CASTLEWOOD STATE PARK
STREAMBANK RESTORATION PHASE I
(Ballwin, Missouri)

LOCATION MAP:

OWNER: STATE OF MISSOURI
MICHAEL L. PARSON,
GOVERNOR
DEPARTMENT OF
NATURAL RESOURCES

PROJECT MANAGEMENT: OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES MANAGEMENT,
DESIGN AND CONSTRUCTION

DESIGNER: STANTEC CONSULTING SERVICES, INC.

PROJECT NUMBER: X2002-01
SITE NUMBER: 5205
ASSET NUMBER: 7815205028
THE PROPOSED GRADE SHALL BE FINISHED TO A SMOOTH AND COMPACT SURFACE IN ACCORDANCE WITH THE LINES, GRADES AND DETAILS CROSS SECTIONS. ANY STOCKPILING OF MATERIALS OR "DOUBLE HANDLING" NECESSARY TO BUILD THE CHANNEL SHALL BE CONSIDERED CHANNEL TO THE APPROPRIATE DIMENSIONS. THE SLOPING OF THE CROSS SECTIONS SHALL THEN BE PERFORMED AS SHOWN ON THE A TRACKED EXCAVATOR. THE DETAILS AND CROSS SECTIONS SHOWN PROVIDE WIDTHS AND SLOPES FOR AID IN CONSTRUCTING THE TEMPORARY CONSTRUCTION ENTRANCE PLACE.

THE CONTRACTOR SHALL Restore THESE AREAS TO THEIR ORIGINAL CONDITION OR BETTER, UNLESS THE OWNER GIVES WRITTEN ASSOCIATED WITH CHANGING STRUCTURE LOCATIONS OR ALIGNMENT SHALL BE CONSIDERED INCIDENTAL TO CONSTRUCTION. THE CONTRACTOR SHALL STAKE THE PROPOSED BANK STABILIZATION FOR REVIEW BY THE ENGINEER BEFORE INITIATING EXCAVATION. TO MINIMIZE TREE REMOVAL. IN ADDITION, TREES SHALL BE REMOVED IN A MANNER TO ALLOW THEM TO BE REUSED ON THE SITE AS ROOT DRESSING OR USE FOR ANY PURPOSE OTHER THAN THAT AUTHORIZED BY STANTEC IS FORBIDDEN.

THESE DRAWINGS WERE PREPARED BY STANTEC USING PUBLICLY AVAILABLE LIDAR DATED 2011 AND AERIAL IMAGERY DATED 2016. THE EXISTING INDEX CONTOURS TO MINIMIZE IMPACTS TO INDIANA AND NORTHERN LONG-EARED BATS DURING THE SUMMER AND FALL, ALL CLEARING OF TREES AND LIVE BRUSH LAYERING OF TREES SHALL BE PERFORMED DURING CONSTRUCTION WITH THE ANTICIPATION OF A HIGH MORTALITY RATE. THE CLIENT ANTICIPATES HAVING TO RE-SEED WITH PERMANENT SEED MIX IN THE FALL.

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GENERAL NOTES

1. CONTRACTOR SHALL PREVENT PARK OR CONSTRUCT CUTOFF OF EROSION BANKS AND THE DEPOSITS OF SEDIMENT.
2. THE CONTRACTOR SHALL NOTIFY ENGINEER 72 HOURS PRIOR TO INSTALLING ANY STRUCTURES. PLACEMENT AND ELEVATION OF ALL EROSION AND SEDIMENT CONTROL STRUCTURES SHALL BE PERMITTED CONSTRUCTION WITH THE ANTICIPATION OF A HIGH MORTALITY RATE. THE CLIENT ANTICIPATES HAVING TO RE-SEED WITH PERMANENT SEED MIX IN THE FALL. THE CONTRACTOR SHALL STAKE THE PROPOSED BANK STABILIZATION FOR REVIEW BY THE ENGINEER BEFORE INITIATING EXCAVATION. TO MINIMIZE TREE REMOVAL. IN ADDITION, TREES SHALL BE REMOVED IN A MANNER TO ALLOW THEM TO BE REUSED ON THE SITE AS ROOT DRESSING OR USE FOR ANY PURPOSE OTHER THAN THAT AUTHORIZED BY STANTEC IS FORBIDDEN.

3. STORM WATER POLLUTION PREVENTION PLAN (SWPPP): THE BOUNDARY WITHIN WHICH ALL CONSTRUCTION, MATERIALS STORAGE, AND ALL OTHER CONSTRUCTION PLANS AND DETAILS SHOWN IN THESE DRAWINGS TO BE CONSIDERED ONLY APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL VERIFICATION AND LOCATION.

4. TOPSOIL SHALL BE REMOVED FROM EXCAVATION AND SPOIL AREAS PRIOR TO CUT OR FILL AND RE-APPLIED TO AREAS AFTER ROUGH DRESSING.

5. THE CONTRACTOR SHALL RESTORE THESE AREAS TO THEIR ORIGINAL CONDITION OR BETTER, UNLESS THE OWNER GIVES WRITTEN ASSOCIATED WITH CHANGING STRUCTURE LOCATIONS OR ALIGNMENT SHALL BE CONSIDERED INCIDENTAL TO CONSTRUCTION. THE CONTRACTOR SHALL STAKE THE PROPOSED BANK STABILIZATION FOR REVIEW BY THE ENGINEER BEFORE INITIATING EXCAVATION. TO MINIMIZE TREE REMOVAL. IN ADDITION, TREES SHALL BE REMOVED IN A MANNER TO ALLOW THEM TO BE REUSED ON THE SITE AS ROOT DRESSING OR USE FOR ANY PURPOSE OTHER THAN THAT AUTHORIZED BY STANTEC IS FORBIDDEN.

6. CONTRACTOR SHALL USE AN EXCAVATOR WITH A HYDRAULIC THUMB TO CONSTRUCT BOULDER TOE WITH ROOT WADS AND LIVE BRUSH WITH THE ANTICIPATION OF A LOW SUCCESS RATE. THE CLIENT ANTICIPATES HAVING TO RE-SEED WITH PERMANENT SEED MIX IN THE FALL.

7. THE CONTRACTOR SHALL NOTIFY ENGINEER 72 HOURS PRIOR TO INSTALLING ANY STRUCTURES. PLACEMENT AND ELEVATION OF ALL EROSION AND SEDIMENT CONTROL STRUCTURES SHALL BE PERMITTED CONSTRUCTION WITH THE ANTICIPATION OF A HIGH MORTALITY RATE. THE CLIENT ANTICIPATES HAVING TO RE-SEED WITH PERMANENT SEED MIX IN THE FALL. THE CONTRACTOR SHALL STAKE THE PROPOSED BANK STABILIZATION FOR REVIEW BY THE ENGINEER BEFORE INITIATING EXCAVATION. TO MINIMIZE TREE REMOVAL. IN ADDITION, TREES SHALL BE REMOVED IN A MANNER TO ALLOW THEM TO BE REUSED ON THE SITE AS ROOT DRESSING OR USE FOR ANY PURPOSE OTHER THAN THAT AUTHORIZED BY STANTEC IS FORBIDDEN.

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NOTES:

1. Boulders are to be spaced at 25' and positioned covering end of boulder, to be connected at the channel's right bank elevation as shown in Plan.

2. Plant a minimum of 8' of wood type #4 rock, above low water line, starting at 35' upstream, spaced every 10' and connected to the toe of the boulder. At the 35' low water line, the rock shall be embedded in a 1' layer of concrete. The rock will be set at grade and extend up 1' above high water line. The rock will be tied to the underlying structure by stake and cable to ensure stability and prevent erosion at the toe of the boulder.

3. Boulder placement shall be confirmed by the contractor. A number of native species shall be planted around the boulder at a distance of 1' from the boulder and 25' from the low water line. The boulder shall be anchored by steel and cable to ensure stability and prevent erosion at the toe of the boulder.

4. Plant a minimum of 8' of wood type #4 rock, above low water line, starting at 35' upstream, spaced every 10' and connected to the toe of the boulder. At the 35' low water line, the rock shall be embedded in a 1' layer of concrete. The rock will be set at grade and extend up 1' above high water line. The rock will be tied to the underlying structure by stake and cable to ensure stability and prevent erosion at the toe of the boulder.

5. Boulders shall be spaced at 25' and positioned covering end of boulder, to be connected at the channel's right bank elevation as shown in Plan.

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TO beginning: boulders from the face of the proposed berm and extending back a minimum of 1' from the proposed berm. To prevent propagation of berm erosion, boulders shall be connected to the toe of the boulder. At the 35' low water line, the rock shall be embedded in a 1' layer of concrete. The rock will be set at grade and extend up 1' above high water line. The rock will be tied to the underlying structure by stake and cable to ensure stability and prevent erosion at the toe of the boulder.