT			
CITY OF MOORE			
<b>CP&amp;Y</b>			
PLAN SCALE	DRAWN	CPY	APPROVED:
	DESIGNED	CPY	
	SURVEY		
PROFILE SCALE	RECOMMENDED		
HORIZONTAL:	DEVELOPMENT SERVICES		
VERTICAL:	RECOMMENDED		
	DEPUTY DIRECTOR		PUBLIC WORKS DIRECTOR
FILE:	DRAWING:	DATE:	
SHEET NO. 55 OF 112			

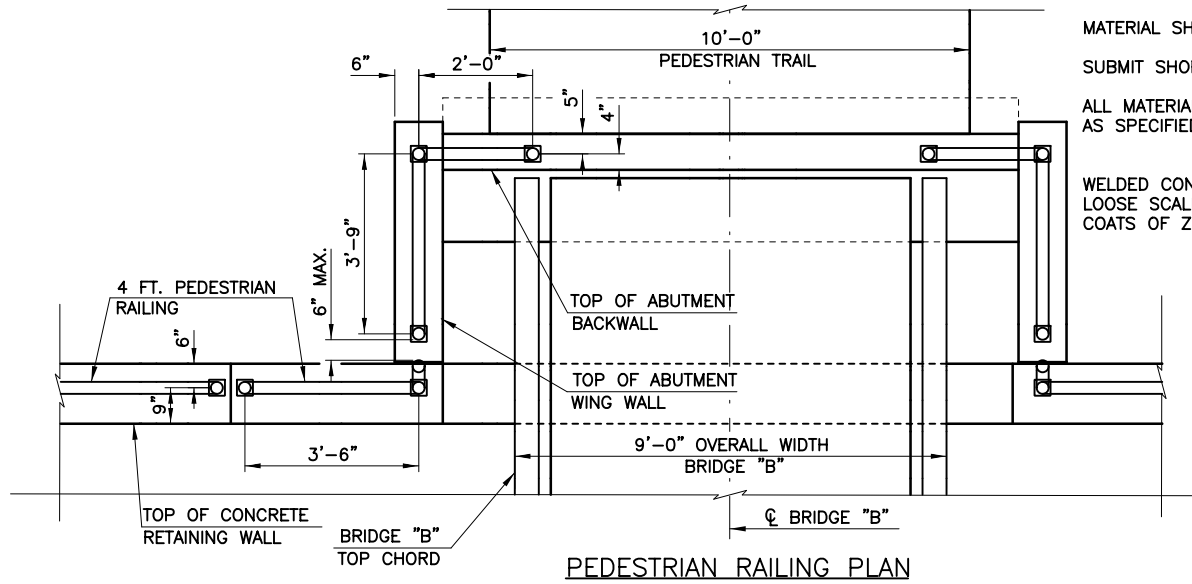
PEDESTRIAN RAILING NOTES:

MATERIAL SHALL COMPLY WITH THE STD. SPECIFICATIONS.

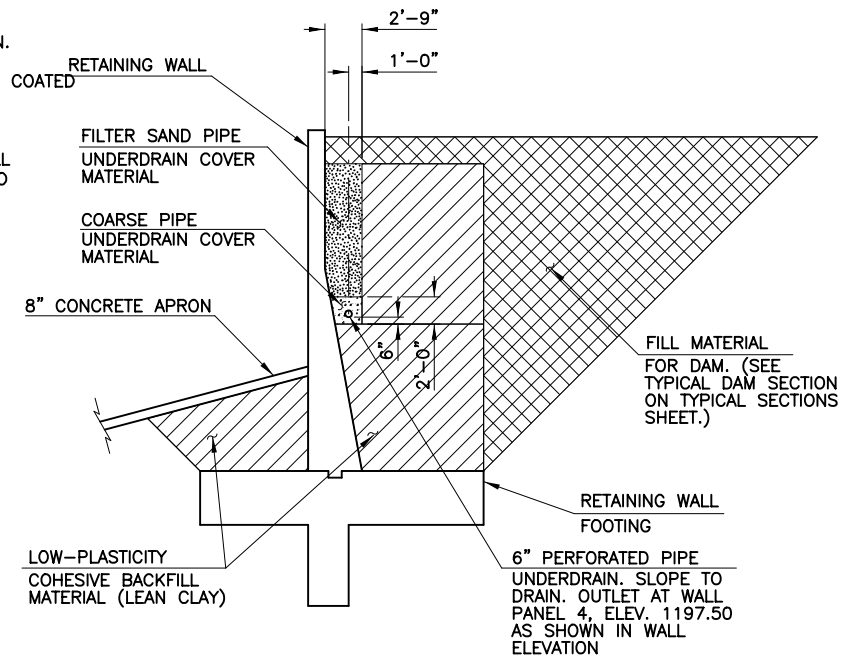
SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO FABRICATION.

ALL MATERIALS SHALL BE GALVANIZED OR GALVANIZED/POWDER COATED AS SPECIFIED IN THE PROPOSAL.

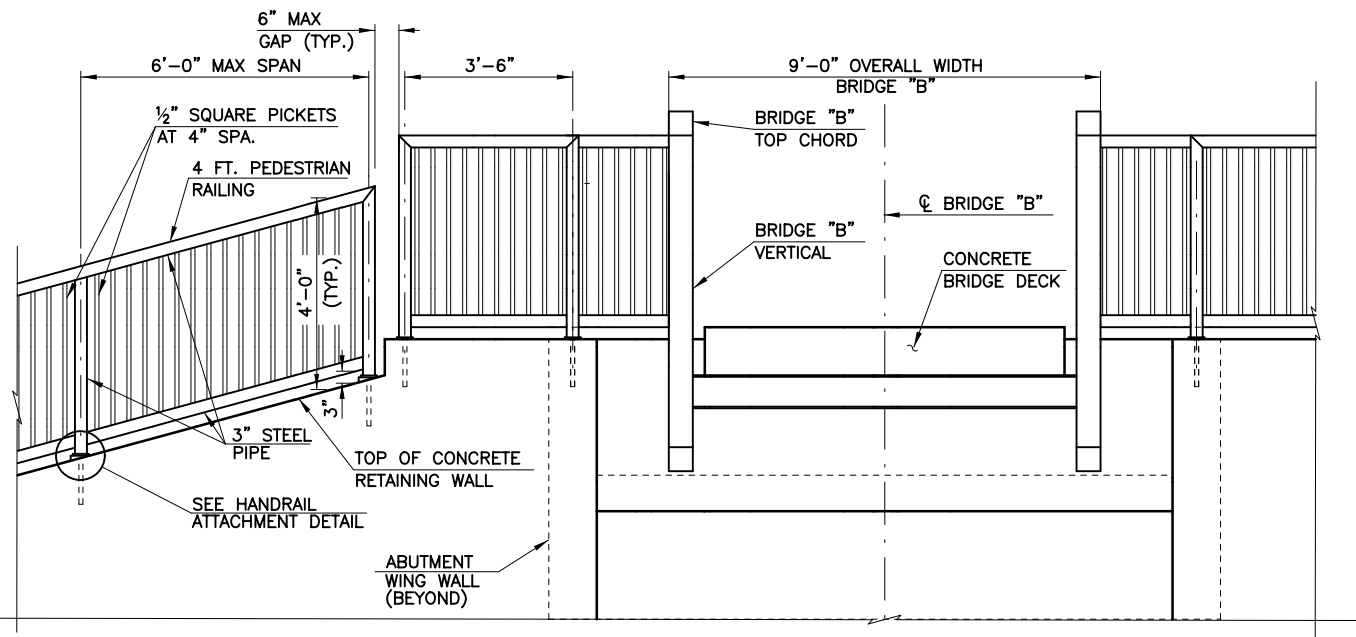
WELDED CONNECTIONS SHALL BE THOROUGHLY CLEANED OF ALL LOOSE SCALES, GROUND SMOOTH AND SPOT PAINTED WITH TWO COATS OF ZINC RICH PAINT.



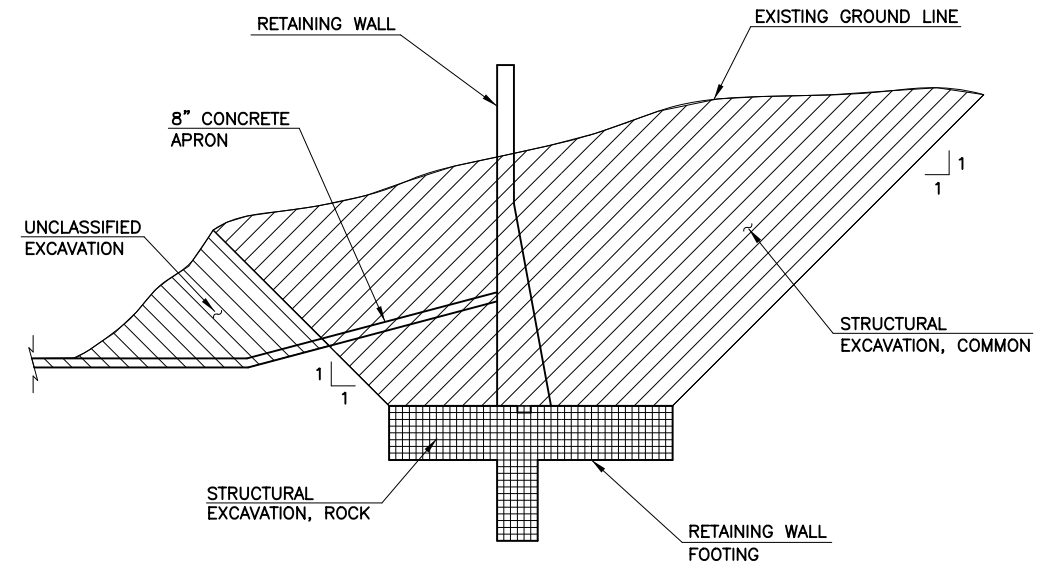
PEDESTRIAN RAILING PLAN



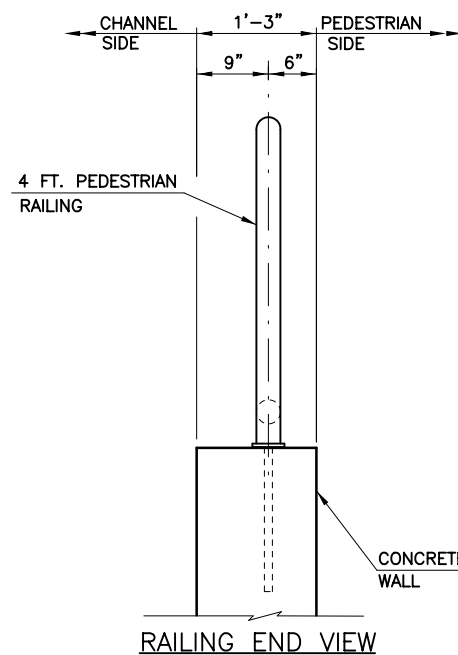
BACKFILL DETAIL



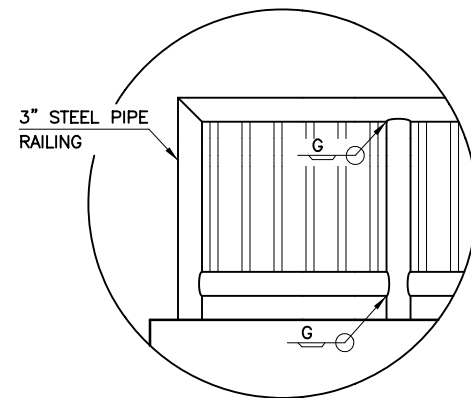
PEDESTRIAN RAILING ELEVATION



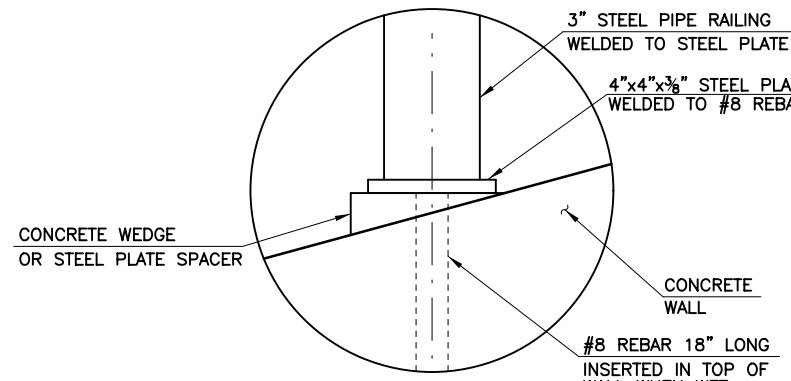
EXCAVATION DETAIL



RAILING END VIEW



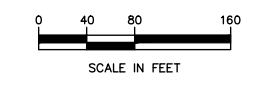
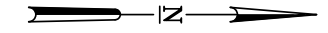
WELDING DETAIL



HANDRAIL ATTACHMENT DETAIL

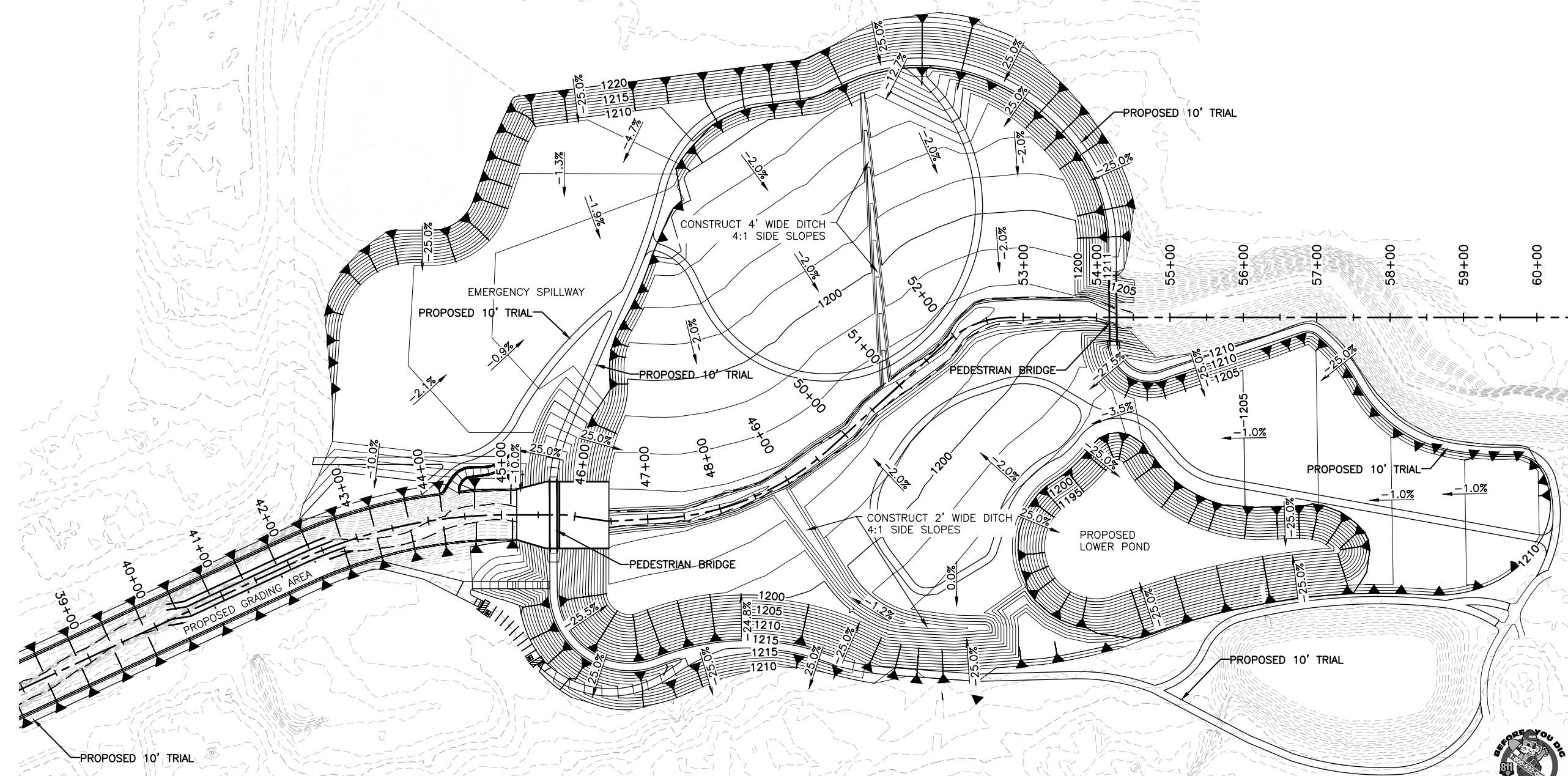
RETAINING WALL DETAILS			
LITTLE RIVER PARK DRAINAGE IMPROVEMENT			
CITY OF MOORE			
PLAN SCALE		DRAWN	CPY
PROFILE SCALE		DESIGNED	CPY
HORIZONTAL:		RECOMMENDED	
VERTICAL:		RECOMMENDED	
FILE:	DRAWING:	DEPUTY DIRECTOR	PUBLIC WORKS DIRECTOR
SHEET NO. 56 OF 112		DATE:	

M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_SITE\_GRADING\_PLAN.dwg



PROPOSED MINOR CONTOUR \_\_\_\_\_  
 PROPOSED INDEX CONTOUR \_\_\_\_\_  
 EXISTING CONTOUR - - - - -

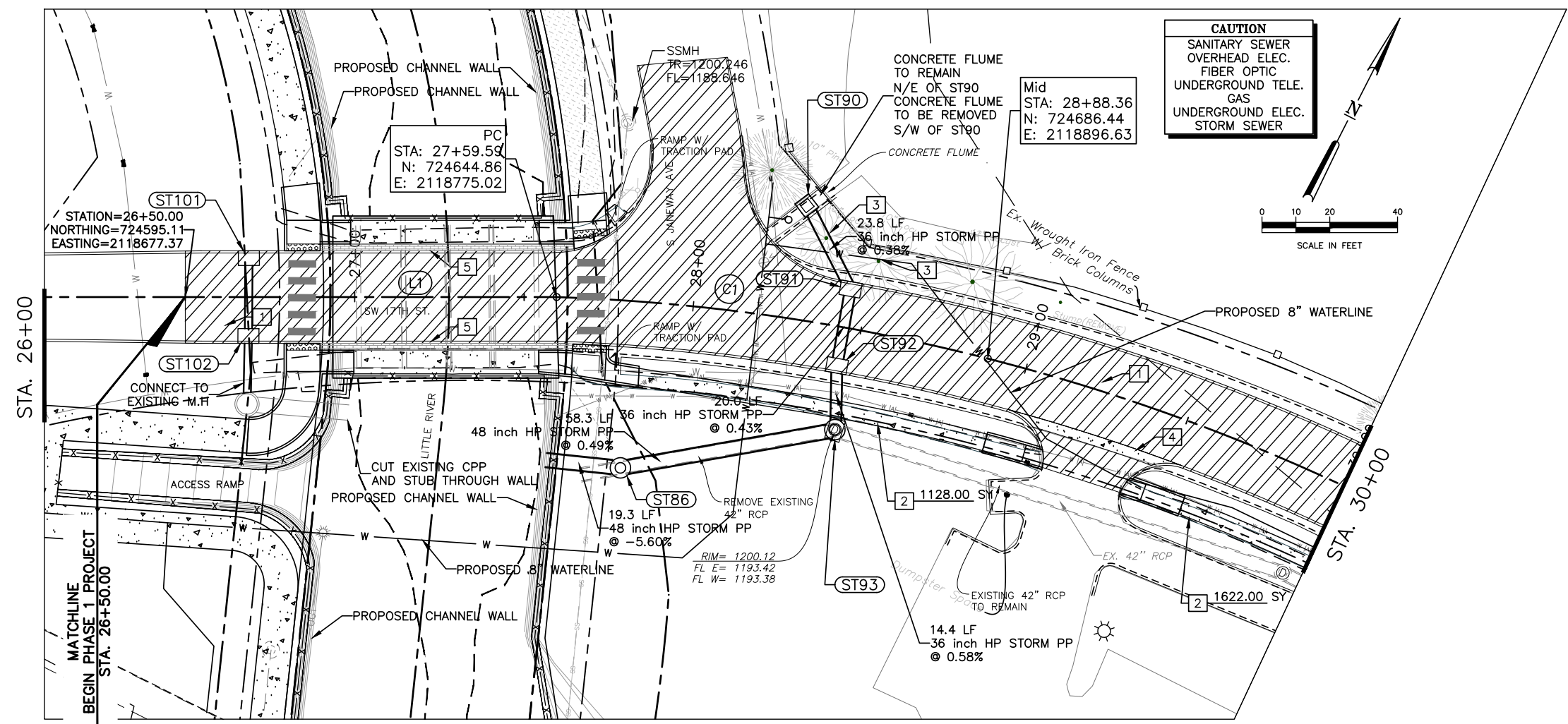
STA: 60+98.94  
 N: 727812.22  
 E: 2117517.09



<b>SITE GRADING PLAN</b>	
<b>LITTLE RIVER PARK DRAINAGE IMPROVEMENTS</b>	
<b>CITY OF MOORE</b>	
PLANS AND ESTIMATES PREPARED BY:	
<b>Meshek &amp; Associates, L.L.C.</b>	
1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620	

REVISION	BY	DATE	PLAN SCALE	DRAWN	JCL	Value	APPROVED:
			1" = 80'	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	DEVELOPMENT SERVICES			PUBLIC WORKS DIRECTOR
			RECOMMENDED				
			VERTICAL:	DEPUTY DIRECTOR			DATE:
			RECOMMENDED				
			FILE:	DRAWING:			DATE:
			ATLAS PAGE NO. ###				SHEET 57 OF 133 SHEETS

M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_17thST\_PLAN\_PROFILE.dwg

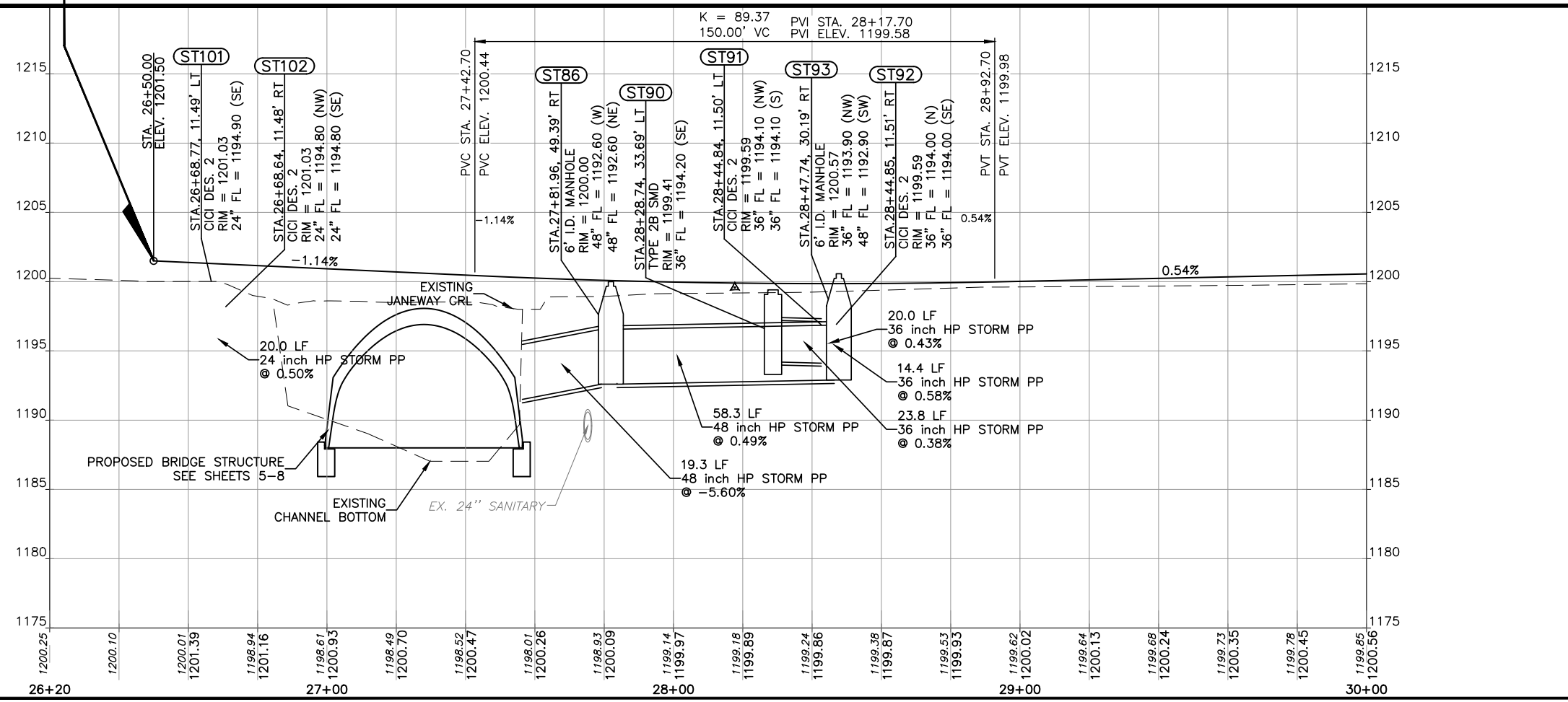


C.R.L. LINE DATA		
Line #	Length	Bearing
L1	183.98	N63° 00' 11.27"E
L2	333.94	N89° 19' 07.07"E

C.R.L. CURVE DATA					
Curve #	Arc Length	Radius	Delta Angle	Chord Length	Chord Bearing
C1	257.55	595.00	24°48'02"	255.54	N77° 19' 29.31"E

- CHANNEL
- CONSTRUCTION LIMITS
- PROPOSED CONTOURS

- CONSTRUCTION NOTES:**
- 1 [Symbol] P.C. RECONSTRUCTION
  - 2 [Symbol] CONCRETE SIDEWALK
  - 3 [Symbol] TREE REMOVAL
  - 4 [Symbol] CONSTRUCT VALLEY GUTTER
  - 5 [Symbol] INSTALL BRICK PAVERS



**CONTROL POINT**  
 CP=503  
 TYPE  
 N=723643.11  
 E=2118836.085  
 EL=1207.66

**17th ST PLAN & PROFILE**  
**LITTLE RIVER PARK DRAINAGE IMPROVEMENTS**  
**CITY OF MOORE**

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	JCL	Value	APPROVED:
			1" = 20'	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	RECOMMENDED			
			1" = 20'	DEVELOPMENT SERVICES			
			VERTICAL:	RECOMMENDED			
			1" = 5'	DEPUTY DIRECTOR			PUBLIC WORKS DIRECTOR
			FILE:	DRAWING:			DATE:
			ATLAS PAGE NO. ###				SHEET 58 OF 133 SHEETS

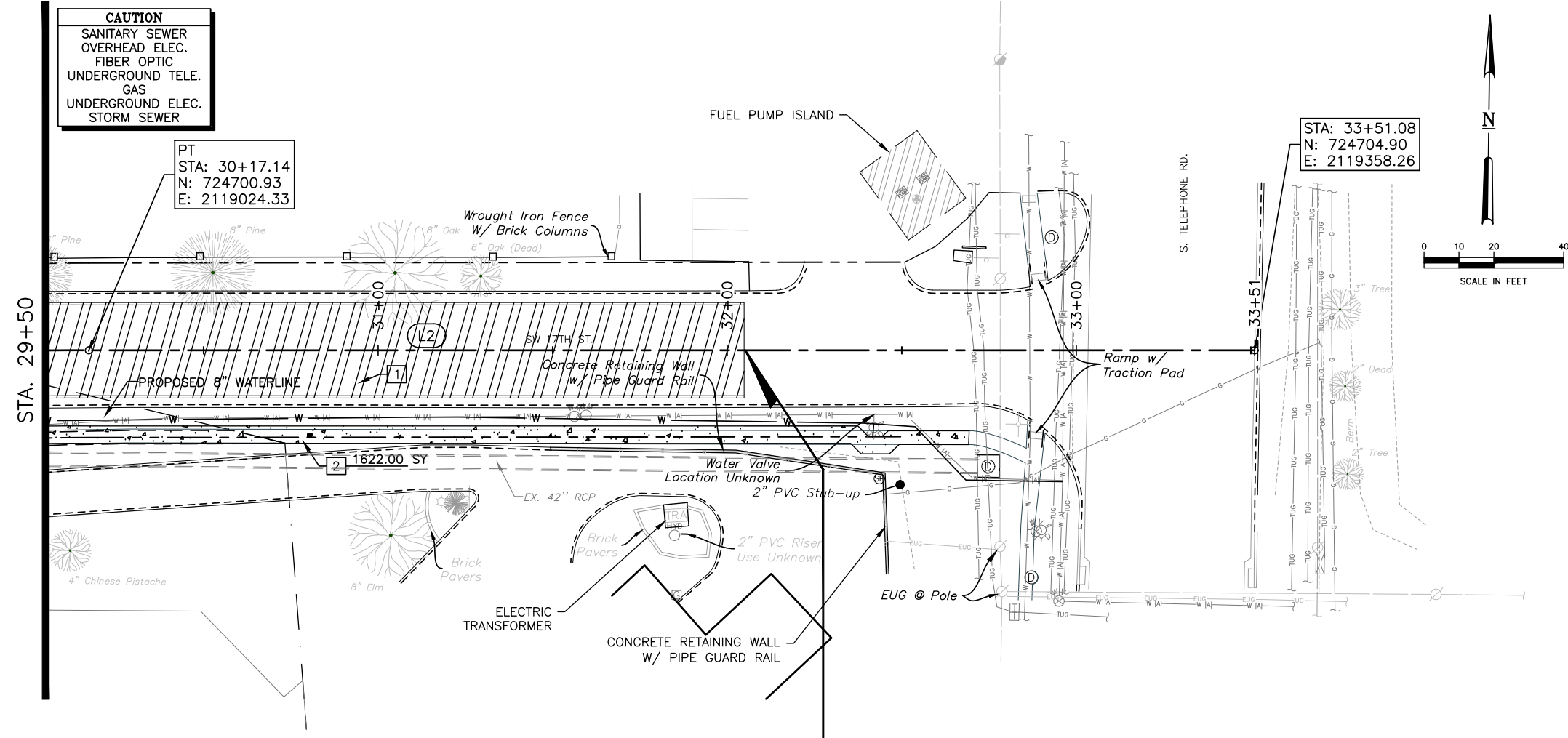
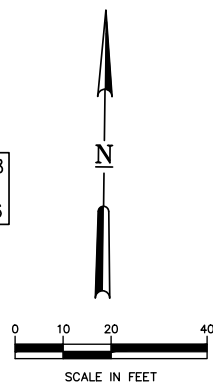
**CAUTION**  
 SANITARY SEWER  
 OVERHEAD ELEC.  
 FIBER OPTIC  
 UNDERGROUND TELE.  
 GAS  
 UNDERGROUND ELEC.  
 STORM SEWER

PT  
 STA: 30+17.14  
 N: 724700.93  
 E: 2119024.33

STA: 33+51.08  
 N: 724704.90  
 E: 2119358.26

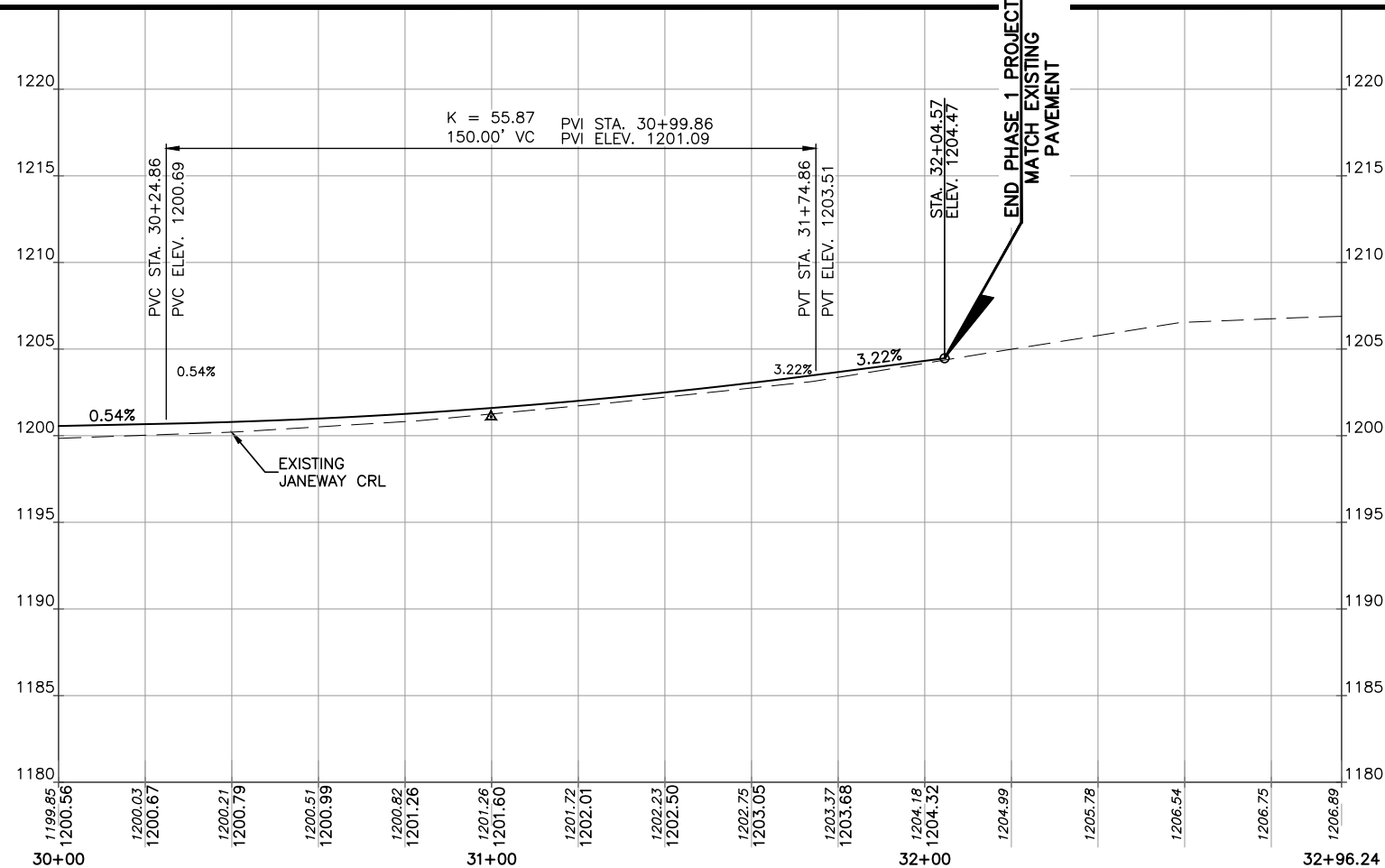
C.R.L. LINE DATA		
Line #	Length	Bearing
L1	183.98	N63° 00' 11.27"E
L2	333.94	N89° 19' 07.07"E

C.R.L. CURVE DATA					
Curve #	Arc Length	Radius	Delta Angle	Chord Length	Chord Bearing
C1	257.55	595.00	24°48'02"	255.54	N77° 19' 29.31"E



- CHANNEL
- CONSTRUCTION LIMITS
- PROPOSED CONTOURS

- CONSTRUCTION NOTES:**
- 1 [Hatched Box] P.C. RECONSTRUCTION
  - 2 [Dotted Box] CONCRETE SIDEWALK
  - 3 [Tree Symbol] TREE REMOVAL
  - 4 [Gutter Symbol] CONSTRUCT VALLEY GUTTER
  - 5 [Brick Box] INSTALL BRICK PAVERS



**CONTROL POINT**  
 CP-503  
 TYPE  
 N=723643.11  
 E=2118836.085  
 EL=1207.66

**17th ST PLAN & PROFILE**  
**LITTLE RIVER PARK DRAINAGE IMPROVEMENTS**  
**CITY OF MOORE**

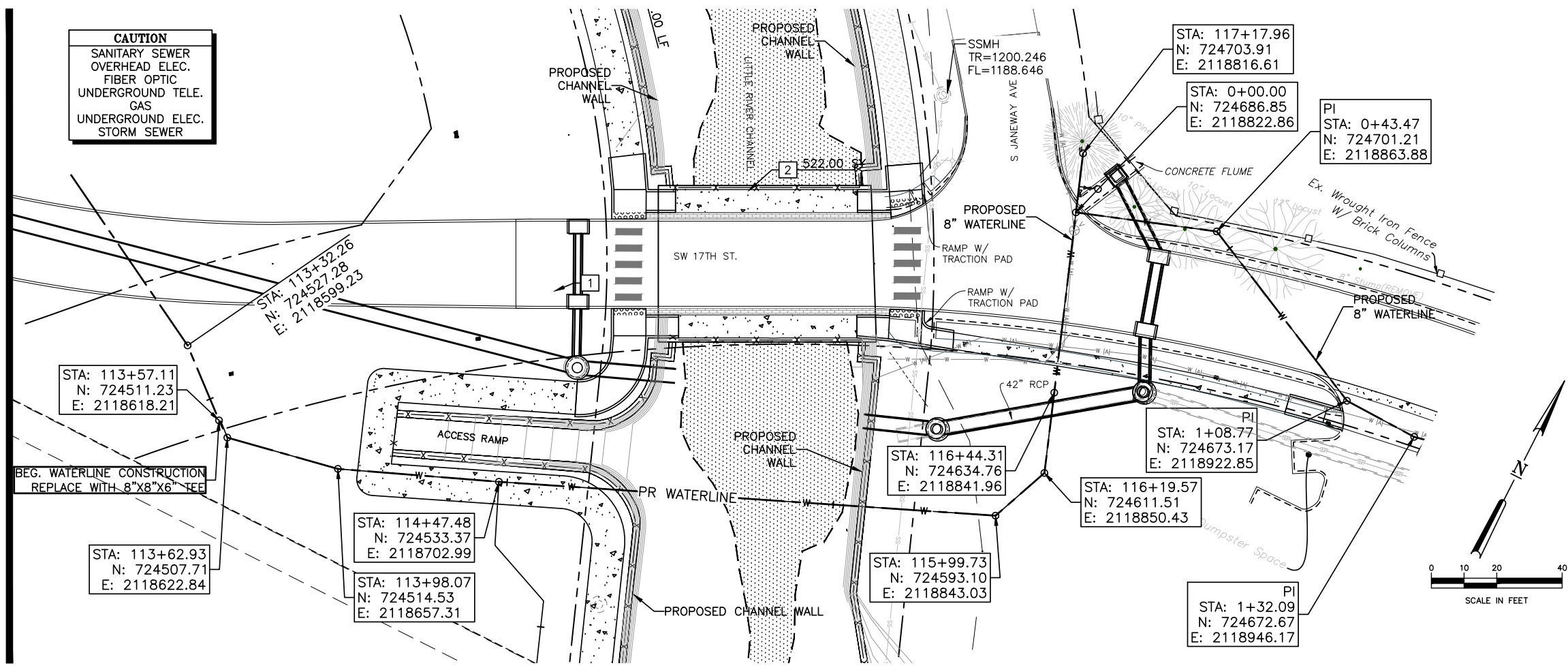
PLANS AND ESTIMATES PREPARED BY:  
**Meshek & Associates, L.L.C.**  
 1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620

REVISION	BY	DATE	PLAN SCALE	DRAWN	JCL	Value	APPROVED:
			1" = 20'	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	RECOMMENDED			DEPUTY DIRECTOR
			VERTICAL:	RECOMMENDED			
			FILE:	DRAWING:			PUBLIC WORKS DIRECTOR
			ATLAS PAGE NO. ###				DATE:

M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\15MOR05\_17thST\_PLAN\_PROFILE.dwg

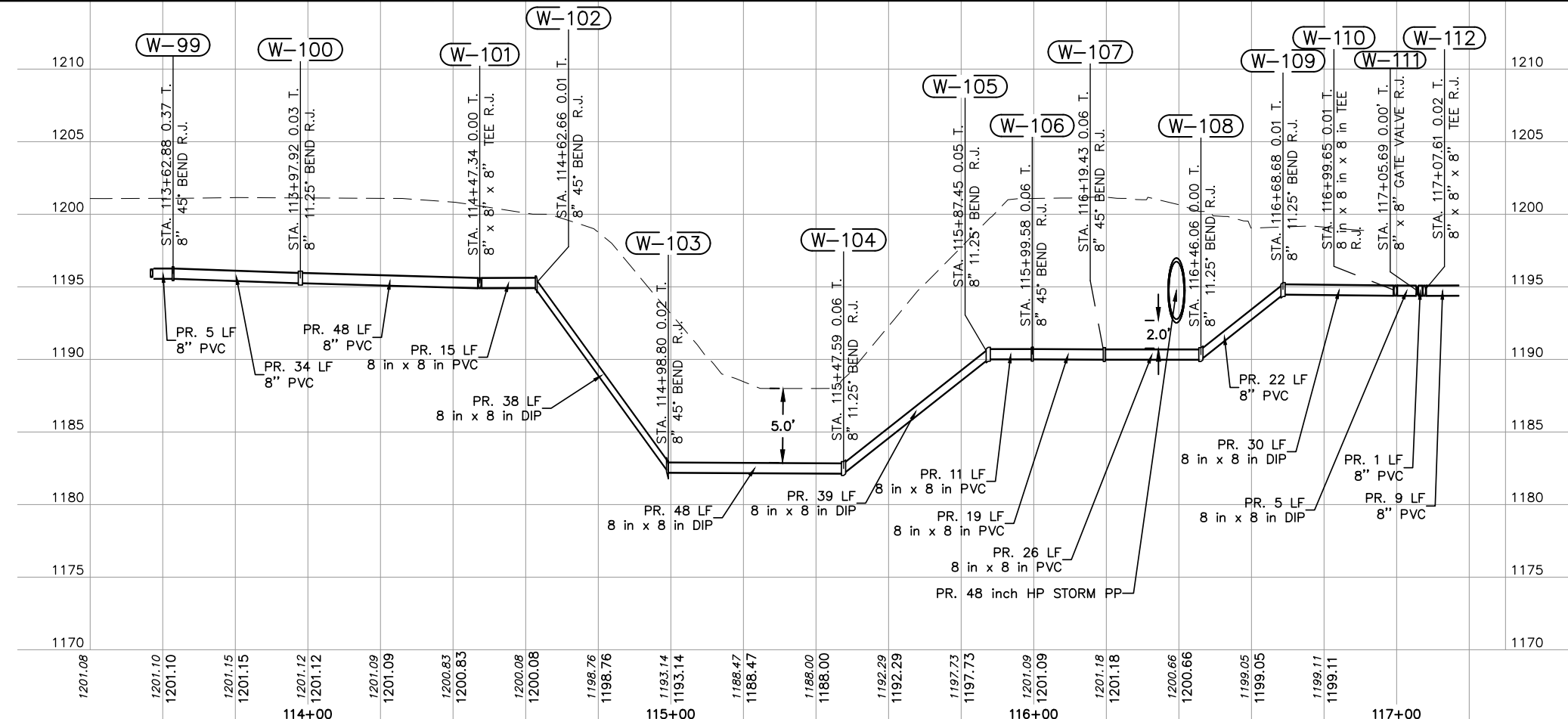
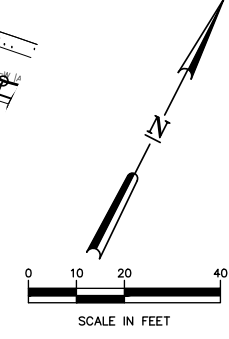
M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Drawings\15MOR05\_17thST\_WATERLINE.dwg

**CAUTION**  
 SANITARY SEWER  
 OVERHEAD ELEC.  
 FIBER OPTIC  
 UNDERGROUND TELE.  
 GAS  
 UNDERGROUND ELEC.  
 STORM SEWER



--- CHANNEL  
 - - - CONSTRUCTION LIMITS  
 - - - PROPOSED CONTOURS

**CONSTRUCTION NOTES:**  
 1 P.C. RECONSTRUCTION  
 2 CONCRETE SIDEWALK



**CONTROL POINT**  
 CP-503  
 TYPE  
 N=723643.11  
 E=2118836.085  
 EL=1207.66

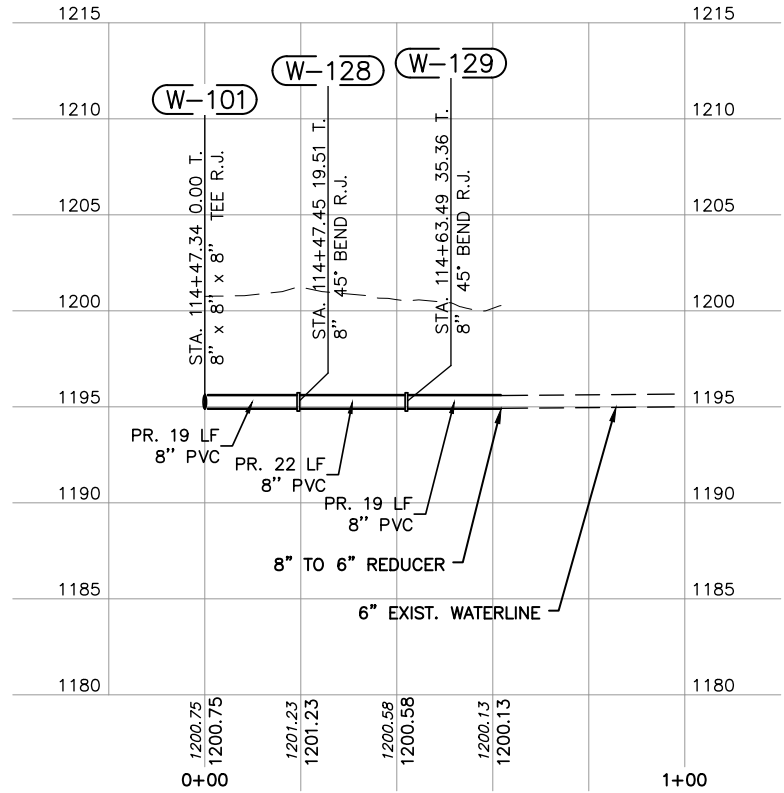
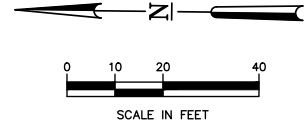
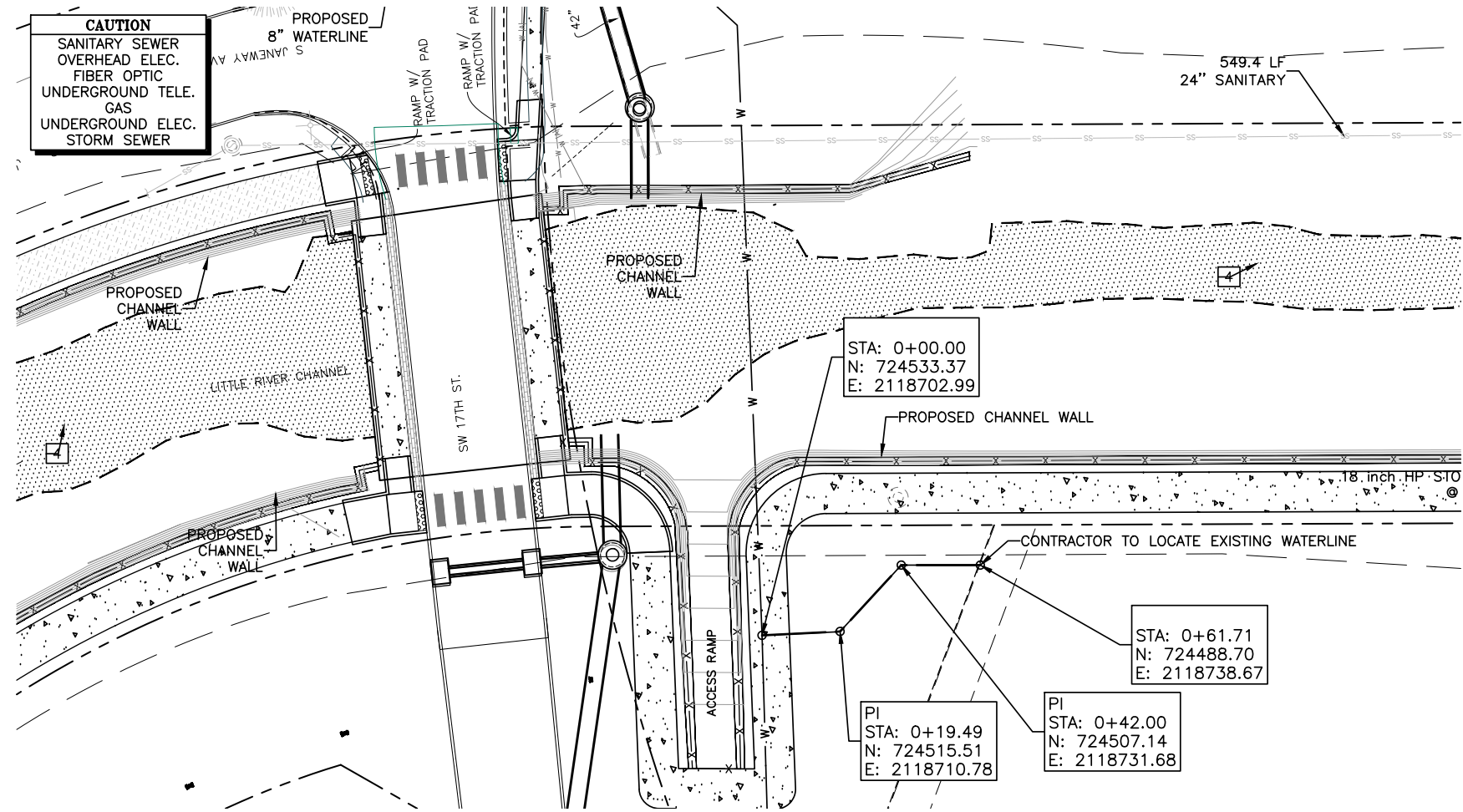
**17th ST WATERLINE P&P**  
**LITTLE RIVER PARK DRAINAGE IMPROVEMENTS**  
**CITY OF MOORE**  
 PLANS AND ESTIMATES PREPARED BY:  
**Meshek & Associates, L.L.C.**  
 1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620

REVISION	BY	DATE	PLAN SCALE	DRAWN	JCL	Value	APPROVED:
			1" = 20'	DESIGNED	BWF	Value	PUBLIC WORKS DIRECTOR
				SURVEY	PDH	Value	
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	DEVELOPMENT SERVICES			PUBLIC WORKS DIRECTOR
			1" = 20'	RECOMMENDED			
			VERTICAL:	DEPUTY DIRECTOR			
			1" = 5'				
			FILE:	DRAWING:	DATE:		
			ATLAS PAGE NO. ###				SHEET 60 OF 133 SHEETS





**CAUTION**  
 SANITARY SEWER  
 OVERHEAD ELEC.  
 FIBER OPTIC  
 UNDERGROUND TELE.  
 GAS  
 UNDERGROUND ELEC.  
 STORM SEWER



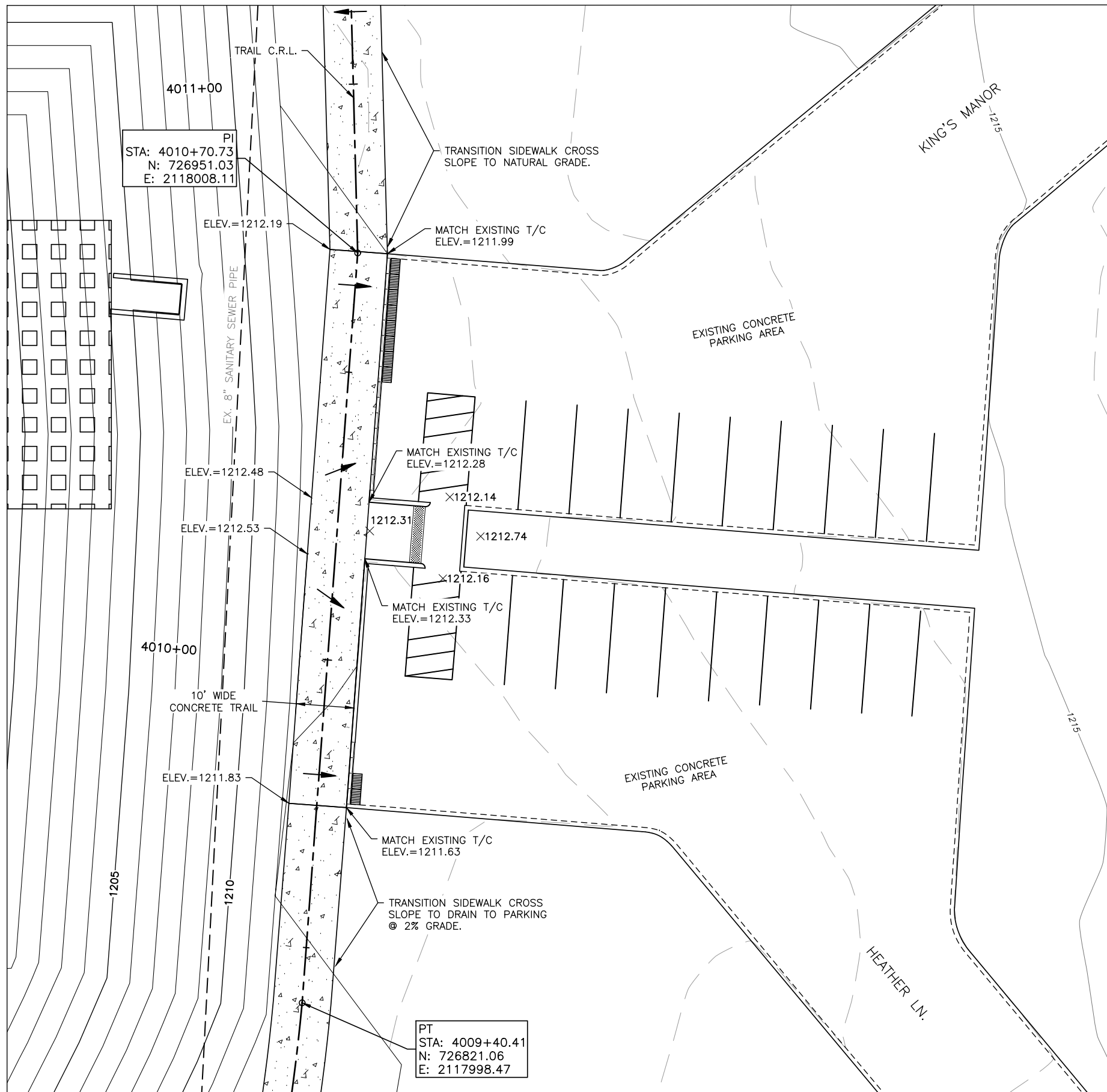
**CONTROL POINT**  
 CP-503  
 TYPE  
 N=723643.11  
 E=2118836.085  
 EL=1207.66

**17th ST WATERLINE P&P**  
**LITTLE RIVER PARK DRAINAGE IMPROVEMENTS**  
**CITY OF MOORE**  
 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	JCL	Value	APPROVED:
			1" = 20'	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	RECOMMENDED			
			1" = 20'	DEVELOPMENT SERVICES			
			VERTICAL:	RECOMMENDED			
			1" = 5'	DEPUTY DIRECTOR			PUBLIC WORKS DIRECTOR
			FILE:	DRAWING:			DATE:
			ATLAS PAGE NO. ###				SHEET 62 OF 133 SHEETS

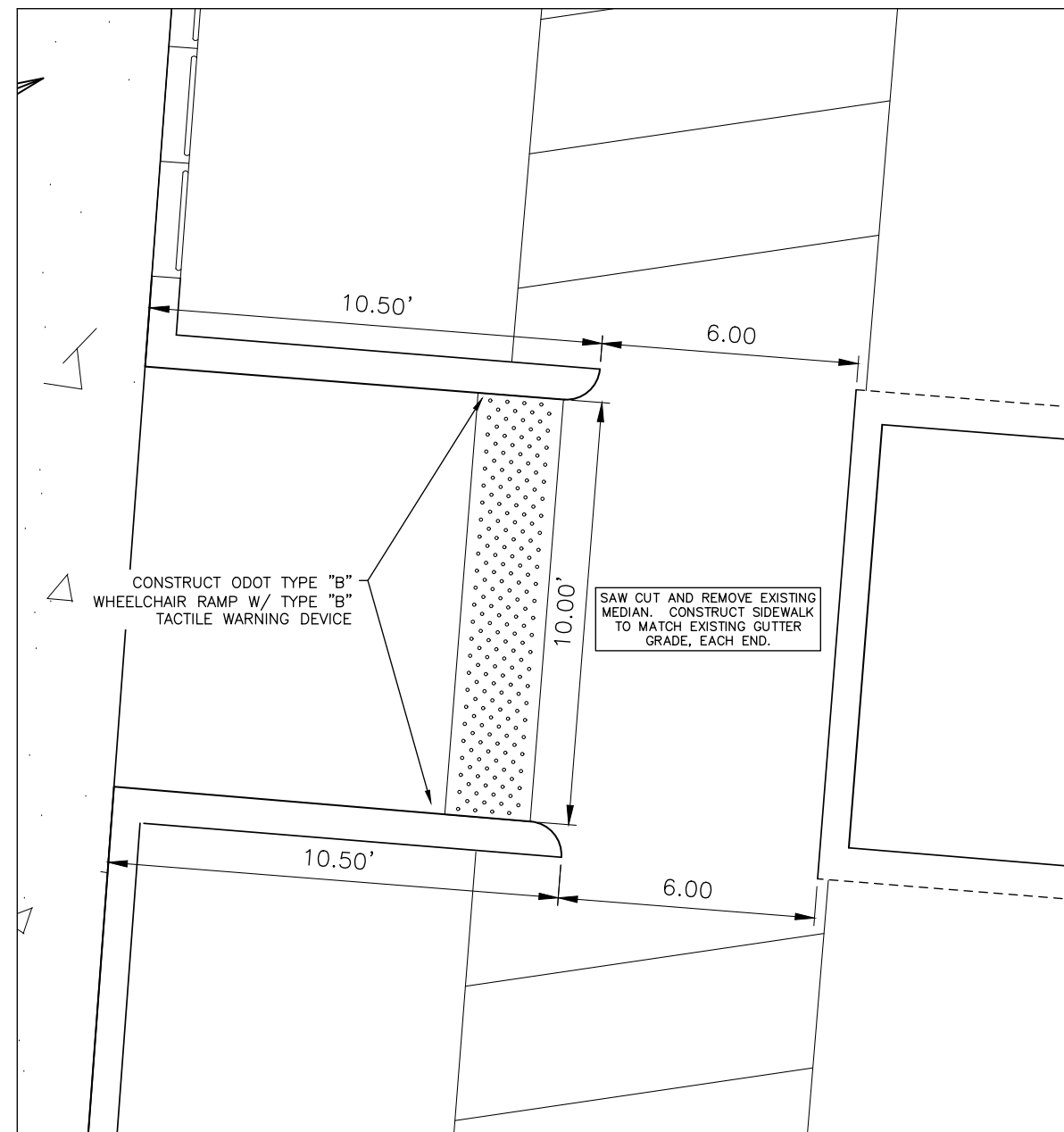
M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_17thST\_WATERLINE.dwg

M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_NEW\_PARKING\_DETAIL.dwg



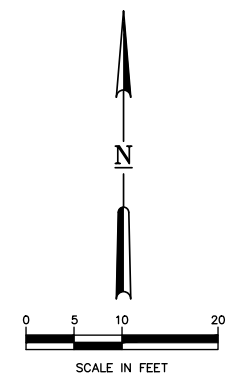
PI  
STA: 4010+70.73  
N: 726951.03  
E: 2118008.11

PT  
STA: 4009+40.41  
N: 726821.06  
E: 2117998.47



**SIDEWALK RAMP DETAIL**

SCALE: 1" = 2'



**NOTES:**  
ALL CONSTRUCTION SHALL BE IN STRICT ACCORDANCE WITH CURRENT CITY OF TULSA ENGINEERING SERVICES DEPARTMENT STANDARDS AND SPECIFICATIONS.



**PARKING AREA SIDEWALK DETAIL**  
**LITTLE RIVER PARK DRAINAGE IMPROVEMENTS**  
**CITY OF MOORE**

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	JCL	Value	APPROVED:
			1" = 20'	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	DEVELOPMENT SERVICES			
			1" = 20'	RECOMMENDED			
			VERTICAL:	DEPUTY DIRECTOR			PUBLIC WORKS DIRECTOR
			1" = 5'				
			FILE:	DRAWING:			DATE:
			ATLAS PAGE NO. ###				SHEET 63 OF 133 SHEETS



M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_HANDICAP\_RAMP\_DETAILS.dwg

**CAUTION**  
 SANITARY SEWER  
 OVERHEAD ELEC.  
 FIBER OPTIC  
 UNDERGROUND TELE.  
 GAS  
 UNDERGROUND ELEC.  
 STORM SEWER

PROPOSED PEDESTRIAN BRIDGE

PROPOSED OUTLET STRUCTURE

LITTLE RIVER CHANNEL

10' PEDESTRIAN TRAIL

10' PEDESTRIAN TRAIL

10' PEDESTRIAN TRAIL

6.5'

S. JANEWAY AVE

WHITE 4" WIDE TRAFFIC STRIP (TYP)

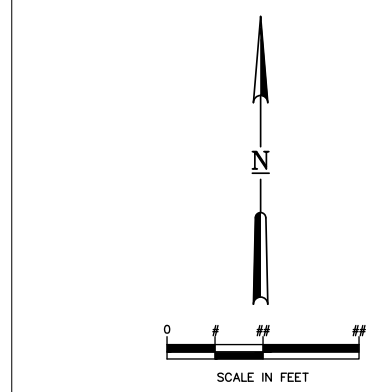
18.0' (TYP)

9.0" (TYP)

7.0'

4  
12

4  
12

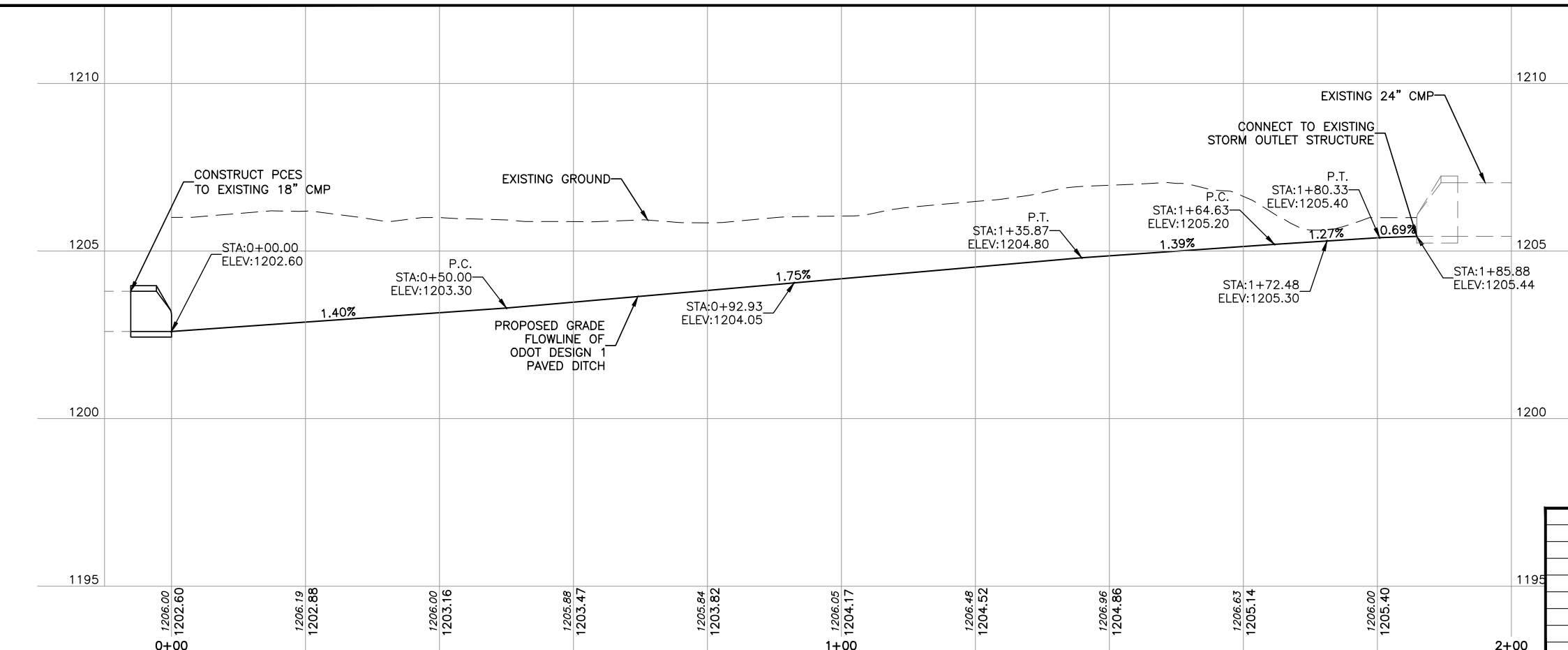
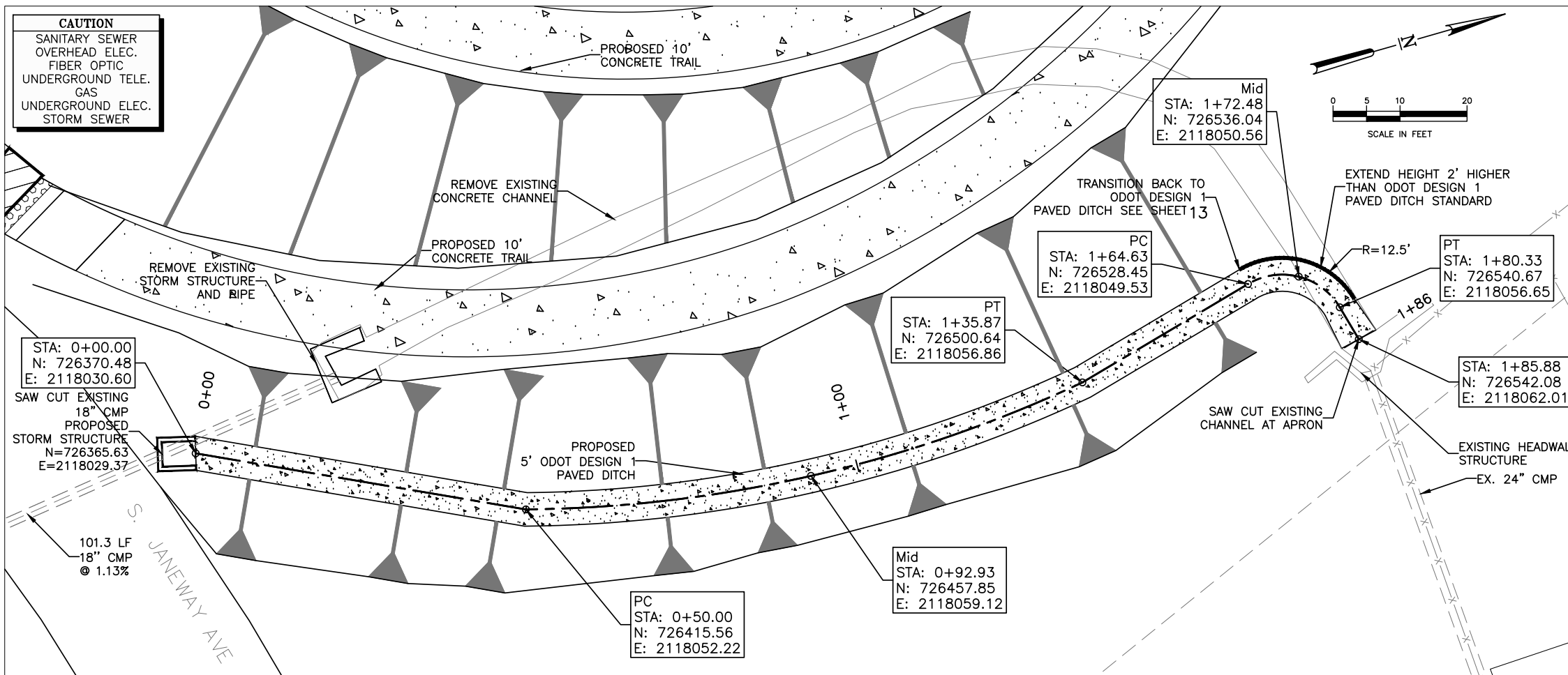


**HANDICAP RAMP DETAILS  
 STRIPING PLAN  
 LITTLE RIVER PARK DRAINAGE  
 IMPROVEMENTS**

**CITY OF MOORE**

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	JCL	Value	APPROVED:
			1" = 10'	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	DEVELOPMENT SERVICES			PUBLIC WORKS DIRECTOR
			RECOMMENDED				
			VERTICAL:	DEPUTY DIRECTOR			
			FILE:	DRAWING:			DATE:
			ATLAS PAGE NO. ###				SHEET 65 OF 133 SHEETS



**CAUTION**  
 SANITARY SEWER  
 OVERHEAD ELEC.  
 FIBER OPTIC  
 UNDERGROUND TELE.  
 GAS  
 UNDERGROUND ELEC.  
 STORM SEWER

- LEGEND**
- CATCH LINE
  - CHANNEL
  - - - CONSTRUCTION LIMITS
- CONSTRUCTION NOTES:**
- 1 XX.X LF CONSTRUCT WALL
  - 2 XX.X SY CONSTRUCT TRAIL
  - 3 XX.X LF WEIR
  - 4 [Pattern] CONSTRUCTION LIMITS/DO NOT DISTURB
  - 5 ADJUST MANHOLE TO GRADE
  - 6 GRADE TO DRAIN
  - 6 REMOVE EXISTING STORM PIPE
  - [Pattern] CONCRETE TRICKLE CHANNEL

**BENCHMARK**  
 CP-71011  
 TYPE  
 N=724775.445  
 E=2118696.59  
 EL=1198.52

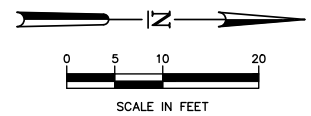
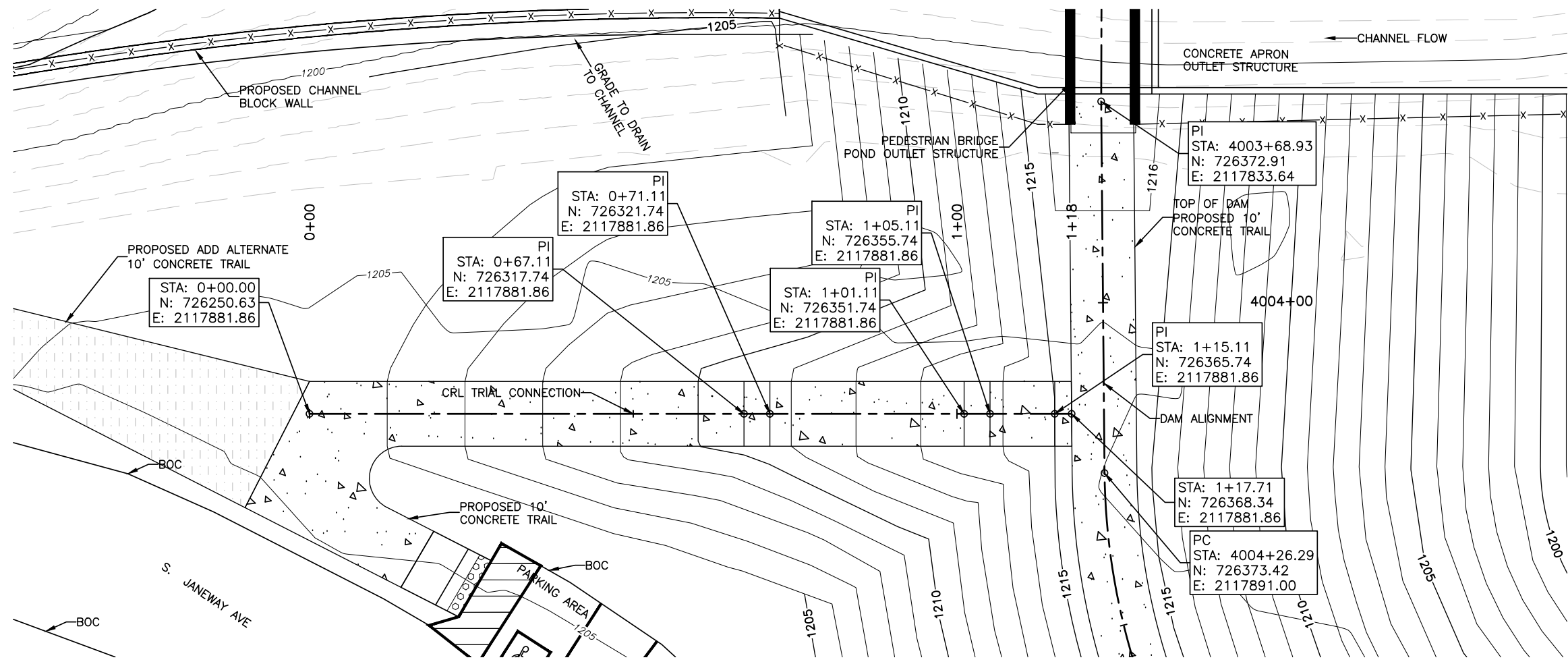
**TRICKLE CHANNEL RELOCATION  
 PLAN & PROFILE  
 LITTLE RIVER PARK DRAINAGE  
 IMPROVEMENTS**

**CITY OF MOORE**

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

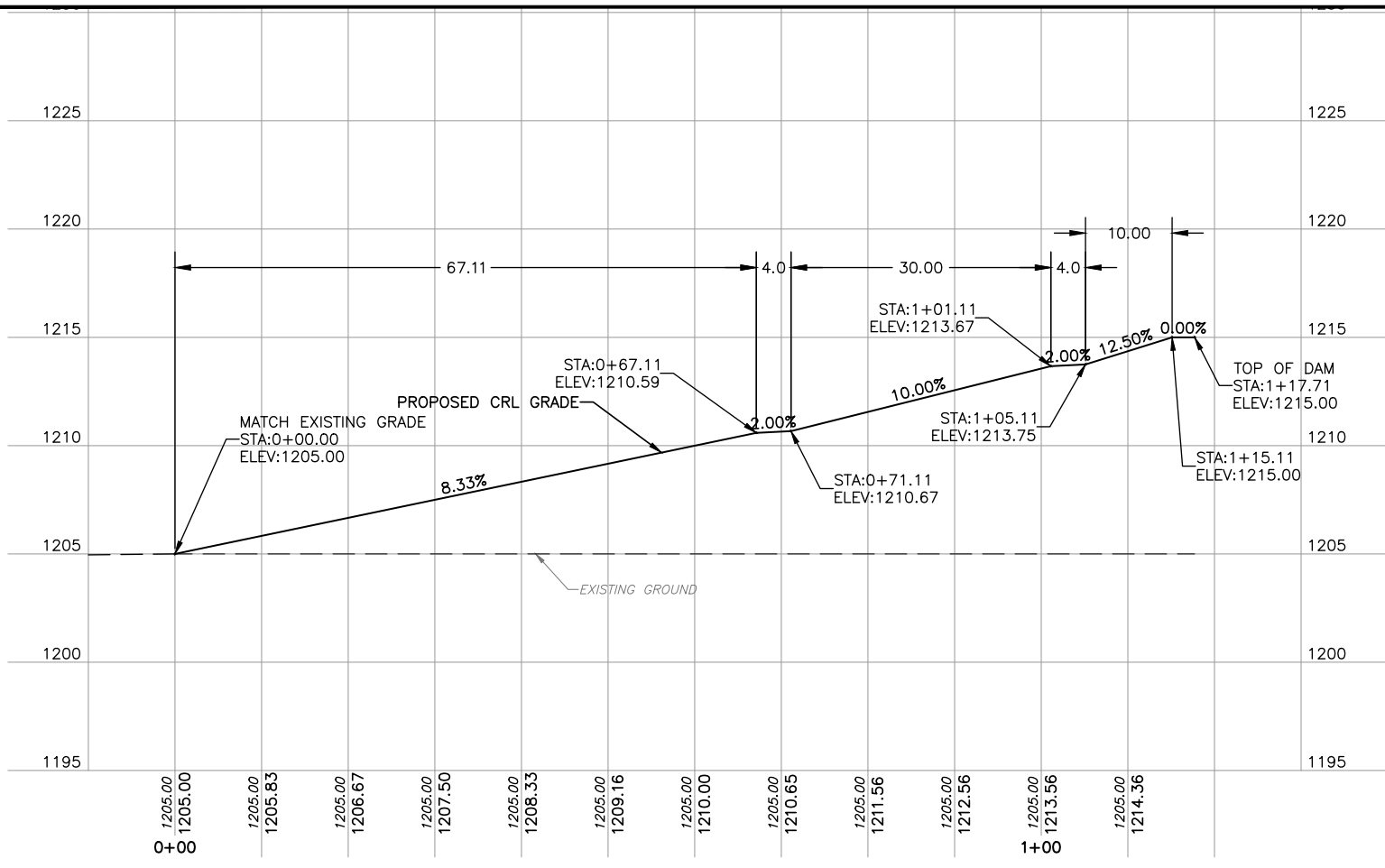
REVISION	BY	DATE	PLAN SCALE	DRAWN	JCL	Value	APPROVED:
			1" = 20'	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL: 1" = 20'	RECOMMENDED			
			VERTICAL: 1" = 5'	RECOMMENDED			
			FILE:	DRAWING:			PUBLIC WORKS DIRECTOR
			ATLAS PAGE NO. ###				DATE:

M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_CONC\_CHANNEL\_PLAN\_PROFILE.dwg



- CHANNEL
- CONSTRUCTION LIMITS
- PROPOSED CONTOURS
- EXISTING CONTOURS
- - - PROPOSED WALL LEFT (PROFILE)
- - - PROPOSED WALL RIGHT (PROFILE)

- CONSTRUCTION NOTES:**
- 1 XX.X LF CONSTRUCT WALL
  - 2 [Symbol] CONSTRUCT TRAIL
  - 3 XX.X LF WEIR
  - 4 [Symbol] CONSTRUCTION LIMITS/DO NOT DISTURB
  - 5 ADJUST MANHOLE TO GRADE
  - 6 GRADE TO DRAIN
  - 7 REMOVE EXISTING STORM PIPE
  - 8 RELOCATED BY OTHERS
  - 9 [Symbol] GRADING AND SODDING



**TRAIL CONNECTION  
PLAN & PROFILE  
LITTLE RIVER PARK DRAINAGE  
IMPROVEMENTS**

**CITY OF MOORE**

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

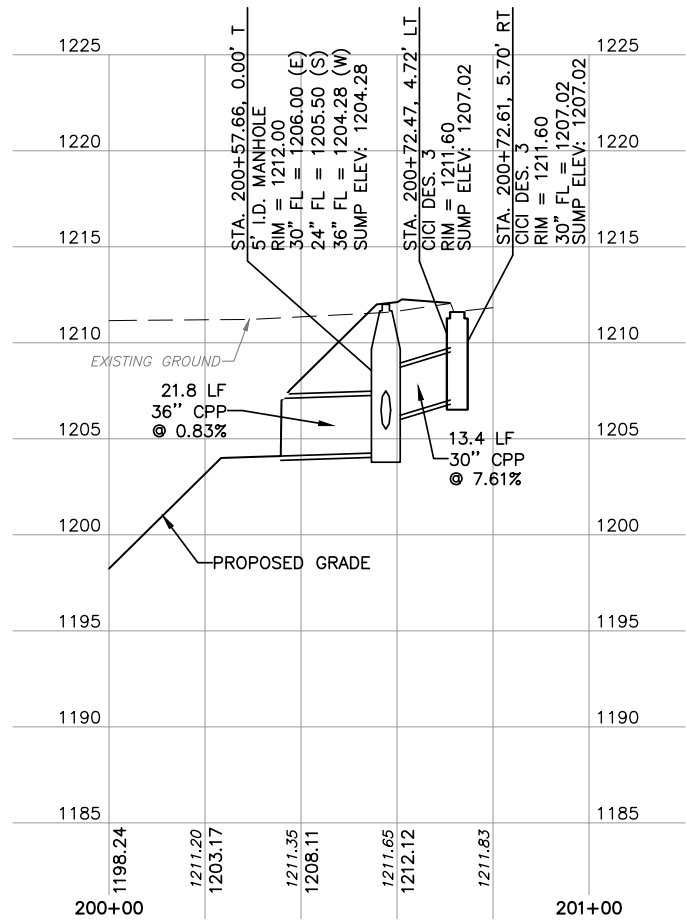
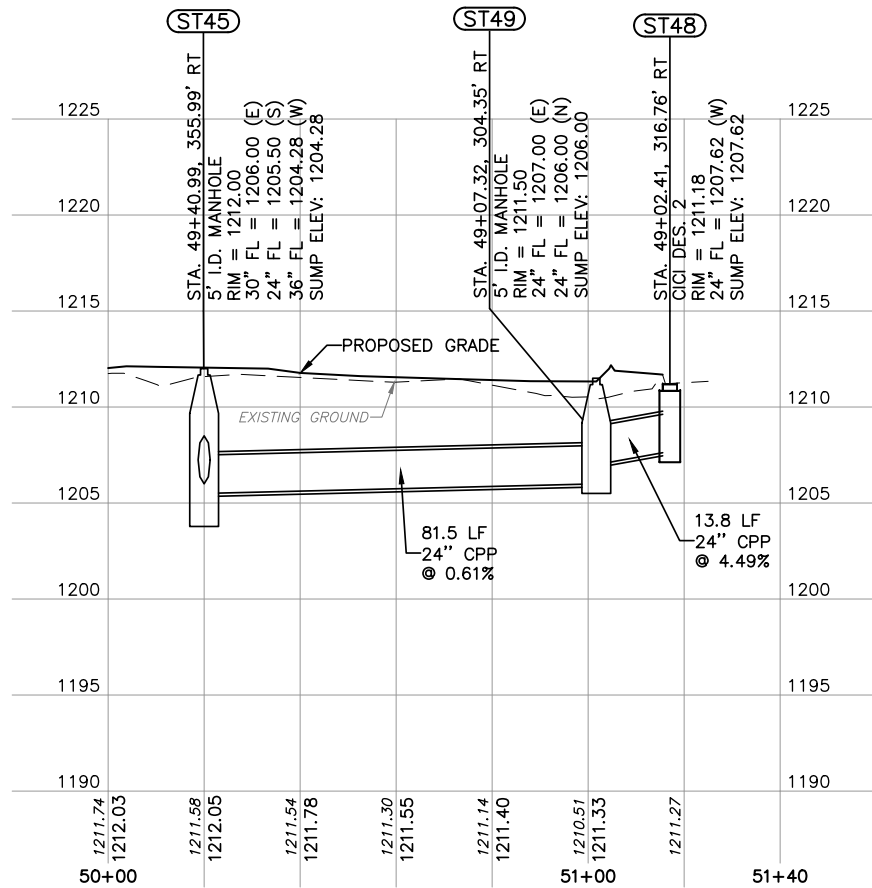
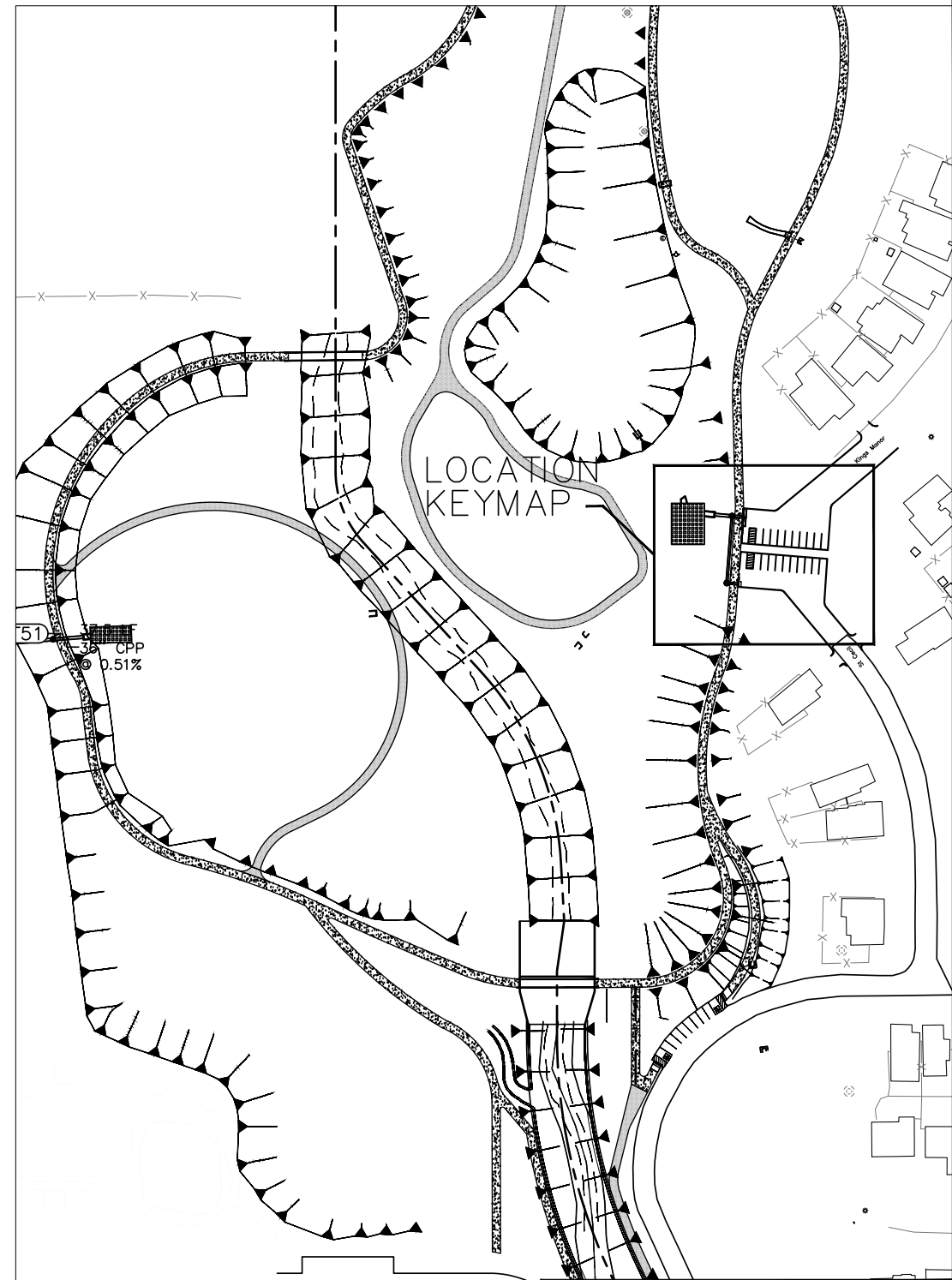
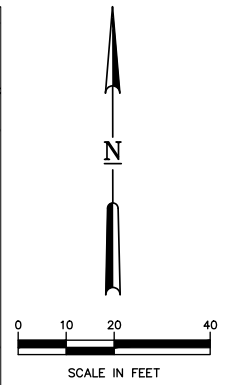
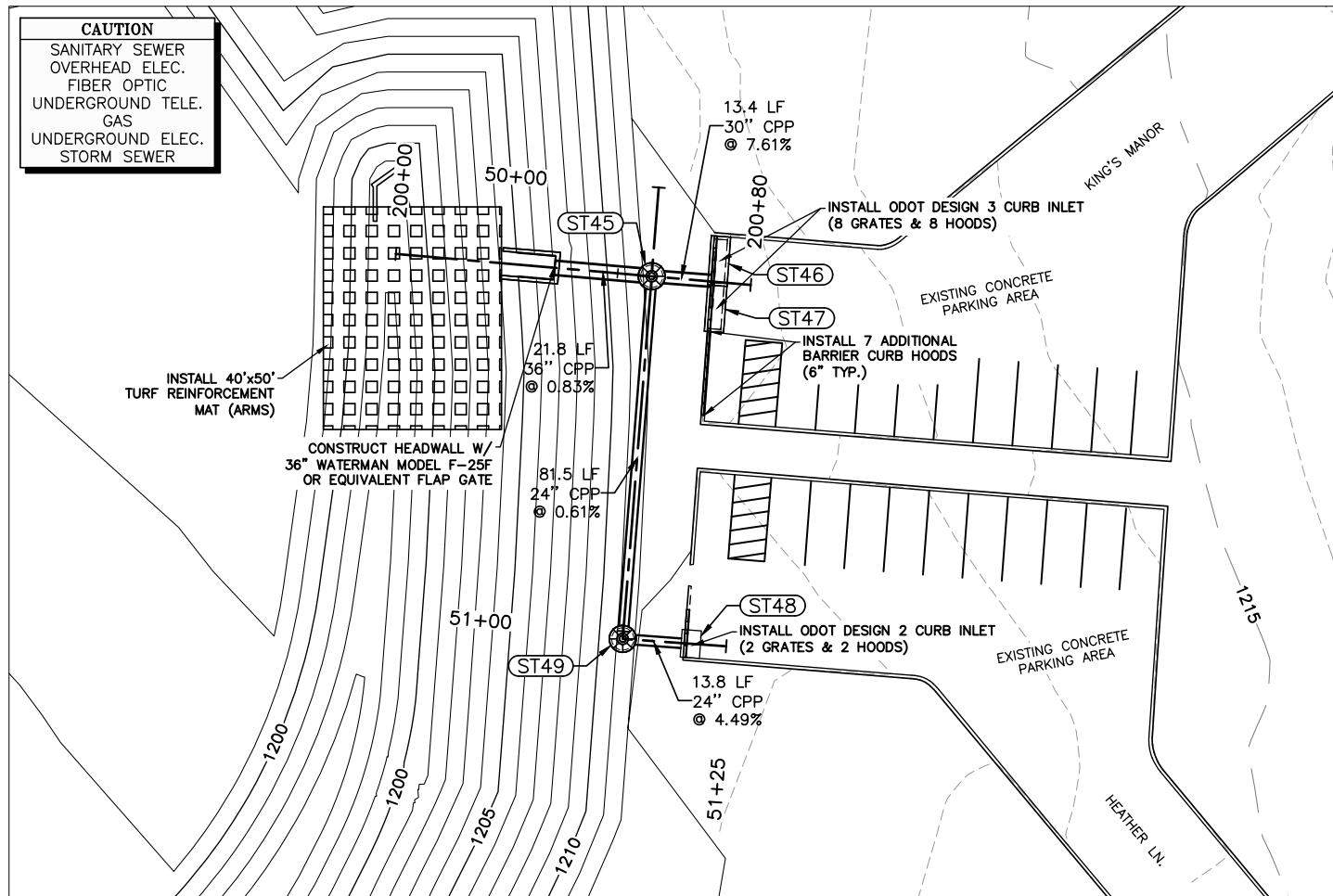
REVISION	BY	DATE	PLAN SCALE	DRAWN	JCL	Value	APPROVED:
			1" = 10'	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	RECOMMENDED			DEPUTY DIRECTOR
			1" = 10'	RECOMMENDED			
			VERTICAL:	DEPUTY DIRECTOR			PUBLIC WORKS DIRECTOR
			1" = 5'	DEPUTY DIRECTOR			
			FILE:	DRAWING:			DATE:
			ATLAS PAGE NO. ###				SHEET 67 OF 133 SHEETS

M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_TRAIL\_DAM\_CONNECTION\_P&P.dwg





M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Drawings\15MOR05\_STORM\_PLAN\_PROFILE.dwg



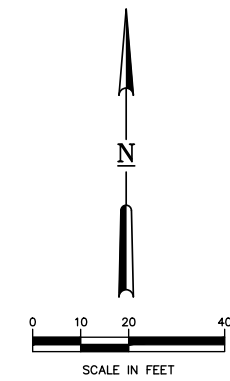
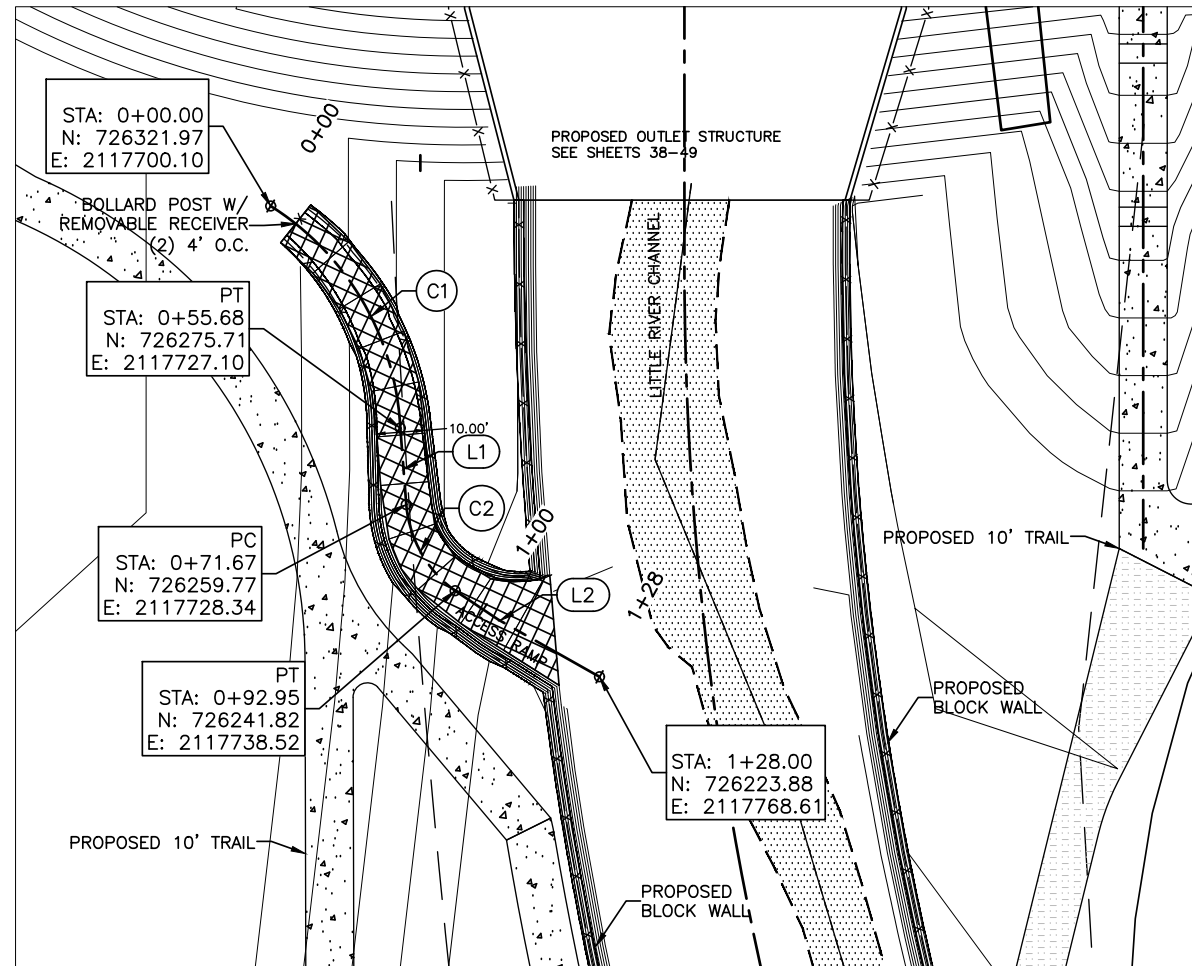
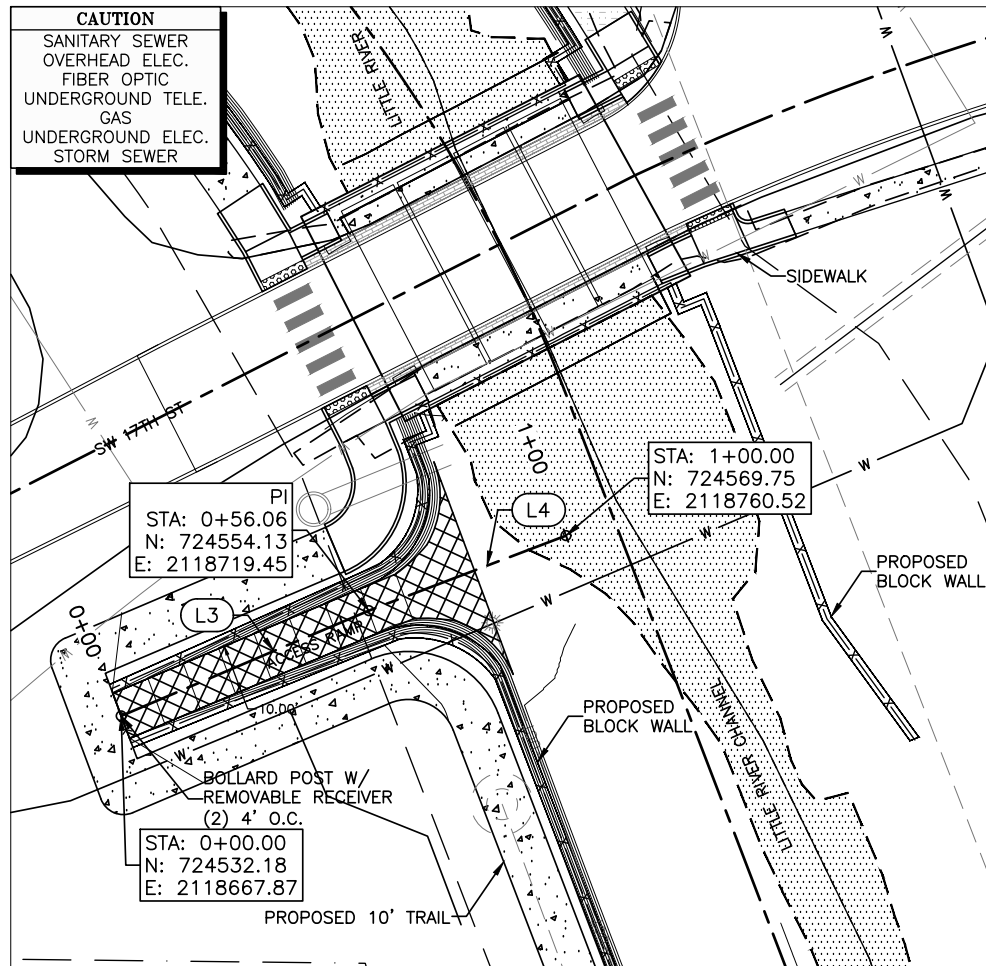
**STORM SEWER  
PLAN & PROFILE**  
**LITTLE RIVER PARK DRAINAGE  
IMPROVEMENTS**

**CITY OF MOORE**

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	JCL	Value	APPROVED:
			1" = 20'	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
				RECOMMENDED			
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	DEVELOPMENT SERVICES			
				RECOMMENDED			
			VERTICAL:	DEPUTY DIRECTOR			
				PUBLIC WORKS DIRECTOR			
			FILE:	DRAWING:		DATE:	
			ATLAS PAGE NO. ###			SHEET 69 OF 133 SHEETS	

M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_Access\_Ramps.dwg

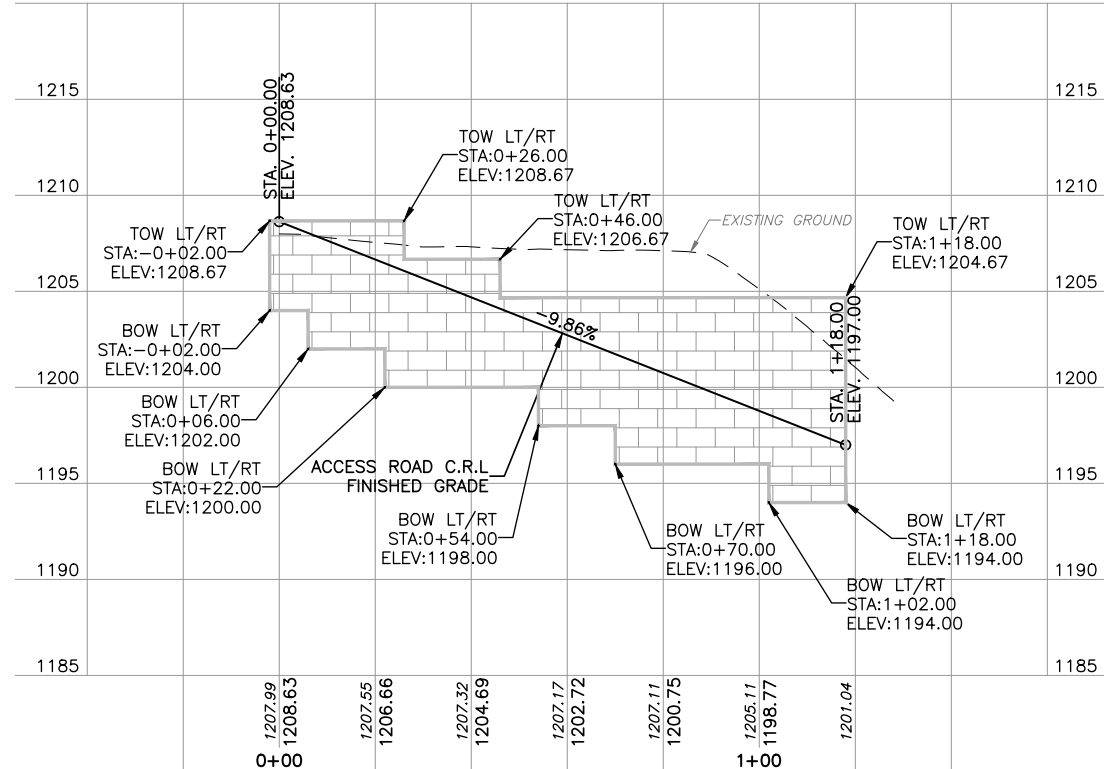
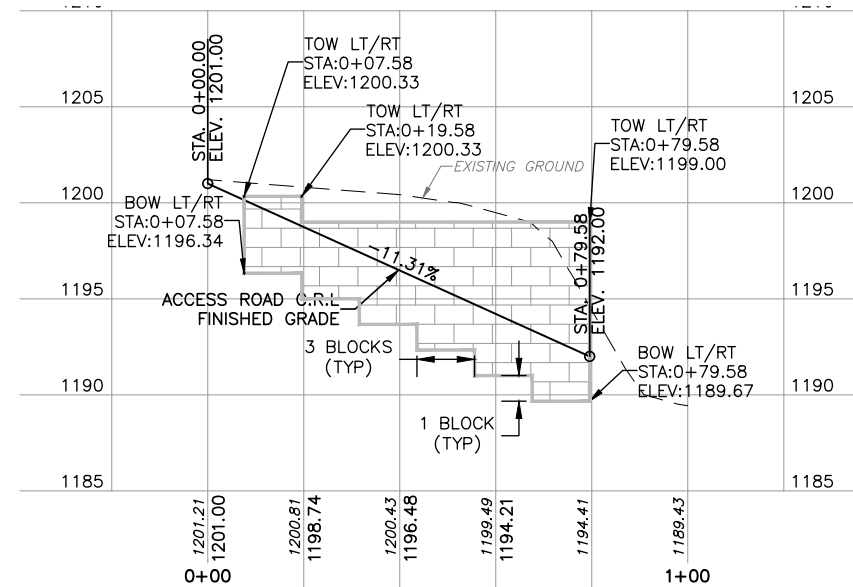


C.R.L. LINE DATA		
Line #	Length	Bearing
L1	15.99	S4° 26' 30.53"E
L2	24.24	S60° 32' 21.84"E
L3	56.06	N66° 57' 06.78"E
L4	43.94	N69° 10' 14.79"E

C.R.L. CURVE DATA					
Curve #	Arc Length	Radius	Delta Angle	Chord Length	Chord Bearing
C1	55.68	58.03	54°58'08"	53.57	S30° 16' 02.31"E
C2	21.28	24.76	49°15'17"	20.63	S29° 33' 00.68"E

**LEGEND**

10' CONCRETE ACCESS RAMP



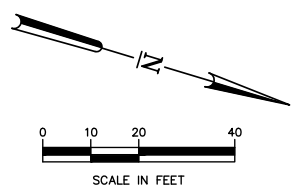
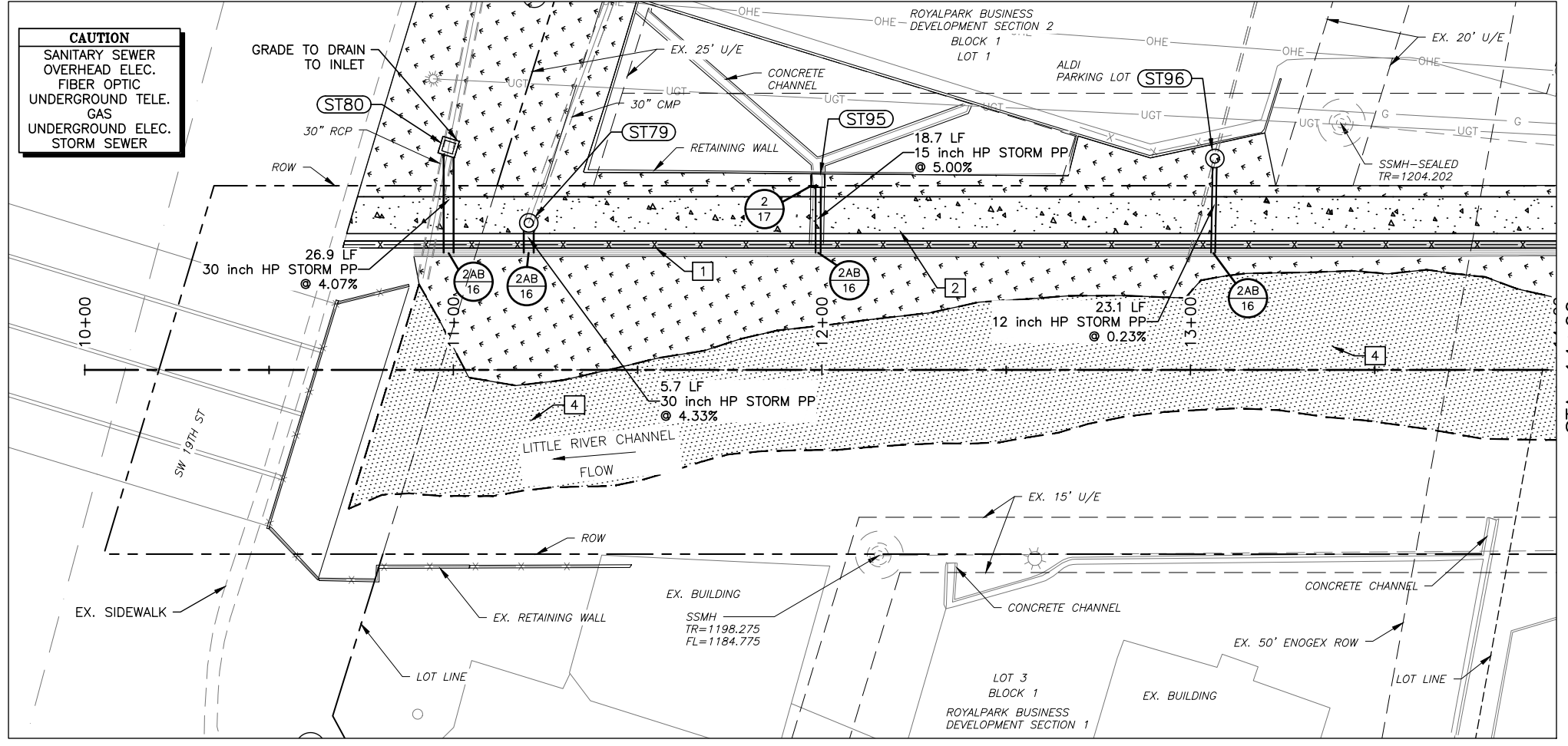
**ACCESS RAMPS  
 PLAN & PROFILE**

**LITTLE RIVER PARK DRAINAGE  
 IMPROVEMENTS**

**CITY OF MOORE**

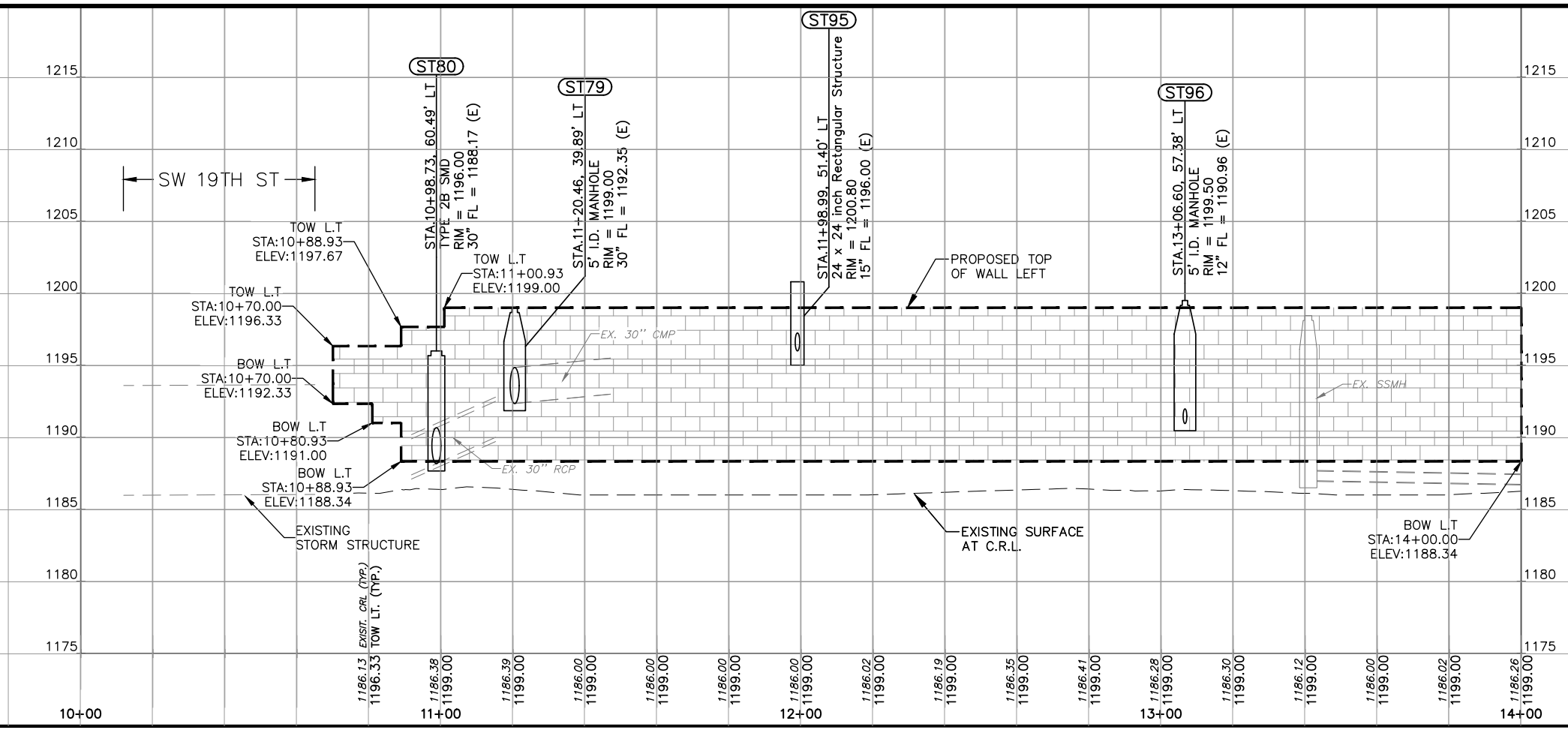
PLANS AND ESTIMATES PREPARED BY:  
**Meshek & Associates, L.L.C.**  
 1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620

REVISION	BY	DATE	PLAN SCALE	DRAWN	JCL	Value	APPROVED:
			1" = 20'	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	RECOMMENDED			PUBLIC WORKS DIRECTOR
			1" = 20'	DEVELOPMENT SERVICES			
			VERTICAL:	RECOMMENDED			PUBLIC WORKS DIRECTOR
			1" = 5'	DEPUTY DIRECTOR			
			FILE:	DRAWING:			DATE:
			ATLAS PAGE NO. ###				SHEET 70 OF 133 SHEETS



- CHANNEL
- CONSTRUCTION LIMITS
- PROPOSED CONTOURS
- EXISTING CONTOURS
- PROPOSED WALL LEFT (PROFILE)
- PROPOSED WALL RIGHT (PROFILE)

- CONSTRUCTION NOTES:**
- 1 CONSTRUCT RECON BLOCK WALL
  - 2 CONSTRUCT CONCRETE TRAIL
  - 3 XX.X LF SANITARY SEWER ENCASEMENT
  - 4 CONSTRUCTION LIMITS/DO NOT DISTURB
  - 5 ADJUST MANHOLE TO GRADE
  - 6 GRADE TO DRAIN
  - 7 REMOVE EXISTING STORM PIPE
  - 8 TO BE RELOCATED BY OTHERS
  - 9 GRADING AND SODDING
  - 10 ADD ALTERNATE (TRAIL)
  - 11 REMOVE EXISTING CONCRETE TRAIL



<b>CONTROL POINT</b> CP=503
TYPE
N=723643.11
E=2118836.085
EL=1207.66

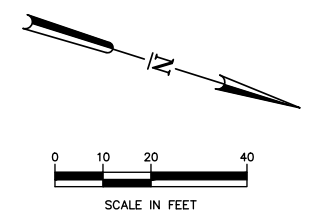
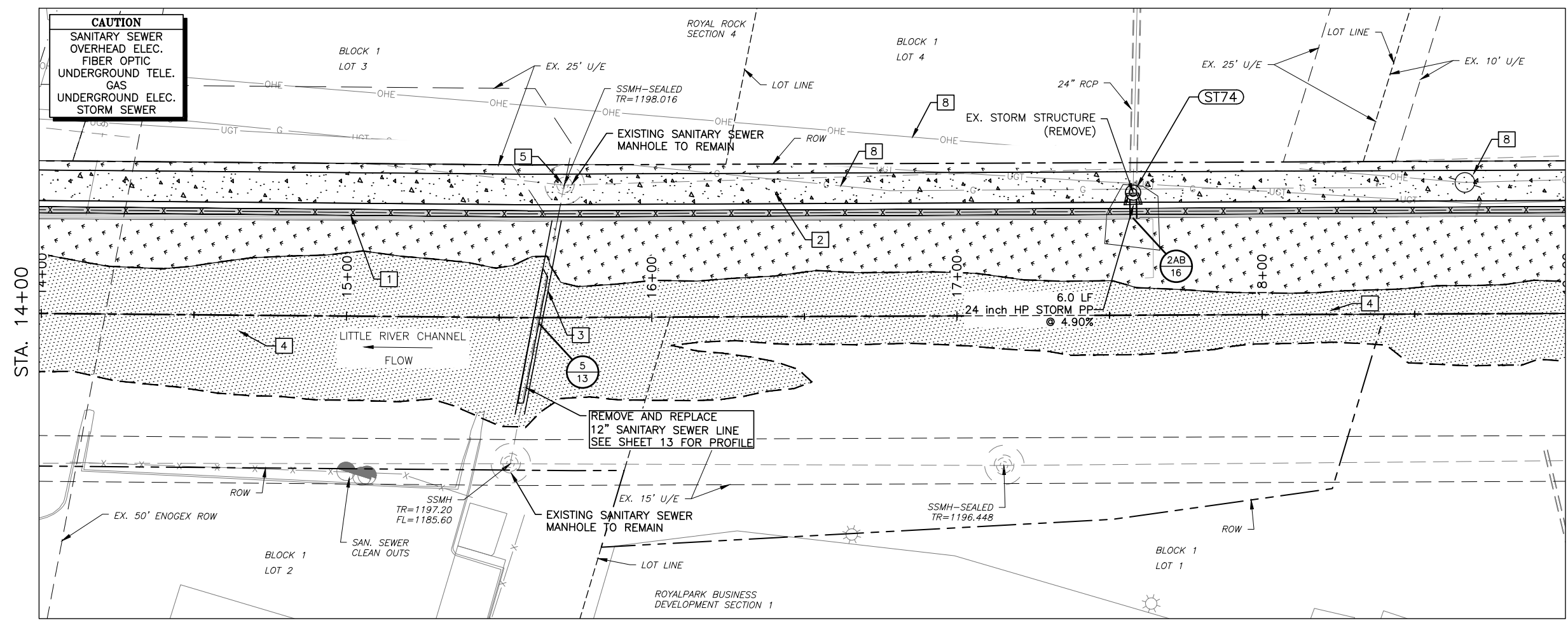
**CHANNEL PLAN & PROFILE**  
**LITTLE RIVER PARK DRAINAGE IMPROVEMENTS**  
**CITY OF MOORE**

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	JCL	Value	APPROVED:
			1" = 20'	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	DEVELOPMENT SERVICES			
			1" = 20'	RECOMMENDED			
			VERTICAL:	DEPUTY DIRECTOR			PUBLIC WORKS DIRECTOR
			1" = 5'				
			FILE:	DRAWING:			DATE:
			ATLAS PAGE NO. ###				SHEET 71 OF 133 SHEETS

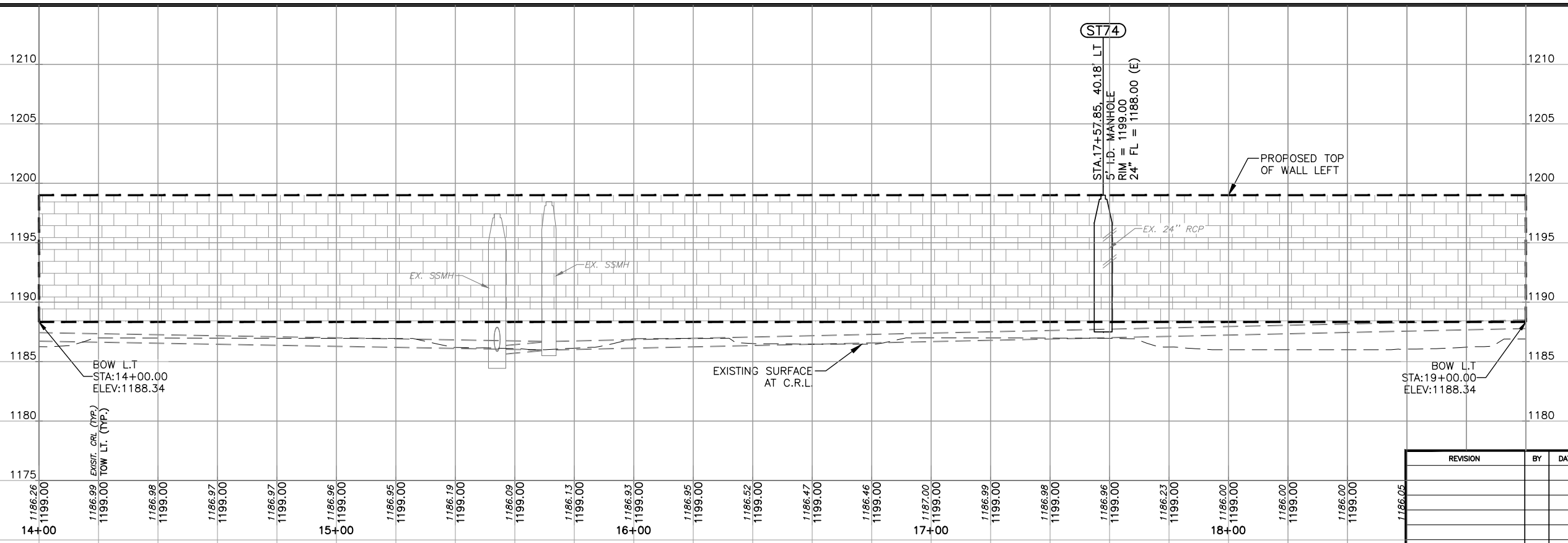
M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_CHANNEL\_PLAN\_PROFILE.dwg

**CAUTION**  
 SANITARY SEWER  
 OVERHEAD ELEC.  
 FIBER OPTIC  
 UNDERGROUND TELE.  
 GAS  
 UNDERGROUND ELEC.  
 STORM SEWER



- CHANNEL
- CONSTRUCTION LIMITS
- PROPOSED CONTOURS
- EXISTING CONTOURS
- PROPOSED WALL LEFT (PROFILE)
- PROPOSED WALL RIGHT (PROFILE)

- CONSTRUCTION NOTES:**
- 1 CONSTRUCT RECON BLOCK WALL
  - 2 CONSTRUCT CONCRETE TRAIL
  - 3 XX.X LF SANITARY SEWER ENCASEMENT
  - 4 CONSTRUCTION LIMITS/ DO NOT DISTURB
  - 5 ADJUST MANHOLE TO GRADE
  - 6 GRADE TO DRAIN
  - 7 REMOVE EXISTING STORM PIPE
  - 8 TO BE RELOCATED BY OTHERS
  - 9 GRADING AND SODDING
  - 10 ADD ALTERNATE (TRAIL)
  - 11 REMOVE EXISTING CONCRETE TRAIL



**BEFORE YOU DIG**  
 CALL 811  
 CALL ONE

**CONTROL POINT**  
 CP=503  
 TYPE  
 N=723643.11  
 E=2118836.085  
 EL=1207.66

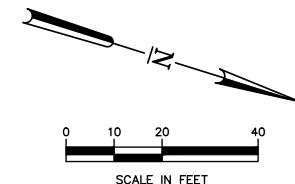
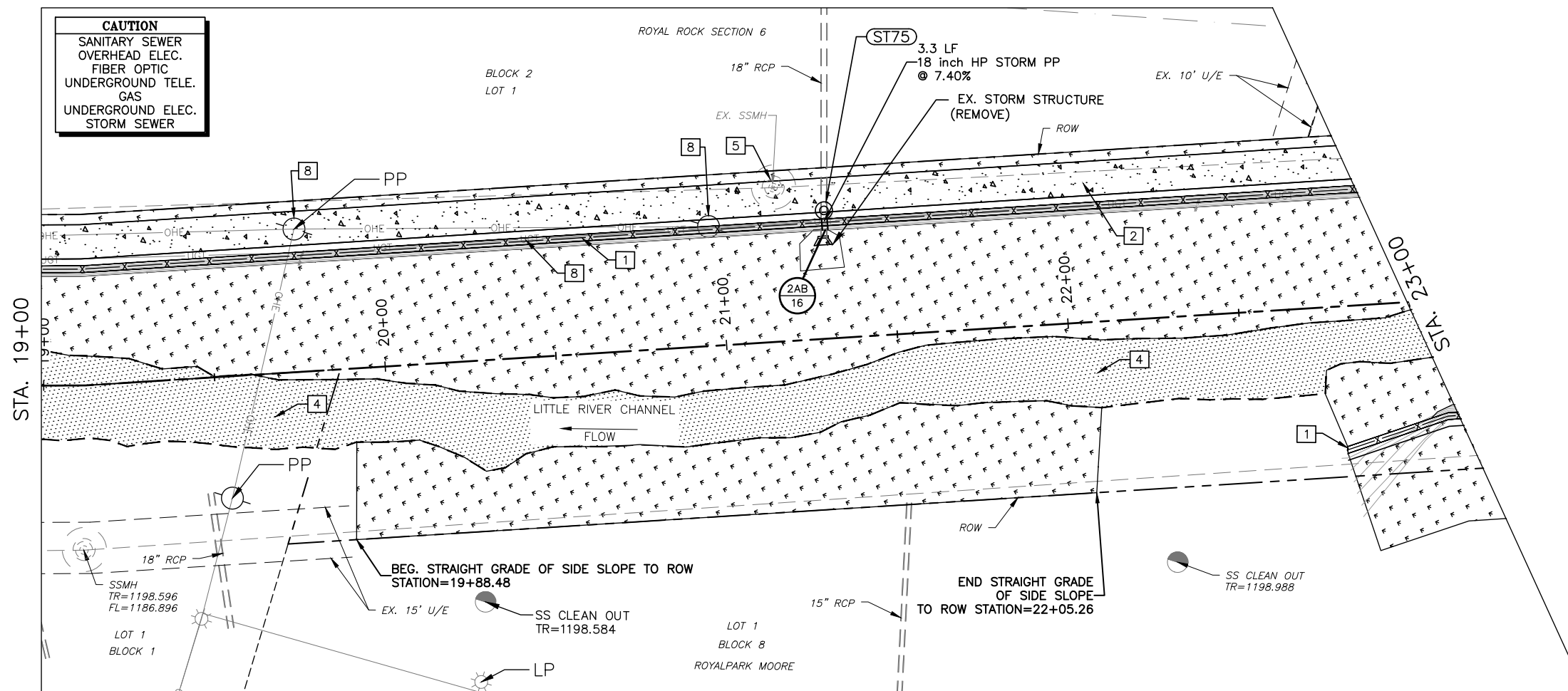
**CHANNEL PLAN & PROFILE**  
**LITTLE RIVER PARK DRAINAGE IMPROVEMENTS**  
**CITY OF MOORE**

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	JCL	Value	APPROVED:
			1" = 20'	DESIGNED	BWF	Value	PUBLIC WORKS DIRECTOR
				SURVEY	PDH	Value	
				RECOMMENDED			
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	DEVELOPMENT SERVICES			
			1" = 20'	RECOMMENDED			
			VERTICAL:	DEPUTY DIRECTOR			
			1" = 5'				
			FILE:	DRAWING:	DATE:		
			ATLAS PAGE NO. ###				SHEET 72 OF 133 SHEETS

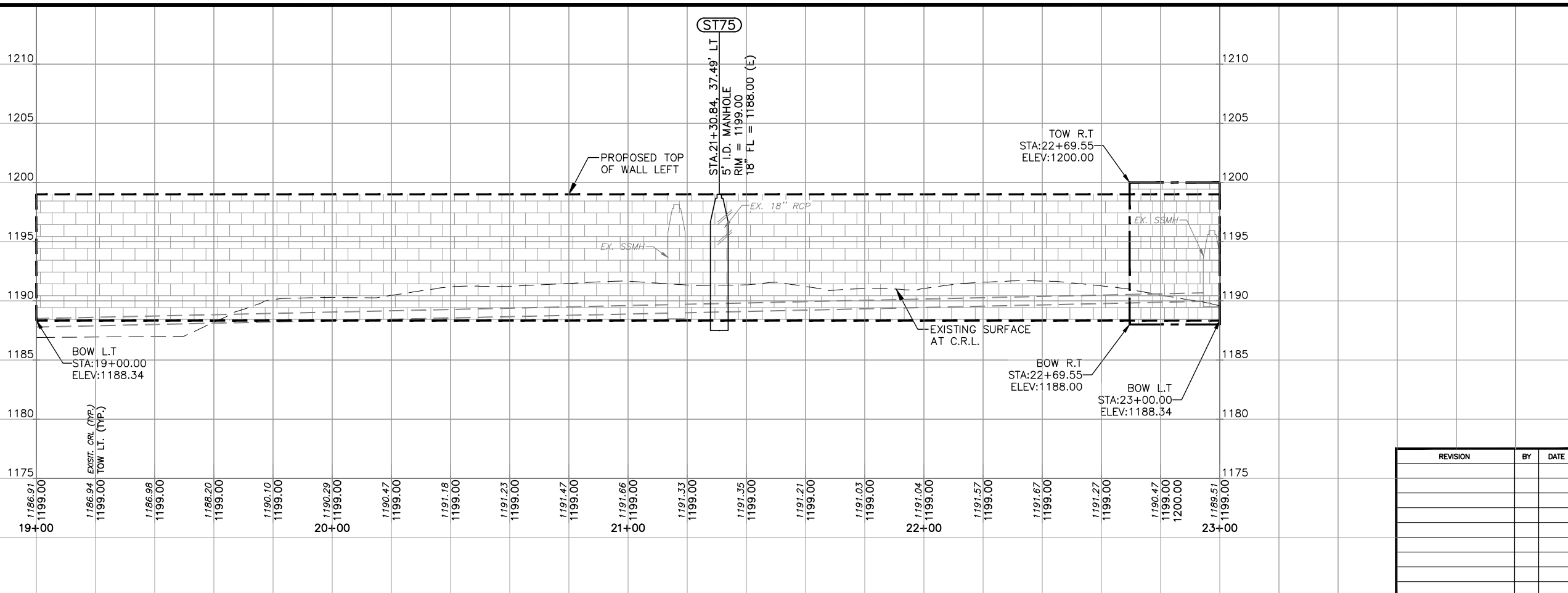
M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_CHANNEL\_PLAN\_PROFILE.dwg

**CAUTION**  
 SANITARY SEWER  
 OVERHEAD ELEC.  
 FIBER OPTIC  
 UNDERGROUND TELE.  
 GAS  
 UNDERGROUND ELEC.  
 STORM SEWER



- CHANNEL
- CONSTRUCTION LIMITS
- PROPOSED CONTOURS
- EXISTING CONTOURS
- PROPOSED WALL LEFT (PROFILE)
- PROPOSED WALL RIGHT (PROFILE)

- CONSTRUCTION NOTES:**
- 1 CONSTRUCT RECON BLOCK WALL
  - 2 CONSTRUCT CONCRETE TRAIL
  - 3 XX.X LF SANITARY SEWER ENCASEMENT
  - 4 CONSTRUCTION LIMITS/ DO NOT DISTURB
  - 5 ADJUST MANHOLE TO GRADE
  - 6 GRADE TO DRAIN
  - 7 REMOVE EXISTING STORM PIPE
  - 8 TO BE RELOCATED BY OTHERS
  - 9 GRADING AND SODDING
  - 10 ADD ALTERNATE (TRAIL)
  - 11 REMOVE EXISTING CONCRETE TRAIL



**BEFORE YOU DIG**  
 CALL OKIE

**CONTROL POINT**  
 CP-503  
 TYPE  
 N=723643.11  
 E=2118836.085  
 EL=1207.66

**CHANNEL PLAN & PROFILE**  
**LITTLE RIVER PARK DRAINAGE IMPROVEMENTS**  
**CITY OF MOORE**

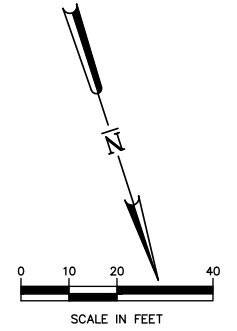
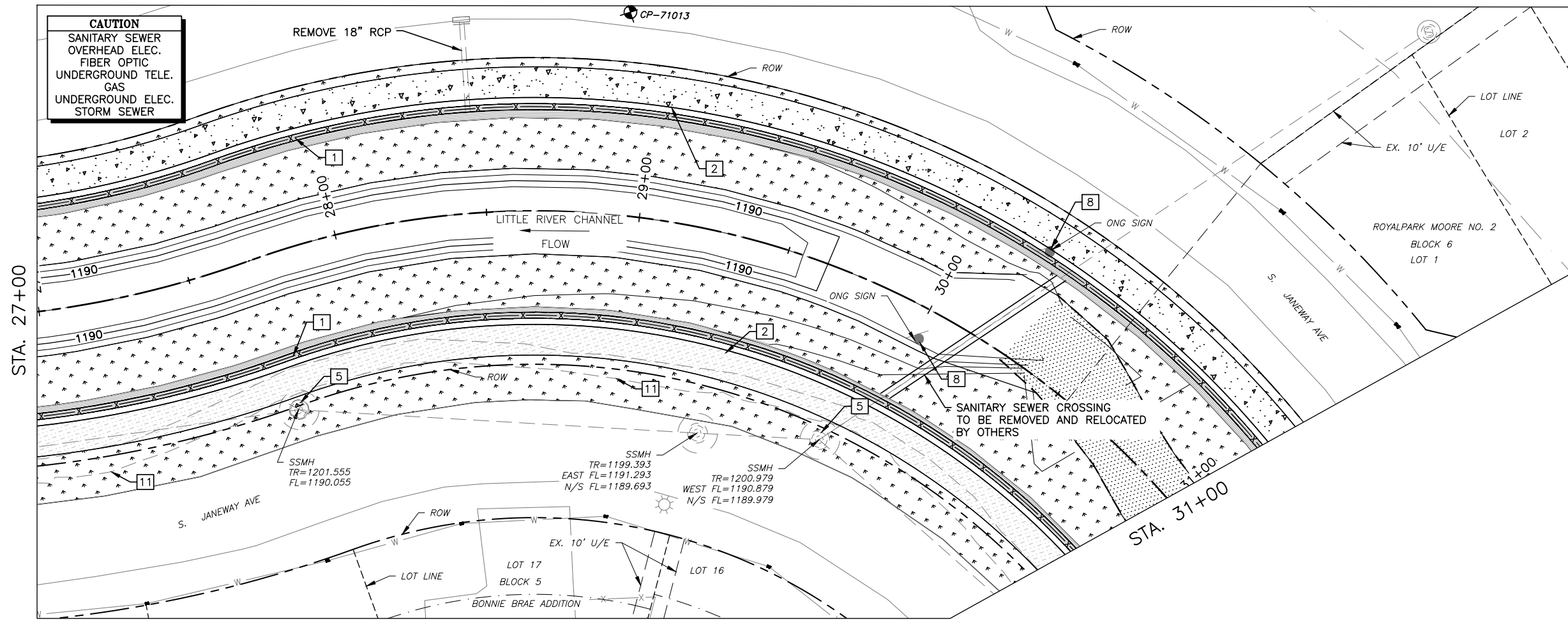
PLANS AND ESTIMATES PREPARED BY:  
**Meshek & Associates, L.L.C.**  
 1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620

REVISION	BY	DATE	PLAN SCALE	DRAWN	JCL	Value	APPROVED:
			1" = 20'	DESIGNED	BWF	Value	PUBLIC WORKS DIRECTOR
				SURVEY	PDH	Value	
				RECOMMENDED			
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	DEVELOPMENT SERVICES			
			1" = 20'	RECOMMENDED			
			VERTICAL:	DEPUTY DIRECTOR			
			1" = 5'				
			FILE:	DRAWING:	DATE:		
			ATLAS PAGE NO. ###				SHEET 73 OF 133 SHEETS

M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_Channel\_Plan\_Profile.dwg

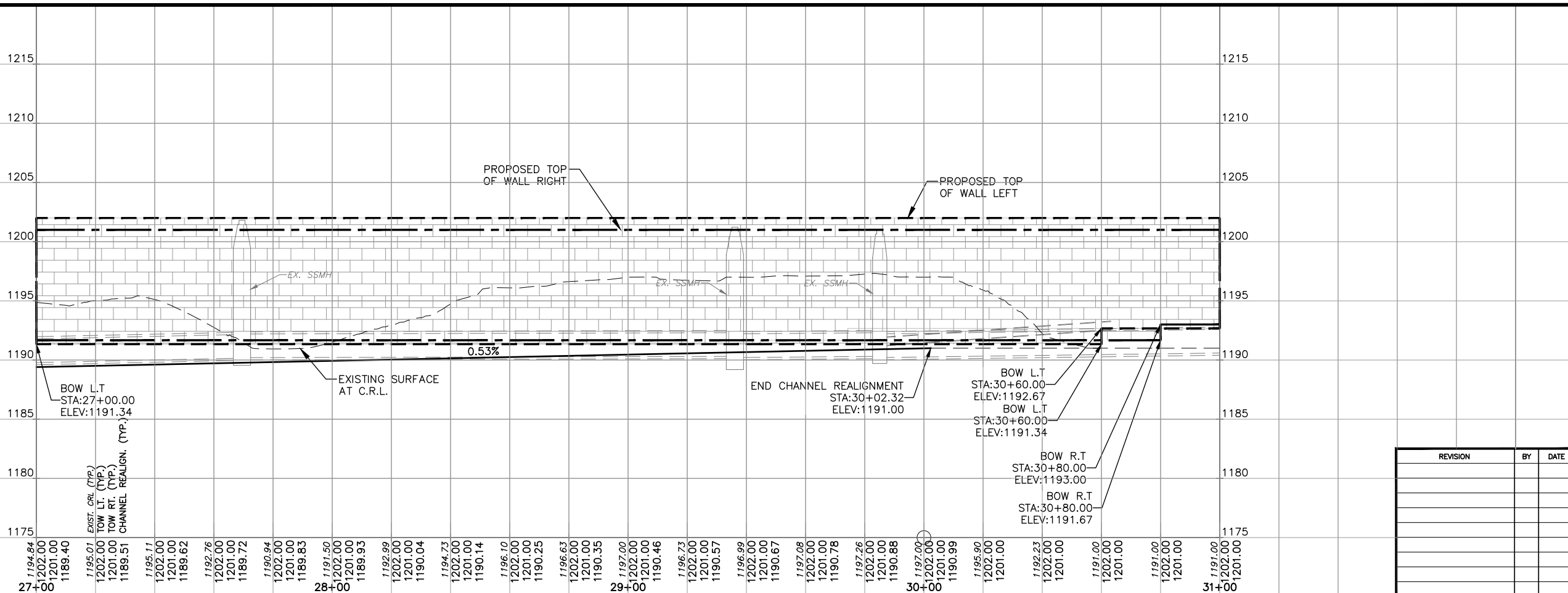


**CAUTION**  
 SANITARY SEWER  
 OVERHEAD ELEC.  
 FIBER OPTIC  
 UNDERGROUND TELE.  
 GAS  
 UNDERGROUND ELEC.  
 STORM SEWER



- CHANNEL
- CONSTRUCTION LIMITS
- PROPOSED CONTOURS
- EXISTING CONTOURS
- PROPOSED WALL LEFT (PROFILE)
- PROPOSED WALL RIGHT (PROFILE)

- CONSTRUCTION NOTES:**
- 1 CONSTRUCT RECON BLOCK WALL
  - 2 CONSTRUCT CONCRETE TRAIL
  - 3 XX.X LF SANITARY SEWER ENCASEMENT
  - 4 CONSTRUCTION LIMITS/ DO NOT DISTURB
  - 5 ADJUST MANHOLE TO GRADE
  - 6 GRADE TO DRAIN
  - 7 REMOVE EXISTING STORM PIPE
  - 8 TO BE RELOCATED BY OTHERS
  - 9 GRADING AND SODDING
  - 10 ADD ALTERNATE (TRAIL)
  - 11 REMOVE EXISTING CONCRETE TRAIL



**BEFORE YOU DIG CALL OKIE**

**CONTROL POINT**  
 CP-71013  
 TYPE  
 N=724767.303  
 E=2118306.538  
 EL=1198.57

**CHANNEL PLAN & PROFILE**  
**LITTLE RIVER PARK DRAINAGE IMPROVEMENTS**  
**CITY OF MOORE**

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

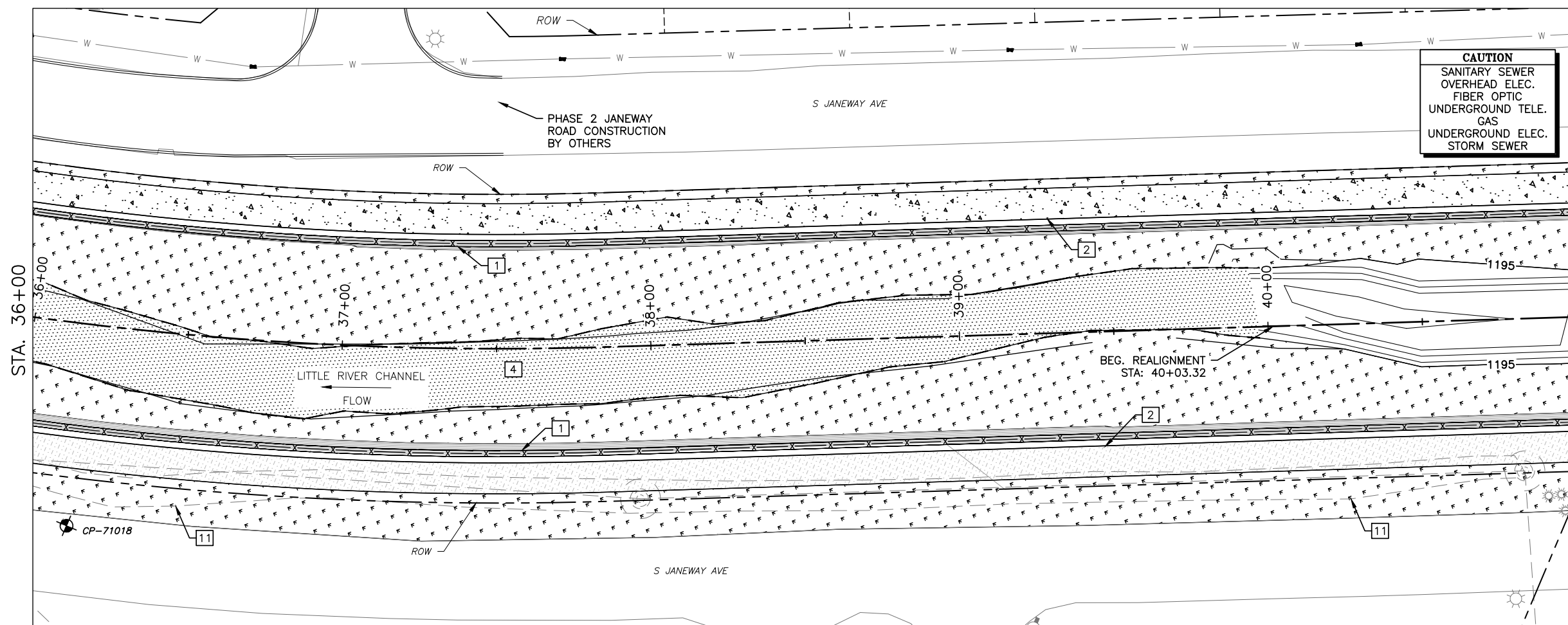
REVISION	BY	DATE	PLAN SCALE	DRAWN	JCL	Value	APPROVED:
			1" = 20'	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
				RECOMMENDED			
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	DEVELOPMENT SERVICES			
			1" = 20'	RECOMMENDED			
			VERTICAL:	DEPUTY DIRECTOR			PUBLIC WORKS DIRECTOR
			1" = 5'				
			FILE:	DRAWING:			DATE:
			ATLAS PAGE NO. ###				SHEET 75 OF 133 SHEETS

M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_CHANNEL\_PLAN\_PROFILE.dwg

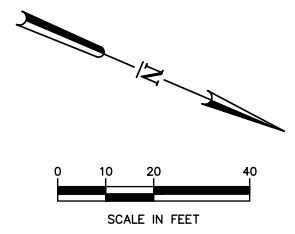




M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_CHANNEL\_PLAN\_PROFILE.dwg

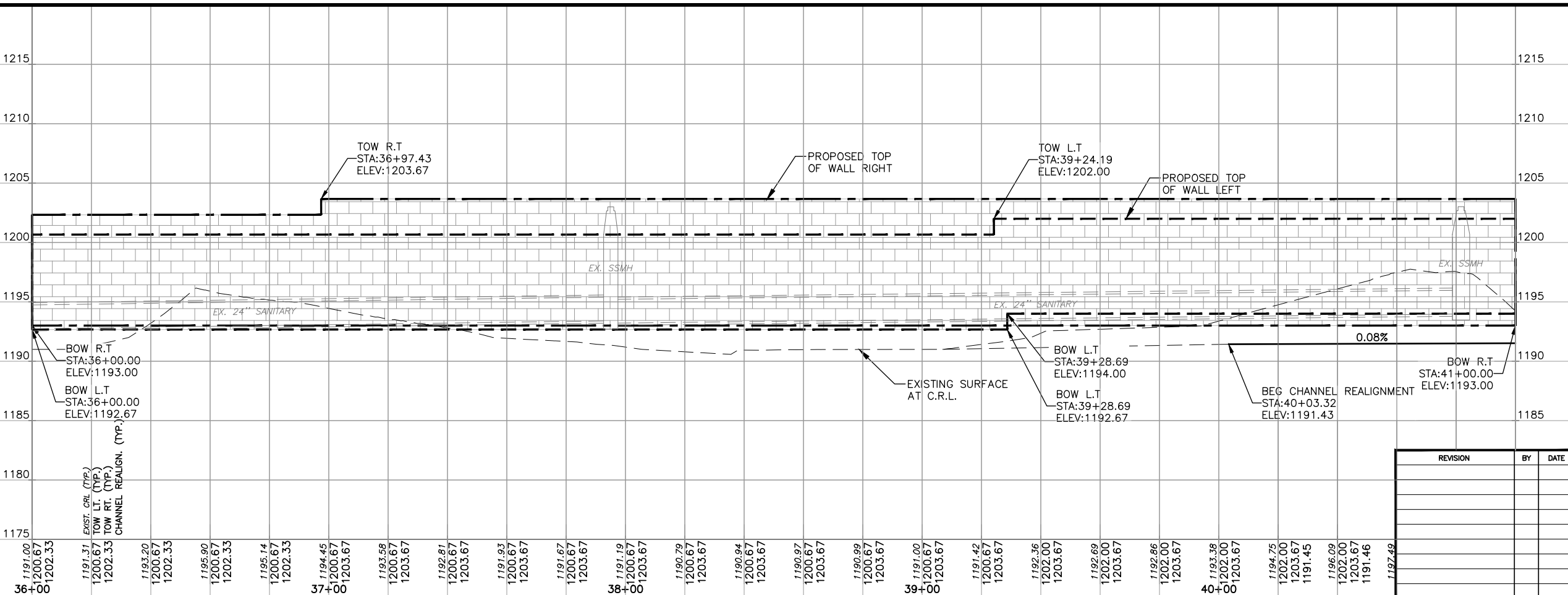


**CAUTION**  
 SANITARY SEWER  
 OVERHEAD ELEC.  
 FIBER OPTIC  
 UNDERGROUND TELE.  
 GAS  
 UNDERGROUND ELEC.  
 STORM SEWER



- CHANNEL
- CONSTRUCTION LIMITS
- PROPOSED CONTOURS
- EXISTING CONTOURS
- PROPOSED WALL LEFT (PROFILE)
- PROPOSED WALL RIGHT (PROFILE)

- CONSTRUCTION NOTES:**
- 1 CONSTRUCT RECON BLOCK WALL
  - 2 CONSTRUCT CONCRETE TRAIL
  - 3 XX.X LF SANITARY SEWER ENCASEMENT
  - 4 CONSTRUCTION LIMITS/DO NOT DISTURB
  - 5 ADJUST MANHOLE TO GRADE
  - 6 GRADE TO DRAIN
  - 7 REMOVE EXISTING STORM PIPE
  - 8 TO BE RELOCATED BY OTHERS
  - 9 GRADING AND SODDING
  - 10 ADD ALTERNATE (TRAIL)
  - 11 REMOVE EXISTING CONCRETE TRAIL



**BEFORE YOU DIG**  
 CALL 811

**CONTROL POINT**  
 CP-71018  
 TYPE  
 N=725498.605  
 E=2118150.75  
 EL=1201.57

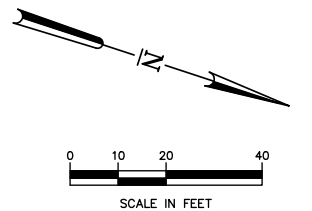
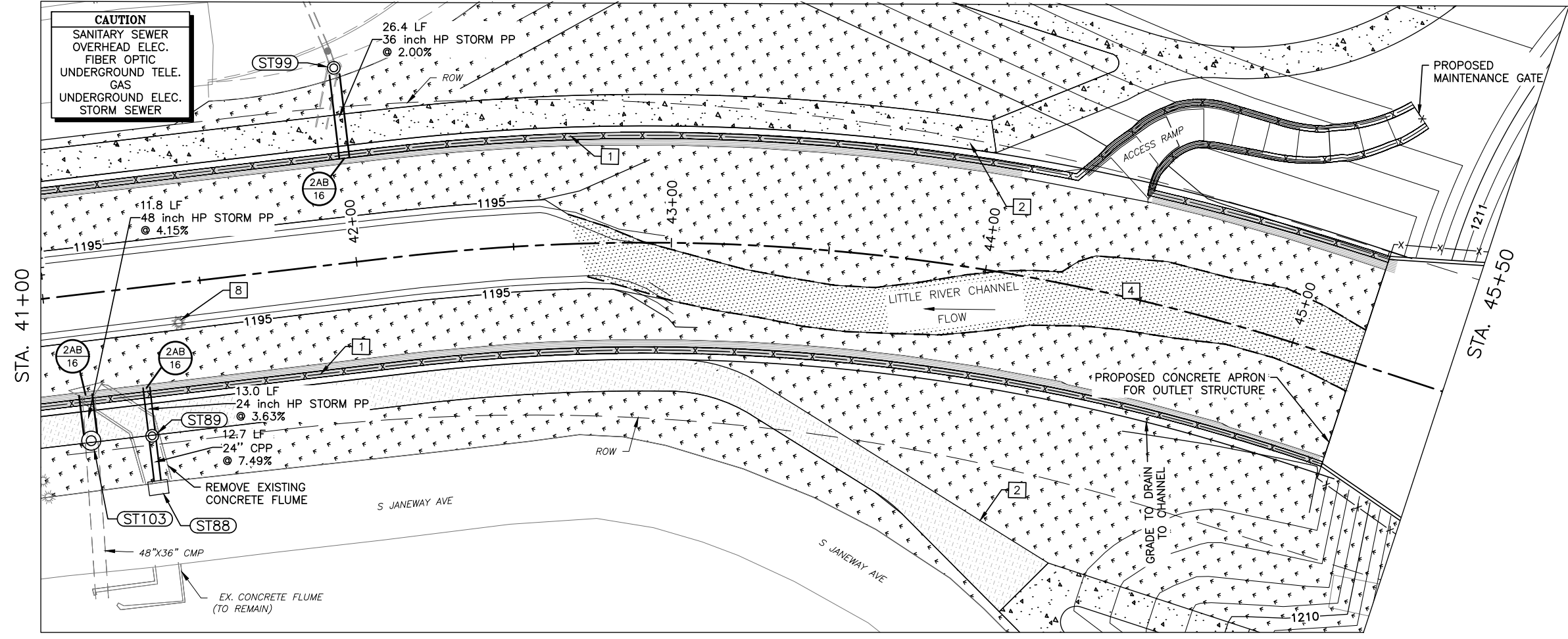
**CHANNEL PLAN & PROFILE**  
**LITTLE RIVER PARK DRAINAGE IMPROVEMENTS**  
**CITY OF MOORE**

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

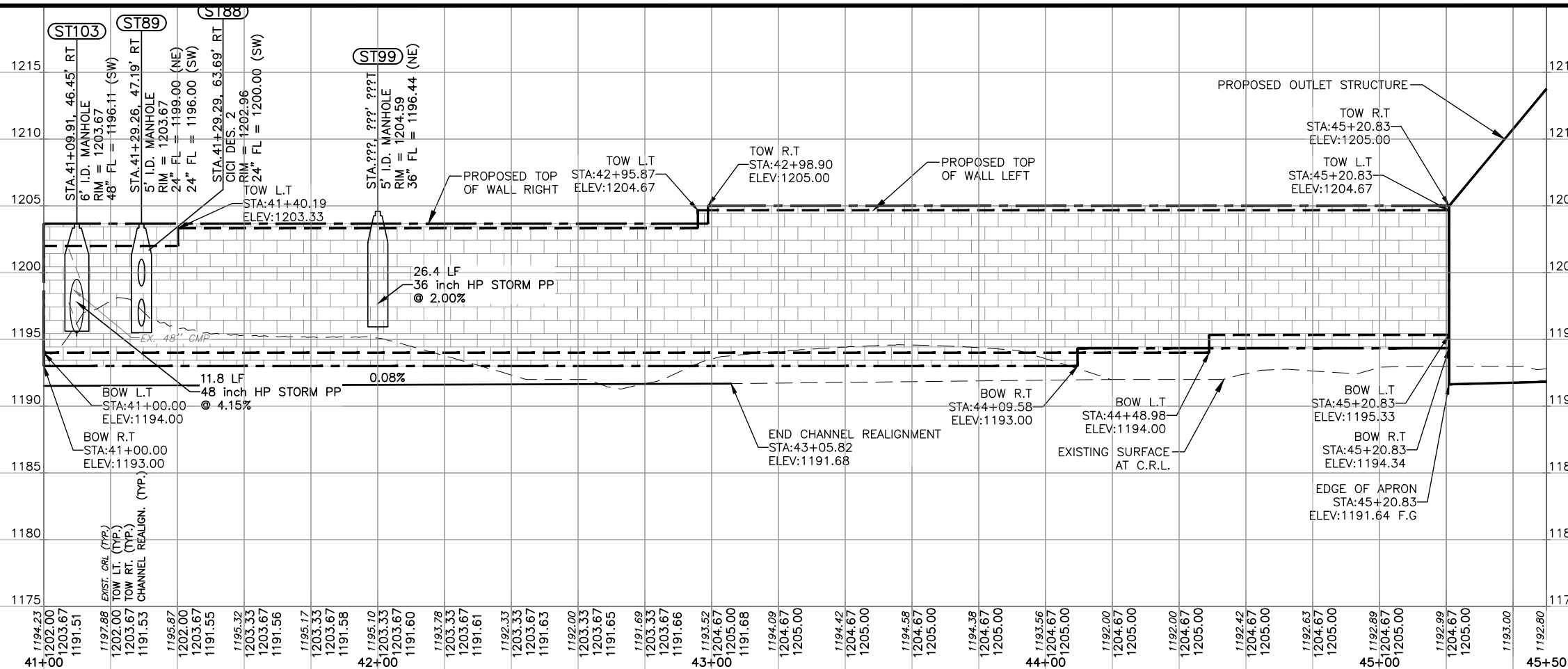
PLAN SCALE 1" = 20'	DRAWN DESIGNED	JCL BWF	Value	APPROVED:  DEPUTY DIRECTOR PUBLIC WORKS DIRECTOR
PROFILE SCALE RECOMMENDED	SURVEY	PDH	Value	
HORIZONTAL: 1" = 20'	DEVELOPMENT SERVICES RECOMMENDED			
VERTICAL: 1" = 5'	DEPUTY DIRECTOR			PUBLIC WORKS DIRECTOR
FILE: ATLAS PAGE NO. ###	DRAWING:	DATE:		SHEET 77 OF 133 SHEETS

**CAUTION**  
 SANITARY SEWER  
 OVERHEAD ELEC.  
 FIBER OPTIC  
 UNDERGROUND TELE.  
 GAS  
 UNDERGROUND ELEC.  
 STORM SEWER



- CHANNEL
- CONSTRUCTION LIMITS
- PROPOSED CONTOURS
- EXISTING CONTOURS
- - - PROPOSED WALL LEFT (PROFILE)
- - - PROPOSED WALL RIGHT (PROFILE)

- CONSTRUCTION NOTES:**
- 1 CONSTRUCT RECON BLOCK WALL
  - 2 CONSTRUCT CONCRETE TRAIL
  - 3 XX.X LF SANITARY SEWER ENCASEMENT
  - 4 CONSTRUCTION LIMITS/DO NOT DISTURB
  - 5 ADJUST MANHOLE TO GRADE
  - 6 GRADE TO DRAIN
  - 7 REMOVE EXISTING STORM PIPE
  - 8 TO BE RELOCATED BY OTHERS
  - 9 GRADING AND SODDING
  - 10 ADD ALTERNATE (TRAIL)
  - 11 REMOVE EXISTING CONCRETE TRAIL



**CONTROL POINT**  
 CP=71018  
 TYPE  
 N=725498.605  
 E=2118150.75  
 EL=1201.57

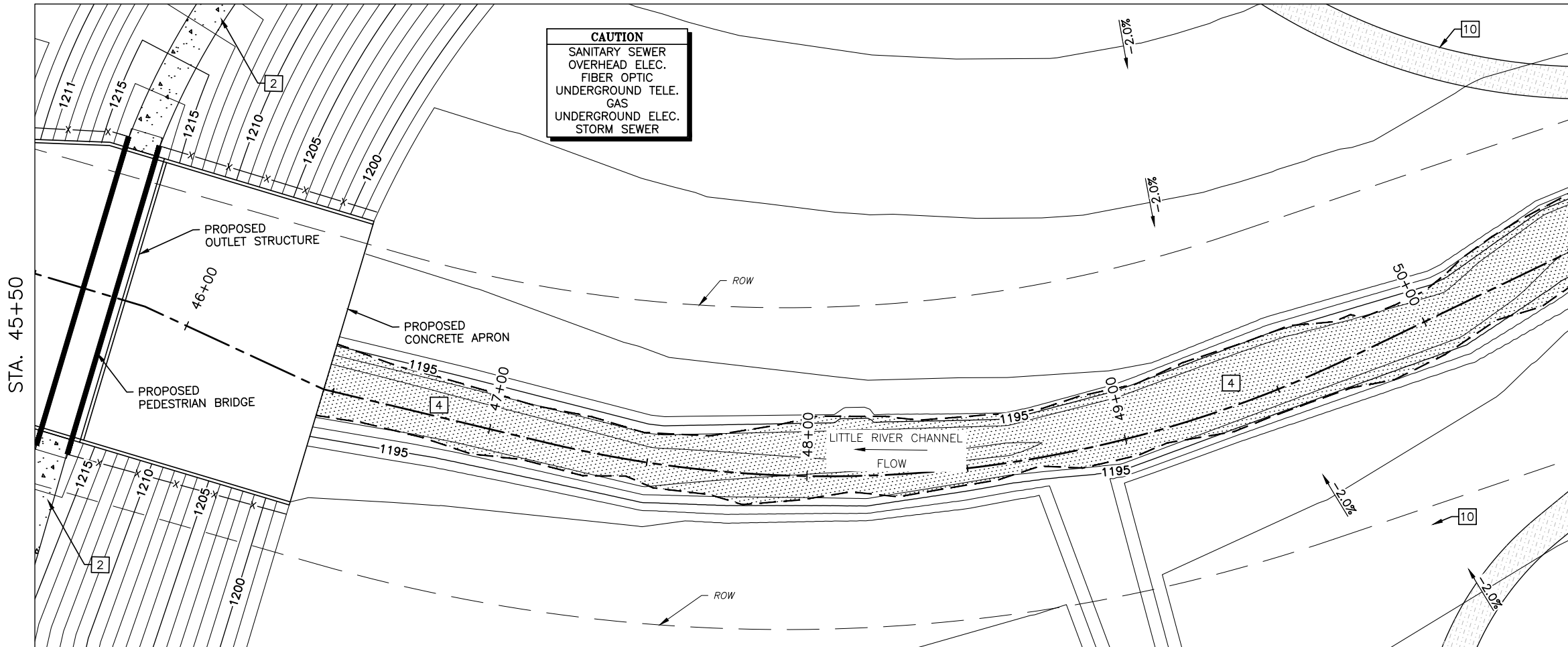
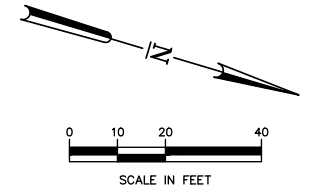
**CHANNEL PLAN & PROFILE**  
**LITTLE RIVER PARK DRAINAGE IMPROVEMENTS**  
**CITY OF MOORE**

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	JCL	Value	APPROVED:
			1" = 20'	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	DEVELOPMENT SERVICES			
			1" = 20'	RECOMMENDED			
			VERTICAL:	DEPUTY DIRECTOR			
			1" = 5'	PUBLIC WORKS DIRECTOR			
			FILE:	DRAWING:		DATE:	
			ATLAS PAGE NO. ###			SHEET 78 OF 133 SHEETS	

M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_CHANNEL\_PLAN\_PROFILE.dwg

**CAUTION**  
 SANITARY SEWER  
 OVERHEAD ELEC.  
 FIBER OPTIC  
 UNDERGROUND TELE.  
 GAS  
 UNDERGROUND ELEC.  
 STORM SEWER



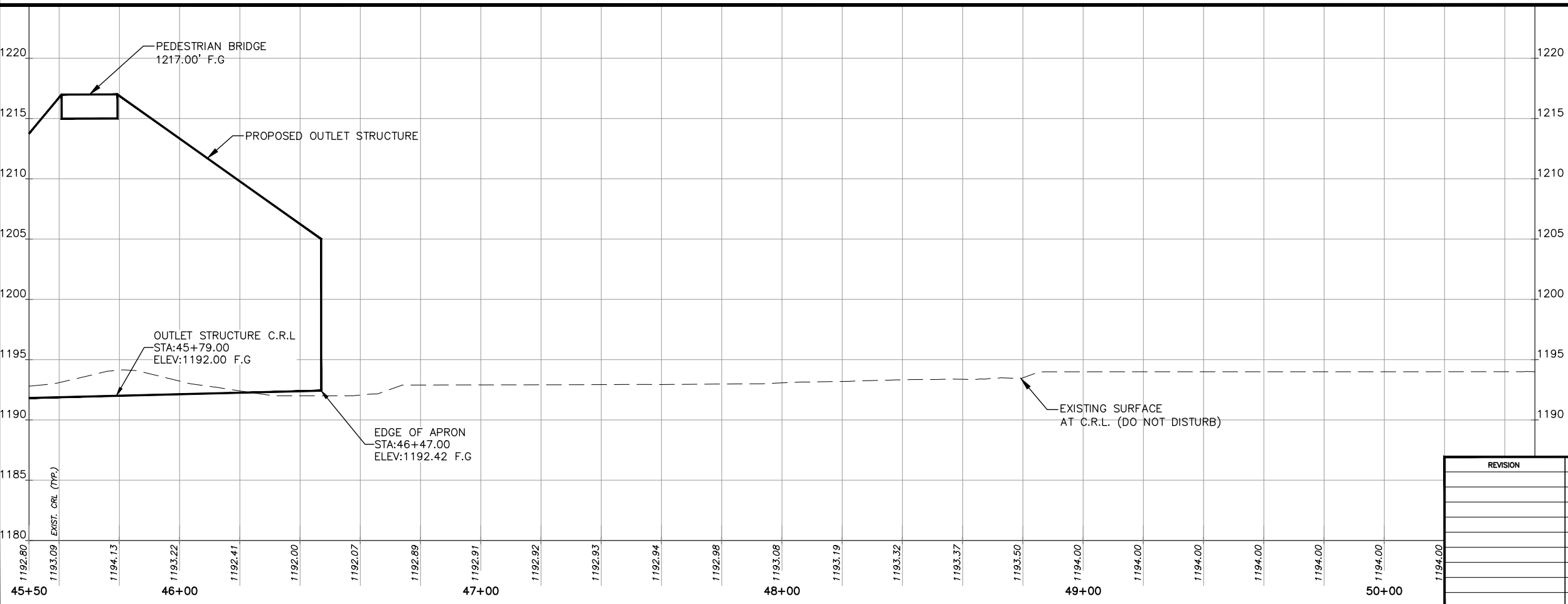
STA. 50+50

- CHANNEL
- CONSTRUCTION LIMITS
- PROPOSED CONTOURS
- EXISTING CONTOURS
- PROPOSED WALL LEFT (PROFILE)
- PROPOSED WALL RIGHT (PROFILE)

**CONSTRUCTION NOTES:**

- 1 CONSTRUCT RECON BLOCK WALL
- 2 CONSTRUCT CONCRETE TRAIL
- 3 XX.X LF SANITARY SEWER ENCASEMENT
- 4 CONSTRUCTION LIMITS/ DO NOT DISTURB
- 5 ADJUST MANHOLE TO GRADE
- 6 GRADE TO DRAIN
- 7 REMOVE EXISTING STORM PIPE
- 8 TO BE RELOCATED BY OTHERS
- 9 GRADING AND SODDING
- 10 ADD ALTERNATE (TRAIL)
- 11 REMOVE EXISTING CONCRETE TRAIL

M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_Channel\_Plan\_Profile.dwg



**CONTROL POINT**  
 CP-71018  
 TYPE  
 N=725498.605  
 E=2118150.75  
 EL=1201.57

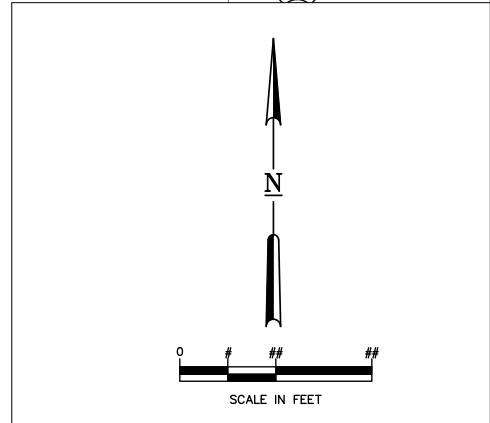
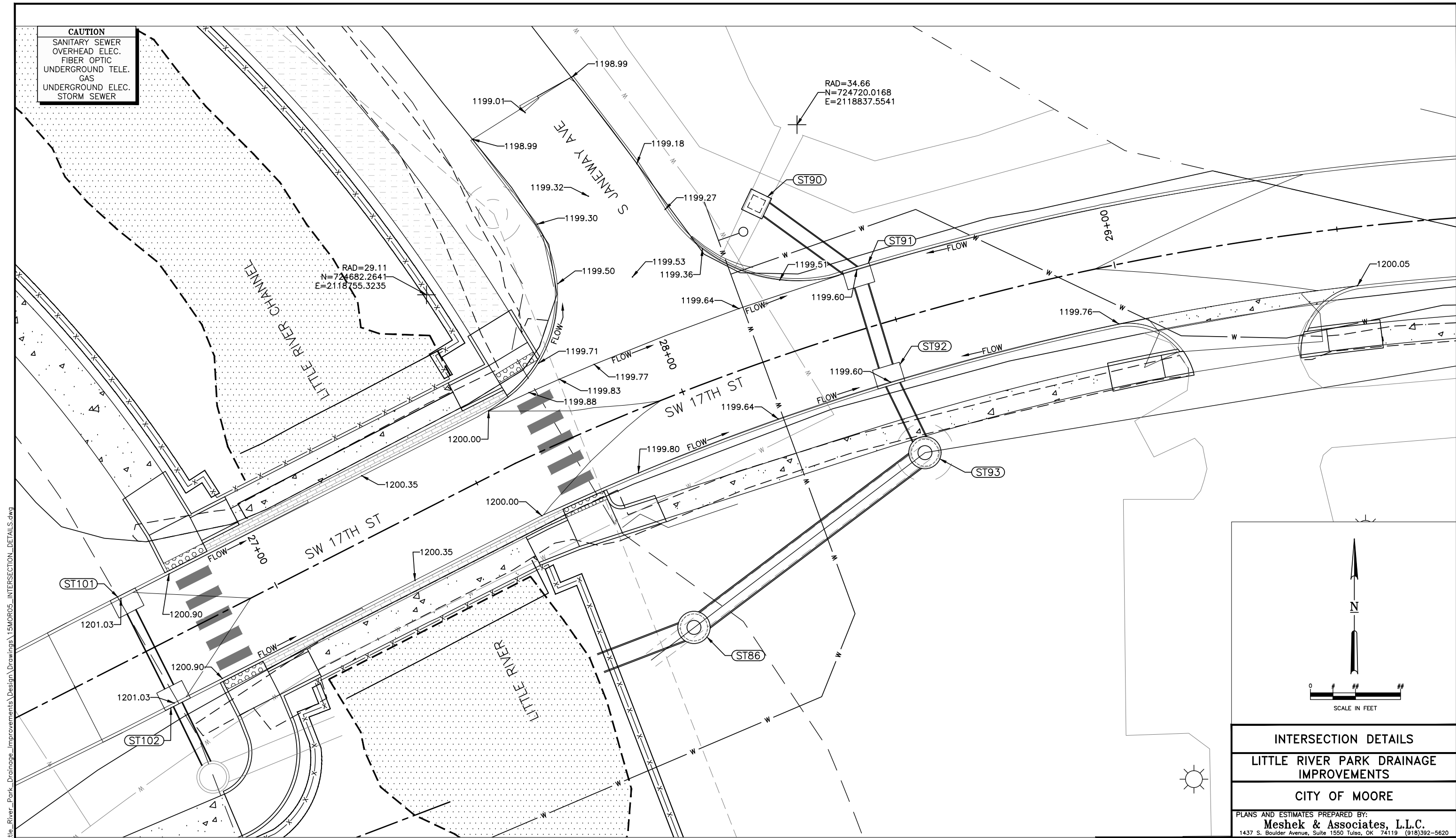
**CHANNEL PLAN & PROFILE**  
**LITTLE RIVER PARK DRAINAGE IMPROVEMENTS**  
**CITY OF MOORE**

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	JCL	Value	APPROVED:
			1" = 20'	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
				RECOMMENDED			
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	DEVELOPMENT SERVICES			
			1" = 20'	RECOMMENDED			
			VERTICAL:	DEPUTY DIRECTOR			
			1" = 5'	PUBLIC WORKS DIRECTOR			
			FILE:	DRAWING:			DATE:
			ATLAS PAGE NO. ###				SHEET 79 OF 133 SHEETS



**CAUTION**  
 SANITARY SEWER  
 OVERHEAD ELEC.  
 FIBER OPTIC  
 UNDERGROUND TELE.  
 GAS  
 UNDERGROUND ELEC.  
 STORM SEWER

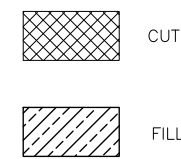
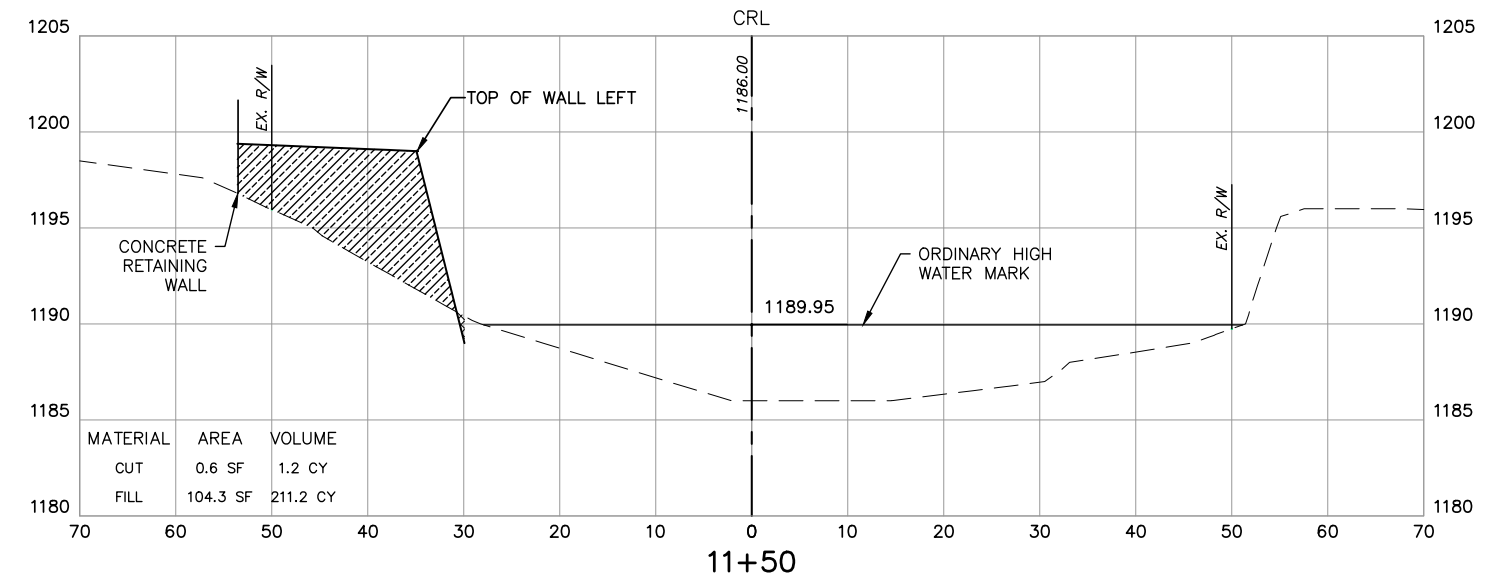
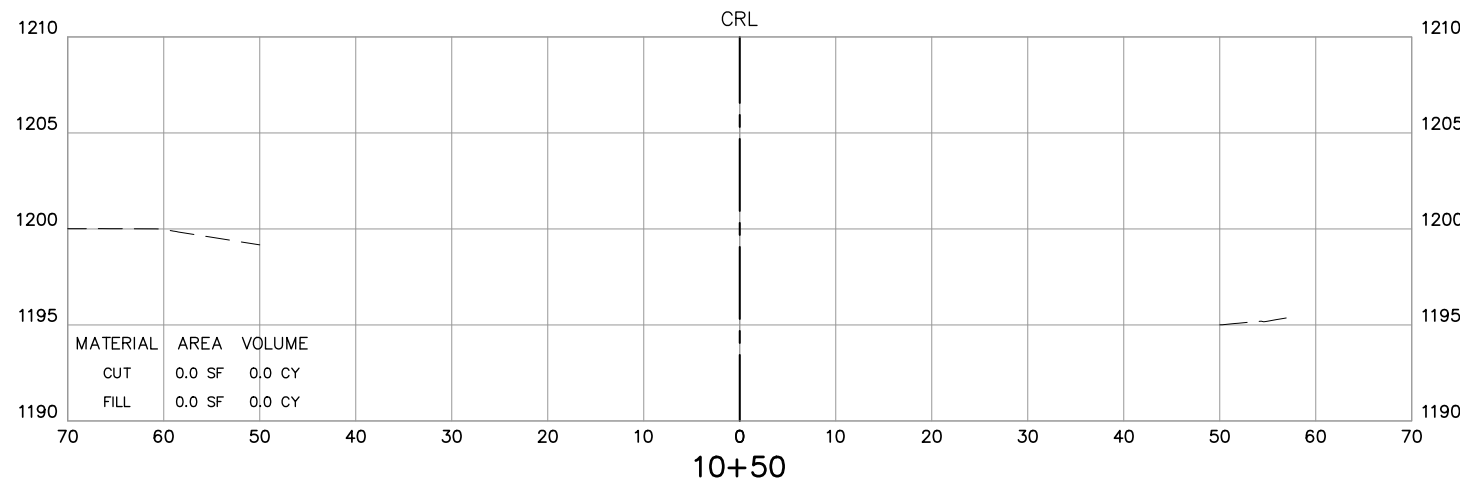
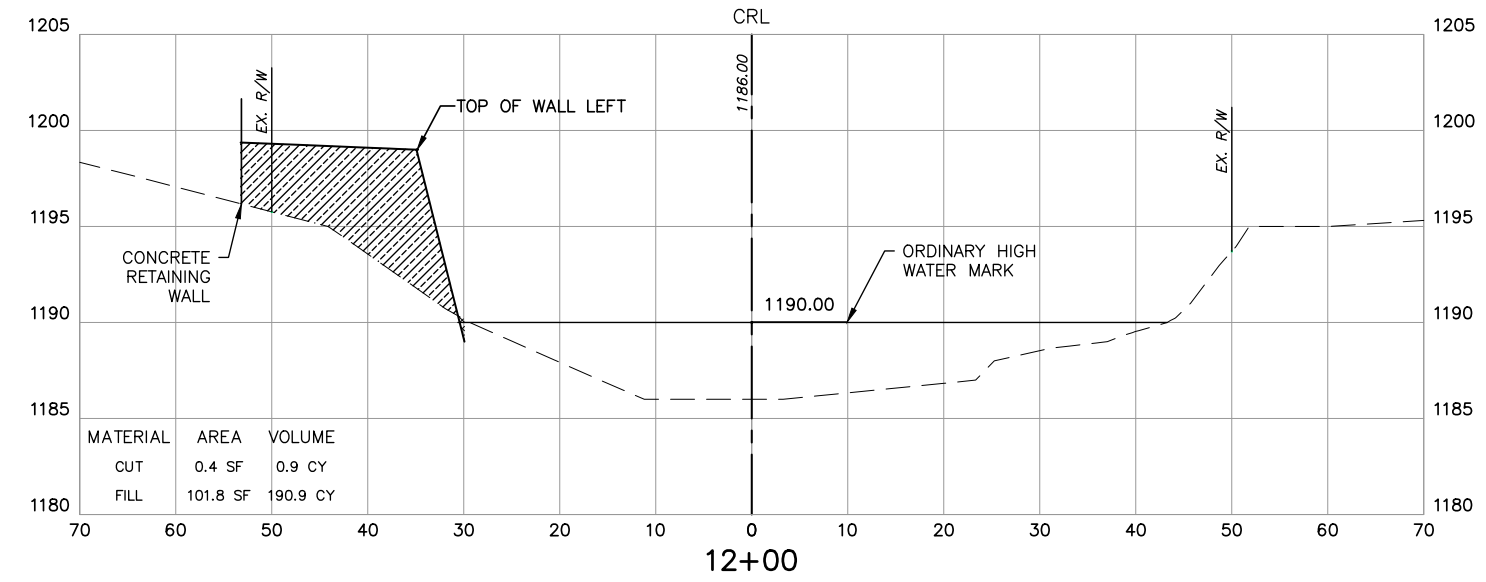
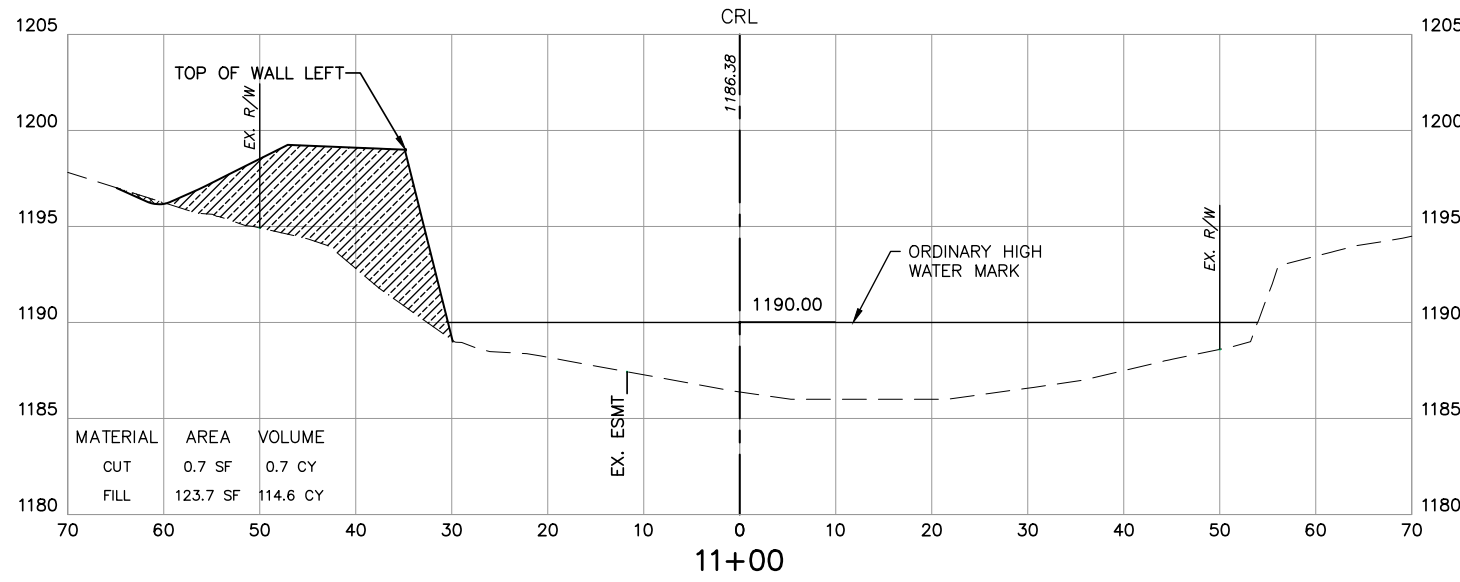


**INTERSECTION DETAILS**  
**LITTLE RIVER PARK DRAINAGE IMPROVEMENTS**  
**CITY OF MOORE**  
 PLANS AND ESTIMATES PREPARED BY:  
**Meshek & Associates, L.L.C.**  
 1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620

REVISION	BY	DATE	PLAN SCALE	DRAWN	JCL	Value	APPROVED:
			1" = 10'	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	DEVELOPMENT SERVICES			PUBLIC WORKS DIRECTOR
			N/A	RECOMMENDED			
			VERTICAL:	DEPUTY DIRECTOR			DATE:
			N/A				
			FILE:	DRAWING:			DATE:
			ATLAS PAGE NO. ###				SHEET 81 OF 133 SHEETS

M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\_Design\Drawings\15MOR05\_INTERSECTION\_DETAILS.dwg

M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_XSECTIONS\_CHANNEL.dwg

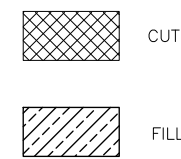
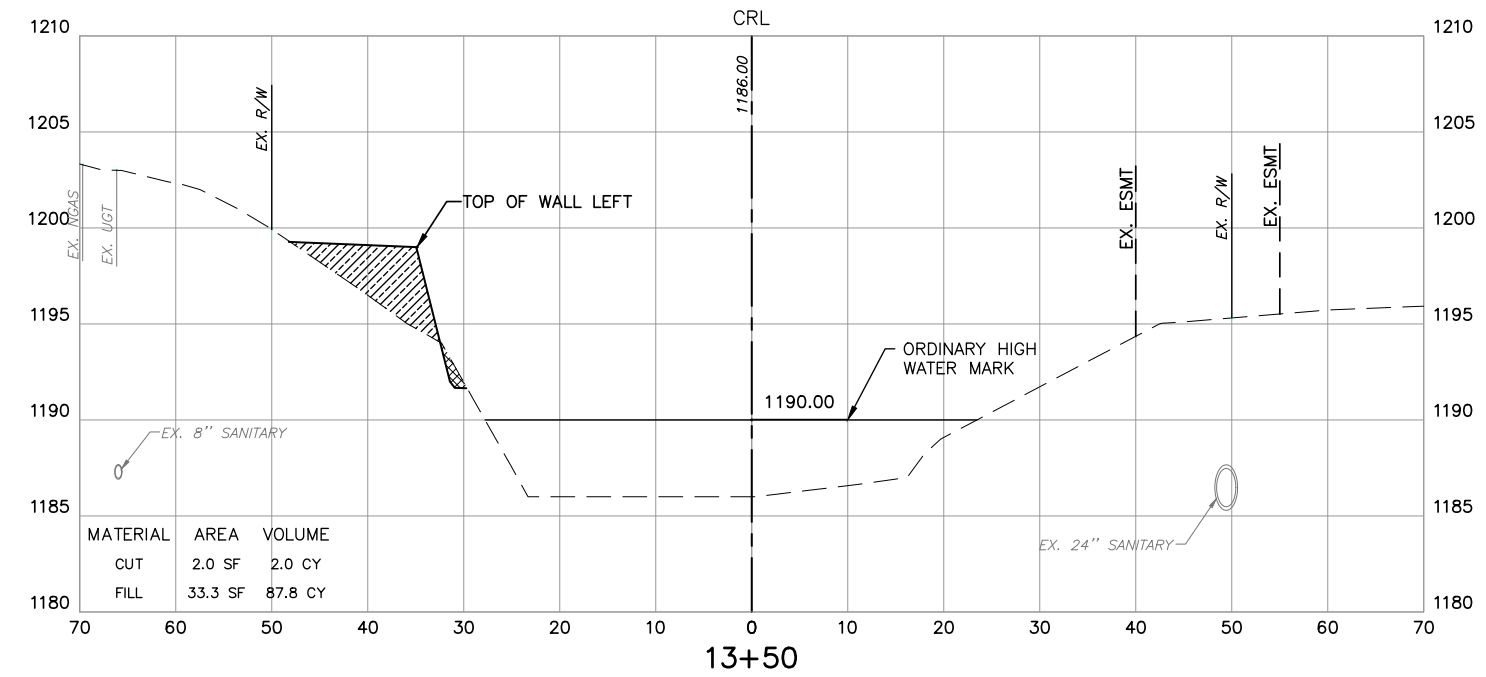
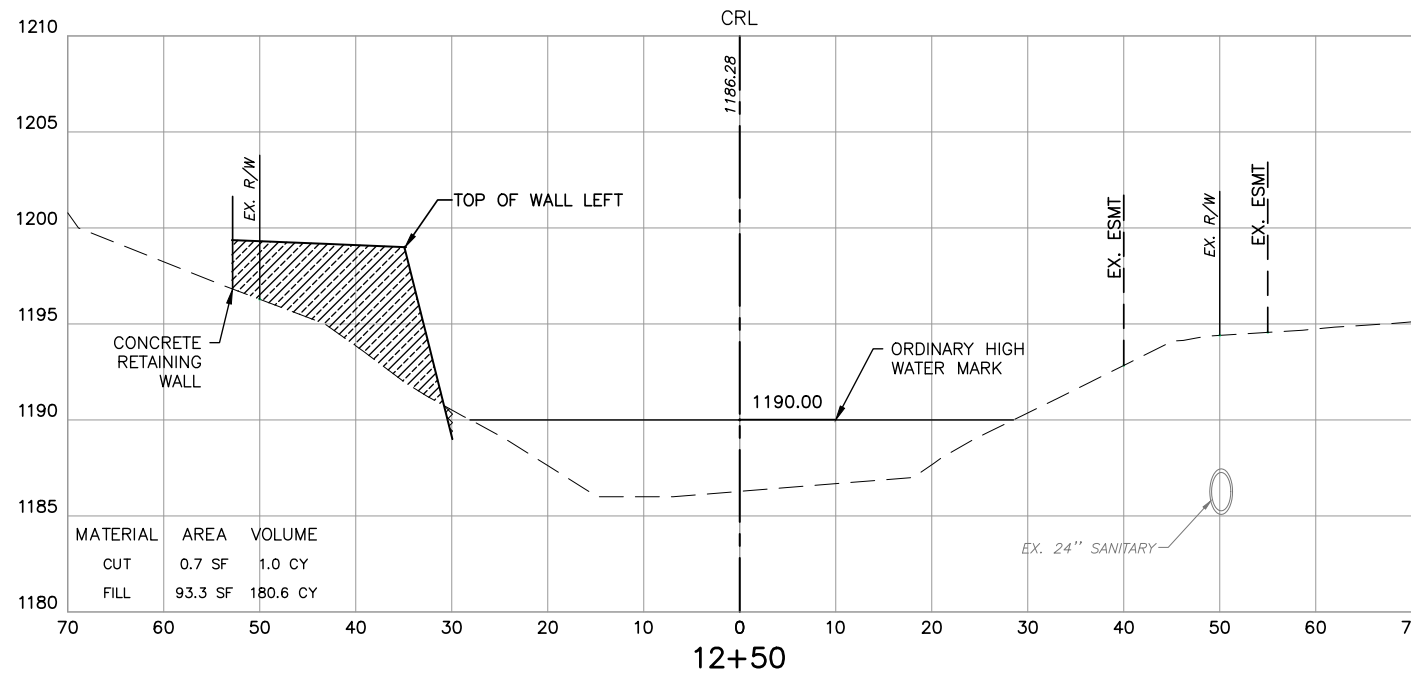
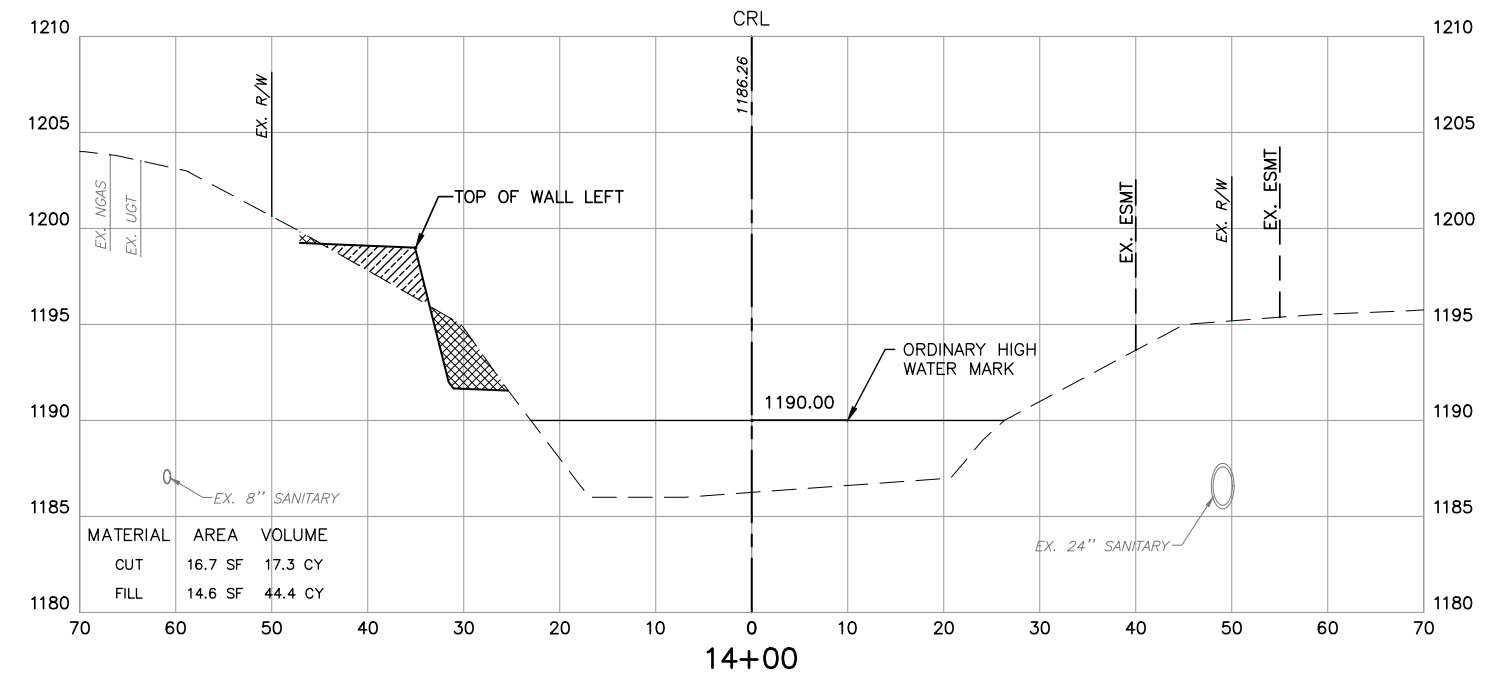
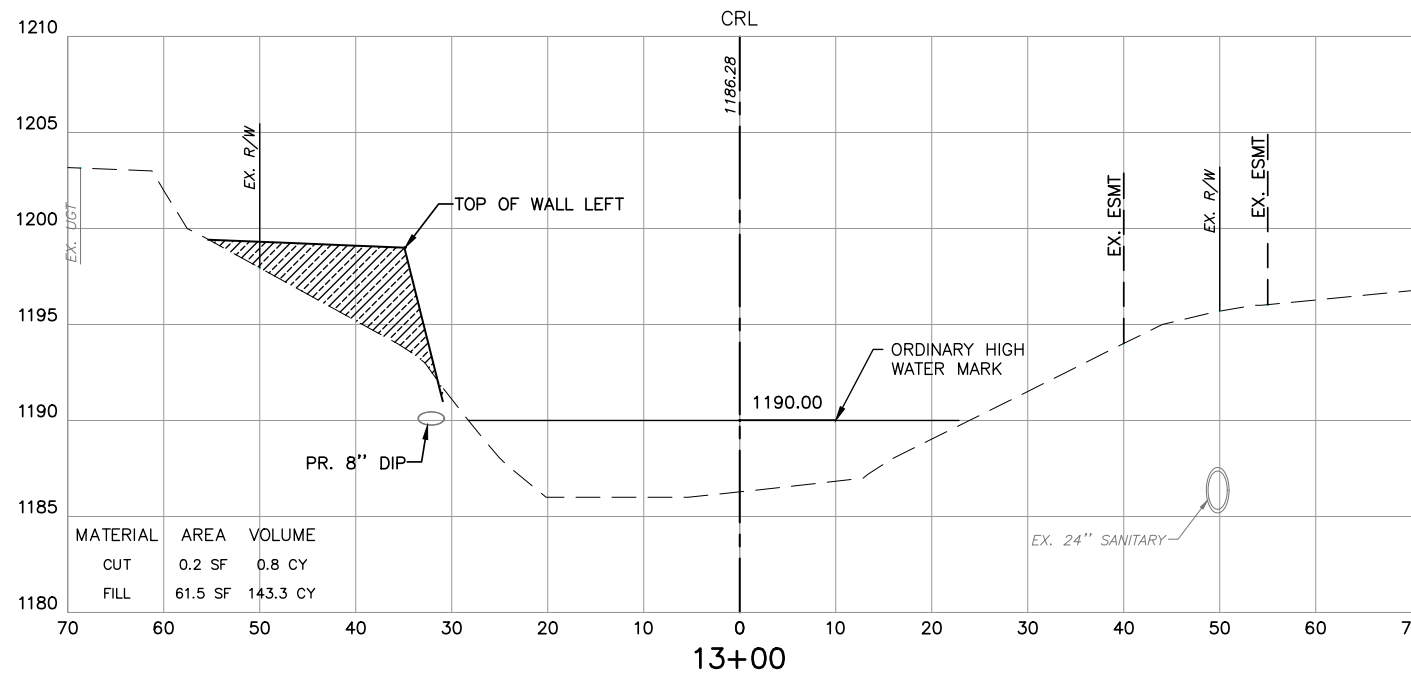


**CHANNEL CROSS SECTIONS**  
**LITTLE RIVER PARK DRAINAGE IMPROVEMENTS**  
**CITY OF MOORE**  
 PLANS AND ESTIMATES PREPARED BY:  
**Meshek & Associates, L.L.C.**  
 1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620

REVISION	BY	DATE	PLAN SCALE	DRAWN	JCL	Value	APPROVED:
			N/A	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	RECOMMENDED			PUBLIC WORKS DIRECTOR
			VERTICAL:	RECOMMENDED			
			FILE:	DRAWING:			DATE:
			ATLAS PAGE NO. .				SHEET 82 OF 133 SHEETS

M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_XSECTIONS\_CHANNEL.dwg

PRINT DATE: 02/05/2018



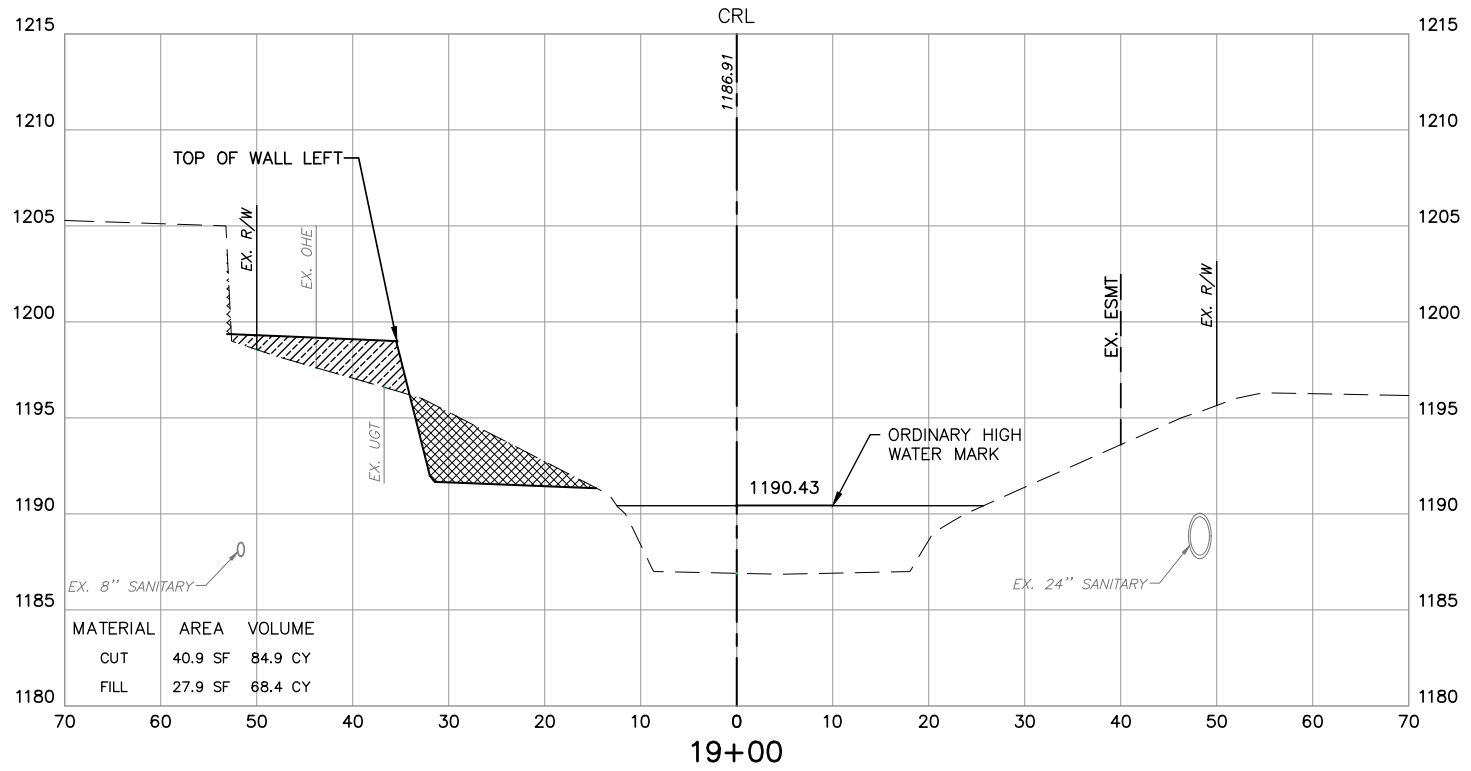
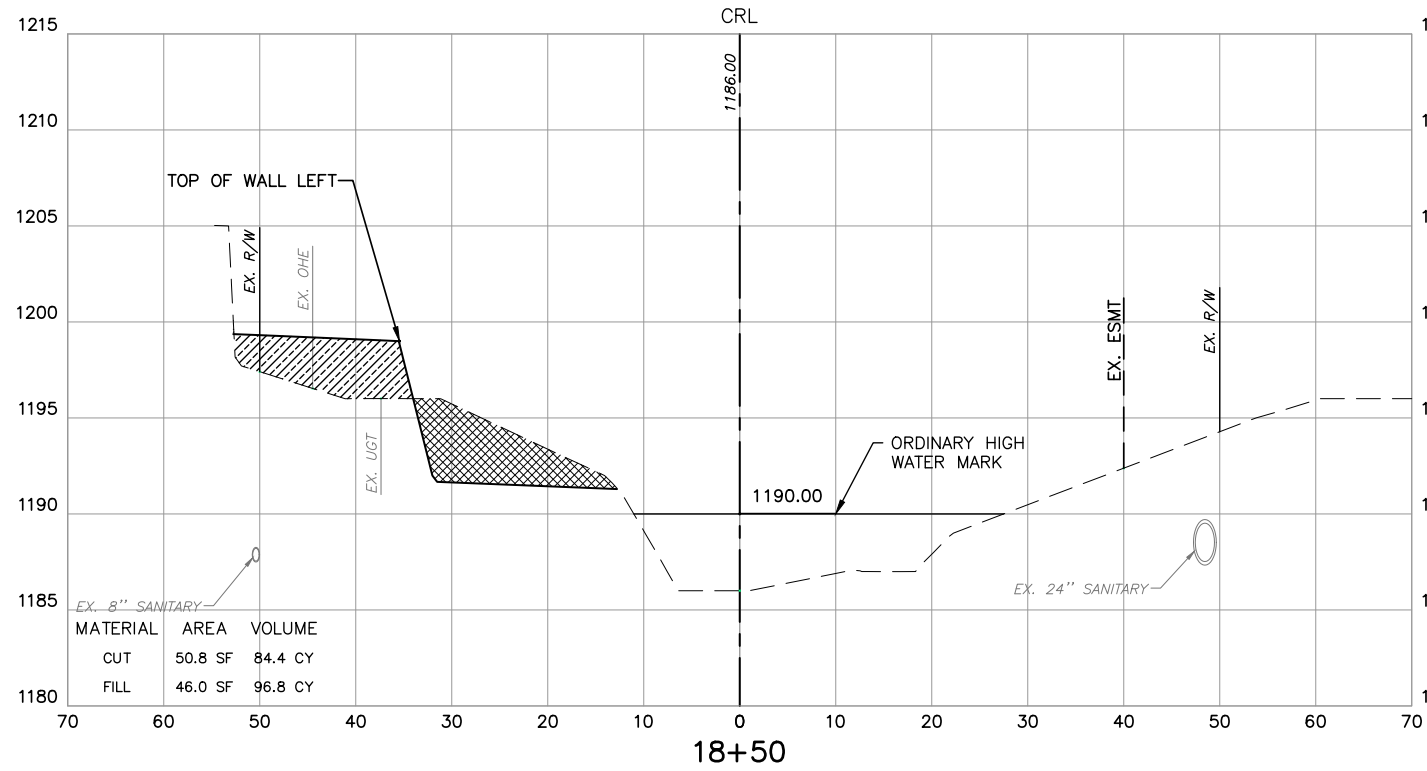
<b>CHANNEL CROSS SECTIONS</b>																	
<b>LITTLE RIVER PARK DRAINAGE IMPROVEMENTS</b>																	
<b>CITY OF MOORE</b>																	
PLANS AND ESTIMATES PREPARED BY:																	
<b>Meshek &amp; Associates, L.L.C.</b>																	
1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620																	
<table border="1" style="width: 100%; border-collapse: collapse;"> <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> </tbody> </table>	REVISION	BY	DATE										PLAN SCALE	DRAWN	JCL	Value	APPROVED:
	REVISION	BY	DATE														
	N/A	DESIGNED	BWF	Value													
		SURVEY	PDH	Value													
		RECOMMENDED															
		PROFILE SCALE															
		HORIZONTAL:															
		1" = 10'															
		RECOMMENDED															
		VERTICAL:															
		1" = 10'															
		RECOMMENDED															
		FILE:	DRAWING:		PUBLIC WORKS DIRECTOR												
		ATLAS PAGE NO. .			DATE:												
					SHEET 83 OF 133 SHEETS												





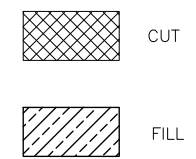


M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_XSECTIONS\_CHANNEL.dwg



MATERIAL	AREA	VOLUME
CUT	50.8 SF	84.4 CY
FILL	46.0 SF	96.8 CY

MATERIAL	AREA	VOLUME
CUT	40.9 SF	84.9 CY
FILL	27.9 SF	68.4 CY



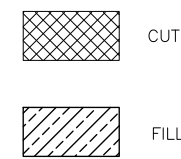
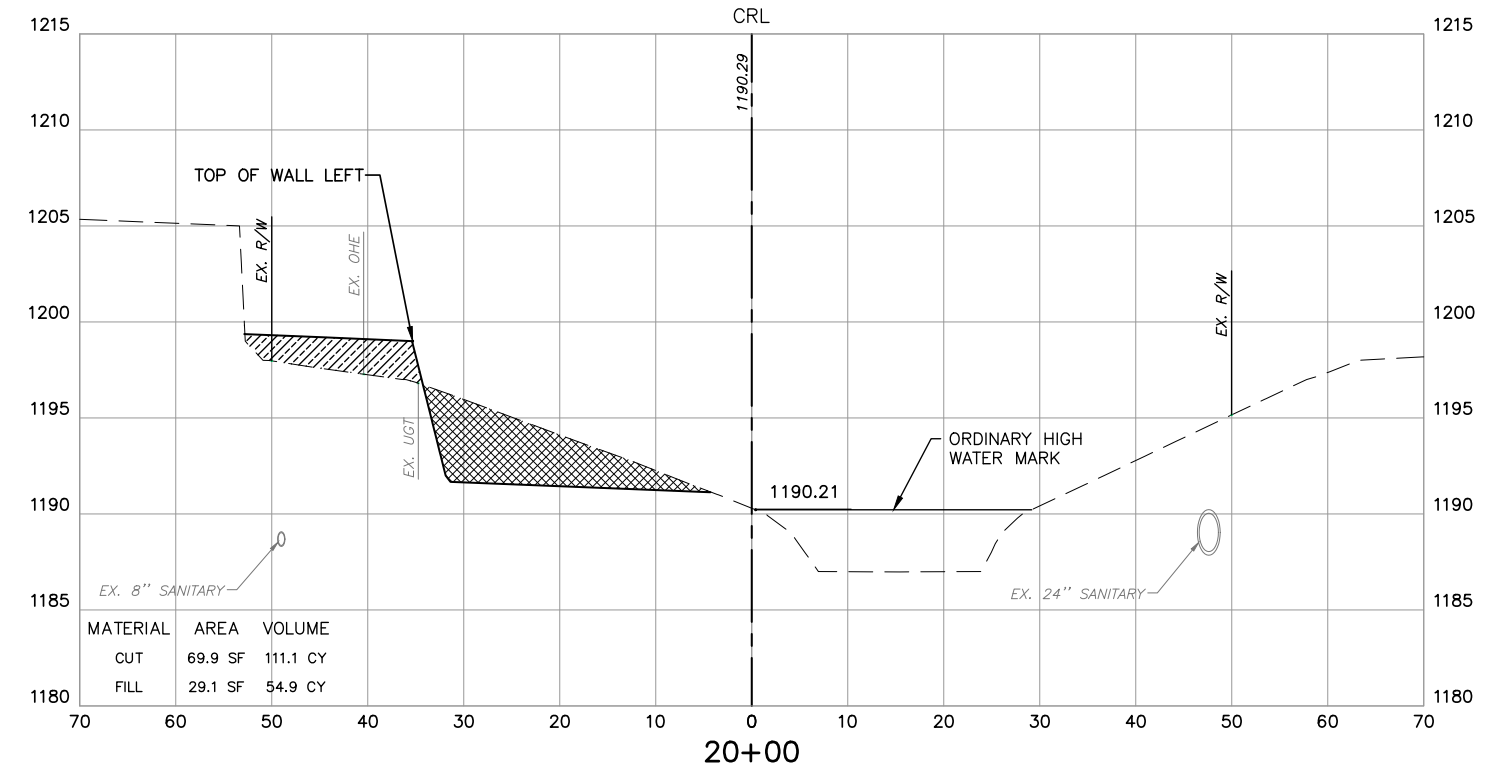
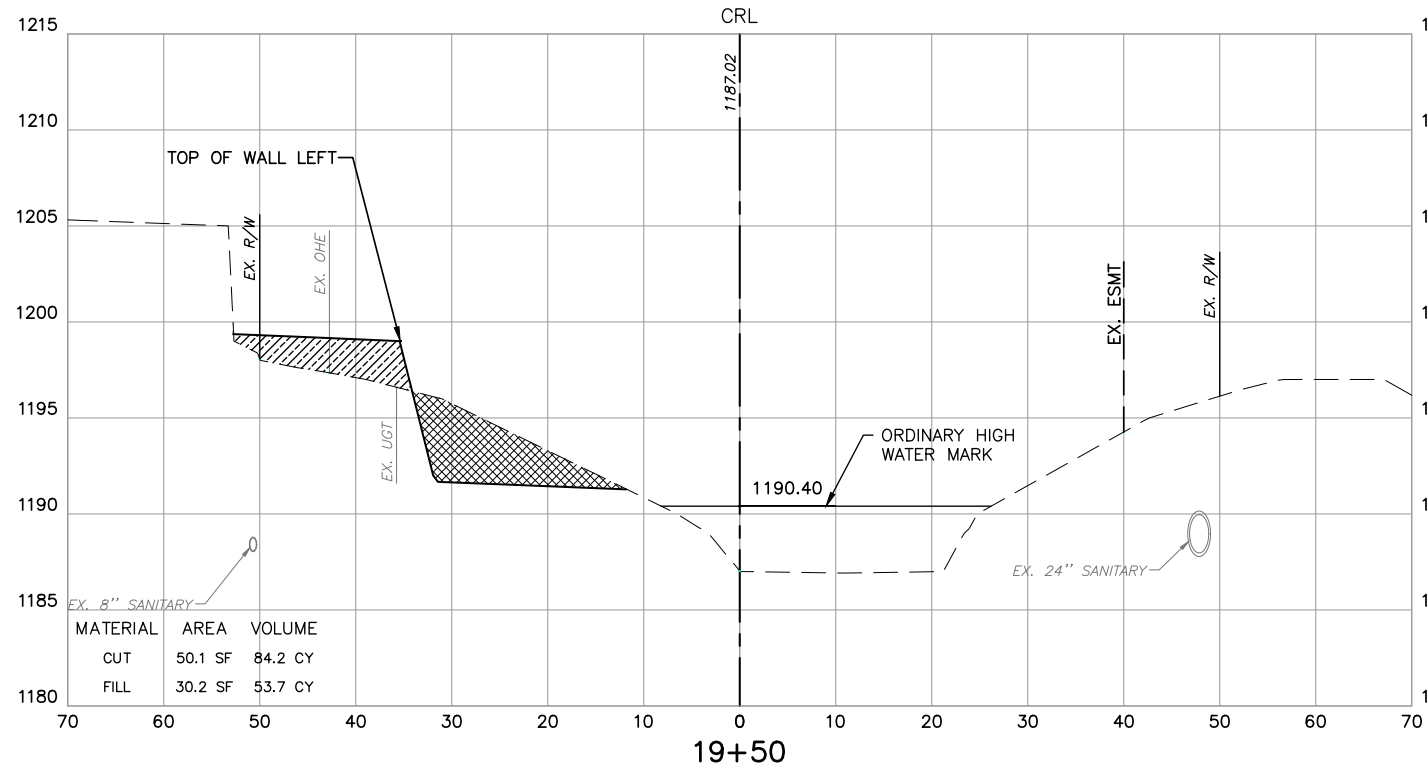
**CHANNEL CROSS SECTIONS**  
**LITTLE RIVER PARK DRAINAGE IMPROVEMENTS**  
**CITY OF MOORE**

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	JCL	Value	APPROVED:
			N/A	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	DEVELOPMENT SERVICES			
				RECOMMENDED			
			VERTICAL:	DEPUTY DIRECTOR			PUBLIC WORKS DIRECTOR
			FILE:	DRAWING:			DATE:
			ATLAS PAGE NO. .				SHEET 86 OF 133 SHEETS

PRINT DATE: 02/05/2018

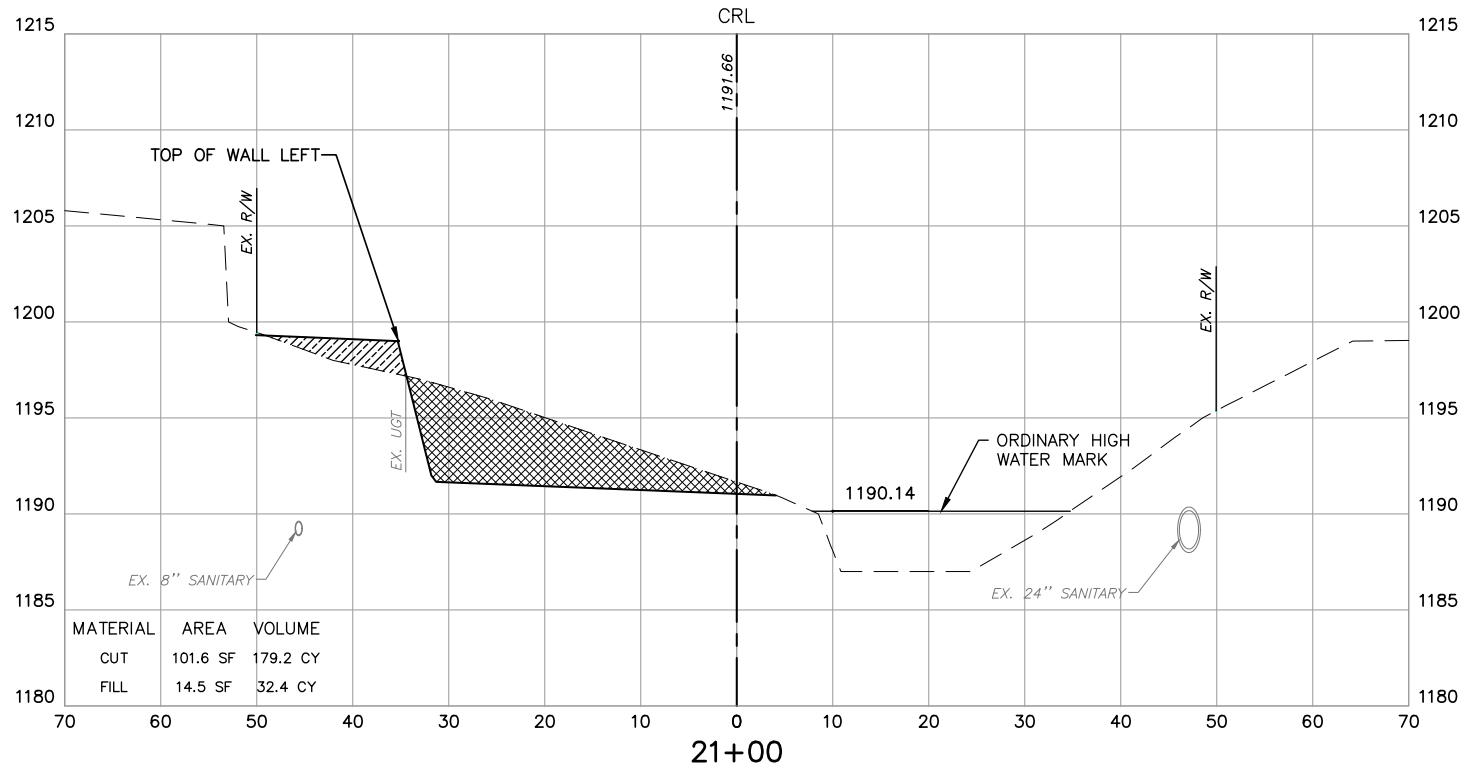
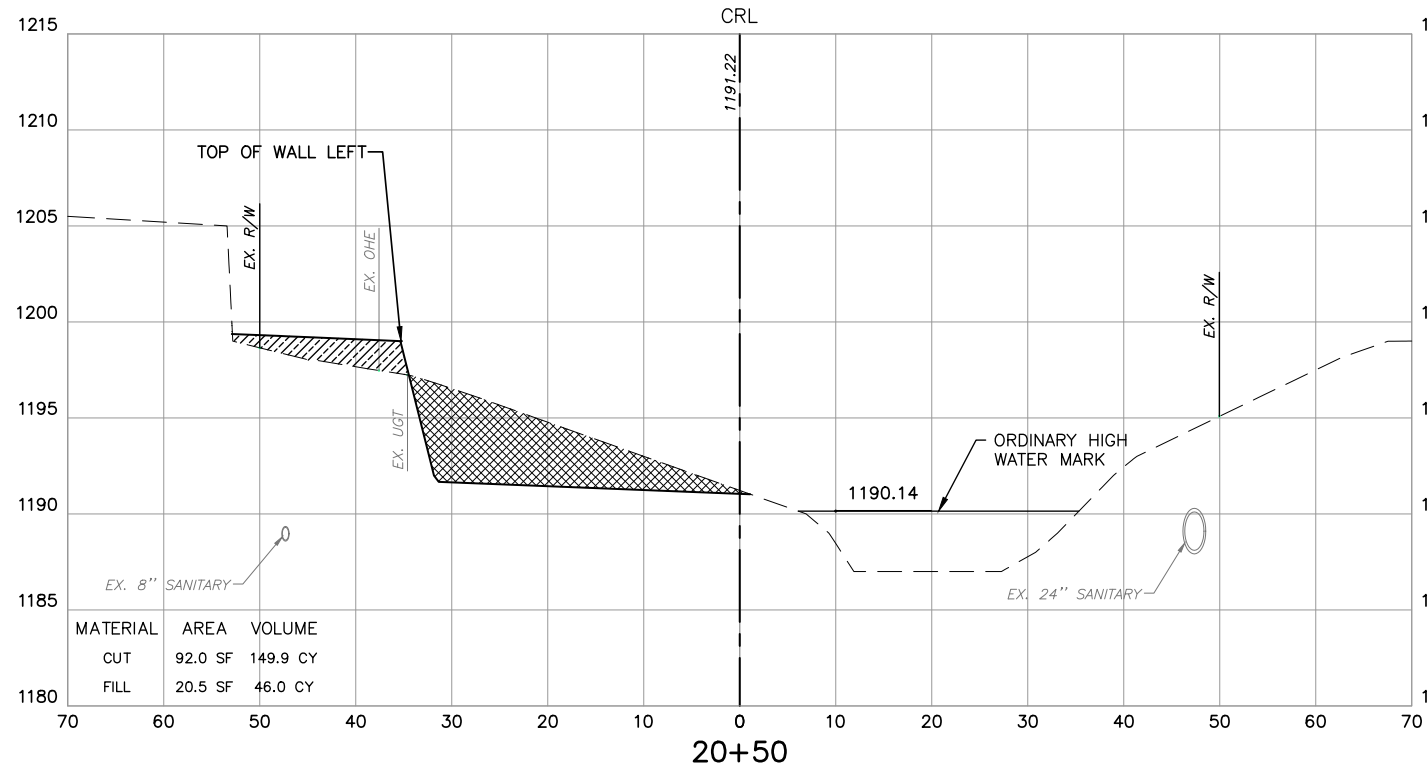
M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_XSECTIONS\_CHANNEL.dwg



<b>CHANNEL CROSS SECTIONS</b>													
<b>LITTLE RIVER PARK DRAINAGE IMPROVEMENTS</b>													
<b>CITY OF MOORE</b>													
PLANS AND ESTIMATES PREPARED BY:													
<b>Meshek &amp; Associates, L.L.C.</b>													
1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620													
REVISION	BY	DATE	APPROVED:										
			<table border="1"> <tr> <td>PLAN SCALE</td> <td>JCL</td> <td>Value</td> </tr> <tr> <td>N/A</td> <td>BWF</td> <td>Value</td> </tr> <tr> <td>SURVEY</td> <td>PDH</td> <td>Value</td> </tr> </table>	PLAN SCALE	JCL	Value	N/A	BWF	Value	SURVEY	PDH	Value	
PLAN SCALE	JCL	Value											
N/A	BWF	Value											
SURVEY	PDH	Value											
			<table border="1"> <tr> <td>PROFILE SCALE</td> <td>RECOMMENDED</td> </tr> <tr> <td>HORIZONTAL:</td> <td>DEVELOPMENT SERVICES</td> </tr> <tr> <td>1" = 10'</td> <td>RECOMMENDED</td> </tr> <tr> <td>VERTICAL:</td> <td>DEPUTY DIRECTOR</td> </tr> <tr> <td>1" = 10'</td> <td>PUBLIC WORKS DIRECTOR</td> </tr> </table>	PROFILE SCALE	RECOMMENDED	HORIZONTAL:	DEVELOPMENT SERVICES	1" = 10'	RECOMMENDED	VERTICAL:	DEPUTY DIRECTOR	1" = 10'	PUBLIC WORKS DIRECTOR
PROFILE SCALE	RECOMMENDED												
HORIZONTAL:	DEVELOPMENT SERVICES												
1" = 10'	RECOMMENDED												
VERTICAL:	DEPUTY DIRECTOR												
1" = 10'	PUBLIC WORKS DIRECTOR												
			DATE:										
			SHEET 87 OF 133 SHEETS										

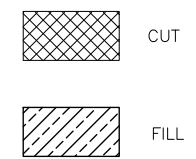
PRINT DATE: 02/05/2018

M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_XSECTIONS\_CHANNEL.dwg



MATERIAL	AREA	VOLUME
CUT	92.0 SF	149.9 CY
FILL	20.5 SF	46.0 CY

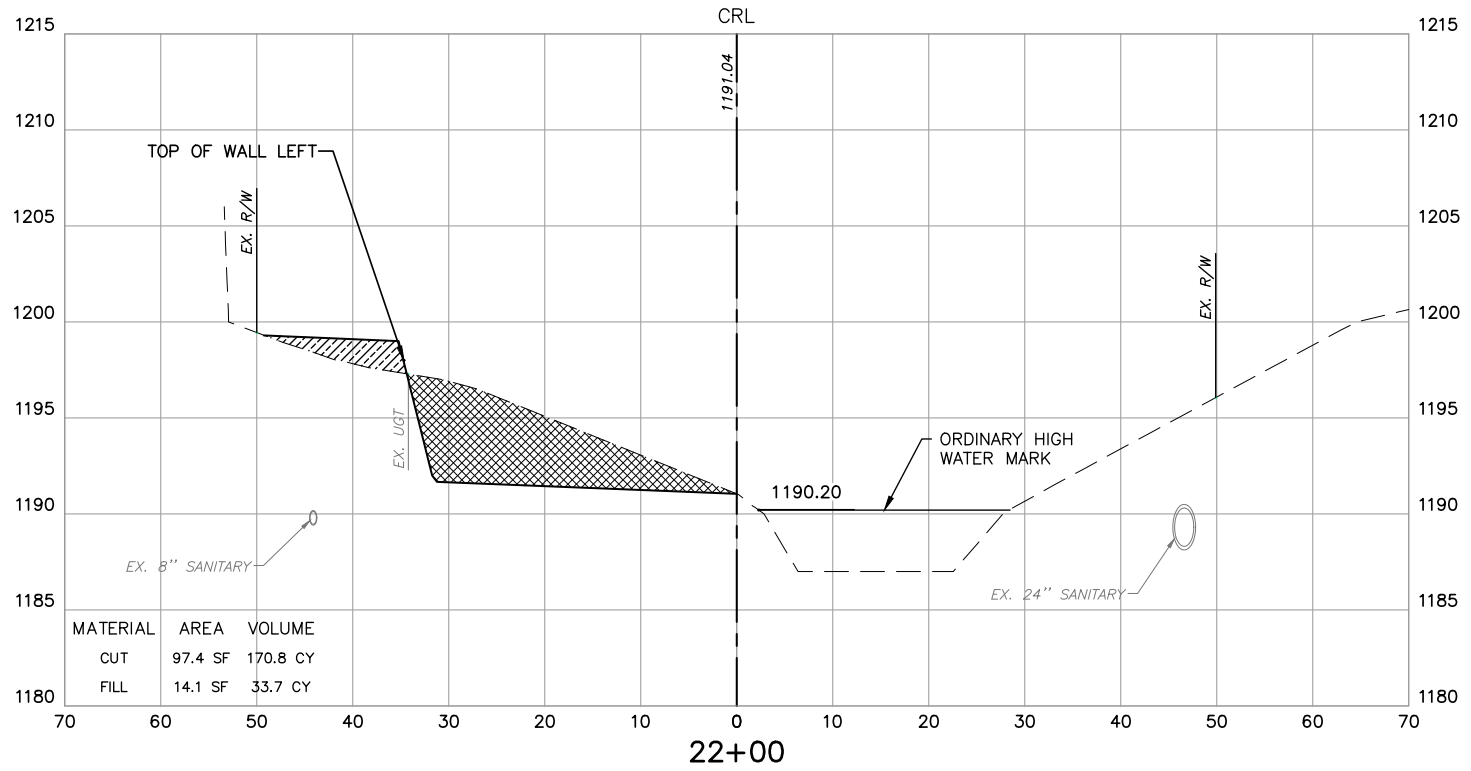
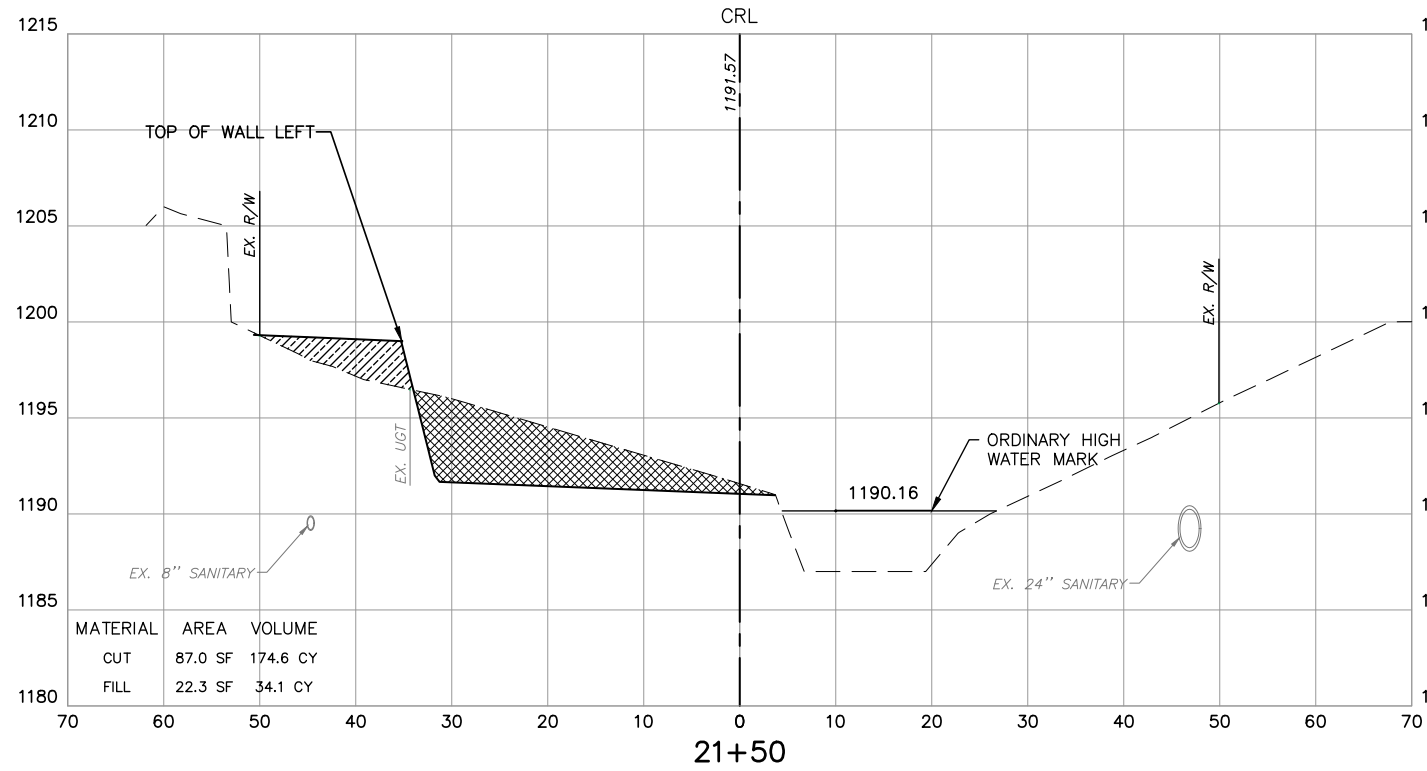
MATERIAL	AREA	VOLUME
CUT	101.6 SF	179.2 CY
FILL	14.5 SF	32.4 CY



<b>CHANNEL CROSS SECTIONS</b>																																																	
<b>LITTLE RIVER PARK DRAINAGE IMPROVEMENTS</b>																																																	
<b>CITY OF MOORE</b>																																																	
PLANS AND ESTIMATES PREPARED BY:																																																	
<b>Meshek &amp; Associates, L.L.C.</b>																																																	
1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620																																																	
<b>REVISION</b>	<b>BY</b>	<b>DATE</b>	<b>APPROVED:</b>																																														
			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;"><b>PLAN SCALE</b></td> <td style="width: 10%;"><b>JCL</b></td> <td style="width: 10%;"><b>Value</b></td> <td rowspan="3" style="width: 60%;"></td> </tr> <tr> <td>N/A</td> <td><b>DESIGNED</b></td> <td><b>BWF</b></td> </tr> <tr> <td></td> <td><b>SURVEY</b></td> <td><b>PDH</b></td> </tr> <tr> <td colspan="4"><b>PROFILE SCALE</b></td> </tr> <tr> <td colspan="4" style="text-align: center;">RECOMMENDED</td> </tr> <tr> <td colspan="4"><b>HORIZONTAL:</b></td> </tr> <tr> <td colspan="4" style="text-align: center;">1" = 10'</td> </tr> <tr> <td colspan="4"><b>VERTICAL:</b></td> </tr> <tr> <td colspan="4" style="text-align: center;">1" = 10'</td> </tr> <tr> <td colspan="2"><b>FILE:</b></td> <td colspan="2"><b>DRAWING:</b></td> </tr> <tr> <td colspan="2">ATLAS PAGE NO. .</td> <td colspan="2">DATE:</td> </tr> <tr> <td colspan="2"></td> <td colspan="2" style="text-align: center;">PUBLIC WORKS DIRECTOR</td> </tr> </table>	<b>PLAN SCALE</b>	<b>JCL</b>	<b>Value</b>		N/A	<b>DESIGNED</b>	<b>BWF</b>		<b>SURVEY</b>	<b>PDH</b>	<b>PROFILE SCALE</b>				RECOMMENDED				<b>HORIZONTAL:</b>				1" = 10'				<b>VERTICAL:</b>				1" = 10'				<b>FILE:</b>		<b>DRAWING:</b>		ATLAS PAGE NO. .		DATE:				PUBLIC WORKS DIRECTOR	
<b>PLAN SCALE</b>	<b>JCL</b>	<b>Value</b>																																															
N/A	<b>DESIGNED</b>	<b>BWF</b>																																															
	<b>SURVEY</b>	<b>PDH</b>																																															
<b>PROFILE SCALE</b>																																																	
RECOMMENDED																																																	
<b>HORIZONTAL:</b>																																																	
1" = 10'																																																	
<b>VERTICAL:</b>																																																	
1" = 10'																																																	
<b>FILE:</b>		<b>DRAWING:</b>																																															
ATLAS PAGE NO. .		DATE:																																															
		PUBLIC WORKS DIRECTOR																																															

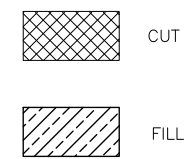
PRINT DATE: 02/05/2018

M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_XSECTIONS\_CHANNEL.dwg



MATERIAL	AREA	VOLUME
CUT	87.0 SF	174.6 CY
FILL	22.3 SF	34.1 CY

MATERIAL	AREA	VOLUME
CUT	97.4 SF	170.8 CY
FILL	14.1 SF	33.7 CY

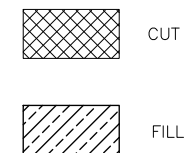
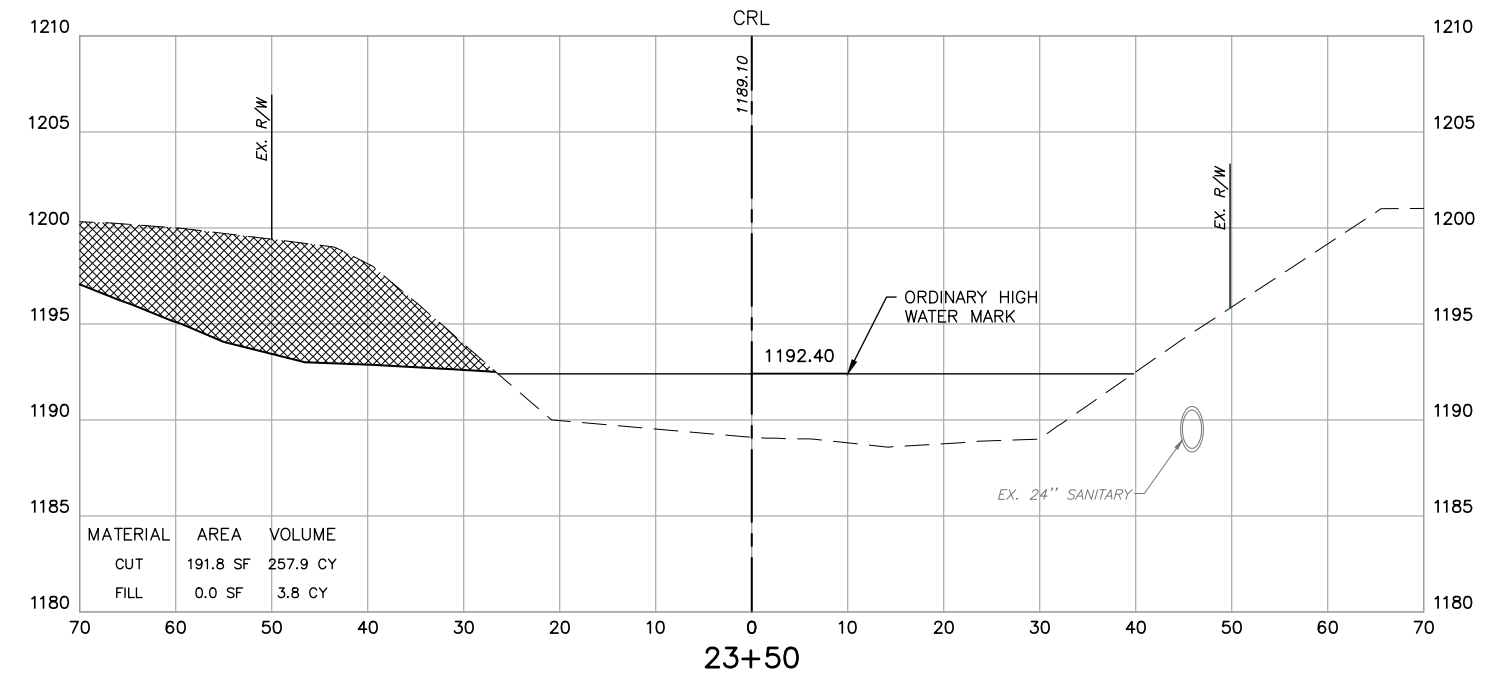
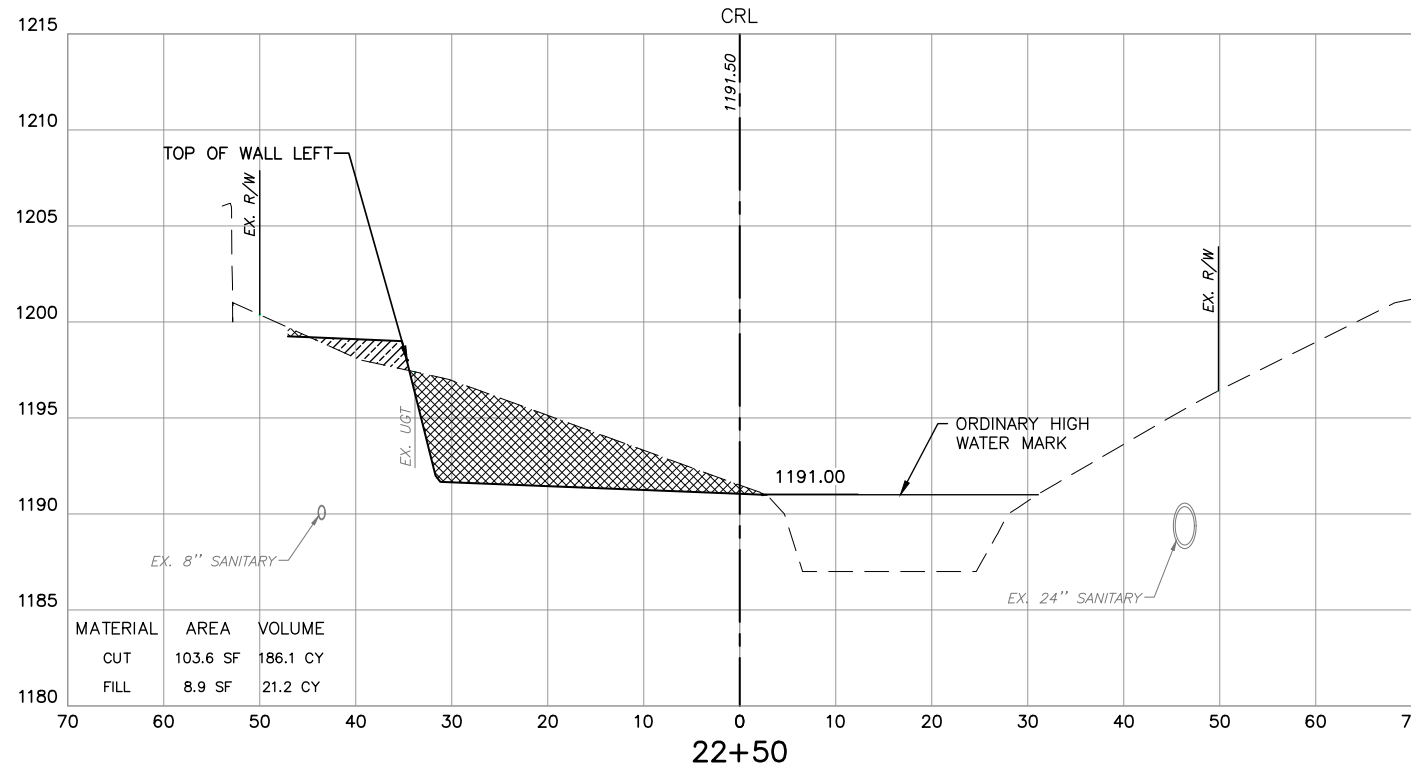
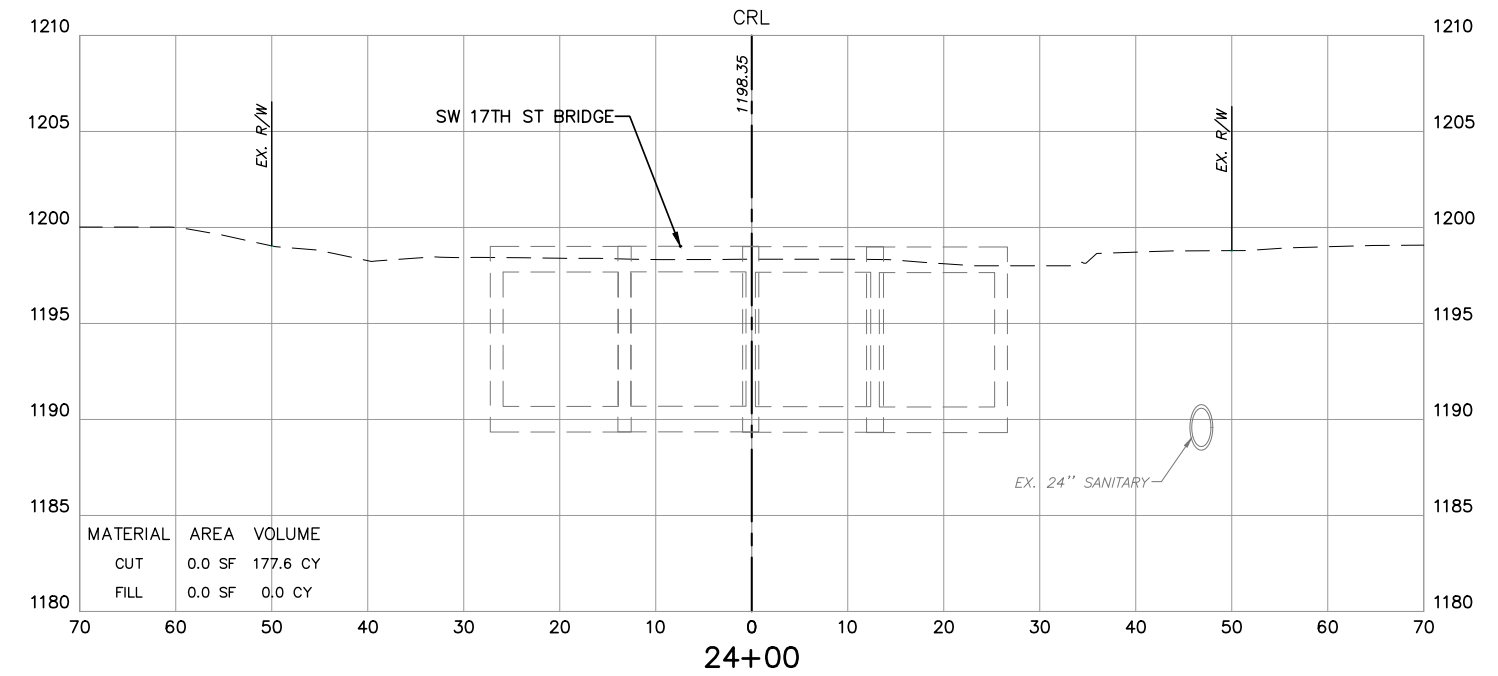
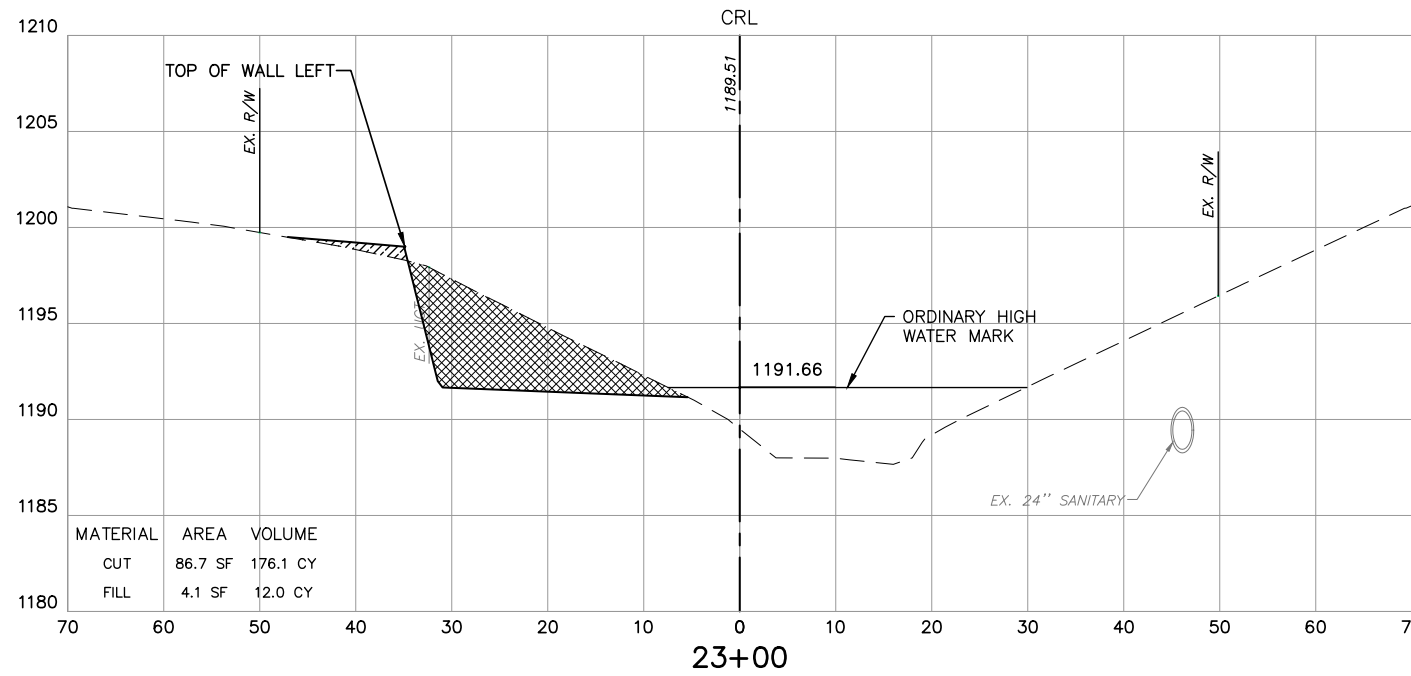


<b>CHANNEL CROSS SECTIONS</b>																																																	
<b>LITTLE RIVER PARK DRAINAGE IMPROVEMENTS</b>																																																	
<b>CITY OF MOORE</b>																																																	
PLANS AND ESTIMATES PREPARED BY:																																																	
<b>Meshek &amp; Associates, L.L.C.</b>																																																	
1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620																																																	
<b>REVISION</b>	<b>BY</b>	<b>DATE</b>	<b>APPROVED:</b>																																														
			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;"><b>PLAN SCALE</b></td> <td style="width: 10%;"><b>JCL</b></td> <td style="width: 10%;"><b>Value</b></td> <td rowspan="3" style="width: 60%;"></td> </tr> <tr> <td>N/A</td> <td><b>DESIGNED</b></td> <td><b>BWF</b></td> </tr> <tr> <td></td> <td><b>SURVEY</b></td> <td><b>PDH</b></td> </tr> <tr> <td colspan="4"><b>PROFILE SCALE</b></td> </tr> <tr> <td colspan="4" style="text-align: center;"><b>RECOMMENDED</b></td> </tr> <tr> <td colspan="4"><b>HORIZONTAL:</b></td> </tr> <tr> <td colspan="4" style="text-align: center;"><b>1" = 10'</b></td> </tr> <tr> <td colspan="4"><b>VERTICAL:</b></td> </tr> <tr> <td colspan="4" style="text-align: center;"><b>1" = 10'</b></td> </tr> <tr> <td colspan="2"><b>FILE:</b></td> <td colspan="2"><b>DRAWING:</b></td> </tr> <tr> <td colspan="2">ATLAS PAGE NO. .</td> <td colspan="2">DATE:</td> </tr> <tr> <td colspan="2"></td> <td colspan="2" style="text-align: right;">PUBLIC WORKS DIRECTOR</td> </tr> </table>	<b>PLAN SCALE</b>	<b>JCL</b>	<b>Value</b>		N/A	<b>DESIGNED</b>	<b>BWF</b>		<b>SURVEY</b>	<b>PDH</b>	<b>PROFILE SCALE</b>				<b>RECOMMENDED</b>				<b>HORIZONTAL:</b>				<b>1" = 10'</b>				<b>VERTICAL:</b>				<b>1" = 10'</b>				<b>FILE:</b>		<b>DRAWING:</b>		ATLAS PAGE NO. .		DATE:				PUBLIC WORKS DIRECTOR	
<b>PLAN SCALE</b>	<b>JCL</b>	<b>Value</b>																																															
N/A	<b>DESIGNED</b>	<b>BWF</b>																																															
	<b>SURVEY</b>	<b>PDH</b>																																															
<b>PROFILE SCALE</b>																																																	
<b>RECOMMENDED</b>																																																	
<b>HORIZONTAL:</b>																																																	
<b>1" = 10'</b>																																																	
<b>VERTICAL:</b>																																																	
<b>1" = 10'</b>																																																	
<b>FILE:</b>		<b>DRAWING:</b>																																															
ATLAS PAGE NO. .		DATE:																																															
		PUBLIC WORKS DIRECTOR																																															
<b>FILE:</b>		<b>DRAWING:</b>																																															
ATLAS PAGE NO. .		DATE:																																															
		PUBLIC WORKS DIRECTOR																																															

REVISION	BY	DATE

PRINT DATE: 02/05/2018

M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_XSECTIONS\_CHANNEL.dwg

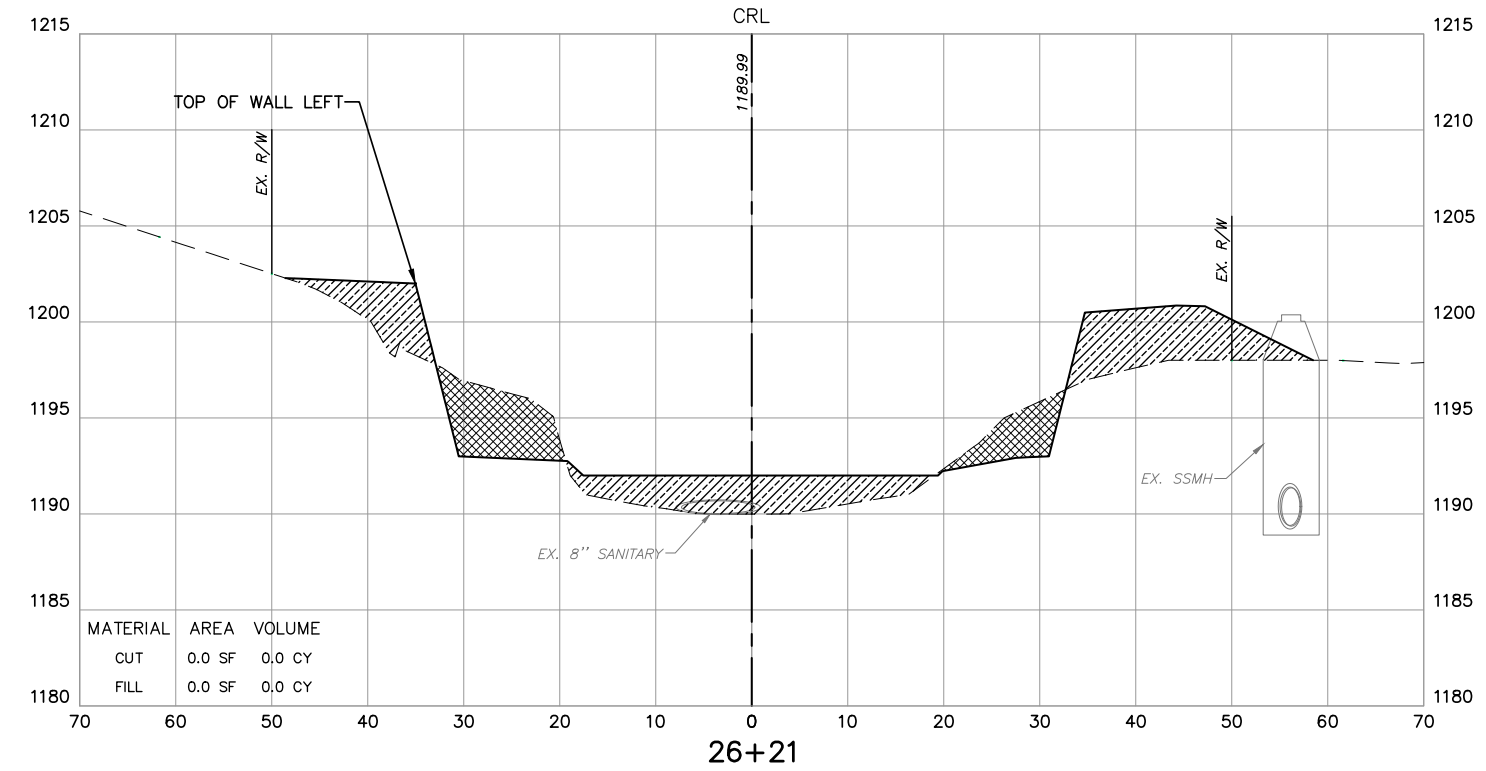
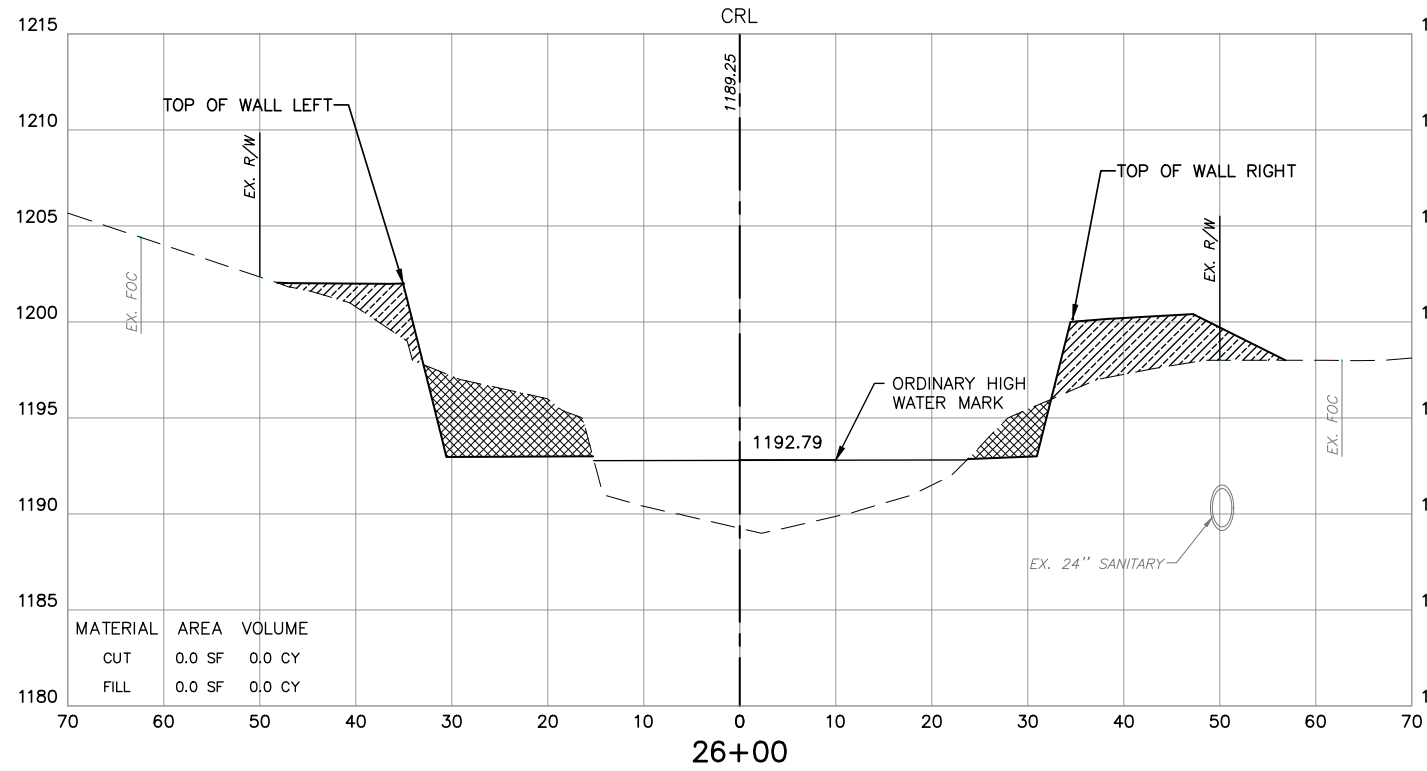


<b>CHANNEL CROSS SECTIONS</b>																																																																
<b>LITTLE RIVER PARK DRAINAGE IMPROVEMENTS</b>																																																																
<b>CITY OF MOORE</b>																																																																
PLANS AND ESTIMATES PREPARED BY: <b>Meshek &amp; Associates, L.L.C.</b> 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> </tbody> </table>	REVISION	BY	DATE																			<table border="1"> <thead> <tr> <th>PLAN SCALE</th> <th>JCL</th> <th>Value</th> <th>APPROVED:</th> </tr> </thead> <tbody> <tr> <td>N/A</td> <td>DESIGNED</td> <td>BWF</td> <td rowspan="3"> </td> </tr> <tr> <td> </td> <td>SURVEY</td> <td>PDH</td> </tr> <tr> <td> </td> <td>RECOMMENDED</td> <td> </td> </tr> <tr> <td> </td> <td>PROFILE SCALE</td> <td>RECOMMENDED</td> <td> </td> </tr> <tr> <td> </td> <td>HORIZONTAL:</td> <td>1" = 10'</td> <td>DEVELOPMENT SERVICES</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td>RECOMMENDED</td> </tr> <tr> <td> </td> <td>VERTICAL:</td> <td>1" = 10'</td> <td>DEPUTY DIRECTOR</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td>PUBLIC WORKS DIRECTOR</td> </tr> <tr> <td> </td> <td>FILE:</td> <td>DRAWING:</td> <td>DATE:</td> </tr> <tr> <td> </td> <td>ATLAS PAGE NO. .</td> <td> </td> <td>SHEET 90 OF 133 SHEETS</td> </tr> </tbody> </table>	PLAN SCALE	JCL	Value	APPROVED:	N/A	DESIGNED	BWF			SURVEY	PDH		RECOMMENDED			PROFILE SCALE	RECOMMENDED			HORIZONTAL:	1" = 10'	DEVELOPMENT SERVICES				RECOMMENDED		VERTICAL:	1" = 10'	DEPUTY DIRECTOR				PUBLIC WORKS DIRECTOR		FILE:	DRAWING:	DATE:		ATLAS PAGE NO. .		SHEET 90 OF 133 SHEETS
REVISION	BY	DATE																																																														
PLAN SCALE	JCL	Value	APPROVED:																																																													
N/A	DESIGNED	BWF																																																														
	SURVEY	PDH																																																														
	RECOMMENDED																																																															
	PROFILE SCALE	RECOMMENDED																																																														
	HORIZONTAL:	1" = 10'	DEVELOPMENT SERVICES																																																													
			RECOMMENDED																																																													
	VERTICAL:	1" = 10'	DEPUTY DIRECTOR																																																													
			PUBLIC WORKS DIRECTOR																																																													
	FILE:	DRAWING:	DATE:																																																													
	ATLAS PAGE NO. .		SHEET 90 OF 133 SHEETS																																																													

PRINT DATE: 02/05/2018

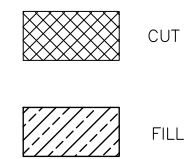


M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_XSECTIONS\_CHANNEL.dwg



MATERIAL	AREA	VOLUME
CUT	0.0 SF	0.0 CY
FILL	0.0 SF	0.0 CY

MATERIAL	AREA	VOLUME
CUT	0.0 SF	0.0 CY
FILL	0.0 SF	0.0 CY



**CHANNEL CROSS SECTIONS**  
**LITTLE RIVER PARK DRAINAGE IMPROVEMENTS**  
**CITY OF MOORE**

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

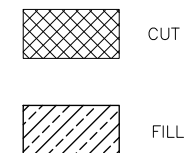
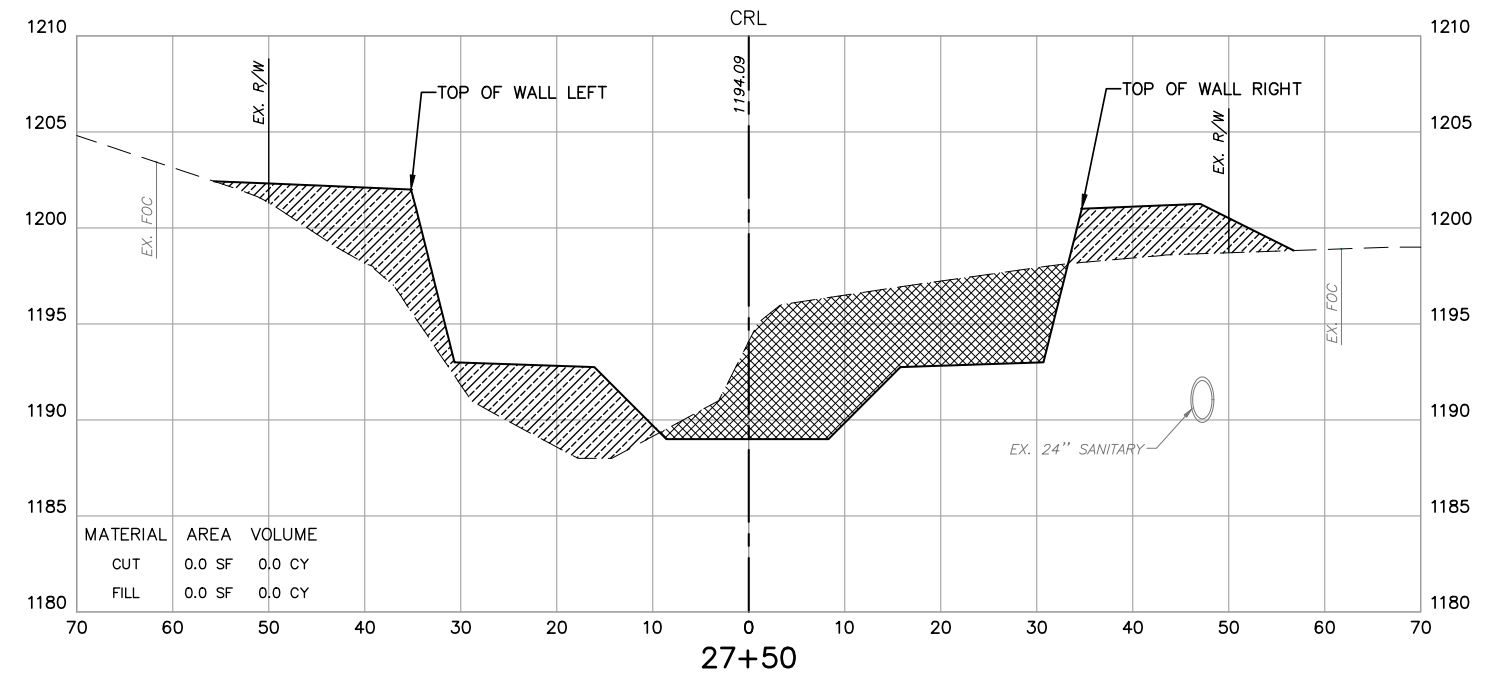
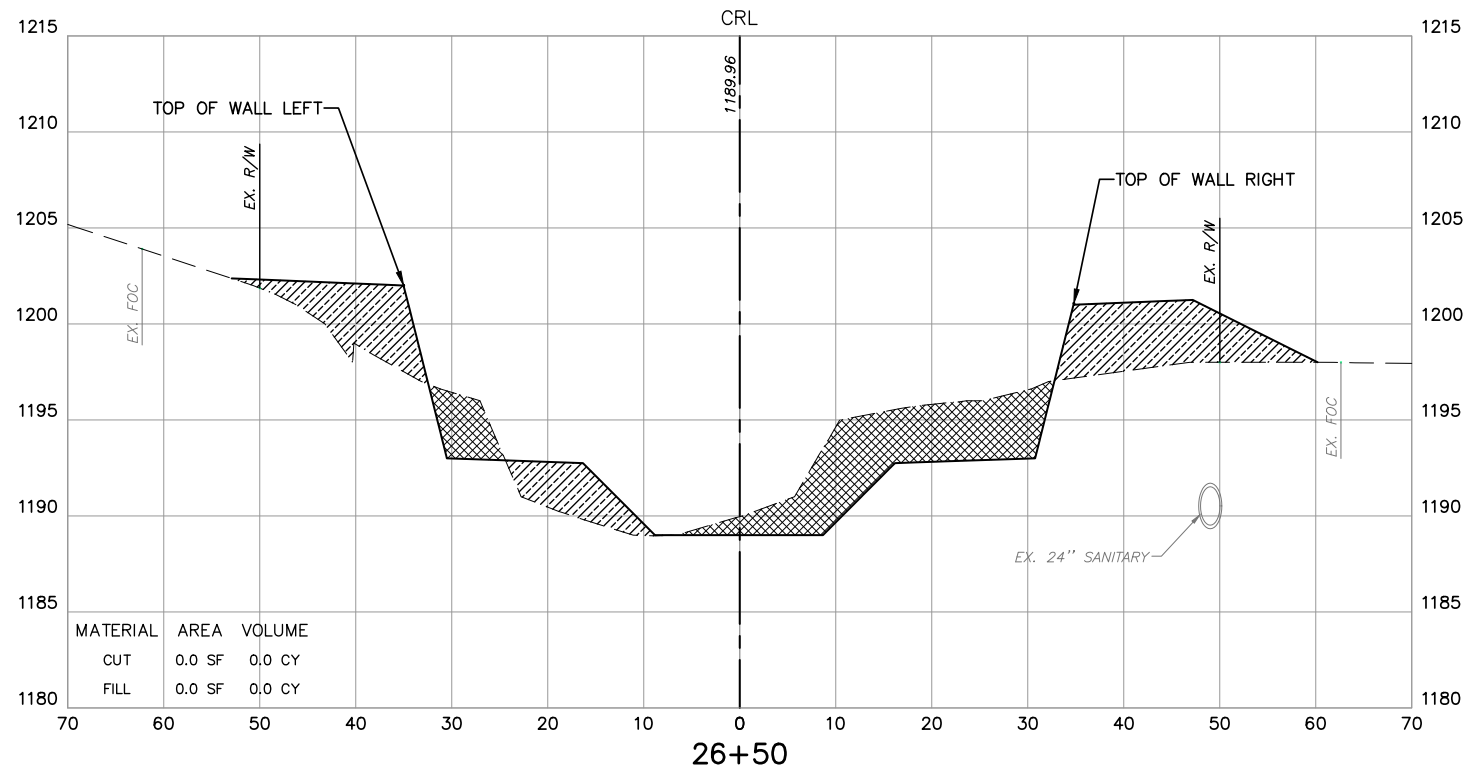
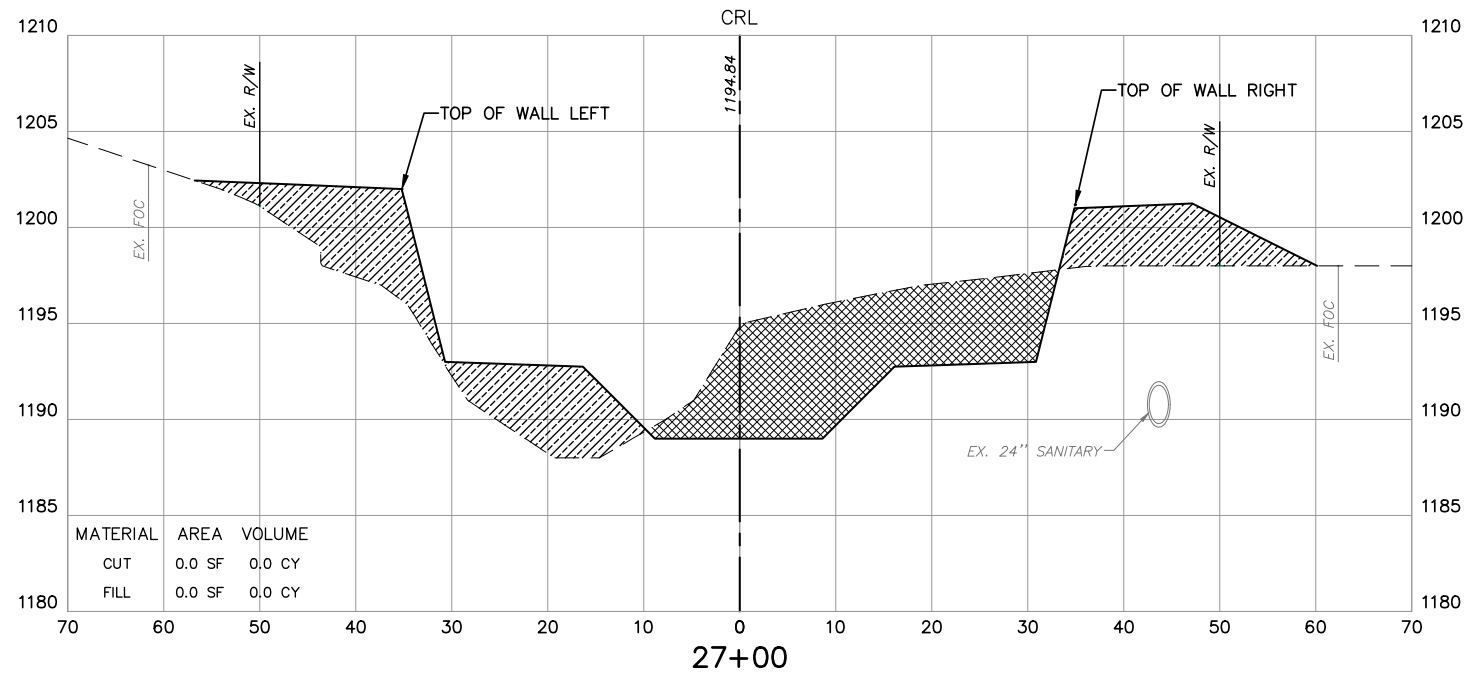
REVISION	BY	DATE	PLAN SCALE	DRAWN	JCL	Value	APPROVED:
			N/A	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	RECOMMENDED			PUBLIC WORKS DIRECTOR
			1" = 10'	DEVELOPMENT SERVICES			
			VERTICAL:	RECOMMENDED			PUBLIC WORKS DIRECTOR
			1" = 10'	DEPUTY DIRECTOR			
			FILE:	DRAWING:			DATE:
			ATLAS PAGE NO. .				SHEET 92 OF 133 SHEETS

PRINT DATE: 02/05/2018



M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_XSECTIONS\_CHANNEL.dwg

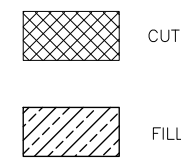
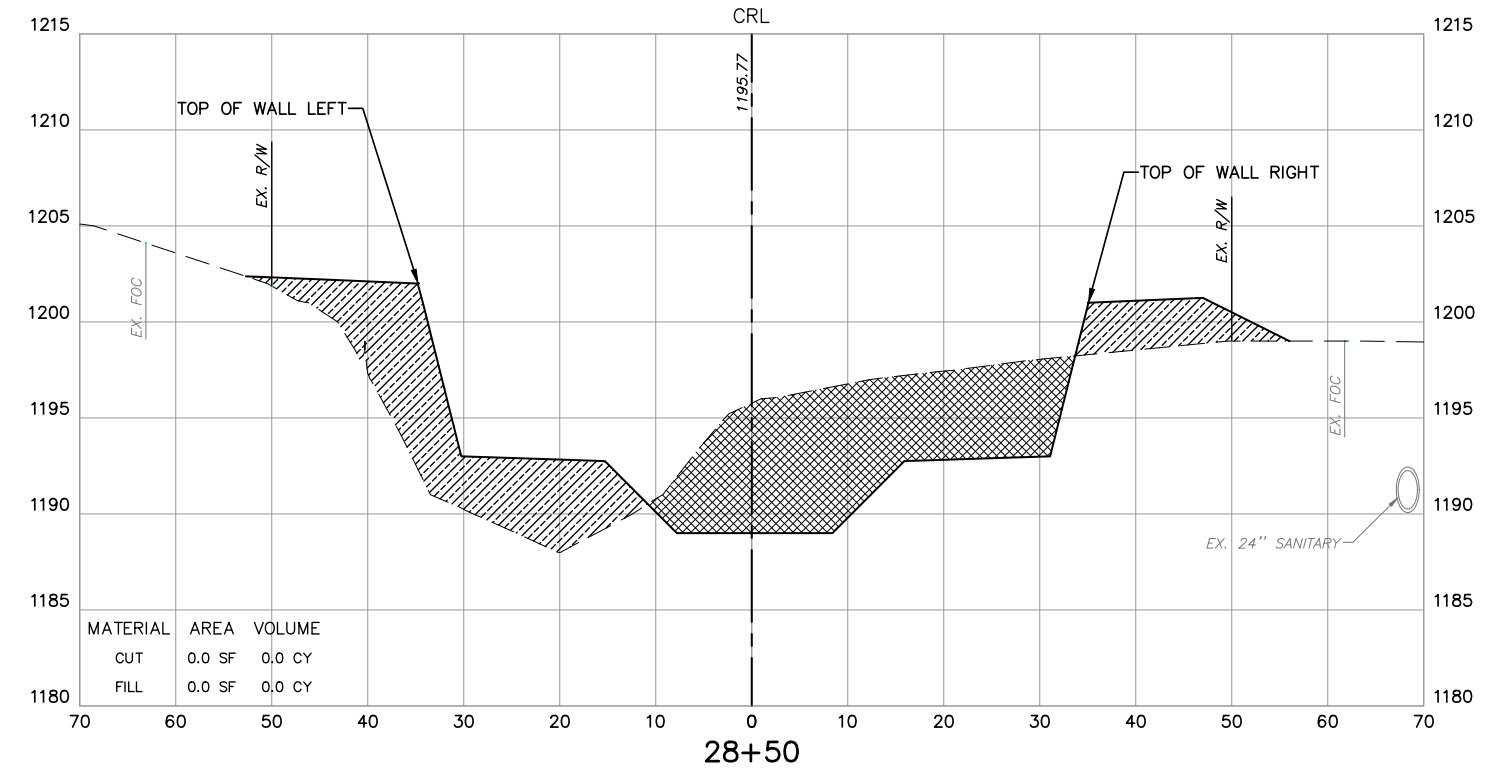
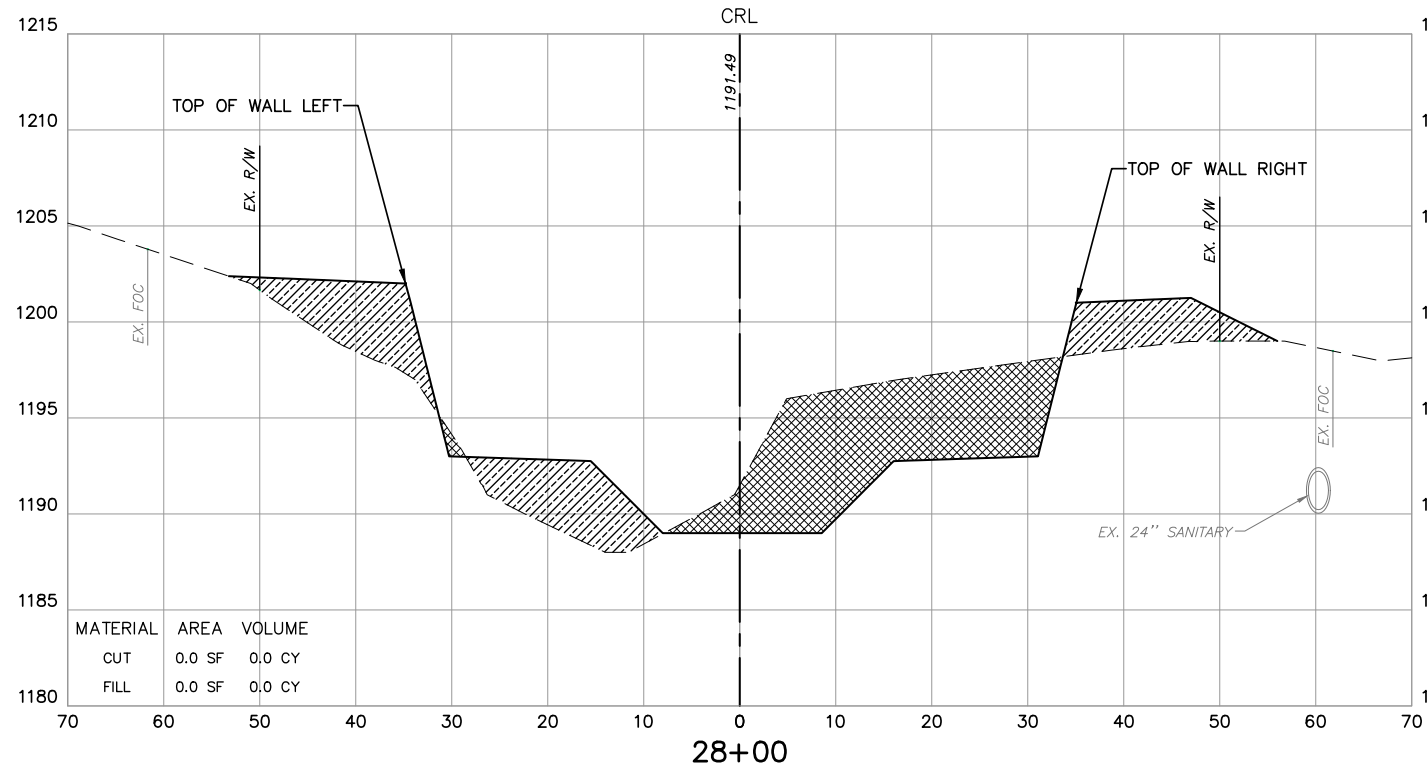
PRINT DATE: 02/05/2018



<b>CHANNEL CROSS SECTIONS</b>																																																			
<b>LITTLE RIVER PARK DRAINAGE IMPROVEMENTS</b>																																																			
<b>CITY OF MOORE</b>																																																			
PLANS AND ESTIMATES PREPARED BY:																																																			
<b>Meshek &amp; Associates, L.L.C.</b>																																																			
1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620																																																			
<b>REVISION</b>	<b>BY</b>	<b>DATE</b>	<b>APPROVED:</b>																																																
			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;"><b>PLAN SCALE</b></td> <td style="width: 25%;"><b>DRAWN</b></td> <td style="width: 25%;"><b>JCL</b></td> <td style="width: 25%;"><b>Value</b></td> </tr> <tr> <td>N/A</td> <td><b>DESIGNED</b></td> <td><b>BWF</b></td> <td><b>Value</b></td> </tr> <tr> <td> </td> <td><b>SURVEY</b></td> <td><b>PDH</b></td> <td><b>Value</b></td> </tr> <tr> <td colspan="4"><b>PROFILE SCALE</b></td> </tr> <tr> <td colspan="4" style="text-align: center;"><b>RECOMMENDED</b></td> </tr> <tr> <td colspan="4"><b>HORIZONTAL:</b></td> </tr> <tr> <td colspan="4" style="text-align: center;"><b>1" = 10'</b></td> </tr> <tr> <td colspan="4"><b>VERTICAL:</b></td> </tr> <tr> <td colspan="4" style="text-align: center;"><b>1" = 10'</b></td> </tr> <tr> <td colspan="2"><b>FILE:</b></td> <td colspan="2"><b>DRAWING:</b></td> </tr> <tr> <td colspan="2">ATLAS PAGE NO. .</td> <td colspan="2">DATE:</td> </tr> <tr> <td colspan="2"> </td> <td colspan="2">SHEET 93 OF 133 SHEETS</td> </tr> </table>	<b>PLAN SCALE</b>	<b>DRAWN</b>	<b>JCL</b>	<b>Value</b>	N/A	<b>DESIGNED</b>	<b>BWF</b>	<b>Value</b>		<b>SURVEY</b>	<b>PDH</b>	<b>Value</b>	<b>PROFILE SCALE</b>				<b>RECOMMENDED</b>				<b>HORIZONTAL:</b>				<b>1" = 10'</b>				<b>VERTICAL:</b>				<b>1" = 10'</b>				<b>FILE:</b>		<b>DRAWING:</b>		ATLAS PAGE NO. .		DATE:				SHEET 93 OF 133 SHEETS	
<b>PLAN SCALE</b>	<b>DRAWN</b>	<b>JCL</b>		<b>Value</b>																																															
N/A	<b>DESIGNED</b>	<b>BWF</b>		<b>Value</b>																																															
	<b>SURVEY</b>	<b>PDH</b>	<b>Value</b>																																																
<b>PROFILE SCALE</b>																																																			
<b>RECOMMENDED</b>																																																			
<b>HORIZONTAL:</b>																																																			
<b>1" = 10'</b>																																																			
<b>VERTICAL:</b>																																																			
<b>1" = 10'</b>																																																			
<b>FILE:</b>		<b>DRAWING:</b>																																																	
ATLAS PAGE NO. .		DATE:																																																	
		SHEET 93 OF 133 SHEETS																																																	

M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_XSECTIONS\_CHANNEL.dwg

PRINT DATE: 02/05/2018

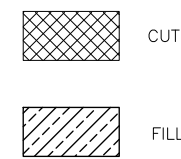
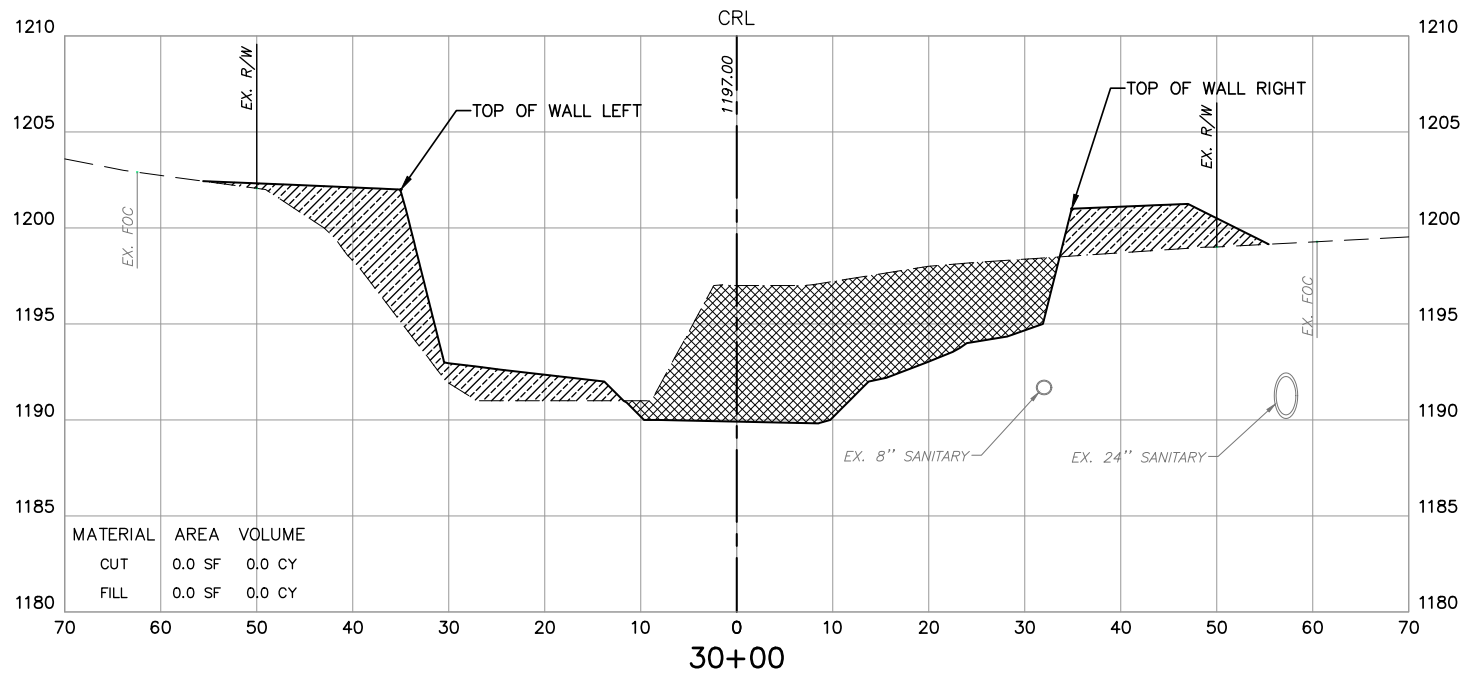
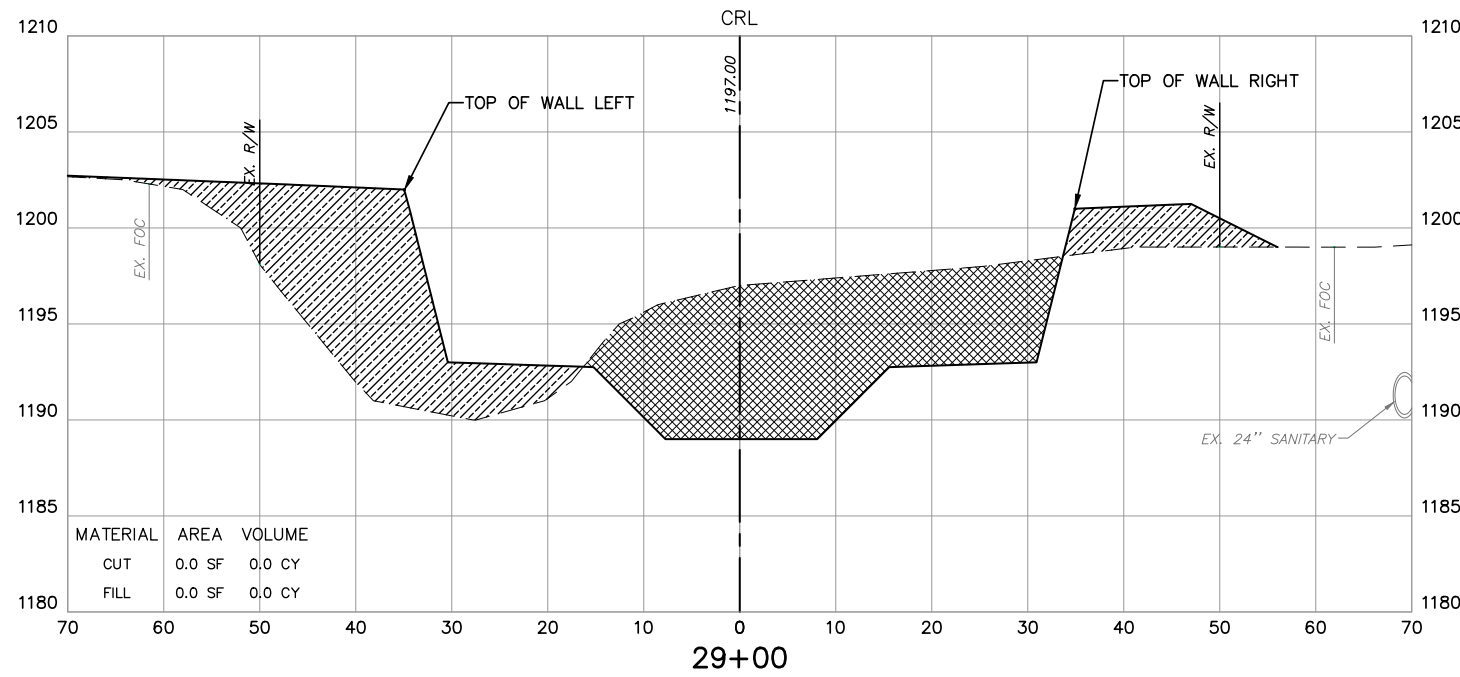
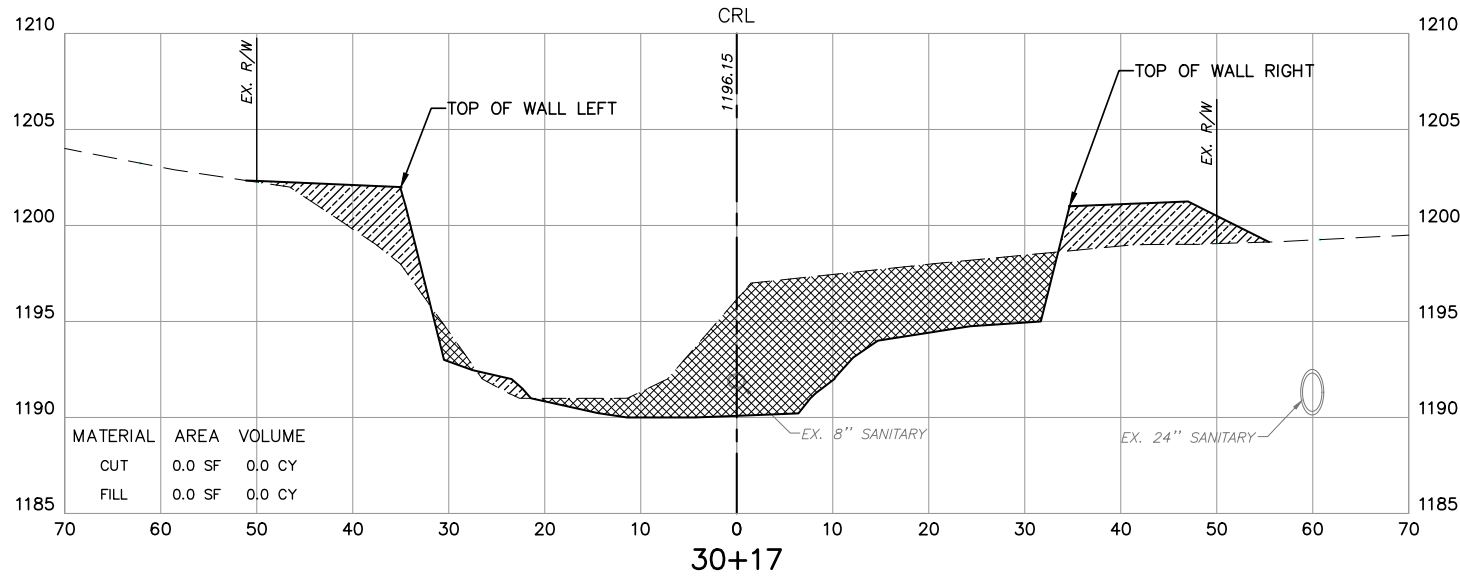
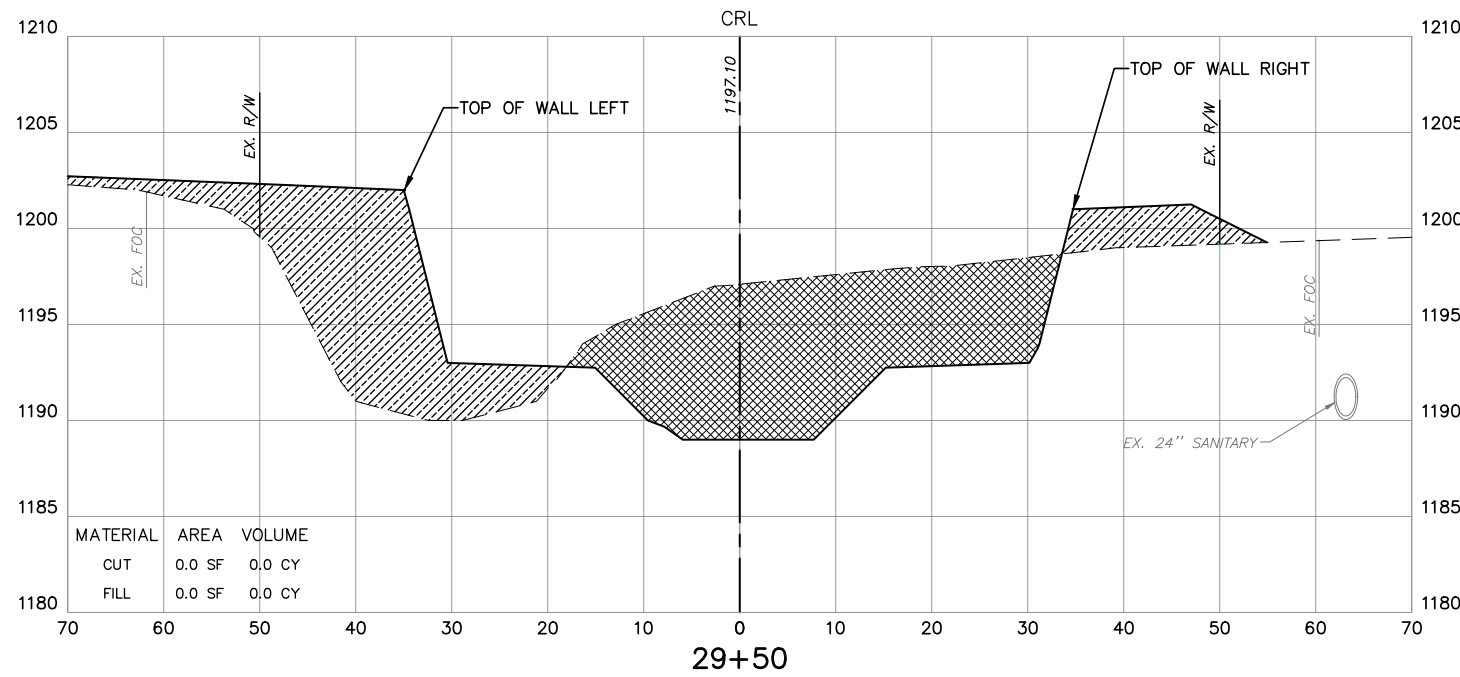


**CHANNEL CROSS SECTIONS**  
**LITTLE RIVER PARK DRAINAGE IMPROVEMENTS**  
**CITY OF MOORE**

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	JCL	Value	APPROVED:
			N/A	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	DEVELOPMENT SERVICES			PUBLIC WORKS DIRECTOR
			RECOMMENDED	RECOMMENDED			
			VERTICAL:	DEPUTY DIRECTOR			
			1" = 10'				
			FILE:	DRAWING:			DATE:
			ATLAS PAGE NO. .				SHEET 94 OF 133 SHEETS

M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_XSECTIONS\_CHANNEL.dwg



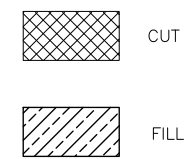
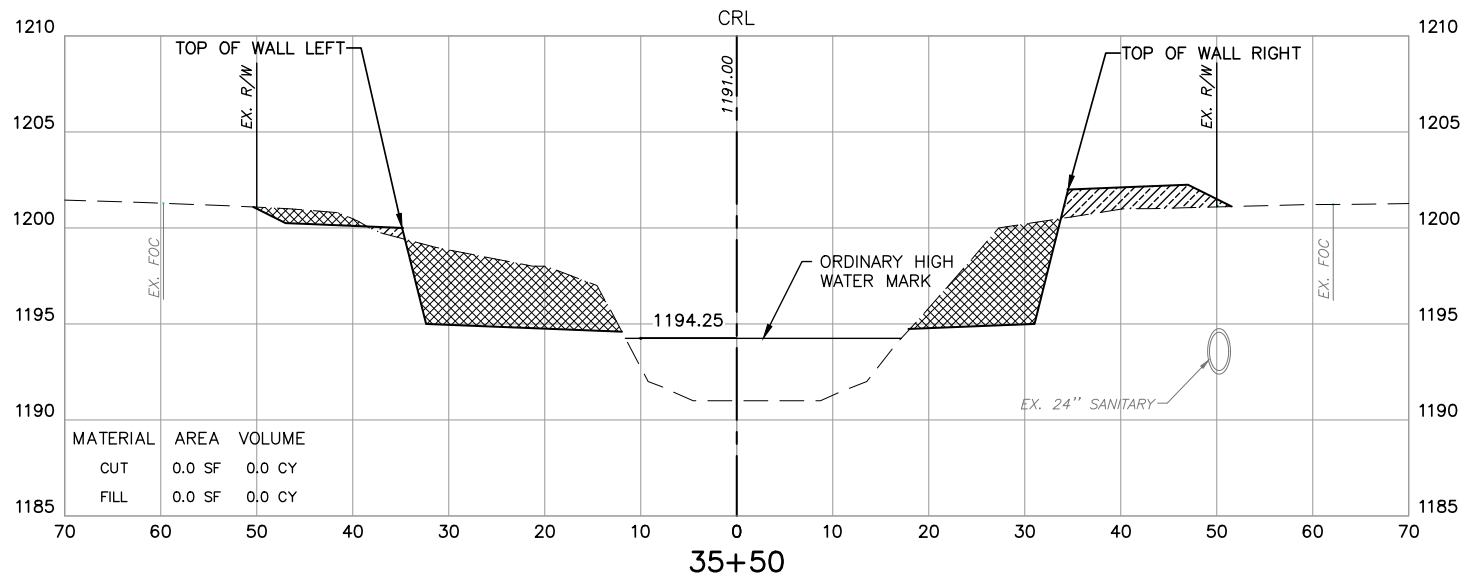
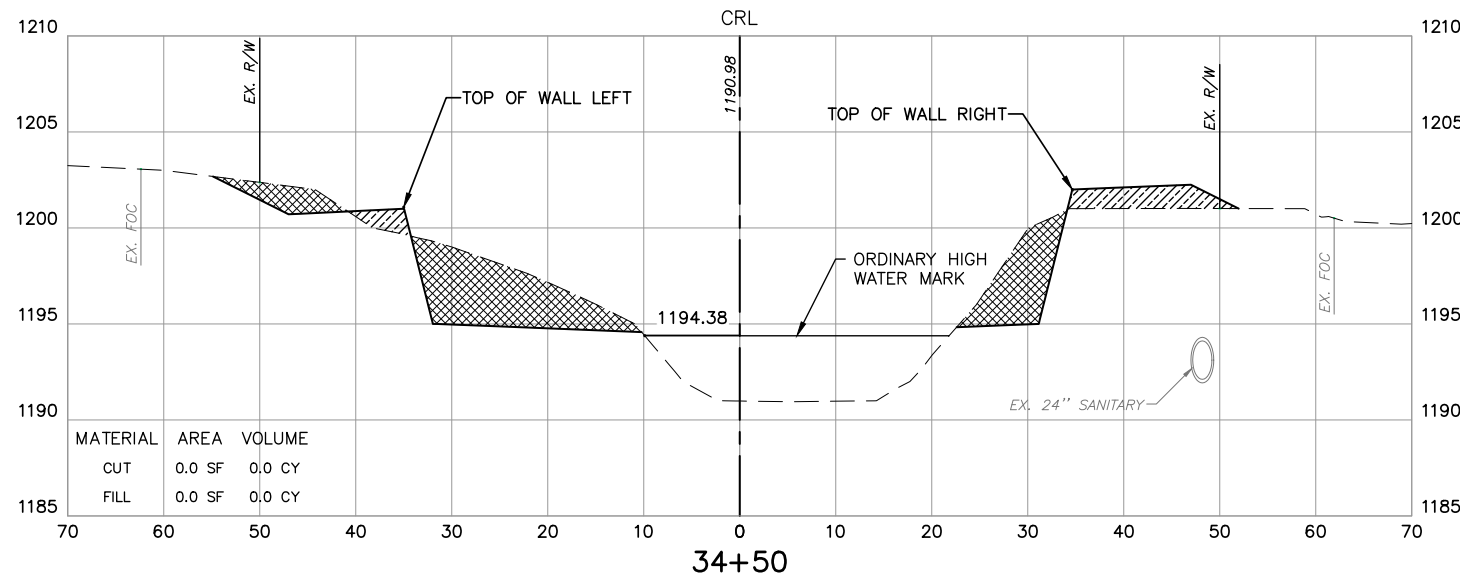
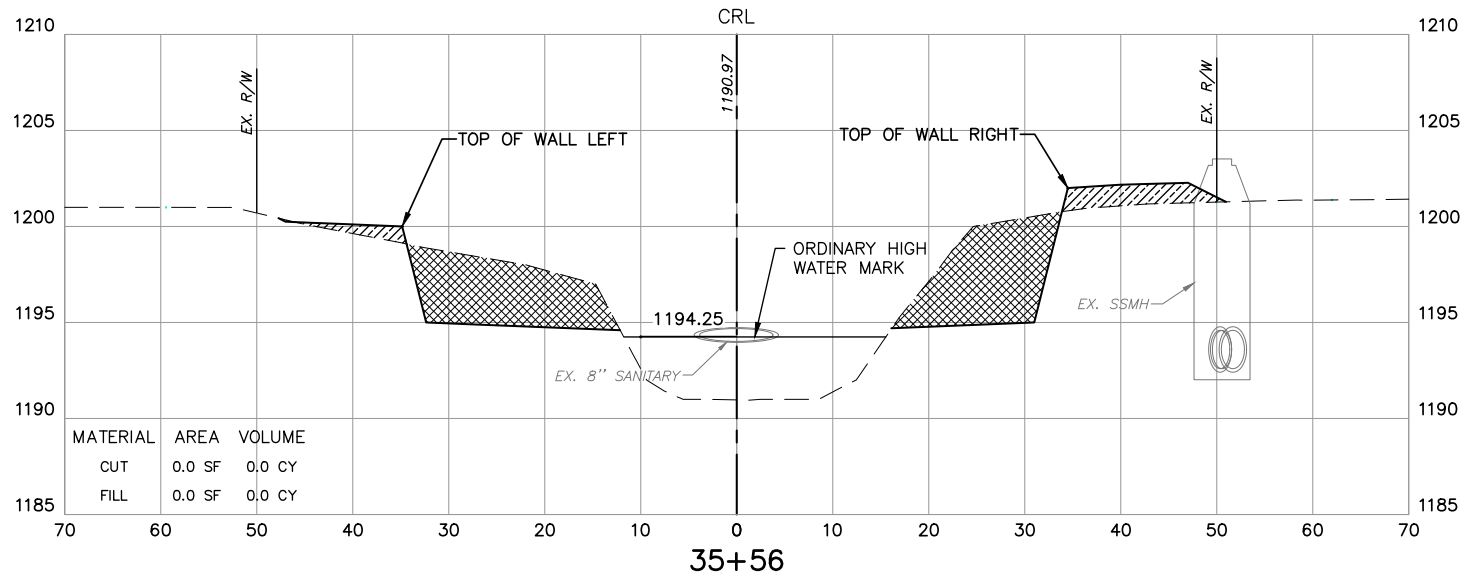
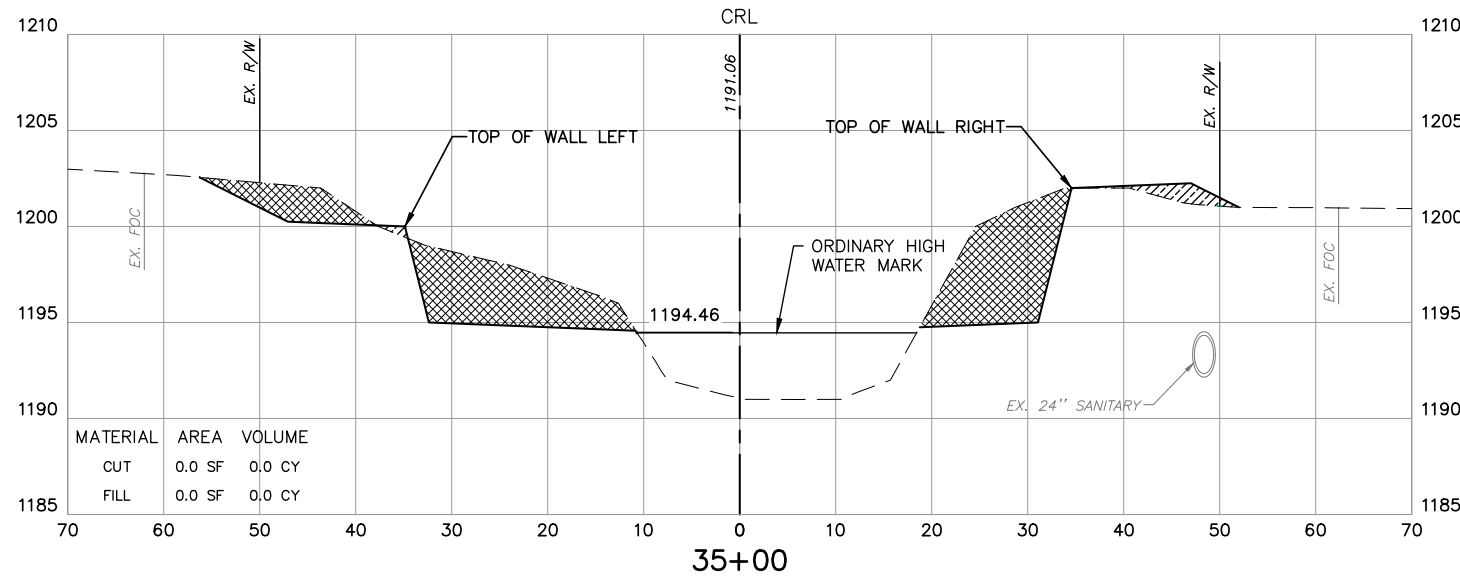
<b>CHANNEL CROSS SECTIONS</b>																																																																															
<b>LITTLE RIVER PARK DRAINAGE IMPROVEMENTS</b>																																																																															
<b>CITY OF MOORE</b>																																																																															
PLANS AND ESTIMATES PREPARED BY:																																																																															
<b>Meshek &amp; Associates, L.L.C.</b>																																																																															
1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620																																																																															
<b>REVISION</b>	<b>BY</b>	<b>DATE</b>	<b>APPROVED:</b>																																																																												
			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;"><b>PLAN SCALE</b></td> <td style="width: 25%;">DRAWN</td> <td style="width: 25%;">JCL</td> <td style="width: 25%;">Value</td> </tr> <tr> <td> </td> <td>DESIGNED</td> <td>BWF</td> <td>Value</td> </tr> <tr> <td> </td> <td>SURVEY</td> <td>PDH</td> <td>Value</td> </tr> <tr> <td colspan="4"><b>PROFILE SCALE</b></td> </tr> <tr> <td colspan="4" style="text-align: center;">RECOMMENDED</td> </tr> <tr> <td colspan="4"><b>HORIZONTAL:</b></td> </tr> <tr> <td colspan="4" style="text-align: center;">1" = 10'</td> </tr> <tr> <td colspan="4"><b>RECOMMENDED</b></td> </tr> <tr> <td colspan="4"><b>DEVELOPMENT SERVICES</b></td> </tr> <tr> <td colspan="4" style="text-align: center;">RECOMMENDED</td> </tr> <tr> <td colspan="4"><b>VERTICAL:</b></td> </tr> <tr> <td colspan="4" style="text-align: center;">1" = 10'</td> </tr> <tr> <td colspan="4"><b>DEPUTY DIRECTOR</b></td> </tr> <tr> <td colspan="2"><b>FILE:</b></td> <td colspan="2"><b>DRAWING:</b></td> </tr> <tr> <td colspan="2"> </td> <td colspan="2"> </td> </tr> <tr> <td colspan="2"><b>ATLAS PAGE NO.</b></td> <td colspan="2"><b>DATE:</b></td> </tr> <tr> <td colspan="2"> </td> <td colspan="2"> </td> </tr> <tr> <td colspan="2"> </td> <td colspan="2" style="text-align: right;"><b>PUBLIC WORKS DIRECTOR</b></td> </tr> <tr> <td colspan="2"> </td> <td colspan="2" style="text-align: right;">SHEET 95 OF 133 SHEETS</td> </tr> </table>	<b>PLAN SCALE</b>	DRAWN	JCL	Value		DESIGNED	BWF	Value		SURVEY	PDH	Value	<b>PROFILE SCALE</b>				RECOMMENDED				<b>HORIZONTAL:</b>				1" = 10'				<b>RECOMMENDED</b>				<b>DEVELOPMENT SERVICES</b>				RECOMMENDED				<b>VERTICAL:</b>				1" = 10'				<b>DEPUTY DIRECTOR</b>				<b>FILE:</b>		<b>DRAWING:</b>						<b>ATLAS PAGE NO.</b>		<b>DATE:</b>								<b>PUBLIC WORKS DIRECTOR</b>				SHEET 95 OF 133 SHEETS	
<b>PLAN SCALE</b>	DRAWN	JCL		Value																																																																											
	DESIGNED	BWF		Value																																																																											
	SURVEY	PDH	Value																																																																												
<b>PROFILE SCALE</b>																																																																															
RECOMMENDED																																																																															
<b>HORIZONTAL:</b>																																																																															
1" = 10'																																																																															
<b>RECOMMENDED</b>																																																																															
<b>DEVELOPMENT SERVICES</b>																																																																															
RECOMMENDED																																																																															
<b>VERTICAL:</b>																																																																															
1" = 10'																																																																															
<b>DEPUTY DIRECTOR</b>																																																																															
<b>FILE:</b>		<b>DRAWING:</b>																																																																													
<b>ATLAS PAGE NO.</b>		<b>DATE:</b>																																																																													
		<b>PUBLIC WORKS DIRECTOR</b>																																																																													
		SHEET 95 OF 133 SHEETS																																																																													

PRINT DATE: 02/05/2018





M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_XSECTIONS\_CHANNEL.dwg



**CHANNEL CROSS SECTIONS**  
**LITTLE RIVER PARK DRAINAGE IMPROVEMENTS**  
**CITY OF MOORE**

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

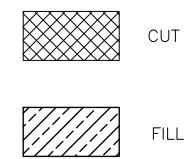
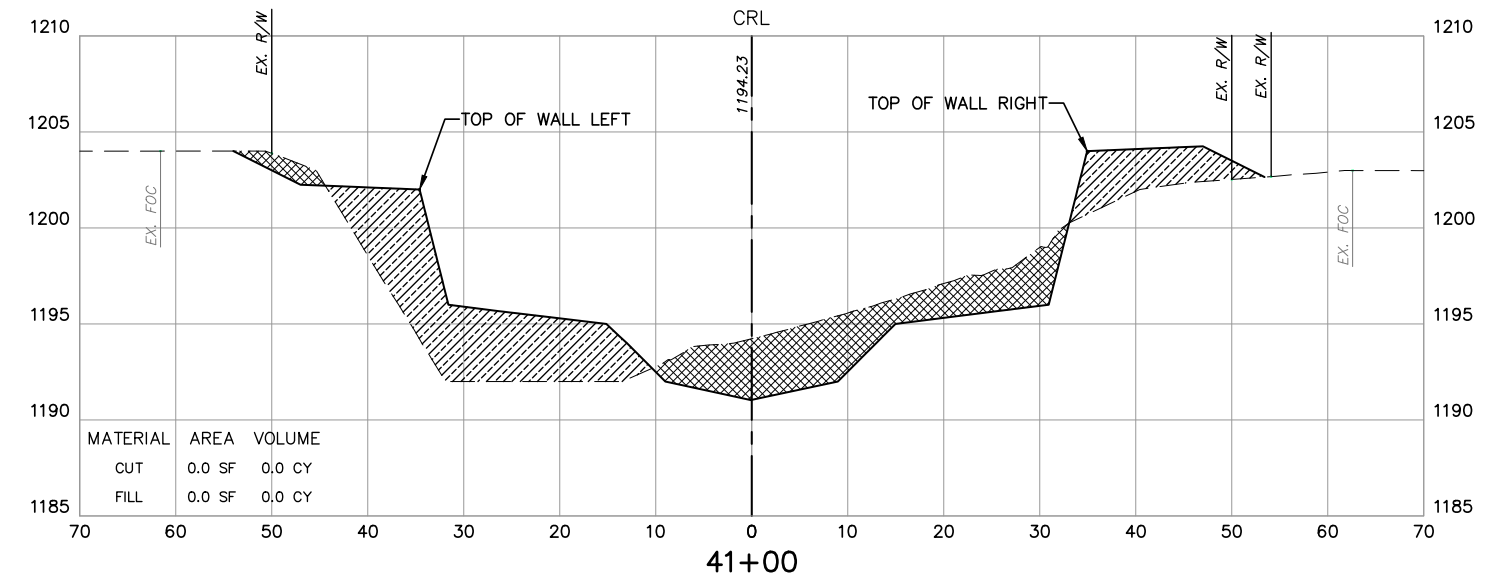
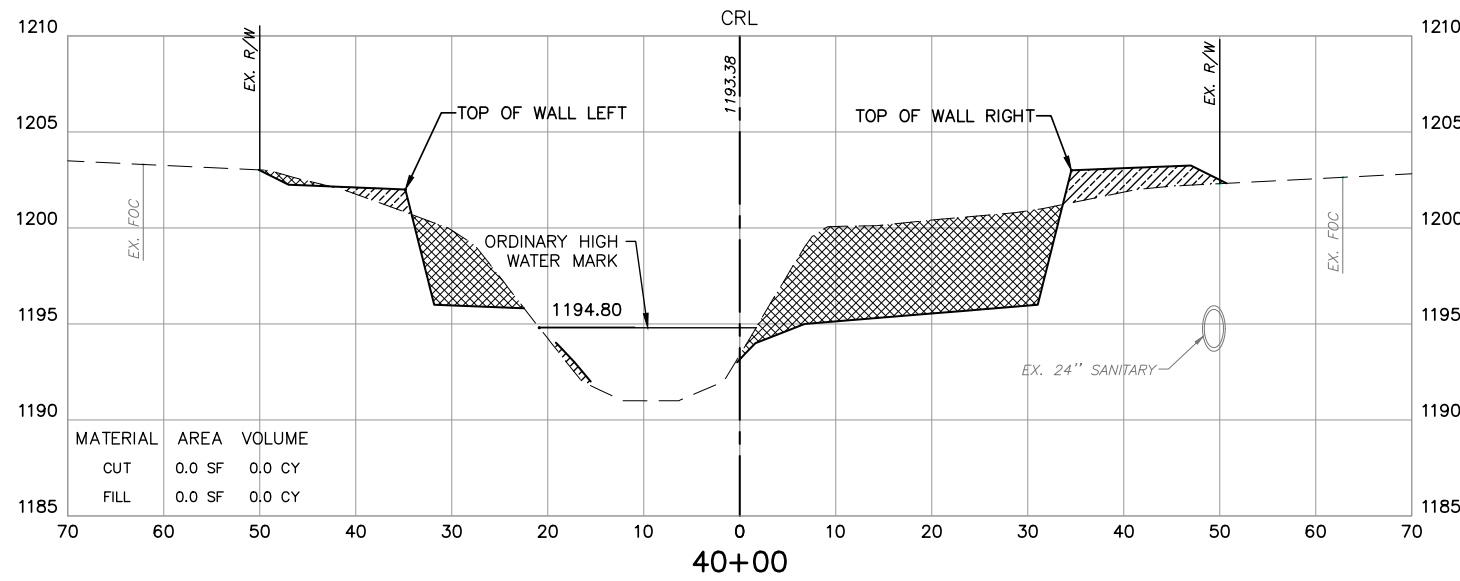
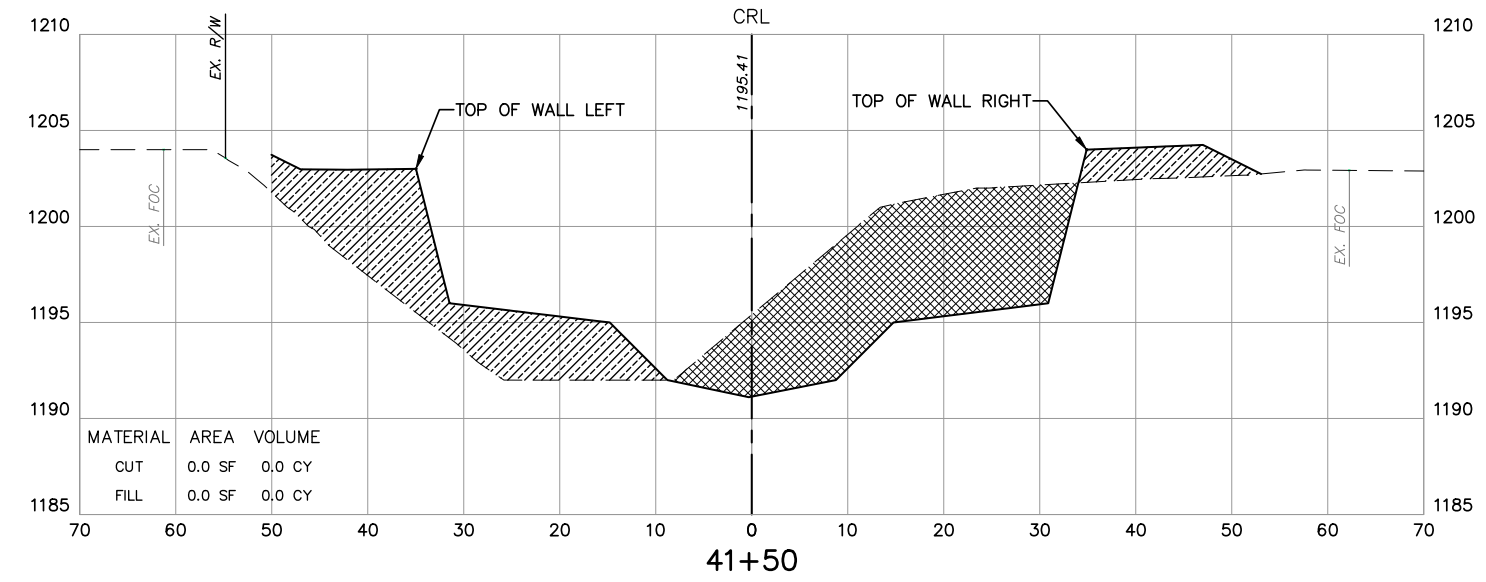
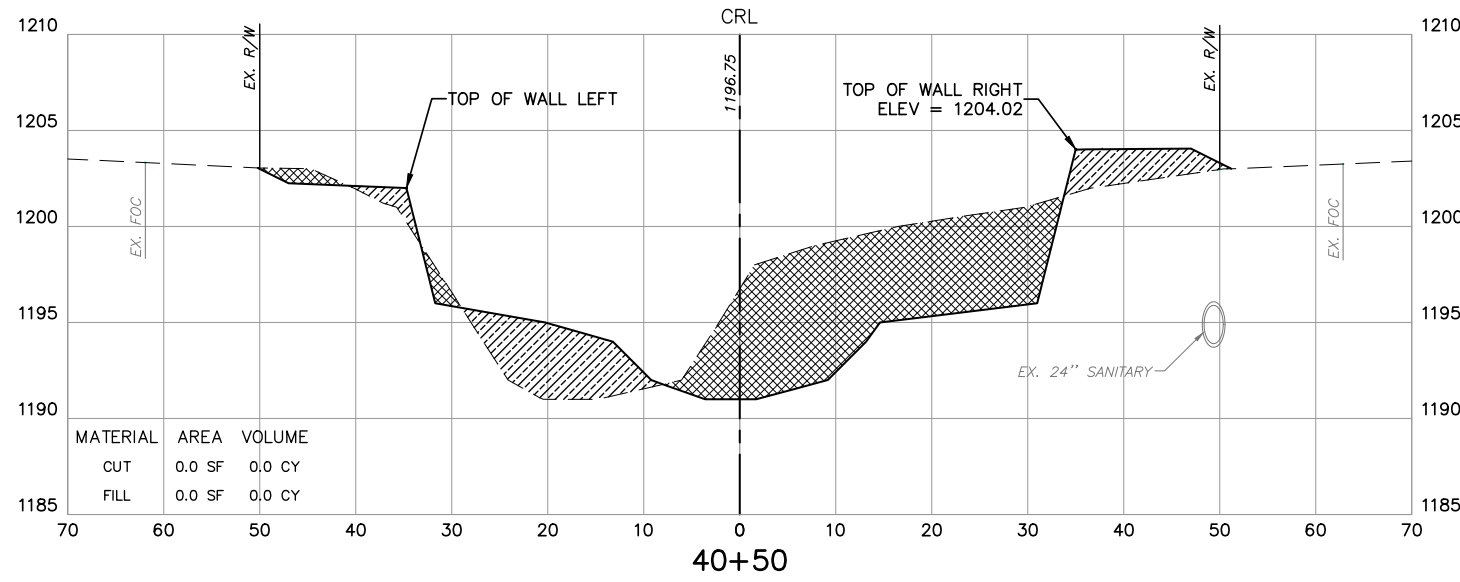
REVISION	BY	DATE	PLAN SCALE	DRAWN	JCL	Value	APPROVED:
			N/A	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	DEVELOPMENT SERVICES			
				RECOMMENDED			
			VERTICAL:	DEPUTY DIRECTOR			
							PUBLIC WORKS DIRECTOR
			FILE:	DRAWING:			DATE:
			ATLAS PAGE NO.				SHEET 98 OF 133 SHEETS







M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_XSECTIONS\_CHANNEL.dwg



**CHANNEL CROSS SECTIONS**

**LITTLE RIVER PARK DRAINAGE IMPROVEMENTS**

**CITY OF MOORE**

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	JCL	Value	APPROVED:
			N/A	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	DEVELOPMENT SERVICES			PUBLIC WORKS DIRECTOR
				RECOMMENDED			
			VERTICAL:	DEPUTY DIRECTOR			
			FILE:	DRAWING:			DATE:
			ATLAS PAGE NO. .				SHEET 101 OF 133 SHEETS

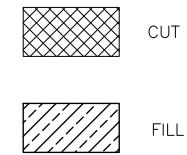
PRINT DATE: 02/05/2018







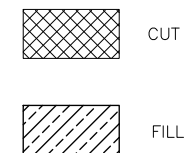
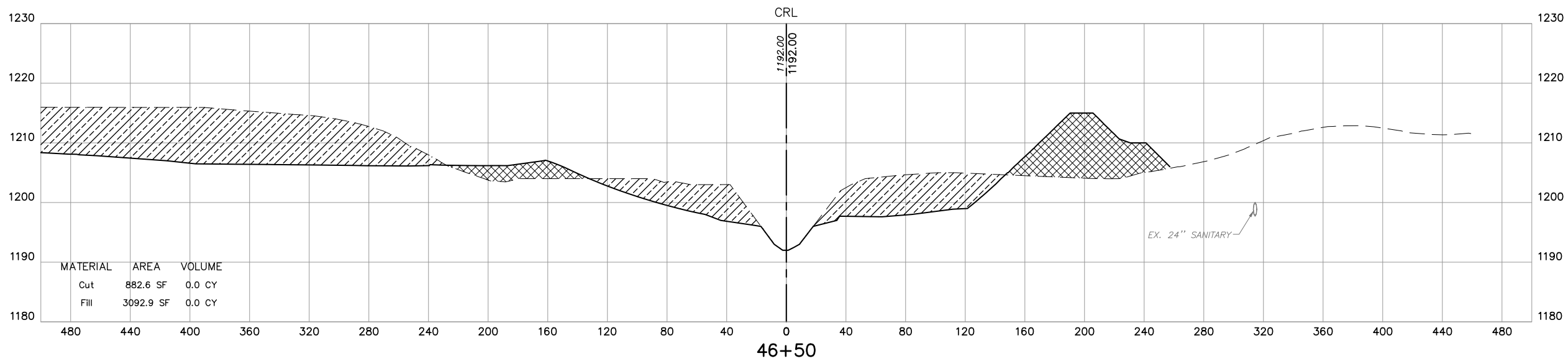
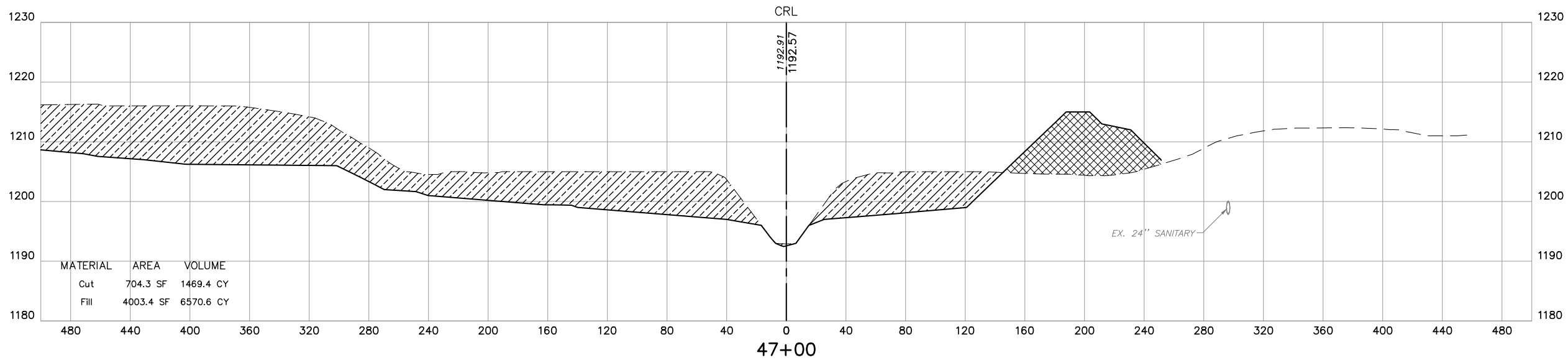
PRINT DATE: 02/05/2018 M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_XSECTIONS\_CHANNEL.dwg



**CHANNEL CROSS SECTIONS**  
**LITTLE RIVER PARK DRAINAGE IMPROVEMENTS**  
**CITY OF MOORE**  
 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	JCL	Value	APPROVED:
			N/A	DESIGNED	BWF	Value	_____ DEPUTY DIRECTOR PUBLIC WORKS DIRECTOR
				SURVEY	PDH	Value	
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	RECOMMENDED			
			1" = 10'	RECOMMENDED			
			VERTICAL:	RECOMMENDED			
			1" = 10'	RECOMMENDED			
			FILE:	DRAWING:			DATE:
			ATLAS PAGE NO. .				SHEET 105 OF 133 SHEETS

M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_XSECTIONS\_POND.dwg

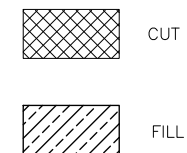
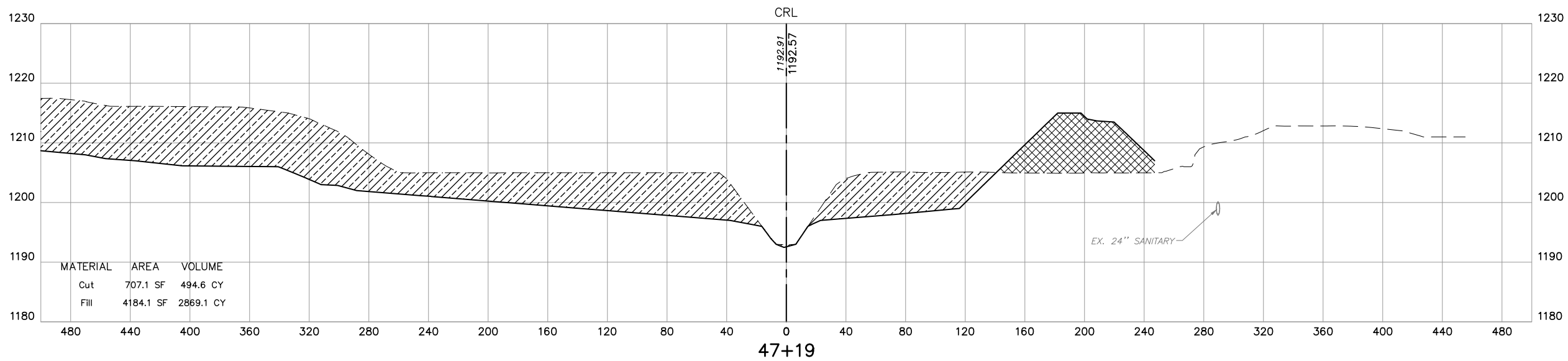
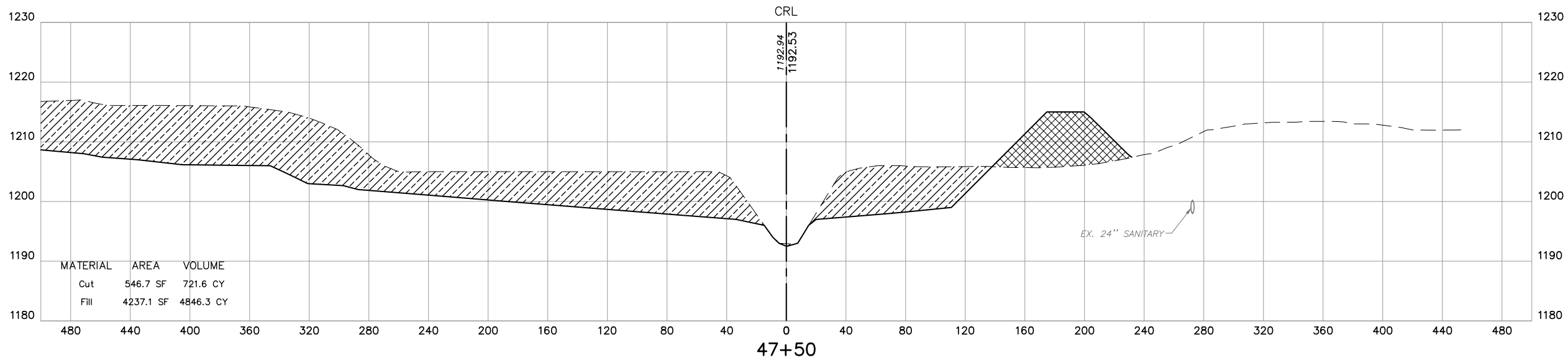


<b>CROSS SECTIONS</b>			
<b>LITTLE RIVER PARK DRAINAGE IMPROVEMENTS</b>			
<b>CITY OF MOORE</b>			
PLANS AND ESTIMATES PREPARED BY:			
<b>Meshek &amp; Associates, L.L.C.</b>			
1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620			
PLAN SCALE	DRAWN	JCL	Value
N/A	DESIGNED	BWF	Value
	SURVEY	PDH	Value
PROFILE SCALE	RECOMMENDED		
HORIZONTAL:	RECOMMENDED		
1" = 10'	DEVELOPMENT SERVICES		
VERTICAL:	RECOMMENDED		
1" = 10'	DEPUTY DIRECTOR		
FILE:	DRAWING:	DATE:	
ATLAS PAGE NO. .		SHEET 106 OF 133 SHEETS	

REVISION	BY	DATE

PRINT DATE: 02/05/2018

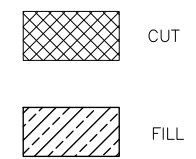
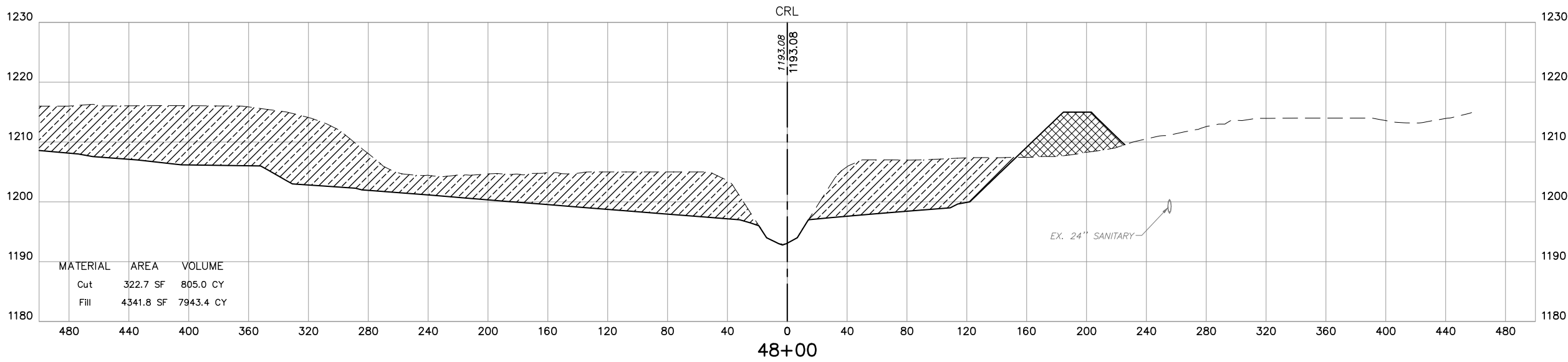
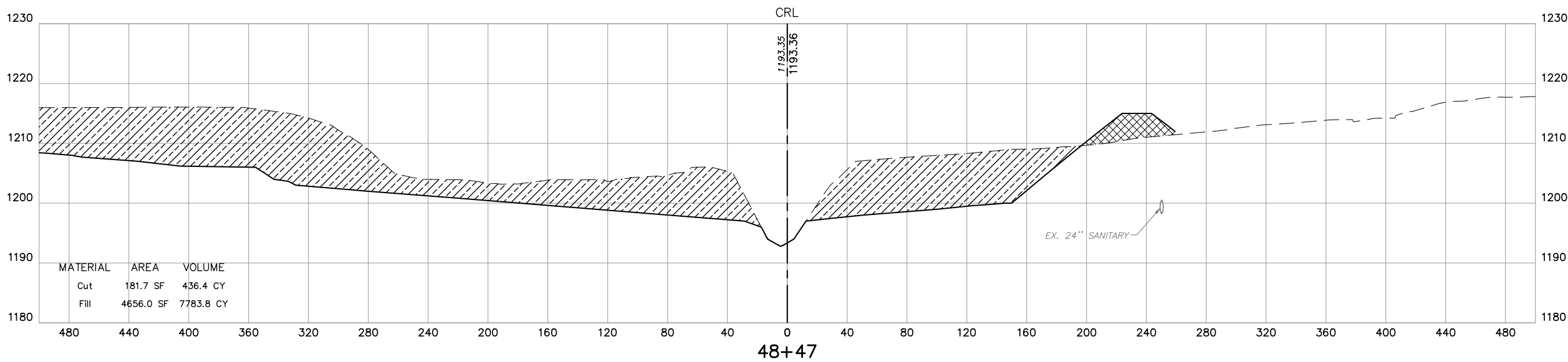
M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_XSECTIONS\_POND.dwg



<b>CROSS SECTIONS</b>															
<b>LITTLE RIVER PARK DRAINAGE IMPROVEMENTS</b>															
<b>CITY OF MOORE</b>															
PLANS AND ESTIMATES PREPARED BY:															
<b>Meshek &amp; Associates, L.L.C.</b>															
1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620															
REVISION	BY	DATE	APPROVED:												
			<table border="1"> <tr> <td>PLAN SCALE</td> <td>DRAWN</td> <td>JCL</td> <td>Value</td> </tr> <tr> <td>N/A</td> <td>DESIGNED</td> <td>BWF</td> <td>Value</td> </tr> <tr> <td> </td> <td>SURVEY</td> <td>PDH</td> <td>Value</td> </tr> </table>	PLAN SCALE	DRAWN	JCL	Value	N/A	DESIGNED	BWF	Value		SURVEY	PDH	Value
PLAN SCALE	DRAWN	JCL		Value											
N/A	DESIGNED	BWF		Value											
	SURVEY	PDH	Value												
			<table border="1"> <tr> <td>PROFILE SCALE</td> <td>RECOMMENDED</td> </tr> <tr> <td>HORIZONTAL:</td> <td>DEVELOPMENT SERVICES</td> </tr> <tr> <td>1" = 10'</td> <td>RECOMMENDED</td> </tr> <tr> <td>VERTICAL:</td> <td>DEPUTY DIRECTOR</td> </tr> <tr> <td>1" = 10'</td> <td>PUBLIC WORKS DIRECTOR</td> </tr> </table>	PROFILE SCALE	RECOMMENDED	HORIZONTAL:	DEVELOPMENT SERVICES	1" = 10'	RECOMMENDED	VERTICAL:	DEPUTY DIRECTOR	1" = 10'	PUBLIC WORKS DIRECTOR		
PROFILE SCALE	RECOMMENDED														
HORIZONTAL:	DEVELOPMENT SERVICES														
1" = 10'	RECOMMENDED														
VERTICAL:	DEPUTY DIRECTOR														
1" = 10'	PUBLIC WORKS DIRECTOR														
			<table border="1"> <tr> <td>FILE:</td> <td>DRAWING:</td> <td>DATE:</td> </tr> <tr> <td>ATLAS PAGE NO. .</td> <td> </td> <td>SHEET 107 OF 133 SHEETS</td> </tr> </table>	FILE:	DRAWING:	DATE:	ATLAS PAGE NO. .		SHEET 107 OF 133 SHEETS						
FILE:	DRAWING:	DATE:													
ATLAS PAGE NO. .		SHEET 107 OF 133 SHEETS													

PRINT DATE: 02/05/2018

M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_XSECTIONS\_POND.dwg

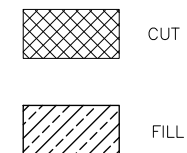
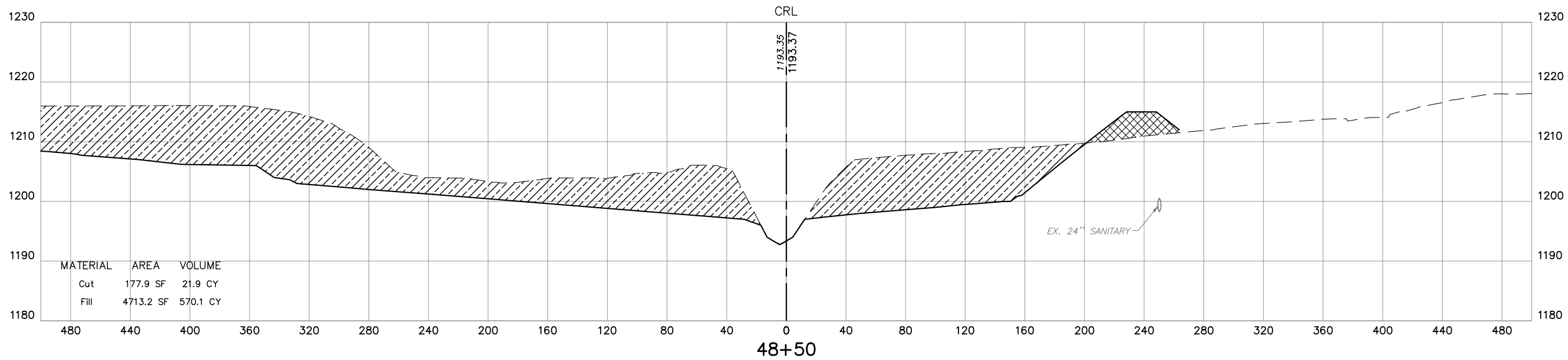
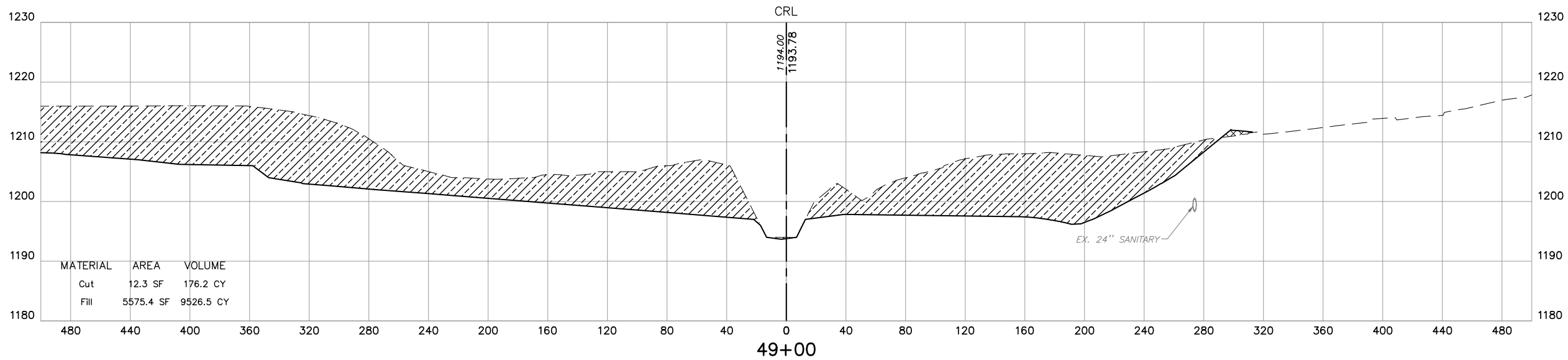


<b>CROSS SECTIONS</b>																																																	
<b>LITTLE RIVER PARK DRAINAGE IMPROVEMENTS</b>																																																	
<b>CITY OF MOORE</b>																																																	
PLANS AND ESTIMATES PREPARED BY: <b>Meshek &amp; Associates, L.L.C.</b> 1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620																																																	
<b>REVISION</b>	<b>BY</b>	<b>DATE</b>	<b>APPROVED:</b>																																														
			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;"><b>PLAN SCALE</b></td> <td style="width: 10%;"><b>JCL</b></td> <td style="width: 10%;">Value</td> <td rowspan="3" style="width: 55%;"></td> </tr> <tr> <td>N/A</td> <td><b>BWF</b></td> <td>Value</td> </tr> <tr> <td><b>SURVEY</b></td> <td><b>PDH</b></td> <td>Value</td> </tr> <tr> <td colspan="4"><b>PROFILE SCALE</b></td> </tr> <tr> <td colspan="4" style="text-align: center;">RECOMMENDED</td> </tr> <tr> <td colspan="4"><b>HORIZONTAL:</b></td> </tr> <tr> <td colspan="4" style="text-align: center;">1" = 10'</td> </tr> <tr> <td colspan="4"><b>VERTICAL:</b></td> </tr> <tr> <td colspan="4" style="text-align: center;">1" = 10'</td> </tr> <tr> <td colspan="2"><b>FILE:</b></td> <td colspan="2"><b>DRAWING:</b></td> </tr> <tr> <td colspan="2">ATLAS PAGE NO. .</td> <td colspan="2">DATE:</td> </tr> <tr> <td colspan="2"></td> <td colspan="2" style="text-align: right;">PUBLIC WORKS DIRECTOR</td> </tr> </table>	<b>PLAN SCALE</b>	<b>JCL</b>	Value		N/A	<b>BWF</b>	Value	<b>SURVEY</b>	<b>PDH</b>	Value	<b>PROFILE SCALE</b>				RECOMMENDED				<b>HORIZONTAL:</b>				1" = 10'				<b>VERTICAL:</b>				1" = 10'				<b>FILE:</b>		<b>DRAWING:</b>		ATLAS PAGE NO. .		DATE:				PUBLIC WORKS DIRECTOR	
<b>PLAN SCALE</b>	<b>JCL</b>	Value																																															
N/A	<b>BWF</b>	Value																																															
<b>SURVEY</b>	<b>PDH</b>	Value																																															
<b>PROFILE SCALE</b>																																																	
RECOMMENDED																																																	
<b>HORIZONTAL:</b>																																																	
1" = 10'																																																	
<b>VERTICAL:</b>																																																	
1" = 10'																																																	
<b>FILE:</b>		<b>DRAWING:</b>																																															
ATLAS PAGE NO. .		DATE:																																															
		PUBLIC WORKS DIRECTOR																																															

PRINT DATE: 02/05/2018



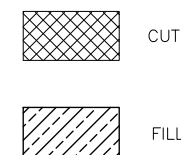
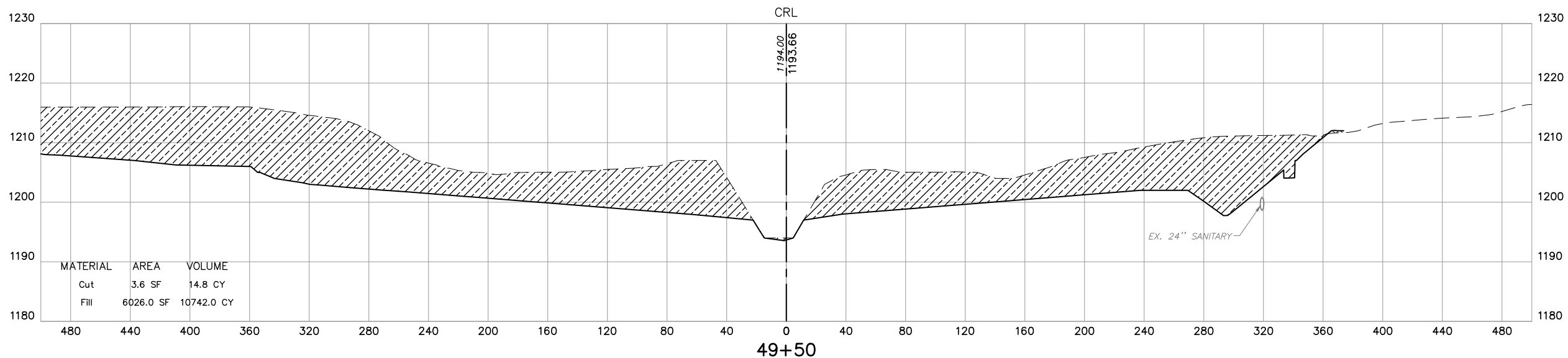
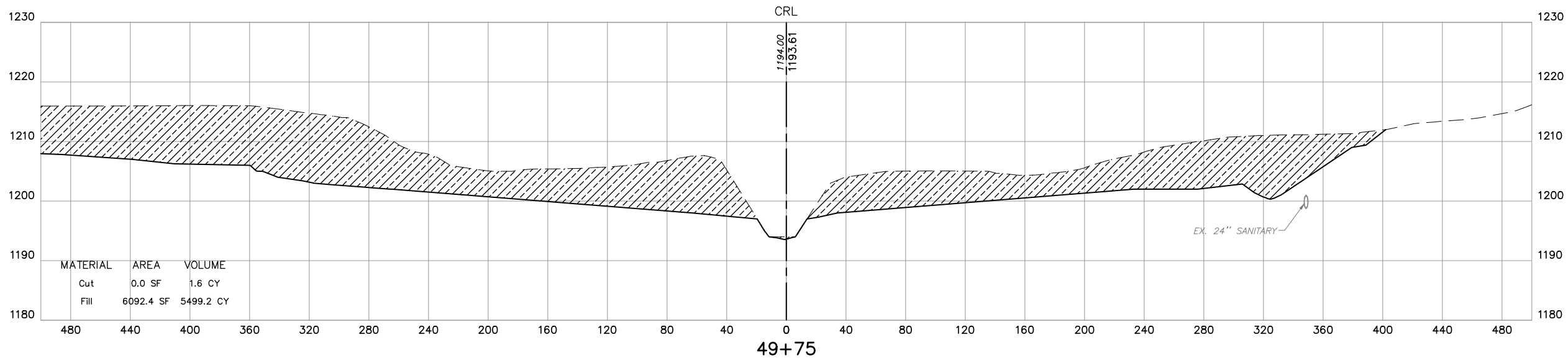
M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_XSECTIONS\_POND.dwg



<b>CROSS SECTIONS</b>			
<b>LITTLE RIVER PARK DRAINAGE IMPROVEMENTS</b>			
<b>CITY OF MOORE</b>			
PLANS AND ESTIMATES PREPARED BY: <b>Meshek &amp; Associates, L.L.C.</b> 1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620			
REVISION	BY	DATE	PLAN SCALE
			N/A
			DESIGNED
DESIGNED	BWF	Value	JCL
			Value
			RECOMMENDED
SURVEY	PDH	Value	APPROVED:
			RECOMMENDED
			DEVELOPMENT SERVICES
PROFILE SCALE			RECOMMENDED
HORIZONTAL:			RECOMMENDED
1" = 10'			DEPUTY DIRECTOR
VERTICAL:			PUBLIC WORKS DIRECTOR
1" = 10'			DATE:
FILE:		DRAWING:	
ATLAS PAGE NO. .		SHEET 109 OF 133 SHEETS	

PRINT DATE: 02/05/2018

M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_XSECTIONS\_POND.dwg

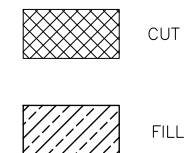
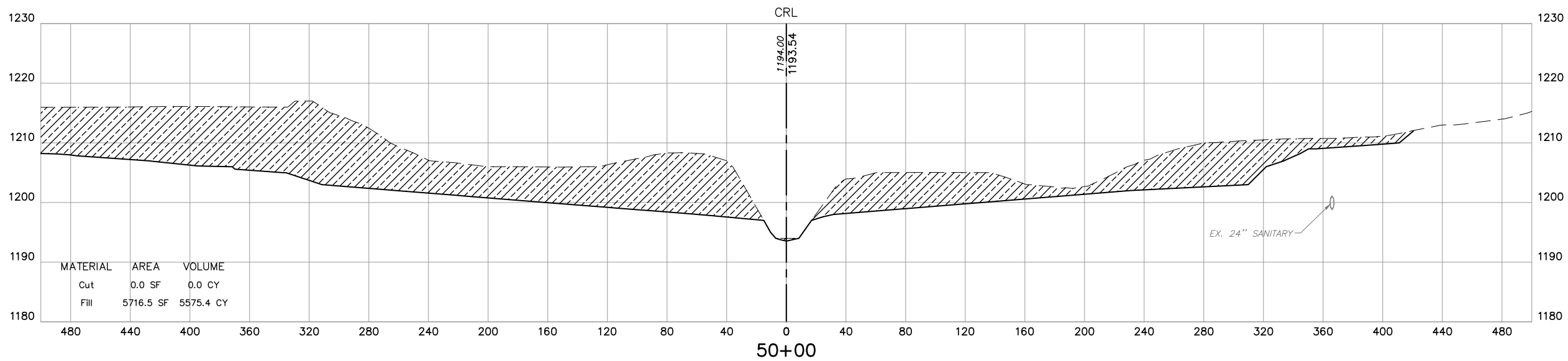
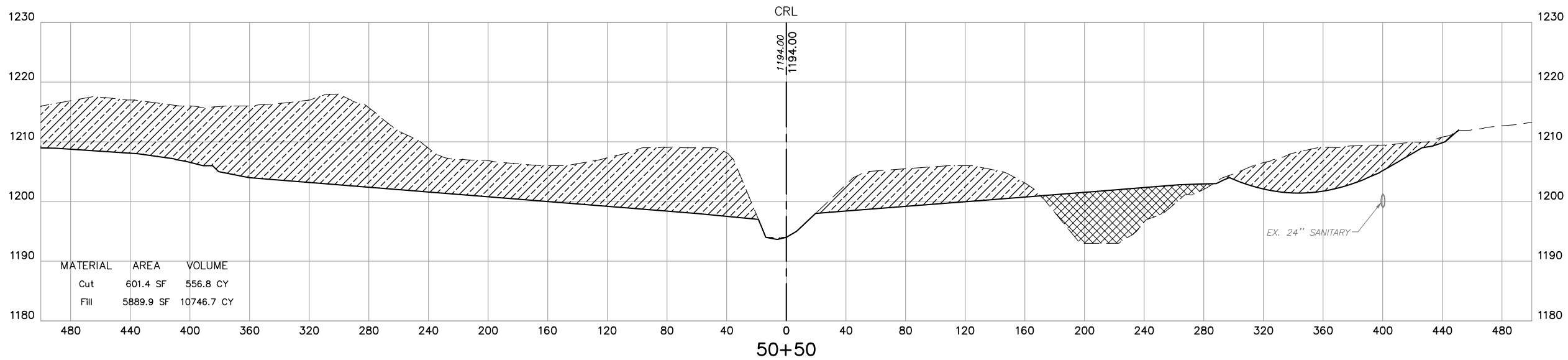


<b>CROSS SECTIONS</b>			
<b>LITTLE RIVER PARK DRAINAGE IMPROVEMENTS</b>			
<b>CITY OF MOORE</b>			
PLANS AND ESTIMATES PREPARED BY: <b>Meshek &amp; Associates, L.L.C.</b> 1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620			
PLAN SCALE	DRAWN	JCL	Value
N/A	DESIGNED	BWF	Value
	SURVEY	PDH	Value
PROFILE SCALE	RECOMMENDED		
HORIZONTAL:	RECOMMENDED		
1" = 10'	DEVELOPMENT SERVICES		
VERTICAL:	RECOMMENDED		
1" = 10'	DEPUTY DIRECTOR		
FILE:	DRAWING:	DATE:	
ATLAS PAGE NO. .		SHEET 110 OF 133 SHEETS	

REVISION	BY	DATE

PRINT DATE: 02/05/2018

M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_XSECTIONS\_POND.dwg



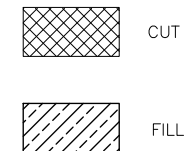
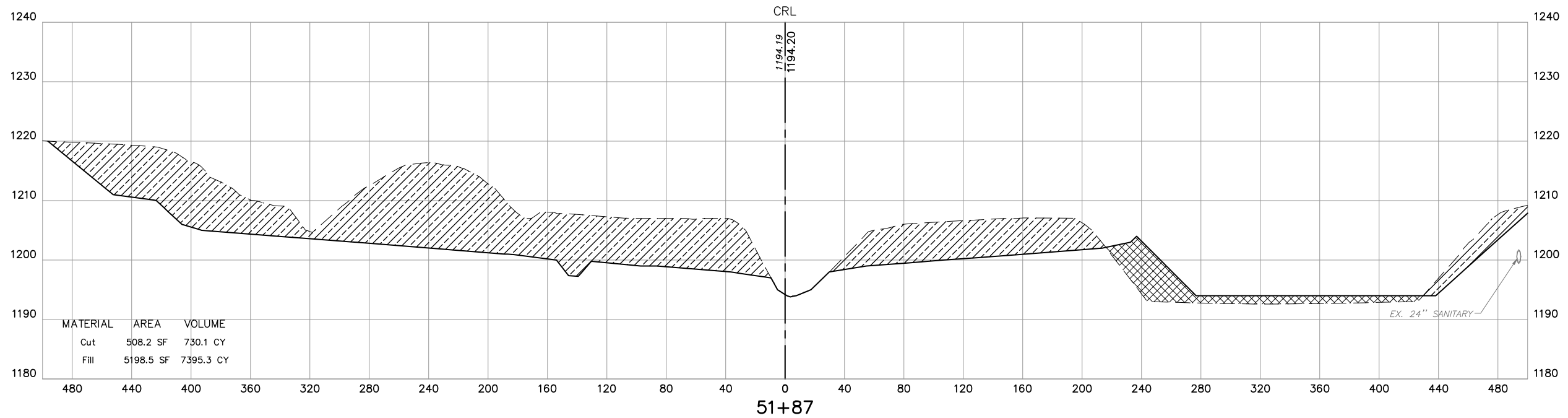
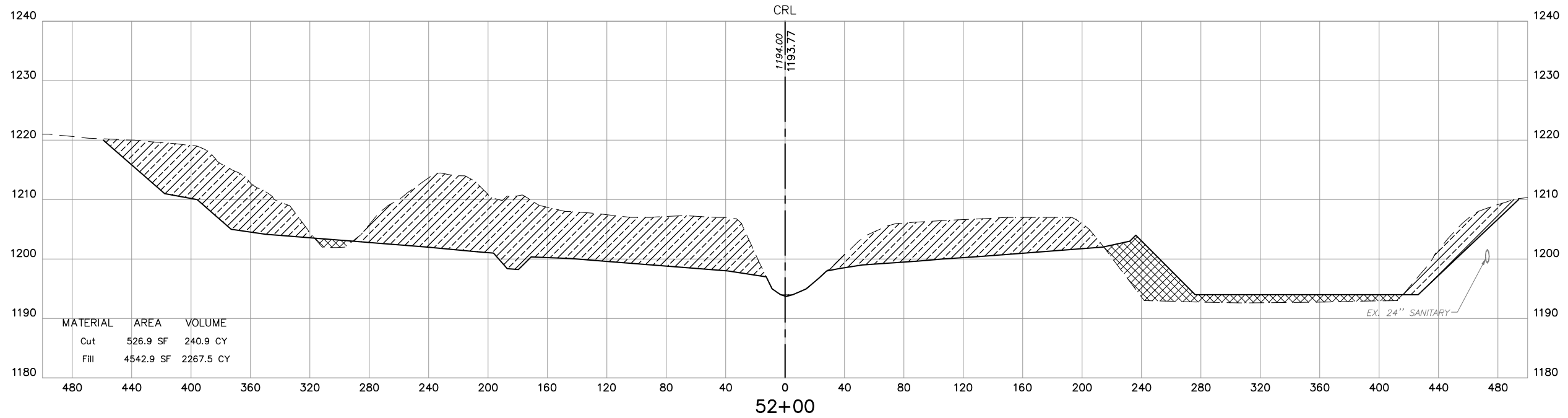
<b>CROSS SECTIONS</b>																							
<b>LITTLE RIVER PARK DRAINAGE IMPROVEMENTS</b>																							
<b>CITY OF MOORE</b>																							
PLANS AND ESTIMATES PREPARED BY: <b>Meshek &amp; Associates, L.L.C.</b> 1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620																							
<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> </tbody> </table>	REVISION	BY	DATE										<table border="1"> <tr> <td>PLAN SCALE</td> <td>JCL</td> <td>Value</td> <td rowspan="3">APPROVED:</td> </tr> <tr> <td>N/A</td> <td>BWF</td> <td>Value</td> </tr> <tr> <td></td> <td>PDH</td> <td>Value</td> </tr> </table>	PLAN SCALE	JCL	Value	APPROVED:	N/A	BWF	Value		PDH	Value
	REVISION	BY	DATE																				
PLAN SCALE	JCL	Value	APPROVED:																				
N/A	BWF	Value																					
	PDH	Value																					
<table border="1"> <tr> <td>PROFILE SCALE</td> <td>RECOMMENDED</td> </tr> <tr> <td>HORIZONTAL:</td> <td>DEVELOPMENT SERVICES</td> </tr> <tr> <td>1" = 10'</td> <td>RECOMMENDED</td> </tr> <tr> <td>VERTICAL:</td> <td>DEPUTY DIRECTOR</td> </tr> <tr> <td>1" = 10'</td> <td>PUBLIC WORKS DIRECTOR</td> </tr> </table>	PROFILE SCALE	RECOMMENDED	HORIZONTAL:	DEVELOPMENT SERVICES	1" = 10'	RECOMMENDED	VERTICAL:	DEPUTY DIRECTOR	1" = 10'	PUBLIC WORKS DIRECTOR	<table border="1"> <tr> <td>FILE:</td> <td>DRAWING:</td> <td>DATE:</td> </tr> <tr> <td>ATLAS PAGE NO. .</td> <td></td> <td>SHEET 111 OF 133 SHEETS</td> </tr> </table>	FILE:	DRAWING:	DATE:	ATLAS PAGE NO. .		SHEET 111 OF 133 SHEETS						
PROFILE SCALE	RECOMMENDED																						
HORIZONTAL:	DEVELOPMENT SERVICES																						
1" = 10'	RECOMMENDED																						
VERTICAL:	DEPUTY DIRECTOR																						
1" = 10'	PUBLIC WORKS DIRECTOR																						
FILE:	DRAWING:	DATE:																					
ATLAS PAGE NO. .		SHEET 111 OF 133 SHEETS																					

PRINT DATE: 02/05/2018



M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_XSECTIONS\_POND.dwg

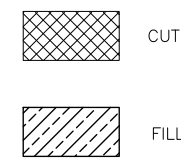
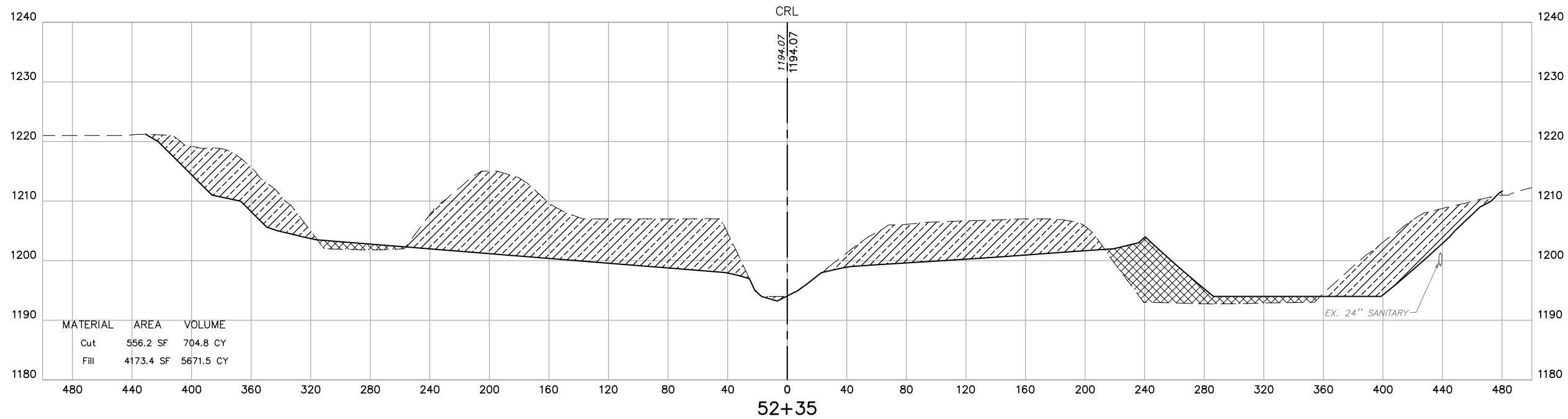
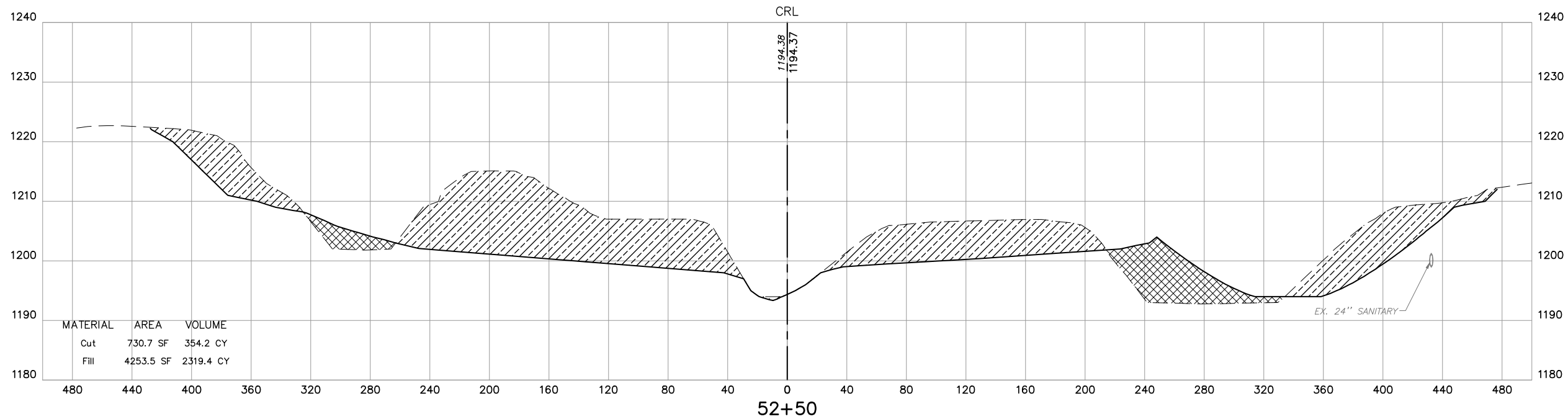
PRINT DATE: 02/05/2018



<b>CROSS SECTIONS</b>																																												
<b>LITTLE RIVER PARK DRAINAGE IMPROVEMENTS</b>																																												
<b>CITY OF MOORE</b>																																												
PLANS AND ESTIMATES PREPARED BY:																																												
<b>Meshek &amp; Associates, L.L.C.</b>																																												
1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620																																												
<b>REVISION</b>	<b>BY</b>	<b>DATE</b>	<b>APPROVED:</b>																																									
			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;"><b>PLAN SCALE</b></td> <td style="width: 10%;"><b>DRAWN</b></td> <td style="width: 10%;"><b>JCL</b></td> <td style="width: 10%;"><b>Value</b></td> <td rowspan="3" style="width: 50%;"></td> </tr> <tr> <td>N/A</td> <td><b>DESIGNED</b></td> <td><b>BWF</b></td> <td><b>Value</b></td> </tr> <tr> <td></td> <td><b>SURVEY</b></td> <td><b>PDH</b></td> <td><b>Value</b></td> </tr> <tr> <td colspan="4"><b>PROFILE SCALE</b></td> <td rowspan="3" style="text-align: center; vertical-align: middle;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;"><b>RECOMMENDED</b></td> <td style="width: 30%;"></td> <td style="width: 50%;"></td> </tr> <tr> <td><b>HORIZONTAL:</b></td> <td colspan="2" style="text-align: center;"><b>DEVELOPMENT SERVICES</b></td> </tr> <tr> <td>1" = 10'</td> <td colspan="2" style="text-align: center;"><b>RECOMMENDED</b></td> </tr> <tr> <td><b>VERTICAL:</b></td> <td colspan="2" style="text-align: center;"><b>DEPUTY DIRECTOR</b></td> </tr> <tr> <td>1" = 10'</td> <td colspan="2" style="text-align: center;"><b>PUBLIC WORKS DIRECTOR</b></td> </tr> <tr> <td><b>FILE:</b></td> <td><b>DRAWING:</b></td> <td colspan="2"><b>DATE:</b></td> </tr> <tr> <td>ATLAS PAGE NO. .</td> <td></td> <td colspan="2">SHEET 113 OF 133 SHEETS</td> </tr> </table> </td> </tr> </table>	<b>PLAN SCALE</b>	<b>DRAWN</b>	<b>JCL</b>	<b>Value</b>		N/A	<b>DESIGNED</b>	<b>BWF</b>	<b>Value</b>		<b>SURVEY</b>	<b>PDH</b>	<b>Value</b>	<b>PROFILE SCALE</b>				<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;"><b>RECOMMENDED</b></td> <td style="width: 30%;"></td> <td style="width: 50%;"></td> </tr> <tr> <td><b>HORIZONTAL:</b></td> <td colspan="2" style="text-align: center;"><b>DEVELOPMENT SERVICES</b></td> </tr> <tr> <td>1" = 10'</td> <td colspan="2" style="text-align: center;"><b>RECOMMENDED</b></td> </tr> <tr> <td><b>VERTICAL:</b></td> <td colspan="2" style="text-align: center;"><b>DEPUTY DIRECTOR</b></td> </tr> <tr> <td>1" = 10'</td> <td colspan="2" style="text-align: center;"><b>PUBLIC WORKS DIRECTOR</b></td> </tr> <tr> <td><b>FILE:</b></td> <td><b>DRAWING:</b></td> <td colspan="2"><b>DATE:</b></td> </tr> <tr> <td>ATLAS PAGE NO. .</td> <td></td> <td colspan="2">SHEET 113 OF 133 SHEETS</td> </tr> </table>	<b>RECOMMENDED</b>			<b>HORIZONTAL:</b>	<b>DEVELOPMENT SERVICES</b>		1" = 10'	<b>RECOMMENDED</b>		<b>VERTICAL:</b>	<b>DEPUTY DIRECTOR</b>		1" = 10'	<b>PUBLIC WORKS DIRECTOR</b>		<b>FILE:</b>	<b>DRAWING:</b>	<b>DATE:</b>		ATLAS PAGE NO. .		SHEET 113 OF 133 SHEETS	
<b>PLAN SCALE</b>	<b>DRAWN</b>	<b>JCL</b>		<b>Value</b>																																								
N/A	<b>DESIGNED</b>	<b>BWF</b>		<b>Value</b>																																								
	<b>SURVEY</b>	<b>PDH</b>	<b>Value</b>																																									
<b>PROFILE SCALE</b>				<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;"><b>RECOMMENDED</b></td> <td style="width: 30%;"></td> <td style="width: 50%;"></td> </tr> <tr> <td><b>HORIZONTAL:</b></td> <td colspan="2" style="text-align: center;"><b>DEVELOPMENT SERVICES</b></td> </tr> <tr> <td>1" = 10'</td> <td colspan="2" style="text-align: center;"><b>RECOMMENDED</b></td> </tr> <tr> <td><b>VERTICAL:</b></td> <td colspan="2" style="text-align: center;"><b>DEPUTY DIRECTOR</b></td> </tr> <tr> <td>1" = 10'</td> <td colspan="2" style="text-align: center;"><b>PUBLIC WORKS DIRECTOR</b></td> </tr> <tr> <td><b>FILE:</b></td> <td><b>DRAWING:</b></td> <td colspan="2"><b>DATE:</b></td> </tr> <tr> <td>ATLAS PAGE NO. .</td> <td></td> <td colspan="2">SHEET 113 OF 133 SHEETS</td> </tr> </table>	<b>RECOMMENDED</b>			<b>HORIZONTAL:</b>	<b>DEVELOPMENT SERVICES</b>		1" = 10'	<b>RECOMMENDED</b>		<b>VERTICAL:</b>	<b>DEPUTY DIRECTOR</b>		1" = 10'	<b>PUBLIC WORKS DIRECTOR</b>		<b>FILE:</b>	<b>DRAWING:</b>	<b>DATE:</b>		ATLAS PAGE NO. .		SHEET 113 OF 133 SHEETS																		
<b>RECOMMENDED</b>																																												
<b>HORIZONTAL:</b>	<b>DEVELOPMENT SERVICES</b>																																											
1" = 10'	<b>RECOMMENDED</b>																																											
<b>VERTICAL:</b>	<b>DEPUTY DIRECTOR</b>																																											
1" = 10'	<b>PUBLIC WORKS DIRECTOR</b>																																											
<b>FILE:</b>	<b>DRAWING:</b>	<b>DATE:</b>																																										
ATLAS PAGE NO. .		SHEET 113 OF 133 SHEETS																																										

M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_XSECTIONS\_POND.dwg

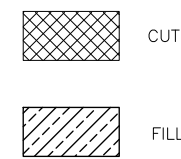
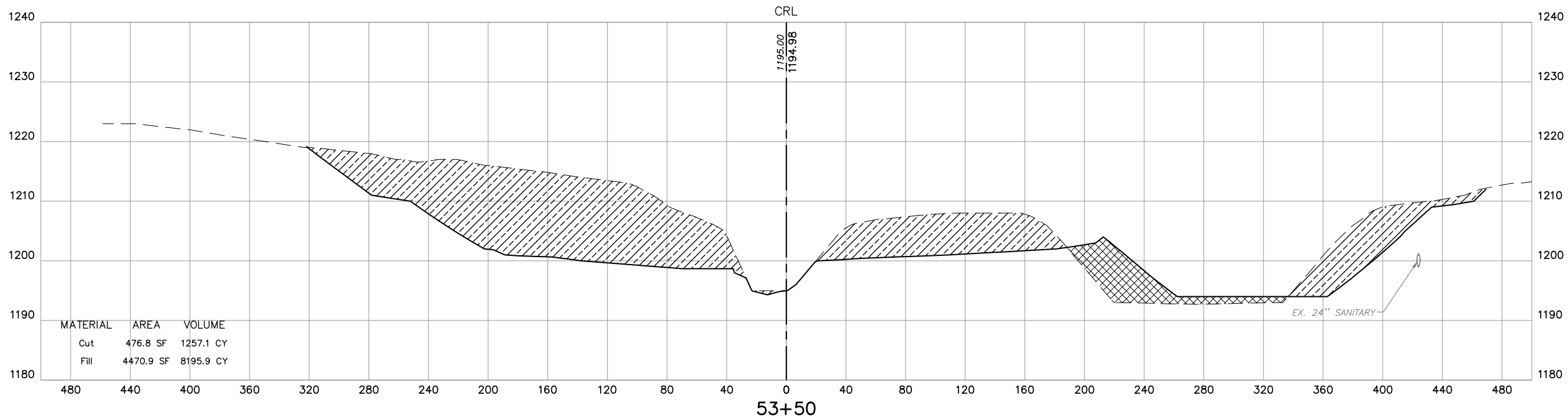
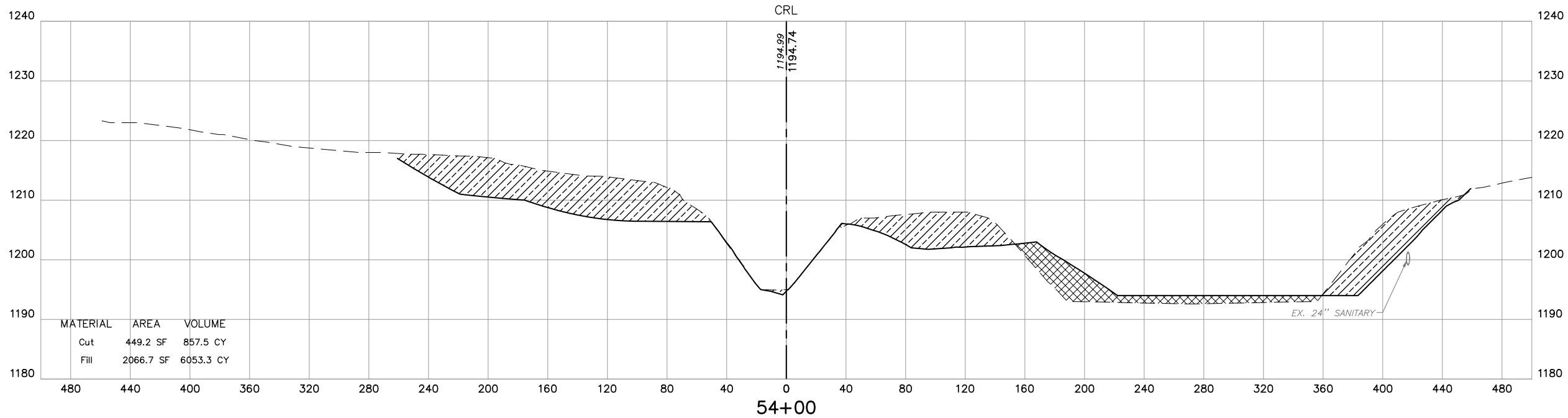
PRINT DATE: 02/05/2018



<b>CROSS SECTIONS</b>																																															
<b>LITTLE RIVER PARK DRAINAGE IMPROVEMENTS</b>																																															
<b>CITY OF MOORE</b>																																															
PLANS AND ESTIMATES PREPARED BY:																																															
<b>Meshek &amp; Associates, L.L.C.</b>																																															
1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620																																															
<b>REVISION</b>	<b>BY</b>	<b>DATE</b>	<b>APPROVED:</b>																																												
			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;"><b>PLAN SCALE</b></td> <td style="width: 10%;"><b>DRAWN</b></td> <td style="width: 10%;"><b>JCL</b></td> <td style="width: 10%;"><b>Value</b></td> <td rowspan="3" style="width: 50%;"></td> </tr> <tr> <td>N/A</td> <td><b>DESIGNED</b></td> <td><b>BWF</b></td> <td><b>Value</b></td> </tr> <tr> <td></td> <td><b>SURVEY</b></td> <td><b>PDH</b></td> <td><b>Value</b></td> </tr> <tr> <td colspan="4"><b>PROFILE SCALE</b></td> <td rowspan="3" style="text-align: center; vertical-align: middle;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2" style="text-align: center;"><b>RECOMMENDED</b></td> </tr> <tr> <td colspan="2" style="text-align: center;"><b>DEVELOPMENT SERVICES</b></td> </tr> <tr> <td colspan="2" style="text-align: center;"><b>RECOMMENDED</b></td> </tr> <tr> <td colspan="2" style="text-align: center;"><b>DEPUTY DIRECTOR</b></td> </tr> <tr> <td colspan="2" style="text-align: center;"><b>PUBLIC WORKS DIRECTOR</b></td> </tr> </table> </td> </tr> <tr> <td colspan="2"><b>HORIZONTAL:</b></td> <td colspan="2"><b>1" = 10'</b></td> </tr> <tr> <td colspan="2"><b>VERTICAL:</b></td> <td colspan="2"><b>1" = 10'</b></td> </tr> <tr> <td><b>FILE:</b></td> <td><b>DRAWING:</b></td> <td colspan="2"><b>DATE:</b></td> </tr> <tr> <td>ATLAS PAGE NO. .</td> <td></td> <td colspan="2">SHEET 114 OF 133 SHEETS</td> </tr> </table>	<b>PLAN SCALE</b>	<b>DRAWN</b>	<b>JCL</b>	<b>Value</b>		N/A	<b>DESIGNED</b>	<b>BWF</b>	<b>Value</b>		<b>SURVEY</b>	<b>PDH</b>	<b>Value</b>	<b>PROFILE SCALE</b>				<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2" style="text-align: center;"><b>RECOMMENDED</b></td> </tr> <tr> <td colspan="2" style="text-align: center;"><b>DEVELOPMENT SERVICES</b></td> </tr> <tr> <td colspan="2" style="text-align: center;"><b>RECOMMENDED</b></td> </tr> <tr> <td colspan="2" style="text-align: center;"><b>DEPUTY DIRECTOR</b></td> </tr> <tr> <td colspan="2" style="text-align: center;"><b>PUBLIC WORKS DIRECTOR</b></td> </tr> </table>	<b>RECOMMENDED</b>		<b>DEVELOPMENT SERVICES</b>		<b>RECOMMENDED</b>		<b>DEPUTY DIRECTOR</b>		<b>PUBLIC WORKS DIRECTOR</b>		<b>HORIZONTAL:</b>		<b>1" = 10'</b>		<b>VERTICAL:</b>		<b>1" = 10'</b>		<b>FILE:</b>	<b>DRAWING:</b>	<b>DATE:</b>		ATLAS PAGE NO. .		SHEET 114 OF 133 SHEETS	
<b>PLAN SCALE</b>	<b>DRAWN</b>	<b>JCL</b>		<b>Value</b>																																											
N/A	<b>DESIGNED</b>	<b>BWF</b>		<b>Value</b>																																											
	<b>SURVEY</b>	<b>PDH</b>	<b>Value</b>																																												
<b>PROFILE SCALE</b>				<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2" style="text-align: center;"><b>RECOMMENDED</b></td> </tr> <tr> <td colspan="2" style="text-align: center;"><b>DEVELOPMENT SERVICES</b></td> </tr> <tr> <td colspan="2" style="text-align: center;"><b>RECOMMENDED</b></td> </tr> <tr> <td colspan="2" style="text-align: center;"><b>DEPUTY DIRECTOR</b></td> </tr> <tr> <td colspan="2" style="text-align: center;"><b>PUBLIC WORKS DIRECTOR</b></td> </tr> </table>	<b>RECOMMENDED</b>		<b>DEVELOPMENT SERVICES</b>		<b>RECOMMENDED</b>		<b>DEPUTY DIRECTOR</b>		<b>PUBLIC WORKS DIRECTOR</b>																																		
<b>RECOMMENDED</b>																																															
<b>DEVELOPMENT SERVICES</b>																																															
<b>RECOMMENDED</b>																																															
<b>DEPUTY DIRECTOR</b>																																															
<b>PUBLIC WORKS DIRECTOR</b>																																															
<b>HORIZONTAL:</b>		<b>1" = 10'</b>																																													
<b>VERTICAL:</b>		<b>1" = 10'</b>																																													
<b>FILE:</b>	<b>DRAWING:</b>	<b>DATE:</b>																																													
ATLAS PAGE NO. .		SHEET 114 OF 133 SHEETS																																													



M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_XSECTIONS\_POND.dwg

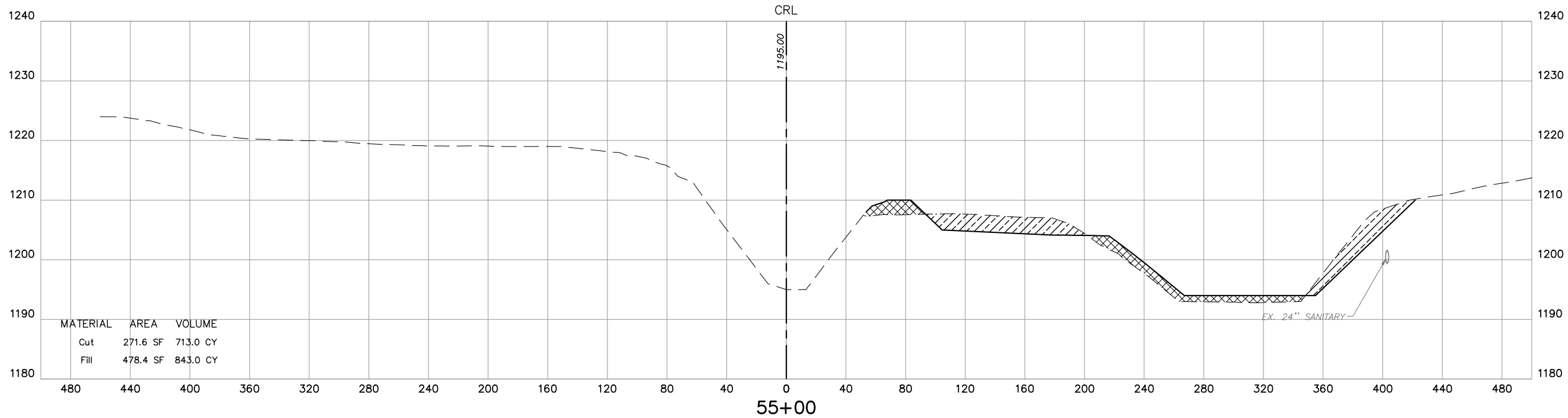


<b>CROSS SECTIONS</b>																																															
<b>LITTLE RIVER PARK DRAINAGE IMPROVEMENTS</b>																																															
<b>CITY OF MOORE</b>																																															
PLANS AND ESTIMATES PREPARED BY: <b>Meshek &amp; Associates, L.L.C.</b> 1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620																																															
<b>REVISION</b>	<b>BY</b>	<b>DATE</b>	<b>APPROVED:</b>																																												
			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;"><b>PLAN SCALE</b></td> <td style="width: 10%;"><b>DRAWN</b></td> <td style="width: 10%;"><b>JCL</b></td> <td style="width: 10%;"><b>Value</b></td> <td rowspan="3" style="width: 45%;"></td> </tr> <tr> <td>N/A</td> <td><b>DESIGNED</b></td> <td><b>BWF</b></td> <td><b>Value</b></td> </tr> <tr> <td></td> <td><b>SURVEY</b></td> <td><b>PDH</b></td> <td><b>Value</b></td> </tr> <tr> <td colspan="4"><b>PROFILE SCALE</b></td> <td rowspan="3"> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;"><b>RECOMMENDED</b></td> <td style="width: 50%;"><b>RECOMMENDED</b></td> </tr> <tr> <td colspan="2" style="text-align: center;"><b>DEVELOPMENT SERVICES</b></td> </tr> <tr> <td colspan="2" style="text-align: center;"><b>RECOMMENDED</b></td> </tr> <tr> <td colspan="2" style="text-align: center;"><b>DEPUTY DIRECTOR</b></td> <td style="text-align: center;"><b>PUBLIC WORKS DIRECTOR</b></td> </tr> </table> </td> </tr> <tr> <td colspan="2"><b>HORIZONTAL:</b></td> <td colspan="2"><b>1" = 10'</b></td> </tr> <tr> <td colspan="2"><b>VERTICAL:</b></td> <td colspan="2"><b>1" = 10'</b></td> </tr> <tr> <td colspan="2"><b>FILE:</b></td> <td colspan="2"><b>DRAWING:</b></td> <td><b>DATE:</b></td> </tr> <tr> <td colspan="2">ATLAS PAGE NO. .</td> <td colspan="2">SHEET 116 OF 133 SHEETS</td> </tr> </table>	<b>PLAN SCALE</b>	<b>DRAWN</b>	<b>JCL</b>	<b>Value</b>		N/A	<b>DESIGNED</b>	<b>BWF</b>	<b>Value</b>		<b>SURVEY</b>	<b>PDH</b>	<b>Value</b>	<b>PROFILE SCALE</b>				<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;"><b>RECOMMENDED</b></td> <td style="width: 50%;"><b>RECOMMENDED</b></td> </tr> <tr> <td colspan="2" style="text-align: center;"><b>DEVELOPMENT SERVICES</b></td> </tr> <tr> <td colspan="2" style="text-align: center;"><b>RECOMMENDED</b></td> </tr> <tr> <td colspan="2" style="text-align: center;"><b>DEPUTY DIRECTOR</b></td> <td style="text-align: center;"><b>PUBLIC WORKS DIRECTOR</b></td> </tr> </table>	<b>RECOMMENDED</b>	<b>RECOMMENDED</b>	<b>DEVELOPMENT SERVICES</b>		<b>RECOMMENDED</b>		<b>DEPUTY DIRECTOR</b>		<b>PUBLIC WORKS DIRECTOR</b>	<b>HORIZONTAL:</b>		<b>1" = 10'</b>		<b>VERTICAL:</b>		<b>1" = 10'</b>		<b>FILE:</b>		<b>DRAWING:</b>		<b>DATE:</b>	ATLAS PAGE NO. .		SHEET 116 OF 133 SHEETS	
<b>PLAN SCALE</b>	<b>DRAWN</b>	<b>JCL</b>		<b>Value</b>																																											
N/A	<b>DESIGNED</b>	<b>BWF</b>		<b>Value</b>																																											
	<b>SURVEY</b>	<b>PDH</b>	<b>Value</b>																																												
<b>PROFILE SCALE</b>				<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;"><b>RECOMMENDED</b></td> <td style="width: 50%;"><b>RECOMMENDED</b></td> </tr> <tr> <td colspan="2" style="text-align: center;"><b>DEVELOPMENT SERVICES</b></td> </tr> <tr> <td colspan="2" style="text-align: center;"><b>RECOMMENDED</b></td> </tr> <tr> <td colspan="2" style="text-align: center;"><b>DEPUTY DIRECTOR</b></td> <td style="text-align: center;"><b>PUBLIC WORKS DIRECTOR</b></td> </tr> </table>	<b>RECOMMENDED</b>	<b>RECOMMENDED</b>	<b>DEVELOPMENT SERVICES</b>		<b>RECOMMENDED</b>		<b>DEPUTY DIRECTOR</b>		<b>PUBLIC WORKS DIRECTOR</b>																																		
<b>RECOMMENDED</b>	<b>RECOMMENDED</b>																																														
<b>DEVELOPMENT SERVICES</b>																																															
<b>RECOMMENDED</b>																																															
<b>DEPUTY DIRECTOR</b>		<b>PUBLIC WORKS DIRECTOR</b>																																													
<b>HORIZONTAL:</b>		<b>1" = 10'</b>																																													
<b>VERTICAL:</b>		<b>1" = 10'</b>																																													
<b>FILE:</b>		<b>DRAWING:</b>		<b>DATE:</b>																																											
ATLAS PAGE NO. .		SHEET 116 OF 133 SHEETS																																													

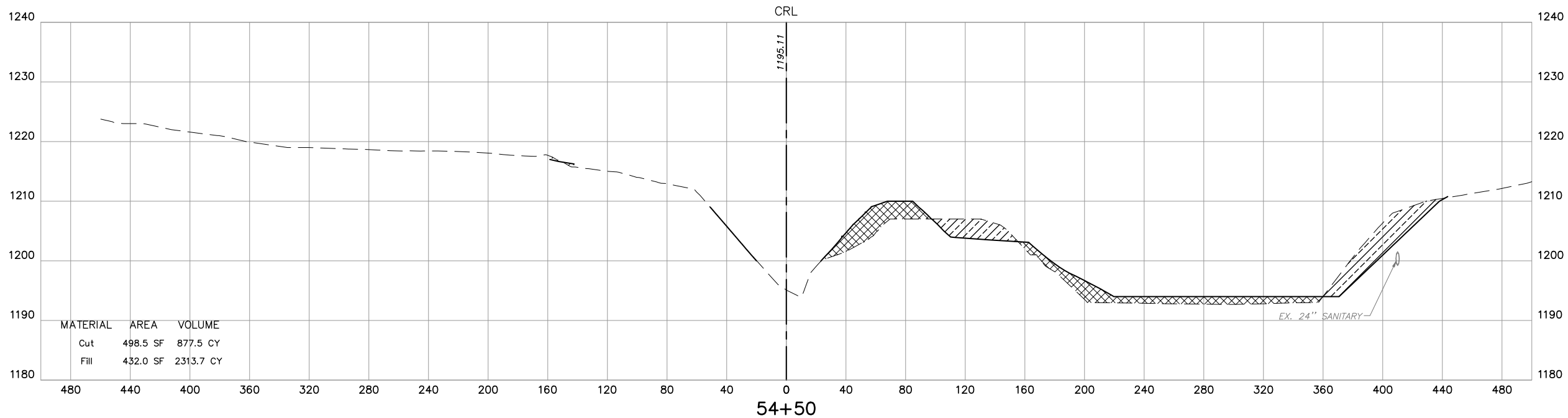
PRINT DATE: 02/05/2018



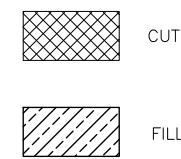
M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_XSECTIONS\_POND.dwg



MATERIAL	AREA	VOLUME
Cut	271.6 SF	713.0 CY
Fill	478.4 SF	843.0 CY



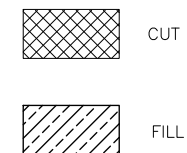
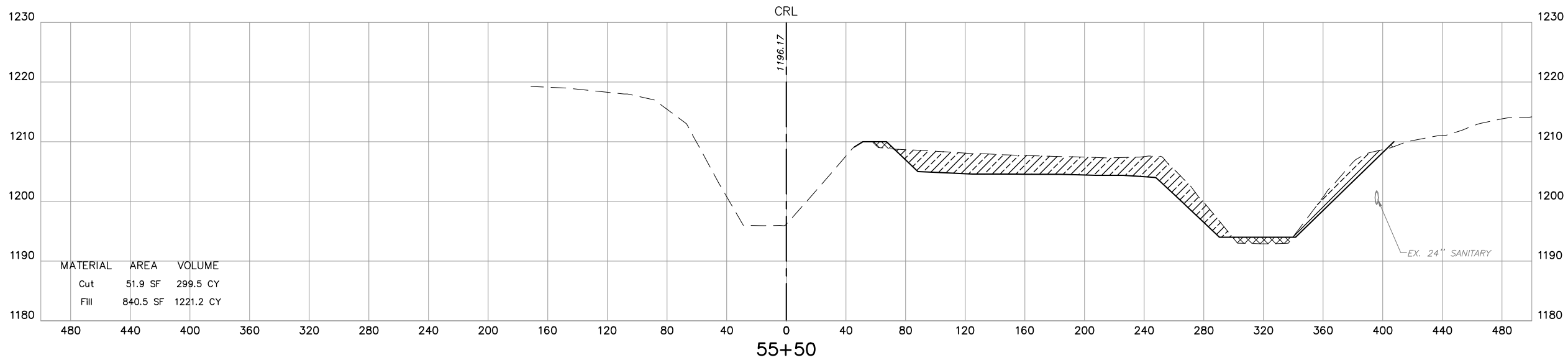
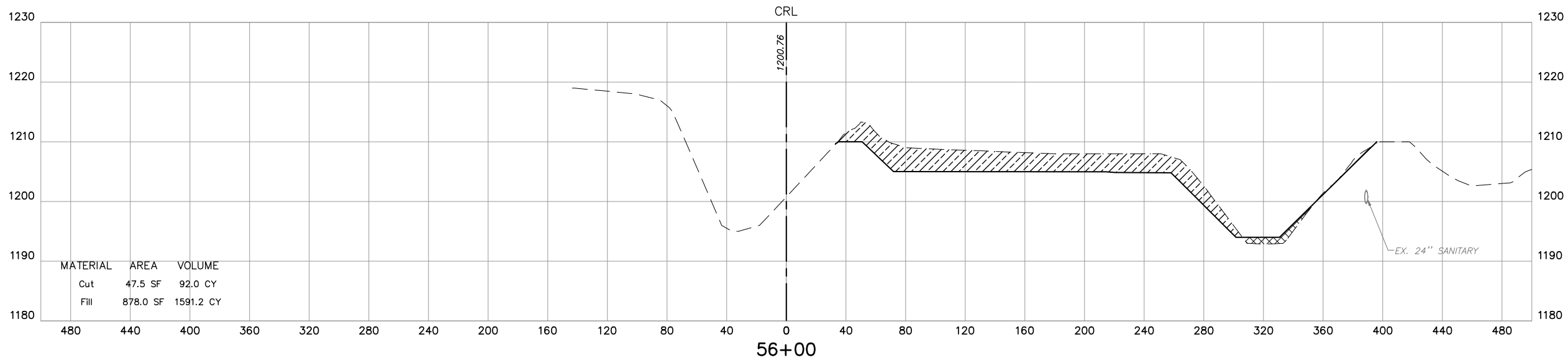
MATERIAL	AREA	VOLUME
Cut	498.5 SF	877.5 CY
Fill	432.0 SF	2313.7 CY



<b>CROSS SECTIONS</b>																																													
<b>LITTLE RIVER PARK DRAINAGE IMPROVEMENTS</b>																																													
<b>CITY OF MOORE</b>																																													
PLANS AND ESTIMATES PREPARED BY:																																													
<b>Meshek &amp; Associates, L.L.C.</b>																																													
1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620																																													
<b>REVISION</b>	<b>BY</b>	<b>DATE</b>	<b>APPROVED:</b>																																										
			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;"><b>PLAN SCALE</b></td> <td style="width: 10%;"><b>DRAWN</b></td> <td style="width: 10%;"><b>JCL</b></td> <td style="width: 10%;"><b>Value</b></td> <td rowspan="3" style="width: 50%;"></td> </tr> <tr> <td>N/A</td> <td><b>DESIGNED</b></td> <td><b>BWF</b></td> <td><b>Value</b></td> </tr> <tr> <td></td> <td><b>SURVEY</b></td> <td><b>PDH</b></td> <td><b>Value</b></td> </tr> <tr> <td colspan="4"><b>PROFILE SCALE</b></td> <td rowspan="3" style="text-align: center; vertical-align: middle;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;"><b>HORIZONTAL:</b></td> <td style="width: 10%;"><b>RECOMMENDED</b></td> <td style="width: 70%;"></td> </tr> <tr> <td>1" = 10'</td> <td><b>DEVELOPMENT SERVICES</b></td> <td></td> </tr> <tr> <td><b>VERTICAL:</b></td> <td><b>RECOMMENDED</b></td> <td></td> </tr> <tr> <td>1" = 10'</td> <td><b>DEPUTY DIRECTOR</b></td> <td></td> </tr> <tr> <td><b>FILE:</b></td> <td><b>DRAWING:</b></td> <td colspan="2"><b>PUBLIC WORKS DIRECTOR</b></td> </tr> <tr> <td><b>ATLAS PAGE NO.</b></td> <td></td> <td colspan="2"><b>DATE:</b></td> </tr> <tr> <td></td> <td></td> <td colspan="2"><b>SHEET 117 OF 133 SHEETS</b></td> </tr> </table> </td> </tr> </table>	<b>PLAN SCALE</b>	<b>DRAWN</b>	<b>JCL</b>	<b>Value</b>		N/A	<b>DESIGNED</b>	<b>BWF</b>	<b>Value</b>		<b>SURVEY</b>	<b>PDH</b>	<b>Value</b>	<b>PROFILE SCALE</b>				<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;"><b>HORIZONTAL:</b></td> <td style="width: 10%;"><b>RECOMMENDED</b></td> <td style="width: 70%;"></td> </tr> <tr> <td>1" = 10'</td> <td><b>DEVELOPMENT SERVICES</b></td> <td></td> </tr> <tr> <td><b>VERTICAL:</b></td> <td><b>RECOMMENDED</b></td> <td></td> </tr> <tr> <td>1" = 10'</td> <td><b>DEPUTY DIRECTOR</b></td> <td></td> </tr> <tr> <td><b>FILE:</b></td> <td><b>DRAWING:</b></td> <td colspan="2"><b>PUBLIC WORKS DIRECTOR</b></td> </tr> <tr> <td><b>ATLAS PAGE NO.</b></td> <td></td> <td colspan="2"><b>DATE:</b></td> </tr> <tr> <td></td> <td></td> <td colspan="2"><b>SHEET 117 OF 133 SHEETS</b></td> </tr> </table>	<b>HORIZONTAL:</b>	<b>RECOMMENDED</b>		1" = 10'	<b>DEVELOPMENT SERVICES</b>		<b>VERTICAL:</b>	<b>RECOMMENDED</b>		1" = 10'	<b>DEPUTY DIRECTOR</b>		<b>FILE:</b>	<b>DRAWING:</b>	<b>PUBLIC WORKS DIRECTOR</b>		<b>ATLAS PAGE NO.</b>		<b>DATE:</b>				<b>SHEET 117 OF 133 SHEETS</b>	
<b>PLAN SCALE</b>	<b>DRAWN</b>	<b>JCL</b>		<b>Value</b>																																									
N/A	<b>DESIGNED</b>	<b>BWF</b>		<b>Value</b>																																									
	<b>SURVEY</b>	<b>PDH</b>	<b>Value</b>																																										
<b>PROFILE SCALE</b>				<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;"><b>HORIZONTAL:</b></td> <td style="width: 10%;"><b>RECOMMENDED</b></td> <td style="width: 70%;"></td> </tr> <tr> <td>1" = 10'</td> <td><b>DEVELOPMENT SERVICES</b></td> <td></td> </tr> <tr> <td><b>VERTICAL:</b></td> <td><b>RECOMMENDED</b></td> <td></td> </tr> <tr> <td>1" = 10'</td> <td><b>DEPUTY DIRECTOR</b></td> <td></td> </tr> <tr> <td><b>FILE:</b></td> <td><b>DRAWING:</b></td> <td colspan="2"><b>PUBLIC WORKS DIRECTOR</b></td> </tr> <tr> <td><b>ATLAS PAGE NO.</b></td> <td></td> <td colspan="2"><b>DATE:</b></td> </tr> <tr> <td></td> <td></td> <td colspan="2"><b>SHEET 117 OF 133 SHEETS</b></td> </tr> </table>	<b>HORIZONTAL:</b>	<b>RECOMMENDED</b>		1" = 10'	<b>DEVELOPMENT SERVICES</b>		<b>VERTICAL:</b>	<b>RECOMMENDED</b>		1" = 10'	<b>DEPUTY DIRECTOR</b>		<b>FILE:</b>	<b>DRAWING:</b>	<b>PUBLIC WORKS DIRECTOR</b>		<b>ATLAS PAGE NO.</b>		<b>DATE:</b>				<b>SHEET 117 OF 133 SHEETS</b>																		
<b>HORIZONTAL:</b>	<b>RECOMMENDED</b>																																												
1" = 10'	<b>DEVELOPMENT SERVICES</b>																																												
<b>VERTICAL:</b>	<b>RECOMMENDED</b>																																												
1" = 10'	<b>DEPUTY DIRECTOR</b>																																												
<b>FILE:</b>	<b>DRAWING:</b>	<b>PUBLIC WORKS DIRECTOR</b>																																											
<b>ATLAS PAGE NO.</b>		<b>DATE:</b>																																											
		<b>SHEET 117 OF 133 SHEETS</b>																																											

PRINT DATE: 02/05/2018

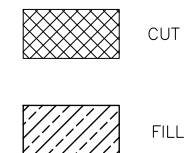
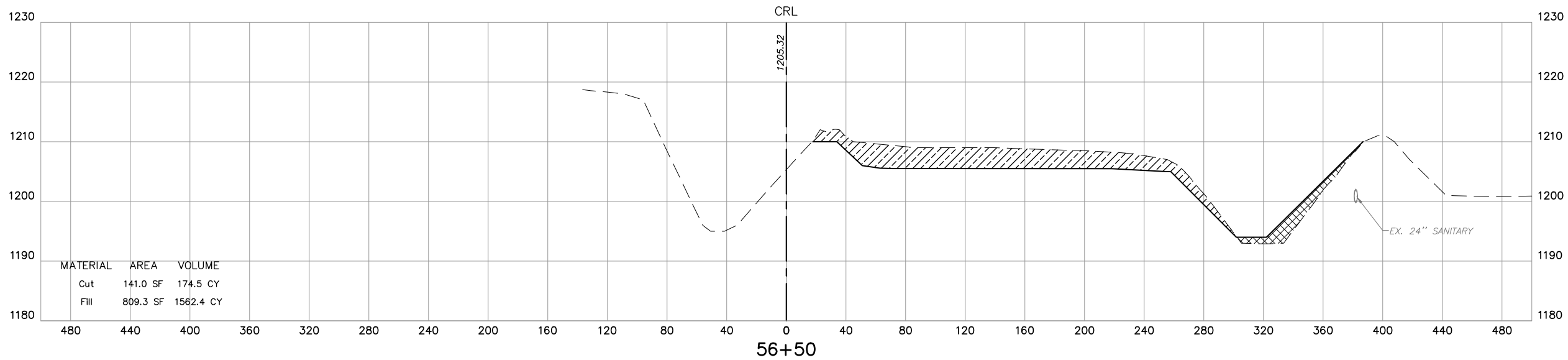
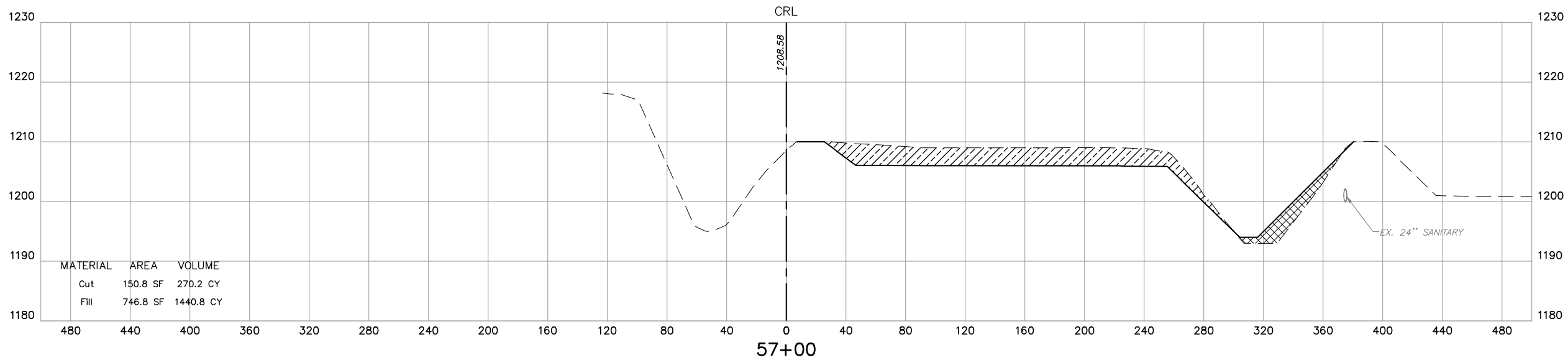
M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_XSECTIONS\_POND.dwg



<b>CROSS SECTIONS</b>																																																											
<b>LITTLE RIVER PARK DRAINAGE IMPROVEMENTS</b>																																																											
<b>CITY OF MOORE</b>																																																											
PLANS AND ESTIMATES PREPARED BY: <b>Meshek &amp; Associates, L.L.C.</b> 1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620																																																											
<b>REVISION</b>	<b>BY</b>	<b>DATE</b>	<b>APPROVED:</b>																																																								
			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;"><b>PLAN SCALE</b></td> <td style="width: 25%;"><b>DRAWN</b></td> <td style="width: 25%;"><b>JCL</b></td> <td style="width: 25%;"><b>Value</b></td> </tr> <tr> <td>N/A</td> <td><b>DESIGNED</b></td> <td><b>BWF</b></td> <td><b>Value</b></td> </tr> <tr> <td> </td> <td><b>SURVEY</b></td> <td><b>PDH</b></td> <td><b>Value</b></td> </tr> <tr> <td colspan="4"><b>PROFILE SCALE</b></td> </tr> <tr> <td colspan="4" style="text-align: center;"><b>RECOMMENDED</b></td> </tr> <tr> <td colspan="4"><b>HORIZONTAL:</b></td> </tr> <tr> <td colspan="4">1" = 10'</td> </tr> <tr> <td colspan="4"><b>RECOMMENDED</b></td> </tr> <tr> <td colspan="4"><b>VERTICAL:</b></td> </tr> <tr> <td colspan="4">1" = 10'</td> </tr> <tr> <td colspan="4" style="text-align: center;"><b>DEPUTY DIRECTOR</b></td> </tr> <tr> <td colspan="3"><b>FILE:</b></td> <td><b>PUBLIC WORKS DIRECTOR</b></td> </tr> <tr> <td colspan="3"><b>DRAWING:</b></td> <td><b>DATE:</b></td> </tr> <tr> <td colspan="3"><b>ATLAS PAGE NO.</b></td> <td><b>SHEET 118 OF 133 SHEETS</b></td> </tr> </table>	<b>PLAN SCALE</b>	<b>DRAWN</b>	<b>JCL</b>	<b>Value</b>	N/A	<b>DESIGNED</b>	<b>BWF</b>	<b>Value</b>		<b>SURVEY</b>	<b>PDH</b>	<b>Value</b>	<b>PROFILE SCALE</b>				<b>RECOMMENDED</b>				<b>HORIZONTAL:</b>				1" = 10'				<b>RECOMMENDED</b>				<b>VERTICAL:</b>				1" = 10'				<b>DEPUTY DIRECTOR</b>				<b>FILE:</b>			<b>PUBLIC WORKS DIRECTOR</b>	<b>DRAWING:</b>			<b>DATE:</b>	<b>ATLAS PAGE NO.</b>			<b>SHEET 118 OF 133 SHEETS</b>
<b>PLAN SCALE</b>	<b>DRAWN</b>	<b>JCL</b>		<b>Value</b>																																																							
N/A	<b>DESIGNED</b>	<b>BWF</b>		<b>Value</b>																																																							
	<b>SURVEY</b>	<b>PDH</b>	<b>Value</b>																																																								
<b>PROFILE SCALE</b>																																																											
<b>RECOMMENDED</b>																																																											
<b>HORIZONTAL:</b>																																																											
1" = 10'																																																											
<b>RECOMMENDED</b>																																																											
<b>VERTICAL:</b>																																																											
1" = 10'																																																											
<b>DEPUTY DIRECTOR</b>																																																											
<b>FILE:</b>			<b>PUBLIC WORKS DIRECTOR</b>																																																								
<b>DRAWING:</b>			<b>DATE:</b>																																																								
<b>ATLAS PAGE NO.</b>			<b>SHEET 118 OF 133 SHEETS</b>																																																								

PRINT DATE: 02/05/2018

M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_XSECTIONS\_POND.dwg



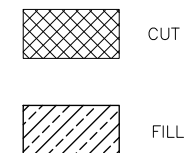
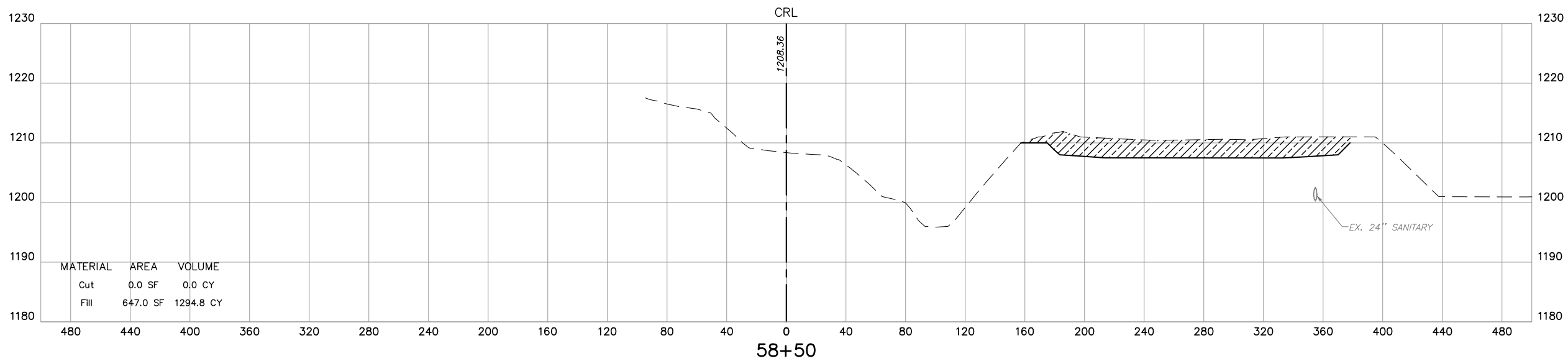
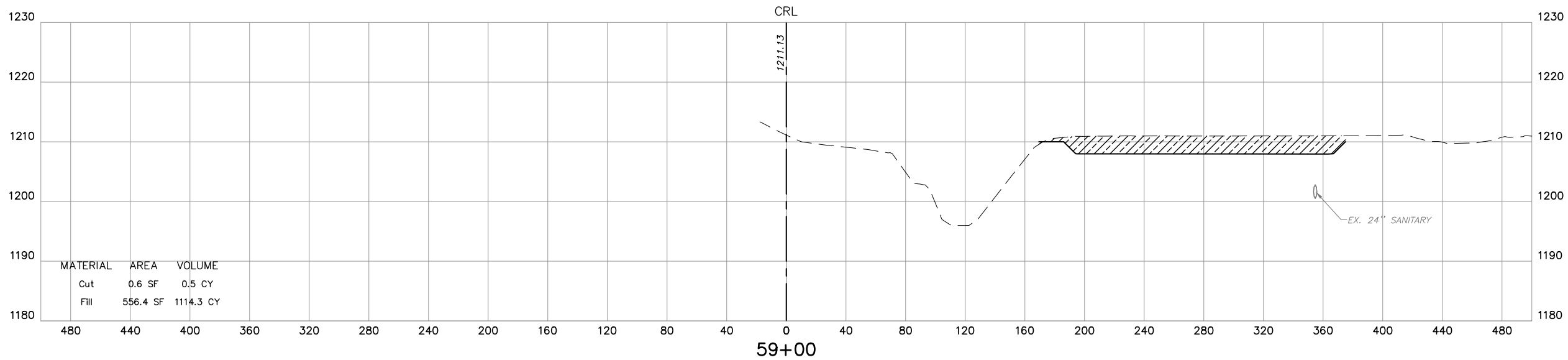
<b>CROSS SECTIONS</b>			
<b>LITTLE RIVER PARK DRAINAGE IMPROVEMENTS</b>			
<b>CITY OF MOORE</b>			
PLANS AND ESTIMATES PREPARED BY: <b>Meshek &amp; Associates, L.L.C.</b> 1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620			
	DRAWN	JCL	Value
	DESIGNED	BWF	Value
	SURVEY	PDH	Value
PROFILE SCALE:	RECOMMENDED		
HORIZONTAL:	RECOMMENDED		
1" = 10'	DEVELOPMENT SERVICES		
VERTICAL:	RECOMMENDED		
1" = 10'	DEPUTY DIRECTOR		
FILE:	DRAWING:	DATE:	
ATLAS PAGE NO. .		SHEET 119 OF 133 SHEETS	

REVISION	BY	DATE

PRINT DATE: 02/05/2018



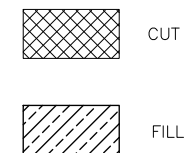
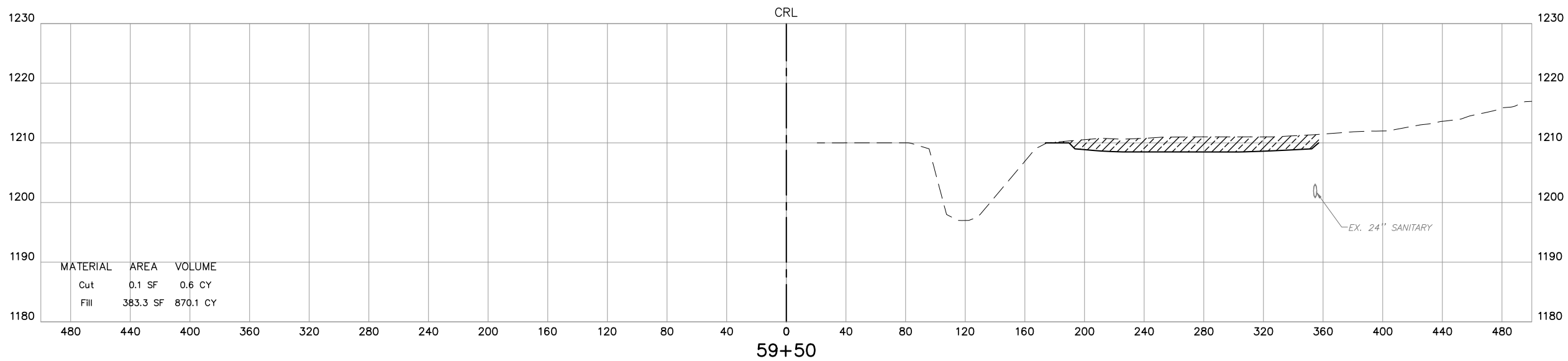
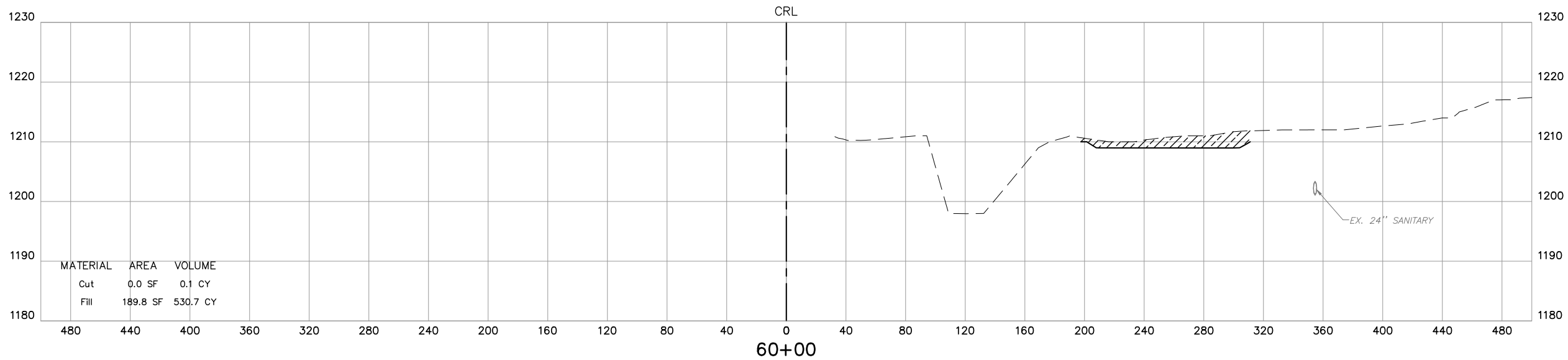
M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_XSECTIONS\_POND.dwg



<b>CROSS SECTIONS</b>																																																									
<b>LITTLE RIVER PARK DRAINAGE IMPROVEMENTS</b>																																																									
<b>CITY OF MOORE</b>																																																									
PLANS AND ESTIMATES PREPARED BY:																																																									
<b>Meshek &amp; Associates, L.L.C.</b>																																																									
<small>1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620</small>																																																									
<b>REVISION</b>	<b>BY</b>	<b>DATE</b>	<b>APPROVED:</b>																																																						
			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;"><b>PLAN SCALE</b></td> <td style="width: 10%;"><b>DRAWN</b></td> <td style="width: 10%;"><b>JCL</b></td> <td style="width: 10%;">Value</td> <td rowspan="3" style="width: 45%;"></td> </tr> <tr> <td>N/A</td> <td><b>DESIGNED</b></td> <td><b>BWF</b></td> <td>Value</td> </tr> <tr> <td></td> <td><b>SURVEY</b></td> <td><b>PDH</b></td> <td>Value</td> </tr> <tr> <td colspan="4"><b>PROFILE SCALE</b></td> <td rowspan="3" style="text-align: center;"><b>PUBLIC WORKS DIRECTOR</b></td> </tr> <tr> <td colspan="4" style="text-align: center;"><b>RECOMMENDED</b></td> </tr> <tr> <td colspan="4" style="text-align: center;"><b>DEVELOPMENT SERVICES</b></td> </tr> <tr> <td colspan="4"><b>HORIZONTAL:</b></td> <td rowspan="2" style="text-align: center;"><b>DEPUTY DIRECTOR</b></td> </tr> <tr> <td colspan="4">1" = 10'</td> </tr> <tr> <td colspan="4"><b>VERTICAL:</b></td> <td rowspan="2" style="text-align: center;"><b>PUBLIC WORKS DIRECTOR</b></td> </tr> <tr> <td colspan="4">1" = 10'</td> </tr> <tr> <td colspan="2"><b>FILE:</b></td> <td colspan="2"><b>DRAWING:</b></td> <td><b>DATE:</b></td> </tr> <tr> <td colspan="2">ATLAS PAGE NO. .</td> <td colspan="2"></td> <td>SHEET 121 OF 133 SHEETS</td> </tr> </table>	<b>PLAN SCALE</b>	<b>DRAWN</b>	<b>JCL</b>	Value		N/A	<b>DESIGNED</b>	<b>BWF</b>	Value		<b>SURVEY</b>	<b>PDH</b>	Value	<b>PROFILE SCALE</b>				<b>PUBLIC WORKS DIRECTOR</b>	<b>RECOMMENDED</b>				<b>DEVELOPMENT SERVICES</b>				<b>HORIZONTAL:</b>				<b>DEPUTY DIRECTOR</b>	1" = 10'				<b>VERTICAL:</b>				<b>PUBLIC WORKS DIRECTOR</b>	1" = 10'				<b>FILE:</b>		<b>DRAWING:</b>		<b>DATE:</b>	ATLAS PAGE NO. .				SHEET 121 OF 133 SHEETS
<b>PLAN SCALE</b>	<b>DRAWN</b>	<b>JCL</b>		Value																																																					
N/A	<b>DESIGNED</b>	<b>BWF</b>		Value																																																					
	<b>SURVEY</b>	<b>PDH</b>	Value																																																						
<b>PROFILE SCALE</b>				<b>PUBLIC WORKS DIRECTOR</b>																																																					
<b>RECOMMENDED</b>																																																									
<b>DEVELOPMENT SERVICES</b>																																																									
<b>HORIZONTAL:</b>				<b>DEPUTY DIRECTOR</b>																																																					
1" = 10'																																																									
<b>VERTICAL:</b>				<b>PUBLIC WORKS DIRECTOR</b>																																																					
1" = 10'																																																									
<b>FILE:</b>		<b>DRAWING:</b>		<b>DATE:</b>																																																					
ATLAS PAGE NO. .				SHEET 121 OF 133 SHEETS																																																					

PRINT DATE: 02/05/2018

M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_XSECTIONS\_POND.dwg

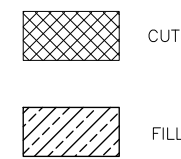
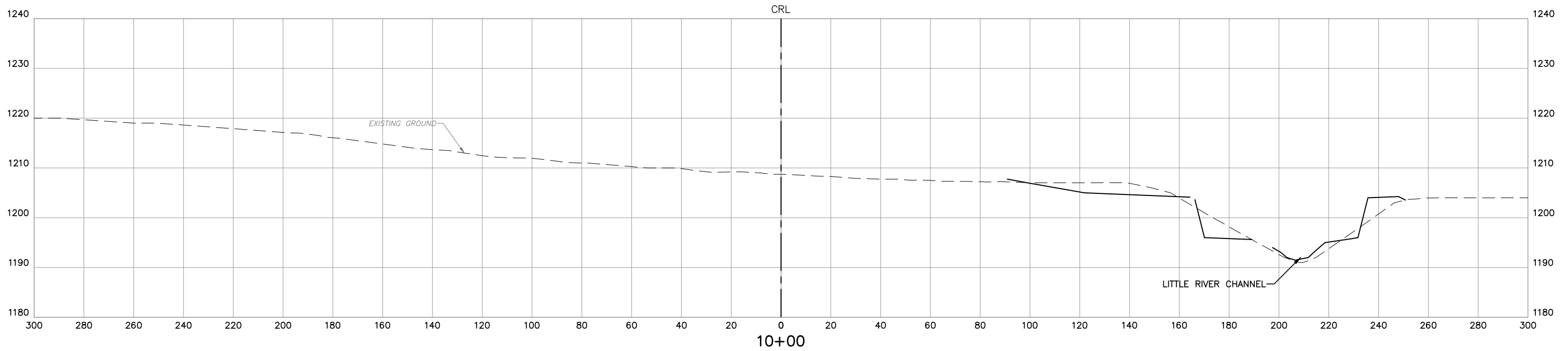
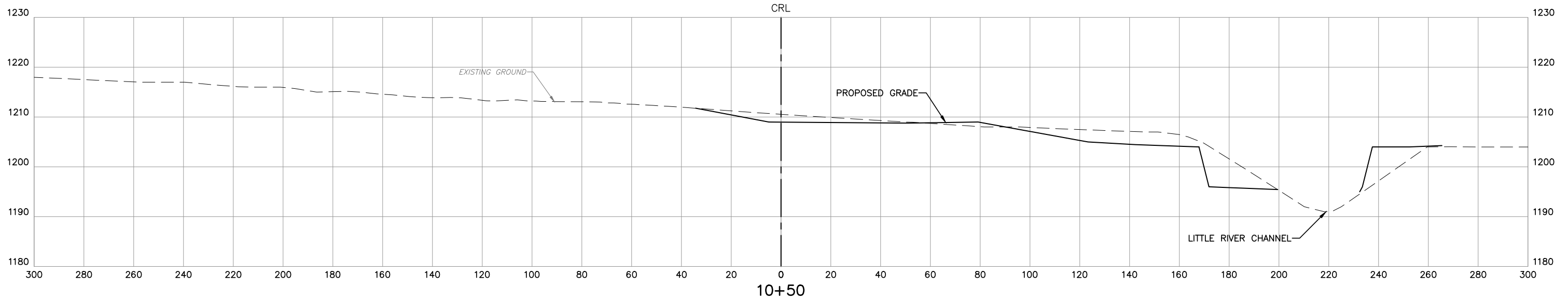


<b>CROSS SECTIONS</b>	
<b>LITTLE RIVER PARK DRAINAGE IMPROVEMENTS</b>	
<b>CITY OF MOORE</b>	
PLANS AND ESTIMATES PREPARED BY:	
<b>Meshek &amp; Associates, L.L.C.</b>	
1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620	

REVISION	BY	DATE	PLAN SCALE	DRAWN	JCL	Value	APPROVED:
			N/A	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	DEVELOPMENT SERVICES			
			1" = 10'	RECOMMENDED			
			VERTICAL:	DEPUTY DIRECTOR			PUBLIC WORKS DIRECTOR
			1" = 10'				
			FILE:	DRAWING:		DATE:	SHEET 122 OF 133 SHEETS
			ATLAS PAGE NO. .				

PRINT DATE: 02/05/2018

M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_XSECTIONS\_SPILLWAY.dwg



**CROSS SECTIONS  
EMERGENCY SPILLWAY  
LITTLE RIVER PARK DRAINAGE  
IMPROVEMENTS**

**CITY OF MOORE**

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	JCL	Value	APPROVED:
			N/A	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
				RECOMMENDED			
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	DEVELOPMENT SERVICES			
			1" = 10'	RECOMMENDED			
			VERTICAL:	DEPUTY DIRECTOR			PUBLIC WORKS DIRECTOR
			1" = 10'				
			FILE:	DRAWING:		DATE:	SHEET 123 OF 133 SHEETS
			ATLAS PAGE NO. .				

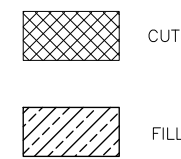
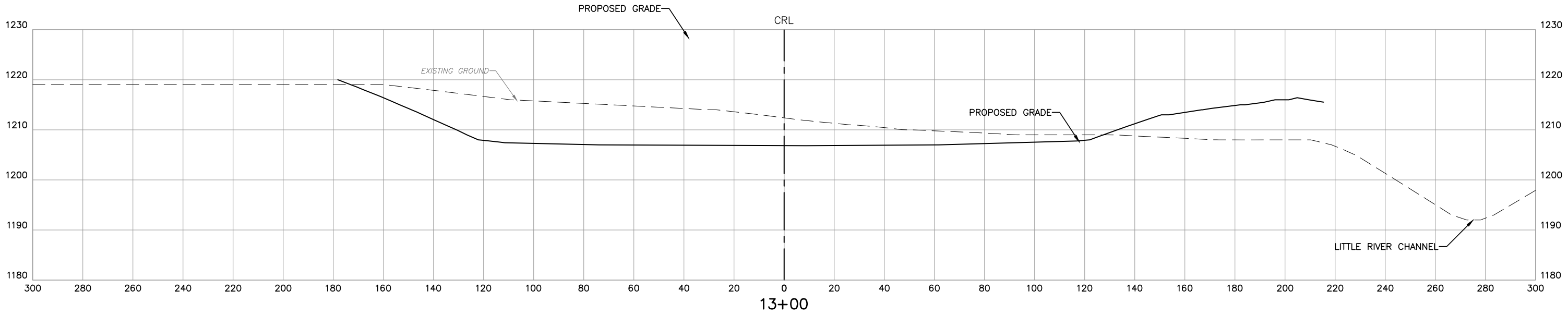
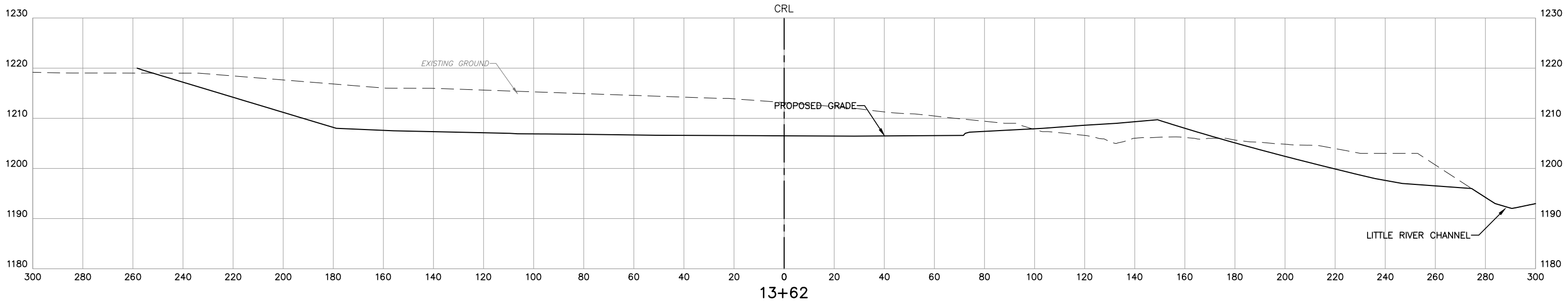
PRINT DATE: 02/05/2018







M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_XSECTIONS\_SPILLWAY.dwg



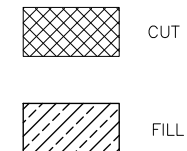
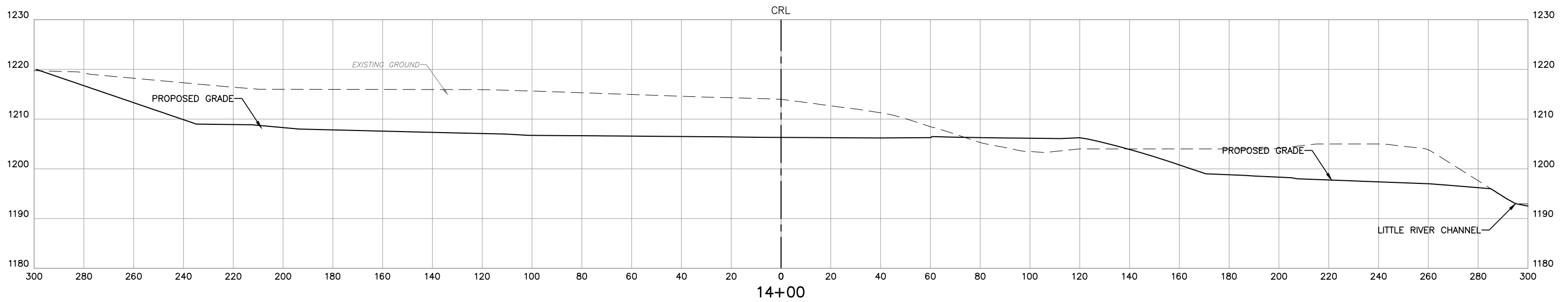
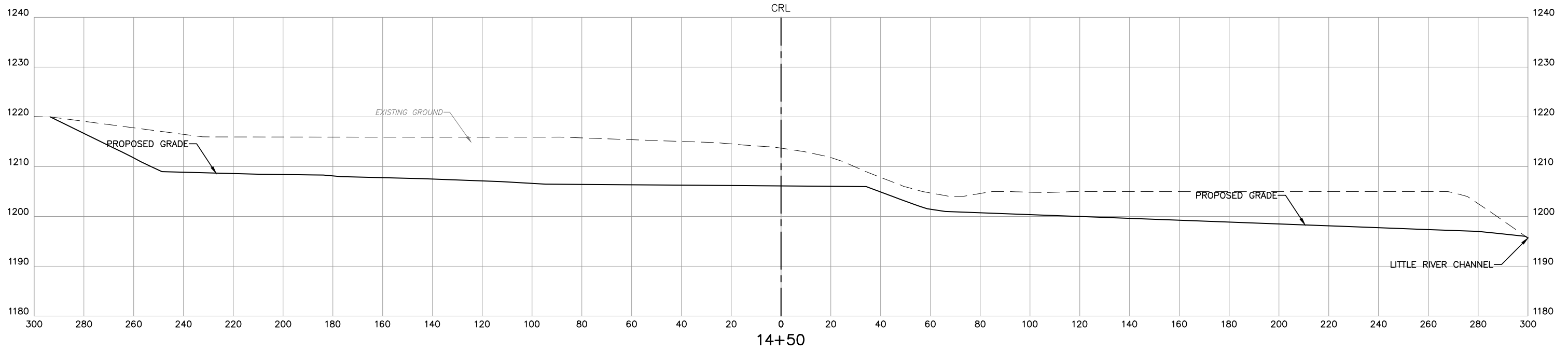
**CROSS SECTIONS  
EMERGENCY SPILLWAY  
LITTLE RIVER PARK DRAINAGE  
IMPROVEMENTS**

**CITY OF MOORE**

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	JCL	Value	APPROVED:
			N/A	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	RECOMMENDED			
			1" = 10'	DEVELOPMENT SERVICES			
			VERTICAL:	RECOMMENDED			
			1" = 10'	DEPUTY DIRECTOR			
			FILE:	DRAWING:			PUBLIC WORKS DIRECTOR
			ATLAS PAGE NO. .				DATE:
							SHEET 126 OF 133 SHEETS

M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_XSECTIONS\_SPILLWAY.dwg



**CROSS SECTIONS  
EMERGENCY SPILLWAY  
LITTLE RIVER PARK DRAINAGE  
IMPROVEMENTS**

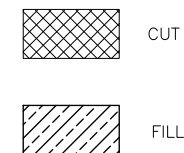
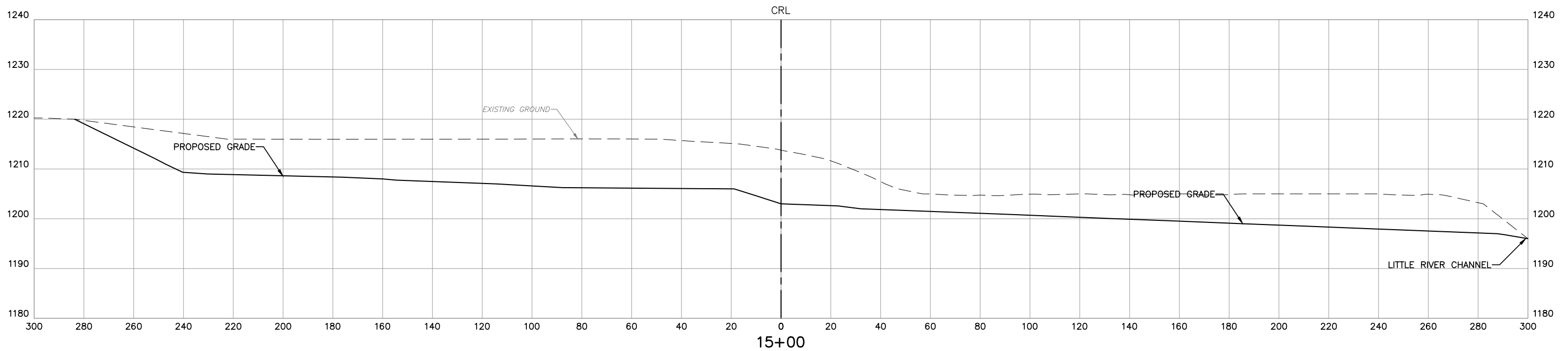
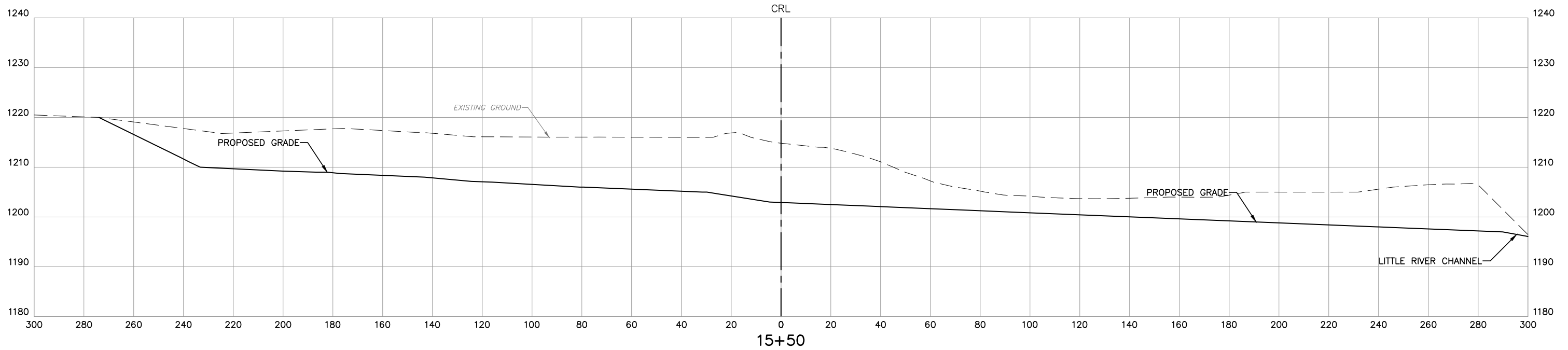
**CITY OF MOORE**

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	JCL	Value	APPROVED:
			N/A	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
				RECOMMENDED			
				PROFILE SCALE			
				HORIZONTAL:			
				1" = 10'			
				VERTICAL:			
				1" = 10'			
				FILE:	DRAWING:		
				ATLAS PAGE NO. .			

PRINT DATE: 02/05/2018

M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_XSECTIONS\_SPILLWAY.dwg



**CROSS SECTIONS  
EMERGENCY SPILLWAY  
LITTLE RIVER PARK DRAINAGE  
IMPROVEMENTS**

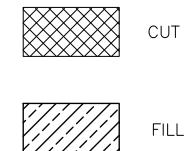
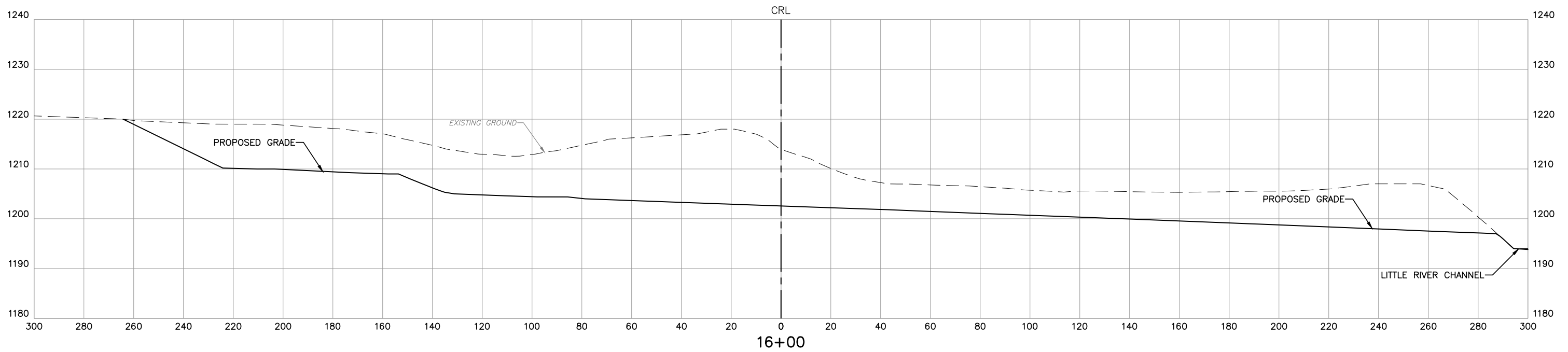
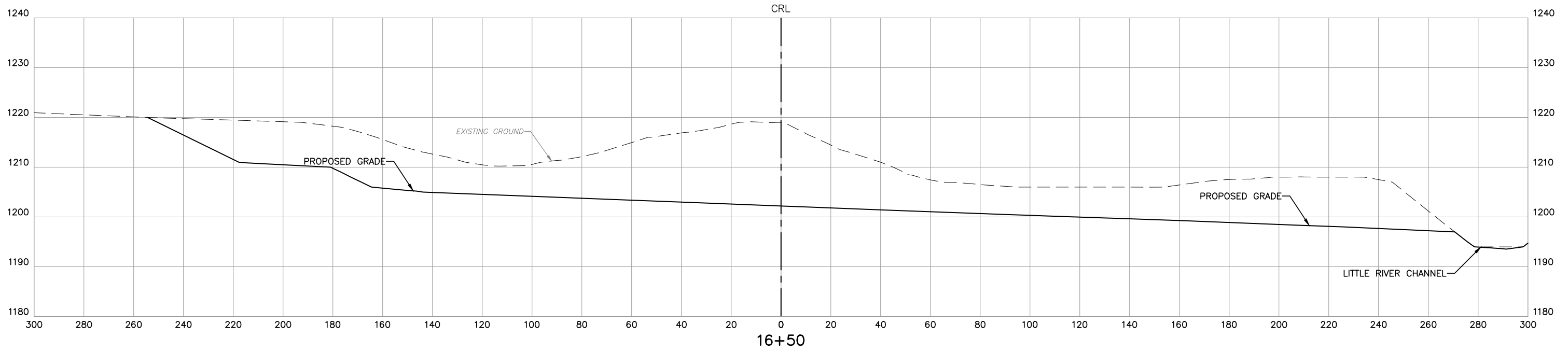
**CITY OF MOORE**

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	JCL	Value	APPROVED:
			N/A	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	DEVELOPMENT SERVICES			PUBLIC WORKS DIRECTOR
			1" = 10'	RECOMMENDED			
			VERTICAL:	DEPUTY DIRECTOR			DATE:
			1" = 10'				
			FILE:	DRAWING:			SHEET 128 OF 133 SHEETS
			ATLAS PAGE NO. .				

PRINT DATE: 02/05/2018

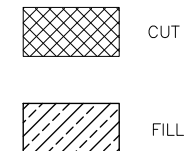
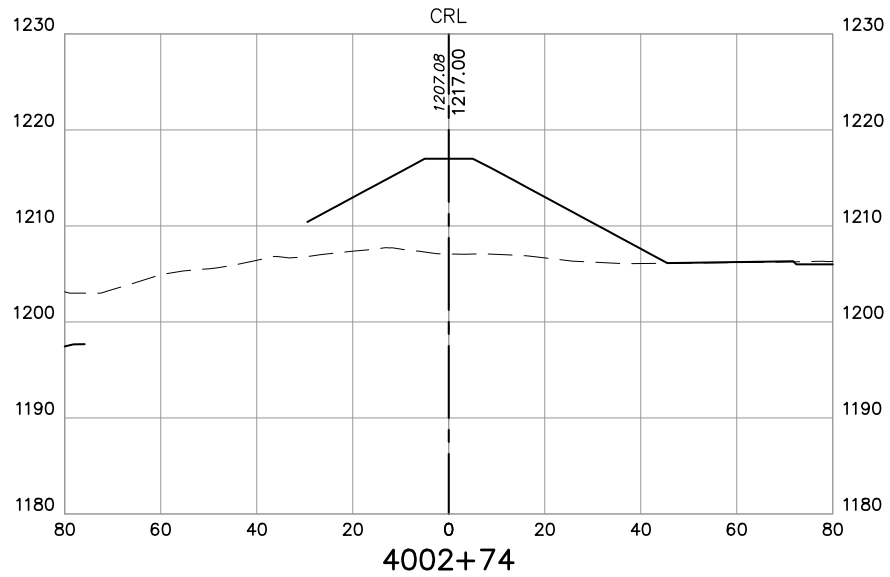
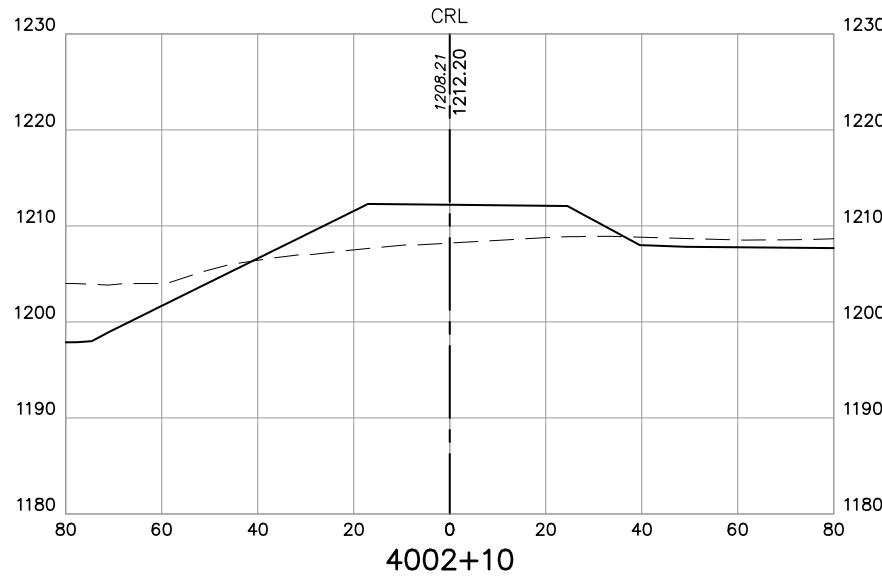
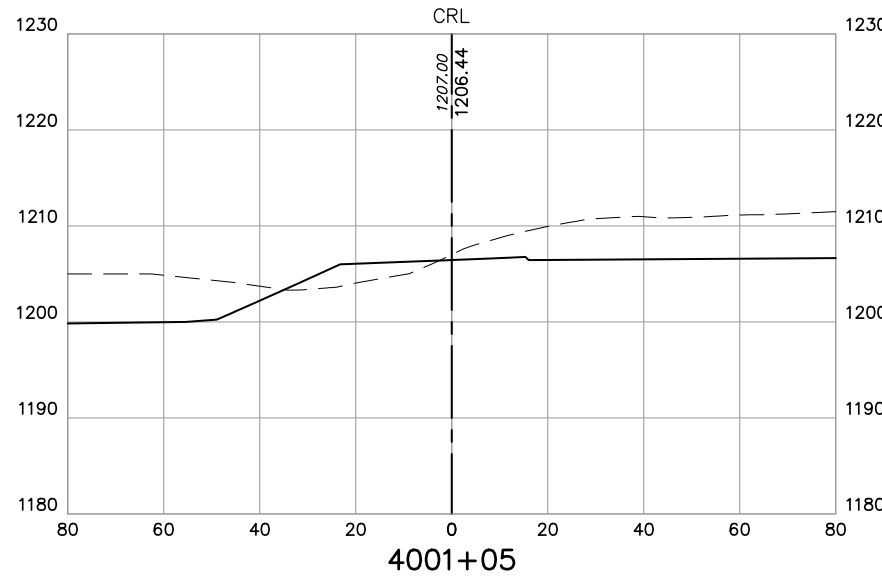
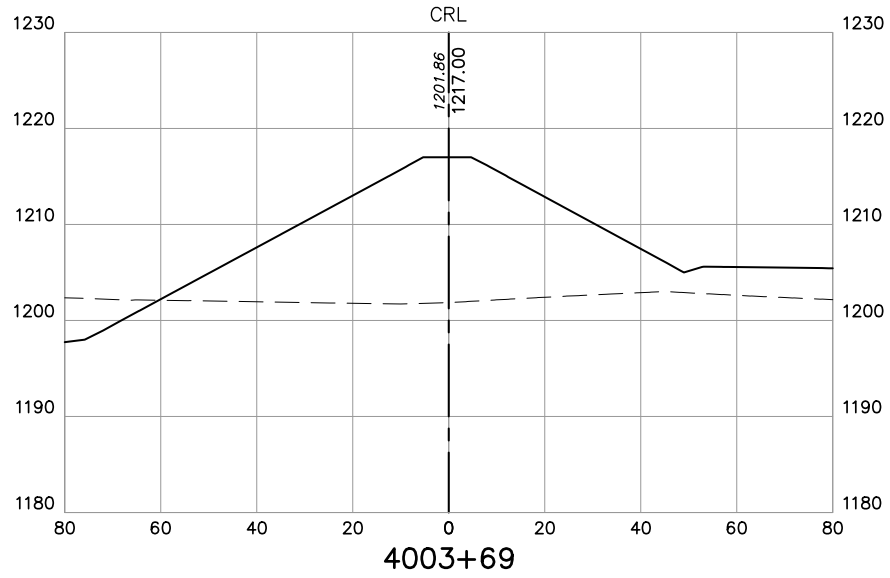
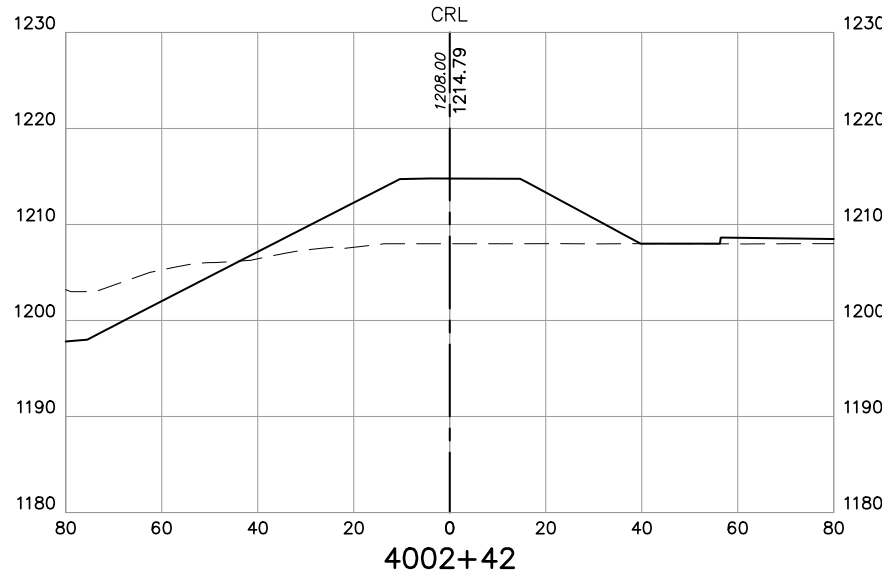
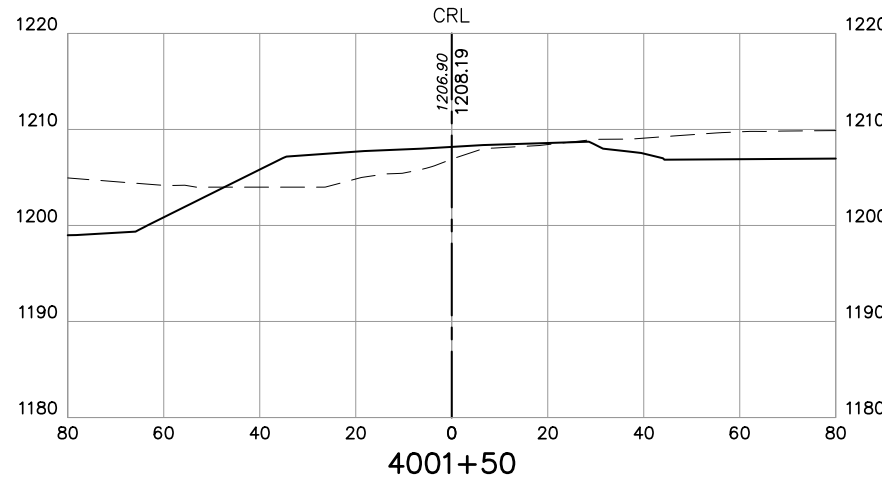
M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_XSECTIONS\_SPILLWAY.dwg



<b>CROSS SECTIONS EMERGENCY SPILLWAY</b>			
<b>LITTLE RIVER PARK DRAINAGE IMPROVEMENTS</b>			
<b>CITY OF MOORE</b>			
PLANS AND ESTIMATES PREPARED BY: <b>Meshek &amp; Associates, L.L.C.</b> 1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620			
REVISION	BY	DATE	PLAN SCALE
			N/A
			PROFILE SCALE
			RECOMMENDED
HORIZONTAL:	RECOMMENDED		APPROVED:
	DEVELOPMENT SERVICES		
VERTICAL:	RECOMMENDED		PUBLIC WORKS DIRECTOR
	DEPUTY DIRECTOR		
FILE:	DRAWING:	DATE:	
ATLAS PAGE NO. .		SHEET 129 OF 133 SHEETS	

DESIGNED	JCL	Value
SURVEY	BWF	Value
	PDH	Value

M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_XSECTIONS\_DAM.dwg

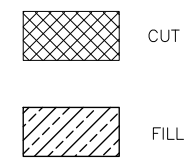
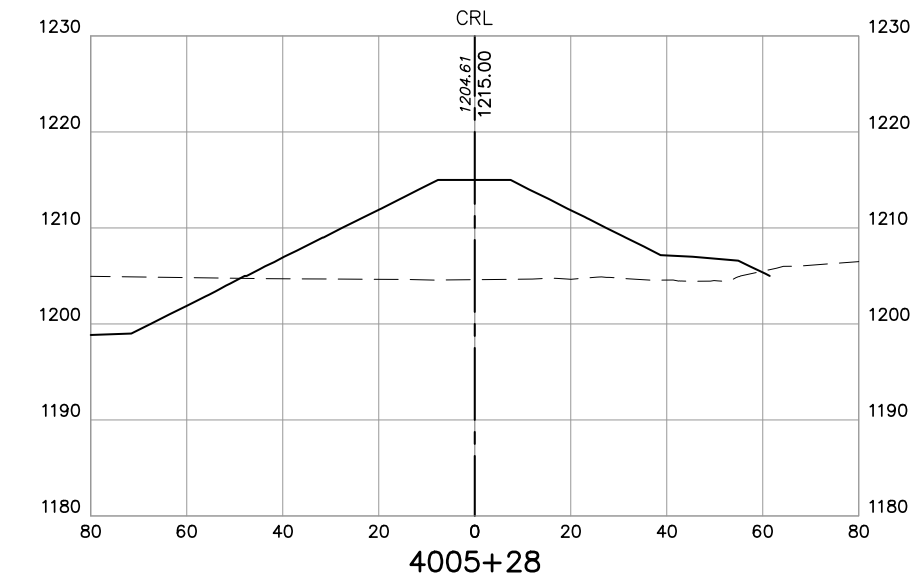
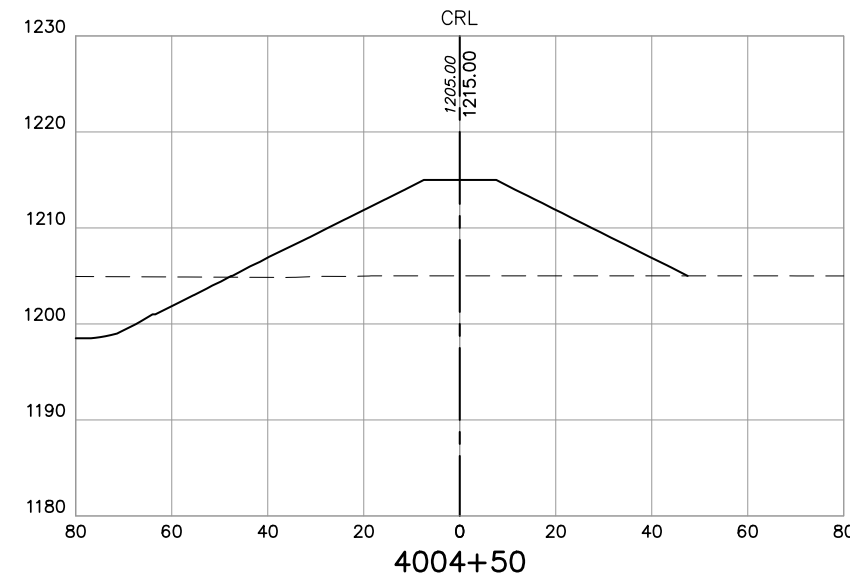
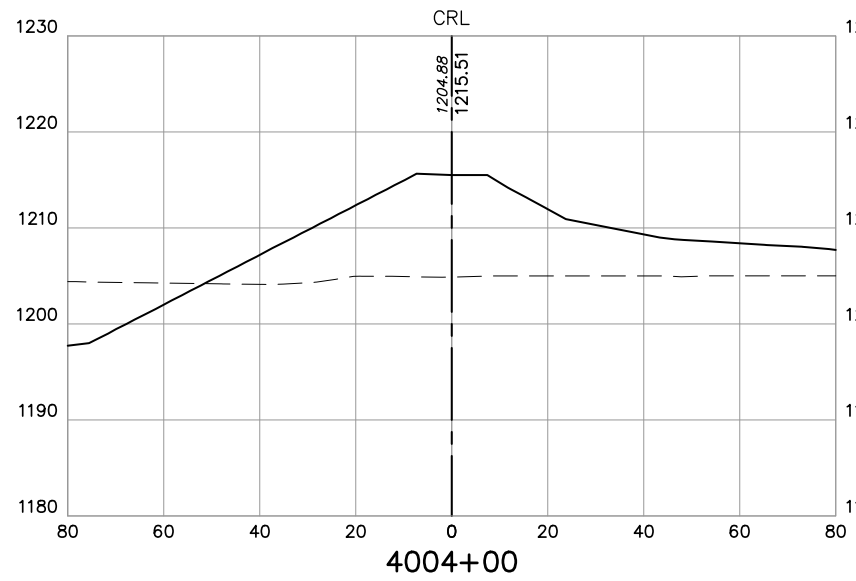
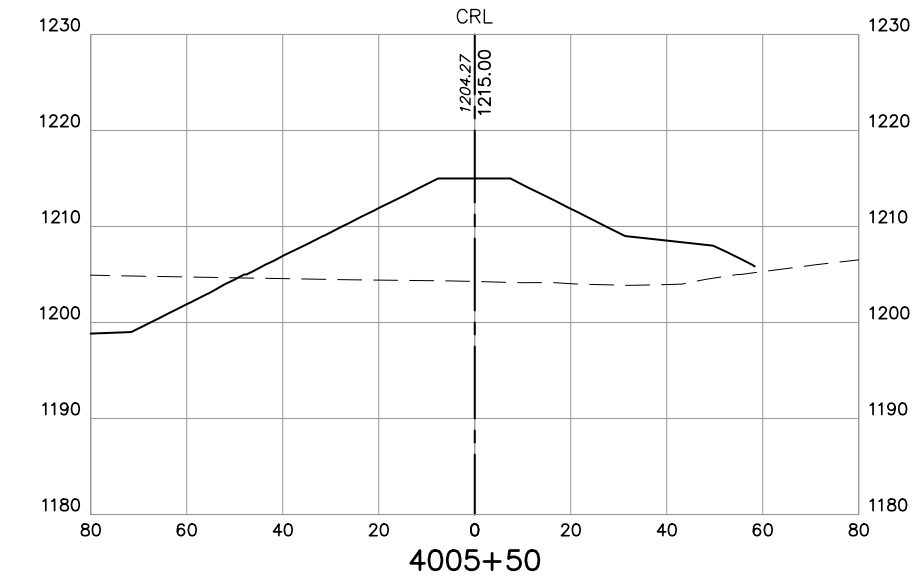
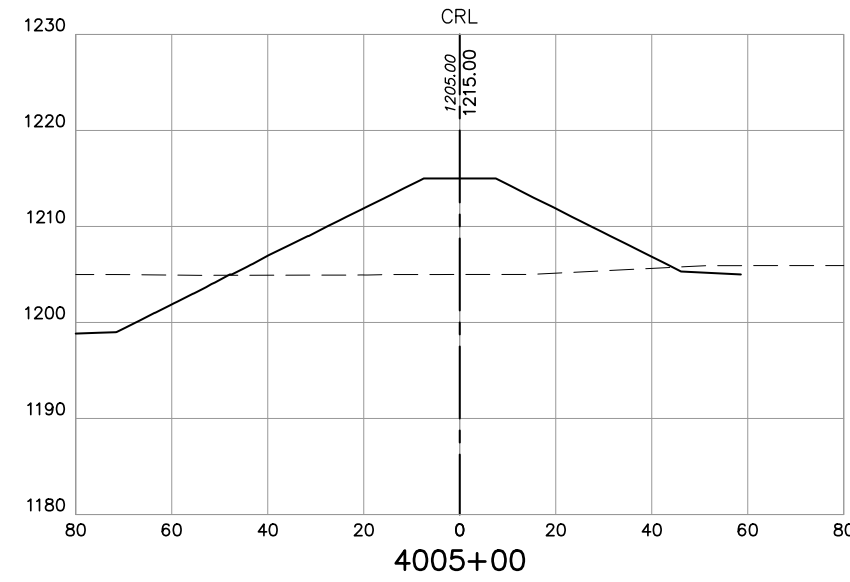
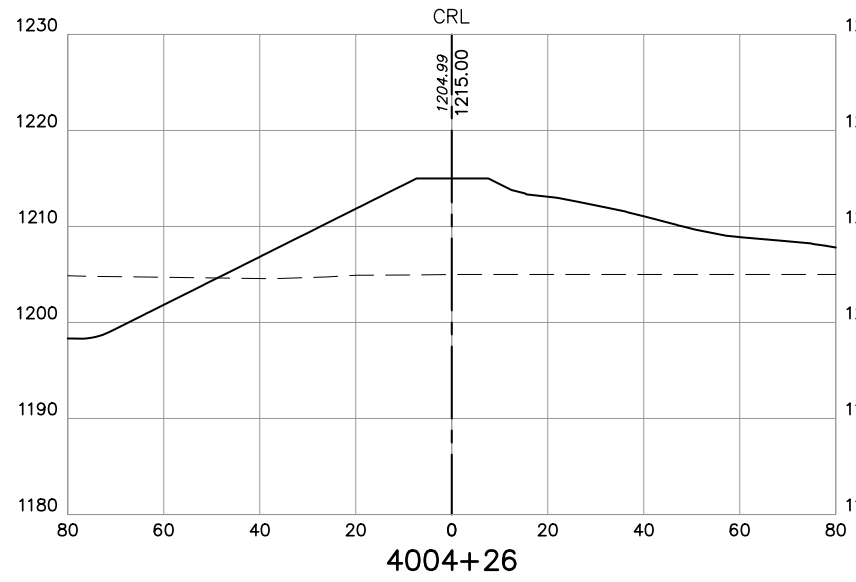


**CROSS SECTIONS  
DAM  
LITTLE RIVER PARK DRAINAGE  
IMPROVEMENTS  
CITY OF MOORE**

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	JCL	Value	APPROVED:
			N/A	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	DEVELOPMENT SERVICES			PUBLIC WORKS DIRECTOR
			VERTICAL:	RECOMMENDED			
			FILE:	DEPUTY DIRECTOR			
			ATLAS PAGE NO. .	DRAWING:			DATE:

M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_XSECTIONS\_DAM.dwg



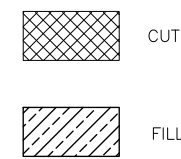
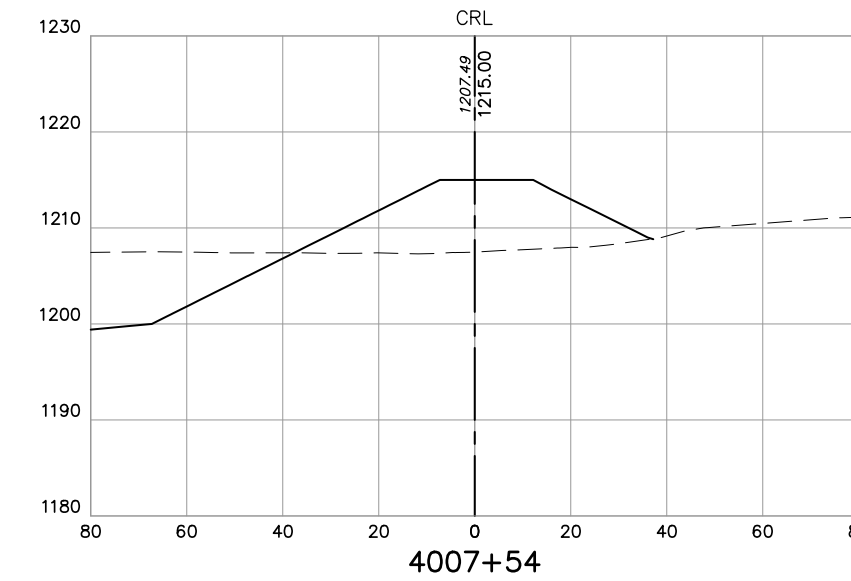
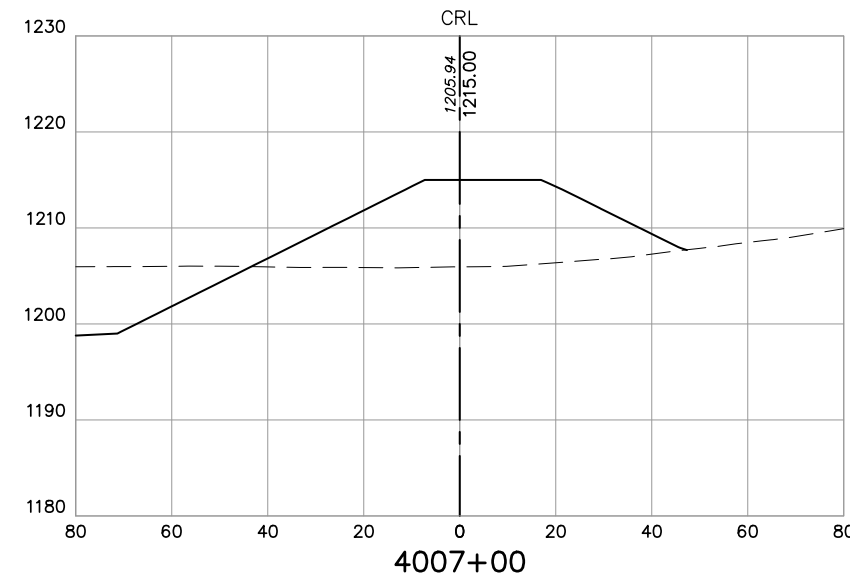
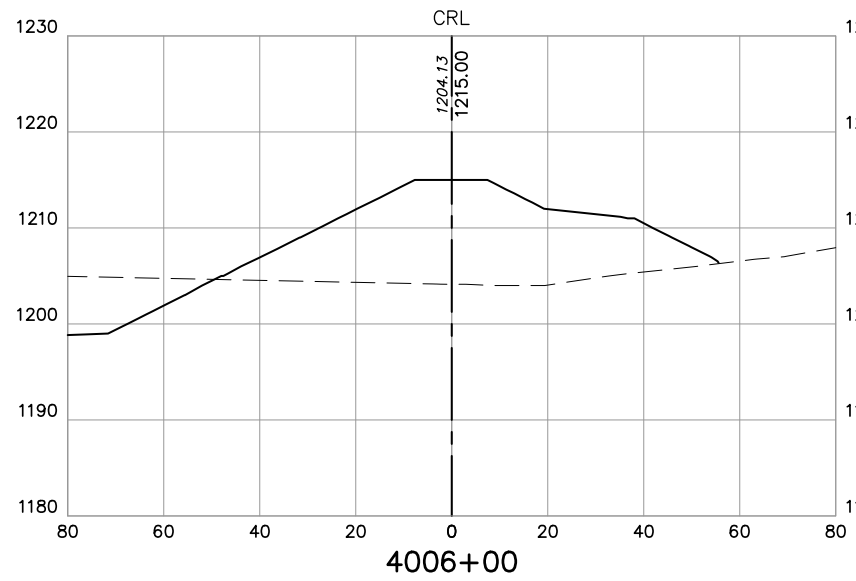
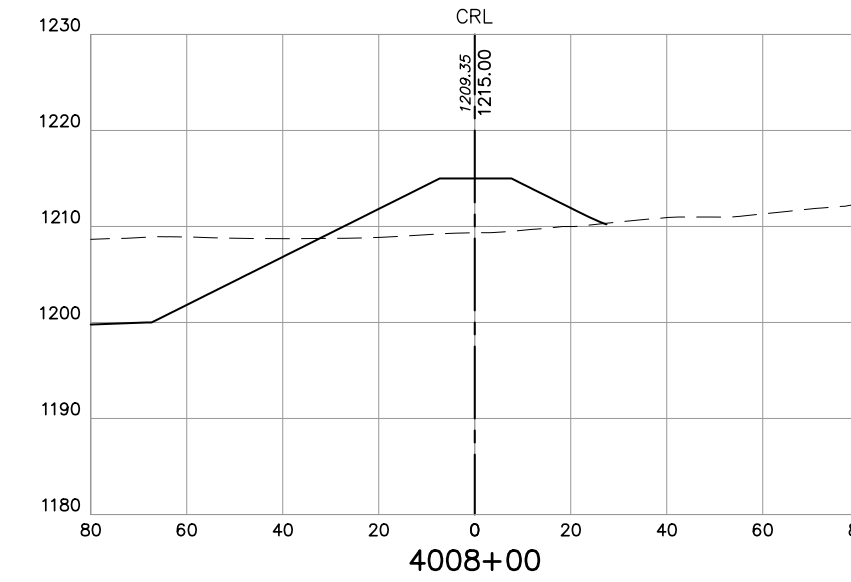
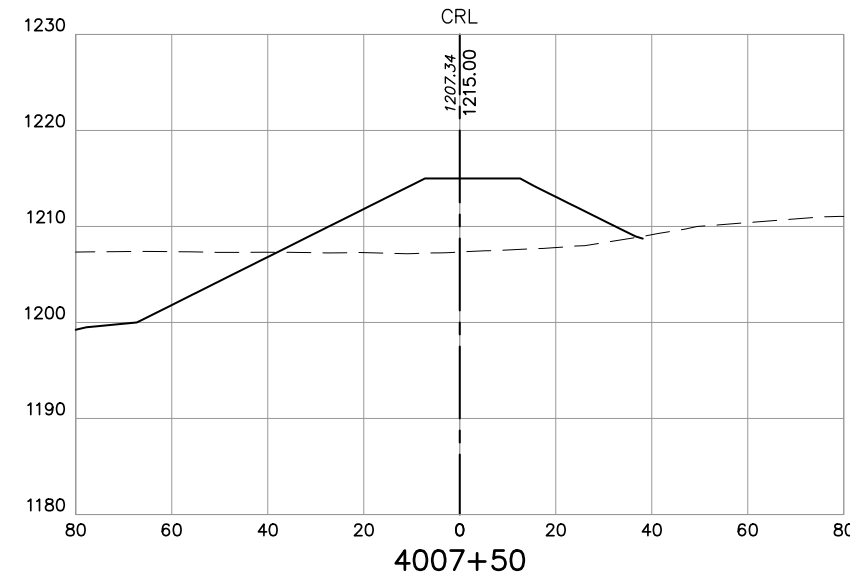
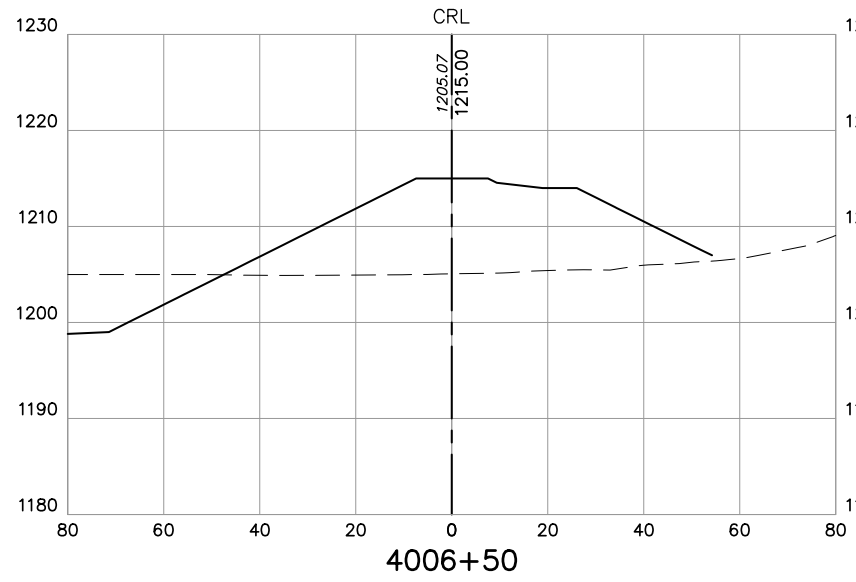
**CROSS SECTIONS  
DAM  
LITTLE RIVER PARK DRAINAGE  
IMPROVEMENTS  
CITY OF MOORE**

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	JCL	Value	APPROVED:
			N/A	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
				RECOMMENDED			
				PROFILE SCALE			
				RECOMMENDED			
				DEVELOPMENT SERVICES			
				RECOMMENDED			
				DEPUTY DIRECTOR			
				FILE:	DRAWING:		PUBLIC WORKS DIRECTOR
				ATLAS PAGE NO. .			DATE:
							SHEET 131 OF 133 SHEETS

PRINT DATE: 02/05/2018

M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_XSECTIONS\_DAM.dwg



**CROSS SECTIONS  
DAM  
LITTLE RIVER PARK DRAINAGE  
IMPROVEMENTS  
CITY OF MOORE**

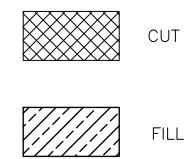
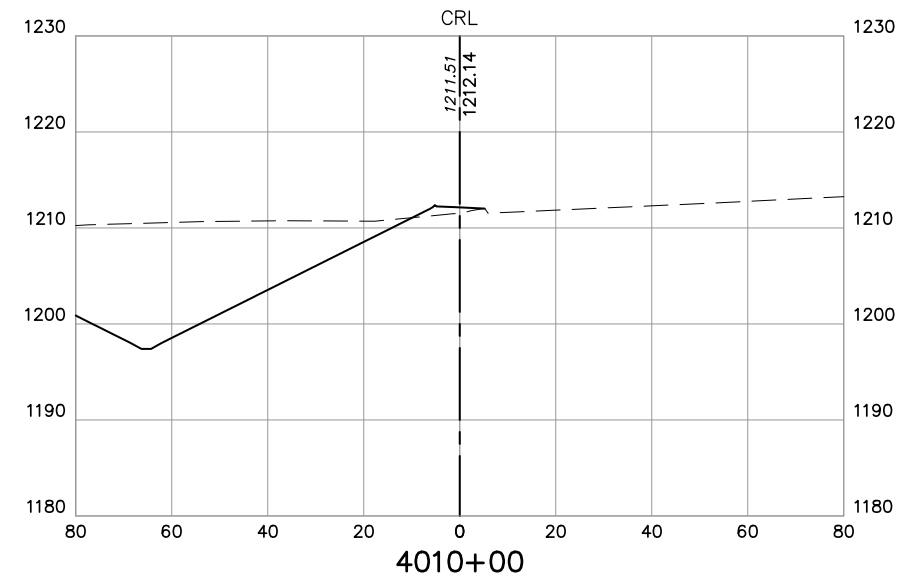
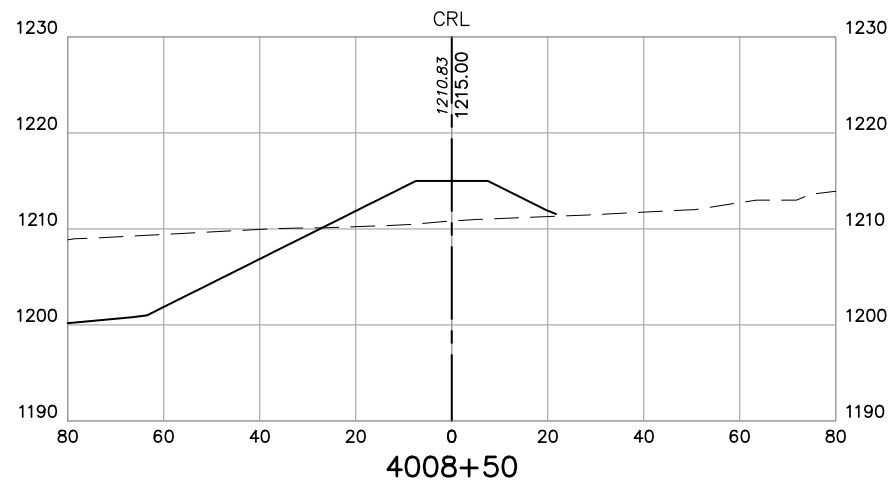
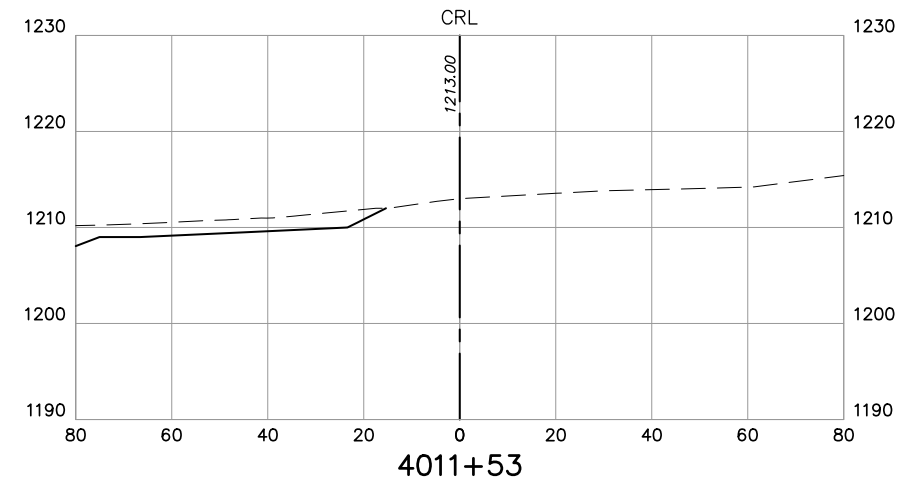
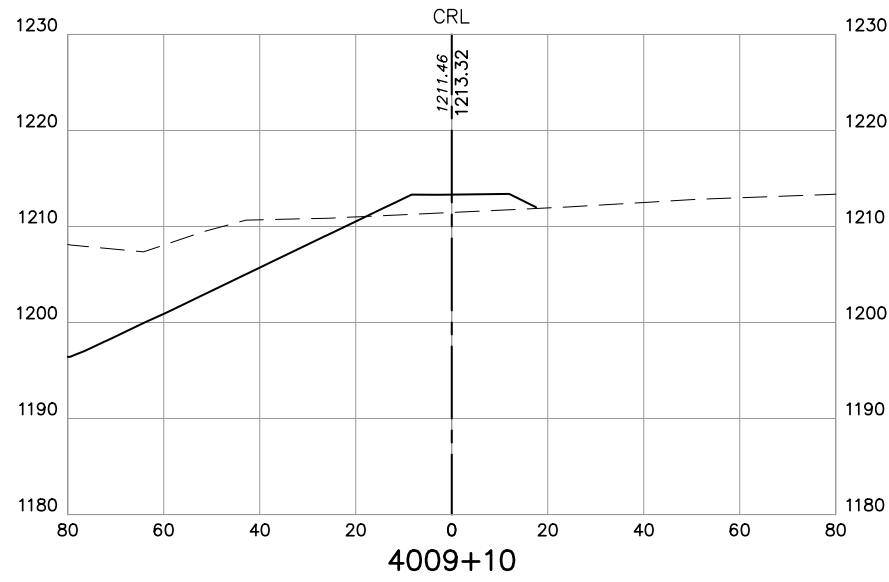
PLANS AND ESTIMATES PREPARED BY:  
**Meshek & Associates, L.L.C.**  
1437 S. Boulder Avenue, Suite 1550 Tulsa, OK 74119 (918)392-5620

REVISION	BY	DATE	PLAN SCALE	DRAWN	JCL	Value	APPROVED:
			N/A	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
				RECOMMENDED			
				PROFILE SCALE			
				RECOMMENDED			
				DEVELOPMENT SERVICES			
				RECOMMENDED			
				DEPUTY DIRECTOR			
				FILE:	DRAWING:	DATE:	PUBLIC WORKS DIRECTOR
				ATLAS PAGE NO. .			SHEET 132 OF 133 SHEETS

PRINT DATE: 02/05/2018



M:\City\_of\_Moore\15MOR05\_Little\_River\_Park\_Drainage\_Improvements\Design\Drawings\15MOR05\_XSECTIONS\_DAM.dwg



**CROSS SECTIONS  
DAM  
LITTLE RIVER PARK DRAINAGE  
IMPROVEMENTS  
CITY OF MOORE**

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	JCL	Value	APPROVED:
			N/A	DESIGNED	BWF	Value	
				SURVEY	PDH	Value	
			PROFILE SCALE	RECOMMENDED			
			HORIZONTAL:	RECOMMENDED			
			1" = 10'	DEVELOPMENT SERVICES			
			VERTICAL:	RECOMMENDED			
			1" = 10'	DEPUTY DIRECTOR			
			FILE:	DRAWING:			PUBLIC WORKS DIRECTOR
			ATLAS PAGE NO. .	DATE:			

## Applicability

The Project or Program to which the construction work covered by this contract pertains is being assisted by the United States of America and the following Federal Labor Standards Provisions are included in this Contract pursuant to the provisions applicable to such Federal assistance.

**A. 1. (i) Minimum Wages.** All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under Section I(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of 29 CFR 5.5(a)(1)(iv); also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under 29 CFR 5.5(a)(1)(ii) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible, place where it can be easily seen by the workers.

**(ii) (a)** Any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. HUD shall approve an additional classification and wage rate and fringe benefits therefor only when the following criteria have been met:

**(1)** The work to be performed by the classification requested is not performed by a classification in the wage determination; and

**(2)** The classification is utilized in the area by the construction industry; and

**(3)** The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

**(b)** If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and HUD or its designee agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by HUD or its designee to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, D.C. 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB control number 1215-0140.)

**(c)** In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and HUD or its designee do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), HUD or its designee shall refer the questions, including the views of all interested parties and the recommendation of HUD or its designee, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

**(d)** The wage rate (including fringe benefits where appropriate) determined pursuant to subparagraphs (1)(ii)(b) or (c) of this paragraph, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

**(iii)** Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

**(iv)** If the contractor does not make payments to a trustee or other third person, the contractor may consider as part

of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

**2. Withholding.** HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee or helper, employed or working on the site of the work, all or part of the wages required by the contract, HUD or its designee may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased. HUD or its designee may, after written notice to the contractor, disburse such amounts withheld for and on account of the contractor or subcontractor to the respective employees to whom they are due. The Comptroller General shall make such disbursements in the case of direct Davis-Bacon Act contracts.

**3. (i) Payrolls and basic records.** Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in Section 1(b)(2)(B) of the Davis-bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5 (a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been

communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs. (Approved by the Office of Management and Budget under OMB Control Numbers 1215-0140 and 1215-0017.)

**(ii) (a)** The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to HUD or its designee if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant sponsor, or owner, as the case may be, for transmission to HUD or its designee. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i) except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to HUD or its designee if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant sponsor, or owner, as the case may be, for transmission to HUD or its designee, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this subparagraph for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to HUD or its designee. (Approved by the Office of Management and Budget under OMB Control Number 1215-0149.)

**(b)** Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

**(1)** That the payroll for the payroll period contains the information required to be provided under 29 CFR 5.5 (a)(3)(ii), the appropriate information is being maintained under 29 CFR 5.5(a)(3)(i), and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR Part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(c) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by subparagraph A.3.(ii)(b).

(d) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 231 of Title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under subparagraph A.3.(i) available for inspection, copying, or transcription by authorized representatives of HUD or its designee or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, HUD or its designee may, after written notice to the contractor, sponsor, applicant or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

#### 4. Apprentices and Trainees.

(i) **Apprentices.** Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who

is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) **Trainees.** Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by

the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

**(iii) Equal employment opportunity.** The utilization of apprentices, trainees and journeymen under 29 CFR Part 5 shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

**5. Compliance with Copeland Act requirements.** The contractor shall comply with the requirements of 29 CFR Part 3 which are incorporated by reference in this contract

**6. Subcontracts.** The contractor or subcontractor will insert in any subcontracts the clauses contained in subparagraphs 1 through 11 in this paragraph A and such other clauses as HUD or its designee may by appropriate instructions require, and a copy of the applicable prevailing wage decision, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this paragraph.

**7. Contract termination; debarment.** A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

**8. Compliance with Davis-Bacon and Related Act Requirements.** All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this contract

**9. Disputes concerning labor standards.** Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and HUD or its designee, the U.S. Department of Labor, or the employees or their representatives.

**10. (i) Certification of Eligibility.** By entering into this contract the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be

awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

**(ii)** No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

**(iii)** The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001. Additionally, U.S. Criminal Code, Section 1 01 0, Title 18, U.S.C., "Federal Housing Administration transactions", provides in part: "Whoever, for the purpose of . . . influencing in any way the action of such Administration..... makes, utters or publishes any statement knowing the same to be false..... shall be fined not more than \$5,000 or imprisoned not more than two years, or both."

**11. Complaints, Proceedings, or Testimony by Employees.** No laborer or mechanic to whom the wage, salary, or other labor standards provisions of this Contract are applicable shall be discharged or in any other manner discriminated against by the Contractor or any subcontractor because such employee has filed any complaint or instituted or caused to be instituted any proceeding or has testified or is about to testify in any proceeding under or relating to the labor standards applicable under this Contract to his employer.

**B. Contract Work Hours and Safety Standards Act.** The provisions of this paragraph B are applicable where the amount of the prime contract exceeds \$100,000. As used in this paragraph, the terms "laborers" and "mechanics" include watchmen and guards.

**(1) Overtime requirements.** No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which the individual is employed on such work to work in excess of 40 hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of 40 hours in such workweek.

**(2) Violation; liability for unpaid wages; liquidated damages.** In the event of any violation of the clause set forth in subparagraph (1) of this paragraph, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in subparagraph (1) of this paragraph, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of 40 hours without payment of the overtime wages required by the clause set forth in subparagraph (1) of this paragraph.

---

**(3) Withholding for unpaid wages and liquidated damages.** HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contract, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act which is held by the same prime contractor such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in subparagraph (2) of this paragraph.

**(4) Subcontracts.** The contractor or subcontractor shall insert in any subcontracts the clauses set forth in subparagraph (1) through (4) of this paragraph and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in subparagraphs (1) through (4) of this paragraph.

**C. Health and Safety.** The provisions of this paragraph C are applicable where the amount of the prime contract exceeds \$100,000.

**(1)** No laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his health and safety as determined under construction safety and health standards promulgated by the Secretary of Labor by regulation.

**(2)** The Contractor shall comply with all regulations issued by the Secretary of Labor pursuant to Title 29 Part 1926 and failure to comply may result in imposition of sanctions pursuant to the Contract Work Hours and Safety Standards Act, (Public Law 91-54, 83 Stat 96). 40 USC 3701 et seq.

**(3)** The contractor shall include the provisions of this paragraph in every subcontract so that such provisions will be binding on each subcontractor. The contractor shall take such action with respect to any subcontractor as the Secretary of Housing and Urban Development or the Secretary of Labor shall direct as a means of enforcing such provisions.

General Decision Number: OK180029 01/05/2018 OK29

Superseded General Decision Number: OK20170029

State: Oklahoma

Construction Type: Heavy

Counties: Canadian, Cleveland, Grady, Lincoln and McClain  
Counties in Oklahoma.

HEAVY CONSTRUCTION PROJECTS (including sewer/water line construction; heavy construction projects on treatment plants and industrial sites) (excludes heavy dredging and water well drilling)

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.35 for calendar year 2018 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.35 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2018. The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at [www.dol.gov/whd/govcontracts](http://www.dol.gov/whd/govcontracts).

Modification Number	Publication Date
0	01/05/2018

\* ENGI0627-015 06/01/2017

	Rates	Fringes
POWER EQUIPMENT OPERATOR:		
Group 1.....	\$ 28.65	12.98
Group 2.....	\$ 26.95	12.98
Group 3.....	\$ 26.40	12.98
Group 4.....	\$ 25.65	12.98
Group 5.....	\$ 25.15	12.98
Group 6.....	\$ 24.70	12.98
Group10.....	\$ 21.70	12.98

POWER EQUIPMENT OPERATOR

GROUP 1: All Crane Type Equipment 200 ton and larger and including 400 ton capacity cranes. All Tower Cranes.

GROUP 2: All Crane Type Equipment 100 ton capacity and larger cranes, and less than 200 ton capacity.

GROUP 3: All Crane Type Equipment 50 ton capacity and larger cranes, and less than 100 ton capacity. Crane Equipment (as rated by mfg.) 3 cu. yd. and over Guy derrick Whirley Power Driven Hole Digger (with 30' and longer mast).

GROUP 4: CRANES with Boom Incl. Jib less than 100 ft and less than 3 cu. Yd.; Overhead Monorail Crane

GROUP 5: BULLDOZER

GROUP 6: ROLLER (ASPHALT AND DIRT)

GROUP 10: OILER

-----  
IRON0048-005 06/01/2017

	Rates	Fringes
IRONWORKER (Structural, Reinforcing, and Ornamental).....	\$ 24.00	14.81

-----  
SUOK2012-007 05/18/2012

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER....	\$ 12.49	1.23
ELECTRICIAN.....	\$ 22.00	4.76
FORM WORKER.....	\$ 11.77	0.00
LABORER: Common or General.....	\$ 11.81	1.09
LABORER: Pipelayer.....	\$ 11.13	0.00
OPERATOR: Backhoe/Excavator.....	\$ 18.17	6.28
OPERATOR: Drill.....	\$ 17.15	0.78
OPERATOR: Grader/Blade.....	\$ 17.76	3.87
OPERATOR: Loader (Front End)....	\$ 13.51	0.00
OPERATOR: Mechanic.....	\$ 19.61	9.39
OPERATOR: Scraper.....	\$ 16.00	1.55
OPERATOR: Trackhoe.....	\$ 17.50	2.78
TRUCK DRIVER: Dump Truck.....	\$ 16.50	0.74

-----  
WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

=====  
Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this



contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at [www.dol.gov/whd/govcontracts](http://www.dol.gov/whd/govcontracts).

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

-----

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

#### Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

#### Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and

non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

#### Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

---

#### WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- \* an existing published wage determination
- \* a survey underlying a wage determination
- \* a Wage and Hour Division letter setting forth a position on a wage determination matter
- \* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations  
Wage and Hour Division  
U.S. Department of Labor  
200 Constitution Avenue, N.W.

Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

=====

END OF GENERAL DECISION

Exhibit C

**NON-COLLUSION AFFIDAVIT OF VENDOR**

The following affidavit **MUST** accompany your response to this proposal.

COUNTY OF \_\_\_\_\_) SS.  
STATE OF \_\_\_\_\_)

**AFFIDAVIT**

I, \_\_\_\_\_, declare under oath, under penalty of perjury, That I am lawfully qualified and acting officer and/or agent of \_\_\_\_\_  
(Firm's Name)

and that:

1. That the affiant has not been party to any collusion among proponents in restraint of freedom of competition by agreement to propose at a fixed price or to refrain from making a proposal; or with any official of the state or political subdivision of the State, including The City of Moore, as to quantity, quality, or price in the matter of the attached proposal, or any other terms of said prospective contract; or in any discussions between proponents and any official of the state, including the City of Moore, concerning the exchange of money or other thing of value for special consideration in the letting of a contract and,
2. \_\_\_\_\_, has not pled guilty to or been convicted of a  
(Firm's Name)  
felony charge for fraud, bribery, or corruption involving sale of real or personal property to any state or any political subdivision of a state.
2. That no person, firm, corporation subsidiary, parent, predecessor or other entity affiliated with or related to \_\_\_\_\_ has been convicted of a  
(Firm's Name)  
felony charge for fraud, bribery, or corruption relating to sale of real or personal property to any state or political subdivision of a state.

\_\_\_\_\_  
(Officer or Agent)

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

(SEAL)

\_\_\_\_\_  
My Commission Expires

\_\_\_\_\_  
(Notary Public)

# Exhibit D: Byrd Amendment Certification

The undersigned certifies, to the best of his or her knowledge and belief, that:

- (1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- (2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
- (3) The undersigned shall require that the language of this certification be included in the award documents for all sub-awards at all tiers (including subcontracts, sub-grants, and contracts under grants, loans, and cooperative agreements) and that all sub-recipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

Signature	
Printed Name	
Position	
Date	

# Exhibit E: Certification Regarding Debarment, Suspension, and Other Responsibility Matters

In accordance with 2 CFR Part 2424 and 24 CFR Parts 5, 6, et al (US Department of Housing and Urban Development: Implementation of OMB Guidance on Debarment and Suspension; Final Rule) the Respondent certifies, to the best of his or her knowledge and belief, that:

- (1) No employee of the Respondent who will materially participate in the Respondent's delivery of labor or work product under this RFP is currently suspended or debarred under the applicable laws or regulations in effect on the date of certification;
- (2) No sub-contractor, partner or other party who will materially participate in the Respondent's delivery of labor or work product under this RFP is currently suspended or debarred under the applicable laws or regulations in effect on the date of certification.
- (3) The undersigned Respondent shall require that the language of this certification be included in the award documents for all sub-awards at all tiers (including subcontracts, sub-grants, and contracts under grants, loans, and cooperative agreements) and that all sub-recipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

Signature	
Printed Name	
Position	
Date	

# Exhibit F:

Instructions: If the Respondent is a Minority Owned Business (MOB) or Women Owned Business (WOB) or qualifies as a Section 3 business, the Respondent completes Form F.1. If the Respondent intends to utilize a MOB/WOB or Section 3 business in the performance of the proposed contract, the respondent completes Form F.2

## F.1: CERTIFICATION AS A MINORITY OWNED, WOMEN OWNED OR SECTION 3 BUSINESS

I, \_\_\_\_\_ certify that \_\_\_\_\_ is a Minority Owned, Women Owned or Section 3 Business.

Business Registered Name	
Business Registered Address 1	
Business Registered Address 2	
State of Registration	
Certificate or Registration Number	
Certifying Agency	

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. The City reserves the right to withdraw or terminate the proposed contract should the representation of fact be false.

Signature	
Printed Name	
Position	
Date	

## F.2: STATEMENT OF INTENT OF MOB/WOB/SECTION 3 UTILIZATION

I, \_\_\_\_\_ certify that \_\_\_\_\_ will utilize Minority Owned Business (MOB) or Women Owned Business (WOB) as subcontractor(s), vendor(s), supplier(s), or professional service(s). The estimated **dollar value** of the amount that we plan to pay the MOB or WOB subcontractor(s), vendor(s), supplier(s), or professional service(s) is \$ \_\_\_\_\_

Description of Work	MOB Amount	WOB Amount	Section 3 Amount	Name of MOB/WOB/Section 3

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. The City reserves the right to withdraw or terminate the proposed contract should the representation of fact be false

Signature	
Printed Name	
Position	
Date	



Exhibit G

LITTLE RIVER PARK DRAINAGE IMPROVEMENTS PAY ITEMS							
ITEM NUMBER	OKC SPEC	ITEM DESCRIPTION	UNIT	Notes	QUANTITY	UNIT PRICE	AMOUNT
1	109	SWPPP DOCUMENTATION AND MANAGEMENT	LS	6,37	1.00		
2	200	EARTHWORK	CY	2,4,25,36	174862.16		
3	213	GRANULAR BACKFILL (#57 CRUSHED STONE CLEAN WASHED)	CY		5204.00		
4	217	PRECAST ARCH CULVERT W/ AESTHETICS	EA		1.00		
5	220	6" #57 CRUSHED STONE LEVELING PAD (WALL)	CY	12	646.11		
6	220	8" COMPACTED SUBGRADE (WALL)	SY	2	4045.00		
7	225	AGGREGATE BASE (TYPE A)	CY		422.00		
8	301	PORTLAND CEMENT CONCRETE PAVEMENT (9" DOWEL JOINTED)	SY	12	1900.64		
9	305	CONC. CURB (6" BARRIER-INTEGRAL)	LF	11	1124.42		
10	314	BRICK PAVERS (SP)	SF		298.00		
11	403	24" CONCRETE END TREATMENT (CLASS A CONC.)	EA		1.00		
12	451	(SP) 8" CORRUGATED POLYPROPYLENE PIPE	LF		25.26		
13	451	(SP) 16" CORRUGATED POLYPROPYLENE PIPE	LF		18.60		
14	451	(SP) 18" CORRUGATED POLYPROPYLENE PIPE	LF		5.40		
15	451	(SP) 21" CORRUGATED POLYPROPYLENE PIPE	LF		8.00		
16	451	(SP) 24" CORRUGATED POLYPROPYLENE PIPE	LF		42.00		
17	451	(SP) 36" CORRUGATED POLYPROPYLENE PIPE	LF		26.80		
18	451	(SP) 48" CORRUGATED POLYPROPYLENE PIPE	LF		15.60		
19		6' X 3' C76 CL III RCB, COMPLETE IN PLACE	LF		80.80		
20	451	36" C76 CL III RCP, COMPLETE IN PLACE	LF		57.20		
21	454	STORM SEWER MANHOLE (5' DIA.)	EA	14,33	11.00		
22	454	STORM SEWER MANHOLE (6' DIA.)	EA	14,33	3.00		
23	454	STORM SEWER MANHOLE ADDED DEPTH (5' DIA.)	VF	26	21.34		
24		STORM SEWER MANHOLE ADDED DEPTH (6' DIA.)		26	3.63		
25	454	INLET SMD (TYPE 2B)	EA	16	2.00		
26	459	ADJUST MANHOLE TO GRADE	EA	10	7.00		
27	505	4" PERFORATED SUBDRAIN PIPE	LF		6723.00		
28	611(G)	INLET CI DES. 2 (D)	EA	16	5.00		
29		ST-95 STORM OUTLET STRUCTURE (COMPLETE)	EA	47	1.00		
30	735	TRAFFIC STRIPE (PLASTIC) (WHITE) (4" WIDE)	LF	45	356.22		
31	735	TRAFFIC STRIPE (PLASTIC) (WHITE) (24" WIDE)	LF	45	80.00		
32	735	TRAFFIC STRIPE (PLASTIC) (WHITE) (SYMBOLS)	EA	45	2.00		
33	735	PAVEMENT MARKING REMOVAL (TRAFFIC STRIPE)	LF		223.00		
34	735	PAVEMENT MARKING REMOVAL (SYMBOLS)	EA		1.00		
35	801	CONSTRUCTION STAKING, LEVEL II	LSUM	3,28	1.00		
36	809	FIELD OFFICE	EA	34	1.00		
37	809	MOBILIZATION	EA		1.00		
38	810	CLEARING AND RESTORING	LSUM	1,4,5,8,29,30	1.00		
39	811	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	LSUM	4,10,30	1.00		
40	811	REMOVE EXIST. HEADWALL & WINGWALL	EA	4,10	4.00		
41	812	REMOVAL OF 17TH STREET BRIDGE	LS	4,10,30	1.00		
42	812	REMOVE SIDEWALK	SY	4,10	3167.00		
43	812	REMOVE CURB & GUTTER	LF	4,10	1124.00		
44	812	CONCRETE PAVEMENT REMOVAL	SY	4,10	1900.64		
45	812	REMOVE DRIVEWAY	SY	4,10	48.20		
46	823	SIDEWALK	SY	12	314.00		
47	823	6" P.C. CONC. DRIVEWAY (HES)	SY	12	48.20		
48	828	4' BLACK VINYL COATED CHAIN LINK FENCE	LF		6067.48		
49	830	WHEELCHAIR RAMP (TYPE B)	SY		47.14		
50	830	WHEELCHAIR RAMP (TYPE D)	SY		136.29		
51	830	TACTILE MARKERS/TRUNCATED DOMES	SF		120.00		
52	840	SOLID SLAB SODDING (U-3 BERMUDA)	SY	7,9,49	120286.96		
53	900	TEMPORARY SILT FENCE	LF	6	15100.41		
54	900	FILTER FABRIC	SY	6	1935.00		
55	932	10' WIDE CONCRETE TRAIL (4" THICK)	SY	12	14044.00		
56	988	TURF REINFORCEMENT MATS (TRMS)	SY	31	11832.69		
57	988	TURF REINFORCEMENT MATS (ARMS)	SY	31	333.33		
58	SPECIAL	BOLLARD POST (REMOVABLE RECEIVER W/ LID)	EA	48	4.00		
59	SPECIAL	36" FLAP GATE	EA		2.00		
60	SPECIAL	RECON BLOCK CHANNEL WALL (NO AESTHETICS)	SFF		54237.00		

**SANITARY SEWER**

1	OKC-212	TRENCH EXCAVATION AND BACKFILL (0' TO 10')	CY	2	82.00		
2	OKC-616A	12" C-900 AWWA 151, CL 51 POLY WRAPPED	LF	1,3	93.00		
3	OKC-528	24" STEEL CASING	LF	1	80.00		

**WATER LINE**

1	OKC-212	TRENCH EXCAVATION AND BACKFILL (0' TO 10')	CY		677.00		
---	---------	--	----	--	--------	--	--

2	OKC-215	ROCK BACKFILL	CY		622.00		
5	OKC-505	8" PVC PIPE C-900	LF	1,2,7,8,9,10,11	708.00		
6	OKC-505	8" DUCTILE IRON PIPE AWWA 151, CL 51 (RJ)	LF	1,2,7,8,9,10,11	210.00		
8	OKC-505	8" SOLID SLEEVE (RJ)	EA	1,7,8,9,10,11	3.00		
12	OKC-505	8" x 8" x 6" TEE	EA	1,7,8,9,10,11	1.00		
13	OKC-505	8" x 8" x 8" TEE	EA	1,7,8,9,10,11	4.00		
14	OKC-505	8" 11.25° BEND (RJ)	EA	1,7,8,9,10,11	9.00		
15	OKC-505	8" 22.5° BEND (RJ)	EA	1,7,8,9,10,11	5.00		
16	OKC-505	8" 45° BEND (RJ)	EA	1,7,8,9,10,11	10.00		
18	OKC-520	8" GATE VALVE (RJ) AND VALVE BOX	EA	1,7,13	5.00		
19	OKC-516	FIRE HYDRANT	EA		2.00		
21	OKC-810	CLEARING AND RESTORING	LSUM	3,4,5,6,12,14,15,16	1.00		

**STRUCTURAL ITEMS**

<b>BRIDGE "A"</b>							
	402	DRILLED SHAFTS (18" DIAMETER)	LF		196.00		
	404	STRUCTURAL CONCRETE	CY		11.10		
	411	REINFORCING STEEL	LB		850.00		
	SPECIAL	INSTALLATION OF BRIDGE ITEMS	EA		1.00		
<b>BRIDGE "B"</b>							
	402	DRILLED SHAFTS (18") DIAMETER	LF		156.00		
	404	STRUCTURAL CONCRETE	CY		6.90		
	411	REINFORCING STEEL	LB		740.00		
	SPECIAL	INSTALLATION OF BRIDGE ITEMS	EA		1.00		
<b>OUTLET STRUCTURE</b>							
	401	STRUCTURAL EXCAVATION	CY		5260.00		
	404	STRUCTURAL CONCRETE	CY		1041.30		
	411	REINFORCING STEEL	LB		83270.00		
	826	PERFORATED UNDERDRAIN PIPE CONDUIT (6")	LF		262.00		
	828	4 FT PEDESTRIAN RAILING	LF		310.00		

**TOTAL BASE BID**

\$ -

ADD ALTERNATE 1 - TRAIL EAST OF CHANNEL (CRL_STA: 24+33 - 44+32)			UNIT	Notes	QUANTITY	UNIT PRICE	AMOUNT
1	932	10' WIDE CONCRETE TRAIL (4" THICK)	SY	12	2243.00		

ADD ALTERNATE 2 - TRAIL INSIDE POND AREA			UNIT	Notes	QUANTITY	UNIT PRICE	AMOUNT
1	932	10' WIDE CONCRETE TRAIL (4" THICK)	SY	12	2618.00		
2	403	42" CONCRETE END TREATMENT (CLASS A CONC.)	EA	47	1.00		
3	451	36" C76 CL III RCP, COMPLETE IN PLACE	LF	37	40.00		

**ADD ALTERNATE 2 TOTAL**

\$ -

ADD ALTERNATE 3 - RECON BLOCK CHANNEL WALL W/ AESTHETICS			UNIT	Notes	QUANTITY	UNIT PRICE	AMOUNT
1	SPECIAL	RECON BLOCK W/ WEATHERED EDGE & STAINING	SFF		54237.00		

**TOTAL BASE BID WITH ADD ALTERNATES**

\$ -

## Exhibit H: Conflict of Interest Certification

In accordance with 24 CFR 85.36(b)(3) the Bidder certifies that no member, officer, or employee of the City or its designees or agents, no member of the governing body of the City of Moore in which the program is situated, and no other public official of the City who exercises any functions or responsibilities with respect to the program during his tenure or for one year thereafter, has any interest, direct or indirect, in any contract or subcontract, or the proceeds thereof for work to be performed in connection with the program assisted under the Agreement. The Bidder shall incorporate, or cause to be incorporated, in all subcontracts, a provision prohibiting such interest pursuant to the purposes of Section 24 CFR part 85.36 (3).

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

Bidder Name	
Signature	
Printed Name	
Position	
Date	



# CONTRACT

## BETWEEN THE CITY OF MOORE, OKLAHOMA AND

-----

## FOR ON-DEMAND CONSTRUCTION SERVICES

### Preamble

This Contract is entered into between the City of Moore, Oklahoma (“the City”), a municipality, with principal offices at 301 N. Broadway, Moore, Oklahoma 73160 and

-(Company Name)------(Company Type)------(Address of Principal Offices)-----

WHEREAS, the City requires the services of (INSERT COMPANY NAME) (“the Contractor”) as an on-demand public works construction contractor to perform construction services as described herein;

WHEREAS, the Contractor has agreed to provide said services, to the extent outlined herein;

NOW THEREFORE, in consideration of the premises and conditions set forth below the party’s contract;

## Section 1: Term and Termination

- 1) The term of the contract shall be from (---(Month)----(Day)---(Year)---) through (---(Month)----(Day)---(Year)---);
  - 2) The term may be extended in increments of one year for up to five years from the initial Contract date upon the written agreement of the City and the Contractor;
  - 3) The Contract may be terminated in whole or in part as follows:
    - (1) By the City of Moore, if a Contractor fails to comply with the terms and conditions of a Federal award;
    - (2) By the City of Moore for cause;
    - (3) By the City of Moore with the consent of the Contractor, in which case the two parties must agree upon the termination conditions, including the effective date and, in the case of partial termination, the portion to be terminated; or
    - (4) By the Contractor upon sending to the City of Moore written notification setting forth the reasons for such termination, the effective date, and, in the case of partial termination, the portion to be terminated. However, if the City of Moore or HUD determines in the case of partial termination that the reduced or modified portion of the Federal award or sub-award will not accomplish the purposes for which the Federal award was made, the City of Moore may terminate the Federal award in its entirety.
- (c) When a Federal award is terminated or partially terminated, the City of Moore and the Contractor remain responsible for compliance with the requirements in 2 CFR 200.343 Closeout and 2 CFR 200.344 Post-closeout adjustments and continuing responsibilities. References: (2 CFR 200.339; 78 FR 78608, Dec. 26, 2013, as amended at 80 FR 43309, July 22, 2015)

4) The Contract may be amended as provided for in Section 8: Modification or Amendment

## **Section 2: Scope of Services**

### **GENERAL**

1) The work will consist of a selected on-demand construction services contractor building various projects or construction tasks though out the City of Moore as task orders are issued by the Assistant City Manager or his designee. These municipal projects including but not limited to: various on-demand construction services such as roadway repairs, rehabilitation, reconstruction or new construction; sidewalk repair, reconstruction or new construction; multi-modal trail repair, reconstruction or new construction; storm water drainage repairs, reconstruction or new construction; traffic signal repair, rehabilitation and reconstruction; emergency construction services that would include snow/ice removal, storm damage debris collection and removal and emergency traffic control; and any other special projects as deemed necessary by the City of Moore or The Moore Public Works Authority (hereinafter referred to as the City of Moore). Some projects will be federally funded by the Department of Housing and Urban Development (HUD) and will adhere to federal regulations. When assigned a construction project or construction task, the contractor or contractors will be required to provide cost estimates on these specific projects and cooperate with the city in meeting these estimates. The Contractor will provide all necessary construction crews with adequate staffing to complete assigned projects.

2) The Contractor shall provide all equipment to complete the assigned construction projects or construction tasks. This equipment shall all be in good operating condition. The contractor shall also provide its own tools, fuel, safety equipment, communications equipment, and manually operated tools, local or mobile field office, and office equipment.

3) All work and materials will comply with the current version of the City of Moore Standard Specification for the Construction of Public Improvements with all amendments and revisions included (hereafter referred to as “standard specifications”) and the City of Moore Construction

Standard Details (hereafter referred to as “standard details”). When these standard specifications and standard details do not address certain construction tasks or certain required construction materials, then the Oklahoma Department of Transportation Standard Specifications for Highway Construction will govern

**(INSERT SPECIFIC SCOPE OF SERVICES)**

## Section 3: General Terms and Conditions

### Laws and Regulations

The Community Development Block Grant – Disaster Recovery (CDBG-DR) allocation to the City of Moore is governed by the following laws and regulations:

- (a) The Housing and Community Development Act of 1974;
- (b) Section 312 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C.5155), as amended;
- (c) Section 18 of the Small Business Act, as amended (14A U.S.C. 647) 44 CFR 206.191 Duplication of Benefit
- (d) Duplication of Benefits Federal Register, Vol. 76, No.221, November 16, 2011 (76 FR 71060) Public Law 113-2:
- (e) Disaster Relief Appropriations Act, 2013 (at HR 152-34)
- (f) The HUD Federal Register Notice at 78 FR 14329 published March 5, 2013
- (g) HUD Federal Register Notice at 78 FR 23578 published April 19, 2013
- (h) HUD Federal Register Notice at 78 FR 76154 published December 16, 2013
- (i) The applicable laws of the State of Oklahoma; and
- (j) By the laws and regulations promulgated by the City for the CDBG-DR program.
- (k) In addition to the citations noted, the CDBG-DR allocation is also subject to “cross-cutting” Federal requirements referenced herein and contained in 2 CFR 200 Sub-part F – Appendix

### Federal Changes

Contractor shall at all times comply with all applicable Federal regulations, policies, procedures and directives, including without limitation those listed directly or by reference in this Contract between the City of Moore Department of Capital Planning and Resiliency and the Contractor, as



such Federal regulations, policies, procedures and directives may be amended or promulgated from time to time during the term of this contract. Contractor's failure to so comply shall constitute a material breach of this contract. Reference: (49 CFR Part 18)

### **Compliance with the Copeland "Anti-Kickback" Act**

1.) Whoever, by force, intimidation, or threat of procuring dismissal from employment, or by any other manner whatsoever induces any person employed in the construction, prosecution, completion or repair of any public building, public work, or building or work financed in whole or in part by loans or grants from the United States, to give up any part of the compensation to which he is entitled under his contract of employment, shall be fined under this title or imprisoned not more than five years, or both.

1.) In General.—The Secretary of Labor shall prescribe reasonable regulations for contractors and subcontractors engaged in constructing, carrying out, completing, or repairing public buildings, public works, or buildings or works that at least partly are financed by a loan or grant from the Federal Government. The regulations shall include a provision that each contractor and subcontractor each week must furnish a statement on the wages paid each employee during the prior week. References: (18 U.S.C. 874) as supplemented in Department of Labor regulations (29 CFR part 3).

### **Compliance with the Davis-Bacon Act**

1.) The contractor or subcontractor shall pay all mechanics and laborers employed directly on the site of the work, unconditionally and at least once a week, and without subsequent deduction or rebate on any account, the full amounts accrued at time of payment, computed at wage rates not less than those stated in the advertised specifications, regardless of any contractual relationship which may be alleged to exist between the contractor or subcontractor and the laborers and mechanics;

2.) The contractor will post the scale of wages to be paid in a prominent and easily accessible place at the site of the work; and

3.) There may be withheld from the contractor so much of accrued payments as the contracting officer considers necessary to pay to laborers and mechanics employed by the contractor or any subcontractor on the work the difference between the rates of wages required by the contract to be paid laborers and mechanics on the work and the rates of wages received by the laborers and mechanics and not refunded to the contractor or subcontractors or their agents. References: (40 U.S.C. 276a to 276a-7) as supplemented by Department of Labor regulations (29 CFR part 5).

**Compliance with Sections 103 and 107 of the Contract Work Hours and Safety Standards Act.**

1.) The Contract Work Hours and Safety Standards Act requires that laborers or mechanics shall be paid wages at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in any workweek. In the event of violation of this provision, the contractor and any subcontractor shall be liable for the unpaid wages and in addition for liquidated damages, computed with respect to each laborer or mechanic employed in violation of the Act in the amount of \$25 for each calendar day in the workweek on which such individual was required or permitted to work in excess of forty hours without payment of required overtime wages. Any contractor or subcontractor aggrieved by the withholding of liquidated damages shall have the right to appeal to the head of the agency of the United States (or the territory of District of Columbia, as appropriate) for which the contract work was performed or for which financial assistance was provided.

2.) *Findings and recommendations of the Agency Head.* The Agency Head has the authority to review the administrative determination of liquidated damages and to issue a final order affirming the determination. It is not necessary to seek the concurrence of the Administrator but the Administrator shall be advised of the action taken. Whenever the Agency Head finds that a sum of liquidated damages administratively determined to be due is incorrect or that the contractor or subcontractor violated inadvertently the provisions of the Act notwithstanding the exercise of due care upon the part of the contractor or subcontractor involved, and the amount of the liquidated damages computed for the contract is in excess of \$500, the Agency Head may make recommendations to the Secretary that an appropriate adjustment in liquidated damages

be made or that the contractor or subcontractor be relieved of liability for such liquidated damages. Such findings with respect to liquidated damages shall include findings with respect to any wage underpayments for which the liquidated damages are determined.

3.) The recommendations of the Agency Head for adjustment or relief from liquidated damages under paragraph (a) of this section shall be reviewed by the Administrator or an authorized representative who shall issue an order concurring in the recommendations, partially concurring in the recommendations, or rejecting the recommendations, and the reasons therefor. The order shall be the final decision of the Department of Labor, unless a petition for review is filed pursuant to part 7 of this title, and the Administrative Review Board in its discretion reviews such decision and order; or, with respect to contracts subject to the Service Contract Act, unless petition for review is filed pursuant to part 8 of this title, and the Administrative Review Board in its discretion reviews such decision and order.

4.) Whenever the Agency Head finds that a sum of liquidated damages administratively determined to be due under section 104(a) of the Contract Work Hours and Safety Standards Act for a contract is \$500 or less and the Agency Head finds that the sum of liquidated damages is incorrect or that the contractor or subcontractor violated inadvertently the provisions of the Contract Work Hours and Safety Standards Act notwithstanding the exercise of due care upon the part of the contractor or subcontractor involved, an appropriate adjustment may be made in such liquidated damages or the contractor or subcontractor may be relieved of liability for such liquidated damages without submitting recommendations to this effect or a report to the Department of Labor. This delegation of authority is made under section 105 of the Contract Work Hours and Safety Standards Act and has been found to be necessary and proper in the public interest to prevent undue hardship and to avoid serious impairment of the conduct of Government business. References: (40 U.S.C. 327–330) as supplemented by Department of Labor regulations (29 CFR part 5)

## **Assignability**

The Contractor shall not assign or transfer any interest in this Contract without the prior written consent of the City thereto; provided, however, that claims for money due or to become due to the contractors from the City under this contract may be assigned to a bank, trust company, or other financial institution without such approval. Notice of any such assignment or transfer shall be furnished promptly to the City.

## **Access to Records**

The Contractor agrees that the U.S. Department of Housing and Urban Development (“HUD”), the Inspectors General, the Comptroller General of the United States, and the City Moore, or any of their authorized representatives, have the right of access to any documents, papers, or other records of the Contractor which are pertinent to the Federal award, in order to make audits, examinations, excerpts, and transcripts. The right also includes timely and reasonable access to the Contractor’s personnel for the purpose of interview and discussion related to such documents. Reference: (2 CFR 200.336)

## **Record Retention Requirements**

The Contractor agrees financial records, supporting documents, statistical records, and all other Contractor records pertinent to the HUD CDBG-DR award shall be retained for a period of three years from the date of submission of the final expenditure report. HUD and the City may not impose any other record retention requirements upon the Contractor. The only exceptions are the following:

(a) If any litigation, claim, or audit is started before the expiration of the 3-year period, the records must be retained until all litigation, claims, or audit findings involving the records have been resolved and final action taken.

(b) When the Contractor is notified in writing by HUD, the cognizant agency for audit, oversight agency for audit, cognizant agency for indirect costs, or City of Moore to extend the retention period.

(c) Records for real property and equipment acquired with Federal funds must be retained for three years after final disposition.

(d) When records are transferred to or maintained by the HUD or the City of Moore, the 3-year retention requirement is not applicable to the Contractor. Reference: (2 CFR 200.333)

### **Remedies for Noncompliance**

If a Contractor fails to comply with Federal statutes, regulations or the terms and conditions of a Federal award, HUD or the City of Moore may impose additional conditions, as described in 2 CFR 200.207 Specific Conditions. If HUD or the City of Moore determines that noncompliance cannot be remedied by imposing additional conditions, HUD or the City of Moore may take one or more of the following actions, as appropriate in the circumstances:

(a) Temporarily withhold cash payments pending correction of the deficiency by the Contractor or more severe enforcement action by HUD or City of Moore.

(b) Disallow (that is, deny both use of funds and any applicable matching credit for) all or part of the cost of the activity or action not in compliance.

(c) Wholly or partly suspend or terminate the Federal award.

(d) Initiate suspension or debarment proceedings as authorized under 2 CFR part 180 and HUD regulations, or in the case of a City of Moore, recommend such a proceeding be initiated by HUD.

(e) Withhold further Federal awards for the project or program.

(f) Take other remedies that may be legally available.

Reference: (2 CFR 200.338)

## Breaches and Dispute Resolution

- (a) Disputes - Disputes arising in the performance of this Contract which are not resolved by agreement of the parties shall be decided in writing by the authorized representative of the City's Department of Capital Planning and Resiliency. This decision shall be final and conclusive unless within [ten (10)] calendar days from the date of receipt of its copy, the Contractor mails or otherwise furnishes a written appeal to authorized representative. In connection with any such appeal, the Contractor shall be afforded an opportunity to be heard and to offer evidence in support of its position. The decision of the authorized representative shall be binding upon the Contractor and the Contractor shall abide by the decision.
- (b) Performance During Dispute - Unless otherwise directed by to the City of Moore Department of Capital Planning and Resiliency, the Contractor shall continue performance under this Contract while matters in dispute are being resolved.
- (c) Claims for Damages - Should either party to the Contract suffer injury or damage to person or property because of any act or omission of the party or of any of his employees, agents or others for whose acts he is legally liable, a claim for damages therefor shall be made in writing to such other party within a reasonable time after the first observance of such injury of damage.
- (d) Remedies - Unless this contract provides otherwise, all claims, counterclaims, disputes and other matters in question between the City and the Contractor arising out of or relating to this Contract or its breach will be decided by arbitration in the City of Moore Department of Capital Planning and Resiliency if the parties mutually agree, or in a court of competent jurisdiction within the State of Oklahoma.
- (e) Rights and Remedies - The duties and obligations imposed by the Contract Documents and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law. No action or failure to act by the City of Moore or the Contractor shall constitute

a waiver of any right or duty afforded any of them under the Contract, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach thereunder, except as may be specifically agreed in writing. Reference: 49 CFR Part 18

## **Termination**

(a) The Contract may be terminated in whole or in part as follows:

(1) By the City of Moore, if a Contractor fails to comply with the terms and conditions of a Federal award;

(2) By the City of Moore for cause;

(3) By the City of Moore with the consent of the Contractor, in which case the two parties must agree upon the termination conditions, including the effective date and, in the case of partial termination, the portion to be terminated; or

(4) By the Contractor upon sending the City of Moore or HUD written notification setting forth the reasons for such termination, the effective date, and, in the case of partial termination, the portion to be terminated. However, if HUD or City of Moore determines in the case of partial termination that the reduced or modified portion of the Contract will not accomplish the purposes for which the Federal award was made, HUD or City of Moore may terminate the Contract in its entirety.

(b) When a Federal award is terminated or partially terminated, the City of Moore and the Contractor remain responsible for compliance with the requirements in 2 CFR 200.343 Closeout and 2 CFR 200.344 Post-closeout adjustments and continuing responsibilities. References: (2 CFR 200.339; 78 FR 78608, Dec. 26, 2013, as amended at 80 FR 43309, July 22, 2015)

## **Equal Opportunity**

The following equal employment opportunity requirements apply to the Contract:

- a) Race, Color, Creed, National Origin, Sex - In accordance with Title VII of the Civil Rights Act, as amended, 42 U.S.C. § 2000e, and Federal transit laws at 49 U.S.C. § 5332, the Contractor agrees to comply with all applicable equal employment opportunity requirements of U.S. Department of Labor (U.S. DOL) regulations, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor," 41 C.F.R. Parts 60 et seq ., (which implement Executive Order No. 11246, "Equal Employment Opportunity," as amended by Executive Order No. 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," 42 U.S.C. § 2000e note), and with any applicable Federal statutes, executive orders, regulations, and Federal policies that may in the future affect construction activities undertaken in the course of the Project. The Contractor agrees to take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, creed, national origin, sex, or age. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. In addition, the Contractor agrees to comply with any implementing requirements HUD may issue.
- b) Age - In accordance with section 4 of the Age Discrimination in Employment Act of 1967, as amended, 29 U.S.C. § § 623 and Federal transit law at 49 U.S.C. § 5332, the Contractor agrees to refrain from discrimination against present and prospective employees for reason of age. In addition, the Contractor agrees to comply with any implementing requirements HUD may issue.
- c) Disabilities - In accordance with section 102 of the Americans with Disabilities Act, as amended, 42 U.S.C. § 12112, the Contractor agrees that it will comply with the requirements of U.S. Equal Employment Opportunity Commission, "Regulations to Implement the Equal Employment Provisions of the Americans with Disabilities Act," 29



C.F.R. Part 1630, pertaining to employment of persons with disabilities. In addition, the Contractor agrees to comply with any implementing requirements HUD may issue.

References: Executive Order 11246 September 24, 1965 as amended by Executive Order 11375 of October 13, 1967, and as supplemented in Department of Labor regulations 41 CFR chapter 60

## Civil Rights

- 1) Nondiscrimination - In accordance with Title VI of the Civil Rights Act, as amended, 42 U.S.C. § 2000d, section 303 of the Age Discrimination Act of 1975, as amended, 42 U.S.C. § 6102, section 202 of the Americans with Disabilities Act of 1990, 42 U.S.C. § 12132, and Federal transit law at 49 U.S.C. § 5332, the Contractor agrees that it will not discriminate against any employee or applicant for employment because of race, color, creed, national origin, sex, age, or disability. In addition, the Contractor agrees to comply with applicable Federal implementing regulations and other implementing requirements HUD may issue.
- 2) The Contractor agrees to comply with the non-discrimination in employment and contracting opportunities laws, regulations, and executive orders referenced in 24 CFR 570.607, as revised by Executive Order 13279. The applicable non-discrimination provisions in Section 109 of the HCDA are still applicable.
- 3) The Contractor agrees to comply with Title VI of the Civil Rights Act of 1964 as amended, Title VIII of the Civil Rights Act of 1968 as amended, Section 104(b) and Section 109 of Title I of the Housing and Community Development Act of 1974 as amended, Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act of 1990, the Age Discrimination Act of 1975, Executive Order 11063, and Executive Order 11246 as amended by Executive Orders 11375, 11478, 12107 and 12086.
- 4) The Contractor agrees to meet the Section 3 requirements as provided for in the [City's Section 3 Plan](#)

5) The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, sexual orientation, gender identity, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensuring that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. This obligation extends to all contracts containing the equal opportunity clause regardless of the amount of the contract. The term "facilities," as used in this section, means waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, wash rooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees; Provided, That separate or single-user restrooms and necessary dressing or sleeping areas shall be provided to assure privacy between the sexes.

References: 29 U.S.C. § 623, 42 U.S.C. § 2000, 42 U.S.C. § 6102, 42 U.S.C. § 12112, 42 U.S.C. § 12132, 49 U.S.C. § 5332, 29 CFR Part 1630, 41 CFR Parts 60 et seq.

### **Conflict of Interest**

Any person who is an employee, agent, consultant, officer, or elected official or appointed official of the City of Moore, or of any of the City's subsidiaries, who exercises or have exercised any functions or responsibilities with respect to CDBG activities assisted, or who are in a position to participate in a decision making process or gain inside information with regard to such activities, may obtain a financial interest or benefit from a CDBG-assisted activity, or have a financial interest in any contract, subcontract, or agreement with respect to a CDBG-assisted activity, or with respect to the proceeds of the CDBG-assisted activity, either for themselves or those with whom they have business or immediate family ties, during their tenure or for one year after such decision making responsibilities have ended. Reference: 2 CFR 200.112

## Patent rights

1.) The contractor agrees to execute or to have executed and promptly deliver to the City all instruments necessary to (i) establish or confirm the rights the Government has throughout the world in those subject inventions to which the contractor elects to retain title, and (ii) convey title to the City when requested under paragraph (d) above and to enable the government to obtain patent protection throughout the world in that subject invention.

2.) The contractor agrees to require, by written agreement, its employees, other than clerical and nontechnical employees, to disclose promptly in writing to personnel identified as responsible for the administration of patent matters and in a format suggested by the contractor each subject invention made under contract in order that the contractor can comply with the disclosure provisions of paragraph (c), above, and to execute all papers necessary to file patent applications on subject inventions and to establish the government's rights in the subject inventions. This disclosure format should require, as a minimum, the information required by (c)(1), above. The contractor shall instruct such employees through employee agreements or other suitable educational programs on the importance of reporting inventions in sufficient time to permit the filing of patent applications prior to U.S. or foreign statutory bars.

3.) The contractor will notify the City of any decisions not to continue the prosecution of a patent application, pay maintenance fees, or defend in a reexamination or opposition proceeding on a patent, in any country, not less than thirty days before the expiration of the response period required by the relevant patent office.

4.) The contractor agrees to include, within the specification of any United States patent applications and any patent issuing thereon covering a subject invention, the following statement, "This invention was made with government support under (identify the contract) awarded by (identify the agency). The government has certain rights in the invention."

### **Subcontracts:**

5.) The contractor will include this clause, suitably modified to identify the parties, in all subcontracts, regardless of tier, for experimental, developmental or research work to be performed by a small business firm or domestic nonprofit organization. The subcontractor will retain all rights provided for the contractor in this clause, and the contractor will not, as part of the consideration for awarding the subcontract, obtain rights in the subcontractor's subject inventions.

6.) The contractor will include in all other subcontracts, regardless of tier, for experimental developmental or research work the patent rights clause required by (cite section of agency implementing regulations or FAR).

7.) In the case of subcontracts, at any tier, when the prime award with the City was a contract (but not a grant or cooperative agreement), the City, subcontractor, and the contractor agree that the mutual obligations of the parties created by this clause constitute a contract between the subcontractor and the City with respect to the matters covered by the clause; provided, however, that nothing in this paragraph is intended to confer any jurisdiction under the Contract Disputes Act in connection with proceedings under paragraph (j) of this clause.

## Copyrights

HUD and the City of Moore reserve a royalty-free, nonexclusive, and irrevocable license to reproduce, publish or otherwise use, and to authorize others to use, for Federal Government purposes: The copyright in any work developed under the Contract, and to any rights of copyright to which a Contractor or Sub-contractor purchases ownership with grant support. Reference: 24 CFR Subtitle A. 85.34 Copyrights

## Lobbying

Contractors who apply or bid for an award of \$100,000 or more shall file the certification required by 49 CFR Part 20, "New Restrictions on Lobbying." Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of

Congress, officer or employee of Congress, or an employee of member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier shall also disclose the name of any registrant under the Lobbying Disclosure Act of 1995 who has made lobbying contacts on its behalf with non-Federal funds with respect to that Federal contract, grant or award covered by 31 U.S.C. 1352. Such disclosures are forwarded from tier to tier up to the City of Moore.

References: (31 U.S.C. 1352 as amended by the Lobbying Disclosure Act of 1995, P.L. 104-65; 49 CFR Part 19, 49 CFR Part 20)

## **Environmental Requirements**

### **Clean Air**

1) The Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. §§ 7401 et seq. The Contractor agrees to report each violation to the Purchaser and understands and agrees that the Purchaser will, in turn, report each violation as required to assure notification and the appropriate EPA Regional Office.

2) The Contractor also agrees to include these requirements in each subcontract exceeding \$100,000 financed in whole or in part with Federal Assurances provided by HUD.

References: 42 U.S.C. 7401 et seq., 40 CFR 15.61, 49 CFR Part 18 (over \$100,000)

### **Clean Water**

1) The Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq. The Contractor agrees to report each violation to the City of Moore Department of Capital Planning and Resiliency and understands and agrees that the Purchaser will, in turn, report each violation as required to assure notifications the appropriate EPA Regional Office.

2) The Contractor also agrees to include these requirements in each subcontract exceeding \$100,000 financed in whole or in part with HUD.

References: 33 U.S.C. 1251 (over \$100,000)

### **Energy Conservation**

The Contractor agrees to comply with mandatory standards and policies relating to energy efficiency, which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act.

References: 42 U.S.C. 6321 et. Seq., 49 CFR Part 18

### **Recycled Products**

The Contractor agrees to comply with all the requirements of Section 6002 of the Resource Conservation and Recovery Act (RCRA), as amended (42 U.S.C. 6962), including but not limited to the regulatory provisions of 40 CFR Part 247, and Executive Order 12873, as they apply to the procurement of the items designated in Subpart B of 40 CFR Part 247.

References: 42 U.S.C. 6962, 40 CFR Part 247, Executive Order 12873 (More than \$10,000)

### **Environmental Conditions Discovered During Construction**

1) The Contractor agrees to cease work and immediately notify the Assistant City Manager and Compliance Specialist should a previously unknown environmental condition be discovered in the course of construction;

2) The Contractor understands that the discovery of an environmental condition requires the City to revise the Environmental Review Record (ERR) and that work on the portion of the project designated by the City must cease until the ERR is revised.

3) The Assistant City Manager will issue a new Notice to Proceed once the Environmental Review has been updated or the environmental condition has been cleared. References: 24 CFR Part 58.47

### **Section 504 and Americans with Disabilities Act**

The Contractor agrees and understands the requirements of the Americans with Disabilities Act (ADA) and Section 504 of the Rehabilitation Act of 1973 and requirement that: sidewalks, pedestrian overpasses, underpasses, and ramps constructed with Federal financial assistance must be accessible.

References: 36 CFR Part 1190 Minimum Guidelines and Requirements for Accessible Design

## **Section 4: Bonds, Insurance & Licenses**

### **Bond Requirements**

No surety will be accepted by the City from a Contractor that is now in default or delinquent on any bond or has an interest in any litigation against the City. All bonds shall be executed by surety companies licensed to do business in the State of Oklahoma and acceptable to the Council. Each bond shall be executed by the Contractor and the Surety.

The City requires the following bonds:

#### **Maintenance Bond:**

A good and sufficient Maintenance Bond shall be required in an amount equal to one hundred (100) percent of the total amount of the contract Work Order, guaranteeing such improvements against defective workmanship and/or materials for a period of one (1) year from and after the time of completion and acceptance by the City of said improvements.

#### **Performance Bond:**

A good and sufficient Performance Bond shall be required in an amount equal to one hundred (100) percent of the total contract Work Order amount guaranteeing execution and completion of the work in accordance with the specifications

**Statutory Bond:**

A good and sufficient Statutory Bond shall be required in an amount equal to one hundred (100) percent of the total contact Work Order amount guaranteeing payment in full for all materials and labor used in the construction of the work.

**Insurance Requirements**

The Contractor assumes all risks incident to or in connection with its purpose to be conducted herein under and shall indemnify, defend and save the City of Moore harmless from damage or injuries of whatever nature or kind to persons or property arising directly or indirectly out of the Contractor’s operations and arising from acts or omissions of its employees and shall indemnify, defend, save harmless the City of Moore from any penalties for violation of any law, ordinance or regulation affecting or having application to said operation or resulting from the carelessness, negligence or improper conduct of Contractor or any of its agents or employees. In this connection, the Contractor shall carry Insurances in the following amounts:

<b>Commercial Liability</b>	\$1,000,000 Each Occurrence
	\$1,000,000 General Aggregate
Must include coverage for blanket contractual liability for the obligations assumed under contract	
<b>Comprehensive Automobile Liability</b>	\$1,000,000 Combined Single Limit Each Occurrence
Coverage must extend to all owned, non-owned, leased, hired or borrowed vehicles and must include coverage for blanket contractual liability for the obligations assumed under contract	
<b>Workers’ Compensation</b>	Statutory Limits where Services are to be performed
Must include coverage for Longshoremen’s and Harbor Workers’ Compensation, if applicable, and coverage for Federal Employers’ Liability Act, if applicable	
<b>Employer’s Liability</b>	\$1,000,000 Each Occurrence



	\$1,000,000 Disease per Employee
An Umbrella liability policy, which follows form, may be used to obtain the aforementioned limits	
<b>Professional Liability (if applicable)</b>	\$1,000,000 Each Claim
	\$2,000,000 General Aggregate

The City of Moore shall be furnished with a certificate of insurance, which shall provide that such insurance shall not be changed or canceled, without ten days prior written notice to the City of Moore.. THE POLICY SHALL LIST THE CITY OF MOORE AS CO-INSURED OR ADDITIONAL INSURED.

Certificates of Insurance shall be delivered to the City of Moore prior to the issuance of any Work Order

**License Requirements**

The Contractor assumes all responsibility for insuring the Contractor and all sub-contractors maintain all applicable federal, state or local Licenses necessary to perform the work required.

**Section 5: Work Orders, Invoices, and Payment**

**Work Orders**

- 1) The Contractor will receive a Work Order from the City which will describe the scope of services specific to the construction project or task;
  - a. The Contractor will submit to the City a complete line item budget based on the Unit Prices in Appendix A;
  - b. The Contractor will submit to the City a schedule for completion;
- 2) The City will determine if the costs and schedule are reasonable and prudent;
- 3) The City will establish the start date for the project and provide the Contractor with a signed and dated Notice to Proceed;
  - a. Any work undertaken prior to receiving a signed and dated Notice to Proceed from the City shall be at the Contractor’s complete expense and risk.
- 4) The Work Order number shall be identified and included in all Invoices.

## Invoices

The City agrees to pay the Contractor for services rendered on the following schedule, terms and conditions:

- 1) The Contractor agrees that the labor and materials costs for on-demand construction services shall be defined as the Unit Prices contained in [Appendix A](#);
- 2) The Contractor's sub-contractors are contained in [Appendix B](#)
  - a) The Contractor may amend the sub-contractor list in accordance with [Section 8: Modification or Amendment](#)
- 3) The Contractor agrees to meet all of the Federal Labor Standard Provisions contained in [Appendix C](#); and
  - a) To submit Davis Bacon Payrolls weekly to the Compliance Specialist
- 4) The Contractor agrees to meet the Section 3 requirements as provided for in the [City's Section 3 Plan](#); and
  - a) To submit Section 3 reports weekly to the Compliance Specialist
- 5) The Contractor agrees to meet the Minority Owned, Women Owned or Section 3 business reporting requirements contained in [Appendix D](#) at the time of the Invoice;
- 6) The Contractor shall be permitted to invoice the City once each month during the contract period for reimbursement of Unit Costs.
- 7) For an Invoice to be considered "properly submitted":
  - a) The Invoice must be identified by Work Order Number, be complete, accurate, have all required documentation; be signed and dated; and

- b) All Davis-Bacon; Section 3 and Minority Owned, Women Owned or Section 3 business reporting requirements must be current, complete, compliant and signed and dated.

## Payments

- 1) The City agrees to make full payment of any “properly submitted” invoice within thirty days of the invoice date.
- 2) Unless otherwise stipulated all payments will be made by electronic funds transfer from the City to the Contractor

## Adjustments to Rate Schedule

- 1) The Unit Prices defined in Appendix A may be adjusted once per year on the contract anniversary date.
- 2) The Contractor will propose rate adjustments to compensate for cost increases in materials, fuel, insurance etc.
  - a. These material adjustments must be documented to the full satisfaction of the City of Moore.
- 3) Labor rate adjustments or cost of living increases for labor may not exceed the U.S. Labor Department's U.S. City Average South West Region C.P.I. for the immediately preceding calendar year;
- 4) If the Contractor and the City of Moore cannot agree on the amount of rate adjustments, the Contractor or the City of Moore may elect to terminate the contract as provided for in [Section 3: Termination](#)
- 5) If the parties elect to terminate the Contract, the Contractor shall be bound to complete any projects currently under construction at the current contract rates or for a term of no longer than 90 days at the discretion of the City of Moore

## **Section 6: Proprietary Information**

The parties agree that each will hold any proprietary information learned as a result of this Contract in confidence. The parties will not, during or after the term of this Contract, disclose such proprietary information to any other person or entity for any reason whatsoever, unless required by Title 51 O.S. Section 24A.1 et. seq.; also known as the State of Oklahoma Open Records Act.

## **Section 7: Understanding and Authorization**

This Contract shall constitute the entire understanding of the parties and any other understanding or representation of any kind shall not be binding upon either party. Each party represents that they are authorized by their organization to enter into this Contract and to bind their organization to its terms.

## **Section 8: Modification or Amendment**

Any modification of this Contract or additional obligations assumed by either party in connection with this Contract shall be binding only if placed in writing and signed by each party or an authorized representative thereof. Should any portion of this Contract be found to be invalid it shall not be deemed to invalidate the entire Contract.

## **Section 9: Execution**

This Contract may be executed in any number of counterparts, each of which shall be deemed an original, however all of which together shall constitute one and the same instrument.

## Section 10: Notifications

All notifications concerning this Contract shall be sent to the following addresses:

To: The City of Moore at:  
Jared Jakubowski  
Capital Planning and Resiliency  
City of Moore  
301 N. Broadway  
Moore, Oklahoma 73160

To: (Name of Contractor) at:  
(Name of Contractor)  
(Address)  
(City, State, Zip)

IN WITNESS WHEREOF, each party has caused this Contract to be executed on the date indicated below, on this, page 26 of 16 pages.

The City of Moore

BY: \_\_\_\_\_

Steve O Eddy, City Manager

DATE: \_\_\_\_\_

(Name of Contractor)

BY: \_\_\_\_\_

(Printed Name and Position)

DATE \_\_\_\_\_

## APPENDIX B: SUB-CONTRACTORS

Ex	Concrete Curb and Gutter - Joe's Construction Company, 301 North Broadway, Moore, Oklahoma 73160 Joe Jones, President (405) 555-1212 office (405) 555-2121 cell <a href="mailto:joe.jones@JCC.com">joe.jones@JCC.com</a>
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	