SOLICITATION, OFFER, AND AWARD *(Construction, Alteration, or Repair)*	1. SOLICITATION NO. FA4486-10-R-0015	2. TYPE OF SOLICITATION [ ] SEALED BID (IFB) [X] NEGOTIATED *(RFP)*	3. DATE ISSUED 28-Jun-2010	PAGE OF PAGES 1 OF 25

IMPORTANT - The "offer" section on the reverse must be fully completed by offeror.

4. CONTRACT NO.	5. REQUISITION/PURCHASE REQUEST NO. F2N33Q0124A001	6. PROJECT NO. MQNA 09-1501

7. ISSUED BY CODE FA4486	8. ADDRESS OFFER TO *(If Other Than Item 7)* CODE
65 CONS/LGCA 65TH CONTRACTING SQUADRON APO AE 09720-7775 TEL: 011-351-295-571468 FAX: 011-351-295-573758	**See Item 7** TEL: FAX:

9. FOR INFORMATION CALL:	A. NAME	B. TELEPHONE NO. *(Include area code)* *(NO COLLECT CALLS)*
	TIMOTHY JAMES EMEOTT	011-351-295-57-1459

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 no., date):*

Repair Various Pavements on Base

1) The magnitude of this project is between $25,000 and $100,000 in accordance with FAR 36.204(g).

2) All offerors must be registered in the Central Contractor Registration (CCR) to be eligible for award.

3) A site visit is scheduled for 7 July at 1000 hours, Bldg T-615, in the Contracting Squadron.

4) Facsimile proposals will not be accepted.

11. The Contractor shall begin performance within 10 calendar days and complete it within 45 calendar days after receiving [ ] award, [X] notice to proceed. This performance period is [X] mandatory, [ ] negotiable. *(See* FAR 52.211-10 *.)*

12 A. THE CONTRACTOR MUST FURNISH ANY REQUIRED PERFORMANCE AND PAYMENT BONDS? *(If "YES," indicate within how many calendar days after award in Item 12B.)* [ ] YES [X] NO	12B. CALENDAR DAYS

13. ADDITIONAL SOLICITATION REQUIREMENTS:

A. Sealed offers in original and 1 copies to perform the work required are due at the place specified in Item 8 by 12:00 PM *(hour)* local time 14 Jul 2010 *(date).* If this is a sealed bid solicitation, offers must be publicly opened at that time. Sealed envelopes containing offers shall be marked to show the offeror's name and address, the solicitation number, and the date and time offers are due.

B. An offer guarantee [ ] is, [X] 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 60 calendar days for Government acceptance after the date offers are due will not be considered and will be rejected.

SOLICITATION, OFFER, AND AWARD (Continued)

(Construction, Alteration, or Repair)

OFFER ***(Must be fully completed by offeror)***

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

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

AMOUNTS	SEE SCHEDULE OF PRICES

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

19. ACKNOWLEDGMENT OF AMENDMENTS

(The offeror acknowledges receipt of amendments to the solicitation -- give number and date of each)

AMENDMENT NO.										
DATE										

20A. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER *(Type or print)*	20B. SIGNATURE	20C. OFFER DATE

AWARD ***(To be completed by Government)***

21. ITEMS ACCEPTED:

22. AMOUNT	23. ACCOUNTING AND APPROPRIATION DATA

24. SUBMIT INVOICES TO ADDRESS SHOWN IN *(4 copies unless otherwise specified)*	**ITEM**	25. OTHER THAN FULL AND OPEN COMPETITION PURSUANT TO ☐ 10 U.S.C. 2304(c) ☐ 41 U.S.C. 253(c)
26. ADMINISTERED BY CODE		27. PAYMENT WILL BE MADE BY: CODE

CONTRACTING OFFICER WILL COMPLETE ITEM 28 OR 29 AS APPLICABLE

☐ 28. NEGOTIATED AGREEMENT *(Contractor is required to sign this document and return _ _ copies to issuing office.)* Contractor agrees to furnish and deliver all items or perform all work, requisitions identified on this form and any continuation sheets for the consideration stated in this contract. The rights and obligations of the parties to this contract shall be governed by (a) this contract award, (b) the solicitation, and (c) the clauses, representations, certifications, and specifications or incorporated by reference in or attached to this contract.

☐ 29. AWARD *(Contractor is not required to sign this document.)* Your 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.

30A. NAME AND TITLE OF CONTRACTOR OR PERSON AUTHORIZED TO SIGN *(Type or print)*	31A. NAME OF CONTRACTING OFFICER *(Type or print)* TEL: EMAIL:
30B. SIGNATURE / 30C. DATE	31B. UNITED STATES OF AMERICA BY / 31C. AWARD DATE

Section B - Supplies or Services and Prices

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0001		1	Lump Sum		

REPAIR INTERSECTION NEAR T-416 / T-308
FFP
The contractor shall provide all plant, labor, equipment, supervision, and specified material to complete Asphalt Road Repair in accordance with the Drawings and Specifications. The work is located at Lajes Field, Azores, Portugal.
FOB: Destination
PURCHASE REQUEST NUMBER: F2N33Q0124A001
SIGNAL CODE: A

NET AMT

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0002		1	Lump Sum		

REPAVE T-202 PARKING LOT - CREDIT UNION
FFP
The contractor shall provide all plant, labor, equipment, supervision, and specified material to complete Asphalt Road Repair in accordance with the Drawings and Specifications. The work is located at Lajes Field, Azores, Portugal.
FOB: Destination
PURCHASE REQUEST NUMBER: F2N33Q0124A001
SIGNAL CODE: A

NET AMT

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0003		1	Lump Sum		

MILL/OVERLAY PARKING LOT WEST OF T-701
FFP
The contractor shall provide all plant, labor, equipment, supervision, and specified material to complete Asphalt Road Repair in accordance with the Drawings and Specifications. The work is located at Lajes Field, Azores, Portugal.
FOB: Destination
PURCHASE REQUEST NUMBER: F2N33Q0124A001
SIGNAL CODE: A

NET AMT

Section E - Inspection and Acceptance

INSPECTION AND ACCEPTANCE TERMS

Supplies/services will be inspected/accepted at:

CLIN	INSPECT AT	INSPECT BY	ACCEPT AT	ACCEPT BY
0001	Destination	Government	Destination	Government
0002	Destination	Government	Destination	Government
0003	Destination	Government	Destination	Government

Section F - Deliveries or Performance

DELIVERY INFORMATION

CLIN	DELIVERY DATE	QUANTITY	SHIP TO ADDRESS	UIC
0001	45 Days after Notice to Proceed	1	65 CES/CERF - F2N33Q BASE CIVIL ENGINEERING BLDG T-570 APO AE 09720 011-351-295-573495 FOB: Destination	F2N33Q
0002	45 Days after Notice to Proceed	1	(SAME AS PREVIOUS LOCATION) FOB: Destination	F2N33Q
0003	45 Days after Notice to Proceed	1	(SAME AS PREVIOUS LOCATION) FOB: Destination	F2N33Q

CLAUSES INCORPORATED BY REFERENCE

52.242-14	Suspension of Work	APR 1984

CLAUSES INCORPORATED BY FULL TEXT

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

The Contractor shall be required to (a) commence work under this contract within 10 calendar days after the date the Contractor receives the notice to proceed, (b) prosecute the work diligently, and (c) complete the entire work ready for use not later than 45 calendar days after receipt of Notice to Proceed. The time stated for completion shall include final cleanup of the premises.

(End of clause)

Section H - Special Contract Requirements

INSTRUCTIONS

DEPARTAMENTO DA FORÇA AÉREA NORTE AMERICANA ESTACIONADA NAS LAJES-AÇORES
CONTRIBUINTE No. 912002697
IVA – REGIME DE ISENÇÃO
No.8 DO ARTIGO 28 DO CIVA, ABRANGIDO PELO ARTIGO IX DO ANEXO I DO ACORDO TECNICO ESTABELECIDO ENTRE PORTUGAL E OS ESTADO UNIDOS DA AMERICA

Translation:
Department of the U.S. Air Force" stationed at Lajes – Azores
Tax ID No. 912002697
IVA – Regime of Exemption (Exemption of Tax)
Number 8 of Article 28 of the CIVA, in conjunction with Article 9 of Annex 1 of the Technical Agreement established between Portugal and the United States of America.

REQUIRED DATE FOR SUBMITTALS

a) Material submittals as required by Contract Clause FAR 52.236-5, entitled "Material and Workmanship" are specified in the Technical Specifications.

b) The Contractor shall submit Material Submittals within 10 calendar days after receipt of the Notice-to-Proceed (NTP), or as otherwise specified on the AF Form 66 (Schedule of Material Submittals).

c) All Material Submittals shall be prepared and submitted using AF Form 3000.

d) In the event the Contractor cannot meet the established dates for submission of Material Submittals, he will advise the Contracting Officer in writing and arrange a mutually acceptable date that will not delay progress of work.

LEGAL HOLIDAYS

This base observes the following legal holidays:

*New Year's Day	01 January
Mardi Gras	Variable
Good Friday	Variable
Day of Liberty	25 April
Day of the Worker	1 May
Holy Spirit Monday	Variable
Corpus Christi	Variable
Day of Portugal	10 June
Praia da Vitoria Day	20 June
Assumption Day	15 August
Founding of the Republic	5 October
All Saint's Day	1 November

Restoration of Independence	1 November
Immaculate Conception	8 December
*Christmas Day	25 December
Martin Luther King's Birthday	3rd Monday in January
President's Day	3rd Monday in January
Memorial Day	Last Monday in May
*Independence Day	04 July
Labor Day	1st Monday in September
Columbus Day	2nd Monday in October
*Veteran's Day	11 November
Thanksgiving Day	4th Thursday in November

(*) NOTE: Any of the above holidays falling on a Saturday will be observed on the proceeding Friday. Holidays falling on a Sunday will be observed on the following Monday.

LABOR LAWS OF HOST COUNTRY

Contractors shall comply with all of the applicable labor laws of Portugal.

CONDUCT OF CONTRACTOR PERSONNEL/DEPENDENTS

(a) The contractor shall report to the contracting officer, immediately upon receipt of and/or discovery, any and all information, whether or not verified, relating to physical security incidents, misconduct, crimes, and misdemeanors, including but not limited to murder; arson; larceny of any weapon, ammunition, or explosives; larceny of other property; robbery; burglary; narcotics and dangerous drugs; destruction of Government property; fraud; malfeasance and misfeasance; sabotage; subversion; disaffections; treason; espionage. The contractor shall recognize and comply with the rules and regulations promulgated by the foreign country where the work is to be performed to the extent required by pertinent international agreements.

b) In the event that it becomes necessary for the contracting officer to remove any contractor personnel or dependents for any of the above stated reasons, the contractor shall bear all costs associated with such removal, including the costs for the replacement of any personnel so removed. The contractor shall provide the contracting officer with a list of all personnel performing work under this contract and the name of a responsible individual who may be contacted twenty-four (24) hours a day whenever questions or problems arise concerning their personnel.

CONTRACTOR GENERATED REFUSE

a) All Contractor generator refuse and waste shall be hauled from the construction site daily to a disposal area to be selected by the Contractor and shall be located outside the physical boundaries of the installation. This refuse and waste material shall be hauled in trucks with tight fitting covers to prevent spillage on roadways. The construction site shall be kept neat, orderly, and safe for workmen at all times.

b) The contractor shall take positive action to prevent work-generated refuse from entering the sewer system.

HOURS OF WORK

The hours of work for subject project shall be 0800 to 1700, Monday through Friday, excluding aforementioned holidays. For work during other than these hours, the contractor shall submit, in writing, a request detailing the specific hours desired for the Contracting Officer's approval.

CONTRACTOR PAYMENT IN EUROS

Payment will be made in Euros. All payments by the Government under this contract shall be made by electronic funds transfer (EFT). The term "EFT" refers to the funds transfer and may also include the payment information transfer.

INSURANCE UNDER FIXED-PRICE CONTRACTS

Reference FAR 52.228-5, entitled "Insurance under Fixed-Price Contracts." The contractor shall, at its own expense, procure and thereafter maintain the following kinds of insurance with respect to performance under the contract.

a) Workmen's Compensation and Employer's Liability Insurance as required by law except that if this contract is to be performed in a State which does not require or permit private insurance, then compliance with the statutory or required Workmen's Compensation insurance shall extend to cover employer's liability for accidental bodily injury or death and for occupational disease with a minimum liability limit of "As required by Portuguese Law."

b) General Liability Insurance. Liability insurance covering bodily injury and property damage in the minimum limes of "As required by Portuguese Law" per occurrence shall be required on the comprehensive form of policy.

c) Automobile Liability Insurance. This insurance shall be required of the comprehensive form of policy and shall provide bodily injury liability and property damage liability covering the operation of all automobiles used in connection with the performance of the contract. At least the minimum limits of "As required by Portuguese Law" per person and "As required by Portuguese Law" per occurrence for bodily injury and "As required by Portuguese Law" per occurrence for property damage shall be required.

d) The Contractor shall procure and maintain during the entire period of performance under this contract the following minimum insurance as required by Portuguese Law:

1) Insurance applicable to civil construction.
2) Portuguese Law #2127, Labor Accidents 3 Aug 65.
3) Automobile liability

e) The Contractor shall also procure and maintain during the entire period of performance under this contract insurance to cover injuries to persons or damage to property that may occur in Portuguese territory as a result of acts or omissions done in the performance of duty by their employees.
NOTE: Full text of the Portuguese Laws may be accessed electronically at this address:
http://www.dr.incm.pt/dr/default.asp

EMPLOYEE RECRUITING (PORTUGUESE NATIONALS):

It is the Contractor's responsibility to comply with the following requirements for Portuguese National employees.

a) The Contractor, using his own contracting forms, may contract directly with, or request assistance from the Civilian Personnel office, civilian recruitment section, Headquarters Azores Air Command (SRPC, HAAZ), in contracting Portuguese National employees. The Contractor's contract form must include, as a minimum, the following: name, social welfare number, date and place of birth, residence (village and council), parent's name, marital status, spouse's maiden name, professional degree or skill, salary, meal and transportation allowances.

b) It will be the Contractor's responsibility once he has obtained his employees, to clear them through SRPC/HAAZ in order for them to gain access to this installation.

c) The Contractor shall request on SRPC/HAAZ forms the number of passes needed. A pass will be issued to each employee. The employee will proceed with the pass directly to the Portuguese Air Police Identification Section at the Main Gate for proper clearance and return to SRPC/HAAZ to have the pass laminated.

d) The Contractor shall inform SRPC/HAAZ when the contract period of performance is changed and return all passes to SRPC/HAAZ upon completion of the contract.

e) Failure to comply with paragraph (b) or (c) of this clause may result in the denial of entrance to this installation.

f) U.S. citizens and Third Nation personnel, who are residents of Terceira Island at the time they are hired by the Contractor, must comply with the Portuguese Laws regarding work permits. It is the responsibility of the Contractor to insure compliance with these laws. Failure to do so may result in the employee being denied access to Lajes Field.

RECORD DRAWINGS

Record drawings showing existing underground utilities are located in Building 570, Lajes Field, Azores, Portugal. Contractor shall call 011-351-295-57-6828 for record drawings, the POC is Antonio Avila at 65 CES/CECN. Any utility lines shown on the record drawings (or made known to the Contractor) and damaged during construction work, will be repaired immediately by the Contractor at no cost to the Government.

GREEN PROCUREMENT

Compliance with the Green Procurement (GP) requirements of Executive Order (EO) 13148 is mandatory. Additional requirements set forth by Section 6002 of the Resource Conservation Recovery Act (RCRA), Section 9002 of the Farm Security and Rural Investment Act of 2002, and Executive Order 13101 are also mandatory. Special attention should be paid to Contract Provision FAR 52.223-4 "Recovered Material Certification" and Contract Clauses FAR 52.223-9 "Estimate of Percentage of Recovered material Content for EPA Designated Products" and FAR 52.223-10 "Waste Reduction Program". The contractor is required to use recycled-content and bio-based products as identified in the contract specifications and drawings; however, their use must not delay the progress of the work and must not be cost prohibitive. Materials and products provided in the completion of this contract must meet the requirements of the Statement of Work/Specifications. Recycled-content products are identified in the Environmental Protection Agency's Comprehensive Procurement Guidelines (CPGs). The United States Department of Agriculture designates bio-based products. EPA guideline items and USDA designated bio-based products are seen as the minimum that should be considered when evaluating environmentally preferable materials. Other environmentally preferable materials and products not listed, but commonly used in industry outside of the government, should also be considered. Submittals of material and product lists for all recycled content items should list the recycled and recovered materials used and the percentage content (by weight). Covered products and their associated descriptions can be viewed at: http://www.epa.gov/cpg/products.htm. Contractors should follow the links regarding whether products count as "U.S. EPA-designated" or what the required recycled content for the product(s).

EPA COMPREHENSIVE PROCUREMENT GUIDELINE (CPG)
Construction Products
Landscaping Products
Nonpaper Office Products
Paper and Paper Products
Park and Recreation Products
Transportation Products
Vehicular Products
Miscellaneous Products

Section I - Contract Clauses

CLAUSES INCORPORATED BY REFERENCE

52.202-1	Definitions	JUL 2004
52.204-7	Central Contractor Registration	APR 2008
52.209-6	Protecting the Government's Interest When Subcontracting With Contractors Debarred, Suspended, or Proposed for Debarment	SEP 2006
52.222-50	Combating Trafficking in Persons	FEB 2009
52.223-5	Pollution Prevention and Right-to-Know Information	AUG 2003
52.225-13	Restrictions on Certain Foreign Purchases	JUN 2008
52.232-5	Payments under Fixed-Price Construction Contracts	SEP 2002
52.232-17	Interest	OCT 2008
52.232-23 Alt I	Assignment of Claims (Jan 1986) - Alternate I	APR 1984
52.232-27	Prompt Payment for Construction Contracts	OCT 2008
52.232-33	Payment by Electronic Funds Transfer--Central Contractor Registration	OCT 2003
52.233-1	Disputes	JUL 2002
52.233-3	Protest After Award	AUG 1996
52.233-4	Applicable Law for Breach of Contract Claim	OCT 2004
52.236-2	Differing Site Conditions	APR 1984
52.236-3	Site Investigation and Conditions Affecting the Work	APR 1984
52.236-5	Material and Workmanship	APR 1984
52.236-6	Superintendence by the Contractor	APR 1984
52.236-7	Permits and Responsibilities	NOV 1991
52.236-8	Other Contracts	APR 1984
52.236-9	Protection of Existing Vegetation, Structures, Equipment, Utilities, and Improvements	APR 1984
52.236-10	Operations and Storage Areas	APR 1984
52.236-11	Use and Possession Prior to Completion	APR 1984
52.236-12	Cleaning Up	APR 1984
52.236-13	Accident Prevention	NOV 1991
52.236-14	Availability and Use of Utility Services	APR 1984
52.236-15	Schedules for Construction Contracts	APR 1984
52.236-17	Layout of Work	APR 1984
52.236-21	Specifications and Drawings for Construction	FEB 1997
52.236-26	Preconstruction Conference	FEB 1995
52.243-5	Changes and Changed Conditions	APR 1984
52.246-21	Warranty of Construction	MAR 1994
52.248-3	Value Engineering-Construction	SEP 2006
52.253-1	Computer Generated Forms	JAN 1991
252.203-7000	Requirements Relating to Compensation of Former DoD Officials	JAN 2009
252.203-7002	Requirement to Inform Employees of Whistleblower Rights	JAN 2009
252.204-7003	Control Of Government Personnel Work Product	APR 1992
252.204-7004 Alt A	Central Contractor Registration (52.204-7) Alternate A	SEP 2007
252.222-7002	Compliance With Local Labor Laws (Overseas)	JUN 1997
252.223-7006	Prohibition On Storage And Disposal Of Toxic And Hazardous Materials	APR 1993
252.225-7041	Correspondence in English	JUN 1997
252.229-7000	Invoices Exclusive of Taxes or Duties	JUN 1997

252.232-7003	Electronic Submission of Payment Requests and Receiving Reports	MAR 2008
252.232-7008	Assignment of Claims (Overseas)	JUN 1997
252.232-7010	Levies on Contract Payments	DEC 2006
252.233-7001	Choice of Law (Overseas)	JUN 1997

CLAUSES INCORPORATED BY FULL TEXT

52.236-4 PHYSICAL DATA (APR 1984)

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

(a) The indications of physical conditions on the drawings and in the specifications are the result of site investigations by: N/A

(b) Weather conditions

Average Monthly High & Low Temperatures (Farenheit)											
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
62 / 54	62 / 53	62 / 54	64 / 55	67 / 57	71 / 61	75 / 65	77 / 67	76 / 66	71 / 62	67 / 59	64 / 56
Historical Average Monthly Rainfall (inches)											
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
5.2	4.9	4.8	2.9	2.1	1.8	1.5	1.9	3.2	5.3	5.0	5.6

(c) Transportation facilities. None

(d) None.

(End of clause)

52.252-2 CLAUSES INCORPORATED BY REFERENCE (FEB 1998)

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

http://farsite.hill.af.mil

(End of clause)

252.225-7043 ANTITERRORISM/FORCE PROTECTION POLICY FOR DEFENSE CONTRACTORS OUTSIDE THE UNITED STATES (MAR 2006)

(a) Definition. United States, as used in this clause, means, the 50 States, the District of Columbia, and outlying areas.

(b) Except as provided in paragraph (c) of this clause, the Contractor and its subcontractors, if performing or traveling outside the United States under this contract, shall--

(1) Affiliate with the Overseas Security Advisory Council, if the Contractor or subcontractor is a U.S. entity;

(2) Ensure that Contractor and subcontractor personnel who are U.S. nationals and are in-country on a non-transitory basis, register with the U.S. Embassy, and that Contractor and subcontractor personnel who are third country nationals comply with any security related requirements of the Embassy of their nationality;

(3) Provide, to Contractor and subcontractor personnel, antiterrorism/force protection awareness information commensurate with that which the Department of Defense (DoD) provides to its military and civilian personnel and their families, to the extent such information can be made available prior to travel outside the United States; and

(4) Obtain and comply with the most current antiterrorism/force protection guidance for Contractor and subcontractor personnel.

(c) The requirements of this clause do not apply to any subcontractor that is--

(1) A foreign government;

(2) A representative of a foreign government; or

(3) A foreign corporation wholly owned by a foreign government.

(d) Information and guidance pertaining to DoD antiterrorism/force protection can be obtained from
65 SFS/ATO
DSN: 535-3247
Commercial Number: 295-573-247

(End of clause)

252.229-7001 TAX RELIEF (JUN 1997)

(a) Prices set forth in this contract are exclusive of all taxes and duties from which the United States Government is exempt by virtue of tax agreements between the United States Government and the Contractor's government. The following taxes or duties have been excluded from the contract price:

NAME OF TAX: ( ) RATE (PERCENTAGE): ( )

(b) The Contractor's invoice shall list separately the gross price, amount of tax deducted, and net price charged.

(c) When items manufactured to United States Government specifications are being acquired, the Contractor shall identify the materials or components intended to be imported in order to ensure that relief from import duties is obtained. If the Contractor intends to use imported products from inventories on hand, the price of which includes a factor for import duties, the Contractor shall ensure the United States Government's exemption from these taxes. The Contractor may obtain a refund of the import duties from its government or request the duty-free import of an amount of supplies or components corresponding to that used from inventory for this contract.

(End of clause)

252.236-7001 CONTRACT DRAWINGS AND SPECIFICATIONS (AUG 2000)

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

(b) The Contractor shall--

(1) Check all drawings furnished immediately upon receipt;

(2) Compare all drawings and verify the figures before laying out the work;

(3) Promptly notify the Contracting Officer of any discrepancies;

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

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

(c) In general--

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

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

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

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

Title	Drawing No.
Construction Drawings	1

(End of clause)

5352.201-9101 OMBUDSMAN (AUG 2005)

(a) An ombudsman has been appointed to hear and facilitate the resolution of concerns from offerors, potential offerors, and others for this acquisition. When requested, the ombudsman will maintain strict confidentiality as to the source of the concern. The existence of the ombudsman does not affect the authority of the program manager, contracting officer, or source selection official. Further, the ombudsman does not participate in the evaluation of proposals, the source selection process, or the adjudication of protests or formal contract disputes. The ombudsman may refer the party to another official who can resolve the concern.

(b) Before consulting with an ombudsman, interested parties must first address their concerns, issues, disagreements, and/or recommendations to the contracting officer for resolution. Consulting an ombudsman does

not alter or postpone the timelines for any other processes (e.g., agency level bid protests, GAO bid protests, requests for debriefings, employee-employer actions, contests of OMB Circular A-76 competition performance decisions).

(c) If resolution cannot be made by the contracting officer, concerned parties may contact the Center/MAJCOM ombudsmen:

Primary Command Ombudsman:

Mr. David Jones
HQ USAFE/A7K, UNIT 3050, Box 10, APO AE 09094-0110
HQ USAFE/A7K, Flugplatz Ramstein, 66877 Ramstein Germany
E-mail: dave.jones@ramstein.af.mil
Tel: 0049-637-147-2209, Fax: 0049-673-147-2025

Alternate Command Ombudsman:

Maj Kim Arnold
HQ USAFE/A7K, UNIT 3050, Box 10, APO AE 09094-0110
HQ USAFE/A7K, Flugplatz Ramstein, 66877 Ramstein Germany
E-mail: kim.arnold@ramstein.af.mil
Tel: 0049-637-147-2010, Fax: 0049-673-147-2025

Concerns, issues, disagreements, and recommendations that cannot be resolved at the MAJCOM/DRU level, may be brought by the concerned party for further consideration to the Air Force ombudsman, Associate Deputy Assistant Secretary (ADAS) (Contracting), SAF/AQC, 1060 Air Force Pentagon, Washington DC 20330-1060, phone number (703) 588-7004, facsimile number (703) 588-1067.

(d) The ombudsman has no authority to render a decision that binds the agency.

(e) Do not contact the ombudsman to request copies of the solicitation, verify offer due date, or clarify technical requirements. Such inquiries shall be directed to the Contracting Officer.

(End of clause)

5352.242-9000 CONTRACTOR ACCESS TO AIR FORCE INSTALLATIONS (JUN 2002)

(a) The contractor shall obtain base identification and vehicle passes for all contractor personnel who make frequent visits to or perform work on the Air Force installation(s) cited in the contract. Contractor personnel are required to wear or prominently display installation identification badges or contractor-furnished, contractor identification badges while visiting or performing work on the installation.

(b) The contractor shall submit a written request on company letterhead to the contracting officer listing the following: contract number, location of work site, start and stop dates, and names of employees and subcontractor employees needing access to the base. The letter will also specify the individual(s) authorized to sign for a request for base identification credentials or vehicle passes. The contracting officer will endorse the request and forward it to the issuing base pass and registration office or security police for processing. When reporting to the registration office, the authorized contractor individual(s) should provide a valid driver’s license, current vehicle registration, and valid vehicle insurance certificate to obtain a vehicle pass.

(c) During performance of the contract, the contractor shall be responsible for obtaining required identification for newly assigned personnel and for prompt return of credentials and vehicle passes for any employee who no longer requires access to the work site.

(d) When work under this contract requires unescorted entry to controlled or restricted areas, the contractor shall comply with AFI 31-101, Volume 1, The Air Force Installation Security Program, and AFI 31-501, Personnel Security Program Management, as applicable.

(e) Upon completion or termination of the contract or expiration of the identification passes, the prime contractor shall ensure that all base identification passes issued to employees and subcontractor employees are returned to the issuing office.

(f) Failure to comply with these requirements may result in withholding of final payment.

(End of clause)

Section J - List of Documents, Exhibits and Other Attachments

Exhibit/Attachment Table of Contents

DOCUMENT TYPE	DESCRIPTION	PAGES	DATE
Attachment 1	Specifications	61	31-MAY-2010
Attachment 2	Drawings	8	31-MAY-2010

Section K - Representations, Certifications and Other Statements of Offerors

CLAUSES INCORPORATED BY REFERENCE

52.236-28	Preparation of Proposals--Construction	OCT 1997
252.225-7031	Secondary Arab Boycott Of Israel	JUN 2005

CLAUSES INCORPORATED BY FULL TEXT

252.204-7007 ANNUAL REPRESENTATIONS AND CERTIFICATIONS (52.204-8) ALTERNATE A (MAY 2010)

(a)(1) The North American Industry Classification System (NAICS) code for this acquisition is 237310.

(2) The small business size standard is $33.5M.

(3) The small business size standard for a concern which submits an offer in its own name, other than on a construction or service contract, but which proposes tofurnish a product which it did not itself manufacture, is 500 employees.

(b)(1) If the clause at 52.204-7, Central Contractor Registration, is included in this solicitation, paragraph (d) of this provision applies.

(2) If the clause at 52.204-7 is not included in this solicitation, and the offeror is currently registered in CCR, and has completed the ORCA electronically, the offeror may choose to use paragraph (d) of this provision instead of completing the corresponding individual representations and certifications in the solicitation. The offeror shall indicate which option applies by checking one of the following boxes:

(__) Paragraph (d) applies.

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

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

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

(A) The acquisition is to be made under the simplified acquisition procedures in Part 13;

(B) The solicitation is a request for technical proposals under two-step sealed bidding procedures; or

(C) The solicitation is for utility services for which rates are set by law or regulation.

(ii) 52.203-11, Certification and Disclosure Regarding Payments to Influence Certain Federal Transactions. This provision applies to solicitations expected to exceed $100,000.

(iii) 52.204-3, Taxpayer Identification. This provision applies to solicitations that do not include the clause at 52.204-7, Central Contractor Registration.

(iv) 52.204-5, Women-Owned Business (Other Than Small Business).This provision applies to solicitations that--

(A) Are not set aside for small business concerns;

(B) Exceed the simplified acquisition threshold; and

(C) Are for contracts that will be performed in the United States or its outlying areas.

(v) 52.209-5, Certification Regarding Responsibility Matters. This provision applies to solicitations where the contract value is expected to exceed the simplified acquisition threshold.

(vi) 52.214-14, Place of Performance--Sealed Bidding. This provision applies to invitations for bids except those in which the place of performance is specified by the Government.

(vii) 52.215-6, Place of Performance. This provision applies to solicitations unless the place of performance is specified by the Government.

(viii) 52.219-1, Small Business Program Representations (Basic & Alternate I). This provision applies to solicitations when the contract will be performed in the United States or its outlying areas.

(A) The basic provision applies when the solicitations are issued by other than DoD, NASA, and the Coast Guard.

(B) The provision with its Alternate I applies to solicitations issued by DoD, NASA, or the Coast Guard.

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

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

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

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

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

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

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

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

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

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

(C) If the acquisition value is $50,000 or more but is less than $67,826, the provision with its Alternate II applies.

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

(xviii) 52.225-20, Prohibition on Conducting Restricted Business Operations in Sudan--Certification.

(xix) 52.226-2, Historically Black College or University and Minority Institution Representation. This provision applies to--

(A) Solicitations for research, studies, supplies, or services of the type normally acquired from higher educational institutions; and

(B) For DoD, NASA, and Coast Guard acquisitions, solicitations that contain the clause at 52.219-23, Notice of Price Evaluation Adjustment for Small Disadvantaged Business Concerns.

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

(Contracting Officer check as appropriate.)

----(i) 52.219-19, Small Business Concern Representation for the Small Business Competitiveness Demonstration Program.

------(ii) 52.219-21, Small Business Size Representation for Targeted Industry Categories Under the Small Business Competitiveness Demonstration Program.

------(iii) 52.219-22, Small Disadvantaged Business Status.

------(A) Basic.

------(B) Alternate I.

------(iv) 52.222-18, Certification Regarding Knowledge of Child Labor for Listed End Products.

------(v) 52.222-48, Exemption from Application of the Service Contract Act to Contracts for Maintenance, Calibration, or Repair of Certain Equipment Certification.

------(vi) 52.222-52 Exemption from Application of the Service Contract Act to Contracts for Certain Services--Certification.

------(vii) 52.223-9, with its Alternate I, Estimate of Percentage of Recovered Material Content for EPA-Designated Products (Alternate I only).

------(viii) 52.223-13, Certification of Toxic Chemical Release Reporting.

------(ix) 52.227-6, Royalty Information.

------ (A) Basic.

------ (B) Alternate I.

------(x) 52.227-15, Representation of Limited Rights Data and Restricted Computer Software.

(d) The offeror has completed the annual representations and certifications electronically via the Online Representations and Certifications Application (ORCA) Web site at https://orca.bpn.gov/.

After reviewing the ORCA database information, the offeror verifies by submission of the offer that the representations and certifications currently posted electronically have been entered or updated within the last 12 months, are current, accurate, complete, and applicable to this solicitation (including the business size standard applicable to the NAICS code referenced for this solicitation), as of the date of this offer, and are incorporated in this offer by reference (see FAR 4.1201); except for the changes identified below [offeror to insert changes, identifying change by clause number, title, date]. These amended representation(s) and/or certification(s) are also incorporated in this offer and are current, accurate, and complete as of the date of this offer.

FAR/DFARS clause No.	Title	Date	Change

Any changes provided by the offeror are applicable to this solicitation only, and do not result in an update to the representations and certifications posted on ORCA.

(End of Provision)

Section L - Instructions, Conditions and Notices to Bidders

INSTRUCTIONS TO OFFERORS
MAGNITUDE OF CONSTRUCTION PROJECT
(IAW) FAR 36.204

The estimated amount of the project is: Between $25,000.00 and $100,000.00

GENERAL INFORMATION

Offerors are cautioned that Lajes Field, Terceira Island, Azores, Portugal has visitor control procedures requiring individuals not affiliated with the installation to obtain a visitor pass prior to entrance. SOME DELAY SHOULD BE ANTICIPATED WHEN HANDCARRYING PROPOSALS. Offerors should allow sufficient time to obtain a visitor pass and arrive at Bldg T-615 PRIOR to the time specified for receipt.

SPECIFIC INSTRUCTIONS

a. PRICE PROPOSAL

1. Complete blocks 14, 15, 17, 19, and 20a – 20 c of the RFP Section A, SF Form 1442. In doing so, the offeror accedes to the contract terms and conditions as written in the RFP Sections A through K. These sections constitute the model contract.

2. Insert proposed unit and extended prices in Section B for each Contract Line Item Number (CLIN).

3. Complete the necessary fill-ins and certifications in Sections I through K. Section shall be returned in its entirety. For Sections C through I, the offeror shall submit only those pages that require a fill-in.

b. Documents submitted in response to this RFP must be fully responsive to and consistent with the following:

1. Requirements of the RFP (CLINs & Specifications) and government standards and regulations pertaining to the Specifications.

2. Evaluation Factors for Award in Section M of this RFP.

AMENDMENT OF SOLICITATION PRIOR TO CLOSING TIME

The government reserves the right to revise or amend the specification, drawings, or the solicitation prior to the proposal closing time. Such reservations or amendments will be communicated by amendments to this Request for Proposal (RFP). If such amendments require material changes in quantities or prices, the proposal closing date may be postponed by enough days to enable offerors to revise their proposals. In such cases, the amendment will include an announcement of the new closing date and time. Amendments will be posted in Bldg T-615, 2nd floor, bid board, with the solicitation documents without notice.

TELEGRAPHIC/TELEPHONIC/FACSIMILE RESPONSES

a. The term “Telegram” includes mailgrams.

b. Telephonic receipt of modifications or withdrawals does not qualify the telegrams/telefax as being timely. The telegram itself must be received by the proper official at the government installation by the time specified.

c. Telegraphic/telephonic/facsimile proposals will not be considered.

TELEGRAPHIC OR FACSIMILE MODIFICATION/WITHDRAWAL OF PROPOSALS

Telegraphic/Facsimile modification of proposal or withdrawal of proposal is not authorized.

CLAUSES INCORPORATED BY REFERENCE

52.214-34	Submission Of Offers In The English Language	APR 1991
252.225-7042	Authorization to Perform	APR 2003

CLAUSES INCORPORATED BY FULL TEXT

52.216-1 TYPE OF CONTRACT (APR 1984)

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

(End of provision)

52.233-2 SERVICE OF PROTEST (SEP 2006)

(a) Protests, as defined in section 33.101 of the Federal Acquisition Regulation, that are filed directly with an agency, and copies of any protests that are filed with the Government Accountability Office (GAO), shall be served on the Contracting Officer (addressed as follows) by obtaining written and dated acknowledgment of receipt from

MSgt Zane R. Rohwedder
65 CONS/LGCA
UNIT 7775
APO AE 09720-7775

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

(End of provision)

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

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

(b) An organized site visit has been scheduled for—

1000 hrs local time, Tuesday, 7 Jul 10

(c) Participants will meet at—

65th Contracting Squadron, Bldg T-615, 2nd Floor Conference Room

(End of provision)

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

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

http://farsite.hill.af.mil

(End of provision

Section M - Evaluation Factors for Award

EVALUATION CRITERIA

The Government will award a contract resulting from this solicitation to the responsible offeror whose offer conforming to the solicitation will be most advantageous to the Government. The following factors shall be used to evaluate offers in this solicitation:

- Price

CLAUSES INCORPORATED BY FULL TEXT

5352.225-9004 SUBMISSION OF OFFERS IN OTHER THAN UNITED STATES CURRENCY (JUNE 2006)

(a) Offers may be submitted in United States dollars or the currency accepted at the place of performance.

(b) All offers shall be evaluated for determination of contract award by converting all foreign currencies to equivalent United States dollars by using the Foreign Currency Fluctuation Defense (FCFD) budget rate for the applicable currency in affect on the date set for the receipt of initial proposals.

(c) When a "Final Proposal Revision" is requested and received, in accordance with the applicable solicitation's terms and conditions, offers shall be evaluated by converting all foreign currencies to equivalent United States dollars by using the Foreign Currency Fluctuation Defense (FCFD) budget rate for the applicable currency in affect on the date set for the receipt of initial proposals.

(End of Provision)

SPECIFICATIONS

FOR

REPAIR VARIOUS PAVEMENTS ON BASE

MQNA 09-1501

MQNA 10-1530

MQNA 10-1534

USAFE

Lajes Field, Azores, Portugal

65th Civil Engineer Squadron

APO AE 09720

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SECTION 01 11 00

SUMMARY OF WORK

1. 1 GENERAL: The contractor's scope of work includes supplying all plant, labor, equipment, supervision and specified material to perform all operations required to complete all work as specified in the contract.

1.2 LOCATION: The work will be in Lajes Field, Azores, Portugal.

1.3 PRINCIPAL FEATURES: The following list of principal features is intended as a guide only and should in no way be considered an all inclusive description of the work and does not relieve the Contractor from the responsibility to complete the work in accordance with the applicable construction drawings, schedules, and specifications.

1.3.1 MQNA 09-1501, Repair Intersection near T-416 and T-308

a. Concrete Work-
   1) Remove and dispose existing concrete where shown on drawing.
   2) Place and compact additional base course as needed in order to meet the desirable elevation.
   3) Place concrete (15cm thick, 3,500 psi) at location detailed in the drawings.
   4) Apply joint sealer around the new concrete patch.
b. Asphalt Work-
   1) Remove all the asphalt, and a total of 30cm of base and subbase in the area shown on drawing.
   2) Place and compact 15cm of subbase and 15 cm of base course.
   3) Prime and Tack-coat the area to be asphalted.
   4) Place asphalt on the road in one 6.35 cm thick layer.
c. Paint new lines on the road to match the lines, stop bars and letters that were previously at this location.
d. Clean up the entire area before final inspection

1.3.2 MQNA 10-1530, Repave T-202 Parking Lot

a. Remove seven (7) concrete parking bumpers during asphalt work. Reinstall existing bumpers at the completion of work.
b. Concrete Work-
   1) Saw cut the concrete at location detailed on drawing.
   2) Demolish the concrete where shown on drawings, add base course and prepare the area to receive new asphalt.
c. Asphalt Work
   1) Mill and dispose of 6.35 cm of asphalt.
   2) Prime and Tack-coat the area to be asphalted.
   3) Place asphalt on the parking lot in one 6.35 cm thick layer.

4) Paint new lines on the parking lot to match the lines that were previously at this location.
5) Clean up the entire area before final inspection

1.3.3 MQNA 10-1534, Repave Parking Lot West of T-701

a. Concrete Work
    1) Remove and dispose at an off-base location the concrete sections detailed in the drawings.
    2) Place and compact additional base course where the concrete has been demolished as needed in order to be 6.35 cm below the final asphalt elevation.
    3) At the locations shown on the drawings, saw cut about 7cm of the edge of the existing Portland concrete.
b. Asphalt Work
    1) Mill and dispose of 6.35 cm of asphalt.
    2) Prime and Tack-coat the area to be asphalted.
    3) Place asphalt on the road in one 6.35 cm thick layer. Sections where concrete has been demolished will be replace with asphalt.
c. Paint new lines on the parking lot (yellow line) to match lines that were previously at this location.
d. Clean up the entire area before final inspection

1.4 EXECUTION/PHASING: Contractor will be provided any drawings, special phasing requirements or any other added requirements to accomplish the work.

1.5 SPECIAL CONSIDERATIONS:

1.5.1 Contractor must use and regard the current and valid "Base Appearance Standards" for construction projects in the Lajes Field, Azores. A copy of this standard will be provided to the contractor by the CO or his technical representative for each project. All project staging areas, construction sites, and storage areas shall be securely fenced around the entire perimeter of the job site. Fencing shall be completely secured at top and bottom to prevent pedestrian access. Fences shall be screened with opaque screening material to prevent visibility of the fenced area (min 2 m in height) in areas where material storage, contractor work trailers, trash container and any debris that maybe collected as result of construction. Fences and screens shall be adequately staked and/or anchored to prevent blowing over during high wind conditions. Submit photos or samples of the screening material for approval prior to installation.

1.5.2 The contractor shall preserve and protect all structures, equipment, and vegetation (such as trees, shrubs, grass) on or adjacent to the work site, which are not to be removed and which do not unreasonably interfere with the work required under this contract. The contractor shall only remove trees when specifically authorized by 65 CES Environmental Management function to do so, and shall avoid damaging vegetation that will remain in place. If any limbs or branches of

trees are broken during contract performance, or by the careless operation of equipment, or by workmen, the contractor shall trim those limbs or branches with a clean cut and paint the cut with a tree-pruning compound. The contractor shall return all areas disturbed during construction to its original condition.

1.5.3 The contractor shall request approval for siting and placing an office trailer at any project location. Any office trailer shall be no more than 10' x 32' in size, provided with a skirt on all sides, in like new condition, and painted Cream Beige or an equivalent color of similar tone approved by CO, if it is not obscured and hidden by the opaque fencing material. Office trailers in need of painting and / or repairs or, that are in an unsightly condition **will not** be allowed at the project site. A nameplate shall be displayed on the exterior of all trailers which lists the name of the contractor's company, contractor's point(s) of contact (POC) and telephone number where he/she can be reached, contract number, and title, and the date trailer was placed at the job site.

1.5.4 All contractor employees shall obey all traffic laws on installation. The contractor shall park all vehicles only in legally designated locations, or within the fenceline of the construction site.

1.5.5 The contractor shall perform normal housekeeping functions inside and outside contractor job sites. Such functions include grounds maintenance, sweeping, mopping, dusting, disposal of accumulated waste materials and rubbish and other operations necessary to present a neat appearance at all times. All rubbish and waste materials shall be removed daily and shall be placed in contractor furnished containers. During construction, the contractor shall maintain all areas in a neat and orderly manner. The contractor shall clean the construction site and/or structure of all construction trash, trash generated by employees, debris, demolished building materials, combustible waste material, and/or dust daily or more frequently as necessary for safe operations. During the laying of asphalt roads, streets and/or parking surfaces, areas soiled by residual asphalt shall be cleaned daily. The contractor shall treat with lime entrances and exits to asphalt work site at their own expense. The contractor shall ensure all light or moderate weight debris at the construction site is properly secured in waste receptacles so that it does not blow to another area or onto the airfield. At the end of each project all equipment, rubble and rubbish shall be completely removed from the base by the contractor, leaving the area in a safe, clean and orderly manner to the satisfaction of the CO.

1.5.6 Trucks loaded with loose material that can create a dust, debris or falling hazard shall be secured and covered. Fasten a suitable cover, such as tarpaulin, over the load before entering surrounding streets. The contractor is solely responsible for spillage from his/her vehicles and such spillage shall be cleaned up immediately. For the duration of this contract and on a daily basis, the contractor shall remove from all base roads and/or streets asphalt, mud, soil, rocks, trash, and debris that result from their construction operation on base. All roads and/or streets

affected shall be cleaned before close of business on the particular day affected. In the case of asphalt, roads will be cleaned and/or treated with lime immediately.

1.5.7 Grassy areas disturbed by any type of construction work including storage, equipment staging, and material delivery areas shall be sodded or seeded as required on each delivery order. Contractor shall be responsible for the successful growth and maintenance of all new grass areas under this contract for a period of thirty (30) days, or three mowing, after final acceptance of the work. All grass, shrubbery, and ornamental plants fenced by the construction site shall be maintained to base standards by the contractor.

1.5.8 All contractor owned items such as, but not limited to, stakes, traffic/safety cones, barriers, warning tape, erosion control fences that are erected during construction, shall be removed entirely after completion of project and prior to Government acceptance of the project site. The contractor, at his own expense, shall return to the site to remove any items left at or near the project site after this time period. All trailers, equipment/storage units, residual construction materials shall be removed also within five (5) days of Government acceptance of the project site.

1.5.9 If there are any uncertainties with respect to elevations, location of new or existing utilities, or any other information in this contract, the contractor shall obtain clarification from the CO or his designated representative. See “Digging Permit”, paragraph 9 of this section.

1.5.10 The contractor shall coordinate the exact location of each item of work with the inspector, such as drainage systems, drop inlets, repairs, and so forth. Once a week, the contractor shall layout and stake the proposed work in the field, and then review the layout with the inspector, who shall make recommendations as to adjustments needed. Prior to doing any work, the contractor shall receive approval from the inspector, who will coordinate with the CO, engineer, and environmental flight as required.

1.6 QUALITY CONTROL

1.6.1 Government Inspection: When the contractor considers that the work is acceptable to the government and is complete, the contractor shall inform the CO five (5) calendar days in advance of the final inspection that the work is complete and ready for inspection. The CO and his representative will inspect the work on site. In the event that the work is not acceptable, the contractor shall record a list of deficiencies noted by the government to be corrected. A subsequent inspection will take place in order to review the corrected items.

1.6.2 Government Approval of Work: The government will notify the contractor that work for a specific task order is, or is not, acceptable. Invoices for a task order shall not be permitted until the government has accepted the work. The contractor shall clean up prior to government acceptance.

1.7 CONSTRUCTION SITE MAINTENANCE

1.7.1 The contractor shall maintain each site in a neat and orderly manner. All supplies and equipment on the project site shall be stored to preclude mechanical and climatic damage. All grass, weeds, etc. shall be cut as necessary to prevent any fire/safety hazards and shall be no higher than 5 cm at any one time or as directed by the CO. All trash, debris, paper etc. shall be picked up immediately and placed in proper containers.

1.7.2 Contractor Parking: The contractor shall inform his employees, suppliers, and subcontractors that their vehicles shall not be parked on grass, in Fire Lanes or other restricted areas, parking spaces marked as “Handicapped” or “Government”, at any time. In addition, vehicles may not be driven over grass surfaces, unless indicated during a site visit or pre-performance conference. Any damage done to lawns, shrubs, sidewalks etc. shall be repaired or replaced by the contractor at no additional cost to the government.

1.7.3 Clean-up of Installation Access Routes Outside of the Construction Limits and Staging Areas: All mud, dirt, debris, foreign objects, or spills of any kind from the contractor's operations (including subcontractors and suppliers) on (a) streets and parking lots, used as access to the work or staging areas, shall be cleaned up not less than daily, or as requested by the CO, and (b) parking aprons and hard surfaces used as access to the work or staging areas, shall be kept clean at all times.

1.7.4 Trucking: Loose debris on trucks leaving the site shall be loaded in a manner that will prevent dropping of materials on streets and conform to local ordinances and laws. Fasten suitable cover, such as a tarpaulin, over the load before entering surrounding streets. The contractor shall be responsible for immediately cleaning up any materials that fall from trucks.

1.7.5 Fencing of Construction Site: Fences will be used to isolate construction sites as per instructions by the CO and per recommendations of the Wing Safety Office during the pre-construction conference.

1.7.6 Barricades:

a. The contractor shall barricade access to all construction sites. Barricading shall be used to isolate areas from access. The barricades shall be maintained in good condition, and be installed such that people approaching from the predominant direction can clearly read the warning. Barricades on streets shall have battery-powered flashers for night use. Construction fencing shall be used to isolate exterior areas from pedestrian access, and shall be maintained in good condition. Cones shall only be used to temporarily block pedestrian traffic. Extended pedestrian blockages or road traffic shall use rigid barrels/barricades. All barricades, barrels, cones, etc., are included in the contractor’s supplied equipment/supplies and therefore shall not be a direct cost to any task order unless the CO deems the individual task order requirements so extensive as to warrant payment.

b. All projects involving excavation shall be secured with flashing lights on all sides and have construction fencing completely surrounding the site at a minimum of five (5) feet from the hole.

1.8 DRAWING REQUIREMENTS

1.8.1 Existing Condition Drawings and As-built Drawings (including utilities):

a. Existing condition drawings showing existing underground utilities are available upon request. The contractor shall avail himself of the drawings. Any utility line shown on the record drawings (or made known to the contractor) and damaged during construction work shall be repaired immediately by the contractor at no additional cost to the government.
b. The government does not guarantee the accuracy or adequacy of existing record drawings. It is the contractor's responsibility to verify all existing conditions prior to starting work on each task order.
c. During the progress of the job, the contractor shall keep a careful record at the job site of all work accomplished from the layouts shown on the drawings. The contractor shall provide documents (drawings or sketches) to describe all of the work accomplished, and enter changes and corrections on contract or record drawings promptly and submit to the CO.

1.9 PERMITS

1.9.1 Welding Permit: No welding shall be started without first obtaining a permit issued by the 65 CES/CEFP, Fire Prevention and Emergency Service Office. Delay in obtaining a welding permit shall not be reason for time extension to the task order performance period.

1.9.2 Work Clearance Requests:

a. In order to avoid damaging any underground utilities, such as sewer, water, gas, electrical, telephone, cable TV, and possibly others, the contractor must obtain digging permits. The contractor shall process, obtain and maintain a Work Clearance Request (AF Form 103) required, prior to beginning construction.
b. The contractor is responsible for obtaining a Work Clearance Request for each delivery order right after Notice to Proceed (NTP) is issued. The contractor must fill out the request form (AF Form 103) with pertinent information and attach a plan showing the location of the respective work (contract drawings with areas highlighted is acceptable).
c. Also, as a part of the work request process, the contractor shall be required to mark all locations of excavation work on site with white spray paint or stakes with flagging. Existing utilities will be marked in the field by the respective agency in proposed construction areas. The contractor is required to maintain these markings (or reference points) so that the pertinent agency does not have to duplicate their work.

1.10 PROGRESS REPORTS The reports mentioned in FAR clause 52.236-15, "Schedules for Construction Contracts" shall be accomplished on AF Form 3064, Contracts Progress Schedule, and AF Form 3065, Contract Progress Report.

1.11 MATERIAL SUBMITTAL AND APPROVAL FORM In accordance with FAR clause 52.236-5 “Materials and Workmanship,” all material requiring approval shall be submitted by the contractor to the CO for approval on an AF Form 3000 within 10 calendar days after NTP (or as other-wise established by the CO).

1.12 UNIQUE PROJECT REQUIREMENTS

1.12.1 Paving and Excavation Projects:

a. Prior to start of any paving, exterior painting and excavation under this contract, the contractor shall coordinate start and completion dates in writing with the CO or his/her designated representative, five (5) workdays prior to the scheduled start date.
b. Special Requirements for Excavating Around or Locating Existing Utilities: Excavations for street and utility outages will also include the following requirements unless waived by the CO: Prior to the start of work, all valve locations will be identified/located so the utility can be shut off in the event of accidental damage. To preclude accidental damage, the contractor shall locate the exact location of all known utilities by hand digging within 1m in each direction of the marked utility prior to any excavation with power equipment. Any utilities discovered during excavations that are not shown on the drawings will be marked on the contract drawings and will be identified on the contractor's as-built drawings.

1.13 AVAILABILITY/UNAVAILABILITY OF UTILITIES SERVICES

1.13.1 All reasonable required amounts of water, electricity, etc., essential to contract performance, will be made available at no cost to the contractor from existing systems, outlets and supplies. All temporary connections, outlets and distribution lines, as may be required, shall be installed by the contractor at his own expense.

1.13.2 Water Supply. When required, the contractor will be furnished a water supply from a fire hydrant selected by the CO with the written coordination of the Chief**,** Fire and Emergency Services Office. Exceptions will be in the case of a significant drop in water pressure on the system degrading the protection of facilities and/or lives.

1.13.3 Unavailable Toilet Facilities: The contractor shall provide his own chemical sanitary toilets at work sites. Chemical toilets must be serviced regularly and may be inspected by the Government. Sanitary deficiencies shall be corrected within 24 hours after a deficiency is made known to the contractor.

1.14 COORDINATION WITH GOVERNMENT ACTIVITIES

1.14.1 If it becomes necessary to interrupt work activities due to construction, permission to do so must be requested in writing to the CO twenty-one (21) days in advance.

1.14.2 The contractor shall request street closings, both partial and/or total, twenty-one (21) days prior to the closing.

1.14.3 Work in conjunction with this contract which requires utility outages which will affect (as determined by the CO) normal activities in the building, construction area, or other work areas, shall be performed by the contractor at a time other than regular work periods of the organization occupying the facility or area.

1.14.4 Temporary construction for facilities used by the contractor for preventing interruption of normal work activity or loss of utilities shall be subject to approval of 65 CES/CEP through the CO.

1.15 REMOVAL AND REPLACEMENT RESPONSIBILITY The contractor shall be responsible for the replacement or repair of all existing finished surfaces, utilities, equipment, landscapes, grounds, and structures or parts thereof that he/she has damaged, removed, or cut into in order to perform work specified. Removed items to be reinstalled shall be stored by the contractor, free from damage, until reinstalled at no additional cost to the Government.

1.16 WARRANTY SERVICE REQUIREMENTS

1.16.1 The contractor shall furnish, as a minimum, one (1) primary name and telephone number of an individual on his/her management staff, available twenty four (24) hours per day, seven (7) days per week, for the life of this contract to respond to warranty situations. In the event the primary individual is unavailable, the contractor shall furnish an alternate individual and shall notify the CO of the alternate individual's telephone number.

1.16.2 Following notification by the CO or, the COR, the contractor shall respond to a warranty service requirement identified by the CO, or the COR.

1.17 SAFETY ASSURANCE

1.17.1 Preconstruction Safety Meeting: Representatives of the contractor shall meet with the contracting officer and representatives prior to the start of repair, alteration or construction activities for the purpose of reviewing the contractor's safety and health provisions pertinent to the work to be performed under the contract. The contractor shall be prepared to discuss, in detail, the measures it intends to take in order to control any unsafe or unhealthy conditions associated with the work to be performed under the contract. This meeting may be held in conjunction with the preconstruction conference, if so directed by the contracting officer. The conduct of this meeting is not contingent upon a general preconstruction meeting. The level of detail for the safety meeting is dependent upon the nature of the work and the potential inherent

hazards. The contractor's principal on site representatives, the general superintendent, and its safety representatives shall attend this meeting.

1.17.2 Contractor Responsibility: The contractor shall assume full responsibility and liability for compliance with the applicable regulations pertaining to the health and safety of personnel during the execution of work, and shall hold the Government harmless for any action on its part or that of its employees or subcontractors, which results in illness, injury or death.

1.18 SAFETY PLAN The contractor shall submit a safety plan and procedure to the CO for review and approval within 21 calendar days of contract award.

1.19 CERTIFICATION Certified tests on materials and/or equipment to be incorporated into this project will be acceptable provided they are conducted in accordance with the standards established by the authority cited in the referenced specifications and the tested materials or equipment meet the specified requirements. Preprinted certifications are not acceptable. All certifications shall be in the original form and shall itemize the specified material and/or equipment for the specified quality and the test method used. Attach certified copies of all test reports to such certifications.

1.20 CONTRACTOR PERSONNEL: Contract Manager: The contractor shall provide a contract manager and at least one alternate. The contract manager and alternate shall have full authority to act for the contractor in all contractual matters. The contract manager or alternate shall be available during standard work hours. The contract manager and alternate shall be able to read, speak and write English fluently.

1.21 GOVERNMENT PERSONNEL: Personnel from 65 CES/CEP are designated as the representative of the CO for the purpose of technical surveillance of workmanship and inspection of materials for work being performed under this contract. This designation in no way authorizes anyone other than the CO to commit the Government to changes in the terms of the contract. No oral statement of any person and no written statement of anyone other than the CO shall modify or other-wise affect the terms or meaning of this contract. All requests by the contractor for interpretations, modifications, or changes shall be made in writing to the CO. The Government shall not be liable for any costs incurred by the government or any action taken by the contractor, which are not in conformance with this statement.

1.22 GOVERNMENT LIABILITY: The Government shall not be liable for any loss or damage to the contractor's property, including stock, or for expenses incidental to such loss or damage. The contractor shall file a report with the Base Security Forces immediately as is practicable to report loss.

1.23 TRANSFER AND ACCEPTANCE: Contractor is responsible for completing DD Form 1354 (Transfer and Acceptance of Military Real Property) and submitting it to the 65th Contracting Squadron prior to the final inspection.

PART 2 PRODUCTS - Not Applicable

PART 3 EXECUTION - Not Applicable

- End of Section –

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ENVIRONMENTAL COMPLIANCE AND PROTECTION

PART 1 ENVIRONMENTAL COMPLIANCE

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

1.1.1 The contractor is responsible for strict adherence to any Federal, or local environmental regulations relating to this project. The critical environmental regulations for this project are as follows: Final Governing Standards for Portugal (FGS-P), Lajes Field Hazardous Waste Management Plan (HWMP), AFI32-7042 Waste Management, 21 April 2009, AFPM 32-7043 Hazardous Waste Management, 14 June 1999, the European Agreement Concerning the International Carriage of Dangerous Goods by Road (ADR) and Portuguese Laws and Decrees. This is not intended to be an exclusive listing of contractor legal responsibilities and cannot in any way release the contractor from any regulatory requirements not listed. 65 CES/CEAN is the base expert on environmental compliance/noncompliance issues and will provide assistance to the contractor or the contracting office whenever interpretations of environmental regulations and procedures are required.

1.2 HAZARDOUS MATERIAL (HAZMAT) DETERMINATION AND AUTHORIZATION PROCEDURES FOR CONTRACTORS:

1.2.1 Contractors using hazardous materials on Air Force installations must comply with the authorizations procedures established in the most current AFI32-7086 Hazardous Materials Management and Chapter 5, Hazardous Materials, Final Governing Standards (FGS). For the purposes of this project hazardous material shall be defined as any substance or preparation of materials that presents one or more may danger property to the public health or safety or the environment and included in Appendix C5.A1, Chapter 5 of the most current version of the FGS Portugal.

1.2.2 Prior to the final closeout of the construction project any hazardous material brought onto Lajes Field by the contractor must have a current copy of the manufacturer's Material Safety Data Sheet (MSDS). The contractor must ensure through certification that the MSDS contains at minimum, the following information:

a. Manufacturer's Name
b. List 100% of the hazardous chemical components
c. Chemical Abstract Number (CAS Number) for each chemical component
d. Specific Gravity/Unit Volume and or Unit Weight
e. Ph (Acidity or Alkalinity) if applicable
f. Flash Point/Ignitability

g. Exact weight in pounds/ounces of the material initially brought on base

1.2.3 Reuse of Surplus Hazardous Materials: Surplus hazardous materials will be the responsibility of construction contractor. A certification of surplus hazardous material is required prior to construction project closeout certifying both the quantity and reuse of that hazardous material.

1.2.4 Prior to final acceptance of this project the contractor shall compile a listing of all hazardous materials relating to this project. The listing will include the product name, manufacturer, and exact weight of material remaining. All material tracking shall be done on the Hazardous Material Tracking List. Attachment 1 at the end of this section is a blank copy of the Hazardous Materials Tracking List.

1.2.5 Requirement for special haul routes to deliver or remove hazardous materials for this project shall be addressed by the Contractor.

1.3 HAZARDOUS WASTES MANAGEMENT AND DISPOSAL REQUIREMENTS:

1.3.1 All types of hazardous waste, to include, used petroleum, asbestos, Lead-Based Paint and PCB's that are generated by this project shall be managed and disposed of at contractor's expense, in the manner required by Chapter 6 and Chapter 7 of FGS-P and, the ADR and approved by the Contracting Officer. For this project hazardous waste shall be defined as any solid wastes satisfying the criteria listed in Appendixes C6.A1 and C6.A2 Chapter 6 of FGS-P and Table C7.T4 European Waste Catalogue (EWC) in Chapter 7.

1.3.2 The contractor shall be responsible for proper handling, containerization, labeling and storage of hazardous wastes created from this project.

1.3.3 The contractor shall be responsible for obtaining all necessary manifest forms and for proper completion of each form.

a. Each manifest line item must have the quantity listed on the manifest in the quantity listed in Kilograms.
b. Each manifest line item must have supporting documentation to allow proper chemical characterization of the hazards as defined in the FGS-P. Sampling and analysis will be required on all wastes that have been contaminated or altered during the course of this project.
c. The contractor shall ensure all hazardous wastes are moved off base in accordance with ADR.

1.4 INSPECTION LIABILITY:

1.4.1 The contractor should understand that any operations on Lajes Field property are fully inspected by the 65 CES/CEAN and other federal regulatory, Air Force, or local agencies.

Compliance with all requirements in areas where called for in this project is mandatory.

1.4.2 By accepting this project the contractor will also permit no notice inspections of all activities related to the project by 65 CES/CEAN (Base Natural Resources Management). Issues of noncompliance will be addressed directly to the Contracting Officer to assure rapid correction of the unsatisfactory features.

1.4.3 Any breach of environmental regulations deemed serious by the Contracting Officer shall result in withholding of all progress or final payments related to this project until environmental compliance has been restored.

PART 2 ENVIRONMENTAL PROTECTION

2.1 APPLICABLE LAWS AND REGULATIONS:

2.1.1 Bases outside of the United States and its territories must comply with Air Force Instruction (AFI) 32-7006, Environmental Program in Foreign Countries. AFI 32-7006 states that FGS, as the sole compliance standard at installations and facilities in foreign countries, takes precedence over compliance with the AFI 32-7042, Waste Management, 21 April 2009. USAFE Instruction 32-7042, Hazardous Waste Management, 14 JUNE 1999 and Lajes Field Hazardous Waste Management Plan (HWMP).

2.1.2 The Final Governing Standards for Portugal (March 2006) requires the base (Lajes Field) to identify, collect, store, transport, treat, dispose, and recycle wastes they generate in a safe manner that is protective of human health and the environment. The FGS-P compiles requirements from Host Nation legislation as well as U.S. laws, selecting the more stringent requirements for each of the 18 media areas to apply to the DoD installations in Portugal.

2.2 DEFINITIONS

2.2.1 Solid Waste: Rubbish, debris, garbage, and other discarded solid materials, except hazardous waste as defined in paragraph entitled "Hazardous Waste," resulting from industrial, commercial, and agricultural operations and from community activities.

2.2.2 Rubbish: Combustible and noncombustible wastes such as paper, boxes, glass, crockery, metal, lumber, cans, and bones.

2.2.3 Debris: Combustible and noncombustible wastes such as ashes and waste materials resulting from construction or maintenance and repair work, leaves, and tree trimmings.

2.2.4 Chemical Wastes: This includes salts, acids, alkalis, herbicides, pesticides, and organic chemicals.

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2.2.5 Garbage: Refuse and scraps resulting from preparation, cooking, dispensing, and consumption of food.

2.2.6 Hazardous Waste (HW): Wastes that either present 1 or more hazardous properties listed in Appendix C6.A2 of Chapter 6, and table C7.T4 of Chapter 7 of FGS-P that are marked with an asterisk in the waste catalog, and in accordance with the European Agreement Concerning the International Carriage of Dangerous Goods by Roads (ADR), and any material or mixture of materials which may present a danger to the public health, safety or the environment.

2.2.7 Generator: Any person or entity that generates, treats or mixes wastes or conducts other operations that modify the nature or composition of wastes.

2.2.8 Hazardous Waste Accumulation Point (HWAP): A shop, site or other work center where hazardous waste are accumulated until removed to a Hazardous Waste Storage Area (HWSA). A HWSA may be used to accumulate per waste stream no more than one container as specified for the particular waste stream in the ADR. The HWAP must be at or near the point of generation and under the control of the operator.

2.2.9 Hazardous Waste Management: The systematic control of the collection, separation, storage, transportation, processing, treatment, recovery, and disposal of HW.

2.2.10 Hazardous Waste Storage Area: One or more locations on a DoD installation where HW is collected prior to shipment for treatment of disposal. A HWSA may store multiple containers per HW stream.

2.2.11 Treatment Storage of Disposal Facility (TSDF): Refers to any facility not located on a DoD installation that is used for the collection, source separation, storage, transportation, transfer, processing, treatment, or disposal of HW.

2.3 EXECUTION

2.3.1 Protection of natural resources: Preserve the natural resources within the project boundaries and outside the limits of permanent work. Restore to an equivalent or improved condition upon completion of work. Confine construction activities to within the limits of the work indicated or specified.

2.3.2 Land Resources: Except in areas to be cleared, do not remove, cut, deface, injure, or destroy trees or shrubs without Contracting Officer's permission. Do not fasten or attach ropes, cables, or guys to existing nearby trees for anchorages unless authorized by Contracting Officer.

Where such use of attach ropes, cables, or guys is authorized, the Contractor shall be responsible for any resultant damage.

2.3.3 Protection of Trees: Protect existing trees that are to remain and which may be injured, bruised, defaced, or otherwise damaged by construction operations. Remove displaced rocks from uncleared areas. By approved excavation, remove trees with 30 percent or more of their root systems destroyed. Removal of trees and the procedure for removal requires approval of the Contracting Officer.

2.3.4 Landscape Replacement: Remove trees and other landscape features scarred or damaged by equipment operations, and replace with equivalent, undamaged trees and landscape features. Obtain Contracting Officer's approval before removal or replacement.

2.4 EROSION AND SEDIMENT CONTROL MEASURES:

2.4.1 Burnoff: Burnoff of the ground cover is not permitted.

2.4.2 Mechanical Retardation and Control of Runoff: Mechanically retard and control the rate of runoff from the construction site. This includes construction of diversion ditches, benches, berms, and use of silt fences and straw bales to retard and divert runoff to protected drainage courses.

2.4.3 Borrow: Permit only in areas where suitable environmental controls are possible.

2.4.4 Vegetation and Mulch: Provide temporary protection on sides and back slopes as soon as rough grading is completed or sufficient soil is exposed to require erosion protection. Protect slopes by accelerated growth of permanent vegetation, temporary vegetation, mulching, or netting. Stabilize slopes by hydro seeding, anchoring mulch in place, covering with anchored netting, sodding, or such combination of these and other methods necessary for effective erosion control.

a. Provide new seeding where ground is disturbed. Include topsoil or nutriment during the seeding operation necessary to re-establish a suitable stand of grass.

2.5 CONTROL AND DISPOSAL OF SOLID WASTES Pick up solid wastes, and place in covered containers, which are regularly emptied. Do not prepare or cook food on the project site. Prevent contamination of the site or other areas when handling and disposing of wastes. At project completion, leave the areas clean. Dispose of solid waste generated at locations as directed.

2.5.1 Disposal of Rubbish and Debris: Dispose of rubbish and debris in accordance with the requirements specified below:

2.5.2 Removal From Government Property: Remove and dispose rubbish and debris from Government property.

2.5.3 Garbage Disposal: Place garbage in approved containers; the Government will provide pickup and disposal service.

2.5.4 Spills of Oil and Hazardous Materials: Take precautions to prevent spills of oil and hazardous material. In the event of a spill, immediately notify the Contracting Officer. Spill response shall be in accordance with Chapter 18 of FGS-P for DoD Operations in Portugal and all other applicable regulations.

2.5.5 Petroleum Products: Protect against spills and evaporation during fueling and lubrication of equipment and motor vehicles. Dispose of lubricants to be discarded and excess oil.

2.6 DUST CONTROL Keep dust down at all times, including nonworking periods. Sprinkle or treat, with dust suppressants, the soil at the site, haul roads, and other areas disturbed by operations. Dry power brooming will not be permitted. Instead, use vacuuming, wet mopping, wet sweeping, or wet power brooming. Air blowing will be permitted only for cleaning nonparticulate debris such as steel reinforcing bars. Only wet cutting will be permitted for cutting concrete blocks, concrete, and bituminous concrete. Do not shake bags of cement, concrete mortar, or plaster unnecessarily.

-- End of Section –

SECTION 03 31 01.00 10

CAST-IN-PLACE STRUCTURAL CONCRETE FOR CIVIL WORKS

PART 1 GENERAL

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

1.1.1 ACI INTERNATIONAL (ACI)

a. ACI 117(2006) Standard Specifications for Tolerances for Concrete Construction and Materials
b. ACI 211.1(1991; R 2009) Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete
c. ACI 318M (2008; Errata 2008; Errata 2009) Metric Building Code Requirements for Structural Concrete and Commentary

1.1.2 AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO)

a. AASHTO M 182 (2005) Standard Specification for Burlap Cloth Made from Jute or Kenaf and Cotton Mats

1.1.3 ASTM INTERNATIONAL (ASTM)

a. ASTM C 1059/C 1059M (1999; R 2008) Standard Specification for Latex Agents for Bonding Fresh to Hardened Concrete
b. ASTM C 150/C 150M (2009) Standard Specification for Portland Cement
c. ASTM C 172 (2008) Standard Practice for Sampling Freshly Mixed Concrete
d. ASTM C 597 (2002) Pulse Velocity Through Concrete
e. ASTM C 803/C 803M (2003) Penetration Resistance of Hardened Concrete
f. ASTM C 805/C 805M (2008) Rebound Number of Hardened Concrete
g. ASTM C 881/C 881M (2002) Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete
h. ASTM C 94/C 94M (2009) Standard Specification for Ready-Mixed Concrete
i. ASTM D 75/D 75M (2009) Standard Practice for Sampling Aggregates

1.2 DESIGN REQUIREMENTS For each portion of the structure, select concrete mixture proportions so that the strength and W/C requirements are met. The concrete mixture quantities of all ingredients per cubic meter and nominal maximum coarse aggregate size that will be used in the manufacture of each quality of concrete shall be stated. Proportions shall indicate the mass of cement, pozzolan and ground granulated blast-furnace (GGBF) slag when used, and water; the mass of aggregates in a saturated surface-dry condition; and the quantities of admixtures.

Nominal maximum-size coarse aggregate shall be 25.0 mm except 19.0 mm nominal maximum-size coarse aggregate shall be used when any of the following conditions exist: the narrowest dimension between sides of forms is less than 190 mm, the depth of the slab is less than 100 mm, or the minimum clear spacing between reinforcing is less than 55 mm.

1.2.1 Air Content

Air content as delivered to the forms and as determined by ASTM C 231 shall be between 4 and 7 percent except that when the nominal maximum-size coarse aggregate is 19.0 mm, it shall be between 4.5 and 7.5 percent.

1.2.2 Slump

The slump shall be determined in accordance with ASTM C 143/C 143M and shall be within the range of 25 to 100 mm. Where placement by pump is approved, the slump shall not exceed 150 mm.

1.2.3 Concrete Proportioning

Trial batches and testing requirements for various qualities of concrete specified are the responsibility of the Contractor. Obtain samples of aggregates in accordance with the requirements of ASTM D 75/D 75M. Samples of materials other than aggregate shall be representative of those proposed for the project and shall be accompanied by the manufacturer's test reports indicating compliance with applicable specified requirements. Make trial mixtures having proportions, consistencies, and air content suitable for the work based on methodology described in ACI 211.1, using at least three different water-cement ratios, which will produce a range of strength encompassing those required for the work. The maximum water-cement ratios required in paragraph MAXIMUM WATER-CEMENT (W/C) RATIO below, will be converted to a weight ratio of water to cement plus pozzolan by mass, silica fume, or GGBF slag by mass equivalency as described in ACI 211.1. In the case where GGBF slag is used, include the weight of the slag in the equations for the term P, which is used to denote the mass of pozzolan. If pozzolan is used in the concrete mixture, the minimum pozzolan content shall be 15 percent of the total cementitious material. Proportion trial mixtures for maximum permitted slump and air content with due consideration to the approved conveying and placement method. The temperature of concrete in each trial batch shall be reported. For each water-cement ratio, at least three test cylinders for each test age shall be made and cured in accordance with ASTM C 192/C 192M; they shall be tested at 7 days and at the design age specified in accordance with ASTM C 39/C 39M. From these test results, a curve will be plotted showing the relationship between water-cement ratio and strength.

1.2.4 Concrete Strength

Specified compressive strength f'c shall be 3,500 psi.

1.2.5 Maximum Water-Cement (W/C) Ratio

Maximum W/C shall be 0.50 water-cement ratio by mass. This W/C may cause higher strength than that required by paragraph CONCRETE STRENGTH.

1.2.6 Construction Tolerances
Except as specified otherwise, a plus tolerance increases and a minus tolerance decreases the dimension to which it applies. A tolerance without sign means plus or minus. Where only one sign is specified, there is no limit in the other direction. Tolerances are not cumulative. The most restrictive tolerance will control. Tolerances shall not extend the structure beyond legal boundaries.

a. Level and grade tolerance measurements of slabs shall be made as soon as possible after finishing. When forms or shoring are used, the measurements shall be made prior to removal.

b. Construction tolerances shall meet the requirements of ACI 117 and any of the following requirements that are applicable.

1.2.7. Appearance
Permanently exposed surfaces shall be cleaned, if stained or otherwise discolored, by a method that does not harm the concrete and that is approved by the Contracting Officer.

1.3 DELIVERY, STORAGE, AND HANDLING Chemical admixtures that have been in storage at the project site for longer than 6 months or that have been subjected to freezing shall be retested at the expense of the Contractor when directed by the Contracting Officer and rejected if test results are not satisfactory.

PART 2 PRODUCTS

2.1 MATERIALS

2.1.1 Cementitious Materials
Cementitious materials shall be portland cement or portland-pozzolan cement, conforming to appropriate specifications listed below.

a. Portland Cement- ASTM C 150/C 150M, Type I or II.
b. Pozzolan, Other than Silica Fume- Pozzolan shall conform to ASTM C 618, Class C or F, with the optional requirements for multiple factor, drying shrinkage, and uniformity of Table 2A. Table 1A requirement for maximum alkalies shall apply when used with aggregates listed at the end of this section to require low-alkali cement.

2.1.2 Aggregate Quality
Fine and coarse aggregates delivered to the mixer shall "be tested and evaluated for alkali-aggregate reactivity in accordance with ASTM C 1260. The fine and coarse aggregates shall be evaluated separately and in combination, which matches the Contractor's proposed mix design proportioning. All results of the separate and combination testing shall have a measured expansion less than 0.10 (0.08) percent at 16 days after casting. Should the test data indicate an expansion of 0.10 (0.08) percent or greater, the aggregate(s) shall be rejected or additional

testing using ASTM C 1260 and ASTM C 1567 shall be performed. The additional testing using ASTM C 1260 and ASTM C 1567 shall be performed using the low alkali portland cement in combination with ground granulated blast furnace (GGBF) slag, or Class F fly ash. GGBF slag shall be used in the range of 40 to 50 percent of the total cementitious material by mass. Class F fly ash shall be used in the range of 25 to 40 percent of the total cementitious material by mass".

2.1.3 Curing Materials

a. Membrane-Forming Curing Compound-The membrane-forming curing compound shall conform to ASTM C 309, Type 1-D or 2, except a styrene acrylate or chlorinated rubber compound meeting Class B requirements shall be used for surfaces that are to be painted or are to receive bituminous roofing, or waterproofing, or floors that are to receive adhesive applications of resilient flooring. The curing compound selected shall be compatible with any subsequent paint, roofing, coating, or flooring specified. Nonpigmented compound shall contain a fugitive dye and shall have the reflective requirements in ASTM C 309 waived.
b. Burlap used for curing shall conform to AASHTO M 182

2.1.4 Water
Water for mixing and curing shall be fresh, clean, potable, and free of injurious amounts of oil, acid, salt, or alkali, except that nonpotable water may be used if it meets the requirements of COE CRD-C 400.

2.1.5 Nonshrink Grout
Nonshrink grout shall conform to ASTM C 1107/C 1107M and shall be a commercial formulation suitable for the application proposed.

2.1.6 Latex Bonding Compound
Latex bonding compound agents for bonding fresh to hardened concrete shall conform to ASTM C 1059/C 1059M.

2.1.7 Epoxy Resin
Epoxy resin for use in repairs shall conform to ASTM C881/C881M, Type III, Grade I or II.

PART 3 EXECUTION

3.1 PREPARATION FOR PLACING

3.1.1 Embedded Items
Before placement of concrete, take care to determine that all embedded items are firmly and securely fastened in place as indicated on the drawings, or required. Embedded items shall be free of oil and other foreign matter such as loose coatings or rust, paint, and scale. The embedding of wood in concrete will be permitted only when specifically authorized or directed. Voids in sleeves, inserts, and anchor slots shall be filled temporarily with readily removable

materials to prevent the entry of concrete into voids. Welding, including tack welding, will not be permitted on embedded metals within 600 mm of the surface of the concrete.

3.1.2 Concrete on Earth Foundations
Earth surfaces upon which concrete is to be placed shall be clean, damp, and free from debris, frost, ice, and standing or running water. Prior to placement of concrete, the earth foundation shall have been satisfactorily compacted in accordance with Section 31 23 00.00 20 EXCAVATION AND FILL.

3.1.3 Concrete on Rock Foundations
Rock surfaces upon which concrete is to be placed shall be clean, free from oil, standing or running water, mud, drummy rock, coating, debris, and loose, semidetached, or unsound fragments. Joints in rock shall be cleaned to a satisfactory depth, as determined by the Contracting Officer, and to firm rock on the sides. Immediately before the concrete is placed, all rock surfaces shall be cleaned thoroughly by the use of air-water jets or sandblasting as described in paragraph CONSTRUCTION JOINT TREATMENT in PART 3. All rock surfaces shall be kept continuously wet for at least 24 hours immediately prior to placing concrete thereon. All approximately horizontal surfaces shall be covered, immediately before the concrete is placed, with a layer of mortar proportioned similar to that in the concrete mixture. The mortar shall be covered with concrete before the time of initial setting of the mortar.

3.1.4 Construction Joint Treatment
Construction joint treatment shall conform to the following requirements.

a. Joint Preparation- Concrete surfaces to which additional concrete is to be bonded shall be prepared for receiving the next lift or adjacent concrete by cleaning with either air-water cutting, sandblasting, high-pressure water jet, or other approved method. Air-water cutting will not be permitted on formed surfaces or surfaces congested with reinforcing steel. Regardless of the method used, the resulting surfaces shall be free from all laitance and inferior concrete so that clean, well bonded coarse aggregate is exposed uniformly throughout the lift surface. The edges of the coarse aggregate shall not be undercut. The surface shall be washed clean again as the last operation prior to placing the next lift. There shall be no standing water on the surface upon which concrete is placed.
b. High-Pressure Water Jet- A stream of water under a pressure of not less than 20.7 MPa may be used for cleaning. Its use shall be delayed until the concrete is sufficiently hard so that only the surface skin or mortar is removed and there is no undercutting of coarse-aggregate particles. If the water jet is incapable of a satisfactory cleaning, the surface shall be cleaned by sandblasting.
c. Wet Sandblasting- This method may be used when the concrete has reached sufficient strength to prevent undercutting of the coarse aggregate particles. The surface of the concrete shall then be washed thoroughly to remove all loose materials.
d. Waste Disposal- The method used in disposing of waste water employed in cutting, washing, and rinsing of concrete surfaces shall be such that the waste water does not

e. stain, discolor, or affect exposed surfaces of the structures, or damage the environment of the project area. The method of disposal shall be subject to approval.

3.2 PLACING

3.2.1 Placing Procedures

The surfaces of horizontal construction joints shall be kept continuously wet for the first 12 hours during the 24-hour period prior to placing concrete. Surfaces may be dampened immediately before placement if necessary. Concrete placement will not be permitted when, in the opinion of the Contracting Officer, weather conditions prevent proper placement and consolidation. Deposit concrete as close as possible to its final position in the forms and, in so depositing, there shall be no vertical drop greater than 1.5 m except where suitable equipment is provided to prevent segregation and where specifically authorized. Depositing of the concrete shall be so regulated that it may be effectively consolidated in horizontal layers 600 mm or less in thickness with a minimum of lateral movement. The amount deposited in each location shall be that which can be readily and thoroughly consolidated. Sufficient placing capacity shall be provided so that concrete placement can be kept plastic and free of cold joints while concrete is being placed. Concrete shall be placed by methods that will prevent segregation or loss of ingredients. Any concrete transferred from one conveying device to another shall be passed through a hopper that is conical in shape. The concrete shall not be dropped vertically more than 1.5 m, except where a properly designed and sized elephant truck with rigid drop chute bottom section is provided to prevent segregation and where specifically authorized. In no case will concrete be discharged to free-fall through reinforcing bars

3.2.2 Placement by Pump

When concrete is to be placed by pump, the nominal maximum-size coarse aggregate shall not be reduced to accommodate the pumps. The distance to be pumped shall not exceed limits recommended by the pump manufacturer. The concrete shall be supplied to the concrete pump continuously. When pumping is completed, concrete remaining in the pipeline shall be ejected without contamination of concrete in place. After each operation, equipment shall be thoroughly cleaned, and flushing water shall be wasted outside of the forms. Grout used to lubricate the pumping equipment at the beginning of the placement will not be incorporated into the placement.

3.2.3 Time Interval Between Mixing and Placing

Place concrete within 30 minutes after discharge into nonagitating equipment. When concrete is truck-mixed or when a truck mixer or agitator is used for transporting concrete mixed by a concrete plant mixer, the concrete shall be delivered to the site of the work, and discharge shall be completed within 1-1/2 hours after introduction of the cement to the aggregates. When the length of haul makes it impossible to deliver truck-mixed concrete within these time limits, batching of cement and a portion of the mixing water shall be delayed until the truck mixer is at or near the construction site.

3.2.4 Consolidation

Immediately after placement, each layer of concrete, including flowing concrete, shall be

consolidated by internal vibrating equipment. Vibrators shall not be used to transport concrete within the forms. Hand spading may be required, if necessary, with internal vibrating along formed surfaces permanently exposed to view. Form or surface vibrators shall not be used unless specifically approved. The vibrator shall be inserted vertically at uniform spacing over the entire area of placement. The distance between insertions shall be approximately 1-1/2 times the radius of action of the vibrator. The vibrator shall penetrate rapidly to the bottom of the layer and at least 150 mm into the preceding unhardened layer if such exists. It shall be held stationary until the concrete is consolidated and then withdrawn slowly.

3.3 FINISHING The ambient temperature of spaces adjacent to surfaces being finished shall be not less than 5 degrees C. In hot weather when the rate of evaporation of surface moisture, as determined by use of Figure 2.1.5 of ACI 305R, may reasonably be expected to exceed 1.0 kg/square meter per hour. Make provisions for windbreaks, shading, fog spraying, or wet covering with a light-colored material in advance of placement, and such protective measures shall be taken as quickly as finishing operations will allow. All unformed surfaces that are not to be covered by additional concrete or backfill shall have a float finish. Additional finishing shall be as specified below and shall be true to the elevation shown in the drawings. Surfaces to receive additional concrete or backfill shall be brought to the elevation shown on the drawings and left true and regular. Exterior surfaces shall be sloped for drainage unless otherwise shown in the drawing or as directed. Joints shall be carefully made with a jointing or edging tool. The finished surfaces shall be protected from stains or abrasions. Grate tampers or jitterbugs shall not be used.

3.3.1 Unformed Surfaces

a. Float Finish- Surfaces shall be screeded and darbied or bullfloated to bring the surface to the required finish level with no coarse aggregate visible. No water, cement, or mortar shall be added to the surface during the finishing operation. The concrete, while still green but sufficiently hardened to bear a man's weight without deep imprint, shall be floated to a true and even plane. Floating may be performed by use of suitable hand floats or power-driven equipment. Hand floats shall be made of magnesium or aluminum.
b. Broom Finish- Apply a broom finish to all surfaces which may be subject to foot or vehicle traffic. Finish the concrete surface with a float finish. The floated surface shall be broomed with a fiber-bristle brush in a direction transverse to that of the main traffic.

3.3.2 Formed Surfaces
Unless another finish is specified, surfaces shall be left with the texture imparted by the forms except that defective surfaces shall be repaired as described below.

3.3.3 Formed Surface Repair
After removal of forms, all ridges, lips, and bulges on surfaces permanently exposed shall be removed. All repairs shall be completed within 48 hours after form removal.

3.4 CURING AND PROTECTION

3.4.1 Duration
The length of the curing period shall be determined by the type of cementitious material, as specified below. Concrete shall be cured by an approved method.

a. Type I Portland cement-7 days
b. Type II Portland cement-14 days
c. Type III Portland cement- 3 days
d. Type IS cement- 7 days
e. GGBF slag is used- 3 days
f. Portland cement when accelerator is used to achieve high early strength, except when fly-ash or Portland cement blended with silica fume -7 days
g. Portland cement blended with 25 percent of less fly-ash or GGBF slag- 14 days
h. Portland cement blended with more than 25 percent fly-ash or GGBF slag- 21 days

Immediately after placement, protect concrete from premature drying, extremes in temperatures, rapid temperature change, and mechanical damage. All materials and equipment needed for adequate curing and protection shall be available and at the placement site prior to the start of concrete placement. Concrete shall be protected from the damaging effects of rain for 12 hours and from flowing water for 14 days. No fire or excessive heat including welding shall be permitted near or in direct contact with concrete or concrete embedments at any time.

3.4.2 Moist Curing
Moist-cured concrete shall be maintained continuously, not periodically, wet for the entire curing period. If water or curing materials stain or discolor concrete surfaces that are to be permanently exposed, they shall be cleaned as required in paragraph APPEARANCE in PART 1. Where wooden form sheathing is left in place during curing, the sheathing shall be kept wet at all times. If steel forms are used in hot weather, nonsupporting vertical forms shall be carefully broken loose from the concrete, soon after the concrete hardens, and curing water continuously applied into the void so as to continuously saturate the entire concrete surface. Horizontal surfaces may be moist cured by ponding, by covering with a minimum uniform thickness of 50 mm of continuously saturated sand, or by covering with saturated nonstaining burlap or cotton mats. Horizontal construction joints may be allowed to dry for 12 hours immediately prior to the placing of the following lift.

3.4.3 Membrane-Forming Curing Compound
Concrete may be cured with an approved membrane-forming curing compound in lieu of moist curing except that membrane curing will not be permitted on any surface to which a grout-cleaned finish is to be applied or other concrete is to be bonded, on any surface containing

protruding steel reinforcement, on an abrasive aggregate finish, or any surface maintained at curing temperature by use of free steam. A styrene acrylate or chlorinated rubber compound may

be used for surfaces that are to be painted or are to receive bituminous roofing or waterproofing, or for floors that are to receive adhesive applications of resilient flooring. The curing compound selected shall be compatible with any subsequent paint, roofing, waterproofing, or flooring specified.

a. Pigmented Curing Compound- A pigmented curing compound meeting the requirements of the above paragraph may be used on surfaces that will not be exposed to view when the project is completed.
b. Nonpigmented Curing Compound- A nonpigmented curing compound containing a fugitive dye may be used on surfaces that will be exposed to view when the project is completed. Concrete cured with nonpigmented curing compound must be shaded from the sun for the first 3 days when the ambient temperature is 32 degrees C or higher.
c. Application- Apply the curing compound to formed surfaces immediately after the forms are removed and prior to any patching or other surface treatment except the cleaning of loose sand, mortar, and debris from the surface. The surfaces shall be thoroughly moistened with water, and the curing compound applied as soon as free water disappears. The curing compound shall be applied to unformed surfaces as soon as free water has disappeared and bleeding has stopped. The curing compound shall be applied in a two-coat continuous operation by approved motorized power-spraying equipment operating at a minimum pressure of 500 kPa, at a uniform coverage of not more than 10 square meters/L for each coat, and the second coat shall be applied perpendicular to the first coat. Concrete surfaces that have been subjected to rainfall within 3 hours after curing compound has been applied shall be resprayed by the method and at the coverage specified. All concrete surfaces on which the curing compound has been applied shall be adequately protected for the duration of the entire curing period from pedestrian and vehicular traffic and from any other cause that will disrupt the continuity of the curing membrane.

3.4.4 Evaporation Retardant
Plastic sheet curing shall not be used.

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SECTION 31 23 00.00 20

EXCAVATION AND FILL

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 the basic designation only.

1.1.1. ASTM INTERNATIONAL (ASTM)

a. ASTM C 136 (2006) Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates
b. ASTM D 1140 (2000; R 2006) Amount of Material in Soils Finer than the No. 200 (75-micrometer) Sieve
c. ASTM D 1556 (2007) Density and Unit Weight of Soil in Place by the Sand-Cone Method
d. ASTM D 1557 (2007) Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft3) (2700 kN-m/m3)
e. ASTM D 2321 (2005) Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications
f. ASTM D 2487 (2006e1) Soils for Engineering Purposes (Unified Soil Classification System)
g. ASTM D 2922 (2005) Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
h. ASTM D 3017 (2005) Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth)
i. ASTM D 4318 (2005) Liquid Limit, Plastic Limit, and Plasticity Index of Soils
j. ASTM D 698 (2007e1) Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/cu. ft. (600 kN-m/cu. m.))

1.2 DEFINITIONS

1.2.1 Capillary Water Barrier
A layer of clean, poorly graded crushed rock, stone, or natural sand or gravel having a high porosity which is placed beneath a building slab with or without a vapor barrier to cut off the capillary flow of pore water to the area immediately below a slab.

1.2.2 Degree of Compaction
Degree of compaction is expressed as a percentage of the maximum density obtained by the test procedure presented in ASTM D 698, for general soil types, abbreviated as percent laboratory maximum density.

1.2.3 Hard Materials
Weathered rock, dense consolidated deposits, or conglomerate materials which are not included

in the definition of "rock" but which usually require the use of heavy excavation equipment, ripper teeth, or jack hammers for removal.

1.2.4 Rock
Solid homogeneous interlocking crystalline material with firmly cemented, laminated, or foliated masses or conglomerate deposits, neither of which can be removed without systematic drilling and blasting, drilling and the use of expansion jacks or feather wedges, or the use of backhoe-mounted pneumatic hole punchers or rock breakers; also large boulders, buried masonry, or concrete other than pavement exceeding 0.75 cubic meters in volume. Removal of hard material will not be considered rock excavation because of intermittent drilling and blasting that is performed merely to increase production.

1.3 DELIVERY, STORAGE, AND HANDLING Perform in a manner to prevent contamination or segregation of materials.

1.4 CRITERIA FOR BIDDING

1.4.1 Base bids on the following criteria:

a. Surface elevations are as indicated.
b. Pipes or other artificial obstructions, except those indicated, will not be encountered.
c. A high water table may exist during late winter and early spring. Well point pumping may be required for some trenching.
d. Hard materials and rock will be encountered in 20 percent of the excavations.
e. Borrow material, suitable backfill and bedding material in the quantities required are not available at the project site and will need to be provided by the Contractor from off base sources.
f. Blasting will not be permitted. Remove material in an approved manner.

1.5 REQUIREMENTS FOR OFF SITE SOIL Soils brought in from off site for use as backfill shall be tested for TPH, BTEX and full TCLP including ignitability, corrosivity and reactivity. Backfill shall contain less than 100 parts per million (ppm) of total petroleum hydrocarbons (TPH) and less than 10 ppm of the sum of Benzene, Toluene, Ethyl Benzene, and Xylene (BTEX) and shall not fail the TCPL test. TPH concentrations shall be determined by using EPA 600/4-79/020 Method 418.1. BTEX concentrations shall be determined by using EPA 530/F-93/004 Method 5030/8020. TCLP shall be performed in accordance with EPA 530/F-93/004 Method 1311. Provide Borrow Site Testing for TPH, BTEX and TCLP from a composite sample of material from the borrow site, with at least one test from each borrow site. Material shall not be brought on site until tests have been approved by the Contracting Officer.

1.6 QUALITY ASSURANCE

1.6.1 Utilities
Movement of construction machinery and equipment over pipes and utilities during construction

shall be at the Contractor's risk. Excavation made with power-driven equipment is not permitted within 600 mm of known Government-owned utility or subsurface construction. For work immediately adjacent to or for excavations exposing a utility or other buried obstruction, excavate by hand. Start hand excavation on each side of the indicated obstruction and continue until the obstruction is uncovered or until clearance for the new grade is assured. Support uncovered lines or other existing work affected by the contract excavation until approval for backfill is granted by the Contracting Officer. Report damage to utility lines or subsurface construction immediately to the Contracting Officer. Mapped locations of underground utilities shown on the project drawings are from available records and actual location of utilities must be verified by the contractor.

PART 2 PRODUCTS

2.1 SOIL MATERIALS

2.1.1 Satisfactory Materials
Any materials classified by ASTM D 2487 as GW, GP, GM, GP-GM, GW-GM, GC, GP-GC, GM-GC, SW, SP, free of debris, roots, wood, scrap material, vegetation, refuse, soft unsound particles, and deleterious, or objectionable materials. Unless specified otherwise, the maximum particle diameter shall be one-half the lift thickness at the intended location.

2.1.2 Unsatisfactory Materials
Unsatisfactory materials are those that do not comply with the requirements for satisfactory materials. Unsatisfactory materials also include man-made fills, trash, refuse, or backfills from previous construction. Unsatisfactory material also includes material classified as satisfactory which contains root and other organic matter, material, and stones larger than 100 mm . The Contracting Officer shall be notified of any contaminated materials. Materials classified as GM, GP-GM, GW-GM, SW-SM, SP-SM, and SM shall be identified as cohesionless only when the fines are nonplastic (plasticity index equals zero). Materials classified as GM and SM will be identified as cohesive only when the fines have a plasticity index greater than zero.

2.1.3 Common Fill
Approved, unclassified soil material with the characteristics required to compact to the soil density specified for the intended location.

2.1.4 Backfill and Fill Material
ASTM D 2487, classification GW, GP, GM, SW, SP, SM, with a maximum ASTM D 4318 liquid limit of 35, maximum ASTM D 4318 plasticity index of 12, and a maximum of 25 percent by weight passing ASTM D 1140, 75 micrometers sieve.

2.1.5 Topsoil
Natural, friable soil representative of productive, well-drained soils in the area, free of subsoil,

stumps, rocks larger than 25 mm diameter, brush, weeds, toxic substances, and other material detrimental to plant growth. Amend topsoil pH range to obtain a pH of 5.5 to 7.

PART 3 EXECUTION

3.1 PROTECTION

3.1.1 Shoring and Sheeting
Provide shoring where necessary. In addition to Section 25 A and B of EM 385-1-1 , include provisions in the shoring and sheeting plan that will accomplish the following:

a. Prevent undermining of pavements, foundations and slabs.
b. Prevent slippage or movement in banks or slopes adjacent to the excavation.

3.1.2 Drainage and Dewatering
Provide for the collection and disposal of surface and subsurface water encountered during construction.

a. Drainage- So that construction operations progress successfully, completely drain construction site during periods of construction to keep soil materials sufficiently dry. The Contractor shall establish/construct storm drainage features (ponds/basins) at the earliest stages of site development, and throughout construction grade the construction area to provide positive surface water runoff away from the construction activity and/or provide temporary ditches, swales, and other drainage features and equipment as required to maintain dry soils, prevent erosion and undermining of foundations. When unsuitable working platforms for equipment operation and unsuitable soil support for subsequent construction features develop, remove unsuitable material and provide new soil material as specified herein. It is the responsibility of the Contractor to assess the soil and ground water conditions presented by the plans and specifications and to employ necessary measures to permit construction to proceed. Excavated slopes and backfill surfaces shall be protected to prevent erosion and sloughing. Excavation shall be performed so that the site, the area immediately surrounding the site, and the area affecting operations at the site shall be continually and effectively drained.
b. Dewatering- Groundwater flowing toward or into excavations shall be controlled to prevent sloughing of excavation slopes and walls, boils, uplift and heave in the excavation and to eliminate interference with orderly progress of construction. French drains, sumps, ditches or trenches will not be permitted within 0.9 m of the foundation of any structure, except with specific written approval, and after specific contractual provisions for restoration of the foundation area have been made. Control measures shall be taken by the time the excavation reaches the water level in order to maintain the integrity of the in situ material. While the excavation is open, the water level shall be maintained continuously, at least 0.5 m below the working level.

3.1.3 Underground Utilities
Location of the existing utilities indicated is approximate. The Contractor shall physically verify the location and elevation of the existing utilities indicated prior to starting construction. The Contractor shall contact the Public Works Department for assistance in locating existing utilities.

3.1.4 Machinery and Equipment
Movement of construction machinery and equipment over pipes during construction shall be at the Contractor's risk. Repair, or remove and provide new pipe for existing or newly installed pipe that has been displaced or damaged.

3.2 SURFACE PREPARATION

3.2.1 Clearing and Grubbing
Unless indicated otherwise, remove trees, stumps, logs, shrubs, brush and vegetation and other items that would interfere with construction operations within the clearing limits. Remove stumps entirely. Grub out matted roots and roots over 50 mm in diameter to at least 460 mm below existing surface.

3.2.2 Stripping
Strip suitable soil from the site where excavation or grading is indicated and stockpile separately from other excavated material. Material unsuitable for use as topsoil shall be stockpiled and used for backfilling. Locate topsoil so that the material can be used readily for the finished grading. Where sufficient existing topsoil conforming to the material requirements is not available on site, provide borrow materials suitable for use as topsoil. Protect topsoil and keep in segregated piles until needed.

3.3 EXCAVATION Excavate to contours, elevation, and dimensions indicated. Reuse excavated materials that meet the specified requirements for the material type required at the intended location. Keep excavations free from water. Excavate soil disturbed or weakened by Contractor's operations, soils softened or made unsuitable for subsequent construction due to exposure to weather. Excavations below indicated depths will not be permitted except to remove unsatisfactory material. Unsatisfactory material encountered below the grades shown shall be removed as directed. Refill with backfill and fill material and compact to 95 percent of ASTM D 698 maximum density. Unless specified otherwise, refill excavations cut below indicated depth with backfill and fill material and compact to 95 percent of ASTM D 698 maximum density. Satisfactory material removed below the depths indicated, without specific direction of the Contracting Officer, shall be replaced with satisfactory materials to the indicated excavation grade; except as specified for spread footings. Determination of elevations and measurements of approved overdepth excavation of unsatisfactory material below grades indicated shall be done under the direction of the Contracting Officer.

3.3.1 Hard Material and Rock Excavation
Remove hard material and rock to elevations indicated in a manner that will leave foundation material in an unshattered and solid condition. Removal of hard material and rock beyond

lines and grades indicated will not be grounds for a claim for additional payment unless previously authorized by the Contracting Officer.

3.3.2 Excavated Materials
Satisfactory excavated material required for fill or backfill shall be placed in the proper section of the permanent work required or shall be separately stockpiled if it cannot be readily placed.

3.4 SUBGRADE PREPARATION Unsatisfactory material in surfaces to receive fill or in excavated areas shall be removed and replaced with satisfactory materials as directed by the Contracting Officer. The surface shall be scarified to a depth of 150 mm before the fill is started. Sloped surfaces steeper than 1 vertical to 4 horizontal shall be plowed, stepped, benched, or broken up so that the fill material will bond with the existing material. When subgrades are less than the specified density, the ground surface shall be broken up to a minimum depth of 150 mm, pulverized, and compacted to the specified density. When the subgrade is part fill and part excavation or natural ground, the excavated or natural ground portion shall be scarified to a depth of 300 mm and compacted as specified for the adjacent fill. Material shall not be placed on surfaces that are muddy, or contain frost. Compaction shall be accomplished by sheepsfoot rollers, pneumatic-tired rollers, steel-wheeled rollers, or other approved equipment well suited to the soil being compacted. Material shall be moistened or aerated as necessary to provide the moisture content that will readily facilitate obtaining the specified compaction with the equipment used. Minimum subgrade density shall be as specified herein.

3.5 FILLING AND BACKFILLING Fill and backfill to contours, elevations, and dimensions indicated. Compact each lift before placing overlaying lift.

3.5.1 Common Fill Placement
Use satisfactory materials. Place in 150 mm lifts. Compact areas not accessible to rollers or compactors with mechanical hand tampers. Aerate material excessively moistened by rain to a satisfactory moisture content. Finish to a smooth surface by blading, rolling with a smooth roller, or both.

3.5.2 Backfill and Fill Material Placement
Place in 150 mm lifts. Do not place over wet or areas. Place backfill material adjacent to structures as the structural elements are completed and accepted. Backfill against concrete only when approved. Place and compact material to avoid loading upon or against the structure.

3.6 COMPACTION Determine in-place density of existing subgrade; if required density exists, no compaction of existing subgrade will be required.

3.6.1 General Site
Compact underneath areas designated for vegetation and areas outside the 1.5 meter line of the paved area or structure to 90 percent of ASTM D 698.

3.6.2 Structures, Spread Footings, and Concrete Slabs

Compact top 300 mm of subgrades to 95 percent of ASTM D 698.

3.6.3 Paved Areas
Compact top 300 mm of subgrades to 95 percent of ASTM D 698. Compact fill and backfill materials to 95 percent of ASTM D 698.

3.7 FINISH OPERATIONS

3.7.1 Grading
Finish grades as indicated within 30 mm. Grade areas to drain water away from structures. Maintain areas free of trash and debris. For existing grades that will remain but which were disturbed by Contractor's operations, grade as directed.

3.7.2 Topsoil and Seed
Scarify existing subgrade. Provide 100 mm of topsoil for newly graded finish earth surfaces and areas disturbed by the Contractor. Topsoil shall not be placed when the subgrade is , excessively wet, extremely dry, or in a condition otherwise detrimental to seeding, planting, or proper grading. If there is insufficient on-site topsoil meeting specified requirements for topsoil, provide topsoil required in excess of that available. Seed shall match existing vegetation. Provide seed at 2.5 kg per 100 square meters. Provide CID A-A-1909, Type I, Class 2, 10-10-10 analysis fertilizer at 12.2 kg per 100 square meters. Provide mulch and water to establish an acceptable stand of grass.

3.7.3 Protection of Surfaces
Protect newly backfilled, graded, and topsoiled areas from traffic, erosion, and settlements that may occur. Repair or reestablish damaged grades, elevations, or slopes.

3.8 DISPOSITION OF SURPLUS MATERIAL Remove from Government property surplus or other soil material not required or suitable for filling or backfilling, and brush, refuse, stumps, roots, and timber.

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SECTION 32 11 24

GRADED CRUSHED AGGREGATE BASE COURSE FOR FLEXIBLE PAVEMENT

PART 1 GENERAL

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

1.1.1 ASTM INTERNATIONAL (ASTM)

a. ASTM D 1556 (2007) Density and Unit Weight of Soil in Place by the Sand-Cone Method
b. ASTM D 1883 (2007e1e2) CBR (California Bearing Ratio) of Laboratory-Compacted Soils
c. ASTM D 2217 (1985; R 1998) Wet Preparation of Soil Samples for Particle-Size Analysis and Determination of Soil Constants
d. ASTM D 2922 (2005) Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
e. ASTM D 3017 (2005) Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth)
f. ASTM D 4318 (2005) Liquid Limit, Plastic Limit, and Plasticity Index of Soils
g. ASTM D 75/D 75M (2009) Standard Practice for Sampling Aggregates

1.2 DELIVERY AND STORAGE Inspect materials delivered to site for damage and store as to prevent segregation and contamination.

1.3 WEATHER LIMITATIONS Do not construct base course when atmospheric temperature is below 2 degrees C or when rainfall or other weather conditions detrimentally affect the quality of the finished course.

1.4 CONSTRUCTION EQUIPMENT Equipment shall be dependable and adequate for the purpose intended. Maintain equipment in satisfactory and safe operating condition. Subject to approval, special equipment dictated by local conditions may be used. Calibrated equipment, such as scales, batching equipment, spreaders, and similar items, shall have been recalibrated by an approved calibration laboratory within 12 months of commencing work.

1.5 SUSTAINABLE DESIGN REQUIREMENTS

1.5.1 Local/Regional Materials
Use materials or products extracted, harvested, or recovered, as well as manufactured, within a 800 kilometer radius from the project site, if available from a minimum of three sources. Aggregate materials may be locally available.

PART 2 PRODUCTS-Not Applicable

PART 3 EXECUTION

3.1 BASE COURSE Construct the graded aggregate base course on a prepared subgrade, as indicated. Verify compacted subgrade, granular base, or stabilized soil is acceptable and ready to support paving and imposed loads. Provide line and grade stakes for control. Place grade stakes in lanes parallel to the centerline of areas to be paved and space for string lining or other control methods. The base course shall consist of aggregate processed, deposited, spread, and compacted on a prepared surface. The Contractor shall be responsible for protection of completed areas against detrimental effects. Recondition, reshape, and recompact areas damaged by freezing, rainfall, or other weather conditions.

3.2 MIXING OF MATERIALS Mix aggregates in a stationary or traveling plant. Proportion aggregates by weight or volume in such quantities that specified gradation, liquid limit, and plasticity index requirements are met after the base course has been placed and compacted. Incorporate, during the mixing operation, water in quantities sufficient to provide the necessary moisture content for the specified compaction. Mixing operations shall produce satisfactory uniform blending and the method of discharging into trucks shall not produce segregation.

3.3 PLACING Do not dump mixed materials in piles, but place on prepared subgrade or subbase in layers of uniform thickness with a spreader. When a compacted course 150 mm in thickness is required, place material in a single layer. When a compacted course in excess of 150 mm is required, place material in layers of equal thickness. Do not exceed 150 mm or have less than 75 mm in thickness for any compacted layer. Place layers so that when compacted, they will be true to grades or levels required with the least possible surface disturbance. Where the base course is constructed in more than one layer, clean previously constructed layers of loose and foreign matter. Maintain material water content during the placing period to obtain the compaction specified. Make adjustments in placing procedures or equipment to obtain true grades, to minimize segregation and degradation, to reduce or increase water content, and to insure a satisfactory base course.

3.4 COMPACTING AND FINISHING
Immediately following the placing, spread the finished mixture uniformly in a layer and bring to optimum moisture content. The loose thickness and the surface of the layer shall be such that the specified density and the required thickness shall be obtained after compaction. Compact the layer with steel-faced, vibrating or pneumatic-tired rollers, or other suitable compacting equipment or combinations thereof. Continue compacting until the layer is compacted through the full depth to a field density of at least 100 percent of the maximum density at optimum moisture content tested in accordance with ASTM D 1556. In areas not accessible to rollers or compactors, compact the mixture with mechanical hand tampers. If the mixture is excessively moistened by rain, aerate by blade graders, or other suitable equipment. Aerate until the moisture content of the material is that needed to obtain the required density. Finish the surface of the layer by a combination of rolling and blading. Final surface shall be smooth and free from

waves, irregularities, and ruts or soft yielding spots.

3.5 FINISHING AT EDGES OF BASE COURSE Place earth or other approved materials along the edges of the base course in such quantity that it will compact to the thickness of the course being constructed. When the course is being constructed in two or more layers, place material to the thickness of each layer. In each operation, allow at least a 300 mm width of the shoulder to be rolled and compacted simultaneously with the rolling and compacting of each layer.

3.6 MAINTENANCE After construction is completed, maintain the base course throughout, except where portion of the succeeding course is under construction thereon. Maintenance includes drainage, rolling, shaping, and watering, as necessary, to maintain the course in proper condition. Correct deficiencies in thickness, composition, construction, smoothness, and density, which develop during the maintenance, to conform to the requirements specified herein. Maintain sufficient moisture by light sprinkling with water at the surface to prevent a dusty condition.

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SECTION 32 12 10

BITUMINOUS TACK AND PRIME COATS

PART 1 GENERAL

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

1.1.1 AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO)

a. AASHTO M 81 (1992; R 2008) Cut-Back Asphalt (Rapid-Curing Type)
b. AASHTO T 102 (2009) Spot Test of Asphaltic Materials

1.1.2 ASTM INTERNATIONAL (ASTM)

a. ASTM D 2028 (1997; R 2004) Cutback Asphalt (Rapid-Curing Type)
b. ASTM D 977 (2005) Emulsified Asphalt

1.2 SYSTEM DESCRIPTION

1.2.1 General Requirements
Plant, equipment, machines and tools used in the work are subject to approval and shall be maintained in a satisfactory working condition at all times. Calibrated equipment such as asphalt distributors, scales, batching equipment, spreaders and similar equipment, should have been recalibrated by a calibration laboratory within 12 months prior to commencing work and every 12 months thereafter, by such laboratory from the date of recalibration, during the term of the contract.

1.2.2 Bituminous Distributor
Provide a distributor with pneumatic tires of such size and number that the load produced on the base surface does not exceed 295 kg/25 mm of tire width to prevent rutting, shoving or otherwise damaging the base surface or other layers in the pavement structure. Design and equip the distributor to spray the bituminous material in a uniform coverage at the specified temperature, at readily determined and controlled rates from 0.23 to 9.05 L/square meter, with a pressure range of 172.4 to 517.1 kPa and with an allowable variation from the specified rate of not more than plus or minus 5 percent, and at variable widths. Include with the distributor equipment a separate power unit for the bitumen pump, full-circulation spray bars, tachometer, pressure gauges, volume-measuring devices, adequate heaters for heating of materials to the proper application temperature, a thermometer for reading the temperature of tank contents and a hand hose attachment the distributor. Equip the distributor to circulate and agitate the bituminous material

during the heating process.

1.2.3 Heating Equipment for Storage Tanks
The equipment for heating the bituminous material shall be steam, electric, or hot oil heaters. Provide steam heaters consisting of steam coils and equipment for producing steam, so designed that the steam cannot get into the material. Fix an armored thermometer to the tank with a temperature range from 4.4 to 204.4 degrees C so that the temperature of the bituminous material may be determined at all times.

1.2.4 Power Brooms and Power Blowers
Use power brooms and power blowers suitable for cleaning the surfaces to which the bituminous coat is to be applied.

1.3 QUALITY ASSURANCE Use Local/Regional Materials or products extracted, harvested, or recovered, as well as manufactured, within a 800 km radius from the project site, if available from a minimum of three sources. Tack and prime coat materials may be locally available.

1.4 DELIVERY, STORAGE, AND HANDLING Inspect the materials delivered to the site for contamination and damage. Unload and store the materials with a minimum of handling.

1.5 ENVIRONMENTAL REQUIREMENTS Apply bituminous coat only when the surface to receive the bituminous coat is dry. Apply bituminous coat only when the atmospheric temperature in the shade is 10 degrees C or above and when the temperature has not been below 2 degrees C for the 12 hours prior to application, unless otherwise directed.

PART 2 PRODUCTS

2.1 PRIME COAT Provide asphalt conforming specified in the following subparagraph.

2.1.1 Emulsified Asphalt
Provide emulsified asphalt conforming to ASTM D 977, Type SS-1.

2.2 TACK COAT Provide asphalt conforming to ASTM D 2028 or AASHTO M 81.

2.2.1 Emulsified Asphalt
Provide emulsified asphalt conforming to ASTM D 977, Type SS-1. Dilute the emulsified asphalt with equal parts of water. The base asphalt used to manufacture the emulsion shall show a negative spot when tested in accordance with AASHTO T 102 using standard naphtha.

PART 3 EXECUTION

3.1 PREPARATION OF SURFACE Immediately before applying the bituminous coat, remove all loose material, dirt, clay, or other objectionable material from the surface to be treated by means of a power broom or blower supplemented with hand brooms. The surface shall be dry

and clean at the time of treatment.

3.2 APPLICATION RATE The exact quantities within the range specified, which may be varied to suit field conditions, will be determined by the Contracting Officer.

3.2.1 Tack Coat
Apply bituminous material for the tack coat in quantities of not less than 0.20 L nor more than 0.70 L/square meter of pavement surface.

3.2.2 Prime Coat
Apply bituminous material for the prime coat in quantities of not less than 0.70 L nor more than 1.80 L/square meter of pavement surface.

3.3 APPLICATION TEMPERATURE

3.3.1 Viscosity Relationship
Asphalt application temperature shall provide an application viscosity between 10 and 60 seconds, Saybolt Furol, or between 20 and 120 square mm/sec, kinematic. Furnish the temperature viscosity relation to the Contracting Officer.

3.3.2 Temperature Ranges
The viscosity requirements determine the application temperature to be used. The following is a normal range of application temperatures:

Liquid Asphalts	
MC-70	50-107 degrees C
Paving Grade Asphalts	
Penetration Grades	
200-300	plus 130 degrees C
Viscosity Grades	
AC 5	plus 137 degrees C
Emulsions	
HFMS-1	20-70 degrees C
SS-1	20-70 degrees C
SS-1h	20-70 degrees C

These temperature ranges exceed the flash point of the material and care should be taken in their heating.

3.4 APPLICATION

3.4.1 General
Following preparation and subsequent inspection of the surface, apply the bituminous prime or tack coat with the Bituminous Distributor at the specified rate with uniform distribution over the surface to be treated. Properly treat all areas and spots missed by the distributor with the hand

spray. Until the succeeding layer of pavement is placed, maintain the surface by protecting the surface against damage and by repairing deficient areas at no additional cost to the Government. If required, spread clean dry sand to effectively blot up any excess bituminous material. No smoking, fires, or flames other than those from the heaters that are a part of the equipment are permitted within 8 meters of heating, distributing, and transferring operations of bituminous material other than bituminous emulsions. Prevent all traffic, except for paving equipment used in constructing the surfacing, from using the underlying material, whether primed or not, until the surfacing is completed. The bituminous coat shall conform to all requirements as described herein.

3.4.2 Prime Coat
Apply a prime coat at locations shown on the Drawings. Apply the bituminous material uniformly over the surface to be treated at a pressure range of 172.4 to 517.1 kPa and at the rate of not less than 0.91 L not more than 1.36 L/square m. To obtain uniform application of the prime coat on the surface treated at the junction of previous and subsequent applications, spread building paper on the surface for a sufficient distance back from the ends of each application to start and stop the prime coat on the paper and to ensure that all sprayers will operate at full force on the surface to be treated. Immediately after application remove and destroy the building paper.

3.4.3 Tack Coat
Apply tack coat at the locations shown on the drawings. Apply the tack coat when the surface to be treated is dry. Immediately following the preparation of the surface for treatment, apply the bituminous material by means of the bituminous distributor, within the limits of temperature specified herein and at a rate of not less than 0.23 L nor more than 0.68 L of diluted emulsion per square meter. Apply the bituminous material so that uniform distribution is obtained over the entire surface to be treated. Treat lightly coated areas and spots missed by the distributor with the bituminous material. Following the application of bituminous material, allow the surface to cure without being disturbed for period of time necessary to permit setting of the tack coat. Apply the bituminous tack coat only as far in advance of the placing of the overlying layer as required for that day's operation. Maintain and protect the treated surface from damage until the succeeding course of pavement is placed.

3.5 CURING PERIOD Following application of the bituminous material and prior to application of the succeeding layer of pavement, allow the bituminous coat to cure and to obtain evaporation of any volatiles or moisture. Maintain the coated surface until the succeeding layer of pavement is placed, by protecting the surface against damage and by repairing and recoating deficient areas. Allow the prime coat to cure without being disturbed for a period of at least 48 hours or longer, as may be necessary to attain penetration into the treated course. Furnish and spread enough sand to effectively blot up and cure excess bituminous material.

3.7 TRAFFIC CONTROLS

Keep traffic off surfaces freshly treated with bituminous material. Provide sufficient warning signs and barricades so that traffic will not travel over freshly treated surfaces.

-- End of Section --

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SECTION 32 12 17

HOT MIX BITUMINOUS PAVEMENT

PART 1 GENERAL

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

1.1.1 ASPHALT INSTITUTE (AI)

a. AI MS-02 (6th Edition; 1997) Mix Design Methods for Asphalt

1.1.2 ASTM INTERNATIONAL (ASTM)

a. ASTM C 117 (2004) Standard Test Method for Materials Finer than 75-um (No. 200) Sieve in Mineral Aggregates by Washing
b. ASTM C 127 (2007) Standard Test Method for Density, Relative Density (Specific Gravity), and Absorption of Coarse Aggregate
c. ASTM C 128 (2007a) Standard Test Method for Density, Relative Density (Specific Gravity), and Absorption of Fine Aggregate
d. ASTM C 131 (2006) Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
e. ASTM C 136 (2006) Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates
f. ASTM C 188 (1995; R 2003) Standard Test Method for Density of Hydraulic Cement
g. ASTM C 29/C 29M (2007) Standard Test Method for Bulk Density ("Unit Weight") and Voids in Aggregate
h. ASTM C 88 (2005) Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
i. ASTM D 1073 (2007) Fine Aggregate for Bituminous Paving Mixtures
j. ASTM D 1188 (2007) Bulk Specific Gravity and Density of Compacted Bituminous Mixtures Using Paraffin-Coated Specimens
k. ASTM D 140/D 140M (2009) Sampling Bituminous Materials
l. ASTM D 1559 (1989) Resistance to Plastic Flow of Bituminous Mixtures Using Marshall Apparatus
m. ASTM D 2041 (2003a) Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures
n. ASTM D 2172 (2005) Quantitative Extraction of Bitumen from Bituminous Paving Mixtures
o. ASTM D 242/D 242M (2009) Mineral Filler for Bituminous Paving Mixtures
p. ASTM D 2726 (2009) Bulk Specific Gravity and Density of Non-Absorptive Compacted Bituminous Mixtures

q. ASTM D 3381 (2009) Viscosity-Graded Asphalt Cement for Use in Pavement Construction
r. ASTM D 4867/D 4867M (2009) Effect of Moisture on Asphalt Concrete Paving Mixtures
s. ASTM D 546 (2005) Sieve Analysis of Mineral Filler for Bituminous Paving Mixtures
t. ASTM D 692/D 692M (2009) Coarse Aggregate for Bituminous Paving Mixtures
u. ASTM D 70 (2009e1) Specific Gravity and Density of Semi-Solid Bituminous Materials (Pycnometer Method)
v. ASTM D 75/D 75M (2009) Standard Practice for Sampling Aggregates
w. ASTM D 854 (2006e1) Specific Gravity of Soil Solids by Water Pycnometer
x. ASTM D 979 (2001; R 2006e1) Sampling Bituminous Paving Mixtures
y. ASTM D 995 (1995b; R 2002) Mixing Plants for Hot-Mixed, Hot-Laid Bituminous Paving Mixtures

1.2 DELIVERY, STORAGE, AND HANDLING Inspect materials delivered to the site for damage and store with a minimum of handling. Store aggregates in such a manner as to prevent segregation, contamination, or intermixing of the different aggregate sizes.

1.3 ENVIRONMENTAL CONDITIONS Place bituminous mixture only during dry weather and on dry surfaces. Place courses only when the surface temperature of the underlying course is greater than 7 degrees C for course thicknesses greater than 25 mm and 13 degrees C for course thicknesses 25 mm or less.

PART 2 PRODUCTS-Not Applicable

PART 3 EXECUTION

3.1 PREPARATION

3.1.1 Preparation of Asphalt Binder Material
The asphalt cement material shall be heated avoiding local overheating and providing a continuous supply of the asphalt material to the mixer at a uniform temperature. The temperature of unmodified asphalts shall be no more than 160 degrees C 325 degrees F when added to the aggregates. Modified asphalts shall be no more than 174 degrees C 350 degrees F when added to the aggregate.

3.1.2 Preparation of Mineral Aggregates
Store different size aggregate in separate stockpiles so that different sizes will not mix. Stockpile different-sized aggregates in uniform layers by use of a clam shell or other approved method so as to prevent segregation. The use of bulldozers in stockpiling of aggregate or in feeding aggregate to the dryer is prohibited. Feed aggregates into the cold elevator by means of separate mechanical feeders so that aggregates are graded within requirements of the job-mix formulas and tolerances specified. Regulate rates of feed of the aggregates so that moisture content and temperature of aggregates are within tolerances specified herein. Dry and heat aggregates to

the temperature necessary to achieve the mixture determined by the job mix formula within the job tolerance specified. Provide adequate dry storage for mineral filler.

3.1.3 Preparation of Bituminous Mixture
Accurately weigh aggregates and dry mineral filler and convey into the mixer in the proportionate amounts of each aggregate size required to meet the job-mix formula. In batch mixing, after aggregates and mineral filler have been introduced into the mixer and mixed for not less than 15 seconds, add asphalt by spraying or other approved methods and continue mixing for a period of not less than 20 seconds, or as long as required to obtain a homogeneous mixture. The time required to add or spray asphalt into the mixer will not be added to the total wet-mixing time provided the operation does not exceed 10 seconds and a homogeneous mixture is obtained. When a continuous mixer is employed, mixing time shall be more than 35 seconds to obtain a homogeneous mixture. Additional mixing time, when required, will be as directed by the Contracting Officer. When mixture is prepared in a twin-pugmill mixer, volume of the aggregates, mineral filler, and asphalt shall not extend above tips of mixer blades when blades are in a vertical position. Overheated and carbonized mixtures, or mixtures that foam or show indication of free moisture, will be rejected. When free moisture is detected in batch or continuous mix plant produced mixtures, waste the mix and withdraw the aggregates in the hot bins immediately and return to the respective stockpiles; for drum-dryer mixer plants, waste the mix, including that in surge or storage bins that is affected by free moisture.

3.1.4 Transportation of Bituminous Mixtures
Transport bituminous material from the mixing plant to the paving site in trucks having tight, clean, smooth beds that have been coated with a minimum amount of concentrated solution of hydrated lime and water or other approved coating to prevent adhesion of the mixture to the truck. Petroleum products will not be permitted for coating truck. If air temperature is less than 16 degrees C or if haul time is greater than 30 minutes, cover each load with canvas or other approved material of ample size to protect the mixture from the loss of heat. Make deliveries so that the spreading and rolling of all the mixture prepared for one day's run can be completed during daylight, unless adequate approved artificial lighting is provided. Deliver mixture to area to be paved so that the temperature at the time of dumping into the spreader is within the range specified herein. Reject loads that are below minimum temperature, that have crusts of cold unworkable material, or that have been wet excessively by rain. Hauling over freshly laid material is prohibited.

3.1.5 Surface Preparation of Underlying Course
Prior to the laying of the asphalt concrete, clean underlying course of foreign or objectionable matter with power blowers or power brooms, supplemented by hand brooms and other cleaning methods where necessary. During the placement of multiple lifts of bituminous concrete, each succeeding lift of bituminous concrete shall have its underlying lift cleaned and provided with a bituminous tack coat if the time period between the placement of each lift of bituminous concrete exceeds 14 days, or the underlying bituminous concrete has become dirty.

3.1.6 Spraying of Contact Surfaces
Spray contact surfaces of previously constructed pavement with a thin coat of bituminous materials to act as an anti-stripping agent, conforming to Section 32 12 10 TACK AND PRIME COATS. Paint contact surfaces of structures with a thin coat of emulsion or other approved bituminous material prior to placing the bituminous mixture. Tack coat the previously placed primed coats on base courses when surface has become excessively dirty and cannot be cleaned or when primed surface has cured to the extent that it has lost all bonding effect.

3.2 PLACEMENT

3.2.1 Machine Spreading
The range of temperatures of the mixtures at the time of spreading shall be between 121 degrees C and 149 degrees C. Bituminous concrete having temperatures less than minimum spreading temperature when dumped into the spreader will be rejected. Adjust spreader and regulate speed so that the surface of the course is smooth and continuous without tears and pulling, and of such depth that, when compacted, the surface conforms with the cross section, grade, and contour indicated. Unless otherwise directed, begin the placing along the centerline of areas to be paved on a crowned section or on the high side of areas with a one-way slope. Place mixture in consecutive adjacent strips having a minimum width of 3 m, except where the edge lanes require strips less than 3 m to complete the area. Construct longitudinal joints and edges to true line markings. Establish lines parallel to the centerline of the area to be paved, and place string lines coinciding with the established lines for the spreading machine to follow. Provide the number and location of the lines needed to accomplish proper grade control. When specified grade and smoothness requirements can be met for initial lane construction by use of an approved long ski-type device of not less than 9 m in length and for subsequent lane construction by use of a short ski or shoe, in-place string lines for grade control may be omitted. Place mixture as nearly continuous as possible and adjust the speed of placing as needed to permit proper rolling.

3.2.2 Shoveling, Raking, and Tamping After Machine-Spreading
Shovelers and rakers shall follow the spreading machine. Add or remove hot mixture and rake the mixture as required to obtain a course that when completed will conform to requirements specified herein. Broadcasting or fanning of mixture over areas being compacted is prohibited. When segregation occurs in the mixture during placing, suspend spreading operation until the cause is determined and corrected. Correct irregularities in alignment left by the spreader by trimming directly behind the machine. Immediately after trimming, compact edges of the course by tamping laterally with a metal lute or by other approved methods. Distortion of the course during tamping is prohibited.

3.2.3 Hand-Spreading in Lieu of Machine-Spreading
In areas where the use of machine spreading is impractical, spread mixture by hand. The range of temperatures of the mixtures when dumped onto the area to be paved shall be between 121 and 149 degrees C. Mixtures having temperatures less than minimum spreading temperature when dumped onto the area to be paved will be rejected. Spread hot mixture with rakes in a uniformly loose layer of a thickness that, when compacted, will conform to the required grade, thickness,

and smoothness. During hand spreading, place each shovelful of mixture by turning the shovel over in a manner that will prevent segregation. Do not place mixture by throwing or broadcasting from a shovel. Do not dump loads any faster than can be properly handled by the shovelers and rakers.

3.3 COMPACTION OF MIXTURE Compact mixture by rolling. Begin rolling as soon as placement of mixture will bear rollers. Delays in rolling freshly spread mixture shall not be permitted. Start rolling longitudinally at the extreme sides of the lanes and proceed toward center of pavement, or toward high side of pavement with a one-way slope. Operate rollers so that each trip overlaps the previous adjacent strip by at least 300 mm. Alternate trips of the roller shall be of slightly different lengths. Conduct tests for conformity with the specified crown, grade and smoothness immediately after initial rolling. Before continuing rolling, correct variations by removing or adding materials as necessary. If required, subject course to diagonal rolling with the steel wheeled roller crossing the lines of the previous rolling while mixture is hot and in a compactable condition. Speed of the rollers shall be slow enough to avoid displacement of hot mixture. Correct displacement of mixture immediately by use of rakes and fresh mixture, or remove and replace mixture as directed. Continue rolling until roller marks are eliminated and course has a density of at least 95 percent but not more than 100 percent of that attained in a laboratory specimen of the same mixture prepared in accordance with ASTM D 1559. During rolling, moisten wheels of the rollers enough to prevent adhesion of mixture to wheels, but excessive water is prohibited. Operation of rollers shall be by competent and experienced operators. Provide sufficient rollers for each spreading machine in operation on the job and to handle plant output. In places not accessible to the rollers, compact mixture thoroughly with hot hand tampers. Skin patching of an area after compaction is prohibited. Remove mixture that becomes mixed with foreign materials or is defective and replace with fresh mixture compacted to the density specified herein. Roller shall pass over unprotected edge of the course only when laying of course is to be discontinued for such length of time as to permit mixture to become cold.

3.4 JOINTS Joints shall present the same texture and smoothness as other portions of the course, except permissible density at the joint may be up to 2 percent less than the specified course density. Carefully make joints between old and new pavement or within new pavements in a manner to ensure a thorough and continuous bond between old and new sections of the course. Vertical contact surfaces of previously constructed sections that are coated with dust, sand, or other objectionable material shall be painted with a thin uniform coat of emulsion or other approved bituminous material just before placing fresh mixture.

3.4.1 Transverse
Roller shall pass over unprotected end of freshly laid mixture only when laying of course is to be discontinued. Except when an approved bulkhead is used, cut back the edge of previously laid course to expose an even, vertical surface for the full thickness of the course. When required, rake fresh mixture against joints, thoroughly tamp with hot tampers, smooth with hot smoothers, and roll. Transverse joints in adjacent lanes shall be offset a minimum of 600 mm.

3.4.2 Longitudinal Joints
Space 150 mm apart. Do not allow joints to coincide with joints of existing pavement or previously placed courses. Spreader screed shall overlap previously placed lanes 50 to 75 mm and be of such height to permit compaction to produce a smooth dense joint. With a lute, push back mixture placed on the surface of previous lanes to the joint edge. Do not scatter mix. Remove and waste excess material. When edges of longitudinal joints are irregular, honeycombed, or poorly compacted, cut back unsatisfactory sections of joint and expose an even vertical surface for the full thickness of the course. When required, rake fresh mixture against joint, thoroughly tamp with hot tampers, smooth with hot smoothers, and roll while hot.

3.5 PROTECTION Do not permit vehicular traffic, including heavy equipment, on pavement until surface temperature has cooled to at least 50 degrees C. Measure surface temperature by approved surface thermometers or other satisfactory methods.

-- End of Section –

SECTION 32 17 23.00 20

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 the basic designation only.

1.1.1 U.S. GENERAL SERVICES ADMINISTRATION (GSA)

a. FS TT-P-1952 (Rev D) Paints for Roads and Streets
b. FS TT-B-1325 (Rev C) Beads (Glass Spheres) Retro-Reflective (Metric)

1.2 DELIVERY AND STORAGE Deliver paints, paint materials and thermoplastic compound materials in original sealed containers that plainly show the designated name, specification number, batch number, color, date of manufacture, manufacturer's directions, and name of manufacturer. Provide storage facilities only in areas approved by the Contracting Officer or authorized representative, for maintaining materials at temperatures recommended by the manufacturer.

1.3 WEATHER LIMITATIONS Apply paint to clean, dry surfaces, and unless otherwise approved, only when the air and pavement surface temperature is at least 2.7 degrees C 5 degrees above the dew point and the air and pavement temperatures are above 5 degrees C 40 degrees F and less than 35 degrees C 95 degrees F for oil-based materials; above 10 degrees C 50 degrees F and less than 43 degrees C 110 degrees F for water-based materials. Maintain paint temperature within these same limits.

PART 2 PRODUCTS

2.1 MATERIALS

2.1.1 Paints for Roads and Streets-FS TT-P-1952, color white.

2.1.2 Reflective Media for Roads and Streets-FS TT-B-1325, Type I, Gradation A.

PART 3 EXECUTION

3.1 SURFACE PREPARATION Allow new pavement surfaces to cure for a period of not less than 30 days before application of marking materials. Thoroughly clean surfaces to be marked before application of the paint. Remove dust, dirt, and other granular surface deposits by sweeping, blowing with compressed air, rinsing with water, or a combination of these methods as required. Scrub affected areas, where oil or grease is present on old pavements to be marked, with several applications of trisodium phosphate solution or other approved detergent or

degreaser and rinse thoroughly after each application. After cleaning oil-soaked areas, seal with shellac or primer recommended by the manufacturer to prevent bleeding through the new paint. Do not commence painting in any area until pavement surfaces are dry and clean.

3.2 APPLICATION

3.2.1 Testing for Moisture
Apply pavement markings to dry pavement only. The Contractor shall test the pavement surface for moisture before beginning work after each period of rainfall, fog, high humidity, or cleaning, or when the ambient temperature has fallen below the dew point. Do not commence marking until the pavement is sufficiently dry and the pavement condition has been approved by the CO or authorized representative. Employ the "plastic wrap method" to test the pavement for moisture as follows: Cover the pavement with a 300 mm by 300 mm (12 inch by 12 inch) section of clear plastic wrap and seal the edges with tape. After 15 minutes, examine the plastic wrap for any visible moisture accumulation inside the plastic. Do not begin marking operations until the test can be performed with no visible moisture accumulation inside the plastic wrap.

3.2.2 Painting
Apply paint pneumatically with approved equipment at rate of coverage specified herein. Provide guidelines and templates as necessary to control paint application. Take special precautions in marking numbers, letters, and symbols. Manually paint numbers, letters, and symbols. Sharply outline all edges of markings. 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. Discontinue painting operations if there is a deficiency in drying of the markings until cause of the slow drying is determined and corrected.

3.2.3 Reflective Media
Application of reflective media shall immediately follow the application of paint. Accomplish drop-on application of the glass spheres to ensure even distribution at the specified rate of coverage. Should there be malfunction of either paint applicator or reflective media dispenser, discontinue operations until deficiency is corrected.

3.3 TRAFFIC CONTROL AND PROTECTION Place warning signs near the beginning of the work site and well ahead of the work site for alerting approaching traffic from both directions. Place small markers along newly painted lines to control traffic and prevent damage to newly painted surfaces. Mark painting equipment with large warning signs indicating slow-moving painting equipment in operation. Do not use foil-backed material for temporary pavement marking because of its potential to conduct electricity during accidents involving downed power lines.

3.4 QUALITY ASSURANCE Demonstrate success of bond of reflective media, new paint marking and the pavement surface, vacuum cured surface of new marking after a seven (7) day dry time.

3.4.1 Reflective Media and Coating Bond Verification Within seven (7) days after pavement marking application, use industrial vacuum to sweep new markings. Visually inspect the pavement markings and the material captured by the vacuum. Verify that no significant loss of reflective media has occurred to the pavement marking due to the vacuum cleaning.

-- End of Section --

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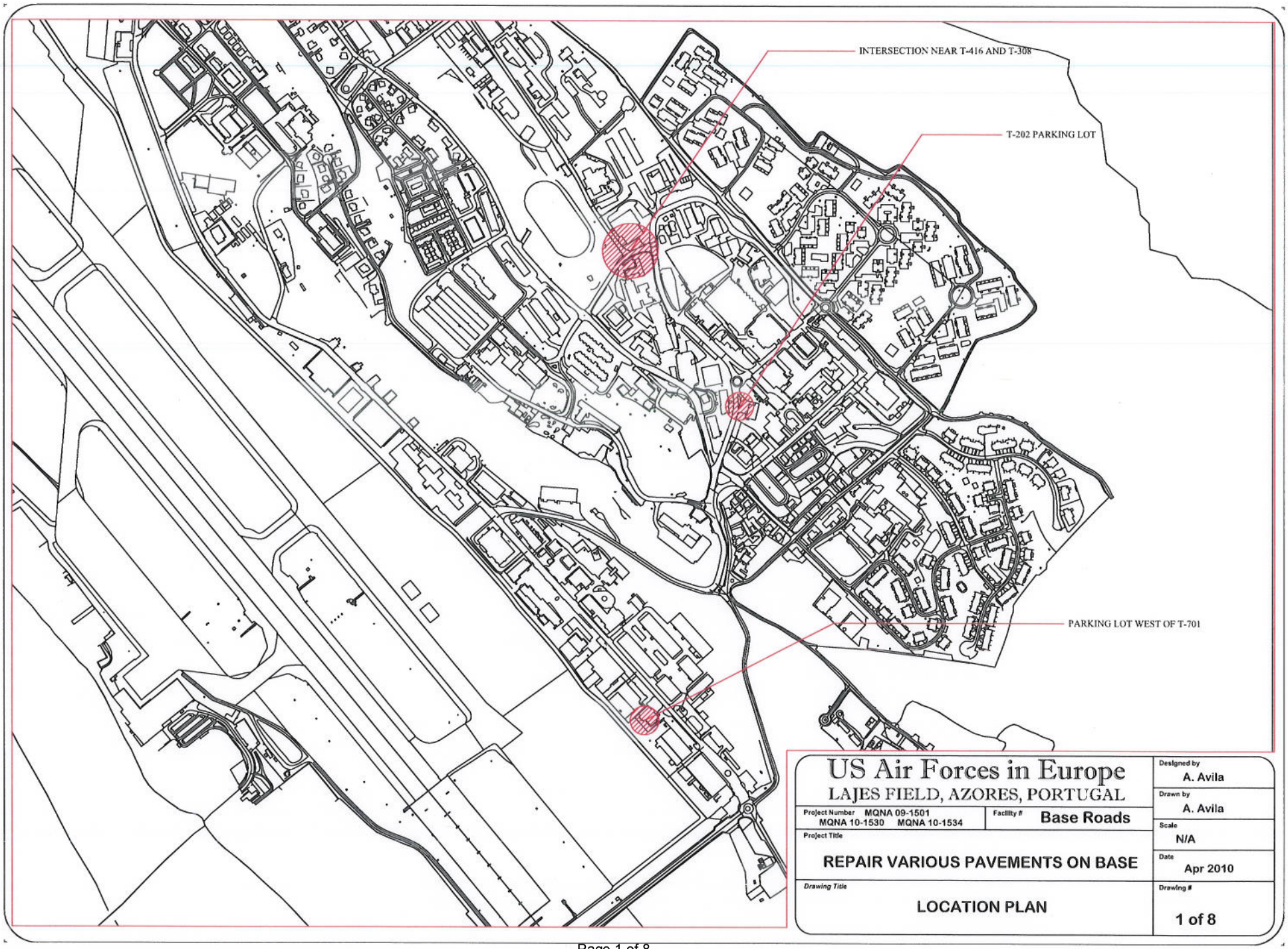
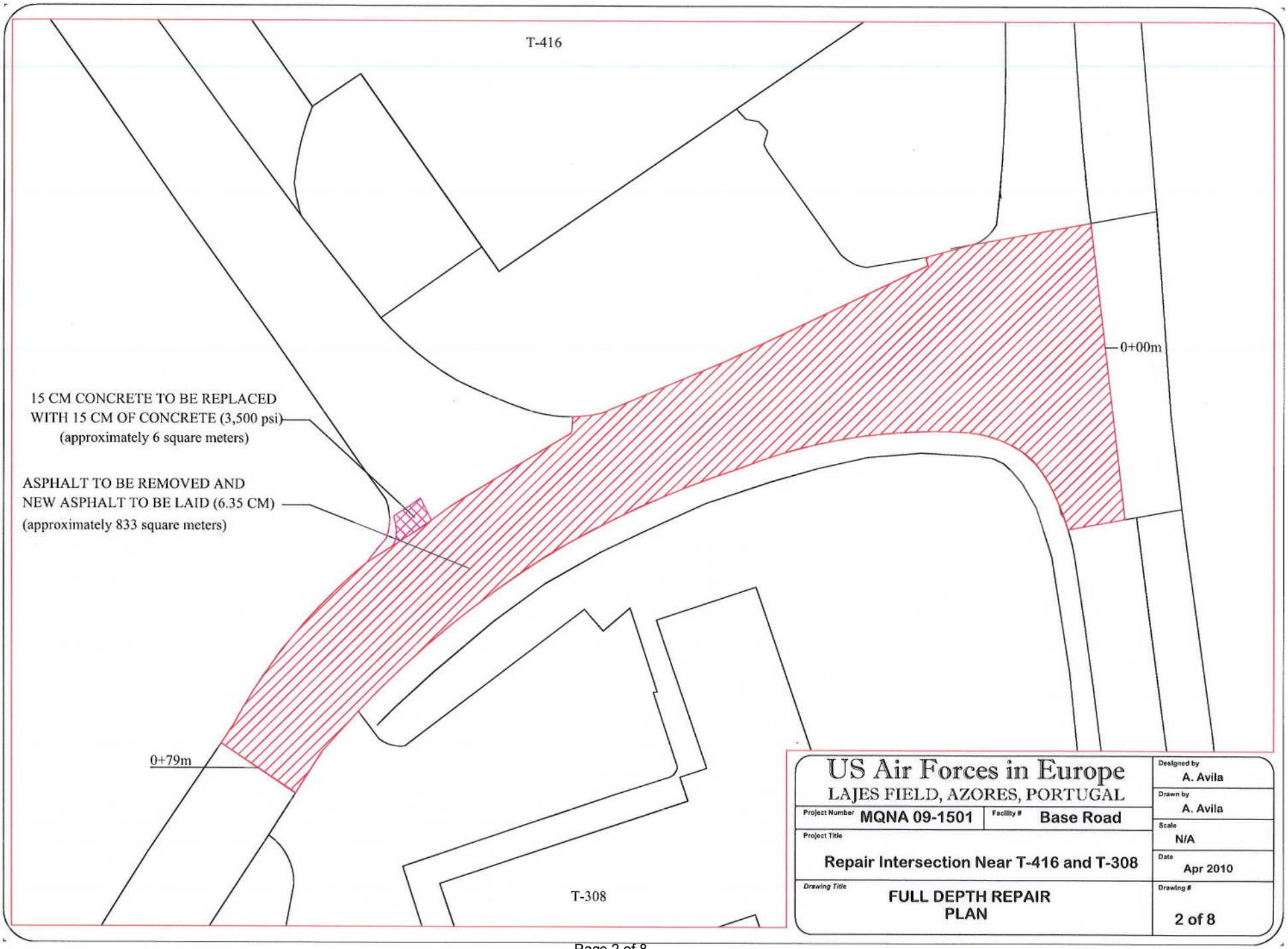
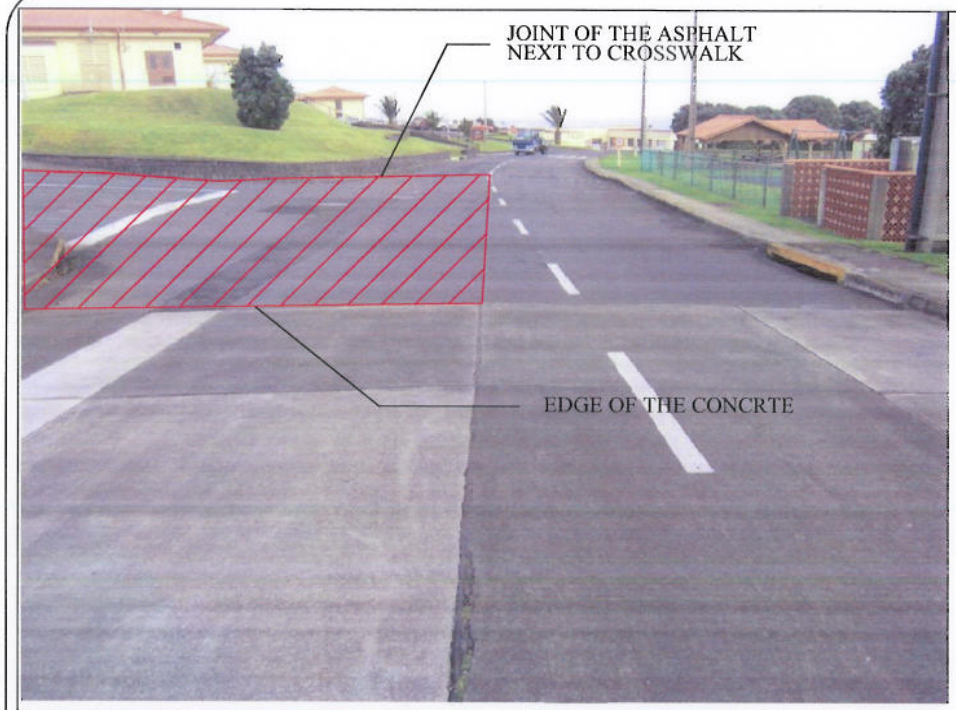
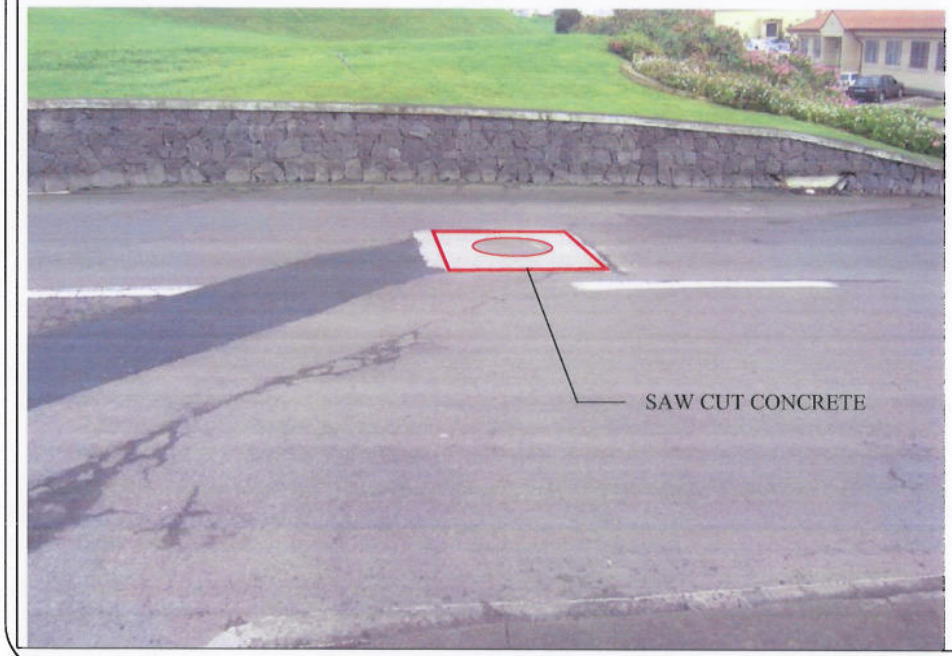


US Air Forces in Europe
LAJES FIELD, AZORES, PORTUGAL

Project Number MQNA 09-1501 MQNA 10-1530 MQNA 10-1534	Facility # Base Roads	Designed by A. Avila
		Drawn by A. Avila
Project Title REPAIR VARIOUS PAVEMENTS ON BASE		Scale N/A
		Date Apr 2010
Drawing Title LOCATION PLAN		Drawing # 1 of 8

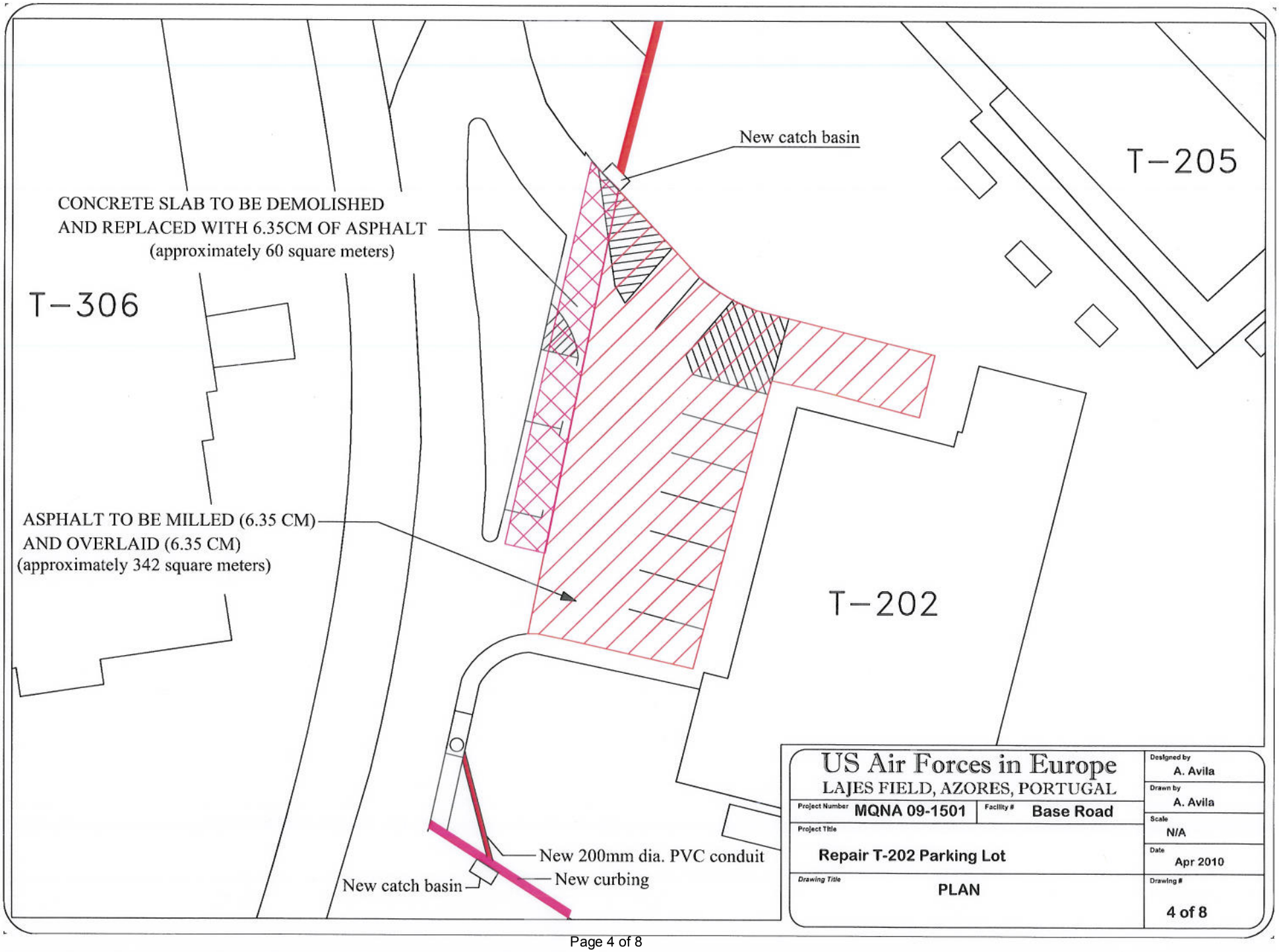

T-416
0+00m
15 CM CONCRETE TO BE REPLACED
WITH 15 CM OF CONCRETE (3,500 psi)
(approximately 6 square meters)
ASPHALT TO BE REMOVED AND
NEW ASPHALT TO BE LAID (6.35 CM)
(approximately 833 square meters)
0+79m
T-308
US Air Forces in Europe
LAJES FIELD, AZORES, PORTUGAL
Project Number MQNA 09-1501
Facility # Base Road
Project Title
Repair Intersection Near T-416 and T-308
Drawing Title
FULL DEPTH REPAIR
PLAN
Designed by A. Avila
Drawn by A. Avila
Scale N/A
Date Apr 2010
Drawing # 2 of 8

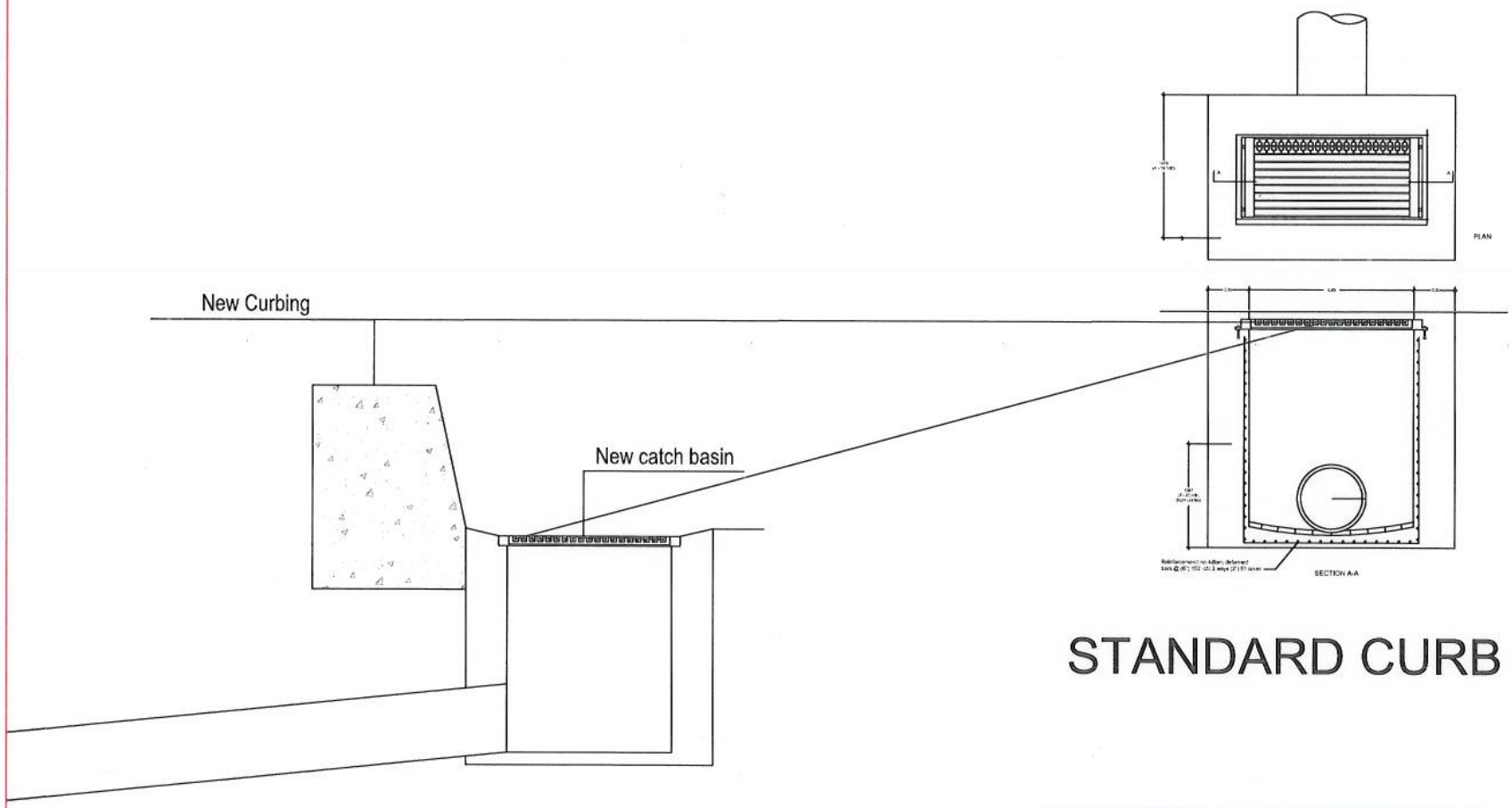




CONCRETE TO BE REPLACED WITH 1 LAYER OF 3.81cm AND 1 LAYER OF 6.35 cm OF ASPHALT.
(approximately 6 square meters)

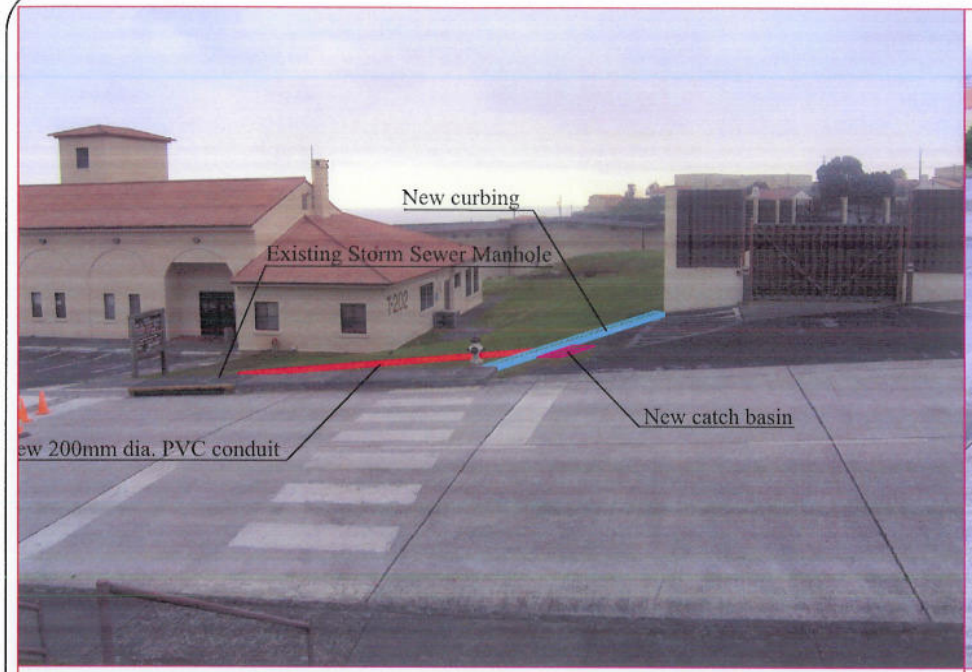
US Air Forces in Europe LAJES FIELD, AZORES, PORTUGAL	Designed by: A. Avila
Project Number: MQNA 09-1501 / Facility #: Base Road	Drawn by: A. Avila
Project Title: Repair Intersection Near T-416 and T-308	Scale: N/A
Drawing Title: PICTURES	Date: Apr 2010
	Drawing #: 3 of 8

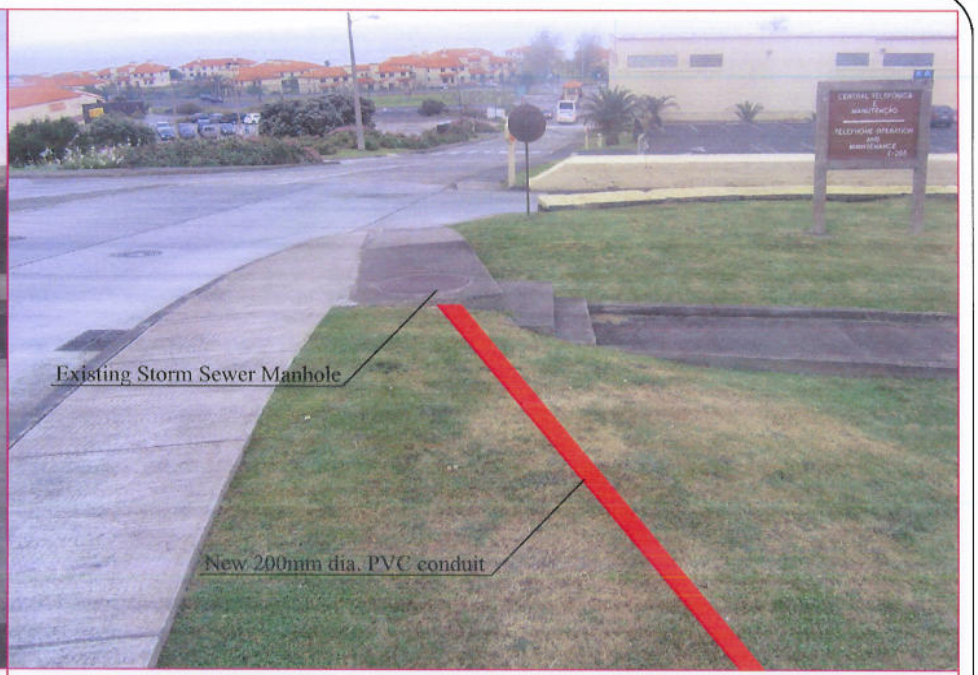

New catch basin
T–205
CONCRETE SLAB TO BE DEMOLISHED
AND REPLACED WITH 6.35CM OF ASPHALT
(approximately 60 square meters)
T–306
ASPHALT TO BE MILLED (6.35 CM)
AND OVERLAID (6.35 CM)
(approximately 342 square meters)
T–202
New 200mm dia. PVC conduit
New curbing
New catch basin
US Air Forces in Europe
LAJES FIELD, AZORES, PORTUGAL
Project Number MQNA 09-1501
Facility # Base Road
Project Title
Repair T-202 Parking Lot
Drawing Title
PLAN
Designed by A. Avila
Drawn by A. Avila
Scale N/A
Date Apr 2010
Drawing # 4 of 8



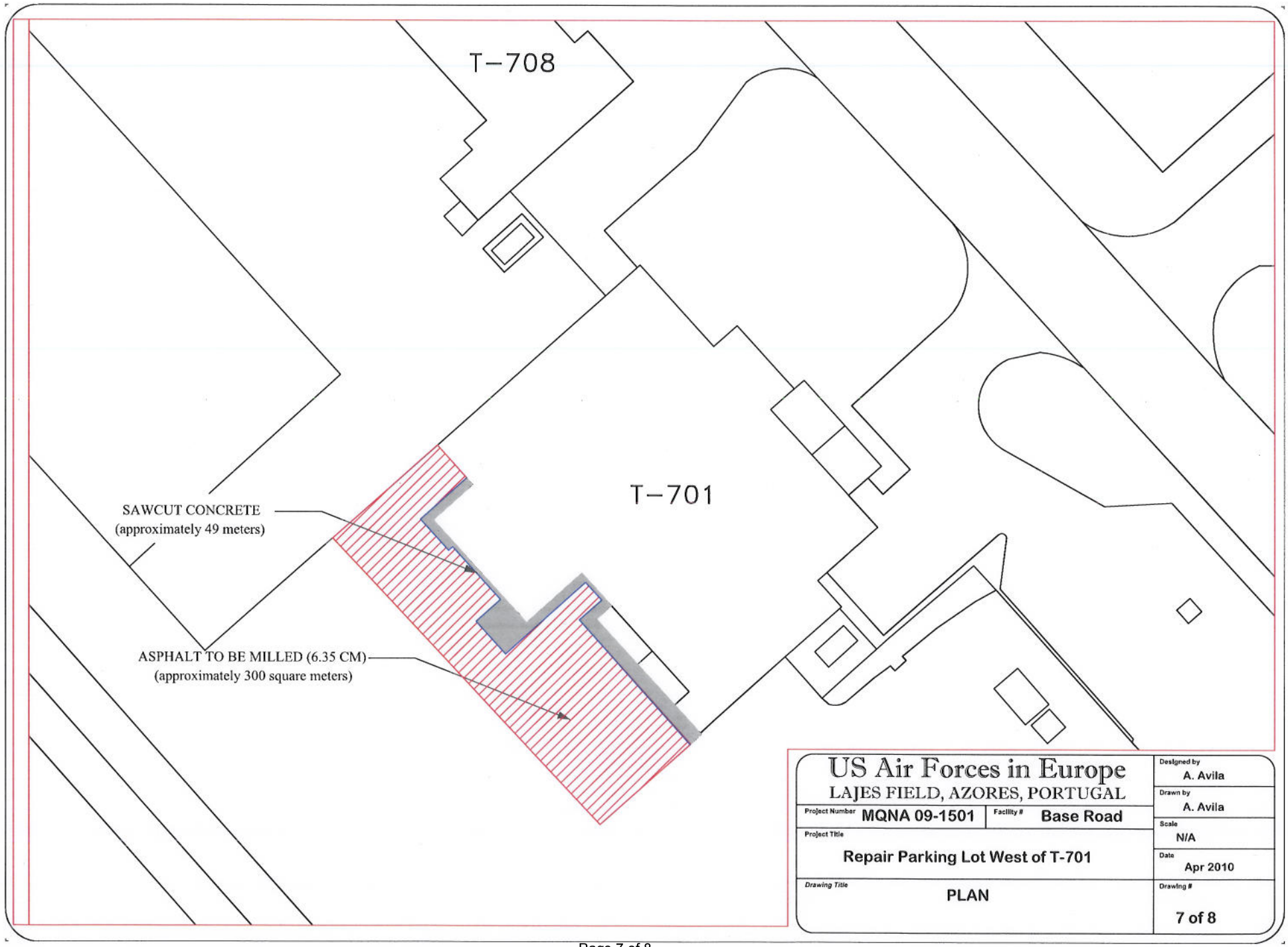
STANDARD CURB INLET

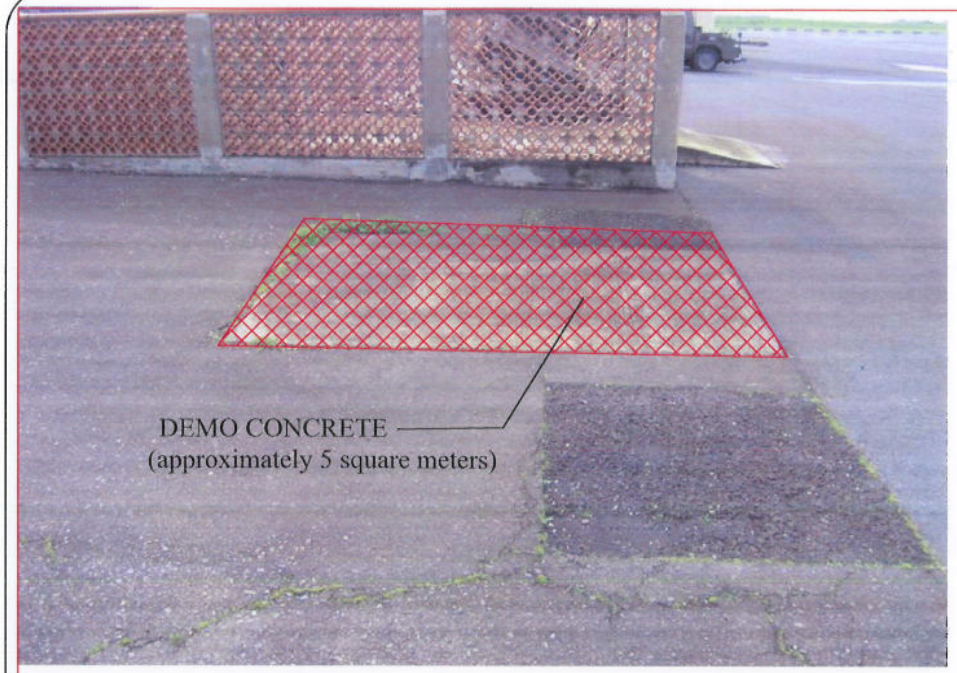
US Air Forces in Europe LAJES FIELD, AZORES, PORTUGAL	Designed by: A. Avila
Project Number: MQNA 09-1501 / Facility #: Base Road	Drawn by: A. Avila
Project Title: Repair T-202 Parking Lot	Scale: N/A
	Date: Apr 2010
Drawing Title: DETAILS	Drawing #: 5 of 8

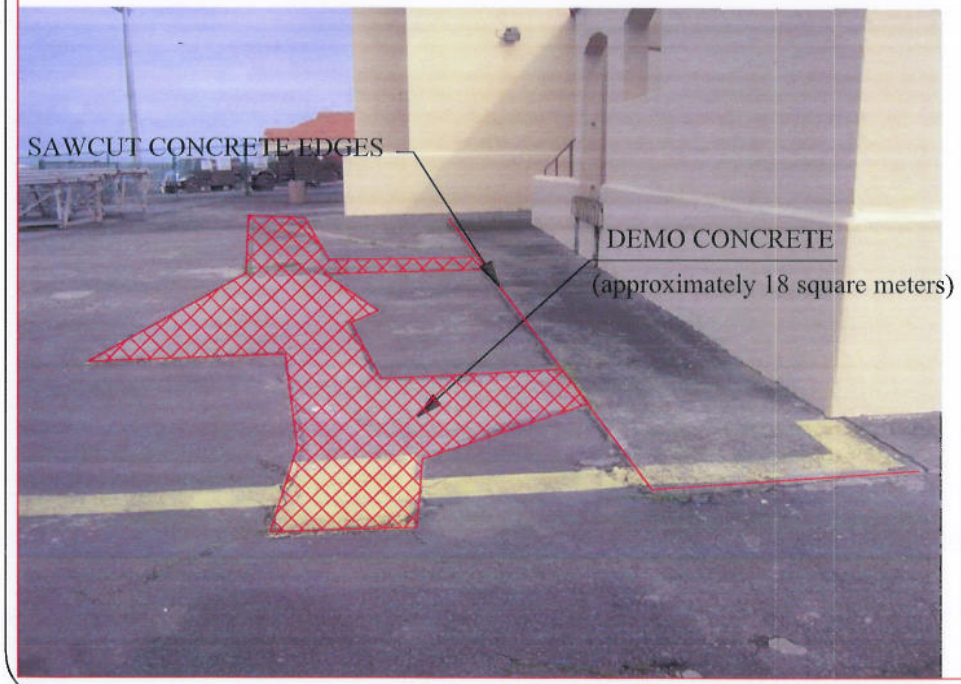


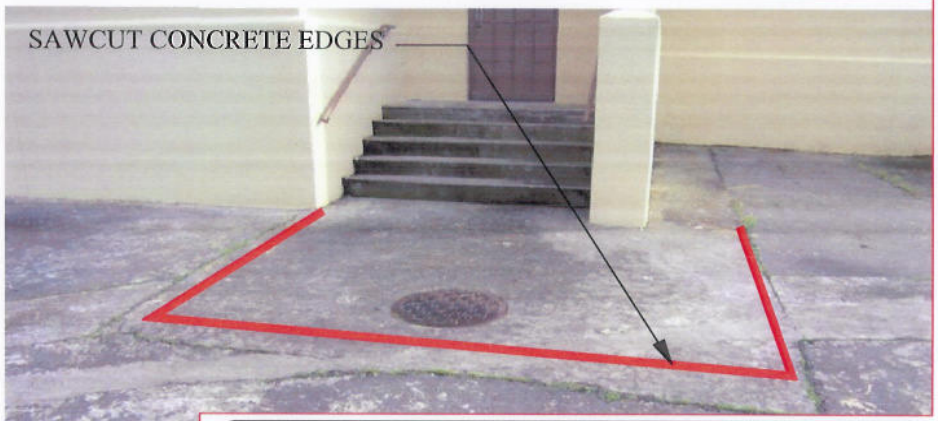


US Air Forces in Europe LAJES FIELD, AZORES, PORTUGAL	Designed by: A. Avila
Project Number: MQNA 09-1501 / Facility #: Base Road	Drawn by: A. Avila
Project Title: Repair T-202 Parking Lot	Scale: N/A
Drawing Title: PICTURES	Date: Apr 2010
	Drawing #: 6 of 8


T-708
T-701
SAWCUT CONCRETE
(approximately 49 meters)
ASPHALT TO BE MILLED (6.35 CM)
(approximately 300 square meters)
US Air Forces in Europe
LAJES FIELD, AZORES, PORTUGAL
Project Number MQNA 09-1501
Facility # Base Road
Project Title
Repair Parking Lot West of T-701
Drawing Title
PLAN
Designed by
A. Avila
Drawn by
A. Avila
Scale
N/A
Date
Apr 2010
Drawing #
7 of 8







US Air Forces in Europe
LAJES FIELD, AZORES, PORTUGAL

Project Number	MQNA 09-1501	Facility #	Base Road
Project Title	Repair Parking Lot West of T-701		
Drawing Title	PICTURES		

Designed by	A. Avila
Drawn by	A. Avila
Scale	N/A
Date	Apr 2010
Drawing #	8 of 8