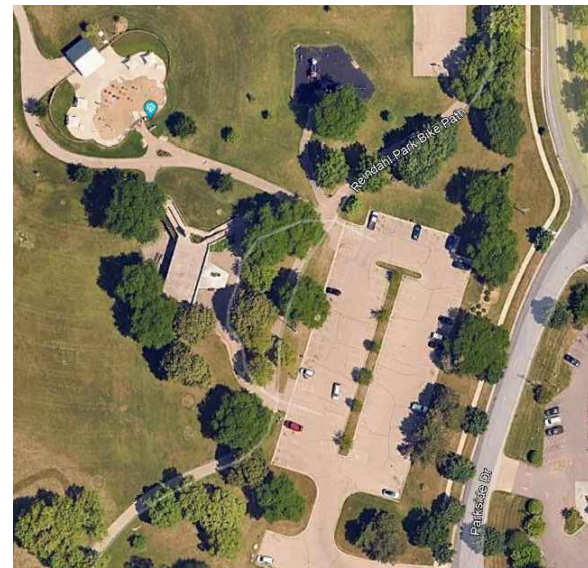


Imagination Center Connection



Project Location City of Madison, WI



COORDINATE SYSTEM: HARN/WI.DaneWI-F

Legend

= Telco	= Fiber Ped	= Manhole
= Cable TV	= Electric Ped	= Utility Pole
= Electric	= Telco Ped	= Power Pole
= Gas	= Cable TV Ped	= Power Transformer Pole
= Water	= Traffic Control Box	= Street Light
= Sanitary Sewer	= Electric Transformer	= Pole Anchor
= Storm Sewer	= Gas Valve	= Aerial Fiber
= Private Fiber Optic	= Water Valve	= Overhead Guy
= New Underground Fiber	= Fire Hydrant	= Aerial Expansion Loop
= Existing Underground Fiber	= Catch Basin	= Aerial Splice
= New Handhole	= Round Catch Basin	= Standoff
= Existing Handhole		= Culvert
= Locate Station		= Railroad Light
		= Traffic Light
		= Pull Box
		= Tree
		Typical Install Depth is 36"



CALL DIGGERS HOTLINE 3 DAYS BEFORE DIGGING:
AT 811 OR (800) 242-8511
EMERGENCY ONLY: (262) 432-7910

ALL UNDERGROUND UTILITY LOCATIONS SHOWN ARE APPROXIMATE. UTILITY INFORMATION WAS PROVIDED IN RESPONSE TO PLANNING LOCATE REQUESTS. CONSTRUCTION CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE LOCATION OF MUNICIPAL AND PRIVATE UTILITIES; COMPLETE REPAIR OF ANY AND ALL DAMAGES & RESTORATION INCURRED SHALL BE AT THE EXPENSE OF THE CONTRACTOR. FACILITY PLACEMENT SUBJECT TO CHANGE UPON FIELD LOCATE COMPLETION.

RIGHTS-OF-WAY ARE DEPICTED BASED ON FIELD OBSERVATIONS AND THE LATEST STATE AND COUNTY RECORDS AVAILABLE.

DISCLAIMER:

Locations are approximate. This data has been prepared, in part, based upon information furnished by others. While this information is believed to be reliable, Multimedia Communications & Engineering, Inc. (MC&E) assumes no responsibility for the accuracy of this data or for any errors or omissions that may have been incorporated into it as a result of incorrect information provided to MC&E. Those relying on this data are advised to obtain independent verification of its accuracy.



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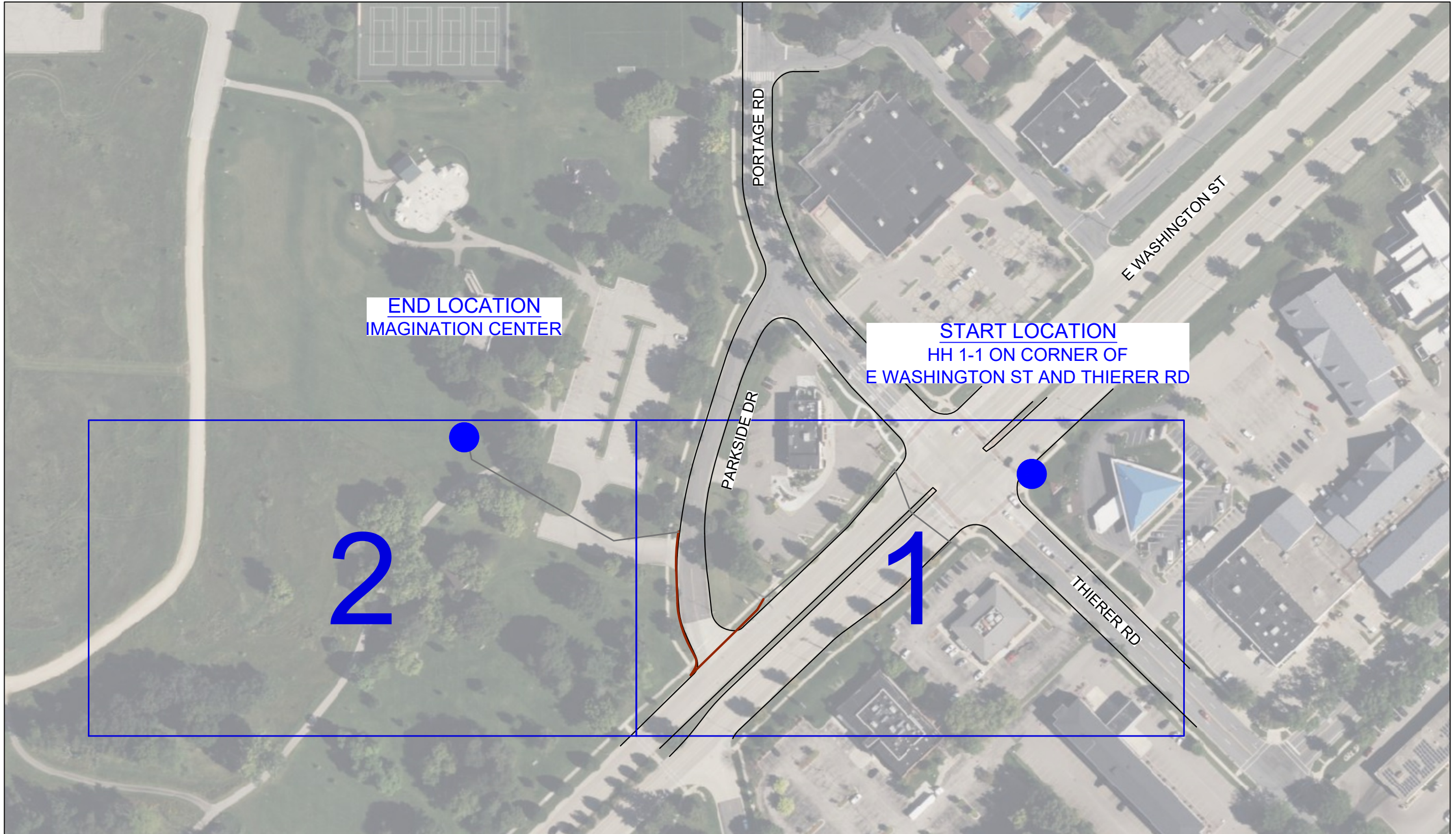
CITY OF MADISON
IMAGINATION CENTER CONNECTION

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COVER SHEET

SHEET ID:
CS1

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**END LOCATION
IMAGINATION CENTER**

**START LOCATION
HH 1-1 ON CORNER OF
E WASHINGTON ST AND THIERER RD**

2

1



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EXCAVATIONS

Excavations shall not remain open in excess of 24 hours unless specific permission is obtained from the City Engineer.

All excavations and trenches shall be covered and/or properly barricaded after working hours and over the weekend.

In all streets, alleys, sidewalks or other public ways, whether improved or unimproved, all excavated material shall be removed and the trench shall be backfilled with flow-able filled slurry mix.

At no time can spoils or other debris be stored or piled in the street gutter.

Excavation stock piling must remain within the public right of way and cannot be placed on or impede any roadways, driveways, sidewalks, or fire hydrants. Any areas that have minimal public right of way available must stock pile the excavated material on a truck bed or trailer. No stock piling of excavated material will be allowed on private property.

Excavations are to remain outside of wetland areas. All excavations must have proper erosion control practices to prevent stock piled materials from entering wetland areas.

Excavations are to remain 75' from the high-water mark of and waterway. Any excavations must have proper erosion control practices to prevent stock piled materials from entering waterways.

All excavations and trenches shall be covered and/or properly barricaded after working hours and over the weekends.

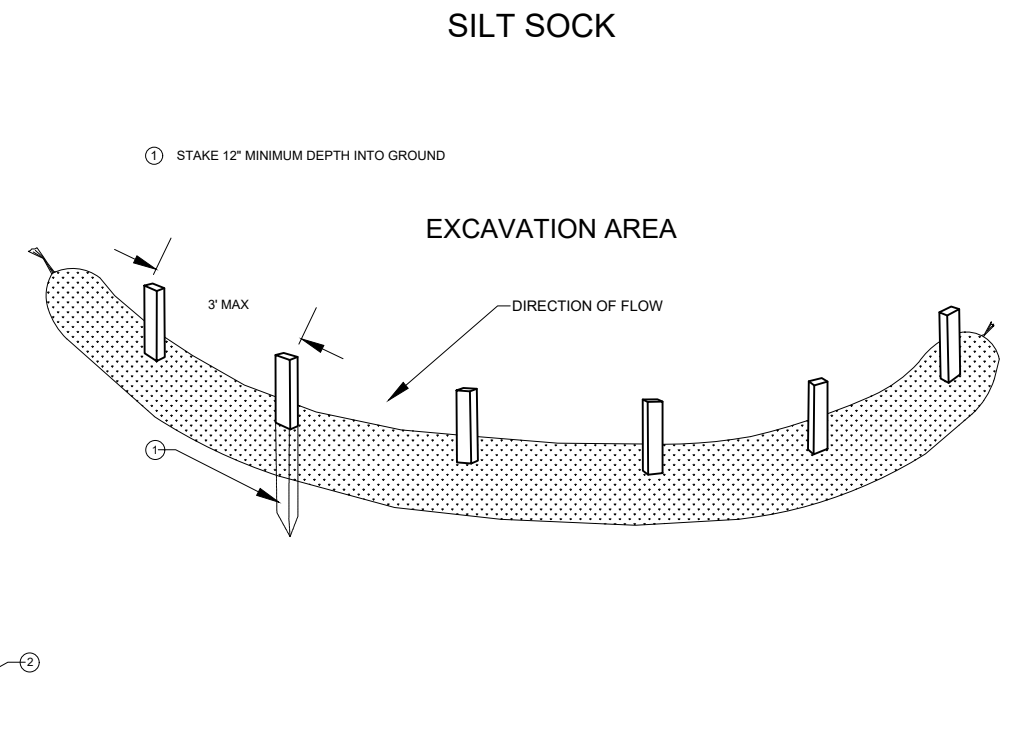
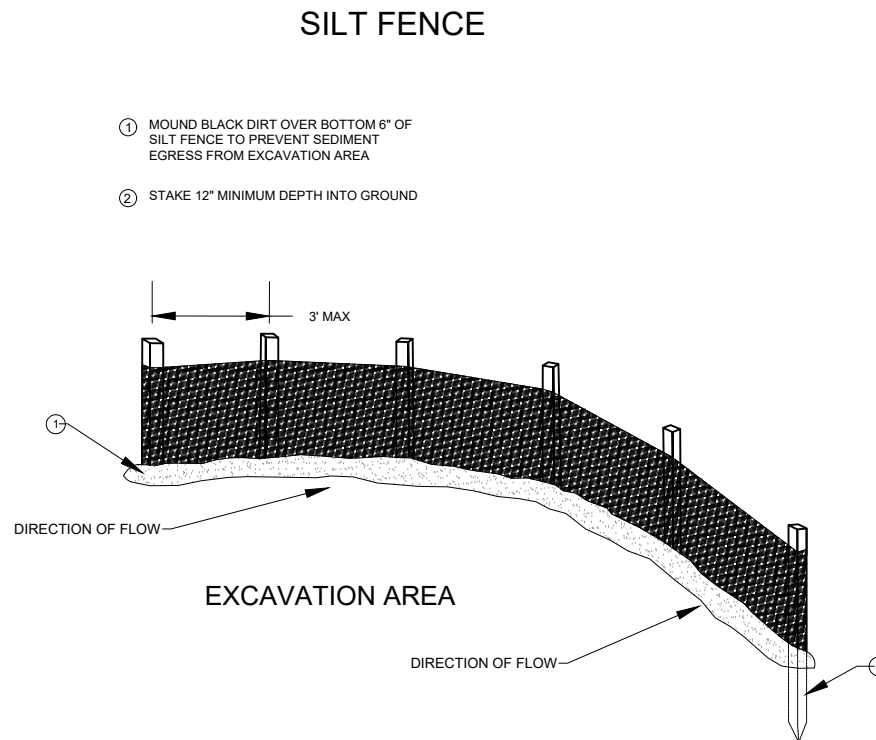
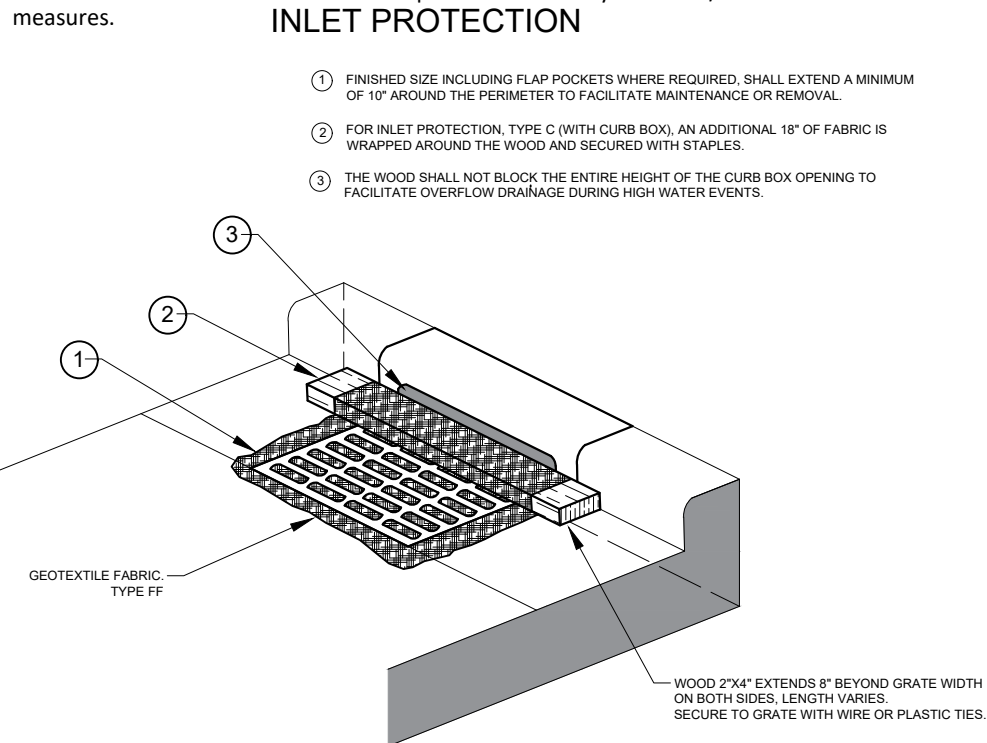
EROSION CONTROL PLAN

Any open excavations, construction areas or standing debris piles that pose the threat debris runoff will require erosion control practices such as placing silt socks, placing hay bales, or placing silt fencing downmill of the area.

The Contractor must employ the following good housekeeping practices that will prevent the ingress of any excavated materials into the Municipal storm water system:

- 1) Cover Storm Sewer Inlet with DOT Filter Fabric (DOT Type FF, not felt or silt fence material) near areas where excavation and directional drilling operations occur. DOT Type C Inlet protection standards apply (2x4 across back of inlet with DOT Filter Fabric over inlet held in place by inlet cover). Type D Inlet Protection including waddles (fiber filled filter socks) around drains to prevent debris from entering the storm sewer system are required at any low area inlets.
- 2) Place Silt Fence Barrier around excavation per below typical specification Diagram. Silt Fence to be inspected prior to excavation.
- 3) Place silt sock Barrier around Spoils to prevent runoff ingress into Storm Water Management System.
- 4) Protect graded restoration area using fibrous matting to prevent erosion into Storm Water Management System
- 5) Place temporary soil stabilization materials to prevent erosion into Storm Water Management System.

All erosion control measures shall be inspected on a weekly basis and/or after 1/2" or more of rainfall to ensure the effectiveness of the erosion control measures.



DEWATERING

Dewatering of pits, trenches, handholes, or manholes must be done with the use of a sediment bag, a straw bale dewatering basin, or approved equivalent. All dewatering procedures must meet or exceed state standards. All Vacuum Excavation spoils are to be transported and disposed of offsite at an approved dumping station. Dewatering is expected to be negligible given the depth of installation and the nature of the directional boring operations for this project.

FRAC-OUT CONTINGENCY PLAN

Boring activities and bore path are to be continually monitored to observe potential frac-outs. Erosion control materials are to be accessible and onsite should a frac-out occur. Acceptable materials include silt fence, straw bales, and sand bags. As soon as a frac-out is discovered, erosion control must immediately be implemented around the frac-out material (bentonite-water mixture). A vacuum excavation machine is to be accessible on short notice to clean any frac-out material should it occur.

RESTORATION

The Contractor may be allowed to mechanically core through hard surface streets to locate existing utilities provided that the restoration of the core be performed per the specific requirements of the Municipality or Agency having jurisdiction. Core holes must be backfilled with a slurry mixture as specified by the DOT per permitting requirements. The original Concrete or Asphalt core can then be replaced using Plug and Epoxy method.

Potholing is not allowed in ADA compliant or non-compliant pedestrian ramps. Any hard surface excavations within any pedestrian ramp panels will result in the Contractor's replacement of the entire ADA Compliant panel, along with adjacent panels at the Contractor's expense.

At no time can the Contractor perform any excavation that undermines the adjacent in-tact surfaces, thereby making vertical mechanical compaction impossible and creating future potential for subsurface failure. This scenario will result in the replacement of the effected hard-surface to the permitting authority's specifications.

All disturbed lawns, vegetation, flowers, shrubbery, trees, landscaping, etc. must be replaced or restored to its previous condition or better. Lawn repair will require a minimum of 4" of black dirt and municipal approved grass blends are to be applied.

All areas of restoration using Black Dirt and Seed must be protected with biodegradable net-free fibrous matting. Placement of loose straw or other materials that can be easily blown away or otherwise eroded/removed from the restored area will not be permitted. Fibrous matting materials will must be included in the Contractor Cut Sheets and approved by the Owner for use prior to placement.



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CONSTRUCTION QUANTITIES – IMAGINATION CENTER CONNECTION

Description of Work

The purpose of this project is to create a connection between an existing splice point at the intersection of E Washington St. and Thierer Rd. and the new Imagination Center. The new duct pack will be a single 3" duct with a single 48 strand fiber optic cable.

Use of Quantities Shown

The following lists represent a high-level overview of the project tasks associated with each portion of the project and should not be solely relied on for bidding purposes. It is the Contractors responsibility to thoroughly review and calculate their own quantities and footages in order to complete this project as outlined in this document. The Bid amount must be adequate to fulfill the intent of the entire project.

1) Directional Bore – (1) 3" duct –	344'
2) Place (2) 2" duct in HH 1–7 and tie into existing duct	10'
3) Place Type V 24x36x24 Handhole –	1
4) Place Type VII 30x48x36 Handhole –	1
5) Install 48 strand fiber optic cable inside new empty 3" duct –	344'
6) Install expansion loop inside handholes –	225'
7) Install #10 stranded, jacketed, copper tracer wire inside 3" duct –	344'
8) Install 1800-pound mule tape – Carlon TL38203 or equivalent inside 3" duct –	1,299'
9) Install 48 strand fiber optic cable inside existing empty 3" duct –	251'
10) Install 48 strand fiber optic cable inside existing occupied 3" duct –	164'
11) Install 48 strand fiber optic cable inside existing empty 2" duct –	430'
12) Splice individual fiber strands inside outdoor splice case –	48 total – 48 in one case
13) Splice individual fiber strands inside data room –	48 into termination panel

City Provided Material List

The City of Madison will not be providing any materials for this project.

Contractor Provided Material List

The Contractor must purchase and provide all the following materials for this project:

1. All outside plant Fiber Optic cables – 48 Strand Singlemode OS2 Glass; loose tube, single armor; single jacket construction.
2. Underground Plowduct – 2" inside diameter first-run SDR-11 HDPE Orange smooth exterior/smooth interior with mule tape. Carlon A13C6N1JNNE (2"), or equivalent.
3. Underground Plowduct – 3" inside diameter first-run SDR-11 HDPE Orange smooth exterior/smooth interior with mule tape. Carlon A16C6N1JNNA (3"), or equivalent.
4. TYPE V Flush-mount Handhole – Composite concrete fiberglass construction 24"x36"x24h" with 2 bolt extra heavy duty cover marked "Fiber Optics". Quazite #PG2436BB24 Base / #PG2436HH21 (ANSI Tier 22) Cover, or equivalent
5. TYPE VII Flush-mount Handhole – Composite concrete fiberglass construction 30"x48"x36h" with 2 bolt extra heavy duty cover marked "Fiber Optics". Quazite #PG3048BB36 Base / #PG3048HH21 (ANSI Tier 22) 2-piece Cover, or equivalent.
6. 1800-pound mule tape – Carlon TL38203 or equivalent.
7. Locate Wire – #10 AWG UL TYPE USE 2/RHH/RHW-2. Non-manufacturer specific.
8. Split Duct Plug – 2" & 3" outside diameter split plugs with interior port diameter sufficient for cable size. Carlon or equivalent.
9. Termination Panel – 1-RU – 72 termination and splice capacity rack mount panel equipped with (6) 12 strand OS2 Singlemode pigtails. Acceptable manufacturers include Total Cable Solutions, Commscope, Clearfield, or equivalent.
10. Fusion Splice Sleeves – Clear heat shrink fusion splice sleeve with steel reinforcing rod. Non-manufacturer specific.
11. Fiber Optic Cable Labels – Labelled with Owner – Strand Count – Start Point – End Point.
12. Consumables and Installation hardware – Contractor required consumables for the installation of all the above items per these Request for Bid Documents.
13. Biodegradable Net-Free matting designed for short term use similar to the American Excelsior Company's Curlex ® CL Blanket.
14. Use seed mixtures based on WisDOT's Seed Mixture Guidelines in the document Seeding 630 (630.2.1.5.1.2).
15. Provide correct inlet protection based on WisDOT SDD 08E10.
16. Topsoil that is evenly spread with uniform texture at least 6" deep.

Contractor Completion Clause

The Contractor is required to complete the installation with the material included in their Bid response.



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TIE INTO (2) 2" DUCTS THAT RUN INTO BUILDING AND BRING THEM INTO HH 1-7.

EXISTING	
HANDHOLE #	1-4
DIMENSIONS:	TYPE 1
LOOP FOOTAGE	0
SPLICE CASE	NO

STATIONING 03+44 NEW TYPE VII INSTALL	
HANDHOLE #	1-7
DIMENSIONS:	30X48
LOOP FOOTAGE	150
SPLICE CASE	NO
LOCATE STATION	FLUSH
PREVIOUS HANDHOLE	THIS PRINT
DISTANCE TO NEXT HANDHOLE	271'
NEXT HANDHOLE	PRINT 2

PULL 340' THROUGH EXISTING DUCT	
EXISTING DUCT SIZE:	(3) 2"
EXISTING CABLES IN DUCT:	NONE
NEW CABLE IN DUCT:	(1) 48 SMFO

198' HDD	
(1) 3" SDR 11 DUCT	
CABLE(S) IN DUCT:	
CITY	(1) 48 SMFO

EXISTING	
HANDHOLE #	1-3
DIMENSIONS:	TYPE 1
LOOP FOOTAGE	0
SPLICE CASE	NO

PULL 251' THROUGH EXISTING DUCT	
EXISTING DUCT SIZE:	(1) 3"
EXISTING CABLES IN DUCT:	NONE
NEW CABLE IN DUCT:	(1) 48 SMFO

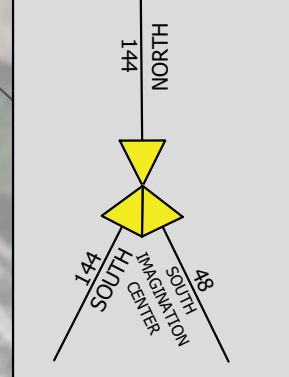
EXISTING	
PULLBOX #	1-5
DIMENSIONS:	N/A
LOOP FOOTAGE	0
SPLICE CASE	NO

146' HDD	
(1) 3" SDR 11 DUCT	
CABLE(S) IN DUCT:	
CITY	(1) 48 SMFO

STATIONING 01+46 NEW TYPE V INSTALL	
HANDHOLE #	1-6
DIMENSIONS:	24X36
LOOP FOOTAGE	75
SPLICE CASE	NO
LOCATE STATION	FLUSH
PREVIOUS PULLBOX	THIS PRINT
DISTANCE TO NEXT HANDHOLE	198'
NEXT HANDHOLE	THIS PRINT

EXISTING	
HANDHOLE #	1-1
DIMENSIONS:	TYPE 7
LOOP FOOTAGE	150
SPLICE CASE	YES

SPLICE #: 1	
SPLICE:	48 in HH 1-1



PULL 62' THROUGH EXISTING DUCT	
EXISTING DUCT SIZE:	(1) 3"
EXISTING CABLES IN DUCT:	(1) 12 SMFO
NEW CABLE IN DUCT:	(1) 48 SMFO

PULL 68' THROUGH EXISTING DUCT	
EXISTING DUCT SIZE:	(1) 3"
EXISTING CABLES IN DUCT:	(1) 12 SMFO
NEW CABLE IN DUCT:	(1) 48 SMFO

PULL 34' THROUGH EXISTING DUCT	
EXISTING DUCT SIZE:	(1) 3"
EXISTING CABLES IN DUCT:	(1) 12 SMFO, (1) 24 SMFO, (1) 144 SMFO
NEW CABLE IN DUCT:	(1) 48 SMFO

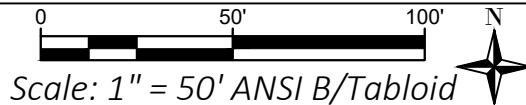
EXISTING	
HANDHOLE #	1-2
DIMENSIONS:	TYPE 1
LOOP FOOTAGE	0
SPLICE CASE	NO

- WZ A, B, C, D, E - TCP 33, WZ 10' x 50'
- WZ F - TCP 33 for E Washington Ave or TCP 39 for Parkside, WZ 10' x 50'
- WZ G - TCP 41, WZ 10' x 50'
- WZ H - TCP 25, WZ 10' x 50'
- Should sidewalk need to be blocked, TCP 55 or 56 as appropriate.

SEE SHEET 2



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1:50 Scaled Plans

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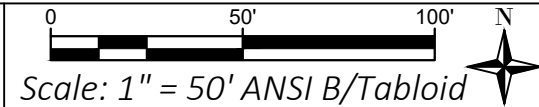
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