



Ames Procedural Requirements

APR 8829.1

Effective Date: May 16, 2023

Expiration Date: May 16, 2028

COMPLIANCE IS MANDATORY

Subject: Construction Permit Process

Responsible Office: Code JCE / Facilities Engineering Branch

CHANGE LOG

Status [Baseline /Revision /Cancelled]	Document Revision	Date of Change	Description
Baseline	-	5/16/2023	New baseline; updated code matrix; added Over the Counter Process; added an appeals process; updated PCA submittal to be concurrent with Permit submittal; updated Process Flow documents and requirements; updated APR, APD, NPD references; eliminated non-Permit-related requirements that are referenced in other APRs.

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PREFACE

P.1 PURPOSE

- a. This document establishes the Construction Permit Process and the requirements imposed on all construction activities at Ames Research Center (ARC). The permit process assures the provision of:
- (1) A safe, environmentally responsible working and living environment
 - (2) Communication among involved organizations/individuals
 - (3) Proper and timely inspection of work
 - (4) Configuration Management -- This is for the process from planning clearance, permitting, inspection, and finally filing as-built drawings with Engineering Document Control (EDC).
- b. The purpose of this APR is to establish the minimum requirements to provide a reasonable level of safety, public health and general welfare through structural strength, means of egress facilities, stability, sanitation, adequate light and ventilation, energy conservation, and safety to life and property from fire, explosion and other hazards, and to provide a reasonable level of safety to fire fighters and emergency responders during emergency operations.

P.2 APPLICABILITY

- a. This directive is applicable to all real property under the jurisdiction of Ames Research Center including, but not limited to: the area commonly known as the Ames Campus; the planning areas known as Bay View, Wetlands, Eastside Airfield, the Shenandoah Plaza Historic District, the NASA Research Park South Campus, the Storm Water Retention Pond, the Eastern Diked Marsh, and the Western Diked Marsh; and the Air National Guard's (ANG) Temporary Use Areas.
- b. ANG shall comply with NPR 8820.2 per agreement between ANG and NASA in September 2010. All required reporting and documentation shall be provided to NASA for review on compliance and managed by the Construction Permit Office.
- c. The areas known as the Shenandoah Plaza Historic District and the NASA Research Park South Campus are collectively referred to under the designation of NASA Research Park (NRP). Throughout the rest of this document, all of these areas will be encompassed under the designation Ames Research Center (ARC), and they are displayed in Appendix C. In this map, the red line shows the boundary of the NASA Ames area of authority.
- d. Lands at Crows Landing Flight Facility in Patterson, California, are excluded from this procedural requirement. Additionally, Ames may exclude property or properties from this directive through written mutual agreements.
- e. This directive applies to contractors, grant recipients, or parties to agreements only to the extent specified or referenced in the appropriate contracts, grants, or agreements.
- f. In this directive, all mandatory actions (i.e., requirements) are denoted by statements containing the term "shall." The terms "may" or "can" denote discretionary privilege or permission, "should" denotes a good practice and is recommended, but not required, "will" denotes an expected outcome, and "are/is" denotes descriptive material.

- g. In this directive, all document citations are assumed to be the latest version unless otherwise noted.
- h. This directive shall apply to NASA tenants and leases as agreed to within each approved lease document.

P.3 AUTHORITY

- a. NPD 8820.2, Design and Construction of Facilities
- b. APD 8829.1, Construction Permits

P.4 APPLICABLE DOCUMENTS AND FORMS

- a. NPD 8831.1E, Maintenance and Operations of Institutional and Program Facilities and Related Equipment.
- b. NPR 8500.1C, NASA Environmental Management
- c. NPR 8580.1A, NASA National Environmental Policy Act Requirements
- d. NPR 8715.1B, NASA Safety and Health Programs
- e. NPR 8820.2, Facility Project Requirements
- f. APR 8715.1, Ames Health & Safety Manual Chapter 27 Construction Safety Management
- g. NASA STD 8719.11, Safety Standards for Fire Protection
- h. Construction Permit Form ARC 57
- i. Safety Clearance Permit Form ARC 135
- j. Construction Permit Request for Deviation/Waiver Form ARC 815
- k. Certificate of Construction Completion, Form ARC 842
- l. Certificate of Occupancy, Form ARC 843
- m. Excavation Permit Form ARC 874
- n. California Code of Regulations, Title 24, Part 1-12 (California Building Standards Code (CBSC))

P.5 MEASUREMENT/VERIFICATION

- a. Verification of conformance to requirements in this directive are measured through Center and Responsible Organizational management reviews, self-assessments, and subsequent analysis and reports of conformance to requirements, as well as periodic internal audits.
- b. The Chief of the Facilities Engineering Branch maintains a log of the active Permits, Waivers, and Certificates of Occupancy (CoC), as well as an archive of closed Permits, Certifications of Construction Completion, Temporary Certificates of Occupancy, and Certificates of Occupancy for permanent occupancy.

P.6 CANCELLATION

- a. APR 8829.1, Construction Permit Process, dated September 25, 2017.

Eugene Tu
Director

DISTRIBUTION STATEMENT:

Internal and external distribution.

CHAPTER 1 CONSTRUCTION WORK COVERED

1.1 Overview

1.1.1 This document covers the Construction Permit process from initiation of a Planning Clearance application for covered construction work, through the Construction Permit submission and review, the approval of the data package, the identification and posting of the Inspection Record, the close-out of the construction work, and the issuing of the Certificate of Construction Completion, Form ARC 842, or Certificate of Occupancy (CoC, or Temporary Certificate of Occupancy (TCO)), Form ARC 843, if required. The following Construction Permit process is to be used for all construction work encompassed.

1.2 Definition of Construction Work

1.2.1 Construction work is defined as tasks that involve the demolition, repair, alteration, upgrade, renovation, or construction of buildings, structures, utilities, or building subsystems. Construction Permit is required for all construction, including facilities, work that occurs at Ames Research Center falling under the authority of this directive, which includes but is not limited to the following:

- a. Utility systems including electrical, communications, water, sewer, storm drains, natural gas, specialty gas or liquid, and compressed air systems.
- b. Fire protection systems including fire suppression systems, hazardous gas detection and relief systems and mass notification systems.
- c. Security Access Systems & Intrusion Detection Systems (IDS), Closed Circuit Television (CCTV) systems, and physical security systems including security fences, physical security barriers, all doors, and other systems that impact the physical security of Ames assets. Also, modification(s) that effect security systems listed as follows: Security Access Systems and Intrusion Detection Systems (IDS), Closed Circuit Television (CCTV) systems, and physical security systems such as security fences, physical security barriers, all doors, and other systems that impact the physical security of Ames assets. Additionally, all new equipment, material and installation shall comply with all current codes, standards and requirements, and a Construction Permit shall be required in order to confirm compliance with all current codes, standards and requirements.
- d. Urgent Repair is unplanned construction required to restore essential services or to avoid serious consequences due to an unexpected occurrence. Determination of Urgent Repair will be made by the Chief Building Official (CBO). A Permit is required for Urgent Repairs; however, construction can start prior to notification to the CBO. Notification should occur within 24 hours. The Permit application shall be submitted to the Construction Permit Office within 15 calendar days; the worksite shall be maintained in a condition that does not inhibit the inspection process.
- e. Ground based pressure systems whose design and operational certification is under the authority of the Ames Pressure Systems Manager per NPD 8710.5, NASA STD 8719.17A and APR 8715.1 Chapter 10.
- f. All building renovations, including reroofing and “like kind” equipment replacement, is required to conform to the requirements outlined in this document.

CHAPTER 2 RESPONSIBILITIES

2.1 Permit Applicant

Permit Applicant shall:

- a. Understand and be familiar with APD 8829.1 and this APR.
- b. Not proceed with construction work without CBO approval and site specific safety plan and associated safety submittals have been reviewed and processed in accordance with APR 8715.1 Chapter 27 by Occupational Safety, Health and Medical Services Division.
- c. Prepare project description and design documentation with sufficient details to demonstrate compliance with all applicable codes, standards, and requirements identified in this APR.
- d. Submit a Planning Clearance Application, preliminary project description and design documentation to the Construction Permit Office.
- e. Assure all design documents for which a Construction Permit is required are designed by a California licensed architect, engineer, or contractor and stamped and wet (or electronic) signed by an architect, engineer or contractor licensed by the State of California in the discipline to which the documents refer.
- f. Submit complete Construction Permit Form ARC 57 with applicable supporting documentation.
- g. Submit complete Environmental NEPA Checklist, per NPR 8580.1A and APD/APR 8500.1, and complete checklist in coordination with the Environmental Management Division (EMD) (Code JQ).
- h. Thirty (30) days prior to the start of construction:
 - (1) Notify the organizations and individuals involved and affected by the construction by email and posted notices. Organizations include: Code H (Human Capital), Code QH (Safety Health, and Medical Service Division), and building Facility Service Managers. Affected areas may include utility systems, electrical, communications, water, sewer, storm drains, natural gas, specialty gas or liquid, and compressed air systems;
 - (2) Schedule a pre-construction conference/meeting with Construction Permit Office.
- i. Comply with all conditions and requirements set forth in the Construction Permit during the construction work.
- j. Maintain a set of the approved, stamped drawings at the work site; mark changes on these drawings as work progresses.
- k. Perform work in accordance with applicable Federal, State and NASA Ames construction safety requirements, the approved Construction Permit and the general contractor's approved site specific safety plan and all associated safety submittals.
- l. Comply with all applicable requirements covered in APR 8715.1 Chapter 27 Construction Safety Management based on scope of work and ensure construction work does not start until the site specific safety plan and associated safety submittals has been reviewed and concurred by the NASA Safety, Health, and Medical Services Division.

- m. Require contractor to have a NASA reviewed and processed Site Specific Safety Plan and contractor's valid safety qualifications and certificates in accordance with APR 8715.1 Chapter 27 prior to commencing construction work as required.
- n. Submit hazardous materials information for review by Building, Fire Protection, Environmental and the Safety, Health and Medical Services Division as part of the construction documents or pre-construction material submittals as appropriate.
- o. Notify the Construction Permit Office of all proposed design changes that affect conformance with codes, standards, and requirements identified in this APR and do not proceed with construction of proposed design changes until such proposed design changes have been submitted to, reviewed, and approved by the Construction Permit Office.
- p. Notify the Construction Permit Office 24 hours prior per form ARC 57 when required inspection points are reached to arrange for site inspection(s).
- q. Within 90 days of construction completion, submit as-built (or record) drawings for review and acceptance by the designated project team. The permit applicant shall then submit them in industry standard format (i.e., the latest AutoCAD, Revit, PDF, etc. format) to the Engineering Document Center (EDC) and/or all other applicable document control drawings for archiving.
- r. Ensure installed building equipment and systems conform to the acceptance requirements of NPD 8831.1E, Maintenance and Operations of Institutional and Program Facilities and Related Equipment.
- s. Permit applicant is to attend a pre-construction meeting with NASA representative at least five (5) business days prior to beginning construction. Permit applicant is to notify NASA representative at least five (5) business days in advance regarding construction staging area requirements, potential construction site ingress and egress routes, possible interruptions of utilities, schedule of construction, schedule of inspections, and review of approved safety plans.
- t. Pay a fee for the issuance of the Construction Permit, unless the fee is waived by other approved agreements/contracts/leases/easements.

Note: The fee only applies to non-NASA Permit Applicants.

2.2 Construction Permit Office

Construction Permit Office shall:

- a. Receive and record Construction Permit applications.
- b. Distribute new and updated/resubmitted Construction Permit applications to Construction Permit Review Board members for review.
- c. Archive and maintain records of Construction Permit applications.
- d. Maintain an updated database of issued Construction Permits, Construction Permit applications, and the current status of Construction Permit applications. Coordinate and facilitate weekly Permit Review Board meetings.
- e. Compile and return results of the reviewed Construction Permit applications (approved/disapproved) to permit applicant along with site inspection card if permit is approved.

- f. Provide electronic copies of Construction Permit application documents including any drawings and make those documents available to the Construction Permit Review Board members as necessary and as requested.
- g. Receive, submit to Review Board for approval, and archive results for any design changes to an approved construction work.
- h. Receive notification of pending inspection points and arrange for site inspections.
- i. Receive, submit to Review Board for approval, and archive any requests for deviations/waivers.

2.3 Chief Building Official (CBO)

Chief Building Official, who is the Chief of the Facilities Engineering Branch or designee, shall:

- a. Be the approval authority for all Construction Permit applications.
- b. Approve/disapprove requests for Construction Permit waivers.
- c. Certifies the Completion of Construction.
- d. Enforce the requirements of this APR 8829.1.
- e. Have authority to assess and shut down non-permitted construction work or construction work that fails to meet any part of this process.
- f. The CBO is not responsible for design errors or omissions made by the applicant.

Note: The CBO may designate other(s) to perform this activity.

2.4 Division Chiefs or Organizational Directors

Division Chiefs or Organizational Directors shall:

- a. Appoint permit reviewers for ARC who will represent the following organizations:
 - (1) Facilities Engineering Branch (JCE),
 - (2) Occupational Safety, Health & Medical Services Division (QH),
 - (3) System Safety & Mission Assurance Division (QS) (when requested by QS),
 - (4) Environmental Management Division (JQ);
 - (5) Plant Engineering Branch (JCM),
 - (6) Protective Services Office (JP),
 - (7) Fire Marshal/Fire Prevention Office (JP),
 - (8) Aviation Management Office (JO) (for MFA or FFA issues only),
 - (9) Master Planner, Facilities Engineering & Real Property Division (JC),
 - (10) Pressure Systems (QS), and
 - (11) IT Operations Division (IO)
 - (12) Cultural Resource Manager – NASA representative for State Historic Preservation Office

b. Appoint Permit reviewers for NRP who will represent the following organizations or designated representatives:

- (1) Planning Director – NRP Office (DT)
- (2) Planner
- (3) Architect
- (4) Engineer

2.5 Permit Reviewers

Permit Reviewers shall:

- a. Review Permit documents per the codes, regulations and standards outlined in this APR, within their area of expertise and responsibility.
- b. Identify and reference the specific code, regulations and/or standard associated with all permit review comments.
- c. Review Construction Permit applications and application documentation in a timely and accurate manner within their area of technical purview for conformance with the codes, standards and requirements identified in this APR.
- d. Communicate with Construction Permit applicants and other Construction Permit Review Board members as necessary to provide adequate, clear and specific plan review comments.
- e. If the submitted Construction Permit application documentation does not comply with codes, standards and requirements of this APR, prepare plan review comments to be issued to the permit applicant that identify the condition(s) of non-conformance and note the referenced code or standard that needs to be complied with.
- f. Identify and maintain up-to-date the criteria, codes, standards and regulations that allow Permit Reviewers to judge applications.
- g. Possess and maintain regulatory and/or technical knowledge, skills and abilities that directly relate to the construction industry.
- h. Maintain competency in the contemporary criteria to which permit applications can be objectively evaluated.
- i. The CBO will assign a Permit Board Chairperson, whose duties in addition to plan checking will include chairing the Permit Board meetings, managing the Permit Board process, and reviewing over the counter applications and recommending approval/denial to the CBO.

2.6 Authority Having Jurisdiction (AHJ)

Authority Having Jurisdiction shall:

- a. Assure that all activities within the scope of this APR meet the requirements of NASA-STD-8719.11.
- b. Appoint a representative to participate in the review of all Construction Permit and Waiver requests.
- c. Serve as the approval authority for the Certificate of Occupancy, Form ARC 843, as specified in NASA-STD 8719.11, paragraph 1.6.3.

CHAPTER 3 FACILITY DESIGN AND CONSTRUCTION CODES, STANDARDS, AND REGULATIONS

3.1 Adoption of Standardized Codes and Standards

3.1.1 Facility Design and Construction Codes, Standards and Regulations, Federal, State, and Local government agencies, in cooperation with the development and construction industry, have adopted consensus development and construction codes, standards and regulations to assure the development and construction of facilities, buildings and structures that are both safe and functional. These codes, standards and regulations provide a minimum requirement for the design, development and construction for most facilities, buildings, and structures, while leaving the design practicality and functionality to the engineers, architects and related professional or technical design professionals.

3.1.2 The following NASA mandated codes, standards and regulations define NASA and Ames Research Center requirements with regards to the development and construction of all facilities, buildings, and structures in any applicable on-site or off-site Ames Research Center community.

3.2 Applicability

3.2.1 All construction and facility modification work that occurs at any on-site or off-site Ames Research Center community must conform to applicable Federal, State, and Local codes, standards, and regulations including those identified in this APR. In cases of overlap between such requirements, the more stringent one shall prevail and be used as the basis for design, subject to the established requirements deviation process. Applicable requirements include all amendments thereto adopted prior to the effective date each permit application is submitted.

3.2.2 As required by NASA policy, all pre-construction and final facility designs shall conform to the latest code edition of the requirement adopted by this APR at the time of permit submission. This version of the requirement must be identified in the submitted construction documents because the construction work will be inspected to the requirements listed in the approved documents or, if not otherwise specified, to the current edition of the requirements. This scenario may result in a one-year lag in the requirements used by the construction management and inspection organizations. All construction and improvement work shall be planned from the design state to eliminate or control potential safety hazards as reasonably as possible.

3.2.3 A process for deviation/waiver via Form ARC815 has been established to address situations in which a design cannot conform to the codes and standards specified requirements. Such deviation/waiver from requirements is granted in the exceptional instances when strict adherence to a particular requirement or group of requirements is determined, through a formal set of written findings, to be impractical or unsafe for circumstances relating to the specific project. Economic hardship alone is never an acceptable reason for deviation from or waiver of code requirements.

3.3 General Requirements

3.3.1 In order to provide uniform Building Codes and adopted Construction Standard for both NASA and NASA tenants, NASA adopts the same Codes and Standards (to include adoption dates) as the County of Santa Clara, exclusive of any County Ordinances unless specifically referenced below. These Standards will continue to be updated as needed to remain in alignment with these Codes and Standards.

3.3.2 Federal, State and County Codes, Standards and Regulations are only applicable to the extent applicable to the Project and only for the purpose of establishing minimum design and construction standards.

3.3.3 Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall be applicable. Where there is a direct conflict in requirements, the most restrictive shall govern.

3.3.4 To the extent a Project contains unique design elements or systems not otherwise addressed in this Codes and Standards Schedule, the Parties shall confirm the codes and standards to which they will be designed during the initial planning review, and upon NASA approval, the codes and standards will be reflected in the meeting minutes, permit documents, or otherwise documented by the Parties.

3.3.5 Projects pertaining to buildings, structures and infrastructure installed for NASA by NASA Tenants shall comply with all codes and standards to include items noted as "NASA assets only" and may require compliance with additional codes and standards, including NPDs, NPRs, APDs, and APRs. The Parties shall confirm the additional codes and standards (if any) during the initial planning review and document all exclusions (or additional codes/standards) in the meeting minutes, permit documents, or otherwise documented by the Parties.

3.3.6 General Construction:

- a. California Code of Regulations, Title 24, Part 1-12 (California Building Standards Code (CBSC))
- b. Cal Health and Safety Code, Section 18938.5 Adoption of CA Codes
- c. CBC Section 1.11 (Office of the State Fire Marshal Provisions)
- d. County of Santa Clara municipal code amendments or supplements.
- e. NPR 8820.2 – Facility Project Requirements (FPR)
- f. APR 8822.1 - NASA Research Park Design Review Program
- g. NASA Ames Local Master Specifications (Start model for NASA assets)

3.3.7 Structural and Seismic:

- a. CCR Title 24 Part 2 (California Building Code)
- b. CCR Title 19 Public Safety Division 3 (Seismic Safety Commission)
- c. ASCE 7 (Minimum Design Loads for Buildings and Other Structures)
- d. ASCE 41 (Seismic Evaluation and Retrofit of Existing Buildings)
- e. Sheet Metal & Air Conditioning Contractors National Association, Inc. – (SMACNA) Seismic Restraint Manual “Guidelines for Mechanical Systems” (NASA assets only)
- f. APR 8715.1 Chapters 10 (Pressure Systems Safety), Section 10.23 and Appendix D (Seismic) (NASA assets only)

3.3.8 Fire Prevention:

- a. CCR Title 24 Part 9 (California Fire Code)
- b. Santa Clara County Unidocs
- c. CCR Title 19 Public Safety Division 1 (State Fire Marshal)
- d. CCR Title 19 Public Safety Division 2 (Office of Emergency Services)
- e. CA Health and Safety Code, Division 20, Chapter 6.95 Hazardous Materials Release Response Plans and Inventories
- f. Santa Clara County Hazardous Materials Storage Ordinance, Division B11, Chapter 13
- g. NASA - STD 8719.11B, Safety for Fire Protection
- h. National Fire Protection Association (NFPA), National Fire Codes
- i. NFPA 13, Fire Sprinkler Systems
- j. NFPA 72, National Fire Alarm Code
- k. NFPA 101, Life Safety Code (NASA assets only UON in CBC/CFC)

3.3.9 Energy:

- a. CCR Title 24 Part 6 (California Energy Code)
- b. ASHRAE Standard 90.1
- c. NPR 8570.1 (Energy Efficiency and Water Conservation Federal directive), to the extent applicable to NASA tenants generally

3.3.10 Green Building:

- a. CCR Title 24 Part 11 (California Green Building Standards Code) also referred to as “Cal Green”
- b. Multifamily Residential \geq 25,000 sf. Cal Green measures and "Tier 1 measures, excluding Tier 1 Cal Energy Code.
- c. USGBC LEED Silver Certification (minimum standard)

3.3.11 Historic Preservation:

- a. National Historic Preservation Act of 1966, as amended
- b. CCR Title 24 Part 8 (California Historic Building Code)
- c. NASA Ames Development Plan, Final Programmatic Environmental Impact Statement, Appendix G: Historic Resource Protection Plan (HRPP)
- d. NASA Ames Integrated Management Cultural Resources Management Plan (ICRMP)

3.3.12 Accessibility:

- a. 24 CFR 570.614 Architectural Barriers Act (Buildings with Federal Occupancy)
- b. CCR Title 24 Part 2 (California Building Code, Chapters 10, 11A and 11B)

3.3.13 Elevators:

- a. CCR Title 8 Subchapter 6 (California Elevator Safety Orders, Both New and Existing)
- b. ASME A17.1 American Society of Mechanical Engineers (ASME) Safety Code for New Elevators and Escalators

3.3.14 Pressure Systems:

- a. ASME B31.1 – Power Piping (NASA Assets Only)
- b. ASME B31.3 – Process Piping
- c. ASME B31.5 – Refrigeration Piping
- d. ASME B31.8 – Gas Transportation & Distribution Piping Systems
- e. ASME B31.9 – Building Services Piping (NASA Assets Only)
- f. ASME Boiler & Pressure Vessel Code (BPVC)
- g. NPR 8715.1B - NASA Safety and Health Programs, Chapter 7 (NASA assets only)
- h. NASA-STD-8719.17 - NASA Requirements for Ground-Based Pressure Vessels and Pressurized Systems (PVS) (NASA assets only)

3.3.15 Boilers or Steam Systems:

- a. CCR Title 24 Part 5 (California Plumbing Code)
- b. CCR Title 24 Part 2 (California Building Code)
- c. CCR Title 24 Part 6 (California Energy Code)
- d. Cal OSHA Title 8 (Boiler Certifications for Pressure Vessels) (Non Federal Assets in Proprietary Jurisdiction areas only)
- e. NPR 8715.1B Ch. 7 and NASA-STD-8719.17 (NASA assets only)

3.3.16 Site Civil, Roads, Curbs and Gutters, Sidewalks:

- a. CCR Title 24 Part 2 (California Building Code)
- b. CCR Title 24 Part 9 (California Fire Code)
- c. Standards for transportation improvements, as applicable:
 - (1) Caltrans
 - (2) City of Mountain View (Limited to Ellis Ave, Manila Dr., and Bayview Proprietary Area)

- (3) County of Santa Clara
- (4) Santa Clara Valley Transportation Authority
- (5) Floodplain Management (Santa Clara County Ordinance, Title C, Division C12, Chapter VII Floodplain Management. Based on FEMA 100 Year Flood Maps
- (6) Grading and Drainage (Santa Clara County Ordinance, Title C, Division C12, Chapter III Grading and Drainage.
- (7) Standard Road Load Rating: H-20, configuration as recommended by the Geotechnical Soils Engineer.

3.3.17 Landscape:

- a. CCR Title 24 Part 11 (California Green Building Standards Code) also referred to as “Cal Green”
- b. County of Santa Clara Sustainable Landscape Ordinance, > 500 sf., establishing new water-efficient landscaping regulations, Ordinance No. NS-1200.328 and NS-1200-361.

3.3.18 Security Features General (Fences, Gates, CCTV, Alarm Systems, etc.):

- a. CCR Title 24 Part 2 (California Building Code)
- b. CCR Title 24 Part 3 (California Electrical Code)

3.3.19 Security and Fencing (NASA Infrastructure):

- a. NPR 1600.1 (NASA Security Program Procedural Requirements)
- b. NPD 1600.4 (National Security Programs)
- c. NPR 1620.3 (Physical Security Requirements for NASA Facilities and Property)
- d. APR 1600.5 (ARC Traffic Management Plan, Rules, Regulations and Vehicle Codes)
- e. Foreign National Access Management

3.3.20 Construction on or about the Airfield:

- a. Aviation Circular on Airport Construction Standards AC/150/5370-10 49 C.F.R. Part 77
- b. Refer to Airfield Management and Operations Plan

3.3.21 Signage for Buildings/Site (non-traffic-related):

- a. City of Mountain View Signage Ordinance Chapter 36, Article XII, Division 6. Assume NASA as Zoning Commercial, Residential - Arterial
- b. NASA Building Signage Policy (NASA Assets only)

3.3.22 Construction Safety:

- a. OSHA 29 CFR 1926 Safety and Health Regulations for Construction
- b. Cal OSHA (CCR Title 8) (Non Federal Assets in Proprietary Jurisdiction areas only)
- c. APR 8715.1 Chapter 27 – Construction Safety Management
- d. APR 8715.1 Chapter 30 - Asbestos Management Plan
- e. APR 8715.1 Chapter 35 - Lead Management Plan

3.3.23 Environmental:

- a. National Environmental Policy Act (42 U.S.C. § 4321 et. seq.)
- b. Protection of the Environment (40 CFR) especially:
 - (1) Part 82, Protection of Stratospheric Ozone
 - (2) Part 112, Oil Pollution Prevention
 - (3) Part 1500, National Environmental Policy Act
 - (4) Part 260 et seq, Proper Management of Hazardous Waste
 - (5) Part 370, Hazardous Chemical Reporting: Community Right-to-Know
 - (6) Part 761, Polychlorinated biphenyls (PCB's)
 - (7) Part 763, Asbestos Hazard Emergency Response Act (AHERA)
 - (8) Part 61, Subpart M, National Emissions Standards for Hazardous Air Pollutants (NESHAPS)
- c. Toxic Substances Control Act (TSCA), (Title 4)
- d. Resource Conservation and Recovery Act (RCRA)
- e. Endangered Species Act Regulations (50 CFR Part 402)
- f. Endangered Species Act (16 USC §1531 et seq)
- g. Migratory Bird Treat Act (16 USC § 703 et seq)
- h. The Clean Water Act (33 USC §1251 et seq.)
- i. The Safe Drinking Water Act (42 USC §300f et seq.)
- j. National Environmental Policy Act of 1969 (42 USC §4321 et seq.)
- k. The Clean Air Act (42 USC §7401 et seq.)
- l. Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (42 USC §9601 et seq.)
- m. The Emergency Planning & Community Right-To-Know Act (42 USC §11001 et seq.)
- n. The Pollution Prevention Act (42 USC §13101 et seq.)
- o. National Aeronautics and Space Administration, Environmental Quality, (14 C.F.R. Parts 1216 et seq.)

- p. Bay Area Air Quality Management District Standards and Rules (40 C.F.R. Parts 52.220)
- q. CCR Title 17 Public Health, Division 3 Air Resources Chapter 1 Air Resources Board
- r. CCR Title 22 Hazardous Waste Management
- s. Santa Clara County Ordinance B11-270 to 351 Hazardous Material Storage
- t. NPR 8553.1B - NASA Environmental Management System
- u. NPR 8570.1A - Energy Efficiency and Water Conservation
- v. NPR 8580.1A, NASA National Environmental Policy Act Requirements
- w. NPR 8590.1A - Environmental Compliance and Restoration Program
- x. APR 8500.1 - Ames Environmental Procedural Requirements
- y. APD 8500.1C, Ames Environmental Policy
- z. NASA ARC CEMP

3.3.24 Underground Infrastructure General:

- a. NASA Ames Local Master Specifications (Start model for NASA assets)
- b. NASA Ames Underground Specifications – Development Support Office (Tenant installed underground systems)

3.3.25 Water:

- a. CCR Title 24 Part 5 (California Plumbing Code)
- b. CCR Title 17 and 22 (Potable and Non-Potable Water)
- c. CCR Title 17 Protection of Water Systems (Cross Connections, Backflow Protection)
- d. Underground Material Standard: Ductile Iron
- e. NPR 8570.1 (Energy Efficiency and Water Conservation Federal directive)

3.3.26 Sewer:

- a. CCR Title 24 Part 5 (California Plumbing Code)
- b. City of Mountain View/Palo Alto Sewer Use Ordinances and Specifications (PA Sewer Use Ordinance chapter 16.09. For systems connected to the City of Mountain View)
- c. City of Sunnyvale (Sewer Use Ordinance Chapter 12), to include connection permits and metering requirements (For systems connected to the City of Sunnyvale)
- d. Underground Material Standard: HDPE or Cast Iron Pipe

3.3.27 Storm:

- a. 40 C.F.R. Part 112, Oil Pollution Prevention, Spill Prevention Control and Countermeasures (SPCC) if triggered (≥ 1320 Gals.)
- b. Energy Independence and Security Act (EISA) of 2007 (42 United States Code (U.S.C.) 17094), Title IV, Subtitle C, Section 438: Storm Water Runoff Requirements for Federal Development Projects, if triggered (> 5000 sf Federal facilities)
- c. CCR Title 24 Part 5 (California Plumbing Code)
- d. California State Water Resources Control Board General Permit for Discharges of Storm Water Runoff Associated with Construction and Land Disturbance Activities (Storm Water General Permit)
- e. California Water Board, Small MS4 General Permit WQ order 2013-0001-DWQ
- f. CA State Water Resources Control Board Industrial Storm Water Permit CAS 000001
- g. CA State Water Resources Control Board Construction Storm Water Permit CAS 000002
- h. City of Mountain View Stormwater Quality Guidelines for Development Projects
- i. Underground Material Standard: HDPE or Cast Iron Pipe
- j. Project-specific Stormwater Pollution Prevention Plan (as required by the Storm Water General Permit), which includes NASA ARC Storm Water Best Management Practices for construction activities (from APR 8500.1 Chapter 14 “Storm Water Management”)

3.3.28 Firewater:

- a. NFPA 11 (Low, Medium, and High Expansion Foam)
- b. NFPA 20 (Installation of Stationary Pumps for Fire Protection)
- c. NFPA 22 (Water Tanks for Private Fire Protection)
- d. NFPA 24 (Private Fire Service Mains and Their Appurtenances)

3.3.29 Reclaimed Water, Gray Water, Black Water:

- a. CCR Title 17 Protection of Water Systems
- b. CCR Title 22 Water Recycling Criteria
- c. CCR Title 24 Part 5 (California Plumbing Code) to include:
 - (1) Chapter 16A, Non-Potable Water Reuse Systems
 - (2) Appendix K Potable Rainwater Catchment System
- d. Permitted with the “Water Reclamation Program Rules and Regulations.” Processing grey water and/or black water for re-use as reclaimed water (i.e., recycled water) shall comply with all applicable State and Federal regulations, (e.g., Publically Owned Treatment Works (POTW) must comply with Sunnyvale and Palo Alto waste water treatment plants, as appropriate).
- e. NASA Ames Regulatory Review Procedures On-Site Blackwater Treatment and Reuse. Black Water Treatment for onsite use must receive NASA pre-approval.

3.3.30 Natural Gas:

- a. CCR Title 24 Part 5 (California Plumbing Code)
- b. PG&E Electric and Gas Service Requirements (PG&E Assets only, PG&E Greenbook)
- c. NFPA 54 - National Gas Fuel Code (System lines over 5psi)

3.3.31 Underground Electrical:

- a. CCR Title 24 Part 3 (California Electrical Code)
- b. California Public Utilities Commission (CPUC) General Order 128 – CA Rules for Construction of Underground Electric
- c. PG&E Underground Construction Manual (PG&E assets only)
- d. PG&E Electric and Gas Service Requirements (PG&E Greenbook), (PG&E assets only)
- e. National Electric Safety Code (NESC) (NASA Assets only)
- f. International Electrical Testing Association Acceptance Testing Standard (ANSI/NETA ATS Current ed.) (NASA Assets only)
- g. Spare Feeder Conduits, N+1 (NASA assets only)

3.3.32 Overhead Electrical (permissible only for temporary electrical service):

- a. National Electric Safety Code (NESC), IEEE-ANSI C2
- b. General Order 95 – CA Rules for Overhead Electric Line Construction PG&E Overhead Construction Manual
- c. International Electrical Testing Association Acceptance Testing Standard (ANSI/NETA ATS)

3.3.33 Telecommunications Systems:

- a. CCR Title 24 Part 3 (California Electrical Code)
- b. NFPA 75 Standard for the Fire Protection of Information Technology Equipment (NASA Assets Only)
- c. ANSI/SCTE 77, National Performance Standard for Underground enclosures (NASA Assets Only)
- d. Electronic Industries Alliance-Telecommunications Industry Association (EIA-TIA) Standards (NASA Assets Only)
- e. Communications Program (CP) Cable Plant Structured Cabling System Design and Installation Manual v2.0 (NASA assets Only)
- f. APR 2815.3 IT Cable Plant and Equipment Access Controls
- g. Spare Distribution Conduits, N+1 (NASA assets only)

3.3.34 References:

- a. Santa Clara County Building Codes (Zoning Ordinances not adopted by NASA)

<https://www.sccgov.org/sites/dpd/OrdinancesCodes/Pages/Ordinances.aspx>

CHAPTER 4 PLANNING CLEARANCE AND CONSTRUCTION PERMIT PROCEDURE

4.1 Applicant Applies for Planning Clearance

4.1.1 Applicant shall submit the Planning Clearance Application and project description documentation for Planning Clearance to the Construction Permit Office concurrent with the Ames Construction Permit Application.

4.1.2 For new buildings, or major building additions, the applicant shall submit a high level conceptual design prior to the Construction Permit Application (no more than 15% complete of design documentation) for planning and environmental approval showing the following minimum conceptual information:

- a. Project description/scope statement
- b. Site Plan showing building footprint, area of improvement, and Infrastructure Connections
- c. Conceptual Floor Plan stating Gross Square Footage by floor and total
- d. Building Height
- e. Type of Construction
- f. Details if necessary to communicate the proposed construction.
- g. Preliminary Schedule
- h. NEPA checklist, listing mitigation measure for project.
- i. SHPO coordination with NASA Cultural Resource Manager

4.1.3 The RPAO review of the application. If the proposed improvements are located in the NASA Research Park, the RPAO forwards the application and documentation to the NASA Research Park Design Review Board for review of the Planning Clearance application and the same review process is followed (see APR 8822.1). The applicant shall complete an Environmental Checklist early in the Planning Clearance process for projects that require mitigation measures, or conflict with Ames Master Plan. Concurring signature from EMD and SHPO and/or CRM approval (if applicable) are required prior to final approval of the NEPA checklist.

4.1.4 The Master Planner review of the application. The Master Planner shall review the application for information only as it relates to NASA infrastructure impacts, conformance with NASA Master Plan, and space allocation data requirements.

4.1.5 The proposed construction work may be approved with no restrictions or conditions of approval and if so approved, an unconditional Planning Clearance document is issued to the applicant.

4.1.6 The proposed construction work may be approved with restrictions or conditions of approval and if so a conditional Planning Clearance document is issued with specific written conditions that must be met in order to proceed with the proposed construction work.

4.1.7 The proposed construction work may be disapproved (or marked “revise and resubmit”) and if so, a statement as to the reasons for disapproval of the proposed construction work is issued. The applicant may revise the proposed construction permit documents to correct the deficiencies and resubmit or may abandon the proposed construction work.

4.1.8 The approved Planning Clearance Application shall be returned to the applicant concurrent with the approved Ames Construction Permit Documents.

4.2 Applicant Preparation of an Ames Construction Permit Application Package

4.2.1 Applicant prepares construction work project description documentation conforming to the requirements of APD 8829.1 and this APR 8829.1. Submit complete Construction Permit Application Form ARC 57 with applicable supporting documentation to the Construction Permit Office. The form can be obtained at: <http://jc.arc.nasa.gov/ARCFORMS/ARC57.pdf>.

4.2.2 Full size electronic PDF's of all documents shall be submitted to the Construction Permit Office. Construction documents must be prepared and submitted as an entire and complete package in sufficient detail to assure the determination of all related code compliance. All documents for which a Construction Permit is required shall be designed by a California Licensed Architect, Engineer, or Contractor as required by the current California Architects Practice Act, the current California Professional Engineers Act, and/or the California Contractors State License Board. All design drawings and design calculations submitted as part of a Construction Permit application shall be stamped and electronically signed by the responsible California Licensed Architect, Engineer, or Contractor as required by the current California law prior to the issuance of the Construction Permit.

4.2.3 Information about the proposed construction work must describe and detail any and all modifications, additions or removal of building or facility systems including structural, electrical, plumbing, fire protection, fire alarm, security, heating, ventilating and air conditioning, etc.

4.2.4 Information about the proposed construction work must address all building code requirements including construction type, occupancy, means of egress, accessibility, etc.

4.2.5 Project documentation shall include the following information:

- a. Project Description and Statement of Work
- b. Plans, drawings, sketches, or other graphical renderings of the project in order to confirm conformance of all applicable codes, standards and requirements identified in this APR.
- c. Structural, electrical, mechanical, fire protection, energy or other engineering calculations necessary to confirm conformance with all applicable codes, standards and requirements identified in this APR.
- d. Cover sheet shall contain a list of current adopted codes which are required to document design, plan check, and inspection criteria for the proposed project.
- e. Reference compliance with safety and health regulations and requirements.
- f. Specifications as necessary to clearly communicate the proposed construction work. Note: code compliance items shall be shown on the drawings since specifications are not normally reviewed by the Permit Reviewers.
- g. Approved Request for Waiver Form ARC 815 if applicable. The form can be obtained at <http://jc.arc.nasa.gov/ARCFORMS/ARC815.pdf>. CBO will determine if submittal to PRACA (ref APR 8735.2) is required, or if the waiver/change can be approved via the alternate means and methods provisions stated in the current adopted building code.

4.3 Applicant Submits Ames Construction Permit Application package to Ames Construction Permit Office

4.3.1 The applicant shall submit a Planning Clearance Application document, Environmental Checklist (NEPA), Ames Construction Permit application documents, detailed project description and engineered design documentation for Construction Permit to the NASA Ames Construction Permit Office via email to arc-construction-permit@mail.nasa.gov.

4.3.2 The applicant must call the permit office to confirm an application has been submitted, and to schedule a presentations before the Permit Board (if required). The telephone number for the Construction Permit Office is (650) 604-1517. The mailing address is: Construction Permit Office, NASA Ames Research Center, Mail Stop 213-8, Moffett Field, CA 94035-0001. Permit Office will return applications deemed to be incomplete or the electronic submission is corrupt or unreadable.

4.3.3 The Ames Construction Permit Board Reviews Construction Permit applications and approves or disapproves Construction Permit applications.

4.3.4 The Construction Permit Office screens all Construction Permit applications for completeness. If, after screening by the Construction Permit Office, a Construction Permit application is determined suitable for review by the Construction Permit Review Board, the Construction Permit Office distributes the Construction Permit application to the appropriate Construction Permit Board reviewers.

4.3.5 The Construction Permit Board reviewers meet regularly to discuss the Construction Permit applications and may request project clarification from the permit applicant.

4.3.6 At the discretion of the CBO, the Construction Permit application can be submitted, reviewed, and signed at a Permit Board meeting.

4.3.7 Minor Projects (primarily Mechanical, Electrical, or Plumbing (MEP) Projects) that can be fully inspected in the field with minimum drawing requirements may qualify for an over the counter permit and not require technical reviews. Projects that qualify for an over the counter permit include:

- a. Very simple projects with minimal code requirements
- b. Simple repair or replacement projects
- c. Mods to Fire Sprinkler or Fire Protection devices with less than 20 heads.

4.3.8 Projects that do not qualify for over the counter permits include:

- a. Structural involvement (e.g. Equipment weighing more than 400 lbs.)
- b. Pressure Systems (exclusive of domestic water, fire and irrigation.)
- c. Changes of occupancy or use
- d. Complex or multi-discipline reviews required
- e. Historical Buildings or Sites.

4.3.9 The over the counter permit process is similar to the standard permit process, however the Permit Board Chairperson is the primary technical reviewer who upon completion of their review recommend approval to the CBO for immediate permit approval. The permit documents are concurrently submitted to Safety, Environmental, and the RPAO for review and approval with a one week turn around requirement. Reference Appendix D for the Over the Counter Permit Process Flow.

4.3.10 The standard permit process is for larger and more complex Construction Permit applications which may require advanced submission, and may require multiple consultations during the design process (if necessary). Reference Appendix D for the Standard Permit Process Flow.

4.3.11 The time required for the review process depends on the magnitude and complexity of the proposed work. The goal for most projects is a two-week review schedule. A well-prepared Construction Permit application package for proposed improvements that conform to all applicable codes, standards and requirements helps avoid unnecessary delays. Additionally, the appropriate reviewers should be involved in the design review process for significant projects. In many instances, these code and regulatory specialists can aid the project manager in making key design decisions and providing invaluable insight. The Construction Permit Office has a list of current permit reviewers.

4.3.12 NASA Permit Board technical reviewers review all of the Construction Permit application documents in order to confirm that the applied for proposed improvements conform to all of the applicable codes, standards and requirements required by this APR.

4.3.13 Each NASA Ames Permit Board technical reviewer, after completing a document review, makes a determination on whether the submitted Construction Permit application and documentation conforms to the requirements defined in this APR and whether the submitted documentation is suitable for issuance of an Ames Construction Permit. Each Permit Board technical reviewer may make one of the following three determinations:

- a. “Approved” - Approves the Construction Permit application documents as submitted without restrictions or conditions of approval for issuance of an Ames Construction Permit. The Ames Construction Permit approval includes requirements for inspections by Ames Construction Permit Inspectors at specific stages of completion of the construction work.
 - (1) “Approved as Noted” - Approves the Construction Permit application documents as submitted with restrictions or conditions of approval without requiring re-submittal of the Construction Permit application documents. “Approved as Noted” means that the documents submitted do not meet the regulations codes, standards and requirements as stated in this APR and the permit applicant shall comply with the permit reviewers comments. The project may proceed with construction work after the site specific safety plan and associated safety submittals have been reviewed and concurred with by Occupational Safety, Health and Medical Services Division.
 - (2) It is the intention of the Permit Board Technical Reviewers that their noted requirements are clearly defined, that the incorporation of the requirements is relatively straight-forward and that the noted requirements can readily be incorporated into the project construction in a predictable implementation and without significant impact on other elements of the project design.
 - (3) Further it is the intention of the Permit Board Technical Reviewers that incorporation of their noted requirements will not require redesign of elements of the project that would require subsequent compliance review by the Permit Board Technical Reviewers.
 - (4) The applicant may (at their option) revise the proposed construction documents and resubmit to the Permit Office to obtain a clean set of permit documents, or may issues the documents as is, provided the markups (or condition of approval items) are not removed from the approved documents.
- b. “Revise and Resubmit” - Disapproves the submitted Construction Permit application and documents as submitted. The Permit Board Technical Reviewers shall issue to the applicant a document

describing the items in the Construction Permit application documents that do not conform with the requirements defined in this APR. The applicant then has three options:

- (1) Revise and resubmit the Construction Permit application documents with modifications to conform to the requirements defined in this APR;
- (2) Resubmit the application with a Request for Deviation/Waiver – ARC 815 (<http://jc.arc.nasa.gov/ARCFORMS/ARC815.pdf>); or
- (3) Abandon the previously proposed construction work.

Note: "Revise and Resubmit" means that the documents submitted do not meet all of the codes, standards and requirements of this APR and/or there may be insufficient information provided in the submittal for the Permit Board Technical Reviewers to confirm conformance with the requirements of this APR.

4.4 Appeal Process for Code interpretations and plan check comments:

4.4.1 CBC section 113 Board of Appeals has not been adopted by NASA since NASA is a Federal Entity.

4.4.2 Appeals shall first be presented to the Chief Building Official and/or NASA Fire Marshal, then (if still unresolved) escalated to the Division Chief for Facilities Engineering & Real Property Management Division for NASA assets, and to the Director of Center Operations Directorate for Tenant Assets.

4.5 Ames Chief Building Official issues Ames Construction Permits to applications approved by the Ames Permit Review Board

4.5.1 An Ames Construction Permit shall be issued by the Ames Chief Building Official to the applicant only after submitted documentation has been determined, by all Permit Board Technical Reviewers, to conform to the requirements defined in this APR or for which an approved Request for Deviation/Waiver has been approved.

4.5.2 When a permit application is approved, the applicant is given the following:

- a. Original permit application package with approval signature
- b. One set of drawings which will act as the "Job Copy", along with the approved permit stamp signed by the CBO. Electronic drawings may only contain the approved permit stamp.
- c. Comments from reviewers, if applicable
- d. Conditions of Approval, if applicable
- e. Copy of the job inspection card, noting inspections required.
- f. A list of possible additional Ames and external permits that may be required such as Hot Work, Excavation/Drilling, Lift Plans etc.
- g. Copy of the approved Planning Clearance Application
- h. Copy of the approved Environmental Checklist

4.5.3 A copy of the approved Construction Permit shall be posted by the applicant along with other postings required by labor laws, OSHA and NASA Ames in a conspicuous location at all times at the site of the construction work. This copy shall provide contact points for the project in the event of a fire, emergency, or other issue.

4.5.4 A current set of the Chief Building Official Approved Construction Permit documentation (including all plans and conditions of approval) shall be maintained on the site of the construction work at all times and shall be made available for all inspections by the Ames Construction Permit Inspector.

4.5.5 The approved permit is valid for the duration of the project, provided construction begins within 180 calendar days of permit issuance and, upon commencement, is diligently and continuously prosecuted in a safe and code-compliant manner to completion. If the construction does not commence within those 180 days, then the permit shall automatically terminate. Before the construction can be restarted, the project must submit a new Construction Permit request, be reviewed again and a new permit issued. NASA projects are exempted from this requirement.

4.6 Inspections

4.6.1 Construction work shall be inspected by an Ames Construction Permit Inspector to confirm that the construction work is in conformance with the approved plans, documentation, and conditions of approval.

4.6.2 The approved Construction Permit and documentation package includes a Job Inspection Card which identifies all required inspections. This card is a summary of the Inspection Records (page 4 of ARC 57) filled out by the Technical Reviewers and indicates when inspections are required during construction. All inspections shall be performed prior to concealing any work and a copy of this card posted at the work-site.

4.6.3 The Construction Permit Office should be notified at least one business day (24 hours min.) before an inspection should occur.

4.6.4 An inspector will be dispatched to review the work. On large projects, this effort must be coordinated well in advance with the Ames Construction Permit Office.

4.6.5 The Inspector marks off the original Job Inspection Card, which shall be kept on the job site.

4.6.6 A partial inspection is noted on the Construction Permit “Approved – Job Copy” drawings. When the work is complete and fully inspected, it is signed off on the inspection card.

4.6.7 If the Inspector finds that the work was not properly completed, a discrepancy form is completed and forwarded to the construction manager listed on the permit. Discrepancies must be corrected by the organization performing the work.

4.6.8 At the completion of construction work under an Ames Construction Permit, the work shall be inspected by an Ames Construction Permit Inspector to confirm that the construction work was completed in conformance with plans, documentation, and conditions of approval. If the Ames Construction Permit Inspector confirms that the work is completed in conformance with plans and documentation approved for issuance of an Ames Construction Permit and in conformance with the requirements of the codes and standards identified in this APR, the Ames Construction Permit Inspector approves the Final Inspection documentation and forwards the documentation to the Ames Chief Building Official with a copy to the Permit Office for record.

4.6.9 Construction work may also be inspected daily by Occupational Safety, Health and Medical Services Division representative to ensure the contractor is in compliance with APR 8715.1 Chapter 27 and their Site Specific Safety Plan.

4.7 Changes During Construction

4.7.1 Significant changes (as determined by the NASA Inspector or Permit Board) during construction and deviations from the approved Construction Permit application documentation shall be submitted to the Construction Permit Office for Permit Board review and approval prior to incorporation into the construction work. Any significant changes or deviations that are constructed without approval of the Permit Board may be ordered to be removed by the Chief Building Official at the Construction Permit holder's expense.

4.8 Job Completion, Construction Permit Closeout

4.8.1 After the final inspection is performed and discrepancies are corrected, and final acceptance has been granted, permit closure is possible. The signed job inspector card is returned to the Construction Permit Office. If noted on the Planning Clearance, the Applicant/Permit Holder shall complete and submit a NASA Form 1046 to the Ames Real Property Accountability Officer.

4.8.2 The Applicant is responsible for preparing and submitting electronic as-built (or record) drawings (PDF format with original format CAD files) to the Engineering Documentation Center and a copy of the submittal form to the Construction Permit Office. The EDC is located in the basement of Building N-213, Room 28, and can be reached at (650) 604-1517.

4.8.3 New equipment/systems that are to be maintained by Plant Engineering, Code JCM, shall require the preparation and submittal of all documentation to include: Manufacturer's Product Data, Design Data, Operation and Maintenance Manuals, Acceptance Testing Results, Warranty, Equipment Transmittal Sheets, etc.,

4.8.4 Documentation of equipment/systems to be demolished/replaced shall also be provided to the Plant Engineering Branch to update their equipment inventory.

4.8.5 The permit is closed after the final inspection sign-off the submission of the approved as-built (or record) drawings to EDC and the submission of the required new equipment/system documentation to the Plant Engineering Branch, Code JCM.

4.9 Certificate of Construction Completion, Form ARC842, and Certificate of Occupancy, if required, is issued by Authority Having Jurisdiction

4.9.1 Upon receipt of the approved Final Inspection documentation from the Ames Construction Permit Inspector and satisfaction of job completion and Construction Permit close-out requirements, the Authority Having Jurisdiction issues to the Construction Permit holder a "Certificate of Occupancy" to occupy or use the area of construction work designated in the Ames Construction Permit. The area of construction work designated in the Ames Construction Permit shall not be occupied or used until a "Certificate of Occupancy" has been obtained.

4.9.2 A Temporary Certificate of Occupancy (TCO) may be issued by the AHJ for sections of a building prior to completion of construction. This TCO has a time limit. Normally it expires after 90 days of issuance, or shorter depending on the nature of the work that requires this TCO to accomplish. Areas covered under this TCO have to be completed and code compliant, and safe for the activities to be performed. However, this does not absolve the contractor from the requirements to complete the facility nor of the requirement for a final Certificate of Occupancy.

4.10 Other Reviews/Permits

4.10.1 The Construction Permit process does not preclude other reviews/permits that may or may not be required on a proposed project. These may include:

- a. Environmental review including completion of NEPA checklist.
- b. Construction safety review of site specific safety plan and applicable safety submittals associated to the scope of work.
- c. Architectural design reviews
- d. For projects that may affect structures or areas of historical significance, approval by the Cultural Resource Manager.
- e. Hazardous waste sampling and risk evaluation.
- f. Local governmental agency reviews/approvals (example BAAQMD)
- g. Other operational permits required by other NASA organizations (including Environmental and Ames Chief Engineer)
- h. An Excavation Permit (Form ARC 874)
- i. Hot Work Permit (Provided by the Fire Prevention Office)
- j. RF Spectrum Management
- k. Electrical Work (High Voltage)
- l. Lift Plan
- m. Confine Space
- n. Facility Closure

4.10.2 The Construction Permit Office can provide assistance in obtaining information regarding these permits and reviews.

CHAPTER 5 REQUEST FOR DEVIATION/WAIVER

5.1 Procedure

5.1.1 Except as specifically allowed, a request for a deviation/waiver is required in exceptional instances when a specific project cannot conform to specified requirements and the strict adherence to a particular requirement or requirements is determined, through a formal set of written findings, to be impractical or unsafe for circumstances relating to the specific project.

5.1.2 A request for a deviation/waiver must be submitted to the Ames Construction Permit Office on an ARC 815, Construction Permit - Request for Deviation/Wavier. Contact the Safety and Mission Assurance Directorate for information on completing the form (if required.)

5.1.3 A submitted ARC 815 will not be accepted by the Ames Construction Permit Office unless it contains approval signatures from the Ames Authority Having Jurisdiction, the Ames Occupational Health and Safety Division, and the Ames Chief Building Official (or their appointed representatives).

5.1.4 In order to avoid unnecessary time delays during the Construction Permit review process, any project deviation/waiver must be formally processed prior to the submission of any project's Construction Permit application.

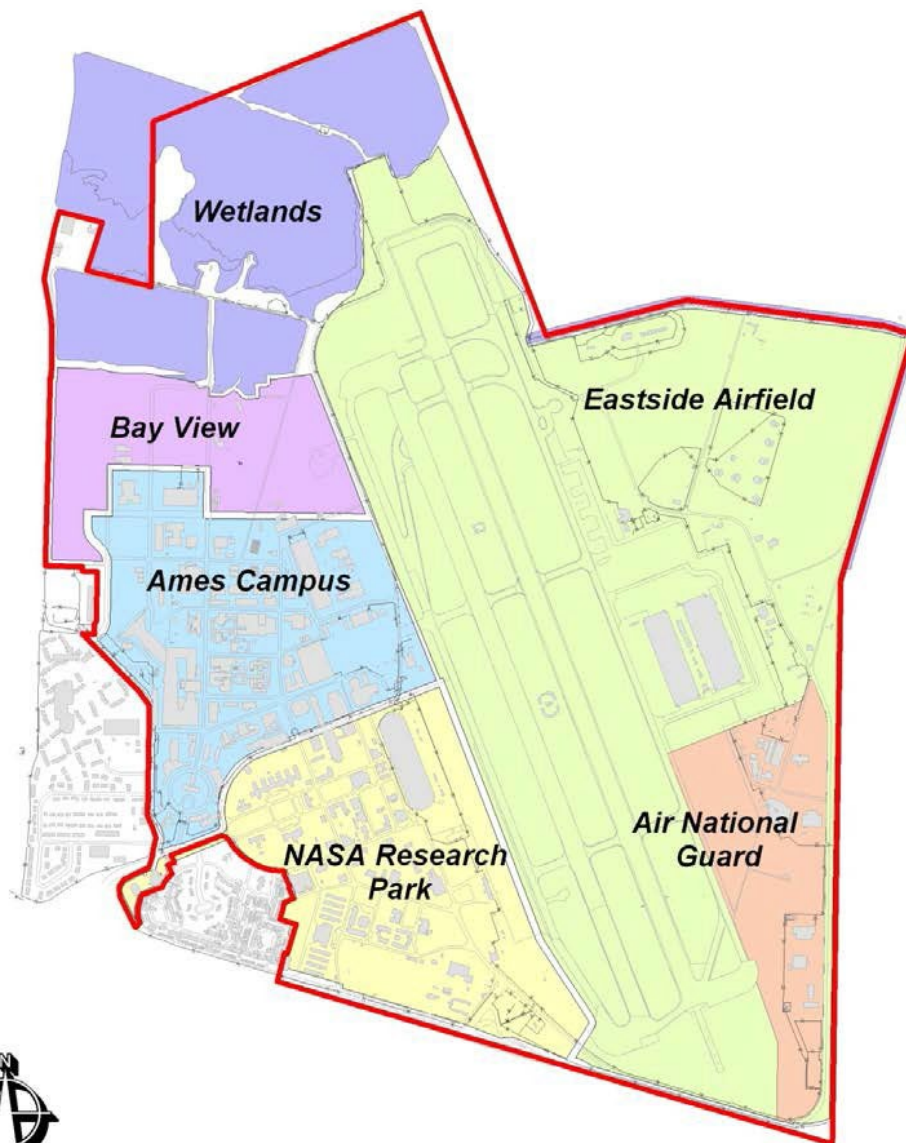
APPENDIX A. DEFINITIONS

Authority Having Jurisdiction (AHJ)	Responsible individual who approves/disapproves certificate of occupancy.
Chief Building Official (CBO)	Chief of the Facilities Engineering Branch or designated individual.
Facilities Engineering Branch (Code JCE)	This Branch provides engineering analysis, design, construction, and other facility related services to the NASA Ames community
Security Access Systems & Intrusion Detection Systems (IDS), Closed Circuit Television (CCTV) systems	Provide physical security systems including security fences, physical security barriers, all doors, and other systems that impact the physical security of Ames asset.

APPENDIX B. ACRONYMS

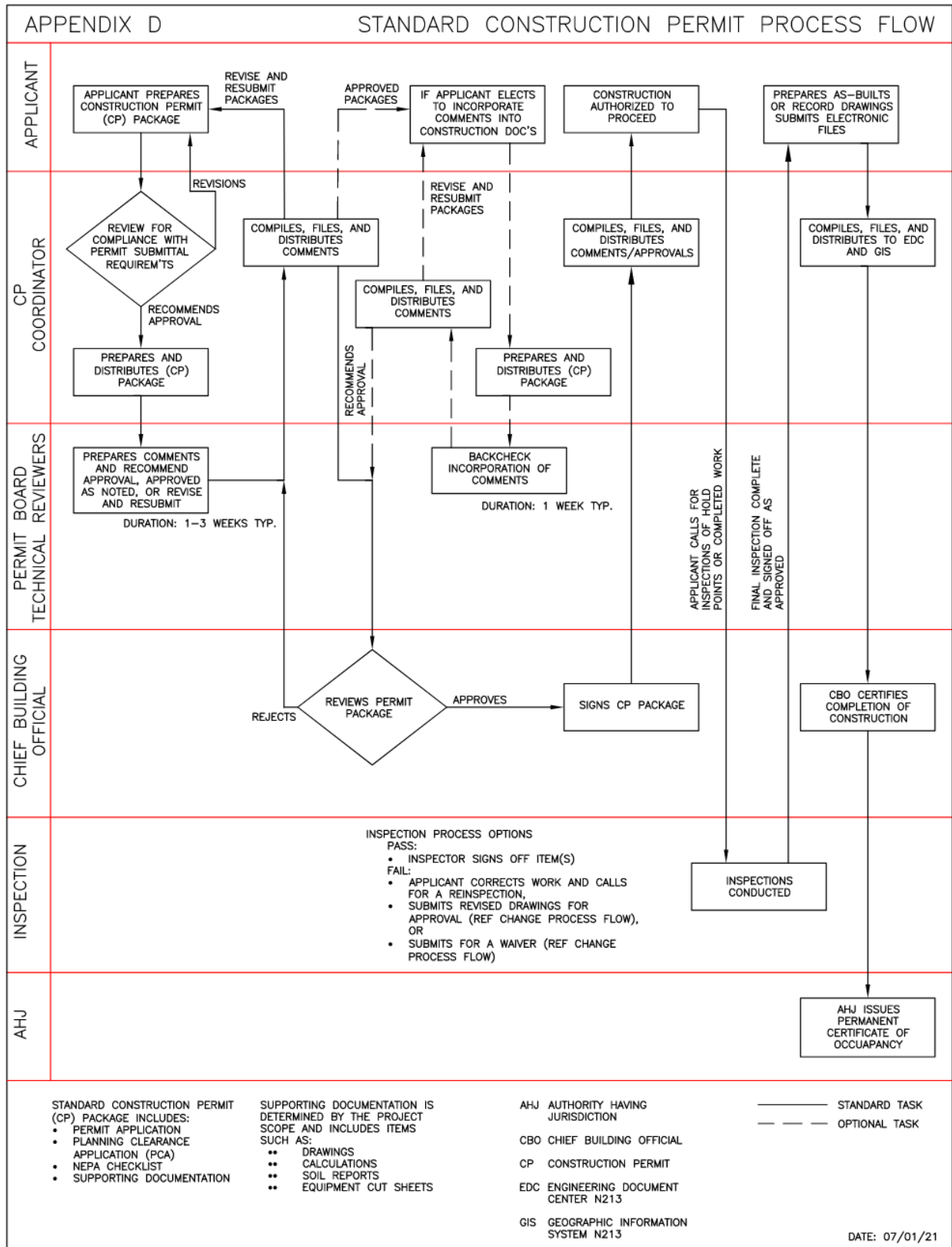
AHJ	Authority Having Jurisdiction
ANG	Air National Guard
APD	Ames Policy Directive
APR	Ames Procedural Requirement
ARC	Ames Research Center
BAAQMD	Bay Area Air Quality Management District
CBO	Chief Building Official
CCR	California Code of Regulations
CCTV	Closed Circuit Television System
CFR	Code of Federal Regulations
COC	Certificate of Occupancy
CP	Construction Permit
DOSH	Division of Occupational Safety and Health
EDC	Engineering Document Center
GIS	Geographic Information System
IDS	Intrusion Detection System
NEPA	National Environmental Policy Act
NRP	NASA Research Park
OCP	Over the Counter Permit
RCM	Reliability Centered Maintenance
RPAO	Real Property Accountability Officer
TCO	Temporary Certificate of Occupancy

**APPENDIX C. MAP OF AMES RESEARCH CENTER AND INCLUDE AREAS
(Red line defines boundary)**



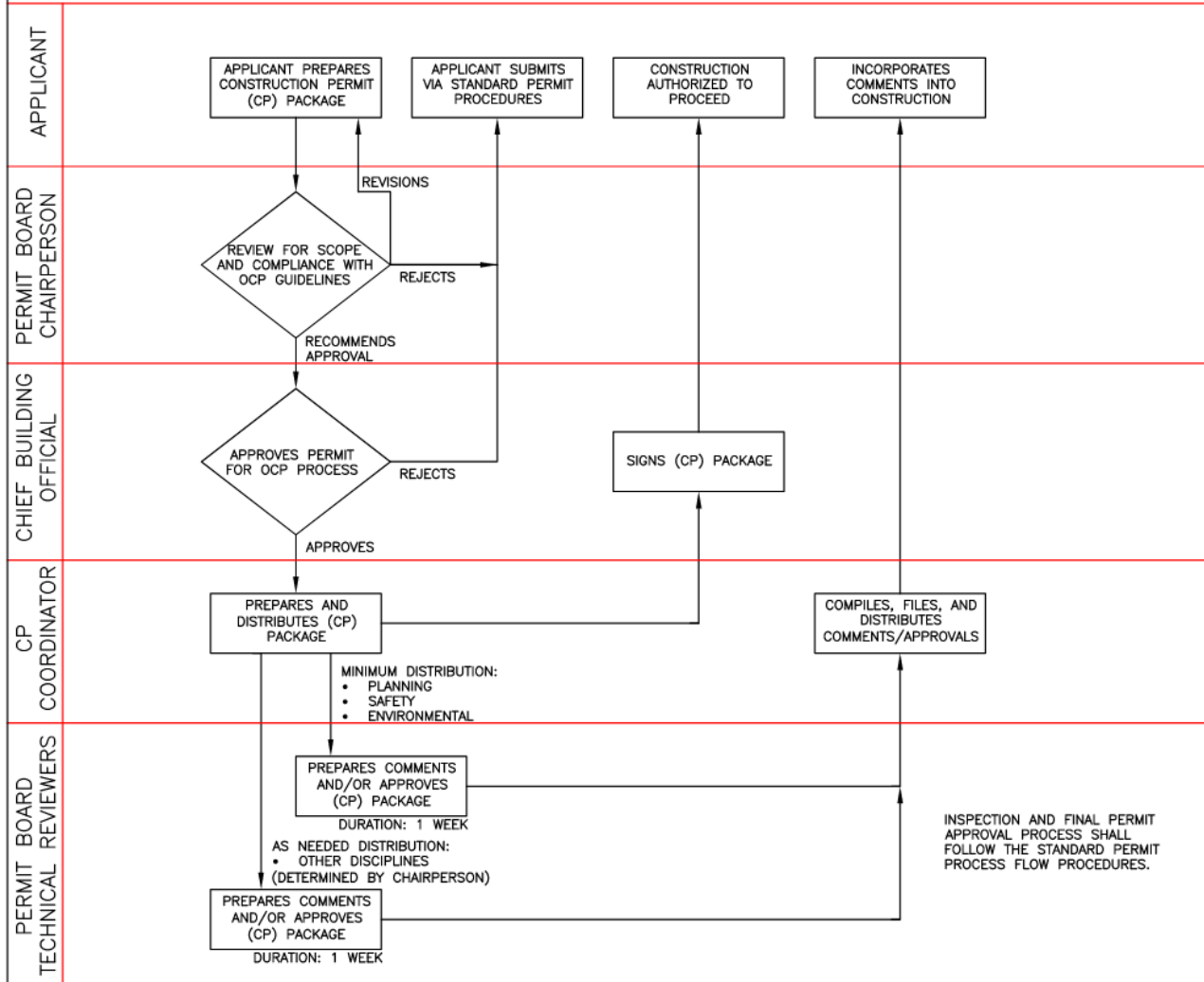

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June 2009

APPENDIX D. CONSTRUCTION PERMIT PROCESS FLOW DIAGRAMS



APPENDIX D

OVER THE COUNTER PERMIT PROCESS FLOW



INSPECTION AND FINAL PERMIT APPROVAL PROCESS SHALL FOLLOW THE STANDARD PERMIT PROCESS FLOW PROCEDURES.

OVER THE COUNTER GUIDELINES

- PROJECTS THAT QUALIFY FOR OVER THE COUNTER PERMITS INCLUDE:
- MECHANICAL, ELECTRICAL, PLUMBING PROJECTS THAT CAN BE FULLY INSPECTED IN THE FIELD WITH MINIMUM DRAWING REQUIREMENTS.
 - VERY SIMPLE PROJECTS WITH MINIMAL CODE REQUIREMENTS.
 - SIMPLE REPAIR OR REPLACEMENT PROJECTS
 - MODS TO FIRE SPRINKLER OR FIRE PROTECTION DEVICES WITH <= 20 HEADS

- PROJECTS THAT DO NOT QUALIFY FOR OVER THE COUNTER PERMITS INCLUDE:
- STRUCTURAL INVOLVEMENT (EQUIPMENT WEIGHING MORE THAN 400 LBS.)
 - PRESSURE SYSTEMS (EXCLUSIVE OF DOMESTIC WATER, FIRE, IRRIGATION)
 - INVOLVES CHEMICAL OR EQUIPMENT WITH CHEMICAL USAGES.
 - CHANGES OF OCCUPANCY OR USE
 - COMPLEX OR MULTI-DISCIPLINE REVIEWS REQUIRED.
 - HISTORICAL BUILDINGS OR SITES

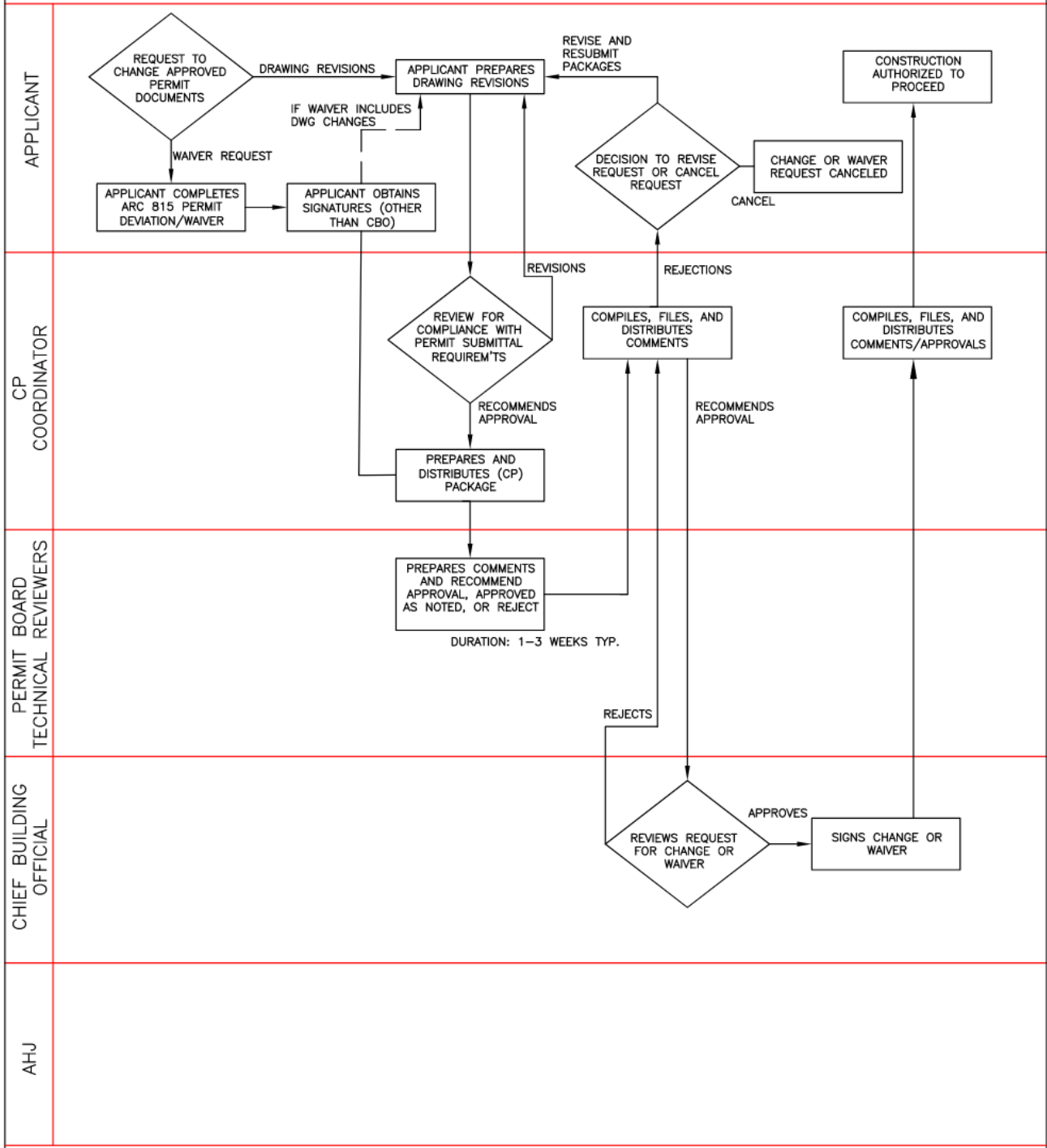
- MINIMUM PERMIT SUBMISSION DOCUMENTS
- ONE FULL SIZE STAMPED AND SIGNED DRAWINGS
 - CALCULATIONS (IF APPLICABLE)
 - NEW CONSTRUCTION PERMIT FORM ARC57
 - ARC PLANNING CLEARANCE APPLICATION
 - NEPA FACILITY CHECKLIST
 - PDF OF DRAWINGS AND CALCS
 - AUTOCAD OR REVIT FILES (IF APPLICABLE) BIND/INSERT

- ABBREVIATIONS:
- ARC AMES RESEARCH CENTER
 - CBO CHIEF BUILDING OFFICIAL
 - CP CONSTRUCTION PERMIT
 - NEPA NATIONAL ENVIRONMENTAL POLICY ACT
 - OCP OVER THE COUNTER PERMIT

DATE: 07/01/21

APPENDIX D

PERMIT CHANGE PROCESS FLOW



STANDARD CONSTRUCTION PERMIT (CP) PACKAGE INCLUDES:

- PERMIT APPLICATION
- PLANNING CLEARANCE APPLICATION (PCA)
- NEPA CHECKLIST
- SUPPORTING DOCUMENTATION

SUPPORTING DOCUMENTATION IS DETERMINED BY THE PROJECT SCOPE AND INCLUDES ITEMS SUCH AS:

- DRAWINGS
- CALCULATIONS
- SOIL REPORTS
- EQUIPMENT CUT SHEETS

AHJ AUTHORITY HAVING JURISDICTION
 CBO CHIEF BUILDING OFFICIAL
 CP CONSTRUCTION PERMIT
 EDC ENGINEERING DOCUMENT CENTER N213
 GIS GEOGRAPHIC INFORMATION SYSTEM N213

———— STANDARD TASK
 - - - - - OPTIONAL TASK

DATE: 07/01/21