

SOLICITATION, OFFER, AND AWARD <small>(Construction, Alteration, or Repair)</small>		1. SOLICITATION NO. W912P422B0020	2. TYPE OF SOLICITATION <input checked="checked" type="checkbox"/> SEALED BID (IFB) <input type="checkbox"/> NEGOTIATED <i>(RFP)</i>	3. DATE ISSUED 15-Jul-2022	PAGE OF PAGES 1 OF 42
IMPORTANT - The "offer" section on the reverse must be fully completed by offeror.					
4. CONTRACT NO.		5. REQUISITION/PURCHASE REQUEST NO.		6. PROJECT NO.	
7. ISSUED BY U.S. ARMY ENGINEER DISTRICT, BUFFALO 1776 NIAGARA STREET BUFFALO NY 14207-3199 TEL: 716.879.4173		CODE W912P4 FAX:		8. ADDRESS OFFER TO <i>(If Other Than Item 7)</i> CODE See Item 7 TEL: FAX:	
9. FOR INFORMATION CALL:	A. NAME KENNETH MACKAY		B. TELEPHONE NO. <i>(Include area code)</i> (NO COLLECT CALLS) 716.879.4173		
SOLICITATION					
NOTE: In sealed bid solicitations "offer" and "offeror" mean "bid" and "bidder".					
10. THE GOVERNMENT REQUIRES PERFORMANCE OF THE WORK DESCRIBED IN THESE DOCUMENTS <i>(Title, identifying no., date):</i> <p>Work consists of providing all plant, labor, materials, etc. needed to develop and install repairs to the North Adit Tunnel at Mount Morris Dam, Mount Morris, NY.</p> <p>The NAICS is 236220 Size Standard is \$39,500,000</p> <p>The Government intends to award one Firm Fixed-Price Contract</p> <p>See Section 01 35 13 Part 1.2.1 and FAR clause 52.211-10 for Period of Performance</p> <p>The estimated magnitude is between \$1,000,000 and \$5,000,000.</p> <p>The Construction Wage Determination (WD) is attached</p> <p>The Bid Guarantee is required, See FAR 52.228-1</p> <p>Bids will be submitted through SAFE, please see instructions to Bidders.</p> <p>Bid Modification received by facsimile will not be considered.</p> <p>This project is a small business set-aside</p> <p>There is a site visit planned see Instructions to Bidders</p>					
11. The Contractor shall begin performance within <u>10</u> calendar days and complete it within <u>180</u> calendar days after receiving <input type="checkbox"/> award, <input checked="checked" type="checkbox"/> notice to proceed. This performance period is <input checked="checked" type="checkbox"/> mandatory, <input type="checkbox"/> negotiable. <i>(See 52.211-10 _____.)</i>					
12 A. THE CONTRACTOR MUST FURNISH ANY REQUIRED PERFORMANCE AND PAYMENT BONDS? <i>(If "YES," indicate within how many calendar days after award in Item 12B.)</i> <input checked="checked" type="checkbox"/> YES <input type="checkbox"/> NO				12B. CALENDAR DAYS 10	
13. ADDITIONAL SOLICITATION REQUIREMENTS:					
<p>A. Sealed offers in original and <u>1</u> copies to perform the work required are due at the place specified in Item 8 by <u>02:00 PM</u> <i>(hour)</i> local time <u>15 Aug 2022</u> <i>(date)</i>. If this is a sealed bid solicitation, offers must be publicly opened at that time. Sealed envelopes containing offers shall be marked to show the offeror's name and address, the solicitation number, and the date and time offers are due.</p> <p>B. An offer guarantee <input checked="checked" type="checkbox"/> is, <input type="checkbox"/> is not required.</p> <p>C. All offers are subject to the (1) work requirements, and (2) other provisions and clauses incorporated in the solicitation in full text or by reference.</p> <p>D. Offers providing less than <u>120</u> calendar days for Government acceptance after the date offers are due will not be considered and will be rejected.</p>					

SOLICITATION, OFFER, AND AWARD (Continued)*(Construction, Alteration, or Repair)***OFFER (Must be fully completed by offeror)**

14. NAME AND ADDRESS OF OFFEROR <i>(Include ZIP Code)</i>		15. TELEPHONE NO. <i>(Include area code)</i>
		16. REMITTANCE ADDRESS <i>(Include only if different than Item 14)</i> See Item 14
CODE	FACILITY CODE	

17. The offeror agrees to perform the work required at the prices specified below in strict accordance with the terms of this solicitation, if this offer is accepted by the Government in writing within _____ calendar days after the date offers are due. *(Insert any number equal to or greater than the minimum requirements stated in Item 13D. Failure to insert any number means the offeror accepts the minimum in Item 13D.)*

AMOUNTS	SEE SCHEDULE OF PRICES
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18. The offeror agrees to furnish any required performance and payment bonds.

19. ACKNOWLEDGMENT OF AMENDMENTS*(The offeror acknowledges receipt of amendments to the solicitation -- give number and date of each)*

AMENDMENT NO.										
DATE										

20A. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER <i>(Type or print)</i>	20B. SIGNATURE	20C. OFFER DATE
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AWARD (To be completed by Government)

21. ITEMS ACCEPTED:

22. AMOUNT	23. ACCOUNTING AND APPROPRIATION DATA
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24. SUBMIT INVOICES TO ADDRESS SHOWN IN <i>(4 copies unless otherwise specified)</i>	ITEM	25. OTHER THAN FULL AND OPEN COMPETITION PURSUANT TO <input type="checkbox"/> 10 U.S.C. 2304(c) <input type="checkbox"/> 41 U.S.C. 253(c)
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26. ADMINISTERED BY	CODE	27. PAYMENT WILL BE MADE BY:	CODE

CONTRACTING OFFICER WILL COMPLETE ITEM 28 OR 29 AS APPLICABLE

<input type="checkbox"/> 28. NEGOTIATED AGREEMENT <i>(Contractor is required to sign this document and return _____ copies to issuing office.)</i> Contractor agrees to furnish and deliver all items or perform all work, requisitions identified on this form and any continuation sheets for the consideration stated in this contract. The rights and obligations of the parties to this contract shall be governed by (a) this contract award, (b) the solicitation, and (c) the clauses, representations, certifications, and specifications or incorporated by reference in or attached to this contract.		<input type="checkbox"/> 29. AWARD <i>(Contractor is not required to sign this document.)</i> Your offer on this solicitation, is hereby accepted as to the items listed. This award commutes the contract, which consists of (a) the Government solicitation and your offer, and (b) this contract award. No further contractual document is necessary.	
30A. NAME AND TITLE OF CONTRACTOR OR PERSON AUTHORIZED TO SIGN <i>(Type or print)</i>		31A. NAME OF CONTRACTING OFFICER <i>(Type or print)</i>	
30B. SIGNATURE	30C. DATE	TEL: EMAIL:	
		31B. UNITED STATES OF AMERICA BY	31C. AWARD DATE

Section 00 10 00 - Solicitation

CLINS/BID SHEET

**SECTION 00 10 00
BIDDING
SCHEDULE**

Bid will be based upon all work as shown on the contract drawings and in accordance with the specifications.

Item No.	Description	Estimated Quantity	Unit	Unit Price	Estimated Amount
Basic Requirements:					
1	Mobilization and Demobilization	1	JA	\$ _____	
2	Record (As-built) Drawings (including all surveys and photographs)	1	JA	\$ _____	
3	Tunnel Repair/Retrofit System	1	JA	\$ _____	

Total Estimated Amount (Items 1 ~ 3)			\$ _____	
Option A:				
4	Concrete Façade	1	JA	\$ _____
5	New Door	1	JA	\$ _____
Total Estimated Option A (Items 4 ~ 5)			\$ _____	
Total Estimated Amount (Items 1 ~ 5)			\$ _____	

Note 1: Bids must be complete as to all the items on the schedule. Failure to complete all items on the bid schedule may render the bid Non-responsive.

Note 2: The Government will evaluate offers for award purposes by adding the total price for the option to the total price for the basic requirement. Evaluation of the option will not obligate the Government to exercise the option.

Note 3: The government may elect to exercise the option, or not to exercise the option. If the option item is exercised, it will be exercised within 60 calendar days from Contract Award.

Section 00 21 13 - Instructions to Bidders

INSTRUCTIONS TO BIDDERS

A Site Visit will be conducted on 26 JUL 2022 at 1000am Eastern Time.

Address is

6103 Visitor Center Road in Mount Morris, New York

Call in information will be

Please use the following call-in information:

<https://usace1.webex.com/meet/vincent.m.lovullo>

Join by phone

+1-844-800-2712 US Toll Free

+1-669-234-1177 US Toll

Access code: 2763 377 4642

For Emergencies call 7163682739

Questions concerning this solicitation shall be submitted via ProjNet NLT

1 AUG 2022,

2:00 P.M. ET

ProjNet can be found at this link

BIDDER'S QUESTIONS AND COMMENTS:

Contracting Primary Point of Contact: Kenneth Mackay at (716) 879-4206 or kenneth.e.mackay@usace.army.mil Technical inquiries and questions relating to proposal procedures or bonds are to be submitted via Bidder Inquiry in ProjNet at <http://www.ProjNet.org/ProjNet>. As noted below, bidders shall not submit their proposals via ProjNet. bidders shall submit their proposals in accordance with the "Submission Requirements" section which is detailed in this section.

To submit and review bid inquiry items, bidders will need to be a current registered user or self-register into system.

Project: **W912PB22B0020**; MMD Adit Tunnels.

Quick Add Key: **7Z9B52-U3XRKW**

Specific Instructions for ProjNet Bid Inquiry Access:

1. From the ProjNet home page linked above, click on Quick Add on the upper right side of the screen.
2. Identify the Agency. This should be marked as USACE.
3. Key. Enter the Bidder Inquiry Key listed above.
4. Email. Enter the email address you would like to use for communication.
5. Select Continue. A page will then open stating a user account was not found and will ask you to create one using the provided form.

6. Enter your First Name, Last Name, Company, City, State, Phone, Email, Secret Question, Secret Answer, and Time Zone. Make sure to remember your Secret Question and Answer as they will be used from this point on to access the ProjNet system.
7. Select Add User. Once this is completed you are now registered within ProjNet and are currently logged into the system.

Specific Instructions for Future ProjNet Bid Inquiry Access:

1. For future access to ProjNet, you will not be emailed any type of password. You will utilize your Secret Question and Secret Answer to log in.
2. From the ProjNet home page linked above, click on Quick Add on the upper right side of the screen.
3. Identify the Agency. This should be marked as USACE.
4. Key. Enter the Bidder Inquiry Key listed above.
5. Email. Enter the email address you used to register previously in ProjNet.
6. Select Continue. A page will then open asking you to enter the answer to your Secret Question.
7. Enter your Secret Answer and click Login. Once this is completed you are now logged into the system.
8. From this page you may view all bidder inquiries or add an inquiry.

Bidders will receive an acknowledgement of their question via email, followed by an answer to their question after it has been processed by our technical team.

Bidders are requested to review the specification in its entirety and to review the Bidder Inquiry System for answers to questions prior to submission of a new inquiry.

The call center operates weekdays from 8AM to 5PM U.S. Central Time Zone (Chicago). The telephone number for the Call Center is 800-428-HELP.

Information concerning the status of the evaluation and/or award will NOT be available after receipt of bids/proposals.

NOTES:

1. Bidders shall not submit their proposals via ProjNet, but in accordance with the provisions stated in the "Submission Requirements" section above. Any questions regarding acceptable means of submitting offers shall be made directly to the Contracting Point of Contact identified in the Presolicitation Notice.
2. Government responses to technical inquiries and questions relating to proposal procedures that are submitted to ProjNet in accordance with the procedures above are not binding on the Government unless an amendment is issued on beta.SAM.gov. In the case of any conflicts, the last posted notice or, if applicable, amendment posted to beta.SAM.gov governs. Any changes or revisions to the Presolicitation Notice will be issued on beta.SAM.gov.
3. The ability to enter technical inquiries and questions relating to proposal procedures will be disabled ten (10) calendar days prior to the closing date stated in this Presolicitation Notice. No Government responses will be entered into the ProjNet system within five (5) calendar days prior to the closing date stated in this Presolicitation Notice.

Bidder Inquiry Key for this action is

[7Z9B52-U3XRKW](#)

BID SUBMISSION:

a. Bids shall be emailed by SAFE to Kenneth Mackay at kenneth.e.mackay@usace.army by 15 AUG 2022 at 2:00 p.m. EasternTime. Please email Mr. Mackay NLT 9 AUG 2022 for the SAFE information.

1. Short Note to the Recipients: Click the Add Files or Drag and Drop your files. For file description, enter W912P422B0006-FIRMNAME. **PLEASE NOTE, YOU MUST CHANGE THE SEND TO ADDRESS IN SAFE TO Kenneth.e.mackay@usace.army.mil**
From: kenneth.e.mackay.civ@mail.mil
Call in information for the Bid Opening will be

Please use the following call-in information:

<https://usace1.webex.com/meet/vincent.m.lovullo>

Join by phone

+1-844-800-2712 US Toll Free

+1-669-234-1177 US Toll

Access code: 2763 377 4642

For Emergencies call 7163682739

b. The bid shall include the following elements to be considered for award:

(1) SF 1442: Filled out by the vendor .

(2) All Amendments (SF 30s): Signed if applicable.

(3) Complete CLINs: 0001-0005.

(4) Bid Bond

(5) Acknowledge and complete clause 52.204-24. (5) In accordance with FAR 52.204-7, System for Award Management, registration is required in the System for Award Management (SAM) database located at www.sam.gov. More specifically, "An Offeror is required to be registered in SAM when submitting an offer or quotation, and shall continue to be registered until time of award, during performance, and through final payment of any contract, basic agreement, basic ordering agreement, or blanket purchasing agreement resulting from this solicitation."

(See FAR 52.204-7(b) (1)).

For SAM Customer Service, contact:

Federal Service Desk

URL: www.fsd.gov

Hours: 8am - 8pm (Eastern Time)

US Calls: 866-606-8220

International Calls: 334-206-7828

DSN: 866-606-8220

(6) Provide business CAGE code: _____

(7) Tax Identification Number: _____

(c) 19.1307 Price evaluation preference for HUBZone small business concerns.

(a) The price evaluation preference for HUBZone small business shall be used in acquisitions conducted using full and open competition. The preference shall not be used -

(1) Where price is not a selection factor so that a price evaluation preference would not be considered (e.g., Architect/Engineer acquisitions); or

2) Where all fair and reasonable offers are accepted (e.g., the award of multiple award schedule contracts).

CLAUSES INCORPORATED BY REFERENCE

52.204-7	System for Award Management	OCT 2018
52.204-16	Commercial and Government Entity Code Reporting	AUG 2020
52.204-22	Alternative Line Item Proposal	JAN 2017
52.214-6	Explanation To Prospective Bidders	APR 1984

CLAUSES INCORPORATED BY FULL TEXT

52.216-1 TYPE OF CONTRACT (APR 1984)

The Government contemplates award of a Firm Fixed Price contract resulting from this solicitation.

(End of provision)

52.217-5 EVALUATION OF OPTIONS (JUL 1990)

Except when it is determined in accordance with FAR 17.206(b) not to be in the Government's best interests, the Government will evaluate offers for award purposes by adding the total price for all options to the total price for the basic requirement. Evaluation of options will not obligate the Government to exercise the option(s).

(End of provision)

52.222-5 CONSTRUCTION WAGE RATE REQUIREMENTS--SECONDARY SITE OF THE WORK (MAY 2014)

(a)(1) The offeror shall notify the Government if the offeror intends to perform work at any secondary site of the work, as defined in paragraph (a)(1)(ii) of the FAR clause at 52.222-6, Construction Wage Rate Requirements, of this solicitation.

(2) If the offeror is unsure if a planned work site satisfies the criteria for a secondary site of the work, the offeror shall request a determination from the Contracting Officer.

(b)(1) If the wage determination provided by the Government for work at the primary site of the work is not applicable to the secondary site of the work, the offeror shall request a wage determination from the Contracting Officer.

(2) The due date for receipt of offers will not be extended as a result of an offeror's request for a wage determination for a secondary site of the work.

(End of provision)

52.228-1 BID GUARANTEE (SEP 1996)

(a) Failure to furnish a bid guarantee in the proper form and amount, by the time set for opening of bids, may be cause for rejection of the bid.

(b) The bidder shall furnish a bid guarantee in the form of a firm commitment, e.g., bid bond supported by good and sufficient surety or sureties acceptable to the Government, postal money order, certified check, cashier's check, irrevocable letter of credit, or, under Treasury Department regulations, certain bonds or notes of the United States. The Contracting Officer will return bid guarantees, other than bid bonds, (1) to unsuccessful bidders as soon as practicable after the opening of bids, and (2) to the successful bidder upon execution of contractual documents and bonds (including any necessary coinsurance or reinsurance agreements), as required by the bid as accepted.-

(c) The amount of the bid guarantee shall be 20 percent of the bid price or \$3,000,000, whichever is less.-

(d) If the successful bidder, upon acceptance of its bid by the Government within the period specified for acceptance, fails to execute all contractual documents or furnish executed bond(s) within 10 days after receipt of the forms by the bidder, the Contracting Officer may terminate the contract for default.-

(e) In the event the contract is terminated for default, the bidder is liable for any cost of acquiring the work that exceeds the amount of its bid, and the bid guarantee is available to offset the difference.

(End of provision)

52.233-2 SERVICE OF PROTEST (SEP 2006)

(a) Protests, as defined in section 33.101 of the Federal Acquisition Regulation, that are filed directly with an agency, and copies of any protests that are filed with the Government Accountability Office (GAO), shall be served on the Contracting Officer (addressed as follows) by obtaining written and dated acknowledgment of receipt from Tyrone Palaganas, U.S. Army Corps of Engineers, 1776 Niagara Street, NY 14207

(b) The copy of any protest shall be received in the office designated above within one day of filing a protest with the GAO.

(End of provision)

52.236-27 SITE VISIT (CONSTRUCTION) (FEB 1995)

(a) The clauses at 52.236-2, Differing Site Conditions, and 52.236-3, Site Investigations and Conditions Affecting the Work, will be included in any contract awarded as a result of this solicitation. Accordingly, offerors or quoters are urged and expected to inspect the site where the work will be performed.

(b) Site visits may be arranged during normal duty hours by contacting:

Name:	Kenneth E Mackay
Email Address:	kenneth.e.mackay@usace.army.mil
Telephone:	716-879-4206

Please see 00 21 13 Instructions to Bidders for detailed site visit information

(End of provision)

52.252-1 SOLICITATION PROVISIONS INCORPORATED BY REFERENCE (FEB 1998)

This solicitation incorporates one or more solicitation provisions by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. The offeror is cautioned that the listed provisions may include blocks that must be completed by the offeror and submitted with its quotation or offer. In lieu of submitting the full text of those provisions, the offeror may identify the provision by paragraph identifier and provide the appropriate information with its quotation or offer. Also, the full text of a solicitation provision may be accessed electronically at this/these address(es):

The full text of FAR clauses and provisions can be found at
<https://www.acquisition.gov/>

The full text of DFARS clauses and provisions can be found at
<https://www.acq.osd.mil/dpap/dars/dfarspgi/current/index.html>

(End of provision)

52.252-5 AUTHORIZED DEVIATIONS IN PROVISIONS (NOV 2020)

(a) The use in this solicitation of any Federal Acquisition Regulation (48 CFR Chapter 1) provision with an authorized deviation is indicated by the addition of "(DEVIATION)" after the date of the provision.

(b) The use in this solicitation of any **Defense Federal Acquisition Regulation Supplement (48 CFR Chapter 2)** provision with an authorized deviation is indicated by the addition of "(DEVIATION)" after the name of the regulation.

(End of provision)

252.215-7008 ONLY ONE OFFER (JUL 2019)

(a) Cost or pricing data requirements. After initial submission of offers, if the Contracting Officer notifies the Offeror that only one offer was received, the Offeror agrees to--

(1) Submit any additional cost or pricing data that is required in order to determine whether the price is fair and reasonable or to comply with the statutory requirement for certified cost or pricing data (10 U.S.C. 2306a and FAR 15.403-3); and

(2) Except as provided in paragraph (b) of this provision, if the acquisition exceeds the certified cost or pricing data threshold and an exception to the requirement for certified cost or pricing data at FAR 15.403-1(b)(2) through (5) does not apply, certify all cost or pricing data in accordance with paragraph (c) of DFARS provision 252.215-7010, Requirements for Certified Cost or Pricing Data and Data Other Than Certified Cost or Pricing Data, of this solicitation.

(b) Canadian Commercial Corporation. If the Offeror is the Canadian Commercial Corporation, certified cost or pricing data are not required. If the Contracting Officer notifies the Canadian Commercial Corporation that additional data other than certified cost or pricing data are required in accordance with DFARS 225.870-4(c), the Canadian Commercial Corporation shall obtain and provide the following:

(1) Profit rate or fee (as applicable).

(2) Analysis provided by Public Works and Government Services Canada to the Canadian Commercial Corporation to determine a fair and reasonable price (comparable to the analysis required at FAR 15.404-1).

(3) Data other than certified cost or pricing data necessary to permit a determination by the U.S. Contracting Officer that the proposed price is fair and reasonable [U.S. Contracting Officer to provide description of the data required in accordance with FAR 15.403-3(a)(1) with the notification].

(4) As specified in FAR 15.403-3(a)(4), an offeror who does not comply with a requirement to submit data that the U.S. Contracting Officer has deemed necessary to determine price reasonableness or cost realism is ineligible for award unless the head of the contracting activity determines that it is in the best interest of the Government to make the award to that offeror.

(c) Subcontracts. Unless the Offeror is the Canadian Commercial Corporation, the Offeror shall insert the substance of this provision, including this paragraph (c), in all subcontracts exceeding the simplified acquisition threshold defined in FAR part 2.

(End of provision)

Section 00 22 13 - Supplementary Instructions to Bidders

CLAUSES INCORPORATED BY REFERENCE

52.214-3	Amendments To Invitations For Bids	DEC 2016
52.214-4	False Statements In Bids	APR 1984
52.214-5	Submission Of Bids	DEC 2016
52.214-7	Late Submissions, Modifications, and Withdrawals of Bids	NOV 1999
52.214-34	Submission Of Offers In The English Language	APR 1991
52.214-35	Submission Of Offers In U.S. Currency	APR 1991

Section 00 45 00 - Representations and Certifications

CLAUSES INCORPORATED BY REFERENCE

252.203-7005	Representation Relating to Compensation of Former DoD Officials	NOV 2011
252.204-7007	Alternate A, Annual Representations and Certifications	MAY 2021
252.225-7055	Representation Regarding Business Operations with the Maduro Regime	MAY 2022
252.225-7973 (Dev)	Prohibition on the Procurement of Foreign-Made Unmanned Aircraft Systems - Representation (DEVIATION 2020-O0015)	MAY 2020

CLAUSES INCORPORATED BY FULL TEXT

52.204-8 ANNUAL REPRESENTATIONS AND CERTIFICATIONS (JAN 2022)

(a)(1) The North American Industry Classification System (NAICS) code for this acquisition is 236220.

(2) The small business size standard is \$39,500,000.

(3) The small business size standard for a concern that submits an offer, other than on a construction or service acquisition, but proposes to furnish an end item that it did not itself manufacture, process, or produce is 500 employees if the acquisition--

(i) Is set aside for small business and has a value above the simplified acquisition threshold;

(ii) Uses the HUBZone price evaluation preference regardless of dollar value, unless the offeror waives the price evaluation preference; or

(iii) Is an 8(a), HUBZone, service-disabled veteran-owned, economically disadvantaged women-owned, or women-owned small business set-aside or sole-source award regardless of dollar value.

(b)(1) If the provision at 52.204-7, System for Award Management, is included in this solicitation, paragraph (d) of this provision applies.

(2) If the provision at 52.204-7, System for Award Management, is not included in this solicitation, and the Offeror has an active registration in the System for Award Management (SAM), the Offeror may choose to use paragraph (d) of this provision instead of completing the corresponding individual representations and certifications in the solicitation. The Offeror shall indicate which option applies by checking one of the following boxes:

() Paragraph (d) applies.

() Paragraph (d) does not apply and the offeror has completed the individual representations and certifications in the solicitation.

(c) (1) The following representations or certifications in SAM are applicable to this solicitation as indicated:

(i) 52.203-2, Certificate of Independent Price Determination. This provision applies to solicitations when a firm-fixed-price contract or fixed-price contract with economic price adjustment is contemplated, unless—

- (A) The acquisition is to be made under the simplified acquisition procedures in Part 13;
 - (B) The solicitation is a request for technical proposals under two-step sealed bidding procedures; or
 - (C) The solicitation is for utility services for which rates are set by law or regulation.
- (ii) 52.203-11, Certification and Disclosure Regarding Payments to Influence Certain Federal Transactions. This provision applies to solicitations expected to exceed \$150,000.
- (iii) 52.203-18, Prohibition on Contracting with Entities that Require Certain Internal Confidentiality Agreements or Statements--Representation. This provision applies to all solicitations.
- (iv) 52.204-3, Taxpayer Identification. This provision applies to solicitations that do not include the provision at 52.204-7, System for Award Management.
- (v) 52.204-5, Women-Owned Business (Other Than Small Business). This provision applies to solicitations that—
- (A) Are not set aside for small business concerns;
 - (B) Exceed the simplified acquisition threshold; and
 - (C) Are for contracts that will be performed in the United States or its outlying areas.
- (vi) 52.204-26, Covered Telecommunications Equipment or Services--Representation. This provision applies to all solicitations.
- (vii) 52.209-2, Prohibition on Contracting with Inverted Domestic Corporations--Representation.
- (viii) 52.209-5, Certification Regarding Responsibility Matters. This provision applies to solicitations where the contract value is expected to exceed the simplified acquisition threshold.
- (ix) 52.209-11, Representation by Corporations Regarding Delinquent Tax Liability or a Felony Conviction under any Federal Law. This provision applies to all solicitations.
- (x) 52.214-14, Place of Performance--Sealed Bidding. This provision applies to invitations for bids except those in which the place of performance is specified by the Government.
- (xi) 52.215-6, Place of Performance. This provision applies to solicitations unless the place of performance is specified by the Government.
- (xii) 52.219-1, Small Business Program Representations (Basic, Alternates I, and II). This provision applies to solicitations when the contract will be performed in the United States or its outlying areas.
- (A) The basic provision applies when the solicitations are issued by other than DoD, NASA, and the Coast Guard.
 - (B) The provision with its Alternate I applies to solicitations issued by DoD, NASA, or the Coast Guard.
 - (C) The provision with its Alternate II applies to solicitations that will result in a multiple-award contract with more than one NAICS code assigned.

(xiii) 52.219-2, Equal Low Bids. This provision applies to solicitations when contracting by sealed bidding and the contract will be performed in the United States or its outlying areas.

(xiv) 52.222-22, Previous Contracts and Compliance Reports. This provision applies to solicitations that include the clause at 52.222-26, Equal Opportunity.

(xv) 52.222-25, Affirmative Action Compliance. This provision applies to solicitations, other than those for construction, when the solicitation includes the clause at 52.222-26, Equal Opportunity.

(xvi) 52.222-38, Compliance with Veterans' Employment Reporting Requirements. This provision applies to solicitations when it is anticipated the contract award will exceed the simplified acquisition threshold and the contract is not for acquisition of commercial products or commercial services.

(xvii) 52.223-1, Biobased Product Certification. This provision applies to solicitations that require the delivery or specify the use of USDA-designated items; or include the clause at 52.223-2, Affirmative Procurement of Biobased Products Under Service and Construction Contracts.

(xviii) 52.223-4, Recovered Material Certification. This provision applies to solicitations that are for, or specify the use of, EPA- designated items.

(xix) 52.223-22, Public Disclosure of Greenhouse Gas Emissions and Reduction Goals--Representation. This provision applies to solicitations that include the clause at 52.204-7.)

(xx) 52.225-2, Buy American Certificate. This provision applies to solicitations containing the clause at 52.225-1.

(xxi) 52.225-4, Buy American--Free Trade Agreements--Israeli Trade Act Certificate. (Basic, Alternates I, II, and III.) This provision applies to solicitations containing the clause at 52.225- 3.

(A) If the acquisition value is less than \$25,000, the basic provision applies.

(B) If the acquisition value is \$25,000 or more but is less than \$50,000, the provision with its Alternate I applies.

(C) If the acquisition value is \$50,000 or more but is less than \$92,319, the provision with its Alternate II applies.

(D) If the acquisition value is \$92,319 or more but is less than \$100,000, the provision with its Alternate III applies.

(xxii) 52.225-6, Trade Agreements Certificate. This provision applies to solicitations containing the clause at 52.225-5.

(xxiii) 52.225-20, Prohibition on Conducting Restricted Business Operations in Sudan--Certification. This provision applies to all solicitations.

(xxiv) 52.225-25, Prohibition on Contracting with Entities Engaging in Certain Activities or Transactions Relating to Iran—Representation and Certification. This provision applies to all solicitations.

(xxv) 52.226-2, Historically Black College or University and Minority Institution Representation. This provision applies to solicitations for research, studies, supplies, or services of the type normally acquired from higher educational institutions.

(2) The following representations or certifications are applicable as indicated by the Contracting Officer:

- (i) 52.204-17, Ownership or Control of Offeror.
- (ii) 52.204-20, Predecessor of Offeror.
- (iii) 52.222-18, Certification Regarding Knowledge of Child Labor for Listed End Products.
- (iv) 52.222-48, Exemption from Application of the Service Contract Labor Standards to Contracts for Maintenance, Calibration, or Repair of Certain Equipment--Certification.
- (v) 52.222-52 Exemption from Application of the Service Contract Labor Standards to Contracts for Certain Services--Certification.
- (vi) 52.223-9, with its Alternate I, Estimate of Percentage of Recovered Material Content for EPA-Designated Products (Alternate I only).
- (vii) 52.227-6, Royalty Information.
 - (A) Basic.
 - (B) Alternate I.
- (viii) 52.227-15, Representation of Limited Rights Data and Restricted Computer Software.
- (d) The Offeror has completed the annual representations and certifications electronically in SAM accessed through <https://www.sam.gov>. After reviewing the SAM information, the Offeror verifies by submission of the offer that the representations and certifications currently posted electronically that apply to this solicitation as indicated in paragraph (c) of this provision have been entered or updated within the last 12 months, are current, accurate, complete, and applicable to this solicitation (including the business size standard applicable to the NAICS code referenced for this solicitation), as of the date of this offer and are incorporated in this offer by reference (see FAR 4.1201); except for the changes identified below [offeror to insert changes, identifying change by clause number, title, date]. These amended representation(s) and/or certification(s) are also incorporated in this offer and are current, accurate, and complete as of the date of this offer.

FAR Clause	Title	Date	Change
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Any changes provided by the offeror are applicable to this solicitation only, and do not result in an update to the representations and certifications posted on SAM.

(End of provision)

52.204-24 REPRESENTATION REGARDING CERTAIN TELECOMMUNICATIONS AND VIDEO SURVEILLANCE SERVICES OR EQUIPMENT (NOV 2021)

The Offeror shall not complete the representation at paragraph (d)(1) of this provision if the Offeror has represented that it "does not provide covered telecommunications equipment or services as a part of its offered products or services to the Government in the performance of any contract, subcontract, or other contractual instrument" in paragraph (c)(1) in the provision at 52.204-26, Covered Telecommunications Equipment or Services--Representation, or in paragraph (v)(2)(i) of the provision at 52.212-3, Offeror Representations and Certifications-Commercial Products and Commercial Services. The Offeror shall not complete the representation in paragraph (d)(2) of this provision if the Offeror has represented that it "does not use covered telecommunications equipment or services, or any equipment, system, or service that uses covered telecommunications equipment or services" in paragraph (c)(2) of the provision at 52.204-26, or in paragraph (v)(2)(ii) of the provision at 52.212-3.

(a) Definitions. As used in this provision-

Backhaul, covered telecommunications equipment or services, critical technology, interconnection arrangements, reasonable inquiry, roaming, and substantial or essential component have the meanings provided in the clause 52.204-25, Prohibition on Contracting for Certain Telecommunications and Video Surveillance Services or Equipment.

(b) Prohibition.

(1) Section 889(a)(1)(A) of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Pub. L. 115-232) prohibits the head of an executive agency on or after August 13, 2019, from procuring or obtaining, or extending or renewing a contract to procure or obtain, any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system. Nothing in the prohibition shall be construed to--

(i) Prohibit the head of an executive agency from procuring with an entity to provide a service that connects to the facilities of a third-party, such as backhaul, roaming, or interconnection arrangements; or

(ii) Cover telecommunications equipment that cannot route or redirect user data traffic or cannot permit visibility into any user data or packets that such equipment transmits or otherwise handles.

(2) Section 889(a)(1)(B) of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Pub. L. 115-232) prohibits the head of an executive agency on or after August 13, 2020, from entering into a contract or extending or renewing a contract with an entity that uses any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system. This prohibition applies to the use of covered telecommunications equipment or services, regardless of whether that use is in performance of work under a Federal contract. Nothing in the prohibition shall be construed to--

(i) Prohibit the head of an executive agency from procuring with an entity to provide a service that connects to the facilities of a third-party, such as backhaul, roaming, or interconnection arrangements; or

(ii) Cover telecommunications equipment that cannot route or redirect user data traffic or cannot permit visibility into any user data or packets that such equipment transmits or otherwise handles.

(c) Procedures. The Offeror shall review the list of excluded parties in the System for Award Management (SAM) (<https://www.sam.gov>) for entities excluded from receiving federal awards for "covered telecommunications equipment or services."

(d) Representations. The Offeror represents that--

(1) It [____] will, [____] will not provide covered telecommunications equipment or services to the Government in the performance of any contract, subcontract or other contractual instrument resulting from this solicitation. The Offeror shall provide the additional disclosure information required at paragraph (e)(1) of this section if the Offeror responds "will" in paragraph (d)(1) of this section; and

(2) After conducting a reasonable inquiry, for purposes of this representation, the Offeror represents that--

It [____] does, [____] does not use covered telecommunications equipment or services, or use any equipment, system, or service that uses covered telecommunications equipment or services. The Offeror shall provide the additional disclosure information required at paragraph (e)(2) of this section if the Offeror responds "does" in paragraph (d)(2) of this section.

(e) Disclosures.

(1) Disclosure for the representation in paragraph (d)(1) of this provision. If the Offeror has responded "will" in the representation in paragraph (d)(1) of this provision, the Offeror shall provide the following information as part of the offer:

(i) For covered equipment--

(A) The entity that produced the covered telecommunications equipment (include entity name, unique entity identifier, CAGE code, and whether the entity was the original equipment manufacturer (OEM) or a distributor, if known);

(B) A description of all covered telecommunications equipment offered (include brand; model number, such as OEM number, manufacturer part number, or wholesaler number; and item description, as applicable); and

(C) Explanation of the proposed use of covered telecommunications equipment and any factors relevant to determining if such use would be permissible under the prohibition in paragraph (b)(1) of this provision.

(ii) For covered services--

(A) If the service is related to item maintenance: A description of all covered telecommunications services offered (include on the item being maintained: Brand; model number, such as OEM number, manufacturer part number, or wholesaler number; and item description, as applicable); or

(B) If not associated with maintenance, the Product Service Code (PSC) of the service being provided; and explanation of the proposed use of covered telecommunications services and any factors relevant to determining if such use would be permissible under the prohibition in paragraph (b)(1) of this provision.

(2) Disclosure for the representation in paragraph (d)(2) of this provision. If the Offeror has responded "does" in the representation in paragraph (d)(2) of this provision, the Offeror shall provide the following information as part of the offer:

(i) For covered equipment--

(A) The entity that produced the covered telecommunications equipment (include entity name, unique entity identifier, CAGE code, and whether the entity was the OEM or a distributor, if known);

(B) A description of all covered telecommunications equipment offered (include brand; model number, such as OEM number, manufacturer part number, or wholesaler number; and item description, as applicable); and

(C) Explanation of the proposed use of covered telecommunications equipment and any factors relevant to determining if such use would be permissible under the prohibition in paragraph (b)(2) of this provision.

(ii) For covered services--

(A) If the service is related to item maintenance: A description of all covered telecommunications services offered (include on the item being maintained: Brand; model number, such as OEM number, manufacturer part number, or wholesaler number; and item description, as applicable); or

(B) If not associated with maintenance, the PSC of the service being provided; and explanation of the proposed use of covered telecommunications services and any factors relevant to determining if such use would be permissible under the prohibition in paragraph (b)(2) of this provision.

(End of provision)

52.209-7 INFORMATION REGARDING RESPONSIBILITY MATTERS (OCT 2018)

(a) Definitions. As used in this provision--

Administrative proceeding means a non-judicial process that is adjudicatory in nature in order to make a determination of fault or liability (e.g., Securities and Exchange Commission Administrative Proceedings, Civilian Board of Contract Appeals Proceedings, and Armed Services Board of Contract Appeals Proceedings). This includes administrative proceedings at the Federal and State level but only in connection with performance of a Federal contract or grant. It does not include agency actions such as contract audits, site visits, corrective plans, or inspection of deliverables.

Federal contracts and grants with total value greater than \$10,000,000 means--

(1) The total value of all current, active contracts and grants, including all priced options; and

(2) The total value of all current, active orders including all priced options under indefinite-delivery, indefinite-quantity, 8(a), or requirements contracts (including task and delivery and multiple-award Schedules).

Principal means an officer, director, owner, partner, or a person having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a division or business segment; and similar positions).

(b) The offeror () has () does not have current active Federal contracts and grants with total value greater than \$10,000,000.

(c) If the offeror checked "has" in paragraph (b) of this provision, the offeror represents, by submission of this offer, that the information it has entered in the Federal Awardee Performance and Integrity Information System (FAPIIS) is current, accurate, and complete as of the date of submission of this offer with regard to the following information:

(1) Whether the offeror, and/or any of its principals, has or has not, within the last five years, in connection with the award to or performance by the offeror of a Federal contract or grant, been the subject of a proceeding, at the Federal or State level that resulted in any of the following dispositions:

(i) In a criminal proceeding, a conviction.

(ii) In a civil proceeding, a finding of fault and liability that results in the payment of a monetary fine, penalty, reimbursement, restitution, or damages of \$5,000 or more.

(iii) In an administrative proceeding, a finding of fault and liability that results in--

(A) The payment of a monetary fine or penalty of \$5,000 or more; or

(B) The payment of a reimbursement, restitution, or damages in excess of \$100,000.

(iv) In a criminal, civil, or administrative proceeding, a disposition of the matter by consent or compromise with an acknowledgment of fault by the Contractor if the proceeding could have led to any of the outcomes specified in paragraphs (c)(1)(i), (c)(1)(ii), or (c)(1)(iii) of this provision.

(2) If the offeror has been involved in the last five years in any of the occurrences listed in (c)(1) of this provision, whether the offeror has provided the requested information with regard to each occurrence.

(d) The offeror shall post the information in paragraphs (c)(1)(i) through (c)(1)(iv) of this provision in FAPIIS as required through maintaining an active registration in the System for Award Management, which can be accessed via <https://www.sam.gov> (see 52.204-7).

(End of provision)

52.209-13 VIOLATION OF ARMS CONTROL TREATIES OR AGREEMENTS--CERTIFICATION (NOV 2021)

(a) This provision does not apply to acquisitions at or below the simplified acquisition threshold or to acquisitions of commercial products and commercial services as defined in Federal Acquisition Regulation 2.101.

(b) Certification. [Offeror shall check either (1) or (2).]

___ (1) The Offeror certifies that--

(i) It does not engage and has not engaged in any activity that contributed to or was a significant factor in the President's or Secretary of State's determination that a foreign country is in violation of its obligations undertaken in any arms control, nonproliferation, or disarmament agreement to which the United States is a party, or is not adhering to its arms control, nonproliferation, or disarmament commitments in which the United States is a participating state. The determinations are described in the most recent unclassified annual report provided to Congress pursuant to section 403 of the Arms Control and Disarmament Act (22 U.S.C. 2593a). The report is available at <https://www.state.gov/bureaus-offices/under-secretary-for-arms-control-and-international-security-affairs/bureau-of-arms-control-verification-and-compliance/>; and

(ii) No entity owned or controlled by the Offeror has engaged in any activity that contributed to or was a significant factor in the President's or Secretary of State's determination that a foreign country is in violation of its obligations undertaken in any arms control, nonproliferation, or disarmament agreement to which the United States is a party, or is not adhering to its arms control, nonproliferation, or disarmament commitments in which the United States is a participating state. The determinations are described in the most recent unclassified annual report provided to Congress pursuant to section 403 of the Arms Control and Disarmament Act (22 U.S.C. 2593a). The report is available at <https://www.state.gov/bureaus-offices/under-secretary-for-arms-control-and-international-security-affairs/bureau-of-arms-control-verification-and-compliance/>; or

___ (2) The Offeror is providing separate information with its offer in accordance with paragraph (d)(2) of this provision.

(c) Procedures for reviewing the annual unclassified report (see paragraph (b)(1) of this provision). For clarity, references to the report in this section refer to the entirety of the annual unclassified report, including any separate reports that are incorporated by reference into the annual unclassified report.

(1) Check the table of contents of the annual unclassified report and the country section headings of the reports incorporated by reference to identify the foreign countries listed there. Determine whether the Offeror or any person

owned or controlled by the Offeror may have engaged in any activity related to one or more of such foreign countries.

(2) If there may have been such activity, review all findings in the report associated with those foreign countries to determine whether or not each such foreign country was determined to be in violation of its obligations undertaken in an arms control, nonproliferation, or disarmament agreement to which the United States is a party, or to be not adhering to its arms control, nonproliferation, or disarmament commitments in which the United States is a participating state. For clarity, in the annual report an explicit certification of non-compliance is equivalent to a determination of violation. However, the following statements in the annual report are not equivalent to a determination of violation:

- (i) An inability to certify compliance.
- (ii) An inability to conclude compliance.
- (iii) A statement about compliance concerns.

(3) If so, determine whether the Offeror or any person owned or controlled by the Offeror has engaged in any activity that contributed to or is a significant factor in the determination in the report that one or more of these foreign countries is in violation of its obligations undertaken in an arms control, nonproliferation, or disarmament agreement to which the United States is a party, or is not adhering to its arms control, nonproliferation, or disarmament commitments in which the United States is a participating state. Review the narrative for any such findings reflecting a determination of violation or non-adherence related to those foreign countries in the report, including the finding itself, and to the extent necessary, the conduct giving rise to the compliance or adherence concerns, the analysis of compliance or adherence concerns, and efforts to resolve compliance or adherence concerns.

(4) The Offeror may submit any questions with regard to this report by email to NDAA1290Cert@state.gov. To the extent feasible, the Department of State will respond to such email inquiries within 3 business days.

(d) Do not submit an offer unless--

(1) A certification is provided in paragraph (b)(1) of this provision and submitted with the offer; or

(2) In accordance with paragraph (b)(2) of this provision, the Offeror provides with its offer information that the President of the United States has--

(i) Waived application under U.S.C. 2593e(d) or (e); or

(ii) Determined under 22 U.S.C. 2593e(g)(2) that the entity has ceased all activities for which measures were imposed under 22 U.S.C.2593e(b).

(e) Remedies. The certification in paragraph (b)(1) of this provision is a material representation of fact upon which reliance was placed when making award. If it is later determined that the Offeror knowingly submitted a false certification, in addition to other remedies available to the Government, such as suspension or debarment, the Contracting Officer may terminate any contract resulting from the false certification.

(End of provision)

(a) Definitions. As used in this provision, covered defense telecommunications equipment or services has the meaning provided in the clause 252.204-7018, Prohibition on the Acquisition of Covered Defense Telecommunications Equipment or Services.

(b) Procedures. The Offeror shall review the list of excluded parties in the System for Award Management (SAM) (<https://www.sam.gov>) for entities excluded from receiving federal awards for “covered defense telecommunications equipment or services”.

(c) Representation. The Offeror represents that it ☐ does, ☐ does not provide covered defense telecommunications equipment or services as a part of its offered products or services to the Government in the performance of any contract, subcontract, or other contractual instrument.

(End of provision)

252.204-7017 PROHIBITION ON THE ACQUISITION OF COVERED DEFENSE TELECOMMUNICATIONS EQUIPMENT OR SERVICES--REPRESENTATION (MAY 2021)

The Offeror is not required to complete the representation in this provision if the Offeror has represented in the provision at 252.204-7016, Covered Defense Telecommunications Equipment or Services--Representation, that it “does not provide covered defense telecommunications equipment or services as a part of its offered products or services to the Government in the performance of any contract, subcontract, or other contractual instrument.”

(a) Definitions. Covered defense telecommunications equipment or services, covered mission, critical technology, and substantial or essential component, as used in this provision, have the meanings given in the 252.204-7018 clause, Prohibition on the Acquisition of Covered Defense Telecommunications Equipment or Services, of this solicitation.

(b) Prohibition. Section 1656 of the National Defense Authorization Act for Fiscal Year 2018 (Pub. L. 115-91) prohibits agencies from procuring or obtaining, or extending or renewing a contract to procure or obtain, any equipment, system, or service to carry out covered missions that uses covered defense telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system.

(c) Procedures. The Offeror shall review the list of excluded parties in the System for Award Management (SAM) at <https://www.sam.gov> for entities that are excluded when providing any equipment, system, or service to carry out covered missions that uses covered defense telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system, unless a waiver is granted.

(d) Representation. If in its annual representations and certifications in SAM the Offeror has represented in paragraph (c) of the provision at 252.204-7016, Covered Defense Telecommunications Equipment or Services--Representation, that it “does” provide covered defense telecommunications equipment or services as a part of its offered products or services to the Government in the performance of any contract, subcontract, or other contractual instrument, then the Offeror shall complete the following additional representation:

The Offeror represents that it ☐ will ☐ will not provide covered defense telecommunications equipment or services as a part of its offered products or services to DoD in the performance of any award resulting from this solicitation.

(e) Disclosures. If the Offeror has represented in paragraph (d) of this provision that it “will provide covered defense telecommunications equipment or services,” the Offeror shall provide the following information as part of the offer:

- (1) A description of all covered defense telecommunications equipment and services offered (include brand or manufacturer; product, such as model number, original equipment manufacturer (OEM) number, manufacturer part number, or wholesaler number; and item description, as applicable).
- (2) An explanation of the proposed use of covered defense telecommunications equipment and services and any factors relevant to determining if such use would be permissible under the prohibition referenced in paragraph (b) of this provision.
- (3) For services, the entity providing the covered defense telecommunications services (include entity name, unique entity identifier, and Commercial and Government Entity (CAGE) code, if known).
- (4) For equipment, the entity that produced or provided the covered defense telecommunications equipment (include entity name, unique entity identifier, CAGE code, and whether the entity was the OEM or a distributor, if known).

(End of provision)

Section 00 70 00 - Conditions of the Contract

CLAUSES INCORPORATED BY REFERENCE

52.202-1	Definitions	JUN 2020
52.203-3	Gratuities	APR 1984
52.203-5	Covenant Against Contingent Fees	MAY 2014
52.203-6	Restrictions On Subcontractor Sales To The Government	JUN 2020
52.203-7	Anti-Kickback Procedures	JUN 2020
52.203-8	Cancellation, Rescission, and Recovery of Funds for Illegal or Improper Activity	MAY 2014
52.203-10	Price Or Fee Adjustment For Illegal Or Improper Activity	MAY 2014
52.203-12	Limitation On Payments To Influence Certain Federal Transactions	JUN 2020
52.203-19	Prohibition on Requiring Certain Internal Confidentiality Agreements or Statements	JAN 2017
52.204-4	Printed or Copied Double-Sided on Postconsumer Fiber Content Paper	MAY 2011
52.204-9	Personal Identity Verification of Contractor Personnel	JAN 2011
52.204-10	Reporting Executive Compensation and First-Tier Subcontract Awards	JUN 2020
52.204-13	System for Award Management Maintenance	OCT 2018
52.204-18	Commercial and Government Entity Code Maintenance	AUG 2020
52.204-19	Incorporation by Reference of Representations and Certifications.	DEC 2014
52.204-23	Prohibition on Contracting for Hardware, Software, and Services Developed or Provided by Kaspersky Lab and Other Covered Entities	NOV 2021
52.204-25	Prohibition on Contracting for Certain Telecommunications and Video Surveillance Services or Equipment	NOV 2021
52.209-6	Protecting the Government's Interest When Subcontracting With Contractors Debarred, Suspended, or Proposed for Debarment	NOV 2021
52.209-9	Updates of Publicly Available Information Regarding Responsibility Matters	OCT 2018
52.209-10	Prohibition on Contracting With Inverted Domestic Corporations	NOV 2015
52.214-18	Preparation of Bids-Construction	APR 1984
52.214-19	Contract Award-Sealed Bidding-Construction	AUG 1996
52.219-6	Notice Of Total Small Business Set-Aside	NOV 2020
52.219-8	Utilization of Small Business Concerns	OCT 2018
52.222-3	Convict Labor	JUN 2003
52.222-4	Contract Work Hours and Safety Standards - Overtime Compensation	MAY 2018
52.222-6	Construction Wage Rate Requirements	AUG 2018
52.222-7	Withholding of Funds	MAY 2014
52.222-8	Payrolls and Basic Records	JUL 2021
52.222-9	Apprentices and Trainees	JUL 2005
52.222-10	Compliance with Copeland Act Requirements	FEB 1988
52.222-11	Subcontracts (Labor Standards)	MAY 2014
52.222-12	Contract Termination-Debarment	MAY 2014

52.222-13	Compliance With Construction Wage Rate Requirements and Related Regulations	MAY 2014
52.222-14	Disputes Concerning Labor Standards	FEB 1988
52.222-15	Certification of Eligibility	MAY 2014
52.222-21	Prohibition Of Segregated Facilities	APR 2015
52.222-26	Equal Opportunity	SEP 2016
52.222-27	Affirmative Action Compliance Requirements for Construction	APR 2015
52.222-37	Employment Reports on Veterans	JUN 2020
52.222-40	Notification of Employee Rights Under the National Labor Relations Act	DEC 2010
52.222-50	Combating Trafficking in Persons	NOV 2021
52.222-54	Employment Eligibility Verification	MAY 2022
52.222-55	Minimum Wages for Contractor Workers Under Executive Order 14026	JAN 2022
52.222-62	Paid Sick Leave Under Executive Order 13706	JAN 2022
52.223-2	Affirmative Procurement of Biobased Products Under Service and Construction Contracts	SEP 2013
52.223-5	Pollution Prevention and Right-to-Know Information	MAY 2011
52.223-6	Drug-Free Workplace	MAY 2001
52.223-17	Affirmative Procurement of EPA-Designated Items in Service and Construction Contracts	AUG 2018
52.223-18	Encouraging Contractor Policies To Ban Text Messaging While Driving	JUN 2020
52.225-13	Restrictions on Certain Foreign Purchases	FEB 2021
52.227-1	Authorization and Consent	JUN 2020
52.227-2	Notice And Assistance Regarding Patent And Copyright Infringement	JUN 2020
52.227-4	Patent Indemnity-Construction Contracts	DEC 2007
52.228-2	Additional Bond Security	OCT 1997
52.228-5	Insurance - Work On A Government Installation	JAN 1997
52.228-11 (Dev)	Individual Surety--Pledge of Assets (DEVIATION 2020-O0016)	FEB 2021
52.228-12	Prospective Subcontractor Requests for Bonds	MAY 2014
52.228-14	Irrevocable Letter of Credit	NOV 2014
52.228-15 (Dev)	Performance and Payment Bonds-Construction. (Deviation 2020-O0016)	JUN 2020
52.229-3	Federal, State And Local Taxes	FEB 2013
52.232-5	Payments under Fixed-Price Construction Contracts	MAY 2014
52.232-17	Interest	MAY 2014
52.232-23	Assignment Of Claims	MAY 2014
52.232-27	Prompt Payment for Construction Contracts	JAN 2017
52.232-33	Payment by Electronic Funds Transfer--System for Award Management	OCT 2018
52.232-39	Unenforceability of Unauthorized Obligations	JUN 2013
52.232-40	Providing Accelerated Payments to Small Business Subcontractors	NOV 2021
52.233-1	Disputes	MAY 2014
52.233-3	Protest After Award	AUG 1996
52.233-4	Applicable Law for Breach of Contract Claim	OCT 2004
52.236-2	Differing Site Conditions	APR 1984
52.236-3	Site Investigation and Conditions Affecting the Work	APR 1984
52.236-5	Material and Workmanship	APR 1984
52.236-6	Superintendence by the Contractor	APR 1984
52.236-7	Permits and Responsibilities	NOV 1991

52.236-8	Other Contracts	APR 1984
52.236-9	Protection of Existing Vegetation, Structures, Equipment, Utilities, and Improvements	APR 1984
52.236-10	Operations and Storage Areas	APR 1984
52.236-11	Use and Possession Prior to Completion	APR 1984
52.236-12	Cleaning Up	APR 1984
52.236-13	Accident Prevention	NOV 1991
52.236-15	Schedules for Construction Contracts	APR 1984
52.236-17	Layout of Work	APR 1984
52.236-21	Specifications and Drawings for Construction	FEB 1997
52.236-26	Preconstruction Conference	FEB 1995
52.242-13	Bankruptcy	JUL 1995
52.242-14	Suspension of Work	APR 1984
52.243-4	Changes	JUN 2007
52.244-6	Subcontracts for Commercial Products and Commercial Services	JAN 2022
52.246-12	Inspection of Construction	AUG 1996
52.246-21	Warranty of Construction	MAR 1994
52.248-3	Value Engineering-Construction	OCT 2020
52.249-2 Alt I	Termination for Convenience of the Government (Fixed-Price) (Apr 2012) - Alternate I	SEP 1996
52.249-10	Default (Fixed-Price Construction)	APR 1984
52.253-1	Computer Generated Forms	JAN 1991
252.201-7000	Contracting Officer's Representative	DEC 1991
252.203-7000	Requirements Relating to Compensation of Former DoD Officials	SEP 2011
252.203-7001	Prohibition On Persons Convicted of Fraud or Other Defense-Contract-Related Felonies	DEC 2008
252.203-7002	Requirement to Inform Employees of Whistleblower Rights	SEP 2013
252.203-7003	Agency Office of the Inspector General	AUG 2019
252.204-7003	Control Of Government Personnel Work Product	APR 1992
252.204-7004	Antiterrorism Awareness Training for Contractors.	FEB 2019
252.204-7015	Notice of Authorized Disclosure of Information for Litigation Support	MAY 2016
252.204-7018	Prohibition on the Acquisition of Covered Defense Telecommunications Equipment or Services	JAN 2021
252.209-7004	Subcontracting With Firms That Are Owned or Controlled By The Government of a Country that is a State Sponsor of Terrorism	MAY 2019
252.223-7004	Drug Free Work Force	SEP 1988
252.223-7006	Prohibition On Storage, Treatment, and Disposal of Toxic or Hazardous Materials	SEP 2014
252.223-7008	Prohibition of Hexavalent Chromium	JUN 2013
252.225-7012	Preference For Certain Domestic Commodities	MAR 2022
252.225-7048	Export-Controlled Items	JUN 2013
252.225-7052	Restriction on the Acquisition of Certain Magnets, Tantalum, and Tungsten.	OCT 2020
252.225-7056	Prohibition Regarding Business Operations with the Maduro Regime	MAY 2022
252.225-7972 (Dev)	Prohibition on the Procurement of Foreign-Made Unmanned Aircraft Systems (DEVIATION 2020-O0015)	MAY 2020
252.227-7033	Rights in Shop Drawings	APR 1966
252.232-7003	Electronic Submission of Payment Requests and Receiving Reports	DEC 2018
252.232-7010	Levies on Contract Payments	DEC 2006

252.232-7017	Accelerating Payments to Small Business Subcontractors-- Prohibition on Fees and Consideration	APR 2020
252.236-7000	Modification Proposals-Price Breakdown	DEC 1991
252.236-7002	Obstruction of Navigable Waterways	DEC 1991
252.243-7001	Pricing Of Contract Modifications	DEC 1991
252.243-7002	Requests for Equitable Adjustment	DEC 2012
252.244-7000	Subcontracts for Commercial Items	JAN 2021
252.247-7023	Transportation of Supplies by Sea	FEB 2019

CLAUSES INCORPORATED BY FULL TEXT

52.204-21 BASIC SAFEGUARDING OF COVERED CONTRACTOR INFORMATION SYSTEMS (NOV 2021)

(a) Definitions. As used in this clause--

Covered contractor information system means an information system that is owned or operated by a contractor that processes, stores, or transmits Federal contract information.

Federal contract information means information, not intended for public release, that is provided by or generated for the Government under a contract to develop or deliver a product or service to the Government, but not including information provided by the Government to the public (such as on public websites) or simple transactional information, such as necessary to process payments.

Information means any communication or representation of knowledge such as facts, data, or opinions, in any medium or form, including textual, numerical, graphic, cartographic, narrative, or audiovisual (Committee on National Security Systems Instruction (CNSSI) 4009).

Information system means a discrete set of information resources organized for the collection, processing, maintenance, use, sharing, dissemination, or disposition of information (44 U.S.C. 3502).

Safeguarding means measures or controls that are prescribed to protect information systems.

(b) Safeguarding requirements and procedures.

(1) The Contractor shall apply the following basic safeguarding requirements and procedures to protect covered contractor information systems. Requirements and procedures for basic safeguarding of covered contractor information systems shall include, at a minimum, the following security controls:

(i) Limit information system access to authorized users, processes acting on behalf of authorized users, or devices (including other information systems).

(ii) Limit information system access to the types of transactions and functions that authorized users are permitted to execute.

(iii) Verify and control/limit connections to and use of external information systems.

(iv) Control information posted or processed on publicly accessible information systems.

(v) Identify information system users, processes acting on behalf of users, or devices.

(vi) Authenticate (or verify) the identities of those users, processes, or devices, as a prerequisite to allowing access to organizational information systems.

(vii) Sanitize or destroy information system media containing Federal Contract Information before disposal or release for reuse.

(viii) Limit physical access to organizational information systems, equipment, and the respective operating environments to authorized individuals.

(ix) Escort visitors and monitor visitor activity; maintain audit logs of physical access; and control and manage physical access devices.

(x) Monitor, control, and protect organizational communications (i.e., information transmitted or received by organizational information systems) at the external boundaries and key internal boundaries of the information systems.

(xi) Implement subnetworks for publicly accessible system components that are physically or logically separated from internal networks.

(xii) Identify, report, and correct information and information system flaws in a timely manner.

(xiii) Provide protection from malicious code at appropriate locations within organizational information systems.

(xiv) Update malicious code protection mechanisms when new releases are available.

(xv) Perform periodic scans of the information system and real-time scans of files from external sources as files are downloaded, opened, or executed.

(2) Other requirements. This clause does not relieve the Contractor of any other specific safeguarding requirements specified by Federal agencies and departments relating to covered contractor information systems generally or other Federal safeguarding requirements for controlled unclassified information (CUI) as established by Executive Order 13556.

(c) Subcontracts. The Contractor shall include the substance of this clause, including this paragraph (c), in subcontracts under this contract (including subcontracts for the acquisition of commercial products or commercial services, other than commercially available off-the-shelf items), in which the subcontractor may have Federal contract information residing in or transiting through its information system.

(End of clause)

52.211-10 COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK (APR 1984)

The Contractor shall be required to (a) commence work under this contract within **10 calendar days** after the date the Contractor receives the notice to proceed, (b) prosecute the work diligently, and (c) complete the entire work ready for use not later than **180 calendar days after NTP, 270 calendar days if Option A is executed**. The time stated for completion shall include final cleanup of the premises.

(End of clause)

52.211-12 LIQUIDATED DAMAGES--CONSTRUCTION (SEP 2000)

(a) If the Contractor fails to complete the work within the time specified in the contract, the Contractor shall pay liquidated damages to the Government in the amount of \$525.00 for each calendar day of delay until the work is completed or accepted.

(b) If the Government terminates the Contractor's right to proceed, liquidated damages will continue to accrue until the work is completed. These liquidated damages are in addition to excess costs of repurchase under the Termination clause.

(End of clause)

52.217-7 OPTION FOR INCREASED QUANTITY--SEPARATELY PRICED LINE ITEM (MAR 1989)

The Government may require the delivery of the numbered line item, identified in the Schedule as an option item, in the quantity and at the price stated in the Schedule. The Contracting Officer may exercise the option by written notice to the Contractor within **60 calendar days of contract award**. Delivery of added items shall continue at the same rate that like items are called for under the contract, unless the parties otherwise agree.

(End of clause)

52.219-14 LIMITATIONS ON SUBCONTRACTING (SEP 2021)

(a) This clause does not apply to the unrestricted portion of a partial set-aside.

(b) Definition. Similarly situated entity, as used in this clause, means a first-tier subcontractor, including an independent contractor, that--

(1) Has the same small business program status as that which qualified the prime contractor for the award (e.g., for a small business set-aside contract, any small business concern, without regard to its socioeconomic status); and

(2) Is considered small for the size standard under the North American Industry Classification System (NAICS) code the prime contractor assigned to the subcontract.

(c) Applicability. This clause applies only to--

(1) Contracts that have been set aside for any of the small business concerns identified in 19.000(a)(3);

(2) Part or parts of a multiple-award contract that have been set aside for any of the small business concerns identified in 19.000(a)(3);

(3) Contracts that have been awarded on a sole-source basis in accordance with subparts 19.8, 19.13, 19.14, and 19.15;

(4) Orders expected to exceed the simplified acquisition threshold and that are--

(i) Set aside for small business concerns under multiple-award contracts, as described in 8.405-5 and 16.505(b)(2)(i)(F); or

(ii) Issued directly to small business concerns under multiple-award contracts as described in 19.504(c)(1)(ii);

(5) Orders, regardless of dollar value, that are--

(i) Set aside in accordance with subparts 19.8, 19.13, 19.14, or 19.15 under multiple-award contracts, as described in 8.405-5 and 16.505(b)(2)(i)(F); or

(ii) Issued directly to concerns that qualify for the programs described in subparts 19.8, 19.13, 19.14, or 19.15 under multiple-award contracts, as described in 19.504(c)(1)(ii); and

(6) Contracts using the HUBZone price evaluation preference to award to a HUBZone small business concern unless the concern waived the evaluation preference.

(d) Independent contractors. An independent contractor shall be considered a subcontractor.

(e) Limitations on subcontracting. By submission of an offer and execution of a contract, the Contractor agrees that in performance of a contract assigned a North American Industry Classification System (NAICS) code for--

(1) Services (except construction), it will not pay more than 50 percent of the amount paid by the Government for contract performance to subcontractors that are not similarly situated entities. Any work that a similarly situated entity further subcontracts will count towards the prime contractor's 50 percent subcontract amount that cannot be exceeded. When a contract includes both services and supplies, the 50 percent limitation shall apply only to the service portion of the contract;

(2) Supplies (other than procurement from a nonmanufacturer of such supplies), it will not pay more than 50 percent of the amount paid by the Government for contract performance, excluding the cost of materials, to subcontractors that are not similarly situated entities. Any work that a similarly situated entity further subcontracts will count towards the prime contractor's 50 percent subcontract amount that cannot be exceeded. When a contract includes both supplies and services, the 50 percent limitation shall apply only to the supply portion of the contract;

(3) General construction, it will not pay more than 85 percent of the amount paid by the Government for contract performance, excluding the cost of materials, to subcontractors that are not similarly situated entities. Any work that a similarly situated entity further subcontracts will count towards the prime contractor's 85 percent subcontract amount that cannot be exceeded; or

(4) Construction by special trade contractors, it will not pay more than 75 percent of the amount paid by the Government for contract performance, excluding the cost of materials, to subcontractors that are not similarly situated entities. Any work that a similarly situated entity further subcontracts will count towards the prime contractor's 75 percent subcontract amount that cannot be exceeded.

(f) The Contractor shall comply with the limitations on subcontracting as follows:

(1) For contracts, in accordance with paragraphs (c)(1), (2), (3) and (6) of this clause--

[Contracting Officer check as appropriate.]

___ By the end of the base term of the contract and then by the end of each subsequent option period; or

___ By the end of the performance period for each order issued under the contract.

(2) For orders, in accordance with paragraphs (c)(4) and (5) of this clause, by the end of the performance period for the order.

(g) A joint venture agrees that, in the performance of the contract, the applicable percentage specified in paragraph (e) of this clause will be performed by the aggregate of the joint venture participants.

(End of clause)

52.219-28 POST-AWARD SMALL BUSINESS PROGRAM REREPRESENTATION (SEP 2021)

(a) Definitions. As used in this clause--

Long-term contract means a contract of more than five years in duration, including options. However, the term does not include contracts that exceed five years in duration because the period of performance has been extended for a cumulative period not to exceed six months under the clause at 52.217-8, Option to Extend Services, or other appropriate authority.

Small business concern--

(1) Means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the criteria in 13 CFR part 121 and the size standard in paragraph (d) of this clause. Such a concern is "not dominant in its field of operation" when it does not exercise a controlling or major influence on a national basis in a kind of business activity in which a number of business concerns are primarily engaged. In determining whether dominance exists, consideration shall be given to all appropriate factors, including volume of business, number of employees, financial resources, competitive status or position, ownership or control of materials, processes, patents, license agreements, facilities, sales territory, and nature of business activity.

(2) Affiliates, as used in this definition, means business concerns, one of whom directly or indirectly controls or has the power to control the others, or a third party or parties control or have the power to control the others. In determining whether affiliation exists, consideration is given to all appropriate factors including common ownership, common management, and contractual relationships. SBA determines affiliation based on the factors set forth at 13 CFR 121.103.

(b) If the Contractor represented that it was any of the small business concerns identified in 19.000(a)(3) prior to award of this contract, the Contractor shall rerepresent its size and socioeconomic status according to paragraph (f) of this clause or, if applicable, paragraph (h) of this clause, upon occurrence of any of the following:

(1) Within 30 days after execution of a novation agreement or within 30 days after modification of the contract to include this clause, if the novation agreement was executed prior to inclusion of this clause in the contract.

(2) Within 30 days after a merger or acquisition that does not require a novation or within 30 days after modification of the contract to include this clause, if the merger or acquisition occurred prior to inclusion of this clause in the contract.

(3) For long-term contracts--

(i) Within 60 to 120 days prior to the end of the fifth year of the contract; and

(ii) Within 60 to 120 days prior to the date specified in the contract for exercising any option thereafter.

(c) If the Contractor represented that it was any of the small business concerns identified in 19.000(a)(3) prior to award of this contract, the Contractor shall rerepresent its size and socioeconomic status according to paragraph (f) of this clause or, if applicable, paragraph (h) of this clause, when the Contracting Officer explicitly requires it for an order issued under a multiple-award contract.

(d) The Contractor shall rerepresent its size status in accordance with the size standard in effect at the time of this rerepresentation that corresponds to the North American Industry Classification System (NAICS) code(s) assigned to this contract. The small business size standard corresponding to this NAICS code(s) can be found at <https://www.sba.gov/document/support-table-size-standards>.

(e) The small business size standard for a Contractor providing an end item that it does not manufacture, process, or produce itself, for a contract other than a construction or service contract, is 500 employees if the acquisition--

(1) Was set aside for small business and has a value above the simplified acquisition threshold;

(2) Used the HUBZone price evaluation preference regardless of dollar value, unless the Contractor waived the price evaluation preference; or

(3) Was an 8(a), HUBZone, service-disabled veteran-owned, economically disadvantaged women-owned, or women-owned small business set-aside or sole-source award regardless of dollar value.

(f) Except as provided in paragraph (h) of this clause, the Contractor shall make the representation(s) required by paragraph (b) and (c) of this clause by validating or updating all its representations in the Representations and Certifications section of the System for Award Management (SAM) and its other data in SAM, as necessary, to ensure that they reflect the Contractor's current status. The Contractor shall notify the contracting office in writing within the timeframes specified in paragraph (b) of this clause, or with its offer for an order (see paragraph (c) of this clause), that the data have been validated or updated, and provide the date of the validation or update.

(g) If the Contractor represented that it was other than a small business concern prior to award of this contract, the Contractor may, but is not required to, take the actions required by paragraphs (f) or (h) of this clause.

(h) If the Contractor does not have representations and certifications in SAM, or does not have a representation in SAM for the NAICS code applicable to this contract, the Contractor is required to complete the following rerepresentation and submit it to the contracting office, along with the contract number and the date on which the rerepresentation was completed:

(1) The Contractor represents that it [] is, [] is not a small business concern under NAICS Code assigned to contract number .

(2) [Complete only if the Contractor represented itself as a small business concern in paragraph (h)(1) of this clause.] The Contractor represents that it [] is, [] is not, a small disadvantaged business concern as defined in 13 CFR 124.1002.

(3) [Complete only if the Contractor represented itself as a small business concern in paragraph (h)(1) of this clause.] The Contractor represents that it [] is, [] is not a women-owned small business concern.

(4) Women-owned small business (WOSB) concern eligible under the WOSB Program. [Complete only if the Contractor represented itself as a women-owned small business concern in paragraph (h)(3) of this clause.] The Contractor represents that--

(i) It [] is, [] is not a WOSB concern eligible under the WOSB Program, has provided all the required documents to the WOSB Repository, and no change in circumstances or adverse decisions have been issued that affects its eligibility; and

(ii) It [] is, [] is not a joint venture that complies with the requirements of 13 CFR part 127, and the representation in paragraph (h)(4)(i) of this clause is accurate for each WOSB concern eligible under the WOSB Program participating in the joint venture.

[The Contractor shall enter the name or names of the WOSB concern eligible under the WOSB Program and other small businesses that are participating in the joint venture: .] Each WOSB concern eligible under the WOSB Program participating in the joint venture shall submit a separate signed copy of the WOSB representation.

(5) Economically disadvantaged women-owned small business (EDWOSB) concern. [Complete only if the Contractor represented itself as a women-owned small business concern eligible under the WOSB Program in (h)(4) of this clause.] The Contractor represents that--

(i) It [] is, [] is not an EDWOSB concern eligible under the WOSB Program, has provided all the required documents to the WOSB Repository, and no change in circumstances or adverse decisions have been issued that affects its eligibility; and

(ii) It [] is, [] is not a joint venture that complies with the requirements of 13 CFR part 127, and the representation in paragraph (h)(5)(i) of this clause is accurate for each EDWOSB concern participating in the joint venture. [The Contractor shall enter the name or names of the EDWOSB concern and other small businesses that are participating in the joint venture: .] Each EDWOSB concern participating in the joint venture shall submit a separate signed copy of the EDWOSB representation.

(6) [Complete only if the Contractor represented itself as a small business concern in paragraph (h)(1) of this clause.] The Contractor represents that it [] is, [] is not a veteran-owned small business concern.

(7) [Complete only if the Contractor represented itself as a veteran-owned small business concern in paragraph (h)(6) of this clause.] The Contractor represents that it [] is, [] is not a service-disabled veteran-owned small business concern.

(8) [Complete only if the Contractor represented itself as a small business concern in paragraph (h)(1) of this clause.] The Contractor represents that--

(i) It [] is, [] is not a HUBZone small business concern listed, on the date of this representation, on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration, and no material changes in ownership and control, principal office, or HUBZone employee percentage have occurred since it was certified in accordance with 13 CFR part 126; and

(ii) It [] is, [] is not a HUBZone joint venture that complies with the requirements of 13 CFR part 126, and the representation in paragraph (h)(8)(i) of this clause is accurate for each HUBZone small business concern participating in the HUBZone joint venture. [The Contractor shall enter the names of each of the HUBZone small business concerns participating in the HUBZone joint venture: .] Each HUBZone small business concern participating in the HUBZone joint venture shall submit a separate signed copy of the HUBZone representation.

[Contractor to sign and date and insert authorized signer's name and title.]

(End of clause)

52.222-23 NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (FEB 1999)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Goals for minority participation for each trade	Goals for female participation for each trade

6.9%

5.3%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance, U.S. Department of Labor, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the --

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is
[Contracting Officer shall insert description of the geographical areas where the contract is to be performed, giving the State, county, and city].

(End of provision)

52.222-35 EQUAL OPPORTUNITY FOR VETERANS (JUN 2020)

(a) Definitions. As used in this clause--

"Active duty wartime or campaign badge veteran," "Armed Forces service medal veteran," "disabled veteran," "protected veteran," "qualified disabled veteran," and "recently separated veteran" have the meanings given at Federal Acquisition Regulation (FAR) 22.1301.

(b) Equal opportunity clause. The Contractor shall abide by the requirements of the equal opportunity clause at 41 CFR 60-300.5(a), as of March 24, 2014. This clause prohibits discrimination against qualified protected veterans, and requires affirmative action by the Contractor to employ and advance in employment qualified protected veterans.

(c) Subcontracts. The Contractor shall insert the terms of this clause in subcontracts valued at or above the threshold specified in FAR 22.1303(a) on the date of subcontract award, unless exempted by rules, regulations, or orders of the Secretary of Labor. The Contractor shall act as specified by the Director, Office of Federal Contract Compliance Programs, to enforce the terms, including action for noncompliance. Such necessary changes in language may be made as shall be appropriate to identify properly the parties and their undertakings.

(End of clause)

52.222-36 EQUAL OPPORTUNITY FOR WORKERS WITH DISABILITIES (JUN 2020)

(a) Equal opportunity clause. The Contractor shall abide by the requirements of the equal opportunity clause at 41 CFR 60-741.5(a), as of March 24, 2014. This clause prohibits discrimination against qualified individuals on the basis of disability, and requires affirmative action by the Contractor to employ and advance in employment qualified individuals with disabilities.

(b) Subcontracts. The Contractor shall include the terms of this clause in every subcontract or purchase order in excess of the threshold specified in Federal Acquisition Regulation (FAR) 22.1408(a) on the date of subcontract award, unless exempted by rules, regulations, or orders of the Secretary, so that such provisions will be binding upon each subcontractor or vendor. The Contractor shall act as specified by the Director, Office of Federal Contract Compliance Programs of the U.S. Department of Labor, to enforce the terms, including action for noncompliance. Such necessary changes in language may be made as shall be appropriate to identify properly the parties and their undertakings.

(End of clause)

52.225-9 BUY AMERICAN—CONSTRUCTION MATERIALS (NOV 2021)

(a) Definitions. As used in this clause--

Commercially available off-the-shelf (COTS) item—

(1) Means any item of supply (including construction material) that is--

(i) A commercial product (as defined in paragraph (1) of the definition of "commercial product" at Federal Acquisition Regulation (FAR) 2.101);

(ii) Sold in substantial quantities in the commercial marketplace; and

(iii) Offered to the Government, under a contract or subcontract at any tier, without modification, in the same form in which it is sold in the commercial marketplace; and

(2) Does not include bulk cargo, as defined in 46 U.S.C. 40102(4) such as agricultural products and petroleum products.

Component means an article, material, or supply incorporated directly into a construction material.

Construction material means an article, material, or supply brought to the construction site by the Contractor or a subcontractor for incorporation into the building or work. The term also includes an item brought to the site preassembled from articles, materials, or supplies. However, emergency life safety systems, such as emergency lighting, fire alarm, and audio evacuation systems, that are discrete systems incorporated into a public building or work and that are produced as complete systems, are evaluated as a single and distinct construction material regardless of when or how the individual parts or components of those systems are delivered to the construction site. Materials purchased directly by the Government are supplies, not construction material.

Cost of components means--

(1) For components purchased by the Contractor, the acquisition cost, including transportation costs to the place of incorporation into the construction material (whether or not such costs are paid to a domestic firm), and any applicable duty (whether or not a duty-free entry certificate is issued); or

(2) For components manufactured by the Contractor, all costs associated with the manufacture of the component, including transportation costs as described in paragraph (1) of this definition, plus allocable overhead costs, but excluding profit. Cost of components does not include any costs associated with the manufacture of the construction material.

Domestic construction material means--

(1) For construction material that does not consist wholly or predominantly of iron or steel or a combination of both--

(i) An unmanufactured construction material mined or produced in the United States; or

(ii) A construction material manufactured in the United States, if--

(A) The cost of its components mined, produced, or manufactured in the United States exceeds 55 percent of the cost of all its components. Components of foreign origin of the same class or kind for which nonavailability determinations have been made are treated as domestic. Components of unknown origin are treated as foreign; or

(B) The construction material is a COTS item; or

(2) For construction material that consists wholly or predominantly of iron or steel or a combination of both, a construction material manufactured in the United States if the cost of foreign iron and steel constitutes less than 5 percent of the cost of all components used in such construction material. The cost of foreign iron and steel includes but is not limited to the cost of foreign iron or steel mill products (such as bar, billet, slab, wire, plate, or sheet), castings, or forgings utilized in the manufacture of the construction material and a good faith estimate of the cost of all foreign iron or steel components excluding COTS fasteners. Iron or steel components of unknown origin are treated as foreign. If the construction material contains multiple components, the cost of all the materials used in such construction material is calculated in accordance with the definition of "cost of components".

Fastener means a hardware device that mechanically joins or affixes two or more objects together. Examples of fasteners are nuts, bolts, pins, rivets, nails, clips, and screws.

Foreign construction material means a construction material other than a domestic construction material.

Foreign iron and steel means iron or steel products not produced in the United States. Produced in the United States means that all manufacturing processes of the iron or steel must take place in the United States, from the initial melting stage through the application of coatings, except metallurgical processes involving refinement of steel additives. The origin of the elements of the iron or steel is not relevant to the determination of whether it is domestic or foreign.

Predominantly of iron or steel or a combination of both means that the cost of the iron and steel content exceeds 50 percent of the total cost of all its components. The cost of iron and steel is the cost of the iron or steel mill products

(such as bar, billet, slab, wire, plate, or sheet), castings, or forgings utilized in the manufacture of the product and a good faith estimate of the cost of iron or steel components excluding COTS fasteners.

Steel means an alloy that includes at least 50 percent iron, between 0.02 and 2 percent carbon, and may include other elements.

United States means the 50 States, the District of Columbia, and outlying areas.

(b) Domestic preference.

(1) This clause implements 41 U.S.C. chapter 83, Buy American, by providing a preference for domestic construction material. In accordance with 41 U.S.C. 1907, the domestic content test of the Buy American statute is waived for construction material that is a COTS item, except that for construction material that consists wholly or predominantly of iron or steel or a combination of both, the domestic content test is applied only to the iron and steel content of the construction materials, excluding COTS fasteners. (See FAR 12.505(a)(2)). The Contractor shall use only domestic construction material in performing this contract, except as provided in paragraphs (b)(2) and (b)(3) of this clause.

(2) This requirement does not apply to information technology that is a commercial product or to the construction materials or components listed by the Government as follows:

___ [Contracting Officer to list applicable excepted materials or indicate "none"]

(3) The Contracting Officer may add other foreign construction material to the list in paragraph (b)(2) of this clause if the Government determines that

(i) The cost of domestic construction material would be unreasonable. The cost of a particular domestic construction material subject to the requirements of the Buy American Act is unreasonable when the cost of such material exceeds the cost of foreign material by more than 20 percent;

(ii) The application of the restriction of the Buy American Act to a particular construction material would be impracticable or inconsistent with the public interest; or

(iii) The construction material is not mined, produced, or manufactured in the United States in sufficient and reasonably available commercial quantities of a satisfactory quality.

(c) Request for determination of inapplicability of the Buy American Act. (1)(i) Any Contractor request to use foreign construction material in accordance with paragraph (b)(3) of this clause shall include adequate information for Government evaluation of the request, including--

(A) A description of the foreign and domestic construction materials;

(B) Unit of measure;

(C) Quantity;

(D) Price;

(E) Time of delivery or availability;

(F) Location of the construction project;

(G) Name and address of the proposed supplier; and

(H) A detailed justification of the reason for use of foreign construction materials cited in accordance with paragraph (b)(3) of this clause.

(ii) A request based on unreasonable cost shall include a reasonable survey of the market and a completed price comparison table in the format in paragraph (d) of this clause.

(iii) The price of construction material shall include all delivery costs to the construction site and any applicable duty (whether or not a duty-free certificate may be issued).

(iv) Any Contractor request for a determination submitted after contract award shall explain why the Contractor could not reasonably foresee the need for such determination and could not have requested the determination before contract award. If the Contractor does not submit a satisfactory explanation, the Contracting Officer need not make a determination.

(2) If the Government determines after contract award that an exception to the Buy American statute applies and the Contracting Officer and the Contractor negotiate adequate consideration, the Contracting Officer will modify the contract to allow use of the foreign construction material. However, when the basis for the exception is the unreasonable price of a domestic construction material, adequate consideration is not less than the differential established in paragraph (b)(3)(i) of this clause.

(3) Unless the Government determines that an exception to the Buy American statute applies, use of foreign construction material is noncompliant with the Buy American statute.

(d) Data. To permit evaluation of requests under paragraph (c) of this clause based on unreasonable cost, the Contractor shall include the following information and any applicable supporting data based on the survey of suppliers:

Foreign and Domestic Construction Materials Price Comparison

Construction material description	Unit of measure	Quantity	Price (dollars) *\
Item 1:			
Foreign construction material....	_____	_____	_____
Domestic construction material...	_____	_____	_____
Item 2:			
Foreign construction material....	_____	_____	_____
Domestic construction material...	_____	_____	_____

[* Include all delivery costs to the construction site and any applicable duty (whether or not a duty-free entry certificate is issued)].

[List name, address, telephone number, and contact for suppliers surveyed. Attach copy of response; if oral, attach summary.]

[Include other applicable supporting information.]

(End of clause)

52.225-10 NOTICE OF BUY AMERICAN REQUIREMENT--CONSTRUCTION MATERIALS (MAY 2014)

(a) Definitions. "Commercially available off-the-shelf (COTS) item," "construction material," "domestic construction material," and "foreign construction material," as used in this provision, are defined in the clause of this solicitation entitled "Buy American --Construction Materials" (Federal Acquisition Regulation (FAR) clause 52.225-9).

(b) Requests for determinations of inapplicability. An offeror requesting a determination regarding the inapplicability of the Buy American statute should submit the request to the Contracting Officer in time to allow a determination before submission of offers. The offeror shall include the information and applicable supporting data required by paragraphs (c) and (d) of the clause at FAR 52.225-9 in the request. If an offeror has not requested a determination regarding the inapplicability of the Buy American statute before submitting its offer, or has not received a response to a previous request, the offeror shall include the information and supporting data in the offer.

(c) Evaluation of offers. (1) The Government will evaluate an offer requesting exception to the requirements of the Buy American statute, based on claimed unreasonable cost of domestic construction material, by adding to the offered price the appropriate percentage of the cost of such foreign construction material, as specified in paragraph (b)(3)(i) of the clause at FAR 52.225-9.

(2) If evaluation results in a tie between an offeror that requested the substitution of foreign construction material based on unreasonable cost and an offeror that did not request an exception, the Contracting Officer will award to the offeror that did not request an exception based on unreasonable cost.

(d) Alternate offers.

(1) When an offer includes foreign construction material not listed by the Government in this solicitation in paragraph (b)(2) of the clause at FAR 52.225-9, the offeror also may submit an alternate offer based on use of equivalent domestic construction material.

(2) If an alternate offer is submitted, the offeror shall submit a separate Standard Form 1442 for the alternate offer, and a separate price comparison table prepared in accordance with paragraphs (c) and (d) of the clause at FAR 52.225-9 for the offer that is based on the use of any foreign construction material for which the Government has not yet determined an exception applies.

(3) If the Government determines that a particular exception requested in accordance with paragraph (c) of the clause at FAR 52.225-9 does not apply, the Government will evaluate only those offers based on use of the equivalent domestic construction material, and the offeror shall be required to furnish such domestic construction material. An offer based on use of the foreign construction material for which an exception was requested--

(i) Will be rejected as nonresponsive if this acquisition is conducted by sealed bidding; or

(ii) May be accepted if revised during negotiations.

(End of provision)

52.236-4 PHYSICAL DATA (APR 1984)

Data and information furnished or referred to below is for the Contractor's information. The Government shall not be responsible for any interpretation of or conclusion drawn from the data or information by the Contractor.

(a) The indications of physical conditions on the drawings and in the specifications are the result of site investigations by [insert a description of investigational methods used, such as surveys, auger borings, core borings, test pits, probings, test tunnels].

(b) Weather conditions: See Paragraph 3.13 entitled 'TIME EXTENSION FOR UNUSUALLY SEVERE WEATHER' of Section 35 20

(c) Transportation facilities: The location is served by railroads and major highways. The Contractor shall

investigate and obtain the necessary information and data regarding the availability and uses of access roads, dock facilities, highway and railroad facilities to the site of the work. The Contractor shall, without additional expense to the Government, be responsible for obtaining any necessary permits to operate on or cross public highways and roads and railroads in connection with the prosecution of the contract work. See FAR Clause 52.236-7 "Permits and Responsibilities".

(d) Lake Levels: Data from Forecasts are available through the following web site.
https://www.lre.usace.army.mil/Missions/Great-Lakes-Information/Great-Lakes-Water-Levels/Water-Level_Forecast/Monthly-Bulletin-of-Great-Lakes-Water-Levels.

(End of clause)

52.252-2 CLAUSES INCORPORATED BY REFERENCE (FEB 1998)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this/these address(es):

<https://www.acquisition.gov>
<https://www.acq.osd.mil/dpap/dars/dfarspgi/current/index.htm>

(End of clause)

52.252-6 AUTHORIZED DEVIATIONS IN CLAUSES (NOV 2020)

(a) The use in this solicitation or contract of any Federal Acquisition Regulation (48 CFR Chapter 1) clause with an authorized deviation is indicated by the addition of "(DEVIATION)" after the date of the clause.

(b) The use in this solicitation or contract of any Defense Federal Acquisition Regulation Supplement (48 CFR **Chapter 2**) clause with an authorized deviation is indicated by the addition of "(DEVIATION)" after the name of the regulation.

(End of clause)

252.236-7001 CONTRACT DRAWINGS AND SPECIFICATIONS (AUG 2000)

(a) The Government will provide to the Contractor, without charge, one set of contract drawings and specifications, except publications incorporated into the technical provisions by reference, in electronic or paper media as chosen by the Contracting Officer.

(b) The Contractor shall--

- (1) Check all drawings furnished immediately upon receipt;
- (2) Compare all drawings and verify the figures before laying out the work;
- (3) Promptly notify the Contracting Officer of any discrepancies;

(4) Be responsible for any errors that might have been avoided by complying with this paragraph (b); and

(5) Reproduce and print contract drawings and specifications as needed.

(c) In general--

(1) Large-scale drawings shall govern small-scale drawings; and

(2) The Contractor shall follow figures marked on drawings in preference to scale measurements.

(d) Omissions from the drawings or specifications or the misdescription of details of work that are manifestly necessary to carry out the intent of the drawings and specifications, or that are customarily performed, shall not relieve the Contractor from performing such omitted or misdescribed details of the work. The Contractor shall perform such details as if fully and correctly set forth and described in the drawings and specifications.

(e) The work shall conform to the specifications and the contract drawings identified on the following index of drawings:

Title File Drawing No.

Cover Sheet G-002

(End of clause)

252.236-7004 PAYMENT FOR MOBILIZATION AND DEMOBILIZATION (DEC 1991)

(a) The Government will pay all costs for the mobilization and demobilization of all of the Contractor's plant and equipment at the contract lump sum price for this item.

(1) 60 percent of the lump sum price upon completion of the contractor's mobilization at the work site.

(2) The remaining 40 percent upon completion of demobilization.

(b) The Contracting Officer may require the Contractor to furnish cost data to justify this portion of the bid if the Contracting Officer believes that the percentages in paragraphs (a) (1) and (2) of this clause do not bear a reasonable relation to the cost of the work in this contract.

(1) Failure to justify such price to the satisfaction of the Contracting Officer will result in payment, as determined by the Contracting Officer, of --

(i) Actual mobilization costs at completion of mobilization;

(ii) Actual demobilization costs at completion of demobilization; and

(iii) The remainder of this item in the final payment under this contract.

(2) The Contracting Officer's determination of the actual costs in paragraph (b)(1) of this clause is not subject to appeal.

Section 00 73 00 - Supplementary Conditions

AT/OPSEC

The Contractor must pre-screen candidates using the E-Verify Program (<http://www.uscis.gov/e-verify>) website to meet the established employment eligibility requirements. The Vendor must ensure that the Candidate has two valid forms of Government issued identification prior to enrollment to ensure the correct information is entered into E-verify system. An initial list of verified/eligible Candidates must be provided to the COR no later than 3 business days after the initial contract award.

Access and General Protection/Security Policy and Procedures

All contractor and all associated sub-contractors' employees shall comply with applicable installation, facility and area commander installation/facility access and local security policies and procedures (provided by government representative). The contractor shall also provide all information required for background checks to meet installation/facility access requirements to be accomplished by installation Provost Marshal Office, Director of Emergency Services or Security Office. Contractor workforce must comply with all personal identity verification requirements (FAR clause 52.204-9, Personal Identity Verification of Contractor Personnel) as directed by DOD, HQDA and/or local policy. In addition to the changes otherwise authorized by the changes clause of this contract, should be Force Protection Condition (FPCON) at any installation or facility change, the Government may require changes in contractor security matters or processes.

Suspicious Activity Reporting Training (e.g. iWatch, CorpsWatch, or See Something, Say Something)

The Contractor and all associated sub-contractors shall receive a brief/training (provided by the RA) on the local suspicious activity reporting program. This locally developed training will be used to inform employees of the types of behavior to watch for and instruct employees to report suspicious activity to the project manager, security representative or law enforcement entity. This training shall be completed within 30 calendar of contract award and within 30 calendar days of new employees commencing performance with the results reported to the COR NLT 5 calendar days after the completion of the training.

(End of special contract requirement)

UAI 5122.1302-100

Veterans Employment Emphasis for U.S. Army Corps of Engineers Contracts

In addition to complying with the requirements outlined in FAR Part 22.13, FAR Clause 52.222-35, FAR Clause 52.222-37, DFARS 222.37 and Department of Labor regulations, U.S. Army Corps of Engineers (USACE) contractors and subcontractors at all tiers are encouraged to promote the training and employment of U.S. veterans while performing under a USACE contract. While no set-aside, evaluation preference, or incentive applies to the solicitation or performance under the resultant contract, USACE contractors are encouraged to seek out highly qualified veterans to perform services under this contract. The following resources are available to assist USACE contractors in their outreach efforts:

U.S. Department of Labor Veterans' employment and Training Services (VETS):

<https://www.dol.gov/vets/>

Federal Veteran Employment Information: <https://www.fedshirevets.gov/> Veterans

Opportunity to Work (VOW) Program: <http://www.benefits.va.gov/vow/>

U.S. Army Warrior Transition Command Employment Index:

<https://wtc.army.mil/modules/employers/index.html>

Hiring Our Heroes: <https://www.uschamberfoundation.org/hiring-our-heroes/>

(End of special contract requirement)

Superseded General Decision Number: NY20210030

State: New York

Construction Types: Building, Heavy and Highway

County: Livingston County in New York.

BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories), HEAVY AND HIGHWAY CONSTRUCTION PROJECTS

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	<ul style="list-style-type: none">. Executive Order 14026 generally applies to the contract.. The contractor must pay all covered workers at least \$15.00 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2022.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	<ul style="list-style-type: none">. Executive Order 13658 generally applies to the contract.. The contractor must pay all covered workers at least \$11.25 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2022.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <https://www.dol.gov/agencies/whd/government-contracts>.

0	01/07/2022
1	02/18/2022
2	02/25/2022
3	05/13/2022

ASBE0026-003 06/01/2021

	Rates	Fringes
ASBESTOS WORKER/HEAT & FROST INSULATOR		
(Includes the application of all insulating materials, protective coverings, coatings, and finishes to all types of mechanical systems. Also, the application of firestopping material openings and penetrations in walls, floors, ceilings, curtain walls and all lead abatement).....	\$ 33.26	24.56
HAZARDOUS MATERIAL HANDLER		
Duties limited to Preparation; wetting; stripping; removal; scrapping; vacuuming; bagging; and disposing of all insulation materials, whether they contain asbestos or not, from mechanical systems.....	\$ 33.26	24.56

BOIL0007-001 01/01/2021

	Rates	Fringes
BOILERMAKER.....	\$ 35.10	30.75

BRNY0003-009 07/01/2021

ROCHESTER CHAPTER

	Rates	Fringes
BUILDING CONSTRUCTION		
BRICKLAYERS, STONE MASONS, PLASTERERS, CEMENT MASONS, POINTER, CLEANER AND CAULKERS.....	\$ 30.56	24.39
MARBLE, TILE & TERRAZZO WORKERS.....	\$ 29.94	18.71
MARBLE, TILE AND TERRAZZO FINISHERS.....	\$ 24.98	15.70
CEMENT MASON/CONCRETE FINISHER		
HEAVY/HIGHWAY CONSTRUCTION CEMENT MASONS.....	\$ 32.53	22.10

CARP0276-007 07/01/2021

	Rates	Fringes
Carpenters (HEAVY & HIGHWAY CONSTRUCTION).....	\$ 33.13	23.90

Carpenters, including Drywall
Hanging (BUILDING CONSTRUCTION

Entire County, excluding the
Towns of Phelps, Seneca and
Geneva).....\$ 30.05 22.19

FOOTNOTE:

a. PAID HOLIDAYS: New Year's Day, Memorial Day, Independence
Day, Labor Day, Thanksgiving Day, and Christmas Day.

CARP1163-001 07/01/2014

	Rates	Fringes
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Carpenters:

BUILDING CONSTRUCTION		
Piledrivers.....	\$ 29.00	18.89
HEAVY & HIGHWAY CONSTRUCTION		
Piledrivers.....	\$ 24.47	13.91
Diver (Dry Day).....	\$ 26.48	14.36
Diver (Wet Day).....	\$ 61.25	14.36
Diver Tender.....	\$ 24.72	16.95
Piledrivers.....	\$ 29.00	18.89

ELEC0086-002 05/31/2021

	Rates	Fringes
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ELECTRICIAN.....	\$ 36.00	5.25%+24.81
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ELEC1249-003 05/04/2020

	Rates	Fringes
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ELECTRICIAN (LINE
CONSTRUCTION: LIGHTING AND
TRAFFIC SIGNAL Including any
and all Fiber Optic Cable
necessary for Traffic Signal
Systems, Traffic Monitoring
systems and Road Weather
information systems)

Flagman.....	\$ 27.72	6.75%+33.90
Groundman (Truck Driver)....	\$ 36.96	6.75%+33.90
Groundman Truck Driver (tractor trailer unit).....	\$ 39.27	6.75%+33.90
Lineman & Technician.....	\$ 46.20	6.75%+33.90
Mechanic.....	\$ 36.96	6.75%+33.90

FOOTNOTE:

a. New Year's Day, Memorial Day, Independence Day, Labor
Day, Thanksgiving Day, Christmas Day, plus President's Day,
Good Friday, Decoration Day, Election Day for the President
of the United States and Election Day for the Governor of
the State of New York, provided the employee works the day
before or the day after the holiday.

ELEC1249-004 05/03/2021

	Rates	Fringes
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ELECTRICIAN (Line
Construction)

Overhead and underground
distribution and
maintenance work and all
overhead and underground
transmission line work
including any and all
fiber optic ground wire,
fiber optic shield wire or
any other like product by
any other name
manufactured for the dual
purpose of ground fault
protection and fiber optic
capabilities :

Flagman.....	\$ 32.82	7%+34.40
Groundman digging machine operator.....	\$ 49.23	7%+34.40
Groundman truck driver (tractor trailer unit).....	\$ 46.50	7%+34.40
Groundman Truck driver.....	\$ 43.76	7%+34.40
Lineman and Technician.....	\$ 54.70	7%+35.40
Mechanic.....	\$ 43.76	7%+34.40

Substation:

Cable Splicer.....	\$ 60.17	7%+35.40
Flagman.....	\$ 32.82	7%+34.40
Ground man truck driver....	\$ 43.76	7%+34.40
Groundman digging machine operator.....	\$ 49.23	7%+34.40
Groundman truck driver (tractor trailer unit).....	\$ 46.50	7%+34.40
Lineman & Technician.....	\$ 54.70	7%+35.40
Mechanic.....	\$ 43.76	7%+34.40

Switching structures;
railroad catenary
installation and
maintenance, third rail
type underground fluid or
gas filled transmission
conduit and cable
installations (including
any and all fiber optic
ground product by any
other name manufactured
for the dual purpose of
ground fault protection
and fiber optic
capabilities), pipetype
cable installation and
maintenance jobs or
projects, and maintenance
bonding of rails; Pipetype
cable installation

Cable Splicer.....	\$ 61.62	7%+35.40
Flagman.....	\$ 33.61	7%+34.40
Groundman Digging Machine Operator.....	\$ 50.42	7%+34.40
Groundman Truck Driver (tractor-trailer unit).....	\$ 47.62	7%+34.40
Groundman Truck Driver.....	\$ 44.82	7%+34.40
Lineman & Technician.....	\$ 56.02	7%+35.40
Mechanic.....	\$ 44.82	7%+34.40

FOOTNOTE:

a. PAID HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, Good Friday, Independence Day, Labor Day, Thanksgiving Day, Christmas Day, and Election Day for the President of the United States and Election Day for the Governor of New York State, provided the employee works two days before or two days after the holiday.

ELEC1249-008 01/03/2021

	Rates	Fringes
ELECTRICIAN (Line Construction)		
TELEPHONE, CATV FIBEROPTICS CABLE AND EQUIPMENT		
Cable splicer.....	\$ 34.78	3%+5.14
Groundman.....	\$ 17.50	3%+5.14
Installer Repairman-Teledata Lineman/Technician-Equipment Operator.....	\$ 33.01	3%+5.14
Tree Trimmer.....	\$ 27.36	3%+9.98

a. New Year's Day, President's Day, Good Friday, Decoration Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, Day after Thanksgiving, Christmas Day.

ELEV0027-001 01/01/2022

	Rates	Fringes
ELEVATOR MECHANIC.....	\$ 54.20	36.885+a+b

FOOTNOTE:

a. Vacation: 6%/under 5 years based on regular hourly rate for all hours worked. 8%/over 5 years based on regular hourly rate for all hours worked.

b. PAID HOLIDAYS: New Year's Day; Memorial Day; Independence Day; Labor Day; Veterans' Day; Thanksgiving Day; the Friday after Thanksgiving Day; and Christmas Day.

* ENGI0158-035 07/01/2018

	Rates	Fringes
Operating Engineer:		
EXCAVATING AND PAVING		
GROUP 1.....	\$ 31.45	27.55+a
GROUP 2.....	\$ 30.98	27.55+a
GROUP 3.....	\$ 30.29	27.55+a
GROUP 4.....	\$ 26.80	27.55+a
MASTER MECHANIC.....	\$ 33.45	27.55+a
HEAVY AND HIGHWAY		
GROUP 1.....	\$ 41.51	28.25+a
GROUP 2.....	\$ 40.80	28.25+a
GROUP 3.....	\$ 37.94	28.25+a
GROUP 4.....	\$ 45.51	28.25+a
GROUP 5.....	\$ 44.51	28.25+a

GROUP 6.....	\$ 43.51	28.25+a
GROUP 7.....	\$ 42.94	28.25+a
TUNNEL AND SHAFT		
GROUP 1.....	\$ 44.24	28.35+a
GROUP 2.....	\$ 43.02	28.35+a
GROUP 3.....	\$ 40.23	28.35+a
GROUP 4.....	\$ 37.22	28.35+a
MASTER MECHANIC.....	\$ 46.65	28.35+a

For EXCAVATION AND PAVING:

FOOTNOTE:

a. PAID HOLIDAYS: New Year's Day; Memorial Day; Independence Day; Labor Day; Thanksgiving Day; Christmas Day, regardless of the day of the week on which the holiday may fall, provided the employee works either on the work day immediately preceding the holiday or on the scheduled work day immediately following the holiday.

EXCAVATION AND PAVING CLASSIFICATIONS

GROUP 1: Asphalt paver; automatic fine grader; backhoe (except tractor mounted, rubber tired); blacktop plant (automated); cableway; caisson auger; central mix concrete plant (automated); cherry picker- over 5 ton capacity; crane; cranes and derricks (steel erection); dragline; dual drum paver; front end loader (4 cu. yd. and over); hoist, (Tow or 3 drum); pile driver; power grader with elevation loader attachment; quarry master (or equivalent); shovel; slip form paver; tractor drawn belt-type loader; truck crane tunnel shovel; excavator, all purpose hydraulically operated

GROUP 2: Backhoe (tractor mounted, rubber tired); bituminous spreader and mixer; blacktop plant (non automated); boring machine; cage hoist; central mix plant (non automated) and all concrete batching plants; cherry picker, 5 tons and under; compressor (4 or less) exceeding 2000 CFM combined capacity; concrete paver over 16s; concrete pump; crusher; drill rigs (tractor mounted); front end loader (under 4 cu. yds); hi- pressure boiler (15 lbs and over); hoist (one drum); Kolman plant loader and similar type loaders; maintenance engineer; maintenance grease man; mechanical slurry machine; mixer for stabilized base self propelled; monorail machine; plant engineer; power broom; power grader; pump crete; ready mix concrete plant; road widener; roller (all above sub-grade); side boom; tractor scraper; tractor with dozer and or pusher; trencher; winch

GROUP 3: Compressors (4 not to exceed 2000 CFM combined capacity; or 3 or less with more than 1200 CFM but not to exceed 2000 CFM); compressors (any size but subject to other provisions for compressors); dust collectors; generators; welding machines (4 of any type or combination); concrete pavement spreaders and finishers; conveyor; drill (core); drill (well); electric pump used in conjunction with well point systems; farm tractor with accessories; fine grade machine; fork lift; gunite machine; hammers-hydraulic-self propelled; locomotive; post hole digger and post driver; pumps (regardless of motive power, not more than 4 in number not to exceed 20" in total capacity); submersible electric pumps when used in lieu of well points, tractor with towed accessories; vibratory compactor; vibro tamp; well point

GROUP 4: Compressor (any size, but subject to other provisions for compressors); dust collectors; generators; welding machines (3 or less of any type or combination); concrete mixer (16s and under), concrete saw-self propelled; fireman; form tamper; mulching machine; power heaterman; pumps regardless of motive power no more than 3 in number not to exceed 12"" in total capacity; revinius widener; steam cleaner; tractor

GROUP 5: Master Mechanic

For HEAVY AND HIGHWAY CONSTRUCTION:

FOOTNOTE:

b. PAID HOLIDAYS: New Years Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day provided the employee works the working day before and the working day after the holiday

POWER EQUIPMENT OPERATOR CLASSIFICATIONS (HEAVY/HIGHWAY):

GROUP 1: Asphalt Curb Machine, Self Propelled, Slipform, Automated Concrete Spreader (CMI Type), Automatic Fine Grader, Backhoe (Except Tractor Mounted, Rubber Tired), Backhoe Excavator Full Swing (CAT 212 or similar type), Back Filling Machine, Belt Placer (CMI Type), Blacktop Plant (Automated), Boom truck , Cableway, Caisson Auger, Central Mix Concrete Plant (Automated), Concrete Curb Machine, Self Propelled, Slipform, Concrete Pump, Crane, Cherry Picker, Derricks (steel erection), Dragline, Overhead Crane (Gantry or Straddle type), Pile Driver, Truck Crane, Directional Drilling Machine, Dredge, Dual Drum Paver, Excavator (All Purpose Hydraulically Operated) (Gradall or Similar), Front End Loader (4 cu. yd. and Over), Head Tower (Sauerman or Equal), Hoist (Two or Three Drum), Holland Loader, Maintenance Engineer, Mine Hoist, Mucking Machine or Mole Pavement Breaker(SP) Wertgen; PB-4 and similar type, Power Grader, Profiler (over 105 H.P.) Quad 9, Quarry Master (or equivalent), Scraper, Fireman, Fork Lift, Form Tamper, Grout Pump, Gunit Machine, Hammers (Hydraulic self-propelled), Hydra-Spiker, ride-on, Hydraulic Pump (jacking system), Hydro-Blaster (Water), Mulching Machine, Oiler, Parapet Concrete or Pavement, Shovel, Side Boom, Slip Form Paver, Tractor Drawn, BeltType Loader, Truck or Trailer Mounted Log , Chipper (Self Feeder), Tug Operator (Manned Rented Equipment Excluded), Tunnel Shovel

GROUP 2: Asphalt Paver, Backhoe (Tractor Mounted, Rubber Tired), Bituminous Recycler Machine, Bituminous Spreader and Mixer, Blacktop Plant (NonAutomated), Blast or Rotary Drill (Truck or Tractor Mounted), Boring Machine, Cage Hoist, Central Mix Plant (NonAutomated) and All Concrete Batching Plants, Cherry Picker (5 tons capacity and under), Concrete Paver (Over 16S), Crawler Drill, Self-contained, Crusher, Diesel Power Unit, Drill Rigs, Tractor Mounted, Front End Loader (Under 4 cu. yd.), Greaseman/Lubrication Engineer, HiPressure Boiler (15 lbs. and over), Hoist (One Drum), Hydro-Axe, Kolman Plant Loader and Similar Type Loaders, L.C.M. Work Boat Operator, Locomotive Mixer (for stabilized base selfpropelled), Monorail Machine, Plant Engineer, Profiler (105 H.P. and under), Grinder, Post Hole Digger and Post Driver, Power Broom (towed), Power

Heaterman, Power Sweeper, Revinus Widener, Roller (Grade and Fill), Scarifier, ride-on, Shell Winder, Skid steer loader (Bobcat or similar), Span-Saw, ride-on, Steam Cleaner, Pug Mill, Pump Crete Ready Mix Concrete Plant Refrigeration Equipment (for soil stabilization) Road Widener, Roller (all above subgrade), Sea Mule, Self-contained Ride-on Rock Drill, Excluding Air-Track Type Drill, Skidder, Tractor with Dozer and/or Pusher, Trencher. Tugger Hoist, Vermeer saw (ride on, any size or type), Winch, Winch Cat

GROUP 3: A Frame Winch Hoist on Truck , Articulated Heavy Hauler, Aggregate Plant, Asphalt or Concrete Grooving, Machine (ride on), Ballast Regulator, Ride-on Boiler (used in conjunction with production), Bituminous Heater, self-propelled, Boat (powered), Cement and Bin Operator, Compressors, Dust Collectors, Generators, Pumps, Welding Machines, Light Plants, Heaters (hands-off equipment), Concrete Pavement Spreader and Finisher, Concrete Paver or Mixer (16S and under), Concrete Saw (self-propelled), Conveyor, Deck Hand, Directional Drill Machine Locator, Drill, (Core), Drill, (Well,) Farm Tractor with accessories, Fine Grade Machine, Tamper, ride-on, Tie Extractor, ride-on, Tie Handler, ride-on, Tie Insertter, ride-on, Tie Spacer, ride-on, Tire Repair, Track Liner, ride-on, Tractor, Tractor (with towed accessories), Vibratory Compactor, Vibro Tamp, Well Point

GROUP 4: Tower Cranes

GROUP 5: Cranes 50 tons and over

GROUP 6: Cranes 49 tons and below

GROUP 7: Master Mechanic

For TUNNEL AND SHAFT:

FOOTNOTE:

b. PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day, regardless of the day of the week on which the Holiday may fall, provided the employee works the working day before and the working day after the holiday

TUNNEL AND SHAFT CLASSIFICATIONS

GROUP 1: Automated concrete spreader (CMI or equivalent); automated fine grade machine (cmi); backhoe; belt placer (cmi or similar); blacktop spreader (automated); cableway; caisson auger; central mix plant (automated); cherry picker (5 tons); concrete curb machine (self-propelled slipform); concrete pump; crane; crane shaft; crane underground; cranes and derricks (steel erection); dragline; dredge; dual drum paver; excavator (all purpose-hydraulically operated gradall or similar); fork lift (factory rated 15' and over); front end loader (4cu yd and over); head tower (sauerman or equal); hoist; shaft; hoist (two or three drum); holland loader; maintenance engineer (shaft and tunnel); mine hoist; mining machine (mole and similar types); mucking machine or mose; overhead crane (gantry or straddle type); pile driver; power grader; Quad 9, quarry master (or equivalent); scraper; shovel; side boom; slip

form paver; tripper/maintenance engineer (shaft and tunnel); tractor drawn belt-type loader; truck crane; truck or trailer mounted log chipper (self feeder); tug operator (manned rented equipment excluded); tunnel shovel

GROUP 2: Automated central mix concrete plant; backhoe (topside); backhoe (tractor mounted, rubber tired); bituminous spreader and mixer; blacktop plant (non automated); blast or rotary drill (truck or tractor mounted); boring machine; cage hoist; central mix plant (non automated) and all concrete batching plants; cherry picker (5 tons capacity and under); compressors (4 or less exceeding 2000 CFM combined capacity); concrete paver (over 16s); concrete pump; crane (topside); crusher; diesel power unit; drill rigs, tractor mounted; front end loader (under 4 cu. yds); grayco epoxy machine; hi-pressure boiler (15 lbs and over); hoist (one drum); hoist (two or three drum) (topside); kolman plant loader and similar type loaders; L.C.M. work boat operator; locomotive; maintenance engineer (topside); maintenance greaseman; mixer (for stabilized base self-propelled); monorial machine; plant engineer; personnel hoist; pump crete; ready mix concrete plant; refrigeration equipment (from soil stabilization); road widener; roller (all above sub-grade); sea mule; shotcrete machine; shovel (topside); tractor with dozer and/or pusher; trencher; tugger hoist; tunnel locomotive; welder; winch; winch cat

GROUP 3: "A" frame truck; ballast regulator (ride on); compressors (4 not to exceed 2000 cfm combined capacity; or 3 or less with more than 1200 cfm but not to exceed 2000 cfm); compressors (any size but subject to other provisions for compressors; dust collectors; generators; pumps; welding machines; light plants (4 of any type or combination); concrete pavement spreaders and finishers; conveyor; drill (core); drill (well); electric pump used in conjunction with well point system; farm tractor with accessories; fine grade machine; fork lift (under 15 ft); ground pump over 5 cu. ft (manufacturers rating); gunite machine; hammers (hydraulic self propelled); hydra-spiker (ride on); hydra blaster (water); hydra blaster; motorized form carrier; post hole digger and post driver; power sweeper; roller (grade and fill); scarifer (ride on); span saw (ride on); submersible electric pump (when used in lieu of well points); tamper (ride on); tie extractor (ride on); tie handler (ride on); tie inserter (rider on); tie spacer (ride on); track liner (ride on); tractor with towed accessories; vibratory compactor; vibro tamp; well point aggregate plant; boiler (used in conjunction with production); cement and bin operator; compressors (3 or less not to exceed 1200 cfm combined capacity); compressors (any size; but subject to other provisions for compressors); dust collectors; generators; pumps; welding machines; light plants (3 or less of any type or combination); concrete paver or mixer (16s and under); concrete saw (self propelled); fireman; form tamper; greaseman; hydraulic pump (jacking system); junior engineer; light plants; mulching machine; oiler; parapet concrete or pavement grinder; power broom (towed); power heaterman (when used for production); revinius widener; shell winder; steam cleaner; tractor

GROUP 4: Crane, friction or lattice type with boom length 200 feet and over

	Rates	Fringes
Power equipment operators:		
BUILDING CONSTRUCTION		
GROUP 1.....	\$ 33.27	27.90+a
GROUP 2.....	\$ 32.47	27.90+a
GROUP 3.....	\$ 29.77	27.90+a
GROUP 4.....	\$ 25.21	27.90+a
GROUP 5.....	\$ 36.85	27.90+a
GROUP 6.....	\$ 38.32	27.90+a
GROUP 7.....	\$ 39.19	27.90+a
GROUP 8.....	\$ 35.27	27.90+a

FOOTNOTE:

a. PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day, provided the employee works on the work day immediately preceding the holiday or on the scheduled work day immediately following the holiday.

BUILDING CONSTRUCTION CLASSIFICATIONS

GROUP 1: Air Tugger, All terrain telescoping material handler, Clamshell, Dragline, Shovel and similar machines over three eighths cu.yd. capacity (Fact. rating);Carrier mounted backhoes that swing 360 degrees Big Generator Plant Hoist (on steel erection) Bridge Crane (all types), Cableway, Caisson auger and similar type machine, Crane, Derrick, Dredge, Excavator all purpose hydraulically operated, Forklift (with Factory rating of Fifteen ft. or more of lift),Hoist (on steel erection), Hydraulic/Krupp Drill Type Mucking Machines, Remote controlled excavator with attachments (Brokk type or similar), Ross Carrier (and similar type), Three-Drum Hoist(when all three drums are in use)

GROUP 2: A-Frame Truck, Backfilling Machine, Backhoe -tractor mounted, Barber Green and similar type machines, Belt Crete and similar type machines, Bituminous spreading machine 3/8 yd. capacity or less(Factory Rating), Bulldozer, Carry-all type scraper, Compressors: Four (4) not to exceed 2000 CFM combined capacity; or three (3) or less with more than1200 CFM but not to exceed 2000 CFM, Concrete Mixer, Concrete Placer, Concrete Pump, Dinky Locomotives (all types), Elevating Grader, Elevator Fine Grade and Finish, Rollers, Fine Grade Machines(all kinds), Forklift with Factory rating of less than fifteen(15) feet of lift, Front End Loader, Gunite Pumping Machine, High Pressure Boiler, Hoist (1 or 2 drums), Maintenance Engineer (Mechanic), Mechanical Slurry Machine (all kinds), Mega Mixers and similar type machines, Motor Grader, Post Hole Digger, Pumps (regardless of motive power) no more than four (4) in number not to exceed twenty (20) inches in total capacity, Shot Crete Pumping Machine, Side Boom Tractor, Skid Steer Loader with Attachments, Stone Crusher Tournadozer and similar types Tournapull and similar types, Trenching Machines, Well Drill, WellPoint System EXCEPTION: Single electric pumps up to and including four (4) inches need not be manned.

GROUP 3: Any combination (Not to exceed three (3) pieces of

equipment) Compressors ♦three (3) or less, or not to exceed 1200 CFM combined capacity, Fireman, Longitudinal Float, Mechanical Heater Pumps (regardless of motive power) No more than three (3) in number, not to exceed twelve (12) inches total capacity, Roller (Fill and Grade)Rubber Tired Tractor Welding Machine or Mechanical Conveyor (over 12ft. in length) EXCEPTION: Single gasoline driven welding machine up to 300amps need not be manned.

GROUP 4: Oilers

GROUP 5: Cranes up to and including 25 tons

GROUP 6: Cranes 25-250 tons

GROUP 7: Cranes 251 and over tons

GROUP 8: Tower Cranes

IRON0033-003 07/01/2019

REMAINDER OF COUNTY

	Rates	Fringes
Ironworkers:		
Sheeter.....	\$ 30.05	26.89
Structural, ornamental, rodman, machinery mover- rigger, fence erector precast concrete erector, reinforcing, stone derrickman.....	\$ 28.00	26.89

LAB00435-004 05/01/2019

	Rates	Fringes
Laborers:		
BUILDING:		
Blaster.....	\$ 27.87	18.59
Chuck tender.....	\$ 26.74	18.59
Concrete vibrators.....	\$ 26.98	18.59
Drillers and asphalt raker..	\$ 26.94	18.59
Hazardous waste removal....	\$ 27.14	17.99
Jack hammer, mortar mixers..	\$ 26.84	18.59
Pipe layers, burners and cutters.....	\$ 26.84	18.59
Powder Monkey.....	\$ 27.41	18.59
Unskilled Laborer.....	\$ 26.54	18.59
Yardman, clean-up.....	\$ 23.69	18.59
HEAVY/HIGHWAY		
GROUP 1.....	\$ 28.54	19.92
GROUP 2.....	\$ 29.24	19.92
GROUP 3.....	\$ 29.44	19.92
GROUP 4.....	\$ 30.27	19.92
GROUP 5.....	\$ 30.04	19.92

FOOTNOTES:

a. PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day, provided the employee has worked the working day before and the working day after the holiday.

HEAVY AND HIGHWAY LABORER CLASSIFICATIONS

GROUP 1: Flaggers;
 GROUP 2: Laborers
 GROUP 3: Rakers, drillers, pipelayers, and torch operators
 GROUP 4: Blasters
 GROUP 5: Hazardous waste removal

 PAIN0004-015 05/01/2019

DANSVILLE, NUNDA, OSSIAN, PORTAGE, SPARTA, SPRINGWATER AND WEST
 SPRATA

	Rates	Fringes
Painters: (BUILDING CONSTRUCTION)		
BUILDING CONSTRUCTION		
Brush and Roller.....	\$ 24.68	19.51
Drywall/Taping.....	\$ 25.18	19.51
Wallcovering, Spray Painting, Sandblasting.....	\$ 24.93	19.51
HEAVY & HIGHWAY CONSTRUCTION		
Bridges.....	\$ 38.50	28.40

 PAIN0004-028 05/01/2019

	Rates	Fringes
Painters:		
BUILDING CONSTRUCTION		
Brush & Roll.....	\$ 23.22	22.43
Drywall Taper.....	\$ 24.56	22.49
Sandblasting.....	\$ 23.97	23.97
Spray.....	\$ 23.82	22.43
Wallcovering.....	\$ 23.52	22.43
HEAVY & HIGHWAY CONSTRUCTION:		
Bridge Work.....	\$ 38.50	28.40

 PAIN0677-004 05/01/2020

	Rates	Fringes
GLAZIER.....	\$ 25.75	24.40

 PLUM0013-001 05/03/2021

	Rates	Fringes
Plumber and Steamfitter.....	\$ 35.38	25.03

 ROOF0022-001 06/25/2021

	Rates	Fringes
ROOFER.....	\$ 31.25	22.35

 * SFNY0669-001 04/01/2022

	Rates	Fringes
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SPRINKLER FITTER.....\$ 40.81 25.91

SHEE0046-001 05/03/2021

Rates Fringes

Sheet metal worker.....\$ 33.89 26.79

TEAM0118-003 07/01/2020

Rates Fringes

Truck drivers:

GROUP 1.....	\$ 24.72	24.68+a
GROUP 2.....	\$ 24.77	24.68+a
GROUP 3.....	\$ 24.82	24.68+a
GROUP 4.....	\$ 24.97	24.68+a
GROUP 5.....	\$ 25.12	24.68+a

Hazardous Waste Site Work receives an additional \$1.50 per hour

FOOTNOTE: a. Paid Holidays: New Years Day; Memorial Day; Independence Day; Laobr Day; Thanksgiving Day; Christmas Day

TRUCK DRIVER CLASSIFICATIONS

GROUP 1: Pick-ups; panel trucks; flatboy materials trucks (straight jobs); single axle dump trucks; dumpsters; receivers; greasers; truck tireman.

GROUP 2: Tandems; batch truck; mechanics.

GROUP 3: Semi-trailers; low-boy trucks; asphalt distributor trucks; agitator; mixer trucks and dumpcrete type vehicles; truck mechanic; fuel truck.

GROUP 4: Specialized earth moving equipment - euclid type or similar off-highway equipment, where not self-loaded; straddle (Ross) carrier; self-contained concrete unit.

GROUP 5: Off-highway tandem back dump; twin engine equipment; double-hitched equipment shere not self-loaded.

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is

like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative

Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISIO"



**US Army Corps
of Engineers®**

Buffalo District

BUILDING STRONG®

PRELIMINARY SUBMITTAL - BCOES BACKCHECK

W912P422B0014

**MOUNT MORRIS, NEW YORK
MOUNT MORRIS DAM
ADIT N. TUNNEL
FY22**

BID FORM & SPECIFICATIONS

25 MAY 2022

SECTION 00 10 00
BIDDING SCHEDULE

Bid will be based upon all work as shown on the contract drawings and in accordance with the specifications.

Item No.	Description	Estimated Quantity	Unit	Unit Price	Estimated Amount
Basic Requirements:					
1	Mobilization and Demobilization	1	JA	\$	_____
2	Record (As-built) Drawings (including all surveys and photographs)	1	JA	\$	_____
3	Tunnel Repair/Retrofit System	1	JA	\$	_____
	Total Estimated Amount (Items 1 ~ 3)			\$	_____
Option A:					
4	Concrete Façade	1	JA	\$	_____
5	New Door	1	JA	\$	_____
	Total Estimated Option A (Items 4 ~ 5)			\$	_____
	Total Estimated Amount (Items 1 ~ 5)			\$	_____

Note 1: Bids must be complete as to all the items on the schedule. Failure to complete all items on the bid schedule may render the bid Non-responsive.

Note 2: The Government will evaluate offers for award purposes by adding the total price for the option to the total price for the basic requirement. Evaluation of the option will not obligate the Government to exercise the option.

Note 3: The government may elect to exercise the option, or not to exercise the option. If the option item is exercised, it will be exercised within 60 calendar days from Contract Award.

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01 57 19	TEMPORARY ENVIRONMENTAL CONTROLS
01 78 00	CLOSEOUT SUBMITTALS

DIVISION 03 - CONCRETE

03 30 53	MISCELLANEOUS CAST-IN-PLACE CONCRETE
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DIVISION 31 - EARTHWORK

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SECTION 01 20 00

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- 1.2 CONTRACT COST BREAKDOWN
- 1.3 SINGLE JOB PAYMENT ITEMS
 - 1.3.1 Mobilization and Demobilization
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PART 2 PRODUCTS

PART 3 EXECUTION

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SECTION 01 20 00

PRICE AND PAYMENT PROCEDURES

PART 1 GENERAL

1.1 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

1.2 CONTRACT COST BREAKDOWN

The Contractor must furnish within 30 calendar days after the date of Notice to Proceed, and prior to the submission of its first partial payment estimate, a breakdown of its single job pay item or items which will be reviewed by the Contracting Officer as to propriety of distribution of the total cost to the various accounts. Any unbalanced items as between early and late payment items or other discrepancies will be revised by the Contracting Officer to agree with a reasonable cost of the work included in the various items. This Contract cost breakdown will then be utilized as the basis for progress payments to the Contractor.

1.3 SINGLE JOB PAYMENT ITEMS

Payment items for the work of this Contract for which Contract job payments will be made are listed in the SCHEDULE and described below. All costs for items of work, which are not specifically mentioned to be included in a particular job or unit price payment item, are included in the listed job item most closely associated with the work involved. The job price and payment made for each item listed constitutes full compensation for furnishing all plant, labor, materials, and equipment, and performing any associated Contractor quality control, environmental protection, meeting safety requirements, tests and reports, and for performing all work required for which separate payment is not otherwise provided.

1.3.1 Mobilization and Demobilization

1.3.1.1 Payment

Payment will be made for costs associated with a single mobilization and a single demobilization. This covers all base bid line items. Payment will be made for single mobilization/demobilization.

1.3.1.2 Unit of Measure

Unit of measure: job.

1.3.2 Record (As-built) Drawings

1.3.2.1 Payment

Payment will be made for costs associated with the line items "Record

(As-built) Drawings" as required in section 01 78 00 CLOSEOUT SUBMITTALS. Include the cost of all labor, equipment, and any other items not listed, to obtain all surveys, photographs, and videos on this line item.

1.3.2.2 Unit of Measure

Unit of measure: job.

1.3.3 Tunnel Repair/Retrofit System

1.3.3.1 Payment

Payment will be made for costs associated with line item "Tunnel Repair/Retrofit System". This includes the cost of all labor, equipment, and materials, and any other items not listed, to design and install the Tunnel Repair/Retrofit System. Included is the cost of removal and reinstalation of electrical power and security monitors loacted within the work area of the adit tunnel. Incuded in this cost are any modifictions to the existing tunnel concrete needed to install the Tunnel Repair/Retrofit System.

1.3.3.2 Unit of Measure

Unit of measure: job.

1.3.4 Concrete Facade

1.3.4.1 Payment

Payment will be made for costs associated with the line item Concrete Facade. Payment will cover all cost of furnishing, handling, storing and installing concrete including formwork, other work and materials as stated and shown, and all other work and materials incident thereto. Payment includes the proper mixing of the concrete, transportation of concrete, all reinforcement, and final placement of concrete as required and shown on the contract drawings. Payment also includes all joints required as shown. No payment will be made for any excess materials to make concrete, any excess concrete not placed as required, concrete which is installed incorrectly or fails compressive strength requirements.

1.3.4.2 Unit of Measure

Unit of measure: job.

1.3.5 New Door

1.3.5.1 Payment

Payment will be made for costs associated with removal and disposal of the existing door and providing and installing the new door. This includes providing and installing the door frame and threshold, leveling and sealing the door, and all other work necessary to install a fully functional weathertight exterior door.

1.3.5.2 Unit of Measure

Unit of measure: job.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

-- End of Section --

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- 3.2 EQUIPMENT
 - 3.2.1 Photographs

-- End of Section Table of Contents --

SECTION 01 32 16

CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 GENERAL

1.1 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for Contractor Quality Control approval. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Construction schedule; G, AO

Equipment

SD-02 Shop Drawings

Photographs

SD-03 Product Data

Photographs; G, AO

1.2 ACCEPTANCE

Prior to the start of work, prepare and submit to the Contracting Officer for acceptance a construction schedule in the form of a Bar Chart in accordance with the terms in FAR 52.236-15, SCHEDULES FOR CONSTRUCTION CONTRACTS, except as modified in this contract. Acceptance of an error free Baseline Schedule and updates is a condition precedent to processing the Contractor's pay request.

1.3 SCHEDULE FORMAT

1.3.1 Bar Chart Schedule

Show submittals, government review periods, material/equipment delivery, utility outages, on-site construction, inspection, testing, and closeout activities. Time scale the Bar Chart and generate it using an electronic spreadsheet program.

1.4 UPDATED SCHEDULES

Update the Construction schedule at monthly intervals or when the schedule has been revised. Keep the updated schedule current, reflecting actual activity progress and plan for completing the remaining work. Submit copies of purchase orders and confirmation of delivery dates as directed.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

The following paragraphs describe the requirements for obtaining photographs of the work being performed. Provide enough personnel and equipment on-site to record all photographs as described, at all locations of work.

3.1 PHOTOGRAPHS

Daily photographs required are listed below. Show the date and time the photographs were taken in the lower right corner. Use the format described in 3.3.1, or as agreed upon by the COR. Submit all photographs with the contractors daily quality control reports. It is possible that some of the work items may be occurring simultaneously, requiring multiple personnel to obtain the required photographs.

a. Tunnel Repair/Retrofit

Obtain photographs of work accomplished when preparing to install the tunnel repair/retrofit measures and while installing the measures.

b. Concrete

On any day that any of the activities listed below are performed, obtain a photograph of that activity.

(1) While concrete is being poured.

(2) When finishing of concrete is performed.

3.2 EQUIPMENT

Submit list of equipment to be used for acquiring photographs and videos.

3.2.1 Photographs

a. Take photographs with a digital camera with the following minimum specifications:

(1) Sixteen (16) megapixel

(2) Use the finest resolution setting for the camera.

(3) Use the .JPG file format for the photograph.

b. Name photographs according to a naming convention that describes the photograph. Use a naming convention containing the following:

(1) MMDNADIT

(2) Type of work photographed (i.e. Surveys, Sheet Pile, etc.)

(3) {date}

(4) {time, based upon 24-hour clock}

(5) {Sequential number starting at 001 each day}

Choose a format approved by the Government at the pre-construction meeting.

-- End of Section --

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SECTION 01 33 00

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SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 SUMMARY

The Contracting Officer may request submittals in addition to those specified when deemed necessary to adequately describe the work covered in the respective sections.

Units of weights and measures used on all submittals are to be the same as those used in the contract drawings.

Each submittal is to be complete and in sufficient detail to allow ready determination of compliance with contract requirements.

Contractor to check and approve all items prior to submittal and stamp, sign, and date indicating action taken. Proposed deviations from the contract requirements are to be clearly identified. Include within submittals items such as: Contractor's, manufacturer's, or fabricator's drawings; descriptive literature including (but not limited to) catalog cuts, diagrams, operating charts or curves; test reports; test cylinders; samples; O&M manuals (including parts list); certifications; warranties; and other such required submittals.

1.2 DEFINITIONS

1.2.1 Submittal Descriptions (SD)

Submittals requirements are specified in the technical sections. Submittals are identified by Submittal Description (SD) numbers and titles as follows:

SD-01 Preconstruction Submittals

Submittals which are required prior to or the start of the next major phase of the construction on a multi-phase contract, includes schedules, tabular list of data, or tabular list including location, features, or other pertinent information regarding products, materials, equipment, or components to be used in the work.

Certificates of insurance

Surety bonds

List of proposed Subcontractors

List of proposed products

Construction Progress Schedule

Network Analysis Schedule (NAS)

Submittal register

Schedule of prices

Health and safety plan

Work plan

Quality Control (QC) plan

Environmental protection plan

Contractor Accident Prevention Checklist

Contractor Activity Hazard Analysis

SD-02 Shop Drawings

Drawings, diagrams and schedules specifically prepared to illustrate some portion of the work.

Diagrams and instructions from a manufacturer or fabricator for use in producing the product and as aids to the Contractor for integrating the product or system into the project.

Drawings prepared by or for the Contractor to show how multiple systems and interdisciplinary work will be coordinated.

SD-03 Product Data

Catalog cuts, illustrations, schedules, diagrams, performance charts, instructions and brochures illustrating size, physical appearance and other characteristics of materials, systems or equipment for some portion of the work.

Samples of warranty language when the contract requires extended product warranties.

SD-05 Design Data

Design calculations, mix designs, analyses or other data pertaining to a part of work.

SD-06 Test Reports

Report signed within three years of date of contract award by authorized official of testing laboratory that a material, product or system identical to the material, product or system to be provided has been tested in accord with specified requirements.

Report which includes findings of a test required to be performed by the Contractor on an actual portion of the work or prototype prepared for the project before shipment to job site.

Report which includes finding of a test made at the job site or on sample taken from the job site, on portion of work during or after installation.

Investigation reports.

Daily logs and checklists.

Final acceptance test and operational test procedure.

SD-07 Certificates

Statements printed on the manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements. Obtain certificates dated after award of project contract and clearly name the project.

Document required of Contractor, or of a manufacturer, supplier, installer or Subcontractor through Contractor, the purpose of which is to further quality of orderly progression of a portion of the work by documenting procedures, acceptability of methods or personnel qualifications.

Confined space entry permits.

Text of posted operating instructions.

SD-08 Manufacturer's Instructions

Preprinted material describing installation of a product, system or material, including special notices and (MSDS) concerning impedances, hazards and safety precautions.

SD-11 Closeout Submittals

Documentation to record compliance with technical or administrative requirements or to establish an administrative mechanism.

Special requirements necessary to properly close out a construction contract. For example, Record Drawings and as-built drawings. Also, submittal requirements necessary to properly close out a major phase of construction on a multi-phase contract.

Interim "DD Form 1354" with cost breakout for all assets 30 days prior to facility turnover.

1.2.2 Approving Authority

Office or designated person authorized to approve submittal.

1.2.3 Work

As used in this section, on- and off-site construction required by contract documents, including labor necessary to produce submittals, except those SD-01 Pre-Construction Submittals noted above, construction, materials, products, equipment, and systems incorporated or to be incorporated in such construction.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. Submit the following in

accordance with this section.

SD-01 Preconstruction Submittals

Submittal Register; G, AO

1.4 SUBMITTAL CLASSIFICATION

Submittals are classified as follows:

1.5 PREPARATION

1.5.1 Transmittal Form

Use the attached sample transmittal form (ENG Form 4025, found after this section) for submitting both Government approved and information only submittals in accordance with the instructions on the reverse side of the form. These forms will be furnished to the Contractor. Properly complete this form by filling out all the heading blank spaces and identifying each item submitted. Exercise special care to ensure proper listing of the specification paragraph and sheet number of the contract drawings pertinent to the data submitted for each item.

1.5.2 Electronic File Format

See Paragraph 'Submittal Procedures'

1.6 INFORMATION ONLY SUBMITTALS

Normally submittals for information only will not be returned. Approval of the Contracting Officer is not required on information only submittals. The Government reserves the right to require the Contractor to resubmit any item found not to comply with the contract. This does not relieve the Contractor from the obligation to furnish material conforming to the plans and specifications; will not prevent the Contracting Officer from requiring removal and replacement of nonconforming material incorporated in the work; and does not relieve the Contractor of the requirement to furnish samples for testing by the Government laboratory or for check testing by the Government in those instances where the technical specifications so prescribe.

1.7 VARIATIONS

Variations from contract requirements require Government approval and will be considered where advantageous to Government.

1.7.1 Considering Variations

a. Discussion with Contracting Officer prior to submission, after consulting with the DOR, will help ensure functional and quality requirements are met and minimize rejections and re-submittals. When contemplating a variation which results in lower cost, consider submission of the variation as a Value Engineering Change Proposal (VECP).

b. Specifically point out variations from contract requirements in transmittal letters. Failure to point out deviations may result in the Government requiring rejection and removal of such work at no additional cost to the Government.

1.7.2 Proposing Variations

a. When proposing variation, deliver written request to the Contracting Officer, with documentation of the nature and features of the variation and why the variation is desirable and beneficial to Government, including the DOR's written analysis and approval. If lower cost is a benefit, also include an estimate of the cost savings. In addition to documentation required for variation, include the submittals required for the item. Clearly mark the proposed variation in all documentation.

b. Check the column "variation" of ENG Form 4025 for submittals which include proposed deviations requested by the Contractor. Set forth in writing the reason for any deviations and annotate such deviations on the submittal. The Government reserves the right to rescind inadvertent approval of submittals containing unnoted deviations.

1.7.3 Warranting That Variations Are Compatible

When delivering a variation for approval, Contractor, including its Designer(s) of Record (DOR), warrants that this contract has been reviewed to establish that the variation, if incorporated, will be compatible with other elements of work.

1.7.4 Review Schedule Is Modified

In addition to normal submittal review period, a period of 10 working days will be allowed for consideration by the Government of submittals with variations.

1.8 SUBMITTAL REGISTER

a. Prepare and maintain submittal register, as the work progresses. Do not change data which is output in columns (c), (d), (e), and (f) as delivered by Government; retain data which is output in columns (a), (g), (h), and (i) as approved. A submittal register showing items of equipment and materials for which submittals are required by the specifications is provided as an attachment. This list may not be all inclusive and additional submittals may be required. Maintain a submittal register for the project in accordance with Section 01 45 00.15 10 RESIDENT MANAGEMENT SYSTEM CONTRCTOR MODE (RMS CM). The Government will provide the initial submittal register in electronic format.

Column (c): Lists specification section in which submittal is required.

Column (d): Lists each submittal description (SD No. and type, e.g. SD-02 Shop Drawings) required in each specification section.

Column (e): Lists one principal paragraph in specification section where a material or product is specified. This listing is only to facilitate locating submitted requirements. Do not consider entries in column (e) as limiting project requirements.

b. After receipt of the initial submittal register, track all submittals by maintaining a complete list, including completion of all data columns, including dates on which submittals are received and returned by the Government.

1.8.1 Use of Submittal Register

Submit submittal register. Submit with QC plan and project schedule. Verify that all submittals required for project are listed and add missing submittals. Coordinate and complete the following fields on the register submitted with the QC plan and the project schedule:

Column (a) Activity Number: Activity number from the project schedule.

Column (g) Contractor Submit Date: Scheduled date for approving authority to receive submittals.

Column (h) Contractor Approval Date: Date Contractor needs approval of submittal.

Column (i) Contractor Material: Date that Contractor needs material delivered to Contractor control.

1.8.2 Contractor Use of Submittal Register

Update the following fields with each submittal throughout contract.

Column (b) Transmittal Number: Contractor assigned list of consecutive numbers.

Column (j) Action Code (k): Date of action used to record Contractor's review when forwarding submittals to QC.

Column (l) List date of submittal transmission.

Column (q) List date approval received.

1.8.3 Approving Authority Use of Submittal Register

Update the following fields.

Column (b) Transmittal Number: Contractor assigned list of consecutive numbers.

Column (l) List date of submittal receipt.

Column (m) through (p) List Date related to review actions.

Column (q) List date returned to Contractor.

1.8.4 Copies Delivered to the Government

Deliver one copy of submittal register updated by Contractor to Government with each invoice request.

1.9 SCHEDULING

Schedule and submit concurrently submittals covering component items forming a system or items that are interrelated. Include certifications to be submitted with the pertinent drawings at the same time. No delay damages or time extensions will be allowed for time lost in late submittals.

- a. Coordinate scheduling, sequencing, preparing and processing of submittals with performance of work so that work will not be delayed by submittal processing. Allow for potential resubmittal of requirements.
- b. Submittals called for by the contract documents will be listed on the register. If a submittal is called for but does not pertain to the contract work, the Contractor is to include the submittal in the register and annotate it "N/A" with a brief explanation. Approval by the Contracting Officer does not relieve the Contractor of supplying submittals required by the contract documents but which have been omitted from the register or marked "N/A."
- c. Re-submit register and annotate monthly by the Contractor with actual submission and approval dates. When all items on the register have been fully approved, no further re-submittal is required.
- d. Carefully control procurement operations to ensure that each individual submittal is made on or before the Contractor scheduled submittal date shown on the approved "Submittal Register."

1.10 GOVERNMENT APPROVING AUTHORITY

- a. When approving authority is Contracting Officer, the Government will:
 - (1) Note date on which submittal was received.
 - (2) Review submittals for approval within scheduling period specified and only for conformance with project design concepts and compliance with contract documents.
 - (3) Identify returned submittals with one of the actions defined in paragraph entitled, "Review Notations," of this section and with markings appropriate for action indicated.
- b. Upon completion of review of submittals requiring Government approval, stamp and date approved submittals. Two copies of the approved submittal will be retained by the Contracting Officer and one copy of the submittal will be returned to the Contractor.

1.11 DISAPPROVED OR REJECTED SUBMITTALS

- a. Make corrections required by the Contracting Officer. If the Contractor considers any correction or notation on the returned submittals to constitute a change to the contract drawings or specifications; notice is required to be given to the Contracting Officer. Contractor is responsible for the dimensions and design of connection details and construction of work. Failure to point out deviations may result in the Government requiring rejection and removal of such work at the Contractor's expense.
- b. If changes are necessary to submittals, make such revisions and submission of the submittals in accordance with the procedures above. No item of work requiring a submittal change is to be accomplished until the changed submittals are approved.

1.12 APPROVED/ACCEPTED SUBMITTALS

- a. The Contracting Officer's approval or acceptance of submittals is not to be construed as a complete check, and indicates only that

b. Approval or acceptance will not relieve the Contractor of the responsibility for any error which may exist, as the Contractor under the Contractor Quality Control (CQC) requirements of this contract is responsible for.

c. After submittals have been approved or accepted by the Contracting Officer, no resubmittal for the purpose of substituting materials or equipment will be considered unless accompanied by an explanation of why a substitution is necessary.

1.13 WITHHOLDING OF PAYMENT

Payment for materials incorporated in the work will not be made if required approvals have not been obtained. No payment for materials incorporated in the work will be made unless all required DOR approvals or required Government approvals have been obtained. No payment will be made for any materials incorporated into the work for any conformance review submittals or information-only submittals found to contain errors or deviations from the Solicitation or Accepted Proposal.

1.14 STAMPS

Stamps used by the Contractor on the submittal data to certify that the submittal meets contract requirements is to be similar to the following:

CONTRACTOR
(Firm Name)
_____ Approved
_____ Approved with corrections as noted on submittal data and/or attached sheets(s)
SIGNATURE: _____
TITLE: _____
DATE: _____

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.1 SUBMITTAL PROCEDURES

Make submittals as indicated in section 01 35 13, "SPECIAL PROJECT PROCEDURES", paragraph 3.1.

3.1.1 Submission Of Contract Documentation

a. Provide contract documentation in an electronic format to the greatest extent practicable. Contract documentation to be submitted electronically includes, but is not limited to, the following:

Submittals, including ENG 4025 transmittal form

Meeting Minutes

Construction Photographs

Correspondence

Requests for Information

Payroll Documents

Statement and Acknowledgement Forms (SF 1413)

Request for Additional Classification (SF 1444)

Progress Payment Requests and Supporting Documentation

Contract Modification Documentation, including SF 30, Contractor's Offer, Cost/Pricing Audit Report, and Certificate of Current Cost or Pricing Data

Contractor Quality Control Reports (with attachments)

Accident Reports

Schedules and Schedule Updates

Closeout Documentation, including Release of Claims

b. Submit electronic files of sufficient quality that all information is legible. When submitting electronic files, use the Adobe.PDF format, unless otherwise specified or directed by the Contracting Officer's Representative (COR). Whenever possible, generate PDF files from original documents so that the text included in the PDF file is both searchable and can be copied. If documents are scanned, Optical Character Resolution (OCR) routines are required. Index files exceeding 30 pages and bookmark to allow efficient navigation of the file. When required, include with the electronic file a valid electronic signature, or scan of a signature.

c. Email electronic submittal documents fewer than 10MB to an email address as directed by the COR. Provide electronic documents over 10MB on a CD/DVD, or through an electronic file sharing system.

d. The Government reserves the right to request hard copy submission of any item, if deemed necessary. Be prepared to provide up to eight additional paper hard copies of any contract document at the discretion of the Contracting Officer, at no additional cost to the Government. In addition to the electronic file format described above, the following list of Documents shall be provided in their original format because law or other regulations require signed originals be kept in accordance with FAR 4.805 --Storage, Handling, and Disposal of Contract Files: (this list is taken from appendix 5 to annex C to OPORD 2012-66)

Advance Payment Bond

Bid Bond including Annual Bid Bond

Performance Bond including Annual Performance Bond

Payment Bond

Patent Infringement Bond

Any performance security instruments

Certificate of Insurance

Novation/Change of Name Agreement

Assignment of Claims

Any document containing a raised seal. Examples include

Notarized documents

Architecture Drawings

Paper Payroll Documents

Physical signatures on contracts and modifications

SF 1442

SF 30

3.2 Deviations

For submittals which include proposed deviations requested by the Contractor, check the column "variation" of ENG Form 4025. Submit in writing the reason for any deviations and annotate such deviations on the submittal. The Government reserves the right to rescind inadvertent approval of submittals containing unnoted deviations.

3.3 RESERVATION OF RIGHTS

The Government reserves the right to require the Contractor to resubmit any item found not to comply with the contract. This does not relieve the Contractor from the obligation to furnish material conforming to the plans and specifications; will not prevent the Contracting Officer from requiring removal and replacement of nonconforming material incorporated in the work; and does not relieve the Contractor of the requirement to furnish samples for testing by the Government laboratory or for check testing by the Government in those instances where the technical specifications so prescribe.

-- End of Section --

CONTRACT NO.

[illegible]

CONTRACT NO.

[illegible]

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION

MMD North Adit Tunnel Repair

CONTRACTOR

[illegible]

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION

MMD North Adit Tunnel Repair

CONTRACTOR

[illegible]

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION

MMD North Adit Tunnel Reapir

CONTRACTOR

[illegible]

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SPECIAL PROJECT PROCEDURES

PART 1 GENERAL

1.1 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Certificate of Insurance; G, AO

Plan of Operations; G, AO

Additional Real Estate Rights

SD-02 Shop Drawings

Certificate of Insurance; G, AO

Notifications; G, AO

1.2 PERFORMANCE PERIOD AND RESTRICTIONS

Perform all work in a manner that plans and maintains the stability of the existing adit tunnel during the period of work.

1.2.1 Commencement

Complete the work in accordance with the milestone schedule below. The time stated for completion includes final clean-up of the premises.

Milestone	<u>Maximum Calendar Days After Receipt of Notice to Proceed</u>
Begin Work On-site	40
Complete Base Bid Work	180
Complete Option A Work	90

The Notice to Proceed will be issued on or about 21 September 2022

1.2.2 Construction Schedule

See section 01 32 16 CONSTRUCTION PROGRESS DOCUMENTATION.

1.2.3 Certificate of Insurance

Submit a Certificate of Insurance within 10 calendar days of receipt of the Notice of Award.

1.2.4 Time Extensions For Unusually Severe Weather

1. This provision specifies the procedures for determination of time extensions for unusually severe weather. If the following conditions are satisfied, the Contracting Officer will award a time extension:

a. The weather experienced at the project site during the contract period is found to be unusually severe, that is, more severe than the adverse weather anticipated for the project location during any given month.

b. The unusually severe weather actually causes a delay to the completion of the project. The delay is beyond the control and without the fault or negligence of the contractor.

2. The following schedule of monthly anticipated adverse weather delays is based on National Oceanic and Atmospheric Administration (NOAA) or similar data for the project location and will constitute the base line for monthly weather time evaluations. Reflect these anticipated adverse weather delays in all weather dependent activities on the contractor's progress schedule.

MONTHLY ANTICIPATED ADVERSE WEATHER DELAY WORK DAYS BASED ON (5) DAY WORK WEEK

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
14	9	7	5	6	6	4	4	6	6	6	9

3. Upon acknowledgment of the Notice to Proceed (NTP) and continuing throughout the contract, the contractor will record on the daily CQC report, the occurrence of adverse weather and resultant impact to normally scheduled work. Actual adverse weather delay days prevent work on critical activities for 50 percent or more of the contractor's scheduled work day. The number of actual adverse weather delay days includes days impacted by actual adverse weather (even if adverse weather occurred in previous month), is calculated chronologically from the first to the last day of each month, and is to be recorded as full days. If the number of actual adverse weather delay days exceeds the number of days anticipated in paragraph 2, above, the contracting officer will convert any qualifying delays to calendar days, giving full consideration for equivalent fair weather work days, and issue a modification in accordance with FAR 52.249-10 "Default (Fixed Price Construction)".

1.2.5 Contract Accruals

Submit a monthly listing of accruals. Accruals are used to provide projections of the incremental costs not yet paid for, but earned. Make the accrual submittal one week before the end of each month throughout the contract duration. Provide the accrual information for each line item of the Bidding Schedule.

1.2.6 Project/Site Conditions

1.2.6.1 Condition and Use of Project Site

The drawings indicate elevations and the reference drawings indicate the latest elevations at the project site. Give a notification of at least 5 calendar days to the Contracting Officer prior to bringing any equipment or material to the work site. The Contractor is responsible for damages that may be suffered due to their operations.

1.2.6.2 Physical Conditions

The physical conditions shown on the drawings are indicative of those that prevailed at the time of the site investigations and may be different than those at the time of construction.

1.2.6.3 Existing Structures, Equipment, Utilities & Improvements

General locations of applicable existing utilities, vegetation, structures, equipment and improvements, based upon latest information available to the Government have been shown on the drawings. However, it is the responsibility of the Contractor to establish the exact horizontal and vertical location and size of all existing utility lines which are located within the required work area. Confer with the owners of the crossings regarding their exact locations and elevations and the Contractor will be held responsible for any damages done to them by the construction operations. If the Contractor damages any existing utility line, vegetation, structure, equipment or improvement, make a report thereof immediately to the Contracting Officer. In any event, protect existing utility lines, vegetation, structures, equipment or improvements from damage, and if damaged, repair them at no cost to the Government.

1.2.6.4 Use of Local Roads

The Contractor will be responsible for making all arrangements (including approval of routes to be used and permits required) with all local Government officials or owners for use of public and private roads and streets for the operations, conform to all requirements regarding such use. All costs in connection with the use of local roads, including any repairs, are at no cost to the Government.

1.2.6.5 Plan of Operations

Perform the work in accordance with an approved plan of operations submitted by the Contractor. Include work schedules in the plan, and Notify the Contracting Officer at least 48 hours in advance of changes in work schedules. Provide a plan for the coordination of construction activities indicated in the specifications and shown on the contract drawings.

1.2.6.6 Restoration

Restore areas within the required work areas which are damaged by the Contractor's operations to the satisfaction of the contracting officer at no additional cost to the Government.

1.2.6.7 Notifications

Within 5 calendar days of completing the notifications required under this contract, submit to the Contracting Officer, written verification of these

notifications, including the date, time and the name of the point of contact with whom correspondence occurred. Send these notifications to:

NY/PA Area Office
1776 Niagara Street
Buffalo, NY 14207
Telephone: 716-879-4397

1.3 REAL ESTATE RIGHTS

Rights for the use of the work areas are shown on the contract drawings as contract limits. Copies of real estate agreements for use of the work and storage areas obtained prior to advertisement are included in the solicitation package, if applicable. No additional real estate rights are required to complete the project.

1.3.1 Additional Real Estate Rights

If additional real estate agreements, real estate rights, or both, are desired by the Contractor for work, storage and laydown, or disposal areas, the Contractor may obtain and utilize the agreements at no cost to the Government. Within all agreements, clearly relieve the Government of any potential responsibility for damages or liability resulting from the Contractors use of such grounds. Coordinate any additional agreements sought, and receive acknowledgement that they are sufficient from Real Estate Division, U.S. Army Corps of Engineers, Detroit District, 477 Michigan Avenue, McNamara Building, Detroit, Michigan 48226, prior to application and execution, to obtain guidance, examples, or both, of acceptable agreements. The acknowledgement will be dependent upon the Contractors conformance with Federal Requirements of Real Estate, Environmental, Legal, Contractual, Safety, or other laws which may be determined applicable by the Government. This review does not relieve the contractor from ensuring conformance with permits and responsibilities clause.

1.4 VETERANS EMPLOYMENT EMPHASIS FOR U.S. ARMY CORPS OF ENGINEERS CONTRACTS

In addition to complying with the requirements outlined in FAR Part 22.13, FAR Clause 52.222-35, FAR Clause 52.222-37, DFARS 222.13 and Department of Labor regulations, U.S. Army Corps of Engineers (USACE) contractors and subcontractors at all tiers are encouraged to promote the training and employment of U.S. veterans while performing under a USACE contract. While no set-aside, evaluation preference, or incentive applies to the solicitation or performance under the resultant contract, USACE contractors are encouraged to seek out highly qualified veterans to perform services under this contract. The following resources are available to assist USACE contractors in their outreach efforts:

U.S. Department of Labor Veterans employment:
www.vets.gov/

Federal veteran employment information:
www.fedshirevets.gov/index.aspx

Veterans' Employment and Training Service (VETS):
<http://www.dol.gov/vets/>

Veterans Opportunity to Work (VOW) Program:

<http://benefits.va.gov/vow/>

U.S. Army Warrior Transition Command Employment Index:
wtc.army.mil/modules/employers/index.html

Hiring Our Heroes initiative:
www.uschamberfoundation.org/hiring-our-heroes

Guide to Hiring Veterans link with:
https://obamawhitehouse.archives.gov/sites/default/files/docs/white_house_business_council_-_guide_to_hiring_veterans_0.pdf

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.1 CONTRACTOR RESPONSIBILITIES

a. The Contractor acknowledges that it has taken steps reasonably necessary to ascertain the nature and location of the work, and that it has investigated and satisfied itself as to the general and local conditions which can affect the work or its cost, including but not limited to:

(1) conditions bearing upon transportation, disposal, handling, and storage of materials;

(2) the availability of labor, water, electric power, and roads;

(3) uncertainties of weather, river stages, tides, or similar physical conditions at the site;

(4) the character of equipment and facilities needed preliminary to and during work performance.

b. The Contractor also acknowledges that it has satisfied itself 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, as well as from the drawings and specifications made a part of this contract. Any failure of the Contractor to take the actions described and acknowledged in this paragraph will not relieve the Contractor from responsibility for estimating properly the difficulty and cost of successfully performing the work, or for proceeding to successfully perform the work without additional expense to the Government.

c. The Government assumes no responsibility for any conclusions or interpretations made by the Contractor based on the information made available by the Government. Nor does the Government assume responsibility for any understanding reached or representation made concerning conditions which can affect the work by any of its officers or agents before the execution of this contract, unless that understanding or representation is expressly stated in this contract.

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GOVERNMENTAL SAFETY REQUIREMENTS

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)

ASME B30.3	(2020) Tower Cranes
ASME B30.5	(2018) Mobile and Locomotive Cranes
ASME B30.7	(2016) Winches
ASME B30.8	(2020) Floating Cranes and Floating Derricks
ASME B30.9	(2018) Slings
ASME B30.20	(2018) Below-the-Hook Lifting Devices
ASME B30.22	(2016) Articulating Boom Cranes
ASME B30.23	(2016) Personnel Lifting Systems Safety Standard for Cableways, Cranes, Derricks, Hoists, Hooks, Jacks, and Slings
ASME B30.26	(2015; R 2020) Rigging Hardware

AMERICAN SOCIETY OF SAFETY PROFESSIONALS (ASSP)

ASSP A10.22	(2007; R 2017) Safety Requirements for Rope-Guided and Non-Guided Workers' Hoists
ASSP A10.34	(2021) Protection of the Public on or Adjacent to Construction Sites
ASSP A10.44	(2020) Control of Energy Sources (Lockout/Tagout) for Construction and Demolition Operations
ASSP Z244.1	(2016) The Control of Hazardous Energy Lockout, Tagout and Alternative Methods
ASSP Z359.0	(2018) Definitions and Nomenclature Used for Fall Protection and Fall Arrest
ASSP Z359.1	(2020) The Fall Protection Code
ASSP Z359.2	(2017) Minimum Requirements for a

Comprehensive Managed Fall Protection Program

ASSP Z359.3	(2019) Safety Requirements for Lanyards and Positioning Lanyards
ASSP Z359.4	(2013) Safety Requirements for Assisted-Rescue and Self-Rescue Systems, Subsystems and Components
ASSP Z359.6	(2016) Specifications and Design Requirements for Active Fall Protection Systems
ASSP Z359.7	(2019) Qualification and Verification Testing of Fall Protection Products
ASSP Z359.11	(2014) Safety Requirements for Full Body Harnesses
ASSP Z359.12	(2019) Connecting Components for Personal Fall Arrest Systems
ASSP Z359.13	(2013) Personal Energy Absorbers and Energy Absorbing Lanyards
ASSP Z359.14	(2014) Safety Requirements for Self-Retracting Devices for Personal Fall Arrest and Rescue Systems
ASSP Z359.15	(2014) Safety Requirements for Single Anchor Lifelines and Fall Arresters for Personal Fall Arrest Systems
ASSP Z359.16	(2016) Safety Requirements for Climbing Ladder Fall Arrest Systems
ASSP Z359.18	(2017) Safety Requirements for Anchorage Connectors for Active Fall Protection Systems

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 10	(2018; ERTA 1-2 2018) Standard for Portable Fire Extinguishers
NFPA 51B	(2019; TIA 20-1) Standard for Fire Prevention During Welding, Cutting, and Other Hot Work
NFPA 70	(2020; ERTA 20-1 2020; ERTA 20-2 2020; TIA 20-1; TIA 20-2; TIA 20-3; TIA 20-4) National Electrical Code
NFPA 70E	(2021) Standard for Electrical Safety in the Workplace
NFPA 241	(2019) Standard for Safeguarding Construction, Alteration, and Demolition

Operations

NFPA 306 (2019) Standard for the Control of Gas Hazards on Vessels

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1 (2014) Safety and Health Requirements Manual

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

29 CFR 1910 Occupational Safety and Health Standards

29 CFR 1910.146 Permit-required Confined Spaces

29 CFR 1910.147 The Control of Hazardous Energy (Lock Out/Tag Out)

29 CFR 1910.333 Selection and Use of Work Practices

29 CFR 1915.89 Control of Hazardous Energy (Lockout/Tags-Plus)

29 CFR 1926 Safety and Health Regulations for Construction

29 CFR 1926.16 Rules of Construction

29 CFR 1926.500 Fall Protection

29 CFR 1926.552 Material Hoists, Personal Hoists, and Elevators

29 CFR 1926.553 Base-Mounted Drum Hoists

29 CFR 1926.1400 Cranes and Derricks in Construction

1.2 DEFINITIONS

1.2.1 Competent Person (CP)

The CP is a person designated in writing, who, through training, knowledge and experience, is capable of identifying, evaluating, and addressing existing and predictable hazards in the working environment or working conditions that are dangerous to personnel, and who has authorization to take prompt corrective measures with regards to such hazards.

1.2.2 Competent Person, Confined Space

The CP, Confined Space, is a person meeting the competent person requirements as defined EM 385-1-1 Appendix Q, with thorough knowledge of OSHA's Confined Space Standard, 29 CFR 1910.146, and designated in writing to be responsible for the immediate supervision, implementation and monitoring of the confined space program, who through training, knowledge and experience in confined space entry is capable of identifying, evaluating and addressing existing and potential confined space hazards and, who has the authority to take prompt corrective measures with regard to such hazards.

1.2.3 Competent Person, Cranes and Rigging

The CP, Cranes and Rigging, as defined in EM 385-1-1 Appendix Q, is a person meeting the competent person, who has been designated in writing to be responsible for the immediate supervision, implementation and monitoring of the Crane and Rigging Program, who through training, knowledge and experience in crane and rigging is capable of identifying, evaluating and addressing existing and potential hazards and, who has the authority to take prompt corrective measures with regard to such hazards.

1.2.4 Competent Person, Fall Protection

The CP, Fall Protection, is a person meeting the competent person requirements as defined in EM 385-1-1 Appendix Q and in accordance with ASSP Z359.0, who has been designated in writing by the employer to be responsible for immediate supervising, implementing and monitoring of the fall protection program, who through training, knowledge and experience in fall protection and rescue systems and equipment, is capable of identifying, evaluating and addressing existing and potential fall hazards and, who has the authority to take prompt corrective measures with regard to such hazards.

1.2.5 Competent Person (CP) Trainer

A competent person trainer as defined in EM 385-1-1 Appendix Q, who is qualified in the training material presented, and who possesses a working knowledge of applicable technical regulations, standards, equipment and systems related to the subject matter on which they are training Competent Persons. A competent person trainer must be familiar with the typical hazards and the equipment used in the industry they are instructing. The training provided by the competent person trainer must be appropriate to that specific industry. The competent person trainer must evaluate the knowledge and skills of the competent persons as part of the training process.

1.2.6 High Risk Activities

High Risk Activities are activities that involve work at heights, crane and rigging, excavations and trenching, scaffolding, electrical work, and confined space entry.

1.2.7 High Visibility Accident

A High Visibility Accident is any mishap which may generate publicity or high visibility.

1.2.8 Load Handling Equipment (LHE)

LHE is a term used to describe cranes, hoists and all other hoisting equipment (hoisting equipment means equipment, including crane, derricks, hoists and power operated equipment used with rigging to raise, lower or horizontally move a load).

1.2.9 Medical Treatment

Medical Treatment is treatment administered by a physician or by registered professional personnel under the standing orders of a physician. Medical treatment does not include first aid treatment even when provided by a

physician or registered personnel.

1.2.10 Near Miss

A Near Miss is a mishap resulting in no personal injury and zero property damage, but given a shift in time or position, damage or injury may have occurred (e.g., a worker falls off a scaffold and is not injured; a crane swings around to move the load and narrowly misses a parked vehicle).

1.2.11 Operating Envelope

The Operating Envelope is the area surrounding any crane or load handling equipment. Inside this "envelope" is the crane, the operator, riggers and crane walkers, other personnel involved in the operation, rigging gear between the hook, the load, the crane's supporting structure (i.e. ground or rail), the load's rigging path, the lift and rigging procedure.

1.2.12 Qualified Person (QP)

The QP is a person designated in writing, who, by possession of a recognized degree, certificate, or professional standing, or extensive knowledge, training, and experience, has successfully demonstrated their ability to solve or resolve problems related to the subject matter, the work, or the project.

1.2.13 Qualified Person, Fall Protection (QP for FP)

A QP for FP is a person meeting the definition requirements of EM 385-1-1 Appendix Q, and ASSP Z359.2 standard, having a recognized degree or professional certificate and with extensive knowledge, training and experience in the fall protection and rescue field who is capable of designing, analyzing, and evaluating and specifying fall protection and rescue systems.

1.2.14 Recordable Injuries or Illnesses

Recordable Injuries or Illnesses are any work-related injury or illness that results in:

- a. Death, regardless of the time between the injury and death, or the length of the illness;
- b. Days away from work (any time lost after day of injury/illness onset);
- c. Restricted work;
- d. Transfer to another job;
- e. Medical treatment beyond first aid;
- f. Loss of consciousness; or
- g. A significant injury or illness diagnosed by a physician or other licensed health care professional, even if it did not result in (a) through (f) above

1.2.15 Government Property and Equipment

Interpret "USACE" property and equipment specified in USACE EM 385-1-1 as

Government property and equipment.

1.2.16 Load Handling Equipment (LHE) Accident or Load Handling Equipment Mishap

A LHE accident occurs when any one or more of the eight elements in the operating envelope fails to perform correctly during operation, including operation during maintenance or testing resulting in personnel injury or death; material or equipment damage; dropped load; derailment; two-blocking; overload; or collision, including unplanned contact between the load, crane, or other objects. A dropped load, derailment, two-blocking, overload and collision are considered accidents, even though no material damage or injury occurs. A component failure (e.g., motor burnout, gear tooth failure, bearing failure) is not considered an accident solely due to material or equipment damage unless the component failure results in damage to other components (e.g., dropped boom, dropped load, or roll over). Document an LHE mishap using the Crane High Hazard working group mishap reporting form.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

APP - Construction; G, SO

Accident Prevention Plan (APP); G, SO

Accident Prevention Plan Checklist; G, SO

SD-06 Test Reports

Monthly Exposure Reports

Notifications and Reports

Accident Reports; G, SO

LHE Inspection Reports

SD-07 Certificates

Crane Operators/Riggers

Standard Lift Plan; G, SO

Critical Lift Plan; G, SO

Activity Hazard Analysis (AHA)

Confined Space Entry Permit

Hot Work Permit

Certificate of Compliance

1.4 MONTHLY EXPOSURE REPORTS

Provide a Monthly Exposure Report and attach to the monthly billing request. This report is a compilation of employee-hours worked each month for all site workers, both Prime and subcontractor. Failure to submit the report may result in retention of up to 10 percent of the voucher.

1.5 REGULATORY REQUIREMENTS

In addition to the detailed requirements included in the provisions of this Contract, comply with the most recent edition of USACE EM 385-1-1, and the following federal, state, and local laws, ordinances, criteria, rules and regulations. Submit matters of interpretation of standards to the appropriate administrative agency for resolution before starting work. Where the requirements of this specification, applicable laws, criteria, ordinances, regulations, and referenced documents vary, the most stringent requirements govern.

1.6 SITE QUALIFICATIONS, DUTIES, AND MEETINGS

1.6.1 Personnel Qualifications

1.6.1.1 Site Safety and Health Officer (SSHO)

Provide an SSHO that meets the requirements of EM 385-1-1 Section 1. The SSHO must ensure that the requirements of 29 CFR 1926.16 are met for the project. Provide a Safety oversight team that includes a minimum of one person at each project site to function as the Site Safety and Health Officer (SSHO). The SSHO or an equally-qualified Alternate SSHO must be at the work site at all times to implement and administer the Contractor's safety program and Government-accepted Accident Prevention Plan. The SSHO and Alternate SSHO must have the required training, experience, and qualifications in accordance with EM 385-1-1 Section 01.A.17, and all associated sub-paragraphs.

1.6.1.1.1 Additional Site Safety and Health Officer (SSHO) Requirements and Duties

The SSHO may also serve as the Quality Control Manager. The SSHO may not serve as the Superintendent.

1.6.1.2 Competent Person Qualifications

a. Provide Competent Persons in accordance with EM 385-1-1, Appendix Q and herein. Competent Persons for high risk activities include confined space, cranes and rigging, excavation/trenching, fall protection, and electrical work. The CP for these activities must be designated in writing, and meet the requirements for the specific activity (i.e. competent person, fall protection).

b. The Competent Person identified in the Contractor's Safety and Health Program and accepted Accident Prevention Plan, must be on-site at all times

when the work that presents the hazards associated with their professional expertise is being performed. Provide the credentials of the Competent Persons(s) to the Contracting Officer for information in consultation with the Safety Office.

1.6.1.2.1 Competent Person for Confined Space Entry

a. Provide a Confined Space (CP) Competent Person who meets the requirements of EM 385-1-1, Appendix Q, and herein. The CP for Confined Space Entry must supervise the entry into each confined space in accordance with EM 385-1-1, Section 34.

b. Since this work involves operations that handle combustible or hazardous materials, this person must have the ability to understand and follow through on the air sampling, Personal Protective Equipment (PPE), and instructions of a Marine Chemist, Coast Guard authorized persons, or Certified Industrial Hygienist. Confined space and enclosed space work must comply with NFPA 306, Subpart B, "Confined and Enclosed Spaces and Other Dangerous Atmospheres in Shipyard Employment," or as applicable, 29 CFR 1910.147 for general industry.

1.6.1.2.2 Competent Person for Fall Protection

Provide a Competent Person for Fall Protection who meets the requirements of EM 385-1-1, Section 21.C.04, 21.B.03, and herein.

1.6.1.3 Qualified Trainer Requirements

a. Individuals qualified to instruct the 40 hour contract safety awareness course, or portions thereof, must meet the definition of a Competent Person Trainer, and, at a minimum, possess a working knowledge of the following subject areas: EM 385-1-1, Electrical Standards, Lockout/Tagout, Fall Protection, Confined Space Entry for Construction; Excavation, Trenching and Soil Mechanics.

b. Instructors are required to:

- (1) Prepare class presentations that cover construction-related safety requirements.
- (2) Ensure that all attendees attend all sessions by using a class roster signed daily by each attendee. Maintain copies of the roster for at least five years. This is a certification class and must be attended 100 percent. In cases of emergency where an attendee cannot make it to a session, the attendee can make it up in another class session for the same subject.
- (3) Update training course materials whenever an update of the EM 385-1-1 becomes available.
- (4) Provide a written exam of at least 50 questions. Students are required to answer 80 percent correctly to pass.
- (5) Request, review and incorporate student feedback into a continuous course improvement program.

1.6.1.4 Crane Operators/Riggers

Provide Operators, Signal Persons, and Riggers meeting the requirements in

EM 385-1-1, Section 15.B for Riggers and Section 16.B for Crane Operators and Signal Persons. In addition, for mobile cranes with Original Equipment Manufacturer (OEM) rated capacities of 50,000 pounds or greater, designate crane operators qualified by a source that qualifies crane operators (i.e., union, a Government agency, or an organization that tests and qualifies crane operators). Provide proof of current qualification.

1.6.2 Personnel Duties

1.6.2.1 Duties of the Site Safety and Health Officer (SSHO)

a. The SSHO must:

- (1) Conduct daily safety and health inspections and maintain a written log which includes area/operation inspected, date of inspection, identified hazards, recommended corrective actions, estimated and actual dates of corrections. Attach safety inspection logs to the Contractors' daily production report.
- (2) Conduct mishap investigations and complete required accident reports. Report mishaps and near misses.
- (3) Use and maintain OSHA's Form 300 to log work-related injuries and illnesses occurring on the project site for Prime Contractors and subcontractors, and make available to the Contracting Officer upon request. Post and maintain the Form 300A on the site Safety Bulletin Board.
- (4) Maintain applicable safety reference material on the job site.
- (5) Attend the pre-construction conference, pre-work meetings including preparatory meetings, and periodic in-progress meetings.
- (6) Review the APP and AHAs for compliance with EM 385-1-1, and approve, sign, implement and enforce them.
- (7) Establish a Safety and Occupational Health (SOH) Deficiency Tracking System that lists and monitors outstanding deficiencies until resolution.
- (8) Ensure subcontractor compliance with safety and health requirements.
- (9) Maintain a list of hazardous chemicals on site and their material Safety Data Sheets (SDS).
- (10) Maintain a weekly list of high hazard activities involving energy, equipment, excavation, entry into confined space, and elevation, and be prepared to discuss details during QC Meetings.
- (11) Provide and keep a record of site safety orientation and indoctrination for Contractor employees, subcontractor employees, and site visitors.

b. Superintendent, QC Manager, and SSHO are subject to dismissal if the above or any other required duties are not being effectively carried out. If either the Superintendent, QC Manager, or SSHO are dismissed, project work will be stopped and will not be allowed to resume until a suitable replacement is approved and the above duties are again being effectively carried out.

1.6.3 Meetings

1.6.3.1 Preconstruction Conference

- a. Contractor representatives who have a responsibility or significant role in accident prevention on the project must attend the preconstruction conference. This includes the project superintendent, Site Safety and Occupational Health Officer, quality control manager, or any other assigned safety and health professionals who participated in the development of the APP (including the Activity Hazard Analyses (AHAs) and special plans, program and procedures associated with it).
- b. Discuss the details of the submitted APP to include incorporated plans, programs, procedures and a listing of anticipated AHAs that will be developed and implemented during the performance of the Contract. This list of proposed AHAs will be reviewed and an agreement will be reached between the Contractor and the Contracting Officer as to which phases will require an analysis. In addition, establish a schedule for the preparation, submittal, and Government review of AHAs to preclude project delays.
- c. Deficiencies in the submitted APP, identified during the Contracting Officer's review, must be corrected, and the APP re-submitted for review prior to the start of construction. Work is not permitted to begin until an APP is established that is acceptable to the Contracting Officer.

1.6.3.2 Safety Meetings

Conduct safety meetings to review past activities, plan for new or changed operations, review pertinent aspects of appropriate AHA (by trade), establish safe working procedures for anticipated hazards, and provide pertinent Safety and Occupational Health (SOH) training and motivation. Conduct meetings at least once a month for all supervisors at the project location. The SSHO, supervisors, foremen, or CDSOs must conduct meetings at least once a week for the trade workers. Document meeting minutes to include the date, persons in attendance, subjects discussed, and names of individual(s) who conducted the meeting. Maintain documentation on-site and furnish copies to the Contracting Officer on request. Notify the Contracting Officer of all scheduled meetings 7 calendar days in advance.

1.7 ACCIDENT PREVENTION PLAN (APP)

1.7.1 APP - Construction

- a. A qualified person must prepare the written site-specific APP. Prepare the APP in accordance with the format and requirements of EM 385-1-1 Section 01.A.12, Appendix A, and as supplemented herein. Complete and Submit APP with the Accident Prevention Plan Checklist, EM 385-1-1 Form A-01 or A-02 or local checklist as required in contractual documents. The APP must be job-specific and address any unusual or unique aspects of the project or activity for which it is written. The APP must interface with the Contractor's overall safety and health program referenced in the APP in the applicable APP element, and made site-specific. Describe the methods to evaluate past safety performance of potential subcontractors in the selection process. Also, describe innovative methods used to ensure and monitor safe work practices of subcontractors. The Government considers the Prime Contractor to be the "controlling authority" for all work site

safety and health of the subcontractors. Contractors are responsible for informing their subcontractors of the safety provisions under the terms of the Contract and the penalties for noncompliance, coordinating the work to prevent one craft from interfering with or creating hazardous working conditions for other crafts, and inspecting subcontractor operations to ensure that accident prevention responsibilities are being carried out. The APP must be signed by an officer of the firm (Prime Contractor senior person), the individual preparing the APP, the on-site superintendent, the designated SSHO, the Contractor Quality Control Manager, and any designated Certified Safety Professional (CSP) or Certified Health Physicist (CIH). The SSHO must provide and maintain the APP and a log of signatures by each subcontractor foreman, attesting that they have read and understand the APP, and make the APP and log available on-site to the Contracting Officer. If English is not the foreman's primary language, the Prime Contractor must provide an interpreter.

b. Submit the APP to the Contracting Officer 15 calendar days prior to the date of the preconstruction conference for acceptance. Work cannot proceed without an accepted APP. Once reviewed and accepted by the Contracting Officer, the APP and attachments will be enforced as part of the Contract. Disregarding the provisions of this Contract or the accepted APP is cause for stopping of work, at the discretion of the Contracting Officer, until the matter has been rectified. Continuously review and amend the APP, as necessary, throughout the life of the Contract. Changes to the accepted APP must be made with the knowledge and concurrence of the Contracting Officer, project superintendent, SSHO and Quality Control Manager. Incorporate unusual or high-hazard activities not identified in the original APP as they are discovered. Should any severe hazard exposure (i.e. imminent danger) become evident, stop work in the area, secure the area, and develop a plan to remove the exposure and control the hazard. Notify the Contracting Officer within 24 hours of discovery. Eliminate and remove the hazard. In the interim, take all necessary action to restore and maintain safe working conditions in order to safeguard onsite personnel, visitors, the public (as defined by ASSP A10.34), and the environment.

1.7.2 Names and Qualifications

Provide plans in accordance with the requirements outlined in Appendix A of EM 385-1-1, including the following:

- a. Names and qualifications (resumes including education, training, experience and certifications) of site safety and health personnel designated to perform work on this project to include the designated Site Safety and Health Officer and other competent and qualified personnel to be used. Specify the duties of each position.
- b. Qualifications of competent and of qualified persons. As a minimum, designate and submit qualifications of competent persons for each of the following major areas: excavation; scaffolding; fall protection; hazardous energy; confined space; health hazard recognition, evaluation and control of chemical, physical and biological agents; and personal protective equipment and clothing to include selection, use and maintenance.

1.7.3 Plans

Provide plans in the APP in accordance with the requirements outlined in Appendix A of EM 385-1-1, including the following:

1.7.3.1 Confined Space Entry Plan

Develop a confined or enclosed space entry plan in accordance with EM 385-1-1, applicable OSHA standards 29 CFR 1910, and 29 CFR 1926, and any other federal, state and local regulatory requirements identified in this Contract. Identify the qualified person's name and qualifications, training, and experience. Delineate the qualified person's authority to direct work stoppage in the event of hazardous conditions. Include procedure for rescue by Contractor personnel and the coordination with emergency responders. (If there is no confined space work, include a statement that no confined space work exists and none will be created.)

1.7.3.2 Standard Lift Plan (SLP)

Plan lifts to avoid situations where the operator cannot maintain safe control of the lift. Prepare a written SLP in accordance with EM 385-1-1, Section 16.A.03, using Form 16-2 for every lift or series of lifts (if duty cycle or routine lifts are being performed). The SLP must be developed, reviewed and accepted by all personnel involved in the lift in conjunction with the associated AHA. Signature on the AHA constitutes acceptance of the plan. Maintain the SLP on the LHE for the current lift(s) being made. Maintain historical SLPs for a minimum of three months.

1.7.3.3 Critical Lift Plan - Crane or Load Handling Equipment

Provide a Critical Lift Plan as required by EM 385-1-1, Section 16.H.01, using Form 16-3. In addition, Critical Lift Plans are required for the following:

- a. Lifts over 50 percent of the capacity of barge mounted mobile crane's hoist.
- b. When working around energized power lines where the work will get closer than the minimum clearance distance in EM 385-1-1 Table 16-1.
- c. For lifts with anticipated binding conditions.
- d. When erecting cranes.

1.7.3.3.1 Critical Lift Plan Planning and Schedule

Critical lifts require detailed planning and additional or unusual safety precautions. Develop and submit a critical lift plan to the Contracting Officer 30 calendar days prior to critical lift. Comply with load testing requirements in accordance with EM 385-1-1, Section 16.F.03.

1.7.3.3.2 Lifts of Personnel

In addition to the requirements of EM 385-1-1, Section 16.H.02, for lifts of personnel, demonstrate compliance with the requirements of 29 CFR 1926.1400 and EM 385-1-1, Section 16.T.

1.7.3.4 Multi-Purpose Machines, Material Handling Equipment, and Construction Equipment Lift Plan

Multi-purpose machines, material handling equipment, and construction equipment used to lift loads that are suspended by rigging gear, require proof of authorization from the machine OEM that the machine is capable of

making lifts of loads suspended by rigging equipment. Written approval from a qualified registered professional engineer, after a safety analysis is performed, is allowed in lieu of the OEM's approval. Demonstrate that the operator is properly trained and that the equipment is properly configured to make such lifts and is equipped with a load chart.

1.7.3.5 Fall Protection and Prevention (FP&P) Plan

The plan must be in accordance with the requirements of EM 385-1-1, Section 21.D and ASSP Z359.2, be site specific, and address all fall hazards in the work place and during different phases of construction. Address how to protect and prevent workers from falling to lower levels when they are exposed to fall hazards above 6 feet. A competent person or qualified person for fall protection must prepare and sign the plan documentation. Include fall protection and prevention systems, equipment and methods employed for every phase of work, roles and responsibilities, assisted rescue, self-rescue and evacuation procedures, training requirements, and monitoring methods. Review and revise, as necessary, the Fall Protection and Prevention Plan documentation as conditions change, but at a minimum every six months, for lengthy projects, reflecting any changes during the course of construction due to changes in personnel, equipment, systems or work habits. Keep and maintain the accepted Fall Protection and Prevention Plan documentation at the job site for the duration of the project. Include the Fall Protection and Prevention Plan documentation in the Accident Prevention Plan (APP).

1.7.3.6 Rescue and Evacuation Plan

Provide a Rescue and Evacuation Plan in accordance with EM 385-1-1 Section 21.N and ASSP Z359.2, and include in the FP&P Plan and as part of the APP. Include a detailed discussion of the following: methods of rescue; methods of self-rescue; equipment used; training requirement; specialized training for the rescuers; procedures for requesting rescue and medical assistance; and transportation routes to a medical facility.

1.7.3.7 Hazardous Energy Control Program (HECP)

Develop a HECP in accordance with EM 385-1-1 Section 12, 29 CFR 1910.147, 29 CFR 1910.333, 29 CFR 1915.89, ASSP Z244.1, and ASSP A10.44. Submit this HECP as part of the Accident Prevention Plan (APP). Conduct a preparatory meeting and inspection with all effected personnel to coordinate all HECP activities. Document this meeting and inspection in accordance with EM 385-1-1, Section 12.A.02. Ensure that each employee is familiar with and complies with these procedures.

1.8 ACTIVITY HAZARD ANALYSIS (AHA)

a. Before beginning each activity, task or Definable Feature of Work (DFOW) involving a type of work presenting hazards not experienced in previous project operations, or where a new work crew or subcontractor is to perform the work, the Contractor(s) performing that work activity must prepare an AHA. AHAs must be developed by the Prime Contractor, subcontractor, or supplier performing the work, and provided for Prime Contractor review and approval before submitting to the Contracting Officer. AHAs must be signed by the SSHO, Superintendent, QC Manager and the subcontractor Foreman performing the work. Format the AHA in accordance with EM 385-1-1, Section 1 or as directed by the Contracting Officer. Submit the AHA for review at least 15 working days prior to the start of each activity task, or DFOW. The Government reserves the right to require the Contractor to revise and

resubmit the AHA if it fails to effectively identify the work sequences, specific anticipated hazards, site conditions, equipment, materials, personnel and the control measures to be implemented.

b. AHAs must identify competent persons required for phases involving high risk activities, including confined entry, crane and rigging, excavations, trenching, electrical work, fall protection, and scaffolding.

1.8.1 AHA Management

Review the AHA list periodically (at least monthly) at the Contractor supervisory safety meeting, and update as necessary when procedures, scheduling, or hazards change. Use the AHA during daily inspections by the SSHO to ensure the implementation and effectiveness of the required safety and health controls for that work activity.

1.8.2 AHA Signature Log

Each employee performing work as part of an activity, task or DFOV must review the AHA for that work and sign a signature log specifically maintained for that AHA prior to starting work on that activity. The SSHO must maintain a signature log on site for every AHA. Provide employees whose primary language is other than English, with an interpreter to ensure a clear understanding of the AHA and its contents.

1.9 DISPLAY OF SAFETY INFORMATION

1.9.1 Safety Bulletin Board

Prior to commencement of work, erect a safety bulletin board at the job site. Where size, duration, or logistics of project do not facilitate a bulletin board, an alternative method, acceptable to the Contracting Officer, that is accessible and includes all mandatory information for employee and visitor review, may be deemed as meeting the requirement for a bulletin board. Include and maintain information on safety bulletin board as required by EM 385-1-1, Section 01.A.07. Additional items required to be posted include:

- a. Confined space entry permit.
- b. Hot work permit.

1.9.2 Safety and Occupational Health (SOH) Deficiency Tracking System

Establish a SOH deficiency tracking system that lists and monitors the status of SOH deficiencies in chronological order. Use the tracking system to evaluate the effectiveness of the APP. A monthly evaluation of the data must be discussed in the QC or SOH meeting with everyone on the project. The list must be posted on the project bulletin board and updated daily, and provide the following information:

- a. Date deficiency identified;
- b. Description of deficiency;
- c. Name of person responsible for correcting deficiency;
- d. Projected resolution date;

e. Date actually resolved.

1.10 SITE SAFETY REFERENCE MATERIALS

Maintain safety-related references applicable to the project, including those listed in paragraph REFERENCES. Maintain applicable equipment manufacturer's manuals.

1.11 EMERGENCY MEDICAL TREATMENT

Contractors must arrange for their own emergency medical treatment in accordance with EM 385-1-1. Government has no responsibility to provide emergency medical treatment.

1.12 NOTIFICATIONS and REPORTS

1.12.1 Mishap Notification

a. Notify the Contracting Officer as soon as practical, but no more than four hours, after any mishaps, including recordable accidents, incidents, and near misses, as defined in EM 385-1-1 Appendix Q, any report of injury, illness, or any property damage. For LHE or rigging mishaps, notify the Contracting Officer as soon as practical but not more than four hours after mishap. The Contractor is responsible for obtaining appropriate medical and emergency assistance and for notifying fire, law enforcement, and regulatory agencies. Immediate reporting is required for electrical mishaps, to include Arc Flash; shock; uncontrolled release of hazardous energy (includes electrical and non-electrical); load handling equipment or rigging; fall from height (any level other than same surface); and underwater diving. These mishaps must be investigated in depth to identify all causes and to recommend hazard control measures.

b. Within notification include Contractor name; Contract title; type of Contract; name of activity, installation or location where accident occurred; date and time of accident; names of personnel injured; extent of property damage, if any; extent of injury, if known, and brief description of accident (for example, type of construction equipment used and PPE used). Preserve the conditions and evidence on the accident site until the Government investigation team arrives on-site and Government investigation is conducted. Assist and cooperate fully with the Government's investigation(s) of any mishap.

1.12.2 Accident Reports

a. Conduct an accident investigation for recordable injuries and illnesses, property damage, and near misses as defined in EM 385-1-1, to establish the root cause(s) of the accident. Complete the applicable USACE Accident Report Form 3394, and provide the report to the Contracting Officer within 5 calendar days of the accident. The Contracting Officer will provide copies of any required or special forms.

b. Near Misses: For Army projects, report all "Near Misses" to the GDA, using local mishap reporting procedures, within 24 hrs. The Contracting Officer will provide the Contractor the required forms. Near miss reports are considered positive and proactive Contractor safety management actions.

c. Conduct an accident investigation for any load handling equipment

accident (including rigging accidents) to establish the root cause(s) of the accident. Complete the LHE Accident Report (Crane and Rigging Accident Report) form and provide the report to the Contracting Officer within 30 calendar days of the accident. Do not proceed with crane operations until cause is determined and corrective actions have been implemented to the satisfaction of the Contracting Officer. The Contracting Officer will provide a blank copy of the accident report form.

1.12.3 LHE Inspection Reports

Submit LHE inspection reports required in accordance with EM 385-1-1 and as specified herein with Daily Reports of Inspections.

1.12.4 Certificate of Compliance and Pre-lift Plan/Checklist for LHE and Rigging

a. Provide a FORM 16-1 Certificate of Compliance for LHE entering an activity under this Contract and in accordance with EM 385-1-1. Post certifications on the crane.

b. Develop a Standard Lift Plan (SLP) in accordance with EM 385-1-1, Section 16.H.03 using Form 16-2 Standard Pre-Lift Crane Plan/Checklist for each lift planned. Submit SLP to the Contracting Officer for approval within 15 calendar days in advance of planned lift.

1.13 HOT WORK

1.13.1 Permit and Personnel Requirements

a. Submit and obtain a written permit prior to performing "Hot Work" (i.e. welding or cutting) or operating other flame-producing/spark producing devices, from the Fire Division. A permit is required from the Explosives Safety Office for work in and around where explosives are processed, stored, or handled. CONTRACTORS ARE REQUIRED TO MEET ALL CRITERIA BEFORE A PERMIT IS ISSUED. Provide at least two 20 pound 4A:20 BC rated extinguishers for normal "Hot Work". The extinguishers must be current inspection tagged, and contain an approved safety pin and tamper resistant seal. It is also mandatory to have a designated FIRE WATCH for any "Hot Work" done at this activity. The Fire Watch must be trained in accordance with NFPA 51B and remain on-site for a minimum of one hour after completion of the task or as specified on the hot work permit.

b. When starting work in the facility, require personnel to familiarize themselves with the location of the nearest fire alarm boxes and place in memory the emergency Fire Division phone number. REPORT ANY FIRE, NO MATTER HOW SMALL, TO THE RESPONSIBLE FIRE DIVISION IMMEDIATELY.

1.13.2 Work Around Flammable Materials

a. Obtain permit approval from a NFPA Certified Marine Chemist for "HOT WORK" within or around flammable materials (such as fuel systems or welding/cutting on fuel pipes) or confined spaces (such as sewer wet wells, manholes, or vaults) that have the potential for flammable or explosive atmospheres.

b. Whenever these materials, except beryllium and chromium (VI), are encountered in indoor operations, local mechanical exhaust ventilation systems that are sufficient to reduce and maintain personal exposures to

within acceptable limits must be used and maintained in accordance with manufacturer's instruction and supplemented by exceptions noted in EM 385-1-1, Section 06.H

1.14 CONFINED SPACE ENTRY REQUIREMENTS

Confined space entry must comply with Section 34 of EM 385-1-1, OSHA 29 CFR 1926, OSHA 29 CFR 1910, OSHA 29 CFR 1910.146. Any potential for a hazard in the confined space requires a permit system to be used.

1.14.1 Entry Procedures

Prohibit entry into a confined space by personnel for any purpose, including hot work, until the qualified person has conducted appropriate tests to ensure the confined or enclosed space is safe for the work intended and that all potential hazards are controlled or eliminated and documented. Comply with EM 385-1-1, Section 34 for entry procedures. Hazards pertaining to the space must be reviewed with each employee during review of the AHA.

1.14.2 Forced Air Ventilation

Forced air ventilation is required for all confined space entry operations and the minimum air exchange requirements must be maintained to ensure exposure to any hazardous atmosphere is kept below its action level.

1.14.3 Sewer Wet Wells

Sewer wet wells require continuous atmosphere monitoring with audible alarm for toxic gas detection.

1.14.4 Rescue Procedures and Coordination with Local Emergency Responders

Develop and implement an on-site rescue and recovery plan and procedures. The rescue plan must not rely on local emergency responders for rescue from a confined space.

1.15 SEVERE STORM PLAN

In the event of a severe storm warning, the Contractor must comply with the applicable Storm Plan and:

- a. Secure outside equipment and materials and place materials that could be damaged in protected areas.
- b. Check surrounding area, including roof, for loose material, equipment, debris, and other objects that could be blown away or against existing facilities.
- c. Ensure that temporary erosion controls are adequate.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.1 CONSTRUCTION AND OTHER WORK

a. Comply with EM 385-1-1, NFPA 70, NFPA 70E, NFPA 241, the APP, the AHA, Federal and State OSHA regulations, and other related submittals and activity fire and safety regulations. The most stringent standard prevails.

b. PPE is governed in all areas by the nature of the work the employee is performing. Use personal hearing protection at all times in designated noise hazardous areas or when performing noise hazardous tasks. Safety glasses must be worn or carried/available on each person. Mandatory PPE includes:

- (1) Hard Hat
- (2) Long Pants
- (3) Appropriate Safety Shoes
- (4) Appropriate Class Reflective Vests

3.1.1 Worksite Communication

Employees working alone in a remote location or away from other workers must be provided an effective means of emergency communications (i.e., cellular phone, two-way radios, land-line telephones or other acceptable means). The selected communication must be readily available (easily within the immediate reach) of the employee and must be tested prior to the start of work to verify that it effectively operates in the area/environment. Develop an employee check-in/check-out communication procedure to ensure employee safety.

3.1.2 Hazardous Material Exclusions

Notwithstanding any other hazardous material used in this Contract, radioactive materials or instruments capable of producing ionizing/non-ionizing radiation (with the exception of radioactive material and devices used in accordance with EM 385-1-1 such as nuclear density meters for compaction testing and laboratory equipment with radioactive sources) as well as materials which contain asbestos, mercury or polychlorinated biphenyls, di-isocyanates, lead-based paint, and hexavalent chromium, are prohibited. The Contracting Officer, upon written request by the Contractor, may consider exceptions to the use of any of the above excluded materials. Low mercury lamps used within fluorescent lighting fixtures are allowed as an exception without further Contracting Officer approval. Notify the Radiation Safety Officer (RSO) prior to excepted items of radioactive material and devices being brought on base.

3.1.3 Unforeseen Hazardous Material

Contract documents identify materials such as PCB, lead paint, and friable and non-friable asbestos and other OSHA regulated chemicals (i.e. 29 CFR Part 1910.1000). If material(s) that may be hazardous to human health upon disturbance are encountered during construction operations, stop that portion of work and notify the Contracting Officer immediately. Within 14 calendar days the Government will determine if the material is hazardous. If material is not hazardous or poses no danger, the Government will direct the Contractor to proceed without change. If material is hazardous and

handling of the material is necessary to accomplish the work, the Government will issue a modification pursuant to FAR 52.243-4 Changes and FAR 52.236-2 Differing Site Conditions.

3.2 CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT)

Provide and operate a Hazardous Energy Control Program (HECP) in accordance with EM 385-1-1 Section 12, 29 CFR 1910.333, 29 CFR 1915.89, ASSP A10.44, NFPA 70E, and paragraph HAZARDOUS ENERGY CONTROL PROGRAM (HECP).

3.2.1 Safety Preparatory Inspection Coordination Meeting with the Government or Utility

For electrical distribution equipment that is to be operated by Government or Utility personnel, the Prime Contractor and the subcontractor performing the work must attend the safety preparatory inspection coordination meeting, which will also be attended by the Contracting Officer's Representative, and required by EM 385-1-1, Section 12.A.02. The meeting will occur immediately preceding the start of work and following the completion of the outage coordination meeting. Both the safety preparatory inspection coordination meeting and the outage coordination meeting must occur prior to conducting the outage and commencing with lockout/tagout procedures.

3.2.2 Lockout/Tagout Isolation

Where the Government or Utility performs equipment isolation and lockout/tagout, the Contractor must place their own locks and tags on each energy-isolating device and proceed in accordance with the HECP. Before any work begins, both the Contractor and the Government or Utility must perform energy isolation verification testing while wearing required PPE detailed in the Contractor's AHA and required by EM 385-1-1, Sections 05.I and 11.B. Install personal protective grounds, with tags, to eliminate the potential for induced voltage in accordance with EM 385-1-1, Section 12.E.06.

3.2.3 Lockout/Tagout Removal

Upon completion of work, conduct lockout/tagout removal procedure in accordance with the HECP. In accordance with EM 385-1-1, Section 12.E.08, each lock and tag must be removed from each energy isolating device by the authorized individual or systems operator who applied the device. Provide formal notification to the Government (by completing the Government form if provided by Contracting Officer's Representative), confirming that steps of de-energization and lockout/tagout removal procedure have been conducted and certified through inspection and verification. Government or Utility locks and tags used to support the Contractor's work will not be removed until the authorized Government employee receives the formal notification.

3.3 FALL PROTECTION PROGRAM

Establish a fall protection program, for the protection of all employees exposed to fall hazards. Within the program include company policy, identify roles and responsibilities, education and training requirements, fall hazard identification, prevention and control measures, inspection, storage, care and maintenance of fall protection equipment and rescue and evacuation procedures in accordance with ASSP Z359.2 and EM 385-1-1, Sections 21.A and 21.D.

3.3.1 Training

Institute a fall protection training program. As part of the Fall Protection Program, provide training for each employee who might be exposed to fall hazards and using personal fall protection equipment. Provide training by a competent person for fall protection in accordance with EM 385-1-1, Section 21.C. Document training and practical application of the competent person in accordance with EM 385-1-1, Section 21.C.04 and ASSP Z359.2 in the AHA.

3.3.2 Fall Protection Equipment and Systems

a. Enforce use of personal fall protection equipment and systems designated (to include fall arrest, restraint, and positioning) for each specific work activity in the Site Specific Fall Protection and Prevention Plan and AHA at all times when an employee is exposed to a fall hazard. Protect employees from fall hazards as specified in EM 385-1-1, Section 21.

b. Provide personal fall protection equipment, systems, subsystems, and components that comply with EM 385-1-1 Section 21.I, 29 CFR 1926.500 Subpart M, ASSP Z359.0, ASSP Z359.1, ASSP Z359.2, ASSP Z359.3, ASSP Z359.4, ASSP Z359.6, ASSP Z359.7, ASSP Z359.11, ASSP Z359.12, ASSP Z359.13, ASSP Z359.14, ASSP Z359.15, ASSP Z359.16 and ASSP Z359.18.

3.3.2.1 Additional Personal Fall Protection Measures

In addition to the required fall protection systems, other protective measures such as safety skiffs, personal floatation devices, and life rings, are required when working above or next to water in accordance with EM 385-1-1, Sections 21.O through 21.O.06. Personal fall protection systems and equipment are required when working from an articulating or extendible boom, swing stages, or suspended platform. In addition, personal fall protection systems are required when operating other equipment such as scissor lifts. The need for tying-off in such equipment is to prevent ejection of the employee from the equipment during raising, lowering, travel, or while performing work.

3.3.2.2 Personal Fall Protection Equipment

Only a full-body harness with a shock-absorbing lanyard or self-retracting lanyard is an acceptable personal fall arrest body support device. The use of body belts is not acceptable. Harnesses must have a fall arrest attachment affixed to the body support (usually a Dorsal D-ring) and specifically designated for attachment to the rest of the system. Snap hooks and carabineers must be self-closing and self-locking, capable of being opened only by at least two consecutive deliberate actions and have a minimum gate strength of 3,600 lbs in all directions. Use webbing, straps, and ropes made of synthetic fiber. The maximum free fall distance when using fall arrest equipment must not exceed 6 feet, unless the proper energy absorbing lanyard is used. Always take into consideration the total fall distance and any swinging of the worker (pendulum-like motion), that can occur during a fall, when attaching a person to a fall arrest system. Equip all full body harnesses with Suspension Trauma Preventers such as stirrups, relief steps, or similar in order to provide short-term relief from the effects of orthostatic intolerance in accordance with EM 385-1-1, Section 21.I.06.

3.3.3 Guardrails and Safety Nets

Design, install and use guardrails and safety nets in accordance with EM 385-1-1, Section 21.F.01 and 29 CFR 1926 Subpart M.

3.3.4 Rescue and Evacuation Plan and Procedures

When personal fall arrest systems are used, ensure that the mishap victim can self-rescue or can be rescued promptly should a fall occur. Prepare a Rescue and Evacuation Plan and include a detailed discussion of the following: methods of rescue; methods of self-rescue or assisted-rescue; equipment used; training requirement; specialized training for the rescuers; procedures for requesting rescue and medical assistance; and transportation routes to a medical facility. Include the Rescue and Evacuation Plan within the Activity Hazard Analysis (AHA) for the phase of work, in the Fall Protection and Prevention (FP&P) Plan, and the Accident Prevention Plan (APP). The plan must be in accordance with the requirements of EM 385-1-1, ASSP Z359.2, and ASSP Z359.4.

3.4 EQUIPMENT

3.4.1 Material Handling Equipment (MHE)

- a. Material handling equipment such as forklifts must not be modified with work platform attachments for supporting employees unless specifically delineated in the manufacturer's printed operating instructions. Material handling equipment fitted with personnel work platform attachments are prohibited from traveling or positioning while personnel are working on the platform.
- b. The use of hooks on equipment for lifting of material must be in accordance with manufacturer's printed instructions. Material Handling Equipment Operators must be trained in accordance with OSHA 29 CFR 1910, Subpart N.
- c. Operators of forklifts or power industrial trucks must be licensed in accordance with OSHA.

3.4.2 Load Handling Equipment (LHE)

The following requirements apply. In exception, these requirements do not apply to commercial truck mounted and articulating boom cranes used solely to deliver material and supplies (not prefabricated components, structural steel, or components of a systems-engineered metal building) where the lift consists of moving materials and supplies from a truck or trailer to the ground; to cranes installed on mechanics trucks that are used solely in the repair of shore-based equipment; to crane that enter the activity but are not used for lifting; nor to other machines not used to lift loads suspended by rigging equipment. However, LHE accidents occurring during such operations must be reported.

- a. Equip cranes and derricks as specified in EM 385-1-1, Section 16.
- b. Notify the Contracting Officer 15 working days in advance of any LHE entering the activity, in accordance with EM 385-1-1, Section 16.A.02, so that necessary quality assurance spot checks can be coordinated. Contractor's operator must remain with the crane during the spot check. Rigging gear must be in accordance with OSHA, ASME B30.9 Standards and host country safety standards.

- c. Comply with the LHE manufacturer's specifications and limitations for erection and operation of cranes and hoists used in support of the work. Perform erection under the supervision of a designated person (as defined in ASME B30.5). Perform all testing in accordance with the manufacturer's recommended procedures.
- d. Comply with ASME B30.5 for mobile and locomotive cranes, ASME B30.22 for articulating boom cranes, ASME B30.3 for construction tower cranes, ASME B30.8 for floating cranes and floating derricks, ASME B30.9 for slings, ASME B30.20 for below the hook lifting devices and ASME B30.26 for rigging hardware.
- e. When operating in the vicinity of overhead transmission lines, operators and riggers must be alert to this special hazard and follow the requirements of EM 385-1-1 Section 11, and ASME B30.5 or ASME B30.22 as applicable.
- f. Do not use crane suspended personnel work platforms (baskets) unless the Contractor proves that using any other access to the work location would provide a greater hazard to the workers or is impossible. Do not lift personnel with a line hoist or friction crane. Additionally, submit a specific AHA for this work to the Contracting Officer. Ensure the activity and AHA are thoroughly reviewed by all involved personnel.
- g. Inspect, maintain, and recharge portable fire extinguishers as specified in NFPA 10, Standard for Portable Fire Extinguishers.
- h. All employees must keep clear of loads about to be lifted and of suspended loads, except for employees required to handle the load.
- i. Use cribbing when performing lifts on outriggers.
- j. The crane hook/block must be positioned directly over the load. Side loading of the crane is prohibited.
- k. A physical barricade must be positioned to prevent personnel access where accessible areas of the LHE's rotating superstructure poses a risk of striking, pinching or crushing personnel.
- l. Maintain inspection records in accordance by EM 385-1-1, Section 16.D, including shift, monthly, and annual inspections, the signature of the person performing the inspection, and the serial number or other identifier of the LHE that was inspected. Records must be available for review by the Contracting Officer.
- m. Maintain written reports of operational and load testing in accordance with EM 385-1-1, Section 16.F, listing the load test procedures used along with any repairs or alterations performed on the LHE. Reports must be available for review by the Contracting Officer.
- n. Certify that all LHE operators have been trained in proper use of all safety devices (e.g. anti-two block devices).
- o. Take steps to ensure that wind speed does not contribute to loss of control of the load during lifting operations. At wind speeds greater than 20 mph, the operator, rigger and lift supervisor must cease all crane operations, evaluate conditions and determine if the lift may proceed. Base the determination to proceed or not on wind calculations

per the manufacturer and a reduction in LHE rated capacity if applicable. Include this maximum wind speed determination as part of the activity hazard analysis plan for that operation.

- q. Follow FAA guidelines when required based on project location.

3.4.3 Machinery and Mechanized Equipment

- a. Proof of qualifications for operator must be kept on the project site for review.
- b. Manufacture specifications or owner's manual for the equipment must be on-site and reviewed for additional safety precautions or requirements that are sometimes not identified by OSHA or USACE EM 385-1-1. Incorporate such additional safety precautions or requirements into the AHAs.

3.4.4 Base Mounted Drum Hoists

- a. Operation of base mounted drum hoists must be in accordance with EM 385-1-1 and ASSP A10.22.
- b. Rigging gear must be in accordance with applicable ASME/OSHA standards.
- c. When used on telecommunication towers, base mounted drum hoists must be in accordance with ASME B30.7, 29 CFR 1926.552, and 29 CFR 1926.553.
- d. When used to hoist personnel, the AHA must include a written standard operating procedure. Operators must have a physical examination in accordance with EM 385-1-1 Section 16.B.05 and trained, at a minimum, in accordance with EM 385-1-1 Section 16.U and 16.T. The base mounted drum hoist must also comply with ASME B30.23.
- e. Material and personnel must not be hoisted simultaneously.
- f. Personnel cage must be marked with the capacity (in number of persons) and load limit in pounds.
- g. Construction equipment must not be used for hoisting material or personnel or with trolley/tag lines. Construction equipment may be used for towing and assisting with anchoring guy lines.

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SOURCES FOR REFERENCE PUBLICATIONS

PART 1 GENERAL

1.1 REFERENCES

Various publications are referenced in other sections of the specifications to establish requirements for the work. These references are identified in each section by document number, date and title. The document number used in the citation is the number assigned by the standards producing organization (e.g. ASTM B564 Standard Specification for Nickel Alloy Forgings). However, when the standards producing organization has not assigned a number to a document, an identifying number has been assigned for reference purposes.

1.2 ORDERING INFORMATION

The addresses of the standards publishing organizations whose documents are referenced in other sections of these specifications are listed below, and if the source of the publications is different from the address of the sponsoring organization, that information is also provided.

ASTM INTERNATIONAL (ASTM)
100 Barr Harbor Drive, P.O. Box C700
West Conshohocken, PA 19428-2959
Ph: 877-909-2786
Internet: <http://www.astm.org>

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
1 Batterymarch Park
Quincy, MA 02169-7471
Ph: 617-770-3000
Fax: 617-770-0700
Internet: <http://www.nfpa.org>

POST-TENSIONING INSTITUTE (PTI)
38800 Country Club Drive
Farmington Hills, MI 48331
Ph: 248-848-3180
Bookstore: 248-848-3182
Fax: 248-848-3181
E-mail: technical.inquiries@post-tensioning.org
Internet: <http://www.post-tensioning.org/>

U.S. ARMY CORPS OF ENGINEERS (USACE)
CRD-C DOCUMENTS available on Internet:
http://www.wbdg.org/ccb/browse_cat.php?c=68
Order Other Documents from:
USACE Publications Depot
Attn: CEHEC-IM-PD

2803 52nd Avenue
Hyattsville, MD 20781-1102
Ph: 301-394-0081
Fax: 301-394-0084
E-mail: pubs-army@usace.army.mil
Internet: <http://www.publications.usace.army.mil/>
or
<http://www.hnc.usace.army.mil/Missions/Engineering/TECHINFO.aspx>

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)
8601 Adelphi Road
College Park, MD 20740-6001
Ph: 866-272-6272
Fax: 301-837-0483
Internet: <http://www.archives.gov>
Order documents from:
Superintendent of Documents
U.S. Government Printing Office (GPO)
710 North Capitol Street, NW
Washington, DC 20401
Ph: 202-512-1800
Fax: 202-512-2104
E-mail: contactcenter@gpo.gov
Internet: <http://www.gpoaccess.gov>

PART 2 PRODUCTS

Not used

PART 3 EXECUTION

Not used

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SECTION 01 45 00

QUALITY CONTROL

PART 1 GENERAL

1.1 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Contractor Quality Control (CQC) Plan; G, AO

Contractor Quality Control Plan Checklist; G, AO

SD-07 Certificates

Verification Statement

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

Establish and maintain an effective quality control (QC) system. QC consist of plans, procedures, and organization necessary to produce an end product which complies with the Contract requirements. The QC system covers all construction operations, both onsite and offsite, and be keyed to the proposed construction sequence. The project superintendent will be held responsible for the quality of work and is subject to removal by the Contracting Officer for non-compliance with the quality requirements specified in the Contract. In this context the highest level manager responsible for the overall construction activities at the site, including quality and production is the project superintendent. The project superintendent maintains a physical presence at the site at all times and is responsible for all construction and related activities at the site, except as otherwise acceptable to the Contracting Officer.

3.2 CONTRACTOR QUALITY CONTROL (CQC) PLAN

Submit no later than 15 calendar days after receipt of notice to proceed, the Contractor Quality Control (CQC) Plan. The Government will consider an interim plan for the first 15 calendar days of operation. Construction will be permitted to begin only after acceptance of the CQC Plan or acceptance of an interim plan applicable to the particular feature of work to be started. Work outside of the accepted interim plan will not be permitted to begin until acceptance of a CQC Plan or another interim plan containing the additional work. Submit the Contractor Quality Control Plan Checklist as directed by the Contracting Officer.

3.2.1 Content of the CQC Plan

Include, as a minimum, the following to cover all construction-operations, both onsite and offsite, including work by subcontractors fabricators, suppliers and purchasing agents:

- a. A description of the quality control organization, including a chart showing lines of authority and acknowledgment that the CQC staff will implement the three phase control system for all aspects of the work specified. Include a CQC System Manager that reports to the project superintendent.
- b. The name, qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a CQC function.
- c. A copy of the letter to the CQC System Manager signed by an authorized official of the firm which describes the responsibilities and delegates sufficient authorities to adequately perform the functions of the CQC System Manager, including authority to stop work which is not in compliance with the Contract. Letters of direction to all other various quality control representatives outlining duties, authorities, and responsibilities will be issued by the CQC System Manager. Furnish copies of these letters to the Contracting Officer.
- d. Procedures for scheduling, reviewing, certifying, and managing submittals, including those of subcontractors, offsite fabricators, suppliers, and purchasing agents. These procedures must be in accordance with Section 01 33 00 SUBMITTAL PROCEDURES.
- e. Control, verification, and acceptance testing procedures for each specific test to include the test name, specification paragraph requiring test, feature of work to be tested, test frequency, and person responsible for each test. (Laboratory facilities approved by the Contracting Officer are required to be used.)
- f. Procedures for tracking preparatory, initial, and follow-up control phases and control, verification, and acceptance tests including documentation.
- g. Procedures for tracking construction deficiencies from identification through acceptable corrective action. Establish verification procedures that identified deficiencies have been corrected.
- h. Reporting procedures, including proposed reporting formats.
- i. A list of the definable features of work. A definable feature of work is a task which is separate and distinct from other tasks, has separate control requirements, and is identified by different trades or disciplines, or it is work by the same trade in a different environment. Although each section of the specifications can generally be considered as a definable feature of work, there are frequently more than one definable features under a particular section. This list will be agreed upon during the coordination meeting.

3.2.2 Acceptance of Plan

Acceptance of the Contractor's plan is required prior to the start of construction. Acceptance is conditional and will be predicated on

satisfactory performance during construction. The Government reserves the right to require the Contractor to make changes in the Contractor Quality Control (CQC) Plan and operations including removal of personnel, as necessary, to obtain the quality specified.

3.2.3 Notification of Changes

After acceptance of the CQC Plan, notify the Contracting Officer in writing of any proposed change. Proposed changes are subject to acceptance by the Contracting Officer.

3.3 COORDINATION MEETING

After the before start of construction, and prior to acceptance by the Government of the CQC Plan, meet with the Contracting Officer and discuss the Contractor's quality control system. Submit the CQC Plan a minimum of 7 calendar days prior to the Coordination Meeting. During the meeting, develop a mutual understanding of the system details, including the forms for recording the CQC operations, control activities, testing, administration of the system for both onsite and offsite work, and the interrelationship of Contractor's Management and control with the Government's Quality Assurance. Minutes of the meeting will be prepared by the Government, signed by both the Contractor and the Contracting Officer and will become a part of the contract file. There can be occasions when subsequent conferences will be called by either party to reconfirm mutual understandings or address deficiencies in the CQC system or procedures which can require corrective action by the Contractor.

3.4 QUALITY CONTROL ORGANIZATION

3.4.1 Personnel Requirements

The requirements for the CQC organization are a Safety and Health Manager, CQC System Manager, and sufficient number of additional qualified personnel to ensure safety and Contract compliance. The Safety and Health Manager reports directly to a senior project (or corporate) official independent from the CQC System Manager. The Safety and Health Manager will also serve as a member of the CQC Staff. Personnel identified in the technical provisions as requiring specialized skills to assure the required work is being performed properly will also be included as part of the CQC organization. The Contractor's CQC staff maintains a presence at the site at all times during progress of the work and have complete authority and responsibility to take any action necessary to ensure Contract compliance. The CQC staff will be subject to acceptance by the Contracting Officer. Provide adequate office space, filing systems and other resources as necessary to maintain an effective and fully functional CQC organization. Promptly complete and furnish all letters, material submittals, shop drawing submittals, schedules and all other project documentation to the CQC organization. The CQC organization is responsible to maintain these documents and records at the site at all times, except as otherwise acceptable to the Contracting Officer.

3.4.2 CQC System Manager

Identify as CQC System Manager an individual within the onsite work organization that is responsible for overall management of CQC and has the authority to act in all CQC matters for the Contractor. The CQC System Manager is required to be a construction person with a minimum of 5 years in related work. This CQC System Manager is on the site at all times

during construction and is employed by the prime Contractor. The CQC System Manager will be assigned as System Manager, but may not be the project superintendent as described in paragraph 3.1. Identify in the plan an alternate to serve in the event of the CQC System Manager's absence. The requirements for the alternate are the same as the CQC System Manager.

3.4.3 CQC Personnel

In addition to CQC personnel specified elsewhere in the contract, provide as part of the CQC organization specialized personnel to assist the CQC System Manager for the following areas: civil. These individuals or specialized technical companies are employees of the prime or subcontractor; be responsible to the CQC System Manager; be physically present at the construction site during work on the specialized personnel's areas of responsibility; have the necessary education and/or experience in accordance with the experience matrix listed herein. These individuals can perform other duties but need to be allowed sufficient time to perform the specialized personnel's assigned quality control duties as described in the Quality Control Plan. A single person can cover more than one area provided that the single person is qualified to perform quality control activities in each designated and that workload allows.

Experience Matrix	
Area	Qualifications
Civil	Graduate Civil Engineer or Construction Manager with 2 years experience in the type of work being performed on this project or technician with 5 yrs related experience

3.4.4 Additional Requirement

a. In addition to the above experience and education requirements, the Contractor Quality Control (CQC) System Manager and Alternate CQC System Manager are required to have completed the Construction Quality Management (CQM) for Contractors course. If the CQC System Manager does not have a current certification, obtain the CQM for Contractors course certification within 90 calendar days of award. The requirement to complete the course is required if the contract is over \$1,000,000.00. This course is periodically offered by the U.S. Army Corps of Engineers. Contact Mr. Christopher Ignatowski (716-879-4257) of the Construction Branch, Buffalo District, for the latest information on the course.

b. The Construction Quality Management Training certificate expires after 5 years. If the CQC System Manager's certificate has expired, retake the course to remain current.

3.4.5 Organizational Changes

Maintain the CQC staff at full strength at all times. When it is necessary to make changes to the CQC staff, revise the CQC Plan to reflect the changes and submit the changes to the Contracting Officer for acceptance.

3.5 SUBMITTALS AND DELIVERABLES

Submittals, if needed, have to comply with the requirements in Section

01 33 00 SUBMITTAL PROCEDURES. The CQC organization is responsible for certifying that all submittals and deliverables are in compliance with the contract requirements.

3.6 CONTROL

CQC is the means by which the Contractor ensures that the construction, to include that of subcontractors and suppliers, complies with the requirements of the contract. At least three phases of control are required to be conducted by the CQC System Manager for each definable feature of the construction work as follows:

3.6.1 Preparatory Phase

This phase is performed prior to beginning work on each definable feature of work, after all required plans/documents/materials are approved/accepted, and after copies are at the work site. This phase includes:

- a. A review of each paragraph of applicable specifications, reference codes, and standards. Make available during the preparatory inspection a copy of those sections of referenced codes and standards applicable to that portion of the work to be accomplished in the field. Maintain and make available in the field for use by Government personnel until final acceptance of the work.
- b. Review of the Contract drawings.
- c. Check to assure that all materials and/or equipment have been tested, submitted, and approved.
- d. Review of provisions that have been made to provide required control inspection and testing.
- e. Examination of the work area to assure that all required preliminary work has been completed and is in compliance with the Contract.
- f. Examination of required materials, equipment, and sample work to assure that they are on hand, conform to approved shop drawings or submitted data, and are properly stored.
- g. Review of the appropriate activity hazard analysis to assure safety requirements are met.
- h. Discussion of procedures for controlling quality of the work including repetitive deficiencies. Document construction tolerances and workmanship standards for that feature of work.
- i. Check to ensure that the portion of the plan for the work to be performed has been accepted by the Contracting Officer.
- j. Discussion of the initial control phase.
- k. The Government needs to be notified at least 48 hours in advance of beginning the preparatory control phase. Include a meeting conducted by the CQC System Manager and attended by the superintendent, other CQC personnel (as applicable), and the foreman responsible for the definable feature. Document the results of the preparatory phase actions by separate minutes prepared by the CQC System Manager and attach to the daily CQC report. Instruct applicable workers as to the

acceptable level of workmanship required in order to meet contract specifications.

3.6.2 Initial Phase

This phase is accomplished at the beginning of a definable feature of work. Accomplish the following:

- a. Check work to ensure that it is in full compliance with contract requirements. Review minutes of the preparatory meeting.
- b. Verify adequacy of controls to ensure full contract compliance. Verify required control inspection and testing are in compliance with the contract.
- c. Establish level of workmanship and verify that it meets minimum acceptable workmanship standards. Compare with required sample panels as appropriate.
- d. Resolve all differences.
- e. Check safety to include compliance with and upgrading of the safety plan and activity hazard analysis. Review the activity analysis with each worker.
- f. Notify the Government at least 72 hours in advance of beginning the initial phase for definable feature of work. Prepare separate minutes of this phase by the CQC System Manager and attach to the daily CQC report. Indicate the exact location of initial phase for definable feature of work for future reference and comparison with follow-up phases.
- g. The initial phase for each definable feature of work is repeated for each new crew to work onsite, or any time acceptable specified quality standards are not being met.

3.6.3 Follow-up Phase

Perform daily checks to assure control activities, including control testing, are providing continued compliance with contract requirements, until completion of the particular feature of work. Record the checks in the CQC documentation. Conduct final follow-up checks and correct all deficiencies prior to the start of additional features of work which may be affected by the deficient work. Do not build upon nor conceal non-conforming work.

3.6.4 Additional Preparatory and Initial Phases

Conduct additional preparatory and initial phases on the same definable features of work if: the quality of on-going work is unacceptable; if there are changes in the applicable CQC staff, onsite production supervision or work crew; if work on a definable feature is resumed after a substantial period of inactivity; or if other problems develop.

3.7 COMPLETION INSPECTION

3.7.1 Punch-Out Inspection

Conduct an inspection of the work by the CQC System Manager near the end of

the work, or any increment of the work established by a time stated in FAR 52.211-10 Commencement, Prosecution, and Completion of Work, or by the specifications. Prepare and include in the CQC documentation a punch list of items which do not conform to the approved drawings and specifications, as required by paragraph DOCUMENTATION. Include within the list of deficiencies the estimated date by which the deficiencies will be corrected. Make a second inspection the CQC System Manager or staff to ascertain that all deficiencies have been corrected. Once this is accomplished, notify the Government that the facility is ready for the Government Pre-Final inspection.

3.7.2 Pre-Final Inspection

The Government will perform the pre-final inspection to verify that the facility is complete and ready to be occupied. A Government Pre-Final Punch List may be developed as a result of this inspection. Ensure that all items on this list have been corrected before notifying the Government, so that a Final inspection with the customer can be scheduled. Correct any items noted on the Pre-Final inspection in a timely manner. These inspections and any deficiency corrections required by this paragraph need to be accomplished within the time slated for completion of the entire work or any particular increment of the work if the project is divided into increments by separate completion dates.

3.7.3 Final Acceptance Inspection

The Contractor's Quality Control Inspection personnel, plus the superintendent or other primary management person, and the Contracting Officer's Representative is required to be in attendance at the final acceptance inspection. The final acceptance inspection will be formally scheduled by the Contracting Officer based upon results of the Pre-Final inspection. Notify the Contracting Officer at least 14 days prior to the final acceptance inspection and include the Contractor's assurance that all specific items previously identified to the Contractor as being unacceptable, along with all remaining work performed under the Contract, will be complete and acceptable by the date scheduled for the final acceptance inspection. Failure of the Contractor to have all contract work acceptably complete for this inspection will be cause for the Contracting Officer to bill the Contractor for the Government's additional inspection cost in accordance FAR 52.246-12 Inspection of Construction.

3.8 DOCUMENTATION

3.8.1 Quality Control Activities

Maintain current records providing factual evidence that required quality control activities and tests have been performed. Include in these records the work of subcontractors and suppliers on an acceptable form that includes, as a minimum, the following information:

- a. The name and area of responsibility of the Contractor/Subcontractor.
- b. Operating plant/equipment with hours worked, idle, or down for repair.
- c. Work performed each day, giving location, description, and by whom. When Network Analysis (NAS) is used, identify each phase of work performed each day by NAS activity number.
- d. Test and control activities performed with results and references to

specifications/drawings requirements. Identify the control phase (Preparatory, Initial, Follow-up). List of deficiencies noted, along with corrective action.

- e. Quantity of materials received at the site with statement as to acceptability, storage, and reference to specifications/drawings requirements.
- f. Submittals and deliverables reviewed, with Contract reference, by whom, and action taken.
- g. Offsite surveillance activities, including actions taken.
- h. Job safety evaluations stating what was checked, results, and instructions or corrective actions.
- i. Instructions given/received and conflicts in plans and specifications.

3.8.2 Verification Statement

Indicate a description of trades working on the project; the number of personnel working; weather conditions encountered; and any delays encountered. Cover both conforming and deficient features and include a statement that equipment and materials incorporated in the work and workmanship comply with the Contract. Furnish the original and one copy of these records in report form to the Government daily within 24 hours after the date covered by the report, except that reports need not be submitted for days on which no work is performed. As a minimum, prepare and submit one report for every 7 days of no work and on the last day of a no work period. All calendar days need to be accounted for throughout the life of the contract. The first report following a day of no work will be for that day only. Reports need to be signed and dated by the Contractor Quality Control (CQC) System Manager. Include copies of test reports and copies of reports prepared by all subordinate quality control personnel within the CQC System Manager Report.

3.9 SAMPLE FORMS

The web-based Resident Management System Contractor Mode (RMS Contractor Mode) will generate the CQC Daily Report and other forms needed to track and manage the project.

3.10 NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the foregoing requirements. Take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, will be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Contracting Officer can issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders will be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

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SECTION 01 45 00.15

RESIDENT MANAGEMENT SYSTEM CONTRACTOR MODE (RMS CM)

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this section to the extent referenced. The publications are referred to within the text by the basic designation only.

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1 (2014) Safety and Health Requirements Manual

1.2 MEASUREMENT AND PAYMENT

The work of this section is not measured for payment. The Contractor is responsible for the work of this section, without any direct compensation other than the payment received for contract items.

1.3 CONTRACT ADMINISTRATION

The Government will use the Resident Management System (RMS) to assist in its monitoring and administration of this contract. The Government accesses the system using the Government Mode of RMS (RMS GM) and the Contractor accesses the system using the Contractor Mode (RMS CM). The term RMS will be used in the remainder of this section for both RMS GM and RMS CM. The joint Government-Contractor use of RMS facilitates electronic exchange of information and overall management of the contract. The Contractor accesses RMS to record, maintain, input, track, and electronically share information with the Government throughout the contract period in the following areas:

- Administration
- Finances
- Quality Control
- Submittal Monitoring
- Scheduling
- Closeout
- Import/Export of Data

1.3.1 Correspondence and Electronic Communications

For ease and speed of communications, exchange correspondence and other documents in electronic format to the maximum extent feasible. Some correspondence, including pay requests and payrolls, are also to be provided in paper format with original signatures. Paper documents will govern, in the event of discrepancy with the electronic version.

1.3.2 Other Factors

Particular attention is directed to FAR 52.236-15 SCHEDULES FOR

CONSTRUCTION CONTRACTS, FAR 52.232-5 PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS, Section 01 32 16 CONSTRUCTION PROGRESS SCHEDULES, Section 01 33 00 SUBMITTAL PROCEDURES, and Section 01 45 00 QUALITY CONTROL, which have a direct relationship to the reporting to be accomplished through RMS. Also, there is no separate payment for establishing and maintaining the RMS database; costs associated will be included in the contract pricing for the work.

1.4 RMS SOFTWARE

RMS is a web based application. Download, install and be able to utilize the latest version of RMS within 7 calendar days of receipt of the Notice to Proceed. RMS software, user manuals, access and installation instructions, program updates and training information are available from the RMS website (<https://rms.usace.army.mil>). The Government and the Contractor will have different access authorities to the same contract database through RMS. The common database will be updated automatically each time a user finalizes an entry or change.

1.5 CONTRACT DATABASE - GOVERNMENT

The Government will enter the basic contract award data in RMS prior to granting the Contractor access. The Government entries into RMS will generally be related to submittal reviews, correspondence status, and Quality Assurance (QA) comments, as well as other miscellaneous administrative information.

1.6 CONTRACT DATABASE - CONTRACTOR

Contractor entries into RMS establish, maintain, and update data throughout the duration of the contract. Contractor entries generally include prime and subcontractor information, daily reports, submittals, RFI's, schedule updates and payment requests. RMS includes the ability to import attachments and export reports in many of the modules, including submittals. The Contractor responsibilities for entries in RMS typically include the following items:

1.6.1 Administration

1.6.1.1 Contractor Information

Enter all current Contractor administrative data and information into RMS within 7 calendar days of receiving access to the contract in RMS. This includes, but is not limited to, Contractor's name, address, telephone numbers, management staff, and other required items.

1.6.1.2 Subcontractor Information

Enter all missing subcontractor administrative data and information into RMS CM within 7 calendar days of receiving access to the contract in RMS or within 7 calendar days of the signing of the subcontractor agreement for agreements signed at a later date. This includes name, trade, address, phone numbers, and other required information for all subcontractors. A subcontractor is listed separately for each trade to be performed.

1.6.1.3 Correspondence

Identify all Contractor correspondence to the Government with a serial number. Prefix correspondence initiated by the Contractor's site office

with "S". Prefix letters initiated by the Contractor's home (main) office with "H". Letters are numbered starting from 0001. (e.g., H-0001 or S-0001). The Government's letters to the Contractor will be prefixed with "C" or "RFP".

1.6.1.4 Equipment

Enter and maintain a current list of equipment planned for use or being used on the jobsite, including the most recent and planned equipment inspection dates.

1.6.1.5 Reports

Track the status of the project utilizing the reports available in RMS. The value of these reports is reflective of the quality of the data input. These reports include the Progress Payment Request worksheet, Quality Control (QC) comments, Submittal Register Status, and Three-Phase Control worksheets.

1.6.1.6 Request For Information (RFI)

Create and track all Requests For Information (RFI) in the RMS Administration Module for Government review and response.

1.6.2 Finances

1.6.2.1 Pay Activity Data

Develop and enter a list of pay activities in conjunction with the project schedule. The sum of pay activities equals the total contract amount, including modifications. Assign each pay activity to a Contract Line Item Number (CLIN). The sum of the activities assigned to a CLIN equals the amount of each CLIN.

1.6.2.2 Payment Requests

Prepare all progress payment requests using RMS. Update the work completed under the contract at least monthly, measured as percent or as specific quantities. After the update, generate a payment request and prompt payment certification using RMS. Submit the signed prompt payment certification and payment request as well as supporting data either electronically or by hard copy. Unless waived by the Contracting Officer, a signed paper copy of the approved payment certification and request is also required and will govern in the event of discrepancy with the electronic version.

1.6.3 Quality Control (QC)

Enter and track implementation of the 3-phase QC Control System, QC testing, transferred and installed property and warranties in RMS. Prepare daily reports, identify and track deficiencies, document progress of work, and support other Contractor QC requirements in RMS. Maintain all data on a daily basis. Insure that RMS reflects all quality control methods, tests and actions contained within the Contractor Quality Control (CQC) Plan and Government review comments of same within 7 calendar days of Government acceptance of the CQC Plan.

1.6.3.1 Quality Control (QC) Reports

The Contractor's Quality Control (QC) Daily Report in RMS is the official report. The Contractor can use other supplemental formats to record QC data, but information from any supplemental formats are to be consolidated and entered into the RMS QC Daily Report. Any supplemental information may be entered into RMS as an attachment to the report. Finalize QC Daily Reports and sign in RMS within 24 hours after the date covered by the report. Provide the Government a printed signed copy of the QC Daily Report, unless waived by the Contracting Officer.

1.6.3.2 Deficiency Tracking.

Use the QC Daily Report Module to enter and track deficiencies. Deficiencies identified and entered into RMS by the Contractor or the Government will be sequentially numbered with a QC or QA prefix for tracking purposes. Enter each deficiency into RMS the same day that the deficiency is identified. Monitor, track and resolve all QC and QA entered deficiencies. A deficiency is not considered to be corrected until the Government indicates concurrence in RMS.

1.6.3.3 Three-Phase Control Meetings

Maintain scheduled and actual dates and times of preparatory and initial control meetings in RMS. Worksheets for the three-phase control meetings are generated within RMS.

1.6.3.4 Labor and Equipment Hours

Enter labor and equipment exposure hours on a daily basis. Roll up the labor and equipment exposure data into a monthly exposure report.

1.6.3.5 Accident/Safety Reporting

Both the Contractor and the Government enter safety related comments in RMS as a deficiency. Monitor, track and show resolution for safety issues in the QC Daily Report area of the RMS QC Module. In addition, follow all reporting requirements for accidents and incidents as required in EM 385-1-1, Section 01 35 26 GOVERNMENTAL SAFETY REQUIREMENTS and as required by any other applicable Federal, State or local agencies.

1.6.3.6 Definable Features of Work

Enter each feature of work, as defined in the approved CQC Plan, into the RMS QC Module. A feature of work may be associated with a single or multiple pay activities, however a pay activity is only to be linked to a single feature of work.

1.6.3.7 Activity Hazard Analysis

Import activity hazard analysis electronic document files into the RMS QC Module utilizing the document package manager.

1.6.4 Submittal Management

Enter all current submittal register data and information into RMS within 7 calendar days of receiving access to the contract in RMS. The information shown on the submittal register following the specification Section 01 33 00 SUBMITTAL PROCEDURES will already be entered into the RMS database when

access is granted. Group electronic submittal documents into transmittal packages to send to the Government, except very large electronic files, samples, spare parts, mock ups, color boards, or where hard copies are specifically required. Track transmittals and update the submittal register in RMS on a daily basis throughout the duration of the contract. Submit hard copies of all submittals unless waived by the Contracting Officer.

1.6.5 Schedule

Enter and update the contract project schedule in RMS by either manually entering all schedule data.

1.6.6 Closeout

Closeout documents, processes and forms are managed and tracked in RMS by both the Contractor and the Government. Ensure that all closeout documents are entered, completed and documented within RMS.

1.7 IMPLEMENTATION

Use of RMS as described in the preceding paragraphs is mandatory. Ensure that sufficient resources are available to maintain contract data within the RMS system. RMS is an integral part of the Contractor's required management of quality control.

1.8 NOTIFICATION OF NONCOMPLIANCE

Take corrective action within 7 calendar days after receipt of notice of RMS non-compliance by the Contracting Officer.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

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TEMPORARY ENVIRONMENTAL CONTROLS

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

40 CFR 112	Oil Pollution Prevention
40 CFR 241	Guidelines for Disposal of Solid Waste
40 CFR 243	Guidelines for the Storage and Collection of Residential, Commercial, and Institutional Solid Waste
40 CFR 258	Subtitle D Landfill Requirements
40 CFR 260	Hazardous Waste Management System: General
40 CFR 279	Standards for the Management of Used Oil
40 CFR 300	National Oil and Hazardous Substances Pollution Contingency Plan
40 CFR 300.125	National Oil and Hazardous Substances Pollution Contingency Plan - Notification and Communications
40 CFR 355	Emergency Planning and Notification
40 CFR 60	Standards of Performance for New Stationary Sources
40 CFR 63	National Emission Standards for Hazardous Air Pollutants for Source Categories
40 CFR 64	Compliance Assurance Monitoring
49 CFR 173	Shippers - General Requirements for Shipments and Packagings

1.2 DEFINITIONS

1.2.1 Environmental Pollution and Damage

Environmental pollution and damage is the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life;

affect other species of importance to humankind; or degrade the environment aesthetically, culturally or historically.

1.2.2 Environmental Protection

Environmental protection is the prevention/control of pollution and habitat disruption that may occur to the environment during construction. The control of environmental invasives pollution and damage requires consideration of land, water, and air; biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.

1.2.3 Oily Waste

a. Oily waste are those materials that are, or were, mixed with Petroleum, Oils, and Lubricants (POLs) and have become separated from that POLs. Oily wastes also means materials, including wastewaters, centrifuge solids, filter residues or sludges, bottom sediments, tank bottoms, and sorbents which have come into contact with and have been contaminated by, POLs and may be appropriately tested and discarded in a manner which is in compliance with other state and local requirements.

b. This definition includes materials such as oily rags, "kitty litter" sorbent clay and organic sorbent material. These materials may be land filled provided that: It is not prohibited in other state regulations or local ordinances; the amount generated is "de minimus" (a small amount); it is the result of minor leaks or spills resulting from normal process operations; and free-flowing oil has been removed to the practicable extent possible. Large quantities of this material, generated as a result of a major spill or in lieu of proper maintenance of the processing equipment, are a solid waste. As a solid waste, perform a hazardous waste determination prior to disposal. As this can be an expensive process, it is recommended that this type of waste be minimized through good housekeeping practices and employee education.

1.2.4 Pests

Pests are arthropods, birds, rodents, nematodes, fungi, bacteria, viruses, algae, snails, marine borers, snakes, weeds and other organisms (except for human or animal disease-causing organisms) that adversely affect readiness, military operations, or the well-being of personnel and animals; attack or damage real property, supplies, equipment, or vegetation; or are otherwise undesirable.

1.2.5 Sediment

Sediment is soil and other debris that have eroded and have been transported by runoff water or wind.

1.2.6 Solid Waste

1.2.6.1 Debris

Debris is non-hazardous solid material generated during the construction, demolition, or renovation of a structure that exceeds 2.5-inch particle size that is: a manufactured object; plant or animal matter; or natural geologic material (for example, cobbles and boulders), broken or removed concrete, masonry, and rock asphalt paving; ceramics; roofing paper and

shingles. Inert materials may not be reinforced with or contain ferrous wire, rods, accessories and weldments. A mixture of debris and other material such as soil or sludge is also subject to regulation as debris if the mixture is comprised primarily of debris by volume, based on visual inspection.

1.2.6.2 Wood

Wood is dimension and non-dimension lumber, plywood, chipboard, hardboard. Treated or painted wood that meets the definition of lead contaminated or lead based contaminated paint is not included. Treated wood includes, but is not limited to, lumber, utility poles, crossties, and other wood products with chemical treatment.

1.2.7 Waters of the United States

Waters of the United States means Federally jurisdictional waters, including wetlands, that are subject to regulation under Section 404 of the Clean Water Act or navigable waters, as defined under the Rivers and Harbors Act.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Regulatory Notifications; G, AO

Environmental Protection Plan; G, AO

Preconstruction Survey

SD-11 Closeout Submittals

Regulatory Notifications; G, AO

1.4 ENVIRONMENTAL PROTECTION REQUIREMENTS

a. Provide and maintain, during the life of the contract, environmental protection as defined. Plan for and provide environmental protective measures to control pollution that develops during construction practice. Plan for and provide environmental protective measures required to correct conditions that develop during the construction of permanent or temporary environmental features associated with the project. Protect the environmental resources within the project boundaries and those affected outside the limits of permanent work during the entire duration of this Contract. Comply with federal, state, and local regulations pertaining to the environment, including water, air, solid waste, oily substances, and noise pollution.

b. Tests and procedures assessing whether construction operations comply with Applicable Environmental Laws may be required. Perform analytical work by employing a qualified laboratories; and where required by law, certified laboratories.

1.5 SPECIAL ENVIRONMENTAL REQUIREMENTS

Comply with the special environmental requirements listed here and attached at the end of this section.

1.6 QUALITY ASSURANCE

1.6.1 Preconstruction Survey and Protection of Features

Prior to start of any onsite construction activities, perform a Preconstruction Survey of the project site with the Contracting Officer, and take photographs showing existing environmental conditions in and adjacent to the site. Submit a report for the record. Include in the report a plan describing the features requiring protection under the provisions of the Contract Clauses, which are not specifically identified on the drawings as environmental features requiring protection along with the condition of trees, shrubs and grassed areas immediately adjacent to the site of work and adjacent to the Contractor's assigned storage area and access route(s), as applicable. The Contractor and the Contracting Officer will sign this survey report upon mutual agreement regarding its accuracy and completeness. Protect those environmental features included in the survey report and any indicated on the drawings, regardless of interference that their preservation may cause to the work under the Contract.

1.6.2 Regulatory Notifications

Provide any regulatory notification requirements in accordance with federal, state and local regulations. Submit copies of regulatory notifications to the Contracting Officer within 20 calendar days prior to commencement of work activities.

1.6.3 Environmental Brief

a. Attend an environmental brief to be included in the preconstruction meeting. Provide the following information: environmental (no work) dates for resource protection, types and quantities of wastes that may be generated during the Contract. Discuss the results of the Preconstruction Survey at this time.

b. Prior to initiating any work on site, meet with the Contracting Officer and installation Environmental Office to discuss the proposed Environmental Protection Plan (EPP). Develop a mutual understanding relative to the details of environmental protection, including measures for protecting natural and cultural resources, required reports, required permits and permit requirements (such as mitigation measures), and other measures to be taken.

1.6.4 Environmental Manager

Appoint in writing an Environmental Manager for the project site. The Environmental Manager is directly responsible for coordinating contractor compliance with federal, state, local requirements. One duty of the The Environmental Manager is to ensure implementation of the EPP compliance with any certification or permit conditions imposed by federal, state or local authorities, and that environmental permits are obtained, maintained, and closed out. This can be a collateral position; however, train the person in this position to adequately maintain the Environmental Records binder and required documentation, including environmental permits compliance and close-out. Submit Environmental Manager Qualifications to

the Contracting Officer.

1.6.5 Non-Compliance Notifications

The Contracting Officer will notify the Contractor in writing of any observed noncompliance with federal, state or local environmental laws or regulations, permits, and other elements of the Contractor's EPP. After receipt of such notice, inform the Contracting Officer of the proposed corrective action and take such action when approved by the Contracting Officer. The Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No time extensions will be granted or equitable adjustments allowed for any such suspensions. This is in addition to any other actions the Contracting Officer may take under the contract, or in accordance with the Federal Acquisition Regulation or federal law.

1.7 ENVIRONMENTAL PROTECTION PLAN

The purpose of the EPP is to present an overview of known or potential environmental issues that to be considered and addressed during construction. Include in the EPP measures for protecting natural resources, required reports, and other measures to be taken. Meet with the Contracting Officer or Contracting Officer Representative to discuss the EPP and develop a mutual understanding relative to the details for environmental protection including measures for protecting natural resources, required reports, and other measures to be taken. Submit the EPP within 15 calendar days after notice to proceed. Revise the EPP throughout the project to include any reporting requirements, changes in site conditions, or contract modifications that change the project scope of work in a way that could have an environmental impact. No requirement in this section will relieve the Contractor of any applicable federal, state, and local environmental protection laws and regulations. During Construction, identify, implement, and submit for approval any additional requirements to be included in the EPP. Maintain the current version onsite.

The EPP includes, but is not limited to, the following elements:

1.7.1 General Overview and Purpose

1.7.1.1 Descriptions

A brief description of each specific plan required by environmental permit or elsewhere in this Contract such as air pollution control plan, stormwater pollution prevention plan, spill control plan, solid waste management plan, wastewater management plan, a historical, archaeological, cultural resources, biological resources and wetlands plan, contaminant prevention plan, and land, or vessel, or both, traffic plan.

1.7.1.2 Duties

The duties and level of authority assigned to the person(s) on the job site who oversee environmental compliance, such as who is responsible for adherence to the EPP, who is responsible for spill cleanup and training personnel on spill response procedures, and who is responsible for training the Contractor's environmental protection personnel. Submit Environmental Manager Qualifications as part of the EPP.

1.7.1.3 Procedures

A copy of any standard or project-specific operating procedures that will be used to effectively manage and protect the environment on the project site.

1.7.1.4 Communications

Communication and training procedures that will be used to convey environmental management requirements to Contractor employees and subcontractors.

1.7.1.5 Contact Information

Emergency contact information contact information (office phone number, cell phone number, and e-mail address).

1.7.2 General Site Information

1.7.2.1 Drawings

Drawings showing locations of proposed work areas and any protected areas.

1.7.2.2 Work Area

Work area plan showing the proposed activity in each portion of the area and identify the areas of limited use or nonuse. Include navigational or other measures for marking the limits of use areas, including methods for protection of features to be preserved within authorized work areas and methods to control runoff and to contain materials on site, and a traffic control plan.

1.7.2.3 Documentation

A letter signed by an officer of the firm appointing the Environmental Manager and stating that person is responsible for managing and implementing the Environmental Program as described in this contract. Include in this letter the Environmental Manager's authority to direct the removal and replacement of non-conforming work.

1.7.3 Management of Natural Resources

- a. Land resources
- b. Replacement of damaged structural features
- c. Temporary construction
- d. Fish and wildlife resources

1.7.4 Protection of Historical and Archaeological Resources

- a. Objectives
- b. Methods

1.7.5 Prevention of Releases to the Environment

- a. Procedures to prevent unauthorized releases of contaminants to the

environment, to include all concrete to be placed.

b. Notifications in the event of an unauthorized release to the environment.

1.7.6 Regulatory Notification and Permits

List what notifications and permit applications that will be made. Some permits require up to 180 calendar days to obtain. Demonstrate that those permits have been obtained or applied for by including copies of applicable environmental permits. The EPP will not be approved until the permits have been obtained.

1.7.7 Clean Air Act Compliance

1.7.7.1 Pollution Generating Equipment

Identify air pollution generating equipment or processes that may require federal, state, or local permits under the Clean Air Act. Determine requirements based on any current permits and the impacts of the project. Provide a list of all fixed or mobile equipment, machinery or operations that could generate air emissions during the project to the COR.

1.7.7.2 Stationary Internal Combustion Engines

Identify portable and stationary internal combustion engines that will be supplied, used or serviced. Comply with 40 CFR 60 Subpart IIII, 40 CFR 60 Subpart JJJJ, 40 CFR 63 Subpart ZZZZ, and local regulations as applicable. At minimum, include the make, model, serial number, manufacture date, size (engine brake horsepower), and EPA emission certification status of each engine. Maintain applicable records and log hours of operation and fuel use. Include reasons for operation and delineate between emergency and non-emergency operation in the logs.

1.8 LICENSES AND PERMITS

Obtain licenses and permits required for the construction of the project. Notify the Government of all general use permitted equipment the Contractor plans to use on site.

1.9 ENVIRONMENTAL RECORDS BINDER

Maintain on-site a separate three-ring Environmental Records Binder and submit at the completion of the project. Make separate parts within the binder that correspond to each submittal listed under paragraph CLOSEOUT SUBMITTALS in this section.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 PROTECTION OF NATURAL RESOURCES

a. Minimize interference with, disturbance to, and damage to fish, wildlife, and plants, including their habitats. Prior to the commencement of activities, consult with the Contracting Officer, regarding rare species or sensitive habitats that need to be protected. The protection of rare, threatened, and endangered animal and plant species identified, including their habitats, is the Contractor's responsibility.

b. Preserve the natural resources within the project boundaries and outside the limits of permanent work. Restore to an equivalent or improved condition upon completion of work that is consistent with the requirements of the COR or as otherwise specified. Confine construction activities to within the limits of the work indicated or specified.

3.2 WATERS OF THE UNITED STATES

Do not enter, disturb, destroy, or allow discharge of contaminants into waters of the United States except as authorized. The protection of waters of the United States shown on the drawings in accordance with paragraph LICENSES AND PERMITS is the Contractor's responsibility. Authorization to enter specific waters of the United States identified does not relieve the Contractor from any obligation to protect other waters of the United States within, adjacent to, or in the vicinity of the construction site and associated boundaries.

3.3 PROTECTION OF CULTURAL RESOURCES

3.3.1 Archaeological Resources

If, during excavation or other construction activities, any previously unidentified or unanticipated historical, archaeological, and cultural resources are discovered or found, activities that may damage or alter such resources will be suspended. Resources covered by this paragraph include, but are not limited to: any human skeletal remains or burials; artifacts; shell, midden, bone, charcoal, or other deposits; rock or coral alignments, pavings, wall, or other constructed features; and any indication of agricultural or other human activities. Upon such discovery or find, immediately notify the Contracting Officer so that the appropriate authorities may be notified and a determination made as to their significance and what, if any, special disposition of the finds should be made. Cease all activities that may result in impact to or the destruction of these resources. Secure the area and prevent employees or other persons from trespassing on, removing, or otherwise disturbing such resources. The Government retains ownership and control over archaeological resources.

3.3.2 Historical Resources

Existing historical resources within the work area are shown on the drawings. Protect these resources and be responsible for their preservation during the life of the Contract.

3.4 AIR RESOURCES

Equipment operation, activities, or processes will be in accordance with 40 CFR 64 and state air emission and performance laws and standards.

3.5 WASTE MANAGEMENT AND DISPOSAL

3.5.1 Control and Management of Solid Wastes

Pick up solid wastes, and place in covered containers that are regularly emptied. Do not prepare or cook food on the project site. Prevent contamination of the site or other areas when handling and disposing of wastes. At project completion, leave the areas clean. Employ segregation measures so that no hazardous or toxic waste will become co-mingled with non-hazardous solid waste. Transport solid waste off-site and dispose of

it in compliance with 40 CFR 260, state, and local requirements for solid waste disposal. A Subtitle D RCRA permitted landfill is the minimum acceptable offsite solid waste disposal option. Verify that the selected transporters and disposal facilities have the necessary permits and licenses to operate. Comply with the most stringent local, state, and federal requirements, including 40 CFR 241, 40 CFR 243, and 40 CFR 258 for all off-site solid waste disposal.

Manage hazardous material used in construction, including but not limited to, aerosol cans, waste paint, cleaning solvents, contaminated brushes, and used rags, in accordance with 49 CFR 173.

3.5.2 Releases/Spills of Oil and Hazardous Substances

3.5.2.1 Response and Notifications

a. Exercise due diligence to prevent, contain, and respond to spills of hazardous material, hazardous substances, hazardous waste, sewage, regulated gas, petroleum, lubrication oil, and other substances regulated in accordance with 40 CFR 300. Maintain spill cleanup equipment and materials at the work site. In the event of a spill, take prompt, effective action to stop, contain, curtail, or otherwise limit the amount, duration, and severity of the spill/release. In the event of any releases of oil and hazardous substances, chemicals, or gases; immediately (within 15 minutes) notify the Fire Department, State (NYSDEC) and local authorities, and the Contracting Officer.

b. Submit verbal and written notifications as required by the federal (40 CFR 300.125 and 40 CFR 355), state, local regulations and instructions. Provide copies of the written notification and documentation that a verbal notification was made within 20 calendar days. Perform spill response in accordance with 40 CFR 300 and applicable state and local regulations. Contain and clean up these spills without cost to the Government.

3.5.2.2 Clean Up

Clean up hazardous and non-hazardous waste spills. Reimburse the Government for costs incurred including sample analysis materials, clothing, equipment, and labor if the Government will initiate its own spill cleanup procedures, for Contractor- responsible spills, when: Spill cleanup procedures have not begun within one hour of spill discovery/occurrence; or, in the Government's judgment, spill cleanup is inadequate and the spill remains a threat to human health or the environment.

3.6 PETROLEUM, OIL, LUBRICANT (POL) STORAGE AND FUELING

POL products include flammable or combustible liquids, such as gasoline, diesel, lubricating oil, used engine oil, hydraulic oil, mineral oil, and cooking oil. Store POL products and fuel equipment and motor vehicles in a manner that affords the maximum protection against spills into the environment. Manage and store POL products in accordance with EPA 40 CFR 112, and other federal, state, regional, and local laws and regulations. Use secondary containments, dikes, curbs, and other barriers, to prevent POL products from spilling and entering the ground, storm or sewer drains, stormwater ditches or canals, or navigable waters of the United States. Describe in the EPP (see paragraph ENVIRONMENTAL PROTECTION PLAN) how POL tanks and containers will be stored, managed, and inspected

and what protections are to be provided. Storage of oil, including fuel, on the project site is not allowed. Bring fuel to the project site each day that work is performed.

3.6.1 Used Oil Management

Manage used oil generated on site in accordance with 40 CFR 279. Determine if any used oil generated while onsite exhibits a characteristic of hazardous waste. Used oil containing 1,000 parts per million of solvents is considered a hazardous waste and disposed of at the Contractor's expense. Used oil mixed with a hazardous waste is also considered a hazardous waste. Dispose in accordance with paragraph HAZARDOUS WASTE DISPOSAL.

3.7 SOUND INTRUSION

- a. Make the maximum use of low-noise emission products, as certified by the EPA.
- b. Keep construction activities under surveillance and control to minimize environment damage by noise. Comply with the provisions of the State of New York rules.

3.8 POST CONSTRUCTION CLEANUP

Clean up areas used for construction. Unless otherwise instructed in writing by the Contracting Officer, remove traces of temporary construction facilities such as haul roads, work area, structures, foundations of temporary structures, stockpiles of excess or waste materials, and other vestiges of construction prior to final acceptance of the work. Grade parking area and similar temporarily used areas to conform with surrounding contours.

-- End of Section --

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DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01 78 00

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-- End of Section Table of Contents --

SECTION 01 78 00

CLOSEOUT SUBMITTALS

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

U.S. ARMY CORPS OF ENGINEERS (USACE)

ERDC/ITL TR-12-1 (2012) CAD Drafting Standard

ERDC/ITL TR-12-6 (2012) A/E/C CAD Standard - Release 5.0

1.2 DEFINITIONS

1.2.1 As-Built Drawings

As-built drawings are developed and maintained by the Contractor and depict actual conditions, including deviations from the Contract Documents. These deviations and additions may result from coordination required by, but not limited to: contract modifications; official responses to Contractor submitted Requests for Information; direction from the Contracting Officer; designs which are the responsibility of the Contractor, and differing site conditions. Maintain the as-builts throughout construction as red-lined hard copies on site. These files serve as the basis for the creation of the record drawings.

1.2.2 Record Drawings

The record drawings are the final compilation of actual conditions reflected in the as-built drawings.

1.3 SOURCE DRAWING FILES

Request the full set of electronic drawings, in the source format, for Record Drawing preparation, after award and at least 30 calendar days prior to required use.

1.3.1 Terms and Conditions

a. Data contained on these electronic files can not be used for any purpose other than as a convenience in the preparation of construction drawings and data for the referenced project. Any other use or reuse is at the sole risk of the Contractor and without liability or legal exposure to the Government. The Contractor will make no claim and waives to the fullest extent permitted by law, any claim or cause of action of any nature against the Government, its agents or sub consultants that may arise out of or in connection with the use of these electronic files. The Contractor, to the fullest extent permitted by law, indemnifies and holds the Government harmless against all damages, liabilities or costs, including reasonable

attorney's fees and defense costs, arising out of or resulting from the use of these electronic files.

b. These electronic CAD drawing files are not construction documents. Differences may exist between the CAD files and the corresponding construction documents. The Government makes no representation regarding the accuracy or completeness of the electronic CAD files, nor does it make representation to the compatibility of these files with the Contractor hardware or software. In the event that a conflict arises between the signed and sealed construction documents prepared by the Government and the furnished Source drawing files, the signed and sealed construction documents govern. The Contractor is responsible for determining if any conflict exists. Use of these Source Drawing files does not relieve the Contractor of duty to fully comply with the contract documents, including and without limitation, the need to check, confirm and coordinate the work of all contractors for the project. If the Contractor uses, duplicates or modifies these electronic source drawing files for use in producing construction drawings and data related to this contract, remove all previous indicia of ownership (seals, logos, signatures, initials and dates).

1.4 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-11 Closeout Submittals

As-Built Drawings; G, AO
Record Drawings; G, AO

1.5 QUALITY CONTROL

Make additions and corrections to the contract drawings equal in quality and detail to that of the originals. Use line colors, line weights, lettering, layering conventions, and symbols conforming to ERDC/ITL TR-12-6.

PART 2 PRODUCTS

2.1 GOVERNMENT FURNISHED MATERIALS

The Government will provide an optical disc (CD or DVD) at the preconstruction conference that contains the following:

- a. One set of "as-designed" electronic CAD files in the specified software and format revised to reflect all amendments and the final contract PDF drawings. The CAD files are provided to enable preparation of as-built or as-constructed drawings. If discrepancies exist between the CAD files and the contract PDF drawings, correct the CAD files to show the contract PDF drawings.
- b. A submittal register data file in comma separated value (CSV) format for import into the Resident Management System (RMS).

2.2 SYSTEM DESCRIPTION

Prepare the CAD drawing files in MicroStation Connect compatible with a

Windows 10 operating system.

2.2.1 Additional Drawings

If additional drawings are required, prepare them using the specified electronic file format applying the same graphic standards specified for original drawings ERDC/ITL TR-12-6 and ERDC/ITL TR-12-1. Use a title block and drawing border for any new final record drawings identical to that used on the contract drawings.

2.2.1.1 Sheet Numbers and File Names

If a sheet needs to be added between two sequential sheets, append a Supplemental Drawing Designator in accordance with ERDC/ITL TR-12-6 Adding a drawing sheet, and ERDC/ITL TR-12-1 Adding or deleting drawing sheets and index sheet procedures.

PART 3 EXECUTION

3.1 AS-BUILT DRAWINGS

Provide and maintain two black line print copies of the PDF contract drawings for As-Built Drawings.

3.1.1 Markup Guidelines

Make comments and markup the drawings complete without reference to letters, memos, or materials that are not part of the As-Built drawing. Show what was changed, how it was changed, where items(s) were relocated and change related details. Create these working as-built markup prints neat, legible and accurate as follows:

- a. Use base colors of red, green, and blue. Color code for changes as follows:
 - (1) Special (Blue) - Items requiring special information, coordination, or special detailing or detailing notes.
 - (2) Deletions (Red) - Over-strike deleted graphic items (lines), lettering in notes and leaders.
 - (3) Additions (Green) - Added items, lettering in notes and leaders.
- b. Provide a legend if colors other than the "base" colors of red, green, and blue are used.
- c. Add and denote any additional equipment or material facilities, service lines, incorporated under As-Built Revisions if not already shown in legend.
- d. Use frequent written explanations on markup drawings to describe changes. Do not totally rely on graphic means to convey the revision.
- e. Use legible lettering and precise and clear digital values when marking prints. Clarify ambiguities concerning the nature and application of change involved.
- f. Wherever a revision is made, also make changes to related section views, details, legend, profiles, plans and elevation views, schedules,

notes and call out designations, and mark accordingly to avoid conflicting data on all other sheets.

- g. For deletions, cross out all features, data and captions that relate to that revision.
- h. For changes on small-scale drawings and in restricted areas, provide large-scale inserts, with leaders to the applicable location.
- i. Indicate one of the following when attaching a print or sketch to a markup print:
 - 1) Add an entire drawing to contract drawings
 - 2) Change the contract drawing to show any changes.
 - 3) Provided for reference only to further detail the initial design.
- j. Incorporate all shop and fabrication drawings into the markup drawings.

3.1.2 As-Built Drawings Content

Revise As-Built Drawings in accordance with ERDC/ITL TR-12-1 and ERDC/ITL TR-12-6. Provide two sets of paper copies from PDF drawings to show the as-built conditions by red-line process during the execution of the project. Keep these working as-built markup drawings current on a weekly basis and at least one set available on the jobsite at all times. Accurately and neatly record changes from the contract drawings which are made during construction or additional information which might be uncovered in the course of construction as they occur by means of details and notes. Submit the working as-built markup drawings for approval prior to submission of each monthly pay estimate. For failure to maintain the working and final record drawings as specified herein, the Contracting Officer will withhold 10 percent of the monthly progress payment until approval of updated drawings. Show on the as-built drawings, but not limited to, the following information:

- a. The actual location, kinds and sizes of all sub-surface utility lines. In order that the location of these lines and appurtenances may be determined in the event the surface openings or indicators become covered over or obscured, show by offset dimensions to two permanently fixed surface features the end of each run including each change in direction on the record drawings. Locate valves, splice boxes and similar appurtenances by dimensioning along the utility run from a reference point. Also record the average depth below the surface of each run.
- b. The location and dimensions of any changes within the building structure.
- c. Layout and schematic drawings of electrical circuits and piping.
- d. Correct grade, elevations, cross section, or alignment of roads, earthwork, structures or utilities if any changes were made from contract plans.
- e. Changes in details of design or additional information obtained from working drawings specified to be prepared and/or furnished by the Contractor; including but not limited to shop drawings, fabrication,

erection, installation plans and placing details, pipe sizes, insulation material, dimensions of equipment foundations, etc.

- f. The topography, invert elevations and grades of drainage installed or affected as part of the project construction.
- g. Changes or Revisions which result from the final inspection.
- h. Where contract drawings or specifications present options, show only the option selected for construction on the working as-built markup drawings.
- i. If borrow material for this project is from sources on Government property, or if Government property is used as a spoil area, furnish a contour map of the final borrow pit/spoil area elevations.
- j. Systems designed or enhanced by the Contractor, such as HVAC controls, fire alarm, fire sprinkler, and irrigation systems.
- k. Changes in location of equipment and architectural features.
- j. Modifications (include within change order price the cost to change working as-built markup drawings to reflect modifications).
- l. Actual location of anchors, construction and control joints, etc., in concrete.
- m. Unusual or uncharted obstructions that are encountered in the contract work area during construction.
- n. Location, extent, thickness, and size of stone protection particularly where it will be normally submerged by water.

3.2 RECORD DRAWING FILES

If additional drawings are required, prepare them using the specified electronic file format applying . For any new final record drawings use a title block and drawing border identical to that used on the contract drawings. Accomplish additions and corrections to the contract drawings using CAD files. Provide all program files and hardware necessary to prepare final PDF record drawings. The Contracting Officer will review final PDF record drawings for accuracy and return them to the Contractor for required corrections, changes, additions, and deletions.

For all record drawing files and pdf versions, use the same style as the original contract drawings with regards to line weights, colors, styles, symbology, print size, etc. Request and receive approval for variations from the COR prior to submittal of the record drawings.

3.2.1 Rename the CAD Drawing files

Rename the CAD Drawing files using the contract number as the Project Code field, (e.g., W91238-15-C-10A-102.DGN) as instructed in the Pre-Construction conference. Use only those renamed files for the Marked-up changes. Make all changes on the layer/level as the original item.

- a. MicroStation files (DGN), enter all as-built delta changes and notations on:

- Level Name contains: ANNO-REVS

- c. When final revisions have been completed, show the wording "RECORD DRAWING AS-BUILTS" followed by the name of the Contractor in letters at least 3/16 inch high on the cover sheet drawing. Date RECORD DRAWING AS-BUILTS" drawing revisions in the revision block.
- d. Within 10 calendar days after Government approval of all of the working record drawings for a phase of work, prepare the final CAD record drawings for that phase of work and submit PDF drawing files and two sets of prints for review and approval. The Government will promptly return one set of prints annotated with any necessary corrections. Within 10 calendar days after receipt of the prints from the Government, revise the CAD files accordingly at no additional cost and submit one set of final prints for the completed phase of work to the Government. Within 10 calendar days of substantial completion of all phases of work, submit the final record drawing package for the entire project. Submit one set of electronic CAD files, and one set of the approved working record PDF files on a DVD with two sets of prints. Submit the CAD files complete in all details and identical in form and function to the CAD drawing files supplied by the Government. Prepare MicroStation files for transmittal using the Packager (Archive). Make any transactions or adjustments necessary to accomplish this. The Government reserves the right to reject any drawing files it deems incompatible with the customer's CAD system. Paper prints, drawing files and storage media submitted will become the property of the Government upon final approval. Failure to submit final record PDF drawing files, CAD files and marked prints as specified will be cause for withholding any payment due under this contract. Final payment will not be made until and unless approval and acceptance of final record drawings is accomplished.

3.3 RECORD DRAWINGS

- b. Prepare final record drawings after the completion of each definable phase of work as listed in the Contractor Quality Control Plan (Foundations, Utilities, Structural Steel, etc., as appropriate for the project). Transfer the changes from the approved working as-built markup drawings to the original electronic CAD drawing files. Modify the as-built CAD drawing files to correctly show the features of the project as-built by bringing the working CAD drawing set into agreement with approved working as-built markup drawings, and adding such additional drawings as may be necessary. Refer to ERDC/ITL TR-12-1 Chapter 11 Drawing Revisions. Jointly review the working as-built markup drawings with printouts from working as-built CAD drawing PDF files for accuracy and completeness. In the monthly review of working as-built CAD drawing PDF file printouts, cover all sheets revised since the previous review. These PDF drawing files are part of the permanent records of this project. Satisfactorily replace, at no expense to the Government, any drawings damaged or lost.
- c. Drawing revisions (include within change order price the cost to change working and final record drawings to reflect revisions) and compliance with the following procedures.
 - (1) Follow directions in the revision for posting descriptive changes.
 - (2) Use a revision delta size of 5/16 inch unless the area where the delta is to be placed is crowded. Use a smaller size delta for crowded areas.

- (3) Place a revision delta at the location of each deletion.
- (4) For new details or sections which are added to a drawing, place a revision delta by the detail or section title.
- (5) For minor changes, place a revision delta by the area changed on the drawing (each location).
- (6) For major changes to a drawing, place a revision delta by the title of the affected plan, section, or detail at each location.
- (7) For changes to schedules or drawings, place a revision delta either by the schedule heading or by the change in the schedule.

3.3.1 Final Record Drawing Package

Submit the final record PDF and CAD drawings package for the entire project within 20 calendar days of substantial completion of all phases of work. Submit one set of ANSI D size PDF and CAD files on optical disc, read-only memory (ROM), two sets of ANSI D size prints and one set of the approved working record drawings. Only submit a final record drawing package complete in all details and identical in form and function to the contract drawing files supplied by the Government.

3.4 FINAL CLEANING

Remove from the site all waste, surplus materials, and rubbish. Remove from the project area all temporary structures, barricades, project signs, and construction facilities.

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MISCELLANEOUS CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.1 SUMMARY

Perform all work in accordance with ACI 318.

1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AMERICAN CONCRETE INSTITUTE (ACI)

ACI 117	(2010; Errata 2011) Specifications for Tolerances for Concrete Construction and Materials and Commentary
ACI 301	(2016) Specifications for Structural Concrete
ACI 304R	(2000; R 2009) Guide for Measuring, Mixing, Transporting, and Placing Concrete
ACI 305R	(2020) Guide to Hot Weather Concreting
ACI 306R	(2016) Guide to Cold Weather Concreting
ACI 318	(2014; Errata 1-2 2014; Errata 3-5 2015; Errata 6 2016; Errata 7-9 2017) Building Code Requirements for Structural Concrete (ACI 318-14) and Commentary (ACI 318R-14)
ACI 347R	(2014; Errata 1 2017) Guide to Formwork for Concrete
ACI SP-66	(2004) ACI Detailing Manual

ASTM INTERNATIONAL (ASTM)

ASTM A615/A615M	(2020) Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
ASTM A1064/A1064M	(2017) Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete
ASTM C31/C31M	(2021a) Standard Practice for Making and Curing Concrete Test Specimens in the Field

ASTM C33/C33M	(2018) Standard Specification for Concrete Aggregates
ASTM C39/C39M	(2021) Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens
ASTM C94/C94M	(2021a) Standard Specification for Ready-Mixed Concrete
ASTM C143/C143M	(2020) Standard Test Method for Slump of Hydraulic-Cement Concrete
ASTM C150/C150M	(2021) Standard Specification for Portland Cement
ASTM C172/C172M	(2017) Standard Practice for Sampling Freshly Mixed Concrete
ASTM C173/C173M	(2016) Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method
ASTM C231/C231M	(2017a) Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method
ASTM C260/C260M	(2010a; R 2016) Standard Specification for Air-Entraining Admixtures for Concrete
ASTM C309	(2019) Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete
ASTM C494/C494M	(2019) Standard Specification for Chemical Admixtures for Concrete
ASTM C618	(2019) Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete
ASTM C685/C685M	(2017) Standard Specification for Concrete Made by Volumetric Batching and Continuous Mixing
ASTM C920	(2018) Standard Specification for Elastomeric Joint Sealants
ASTM C1064/C1064M	(2017) Standard Test Method for Temperature of Freshly Mixed Hydraulic-Cement Concrete
ASTM C1602/C1602M	(2018) Standard Specification for Mixing Water Used in Production of Hydraulic Cement Concrete
ASTM D75/D75M	(2019) Standard Practice for Sampling Aggregates

ASTM D98	(2015) Calcium Chloride
ASTM D412	(2016) Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers - Tension
ASTM D471	(2016a) Standard Test Method for Rubber Property - Effect of Liquids
ASTM D1752	(2018) Standard Specification for Preformed Sponge Rubber, Cork and Recycled PVC Expansion Joint Fillers for Concrete Paving and Structural Construction

U.S. ARMY CORPS OF ENGINEERS (USACE)

COE CRD-C 513	(1974) Corps of Engineers Specifications for Rubber Waterstops
COE CRD-C 572	(1974) Corps of Engineers Specifications for Polyvinylchloride Waterstops

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

40 CFR 247	Comprehensive Procurement Guideline for Products Containing Recovered Materials
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1.3 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Installation Drawings; G, DS

SD-03 Product Data

Air-Entraining Admixture
Accelerating Admixture
Water-Reducing or Retarding Admixture
Curing Materials
Expansion Joint Filler Strips, Premolded
Joint Sealants - Field Molded Sealants
Waterstops
Chemical Floor Hardener
Batching and Mixing Equipment
Conveying and Placing Concrete
Formwork
Mix Design Data; G, DS
Ready-Mix Concrete
Curing Compound
Mechanical Reinforcing Bar Connectors

SD-06 Test Reports

- Aggregates
- Concrete Mixture Proportions; G, DS
- Measurement of Floor Tolerances
- Compressive Strength Testing; G, DS
- Slump; G, AO
- Air Content
- Water

SD-07 Certificates

- Cementitious Materials
- Pozzolan
- CPG for recycled materials or appropriate Waiver Form
- Aggregates
- Delivery Tickets

SD-08 Manufacturer's Instructions

- Chemical Floor Hardener
- Curing Compound

1.4 QUALITY ASSURANCE

Indicate specific locations of Forms, Steel Reinforcement, Accessories, Expansion Joints, Construction Joints Contraction Joints, Control Joints, on installation drawings and include, but not be limited to, square feet of concrete placements, thicknesses and widths, plan dimensions, and arrangement of cast-in-place concrete section.

PART 2 PRODUCTS

2.1 SYSTEM DESCRIPTION

The Government retains the option to sample and test aggregates and concrete to determine compliance with the specifications. Provide facilities and labor as may be necessary to assist the Government in procurement of representative test samples. Obtain samples of aggregates at the point of batching in accordance with ASTM D75/D75M. Sample concrete in accordance with ASTM C172/C172M. Determine slump and air content in accordance with ASTM C143/C143M and ASTM C231/C231M, respectively, when cylinders are molded. Prepare, cure, and transport compression test specimens in accordance with ASTM C31/C31M. Test compression test specimens in accordance with ASTM C39/C39M. Take samples for strength tests not less than once each shift in which concrete is produced. Provide a minimum of five specimens from each sample; two to be tested at 28 days (90 days if pozzolan is used) for acceptance, two will be tested at 7 days for information and one held in reserve.

2.1.1 Strength

Acceptance test results are the average strengths of two specimens tested at 28 days (90 days if pozzolan is used). The strength of the concrete is considered satisfactory so long as the average of three consecutive acceptance test results equal or exceed the specified compressive strength, f'c, but not more than 20 percent, and no individual acceptance test result falls below f'c by more than 500 psi.

2.1.2 Construction Tolerances

Apply a Class "C" finish to all surfaces except those specified to receive a Class "D" finish. Apply a Class "D" finish to all post-construction surfaces which will be permanently concealed. Surface requirements for the classes of finish required are as specified in ACI 117.

2.1.3 Concrete Mixture Proportions

Concrete mixture proportions are the responsibility of the Contractor. Mixture proportions must include the dry weights of cementitious material(s); the nominal maximum size of the coarse aggregate; the specific gravities, absorptions, and saturated surface-dry weights of fine and coarse aggregates; the quantities, types, and names of admixtures; and quantity of water per yard of concrete. Provide materials included in the mixture proportions of the same type and from the same source as will be used on the project. The specified compressive strength f'_c is 4000 psi at 28 days (90 days if pozzolan is used). The maximum nominal size coarse aggregate is 3/4 inch, in accordance with ACI 304R. The air content must be between 4.5 and 7.5 percent with a slump between 2 and 5 inches. The maximum water-cementitious material ratio is 0.50. Submit the applicable test reports and mixture proportions that will produce concrete of the quality required, ten days prior to placement of concrete.

2.2 MATERIALS

Submit manufacturer's literature from suppliers which demonstrates compliance with applicable specifications for the specified materials.

2.2.1 Cementitious Materials

Submit Manufacturer's certificates of compliance, accompanied by mill test reports, attesting that the concrete materials meet the requirements of the specifications in accordance with the Special Clause "CERTIFICATES OF COMPLIANCE". Also, certificates for all material conforming to EPA's Comprehensive Procurement Guidelines (CPG), in accordance with 40 CFR 247. Provide cementitious materials that conform to the appropriate specifications listed:

2.2.1.1 Portland Cement

ASTM C150/C150M, Type I or II, with tri-calcium aluminates (C3A) content less than 10 percent and a maximum cement-alkali content of 0.80 percent Na_2Oe (sodium oxide) equivalent.

2.2.1.2 Pozzolan

Provide pozzolan that conforms to ASTM C618, Class F, including requirements of Tables 1A and 2A.

2.2.2 Aggregates

For fine and coarse aggregates meet the quality and grading requirements of ASTM C33/C33M. Submit certificates of compliance and test reports for aggregates showing the material(s) meets the quality and grading requirements of the specifications under which it is furnished.

2.2.3 Admixtures

Provide admixtures, when required or approved, in compliance with the appropriate specification listed. Retest chemical admixtures that have been in storage at the project site, for longer than 6 months or that have been subjected to freezing, at the expense of the Contractor at the request of the Contracting Officer and will be rejected if test results are not satisfactory.

2.2.3.1 Air-Entraining Admixture

Provide air-entraining admixture that meets the requirements of ASTM C260/C260M.

2.2.3.2 Accelerating Admixture

Provide calcium chloride meeting the requirements of ASTM D98. Other accelerators must meet the requirements of ASTM C494/C494M, Type C or E.

2.2.3.3 Water-Reducing or Retarding Admixture

Provide water-reducing or retarding admixture meeting the requirements of ASTM C494/C494M, Type A, B, or D. High-range water reducing admixture Type F or G may be used only when approved, approval being contingent upon particular placement requirements as described in the Contractor's Quality Control Plan.

2.2.4 Water

Mixing and curing water in compliance with the requirements of ASTM C1602/C1602M; potable, and free of injurious amounts of oil, acid, salt, or alkali. Submit test report showing water complies with ASTM C1602/C1602M.

2.2.5 Reinforcing Steel

Provide reinforcing bars conforming to the requirements of ASTM A615/A615M, Grade 60, deformed. Provide welded steel wire reinforcement conforming to the requirements of ASTM A1064/A1064M. Detail reinforcement not indicated in accordance with ACI 301 and ACI SP-66. Provide mechanical reinforcing bar connectors in accordance with ACI 301 and provide 125 percent minimum yield strength of the reinforcement bar.

2.2.6 Expansion Joint Filler Strips, Premolded

Expansion joint filler strips, premolded of sponge rubber conforming to ASTM D1752, Type I.

2.2.7 Joint Sealants - Field Molded Sealants

Conform to ASTM C920, Type M, Grade NS, Class 25, use NT for vertical joints and Type M, Grade P, Class 25, use T for horizontal joints. Provide polyethylene tape, coated paper, metal foil, or similar type bond breaker materials. The backup material needs to be compressible, nonshrink, nonreactive with the sealant, and a nonabsorptive material such as extruded butyl or polychloroprene foam rubber. Immediately prior to installation of field-molded sealants, clean the joint of all debris and further cleaned using water, chemical solvents, or other means as recommended by the sealant manufacturer or directed.

2.2.8 Formwork

Design and engineer the formwork as well as its construction in accordance with ACI 301 Section 2 and 5 and ACI 347R. Fabricate of wood, steel, or other approved material. Submit formwork design prior to the first concrete placement.

2.2.9 Form Coatings

Provide form coating in accordance with ACI 301.

2.2.10 Vapor Retarder

Consider plastic vapor retarders and adhesives with a high recycled content, low toxicity low VOC (Volatile Organic Compounds) levels.

2.2.11 Curing Materials

Provide curing materials in accordance with ACI 301, Section 5.

2.3 READY-MIX CONCRETE

Provide ready-mix concrete with mix design data conforming to ACI 301 Part 2. Submit delivery tickets in accordance with ASTM C94/C94M for each ready-mix concrete delivery, include the following additional information: .

- a. Type and brand cement
- b. Cement content in 94-pound bags per cubic yard of concrete
- c. Maximum size of aggregate
- d. Amount and brand name of admixture
- e. Total water content expressed by water cementitious material ratio

2.4 ACCESSORIES

2.4.1 Waterstops

2.4.1.1 PVC Waterstop

Polyvinylchloride waterstops conforming to COE CRD-C 572.

2.4.1.2 Rubber Waterstop

Rubber waterstops conforming to COE CRD-C 513.

2.4.1.3 Thermoplastic Elastomeric Rubber Waterstop

Thermoplastic elastomeric rubber waterstops conforming to ASTM D471.

2.4.1.4 Hydrophilic Waterstop

Swellable strip type compound of polymer modified chloroprene rubber that swells upon contact with water conforming to ASTM D412 as follows: Tensile strength 420 psi minimum; ultimate elongation 600 percent minimum. Minimum hardness of 50 on the type A durometer and the volumetric expansion ratio

in distilled water at 70 degrees F; 3 to 1 minimum.

2.4.2 Chemical Floor Hardener

Provide hardener which is a colorless aqueous solution containing a blend of inorganic silicate or silicate material and proprietary components combined with a wetting agent; that penetrates, hardens, and densifies concrete surfaces. Submit manufacturers instructions for placement of liquid chemical floor hardener.

2.4.3 Curing Compound

Provide curing compound conforming to ASTM C309. Submit manufacturers instructions for placing curing compound.

PART 3 EXECUTION

3.1 PREPARATION

Prepare construction joints to expose coarse aggregate. The surface must be clean, damp, and free of laitance. Construct ramps and walkways, as necessary, to allow safe and expeditious access for concrete and workmen. Remove snow, ice, standing or flowing water, loose particles, debris, and foreign matter. Satisfactorily compact earth foundations. Make spare vibrators available. Placement cannot begin until the entire preparation has been accepted by the Government.

3.1.1 Embedded Items

Secure reinforcement in place after joints, anchors, and other embedded items have been positioned. Arrange internal ties so that when the forms are removed the metal part of the tie is not less than 2 inches from concrete surfaces permanently exposed to view or exposed to water on the finished structures. Prepare embedded items so they are free of oil and other foreign matters such as loose coatings or rust, paint, and scale. The embedding of wood in concrete is permitted only when specifically authorized or directed. Provide all equipment needed to place, consolidate, protect, and cure the concrete at the placement site and in good operating condition.

3.1.2 Formwork Installation

Forms must be properly aligned, adequately supported, and mortar-tight. Provide smooth form surfaces, free from irregularities, dents, sags, or holes when used for permanently exposed faces. Chamfer all exposed joints and edges, unless otherwise indicated.

3.1.3 Production of Concrete

3.1.3.1 Ready-Mixed Concrete

Provide ready-mixed concrete conforming to ASTM C94/C94M except as otherwise specified.

3.1.3.2 Concrete Made by Volumetric Batching and Continuous Mixing

Conform to ASTM C685/C685M.

3.1.3.3 Batching and Mixing Equipment

The option of using an on-site batching and mixing equipment is allowable. The contractor must provide sufficient batching and mixing equipment capacity to prevent cold joints. Submit the method of measuring materials, batching operation, and mixer for review, and manufacturer's data for batching and mixing equipment.

3.2 CONVEYING AND PLACING CONCRETE

Convey and place concrete in accordance with ACI 301, Section 5.

3.2.1 Cold-Weather Requirements

Place concrete in cold weather in accordance with ACI 306R

3.2.2 Hot-Weather Requirements

Place concrete in hot weather in accordance with ACI 305R

3.3 FINISHING

3.3.1 Temperature Requirement

Do not finish or repair concrete when either the concrete or the ambient temperature is below 50 degrees F.

3.3.2 Finishing Formed Surfaces

Remove all fins and loose materials , and surface defects including filling of tie holes. Repair all honeycomb areas and other defects. Remove all unsound concrete from areas to be repaired. Ream or chip surface defects greater than 1/2 inch in diameter and holes left by removal of tie rods in all surfaces not to receive additional concrete and fill with dry-pack mortar. Brush-coat the prepared area with an approved epoxy resin or latex bonding compound or with a neat cement grout after dampening and filling with mortar or concrete. Use a blend of portland cement and white cement in mortar or concrete for repairs to all surfaces permanently exposed to view shall be so that the final color when cured is the same as adjacent concrete.

3.3.3 Finishing Unformed Surfaces

Finish unformed surfaces in accordance with ACI 301, Section 5.

3.3.3.1 Expansion and Contraction Joints

Make expansion and contraction joints in accordance with the details shown or as otherwise specified.

3.4 CURING AND PROTECTION

Cure and protect in accordance with ACI 301, Section 5.

3.5 FORM WORK

Provide form work in accordance with ACI 301, Section 2 and Section 5.

3.5.1 Removal of Forms

Remove forms in accordance with ACI 301, Section 2.

3.6 STEEL REINFORCING

Reinforcement must be free from loose, flaky rust and scale, and free from oil, grease, or other coating which might destroy or reduce the reinforcement's bond with the concrete.

3.6.1 Fabrication

Shop fabricate steel reinforcement in accordance with ACI 318 and ACI SP-66. Provide shop details and bending in accordance with ACI 318 and ACI SP-66.

3.6.2 Splicing

Perform splices in accordance with ACI 318 and ACI SP-66.

3.6.3 Supports

Secure reinforcement in place by the use of metal or concrete supports, spacers, or ties.

3.7 EMBEDDED ITEMS

Before placing concrete, take care to determine that all embedded items are firmly and securely fastened in place. Provide embedded items free of oil and other foreign matter, such as loose coatings of rust, paint and scale. Embedding of wood in concrete is permitted only when specifically authorized or directed.

3.8 TESTING AND INSPECTING

Report the results of all tests and inspections conducted at the project site informally at the end of each shift. Submit written reports weekly. Deliver within three days after the end of each weekly reporting period. See Section 01 45 00.00 10 QUALITY CONTROL.

3.8.1 Field Testing Technicians

The individuals who sample and test concrete must have demonstrated a knowledge and ability to perform the necessary test procedures equivalent to the ACI minimum guidelines for certification of Concrete Field Testing Technicians, Grade I.

3.8.2 Preparations for Placing

Inspect foundation or construction joints, forms, and embedded items in sufficient time prior to each concrete placement to certify that it is ready to receive concrete.

3.8.3 Sampling and Testing

- a. Obtain samples and test concrete for quality control during placement. Sample fresh concrete for testing in accordance with ASTM C172/C172M. Make six test cylinders.
- b. Test concrete for compressive strength at 7 and 28 days for each design

mix and for every 100 cubic yards of concrete. Test two cylinders at 7 days; two cylinders at 28 days; and hold two cylinders in reserve. Conform test specimens to ASTM C31/C31M. Perform compressive strength testing conforming to ASTM C39/C39M.

- c. Test slump at the site of discharge for each design mix in accordance with ASTM C143/C143M. Check slump twice during each shift that concrete is produced .
- d. Test air content for air-entrained concrete in accordance with ASTM C231/C231M. Test concrete using lightweight or extremely porous aggregates in accordance with ASTM C173/C173M. Check air content at least twice during each shift that concrete is placed .
- e. Determine temperature of concrete at time of placement in accordance with ASTM C1064/C1064M. Check concrete temperature at least twice during each shift that concrete is placed .

3.8.4 Action Required

3.8.4.1 Placing

Do not begin placement until the availability of an adequate number of acceptable vibrators, which are in working order and have competent operators, has been verified. Discontinue placing if any lift is inadequately consolidated.

3.8.4.2 Air Content

Whenever an air content test result is outside the specification limits, adjust the dosage of the air-entrainment admixture prior to delivery of concrete to forms.

3.8.4.3 Slump

Whenever a slump test result is outside the specification limits, adjust the batch weights of water and fine aggregate prior to delivery of concrete to the forms. Make the adjustments so that the water-cementitious material ratio does not exceed that specified in the submitted concrete mixture proportion and the required concrete strength is still met.

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SECTION 31 68 13.02

TUNNEL REPAIR/RETROFIT

PART 1 GENERAL

1.1 SYSTEM DESCRIPTION

1.1.1 General Requirements

Submit drawings and detailed installation procedures and sequences showing complete details of the installation procedure and equipment including but not limited to the following as applicable: steel set or steel truss fabrication; removals/demolition; grouting methods; grout mix designs; anchorage placement and installation; for the approval by the Contracting Officer. Shop drawings are to include locations and details of all aspects of the work. Once reviewed by the Contracting Officer, no changes or deviation from shop drawings will be permitted without further review by the Contracting Officer. The work includes design, fabrication and installation of the tunnel repair/retrofit system. Install and fabricate as shown on the drawings. Prepare fabrication and installation drawings and an installation plan for approval.

1.1.2 Scope of Work

Provide the design of the tunnel repair/retrofit system that will be completely the Contractor's responsibility. General design criteria are shown on the drawings and given in paragraph Tunnel Repair/Retrofit System Design.

- a. Tunnel repair/retrofit system may be steel sets or steel trusses or any other system common to tunnel repairs and retrofits. The Contractor is responsible for the design of the tunnel repair/retrofit system, determining the design load for the system, determining means and methods to install the system. Submit design computations and data for tunnel repair/retrofit system.
- b. Include computations with drawings, design assumptions, calculations, and other information in sufficient detail to verify the design proposed. The design must be certified by a registered Professional Engineer with proven experience in design of tunnel repair/retrofit system as stated in paragraph Qualifications.
- c. The Contracting Officer will approve the design calculations. Approval of the design calculations will not relieve the Contractor of responsibility for unsatisfactory performance of the installed tunnel repair/retrofit system. Furnish all design computations at least 30 calendar days prior to the proposed commencement of installation. The complete design, including design computations, fabrication and installation drawings and installation plan, must be certified by a registered Professional Engineer and must be submitted for approval.
- d. Submit a plan for installing the tunnel repair/retrofit system for review and comment. The proposal must describe the sequence for installation and other restrictions as outlined on the drawings or specified. Determine the tunnel repair/retrofit system installation

procedures as part of the design. Include the installation plan with descriptions of methods and equipment to be used.

1.1.3 Tunnel Repair/Retrofit System Design

Design the individual tunnel repair/retrofit system to meet the following criteria:

1.1.3.1 Design Load

The Design Load is to be determined by the contractor using the information attached to this section, shown on the drawings, and in accordance with industry standards.

1.1.3.2 Access Requirements

Access through the adit tunnel and security door to the non-overflow surface of the dam must be maintained upon project completion. Ensure clear passageway of at least 36 inches wide by 78 inches tall remains after installation of the tunnel repair/retrofit system. The Contracting Officer will consider for approval designs that call for demolition and removal of the existing concrete tunnel lining as needed to ensure access is maintained.

1.1.3.3 Component Design

The individual components of the tunnel repair/retrofit system must be of suitable size to either be moved through the manhole cover and access shaft shown or fit through the corridors and stairwells within the dam. If the elevator at the dam is to be used the components transported by elevator must not exceed the load rating for the elevator. The elevator weight capacity is 9,000lbs. The car dimensions are: Length 120" x Width 92" x Height 92". The elevator door is 52.5" wide and 80" tall.

1.1.3.4 Design Schedule

Submit a design schedule for the tunnel repair/retrofit system which includes the following:

- a. Steel set, steel truss, or other feature number.
- b. Steel set, steel truss or other feature design load.
- c. Type and size of steel set, steel truss, or other feature.
- d. Details of corrosion protection, including details of anchorage and installation and concrete overlay as applicable.
- e. Submit the design schedule at least 30 days prior to commencement of work on the tunnel repair/retrofit system covered by the schedule.

1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AMERICAN CONCRETE INSTITUTE (ACI)

ACI 301 (2016) Specifications for Structural Concrete

ASTM INTERNATIONAL (ASTM)

ASTM A36/A36M (2019) Standard Specification for Carbon Structural Steel

ASTM A53/A53M (2020) Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless

ASTM A500/A500M (2021) Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes

ASTM A572/A572M (2021; E 2021) Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel

ASTM A588/A588M (2019) Standard Specification for High-Strength Low-Alloy Structural Steel, up to 50 ksi Minimum Yield Point, with Atmospheric Corrosion Resistance

ASTM A615/A615M (2020) Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement

ASTM A709/A709M (2018) Standard Specification for Structural Steel for Bridges

ASTM A722/A722M (2015) Standard Specification for Uncoated High-Strength Steel Bar for Prestressing Concrete

ASTM C33/C33M (2018) Standard Specification for Concrete Aggregates

ASTM C109/C109M (2021) Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or (50-mm) Cube Specimens)

ASTM C144 (2018) Standard Specification for Aggregate for Masonry Mortar

ASTM C150/C150M (2021) Standard Specification for Portland Cement

ASTM C1107/C1107M (2020) Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink)

POST-TENSIONING INSTITUTE (PTI)

PTI DC35.1 (2014) Recommendations for Prestressed

Rock and Soil Anchors

1.3 SITE CONDITIONS

A foundation investigation has been conducted at the site by the government and data is presented in the Geologic Conditions Summary attached after this section. While the foundation information is representative of subsurface conditions at the respective locations, local variations in the characteristics of the subsurface materials are anticipated. Local variations which may be encountered include, but are not limited to, classification and thickness of rock strata, fractures, and other discontinuities in the rock structure, and variation in the soil classifications. Such variations will not be considered as differing materially within the purview of the contract clauses, paragraph differing site conditions. Core from the borings indicated are available for inspection as specified in the special contract requirements, paragraph physical data. The contractor is responsible for verifying the location, removal, and reinstallation of all utilities that may be affected by construction or the installation of the tunnel repair/retrofit system.

1.4 SUBMITTALS

Government approval is required for submittals with a "G" classification. Submittals not having a "G" classification are for information only. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Fabricator Qualifications; G, DS/DG

Installer Qualifications; G, DS/DG

SD-02 Shop Drawings

Fabrication and Installation Drawings; G, DS/DG

SD-03 Product Data

Equipment

Designer Qualifications; G, DS/DG

Installation Plan; G, DS/DG

SD-05 Design Data

Design Computations; G, DS/DG

Tunnel Repair/Retrofit System Design; G, DS/DG

Design Schedule

SD-06 Test Reports

Prestressing Steel

SD-07 Certificates

Prestressing Steel

Cement

1.5 QUALITY ASSURANCE

Submit tunnel repair/retrofit system designer, fabricator and installer qualifications for approval in accordance with paragraph SUBMITTALS. The submittals must, where applicable, identify individuals who will be working on this contract and their relevant experience. No changes must be made in approved personnel without prior approval of the Contracting Officer.

1.5.1 Designer Qualifications

The tunnel repair/retrofit system must be designed by Professional Engineers who have designed a minimum three tunnel projects similar in size and scope to this project within the past ten years. The drawings and calculations must be signed by the Professional Engineer.

1.5.2 Fabricator Qualifications

The anchors must be fabricated by a manufacturer that has been in the practice of designing and fabricating tunnel repair/retrofit systems similar in size and scope to this project for at least 5 years.

1.5.3 Installer Qualifications

Submit the qualifications and experience records for approval. In the experience record, identify all the individuals responsible for the tunnel repair/retrofit system and must include a listing of projects of similar scope performed within the specified period along with points of contact. Submit Qualifications prior to the installation of any tunnel repair/retrofit system. The tunnel repair/retrofit system must be installed by a firm which is regularly engaged in the installation of tunnel repair/retrofit systems and has at least 5 years experience in the installation of similar tunnel systems. The superintendent must have installed tunnel systems on at least three projects of similar scope and size.

1.6 DELIVERY, STORAGE, AND HANDLING

Materials must be suitably wrapped, packaged or covered at the factory or shop to prevent being affected by dirt, water, oil, grease, and rust. Protect materials against abrasion or damage during shipment and handling. Place materials stored at the site on a well-supported platform and covered with plastic or other approved material. protect materials from adjacent construction operations.

PART 2 PRODUCTS

2.1 MATERIALS

2.1.1 Prestressing Steel

Submit certified test reports for each heat or lot of prestressing steel with materials delivered to the site. Submit mill reports and certificate from the manufacturer stating chemical properties, ultimate strengths, yield strengths, modulus of elasticity, and any other physical properties needed for the required computations, for the type of steel furnished.

2.1.1.1 High-Strength Steel Bars

ASTM A722/A722M, Type I or II, meeting all supplementary requirements.

2.1.1.2 Steel Bar

ASTM A615/A615M .

2.1.2 Structural Steel

ASTM A36/A36M ASTM A572/A572M, Grade 50 ASTM A588/A588M ASTM A709/A709M
Grade 36 or 50.

2.1.3 Steel Pipe

ASTM A53/A53M, Type E or S, Grade B.

2.1.4 Steel Tube

ASTM A500/A500M.

2.2 GROUT

2.2.1 Cement

ASTM C150/C150M, Type I, II, III or V.

2.2.2 Water

Provide fresh, clean, potable water free from injurious amounts of sewage, oil, acid, alkali, salts, or organic matter.

2.2.3 Aggregates

Fine aggregate for sand-cement grout must conform to ACI 301 and [ASTM C33/C33M for grout for backfilling holes] [or ASTM C144 for grout for pregrouting]. Aggregates must not contain substances which may be deleteriously reactive with alkalis in the cement.

2.2.4 Admixtures.

Admixtures which control bleed, improve flowability, reduce water content and retard set may be used in the grout subject to the approval of the Contracting Officer. Any admixtures used must be compatible with the prestressing steel and must be mixed in accordance with the manufacturer's recommendations.

2.2.5 Grout for Anchors

2.2.5.1 Cement Grout

Cement grout must conform to PTI DC35.1-14 Section 6.11 and Section 7.8.2.3. Submit cement grout mixture proportions.

2.2.5.2 Polyester Resin Grout

Polyester resin grout must consist of high strength, unsaturated polyester resin filled with nonreactive, inorganic aggregate and a separated catalyst

contained in a tube of polyester film or glass. Gel time and cure time must be appropriate for the installation procedures. The polyester resin grout must have the following minimum properties:

Compressive Strength	12000 psi
Tensile Strength	4000 psi
Shear Strength	3000 psi

Resin cartridges with expired shelf life are not allowed.

2.2.6 Sand-Cement Grout

Grout for waterproofing holes, grouting holes which fail the watertightness test, and for backfilling holes which are abandoned must consist of a mixture of portland cement, fine aggregate masonry sand and water. The grout mix proportions are the responsibility of the Contractor. Submit the proposed mix design to the Contracting Officer. The water content must be the minimum necessary for proper placement. Base the final proportions of materials on results of tests made on sample mixtures of grout. The minimum compressive strength of two-inch cubes, molded, cured, and tested in accordance with ASTM C109/C109M, shall be 4,000 psi. The Contractor is responsible for taking, curing, and breaking of grout test cubes for determining mix design, and all testing must be done by an independent laboratory approved by the Contracting Officer. Replicate rock conditions and temperatures in the curing process.

2.2.7 Grout for Anchor Pads

Use nonshrink grout conforming to ASTM C1107/C1107M for leveling bearing plates.

PART 3 EXECUTION

3.1 DRILLING HOLES

3.1.1 Drilling Through Existing Structures

Drill holes through existing structure by any method which does not cause damage to the surrounding structure. The Contractor is advised that foreign material, including metals and other materials remaining from original construction of the existing structure, may be encountered during drilling through existing structures.

3.1.2 Drilling in Rock

Holes in rock may be drilled by core drilling, rotary drilling, percussion drilling or down-the-hole hammer using equipment suitable for the intended purpose. The drilling method must not cause structural damage to existing structures. Modify drilling method if damage is observed.

3.1.3 Watertightness Testing

The rock portion of all drilled holes must be watertightness tested in accordance with the procedures of PTI DC35.1, Section 7.5. A packer must be used where necessary to facilitate pressure testing of the bond zone. Holes which have a water loss in excess of 2.5 gallons in ten minutes must

be grouted as specified in paragraph Waterproofing Anchor Holes, and redrilled.

3.2 ACCEPTANCE

3.2.1 General

Acceptance of the tunnel repair/retrofit system must be determined by the Contracting Officer. The following criteria will be used in determination of the acceptability:

- a. Installed tunnel repair/retrofit system matches the Fabrication and Installation Drawings.
- b. Installed tunnel repair/retrofit system components meet or exceed the requirements shown in the Design Computations.
- c. A complete Design Schedule has been submitted including any changes, additions, and/or alterations made during installation.

3.2.2 Replacement of Rejected tunnel repair/retrofit system

Any tunnel repair/retrofit system that is rejected by the Contracting Officer must be replaced. A replacement tunnel repair/retrofit system, shall be provided by the Contractor at no expense to the Government. The location of the replacement tunnel repair/retrofit system will be as determined by the Contractor in accordance with the redesign of the tunnel repair/retrofit system. Provide all materials, supplies, equipment, and labor necessary to provide a new tunnel repair/retrofit system to the satisfaction of the Contracting Officer. Payment will not be made for rejected or failed tunnel repair/retrofit systems. The Contractor will be responsible to remove any and all failed components of the failed tunnel repair/retrofit systems as deemed by the Contracting Officer at no cost to the government.

-- End of Section --

Mt Morris Dam North Portal Repair

Geologic Conditions Summary

April 22, 2022

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Attachments:

Attachment 1: RMR Classification System Worksheets

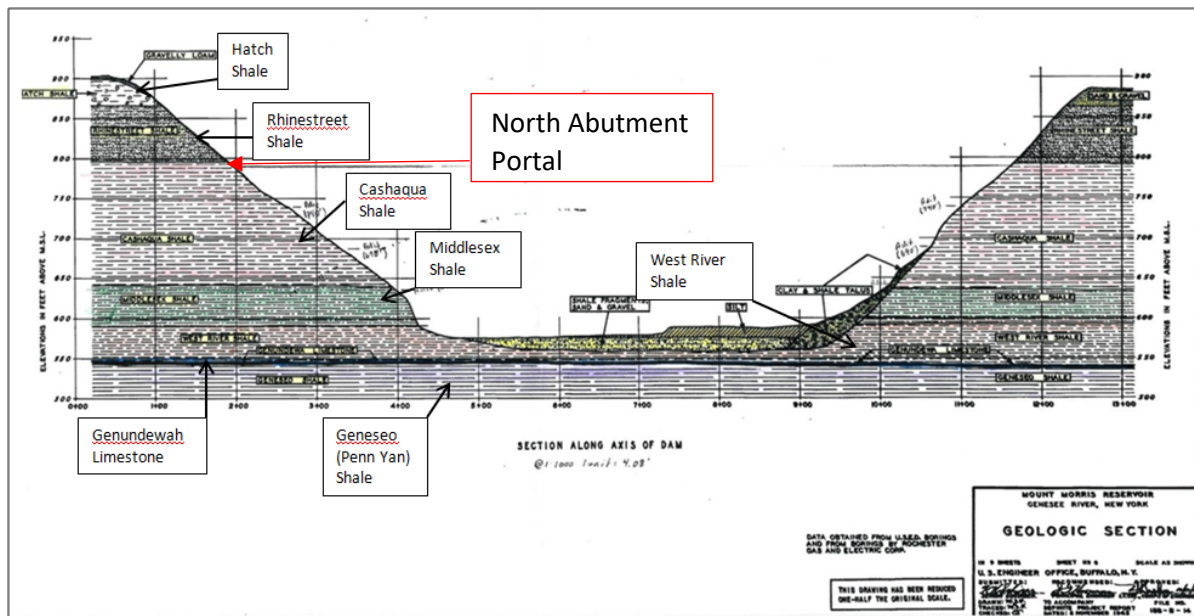
Attachment 2: Q Classification System Worksheets

Attachment 3: Terzaghi's Rock Classification System Worksheet

Attachment 4: GSI Supporting Worksheets

1. Geologic Cross Section and Summary of Relevant Geologic Units

Figure 1. Geologic Cross Section Along Axis of the Dam (Downstream View)



Overburden strata of the site includes a relatively limited thickness deposit of glacial till mantling bedrock at the top of the river gorge, weathered shale talus along the gorge walls, and recent alluvium (silt, sand, gravel) at the Genesee River bed. The overburden deposits were thoroughly removed from above the bedrock during the construction of the dam. The foundation rocks at Mt. Morris Dam are sedimentary and consist of Upper and Middle Devonian shales with the exception of the Genundawa Limestone which is 1.8 to 2.8 feet in thickness.

General Foundation Geology of Mount Morris Dam

Mt Morris Dam is entirely founded on rock consisting of flat-lying sedimentary rocks of Upper Devonian Age, primarily thinly laminated and fissile shales serving as the abutment foundation, and a relatively thin unit (~3 ft) of limestone as the immediate base unit of the valley bottom monoliths. The literature indicates that central and western New York State Upper Devonian rock units are part of a thick flysch deposit (Grossman, Bulletin of the Geological Society of America, 1944). Flysch is a geologic unit consisting of a sequence of deep marine shales rhythmically interbedded with thin, hard, siltstones/sandstones. The total thickness of such sequences is commonly greater than hundreds of feet.

With regard to petrography, the foundation rocks at the dam site are all conformable, unaltered, non-folded sedimentary rocks. Joints in the abutments were the principal foundation weaknesses encountered during construction of the dam. Two predominant joint sets are present: One set is near vertical, well developed, tight, and dry and crossing the valley diagonally striking about N45W. The second set roughly parallels the valley walls with a strike of N60E. These parallel valley joints (referred to as inclined joints) dip toward the river in both abutments at angles varying between 45 and 90 degrees with most of them at approximately 75 degrees.

According to the Foundation report, neither of these joint sets intersect the Genundewa Limestone.

As reported from construction documentation, only the inclined set of joints offered serious foundation problems. Both dips and strikes of this joint set vary sufficiently to produce many small angle intersections. In many places where the joints are close together, the shale between them was found to be partially or completely deteriorated. Due to apparent riverward movement of the walls of rock between the joints, open cracks were formed and surface water had entered the cracks, or open joints, causing deterioration of both sides and decay of the narrow portions of the intervening shale referred to above. In many cases the joints were filled with clay or mud, often producing a combination of clay and broken shale. The inclined joints are found throughout both abutments but are generally tight in the West River and Middlesex shales except in the outer surface. Only in the Cashaqua shale did these joints present a serious construction problem. Nearly all the grout injected during the curtain grouting operation went into the Cashaqua Shale.

Cashaqua Shale and Rhinestreet Shale Descriptions

The North Abutment Portal is constructed principally within the Cashaqua Shale unit with the portal's excavation limits at the roof very near or at the contact (el. 800) of the base of the overlying Rhinestreet Shale and the top of the Cashaqua Shale. Since the Rhinestreet Shale does not serve as a foundation for the dam components, its physical attributes and characteristics were not studied to any great extent as part of the dam's construction. However, from available reference sources and site observations, it is a Devonian age shale and is similar in general characteristics to the Cashaqua Shale. Consequently, the Cashaqua Shale physical characteristics represent a reasonable surrogate for the Rhinestreet Shale for the purpose of evaluating the rock mass conditions overlying the roof of the North Abutment Portal.

The Cashaqua Shale is the dam's foundation (in part) in Monoliths 1, 2 and 3, and 19, 20, 21, and 22. The Cashaqua Shale is blocky, moderately hard to hard, but weathers rapidly upon exposure. The shale is a very light olive green on a weathered surface but is medium to dark gray on a fresh surface. It contains spheric and elongated concretions that range up to a foot in diameter.

The Upper Devonian Rhinestreet Shale of western New York State comprises a sequence of finely laminated, low-permeability, organic-rich shale and thin intervals of gray shale and concretionary limestone. It is described as more weathering resistant than the underlying Cashaqua Shale.

The following summarizes the approximate average of the drill core quality and physical characteristics of the Cashaqua Shale based upon investigations and laboratory testing of drill core samples obtained from the southern dam abutment:

Rock Quality Designation (RQD)	80
Uniaxial Compressive Strength	3832 psi (lower 1/3 of lab tests)
Density or Rock	167.8 pcf

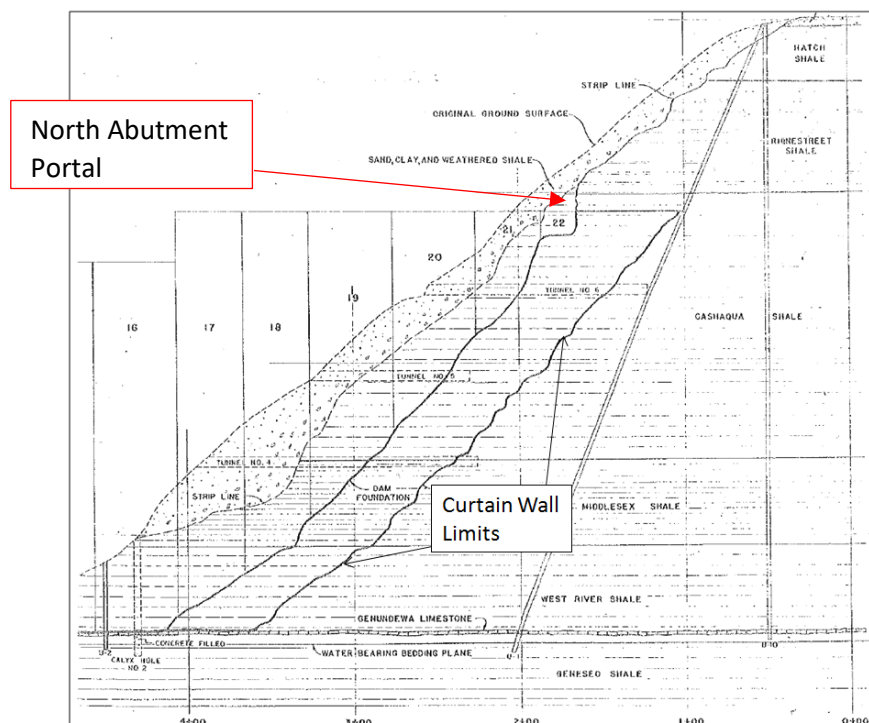
Abutment Treatment

Both abutments were excavated from top to bottom by bulldozers and blasting. The limits of excavation were dependent upon the depth of weathering. Final cleanup was made using cableway skips. Inclined joints that penetrated from the Cashaqua Shale to the Genundewa Limestone were troublesome. Most of the joints were weathered to some degree. They were cleaned by using pavement breakers, picks, and air-water jets.

Curtain Wall

A curtain wall was constructed in the rock abutments and grouting of the foundation was performed along both the abutments and river bottom. The curtain wall was constructed in a notch that was excavated considerably deeper than the designed limits of the abutments. Except at gallery junctions, the excavations were designed to be six feet wide and extend into the foundation wall 20 feet beyond the limits of the mud-filled, stress-relief joints. The existing joints were interpreted to be problematic so the curtain wall was excavated, at times, 125 feet beyond the designed limits on the right abutment. Generally, the curtain wall was excavated using the tunnel and slope method with line-drilled faces both upstream and downstream. The curtain wall bulkhead lines were located far enough bankward to avoid any possibility of the wall extending into the concrete of the dam. Numerous inclined joints resulted in considerable overbreak during blasting. To avoid excessive rebound in the sides of the curtain wall excavation, the maximum height of open hole was limited to 50 feet. Prior to concrete placement, the curtain wall was covered with two inches of styrofoam to compensate for any differential settlement that might occur between the curtain walls and the abutment monoliths of the dam.

Figure 2 Curtain Wall Limits – North Abutment



2. North Portal Exterior Photographs

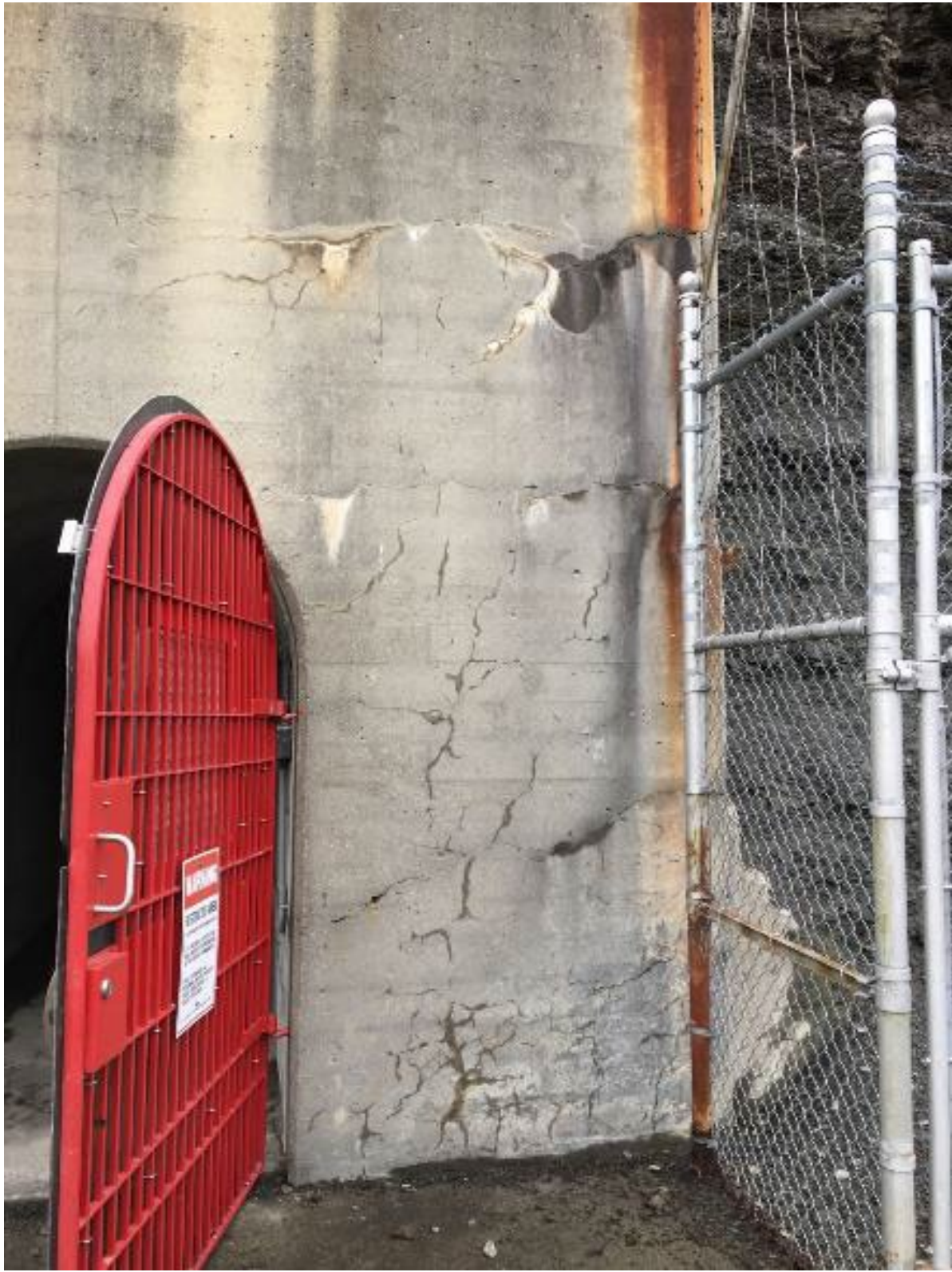
Photograph 1. Looking North at Portal Entry from Dam Parapet



Photograph 2. Looking Northwest at Portal Entry from Dam Parapet

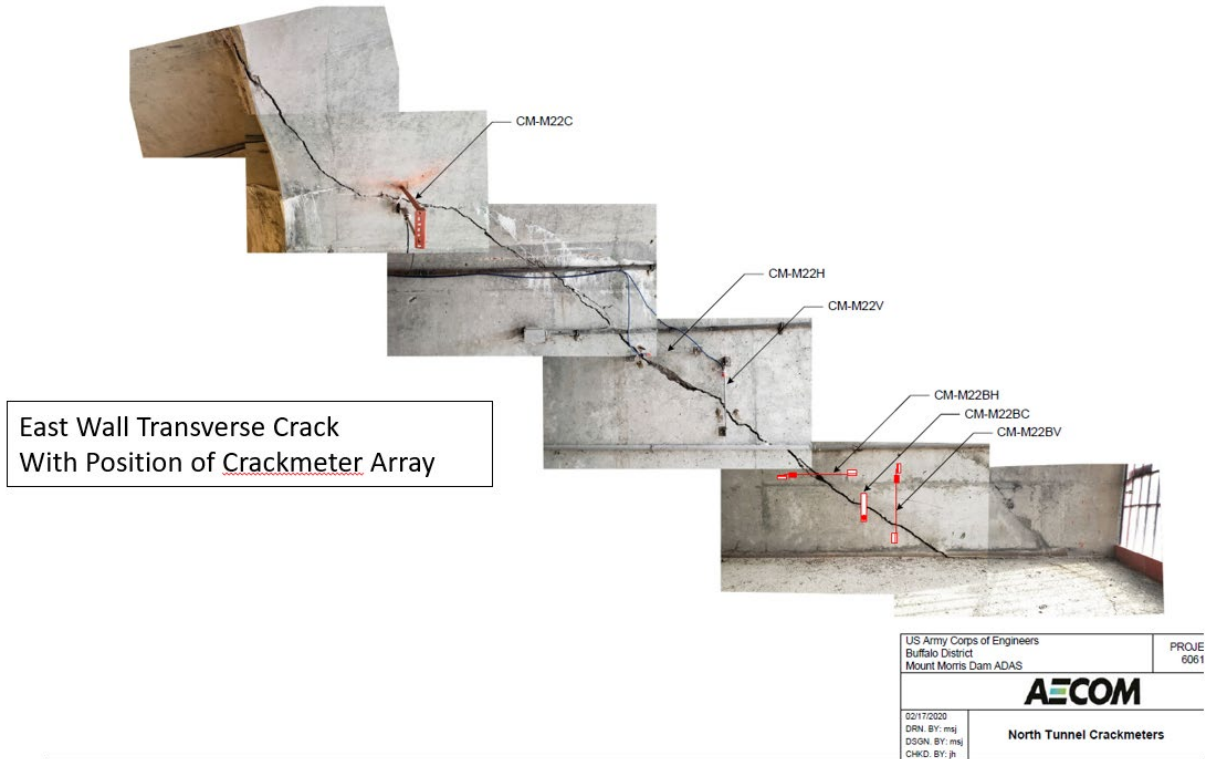


Photograph 3. Looking North at Portal Entry from Dam Parapet



3. North Portal Interior Photographs

Photograph 4. East Wall Transverse Crack



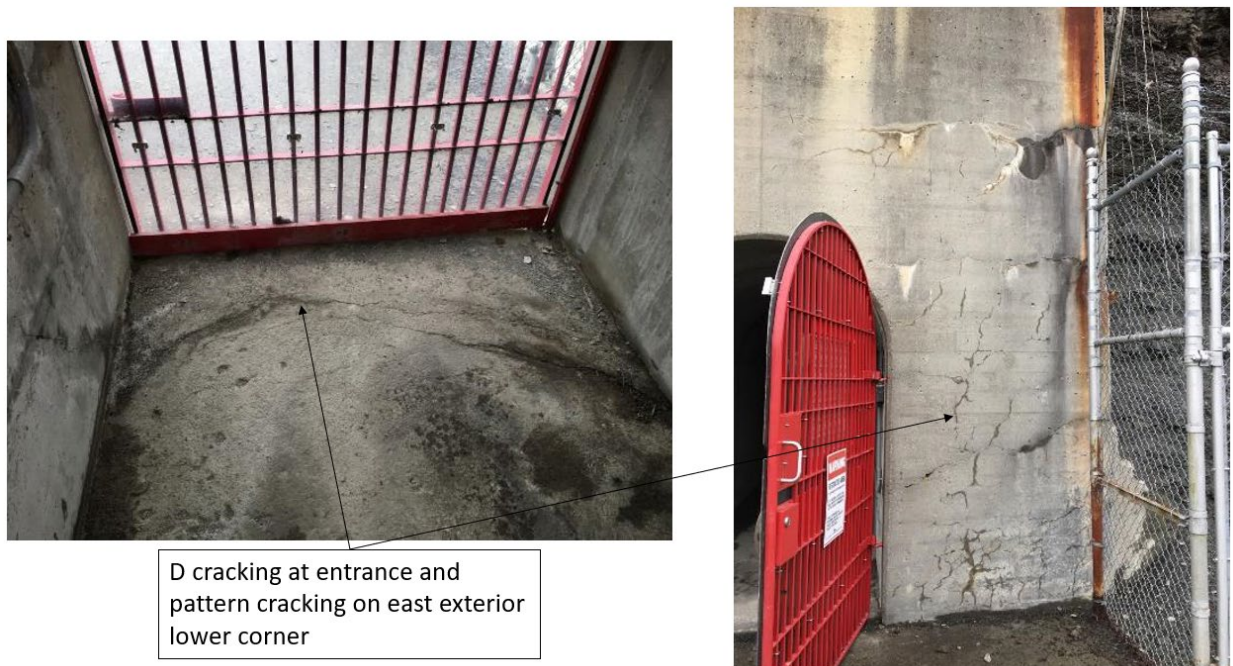
Photograph 5. Interior Cracking – Looking South



Photograph 6. Interior Cracking – West wall



Photograph 7. Floor Cracking and Exterior Pattern Cracking



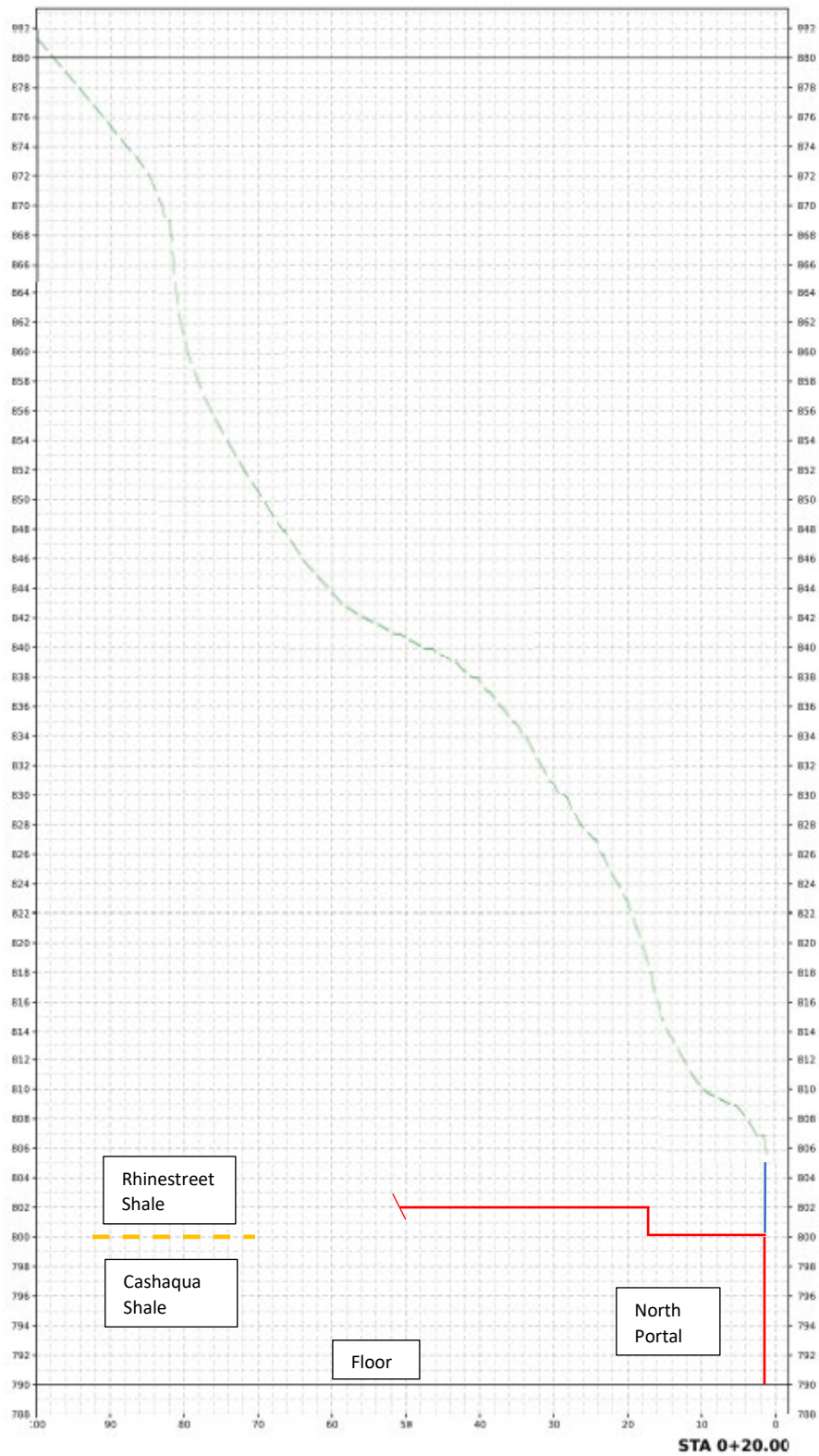
Photograph 8 – Cracking at Interior Chamber

Transverse Cracking beginning
on Interior Tunnel Wall and
Crown



4. North Slope Cross Section Above Portal

Figure 3. North Slope Cross Section Above Portal



5. North Portal Extensometer Trends

The following figures present plots of extensometer data collected from six extensometers installed within the north portal. These extensometers can be seen in figures 4 and 5 below.

Figure 4. Extensometer Data: Left/North Abutment Tunnel Crack (X,Y,Z)

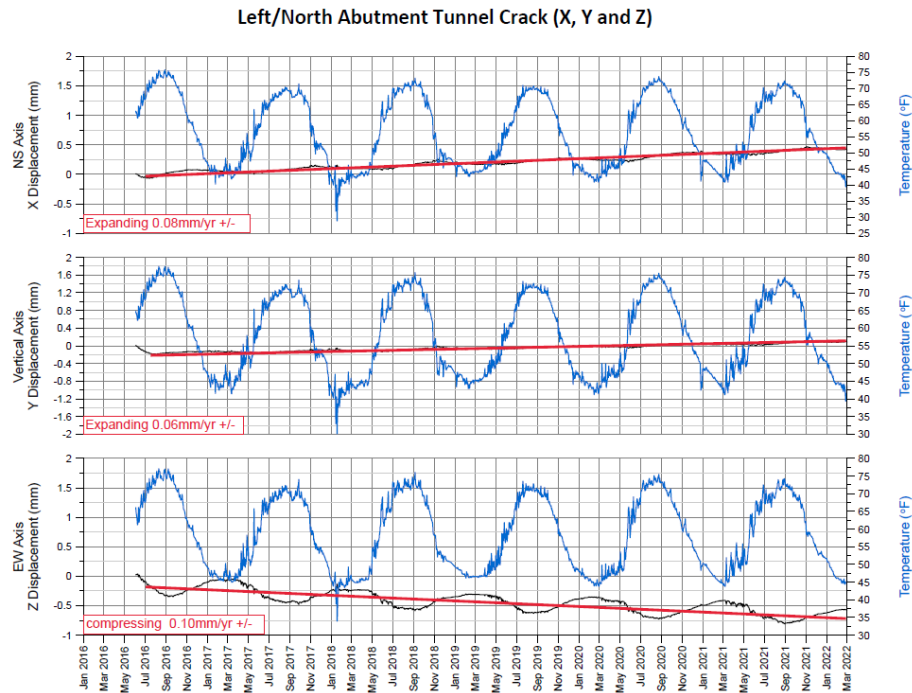
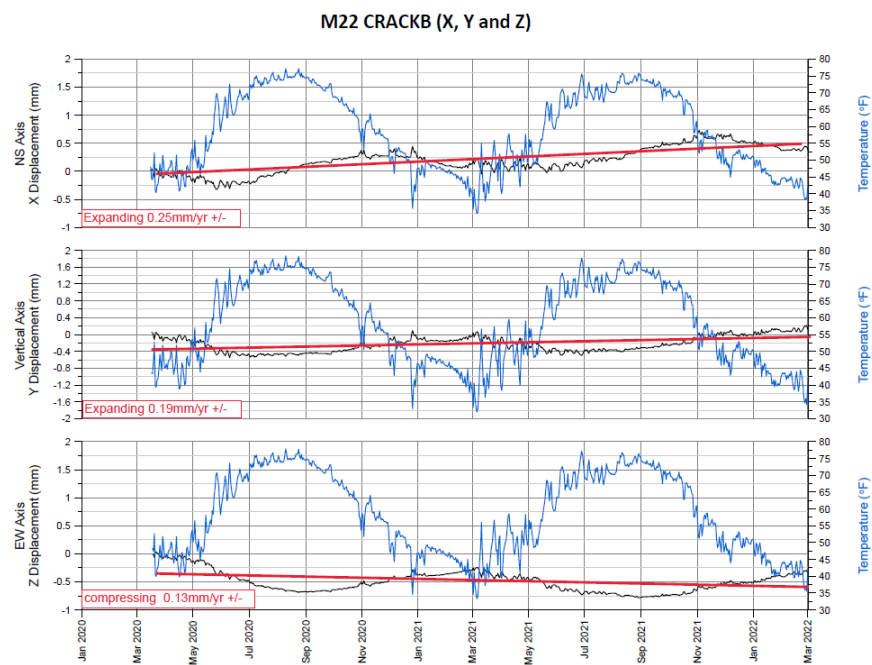


Figure 5. Extensometer Data: M22 CrackB (X,Y,Z)



Note/Disclaimer for Section 6, 7, and 8 below: The following sections of this Geologic Conditions Summary presents several rock mass classifications and analyses in support of USACE Buffalo's understanding of existing geologic conditions that pertain to the north portal repair project. The classifications and analyses have been prepared based on available investigative and laboratory data for the Mt Morris Dam and specifically for the Cashaqua Shale unit. The Cashaqua Shale forms the sidewall and tunnel crown support zones for the portal. The classifications and analyses for the Cashaqua Shale have also been developed to provide an understanding and surrogate for the physically similar overlying Rhinestreet Shale present immediately above the crown of the portal. The information developed herein is for USACE reference purposes and understanding of the portal repair project. The Bidders for the north portal repair are to rely on their own technical analyses in developing their respective bids and repair approach.

6. Rock Mass Classification Assessments Using Geomechanics Rock Mass Rating (RMR) System, Q System, and Terzaghi's Rating

- References: Tunnel Design by Rock Mass Classifications, Technical Report GL-79-19, Z.T Bieniawski, Prepared for Department of the Army, US Army Corps of Engineers, January 1990.
- EM 1110-2-2901, Tunnels and Shafts in Rock, US Army Corps of Engineers, May 1997.

6.1 Attachment 1 provides completed RMR System worksheets (ref GL-79-19) for the Cashaqua Shale. The rock mass classification rating categories are: strength of intact rock, drill core quality RQD, spacing of discontinuities, condition of discontinuities, ground water and a rating adjustment for joint orientation relative to the tunnel axis. Based upon the observation and data entries to the worksheets, the estimated RMR value by totaling rating factors is: RMR = 41, rock mass classified as low end of Fair Rock.

6.2 Attachment 2 provides completed Q System worksheets (ref GL-79-19) for the Cashaqua Shale. The Q System rating is calculated as follows:

$$Q = (RQD/J_n) \times (J_r/J_a) \times (J_w/SRF)$$

Where RQD = rock quality designation; J_n = joint set number; J_r = joint roughness number; J_a = joint alteration number; J_w = joint water reduction number; SRF = stress reduction number.

Based upon the observation and data entries to the worksheets, the estimated Q value is: Q = 2, rock mass classified as Poor Rock.

- 6.3** Attachment 3 provides an assessment of the rock condition based upon Terzaghi's rock load classification categories. Based on field observations and guidance in utilization of the Terzaghi approach, the Terzaghi Rock Mass Condition is Very Blocky and Seamy.

7. Geologic Strength Index (GSI) Rating of Cashaqua Shale

Rock Mass Properties

To use the Hoek-Brown criterion for estimating the strength and deformability of jointed rock masses, three 'properties' of the rock mass have to be estimated. These are:

- uniaxial compressive strength of the intact rock pieces,
- value of the Hoek-Brown constant for these intact rock pieces, and
- value of the Geological Strength Index GSI for the rock mass.

Based on further studies of the Hoek-Brown failure criteria, an additional factor considering the degree of disturbance from blasting or stress relaxation has also been included and is discussed below.

The Hoek-Brown failure criterion, which assumes isotropic rock and rock mass behavior, is applicable to rock masses in which there are a sufficient number of closely spaced discontinuities, with similar surface characteristics, that isotropic behavior involving failure on discontinuities can be assumed. When the structure being analyzed is large and the block size small in comparison, the rock mass can be treated as a Hoek-Brown material. The strength of a jointed rock mass depends on the properties of the intact rock pieces and also upon the freedom of these pieces to slide and rotate under different stress conditions. This freedom is controlled by the geometrical shape of the intact rock pieces as well as the condition of the surfaces separating the pieces. Angular rock pieces with clean, rough discontinuity surfaces will result in a much stronger rock mass than one which contains rounded particles surrounded by weathered and altered material.

Uniaxial Compressive Strength and Hoek-Brown constant

The relationship between the principal stresses at failure for a given rock is defined by two constants, the uniaxial compressive strength and a constant – the Hoek- Brown constant. These constants can be determined by statistical analysis of the results of a set of triaxial tests on core samples or through tables compiled from field estimates. See Attachment 4 – Reference Table: Values of the Constant m_i for intact rock, by Rock Group (Hoek, 2006).

Geological Strength Index (GSI)

The Geological Strength Index (GSI), introduced by Hoek (1994) and Hoek, Kaiser and Bawden (1995) provides a number which, when combined with the intact rock properties, can be used for estimating the reduction in rock mass strength for different geological conditions. This evaluation system is presented in Attachments 4 and addresses both blocky rock masses and heterogeneous rock masses such as flysch, respectively.

Disturbance Factor, D

D is a factor which depends upon the degree of disturbance due to blast damage and stress relaxation. It varies from 0 for undisturbed in situ rock masses to 1 for very disturbed rock masses. Guidelines for the selection of D are presented in Attachment 4. Guidance indicates Factor D applies only to the blast damaged zone and should not be applied to the entire rock mass.

Cashaqua Shale – Hoek Brown Rock mass Properties

Uniaxial Compressive Strength

Total number of Cashaqua samples tested = 5

Mean = 5,327 psi (36.7 MPa), Std. Dev. = 1,922 psi (13.3 MPa),

Range = 2,014 – 6,900 psi (13.9 MPa – 47.6 MPa)

Hoek-Brown Constant (refer to Attachment 4-1 for basis of selection of m_i)

This rock unit is a shale which is a clastic, sedimentary rock with very fine texture made up of clay size particles. Occasional thin siltstone seams are present within the unit. Based on these characteristics a range of m_i of 4-8 is appropriate for this unit.

Geologic Strength Index (See Attachments 4-2 & 4-3 for guidance on selection of GSI)

GSI Structure Category: Heterogeneous rock mass (flysch) – Undisturbed silty or clayey shale, with or without a very few sandstone layers.

GSI Surface Condition of Discontinuities Category: Based on the composition and structure inherent to shale rock units, the guidance conservatively drives the rating of the discontinuities to a rating of FAIR – Smooth, moderately weathered and altered surface.

Based on these categorical assessments, an appropriate estimate of the range of GSI would be 25-30.

A reference photograph of the Cashaqua Shale unit at the Mt. Morris dam site is provided as Photograph 9.

Disturbance Factor (See Attachment 4-4 for guidance on selection of D)

Excavation for the construction of the dam foundation abutments in the Cashaqua shale included small scale blasting (not controlled) to within 2-3 feet above final planned grades, after which mechanical/hand excavation was used to achieve final grades. Guidance indicates mechanical or hand excavation in poor quality rock masses results in minimal disturbance to the surrounding rock mass. Based on this guidance, an appropriate range of D would be 0 to 0.1.

Photograph 9. Cashaqua Shale Prepared for Foundation



8. Estimations of Roof Loading Based on Rock Mass Classifications

The following are estimates of roof loading at the north portal tunnel based upon empirically derived relationships using the RMR, Q, and Terzaghi rock mass ratings estimated for the shale units surrounding the tunnel. It is noted that these relationships appear to have been developed principally for vertical roof loads and likely do not address the potential for loading on the tunnel exerted by rock mass movement parallel to the slope face that may be developed within the thickness of the overlying Rhinestreet Shale. Considerations for potential rock slope loading have not been evaluated as part of this Geologic Conditions Summary.

Roof Loading Based on RMR Classification

The roof load exerted by the rock mass can be estimated by the RMR rating using the following:

$$\text{Roof Load, } P = \frac{100 - \text{RMR}}{100} \times \gamma \times B,$$

Where γ = rock density and B = the tunnel width

The tunnel width as originally developed within the abutment rock is estimated at 9 ft., $\gamma = 167.8 \text{ lb/ft}^3$ and the RMR from Section 6.1 above is $\text{RMR} = 41$. The estimated Roof Load P is found to be 891 lb/ft^2 (6.2 lb/in^2).

Roof Loading Base on Q System Classification

The roof load can be estimated by the Q rating using the following:

$$\text{Roof Load, } P = (2J_n^{\frac{1}{2}} Q^{-\frac{1}{3}}) / 3J_r \text{ for less than three joint sets}$$

Using the worksheet entries from Attachment 2, estimated $P = 1 \text{ kg/cm}^2$ (14.2 lb/in^2)

Roof Loading Based on Terzaghi's Classification

For a Very Blocky and Seamy rock condition as estimated for the shale surrounding the north tunnel portal, using Terzaghi's Rock Load Classification for Steel Arch-Supported Tunnels, which provides Rock Load, H_p , in feet of rock on roof support in tunnel width B and height, H_t , the rock load is estimated as:

$H_p = (0.35 \text{ to } 1.10) (B + H_t)$ and for this site the estimated multiplier is taken as the average of 0.35 and 1.10. The tunnel height as originally developed within the abutment rock is estimated at 9.5 ft. Therefore: $H_p = 0.725 (9 \text{ ft} + 9.5 \text{ ft}) = 13.4 \text{ ft}$.

The roof load is estimated as $H_p \times \gamma = 13.4 \text{ ft} \times 167.8 \text{ lb/ft}^3 = 2181 \text{ lb/ft}^2$ (15.2 lb/in^2).

Attachment 1: RMR Classification System Worksheets

Table 6

GEOMECHANICS CLASSIFICATION OF JOINTED ROCK MASSES

A. CLASSIFICATION PARAMETERS AND THEIR RATINGS

PARAMETER			RANGES OF VALUES						
1	Strength of intact rock material	Point-load strength index	> 10 MPa	4 - 10 MPa	2 - 4 MPa	1 - 2 MPa	For this low range - uniaxial compressive test is preferred		
		Uniaxial compressive strength	>250 MPa	100 - 250 MPa	50 - 100 MPa	25 - 50 MPa	5-25 MPa	1-5 MPa	< 1 MPa
	Rating		15	12	7	4	2	1	0
2	Drill core quality RQD		90% - 100%	75% - 90%	50% - 75%	25% - 50%	> 25%		
	Rating		20	17	13	8	3		
3	Spacing of discontinuities		>2 m	0.6 - 2 m	200 - 600 mm	60 - 200 mm	60 mm		
	Rating		20	15	10	8	5		
4	Condition of discontinuities		Very rough surfaces. Not continuous. No separation. Unweathered wall rock	Slightly rough surfaces. Separation < 1 mm. Slightly weathered walls	Slightly rough surfaces. Separation < 1 mm. Highly weathered walls	Slickensided surfaces OR Gouge < 5 mm thick OR Separation 1-5 mm. Continuous	Soft gouge > 5 mm thick OR Separation > 5 mm. Continuous		
	Rating		30	25	20	15	10	0	
5	Ground water	Inflow per 10 m tunnel length	None	<10 litres/min	10-25 litres/min	25 - 125 litres/min	> 125		
		Ratio $\frac{\text{joint water pressure}}{\text{major principal stress}}$	OR 0	OR 0.0-0.1	OR 0.1-0.2	OR 0.2-0.5	OR > 0.5		
			OR	OR	OR	OR	OR		
		General conditions	Completely dry	Damp	Wet	Dripping	Flowing		
	Rating		15	10	7	4	0		

B. RATING ADJUSTMENT FOR JOINT ORIENTATIONS

Strike and dip orientations of joints		Very favourable	Favourable	Fair	Unfavourable	Very unfavourable
Ratings	Tunnels	0	-2	-5	-10	-12
	Foundations	0	-2	-7	-15	-25
	Slopes	0	-5	-25	-50	-60

RMR = 41

C. ROCK MASS CLASSES DETERMINED FROM TOTAL RATINGS

Rating	100-81	80-61	60-41	40-21	< 20
Class No	I	II	III	IV	V
Description	Very good rock	Good rock	Fair rock	Poor rock	Very poor rock

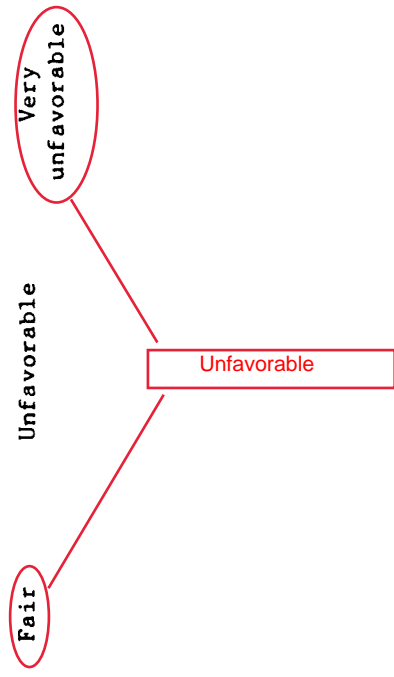
D. MEANING OF ROCK MASS CLASSES

Class No	I	II	III	IV	V
Average stand-up time	10 years for 15 m span	6 months for 8 m span	1 week for 5 m span	10 hours for 2.5 m span	30 minutes for 1 m span
Cohesion of the rock mass	> 400 kPa	300 - 400 kPa	200 - 300 kPa	100 - 200 kPa	< 100 kPa
Friction angle of the rock mass	> 45°	35° - 45°	25° - 35°	15° - 25°	< 15°

Table 7

Effect of Joint Strike and Dip Orientations of Discontinuities on Tunneling

Strike Perpendicular to Tunnel Axis		Strike Parallel to Tunnel Axis		Dip 0°-20° Irrespective of Strike
Drive with Dip	Drive against Dip	Dip 45°-90°	Dip 20°-45°	
Dip 45°-90°	Dip 20°-45°	Dip 20°-45°	Dip 20°-45°	
Very favorable	Favorable	Fair	Unfavorable	Fair
		Fair	Unfavorable	Fair
		Very unfavorable	Unfavorable	Fair



Attachment 2: Q Classification System Worksheets

Table 11
Q-System: Description and Ratings - RQD, J_n , and J_r ¹²

Rock Quality Designation (RQD)

Very poor.....	0-25	<u>Note:</u> (i) Where RQD is reported or measured as ≤ 10 (including 0) a nominal value of 10 is used to evaluate Q in Eq. (1). (ii) RQD intervals of 5, i.e. 100, 95, 90 etc. are sufficiently accurate.
Poor.....	25-50	
Fair.....	50-75	
Good.....	75-90 80	
Excellent.....	90-100	

Joint Set Number (J_n)

Massive, no or few joints	0.5-1.0	<u>Note:</u> (i) For intersections use $(3.0 \times J_n)$ (ii) For portals use $(2.0 \times J_n)$ adjusted $J_n = 8$
One joint set.....	2	
One joint set plus random	3	
Two joint sets.....	4	
Two joint sets plus random.....	6	
Three joint sets.....	9	
Three joint sets plus random.....	12	
Four or more joint sets, random, heavily jointed, "sugar cube", etc.....	15	
Crushed rock, earthlike..	20	

Joint Roughness Number (J_r)

(a) Rock wall contact and (b) Rock wall contact before 10 cms shear		<u>Note:</u> (i) Add 1.0 if the mean spacing of the relevant joint set is greater than 3 m.
Discontinuous joints.....	4	
Rough or irregular, undulating.....	3	
Smooth, undulating.....	2	
Slickensided, undulating	1.5	
Rough or irregular, planar.....	1.5	<u>Note:</u> (ii) $J_r = 0.5$ can be used for planar slickensided joints having lineation, provided the lineations are favorably orientated. (iii) Descriptions B to G refer to small scale features and intermediate scale features, in that order.
Smooth, planar.....	1.0	
Slickensided, planar.....	0.5	
(c) No rock wall contact when sheared		
Zone containing clay minerals thick enough to prevent rock wall contact	1.0 (nominal)	
Sandy, gravelly or crushed zone thick enough to prevent rock wall contact.....	1.0 (nominal)	

Table 12
Q-System: Description and Ratings - J_a¹²

	<u>Joint Alteration Number</u>	ϕ_r (approx.)
(a) Rock wall contact	(J _a)	
A. Tightly healed, hard, nonsoftening, impermeable filling i.e. quartz or epidote.....	0.75	(-)
B. Unaltered joint walls, surface staining only.....	1.0	(25°-35°)
C. Slightly altered joint walls. Non-softening mineral coatings, sandy particles, clay-free disintegrated rock etc.....	2.0	(25°-30°)
D. Silty-, or sandy-clay coatings, small clay-fraction (non-softening)	3.0	(20°-25°)
E. Softening or low friction clay mineral coatings, i.e. kaolinite, mica. Also chlorite, talc, gypsum and graphite etc., and small quantities of swelling clays. (Discontinuous coatings, 1-2 mm or less in thickness).....	4.0	(8°-16°)
(b) Rock wall contact before 10 cms shear		
F. Sandy particles, clay-free disintegrated rock etc.....	4.0	(25°-30°)
G. Strongly over-consolidated, non-softening clay mineral fillings (Continuous, <5 mm in thickness)....	6.0	(16°-24°)
H. Medium or low over-consolidation, softening, clay mineral fillings. (continuous, <5 mm in thickness)...	8.0	(12°-16°)
J. Swelling clay fillings, i.e. montmorillonite (Continuous, <5 mm in thickness). Value of J _a depends on percent of swelling clay-size particles, and access to water etc.....	8.0-12.0	(6°-12°)
(c) No rock wall contact when sheared		
K., Zones or bands of disintegrated or L., crushed rock and clay (see G., H., M. J. for description of clay condition).....	6.0, 8.0 or 8.0-12.0	(6°-24°)
N. Zones or bands of silty- or sandy clay, small clay fraction (nonsoftening).....	5.0	
O., Thick, continuous zones or bands of P., clay (see G., H., J. for R. description of clay condition).....	10.0, 13.0 or 13.0-20.0	(6°-24°)

Note:

(i) Values of $(\phi)_r$ are intended as an approximate guide to the mineralogical properties of the alteration products, if present.

Table 13
Q-System: Description and Ratings - SRF and J_v ¹²

Stress Reduction Factor			
(SRF)			
(a) Weakness zones intersecting excavation, which may cause loosening of rock mass when tunnel is excavated.			
A. Multiple occurrences of weakness zones containing clay or chemically disintegrated rock, very loose surrounding rock (any depth).....		10.0	
B. Single weakness zones containing clay, or chemically disintegrated rock (depth of excavation ≤ 50 m).....		5.0	
C. Single, weakness zones containing clay, or chemically disintegrated rock (depth of excavation > 50 m).....		2.5	
D. Multiple shear zones in competent rock (clay free), loose surrounding rock (any depth).....		7.5	
E. Single shear zones in competent rock (clay free) (depth of excavation ≤ 50 m).....		5.0	
F. Single shear zones in competent rock (clay free) (depth of excavation > 50 m).....		2.5	
G. Loose open joints, heavily jointed or "sugar cube" etc. (any depth).....		5.0	
(b) Competent rock, rock stress problems.			
	σ_c/σ_1	σ_t/σ_1	
H. Low stress, near surface..	> 200	> 13	2.5
J. Medium stress.....	200-10	13-0.66	1.0
K. High stress, very tight structure (Usually favorable to stability, may be unfavorable to wall stability).....	10-5	0.66-0.33	0.5-2.0
L. Mild rock burst (massive rock).....	5-2.5	0.33-0.16	5-10
M. Heavy rock burst (massive rock).....	< 2.5	< 0.16	10-20
(c) Squeezing rock; plastic flow of incompetent rock under the influence of high rock pressures.			
N. Mild squeezing rock pressure.....			5-10
O. Heavy squeezing rock pressure.....			10-20
(d) Swelling rock; chemical swelling activity depending on presence of water			
P. Mild swelling rock pressure.....			5-10
R. Heavy swelling rock pressure.....			10-15
Joint Water Reduction Factor			
	(J_v)	Approx. water pressure (kg/cm ²)	
A. Dry excavations or minor inflow, i.e. 5 l/min. locally.....	1.0	< 1	
B. Medium inflow or pressure occasional outwash of joint fillings.....	0.66	1.0-2.5	
C. Large inflow or high pressure in competent rock with unfilled joints.....	0.5	2.5-10.0	
D. Large inflow or high pressure, considerable outwash of joint fillings.....	0.33	2.5-10.0	
E. Exceptionally high inflow or water pressure at blasting, decaying with time.....	0.2-0.1	> 10.0	
F. Exceptionally high inflow or water pressure continuing without noticeable decay.....	0.1-0.05	> 10.0	

Note:

(i) Reduce these values of SRF by 25-50% if the relevant shear zones only influence but do not intersect the excavation.

(ii) For strongly anisotropic stress field (if measured): when $5 \leq \sigma_1/\sigma_3 \leq 10$, reduce σ_c and σ_t to $0.8 \sigma_c$ and $0.8 \sigma_t$; when $\sigma_1/\sigma_3 > 10$, reduce σ_c and σ_t to $0.6 \sigma_c$ and $0.6 \sigma_t$ where: σ_c = unconfined compression strength, σ_t = tensile strength (point load), σ_1 and σ_3 = major and minor principal stresses.

(iii) Few case records available where depth of crown below surface is less than span width. Suggest SRF increase from 2.5 to 5 for such cases (see H).

Note:

(i) Factors C to F are crude estimates. Increase J_v if drainage measures are installed.

(ii) Special problems caused by ice formation are not considered.

Attachment 3: Terzaghi's Rock Classification System Worksheet

Table A1
Terzaghi's Rock Load Classification for Steel Arch-Supported Tunnels²
 (Rock Load H_p in Feet of Rock on Roof of Support in Tunnel With
 Width B (feet) and Height H_t (feet) at a Depth of More
 Than $1.5(B + H_t)$)*

Rock Condition	Rock Load H_p in Feet	Remarks
1. Hard and intact.	Zero	Light lining required only if spalling or popping occurs.
2. Hard stratified or schistose.**	0 to 0.5B	} Light support, mainly for protection against spalls. Load may change erratically from point to point.
3. Massive, moderately jointed.	0 to 0.25B	
4. Moderately blocky and seamy	$0.25B$ to $0.35(B + H_t)$	No side pressure.
5. Very blocky and seamy.	$(0.35$ to $1.10)(B + H_t)$	Little or no side pressure.
6. Completely crushed but chemically intact.	$1.10(B + H_t)$	Considerable side pressure. Softening effects of seepage towards bottom of tunnel requires either continuous support for lower ends of ribs or circular ribs.
7. Squeezing rock, moderate depth.	$(1.10$ to $2.10)(B + H_t)$	} Heavy side pressure, invert struts required. Circular ribs are recommended.
8. Squeezing rock, great depth.	$(2.10$ to $4.50)(B + H_t)$	
9. Swelling rock.	Up to 250 feet, irrespective of the value of $(B + H_t)$	Circular ribs are required. In extreme cases use yielding support.

* The roof of the tunnel is assumed to be located below the water table. If it is located permanently above the water table, the values given for types 4 to 6 can be reduced by fifty percent.

** Some of the most common rock formations contain layers of shale. In an unweathered state, real shales are no worse than other stratified rocks. However, the term shale is often applied to firmly compacted clay sediments which have not yet acquired the properties of rock. Such so-called shale may behave in a tunnel like squeezing or even swelling rock.

If a rock formation consists of a sequence of horizontal layers of sandstone or limestone and of immature shale, the excavation of the tunnel is commonly associated with a gradual compression of the rock on both sides of the tunnel, involving a downward movement of the roof. Furthermore, the relatively low resistance against slippage at the boundaries between the so-called shale and the rock is likely to reduce very considerably the capacity of the rock located above the roof to bridge. Hence, in such formations, the roof pressure may be as heavy as in very blocky and seamy rock.

Attachment 4: GSI Supporting Worksheets

Attachment 4-1 – Values of the Constant m_i for Intact Rock, by Rock Group
(note that values in parenthesis are estimates)


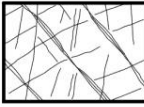
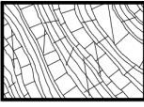
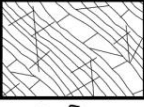

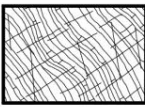
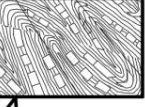
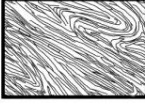
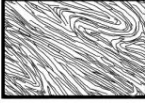
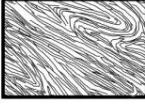
Rock type	Class	Group	Texture			
			Coarse	Medium	Fine	Very fine
SEDIMENTARY	Clastic		Conglomerates* (21 ± 3)	Sandstones 17 ± 4	Siltstones 7 ± 2	Claystones 4 ± 2
			Breccias (19 ± 5)		Greywackes (18 ± 3)	Shales (6 ± 2) Marls (7 ± 2)
	Non-Clastic	Carbonates	Crystalline Limestone (12 ± 3)	Sparitic Limestones (10 ± 2)	Micritic Limestones (9 ± 2)	Dolomites (9 ± 3)
		Evaporites		Gypsum 8 ± 2	Anhydrite 12 ± 2	
		Organic				Chalk 7 ± 2
METAMORPHIC	Non Foliated		Marble 9 ± 3	Hornfels (19 ± 4) Metasandstone (19 ± 3)	Quartzites 20 ± 3	
	Slightly foliated		Migmatite (29 ± 3)	Amphibolites 26 ± 6		
	Foliated**		Gneiss 28 ± 5	Schists 12 ± 3	Phyllites (7 ± 3)	Slates 7 ± 4
IGNEOUS	Plutonic	Light	Granite 32 ± 3 Granodiorite (29 ± 3)	Diorite 25 ± 5		
		Dark	Gabbro 27 ± 3 Norite 20 ± 5	Dolerite (16 ± 5)		
	Hypabyssal		Porphyries (20 ± 5)		Diabase (15 ± 5)	Peridotite (25 ± 5)
	Volcanic	Lava		Rhyolite (25 ± 5) Andesite 25 ± 5	Dacite (25 ± 3) Basalt (25 ± 5)	Obsidian (19 ± 3)
		Pyroclastic	Agglomerate (19 ± 3)	Breccia (19 ± 5)	Tuff (13 ± 5)	

* Conglomerates and breccias may present a wide range of m_i values depending on the nature of the cementing material and the degree of cementation, so they may range from values similar to sandstone to values used for fine grained sediments.

* *These values are for intact rock specimens tested normal to bedding or foliation. The value of m_i will be significantly different if failure occurs along a weakness plane.

Attachment 4-2 – Estimate of Geological Strength Index (GSI) based on Geological Descriptions (Hoek and Marinos, 2000)

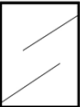





Attachment 4-2 Heterogeneous Rock Masses

GSI FOR HETEROGENEOUS ROCK MASSES SUCH AS FLYSCH (Marinos, P. and Hoek, E., 2000) From a description of the lithology, structure and surface conditions (particularly of the bedding planes), choose a box in the chart. Locate the position in the box that corresponds to the condition of the discontinuities and estimate the average value of GSI from the contours. Do not attempt to be too precise. Quoting a range from 33 to 37 is more realistic than giving GSI = 35. Note that the Hoek-Brown criterion does not apply to structurally controlled failures. Where unfavourably oriented continuous weak planar discontinuities are present, these will dominate the behaviour of the rock mass. The strength of some rock masses is reduced by the presence of groundwater and this can be allowed for by a slight shift to the right in the columns for fair, poor and very poor conditions. Water pressure does not change the value of GSI and it is dealt with by using effective stress analysis.	SURFACE CONDITIONS OF DISCONTINUITIES (Predominantly bedding planes)				
	VERY GOOD - Very rough, fresh unweathered surfaces	GOOD - Rough, slightly weathered surfaces	FAIR - Smooth, moderately weathered and altered surfaces	POOR - Very smooth, occasionally slickensided surfaces with compact coatings or fillings with angular fragments	VERY POOR - Very smooth slickensided or highly weathered surfaces with soft clay coatings or fillings
COMPOSITION AND STRUCTURE	 A. Thick bedded, very blocky sandstone The effect of pelitic coatings on the bedding planes is minimized by the confinement of the rock mass. In shallow tunnels or slopes these bedding planes may cause structurally controlled instability.	 B. Sandstone with thin inter-layers of siltstone	 C. Sandstone and siltstone in similar amounts	 D. Siltstone or silty shale with sandstone layers	 E. Weak siltstone or clayey shale with sandstone layers
	 G. Undisturbed silty or clayey shale with or without a few very thin sandstone layers	 F. Tectonically deformed, intensively folded/faulted, sheared clayey shale or siltstone with broken and deformed sandstone layers forming an almost chaotic structure	 H. Tectonically deformed silty or clayey shale forming a chaotic structure with pockets of clay. Thin layers of sandstone are transformed into small rock pieces.	 H. Tectonically deformed silty or clayey shale forming a chaotic structure with pockets of clay. Thin layers of sandstone are transformed into small rock pieces.	 H. Tectonically deformed silty or clayey shale forming a chaotic structure with pockets of clay. Thin layers of sandstone are transformed into small rock pieces.






↑ : Means deformation after tectonic disturbance

Attachment 4-3 – Estimate of Geological Strength Index (GSI) based on Geological Descriptions (Hoek and Marinos, 2000)

Attachment 4-3 Blocky Rock Masses

<p>GEOLOGICAL STRENGTH INDEX FOR JOINTED ROCKS (Hoek and Marinos, 2000)</p> <p>From the lithology, structure and surface conditions of the discontinuities, estimate the average value of GSI. Do not try to be too precise. Quoting a range from 33 to 37 is more realistic than stating that GSI = 35. Note that the table does not apply to structurally controlled failures. Where weak planar structural planes are present in an unfavourable orientation with respect to the excavation face, these will dominate the rock mass behaviour. The shear strength of surfaces in rocks that are prone to deterioration as a result of changes in moisture content will be reduced if water is present. When working with rocks in the fair to very poor categories, a shift to the right may be made for wet conditions. Water pressure is dealt with by effective stress analysis.</p>		SURFACE CONDITIONS				
STRUCTURE		VERY GOOD Very rough, fresh unweathered surfaces	GOOD Rough, slightly weathered, iron stained surfaces	FAIR Smooth, moderately weathered and altered surfaces	POOR Slackensided, highly weathered surfaces with compact coatings or fillings or angular fragments	VERY POOR Slackensided, highly weathered surfaces with soft clay coatings or fillings
		DECREASING SURFACE QUALITY →				
	INTACT OR MASSIVE - intact rock specimens or massive in situ rock with few widely spaced discontinuities	90	80	70	N/A	N/A
	BLOCKY - well interlocked undisturbed rock mass consisting of cubical blocks formed by three intersecting discontinuity sets	80	70	60	50	40
	VERY BLOCKY - interlocked, partially disturbed mass with multi-faceted angular blocks formed by 4 or more joint sets	70	60	50	40	30
	BLOCKY/DISTURBED/SEAMY - folded with angular blocks formed by many intersecting discontinuity sets. Persistence of bedding planes or schistosity	60	50	40	30	20
	DISINTEGRATED - poorly interlocked, heavily broken rock mass with mixture of angular and rounded rock pieces	50	40	30	20	10
	LAMINATED/SHEARED - Lack of blockiness due to close spacing of weak schistosity or shear planes	N/A	N/A	10		
		← DECREASING INTERLOCKING OF ROCK PIECES				















Attachment 4-4 – Guidelines for Estimating Disturbance Factor D (Hoek, Carranza-Torres and Corkum, 2002)

Appearance of rock mass	Description of rock mass	Suggested value of D
	Excellent quality controlled blasting or excavation by Tunnel Boring Machine results in minimal disturbance to the confined rock mass surrounding a tunnel.	$D = 0$
	<u>Mechanical or hand excavation in poor quality rock masses (no blasting)</u> results in minimal disturbance to the surrounding rock mass. Where squeezing problems result in significant floor heave, disturbance can be severe unless a temporary invert, as shown in the photograph, is placed.	<u>$D = 0$</u> $D = 0.5$ No invert
	Very poor quality blasting in a hard rock tunnel results in severe local damage, extending 2 or 3 m, in the surrounding rock mass.	$D = 0.8$
	Small scale blasting in civil engineering slopes results in modest rock mass damage, particularly if controlled blasting is used as shown on the left hand side of the photograph. However, stress relief results in some disturbance.	$D = 0.7$ Good blasting $D = 1.0$ Poor blasting
	Very large open pit mine slopes suffer significant disturbance due to heavy production blasting and also due to stress relief from overburden removal. In some softer rocks excavation can be carried out by ripping and dozing and the degree of damage to the slopes is less.	$D = 1.0$ Production blasting $D = 0.7$ Mechanical excavation

**ALL ATTACHMENTS CAN BE FOUND IN THE
“ATTACHMENTS” PANEL OF THIS ADOBE FILE. DOUBLE-
CLICKING ON THE NAME WILL OPEN THE FILE SO THAT
IT MAY BE SAVED DIRECTLY TO YOUR COMPUTER.**

Attachments




Name	Description
 Accident Prevention Plan (APP) Checklist and Attachments.pdf	
 CELRB FORM 385-02 AHA 2020.pdf	Activity Hazard Analysis
 Contractor QC Plan Checklist (Dec2011).pdf	Contract QCP Checklist
 CONTRACTOR QUALITY CONTROL PLAN (General).pdf	Contractor QCP Template
 Contractor Quality Control report _Dec 2011_.pdf	Contract CQC report
 ENG_FORM_3394_1999Mar.pdf	Accident Form
 Eng_Form_4025-R.pdf	Transmittal Form
 Eng_Form_4026.pdf	Routing of Submittals
 ENVIRONMENTAL PROTECTION PLAN TEMPLATE(June2012).pdf	EPP
 LRB-ContractorMonthlyManhourExposureForm.pdf	Monthly Manhour Exposure Form
 LRB-Crane-CertificateOfCompliance.pdf	Crane Certificate of Compliance
 NAA_FSLC CHECKLIST(2016).pdf	Naval Arch. Checklist
 PAYMENT ESTIMATE CHECKLIST(2016).pdf	
 Prep List & Initial Inspect.pdf	Preparatory & Initial Inspect Checklist



MOUNT MORRIS, NEW YORK
MOUNT MORRIS DAM
NORTH ADIT TUNNEL REPAIR

SOLICITATION NO.: W912P422B0014
CONTRACT NO.: WXXXXX-XX-X-XXX
ISSUE DATE: MAY 2022

INDEX OF DRAWINGS	
TITLE	SHEET ID
COVER SHEET	G-001
GENERAL NOTES, VICINITY, LOCALITY, AND ACCESS MAPS	G-002
EXISTING SITE PLAN	C-101
EXISTING TUNNEL DETAILS	C-501
DETAILS OF NEW WORK	C-502
ACCESS SHAFT DETAILS	C-503
NEW CONCRETE FACADE - OPTION 1	S-501

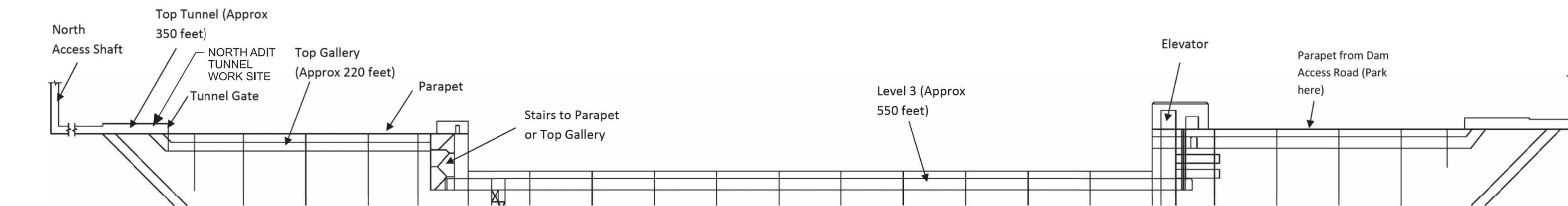
<p>THIS PROJECT WAS DESIGNED BY THE BUFFALO DISTRICT OF THE U.S. ARMY CORPS OF ENGINEERS. THE INITIALS OR SIGNATURES AND REGISTRATION DESIGNATIONS OF INDIVIDUALS APPEAR ON THESE PROJECT DOCUMENTS WITHIN THE SCOPE OF THEIR EMPLOYMENT AS REQUIRED BY ER 1110-1-8152.</p> <p>THE INITIALS AND SIGNATURES AFFIXED TO THIS SHEET INDICATE OFFICIAL REVIEW AND APPROVAL OF ALL BUFFALO DISTRICT DRAWINGS WITHIN THIS PROJECT SET AS INDEXED ON THE FOLLOWING SHEET.</p>	<p>APPROVAL RECOMMENDED BY:</p> <div> <div> LEWANDOWSKI,FRAN K.T.1228664746 </div> <div> Digitally signed by LEWANDOWSKI,FRANK.T.1228664746 Date: 2022.05.23 12:48:16 -0400 </div> </div>
<p>APPROVED BY:</p> <div> <div>CONBOY,DAVID.JOSE PH.1014868786</div> <div> CONBOY,DAVID.JOSEPH.1014868 786 2022.05.24 12:55:36 -0400 </div> </div>	<div> <div>CHIEF, CIVIL/STRUCTURAL DESIGN TEAM, P.E.</div> <div>DATE</div> </div> <div> <div>  </div> <div> Digitally signed by KUPFEL,TODD.C.1238606336 Date: 2022.05.24 08:50:49 -0400 </div> </div>
<div>CHIEF, TECHNICAL SERVICES DIVISION, P.E.</div> <div>DATE</div> <td> <div>CHIEF, DESIGN BRANCH, P.E.</div> <div>DATE</div> </td>	<div>CHIEF, DESIGN BRANCH, P.E.</div> <div>DATE</div>

[illegible]

U.S. ARMY CORPS OF ENGINEERS BUFFALO DISTRICT 1176 NIAGARA STREET BUFFALO, NY 14207	DESIGNED BY:	ISSUE DATE:
	D. TELLINGHUSEN	MAY 2002
	D. TELLINGHUSEN	PROJECT NO.
	D. TELLINGHUSEN	XXXXXX-X-XXXX
	CHECKED BY:	CONTRACT NO.
	F. LEWANDOWSKI	WXXXXX-X-X-XXXX
	SUBMITTED BY:	
	D. TELLINGHUSEN	
	SIZE:	

COVER SHEET

SHEET ID
G-001



M5 SKETCH - UPPER DAM UPSTREAM ELEVATION
NTS



A1 **SITE PLAN**
SCALE: 1"=400'



A7 STAGING AREA PLAN
SCALE: NTS



**U.S. Army Corps
Engineers®**

[illegible]

	DRAWN BY:	SOLICITATION NO.:
	CHECKED BY:	W912P422B0014
	SUBMITTED BY:	CONTRACT NO.:
	SIZE:	WXXXXXX-XXX-XXX

NORTHADIT TUNNEL REPAIR

SHEET ID

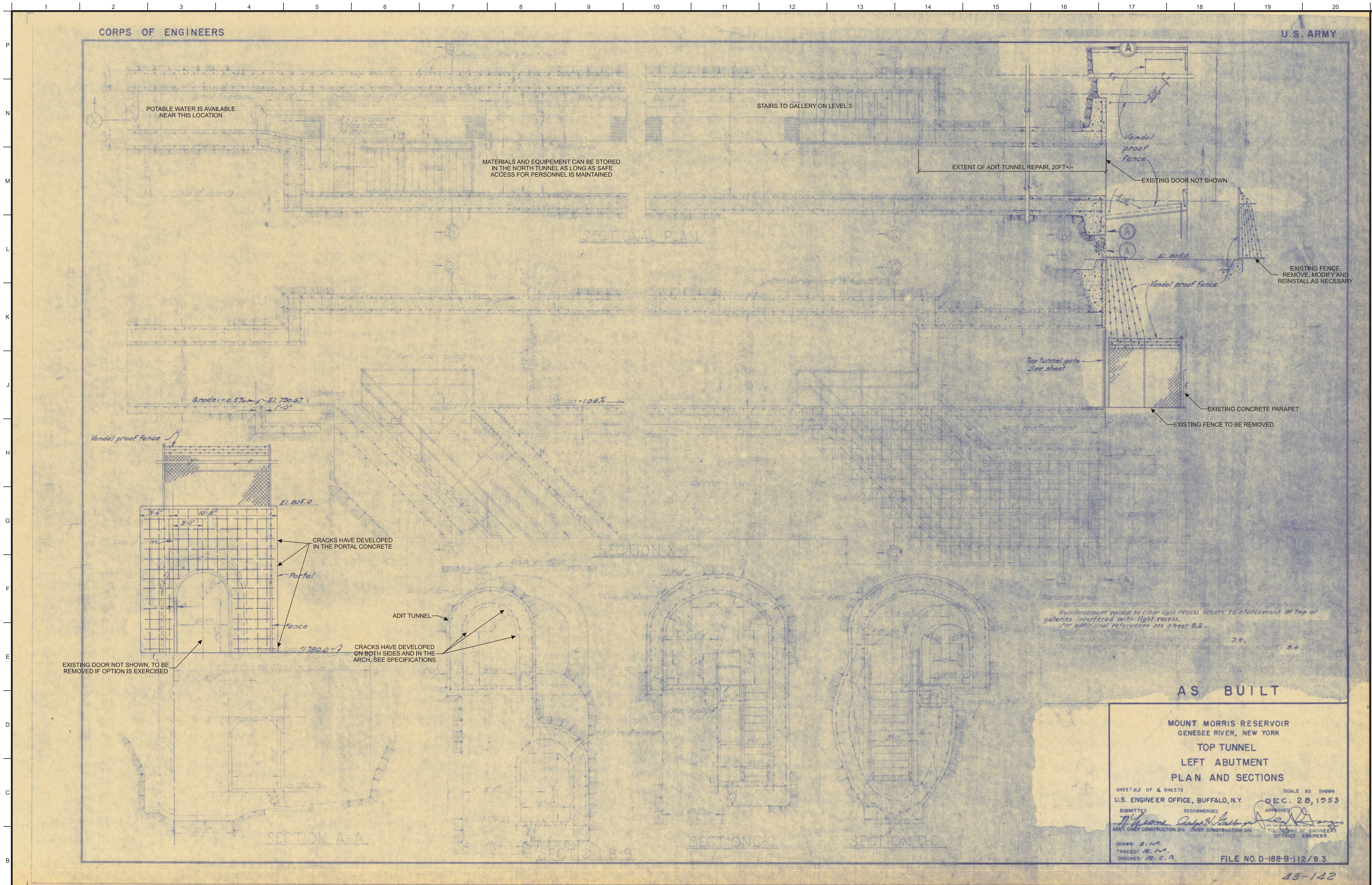
C-101

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DRAWN BY: D. TELLINGHUISEN 1776 NIAGARA STREET BUFFALO, NY 14207	SOLUTION NO:	W912P422B0014
	CHECKED BY:	WXXXXXXXXXX-XX
	DATE:	
	SUBMITTED BY:	
	SIZE:	

NORTH ADIT TUNNEL REPAIR

SHEET ID
C-501



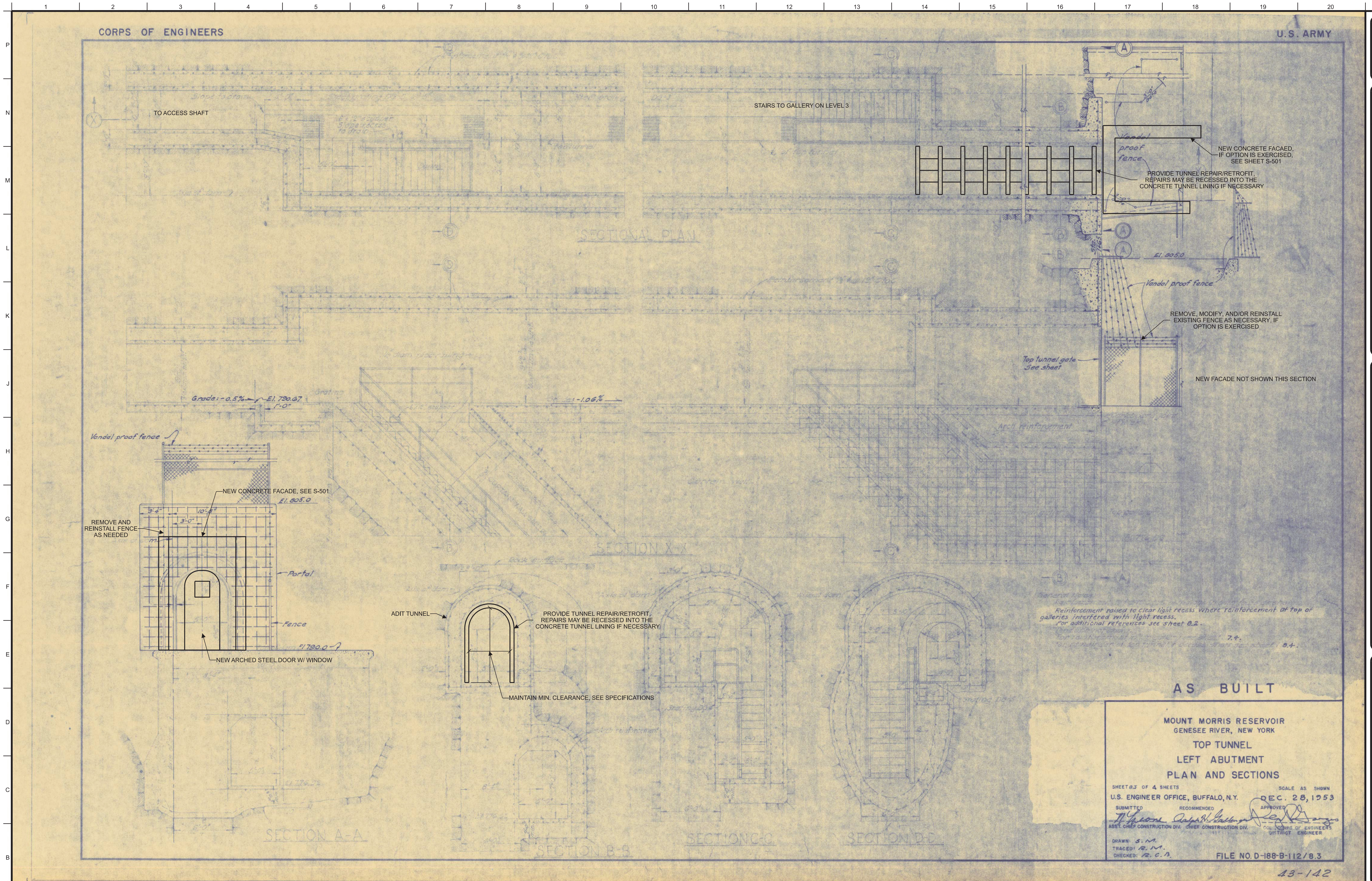
- NOTES:
1. ACCESS TO THE ADIT TUNNEL CAN BE ATTAINED THROUGH THE DAM OR THROUGH THE ACCESS SHAFT.
 2. MATERIALS CAN BE BROUGHT TO THE GALLERY ON LEVEL 3 BY ELEVATOR. THE ADIT TUNNEL IS LOCATED ABOUT LEVEL 350 FEET FROM THE DAM BY STAIRS WITHIN THE DAM. CONTRACTOR MAY ELECT TO INSTALL A PILE LIFT SYSTEM WITHIN THE STAIRWELL TO MOVE MATERIALS BETWEEN THE ADIT TUNNEL AND THE GALLERY ON LEVEL 3.
 3. SEE ACCESS SHAFT DETAILS ON C-502.

[illegible]

DRAWN BY: D. TELLINGHUSEN 1776 NIAGARA STREET BUFFALO, NY 14207		SOLICITATION NO: W872P422B014	
CHECKED BY: D. TELLINGHUSEN		CONTRACT NO: WXXXX-XX-XXXX	
SUBMITTED BY: F. LEWANDOWSKI			
SIZE:			

NORTH ADIT TUNNEL REPAIR

SHEET ID
C-502



NOTES:

1. TUNNEL REPAIR/RETROFIT DESIGN AND ALL NECESSARY STRUCTURAL SUPPORTS AND ANCILLARY MATERIALS WILL BE DEVELOPED AND INSTALLED BY THE CONTRACTOR.
2. TUNNEL REPAIRS/RETROFIT WILL REQUIRE REMOVAL AND REINSTALLATION OF ELECTRICAL POWER AND AND SECURITY MONITORS. REMOVAL OF CRACK MONITORING DEVICES IS REQUIRED AS WELL. TURN OVER CRACK MONITORING DEVICES TO THE GOVERNMENT.
3. SEE NEW CONCRETE FACADE DETAILS ON S-501.

