

2. AMENDMENT/MODIFICATION NO. 0004	3. EFFECTIVE DATE 06/24/04	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. (If applicable)
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6. ISSUED BY CODE US ARMY ENGINEER DISTRICT, HONOLULU CORPS OF ENGINEERS, BUILDING S-200 FORT SHAFTER, HAWAII 96858-5440 CONTRACT SPECIALIST: JODY MURAOKA	7. ADMINISTERED BY (If other than Item 6) CODE
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8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)	(X)	9A. AMENDMENT OF SOLICITATION NO. W9128A-04-R-0009
	X	9B. DATED (SEE ITEM 11) 05/12/04
		10A. MODIFICATION OF CONTRACT/ORDER NO.
		10B. DATED (SEE ITEM 13)

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers is extended, is not extended.

Offer must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:

(a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. Accounting and Appropriation Data (If required)

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

(X)	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A/
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc). SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
	D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor is not, is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)
 FY03 MCA PN 48783, Whole Barracks Renewal Phase 2C2 and FY04 MCA PN 48784, Whole Barracks Renewal Phase 2D, Schofield Barracks, Oahu, Hawaii

See Page 2 & 3 of 3 Pages

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)	16A. NAME AND TITLE OF SIGNER (Type or print)
15B. CONTRACTOR/OFFEROR _____ (Signature of person authorized to sign)	15C. DATE SIGNED
16B. UNITED STATES OF AMERICA BY _____ (Signature of Contracting Officer)	16C. DATE SIGNED

1. **CHANGES TO THE SOLICITATION.** Attached hereto are new and revised pages to the solicitation. The revision mark "(Am-0004)" is shown on each page.

a. **REVISED PROVISIONS/CLAUSES/PAGES.** Following are revised pages to the solicitation. Changes are indicated in **bold** print. Although the entire sections are being re-issued under Am-0004, only the following pages/paragraphs/provisions/clauses changed in these sections.

Section 00010

Page 00010-1 (SF 1442), Item 13A

Section 01000

Section 02763, Paragraph 2.2.1

Section 12320A, Paragraph 2.1, 2.1.1, 2.4.1 and 2.4.2

b. **DELETED PROVISIONS/CLAUSES/PAGES.** The following items are deleted from the solicitation.

Section 01000

Submittal Register
Table of Contents

c. **NEW PAGES/PROVISIONS/CLAUSES.** The following pages are added to the solicitation.

Section 00900

Page A.5 through A.11

Section 01000

Submittal Register
Table of Contents
Section 01356A

2. CHANGES TO DRAWINGS.

REVISED DRAWINGS (ISSUED). The following revised drawings replace the like-numbered drawings and are issued herewith:

<u>RING NO.</u>	<u>DRAWING NO.</u>	<u>SHEET NO.</u>	<u>REVISION LTR.</u>	<u>REVISION DATE</u>
2	851-90-08	TX -2	b	6/21/04
4	851-90-08	TX -4	b	6/21/04
5	851-90-08	TX -5	b	6/21/04
6	851-90-08	TX-6	b	6/21/04
7	851-90-08	TX -7	b	6/21/04
8	851-90-08	TX -8	b	6/21/04
19	851-90-08	CS-4	b	6/21/04
20	851-90-08	CS-5	b	6/21/04
22	851-90-08	CS-7	b	6/21/04
23	851-90-08	CS-8	b	6/21/04
24	851-90-08	CS-9	b	6/21/04
34	851-90-08	CS-19	b	6/21/04
189	721-11-29	SB-20	b	6/21/04
235	721-11-29	EB-9	b	6/21/04
242	721-11-29	EB-16	b	6/21/04
302	721-11-30	SA-20	b	6/21/04
349	721-11-30	EA-9	b	6/21/04
351	721-11-30	EA-16	b	6/21/04
411	721-11-31	SL -12	b	6/21/04
462	721-11-31	EL-9	b	6/21/04
527	721-11-32	SM-16	b	6/21/04
577	721-11-32	EM-9	b	6/21/04

3. The proposal due date of June 28, 2004, is hereby extended to July 1, 2004, 2:00 P.M., Hawaiian Standard Time.

SOLICITATION, OFFER, AND AWARD <i>(Construction, Alteration, or Repair)</i>	1. SOLICITATION NUMBER W9128A-04-R-0009	2. TYPE OF SOLICITATION <input type="checkbox"/> SEALED BID (IFB) <input checked="" type="checkbox"/> NEGOTIATED (RFP)	3. DATE ISSUED 05/12/04	PAGE OF PAGES 1
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IMPORTANT - The "offer" section on the reverse must be fully completed by the offeror.

4. CONTRACT NUMBER	5. REQUISITION/PURCHASE REQUEST NUMBER	6. PROJECT NUMBER
7. ISSUED BY Contracting Division (CEPOH-CT-C) U.S. Army Engineer District, Honolulu Building 230 Fort Shafter, Hawaii 96858-5440	CODE	8. ADDRESS OFFER TO Contracting Division (CEPOH-CT-C) U.S. Army Engineer District, Honolulu Building 200 Fort Shafter, Hawaii 96858-5440 (Deliver hand-carried proposals to Room 115, Building 200, Fort Shafter, Hawaii 96858-5440)
9. FOR INFORMATION CALL A. NAME Jody Muraoka	B. TELEPHONE NUMBER (Include area code) (NO COLLECT CALLS) (808)438-8575	

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 (Title, identifying number, date):
Request for Proposals No. W9128A-04-R-0009, FY03 MCA PN 48783, Whole Barracks Renewal Phase 2C2 and FY04 MCA PN 48784, Whole Barracks Renewal Phase 2D, Schofield Barracks, Oahu, Hawaii

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11. The Contractor shall begin performance within 7 calendar days and complete it within * calendar days after receiving award, notice to proceed. This performance period is mandatory, negotiable. (See Far Clause 52.211-10).

12A. THE CONTRACTOR MUST FURNISH ANY REQUIRED PERFORMANCE PAYMENT BONDS? <i>(If "YES," indicate within how many calendar days after award in Item 12B.)</i> <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	12B. CALENDAR DAYS 14
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13. ADDITIONAL SOLICITATION REQUIREMENTS:

A. Sealed offers in original and 3 copies to perform the work required are due at the place specified in Item 8 by 2:00 P.M. (hour, local time 07/01/04 (date). If this is a sealed bid solicitation, offers will be publicly opened at that time. Sealed envelope containing offers shall be marked to show the offeror's name and address, the solicitation number, and the date and time offers are due.

B. An offer guarantee is, is not required.

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.

D. Offers providing less than 90 calendar days for Government acceptance after the date offers are due will not be considered and will be rejected.

OFFER (Must be fully completed by offeror)

14. NAME AND ADDRESS OF OFFEROR (Include ZIP Code) DUNS No. _____ CAGE No. _____ CODE _____ FACILITY CODE _____	15. TELEPHONE NUMBER (Include area code) 16. REMITTANCE ADDRESS (Include only if different than Item 14)
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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 or greater than the minimum requirement stated in 13D. Failure to insert any number means the offeror accepts the minimum in Item 13D.)

AMOUNTS (SEE "PROPOSAL SCHEDULE", Section 00010)

18. The offeror agrees to furnish any required performance and payment bonds.

19. ACKNOWLEDGEMENT 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 (Type or print)	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 (4 copies unless otherwise specified)	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
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CONTRACTING OFFICER WILL COMPLETE ITEM 28 OR 29 AS APPLICABLE

<input type="checkbox"/> 28. NEGOTIATED AGREEMENT (Contractor is required to sign this document and return _____ copies to the issuing office.) Contractor agrees to furnish and deliver all items or perform all work requirements 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 incorporated by reference in or attached to this contract.	<input type="checkbox"/> 29. AWARD. (Contractor is not required to sign this document.) You offer on this solicitation is hereby accepted as to the items listed. This award consummates the contract, which consists of (a) the Government solicitation and your offer, and (b) this contract award. No further contractual document is necessary.
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30A. NAME AND TITLE OF CONTRACTOR OR PERSON AUTHORIZED TO SIGN (Type or print)	31A. NAME OF CONTRACTING OFFICER (Type or print)		
30B. SIGNATURE	30C. DATE	31B. UNITED STATES OF AMERICA BY _____	31C. AWARD DATE

Q19. Please advise as how to proceed on the casework (cabinets / countertops)

The plans and specifications are 180 degrees apart. There are too many differences to list, would you please review them closely and advise

A19. Revised specifications will be issued.

Q20. Specification 10800 paragraph 2.2.2 references Metal Mirrors. The plan drawings for the barracks buildings show a metal mirror in every vanity, and the size scales to be a 42" x 42" Mirror. No manufacturer makes these as a standard size. The cost of this custom mirror would be astronomical. Do they truly want a stainless Steel Mirror over a dorm room Vanity in that large a mirror or was that a mistake and they need a glass mirror?

A20. Provide type and size of vanity mirror as indicated.

Q21. The electrical one-line diagrams for buildings A & B calls for a 3" conduit w/ 3 # 350MCM, & 1 # 3/0 conductors to each unit panel, this seems to be highly overrated. The main breaker at the unit panel is only 125amps, the 350MCM wire is rated at 350amps, and you cannot physically terminate 350MCM wire to a 125amp circuit breaker. Also is the unit panel a panelboard or a loadcenter? If it is a loadcenter it cannot accept a 3" conduit, the loadcenter isn't deep enough, neither is the wall, if it is a panelboard the wall isn't deep enough to accept a 5-3/4" deep can, the unit panel calls for it to be recessed.

A21. The #350 conductors to the individual dwelling unit panels are correctly sized. They need to be this large to compensate for voltage drop in order to meet 1% maximum government guidelines. The unit panel is a loadcenter. If the #350 cannot be brought to the loadcenter, splice #1/0 conductors to the #350 in a junction box accessible above the ceiling and bring the #1/0 conductors to the loadcenter.

Q22. The telephone riser diagram calls for a separate 3/4" conduit from the telephone backboard to each telephone outlet, is this necessary? One 3/4" or upsizing the conduit to 1" to each unit is adequate. Instead of 40 each 3/4" telephone conduits running in each breezeway ceilings you'd have 10. Please note that if we are to go per plans, the breezeway ceiling space won't be big enough to handle all the systems: electrical, telephone, fire alarm, fire sprinklers, a/c ducts, etc.

A22. Please see amended drawings for a corrected riser. In order to comply with government regulations, a maximum of three only outlets may be fed from a single conduit. Hence the number of conduits has been reduced. Note also that the minimum size for conduits have been changed to 1".

Q23. Section 05500a, Miscellaneous Metals, states no specifications concerning the wall and gear lockers. Gear locker detail is helpful in providing dimensions and gauges, but none is available for wall lockers. Will the specs be identical to the previous projects installed at Schofield? Will spec sections for gear and metal lockers be issued?

A23. Wall locker specification is provided in section 05500a; para. 2.13. See Gear Locker details for specifications.

Q24. On the Architectural Plans, the Window Schedules indicate certain window types to meet blast resistant requirements but none is indicated on the Door and Louver Schedules (even their corresponding drawing details does not show either). Please indicate which doors and louvers need to meet blast resistant requirements along with their required drawing details.

A24. Note on the Sheet 22a was revised to "SEE STRUCTURAL DRAWINGS FOR IDENTIFICATION OF BLAST WINDOW LOCATION" in amendment #0002 (letter "a") for both 200PN & 180PN barracks project 2C2 & 2D projects.
Blast door not required on 2C2 & 2D barracks and COF buildings. See response to Question 35.

Q25. Detail 3/AL- 27 shows no jamb required for the louver. Is one required?

A25. Jamb detail is required and is provided for Detail 3/AL-27; see detail 5/AL-27 for jamb detail for louver type B and C.

Q26. Elevation B & C on sheet AL-25 shows the frame enclosing the louver. Is this correct, or does the louver have its own frame and sits on the plate on the head of the frame?

A26. Louver type B and C indicates a full surround frame. Likewise, the details for those louver types indicate this requirement.

Q27. Spec Section 02811a – Underground Sprinklers

2.3.1.1, "Nozzle risers a minimum 4" above body"

Question: Irrigation legend indicates 75mm or 3" pop-up. Please Clarify.

A27. Use 100mm (4") pop-up height.

Q28. Spec Section 02811a – Underground Sprinklers

2.3.1.2 "Provide brass nozzles"

Question: Can approved pressure compensating plastic nozzle be substituted? High impact molded plastic nozzles are the standard for underground sprinkler systems today.

A28. Yes

Q29. Spec Section 02811a – Underground Sprinklers

Question: I do not see sprinkler coverage or layout of sprinkler heads within the designated grass cell pavers. How do we irrigate these areas? Shouldn't heads be placed under grass cell pavers, prior to installation, for proper coverage in these grassed areas?

A29. The Corps does not want sprinkler heads within the grass cell paver areas, the head spacing shown on the plans account for overspray into those areas.

Q30. Spec. Section 02921a – Seeding

2.1.2, "Permanent seed species and mixtures 50% Bermuda, 25% Centipede, 25 Rye"

Question: Can the rye grass seed be eliminated from this mixture leaving a 75% Bermuda, 25% Centipede mixture? Germination rates and growth patterns are better initiated without the use of Rye grass, which tends to compete with the other two primary grass species.

A30. No, the intent of the Annual Ryegrass seed is to germinate faster to provide for quicker erosion control and will die back once the Bermuda and Centipede get established.

Q31. Spec. Section 02922a – Sodding

2.1.1, Sod Classification, Zoysia Z-3

Question: May we substitute Zoysia "El Toro"? Zoysia "El Toro" has been found to be a more disease tolerant, lower maintenance, shade tolerant and a more available sod than the potential "Z-3" Zoysia. The "El Toro" sod has been accepted and is currently being used at the Schofield 2A project.

A31. Yes, as long as there isn't an increase in cost.

Q32. Currently, we are working on the above bid and I handle the One (1) year maintenance service contract for the air conditioning equipment.
With this regard, I would like to ask your office if this quote request for bidding requires a year maintenance service for all the new A/C equipment as specified on the HVAC equipment schedules? (like; monthly, quarterly, semi-annual and annually service maintenance).

Going through the specifications on section 15951A page 15, the maintenance and service on this section ONLY calls for the control system equipment and will be made every six months interval. No other further service maintenance is mention for the A/C equipment.

A32. The contract documents do not require a maintenance service contract for the air conditioning equipment.

Q33. Is caulking required at the perimeter felt joints (PFJ) per details 3/SL-2, 3/SM-2, 3/SB-2 and 3/SA-2?

A33. Yes, provide Polyurethane sealant C for horizontal joints subject to traffic, type M, grade NS, class 25, use T, M, O in according to ASTM C 920.

Q34. What kind of caulking material is required at the interior CMU vertical wall control joints (WCJ) per details 2/SL-3,2/SM-3, 2/SB-3 and 2/SA-3 ?

A34. Provide Polyurethane sealant D for vertical joints subject to non-traffic, type M, grade NS, class 25, use NT, M, G, A, O in according to ASTM C 920.

Q35a. The blast resistant requirements for exterior doors as indicated on shts. SL-12 and SM-16 for the Company Operations Facilities are specifically identified and quantified. However, the blast resistant requirements for exterior doors as indicated on shts. SB-20 and SA -20 for the Barracks are not specifically identified and quantified. It is noted on SB-20 and SA-20 that "Exterior Windows and Doors shall be capable of withstanding the blast pressures specified by the pressure zones indicated". Since the breezeway on all 5 floors is not enclosed, does a blast pressure affect all doors opening to the breezeway?

A35a. No. Blast resistant requirements are not required for breezeway doors.

Q35b. Are the typical module entry doors at breezeway corridors (specified as solid core wood) to be blast resistant?

A35b. No. Blast resistant requirements are not required for typical module entry doors.

Q35c. Are the elevator doors to be blast resistant?

A35c. No.

Q35d. Are all of the metal doors at the stairs, mechanical and electrical rooms, laundry rooms, etc. to be blast resistant? Please clarify.

A35d. No. Amendment "b" will delete all blast door requirements.

Q36. The RFP specifications include section 08580-Blast Resistant Window for External Envelope but there is no specification for Blast Resistant Doors and Louvers:

- a) A regular Metal Door costs about \$250 whereas a Blast Resistant Metal Door cost can possibly range from \$350 to \$15,000. Due to this huge cost difference, can you provide specific details and specifications for Blast Resistant Doors?
- b) A regular Aluminum Louver costs about \$200 whereas a Blast Resistant Louver cost can possibly range from \$300 to \$10,000. Due to this huge cost difference, can you provide specific details and specifications for Blast Resistant Louvers?

A36a. Doors are not required blast resistant requirements. Amendment "b" will delete requirements for blast doors.

A36b. Louvers are not required blast resistant requirements. Amendment "b" will delete requirements for blast louvers.

Q37. On Shts AB-37 and AA-37, the undercounter refrigerator and range are indicated as NIC but the range hood is not indicated as NIC. If range hoods are required, please provide specifications.

A37. Range Hoods are required. See Range Hood Schedule on Sheets MB-30 and MA-30 for specifications.

Q38. On sht. ES-10, One-line diagram, are the transformers with the dashed lines existing or are they new?

A38. Please note the kind of dashes. The plan dash indicates existing. The long dash-short dash does not indicate existing. The transformers with this long dash-short dash are new.

Q39. Specification section 04200, para 2.2, last sentence of the section states...."Exterior concrete masonry units shall have water-repellant admixture added during manufacture." Is this still required even though the exterior walls are covered with EFS?

A39. Yes.

Q40. Section 04200 Paragraph 2.2 states "exterior concrete masonry units shall have water-repellent admixture added during manufacture." Is this still a requirement even though walls are covered with EFS? Please confirm.

A40. Yes

Q41. Amendment-0003 changes Section 13280A, Paragraph 3.9.1-Title to ACM Materials to read " ACM material resulting from abatement work, shall be disposed of as specified and in accordance with applicable federal, state and local regulations." Contract language does not specify the Government as the "generator" of the asbestos.
I have attached a previous solicitation, DACA83-01-R-0001 / DACA83-01-C-0015, FY00 MCA PN 46902, Whole Barracks Renewal Phase 2A, which states "the Government is considered the generator of the asbestos and has the sole responsibility of the disposed material. Like RCRA waste, the Government is responsible from "Cradle to Grave" for the waste generated on its bases. For this reason, the specifications requests that the Contractor submit the asbestos waste shipment records to the Government so they may keep track of how much asbestos waste they

are disposing." This language specifying the Government as the generator of the asbestos must be added to contract in order for Kiewit Pacific Co. to bid this RFP. Please clarify.

A41. The law regarding the responsibility of the generator of hazardous materials is well established and the specific language mandated by Kiewit Pacific is not required to be included in the current solicitation. The absence of the suggested language does not shift the generator responsibility to a Federal contractor who is properly following the requirements of any hazardous material removal operation. The contractor's liability will be to properly remove, transport, store, dispose and document all hazardous materials in accordance with all controlling laws and regulations of the federal, state, and governmental entities. The contractor awarded the contract will be liable for its own negligence under Federal common law tort liability.

Q42. We are striping subcontractors bidding on Section 02763a Pavement Markings. The material to be used according to Para 2.2.1, is hydrocarbon thermoplastic. The current State of Hawaii Dept. of Transportation standard is alkyd thermoplastic. Suppliers may not have this item as a standard stock item. Please advise.

A42. Spec will be changed to require alkyd thermoplastic materials

Q43. Can you clarify on sheet ES-10 what is new and what exists? The number of solid items (assumed new) does not correlate with the site plans.

A43. Note that the one line indicated conductors and the plan layout indicates ducts.

Q44. Assuming that the sectionalizer switch is new, where do we put the switch that's feeding Barracks 3 and Barracks 4? Bid Item 3 or 4?

A44. Place in bid item #3.

Q45. 500 MCM cables are listed as the cables on the load break elbows on the transformer. The 200A load break can take a maximum of only 4/0 cables. Please clarify?

A45. Provide #2 15KV EPR from sectionalizing switch to transformer. Note this is the reason for the 125A fusing at the sectionalizing switch to the transformer.

Q46. Padmounted transformer specification (Sec. 16375A 2.8.1) does not clearly state what type of material to use (stainless steel or mild steel)? Also, it does not clearly state if we need taps on both of the primary voltages?

A46. Provide transformers with mild steel. Provide taps on both primary voltages.

Q47. The specifications for the padmounted transformer list only the 3 phase units. What about the 1-phase units?

A47. Single phase transformers to be similar.

Q48. Sheet EL-7 is entitled, "SM/SM Company Operations Facility COF-8 and 10". Size of the transformer cannot be determined by looking at ES-9 or ES-10. There are 2 different size transformers feeding COF-8 (500 KVA) and COF-10 (300 KVA).

$$300,000/(208)(1.73) = 833A \times 125\% \text{ (NEC design factor)} = 1040A$$
$$500,000/(208)(1.73) = 1388A \times 125\% \text{ (NEC design factor)} = 1735A$$

The Swbd 2DP is rated 600A and per my calculations above, we cannot determine the transformer size? The same can be said for COF-9 and COF-11. Please clarify.

A48. Please see one line diagram sheet ES-10. This indicates which transformer will be used to supply each building. Note that the intent of the design is to combine the loads for COF-8 and -9 onto one 500 KVA transformer and feed COF-10 and -11 with individual transformers. This was done to incorporate a minimum standoff distance from the buildings to the transformers for force protection requirements.

Q49. On sheet EL-9, Panel A1 has a 3P20A (12) with a single phase listing in the panel. Is it 3-pole or 1-pole?

A49. Drawing amended; single pole for flush controls are correct.

Q50. On sheet EL-9, Panel B1 has a 3P30A (25), 3P15A (27), and 3P20A (12) with a single phase listing in the panel. Is it 3-pole or 1-pole?

A51. Drawing amended; single poles for all three are correct.

Q52. On sheet EM-9, Panel A1 has a 3P20A (12), 3P30A (25), and 3P15A (27) with a single phase listing in the panel. Is it 3-pole or 1-pole?

A52. Drawing amended; single poles for all three are correct.

Q53. On sheet EM-9, Panel B1 has a 3P15A (35) with a single phase listing. Is it 3-pole or 1-pole?

A53. Drawing amended; single pole is correct.

Q54. On sheet EA-16, Panel P has a listing in circuits 9, 11, 12, 13 and 14 as PFB's but there are 1P20A breakers. Is it provisions or spare breakers?

A54. Drawing amended; provide with spares.

Q55. On sheet EB-16, Panel P has a listing in circuits 9, 11, 12, 13, and 14 as PFB's but there are 1P20A breakers. Is it provisions or spare breakers?

A55. Drawing amended; provide with spares.

Q56. The documents require fire sprinkler protection with wet standpipe, or a Wet Standpipe Sprinkler Riser. This requires supply for each floor and have 2 1/2" valves installed below each floor control assembly. This system will require an existing water pressure able to provide 500 g.p.m. at the top of the roof hose valves for one standpipe and 250 g.p.m. for each additional standpipe. Please provide existing water pressure.

A56. Your question refers to an "automatic-wet" standpipe system, which requires connection to an existing water supply and supplying the system demand (gpm and pressure) automatically. The contract documents indicates the installation of a "manual-wet" standpipe system, which is only connected to a small water supply for the purpose of maintaining water within the system, but not having a water supply capable of delivering the system demand. Existing water pressure is not required for a "manual-wet" standpipe system.

Q58. I was writing because my company was asked to submit a bid as a cook top manufacturer/supplier to the GC's who are preparing their submittals, however, it appears that the cook tops were omitted from this solicitation.

How will the requirement for the cook tops be provided for?

A58. Stand alone range/ovens will be used in lieu of cook tops. Range/ovens will be government furnished/government installed equipment.

Q59. In addition to our previous RFI's 9 & 10, we would like to get a clarification as to what door Hardware would be used for the Blast Resistant Doors (no specifications provided) as noted in the Structural Drawings (shts. SB-20, SA-20 SL-12 and SM-16). We do not believe the door hardware shown in the door schedules and specified in Section 08710 has been tested for Blast Resistance.

A59. See Question 35.

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01415 METRIC MEASUREMENTS
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 FY03 & 04 WBR, I J K, PH 2C2 & 2D1, SB

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH #	GOVT CLASSIFICATION / REVIEWER	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION		APPROVING AUTHORITY				MAILED TO CONTR/ DATE RCD FRM APPR AUTH	REMARKS	
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		03150a	Sealant	2.3													
			SD-07 Certificates														
			Preformed Expansion Joint Filler	2.2													
			GRE														
			Sealant	2.3													
		03200a	SD-02 Shop Drawings														
			Reinforcement	3.1													
			SD-03 Product Data														
			Welding	1.3													
			SD-07 Certificates														
			Reinforcing Steel	2.3													
		03300	SD-03 Product Data														
			Mixture Proportions	1.9	G												
			SD-06 Test Reports														
			Testing and Inspection for Contractor Quality Control	3.17	G												
			SD-07 Certificates														
			Qualifications	1.5	G												
			SD-08 Manufacturer's Instructions														
			Application														
		04200	SD-02 Shop Drawings														
			Masonry Work		G												
			RE														
			SD-04 Samples														
			Concrete Masonry Units (CMU)	2.4	G												

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		04200	Anchors, Ties, and Bar Positioners	2.11													
			Expansion-Joint Materials	2.16	G												
			Joint Reinforcement	2.12													
			SD-05 Design Data														
			Pre-mixed Mortar	2.8.5	G												
			RE														
			Unit Strength Method	1.5.2	G												
			SD-06 Test Reports														
			Efflorescence Test		G												
			Field Testing of Mortar	3.26.1	G												
			Field Testing of Grout	3.23.2	G												
			Prism tests	3.23.4	G												
			Fire-rated CMU		G												
			Special Inspection	1.5.1	G												
			SD-07 Certificates														
			Concrete Masonry Units (CMU)	2.4													
			Control Joint Keys	2.14													
			Anchors, Ties, and Bar Positioners	2.11													
			Expansion-Joint Materials	2.16													
			Joint Reinforcement	2.12													
			Reinforcing Steel Bars and Rods	2.13													
			Admixtures for Masonry Mortar														
			Admixtures for Grout														
		05120	SD-02 Shop Drawings														

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		05120	Erection drawings		G												
			Fabrication drawings	1.7.1	G												
			SD-03 Product Data														
			Shop primer	2.4													
			Load indicator washers														
			Load indicator bolts														
			SD-06 Test Reports														
			Class B coating														
			Bolts, nuts, and washers	2.2													
			SD-07 Certificates														
			Steel	2.1													
			Bolts, nuts, and washers	2.2													
			Shop primer	2.4													
			Welding electrodes and rods	2.3.1													
			Nonshrink grout	2.3.2													
			Galvanizing	2.5													
			AISC Quality Certification	1.5													
			Welding procedures and qualifications	1.7.2.3													
		05300a	SD-02 Shop Drawings														
			Deck Units	2.1													
			Accessories	2.5													
			Attachments	3.3													
			Holes and Openings	3.4													
			SD-03 Product Data														
			Deck Units	2.1													

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		05300a	Attachments	3.3													
			SD-04 Samples														
			Deck Units	2.1													
			Accessories	2.5													
			SD-07 Certificates														
			Deck Units	2.1													
			Attachments	3.3													
		05500a	SD-02 Shop Drawings														
			Miscellaneous Metal Items	1.6													
			SD-04 Samples														
			Miscellaneous Metal Items	1.6													
		06100a	SD-02 Shop Drawings														
			Nailers and Nailing Strips	3.6.4													
			SD-03 Product Data														
			Product Installations														
			SD-07 Certificates														
			Grading and Marking	2.1.1													
			Insulation	2.3													
			Vapor Retarder														
		06200a	SD-02 Shop Drawings														
			Finish Carpentry														
			SD-04 Samples														
			Moldings and Base														
		06650	SD-02 Shop Drawings														
			Installation	3.2													
			SD-03 Product Data														

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		06650	Solid polymer material	2.1													
			Qualifications	1.6													
			Fabrications	2.3													
			SD-04 Samples														
			Material	2.1													
			Counter and Vanity Tops	2.3.6													
			SD-06 Test Reports														
			Solid polymer material	2.1													
			SD-07 Certificates														
			Fabrications	2.3													
			Qualifications	1.6													
			SD-10 Operation and Maintenance														
			Data														
			Solid polymer material	2.1													
			Clean-up														
		07131	SD-03 Product Data														
			Elastomeric waterproofing sheet material	2.1	G												
			Protection board														
			Primers, adhesives, and mastics	2.1													
			SD-06 Test Reports														
			Elastomeric waterproofing sheet material	2.1													
		07132a	SD-03 Product Data														
			Applications	2.1.2													
			SD-07 Certificates														

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		07132a	Materials	1.4													
		07210	SD-02 Shop Drawings														
			Fastening Spacing														
			SD-07 Certificates														
			Inspection														
			SD-08 Manufacturer's Instructions														
			Application of Insulation														
		07220a	SD-03 Product Data														
			Application of Insulation	3.7													
			Inspection	3.8													
			SD-07 Certificates														
			Insulation	2.2													
		07240	SD-02 Shop Drawings														
			Shop drawings	3.3	G												
			SD-03 Product Data														
			Sheathing board	2.2													
			Adhesive	2.3													
			Mechanical Fasteners	2.5													
			Accessories	2.13													
			Base coat	2.7													
			Portland cement	2.8													
			Reinforcing fabric	2.9													
			Finish coat	2.11													
			Joint Sealant	2.14													
			Primer	2.12													
			Bond breaker	2.15													

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		07240	Backer Rod	2.16													
			Warranty	1.7													
			SD-04 Samples														
			Sample Boards	1.2.3.7	G												
			SD-05 Design Data														
			Moisture analysis	1.2.4													
			SD-06 Test Reports														
			Abrasion resistance	1.2.3.1													
			Accelerated weathering	1.2.3.2													
			Impact resistance	1.2.2.3													
			Mildew resistance	1.2.3.3													
			Salt spray resistance	1.2.3.4													
			Water vapor transmission														
			Absorption-freeze-thaw	1.2.3.6													
			Flame spread														
			Water resistance	1.2.3.5													
			Surface Burning Characteristics	1.2.2.1													
			Radiant heat	1.2.2.2													
			substrate	3.1													
			SD-07 Certificates														
			Qualifications of EFS	1.4.1													
			Manufacturer														
			Qualification of EFS Installer	1.4.2													
			Qualification of Sealant Applicator	1.4.3													
			Qualifications of Third Party														
			Inspector														

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		07240	Inspection Check List	3.5.2	G												
			SD-08 Manufacturer's Instructions Installation	3.3													
			SD-10 Operation and Maintenance Data														
			EFS	1.7													
		07416a	SD-02 Shop Drawings														
			Standing Seam Metal Roof System		G												
			SD-03 Product Data Design Analysis Qualifications		G												
			SD-04 Samples														
			Accessories	2.3													
			Roof Panels	2.1													
			Factory Color Finish	2.6													
			Fasteners	2.4													
			Insulation	2.7													
			Gaskets and Insulating Compounds	2.10													
			Sealant	2.9													
			Concealed Anchor Clips	2.2													
			Subpurlins	2.5													
			EPDM Rubber Boots	2.12													
			SD-07 Certificates														

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		07416a	Standing Seam Metal Roof System														
			Insulation	2.7													
		07600a	SD-02 Shop Drawings Materials	2.1													
		07810	SD-03 Product Data Fireproofing Material	3.3	G												
			SD-04 Samples Spray-Applied Fireproofing	2.1	G												
			SD-06 Test Reports Fire Resistance Rating	1.7	G												
			Field Tests	3.5	G												
			SD-07 Certificates Installer Qualifications	1.5	G												
			Surface Preparation Report		G												
			Manufacturer's Inspection Report	3.5.4	G												
		07840a	SD-02 Shop Drawings Firestopping Materials	2.1													
			SD-07 Certificates Firestopping Materials	2.1													
			Installer Qualifications	1.5													
			Inspection	3.3													
		07900a	SD-03 Product Data Backing	2.1													
			Bond-Breaker	2.2													
			Sealant	2.5													

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		07900a	SD-07 Certificates														
			Sealant	2.5													
		08110	SD-02 Shop Drawings														
			Doors	2.1	G G												
			Doors	2.1	G G												
			Frames	2.7	G G												
			Frames	2.7	G G												
			Accessories	2.5													
			Weatherstripping	2.9													
			SD-03 Product Data														
			Doors	2.1	G												
			Frames	2.7	G												
			Accessories	2.5													
			Weatherstripping	2.9													
		08210	SD-02 Shop Drawings														
			Doors	2.1	G												
			SD-03 Product Data														
			Doors	2.1	G												
			Accessories	2.2													
			Water-resistant sealer warranty	2.3.7 1.4													
			Fire resistance rating		G												
			SD-04 Samples														
			Doors	2.1													
			Door finish colors	2.3.6.4	G												
			SD-06 Test Reports														

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		08210	Split resistance	2.4													
			Cycle-slam	2.4													
			Hinge loading resistance	2.4													
		08580	SD-02 Shop Drawings														
			Windows		G												
			SD-03 Product Data														
			Windows		G												
			Glass		G												
			Setting Materials		G												
			Fasteners		G												
			Accessories		G												
			Subframe		G												
			Hardware		G												
			Window Units		G												
			SD-04 Samples														
			Window units		G												
			SD-07 Certificates														
			Window units		G												
			SD-09 Manufacturer's Field														
			Reports														
			Minimum condensation resistance factor														
			Deflection														
			Air infiltration														
			Water penetration														
			Blast resistance test reports		G												

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		08580	SD-10 Operation and Maintenance Data														
			Window units		G												
		08710	SD-02 Shop Drawings														
			Hardware schedule	1.3	G												
			Hardware schedule	1.3	G												
			Keying system	2.3.8													
			SD-03 Product Data														
			Hardware items	2.3	G												
			Card Key Access Control		G												
			SD-08 Manufacturer's Instructions														
			Installation	3.1													
			SD-10 Operation and Maintenance Data														
			Hardware Schedule	1.3	G												
			Hardware Schedule	1.3	G												
			SD-11 Closeout Submittals														
			Key bitting	1.4													
		08810a	SD-02 Shop Drawings														
			Installation	3.2													
			SD-03 Product Data														
			Glazing Accessories	2.11													
			SD-07 Certificates														
			Glazing Accessories	2.11													
		09100N	SD-02 Shop Drawings														
			Metal support systems	2.1	G												

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		09250	SD-03 Product Data														
			Cementitious backer units	2.1.8													
			Glass Mat Water-Resistant Gypsum Tile Backing Board														
			Water-Resistant Gypsum Backing Board														
			Glass Mat Covered or Reinforced Gypsum Sheathing														
			Glass Mat Covered or Reinforced Gypsum Sheathing Sealant														
			Impact Resistant Gypsum Board														
			Accessories	2.1.14													
			SD-04 Samples														
			Predecorated gypsum board		G												
			SD-07 Certificates														
			Asbestos Free Materials	2.1	G												
		09310	SD-03 Product Data														
			Tile	2.1													
			Setting-Bed	2.2													
			Mortar, Grout, and Adhesive	2.4													
			SD-04 Samples														
			Tile	2.1													
			Accessories	2.1.6													
			Marble Thresholds	2.5													
			SD-06 Test Reports														
			Testing														

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		09310	SD-07 Certificates														
			Tile	2.1													
			Mortar, Grout, and Adhesive	2.4													
		09510	SD-02 Shop Drawings														
			Approved Detail Drawings	1.3													
			SD-03 Product Data														
			Acoustical Ceiling Systems														
			SD-04 Samples														
			Acoustical Units	2.1													
			SD-06 Test Reports														
			Ceiling Attenuation Class and Test	1.3.2													
			SD-07 Certificates														
			Acoustical Units	2.1													
		09650	SD-02 Shop Drawings														
			Tile Flooring	2.2	G												
			SD-03 Product Data														
			Tile Flooring	2.2													
			Adhesive for Vinyl Composition Tile	2.2.6													
			Adhesive for Wall Base	2.2.7													
			SD-04 Samples														
			Tile Flooring	2.2													
			Wall Base	2.5													
			SD-06 Test Reports														
			Moisture Test	3.3													

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		09650	Moisture and Alkalinity Tests														
			SD-08 Manufacturer's Instructions														
			Tile Flooring	2.2													
			SD-10 Operation and Maintenance Data														
			Data Package 1		G												
		09680A	SD-02 Shop Drawings														
			Installation	3.4													
			Molding	2.3													
			SD-03 Product Data														
			Carpet and Accessories														
			Surface Preparation	3.1													
			Installation	3.4													
			Regulatory Requirements	1.3													
			SD-04 Samples														
			Carpet and Accessories														
			Molding	2.3													
			SD-06 Test Reports														
			Moisture and Alkalinity Tests	3.2													
			SD-07 Certificates														
			Carpet and Accessories														
			SD-10 Operation and Maintenance Data														
			Carpet and Accessories														
			Cleaning and Protection	3.5													
		09880	SD-03 Product Data														

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		09880	Acrylic Textured Wall Coating														
			SD-08 Manufacturer's Instructions														
			Mixing and Thinning														
			Application														
			SD-07 Certificates														
			Applicator's Qualifications														
			Acrylic Textured Wall Coating														
			SD-04 Samples														
			Color														
			Acrylic Textured Wall Coating														
		09900	SD-02 Shop Drawings														
			Piping identification	3.12													
			stencil	3.12													
			SD-03 Product Data														
			Coating	2.1													
			Manufacturer's Technical Data	2.1													
			Sheets														
			SD-04 Samples														
			Color	1.9													
			SD-07 Certificates														
			Applicator's qualifications	1.3													
			Qualification Testing	1.4.1.2													
			SD-08 Manufacturer's Instructions														
			Application instructions														
			Mixing	3.8.2													

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		09900	Manufacturer's Material Safety Data Sheets	1.7.2													
			SD-10 Operation and Maintenance Data														
			Coatings	2.1													
		10100A	SD-03 Product Data Visual Display Boards														
			SD-04 Samples Aluminum	2.2.6													
			Porcelain Enamel Materials	2.2.1 2.2													
			07 Certificates Visual Display Boards														
		10153	SD-02 Shop Drawings Toilet Partition System														
			SD-03 Product Data Toilet Partition System														
			SD-04 Samples Toilet Partition System														
		10430	SD-02 Shop Drawings Approved Detail Drawings	3.1													
			SD-03 Product Data Modular Exterior Signage System	2.1													
			Installation Exterior Signs	3.1													
			SD-04 Samples														

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		10430	Exterior Signs														
		10440	SD-02 Shop Drawings														
			Detail Drawings	3.1													
			SD-03 Product Data														
			Installation	3.1													
			SD-04 Samples														
			Interior Signage	1.3													
		10522	SD-08 Manufacturer's Instructions														
			Fire extinguisher cabinets														
			Fire extinguishers														
		10550	SD-02 Shop Drawings														
			Mailbox Installation														
			SD-03 Product Data														
			Mailboxes, Parcel Lockers, and														
			Mail Collection Boxes														
		10800	SD-03 Product Data														
			Finishes	2.1.2													
			Accessory Items	2.2													
			SD-04 Samples														
			Finishes	2.1.2													
			Accessory Items	2.2													
			SD-07 Certificates														
			Accessory Items	2.2													
		11131	SD-02 Shop Drawings														
			Projection Screen														
			SD-03 Product Data														

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		11131	Projection Screen														
		12320A	SD-02 Shop Drawings														
			Installation	3.1													
			SD-03 Product Data														
			Cabinets	2.1													
			Countertops and Backsplash	2.2													
			SD-04 Samples														
			Cabinets	2.1													
			Countertops and Backsplash	2.2													
			SD-06 Test Reports														
			Cabinets and Countertops														
		12490A	SD-02 Shop Drawings														
			Approved Detail Drawings	3.2													
			SD-03 Product Data														
			Window Treatments	3.2													
			Hardware	1.3													
			SD-04 Samples														
			Window Treatments	3.2													
		13080	SD-02 Shop Drawings														
			Bracing and Coupling														
			Resilient Vibration Isolation	3.4													
			Devices														
			Equipment Requirements														
			SD-03 Product Data														
			Bracing and Coupling														
			Equipment Requirements														

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		13100A	SD-02 Shop Drawings Drawings														
			SD-07 Certificates Materials	2.1													
		13280A	SD-03 Product Data Respiratory Protection Program	1.12	G												
			Cleanup and Disposal	3.11	G												
			Detailed Drawings		G												
			Materials and Equipment		G												
			Qualifications	1.5	G												
			Training Program	1.11	G												
			Medical Requirements	1.10	G												
			Encapsulants	2.1	G												
			SD-06 Test Reports Exposure Assessment and Air Monitoring	3.9	G												
			Local Exhaust Ventilation	1.20													
			Licenses, Permits and Notifications	1.14	G												
			SD-07 Certificates Vacuum, Filtration and Ventilation Equipment		G												
		13281A	SD-03 Product Data Materials and Equipment	1.18	G												
			Expendable Supplies		G												
			Qualifications	1.5	G												

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		13281A	SD-06 Test Reports														
			Licences, Permits, and Notifications	1.11	G												
			Accident Prevention Plan (APP)	1.7	G												
			Sampling and Analysis	1.13	G												
		13286N	SD-07 Certificates														
			Qualifications of CIH	1.8.1	G												
			Training Certification	1.8.1	G												
			PCB and Lamp Removal Work Plan	1.8.2	G												
			PCB and Lamp Disposal Plan	1.8.3	G												
			SD-11 Closeout Submittals														
			Transporter certification	3.5.2	G												
			Certification of Decontamination	3.2.4													
			Certificate of Disposal and/or recycling	3.5.2.1													
			DD Form 1348-1														
			Testing results	3.3.1													
		13851A	SD-02 Shop Drawings														
			Fire Alarm Reporting System	1.4.1													
			SD-03 Product Data														
			Storage Batteries	2.2													
			Voltage Drop														
			Special Tools and Spare Parts	2.7.4													
			Technical Data and Computer Software	1.4	G RE												

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		13851A	Training	3.6													
			Testing	3.5													
			SD-06 Test Reports														
			Testing	3.5													
			SD-07 Certificates														
			Equipment														
			Qualifications	1.3.7													
			SD-10 Operation and Maintenance														
			Data														
			Technical Data and Computer	1.4	G RE												
			Software														
		13930A	SD-02 Shop Drawings														
			Sprinkler System Shop Drawings		G												
			As-Built Shop Drawings														
			SD-03 Product Data														
			Fire Protection Related Submittals	3.1	G												
			Load Calculations for Sizing Sway		G												
			Bracing														
			Components and Equipment Data		G												
			Hydraulic Calculations	1.7	G												
			Spare Parts														
			Preliminary Tests Procedures		G												
			Final Acceptance Test		G												
			Procedures														
			On-site Training Schedule		G												
			Preliminary Tests	3.10	G												

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		13930A	Final Acceptance Test		G												
			Fire Protection Specialist Qualifications		G												
			Sprinkler System Installer Qualifications	1.9	G												
			SD-06 Test Reports														
			Preliminary Tests Report		G												
			Final Acceptance Test Report		G												
			SD-07 Certificates														
			Fire Protection Specialist Inspection		G												
			SD-10 Operation and Maintenance Data														
			Wet Pipe Sprinkler System														
		14210A	SD-02 Shop Drawings														
			Elevator System														
			SD-03 Product Data														
			Training Data														
			Elevator System														
			Framed Instructions	3.6													
			Test Procedures		G												
			SD-04 Samples														
			Finishes														
			SD-06 Test Reports														
			Testing	3.5													
			SD-07 Certificates														

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		14210A	Qualification Certificates														
			SD-10 Operation and Maintenance Data														
			Elevator System		G												
		15070A	SD-02 Shop Drawings														
			Coupling and Bracing	3.1													
			Flexible Couplings or Joints	3.3													
			Equipment Requirements	1.3													
			Contractor Designed Bracing	1.2.4	G												
			SD-03 Product Data														
			Coupling and Bracing	3.1	G												
			Equipment Requirements	1.3	G												
			Contractor Designed Bracing	1.2.4	G												
			SD-07 Certificates														
			Flexible Ball Joints	2.2													
		15080A	SD-02 Shop Drawings														
			Mica Plates	3.2.2.4													
			SD-03 Product Data														
			General Materials	2.1													
			SD-04 Samples														
			Thermal Insulation Materials														
		15190A	SD-02 Shop Drawings														
			Gas Piping System	3.2													
			SD-03 Product Data														
			Qualifications														
			SD-06 Test Reports														

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		15190A	Testing														
			Pressure Tests	3.16.1													
			Pressure Tests for Liquified Petroleum Gas	3.16.2													
			Test With Gas	3.16.3													
		15400A	SD-02 Shop Drawings														
			Plumbing System	3.9.1													
			Electrical Schematics														
			SD-03 Product Data														
			Welding	1.5.1													
			Plumbing Fixture Schedule	3.10													
			Vibration-Absorbing Features	3.4													
			Plumbing System	3.9.1													
			SD-06 Test Reports														
			Tests, Flushing and Disinfection	3.9													
			Backflow Prevention Assembly Tests														
			SD-07 Certificates														
			Materials and Equipment														
			Bolts	2.1.1													
			SD-10 Operation and Maintenance														
			Data														
			Plumbing System	3.9.1													
		15895A	SD-02 Shop Drawings														
			Drawings	3.1.9													
			Installation	3.1													

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		15895A	SD-03 Product Data														
			Components and Equipment	2.1													
			Test Procedures	2.11.1													
			Welding Procedures	3.1.1.1													
			System Diagrams		G												
			Similar Services														
			Welding Joints														
			Testing, Adjusting and Balancing	3.7													
			Field Training	3.9													
			SD-06 Test Reports														
			Performance Tests	3.8													
			SD-07 Certificates														
			Bolts	2.5.2.2													
			SD-10 Operation and Maintenance														
			Data														
			Operating and Maintenance	3.9													
			Instructions														
		15951A	SD-02 Shop Drawings														
			HVAC Control System	3.1.1													
			SD-03 Product Data														
			Service Organizations														
			Equipment Compliance Booklet	1.6													
			Commissioning Procedures	3.4													
			Performance Verification Test	1.6													
			Procedures														
			Training	3.6													

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		15951A	SD-06 Test Reports														
			Commissioning Report	3.6.2													
			Performance Verification Test	3.5.3													
			SD-07 Certificates														
			Air Storage Tank														
			SD-10 Operation and Maintenance Data														
			Operation Manual	1.5													
			Maintenance and Repair Manual	1.6													
		15990A	SD-02 Shop Drawings														
			TAB Schematic Drawings and Report Forms	3.3	G												
			SD-03 Product Data														
			TAB Related HVAC Submittals	3.2													
			TAB Procedures	3.5.1													
			Calibration	1.4													
			Systems Readiness Check	3.5.2													
			TAB Execution	3.5.1													
			TAB Verification	3.5.4													
			SD-06 Test Reports														
			Design Review Report	3.1													
			Systems Readiness Check	3.5.2													
			TAB Report	3.5.3													
			TAB Verification Report	3.5.4													
			SD-07 Certificates														
			TAB Firm	1.5.1													

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						SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE			DATE OF ACTION
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		15990A	TAB Specialist	1.5.2													
		15995A	SD-03 Product Data														
			Commissioning Team	3.1													
			Test Procedures														
			Test Schedule		G												
			SD-06 Test Reports														
			Test Reports		G												
		16070A	SD-02 Shop Drawings														
			Lighting Fixtures in Buildings	3.2													
			Equipment Requirements	1.4													
			SD-03 Product Data														
			Lighting Fixtures in Buildings	3.2	G RE												
			Equipment Requirements	1.4	G RE												
			Contractor Designed Bracing	1.3.4	G RE												
		16375A	SD-02 Shop Drawings														
			Electrical Distribution System	3.11.3													
			As-Built Drawings														
			SD-03 Product Data														
			Fault Current Analysis		G												
			RE														
			Protective Device		G												
			Coordination Study		G												
			Nameplates	2.2													
			Material and Equipment	2.1													
			General Installation Requirements	3.1													
			SD-06 Test Reports														

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
 FY03 & 04 WBR, I J K, PH 2C2 & 2D1, SB

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH	GOVT CLASSIFICATION REVIEWER	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION		APPROVING AUTHORITY				MAILED TO CONTR/ DATE RCD FRM APPR AUTH	REMARKS	
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		16375A	Factory Tests	2.17													
			Field Testing	3.11													
			Operating Tests	3.11.13													
			Cable Installation	3.2.1.4													
			SD-07 Certificates														
			Material and Equipment	2.1													
			Cable Joints	3.3													
			Cable Installer Qualifications														
			SD-10 Operation and Maintenance Data														
			Electrical Distribution System	3.11.3													
		16415A	SD-02 Shop Drawings														
			Interior Electrical Equipment														
			SD-03 Product Data														
			Manufacturer's Catalog														
			Material, Equipment, and Fixture Lists														
			Installation Procedures														
			As-Built Drawings	1.2.6													
			Onsite Tests	3.24.2	G RE												
			SD-06 Test Reports														
			Factory Test Reports		G RE												
			Field Test Plan		G RE												
			Field Test Reports	3.22	G RE												
			SD-07 Certificates														
			Materials and Equipment	1.4													

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		16528A	SD-02 Shop Drawings														
			Lighting System	1.3.1	G												
			RE														
			Detail Drawings		G												
			As-Built Drawings	3.16.3													
			SD-03 Product Data														
			Equipment and Materials	1.3.9													
			Spare Parts														
			SD-06 Test Reports														
			CCTV Assessment Lighting		G												
			RE														
			Operating Test	3.16.2	G												
			Ground Resistance	3.16.3													
			Measurements														
			SD-10 Operation and Maintenance														
			Data														
			Lighting System	1.3.1													
		16710A	SD-02 Shop Drawings														
			Premises Distribution System	1.7	G RE												
			Record Drawings		G RE												
			SD-03 Product Data														
			Record Keeping and	1.8	G RE												
			Documentation														
			Spare Parts														
			Manufacturer's Recommendations	3.1.2	G RE												
			Test Plan		G RE												

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		16710A	Qualifications	1.4	G RE												
			SD-06 Test Reports														
			Test Reports														
			SD-07 Certificates														
			Premises Distribution System	1.7													
			Materials and Equipment	2.1													
			Installers		G RE												
		16711A	SD-02 Shop Drawings														
			Telephone System														
			Installation	3.1													
			SD-03 Product Data														
			Spare Parts														
			Equipment	1.5.2													
			Installation	3.1													
			SD-07 Certificates														
			Telephone System														
			Qualifications	1.4													
		16815a	SD-02 Shop Drawings														
			Cable Television Premises														
			Distribution System														
			Installation	3.1													
			SD-03 Product Data														
			Spare Parts														
			Manufacturer's Recommendations														
			Test Plan														
			Qualifications	1.5													

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		16815a	SD-06 Test Reports														
			Testing	3.6													
			SD-07 Certificates														
			Materials and Equipment	2.1													
			SD-10 Operation and Maintenance Data														
			Operation and Maintenance Manuals														

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SECTION 01356A

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SECTION 01356A

STORM WATER POLLUTION PREVENTION MEASURES

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 in the text by basic designation only.

ENVIRONMENTAL PROTECTION AGENCY

EPA POSTER Stormwater and the Construction Industry,
EPA 833-11-03-001, April 2003

STATE OF HAWAII DEPARTMENT OF HEALTH (HIDOH)

HRS, Chapter 342D Revised Statutes, Water Pollution

HIDOH, Chapter 55, Appendix C Administrative Rules, NPDES General Permit
Authorizing Discharges of Storm Water
Associated with Construction Activity

Best Management Practices Manual for Construction Sites in Honolulu,
Department of Environmental Services, City and County of Honolulu and
General Contractors Association of Hawaii, May 1999.

Rules Relating to Soil Erosion Standards and Guidelines, Department of
Planning and Permitting, City and County of Honolulu, April 1999.

1.2 GENERAL

The intent of this specification is to prevent sediment from entering streams adjacent to Army construction sites. Current studies indicate contaminants bind to the soil particles, which can be carried with eroded soils to streams. The Contractor shall implement the storm water pollution prevention measures specified in this section in a manner which will meet the requirements of Section 01354 ENVIRONMENTAL PROTECTION, and the requirements of the National Pollution Discharge Elimination System (NPDES) permit attached to that Section.

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. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-07 Certificates

State Department of Health, Clean Water Branch, Notice of Intent (NOI), Form C

Submit a copy of the NOI Form C to the Directorate of Public Works (DPW) Environmental Division

Notice of General Permit Coverage (NGPC)

Submit copy of NGPC to DPW Environmental

Contractor Site Specific Best Management Practices (BMPs); DPW Environmental Approval Required

Submit a copy of the Site Specific BMPs to both the State Department of Health and DPW Environmental for review and approval. Submit at least 30 calendar days before construction.

Contractor Erosion and Sediment Control Plan (ESCP)

Submit a copy of the ESCP to both the State Department of Health and DPW Environmental for review and approval. Submit at least 30 calendar days before construction. Use the City and County of Honolulu, Rules Relating to Soil Erosion Standards and Guidelines to determine when an ESCP is required.

Monthly Inspection Report and Certification Form For Erosion and Sediment Controls

Submit Inspection Report and Certification Form on a monthly basis to DPW Environmental. Submit water quality data on storm water influent and discharge water. Data shall include tests for turbidity, total suspended solids, nitrogen, and phosphorous.

1.4 EROSION AND SEDIMENT CONTROLS

The controls and measures required by the Contractor are described below.

1.4.1 Stabilization Practices

The stabilization practices to be implemented shall include temporary seeding, mulching, geotextiles, sod stabilization, vegetative buffer strips, erosion control mats, protection of trees, preservation of mature vegetation, fiber rolls, soil tracking or roughing, etc. On his daily CQC Report, the Contractor shall record the dates when the major grading activities occur, (e.g., clearing] and grubbing, excavation, embankment, and grading); when construction activities temporarily or permanently cease on a portion of the site; and when stabilization practices are initiated. This information shall be provided to the Contractor's third party independent company inspector. Except as provided in paragraphs UNSUITABLE CONDITIONS, stabilization practices shall be initiated as soon as practicable, but no more than 14 calendar days, in any portion of the site where construction activities have temporarily or permanently ceased.

1.4.1.1 Unsuitable Conditions

Where the initiation of stabilization measures by the fourteenth day after construction activity temporarily or permanently ceases is precluded by unsuitable conditions caused by the weather, stabilization practices shall be initiated as soon as practicable after conditions become suitable.

1.4.2 Structural Practices

Structural practices shall be implemented to divert flows from exposed soils, temporarily store flows, or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Structural practices shall be implemented in a timely manner during the construction process to minimize erosion and sediment runoff. Structural practices shall include the following devices.

1.4.2.1 Silt Fences

The Contractor shall provide silt fences as a temporary structural practice to minimize erosion and sediment runoff. Silt fences shall be properly installed to effectively retain sediment immediately after completing each phase of work where erosion would occur in the form of sheet and rill erosion (e.g. clearing and grubbing, excavation, embankment, and grading). Final removal of silt fence barriers shall be upon approval by the Contracting Officer.

1.4.2.2 Fiber Rolls

The Contractor shall provide fiber rolls as a temporary structural practice to reduce water velocity, minimize erosion, and reduce sediment runoff. Rolls shall be properly placed to effectively retain sediment immediately after completing each phase of work (e.g., clearing and grubbing, excavation, embankment, and grading) in each independent runoff area (e.g., after clearing and grubbing in a area between a ridge and drain, rolls shall be placed as work progresses, rolls shall be removed/replaced/relocated as needed for work to progress in the drainage area). Final removal of fiber rolls barriers shall be upon approval by the Contracting Officer. Rows of fiber rolls shall be provided as follows:

- a. Along the downhill perimeter edge of all areas disturbed.
- b. Along the top of the slope or top bank of drainage ditches, channels, swales, etc. that traverse disturbed areas.
- c. Along the toe of all cut slopes and fill slopes of the construction areas.
- d. Perpendicular to the flow in the bottom of existing drainage ditches, channels, swales, etc. that traverse disturbed areas or carry runoff from disturbed areas. Rows shall be spaced at distances not to exceed 35 feet.
- e. Perpendicular to the flow in the bottom of new drainage ditches, channels, and swales. Rows shall be spaced at distances not to exceed 35 feet.
- f. At the entrance to culverts that receive runoff from disturbed areas.
- g. On steep slopes fiber rolls shall be trenched in slightly and spaced at distances not to exceed 35 feet. Rolls shall be placed at the same elevation contour by survey methods. Placement by survey methods will reduce the possibility of a rill developing along a sloping roll. On steep slopes fiber rolls shall be used with erosion control blankets.

PART 2 PRODUCTS

2.1 SILT FENCES

The geotextile shall contain stabilizers and/or inhibitors added to the base plastic to make the filaments resistance to deterioration due to ultraviolet and heat exposure. Synthetic filter fabric shall contain ultraviolet ray inhibitors and stabilizers to provide a minimum of six months of expected usable construction life.

The Contractor may use either wooden stakes or steel posts for fence construction. Wooden stakes utilized for silt fence construction, shall have a minimum cross section of 2 inches by 2 inches and shall have a minimum length of 5 feet. Steel posts (standard "U" or "T" section) utilized for silt fence construction, shall have a minimum weight of 1.33 pounds per linear foot and a minimum length of 5 feet.

2.2 COMPONENTS FOR FIBER ROLLS

In lieu of fiber rolls, mulch tubes can be used. The Contractor may use either wooden stakes or steel posts to secure the straw bales to the ground. Wooden stakes utilized for this purpose, shall have a minimum dimensions of 2 inches x 2 inches in cross section and shall have a minimum length of 3 feet. Steel posts (standard "U" or "T" section) utilized for securing straw bales, shall have a minimum weight of 1.33 pounds per linear foot and a minimum length of 3 feet.

PART 3 EXECUTION

3.1 RAIN GAGE

The rain gage shall have a tolerance of at least 0.05 inches of rainfall, and have an opening of at least one inch in diameter. Install the rain gage on the project site in an area that will not deter rainfall from entering the gate opening. The rain gage shall be stable and plumb. Do not begin earthwork until the rain gage is installed and the site specific BMPs are in place.

3.2 BMP IMPLEMENTATION

Contractor shall follow the guidelines in the "Best Management Practices Manual for Construction Sites in Honolulu" in developing, installing, and maintaining the BMPs for this project. Temporary sedimentation basins and gravel entrances and exits are required for construction sites greater than 1 acre in size. The contractor shall phase his site construction as much as possible to reduce the total amount of exposed areas subject to erosion.

A vegetative buffer downstream of graded areas shall be used as much as possible.

3.3 RECORD KEEPING

The Contractor shall keep daily records of construction activities including dates when major grading activities occur; dates when construction activities temporarily cease on the site or a portion of the site; dates when construction activities permanently cease on the site or a portion of the site; and dates when stabilization measures are completed on the site. This information shall be provided to the Contractor's third party independent company inspector. Maintain records of inspections and

BMP repairs.

3.4 CUT & FILL SLOPES AT TRAINING ROADS

Training range cut and fill slopes disturbed during construction shall be revegetated using the Duff method. The existing slope vegetation shall be removed, chipped and stockpiled. The upper 6-inches of the slope's topsoil shall be removed and separately stockpiled. The two stockpiles shall be well mixed and the composite material applied to slopes up to 2 horizontal to 1 vertical (2H:1V). The composite material shall be compacted by a dozer track walking perpendicular to the slope

For slopes steeper than 2H:1V, grass seed, tackifier, and time release fertilizer shall be applied hydraulically. A permanent erosion control blanket with design life of 3 years shall be installed immediately over the seed. Fiber rolls shall be installed on the top of slope, on the bottom of slope, and on the slope at contour intervals not to exceed 35 feet. The fiber rolls shall be trenched slightly. The location of the fiber rolls shall be set by survey to be at the same contour. This will reduce the potential for the fiber roll to channel surface flow and concentrate erosion.

3.5 WORK STOPPAGE & FINES

Failure to conform with this specification requirements and State and Federal regulations will be cause for temporary or permanent suspension of operations. If operations are suspended due to the Contractor's failure to conform, the Contractor shall maintain the project during the period of suspension at no cost to the Government.

For all citations or fines received by Government for non-compliance with the Notice of General Permit Coverage (NGPC), the BMPs in the NOI Form C, and the site specific BMPs, the Contractor shall reimburse the Government within 30 calendar days for the full amount of the outstanding cost the Government has incurred. In lieu of reimbursement, the Government will deduct the cost from progress payments.

Upon notification by DPW Environmental, the Contracting Officer will assess liquidated damages up to \$27,500 per day for non-compliance of each BMP requirement and all other requirements in this specification. There is no maximum limit on the amount assessed per day. The State Department of Health may also assess fines independent of the government.

3.6 MAINTENANCE

The Contractor shall maintain the temporary and permanent vegetation, erosion and sediment control measures, and other protective measures in good and effective operating condition by performing routine inspections to determine condition and effectiveness, by restoration of destroyed vegetative cover, and by repair of erosion and sediment control measures and other protective measures. The Contractor shall perform BMP maintenance at the frequency identified in the "Best Management Practices Manual for Construction Sites in Honolulu".

3.7 INSPECTIONS

3.7.1 General

The Contractor shall hire a third party independent company to provide quality control inspection services related to storm water compliance. The inspector's work will be under the direct supervision of a licensed civil engineer and consist of the required inspections and submittals of certified reports. Inspection shall be performed on disturbed areas of the construction site, areas used for storage of materials that are exposed to precipitation that have not been finally stabilized, stabilization practices, structural practices, other controls, and area where vehicles exit the site at least once every seven (7) calendar days, 24 hours prior to anticipated heavy storm, and within 24 hours of the end of any storm that produces 0.5 inches or more rainfall at the site. Where sites have been finally stabilized, such inspection shall be conducted at least once every month.

3.7.2 Inspections Details

"Best Management Practices Manual for Construction Sites in Honolulu", the BMP checklist in "Rules Relating to Soil Erosion Standards and Guidelines", HRS, Chapter 342D, HIDO, Chapter 55, Appendix C, and EPA POSTER "Stormwater and the Construction Industry", EPA 833-11-03-001, shall be used to establish inspection criteria. A copy of the DPW Environmental inspection checklist is attached to the end of this section. Disturbed areas and areas used for material storage that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion and sediment control measures identified in the Site Specific BMPs shall be observed to ensure that they are operating correctly. Discharge locations or points shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters. Water quality grab samples shall be obtained from the storm water influent and discharge points. If the existing State Water Quality Standards (WQS) are not being met, the Contractor shall adjust his BMPs to ensure the discharge meets the WQS.

Locations where vehicles exit the site shall be inspected for evidence of offsite sediment tracking. Tracking of soil onto installations roads and streets are prohibited. Washing of soil into the existing storm drain inlets is prohibited.

3.7.3 Inspection by SDOH and DPW Environmental

The Contractor shall make the construction site available at all times for inspection by the SDOH or DPW Environmental. Either agency shall be checking for compliance with the site specific BMPs and the Erosion and Sediment Control Plan. Either agency may issue the Contractor a notice of nonconformance. The contractor shall correct nonconformance BMPs within 72 [] hours. If the correction is not completed within this time, work stoppage and fines shall be issued.

3.7.4 Inspection Reports

For each inspection conducted, the Contractor's inspector shall prepare a report summarizing the scope of the inspection, name(s) and qualifications of personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of the Storm Water Pollution Prevention Plan, maintenance performed, and actions taken. The report

shall be furnished to the Contracting Officer within 24 hours of the inspection as a part of the Contractor's daily CQC REPORT. A copy of the inspection report shall be maintained on the job site.

3.7.5 Monthly Inspection Report and Certification Form for Erosion and Sediment Controls

On the first working day of each month the Contractor's inspector shall complete, sign, and submit the original form to DPW Environmental at the following address:

Directorate of Public Works
Environmental Division (APVG-GW)
Clean Water Program Manager
947 Wright Ave., Wheeler Army Airfield
US Army Garrison Hawaii
Schofield Barracks, HI 96857-5000

A copy of the Monthly Inspection Report and Certification Form for Erosion and Sediment Controls is attached to the end of this section. On the first working day of each month the Contractor shall also furnish one copy of the form submitted to the Contracting Officer as part of the Contractor's daily CQC Report and attach a copy of the completed form to the Plan. Unless otherwise notified by the DPW Environmental, the Contractor shall submit the Monthly Inspection Report and Certification Forms for an additional two months after the final completion of all storm water pollution prevention measures required in this contract have been implemented.

-- End of Section --

OTHER REQUIREMENTS				
Requirement	Yes	No	N/A	Corrective Action
Temporary Soil Stabilization				
Does the applied temporary soil stabilization provide 100% coverage for the required areas?				
Are any non-vegetated areas that may require temporary soil stabilization?				
Is the area where temporary soil stabilization required free from visible erosion?				
Location:				
Temporary Linear Sediment Barriers				
Are temporary linear sediment barriers properly installed in accordance with the details, functional and maintained?				
Are temporary linear sediment barriers free of accumulated litter?				
Is the built-up sediment less than 1/3 the height of the barrier?				
Are cross barriers installed where necessary and properly spaced?				
Location:				
Storm Drain Inlet Protection				
Are storm drain inlets internal to the project properly protected?				
Are storm drain inlet protection devices in working order and being properly maintained?				
Location:				
Desilting Basins				
Are basins maintained to provide the required retention/detention?				
Are basin controls (inlets, outlets, diversions, weirs, spillways, and racks) in working order?				
Location:				
Location:				
Location:				

OTHER REQUIREMENTS				
Requirement	Yes	No	N/A	Corrective Action
Location:				
Stockpiles				
Are all locations of temporary stockpiles, including soil, hazardous waste, and construction materials in approved areas?				
Are stockpiles protected from run-on, run-off from adjacent areas and from winds?				
Are stockpiles located at least 45 feet from concentrated flows, downstream drainage courses and storm drain inlets?				
Are required covers and/or perimeter controls in place?				
Location:				
Concentrated Flows				
Are concentrated flow paths free of visible erosion?				
Location:				
Tracking Control				
Are points of ingress/egress to public/private roads inspected and swept and vacuumed daily?				
Are all paved areas free of visible sediment tracking or other particulate matter?				
Location:				
Vehicle & Equipment Fueling, Cleaning, and Maintenance				
Are vehicle and equipment fueling, cleaning and maintenance areas reasonably clean and free of spills, leaks, or any other deleterious material?				
Are vehicle and equipment fueling, cleaning and maintenance activities performed on an impermeable surface in dedicated areas?				
If no, are drip pans used?				
Are dedicated fueling, cleaning, and maintenance areas located at least 45 feet away from downstream drainage facilities and water courses and protected from run-on and runoff?				

OTHER REQUIREMENTS				
Requirement	Yes	No	N/A	Corrective Action
Is wash water contained for infiltration/evaporation and disposed of outside the highway right of way?				
Is on-site cleaning limited to washing with water (no soap, soaps substitutes, solvents, or steam)?				
On each day of use, are vehicles and equipment inspected for leaks and if necessary, repaired?				
Location:				
Waste Management & Materials Pollution Control				
Are material storage areas and washout areas protected from run-on and runoff, and located at least 45 feet from concentrated flows and downstream drainage facilities?				
Are all material handling and storage areas clean; organized; free of spills, leaks, or any other deleterious material; and stocked with appropriate clean-up supplies?				
Are liquid materials, hazardous materials, and hazardous wastes stored in temporary containment facilities?				
Are bagged and boxed materials stored on pallets?				
Are hazardous materials and wastes stored in appropriate, labeled containers?				
Are proper storage, clean-up, and spill-reporting procedures for hazardous materials and wastes posted in open, conspicuous and accessible locations adjacent to storage areas?				
Are temporary containment facilities free of spills and rainwater?				
Are temporary containment facilities and bagged/boxed materials covered?				
Are temporary concrete washout facilities designated and being used?				
Are temporary concrete washout facilities functional for receiving and containing concrete waste and are concrete residues prevented from entering the drainage system?				
Do temporary concrete washout facilities provide sufficient volume and freeboard for planned concrete operations?				
Are concrete wastes, including residues from cutting and grinding, contained and disposed of off-site or in concrete washout facilities?				
Are spills from mobile equipment fueling and maintenance properly contained and cleaned up?				
Is the site free of litter?				

GENERAL INFORMATION			
Project Name			
Contract Number			
Contractor			
Inspector's Name			
Inspector's Title			
Signature			
Date of Inspection			
Inspection Type (Check Applicable)	<input type="checkbox"/> Prior to forecast rain		<input type="checkbox"/> After a rain event
	<input type="checkbox"/> 24-hr intervals during extended rain		<input type="checkbox"/> Other _____
Season (Check Applicable)	<input type="checkbox"/> Rairy		<input type="checkbox"/> Non-Rainy
Storm Data	Storm Start Date & Time:		Storm Duration (hrs):
	Time elapsed since last storm (Circle Applicable Units)	Min. Hr. Days	Approximate Rainfall Amount (mm)

PROJECT AREA SUMMARY AND DISTURBED SOIL AREA (DSA) SIZE LIMITS			
Total Project Area	_____ Hectares	_____ Acres	
Field Estimate of Active DSAs	_____ Hectares	_____ Acres	

OTHER REQUIREMENTS				
Requirement	Yes	No	N/A	Corrective Action
Preservation of Existing Vegetation				
Is temporary fencing provided to preserve vegetation in areas where no construction activity is planned?				
Location:				

OTHER REQUIREMENTS				
Requirement	Yes	No	N/A	Corrective Action
Are trash receptacles provided in the Contractor's yard, field trailer areas, and at locations where workers congregate for lunch and break periods?				
Is litter from work areas within the construction limits of the project site collected and placed in watertight dumpsters?				
Are waste management receptacles free of leaks?				
Are the contents of waste management receptacles properly protected from contact with storm water or from being dislodged by winds?				
Are waste management receptacles filled at or beyond capacity?				
Location:				
Illicit Connection/Illegal Discharge Detection and Reporting				
Is there any evidence of illicit discharges or illegal dumping on the project site?				
If yes, has the Engineer been notified?				
Location:				
Discharge Points				
Are discharge points and discharge flows free from noticeable pollutants?				
Are discharge points free of any significant erosion or sediment transport?				
Location:				
Site Specific BMP Plan				
Are all BMPs shown on the site specific BMP plan installed in the proper location(s) and according to the details for the plan?				
Location:				
General				

OTHER REQUIREMENTS				
Requirement	Yes	No	N/A	Corrective Action
Are there any other potential water pollution control concerns at the site?				
Location:				

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SECTION 02763A

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-- End of Section Table of Contents --

SECTION 02763A
PAVEMENT MARKINGS

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 in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 792	(1998) Density and Specific Gravity (Relative Density) of Plastics by Displacement
ASTM D 4280	(1996) Extended Life Type, Nonplowable, Prismatic, Raised, Retroreflective Pavement Markers
ASTM E 28	(1999) Softening Point of Resins by Ring and Ball Apparatus

U.S. GENERAL SERVICES ADMINISTRATION (GSA)

FS TT-P-1952	(Rev D; Canc. Notice 1) Paint, Traffic and Airfield Marking, Waterborne (Metric)
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1.2 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. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-03 Product Data

Equipment

Lists of proposed equipment, including descriptive data, and notifications of proposed Contractor actions as specified in this section. List of removal equipment shall include descriptive data indicating area of coverage per pass, pressure adjustment range, tank and flow capacities, and safety precautions required for the equipment operation.

Composition Requirements

Manufacturer's current printed product description and Material Safety Data Sheets (MSDS) for each type paint/color proposed for use.

Qualifications

Document certifying that personnel are qualified for equipment operation and handling of chemicals.

SD-06 Test Reports

Sampling and Testing

Certified copies of the test reports, prior to the use of the materials at the jobsite. Testing shall be performed in an approved independent laboratory.

SD-07 Certificates

Volatile Organic Compound (VOC)

Certificate stating that the proposed pavement marking compound or paint meets the VOC regulations of the local Air Pollution Control District having jurisdiction over the geographical area in which the project is located.

1.3 DELIVERY AND STORAGE

All materials shall be delivered and stored in sealed containers that plainly show the designated name, formula or specification number, batch number, color, date of manufacture, manufacturer's name, and directions, all of which shall be plainly legible at time of use.

1.4 EQUIPMENT

All machines, tools and equipment used in the performance of the work shall be approved and maintained in satisfactory operating condition. Equipment operating on roads and runways shall display low speed traffic markings and traffic warning lights.

1.4.1 Paint Application Equipment

The equipment to apply paint to parking stall (where indicated) pavements shall be a self-propelled or mobile-drawn pneumatic spraying machine with suitable arrangements of atomizing nozzles and controls to obtain the specified results. The machine shall have a speed during application not less than 8 kilometers per hour (5 mph), and shall be capable of applying the stripe widths indicated, at the paint coverage rate specified in paragraph APPLICATION, and of even uniform thickness with clear-cut edges. The paint applicator shall have paint reservoirs or tanks of sufficient capacity and suitable gauges to apply paint in accordance with requirements specified. Tanks shall be equipped with suitable air-driven mechanical agitators. The spray mechanism shall be equipped with quick-action valves conveniently located, and shall include necessary pressure regulators and gauges in full view and reach of the operator. Paint strainers shall be installed in paint supply lines to ensure freedom from residue and foreign matter that may cause malfunction of the spray guns. The paint applicator shall be readily adaptable for attachment of an air-actuated dispenser for the reflective media approved for use. Pneumatic spray guns shall be provided for hand application of paint in areas where the mobile paint applicator cannot be used.

1.4.2 Thermoplastic Application Equipment

1.4.2.1 Thermoplastic Material

Thermoplastic material shall be applied to the primed pavement surface by spray techniques or by the extrusion method, wherein one side of the shaping die is the pavement and the other three sides are contained by, or are part of, suitable equipment for heating and controlling the flow of material. By either method, the markings shall be applied with equipment that is capable of providing continuous uniformity in the dimensions of the stripe.

1.4.2.2 Application Equipment

a. Application equipment shall provide continuous mixing and agitation of the material. Conveying parts of the equipment between the main material reservoir and the extrusion shoe shall prevent accumulation and clogging. All parts of the equipment which come into contact with the material shall be easily accessible and exposable for cleaning and maintenance. All mixing and conveying parts up to and including the extrusion shoes and spray guns shall maintain the material at the required temperature with heat-transfer oil or electrical-element-controlled heat.

b. The application equipment shall be constructed to ensure continuous uniformity in the dimensions of the stripe. The applicator shall provide a means for cleanly cutting off stripe ends squarely and shall provide a method of applying "skiplines". The equipment shall be capable of applying varying widths of traffic markings.

c. The applicator shall be equipped with a drop-on type bead dispenser capable of uniformly dispensing reflective glass spheres at controlled rates of flow. The bead dispenser shall be automatically operated and shall begin flow prior to the flow of composition to assure that the strip is fully reflectorized.

1.4.2.3 Mobile and Maneuverable

Application equipment shall be mobile and maneuverable to the extent that straight lines can be followed and normal curves can be made in a true arc. The equipment used for the placement of thermoplastic pavement markings shall be of two general types: mobile applicator and portable applicator.

a. Mobile Application Equipment: The mobile applicator shall be defined as a truck-mounted, self-contained pavement marking machine that is capable of hot applying thermoplastic by the extrusion method. The unit shall be equipped to apply the thermoplastic marking material at temperatures exceeding 190 degrees C (375 degrees F), at widths varying from 75 to 300 mm (3 to 12 inches) and in thicknesses varying from 1.0 to 5.0 mm (0.020 to 0.190 inch) and shall have an automatic drop-on bead system. The mobile unit shall be capable of operating continuously and of installing a minimum of 6 kilometers (20,000 lineal feet) of longitudinal markings in an 8-hour day.

(1) The mobile unit shall be equipped with a melting kettle which holds a minimum of 2.7 metric tons (6000 pounds) of molten thermoplastic material. The kettle shall be capable of heating the thermoplastic composition to temperatures of 195 to 220 degrees C (375 to 425 degrees F).

A thermostatically controlled heat transfer liquid shall be used. Heating of the composition by direct flame will not be allowed. Oil and

material temperature gauges shall be visible at both ends of the kettle. The mobile unit shall be equipped with a minimum of two extrusion shoes located one on each side of the truck, and shall be capable of marking simultaneous edgeline and centerline stripes. Each extrusion shoe shall be a closed, oil-jacketed unit; shall hold the molten thermoplastic at a temperature of 195 to 220 degrees C (375 to 425 degrees F); and shall be capable of extruding a line of 75 to 200 mm (3 to 8 inches) in width; and at a thickness of not less than 3 mm (0.125 inch) nor more than 5.0 mm (0.190 inch), and of generally uniform cross section.

(2) The mobile unit shall be equipped with an electronic programmable line pattern control system. The control system shall be capable of applying skip or solid lines in any sequence, through any and all of the extrusion shoes, and in programmable cycle lengths. In addition, the mobile unit shall be equipped with an automatic counting mechanism capable of recording the number of lineal meters (feet) of thermoplastic markings applied to the pavement surface with an accuracy of 0.5 percent.

b. Portable Application Equipment: The portable applicator shall be defined as hand-operated equipment, specifically designed for placing special markings such as crosswalks, stopbars, legends, arrows, and short lengths of lane, edge and centerlines. The portable applicator shall be capable of applying thermoplastic pavement markings by the extrusion method. The portable applicator shall be loaded with hot thermoplastic composition from the melting kettles on the mobile applicator. The portable applicator shall be equipped with all the necessary components, including a materials storage reservoir, bead dispenser, extrusion shoe, and heating accessories, so as to be capable of holding the molten thermoplastic at a temperature of 195 to 220 degrees C (375 to 425 degrees F), of extruding a line of 75 to 300 mm (3 to 12 inches) in width, and in thicknesses of not less than 3.0 mm (0.125 inch) nor more than 5.0 mm (0.190 inch) and of generally uniform cross section.

1.4.3 Reflective Media Dispenser

The dispenser for applying the reflective media shall be attached to the paint dispenser and shall operate automatically and simultaneously with the applicator through the same control mechanism. The dispenser shall be capable of adjustment and designed to provide uniform flow of reflective media over the full length and width of the stripe at the rate of coverage specified in paragraph APPLICATION, at all operating speeds of the applicator to which it is attached.

1.4.4 Surface Preparation Equipment

1.4.4.1 Sandblasting Equipment

Sandblasting equipment shall include an air compressor, hoses, and nozzles of proper size and capacity as required for cleaning surfaces to be painted. The compressor shall be capable of furnishing not less than 70.8 liters per sec (150 cfm) of air at a pressure of not less than 620 kPa (90 psi) at each nozzle used, and shall be equipped with traps that will maintain the compressed air free of oil and water.

1.4.4.2 Waterblast Equipment

The water pressure shall be specified at 17.9 MPa (2600 psi) at 60 degrees C (140 degrees F) in order to adequately clean the surfaces to be marked.

1.4.5 Marking Removal Equipment

Equipment shall be mounted on rubber tires and shall be capable of removing markings from the pavement without damaging the pavement surface or joint sealant. Waterblasting equipment shall be capable of producing an adjustable, pressurized stream of water. Sandblasting equipment shall include an air compressor, hoses, and nozzles. The compressor shall be equipped with traps to maintain the air free of oil and water.

1.4.5.1 Shotblasting Equipment

Shotblasting equipment shall be capable of producing an adjustable depth of removal of marking and pavement. Each unit shall be self-cleaning and self-contained, shall be able to confine dust and debris from the operation, and shall be capable of recycling the abrasive for reuse.

1.4.5.2 Chemical Equipment

Chemical equipment shall be capable of application and removal of chemicals from the pavement surface, and shall leave only non-toxic biodegradable residue.

1.4.6 Traffic Controls

Suitable warning signs shall be placed near the beginning of the worksite and well ahead of the worksite for alerting approaching traffic from both directions. Small markers shall be placed along newly painted lines or freshly placed raised markers to control traffic and prevent damage to newly painted surfaces or displacement of raised pavement markers. Painting equipment shall be marked with large warning signs indicating slow-moving painting equipment in operation.

1.5 HAND-OPERATED, PUSH-TYPE MACHINES

All machines, tools, and equipment used in performance of the work shall be approved and maintained in satisfactory operating condition. Hand-operated push-type machines of a type commonly used for application of paint to pavement surfaces will be acceptable for marking small streets and parking areas. Applicator machine shall be equipped with the necessary paint tanks and spraying nozzles, and shall be capable of applying paint uniformly at coverage specified. Sandblasting equipment shall be provided as required for cleaning surfaces to be painted. Hand-operated spray guns shall be provided for use in areas where push-type machines cannot be used.

1.6 MAINTENANCE OF TRAFFIC

1.6.1 Roads, Streets, and Parking Areas

When traffic must be rerouted or controlled to accomplish the work, the necessary warning signs, flagpersons, and related equipment for the safe passage of vehicles shall be provided.

PART 2 PRODUCTS

2.1 PAINT FOR BLUE HANDICAP STALL MARKINGS

Paint shall be used for blue handicap stall markings only. All other markings shall be thermoplastic materials. The paint shall be homogeneous,

easily stirred to smooth consistency, and shall show no hard settlement or other objectionable characteristics during a storage period of 6 months. Paints for handicap space markings and catch basin markings shall conform to FS TT-P-1952, color as indicated. Pavement marking paints shall comply with applicable state and local laws enacted to ensure compliance with Federal Clean Air Standards. Paint materials shall conform to the restrictions of the local Air Pollution Control District. Blue pavement marking paint shall be Pervo Paint Company #3033 Dark Handicap Blue Traffic Line Paint, water base, or approved equal.

2.2 THERMOPLASTIC COMPOUNDS

The thermoplastic reflectorized pavement marking compound shall be extruded in a molten state onto a primed pavement surface. Following a surface application of glass beads and upon cooling to normal pavement temperatures, the marking shall be an adherent reflectorized strip of the specified thickness and width that is capable of resisting deformation by traffic.

2.2.1 Composition Requirements

Reflective thermoplastic compound pavement markings shall be alkyd-based and shall comply with the requirements in Section 712 of the State of Hawaii, 1994 Standard Specifications for Road, Bridge, and Public Works Construction. Hydrocarbon based reflective thermoplastic compound pavement markings shall not be used. The compound shall not deteriorate by contact with sodium chloride, calcium chloride, oil content of pavement materials, or from oil droppings from traffic.

2.2.2 Physical Properties

2.2.2.1 Color

The color shall be as indicated.

2.2.2.2 Drying Time

When installed at 20 degrees C) and in thicknesses between 3 and 5 mm, the composition shall be completely solid and shall show no damaging effect from traffic after curing 15 minutes.

2.2.2.3 Softening Point

The composition shall have a softening point of not less than 90 degrees C (194 degrees F) when tested in accordance with ASTM E 28.

2.2.2.4 Specific Gravity

The specific gravity of the composition shall be between 1.9 and 2.2 as determined in accordance with ASTM D 792.

2.2.3 Asphalt Concrete Primer

The primer for asphalt concrete pavements shall be a thermosetting adhesive with a solids content of pigment reinforced synthetic rubber and synthetic plastic resin dissolved and/or dispersed in a volatile organic compound (VOC). Solids content shall not be less than 10 percent by weight at 20 degrees C and 60 percent relative humidity. A wet film thickness of 0.10 mm plus or minus 0.025 mm, shall dry to a tack-free condition in less than 5

minutes.

2.2.4 Portland Cement Concrete Primer

The primer for Portland cement concrete pavements shall be an epoxy resin primer. The primer shall be of the type recommended by the manufacturer of the thermoplastic composition. Epoxy primers recommended by the manufacturer shall be approved by the Contracting Officer prior to use. Requests for approval shall be accompanied with technical data, instructions for use, and a 1 liter sample of the primer material.

2.3 RAISED REFLECTIVE MARKERS

Two-way reflective raised pavement markers shall be the prismatic type. Markers shall be of permanent colors, as specified for pavement marking, and shall retain the color and brightness under the action of traffic. Two-way reflective raised pavement markers shall have rounded surfaces presenting a smooth contour to traffic and shall not project more than 19 mm above level of pavement. Pavement markers and adhesive epoxy shall conform to ASTM D 4280.

2.4 SAMPLING AND TESTING

Materials proposed for use shall be stored on the project site in sealed and labeled containers, or segregated at source of supply, sufficiently in advance of needs to allow 60 days for testing. Upon notification by the Contractor that the material is at the site or source of supply, a sample shall be taken by random selection from sealed containers by the Contractor in the presence of a representative of the Contracting Officer. Samples shall be clearly identified by designated name, specification number, batch number, manufacturer's formulation number, project contract number, intended use, and quantity involved. Testing shall be performed in an approved independent laboratory. If materials are approved based on reports furnished by the Contractor, samples will be retained by the Government for possible future testing should the material appear defective during or after application.

PART 3 EXECUTION

3.1 SURFACE PREPARATION

All new pavement surfaces shall be at least 30 days old before applying paint. Surfaces to be marked shall be thoroughly cleaned before application of the pavement marking material. Dust, dirt, and other granular surface deposits shall be removed by sweeping, blowing with compressed air, rinsing with water or a combination of these methods as required. Rubber deposits, surface laitance, existing paint markings, and other coatings adhering to the pavement shall be completely removed with scrapers, wire brushes, sandblasting, approved chemicals, or mechanical abrasion as directed. Areas of old pavement affected with oil or grease shall be scrubbed with several applications of trisodium phosphate solution or other approved detergent or degreaser, and rinsed thoroughly after each application. After cleaning, oil-soaked areas shall be sealed with cut shellac to prevent bleeding through the new paint. Pavement surfaces shall be allowed to dry, when water is used for cleaning, prior to striping or marking. Surfaces shall be re-cleaned, when work has been stopped due to rain.

3.1.1 Cleaning Existing Pavement Markings

In general, markings shall not be placed over existing pavement marking patterns. Existing pavement markings, which are in good condition but interfere or conflict with the newly applied marking patterns, shall be removed. Deteriorated or obscured markings that are not misleading or confusing or interfere with the adhesion of the new marking material do not require removal. New thermoplastic pavement markings shall not be applied over existing preformed or thermoplastic markings. Whenever grinding, scraping, sandblasting or other operations are performed the work must be conducted in such a manner that the finished pavement surface is not damaged or left in a pattern that is misleading or confusing. When these operations are completed the pavement surface shall be blown off with compressed air to remove residue and debris resulting from the cleaning work.

3.1.2 Cleaning Concrete Curing Compounds

On new Portland cement concrete pavements, cleaning operations shall not begin until a minimum of 30 days after the placement of concrete. All new concrete pavements shall be cleaned by either sandblasting or water blasting. When water blasting is performed, thermoplastic and preformed markings shall be applied no sooner than 24 hours after the blasting has been completed. The extent of the blasting work shall be to clean and prepare the concrete surface as follows:

- a. There is no visible evidence of curing compound on the peaks of the textured concrete surface.
- b. There are no heavy puddled deposits of curing compound in the valleys of the textured concrete surface.
- c. All remaining curing compound is intact; all loose and flaking material is removed.
- d. The peaks of the textured pavement surface are rounded in profile and free of sharp edges and irregularities.
- e. The surface to be marked is dry.

3.2 APPLICATION

All pavement markings and patterns shall be placed as shown on the plans.

Pavement marking types shall be as follows:

<u>Marking description</u>	<u>Type of pavement marking</u>
Roads (new & repaved)	Double yellow Thermoplastic w/ prismatic reflectors
Road--Edge lines	White Thermoplastic markings
Cross-walks	White Thermoplastic markings
Parking stall striping & related markings (e.g. H/C, compact, etc.)	Thermoplastic Markings, color as markings indicated, except blue H/C may be painted
Pavement arrows (roads & parking)	White Thermoplastic markings
Parking Driveways (roads leading to Parking lots)	Single yellow Thermoplastic markings

3.2.1 Paint

Paint shall be applied to clean, dry surfaces, and only when air and pavement temperatures are above 5 degrees C and less than 35 degrees C. Paint temperature shall be maintained within these same limits. New asphalt pavement surfaces and new Portland concrete cement shall be allowed to cure for a period of not less than 30 days before applications of paint.

Paint shall be applied pneumatically with approved equipment at rate of coverage specified. The Contractor shall provide guide lines and templates as necessary to control paint application. Special precautions shall be taken in marking numbers, letters, and symbols. Edges of markings shall be sharply outlined.

3.2.1.1 Rate of Application

a. Reflective Markings: Pigmented binder shall be applied evenly to the pavement area to be coated at a rate of 2.9 plus or minus 0.5 square meter per liter. Glass spheres shall be applied uniformly to the wet paint on road and street pavement at a rate of 0.7 plus or minus 0.06 kilograms of glass spheres per liter of paint.

b. Nonreflective Markings: Paint shall be applied evenly to the pavement surface to be coated at a rate of 2.9 plus or minus 0.5 square meter per liter.

3.2.1.2 Drying

The maximum drying time requirements of the paint specifications will be strictly enforced to prevent undue softening of bitumen, and pickup, displacement, or discoloration by tires of traffic. If there is a delay in drying of the markings, painting operations shall be discontinued until cause of the slow drying is determined and corrected.

3.2.2 Thermoplastic Compounds

Thermoplastic pavement markings shall be placed upon dry pavement; surface dry only will not be considered an acceptable condition. At the time of installation, the pavement surface temperature shall be a minimum of 5 degrees C and rising. Thermoplastics, as placed, shall be free from dirt or tint.

3.2.2.1 Longitudinal Markings

All centerline, skipline, edgeline, and other longitudinal type markings shall be applied with a mobile applicator. All special markings, crosswalks, stop bars, legends, arrows, and similar patterns shall be placed with a portable applicator, using the extrusion method.

3.2.2.2 Primer

After surface preparation has been completed the asphalt and/or concrete pavement surface shall be primed. The primer shall be applied with spray equipment. Primer materials shall be allowed to "set-up" prior to applying the thermoplastic composition. The asphalt concrete primer shall be allowed to dry to a tack-free condition, usually occurring in less than 10 minutes. The Portland cement concrete primer shall be allowed to dry in accordance with the thermoplastic manufacturer's recommendations. To shorten the curing time of the epoxy resins an infrared heating device may be used on the concrete primer.

a. Asphalt Concrete Primer: Primer shall be applied to all asphalt concrete pavements at a wet film thickness of 0.10 mm (0.005 inch), plus or minus 0.025 mm (0.001 inch) 25-40 square meters per liter.

b. Portland Cement Concrete Primer: Primer shall be applied to all concrete pavements (including concrete bridge decks) at a wet film thickness of between 1.0 to 1.3 mm 30-40 square meters per liter.

3.2.2.3 Markings

After the primer has "set-up", the thermoplastic shall be applied at temperatures no lower than 190 degrees C nor higher than 220 degrees C at the point of deposition. Immediately after installation of the marking, drop-on glass spheres shall be mechanically applied so that the spheres are held by and imbedded in the surface of the molten material.

a. Extruded Markings: All extruded thermoplastic markings shall be applied at the specified width and at a thickness of not less than 3.0 mm (0.125 inch) nor more than 5.0 mm (0.190 inch).

b. Reflective Glass Spheres: Immediately following application, reflective glass spheres shall be dropped onto the molten thermoplastic marking at the rate of 1 kilogram per 2 square meters of compound.

3.2.3 Raised Reflective Markers

Prefabricated markers shall be aligned carefully at the required spacing and permanently fixed in place by means of epoxy resin adhesives. To insure good bond, pavement in areas where markers will be set shall be thoroughly cleaned by sandblasting and use of compressed air prior to applying adhesive.

3.2.4 Reflective Media

Application of reflective media shall immediately follow application of pigmented binder. Drop-on application of glass spheres shall be accomplished to insure that reflective media is evenly distributed at the specified rate of coverage. Should there be malfunction of either paint applicator or reflective media dispenser, operations shall be discontinued immediately until deficiency is corrected.

3.3 MARKING REMOVAL

Pavement marking, including plastic tape, shall be removed in the areas shown on the drawings. Removal of marking shall be as complete as possible without damage to the surface. Aggregate shall not be exposed by the removal process. After the markings are removed, the cleaned pavement surfaces shall exhibit adequate texture for remarking as specified in paragraph SURFACE PREPARATION. Contractor shall demonstrate removal of pavement marking in an area designated by the Contracting Officer. The demonstration area will become the standard for the remainder of the work.

3.3.1 Equipment Operation

Equipment shall be controlled and operated to remove markings from the pavement surface, prevent dilution or removal of binder from underlying pavement, and prevent emission of blue smoke from asphalt or tar surfaces.

3.3.2 Cleanup and Waste Disposal

The worksite shall be kept clean of debris and waste from the removal operations. Cleanup shall immediately follow removal operations in areas subject to air traffic. Debris shall be disposed of at approved sites.

-- End of Section --

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DIVISION 12 - FURNISHINGS

SECTION 12320A

CABINETS AND COUNTERTOPS

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SECTION 12320A

CABINETS AND COUNTERTOPS

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 in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 570	(1995) Water Absorption of Plastics
ASTM D 638	(1997) Tensile Properties of Plastics
ASTM D 2583	(1995) Indentation Hardness of Rigid Plastics by Means of a Barcol Impressor
ASTM E 84	(1997a) Surface Burning Characteristics of Building Materials

BUILDERS HARDWARE MANUFACTURERS ASSOCIATION (BHMA)

BHMA A156.9	(1994) Cabinet Hardware
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KITCHEN CABINET MANUFACTURERS ASSOCIATION (KCMA)

KCMA A161.1	(1995) Performance & Construction Standards for Kitchen and Vanity Cabinets
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NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

NEMA LD 3	(1995) High-Pressure Decorative Laminates
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1.2 DESIGN

Cabinets shall be wood, factory-fabricated and finished in the manufacturer's standard sizes and finishes of the type, design, and configuration indicated. Cabinets shall be constructed as specified and shall meet the requirements of KCMA A161.1. Wall and base cabinet assemblies shall consist of individual units joined into continuous sections. Fastenings shall be accomplished to permit removal and replacement of individual units without affecting the remainder of the installation. Counters shall be provided with watertight sink rim when indicated. Drawers shall be removable and shall be equipped with position

stops to avoid accidental complete withdrawals. Shelves shall be fixed or adjustable as indicated.

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. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Installation

Drawings showing each type of cabinet and related item, and clearly indicating the complete plan, location, and elevations of the cabinets and accessories and pertinent details of construction, fabrication, and attachments.

SD-03 Product Data

Cabinets Countertops and Backsplash

Manufacturer's printed data, catalog cuts, installation and cleaning instructions.

SD-04 Samples

Cabinets Countertops and Backsplash

In lieu of individual samples, complete minimum size cabinets may be furnished as samples. Mock-up units are not acceptable. Samples shall be of sufficient size to show color, pattern, and method of assembly.

- a. Countertop and backsplash - One section, containing both.
- b. Door and drawer front - One of each, with hardware mounted.
- c. Countertop color samples approximately 50 x 75 mm size.
- d. Color samples approximately 50 x 75 mm size.

SD-06 Test Reports

Cabinets and Countertops

Test reports certifying that all cabinets comply with the requirements of KCMA A161.1. Tests shall be conducted by independent laboratories approved by KCMA. KCMA certification seals affixed to the cabinets will be accepted in lieu of

certified test reports.

1.4 DELIVERY AND STORAGE

Cabinets shall be delivered to the jobsite wrapped in a protective covering. Cabinets shall be stored in accordance with manufacturer's recommendations in an adequately ventilated, dry location that is free of dust, water, or other contaminants and in a manner to permit access for inspection and handling. Cabinets shall be handled carefully to prevent damage to the surfaces. Damaged items that cannot be restored to like-new condition shall be replaced.

PART 2 PRODUCTS

2.1 CABINETS

Wall and base cabinets shall be of the same construction and same outside appearance. **Door design shall be as indicated on the drawings.** Shelves shall be fully adjustable as indicated. Adjustable shelves shall be capable of adjusting on approximately 75 mm increments. Shelves shall be supported by self-locking clips. Clips (shelf rests) shall be B04091 with B04071 mortised shelf standards. Shelves shall be 19 mm thick plywood. **Drawer fronts shall be as indicated on the drawings.**

2.1.1 Frameless Type Cabinets

The cabinets shall be of frameless design and construction. Cabinets shall be constructed of minimum 19 mm thick, 20 kg density particle board end and floor panels. Cabinet back shall be constructed of minimum 6 mm thick, 20 kg density particle board. Hanging rails shall be doweled and glued to end panels, then fastened and hot melt glued to cabinet back. Toe kick plates shall be recessed, doweled and glued to the end panels. Top and bottom corners shall be braced with either hardwood blocks glued together with water resistant glue and nailed in place, or fastened with metal or plastic corner braces.

2.2 COUNTERTOPS AND BACKSPLASH

2.2.1 High-Pressure Laminated Plastic Clad Countertops

Clad countertop and backsplash shall be constructed of 19 mm thick plywood and shall be post formed cove type or fully formed type. Cove type shall be a single unit with self-edging and plastic laminate coved at the juncture of the countertop and backsplash. Fully formed type or square edge shall be a unit with shaped edges using wood nose molding at counter edge and shall include a separate backsplash. Backsplash shall be not less than 90 mm high. Edging and trim shall consist of plastic laminate cut and fitted to all exposed edges. End splashes constructed of 19 mm. Continuous sheets of longest lengths practicable shall be provided. Joints in surface sheeting shall be tight and flush and held to a practicable minimum. When the countertop and backsplash are two separate units, GP50 plastic laminate shall be used. When the countertop and backsplash are one unit, PF42 plastic laminate shall be used. Plastic laminate shall conform to the requirements of NEMA LD 3 and plastic laminate adhesive shall be

contact type applied to both surfaces. For cove type countertops, the post-forming plastic laminate shall not be bent to a radius smaller than the limit recommended by the plastic manufacturer.

2.2.2 Solid Polymer Countertops

Countertop and backsplash shall be constructed as shown. Material thickness shall be as indicated, cast, and filled nonporous solid surfacing composed of acrylic polymer, mineral fillers, and pigments. Superficial damage to a depth of 0.25 mm shall be repairable by sanding or polishing. Material shall comply with the following performance requirements.

- a. Tensile Strength; 18.3 N/mm^2 , when tested in accordance with ASTM D 638.
- b. Hardness; Barcol Impressor 50 when tested in accordance with ASTM D 2583.
- c. Flammability; rated Class I with a flame spread of 25 maximum and a smoke developed of 100 maximum when tested in accordance with ASTM E 84.
- d. Boiling water resistance; no effect when tested in accordance with NEMA LD 3.
- e. High temperature; no effect when tested in accordance with NEMA LD 3.
- f. Liquid absorption; 0.06% maximum (24 hours) when tested in accordance with ASTM D 570.
- g. Sanitation; National Sanitation Foundation approval for food contact in accordance with Standard 51 and approval for food area applications.
- h. Impact resistance; no failure for ball drop when tested in accordance with NEMA LD 3.

2.3 Sink/Lavatory Rims

Sink/lavatory rims shall be of the corrosion resistant steel clamping type, sized to the sink, and a standard product of a manufacturer regularly producing this type of equipment.

2.4 FINISH

2.4.1 Cabinet Finish

Cabinets shall be provided with the finish as indicated on the drawings. Exposed exterior surfaces shall be laminate plastic finish.

2.4.2 Melamine Laminated Interior Cabinet Finish

Plywood or medium density fiber board cabinet backs shall be finished with

a melamine laminate or as indicated on the drawings. Shelves shall be covered on both sides and exposed edges with a plastic laminated finish or as indicated. Melamine laminate shall conform to the requirements of NEMA LD 3 CL20 and laminate adhesive shall be contact type.

2.4.3 Backer Sheets

Backer Sheets of high pressure plastic laminate, shall conform to NEMA LD 3, Grade BK20 and shall be applied to the underside of all core material.

2.5 HARDWARE

Hardware shall conform to BHMA A156.9, shall be suitable for cabinet use, and shall include all miscellaneous hardware for a complete installation. Drawer runners shall have nylon rollers standard with the manufacturer. The types and finishes of hardware shall be as indicated on the drawings.

2.6 COLOR, TEXTURE, AND PATTERN

Design, color, and finish shall be as indicated.

PART 3 EXECUTION

3.1 INSTALLATION

Cabinets shall be installed level, plumb, and true to line, and shall be attached to the walls or floors with suitable devices to securely anchor each unit. Countertops, accessories, and hardware shall be installed as indicated on the drawings. Installation shall be in accordance with the manufacturer's approved printed instructions. The inner edge of sink cut-outs in laminated plastic tops shall be painted with a coat of semigloss enamel paint and sink flanges shall be set in a bed of sealant. Closer and filler strips and finish moldings shall be provided as required. Prior to final acceptance, doors shall be aligned, and hardware shall be adjusted.

3.2 CLEANING

Cabinet and countertop surfaces shall be cleaned in accordance with manufacturer's instructions.

-- End of Section --