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1. Administrative.

1-1 General.

Perform the work under this construction contract for City of Madison East-West Bus Rapid Transit (BRT), in Dane County, Wisconsin as the plans show and execute the work as specified in the State of Wisconsin, Department of Transportation, Standard Specifications for Highway and Structure Construction, 2024 Edition (Spec/standard specifications/standard spec), as published by Wisconsin Department of Transportation (WisDOT), the Construction and Materials Manual (CMM), as published by WisDOT, The Standard Detail Drawings (SDD), as published by WisDOT in Chapter 16 of the Facilities Development Manual (FDM), and these special provisions.

References within these special provisions regarding executing the work as specified in the City of Madison specifications, City specs, or similar language is used to refer to the City of Madison Standard Specifications for Public Works Construction 2023 Edition, as published by the City of Madison.

All work contained within this contract is required to follow the Build America, Buy America (BABA) Act as stated in the contractual documents.

1-2 Scope of Work.

The work under this contract shall include, but is not limited to, construction of HMA pavement, concrete pavement, pavement resurfacing, curb and gutter, sidewalk, curb ramps, modular landscaping walls, grading, landscaping, storm sewer, water, fiber optic, lighting, traffic signals, pavement marking, signs and all incidental items necessary to complete the work as shown on the plans and included in the proposal and contract.

104-005 (20090901)

1-3 Notice to Contractor – City of Madison Metro Transit.

The City of Madison Metro Transit operates multiple bus routes within and directly adjacent to the construction limits. Coordinate with the Metro Transit to discuss the project schedule of operations including vehicular and pedestrian access during construction operations.

When construction operations at a specific site require the removal of an existing bus stop sign and/or shelter, Metro Transit will remove any existing Metro-owned bus stop sign and/or shelter before work begins. For bus stop signs, notify Metro Transit at least five business days prior to removal. For bus stop shelters, notify Metro Transit at least ten business days prior to removal. Upon completion of construction at a specific site, Metro Transit will re-install or replace bus stop signs and/or shelters as needed.

Metro Transit contacts:

Graham Carey
BRT Program Manager
415-937-3192
GCarey@cityofmadison.com

1-4 Notice to Contractor – Construction Management team.

The Construction Management team is representing Metro Transit during the construction process as the engineer. The engineer will be on-site during construction activities and will serve as the primary contact.

Construction Management team contact:

Monty Carlson
BRT Construction Project Manager
608-209-1562
mcarlson@hntb.com

1-5 Notice to Contractor – City of Madison.

The City of Madison has been made aware that the following work will be undertaken by others in approximately the same time frame and the same area as the proposed project. It is the contractor's responsibility to verify this information and any subsequent changes in the scheduling of the work by others

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and to make corrections in his/her construction timetable as required. The list below shall not be assumed to be a complete list of concurrent projects over the duration of this construction contract.

City of Madison Department of Transportation contacts:

Mike Cechvala
Deputy Project Manager
MCechvala@cityofmadison.com

Jim Wolfe
Engineering
608-266-4099
JWolfe@cityofmadison.com

Concurrent projects:

- East West Bus Rapid Transit
- Mineral Point Road – USH 12 to S. High Point Road
- Madison Metro Route Redesign
- West Towne Path Construction (South Junction Rd. at Watts Rd. East to Plaza Dr.)
- 7601/7603 Mineral Point (project 13894)
- URP Element District Plat (Project 13355 - southwest corner of Mineral Point Rd & Whitney Way)
- CUNA Mutual Group– 5910 Mineral Point
- Oakwood 6145-6301 Mineral Point (Proposed project)

1-6 Notice to Contractor – Real Estate.

Parcels for Transportation Project Plat 12777-3 are anticipated to be acquired by March of 2024, except for Parcel 26 which is anticipated to be acquired by May 2024. Fee areas and easements are shown on the Removal Plan sheets, Site Plan sheets and Grading Plan sheets.

1-7 Notice to Contractor – City of Madison Forestry.

The City of Madison Forestry will mark proposed tree locations. To identify utilities buried in the site, contact Diggers Hotline to file a ticket prior to excavation and planning an excavation. Once the ticket clears, call City of Madison Forestry to inspect the nursery stock and to mark the final tree planting location with a green “T” on the curb.

City of Madison Forestry contacts:

Brandon Sly
West Forestry Specialist
608-220-0637

1-8 Permits and Licensing.

Add the following to standard spec 107.3(1):

The City of Madison has obtained a City of Madison Erosion Control Permit and has submitted a DNR WRAPP Water Resources Application for Project Permit (formerly known as Notice of Intent (NOI) to obtain coverage under a Construction Site General Permit.

The contractor shall meet the conditions of the permit by properly installing and maintaining the erosion control measures shown on the plans, specified in the special provisions, or as directed by the engineer. This work will be paid for under the appropriate contract bid items or, if appropriate items are not included in the contract, shall be paid for as Extra Work. A copy of the permit is available at the City of Madison, Engineering Division office.

This permit covers trench dewatering to a maximum of 70 gallons/minute from the project, provided appropriate control measures are in place. The City's obtaining this permit is not intended to be exhaustive of all permits that may be required to be obtained by the contractor for construction of this project. It shall be the responsibility of the contractor to identify and obtain any other permits needed for construction.

1-9 Guarantee.

Unless otherwise stated in the special provisions, the Contractor shall guarantee the work performed under this contract for a period of one year from the date of Certificate of Substantial Completion against defects

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in workmanship or materials, all in accordance with WisDOT standard spec 105.11.2, "Project Acceptance". If any defect should appear during the guarantee period, the Contractor shall make required replacement or acceptable repairs of the defective work at the Contractor's expense. This expense includes total and complete restoration of any disturbed surface to original or better than original condition which existed before the repairs or replacement, regardless of improvements on lands where the repairs or replacement is required. The Payment and Performance Bond shall remain in force during this guarantee period. This guarantee is in addition to any other rights and remedies the City may have.

2. Prosecution and Progress.

2-1 Prosecution and Progress.

Begin work within ten calendar days after Metro Transit issues a written notice to proceed. The notice to proceed is not expected prior to February 16, 2024.

Provide the start date to the engineer in writing within a month after executing the contract but at least fourteen calendar days before the Preconstruction Meeting. Upon approval, Metro Transit will issue the notice to proceed within ten calendar days before the approved start date.

To revise the start date, submit a written request to the engineer at least two weeks before the intended start date. Metro Transit will approve or deny that request based on the conditions cited in the request and its effect on City of Madison's scheduled resources.

The contract time for completion is based on an expedited work schedule and may require extraordinary forces and equipment. The proposed schedule of operations indicates that a large force and adequate equipment will be needed to assure that the work will be completed within the established contract time. Use Oracle Primavera P6 scheduling software version 18 or higher and provide a monthly P6 cost-loaded schedule to the engineer for incorporation into the Project master schedule. The schedule shall be updated monthly showing critical path and the updates shall be tracked against the accepted baseline schedule.

Take care to protect all building faces and adjacent privately-owned structures from damage, dirt, undermining, and wet concrete. Place plywood, sheeting, or other approved shield against the building to protect it if approved by building owner. Excavate, bore, and drill adjacent to privately owned structures with caution to avoid undermining. The costs for this work are incidental to the contract. Return any privately-owned structures and building faces to its original condition if any damage or undermining, or both occur, or any dirt or concrete is adhered to the structure face.

Limit work hours to 7:00 a.m. to 7 p.m. Monday-Friday unless approved by the engineer in writing. The contractor will be able to start at 6:00 a.m. for concrete pours at building entrances and utility lateral connections if approved by the engineer. No work shall be allowed on City holidays unless approved by the engineer.

Do not undertake construction improvements along the entirety of the widened at once. Stage work in coordination with the City such that no more than three adjacent blocks are under construction simultaneously, unless approved by the engineer, to minimize adverse impacts to pedestrians, bicyclists, and the traveling public.

City of Madison will not grant time extensions to the interim or completion dates for the following:

- Severe weather as specified in standard spec 108.10.2.2.
- Labor disputes that are not industry wide.
- Delays in material deliveries.

Removals between Grand Canyon Drive and Coronado Court

Do not perform removals, including tree removals, between Grand Canyon Drive and Coronado Court prior to obtaining approval from the engineer. Approval is not anticipated prior to May 15, 2024.

5810 Mineral Point Road

Do not begin construction adjacent to the 5810 Mineral Point Road property prior to May 1, 2024 unless approved by the engineer.

Liquidated Damages

Complete all work as specified per standard spec 105.11.2.1.3 to reach substantial completion prior to Friday, August 30, 2024.

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If the contractor fails to complete the work prior to 11:59 PM, August 29, 2024, the City of Madison will assess the contractor \$4,300 in liquidated damages. If the work remains incomplete at 12:01 AM August 30, 2024, the City of Madison will assess the contractor \$4,300 in liquidated damages for each day that requirements are not met after 12:01 AM August 30, 2024. Additional liquidated damages will be assessed under administrative item Failing to Open Road to Traffic.

If contract time expires prior to completion of all work specified in the contract, additional liquidated damages will be affixed according to standard spec 108.11.

Erosion Control Implementation and Enforcement

Submit a schedule and description of Clearing operations with the Erosion Control Implementation Plan (ECIP) fourteen days prior to any Clearing operations. The engineer will determine, based on schedule and scope of work, what additional erosion control measures shall be implemented prior to the start of Clearing operations, and list those additional measures in the ECIP.

Timely action regarding the maintenance of erosion control practices is critical to compliance with the City of Madison's land disturbance permits as issued by both the WDNR and the City of Madison. To allow the City to be assured of compliance with these permits, and federal, state and local laws, the contractor shall be required to proceed in the following manner with regard to the maintenance of these practices.

In the event an erosion control practice is determined by the engineer to require maintenance, or if the terms of the erosion control permit are not being met, the engineer shall order the contractor, in writing, to maintain the erosion control practice/device or comply with the terms of the permit. The contractor shall have 48 hours to complete that work and provide documentation to the engineer that it has been completed.

Failure to complete the work within the 48 hours shall result in any or all of the following actions by the engineer:

- 1) The contractor shall be charged one day of liquidated damages for failure to complete the work during the ordered timeframe and an additional day of liquidated damages for each 24 hour period that passes after the initial 48 hours during which time the ordered work is not completed.
- 2) At the engineer's discretion, the work ordered may be completed by City forces. In this case, the contractor shall be charged the liquidated damages as described in 1 above and shall be charged the full cost of City Forces responding to complete the ordered work.
- 3) At the engineer's discretion, work on the project as a whole may be suspended until such time as the contractor completes the originally ordered work. In this case, the contractor shall still be charged liquidated damages as described in 1 above. Additionally, days of work will continue to be charged during the suspension of work. If this results in the contractor failing to complete the project within the allotted contract time then additional liquidated damages shall be charged.

Environmental Protection

If construction activities beyond what was originally specified are required to complete the work, approval from the engineer, following coordination with the Wisconsin Department of Natural Resources as needed, is required prior to initiating activities.

Northern Long-eared Bat (*Myotis septentrionalis*)

Northern Long-eared Bats (NLEB) have the potential to inhabit the project limits because they roost in trees. Roosts have been identified within 150 feet of the project limits. The species and all active roosts are protected by the Federal Endangered Species Act. If an individual bat or active roost is encountered during construction operations, stop work and notify the engineer.

Ensure all operators, employees, and subcontractors working in areas of known or presumed bat habitat are aware of environmental commitments and avoidance and minimization measures (AMMs) to protect both bats and their habitat.

To avoid adverse impacts upon the NLEBs, no tree clearing is allowed between June 1 and July 31, both dates inclusive.

If the required tree clearing is not completed by May 31, the engineer will suspend all tree clearing and associated work directly impacted by clearing. The engineer will issue a notice to proceed with clearing and associated work directly impacted by clearing after consulting with the United States Fish and Wildlife Service (USFWS).

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Tree clearing is limited to that which is specified in the plans. If additional trees need to be removed, no tree clearing shall occur without prior approval from the engineer. Notify the engineer if additional clearing cannot be avoided.

Submit a schedule and description of clearing operations with the ECIP fourteen days prior to any clearing operations. The engineer will determine, based on schedule and scope of work, what additional erosion control measures shall be implemented prior to the start of clearing operations, and list those additional measures in the ECIP.

Rusty Patch Bumble Bee (*Bombus affinis*)

The Rusty Patched Bumble Bee (*Bombus affinis*) is a federally-listed endangered species and a Wisconsin State Special Concern species. Suitable habitat for the rusty patched bumble bee consists of prairies, woodlands, marshes/wetlands, agricultural landscapes, and residential parks and gardens. Overwintering habitat includes non-compacted and often sandy soils or woodlands. The proposed park-and-ride site near the intersection of Mineral Point Road and Junction Road may contain suitable habitat for the rusty patched bumble bee. The DNR determined that the project may have an impact on the Rusty Patched Bumble Bee and that the impact is likely to be adverse.

Minimize potential impacts to federally-listed threatened and endangered species and Wisconsin State Special Concern species including the following:

- Perform work to minimize the spread of invasive species per standard spec 107.18 and to minimize soil compaction.
- Minimize soil disturbance and heavy equipment operation during overwintering October 15 to March 15.
- Minimize forest management that may destroy spring blooming flowers during their bloom periods.

Yellow Bumble Bee (*Bombus fervidus*)

The Yellow Bumble Bee (*Bombus fervidus*) is a Wisconsin State Special Concern species. The yellow bumble bee inhabits grassy, open areas including forest clearings, garden parks and along roadsides. The proposed Junction Road park-and-ride site may contain suitable habitat for the Yellow Bumble Bee. The DNR determined that the project may have an impact on the Yellow Bumble Bee; these impacts are not expected to be adverse.

Lake Sturgeon (*Acipenser fulvescens*)

Lake Sturgeon (*Acipenser fulvescens*) is a Wisconsin State Special Concern species. Lake Sturgeon is found in large rivers and lakes, along with shoal waters of the Great Lakes. The DNR determined that land disturbance activities during Project construction may have an impact on Lake Sturgeon; these impacts are not expected to be adverse.

Material and Equipment Staging

Submit a map that identifies all proposed material stockpile or equipment storage locations to the engineer fourteen days before either preconstruction or proposed use, whichever comes first. Identify the specific purposes for the location. Obtain written permits from the property owner and submit an electronic copy to the engineer before use. Do not stockpile or store materials or equipment on wetlands.

Include material and staging areas off the project limits in the ECIP for review.

2-2 Mobilization.

Add the following to standard spec 619.1:

Work under this contract will require multiple mobilizations to complete the work per the traffic control specifications and to meet the erosion control and phasing requirements of the project. All mobilizations, except for the provided quantity for mobilizations erosion control and mobilizations emergency erosion control, shall be considered incidental to this bid item.

2-3 Contractor Document Submittal.

This special provision describes minimum requirements for submitting project documents to the engineer. This special provision does not apply to shop drawing submittals.

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Provide one electronic copy of all documents requiring the engineer review, acceptance, or approval. Attach a completed engineer-provided transmittal sheet to each email submittal. The engineer will reject submittals with incomplete transmittal sheets and require resubmittal.

The engineer will return one reviewed, accepted, or approved original to the contractor. Additional return originals can be requested. Submit an additional original for each additional return original requested.

Submit electronic copies in Portable Document Format (PDF) to the engineer-designated folder within the engineer's SharePoint site and send alerts with a link to the document via email to (an) account(s) the engineer determines. If possible, translate original documents from their native format (e.g. Word, Excel, AutoCAD, etc.) using a Portable Document Format translation routine. Scan other documents to PDF format with a minimum resolution of 600 dpi.

All costs for contractor document submittals are incidental to the contract.

sef-105-010 (20150619)

2-4 City of Madison Parks Division Coordination.

When construction activities at a specific site may impact City of Madison Parks, notify the engineer and City of Madison Parks Division at least fourteen days prior to construction.

City of Madison Parks Division contact:

Eric Knepp
Superintendent
608-266-4711
EKnepp@cityofmadison.com

2-5 Madison Metropolitan School District Coordination.

When construction activities at a specific site may impact Madison Metropolitan School District, notify the engineer and Madison Metropolitan School District at least fourteen days prior to construction.

Madison Metropolitan School District contact:

Michael LaCount, mlacount@madison.k12.wi.us
De'Kendrea Stamps, dbstamps@madison.k12.wi.us
Mick Howan, School District Transportation, mjhowan@madison.k12.wi.us
Jeff Fedler, Madison School District Transportation Coordinator, jfedler@madison.k12.wi.us

2-6 Guidepost Montessori Coordination.

When construction activities at a specific site may impact Guidepost Montessori, notify the engineer and Guidepost Montessori at least fourteen days prior to construction.

2-7 East West Bus Rapid Transit Project Coordination.

Notify the East West Bus Rapid Transit contractor at least 14 days prior to beginning construction. Provide schedule for traffic control, traffic signal, and widened sidewalk construction to East West Bus Rapid Transit contractor on a weekly basis.

The East West Bus Rapid Transit contractor installed temporary signals and will be completing final signal work at intersections along the project corridor, except for the Mineral Point Road - Whitney Way intersection. There are constrained areas for construction at intersections due to the placement of wood poles and anticipated final signal work. Allow flexibility in the construction schedule for removal of existing wood poles and completion of final signal work by the East West Bus Rapid Transit contractor. Request adjustments to signal heads including bagging, at least 14 days in advance if needed to accommodate staging operations.

Allow 85 days of BRT platform construction by the East West BRT contractor, shown in the plans as the hatched area in the western median of the Mineral Point Road - Whitney Way intersection, after the installation of the Mineral Point Road - Whitney Way temporary traffic signal, but prior to construction of other work near the Mineral Point Road - Whitney Way intersection. Provide at least 14 days notice to the East West Bus Rapid Transit contractor prior to the installation of the temporary traffic signals in the condition to allow for platform construction. Allow the 85 day BRT platform construction period to occur prior to construction of other work near the Mineral Point Road - Whitney Way intersection unless approved by the engineer.

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East West Bus Rapid Transit contractor contact:

Nick Matthews
Zenith Tech
Senior Project Manager
262-832-4627
nmatthwes@walbecgroup.com

3. Meetings.

3-1 Pre-Bid Meeting.

Add the following to standard spec 102.3.1:

Prospective bidders may attend a virtual pre-bid meeting. Details and directions regarding an invitation for prequalified bidders will be forthcoming.

No meeting minutes will be prepared. Issues discovered at the meeting will be handled by addendum.

3-2 Preconstruction Meeting.

Before any work at the site is started, a meeting attended by City of Madison, contractor, engineer, appropriate utility companies, and others as appropriate will be held to establish understanding among the parties as to the work, schedule, handling of submittals, payment, and required records associated with this project. Setup the meeting and send out invites, including sending an invite list to the engineer.

3-3 Construction Meetings.

Weekly meetings to be held at the Madison Metro Building, BRT Conference Room, 1101 E Washington Ave, Madison, WI 53703. Setup the meeting and send out invites, including sending an invite list to the engineer.

3-4 Coordinate with Businesses and Residents.

The contractor shall arrange and conduct meetings with City officials, business owners, property owners, and residents to discuss the project schedule of operations including vehicular and pedestrian access during construction operations, anticipated utility outages, and any other vital information as determined by the contractor and engineer. The contractor shall hold up to 2 public meetings, including a first meeting at least one week prior to the start of work in 2024. No further meetings are anticipated to be required unless directed by engineer. The contractor shall arrange for a suitable location for meetings that provides reasonable accommodation for public involvement. City of Madison will prepare and coordinate publication of the meeting notices and mailings for meetings. The contractor shall schedule meetings with at least 2 weeks prior notice to the engineer to allow for these notifications.

Coordinate with businesses and residents on privately owned items such as landscaping items that are within the construction area at least 48-hours in advance of disturbing those areas.

Provide 1 week notice to property owners in advance of construction adjacent to property.

Abide by section 107.11.1(1) of the standard specifications regarding continuing property owner coordination required throughout the duration of the project.

3-5 Coordinate with Suppliers.

Coordinate with suppliers who will install items listed to be installed "by others."

This includes, but is not limited to, signals and signal equipment. Contact information will be provided by the engineer upon request by the contractor when suppliers are identified for the "by others" items.

4. Environmental.

4-1 Information to Bidders, WPDES General Construction Storm Water Discharge Permit.

The City of Madison has obtained coverage through the Wisconsin Department of Natural Resources to discharge storm water associated with land disturbing construction activities of this contract under the Wisconsin Pollutant Discharge Elimination System General Construction Storm Water Discharge Permit (WPDES Permit No. WI-S067831-6). A certificate of permit coverage will be available from the engineer.

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Contact the engineer for contact information. Post the permit in a conspicuous place at the construction site.

4-2 Noxious Weeds.

Perform all work in accordance with Wisconsin Statute 66.0407 to minimize the spread of noxious weeds within project limits.

4-3 Hazardous Materials.

Do not store construction materials and debris, including fuels, oil, and other liquid substances, in a manner that would allow them to enter a wetland, waterbody, or groundwater source as a result of spillage, natural runoff, or flooding. If a spill of any potential pollutant should occur, it is responsibility of the contractor to remove such material, minimize any contamination resulting from the spill, and immediately notify the engineer.

4-4 Archaeological and Historical Findings.

Abide by standard spec 107.25 regarding archaeological and historical findings. If at any point project activities should result in the inadvertent discovery of human remains or burials, all activities in the area of the discovery should be halted and the area of the discovery fenced and secured. Immediately notify the local Sheriff's Department and the Wisconsin Historical Society in compliance with Wisconsin burial sites protection laws (Wisconsin State Statute 157.70 and Wisconsin Administrative Code HS 2).

4-5 Noise Control.

Construction noise shall comply with City of Madison noise ordinance. Prepare a detailed noise control plan under the supervision of a noise control engineer or acoustician. Key elements of a plan include:

- Contractor's specific equipment types
- Schedule and methods of construction
- Maximum noise limits for each piece of equipment with certification testing
- Prohibitions on certain types of equipment and processes during the nighttime hours without variances
- Identification of specific sensitive sites where near construction sites
- Methods for projecting construction noise levels
- Implementation of noise control measures where appropriate
- Acoustic shielding requirements for jackhammers, chainsaws, and pavement breakers
- Methods for responding to community complaints
- Methods to limit vibrations in construction areas within 36 feet of a building

Submit the noise control plan to the engineer for approval prior to construction. The noise control plan is incidental to construction.

4-6 Excavation, Hauling, Segregation, and Disposal of Contaminated Soil, Item SPV.0035.002

A Description

This special provision describes management of nonhazardous contaminated soils or excavated fill material if encountered within the project limits. Nonhazardous contaminated soil and fill material shall be disposed at a licensed landfill facility.

Perform this work according to standard spec 205 and with pertinent parts of Chapters NR 700-754 of the Wisconsin Administrative Code, as supplemented herein. Per NR 718.07, a solid waste collection and transportation service- operating license is required under NR 502.06 for each vehicle used to transport contaminated soil.

A.1 Notice to Contractor- Contaminated Soil and Groundwater Beyond Construction Limits

Based on results from the Phase 1 Hazardous Materials Assessment, sites with known or suspected soil contamination were identified adjacent to the construction limits where grading or excavation may be

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required. Documented soil contamination is present beyond the project construction limits; however, there is potential for soil contamination or fill material within this project where excavation may be required at the following locations:

Site 7W-	Middleton Garage, 7722 Mineral Point Road, Station 73+00 to 78+00 LT
Site 10W-	Kwik Trip #953, 7502 Mineral Point Road, Station 88+00 to 91+50 LT
Site 24W-	Citgo Quik-Mart, 6702 Mineral Point Road, Station 131+50 to 133+25 LT
Site 26W-	CVS Pharmacy #7147, 6701 Mineral Point Road, Station 132+75 to 133+25 RT
Site 36W-	Mobil Gas Station #05, 6110- 6114 Mineral Point Road, Station 162+75 to 166+00 LT

If contaminated soil, groundwater, solid waste fill material (e.g. cinders, ash, foundry sand, etc.) or underground storage tanks (USTs) are encountered within the areas listed above or elsewhere on the project, then terminate excavation or grading in the area and notify the engineer.

B (Vacant)

C Construction

C.1 Coordination

Coordinate this work with the engineer or their designated environmental consultant. The role of the environmental consultant will be limited to:

1. Determining the locations and limits of contaminated soil to be excavated based on soil analytical results from previous investigations, visual observations, and field screening of soil that is excavated;
2. Identifying contaminated soils to be hauled to the landfill facility;
3. Documenting that activities associated with management of contaminated soils are in conformance with the contaminated soil management methods for this project as specified herein; and
4. Obtaining the necessary approvals for disposal of contaminated soil.

Provide at least a 14-calendar day notice of the preconstruction conference date to the environmental consultant. At the preconstruction conference, provide a schedule for all excavation activities in the contaminated areas specified above to the environmental consultant. Identify the WDNR approved landfill facility that will be used for disposal of contaminated soils. Provide this information to the environmental consultant no later than 30 calendar days prior to commencement of excavation in the contaminated areas, or at the preconstruction conference, whichever comes first.

Coordinate with the environmental consultant to ensure that the environmental consultant is present during excavation in the contaminated areas. Notify the environmental consultant at least three working days prior to commencement of excavation activities in the contaminated areas. Perform excavation work in this area on a continuous basis until excavation work is completed. The environmental consultant will be responsible for obtaining the necessary approvals for disposal of contaminated soils. Do not transport contaminated soil offsite without prior approval from the environmental consultant.

Active groundwater monitoring wells are not expected to be located within the project limits. If active groundwater monitoring wells are encountered during construction, notify the engineer and protect the wells to maintain their integrity. The environmental consultant will determine if monitoring wells need to be maintained. Adjust monitoring wells that need to be maintained and do not conflict with structures or curb and gutter to be flush with the final grade. Coordinate with the environmental consultant the abandonment or adjustment of wells that conflict with the previously mentioned items and wells that are not required to be maintained.

For further information regarding previous investigation and remediation activities at these sites contact the engineer.

C.2 Health and Safety Requirements

Supplement standard spec 107.1 with the following:

During excavation activities of contaminated soil, site workers taking part in these activities that will result in the reasonable probability of exposure to safety and health hazards associated with potential hazardous materials shall have completed health and safety training that meets the Occupational Safety and Health Administration (OSHA) requirements for Hazardous Waste Operations and Emergency Response (HAZWOPER), as provided in 29 CFR 1910.120.

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C.3 General Conditions

Supplement standard spec 205.3 with the following:

Control operations in the contaminated areas to minimize the quantity of contaminated soil excavated.

The engineer or their environmental consultant will periodically evaluate soil excavated from the contaminated areas. The environmental consultant will evaluate excavated soil based on field-screening results, visual observations, and soil analytical results from previous environmental investigations. Assist the environmental consultant in collecting soil samples for evaluation using excavation equipment. The sampling frequency shall be a maximum of one sample for every 15 cubic yards excavated.

Based on the results of such field-screening, the material will be designated as follows:

1. Excavation Common consisting of clean soil and/or clean construction and demolition fill (such as clean soil, boulders, concrete, reinforced concrete, bituminous pavement, bricks, building stone, and unpainted or untreated wood), which under NR 500.08 are exempt materials, or
2. Contaminated soil for disposal at the WDNR-licensed landfill facility, or
3. Potentially contaminated material for temporary stockpiling and additional characterization prior to disposal.

Some material may require additional characterization prior to disposal. Provide for the temporary stockpiling of up to 50 cubic yards of contaminated material on-site that require additional characterization. Construct and maintain a temporary stockpile of the material according to NR 718.05(3), including, but not limited to, placement of the contaminated soil on an impervious surface and covering the stockpile with impervious material to prevent infiltration of precipitation.

The environmental consultant will collect representative samples of the stockpiled material, laboratory analyze the samples, and advise the contractor, within 10 business days of the construction of the stockpile, of disposal requirements. The stockpiled material shall be disposed either at the WDNR licensed landfill facility by the contractor or, if characterized as hazardous waste, by others.

As an alternative to temporarily stockpiling contaminated material that requires additional characterization, the contractor has the option of suspending excavation in those areas where such material is encountered until such time as characterization is completed. Directly load and haul soils designated by the environmental consultant for offsite treatment and disposal at the WDNR-licensed facility. Use loading and hauling practices that are appropriate to prevent any spills or releases of contaminated soils or residues. Prior to transport, sufficiently dewater soils designated for off-site treatment and disposal so as not to contain free liquids.

D Measurement

The City of Madison will measure Excavation, Hauling, Segregation, and Disposal of Contaminated Soil in tons of contaminated soil accepted by the landfill facility as documented by weight tickets generated by the landfill facility. The management of contaminated groundwater shall be considered incidental to other items in the contract.

E Payment

The City of Madison will pay for measured quantities at the contract unit price under the following bid items:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0035.002	Excavation, Hauling, Segregation, and Disposal of Contaminated Soil	TON

Payment is full compensation for excavating, segregating, loading, hauling, and direct landfilling of contaminated soil; obtaining solid waste collection and transportation service operating licenses; assisting in the collection of soil samples for field evaluation; and dewatering of soils prior to transport, if necessary. Payment includes the landfill tipping fees for the disposal of contaminated soil.

5. Traffic Control.

5-1 General.

This work includes furnishing, constructing, assembling, hauling, erecting, re-erecting, maintaining, restoring, and removing non-permanent traffic signs, drums, barricades, and similar control devices, including arrow boards, for providing, placing, and maintaining work zones. Maintaining shall include replacing damaged or stolen traffic control devices. Existing traffic control devices such as signs and

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pavement markings that conflict with the Maintenance of Traffic Control Plan shall be removed or covered as directed by the engineer.

All signing and barricading shall conform to Part VI of the Federal Highway Administration's latest "Manual on Uniform Traffic Control Devices" (MUTCD), the State of Wisconsin Standard Facilities Development Manual (including Chapter 16 – Standard Detail Drawings, Series 15 – R/W, Access Control and Traffic Control) and the City of Madison Standards for sidewalk and bikeway closures.

Submit a Traffic Control Plan, including all necessary phases, to Tom Mohr, 608-267-8725, tmohr@cityofmadison.com and Chad Veinot, 608-267-1960, cveinot@cityofmadison.com, prior to the pre-construction meeting. The Traffic Control Plan shall address all requirements of this section of the special provisions. The successful bidder shall work with the City Traffic Engineering Division to develop an approved Traffic Control Plan. Do not start construction on this project until the Traffic Engineering Division has approved a traffic control plan and traffic control devices have been installed, in accordance with the approved plan. Failure of the contractor to obtain approval of a Traffic Control Plan or closure, as specified above, may prevent the contractor from starting work or implementing a lane or street closure and shall be considered a delay of the project, caused by the contractor.

Refer to Chapter 6 in the MUTCD to provide adequate signs and taper lengths. The contractor may use drums as a channelizing device to separate traffic from the work zone. Type A warning lights shall be installed on all barricades used in the project per State of Wisconsin S.D.D. 15C2-B. Place Type C warning lights on any traffic control drums used to taper traffic or lane closures.

The contractor is responsible for installing and maintaining traffic control in accordance with the approved Traffic Control Plan and as directed by the engineer. The traffic control plan may need to be altered as conditions change in the field or as unexpected conditions occur. This shall include relocating existing traffic control or providing additional traffic control. Install and maintain any necessary modifications or additions to the traffic control, as directed by the engineer, at no cost to the City. Provide 24 hours-a-day availability of equipment and forces to expeditiously restore lights, signs, or other traffic control devices that are damaged or disturbed. Supply the name and telephone number of the local contact person for traffic control repairs before starting work. The turning of traffic control devices when not in use to obscure the message will not be allowed under this contract.

Do not park or store equipment, vehicles, or construction materials within the clear zone on any roadway carrying traffic during non-working hours except at locations and periods of time approved by the engineer.

Obtain prior approval from the engineer for the location of egress and ingress for construction vehicles to prosecute the work.

Conduct a traffic control meeting with the engineer and the City of Madison Traffic engineer prior to the following events. Notification must be given to the engineer 7 business days in advance.

- Initial Traffic Control Set Up
- Individual Intersection Construction
- Closure, Re-Striping, and Opening of Bus Only Lanes

Removals or covering of conflicting pavement marking and signs shall be performed at no cost to the City.

Traffic Control Changes

Submit any traffic control change request to the engineer at least 72 hours prior to an actual traffic control change. A request does not constitute approval.

Local Street Work Restrictions

Existing trees, street light poles, hydrants and other utility poles are to remain in place during construction unless otherwise noted in the plan. Conduct an on-site visit prior to bidding to determine any special measures required for proper clearance between the trees, hydrants and poles and the paving equipment. Any existing trees within the limits of construction to remain shall be protected according to City of Madison standard specification 107.13.

Maintenance of Access

Maintain or provide pedestrian access to adjacent properties, businesses, and bus stops throughout the duration of construction.

Provide emergency vehicles access throughout the construction zones at all times.

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Pedestrian & Bicycle Movements

Conduct operations in a manner that will minimize interference to pedestrian and bicycle movements adjacent to the work site and pedestrian access to buildings within the project limits. A bicycle detour plan has been approved by the City of Madison and is included in the plan sheets for Contractor reference. All traffic control devices associated with this detour, including set up and maintenance of signage, shall not be paid for separately, but shall be included in the pay item "Traffic Control." Construction staging shifts that occur and impact the pedestrian and bicycle movements shall be done with utmost caution for public safety.

Provide and maintain pedestrian walkways at all times within the project limits that provide the following pedestrian movements:

Pedestrian walkways shall be surfaced of existing concrete, asphalt, or temporary pavement and be maintained ADA accessible, and free from mud, sand, and construction debris. Sections of the walkways that are disturbed or removed during construction shall be repaired with temporary pavement or other engineer approved material prior to reopening. Walkway sections shall not be closed overnight. Temporary pedestrian barricades or other engineer approved method shall be installed to guide pedestrian walkways; traffic control barrels shall not be used for pedestrian corridors.

Pedestrian walkways shall have a minimum clear width of 5-feet.

The Contractor's special attention is called to the fact that proximity actuated audible signs, or other non-visual means of conveying applicable information, is required for all alternate pedestrian access routes throughout the duration of construction. Refer to the following link for additional information and note that this work shall be included in the "Traffic Control" pay item.

<https://www.federalregister.gov/documents/2023/08/08/2023-16149/accessibility-guidelines-for-pedestrian-facilities-in-the-public-right-of-way#p-307>

On-Street Parking

The proposed traffic control staging configurations may restrict on-street parking in the areas immediately adjacent to construction operations. Coordinate applicable signage requirements with the City of Madison Traffic engineer and the engineer at least three working days prior to the start of construction operations. This shall include, but not be limited to, covering or removing of existing parking restriction signage and posting of temporary parking restrictions required to facilitate construction operations.

Adjacent Streets

Conduct operations at all times in a manner that will cause a minimum of inconvenience to the free flow of vehicle, bicycle, and pedestrian traffic on all adjacent streets. Temporary lane closures and/or halting of traffic within open roadways for delivery of materials or equipment shall require flaggers. All traffic control items and flaggers for any temporary lane closure for delivery of materials shall be included in the bid item "Traffic Control", under this contract. The materials and equipment used by the contractor shall remain within the boundaries of the project and traffic control limits as approved by the engineer.

Place roadway and sidewalk signing as detailed on the plans and special provisions and in conformance with the Manual on Uniform Traffic Control Devices (MUTCD), latest edition. Cover or remove conflicting signs after coordination with the City of Madison Traffic Engineering Division as necessary to avoid confusion. A two-week notice is required to Chad Veinot, 608-267-1960, cveinot@cityofmadison.com to cover or remove traffic signs.

Use only City of Madison designated truck routes for material haul roads as detailed in standard spec section 618.

5-2 Coordination.

Notify the engineer and the following agencies 48 hours in advance of any changes to traffic operations or closures of streets. Notifications must be given by 4:00 p.m. on Thursday for any such work to be done on the following Monday. Refer to Article 2 of this document for a comprehensive list of all parties requiring coordination.

-City of Madison Police Department – Cindy Deering, cdeering@cityofmadison.com

-City of Madison Fire Department – Bill Sullivan, 608-261-9658, wsullivan@cityofmadison.com

-City of Madison Traffic Engineering – Chad Veinot, 608-267-1960, cveinot@cityofmadison.com

Tom Mohr, 608-267-8725, tmohr@cityofmadison.com

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-City of Madison Streets Division – Charlie Romines, 608-266-4680, cromines@cityofmadison.com

- City of Madison Metro Transit – Mike Cechvala, 608-261-9283, MCechvala@cityofmadison.com

Furnish portable changeable message signs at the plan or engineer identified locations 10 calendar days prior, notifying the traveling public of the closure. Request message approval from the engineer. A request does not constitute approval.

Other separate contracts are, or may be, in force that intersect the construction limits of this project. Cooperate with other contractors in the phasing and performance of this work so as not to delay, interrupt, or hinder the progress or completion of the work being performed by other contractors. No additional compensation will be allowed for compliance with the above requirements, nor for any delays or inconveniences resulting from activities of other contractors. Should a conflict arise between contractors with respect to the sequence of construction or maintenance of traffic requirements, said conflicts shall be resolved by, or at the direction of, the engineer. Refer to Article 1-6 of this document for a list of known concurrent projects which may require contractor coordination for traffic control efforts.

5-3 Public Convenience and Safety.

Revise standard spec 107.8(4) as follows:

Notify the responsible fire and police department at least 48 hours before any road closures.

Revise standard spec 107.8(6) as follows:

Obtain hours of operation approval from the City of Madison prior to beginning construction.

5-4 Holiday and Other Work Restrictions.

The work is expected to start in February 2024 and be complete by August 2024. City of Madison events and other public holidays may increase both vehicular and pedestrian traffic to the project area.

The public holidays include:

2024

From noon Friday, May 24, 2024 to 6:00 AM Tuesday, May 28, 2024 for Memorial Day

From noon Tuesday, June 18, 2024 to 6:00 AM Thursday, June 20, 2024 for Juneteenth

From noon Wednesday, July 3, 2024 to 6:00 AM Friday, July 5, 2024 for Independence Day

From noon Friday, September 1, 2024 to 6:00 AM Tuesday, September 5, 2024 for Labor Day

Refer to www.cityofmadison.com/visit-play/annual-events for a list of annual events scheduled. Coordinate with the City of Madison on other potential events which may impact construction timing and traffic control operations, such as University of Wisconsin football games.

Traffic control and work hours may need to be modified during this time. Comply to changes to the work zones during that time.

One lane in each direction shall always be maintained unless otherwise shown on the plans. Some work on side streets may require one direction of the traffic to be detoured. Such detours shall not be allowed for more than 7 days. All detours will need to be coordinated and approved by the City of Madison before implementation.

It is anticipated that single lane paving operations will be required at various intersections during construction activities which will restrict existing traffic patterns to one lane. These operations shall occur at off peak or weekend hours (Friday 6:00 PM through Monday 7:00 AM) and need to be coordinated and approved with the City of Madison.

Do not restrict traffic during peak hours on streets with a functional classification of collector or arterial unless otherwise specified in the plans or approved by the engineer. The City of Madison shall assess the contractor \$1000 per occurrence for working during peak hours.

The Contractor shall limit all disturbances to existing parking lots on or adjacent to the construction site to 1 month in total duration.

Refer to Section 2-1 Prosecution and Progress for additional work restrictions during construction operations.

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Failure to Open Road to Traffic

The maximum cumulative total time in which any residential property is completely without driveway access is 20 calendar days. The City of Madison shall assess the contractor \$100 per calendar day per driveway when exceeding the maximum allowable closure.

5-5 Measurement.

The work to maintain the traffic through improvement locations for the duration of construction shall be measured as each per bid contract. All work related to traffic control will be included in the pay item "Traffic Control" unless listed in Payment section below.

5-6 Payment.

The City of Madison will pay for measured quantities at the contract unit price under the following bid items:

ITEM	NUMBER DESCRIPTION	UNIT
643.0300	Traffic Control Drums	DAY
643.0410	Traffic Control Barricades Type II	DAY
643.0420	Traffic Control Barricades Type III	DAY
643.0705	Traffic Control Warning Lights Type A	DAY
643.0715	Traffic Control Warning Lights Type C	DAY
643.0800	Traffic Control Arrow Boards	DAY
643.0900	Traffic Control Signs	DAY
643.1050	Traffic Control Signs PCMS	DAY
643.3105	Temporary Marking Line Paint 4-Inch	LF
643.3505	Temporary Marking Arrow Paint	EACH
643.3605	Temporary Marking Word Paint	EACH
643.3805	Temporary Marking Stop Line Paint 18-inch	LF
643.5000	Traffic Control	EACH
644.1410	Temporary Pedestrian Surface Asphalt	SF
644.1430	Temporary Pedestrian Surface Plate	SF
644.1601	Temporary Pedestrian Curb Ramp	DAY
644.1605	Temporary Pedestrian Detectable Warning Field	SF
644.1810	Temporary Pedestrian Barricade	LF

6. Utilities.

This contract does not come under the provision of Administrative Rule Trans 220.

stp-107-066 (20080501)

There are underground and overhead utility facilities located within the construction limits of the project.

There are known utility adjustments required for the construction project as noted below. Coordinate construction activities with a call to Diggers Hotline or a direct call to the utilities that have facilities in the area. Use caution to ensure the integrity of underground facilities and maintain code clearance from overhead facilities at all times. Adjustments in the location of certain described items may be necessary, as directed by the engineer, when it becomes evident that a utility conflict could occur.

Utility work plans are available from the engineer on request.

AT&T Wisconsin – Communications

AT&T Wisconsin has underground facilities within the project limits.

They will adjust the handhole at Station 0M+30. Notify AT&T 3 days before.

They will also remove the pole and install a pedestal at Station 5M+25 5 feet to the south of the current position. This work will be completed prior to construction.

Charter Communications

Charter has underground facilities within the project limits.

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They will do the following prior to construction:

Lower in place from 2A+00 to 2A+75, Min. El. 1051.50.

Relocate pedestal from 72MP, LT 68' to 72MP+35.5, LT 68'.

Relocate vault from 73MP+24, LT 70.5' to 73MP+26.5, LT 74'.

Remove pedestal from 74MP+00, LT.

Relocate pedestal south 2', from 78MP+03, LT 47' to 78MP +03, LT 49'.

Remove pedestal from 92MP+50, LT.

Lower in place empty duct to Min. El. Of 1053.50 – 105MP+81, LT 71'.

Lower in place from MH. To R/W to Min. El. Of 1051.00 – 109MP+37, LT 61' to 71'.

Remove pedestal from 119MP+20, LT.

Remove pedestal 133MP+85.8, LT 55.8'. Install MH 133MP+58.8, LT 59'.

Move north edge of vault 1' south to 141MP+85, LT 56'.

Install a 3" duct with coax and fiber optic cable across Mineral Point Rd at 146MP+72, LT 59', and then east under the sidewalk at approximately 58' LT, to 159MP+89, LT 59', at 60" minimum depth.

Install a 2" duct with fiber optic cable from 152MP+08, LT 71', to 153MP+85, LT 70', at 38" depth.

The following manhole locations will be adjusted during construction to final grade. Charter will be requesting a 5-working-day per location notice for scheduling a contractor. Estimated time needed per location is one day.

MH, 72MP+12, LT 53'; MH, 79MP+32.6, LT 51'; MH, 83MP+49, LT 60.5'; MH, 98MP+91, LT 60.5'; MH, 105MP+03, LT 68.5'; Remove vault replace with MH, 107MP+26, LT 64'; MH, 109MP+37, LT 61'; MH, 111MP+80, LT 76.5'; MH, 133MP+85.8, LT 59'; MH, 136MP+97, LT 56.8'; MH, 146MP+51, LT 57.8'; MH, 150MP+62 and +72, LT 58'; MH, 153MP+85, LT 70'; MH, 181MP+78, LT 53.8'.

Charter is requesting to be present during excavation for curb and cutter replacement at the northeast corner of Mineral Point and Yellowstone Dr. A 5-working-day notification is requested.

The contact for this project will be Sean Potter – Mobile: 608-287-9606, sean.potter@charter.com.

Everstream – Communications

Everstream has underground facilities being installed within the project limits in 2023, designed to avoid conflict with this project. Coordination with the contractor will be required. The contact for this project is Jim Sagaitis, 608-201-5586, jsagaitis@everstream.net.

Madison Gas & Electric – Gas

MG&E-Gas has underground facilities within the project limits.

MG&E will abandon and relocate existing 2" Steel distribution gas main facilities along Mineral Point Road from Rosa Rd to S Whitney Way, Station 1+75R to 16+50R to 3' from the north right-of-way line. They will replace all gas main within the intersection of Mineral Point Road & Whitney Way. This work will be done prior to construction.

MG&E will relocate the gas service on Mineral Point Road at Coronado Court at Station 3J+95. The gas service will be relocated to the gas main located along Coronado Court. This work will be done prior to construction.

MG&E will adjust gas valve covers at Station 4A+82 on Tree Lane and at Station 12R+50. These adjustments will be done during construction. Notify MG&E-Gas fourteen days before adjustments will be required.

Use caution near gas main during tree planting in the terrace at 109MP+30, 110MP+30, 144MP+25, 176MP+60, 197MP+75, 198MP+30, and 198MP+80.

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Madison Gas & Electric – Electricity

MG&E-Electric has overhead and underground facilities within the project limits. They will do the following work:

Station 118'MP'+80 – NE corner Mineral Point and Gammon, down guy parallel to Gammon Rd to be relocated by MGE prior to construction to south side of Mineral Point Road with a new overhead span guy. This work will be completed prior to construction.

Station 119'MP' +00 SE corner sidewalk, adjust existing MH cover elevation for sidewalk replacement. 1 day work – 1 week notice.

Station 133'MP'+75 SE corner sidewalk, adjust existing MH cover elevation for sidewalk replacement. 1 day work – 1 week notice.

Station 145'MP'+00 to 146'MP'+00, existing MGE transformer will be relocated to clear retaining wall. This work will be completed prior to construction.

Station 201'MP' +00 - SE corner sidewalk, relocate pole approximately 30' east of existing location. This work will be completed prior to construction.

The prior-to-construction portion of this work is anticipated to start 6 months prior to construction date and take 180 working days.

Madison Metropolitan Sewerage District (MMSD) – Sewer

MMSD will adjust the manhole (their #MH12-176) in the pavement at the northwest corner of Mineral Point Rd and Gammon Rd. This adjustment will be done during construction. Notify MMSD three days prior to working around and before adjustment will be required. The contact for this project will be Ray Schneider, 608-347-3628, css@madsewer.org.

MCI Communications (Verizon)

MCI has underground facilities under the sidewalk the length of the project limits. They will adjust Hand Holes in the existing north sidewalk along Mineral Point Rd at

Tree Ln (NW), High Point Rd (NW), Westward Wy (NW), Randolph Dr (NW), Sunset Memory Gardens entrance (NE), Westfield Rd (NE), Gammon Rd (NE), Gammon Pl (NE), 250' west of Grand Canyon Dr, Coronado Ct (NE), Yellowstone Dr (NE), Nautilus Dr (NW), Island Dr (NW), Credit Union Wy (NW), Woodford Dr (NE), and Rosa Rd (NW).

These adjustments will be done during construction. Notify MCI fourteen days before adjustments will be required.

TDS Metrocom – Communications and TDS Telecom – Communications

TDS has overhead and underground facilities within the project limits.

TDS will remove existing copper Pedestal M7B-11/1 located at Station 3B+38. TDS will intercept existing copper cable at Station 2B+00 and swing Cable into new pedestal M7B-11/2 to be placed at Station 2B+14 -0'LT in an existing TDS easement (easement Doc 1828721). TDS will then place new copper cable in the TDS Easement from new ped M7B-11/2 extending east to Station 5B+81 -19'LT where new Pedestal M7B-11/3. Existing copper cable extending north along the west side of S High Point will be exposed and swung into new ped.

TDS will abandon in place existing copper between Station 2B+00 and Station 5B+81

This work will be completed prior to construction.

US Signal – Communications

US Signal will send a representative to monitor their facility during construction. Notify US Signal two weeks prior to working on the curb ramp at Station 0R+50 (northeast of Rosa Rd) and in the Southeast corner of Whitney Way.

Wisconsin Independent Network (WIN) – Communications

WIN has and underground facilities within the project limits. They will adjust manholes in the work. These adjustments will be done during construction. Notify WIN fourteen days before adjustments will be required.

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The following utility companies have facilities within the project area and will have facilities adjusted or relocated by the Contractor as part of this project:

City of Madison – Electric, Signals, Lighting

Madison Water Utility

Metropolitan Unified Fiber Network (MUFN) – Communications

The following utility companies have facilities within the project area with no relocation anticipated:

Alliant Energy – Electric

ATC – Electricity Transmission

City of Madison – Sewer

Midwest Fiber Networks – Communications

SupraNet – Communications

Windstream – Communications

6-1 Adjusting Manhole Covers, Item 611.8110.

This special provision describes adjusting manhole covers conforming to standard spec 611 as modified in this special provision.

Adjust manhole covers located in pavement areas in two separate operations. Initially, remove designated manhole covers along with sufficient pavement to permit installation of temporary cover plate over the opening. Fill the excavated area with asphaltic pavement mixture, which shall remain in place until contract milling and paving operations permit setting the manhole frames to grade. During the second phase, remove the asphaltic pavement mixture surrounding the manhole plus the temporary cover plate, and set the manhole cover to final grade. The City of Madison will measure and pay for the items of asphaltic pavement mixture, temporary cover plate, milling, and paving separately.

Supplement standard spec 611.3.7 with the following:

Set the manhole frames so that they comply with the surface requirements of standard spec 450.3.2.9. At the completion of the paving, a 6-foot straightedge shall be placed over the centerline of each manhole frame parallel to the direction of traffic. A measurement shall be made at each side of the frame. The two measurements shall be averaged. If this average is greater than 5/8 inches, reset the manhole frame to the correct plane and elevation. If this average is 5/8 inches or less but greater than 3/8 inches, the manhole frame shall be allowed to remain in place but shall be paid for at 50 percent of the contract unit price.

If the manhole frame is higher than the adjacent pavement, the two measurements shall be made at each end of the straightedge. These two measurements shall be averaged. The same criteria for acceptance and payment as above, shall apply.

stp-611-005 (20200629)

6-2 Relocate Hydrant, Item SPV.0060.609.

A Description

This special provision describes the removal and relocation of hydrants and any necessary replacement or addition of hydrant valves.

B Materials

Furnish materials that are in accordance with the pertinent requirements of City of Madison standard specifications section 704.8.

C Construction

Perform work in accordance with City of Madison standard specifications section 704.8 and detail drawing 7.04.

D Measurement

The City of Madison will measure Relocate Hydrant as each individual relocation, successfully completed.

APPENDIX C

E Payment

The City of Madison will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.609	Relocate Hydrant	EACH

Payment includes all equipment, labor and materials necessary to complete this item as specified.

6-3 Adjust Water Valve Box, Item SPV.0060.613.

A Description

This special provision describes the adjustment of water valve boxes in accordance with City of Madison standard specification 704.20.

B Materials

Furnish materials that are in accordance with the pertinent requirements of Madison standard specification 704.20.2.

C Construction

Perform work in accordance with City of Madison standard specification 704.20.3.

D Measurement

The City of Madison will measure Adjust Water Valve Box as each individual adjustment, successfully completed.

E Payment

The City of Madison will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.613	Adjust Water Valve Box	EACH

Payment includes all equipment, labor and materials necessary to complete this item as specified. Adjustment of new valve boxes is incidental to valve box installations and will not be paid.

6-4 Manhole Cover Type J-Special, Item SPV.0060.620.

A Description

This special provision describes installing City of Madison manhole castings in accordance with the pertinent requirements of WisDOT standard spec 611 and the construction details shown in the plans.

B Materials

Provide castings according to WisDOT standard spec 611 and Article 507 of the City of Madison standard specifications and as shown on the plans. Provide lids with logo per City of Madison standard detail drawing 5.7.16.

C Construction

Perform work in accordance with standard spec 611.

D Measurement

The City of Madison will measure Manhole Cover Type J-Special by each individual unit, acceptably completed.

E Payment

The City of Madison will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.620	Manhole Cover Type J-Special	EACH

Payment shall be in accordance with section 611.5.4 of the standard specifications, including the removal of the cover.

APPENDIX C

6-5 Furnish & Install Insulation, Item SPV.0060.631.

A Description

This special provision describes furnishing and installing insulation for water mains and /or water service laterals in accordance with City of Madison standard specifications section 704.17 and this special provision. Insulation is additionally required when the water main or service lateral crosses below underdrain.

B Materials

Furnish materials that are in accordance with the pertinent requirements of City of Madison standard specifications section 704.17.

C Construction

Perform work in accordance with City of Madison standard specifications section 704.17.

D Measurement

The City of Madison will measure Furnish and Install Insulation as each individual installation, successfully completed.

E Payment

The City of Madison will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.631	Furnish & Install Insulation	EACH

Payment includes all equipment, labor and materials necessary to complete this item as specified.

6-6 Utility Line Opening, Item SPV.0060.637.

A Description

This special provision describes excavating to uncover utilities for the purpose of determining the elevation of those utilities, to determine if potential conflicts with proposed work exist, and restoring the site.

B (Vacant)

C Construction

Perform work and in accordance with City of Madison standard specification 508.

Ensure that all utility line openings have been coordinated with and approved by the engineer.

Excavate in a manner such that the utility in question is not damaged, and the safety of the workers is not compromised.

Perform the Utility Line Opening (ULO) as soon as possible and at least three days in advance of proposed utility or street construction to allow all conflicts to be resolved with minimal interruption. Where utilities are within six feet of each other at a location, only one ULO shall be called for. In this case, a single ULO shall be considered full payment to locate multiple utilities.

The standard for restoration will vary project by project site and be dependent on the relative time during the project that the ULO is completed. Restore the ULO site to a safe condition commensurate with the condition of the construction site at the time the ULO is completed.

Open cut method and vacuum technology are acceptable.

Open Cut Method: A single ULO by open cut methods shall include a trench up to a maximum of five feet long, as measured at the trench bottom, and of any depth required to locate the intended utility and may uncover multiple utilities.

Vacuum Technology: A single ULO by vacuum technology shall include up to five vacuum excavations of any depth required to locate the intended utility and may uncover multiple utilities.

D Measurement

The City of Madison will measure Utility Line Opening by each, acceptably completed.

APPENDIX C

E Payment

The City of Madison will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.637	Utility Line Opening	EACH

Payment is full compensation for performing all excavation required to expose the utility line; backfilling the excavation; compacting the backfill; work and materials to restore the site; coordination; and for furnishing all labor, materials, tools, equipment and incidentals necessary to complete the work.

7. Clear – Demolition – Removal.

7-1 Detectable Warning Fields.

Add the following to standard spec 204.5.1:

Payment for Removing Sidewalk includes the removal of existing detectable warning fields.

7-2 Tree Removal – Property Owner Notice.

Notify all property owners within 100 feet of a tree removal at least 10 days prior to removing the tree.

7-3 Removing Retaining Wall, Item 204.9090.S.04.

A Description

This special provision describes removing retaining walls conforming to standard spec 204.

B (Vacant)

C (Vacant)

D Measurement

The City of Madison will measure Removing Retaining Wall in linear feet, acceptably completed.

E Payment

Add the following to standard spec 204.5:

ITEM NUMBER	DESCRIPTION	UNIT
204.9090.S.04	Removing Retaining Wall	LF
stp-204-025 (20230113)		

8. Earthwork.

8-1 Excavation Common.

Replace standard spec 205.4.1(1) with the following:

City of Madison will measure excavation for the widened sidewalk by the cubic yard acceptably completed as computed using the method of average end areas, with no correction for curvature, except as follows:

1. The engineer and contractor mutually agree to an alternate volume calculation method.
2. The method of average end areas is not feasible.
3. Other methods are specified in standard spec 205.4.1.

City of Madison will measure intersection quadrants, defined as the area outside of the proposed cross sections, by the cubic yard, acceptably completed, as computed using alternate methods involving anticipated depth measurements based on typical proposed section and assumed existing pavement thickness multiplied by area of pavement removal.

Excavation for utility trenches and disposals of surpluses and unsuitable material is incidental to the other items of this project and will not be paid for separately.

9. Bases, Subbases, and Pavements.

9-1 General Requirements for Concrete Pavements.

Where removing and replacing concrete, sawcut existing concrete to be removed and replaced to the nearest joint.

9-2 General Requirements for Pavements.

All bituminous and Portland cement concrete proportioning plants and crushers must meet the requirements for the rules of Part 55 Air Pollution Control, of Act 451, Natural Resource and Environmental Protection.

Sawcut existing asphalt and use adjacent existing pavement as a form for new pavement. Reconstruct lane width for a minimum of 50-feet if removing or damaging existing asphalt beyond limits shown in plans.

10. General/Roadway.

10-1 Landmark Reference Monuments.

Any reference monument impacted during construction shall be replaced or adjusted in accordance to standard spec 621. All work with replacing or adjusting existing monuments impacted during construction are incidental to the project.

10-2 Construction Staking.

Verify existing match points prior to continuing with survey. In the event of existing match points are not the same as anticipated values, notify the engineer prior to continuing survey. Work through discrepancies prior to restarting the survey. This is incidental to the contract.

10-3 Concrete Curb and Gutter

Replace standard spec 601.5.1(2) with the following:

Payment for the curb, gutter, and curb & gutter bid items and special provision bid items is full compensation for foundation excavation and preparation; special construction required at driveway and alley entrances, or curb ramps; for providing materials, including concrete, expansion joints; for placing, finishing, protecting, and curing; for sawing joints; and for restoring the site. Payment also includes providing tie bars in unhardened concrete. For tie bars provided in concrete not placed under the contract, the City of Madison will pay separately under the Drilled Tie Bars bid item as specified in 416.5.

10-4 Concrete Sidewalks and Driveways

Replace standard spec 602.5.2(1) with the following:

Payment for the Concrete Sidewalk and Driveway bid items is full compensation for providing concrete and reinforcement; and for restoring the site. Payment also includes providing tie bars and dowel bars in unhardened concrete. For tie bars and dowel bars provided in concrete not placed under the contract, the City of Madison will pay separately under the Drilled Tie Bars and Drilled Dowel Bars bid items as specified in 416.5.

The City of Madison will pay separately for granular subbase or aggregate base, excavation and backfill.

10-5 Curb and Gutter Hand Formed

Per City of Madison standard spec 302, hand formed curb and gutter may be required in the vicinity of any tree located in the terrace. This work is incidental to the concrete curb and gutter bid items.

10-6 Concrete Curb & Gutter Bike Ramp Special, Item SPV.0060.002.

A Description

This special provision describes constructing concrete curb and gutter and detectable directional bar tiles as shown in the plans, as shown in the construction detail drawing, and in accordance with standard spec 601 and 602.

B Materials

Furnish materials in accordance with standard spec 601 and 602.

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Furnish detectable directional bar tiles that are 6" wide and 10 gauge galvanized steel. Detectable directional bar tiles shall be:

" 6" X Length X 10 Gauge Galvanized Steel Directional Indicator Tile" (green) by TuFile; Address: 905 Telsler Road, Lake Zurich, IL 60047. Phone: 1-888-960-8897. Web site: www.tufile.com. E-Mail: sales@tufile.com; or approved equal. Obtain approval from the engineer before furnishing detectable directional bar tiles.

C Construction

Construct concrete curb and gutter and detectable directional bar tiles as shown in the plans, as shown on WisDOT standard detail drawings, and in accordance standard spec 601 and 602. Detectable directional bar tiles to be "wet-set" installed per the manufacturer's specifications.

D Measurement

The City of Madison will measure Concrete Curb & Gutter Bike Ramp Special by each, acceptably completed.

E Payment

The City of Madison will pay for measured quantities at the contract unit price under the following bid items:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.002	Concrete Curb & Gutter Bike Ramp Special	EACH

Payment is full compensation for all materials, labor and incidentals for constructing the curb and gutter and detectable directional bar tiles, in accordance with the drawings and as set forth in these specifications.

10-7 Concrete Curb & Gutter 24-Inch Type H Special, Item SPV.0090.003; Concrete Curb & Gutter 30-Inch Type X Special, SPV.0090.009; Concrete Curb & Gutter 24-Inch Type A Special, Item SPV.0090.018.

A Description

This special provision describes the construction of curb and gutter.

B (Vacant)

C Construction

Construct concrete curb and gutter as shown in the plans, as shown on City of Madison standard detail drawing, and in accordance with WisDOT standard spec 601. Construct Concrete Curb & Gutter 30-Inch Type X Special in accordance with the Pedestrian Ramp Section Concrete Curb & Gutter Type 'X' detail shown on City of Madison standard detail 3.07.

D Measurement

The City of Madison will measure Concrete Curb & Gutter (Size) (Type) Special by the linear foot acceptably completed.

E Payment

The City of Madison will pay for measured quantities at the contract unit price under the following bid items:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.003	Concrete Curb & Gutter 24-Inch Type H Special	LF
SPV.0090.009	Concrete Curb & Gutter 30-Inch Type X Special	LF
SPV.0090.018	Concrete Curb & Gutter 24-Inch Type A Special	LF

Payment is full compensation for all materials, labor and incidentals for constructing the curb and gutter, in accordance with the drawings and as set forth in these specifications.

10-8 Concrete Pedestrian Curb Special, Item SPV.0090.021.

A Description

This special provision describes the construction of pedestrian curb greater than 6" height.

B (Vacant)

APPENDIX C

C Construction

Construct concrete curb as shown in the plans, as shown on WisDOT standard detail drawing, and in accordance with WisDOT standard spec 601.

D Measurement

The City of Madison will measure Concrete Pedestrian Curb Special by the linear foot acceptably completed.

E Payment

The City of Madison will pay for measured quantities at the contract unit price under the following bid items:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.021	Concrete Pedestrian Curb Special	LF

Payment is full compensation for all materials, labor and incidentals for constructing the curb, in accordance with the drawings and as set forth in these specifications.

10-9 Remove, Salvage and Reinstall Fence, Item SPV.0090.022.

A Description

This special provision describes removing fence conforming to standard spec 204 and reinstalling salvaged fence.

B Materials

Conform to section 501 of the standard specifications for concrete. Furnish grade A concrete as modified in section 716 of the standard specifications, except the engineer may waive the requirements for proportioning by weight, and may allow alternate mixers or mixing methods.

The existing fence at Guidepost Montessori is originally supplied by Northway Fence.

C Construction

Perform a field review of existing fence with the engineer to identify condition of the existing fence before removal. The engineer will identify all items to be removed and salvaged or disposed.

Remove all fence, posts, and flanges from their concrete footings and disassemble out of traffic. Remove concrete bases.

After removal of fence, store salvaged material at a mutually agreed location with the engineer.

Reinstall fence on concrete bases per manufacturer's specifications.

D Measurement

The City of Madison will measure Remove, Salvage and Reinstall Fence by the linear foot acceptably completed.

E Payment

The City of Madison will pay for measured quantities at the contract unit price under the following bid items:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.022	Remove, Salvage and Reinstall Fence	LF

Payment is full compensation for all materials, labor and incidentals for removing the existing fence, storing, and reinstalling fence.

10-10 Remove, Salvage, and Reinstall Pavers, Item SPV.0165.004.

A Description

This special provision describes removing, salvaging, and reinstalling existing pavers.

B Materials

Bedding sand shall be washed free from deleterious or foreign materials, well graded, angular, concrete sand conforming to ASTM C33 with a 3/16 in. maximum aggregate size.

Joint filler shall be polymeric sand. Provide application instructions and sample for approval by engineer prior to installation. Apply per manufacturer instructions.

APPENDIX C

Aggregate base shall conform to standard spec 305.2 for ¾ inch gradation.

C Construction

Remove the existing pavers in a way that prevents damaging the pavers to the location shown on the plans. If the contractor damages the paver through its own operations, then the contractor shall replace them at no expense to the City of Madison. Store materials in a safe location until they are ready to be reinstalled.

Spread and compact aggregate base material in uniform layers not exceeding 4 inches. Compact to 95 percent maximum density. The surface of the aggregate base material should be close-knit to prevent bedding sand from filtering and eroding the base.

Spread setting bed sand evenly over prepared aggregate base to a minimum thickness of 1-inch.

Dampen and roller compact sand to level and even surface.

Screed and scarify top ½-inch of sand. Reinstall salvaged bricks back to the original layout. Excess bricks shall be offered to the property owner. If the property owner does not want the bricks then contractor must dispose of off-site.

Spread polymetric sand over surface and sweep into joints. Moisten joints and recover with additional sand until firm joints are achieved. Remove excess sand.

Tamp and level paver units with mechanical plate vibrator until units are firmly bedded, level and to the correct elevation.

Spread sand over surface and sweep into joints.

D Measurement

The City of Madison will measure Remove, Salvage and Reinstall Pavers by the square foot, acceptably completed.

E Payment

The City of Madison will pay for measured quantities at the contract unit price under the following bid items:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0165.004	Remove, Salvage, and Reinstall Pavers	SF

Payment is full compensation for all materials, labor and incidentals for removing the existing pavers, storing, and for reinstalling pavers on compacted sand and base aggregate, and delivery of excess pavers to property owner.

11. Accessory Structures.

11-1 Bike Rack, Item SPV.0060.003.

A Description

This special provision describes furnishing and installing a bike rack at the locations as indicated on the plan.

B Materials

Furnish a bike rack that is stainless steel U square rails with capacity for 2 bicycles. Bike rack shall be:

“SBR11B” model by Duo-Gard Industries Inc., 40442 Koppernick Road, Canton, Michigan 48187. Phone (734) 207-9700. Web Site www.duo-gard.com E-Mail info@duo-gard.com or Approved equal.

C Construction

Submit Manufacturer’s product data and shop drawings for bicycle rail and installation including Layout, footing and installation details. Examine footing with the installer, present for compliance with requirements indicated, installation tolerances and other conditions that affect the installation of all bicycle rails such as aisle widths. Correct unsatisfactory conditions before proceeding with the installation. Setout as per manufacturer’s recommendations and guidelines

Install bicycle rail and associated components in accordance with manufacturer. Verify units level, plumb and true line.

APPENDIX C

D Measurement

The City of Madison will measure Bike Rack by each unit, acceptably completed.

E Payment

The City of Madison will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.003	Bike Rack	EACH

Payment includes all equipment, labor and materials necessary to complete this item as specified.

11-2 Railing Steel Special, Item SPV.0090.402.

A Description

This special provision describes fabricating, galvanizing, painting and installing railing in accordance with standard specs 506, 513 and 517 and the plan details, as directed by the engineer, and as hereinafter provided.

B Materials

All materials for railing shall be new stock, free from defects impairing strength, durability and appearance. Railing assemblies shall be galvanized and receive a two-coat paint system. Bubbles, blisters and flaking in the coating will be a basis for rejection.

B1 Coating System

B1.1. Galvanizing

After fabrication, blast clean steel railing assemblies per SSPC-SP6 and galvanize according to ASTM A123. Vent holes shall be drilled in members as required to facilitate galvanizing and drainage. Location and size of vent holes are to be shown on the shop drawings. All burrs at component edges, corners and at holes shall be removed and sharp edges chamfered before galvanizing. Condition any thermal cut edges before blast cleaning by shallow grinding or other cleaning to remove any hardened surface layer. Remove all evident steel defects exposed in accordance to AASHTO M 160 prior to blast cleaning. Lumps, projections, globules, or heavy deposits of galvanizing, which will provide surface conditions that when painted, will produce unacceptable aesthetic and/or visual qualities, will not be permitted.

B1.2 Two-Coat Paint System

After galvanizing, paint all exterior surfaces of steel railing assemblies and inside of rail elements at field erection and expansion joints as hereinafter provided. All galvanized surfaces to be painted shall be cleaned per SSPC-SP1 to remove chlorides, sulfates, zinc salts, oil, dirt, organic matter and other contaminants. The cleaned surface shall then be brush blast cleaned per SSPC-SP16 to create a slight angular surface profile per manufacturer's recommendation for adhesion of the tie coat. Blasting shall not fracture the galvanized finish or remove any dry film thickness. After cleaning, apply a tie coat from an approved coating system that is specifically intended to be used on a galvanized surface, per manufacturer's recommendations. The tie coat shall etch the galvanized rail and prepare the surface for the top coat. Apply a top coat per manufacturer's recommendations, matching the specified color shown on the plans. Use a preapproved top coat that is resistant to the effects of the sun and is suitable for a marine environment. The tie and top coats should be of contrasting colors, and come from the same manufacturer.

Ensure that the paint manufacturer reviews the process to be used for surface preparation and application of the paint coating system with the paint applier. The review shall include a visit to the facility performing the work if requested by the paint manufacturer. Provide written confirmation, from the paint manufacturer to the engineer, that the review has taken place and that issues raised have been addressed before beginning coating work under the contract.

Use one of the qualified paint manufacturers and products given below. An equivalent system may be used with the written approval of the engineer.

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Manufacturer	Coat	Products	Dry Film Minimum Thickness (mils)	Min. Time¹ Between Coats (hours)
<u>Sherwin Williams</u> 1051 Perimeter Drive Suite 710 Schaumburg, IL 60173 847.330.1562	Tie	Recoatable Epoxy Primer B67-5 Series / B67V5	2.0 to 4.0	6
	Top	Acrolon 218 HS Polyurethane, B65-650	2.0 to 4.0	NA
<u>Carboline</u> 350 Hanley Industrial St. Louis, MO 63144 314.644.1000	Tie	Rustbond Penetrating Sealer FC	1	36
	Tie	Carboguard 60	4.0 to 6.0	10
	Tie	Carboguard 635	4.0 to 6.0	1
	Top	Carbothane 133 LH(satin)	4	NA
<u>Wasser Corporation</u> 4118 B Place NW Suite B Auburn, WA 98001 253.850.2967	Tie	MC-Ferrox B 100	3.0 to 5.0	8
	Top	MC-Luster 100	2.0 to 4.0	N/A

¹Time is dependent on temperature and humidity. Contact manufacturer for more specific information.

B2 Shop Drawings

Submit shop drawings showing the details of railing construction. Show the railing height post spacing, rail location, weld sizes and locations and all dimensions necessary for the construction of the railing. Show location of shop rail splices, field erection joints and expansion joints. State the name of the paint manufacturer and the product name of the tie coat and top coat used along with the color. State the size and material type used for all components. Also show the size and location of any vent or drainage holes provided.

C Construction

C1 Delivery, Storage and Handling

Deliver material to the site in an undamaged condition. Upon receipt at the job site, all materials shall be thoroughly inspected to ensure that no damage occurred during shipping or handling and conditions of materials is in conformance with these specifications. If coating is damaged, Contractor shall repair or replace railing assemblies to the approval of the engineer at no additional cost to the City. Carefully store the material off the ground to ensure proper ventilation and drainage. Exercise care so as not to damage the coated surface during railing installation. No field welding, field cutting or drilling will be permitted without the approval of the engineer..

C2 Touch-up and Repair

For minor damage caused by shipping, handling or installation to coated surfaces, touch-up the surface in conformance with the manufacturer’s recommendations. If damage is excessive, the railing assembly shall be replaced at no additional cost to the City of Madison. The Contractor shall provide the Engineer with a copy of the manufacturer’s recommended repair procedure and materials before repairing damaged coatings.

D Measurement

The City of Madison will measure each railing steel special by the linear foot, acceptably completed.

APPENDIX C

E Payment

The City of Madison will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.402	Railing Steel Special	LF

Payment is full compensation for fabricating, galvanizing, painting, transporting, and installing the railing, including any touch-up and repairs; and for furnishing all labor, tools, equipment, materials and incidentals necessary to complete the work as set forth in these specifications.

11-3 Wall Modular Block Gravity, Item SPV.0165.404.

A Description

This special provision describes designing, furnishing materials and erecting a permanent earth retention system in accordance to the lines, dimension, elevations and details as shown on the plans and provided in the contract. The design life of the wall and all wall components shall be 75 years minimum.

B Materials

B.1 Proprietary Wall Systems

The supplied wall system must be from the WisDOT approved list of Modular Block Gravity Wall systems. Proprietary wall systems must conform to the requirements of this specification and be pre-approved for use by the WisDOT Bureau of Structures. WisDOT maintains a list of pre-approved proprietary wall systems. See the approved products list titled "Proprietary Retaining Wall System Vendors." The name of the pre-approved proprietary wall system selected shall be furnished to the engineer within 25 days after the award of contract. WisDOT also maintains a separate list of plants pre-approved by WisDOT to provide wall facing units. See the approved products list titled "Precast Concrete and Block Fabricators." The identity of the plant manufacturing the facing units shall be furnished to the engineer at least 14 days prior to the project delivery.

To be eligible for use on this project, a system must have been pre-approved by the Bureau of Structures and added to that list prior to the bid closing date. To receive pre-approval, the retaining wall system must comply with all pertinent requirements of this provision and be prepared in accordance to the requirements of Chapter 14 of WisDOT's LRFD Bridge Manual. Information and assistance with the pre-approval process can be obtained by contacting the Bureau of Structures, Structures Maintenance Section at the following email address: DOTDLStructuresFabrication@dot.wi.gov.

To be eligible to provide wall facing units for this project, a block manufacturing plant must be pre-approved by the Bureau of Technical Services and added to that list prior to the bid closing date. Information and assistance with the pre-approval process can be obtained by contacting the Bureau of Technical Services at the following email address: DOTProductSubmittal@wisconsin.gov.

B.2 Design Requirements

It is the responsibility of the contractor to submit a design and supporting documentation as required by this special provision, for review and acceptance by the engineer, to show the proposed wall design conforms to the design specifications. The submittal shall include the following items for review: detailed plans and shop drawings, complete design calculations, explanatory notes, supporting materials, and specifications. The detailed plans and shop drawings shall include all details, dimensions, quantities and cross-sections necessary to construct the walls. Submit shop drawings to the engineer conforming to 105.2 with electronic submittal to the fabrication library under 105.2.2. Certify that shop drawings conform to quality control standards by submitting WisDOT form DT2329 with each set of shop drawings. Engineer review does not relieve the contractor from responsibility for errors or omissions on shop drawings. Submit no later than 60 days from the date of notification to proceed with the project and a minimum of 30 days prior to the date proposed to begin wall construction.

The plans and shop drawings shall be prepared on reproducible sheets 11 inch x 17 inch, including borders. Each sheet shall have a title block in the lower right corner. The title block shall include the project identification number and name or designation of the wall. Design calculations and notes shall be on 8 ½ inch x 11 inch sheets, and shall contain the project identification number, name or designation of the wall, date of preparation, initials of designer and checker, and page number at the top of the page. All plans, shop drawings, and calculations shall be signed, sealed and dated by a professional engineer licensed in the State of Wisconsin.

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The design of the wall shall be in compliance with the current American Association of State Highway and Transportation Officials LRFD (AASHTO LRFD) Bridge Design Specifications with latest interim specifications for Mechanically Stabilized Earth Walls, WisDOT's current Standard Specifications for Highway and Structure Construction (standard spec), Chapter 14 of the WisDOT LRFD Bridge Manual and standard engineering design procedures as determined by WisDOT. Loads, load combinations, load and resistance factors shall be as specified in AASHTO LRFD Section 11. The associated resistance factors shall be defined in accordance with Table 11.5.7-1 in AASHTO LRFD.

Design and construct the walls in accordance to the lines, grades, heights and dimensions shown on the plans, as herein specified, and as directed by the engineer.

Walls shall be designed for a minimum live load surcharge of 100 psf in accordance with Chapter 14 of the WisDOT LRFD Bridge Manual or as shown on the plans.

A maximum value of the angle of internal friction of the wall backfill material used for design shall be assumed to be 30 degrees without a certified report of tests. If a certified report of tests yields an angle of internal friction greater than 30 degrees, the larger test value may be used for design, up to a maximum value of 36 degrees.

The design of the wall by the contractor shall consider the internal and compound stability of the wall mass in accordance with AASHTO LRFD 11.10.6. Internal stability shall also be considered at each block level. Calculations for factored stresses and resistances shall be based upon assumed conditions at the end of the design life. The width of the modular block (front face to back face) shall be included in the design computations and shown on the wall shop drawings. Blocks must have a minimum width of 8 inches. Block widths may vary among courses, but shall consist of only a single block. Compound stability shall be computed for the applicable strength limits. Sample analyses and hand calculations shall be submitted to verify the output of any software program used. The design calculations and notes shall clearly indicate the Capacity to Demand Ratios (CDR) for all internal and external stabilities as defined in AASHTO LRFD.

Wall facing units shall be designed in accordance with AASHTO LRFD 11.10.2.3.

The minimum embedment of the wall shall be 1 foot 6 inches below finished grade, or as given on the plans. All walls shall be provided with a concrete leveling pad. Minimum wall embedment does not include the leveling pad depth. Step the leveling pad to follow the general slope of the ground line. Frost depth shall not be considered in designing the wall for depth of leveling pad.

Wall facing units shall be installed on a leveling pad.

B.3 Wall System Components

Materials furnished for wall system components under this contract shall conform to the requirements of this specification. All documentation related to material and components of the wall systems specified in this subsection shall be submitted to the engineer.

B.3.1 Wall Facing

Wall facing units shall consist of precast modular concrete blocks. Furnish concrete produced by a dry-cast or wet-cast process. Concrete for all blocks shall not contain less than 565 pounds of cementitious materials per cubic yard. The contractor may use cement conforming to standard spec. 501.2.1 or may substitute for portland cement at the time of batching conforming to standard spec. 501.2.6 for fly, 501.2.7 for slag, or 501.2.8 for other pozzolans. In either case the maximum total supplementary cementitious content is limited to 30% of the total cementitious content by weight.

Dry-cast concrete blocks shall be manufactured in accordance with ASTM C1372 and this specification.

All units shall incorporate a mechanism or devices that develop a mechanical connection between vertical block layers. Units that are broken, have cracks wider than 0.02" and longer than 25% of the nominal height of the unit, chips larger than 1", have excessive efflorescence, or are otherwise deemed unacceptable by the engineer, shall not be used within the wall. A single block front face style shall be used throughout each wall. The color and surface texture of the block shall be as given on the plan.

The top course of facing units shall be as noted on the plans, either;

- Solid precast concrete unit designed to be compatible with the remainder of the wall. The finishing course shall be bonded to the underlying facing units with a durable, high strength, flexible adhesive compound compatible with the block material.
- A formed cast-in-place concrete cap. A cap of this type shall have texture, color, and appearance, as noted on the plans. The vertical dimension of the cap shall not be less than 3 1/2 inches. Expansion joints shall be placed in the cap at a maximum spacing of 20 feet unless noted

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otherwise on the plan. Use Grade A concrete conforming to standard spec 501 as modified in standard spec 716. Provide QMP for cast in place cap and coping concrete as specified in standard spec 716, Class II Concrete.

Block dimensions may vary no more than $\pm 1/8$ inch from the standard values published by the manufacturer. Blocks must have a minimum width (front face to back face) of 8 inches. The minimum front face thickness of blocks shall be 4 inches measured perpendicular from the front face to inside voids greater than 4 square inches. The minimum allowed thickness of any other portions of the block is $1\frac{3}{4}$ inches. The front face of the blocks shall conform to plan requirements for color, texture, or patterns.

If pins are used to align modular block facing units, they shall consist of a non-degrading polymer, or hot dipping galvanized steel and be made for the express use with the modular block units supplied, to develop mechanical interlock between facing unit block layers. Connecting pins shall be capable of holding the wall in the proper position during backfilling. Furnish documentation that establishes and substantiates the design life of such devices.

All block materials shall be furnished palleted and banded, with every pallet marked for quantity, lot number, lot size, manufacturing plant, and manufacturing date(s). Materials furnished loose or unmarked will be rejected. Rejected materials shall be removed from the project at no cost to the City of Madison.

B.3.1.1 Material Testing

Perform or procure quality control testing of project materials according to the following requirements:

Test	Method	Requirement	
		Dry-cast	Wet-cast
Compressive Strength (psi)	ASTM C140 or ASTM C39 [4]	5000 min.	4000 min.
Air Content (%)	AASHTO T152 [4]	N/A	6.0 +/-1.5
Water Absorption (%)	ASTM C140 [3]	6 max.	N/A
Freeze-Thaw Loss (%) 40 cycles, 5 of 5 samples 50 cycles, 4 of 5 samples	ASTM C1262 ^{[1][2][3]}	1.0 max. 1.5 max.	N/A

[1] Test shall be run using a 3% saline solution and blocks greater than 45 days old.

[2] Test results that meet either of the listed requirements for Freeze-Thaw Loss are acceptable.

[3] An independent testing laboratory shall control and conduct all sampling and testing under ASTM C140/Water Absorption and ASTM C1262. Prior to sampling, the manufacturer shall identify materials by lot. Five blocks per lot shall be randomly selected for testing. Solid blocks used as a finishing or top course shall not be selected. The selected blocks shall remain under the control of the person who conducted the sampling until shipped or delivered to the testing laboratory.

[4] The manufacturer may perform their own quality control testing under ASTM C140/Compressive Strength, ASTM C39, and AASHTO T152, if qualified for this work under the requirements for plant certification.

The contractor and fabricator shall coordinate with the independent testing agent (if used) to ensure that strength and air content samples can be taken appropriately during manufacturing. At the time of delivery of materials, furnish the engineer a certified report of test from an AASHTO-registered or ASTM-accredited independent testing laboratory for each lot furnished.

The certified test report shall include the following:

- Project ID
- Production process used (dry-cast or wet-cast)
- Name and location of testing facility
- Name of sampling technician
- Lot number, lot size, and date(s) of fabrication

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Quality control testing of project materials shall be completed not more than 18 months prior to delivery. Lot size shall not exceed the maximum testing frequencies, which shall not exceed 5000 blocks for dry-cast blocks and the lesser of 150 CY or 1 day's production for wet-cast blocks. Test results will represent all blocks within the lot. Each pallet of blocks delivered shall bear lot identification information. Block lots that do not meet the requirements of this specification or blocks without supporting reports will be rejected and shall be removed from the project at no expense to the City of Madison.

Nonconforming materials will be subject to evaluation according to standard spec 106.5.

B.3.2 Leveling Pad

Provide an unreinforced cast-in-place concrete leveling pad. Use Grade A concrete conforming to standard spec 501 as modified in standard spec 716. Provide QMP for leveling pad concrete as specified in standard spec 716, Class III Concrete.

The minimum width of the concrete leveling pad shall be as wide as the proposed blocks plus 6-inches, with 6-inches of the leveling pad extending beyond the front face of the blocks. The minimum thickness of the leveling pad shall be 6-inches.

B.3.3 Backfill

Furnish and place backfill for the wall as shown on the plans and as hereinafter provided.

Wall Backfill, Type A, shall comply with the requirements for Coarse Aggregate Size No. 1 as given in standard spec 501.2.5.4. All backfill placed within a zone from the top of the leveling pad to the top of the final layer of wall facing units and within 1 foot behind the back face of the wall shall be Wall Backfill, Type A. This includes all material used to fill openings in the wall facing units.

A layer of Geotextile Type "DF" (Schedule B) shall be placed vertically between the backfill and the Type A backfill. The geotextile shall extend from the top of the leveling pad to 6 inches below the surface of the retained soil. The geotextile shall then wrap across the top of the Type A backfill to the back of block wall facing.

Backfill placed between retained soil and Type A backfill shall comply with the requirements for Granular Backfill Grade 1 as contained in 209.2.2 of the standard spec. The Contractor may substitute Type A Backfill for Granular Backfill Grade 1.

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C.1 Excavation and Backfill

Excavation and preparation of the foundation for the wall and the leveling pad shall be in accordance to standard spec 206. At the end of each working day, provide good temporary drainage such that the backfill shall not become contaminated with run-off soil or water if it should rain. Do not stockpile or store materials or large equipment within 10 feet of the back of the wall.

Place backfill materials in the areas as indicated on the plans and as detailed in this specification. Backfill lifts shall be no more than 8-inches in depth, after compaction. Backfilling shall closely follow erection of each course of wall facing units.

Conduct backfilling operations in such a manner as to prevent damage or misalignment of the wall facing units or other wall components. At no expense to the City of Madison, correct any such damage or misalignment as directed by the engineer. A field representative of the wall supplier shall be available during wall construction to provide technical assistance to the contractor and the engineer.

Do not operate tracked or wheeled equipment on the backfill within 3 feet from the back face of modular blocks. The engineer may order the removal of any large or heavy equipment that may cause damage or misalignment of the wall facing units.

C.2 Compaction

Compact wall backfill Type A with at least three passes of lightweight manually operated compaction equipment acceptable to the engineer.

Ensure adequate moisture is present in the backfill during placement and compaction to prevent segregation and to help achieve compaction.

Compaction of backfill within 3 feet of the back face of the wall should be accomplished using lightweight compaction devices. Use of heavy compaction equipment or vehicles should be avoided within 3 feet of the modular blocks.

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C.3 Wall Components

C.3.1 General

Erect wall facing units and other associated elements according to the wall manufacturer's construction guide and to the lines, elevations, batter, and tolerances as shown on the plans. Center the initial layer of facing units on the leveling pad; then level them and properly align them. Fill formed voids or openings in the facing units with wall backfill, Type A. Remove all debris on the top of each layer of facing units, before placing the next layer of facing units.

Install all pins, rods, clips, or other devices used to develop mechanical interlock between facing unit layers in accordance with the manufacturer's directions.

C.3.2 Leveling Pad

Provide an unreinforced cast-in-place concrete leveling pad as shown on the plans. Vertical tolerances shall not exceed 3/4-inch when measured along a 10-foot straight edge. Allow the concrete to set at least 12 hours prior to placing wall facing units.

The bottom row of wall facing units shall be horizontal and 100% of the unit surface shall bear on the leveling pad.

C.4 Geotechnical Information

Geotechnical data to be used in the design of the wall is given on the wall plan and supplemental geotechnical investigation that is required by the manufacturer.

D Measurement

The City of Madison will measure Wall Modular Block Gravity by the square foot acceptably completed. The City of Madison will compute the measured quantity from the theoretical pay limits the contract plans show. The City of Madison will make no allowance for wall area constructed above or below the theoretical pay limits. All work beyond the theoretical pay limits is incidental to the cost of work. The City of Madison will make no allowance for as-built quantities.

E Payment

The City of Madison will pay for accepted measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0165.404	Wall Modular Block Gravity	SF

Payment is full compensation for supplying a design and shop drawings; supplying geotechnical investigation as needed; preparing the site, including all necessary excavation and disposal of materials; supplying all necessary wall components to produce a functional wall system including cap, copings, leveling pad, and leveling pad steps; constructing the retaining system and providing temporary drainage; providing and installing underdrain; providing backfill, backfilling, compacting, developing and completing and documenting the quality management program, and performing compaction testing.

The City of Madison will pay separately for railings and other items above the wall cap or coping.

12. Drainage, Sewer, & Erosion Control.

12-1 General.

Inspect existing storm, sanitary, and combined infrastructure prior to connecting to existing infrastructure. Work with the engineer in cases where substandard infrastructure could adversely impact the system. Payment shall be adjusted if the engineer agrees that manholes or catch basins need to be reconstructed rather than adjusted. Unit prices for reconstructing manholes and catch basins provided by the contractor at the time of bidding is to be used if reconstruction is agreed upon by the contractor and the engineer.

12-2 Erosion Control.

Add the following to standard spec 107.20:

Provide the Erosion Control Implementation Plan (ECIP) a minimum of fourteen days prior to the pre-construction meeting. Pursue operations in a timely and diligent manner, continuing all construction operations methodically from the initial removals and topsoil stripping operations through the subsequent grading, paving, and re-topsoiling to minimize the period of exposure to possible erosion.

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Topsoil graded areas, as designated by the engineer, immediately after grading has been completed within those areas. Seeding shall be completed and erosion mat installed on all topsoiled areas within 5 working days after placement of topsoil.

Provide an open aggregate concrete truck washout area on site. Contractor to ensure that concrete washout shall be contained to this designated area and not be allowed to run into storm inlets or into the overland storm water drainage system. Washout area shall be removed upon completion of construction.

12-3 Salvaging Castings.

Comply with section 203.2 of the City of Madison standard specifications with regard to salvaging castings.

12-4 Removing Storm Sewer.

Revise standard spec 204.3.2.2.1 (13):

Under the Removing Storm Sewer bid items, remove existing storm sewer, sanitary sewer or combined sewer as called out in the plans. Backfill resulting trenches with granular backfill conforming to subsection 209.2 of the standard specifications.

12-5 Inlet Protection Type D.

Remove the following from FDM 10-10-27:

Use WisDOT's SDD 8E10 inlet protection.

Replace with the following:

Use City of Madison Standard Detail Drawing 1.11 and follow City of Madison Specification 210.1(f).

12-6 Abandoning Sewer, Item 204.0291.S.

A Description

This special provision describes abandoning existing sewer by filling it with cellular concrete as the plans show and conforming to standard spec 204 and standard spec 501 as modified in this special provision.

B Materials

Provide cellular concrete meeting the following specifications: 1 part cement, 1 part fly ash, 8 parts sand, or an approved equal, and water. Provide cement meeting the requirements of standard spec 501.2.4.1 for Type 1 Portland Cement. Provide sand meeting the requirements of standard spec 501.2.7.2. Provide water meeting the requirements of standard spec 501.2.6.

C Construction

Fill the abandoned sewer pipe with cellular concrete as the engineer directs. If the sewer cannot be completely filled from existing manholes, tap the sewer where necessary and fill from these locations.

D Measurement

The City of Madison will measure Abandoning Sewer in volume by the cubic yard as specified in standard spec 109.1.3.

E Payment

The City of Madison will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
204.0291.S	Abandoning Sewer	CY

Payment is full compensation for furnishing all materials and excavating and backfilling where necessary.
stp-204-050 (20210708)

12-7 Saddled Inlet Type I, Item SPV.0060.601.

A Description

This special provision describes the installation of saddled Inlets Type I at locations as indicated on the plans. The casting is not included in this item.

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B Materials

Furnish inlets that are in accordance with the pertinent requirements of City of Madison standard detail drawing 5.7.8 and Article 507 of the City of Madison standard specifications.

C Construction

Perform work in accordance with City of Madison standard detail drawing 5.7.8 and Article 507 of the City of Madison standard specifications.

D Measurement

The City of Madison will measure Saddled Inlet Type I as each individual saddled inlet Type I as provided on the plans, acceptably completed.

E Payment

The City of Madison will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.601	Saddled Inlet Type I	EACH

Payment includes all equipment, labor and materials necessary to complete this item as specified. The casting will be paid for separately.

12-8 Storm Sewer Tap, Item SPV.0060.606.

A Description

This special provision describes tapping various sized storm sewer pipes into existing structures, including manholes or inlets, or other pipes at locations shown on the plans. Perform the work in accordance to the applicable provisions of standard spec 607 and standard spec 611, and as hereinafter provided.

B (Vacant)

C Construction

Tap into the existing structure to allow the pipe to be flush with the interior wall of the existing pipe or structure. All necessary temporary shoring needed for construction of this item will not be paid for separately but will be included in this item of work.

D Measurement

The City of Madison will measure Storm Sewer Tap by each individual unit acceptably completed.

E Payment

The City of Madison will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.606	Storm Sewer Tap	EACH

Payment is full compensation for providing all materials, including saw cuts, for excavating; for removing concrete; for providing and removing sheeting and shoring, making connections to new or existing facilities, and for cleaning out.

12-9 Connect Pipe Underdrain to Existing Structure, Item SPV.0060.614.

A Description

This special provision describes coring a hole into an existing storm sewer structure to connect proposed pipe underdrain. Perform the work in accordance to the applicable provisions of standard specs 608, 611, and 612, and as shown on the plans.

B Materials

Furnish mortar conforming to standard spec 519.2.3.

C Construction

Core into the existing storm sewer structure. Insert the pipe underdrain to be flush with the interior of the existing structure. Construct watertight connection between the pipe underdrain and existing storm sewer structure using Portland cement mortar.

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D Measurement

The City of Madison will measure Connect Pipe Underdrain to Existing Structure as each individual connect pipe underdrain to existing structure acceptably completed.

E Payment

City of Madison will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.614	Connect Pipe Underdrain to Existing Structure	EACH

Payment includes all equipment, labor and materials necessary to complete this item as specified.

12-10 Inlet Casting Offset, Item SPV.0060.625.

A Description

This special provision describes the inlet casting offset at locations as indicated on the plans.

B Materials

Furnish castings that are in accordance with the pertinent requirements of City of Madison standard detail drawing 5.7.29.

C Construction

Perform work in accordance with City of Madison standard detail drawing 5.7.29.

D Measurement

The City of Madison will measure Inlet Casting Offset as each individual Inlet Casting Offset, acceptably completed.

E Payment

City of Madison will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.625	Inlet Casting Offset	EACH

Payment includes all equipment, labor and materials necessary to complete this item as specified.

12-11 PVC 12" Drain Basin with Grate, Item SPV.0060.636.

A Description

This special provision describes the furnishing and installation of PVC 12" Drain Basin with Grate.

B Materials

All standpipes shall be 12-inch SDR 35 PVC and conform to the requirements of ASTM D3034. The grate shall be ductile iron per ASTM A536 Grade 70-50-05. Drain basins shall be Nyloplast Inline Drains or an approved equivalent. Joints shall be watertight. Drain basins shall be custom manufactured according to plan elevations and details and conform to the required traffic class.

C Construction

Construct PVC 12" Drain Basin with Grate as shown on the plans. Install base aggregate open-graded around the standpipe. Connect drain basins to pipes, as shown on the plans, and with watertight joints. Finish surface shall be graded to the Drain Basins.

D Measurement

The City of Madison will measure PVC 12" Drain Basin with Grate as each acceptably completed.

E Payment

City of Madison will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.636	PVC 12" Drain Basin with Grate	EACH

Payment includes all equipment, labor and materials, including the standpipes, grates, tees, wyes, fittings, caps and ends, necessary to complete this item as specified.

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12-12 Surface Drain Pipe Corrugated Plastic Slotted, Item SPV.0090.635.

A Description

This special provision describes furnishing and installing slotted corrugated plastic pipe surface drain as shown on the plans, according to standard spec 530, and as hereinafter provided.

B Materials

Furnish backfill material in accordance with City of Madison standard detail drawing 5.2.1.

The aluminum slot grate frame shall be manufactured commercial aluminum meeting ASTM B209 and consisting of two parallel plates separated by spacers spanning the slot on 6-inch centers. The grate shall have diamond-shaped openings with a 52% open area and be ADA compliant. The grate shall be rated to conform to the required traffic class.

Furnish culvert pipe, with a corrugated outer wall and a smooth inner liner corrugated plastic pipe. The culvert shall conform to AASHTO M294 type S.

C Construction

Prior to backfilling, plug the upper end of the slotted drain as approved by the engineer.

Prior to backfill operations adjacent to the slotted area of the slotted corrugated plastic pipe surface drain pipe, install timber blocks in the slots. Remove any material entering the pipe at no expense to the City.

Keep the timber blocks in place until final cleanup operations are completed; at which time, remove the timber blocks.

Exercise care to avoid damage to the slotted corrugated plastic pipe surface drain pipe. If any section of pipe is damaged or is unsatisfactory as determined by the engineer, replace the drain pipe at no expense to the City.

D Measurement

The City of Madison will measure Surface Drain Pipe Corrugated Plastic Slotted, completed according to the contract and accepted, in place by the linear foot.

E Payment

City of Madison will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.635	Surface Drain Pipe Corrugated Plastic Slotted	LF

Payment includes all equipment, labor and materials necessary to complete this item as specified.

13. Signing and Marking.

13-1 General.

Prior to placement of permanent signing and pavement markings, coordinate with the City of Madison.

A separate project on Mineral Point Road includes Bus Rapid Transit improvements. The signing and pavement marking plans assume that project will be completed prior to this project.

13-2 Two Stage Left Turn Bike Box, Item SPV.0060.103.

A Description

This work consists of furnishing and installing a durable, high skid and slip resistant preformed thermoplastic pavement marking that consists of white retroreflective symbols, bike lane green material background, and a 6-inch white retroreflective linear pavement marking for use on asphalt or Portland cement concrete pavement surfaces.

B Materials

B.1 General

Preformed thermoplastic pavement marking to be produced of the materials and by methods described below as manufactured by Ennis-Flint or approved equal.

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The material must be produced in the United States, and the manufacturer must be ISO 9001:2008 certified for design, development and manufacturing of preformed thermoplastic pavement markings, and provide proof of current certification.

The material shall be capable of being applied on bituminous and/or Portland cement concrete pavements by the use of a handheld heat torch, and/or infrared heater without preheating the surface.

The material shall be capable of being applied in temperatures down to 45°F (7.2°C) without any special storage, preheating or treatment of the material before application.

The material must be a resilient light green color preformed thermoplastic product which contains a minimum of thirty percent (30%) intermixed anti-skid/anti-slip elements with a hardness range of 7-9 (Mohs scale), and where the top surface contains anti-skid/anti-slip elements with a hardness of 9 (Mohs scale).

Material shall be composed of an ester-modified rosin impervious to degradation by motor fuels, lubricants, etc., in conjunction with aggregates, pigments, binders, and anti-skid/anti-slip elements uniformly distributed throughout the material. The thermoplastic material shall conform to AASHTO designation M249, with the exception of the relevant differences due to the material being supplied in a preformed state, being non-reflective, and being of a color different from white or yellow.

B.2 Pigment Color

The bike lane green color shall be manufactured with appropriate pigment to ensure that the resulting colors complies with the Light Green color as specified in the FHWA Memorandum dated April 15th, 2011: Interim Approval for Optional Use of Green Colored Pavement for Bike Lanes (IA-14).

The white color shall be standard regulatory color white.

The pigment system must not contain heavy metals or any carcinogen, as defined in 29 CFR 1910.1200 in amounts exceeding permissible limits as specified in relevant Federal Regulations.

B.3 Heating Indicators

The top surface of the material shall have regularly spaced indents. The closing of these indents during application shall act as a visual cue that the material has reached a molten state, allowing for satisfactory adhesion and proper embedment of the anti-skid/anti-slip elements, and a post-application visual cue that proper application procedures have been followed.

B.4 Skid Resistance

The surface of the preformed thermoplastic material shall contain factory applied anti-skid elements with a minimum hardness of 9 (Mohs scale). Upon application, the material shall provide a minimum skid resistance value of 60 BPN when tested according to ASTM E 303.

B.5 Slip Resistance

The surface of the preformed thermoplastic material shall contain factory applied anti-skid elements with a minimum hardness of 9 (Mohs scale). Upon application the material shall provide a minimum static coefficient of friction of 0.6 when tested according to ASTM C 1028 (wet and dry), and a minimum static coefficient of friction of 0.6 when tested according to ASTM D 2047.

B.6 Thickness

The material must be supplied at a minimum thickness of 90 mils (2.29 mm) or 125 mils (3.15 mm).

B.7 Environmental Resistance

The material shall be resistant to deterioration due to exposure to sunlight, water, salt or adverse weather conditions and impervious to oil and gasoline.

C Construction

C.1 Construction Method

Install preformed thermoplastic pavement marking in accordance with manufacture's specifications.

C.2 Performance Requirements

Preformed thermoplastic pavement marking shall be installed per plans and specification. The engineer will notify the contractor within 48 hours of installation regarding any pavement marking not installed to specification or to the satisfaction of the engineer. Non-conforming preformed thermoplastic pavement marking shall be removed at no charge to the City and replaced with a conforming product.

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D Measurement

City of Madison will measure by each (EA) of all preformed thermoplastic pavement marking needed for the Two Stage Left Turn Bike Box installed and accepted.

E Payment

City of Madison will pay for measured quantities at the contract unit price under the following bid items:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.103	Two Stage Left Turn Bike Box	EA

Payment is full compensation for all work, materials, labor, and incidentals required to complete the work as specified, including any re-application or repair required under the performance requirements as provided herein.

13-3 Pavement Marking Epoxy Continental Crosswalk 18-Inch, Item SPV.0090.101.

A Description

This special provision describes providing pavement markings at crosswalks.

B Materials

Furnish pavement marking products in compliance with standard spec 646.2 and as shown in the plans.

C Construction

Prepare the surface and apply markings in compliance with standard spec 646.3 and as shown in the plans.

D Measurement

City of Madison will measure Continental Crosswalks by the linear foot, perpendicular to the crosswalk bars, acceptably completed.

E Payment

City of Madison will pay for measured quantities at the contract unit price under the following bid items:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.101	Pavement Marking Epoxy Continental Crosswalk 18-Inch	LF

Payment is full compensation for all materials, labor and incidentals for providing the marking, in accordance with the drawings and as set forth in these specifications.

13-4 Pavement Marking Epoxy Stop Line 24-Inch, Item SPV.0090.102; Pavement Marking Epoxy Line 6-Inch Item, SPV.0090.103; Pavement Marking Epoxy Line 8-Inch, Item SPV.0090.104; Pavement Marking Epoxy Diagonal Line 8-Inch, Item SPV.0090.106; Marking Crosswalk Epoxy Transverse Line 12-Inch, Item SPV.0090.113; Pavement Marking Epoxy Lane Line 4-Inch, Item SPV.0090.114.

A Description

This special provision describes providing epoxy pavement marking.

B Materials

Furnish pavement marking products in compliance with standard spec 646.2 and as shown in the plans.

C Construction

Prepare the surface and apply markings in compliance with standard spec 646.3 and as shown in the plans.

D Measurement

City of Madison will measure these items by the linear foot, acceptably completed.

E Payment

City of Madison will pay for measured quantities at the contract unit price under the following bid items:

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ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.102	Pavement Marking Epoxy Stop Line 24-Inch	LF
SPV.0090.103	Pavement Marking Epoxy Line 6-Inch	LF
SPV.0090.104	Pavement Marking Epoxy Line 8-Inch	LF
SPV.0090.106	Pavement Marking Epoxy Diagonal Line 8-Inch	LF
SPV.0090.113	Marking Crosswalk Epoxy Transverse Line 12-Inch	LF
SPV.0090.114	Pavement Marking Epoxy Lane Line 4-Inch	LF

Payment is full compensation for all materials, labor and incidentals for providing the marking, in accordance with the drawings and as set forth in these specifications.

13-5 Marking Removal Longitudinal Line 8-Inch Wide Max, Item SPV.0090.109; Marking Removal Wide Line Greater Than 8-Inch Wide, Item SPV.0090.110; Marking Removals Ladder/Continental Crosswalks, Item SPV.0090.111.

A Description

This special provision describes removing pavement markings.

B Materials

Remove pavement marking in compliance with standard spec 646.3 and as shown in the plans.

C Construction

Prepare the surface and apply markings in compliance with standard spec 646.3 and as shown in the plans.

D Measurement

City of Madison will measure the Marking Removal Longitudinal Line 8-Inch Wide Max by the linear foot of material removed, Marking Removal Wide Line Greater Than 8-Inch Wide by the linear foot of material removed, and Marking Removals Ladder/Continental Crosswalks by the linear foot of material removed, acceptably completed.

E Payment

City of Madison will pay for measured quantities at the contract unit price under the following bid items:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.109	Marking Removal Longitudinal Line 8-Inch Wide Max	LF
SPV.0090.110	Marking Removal Wide Line Greater Than 8-Inch Wide	LF
SPV.0090.111	Marking Removals Ladder/Continental Crosswalks	LF

Payment is full compensation for removing the marking and for resealing areas of clear protective surface treatments.

13-6 Skid/Slip Resistant Preformed Thermoplastic Pavement Marking Bike Lane Green, Item SPV.0165.102.

A Description

This work consists of furnishing and installing a durable, high skid and slip resistant preformed thermoplastic bike lane green pavement marking material for use on asphalt or Portland cement concrete pavement surfaces.

B Materials

B.1 General

Preformed thermoplastic pavement marking to be produced of the materials and by methods described below as manufactured by Ennis-Flint or approved equal.

The material must be produced in the United States, and the manufacturer must be ISO 9001:2008 certified for design, development and manufacturing of preformed thermoplastic pavement markings, and provide proof of current certification.

The material shall be capable of being applied on bituminous and/or Portland cement concrete pavements by the use of a handheld heat torch, and/or infrared heater without preheating the surface.

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The material shall be capable of being applied in temperatures down to 45°F (7.2°C) without any special storage, preheating or treatment of the material before application.

The material must be a resilient light green color preformed thermoplastic product which contains a minimum of thirty percent (30%) intermixed anti-skid/anti-slip elements with a hardness range of 7-9 (Mohs scale), and where the top surface contains anti-skid/anti-slip elements with a hardness of 9 (Mohs scale).

Material shall be composed of an ester-modified rosin impervious to degradation by motor fuels, lubricants, etc., in conjunction with aggregates, pigments, binders, and anti-skid/anti-slip elements uniformly distributed throughout the material. The thermoplastic material shall conform to AASHTO designation M249, with the exception of the relevant differences due to the material being supplied in a preformed state, being non-reflective, and being of a color different from white or yellow.

B.2 Pigment Color

The bike lane green color shall be manufactured with appropriate pigment to ensure that the resulting colors complies with the Light Green color as specified in the FHWA Memorandum dated April 15th, 2011: Interim Approval for Optional Use of Green Colored Pavement for Bike Lanes (IA-14).

The pigment system must not contain heavy metals or any carcinogen, as defined in 29 CFR 1910.1200 in amounts exceeding permissible limits as specified in relevant Federal Regulations.

B.3 Heating Indicators

The top surface of the material shall have regularly spaced indents. The closing of these indents during application shall act as a visual cue that the material has reached a molten state, allowing for satisfactory adhesion and proper embedment of the anti-skid/anti-slip elements, and a post-application visual cue that proper application procedures have been followed.

B.4 Skid Resistance

The surface of the preformed thermoplastic material shall contain factory applied anti-skid elements with a minimum hardness of 9 (Mohs scale). Upon application, the material shall provide a minimum skid resistance value of 60 BPN when tested according to ASTM E 303.

B.5 Slip Resistance

The surface of the preformed thermoplastic material shall contain factory applied anti-skid elements with a minimum hardness of 9 (Mohs scale). Upon application the material shall provide a minimum static coefficient of friction of 0.6 when tested according to ASTM C 1028 (wet and dry), and a minimum static coefficient of friction of 0.6 when tested according to ASTM D 2047.

B.6 Thickness

The material must be supplied at a minimum thickness of 90 mils (2.29 mm) or 125 mils (3.15 mm).

B.7 Environmental Resistance

The material shall be resistant to deterioration due to exposure to sunlight, water, salt or adverse weather conditions and impervious to oil and gasoline.

C Construction

C.1 Construction Method

Install preformed thermoplastic pavement marking in accordance with manufacture's specifications.

C.2 Performance Requirements

Preformed thermoplastic pavement marking shall be installed per plans and specification. The engineer will notify the contractor within 48 hours of installation regarding any pavement marking not installed to specification or to the satisfaction of the engineer. Non-conforming preformed thermoplastic pavement marking shall be removed at no charge to the City and replaced with a conforming product.

D Measurement

City of Madison will measure by the squared foot (SF) of preformed thermoplastic pavement marking installed and accepted.

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E Payment

City of Madison will pay for measured quantities at the contract unit price under the following bid items:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0165.102	Skid/Slip Resistant Preformed Thermoplastic Pavement Marking Bike Lane Green	SF

Payment is full compensation for all work, materials, labor, and incidentals required to complete the work as specified, including any re-application or repair required under the performance requirements as provided herein.

13-7 Methyl Methacrylate Bike Lane Green, Item SPV.0165.103.

A Description

This special provision describes providing Methyl Methacrylate Bike Lane Green pavement markings.

B Materials

The Methyl Methacrylate (MMA) Acrylic Resin Material System shall include primer, material, top coat, and all other system materials in compliance with the manufacturer's specifications and application instructions.

B.1 General

Anti-slip treated MMA pavement marking to be produced of the materials and by methods described below.

The material must be produced in the United States, and the manufacturer must be ISO 9001:2008 certified for design, development and manufacturing of colored pavement materials, and provide proof of current certification.

The material shall be capable of being applied on bituminous and/or Portland cement concrete pavements and must be able to be applied after 30 days of placement.

The material must be capable of conforming to pavement contours, breaks and faults through the action of traffic at normal pavement temperatures. It shall not be necessary to use a grid template or to make pattern grooves or other indentations in the asphalt or concrete surface prior to applying the material. It shall not be necessary to inlay the material in grooves or indentations. It shall not be necessary to heat the pavement or application surface to a specific temperature.

The material shall be capable of being applied in temperatures down to 40°F without any special storage, preheating or treatment of the material before application.

Material shall be resistant to the detrimental effects of motor fuels, antifreeze, lubricants, hydraulic fluids composed of an ester modified resin impervious to degradation by motor fuels, lubricants, etc. in conjunction with aggregates, pigments, binders, and anti-skid/anti-slip elements.

Material is not required to be retroreflective.

Pigments and anti-skid/anti-slip elements must be uniformly distributed throughout the material.

Elongation of material resin shall have a minimum of 30% when tested in accordance with ASTM D638 Type I.

Water Absorption shall be a maximum of 0.25% when tested in accordance with ASTM D570.

Solids Content shall be a minimum of 99% when tested in accordance with ASTM D1644.

B.2 Pigment Color

The bike lane green color shall be manufactured with appropriate pigment to ensure that the resulting colors complies with the Light Green color as specified in the FHWA Memorandum dated April 15th, 2011: Interim Approval for Optional Use of Green Colored Pavement for Bike Lanes (IA-14).

The pigment system must not contain heavy metals or any carcinogen, as defined in 29 CFR 1910.1200 in amounts exceeding permissible limits as specified in relevant Federal Regulations.

B.3 Skid Resistance

The aggregate used in the Methyl-Methacrylate coating shall have a minimum hardness of 8.5 (Mohs scale). Upon application the material shall provide a minimum skid resistance value of 60 BPN when tested according to ASTM E 303 or minimum value of 40 when tested according to ASTM E 274.

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The aggregate shall be determined with options of #0, #1 or #2 kiln dried silica sand, corundum or bauxite dependent on use of pavement marking and ADT.

B.4 Hardness

The material must meet a minimum hardness value of 55-60 per ASTM D2240.

B.5 Thickness

The material must be supplied at a minimum thickness of 80 mils.

B.6 Environmental Resistance

The material must be resistant to deterioration due to exposure to sunlight, water, salt or adverse weather conditions and impervious to oil and gasoline.

B.7 Performance Measures of Durability

Minimum Durability – 90 percent of each colored area, legend, or symbol must be present.

Failure to meet any of the specified performance measures on at least 90 percent of the colored area is considered a failure. engineer may require partial or complete replacement of the colored area under the warranty terms.

Failure to meet any of the specified performance measures on at least 90 percent of the legend or symbol is considered a complete failure of that legend or symbol. Replace under the warranty terms.

B.8 Submittals

Submit:

- a. Product Data describing physical and performance characteristics and colors available
- b. Material Certification: Provide a Manufacturer's written certification that the material complies with these specifications.
- c. Samples: Submit manufacturer's sample of materials, finishes, and colors
- d. Quality Control Plan
 - Description of equipment for placing MMA
 - Description of equipment for measuring, mixing, placing, and finishing MMA
 - Method for protecting areas not to receive MMA
 - Cure time estimates for MMA
 - Storage and handling of MMA components
 - Disposal of excess MMA and containers
 - Contingency plan for possible failure during the MMA application including remediation

C Construction

All pavement marking areas shall be laid out by the contractor and then reviewed by the engineer. Obtain approval of the marking layout from the engineer prior to placement of material.

Prepare the surface and apply markings in compliance with manufacturer's specifications and application instructions and as shown in the plans. Surface preparation shall include cleaning and preparation of the pavement surface using high pressure water, compressed air, sand-blasting or shot-blasting. Prepare asphalt and concrete surfaces per material manufacturer recommendations and obtain approval from the engineer prior to applying markings. Concrete surfaces shall require shot blasting preparation in addition to any other methods of preparation used. All surface damage shall be corrected by the contractor at the contractor's expense, as directed by the engineer. Manufacturer recommended pavement and air temperatures must be followed.

Manufacturer's instructions include age harden or cure requirements for new pavements prior to application. New Hot Mix Asphalt shall have been placed 15-30 days prior to installation of the MMA acrylic colorized material and surface oils shall not be present. MMA acrylic colorized material applied on concrete surfaces shall receive a base coat application and shall be included in the pay item. Marking layout, material mixing, base coat application, and pigmented coat application shall comply with the manufacturer's installation procedures.

Protect the pavement markings from damage and allow them to fully cure prior to allowing traffic to drive over markings. Any damage shall be corrected by the contractor at the contractor's expense.

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D Measurement

The City of Madison will measure Methyl Methacrylate Bike Lane Green by the square foot, acceptably completed.

E Payment

The City of Madison will pay for measured quantities at the contract unit price under the following bid items:

ITEM NUMBER	DESCRIPTION	UNIT
SPV. 0165.103	Methyl Methacrylate Bike Lane Green	SF

Payment is full compensation for all materials, labor and incidentals for providing the marking, in accordance with the drawings and as set forth in these specifications.

14. Street Lighting/Traffic Signal/Communications.

14-1 General Requirements for Lighting Work.

Unless otherwise indicated, State Specifications in this section shall be in reference to the State of Wisconsin Department of Transportation, Division of Highways, "Standard Specifications for Highway and Structure Construction", Latest Edition, including Supplemental Specifications.

Contact City of Madison prior to starting street lighting construction.

City of Madison Contact – Jerry Schippa 608-266-4761

City of Madison lighting systems shall remain operational during construction.

14-2 Notice to Contractor – Traffic Signal & Lighting Equipment Lead Time.

Lead time for traffic signal equipment specified for this project are seeing lead times longer than typical time frame. Order equipment within two weeks of signed contract to assure the equipment is procured in a timely fashion to ensure the equipment is installed, inspected, and ready for turn-on at the required date.

14-3 Install Conduit into Existing Item, Item 652.0700.S.

A Description

This special provision describes installing proposed conduit into an existing manhole, pull box, junction box, communication vault, or other structure.

B Materials

Use Nonmetallic Conduit 2-Inch or 3-Inch or Conduit Special 3-Inch, as provided and paid for under other items in this contract. Furnish backfill material, topsoil, fertilizer, seed, and mulch conforming to the requirements of pertinent provisions of the standard specifications.

C Construction

Expose the outside of the existing structure without disturbing existing conduits or cabling. Drill the appropriate sized hole for the entering conduit(s) at a location within the structure without disturbing the existing cabling and without hindering the installation of new cabling within the installed conduit. Fill void area between the drilled hole and conduit with an engineer-approved filling material to protect against conduit movement and entry of fill material into the structure. Tamp backfill into place.

D Measurement

The City of Madison will measure Install Conduit into Existing Item by the unit, acceptably installed. Up to six conduits entering a structure per entry point into the existing structure will be considered a single unit. Conduits in excess of six, or conduits entering at significantly different entry points into the existing pull box, manhole, or junction box will constitute multiple units of payment.

E Payment

The City of Madison will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
652.0700.S	Install Conduit into Existing Item	EACH

Payment is full compensation for excavating, drilling holes; furnishing and installing all materials, including bricks, coarse aggregate, sand, bedding, and backfill; for excavating and backfilling; and for furnishing and

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placing topsoil, fertilizer, seed, and mulch in disturbed areas; for properly disposing of surplus materials; and for making inspections.

14-4 Install Electrical Pull Box Type I, Item SPV.0060.201; Install Electrical Pull Box Type III, Item SPV.0060.202; Install Electrical Pull Box Type V, Item SPV.0060.203; Install Electrical Pull Box Type VII, Item SPV.0060.246.

A Description

This special provision describes transporting and installing electrical pull boxes in accordance to section 653 of the standard specifications, the plan details, and as hereinafter provided.

B Materials

Obtain electrical pull box from the City of Madison at 3829 Hanson Rd, Madison, WI 53704. Contact Ed Smith of City of Madison at (608) 266-9034 to make arrangements for picking up the furnished materials, minimum of three working days prior to picking the materials up. Furnish any hardware not provided by the City of Madison.

C Construction

Install Electrical Pull Box (Type) in accordance to the pertinent provisions of section 653.3 of the standard specifications and the plan details.

D Measurement

The City of Madison will measure Install Electrical Pull Box (Type), by each unit, acceptably completed.

E Payment

The City of Madison will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.201	Install Electrical Pull Box Type I	EACH
SPV.0060.202	Install Electrical Pull Box Type III	EACH
SPV.0060.203	Install Electrical Pull Box Type V	EACH
SPV.0060.246	Install Electrical Pull Box Type VII	EACH

Payment is full compensation for transporting and installing all materials, and for furnishing all equipment and incidentals necessary to complete the work.

14-5 Concrete Bases Type G, Item SPV.0060.204; Concrete Bases Type LB-3, Item SPV.0060.205; Concrete Bases Type LB-8, Item SPV.0060.206; Concrete Bases Type P, Item SPV.0060.207.

A Description

This special provision describes the construction of concrete foundations, including furnishing and installing necessary hardware, as shown on the plans, according to the pertinent provisions of standard spec 654, and as hereinafter provided.

B Materials

Furnish Grade A, A-WR, A-FA, or A-IP concrete masonry conforming to the requirements of standard spec 501. Conduit cast within the bases shall be Schedule 40 polyvinyl chloride (PVC) electrical conduit and shall conform to the requirements of standard spec 652.

Furnish anchor bolts for Type G made from high-strength steel (50 ksi minimum yield strength), ASTM A36, and fit each with two hard washers and two heavy hex nuts. Each bolt shall have approximately 3 inches or more of thread at the top end. The bolts, washers and nuts shall be galvanized.

Furnish anchor bolts for LB-3 and LB-8 bases made from high-strength steel (50 ksi minimum yield strength), ASTM A36, and fit each with two hard washers and two heavy hex nuts. Each bolt shall have approximately 6 inches or more of thread at the top end. The bolts, washers, and nuts shall be galvanized.

Furnish 1 1/4-inch x 48-inch bolts for the LB-8 bases including a 4-inch L-bend at the bottom. Furnish 1-inch x 40-inch bolts for the LB-3 including a 4-Inch L-bend at the bottom. Furnish 3/4-inch x 19-inch bolts for the Type G bases.

Include a concrete maintenance platform on the Type P bases. Generally, construct the Type P bases according to the standard detail drawing Concrete Control Cabinet Bases. Confirm the location of the

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conduits in the base with the City of Madison. Anchor bolts, nuts, and washers for Concrete Base, Type P, will be provided and installed by the contractor when installing signal control cabinets.

Conform bar steel reinforcement to the requirements of standard spec 505.

C Construction

Place the bases with one side parallel to the centerline of the street.

Forms shall be of sufficient depth to provide a minimum of 12 inches of formed base below the finished grade on the low side of the base. The top surface of the base shall be level with a 3/4-inch bevel on the edges and shall be given a rubbed finish.

Cast anchor bolts into the base as shown on the plans. Verify the bolt circle diameters before constructing the bases.

Furnish and install manufactured elbows in all bases, except as noted on the details. Install elbows to permit installation of conduit in as nearly straight-line runs as possible without unnecessary bends. Bases not installed to this standard will not be accepted.

Extend existing conduit into the bases. Elbows shall conform to the requirements of the type of conduit entering the base. Install an extra elbow in each base at the end of a run as directed by the engineer. Install extra elbows in any base as directed by the engineer.

Do not erect poles on the concrete bases until the bases have cured for at least seven days. All concrete bases require a rubbed finish down to finished grade.

D Measurement

The City of Madison will measure Concrete Bases (Type) by each unit, acceptably completed.

E Payment

The City of Madison will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.204	Concrete Bases Type G	EACH
SPV.0060.205	Concrete Bases Type LB-3	EACH
SPV.0060.206	Concrete Bases Type LB-8	EACH
SPV.0060.207	Concrete Bases Type P	EACH

Payment is full compensation for furnishing and installing all materials including conduit, bushings, caps and/or plugs, ground rod, anchor bolts, cadwelding, copper grounding wire; bar steel reinforcement, and concrete masonry; for providing openings through existing pavement where required; for excavation, including hand-digging as required, backfill, and disposal of surplus materials.

14-6 Install Pole 20-Foot 7 Gauge, Item SPV.0060.209; Install Pole 30-Foot 7 Gauge Twin Mount, Item SPV.0060.211; Install Pole 30-Foot 11 Gauge Single Mount, SPV.0060.212.

A Description

This special provision describes transporting and installing poles and arms according to standard spec 657, the details shown on the plans, and these special provisions.

B Materials

Obtain poles from the City of Madison at 3829 Hanson Rd, Madison, WI 53704. Contact Ed Smith of City of Madison at (608) 266-9034 to make arrangements for picking up the furnished materials, minimum of three working days prior to picking the materials up. Furnish any hardware not provided by the City of Madison.

C Construction

Set and plumb metal poles with the use of leveling nuts furnished with the anchor bolts. Level luminaires after erecting and leveling the metal standards with bracket arms. The proper leveling method may be obtained from the manufacturer's instruction manual. Torque nuts on anchor and transformer bolts to 175-200 foot pounds or as directed by the engineer. Provide rust, corrosion, and snit-seize protection on all threaded assemblies by coating and mating surfaces with Markal (hightemp – E-Z Break), Never-Seez (Marine Grade), LPS 100, Lubriplate, or approved equal.

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Attach the stranded copper ground wire that is installed as a part of the base construction with an approved connector (Fargo GC 202 or approved equal) to a ground nut locate inside the pole opposite the handhole.

When transformer bases are not installed, trowel grout between the pole and concrete base and finished at an angle from the edge of the pole base to the outer edge of the foundation. Leave a ½ inch slot for drainage through the grouting on the street side at the top of the concrete base.

Cut the poles to modified lengths at the plan locations to meet OSHA clearance requirements at overhead transmission lines.

D Measurement

The City of Madison will measure Install Pole (description) as each individual unit, acceptably completed.

E Payment

The City of Madison will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.209	Install Pole 20-Foot 7 Gauge	EACH
SPV.0060.211	Install Pole 30-Foot 7 Gauge Twin Mount	EACH
SPV.0060.212	Install Pole 30-Foot 11 Gauge Single Mount	EACH

Payment is full compensation for transporting and installing according to standard spec 657.5. and for cutting poles to lengths less than 30 feet.

14-7 Install Traffic Signal Trombone Arm 15-Foot, Item SPV.0060.216; Install Traffic Signal Trombone Arm 12-Foot, Item SPV.0060.265.

A Description

This special provision describes transporting and installing trombone mast arms and all necessary miscellaneous hardware needed to complete the installation of the trombone mast arm as shown on the plans, in the standard specifications, and as hereinafter provided.

B Materials

Obtain trombone arms from the City of Madison at 3829 Hanson Rd, Madison, WI 53704. Contact Ed Smith of City of Madison at (608) 266-9034 to make arrangements for picking up the furnished materials, minimum of three working days prior to picking the materials up. Furnish any hardware not provided by the City of Madison.

C Construction

Install per manufacturer's instructions and in accordance to spec 657.3.

D Measurement

The City of Madison will measure Install Traffic Signal Trombone Arm Aluminum (length) by each individual unit, acceptably completed.

E Payment

The City of Madison will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.216	Install Traffic Signal Trombone Arm 15-Foot	EACH
SPV.0060.265	Install Traffic Signal Trombone Arm 12-Foot	EACH

Payment is full compensation transporting and installing all materials including all hardware, fittings, mounting clamps, shims and attachments necessary to completely install the mast arms.

14-8 Install Traffic Signal Heads 12-Inch 3-Section, Item SPV.0060.220; Install Traffic Signal Heads 12-Inch 3-Section Transit, Item SPV.0060.223; Install Traffic Signal Heads 16-Inch Pedestrian with Countdown, Item SPV.0060.224.

A Description

This special provision describes transporting and installing vehicle and pedestrian signals with LED indications according to the standard specifications and these special provisions.

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B Materials

Obtain traffic signal head equipment from the City of Madison at 3829 Hanson Rd, Madison, WI 53704. Contact Ed Smith of City of Madison at (608) 266-9034 to make arrangements for picking up the furnished materials, minimum of three working days prior to picking the materials up. Furnish any hardware not provided by the City of Madison.

C Construction

Construct according to standard spec 658 including assembly of traffic signal head equipment.

D Measurement

The City of Madison will measure Install Traffic Signal Heads (Description) by each individual unit, acceptably completed.

E Payment

The City of Madison will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.220	Install Traffic Signal Heads 12-Inch 3-Section	EACH
SPV.0060.223	Install Traffic Signal Heads 12-Inch 3-Section Transit	EACH
SPV.0060.224	Install Traffic Signal Heads 16-Inch Pedestrian with Countdown	EACH

Payment is full compensation for transporting, assembly, and installing a complete and functioning assembly.

14-9 Install Backplates Signal Face 3-Section 12-Inch, Item SPV.0060.225

A Description

This special provision describes transporting and installing backplates for signal faces.

B Materials

Obtain backplates from the City of Madison at 3829 Hanson Rd, Madison, WI 53704. Contact Ed Smith of City of Madison at (608) 266-9034 to make arrangements for picking up the furnished materials, minimum of three working days prior to picking the materials up. Furnish any hardware not provided by the City of Madison.

C Construction

Install the backplates according to standard spec 658.3, the manufacturer's instructions, and as shown on the plans.

D Measurement

The City of Madison will measure Install Backplates Signal Face (Description) 12-Inch by each individual unit, acceptably completed.

E Payment

The City of Madison will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.225	Install Backplates Signal Face 3-Section 12-Inch	EACH

Payment is full compensation for transporting and installing all materials.

14-10 Install NEMA TS2 Type 1 Traffic Controller Cabinet, Item SPV.0060.229.

A Description

This special provision describes the transporting and installing of City furnished traffic signal cabinet as the plans show and as follows. Furnish and install at no extra cost any equipment and materials not specifically described but required in order to perform the intended functions in the cabinet.

B Materials

Use materials furnished by the City including: the traffic signal controller, traffic signal ethernet switch, Malfunction Management Unit (MMU), traffic signal cabinet, and other peripheral traffic signal cabinet equipment.

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Obtain traffic signal cabinet and cabinet materials from the City of Madison at 3829 Hanson Rd, Madison, WI 53704. Contact Ed Smith of City of Madison at (608) 266-9034 to make arrangements for picking up the furnished materials, minimum of three working days prior to picking the materials up. Furnish any hardware not provided by the City of Madison.

Provide all other needed materials in conformance to 651.2, 652.2, 653.2, 654.2, 655.2, 656.2, 657.2, 658.2 and 659.2 of the standard specs.

C Construction

Perform work conforming to 651.3, 652.3, 653.3, 654.3, 655.3, 656.3, 657.3, 658.3 and 659.3 of the standard specs except as specified below.

Request a signal inspection of the completed signal installation to the project engineer at least five (5) working days prior to the time of the requested inspection. The City of Madison personnel will perform the inspection.

Coordinate directly with Chad Veinot of the City of Madison at (608) 267-1960 to schedule the cabinet acceptance testing. The City has final determination of the cabinet acceptance testing date and time.

Installation of traffic signal cabinet shall occur between 9:00am and 3:00pm unless otherwise approved by the engineer.

D Measurement

The City of Madison will measure Install NEMA TS2 Type 1 Traffic Controller Cabinet by each individual unit, acceptably completed.

E Payment

The City of Madison will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.229	Install NEMA TS2 Type 1 Traffic Controller Cabinet	EACH

Payment is full compensation for transporting and installing the traffic signal controller and the traffic signal cabinet; for furnishing and installing all other items necessary such as, but not limited to, wire nuts, splice kits and/or connectors, tape, insulating varnish, and ground lug fasteners. To make the proposed system complete from the source of supply to the most remote unit and for clean-up and waste disposal.

14-11 Install Traffic Signal Controller, Item SPV.0060.230.

A Description

This special provision describes transporting and installing a traffic signal controller with auxiliary equipment.

B Materials

Obtain traffic signal controller from the City of Madison at 3829 Hanson Rd, Madison, WI 53704.

C Construction

Perform work conforming to 651.3, 652.3, and 655.3 of the standard specs except as specified below.

Request a signal inspection of the completed signal installation to the project engineer at least five (5) working days prior to the time of the requested inspection. The City of Madison personnel will perform the inspection.

Coordinate directly with Chad Veinot of the City of Madison at (608) 267-1960 to schedule the controller acceptance testing. The City has final determination of the acceptance testing date and time.

D Measurement

The City of Madison will measure Install Traffic Signal Controller by each individual unit, acceptably completed.

E Payment

The City of Madison will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.230	Install Traffic Signal Controller	EACH

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Payment is full compensation for transporting and installing the traffic signal controller, and all auxiliary equipment.

14-12 Install LED Luminaire and Mounting Bracket Type III, Item SPV.0060.234; Install LED Luminaire and Mounting Bracket Type VII, Item SPV.0060.290.

A Description

This special provision describes transporting and installing luminaires and luminaire brackets/arms, as specified in standard specs 651, 655, and 659, as shown on the plans, and as provided hereinafter.

B Materials

Obtain luminaire and mounting brackets/arms from the City of Madison at 3829 Hanson Rd, Madison, WI 53704. Contact Ed Smith of City of Madison at (608) 266-9034 to make arrangements for picking up the furnished materials, minimum of three working days prior to picking the materials up. Furnish any hardware not provided by the City of Madison.

C Construction

Install LED Luminaires and Mounting Bracket (Type) in accordance to the pertinent provisions of standard spec 659 and as the manufacturer's instructions.

D Measurement

The City of Madison will measure Install LED Luminaires and Mounting Bracket (Type) by each individual unit, acceptably completed.

E Payment

The City of Madison will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.234	Install LED Luminaire and Mounting Bracket Type III	EACH
SPV.0060.290	Install LED Luminaire and Mounting Bracket Type VII	EACH

Payment is full compensation for transporting and installing all materials, including all luminaires and pole mounting hardware.

14-13 Removing Street Lighting Assembly, Item SPV.0060.243.

A Description

This special provision describes removing existing street light pole assemblies and electrical wire, in accordance to the pertinent provisions of section 204 of the standard specifications and as hereinafter provided.

B (Vacant)

C Construction

Arrange for the de-energizing of the lighting system with the local utility after receiving approval from the engineer that the existing light pole assembly can be removed.

Contact Chad Veinot of the City of Madison at (608) 267-1960 at least five working days prior to the removal of the lighting assembly. Complete this work immediately following shut down of equipment.

Arrange a meeting to document the existing condition of street lighting that will be affected by construction activities.

The City of Madison will provide the following information.

1. Identify all items to be salvaged or disposed.
2. Identify existing feed-point locations and circuit breaks.

When removing street lights, carefully remove and stockpile all equipment at a location approved by the engineer. Place all equipment on blocks so as not to be in direct contact with the ground. Protect luminaires from moisture. Properly dispose of any equipment that the city does not salvage including cabling/wiring. Replace any equipment damaged in the removal process with equipment that is of greater or equal quality than the damaged piece.

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Deliver salvaged street light equipment to the City of Madison at 1120 Sayle Street Madison, WI 53715. Contact Ed Smith of City of Madison at (608) 266-9034 at least five working days prior to delivery to make arrangements.

Removing concrete bases will be paid for under a separate bid item.

D Measurement

The City of Madison will measure Removing Street Light Assembly by each unit, acceptably completed.

E Payment

The City of Madison will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.243	Removing Street Lighting Assembly	EACH

Payment is full compensation for removing light pole assembly, salvaging, transporting, disassembling, scrapping materials, disposing of scrap material and cabling/wiring.

14-14 Install Lighting Control Cabinet, Item SPV.0060.264.

A Description

This special provision describes transporting and installing a lighting control cabinet with all electrical components and wiring assembled.

B Materials

Obtain lighting control cabinet from the City of Madison at 3829 Hanson Rd, Madison, WI 53704. Contact Ed Smith of City of Madison at (608) 266-9034 to make arrangements for picking up the furnished materials, a minimum of three working days prior to picking the materials up. Furnish any hardware not provided by the City of Madison.

C Construction

Assemble the control cabinet as shown on the plans. Pretest the cabinet prior to transporting to the site. Mount all equipment to panel in enclosure. Train the cables in straight horizontal and vertical directions and be parallel next to and adjacent to other cables whenever possible. Mount the cabinet to the concrete base per the manufacturer's requirements. The work under this bid item includes connection and termination to the feeder system wiring.

D Measurement

The City of Madison will measure Install Lighting Control Cabinet by each unit, acceptably completed.

E Payment

The City of Madison will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.264	Install Lighting Control Cabinet	EACH

Payment is full compensation for transporting and installing photo control, contactors, panel, distribution blocks, surge arrestor, enclosure, grounding, wiring and electrical components; and for mounting to the concrete base.

14-15 Install PTZ Camera, Item SPV.0060.272.

A Description

This special provision describes installing a PTZ Camera at the locations shown on the plans.

B Materials

Obtain PTZ camera and cable from the City of Madison at 3829 Hanson Rd, Madison, WI 53704. Contact Ed Smith of City of Madison at (608) 266-9034 to make arrangements for picking up the furnished materials, minimum of three working days prior to picking the materials up. Furnish any hardware not provided by the City of Madison.

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C Construction

Notify Chad Veinot at least five working days prior to the scheduled installation of PTZ camera and all subsequent changes in operation. Install the PTZ camera per plan.

D Measurement

The City of Madison will measure Install PTZ Camera by each unit, acceptably completed.

E Payment

The City of Madison will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.272	Install PTZ Camera	EACH

Contract unit price installing PTZ camera, shall be full compensation for furnishing all labor, equipment, supervision, installation, touchup painting, cleanup, and all else necessary to install PTZ camera where indicated.

14-16 Install Pedestal Bases, Item SPV.0060.273; Install Transformer Bases Breakaway 11 1/2-Inch Bolt Circle, Item SPV.0060.274.

A Description

This special provision describes transporting and installing bases and all necessary miscellaneous hardware needed to complete the installation of the bases as shown on the plans, in the standard specifications, and as hereinafter provided.

B Materials

Obtain bases from the City of Madison at 3829 Hanson Rd, Madison, WI 53704. Contact Ed Smith of City of Madison at (608) 266-9034 to make arrangements for picking up the furnished materials, minimum of three working days prior to picking the materials up. Furnish any hardware not provided by the City of Madison.

C Construction

Install per manufacturer’s instructions and in accordance to spec 657.3.

D Measurement

The City of Madison will measure Install Pedestal Bases by each individual unit, acceptably completed.

The City of Madison will measure Install Transformer Bases Breakaway 11 1/2-Inch Bolt Circle by each individual unit, acceptably completed.

E Payment

The City of Madison will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.273	Install Pedestal Bases	EACH
SPV.0060.274	Install Transformer Bases Breakaway 11 1/2-Inch Bolt Circle	EACH

Payment is full compensation for transporting and installing all materials including the base, grounding lugs and related mounting hardware; for leveling shims; for corrosion prevention; and for disposal of surplus materials.

14-17 Install Traffic Signal Standards Aluminum 3.5-FT, Item SPV.0060.276; Install Traffic Signal Standards Aluminum 13-FT, Item SPV.0060.277; Install Traffic Signal Standards Aluminum 10-FT, Item SPV.0060.280.

A Description

This special provision describes transporting and installing standards and all necessary miscellaneous hardware needed to complete the installation of the standards as shown on the plans, in the standard specifications, and as hereinafter provided.

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B Materials

Obtain standards from the City of Madison at 3829 Hanson Rd, Madison, WI 53704. Contact Ed Smith of City of Madison at (608) 266-9034 to make arrangements for picking up the furnished materials, minimum of three working days prior to picking the materials up. Furnish any hardware not provided by the City of Madison.

C Construction

Install per manufacturer's instructions and in accordance to spec 657.3.

D Measurement

The City of Madison will measure Install Traffic Signal Standards Aluminum (length) by each individual unit, acceptably completed.

E Payment

The City of Madison will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.276	Install Traffic Signal Standards Aluminum 3.5-FT	EACH
SPV.0060.277	Install Traffic Signal Standards Aluminum 13-FT	EACH
SPV.0060.280	Install Traffic Signal Standards Aluminum 10-FT	EACH

Payment is full compensation for furnishing and installing the standards.

14-18 Install Poles Type 10, Item SPV.0060.286; Install Monotube Arms 25-Foot, Item SPV.0060.287; Install Monotube Arms 30-Foot, Item SPV.0060.291.

A Description

This section describes transporting and installing poles and monotube arms for traffic signals confirming to standard spec 657, details shown in the plan, and these special provisions.

B Materials

The City of Madison will furnish monotube pole and monotube arms including mounting hardware, handhole covers, and pole caps.

Obtain monotube pole and monotube arms from the City of Madison at 3829 Hanson Rd, Madison, WI 53704. Contact Ed Smith of City of Madison at (608) 266-9034 to make arrangements for picking up the furnished materials, minimum of three working days prior to picking the materials up. Furnish any hardware not provided by the City of Madison as the plan shows and according to standard spec 654 and 657.

C Construction

Under each bid item, transport and install poles, ventilated pole caps, arms, and all necessary miscellaneous hardware needed to complete the installation of the poles and arms.

Install dampeners as the plans show and for poles and arms used in configurations susceptible to vibration. If the engineer determines that vibration is a problem after a pole and arm has been installed, install dampeners as the engineer directs.

After completing erection using normal pole shaft raking techniques, ensure that the centerline of the shaft is vertical.

Install equipment in accordance to standard spec 657.3.

Inspect according to 532.3.8 prior to opening to traffic.

D Measurement

The City of Madison will measure bid items under this section by each unit acceptably completed.

E Payment

The City of Madison will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.286	Install Poles Type 10	EACH
SPV.0060.287	Install Monotube Arms 25-Foot	EACH

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SPV.0060.291 Install Monotube Arms 30-Foot EACH

Payment for Monotube Pole is full compensation for transporting and installing city furnished poles and for providing grounding lugs, fittings, shims, hardware, and other required components the City of Madison does not furnish.

Payment for the Install Monotube Arms is full compensation for transporting and installing city furnished arms; for testing and installing high strength bolt assemblies; and for providing related mounting hardware, leveling shims, and other required components the city does not furnish.

14-19 Install Platform APS System 13 Push Buttons, Item SPV.0060.288.

A Description

This special provision describes transporting and installing APS system including 13 push buttons.

B Materials

Obtain APS system with 13 push buttons from the City of Madison at 3829 Hanson Rd, Madison, WI 53704. Contact Ed Smith of City of Madison at (608) 266-9034 to make arrangements for picking up the furnished materials, minimum of three working days prior to picking the materials up. Furnish any hardware not provided by the City of Madison.

C Construction

Install APS Push Button Stations according to section 658.3.3 of the standard spec.

Install the APS Push Button Stations as shown on the plans and per manufacturer’s instructions. For each push button location provide a 3/4-Inch diameter push button mounting hole for wiring purposes in standards or poles. De-burr the holes after sawing and before installing the wire.

Notify Chad Veinot of City of Madison at (608) 267-1960 upon completion of the installation of the APS Push Button Stations.

Provide the City of Madison audio files for the APS system.

D Measurement

The City of Madison will measure Install Platform APS System 13 Push Buttons by each individual unit, acceptably completed.

E Payment

The City of Madison will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.288	Install Platform APS System 13 Push Buttons	EACH

Payment is full compensation for transporting and installing of City of Madison furnished APS System and push buttons and for all labor, tools, equipment, and incidentals necessary to complete this item.

14-20 Optical Signal Preempt System Mineral Point & Whitney Way, Item SPV.0060.289.

A Description

This special provision describes furnishing and installing optical signal preempt equipment at signalized intersections at the location and the quantity as shown on the plan.

B Materials

Furnish the following:

1. 1 - GTT Opticom Model 764 Multimode Phase Selector
2. 4 - GTT Opticom Model 711 Single Channel Optical Detector(s)

Furnish and install preemption detector cable, jumpers and any auxiliary equipment as necessary for a complete operating system.

C Construction

Install detectors on the top horizontal member of monotube arms, between the first and second traffic signal head, and as otherwise shown on the plan or as directed by Madison Traffic Engineering.

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The detectors will generally be on the far side of the intersection, and aimed at approaching traffic, or as directed by Madison Traffic Engineering staff. Install detector cable from the detector to the control cabinet without splicing, using the shortest conduit path and leaving 5-ft slack at each handhole.

All installation methods to be consistent with the manufacturer's instructions. Card rack and discriminator installation, as well as cabinet connections, will be made by the contractor.

Request an inspection of the installed system to the project engineer at least five (5) working days prior to the time of the requested inspection. The City of Madison personnel will perform the inspection.

D Measurement

The City of Madison will measure Optical Signal Preempt by each individual unit, acceptably completed.

E Payment

The City of Madison will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.289	Optical Signal Preempt System Mineral Point & Whitney Way	EACH

Payment is full compensation for furnishing and installing detectors and cable; for furnishing and delivering discriminators, card racks, cables and miscellaneous materials to the City Traffic Engineering Field Office, 1120 Sayle Street.

14-21 Salvage PTZ Camera, Item SPV.0060.292.

A Description

This special provision describes salvaging PTZ Camera and delivery in accordance with the drawings and as hereinafter provided.

B Materials (Vacant)

C Construction

Arrange for de-energizing of the PTZ camera approval from the engineer that the existing PTZ camera can be removed.

Notify Chad Veinot at least five working days prior to the scheduled salvage of PTZ camera and all subsequent changes in operation.

Deliver salvaged traffic signal equipment to the 3829 Hanson Rd, Madison, WI 53704. Contact Ed Smith of City of Madison at (608) 266-9034 at least five working days prior to delivery to make arrangements.

D Measurement

The City of Madison will measure Salvage PTZ Camera by each unit, acceptably completed.

E Payment

The City of Madison will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.292	Salvage PTZ Camera	EACH

Contract unit price for salvage PTZ camera, shall be full compensation for furnishing all labor, equipment, supervision, transporting, and salvaging PTZ camera.

14-22 Loop Detector Lead-In Cable Special, Item SPV.0090.201.

A Description

This special provision describes furnishing and installing loop detector lead in cable according to standard spec 655.

B Materials

Furnish 0.25 inch diameter, 4-conductor, #18 AWG, waterproof, shielded, polypropylene insulation cable, with HDPE outer jacket, meeting IMSA specifications. Provide loop detector lead in cable to be smooth on the outside without any ripples or ribbing from cable wires.

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C Construction

Install loop detector lead-in cables in accordance with section 655.3.8 of the standard specifications.

Furnish and install one cable for every two loops from each loop handhole to the intersection control cabinet via the most direct route, without intermediate splicing. Install cable for new and existing loops as shown on the plans. Verify cable needs with the City of Madison Traffic Engineering staff before completing intersection wiring.

D Measurement

The City of Madison will measure Loop Detector Lead-In Cable by the linear foot, acceptably completed, measured from the splice with the loop lead in wire along the centerline of the conduit to its connection with terminals in the control cabinet.

E Payment

The City of Madison will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.201	Loop Detector Lead-In Cable Special	LF

Payment is full compensation for furnishing and installing all materials, and for furnishing all equipment and incidentals necessary to complete the work.

14-23 Electrical Wire Lighting 14-3 UF Grounded, Item SPV.0090.202.

A Description

This special provision describes furnishing and installing electrical wire lighting, 14-3 type UF cable according to standard spec 655 and these specifications.

B Materials

Furnish type UF cable with ground including the number and size of conductors as the plans show. Use cable conforming to ANSI/UL 493.

C Construction

Furnish and install one cable to each LED luminaire from base of pole to the luminaire and furnish and install one cable for each loop detector as shown on plans.

D Measurement

The City of Madison will measure Electrical Wire Lighting 14-3 UF Grounded by the linear foot, acceptably completed, measured from the splice with the system lighting circuit in the pole base to the connection terminals in the luminaire or from the homerun pull box to and around the loop detector.

E Payment

The City of Madison will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.202	Electrical Wire Lighting 14-3 UF Grounded	LF

Payment is full compensation for furnishing and installing all materials, and for furnishing all equipment and incidentals necessary to complete the work.

14-24 Sawed in Bicycle Loop Detection, Item SPV.0090.209.

A Description

This special provision describes the process for sawing in slots for bicycle loop detection, furnishing and installing bicycle loop detector wires, and sealing bicycle loop detectors in existing concrete pavement.

B Materials

B.1 Loop Detector Wires

Furnish and install Electrical Wire Lighting 14-3 UF Grounded for loop detector wire. Install loop detector wire directly into saw cut opening in pavement, do not use conduit to install loop detector wires.

The furnishing and installing of lead-in cable is paid for under item SPV.0090.201 Loop Detector Lead-In Cable Special.

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B.2 Sealant

Provide a flowable polyester sealant MasterSeal SL-180 Polyester Traffic-Detector Loop Sealant Kit or equal as approved by the engineer for traffic loop detectors. The sealant shall be self-leveling, flowable to allow the sealant to cover the loop within the slot, shall be rated for exterior use, shall be applicable to concrete and asphalt applications, and shall be gray in color.

C Construction

Saw slots into the concrete to a width no larger than 0.25 inch wide, and no deeper than 1.5 inches deep. There shall be a minimum of 0.5" of depth from the top of the detection wire to the surface of the concrete pavement.

The bicycle loop detection dimensions and shape are shown in the plans.

Apply the sealant as described per the manufacturer's guidance, and finish flush with the surface, cleaning off any excess from the concrete.

D Measurement

The City of Madison will measure Sawn in Bicycle Loop Detection, by the LF of the cut including all work necessary to saw slot, furnish and install loop detector wire, and seal loop detector wire. Note the LF of sawing will not match the LF of detection wire.

E Payment

The City of Madison will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.209	Sawn in Bicycle Loop Detection	LF

Payment is full compensation for sawing slots for bicycle loop detectors, furnishing and installing loop detector wire, and sealing.

14-25 Temporary Traffic Signal (Whitney Way), Item SPV.0105.209.

A Description

This special provision describes installing temporary traffic signals for intersections, using overhead electrical wiring to temporary traffic signal poles and temporary supports, and providing non-intrusive vehicle detection according to standard spec 661 and as amended herein. This special covers temporary lighting at the intersection including overhead conductors, arms, luminaires, supplying wood poles, maintaining wood poles, and removing wood poles.

B Materials

Furnish and use materials that are according to standard spec 661.2 and as amended herein.

B.1 Signal Poles and Signal Faces

Furnish new or used poles and traffic signal standards for use in temporary signals conforming to the pertinent requirements of standard spec 657 and 661. Furnish signal faces according to standard spec 661.2.2.2.

B.2 Signal Cabinet

Furnish new or equivalent to new materials as specified in standard spec 661.2 and as follows:

B.2.1 Controller

Furnish a new or equivalent to new Econolite Cobalt TS2 Type-1 controller with Telemetry Module. The controller shall be compatible with the City of Madison closed loop system (CLS).

B.2.2 Conflict Monitor

Furnish a new or equivalent to new NEMA+ 12-Channel Signal Conflict Monitor, with LCD display, and an Ejector Tab card release on side of card.

Provide keys to the temporary signal control cabinet to the City of Madison in addition to other required keys according to standard spec 661.2.1.

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B.3 Luminaires

Furnish luminaire arms and luminaries conforming to the pertinent requirements of standard spec 657 and 659. The luminaries shall be 160-watt, full cutoff, LED and shall be furnished with photo electric cells to turn the luminaire on and off.

B.4 Vehicle Detection Hardware, Cable and Equipment

The contractor, with prior approval of the engineer and the City of Madison, shall select the vehicle detection technology best suited for the site conditions and the anticipated construction work zones and activities. The engineer reserves the right to request a demonstration of any or all temporary vehicle detection technologies prior to said approval. Vehicle detection technologies considered shall include; but are not limited to, temporary inductive loops, microwave detection, or video detection. Detection technology shall provide for true presence detection.

Damage to new pavement for temporary detection loops will not be allowed. Any pavement damaged during installation shall be replaced at the contractor's expense.

C Construction

C.1 General

Construct temporary signal systems according to section 661.3 of the standard specifications and as hereinafter provided. Replace standard spec 661.3.1(2) with the following:

Request a signal inspection of the complete temporary traffic signal installation. Make this request to the City of Madison Electrical unit at 608-266-4767 at least 5 working days before the requested inspection. The City of Madison traffic signal personnel will perform the traffic signal inspection.

Arrange for monthly inspections with the engineer to review the height of the span wire above the roadways to ensure that the bottom of the traffic signal heads remain within the minimum and maximum heights allowed above the roadway as provided in the plans. Make all height adjustments within 24-hours of an inspection. Notify the engineer in writing upon completion of all necessary adjustments. Maintain a written log to properly document the date of each monthly inspection, the heights above the roadway, the roadway clearance after adjustments have been made and acceptance by the engineer.

Inspections can be more frequent than monthly as directed by the engineer.

The City of Madison will load the timing programs into the controller. Do not use new permanent signal conduit for temporary signal wiring. Provide horizontal and vertical clearance between sidewalks and guy wires.

Arrange for all required electrical service modifications with the utility. Pay all utility company installation costs for modifications required to maintain the Temporary Traffic Signal.

Locate and avoid all underground and aboveground utilities and structures. Install temporary supports as required to avoid conflicts with proposed curb and gutter, sidewalk, and traffic signal poles. The engineer will approve the final location of wood poles prior to installation.

Use of self-supporting poles will likely be required due to limited right-of-way limitations and depending on contractor operations.

Maintain temporary signals throughout the construction of the project, until such time that the new signals are operational and have been accepted by, and turned over to the city.

This item includes multiple configurations and re-installations of the temporary traffic signal. Allow for additional equipment on site to maintain temporary signal operations at all times during construction.

C.2 Signal Heads

Install signal heads for the same vehicle travel direction at a minimum of 11 feet from each other. Move signal heads as necessary or as directed by the engineer.

C.3 Cabinet

Require a representative from the cabinet supplier on-site at the time of the turn on. Install equipment in the cabinet as follows:

C.3.1 Controller

Install the controller and ensure that it is operational as part of the City of Madison closed loop system.

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C.4 Luminaires

Install luminaire arms and luminaries conforming to the pertinent requirements of standard spec 657 and 659.

C.5 Vehicle Detection Hardware, Cable and Equipment

Install detector cards, sensors, cables and all required ancillary equipment, appurtenances and mounting hardware at the temporary signals to provide a fully functioning vehicle detection system for all approaches. The desired vehicle detection zones and temporary signal phasing are shown on the plans.

Arrange testing of the temporary detection system with Chad Veinot of City of Madison at (608) 267-1960, before turn-on of the temporary signal.

Adjust, relocate, add, or remove temporary vehicle detection equipment for each traffic control stage or sub stage as shown in the plans, requested by the engineer, or as modified by the contractor's operations to maintain the required traffic and complete the proposed work. Damage to new pavement for temporary detection loops will not be allowed. Any pavement damaged during installation shall be replaced at the contractor's expense.

If repairs or adjustments to restore vehicle detection to full function are not made the same day as notification, the associated pay item shall be reduced by the following amounts:

- a) First instance: No deduct if repaired within 24 hours.
- b) Each subsequent instance: 5% deduct for each day or partial day of non-compliance.

C.7 Maintenance

When a signal installation or signal head is not in operation, hood, turn, or take down the signal head(s) to clearly indicate that the signal is not in operation. (See MUTCD 4D-1).

Provide immediate response, 24-hour/7-days per week, to maintain any aspect of the temporary vehicle detection that is defective, completing repairs or adjustment the same day as notification.

C.8 Contractor Qualifications

Demonstrate the ability to operate all required traffic signal equipment listed in this special provision for the engineer and the City of Madison prior to starting work. Provide proof of the ability to obtain all required traffic signal equipment listed in this special provision to the engineer and the City of Madison prior to starting work.

D Measurement

The City of Madison will measure Temporary Traffic Signals (Location), completed according to the contract and accepted, as each unit of work, and according to standard spec 661.4.

E Payment

The City of Madison will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.209	Temporary Traffic Signal (Whitney Way)	LS

Payment is full compensation according to standard spec 661.5.

14-26 Temporary Street Lighting, Item SPV.0105.256.

A Description

This special provision describes providing a temporary lighting system at all the locations specified in the plans. Provide all labor, material, and equipment necessary to furnish, install, maintain, and remove the temporary lighting system.

B Materials

Provide all necessary materials required to install a complete and operational temporary lighting systems consisting of any combination of the following new or existing lighting equipment: wood poles, luminaires, luminaire arms, overhead cable, risers, guy wires, conduit, pull boxes, direct buried concrete poles, decorative lighting assemblies, and all necessary equipment and connections.

Furnish Wood Poles Class 4 and guy wires conforming to standard spec 661. Furnish and install guy wires and support cables at all wood poles that have aerial power cables.

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Furnish all lighting equipment as shown on the plan and plan details from WisDOT's approved products list and conforming to 657.2 and 659.2 of the standard specifications.

Provide overhead service conductor assembly, including a messenger cable, insulated conductor wires, ground wires, a jacket, and conductor lashing as shown in the plan details. Provide a messenger wire consisting of:

1. Seven strands of extra high strength (EHS) grade, galvanized (zinc coating weight per ASTM A 90) steel wire
2. 3/8 inch nominal diameter
3. Minimum strand break load 26,900 lbf
4. Critical tension 25,000 lb
5. Meets or exceeds ASTM A 475 and ASTM A 363 standards

Provide annealed (soft) copper, type SE, 600 volt, conductor wires and ground wires, of the size noted in the plans. Provide sunlight resistant Type XHHW-2 insulation for the conductor wires. Provide wires in a jacket of sunlight resistant gray polyvinyl chloride.

Provide stainless steel tie straps for lashing the conductor assembly.

Provide materials at each station listed below and as shown in the plans and as specified herein.

- Mineral Point Road & Whitney Way

C Construction

The temporary lighting units at the BRT location identified in the plans shall remain operational every night for the duration of the project as long as the roadway and sidewalk affected by the temporary lighting are in use. Overnight outages are not permitted.

Temporary lighting shall provide lighting levels equal to or exceeding the existing lighting levels and quality by using the same luminaire quantity and type as existing until the new lighting system is energized.

Install wood poles, guy, span, and messenger wire, and mountain hardware conforming to standard spec 661.3. Install all hardware as represented on the plans and all grounding components per National Electric Code.

Install lighting equipment as shown on plans and in the plan details conforming to 657.3 and 659.3 of the standard specifications.

Assemble and install the conductor assembly as shown in the plans and in the plan details. Maintain overhead clearances, including wire sag, as shown on the plans. Install wires in conduit on poles and make connections. Verify the span height throughout the project duration.

Arrange for all required electrical service modifications with the utility.

Request a lighting inspection of the complete temporary lighting system installation. Make request to the engineer at least 5 working days before requested inspection.

Provide contact information for the city and police department for repair purposes and be able to respond within 2 hours to the project site for a knockdown. All other maintenance needs shall be completed within 24 hours of notification.

Cable splicing and luminaire fusing shall be submitted for approval.

Determine the exact location of existing conduit runs and pull boxes before using equipment that may damage such facilities or interfere with existing system operations. Existing lighting installations to be removed may need to be kept in operation to provide temporary lighting until proposed lighting system is installed and operational.

All circuits outside of the project scope shall stay energized without interruption. If damage is caused by contractor's operations, damaged facilities shall be repaired or replaced promptly at no additional compensation.

After the permanent lighting system has been installed, energized, and approved for each station, remove completely all temporary lighting equipment used for temporary lighting.

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D Measurement

The City of Madison will measure Temporary Street Lighting as a single lump sum unit of work acceptably completed.

E Payment

The City of Madison will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.256	Temporary Street Lighting	LS

Payment is full compensation for furnishing, installing, operating, maintaining, and removing the temporary lighting system and for backfilling and restoring the site to match surroundings. Grounding components, guy wires, support cables, and rigid metallic conduit are incidental to this item. Payment also includes all utility charges for installation and disconnection through project completion.

14-27 Install Electrical Service Meter Breaker Pedestal (Whitney Way), Item SPV.0105.2004.

A Description

This special provision describes transporting and installing electrical meter breaker pedestal.

B Materials

Obtain meter breaker pedestals from the City of Madison at 3829 Hanson Rd, Madison, WI 53704. Contact Ed Smith of City of Madison at (608) 266-9034 to make arrangements for picking up the furnished materials, minimum of three working days prior to picking the materials up. Furnish any hardware not provided by the City of Madison.

C Construction

Install electrical meter breaker pedestal according to standard spec 656.3, the manufacturer's instructions, and as shown on the plans.

D Measurement

The City of Madison will measure Install Electrical Service Meter Breaker Pedestal (Location) as a single lump sum unit of work acceptably completed.

E Payment

The City of Madison will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.2004	Install Electrical Service Meter Breaker Pedestal (Whitney Way)	LS

Payment is full compensation for transporting and installing all materials including meter breaker pedestal, manual bypass meter socket, conduit and fittings, circuit breakers, grounding electrodes and connections.

14-28 Removing Traffic Signals (Whitney Way), Item SPV.0105.2005.

A Description

This special provision describes removing, salvaging, and transporting, existing traffic signal equipment at the intersection in accordance to the pertinent provisions of section 204 of the standard specifications and as hereinafter provided. Specific removal items are noted in the plans.

B (Vacant)

C Construction

Arrange for the de-energizing of the traffic signals with the local electrical utility after receiving approval from the engineer that the existing traffic signals and lighting can be removed.

Notify Chad Veinot with the City of Madison at (608) 267-1960 at least five working days prior to the removal of the traffic signals. Complete the removal work as soon as possible following shut down of this equipment.

Arrange a meeting to document the existing condition of all traffic signal equipment that will be affected by construction activities. Only items that could be identified to be salvaged are traffic signal poles, trombone arms, and luminaire arms. All other items will be disposed by the contractor.

Remove and dispose cabling/wiring, loop detector wire and lead, etc.

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The City of Madison will provide the following information.

1. Identify all items to be salvaged or disposed (Only traffic signal poles, trombone arms, and luminaire arms).
2. Identify existing feed-point locations and circuit breaks.

When removing traffic signals, carefully remove and stockpile all equipment at a location approved by the engineer. Place all equipment on blocks so as not to be in direct contact with the ground. Protect luminaires and signal heads from moisture. Properly dispose of any equipment that the city does not salvage. Replace any equipment damaged in the removal process with equipment that is of greater or equal quality than the damaged piece.

Deliver salvaged traffic signal equipment to the 3829 Hanson Rd, Madison, WI 53704. Contact Ed Smith of City of Madison at (608) 266-9034 at least five working days prior to delivery to make arrangements.

D Measurement

The City of Madison will measure Removing Traffic Signals (Location) as a single lump sum unit of work, completed in accordance to the contract and accepted.

E Payment

The City of Madison will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.2005	Removing Traffic Signals (Whitney Way)	LS

Payment is full compensation for removing, salvaging, transporting, disassembling traffic signals, scrapping of some materials, disposing of scrap material, delivering the requested materials to the City, and incidentals necessary to complete the contract work.

14-29 Install Signal Mounting Hardware (Whitney Way), Item SPV.0105.2006.

A Description

This special provision describes transporting and installing signal mounting hardware per intersection.

B Materials

Obtain signal mounting hardware from the City of Madison at 3829 Hanson Rd, Madison, WI 53704. Contact Ed Smith of City of Madison at (608) 266-9034 to make arrangements for picking up the furnished materials, minimum of three working days prior to picking the materials up. Furnish any hardware not provided by the City of Madison.

C Construction

Install the signal mounting hardware according to standard spec 658.3, the manufacturer's instructions, and as shown on the plans.

D Measurement

The City of Madison will measure Install Signal Mounting Hardware (Location) as a single lump sum unit of work acceptably completed.

E Payment

The City of Madison will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.2006	Install Signal Mounting Hardware (Whitney Way)	LS

Payment is full compensation for transporting and installing all materials.

15. Landscaping.

15-1 Landscape Planting Surveillance and Care Cycles.

If the care specialist fails to perform any of the required care cycles as specified in the standard spec 632.3.19.1, the City of Madison will assess daily damages in the amount of \$200 to cover the cost of performing the work with other forces. The City of Madison will assess these damages for each day the

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requirements of the car cycle remain incomplete, including each additional day if the engineer extends the required time period.

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A surveillance and care cycle is defined as a 2 week interval from May to October. A care cycle covers all vegetation on the project including trees, shrubs, perennials & native grasses, plugs, and seeding. The number of and duration between surveillance and care cycles may be reduced or extended by the engineer as conditions dictate.

Add the following to standard spec 632.3.19.1(7):

Follow safe usage, application rates, and application methods per product specifications. Take precautions to avoid pesticide contamination on flowering plants near treatment areas. Alert the engineer 48 hours prior to applying pesticide.

15-2 Terrace Excavation For Tree Planting, Item SPV.0035.501.

A Description

This special provision describes excavating areas within grass terraces for new tree plantings, backfilling and restoring the surface at each tree planting location shown in the plans.

B Materials

Furnish Erosion Mat in accordance with WisDOT standard spec 628. Furnish Planting Mix Topsoil in accordance with City of Madison standard spec 207. Furnish Seeding in accordance with these special provisions.

C Construction

Perform work in accordance with City of Madison standard spec 201, 202 and 207.

Coordinate with the engineer and City of Madison Forestry representative for locations of new tree plantings. Once the locations are marked, excavate the terrace area to a 24" depth for new tree plantings. The terrace shall be excavated to a minimum length of 20'. Excavation length may be reduced by the engineer to fit site constraints. Excavate terrace width as close to the sidewalk and curb as is reasonable. Do not undermine the adjacent curb or sidewalk during excavation. If damaged during the excavation process, replace curb and sidewalk at the contractor's cost. Once the area is excavated, backfill the area with Planting Mix Topsoil per City standard article 202. Restore the surface with seeding and Erosion Mat Urban Class I Type A.

D Measurement

The City of Madison will measure by the cubic yard, acceptably completed.

E Payment

The City of Madison will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0035.501	Terrace Excavation For Tree Planting	CY

Payment includes full compensation for excavating and furnishing, hauling, placing and fine grading topsoil including all equipment, tools, labor and incidentals necessary to complete the work.

The City of Madison will pay separately for Seeding and Erosion Mat Urban Class I Type A.

15-3 Tree Protection, Item SPV.0060.501.

A Description

This special provision describes the protection of trees at locations as indicated on the plans. All tree protection shall be coordinated with City Forester, including inspection of tree protection measures.

B Materials

Add the following City of Madison standard spec 107.13:

Use orange construction type fencing that is 4-foot in height with steel supporting posts 5-foot to 8-foot on center for tree protection fencing. Furnish all other materials necessary to erect the fencing.

APPENDIX C

C Construction

Perform work in accordance with City of Madison standard spec 107.13.

D Measurement

The City of Madison will measure Tree Protection as each individual Tree Protection, acceptably completed.

E Payment

The City of Madison will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.501	Tree Protection	EACH

Payment includes all equipment, labor and materials necessary to complete this item as specified.

15-4 Trees, Item SPV.0060.504.

A Description

This special provision describes furnishing and planting plants of the species, varieties and sizes specified, complete in place at the locations as indicated on the plans.

B Materials

Furnish trees that are in accordance with the pertinent requirements of City of Madison standard spec 209.2 and 209.3.

C Construction

Perform work in accordance with standard City of Madison standard specs 209.4, 209.5 and 209.6, and standard detail drawings 2.01, 2.02, 2.03, 2.04.and 2.05.

D Measurement

The City of Madison will measure by the number of plants of each species, variety and size complete in place, acceptably completed.

E Payment

The City of Madison will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.504.04	Trees (Hackberry, B&B, 2-IN)	EACH
SPV.0060.504.05	Trees (Kentucky Coffee Tree, B&B, 2-IN)	EACH
SPV.0060.504.06	Trees (Skyline Thornless Honey Locust, B&B, 2-IN)	EACH
SPV.0060.504.07	Trees (Exclamation London Planetree, B&B, 2-IN)	EACH
SPV.0060.504.09	Trees (Chinquapin Oak, B&B, 2-IN)	EACH
SPV.0060.504.11	Trees (American Sentry Linden, B&B, 2-IN)	EACH
SPV.0060.504.14	Trees (New Horizon Elm, B&B, 2-IN)	EACH
SPV.0060.504.19	Trees (Linden 'Sweet Street', B&B, 2-IN)	EACH
SPV.0060.504.20	Trees (Honeylocust 'Street Keeper', B&B, 2-IN)	EACH
SPV.0060.504.21	Trees (Ginkgo 'Princeton Sentry', B&B, 2-IN)	EACH
SPV.0060.504.23	Trees (Adirondack Crabapple, B&B, 2-IN)	EACH

Payment includes the number of plants, furnished and planted, at the contract unit price each, which price shall be payment in full for furnishing, transporting, handling, potting, storing, pruning, placing and replacing plant materials; for all excavation of plant holes, salvaging of topsoil, mixing and backfilling, and planting soil; for furnishing and applying all required fertilizer, mulch, water, wrapping, guys and braces, rodent protection, herbicides and anti-desiccant spray; for removing guys and braces; for disposal of all excess and waste materials; for care; and for furnishing all labor, tools, equipment and incidentals necessary to complete the work.

APPENDIX C

15-5 Seeding, Item SPV.0085.501.

A Description

This special provision describes preparing seed beds, furnishing and sowing the required seed, furnishing and applying the required stabilizers, fertilizer, and mulching material at the locations as indicated on the plans.

B Materials

Furnish Sun Terrace Seed Mix in accordance with City of Madison standard spec 207.2.

C Construction

Perform work in accordance with City of Madison standard spec 207.3 and 207.4.

D Measurement

The City of Madison will measure by the equivalent pound acceptably completed, measured based on net weights of seed shipments or weighed on city-approved scales the contractor furnishes. The City of Madison will deduct quantities wasted or not actually incorporated in the work according to the contract. The City of Madison will determine the equivalent pounds of seed furnished and applied by dividing the actual pounds of seed applied by the sum of the unadjusted and adjusted percentages of the various species in the seed mixture sown. The unadjusted percentage equals the minimum percent of purity and germination specified in 207.2(a), and the adjusted percentage is obtained by dividing the specified percentage of the species by the product of the percent of purity and the percent of germination specified in 207.2(a).

E Payment

The City of Madison will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0085.501	Seeding	LB

Payment includes full compensation for furnishing, handling, and storing all seed; for preparing the seed bed and sowing the seed; for furnishing, hauling, handling, storing, placing, and incorporating the fertilizer into the work; for furnishing, hauling and placing soil stabilizers; for furnishing, hauling, treating, placing, spreading, and anchoring of the mulch material unless the area is to receive erosion matting, in which case mulch is not required; for maintenance of the work and the repair of all damaged areas; and for furnishing all labor, tools, equipment, and incidentals necessary to complete this item as specified.

15-6 Sodding Bluegrass, Item SPV.0180.501.

A Description

This work shall consist of preparing sod beds, furnishing and laying of live sod, furnishing and applying the required fertilizer, as shown on the plans, or as ordered and laid out by the engineer.

B Materials

Furnish sod in accordance with City of Madison standard spec 208 and these special provisions.

Furnish Bluegrass Sod: Number 1 Quality/Premium, including limitations on thatch, weeds, diseases, nematodes, and insects, complying with "Specifications for Turfgrass Sod Materials" in TPI's "Guideline Specifications to Turfgrass Sodding." Furnish viable sod of uniform density, color, and texture that is strongly rooted and capable of vigorous growth and development when planted. Furnish mineral sod; peat sod is not acceptable.

1. With not less than 85 percent germination, not less than 95 percent pure seed, and not more than 0.5 percent weed seed:
2. Full Sun: Kentucky bluegrass (*Poa pratensis*), a minimum of three cultivars.

C Construction

Perform work in accordance with City of Madison standard spec Article 208 and these special provisions.

Install standard sections of sod of enough strength to support their own weight and to retain their size and shape when held within its upper ten (10) percent and suspended vertically.

APPENDIX C

D Measurement

The City of Madison will measure Sodding Bluegrass the square yard and the quantity to be measured for payment under this item shall be the actual number of square yards of area on which sod has been placed in accordance with the contract, within the limits of such construction designated on the plans or in the contract or as ordered by the engineer.

E Payment

The City of Madison will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0180.501	Sodding Bluegrass	SY

Payment includes full compensation for preparing the earth bed; for furnishing, placing, staking, top dressing, and watering the sod; and for all labor, equipment, tools and incidentals necessary to complete the work in accordance with the contract.

15-7 Native Vegetated Mat, Item SPV.0180.502.

A Description

This section describes providing erosion control mats as shown in the plans.

B Materials

Furnish erosion control mats in accordance with standard spec 628 and these special provisions.

Furnish Solid seeded vegetated erosion control mat produced by a supplier specializing in native seed and plants with no less than five (5) years proven experience growing native vegetated mats that result in healthy, viable, successful established areas. Native vegetated mat shall be produced from a native seed matrix free from any noxious weeds or invasive species with the following characteristics:

1. Composed of solid seeded vegetated erosion control mat produced from a native seed matrix free from any noxious weeds or invasive species.
2. Comprised of a soilless media with an integrated core material supporting a strong fibrous root system.
3. Provide a composite growing soilless media capable of sustaining vigorous root growth: free of any admixture of topsoil, subsoil, slag, clay, stones, sticks or other extraneous matter and having a pH value of a minimum of 5.4 and maximum of 7.0. Provide a growing media and root zone with a 1-inch depth, +/- .20 inches.
4. 100% biodegradable coir mat of woven coir fibers evenly machine twisted and spun at 20.5 to 25.5 oz/cu.yd.
5. Biodegradable with the longevity of the core being 3-6 years according to manufacturer's specifications.
6. Biodegradable stakes.

Provide "Short and Showy" native vegetated mat by Agrecol (608-223-3571), or approved equal, for use on areas indicated in Working Drawings.

C Construction

Perform work in accordance with standard spec 628.

D Measurement

The City of Madison will measure Native Vegetated Mat the square yard acceptably completed. The City will not make allowance for portions of the mat that must be entrenched in the soil for any end or junction slot, or for required overlaps.

E Payment

The City of Madison will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0180.502	Native Vegetated Mat	SY

APPENDIX C

Payment includes full compensation for providing, protecting, and storing erosion mat materials on the project; for placing and anchoring the mat, including staples; for preparing the seeded areas; for installing end and junction slots; and for repairing and reseeding damaged areas.