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Transportation
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GENERAL CONSTRUCTION SEQUENCE

THE FOLLOWING GENERAL CONSTRUCTION SEQUENCE WILL BE FOLLOWED FOR THE PROJECT WORK.

PRE-CONSTRUCTION

1. WORK MUST BE CONDUCTED DURING THE LOW FLOW MONTHS OF JUNE - OCTOBER IN ORDER TO ENSURE THAT THE PROPOSED WORK IN THE RIVER IS PERFORMED UNDER RELATIVELY DRY CONDITIONS.
2. THE CONTRACTOR SHALL REVIEW THE LOCAL, STATE AND FEDERAL PERMITS ISSUED FOR THIS PROJECT AND SHALL FULLY COMPLY WITH ALL CONDITIONS AND REQUIREMENTS.
3. TWO WEEKS PRIOR TO CONSTRUCTION, A PRE-CONSTRUCTION CONFERENCE WILL BE HELD WITH THE CONTRACTOR, FRANKLIN CONSERVATION DISTRICT STAFF, AND REGULATORY AGENCIES TO DISCUSS THE PROPOSED PLAN/SCHEDULE, REVIEW PERMIT CONDITIONS, AND TO DISCUSS SEQUENCE OF OPERATIONS.
4. THE CONTRACTOR SHALL SUBMIT A WATER CONTROL/MANAGEMENT PLAN TO THE ENGINEER FOR REVIEW AND ACCEPTANCE AT LEAST 20 DAYS PRIOR TO COMMENCING ANY WORK IN THE RIVER. THE WATER MANAGEMENT PLAN SHALL INCLUDE SKETCHES AND A NARRATIVE SUFFICIENT TO DESCRIBE HOW COFFER DAMS, SUMP PUMPS AND ANY OTHER PROPOSED WATER CONTROL MEASURES WILL BE INSTALLED, DISASSEMBLED, AND REINSTALLED TO ALLOW FOR PROPOSED WORK IN THE RIVER AS SPECIFIED. THE WATER MANAGEMENT PLAN SHALL ALLOW FOR THE GREATEST FLEXIBILITY IN CONSTRUCTION OPERATIONS, TIMELY COMPLETION OF ALL IN-RIVER WORK ACTIVITIES, AND MINIMAL DISTURBANCE TO THE RIVER CHANNEL AS WELL AS ADJACENT ACCESS AND STAGING AREAS.

5. THE CONTRACTOR SHALL PROVIDE A FINAL CONSTRUCTION SCHEDULE AND METHODS TO THE ENGINEER AT LEAST 10 DAYS PRIOR TO CONSTRUCTION. THIS SCHEDULE AND METHODS SHALL DOCUMENT DETAILS OF PROPOSED RIVER DIVERSION, COFFERDAM CONSTRUCTION, CONSTRUCTION PHASING, AND TEMPORARY EROSION CONTROL MEASURES TO BE IMPLEMENTED. THIS PLAN SHALL ADDRESS THE ENTIRE RIVER MANAGEMENT AND CONTROL PLAN AS WELL AS INSTALLATION OF PROPOSED RIVER STRUCTURES.

6. ALL PROJECT PERMITS SHALL BE CLEARLY POSTED ON SITE AND SHALL REMAIN IN PLACE FOR THE DURATION OF THE CONSTRUCTION PERIOD.

7. THE MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION AND THE MONTAGUE CONSERVATION COMMISSION SHALL BE NOTIFIED IN WRITING PRIOR TO COMMENCEMENT AND UPON COMPLETION OF PROJECT.

8. CONTRACTOR SHALL CONTACT DIGSAFE FOR MARKING OF UNDERGROUND UTILITIES PRIOR TO COMMENCING CONSTRUCTION OPERATIONS.

9. SURVEY AND STAKE THE LIMITS OF DISTURBANCE AND INSTALL CONSTRUCTION FENCING AT LIMITS OF WORK TO PREVENT UNINTENTIONAL DISTURBANCES, PARTICULARLY IN AREAS OF ENVIRONMENTAL SENSITIVITY.

10. THE CONTRACTOR AND ENGINEER WILL PHOTOGRAPH THE ENTIRE WORK AREA TO DOCUMENT ITS CONDITION PRIOR TO CONSTRUCTION IN ORDER TO ASSIST DURING FINAL RESTORATION.

CONSTRUCTION STAGING & SITE PREPARATION

1. TEMPORARY EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO CONSTRUCTION AND SHALL REMAIN IN PLACE UNTIL ALL DISTURBED AREAS ARE STABILIZED.
2. CLEAR AREAS AS IDENTIFIED INSIDE THE LIMITS OF DISTURBANCE AND APPROVED BY THE ENGINEER.
3. STRIP LOAM WITHIN AREAS DISTURBED BY GRADING AND/OR EQUIPMENT ACCESS AND STOCKPILE FOR LATER RESTORATION. TOPSOIL SHALL NOT BE SALVAGED FROM AREAS WITH NON-NATIVE INVASIVE SPECIES.
4. THE CONTRACTOR SHALL MINIMIZE THE AREA OF RIVERBANK DISTURBANCE AND THE DURATION OF TIME THE BANK IS EXPOSED AND NOT STABILIZED.
5. THE CONTRACTOR SHALL DIVERT RIVER FLOW IN A MANNER THAT ALLOWS FOR PROPER INSTALLATION OF THE PROPOSED CROSS VANES, LOG VANES, AND ROOT WAD STRUCTURES IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
6. WORK SHALL BE CONDUCTED IN THE DRY TO THE EXTENT POSSIBLE TO MINIMIZE TURBIDITY AND ENSURE PROPER INSTALLATION OF THE STRUCTURES. THE CONTRACTOR SHALL THOROUGHLY ADDRESS THE CONTROL AND MANAGEMENT OF WATER DURING STRUCTURE INSTALLATION IN HIS/HER CONSTRUCTION SCHEDULE & METHODS TO BE REVIEWED AND ACCEPTED BY THE ENGINEER.
7. IT IS ANTICIPATED THAT THE CONTRACTOR WILL INSTALL A TEMPORARY COFFERDAM ON THE UPSTREAM SIDE OF EACH PROPOSED STRUCTURE TO ALLOW FOR ADEQUATE DE-WATERING, SITE PREPARATION, AND INSTALLATION OF INDIVIDUAL STRUCTURE COMPONENTS. THE CONTRACTOR SHALL CHOOSE THE COFFERDAM CONSTRUCTION TYPE AS WELL AS METHODS FOR MANAGING AND CONTROLLING WATER THROUGHOUT THE CONSTRUCTION PERIOD, BUT THE DESIGN IS SUBJECT TO REVIEW AND ACCEPTANCE BY THE ENGINEER.
8. DEWATERING OF TURBID WATER, IF REQUIRED, SHOULD BE ACCOMPLISHED BY DISCHARGING TO A FILTER BAG IN ACCORDANCE WITH ACCEPTED BEST MANAGEMENT PRACTICES. THE SEDIMENT FILTER BAG SHALL BE LOCATED IN AN UPLAND AREA AS FAR AS PRACTICAL FROM THE RIVER. CLEAN WATER MAY BE DISCHARGED DIRECTLY TO THE RIVER. DEWATERING METHODS SHALL BE SUBJECT TO THE REVIEW AND ACCEPTANCE OF THE ENGINEER.

2. AS PART OF THE CONSTRUCTION LAYOUT PROCEDURE AND IN COOPERATION WITH THE ENGINEER, THE CONTRACTOR AND ENGINEER SHALL IDENTIFY TREES TO BE PROTECTED WITHIN THE PROJECT AREA. GRADING AND ACCESS LIMITS WILL BE ADJUSTED WHERE PRACTICABLE IN ORDER TO SALVAGE/PROTECT ANY TREES IDENTIFIED AND MARKED AS HIGH VALUE TREES. THE ENGINEER WILL DETERMINE THE FEASIBILITY OF ADJUSTING GRADING/ACCESS LIMITS FOR PURPOSES OF PROTECTING/SAVING ANY EXISTING TREES.

3. UPON ACCEPTANCE OF THE STRUCTURE LAYOUT PLAN BY THE ENGINEER, AND INSTALLATION OF THE ACCEPTED WATER MANAGEMENT PLAN AND ASSOCIATED WORKS, THE CONTRACTOR SHALL STAKEOUT THE UPPER CROSS VANE STRUCTURE FOR INSPECTION AND ACCEPTANCE BY THE ENGINEER. THE CONTRACTOR AND ENGINEER SHALL JOINTLY REVIEW THE CONSTRUCTION STAKEOUT IN THE FIELD. THE CONTRACTOR SHALL ADJUST THE LAYOUT IN TERMS OF ELEVATION AND/OR HORIZONTAL POSITION IF DEEMED REQUIRED BY THE ENGINEER.

4. INSTALLATION OF EACH STRUCTURE SHALL BE IN ACCORDANCE WITH THE ACCEPTED LAYOUT PLANS, CONSTRUCTION PLANS AND SPECIFICATIONS, AND DIRECTION OF THE ENGINEER. THE TIMING OF EACH STRUCTURE STAKEOUT SHALL BE IN ACCORDANCE WITH THE CONTRACTOR'S ACCEPTED WATER MANAGEMENT PLAN AND CONSTRUCTION SCHEDULE. THE LAYOUT OF EACH STRUCTURE MAY BE ADJUSTED UPON INSPECTION AND APPROVAL BY THE ENGINEER.

5. FOLLOW THE CONSTRUCTION SPECIFICATIONS FOR ADDITIONAL INSTALLATION DETAILS INCLUDING QUALITY, SIZING AND PLACEMENT OF INDIVIDUAL STONES, SIZE AND ORIENTATION OF INDIVIDUAL LOGS AND ANCHOR ROCKS, AND BACKFILL REQUIREMENTS FOR CROSS VANES USING A SPECIFIED COBBLE/GRAVEL/SAND MIX SUITABLE FOR ENHANCING STRUCTURE STABILITY AND MINIMIZING WATER FLOW BETWEEN INDIVIDUAL BOULDERS.

6. CLEAR AND GRUB THE RIVER CHANNEL BANK AND ADJACENT AREAS AS NECESSARY AND APPROVED BY THE ENGINEER TO INSTALL EACH PROPOSED RIVER STRUCTURE. THE CONTRACTOR'S DAILY WORK AREA SHALL BE CONFINED TO AN AREA WHICH CAN BE COMPLETED, THAT IS, GRADED AND STABILIZED AS INDICATED ON THE CONSTRUCTION PLANS BY THE END OF EACH WORK DAY. SILT FENCE SHALL BE INSTALLED AS NECESSARY IN ORDER TO MINIMIZE SILTATION FROM ACCESS AND LAYDOWN/STOCKPILE AREAS.

7. STRIP AND STOCKPILE THE TOP NINE (9) INCHES OF SOIL MATERIAL FROM AREAS OF PROPOSED EARTHWORK AND PLACE SILT FENCE AROUND THE STOCKPILES.

8. EXCAVATE IN ACCORDANCE WITH THE ACCEPTED CONSTRUCTION LAYOUT PLAN AND INSTALL STRUCTURES AS INDICATED IN THE LAYOUT PLAN, CONSTRUCTION PLAN DETAILS SHEET, CONSTRUCTION SPECIFICATIONS, AND DIRECTED BY THE ENGINEER.

9. THE CONTRACTOR SHALL COMPLETE THE INSTALLATION OF EACH STRUCTURE AS TIMELY AND EFFICIENTLY AS POSSIBLE, AND THEN QUICKLY STABILIZE DISTURBED RIVERBANK AREAS WITH SEED, MULCH, AND EROSION CONTROL MATTING AS SPECIFIED.

10. THE CONTRACTOR SHALL ATTAIN AND DOCUMENT SURVEY COORDINATES FOR FINAL PLACEMENT OF THE TOP STONES OF EACH STRUCTURE AND COMPLETED RIVERBED GRADES ON A DAILY BASIS. THIS SURVEY DATA SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND ACCEPTANCE AT THE END OF EACH WORK DAY.

11. PLACE TOPSOIL OVER AREAS MODIFIED BY EARTHWORK OR OTHERWISE DISTURBED IN ACCORDANCE WITH THE CONSTRUCTION SPECIFICATIONS TO ACHIEVE FINAL GRADES.

12. PREPARE SEEDBED IN ALL DISTURBED AREAS INCLUDING RIVERBANKS AND SOW WITH THE SPECIFIED SEED MIX.

13. INSTALL COIR FIBER LOGS AND LIVE STAKES AS INDICATED ON THE DRAWINGS AND DIRECTED IN THE FIELD BY THE ENGINEER.

14. CONTRACTOR SHALL RETAIN A MASSACHUSETTS PROFESSIONAL LAND SURVEYOR TO PERFORM AN AS BUILT SURVEY FOR COMPLETED RIVER RESTORATION WORK IN ACCORDANCE WITH THE CONSTRUCTION SPECIFICATIONS AND SUBMIT TO THE ENGINEER FOR REVIEW AND ACCEPTANCE. STAMPED SURVEY SHALL INCLUDE ELEVATION OF STONES, LOGS, ROOTWADS, AND RIVERBANK GRADES.

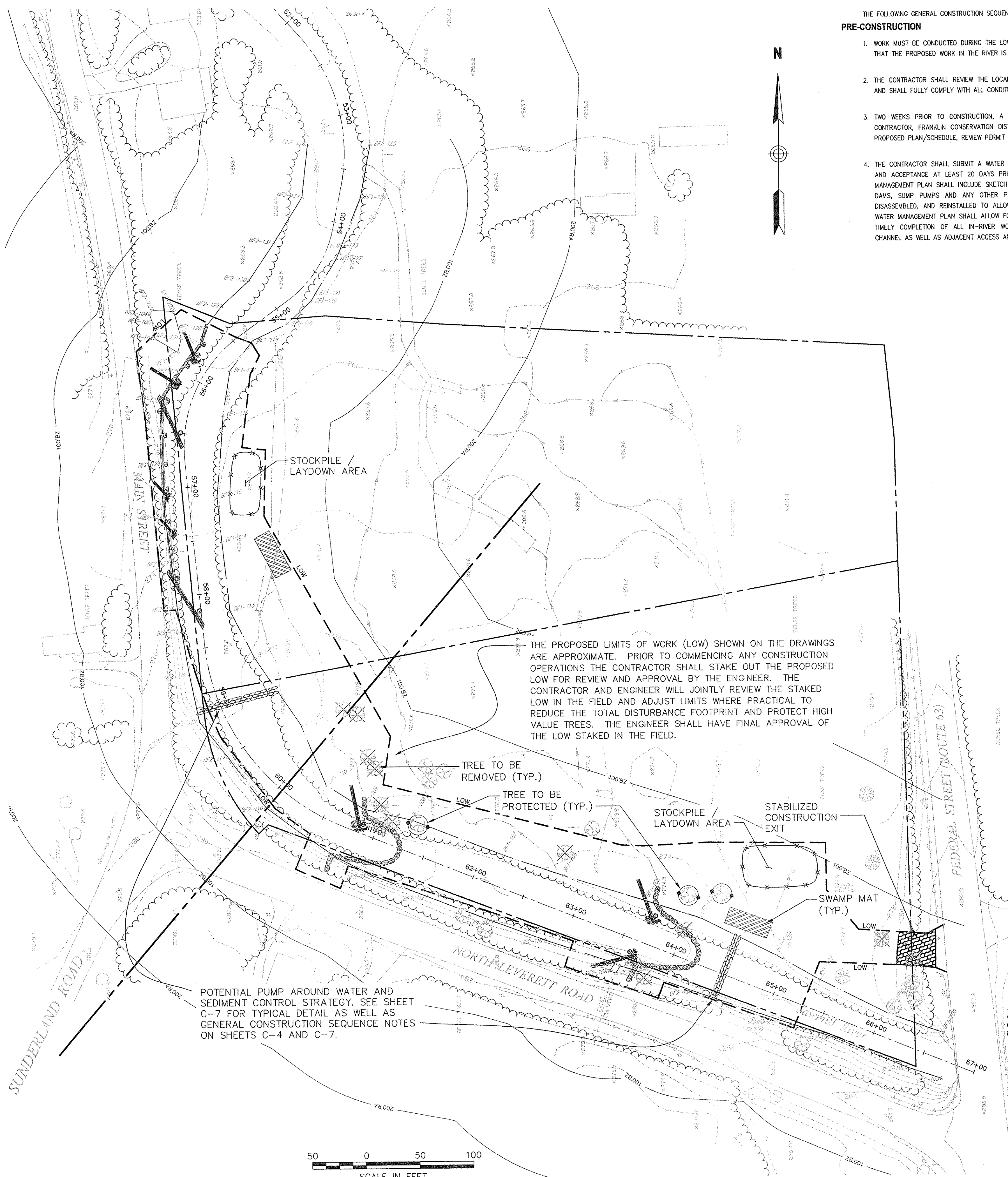
TIMING

1. WORK IN THE RIVER CHANNEL SHALL NOT COMMENCE UNTIL DRY WEATHER IS FORECASTED, GENERALLY FOR AT LEAST 3 TO 4 DAYS. SHOULD A SIGNIFICANT (GREATER THAN 0.5 INCHES IN 24 HOURS) RAINFALL EVENT OCCUR WHILE WORK IS BEING CONDUCTED IN THE RIVER, ALL EQUIPMENT SHALL BE REMOVED FROM THE RIVER UNTIL THE HIGH RIVER FLOW SUBSIDES.
2. THE TOTAL RIVER RESTORATION PROJECT IS ANTICIPATED TO BE COMPLETED WITHIN 60 CALENDAR DAYS FOLLOWING THE NOTICE TO PROCEED BARRING UNUSUALLY SEVERE WEATHER CONDITIONS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER REGARDING ANY DELAYS IN THE CONSTRUCTION SCHEDULE.

RIVER RESTORATION - SUGGESTED SEQUENCE OF CONSTRUCTION

UNLESS OTHERWISE ACCEPTED BY THE ENGINEER, ALL RIVER RESTORATION WORK SHALL BE PERFORMED FROM UPSTREAM TO DOWNSTREAM IN ORDER TO MINIMIZE POTENTIAL FOR EROSION AND/OR SEDIMENTATION IN THE RESTORED CHANNEL.

1. THE CONTRACTOR SHALL PREPARE AND SUBMIT A CONSTRUCTION LAYOUT AND INSTALLATION PLAN FOR THE PROPOSED RIVER STRUCTURES (CROSS VANES, LOG VANES, ROOTWADS) AS INDICATED IN THE CONSTRUCTION PLANS A MINIMUM OF 10 DAYS PRIOR TO SCHEDULED INSTALLATION. THE PLAN SHALL INDICATE HORIZONTAL AND VERTICAL COORDINATES FOR THE TOP TIER OF EACH CROSS VANE STRUCTURE AS WELL AS END COORDINATES OF EACH LOG VANE AND ROOTWAD STRUCTURE.



THE PROPOSED LIMITS OF WORK (LOW) SHOWN ON THE DRAWINGS ARE APPROXIMATE. PRIOR TO COMMENCING ANY CONSTRUCTION OPERATIONS THE CONTRACTOR SHALL STAKE OUT THE PROPOSED LOW FOR REVIEW AND APPROVAL BY THE ENGINEER. THE CONTRACTOR AND ENGINEER WILL JOINTLY REVIEW THE STAKED LOW IN THE FIELD AND ADJUST LIMITS WHERE PRACTICAL TO REDUCE THE TOTAL DISTURBANCE FOOTPRINT AND PROTECT HIGH VALUE TREES. THE ENGINEER SHALL HAVE FINAL APPROVAL OF THE LOW STAKED IN THE FIELD.

TREE TO BE REMOVED (TYP.)

TREE TO BE PROTECTED (TYP.)

POTENTIAL PUMP AROUND WATER AND SEDIMENT CONTROL STRATEGY. SEE SHEET C-7 FOR TYPICAL DETAIL AS WELL AS GENERAL CONSTRUCTION SEQUENCE NOTES ON SHEETS C-4 AND C-7.



Legend

- 2--- EXISTING MINOR CONTOUR
- 10--- EXISTING MAJOR CONTOUR
- - - - - APPROXIMATE LOCATION OF EPHEMERAL FLOODPLAIN CHANNEL
- BF-112 TOP OF BANK
- LOW LIMIT OF WORK
- SILT FENCE
- ROOT WAD
- LOG VANE
- ROCK CROSS VANE

No.	Revision	Date	Appr.

Designed by *CRS* Drawn by *WH* Checked by *MV*
 CAD checked by *MF* Approved by *MV*
 Scale 1"=50'
 Date July 2, 2012

Project Title
**Sawmill River
 Priority Reach 1
 Stabilization/Enhancement
 Project**
 Montague, Massachusetts
 Issued for
Bidding & Construction

Drawing Title
**Erosion and Sediment
 Control Plan and Notes**



Drawing Number
C-4
 Sheet of 47
 Project Number
 11648.00

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