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**COSDS EMERGENCY STREAM BANK REPAIRS  
OAKLAND COUNTY WATER RESOURCES COMMISSIONER  
ADDENDUM NO. 1  
CITY OF ROCHESTER HILLS  
OAKLAND COUNTY, MICHIGAN**

**ISSUED: September 9, 2016**

**HRC Job No. 20140331**

This Addendum is issued prior to receipt of bids to provide for certain changes and clarifications to the Contract Documents and Specifications or Contract Drawings, as herein specified, and is hereby made a part of the Contract Documents and shall be taken into consideration in preparing the Proposal. The General Conditions and Specifications for the original work and the Contract Drawings are to govern this work unless otherwise revised herein.

The Bidder shall acknowledge the receipt of this Addendum on page P-3 of the Proposal, and at the end of this Addendum. Bidders shall return a copy of their Acknowledgment of Receipt of this Addendum by fax to Hubbell, Roth & Clark, Inc., at (248) 454-6359, or by email to [jsurhigh@hrc-engr.com](mailto:jsurhigh@hrc-engr.com).

The following table of contents lists the extent of this Addendum. Descriptions of the changes or clarifications are given within each heading.

**CONTRACT DRAWINGS – Not Issued**

**CONTRACT DOCUMENTS**

The following sections of the Contract Documents are issued, and shall replace those found in the initial specifications book:

- Iran Economic Sanctions Act Vendor Certification (1 page)
- WRC General Specifications (23 pages)
- Color Audio-Video Recording of Construction Areas (5 pages)

**BULLETIN NO. 1**


The following explanations are given to inquiries made by Bidders, submitted in writing, through September 8, 2016, and are presented in no particular order.

- Because the bid is by invitation, the Owner has already determined that the prospective Bidders meet the minimum qualifications for the proposed work, and therefore, submittals noted in the Information for Bidders, Section 12 and 13, do not apply to this Contract.
- The daily reports referenced in General Conditions, Section 3, will be prepared by WRC's onsite representative.
- Prevailing wages are not required on this Contract.

- The amount bid for mobilization would not be expected to exceed 10% of the total contract price.
- The MDEQ permit has been applied for and is currently under review. The plans and specifications issued for bids incorporate responses to preliminary review comments from MDEQ. The Owner will pay the MDEQ permit fee.
- The floodplain cut/fill calculations on the plans represent the total volume change taking place within the regulated floodplain, and include volumes of the toe-protection, in-stream structures, slope fills, point bar removal, and scour pool excavations. Some work is above the 100-year floodplain elevation and is not included in those totals.
- Suitable material excavated from one of the work sites may be transported to the other work site for use as fill.
- Existing topsoil material from parts of the staging area that will be disturbed by construction activities may be excavated, stockpiled and re-used on the project. Restoration of disturbed areas requires 3" of topsoil.
- There may be an opportunity to spoil a limited amount of excess excavated materials in upland areas on City property near the work sites. The nature and amount of spoils at any potential spoil location must be coordinated with the City of Rochester Hills.
- Excess materials from clearing and grubbing operations must be removed from the site and be properly disposed of.
- The cost for performing any invasive species control that is necessary during the maintenance period as specified in Section 02929, article 3.06, will not be paid for separately, and shall be included in the prices bid for related items.
- Bare-root shrubs should be 2 to 3 foot in length.
- The natural stone materials to be used to construct riffles and boulder sills have been included in the quantities for Pay Items #11, 12 and 13.
- Descriptions of what is to be included in each pay item are listed in Section 01005.
- Pay Item #7 includes topsoil (salvaged or imported if needed) and compost for preparing the planting mix.
- Pay Item #28 includes 3" of topsoil (salvaged or imported).
- There is not a separate pay item for the log materials to be used in construction of the toe protection. It is intended to obtain log materials on-site from existing fallen trees, standing dead trees, or select standing live trees. Costs for obtaining the log materials, preparing them for use in the work, and installing shall be included in Pay Item #4.

- Rip rap to be constructed per OCWRC Detail E-10, except that rounded boulders are to be used to match toe protection work. The thickness of the rip rap will vary from 12” to 18”. Non-woven geotextile fabric used for the rip rap will not be paid for separately, and shall be included in Pay Item #8.
- The Pre-Bid Meeting was held on August 31, 2016. The meeting notes are attached and are hereby made a part of Addendum No. 1.

Prepared by:  
HUBBELL, ROTH & CLARK, INC.



James J. Surhigh, P.E.  
Senior Project Engineer

Attachments

pc: All Bidders  
OCWRC – George Nichols  
City of Rochester Hills – Tim Pollizzi  
HRC – D. Mitchell, D. Stratelak, File

Acknowledgement of Receipt of Addendum

Company Name: \_\_\_\_\_

Name: \_\_\_\_\_

Written Name: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone: \_\_\_\_\_ Fax: \_\_\_\_\_

**VENDOR CERTIFICATION  
THAT IT IS NOT AN  
“IRAN LINKED BUSINESS”**

Pursuant to Michigan law, (*the Iran Economic Sanctions Act, 2012 PA 517, MCL 129.311 et seq.*), before accepting any bid or proposal, or entering into any contract for goods or services with any prospective Vendor, the Vendor must first certify that it is not an “IRAN LINKED BUSINESS, as defined by law.

Vendor	
Legal Name	
Street Address	
City	
State, Zip	
Corporate I.D. Number / State	
Taxpayer I.D. #	

The undersigned, with: 1) full knowledge of all of Vendors business activities, 2) full knowledge of the requirements and possible penalties under the law MCL 129.311 et seq. and 3) the full and complete authority to make this certification on behalf of the Vendor, by his/her signature below, certifies that: the Vendor is NOT an “IRAN LINKED BUSINESS” as required by MCL 129.311 et seq., and as such that Vendor is legally eligible to submit a bid and be considered for a possible contract to supply goods and/or services to the County of Oakland.

Signature of Vendor's  
Authorized Agent: \_\_\_\_\_

Printed Name of Vendor's  
Authorized Agent: \_\_\_\_\_

Witness Signature: \_\_\_\_\_

Printed Name of Witness: \_\_\_\_\_

**GENERAL SPECIFICATIONS**

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## GENERAL SPECIFICATIONS

### 1. INTENT

It is the intention of these General Specifications to describe work, which may be performed or required, on the various storm drains, sewer, water main or structure projects.

### 2. PUMPING AND DRAINING

- A. The Contractor shall provide and maintain adequate pumping and drainage facilities for removal and disposal of water from drains, sewers, trenches or other excavations. He shall also provide pumping and drainage facilities for bulkheaded drain and sewer sections, and shall operate same as may be necessary until bulkheads have been removed or construction completed if bulkheads are to be left in place.
- B. Where underground work contains an excessive amount of water, the Contractor shall provide, install, maintain, and operate suitable well points, deep wells, connecting manifolds or other methods, and reliable pumping equipment to operate same to insure proper construction of the work.
- C. When pumping equipment and/or generators are placed within populated areas, the equipment shall be adequately muffled by using hospital quiet motors and/ or generators. The Owner will require the construction of temporary barriers to isolate noisy equipment. Temporary barriers shall be 4 feet above highest part of generator.
- D. Drainage or discharge lines shall be connected to adjacent public storm water drains or extended to nearby watercourses whenever possible. Without exception, written permission must be obtained to traverse private property. All pumping and drainage shall be done without damage to any highway or other property, public or private, or to the environment, without interference with the rights of the public or private property owners. If it should become necessary to lay pipe in water, the Engineer must approve the method of installation. The contractor is responsible for acquiring and obtaining any permits for drainage or discharge if not already provided within the contract documents at time of bid.
- E. The Contractor shall receive no extra compensation for, designing, providing, maintaining, or operating dewatering or drainage facilities.

### 3. SHEETING, SHORING AND BRACING

- A. Excavations shall be sheeted and braced as necessary to insure substantial completion of the work and/or to insure the safety of the workmen or the public or to protect adjoining structures. All excavations shall be in accordance with MIOSHA standards.

## GENERAL SPECIFICATIONS

- B. No extra compensation shall be paid the Contractor for sheeting or bracing left in place, unless ordered left in place by the Engineer and then only a fair salvage value for material left in place shall be paid. The Contractor shall receive no extra compensation for sheeting or bracing left in place.

### 4. DISPOSAL OF EXCAVATED MATERIAL

With the exception of an amount of excavated materials sufficient for backfilling and construction of fills as called for on the plans, the Contractor shall dispose of all broken concrete, stone and excess excavated materials. The Contractor will be required to obtain his own disposal ground, and will receive no extra compensation for disposing of any of the excess materials.

### 5. SOIL CONDITIONS

- A. Borings may have been made by the Owner at the points indicated on the plans. This information is given to bidders as an aid in the determination of the character of the soil. The Owner does not guarantee, however, that the ground encountered during construction will conform to these borings and the bidders should secure such other information, as they consider necessary to check and supplement the above data.
- B. The Contractor shall assume all risk and responsibility and shall complete the work in whatever materials, and under whatever conditions he may encounter or create without extra cost to the Owner unless a Differing Site Condition has been determined following Section 32. "Differing Site Conditions" of the General Conditions.

### 6. TREES

- A. The Contractor shall preserve and protect all trees along the line of his work except where specified herein to be removed and not replaced, and shall assume all risk and responsibility for any damage to trees which he may cause or create as the result of his operations under this Contract, for a period of one year.
- B. The Contractor will receive no extra compensation for preservation or protection of trees; for removal, disposal, replacement, trimming, or repair of damaged trees; or for other treatment specified herein except where noted.
- C. All work affecting all trees shall be done using the best nursery practice of the industry. Any trees, roots, trimmings and stumps which are removed during performance of contract work shall be disposed of in a manner acceptable to the Engineer, or as specified in the contract documents. Burial of trees or tree related refuse in the backfill of any excavation for contract work shall be expressly prohibited. All diseased trees or diseased tree related refuse, and all Ash or Elm trees or Ash or Elm tree related refuse shall be disposed of by burning or by other methods approved by the Michigan Department of Agriculture.

## GENERAL SPECIFICATIONS

- D. Trees along the line of the work affected by the Contractor's operations which die, or trees planted by the Contractor which die, shall be removed completely by the Contractor and replaced as specified by Paragraph h. (4) below entitled, "REMOVE - REPLACE". Trees planted by the Contractor shall be guaranteed for one (1) year.
- E. Contract work affecting trees located within the public right-of-way (dedicated or assumed) under the jurisdiction of the Road Commission for Oakland County, the Michigan Department of Transportation or of the municipality shall be governed by the requirements of the construction or forestry permits issued by these respective agencies.
- F. In some instances it may be policy of municipalities or other governmental agencies to issue permits which specify requirements of contract work affecting trees. Requirements of such permits shall govern within the geographic boundaries established by the permit.
- G. The Contractor shall conduct and control his operations in accordance with the following specific requirements where trees are encountered in the performance of all contract work. Where such requirements differ from those specified by permits issued by the Road Commission for Oakland County, by the Michigan Department of Transportation, by municipalities or other governmental agencies, permit requirements shall govern.
- (1) **Permanent Easement** - Trees may be removed unless otherwise indicated on the Contract Drawings, Easement Conditions or in the Supplemental Specifications.
  - (2) **Temporary Construction Easement** - Trees in wooded areas shall not be clear-cut. Trees four (4) inches in diameter and smaller may be removed unless otherwise indicated on the Contract Drawings, Easement Conditions or in the Supplemental Specifications. Trees larger than four (4) inches in diameter may be removed, if necessary, unless otherwise indicated on the Contract Drawings, Easement Conditions or in the Supplemental Specifications, and only with prior approval of the Engineer.
  - (3) **Private or Public Road Right-of-Way** - Trees located at a distance ten (10) feet or less from the centerline of construction may be removed unless otherwise indicated on the Contract Drawings, Easement Conditions in the Supplemental Specifications, or by governing permit.  
  
Trees located more than ten (10) feet from the centerline of construction shall not be clear-cut. Trees four (4) inches in diameter and smaller may be removed unless otherwise indicated on the Contract Drawings, Easement Conditions, in the Supplemental Specifications, or by governing permit. Trees larger than four (4) inches in diameter may be removed, if necessary, unless otherwise indicated on the Contract Drawings, Easement Conditions, in the Supplemental Specifications, or by governing permit, and only with prior approval of the Engineer.



## GENERAL SPECIFICATIONS

### H. Definition and Application of Terms

- (1) Tree size is to be expressed as its diameter measured 3 feet from the ground.
- (2) Where the term "REMOVE" is indicated to apply to a specific tree, the Contractor shall remove the tree completely, including the stump.
- (3) Where the term "PRESERVE AND PROTECT - CONDITIONAL REMOVE" is indicated to apply to a specific tree, the Contractor may work around such tree and preserve and protect it from damage; or may remove such tree completely. If such tree is removed, the Contractor shall pay to the Property Owner the dollar amount set forth on the Contract Drawings or in the Supplemental Specifications. Should this payment not be made within 30 days, such dollar amount will be deducted from any monies due the Contractor on a subsequent regular construction estimate.
- (4) Where the term "REMOVE - REPLACE" is indicated to apply to a specific tree, the Contractor shall remove the tree completely and plant a replacement tree. The selection of the replacement tree shall be governed by the following, appropriate condition:
  - (a) The type and size tree noted on the plans or in the Supplemental Specifications.
  - (b) A comparable quality tree at least two (2) inches in diameter from nursery stock acceptable to the Engineer.
  - (c) The specific tree removed, if proper precautions are taken to prevent damage or permanent injury to the tree.
- (5) Where the term "SAVE" is indicated to apply to a specific tree, the Contractor shall work around such tree and shall preserve and protect it from damage.
- (6) Where the term "SAVE - TUNNEL" is indicated to apply to a specific tree, the Contractor shall tunnel or bore such tree.

### I. Open Cut Excavation of Trees

- (1) Trees four (4) inches in diameter and smaller may be removed and replanted if proper precautions are taken to prevent damage or permanent injury to the tree.
- (2) Trees eight (8) inches in diameter and smaller should not be open cut closer than four (4) feet as measured from the center of the tree to the nearest point of open cut or excavation. Undermining of the root structure or disturbance to the soil closer than four (4) feet for the total depth of open cut or excavation should be avoided.

## GENERAL SPECIFICATIONS

- (3) Trees larger than eight (8) inches in diameter and smaller than twenty-four (24) inches in diameter should not be open cut closer than the radius of the main trunk in inches multiplied by one (1) foot. For example, a twelve (12) inch diameter tree should not be open cut closer than six (6) feet. The controlling distance shall be measured from the center of the main trunk to the nearest point of open cut or excavation. Undermining of the root structure or disturbance of the soil closer than the controlling distance for the total depth of open cut or excavation should be avoided.
- (4) Trees twenty-four (24) inches in diameter through thirty-six (36) inches in diameter should not be open cut closer than twelve (12) feet. The controlling distance shall be measured from the center of the main trunk to the nearest point of open cut or excavation. Undermining of the root structure or disturbance to the soil closer than the controlling distance for the total depth of open cut or excavation should be avoided.
- (5) Trees larger than thirty-six (36) inches in diameter should not be cut closer than one-third (1/3) the diameter of the main trunk in inches multiplied by one (1) foot. For example, a forty-two (42) inch diameter tree should not be open cut closer than fourteen (14) feet. The controlling distance shall be measured from the center of the main trunk to the nearest point of open cut or excavation. Undermining of the root structure or disturbance for the total depth of open cut or excavation should be avoided.

### J. Tunnels or Bores of Trees

- (1) Tunnels or bores under or adjacent to trees shall begin and end at points which fall outside a radius measured from the center of the tree equal to the radius of the main trunk in inches multiplied by one (1) foot plus one half the depth of open cut or excavation. In addition, the open cut or excavation at tunnel or bore and points should not be closer than the distance for open cut specified above under Paragraph i.
- (2) Tunnels or bores shall be constructed using structural liners to support the mined earth. Premined, unsupported, earth tunnels or bores shall be expressly prohibited.

### K. Removal of Trees

Where trees are removed, the Contractor shall remove the tree, completely, including the stump and main roots.

### L. Filling Under and Around Trees

Permanent placement of earth fill above existing ground level, under or around any existing tree, without the prior consent of the Engineer, should be avoided. Damage to trees may result from permanent placement of fill materials on the existing ground surface, and over the root system.

**GENERAL SPECIFICATIONS**

**7. FINAL CLEANUP AND RESTORATION**

- A. Upon completion of construction and before final payment is made the Contractor shall properly restore all disturbed areas to original or better condition as existed before his operations were started. The Contractor shall go over the entire line and refill any places that may have settled. The Contractor shall then regrade all backfilled trenches, all fills he may have made from excess excavated materials, and all other areas that may have been disturbed through his operations.
- B. The Contractor shall restore the job site to substantially the same condition as existed prior to beginning of work. All topsoil in the area of the excavation or in any area, which will be disturbed by construction, shall be excavated and stockpiled. After backfilling is completed and settlement has taken place, the topsoil shall be replaced. Topsoil removal, stockpiling, replacement and seeding as necessary, shall be as directed by the Engineer.
- C. Minimum seeding requirement shall be MDOT "Roadside" Mixture.
- D. Where the Contractor has disturbed lawn area, he shall then bring all areas to be seeded to an acceptable subgrade, and shall then apply three inches (3") of "quality" topsoil acceptable to the engineer to attain finished grade.
  - (1) "Quality" topsoil shall be defined as a loose black colored soil suitable for the growth of grass **seed, obtained from the upper layer of an existing soil, free of limbs, twigs, rocks, stones, roots and debris, etc.**, containing organic matter rich in nutrients, with negligible clay content.
  - (2) Prior to applying seed, all topsoil shall be brought to a friable condition conducive to receive the seed. All lumps and clods, etc. shall be thoroughly broken, crushed or removed. If the friable condition of the topsoil is lost through compaction or crusting due to rain, equipment movement, etc. prior to seeding, the seedbed shall again be made friable by raking, disking, etc. before applying the seed.
  - (3) The Contractor shall then apply seed and fertilizer in accordance with the following table:

Location	Seeding Requirement	Fertilizer Requirement
Maintained Lawn Areas	MDOT "Class A" Mix (30% Perennial Rye, 30%; Kentucky Blue, 40% Red Fescue) applied at 100 lbs./acre	600 lbs./acre of 10-6-6
Fields, Slopes & Ditch Banks, Etc.	MDOT "Roadside" Mix (50% Perennial Rye, 15% Kentucky Blue, 35% Red Fescue) applied at 100 lbs./acre	600 lbs./acre of 10-6-6

## GENERAL SPECIFICATIONS

The Contractor shall then mulch all seeded areas with unweathered small grain straw, applied at the rate of 2-3 bales/1000 sq. ft. The mulch shall be anchored in place with biodegradable netting with openings not to exceed 1 1/2 inches x 3 inches, and a minimum roll width of 35 inches. It shall be anchored with wood pegs at least 6 inches long.

The Contractor shall be responsible to insure the growth of all seeded areas and shall reseed as necessary, at his expense, to accomplish this end.

The basis for payment for seed restoration shall be 50% upon the completion of the initial seeding, with the remaining 50% being paid upon establishment of a dense lawn of permanent grasses to the satisfaction of the engineer.

- E. The Contractor may restore areas disturbed by his operations with sod conforming to MDOT 2003 Specifications Section 917.13 instead of seed, with the approval of the Engineer. In addition, sod shall be placed where called for on the Contract Drawings or Supplemental Specifications. Sod shall be placed on a prepared bed of 2" of "quality" topsoil. On slopes steeper than 1 vertical to 3 horizontal, the sod shall be pegged with wooden pegs or wire stakes driven flush with the surface of the sod. Sod placed by the Contractor shall match existing lawn.

The basis for payment for sod restoration shall be 50% upon completion of initial sodding, with the remaining 50% being paid upon establishment of a dense lawn of permanent grasses to the satisfaction of the engineers.

- F. If any special landscaped area is disturbed, because of the operations of the Contractor, it shall be reasonably restored to its original condition by the Contractor, or as specified in easement conditions or the contract documents.
- G. Seeding or sodding, as may be required by Road Permits, shall be done in accordance with requirements of governing body issuing said Road Permits.+
- H. Final cleanup and restoration work shall be commenced and completed as soon as possible. The work must be done so as to assure that no disturbed areas exist within 1,000 feet behind pipe laying and/or within 30 days after pipe laying, whichever is less. The above shall apply exclusive of the time period from **December 1 to April 1**. The Contractor shall maintain lawns by watering, fertilizing, weeding, mowing, trimming, and other operations such as rolling, regrading and replanting as required to establish a smooth, acceptable lawn, free of eroded or bare areas.
- I. If, in the opinion of the Engineer, work has not progressed in a reasonable manner, he shall have the right to direct the Contractor to proceed with the work or any portion thereof immediately. In the event that the Contractor does not proceed with the work immediately, as directed by the Engineer, the Engineer may order any or all other operations of the Contractor, under this Contract, to cease until the final cleanup and restoration work is proceeding in an acceptable manner. Should the Contractor fail to comply with these provisions, the owner may with or without notice cause the required restoration and cleanup to be done by the owner or others and will deduct the cost of said work from any money due or to become due the Contractor under this Contract. The performance of such work by the owner or others shall serve in no way to release the Contractor from his general or particular liability for the safety of the public or the work.

**8. PUBLIC AND PRIVATE UTILITIES - ROAD PERMITS**

- A. **Utilities** - Where any utilities, water, sewer, gas, telephone or any other either public or private, are encountered, the Contractor must provide adequate protection for them and he will be held responsible for any damages to such utilities arising from his operations.
- (1) When it is apparent that construction operations may endanger the foundation of any utility conduit, or the support of any structure, the Contractor shall notify the utility owner of this possibility and he shall take such steps as may be required to provide temporary bracing or support of conduits or structures.
  - (2) In all cases where permits or inspection fees are required by utilities in connection with changes to or temporary support of their conduits, the Contractor shall secure such permits and pay all inspection fees.
  - (3) When it is necessary in order to carry out the work, that a pole, electric or telephone, be moved to a new location, or moved and replaced after construction, the Contractor shall arrange for the moving of such pole or poles, and the lines thereof, and shall pay any charges therefor.
  - (4) Where it is the policy of any utility owner to make his own repairs to damaged conduit or other structures, the Contractor shall cooperate to the fullest extent with the utility owner and he shall see that his operations interfere as little as possible with those operations.
- B. **Existing Sewer Facilities** - In certain instances, existing sewers or drains will be encountered along the line of work. In all such cases, the Contractor shall perform his operations in such a manner that sewer service will not be interrupted, and shall, at his own expense, make all temporary provisions to maintain sewer service.
- (1) Unless otherwise indicated on the plans, the Contractor shall replace any disturbed sewer or drain, or relay same to a new grade to be established by the Engineer such that sufficient clearance for the sewer will be provided.
  - (2) The Contractor will receive no extra compensation for replacement of sewers or drains encountered, or for relaying at a new grade.
- C. **Existing Water Facilities** - Where existing water facilities are encountered in the work, they shall be maintained in operation. If necessary, they shall be relayed, using ductile iron pipe, offsets, bends and sleeves. The Contractor will receive no extra compensation for the relaying and/or lowering or raising of water mains.

## GENERAL SPECIFICATIONS

- D. **Existing Gas Facilities** - Where existing gas facilities are encountered, the Contractor shall arrange with the gas company for any necessary relaying, and shall pay for the cost of such work.
- E. In all cases the Contractor shall contact "**MISS DIG**" not less than **48 hours** before starting construction for assistance in locating utilities or for any work to be done on utilities. The toll free telephone number is 811.
- F. **Roads and Road Permits** - The Contractor shall obtain any necessary construction permits for work within public streets, highways, roads or alleys. He shall pay for same at his own expense as well as for any inspection fees that may be required in connection with such permits, and in addition to all other requirements of these Contract Documents, shall conduct his entire operation in accordance with the provisions of such permits including tunneling of pavements where required. He shall also furnish any required bonds and/or cash deposits and pay the cost of same. In the event that the Contractor fails to furnish the Owner with proof of payment within ten (10) days after receipt of billing for the above-mentioned charges, the Owner will assume that the charges are equitable and unpaid and the Owner will pay such bills and deduct the sum plus 10% for handling costs from any money due or to become due the Contractor under the terms of this Contract. Improved roadways or walkways damaged by the Contractor shall be repaired to substantially the same condition as existed prior to beginning of work unless otherwise stated on plans or in Supplemental Specifications.

### 9. REQUIREMENTS PERTAINING TO WORK WITHIN RAILROAD RIGHT-OF-WAY

- A. Where the Contract plans call for work within railroad right-of-way or where the work crosses under railroad tracks, the Contractor shall secure the approval of the railroad company of his method and schedule of operations and shall carry out his work in strict accordance therewith, all to the satisfaction of the railroad company and at no extra cost to the Owner.
- B. No work of installing, maintaining or repairing of the facility shall be done until the railroad company shall have had sufficient prior notice of at least seventy two (72) hours (exclusive of Saturdays, Sundays and Holidays) to allow assignment of an inspector to the job to protect railroad interests.
- C. All work of installation, maintenance and repair of the facility and appurtenances shall be performed to the satisfaction of the Chief Engineer of the railroad company, or his duly authorized representative, and when any work hereunder is completed, the area shall be left in a neat, smooth and level condition.
- D. The Contractor shall reimburse the railroad for any necessary expense it is put to incidental to the installation of the facility, including the wages and expenses of railroad inspectors and flagmen.

## GENERAL SPECIFICATIONS

- E. The Contractor shall reimburse the railroad for any costs due to the Contractor's operations, including the wages and/or expense of watchmen, flagmen, barricades, lights, or inspectors, etc., as required by the railroad to protect its operations and property during the Contractor's construction operations on railroad property.
- F. In the event that the Contractor fails to furnish the Owner with proof of payment within ten (10) days after receipt of billing for the above-mentioned charges, the Owner will assume that the charges are equitable and unpaid and the Owner will pay such bills and deduct that sum plus 10% for handling costs from any money due or to become due the Contractor under the terms of this Contract.
- G. All tunnel headings shall be breasted at the end of each mining operation.
- H. Prior to beginning of construction on railroad property, the Contractor shall submit, through the Owner, for approval, the details of any proposed construction shaft located within the limits of the railroad right-of-way, including details of sheeting and bracing. Any such shaft shall be tightly braced to prevent any movement of the adjacent soil or structure.
- I. The additional named insured under GENERAL CONDITIONS for "Owner's Protective Public Liability and Property Damage Insurance" and "Owner's and Contractors Protective Public Liability and Property Damage Insurance", shall include the name of the railroad company.

### 10. GAS

If gas is present in existing sewers or open excavations in which the Contractor must work, the sewer or open excavation shall be cleared of gas before entering. If the gas cannot be removed by natural ventilation, or by the removal of manhole covers on existing sewer appurtenances, the Contractor shall maintain forced draft or such other gas control or removal process as may be necessary to render the sewers or open excavation safe as determined by gas detection instruments and shall pay all costs therefor.

### 11. MAINTENANCE AND RESTORATION OF ROAD SURFACES, STRUCTURES AND TRENCH BACKFILL

- A. All structures, including curbing, driveways, walks, paving, gravel, or street road surfaces, etc. that may be damaged or destroyed by the Contractor's operations, shall be maintained, repaired and replaced by him at his own expense.
- J. In order to insure proper maintenance of service, the Contractor shall follow immediately behind the pipe laying operation with the restoration of all drainage facilities including driveways and road culverts, catch basins, manholes, ditches, sewers, and any other structure as deemed necessary by the Engineer. Mailboxes where removed or disturbed shall be replaced as soon as is practicable. Trenches shall be promptly backfilled after the pipe is laid with no

## GENERAL SPECIFICATIONS

more than 50 lineal feet of trench being open at one time. The trench backfill may be neatly mounded over the centerline of the excavation to provide sufficient material to establish the original grade after settlement has taken place. All construction debris, equipment, and excess dirt shall be removed from the site. Stockpiling of excess excavated materials in large piles will not be allowed without permission of the Engineer.

- K. All haul roads, detour roads, gravel roads, and driveways must be maintained in a dust-free condition during the life of this Contract. The control of dust shall be accomplished by the application of dust control materials and methods of application, which are in accordance with the requirements of the agency having jurisdiction over the roadway. Such dust control materials shall be applied as often as is necessary to control the dust. The use of road oils and waste oils to control dust is prohibited.
- L. Where concrete or asphalt areas are disturbed, temporary cold patching will be as required elsewhere in these Contract Documents.
- M. Maintenance and restoration of road surfaces, structures and trench backfill shall be commenced and completed within a reasonable length of time after construction. If in the opinion of the Engineer work has not progressed in a reasonable manner, he shall have the right to direct the Contractor to proceed with the work or any portion thereof immediately. In the event that the Contractor does not proceed with the work immediately, as directed by the Engineer, the Engineer may order any or all other operations of the Contract, under this Contract, to cease until the maintenance and restoration of road surfaces, structures and trench backfill is proceeding in an acceptable manner.
- N. If, due to weather conditions, the existing gravel roads, disturbed by the Contractor's operations, cannot be maintained with 21AA natural aggregate, the Contractor shall, at the Engineer's request, provide sufficient crushed stone of a size approved by the Engineer until final restoration can be accomplished with 21AA natural aggregate.
- O. The Contractor shall immediately restore all roadways and shoulders with 8" of 21AA natural aggregate, parking areas and driveways with a minimum of 6" 21AA natural aggregate and shall maintain as settling occurs. If necessary, the Contractor shall build a sub-base using larger size aggregate in order to open the facility to traffic.
- P. All driveways disturbed by the Contractor's operations shall be promptly restored by the Contractor using materials matching or exceeding the performance characteristics and visual aspects of the original driveway construction.
- Q. New gravel shall be used for all road and driveway restoration; no salvaged material shall be used.

### 12. REPLACEMENT OF CONCRETE OR ASPHALT PAVEMENT CROSSINGS

Unless otherwise specified or required by the local units of government, the Road Commission for Oakland County or the Michigan Department of Transportation, all existing concrete or asphalt paved areas shall be restored with materials of similar type, thickness and width to match existing material using the following minimum criteria:



## GENERAL SPECIFICATIONS

### A. Concrete Pavement Replacement

- (1) The replacement concrete shall be at least the thickness of the existing slab and of Grade A (3,500 p.s.i.) compressive strength.
- (2) In all cases, the concrete replacement shall be a minimum of four (4") inches thick and have a minimum 18 inches bearing on undisturbed ground on each side of the trench excavation.
- (3) The existing slab shall be saw-cut to provide the concrete replacement width required in (2), above, however if a saw-cut is closer than three (3) feet from a parallel joint, the existing slab shall be removed and replaced to that joint.
- (4) The concrete replacement shall be reinforced in a manner equal to the existing slab, however, if the existing slab is unreinforced the replacement concrete shall have a 6" x 6" w6/w6 welded wire fabric, steel mesh placed therein.
- (5) A temporary cold patch (equal to the Michigan Department of Transportation CP-3 Patching Mixture) shall be used to surface the area where the concrete has been removed until the concrete pavement can be replacement. The Contractor shall maintain this temporary cold patch until it is removed for completion of the work.

### B. Asphalt Pavement Replacement

- (1) Asphalt surfaces shall be replaced to sawed joints as directed by the Engineer. Repair areas shall be such that the sawed joints are parallel to the undisturbed edge of the surface at the furthest extremity of the disturbed area. No "checkerboard" repairs shall be permitted.
- (2) The asphalt replacement shall have a minimum of eight (8) inches of MDOT 21AA natural gravel or slag aggregate, or approved equal, to match original aggregate subgrade material, with a minimum of four (4) inches of bituminous surface course in accordance with MDOT (2003) Division 5 Specifications, as necessary to match existing surface.
- (3) A temporary cold patch (equal to Michigan Department of Transportation CP-3 Patching Mixture) shall be used to surface the area where the asphalt has been removed until the asphalt pavement can be replaced. The Contractor shall maintain this temporary cold patch until it is removed for completion of the work.

### C. Replacement of Driveway Approach Pavement

When either asphalt or concrete drive approach pavement is removed, the area to be repaired shall include the entire approach from the existing pavement to the sidewalk. If there is no sidewalk the repair shall extend to the "throat" of the driveway or to the point at which the approach meets the driveway at its normal width.

## GENERAL SPECIFICATIONS

### 13. ENGINEER'S AND INSPECTOR'S FIELD OFFICE

- D. The Contractor shall provide and maintain, at his own expense, a field office for the exclusive use of the Owner's Engineers and Inspectors. It shall be centrally located within the limits of the Contract. The field office shall have all utilities in service PRIOR to the commencement of construction and shall not be removed until the completion of all work including cleanup and restoration. The Contractor shall not remove the field office without receiving written permission to do so from the Owner.
- E. The field office shall contain a minimum area of 192 square feet and be equipped with the following: heat, air conditioning, electric lights, sanitary facilities, closet, two desks, matching rolling desk chair, one drafting table and padded drafting stool, a print rack, fax-copier, six sturdy chairs, a four drawer legal size file cabinet, a 3 foot by 4 foot bulletin board, mop, broom, pail, first aid kit, fire extinguisher, bottled water and dispenser, locks and 4 keys for the doors.
- F. Field offices, having chemical/holding tank sanitary facilities may be utilized provided, in the opinion of the Owner, the Contractor adequately maintains the sanitary facilities.
- G. The Contractor will receive no special payment for the cost of the field office, and the cost shall be included in other items of the proposal. Costs of heat, electricity and telephone service, including reasonable toll calls, shall be borne by the Contractor. Two or more Contractors on a multi-sectioned project may join together to furnish a field office, if, in the opinion of the Owner, it would meet certain location and size requirements.
- H. A mobile telephone system may be provided for telephone service, subject to approval of the Owner and Engineer.

### 14. CONTRACTOR FURNISHED SURVEY EQUIPMENT

The Contractor shall provide one (1) tripod, automatic level and level rod for the use of the Inspector for the duration of the project. The level rod shall be in English units. The equipment shall be of commercial construction grade quality. The equipment shall be calibrated at the start of the project with a copy of the calibration certificate provided to the Inspector for his records. The survey equipment will be returned to the Contractor at the end of the project

### 15. MONUMENTS

Monuments or other recognized property boundary markers at street intersections, section corners, acreage or lot corners, and right-of-way lines shall be preserved and protected. Where such monuments or markers must be removed during construction, the Engineer shall be notified and the Contractor shall make all necessary arrangements, at his own expense, with a Land Surveyor registered in the State of Michigan to have these monuments or markers properly witnessed prior to disturbance or removal and later reset by the Registered Land Surveyor.

## GENERAL SPECIFICATIONS

### 16. MAINTENANCE OF TRAFFIC

- A. During the progress of the work, the Contractor shall accommodate both vehicular and pedestrian traffic in road rights-of-way as provided in these specifications. Access to fire hydrants, water and gas valves shall always be maintained. All local traffic ordinances and regulations of the Fire and Police Department and the Department of Public Services shall govern the Contractor's truck and equipment operations on public streets.
- B. Working sites at manholes, alignment holes, and other minor openings in streets need not be fenced but they shall not be larger than necessary and shall be well protected by barricades and lights and shall not be occupied longer than necessary. Small openings in streets shall be covered with strong steel plates anchored in place, when they are not required to be open for construction purposes.
- C. Shaft locations shall be selected at point where they will interfere with traffic as little as possible and their working site arrangements shall meet the approval of the Engineer. Detouring of traffic shall be done in accordance with the requirements of the municipal unit having jurisdiction therefor.
- D. Where streets are partially obstructed, the Contractor shall place and maintain temporary driveways, ramps, bridges and crossings that, in the opinion of the Engineer, are necessary to accommodate the public. In the event of the Contractor's failure to comply with the foregoing provisions, the Owner may, with or without notice, cause the same to be done and deduct the cost of such work from any monies due or to become due the Contractor under this Contract, but the performance of such work by the Owner, or at his insistence, shall serve in no way to release the Contractor from his liability for the safety of the traveling public.
- E. The Contractor shall provide flagmen, warning lights, signs and barricades necessary to direct and protect vehicular and pedestrian traffic.
- F. The Contractor shall inform the local Police, Fire and Public Services Department in advance of his program of street obstructions and detours, so that those Departments have ample time to develop plans for servicing the area in case of an emergency. He shall also notify the Owner at least one week prior to obstructing any street.

### 17. PROGRESS SCHEDULE

- A. The Progress Schedule as called for in the Contract Documents shall show in a clear, graphical manner the proposed dates for the commencement and completion of each of the various subdivisions of the work. The schedule shall be predicated on starting the work sixty (60) days or less after award, and on the completion dates outlined in the AGREEMENT, Article II, entitled THE TIME. The schedule shall indicate the number of crews, including subcontractors if any are to be employed, on the project and the manner and times in which they will be utilized.

## GENERAL SPECIFICATIONS

- B. Should the Contractor elect to change the progress schedule by the addition of one or more crews, he shall notify the Engineer in writing along with revised progress schedule two (2) weeks prior to the addition of any crew(s).
- C. Should the Contractor elect to change his location of work or move to a different area, he shall notify the Engineer seventy two (72) hours in advance (excluding weekends and holidays) of his intended move.
- D. If during the course of the work, the time of completion of the Contract is extended, or if in the opinion of the owner the progress is behind schedule so as to affect its completion, the Progress Schedule shall be corrected to show the revised commencement and completion dates of those parts of the work which are affected.
- E. The project schedule will meet the following requirements. For the purposes of bidding, any schedules that are required to be turned in with the bid may be provided with other scheduling software such as Microsoft Project with the understanding that the successful bidder will convert the bidding schedule to an acceptable format as specified. At any time the Owner may request that an existing schedule be resource loaded to ensure that the contractor is making adequate progress towards the final completion deadlines.

### 18. CONTRACTOR'S SCHEDULER

Contractor shall appoint a project scheduler with the following minimum qualifications (unless otherwise modified by the Owner or Engineer):

- A. At least five years of experience using the most recent version of Primavera Project Planner software.
- B. Scheduling for at least three heavy construction projects each with a total construction value in excess of ten million dollars (\$10,000,000) each.
- C. Contractor's scheduler shall prepare the Project Base Line Schedule, all schedule updates, and any time impact analysis, make up schedules or acceleration schedules required by the Contract Documents. The form of certification, if required by the Owner, will be provided by the Owner upon the acceptance by the Engineer of the Contractor's appointed scheduler. The Contractor's scheduler shall attend all project meetings where scheduling input is necessary, as well as attend the meetings and perform the duties set out in the General Conditions or other Contract Documents. The Owner and Engineer shall be invited to all Contractor Scheduling meetings.

### 19. SCHEDULE REQUIREMENTS

The Contractor shall employ the Critical Path Method (or similar, pre-approved method) scheduling technique to create and maintain a current and accurate schedule depicting the actual and expected progress of the work and meeting the following requirements:

#### SCHEDULE STANDARDS

- A. The Contractor shall create its schedule using the latest version of Primavera Project Planner.

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**OAKLAND COUNTY WATER RESOURCES COMMISSIONER**

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## GENERAL SPECIFICATIONS

- B. Each element of work on the project shall be shown as an activity or group of activities on the schedule in the detail necessary to accurately depict every step required to complete the project. At least 300 discrete activities shall be included on the Preliminary Schedule, however, the Owner or Engineer retains the right to modify this minimum activity count.
- C. In addition to construction activities, the schedule shall include applicable activities for design and procurement (of both subcontractors and material). The material delivery date shall be the same as provided in the Consolidated Submittal Schedule.
- D. The schedule shall include activities that represent the major milestones and completion dates listed within the Contract Documents.
- E. The Schedule shall include Submittals and Submittal-Owner Approval activities, as well as time required for fabrication, delivery, storage, installation, testing, start-up, training, close-out, and commissioning.
- F. The activities shall form a complete network wherein all activities (except for the start and completion milestones) shall have at least one predecessor and one successor.
- G. Each activity shall have as many predecessor or successor activities as is necessary to accurately reflect the requirements to complete the work.
- H. The activities shall be connected by only “finish-to-start” (FS) logic ties with 0 day lags. In the event that a relationship between activities cannot be accurately depicted using FS then the Contractor can request the use of other logic types.
- I. The Contractor shall refrain from constraining activity dates in the schedule. If the Contractor feels constraints are necessary, the Contractor will detail the reasons for the constraints to the Engineer for approval.
- J. The Critical Path shall be the longest continuous chain of activities in the network from the data date of the schedule through Substantial and Final Completion of the project.
- K. The schedule must contain activities that clearly identify information, materials, actions or directions required from the Owner to progress the work.
- L. The Contractor shall provide the Project Baseline Schedule to the Owner in hard copy print outs in bar chart format, printed landscape on 11”x17” paper with the timescale formatted to fit on 1 page wide, unless otherwise requested in writing by the Owner. The print out shall include columns indicating the Activity ID, Activity Name, Remaining Duration, Start Date, Finish Date, Total Float, and any other dates requested by the Owner. The Contractor shall also submit all schedule files in the native Primavera Project Planner electronic format.
- M. The schedule shall clearly show the calculated critical path of the project.
- N. Schedule calendars must be developed to accurately reflect the working times for each activity based on the specific requirements of the project.

## GENERAL SPECIFICATIONS

- O. The Contractor shall use the scheduling software to resource load the schedule and indicate the specific trade(s) required to perform each activity and the man hours required by each trade.
- P. If not waived by the Owner, the Contractor must provide a manpower curve for each trade based on the activity duration and sequence as calculated by the scheduling software.
- Q. The schedule should include a specific plan for dealing with 'normal adverse weather'. This is weather that can be reasonably expected to slow or stop work, based on historical weather in the same general geographic area. Examples of such weather include, but are not limited to: wind, cold, heat, humidity, rain, and snow. Time extensions for 'abnormal adverse weather' will only be considered if the Contractor provides specifics as to why the actual weather is abnormally adverse. Analysis of historical weather data will nearly always demonstrate that normal adverse weather should be anticipated by the Contractor every month. This must be planned for in the schedule.
- R. The schedule shall include appropriate activity codes and WBS structure such that it can be easily grouped, filtered, and sorted. The Engineer may suggest additional codes.

### 20. THE PROJECT BASELINE

- A. Within 10 calendar days of the Award of The Contract by the Owner (or within another timeframe, as required by the Owner), the Contractor shall provide a Project Baseline Schedule which depicts all major elements of the work and calculates a completion date consistent with the completion dates listed in the Contract. The Project Baseline Schedule shall be based on the Preliminary Schedule expanding the activities and detail as well as making any necessary corrections. It is expected that the number of activities in the Baseline Schedule will exceed the number of activities in the Preliminary schedule. The exact minimum number of activities is to be determined by the Engineer or Owner. Any change in activity titles in the preliminary schedule shall be specifically identified to the Owner prior to use in the Project Baseline Schedule. The Contractor shall immediately address any exceptions taken by the Owner or Engineer. The Schedule is not properly submitted until the Owner returns the Schedule to the Contractor with "No Exceptions". The return of the schedule with "No Exceptions" will not constitute adoption of the schedule by the Engineer or Owner. This designation merely means that the Owner has not discovered any obvious errors in the schedule or obvious deviations from the schedule requirements in the Contract Documents. The return of the schedule with "No Exceptions" shall not preclude the Owner or Engineer from raising exceptions to subsequent updates regardless of whether those concerns appeared on the Project Baseline Schedule.

## GENERAL SPECIFICATIONS

- B. The Project Baseline Schedule shall include only the work shown in the Contract documents and intended at the time of award of Contract as well as the obligations of others affecting the Work. The Project Baseline Schedule shall not show any progress of the work since the start of the project and shall not reflect any changes, claims, disputes or extra work performed or anticipated on the project.
  
- C. The Baseline Schedule shall include a narrative that includes the following information (which may be appended by the Owner or Engineer at any time):
  - (1) Overall description of the general work sequence
  - (2) Summary of the critical path
  - (3) Description of allowances made for adverse weather
  - (4) Description of the basis for the durations
  - (5) Listing of known project risks
  - (6) Description of the general procurement plan for long lead equipment and materials
  - (7) A general overview of labor availability
  - (8) An overall site logistics and staging plan, including crane plans

### 21. UPDATING THE SCHEDULE

- A. At least 10 days before submission of the each Application for Payment a conference attended by Contractor, Contractor's Scheduler, Engineer, Owner's Scheduler, and others as appropriate will be held to review the proposed schedule update to be submitted in accordance with the Contract Documents, including this Specification. Contractor will have 10 days to make corrections and adjustments and to complete and resubmit the schedule updates with the monthly progress payment application. No progress payment will be due to, or made to Contractor until the current schedule updates are submitted to Engineer, and until the prior month schedule update has been returned to the Contractor by the Engineer with "No Exceptions."
  
- B. The schedule shall be updated to indicate the actual progress of the work since the previous update and the intended sequence of the remaining work. All Work required to complete the Contract shall be included on the schedule updates, including Work relating to changes, disputes, claims, and delays or asserted delays. Schedule updates shall not include assertions as to the cause or responsibility for any delays, claims or purported added work. The schedule updates shall not reflect theoretical time for completion beyond the time actually necessary for completion of the work. Schedule updates shall not move any completion dates or milestones unless a Change Order has been issued. Any review, return without exceptions, or other comments or response to a schedule update shall not constitute approval of a schedule modification, or a change

## GENERAL SPECIFICATIONS

order or work directive. The schedule updates are a report to the Owner of the Contractor's specific plan for completing the work and the time the Contractor believes is necessary to perform all of the required Work.

- C. In the event that actual progress of the work or any modifications to the sequence or duration of the activities causes the completion milestones of the project to be delayed beyond the dates indicated in the previous update, the Contractor shall make every effort to re-sequence the work (or otherwise adjust the schedule) to eliminate the delay. Unless determined otherwise through the issuance of a written, fully executed Change Order, the cost of the re-sequencing shall be borne by the Contractor.
- D. The Contractor shall certify each scheduling submission indicating that it has accurately depicted the critical path of the project.
- E. The Contractor shall provide an electronic copy of each schedule update to the Owner in the native Primavera Project Planner scheduling software format.
- F. Each schedule update shall be submitted to the Owner with a narrative report indicating the major changes that occurred (and the reason for the changes) including:
  - (1) Activities added to the schedule
  - (2) Activities deleted from the schedule
  - (3) Logic revisions
  - (4) Changes to the Critical Path
  - (5) Calendar changes
  - (6) Added or deleted constraint dates
  - (7) Duration Changes
- G. The Contractor must provide with each update a listing of all activities, complete with the current float values that require specific input or direction from the Owner.
- H. The Contractor may not rename activities included in the Project Baseline Schedule nor divide existing activities into new activities or sub-activities without the written consent of Owner. Additionally, the Contractor is not to re-use Activity IDs (i.e., if an activity is deleted, that ID shall not be used for a new activity).
- I. Significant changes to the schedule sequence or the addition/deletion of change order work may necessitate a schedule Revision. This is effectively a re-baselining of the project, and the schedule shall be designated and reviewed as a Revision.



## GENERAL SPECIFICATIONS

### 22. MEASUREMENT OF CHANGE

- A. The only means of changing the completion dates or milestones of the project is by a fully executed Change Order as set out in the Contract Documents.
- B. The Contractor must identify, at the time that a change in the work is identified, what, if any, activities are impacted by the change and/or what new activities that are required to sufficiently depict the changed work in the CPM schedule.
- C. No requests for additional time will be granted unless entitlement is demonstrated by a contemporaneous time impact analysis.
- D. All direct and indirect impacts from approved changed conditions must be indicated in the schedule.

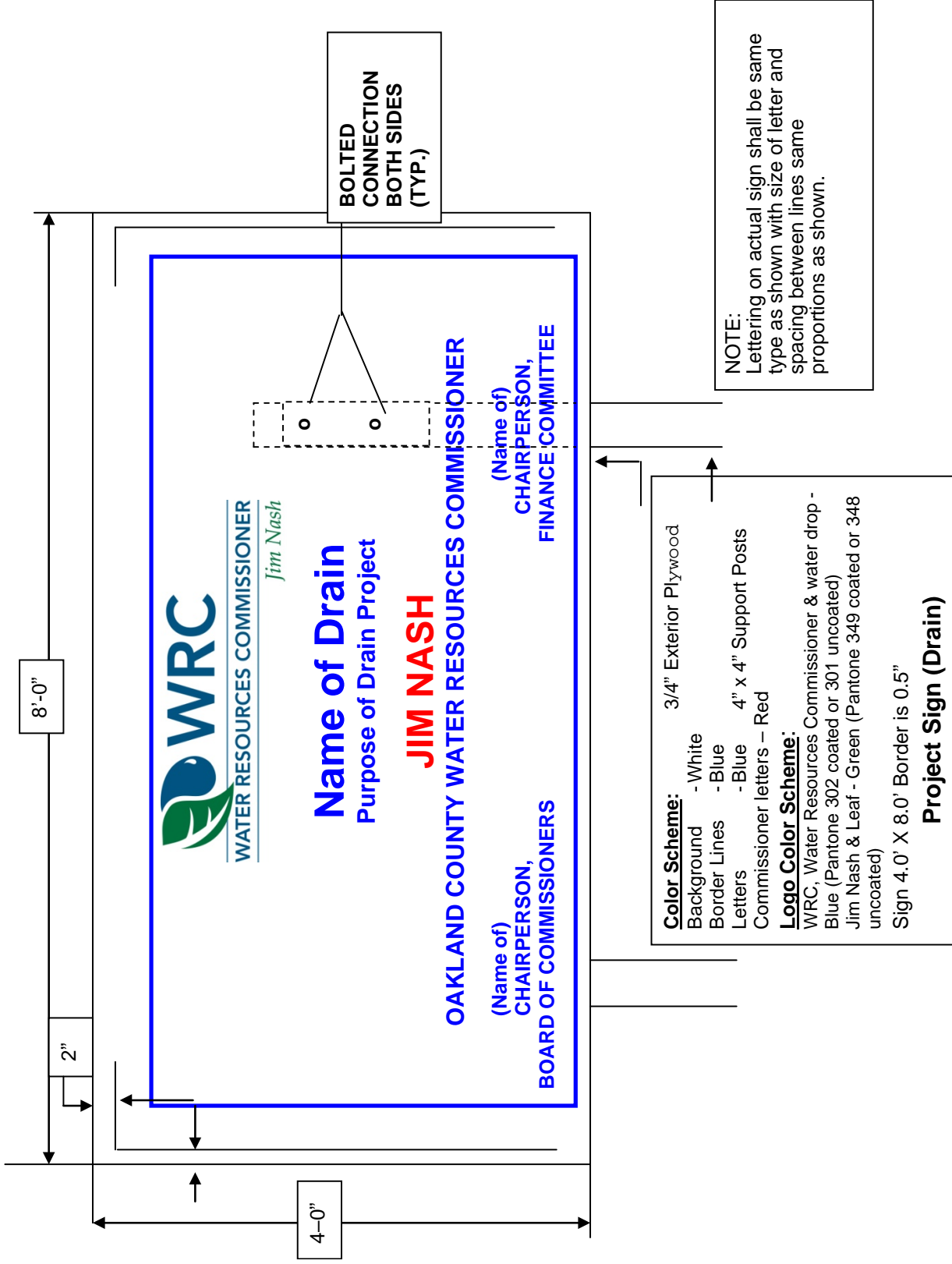
### 23. SCHEDULE FLOAT

Any float existing, found, or created in the schedule shall belong equally to the Contractor and the Owner from the time of Project Baseline Schedule approval. Each party may use the float it owns. However, no damages will be recoverable by the Contractor based on an asserted right to an early finish date prior to the Contract or milestone completion deadlines.

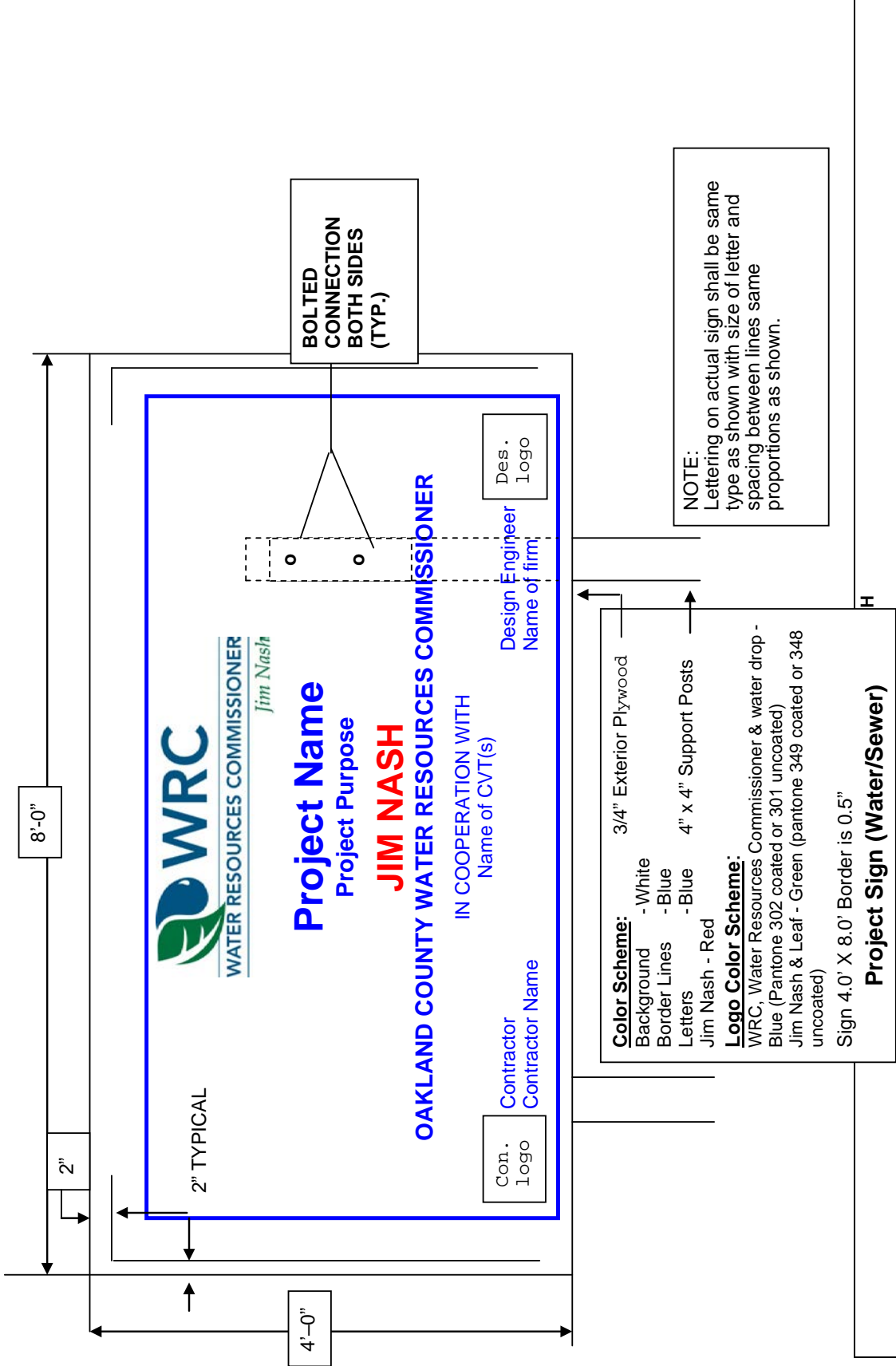
### 24. SIGNS

- A. The Contractor will furnish and erect one sign for each section of the Project, at those locations as directed by the Engineer.
- B. The Project sign shall be in accordance with the drawing shown on the following page, made of 3/4-inch exterior plywood with blue and red letters on a white background and maintained in good condition until completion of the project.
- C. The Engineer will supply to the Contractor an electronic copy of the WRC logo for use on the sign(s).
- D. A draft copy of the sign(s) must be approved by the Engineer prior to final production.
- E. Signs must be in accordance with local ordinances; this takes precedence over Section 18 b.

**GENERAL SPECIFICATIONS**



**GENERAL SPECIFICATIONS**



**END of SECTION**

**SPECIFICATIONS FOR COLOR AUDIO-VIDEO RECORDING  
OF CONSTRUCTION AREAS**

**1. QUALIFICATIONS**

The pre-construction digital versatile disk (DVD) documentation shall be done by a responsible commercial firm known to be skilled and regularly engaged in the business of color audio-video construction documentation. The firm shall furnish such information as the Owner deems necessary to determine the ability of that firm to perform the work in accordance with contract specifications. This information may include a complete history of all construction work experience.

**2. CONTRACTOR'S RESPONSIBILITIES**

The Contractor shall provide all labor, materials, equipment, services and perform all operations necessary to furnish to the Owner a complete color audio-video recording of the surface features within the proposed construction zone of influence including access roads and haul routes. This record shall include, but not be limited to, all audio-videos, DVD storage cases, index labels and logs. The purpose of this coverage shall be to accurately document the pre-construction condition of these surface features.

**a. Coverage**

The recordings shall include coverage of all surface features located within the construction zone of influence. The construction zone of influence shall be defined (1) as the area within the permanent and temporary easements and areas adjacent to these easements which may be affected by routine construction operations; (2) road R.O.W. (3) as directed by the Owner. The surface features within the construction zone of influence shall include, but not be limited to, all roadways, pavements, curbs, driveways, sidewalks, culverts, headwalls, retaining walls, buildings, landscaping, trees, shrubbery and fences. Of particular concern shall be the existence or non-existence of any faults, fractures or defects.

Houses and buildings shall be identified visually by house or building number, when possible, in such manner that the progress of the recording and proposed construction areas may be located by reference to the house and buildings.

**b. Recording Operation**

The operator in charge must have experience on at least 25 miles preconstruction work and/or other similar construction work. Apprentice operators may not assume control over any work, but must, in the course of their duties, be continuously supervised by an experienced operator.

**c. Recording Schedule**

The recording shall be performed prior to the placement of any construction materials or equipment on the proposed construction site.

**SPECIFICATIONS FOR COLOR AUDIO-VIDEO RECORDING  
OF CONSTRUCTION AREAS**

d. **Delivery**

The Contractor shall deliver the DVD recordings to the Owner upon their completion as a whole; or upon request of the Owner, deliver specific DVD recordings of any area to the Owner upon their completion. Upon delivery of the DVDs, transfer of ownership of those DVDs shall be made to the Owner.

e. **Unacceptable Documentation**

The Owner shall have the authority to reject all or any portion of the DVD documentation not conforming to specifications. Those rejected portions shall be re-done at no additional cost to the Owner.

f. **Documentation Additions and Omissions**

The Owner shall have the authority to designate what areas may be added to or omitted from DVD documentation.

g. **Specification Deviations**

Any deviation from these specifications must have the written approval of the Owner/Engineer.

**3. PROCEDURAL REQUIREMENTS**

The following procedures shall be implemented in the production of pre-construction color audio-DVD documentation. Above all, the documentation shall be executed in a conscientious and professional manner to assure the end product's maximum usefulness to the Owner.

- a. The coverage shall consist of a single, continuous, unedited recording which begins at one end of a particular construction area and continues to the other end of that construction area. However, where coverage is required in areas not accessible by conventional wheeled vehicles and smooth transport of the recording system is not possible, such coverage shall consist of an organized, interrelated sequence of recordings at various positions along that construction area.
- b. The DVD shall be divided into chapters with a maximum of 10 stations (1,000') per chapter.
- c. **Vehicle Rate of Travel** - The vehicle rate of travel shall be indirectly proportional to the number, size and value of the surface features within that construction area's zone of influence. The following table classifies typical areas and sets the maximum average rates of travel in those areas, shall be used to establish approximate limits on actual average rates of travel:

**SPECIFICATIONS FOR COLOR AUDIO-VIDEO RECORDING  
OF CONSTRUCTION AREAS**

RATE OF TRAVEL

AREA	RATE MAX.	TYPICALLY CHARACTERIZED BY	AVG.
(1)	High Density developed subdivision)	(e.g. hard surface streets, curbs, drives & sidewalks; 50' lots; very few empty lots	30 ft/min.
(2)	Med. Density partially developed subdivision)	(e.g. gravel roads, hard & soft surface drives, no sidewalks culverts and headwalls, 100' lots, few empty lots	60 ft/min.
(3)	Low Density Suburban fringe)	(e.g. gravel roads, small fields or woods, occasional houses	90 ft/min.
(4)	Extra Low Density (e.g. rural)	gravel roads, large fields, sparse number of houses	120 ft/min.

- d. **Visibility** - All recording shall be performed during times of good visibility. No recording shall be done during period of significant precipitation, mist or fog. The recording shall only be done when sufficient sunlight is present to properly illuminate the subjects of recording and to produce bright, sharp video recordings of those subjects.

No recording shall be performed when more than 10% of the ground area is covered with snow, unless otherwise authorized by the Owner,

**4. TECHNICAL REQUIREMENTS**

The total audio-video recording system and the procedures employed in its use shall be such as to produce a finished product that will fulfill the technical requirements of the project as well as those more subjective requirements of high quality audio and video production. The video portion of the recording shall reproduce bright, sharp, clear pictures with accurate colors and shall be free from distortion, tearing, rolls, or any other form of picture imperfection. The audio portion of the recording shall reproduce the commentary of the camera operator with proper volume, clarity and be free from distortion.

a. **Recording System**

(1) **DVD**

The DVD used for the recordings shall be professional quality 12 cm color DVD media that conforms to either DVD-R or DVD+R recording standards using high quality DVD video and audio bitrates. No DVD's used for any previous recording will be used except when furnished by the Owner.

The recorded DVDs shall be compatible for playback with any standard DVD-R or DVD+R player.

**SPECIFICATIONS FOR COLOR AUDIO-VIDEO RECORDING  
OF CONSTRUCTION AREAS**

(2) **Recorder**

All video recordings must, by electronic means, display continuously and simultaneously generated transparent digital information to include the date the time of recording, the engineering stationing corresponding to the stationing on the plans or as directed by the engineer, the name of the street, easement or building being documented, the project and time to appear in the upper left hand corner of the picture.

Example:     N on First Street W/E  
                  84 + 20

(3) **Audio Record**

There shall be a corresponding and simultaneously recorded audio recording. This audio recording, containing the commentary of the camera operator, shall assist the viewer orientation and in any needed identification, differentiation, clarification or objective description of the structures being shown in the video portion of the recording.

The audio recording shall be free of any other voice communication.

At the start of production and the beginning of a new street, an identification summary shall be read into the record while at the same time a wide angle view with numeric displays is provided for facial record. Summary to include: DVD Number, Name of Job, Location of Job, Positional Location at start of job date, time, weather and other notable conditions.

(4) **Camera**

The color video camera used in the recording system shall have a horizontal resolution of 300 lines at center, a luminance signal to noise ratio of 45db, and a minimum illumination requirement of 25 foot-candles.

Camera to be adjusted to factory specifications and f-stop adjusted to optimum contrast. White balance pedestal, level and sync must be adjusted for factory recommended optimum performance under environmental conditions.

a.     **Camera Height and Stability**

When conventional wheeled vehicles are used as conveyances for the recording system, the distance between the camera lens and the ground shall be not less than 12 feet. The camera shall be firmly mounted, such that transport of the camera during the recording process will not cause an unsteady picture.

b.     **Camera Control**

Camera pan, tilt, zoom-in, and zoom-out rates shall be sufficiently controlled such that recorded objects will be clearly viewed during DVD playback. In addition, all other camera and recording system controls, such as lens focus and aperture,

**SPECIFICATIONS FOR COLOR AUDIO-VIDEO RECORDING  
OF CONSTRUCTION AREAS**

video level, pedestal, chrome, white balance and electrical focus, shall be properly controlled or adjusted to maximize recorded picture quality.

- (1) A wide angle of area will be shown first, then a series of pans, zooms and tilts as may be necessary to accomplish a comprehensive view. Close-ups will be utilized as necessary to insure sufficient detail of items of interest. Progress shall continue linearly along the field of view, for example, one side of roadway must be completed before commencing recording of the opposite side.
- (2) Camera pans and tilts to be no faster than 90 degrees of arc in a five-second interval, or slower, to assure maximum clarity of scene detail.
- (3) Camera zoom to be no faster than a doubling of focal distance within a 1/2 second interval, or slower. Zoom is capable of 17 to 120 mm, then the minimum time to perform a full zoom is 3/5 seconds.
- (4) Each item of interest shall be clearly indicated in the video record for sufficient time to permit audio discussion and viewer comprehension.

(5) **DVD Indexing**

a. **DVD Identification**

All DVDs and their storage cases shall be properly identified by DVD index number, project title and general project location.

b. **DVD Logs**

Displayed on the storage case of each DVD shall be a log of that DVD's contents. That log shall describe the various segments of coverage contained on that DVD in terms of the chapters, names and sides of the streets or easements, coverage beginning, direction and endpoints, with corresponding DVD layer counter numbers.

c. **Cumulative Index**

A cumulative alphabetical index correlating the various segments of coverage to their corresponding DVDs shall be supplied to the Owner.

All equipment, accessories and materials to perform this service shall be furnished by the Contractor, except the plans of the proposed area to be televised, which are furnished by the engineer. Measurement will be based on the number of lineal feet of proposed pipe installation including manholes measured horizontally on the centerline thereof as indicated on the contract drawings.

\*\*\*END OF SECTION\*\*\*



## **PREBID MEETING AGENDA**

### **COSDS Emergency Streambank Repairs Rochester Hills, Michigan August 31, 2016**

#### **Circulate Sign-in Sheet**

#### **Introductions**

Tim Pollizzi, Rochester Hills  
Roger Cantelon, Inland Lakes Landscaping  
Dominic Vani, V.I.L. Construction  
George Nichols, P.E., OCWRC  
Jim Surhigh, P.E., HRC

#### **Purpose**

The purpose of this meeting is to clarify the plans and specifications and address any questions from the prospective bidders. The meeting minutes will be distributed under addendum #1.

#### **Description of Project**

The work on the drain project consists of furnishing and installing the necessary natural stone materials and plantings for approximately 550 feet of stream bank stabilization at two distinct locations where the Clinton River threatens the COSDS Interceptor pipe and manhole structures within the City of Rochester Hills property south of Avon, west of Livernois. Work also includes clearing, grubbing, select tree trimming/removal, dewatering, backfill and restoration required for a complete job.

#### **Schedule**

Bids will be received at the Office of the Oakland County Drain Commissioner up until **2:00 PM on Tuesday, September 13, 2016** and will also be opened at that time. There will be a 120-day hold period on the bids. We intend to award the Contract to the lowest, responsive, responsible bidder and the Notice to Proceed will be issued within the 120-day hold period. The Contractor's experience and qualifications documents shall be submitted immediately after the bid opening to help expedite the contract award process.

The Contractor will be required to start work no later than ten calendar days after the date of written Notice to Proceed and maintain a rate of progress that will result in the substantial completion of the project by December 16, 2016 and final completion of the project by June 2, 2017.

There is also a liquidated damage amount of \$500 per calendar day for each calendar day, including weekends, by which the Contractor exceeds the substantial completion date.

### **Bidding Information**

The Bidder must execute and submit with his Proposal the appropriate Resolution of Certificate Form included in the Specifications under the proposal section. The Resolution form authorizes the bidder to sign the Proposal on behalf of the firm submitting the bid. A bid bond, certified check or cashier's check in the amount of five percent of the total amount bid for the project is also required for the bid to be accepted.

### **Easements/Access**

A copy of the signed temporary easement document and map were distributed at the meeting. There is also a copy at the end of the specification book

### **Discussion Items**

1. The sanitary sewer is located far enough below the water level and should have no interference with the project.
2. The contractor may access the site along the walking path or through the trees/brush as noted and shown on the easement documents.
3. The Contractor should use the staging area as noted on the easement document to prevent any backups at the intersection of Livernois and Avon Roads.
4. There was a question regarding the pay items in particular the issue of topsoil, compost and fill material. There is not a separate pay item for each but is included under a lump sum item. Therefore the contractor has concerns about knowing the amount of material which is needed for the project. HRC will address this issue.
5. Slope and toe protection are outlined in the plans with a profile. There are pre and post elevations shown on the plans.
6. Toe protection includes the use of log segments and stone materials. Logs to be placed as described in the details and construction notes.
7. Reference the toe protection details on Sheet No. 4 for specific layout information.
8. WRC will provide a full time inspector on site during the construction.
9. HRC will stake out and layout the proposed in-stream work.
10. Concrete slabs for in-stream structure footings should contain no steel rebar. Detail calls for regular shape stone and not boulders.
11. Verification of concrete slab material might be required to prevent material that contains oils/grease from industrial sites being used near the water course.
12. The Contractor can harvest existing dead trees to obtain needed log materials.
13. If using the walking path as a haul route, the existing culvert pipe needs to be protected from any potential damage. This is noted on the plans accordingly.