



ADDENDUM No. 2

Project: 2018 Community Conservation Park

Chapel Lake Park

Jeffersonville, Indiana

Proj. No: 1834.01

Date: November 12, 2018

This addendum is a part of the bid documents. Acknowledge receipt on the Proposal Form.

General

1. Notify Matt Gullo of any questions regarding bidding at phone (812-913-4616) or email (matt.gullo@koverthawkins.com).
2. Bids are due **November 28 @ 9:30am**. Bids should be delivered sealed to the City of Jeffersonville Clerk's Office, located in City Hall Suite 156.
3. All of the plan drawings show final design as if all the alternates have been implemented. Refer to 01 23 00 for depiction between alternate and basebid items.

Specifications

Section 00 42 01 (Proposal Form)

- Replace the proposal form in full to include the following changes
 - Alternate 15 (Multi-use path) has been added
 - Remove Unit price line item for "Multi-use Path" This will be bid as an alternate item instead.

Section 01 23 00 (Alternates)

- Clarification on Alternate No. 13 – Prairie/Meadow at Nature's View Section:
 - As part of the alternate, the existing vegetation should be eradicated per keynote #7 on C200-0.
 - The basebid would include no removal of existing vegetation.
- Add Alternate No. 15 – Multi-use Path to the list of alternates
 - Give the amount to be ADDED to the Base Bid for the following:
 - Provide 10' wide multi-use trail as shown per the Drawings.
 - To include the demolition of existing asphalt where it is located on site.
 - To include any grading needed for the new multi-use path.
 - To include any additional stone needed for new multi-use path per details on Drawings.
 - To include stabilization of soil alongside new multi-use path.
 - Existing asphalt millings may be used for new multi-use path.
 - Existing stone on site at railroad may be used for base material for new multi-use path.
 - Excavation soil from new lake may be used as soil for stabilization of sides for new multi-use path.
 - Any working referring to the multi-use path as unit pricing shall be switched to Alternate #15.
 - Base Bid to include:
 - Existing conditions to remain as is, no path to be created on site.
 - Section of multi-use path shown at entrance per C101-6 (Keynote #7) shall remain in the base bid.



Section 02 70 00 Stream Restoration

- Refer to the attached "Stream Restoration Quantity Estimates" document to use for a reference.

Section 06 18 00 (Glue-Laminated Construction)

- Replace phone number in parts 2.01. A and 2.02 A with the following:
Kyle Heminger: (317) 878-9717.

Section 07 42 13 (Metal Wall and Ceiling Panel)

- Add to part 2.01.A, 1., the following acceptable product:
c. "DMI Metals", Flush Panel FP10.

Section 07 61 13.02 (Metal Roofing)

- Add to part 2.04.A the following acceptable manufacturer:
6. "Protecto Wrap Company", Jiffy Seal Ice and Water Guard HT.

Section 32 18 16.14 (Playground Rubber Surface System)

- Add to part 2.01.A the following acceptable manufacturer:
2. "Amex Surface Installer LLC", Pour-in-Place Surface System.

Section 32 32 16 (Precast Concrete Retaining Walls)

- Add to part 2.01.A the following acceptable manufacturer:
2. "Redi Rock", Retaining Wall System
 - This system may be used on any of the retaining walls shown on the Drawings.

Section 32 33 00 (Site Furnishings)

- Add to part 2.02.A the following acceptable manufacturer:
3. "Jamestown Advanced Products", 6' Contour Bench.
- Add to part 2.05.A the following acceptable manufacturer:
3. "Jamestown Advanced Products", Kennedy, 2 Bike, Duel Sided Rack.
- Add to part 2.08.A the following acceptable manufacturer:
3. "Jamestown Advanced Products", Standard Park Grill, Adjustable Grate.

Drawings

Drawing C101-6

- Clarification on General Trail Note #3 – Trails will be built on a unit price basis. The multi-use path will be bid as an alternate per Addendum #1. Trailhead to be bid as part of the basebid

Drawing B101-7

- Plumbing Fixture Schedule:
 - WC: Revise the schedule to the following model number: Acorn 1675-W-1-1.6-FVH-HS-SW. There will be no Master-Trol system.
 - L: Revise the schedule to the following model number: Acorn 1652-1-BP-04-M-SW. There will be no Master-Trol system.
- The sanitary sewer line from the building will be a 4" line NOT a 6" line.



Drawing C101-3

- Clarification to keynote #13 – information to be added regarding playground equipment and the rubber surface system.
 - In order to bid the playground rubber surface system accurately, a playground layout has been created to decipher where playground equipment will be placed, fall heights for the equipment and area of the playground equipment. Refer to the attached drawing AD-2 for information.

Drawing C201-3

- Clarification on General Trail Note #3 – Trails will be built on a unit price basis. The multi-use path will be bid as an alternate per Addendum #1. Trailheads to be built as part of the basebid

Drawing C301-2

- Clarification to keynote #15 – information to be added regarding playground equipment and the rubber surface system.
 - In order to bid the playground rubber surface system accurately, a playground layout has been created to decipher where playground equipment will be placed, fall heights for the equipment and area of the playground equipment. Refer to the attached drawing AD-2 for information.

Drawing C301-4

- Clarification on General Trail Note #3 – Trails will be built on a unit price basis. The multi-use path will be bid as an alternate per Addendum #1. Trailheads to be built as part of the basebid.

Drawing L302-1

- Clarification on natural grass/slope stabilization seed planting – if there is a good stand of natural grass in the area shown for slope stabilization seed, you may leave this area untouched and keep as natural. Only seed areas need where previous Johnson Grass was located.

Drawing C-501

Replace Construction Sequence notes with the following notes:

1. Contractor shall conduct the stream restoration activities in accordance with the plans. Any deviation from plans must be approved by a representative of KHA.
2. Elevations on the plan set are based on a site topographic survey in 88 US feet. The client will provide the survey data to the chosen contractor prior to construction.
3. Identify the project corridor, existing trees to be removed (TBR), and limits of disturbance with a kha representative.
4. Install stabilized construction entrances and prepare staging areas and haul routes per the EPSC plan. Contractor is responsible for identifying and gaining proper approvals for establishing an access to the project site from the adjacent public road.
5. Install and maintain the erosion control measures in accordance with EPSC plan.
6. Clear corridor along proposed stream rehabilitation reach as needed within limits of disturbance to construct the proposed stream restoration activities and adjacent streambank grading. Downed trees and shrubs may be chipped up and spread thinly (maximum thickness of one-half inch) within the adjacent riparian area and used as mulch or hauled and disposed off-site in an approved manner. After reaching one-half an inch of



wood chips within the stream restoration corridor, all remaining woody materials are to be hauled and disposed of off-site in an approved manner.

7. All stream construction activities shall take place in dry or low flow conditions. If water is present in the stream reach under construction, contractor shall utilize pump around operations in accordance with Details 9 and 11 on Sheet C-512.
8. Begin construction of the stream restoration activities at the most upstream end of the stream rehabilitation reach and work downstream. Regrade the left and right descending banks in accordance with the planform, longitudinal profile, and cross sections sheets (sheets c-502 through c-510). The subgrade surfaces of areas to receive fill shall be compacted utilizing construction equipment such as excavator or dozer with a minimum of four passes. Soil fill shall be placed in loose lifts not exceeding 12-inches and then compacted with an excavator or a dozer to 85% to 90% of standard proctor density. Care should be taken to not over compact the soils (> 90% standard proctor density), which may prohibit tree and shrub growth. During grading, contractor shall allow for placement of three to four inches of topsoil along the stream restoration reaches to achieve proposed final grades. Maintain well drained embankment and excavation to prevent ponding and softening of soils.
9. Layout and construct each in-stream structure per the planform, longitudinal profile, cross sections, and details shown in the plans (Sheets C-502 through C-512). Constructed structures must be within one-tenth of a foot of the designated design elevations. Riffle structures must maintain a positive slope from the head of the riffle (upstream) to the end of the riffle (downstream).
10. Seed and mulch all disturbed areas and blanket streambanks after completion of stream restoration activities in accordance with the proposed planting plan (Sheet C-513) and EPSC plan. Prepare the planting surface by loosening the top layer of soil. Apply and seed and straw in accordance with the proposed planting plan (Sheet C-513). Then install the specified erosion control blanket in accordance with the plans and details.
11. Contractor shall only perform stream restoration activities on a section of stream that can be entirely completed prior to the likelihood of rain occurrence. Contractor shall not exceed three days before seeding, mulching and blanketing disturbed areas along the stream restoration reaches. Should the chance of rain be present, the contractor will seed, mulch, and blanket stream restoration reaches more frequently.
12. Plant trees and shrubs within the restoration area in first dormant season (late November to late February) following construction activities and in accordance with the proposed planting plan (Sheet C-513).
13. Remove all waste generated and materials not utilized for the restoration activities from the project site. Restore all staging, stockpile and haul roads to their original appearance or better. Seed and mulch all disturbed areas in accordance with the proposed planting plan (Sheet C-513).

Drawing C-505

- The existing wetland located just west of Station 6+50 along the stream restoration reach shall not be disturbed. The disturbance limit should be shown around the wetland to show that the wetland is not to be disturbed.

Drawing C-511, Detail #4

- Replace Note 2 under Detail 4 on Sheet C-511 with "Riffle material shall consist of rock with a dominant mean diameter size of 9 inches (INDOT Class 1 Riprap or equivalent)."



Drawing C-511, Detail #6

Include the following notes for erosion control blanket installation along stormwater swales:

NOTES FOR EROSION CONTROL BLANKET INSTALLATION ALONG STORMWATER SWALES:

1. C125BN erosion control blanket or equivalent shall be used along stormwater swales. Contractor must follow manufacturer's installation instructions.
2. Prepare soil area before installing erosion control blanket by loosening the top 2-3" of soil and applying lime, fertilizer and seed.
3. The approved seed mixture shall be broadcast evenly over the disturbed areas at a rate of 40 pounds per acre (Table 4 on Sheet C-513). Straw shall be applied at a rate of two tons per acre in areas not covered by erosion control blanket.
4. The erosion control blanket shall be placed from the toe of slope within the swale to a minimum of five feet beyond the top of bank of the swale. Starting at the upgradient end of the swale, anchor the erosion control blanket in a 6" wide x 6" deep trench with approximately 12" of erosion control blanket extending beyond the upslope portion of the trench. Anchor the erosion control blanket with staples approximately 12" apart in the bottom of the trench, and then backfill and compact soil in the trench. Apply lime, fertilizer, and seed to the backfilled soil and then fold the remaining 12" of erosion control blanket over the backfilled soil and secure with a row of staples approximately 12" apart (Detail 1).
5. Roll the erosion control blanket out along the swale banks in the direction of flow. Unroll the erosion control blanket with the appropriate side against the soil surface. The erosion control blanket shall be secured to the soil surface by placing one row of staples at 18" intervals. The middle of the blankets should be anchored every 18". Place anchors in a staggered pattern. Lay blankets loosely on the ground, allowing a good contact between the soil and the blanket.
6. Fasteners shall be 12" metal staples of gauge 11 or approved equivalent.
7. The full length edge of the erosion control blanket at the toes of the bank shall be secured with a row of staples spaced approximately 12" apart.
8. Consecutive erosion control blankets shall be overlapped 8" with the upstream blanket on the top and shall be anchored with two rows of staples spaced approximately 12" apart in a staggered pattern. Rows shall be spaced 6" apart (Detail 2).
9. The full length edge of the erosion control blanket above the top of bank shall be anchored in a 6" deep x 6" wide trench (Detail 3).
10. Adjacent erosion control blankets shall overlap approximately 2" - 5" and be secured with a row of staples spaced approximately 12" apart (Detail 4).
11. The terminal end of the erosion control blanket shall be anchored in a 6" deep x 6" wide trench and secured with a row of staples spaced approximately 12" apart. The trench shall then be backfilled with soil and compacted (Detail 5).

Drawing C-513

- The proposed planting zone hatching along the proposed stormwater swale in the Perennial Stream 1 – Lower Reach viewport should be designated as Proposed Riparian Planting Zone C (Table 4) hatch. All disturbed ground surfaces along the stormwater swale should be planted with the Table 4 – Zone C Stormwater Swale Mix. The quantity of seed identified in Table 4 already accounts for these areas being seeded with the Zone C seed mix.



Prepared by,

Matthew D. Gullo, RLA

Director of Landscape Architecture and Planning

enclosed: AD-2 (Playground Equipment Typical Layout)
Revised Proposal Form
Chapel Lake Stream Restoration Quantity Estimates

file: 1727.01

End of Addendum No. 2



PROPOSAL FORM: PART I
Form 96 (Revised 2013)

CONTRACTOR'S BID FOR PUBLIC WORKS
Prescribed by the State Board of Accounts

CONTRACTORS BID FOR: *2018 Chapel Lake Park*
 Community Conservation Park
 New Chapel Rd.
 Jeffersonville, IN 47130

PART I
(Part I to be completed for all bids)

Date (Month, Day, Year): _____

Governmental Unit (Owner): *CITY OF JEFFERSONVILLE*

County: _____

Bidder (Firm): _____

Address: _____

City, State, Zip: _____

Telephone No.: _____

Fax No.: _____

E-Mail Address: _____

Agent of Bidder:
(if applicable) _____

Pursuant to notices given, the undersigned offers to furnish labor and/or material necessary to complete the public works project of *CITY OF JEFFERSONVILLE* (Governmental Unit) in accordance with plans and specifications prepared by Kovert Hawkins Architects, Inc. and their consultants for the sum of:

BASE BID

Lump Sum _____ \$ _____

The undersigned further agrees to furnish a bond or certified check with this bid for an amount specified in the notice of the letting. If alternative bids apply, the undersigned submits a proposal for each in accordance with the notice.

ADDENDA

Acknowledges receipt of:

Addendum No. _____ () pages Dated _____

Addendum No. _____ () pages Dated _____

Addendum No. _____ () pages Dated _____

Addendum No. _____ () pages Dated _____

ALTERNATES

The undersigned also proposes to furnish or to omit all labor and materials necessary to complete work as required by the Alternate Bids, as provided in the specifications as follows:

Alternate No. 1: *Chapel Lake Shelter House* \$ _____

Alternate No. 2: *Lentzier Creek Shelter House* \$ _____

Alternate No. 3: *Site Lighting* \$ _____

Alternate No. 4: *Landscape at Chapel Lake* \$ _____

Alternate No. 5: *Bridge @ Chapel Lake Section* \$ _____

Alternate No. 6: *Prairie/Meadow at Lentzier Creek Section* \$ _____

Alternate No. 7: *Site Furnishings Phase 2* \$ _____

Alternate No. 8: *Parking Lot Asphalt Surface Course* \$ _____

Alternate No. 9: *Playground Rubber Surface:Chapel Lake Sec..* \$ _____

Alternate No. 10: *Playground Rubber Surface: Lentzier Creek Sec.* \$ _____

Alternate No. 11: *Lentzier Creek Restoration: North* \$ _____

Alternate No. 12: *Lentzier Creek Restoration: South* \$ _____

Alternate No. 13: *Prairie/Meadow at Nature's View Section* \$ _____

Alternate No. 14: *Limestone Stairs at Lentzier Creek Shelter* \$ _____

Alternate No. 15: *Multi-use Path* \$ _____

ALLOWANCES

By initialing adjacent to amounts below, bidder acknowledges allowance amounts are included in the forgoing bid:

Contingency Allowance within the Base Bid per Section 01220	\$ 100,000	initials _____
Playground Equipment within the Base Bid per Section 01220	\$ 50,000	initials _____
Entrance Sign within the Base Bid per Section 01220	\$ 60,000	initials _____

COMPLETION OF WORK

Undersigned guarantees, if awarded contract, to complete the work within _____() calendar days.

DISCRIMINATION

The Contractor and his subcontractors, if any, shall not discriminate against or intimidate any employee, or applicant for employment, to be employed in the performance of this contract, with respect to any matter directly or indirectly related to employment because of race, religion, color, sex, national origin or ancestry. Breach of this covenant may be regarded as a material breach of the Contract.

LIST OF PROPOSED UNIT PRICES

If additional units of material included in the contract are needed, the cost of units must be the same as that shown in the original Contract if accepted by the Governmental Unit. If the bid is to be awarded on a unit basis, the itemization of the units shall be shown on the Proposal Form.

Unit prices shall include the furnishing of all labor, materials, supplies, services, and include all items of cost, overhead and profit for the Contractor and any Subcontractor involved, and shall be used uniformly without modifications, for either additions or deductions for all work performed under the contract.

The Unit Prices as established in accordance with changes in the work, are as follows:

<u>NATURE OF WORK</u>	<u>MEASURE</u>	<u>UNIT OF UNIT PRICE</u>
1. Excavation; earth, trench, machine, including removal from site	Cubic Yard	\$ _____
2. Excavation; earth, trench, hand, including removal from site	Cubic Yard	\$ _____
3. Trench Rock Removal	Cubic Yard	\$ _____
4. Mass Rock Removal	Cubic Yard	\$ _____
5. Dirt Trail Construction	Linear Foot	\$ _____

6. Grass Trail Construction Linear Foot \$ _____

CERTIFICATION OF USE OF UNITED STATES STEEL PRODUCTS (if applicable)

I, the undersigned bidder or agent as a contractor on a public works project, understand my statutory obligation to use steel products made in the United States (I.C. 5-16-8-2). I hereby certify that I and all subcontractors employed by me for this project will use U.S. steel products on this project if awarded. I understand that violations hereunder may result in forfeiture of contractual payments.

NON-COLLUSION AFFIDAVIT

The undersigned bidder or agent, being duly sworn on oath, says that he has not, nor has any other member, representative, or agent of the firm, company, corporation or partnership represented by him, entered into any combination, collusion or agreement with any person relative to the price to be bid by anyone at such letting nor to prevent any person from bidding nor to induce anyone to refrain from bidding, and that this bid is made without reference to any other bid and without any agreement, understanding or combination with any other person in reference to such bidding.

He further says that no person or persons, firms, or corporation has, have or will receive directly or indirectly, any rebate, fee, gift, commission or thing of value on account of such sale.

GENERAL CONTRACTOR CERTIFICATION

I hereby certify that we have obtained a complete set of construction documents, including all Drawings, Specifications and Addenda, and have reviewed the jobsite to sufficiently familiarize ourselves with the existing conditions.

Dated at _____ this _____ day of _____, 20____.

(Name of Organization)

BY _____

(Title of Person Signing)

OATH AND AFFIRMATION

I hereby affirm under the penalties for perjury that the facts and information contained in the foregoing bid for public works are true and correct.

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

(Name of Organization)

BY _____

(Title of Person Signing)

ACKNOWLEDGEMENT

STATE OF _____

COUNTY OF _____

Before me, a Notary Public, personally appeared the above-named _____ and
(Name of Person Signing)
swore that the statements contained in the foregoing document are true and correct.

Subscribed and sworn to before me this _____ day of _____, 20__.

Notary Public

My Commission Expires: _____

County of Residence: _____

ACCEPTANCE

The above bid is accepted this _____ day of _____, 20__,

subject to the following conditions: _____
_____.

Contracting Authority Members:

END OF SECTION 00301

CHAPEL LAKE PARK STREAM RESTORATION ADDENDUM (November 12, 2018)

SPECIFICATIONS

Item 1 – **ADD SECTION 5.0. ENGINEER QUANTITIES ESTIMATES**

The following Engineer's Quantities Estimates for the project are provided for the contractor's reference. The contractor shall review the Stream Restoration Plans and determine their own quantities for preparing their bid prices.

**Quantities Estimates for Stormwater Swale Construction (11/01/18)
Chapel Lake Park**

Proposed Activity		
Surveyor Grade Staking -includes grade staking for the stormwater swale construction activities		
EPSC Plan Implementation and Operation and Maintenance -assume proposed stormwater swale construction activities covered under overall park project		
Contractor Equipment and Labor to Clear and Grub the Stream Restoration Corridor -assumes no clearing or grubbing needed to construct stormwater swale		
Cut and fill along both channel banks, structures, and bank regrading -includes equipment/labor to construct stormwater channel, floodplain, excavate to foundation of structures, and regrade adjacent ground surfaces Amount of cut/fill for stormwater channel construction activities within disturbance limits		
	492	cubic yards
Construction of Boulder Steps -includes equipment/labor/materials to construct boulder steps -materials needed:		
Number 3' x 2' x 1' boulders	280	boulders
Filter fabric	182	SY
INDOT Revetment Riprap for backfill	238	Tons
Dissipation Pool Construction -includes equipment/labor/materials to construct dissipation pool -materials needed:		
INDOT Class 2 riprap	58	tons
Filter fabric	55	square yards
Seed Material -includes equipment/labor/materials to seed disturbed areas along stormwater swale construction reach -materials needed:		
Native seed	14.0	pounds
Annual cover seed	14.0	pounds
Straw Material -includes equipment/labor/materials to straw mulch disturbed areas along stormwater swale construction reach -materials needed:		
Number of 50-pound square straw bales	56.0	bales
Erosion Control Blanket -includes equipment/labor/materials to install erosion control blanket over disturbed areas along stormwater channel construction reach -materials needed:		
C125BN for stormwater swale bed and banks	1,200	SY
Boxes of 12-inch stakes (500 stakes per box)	15	boxes
Native Herbaceous Plug Material and Labor -includes equipment/labor/materials to plant native herbaceous plugs along stormwater swale construction reach -materials needed:		
Number of native herbaceous plugs	658	plugs

Stream Restoration Quantities Estimates for Upper Lentzier Creek (11/01/18)

Chapel Lake Park

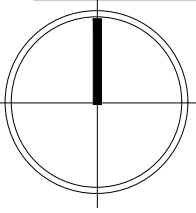
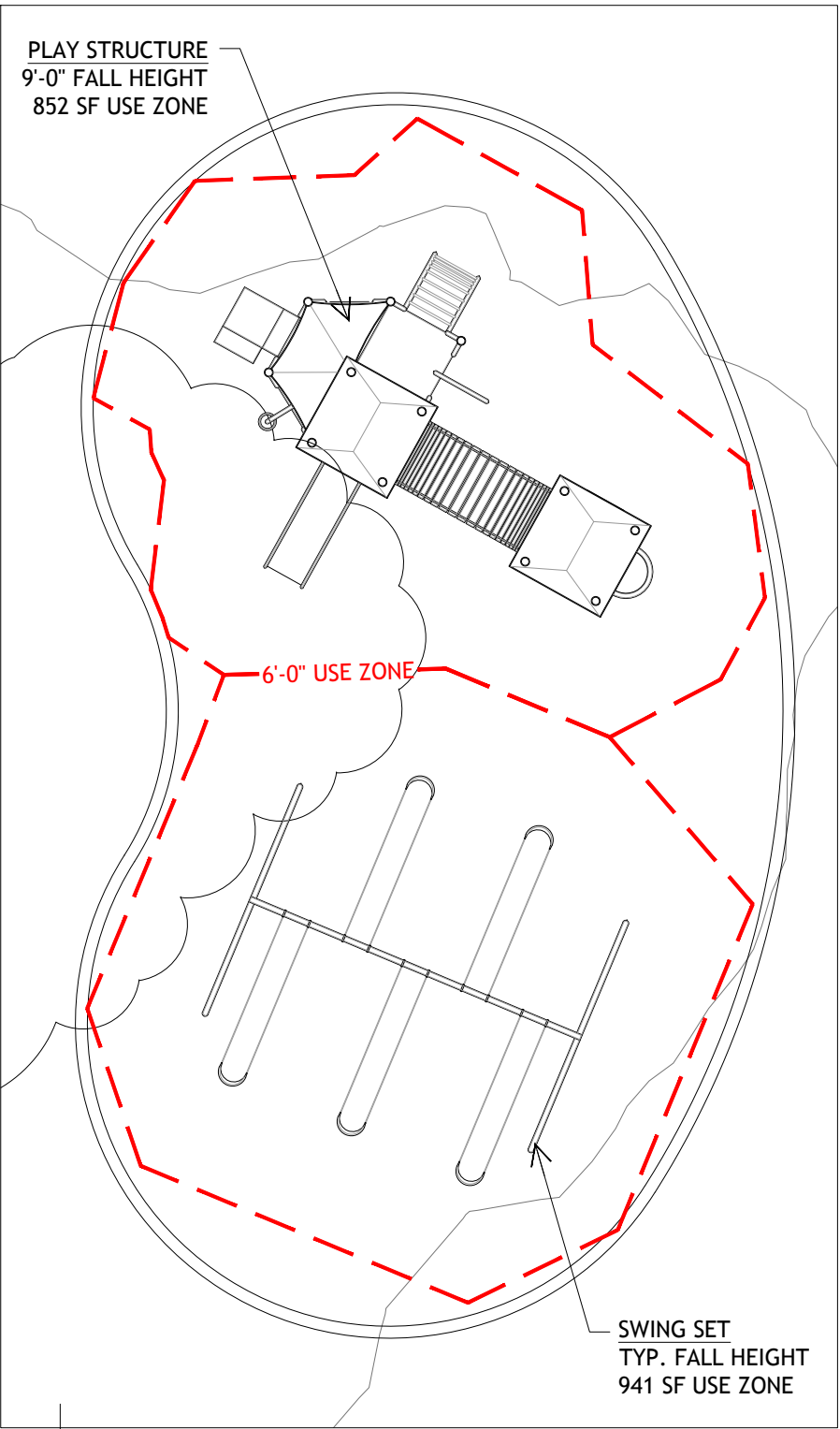
Proposed Activity		
Surveyor Grade Staking -includes grade staking for the stream restoration activities		
EPSC Plan Implementation and Operation and Maintenance -assume includes operation and maintenance of pump-around and construction of one temporary stream crossing		
Contractor Equipment and Labor to Clear and Grub the Stream Restoration Corridor -includes equipment/labor/materials to clear minimal width of stream corridor within approximate 1.1-acre area to conduct stream restoration activities		
Cut and fill along both streambanks, structures, and bank regrading -includes equipment/labor to regrade streambanks, floodplain, excavate to foundation of structures, and regrade adjacent ground surfaces Amount of cut/fill for stream restoration within stream restoration disturbance limits 1,559 cubic yards		
Riffle Construction -includes equipment/labor/materials to construct 15 riffle structures within the stream restoration reach -materials needed:		
9 inch mean diameter stone (or INDOT Class 1 riprap equivalent)	684	tons
4 inch mean diameter facing rock	114	tons
Boulder J-Hook Construction -includes equipment/labor/materials to construct two boulder J-hooks within the stream restoration reaches -materials needed:		
Number 3' x 2' x 1' boulders	48	boulders
Filter fabric	24	SY
INDOT Revetment Riprap for backfill	21	Tons
Construction of Boulder Step Trail Crossing -includes equipment/labor/materials to construct boulder step trail crossing -materials needed:		
Number 3' x 2' x 1' boulders	10	boulders
Filter fabric	8	SY
INDOT CA No. 2 for backfill	2	Tons
Construction of Boulder Steps -includes equipment/labor/materials to construct boulder step-pools -materials needed:		
Number 3' x 2' x 1' boulders	40	boulders
Filter fabric	30	SY
INDOT Revetment Riprap for backfill	34	Tons
Construction of Log Vanes -includes equipment/labor/materials to construct log vane structures -materials needed:		
Number of 17-foot long logs with mean diameter of 1-foot with root wad	4	logs
Number of 8-foot long logs with mean diameter of 1-foot with root wad	4	logs
Number of 21-foot long logs with mean diameter of 1-foot without root wad	4	logs
Number of 5-foot long sections of 1/2-inch rebar	4	5-foot sections
Filter fabric	64	SY

Boulder Toe Construction		
-includes equipment/labor/materials to construct boulder toe structures along stream restoration reaches		
-materials needed:		
Number 3' x 2' x 1' boulders	56	boulders
INDOT Revetment Riprap for foundation	18	Tons
INDOT CA No. 2 for backfill	12	Tons
Filter fabric	36	SY
Construction of Toe Wood/Branch Layering		
-includes equipment/labor/materials to construct toe wood/branch layering structures		
-materials needed:		
Bundles of branch layering materials that cover 3 linear feet of streambank	62	bundles
Woody debris	45	CY
Filter fabric	135	SY
Seed Material		
-includes equipment/labor/materials to seed disturbed areas along stream restoration reaches		
-materials needed:		
Native seed	22.0	pounds
Annual cover seed	22.0	pounds
Straw Material		
-includes equipment/labor/materials to straw mulch disturbed areas along stream restoration reaches		
-materials needed:		
Number of square straw bales	88	bales
Erosion Control Blanket		
-includes equipment/labor/materials to install erosion control blankets/mats over disturbed areas along stream restoration reaches		
-materials needed:		
RoLanka BioD Mat 70 for streambanks	2,846	SY
Boxes of 12-inch stakes (500 stakes per box)	36	boxes
Trees and Livestakes Material and Labor		
-includes equipment/labor/materials to plant native trees/shrubs and livestock along stream restoration reaches		
-materials needed:		
Number of 3 gallon trees/shrubs	121	trees/shrubs
Number of livestock	280	stakes

**Stream Restoration Cost Estimates for Lower Lentzier Creek
Chapel Lake Park**

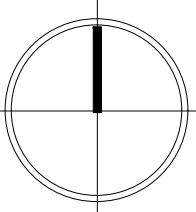
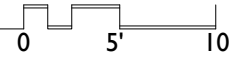
Proposed Activity		
Surveyor Grade Staking		
-includes grade staking for the stream restoration activities		
EPSC Plan Implementation and Operation and Maintenance		
-includes equipment/labor/materials to implement EPSC Plan and inspect and maintain the installed EPSC measures		
-assume only includes operation and maintenance of pump around		
Contractor Equipment and Labor to Clear and Grub the Stream Restoration Corridor		
-includes equipment/labor/materials to clear minimal width of stream corridor within 1.04 acres area to conduct stream restoration activities		
Cut and fill along both streambanks, structures, and bank regrading		
-includes equipment/labor to regrade streambanks, floodplain, excavate to foundation of structures, and regrade adjacent ground surfaces		
Amount of cut/fill for stream restoration within stream restoration disturbance limits	2,265	cubic yards
Riffle Construction		
-includes equipment/labor/materials to construct 27 riffle structures within the stream restoration reach		
-materials needed:		
9 inch mean diameter stone (or INDOT Class 1 riprap equivalent)	790	tons
4 inch mean diameter facing rock	131	tons
Boulder J-Hook Construction		
-includes equipment/labor/materials to construct four boulder J-hooks within the stream restoration reaches		
-materials needed:		
Number 3' x 2' x 1' boulders	52	boulders
Filter fabric	26	SY
INDOT Revetment Riprap for backfill	22	Tons
Construction of Boulder Steps		
-includes equipment/labor/materials to construct boulder step-pools		
-materials needed:		
Number 3' x 2' x 1' boulders	40	boulders
Filter fabric	26	SY
INDOT Revetment Riprap for backfill	44	Tons
Construction of Log Vanes		
-includes equipment/labor/materials to construct log vane structures		
-materials needed:		
Number of 18-foot long logs with mean diameter of 1-foot with root wad	3	logs
Number of 8-foot long logs with mean diameter of 1-foot with root wad	3	logs
Number of 23-foot long logs with mean diameter of 1-foot without root wad	3	logs
Number of 5-foot long sections of 1/2-inch rebar	3	5-foot sections
Filter fabric	36	SY
Boulder Toe Construction		
-includes equipment/labor/materials to construct boulder toe structures along stream restoration reaches		
-materials needed:		
Number 3' x 2' x 1' boulders	58	boulders
INDOT Revetment Riprap for foundation	19	Tons
INDOT CA No. 2 for backfill	13	Tons
Filter fabric	39	SY

Construction of Toe Wood/Branch Layering		
-includes equipment/labor/materials to construct toe wood/branch layering structures		
-materials needed:		
Bundles of branch layering materials that cover 3 linear feet of streambank	47	bundles
Woody debris	24	CY
Filter fabric	70	SY
Dissipation Pool Construction		
-includes equipment/labor/materials to construct dissipation pools		
-materials needed:		
INDOT Class 2 riprap	60	tons
Filter fabric	55	square yards
Seed Material		
-includes equipment/labor/materials to seed disturbed areas along stream restoration reaches		
-materials needed:		
Native seed	21.0	pounds
Annual cover seed	21.0	pounds
Straw Material		
-includes equipment/labor/materials to straw mulch disturbed areas along stream restoration reaches		
-materials needed:		
Number of 50-pound square straw bales	84	bales
Erosion Control Blanket		
-includes equipment/labor/materials to install erosion control blankets/mats over disturbed areas along stream restoration reaches		
-materials needed:		
RoLanka BioD Mat 70 for streambanks	2,817	SY
Boxes of 12-inch stakes (500 stakes per box)	35	boxes
Trees and Livestakes Material and Labor		
-includes equipment/labor/materials to plant native trees/shrubs and livestakes along stream restoration reaches		
-materials needed:		
Number of 3 gallon trees/shrubs	114	trees/shrubs
Number of livestakes	180	stakes



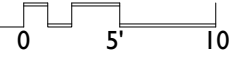
**Playground @
Lentzier Creek**

full size plot scale: 1" = 10'-0"



**Playground @
Chapel Lake**

full size plot scale: 1" = 10'-0"



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Drawn	CP
Checked By	MG
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Date	11/05/2018

Revisions 1
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Review Print
Not for Construction
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PHASE 1:
CHAPEL LAKE PARK
Jeffersonville, Indiana 47130
THE CITY OF JEFFERSONVILLE

Sheet
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