

CAMP PENDLETON REQUIREMENTS

REVISION

1 DECEMBER, 2010

NOT NEGOTIABLE FOR CONTRACTORS



R A Lim

R.A.LIM, CDR, CEC, USN
PUBLIC WORKS OFFICER
MCB CAMP PENDLETON

1/3/2011

DATE SIGNED

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* LIGHT BLUE FONT INDICATES REVISION TO PREVIOUS EDITIONS OF CAMP PENDLETON REQUIREMENTS.

CAMP PENDLETON REQUIREMENTS

(12-1-2010)

THE FOLLOWING CATEGORIES ARE BASED ON CSI 33 DIVISION SPECIFICATION ORGANIZATIONS. THEY CONTAIN DESIGN AND SPECIFICATION ISSUES THAT SHOULD BE ADDRESSED DURING THE PREPARATION OF CONSTRUCTION DOCUMENTS OR RFP'S FOR WORK AT MCB CAMP PENDLETON.

010000 LOCATION OF UNDERGROUND UTILITIES

SUMMARY OF WORK should be considered to cover such items such as location of underground utilities. Add Utility Coordination Report to Submittal paragraph. It should be annotated "G" for Government review.

1. Location of Underground Facilities/Utilities

Scan the construction site with electromagnetic or sonic equipment, and mark the surface of the ground where existing underground utilities are discovered. Verify the elevations of existing piping, utilities, and any type of underground obstruction not indicated or specified to be removed but indicated [or discovered during scanning] in locations to be traversed by piping, ducts, and other work to be installed. Verify elevations before installing new work closer than nearest manhole or other structure at which an adjustment in grade can be made.

2. Coordination after contract award and prior to commencement of any clearing and grubbing, trenching, boring, earthwork, pile driving, or other operation that may damage underground utilities, the Contractor shall provide his own utility locator services. The Contractor shall review all available As-built Base Facility Drawing(s) for the area under construction. These drawings are located at the Facility Maintenance Office (Building 2296); telephone number (760) 725-3638. Request to review these drawings must be submitted to FMO, with a copy furnished to the Contracting Officer, at least fifteen working days in advance of the date when the Contractor desires to review these drawings. The Contractor shall coordinate the utility locating service with other applicable activities and agencies including but not limited to Camp Pendleton Base Communications (Building 2459), telephone number (760) 725-3101 and DIG ALERT at telephone number 1 (800) 422-4133.

3. Utility Location Coordination Report

When utility location is furnished, the Contractor shall submit a report outlining the activities and agencies contacted. The DIG ALERT inquiry identification shall be provided in the report. No activity that could damage the underground utilities may begin until the Contracting Officer approves the coordination report.

BROKEN UTILITIES

1. Contractors shall be required to submit an Emergency Utility Repair Plan prior to being allowed to perform any excavation. Emergency shall be defined as the interruption of any and/or damage of any utility service. Including but not limited to the spill, or potential spill of any fuel oil, gas, potable water, sewage effluent, raw sewage, or storm water outside of system facilities.

2. The Emergency Utility Repair Plan shall include the following elements:

- a. Equipment list of available pumps **with sizes**, excavation equipment, tools, and repair materials that are available onsite.
- b. Labor force that will be available as a minimum to respond to emergencies.
- c. Site-specific plan for locating, potholing, protecting, avoiding, and repairing any damage caused to existing, or newly installed utilities.
- d. Include the same level of detail for any subcontractors that will be performing work involving

- excavation.
- e. Include a description of any planned effort that would involve bringing in subcontractor personnel to respond to emergencies.
 - f. The Plan shall be subject to approval by the Contracting Officer.
3. The Contractor shall demonstrate in his Emergency Utility Repair Plan that they are capable of responding to utility interruptions that could be caused by their construction operations or impacts from them. Immediately upon discovery of the situation, the Contractor shall react in a way that will minimize utility interruptions, releases, spills, impacts to utility customers, and potential for fines or notices of violations. In no case will repairs be left to be resolved the next day without the approval of the Contracting Officer.
4. The Contractor's Emergency Utility Repair Plan shall address the above items for each utility potentially impacted by construction, crossed by excavation, or known to be in the area but possessing properties that cause difficulties in identification of the exact location.
5. In the event that a utility is broken, all repairs will be the responsibility of the Contractor. The Contractor shall repair any damage to those facilities, including those that are the property of a third party, resulting from failure to comply with the requirements of this contract or failure to exercise reasonable care in performing the work. If the Contractor fails or refuses to repair the damage promptly, the Contracting Officer may have the necessary work performed and charge the cost to the Contractor.

011400 BUSINESS PASS AND RAPIDGATE (PROCESS FOR OBTAINING A BUSINESS PASS AND RAPIDGATE)

BUSINESS PASS :

Effective March 1, 2010, Camp Pendleton Base Regulations provide:
Business passes can be issued for up to 90 days. It is renewable for one additional 90-day period (total of two 90-day periods or 6 months) whereupon the Business/Vendor must either apply for RAPIDGate, the long term length access token, or be denied access.
Basically, individuals will only be allowed two passes before he/she is required to enroll in the RAPIDGate program.

You must have a base sponsor (i.e., MCCS) who is willing to provide the contractor with a sponsor letter. A sponsor is a person assigned to the Base (Military Command, member or civilian) who is granting permission for you to perform services on the Base. This letter must contain the contractor's name, address, phone number, contract number, contract dates. If a contract number is not applicable, explain briefly in layman's terms the nature of the contractor's business on Base, location on Base, effective dates and work schedule. The letter must also provide a company Point of Contact (POC) address and telephone number, as well as the sponsor's POC and telephone and/or mobile phone number. The letter must be signed and dated by the Base sponsor.

The sponsorship letter must indicate the employees being approved for Business Passes. If the sponsorship letter does not list the individual employees' names, a letter from the company listing the employees' names will suffice. This letter must accompany the sponsorship letter.

The contractor brings his/her sponsorship letter to **Bldg. 41501T adjacent to the Las Pulgas gate** and requests an application for a Business Pass. Upon completion of the Business Pass, a background check is conducted, which takes approximately 3-4 days. In the interim, contractor is issued a temporary pass to enter the Base. Upon completion of the background check, a

Business Pass is then supplied to the contractor. If anything questionable comes up during the process, there is an opportunity to apply for a waiver, on a case by case basis.

The only gates a contractor with a Business Pass is allowed to enter are San Luis Rey (back gate), San Onofre, and Las Pulgas. There is no charge at this time for a Business Pass.

EID-RAPIDGate:

RAPIDGate is a program the Base has contracted with to provide a system in which to save time and money to contractors, while allowing easy access to the Base. A company would contact RAPIDGate at (1-877-RAPIDGate) and enroll their company. Once enrolled, the company receives a password. The company then provides its employees with the password and each employee it designates would be required to enroll in RAPIDGate – individually.

Please contact the Base Access Control Branch Contract Security Section for the current annual fees of the company enrollment and per employee enrollment.

Once identified, the employee would respond to **Bldg. 41501T, adjacent to the Las Pulgas gate, PMO/Police Records** and enroll in RAPIDGate using one of four kiosks designated for RAPIDGate. This process takes approximately 15 minutes per employee. The system takes fingerprints and photographs and submits the information directly to RAPIDGate for approval. In the interim, a temporary pass is issued to the employee for access to the Base.

RAPIDGate conducts a thorough background check on each individual. Additionally, every 92 days, RAPIDGate conducts backgrounds on each employee to ensure compliance with the program. Should something arise during that time, the employee would be given an opportunity to discuss the circumstances and appeal any negative decisions.

The benefits to the company are that RAPIDGate passes are accepted through all gates on Camp Pendleton, including Fallbrook Weapons Station.

Please direct questions to the Contract Security Section at **(760) 763-7604/7605**.

For latest information, visit : www.pendleton.usmc.mil

013300 SUBMITTAL DISTRIBUTION

Provide copies of each design submittal package for review to the following reviewers as Design Distribution List and Point of Contact Maps. The list below is for typical BEQ information only. Check with PWD project leader for this solicitation.

**BUILDING DESIGN SUBMITTAL DISTRIBUTION LIST
PUBLIC WORKS OFFICE, MCB, CAMP PENDLETON**

From:

THE FOLLOWING IS DISTRIBUTION LIST FOR THE DESIGN SUBMISSION FOR PWO CONCERNED OFFICE.		PHONE: FAX:	DATE:	
PROJECT NO.:	PROJECT TITLE AND LOCATION:		TYPE OF REVIEW: UP TO 100% SUBMITTAL & FINAL SUBMITTAL	
DISTRIBUTION		DESIGN SUBMITTAL FORMAT	UP TO 100%	FINAL
TO: PWD: Project Leader AC/S Facilities, PWD, ENG/ARCH DIV. Bldg.220101T, Camp Pendleton, CA, 92055		½ Size- DRAWINGS CD- AUTOCAD and PDF drawings CD- PDF with Bookmark of SPECIFICATIONS, REPORTS, ELECTRONIC MEDIA, ALL OTHERS	4 SETS	2 SETS
TO : AC/S Billeting (For BEQ project) Bldg.1341, Camp Pendleton, CA, 92055		½ Size DRAWINGS CD- PDF with Bookmark of SPECIFICATIONS	1 SET	1 SET
TO: Respective Area S-4 (or Camp Services) : List to be provided by Project Leader		½ Size DRAWINGS CD- PDF with Bookmark of SPECIFICATIONS	1 SET	1 SET
TO: FMD: Facilities Mgmt Specialist Bldg. 2291, Camp Pendleton, CA, 92055		½ Size DRAWINGS CD- PDF with Bookmark of SPECIFICATIONS	1 SET	-
TO: Fire Station: Chief Bldg.22131 (2 nd Flr), Camp Pendleton, CA 92055		½ Size DRAWINGS CD- PDF with Bookmark of SPECIFICATIONS	1 SET	1 SET
TO: Base Communications (CIS): Bldg.2456, Camp Pendleton, CA, 92055		½ Size DRAWINGS CD- PDF with Bookmark of SPECIFICATIONS	1 SET	-
TO: AC/S Logistic: CMSC Bldg.22105 (2 nd Flr), Camp Pendleton, CA, 92055		½ Size DRAWINGS CD- PDF with Bookmark of SPECIFICATIONS	1 SET	1 SET
TO: Environmental Security: NEPA Branch Head Bldg. 22165 (2 nd Flr) Camp Pendleton, CA, 92055		½ Size DRAWINGS CD- PDF with Bookmark of SPECIFICATIONS	1 SET	-
<p>Note: CADD Drawings/Data: The Contractor shall develop all CAA data in conformance with the latest version of the following standards and policy: US National CADD Standards (NCS); CADD/GIS Technology Center's AEC CADD Standards (https://tsc.wes.army.mil); and NAVFACCINST 4250.1, Electronic Bid Solicitation.</p>				

013300 SPECIFICATIONS FOR DIGITAL DATA

Any maps, drawings, figures, sketches, geospatial data, spreadsheets, or text files prepared for this contract shall be provided in both hard copy and digital form. The hard copy deliverables are defined in another section of this SOW.

A. Text, Spreadsheet, and Database Files:

The Marine Corps standard computing software is Microsoft Office 2003. Final Reports and other text documents shall be provided in Microsoft Word 2003 format **AND** Adobe Portable Document Format (PDF). Spreadsheet files shall be provided in Microsoft Excel 2003 format. Databases shall be provided in Microsoft Access format, unless specified otherwise, as approved by the Government. **Prior to database development, the Contractor shall provide the Government with a Technical Approach Document** for approval, which describes the Contractor's technical approach to designing and developing the database. All text, spreadsheet, and database files shall be delivered on a Compact Disk read-only memory (CD-ROM), Digital Versatile Disc read-only memory (DVD-ROM) or portable external hard drive.

B. Maps, Drawings, and Sketches (Digital Geospatial Data):

1. **Geospatial Data Software Format:**

Geographic data **must** be provided in a form that does **not** require translation, preprocessing, or post processing before being loaded to the Installation's regionally hosted geodatabase. The Contractor shall validate any deviation from this specification in writing with the Government (Installation Geospatial Information & Services (IGI&S) Manager via the Project Manager). Digital geographic maps and the related data sets shall be delivered in the following software format:

a. **CADD:** *All CADD data shall be provided in AutoCAD 2004 and shall be in the same projection and use the same coordinate system, datum, and units as stated below in the paragraph titled Geospatial Data Projection. Drawing files shall be full files, uncompressed, unzipped, and georeferenced.*

-AND-

b. **GIS:** *If the Subject Project is MILCON and/or utility project. Personal or file geodatabase format using ArcGIS 9.3. The geodatabase must be importable to a multi-user geodatabase using ArcSDE 9.3. The delivered data layer(s) shall be provided with x,y domain precision of 1000.*

(**NOTE:** ArcGIS and ArcSDE are geographic information system software produced by the Environmental Systems Research Institute (ESRI) of Redlands, California. AutoCAD is software produced by Autodesk, Inc.)

2. **Geospatial Data Structure:**

a. **GIS Data Sets:** *When developing/delivering geospatial data, the Contractor shall develop the initial structure consistent with the most current version of the GEOFidelis Data Model. The GEOFidelis Data Model shall be followed for geospatial database table structure, nomenclature, and attributes. The Government may approve modifications to the GEOFidelis Data Model if it is determined that the GEOFidelis Data Model does not adequately address subject datasets. Copies of the GEOFidelis Data Model may be obtained by contacting the Camp Pendleton GIS Office via phone at Phone 1-760-763-1891.*

-AND / OR-

- b. **CADD Drawings/Data:** *The Contractor shall develop all CADD data in conformance with the latest version of the following standards and policies:*
- U. S. National CADD Standards (NCS)
 - CADD/GIS Technology Center's AEC CADD Standards (<https://tsc.wes.army.mil>)
 - NAVFACINST 4250.1, *Electronic Bid Solicitation*

3. Geospatial Data Projection:

Geographic data (regardless of format) shall be provided in U.S. Survey Feet and **projected** into the California State Plane, Zone VI, FIPS 0406 projection system. The maps and data shall use the GRS 1980 spheroid and the North American Datum 1983/World Geodetic System 1984 (NAD83/WGS84). [Epoch 1991.35 shall be used](#) [The vertical datum used is NAVD88](#). This projection requirement applies to all GIS data layer deliverables as well as all CADD drawings such as as-designed and as-built project plans. Each data set shall have a projection file if appropriate based on format.

4. Geospatial Data Collection:

- a. **Survey grade Global Positioning System (GPS)** *data collection shall be performed when specified in the statement of work or if the Subject Project is a MILCON and/or utility project. Survey grade GPS data collection shall at a minimum use the Geoid2003 CONUS epoch and spatial accuracy requirements for survey grade are 95 % of GPS points are within ± 1 centimeter. Every effort shall be made to capture feature locations without using offsets unless obstructions are present.*

All GPS data collection activities shall be logged with the MCB Camp Pendleton GIS Office prior to initiation. GPS data collection shall tie into the MCB Camp Pendleton GPS Base Station. [Checks shall be made to existing Survey Control Monuments around the area of work \(Control Coordinates, Maps & Monument Record Sheets are available from the GIS Office\)](#). [All checks made to control points must be recorded and discrepancies noted in the deliverables](#). [Data collected but not verified via this method will not be accepted for submittal.](#)

5. Map Products and Support Files:

Finished map products, regardless of final print size, shall be presented separately in both hard copy and digital formats. The hard copy deliverables are defined in another section of this SOW. Final map products shall be delivered in the following digital formats:

- a. **PDF Format:** Resolution of 300 dpi with no image compression. All fonts must be embedded. The Contractor shall only use fonts that are licensed and available for use by the Government.
- b. **JPG (Joint Photographic Experts Group) Format:** Resolution of 96 dpi with 24-bit true color.
- c. **MXD (ESRI Map Document) Format:** All maps constructed shall have the associated MXD delivered to allow for future printing and modification, as necessary, by the Government. MXDs shall use the 'relative paths' option. The Table of Contents (TOC) within the MXD shall be orderly, and contain a logical naming structure.

6. Geographic Data Documentation (Metadata):

For each digital file delivered containing geographic information (regardless of format), **the Contractor shall provide documentation** consistent with the *GEOFidelis* Metadata Guidelines, which follow Federal Geographic Data Committee (FGDC) Content Standards for Digital Geospatial Metadata (CSDGM). Both 'Mandatory' and 'Mandatory as Applicable' fields shall be completed for each geographic data set, as well as selected 'Optional' fields. The documentation shall include, but not be limited to, the following:

- The name, description, abstract, and purpose of the data set/data layer.
- The source of the data and any related data quality information such as accuracy and time period of content.
- Descriptions of the receiver and other equipment used during collection and processing, base stations used for differential corrections, software used for performing differential corrections, estimated horizontal and vertical accuracies obtained, and conversion routines used to translate the data into final geographic data delivery format.
- [Details of all checks made to existing control points & any discrepancies noted.](#)
- Type of data layer (point, line, polygon, etc.).
- Field names of all attribute data and a description of each field name.
- Definition of all codes used in the data fields.
- Ranges of numeric fields and the meaning of these numeric ranges.
- The creation date of the map layer and the name of the person who created it.
- A point of contact shall be provided to answer technical questions.

Metadata generation tools included in the ArcGIS suite of software (or equivalent technology) shall be used in the production of the required metadata in XML format. Regardless of the tools used for metadata creation, the Contractor must insure that the metadata is delivered in XML format. Specific guidelines may be found within the *GEOFidelis* West Metadata Authoring Guide. A copy of the guide may be obtained by contacting:

GEOFidelis West
Building 1160, Lower Level Room 6
Camp Pendleton, CA 92055
(760) 763-1891

(NOTE: The metadata should be formatted from the Installation database perspective, not the Contractor project perspective. Therefore such items as Point of Contact should be the Installation POC currently associated with the data and **NOT** the Contractor's Project Manager. The Contractor shall use language and format consistent with existing Installation metadata.)

7. Geographic Data Review:

The digital geographic maps, related data, and text documents shall be included for review in the draft and final contract submittals. The data will be analyzed for discrepancies in subject content, correct format in accordance with these specifications, and compatibility with the existing GIS system. The Contractor shall incorporate review comments to data and text prior to approval of the final submittal.

C. Ownership:

All digital files, final hard copy products, source data acquired for this project, and related materials, including that furnished by the Government, shall become the property of the Installation and will not be issued, distributed, or published by the Contractor.

013500 RANGE SAFETY REQUIREMENTS

RANGE SAFETY REQUIREMENTS FOR ENTERING A TRAINING AREA OR RANGE

In order for the Contractor to work on a Range or in a Training Area, they shall have a certified Range Safety Officer (RSO) on-site whenever the site is occupied. The contractor shall do the following in order to obtain certification as a RSO and gain access to the site:

- The person in charge of the site or another competent person that will be on site must attend the non-live fire RSO course and pass the written examination.
- After successfully completing the non-live fire portion of the RSO course the Base unit sponsoring the contractor must send a letter to Range Operation Division (ROD) designating the person(s) to be RSO on this project.
- ROD must register the person(s) as RSO for this project. This registration process will take approximately one week
- Schedule the Range or Training Area through their Base sponsor
- Obtain a radio compatible with ROD communication system. [Obtain the radio from your Government sponsor.](#)

The non-live fire portion of the class is once a month from 0800 - 1000. Call (760) 725-4219 for the actual class dates. The class is held at Building 1330 (Base Theater). Course attendees shall bring, to the class, picture ID, Base sponsor information (name of point of contact and Base unit name), pen or pencil, [class handout and "bubble sheet"/answer scoring sheet](#). [Class handout and "bubble sheet" can be obtained at the following web site: <https://pendleton.mciwest.nmci.usmc.mil/ot/rod/default.aspx>](#). The seating in the theater has no writing surface, a clip board or other hard surface will be helpful.

Prior to entering any training area or range site, the contractor will ensure all areas requiring access have been properly scheduled for the dates and times needed. Failure to schedule these areas through ROD will result in access being denied from Range Control (LONGRIFLE) until proper scheduling of events has been completed. Contractor shall schedule the site through their Base sponsor.

The contractor and their employees shall not deviate from an assigned access route or the work site unless directed by Longrifle or other ROD official.

Compatible radio can be purchased or rented from Darcy Rigby, Oceanside, CA at telephone (760) 940-1944 or Day Wireless, San Diego, CA 92126 at (858) 537-0709. Contractor shall submit a letter to ROD with the serial numbers of the radios so the programming of the radios to the Longrifle frequencies can be approved.

The contractor shall obtain Privately Owned Vehicle (POV) placards from ROD. These placards shall be placed in the front window of each POV whenever the vehicle is in a training area and/or on a range. To obtain a placard the contractor must provide the name of the driver of each vehicle; the year; make, and model of the vehicle; color; and license plate number. [POV should be truck like or something to that effect.](#)

017830 AS-BUILT DRAWINGS

GENERAL DESIGN CONSIDERATIONS

The use of Section 017830 – CLOSEOUT SUBMITTALS should be considered to cover such items such as as-built drawings.

Division 01 – GENERAL REQUIREMENTS

1.2.1 As-Built Drawings

1.2.1.1 In addition to the requirements of FAC 5252.236-9310, the Contractor shall be responsible for all of the following requirements.

- a. Redlining - Notations are to be performed using the following color coding schemes:
 1. Red - Indicates additions or corrections.
 2. Green - Indicates deletions.
 3. Yellow - Indicates correct information.
 4. Blue/Black - Indicates information that may be helpful during incorporation of the mark-ups.
- b. The contractor shall transform the redline drawings into record documents. The final record drawings shall be stamped and signed by a registered Architect or Engineer with formatting in accordance with [the UFC 1-300-09N Design Procedures](#).
- c. The final record drawings shall be turned over to the government at the pre-final inspection. Provide the government the following:
 1. Provide additional sheets that contain all underground utilities. Provide 1 full size utilities sheet covered with plastic laminate.
 2. Provide electronic copies in AutoCAD 2004 and Adobe PDF format, **latest version**.
 3. Provide **4 Complete sets** on CD-ROM.
 4. Provide 1 set of redline drawings.
 5. Provide cost data on the final cost of the project using table at end of this specification section.
- d. Record Drawing Format: In addition to other record drawing document format requirements provide for the following:

[DD Form 1354, transfer and acceptance of Real Property.](#)

1. NAVFACSW PM is responsible to ensure the AE or in-house designers work includes DD Form 1354 deliverables at:
 - a. Draft DD Form 1354 at 100% design
 - b. Interim DD Form 1354 at BOD
2. NAVFACSW DM is responsible to assist the DOR in preparation of the Draft DD 1354 at 100% design and providing a copy to the Real Property Asset Officer (RPAO)
3. NAVFACSW ROICC CM, during the Post Award Kickoff or Pre-Construction Conference, is to lay out expectations for DD Form 1354 deliverables at:
 - a. Draft DD Form 1354 at 100% design
 - b. Interim DD Form 1354 at BOD
4. CM, during the Red Zone Meetings, and at least 60 days prior to BOD, is to remind the construction contractor of requirements to provide the cost breakout per asset at least 30 days prior to BOD.
5. CM, 30 days prior to BOD, is to receive the Interim DD Form 1354 from the contractor, review it and adjust for any modifications, and forward it to the RPAO with a copy to the PM.

The design team should be driving the Draft DD Form 1354, for delivery to the RPAO at the 100% design submittal. If it's missing, please push the DM to provide it. Per the contract, the Interim DD Form 1354 shall be submitted by the contractors at least 30 days prior to BOD. The NAVFAC SW PM is responsible for providing the Final DD Form 1354 to the RPAO when the contract is financially complete.

UFC 1-300-08 16 Apr 09 Change 1, Mar 10

TRANSFER AND ACCEPTANCE OF DoD REAL PROPERTY													Form Approved OMB No. 0704-0188		
													PAGE	OF	PAGES
<small>The public reporting burden for this collection of information is estimated to average 20 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, to the Department of Defense, Information Management Directorate, 155 Defense Pentagon, Washington, DC 20301-1555 (0704-0188). Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.</small>															
PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THE ABOVE ORGANIZATION.															
1. FROM (Organization Name)				2. DATE PREPARED (YYYYMMDD)		3. PROJECT/JOB NUMBER		4. SERIAL NUMBER		B. TRANSACTION DETAILS					
5. TO (Organization - Installation Code and Name)				6. RPSUID/SITENAME/INSTCODE/INSTNAME		7. CONTRACT NUMBER(S)		7a. PLACED-IN-SERVICE DATE (YYYYMMDD)		a. METHOD (X all that apply) <input type="checkbox"/> ACQUISITION BY CONSTRUCTION <input type="checkbox"/> TRANSFER BETWEEN SERVICES <input type="checkbox"/> CAPITAL IMPROVEMENT <input type="checkbox"/> INVENTORY ADJUSTMENT				d. WHEN/EVENT (X all) <input type="checkbox"/> TOTAL ASSET PLACED-IN-SERVICE <input type="checkbox"/> PARTIAL ASSET PLACED-IN-SERVICE	
e. TYPE (X one) <input type="checkbox"/> DRAFT <input type="checkbox"/> FINAL <input type="checkbox"/> INTERIM															
9. ITEM NO.	10a. FACILITY NO.	10b. RPUID	11. CATEGORY CODE	12. CATCODE DESCRIPTION	13. TYPE CODE	AREA		OTHER		18. COST	19. FUNG SOURCE	20. FUNG ORG	21. INTEREST CODE	22. ITEM REMARKS	
						14. PRIMARY UM	15. PRIMARY UM QUANTITY	16. SECONDARY UM	17. SECONDARY UM QUANTITY						
23. STATEMENT OF COMPLETION. The facilities listed hereon are in accordance with maps, drawings, and specifications and change orders approved by the authorized representative of the using agency except for the deficiencies listed on the reverse side.										24.a. ACCEPTED BY (Typed Name and Signature)			b. DATE SIGNED (YYYYMMDD)		
a. TRANSFERRED BY (Typed Name and Signature)					b. DATE SIGNED (YYYYMMDD)					c. TITLE (DPW/RPAO)			25. PROPERTY VOUCHER NUMBER		
c. TITLE (Area Engr./Base Engr./DPW/Construction Agent)															

DD FORM 1354, SEP 2009

PREVIOUS EDITION IS OBSOLETE.

(0408) (Professional) (5)

<p>26. CONSTRUCTION DEFICIENCIES (Attach blank sheet for continuations)</p>	<p>27. PROJECT REMARKS (Attach blank sheet for continuations)</p>
<p>INSTRUCTIONS</p>	
<p>GENERAL. This form has been designed and issued for use in connection with the transfer of military real property between the military departments and to or from other government agencies. It supersedes ENG Forms 250 and 200B (formerly used by the Army and Air Force) and NAVDOCKS Form 2317 (formerly used by the Navy). Existing instructions issued by the military departments relative to the preparation of DD Form 1354 are applicable to this revised form to the extent that the various items and columns on the superseded forms have been retained. The military departments may promulgate additional instructions, as appropriate.</p> <p>For detailed instructions on how to fill out this form, please refer to Unified Facilities Criteria (UFC) 1-300-09, dated 16 April 2009 or later.</p>	
<p>SPECIFIC DATA ITEMS.</p>	
<p>1. From. Name of the transferring agency.</p>	
<p>2. Date Prepared. Date of actual preparation. Enter all dates in YYYYMMDD format (Example: March 31, 2010 = 20100331).</p>	
<p>3. Project/Job Number. Project number on a DD Form 1391 or Individual Job Order Number.</p>	
<p>4. Serial Number. Sequential serial number assigned by the preparing organization (e.g., 2010-0001).</p>	
<p>5. To. Name and address of the receiving installation, activity, and Service of the Real Property Accountable Officer (RPAO).</p>	
<p>6. RPSUID/SITENAME/INSTCODE/INSTNAME. Real Property Site Unique Identifier and Site Name or Installation Code and Installation Name where the constructed facility is located.</p>	
<p>7. Contract Number(s). Contract number(s) for this project.</p>	
<p>7a. Placed-in-Service Date. RPA Placed in Service Date. This is the date the asset is actually placed-in-service.</p>	
<p>8. Transaction Details. a. Method of Transaction. Mark (X) as many boxes as apply. b. When/Event. When or event causing preparation of DD Form 1354. X only one box. c. Type. Draft, interim, or final DD Form 1354. X only one box.</p>	
<p>9. Item Number. Use a separate item number for each facility, no item number for additional usages.</p>	
<p>10a. Facility Number. Assigned in accordance with the Installation/Base Master Numbering Plan.</p>	
<p>10b. RPUID. Real Property Unique Identifier - Identified in Real Property Inventory.</p>	
<p>11. Category Code. The category code describes the facility usage.</p>	
<p>12. Catcode Description. The category code name which describes the facility usage.</p>	
<p>13. Type Code. Construction Type Code - Type of construction: P for Permanent; S for Semi-permanent; T for Temporary.</p>	
<p>14. Primary Unit of Measure. Area unit of measure; use the unit of measure associated with the category code selected in 11.</p>	
<p>15. Primary Unit of Measure Quantity. The total area for the measure identified in Item 14. Use negative numbers for demolition.</p>	
<p>16. Secondary Unit of Measure. Unit of Measure 2 is the capacity or other measurement unit (e.g., LF, MB, EA, etc.).</p>	
<p>17. Secondary Unit of Measure Quantity. The total capacity/other for the measure identified in Item 16.</p>	
<p>18. Cost. Cost for each facility, for capital improvements to existing facilities, show amount of increase only. If there is no increase for the capital improvement, enter N/A.</p>	
<p>19. Fund Source. Enter the Fund Source Code for this item.</p>	
<p>20. Funding Organization. Enter the code for the organization responsible for acquiring this facility.</p>	
<p>21. Interest Code. RPA Interest Type Code. Enter the code that reflects government interest or ownership in the facility.</p>	
<p>22. Item Remarks. Remarks pertaining only to the item number identified in Item 9; show cost sharing.</p>	
<p>23. Statement of Completion. Typed name, signature, title, and date of signature by the responsible transferring individual or agent.</p>	
<p>24. Accepted By. Typed name, signature, title, and date of signature by the RPAO or accepting official.</p>	
<p>25. Property Voucher Number. Next sequential number assigned by the RPAO in voucher register.</p>	
<p>26. Construction Deficiencies. List construction deficiencies in project during contractor turnover inspection.</p>	
<p>27. Project Remarks. Project level remarks and continuation of blocks.</p>	

DD FORM 1354 (BACK), SEP 2009

Reset

018000 ADA ROOM REQUIREMENTS FOR BEQ

The **Two (2) ADA Compliant Rooms** required for a typical BEQ should be located close to ADA Parking and/or Duty Desk.

018113 LEED ACCEPTABLE STRATEGIES

LEED-NC 2.2

- Below is a chart of **LEED-NC v2.2** credits mandated by NAVFAC with acceptable strategies for implementing those credits at MCB Camp Pendleton
- Following the chart is a list of acceptable strategies for **LEED-NC v2.2** credits not mandated by NAVFAC, but desirable by the Base.

LEED-NC 2.2 NAVFAC Mandated Credits		Pts	Acceptable Strategies for use at MCB Camp Pendleton
SUSTAINABLE SITES			
SS6.1	Storm Water Design – Quantity Control	1	Comply with: Calif. Gen. Constr. Storm Water Permit Effective 1 July 2010, EISA 2007, Employ LID Strategy per Navy Policy Effective:1 Oct 2010
SS6.2	Storm Water Design Quality Control	1	Comply with: Calif. Gen. Constr. Storm Water Permit: Effective 1 July 2010 Employ LID Strategy per Navy Policy: Effective 1 Oct 2010 (Vertical Media Filtration System is expensive. Employ alternate strategies

			whenever possible)
WATER EFFICIENCY			
WE 1.1	Water Efficient Landscaping, Reduce by 50%	1	Passive captured rain water is acceptable (i.e. divert rain from downspouts to irrigate landscape) Use of recycled waste water from Tertiary Treatment plants/purple pipe desired Grey water systems not allowed
WE 3.1	Water Use Reduction 20%	1	Waterless urinals not approved for use at MCB Camp Pendleton
ENERGY AND ATMOSPHERE			
EA Prereq	Fundamental Commissioning	0	Discretionary*
EA1	Optimize Energy Performance	1-10	Daylight sensors are desired for large spaces such as warehouses, hangers, storage buildings and mechanical buildings. The use of light shelf/clerestory window design is desirable. Daylight sensors are not desired for BEQ or Administration Buildings. If boilers are used, the best technology available should be utilized. Separate hot water boilers from HVAC boilers so that each system can function independently from the other.
EA 4	Enhanced Refrigerant Mgt	1	Discretionary*
EA 5	Measurement and Verification	1	Executive Order 13423
MATERIALS AND RESOURCES			
MR 2.1	Construction Waste Mgt.	1	Discretionary*
MR 4.1	Recycled Content 20%	1	Discretionary*
MR 6	Rapidly Renewable Products	1	Discretionary*
MR 7	Certified Wood	1	Discretionary*
INDOOR ENVIRONMENTAL QUALITY			
EQ 4	Low Emitting Materials	1	Executive Order 13423 and 13514
EQ 7.1	Thermal Comfort Design	1	DDC Controls required for main HVAC design, but not desirable in individual BEQ Living Units.
EQ 8.1	Daylighting	1	
INNOVATION AND DESIGN			
ID	Moisture Control Plan	1	Discretionary*
ID	Bio-Based Products	1	Executive Order 13423
ID	LEED AP	1	Discretionary*

*To be determined on a case by case basis.

Additional Acceptable Strategies for optional LEED-NC v2.2 credits at MCB Camp Pendleton:

- SS 4.3 Alternative Transportation/Low Emitting & Fuel Efficient Vehicles:
 -Electric car ports desirable/Executive Order 13514.
 -SWRFT Office manages Base vehicles at MCB Camp Pendleton

- EA Prereq 2: Minimum Energy Performance:
 -Use VAC or VRV mechanical systems if technology complies with CPR (Camp Pendleton Requirements)
 -Use of re-heat systems desirable
 -Geothermal energy should not be explored. Base studies have proven the ground water does not support the required temperature needed for geothermal energy design.

- EA 2 On-Site Renewable Energy
 Utilize photovoltaic solar panels for all FY12 projects and FY10 M2R2 Projects.

- EA3 Enhanced Commissioning
 -Enhanced commissioning is desired of all HVAC systems and controls, refrigeration systems and controls, renewable energy systems and hot water systems. Enhanced commissioning is to be provided by third party. TAB contractor is not permitted to perform the enhanced commissioning. Return of Contractor after completion of project to implement Enhanced Commissioning to be enforced; enhanced commissioning to be under a separate contract from building.

- EA6 Green Power
 -NAVFAC does not allow.

- EQ1 Outdoor Air Delivery Monitoring
 -Desirable on all buildings. Must interface with MCB Camp Pendleton EMS (Energy Management System).

LEED-NC v3

1. Below is a chart of **LEED-NC v3** credits mandated by NAVFAC with acceptable strategies for implementing those credits at MCB Camp Pendleton
2. Following the chart is a list of acceptable strategies for **LEED-NC v3** credits not mandated by NAVFAC, but desirable by the Base.

LEED-NC v3 NAVFAC Mandated Credits		Pts	Acceptable Strategies for use at MCB Camp Pendleton
SUSTAINABLE SITES			
SS6.1	Storm Water Design – Quantity Control	1	Comply with: Calif. Gen. Constr. Storm Water Permit Effective 1 July 2010, EISA 2007 (Energy Independence & Security Act). Comply with Dept. of Navy LID (Low Impact Development) Policy and Unified Facilities Criteria (UFC) 3-210-10, effective 1 Oct 2010
SS6.2	Storm Water Design Quality Control	1	Comply with: Calif. Gen. Constr. Storm Water Permit Effective 1 July 2010. Comply with Dept. of Navy LID (Low Impact Development) Policy

			and Unified Facilities Criteria (UFC) 3-210-10, effective 1 Oct 2010 (Vertical Media Filtration System is expensive. Employ alternate strategies whenever possible)
WATER EFFICIENCY			
WE Prereq	Water Use Reduction by 20%	0	Waterless urinals not approved for use at MCB Camp Pendleton
WE 1.1	Water Efficient Landscaping, Reduce by 50%	2-4 1	Passive captured rain water is acceptable (i.e. divert rain from downspouts to irrigate landscape) Use of recycled waste water from Tertiary Treatment plants/purple pipe desired Grey water systems not allowed Additional Point – Regional Priority Credit
ENERGY AND ATMOSPHERE			
EA1	Optimize Energy Performance	1-19	Daylight sensors are desired for large spaces such as warehouses, hangers, storage buildings and mechanical buildings. The use of light shelf and clerestory window design is desirable. Daylight sensors are not desired for BEQ or Administration Buildings. If boilers are used, the best technology available should be utilized. Separate hot water boilers from HVAC boilers so that each system can function independent from the other.
EA 4	Enhanced Refrigerant Mgt	2	Discretionary*
EA 5	Measurement and Verification	3	Executive Order 13423
MATERIALS AND RESOURCES			
MR 2.1	Construction Waste Mgt.	1-2	Discretionary*
MR 4.1	Recycled Content 20%	2	Discretionary*
MR 6	Rapidly Renewable Products	1	Discretionary*
MR 7	Certified Wood	1	Discretionary*
INDOOR ENVIRONMENTAL QUALITY			
EQ 3.1	Construction IAQ Mgt During Construction	1	Discretionary*
EQ 3.2	Construction IAQ Mgt Before Occupancy	1	Discretionary*
EQ 4	Low Emitting Materials	1-4	Executive Order 13423 and 13514
EQ 7.1	Thermal Comfort Design	1	DDC Controls required for main HVAC design, but not desirable in individual BEQ Living Units.
EQ 8.1	Daylighting	1	Discretionary*
INNOVATION AND DESIGN			

ID	Moisture Control Plan	1	Discretionary*
ID	Bio-Based Products	1	Executive Order 13423
ID	Energy Star/Energy Efficient Products	1	Executive Order 12902 Sec. 301 Executive Order 13423

*To be determined on a case by case basis.

Additional Acceptable Strategies for optional LEED-NC v3 credits at MCB Camp Pendleton:

- SS 4.3 Alternative Transportation/Low Emitting & Fuel Efficient Vehicles:
-Electric car ports desirable/Executive Order 13514.
-SWRFT Office manages Base vehicles at MCB Camp Pendleton

- EA Prereq 2: Minimum Energy Performance:
-Use VAC or VRV mechanical systems if technology complies with CPR (Camp Pendleton Requirements)
-Use of re-heat systems desirable
-Geothermal energy should not be explored. Base studies have proven the ground water does not support the required temperature needed for geothermal energy design.

- EA 2 On-Site Renewable Energy
Utilize photovoltaic solar panels for all FY12 projects and FY10 M2R2 Projects. Earn an additional point for Regional Priority Credit.

- EA3 Enhanced Commissioning
-Enhanced commissioning is desired of all HVAC systems and controls, refrigeration systems and controls, renewable energy systems and hot water systems. Enhanced commissioning is to be provided by third party. TAB contractor is not permitted to perform the enhanced commissioning. Return of Contractor after completion of project to implement Enhanced Commissioning to be enforced; enhanced commissioning to be under a separate contract from building.

- EA6 Green Power
-NAVFAC does not allow.

- EQ1 Outdoor Air Delivery Monitoring
-Desirable on all buildings. Must interface with MCB Camp Pendleton EMS (Energy Management System).

087100 and 081113 ARCHITECTURAL REQUIREMENTS

1. All architectural door hardware shall be grade 1 heavy duty as defined in the American National Standards Institute, Inc. (ANSI) and the Builders Hardware Manufacturers association, Inc. (BHMA).
2. All steel doors shall be Level III, Extra heavy duty, seamless construction, flush top and vertical stiffeners as defined in the Steel Door Institute manual. The doors and frames shall have reinforced backing for closers, strikes, hinges, locks and latch-sets.
3. For all Camp Pendleton BEQ's, door hardware shall be the **"vertical-swipe" feature Electro-Magnetic (Smart Card or Electronic Card) Programmable Locks**, in accordance with MCB Camp Pendleton Requirements. Match existing key system for Camp Pendleton.

All new door locksets shall be **Electronic Card readable-type**, submit hardware specifications for approval by Public Works and ROICC prior to purchase and installation".

Provide **card key type** access units for specialized entries as required by the program.

Provide alkaline battery powered, magnetic stripe keycard locksets that are ANSI/BHMA A156.12, Series 1000, Grade 1, mortise sets....tamper resistant, UL listed with 25 mm (1 inch) throw deadbolt, 19 mm (3/4 inch) backset.

The latch bolt and dead bolt shall be operated simultaneously by rotating inside lever.

Locks shall be operated only by a correctly encoded cardkey.

Use of a newly issued keycard automatically rekeys the lock and voids the previous keycard.

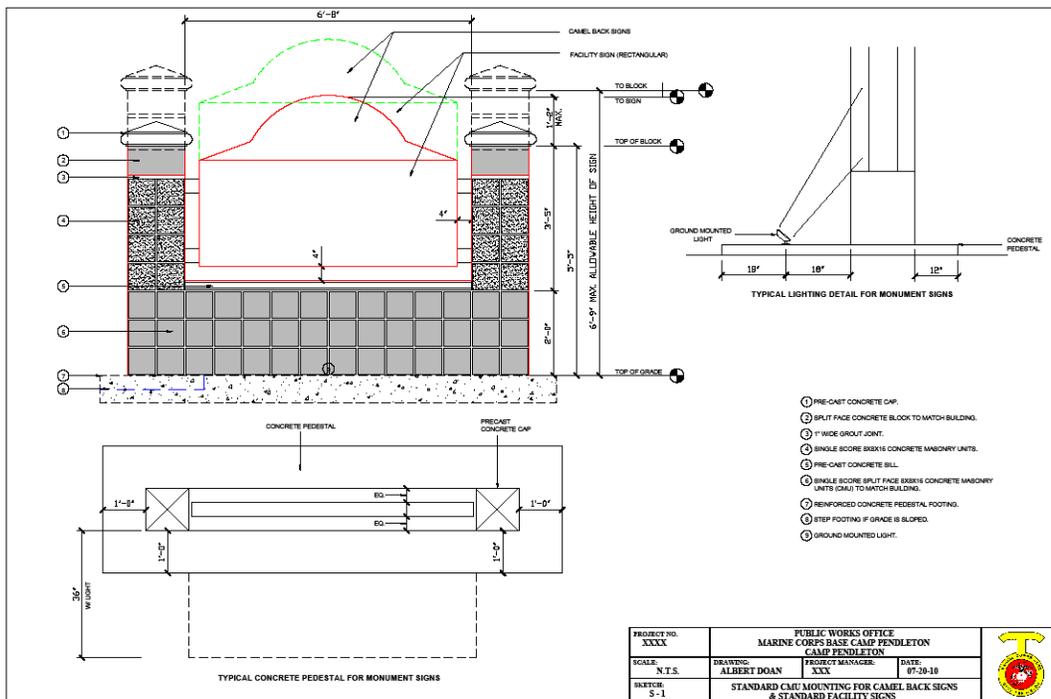
Locks shall have memory that is capable of recording up to **140 entries** into each room, identification of the keycard used to access the room, the date and time of entry.

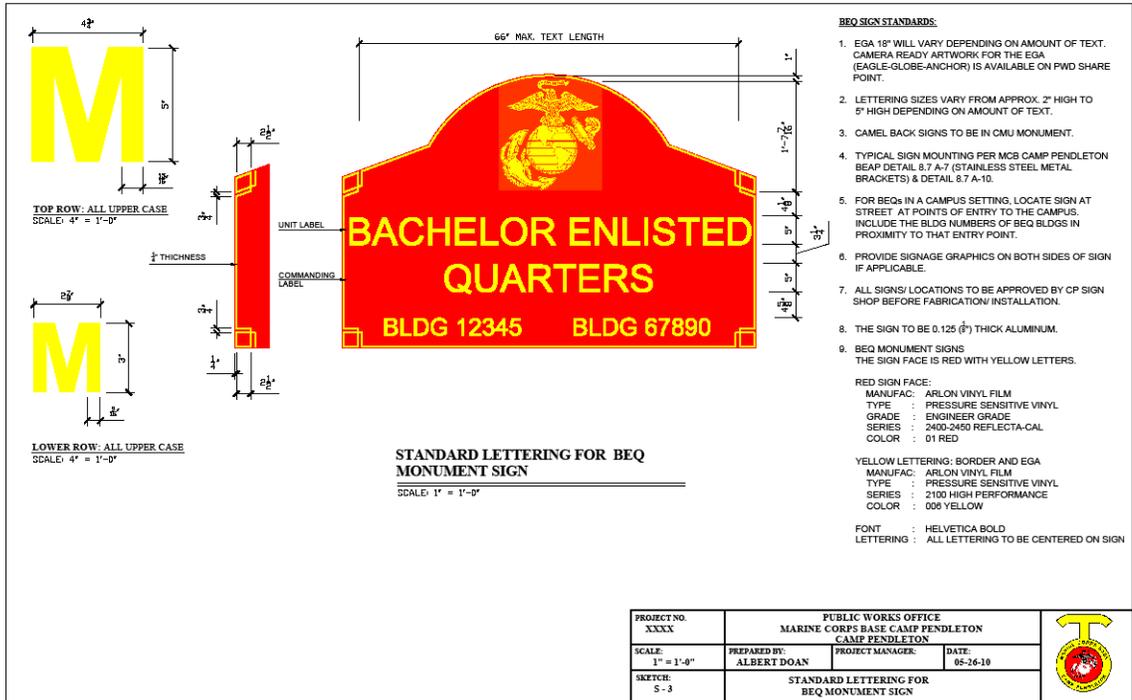
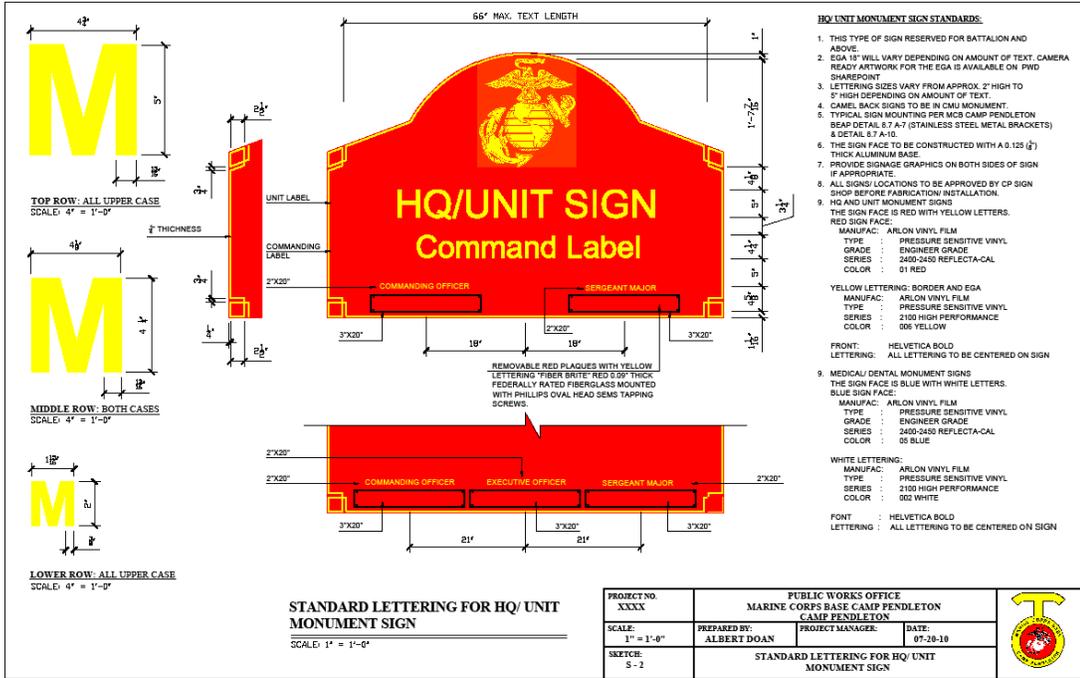
System shall be capable of accepting a minimum of **12 keycard** access levels, security auditing and computer interfacing with the existing or new management systems.

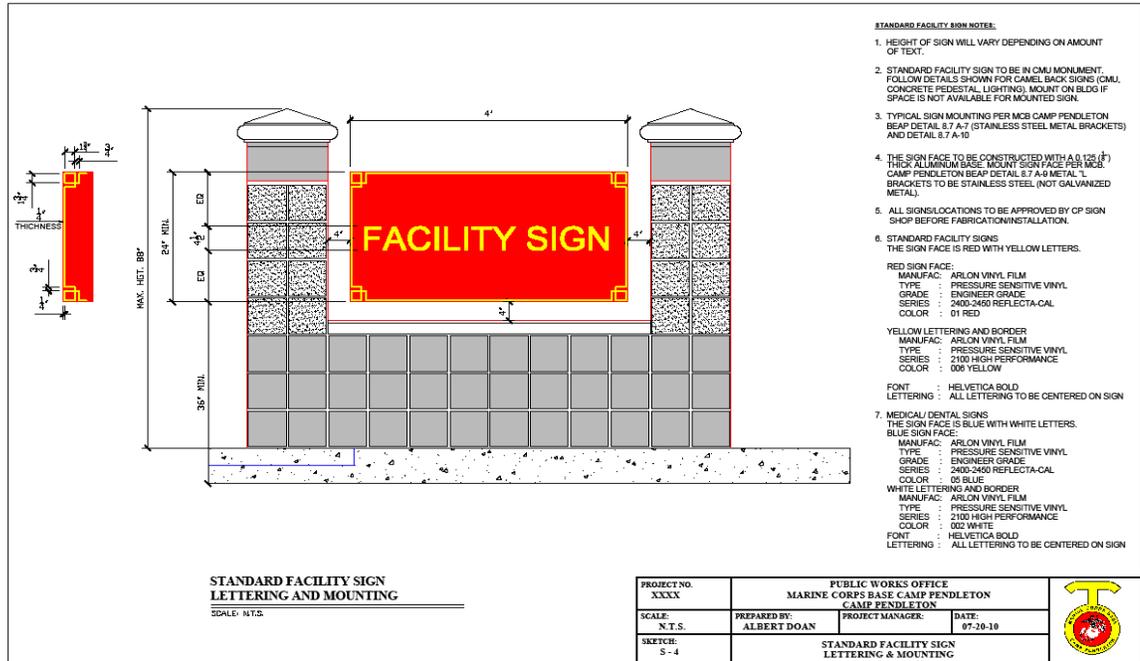
On-site service shall be provided within **3 hours** from request within the first **12 months** of occupancy.

Provide a **5-year** parts and labor warranty.

101400 BUILDING MONUMENT SIGN







NUMBER IDENTIFICATION SIGNS of ANCILLARY STRUCTURES

Ancillary Structures include but are not limited to:

- Trash Enclosures
- Utility Boxes
- Bleachers/Viewing Stands
- Basketball Courts
- Bus Shelters
- Training Towers

GENERAL:

- A number identification sign is desired for each ancillary structure, however, if there is more than one access point (i.e. a trash enclosure that could be approached by trash trucks or emergency vehicles from opposite sides or a bus shelter that is approached from opposite sides), then two or more sets of numbers may be required.
- All signs and their locations to be approved by Camp Pendleton Sign Shop before fabrication and/or installation.
- Construction Manager to obtain ancillary structure numbers from Real Property Accounting Lead located in Building 220102T at 760-763-7832
- Number Font: Helvetica Bold
- Sign Material Specifications:

VINYL LETTERS:

Type: Pressure Sensitive Vinyl
Series: 2100 High Performance
Color: 006 Yellow, 002 White, 003 Black

Sign Backing:

Type: Federally Rated Fiberglass

Thickness: .06"
Color: White and Blue

Individual Metal Numbers:

Type: Bronze Anodized Aluminum
Size: 6" high
Ref: MCB Camp Pendleton BEAP 26 May 2010

UTILITY BOXES

Locate identification number signs on the upper right hand corner on the front of the utility box. The number identification sign will be individual 3" yellow vinyl numbers.



Photo 1: Utility Box

BUS SHELTERS

Number identification signs to be mounted on ends of bus shelter so that signs are easily visible from traffic approaching from both sides. The number identification sign will be individual 3" white vinyl numbers. (Photo 2)



Photo 2: Bus Shelter

TRASH ENCLOSURES:

Locate identification number signs on the upper corner of an outside wall closest to the accessible side of the enclosure. The sign will be 6" black vinyl numbers on an 8" x 24" white fiberglass backing. The sign will be mounted onto the block wall of the trash enclosure with anchoring screws (Photo 3). Do not locate signs inside the trash enclosure (photo 4).



Photo 3: Correct Sign Placement for Trash Enclosure



Photo 4: Incorrect Sign Placement for Trash Enclosure

BASKETBALL COURTS

Number Identification Signs to be mounted on both ends of the fence near the basketball backboard/poles. The signs will be 6" black vinyl numbers on an 8" x 24" white fiberglass backing. The signs to be mounted on the fence with vandal proof hardware. (Photo 5).

If a fence is not available, the number identification sign is to be mounted vertically on the poles of the backstop with bottom of last number at 7'-0" high. The number identification sign will be individual 3" white vinyl numbers (Photo 6).



Photo 5: Sign on Fence of Basketball Court



Photo 6: Sign on pole of backstop (numbers in photo are not properly mounted at 7' high)

RANGE STRUCTURES

Open Air Structures: Number Identification Signs to be mounted vertically on support poles or on an easily accessible overhang. The number identification sign will be individual 3" white vinyl numbers (Photo 7).

Concrete Block Structures: The sign will be 6" black vinyl numbers on an 8" x 24" white fiberglass backing. The sign will be mounted onto the block wall of the structure with anchoring screws (Photo 8).



Photo 7: Range Open Air Structure

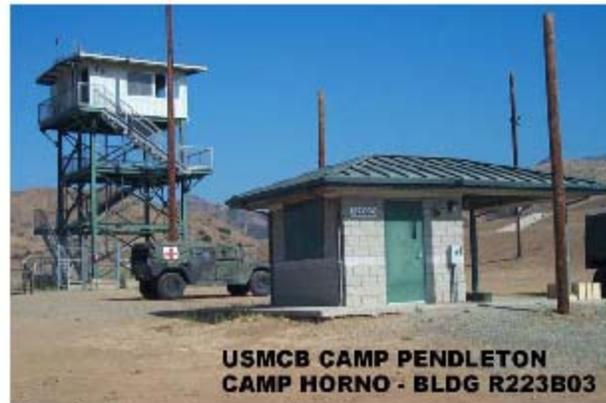


Photo 8: Range Concrete Block Structure

BLEACHERS/VIEWING STANDS

Number identification signs to be mounted vertically on support poles (individual 3" white vinyl numbers) or on an easily accessible overhang (6" black vinyl numbers on an 8" x 24" white fiberglass backing). (Photos 9 and 10)



Photo 9: Sign on road accessible side of bleachers



Photo 10: Sign on overhang

TOWERS

The sign will be 6" black vinyl numbers on an 8" x 24" white fiberglass backing. The sign will be mounted on to the structure with anchoring screws (Photo 11).

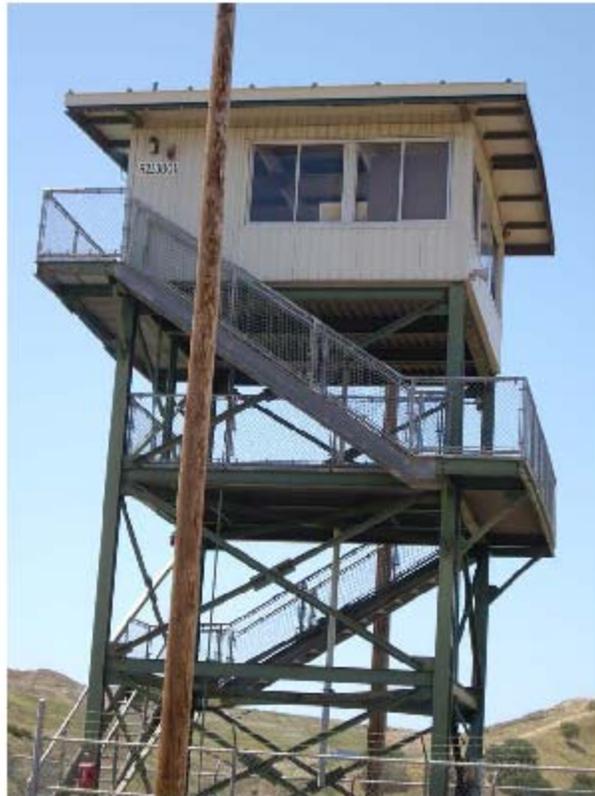


Photo 11: Sign on accessible side of tower

BEQ SHADE STRUCTURE

Locate Number Identification Sign on an easily accessible side of the structure. Sign to be made up of 6" high individual bronze anodized aluminum characters in Helvetica Bold font per the MCB Camp Pendleton BEAP. Numbers to be in contrast with background (photo12)



Photo 12: Number Identification Sign on BEQ shade structure

NAVFAC ANCILLARY STRUCTURES

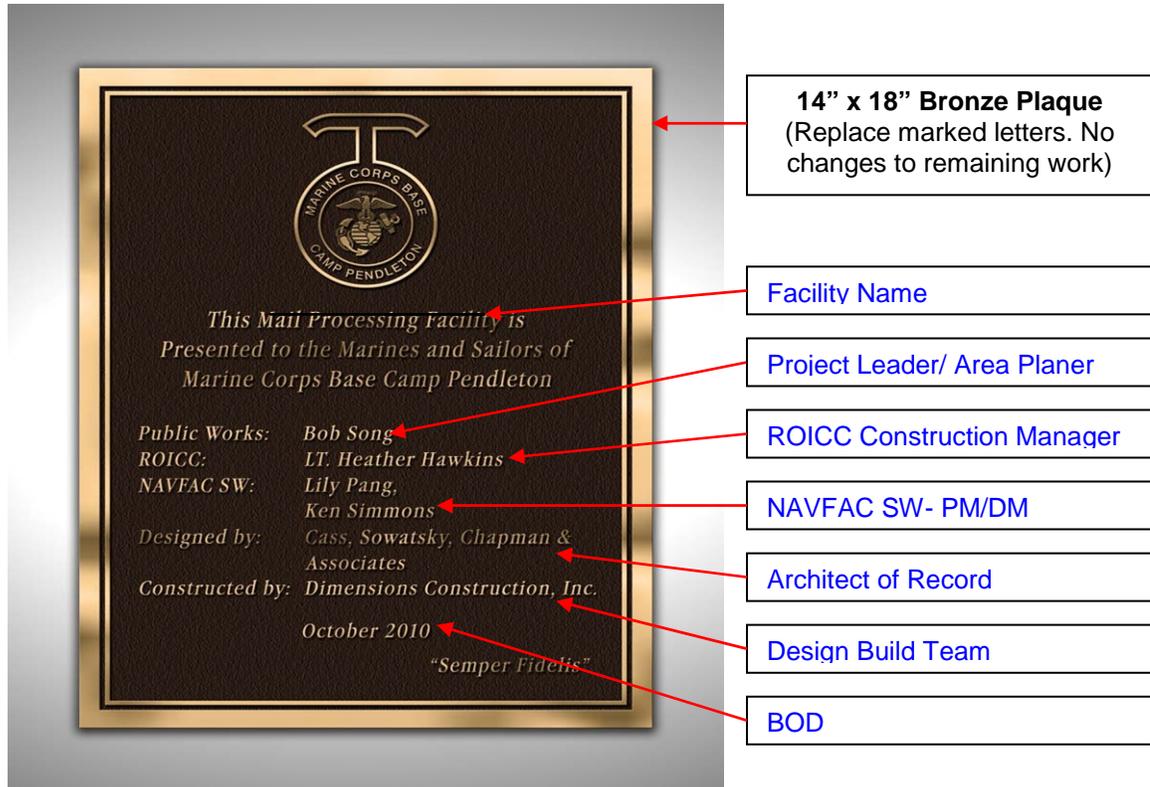
Locate identification number signs on the upper corner of an outside wall. The sign will be 6" white vinyl numbers on an 8" x 24" blue fiberglass backing. The sign will be mounted onto the structure with anchoring screws. (Photo 13)



Photo 13: NAVFAC Ancillary Structure

101426 BUILDING PLAQUE

Attached is the plaque design for all newly constructed buildings on board MCB Camp Pendleton. A plaque should be hung at each new building in prominent location. This should be incorporated into all existing and new MILCONs for new construction.



129300 TRASH and RECYCLING CONTAINERS

Each new building constructed on the Base shall have a CMU enclosure with trash and recycling containers. Comply with the Base Exterior Architecture Plan (BEAP) for enclosure requirements. Trash and recycling containers to be part of FF&E, and purchased and installed by the General Contractor. Size and quantity to be determined during initial design phase of project.

TRASH CONTAINER

SIZE	*A	B	C	D	E
6 YD	72"	66"	50"	69"	41.5"

*Add 4" per side (A) for sleeve width

6 YD HUMPBACK w/ 12 GA BOTTOM

SERIAL #: 357736 – 357831
 GSA SCHEDULE: #GS-07F-5512P
 MFG PART #40-9007
 COLOR: Marine Corp Green
 LABEL: Stencil per special instructions
 (Contact: Camp Pendleton Recycling Center Mgr. 760-725-4982)

SPLIT RECYCLING CONTAINER
(Split: ½ cans/bottles and ½ paper/cardboard)

SIZE	FRONT HEIGHT	BACK HEIGHT	WIDTH	LENGTH
	C**	D**	B	*A
4 YD	46"	57"	50.5"	72"

*Add 4" per side (A) for sleeve width

* *Casters add 8" to height

9107-1 4 YD PITCH TOP SPLIT UNIT w/ 12 GA BOTTOM

SERIAL #: 327467 - 327487

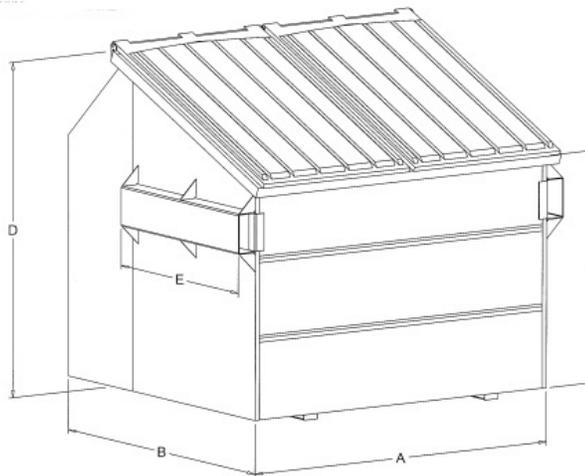
GSA SCHEDULE: #GS-07F-5512P (Some options are not on GSA)

MFG PART #40-9007

COLOR: ½ White and ½ Blue

LABEL: Stencil Per Special Instructions

(Contact: Camp Pendleton Recycling Center Mgr. 760-725-4982)



142000 ELEVATOR CONSTRUCTION REQUIREMENTS

All elevator installations shall be required to comply with ASME A17.1 Safety Code for Elevators and Escalators (NOT California Code of Regulations CCR Title 8 Subchapter 6 Elevator Safety Orders), the NAVFAC Elevator Design Guide, [the PTS-D10 NAVFAC Performance Technical Specifications](#), [the UFGS-14240 Unified Facilities Guide Specifications Section 142400 for Hydraulic Elevators](#), and [the UFGS-14210 Unified Facilities Guide Specifications Section 142400 for Electric Traction Elevators](#). The following requirements are to be included as applicable:

1. Machine room and hoist-way construction shall have a 2 hour fire rating. Machine room doors shall have a minimum 1 ½ hour fire rating, be self closing and self locking. Means such as fire rated caulking and foam shall be applied as necessary to add to the control of smoke and gases.
2. Only machinery, equipment, electrical equipment, electrical wiring, raceways, cables, fire

detecting systems, pipes, ducts, tanks, and sprinklers used in conjunction with the function or use of the elevator shall be permitted in the elevator machine room and hoist-way.

3. Ventilation means, either natural or mechanical shall be provided in elevator machine rooms and hoist-ways. Machine room temperature and humidity shall be maintained in the range specified by the elevator equipment manufacturer to ensure safe and normal operation of the elevator. Hoist-ways of elevators serving three or more floors shall be equipped with natural or forced means of ventilation. Means such as fire rated caulking and foam shall be applied as necessary to add to the control of smoke and gases.
4. A drain, or sump and sump pump of appropriate capacity shall be provided in the elevator pit. Positive means shall be provided to prevent water, gases, and odors from entering the hoist-way. Permanent piping shall be installed and routed to pump out of the elevator hoist-way and machine room as necessary. Provide grated cover for sump.
5. Grout areas and components as necessary, i.e. landing sills at landings and underneath landing sills on the hoist-way side, entrance frames, bottom of guide rails, etc.
6. Seismic requirements shall be provided as follows:
 - a. Hydraulic Elevators shall be provided with an Over-speed/Rupture/Safety Valve/Automatic Shutoff Valve, installed immediately adjacent to the hydraulic cylinder (jack) head.
 - b. Electric Traction Elevators shall be provided with Counterweight Derailment Detection Devices in the hoist-way and Seismic Motion Detection Switches in the machine room.
7. The ASME A17.1 Elevator Safety Code for Elevators and Escalators requires means to automatically shut down elevators prior to the application of water through fire sprinklers located in elevator machine rooms and top of hoist-ways. A NAVFAC Fire Protection Engineer shall determine when a fire sprinkler is required at the top of the hoist-way. Department Of Navy policy requires water flow switches (NOT HEAT DETECTORS) in the fire sprinkler lines to automatically shut down the elevator(s) through a shunt trip circuit breaker. Each water flow switch arrangement shall include a shut off valve, check valve, and inspector's test valve. The water flow switch arrangements shall be installed on the outside of machine rooms and hoist-ways. The control voltage for the shunt trip circuit breaker shall be supervised at the Building fire alarm panel. Water flow switches shall be nonadjustable factory set at zero (0) time delay. Disconnect switches and circuit breakers shall be labeled with circuit identification and origination.
8. Smoke detectors shall be provided in elevator lobbies at all floors and in the elevator machine room. If a fire sprinkler is installed at the top of the hoist-way a smoke detector shall also be installed at the top of the hoist-way. Activation of any one of the smoke detectors mentioned here shall recall the elevator(s) in accordance with ASME A17.1 Safety Code for Elevators and Escalators. The "Fireman's Hat" light indicator located in the elevator car operating panel (COP) shall light continuously when a smoke detector in an elevator lobby is activated, and shall light intermittently (flash on-and-off) when a smoke detector in the elevator machine room or top of hoist-way is activated.
9. GFCI convenience outlets shall be provided in every pit, elevator car top, and machine room. Convenience outlets in pits located less than 48 inch above the pit floor shall have a NEMA- 4 water tight enclosure. Provide label with circuit identification and origination.
10. A fused or circuit breaker type disconnect switch shall be provided for each elevator in the elevator machine room for each 120 VAC dedicated lighting circuit. Lighting switches, disconnect switches, and convenience outlets shall be labeled with circuit identification and origination.

11. A Hydraulic Elevator shall be provided with two (2) oil shut-off valves. One in the pit and one in the elevator machine room. The valves shall be 1500 PSI rated Water/Oil/Gas (WOG) ball valves.
12. All elevators shall be provided with two (2) alarm bells. One bell shall be battery operated, and one shall be a 120 VAC operated bell. Both bells shall be activated through the push button marked "ALARM" located on the elevator car operating panel (COP). Both bells may be installed on the elevator car top.
13. A separate certificate frame shall be provided in the elevator adjacent to or on the elevator car operating panel. The certificate frame shall not be an integral part of the car operating panel that requires opening the car operating panel to gain access to the certificate.
14. All elevators shall be provided with either hall lanterns and gongs at every landing, or car riding lanterns and gongs. Lighting means shall be reliable, long lasting, energy efficient, and be virtually maintenance free.
15. Hydraulic elevators with hole-less/above-ground cylinder-plunger assemblies shall utilize single-stage cylinder-plunger assemblies. Telescopic/multistage hydraulic cylinder-plunger assemblies are prohibited. Hole-Less/Above-Ground hydraulic single-stage cylinder-plunger assemblies shall be installed with the cylinder mounted directly on the pit floor and the plunger connected to the elevator car (inverted installation is prohibited).
16. Elevator guide rails shall be "T" rails. No other type of guide rail is acceptable.
17. Standard safety railing shall be installed on the top of the elevator when the horizontal distance between the edges on the top of the elevator and the hoist-way enclosure exceeds **12 inch**.
18. Controllers, controls, control valves, switches, components, devices and tools shall be non-proprietary. Proprietary knowledge, training, tools, programs, software, or hardware shall not be required to operate, adjust, analyze, troubleshoot, or repair the elevator system in its entirety.
- 19. Minimum Elevator Cab shall be 6 feet x 8 feet.**

220519 BASE UTILITY METERS

The base requires that all new meters on Camp Pendleton be compatible, **field tested & verified** with the base Itron wireless RF meter reading system. The system is **Itron MV-RS**. The meters should be centrally located if feasible. This is handled on a project by project basis.

The meter requirements are as follows.

- a) **Electric meters shall be Itron Sentinel or Centron Poly digital meters with ERT/RF output. They shall be able to read demand and large customers to read TOU. Transformer-rated meters shall have a test switch installed in the switchgear or metering enclosure. Test switch wiring and color codes shall match SDG&E standards.** The meter will have a test switch installed in the switchgear or metering cabinet. The only approved forms are 2S, 5S, 9S & 16s. **All electric meters shall be programmed at the factory with CPEN customer requirements.**
- b) Alternate to above N/A.

- c) **Any poly-phase electric meter installed at CPEN should meet the technical specifications in order to ensure compatibility with the Base's Meter Reading System and data gathering requirements.**
2. **Gas meters shall be the American brand or equal with an Itron ERT/RF compatible model 100G will data logging or better.** The meter will be sized for the appropriate load of the building. The meter be installed by the contractor & inspected by the base Gas Distribution personnel after installation.
3. **Water meters Shall be Neptune or equal with an Itron ERT/RF compatible model 100W series end point.** Units should be mounted on the meter or under the pit lid or on the wall of the mechanical room depending on location of meter. This will be decided on a project-by-project basis. The meter will be sized for the appropriate load of the building. The meter will be installed by the contractor & inspected by the base Water Distribution personnel after installation.

Note: All Water & Gas meters except for special conditions, will be above ground & protected from physical damage. Large master meters will also be fenced with gravel or concrete pads. Working clearance must be approved by Base FMD personnel.

Recommended local vendor: Measurement Control Systems Inc., Phone: (800) 826-1682 or McAvoy & Markham Engineering & Sales Co. Phone: (949) 727-3966, sales@macavoy-marham.com.

Questions on these specifications should be directed to the CPEN Energy Office. Phone Number 760-725-0567

220523 WATER SHUT-OFF CONTROL VALVE SYSTEM IN BEQ

The following is for new BEQ projects with **Recycled Water** as the water source for the toilets flushing system.

Due to high level of concern about massive amount of domestic water running to sewer system after a sudden water pressure drop in BEQs, providing better quality flush valves will ensure eliminating this problem. The following **Control Valve** design is a way of solving the problem for BEQs.

This **Control Valve (with shut off valves at both sides and a bypass valve)** will be installed in the **Main Recycled Water line** in mechanical room after water meter.

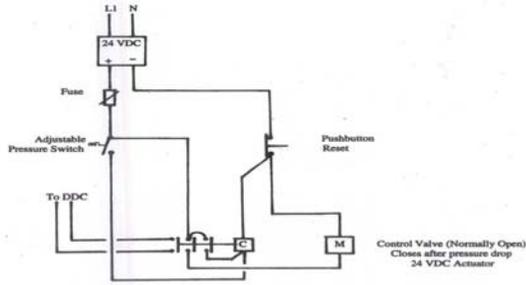
Sequence of Operations:

When pressure drops to the set-points of the Pressure Switch, Contactor is energized. Three Auxiliary Contacts (normally open) will close causing:

1. Continue energizing the contactor after Pressure Switch reset.
2. Energizing the Control Valve which results in closing the valve and stop domestic water flow to building.
3. A signal will be sent to DDC system to alarm the water pressure failure.

This valve will stay closed until the maintenance personnel arrive and reset the pushbutton.

Note: Pressure Switch will be adjusted based on the local water pressure at the building.



221113 and 2111000

WATER MAIN, FIRE HYDRANT, WATER LOOP, WET TAP, STANDARD DETAIL, LEAD JOINTS, WATER SOFTENER, and WATER DISINFECTION

GENERAL

All water works construction shall conform to the most recent Unified Facilities Criteria (UFC) and Code of Federal Regulation (CFR) requirements. If the standard sought does not appear in these requirements, then the latest edition of the following standards shall be utilized in the order listed:

1. State of California Department of Health Services.
2. American Water Works Association (AWWA) Standards.
3. City of Oceanside Water, Sewer and Reclaimed Water Design and Construction Manual.
4. San Diego County Regional Standard Drawings.
5. Standard Specifications for Public Works Construction (SSPWC or Greenbook) latest edition.

WATER MAIN MATERIAL

Distribution line ([pipes less than 8 inch ID](#)) construction materials shall be ductile iron per AWWA C-151 with double inside mortar lining per AWWA C-104 and double outside 8 mil polyethylene encasement per AWWA C105 or PVC per AWWA C-900 and C-905.

Transmission lines ([Mains](#)), (Wells to Water Treatment Plant or Reservoirs, [Primary Mains to Cantonments](#)), shall be [High Density Polyethylene \(HDPE\) per AWWA C901 and C906 unless approved in advance by PW \(Steel or Ductile Iron per AWWA may be approved\)](#). For steel and ductile iron pipe, lay drawings must be submitted and approved by PW before ordering materials.

WATER MAIN AND FIRE HYDRANT

All water mains and fire hydrants shall comply with the following regardless of whether the facility is sprinklered or unsprinklered:

The contractor will be responsible for obtaining or performing fire flow tests as part of the process. All new or existing facility projects shall have water mains and fire hydrants that are capable of providing a minimum flow of **1,250 gpm at 20 psi** residual pressure for **two (2) hours**. In the event the existing water distribution system is unable to accommodate these pressures or flows, the contractor shall be responsible for installing a fire pump(s) and/or water storage tank(s) as part of the project and shall be responsible for including this item(s) in determining his bid on the project.

A facility being served by a single fire hydrant may be served by a single lateral on an unlooped system. This lateral shall have a **minimum internal diameter of 6 inches**.

A facility or group of facilities requiring more than one fire hydrant shall be installed on a looped system. The loop and the laterals serving the fire hydrants shall have a **minimum internal diameter of 8 inches and shall conform to the maximum allowable velocities listed below.** Pipes shall be sized based on the following criteria:

1. Maximum allowable velocity at average day demands = 5 ft/s.
2. Maximum allowable velocity at max day & peak hour demands = 7 ft/s.
3. Maximum allowable velocity at max day demands + fire flow = 10 ft/s.

Minimum depth of cover required:

1. 36 inches for 12-inch mains and smaller.
2. Mains over 12 inches require special design and approval at the design stage.
3. Water main shall not be installed under sewer mains.

WATER LOOP REQUIREMENTS

Water service for new construction shall be provided by a looped system. Dead end water service mains (**other than fire hydrants**) require the approval of Public Works (PW) in the design phase. **Water loop systems shall be connected to two separate water mains. In case the secondary water main is more than 1,000 feet from the facility, the contractor will be allowed to loop the water system back to a secondary source on the same water main. In this event, the two points of connection shall be a minimum of 100 feet apart.**

Water loops shall be designed to fall within the footprint of the approved Environmental Boundary (EA, CATX, etc). If a water loop cannot be installed within this boundary the contractor shall contact Public Works before beginning their design

WET TAP REQUIREMENTS

Connections to existing pipelines shall be made with the installation of a Tee. The connection sequence shall be as follows: The existing pipeline shall be drained; the Tee with a three valve cluster shall be installed; FMD or PW approval of the connection shall occur prior to the re-filling of the existing pipeline.

In certain exceptional instances, and only where approved by PW, wet tapping will be allowed as follows:

A wet tap design and plan of execution will be submitted to PW prior to performing the work. The plan of execution will include the qualifications of the wet tap contractor. The contractor will install a tapping saddle and gate or plug valve and make the wet tap.

New installed wet taps (hot taps) of 8.0" O.D. maximum are limited to 1/3 internal diameter of connecting water line, i.e. wet tap O.D. must be less than 1/3 the internal diameter of the supply line.

New connections to existing lines solely for the purpose of a hydrant or blow off valve may be performed with a single valve to isolate the hydrant.

WATER SYSTEM STANDARD DETAILS

Standard construction details are per City of Oceanside or San Diego County Requirements.

Exceptions: 1. PRV's shall be above ground, on concrete pads with fence or cover.
2. Blow off valves, shall be above ground, 4" minimum.
3. Back flow preventers, DCDA's and RPPA's are per San Diego County

requirements but with an isolation valve.

4. Minimum diameter of hydrant laterals shall be **8 inch** inside diameter.

Wells shall be constructed as per the California Department of Water Resources-Southern District. All appurtenances of the well shall be attached with structural shoulder bolts, washers, and nuts; torqued to standards, witnessed and torque strip, with at least three threads exposed beyond the nut. Columns shall be Type 304 Stainless Steel with passivated Type 316 Stainless Steel threaded locking collars and screens.

De-chlorination procedures for newly installed potable lines must be certified, complete, and perform sample testing with results completed prior to being put in service. Abandoned water lines will be removed whenever feasible. Feasibility will be determined by Public Works. However, contractor will not be required to remove abandoned water lines running under existing buildings, roads, or parking lots unless those items are also being removed as part of the project.

Lead abatement and remediation (lined), involving cast iron lines, will be accomplished per California Code of Regulations. No new cast iron lines will be installed.

VALVES

For all work on existing water systems (remodel, rehabilitation of existing structures), replace valves with lead joints whenever possible.

Butterfly and rising stem valves are for above grade installation only.

Only single-disc, non-rising stem, gate valves are installed into new or existing below grade water lines.

WATER DISINFECTION

Either for new or repaired water main, the disinfection shall be in compliance with American Water Works Association (AWWA) C651-05 (Standard for Disinfecting Water Mains) or latest. The contractor personnel performing the disinfection and flushing procedures shall be trained and be familiar with AWWA Standards.

221316 WASTE WATER MAIN, MANHOLE, GRAVITY, FORCED MAIN PIPE, and RECYCLED WATER

GENERAL

All sewer system construction shall conform to the most recent Unified Facilities Criteria (UFC) and Code of Federal Regulation (CFR) requirements. If the standard sought does not appear in these requirements, then the latest edition of the following standards shall be utilized in the order listed:

1. State of California Department of Health Services.
2. American Water Works Association (AWWA) Standards.
3. City of Oceanside Water, Sewer and Reclaimed Water Design and Construction Manual.
4. San Diego County Regional Standard Drawings.
5. Standard Specifications for Public Works Construction (SSPWC or Greenbook) latest edition.

WASTEWATER MAINS

Minimum size shall be 8 inches. Minimum velocity of **2.5 feet per second** shall be maintained at peak to standard flow.

MANHOLES (Sanitary Manhole and Sewer Manhole)

Manholes shall be provided at all pipe intersections and at changes in elevation, direction, size, diameter and shape. Manholes shall be placed a maximum of **400 ft** apart **in the closest paved street**.

Also, Manholes shall not be placed in the following locations:

1. Inaccessible locations.
2. Gutters and other depressions.
3. Sidewalks, crosswalks, private yards and public gathering areas.
4. Within twenty feet of any structure.
5. Within any area subject to flooding.

GRAVITY WASTEWATER MAIN MATERIAL

PVC Pipe: 4" – 15" PVC shall meet ASTM D3034, SDR-35 requirements, minimum. 18" – 24" shall meet ASTM F679 requirements, minimum. Maximum diameter of PVC shall be 24". For depths less than 6 feet or greater than 12 feet and for pipe slopes greater than 6%, PVC ASTM 3034, SDR-26 shall be used. **HDPE, SDR-26, butt fused, is preferred piping material for all applications greater than 12" ID.**

Maximum diameter of PVC shall be 24 inches. Larger pipes shall be ductile iron and polyethylene lined or HDPE or approved equal.

FORCE MAIN PIPE

Force mains shall be **HDPE (HIGH-DENSITY POLYETHYLENE PIPE)**. The maximum allowable velocity = **6.5 ft/s while the minimum s.b. 2.5 fps.**

VENT PIPE

Vent pipe for sound sensitive occupancy, (BEQ, Lodging and Medical construction/remodel) shall be Cast Iron per CISPI 301 and 310 specifications. All other building types, (office, retail, etc.) where sound control is less of an issue can be PVC or ABS schedule 40.

RECYCLED WATER

All new construction will conform to the most recent Unified Facilities Criteria (UFC) and Code of Federal Regulation (CFR) requirements. The latest edition of the following standards shall be utilized in the order listed:

1. State of California Department of Health Services.
2. American Water Works Association (AWWA) Standards.
3. City of Oceanside Water, Sewer and Reclaimed Water Design and Construction Manual.
4. San Diego County Regional Standard Drawings.
5. Standard Specifications for Public Works Construction (SSPWC or Greenbook) latest edition.
6. State of California Department of Water Resources

Pipe Size and Material:

Note: Pipe sizes indicated are Internal Diameter (I.D.)

All recycled water mains shall be HDPE (High-Density Polyethylene Pipe). The maximum allowable velocity = 6.5 ft/s.

The minimum diameter of mains shall be 8 inches.

Service lines may be PVC class 200 (C-900).

Depth of Pipe Cover:

The minimum depth of cover required is 48 inches for 12-inch mains and larger. Mains over 12 inches require special design and approval from PWO at the design stage.

Recycled water mains shall not be installed over potable water mains.

Valves and Risers:

Valve cans and risers shall be 6 inch PVC class 200, C-900 Pipe and colored purple. Three valve clusters will be installed at all tee connections. Valves must be easily accessible.

221343 WASTE WATER LIFT STATION

Complete Design Submittal under RFP Part 3, Chapter 6, Section G3020, Sanitary Sewer.

REFERENCES: UFC 3-240-06A , WASTEWATER COLLECTION AND PUMPING (16 January 2004) and The City of San Diego, SEWER DESIGN GUIDE (2004)

1. Provide Construction and Design Documents in accordance with all applicable Contract Requirements, including the RFP Part 2 Sections.
2. Sewer Lifting Station (SLS) Submittal Register shall include Construction and Design Documents supporting SLS.
3. SLS Design Analysis shall include:
 - a. Basis of Design (BOD)
 - b. Code and Criteria Search (CCS)
 - c. Design Calculations
4. SLS BOD shall include a description of project concepts that address salient points of the design including, but not limited to, following:
 - a. UFC 3-200-10N requirements, including, but not limited to Section 3-2.1, Civil Basis of Design (BOD) and Section 3-2.1.10, Sanitary Sewer.
 - b. How pump duty is controlled and cycled among the three pumps.
 - c. Telemetry requirements and compatibility with existing Base System.
 - d. RFP Part 3 requirement to provide multiple force mains as necessary to enable expansion from commissioning to full lift station capacity.
 - e. RFP Part 3 requirement to provide fail safe devices based on failure mode analysis.
 - f. RFP Part 3 wet well **retention time must be designed for at least 60 minutes.** If recommendation is not followed, address this in failure mode analysis.
 - g. RFP Part 4 Performance Technical Specification (PTS) Requirements.
5. Provide flow calculations for a catastrophic failure in the event all power to the lift station is lost, (if the emergency generator doesn't start and perform as expected). Provide with those flow times for normal, peak and maximum calculated peak demand so that FMD has sufficient time to respond to the crisis and get all the portable pumping equipment connected in time before an actual spill were to occur. The sewer lines and manhole system would need to provide the retention time necessary to allow FMD to respond. These flow calculations are important to fully understand the total system capacity and to identify any need to provide additional overflow storage capacity.
6. The construction submittals should include all equipment and material to be reviewed and approved by the Engineer of Record. These submittals should include the pumps, motors,

- controls, electric power panel, influent grinder pump, odor control chemical tank, emergency generator, flow meter, pressure transmitter, connection to Unity, emergency overflow tank, valves, pipe and fittings, etc.
7. Wet wells and all concrete components exposed to waste water shall be lined with a post cured spray or brushed on water proofing material.
 8. Corrosion resistant materials shall be used for all mechanical and electrical components. Type 316 Stainless steel for brackets and supports. Fiberglass grating and ladders. Exterior of ductile iron piping shall be epoxy coated.
 9. Pump stations shall be equipped with soft start motor controllers or VFD's, to reduce surge pressures and reduce the impact on downstream treatment components.

223100 WATER SOFTENER

All water softeners shall be Ion Exchange Resin Tanks.

The use of sodium or potassium salt self-regenerating exchange processes is not allowed.

221423 STORM WATER

GENERAL

All storm water collection systems, culverts and erosion control construction shall conform to the most recent Unified Facilities Criteria (UFC) and Code of Federal Regulation (CFR) requirements. If the standard sought does not appear in these requirements, then the latest edition of the following standards shall be utilized in the order listed:

1. San Diego County Regional Standard Drawings, latest edition.
2. Standard Specifications for Public Works Construction (SSPWC or Greenbook), latest edition.
3. Caltrans, Standard Specifications and Construction Details, latest edition.

PIPE REQUIREMENTS

1. All storm water piping outside of cantonment areas, (undeveloped areas susceptible to wild fires) shall be RCP (Reinforced Concrete Pipe). Storm water piping within cantonment areas shall be RCP or HDPE (High Density Polyethylene Pipe) or SRPE (Steel Reinforced Polyethylene Pipe).
2. The Contractor / Designer of record will provide calculations and pipe manufacturer's data to install pipes with the required strength and bedding design combination capacity to satisfy the dead load and / or live load requirements for the installation.
3. Concrete Pipe to be manufactured in accordance with and conforming to ASTM C 76M ASTM C 76 (Class III to Class V). Arch Concrete Culvert to be manufactured in accordance and conforming to ASTM C 506M ASTM C 506 (Class A-III to A-IV). Concrete Pipe sizes larger than 24 inch diameter shall be reinforced concrete pipe. Non reinforced pipe manufactured with and conforming to ASTM C 14M ASTM C 14, (Class III).
4. High Density Polyethylene to be smooth interior wall (Type D or S) manufactured in accordance with and conforming to ASTM D3350, ASTM D 2412, ASTM F894, and AASHTO Designation M294 ribbed.
5. Steel Reinforced Polyethylene Pipe to be smooth interior wall manufactured in accordance with and conforming to ASTM F2562M ASTM F2562, and AASHTO Designation M294

ribbed.

6. Low Impact Development (LID) solutions (Example: Storage Systems) will follow same requirements criteria as the Storm Water Systems.

230515 FOUR- PIPE SYSTEM FOR BEQ

Provide a 4-pipe reverse-return heating and cooling piping system from the Mechanical Room throughout the building vertical pipe chase, attic, and to each individual fan coil unit in each room. Provide vents at the high points of the system and drains at the low points. Drains (except BEQ fan coil units) shall be piped to a floor sink or other suitable entrance to the building's sanitary sewer system. Provide expansion loops, isolation ball valves at the drops, piping insulation, control valves, and all necessary supports, joints, couplings, caps and other items to complete the piping system. Joints on direct-bury factory prefabricated, pre-insulated copper pipes shall be silver-brazed.

Provide vertical 4-pipe fan coil units and controls. Heat exchange coils shall consist of copper fins on copper tubes.

230900 DIRECT DIGITAL CONTROL SYSTEMS

GENERAL REQUIREMENTS

1. The use of Sections 013500– SPECIAL PROJECT PROCEDURES should be considered to cover migration of facilities already constructed using Base Wide Energy Management System (EMS) Technical Design Specification, Final Version dated 23 May 1997. All new and/or renovated facilities shall be designed for EMS connectivity based on the technical requirements specified in Specification 230900 (15910), Direct Digital Control System dated 1 Mar 06. Future Versions of this document will be based on UFC 3-410-02.
2. Energy Management System (EMS) LON control devices shall be LonMark Certified utilizing a LonWorks Network Services (LNS) based database structure. Configuration parameters of the LonMark certified devices shall be directly accessible via an LNS based application interface (plug-in). The “plug-in” shall be installed and its use demonstrated with Commercial Off the Shelf (COTS) LNS management tool. The “plug-in” shall be freely available and/or provided by the installing contractor.
3. The system shall be of a flat, open architecture and the devices shall communicate utilizing the ANSI/CEA 709.1b (LonTalk) Protocol and CEA 852. Installed LON networks shall be readied for connection to the existing base wide MCB Camp Pendleton EMS system (Unity) utilizing the most feasible and economical option available including; hardwire (709.1b) connection to existing Facility Management System Cable (FMS Cable), network drop (CEA 852) located in NMCI/Telco Room, wireless LonWorks router (709.1b), and/or wireless network (CEA 852) connection. It is recommended, as part of the project design that the Direct Digital Control System submittals be turned into the Unity Room Manager or Representative separately for approval.

REFERENCE SPECIFICATION - SECTION 230900 (15910CP) DIRECT DIGITAL CONTROL SYSTEMS 03/06

231110 ABOVE GROUND STORAGE TANKS

All new ASTs on MCB CPEN must meet the following 40 CFR 112.7, CPEN Fire Marshall, and AC/S, Environmental Security requirements:

1. Double Wall secondary containment, UL 142 listed for combustibles, UL 2085 listed for flammable liquids.
2. AST secured by mechanical fasteners to a reinforced concrete pad approved by the tank manufacturer.
3. High level alarm (better or equal to TM1 Tank Monitor).
4. Secondary space leak gauge (better or equal to At-A-Glance Leak Gauge).
5. Primary tank level gauge (better or equal to At-A-Glance Direct Reading Gauge).
6. Fill line spill bucket container (better or equal to Pomeco 221-AST Spill container, min. 5 gallons).
7. NFPA 704 markings (fire diamonds).
8. Vehicle collision protection (concrete-filled steel pipe bollards) spaced in accordance with manufacturer's recommendations.
9. All piping must be aboveground and visible (single wall), **unless approved prior to construction by AC/S, ES because of extenuating circumstances. Any underground piping must be double walled, fiberglass, and electronically monitored).**
10. Piping must be painted, labeled for product contained and direction of flow indicated by arrows.
11. Gasoline tanks 250 gallons and greater require an Air Pollution Control District Permit.
12. Camp Pendleton Fire Dept. (Fire Marshall), AC/S, Environmental Security (NEPA and Spill Prevention Branches) and AC/S O&T, OPS Force Protection must approve tank site plans prior to installation.

234100 NATURAL GAS

GENERAL

All natural gas system construction shall conform to the most recent [NFPA 54](#), Unified Facilities Criteria (UFC) and Code of Federal Regulations (CFR) Title 49, Part 192 requirements. If the standard sought does not appear in these requirements, then the latest edition of the following standards shall be utilized in the order listed:

1. International Fuel Gas Code.
2. American Society of Mechanical Engineers, ASME.
3. American Society of Testing Materials, ASTM.
4. [Unified Facilities Guide Specifications Section 09-90-00, UFGS](#)
5. San Diego Gas and Electric Specifications and standard construction details ([will require Public Works approval](#)).

In addition to the preceding codes, the contractor shall ensure the following items are adhered to during construction.

1. All aboveground pipe shall be painted gray.
2. All buried piping shall include plastic warning tape installed 12" below finished grade. The tape shall be 3" wide and shall have the words "Caution buried gas line below" or similar.
3. Tape an insulated yellow #10 AWG polyethylene coated copper tracer wire to the top of the pipe that terminates a minimum of 4" above grade at all metal vertical risers. Do not wrap the wire around pipe.
4. All pipe shall be buried a minimum of 36" below finished grade or as recommended by the manufacturer, whichever is greater. Any burial of pipe less than 36" will require Public Works approval.
5. Contractor shall provide an aboveground pressure regulator/meter detail as part of the construction plan set. The detail shall identify all pipe, fittings, unions, meters, regulators, and other pertinent information. The detail shall also show transition from PE pipe below grade to the vertical steel riser.

6. All coated anode less vertical risers and aboveground pipe shall be black steel schedule 40 or 80 in non-coastal areas and galvanized piping in coastal areas with threaded ends for pipe 2" and smaller. Pipe greater than 2" shall be butt welded in accordance with ASME standards.

MATERIALS

All gas pipeline products shall be Polyethylene PE24, (PE2406) for distribution or PE36, (PE3608) for transmission, all pipes shall have Standard Dimension Ratios, (SDR). SDR shall be submitted and approved by PW prior to ordering material.

235200 BOILER REQUIREMENTS

BOILER REQUIREMENTS

1. All boilers used for heating hot water shall be fire tube/fire box type. The boilers must have IRI gas train and meet CSD-1 compliance.
2. Domestic water boilers under 140 deg F maybe fin tube water tube boilers. The boilers must have IRI gas train and meet CSD-1 compliance.
3. Any new unit (boiler, process heater, or steam generator) with a heat input rating of 1million Btu per hour or greater may require an Air Permit.

235233 LOW PRESSURE WATER HEATING BOILERS (OVER 800,000 BTU/HR OUTPUT)

Only used DDC (Direct Digital Control) System for FMS and Heating System instead of pneumatic control and with separate over ride switches for all equipment being controlled by Unity Room. All remote operator communication (by others) shall be through connection to the existing Camp Pendleton Facilities Management System (FMS) with connectivity to the "UNITY ROOM".

1. Boiler submittals to be approved by FMD Boiler Inspector.
2. Only install "Hurst" fire tube firebox heating boiler or equal in compliance with the enclosed Section 235233 (edited) specifications acceptable to us.
3. Boiler isolation valves shall be ball valve or gate outside screw & yoke design and flanged ends valves and **be installed closer to the boiler.**
4. Boiler gas trains must comply to I.R.I gas control system with Honeywell RM-7800-L-1012 (Infrared scanner) for flame safeguard control panel. Gas train must have leakage test valves installed as per ASME CSD-1-2004 para. CF-150 (d).
5. Boiler vents (forced draft) must comply to positive pressure type for boiler stacks.
6. Ensure McDonnell & Miller Test N Check Valves Model #TC-4 is being installed on low water control piping.
7. Ensure quick disconnect switches are being installed for each boiler at each entrance door properly labeled for identification. If there is more than one door to the boiler room, there should be a switch located at each door as per ASME CSD-1-2004 para. CE-110 page 9 and CF-310 (d) page 21.
8. Ensure Boiler Burner Combustion Flame Safeguard system shall be provided with a **repetitive self-checking circuit.**
9. Ensure boiler control panel cabinet remotely mounted on the side or on the wall away from boiler burner front approximately 4 to 5 feet above floor.
10. Ensure two separate vent lines are being installed for gas train normally open vent valve and for gas diaphragm pressure switches/gas pressure regulator.
11. Ensure drip legs are being installed on each boiler gas trains as per CSD-1 para. CF0-140

page 17.

12. Ensure union fitting is being installed on boiler relief valve discharge line.
13. Ensure where all electrical components and devices subject to dripping moisture/water shall be provided of an enclosure that is weatherproof/drip tight.
14. Ensure cement lined is being installed for domestic hot water storage tank instead of glass lined. (For easier weld repairs).
15. Per UPC (Uniform Plumbing Code) 603.4.4 only installed double wall heat exchanger on cement lined domestic hot water storage tank.
16. Only install Chemical Pot Feeder with "legs", (5 gallons capacity) with maximum pressure/temperature of 200 psig/200F temperature.
17. Ensure piping insulation and equipment are identified, labeled and marked for direction of flow.
18. Per "Closeout Procedures" ensure "Warranty Tags" are being attached on each newly installed equipment/product. Furnish with each warranty the name, address, and telephone number of the guarantor's representative nearest to the location where the equipment and appliances are installed. The guarantor's representative, upon request of the station representative, shall honor the warranty during the warranty period, and shall provide services prescribed by the terms of the warranty.
19. Due to the hard domestic water at Camp Pendleton, ensure "Type K" of copper tube is being installed for all domestic and heating water above ground piping to reach a life expectancy of 20 years.
20. Ensure a thermometer is being installed on all domestic storage tanks. The thermometer shall at all times indicate the temperature of the water in the tank at or near the outlet.
21. Provide and install "Guard Post" (4" Sch. 80 Steel Pipe filled with concrete and paint with brilliant yellow) where the gas meter and or regulator may be subjected to "vehicular damage".
22. Automatic air vent valve shall be equipped with a vent line running to the floor.
23. Ensure circ pumps are not installed overhead to facilitate repairs without using a step-ladder.
24. Ensure main gas line in the boiler room is being installed overhead to prevent trip hazard to the personnel.
25. Ensure ¾" hose bib connection is being installed in the boiler room for performing Boiler PM. (Preventive Maintenance schedules of any of these boilers, heating and hot water will not be lost.
26. Our procedures for certification of boiler are:
 - a. First witness 150% hydrostatic test of 1 ½ times of the boiler highest safety valve popping pressure or 1 ½ times of the boiler MAWP, whichever is less. (To determine if leakage causing damages have occurred during shipment/installation.)
 - b. Received documentation of boil-out of boiler for each boiler.
 - c. Received combustion tests report of boiler for each boiler.
 - d. Received documentation to show that all the newly installed boilers have had the HHW systems chemically treated.
 - e. Witness operational tests of all boiler safety controls.
 - f. Received Boiler Manufacturer Data Report Sheet and Manual for each boiler. (Form H2/H3 for ASME Section IV) or (Form P2/P3 for ASME Section I)
27. Any new unit (boiler, process heater, or steam generator) with a heat input rating of 1 million Btu per hour or greater may require an Air Permit.

REFERENCE SPECIFICATION: SECTION 235233 (EDITED) LOW PRESSURE WATER HEATING BOILERS (OVER 800,000 BTU/HR OUTPUT)

235239 STEAM BOILER FOR MESSHALL EQUIPMENT

1. Boiler submittals to be approved by **FMD Boiler Inspector**.
2. Boiler gas train must comply to IRI and CSD-1 gas control system with Honeywell RM-7800L-1012 (Infrared scanner) for flame safeguard control panel.
3. Ensure Boiler Burner Combustion Flame Safeguard system shall be provided with a

repetitive self-checking circuit.

4. Ensure steam boiler is being installed in compliance with requirements of ASME Section I (Power Boiler) or approved equal.
5. Ensure two separate feed lines and stainless steel check valves are being installed on each boiler. This way, if one feed line breaks, we will not lose both boilers. This is also better for chemical treatment of the boilers.
6. Feed pumps to be changed from duplex into triplex. We prefer the receiver condensate tank to be horizontal, cylindrical and stand-mounted. The pumps shall be separately mounted on a steel base plate. This ensures we will have two pumps operational and one standby.
7. Ensure cement lined is being installed for domestic hot water storage tank. (For easier weld repairs).
8. Ensure domestic hot water storage tank double wall heat exchanger is being heated by steam from Steaming Boilers.
9. Ensure boiler water sample cooler and blow-down separator tank with after cooler are being installed on boiler blow-down system.
10. Boiler vents (Forced Draft) must comply with positive pressure type for boiler stacks as per NFPA 211 page 211-12 para. "C".
11. Make sure existing chemical treatment systems are being maintained on both boilers and soft water fill lines/valves are being installed to each chemical tank.
12. In addition to boiler main steam valve, a guarding gate valve (OS&Y chain operated) should be installed whenever a boiler is connected to a common header as per ASME Section I (PG-58.3.2)
13. Ensure quick disconnect switches are being installed for each boiler at each entrance door and properly labeled for identification. (as per ASME CSD- page 17 para. 100 and ASME CSD-1 page 21 para. CF-310 (d).
14. Ensure drain and steam trap are being installed on boiler header as per ASME Section I para. PG-59.4 page 47.
15. Ensure main gas line is being installed overhead to prevent personnel trip hazard and will not interfere moving equipment for replacement.
16. Ensure union fitting is being installed on boiler safety valve discharge line.
17. Ensure each boiler control panel cabinet remotely mounted on the side or on the wall away from boiler burner front approximately 4 to 5 feet above the floor.
18. Ensure two separate vent lines are being installed for gas train normally open vent valve and for gas diaphragm pressure switches/gas pressure regulator as per CSD-1 para. CF-190 (c) page 21.
19. Ensure piping insulation and equipment are identified, labeled and marked for direction of flow.
20. Per "Closeout Procedures)" ensure "Warranty Tags" are being attached on each newly installed equipment /product. Furnish with start date(s) and expiration date(s) of the warranty period and the name, address, and telephone number of the guarantor's representative nearest to the location where the equipment and appliances are installed. The guarantor's representative, upon request of the station representative, shall honor the warranty during the warranty period and shall provide services prescribed by the terms of the warranty.
21. Ensure circ pumps are not installed overhead to facilitate repairs without using a stepladder.
22. Provide and install chain operated hand wheels for overhead main header steam valves to provide quick control of the valves without using a stepladder.
23. Provide and install "Guard Post" (4" Sch. 80 Steel Pipe filled with concrete and paint with brilliant yellow) where the gas meter and/or regulator may be subjected to "vehicular damage".
24. Ensure "hard water" is being used for cooling water for blow down tank and boiler water sample cooler. It must be coming from outlet side of the backflow preventer. Due to the hard domestic water at Camp Pendleton, ensure Type "K" only of copper tube is being used for all domestic water piping.
25. To facilitate replacement of boiler feed check valve and for safety. Ensure (2) gate valves and a union fittings are being installed on both boilers feed check valves.
26. Per Ref. ASME Section 1 para. 61.1 page 50; Provide and install secondary (emergency soft

- water feed line) means of feeding the boiler.
27. Ensure ¾" hose bib valve connection is being installed in the Boiler Room for performing Boiler Maintenance/Cleaning.
 28. Our procedures for certification of boiler are:
 - a). First witness 150% hydrostatic test of 1 1/2 times of the boiler highest safety valve popping pressure or 1-½ times of the boiler MAWP, whichever is less.
(To determine if leakage causing damages have occurred during shipment/ installation.)
 - b). Received documentation of boil-out of boiler for each boiler.
 - c). Received combustion tests report of boiler for each boiler.
 - d). Witness operational tests of all boiler safety controls.
 - e). Received Boiler Manufacturer Data Report Sheet and Manual for each boiler.
(Form H2 / H3 for ASME Section IV) or (Form P2 / P3 for ASME Section I)

POC: FMD Boiler System Inspector, Phone:760.725.4799 Fax: 760.725.3440

260400 ELECTRICAL REQUIREMENTS

GENERAL

All electrical system construction shall conform to the most recent Unified Facilities Criteria (UFC) and Code of Federal Regulation (CFR) requirements. If the standard sought does not appear in these requirements, then the latest edition of the following standards shall be utilized in the order listed:

- a. National Electrical Code.
 - b. San Diego Gas and Electric Specifications and standard construction details.
1. Before any digging or disturbing in any location, the contractor shall be responsible to coordinate with the Base Environmental Security Office for permit and /or inspection.
 2. All underground conduit ducts for site and secondary power, telephone, cable and low voltage service cables shall be minimum PVC 40 concrete encased. Concrete shall have a minimum 3,000 psi compressive strength and contain. Red color dye added to the concrete mix.
 3. All trench ground wires shall not be installed with other primary medium voltage cables in the conduits, but rather shall be installed in the duct bank concrete encasement.
 4. Overhead electrical utilities shall be constructed in accordance with San Diego Gas & Electric Standards, SDG&E Section 1600 for Avian Protection.
 5. The contractor shall be responsible to apply and pay costs for all new San Diego Gas & Electric (SDG&E) service requirements.
 6. All wet type transformers and switches shall have less-flammable liquids. NFPA 70 and FM P7825 for less-flammable liquids having a fire point not less than 300 degrees C tested per ASTM D 92 and a dielectric strength not less than 33 kV tested per ASTM D 877. The fluid shall be a biodegradable electrical insulating and cooling liquid classified by UL and approved by FM as "less flammable". Fluid properties shall meet pour point ASTM D 97, less than -15 degree C, aquatic biodegradation EPA 712-C-98-075, 100% and trout toxicity OECD Test 203, zero mortality of EPA 600/4-90/027F, pass.

No live front pad-mount switches or transformers will be permitted.

SF₆ gases are not permitted.

7. When installed within five miles of the ocean: Pad-mounted switches and transformer enclosures must be 100% stainless steel and comply to ANSI c.57.12.29 for coastal environments.
8. Pad-mount transformers shall contain stainless steel bases to minimize corrosion where subject to landscape irrigation or standing water.
9. All substations and switchboard circuit breakers which are removable shall be provided with mechanical hoist; circuit breaker carts and storage cabinet in the same area as substations and switchboard. Where application is outdoor, carts provided shall be made of stainless steel.
10. Electrical Meters, see SECTION 220519 BASE UTILITY METER REQUIREMENTS.
11. Electrical design shall comply with Commercial building design standards and practices to allow for the traditional approach in determining the distribution system panel and feeder size/ratings based on a more conservative demand-adjusted connected load to better accommodate surges or future load growth.
12. All electrical switchboard and panelboard buses shall be copper.
13. All panelboard circuit breakers shall be bolt-on type. Include a main circuit breaker in every electrical sub-panel.
14. Electrical panel phases/loads shall be reasonably balanced within normally accepted tolerances, standards or guidelines.
15. Panel schedule shall show all connected loads per phase.
16. All service, feeder and branch circuit wiring shall be copper.
17. (MC) Metal-Clad Cable is not permitted.
18. Use steel compression connectors and couplings on EMT conduit.
19. Receptacles shall be minimally rated heavy-duty, specification, commercial or premium grade.
20. Outdoor LED Luminaires shall be American-made, ARRA Compliant at least 1 year of commercial service, listed to UL 1598, tested to LM79 & LM80, have an efficacy > 50 lumens/watt, L70 life > 75,000 hours, CRI > 70, CCT < 6500 and IP rating > 54 with onboard surge protection and with a minimum 5 year light engine/ enclosure coating warranty. Color temperature range for outdoor LED lamps shall be from 4000K to 6000K.
21. Light fixtures for parking lots shall have 54-watt T-5 High Output fluorescent lamps and electronic ballasts or LED or Induction that meet Base Requirements.
22. Wall packs shall be compact fluorescent or induction type with individual photo control unless otherwise authorized to be (HID) High Intensity Discharge type by the Public Works Electrical Engineer specifically for high security or special illumination applications.
23. Light fixtures located in Hi-Bay applications shall have 54-watt T-5 High Output fluorescent lamps and electronic ballasts.
24. Egress Lighting Illumination Level shall be a minimum of one foot candle along the path of egress. Egress Lighting Photometric study is required.

25. Compact fluorescent twin-tube or quad lamps shall be horizontally mounted where installed in recessed or surface downlight open-can fixtures for better, glare-free illumination".
26. Four-foot fluorescent fixtures shall be provided with 25-watt Super T-8 fluorescent lamps and electronic ballasts.
27. Color temperature of fluorescent lamps shall normally be 4100 degrees Kelvin for most applications except where other color temperatures can be reasonably justified for specific purposes when color rendition is of prime importance. Color temperature for interior LED lamps shall be 3500 K to 4100 K.
28. All steel light poles shall be powder coated inside and out.
29. All system-circuited street, walkway, security and parking lot lighting fixtures shall be provided with individual fusing to locally isolate internal fault-caused loss of power from affecting the remainder of the branch circuit lighting.
30. Time switches shall be digital electronic type with battery back-up and shall contain astronomic or photocell control feature where used for operating lighting.
31. All old style BEQ lighting designs that do not contain a vestibule entry or hallway with separate localized illumination, but rather have entry directly into the sleeping room with a bright main light fixture over the sleeping area, shall incorporate a low-wattage compact fluorescent night light inside the main fluorescent light fixture that provides minimal lighting in sleeping area. The night light shall be separately switched from the main light and the switch shall be located at the entry door. The main light switch should be located near the hallway to the bathroom to avoid accidentally switching-on the main light upon sleeping room entry.
32. All dimmer or fan speed controls shall contain a separate "on/off" switch to allow for preset dimming or fan speed without losing the adjusted setting when the lights or fan are turned "on" or "off". The separate switch is usually more durable and has a longer operational life than continually moving the slider control for switching power "on" or "off".

263213 DIESEL GENERATOR REQUIREMENTS

Generators need to be permitted through SDAPCD for the majority of the base and SCAQMD for equipment located in the 64-area (Talega).

The contractor shall complete the application in the name of Camp Pendleton (CPEN) and pay for the application costs. The Air Branch MUST review and approve the application prior to submitting to SDAPCD. This process takes at least 6 weeks and could take as long as, 6 months. Submit the application ASAP - even if it means submitting without knowing specific engine information, such as, engine serial numbers.

All new diesel engines for (CPEN) are to be Tier 3 certified, when available. The actual emission standards required for the engines depend on the size of the engine as follows:

All equipment greater or equal to 50 HP requires a permit from local air district. The State of California developed requirements specifically for diesel engines that required certain emission standards. These standards have been categorized into "Tier" standards. In the near future, all diesel engines will be meeting at least Tier 3 standards. For this reason, all new diesel equipment shall meet Tier 3 emission standards when available. This allows future flexibility for the Base to use the engine, if needed and it helps in reducing the Base's emissions, which are annually monitored and reported to the district for use in regulating the Base.

If the engine is used to provide emergency back-up power, then there typically is a self-imposed limit on the number of allowable non-emergency operation hours of operation (i.e. testing/maintenance usage). If the generator provides back-up power to a critical unit - it is typically 30, 50, or 52 hours. If the unit provides non-critical back-up power, then hours are limited to 20. The regulation still requires that Tier standards are met according to the engine size. The reference that outlines these requirements can be found at:

<http://www.sdapcd.org/rules/Appendix/AppenA/93115ATCM.pdf>

See pages 16 and 17 for New Engine standards.

Even though there are some engine sizes that do not yet require Tier 3 standards, the Base requires new engines to meet the most stringent standards available.

In addition, the following requirements also apply:

The generator unit needs to comply with the CPEN Spill Prevention, Control, and Countermeasures (SPCC) Plan, which requires secondary containment for all fuel and fuel storage greater than 55 gallons. BMP also requires it for smaller quantities.

There should not be an impact to federally listed wildlife species as a result of the project. Generally, all of the power units will be installed within the cantonment areas and adjacent to the buildings.

271300 AND 271500 COX COMMUNICATIONS REQUIREMENTS

GENERAL

1. Project lead time notices to COX should be at least 6 months. Current pole applications take at least 4 months plus up to 2 months for construction.
2. If COX has a current active presence in the building, coordinate with COX prior to construction commencing.
3. Include COX for the Partnering Meetings.
4. Add COX contact by name in the plans and/or bid documents:

Construction Liaison, COX Communications, 1922 Avenida Del Oro, Oceanside, CA 92056. Phone: 619-266-5616 or 760-806-2016

DROP STANDARDS:

Home Run Drops (from tap to outlet)

1. Use RG-6 for pre or post wires.
2. Length not to exceed 250 feet (tap to set)
3. For drops greater than 250 feet and no more than 325 feet, use RG-11 for pre and post wires.
4. Issue: Many M2R2 projects have one drop for each room. COX recommends a minimum of two home run drops to any barracks room.

OVERVIEW:

Remodels:

COX requests involvement before construction begins, preferably during the base's assessment of the building. Provide requirements/specifications to include wiring/drop standards and coordination with COX.

New Buildings:

1. Two 2" PVC conduits for roadway portions and minimum of one 2" PVC conduit to the inside MPOE.

2. Lengths no more than 500 feet between pedestals or communication rooms.
3. No more than three 90 degree sweeps between pedestals or communication rooms.
4. Backboard room sufficient for COX's equipment to feed drops being routed to that communication room. The more drops to the communication rooms, the more wall space that is required by COX.
5. Provide a common box for connection interface with COX and Satellite Providers.
6. Locates for COX facilities can be handled through traditional resources: 811 and COX personnel.
7. Minimum 2' x 2' backboard required depends on size conditions. Preferred 4' x 8' backboard.

271300 and 271500

STRUCTURED TELECOMMUNICATIONS CABLING AND PATHWAY SYSTEM

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.

EIA/TIA-526-7	Optical Power Loss Measurements of Installed Single-Mode Fiber Cable Plant
EIA/TIA-526-14	OFSTP-14 Optical Power Loss Measurements of Installed Multimode Fiber Cable Plant
EIA/TIA-568	Commercial Building Telecommunications Wiring Standard
EIA/TIA-569	Commercial Building Standard for Telecommunications Pathways and Spaces
EIA/TIA-606	Administration Standard for the Telecommunications Infrastructure of Commercial Buildings
EIA/TIA-607	Commercial Building Ground and Bonding Requirements for Telecommunications
EIA/TIA-758	Customer Owned Outside Plant
NFPA 70	National Electrical Code
UL 497	Safety Protector for Paired Conductor Communication Circuit
UFC-3-580-1	Telecommunications Building Cabling System Planning, Design, and Estimating
UFC-3-580-10	Navy and Marine Corps (NMCI) Standard Construction Practices

1.2 DEFINITIONS

CAMPUS DISTRIBUTOR (CD)

A physical concentration or central location for terminating backbone cables to interconnect with local exchange carrier (LEC) equipment at the activity minimum point of presence. The CD generally includes vendor specific components to support voice and data circuits, building surge protector assemblies, main cross connect blocks, equipment support frames, and fireproof wood backboard.

TELECOMMUNICATIONS ROOM (TR)

An enclosed architectural space for housing telecommunications equipment, cable terminations, and cross-connect cabling.

ENTRANCE FACILITY (EF)

An entrance to the building for both private and public network service cables (including antenna). This includes the entrance point at the building wall and continuing to the entrance room or space.

EQUIPMENT ROOMS (ER)

An architectural centralized space for telecommunications equipment and other building automations that provide services the occupants of the building. Equipment housed therein is considered distinct from a telecommunications use because of the nature of its complexity. Electromagnetic Compatibility shall be considered when designing this space.

1.3 SUBMITTALS

Submit the following in accordance with Section 013300, "Submittal Procedures."

SD-02 SHOP DRAWINGS

Telecommunications drawings to include T0, T1, T2, T3, T4 and T5

SD-03 PRODUCT DATA

Provide manufactures specifications on telecommunications cabling, telecommunications outlet/connector assemblies, equipment support frame, building protector assemblies, connector blocks, building entrance terminals, and other materials used.

SD-06 TEST REPORTS

Provide testing on telecommunications cable, utilizing a level III tester and a power source and light meter.

1.3.1 TELECOMMUNICATIONS DRAWINGS

Provide registered communications distribution designer (RCDD) approved drawings complete with wiring diagrams and details required to prove that the distribution system shall properly support connectivity from the telecommunications equipment room to telecommunications work area outlets. Show the entrance facility and layout of cabling and pathway runs, distribution frame, cross connect points, single point ground system, and terminating block arrangements. Drawings shall depict final telecommunications cabling configuration, including location, and terminating blocks layout at cross connect points and patch panels after telecommunications cable installation.

- a. T0 – Campus or site plan: exterior pathways and inter building backbone cable and pathways.
- b. T1 - Layout of complete building per floor - Building Area/Serving Zone Boundaries, Backbone Systems, and Horizontal Pathways. The drawing indicates location of building areas, serving zones, vertical backbone diagrams, telecommunications rooms, access points, pathways, grounding system, and other systems that need to be viewed from the complete building perspective.
- c. T2 - Serving Zones/Building Area Drawings - Drop Locations and Cable Identification (ID'S). Show's the building area, and the serving zone within the building. These drawings show drop locations, telecommunications rooms, access points and detail call outs for common equipment rooms and other congested areas.
- d. T3 – Telecommunications equipment room (ER): plan views, telecommunications, and architectural, mechanical electrical and plumbing, elevations (racks and walls)
- e. T4 - Typical Detail Drawings - Faceplate Labeling, Fire-stopping, Americans with Disabilities Act (ADA), Safety, Department of Transportation (DOT). The T4 will show detailed drawings of symbols and typical such as faceplate labeling, faceplate types, faceplate population installation procedures, detail racking, and raceways.
- f. T5 - Schedule for cutovers

1.4 DELIVERY AND STORAGE

Provide protection from weather, moisture, dirt, dust, and other contaminants for

telecommunications cabling and pathway equipment placed in storage.

1.5 TELECOMMUNICATIONS QUALIFICATIONS

The telecommunications contractor shall be a firm which is regularly and professionally engaged in the business of the applications, installation, and testing of the specified telecommunications systems and equipment. The telecommunications contractor shall demonstrate experience in providing successful telecommunications systems within the past 3 years. Submit documentation for a minimum of three and a maximum of five successful telecommunication system installations for the telecommunications contractor.

1.5.1 INSTALLERS QUALIFICATIONS

Prior to installation, submit data of installer's experience and qualifications which shall include 3 years on projects of similar complexity. Include names and locations of two projects successfully completed using fiber optic and copper communications cabling systems. Include specific experience in installing and testing structured telecommunications distribution systems using fiber optic and copper communications cabling system.

1.6 TEST PLAN

Provide a complete and detailed test plan for the telecommunications cabling system including a complete list of test equipment for the UTP and optical fiber components and accessories 30 days prior to the proposed test date. Include procedures for certification, validation, and testing. A level III tester shall be used on all projects Category 5e or Category 6 cabling.

1.7 RECORD DOCUMENTATION

NOTE: ANSI/TIA/EIA-606-A describes the necessary data fields and reports for hard copy, spreadsheet and electronic media as well as cable management software requirements. AC/S CIS Investigators are responsible for cable management software. Marine Corps Base Camp Pendleton is a class 4 activity, all labeling schemes will be provided by AC/S CIS Operations Department. Provide T5 drawings including documentation on cables and termination hardware in accordance with ANSI/TIA/EIA-606-A. T5 drawings shall include schedules to show information for cut-over and cable plant management, patch panel layouts and cover plate assignments, cross-connect information and connecting terminal layout as a minimum. T5 drawings shall be provided in hard copy format on electronic media using Windows based computer cable management software, all drawings will be provided in an AutoCAD and Adobe Acrobat format. Provide the following T5 drawing documentation as a minimum:

PART 2 PRODUCTS

2.1 COMPONENTS

2.1.1 PATHWAYS

Pathway shall consist of conduits, cable tray, and ceiling open cable installations.

2.1.2 TELECOMMUNICATIONS CABLING

Cabling shall be copper core or optical fiber in both premise and outside plant cable construction.

2.1.3 BACKBONE CABLING

Solid conductors shall be multi-pair Category 5e, 24 AWG, formed into 25-pair binder groups covered with a thermoplastic jacket and metallic shield. All optical fiber in the backbone shall be single-mode optical fiber.

2.1.4 HORIZONTAL CABLING

Category 5e, 24 AWG, four pair cable shall be used for all horizontal cabling.

2.1.5 EQUIPMENT SUPPORT FRAME

Shall be steel construction and treated to resist corrosion. 19-inch equipment racks shall be installed.

2.1.6 BUILDING ENTRANCE TERMINALS

Inter-building backbone cables shall be terminated on 110 type protected entrance terminals with a splice closure. Outdoor type terminals which are mounted on the outside of buildings shall not be used, all terminals will be inside the building in the entrance facility (EF). Provide self-contained 5-pin unit supplied with a field cable stub factory connected to protector socket blocks to terminate and accept protector modules for a minimum of 25 pairs of outside cable. Building protector assembly shall have 710 interconnecting hardware for connection to interior cabling at full capacity.

2.1.6.1 PROTECTOR MODULES

Solid-state surge protectors provide protection for sensitive equipment which incorporates a fast semiconductor switch with operating voltage nearly independent of transient rise time. Otherwise, use gas tube protection modules in areas where lightning damage probability is very low, less than 5 strikes per year. Protector modules shall be in accordance with UL 497 gas tube or solid-state type 5 pin rated for the application. The gas modules shall shunt high voltage to ground, fail short, and be equipped with an external spark gap and heat coils in accordance with UL 497. Provide the number of surge protection modules equal to the number of pairs of exterior cable of the building protector assembly.

2.1.7 CONNECTOR BLOCKS

Type 110, Insulation displacement connections shall be provided for all copper cable.

2.1.8 FIBER OPTIC PATCH PANEL

Provide panel for maintenance and cross-connecting of fiber optic cables. Duplex SC panel connectors shall be provided to fill the spaces of the fiber patch panel.

2.1.9 TELECOMMUNICATIONS OUTLET BOXES

Utilize standard type 4 inches square by 2 1/8 inches deep device boxes with quad port face plates, unused ports shall be filled with blank inserts.

2.1.10 TELECOMMUNICATIONS OUTLET/CONNECTOR ASSEMBLIES

UTP jacks shall be keystone type, RJ-45, eight position rated for Category 5e service.

2.1.11 BACKBOARDS

Provide interior grade fire retardant plywood, 3/4 inch thick in 4 foot by 8 foot sheets.

2.1.12 GROUNDING AND BONDING PRODUCTS

Comply with EIA/TIA-607, and NFPA 70.

2.1.13 NAMEPLATES

Provide nameplate on door to read, "Telecommunications Room" in accordance with finishing schedule of the plans.

2.1.14 OUTSIDE CABLE PLANT

Outside plant copper wire shall have a minimum of 24-gauge, balanced twisted pair cabling that is filled core cable and meet the manufactures specification for the type of construction. Optical fiber shall be single-mode to meet the manufactures specification for the type of construction.

2.1.15 MAINTENANCE HOLES

Maintenance Holes shall be a minimum of 6'x12'x7'. Maintenance holes shall have telecommunications on the cover. All maintenance holes shall have a ladder, cable shoes to rack the cable, 5/8" x 5 foot grounding rod and be traffic rated.

2.1.16 HAND HOLES

Hand holes shall be a minimum of 3'x 5'x 4'. Hand-holes are pull-through points and there shall be no splicing in hand-holes. Hand-holes shall have telecommunications on the cover, and the doors shall be hinged. All hand-holes shall have cable shoes to rack the cable, and be traffic rated.

2.1.17 INNERDUCT

Provide a three inch, three-chamber MaxCell inner duct or equivalent three inch, multi-celled, textile inner duct system for the placement of optical fiber cables within 4' conduit in the following quantities:

In 2-4" duct banks place 1 three inch, three-chamber MaxCell inner duct in one of the conduits
In 4-4" duct banks place 3 three inch, three-chamber MaxCell inner duct in one of the conduit
In 6-4" duct banks place 3 three inch, three-chamber MaxCell inner duct in two of the conduit
In 8-4" duct banks place 3 three inch, three-chamber MaxCell inner duct in three of the conduit.

Corrugated inner duct shall not be used.

2.1.18 SPLICE CLOSURES housing, encapsulating compound shall not be used. Closure shall be of suitable thermoplastic, or stainless steel material supplying structural strength necessary to pass the mechanical and electrical requirements in an OSP environment. Size of closure shall be determined by AC/S CIS. Optical Fiber Splice Closures shall be suitable to house splice organizer in a protective housing. Closure shall be of thermoplastic, or stainless steel material supplying structural strength necessary to pass the mechanical and electrical requirements in an OSP environment. Size of closure shall be determined by AC/S CIS.

Metallic Splice Closures shall be suitable to house a straight and butt splices, and in a protective

2.1.19 MANUFACTURER'S NAMEPLATE

Each item of equipment shall have a nameplate bearing the manufacturer's name, address, model number, and serial number securely affixed in a conspicuous place; the nameplate of the distributing agent will not be acceptable.

PART 3 EXECUTIONS

3.1 INSTALLATION

Telecommunications cabling and pathway systems, including the horizontal and backbone cable, pathway systems, telecommunications outlet/connector assemblies, and associated hardware shall be installed in accordance with EIA/TIA-568, EIA/TIA-569, NFPA 70, and UL standards as applicable. Cabling shall be connected in a star topology network.

3.1.1 HORIZONTAL CABLE

Install Category 5e telecommunications cabling utilizing the T568A standard. Use an approved insulation displacement connection (IDC) tool kit for copper cable terminations. Do not untwist Category 5e UTP cables more than one-half inch from the point of termination to maintain cable geometry. Provide a 10-foot service loop in the telecommunications room, a 3-foot above the work-area outlet in the overhead ceiling and 1-foot of excess cable in the work-area outlet box. Do not exceed manufacturers' cable pull tensions for copper and fiber optic cables. Do not chafe or damage outer jacket materials. Use only lubricants approved by cable manufacturer. Velcro shall be the only acceptable material used to maintain cable management. When open-top wire supports ("J" hooks) are used for wire distribution in an open or dropped ceiling installation, they shall be spaced 4'-5' apart. There shall be no more than (6) CAT 5e cable drops per location when serving multiple telecommunications outlets with one conduit stubbed into the ceiling cavity. Install no more than two 90 degree bends for a single horizontal cable run. Conduits shall be a minimum of 1".

3.1.2 BACKBONE CABLE

Install backbone copper and optical fiber cable between Telecommunications Rooms. Terminate copper cable on an approved 110-type IDC connections, optical fiber shall be terminated utilizing SC connectors. The designer shall coordinate with AC/S CIS for the termination locations in the Telecommunications Room.

3.1.3 OUTSIDE CABLE PLANT

Comply with EIA/TIA-758. Keep conduit minimum 6 inches away from parallel runs of electrical power equipment, flues, steam, and hot water pipes. Install conduit parallel with or at right angles to ceilings, walls, and structural members where located above accessible ceilings and where conduit is visible after completion of project. Run conduits in crawl spaces and under floor slabs as if exposed. The minimum requirement for copper is 25-pairs and for single mode optical fiber is 12-strands. Coordination with AC/S CIS will be required to get a point of connection for both cable and telecommunications pathways.

3.1.4 SERVICE ENTRANCE CONDUITS, UNDERGROUND

A minimum of two, four-inch conduits shall be provided from the point of connection to the building entrance for telecommunications. One duct will be used for optical fiber and have a 3-port cloth inter-duct like Maxcell or an equivalent product, any unused ducts shall have a ¼ inch pull rope placed in them and be tied off at both ends. Unused conduits shall be have duct plugs installed.

3.1.5 CABLE TRAY

Cable tray shall be installed in the Telecommunications Rooms so that cables can easily be routed from equipment racks and backboards to conduits, stubs and sleeves that exit the space.

3.1.6 CONDUITS

All conduits that are installed shall have a pull rope placed in them for future use; all conduits will be plugged utilizing conduit duct plugs. The minimum size of a conduit is 1-inch in horizontal pathways, 4-inches in sleeve's leaving the Telecommunications Room, 4-inch continuous conduit between telecommunications spaces and 4-inches for building entrance.

3.1.7 WORK AREA OUTLETS

Terminate Category 5e cable in accordance with EIA/TIA-568 wiring configuration T586A. All work area horizontal cabling shall be terminated in quad-port face plate and mounted at the same elevation as the electrical outlets. Un-used ports will have blank inserts placed in the faceplate.

3.1.8 EQUIPMENT RACK

The following clearances are required: 3' minimum clearance on all sides of the equipment rack. The telecomm rack shall be located to give maximum access to all of the equipment contained in and on the rack without obstruction. The equipment rack shall contain space for a fiber optic patch panel of sufficient size to terminate all fiber optic cables entering the closet. This fiber optic patch panel shall be mounted at the top of the rack. The telecomm rack shall have T568A 110-type termination fields and placed below the fiber optic patch panel for termination of the data (blue) cable from each workstation outlet. All Cat 5e terminations shall conform to the T568A USOC wiring standard. There shall be sufficient room on the rack to mount the data equipment needed for the closet (switch, repeater hub, etc.). This equipment shall be placed below the bottom wire management panel. The telecomm rack shall have horizontal/vertical cable management to keep all patch cables and wiring organized and neat in appearance. There shall be braced cable runways on the top of the rack and wall support kits. Racks shall be permanently anchored to the floor in accordance with manufacturer's recommendations, shall not exceed 78" above the finished floor, and have 3 point seismic bracing.

3.1.9 CABLE SPLICING

All splicing materials shall be provided by the telecommunications contractor.

3.1.9.1 OPTICAL FIBER

Provide Optical Fiber splicing materials for fusion methods at locations shown on the construction drawings. Optical Fiber splicing shall be in accordance with manufacturer's recommendation and shall exhibit an insertion loss not greater than 0.2 dB for fusion splices and not greater than 0.4 db for mechanical splices.

3.1.9.2 METALLIC CABLE

Multi-pair splices are insulation displacement (IDC) type splices. Provide multi-pair, fold-back, in-line, single pair, splices of a moisture resistant, two or three wire insulation displacement connector held rigidly in place to assure maximum continuity. Cables greater than 25 pairs shall be spliced using multi-pair splicing connectors, which accommodate 25 pairs of conductors at a time. Provide correct connector size to accommodate the cable gauge of the supplied cable. 710 splicing is the preferred method for MCB Camp Pendleton.

3.1.10 CONNECTION BLOCKS

Connector blocks shall be 110-type IDC and wall mounted in orderly rows and columns. Adequate vertical and horizontal wire management routing areas shall be provided between groups of blocks. Install in accordance with industry standard wire routing guides in accordance with ANSI/TIA/EIA-569-A.

3.1.11 PATCH PANELS

Patch panels shall be mounted in equipment racks with sufficient ports to accommodate the installed cable plant plus 25 percent spares. Copper cable entering a patch panel shall be secured to the panel with cable ties as recommended by the manufacturer to prevent movement of the cable. Fiber optic cable loop shall be 3 feet in length provided as recommended by the manufacturer. The outer jacket of each cable entering a patch panel shall be secured to the panel to prevent movement of the fibers within the panel, using clamps or brackets specifically manufactured for that purpose.

3.1.12 PENETRATIONS

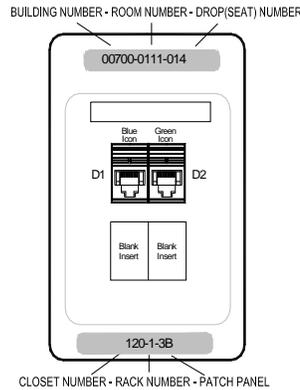
Caulk and seal cable access penetrations in walls, ceilings and other parts of the building. Seal openings around electrical penetrations through fire resistance-rated wall, partitions, floors, or ceilings.

3.1.13 LABELING

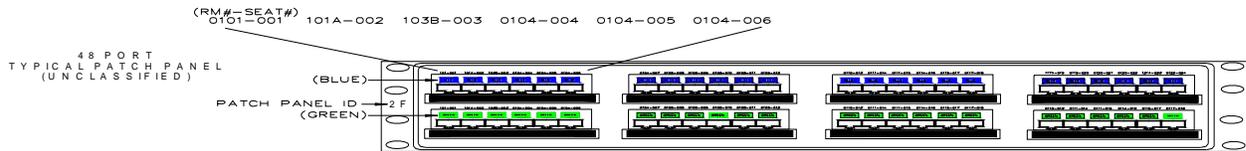
The system shall be labeled utilizing the NMCI wiring standard. At the workstation, voice ports will be labeled "V" to the left of the top port (gray insert) and data ports shall be labeled "D1" to the

left of the bottom port (blue insert). In the case of faceplates with ports that are side by side, the "V" and "D" shall be on top of the ports and the number of the port shall be placed at the bottom of the faceplate. Labels shall be placed on the sides of the 110 block/panel to mark each 4 pair CAT 5e cable. All labeling shall be provided by a label making machine utilizing thermal transfer and shall be black text on white backing, self-adhesive laminated label tapes. The font size of the labels shall be appropriate for the part it pertains too.

3.1.13.1 EXAMPLE OF THE WORK-AREA LABELING SCHEME.



3.1.13.2 EXAMPLE OF THE PATCH-PANEL LABELING SCHEME



3.1.13.3 CABLE TAG INSTALLATION

Verify labeling standard requirements with AC/S CIS Operations Department. Label in accordance with ANSI/TIA/EIA-606-A. Install cable tags for each telecommunications cable or wire located in maintenance-holes, hand-holes, and vaults including each splice. Tag only new wire and cable provided by this contract. Tag new wire and cable provided under this contract and existing wire and cable that are indicated to have splices and terminations provided by this contract. The labeling of telecommunications cable tag identifiers shall be as indicated in accordance with ANSI/TIA/EIA-606-A. Tag legend shall be as indicated. Do not provide handwritten letters. Install cable tags so that they are clearly visible without disturbing any cabling or wiring in the manholes, hand-holes, and vaults.

3.2 TESTING

3.2.1 TELECOMMUNICATIONS CABLE TESTING

Perform telecommunications cabling inspection, verification, and performance tests in accordance with EIA/TIA-568. Level III testers shall be used on all Category 5e cable, and a power source and light meter shall be used on optical fiber. Test results shall be provided in a pdf format, so that they are non-editable. 2 copies on paper and 4 electronic copies of the test reports shall be provided.

3.3 CONTRACTOR DAMAGE

Promptly repair indicated utility lines or systems damaged during site preparation and construction. Damages to lines or systems not indicated, which are caused by Contractor operations, shall be treated as "Changes" under the terms of the Contract Clauses. When Contractor is advised in writing of the location of a non-indicated line or system, such notice shall

provide that portion of the line or system with "indicated" status in determining liability for damages. In every event, immediately notify the AC/S CIS Operations Department of damage. Compounds and tape are not acceptable substitutes for heat shrinkable end caps. Cable, which is not sealed in the specified manner at all times, will be rejected.

3.4 GROUNDING

Designer should verify the existence of grounding facilities. It is essential that all grounding facilities, new and existing, conform to ANSI-J-STD-607.

3.4.1 TELECOMMUNICATIONS MAIN GROUNDING BAR (TMGB)

The TMGB is the hub of the basic telecommunications grounding and bonding system providing a common point of connection for ground from outside cable to the building and equipment. Establish a TMGB where the OSP cables enter the building. All pathways, equipment racks, and metallic components shall be connected to the TMGB.

3.5 TELECOMMUNICATIONS ROOM (TR)

The telecommunications room shall be designed in accordance with UFC-580-10. The default starting size for the telecommunications room is 10' x 8'.

271400 TELECOMMUNICATIONS BUILDING REQUIREMENTS

(Cabling Systems, Planning, Design, and Estimating Classified Information Infrastructure)

Assistant Chief of Staff, Communications and Information System Department is recommending that building requirements for future Protected Distribution Systems Design as follow:

1. National Security Telecommunications and Information Systems Security Instruction (NSTISSI) No. 7003, Protective Distribution Systems (PDS), provides guidance for the protection of wire line and optical fiber PDS to transmit unencrypted classified National Security Information (NSI). This instruction is effective upon receipt, and supersedes NACSI No. 4009, Protected Distribution Systems, dated 30 December 19981 and Appendix K, NACSEM 5203, Guidelines for facility Design and RED/BLACK Installation, dated 30 June 1982. Please check with your agency for applicable implementing documents.
2. The major differences between this revision and the previous version are the identification of installation and physical security practices clarification of certain exempted applications from the approval process, the inclusion of government contractors in the scope of this publication, and the inclusion of detailed installation requirements.

2-1 Classified Information Infrastructure Space Design requirements

This instruction stipulates approval authority, standards, and guidance for the design, installation, and maintenance of Protected Distribution Systems (PDS). This instruction incorporates a philosophy of "risk management" in lieu of the "risk avoidance" philosophy employed in the previous document. Absent specific facts, unique to each facility, suggesting greater or lesser risks, these standards shall be applied. However, sensible risk management practice dictates each facility must be evaluated on its own risks and vulnerabilities based on factors such as location, physical security, environment, access controls, personnel security requirements, etc. The overall security afforded by PDS is the result of a layered approach incorporating various protection techniques. The emphasis is placed on "detection" of attempted penetration in lieu of "prevention" of penetration. Criteria called out are based on threat or risk analysis relative to the location of the PDS. This generally results in reduced requirements and cost savings during installation and maintenance of PDS. The decision as to

what extent the guidance provided in ANNEX B is followed ultimately rests with the department or agency Approval Authority.

SECTION III -SCOPE

This instruction applies to U.S. Government departments and agencies and their contractors and vendors who use, or are contemplating the use of a PDS to protect the transmission of unencrypted classified National Security information (NSI). This instruction Protective Distribution Systems 13 Dec 1996 3

2-1-2 Controlled Access Area (CAA)

- (a) A physical area (e.g. building, room, etc) which is under physical control and to which only cleared personnel cleared to the level of information being processed are authorized unrestricted access. All other individuals are either escorted by authorized personnel or are under continuous surveillance. A CAA shall comply with the CAA physical requirements of Section 4 with in a CAA, a PDS will not be required for classified information processed at or below the classification level to which access to the CAA is controlled. While unprotected cables may run with in a CAA, they will not run outside the perimeter of the CAA. Safeguarding and storage of magnetic and hardcopy media will be in accordance with REF (b).
- (b) Doors: The access door to the area shall be substantially constructed of wood, metal or solid material. If Double doors are installed, an astragal will be installed on active leaf of the door.
- (c) Locks: The locks shall meet FF-L-2890 Specifications requirements, for Camp Pendleton. CAA doors will use XO-9 Locks.
- (d) Walls, floor and roof: The walls, floor, and roof construction shall be of permanent construction materials (i.e. plaster, gypsum, wallboard, metal panels, hardwood, plywood, or other materials. Offering resistance to and evidence of unauthorized entry into area. Wall shall be extended from true floor to true ceiling with permanent materials or 18-gauge expanded steel screen. If the walls cannot be extended, then an intrusion detection system shall be installed to monitor the space above the terminal.
- (e) Windows: All windows which might reasonably afford visual observation of classified activities within the facility shall be made opaque or equipped with blinds, drapes or other coverings. Windows less than 18 feet above the ground measured from bottom of window, or are easily accessible by means of objects directly beneath the windows, will be locked at all times. The locking mechanism and window construction shall be such as to provide indications, of any attempt of forced entry. If the construction is inadequate to provide said indication, then protective coverings, such as bars, need to be placed over the windows. The protection provided to the windows need be no stronger than the strength of the contiguous walls. Windows containing climate control units (e.g. air conditioners) must be secured in a manner to provide indications of any attempt at forced entry.
- (f) Openings: Utility openings such as ducts and vent shall be kept at less than man-passable (96 square inches). Openings larger than 96 square inches shall be hardened per Military Handbook 1013/1B

2-1-3 Restricted Access Area (RAA)

- (a) A physical area (e.g., building, room, etc) that is under physical control and to which only personnel cleared to level of the information being processed are authorized unrestricted access. Authorized personnel escort all other personnel. A RAA shall comply with RAA physical requirements section 4. Safeguarding and storage of magnetic and hard copy media will be in accordance with IA 5239-22.

- (b) Doors: The access door to the area shall be a security deadbolt lock with a one inch throw, with cylinder which meets the requirements of Underwriters Laboratories inc. UL-437 standard key lock, 7th edition dated 4 Aug 2000. The hinge pins of out swing doors shall be pinned brazed, or spot weld to prevent removal. Doors other than access doors shall be secured from the inside (for example, by a dead bolt lock, panic dead bolt lock, or rigid wood or metal bar which extends across the width of the door, or by any other means that will prevent entry from the outside)
- (c) Locks: The locks shall meet FF-L-2890 Specifications, UL-437 Key Cylinder High Security dead bolt with a 1 inch throw, are requirements, for Camp Pendleton, we use the UL-437 Schlage Primus or Everest due to lock smith having the ability and training to R-KEY locks. This should include blank keys for every facility.
- (d) Walls, floor and roof: The walls and floor construction shall be of permanent construction materials (i.e. plaster gypsum wallboard, hardwood, wood, plywood, or other materials) offering resistance to and evidence of unauthorized entry into area.
- (e) Windows: All windows which might reasonably afford visual observation of classified activities within the facility shall be made opaque or equipped with blinds, drapes, or other coverings. Windows that are less than 18 feet above the ground measured from bottom of the window, or are easily accessible by means of object directly beneath the windows will be locked at all times. The locking mechanism shall be such to provide indications of any attempt to forces entry, key lock. Windows containing climate control units (i.e. air conditioners) must be secured in a manner to provide indications of any attempt at forces entry.
- (f) Opening: No stipulations.

2-1-4 Protected Distribution Systems (PDS) Installation and Design

- (a). The system of carriers (conduits, ducts, etc) that are used to distribute National Security Information.
 - 1. A PDS must originate in a SR or CAA
 - 2. A PDS must terminate in a SR, CAA, or RAA
 - 3. A lock box must be used to terminate in a RAA
 - 4. A Workstations must be protected in a RAA
 - 5. A PDS may traverse but not terminate in a LAA
 - 6. A PDS may not traverse or terminate in a UAA
- (b) The Certification Authority validates all areas described in the PDS approval request except SR, CAA or RAA does not protect magnetic media, follow SECNAVINST 5510.36
 - 1. Category II PDS
 - a. Replaces the "Hardened" PDS, Hardened is now a type of carrier for a Category II PDS
 - b. Most common Category of PDS
 - 2. There are 5 types of Category II carriers
 - Hardened
 - Buried
 - Suspended
 - Alarmed
 - Continuously Viewed

(c) Protected Distribution System Design

1. Most common type of carrier inside buildings
2. The carrier must be constructed from metallic conduit, such as EMT
3. Armored cable and flexible spiral wound conduit cannot be used
4. Joints must be sealed with epoxy

(d) Buried PDS

1. Man holes and hand holes must be sealed (welded), locked with PDS lock and inspectable, or alarmed
2. The carrier should enter the building from underground
3. Carriers traversing crawlspaces require rigid steel pipe and/or other additional measures
4. If the carrier enters the side of the building, metal conduit or plastic conduit encased in concrete must be used

(e) Suspended Carrier

1. Uncommon
2. Used between buildings in close proximity when a buried carrier is not possible or cost effective
3. The carrier must be 5 meters high with no poles
4. The ends of carrier must terminate in Secure Room or CAA
5. Area traversed must be owned/leased by U.S.

(f) Alarmed Carrier

Requires alarm test but no visual inspection

1. Subject to false alarms
2. Used when an IDS is already installed in the facility
3. Used for a PDS installed out of view, such as above false ceilings and below false floors
4. Two types of Alarmed Carriers approved:
 - a. Volumetric IDS, Area surrounding entire length of PDS must be covered.
 - b. Fiber Optic Intrusion Detection System (FOIDS) by Fiber SenSys or Interceptor

(g) Continuously Viewed Carrier

1. Uncommon
2. Used when the area is already monitored by a guard or a camera monitoring system is in place
3. The carrier must be in metal or plastic conduit
4. Must be viewed 24/7

(h) Installation

1. The PDS carrier must be installed in view
 - Except Alarmed carriers
 - Generally installed just below false ceiling
 - May not be installed above false ceiling, behind furniture or in walls
2. The carrier should be marked at distances less than 3 meters, should not use the red markings
3. The PDS is routed across hallway below the ceiling
4. Also routed along hallway wall below ceiling



(i) Pull boxes and drops boxes.

1. Boxes must be continuous metal
2. No knockouts or pre-punched knockouts
3. Covers must be welded or sealed with epoxy
4. No removable hinges
 - Hinges with exposed ends are not allowed, even with epoxy
5. Lock boxes may be used for re-entry into pull boxes or for terminations in an RAA
6. Lock boxes must meet requirements of pull box
7. Must have permanently secured locking hardware
 - No screws
 - A locking tab protruding through a slot in the door is the best type
8. In a RAA, the network cable must be secured in the lock box

(j) Pull boxes and drop boxes.

1. Good Example
 - Hidden Hinge
 - No knockouts
 - Tap protruding though slot
2. McKinstry Enclosures



3. No longer available
4. Good Example
 - Hidden Hinge
 - No knockouts
 - External Tab
5. Performance Metal Fabricators 9930-805-CB-series



“Joints must be sealed around all mating surfaces”



6. Non-locking pull boxes and condulets must be bonded around all mating surfaces



(k) Physical Security RAA Locks

1. ASSA
 - V6000 series locks
2. CA POC:



3. Medeco Maxum series



(l) Pull boxes and lock box locks

1. The only lock currently available that meets the PDS lock specification is the S&G 8077.
2. National Stock Number for bulk purchase (24) of 8077-102 is
 - 5340 00 285 6523Unified Facilities Criteria (UFC) Protected Distribution Systems Classified Information Infrastructure 21400

PDS CONDUIT INSTALLATION

PDS Design, Installation, and Certification Guidance

1. The references listed in UFC-3-580-10 will be adhered to when Protected Distribution Systems are included on designs for new facilities that will require secure space modifications for processing up to secret information. Any questions or concerns pertaining to design, hardware, or technology should be brought up the attention of Certified Tempest Technical Authority (CTTA) for Marine Corps Base, Camp Pendleton, Communications and Information Systems G-6. All commands will adhere to and acknowledge these procedures and processes.
2. SECTION III -SCOPE
This instruction applies to U.S. Government departments and agencies and their contractors and vendors who use, or are contemplating the use of a PDS to protect the transmission of unencrypted classified National Security information (NSI). This instruction Protective Distribution Systems 13 Dec 1996 3

(a) Physical Security

1. A PDS must originate in a SR or CAA
2. A PDS must terminate in a SR, CAA, or RAA
 - A lock box must be used to terminate in a RAA
 - Workstations must be protected in a RAA
3. A PDS may traverse but not terminate in a LAA
4. A PDS may not traverse or terminate in a UAA
5. The Certification Authority validates all areas described in the PDS approval request except a SR
6. CAA or RAA does not protect magnetic media, follow SECNAVINST 5510.36

Please direct questions to the Communications Information Systems at **(760) 763-1975**

275116 and 211313 FIRE PROTECTION REQUIREMENTS

1.0 FIRE ALARM

- 1.1 All alarm initiating devices shall be addressable. All components shall be individually attached to or contain an addressable device. All devices shall be easily accessible.
- 1.2 In Section D4010, Fire Alarm and Detection System. All Devices requiring a key to access equipment and reset devices will be keyed alike with a CAT 60 key.
- 1.3 Type THWN/THHN insulated wire is not acceptable for underground wiring of fire alarm circuits. Provide type THW or XHHW for wiring in wet locations.
- 1.4 Surface boxes, when provided for surface mounted manual pull stations, shall be the station manufacturer's approved back box. Back box finish shall match station finish. Surface boxes shall have smooth side surfaces devoid of any knockouts. The surface boxes shall closely match the exterior contour of the manual pull stations.
- 1.5 A building floor plan shall be located and permanently mounted next to the FACP. The floor plan shall be at a minimum laminated, show all initiating devices, all room numbers/names, and device addresses.
- 1.6 If a Mass Notification System (MNS) is required, the system shall be combined with the fire alarm.
 - 1.6.1 LED text signs are not required as part of the MNS system.
 - 1.6.2 Provide clear strobes marked with the word "ALERT" for shared use by the building's combination MNS/FA.
 - 1.6.3 A means to initiate prerecorded MNS messages at the buildings MNS/FA panel will not be required. "However, the FA/MNS panel must have the capability to provide at least eight pre-recorded messages."

- 1.7 The FACP must have the capability to silence fire alarm audible signals including water-flow signals.
- 1.8 The Digital Alarm Communication Receiver (DACR) located at the Joint Emergency Communications Center is a Radionics/Bosch D6600. The receiving station dispatch software is GE MasterMind Monitoring Software. The preferred mode of fire alarm signal transmission is Contact ID. The primary and backup phone numbers will be made available during the pre-final inspection. The fire alarm control panel shall be programmed with primary and backup phone numbers.
 - 1.8.1 The DACR shall receive a distinct description for each type of initiating device.
- 1.9 The phone lines must be installed in conduit from the DACT location to the telephone backboard location.
- 1.10. All site specific programming, software, and pass codes must be provided to the base prior to final acceptance of the fire alarm system.
- 1.11. The FA/MNS system batteries must provide 60 hours of standby power followed by 15 minutes of alarm power.

2.0 Fire Sprinkler

- 2.1 Provide locks and chains on back flow preventer in lieu of tamper switches.
- 2.2 Locate FDC facing the street so it is easily accessible to the Fire Department.
- 2.3 Shotgun risers must be provided eliminating the alarm check valve and retard chamber style.

3.0 KNOX Box

Provide all KNOX Boxes. Exact size and location for installation and ordering shall be coordinated with Camp Pendleton Fire Department.

4.0 FIRE ACCESS LANE

The minimum inside turning radius for any fire access lane shall be **37 feet**.

312100 UTILITY TRENCH DETAIL

Utility trenches shall conform to **SDRSD G24** and **G25** as required.

334110 DRAINAGE ANALYSIS

The most common method used for peak flow estimation is the Rational Method.

The Rational formula is $Q = C i A$

Where Q is the peak flow rate in cubic feet per second (cfs), C is a dimensionless coefficient, i is the rainfall intensity in inches per hour (iph), and A is the drainage area in acres.

The rainfall intensity used in the Rational Equation should be for the desired frequency and have a duration equal to the time of concentration of the drainage basin. The frequency refers to the return period of the storm event. The Unified Facilities Criteria (UFC) publication 3-200-10N provides guidance on the storm frequency to use for design of drainage systems. It states "For design of the drainage system, use a minimum 10 year storm frequency or the minimum required by the local governing authority, whichever is more stringent." Storm drain systems are commonly designed for the 10-year or 25-year storm event.

Designing the storm drain system for a higher storm event, such as the 100-year event, is not necessary or recommended because the facilities would be over-designed. Besides being more

expensive to construct, the storm drain systems may not function properly during routine storm events because the flow velocities would be too low to prevent siltation, particularly at the outlets. Larger infrastructure projects like roads, bridges, levees, etc.... will be design to a 100-year storm event. The time of concentration is the time required for flow to reach the outlet from the most hydraulically remote point in the drainage basin. For each drainage basin, this is determined by accumulating the time of overland flow from each of the surface types and the time of pipe flow. The time of overland flow is dependent on the surface type and the slope. The procedure for estimating rainfall intensities for various return periods is outlined in NOAA Atlas 2, Precipitation-Frequency Atlas of the Western United States, Volume XI-California. This publication contains maps showing lines of constant precipitation (isoyetal maps) for various storm durations (2, 6, and 24 hour) at the 2-year and 100-year return periods. The publication also contains formulas for calculating the 1 hour (60 minute) rainfall intensities for the 2-year and 100-year storm. The rainfall intensities for other return periods are determined by plotting the 2-year and 100-year data on a logarithmic scale and interpolating the results for the desired return period.

334120 STORM WATER RUN-OFF CRITERIA

"All treatment control BMPs for a single Priority Development Project shall collectively be sized to comply with the following numeric sizing criteria:

1. Volume-based treatment control BMPs shall be designed to mitigate (infiltrate, filter, or treat) the volume of runoff produced from a 24-hour 85th percentile storm event, as determined from the County of San Diego's 85th Percentile Precipitation ISO- pluvial Map; or
2. Flow-based treatment control BMPs shall be designed to mitigate (infiltrate, filter, or treat) either:
 - a) the maximum flow rate of runoff from a rainfall intensity of 0.2 inch of rainfall per hour, for each hour of a storm event; or
 - b) the maximum flow rate of runoff produced by the 85th percentile hourly rainfall intensity (for each hour of a storm event), as determined from the local historical rainfall record, multiplied by a factor of two."

334120 VERTICAL MEDIA STORM FILTER

The use of Section 334120 (02650) – Vertical Media Storm Filter should be considered whenever it is required to capture and treat the first **0.6 inch** of water runoff from the affected project site.

SECTION 334120(02650N) VERTICAL MEDIA STORM FILTER (01/02)

1. GENERAL

1.1 REFERENCES

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

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

- ASTM C 109M Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 50-mm Cube Specimens)
- ASTM C 478 Standard Specification for Precast Reinforced Concrete Manhole Sections
- ASTM C 858 Standard Specification for Underground Precast Concrete Utility Structures
- ASTM C 497M Standard Test Methods for Concrete Pipe, Manhole Sections, or Tile
- ASTM D 1785 Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120

- ASTM D 2564 Standard Specification for Solvent Cements for Polyvinyl Chloride (PVC) Plastic Piping Systems
ASTM D 4101 Standard Specification for Polypropylene Injection and Extrusion Materials

2. SUBMITTALS

Submit the following in accordance with Section 013300 "Specifications for Digital Data."

SD-02 Shop Drawings:

Vertical Media Storm Filter; G

Accessory Equipment; G

Submit shop drawings for storm filter, filter media and accessory equipment including principal dimensions, filter placement, location of fittings and unit foundation. Include data to verify center of gravity with the unit empty and filled with water.

SD-05 Design Data:

Calculations establishing design flows; G

Concrete Vault; G

Vault Accessories; G

Filter Media; G

Filter Cartridge; G

SD-06 Test Reports:

Preoperational test

In-service test

SD-07 Certificates

SD-08 Manufacturer's Instructions:

Vertical Media Storm Filter; G

SD-10 Operation and Maintenance Data:

Vertical Media Storm Filter; G, Data Package 3

Submit operation and maintenance data in accordance with Section 017823(01781), "Operation and Maintenance Data." Inspection reports during the maintenance period

Submit written reports with photographs taken during the respective inspection.

1.3 SYSTEM DESCRIPTION

1.3.1 Purpose and Description

The purpose of the VERTICAL MEDIA STORM FILTER is to meet the regulatory requirement to capture and treat the first 15 mm (0.6 inch) of storm runoff by post-project pollution controls. The primary target pollutants for removal are: sediments (TSS), soluble metals, soluble phosphorus, nitrates, soaps, oil and grease.

VERTICAL MEDIA STORM FILTER is a passive, up flow storm water filtration system. These filter systems are manufactured by several companies including Contech, Kristar, Bioclean, and Stormwater Management Inc. The filters are designed to improve the quality of storm water runoff from the urban environment before it enters receiving waterways. It is intended to function as a BMP (Best Management Practice) to meet local, state, and federal requirements, which have been developed to comply with the Clean Water Act. consists of vaults that house rechargeable cartridges filled with a variety of filter media. The filter systems are installed in-line with storm drains. The filter works by passing storm water through media-filled cartridges, which trap particulates and adsorb materials such as dissolved metals and hydrocarbons. After being filtered through the media, the treated storm water flows into a collection pipe to be ultimately discharged into the receiving waterways. Up flow systems are offered in many configurations: cast-in-place, pre-cast and linear. Determine the optimum configuration for the site.

1.3.2 Sizing

In accordance with State Water Resources Control Board Order WQ 2001-15 (November 15, 2001), use the Rational Method to determine the maximum flow rate of runoff produced from a rainfall intensity of 0.2 inch of rainfall per hour.

The runoff coefficient for soils is based on soil types obtained from maps generated by the National Resources Conservation Service. A link to their web site is <http://www.ca.nrcs.usda.gov/>

Determine and target site-specific pollutants for removal. Contact Kristar, Contech, Bioclean, or Storm water Management Inc. to determine the optimum number of cartridges, vault size and composition of filter media that will accommodate the flow and remove the targeted pollutants efficiently.

1.4 DELIVERY, STORAGE, AND HANDLING

1.4.1 Delivery and Storage

Inspect materials delivered to site for damage, unload and store with minimum handling. Store materials on-site in enclosures or under protective coverings. Protect materials not suitable for outdoor storage to prevent damage during periods of inclement weather, such as subfreezing temperatures, precipitation, and high winds. Store materials susceptible to deterioration by direct sunlight under cover and avoid damage due to high temperatures. Do not store materials directly on ground. If special precautions are required, prominently and legibly stencil such precautionary instructions on equipment or the crate.

1.4.2 Handling

Ensure delivery of equipment to final location in sound, undamaged condition.

Take special care not to damage interior and exterior surfaces of structure, filter cartridges, piping and associated supports and accessories. Carry and do not drag materials.

1.5 Maintenance

Provide one-year maintenance service on the storm filters. Maintenance shall begin on the date of final inspection and approval of the installed storm filters by the Contracting Officer.

Maintenance period shall be for 365 calendar days from the authorized commencement date by the Contracting Officer. Maintenance shall include a minimum of two physical inspections of each storm filter during the maintenance period to ascertain the condition of the equipment. Submit a written report, including photographs, after each inspection. The first inspection to occur at the end of the rainy season or after a significant storm event; the second inspection is to occur at the end of the maintenance period. Maintenance activities shall include trash and debris removal, sediment removal within the storm filters and the adjacent cleanouts, cartridge media replacement and system flushing. Cartridge media replacement shall be as directed by the manufacturer at the intermediate inspection and mandatory at the end of the maintenance period.

2 PRODUCTS

2.1 CONCRETE STORM FILTER

All storm filter components used on this contract, except for the concrete vault, shall be manufactured by Kristar, Contech, Bioclean or Storm Water Management Inc. The pre-cast concrete vault may be procured through these companies. The cast-in-place vault may be designed specifically for the contract. Obtain concurrence for the vault design by manufacturer.

All internal components including PVC manifold piping, filter cartridge(s), filter media, flow spreader(s), and energy dissipater(s) shall be provided by Bioclean Environmental Services, P.O. Box 869, Oceanside, Ca. 92049 (760) 433-7640 or Kristar Enterprises Inc., P.O. Box 6419, Santa Rosa, Ca. 95406, (800) 579-8819 or (707) 524-8181 or Contech Construction Products Inc., 9025 Centre Pointe Drive, suite 400, West Chester, OH 45069 (800) 338-1122 or 513-645-7000 or Storm Water Management Inc., 12021-B NE Airport Way, Portland, OR 97220 (800) 548-4667.

2.1.1 Concrete Vault

If Pre-cast vault is provided, comply with ASTM C 858.

If cast-in-place vault is provided, submit detailed drawings.

2.1.2 Vault Accessories

2.1.2.1 Vault Joint Sealant

Comply with manufacturers' written recommendations for the specific equipment. The written recommendations shall identify the actual equipment installed by model & serial #'s.

2.1.2.2 Access Doors

Doors shall have hot-dipped galvanized frame and covers. Covers shall have diamond plate finish. Each door to be equipped with a recessed lift handle and a locking latch with 10 mm (3/8 inch) Pent-ahead hold-down bolts. Provide Pent-ahead wrench for each set of doors. At a minimum, doors shall meet H-20 loading requirements for incidental traffic.

2.1.2.3 Frames and Covers

Frames and covers shall be gray cast iron and shall meet AASHTO H-20 loading requirements.

2.1.2.4 Ladders

Ladders shall be constructed of aluminum and steel reinforced copolymer polypropylene conforming to ASTM D 4101. Ladder shall bolt in place and be equipped with a pull-up ladder extender that shall extend a minimum of 610 mm (24 inches) above the top rung of ladder. Ladder shall meet all ASTM C 497M load requirements.

2.1.2.5 Steps

Steps shall be constructed of copolymer polypropylene conforming to ASTM D 4101. Steps shall be driven into preformed or drilled holes once concrete is cured. Steps shall meet the requirements of ASTM C 478.

2.1.2.6 Sub-Base Material

Sub-base shall be 150 mm (6 inches) minimum of 19mm (3/4 inch) minus rock, 95% compaction. Compact undisturbed sub-grade materials to 95% of maximum density and +/-2%(optimum) moisture content. Unsuitable material below sub-grade shall be replaced with material acceptable to the Contracting Officer.

2.1.2.7 Grout

Shall be non-shrink grout meeting the requirements of Corps of Engineers CRD-C588. Specimens molded, cured and tested in accordance with ASTM C 109M shall have minimum compressive strength of 42.7 MPA (6,200 PSI). Grout shall not exhibit visible bleeding.

2.1.2.8 PVC Pipe Under drain Manifold

All internal PVC pipe and fittings shall meet ASTM D 1785.

2.1.2.9 Flow Spreader

Inlet flow spreader shall be constructed of spun low-density polyethylene (LDPE).

2.1.2.10 Energy Dissipater

Shall be constructed of poly-olefins.

2.2 FILTER MEDIA

Filter media, shall consist of material recommended by the manufacturer.

2.2.1 Pleated Fabric Insert

Provide a fabric insert in accordance with the recommendation of manufacturer.

2.3 FILTER CARTRIDGE

Provide a filter cartridge in accordance with the recommendation of the manufacturer.

3 EXECUTION

3.1 EARTHWORK

Perform earthwork operations in accordance with Section 312000 "Earthwork for Structures and Pavements".

3.2 INSTALLATION

Lift storm filter as required without damaging components. Level storm filter and install anti-flotation ballast to prevent hydrostatic uplift and ensure unit stability. Vertical media storm filter and accessory equipment installation shall be conducted in accordance with manufacturer's recommendations.

3.3 PRECAST CONCRETE VAULT

Place the pre-cast vault on a minimum of 152mm (6 inches) of gravel bedding. Provide the following installation requirements unless otherwise directed by the manufacturer:

- a. Vault floor shall slope 6 mm (1/4 inch) maximum across the width and slope downstream 25mm per 3.65M of (1 inch per 12 FT) length. Vault top finish grade shall be even with surrounding finish grade.
- b. Grout all inlet and outlet pipes flush with vault interior wall. Grout internal baffle walls.
- c. Sand flush fittings used on all PVC inlet and outlet pipes.
- d. Inspect and/or complete installation of flow spreaders and energy dissipaters in accordance with written manufacturer's instructions.

3.3.1 Anti-Flotation Ballast

Concrete ballast shall be installed as indicated. Ballast shall run the entire length of the long side of the vault, both sides. Ballast shall not encase the inlet and/or outlet piping. Provide 300mm clearance from outside diameter of pipe.

3.4 CAST-IN-PLACE VAULT

- a. Unexposed Wall Finish: Patch all rock pockets, form tie holes, and other irregularities with mortar. No further finishing will be required.
- b. Exposed Wall Finish: Immediately after removal of forms, patch or point up all defects to a point 150 mm (6 inches) below exposed grade. After patches and pointings have set sufficiently, grind or fill all form marks, patches, and pointings to provide a smooth, even surface.
- c. Horizontal Surfaces: All horizontal surfaces shall be floated and troweled to provide a smooth, even surface of uniform texture and appearance, free of unsightly bulges, depressions, and other imperfections.
- d. Vault Floor: Concrete shall be placed to an elevation even with tops of tee fittings of manifold piping. Before concrete sets, broom surface of vault floor lightly with a fine brush to provide a fine-grained, smooth, and sandy texture.
- e. Vault Lid: Before concrete sets, broom exposed surface of vault to provide an even, medium-grained, no-slip texture.

3.5 FILTER CARTRIDGE

- a. Cartridges shall not be installed until the project site is clean and stabilized. The project site includes any surface that contributes storm drainage to the storm filter. All impermeable surfaces shall be clean and free of dirt and debris. All catch basins, manholes and pipes shall be free of dirt and sediments.
- b. Install cartridges in accordance with manufacturers' written recommendations. Cartridge manufacturer shall be present during the installation process.

3.6 PVC PIPING

Install in accordance with ASTM D 2564.

3.7 FIELD QUALITY CONTROL

3.7.1 Field Tests and Inspections

The Contracting Officer will conduct field inspections and witness field tests specified in this section. The Contractor shall perform field tests and provide labor, equipment, and incidentals required for testing, except that water and electric power needed for field tests will be furnished as set forth in Section 015000(01500A), "Temporary Construction Facilities". Produce evidence, when required, that each item of work has been constructed in accordance with the drawings and specifications. Storm filter manufacturer is required to be present during testing and inspection.

3.7.2 Preoperational Test

The manufacturer's service representative shall inspect, operate, and test unit before in-service testing by the Contractor.

3.7.3 In-Service Test

After preoperational test is completed and the unit has been properly connected to influent and effluent piping, perform an in-service test in the presence of the manufacturer's representative. The manufacturers' representative shall certify the successful completion of the in-service test.

REFERENCE STANDARDS

COUNTY OF SAN DIEGO STANDARDS – MOST CURRENT EDITION

1. Concretes Structures
2. Drainage Systems: Details D-30 to D-34 shall be used only as reference details for overall dimensions. Wing- walls shall be required for all the headwalls as indicated in Detail D-40.
3. General Surface Improvements: Detail G-36 will no be used.
 - a. Sprinkler Irrigation Systems
 - b. Traffic Control Plans
 - c. Sewerage Systems: Pending review from the PWD Utility Team.
 - d. Water Systems: Pending review from the PWD Utility Team.The contractors shall delete the "County of San Diego" name when the standard details are used as part of the drawings and specifications.

STATE OF CALIFORNIA MANUAL OF TRAFFIC CONTROLS

1. Construction and maintenance Work Zones

CALTRANS STANDARDS SPECIFICATIONS – MOST CURRENT EDITION

1. Grading Sections
2. Sub-bases and Bases Sections
3. Surfacing and Pavements Sections
4. Drainage Facilities Sections
5. Right of Way and Traffic Control Facilities Sections
6. Materials Sections

The Caltrans Standard Specifications are only applicable in their technical or engineering value, not in "measurements, and payment" related to the to specific agency requirements.

If conflict between these standard specifications and others requirements in the Camp Pendleton Requirements, the Camp Pendleton requirements prevail.

**STANDARDS PLANS – STATE OF CALIFORNIA, DEPARTMENT OF TRANSPORTATION –
MOST CURRENT EDITION**

1. Pavement Markers, Traffic Lines and Pavement Markings: All Plans.
2. Excavation and Backfill: Miscellaneous Details, Concrete Pipe Culverts, Cast-In-Place Reinforced Concrete Box and Arch Culverts, and Metal/ Plastics Culverts.
3. Portable Concrete Barrier: All Plans.
4. Object Markers, Delineators, Channelizers and Barricades.
5. Concrete Barrier Type 60 Series: All Plans.
6. Metal Beam Guard Railing: Standard Railing Sections: All Plans
 - All Posts and Separators to be Typical Layout for Embankments
 - Typical Layout for Embankments
 - Typical Layout for Structures
 - Typical Layout for Fixed Objects
 - End Anchorage and Rail Tensioning Assembly
 - Connection Details and Transition Railing to Bridge Railings, Abutments and Wall
 - Terminal System End Treatment
 - All the posts and separators between the Beam Guard Railing and the Post to be galvanized steel to avoid damage during wild fires.
7. Three Beam Barrier: All Plans
 - Standard Barrier Sections
 - At Fixed Objects and on Bridge
 - End Anchorage, End Treatment and Emergency Passageway
 - Connections to Bridge Railings, Abutments, Walls and Barrier
 - Transition Railings
 - All the posts and separators between the Beam Guard Railing and the Post to be galvanized steel to avoid damage during wild fires.
8. Crash Cushions: All Plans
9. Steel Crib Walls: Construction Details, and Design Data
10. Drainage Inlets, Steel Pipe Inlets, Concrete Pipe Inlets, and Grates:
 - Drainage Inlets Details
 - Steel Pipe Inlets Details
 - Concrete Pipe Inlets – Ladder and Trash Rack Details
 - Grate Details
 - Bicycle Proof Grate Details
11. Concrete Pipe – Direct Design Method: All Plans
12. Box Culverts: All Plans. All Box Culverts shall include Wing Walls at Both Ends
13. Pipe and Arch Culvert – End Walls and Warped Wing Walls: All Plans
14. Pipe Down-drains, Anchorage Systems and Over-side Drains: All Plans
15. Construction Loads on Culverts and Strut Details: All Plans
16. Pipe Head Walls, End Walls, and Wing Walls - Pipe Culvert Head Walls, End Walls, and Wing Walls: Types A, B & C.
17. Flared End Sections – Metal and Plastic Flared End Sections
18. Pipe Coupling and Joint Details: All Plans
19. Slotted and Grated Line Drains: All Plans
20. Retaining Walls: All Plans

POINT OF CONTACTS INFORMATION

Installation	Utilities	Point of Contacts (POC)
Government owned utilities are as follows:		
MCB Camp Pendleton	Water, Sewer, Electric, Gas, Steam, Facilities	Facilities Maintenance Department (760) 725-3139 or (760) 725-3558
MCB Camp Pendleton	Maintenance Systems, others not listed	Liaison Office (760)725-3638
Telecommunications, Phones, Energy, GIS and Security are as follows:		
MCB Camp Pendleton	Base Comm. Info System	(760) 725-6222 or (760) 763-5628
MCB Camp Pendleton	Base Energy Management	(760) 725-0567 or (760) 725-0566
MCB Camp Pendleton	GIS Support	(760) 763-1891 or (760) 725-6281
MCB Camp Pendleton	Security	(760) 725-0819 or (760) 725-0818
Private utility companies that the A-E shall coordinate are as follows:		
	Gas and Electric	San Diego Gas & Electric
	Petroleum Product	Southern Counties Gas
	Cable TV	Cox Cablevision
	Telephone	Pacific Bell

BEAP ADDENDUMS

- CHAPTER 3.6H8 EROSION CONTROL
- CHAPTER 3.16 TRASH ENCLOSURES
- CHAPTER 3.17 ABOVE GROUND STORAGE TANK
- CHAPTER 11.2 SUBMITTAL MATRIX
- APPENDIX A BASEWIDE COLOR AND APPENDIX B COLOR BOARD LAYOUT

CHAPTER 3.H8. EROSION CONTROL

The effects of erosion can be reduced by the appropriate use of the following methods:

- a. Splash erosion is best controlled by vegetative ground covers and leafy canopies (Figure 3.6-58).
- b. To blend in with the surrounding area, use native materials adjacent to open space.
- c. Sheet erosion is kept in check by grasses and plants with fibrous root systems (Figure 3.6-59).
- d. A combination of stone rip rap and plant material is acceptable for erosion control. Use filter fabric under stones to control weeds (Figure 3.6-60).
- e. Plant groundcover for manufactured or graded slopes adjacent to open space with mixes that are compatible in growth requirement with existing plant material.
- f. Plant or hydroseed interior slopes between building pads with mixes that are compatible in growth requirements with surrounding plants.
- g. Follow the natural topography when planting on slopes. Plants are to reflect the pattern that plant materials tend to exhibit in the natural environment.
- h. Control ground burrowing rodents to minimize their effect in creating erosion problems

CHAPTER 3.16 TRASH ENCLOSURES

These standards provide information and resources for designing solid waste (non-hazardous) and recycling enclosures that will be used by building occupants. The coordinated design of

trash enclosures will enhance the function and appearances of the base exterior, reinforce the design theme, reduce maintenance requirements, and support solid waste and recycling regulations and directives at Camp Pendleton.

3.16 A. OBSERVATIONS

There is variation in the design, layout, detail and recycling capabilities of trash enclosures at Camp Pendleton. The general observations include:

- a. There is little or no design coordination between existing trash enclosures and no overall uniformity in the design and layout of trash enclosures.
- b. Trash enclosures must meet AT/FP requirements, display similar materials as approved for on-base use, be durable, and require minimal maintenance (Figure 3.16-1).



Figure 3.16-1: Trash enclosure in the Del Mar (21) Area.



Figure 3.16-2: Unenclosed dumpsters located in the parking lot at Chappo (22) Area.

3.16 B. TRASH ENCLOSURE OBJECTIVES

The goal for trash enclosure design is to create a uniform design supportive of the overall base design theme and related to each other by compatibility of material, color, form and design detail. The location of trash enclosures has a significant visual impact and must be addressed as part of an overall building design and incorporated in site planning.

3.16 C. Trash Enclosure Guidelines

1. Location and Materials

- a. Locate trash enclosures to be inconspicuous such that their presence does not detract from the overall design focus and layout of the surrounding area (Figures 3.16-2 and 3.16-3).
- b. Avoid locating trash enclosures along major circulation or use areas (Figure 3.16-3). Trash enclosures are to be directly accessible by way of a paved service drive or parking lot with adequate overhead clearance for collection vehicles (Figure 3.16-4).



Figure 3.16-3: Unenclosed dumpsters in Edson Range located along main road through cantonment.



Figure 3.16-4: Enclosure wall around dumpsters along Service road.

- c. Driveways or aisles shall provide unobstructed access for collection vehicles and personnel and provide at least the minimum clearance required by the collection methods and vehicles utilized by the designated collector.
- d. Provide vertical clearance above trash enclosures free of overhead obstructions as required by the collection methods and vehicles utilized by the designated collector.
- e. Consider the location and orientation of trash enclosures as related to AT/FP requirements and the design of its surrounding environment. AT/FP requirements restrict the location of dumpsters to outside the designated unobstructed space from inhabited buildings, billeting and primary gathering areas. In addition, they should face away from structures.
- f. Refer to current UFC 4-010-01, Design: DoD Minimum Antiterrorism Standards for Buildings, for Standoff Distances.

2. Access

All enclosures are required to have direct access for collection trucks. Direct access means the collection truck can drive directly up to the bin, and insert the forks into the sides of the bin without the driver having to get out of the truck to move the bin (Figure 3.16-4).

- a. Vehicular path of travel shall have minimal conflict with on-site vehicle and pedestrian circulation patterns.
- b. Driveways and drive aisles leading to enclosures shall be minimum 18 feet wide.
- c. Provide sufficient area for front-end loader collection truck turning radius.
- d. Provide a minimum 50 foot straight approach for access to stationary (no wheels) bins.
- e. Design trash enclosure so each bin can be removed and replaced without having to take out other bins, to avoid stacking, and to maximize access.
- f. For each trash enclosure containing three bins, two bins shall be designated for solid waste (nonhazardous), and one bin shall be for recycling (Figure 3.16-5). At the enclosure opening, the solid waste bins shall be on the left side, and the recycling bin shall be on the right side.
- g. If wheeling (i.e., manually pushing) bins from enclosure to a truck collection area is anticipated, provide minimum ten foot wide concrete pathway with slope less than two percent.



Figure 3.16-5: Solid waste and recycling bins shall be placed within an enclosure.



Figure 3.16-6: Wooden rails are not allowed within enclosure.

3. Trash Enclosure Design

- a. Enclosures shall be built to accommodate three trash bins. See Detail 8.9 L-2.
- b. Incorporate plantings to buffer the visual impact of screen walls. Provide a minimum three foot clearance on each side between screen walls and dumpsters to allow adequate pedestrian and truck access.
- c. Storm water shall be prevented from running into the enclosure. There shall be no storm drain or wastewater connections within the enclosure.
- d. Trash storage areas shall be paved with an impervious concrete surface.
- e. All dumpsters are to be placed on concrete pads with aprons large enough to encompass the bearing points of the service vehicle.
- f. Construct enclosure walls from concrete masonry units. Color should match nearby buildings and screen walls.
- g. Construct a concrete apron extending 10 feet from the enclosure pad the width of the enclosure opening. The enclosure base shall be six inches of concrete over two inches of aggregate base rock. The builder shall provide evidence that construction specs are engineered to withstand up to 20,000 pounds of direct force from a single truck axle.
- h. Wooden rails (Figure 3.16-6) or bollards are not permitted within the enclosure. Instead, an eight inch wide by six inch high concrete curb (at inside perimeter of walls) shall be installed to prevent bins from touching the back and side walls.

CHAPTER 3.17 ABOVE GROUND STORAGE TANK

Above Ground Storage Tanks (AST's) are commonly used to store gasoline, diesel fuel, oils, lubricants, and other liquids. AST's refer to both permanent, fixed tanks, as well as portable containers 55 gallons or greater in size. Above Ground Storage Tanks (AST) often have a blighting impact on Base appearance. AST's will benefit from more complete screening than is offered by chain link fence. The coordinated design of AST screened enclosures will enhance the function, appearance of the base exterior, and reinforce the design theme.

3.17 A. Observations

There is a great diversity in the size, configuration, detail, and screening methods of AST's at Camp Pendleton. The general observations include:

- a. There is no overall uniformity in the design of screening AST enclosures (Figures 3.17-1 to 3).
- b. AST screening should display similar materials as approved for on-base use, be durable, and require minimal maintenance.



Figure 3.17-1: Typical AST.



Figure 3.17-2: Bollards surrounding AST in Talega (64) Area.

3.17 B. Objectives

The goal for AST screening enclosure design is to create a uniform design supportive of the overall base design theme and related to each other by compatibility of material, color, form and design detail. Objectives are as follows:

- a. Screen unsightly AST's from view.
- b. Standardize screening elements. The design of all AST screened enclosures should achieve unity of appearance through repetitive use of colors, materials and common details.
- c. Visual disorder will be further alleviated by the use of standard screening elements and details.
- d. All screen material should be durable and low maintenance. High quality temporary screens should also be capable of being easily removed and relocated.
- e. Carefully consider the location of AST's as related to AT/FP criteria and the appearance and design of its surrounding environment. AST's shall not be located within required AT/FP standoff distances.
- f. In new project areas, identify locations where screening is needed and describe conditions and requirements. Prepare a map showing the location of all existing screening. Note type of screen, condition and guideline conformance or nonconformance.
- g. Storage of liquids in AST's requires containment controls that can hold the contents of the AST plus a safety factor (usually 110 percent of the tank capacity). These secondary containment areas may collect storm water from rain events. Do not disrupt containment areas with planting.
Remove dirt, leaves, trash, and weeds from the containment area.
- h. Barrier posts or other means shall be provided to protect tanks from vehicular damage. The tank shall be labeled with the product name and 'no smoking' signs shall be affixed. Tanks shall be adequately grounded or bonded to prevent the accumulation of static electricity.
- i. Locate tanks so as not to restrict circulation, or reduce the number of required parking spaces or vehicle back up space. Adequate space should be available to allow for access to the dispensing mechanism by users without interfering with other circulation needs (Figure 3.17-4).



Figure 3.17-3: AST at the Naval Hospital (27) Area, Unscreened from view.



Figure 3.17-4: Unobstructed access to AST.

3.17 C. SCRINING GUIDLINES

1. FENCES

- a. Use fences where safety and security are needed, such as around electrical substations and where partial view blockage is desirable, such as at service courts and materials storage areas.
- b. Construct screen fences (Figure 3.17-5).
- c. Augment fences with landscaping where screening is desired and irrigation is feasible (see Section 3.6–Landscaping). Landscape planting includes trees only. Shrub planting and hedges are not allowed. Do not use fence slats.



CHAPTER 11.2 SUBMITTAL MATRIX

Marine Corps Base Camp Pendleton

11.2 Submittal Matrix

Submittal Requirements Matrix	Concept Design Development Submittal		Construction Document Submittal		Special Notes
	No. of Sets	Set Size	No. of Sets	Set Size	
1. Site Analysis	10	8-1/2" x 11"			
2. Site Plan	10	8-1/2" x 11"	10	Full Size: 24" x 36" Half Size: 11" x 17"	Refer to Chapter 10 for a checklist of minimum information required.
3. Floor Plans	10	8-1/2" x 11"			
4. Rendered Elevations	10	8-1/2" x 11"			Keyed to Color Board
5. Materials Boards:	5	16" x 20"			Provide Title Block per Section 11.6 in the upper right corner of Board. Key to a colored rendering of the buildings' elevation.
5a. Building Color & Material Boards					
5b. Architectural Site Elements					
5c. Photographs of Plant Material					
6. Landscape Plans			10	1/2 size	
7. Architecture Plans			10	1/2 size	
8. Structural Plans			10	1/2 size	
9. Mechanical & Plumbing Plans			10	1/2 size	
10. Electrical Plans			10	1/2 size	
11. Fire Protection Plan			10	1/2 size	If required by code analysis.
12. Project Manual			1		Prepared according to the latest edition in one of the following formats: - Specsintact (Navy) - AIA - CSI
13. Project Cost Estimate			5		
14. Title 24 Energy			3		
15. Erosion Control Plan			10	1/2 size	
16. Geotechnical Report			3		Prepared by a California Licensed Civil Engineer.
17. Review Period for Submittals	30 days		30 days		Provide written response to the government design review per the NAVFAC SW A/E Guide.

When the work shown on the plans is installed, the Architect or Engineer of record is to provide Record Drawings (As-Built) in accordance with of the NAVFAC SW guide for A/E firms.

APPENDIX A BASEWIDE COLOR

Marine Corps Base Camp Pendleton

Appendix A

Color Board / Building Materials - Basewide & Rehabilitation

BASEWIDE COLOR STANDARDS - NEW AND EXISTING	
ARCHITECTURAL ELEMENTS	MATERIAL DESCRIPTION
Exterior Walls	Concrete Block-Precision/Split Face - ORCO-Gray RCP-Natural ANGELUS-Warm Gray - ORCO-Cool Gray RCP-Castle Gray ANGELUS-Cool Gray - ORCO-Sourdough RCP-La Paz ANGELUS-Champagne Concrete Block Accent Colors-Precision/Split Face - ORCO-Red Brown RCP- Chestnut ANGELUS-Sienna Brown - ORCO-Black 250 RCP-Charcoal ANGELUS-Slate - ORCO-Wheat RCP-Pueblo ANGELUS-Shoreline
Exterior Finishes for Existing Buildings	Concrete plaster building wall-PANTONE 7528, PANTONE 7536
Roofing	Galvanized metal standing seam roofing with a factory applied Fluor Polymer Coating System resin finish: Color - PANTONE 188
Exterior Doors and Door Frames Window Frames Metal Accent/Trim	All windows and doors-aluminum with a factory applied Fluor Polymer Coating System resin finish of: - PANTONE 405 - PANTONE 188 - PANTONE 7 BLACK 7C
Galvanized Downspouts	Color to match dominant color of building
Gutters and Flashings	Color - PANTONE 188
Handrails and Guardrails	Hot dip galvanized steel
Door Hardware	#304 Stainless Steel, #4 Finish
Site Wall Cap	Saddleback or Peaked

