MINUTES

2011 CONTRACTOR/DEVELOPER/ENGINEERS MEETING

FEBRUARY 9, 2011

8:00 – 11:00 MEETING

I. Opening Remarks by Rob Phillips, City Engineer

BPW was cancelled on 2/2 due to snow. However, items will go to same CC as planned so no delays in awarding bids. Prequalification is a 2 year cycle but annual AA updates are required on the off year.

II. Review minutes from November meeting

No comments

III. Affirmative Action – Contract Compliance

Data updates in opposite year of prequalification are due. SBE compliance: attend pre-bib, share information on compliance report so report is responsive and responsible. Collier McNair is contact for SBE compliance. Partial payments can be withheld for missing payrolls. Harper Donahue commented that many AA plans are incomplete and slow down approval.

IV. Comments by City Water Utility

Facility contracts: pump station bidding in May or June. Tank at Prairie Rd is being bid. Spec change for 2011 edition dealing with flushing highly chlorinated mains.

V. Comments by City Traffic Engineering

No staff present.

VI. Comments by Parks Department

Several projects scheduled for 2011: including Breese Stevens, Quann tennis courts, landscaping. Some are already bid.

VII. Erosion Control: Spec revisions

Handout with summary of changes including 2011 specification revisions was handed out. Highlights: Contractors will inspect after all ½" rain events; phasing will need to part of EC plan submitted by contractor;

repairs to EC measures need to be made within 24 hours of end of rain event.

VIII. BVC Update

Ordinance was revised to follow more of the State language. This includes an exemption for displaced journeyworkers due to economic slowdowns. Contractors pre-certified by the State are considered certified by the City. Certification is evaluated for each trade.

IX. Sags in sanitary sewer

A video was shown of a line with a sag that needed to be excavated and repaired. Contractors were informed of problem areas such as tying into structures and installing wyes.

X. Spec revisions proposed

Shared some of the changes being proposed. A summary of all changes was given out previously and posted on the web site. WU discussed testing. Conductivity testing will be required. Flushing mains to the storm sewer is the preferred method. Highly chlorinated water will have to be dechlorinated. A permit will be required if the discharge is to the sanitary. Permit issued by Engineering. 48 hour notice required prior to all flushing.

XI. Reporting Damage to City Facilities

Contractors reminded to inform City staff of damaged facilities immediately.

XII. Contractor/Developer/Engineer Comments

Request was made to have design engineer at pre-bid meetings. Engineering staff could come to more complicated projects.

Question was asked to start contract time after EC measures are installed. Engineering will review this.

Prevailing wage sheets are handed out at the preconstruction meeting for posting on site by the contractor.

Request was made to evaluate how days are calculated for project especially with the phasing requirements due to EC plans.

There is concern over the language about restoring terraces prior to paving due to phasing. Topsoil will be placed on gravel and contaminate the stone. Comment was made that the excavated area behind the curb acts as a silt trap.

Request was made to include phasing plan in contract specifications

Request was made to include a landscape mobilization due to multiple phases of landscaping
Pipe removal specification should include pipe material not just pipe size for determining if incidental

Late addendums should not be allowed date bid is due because supplier quotes are known to general contractors by this time

Request was made to use a summary of tickets for a project instead of individual tickets. Wingra Stone was requested to provide a sample summary sheet.

City is looking into electronic bidding and plans.

NEXT MEETING MAY 4, 2011

February 8, 2011 – Contractor's Meeting

Erosion Control on Public Works Projects

Agenda

I. Introduction – Greg Fries, P.E.

   A. Why

   B. Expectations

   C. Team Effort

II. Erosion Control Specification Changes – Tim Troester, P.E.

   A. Summary of Changes

   B. Revised Standard Detail Drawings

   C. New EC Bid Items

III. Erosion Control Process – Jeff Benedict, P.E.

   A. Erosion Control Implementation Plan

   B. Erosion Control Initial Installation Certification

   C. Erosion Control Inspection & Reporting

   D. Final Inspection (ECNOT)

IV. Questions

EROSION CONTROL SPEC REVISIONS SUMMARY

210 – Erosion Control

Deleted Article 210 – Erosion Control in its entirety and replaced with re-written erosion control specifications. Following is a summary of the major changes.

- Erosion Control Implementation Plan is a new Standard Bid Item on projects disturbing 20,000 SF or more land area. A minimum of two (2) phases are required for all plans. The plan must be approved prior to installation of any EC measures. Prior to any land disturbing activities the required EC measures for the first phase must be installed and an initial implementation inspection (performed by City Engineering staff) must approve the installation. Prior to proceeding with work on each subsequent construction phase the appropriate EC measures from the plan shall be installed and the installation approved by the Construction Engineer.

- Erosion Control Inspection is a new Standard Bid Item on projects disturbing 20,000 SF or more land area. The Contractor shall complete an inspection of the EC measures within 24 hours of the end of any rain day exceeding ½" as measured at a gauge designated at preconstruction meeting. Upon completion of the inspection an email report with photos of each erosion control practice being used must be submitted to the designated City representative. The report shall document the status of all active erosion control measures and any needed repairs. Repairs are to be completed within the same 24 hour period and must be documented and a follow-up inspection report submitted within 24 hours of completing the repairs.

- Construction Entrance & Street Construction Entrance Berms – Note that entrances not installed to the minimum dimensions will not be paid per section 210.4(a). If removal of the entrance is completed after restoration of the site any repairs/restoration required is considered incidental to the entrance items. The amount of clear stone required to build entrances is still paid as a separate item.

- Street Sweeping is a lump sum item to cover all required street sweeping for the project. Sweeping may be required multiple times throughout the workday depending on site conditions and/or as directed by the Construction Engineer. As a minimum all streets/paved areas must be clean at the end of the work day.

- Clear Stone Berms are now broken into "Clear Stone Berm (Ditch Check)" for use in ditches or swales and "Street Construction Stone Berm" for use on street reconstruction projects to provide velocity control. The amount

of stone required to build the berms is still paid separately, but any costs for installation, maintenance, & removal are incidental to the berm items.

- Silt Fence, Silt Sock & Erosion Bales have several new bid items that will be used depending on the scope of the project. Smaller projects will use the "Complete" bid item that covers all materials, installation, maintenance, removal and restoration. Half of the quantity for "Complete" items will be paid on installation and the remaining half will be paid on removal. Larger projects or extended length projects will use bid items that have been broken into "Provide, Install & Maintain" and "Remove & Restore" which are paid on installation and removal respectively.

- Inlet Protection has several new bid items that will be used depending on the scope of the project. Smaller projects will use the "Complete" bid item that covers all materials, installation, maintenance, removal and restoration. Half of the quantity for "Complete" items will be paid on installation and the remaining half will be paid on removal. Larger projects or extended length projects will use bid items that have been broken into "Provide & Install", "Maintain" and "Remove" which are paid on installation, each time the measure is maintained/cleaned and upon removal respectively. Inlet Protection called out as "Modified" uses type HR fabric instead of the WDOT specified type FF.

- Clean Sump is a new bid item for cleaning of any newly constructed catchbasins as determined necessary by the Construction Engineer.

- Polymer Stabilization is a new bid item for the application of soil stabilizers for erosion control as directed by the Construction Engineer. This does not cover polymer application that is already included in the seeding specifications.

- Erosion Matting no longer includes seeding. Any required seeding is paid separately under the appropriate seeding items. The product being installed must be on the WDOT PAL and meet project requirements. The product name and the manufacturer's recommended installation instructions must be submitted at the preconstruction meeting. The Construction Engineer has final say over installation discrepancies between the manufacturer's recommendations and the City's standard installation details.

Standard Detail Drawings
(revised drawings attached)

S.D.D. 1.04
Added note for use of different geotextile fabric Type HR when inlet protection type is called out as "Modified"

S.D.D. 1.05
Revised named to "Clear Stone Berm (Ditch Check)", added note regarding spacing, added note to extend filter fabric

S.D.D. 1.06
Added note for use of different geotextile fabric Type HR when inlet protection type is called out as "Modified"

S.D.D. 1.07
Revised notes to underlay with geotextile fabric at all times

S.D.D. 1.08
Revised notes to underlay with geotextile fabric at all times

S.D.D. 1.10
Added new S.D.D. 1.10 "Street Construction Stone Berm"

Standard Bid Items

Deleted items 21001 thru 21022 and replaced with new items 21001 thru 21092 (see attached)

ARTICLE 210 - EROSION CONTROL

210.1 Description.

Soil erosion and uncontrolled runoff from construction and land disturbing activities can have adverse impacts upon regional water resources and the health, safety, property and general welfare of the community. The Contractor shall conduct and schedule operations so as to avoid or minimize siltation of streams, lakes, reservoirs and other areas. The Contractor shall also take all necessary precautions to prevent pollution of streams, lakes, reservoirs and other areas with fuels, oils, bitumen, calcium chloride, or other harmful materials. Requirements for the treatment of runoff associated with dewatering Type I or Type II is addressed in section 502 of these Standard Specifications.

The Contractor shall have adequate erosion control measures available on site for erosion control as per the plans, special provisions and Standard Detail Drawings or as determined necessary by the Construction Engineer. The type and amount of erosion control materials required will be determined by the type and amount of open excavation and/or the erosion control plan. The Contractor shall schedule the work so that the amount of open excavation and the stockpiling of construction materials on the job site are minimized.

Excavated materials and imported backfill materials stockpiled at the project site shall be stored and protected in such a manner that will not result in transport of said materials by stormwater runoff into adjacent streets or drainage facilities. Unprotected excavated materials and imported backfill materials stored temporarily on street pavements to facilitate construction shall be removed and/or properly stored/protected by the end of the work period, which shall not extend past the end of the work day.

Backfilled trenches and other areas shall be left to the level of the adjacent area or slightly below until restored to reduce the potential for erosion. All excess excavated materials and imported backfill materials shall be promptly removed from the site and disposed of following completion of construction and/or restoration activities.

Tracking of foreign materials (mud, silt, etc.) on street and/or other paved surfaces shall be controlled during the working day as necessary and/or as directed by the Construction Engineer, but no later than the end of the working day, by one or more of the following methods:

1. Hand shoveling material off street or pavement surfaces.

2. Machine removal (such as with endloader or grader), provided that the results are equal to that of hand shoveling.

3. Mechanical sweeping of material off paved surfaces and adjacent streets.

Diversion berms or sediment filtration berms shall be constructed and maintained as determined necessary by the erosion control plan and/or the Construction Engineer in order to route off-site stormwater runoff around disturbed work areas.

Replacement/repair of pre-existing erosion control measures which are disturbed in the course of the work shall be completed promptly following completion of the work on the project causing such disturbance.

210.1(a) Erosion Control Implementation Plan.

Whenever a project requires erosion control permitting for land disturbance of 20,000 square feet or more the Contractor shall prepare and submit an Erosion Control Implementation Plan to the Construction Engineer. This plan shall be submitted for review and approval prior to any land disturbance activities or beginning installation of erosion control measures. The Erosion Control Implementation Plan bid item shall include all work required to create, update, submit, obtain approval for, and initially field inspect an erosion control plan specific to the Contractor's proposed staging and planned methods of construction for the project. The individual erosion control measures necessary for construction of the plan shall be paid under the appropriate bid items.

The Contractor shall understand that a comprehensive phased plan showing the Contractor's approach to minimize the disturbed area at any given time is required to obtain approval of the Erosion Control Implementation Plan. The phasing shall consist of a minimum of two (2) phases for construction with no maximum number of phases. The Contractor shall not simply resubmit the erosion control plan provided with the plan set as what they intend to implement. Upon approval of the implementation plan it shall be provided to the WDNR, when applicable.

Prior to beginning any land disturbing construction activities the Contractor shall install all required erosion control practices for the first phase of the approved Erosion Control Implementation Plan and an initial implementation inspection (performed by City Engineering staff) must approve the installation. Prior to proceeding with work on each subsequent construction phase the appropriate erosion control measures from the Erosion Control Implementation Plan shall be installed and the installation approved by the Construction Engineer.

210.1(b) Erosion Control Inspection.

The Contractor shall complete an inspection of the erosion control practices on permitted projects with 20,000 square feet or more of land disturbance within 24 hours of the end any rain day exceeding ½" in total depth. A rain day is defined as each 24-hour calendar day and shall be measured using a gauging station that shall be provided at preconstruction meeting by City staff. The data from the rain gauging station shall be available on the internet to allow remote checking of the rain depth totals for each rain day.

Upon completion of the erosion control inspection the Contractor shall provide an email report with photos of each individual erosion control practice being used to the Construction Engineer or to the designated representative as identified at the preconstruction meeting. This report shall document the status of all active erosion control measures and any needed repairs. The inspection report shall be submitted and any needed repairs completed by the Contractor within the same 24-hour period after the end of the rain day. The repairs shall then be documented and a follow-up inspection report submitted within 24 hours following completion of the repairs.

210.1(c) Construction Entrance, Street Construction Entrance Berm.

When required, either by the erosion control plan or the Construction Engineer, a Construction Entrance and/or Street Construction Entrance Berm shall be installed to provide mud tracking control at each construction access point to the project. The Construction Entrance and Street Construction Entrance Berm bid items shall include the installation of entrances per Standard Detail Drawings 1.07 and 1.08 respectively. Removal of the entrance, restoration and/or repair of any disturbed or damaged area within the immediate limits of the entrance (including the curb and gutter, sidewalk and pavement) shall also be considered incidental to the entrance bid items.

210.1(d) Street Sweeping.

When required, either by the erosion control plan or the Construction Engineer, the Contractor shall perform street sweeping on all streets or paved surfaces affected by construction equipment, hauling or related construction activities that result in mud tracking or siltation. Street sweeping shall be completed as directed by the Construction Engineer and shall remove all loose material to the satisfaction of the Construction Engineer. Depending on site conditions, construction activities, and hauling methods utilized by the Contractor street sweeping may be required multiple times throughout the day with an absolute minimum that all streets are clean at the end of the work day.

210.1(e) Clear Stone Berm (Ditch Check), Street Construction Stone Berm.

When required, either by the erosion control plan or the Construction Engineer, a Clear Stone Berm (Ditch Check) and/or Street Construction Stone Berm shall be installed to reduce runoff velocities in areas of concentrated stormwater runoff flow. Clear Stone Berm (Ditch Check) and Street Construction Stone Berm shall be installed per Standard Detail Drawings 1.05 and 1.10 respectively. Maintenance and removal of stone berms shall be considered incidental to their respective bid items.

210.1(f) Silt Fence, Silt Sock, Erosion Bales.

When required, either by the erosion control plan or by the Construction Engineer, perimeter controls consisting of silt fence, silt sock or erosion bales shall be installed to protect down slope areas from silt laden runoff generated from disturbed work areas. Perimeter controls shall be installed per their respective Standard Detail Drawings (1.01 for Silt Fence, 1.09 for Silt Sock, and 1.03 for Erosion Bales).

210.1(g) Inlet Protection.

Inlet protection shall be used at both existing and new inlets that receive runoff from disturbed land areas. The type of inlet protection required at each structure shall be specified in the erosion control plan or determined by the Construction Engineer. Upon completion of the project and after the Construction Engineer has determined the site to be sufficiently stabilized all inlet protection shall be removed by the Contractor. Removal shall be completed prior to final acceptance of the project.

Inlet Protection, Type C and Inlet Protection, Type C Modified shall be installed per Standard Detail Drawing 1.04.

Inlet Protection, Type D and Inlet Protection, Type D Modified shall be installed per Standard Detail Drawing 1.06.

210.1(h) Clean Sump.

Clean Sump is the vactor removal of sediment that has accumulated in the sumps of Catchbasins constructed as part of the project. This work shall include but not be limited to removal of any sediments collected in the sump or on the erosion fabric, and disposal or reuse of the sediments at a location provided by the Contractor (this location shall be stable and have sufficient erosion control). The Construction Engineer shall have final determination if sump cleaning is required. If cleaning is required it shall be completed prior to final acceptance of the project.

210.1(i) Polymer Stabilization.

Polymer Stabilization shall include placing a polyacrylamide soil stabilizer on bare ground to stabilize the area. This item shall be used as directed by the Construction Engineer to stabilize areas that are prone to erosion during construction. Note that this item is not intended to cover polymer to be included with all seeding (which shall be compensated as part of the seeding bid items) but shall cover

supplemental polymer stabilization of erosion-prone areas during construction. Polymer shall be applied in conformance with WDNR standard 1050 for Land Application of Anionic Polyacrylamide.

210.1(j) Erosion Matting.

When required, either by the erosion control plan or by the Construction Engineer, erosion matting shall be installed to reduce soil erosion caused by concentrated runoff or rainfall impact. The erosion mat supplied shall be one of the products listed on the PAL under the specified category, and shall conform to Wisconsin Department of Transportation requirements for the specified category.

210.1(k) Terrace Restoration.

Terrace Restoration shall include the provision, placement and finish grading of a minimum thickness of 4" of topsoil and the restoration with Shade or Sun Terrace Mix as directed in the field. The seeding work shall conform to the specifications in Article 207 - Seeding.

In greenways and detention basin areas, a minimum thickness of six inches (6") of topsoil shall be required.

210.2 Materials.

210.2(a) Silt Sock

Silt sock provided shall be a minimum of 12 inches in diameter and manufactured from a Multi-Filament Polypropylene (MFPP). The MFPP shall have a maximum mesh opening of 1/8 in, a minimum tensile strength of 202 psi, and a 100% original strength from ultraviolet exposure at 1000 hours (ASTM G-155). The silt sock shall be filled with either a compost filler material or a wood chip filler material with no pieces larger than 2 inches. Under no circumstances shall the compost filler material contain any animal waste or byproducts. Wooden posts for staking silt sock shall be 2 in X 2 in X 36 in and staking shall be at 10-foot intervals.

210.2(b) Polyacrylamide Soil Stabilizers

Polyacrylamide Soil Stabilizers shall conform to the WDOT's Product Acceptability List (PAL) for Soil Stabilizers, Type B.

210.2(c) Erosion Matting

Erosion Matting provided shall be of the Class and Type specified. The Class and Type requirements listed below match those of the Wisconsin Department of Transportation nomenclature. Products currently listed in the Wisconsin Department of Transportation's Product Acceptability List (PAL) for the Class and Type specified shall be considered to meet the City of Madison's Specifications for these products.

CLASS I — Class I erosion mats shall be a light-duty, organic erosion control revegetation mat (ECRM). Non-organic netting is allowed for some Class I matting. Class I mat shall have an expected working duration of a minimum of six (6) months. There are four Types of Class I erosion mat.

URBAN TYPE A shall have a minimum permissible shear stress of 1.0 lbs/ft^2 for non-netted materials. No specified minimum permissible shear stress for netted products. Recommended for use on slopes 4:1 or flatter, and recommended for use in environmentally sensitive areas. Not recommended for use in channels.

URBAN TYPE B shall have a minimum permissible shear stress of 1.0 lbs/ft^2. Recommended for use on slopes of 2.5:1 or flatter, and recommended for use in environmentally sensitive areas. Not recommended for use in channels.

TYPE A shall have a minimum permissible shear stress of 1.0 lbs/ft^2. Recommended for use on slopes of 2.5:1 or flatter. Not recommended for use in channels.

TYPE B shall have a minimum Permissible Shear Stress of 1.5 lbs/ft^2 (70) Pa. Recommended for use on slopes of 2:1 for flatter.

CLASS II

Class II erosion mats shall be long lasting, organic ECRM mats. Class II mat shall have an expected working duration of a minimum of three (3) years. There are three Types of Class II erosion mats.

TYPE A is a jute fiber mat. This type of matting shall only be used to reinforce sod and shall conform with Section 628.2.2 of the Wisconsin Department of Transportation Standard Specifications.

TYPE B shall have a Minimum Permissible Shear Stress of 2.0 lbs/ft^2 (95 Pa). Type B mat may utilize plastic netting in its construction. Recommended for used on slopes of 2:1 or flatter, or in channels.

TYPE C shall have a Minimum Permissible Shear Stress of 2.0 lbs/ft^2 (95 Pa). Type C shall be 100% organic including all netting used in its construction. Recommended for used on slopes of 2:1 or flatter, or in channels. Recommended for use in environmentally sensitive areas.

CLASS III

Class III erosion mat shall be a 100% synthetic mat which shall be UV stabilized. There are four Types of Class III erosion mat.

TYPE A is an ECRM mat and shall have a Minimum Permissible Shear Stress of 2.0 lbs/ft^2 (95 Pa). Recommended for used on slopes of 2:1 or flatter, or in channels.

TYPE B is a Turf Reinforcement Mat (TRM) and shall have a Minimum Permissible Shear Stress of 2.0 lbs/ft^2 (95 Pa). Recommended for used on slopes of 2:1 or flatter, or in channels.

TYPE C is a TRM and shall have a Minimum Permissible Shear Stress of 3.5 lbs/ft^2 (170 Pa). Recommended for used on slopes of 2:1 or flatter, or in channels.

TYPE D is a TRM and shall have a Minimum Permissible Shear Stress of 5.0 lbs/ft^2 (240 Pa). Recommended for used on slopes of 1:1 or flatter, or in channels.

Note: When Class III, Types B, C or D are used, the affected areas shall be seeded and fertilized but not mulched. The affected area shall then have Class I matting installed over the affected area. The seeding and Class I matting will be measured and paid for separately.

210.3 Construction Methods.

210.3(a) Polymer Stabilization

Application is intended to be done with conventional hydraulic seeding equipment. Polyacrylamide Soil Stabilizer may also be placed through dry spreading.

Application rates shall be as recommended by the manufacturer and shall meet the approval of the engineer. In general, rate of application shall be 20 lbs./acre.

210.3(b) Erosion Matting

Erosion mat shall be installed in compliance with the Standard Plate "EROSION MAT" in the City of Madison Standard Specifications for Public Works Construction and/or in compliance with the manufacture's specifications. Erosion matting shall be installed within three (3) days of seeding.

The Contractor shall submit the name of the specified product proposed for use as well as the manufacturer's recommended installation instructions, including but not limited to: recommended anchoring devices, (i.e. type of stakes or staples); overlap; anchor trench configuration; and anchoring pattern. The Contractor shall provide this submittal at the preconstruction meeting. Where any discrepancy exists between installation methods called out on the Standard Plate and the manufacturer's specifications, the Construction Engineer shall have the final authority to specify the installation method used.

210.4 Method of Measurement.

210.4(a) Construction Entrance, Street Construction Entrance Berm.

Construction Entrance and Street Construction Entrance Berm shall be measured as a completed unit as installed, maintained and removed in the field. The Contractor shall be aware that the Standard Detail Drawings for Construction Entrance (SDD 1.05) and Street Construction Entrance Berms (SDD 1.10) specify these entrances to be a minimum of 50' long. Construction of an entrance not meeting this specification will result in no payment for this item, not a partial payment.

The quantity of clear stone required for these items shall be compensated separately under the clear stone bid item. The Contractor shall furnish and deliver to the Engineer a ticket with each load showing the net weight of the load of clear stone. All tickets for materials delivered to a City of Madison project shall be presented to the City representative on the project within twenty-four (24) hours after delivery of the materials to the project. Tickets presented after the time specified may be rejected due to inability to substantiate actual use of the materials on the project.

Any required restoration resulting from the removal of any Construction Entrance or Street Construction Entrance Berm after project restoration has been completed shall be considered incidental to the entrance item.

210.4(b) Clear Stone Berm (Ditch Check), Street Construction Stone Berm.

Clear Stone Berm (Ditch Check) and Street Construction Stone Berm, shall be measured as a completed unit as installed, maintained and removed in the field. Street Construction Stone Berms installed across the full width of the street shall be counted as two (2) units.

The quantity of clear stone required for these items shall be compensated separately under the clear stone bid item. The Contractor shall furnish and deliver to the Engineer a ticket with each load showing the net weight of the load of clear stone. All tickets for materials delivered to a City of Madison project shall be presented to the City representative on the project within twenty-four (24)

hours after delivery of the materials to the project. Tickets presented after the time specified may be rejected due to inability to substantiate actual use of the materials on the project.

Any required restoration resulting from the removal of any Clear Stone Berm (Ditch Check) or Street Construction Stone Berm after project restoration has been completed shall be considered incidental to the stone berm item.

210.4(c) Erosion Matting

Erosion Matting shall be measured by the square yard in place not including runout in anchor trenches or overlap.

210.4(d) Terrace Restoration.

Terrace Restoration shall be measured by the square yard or the trench foot as specified in the contract.

210.5 Basis of Payment.

210.5(a) Clear Stone

The quantity of clear stone for Clear Stone Berm (Ditch Check), Street Construction Stone Berm, Construction Entrance, and Street Construction Entrance Berm shall be paid at the contract unit price per ton and compensated for under the clear stone bid item.

210.5(b) Silt Fence, Silt Sock, Erosion Bales.

Silt Fence - Complete (BID ITEM 21021), Silt Sock Complete - (BID ITEM 21024), and Erosion Bales - Complete (BID ITEM 21027) shall be paid for at the contract unit price per linear foot, which price shall be full compensation for furnishing all materials; for constructing, reconstructing, erecting, re-erecting, maintaining, removal and any follow-up restoration; and for all labor, tools, equipment and incidentals necessary to complete the work. Half of the installed quantity shall be paid at the time of installation and the remaining half shall be paid upon removal and any required incidental restoration ins completed.

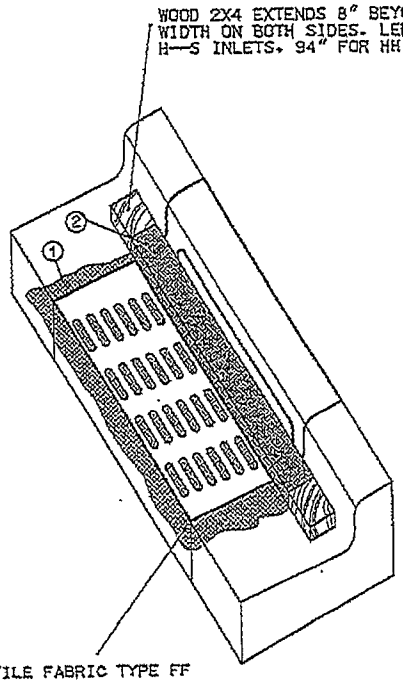
Where silt fence, silt sock and erosion bales are not listed as an item on which to submit unit prices, it shall be understood and agreed that the Contractor shall be paid two dollars and fifty cents ($2.50) per linear foot of silt fence, erosion bales, or silt sock furnished, installed, maintained and removed.

210.5(c) Inlet Protection

Inlet Protection, Type C - Complete (BID ITEM 21031), Inlet Protection, Type C Modified - Complete (BID ITEM 21035), Inlet Protection, Type D - Complete (BID ITEM 21041), and Inlet Protection, Type D Modified - Complete (BID ITEM 21045), shall be paid for at the contract unit price per each unit installed in the field, which price shall be full compensation for furnishing all materials; installing, reinstalling, maintaining, removal and any follow-up cleanup; and for all labor, tools, equipment and incidentals necessary to complete the work. Half of the installed quantity shall be paid at the time of installation and the remaining half shall be paid upon removal and any follow-up cleanup has been completed.

210.5(d) Erosion Matting.

The area of erosion matting, measured as provided above, shall be paid for at the contract unit price per square yard for erosion matting, which price shall be full compensation for furnishing and placing all materials; for constructing, reconstructing, maintaining and anchoring; and for all labor, tools, equipment and incidentals necessary to complete the work. Any matting installed incorrectly shall result in all matting be paid at half the contract price. Incorrectly installed matting shall be defined as matting which is not installed in compliance with the conditions as laid out in these standard specifications. Seeding is not included in this item and will be measured and paid separately per Section 207 of these Standard Specifications.



TYPE C = GEOTEXTILE FABRIC TYPE FF

TYPE C "MODIFIED" = GEOTEXTILE FABRIC TYPE HR

GENERAL NOTES:

FABRIC SHALL BE REPLACED AT THE ENGINEERS DISCRETION.

THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX.

MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE DEPARTMENT'S EROSION CONTROL PRODUCT ACCEPTIBILITY LIST MAY BE SUBSTITUTED.

WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

① FABRIC SIZE SHALL BE 8" (MIN) GREATER ON ALL SIDES OF THE INLET COVER TO PROVIDE A HAND HOLD WHEN MAINTENANCE OR REMOVAL IS REQUIRED.

② FOR INLET PROTECTION, TYPE C WITH A CURB BOX. AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES.

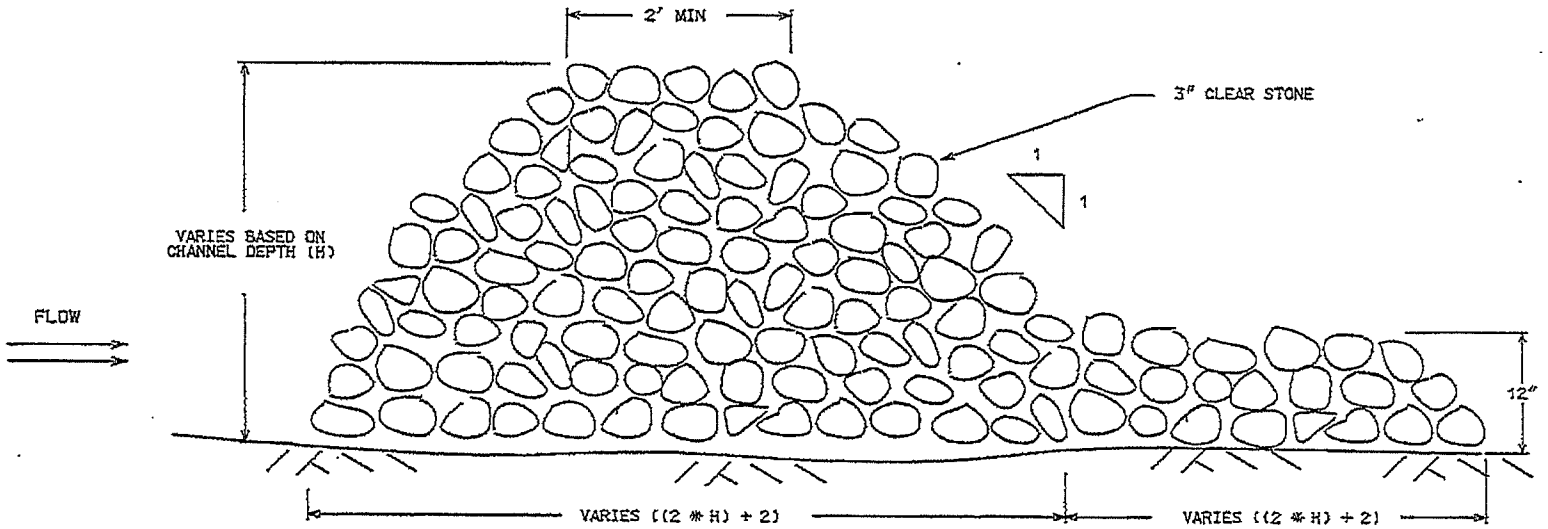
2011

CITY OF MADISON
ENGINEERING DIVISION

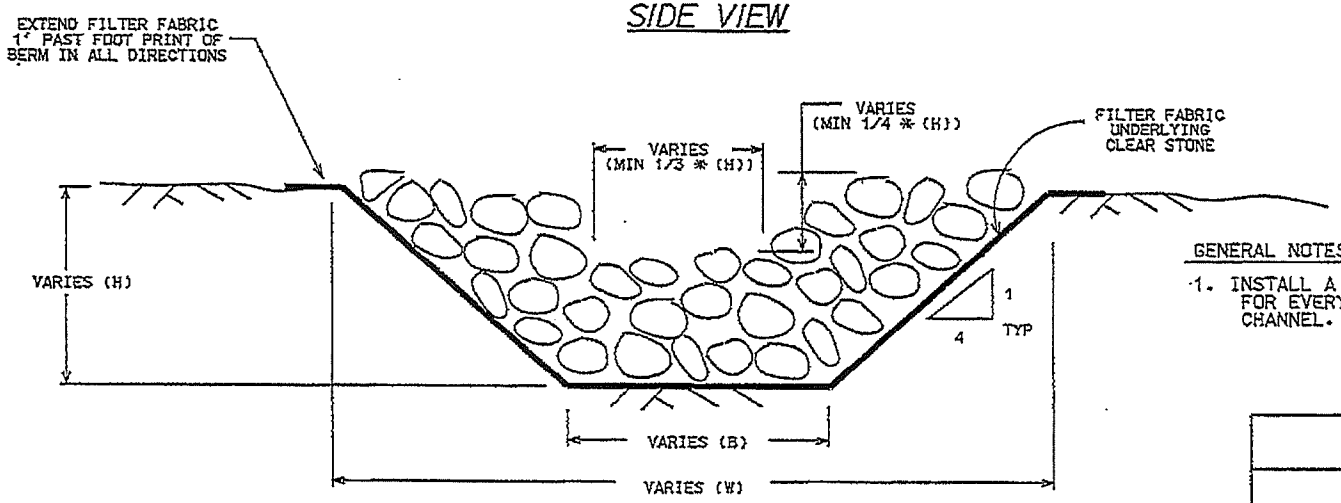
INLET PROTECTION TYPE C AND TYPE C "MODIFIED"

STANDARD DETAIL DRAWING 1.04

1.04



SIDE VIEW



SECTION VIEW

GENERAL NOTES:

1. INSTALL A MINIMUM OF ONE DITCH CHECK FOR EVERY TWO FEET OF DROP IN THE CHANNEL.

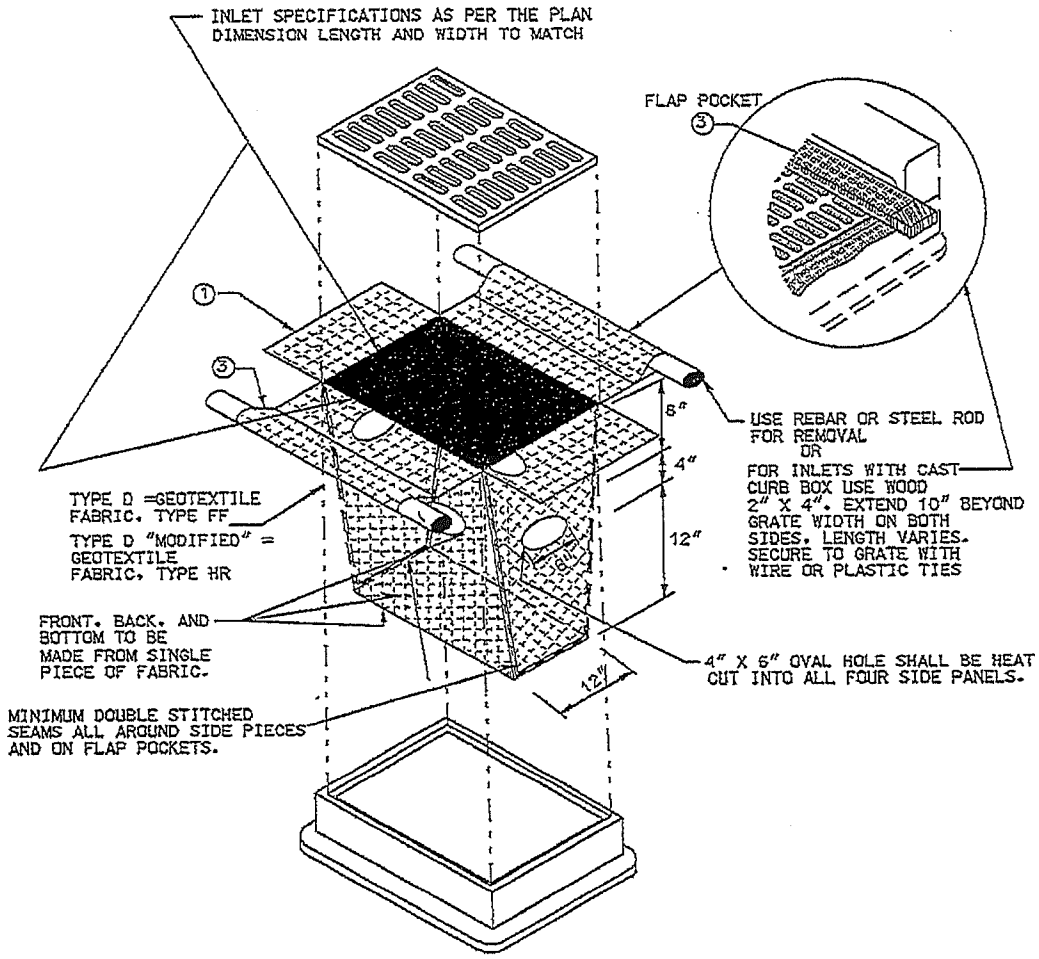
2011

CITY OF MADISON
ENGINEERING DIVISION

CLEAR STONE BERM (DITCH CHECK)

STANDARD DETAIL DRAWING 1.05

1.05



(CAN BE INSTALLED IN ANY INLET TYPE WITH OR WITHOUT A CURB BOX AS PER NOTE ②)

GENERAL NOTES

MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE WisDOT'S EROSION CONTROL PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED.

WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE BOTTOM OF THE BAG.

① FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.

② FOR INLET PROTECTION WITH CURB BOX AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.

③ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.

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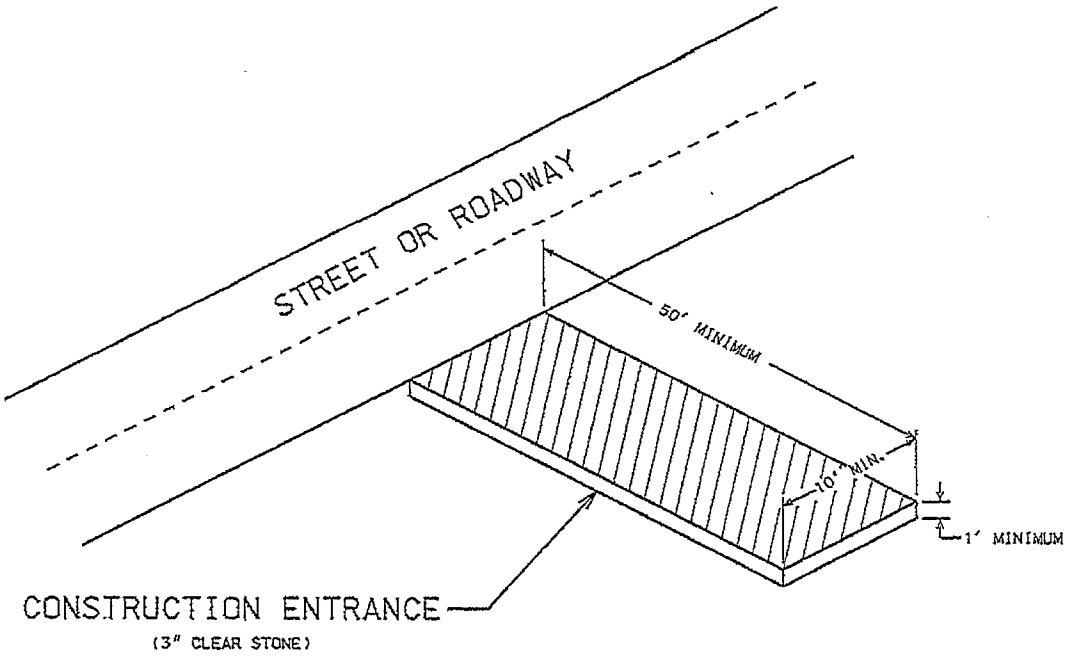
CITY OF MADISON
ENGINEERING DIVISION

INLET PROTECTION TYPE D AND TYPE D "MODIFIED"

STANDARD DETAIL DRAWING 1.06

1.06



GENERAL NOTES:

1. CONSTRUCTION ENTRANCE TO BE INSTALLED PRIOR TO ANY TRAFFIC LEAVING THE SITE.
2. THE AGGREATE FOR THE CONSTRUCTION ENTRANCE SHALL BE 3 INCH CLEAR OR WASHED STONE.
3. AGGREGATE SHALL BE PLACED IN A LAYER AT LEAST 12 INCHES THICK.
4. THE CONSTRUCTION ENTRANCE SHALL BE UNDERLAIN WITH A WDOT TYPE HR OR FF GEOTEXTILE FABRIC TO PREVENT MIGRATION OF UNERLYING SOIL INTO THE STONE.
5. SURFACE WATERS MUST BE PREVENTED FROM PASSING THROUGH THE CONSTRUCTION ENTRANCE. FLOWS SHALL BE DIVERTED AWAY FROM THE CONSTRUCTION ENTRANCE OR CONVEYED UNDER AND AROUND THEM BY USE OF A CULVERT, DIVERSION BERM OR OTHER PRACTICES AS APPROVED BY THE CONSTRUCTION ENGINEER.

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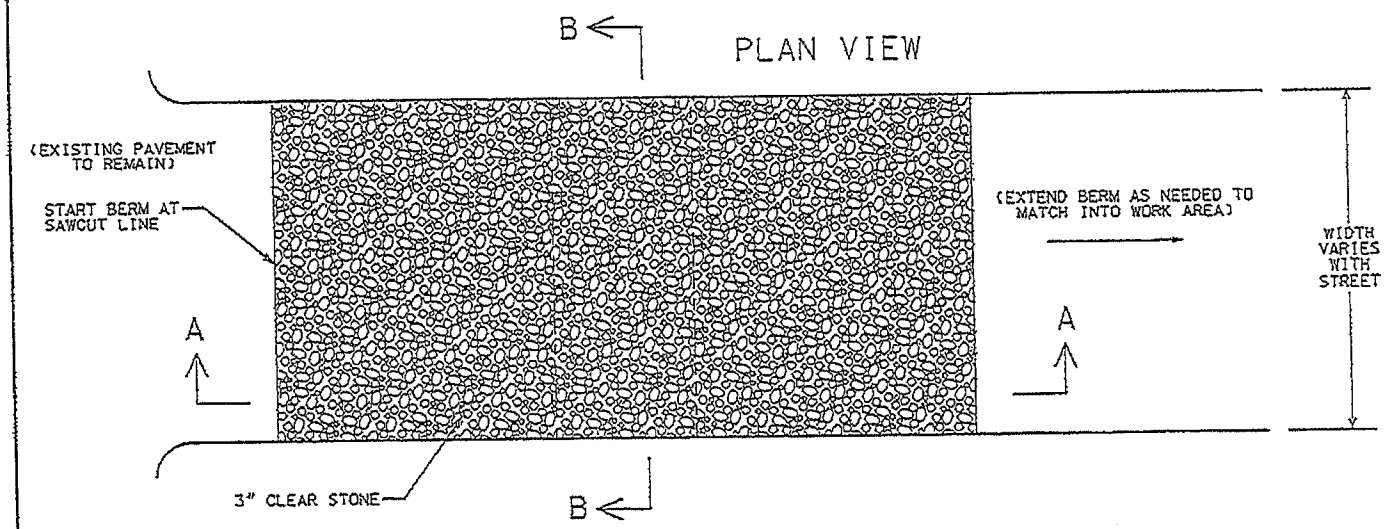
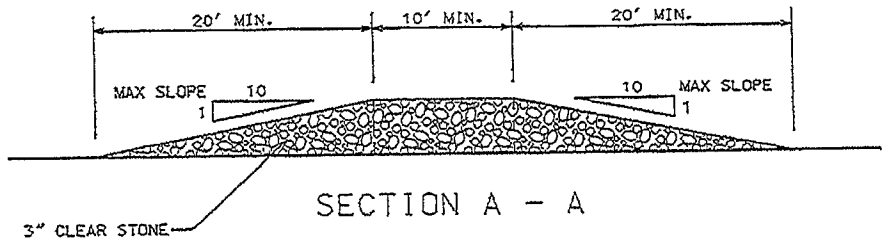
CITY OF MADISON
ENGINEERING DIVISION

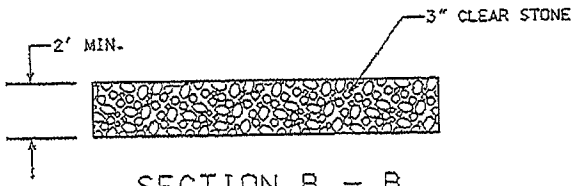
CONSTRUCTION ENTRANCE

STANDARD DETAIL DRAWING 1.07

1.07







GENERAL NOTES:

1. THE STREET CONSTRUCTION ENTRANCE BERM IS TO BE INSTALLED PRIOR TO ANY TRAFFIC LEAVING THE SITE.
2. THE AGGREATE FOR THE STREET CONSTRUCTION ENTRANCE BERM SHALL BE 3 INCH CLEAR OR WASHED STONE.
3. MINIMUM OVERALL LENGTH OF THE STREET CONSTRUCTION ENTRANCE BERM SHALL BE 50 FEET. THE BERM SHALL START AT THE SAWCUT LINE AND EXTEND INTO THE WORK AREA UNTIL IT MATCHES INTO THE WORK AREA GRADES.
4. THE MAXIMUM ALLOWABLE SLOPE OF 10:1 SHALL NOT BE EXCEEDED. THIS IS TO ALLOW EMERGENCY VEHICLE ACCESS TO THE CONSTRUCTION AREA WITHOUT NEEDING TO REMOVE THE BERM.
5. THE STREET CONSTRUCTION ENTRANCE BERM SHALL BE UNDERLAIN WITH A WDOT TYPE HR OR FF GEOTEXTILE FABRIC TO PREVENT MIGRATION OF UNERLYING SOIL INTO THE STONE.

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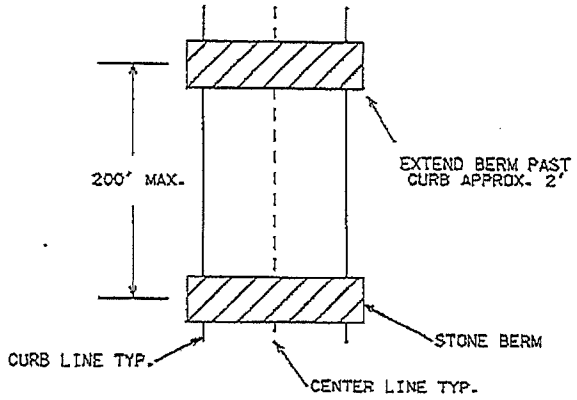
CITY OF MADISON
ENGINEERING DIVISION

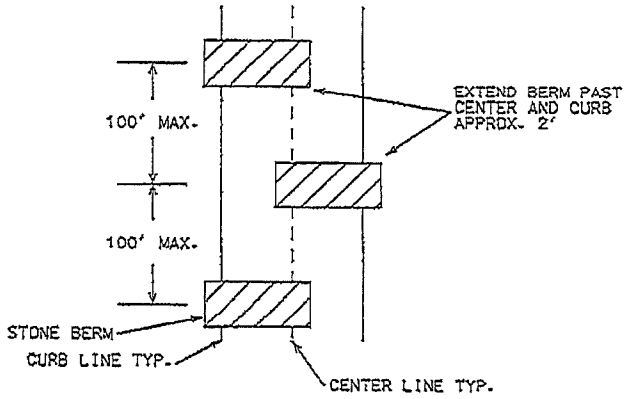
STREET CONSTRUCTION ENTRANCE BERM

STANDARD DETAIL DRAWING 1-08

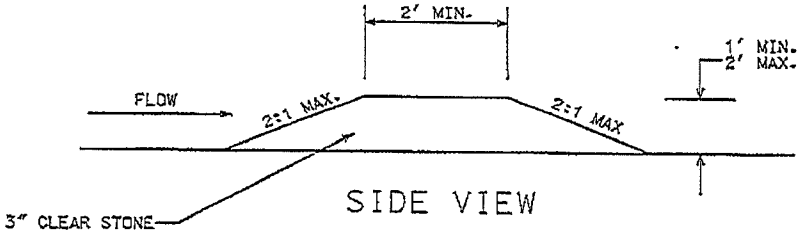
1.08



FULL WIDTH SPACING



STAGGERED SPACING



SIDE VIEW

GENERAL NOTES:

1. THE STREET CONSTRUCTION STONE BERM IS NOT INTENDED FOR USE ON STREETS WITH GREATHER THAN 6 PERCENT SLOPES.
2. THE AGGREATE FOR THE STREET CONSTRUCTION STONE BERM SHALL BE 3 INCH CLEAR OR WASHED STONE.
3. MINIMUM OVERALL LENGTH OF THE STREET CONSTRUCTION STONE BERM WILL BE DICTATED BY THE WIDTH OF THE EXISTING OR PROPOSED STREET.
4. SPACING OF STREET CONSTRUCITON STONE BERMS SHALL BE PER THE APPROVED EROSION CONTROL IMPLEMENTATION PLAN. FOR PROJECTS WITHOUT AN EROSION CONTROL IMPLENTATOIN PLAN SPACING SHALL BE AS NOTED ABOVE.

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CITY OF MADISON
ENGINEERING DIVISION

STREET CONSTRUCTION STONE BERM

STANDARD DETAIL DRAWING 1.10

1.10

EROSION CONTROL BID ITEMS

ITEM NUMBER	TYPE OF WORK	UNIT
21001	Erosion Control Plan & Implementation	LUMP SUM
21002	Erosion Control Inspection	EACH
21011	Construction Entrance	EACH
21012	Street Construction Entrance Berm	EACH
21013	Street Sweeping	LUMP SUM
21014	Clear Stone Berm (Ditch Check)	EACH
21015	Street Construction Stone Berm	EACH
21021	Silt Fence - Complete	L.F.
21022	Silt Fence - Provide, Install & Maintain	L.F.
21023	Silt Fence - Remove & Restore	L.F.
21024	Silt Sock - Complete	L.F.
21025	Silt Sock - Provide, Install & Maintain	L.F.
21026	Silt Sock - Remove & Restore	L.F.
21027	Erosion Bales - Complete	L.F.
21028	Erosion Bales - Provide, Install & Maintain	L.F.
21029	Erosion Bales - Remove & Restore	L.F.
21031	Inlet Protection, Type C - Complete	EACH
21032	Inlet Protection, Type C - Provide & Install	EACH
21033	Inlet Protection, Type C - Maintain	EACH
21034	Inlet Protection, Type C - Remove	EACH
21035	Inlet Protection, Type C Modified - Complete	EACH
21036	Inlet Protection, Type C Modified - Provide & Install	EACH
21037	Inlet Protection, Type C Modified - Maintain	EACH
21038	Inlet Protection, Type C Modified - Remove	EACH
21041	Inlet Protection, Type D - Complete	EACH
21042	Inlet Protection, Type D - Provide & Install	EACH
21043	Inlet Protection, Type D - Maintain	EACH
21044	Inlet Protection, Type D - Remove	EACH
21045	Inlet Protection, Type D Modified - Complete	EACH
21046	Inlet Protection, Type D Modified - Provide & Install	EACH
21047	Inlet Protection, Type D Modified - Maintain	EACH
21048	Inlet Protection, Type D Modified - Remove	EACH
21051	Clean Sump	EACH
21052	Polymer Stabilization	S.Y.
21061	Erosion Matting, Class I, Urban Type A	S.Y.
21062	Erosion Matting, Class I, Urban Type B	S.Y.
21063	Erosion Matting, Class I, Type A	S.Y.
21064	Erosion Matting, Class I, Type B	S.Y.
21071	Erosion Matting, Class II, Type A	S.Y.
21072	Erosion Matting, Class II, Type B	S.Y.
21073	Erosion Matting, Class II, Type C	S.Y.
21081	Erosion Matting, Class III, Type A	S.Y.
21082	Erosion Matting, Class III, Type B	S.Y.
21083	Erosion Matting, Class III, Type C	S.Y.
21084	Erosion Matting, Class III, Type D	S.Y.
21091	Terrace Restoration	T.F.
21092	Terrace Restoration	S.Y.

EROSION CONTROL STANDARDS & REQUIREMENTS FOR PUBLIC WORKS CONSTRUCTION PROJECTS

I. Erosion Control Permit for Street Reconstruction & other PW Construction
    A. Application/Issuance
    B. Project Creation on SEH website
II. Erosion Control Implementation Plan (ECIP)
    A. Background
    B. Standards
        1. Location of individual BMP's or BMP groups
        2. Phasing
    C. Preconstruction Meeting
    D. Project Revision (Edit) on SEH Website to Add BMP's for Inspection
        1. For City Inspector
        2. For Contractor Inspector
III. Erosion Control Initial Installation Certification
IV. Erosion Control Inspections & Reporting Requirements
    A. Inspection & Reporting Standards
        1. Timing
        2. City vs. Contractor Inspections
            a. Weekly
            b. Week End
            c. Rain Event
        3. SEH website for Inspection Reporting
            a. Screen captures
            b. Photos of Individual BMP's or BMP Groups
    B. Final Inspection Report & ECNOT

II. EROSION CONTROL IMPLEMENTATION PLAN (ECIP)

A. Background

Every Public Works project will address erosion control as part of the plan set issued for bidding & construction. Projects disturbing more than 20,000 sf will have separate plan sheets for erosion control only. Smaller projects will show erosion control measures on the plan profile sheets. Erosion control plans will not typically address phasing or order of completion of the proposed improvements. For this reason an Erosion Control Implementation Plan (ECIP) has become a pay item for the Contractor. It is intended that the plan set erosion control plan will be revised by the Contractor to include phasing & sequencing resulting in the ECIP.

B. Standards

The ECIP must locate each best management practice (BMP) by station-offset, street intersection or reach of street. If a BMP is identified as part of a group of BMP's (example: inlet protection on street A between street B & street C) then it shall be numbered & identified on the ECIP.

Each phase (area) of construction shall be identified in the ECIP. No new phase can be started (disturbed) until the previous phase is temporarily stabilized or restored (seeded & mulched, sodded, erosion matted, paved etc.).

C. Preconstruction Meeting

The preconstruction meeting will cover all aspects of erosion control for the project. This will begin with confirming that the City Erosion Control Permit has been issued and entered into the SEH website by the Erosion Control Engineer.

- The ECIP shall be submitted by the Contractor to the Erosion Control Engineer either at, or prior to, the preconstruction meeting.

If the ECIP is not approved, it will be revised by the Contractor until it is approved by the Erosion Control Engineer.

The City Inspector and the Contractors Inspector for erosion control will be identified at the preconstruction meeting. The preconstruction meeting will identify the responsible party for all inspection types, (weekly and after rain events, work week and weekend). See part IV. EROSION CONTROL INSPECTION AND REPORTING REQUIREMENTS.

Any anticipated dewatering will be discussed at the preconstruction meeting along with dewatering requirements.

Project start date and the Erosion Control Initial Installation Certification will be discussed at the preconstruction meeting.

The rain gauge location and the corresponding website required to be able to remotely check the gauge data will be provided at the preconstruction meeting.

D. Project Revision (Edit) on SEH Website and Preparation of Contractors Inspection Form

When the ECIP is approved by the Erosion Control Engineer, they will edit the project in the SEH website to reflect the ECIP phasing and order of completion. The Erosion Control Engineer will create "BMP groups" or identify BMP locations by station-offset at this time. The BMP groups will be identified by the intersection of two streets or the reach of a street. The reach of a street will be identified by street name and from/to either an intersection of two streets or a station.

- Inspection reports can now be entered on the SEH website by the City Inspector.

When the ECIP is approved by the Erosion Control Engineer, they will expand the contractor's inspection form for phase 1 construction. Each BMP, as identified on the ECIP, shall be entered onto the contractor's inspection form by the Erosion Control Engineer.

- The Contractor Inspector can now provide an inspection report on this form for any required weekend inspection.

III. EROSION CONTROL INITIAL INSTALLATION CERTIFICATION

The project will begin with the required installation of the erosion control BMP's for the first phase of construction as identified on the ECIP.

- Once the initial BMP's have been installed, the Contractor shall inform the City Inspector that they wish to proceed with the project beyond installing initial erosion control measures.

- The City Inspector will contact the Erosion Control Engineer with this request.

The Erosion Control Engineer will inspect the installation and provide the Erosion Control Initial Installation Certification at this time.

- Once certified the Contractor may proceed with phase 1 of the project.

- Subsequent installed erosion control BMP's for further phases must be reviewed and approved by the Construction Engineer before proceeding with work in that given phase.

IV. EROSION CONTROL INSPECTION AND REPORTING REQUIREMENTS

A. Inspection & Reporting Standards

- The City Engineering Inspector charged with erosion control inspection reporting shall adhere to the following minimum standards:

  Weekly inspections shall be reported on the SEH website. See attached inspection form that is created for each specific construction project site for hand written reports compiled onsite. The report needs to be entered electronically on the website. Follow the template under the "inspect" tab.

  Photos of each bmp group need to be uploaded onto this inspection template and individual BMP photos of all failures also need to be included.

  The same reporting format is required for each 24 hour rain day of ½ inch or larger. A rain day is defined as each 24 hour calendar day and shall be measured using a gauging station that shall be provided at the preconstruction meeting by City staff. The data from the rain gauging station shall be available on the internet to allow remote checking of the rain depth totals for each rain day.

- The assigned City Engineering Inspector is responsible for rain day reporting during the work week, Monday through Friday.

- The Contractor shall be responsible for rain day inspection reports (on the appropriate supplied form) along with photos of each bmp both during the work week and over the weekend.

- The Contractor's report will be submitted to the City Engineering Inspector within 24 hours of the end of the rain day.

- The City Engineering will transfer any weekend inspection report submitted by the Contractor by creating a "dummy inspection report" on the website and attaching the Contractor's inspection report. This "dummy inspection report" shall be uploaded onto the website by the City Engineering Inspector no later than the Monday following the weekend inspection submitted by the Contractor.

  Rain day inspections during the work week will be performed by both the City Engineering Inspector and the Contractor.

- The City Engineering Inspector shall report their inspection on the website the same as their weekly inspection reports.

- The Contractor's inspection report from a rain event during the work week shall be submitted to the City Engineering Inspector within 24 hours of the end of the

III. EROSION CONTROL INITIAL INSTALLATION CERTIFICATION

The project will begin with the required installation of the erosion control BMP's for the first phase of construction as identified on the ECIP.

- Once the initial BMP's have been installed, the Contractor shall inform the City Inspector that they wish to proceed with the project beyond installing initial erosion control measures.

- The City Inspector will contact the Erosion Control Engineer with this request.

The Erosion Control Engineer will inspect the installation and provide the Erosion Control Initial Installation Certification at this time.

- Once certified the Contractor may proceed with phase 1 of the project.

- Subsequent installed erosion control BMP's for further phases must be reviewed and approved by the Construction Engineer before proceeding with work in that given phase.

rain day. This report shall be retained (filed) for comparison sake only. It need not be uploaded onto the reporting website.

B. Final Inspection Report and ECNOT

- When the project is completed and stable the City Engineering Inspector shall upload a "Final" inspection report.

A stable project is defined as one having all erosion control measures removed and evidence of established vegetation on all denuded areas.

The inspection report is selected as "Final" under the "Reason for Inspection" pull down menu. This is the last inspection report uploaded to the SEH website for this project. This "Final" inspection should not be confused with the "Status" of any given inspection report, either "Draft" or "Final". This final inspection report shall serve as the Erosion Control Notice of Termination (ECNOT) for the project. The Erosion Control Engineer will then change the "Project Status" from "Active" to "Complete".

Department of Pubic Works
City Enigneering Division 608 266 4751

CONTRACTOR'S EROSION CONTROL INSPECTION REPORT

Project Name: _____
Project No.: _____
Contract No.: _____
City EC Inspector: _____
phone: _____
email: _____

Contractor: _____
Contractor's Inspector: _____
phone: _____
email: _____

Inspeciton Date: _____ Time: _____

Reported Rain Amount from last 24-hour Rain Day: _____ (in inches)
Designated Rain Gauge: _____
Current Erosion Control Plan Phase: _____

Inspector's General Comments:

Construction Entrance

EC ID	Location	Date Installed	Inspection Status			Digital Photo ID	Date Removed	Notes
			OK	Maint Req	Failed			

Street Construction Entrance Berm

EC ID	Location	Date Installed	Inspection Status			Digital Photo ID	Date Removed	Notes
			OK	Maint Req	Failed			

Street Sweeping

EC ID	Location	Date Installed	Inspection Status			Digital Photo ID	Date Removed	Notes
			OK	Maint Req	Failed			

Clear Stone Berm (Ditch Check)

EC ID	Location	Date Installed	Inspection Status			Digital Photo ID	Date Removed	Notes
			OK	Maint Req	Failed			

Street Construction Stone Berm

EC ID	Location	Date Installed	Inspection Status			Digital Photo ID	Date Removed	Notes
			OK	Maint Req	Failed			

Silt Fence

EC ID	Location	Date Installed	Inspection Status			Digital Photo ID	Date Removed	Notes
			OK	Maint Req	Failed			

Silt Sock

EC ID	Location	Date Installed	Inspection Status			Digital Photo ID	Date Removed	Notes
			OK	Maint Req	Failed			

Erosion Bales

EC ID	Location	Date Installed	Inspection Status			Digital Photo ID	Date Removed	Notes
			OK	Maint Req	Failed			

Inlet Protection, Type C

EC ID	Location	Date Installed	Inspection Status			Digital Photo ID	Date Removed	Notes
			OK	Maint Req	Failed			

Inlet Protection, Type C Modified

EC ID	Location	Date Installed	Inspection Status			Digital Photo ID	Date Removed	Notes
			OK	Maint Req	Failed			

Inlet Protection, Type D

EC ID	Location	Date Installed	Inspection Status			Digital Photo ID	Date Removed	Notes
			OK	Maint Req	Failed			

Inlet Protection, Type D Modified

EC ID	Location	Date Installed	Inspection Status			Digital Photo ID	Date Removed	Notes
			OK	Maint Req	Failed			

Polymer Stabilization

EC ID	Location	Date Installed	Inspection Status			Digital Photo ID	Date Removed	Notes
			OK	Maint Req	Failed			

Erosion Matting

EC ID	Location	Date Installed	Inspection Status			Digital Photo ID	Date Removed	Notes
			OK	Maint Req	Failed			

Temporary Seeding

EC ID	Location	Date Installed	Inspection Status			Digital Photo ID	Date Removed	Notes
			OK	Maint Req	Failed			