CONSULTING AND TECHNICAL SERVICES+ (CATS+)

TASK ORDER REQUEST FOR PROPOSALS (TORFP)

DEPARTMENT OF INFORMATION TECHNOLOGY (DOIT)

SOLICITATION NUMBER F50B9400034

GEORGIA AVENUE STATE HIGHWAY ADMINISTRATION (SHA)

COMMUNICATIONS TOWER

ISSUE DATE: SEPTEMBER 6, 2019

DEPARTMENT OF INFORMATION TECHNOLOGY (DOIT)

KEY INFORMATION SUMMARY SHEET

Solicitation Title:	**Georgia Avenue SHA Communications Tower**
Solicitation Number (TORFP#):	F50B9400034
Functional Area:	Functional Area 13 – Tower Installation
TORFP Issue Date:	September 6, 2019
TORFP Issuing Office:	Department of Information Technology ("DoIT" or the "Department")
Department Location:	100 Community Place Crownsville, MD 21032
TO Procurement Officer: **e-mail:** **Office Phone:**	Dominic Edet 100 Community Place Crownsville, MD 21032 Dominic.edet2@maryland.gov 410-697-9723
TO Manager: **e-mail:** **Office Phone:**	Ed Macon DoIT 301 W. Preston Street, Room 1304 Baltimore, MD 21201 ed.macon@maryland.gov 410-370-2430
TO Proposals are to be sent to:	Department of Information Technology 100 Community Place, Suite 2.309 Crownsville, MD 21032 **Attention: Dominic Edet**
TO Pre-Proposal Site Visit:	Site visits will be conducted at the Georgia Ave. SHA site on September 17, 2019 at 11:00 M local time See **Attachment A** for directions and instructions.
TO Proposal Question and Answer Period	**September 23, 2019 1:00 PM** Local Time All questions must be submitted to the TO Procurement Officer at the following email address: dominic.edet2@maryland.gov Responses will be provided as per section 4.2
TO Proposals Due (Closing) Date and Time:	**September 30, 2019 at 11:00 AM Local Time** Master Contractors are reminded that a completed Feedback Form is requested if a no-bid decision is made (see **Section 5**).
MBE Subcontracting Goal:	3%

VSBE Subcontracting Goal:	0%
Task Order Type:	Fixed Price
Task Order Duration:	The estimated period of performance for this effort, barring excusable delays, is 120 Business Days after Notice to Proceed ("NTP")
Primary Place of Performance:	Georgia Avenue SHA Communications Tower Site MD. 200 (ICC) & MD Route 97 (Georgia Ave.) Olney, Md. 20853 **Grid Coordinates: Latitude: N39-07-09.10, Longitude: W77-04-32.80**
SBR Designation:	No
Federal Funding:	No
Questions Due Date and Time	September 23, 2019 1:00 PM Local Time

TABLE OF CONTENTS – TORFP

1 Minimum Qualifications

1.1 TO Contractor Minimum Qualifications

Only those Master Contractors that fully meet all minimum qualification criteria shall be eligible for TORFP proposal evaluation.

1.1.1 The Master Contractor's technical proposal, as stated in **Section 5.4.2(11)**, shall demonstrate proof of Master Contractor's current Green/Yellow Card E&S control credentials.

1.2 TO Contractor Personnel Minimum Qualifications

There are no contractor personnel minimum qualifications for evaluation; however, TO Contractor is responsible for utilizing the appropriate personnel to accomplish the tasks in **Section 2 – Scope of Work**.

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2 TO Contractor Requirements: Scope of Work

2.1 Summary Statement

The Department of Information Technology ("DoIT" or the "Department") is issuing this CATS+ TORFP in order to purchase and install the following for the State:

2.1.1 One (1) 250-foot self-supporting tower

2.1.2 One (1) 12x38 ft. concrete foundation

2.1.3 One (1) 12x12 concrete foundation

2.1.4 One (1) 12x38x10-foot equipment shelter

2.1.5 One (1) 12x12 shelter with a 75KW propane-fueled generator

2.1.6 One (1) 1000 gallon propane tank with concrete foundation

2.1.7 Installation shall be completed at the following location:

GEORGIA AVE. SHA TOWER SITE
MD. Rt. 200(ICC) & MD 97(GEORGIA AVE.)
Olney, Md. 20853
Grid Coordinates: Latitude: N39-07-09.10, Longitude: W77-04-32.8

2.1.8 DoIT intends to award this Task Order to one (1) Master Contractor that proposes a team of resources and a Work Plan that can best satisfy the Task Order requirements.

2.1.9 Master Contractors are advised that, should a solicitation or other competitive award be initiated as a result of activity or recommendations arising from this Task Order, the Offeror awarded this Task Order may not be eligible to compete if such activity constitutes assisting in the drafting of specifications, requirement, or design thereof.

2.2 Roles and Responsibilities

Personnel roles and responsibilities under the Task Order:

2.2.1 TO Procurement Officer – The TO Procurement Officer has the primary responsibility for the management of the TORFP process, for the resolution of TO Agreement scope issues, and for authorizing any changes to the TO Agreement.

2.2.2 TO Manager - The TO Manager has the primary responsibility for the management of the work performed under the TO Agreement, administrative functions, including issuing written directions, and for ensuring compliance with the terms and conditions of the CATS+ Master Contract.

2.2.3 TO Contractor – The TO Contractor is the CATS+ Master Contractor awarded this Task Order and is responsible for the performance **Attachment Q – Technical Specifications**.

2.2.4 TO Contractor Manager – The TO Contractor Manager will serve as primary point of contact with the TO Manager to regularly discuss progress of tasks, upcoming tasking, historical performance, and resolution of any issues that may arise pertaining to the TO Contractor Personnel. The TO Contractor Manager will serve as liaison between the TO Manager and the senior TO Contractor management. The TO Contractor Manager may not be a subcontractor.

2.2.5 TO Contractor Personnel – Any official, employee, agent, Subcontractor, or Subcontractor agents of the TO Contractor who is involved with the Task Order over the course of the Task Order period of performance.

2.3 Background and Purpose

DoIT supports Maryland's Executive Branch agencies and commissions through its leadership as a principal procurement unit and in establishing the State strategic direction for information technology (IT) and telecommunications, establishing a long-range target technology architecture, encouraging cross agency collaboration for the mutual benefit of all, and advocating best practices for operations and project management.

DoIT is involved with a multi-year, infrastructure project to provide Maryland's public safety agencies a network of State-owned radio tower sites.

2.4 Requirements

2.4.1 Required Project Policies, Guidelines and Methodologies

The TO Contractor shall comply with all applicable laws, regulations, policies, standards, and guidelines affecting information technology and technology projects, which may be created or changed periodically.

The TO Contractor shall adhere to and remain abreast of current, new, and revised laws, regulations, policies, standards and guidelines affecting security and technology project execution.

The foregoing may include, but are not limited to, the following policies, guidelines and methodologies that can be found at the DoIT site: http://doit.maryland.gov/policies/Pages/ContractPolicies.aspx.

A. The State of Maryland Information Technology Security Policy and Standards.

B. TO Contractor assigned personnel shall follow a consistent methodology for all TO activities.

2.4.2 TO Contractor Responsibilities

The TO Contractor shall:

A. Meet and perform in accordance with the technical specifications as described in **Attachment Q Technical Specifications – Georgia Avenue SHA Communications Tower**.

B. Perform according to the schedule proposed in **Attachment O - Construction Schedule**, following the processes described in this TORFP and associated attachments.

C. Provide notifications to State and other appropriate authorities as expected by best practices, regulation, and as may be specified in the TORFP and its attachments.

D. Obtain and retain all appropriate certifications and permits for the jurisdiction(s) covered by the location where the tower and other products/services will be installed.

E. Obtain acceptance of the products and services by the TO Manager using Closeout binders and generally following **Attachment W - Closeout Acceptance Standards**. A closeout binder shall be produced and left at the site, with a second closeout binder submitted to the TO Manager for review and acceptance.

F. Be responsible for scheduling any required inspections with the appropriate authority (local, county, state) and the TO Manager, as well as, if required, the Maryland Department of the Environment (MDE).

G. Furnish supervision/certification by a certified Professional Engineer for the construction of all appropriate storm water management devices as required.

H. Repair any damage to finished surfaces, surrounding areas, equipment shelter, etc., from this installation to the damaged party's satisfaction at the TO Contractor's expense.

2.5 Deliverables

2.5.1 Deliverable Acceptance

A deliverable must satisfy the scope and requirements of this TORFP for that deliverable.

The TO Manager will review a final deliverable to determine compliance with the acceptance criteria as defined for that deliverable.

In the event of the rejection of a deliverable, the TO Manager will formally communicate in writing any deliverable deficiencies or non-conformities to the TO Contractor, describing in those deficiencies what shall be corrected prior to acceptance of the deliverable.

At the TO Manager's discretion, subsequent project tasks may not continue until deliverable deficiencies are rectified and accepted by the TO Manager or the TO Manager has specifically issued, in writing, a waiver for conditional continuance of project tasks.

2.5.2 Deliverable Descriptions/Acceptance Criteria

The table below identifies required deliverables and their associated due dates. The TO Contractor may suggest other subtasks, artifacts, or deliverables to improve the quality and success of the assigned tasks.

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Deliverables Table

ID #	Deliverable	Description	Due Date / Frequency
2.5.2.1	Integrated Project Schedule	A document suitable for tracking all current and pending activities. At a minimum, the schedule shall show milestones, deliverables, times of performance, degrees of completion and resources for all activities starting with NTP and ending with final deliverables. This is a single, periodically updated deliverable encompassing all activities.	NTP + 14 calendar days; weekly updates
2.5.2.2	Bi-Weekly Construction Schedule and Updates	The TO Contractor will be expected to update progress, forecast upcoming milestones and discuss other items as directed by the TO Manager. Submit schedules and updates in writing per details in attached Scope of Work. Attendance on a biweekly conference call with a representative of the State and a suitable TO Contractor representative to occur on the second and final Thursday of every month for the duration of the project.	Progress reports shall be submitted in writing on the second and last Thursday of every month for the duration of the project or as required.
2.5.2.3	"As Built" Drawings	Submit three hard copies and one soft copy of As-Built drawings to the TO Manager.	Project completion estimated period of performance, barring excusable delays, NTP+ 120 Business Days.
2.5.2.4	Close Out Final	Final required Close Out documents as referenced in Attachment W - Closeout Acceptance Standards.	Project Completion
2.5.2.5	Final Walkthrough	TO Contractor schedules a walkthrough with TO Manager to verify any deficiencies identified in a punch list are completed to the State's satisfaction. Submit to the TO Manager Acceptable Final Inspection Sediment and Erosion Control Reports.	Project Completion

Acceptance by the State of the work to be performed hereunder shall be final and conclusive except regarding latent defects, fraud, or such gross mistakes as may amount to fraud, or regarding any warranty or guaranty hereunder.

3 TO Contractor Requirements: General

3.1 Invoicing

3.1.1 Definitions

A. "Proper Invoice" means a bill, written document, or electronic transmission, readable by the agency, provided by a vendor requesting an amount that is due and payable by law under a written procurement contract for property received or services rendered that meets the requirements of COMAR 21.06.09.02.

B. "Late Payment" means any amount that is due and payable by law under a written procurement contract, without deferral, delay, or set-off under COMAR 21.02.07.03, and remains unpaid more than 45 days after an agency receives a Proper Invoice.

C. "Payment" includes all required processing and authorization by the Comptroller of the Treasury, as provided under COMAR 21.02.07, and may be deferred, delayed, or set-off as applicable under COMAR 21.02.07.03.

3.1.2 General

A. Invoice payments to the TO Contractor shall be governed by the terms and conditions defined in the CATS+ Master Contract.

B. The TO Contractor may submit invoices for progress payments no more than monthly by e-mailing the original of each invoice and signed authorization to the TO Procurement Officer with a copy to the TO Manager.

C. All invoices for services shall be verified by the TO Contractor as accurate at the time of submission.

D. Invoices submitted without the required information cannot be processed for payment. A Proper Invoice, required as Payment documentation, must include the following information, without error:

1. TO Contractor name and address;
2. Remittance address;
3. Federal taxpayer identification (FEIN) number, social security number, as appropriate;
4. Invoice period (i.e. time period during which services covered by invoice were performed);
5. Invoice date;
6. Invoice number;
7. State assigned TO Agreement number;
8. State assigned (Blanket) Purchase Order number(s);
9. Goods or services provided;
10. Amount due; and
11. Any additional documentation required by regulation or the Task Order.

E. Invoices that contain both fixed price and time and material items shall clearly identify the items as either fixed price or time and material billing.

F. The Department reserves the right to reduce or withhold Task Order payment in the event the TO Contractor does not perform within the time frame specified in the Task Order or

otherwise breaches the terms and conditions of the Task Order until such time as the TO Contractor brings itself into full compliance with the Task Order.

G. Any action on the part of the Department, or dispute of action by the TO Contractor, shall be in accordance with the provisions of Md. Code Ann., State Finance and Procurement Article §§ 15-215 through 15-223 and with COMAR 21.10.

H. The State is generally exempt from federal excise taxes, Maryland sales and use taxes, District of Columbia sales taxes and transportation taxes. The TO Contractor; however, is not exempt from such sales and use taxes and may be liable for the same.

I. Invoices for final payment shall be clearly marked as "FINAL" and submitted when all work requirements have been completed and no further charges are to be incurred under the TO Agreement. In no event shall any invoice be submitted later than 60 calendar days from the TO Agreement termination date.

J. Payment for deliverables will only be made upon completion and acceptance of the deliverables as defined in **Section 2.5**.

3.1.3 Travel Reimbursement

Travel will not be reimbursed under this TORFP.

3.1.4 Retainage

Ten percent (10%) of the total TO Agreement value shall be retained by the State and will not be released until final payment and, in making progress payments, the State will retain ten percent (10%) of the progress payments earned. Retainage shall be withheld for each deliverable specified in this TO and released upon completion and acceptance of the project.

TO Contractor shall invoice the State for the retainage amount as part of the final invoice for this Task Order.

3.2 Liquidated Damages

Time is an essential element of the contract and it is important that the work be vigorously prosecuted until completion.

For each day that any work shall remain uncompleted beyond 120 Business Days from date of Notice to Proceed, except for days added due to excusable delay, the TO Contractor shall be liable for liquidated damages in the amount of $700 per day.,

Additionally, for each day that the project has a 'D' rating as assigned by a MDE Field Inspector or authorized State representative, the TO Contractor shall be liable for liquidated damages in the amount of $745 per day. Failure to upgrade the project to the minimum of a 'B' rating within 72 hours will result in the project being rated 'F.' For each day that the project has an 'F' rating, the TO Contractor shall be liable for liquidated damages in the amount of $1,045 per day.

3.3 Prevailing Wages

For TO Proposals with a price totaling $500,000 or more, Prevailing Wage Rates (as that term is defined in State Finance and Procurement Article, § 17-209, Annotated Code of Maryland) apply. For these TO Proposals only, the wage rates to be paid laborers and mechanics on this TO Agreement is by order of the Commissioner of Labor and Industry as outlined on **Attachment P – Prevailing Wage Rates**. It is mandatory upon the TO Contractor and any subcontractor, to pay not less than the specific rates to all workers employed by the TO Contractor and subcontractor(s). (Reference: State Finance and

Procurement, §§ 17-201 thru 17-226, Annotated Code of Maryland, inclusive. These rates were taken from the locality determination, issued pursuant to the Commissioner's authority under State Finance and Procurement Article §17-209, Annotated Code of Maryland.)

IMPORTANT: Master Contractors must submit documentation as instructed in **Attachment P**.

3.4 Insurance Requirements

3.4.1 Master Contractors shall confirm that, as of the date of its proposal, the insurance policies incorporated into its Master Contract are still current and effective at the required levels (See Master Contract Section 2.7).

3.4.2 The Master Contractor shall also confirm that any insurance policies intended to satisfy the requirements of this TORFP are issued by a company that is licensed to do business in the State of Maryland.

3.4.3 The recommended awardee must provide a certificate(s) of insurance with the prescribed coverages, limits and requirements set forth in this Section 3.4 "Insurance Requirements" within five (5) Business Days from notice of recommended award. During the period of performance for multi-year contracts the TO Contractor shall update certificates of insurance annually, or as otherwise directed by the TO Manager

3.4.4 TO Contractor shall maintain commercial general liability (CGL) insurance and, if necessary, commercial umbrella insurance, with a limit of not less than $2,000,000 per each occurrence and shall insure against liability to third parties for accidental death, bodily injury or illness, property damage, and personal injury arising out of the work in connection with the TO Agreement

3.5 Performance and Personnel

3.5.1 TO Contractor Personnel Maintain Certifications

Any TO Contractor Personnel shall maintain in good standing any required professional certifications for the duration of the TO Agreement.

3.6 Substitution of Personnel

3.6.1 Directed Personnel Replacement

The TO Manager may direct the TO Contractor to replace any TO Contractor Personnel who, in the sole discretion of the TO Manager, are perceived as being unqualified, non-productive, unable to fully perform the job duties, disruptive, or known, or reasonably believed, to have committed a major infraction(s) of law or Department, Contract, or Task Order requirement.

A. If deemed appropriate in the discretion of the TO Manager, the TO Manager shall give written notice of any TO Contractor Personnel performance issues to the TO Contractor, describing the problem and delineating the remediation requirement(s). The TO Contractor shall provide a written Remediation Plan within three (3) days of the date of the notice. If the TO Manager rejects the Remediation Plan, the TO Contractor shall revise and resubmit the plan to the TO Manager within five (5) days of the rejection, or in the timeframe set forth by the TO Manager in writing. Once a Remediation Plan has been accepted in writing by the TO Manager, the TO Contractor shall immediately implement the Remediation Plan.

B. Should performance issues persist despite the approved Remediation Plan, the TO Manager will give written notice of the continuing performance issues and either request a new

Remediation Plan within a specified time limit or direct the removal and replacement of the TO Contractor Personnel whose performance is at issue.

C. In circumstances of directed removal, the TO Contractor shall provide a suitable replacement for TO Manager approval within fifteen (15) days of the date of the notification of directed removal, or the actual removal, whichever occurs first, or such earlier time as directed by the TO Manager in the event of a removal on less than fifteen days' notice

D. Normally, a directed personnel replacement will occur only after prior notification of problems with requested remediation, as described above. However, the TO Manager reserves the right to direct immediate personnel replacement without utilizing the remediation procedure described above.

E. Replacement or substitution of TO Contractor Personnel under this section shall be in addition to, and not in lieu of, the State's remedies under the Master Contract, Task Order, or which otherwise may be available at law or in equity.

3.7 Minority Business Enterprise Participation Reports

The Department will monitor both the TO Contractor's efforts to achieve the Minority Business Enterprise (MBE) participation goal and compliance with reporting requirements.

3.7.1 Monthly reporting of MBE participation is required in accordance with the terms and conditions of the CATS+ Master Contract.

1. The TO Contractor shall submit the following reports by the 15th of each month to the Department at the same time the invoice copy is sent:

2. A Prime Contractor Paid/Unpaid MBE Invoice Report (**Attachment D-4A**) listing any unpaid invoices, over 45 days old, received from any certified MBE subcontractor, the amount of each invoice and the reason payment has not been made; and

3. (If Applicable) An MBE Prime Contractor Report (**Attachment D-4B**) identifying an MBE prime self-performing work to be counted towards the MBE participation goals.

3.7.2 The TO Contractor shall ensure that each MBE subcontractor provides a completed Subcontractor Paid/Unpaid MBE Invoice Report (**Attachment D-5**) by the 15th of each month.

3.7.3 Subcontractor reporting shall be sent directly from the subcontractor to the Department. The TO Contractor shall e-mail all completed forms, copies of invoices and checks paid to the MBE directly to the TO Manager.

3.8 Veteran Small Business Enterprise Reports

There is no Veteran Small Business Enterprise (VSBE) Goal for this Task Order.

3.9 Contract Management Oversight Activities

3.9.1 DoIT is responsible for contract management oversight on the CATS+ Master Contract. As part of that oversight, DoIT has implemented a process for self-reporting contract management activities of Task Orders under CATS+. This process typically applies to active TOs for operations and maintenance services valued at $1 million or greater, but all CATS+ Task Orders are subject to review.

3.9.2 A sample of the TO Contractor Self-Reporting Checklist is available on the CATS+ website at http://doit.maryland.gov/contracts/Documents/CATSPlus/CATS+Self-ReportingChecklistSample.pdf DoIT may send initial checklists out to applicable/selected TO Contractors approximately three months after the award date for a Task Orders. The TO Contractor shall complete and return the checklist as instructed on the form. Subsequently, at six month intervals from the due date on the initial checklist, the TO Contractor shall update and resend the checklist to DoIT.

3.10 Purchasing and Recycling Electronic Products

This section does not apply to this solicitation.

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4 TORFP Instructions

4.1 TO Pre-Proposal Site Visit

A pre-proposal site visit will be held at the time, date and location indicated on the Key Information Summary Sheet. Attendance at the pre-proposal site visit is not mandatory, but all Master Contractors are encouraged to attend in order to facilitate better preparation of their proposals. Master Contractors are advised of the Site Investigation clause in Section 4.19 of this TORFP.

The pre-proposal site visit will be summarized in writing. As promptly, as is feasible, subsequent to the pre-proposal site visit, the attendance record and pre-proposal site visit summary will be distributed via e-mail to all Master Contractors known to have received a copy of this TORFP.

In order to assure adequate accommodations at the pre-proposal site visit, please e-mail the TO Procurement Officer no later than three (3) business days prior indicating planned attendance. In addition, if there is a need for sign language interpretation and/or other special accommodations due to a disability, please contact the TO Procurement Officer no later than five (5) business days prior to the pre-proposal site visit. The TO Requesting Agency will make reasonable efforts to provide such special accommodation.

4.2 Questions

All questions must be submitted via e-mail to the TO Procurement Officer no later than the date and time indicated in the Key Information Summary Sheet. Answers applicable to all Master Contractors will be distributed to all Master Contractors who are known to have received a copy of the TORFP.

The statements and interpretations contained in responses to any questions, whether responded to orally or in writing, are not binding on the Department unless the TORFP is expressly amended. Nothing in any response to any questions is to be construed as agreement to or acceptance by the Department of any statement or interpretation on the part of the entity asking the question.

4.3 TO Proposal Due (Closing) Date and Time

4.3.1 TO Proposals, in the number and form set forth in Section 5, must be received by the TO Procurement Officer no later than the TO Proposal due date and time indicated on the Key Information Summary Sheet in order to be considered.

4.3.2 Requests for extension of this date or time shall not be granted.

4.3.3 Master Contractors submitting TO Proposals should allow sufficient delivery time to ensure timely receipt by the TO Procurement Officer. Except as provided in COMAR 21.05.03.02.F and 21.05.02.10, TO Proposals received after the due date and time listed in the Key Information Summary Sheet will not be considered.

4.3.4 TO Proposals may be modified or withdrawn by written notice received by the TO Procurement Officer before the time and date set forth in the Key Information Summary Sheet for receipt of TO Proposals.

4.4 Award Basis

Based upon an evaluation of TO Proposal responses as provided in **Section 6.4**, a Master Contractor will be selected to conduct the work defined in **Sections 2 and 3, and Attachments Q through and including Attachment Z**. A specific TO Agreement, **Attachment M**, will then be entered into between

the State and the selected Master Contractor, which will bind the selected Master Contractor (TO Contractor) to the contents of its TO Proposal, including the TO Financial Proposal.

4.5 Oral Presentation

Oral presentations/interviews will not be held for this solicitation.

4.6 Limitation of Liability

The TO Contractor's liability is limited in accordance with the Limitations of Liability section of the CATS+ Master Contract. TO Contractor's liability for this TORFP is limited to two (2) times the total TO Agreement amount.

4.7 Change Orders

4.7.1 If the TO Contractor is required to perform work beyond the scope of this TORFP as determined by the Procurement Officer, or there is a work reduction due to unforeseen scope changes, a TO Change Order is required. The TO Contractor and TO Manager shall negotiate a mutually acceptable price modification based on the TO Contractor's proposed rates in the Master Contract and scope of the work change.

4.7.2 No scope of work changes shall be performed until a change order is approved by DoIT and the Board of Public Works, as required, and executed by the TO Procurement Officer.

4.8 MBE Participation Goal

4.8.1 A Master Contractor that responds to this TORFP shall complete, sign, and submit all required MBE documentation at the time of TO Proposal submission (See **Attachment D Minority Business Enterprise** Forms).

IMPORTANT: Failure of the Master Contractor to complete, sign, and submit all required MBE documentation at the time of TO Proposal submission will result in the State's rejection of the Master Contractor's TO Proposal.

4.8.2 In 2014, Maryland adopted new regulations as part of its Minority Business Enterprise (MBE) program concerning MBE primes. Those new regulations, which became effective June 9, 2014 and are being applied to this task order, provide that when a certified MBE firm participates as a prime contractor on a contract, an agency may count the distinct, clearly defined portion of the work of the contract that the certified MBE firm performs with its own forces toward fulfilling up to fifty-percent (50%) of the MBE participation goal (overall) and up to one hundred percent (100%) of not more than one of the MBE participation subgoals, if any, established for the contract. Please see the attached MBE forms and instructions.

4.9 VSBE Goal

There is no VSBE participation goal for this procurement.

4.10 Living Wage Requirements

The Master Contractor shall abide by the Living Wage requirements under Title 18, State Finance and Procurement Article, Annotated Code of Maryland and the regulations proposed by the Commissioner of Labor and Industry.

All TO Proposals shall be accompanied by a completed **Living Wage Affidavit of Agreement**, **Attachment E** of this TORFP.

4.11 Federal Funding Acknowledgement

This Task Order does not contain federal funds.

4.12 Conflict of Interest Affidavit and Disclosure

4.12.1 Master Contractors shall complete and sign the **Conflict of Interest Affidavit and Disclosure** (**Attachment H**) and submit it with their Proposals. All Master Contractors are advised that if a TO Agreement is awarded as a result of this solicitation, the TO Contractor's Personnel who perform or control work under this TO Agreement and each of the participating subcontractor personnel who perform or control work under this TO Agreement shall be required to complete agreements substantially similar to **Attachment H Conflict of Interest Affidavit and Disclosure**.

4.12.2 If the TO Procurement Officer makes a determination that facts or circumstances exist that give rise to or could in the future give rise to a conflict of interest within the meaning of COMAR 21.05.08.08A, the TO Procurement Officer may reject an Master Contractor's TO Proposal under COMAR 21.06.02.03B.

4.12.3 Master Contractors should be aware that the State Ethics Law, Md. Code Ann., General Provisions Article, Title 5, might limit the selected Master Contractor's ability to participate in future related procurements, depending upon specific circumstances.

4.12.4 By submitting a Conflict of Interest Affidavit and Disclosure form, the Master Contractor shall be construed as certifying all TO Contractor Personnel and Subcontractors are without a conflict of interest as defined in COMAR 21.05.08.08A.

4.13 Proposal Affidavit

A TO Proposal submitted by the Master Contractor must be accompanied by a completed Proposal Affidavit. A copy of this Affidavit is included as **Attachment C** of this TORFP.

4.14 Mercury and Products That Contain Mercury

This solicitation does not include the procurement of products known to include mercury as a component.

4.15 Bonds

4.15.1 TO Proposal Bond

A. Each Master Contractor must submit with its TO Proposal a TO Proposal Bond or other suitable security, as summarized in Section 4.15.4, in the amount of five percent (5%) of the Total Evaluated Price, guaranteeing the availability of the goods and services at the offered price for 180 days after the due date for receipt of TO Proposals.

B. The bond shall be in the form provided in Appendix 5.

C. A Master Contractor may request a release of the bond after the date of the award in return for a release signed by the TO Contractor and accepted by the Department.

D. The cost of this bond, or other suitable security, is to be included in the total prices proposed, is not to be proposed, and will not be recoverable as a separate cost item.

4.15.2 Performance Bond

A. The TO Contractor shall deliver a Performance Bond, or other suitable security, to the State within ten (10) business days after notification of recommended award in the amount of $1,000,000.00, guaranteeing that the TO Contractor shall well and truly perform the TO Agreement.

B. The Performance Bond shall be in the form provided in Appendix 3 and underwritten by a surety company authorized to do business in the State and shall be subject to approval by the State, or other acceptable security for bond as described in COMAR 21.06.07, as summarized in Section 4.15.4.

C. The Performance Bond shall be maintained throughout the term of this TO Agreement. This Performance Bond shall also secure liquidated damages.

D. The Performance Bond may be renewable annually. The TO Contractor shall provide to the State, 30 days before the annual expiration of the bond, confirmation from the surety that the bond will be renewed for the following year. Failure to timely provide this notice shall constitute an event of default under the TO Agreement. Such a default may be remedied if the TO Contractor obtains a replacement bond that conforms to the requirements of the TO Agreement and provides that replacement bond to the State prior to the expiration of the existing Performance Bond.

E. The cost of this bond, or other suitable security, is to be included in the total prices proposed, is not to be proposed, and will not be recoverable as a separate cost item.

F. After the first year of the TO Agreement, the TO Contractor may request a reduction for Performance Bond. The amount and the duration of the reduction, if any, will be at the Department's sole discretion. If any reduction is granted, the Department's shall have the right to increase the amount of the Performance Bond to any amount, up to the original amount, at any time and at the Department's sole discretion.

4.15.3 Payment Bond

The TO Contractor shall submit to the Procurement Officer, within ten (10) business days after notice of recommended award, a Payment Bond in the amount of the TO Agreement. The bond shall be in the form provided in **Appendix 4** and issued by a surety company licensed to do business in the State. The Payment Bond shall be maintained throughout the term of this TO Agreement, or renewal option period, if exercised. Evidence of renewal of the Payment Bond and payment of the required premium shall be provided to the TO Manager. This bond shall also secure liquidated damages.

Failure of the TO Contractor to submit and maintain the required Payment and Performance Bond coverage throughout the term of the TO Agreement will constitute an event of Default under the Master Contract.

The Payment Bond shall be forfeited to DoIT in whole or part, if the Master Contractor defaults in its payment of subcontractors or vendors for work performed under this TO Agreement.

A letter must be submitted from a bonding company with the Technical Proposal providing evidence that the Master Contractor is capable of securing the required Payment and Performance bonds.

4.15.4 Acceptable Security

Acceptable security shall be as described below, identified within and excerpted from COMAR 21.06.07:

Acceptable security for proposal/bid, performance, and payment bonds is limited to:

A. A bond in a form satisfactory to the State underwritten by a surety company authorized to do business in this State;

B. A bank certified check, bank cashier's check, bank treasurer's check, cash, or trust account;

C. Pledge of securities backed by the full faith and credit of the United States government or bonds issued by the State;

D. An irrevocable letter of credit in a form satisfactory to the Attorney General and issued by a financial institution approved by the State Treasurer.

4.15.5 Surety Bond Assistance Program

Assistance in obtaining bid, performance and payment bonds may be available to qualifying small businesses through the Maryland Small Business Development Financing Authority (MSBDFA). MSBDFA can directly issue bid, performance or payment bonds up to $750,000. MSBDFA may also guarantee up to 90% of a surety's losses because of a TO Contractor's breach of TO Agreement; MSBDFA exposure on any bond guaranteed may not, however, exceed $900,000. Bonds issued directly by the program will remain in effect for the duration of the TO Agreement, and those surety bonds that are guaranteed by the program will remain in effect for the duration of the surety's exposure under the TO Agreement. To be eligible for bonding assistance, a business must first be denied bonding by at least one surety on both the standard and specialty markets within 90 days of submitting a bonding application to MSBDFA. The applicant must employ fewer than 500 full-time employees or have gross sales of less than $50 million annually, have its principal place of business in Maryland or be a Maryland resident, must not subcontract more than 75 percent of the work, and the business or its principals must have a reputation of good moral character and financial responsibility. Finally, it must be demonstrated that the bonding or guarantee will have a measurable economic impact, through job creation and expansion of the state's tax base. Applicants are required to work through their respective bonding agents in applying for assistance under the program. Questions regarding the bonding assistance program should be referred to the following:

Maryland Department of Business and Economic Development
Maryland Small Business Development Financing Authority
MMG Ventures
826 E. Baltimore Street
Baltimore, Maryland 21202
Phone: (410) 333-4270
Fax: (410) 333-2552

4.16 Prompt Payment of Subcontractors

This TO Agreement is subject to the provisions of State Finance and Procurement Article, §15-226, Annotated Code of Maryland, and COMAR 21.10.08. A TO Contractor shall promptly pay its subcontractors an undisputed amount to which a subcontractor is entitled for work performed under the TO Agreement within 10 days after the TO Contractor receives a progress payment or final payment for work under this TO Agreement.

If a TO Contractor fails to make payment within the period prescribed above, a subcontractor may request a remedy in accordance with COMAR 21.10.08.

A TO Contractor shall include in its subcontracts for work under this TO Agreement, wording that incorporates the provisions, duties and obligations of §A-D, State Finance and Procurement Article, §15-226, Annotated Code of Maryland, and COMAR 21.10.08.

4.17 Warranty

4.17.1 All tower materials, galvanizing, tower foundation materials, tower structures and all attachments and appurtenances thereto shall be guaranteed against defects in material and workmanship for a minimum of five (5) years after final, written acceptance of the project.

4.17.2 All equipment shelters, equipment shelter foundations, HVAC units, generator and other associated equipment shall be guaranteed against defects in material and workmanship for a minimum of two (2) years after final, written acceptance of the project.

4.17.3 The tower lighting system supplied by the Master Contractor shall be guaranteed against defects in material and workmanship for a minimum period of five (5) years after final, written acceptance of the project.

4.17.4 All other materials and labor provided by the Master Contractor shall be guaranteed against defects in materials and workmanship for a minimum of two (2) years after final, written acceptance of the project.

4.17.5 After the initial, two-year warranty period, the state, in its discretion, may reduce the performance bond amount to 40% of the total TO Agreement price.

4.18 Differing Site Conditions

The Master Contractor shall promptly, and before such conditions are disturbed, notify the TO Manager in writing of: (1) subsurface or latent physical conditions at the site differing materially from those indicated in this TORFP, or (2) unknown physical conditions at the site of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inhering in work of the character provided for in this TORFP. The TO Manager will promptly investigate the conditions, and if the TO Manager and Procurement Officer find that such conditions do materially so differ and cause an increase or decrease in the Master Contractor's cost of, or the time required for, performance of any part of the work under this contract, whether or not changed as a result of such conditions, an equitable adjustment shall be made and the contract modified in writing accordingly.

No claim of the Master Contractor under this clause shall be allowed unless the Master Contractor has given the notice required in above; provided, however, the time prescribed therefore may be extended by the State. No claim by the Master Contractor for an equitable adjustment here under shall be allowed if asserted after final payment under this contract.

4.19 Site Investigation

The Master Contractor acknowledges that the Master Contractor has investigated and is satisfied as to the conditions affecting the work, including but not restricted to those bearing upon transportation, disposal, handling and storage of materials, availability of labor, water, electric power, roads and uncertainties of weather, river stages, tides or similar physical conditions at the site, the conformation and conditions of the ground, the character of equipment and facilities needed preliminary to and during prosecution of the work. The Master Contractor further acknowledges that it is satisfied as to the character, quality and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, including all exploratory work done by the State, as well as from information presented by the drawings and specifications made a part of this contract. Any failure by the Master Contractor to acquaint itself with the available information may not relieve the Master Contractor from responsibility for estimating properly the difficulty or cost of successfully performing the work. The State assumes no responsibility for any conclusions or interpretations made by the Master Contractor based on the information made available by the State.

5 TO Proposal Format

5.1 Required Response

Each Master Contractor receiving this CATS+ TORFP shall respond no later than the submission due date and time designated in the Key Information Summary Sheet. Each Master Contractor is required to submit one of two possible responses: 1) a TO Proposal or 2) a completed Master Contractor Feedback Form (available online within the Master Contractor Admin System). The feedback form helps the State understand for future contract development why Master Contractors did not submit proposals. The form is accessible via the CATS+ Master Contractor login screen and clicking on TORFP Feedback Response Form from the menu.

A TO Proposal shall conform to the requirements of this CATS+ TORFP.

5.2 Two Part Submission

Master Contractors shall submit TO Proposals in separate volumes:

- Volume I – TO TECHNICAL PROPOSAL
- Volume II – TO FINANCIAL PROPOSAL

5.3 TO Proposal Packaging and Delivery

5.3.1 **Proposals delivered by email or facsimile shall not be considered.**

5.3.2 Provide no pricing information in the TO Technical Proposal.

5.3.3 Offerors must submit TO Proposals by hand or by mail as described below to the address provided in the Key Information Summary Sheet.

A. For U.S. Postal Service deliveries, any TO Proposal that has been received at the appropriate mailroom, or typical place of mail receipt, for the respective procuring unit by the time and date listed in the TORFP will be deemed timely. If an Offeror chooses to use the U.S. Postal Service for delivery, the Department recommends that it use Express Mail, Priority Mail, or Certified Mail only as these are the only forms for which both the date and time of receipt can be verified by the Department. An Offeror using first class mail will not be able to prove a timely delivery at the mailroom, and it could take several days for an item sent by first class mail to make its way by normal internal mail to the procuring unit.

B. Hand-delivery includes delivery by commercial carrier acting as agent for the Offeror. For any type of direct (non-mail) delivery, Offerors are advised to secure a dated, signed, and time-stamped (or otherwise indicated) receipt of delivery.

5.3.4 The TO Procurement Officer must receive all TO Technical and TO Financial Proposal material by the TORFP due date and time specified in the Key Information Summary Sheet. Requests for extension of this date or time will not be granted. Except as provided in COMAR 21.05.03.02F, TO Proposals received by the TO Procurement Officer after the due date will not be considered.

5.3.5 Two Part Submission: Offerors shall provide their TO Proposals in two separately sealed and labeled packages as follows:

TO Technical Proposal consisting of:

1. One (1) original executed TO Technical Proposal and all supporting material marked and sealed,

2. One (1) duplicate copy of the above separately marked and sealed,
3. a password protected electronic version (USB drive) of the TO Technical Proposal in Microsoft Word format, version 2007 or greater,

TO Financial Proposal consisting of:

1. One (1) original executed TO Financial Proposal and all supporting material marked and sealed,
2. a password protected (USB drive) of the TO Technical Proposal in Microsoft Word or Excel format, version 2007 or greater,

5.3.6 It is preferred, but not required, that the name, email address, and telephone number of a contact person for the Offeror be included on the outside of the packaging for each volume. Unless the resulting package will be too unwieldy, the State's preference is for the separately sealed Technical and TO Financial Proposals to be submitted together in a single package to the TO Procurement Officer. Affix the following to the outside of each sealed TO Proposal:

- TORFP title and number,
- Name and address of the Offeror, and
- Closing date and time for receipt of TO Proposals

5.3.7 Label each electronic media on the outside with the TORFP title and number, name of the Offeror, and volume number. Electronic media must be packaged with the original copy of the appropriate TO Proposal (Technical or Financial).

5.4 Volume I - TO Technical Proposal

IMPORTANT:Provide **no pricing information** in the TO Technical Proposal (Volume I). Include pricing information only in the TO Financial Proposal (Volume II).

5.4.1 In addition to the instructions below, responses in the Offeror's TO Technical Proposal shall reference the organization and numbering of Sections in the TORFP (e.g., "Section 2.2.1 Response . . .; "Section 2.2.2 Response . . .,"). All pages of both TO Proposal volumes shall be consecutively numbered from beginning (Page 1) to end (Page "x").

5.4.2 The TO Technical Proposal shall include the following documents and information in the order specified as follows:

A. Proposed Services:

1. Executive Summary: A one-page summary describing the Offeror's understanding of the TORFP scope of work (Section 2) and proposed solution.
2. Proposed Solution: A more detailed description of the Offeror's understanding of the TORFP scope of work, proposed methodology and solution. The proposed solution shall be organized to match the requirements outlined in Section 2.
3. Assumptions: A description of any assumptions formed by the Offeror in developing the TO Technical Proposal. Offerors should avoid assumptions that counter or constitute exceptions to TORFP terms and conditions.
4. Organization Chart: Identify all permanent personnel and subcontractors working on the project.

5. The TO Contractor must document for itself and any subcontractors, a professional level of expertise in construction of erosion and sediment control devices in accordance with the latest Maryland Department of the Environment specifications and construction drawings.
6. Attachment O – Construction Schedule.
7. Schedule of delivery for the products and services requirements in the TORFP.
8. Safety Manual – General and Tower site construction safety procedures and policies, in-house training programs, and certifications obtained and maintained
9. Tower Technical Details: A description of the manufacture, any technical documents related to the tower and tower foundation design. This will include, but is not limited to, preliminary shop drawings, technical sheets or correspondence from the manufacturer. List assumptions used for the tower design.
10. Shelter Technical Details: A description of the manufacturer, any technical documents related to the shelter and shelter foundation design. This will include, but is not limited, to preliminary shop drawings, technical sheets or correspondence from the manufacturer. List any appropriate assumptions used for the shelter design.
11. Shelter Delivery Plan – describe in detail how the shelter will be transported to the proposed site.
12. Copies of green/yellow E&S credentials.
13. Performance Bond Capability letter from a bonding company providing evidence that the Master Contractor is capable of securing the bond required in TORFP **Section 4.15**.
14. Payment Bond Capability letter from a bonding company providing evidence that the Master Contractor is capable of securing the bond required in TORFP **Section 4.15**.

B. TORFP Staffing

1. Provide a Staffing Management Plan with brief qualifications of up to four people demonstrating how the Offeror will provide the resources necessary to perform the Scope of Work required in this TORFP.
2. Provide the names and titles of the Offeror's management staff who will supervise the personnel and quality of services rendered under this TO Agreement.

C. MBE Participation

Submit completed MBE documents D-1A.

D. Subcontractors

Identify all proposed subcontractors, including MBEs, and their roles in the performance of **Section 2 - Scope of Work**.

E. Master Contractor and Subcontractor Experience and Capabilities

1. Provide up to three examples of engagements or contracts the Master Contractor has completed that were similar to **Section 2 - Scope of Work**. Include contact information for each client organization complete with the following:

    a) Name of organization.
    b) Point of contact name, title, e-mail and telephone number (point of contact shall be accessible and knowledgeable regarding experience)
    c) Services provided as they relate to **Section 2 - Scope of Work**.
    d) Start and end dates for each example engagement or contract.
    e) Current Master Contractor team personnel who participated on the engagement/contract.
    f) If the Master Contractor is no longer providing the services, explain why not.

2. State of Maryland Experience: If applicable, the Master Contractor shall submit a list of all contracts it currently holds or has held within the past five years with any entity of the State of Maryland. For each identified contract, the Master Contractor shall provide the following (if not already provided in sub paragraph 1 above):

    a) Contract or task order name
    b) Name of organization.
    c) Point of contact name, title, e-mail, and telephone number (point of contact shall be accessible and knowledgeable regarding experience)
    d) Start and end dates for each engagement or contract. If the Master Contractor is no longer providing the services, explain why not.
    e) Dollar value of the contract.
    f) Indicate if the contract was terminated before the original expiration date.
    g) Indicate if any renewal options were not exercised.

IMPORTANT: State of Maryland experience can be included as part of **Section 1** above as engagement or contract experience. State of Maryland experience is neither required nor given more weight in proposal evaluations.

A. State Assistance

Provide an estimate of expectation concerning participation by State personnel.

B. Confidentiality

A Master Contractor should give specific attention to the identification of those portions of its TO Proposal that it considers confidential, proprietary commercial information or trade secrets, and provide justification why such materials, upon request, should not be disclosed by the State under the Public Information Act, Title 4, of the General Provisions Article of the Annotated Code of Maryland. Master Contractors are advised that, upon request for this information from a third party, the TO Procurement Officer will be required to make an independent determination regarding whether the information may be disclosed.

C. Proposed Facility

Identify Master Contractor's facilities, including address, from which any work will be performed.

5.5 Volume II – TO Financial Proposal

5.5.1 The TO Financial Proposal shall contain all price information in the format specified in **Attachment B – Price Sheet**. The Offeror shall complete the Financial Proposal Form only as provided in the Financial Proposal Form Instructions and the Financial Proposal Form itself.

5.5.2 The TO Financial Proposal shall contain a description of any assumptions on which the Master Contractor's TO Financial Proposal is based (Assumptions shall not constitute conditions, contingencies, or exceptions to the Financial Proposal Form);

5.5.3 Prices shall be valid for 60 days.

6 Evaluation and Selection Process

The TO Contractor will be selected from among all eligible Master Contractors within the appropriate Functional Area responding to the CATS+ TORFP. In making the TO Agreement award determination, the Department will consider all information submitted in accordance with **Section 5**.

6.1 Evaluation Committee

Evaluation of TO Proposals will be performed in accordance with COMAR 21.05.03 by a committee established for that purpose and based on the evaluation criteria set forth below. The Evaluation Committee will review TO Proposals and provide input to the TO Procurement Officer. The Department reserves the right to utilize the services of individuals outside of the established Evaluation Committee for advice and assistance, as deemed appropriate.

During the evaluation process, the TO Procurement Officer may determine at any time that a particular Offeror is not susceptible for award.

6.2 TO Technical Proposal Evaluation Criteria

The criteria to be used to evaluate each TO Technical Proposal are listed below in descending order of importance. Unless stated otherwise, any sub-criteria within each criterion have equal weight.

The following are technical criteria for evaluating a TO Proposal in descending order of importance:

A. The Master Contractor's proposed solution.

B. Proposed Construction Schedule for completion of the project as submitted in **Attachment O – Construction Schedule**.

C. Proposed shelter delivery plan.

D. The Master Contractor's overall experience, capability and references as described in the Master Contractor's TO Technical Proposal.

E. The Master Contractor's safety policies and procedures.

6.3 TO Financial Proposal Evaluation Criteria

All Qualified Offerors (see **Section 6.4**) will be ranked from the lowest to the highest price based on the Total Proposal Price within the stated guidelines set forth in this TORFP and as submitted on **Attachment B – Price Sheet**.

6.4 Selection Procedures

TO Technical Proposals shall be evaluated based on the criteria set forth above in **Section 6.2**. TO Technical Proposals and TO Financial Proposals will be evaluated independently of each other.

A. TO Proposals will be assessed throughout the evaluation process for compliance with the minimum qualifications listed in Section 1 of this TORFP, and quality of responses to **Section 5.4** TO Technical Proposal. Failure to meet the minimum qualifications shall render a TO Proposal not reasonably susceptible for award. The TO Procurement Officer will notify those Offerors who have not been selected to perform the work.

1. TO Technical Proposals will be evaluated for technical merit and ranked from highest to lowest qualified.

2. The Procurement Officer will only open the TO Financial Proposals where the associated TO Technical Proposals have been classified as reasonably susceptible for award.
3. TO Financial Proposals for qualified Offerors will be reviewed and ranked from lowest to highest price proposed.
4. The most advantageous TO Proposal considering both the technical and financial submissions shall be selected for TO award. In making this selection, technical merit has greater weight.
5. All Master Contractors submitting a TO Proposal shall receive written notice from the TO Procurement Officer identifying the awardee.

6.5 Documents Required upon Notice of Recommendation for Task Order Award

Upon receipt of a Notification of Recommendation for Task Order award, the apparent awardee shall complete and furnish the documents and attestations as directed in **Table 1 of Section 7 – TORFP Attachments and Appendices**.

Commencement of work in response to a TO Agreement shall be initiated only upon the completed documents and attestations, plus:

1. Issuance of a fully executed TO Agreement,
2. Purchase Order, and
3. By a Notice to Proceed authorized by the TO Procurement Officer. See (see online example at http://doit.maryland.gov/contracts/Documents/CATSPlus/CATS+NoticeToProceedSample.pdf).

THE REMAINDER OF THIS PAGE IS INTENTIONALLY LEFT BLANK.

7 TORFP ATTACHMENTS AND APPENDICES

Instructions Page

A TO Proposal submitted by an Offeror must be accompanied by the completed forms and/or affidavits identified as "With TO Proposal" in the "When to Submit" column. All forms and affidavits applicable to this TORFP, including any applicable instructions and/or terms, are identified below.

All Offerors are advised that if a Task Order is awarded as a result of this solicitation, the successful Offeror will be required to complete certain forms and affidavits after notification of recommended award. The list of forms and affidavits that must be provided is described below in the "When to Submit" column.

For documents required after award, submit three (3) copies of each document within the appropriate number of days after notification of recommended award, as listed in the table below in the "When to Submit" column.

When to Submit	Label	Attachment Name
Before Proposal	A	Pre-Proposal Conference Response Form
With Proposal	B	Financial Proposal Instructions and Form
With Proposal	C	Bid/Proposal Affidavit (see link at http://procurement.maryland.gov/wp-content/uploads/sites/12/2018/04/AttachmentC-Bid_Proposal-Affidavit.pdf)
With Proposal	D	MBE Forms D-1A (see link at http://procurement.maryland.gov/wp-content/uploads/sites/12/2018/05/AttachmentDMBE-Forms-1.pdf)
10 Business Days after recommended award	D	MBE Forms D-1B, D-1C,D-2, D-3A, D-3B (see link at http://procurement.maryland.gov/wp-content/uploads/sites/12/2018/05/AttachmentDMBE-Forms-1.pdf) **Important: Attachment D-1C**, if a waiver has been requested, is also required within 10 days of recommended award.
As directed in forms	D	MBE Forms D-4A, D-4B, D-5 (see link at http://procurement.maryland.gov/wp-content/uploads/sites/12/2018/05/AttachmentDMBE-Forms-1.pdf)
N/A	E	Veteran-Owned Small Business Enterprise (VSBE) Form E-1A

When to Submit	Label	Attachment Name
With Proposal	F	Maryland Living Wage Requirements for Service Contracts and Affidavit of Agreement (see link at http://procurement.maryland.gov/wp-content/uploads/sites/12/2018/04/AttachmentF-LivingWageAffidavit.pdf)
N/A	G	Federal Funds Attachments
With Proposal	H	Conflict of Interest Affidavit and Disclosure (see link at http://procurement.maryland.gov/wp-content/uploads/sites/12/2018/05/AttachmentH-Conflict-of-InterestAffidavit.pdf)
N/A	I	Non-Disclosure Agreement (Contractor) (see link at http://procurement.maryland.gov/wp-content/uploads/sites/12/2018/04/Attachment-I-Non-DisclosureAgreementContractor.pdf)
N/A	J	HIPAA Business Associate Agreement
N/A	K	Mercury Affidavit
N/A	L	Location of the Performance of Services Disclosure
5 Business Days after recommended award	M	Sample Task Order (included in this TORFP)
N/A	N	DHS Hiring Agreement
With Proposal	O	Construction Schedule (separate document)
With Proposal	P	Prevailing Wage Rate Documentation (separate document)
N/A (informational only)	Q	Technical Specifications (separate document)
N/A (informational only)	R	Foundation Inspection (separate document)
N/A (informational only)	S	250 Foot State Tower Loading Plan (separate document)
N/A (informational only)	T	Typical Equipment Shelter without Generator (separate document)
N/A (informational only)	U	Tower Layout (separate document)
N/A (informational only)	V	Geo-tech-boring logs (separate document)
N/A (informational only)	W	Closeout Process Final (separate document)
N/A (informational only)	X	Reserved
N/A (informational only)	Y	Construction Drawings (separate document)
N/A (informational only)	Z	Typical Generator Shelter (separate document)

When to Submit	Label	Attachment Name
When to Submit	**Label**	**Appendix Name**
n/a	1	Abbreviations and Definitions (included in this TORFP)
With Proposal	2	Offeror Information Sheet (see link at http://procurement.maryland.gov/wp-content/uploads/sites/12/2018/04/Appendix2-Bidder_OfferorInformationSheet.pdf)
5 Business Days after recommended award	3	Performance Bond
5 Business Days after recommended award	4	Payment Bond
With Proposal	5	Proposal Bond
5 Business Days after recommended award	N/A	Evidence of meeting insurance requirements (see **Section 3.4**); 1 copy

Attachment A. TO Pre-Proposal Conference Response Form

Solicitation Number F50B9400034

Georgia Avenue SHA Communications Tower

A TO Pre-proposal conference will be held on September 17, 2019 11:00 AM, at Georgia Avenue SHA Communications Tower Site MD. 200 (ICC) & MD Route 97 (Georgia Ave.) Olney, Md. 20853

Grid Coordinates: Latitude: N39-07-09.10, Longitude: W77-04-32.80.

Please return this form no later than September 12, 2019, 3:00 PM, advising whether or not you plan to attend. The completed form should be returned via e-mail or fax to the TO Procurement Officer at the contact information below:

Dominic Edet
Procurement Officer
DoIT
E-mail: dominic.edet2@maryland.gov

Please indicate:

_____ Yes, the following representatives will attend.
Attendees (Check the TORFP for limits to the number of attendees allowed):
1.
2.
3.

_____ No, we will not attend.

Please specify whether any reasonable accommodations are requested (see TORFP § 4.1"TO Pre-proposal conference"):

Offeror: _____
Offeror Name (please print or type)

By: _____
Signature/Seal

Printed Name: _____
Printed Name

Title: _____
Title

Date: _____
Date

Directions to the TO Pre-Proposal Conference

Take Md. Rt. 97 south through Olney, Md. To just prior to the ICC (MD. Rt.200) Site access is off the right shoulder of Rt. 97 Georgia ave.

Grid Coordinates: Latitude: N39-07-09.10, Longitude: W77-04-32.80

Attachment B. TO Financial Proposal Instructions & Form TORFP # F50B9400034

See separate Excel TO Price Sheet labeled Attachment B - Georgia Avenue SHA Communications Tower Price Proposal.xls.

Attachment C. Bid/Proposal Affidavit

See link at http://procurement.maryland.gov/wp-content/uploads/sites/12/2018/04/AttachmentC-Bid_Proposal-Affidavit.pdf.

Attachment D. Minority Business Enterprise (MBE) Forms

See link at http://procurement.maryland.gov/wp-content/uploads/sites/12/2018/05/AttachmentDMBE-Forms-1.pdf.

Attachment E. Veteran-Owned Small Business Enterprise (VSBE) Forms

This solicitation does not include a Veteran-Owned Small Business Enterprise goal.

Attachment F. Maryland Living Wage Affidavit of Agreement for Service Contracts

See link at http://procurement.maryland.gov/wp-content/uploads/sites/12/2018/04/AttachmentF-LivingWageAffidavit.pdf to complete the Affidavit.

A. This contract is subject to the Living Wage requirements under Md. Code Ann., State Finance and Procurement Article, Title 18, and the regulations proposed by the Commissioner of Labor and Industry (Commissioner). The Living Wage generally applies to a Contractor or subcontractor who performs work on a State contract for services that is valued at $100,000 or more. An employee is subject to the Living Wage if he/she is at least 18 years old or will turn 18 during the duration of the contract; works at least 13 consecutive weeks on the State Contract and spends at least one-half of the employee's time during any work week on the State Contract.

B. The Living Wage Law does not apply to:

(1) A Contractor who:

(a) Has a State contract for services valued at less than $100,000, or

(b) Employs 10 or fewer employees and has a State contract for services valued at less than $500,000.

(2) A subcontractor who:

(a) Performs work on a State contract for services valued at less than $100,000,

(b) Employs 10 or fewer employees and performs work on a State contract for services valued at less than $500,000, or

(c) Performs work for a Contractor not covered by the Living Wage Law as defined in B(1)(b) above, or B (3) or C below.

(3) Service contracts for the following:

(a) Services with a Public Service Company;

(b) Services with a nonprofit organization;

(c) Services with an officer or other entity that is in the Executive Branch of the State government and is authorized by law to enter into a procurement ("Unit"); or

(d) Services between a Unit and a County or Baltimore City.

C. If the Unit responsible for the State contract for services determines that application of the Living Wage would conflict with any applicable Federal program, the Living Wage does not apply to the contract or program.

D. A Contractor must not split or subdivide a State contract for services, pay an employee through a third party, or treat an employee as an independent Contractor or assign work to employees to avoid the imposition of any of the requirements of Md. Code Ann., State Finance and Procurement Article, Title 18.

E. Each Contractor/subcontractor, subject to the Living Wage Law, shall post in a prominent and easily accessible place at the work site(s) of covered employees a notice of the Living Wage Rates, employee rights under the law, and the name, address, and telephone number of the Commissioner.

F. The Commissioner shall adjust the wage rates by the annual average increase or decrease, if any, in the Consumer Price Index for all urban consumers for the Washington/Baltimore metropolitan

area, or any successor index, for the previous calendar year, no later than 90 days after the start of each fiscal year. The Commissioner shall publish any adjustments to the wage rates on the Division of Labor and Industry's website. An employer subject to the Living Wage Law must comply with the rate requirements during the initial term of the contract and all subsequent renewal periods, including any increases in the wage rate, required by the Commissioner, automatically upon the effective date of the revised wage rate.

G. A Contractor/subcontractor who reduces the wages paid to an employee based on the employer's share of the health insurance premium, as provided in Md. Code Ann., State Finance and Procurement Article, §18-103(c), shall not lower an employee's wage rate below the minimum wage as set in Md. Code Ann., Labor and Employment Article, §3-413. A Contractor/subcontractor who reduces the wages paid to an employee based on the employer's share of health insurance premium shall comply with any record reporting requirements established by the Commissioner.

H. A Contractor/subcontractor may reduce the wage rates paid under Md. Code Ann., State Finance and Procurement Article, §18-103(a), by no more than 50 cents of the hourly cost of the employer's contribution to an employee's deferred compensation plan. A Contractor/subcontractor who reduces the wages paid to an employee based on the employer's contribution to an employee's deferred compensation plan shall not lower the employee's wage rate below the minimum wage as set in Md. Code Ann., Labor and Employment Article, §3-413.

I. Under Md. Code Ann., State Finance and Procurement Article, Title 18, if the Commissioner determines that the Contractor/subcontractor violated a provision of this title or regulations of the Commissioner, the Contractor/subcontractor shall pay restitution to each affected employee, and the State may assess liquidated damages of $20 per day for each employee paid less than the Living Wage.

J. Information pertaining to reporting obligations may be found by going to the Division of Labor and Industry website http://www.dllr.state.md.us/labor/prev/livingwage.shmtl and clicking on Living Wage for State Service Contracts.

Attachment G. Federal Funds Attachments

This solicitation does not include a Federal Funds Attachment.

Attachment H. Conflict of Interest Affidavit and Disclosure

See link at http://procurement.maryland.gov/wp-content/uploads/sites/12/2018/04/AttachmentH-ConflictofInterestAffidavit.pdf.

Attachment I. Non-Disclosure Agreement (TO Contractor)

This solicitation does not require a Non-Disclosure Agreement.

Attachment J. HIPAA Business Associate Agreement

This solicitation does not require a HIPAA Business Associate Agreement.

Attachment K. Mercury Affidavit

This solicitation does not include the procurement of products known to include mercury as a component.

Attachment L. Location of the Performance of Services Disclosure

This solicitation does not require a Location of the Performance of Services Disclosure.

Attachment M. Task Order Agreement

CATS+ TORFP#F50B9400034 OF
MASTER CONTRACT #060B2490023

This Task Order Agreement ("TO Agreement") is made this day of Month, 20XX by and between _____(TO Contractor) and the STATE OF MARYLAND, Department of Information Technology (DoIT or the "Department").

IN CONSIDERATION of the mutual promises, the covenants herein contained, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties agree as follows:

1. Definitions. In this TO Agreement, the following words have the meanings indicated:

   a. "Agency" means Department of Information Technology (DoIT), as identified in the CATS+ TORFP # F50B9400034.

   b. "CATS+ TORFP" means the Task Order Request for Proposals #, dated MONTH DAY, YEAR, including any addenda and amendments.

   c. "Master Contract" means the CATS+ Master Contract between the Maryland Department of Information Technology and TO Contractor.

   d. "TO Procurement Officer" means [TO Procurement Officer]. The Department may change the TO Procurement Officer at any time by written notice.

   e. "TO Agreement" means this signed TO Agreement between DoIT and TO Contractor.

   f. "TO Contractor" means the CATS+ Master Contractor awarded this TO Agreement, whose principal business address is _____.

   g. "TO Manager" means Ed Macon. The Department may change the TO Manager at any time by written notice to the TO Contractor.

   h. "TO Technical Proposal" means the TO Contractor's technical response to the CATS+ TORFP dated date of TO Technical Proposal.

   i. "TO Financial Proposal" means the TO Contractor's financial response to the CATS+ TORFP dated date of TO Financial Proposal.

   j. "TO Proposal" collectively refers to the TO Technical Proposal and TO Financial Proposal.

2. Scope of Work

2.1 This TO Agreement incorporates all of the terms and conditions of the Master Contract and shall not in any way amend, conflict with or supersede the Master Contract.

2.2 The TO Contractor shall, in full satisfaction of the specific requirements of this TO Agreement, provide the services set forth in Section 3 of the CATS+ TORFP. These services shall be provided in accordance with the Master Contract, this TO Agreement, and the following Exhibits, which are attached and incorporated herein by reference. If there is any conflict among the Master Contract, this TO Agreement, and these Exhibits, the terms of the Master Contract shall govern. If there is any conflict between this TO Agreement and any of these Exhibits, the following order of precedence shall determine the prevailing provision:

The TO Agreement,

Exhibit A – CATS+ TORFP

Exhibit B – TO Technical Proposal

Exhibit C – TO Financial Proposal

2.3 The TO Procurement Officer may, at any time, by written order, make changes in the work within the general scope of the TO Agreement. No other order, statement or conduct of the TO Procurement Officer or any other person shall be treated as a change or entitle the TO Contractor to an equitable adjustment under this Section. Except as otherwise provided in this TO Agreement, if any change under this Section causes an increase or decrease in the TO Contractor's cost of, or the time required for, the performance of any part of the work, whether or not changed by the order, an equitable adjustment in the TO Agreement price shall be made and the TO Agreement modified in writing accordingly. The TO Contractor must assert in writing its right to an adjustment under this Section within thirty (30) days of receipt of written change order and shall include a written statement setting forth the nature and cost of such claim. No claim by the TO Contractor shall be allowed if asserted after final payment under this TO Agreement. Failure to agree to an adjustment under this Section shall be a dispute under the Disputes clause of the Master Contract. Nothing in this Section shall excuse the TO Contractor from proceeding with the TO Agreement as changed.

3. Time for Performance

The TO Contractor shall provide the services described in the TO Proposal in accordance with the CATS+ TORFP on receipt of a Notice to Proceed from the TO Manager. The term of this TO Agreement shall commence on the date the TO Agreement is fully executed and, unless terminated earlier as provided in the Master Contract, conclude upon completion of the scope of work in accordance with the CATS+ TORFP.

4. Consideration and Payment

4.1 In consideration of its performance hereunder, the TO Contractor shall be paid the fixed price of $..... .

4.2 Payments to the TO Contractor shall be made as outlined Section 3 of the CATS+ TORFP, but no later than thirty (30) days after the Department's receipt of a proper invoice for services provided by the TO Contractor, acceptance by the Department of services provided by the TO Contractor, and pursuant to the conditions outlined in Section 4 of this Agreement.

4.3 Each invoice for services rendered must include the TO Contractor's Federal Tax Identification Number which is _____. Charges for late payment of invoices other than as prescribed by Title 15, Subtitle 1, of the State Finance and Procurement Article, Annotated Code of Maryland, as from time-to-time amended, are prohibited. Invoices must be submitted to the TO Manager unless otherwise specified herein.

4.4 In addition to any other available remedies, if, in the opinion of the TO Procurement Officer, the TO Contractor fails to perform in a satisfactory and timely manner, the TO Procurement Officer may refuse or limit approval of any invoice for payment, and may cause payments to the TO Contractor to be reduced or withheld until such time as the TO Contractor meets performance standards as established by the TO Procurement Officer.

4.5 Liquidated Damages for MBE

1. The Master Contract requires the Master Contractor to comply in good faith with the MBE Program and Master Contract provisions. The State and the Master Contractor acknowledge and agree that the State will incur damages, including but not limited to loss of goodwill, detrimental impact on economic development, and diversion of internal staff resources, if the Master Contractor does not comply in good faith with the requirements of the MBE Program and MBE Contract provisions. The parties further acknowledge and agree that the damages the State might reasonably

be anticipated to accrue as a result of such lack of compliance are difficult to ascertain with precision.

2. Therefore, upon issuance of a written determination by the State that the Master Contractor failed to comply in good faith with one or more of the specified MBE Program requirements or MBE Contract provisions, the Master Contractor shall pay liquidated damages to the State at the rates set forth below. The Master Contractor expressly agrees that the State may withhold payment on any invoices as a set-off against liquidated damages owed. The Master Contractor further agrees that for each specified violation, the agreed upon liquidated damages are reasonably proximate to the loss the State is anticipated to incur as a result of such violation.

(a) Failure to submit each monthly payment report in full compliance with COMAR 21.11.03.13B (3): $20.00 per day until the monthly report is submitted as required.

(b) Failure to include in its agreements with MBE subcontractors a provision requiring submission of payment reports in full compliance with COMAR 21.11.03.13B (4): $50.00 per MBE subcontractor.

(c) Failure to comply with COMAR 21.11.03.12 in terminating, canceling, or changing the scope of work/value of a contract with an MBE subcontractor and amendment of the MBE participation schedule: the difference between the dollar value of the MBE participation commitment on the MBE participation schedule for that specific MBE firm and the dollar value of the work performed by that MBE firm for the Contract.

(d) Failure to meet the Master Contractor's total MBE participation goal and sub goal commitments: the difference between the dollar value of the total MBE participation commitment on the MBE participation schedule and the MBE participation actually achieved.

(e) Failure to promptly pay all undisputed amounts to an MBE subcontractor in full compliance with the prompt payment provisions of the Contract: $100.00 per day until the undisputed amount due to the MBE subcontractor is paid.

2 Notwithstanding the assessment or availability of liquidated damages, the State reserves the right to terminate the Task Order and exercise any and all other rights or remedies, which may be available under the Task Order or Law.

SIGNATURES ON NEXT PAGE

IN WITNESS THEREOF, the parties have executed this TO Agreement as of the date hereinabove set forth.

TO Contractor Name

_____ _____

By: Type or Print TO Contractor POC Date

Witness: _____

STATE OF MARYLAND, DoIT

_____ _____

By: Michael G. Leahy, Secretary Date

Witness: _____

Approved for form and legal sufficiency this _____ day of _____ 20___.

_____

Assistant Attorney General

Attachment N. DHS Hiring Agreement

This solicitation does not require a DHS Hiring Agreement.

Attachment O. Construction Schedule

Attached as a separate document.

Attachment P. Prevailing Wage Rate Documentation

Attached as a separate document.

Attachment Q. Technical Specifications – Georgia Avenue

Attached as a separate document.

Attachment R. Foundation Inspection

Attached as a separate document.

Attachment S. Typical 250 Foot State Tower Loading Plan

Attached as a separate document.

Attachment T. Typical Equipment Shelter Without Generator

Attached as a separate document.

Attachment U. Typical Tower Layout

Attached as a separate document.

Attachment V. Geo-Tech-Boring Logs

Attached as a separate document.

Attachment W. Closeout Acceptance Standards

Attached as a separate document.

Attachment X. Reserved

Reserved.

Attachment Y. Construction Drawings

Attached as a separate document.

Attachment Z. Typical Generator Shelter

Attached as a separate document.

Appendix 1 Abbreviations and Definitions

A. Business Day(s) – The official working days of the week to include Monday through Friday. Official working days excluding State Holidays (see definition of "Normal State Business Hours" below).

B. COMAR – Code of Maryland Regulations available on-line at http://www.dsd.state.md.us/COMAR/ComarHome.html.

C. Effective Date - The date of mutual TO Agreement execution by the parties

D. Local Time – Time in the Eastern Time Zone as observed by the State of Maryland. Unless otherwise specified, all stated times should be Local Time, even if not expressly designated as such.

E. Minority Business Enterprise (MBE) – Any legal entity certified as defined at COMAR 21.01.02.01B (54) which is certified by the Maryland Department of Transportation under COMAR 21.11.03.

F. Normal State Business Hours - Normal State business hours are 8:00 a.m. – 5:00 p.m. Monday through Friday except State Holidays, which can be found at: www.dbm.maryland.gov – keyword: State Holidays.

G. Notice to Proceed (NTP) – A written notice from the TO Procurement Officer that work under the Task Order, project or Work Order (as applicable) is to begin as of a specified date. The NTP Date is the start date of work under the Task Order, project or Work Order. Additional NTPs may be issued by either the TO Procurement Officer or the TO Manager regarding the start date for any service included within this solicitation with a delayed or non-specified implementation date.

H. NTP Date – The date specified in a NTP for work on Task Order, project or Work Order to begin.

I. Offeror – A Master Contractor that submits a Proposal in response to this TORFP.

J. State – The State of Maryland.

K. Source Code – Executable instructions for Software in its high level, human readable form

L. Task Order (TO) – The scope of work described in this TORFP.

M. TO Agreement - The contract awarded to the successful Offeror pursuant to this Task Order Request for Proposals, the form of which is attached to this TORFP as **Attachment H.**

N. TO Contractor Personnel - Employees and agents and subcontractor employees and agents performing work at the direction of the TO Contractor under the terms of the Task Order awarded from this TORFP.

O. TO Proposal – As appropriate, either or both of an Offeror's TO Technical or TO Financial Proposal.

P. Veteran-owned Small Business Enterprise (VSBE) – A business that is verified by the Center for Verification and Evaluation (CVE) of the United States Department of Veterans Affairs as a veteran-owned small business. See Code of Maryland Regulations (COMAR) 21.11.13.

Appendix 2 Offeror Information Sheet

Offeror	
Company Name	
Street Address	
City, State, Zip Code	
TO Contractor Federal Employer Identification Number (FEIN)	
TO Contractor eMM ID number	As of the date of Proposal submission, are you registered to do business with the state of Maryland?
SBE / MBE/ VSBE Certification	
SBE	Number: Expiration Date:
VSBE	Number: Expiration Date:
MBE	Number: Expiration Date: Categories to be applied to this solicitation (dual certified firms must choose only one category).
Offeror Primary Contact	
Name	
Title	
Office Telephone number (with area code)	
Cell Telephone number (with area code)	
e-mail address	
Authorized Offer Signatory	
Name	
Title	
Office Telephone number (with area code)	
Cell Telephone number (with area code)	
e-mail address	

Appendix 3 Performance Bond

PERFORMANCE BOND

Principal	Business Address of Principal
Surety A corporation of the State of and authorized to do business in the State of Maryland	Obligee STATE OF MARYLAND By and though the following Administration
Penal Sum of Bond (express in words and figures) Description of Task Order Georgia Avenue SHA Communications Tower Site Preparation Task Order Number: XXX	(Date of TO Agreement), 20__ Date Bond Executed , 20__

KNOW ALL MEN BY THESE PRESENTS, that we, the Principal named above and Surety named above, are held and firmly bound unto the Obligee named above in the Penal Sum of this Performance Bond stated above, for the payment of which Penal Sum we bind ourselves, our heirs, executors, administrators, personal representatives, successors, and assigns, jointly and severally, firmly by these presents. However, where Surety is composed of corporations acting as co-sureties, we the co-sureties, bind ourselves, our successors and assigns, in such Penal Sum jointly and severally as well as severally only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each co-surety binds itself, jointly and severally with the Principal, for the payment of such sum as appears above its name below, but if no limit of liability is indicated, the limit of such liability shall be the full amount of the Penal Sum.

WHEREAS, Principal has entered into or will enter into a contract with the State of Maryland, by and through the Administration named above acting for the State of Maryland, which contract is described and dated as shown above, and incorporated herein by reference. The contract and all items incorporated into the contract, together with any and all changes, extensions of time, alterations, modifications, or additions to the contract or to the work to be performed thereunder or to the Plans, Specifications, and Special Provisions, or any of them, or to any other items incorporated into the contract shall hereinafter be referred as "the TO Agreement."

WHEREAS, it is one of the conditions precedent to the final award of the TO Agreement that these presents be executed.

NOW, THEREFORE, during the original term of said TO Agreement, during any extensions thereto that may be granted by the Administration and during the guarantee and warranty period, if any, required under the TO Agreement, unless otherwise stated therein, this Performance Bond shall remain in full force and effect unless and until the following terms and conditions are met:

1. Principal shall well and truly perform the TO Agreement; and

2. Principal and Surety shall comply with the terms and conditions in this Performance Bond.

Whenever Principal shall be declared by the Administration to be in default under the TO Agreement, the Surety may, within 15 days after notice of default from the Administration, notify the Administration of

its election to either promptly proceed to remedy the default or promptly proceed to complete the contract in accordance with and subject to its terms and conditions. In the event the Surety does not elect to exercise either of the above stated options, then the Administration thereupon shall have the remaining contract work completed, Surety to remain liable hereunder for all expenses of completion up to but not exceeding the penal sum stated above.

The Surety hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the TO Agreement or to the work to be performed thereunder or the Specifications accompanying the same shall in any way affect its obligation on this Performance Bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the TO Agreement or to the work or to the Specifications.

This Performance Bond shall be governed by and construed in accordance with the laws of the State of Maryland and any reference herein to Principal or Surety in the singular shall include all entities in the plural who or which are signatories under the Principal or Surety heading below.

IN WITNESS WHEREOF, Principal and Surety have set their hands and seals to this Performance Bond. If any individual is a signatory under the Principal heading below, then each such individual has signed below on his or her own behalf, has set forth below the name of the firm, if any, in whose name he or she is doing business, and has set forth below his or her title as a sole proprietor. If any partnership or joint venture is a signatory under the Principal heading below, then all members of each such partnership or joint venture have signed below, each member has set forth below the name of the partnership or joint venture, and each member has set forth below his or her title as a general partner, limited partner, or member of joint venture, whichever is applicable. If any corporation is a signatory under the Principal or Surety heading below, then each such corporation has caused the following: the corporation's name to be set forth below, a duly authorized representative of the corporation to affix below the corporation's seal and to attach hereto a notarized corporate resolution of power of attorney authorizing such action, and each such duly authorized representative to sign below and set forth below his or her title as a representative of the corporation. If any individual acts as a witness to any signature below, then each such individual has signed below and has set forth below his or her title as a witness. All of the above has been done as of the Date of Bond shown above.

Individual Principal

In Presence of:
Witness

_____ as to _____ (SEAL)

(Name)

Co-Partnership Principal

In Presence of:
Witness

_____ as to _____ (SEAL)

(Name of Co-Partnership)

_____ as to _____ (SEAL)
Partner

_____ as to _____ (SEAL)
Partner

_____ as to	_____ (SEAL)
	Partner
	Corporate Principal
Attest:	_____ (Name of Corporation) AFFIX CORPORATE SEAL
_____	By: _____
Corporate Secretary	President
Attest:	
_____	_____
Signature	(Individual or Corporate Surety)
Bonding Agent's Name:	By: _____ SEAL
_____	
Agent's Address:	Title: _____
_____	_____
_____	(Business Address of Surety)

Approved as to form and legal sufficiency this ____ day of _____ 20___

_____

Assistant Attorney General

Appendix 4 Payment Bond

PAYMENT BOND

Principal	Business Address of Principal
Surety A corporation of the State of and authorized to do business in the State of Maryland	Obligee STATE OF MARYLAND By and though the following Administration
Penal Sum of Bond (express in words and figures) Description of Task Order: Georgia Avenue SHA Communications Tower Site Preparation Task Order Number: XXX	(Date of TO Agreement), 20__ Date Bond Executed , 20__

KNOW ALL MEN BY THESE PRESENTS, That we, the Principal named above and Surety named above, being authorized to do business in Maryland, and having business address as shown above, are held and firmly bound unto the Obligee named above, for the use and benefit of claimants as hereinafter defined, in the Penal Sum of this Payment Bond stated above, for the payment of which Penal Sum we bind ourselves, our heirs, executors, administrators, personal representatives, successors, and assigns, jointly and severally, firmly by these co-sureties, bind ourselves, our successors and assigns, in such Penal Sum jointly and severally as well as severally only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each co-surety binds itself, jointly and severally with the Principal, for the payment of such sum as appears above its name below, but if no limit of liability is indicated, the limit of such liability shall be the full amount of the Penal Sum.

WHEREAS, Principal has entered into or will enter into a contract with the State, by and through the Administration named above acting for the State of Maryland, which contract is described and dated as shown above, and incorporated herein by reference. The contract and all items incorporated into the contract, together with any and all changes, extensions of time, alterations, modifications, or additions to the contract or to the work to be performed thereunder or to the Plans, Specifications, and Special Provisions, or any of them, or to any other items incorporated into the contract shall hereinafter be referred to as the "TO Agreement".

WHEREAS, it is one of the conditions precedent to the final award of the TO Agreement that these presents be executed.

NOW THEREFORE, the condition of this obligation is such that if the Principal shall promptly make payment to all claimants as hereinafter defined, for all labor and materials furnished, supplied and reasonably required for use in the performance of the TO Agreement, then this obligation shall be null and void; otherwise it shall remain in full force and effect, subject to the following conditions:

1. A claimant is defined to be any and all of those persons supplying labor and materials (including lessors of the equipment to the extent of the fair market value thereof) to the Principal or its subcontractors and subcontractors in the prosecution of the work provided for in the TO Agreement, entitled to the protection provided by Section 9-113 of the Real Property Article of the Annotated Code of Maryland, as from time to time amended.

2. The above named Principal and Surety hereby jointly and severally agree with the Obligee that every claimant as herein defined, who has not been in full may, pursuant to and when in compliance with the provisions of the aforesaid Section 9-113, sue on this Bond for the use of such claimant, prosecute the suit to final judgment for such sum or sums as may be justly due claimant and have execution thereon. The Obligee shall not be liable for the payment of any costs or expenses of any such suit.

The Surety hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the TO Agreement or to the work to be performed thereunder or the Specifications accompanying the same shall in any way affect its obligation on this Payment Bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the TO Agreement or to the work or to the Specifications.

This Payment Bond shall be governed by and construed in accordance with the laws of the State of Maryland and any reference herein to Principal or Surety in the singular shall include all entities in the plural who or which are signatories under the Principal or Surety heading below.

IN WITNESS WHEREOF, Principal and Surety have set their hands and seals to this Payment Bond. If any individual is a signatory under the Principal heading below, then each such individual has signed below on his or her own behalf, has set forth below the name of the firm, if any, in whose name he or she is doing business, and has set forth below his or her title as a sole proprietor. If any partnership or joint venture is a signatory under the Principal heading below, then all members of each such partnership or joint venture have signed below, each member has set forth below the name of the partnership or joint venture, and each member has set forth below his or her title as a general partner, limited partner, or member of joint venture, whichever is applicable. If any corporation is a signatory under the Principal or Surety heading below, then each such corporation has caused the following: the corporation's name to be set forth below, a duly authorized representative of the corporation to affix below the corporation's seal and to attach hereto a notarized corporate resolution of power of attorney authorizing such action, and each such duly authorized representative to sign below and set forth below his or her title as a representative of the corporation. If any individual acts as a witness to any signature below, then each such individual has signed below and has set forth below his or her title as a witness. All of the above has been done as of the Date of Bond shown above.

Individual Principal

In Presence of:
Witness

_____ as to _____ (Name)

_____ (SEAL)

Co-Partnership Principal

In Presence of:
Witness

_____ as to _____ (Name of Co-Partnership)

_____ (SEAL)
Partner

_____ as to _____ (SEAL)
Partner

_____ as to	_____ (SEAL)
	Partner
	Corporate Principal
Attest:	_____ (Name of Corporation) AFFIX CORPORATE SEAL
_____	By: _____
Corporate Secretary	President
Attest:	
_____	_____
Signature	(Individual or Corporate Surety)
Bonding Agent's Name:	By: _____ SEAL
_____	
Agent's Address:	Title: _____
_____	_____
_____	(Business Address of Surety)

Approved as to form and legal sufficiency this ____ day of _____ 20___

_____

Assistant Attorney General

Appendix 5 Proposal/Bid Bond

PROPOSAL/BID BOND

Bond No. _____

We, _____ as Principal, hereinafter called the Principal, and _____, a corporation duly organized under the laws of the State of _____, as Surety, hereinafter called the Surety, are held and firmly bound unto the State of Maryland, hereinafter called "State", for the sum of _____ for the payment of which sum, the Principal and the Surety bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted a bid for (Identify project by number and brief description):

NOW, THEREFORE, if the Principal, upon acceptance by the State of its bid identified above, within the period specified therein for acceptance (ninety (90) days, if no period is specified), shall execute such further contractual documents, if any, and give such bond(s) as may be required by the terms of the bid as accepted within the time specified (ten (10) days if no period is specified) after receipt of the forms, or in the event of failure so to execute such further contractual documents and give such bonds, if the Principal shall pay the State the difference not to exceed the penalty hereof between the amount specified in Principal's bid and such larger amount for which the State may in good faith contract with another party to perform the work covered by said bid, then the above obligation shall be void and of no effect.

The Surety executing this instrument hereby agrees that its obligation shall not be impaired by any extension(s) of the time for acceptance of the bid that the Principal may grant to the State, notice of which extension(s) to the Surety being hereby waived; provided that such waiver of notice shall apply only with respect to extensions aggregating not more than ninety (90) calendar days in addition to the period originally allowed for acceptance of the bid.

Individual Principal

_____
(Name)

In Presence of:
Witness

_____ as to _____ (SEAL)

Partnership Principal

_____
(Name)

In Presence of:
Witness

_____ as to _____ (SEAL)
Partner

_____ as to _____ (SEAL)
Partner

_____ as to _____ (SEAL)
Partner

Corporate Principal

Attest:

(Name of Corporation) AFFIX SEAL

By:

Secretary

President

Attest:

(Surety)

By:

Attorney-in-fact AFFIX SEAL

Bonding Agent's Name

Agent's Address:

Approved as to form and legal sufficiency this ____ day of _____ 20___

Assistant Attorney General

ATTACHMENT- Q
TECHNICAL SPECIFICATIONS
GEORGIA AVENUE SHA COMMUNICATIONS TOWER
TORFP WORK #F50B9400034

1. Summary

This task order is for the purchase and turnkey installation of:

- one (1) 250-foot self-supporting tower
- one (1) 12x38 ft. concrete equipment shelter foundation
- one (1) 12x12x10-foot generator shelter foundation
- one (1) 12x12 ft. generator shelter containing a 75kW backup generator
- one (1) 12x38x10-foot equipment shelter
- one (1) 1000 gallon propane tank with foundation for the State Highway Administration at the following location:

GEORGIA AVENUE SHA COMMUNICATIONS TOWER
N.W. quadrant of interchange of MD. Rt. 200(ICC) & Md. Rt. 97(Georgia Ave.)
Olney, Montgomery County, MD 20832
Grid Coordinates: Latitude: N39-07-09.12 Longitude: W77-04-32.80

The TO Contractor shall comply with all applicable sections of the MD State Highway Administration Standards of Construction Specifications for Construction and Materials, July 2008 (Grey Book).

TO Contractors will only use approved tower and shelter designs. The following manufacturers have preapproved designs:

Nello Towers www.nelloinc.com
Tower Innovations www.towerinnovations.net
Sabre Towers www.sabreindustriesinc.com
Valmont www.Valmont.com

Cellxion www.cellxion.com
Fibrebond www.fibrebond.com
Thermobond www.thermobond.com

The TO Procurement Officer's prior approval must be obtained for use of anything other than the foregoing.

2. TORFP Specifications

The TO Contractor shall provide all coordination, functions, labor, materials, insurance and purchase items required to install a fully functional microwave and wireless communications site in accordance with the following specifications:

A. Site Preparation Work

1. Locating of any buried electrical and/or telephone cables on all of the property affected by the tower site construction and installation of electrical and communications conduits shall be completed by the TO Contractor.

2. The TO Contractor shall follow the approved sequence of construction as shown in the attached construction drawings. Any deviations must be approved by the County and/or the DOIT project manager, as required.

3. TO Contractor may use subcontractors who have experience in civil / site work, Erosion and Sediment Control (E&S) implementation and Storm Water Management (SWM) and Storm Drain (SD) construction, in the context of SHA projects and, if required, to meet Maryland Department of the Environment (MDE) requirements. TO Contractor without green and yellow cards must use approved subcontractors to install and maintain soil and erosion controls who do have these certificates.

4. TO Contractor shall, if applicable, coordinate and meet with the appropriate inspectors to obtain and ensure compliance with permits and regulations, if required, for maintaining sediment and erosion control. This shall be done prior to any construction.

5. The TO Contractor shall maintain any required E&S controls for the duration of the project. Failure to do so may result in liquidated damages.

6. The TO Contractor shall survey and mark the Limits of Disturbance (LOD) in accordance with the attached construction drawings.

7. The TO Contractor shall, if required, furnish and install sediment and erosion control systems and **any necessary** storm water management features in accordance with the attached drawings. Sediment and erosion control systems

may include, but are not limited to: silt fencing, silt stakes, hay bales, etc. Disposition of any spoils shall be conducted in accordance with the most current version of MDE policy. Details are provided in *Attachment Y - Construction Drawings*. Deviations from the drawings require County or MDE approval, as appropriate. **A watertight container shall be placed on site to contain up to and including the following: Approved Construction drawings, daily completed SWM/ES inspection logs, all applicable permits for construction, and copies of all materials related to the construction of the site (i.e., concrete delivery tickets, stone delivery tickets, MDI, etc.). The container must be placed in a conspicuous location on the site.** The site will be subject to random and scheduled inspections. Sites left dormant shall be stabilized prior to departure in accordance with County or MDE standards, as appropriate. Sites are subject to inspection even during dormant periods. Maintenance of all E&S measures shall be required until approval is granted to remove each feature. One individual, designated by the TO Contractor, shall be responsible for the supervision of all E&S controls and issues. This individual shall have a current green and yellow card.

8. The TO Contractor shall furnish and install a stabilized construction entrance and access road in accordance with the construction drawings with particular attention being paid to the protection of the buried water supply pipe which runs across the access road. Requirements for the protection of this pipe are included in the construction drawings – *Attachment Y*. Near completion of the site improvement,s the stabilized construction entrance shall be restored to match the grade of the existing access road in accordance with the approved construction drawings.

9. All concrete supplied shall originate from a State certified / SHA approved plant. Supplied concrete shall meet SHA, tower designer specifications and comply with Section 902 of the Grey Book. TO Contractors shall use an SHA approved concrete mix that complies with the tower and shelter foundation design specifications.

10. The TO Contractor shall construct the tower foundation per tower manufacturer's specifications using the geo-technical information provided in *Attachment V- Geo-tech – Ga. Ave and Md.200 (ICC).*

11. The TO Contractor shall construct one (1) 12x38ft. equipment shelter foundation and one (1) 12x12ft. generator shelter foundation. The foundation designs shall be approved by the shelter manufacturer. At a minimum, footers shall extend at least 6 IN below the local frost line. The construction of each concrete foundation shall contain integrated continuous stoops for the doors.

12. The TO Contractor shall construct one (1) 4x20ft. concrete foundation for one (1) 1,000 gallon LP fuel tank. The foundation shall be constructed on compacted dirt and no less than 3 IN of 57 stone. The foundation shall be at least six inches above final grade and be reinforced with rebar or 6x6 metal mesh.

13. The TO Contractor shall install tower and shelter ground rings per the latest version of Motorola R56 installation standards. This shall include at least two test wells. Test wells shall not interfere with vehicular traffic. Locations shall be verified by the State Project Manager.

14. Upon completion of tower, shelter and site improvements, the TO Contractor shall furnish and install surface materials in accordance with *Attachment Y- Construction Drawings*. TO Contractor shall restore all areas of grass or existing pavement which have been disturbed during construction.

15. The TO Contractor shall install an eight (8) ft. high galvanized chain-link fence with two (2) feet of barbed wire on top, with a twelve (12) ft. wide, double-leaf vehicle gate, and one (1) twelve (12) foot double-leaf access gate around the site (includes tower, equipment shelter and generator shelter foundation) as shown on *Attachment Y- Construction Drawings*. The fence materials shall be bonded /grounded in accordance with the latest version of R56. The TO Contractor shall utilize sufficiently sized insulated copper wire to bond the fence fabric and barbed wire. The insulation shall be UV rated and black or grey in color. If the copper is not tinned, anti-oxidation compound shall be furnished for any mechanical connections. The TO Contractor shall provide chains and combination style commercial grade padlocks for the vehicle and access gates. The State Project Manager shall be given the combination and shall control access to the site.

B. Tower Specifications

1. The tower shall be a solid steel leg constructed, self-supporting, 250-ft tower. The tower shall be constructed of high-strength steel. All components and hardware shall be hot-dip galvanized with a zinc coating (per EIA standards) after fabrication. A zinc coating shall be permanently fused to the steel, so all surfaces are protected and no painting is required for rust protection. Upon delivery, the tower shall be subject to approval by the State Project Manager.

2. Exact placement of the tower and shelter shall be coordinated by the TO Contractor with the State Project Manager.

3. The tower shall be required to meet or exceed the latest **EIA 222-H** standards for this type of tower. **It shall be designed to carry the number and type of antennas as per *Attachment S- Typical 250-ft State Tower Loading Plan*.**

The tower and associated installation shall conform to all local, County, State and Federal Equipment Shelter codes. The State of Maryland shall be responsible for obtaining Federal Aviation Administration (FAA) approval and permits. The tower shall be designed with the following 222-H design criteria:

Three second wind gust:	120 MPH
Three second wind gust concurrent with radial ice:	40 MPH
Concurrent radial ice:	1 INCH
Structure classification:	III
Exposure category:	B
Topographic category:	1
Crest Height:	350 Feet

4. The bottom 20 feet (minimum) of the tower shall have K-bracing construction to allow for ingress and egress under the tower. The top 60 ft. (minimum) of the tower shall contain no slope.

5. Spacing between tower legs shall not exceed 31 ft. If using a pad and pier foundation, keep the pad to no more than 45x45ft.

6. Proper and thorough grounding and bonding methods in accordance with currently published Motorola R56 standards shall be employed to provide maximum lightning protection.

7. The TO Contractor shall use soil borings supplied by the State for analysis to assure that the engineered tower foundation and the calculated ground loadings are acceptable. The TO Contractor shall furnish two (2) copies of the foundation designs and the ground loading calculations certified by a Maryland registered Professional Engineer (P.E.) to the Maryland State Department of Information Technology. The TO Contractor shall furnish a statement that the engineered tower foundations and the calculated ground loadings meet the manufacturer's recommended requirements**.**

8. Step bolts on one leg, safety climb and grounding bars shall be furnished and installed by the TO Contractor as part of the tower. Safety climb stand offs shall be of sufficient length to ensure the safety climb does not rub on the flanges. Step bolt mounts shall be permanently attached to the side of the climbing leg instead of the face/apex of the climbing leg. Tower ground bus bars shall be grounded to the tower ground ring and bonded directly to the tower structure through the use of stainless steel hardware. Tower ground bus bars shall be a minimum of ¼"x4"x24" (minimum 33 hole pairs) copper bars. One tower bus bar shall be provided for each shelter installed.

9. The tower shall be designed to accommodate two (2)"State" cable ladders (supplied by the TO Contractor) and one (1) "Cellular" cable ladder (supplied by others). The "State" cable ladders shall be designed in accordance with the *Tower Layout (Attachment-U)*. The "State" cable ladders shall be a "rail" configuration with cable ladder side rails and rungs to accommodate at least fifteen (15) ¾ IN snap-ins and be at least three (3) FT wide. If the cable ladders are required to meet, a single ladder shall extend to the top of the tower. The single cable ladder shall accommodate at least fifteen (15) ¾ IN snap-ins and be at least three (3) FT wide. The project manager shall determine where the two cable ladders meet and transition to the single cable ladder. The cable ladders shall be mounted on the same face and the outside edge of the tower. The ladders shall each originate on opposite outer edges of the face of the tower. They shall originate approximately one foot from the leg of the tower and will remain one foot from the edge of the tower. One foot edge spacing shall be maintained to the point where both cable ladders meet. From that point, a single cable ladder shall extend, centered on the face, to the top of the tower. Cable ladders shall not be positioned back to back. The "Cellular" cable ladder shall be designed in accordance with the *Tower Layout (Attachment-U)*. The cellular cable ladder shall be a "rail" configuration with cable ladder side rails and rungs to accommodate at least fifteen (15) ¾ in. snap-ins and be at least three (3) ft. wide and shall extend the full height of the tower. The feed lines shall be arranged in accordance with the *Tower Loading Plan (Attachment-S)*. Feed Lines' heights shall terminate at its corresponding antenna on the Tower Loading Plan. The tower shall be designed in compliance with the State loading plan, the above configuration and all other applicable sections of this task order.

10. All leg and leg flange PL material shall be ASTM A-572 grade 50 (F_y >= 50 ksi). All other material shall be ASTM A36 (F_y >= 36 ksi).

11. Anchor bolts shall comply with ASTM A449 and be any number or size determined by the tower designer to comply with the requested load requirements.

12. Tower foundation concrete strength shall be at least 4000 PSI or the tower foundation designer's recommendation; whichever is greater. Concrete testing shall be conducted in accordance with DoIT's concrete inspection policy memorandum (see *TORFP Attachment-R*). Test cylinders shall be crushed and results provided to the State Project Manager prior to stacking the tower. Tower erection shall NOT commence until verification is provided that the concrete has reached the minimum compressive strength. Compressive strength can be tested prior to 28 days to expedite the tower erection, but this does not exclude the TO Contractor's responsibility to supply 28 day crush reports.

13. Non-chloride, non-corrosive concrete set accelerate may be utilized in compliance with ASTM-C-494 type C and ACI-318.

14. Water reducing admixture may be utilized in compliance with ASTM-C-494.

15. All admixtures shall be dispensed into fresh concrete and sufficiently mixed. All admixtures must be added separately.

16. The TO Contractor shall ensure a minimum concrete cover of 3" on all steel.

17. The TO Contractor shall ensure crown top of piers for drainage and chamfer all exposed concrete edges 1".

18. The TO Contractor shall ensure compact backfill in 9" lifts and remove all forms prior to backfill.

19. The TO Contractor shall purchase and install tower lighting equipment on the 250 ft. tower (Total finished height of the tower including all appurtenances shall be 268 ft.) as per FAA Advisory Circular AC70/7460-1-G or latest revision according to the following specifications:

    i. The TO Contractor ***shall use tower lighting manufacturer trained and certified personnel*** to install tower lighting equipment on the 330 ft. tower.
    ii. The side markers shall be installed using stainless steel hose clamps, not plastic cable ties.
    iii. The tower lighting system shall be an all LED system by Flash Technology Systems (http://www.flashtechnology.com/) (Part # FTS370d LED SMART IR with NVG compatibility using infrared "IR" LEDs) or approved equivalent and manufactured to specifications for FAA type L-864/865 and FAA-AC 150/5345-43E.
    iv. The TO Contractor shall install a dual, medium intensity, Type E-1 LED system that provides a white flashing LED for day operation and a red flashing LED (with IR LED) for night operation as per FAA requirements. The L810 side markers shall also utilize NVG compatible LED technology. A 15 foot beacon extension assembly, with safety climb, shall be installed with flash head and lightning rod mounts and step bolts spaced alternately at approximately 15 inch intervals from the tower flange to the beacon. The beacon extension shall be centrally mounted and not anchored to just one tower leg. It shall be anchored to all three tower legs to distribute weight evenly. The beacon extension can be solid like the other legs on the tower or hollow, but no less than 4.5 IN outside diameter and a minimum of ¼ IN wall thickness. The design must be approved by the State Project Manager prior to shipment.

v. The lighting rod shall extend at least four (4) Ft. above the top of the beacon. No part of the lightning rod or mount that obstructs the beacon can be larger than 7/8" in diameter.

vi. The tower lighting system shall be supplied with remote and onsite diagnostics capabilities including software and direct connect cable.

vii. TO Contractor shall supply temporary power to the lighting controller until permanent power is supplied. This shall include all materials and labor to install temporary power and may include the use of a portable generator or a utility approved metering device, means of disconnect, and receptacles. Delays in permanent power will be evaluated on a case by case basis and solutions will be directed by the State Project Manager.

viii. The supplied tower lighting system shall include 5-year parts warranty.

ix. The lighting controller shall be bonded to the internal halo inside the generator room.

C. Equipment Shelter Specifications

12x38 ft. Single Compartment Equipment Shelter

1. Shelter installation shall be in conformance with manufacturer's requirements for application of warranties provided by the manufacturer, as well as be compliant with the current version of the Motorola R56 grounding requirements.

2. The equipment shelter supplied shall be a one-piece concrete communications equipment shelter. The shelter shall be equipped with a 400-amp integrated load center, such as Transtector ISP Series, incorporating the main service disconnect, manual transfer switch, surge protection and load center. The supplied equipment shelter shall be nominally sized 12 X 38 X 10 ft (height is inside dimension) and configured as a one-room shelter as depicted in the *Equipment Shelter Layout Drawing (TORFP Attachment-T)*.

3. The shelter shall be provided with a NEMA 4, 250 Volt D.C., 600 Volt A.C. 200 amp, weatherproof emergency generator receptacle such as Appleton AJA20044-200, mounted on the front of the shelter to allow connection of a 50kW portable Emergency Generator in case of failure of the site generator during a power outage. The generator receptacle shall be located in such a place that it will not interfere with the operation of the equipment room door. The receptacle's operation shall be controlled by operating the manual transfer switch inside the equipment shelter.

4. The TO Contractor shall furnish a compatible Appleton plug such as AP20044CD with 50 Ft of conductors terminated in a pig tail. The plug shall be designed to interface a portable generator with the Appleton receptacle

mounted on the building. The plug shall be weatherproof and the conductors shall be adequately insulated and weatherproofed. They shall be sized to safely connect a 50 kW emergency generator and mitigate any voltage drop. The cable assembly shall be provided with the shelter and installed inside on an adequately sized hose bib in accordance with the attached shelter layout. If made of a conductive material, the cable holder shall be bonded per the latest version of R56. Shelters without generators shall have the cable installed/stored just inside the door in accordance with the shelter layout drawings.

5. One 24-port cable entry port and one 16-port cable entry port complete with weatherproof caps shall be provided for antenna cable entry. The main cable entry port shall be a 24 position cable entry port located on the back wall of the building. The secondary cable entry port shall be a 16 position cable entry port located on the end wall of the building between the air conditioner units. These locations are shown in the supplied *Typical Equipment Shelter Layout Drawings*. Each port within both assemblies shall be four (4) inches in diameter, and shall be located with the top of the assembly located directly under the cable rack. In addition to the two cable entry ports, two (2) four-inch PVC conduit sleeves for communications and tower lighting conduits shall be installed. The actual location of these penetrations and sleeves must be confirmed with the Project Manager prior to the fabrication of the shelter.

6. Cable ladders (24 inches wide), centered across the main cable entry port, shall be mounted using all-thread and "cherry" insulators, 8 feet above the finished floor, measured from the floor to the bottom of the cable ladder, as shown in the attached *(Attachment-T) Equipment Shelter layout drawing*.

7. Two 5-ton 230/208V-Single-phase, dual (redundant) wall-mounted, vertical, self-contained HVAC units with 5-kw heat strips shall be installed at the locations specified on the equipment shelter drawing. Separate circuit breakers for each unit shall be installed in the main load circuit panel. The provided HVAC units shall have sufficient capacity for the building size supplied, fully loaded with equipment. Each unit shall contain a time delay startup relay, low ambient control, and a forced air resistive heat strip. The HVAC controller shall have a humidity control module installed. The outside portions of the units shall be weather/rodent and tamper proof.

8. The shelter shall be equipped with one 16" ventilation fan with gravity operated back draft louvers and 16" gravity intake damper with filters and hoods (bug and rodent intrusion resistant). Each fan shall be connected to a thermostatic device to allow automatic fan on-off control. The openings shall be provided with shutters and weather hoods. All openings in the shelter structure for the provision of entry or exit of cables, equipment, ventilation,

etc. shall be sealed to prevent the invasion of the shelter interior by insects, rodents and external moisture.

9. Insulation shall be non-combustible, with a vapor barrier. Wall and floor thickness shall provide an R-11 (minimum) rating, and the roof shall have an R-19 (minimum) rating.

10. Concrete Construction – The wall outer finish shall be natural stone aggregate finish with an aesthetically pleasing earth tone.

11. The foundation shall be comprised of concrete piers or concrete pad with steel reinforcement. The top of the finished foundation shall be 6 inches higher than finished grading. The foundation shall level the shelter such that all foundation to shelter contact points shall have equal loads. The equipment shelter shall rest flush on the poured concrete foundation without showing any gaps between shelter and pad and to be level to within ½ degree. The shelter shall have a poured concrete entrance stoop for the entrance, and steps if necessary, to provide safe entry into the shelter. Installations requiring stoops more than 24 inches above grade shall have 42 inch safety rails installed.

12. The minimum live floor loading design shall be 300 lbs. per square foot (PSF). The minimum roof loading design shall be 100 lbs. per square foot (PSF). The minimum wall loading design shall be 34 lbs. per square foot (PSF). The minimum wind loading design shall be 50 lbs. per square foot (PSF).

13. One reinforced steel finished door shall be located on the shelter, per the attached drawings. The door shall be finished to match the appearance of the shelter. The door shall be pre-hung, gasket sealed, insulated, approximately 3 foot by 7 foot, and in a metal frame. Door shall be supplied with door-closer, magnetic weather stripping, drip strip over door, doorstop, door sweep and a 42-inch door canopy. Door checks and door stops shall be provided along with a three (3) point locking system for maximum security. The door shall have non-removable ball bearing hinges and deadbolt locks with tamper plates installed. These deadbolts locks shall be security type with removable cylinders, such as “Best” locks. Each equipment room door shall be bonded to its frame with welding cable of an appropriate gauge in accordance with the latest version of R56. Braided cable SHALL NOT be used.

14. The equipment shelter floor shall be covered with 1/8”, 12” x 12” vinyl tile, light in color (beige, tan or white). The walls shall be trimmed with a 4-inches high and 1/8 inch thick rubber base trim against the floor.

15. The walls shall be covered with a minimum of white wood-grained paneling or white vinyl over ½ inch plywood. The equipment shelter shall have one (1)

¾" X 4ft X 8ft plywood telephone mounting board installed as per attached equipment shelter layout drawing (TORFP Attachment-T).

16. Electrical installation and wiring shall conform to the latest version of the National Electrical Code. Surface mounted, grounded, duplex outlets shall be provided at five (5) foot intervals (where possible) around the interior walls. All wiring shall be installed in surface mount EMT conduit. Outlets shall be installed 18 inches above finished floor. Horizontal runs of conduit shall be installed a minimum of 7 1/2 feet above the floor whenever possible with vertical connections to the surface mounted devices to minimize interference with installing equipment against the wall. Two weatherproof outlets shall be installed on the exterior of the shelter. These outlets shall be located at both ends of the shelter. In addition, circuits supplying power to equipment racks # 3-24 in the shelter shall extend downward six (6) feet from boxes mounted at 22" intervals on the ceiling as shown in the supplied *Typical Equipment Shelter Layout Drawing (TORFP Attachment-T – Equipment Shelter without Generator)*. Wiring for these drops shall be housed in "Seal-tite" flexible conduit and each drop shall be terminated in a quad receptacle box. Each quad box shall contain two circuits and each circuit shall have its own dedicated 15 or 20-amp circuit breaker. These drops shall be planned to fall immediately adjacent to the edge of the cable tray. The exact location for each drop must be confirmed with the Project Manager before the shelter is fabricated. The circuit breakers for the quad boxes supplying power to equipment racks # 1-4 shall be located in the main load center. Racks # 1-3 shall each be supplied with one junction box each containing one 20 amp 240 volt circuit. These junction boxes shall be fastened to the wall in accordance with the shelter drawing and supplied photos. These junction boxes shall be mounted vertically in line. Racks # 3 & 4 shall each be supplied with a quad box containing (2) two 120 volt 20 amp circuits. All circuits shall have a dedicated neutral installed in accordance with the latest Motorola R56 standard.

17. Power to the shelter shall be fed through a properly sized 240-Volt, single-phase fused disconnect switch mounted on the exterior wall of the shelter. (See TORFP Attachment-T- Shelter without Generator drawing for locations.)

18. Shelter shall be provided with 400-amp, 20-position (minimum) main load center, equipped with a minimum of twenty (20) 20-amp breakers. Breakers shall be "high magnetic" or high inrush current type (Square D, HM or equivalent). This box shall be installed at one end of the equipment area within five (5) feet of the primary cable entry port. In addition to the 400-ampere main load center, a 100-amp, 40-position (minimum) quad box load center with 15 or 20-amp circuit breakers shall be installed, fed from a 100 amp breaker in the main load center; the quad box load center shall be located

on the left end wall. Load centers, circuit breakers and quad boxes shall be properly marked.

19. An interior system ground (halo) with a single #2 AWG stranded wire shall be provided with proper connections to the shelter and, in turn, to the tower ground system. The halo shall have a 6-inch break roughly opposite the Master Ground Bar. The #2 AWG ground wire for each row of racks shall be suspended on independent ground lead stand offs as outlined in the typical shelter drawing. They shall be positioned to ensure the #2 AWG lead is isolated from the main cable racks. No electrical conduit is allowed to bridge the 6" gap in the halo ground. The internal ground system shall be mounted on the wall using 2-inch (2") standoff insulators, connected to two (2) minimum ¼" x 5"x 24", (33 hole pairs) minimum copper master ground bus bars that are installed directly under each cable entry port. The ground bus system shall be a Harger EPK24MOT bus bar system or an approved substitute. The copper ground bars on the back interior wall of the shelter shall be connected to the corresponding exterior ground bar with stainless steel insulated feed through. The external ground bar shall be connected through a minimum of three (3) 2-inch copper straps to the external building ground ring and tower grounding system. All exterior connections shall be exothermically welded to ensure proper connection. Electrical ground shall be bonded to the RF ground.

20. An IEEE Type 1 SAD/MOV protection device shall be part of the integrated load center and approved per the latest version of Motorola R56.

21. The Air conditioning units shall be connected to the internal (halo) grounding system **only,** not to the external equipment shelter grounding system.

22. TO Contractor shall install 48-inch, two or four-tube, energy efficient fluorescent fixtures which shall provide sufficient lighting (minimum 50 foot candles) for the shelter. The lights shall be controlled by a wall switch/ timer internal to the shelter, and located next to the entry door. An exterior entry light shall be installed outside the main doorway of the structure. This light shall be controlled by a motion sensor wired through a wall switch inside the shelter.

23. The shelter shall be pre-wired, with the following functions, to a common point in the radio compartment and terminated with a split 66 Block. The 66 Block shall be mounted in the upper right-hand side of the punch block board. All alarms shall be punched down on the left-hand side of the punch block using solid wire. The 66 block shall not be enclosed in any box or enclosure. All functions/alarms shall be programmed to be normally open and to close upon alarm.

a. High Temperature Alarm – Adjustable for over-temperature alert (may be integrated with HVAC system).
b. Low Temperature Alarm – Adjustable for under-temperature alert (may be integrated with HVAC system).
c. HVAC Failure Alarm- derived from the HVAC controller
d. Generator Running Alarm – Closure when generator is running.
e. Remote Generator Start – No transfer to load (a dry contact closure will start the generator remotely, but will not transfer to the load if there is stable commercial power).
f. Generator transfer to Load (a dry contact closure will initiate a transfer to load. If the generator is off, it will start the generator)
g. Low Oil Pressure Alarm
h. Low Coolant Alarm
i. Generator Overcrank Alarm
j. High Coolant Temperature alarm
k. Transfer Panel Switched- indicates that the transfer panel has switched to backup power
l. Equipment Room Door Alarm
m. Generator Room Door Alarm
n. Equipment Room Smoke Alarm
o. Equipment Room Heat Detector Alarm
p. Generator Room Smoke Alarm
q. Generator Room Heat Detector Alarm
r. Type I Surge Suppressor Alarm
s. Type II Surge Suppressor Alarm
t. Type III Lighting Controller Surge Suppressor Alarm
u. Strobe White Alarm (per strobe controller)
v. Strobe Red Alarm (per strobe controller)
w. Marker Alarm (per strobe controller)
x. Spare
y. Spare

24. An external ground ring shall be provided around each shelter foundation. Above grade ground tails shall be provided. The buried external ground ring shall be in direct contact with the earth at a depth of 30 inches below the earth's surface with ground rods driven into the earth at intervals not to exceed twice the ground rod length. In the event 10-foot ground rods cannot be driven shorter rods are acceptable if driven at the proper intervals. The external ground ring shall be placed 3 feet outside the shelter footprint in order to be outside the drip line of the shelter.

25. All grounds must be bonded together. This includes the generator, the shelters, the fuel tank, the fencing, and the equipment shelter grounding systems, the ice bridges and the tower. The ground test reading must not normally exceed 5 OHMS. The State shall test all grounds using a fall-of-potential method test

to determine compliance. In the event 5 OHMS cannot be reached by reasonable means and through no fault of the TO Contractor, the State shall determine the course of action to be taken by the TO Contractor at an additional cost to the State. Grounds must test fewer than 10 OHMS for the site to be acceptable for reasons of personal safety.

26. The shelter shall be designed and installed per the latest version of Motorola R56 to include eye wash station, first aid kit, chemical and CO2 type fire extinguisher.

27. The shelter shall include one broom and dust pan (mounted to the wall), one six foot step ladder, one 30 gallon (plastic) garbage can and one box of 30 gallon garbage can liners.

D. Generator Shelter Specifications

12x12 ft Shelter with 75 Kw Generator:

1. Shelter installations shall be in conformance with manufacturer's requirements for application of warranties provided by the manufacturer, as well as be compliant with the current version Motorola R56 grounding requirements.

2. The generator shelter supplied shall be a one-piece concrete shelter and include a 75 Kw vapor propane fueled generator, 400 amp load center, 400 amp main service disconnect, 400 amp manual transfer switch, surge protection devices for the load center, and a 400 amp fused disconnect for the equipment shelter with installation. The supplied generator shelter shall be nominally sized 12x12x10 ft. (height is inside dimension.)

3. The shelter shall be provided with a NEMA 4, 250 Volt D.C., 600 Volt A.C. 200 amp, weatherproof emergency generator receptacle such as Appleton AJA20044-200, mounted on the side wall of the shelter to allow connection of a 50kW portable Emergency Generator in case of failure of the internal generator during a power outage. The receptacle's operation shall be controlled by operating the manual transfer switch located on the outside of the shelter.

4. TO Contractor shall furnish a compatible Appleton plug such as AP20044CD with 50 Ft of conductors terminated in a pig tail. The plug shall be designed to interface a portable generator with the Appleton receptacle mounted on the building. The plug shall be weatherproof and the conductors shall be adequately insulated and weatherproofed. They shall be sized to safely connect a 50 kW emergency generator and mitigate any voltage drop. The

cable assembly shall be provided with the shelter and installed inside the generator shelter on an adequately sized hose bib in accordance with the attached shelter layout. If made of a conductive material, the cable holder shall be bonded per the latest version of R56. Shelters without generators shall have the cable installed/stored just inside the door in accordance with the shelter layout drawings.

5. The shelter shall be equipped with 16" ventilation fans with gravity operated back draft louvers and 16" gravity intake damper with filter and hood (bug and rodent intrusion resistant). Each fan shall be connected to a thermostatic device to allow automatic fan on-off control. The openings shall be provided with shutters and weather hoods. All required exhaust piping and intake and exhaust plenums required for the manufacturer's recommended air flow shall be included as part of the installed equipment. All openings in the shelter structure for the provision of entry or exit of cables, equipment, ventilation, etc. shall be sealed to prevent the invasion of the shelter interior by insects, rodents and external moisture.

6. Electric baseboard heater strips shall supply heating for the generator room. A thermostat mounted on the wall opposite the heater shall control the heater strips. The heater strips shall be sufficient for the size of the generator room to maintain a room temperature of 72 degrees F.

7. Insulation shall be non-combustible, with a vapor barrier. Wall and floor thickness shall provide an R-11 (minimum) rating, and the roof shall have an R-19 (minimum) rating.

8. Concrete Construction – The wall outer finish shall be natural stone aggregate finish with an aesthetically pleasing earth tone.

9. The foundation shall be comprised of concrete piers or concrete pad with steel reinforcement. The top of the finished foundation shall be 6 inches above finished grade. The foundation shall level the shelter such that all foundation to shelter contact points shall have equal loads. The shelter is to rest flush on the poured concrete foundation without showing any gaps between shelter and pad and to be level to within ½ degree. The shelter shall have an integrated continuous stoop for the door, and steps if necessary, to provide safe entry into the shelter. Installations requiring stoops more than 24 inches above grade shall have safety rails installed.

10. The minimum live floor loading design shall be 300lbs. per square foot (PSF).
    The minimum roof loading design shall be 100lbs. per square foot (PSF).
    The minimum wall loading design shall be 34 lbs. per square foot (PSF).
    The minimum wind loading design shall be 50 lbs. per square foot (PSF).

11. One reinforced steel finished door shall be located on the shelter, per the attached drawings. The door shall be finished to match the appearance of the shelter. The door shall be pre-hung, gasket sealed, insulated, approximately 3 foot by 7 foot, and in a metal frame. Door shall be supplied with door-closer, magnetic weather stripping, drip strip over door, doorstop, door sweep and a 42-inch door canopy. Door checks and door stops shall be provided along with a three (3) point locking system for maximum security. The door shall have non-removable ball bearing hinges and deadbolt locks with tamper plates installed. These deadbolt locks shall be security type with removable cylinders, such as "Best" locks. The door shall be bonded to its frame with welding cable of an appropriate gauge in accordance with the latest version of R56. Braided cable SHALL NOT be used.

12. The shelter floor shall be covered with 1/8", 12" x 12" vinyl tile, light in color (beige, tan or white). The walls shall be trimmed with a 4-inches high and 1/8 inch thick rubber base trim against the floor.

13. The walls shall be covered with a minimum of white wood-grained paneling or white vinyl over ½ inch plywood.

14. Electrical installation and wiring shall conform to the latest version of the National Electrical Code. Surface mounted, grounded, duplex outlets shall be provided at five (5) foot intervals (where possible) around the interior walls. All wiring shall be installed in surface mount EMT conduit. Outlets shall be installed 18 inches above finished floor. Two weatherproof outlets shall be installed on the exterior of the shelter. These outlets are to be located at both ends of the shelter.

15. **All low voltage wiring (i.e. alarm, control, etc.) shall be routed in separate conduits in accordance with the national electrical code.**

16. Power to the shelter shall be fed through a properly sized 240-Volt, fused single-phase disconnect switch mounted on the exterior wall of the shelter.

17. Shelter shall be provided with 400-amp, 20-position (minimum) main load center, equipped with a minimum of twenty (20) 20-amp breakers. Breakers shall be "high magnetic" or high inrush current type (Square D, HM or equivalent).

18. An interior system ground (halo) with a single #2 AWG stranded wire shall be provided with proper connections to the shelter and, in turn, to the tower ground system. The halo shall have a 6-inch break roughly opposite the main load center. No electrical conduit is allowed to bridge the 6" gap in the halo ground. The internal ground system shall be mounted on the wall using 2-inch (2") standoff insulators. All exterior connections shall be exothermically

welded to ensure proper connection. Electrical ground shall be bonded to the RF ground.

19. TO Contractor shall purchase and install the following lightning protection devices in the equipment shelter:

    i. An IEEE Type 2 MOV protection device shall be installed at the main power input inside the shelter, by means of a 60-Ampere (per "leg") breaker or fused disconnect, across the utility lugs of the transfer switch. The device shall be installed inside of the generator shelter and approved for use in the latest version of R56 such as Transtector IMAX series. Its installation shall comply with the latest version of R56 and maintain the device's UL1449 (latest edition) listing.

    ii. All surge suppression devices shall have the ability to create a dry contact alarm (contact closure upon alarm). This alarm shall be integrated with the shelter alarm wiring. The dry contact alarms shall be enabled from the factory.

20. The TO Contractor shall furnish 48-inch, two or four-tube, energy efficient fluorescent fixtures which shall provide sufficient lighting (minimum 50 foot candles) for the shelter. The lights shall be controlled by a wall switch / timer internal to the shelter, and located next to the entry door. An exterior entry light shall be installed outside the doorway of the structure. This light shall be controlled by a motion sensor wired through a wall switch inside the shelter.

21. The TO Contractor shall supply with this shelter a 75 Kilowatt, liquid propane vapor fueled, 1800-RPM generator, 60 Hz, 120/240 volt, single phase with a 400-amp Automatic Transfer Switch (ATS).

22. Installation shall include all materials, parts, labor, etc. to provide a fully functional generator back-up system. Included in the installed price shall be the automatic transfer switch and all associated wiring as well as generator alarm programming in accordance with State requirements. Block heaters with necessary wiring shall be included. Fuel tank hookup, fuel tank, fuel tank pad and fuel supply piping to the shelter shall be provided by the TO Contractor. Fuel supply piping shall be non-metallic to comply with R56 single point grounding requirements. The fuel tank shall be connected to the tower ground ring.

23. Fuel strainers on the propane fuel systems shall be installed for proper drainage to prevent moisture buildup in the line. Proper sized flex fuel lines shall be installed on all generators and the fuel line so as to not impede the proper flow of fuel and must not be sharply bent, or crimped. <u>The flex jumper must be placed to ensure minimal engine vibration is transferred to the fuel</u>

solenoid assemblies to prevent rupture. The fuel line from the secondary regulator to the manifold shall not be less than 1" to minimize fuel pressure drop from no load to full load. The metal fuel line inside the room shall be bonded to the internal halo where it enters the room. This can be done with a c-clamp style device at the fuel line. Proper venting of the fuel system shall be installed to ensure no buildup of pressure and safe venting will occur. Fuel lines run in conduit or sleeves shall be sealed from moisture. All exhaust piping that can come in contact with personnel shall have a heat shield installed. Proper battery chargers shall be installed for the appropriate system, either 12 VDC, 24 VDC, or 110 VAC.

24. The TO Contractor shall perform on-site startup of the generator under full load, using a load bank. The original of the startup form must be completed and submitted prior to submission of an invoice for work performed. The State Project Manager or his designee must be notified in advance to attend the event at their discretion. The load bank test shall be at least one hour and conducted under full load. The startup shall also include the programming of all generator related alarms/function.

25. All alarm outputs from the generator shall be extended to the adjacent equipment shelter via a data cable and terminated in a remote annunciator panel which provides both visual and audible alarm indications for each circuit monitored. The annunciator panel shall also provide either normally open or normally closed dry contacts which can be field selectable as needed to provide the proper inputs to the existing "66 block" for the dissemination of alarm information to the system. The annunciator panel shall be located directly below the existing "66 block" in the equipment shelter.

26. All wiring for the generator shall be routed overhead. It is unacceptable to cross the floor with conduits.

27. The shelter shall be designed and installed per the latest version of Motorola R56 to include chemical and CO2 type fire extinguishers mounted on the inside wall of the generator shelter.

28. An external ground ring shall be provided around the shelter foundation. Above grade ground tails shall be provided. The buried external ground ring shall be in direct contact with the earth at a depth of 30 inches below the earth's surface with ground rods driven into the earth at intervals not to exceed twice the ground rod length. In the event 10-foot ground rods cannot be driven shorter rods are acceptable if driven at the proper intervals. The external ground ring shall be placed 3 feet outside the shelter foundation in order to be outside the drip line of the shelter.

29. All grounds must be bonded together. This includes the generator shelter, the fuel tank, the fencing, and equipment shelter grounding systems, the ice bridge and the tower. The ground test reading must not normally exceed 5 OHMS. The State shall test all grounds using a fall-of-potential method test to determine compliance. In the event 5 OHMS cannot be reached by reasonable means and through no fault of the TO Contractor, the State shall determine the course of action to be taken by the TO Contractor at an additional cost to the State. Grounds must test fewer than 10 OHMS for the site to be acceptable for reasons of personal safety.

E. Specifications for Installation

1. TO Contractor shall purchase and deliver one (1) fully functional, 250 ft. above ground level, three (3) legged, solid legged, heavy duty, self-supporting, two-way microwave radio tower.

2. Installation of the tower shall include placing a foundation which is certified, signed and stamped by a Maryland registered Professional Engineer (certification must be provided with the response to the bid) that it is designed in accordance with the tower manufacturer's recommendations based upon the soil borings provided by the State (see *TORFP Attachment-V – Geotechnical Report- Georgia Ave.*).

3. The TO Contractor shall furnish and install two (2) "State" cable ladders on one face of the tower. The supplied cable ladders shall be installed in accordance with the state loading plan *(Attachment-S), Tower layout (Attachment-U)* and all other applicable sections of this task order.

4. The tower shall be erected to a height of 250 ft. (AGL) above ground in such a manner as to assure straightness and plumb.

5. The TO Contractor shall install tower lighting flash and SO cable on outside of cable ladder rail. The flash and SO cable shall be routed along the cable ladder rail in a manner to prevent damage over sharp edges, inadvertent climbing, etc; and attached per manufacturer's specifications

6. The TO Contractor shall purchase and install one (1) 12x38x10 ft. concrete equipment shelter (height is inside dimension), and one (1) 12x12x10 ft. concrete generator shelter with a 75kW vapor propane generator. The equipment shelters shall rest flush on the poured concrete foundations without showing any gaps between Equipment Shelters and pad and leveled to within ½ degree. Typical Equipment and Generator Shelter drawings are supplied with this Task Order (*Attachments-T and Z*), and should be used for pricing purposes.

7. An approved/certified shelter manufacturer representative shall be on site for all shelter deliveries to supervise the setting of each shelter. This individual shall correct any foundation gaps or any deficiencies found due to shipment. This individual shall also supervise the installation of any field installable items (e.g. hoods, light fixtures, etc).

8. The TO Contractor shall provide and install a liquid cooled, 1800 RPM, 75 kW propane vapor fueled generator housed in a 12x12 ft. concrete shelter complete with a 400-Amp automatic transfer switch capable of zero cross-over (in-phase switching) and time-delay neutral switching to eliminate service interruptions of the electronic equipment and the tower lighting system. The transfer switch shall also incorporate a programmable exercise timer. Time delay neutral will be programmable from at least 0-3 seconds. The exercise timer shall allow preprogramming of time and date of weekly generator runs. The transfer switch shall allow the weekly generator runs to be conducted with or without load.

9. The TO Contractor shall purchase and install one (1) new 1,000 gallon LP fuel tank with hookup to the generator and shall include first LP fill-up. Underground fuel supply piping shall be "plastic" high-performance polyethylene piping or equivalent. The above ground piping shall be UV rated rubber jacketed corrugated metallic piping. The fuel tank shall be connected to the tower ground ring.

10. Generator start-up and test under full load (using load bank) after permanent power is connected to the equipment shelter must be coordinated with the State Project Manager. The test using the load bank shall be one hour. The startup shall include generator alarm/function programming.

11. TO Contractor shall purchase and install one (1) extruded metal, 24-inch wide, no cantilever ice-bridge with a four tier "tee" or "tree" trapeze cable management system to facilitate easy installation and removal of cables, such as Andrew WB-T24-4 or suitable equivalent. Ice bridge posts shall be no less that 3" in diameter, spaced no more than 6' apart. Posts shall be buried 36" encased in concrete. The ice bridge shall be electrically insulated from the tower per R56. The trapeze sections shall be no more than four (4) feet apart. The ice bridge shall be bonded to the external ground bus bar.

12. TO Contractor shall purchase and install, per local utility standard, an electrical backboard of steel post and unistrut construction to include CT cabinet if required, wire trough, main disconnect, at least one (1) electric company-approved meter socket with room to accommodate a minimum of three (3) additional meters.

13. TO Contractor shall purchase and install two (2) 4-inch conduits, approx. 60 ft. in length from the power company-supplied pad mounted transformer, to the TO Contractor-supplied electrical backboard, and from the backboard into the disconnect switch, located on the generator shelter side wall.

14. TO Contractor shall purchase and connect electrical wiring, per local electrical code, from the TO Contractor-installed backboard to the fused disconnect on the side wall of the generator shelter, and from fused disconnect located on the side wall of the generator shelter into the equipment shelter's 400-amp fused disconnect, and from there to the equipment shelter's 400 amp load center. Electrical work must be completed by a State of Maryland certified electrician.

15. TO Contractor shall purchase and install two (2) 4-inch conduits, one (1) for electrical service, and one (1) for alarm wiring, both with pull strings, each approximately 60-ft in length, from the 12x12 ft generator shelter to the adjacent 12x38 ft. equipment shelter. The alarm conduit shall terminate in a minimum of 12x12x12 IN or larger communications cable pull box mounted on the exterior of the equipment shelter. In addition to the alarm conduit, one (1) 4" conduit for future fiber connection to the site shall extend from this pull box to a location beyond the compound limits to a point to be determined by the State Project Manager. The pull box shall accommodate at least three (3) 4IN, schedule 40 conduits. This box shall be weather proof and constructed of plastic or other non- conductive materials. Locator tape shall be installed in all communications and electric trenches one (1) ft. above new conduits.

16. Supplied materials, including, but not limited to, equipment and generator shelters, tower, LP tank, etc shall be new, unused and shall meet the latest design and fabrication standards of the Electronics Industry Association (EIA). A valid bill of sale must be provided upon installation.

17. All supplied materials shall be purchased, not leased.

18. TO Contractor shall supply and install 6" dia. bollards as needed in accordance with the attached construction drawings.

19. The TO Contractor shall provide placards affixed to each equipment and generator shelter door stating there is Electromagnetic Energy dangers. These signs shall comply with the latest version of Motorola's R56. The TO Contractor shall provide placards affixed to every vehicle and access gate indicating the site is alarmed and under 24 hour surveillance. The signs shall say: "Private property – No trespassing. This site is monitored by remote surveillance equipment. Equipment and entrances are alarmed and will notify local police of any intrusion." The TO Contractor shall provide placards to the fence along the entrance to the site with the FCC ASR number. The sign

shall comply with FCC guidelines. The ASR number shall be provided by the Project Manager. All signs shall be metal, fade and weather proof. They are to be permanently affixed to their respective gate or door. ASR signs shall be provided with the delivery of the tower.

3. Inspection schedule/requirements

a. Sediment and Erosion Controls – A preconstruction meeting shall be conducted, if applicable, with the required inspectors at least 7 days prior to any disturbance. Controls shall be randomly inspected by the appropriate inspectors having jurisdiction (County or State), but emphasis is placed after rain events. Corrections/repairs shall be made within time limits specified by County or State requirements.
b. Compaction tests – Construction inspectors shall inspect each lift required for site grading, road work and fill (to include the tower foundation). Non compliance may require the removal of fill and/or halting work.
c. Storm Water Management – TO Contractor shall provide evidence of the installation of any required Storm Water Management materials and techniques. This is outlined in *Attachment-Y– Construction Drawings*, and shall be done at the TO Contractor's expense.
d. Cylinder break reports – The tower and shelter foundations shall require PE certified crush reports at a minimum of 28 days. Tower erection or shelter installation may not occur until compressive strength is tested and verified in compliance with manufacturer and task order specification.
e. Electrical inspection – Final wiring shall be inspected prior to energizing the site. An approved third party inspection agency can be utilized if recognized by the local utility. This shall be supplied by the TO Contractor.
f. Tower Inspection – The tower's structural integrity, galvanizing condition and assembly shall be inspected by a third party inspector furnished by DoIT.
g. R56 Inspection – the site, tower and shelter shall be subject to an R56 inspection. Discrepancies shall be corrected at the TO Contractor's expense. The inspector shall be furnished by DoIT.
h. Punch-list – A final inspection shall be conducted by DoIT personnel to ensure all deliverables of the task order are completed to the satisfaction of the State.

4. Commencement of Work

Work in response to this Task Order shall be initiated only upon issuance of a fully executed Notice to Proceed, authorized by the State Program Manager.

5. Approvals

Prior to ordering, the following drawings/designs shall be approved by the State Project Manager:

a. Tower profile (Final drawings shall have PE stamp)

b. Tower foundation design (Final drawings shall have PE stamp)
c. Shelter drawings (Final drawings shall have PE stamp)
d. Shelter Foundation design (Final drawings shall have PE stamp)
e. Shop drawings for LP tank foundation
f. Shop drawings for fence

6. <u>Final Acceptance Sign-off</u>

The TO Contractor shall provide all items as outlined in the DoIT's close out policy - *Attachment W – Close Out Process Final*. The following is required to be demonstrated to the State Project Manager upon project completion:

a. That the lighting system has operated without fault for thirty 30 days.
b. The State receives a satisfactory inspection report from an independent tower vendor, funded by the State to perform a tower inspection, and all deficient items identified in the inspection report have been corrected to the State's satisfaction. The inspector will mark all deficiencies with blue, permanent paint pens. All corrections will be marked with yellow, permanent paint pens. The correction will be initialed and dated by the crew. Photos will be taken showing the correction to include the initials as proof that the correction was made. The State reserves the right to perform additional tower inspections to verify that deficient items have been corrected. Should the State require two (2) or more tower inspections to verify correction of deficient items, all costs of the additional inspections, beyond the second inspection, shall be deducted from the TO Contractor's final payment.
c. All other deficiencies noted by the State have been corrected to the State's satisfaction.
d. All construction materials, equipment, excess tools and other materials will be removed from the site. The shelter interior (equipment and generator room) will be swept and all protective paper removed from the floors. The site should be neat and organized.
e. If applicable, final acceptance by MDE that all work has been completed in accordance with the MDE permit.
f. All warranty information pertinent to various items such as tower, shelter, tower lighting, generator and transfer switch, etc. is supplied to the State Project Manager.

ATTACHMENT 24 – FOUNDATION INSPECTION SCOPE OF WORK

SUMMARY: Tower construction vendors shall incorporate the following series of tests and inspections to ensure proper quality/strength of all concrete poured and the proper foundation installation on all CATS+ FA13 jobs. These inspections shall also incorporate verification of foundation dimensions, rebar dimensions, rebar layout and soil compaction. Test results shall be supplied, reviewed and approved by DoIT prior to any structures being set on foundations, tower erection or backfilling operations. Field testing shall be conducted by an independent, third party.

DETAILS: Each concrete batch (6-9 cubic yards) shall have a corresponding batch report provided by the supplier. These shall be included in the closeout documentation. Batches shall be uniquely identified on the batch report. The vendor shall use MD SHA approved concrete mixes for all FA13 projects. Mix tables and more information on concrete specifications can be found in section 900.10.03 in the MD SHA grey book.

The following mandatory tests/inspections shall take place for the tower and shelter foundations:

1. Construction inspectors shall verify the excavated foundation dimensions are correct.
2. The compaction of the tower foundation excavated materials shall be tested in accordance with AASHTO T99 (Standard Proctor Test). Compaction results shall be in accordance with the tower foundation designer's specification or the geotechnical report provided, whichever is greater. Excavated fill will only be used to backfill the foundation if they pass the compaction test.
3. The bearing pressure of the tower foundation sub grade shall be tested. Bearing results shall be in accordance with the tower foundation designer's specifications or the geotechnical report provided, whichever is greater. In the event the vendor cannot meet the required bearing pressure, it shall solicit advice from the tower manufacturer and geotechnical engineer to achieve the desired results.
4. Construction inspectors shall verify the proper rebar size, dimension, grade, configuration, layout, fastener/wire ties and other provisions as specified by the foundation designer are correct prior to any concrete pours.
5. Ambient air temperature and general weather conditions shall be recorded and noted by the inspector. Readings shall be taken at the time of delivery.
6. Concrete slump shall be tested for each continuously poured section of caisson or every fifty (50) cubic yards of concrete on a pad and pier foundation. The slump shall be tested in accordance with ASSHTO T119 testing standard. The slump shall meet the tower foundation designer's specification. If none are noted, then the Slump will be measured in accordance with SHA Grey Book Specification 902.10.03, Chart A. Results shall be recorded and supplied prior to acceptance of the given foundation. Work may be halted if the slump is not deemed acceptable.
7. Concrete temperature shall be measured for each continuously poured section of a caisson or every fifty (50) cubic yards of concrete on a pad and pier foundation. Temperatures shall be tested in accordance with ASSHTO T309 testing standard. Temperature shall be in accordance with the foundation designer's specification. If no specifications are supplied, then the

temperature will be measured in accordance with SHA Grey Book Specification 902.10.03, Chart A. Results shall be recorded and supplied prior to acceptance of the given foundation.

8. Air entrainment shall be tested and documented in accordance with ASSHTO T152 or T196. The results shall be documented for each continuously poured caisson or 50 cubic yards for a pad and pier foundation. Air content shall be within the foundation designer's specification or no more than 5-8%.
9. Compressive strength shall be measured at 7 days after pour and 28 days after pour. Compressive strength tests shall be tested in accordance with ASSHTO T23 testing standard. A minimum of one (1) set of four (4) cylinders shall be taken for each continuously poured section of caisson or every fifty (50) cubic yards of concrete on a pad and pier foundation. Compressive strength shall be a minimum of the tower foundation's specification or 4000 psi at 28 days, whichever is greater. At least one cylinder per set shall be broken at 7 days and one at 28 days. If all 7 day sets have reached the required compressive strength, then back fill operations and/or tower erection can commence. 14 day tests can be conducted if the 7 day tests are not within specification to expedite construction. 28 day tests shall be conducted even if 7 day tests are deemed acceptable. Written results shall be provided to the State Project Manager prior to tower erection. Shelter foundations shall be at least 3000 psi or the shelter foundation designer's requirements, whichever is greater, at 28 days. Shelter foundations shall require one (1) set of four (4) cylinders for both shelter foundations. Test cylinders shall be cured on site. As weather conditions dictate, the vendor shall provide a cure box to adequately insulate the test cylinders as they cure.

The inspector shall provide photographs if necessary. If specifications are not met, then the inspector has the authority to stop work until specifications are met.

ATTACHMENT S
Typical 250' State Tower Loading Plan

Antenna#	Mounting Location (Measured down from top)	Mounting Location (AGL)	Antenna Model	Azimuth	Frequency	Line Size	Cable Ladder
1	Top	250	BMR-12	0°	700 MHZ	1 5/8"	State
2	Top	250	BMR-12	120°	700 MHZ	1 5/8"	State
3	Top	250	BMR-12	240°	700 MHZ	1 5/8"	State
4	Top Less 20'	230	8' Hp dish w/o radome	0°	6.00 GHZ	EW63	State
5	Top Less 20'	230	8' Hp dish w/o radome	120°	6.00 GHZ	EW63	State
6	Top Less 20'	230	8' Hp dish w/o radome	240°	6.00 GHZ	EW63	State
7	Top Less 40'	210	BMR-12	0°	800 MHZ	1 5/8"	State
8	Top Less 40'	210	BMR-12	120°	800 MHZ	1 5/8"	State
9	Top Less 40'	210	BMR-12	240°	800 MHZ	1 5/8"	State
10	Top Less 60'	190	DB 420-D	0°	450 MHZ Dual fed antenna	2 X 7/8"	State
11	Top Less 60'	190	DB 420-D	120°	450 MHZ Dual fed antenna	2 X 7/8"	State
12	Top Less 60'	190	DB 420-D	240°	450 MHZ Dual fed antenna	2 X 7/8"	State
13	Top Less 80'	170	DB 224	0°	138-174 MHZ	7/8"	State
14	Top Less 80'	170	DB 224	120°	138-174 MHZ	7/8"	State
15	Top Less 80'	170	DB 224	240°	138-174 MHZ	7/8"	State

16	Top Less 100’	150 feet	(4) DAPA 59210 Panel Antenna array	0°	1710-1990 MHZ	4 X 1 5/8"	Cellular
17	Top Less 100’	150 feet	(4) DAPA 59210 Panel Antenna array	120°	1710-1990 MHZ	4 X 1 5/8"	Cellular
18	Top Less 100’	150 feet	(4) DAPA 59210 Panel Antenna array	240°	1710-1990 MHZ	4 X 1 5/8"	Cellular
19	Top Less 120’	130 feet	(4) DB858HV90E-SX Panel Antenna Array	0°	806-896 MHZ	4 X 1 5/8"	Cellular
20	Top Less 120’	130 feet	(4) DB858HV90E-SX Panel Antenna Array	120°	806-896 MHZ	4 X 1 5/8"	Cellular
21	Top Less 120’	130 feet	(4) DB858HV90E-SX Panel Antenna Array	240°	806-896 MHZ	4 X 1 5/8"	Cellular
22	Top Less 140’	110 feet	8' High Perf Solid Dish w/o radome	0°	6.000 GHz	EW63	State
23	Top Less 140’	110 feet	8' High Perf Solid Dish w/o radome	120°	6.000 GHz	EW63	State
24	Top Less 140’	110 feet	8' High Perf Solid Dish w/o radome	240°	6.000 GHz	EW63	State
25	Top Less 160’	90 feet	(4) DAPA 59210 Panel Antenna Array	0°	1710-1990 MHZ	4 X 1 5/8"	Cellular
26	Top Less 160’	90 feet	(4) DAPA 59210 Panel Antenna Array	120°	1710-1990 MHZ	4 X 1 5/8"	Cellular
27	Top Less 160’	90 feet	(4) DAPA 59210 Panel Antenna Array	240°	1710-1990 MHZ	4 X 1 5/8"	Cellular
28	Top Less 180’	70 feet	(4) DB858HV90E-SX Panel Antenna Array	0°	806-896 MHZ	4 X 1 5/8"	Cellular

29	Top Less 180’	70 feet	(4) DB858HV90E-SX Panel Antenna Array	120°	806-896 MHZ	4 X 1 5/8"	Cellular
30	Top Less 180’	70 feet	(4) DB858HV90E-SX Panel Antenna Array	240°	806-896 MHZ	4 X 1 5/8"	Cellular
31	Top Less 200’	50 feet	8' High Perf Solid Dish w/o radome	0°	6.000 GHz	EW63	State
32	Top Less 200’	50 feet	8' High Perf Solid Dish w/o radome	120°	6.000 GHz	EW63	State
33	Top Less 200’	50 feet	8' High Perf Solid Dish w/o radome	240°	6.000 GHz	EW63	State

TITLE

LATEST REVISION | DATE ORIGINAL

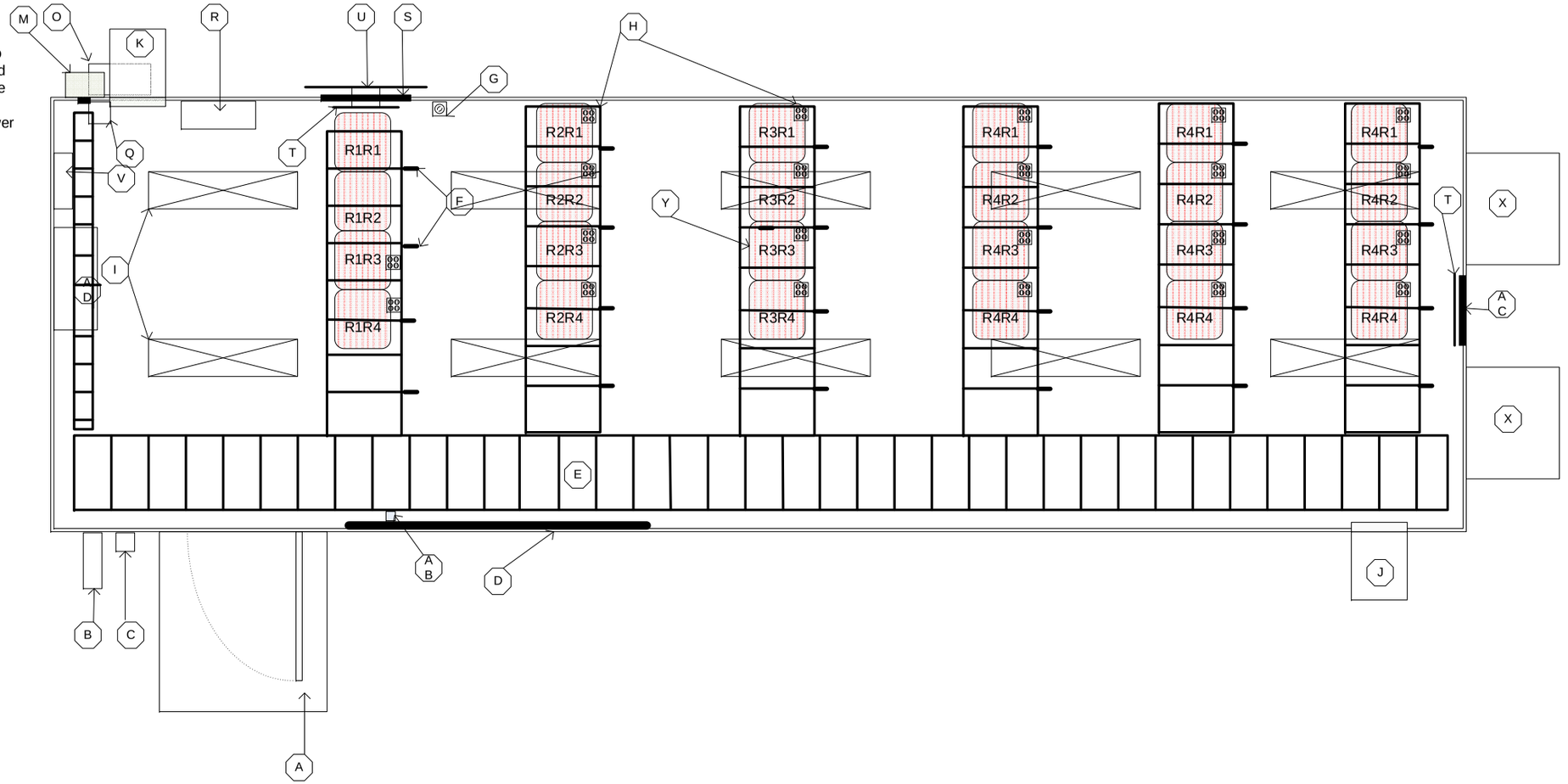
JOB NO. | SCALE

CHECKED | DRAWN

REVISIONS

NO.	DATE	DESCRIPTION

If there are two shelters ordered do not penetrate 12x38 without generator for tower light cables

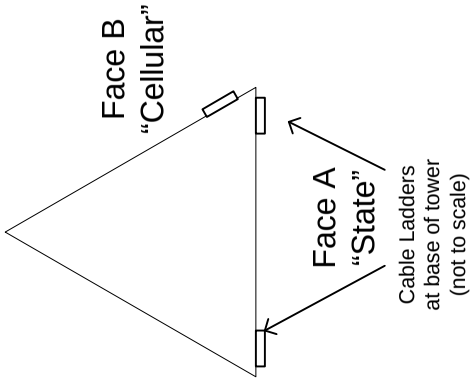


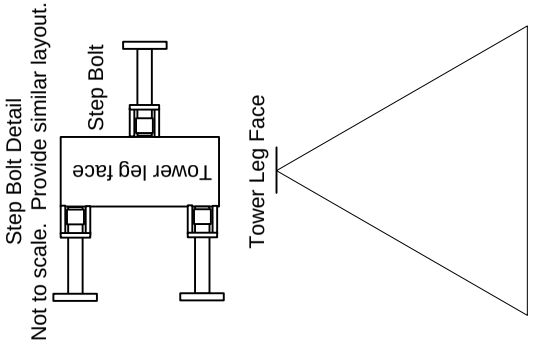
A	Door
B	Appleton Plug
C	Exterior Light
D	4x8 Telco board
E	24" cable ladders
F	Stand offs for #2 ground lead
G	240v outlets (twist lock type)
H	120V Quad box outlet
I	48IN lights

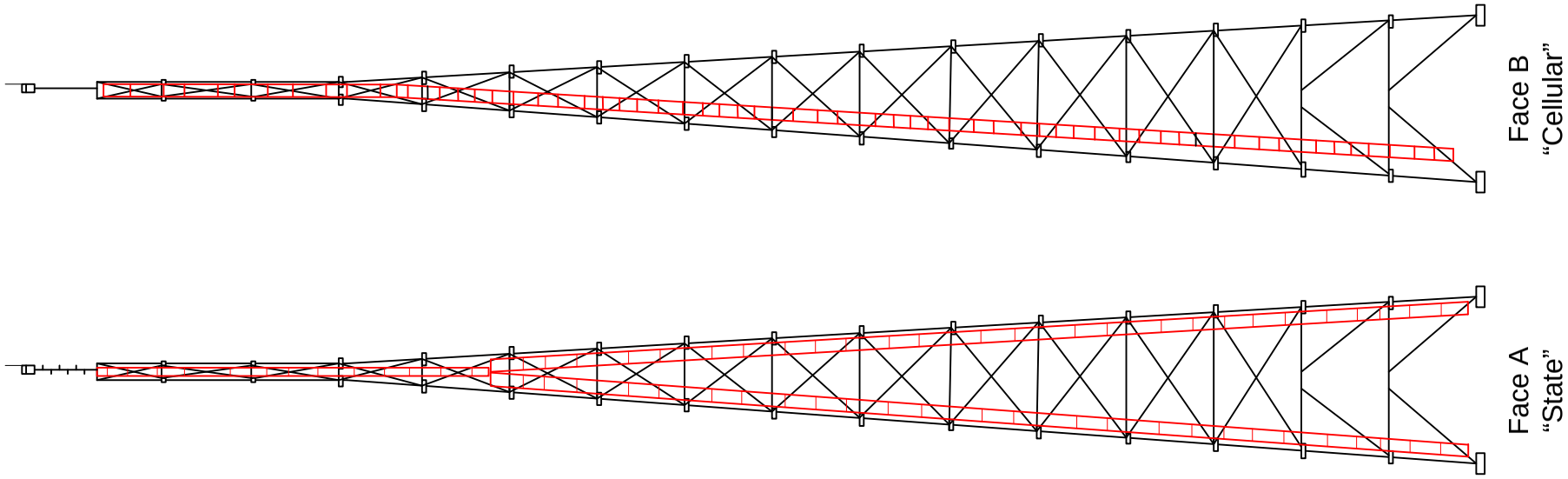
J	Intake hood
K	Temp activated fans
L	Light controller and penetration for SO cables
M	Pull box and 4IN penetration for telco
N	Auto transfer switch
O	Main service disconnect
P	Building subfeed disconnect
Q	Type2 MOV
R	Integrated load center

S	24 Port cable entry port
T	Internal ground bus bar
U	External ground bus bar
V	Subfeed
W	Teleco cable ladder
X	HVAC
Y	Rack footprint
Z	Generator
AA	Generator exhaust

AB	Alarm 66 Block (no enclosure)
AC	16 Port cable entry port
AD	Appleton cable/hose bib
AE	
AF	
AG	
AH	
AI	
AJ	







Typical State tower layout	Drawn by: Sean Javins sean.javins@doit.state.md.us			
	SIZE	FSCM NO	DWG NO	REV A
	SCALE 1in = 40ft. 0in.		SHEET 1 OF 3	

Maryland
DEPARTMENT OF
INFORMATION TECHNOLOGY

ATTACHMENT 24

State Of Maryland
Dept. of Information Technology
Communication Tower
Closeout Acceptance Standards

Latest revision 08/13/10

Table of Contents

I. Intent

II. Closeout Book Set Up

III. Site Binder

I. Intent

The intent of this document is to provide designated personnel with set guidelines, including specified performance metrics, for verifying completeness of construction of communication towers, shelters, and ancillary equipment. . Successful completion of the tests, set forth in this document will guarantee acceptance of a quality facility.

1.1 Tower Foundation

1.1.1 Tower foundation closeout documentation shall include:

- The reinforcement bar steel manufacturer shall furnish certification of grade steel report. The certification shall include actual mill test results including the chemical and physical properties of the finished metal products.

1.2 Concrete Placement

1.2.1. Concrete placement shall comply with current ASTM and/or AASHTO specifications.

1.2.2 Concrete delivery tickets shall include the following:

- Concrete producer's name, including address and phone number.
- Date and time batched concrete departed the mix facility.
- Concrete mixture (i.e. 4000 psi mix, % of air, slump, etc).
- Time batched concrete arrived and site location.
- Verified time of discharged concrete.

1.3 Concrete Testing

1.3.1 Third party independent inspection and certification report to include the following (provided at the vendor's expense):

- The sealed report shall include a written report of inspection of the reinforcement bar in accordance with the approved tower foundation design.
- Certified concrete test cylinders break test report
- The report shall include results of slump, air entrainment, weather conditions at the time of pour, the use of any admixtures per latest DoIT concrete inspection policy.

1.4 Electrical Conduit/Equipment Installation

1.4.1 Electrical conduit, wiring and materials shall be installed in accordance with National NEC codes and standard, local jurisdictional requirements, and local utility requirements.

1.4.2 Documentation required for electrical installation includes:

- Photo documentation of underground conduit depicting depth of trench.
- Photo documentation of underground utility marking tape.
- Electrician's current Maryland License

1.5 Tower Erection and Installation

1.5.1 The tower installation shall be in accordance with ASTM specifications.

1.5.2 Closeout documentation shall include:

- A copy of the erection manual specification contained with the tower.
- A copy of the lighting installation manual.
- Copies of the safety climb installation manual.
- Compliance letter from the installer certifying the tower has been installed in accordance with the manufactures specifications.
- Photo documentation of the tower erection process
- (photo log attached in Exhibit A).
- Photo documentation of any repairs or corrections made as a result of the State-supplied tower inspection report.

1.6 Ground System/Underground Details

1.6.1 Provide photo documentation of ground ring depth, welded and mechanical ground connections

1.6.2 Provide certified documentation that high performance polyethylene "plastic" fuel line or similar substitute was installed.

1.7 Shelter Placement

1.7.1 Provide copy of shelter documents enclosed with the shelter.

1.7.2 Provide shelter set photos.

1.8 Tower Lighting

1.8.1 Provide a copy of the tower light manual and diagnostic materials.

1.8.2 Document that the tower light has been functional for at least 30 days and at the time of acceptance.
1.8.3 Provide proof of warranty through the manufacturer or CATS + vendor.

1.9 Site grounding

1.9.1 Provide evidence of site grounding compliance through a three-point fall of potential test and resistance test of at least 10 equipment grounds with a clamp on test meter. These tests shall be conducted at the vendor's expense.
1.9.2 Clamp on test shall demonstrate less than 5 ohms of resistance for each ground tested.
1.9.3 Report shall describe the ground lead tested, relative location within the site, and the ground reading.
1.9.4 Fall of potential test shall describe type of equipment used, soil type, equipment calibration date and test results.
1.9.5 All tests shall be conducted by personnel trained on the equipment.

1.10 Liquid Propane Information

1.10.1 Provide evidence to support buried installation. The tank shall be new and unused.
1.10.2 Provide an invoice that demonstrates the installation of non-metallic fuel line.
1.10.3 Provide photos of underground installation.
1.10.4 Provide a bill of sale demonstrating the tank's ownership by the State of Maryland.

1.11 Generator Start up

1.11.1 Provide factory-certified inspection/start up documents. The initial setup and testing of the generator shall be conducted by a factory-certified representative.
1.11.2 The required documentation under this section includes:

- Record serial numbers, models, nomenclature, etc of the generator and automatic transfer switch.
- Record and document all services performed to check the integrity of the delivered generator, alarm configuration, components and automatic transfer switch.
- Record and document the generator's performance during the required one (1) hour load bank test (under full load).
- This shall include indicators such as voltage output, frequency output, oil/water pressure, load, etc.

- Provide a copy of the generator and transfer switch warranty.

1.12 Site As Built Drawings

1.12.1 Provide three hard copies of site as built drawings. Provide one soft copy of the as built drawings.

1.12.2 In the event construction drawings are provided by the State, the vendor will redline any changes and provide measurements/locations highlighting the actual location.

1.12.3 If no construction drawings are provided, then the vendor shall create a set of as built drawings that show the location of the following items:

- Tower, shelters, LP tank/pad, electrical conduit, transformer, electric backboard, fence, ice bridges, etc.
- The drawings shall be to scale.

1.13 MD Dept of the Environment Permit and Receipt

1.13.1 Provide a copy of the MDE permit.

1.13.2 Also provide a copy of the receipt provided by MDE to demonstrate completion of the E&S/SWM portion of the project.

1.14 Photo Documentation

Exhibit A
Photo Documentation Log

Format
All photographs must be submitted printed in color and contained within the photo tab of the closeout binder.

Pre Construction

1. Access road.
2. Utility path.
3. Utility Pole at primary power location, including pole number.
4. Proposed compound location 4 photos. North, East, West South.
5. Tower Location.
6. Shelter Pad location.

Construction

Tower Foundation

1. Tower foundation excavation and shoring.
2. Placement of rebar.
3. Placement of anchor bolts.
4. Tower foundation concrete placement.
5. Finished concrete.
6. Backfill and compaction of foundation.

Shelter Foundation

1. Shelter foundation excavation, forms and shoring.
2. Placement of rebar.
3. Foundation concrete placement
4. Stoop forms, rebar and reinforcement
5. Finished concrete

Utilities

1. Power routing form primary pole location to tower site.
2. Telco routing from pole to demark.
3. Underground conduit depth.
4. Power and Telco conduit bends.

Generator and fuel tank

1. Installation of pad, including rebar, concrete, etc.
2. Underground fuel supply line trench, trench depth, and connections.
3. Photo evidence of installation of non-metallic fuel line.

Tower Installation

1. Erection of tower process (Minimum of 10).
2. Installation of lighting system.
3. Lighting cable routing (to include strain relief).

Fence Installation

1. Installation of corner, line and gate posts (minimum of 4).
2. Installation of fence fabric (minimum of 4).
3. Installation of barbed wire (minimum of 4).
4. Gates.

Antenna System

1. Antenna and Microwave mounts.
2. Antenna and Microwave model and serial number.
3. Digital photo verifying mounts are plumb and level.
4. Photo verifying mounts are secured to tower (including stiff arms).
5. Photos of coax grounding and ground kits.

Facility Grounding

1. Grounding trench including verification of trench depth.

2. #2 solid to ground rod (minimum of 5 photos).
3. Underground exothermic welds (minimum of 5 photos)
4. Ice bridge grounding.
5. Entry port grounding.
6. Coax grounding (tower and port).
7. Fence grounding including grounding “buttons”.
8. Fence Gate grounding.
9. Shelter grounding exterior / interior.

Post Construction

1. Tower profile. North, East, South West.
2. Compound and Tower with Shelter, North, East, South West.
3. Antenna System, including mount antennas coax, ice bridge entry port.
4. Generator including serial number model number.
5. Primary utility backboard, including meter and meter number.
6. Generator fuel tank location and connections.
7. Shelter bolted down.
8. Shelter door grounds.
9. Tower grounded.
10. Fire Extinguisher.

II. Closeout Book Set Up

Closeout binder shall be submitted in one (1) hard copy and one (1) CD version with all photos in jpeg format. It shall include:

2.1 Site Name and Notes

Provide title sheet to include:

- Site name
- Project number
- Proper physical address
- Company name

2.2 Manufacturer Warranties

- Include all manufactures warranties

2.3 Site Ground Resistance Reports

- Provide post ground test

2.4 Concrete Test Reports

- Provide Certified test reports

2.5 Site Photos

- As required by Exhibit A

2.6 Tower and Foundation Drawings

- Provide as required

2.7 Shelter Drawings

- Provide as required

2.8 Site As-Built Drawings

- Provide as required

2.9 MDE Permit / Completion Receipt
- Mandatory submission required

2.10 Equipment Spec Sheets
- Provide as required

2.11 Contract Task Orders
- Mandatory submission required

2.12 Contract Purchase Order
- Mandatory Submission

2.13 Material Safety Data Sheets
- Mandatory Submission

2.14 Liquid Propane Information
- Mandatory Submission

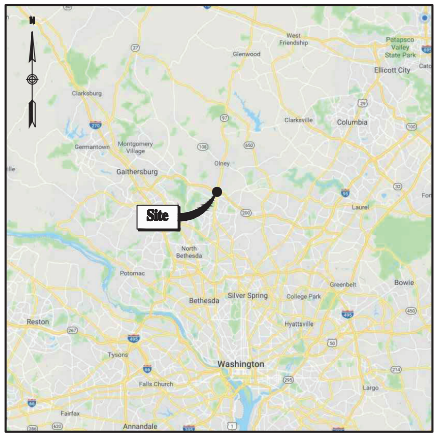
III. Site Binder

3.1 Site ground test.
3.2. Concrete reports.
3.3 Manufacturer warranties for shelter, generator, lighting controller, HVAC, Transfer Switch, etc.
3.4. Generator start up documents.
3.5 Photos of underground work.

STATE OF MARYLAND
Department of Information Technology
Wireless Division

STATE OF MARYLAND
DEPARTMENT OF INFORMATION TECHNOLOGY

MD 200 / Georgia Avenue Communications Tower
State Highway Administration
Maryland



Location Map

SCALE: 1"= 5 MILES
SOURCE: GOOGLE MAPS

INDEX OF DRAWINGS

Vicinity Map

SCALE: 1"= 2000'
SOURCE: GOOGLE MAPS

August 2019

Gannett Fleming
BALTIMORE, MARYLAND

DOIT APPROVAL DATE

SHA APPROVAL DATE

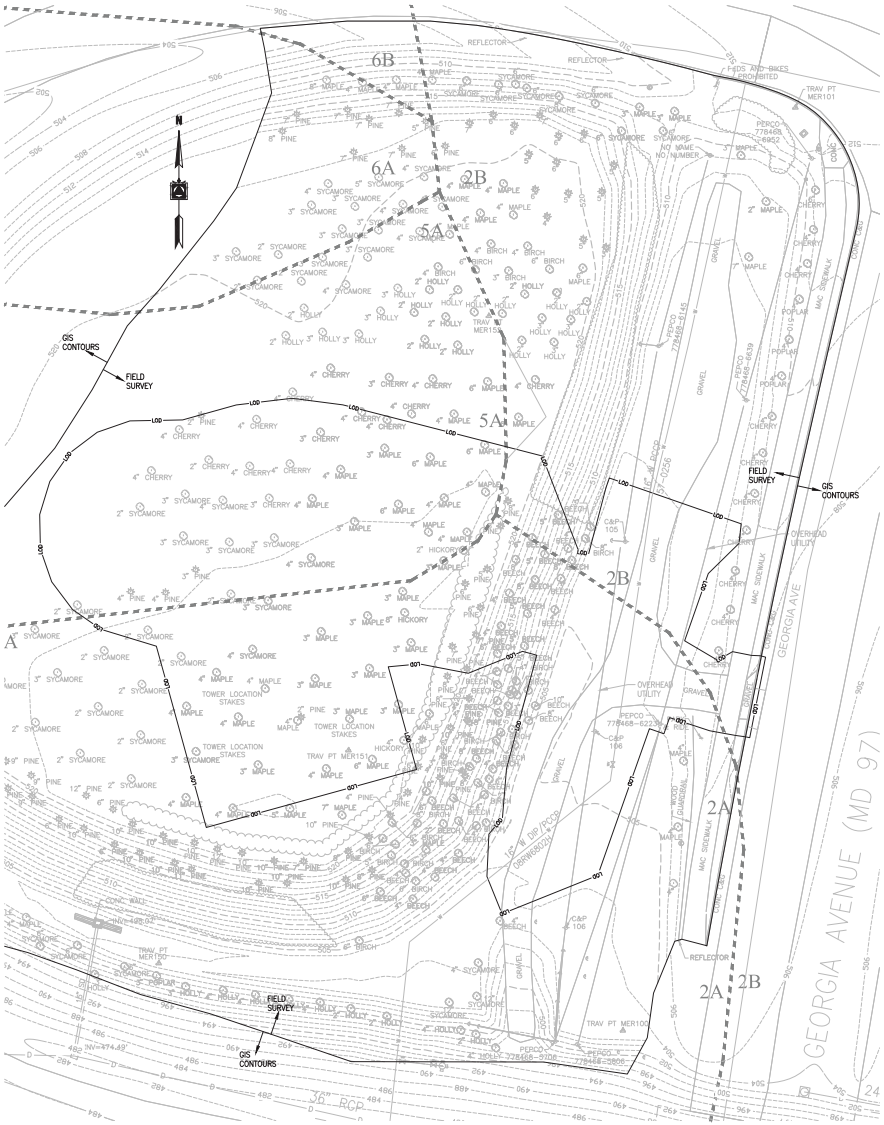
MDE NOTE:
MDE NO. 18-SF-0206

Professional Certification

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 20821.
EXPIRATION DATE: 05/02/2021.

STATE OF MARYLAND · JEFFREY M. SIMPSON · 20821 · PROFESSIONAL ENGINEER

8/20/19



SITE PLAN
SCALE: 1"=30'

30 0 30 60
SCALE IN FEET

GENERAL NOTES

1. HORIZONTAL DATUM: NAD 83/91
   VERTICAL DATUM: NAVD 88
2. THE TOPOGRAPHIC INFORMATION SHOWN ON THIS DRAWING IS BASED ON A FIELD SURVEY PROVIDED BY MERCADO CONSULTANTS, INC. DATED DECEMBER 2017.
3. TOPOGRAPHIC FIELD SURVEY IS MERGED WITH GIS INFORMATION FROM MONTGOMERY COUNTY.
4. ANY DAMAGE TO ADJACENT ROADS, UTILITIES, FENCE LINES, ETC. DURING CONSTRUCTION SHALL BE REPLACED IN KIND OR REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE STATE.
5. THE LOCATIONS OF UNDERGROUND AND AERIAL UTILITIES SHOWN ON THE PLANS ARE FOR INFORMATIONAL PURPOSES ONLY AND ARE NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR SHALL ADHERE TO THE MARYLAND HIGH VOLTAGE LINE ACT AND COORDINATE WITH UTILITY COMPANIES FOR ANY OR ALL RELOCATIONS THAT MAY BE REQUIRED.
6. CALL "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO BEGINNING EXCAVATION TO DETERMINE THE LOCATION OF EXISTING UTILITIES. FOR AREAS AND/OR UTILITIES WHICH "MISS UTILITY" WILL NOT LOCATE, THE CONTRACTOR SHALL UTILIZE THE SERVICES OF A PRIVATE UTILITY LOCATOR TO IDENTIFY THE LOCATION OF SUBSURFACE UTILITIES WITHIN THE LIMITS OF WORK.
7. THE CONTRACTOR MUST PROTECT IN PLACE ALL ACTIVE UNDERGROUND UTILITIES UNLESS OTHER TREATMENT IS CALLED FOR. REPAIRS TO UTILITIES OR PROPERTY DAMAGE AS A RESULT OF THE CONTRACTOR'S NEGLIGENCE OR METHOD OF OPERATION MUST BE MADE AT THE CONTRACTOR'S EXPENSE BEFORE PROCEEDING WITH CONSTRUCTION.
8. SUBSURFACE CONDITIONS MAY VARY ON SITE. INFORMATION ON SUBSURFACE CONDITIONS, LOCATION OF TEST BORINGS, AND BORING LOGS ARE CONTAINED IN THE GEOTECHNICAL EVALUATION REPORT. THE CONTRACTOR SHALL PLAN WORK ACCORDINGLY.

LEGEND

- EXISTING CONTOUR
- EXISTING TREE
- EXISTING TREELINE
- EXISTING WATER LINE
- EXISTING WATER VALVE
- EXISTING FIRE HYDRANT
- EXISTING UTILITY POLE
- SOIL BOUNDARY
- 5A SOIL TYPE

MDE NOTE:

MDE NO. 18-SF-0206

Gannett Fleming
RUTHERFORD PLAZA
7133 RUTHERFORD ROAD, SUITE 300
BALTIMORE, MD 21244

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 20821, EXPIRATION DATE: 05/02/2021.

STATE OF MARYLAND · JEFFREY M. SLEE · 20821 · PROFESSIONAL ENGINEER
8/2/19

doit
STATE OF MARYLAND
DEPARTMENT OF INFORMATION TECHNOLOGY

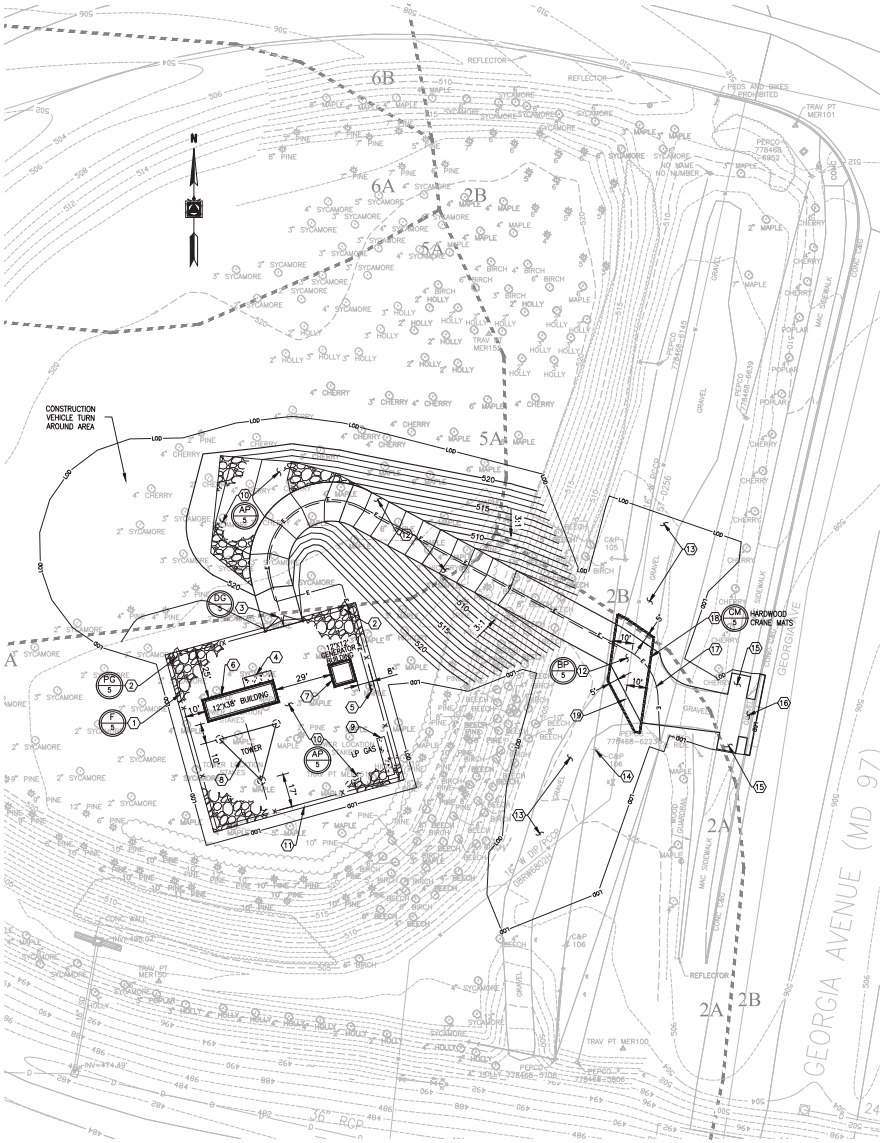
MD 200 / GEORGIA AVENUE COMMUNICATIONS TOWER

USING AGENCY APPROVAL

MARK	DATE	DESCRIPTION

CAD DWG FILE:	
DRAWN BY:	SJM
CHK'D BY:	JMS
PROJECT NO.:	
DATE:	AUGUST 2019

EXISTING CONDITIONS PLAN

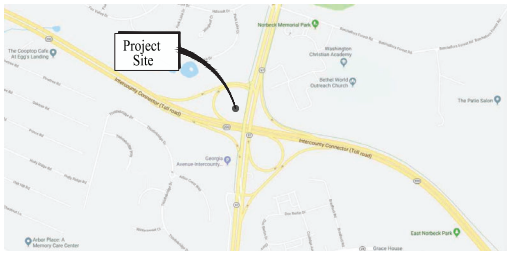


SITE PLAN
SCALE: 1"=30'

30 0 30 60
SCALE IN FEET

LEGEND

- 520 — PROPOSED CONTOURS
- x — FENCE
- LOD — LIMIT OF DISTURBANCE
- EXISTING CONTOUR
- EXISTING TREE
- EXISTING TREELINE
- EXISTING WATER LINE
- EXISTING WATER VALVE
- EXISTING FIRE HYDRANT
- EXISTING UTILITY POLE
- SOIL BOUNDARY
- 5A SOIL TYPE
- AGGREGATE PAVEMENT
- XX C-1 NUMERIC VALUE DENOTES DETAIL NUMBER / DRAWING NUMBER



VICINITY MAP
SCALE: 1"=1000'

SOURCE: GOOGLE MAPS

REFERENCE NOTES

1. FENCE ENCLOSURE
2. PEDESTRIAN GATE
3. DOUBLE SWING GATE
4. 5'W X 15'L CONCRETE PAD CENTERED ON BUILDING DOORS. PAD TO BE MONOLITHIC AND POURED AS PART OF BUILDING FOUNDATION.
5. UTILITY BACKBOARD, DESIGN BY OTHERS
6. 12'X38' UTILITY BUILDING, DESIGN BY OTHERS
7. 12'X12' GENERATOR BUILDING, DESIGN BY OTHERS
8. COMMUNICATION TOWER STRUCTURE, DESIGN BY OTHERS
9. 4'W X 20'L CONCRETE PAD AND LIQUID PROPANE (LP) GAS TANK. LP GAS TANK DESIGN BY OTHERS
10. AGGREGATE PAVEMENT
11. PROVIDE 2FT WIDE 6" DEEP AGGREGATE STRIP ALONG OUTSIDE PERIMETER OF FENCE EXCEPT AT ACCESS ROAD. AGGREGATE SHALL BE CR-6
12. 20'-WIDE ACCESS ROAD, ASPHALT PAVEMENT.
13. REPAIR EXISTING GRAVEL ACCESS ROAD TO EXISTING CONDITION
14. RELOCATE EXISTING UTILITY POLE AND ANY GUY WIRES. COORDINATE POLE RELOCATION WITH UTILITY OWNER
15. REPAIR ASPHALT CONCRETE SIDEWALK, MATCH EXISTING SIDEWALK SECTION
16. CONSTRUCT ENTRANCE PER SHA STANDARD MD 630.02. REPAIR ANY DAMAGED CURB AND GUTTER PER SHA STANDARD 620.02. REPAIRED CURB SHALL MATCH ADJACENT EXISTING CURB
17. ELECTRICAL CONDUIT, DESIGN BY OTHERS
18. CONSTRUCT AND MAINTAIN HARDWOOD CRANE MAT FOR PROTECTION OF EXISTING WSSC PCCP WATER MAIN.
19. TEST PIT EXISTING 16" WATER MAIN TO DETERMINE LOCATION AND DEPTH OF COVER. COORDINATE TEST PIT EXCAVATION WITH WSSC. PROVIDE RESULTS OF TEST PITS FOR LOCATION OF WATER LINE TO ENGINEER IN ADVANCE OF CRANE MAT PLACEMENT.

GENERAL NOTES

1. HORIZONTAL DATUM: NAD 83/91
   VERTICAL DATUM: NAVD 88
2. THE TOPOGRAPHIC INFORMATION SHOWN ON THIS DRAWING IS BASED ON A FIELD SURVEY PROVIDED BY MERCADO CONSULTANTS, INC. DATED DECEMBER 2017.
3. TOPOGRAPHIC FIELD SURVEY IS MERGED WITH GIS INFORMATION FROM MONTGOMERY COUNTY.
4. ANY DAMAGE TO ADJACENT ROADS, UTILITIES, FENCE LINES, ETC. DURING CONSTRUCTION SHALL BE REPLACED IN KIND OR REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE STATE.
5. MATERIALS SALVAGED DURING CONSTRUCTION SHALL BECOME THE CONTRACTOR'S PROPERTY UNLESS OTHERWISE NOTED ON THE PLANS. THE CONTRACTOR IS RESPONSIBLE FOR DISPOSAL OF SALVAGED MATERIALS.
6. CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AT ALL TIMES.
7. THE LOCATIONS OF UNDERGROUND AND AERIAL UTILITIES SHOWN ON THE PLANS ARE FOR INFORMATIONAL PURPOSES ONLY AND ARE NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR SHALL ADHERE TO THE MARYLAND HIGH VOLTAGE LINE ACT AND COORDINATE WITH UTILITY COMPANIES FOR ANY OR ALL RELOCATIONS THAT MAY BE REQUIRED.
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9. THE CONTRACTOR MUST PROTECT IN PLACE ALL ACTIVE UNDERGROUND UTILITIES UNLESS OTHER TREATMENT IS CALLED FOR. REPAIRS TO UTILITIES OR PROPERTY DAMAGE AS A RESULT OF THE CONTRACTOR'S NEGLIGENCE OR METHOD OF OPERATION MUST BE MADE AT THE CONTRACTOR'S EXPENSE BEFORE PROCEEDING WITH CONSTRUCTION.
10. AFTER NEW FENCE AND GATES ARE INSTALLED, COORDINATE WITH THE PROJECT MANAGER TO MAINTAIN THE COMPOUND LOCKED AT ALL TIMES.
11. SUBSURFACE CONDITIONS MAY VARY ON SITE. INFORMATION ON SUBSURFACE CONDITIONS, LOCATION OF TEST BORINGS, AND BORING LOGS ARE CONTAINED IN THE GEOTECHNICAL EVALUATION REPORT. THE CONTRACTOR SHALL PLAN WORK ACCORDINGLY.
12. MITIGATION FOR TREE REMOVAL WITHIN THE LOD WILL BE PROVIDED BY SHA.
13. THERE IS NO STREAM OR WETLAND DISTURBANCE ASSOCIATED WITH THIS PROJECT.

MDE NOTE:
MDE NO. 18-SF-0206

Gannett Fleming
RUTHERFORD PLAZA
7133 RUTHERFORD ROAD, SUITE 300
BALTIMORE, MD 21244

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 20821, EXPIRATION DATE: 05/02/2021.

STATE OF MARYLAND · JEFFREY M. SMITH · 20821 · PROFESSIONAL ENGINEER
4/24/19

doit
STATE OF MARYLAND
DEPARTMENT OF INFORMATION TECHNOLOGY

MD 200 / GEORGIA AVENUE COMMUNICATIONS TOWER

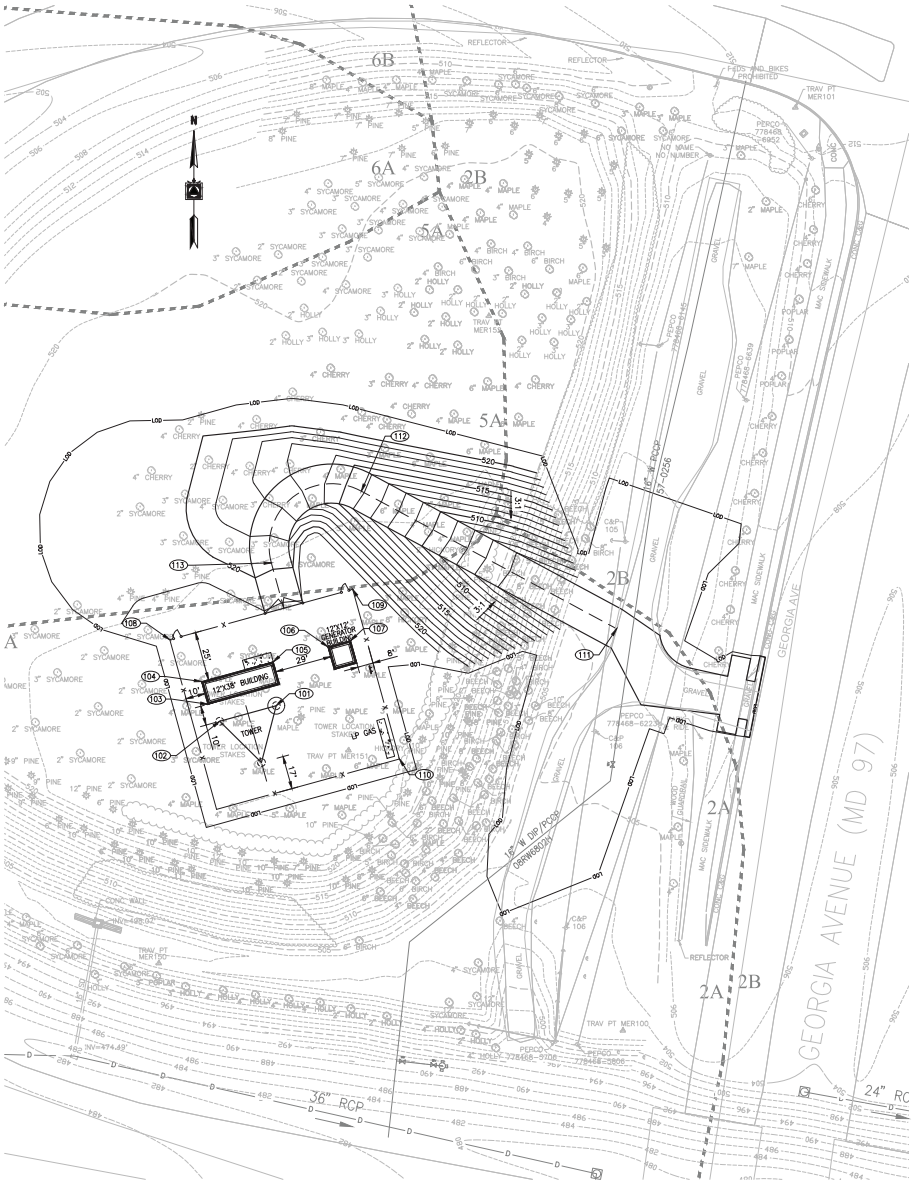
USING AGENCY APPROVAL

MARK	DATE	DESCRIPTION

CAD DWG FILE:
DRAWN BY: SJM
CHK'D BY: JMS

PROJECT NO.:
DATE: AUGUST 2019

SITE PLAN

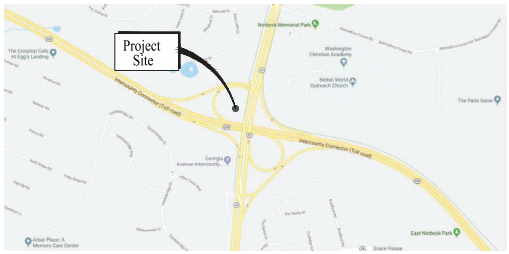


SITE PLAN
SCALE: 1"=30'

30 0 30 60
SCALE IN FEET

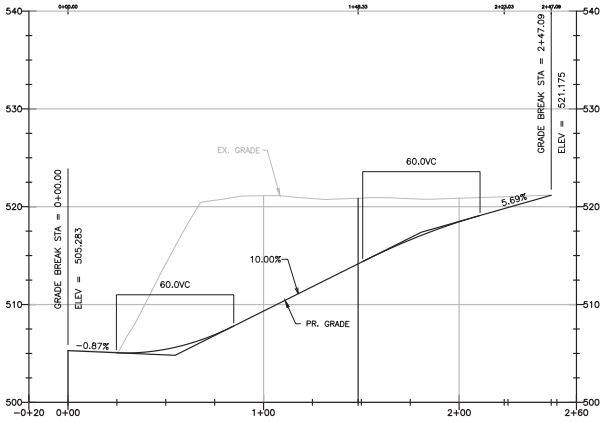
LEGEND

- LOD —— LIMIT OF DISTURBANCE (LOD)
- —X— PROPOSED FENCE
- EXISTING TREE
- EXISTING TREELINE
- 520 EXISTING CONTOUR (MINOR)
- EXISTING CONTOUR (MAJOR)
- 520 EXISTING CONTOUR (MINOR)
- 520 EXISTING CONTOUR (MAJOR)
- 5A / 2B SOIL BOUNDARY & IDENTIFIERS



VICINITY MAP
SCALE: 1"=1000'

SOURCE: GOOGLE MAPS



ACCESS ROAD PROFILE
HORIZONTAL SCALE: 1"=30'
VERTICAL SCALE: 1"=6'

STAKEOUT TABLE

POINT NO.	EASTING	NORTHING	DESCRIPTION
(101)	1,290,837.26	529,017.93	CORNER OF TOWER
(102)	1,290,808.34	529,009.96	CORNER OF TOWER
(103)	1,290,802.31	529,018.67	CORNER OF BUILDING
(104)	1,290,799.12	529,030.24	CORNER OF BUILDING
(105)	1,290,835.75	529,040.33	CORNER OF BUILDING
(106)	1,290,863.71	529,048.05	CORNER OF GENERATOR BUILDING
(107)	1,290,875.28	529,051.24	CORNER OF GENERATOR BUILDING
(108)	1,290,782.83	529,051.68	CORNER OF FENCE
(109)	1,290,876.34	529,077.46	CORNER OF FENCE
(110)	1,290,900.27	528,990.70	CORNER OF FENCE
(111)	1,291,011.36	529,057.25	ACCESS ROAD
(112)	1,290,880.79	529,127.63	ACCESS ROAD POINT CURVE
(113)	1,290,834.76	529,090.96	ACCESS ROAD POINT TANGENCY

MDE NOTE:
MDE NO. 18-SF-0206

Gannett Fleming
RUTHERFORD PLAZA
7133 RUTHERFORD ROAD, SUITE 300
BALTIMORE, MD 21244

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STATE OF MARYLAND · JEFFREY M. SWAN · 20821 · PROFESSIONAL ENGINEER
8/2/19

doit
STATE OF MARYLAND
DEPARTMENT OF INFORMATION TECHNOLOGY

MD 200 / GEORGIA AVENUE COMMUNICATIONS TOWER

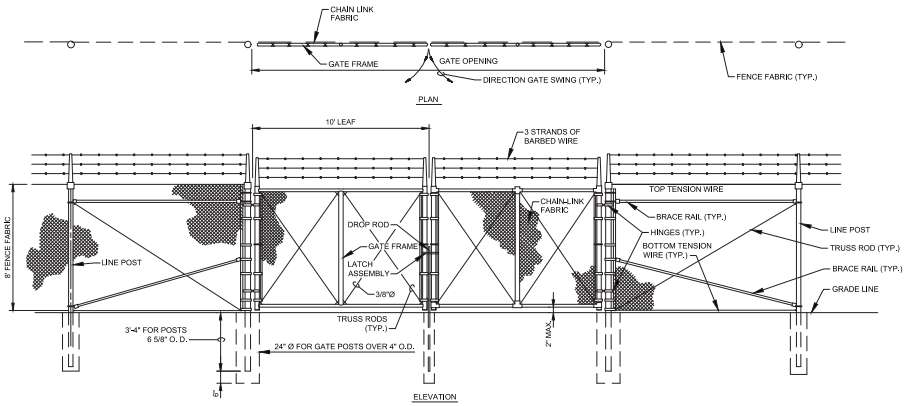
USING AGENCY APPROVAL

MARK	DATE	DESCRIPTION

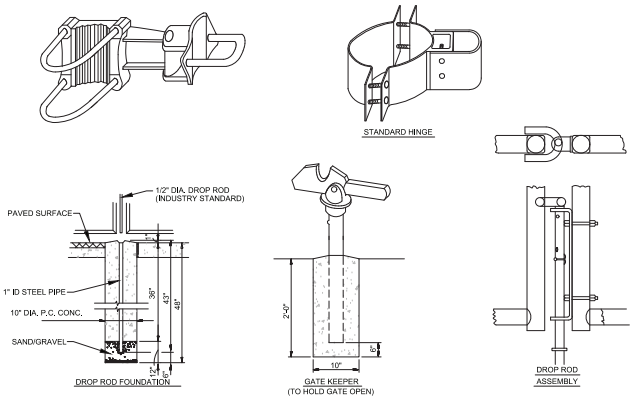
CAD DWG FILE:
DRAWN BY: SJM
CHK'D BY: JMS

PROJECT NO.:
DATE: AUGUST 2019

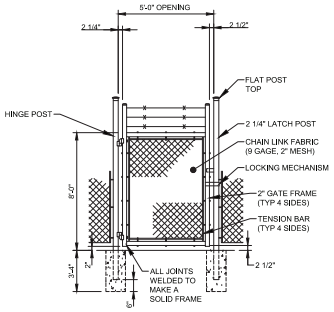
STAKEOUT AND PROFILE



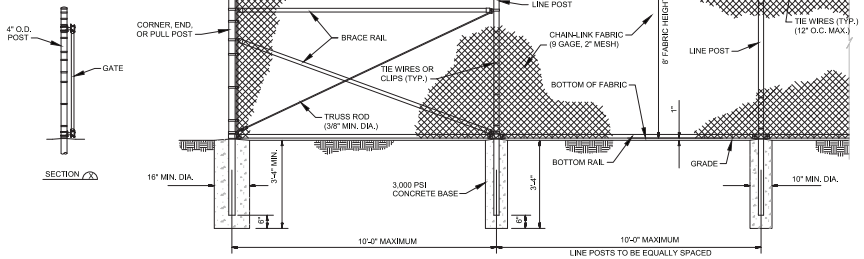
DG DOUBLE SWING GATE
SCALE: NOT TO SCALE



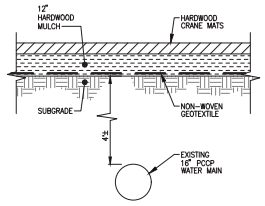
SW SWING GATE DETAILS
SCALE: NOT TO SCALE



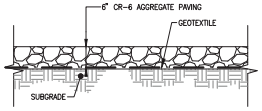
PG PEDESTRIAN GATE
SCALE: NOT TO SCALE



F CHAIN LINK FENCE
SCALE: NOT TO SCALE



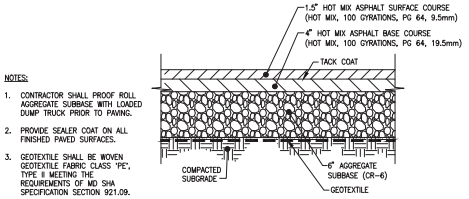
CM HARDWOOD CRANE MATS
SCALE: NOT TO SCALE



AP AGGREGATE PAVEMENT
SCALE: NOT TO SCALE

NOTES:

GEOTEXTILE: WOVEN GEOTEXTILE FABRIC MEETING THE REQUIREMENTS OF MD SHA APPLICATION CLASS "SE" AS SPECIFIED IN SECTION 921.09– GEOTEXTILES, MARYLAND SHA STANDARD SPECIFICATIONS. GEOTEXTILE PANELS SHALL BE JOINED BY SEWING WITH "J" SEAMS UTILIZING A LOCK STITCH. SEAMS SHALL MEET THE TENSILE STRENGTH REQUIREMENT FOR THE GEOTEXTILE WHEN TESTED ACROSS THE SEAM.



NOTES:

1. CONTRACTOR SHALL PROOF ROLL AGGREGATE SUBBASE WITH LOADED DUMP TRUCK PRIOR TO PAVING.
2. PROVIDE SEALER COAT ON ALL FINISHED PAVED SURFACES.
3. GEOTEXTILE SHALL BE WOVEN GEOTEXTILE FABRIC CLASS "PE", TYPE II MEETING THE REQUIREMENTS OF MD SHA SPECIFICATION SECTION 921.09.

BP BITUMINOUS PAVING
SCALE: NOT TO SCALE

MDE NOTE:
MDE NO. 18-SF-0206

Gannett Fleming
RUTHERFORD PLAZA
7133 RUTHERFORD ROAD, SUITE 300
BALTIMORE, MD 21244

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STATE OF MARYLAND · JEFFREY M. SMITH · 20821 · PROFESSIONAL ENGINEER
6/24/19

doit
STATE OF MARYLAND
DEPARTMENT OF INFORMATION TECHNOLOGY

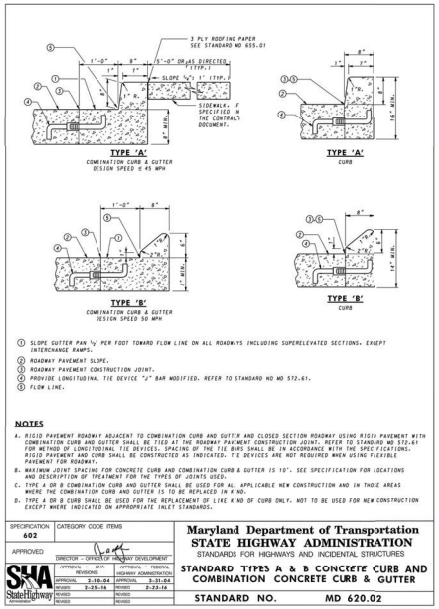
MD 200 / GEORGIA AVENUE COMMUNICATIONS TOWER

USING AGENCY APPROVAL

MARK	DATE	DESCRIPTION

CAD DWG FILE:
DRAWN BY: SJM
CHK'D BY: JMS
PROJECT NO.:
DATE: AUGUST 2019

SITE DETAILS 1



① SLOPE GUTTER PAN ½" PER FOOT TOWARD FLOW LINE ON ALL ROADWYS INCLUDING SUPERELEVATED SECTIONS. EXCEPT INTERCHANGE RAMPS.
② ROADWAY PAVEMENT SLOPE.
③ ROADWAY PAVEMENT CONSTRUCTION JOINT.
④ PROVIDE LONGITUDINAL TIE DEVICE "J" BAR MODIFIED. REFER TO STANDARD NO MD 572.61.
⑤ FLOW LINE.

NOTES

A. RIGID PAVEMENT ROADWAY ADJACENT TO COMBINATION CURB AND GUTTER AND CLOSED SECTION ROADWAY USING RIGID PAVEMENT WITH COMBINATION CURB AND GUTTER SHALL BE TIED AT THE ROADWAY PAVEMENT CONSTRUCTION JOINT. REFER TO STANDARD MD 572.61 FOR METHOD OF LONGITUDINAL TIE DEVICES. SPACING OF THE TIE BARS SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS. RIGID PAVEMENT AND CURB SHALL BE CONSTRUCTED AS INDICATED. TIE DEVICES ARE NOT REQUIRED WHEN USING FLEXIBLE PAVEMENT FOR ROADWAY.

B. MAXIMUM JOINT SPACING FOR CONCRETE CURB AND COMBINATION CURB & GUTTER IS 10'. SEE SPECIFICATION FOR LOCATIONS AND DESCRIPTION OF TREATMENT FOR THE TYPES OF JOINTS USED.

C. TYPE A OR B COMBINATION CURB AND GUTTER SHALL BE USED FOR ALL APPLICABLE NEW CONSTRUCTION AND IN THOSE AREAS WHERE THE COMBINATION CURB AND GUTTER IS TO BE REPLACED IN KIND.

D. TYPE A OR B CURB SHALL BE USED FOR THE REPLACEMENT OF LIKE KIND OF CURB ONLY. NOT TO BE USED FOR NEW CONSTRUCTION EXCEPT WHERE INDICATED ON APPROPRIATE INLET STANDARDS.

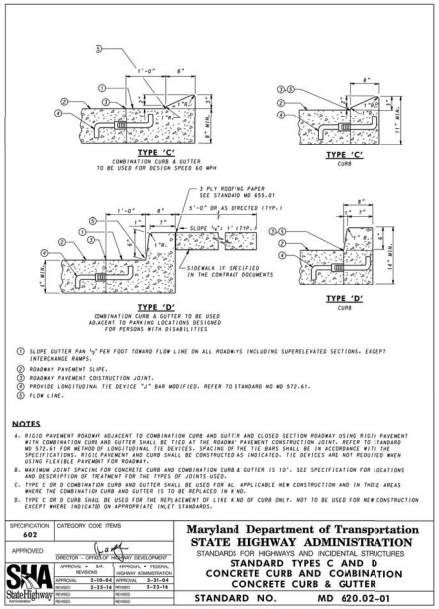
SPECIFICATION	CATEGORY CODE ITEMS
602	

APPROVED _____ DIRECTOR – OFFICE OF HIGHWAY DEVELOPMENT

APPROVAL & REVISIONS		APPROVAL - FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	2-10-04	APPROVAL	3-31-04
REVISED	3-23-16	REVISED	3-23-16
REVISED		REVISED	
REVISED		REVISED	

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
STANDARD TYPES A & B CONCRETE CURB AND COMBINATION CONCRETE CURB & GUTTER
STANDARD NO. MD 620.02

1 OF 2



① SLOPE GUTTER PAN ½" PER FOOT TOWARD FLOW LINE ON ALL ROADWYS INCLUDING SUPERELEVATED SECTIONS. EXCEPT INTERCHANGE RAMPS.
② ROADWAY PAVEMENT SLOPE.
③ ROADWAY PAVEMENT CONSTRUCTION JOINT.
④ PROVIDE LONGITUDINAL TIE DEVICE "J" BAR MODIFIED. REFER TO STANDARD NO MD 572.61.
⑤ FLOW LINE.

NOTES

A. RIGID PAVEMENT ROADWAY ADJACENT TO COMBINATION CURB AND GUTTER AND CLOSED SECTION ROADWAY USING RIGID PAVEMENT WITH COMBINATION CURB AND GUTTER SHALL BE TIED AT THE ROADWAY PAVEMENT CONSTRUCTION JOINT. REFER TO STANDARD MD 572.61 FOR METHOD OF LONGITUDINAL TIE DEVICES. SPACING OF THE TIE BARS SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS. RIGID PAVEMENT AND CURB SHALL BE CONSTRUCTED AS INDICATED. TIE DEVICES ARE NOT REQUIRED WHEN USING FLEXIBLE PAVEMENT FOR ROADWAY.

B. MAXIMUM JOINT SPACING FOR CONCRETE CURB AND COMBINATION CURB & GUTTER IS 10'. SEE SPECIFICATION FOR LOCATIONS AND DESCRIPTION OF TREATMENT FOR THE TYPES OF JOINTS USED.

C. TYPE C OR D COMBINATION CURB AND GUTTER SHALL BE USED FOR ALL APPLICABLE NEW CONSTRUCTION AND IN THOSE AREAS WHERE THE COMBINATION CURB AND GUTTER IS TO BE REPLACED IN KIND.

D. TYPE C OR D CURB SHALL BE USED FOR THE REPLACEMENT OF LIKE KIND OF CURB ONLY. NOT TO BE USED FOR NEW CONSTRUCTION EXCEPT WHERE INDICATED ON APPROPRIATE INLET STANDARDS.

SPECIFICATION	CATEGORY CODE ITEMS
602	

APPROVED _____ DIRECTOR – OFFICE OF HIGHWAY DEVELOPMENT

APPROVAL & REVISIONS		APPROVAL - FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	2-10-04	APPROVAL	3-31-04
REVISED	3-23-16	REVISED	3-23-16
REVISED		REVISED	
REVISED		REVISED	

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
STANDARD TYPES C AND D CONCRETE CURB AND COMBINATION CONCRETE CURB & GUTTER
STANDARD NO. MD 620.02-01

2 OF 2

MDE NOTE:
MDE NO. 18-SF-0206

Gannett Fleming
RUTHERFORD PLAZA
7133 RUTHERFORD ROAD, SUITE 300
BALTIMORE, MD 21244

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 20821, EXPIRATION DATE: 05/02/2021.

doit
STATE OF MARYLAND
DEPARTMENT OF INFORMATION TECHNOLOGY

MD 200 / GEORGIA AVENUE COMMUNICATIONS TOWER

USING AGENCY APPROVAL

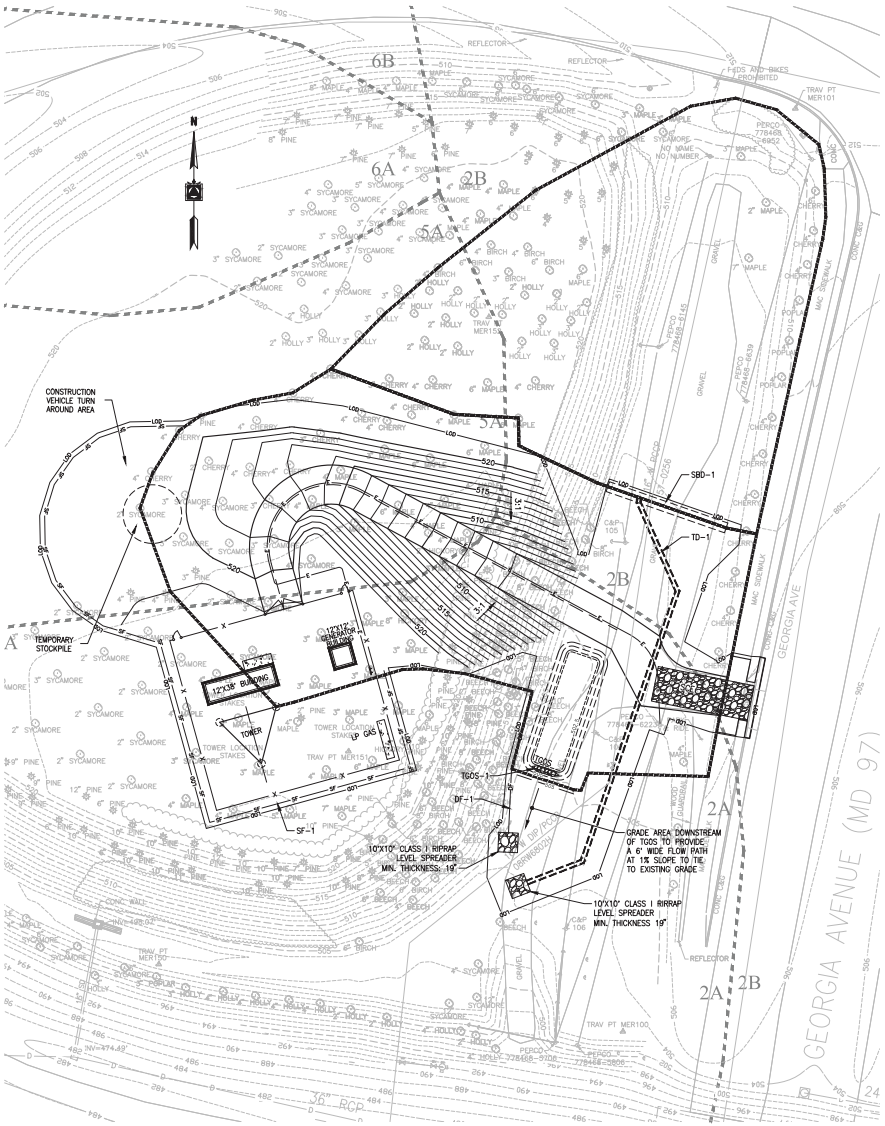
MARK	DATE	DESCRIPTION

CAD DWG FILE:
DRAWN BY: SJM
CHK'D BY: JMS

PROJECT NO.:
DATE: AUGUST 2019

SITE DETAILS 2

SHEET 6 OF 13



SITE PLAN
SCALE: 1"=30'

30 0 30 60
SCALE IN FEET

DF-1: DIVERSION FENCE

- LENGTH: 74 LF
- AVG. LONGITUDINAL SLOPE: 4.1%

SBD-1: SANDBAG DIKE

- SHALL BE WATERTIGHT
- LENGTH: 64 LF
- HEIGHT: 24 INCHES (MIN.)
- WIDTH: 24 INCHES (MIN.)

SF-1: SILT FENCE

- LENGTH: 446 LF
- MAX CONTRIBUTING SLOPE LENGTH: 56 FT
- CONTRIBUTING AREA AVERAGE SLOPE: 1-2%

TD-1: TEMPORARY DRAIN (CLEARWATER)

- SHALL BE WATERTIGHT
- 2-12" HDPE (BURIED)
- DRAINAGE AREA: 0.75 ACRES
- LENGTH: 228 LF.
- MIN. SLOPE: 0.60%

TGOS-1: TEMPORARY GABION OUTLET STRUCTURE

- WEIR CREST ELEVATION: 504.50
- TOP OF GABION ELEVATION: 505.75
- DRAINAGE AREA: 0.95 ACRES
- REQUIRED STORAGE VOLUME: 1,710 CU. FT
- PROVIDED STORAGE VOLUME: 2,540 CU. FT

GENERAL NOTES

1. HORIZONTAL DATUM: NAD 83/91
   VERTICAL DATUM: NAVD 88
2. THE TOPOGRAPHIC INFORMATION SHOWN ON THIS DRAWING IS BASED ON A FIELD SURVEY PROVIDED BY MERCADO CONSULTANTS, INC. DATED DECEMBER 2017.
3. TOPOGRAPHIC FIELD SURVEY IS MERGED WITH GIS INFORMATION FROM MONTGOMERY COUNTY.
4. ANY DAMAGE TO ADJACENT ROADS, UTILITIES, FENCE LINES, ETC. DURING CONSTRUCTION SHALL BE REPLACED IN KIND OR REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE STATE.
5. MATERIALS SALVAGED DURING CONSTRUCTION SHALL BECOME THE CONTRACTOR'S PROPERTY UNLESS OTHERWISE NOTED ON THE PLANS. THE CONTRACTOR IS RESPONSIBLE FOR DISPOSAL OF SALVAGED MATERIALS.
6. CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AT ALL TIMES.
7. THE LOCATIONS OF UNDERGROUND AND AERIAL UTILITIES SHOWN ON THE PLANS ARE FOR INFORMATIONAL PURPOSES ONLY AND ARE NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR SHALL ADHERE TO THE MARYLAND HIGH VOLTAGE LINE ACT AND COORDINATE WITH UTILITY COMPANIES FOR ANY OR ALL RELOCATIONS THAT MAY BE REQUIRED.
8. CALL "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO BEGINNING EXCAVATION TO DETERMINE THE LOCATION OF EXISTING UTILITIES. FOR AREAS AND/OR UTILITIES WHICH "MISS UTILITY" WILL NOT LOCATE, THE CONTRACTOR SHALL UTILIZE THE SERVICES OF A PRIVATE UTILITY LOCATOR TO IDENTIFY THE LOCATION OF SUBSURFACE UTILITIES WITHIN THE LIMITS OF WORK.
9. THE CONTRACTOR MUST PROTECT IN PLACE ALL ACTIVE UNDERGROUND UTILITIES UNLESS OTHER TREATMENT IS CALLED FOR. REPAIRS TO UTILITIES OR PROPERTY DAMAGE AS A RESULT OF THE CONTRACTOR'S NEGLIGENCE OR METHOD OF OPERATION MUST BE MADE AT THE CONTRACTOR'S EXPENSE BEFORE PROCEEDING WITH CONSTRUCTION.
10. SUBSURFACE CONDITIONS MAY VARY ON SITE. INFORMATION ON SUBSURFACE CONDITIONS, LOCATION OF TEST BORINGS, AND BORING LOGS ARE CONTAINED IN THE GEOTECHNICAL EVALUATION REPORT. THE CONTRACTOR SHALL PLAN WORK ACCORDINGLY.
11. THERE IS NO STREAM OR WETLAND DISTURBANCE ASSOCIATED WITH THIS PROJECT.

LEGEND

- FENCE
- SF — SILT FENCE
- LOD — LIMIT OF DISTURBANCE
- SCE — STABILIZED CONSTRUCTION ENTRANCE
- TGOS — TEMPORARY GABION OUTLET STRUCTURE
- DRAINAGE BOUNDARY
- EXISTING CONTOUR
- EXISTING TREE
- EXISTING TREELINE
- EXISTING WATER LINE
- EXISTING WATER VALVE
- EXISTING FIRE HYDRANT
- EXISTING UTILITY POLE
- SOIL BOUNDARY
- 5A — SOIL TYPE

NOTE TO CONTRACTOR:

1. EROSION AND SEDIMENT CONTROL SHALL BE STRICTLY ENFORCED.
2. EXCESS CUT MATERIAL SHALL BE HAULED OFFSITE IMMEDIATELY.

STANDARD STABILIZATION NOTE:

FOLLOWING INITIAL SOIL DISTURBANCE AND REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:

A. THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND

B. SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

MDE NOTE:

MDE NO. 18-SF-0206

Gannett Fleming
RUTHERFORD PLAZA
7133 RUTHERFORD ROAD, SUITE 300
BALTIMORE, MD 21244

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 20821, EXPIRATION DATE: 05/02/2021.

STATE OF MARYLAND — JEFFREY M. SMITH — 20821 — PROFESSIONAL ENGINEER — 8/2/19

doit
STATE OF MARYLAND
DEPARTMENT OF INFORMATION TECHNOLOGY

MD 200 / GEORGIA AVENUE COMMUNICATIONS TOWER

USING AGENCY APPROVAL

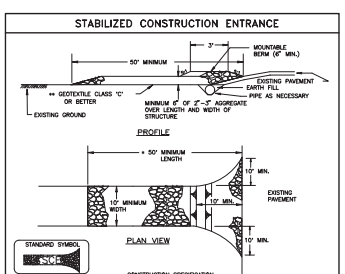
MARK	DATE	DESCRIPTION

CAD DWG FILE:
DRAWN BY: SJM
CHK'D BY: JMS

PROJECT NO.:
DATE: AUGUST 2019

EROSION AND SEDIMENT CONTROL PLAN

STABILIZED CONSTRUCTION ENTRANCE



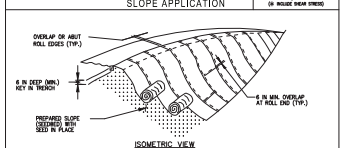
CONSTRUCTION SPECIFICATION

1. LENGTH – MINIMUM OF 50' (*30' FOR SINGLE RESIDENCE LOT).
2. WIDTH – 10' MINIMUM, SHOULD BE FLARED AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
3. GEOTEXTILE FABRIC (FILTER CLOTH) SHALL BE PLACED OVER THE EXISTING GROUND PRIOR TO PLACING STONE. **THE PLAN APPROVAL AUTHORITY MAY NOT REQUIRE SINGLE FAMILY RESIDENCES TO USE GEOTEXTILE.
4. STONE – CRUSHED AGGREGATE (2" TO 3") OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT SHALL BE PLACED AT LEAST 6" DEEP OVER THE LENGTH AND WIDTH OF THE ENTRANCE.
5. SURFACE WATER – ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED THROUGH THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PIPE INSTALLED THROUGH THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE PROTECTED WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 6" OF STONE OVER THE PIPE. PIPE HAS TO BE SIZED ACCORDING TO THE DRAINAGE. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY A PIPE WILL NOT BE NECESSARY. PIPE SHOULD BE SIZED ACCORDING TO THE AMOUNT OF RUNOFF TO BE CONVEYED. A 6" MINIMUM WILL BE REQUIRED.
6. LOCATION – A STABILIZED CONSTRUCTION ENTRANCE SHALL BE LOCATED AT EVERY POINT WHERE CONSTRUCTION TRAFFIC ENTERS OR LEAVES A CONSTRUCTION SITE. VEHICLES LEAVING THE SITE MUST TRAVEL OVER THE ENTIRE LENGTH OF THE STABILIZED CONSTRUCTION ENTRANCE.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE F - 17 - 1	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL B-4-6-B TEMPORARY SOIL STABILIZATION MATTING SLOPE APPLICATION

STANDARD SYMBOL TSSMS – g 2.0 lb/ft² OR HIGHER SHEAR STRESS



CONSTRUCTION SPECIFICATIONS

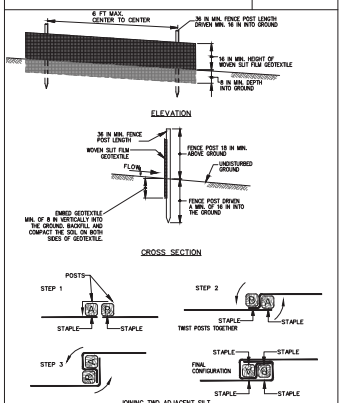
1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
2. USE TEMPORARY SOIL STABILIZATION MATTING MADE OF DEGRADABLE (LASTS 6 MONTHS MINIMUM) NATURAL OR MAN-MADE FIBERS (MOSTLY ORGANIC). MAT MUST HAVE UNIFORM THICKNESS AND DISTRIBUTION OF FIBERS THROUGHOUT AND BE SMOLDER RESISTANT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
3. SECURE MATTING USING STEEL STAPLES, WOOD STAKES, OR BIODEGRADABLE EQUIVALENT. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND A MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, ¾3 INCH IN CROSS SECTION, AND WEDGE SHAPED AT THE BOTTOM.
4. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION & SEDIMENT CONTROL PLAN.
5. UNROLL MATTING DOWNSLOPE. LAY MAT SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
6. OVERLAP OR ABUT ROLL EDGES PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES MINIMUM, WITH THE UPSLOPE MAT OVERLAPPING ON TOP OF THE DOWNSLOPE MAT.
7. KEY IN THE UPSLOPE END OF MAT 6 INCHES MINIMUM BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
8. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT MAXIMUM CENTERS THROUGHOUT AND 2 FOOT MAXIMUM CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
9. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-1 SILT FENCE

STANDARD SYMBOL SF



1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-1 SILT FENCE

STANDARD SYMBOL SF

CONSTRUCTION SPECIFICATIONS

1. USE WOOD POSTS 1½ X 1½ X ¾ INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD. AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
2. USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
3. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION.
4. PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
5. EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
6. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
7. EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE.
8. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN, IF UNDERMINING OCCURS, REINSTALL FENCE.

2 OF 2

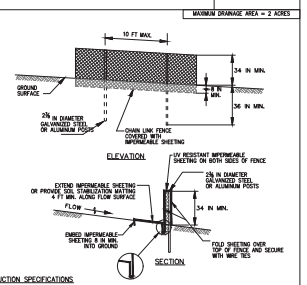
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL C-9 DIVERSION FENCE

STANDARD SYMBOL DF

MAXIMUM DRAINAGE AREA = 2 ACRES



CONSTRUCTION SPECIFICATIONS

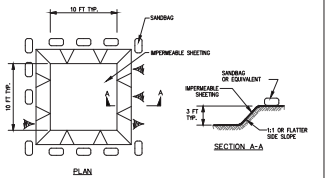
1. USE 42 INCH HIGH, 9 GAUGE OR THICKER CHAIN LINK FENCING (2¼ INCH MAXIMUM OPENING).
2. USE 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. THE POSTS DO NOT NEED TO BE SET IN CONCRETE.
3. FASTEN CHAIN LINK FENCE SECURELY TO THE FENCE POSTS WITH WIRE TIES.
4. SECURE 10 MIL OR THICKER UV RESISTANT, IMPERMEABLE SHEETING TO CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT TOP, MID SECTION, AND BELOW GROUND SURFACE.
5. EXTEND SHEETING A MINIMUM OF 4 FEET ALONG FLOW SURFACE AND EMBED END A MINIMUM OF 8 INCHES INTO GROUND. SOIL STABILIZATION MATTING MAY BE USED IN LIEU OF IMPERMEABLE SHEETING ALONG FLOW SURFACE.
6. WHEN TWO SECTIONS OF SHEETING ADJOIN EACH OTHER, OVERLAP BY 6 INCHES AND FOLD WITH SEAM FACING DOWNGRADE.
7. KEEP FLOW SURFACE ALONG DIVERSION FENCE AND POINT OF DISCHARGE FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. MAINTAIN POSITIVE DRAINAGE. REPLACE IMPERMEABLE SHEETING IF TORN, IF UNDERMINING OCCURS, REINSTALL FENCE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

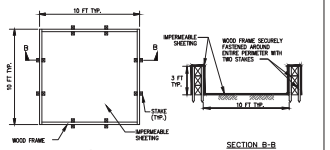
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL H-6 ONSITE CONCRETE WASHOUT STRUCTURE

STANDARD SYMBOL CWS



EXCAVATED WASHOUT STRUCTURE



WASHOUT STRUCTURE WITH WOOD PLANKS

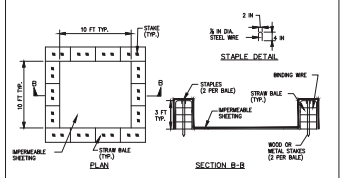
1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL H-6 ONSITE CONCRETE WASHOUT STRUCTURE

STANDARD SYMBOL CWS



NOTE: CAN BE TWO STACKED BALES OR PARTIALLY EXCAVATED TO REACH 3 FT DEPTH

WASHOUT STRUCTURE WITH STRAW BALES

CONSTRUCTION SPECIFICATIONS

1. LOCATE WASHOUT STRUCTURE A MINIMUM OF 50 FEET AWAY FROM OPEN CHANNELS, STORM DRAIN INLETS, SENSITIVE AREAS, WETLANDS, BUFFERS AND WATER COURSES AND AWAY FROM CONSTRUCTION TRAFFIC.
2. SIZE WASHOUT STRUCTURE FOR VOLUME NECESSARY TO CONTAIN WASH WATER AND SOLIDS AND MAINTAIN AT LEAST 4 INCHES OF FREEBOARD. TYPICAL DIMENSIONS ARE 10 FEET X 10 FEET X 3 FEET DEEP.
3. PREPARE SOIL BASE FREE OF ROCKS OR OTHER DEBRIS THAT MAY CAUSE TEARS OR HOLES IN THE LINER. FOR LINER, USE 10 MIL OR THICKER UV RESISTANT, IMPERMEABLE SHEETING, FREE OF HOLES AND TEARS OR OTHER DEFECTS THAT COMPROMISE IMPERMEABILITY OF THE MATERIAL.
4. PROVIDE A SIGN FOR THE WASHOUT IN CLOSE PROXIMITY TO THE FACILITY.
5. KEEP CONCRETE WASHOUT STRUCTURE WATER TIGHT. REPLACE IMPERMEABLE LINER IF DAMAGED (E.G., RIPPED OR PUNCTURED). EMPTY OR REPLACE WASHOUT STRUCTURE THAT IS 75 PERCENT FULL, AND DISPOSE OF ACCUMULATED MATERIAL PROPERLY. DO NOT REUSE PLASTIC AND WET-VACUUM STORED LIQUIDS THAT HAVE NOT EVAPORATED AND DISPOSE OF IN AN APPROVED MANNER. PRIOR TO FORECASTED RAINSTORMS, REMOVE LIQUIDS OR COVER STRUCTURE TO PREVENT OVERFLOWS. REMOVE HARDENED SOLIDS, WHOLE OR BROKEN UP, FOR DISPOSAL OR RECYCLING. MAINTAIN RUNOFF DIVERSION AROUND EXCAVATED WASHOUT STRUCTURE UNTIL STRUCTURE IS REMOVED.

2 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

H-1 STANDARDS AND SPECIFICATIONS FOR MATERIALS

Table H.1: Geotextile Fabrics

		WOVEN SLIT FILM GEOTEXTILE		WOVEN MONOFILAMENT GEOTEXTILE		NONWOVEN GEOTEXTILE	
		MINIMUM AVERAGE ROLL VALUE[1]					
PROPERTY	TEST METHOD	MD	CD	MD	CD	MD	CD
Grab Tensile Strength	ASTMD-4632	200 lb	200 lb	370 lb	250 lb	200 lb	200 lb
Grab Tensile Elongation	ASTMD-4632	15%	10%	15%	15%	50%	50%
Trapezoidal Tear Strength	ASTMD-4533	75 lb	75 lb	100 lb	60 lb	80 lb	80 lb
Puncture Strength	ASTMD-6241	450 lb		900 lb		450 lb	
Apparent Opening Size[2]	ASTMD-4751	U.S. Sieve 30 (0.59 mm)		U.S. Sieve 70 (0.21 mm)		U.S. Sieve 70 (0.21 mm)	
Permittivity	ASTMD-4491	0.05 sec^{-1}		0.28 sec^{-1}		1.1 sec^{-1}	
Ultraviolet Resistance Retained at 500 hours	ASTMD-4355	70% strength		70% strength		70% strength	

[1] All numeric values except apparent opening size (AOS) represent minimum average roll values (MARV). MARV is calculated as the typical minus two standard deviations. MD is machine direction; CD is cross direction.

[2] Values for AOS represent the average maximum opening.

Geotextiles must be evaluated by the National Transportation Product Evaluation Program (NTPEP) and conform to the values in Table H.1.

The geotextile must be inert to commonly encountered chemicals and hydrocarbons and must be rot and mildew resistant. The geotextile must be manufactured from fibers consisting of long chain synthetic polymers and composed of a minimum of 95 percent by weight of polyolefins or polyesters, and formed into a stable network so the filaments or yarns retain their dimensional stability relative to each other, including selvages.

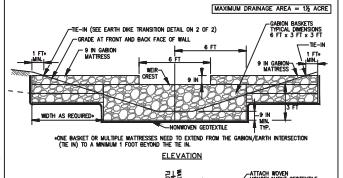
When more than one section of geotextile is necessary, overlap the sections by at least one foot. The geotextile must be pulled taut over the applied surface. Equipment must not run over exposed fabric. When placing riprap on geotextile, do not exceed 1 one foot drop height.

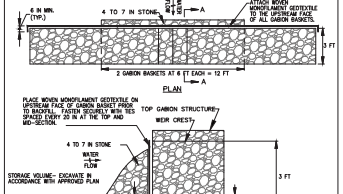
H.1

DETAIL E-8 TEMPORARY GABION OUTLET STRUCTURE

STANDARD SYMBOL TGOS

MAXIMUM DRAINAGE AREA = 15 ACRE





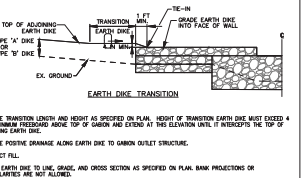
1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-8 TEMPORARY GABION OUTLET STRUCTURE

STANDARD SYMBOL TGOS



NOTES:

1. PROVIDE TRANSITION LENGTH AND HEIGHT AS SPECIFIED ON PLAN. HEIGHT OF TRANSITION EARTH DIKE MUST EXCEED 4 INCH MINIMUM FREEBOARD ABOVE TOP OF GABION AND EXTEND AT THIS ELEVATION UNTIL IT INTERCEPTS THE TOP OF ADJOINING EARTH DIKE.
2. PROVIDE POSITIVE DRAINAGE ALONG EARTH DIKE TO GABION OUTLET STRUCTURE.
3. COMPACT FILL.
4. SHAPE EARTH DIKE TO LINE, GRADE, AND CROSS SECTION AS SPECIFIED ON PLAN. BANK PROJECTIONS OR IRREGULARITIES ARE NOT ALLOWED.

CONSTRUCTION SPECIFICATIONS

1. PROVIDE STORAGE VOLUME AS SPECIFIED ON APPROVED PLANS.
2. USE BASKETS MADE OF 11 GAUGE WIRE OR HEAVIER.
3. USE NONWOVEN AND WOVEN MONOFILAMENT GEOTEXTILES AS SPECIFIED IN SECTION H-1 MATERIALS.
4. INSTALL GABIONS IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.
5. EMBED THE GABION OUTLET STRUCTURE INTO THE SOIL A MINIMUM OF 9 INCHES. PROVIDE NONWOVEN GEOTEXTILE UNDER ALL GABIONS.
6. FILL GABION BASKETS WITH CLEAN 4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE WITHOUT REBAR OR WIRE MESH.
7. MAKE THE WEIR CREST OF THE GABION OUTLET STRUCTURE 9 INCHES LOWER THAN THE TOP OF THE ADJACENT GABIONS.
8. PROVIDE A MINIMUM WEIR CREST OF 6 FEET.
9. ATTACH WOVEN MONOFILAMENT GEOTEXTILE TO THE UPSTREAM FACE OF GABION BASKETS AND COVER WITH 4 TO 7 INCH STONE.
10. REMOVE SEDIMENT WHEN IT HAS ACCUMULATED TO WITHIN 12 INCHES OF THE WEIR CREST. REPLACE GEOTEXTILE AND STONE FACING WHEN STRUCTURE CEASES TO FUNCTION. MAINTAIN LINE, GRADE, AND CROSS SECTION.
11. UPON REMOVAL OF GABION OUTLET STRUCTURE, GRADE AREA FLUSH WITH EXISTING GROUND. WITHIN 24 HOURS STABILIZE DISTURBED AREA WITH TOPSOIL, SEED, AND MULCH, OR AS SPECIFIED ON APPROVED PLAN.

2 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

MDE NOTE:
MDE NO. 18–SF–0206

Gannett Fleming
RUTHERFORD PLAZA
7133 RUTHERFORD ROAD, SUITE 300
BALTIMORE, MD 21244

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 20821, EXPIRATION DATE: 05/02/2021.

doit
STATE OF MARYLAND
DEPARTMENT OF INFORMATION TECHNOLOGY

MD 200 / GEORGIA AVENUE COMMUNICATIONS TOWER

USING AGENCY APPROVAL

MARK	DATE	DESCRIPTION

CAD DWG FILE:
DRAWN BY: SJM
CHK'D BY: JMS

PROJECT NO.:
DATE: AUGUST 2019

EROSION AND SEDIMENT CONTROL DETAILS

SHEET 8 OF 13

EROSION AND SEDIMENT CONTROL GENERAL NOTES

1. THE CONTRACTOR SHALL NOTIFY MDE AT (410) 537-3510 SEVEN (7) DAYS BEFORE COMMENCING ANY LAND DISTURBING ACTIVITY AND, UNLESS WAIVED BY MDE, SHALL BE REQUIRED TO HOLD A PRE-CONSTRUCTION MEETING BETWEEN PROJECT REPRESENTATIVES AND A REPRESENTATIVE OF MDE.
2. THE CONTRACTOR SHALL NOTIFY MDE IN WRITING AND BY TELEPHONE AT THE FOLLOWING POINTS:
   A. THE REQUIRED PRE-CONSTRUCTION MEETING.
   B. FOLLOWING INSTALLATION OF SEDIMENT CONTROL MEASURES.
   C. DURING THE INSTALLATION OF SEDIMENT BASINS (TO BE CONVERTED INTO PERMANENT STORMWATER MANAGEMENT STRUCTURES) AT THE REQUIRED INSPECTION POINTS (SEE INSPECTION CHECKLIST ON PLAN). NOTIFICATION PRIOR TO COMMENCING CONSTRUCTION OF EACH STEP IS MANDATORY.
   D. PRIOR TO REMOVAL OR MODIFICATION OF ANY SEDIMENT CONTROL STRUCTURE(S).
   E. PRIOR TO REMOVAL OF ALL SEDIMENT CONTROL DEVICES.
   F. PRIOR TO FINAL ACCEPTANCE.
3. THE PLAN APPROVAL LETTER, APPROVED EROSION AND SEDIMENT CONTROL PLANS, DAILY LOG BOOKS, AND TEST REPORTS SHALL BE AVAILABLE AT THE SITE FOR INSPECTION BY DULY AUTHORIZED OFFICIALS OF MDE AND THE AGENCY RESPONSIBLE FOR THE PROJECT.
4. THE CONTRACTOR SHALL CONSTRUCT ALL EROSION AND SEDIMENT CONTROL MEASURES PER THE APPROVED PLAN AND CONSTRUCTION SEQUENCE AND SHALL HAVE THEM INSPECTED AND APPROVED BY THE MDE INSPECTOR PRIOR TO BEGINNING ANY OTHER LAND DISTURBANCES. MINOR SEDIMENT CONTROL DEVICE LOCATION ADJUSTMENTS MAY BE MADE IN THE FIELD WITH THE APPROVAL OF THE MDE INSPECTOR. THE CONTRACTOR SHALL ENSURE THAT ALL RUNOFF FROM DISTURBED AREAS IS DIRECTED TO THE SEDIMENT CONTROL DEVICES AND SHALL NOT REMOVE ANY EROSION OR SEDIMENT CONTROL MEASURE WITHOUT PRIOR PERMISSION FROM MDE INSPECTOR. THE CONTRACTOR SHALL OBTAIN PRIOR AGENCY AND MDE APPROVAL FOR MODIFICATIONS TO THE EROSION AND SEDIMENT CONTROL PLAN AND/OR SEQUENCE OF CONSTRUCTION.
5. THE MDE INSPECTOR HAS THE OPTION OF REQUIRING ADDITIONAL SAFETY OR SEDIMENT CONTROL MEASURES, IF DEEMED NECESSARY.
6. THE CONTRACTOR SHALL PROTECT ALL POINTS OF CONSTRUCTION INGRESS AND EGRESS TO PREVENT THE DEPOSITION OF MATERIALS ONTO PUBLIC ROADS. ALL MATERIALS DEPOSITED ONTO PUBLIC ROADS SHALL BE REMOVED IMMEDIATELY.
7. THE CONTRACTOR SHALL INSPECT DAILY AND MAINTAIN CONTINUOUSLY IN AN EFFECTIVE OPERATING CONDITION ALL EROSION AND SEDIMENT CONTROL MEASURES UNTIL SUCH TIME AS THEY ARE REMOVED WITH PRIOR PERMISSION FROM THE MDE INSPECTOR.
8. EROSION AND SEDIMENT CONTROL FOR UTILITY CONSTRUCTION SHALL BE PROVIDED IN ACCORDANCE WITH APPROVED PLANS. UTILITY CONSTRUCTION SHALL ONLY BE FOR AREAS WITHIN THE DELINEATED LIMIT OF DISTURBANCE. CALL "MISS UTILITY" AT 1-800-257-7777 48 HOURS PRIOR TO THE START OF WORK. WHEN SAME DAY STABILIZATION IS APPROVED:
   A. EXCAVATED TRENCH MATERIAL SHALL BE PLACED ON THE HIGH SIDE OF THE TRENCH.
   B. TRENCHES FOR UTILITY INSTALLATION SHALL BE BACKFILLED, COMPACTED, AND STABILIZED AT THE END OF EACH WORKING DAY. NO MORE TRENCH SHALL BE OPENED THAN CAN BE COMPLETED THE SAME DAY.
9. ALL WATER REMOVED FROM EXCAVATED AREAS SHALL BE PASSED THROUGH AN MDE APPROVED DEWATERING PRACTICE OR PUMPED TO A SEDIMENT TRAP OR BASIN PRIOR TO DISCHARGE TO A FUNCTIONAL STORM DRAIN SYSTEM OR TO STABLE GROUND SURFACE.
10. CONCRETE WASHOUT STRUCTURES SHALL BE USED WHEN CONCRETE TRUCKS, DRUMS, PUMPS, CHUTES, OR OTHER EQUIPMENT IS RINSED OR CLEANED ON-SITE.
11. CONSTRUCTION ACTIVITIES PRODUCING DUST SHALL IMPLEMENT CONTROL MEASURES TO AVOID THE SUSPENSION OF DUST PARTICLES AND/OR PREVENT DUST FROM BLOWING OFF-SITE OR TO AREAS WITHOUT TREATMENT.
12. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
   A. THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND
   B. SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.
13. VEGETATIVE STABILIZATION SHALL BE PERFORMED IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL. REFER TO APPROPRIATE SPECIFICATIONS FOR TEMPORARY SEEDING, PERMANENT SEEDING, MULCHING, SODDING, AND GROUND COVERS.
14. WHEN SEEDING, ALL DISTURBED AREAS WITH SLOPES FLATTER THAN 2:1 SHALL BE STABILIZED WITH 4 INCHES OF TOPSOIL, SEED, AND MULCH. ALL DISTURBED AREAS WITH SLOPES 2:1 OR STEEPER SHALL BE STABILIZED WITH MATTING OVER 2 INCHES OF TOPSOIL AND SEED.
15. ALL SEDIMENT BASINS, TRAP EMBANKMENTS AND SLOPES, PERIMETER DIKES, SWALES AND ALL DISTURBED SLOPES STEEPER OR EQUAL TO 3:1 SHALL BE STABILIZED WITH SEED AND ANCHORED STRAW MULCH, SOD, OR OTHER APPROVED STABILIZATION MEASURES, AS SOON AS POSSIBLE BUT NO LATER THAN THREE (3) CALENDAR DAYS AFTER ESTABLISHMENT. ALL AREAS DISTURBED OUTSIDE OF THE PERIMETER SEDIMENT CONTROL SYSTEM SHALL BE MINIMIZED. MAINTENANCE SHALL BE PERFORMED AS NECESSARY TO ENSURE CONTINUED STABILIZATION.
16. PERMANENT SWALES OR OTHER POINTS OF CONCENTRATED WATER FLOW SHALL BE STABILIZED WITH SEED AND AN APPROVED EROSION CONTROL MATTING, SOD, RIP-RAP, OR OTHER APPROVED STABILIZATION MEASURES.
17. FOR STOCKPILE SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1), THE CONTRACTOR SHALL APPLY SEED AND ANCHORED STRAW MULCH, SOD, OR OTHER APPROVED STABILIZATION MEASURES TO THE FACE OF THE STOCKPILE WITHIN THREE (3) CALENDAR DAYS OF ACTIVITY HAVING CEASED ON THE RESPECTIVE FACE. FOR SLOPES 3:1 OR FLATTER, THE CONTRACTOR SHALL APPLY STABILIZATION MEASURES TO THE FACE OF THE STOCKPILE WITHIN SEVEN (7) CALENDAR DAYS OF ACTIVITY HAVING CEASED ON THE RESPECTIVE FACE. MAINTENANCE SHALL BE PERFORMED AS NECESSARY TO ENSURE CONTINUED STABILIZATION.
18. FOR FINISHED GRADING, THE CONTRACTOR SHALL PROVIDE ADEQUATE GRADIENTS TO PREVENT WATER FROM PONDING FOR MORE THAN TWENTY-FOUR (24) HOURS AFTER THE END OF A RAINFALL EVENT. DRAINAGE COURSES AND SWALE FLOW AREAS MAY TAKE AS LONG AS FORTY-EIGHT (48) HOURS AFTER THE END OF A RAINFALL EVENT TO DRAIN. AREAS DESIGNED TO HAVE STANDING WATER SHALL NOT BE REQUIRED TO MEET THIS REQUIREMENT.
19. WHERE DEEMED APPROPRIATE BY THE ENGINEER OR INSPECTOR, SEDIMENT BASINS AND TRAPS MAY NEED TO BE SURROUNDED WITH AN APPROVED SAFETY FENCE. THE FENCE MUST CONFORM TO LOCAL ORDINANCES AND REGULATIONS. THE DEVELOPER OR OWNER SHALL CHECK WITH LOCAL BUILDING OFFICIALS ON APPLICABLE SAFETY REQUIREMENTS. WHERE SAFETY FENCE IS DEEMED APPROPRIATE AND LOCAL ORDINANCES DO NOT SPECIFY FENCING SIZES AND TYPES, THE FOLLOWING SHALL BE USED AS A MINIMUM STANDARD: THE SAFETY FENCE SHALL BE MADE OF WELDED WIRE AND AT LEAST 42 INCHES HIGH, HAVE POSTS SPACED NO FARTHER APART THAN 8 FEET, HAVE MESH OPENINGS NO GREATER THAN 2 INCHES IN WIDTH AND 4 INCHES IN HEIGHT WITH A MINIMUM OF 14 GAUGE WIRE. SAFETY FENCE SHALL BE MAINTAINED AND IN GOOD CONDITION AT ALL TIMES.
20. ALL SEDIMENT TRAP DEPTH DIMENSIONS ARE RELATIVE TO THE OUTLET ELEVATION. ALL TRAPS SHALL HAVE A STABLE OUTFALL. ALL TRAPS AND BASINS SHALL HAVE STABLE INFLOW POINTS.
21. SEDIMENT SHALL BE REMOVED AND THE TRAP OR BASIN RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE QUARTER OF THE TOTAL DEPTH OF THE TRAP OR BASIN. TOTAL DEPTH SHALL BE MEASURED FROM THE TRAP OR BASIN BOTTOM TO THE CREST OF THE OUTLET.
22. SEDIMENT REMOVED FROM TRAPS (AND BASINS) SHALL BE PLACED AND STABILIZED IN APPROVED AREAS, BUT NOT WITHIN A FLOODPLAIN, WETLAND OR TREE-SAVE AREA. WHEN PUMPING SEDIMENT LADEN WATER, THE DISCHARGE SHALL BE DIRECTED TO AN MDE APPROVED SEDIMENT TRAPPING DEVICE PRIOR TO RELEASE FROM THE SITE. A SUMP PIT MAY BE USED IF SEDIMENT TRAPS THEMSELVES ARE BEING PUMPED OUT.
23. PRIOR TO REMOVAL OF SEDIMENT CONTROL MEASURES, THE CONTRACTOR SHALL STABILIZE AND HAVE ESTABLISHED PERMANENT STABILIZATION FOR ALL CONTRIBUTORY DISTURBED AREAS USING SOD OR AN APPROVED PERMANENT SEED MIXTURE WITH REQUIRED SOIL AMENDMENTS AND AN APPROVED ANCHORED MULCH. WOOD FIBER MULCH MAY ONLY BE USED IN SEEDING SEASON WHERE THE SLOPE DOES NOT EXCEED 10% AND GRADING HAS BEEN DONE TO PROMOTE SHEET FLOW DRAINAGE. AREAS BROUGHT TO FINISHED GRADE DURING THE SEEDING SEASON SHALL BE PERMANENTLY STABILIZED AS SOON AS POSSIBLE, BUT NOT LATER THAN THREE (3) CALENDAR DAYS AFTER ESTABLISHMENT FOR SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1) AND SEVEN (7) CALENDAR DAYS FOR FLATTER SLOPES. WHEN PROPERTY IS BROUGHT TO FINISHED GRADE DURING THE MONTHS OF NOVEMBER THROUGH FEBRUARY, AND PERMANENT STABILIZATION IS FOUND TO BE IMPRACTICAL, TEMPORARY SEED AND ANCHORED STRAW MULCH SHALL BE APPLIED TO DISTURBED AREAS. THE FINAL PERMANENT STABILIZATION OF SUCH PROPERTY SHALL BE APPLIED BY MARCH 15 OR EARLIER IF GROUND AND WEATHER CONDITIONS ALLOW.
24. TEMPORARY SEDIMENT CONTROL DEVICES SHALL BE REMOVED WITH PERMISSION OF THE MDE INSPECTOR WITHIN THIRTY (30) CALENDAR DAYS FOLLOWING ESTABLISHMENT OF PERMANENT STABILIZATION IN ALL CONTRIBUTORY DRAINAGE AREAS. UPON REMOVAL OF SEDIMENT CONTROL DEVICES, THE AREA DISTURBED BY REMOVAL SHALL BE STABILIZED WITH TOPSOIL, SEED, AND MULCH, OR AS SPECIFIED, WITHIN 24 HOURS OF SAID REMOVAL. STORMWATER MANAGEMENT STRUCTURES USED TEMPORARILY FOR SEDIMENT CONTROL SHALL BE CONVERTED TO THE PERMANENT CONFIGURATION WITHIN THIS TIME PERIOD AS WELL.
25. OFF-SITE SPOIL OR BORROW AREAS ON STATE OR FEDERAL PROPERTY SHALL HAVE PRIOR APPROVAL BY MDE AND OTHER APPLICABLE STATE, FEDERAL, AND LOCAL AGENCIES; OTHERWISE APPROVAL SHALL BE GRANTED BY THE LOCAL AUTHORITIES. ALL WASTE AND BORROW AREAS OFF-SITE SHALL BE PROTECTED BY SEDIMENT CONTROL MEASURES AND STABILIZED.
26. SITE INFORMATION:

A. AREA DISTURBED	1.25	ACRES
B. TOTAL CUT	4,125	CUBIC YARDS
C. TOTAL FILL	15	CUBIC YARDS
D. OFFSITE WASTE/BORROW AREA LOCATION	TO BE DETERMINED	

NOTE: THESE QUANTITIES NOT TO BE USED FOR BIDDING PURPOSES.

MAINTENANCE NOTE

CONTRACTOR SHALL INSPECT AND MAINTAIN ALL SEDIMENT CONTROL MEASURES AND DEVICES AFTER EVERY STORM EVENT. MAINTENANCE SHALL INCLUDE, BUT NOT BE LIMITED TO, THE REMOVAL OF ALL ACCUMULATED SEDIMENT. GEOTEXTILE FABRIC SHALL BE REPLACED AS NEEDED TO ENSURE PROPER FUNCTION.

OWNER'S/DEVELOPER'S CERTIFICATION

I / WE HEREBY CERTIFY THAT ALL CLEARING, GRADING, CONSTRUCTION, AND/OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS PLAN AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF EROSION AND SEDIMENT BEFORE BEGINNING THE PROJECT. I/WE HEREBY AUTHORIZE THE RIGHT OF ENTRY FOR PERIODIC ON-SITE EVALUATION BY APPROPRIATE INSPECTION AND ENFORCEMENT AUTHORITY OR THE STATE OF MARYLAND, DEPARTMENT OF THE ENVIRONMENT. I / WE HEREBY CERTIFY THAT STORMWATER MANAGEMENT FACILITIES WILL BE MAINTAINED IN ACCORDANCE WITH APPROVED PLANS.

DATE _____ OWNER/ DEVELOPER SIGNATURE _____

RESPONSIBLE PERSONNEL CERTIFICATION NO. _____ PRINTED NAME AND TITLE _____

DESIGN CERTIFICATION

I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, THE 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUMES I & II INCLUDING SUPPLEMENTS, THE ENVIRONMENT ARTICLE SECTIONS 4-101 THROUGH 116 AND SECTIONS 4-201 AND 215, AND THE CODE OF MARYLAND REGULATIONS (COMAR) 26.17.01 AND COMAR 26.17.02 FOR EROSION AND SEDIMENT CONTROL AND STORMWATER MANAGEMENT, RESPECTIVELY.

DATE _____ DESIGNER'S SIGNATURE _____

MD REGISTRATION NO. 20821 (P.E., R.L.S., R.L.A, OR R.A. (CIRCLE ONE)) JEFFREY M. STAMM, P.E. PRINTED NAME

GENERAL SITE NOTES

1. ALL CONSTRUCTION DEBRIS SHALL BE DISPOSED OF IN ACCORDING TO FEDERAL, STATE, AND LOCAL REGULATIONS.
2. ALL WASTE WATER FROM DEWATERING ACTIVITIES SHALL BE DISCHARGE TO AN APPROVED SEDIMENT CAPTURE DEVICE.

DAILY STABILIZATION NOTE

FOR AREAS THAT REQUIRE SAME DAY STABILIZATION, CONTRACTOR SHALL ONLY DISTURB THAT AREA WHICH CAN BE COMPLETED AND STABILIZED BY THE END OF EACH WORKING DAY.

STABILIZATION SHALL BE AS FOLLOWS:

1. FOR AREAS TO BE PAVED, THE APPLICATION OF STONE BASE
2. FOR AREAS TO BE VEGETATIVELY STABILIZED:
   A. PERMANENT SEED AND SOIL STABILIZATION MATTING OR SOD FOR ALL STEEP SLOPES, CHANNELS OR SWALES.
   B. PERMANENT SEED AND MULCH FOR ALL OTHER AREAS
3. ANY AREAS WHICH CAN NOT BE STABILIZED BY THE END OF EACH WORKING DAY MUST HAVE SILT FENCE INSTALLED ON THE DOWNSLOPE SIDE.

TEMPORARY STOCKPILE NOTE

TEMPORARY STOCKPILE SHALL BE

1. LOCATED WITHIN THE LIMIT OF DISTURBANCE (LOD).
2. DRAIN TO A FUNCTIONING SEDIMENT CONTROL DEVICE.
3. POSITIONED TO NOT IMPEDE UPON, OR IMPAIR THE FUNCTION OF SAID DEVICE.
4. POSITIONED TO NOT ALTER DRAINAGE DIVIDES.

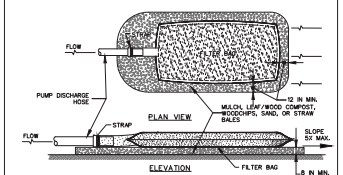
GENERAL NOTES

1. 100-YR FLOOD PLAIN IS NOT PRESENT ON SITE.
2. NO WETLANDS PRESENT ON SITE.
3. NO CRITICAL AREA IS PRESENT ON SITE.
4. AREA OF DISTURBANCE CONTAINS FORESTS.

SEQUENCE OF CONSTRUCTION

1. THE CONTRACTOR SHALL NOTIFY MDE AT (410) 537-3510 SEVEN (7) DAYS BEFORE COMMENCING ANY LAND DISTURBING ACTIVITY AND, UNLESS WAIVED BY MDE, SHALL BE REQUIRED TO HOLD A PRE-CONSTRUCTION MEETING BETWEEN PROJECT REPRESENTATIVES AND A REPRESENTATIVE OF MDE.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING "MISS UTILITY" AT 1-800-257-7777 FOR THE LOCATION OF ALL PUBLIC AND PRIVATE UTILITY LINES, PIPES, CABLES AND ASSOCIATED FEATURES AT LEAST 48 HOURS PRIOR TO ANY CONSTRUCTION WORK. THE CONTRACTOR SHALL UTILIZE THE SERVICES OF A PRIVATE UTILITY LOCATOR TO LOCATE AND MARK EXISTING UNDERGROUND UTILITIES NOT MARKED BY "MISS UTILITY". NO WORK MAY BEGIN WITHOUT CLEAR UTILITY MARKINGS AND A DIG PERMIT AUTHORIZATION.
3. IDENTIFY LOCATION OF EXISTING 16" WSSC WATERLINE WITHIN PROJECT LIMITS. IMPLEMENT PROTECTIVE MEASURES AS NEEDED TO PROTECT WATERLINE FROM ACCIDENTAL DAMAGE DURING CONSTRUCTION ACTIVITIES. CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE TO THE EXISTING WATERLINE AT OWN COST.
4. CLEAR AND GRUB AREAS AT THE TOE OF SLOPE FOR INSTALLATION OF SEDIMENT CONTROL MEASURES AND CLEARWATER DIVERSIONS. RELOCATE EXISTING UTILITY POLE TO FACILITATE INSTALLATION OF SEDIMENT CONTROL MEASURES.
   a. INSTALL STABILIZED CONSTRUCTION ENTRANCE
   b. INSTALL SANDBAG DIKE, CLEARWATER DIVERSION PIPING, DIVERSION FENCE DF-1, AND ASSOCIATED RIPRAP LEVEL SPREADERS. PROVIDE SAME DAY STABILIZATION FOR AREAS DISTURBED FOR INSTALLATION OF CLEARWATER DIVERSION PIPING, DIVERSION FENCE AND LEVEL SPREADERS.
   c. INSTALL TEMPORARY GABION OUTLET STRUCTURE, TGOS-1, EXCAVATE AREA AS NEEDED TO PROVIDE REQUIRED VOLUME BEHIND TGOS-1 AND PROVIDE POSITIVE DRAINAGE FROM TGOS-1. STABILIZE ALL AREAS DISTURBED FOR INSTALLATION OF TGOS-1. THESE IN NO NEED TO STABILIZE EXCAVATED AREA BEHIND TGOS-1.
5. INSTALL SILT FENCE, SF-1 PER PLANS. CLEAR AND GRUB AREA AS NEEDED FOR SILT FENCE INSTALLATION.
6. CLEAR AND GRUB REMAINDER OF THE AREA WITHIN THE PROJECT LIMIT OF DISTURBANCE. EXCAVATE ACCESS ROAD TO THE TOWER SITE AND PROVIDE INCREMENTAL STABILIZATION AS NEEDED.
7. CONSTRUCT COMMUNICATION TOWER, SURROUNDING ENCLOSURE, SUPPORT INFRASTRUCTURE AND ACCESS ROAD.
8. PROVIDE PERMANENT STABILIZATION FOR ALL DISTURBED AREAS.
9. FOLLOWING ESTABLISHMENT OF VEGETATION AND WITH THE APPROVAL OF THE MDE INSPECTOR, REMOVE SEDIMENT CONTROL MEASURES IN THE FOLLOWING ORDER:
   a. REMOVE SILT FENCE AROUND THE TOWER SITE AND STABILIZE AREAS DISTURBED IN THE PROCESS.
   b. REMOVE TGOS FACILITY, DIVERSION FENCE AND ASSOCIATED RIPRAP LEVEL SPREADER. REGRADE AREA TO EXISTING CONDITION AND TO HAVE POSITIVE DRAINAGE. STABILIZE ALL AREAS DISTURBED IN THE PROCESS.
   c. REMOVE SANDBAG DIKE, CLEARWATER PIPING AND THE ASSOCIATED RIPRAP LEVEL SPREADER. STABILIZE ALL AREAS DISTURBED IN THE PROCESS.
10. REMOVE STABILIZED CONSTRUCTION ENTRANCE, CONSTRUCT NEW SITE ENTRANCE FROM GEORGIA AVENUE AND REPAIR ANY INFRASTRUCTURE (PAVEMENT, GRAVEL ACCESS ROAD, SIDEWALK, CURB. ECT.) THAT WAS DAMAGED DURING CONSTRUCTION ACTIVITIES.
11. STABILIZE ANY REMAINING DISTURBED AREAS.

DETAIL F-4 FILTER BAG — STANDARD SYMBOL ⊠FB



CONSTRUCTION SPECIFICATIONS

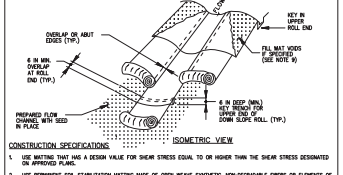
1. TIGHTLY SEAL SLEEVE AROUND THE PUMP DISCHARGE HOSE WITH A STRAP OR SIMILAR DEVICE.
2. PLACE FILTER BAG ON SUITABLE BASE (E.G., MULCH, LEAF/WOOD COMPOST, WOODCHIPS, SAND, OR STRAW BALES) LOCATED ON A LEVEL OR 5% MAXIMUM SLOPING SURFACE. DISCHARGE TO A STABILIZED AREA. EXTEND BASE A MINIMUM OF 12 INCHES FROM EDGES OF BAG.
3. CONTROL PUMPING RATE TO PREVENT EXCESSIVE PRESSURE WITHIN THE FILTER BAG IN ACCORDANCE WITH THE MANUFACTURER RECOMMENDATIONS. AS THE BAG FILLS WITH SEDIMENT, REDUCE PUMPING RATE.
4. REMOVE AND PROPERLY DISPOSE OF FILTER BAG UPON COMPLETION OF PUMPING OPERATIONS OR WHEN BAG HAS REACHED CAPACITY, WHICHEVER OCCURS FIRST. SPREAD THE DEWATERED SEDIMENT FROM THE BAG IN AN APPROVED UPLAND AREA AND STABILIZE WITH SEED AND MULCH BY THE END OF THE WORK DAY. RESTORE THE SURFACE AREA BENEATH THE BAG TO ORIGINAL CONDITION UPON REMOVAL OF THE DEVICE.
5. USE NONWOVEN GEOTEXTILE WITH DOUBLE STITCHED SEAMS USING HIGH STRENGTH THREAD. SIZE SLEEVE TO ACCOMMODATE A MAXIMUM 4 INCH DIAMETER PUMP DISCHARGE HOSE. THE BAG MUST BE MANUFACTURED FROM A NONWOVEN GEOTEXTILE THAT MEETS OR EXCEEDS MINIMUM AVERAGE ROLL VALUES (MARV) FOR THE FOLLOWING:

GRAB TENSILE	250 LB	ASTM D-4632
PUNCTURE	150 LB	ASTM D-4833
FLOW RATE	70 GAL/MIN/FT²	ASTM D-4491
PERMITTIVITY (SEC⁻¹)	1.2 SEC⁻¹	ASTM D-4491
UV RESISTANCE	70% STRENGTH @ 500 HOURS	ASTM D-4355
APPARENT OPENING SIZE (AOS)	0.15-0.18 MM	ASTM D-4751
SEAM STRENGTH	90%	ASTM D-4632

6. REPLACE FILTER BAG IF BAG CLOGS OR HAS RIPS, TEARS, OR PUNCTURES. DURING OPERATION KEEP CONNECTION BETWEEN PUMP HOSE AND FILTER BAG WATER TIGHT. REPLACE BEDDING IF IT BECOMES DISPLACED.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL		
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL B-4-6-C PERMANENT SOIL STABILIZATION MATTING CHANNEL APPLICATION — STANDARD SYMBOL PSSMC - # lb/ft² (# INDICATE SHEAR STRESS)



CONSTRUCTION SPECIFICATIONS

1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
2. USE PERMANENT SOIL STABILIZATION MATTING MADE OF OPEN WEAVE SYNTHETIC, NON-DEGRADABLE FIBERS OR ELEMENTS OF UNIFORM THICKNESS AND DISTRIBUTION THROUGHOUT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-HAZARDOUS TO THE SOIL. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 3x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
3. SECURE MATTING USING STEEL STAPLES OR WOOD STAKES. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF 11 AND NO. 8 RESPECTIVELY. "T" SHAPED STAPLES MUST AVERAGE 1 TO 1.5 INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x2 INCH IN CROSS SECTION, AND WEDGE SHAPE AT THE BOTTOM.
4. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS, UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
5. UNROLL MATTING IN DIRECTION OF WATER FLOW, CENTERING THE FIRST ROLL ON THE CHANNEL CENTER LINE. WORK FROM CENTER OF CHANNEL OUTWARD WHEN PLACING ROLLS. LAY MATTING SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
6. OVERLAP ON ABUT EDGES OF MATTING ROLLS PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES MINIMUM, WITH THE UPSTREAM MAT OVERLAPPING ON TOP OF THE NEXT DOWNSTREAM MAT.
7. KEY IN THE TOP OF SLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
8. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
9. IF SPECIFIED BY THE DESIGNER ON MANUFACTURER AND DEPENDING ON THE TYPE OF MAT BEING INSTALLED, ONCE THE MATTING IS KEYED AND STAPLED IN PLACE, FILL THE MAT VOIDS WITH TOP SOIL OR GRANULAR MATERIAL AND LIGHTLY COMPACT OR ROLL TO MAXIMIZE SOIL/MAT CONTACT WITHOUT CRUSHING MAT.
10. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL		
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

NOTE TO CONTRACTOR:

1. EROSION AND SEDIMENT CONTROL SHALL BE STRICTLY ENFORCED.
2. EXCESS CUT MATERIAL SHALL BE HAULED OFFSITE IMMEDIATELY.

STANDARD STABILIZATION NOTE:

FOLLOWING INITIAL SOIL DISTURBANCE AND REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:

A. THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND

B. SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

MDE NOTE:

MDE NO. 18-SF-0206

Gannett Fleming
RUTHERFORD PLAZA
7133 RUTHERFORD ROAD, SUITE 300
BALTIMORE, MD 21244

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 20821, EXPIRATION DATE: 05/02/2021.

STATE OF MARYLAND — JEFFREY M. STAMM — 20821 — PROFESSIONAL ENGINEER — 8/2/19

doit — STATE OF MARYLAND — DEPARTMENT OF INFORMATION TECHNOLOGY

USING AGENCY APPROVAL

MARK	DATE	DESCRIPTION

CAD DWG FILE:
DRAWN BY: SJM
CHK'D BY: JMS

PROJECT NO.:
DATE: AUGUST 2019

MD 200 / GEORGIA AVENUE COMMUNICATIONS TOWER

EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

SECTION B–4: VEGETATIVE STABILIZATION

DEFINITION: USING VEGETATION AS COVER TO PROTECT EXPOSED SOIL FROM EROSION.

PURPOSE: TO PROMOTE THE ESTABLISHMENT OF VEGETATION ON EXPOSED SOIL.

CONDITIONS WHERE PRACTICE APPLIES: ON ALL DISTURBED AREAS NOT STABILIZED BY OTHER METHODS. THIS SPECIFICATION IS DIVIDED INTO SECTIONS ON INCREMENTAL STABILIZATION, SOIL PREPARATION, SOIL AMENDMENTS AND TOPSOILING, SEEDING AND MULCHING, TEMPORARY STABILIZATION, AND PERMANENT STABILIZATION.

EFFECTS ON WATER QUALITY AND QUANTITY:
STABILIZATION PRACTICES ARE USED TO PROMOTE THE ESTABLISHMENT OF VEGETATION ON EXPOSED SOIL. WHEN SOIL IS STABILIZED WITH VEGETATION, THE SOIL IS LESS LIKELY TO ERODE AND MORE LIKELY TO ALLOW INFILTRATION OF RAINFALL, THEREBY REDUCING SEDIMENT LOADS AND RUNOFF TO DOWNSTREAM AREAS.

PLANTING VEGETATION IN DISTURBED AREAS WILL HAVE AN EFFECT ON THE WATER BUDGET, ESPECIALLY ON VOLUMES AND RATES OF RUNOFF, INFILTRATION, EVAPORATION, TRANSPIRATION, PERCOLATION, AND GROUNDWATER RECHARGE. OVER TIME, VEGETATION WILL INCREASE ORGANIC MATTER CONTENT AND IMPROVE THE WATER HOLDING CAPACITY OF THE SOIL AND SUBSEQUENT PLANT GROWTH.

VEGETATION WILL HELP REDUCE THE MOVEMENT OF SEDIMENT, NUTRIENTS, AND OTHER CHEMICALS CARRIED BY RUNOFF TO RECEIVING WATERS. PLANTS WILL ALSO HELP PROTECT GROUNDWATER SUPPLIES BY ASSIMILATING THOSE SUBSTANCES PRESENT WITHIN THE ROOT ZONE.

SEDIMENT CONTROL PRACTICES MUST REMAIN IN PLACE DURING GRADING, SEEDBED PREPARATION, SEEDING, MULCHING, AND VEGETATIVE ESTABLISHMENT.

ADEQUATE VEGETATIVE ESTABLISHMENT:
INSPECT SEEDED AREAS FOR VEGETATIVE ESTABLISHMENT AND MAKE NECESSARY REPAIRS, REPLACEMENTS, AND RESEEDINGS WITHIN THE PLANTING SEASON.

1. ADEQUATE VEGETATIVE STABILIZATION REQUIRES 95 PERCENT GROUNDCOVER.
2. IF AN AREA HAS LESS THAN 40 PERCENT GROUNDCOVER, RESTABILIZE FOLLOWING THE ORIGINAL RECOMMENDATIONS FOR LIME, FERTILIZER, SEEDBED PREPARATION, AND SEEDING.
3. IF AN AREA HAS BETWEEN 40 AND 94 PERCENT GROUNDCOVER, OVER-SEED AND FERTILIZE USING HALF OF THE RATES ORIGINALLY SPECIFIED.
4. MAINTENANCE FERTILIZER RATES FOR PERMANENT SEEDING ARE SHOWN IN TABLE B.6.

SECTION B–4–1: INCREMENTAL STABILIZATION

DEFINITION: ESTABLISHMENT OF VEGETATIVE COVER ON CUT AND FILL SLOPES.

PURPOSE: TO PROVIDE TIMELY VEGETATIVE COVER ON CUT AND FILL SLOPES AS WORK PROGRESSES.

CONDITIONS WHERE PRACTICE APPLIES: ANY CUT OR FILL SLOPE GREATER THAN 15 FEET IN HEIGHT. THIS PRACTICE ALSO APPLIES TO STOCKPILES.

CRITERIA:
A. INCREMENTAL STABILIZATION– CUT SLOPES

1. EXCAVATE AND STABILIZE CUT SLOPES IN INCREMENTS NOT TO EXCEED 15 FEET IN HEIGHT. PREPARE SEEDBED AND APPLY SEED AND MULCH ON ALL CUT SLOPES AS WORK PROGRESSES.
2. CONSTRUCTION SEQUENCE EXAMPLE (REFER TO FIGURE B.1):
   a. CONSTRUCT AND STABILIZE ALL TEMPORARY SWALES OR DIKES THAT WILL BE USED TO CONVEY RUNOFF AROUND THE EXCAVATION.
   b. PERFORM PHASE 1 EXCAVATION, PREPARE SEEDBED, AND STABILIZE.
   c. PERFORM PHASE 2 EXCAVATION, PREPARE SEEDBED, AND STABILIZE. OVERSEED PHASE 1 AREAS AS NECESSARY.
   d. PERFORM FINAL PHASE EXCAVATION, PREPARE SEEDBED, AND STABILIZE. OVERSEED PREVIOUSLY SEEDED AREAS AS NECESSARY.

NOTE: ONCE EXCAVATION HAS BEGUN THE OPERATION SHOULD BE CONTINUOUS FROM GRUBBING THROUGH THE COMPLETION OF GRADING AND PLACEMENT OF TOPSOIL (IF REQUIRED) AND PERMANENT SEED AND MULCH. ANY INTERRUPTIONS IN THE OPERATION OR COMPLETING THE OPERATION OUT OF THE SEEDING SEASON WILL NECESSITATE THE APPLICATION OF TEMPORARY STABILIZATION.

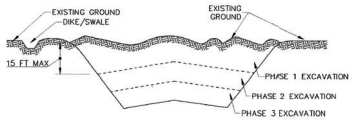


Figure B.1: Incremental Stabilization – Cut

B. INCREMENTAL STABILIZATION – FILL SLOPES

1. CONSTRUCT AND STABILIZE FILL SLOPES IN INCREMENTS NOT TO EXCEED 15 FEET IN HEIGHT. PREPARE SEEDBED AND APPLY SEED AND MULCH ON ALL SLOPES AS THE WORK PROGRESSES.
2. STABILIZE SLOPES IMMEDIATELY WHEN THE VERTICAL HEIGHT OF A LIFT REACHES 15 FEET, OR WHEN THE GRADING OPERATION CEASES AS PRESCRIBED IN THE PLANS.
3. AT THE END OF EACH DAY, INSTALL TEMPORARY WATER CONVEYANCE PRACTICE(S), AS NECESSARY, TO INTERCEPT SURFACE RUNOFF AND CONVEY IT DOWN THE SLOPE IN A NON–EROSIVE MANNER.
4. CONSTRUCTION SEQUENCE EXAMPLE (REFER TO FIGURE B.2):
   a. CONSTRUCT AND STABILIZE ALL TEMPORARY SWALES OR DIKES THAT WILL BE USED TO DIVERT RUNOFF AROUND THE FILL. CONSTRUCT SILT FENCE ON LOW SIDE OF FILL UNLESS OTHER METHODS SHOWN ON THE PLANS ADDRESS THIS AREA.
   b. AT THE END OF EACH DAY, INSTALL TEMPORARY WATER CONVEYANCE PRACTICE(S), AS NECESSARY, TO INTERCEPT SURFACE RUNOFF AND CONVEY IT DOWN THE SLOPE IN A NON–EROSIVE MANNER.
   c. PLACE PHASE 1 FILL, PREPARE SEEDBED, AND STABILIZE.
   d. PLACE PHASE 2 FILL, PREPARE SEEDBED, AND STABILIZE.
   e. PLACE FINAL PHASE FILL, PREPARE SEEDBED, AND STABILIZE. OVERSEED PREVIOUSLY SEEDED AREAS AS NECESSARY.

NOTE: ONCE THE PLACEMENT OF FILL HAS BEGUN THE OPERATION SHOULD BE CONTINUOUS FROM GRUBBING THROUGH THE COMPLETION OF GRADING AND PLACEMENT OF TOPSOIL (IF REQUIRED) AND PERMANENT SEED AND MULCH. ANY INTERRUPTIONS IN THE OPERATION OR COMPLETING THE OPERATION OUT OF THE SEEDING SEASON WILL NECESSITATE THE APPLICATION OF TEMPORARY STABILIZATION.

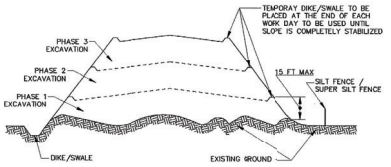


Figure B.2: Incremental Stabilization – Fill

SECTION B–4–2: SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

DEFINITION: THE PROCESS OF PREPARING SOILS TO SUSTAIN ADEQUATE VEGETATIVE STABILIZATION

PURPOSE: TO PROVIDE SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH

CONDITIONS WHERE PRACTICE APPLIES: WHERE VEGETATIVE STABILIZATION IS TO BE ESTABLISHED

CRITERIA:
A. SOIL PREPARATION

1. TEMPORARY STABILIZATION
   a. SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISC HARROWS OR CHISEL PLOWS OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENED, IT MUST NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.
   b. APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.
   c. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
2. PERMANENT STABILIZATION
   a. A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:
      SOIL PH BETWEEN 6.0 AND 7.0.
      SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM).
      SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION: IF LOVEGRASS WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE.
      SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.
      SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.
   b. APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON–SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.
   c. GRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THE APPROVED PLAN, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES.
   d. APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST.
   e. MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RAKE LAWN AREAS TO SMOOTH THE SURFACE, REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND FRIABLE. SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.

B. TOPSOILING

1. TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.
2. TOPSOIL SALVAGED FROM AN EXISTING SITE MAY BE USED PROVIDED IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA–NRCS.
3. TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
   a. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
   b. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.
   c. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
   d. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.
4. AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN.
5. TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:

B. TOPSOILING

1. TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.
2. TOPSOIL SALVAGED FROM AN EXISTING SITE MAY BE USED PROVIDED IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA–NRCS.
3. TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
   a. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
   b. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.
   c. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
   d. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.
4. AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN.
5. TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:
   a. TOPSOIL MUST BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. TOPSOIL MUST NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1½ INCHES IN DIAMETER.
   b. TOPSOIL MUST BE FREE OF NOXIOUS PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, NUT SEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
   c. TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.
6. TOPSOIL APPLICATION
   a. EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING TOPSOIL.
   b. UNIFORMLY DISTRIBUTE TOPSOIL IN A 5 TO 8 INCH LAYER AND LIGHTLY COMPACT TO A MINIMUM THICKNESS OF 4 INCHES. SPREADING IS TO BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS MUST BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.

TOPSOIL MUST NOT BE PLACED IF THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.

C. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)

1. SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OF 5 ACRES OR MORE. SOIL ANALYSIS MAY BE PERFORMED BY A RECOGNIZED PRIVATE OR COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSES.
2. FERTILIZERS MUST BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROPRIATE EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS MUST ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE LAWS AND MUST BEAR THE NAME, TRADE NAME OR TRADEMARK AND WARRANTY OF THE PRODUCER.
3. LIME MATERIALS MUST BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED EXCEPT WHEN HYDROSEEDING) WHICH CONTAINS AT LEAST 50 PERCENT TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE MUST BE GROUND TO SUCH FINENESS THAT AT LEAST 50 PERCENT WILL PASS THROUGH A #100 MESH SIEVE AND 98 TO 100 PERCENT WILL PASS THROUGH A #20 MESH SIEVE.
4. LIME AND FERTILIZER ARE TO BE EVENLY DISTRIBUTED AND INCORPORATED INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
5. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, SPREAD GROUND LIMESTONE AT THE RATE OF 4 TO 8 TONS/ACRE (200–400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL.

SECTION B–4–3: SEEDING AND MULCHING

DEFINITION: THE APPLICATION OF SEED AND MULCH TO ESTABLISH VEGETATIVE COVER.

PURPOSE: TO PROTECT DISTURBED SOILS FROM EROSION DURING AND AT THE END OF CONSTRUCTION.

CONDITIONS WHERE PRACTICE APPLIES: TO THE SURFACE OF ALL PERIMETER CONTROLS, SLOPES, AND ANY DISTURBED AREA NOT UNDER ACTIVE GRADING.

CRITERIA
A. SEEDING

1. SPECIFICATIONS
   a. ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE SUBJECT TO RE–TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED MUST HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON ANY PROJECT. REFER TO TABLE B.4 REGARDING THE QUALITY OF SEED. SEED TAGS MUST BE AVAILABLE UPON REQUEST TO THE INSPECTOR TO VERIFY TYPE OF SEED AND SEEDING RATE.
   b. MULCH ALONE MAY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES ONLY IF THE GROUND IS FROZEN. THE APPROPRIATE SEEDING MIXTURE MUST BE APPLIED WHEN THE GROUND THAWS.
   c. INOCULANTS: THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES MUST BE A PURE CULTURE OF NITROGEN FIXING BACTERIA PREPARED SPECIFICALLY FOR THE SPECIES. INOCULANTS MUST NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER. ADD FRESH INOCULANTS AS DIRECTED ON THE PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING. NOTE: IT IS VERY IMPORTANT TO KEEP INOCULANT AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75 TO 80 DEGREES FAHRENHEIT CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTIVE.
   d. SOD OR SEED MUST NOT BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO–TOXIC MATERIALS.
2. APPLICATION
   a. DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS.
      I. INCORPORATE SEED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON TEMPORARY SEEDING TABLE B.1, PERMANENT SEEDING TABLE B.3, OR SITE–SPECIFIC SEEDING SUMMARIES.
      II. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION. ROLL THE SEEDED AREA WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT.
   b. DRILL OR CULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL.
      I. CULTIPACKING SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1/4 INCH OF SOIL COVERING. SEEDBED MUST BE FIRM AFTER PLANTING.
      II. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.
   c. HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER).
      I. IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION RATES SHOULD NOT EXCEED THE FOLLOWING: NITROGEN, 100 POUNDS PER ACRE TOTAL OF SOLUBLE NITROGEN; P2O5 (PHOSPHOROUS), 200 POUNDS PER ACRE; K2O (POTASSIUM), 200 POUNDS PER ACRE.
      II. LIME: USE ONLY GROUND AGRICULTURAL LIMESTONE (UP TO 3 TONS PER ACRE MAY BE APPLIED BY HYDROSEEDING). NORMALLY, NOT MORE THAN 2 TONS ARE APPLIED BY HYDROSEEDING AT ANY ONE TIME. DO NOT USE BURNT OR HYDRATED LIME WHEN HYDROSEEDING.
      III. MIX SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION. WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL.

B. MULCHING

1. MULCH MATERIALS (IN ORDER OF PREFERENCE)
   a. STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, RYE, OAT, OR BARLEY AND REASONABLY BRIGHT IN COLOR. STRAW IS TO BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW AND NOT MUSTY, MOLDY, CAKED, DECAYED, OR EXCESSIVELY DUSTY. NOTE: USE ONLY STERILE STRAW MULCH IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.
   b. WOOD CELLULOSE FIBER MULCH (WCFM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE.
      I. WCFM IS TO BE DYED GREEN OR CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORMLY SPREAD SLURRY.
      II. WCFM, INCLUDING DYE, MUST CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS. WCFM MATERIALS ARE TO BE MANUFACTURED AND PROCESSED IN SUCH A MANNER THAT THE WOOD CELLULOSE FIBER MULCH WILL REMAIN IN UNIFORM SUSPENSION IN WATER UNDER AGITATION AND WILL BLEND WITH SEED, FERTILIZER AND OTHER ADDITIVES TO FORM A HOMOGENEOUS SLURRY. THE MULCH MATERIAL MUST FORM A BLOTTER–LIKE GROUND COVER, ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND MUST COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDLINGS.
      III. WCFM MATERIAL MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO–TOXIC.
      IV. WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH OF APPROXIMATELY 10 MILLIMETERS, DIAMETER APPROXIMATELY 1 MILLIMETER, PH RANGE OF 4.0 TO 8.5, ASH CONTENT OF 1.6 PERCENT MAXIMUM AND WATER HOLDING CAPACITY OF 90 PERCENT MINIMUM.
2. APPLICATION
   a. APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.
   b. WHEN STRAW MULCH IS USED, SPREAD IT OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS PER ACRE TO A UNIFORM LOOSE DEPTH OF 1 TO 2 INCHES. APPLY MULCH TO ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED. WHEN USING A MULCH ANCHORING TOOL, INCREASE THE APPLICATION RATE TO 2.5 TONS PER ACRE.
   c. WOOD CELLULOSE FIBER USED AS MULCH MUST BE APPLIED AT A NET DRY WEIGHT OF 1500 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER TO ATTAIN A MIXTURE WITH A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
3. ANCHORING
   a. PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED BY PREFERENCE), DEPENDING UPON THE SIZE OF THE AREA AND EROSION HAZARD:
      I. A MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE A MINIMUM OF 2 INCHES. THIS PRACTICE IS MOST EFFECTIVE ON LARGE AREAS, BUT IS LIMITED TO FLATTER SLOPES WHERE EQUIPMENT CAN OPERATE SAFELY. IF USED ON SLOPING LAND, THIS PRACTICE SHOULD FOLLOW THE CONTOUR.
      II. WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. APPLY THE FIBER BINDER AT A NET DRY WEIGHT OF 750 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER AT A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
      III. SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRO–TACK), DCA–70, PETROSET, TERRA TAX II, TERRA TACK AR OR OTHER APPROVED EQUAL MAY BE USED. FOLLOW APPLICATION RATES AS SPECIFIED BY THE MANUFACTURER. APPLICATION OF LIQUID BINDERS NEEDS TO BE HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF BANKS. USE OF ASPHALT BINDERS IS STRICTLY PROHIBITED.
      IV. LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4 TO 15 FEET WIDE AND 300 TO 3,000 FEET LONG.

STANDARD STABILIZATION NOTE:

FOLLOWING INITIAL SOIL DISTURBANCE AND REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:

A. THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND
B. SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

MDE NOTE:

MDE NO. 18–SF–0206

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PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 20821, EXPIRATION DATE: 05/02/2021.

STATE OF MARYLAND — JEFFREY M. SWAN — 20821 — PROFESSIONAL ENGINEER — 8/23/19

doit — STATE OF MARYLAND — DEPARTMENT OF INFORMATION TECHNOLOGY

MD 200 / GEORGIA AVENUE COMMUNICATIONS TOWER

USING AGENCY APPROVAL

MARK	DATE	DESCRIPTION

CAD DWG FILE:
DRAWN BY: SJM
CHK'D BY: JMS
PROJECT NO.:
DATE: AUGUST 2019

VEGETATIVE STABILIZATION NOTES 1

SECTION B-4-4: TEMPORARY STABILIZATION

DEFINITION: TO STABILIZE DISTURBED SOILS WITH VEGETATION FOR UP TO 6 MONTHS.

PURPOSE: TO USE FAST GROWING VEGETATION THAT PROVIDES COVER ON DISTURBED SOILS.

CONDITIONS WHERE PRACTICE APPLIES: EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR A PERIOD OF 6 MONTHS OR LESS. FOR LONGER DURATION OF TIME, PERMANENT STABILIZATION PRACTICES ARE REQUIRED.

CRITERIA:

1. SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE B.1 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3), AND ENTER THEM IN THE TEMPORARY SEEDING SUMMARY BELOW ALONG WITH APPLICATION RATES, SEEDING DATES AND SEEDING DEPTHS. IF THIS SUMMARY IS NOT PUT ON THE PLAN AND COMPLETED, THEN TABLE B.1 PLUS FERTILIZER AND LIME RATES MUST BE PUT ON THE PLAN.
2. FOR SITES HAVING SOIL TESTS PERFORMED, USE AND SHOW THE RECOMMENDED RATES BY THE TESTING AGENCY. SOIL TESTS ARE NOT REQUIRED FOR TEMPORARY SEEDING.
3. WHEN STABILIZATION IS REQUIRED OUTSIDE OF A SEEDING SEASON, APPLY SEED AND MULCH OR STRAW MULCH ALONE AS PRESCRIBED IN SECTION B-4-3.A.1.B AND MAINTAIN UNTIL THE NEXT SEEDING SEASON.

HARDINESS ZONE (from Figure B.3): ___7a___ SEED MIXTURE (from Table B.1):				FERTILIZER RATE (10-20-20)	LIME RATE
SPECIES	APPLICATION RATE (lb/ac)	SEEDING DATES	SEEDING DEPTHS		
ANNUAL RYEGRASS	40	2/15 - 4/30 8/15 - 11/30	0.5 in.	436 lb/ac (10 lb/1000 sf)	2 tons/ac (90 lb/1000 sf)
FOXTAIL MILLET	30	5/1 - 8/14	0.5 in.		

SECTION B-4-5: PERMANENT STABILIZATION

DEFINITION: TO STABILIZE DISTURBED SOILS WITH PERMANENT VEGETATION.

PURPOSE: TO USE LONG-LIVED PERENNIAL GRASSES AND LEGUMES TO ESTABLISH PERMANENT GROUND COVER ON DISTURBED AREAS.

CONDITIONS WHERE PRACTICE APPLIES: EXPOSED SOILS WHERE COVER IS NEEDED FOR 6 MONTHS OR MORE.

CRITERIA:

A. SEED MIXTURES

1. GENERAL USE

a. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE B.3 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3) AND BASED ON THE SITE CONDITION OR PURPOSE FOUND ON TABLE B.2. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.

b. ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES SUCH AS SHORELINES, STREAM BANKS, OR DUNES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC TREATMENT MAY BE FOUND IN USDA-NRCS TECHNICAL FIELD OFFICE GUIDE, SECTION 342 – CRITICAL AREA PLANTING.

c. FOR SITES HAVING DISTURBED AREA OVER 5 ACRES, USE AND SHOW THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY.

d. FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREA FORM FERTILIZER (46-0-0) AT 3 ½ POUNDS PER 1000 SQUARE FEET (150 POUNDS PER ACRE) AT THE TIME OF SEEDING IN ADDITION TO THE SOIL AMENDMENTS SHOWN IN THE PERMANENT SEEDING SUMMARY.

2. TURFGRASS MIXTURES

a. AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE.

b. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED BELOW BASED ON THE SITE CONDITIONS OR PURPOSE. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.

i. KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN AREAS THAT RECEIVE INTENSIVE MANAGEMENT. IRRIGATION REQUIRED IN THE AREAS OF CENTRAL MARYLAND AND EASTERN SHORE. RECOMMENDED CERTIFIED KENTUCKY BLUEGRASS CULTIVARS SEEDING RATE: 1.5 TO 2.0 POUNDS PER 1000 SQUARE FEET, CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.

ii. KENTUCKY BLUEGRASS/PERENNIAL RYE: FULL SUN MIXTURE: FOR USE IN FULL SUN AREAS WHERE RAPID ESTABLISHMENT IS NECESSARY AND WHEN TURF WILL RECEIVE MEDIUM TO INTENSIVE MANAGEMENT. CERTIFIED PERENNIAL RYEGRASS CULTIVARS/CERTIFIED KENTUCKY BLUEGRASS SEEDING RATE: 2 POUNDS MIXTURE PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.

iii. TALL FESCUE/KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN DROUGHT PRONE AREAS AND/OR FOR AREAS RECEIVING LOW TO MEDIUM MANAGEMENT IN FULL SUN TO MEDIUM SHADE. RECOMMENDED MIXTURE INCLUDES; CERTIFIED TALL FESCUE CULTIVARS 95 TO 100 PERCENT, CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 0 TO 5 PERCENT. SEEDING RATE: 5 TO 8 POUNDS PER 1000 SQUARE FEET. ONE OR MORE CULTIVARS MAY BE BLENDED.

iv. KENTUCKY BLUEGRASS/FINE FESCUE: SHADE MIXTURE: FOR USE IN AREAS WITH SHADE IN BLUEGRASS LAWNS. FOR ESTABLISHMENT IN HIGH QUALITY, INTENSIVELY MANAGED TURF AREA. MIXTURE INCLUDES; CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 30 TO 40 PERCENT AND CERTIFIED FINE FESCUE AND 60 TO 70 PERCENT. SEEDING RATE: 1½ TO 3 POUNDS PER 1000 SQUARE FEET.

NOTES:
SELECT TURFGRASS VARIETIES FROM THOSE LISTED IN THE MOST CURRENT UNIVERSITY OF MARYLAND PUBLICATION, AGRONOMY MEMO #77, "TURFGRASS CULTIVAR RECOMMENDATIONS FOR MARYLAND" CHOOSE CERTIFIED MATERIAL. CERTIFIED MATERIAL IS THE BEST GUARANTEE OF CULTIVAR PURITY. THE CERTIFICATION PROGRAM OF THE MARYLAND DEPARTMENT OF AGRICULTURE, TURF AND SEED SECTION, PROVIDES A RELIABLE MEANS OF CONSUMER PROTECTION AND ASSURES A PURE GENETIC LINE.

c. IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURES
WESTERN MD: MARCH 15 TO JUNE 1, AUGUST 1 TO OCTOBER 1 (HARDINESS ZONES: 5B, 6A)
CENTRAL MD: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONE: 6B)
SOUTHERN MD, EASTERN SHORE: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONES: 7A, 7B)

d. TILL AREAS TO RECEIVE SEED BY DISKING OR OTHER APPROVED METHODS TO A DEPTH OF 2 TO 4 INCHES, LEVEL AND RAKE THE AREAS TO PREPARE A PROPER SEEDBED. REMOVE STONES AND DEBRIS OVER 1½ INCHES IN DIAMETER. THE RESULTING SEEDBED MUST BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASSES WILL POSE NO DIFFICULTY.

e. IF SOIL MOISTURE IS DEFICIENT, SUPPLY NEW SEEDINGS WITH ADEQUATE WATER FOR PLANT GROWTH (½ TO 1 INCH EVERY 3 TO 4 DAYS DEPENDING ON SOIL TEXTURE) UNTIL THEY ARE FIRMLY ESTABLISHED. THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE LATE IN THE PLANTING SEASON, IN ABNORMALLY DRY OR HOT SEASONS, OR ON ADVERSE SITES.

PERMANENT SEEDING SUMMARY

NO.	HARDINESS ZONE (from Figure B.3): ___7a___ SEED MIXTURE (from Table B.3): SPECIES	APPLICATION RATE (lbs/ac)	**SEEDING DATES	SEEDING DEPTHS	FERTILIZER RATE (10-20-20) N	P_2O_5	K_2O	LIME RATE
9	TALL FESCUE KENTUCKY BLUEGRASS PERENNIAL RYEGRASS	60 40 20	2/15 - 4/30 8/15-11/30	1/4"-1/2"	45 lb/ac (1 lb/1000 sf)	90 lb/ac (2 lb/1000 sf)	90 lb/ac (2 lb/1000 sf)	2 tons/ac (90 lb/1000 sf)

** FOR SEEDING DATES 5/1-8/14, ADD 6 LBS PER ACRE OF FOXTAIL MILLET TO SEED MIX NO. 9.

B. SOD: TO PROVIDE QUICK COVER ON DISTURBED AREAS (2:1 GRADE OR FLATTER).

1. GENERAL SPECIFICATIONS

a. CLASS OF TURFGRASS SOD MUST BE MARYLAND STATE CERTIFIED. SOD LABELS MUST BE MADE AVAILABLE TO THE JOB FOREMAN AND INSPECTOR.

b. SOD MUST BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF ¾ INCH, PLUS OR MINUS ¼ INCH, AT THE TIME OF CUTTING. MEASUREMENT FOR THICKNESS MUST EXCLUDE TOP GROWTH AND THATCH. BROKEN PADS AND TORN OR UNEVEN ENDS WILL NOT BE ACCEPTABLE.

c. STANDARD SIZE SECTIONS OF SOD MUST BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP ON THE UPPER 10 PERCENT OF THE SECTION.

d. SOD MUST NOT BE HARVESTED OR TRANSPLANTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL.

e. SOD MUST BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOD NOT TRANSPLANTED WITHIN THIS PERIOD MUST BE APPROVED BY AN AGRONOMIST OR SOIL SCIENTIST PRIOR TO ITS INSTALLATION.

2. SOD INSTALLATION

a. DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL, LIGHTLY IRRIGATE THE SUBSOIL IMMEDIATELY PRIOR TO LAYING THE SOD.

b. LAY THE FIRST ROW OF SOD IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO IT AND TIGHTLY WEDGED AGAINST EACH OTHER. STAGGER LATERAL JOINTS TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE AIR DRYING OF THE ROOTS.

c. WHEREVER POSSIBLE, LAY SOD WITH THE LONG EDGES PARALLEL TO THE CONTOUR AND WITH STAGGERING JOINTS. ROLL AND TAMP, PEG OR OTHERWISE SECURE THE SOD TO PREVENT SLIPPAGE ON SLOPES. ENSURE SOLID CONTACT EXISTS BETWEEN SOD ROOTS AND THE UNDERLYING SOIL SURFACE.

d. WATER THE SOD IMMEDIATELY FOLLOWING ROLLING AND TAMPING UNTIL THE UNDERSIDE OF THE NEW SOD PAD AND SOIL SURFACE BELOW THE SOD ARE THOROUGHLY WET. COMPLETE THE OPERATIONS OF LAYING, TAMPING AND IRRIGATING FOR ANY PIECE OF SOD WITHIN EIGHT HOURS.

3. SOD MAINTENANCE

a. IN THE ABSENCE OF ADEQUATE RAINFALL, WATER DAILY DURING THE FIRST WEEK OR AS OFTEN AND SUFFICIENTLY AS NECESSARY TO MAINTAIN MOIST SOIL TO A DEPTH OF 4 INCHES. WATER SOD DURING THE HEAT OF THE DAY TO PREVENT WILTING.

b. AFTER THE FIRST WEEK, SOD WATERING IS REQUIRED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE CONTENT.

c. DO NOT MOW UNTIL THE SOD IS FIRMLY ROOTED. NO MORE THAN ⅓ OF THE GRASS LEAF MUST BE REMOVED BY THE INITIAL CUTTING OR SUBSEQUENT CUTTINGS. MAINTAIN A GRASS HEIGHT OF AT LEAST 3 INCHES UNLESS OTHERWISE

STANDARD STABILIZATION NOTE:

FOLLOWING INITIAL SOIL DISTURBANCE AND REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:

A. THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND

B. SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

MDE NOTE:
MDE NO. 18-SF-0206

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PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 20821, EXPIRATION DATE: 05/02/2021.

STATE OF MARYLAND · JEFFREY M. SWAN · 20821 · PROFESSIONAL ENGINEER
8/2/19

doit
STATE OF MARYLAND
DEPARTMENT OF INFORMATION TECHNOLOGY

MD 200 / GEORGIA AVENUE COMMUNICATIONS TOWER

USING AGENCY APPROVAL

MARK	DATE	DESCRIPTION

CAD DWG FILE:
DRAWN BY: SJM
CHK'D BY: JMS

PROJECT NO.:
DATE: AUGUST 2019

VEGETATIVE STABILIZATION NOTES 2

EXISTING CONDITION – IMPERVIOUS COVER WITHIN LOD
SCALE: 1"=60'

PROPOSED CONDITION – IMPERVIOUS COVER WITHIN LOD
SCALE: 1"=60'

LEGEND

- EXISTING CONTOUR
- TREE LINE
- LOD — LIMIT OF DISTURBANCE
- 515 — PROPOSED CONTOUR
- GRAVEL PAVEMENT
- D — EX. STORM DRAIN PIPE
- EX. STORM INLET
- CbD — SOIL TYPE
- SOIL BOUNDARY
- POI-1 — POINT OF INVESTIGATION
- DRAINAGE AREA BOUNDARY
- TIME OF CONCENTRATION FLOW PATH / FLOW PATH IDENTIFIER

DRAINAGE AREA SUMMARY

STUDY POINT ID	TOTAL AREA (ACRES)	RUNOFF CURVE NUMBER (RCN)	10YR STORM PEAK RUNOFF (CFS)	100YR STORM PEAK RUNOFF (CFS)
EXISTING CONDITION POI-1	3.79	63.7	3.803	7.771
PROPOSED CONDITION POI-1	3.79	68.6	4.896	9.189

STUDY POINT – TIME OF CONCENTRATION SUMMARY

STUDY POINT ID	(A) SHEET FLOW TIME (MIN.)	(B) CONCENTRATED FLOW TIME (MIN.)	(C) CONCENTRATED FLOW TIME (MIN.)	(C) CONCENTRATED FLOW TIME (MIN.)	TOTAL FLOW TIME (MIN.)
EXISTING CONDITION POI-1	40.9	0.1	0.1	3.9	45.0
PROPOSED CONDITION POI-1	40.9	0.1	0.1	3.9	45.0

NOTES:

1. HORIZONTAL DATUM NAD 83/91.
2. VERTICAL DATUM NVD 88.
3. EXISTING CONDITION REPRESENTATION IS A COMPOSITE OF FIELD SURVEY AND GIS DATA OBTAINED FROM MONTGOMERY COUNTY.
4. LAYOUT OF THE STORM SYSTEM ALONG MD 200 IS BASED ON RECORD DRAWINGS AND IS APPROXIMATE.

60 0 60 120
SCALE IN FEET

MDE NOTE:
MDE NO. 18-SF-0206

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STATE OF MARYLAND · JEFFREY M. SLEE · 20821 · PROFESSIONAL ENGINEER
8/2/19

doit
STATE OF MARYLAND
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MD 200 / GEORGIA AVENUE COMMUNICATIONS TOWER

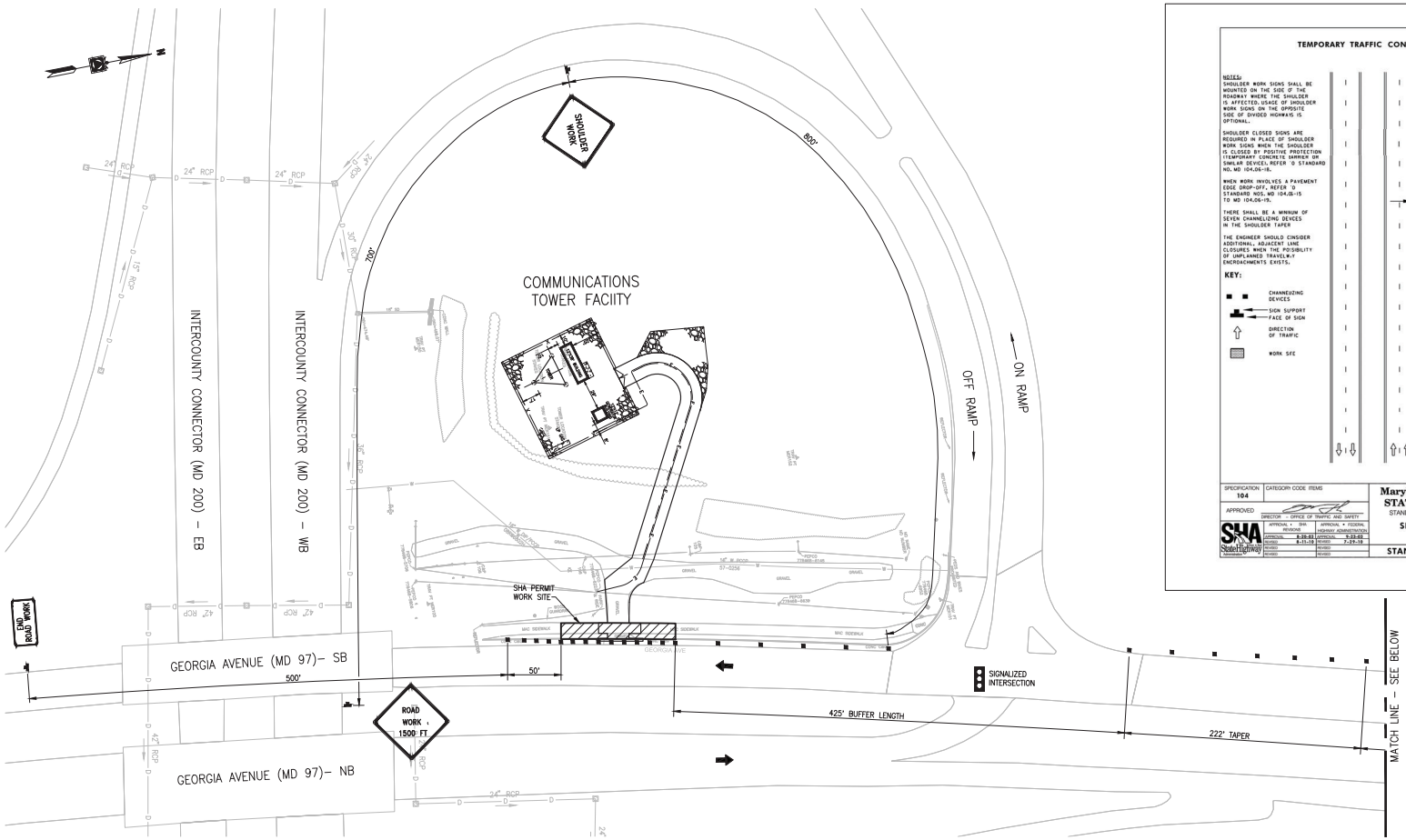
USING AGENCY APPROVAL

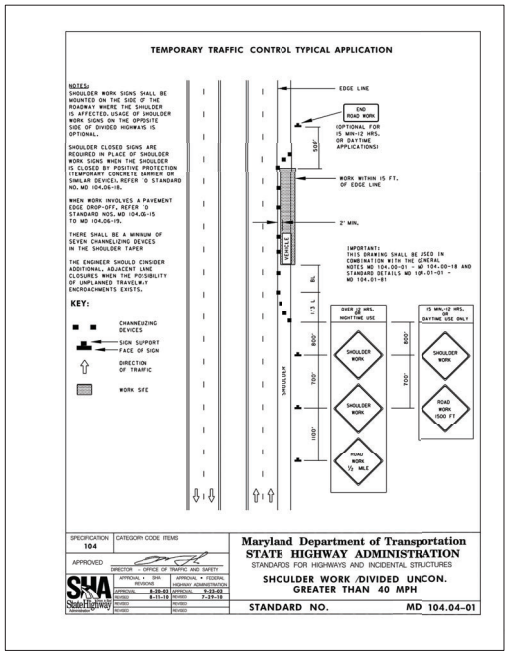
MARK	DATE	DESCRIPTION

CAD DWG FILE:
DRAWN BY: SJM
CHK'D BY: JMS

PROJECT NO.:
DATE: AUGUST 2019

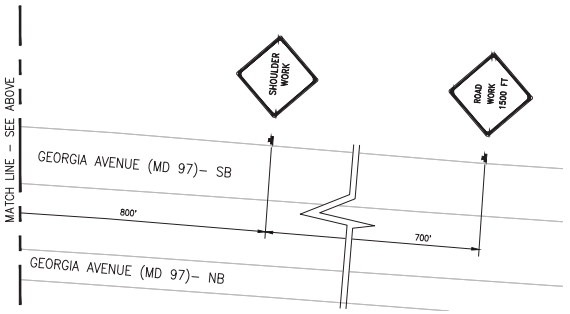
DRAINAGE AREA MAP





TRAFFIC CONTROL NOTES:

1. THE CONTRACTOR SHALL OBTAIN THE APPROPRIATE LANE CLOSURE PERMIT SECURED THROUGH MDSHA DISTRICT 3.
2. PRIOR TO BEGINNING CONSTRUCTION THE CONTRACTOR SHALL NOTIFY CHART OPERATIONS.
3. ALL CONSTRUCTION ACTIVITIES SHALL BE PERFORMED AS DAYTIME OPERATIONS BETWEEN 9AM AND 3PM, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
4. CONTRACTOR SHALL INSTALL THE APPROPRIATE ADVANCED WARNING SIGNS PRIOR TO ANY CONSTRUCTION ACTIVITY INITIATION. ALL SIGNAGE INSTALLED PRIOR TO CONSTRUCTION SHALL BE COVERED UNTIL CONSTRUCTION BEGINS.
5. WORK ACTIVITIES PERFORMED OFF THE ROADWAY SHALL UTILIZE MD SHA STANDARD NO. MD 104.04-01 (SHOULDER WORK / DIVIDED UNCON. / GREATER THAN 40 MPH).
6. WORK ACTIVITIES REQUIRING EQUIPMENT OR MATERIALS WITHIN THE CLEAR ZONE SHALL UTILIZE MD SHA STANDARD NO. MD 104.04-05 (RIGHT LANE CLOSURE / DIVIDED UNCON. / GREATER THAN 40 MPH).
7. A TMA SHALL BE UTILIZED TO FURTHER PROTECT WORKERS IN THE WORK ZONE FOR BOTH SHOULDER AND LANE CLOSURE OPERATIONS.
8. ALL CONSTRUCTION SHALL BE COVERED DURING NON-WORK PERIODS AND TRAFFIC CONTROL DEVICES MOVED OFF THE ROADWAY TO ELIMINATE DRIVER CONFUSION.



LEGEND
- CHANNELIZATION DEVICES
- SIGN LOCATION
- DIRECTION OF TRAFFIC
- WORK ZONE

50 0 50 100
SCALE IN FEET

MDE NOTE:
MDE NO. 18-SF-0206

Gannett Fleming
RUTHERFORD PLAZA
7133 RUTHERFORD ROAD, SUITE 300
BALTIMORE, MD 21244

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 20821, EXPIRATION DATE: 05/02/2021.

STATE OF MARYLAND · JEFFREY M. SLUSS · 20821 · PROFESSIONAL ENGINEER
4/24/19

doit
STATE OF MARYLAND
DEPARTMENT OF INFORMATION TECHNOLOGY

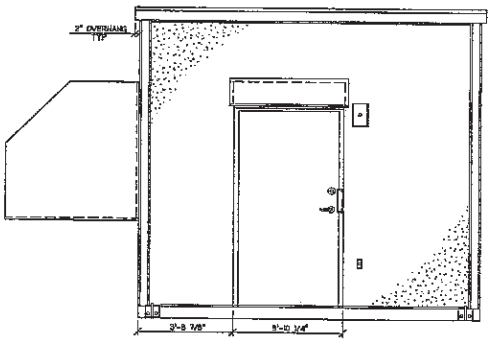
MD 200 / GEORGIA AVENUE COMMUNICATIONS TOWER

USING AGENCY APPROVAL

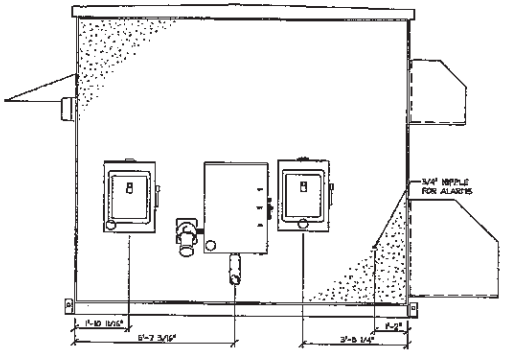
MARK	DATE	DESCRIPTION

CAD DWG FILE:
DRAWN BY: SJM
CHK'D BY: JMS
PROJECT NO.:
DATE: AUGUST 2019

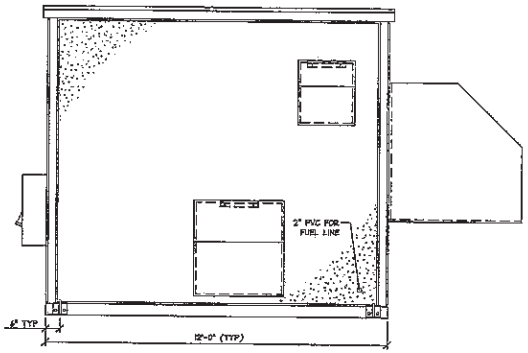
MAINTENANCE OF TRAFFIC PLAN



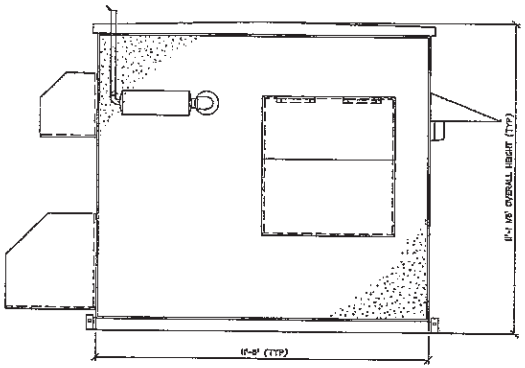
FRONT ELEVATION (WALL A)
SCALE: NONE



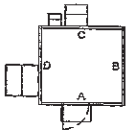
RIGHT ELEVATION (WALL B)
SCALE: NONE



REAR ELEVATION (WALL C)
SCALE: NONE

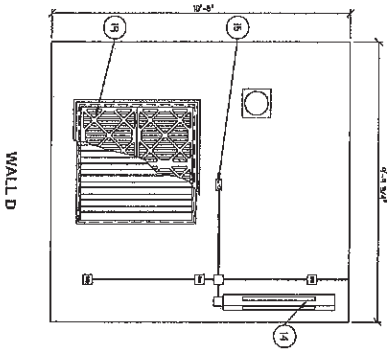


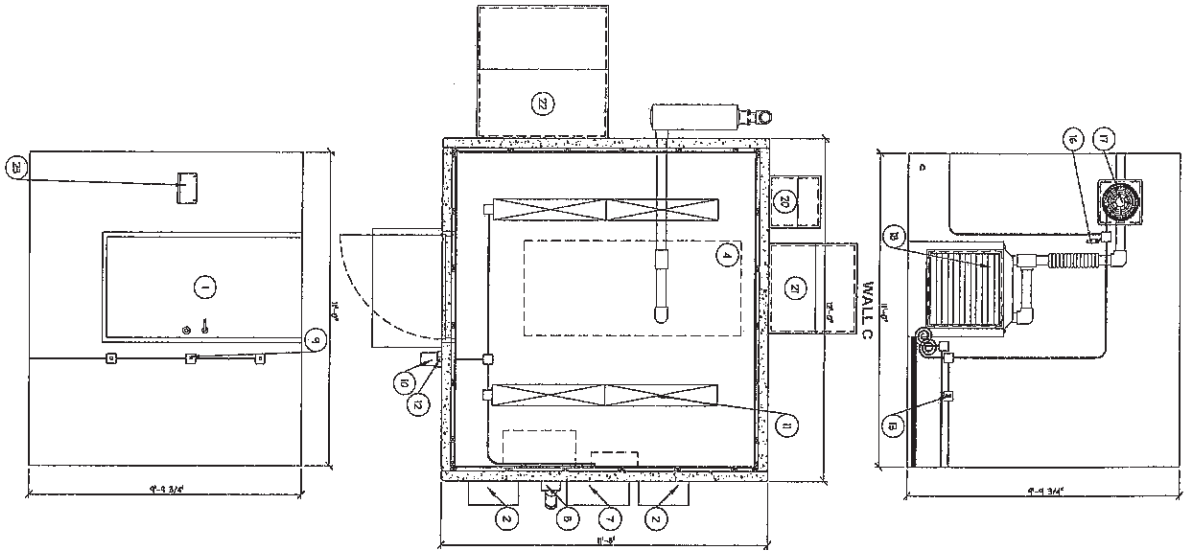
LEFT ELEVATION (WALL D)
SCALE: NONE

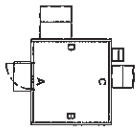


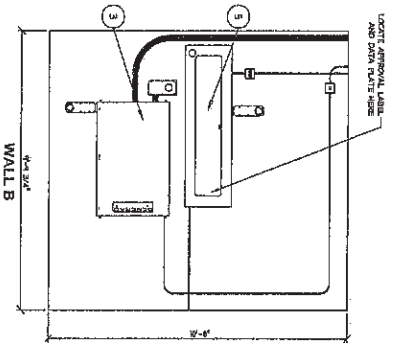
STATE OF MARYLAND
11'-8" X 12'-0" SHELTER
ELEVATIONS

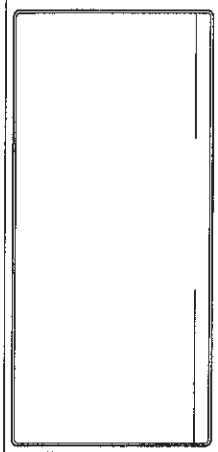
PROJECT NAME:
GENERATOR SHELTER
DRAWING NUMBER:











PROJECT NAME:
GENERATOR SHELTER
DRAWING NUMBER:

STATE OF MARYLAND
11'-8" X 12'-0" SHELTER

FLOOR PLAN

Attachment #O

CATS + FA 13
Construction Schedule
Georgia Avenue SHA Communications Tower

Line	Item	TO Contractor submitted schedule	Date requirements (Business Days)
--------	Notice to proceed [NTP] (Provided by DoIT with approved purchase order)	----------	----------
1	Clearing and Grading		NTP + # Days
2	Shelter/Tower Foundation poured		NTP + # Days
3	Tower Delivery		NTP + # Days
4	Shelter Delivery		NTP + # Days
5	Tower Erection (will trigger request for tower inspection)		NTP + # Days
6	Final Grounding (will trigger request for R56 and punch list inspection)		NTP + # Days
7	Site Completion (to include punch list and R56 corrections)		NTP + # Days
8	Closeout documents submitted for state review		NTP + # Days
	TO Contractor Signature		

Instructions: TO Contractors will submit this document with their signed/sealed bid proposal. Construction completion will be used to compare and evaluate supplied bids. The submitted schedule will also serve as the contractor's binding schedule for the project. Projects not completed within the scheduled completion shown on the schedule will be subject to an assessment for liquidated damages.

The TO Contractor will write the number of days past the NTP in the boxes provided.