DESIGN GUIDELINES

Bradley West Concessions Program

Bradley West Core and Concourses
and
Tom Bradley International Terminal Modifications

May 2011

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1.0

Forward

1.0 FORWARD

Los Angeles International Airport (LAX) is one of the largest and busiest airports in the world. It is the world's busiest airport for original and designation passengers, those beginning or ending their trips in Southern California rather than using the airport for connecting flights. It is the second largest gateway to the USA, now being served by over 62 airlines.

LAX is located about 15 miles south of downtown Los Angeles and is a major hub for west coast USA. It is a dynamic airpot which creates, attracts and supports economic activity throughout Southern California.

As a part of the Airport's commitment to improving passenger flow, satisfaction and concession experience, the new Bradley West Core and Concourses (Bradley West) have been planned to pave the way for exceptional post security Concession build outs. The existing Tom Bradley International Terminal (TBIT) will continue to operate as the "gateway" for departing passengers with new pre-security concessions located on Level 3.

The architecture of Bradley West provides a dramatic transitional space as you proceed from TBIT into the great hall. Large volumes of space have been developed with multiple levels from which passengers can view and experience the activities within the terminal and concourses as they pass through the building or gather to dine and shop.

The design and development of concessions within Bradley West should enliven the expansive volume of the building and reflect the vibrant image of Los Angeles, the City of Angels. The character and quality of concessions should be a reflection of the Airport's commitment to quality and passenger satisfaction.

End of Section.

2.0

Introduction

2.0 INTRODUCTION

The Bradley West Concession Design Guidelines (the Guidelines) have been prepared to facilitate design, construction and fit-out of concession tenant improvements by providing concessionaires (Tenants), their designers (Tenant Designers) and contractors (Tenant Improvement Contractors) an understanding of the following:

1. Review and Approval Requirements
2. Building Systems Interface Requirements
3. Regulatory Requirements for Permitting
4. Construction Environment and Requirements

The guidelines are unique and specific to leasehold improvements in facilities that are currently under construction within the existing Tom Bradley International Terminal (TBIT) Level 3; the new Bradley West Core Expansion; and new Bradley West Concourses (the Project). **In the absence of requirements or criteria provided in to these Guidelines, the Los Angeles World Airports Design and Construction Handbook, latest version shall apply.**

All concession development undertaken for the Project shall adhere to the requirements contained in the Guidelines unless otherwise approved by Los Angeles World Airports Airport Development Group (LAWA ADG) in writing or as required to comply with Applicable Law.

All design and construction must comply with applicable federal, state and local statues, codes, laws and administrative regulations (collectively, “Applicable Law”). Each Tenant is responsible for compliance with Applicable Laws regardless of the guidelines or their implication. Should a conflict between Applicable Law and the Guidelines arise, the Tenant is to notify LAWA ADG immediately, but is to nevertheless conform to Applicable Law. The Tenant shall be responsible for the due diligence necessary to determine the extent to which any conflict or inconsistency exists between the Guidelines and Applicable Law; and the level of compliance required for satisfaction of Applicable Law.

The Guidelines are organized as follows:

- ☐ Sense of Place
- ☐ Design Objectives
- ☐ Concessionaire Zones and Description of Spaces
- ☐ Design Control Zones (not used)
- ☐ Design Criteria
- ☐ Submittals and Procedures
- ☐ Regulatory Compliance Guidelines
- ☐ Special Construction Requirements

End of Section.

3.0

Sense of Place

California

City of Los Angeles

Los Angeles International Airport Bradley West

3.0 INTRODUCTION

No two places are the same. No two cities are the same. No two airports are the same. It is the unique characteristics of a particular place, its history, people, environment, industry and urban fabric that visitors and travelers look for and appreciate.

"Sense of Place" is an aesthetic expression of these unique characteristics of "Place" and should stimulate and enhance an individual's sensual perception and leave a lasting impression of the experience. The designer's interpretation of "Place" through the use of the images, forms, symbols, colors, food and retail offerings within a particular airport make it unique to a city, region or country and different from other airports. The iconic form of Bradley West was conceived as a wave shape to reflect the close connection to the coast and water that is fundamental to the region's character and development. Within that over arching theme, more intimate glimpses of "Place" can provide a unique experience that will form a first impression with arriving travelers and a last glimpse as they depart for other destinations.

The aesthetic interpretation of the physical development and the retail, food and beverage offerings can greatly contribute to the passenger experience. The Guidelines are intended to provide a framework from which the Tenant's design can evolve to support and reinforce the "Sense of Place" that is at the same time LAX, Los Angeles, California, USA.

3.1 "California"

California has a long and rich cultural history. From its early settlement by the Spanish through the uproarious days of the Gold Rush to a modern day economy that embraces everything from farming and fishing to the modern digital knowledge and media universe, California has an enormous variety of themes and experiences to share with the world.

The coastal edge of the state gives way to major valleys and mountain ranges that create diverse climates and support a wealth of crops and food products. These have been overlaid with the many cultural influences of the region to provide California with a unique "fusion" approach to delighting the senses and the palate.

The California experience is as much a "state of mind" as it is the special places, events and experiences to be found there. Each traveler and visitor to the state brings and takes away a unique image of California based upon their experiences. The development of a "California Sense of Place" will allow each traveler to imagine the potential to achieve their dream and a remind them of a reason to return.

3.2 "City of Los Angeles"

Los Angeles is one of the most famous cities in the world. From its beautiful geographic location on the Pacific coast to its vibrant fun-in-the-sun culture and its diverse cultural fusion, Los Angeles presents itself and is a much sought out destination by people from around the world.

With Hollywood only a short drive away, the city sparkles with glamorous celebrities dominating the television and movie industry, giving tourists the feeling that in this city caters to and has something to offer everyone who comes here.

Art lovers can visit a range of interesting attractions from prestigious art museums and galleries to fabulous theaters. They can enjoy the extensive collections at the J. Paul Getty Center and the Los Angeles County Museum of Art and visit the La Brea Tar Pits on Museum Row. Shoppers can check out the trendy shops on Melrose Avenue and Rodeo Drive. Families will not want to miss the fun at Universal Studios Hollywood. Of course every tourist would make a stop at the Venice Beach Boardwalk or pay a visit to Mann's Chinese Theater and the Hollywood Walk of Fame.

Los Angeles has it all; it's a vibrant city offering everyone a chance to enjoy an eclectic mix of cultures and tastes. From early morning till late in the evening, there is a diversity of choice and opportunities in every corner of the city. Your day can start with surfing in the ocean, rollerblading on the strand, playing tennis or a round of golf; follow with lunch in China Town or Olivera Street. Enjoy an evening concert at the Hollywood Bowl, a night out in Hollywood enjoying a venue on the Sunset Strip, or star gazing in Griffith Park. World class art, entertainment, fashion, recreation and dining located in one fabulous city.

3.3 "Los Angeles International Airport and Bradley West"

Bradley West will be the new international gateway to Los Angeles and the face of LAX to international passengers. It is important that the passenger can experience a richly varied palette of retail, food and beverage services that reflect the passenger's visitor experience in Los Angeles and that provides one last opportunity to experience the character of the City of Angels.

Los Angeles has a diverse population and draws visitors from around the world who appreciate elegance, quality and distinction. Concessionaires will be required to demonstrate to the satisfaction of the Airport that their proposed designs achieve significant connections to the Los Angeles region through branding of the stores, the quality and types of offerings.

It is important that the concessions design and fit-out be impressive, exciting and vibrant, invoking the unique appeal of the region. The concessions should provide world class sales presentation of world class goods and products. Customer service should provide passengers with a memorable, engaging experience unique to LAX. All concessions work should respect the aesthetic character of the public spaces and the multi layered fabric of the architecture. Concessions design should enhance their surroundings, add to the interest and excitement of the passenger experience and strive to be accessible, elegant, delightful and memorable for its character.

Los Angeles World Airports will be looking for concession designs that incorporate best design and construction practices. The selection and use of premium materials, fixtures, equipment and display features and the creative expression of local character provide the opportunity to enhance, support and contribute to a uniquely LAX "Sense of Place" that will delight passengers and at the same time support a thriving business environment.

End of Section.

4.0

Design Objectives

General Statement of Purpose and Expectation

LAX as a Gateway to Los Angeles

Inviting Design

Accessibility

Durability

Compatibility

4.1 General Statement of Purpose and Expectation

The primary objective of these Guidelines is to provide Tenant Concessionaires and their associated Designers and Contractors with information necessary to efficiently and economically develop food service and retail spaces that are unique, compatible and consistent with the buildings architectural aesthetic. This document is to be used for all types of concessions development including services; retail and specialty offerings; food and beverage services regardless of size and/or type of operation.

The Guidelines are not intended to stifle creative thought but to provide guidance in the selection of concepts, materials, displays and other aspects of concession development. They are meant to allow for and encourage the creation of exciting, enticing and uniquely expressive designs that will invite passengers to shop, dine and enjoy their experience at LAX.

The expectation is that the design of Concessions spaces will reflect attention to detail and quality; respect the architectural context; and contribute to a cohesive design expression. This document establishes the minimum acceptable parameters and criteria with the intention of promoting excellence and encouraging innovation and regional awareness. The Airport encourages the concessionaires to create a “best of class” design that rivals other world class professionally designed airport concessions and to utilize high quality materials, fixtures, displays, lighting and signage.

Designs that appear to be “rolled-out” responses or reconstituted concepts used in other airports without regional considerations will not be acceptable. Design concepts that appear generic, without regard to the specific design criteria established for Bradley West and TBIT will not be accepted and will be returned without review.

The concessionaires and their designers are expected to become familiar with the intent, scope and requirements of the Guidelines as well as the design characteristics, criteria and constraints of the Bradley West Core and Concourses and TBIT Modifications concessions spaces described in related lease documents. Within this framework, the concessionaires will develop their designs and submit them for review and approval as described in these guidelines.

To achieve the Airport’s Design Objectives, the Concessionaire is reminded to keep the following in mind as the design is initiated and developed:

4.2 LAX as a Gateway to Los Angeles

Innovative and captivating concession designs will greatly contribute to the traveler’s first and last impression of Los Angeles and LAX. The Concessionaire’s design should reflect California and celebrate Los Angeles and the unique qualities provided by the climate, geography and multi-cultural community. The opportunity to present LAX as a Gateway to Los Angeles and its variety provides many sources for design inspiration.

4.3 Inviting Design

Designs should be welcoming and invite the passenger to pause, shop and explore the opportunities presented to them. Concepts for concession storefronts, interiors and signage should be attractive and straightforward. Major design elements should relate to each other in architectural language and material to avoid visual clutter and confusion. Interesting displays, appropriate lighting, well-designed graphics and signage, visibility of merchandise, well-located point of sales, and efficient layouts for tables and chairs will help convey the purpose and function of the space and attract travelers to shop and dine.

4.4 Accessibility

The entrance to Concession spaces should be visually and physically open and approachable. Ease of access and circulation within the space is crucial to travelers and must accommodate those with carry-on luggage and roller bags in tow. Compliance with the Americans with Disabilities Act (ADA) requirements will help determine minimum acceptable aisle widths, interior dining layouts, counter heights and door clearances among other features and must be holistically incorporated into the overall design of the space. ADA and passenger accessibility will also influence the selection of floor materials in order to provide a surface which will be smooth rolling, durable and slip-resistant.

4.5 Durability

It is critical for the design of the concessions to withstand the abuse generated by high-volume travelers as they pass through the airport every day. Use of overhead, low-hanging and protruding architectural elements should be kept to a minimum. Finish materials should be durable in anticipation of extensive foot traffic and capable of withstanding (visually and physically) the impact of rolling luggage, strollers and baggage carts. Finishes should be stain resistant and low maintenance.

4.6 Compatibility

Unlike a typical shopping mall environment, the volume, scale and configuration or the architectural context of Bradley West will offer concessionaire's an opportunity to develop distinctive designs that will be visible from many vantage points. In developing the design of the concessions attention must be given to the multi-dimensional character of the space. The architectural rhythms, materials and color are overlaid with media displays and concession frontage, merchandise display and signage. All of these elements along with the passenger activities will collectively work to animate and enliven the space. In some areas the base building materials will form a part of the envelope for tenant fit out. In all areas the overall quality and character of materials used in the base building and media displays must be blended with the development of concessions and build up the "Sense of Place".

TBIT concessions will be different from that in the New Bradley West Core and Concourses and it too should respond in similar ways to its context. Concessions within this area will be expected to use quality materials such as terrazzo, stainless steel, stone and glass in a manner that is complimentary to the existing and planned architectural language.

Although concessions are individual elements, the compatibility goal serves to emphasize the Airport's desire to achieve a seamless integration of concession spaces with the building architecture in style, quality of materials and workmanship.

All design proposals will be reviewed as they are developed. Design reviews will focus on the objectives outlined above to assess compliance and achievement with the specific intent of assuring that the installed work will provide passenger services and amenities of the highest order and reinforce LAWA's reputation as an industry leader.

End of Section.

5.0

Lease Exhibits and Design Zones

5.0 GENERAL INFORMATION

Individual Tenant Lease Exhibits (TLE) have been developed for each of the designated tenant locations. The lease exhibits illustrate and document the anticipated physical limits and conditions. The lease exhibits are based on construction documents and convey the design intent and anticipated conditions within the tenant space. Actual as-built conditions may vary and concession design may require modification in the event field as-built conditions vary from the design construction documents intent.

Lease exhibits (TLE) typically include the location of demising walls, base building elements, points of connection (POC) for major building systems and other information to describe the envelope and base building provisions within which the Tenant's work will be constructed.

Each tenant space exists within a Design Zone. The concession spaces within a Design Zone will be developed with a similar vocabulary related to the base building conditions and provisions within the zone. The following is a list of Tenant Lease Exhibits by Zone:

ZONE 1 **Bradley West Concourses Level 4**

- North Concourse LN401
- North Concourse LN405
- South Concourse LS401
- South Concourse LS402
- South Concourse LS405

ZONE 2 **Bradley West Food Court Level 4**

- Core LC405

ZONE 3 **Bradley West Retail and Food Service Storefront Level 4**

- Core LC407
- Core LC409
- Core LC402
- Core LC410

ZONE 4 **Bradley West Retail Pods Level 4**

- Core LC411
- Core LC413
- Core LC415

ZONE 5 **Bradley West Airside Wall Mixed Concessions Level 4**

- Core LC404
- Core LC408

ZONE 6 **Bradley West Restaurant and Terrace Level 5**

- Core LC501

ZONE 7 **TBIT Modifications Mixed Concessions Level 3**

- To be determined

ZONE 8 **TBIT Modifications In-Transit Level 2**

- To be determined

End of Section.

6.0

Design Control Zone

NOT USED

7.0

Design Criteria

General Information and Planning Criteria

Architectural Design Guidelines

Building Systems Guidelines and Criteria

7.0 Introduction

All Tenant design and construction work performed in a designated Tenant area is subject to approval by LAWA ADG. Tenant work may not commence until LAWA ADG approval has been granted and the appropriate jurisdictional approvals are in place. Refer to Section 8 for details on Submittals and Procedures.

The following design criteria establish the minimum acceptable standards of design required to meet the standard of excellence, innovation in design, world-class quality and regional awareness expected. Refer to Section 4 for further information on the overall Design Objectives and goals.

In those cases where Tenants have established construction and design standards that play a major branding role, the Airport still expects to see an expression of the overall LAX "Sense of Place". No design that gives the appearance of being a direct reconstitution of another installation will be approved.

7.1 General Information and Planning Criteria

7.1.1. Layout and Queuing

- **Soft retailing is not allowed.** Although Tenant's are encouraged to create a multi-layered, three-dimensional experience for travelers within the lease space, soft retailing is prohibited in Bradley West and TBIT. All design components on the floor must remain within the lease area, and must not be pushed or wheeled forward into the public area with each day's operation.
- **Customer queuing required within leased area.** Tenant layouts shall accommodate all customer queues within their leased area. Queuing, customer pick-up, and grab 'n go offerings must be completely contained with the leased area. Roll out fixtures, coolers, or signage that extend past the lease line are prohibited.
- **Projections beyond leased area require pre-approval.** Design elements may, with LAWA ADG approval, be permitted to project beyond the lease line provided it otherwise conforms to the criteria outlined in this documents. All design elements that project beyond the lease line must not interfere with overall wayfinding, security or life safety in the Airport.

7.1.2. Retail Design Considerations

- **Merchandising of products must be appealing.** Retail design concepts and operational practices that result in a cluttered appearance are not acceptable.
- **Transparency and ease of movement are important.** Visibility into and physical access and movement through the Tenant space is important and minimum aisle ways of 3'-0" must be maintained.
- **Vendor supplied merchandisers** are not allowed within the Design Control Zone.
- **Point of Sale area** must remain free and clear. Floor area around the point of sale is to be kept clear to facilitate the approach and departure of customers making purchases. Storage of items not for sale in and around the sales counter shall be limited to those items which can be neatly kept out of sight.
- **Adequate queuing** space must be provided within the Concession space and be designed with efficiency and convenience in mind.

7.1.3. Food and Beverage Design Considerations

- **Adequate queuing** space must be provided at walk-up service concessions. Provide a means to separate queuing from general circulation and seating.
- **Seating** shall be functionally durable and aesthetically appropriate. The use of fixed or movable seating is at the option of the Tenant.
- **Layout of seating** shall maintain minimum 3'-0" aisles measured at the backs of chairs or greater where required by regulatory requirements.
- **Finishes and materials** throughout the Concessions space shall be durable and easily maintained. Special care must be taken at corners, bases and other features subject to damage from rolling luggage, carts and passenger traffic.
- **Concession Zones 4 Retail Pods Level 4; Zone 6 Airside Wall Mixed Concessions Level 4; and Zone 7 Restaurant and Terrace Level 5** must be cognizant of the multiple viewpoints from which their space is observed and designs must consider the various viewpoints. Provide finishes on all surfaces subject to view. Develop signage to be pleasing and viewable from multiple vantage points.

7.1.4. Service Concession Considerations

7.2 Architectural Design Guidelines

The following Design Guidelines communicate the general visual and aesthetic characteristics preferred in airport concession spaces and outline the quality required of specific elements such as the storefront façade; signage; demising walls and caps; wall, floor and ceiling systems; lighting; materials and finishes; and security closures. The guidelines establish a common framework for all Tenants and provide a starting point for the design of concession space. Imagination and originality are encouraged. It is the Tenant's creativity which will differentiate a concession design while integrating with the Terminal's architecture and context.

The Architectural Design Guidelines and Building Systems Criteria and Guidelines in this section should be viewed as a definition of the minimum standards and requirements for the design of a concession within Bradley West Core and Concourses and TBIT Modifications at LAX.

7.2.1. Sustainable Design Criteria

LAWA designed the Bradley West Modernization and Tom Bradley International Terminal Modifications (TBIT Modifications) to meet the LEED® Silver certification standards. To assist LAWA in making LAX the greenest airport in the world, LAX requires all Bradley West and TBIT Modification Tenants to meet the California Green Building Code for 2011 (CALGreen) Tier I standards for their Tenant spaces.

On January 1, 2011, CALGreen became the standard for all new construction in the state of California. CALGreen requires all new buildings in the state to be more energy efficient and environmentally responsible. These comprehensive regulations will achieve major reductions in greenhouse gas emissions, energy consumption and water use to create a greener California. CALGreen requires every new building constructed in California to reduce energy consumption by 15%, water consumption by 20 percent, divert 50 percent of construction waste from landfills, and install low pollutant-emitting materials.

CALGreen has tiers intended to further encourage building practices that improve public health, safety and general welfare by promoting the use of building concepts which minimize the building's impact on the environment and promote a more sustainable design. The two tiers contain additional prerequisite and elective green building measures necessary to meet the threshold of each tier. CALGreen Tier 1 and CALGreen Tier 2 buildings contain voluntary green building measures necessary to meet the threshold of each level. Tenants must contact the Los Angeles Department of Buildings and Safety to get the most up-to-date information on Los Angeles' requirements to meet CALGreen Tier I.

LEED® is an internationally recognized green building certification system, providing third-party verification that a building or community was designed and built using strategies intended to save energy, reduce water consumption, improve indoor environmental quality, and reduce environmental impacts. The U.S. Green Building Council (USGBC) developed LEED® to provide building owners and operators a concise framework for identifying and implementing practical and measurable green building design, construction, operations, and maintenance solutions.

Tenants are not required to submit or obtain LEED® certification of their facilities within the Project, however, CALGreen Tier 1 will provide an excellent basis for meeting the LEED® requirements. Tenants are welcome to pursue the certification and promote their facilities as participants in making LAX the greenest airport in the world.

One LEED requirement, Environmental Quality Credit 6.1 – Controllability of Systems – Lighting, goes above and beyond what is required under CALGreen. To assist LAWA in meeting its LEED requirements, LAWA requests Tenants to provide individual lighting controls for 90% of occupants (employees) in Tenant spaces. Controls are requested to be able to be adjusted to suit individual task needs and preferences. In addition, LAWA requests Tenants to provide lighting system controllability for all shared multi-occupant (employees) Tenant spaces to enable lighting adjustment that meets group needs and preferences.

7.2.2. Storefront and Concession Façade Criteria

- **The façade** is a major component and often the most visible and prominent element of each concession. The façade will reflect the Design Objectives stated in Section 4 and clearly identify the concession.
- **Transparency of 70 – 80% is desirable.** The Tenant is required to maintain a minimum a 70 – 80% of the storefront as transparent with the exception of food and beverage counter service concessions. Transparency can be achieved with either open entry or window glazing, creating views into and through the concession space. The balance of the storefront may be finished in opaque materials, all of which are subject to the Airport's approval.
- **Maximum open area** shall not exceed 60% or the maximum allowed by code requirements, whichever is greater. Refer to Appendix 11.1 for Life Safety Drawings applicable to the Project.
- **In a corner situation**, where the space abuts more than one public circulation area, the concession space shall be regarded as having more than one storefront and all exposures shall follow the same design criteria.
- **Storefronts must be supported** directly from the building structural system where such support is necessary.
- **Security devices** must be physically integrated into the storefront design. Closure door tracks must be support by a structural steel framework which will be attached and braced to the building structure. Structural framework must be engineered in conformance with applicable code requirements and submitted to the City of Los Angeles Department of Building & Safety for approval.
- **Mechanical and electrical devices** installed with the base building will be incorporated by the Tenants into the storefront design in a manner that meets the original design intent for the devices.
- **Demising caps** are required between adjacent Tenant storefronts and at base building finish intersections with phenolic panel systems. Provide Pittcon SOFTFORMS, LLC Snap-on Bullnose end cap Model # SSB-358-8 and W/SC-358-850 Mounting Clip with ½" reveal. Demising cap shall be prefinished to match PPG Duranar XL, UC106710XL Fawn Metallic.
- **Minimum 8" wall base** provided by the Tenant shall be of an appropriate material to resist damage from traffic and maintenance, across the width of each storefront and where exposed to the public areas. Proven materials include granite, marble, natural stone, tile and stainless steel. Alternative materials not listed may be presented to the Airport for approval.
- **Surfaces exposed to public view** from another level must be finished and cleanable. Concession space will be viewed from terraces, circulation zones and sterile corridors located on higher levels and Tenants. The design for these areas must assure that all areas exposed to public view are finished. No exposed structure, attachments, infrastructure, conduit or unfinished work is acceptable.

7.2.3. Signage

- **Concession identification** is an integral element of the overall design and image of the concession space. Signage shall be imaginative, dimensional and premium quality in appearance, construction and installation..
- **Logos and lettering** shall be used creatively by the Tenant. Three dimensional signage and graphics is encouraged and shall be unique, distinctive and graphically creative.
- **Signage restrictions and zones** are identified and described in the Design Control Zones. Some Design Control Zones identified in Section 6 define specific areas dedicated for signage, with given restrictions, and others do not define the exact placement.
- **All Concession and Tenant signage is subject to Airport approval.**
- **All signs are subject to design criteria.** In the event that the Storefront Sign is not directly along the Storefront, it shall still be subject to the same criteria listed within this section.
- **Fabrication and installation** must comply with all applicable City of Los Angeles Building and Sign Code and Applicable Law.
- **Tenants are limited to one sign** per storefront. Exceptions to this rule are concessions with long storefronts, over 40 l.f., which can have up to two (2) signs and storefronts that face in alternating directions.
- **Illuminated signs are limited to one per concession** between the hours of sunset and 10:30 PM according to the City of Los Angeles energy conservation ordinance.
- **Signage elements may be permitted to project** beyond the given parameters provided it otherwise conforms to the criteria outlined in this document. All design elements that project beyond the lease line are subject to Airport approval, and must not interfere with overall way finding, security or life safety in the Airport.
- **Internal illumination of individual letters** is a basic requirement. Back lit, halo lit, front lit or back washed letters are all acceptable. Tenants must specify lighting with care to avoid hot spots, scallops, and shadows from occurring non-deliberately. Light sources shall be recessed or concealed. Any non-illuminated signage proposed must be of a high quality material, and is subject to Airport approval.
- **Some examples of permitted types** of signs include the following:
  - Individual channel letters, back lit or halo lit
  - Individually expressed, dimensionally thick metal letters, front or back lit
  - Individually expressed, pin mounted letters, in metal or acrylic material, front lit or back washed with light
  - Signs engraved or sandblasted in granite, marble or other stone
  - Painted or silk-screened signs on the surface of a glass storefront
  - Sandblasted or etched signs on glass

- **The following sign types are not allowed:**
  - Animated, audible, blinking, flashing or non-ADA compliant signs
  - Backlit sign box, with flat face
  - Flush mounted non-illuminated plexiglas letters
  - Foam letters with or without laminate mylar faces
  - Exposed or visible neon
  - Advertising placards, banners, pennants, credit card decals, insignias, trademarks or any other advertisement not specifically stipulated in the Tenant's lease and approved by the Airport.
- **Material samples** of proposed signage shall be part of the airport submittal process. Refer to Section 8 for specific submittal requirements.
- **Airport directional signage** is used to guide passengers to gates, other terminal areas and connecting transportation systems and is considered vital to the function of the airport. Concession signs must be visually distinctive from directional signage.
- **Concession signage shall not interfere with sightlines** to Airport way finding or regulatory signage. Signage that is found to interfere with Airport way finding or regulatory signage will have to be removed or relocated by the Tenant.
- **Concession signage shall not interfere with Airport security cameras.** Signage that is found to interfere with camera views will have to be removed or relocated by the Tenant.
- **Access to service sign components** must be provided from within the Tenant premises.
- **Exposed equipment is not permitted.** No exposed conduit, tubing, raceways, ballasts, transformers or other equipment shall be permitted.
- **Exposed brackets and fastening are not permitted.** All signage brackets and fastening shall be concealed or else considered a part of the overall design presentation.
- **Attachment hardware and connections** must be non-corrosive and engineered to insure public safety.
- **Connection required to Tenant's distribution panel.** All illuminated signs, three dimensional graphics and lighting provided and installed by the Tenant shall be connected to the distribution panel installed in the Tenant space.
- **Freestanding signs are not permitted** outside the Concession area. This is considered to be soft retailing and is prohibited in all food and beverage, service and retail concession locations.
- **Product advertisement not allowed without Airport approval.** The Tenant shall not erect or affix any product advertisement to the exterior of the Concession area including windows and doors, without the Airport's approval. The Tenant will remove, at the request of the Airport, any signs or advertisements erected or affixed without the Airport's approval.
- **Tenants shall avoid "over-signing"** their areas with multiple layers of messaging, especially when each sign completes for importance, in attempt to command passenger attention, the result is a cluttered an ineffective presentation.
- **Tenants shall avoid posting or hanging too many vendor supplies items**. Although this is not always signage, it often is advertisement of some form, and shall be selectively chosen to avoid the accumulation of visual noise.

7.2.4. Demising Walls

- **All demising walls** are to be one hour rated construction and extend to the underside of the base building structure.
- **Merchandise display wall** panels and metal standards must be independently secured and mounted in accordance with all governing codes and standards. The Tenant acknowledges that demising walls are not designed to support wall-mounted fixtures or millwork without supplemental support.
- **Intersections between base building and Tenant** finishes other than those noted in Section 7.3.2 "Demising Caps" shall be separated by a reveal. The Tenant shall install a preformed aluminum reveal (minimum 1/2") which allows removal of finish material on either side without damage to the adjacent finish.

7.2.5. Wall Systems and Wall Bases

- **All Tenant wall systems and wall bases** are subject to Airport approval.
- **All general wall construction** within the Concession area to be 3-5/8" metal studs, minimum 25 gauge, and drywall minimum 5/8" thick, and must conform to all regulatory by-laws and codes having jurisdiction.
- **Interior walls must maintain a minimum 8" high wall base** of an appropriately durable material throughout the interior.
- **Acceptable wall base materials include:**
  - Stone tile
  - Quarry, porcelain or ceramic tile
  - Stainless steel
- **Unacceptable wall base materials include:**
  - Rubber or vinyl base
  - Brass
  - Pre-finished metals other than stainless steel
  - Wood
  - Plastic Laminate

7.2.6. Floor Systems

- **All Tenants floor systems** are subject to Airport approval.
- **The level of the Tenant finished floor**, at entry, must match the base building finish floor level. If transition is required in Tenant floor level it shall not exceed 2% in slope and shall only occur at the interior side of the Tenant's closure line.
- **Public base building floor finish must be extended** into the Concession area to meet the proposed storefront closure line. Tenant is required to extend and match the base building floor finish to the closure line.
- **X-rays of the existing floor are required** when the Tenant is proposing to penetrate the floor for the purpose of installing any type of mechanical, plumbing, electrical or telecommunication conduit, pipe or other equipment or material.
- **All materials** shall comply with Applicable Law and shall be slip-resistant.

- **Acceptable floor systems include:**
  - Wood
  - High performance commercial carpet
  - Natural stone
  - Quarry, ceramic or porcelain tile
  - Terrazzo
- **Unacceptable floor systems include:**
  - Vinyl composite tile
  - Rubber tile
  - Sheet vinyl
  - Artificial versions of stone, wood, tile, or other natural material
  - Brick or simulated brick
  - Other low quality, low durability material deemed unacceptable by the Airport

7.2.7. Ceiling Systems

- **All Tenant ceiling systems are subject to Airport approval**
- **All ceiling systems** must conform to all regulatory by-laws and codes having jurisdiction.
- **Ceilings within public view** shall be drywall or approved suspended metal or acoustical tile. Standard 2 x 4 acoustic tile ceiling is not acceptable.
- **Integrated soffits and multi-planed ceilings are acceptable** and are encouraged when used selectively to enhance the overall Tenant design.
- **Attachment to the base building structure is not permitted** for ceiling materials or lighting fixtures.
- **No exposed or untreated open ceilings** are allowed within the Tenant spaces.

7.2.8. Ceiling Support Systems

- **All ceiling support systems** must conform to all regulatory by-laws and codes having jurisdiction.
- **Suspension system shall be grid type**, either exposed or concealed, to accept various types of ceiling panels and/or gypsum wallboard.
- **Where system is to be installed in high moisture environment** such as commercial kitchens, Tenant shall use roll formed aluminum grid.
- **Support ceiling system** directly from base building structure.
- **Independently support** lighting fixtures and mechanical diffusers at all four corners.
- **Provide bracing and lateral support** as required by AHJ.

7.2.9. Lighting Systems

- **All lighting systems** must conform to all regulatory by-laws and codes having jurisdiction.
- **Lighting must be energy efficient** and comply with sustainability goals and design criteria in Section 7.3.1 Sustainability Guidelines.

- **The lighting design** must create visual interest and encourage passengers to patronize the concession. Ambient lighting must provide sufficient levels of lighting for passengers to function safely.
- **Façade lighting must not create glare** in the Concourse area or interfere with public area lighting and information displays.
- **All fixtures are to be high quality commercial grade** and approved for use in this type of application.
- **Lamps, light sources and track lighting** must not be visible from the public areas. Track lighting in display windows must be recessed in coves or pockets unless specifically designed as elements within the space and as exposed systems.
- **Lighting systems uniquely designed to be exposed systems** will be allowed subject to pre-approval by the Airport.
- **Bare lamp fixtures are not permitted** including fluorescent fixtures without lenses, bare incandescent or exposed lamps.
- **All lighting shall be connected** to the electrical distribution panel in the Tenant space.
- **Exposed components are not permitted.** Examples include raceways, crossovers, conduits, conductors, transformers or other equipment.
- **Lighting control shall comply with** Section 7.3.1 Sustainability Guidelines.

7.2.10. Base Building Columns Exposed Within Leasable Space

- **Provide permanent column enclosure** constructed of metal studs and drywall. Construction of permanent enclosure shall not impact the base building fireproofing. Maintain a minimum ½" clearance between fireproofing and face of stud.
- **Provide decorative column wrap over permanent column enclosure** per the design criteria for storefont and concession façade.
- **Signage or display elements** incorporated in the column wrap must be pre-approved by the Airport.

7.2.11. Materials and Finishes

- **All materials shall be new and of high quality** and conform to Applicable Law and are subject to Airport approval.
- **Refer to other sections of these Guidelines** for acceptable and unacceptable finishes applicable to storefronts, walls, floors and ceilings.
- **Use of plastic laminate is not acceptable** for storefronts, cashwraps, millwork edges or countertops. Where allowed, plastic laminate shall be shop applied; limited to areas where corner impact and chipping are not anticipated; joints shall be concealed and no exposed butt joints will be permitted.
- **All glass must be laminated or tempered.** Design employing glass either in metal frames or butt jointed is encouraged. Mirror glass to be mounted directed to substrate, no "J"-mold trim is allowed.
- **Exposed metals used as accents** may be brushed, textured or oiled bronze, copper, stainless steel, treated or untreated iron or anodized aluminum or similar durable finish.
- **Tiles used as accents** may be high quality ceramic, quarry, glass and porcelain.
- **Exposed solid woods and veneers** shall be natural materials. No facsimiles of natural products are allowed.

- **Unacceptable materials include:**
  - Pegboard walls
  - Vinyl wall coverings or wall paper
  - Large areas of plain, smooth, painted drywall
  - Sharp or rough surfaces within reach of the public
  - Stucco or plaster treated with an exaggerated texture

7.2.12. Display Fixtures

- **Gondolas, display fixtures and cash wraps** must have stainless steel corner guards or reinforcement to resist damage.
- **Magazine display walls and slatwall display systems** must have a reinforced backing or be supported by high gauge metal studs.
- **Standards** must be slim profile or hidden/recessed style.
- **Free standing fixtures** must have an impact resistant base a minimum of 12" above finished floor

7.2.13. Base Building Windows

- **Airside views shall be maintained** as much as possible, especially within Food & Beverage locations.
- **No attachments to base building window frames** will be allowed.
- **No window coverings** will be allowed without prior approval by the Airport. When allowed, window coverings must match the base building treatments.

7.2.14. Security Closures

- **Sliding closures:** Single track, narrow-stile sliding glass doors, located at or behind the façade line. Sliding doors must be enclosed in a pocket or become the rear enclosure of a window. All sliding door tracks are to be recessed with the top track mounted flush with the storefront head and the bottom track flush with the finished floor.
- **Folded or hinged:** Fully recessed, out-swinging, multi pane, fully glazed and frameless glass doors on pivots are encouraged.
- **Rolling:** Overhead or horizontal rolling doors or grilles are not preferred or recommended. All proposed closures of this type are subject to prior approval by the Airport and when provided must meet the following criteria:
  - All portions of the frame or track must be recessed within the ceiling or wall
  - Doors or grilles must be independently supported to the base building structure
  - Doors or grilles must be fully concealed when open
  - Sliding chain "pawn broker" type closures are not permitted

7.3 Building Systems Guidelines

Bradley West Core and Concourse concessions will be developed in a new terminal and systems have been designed to provide Points of Connection (POC) to designated Tenant areas. The typical POC is at the demising wall between base building and designated Tenant area. Beyond the POC each Tenant shall provide the design and installation of all required building systems such that they conform to all regulatory by-laws and codes having jurisdiction. Where interface with proprietary building systems is required, the manufacturer and product information are provided in this section or are available from the LAWA ADG designated representative.

TBIT Modifications Level 3 Mixed Concessions area and Level 2 In-Transit has been designed to provide Points of Connection (POC) to designated Tenant areas. The typical POC is at the demising wall between base building and designated Tenant area. Beyond the POC each Tenant shall provide the design and installation of all required building systems such that they conform to all regulatory by-laws and codes having jurisdiction. Where interface with proprietary building systems are required, the manufacturer and product information are provided in this section or are available from the ADG designated representative.

Refer to Tenant Lease Exhibits (TLE) for information pertaining to the size and location of POCs within designated Tenant areas and identified in the criteria below. Criteria are typical Tenant allowances and may be supplemented where required as a part of the Tenant improvement when approved by LAWA ADG. Variations from typical conditions are noted on the Tenant lease exhibits specific to designated areas.

7.3.1. Structural: Floor live load capacity: 100 psf

7.3.2. Floor Slab and Finish:

- Typical Tenant space is concrete on metal deck. Refer to Tenant lease exhibits for limits of base building floor finishes.

7.3.3. Ceiling:

- Typical Tenant space is unfinished and exposed to structure.
- Refer to Tenant Lease Exhibits for special conditions at Zone 4 Retail Pods.

7.3.4. Building Automation System (BAS)

- The Building Automation System (BAS) is an integrated direct digital control (DDC), open protocol, BACnet system manufactured by Siemens, Apogee TX. All equipment required to be connected to and monitored from the BAS including all meter equipment is to be compatible with this system.

7.3.5. Meters Acceptable for Installation:

- **Cold Water**: Badger Meter Series 380 CS (cold service) design for operating in fluid temperatures of -4F to 140F (4 to 125C). Communication standard: Modbus RTU, BACnet MSTP. Manufacturer: Badger Meter, P.O. Box 581390, Tulsa, OK 74158 (918) 836-8411, www.badgermeter.com (Appendix 11.4)

- **Hot Water:** Badger Meter Series 380 HS (hot service) design for operating in fluid temperatures of -4F to 140F (4 to 125C). Communication standard: Modbus RTU, BACnet MSTP. Manufacturer: Badger Meter, P.O. Box 581390, Tulsa, OK 74158 (918) 836-8411, www.badgermeter.com (Appendix 11.4)
- **BTU Meter for chilled water and heating hot water:** Onicon Inc. System-10-BAC BTU meter, BACnet MS/TP Compatible. Manufacturer: Onicon Inc., 1500 N. Belcher Road, Clearwater, FL 33765 (727) 442-5699 www.onicon.com e-mail: sales@onicon.com (Appendix 11.5)
- **Gas Meter:** Romet ECM2 rotary gas meter. Manufacturer: IMAC Systems Inc. 90 Main St., P.O. Box 1605, Tulltown, PA 19007 (215)946-2200 www.imacsystems.com e-mail: sales@imacsystems.com (Appendix 11.3)

7.3.6. HVAC POCs and design criteria for typical retail Tenant Development Zones 1, 3 and 5:

- **HVAC supply and return** duct connections capped within the Tenant demising wall and at mechanical room if applicable for future connection by Tenant. Heating hot water piping stub-outs at the demising wall for reheat of the perimeter zones (3.3 gpm /1000 SF).
  - 1-1/2" connection for tenants 5,000SF and smaller
  - 2" connection for tenants 5,000 to 10,000 SF
  - 2-1/2" connection for tenants over 10,000 SF
- **Chilled water connections**
  - 1-1/2" or larger chilled water stub-outs for Tenant HVAC needs, and to accommodate a capacity of 300 sf/ton.
- **Ventilation Air Allotments**
  - Louvers sized for 1cfm/sf ventilation (for combined outside air (OSA) and relief air) at Tenant exterior perimeter walls for Concourses. At Core locations a duct stub out at demising wall with connection to outside air louver or shaft is provided depending on location.
- **General exhaust** connection at demising wall.

7.3.7. HVAC POCs and design criteria for Tenant Development Zone 4 Retail Pods:

- **Metered chilled water** supply and return piping stub-outs with valves will be provided through the floor of each "pod". The chilled water can be used at the Tenant's option to provide radiant panels if duct distribution is not desired for aesthetic reasons.
- **Metered hot water** supply and return piping stub-outs with valves will be provided through the floor for heating needs. Similar to chilled water, the heating hot water can be used for radiant panels at Tenant's option.
- **Conditioned air** medium pressure ductwork capped connection will be provided for each "pod". Ductwork will be connected to a LAWA main air handling unit and will extend through the Tenant floor slab or air column sized to provide a capacity of 1 ton/300 SF.
- **Outside air ventilation** will be met by the conditioned air supply noted above.

7.3.8. HVAC POCs and design criteria for Tenant Development Zone 2 Food Court and Zone 7 Restaurant and Terrace

- **Heating and Cooling Load** (BTU/Tonnage) allotments based on assumed tenant load density will be provided as follows:
  - **Heating:** 50 BTU/SF (3.3 GPM/1,000 SF) at 170F at Tenant demising wall.
  - **Cooling:** 200 SF per ton cooling (5.0 GPM/1,000SF) at 44F at Tenant demising wall
  - **Planned connections to heating and cooling:**
    - 1-1/2" connection for tenants 5,000 SF and smaller
    - 2" connection for tenants from 5,000 – 10,000 SF
    - 2-1/2" connection for tenants 10,000 and larger
- **Ventilation Air Allotments**
  - **Louvers:** Sized for 1 CFM/SF ventilation (for combined outside air and relief air) at Tenant exterior perimeter walls where Tenant space allows. At other locations a duct stub out at demising wall with connection to outside air louver or shaft is provided depending on location.
- **Chilled Water/Hot Water Piping**
  - **Stub outs at demising wall** will be provided as noted above. Refer to the Tenant Lease Exhibits for specific sizes at designated Tenant locations.
  - **Meters are provided by the Tenant.**
- **Grease Exhaust**
  - **A shaft pathway is provided from roof to Tenant space.** The shaft and shared duct are provided by LAWA. Refer to the Tenant Lease Exhibits for location of designated Tenant POC to the grease exhaust infrastructure. Tenant is responsible to provide approved grease exhaust system from POC to the termination in the Tenant lease space.
  - **Pollution Control Units (PCU)** must be located in the designated mechanical space outside of Tenant space in Zone 2 and within Tenant space in Zone 7. Unit shall be comprised, as a minimum, of a double pass, dual wash 250 FPM face velocity. Tenant is responsible for design and installation of all grease exhaust components required for a fully operational and approved system from the defined POC.

7.3.9. HVAC POCs and design criteria for Zone 6

- **Refer to the Tenant Lease Exhibits for all connections.**
- **Grease Exhaust** path has been provided for Tenant Lease Space LC408 only in this area. The PCU will be located within the Tenant space. Concealment and any enclosure to meet code requirements are the responsibility of the Tenant.

7.3.10. HVAC POCs and design criteria for Concessions Storage

- **Medium pressure HVAC supply duct** capped within the Tenant demising wall fed from a variable valve air handling unit and having a capacity to accommodate 500 SF per ton. Supply air temperature will be 54 F.
- **Return air duct** stub-out is provided at the Tenant's demising wall.
- **Chilled water connections:**
  - 1-1/2" chilled water stub-outs for supplemental and/or HVAC needs

- **Ventilation air allotments**
  - **Louvers:** Sized for 1 CFM/SF ventilation (for combined outside air and relief air) at Tenant exterior perimeter walls where Tenant space allows. At other locations a duct stub out at demising wall with connection to outside air louver or shaft is provided depending on location.

7.3.11. Any HVAC items not listed above shall be provided by Tenant, including, but not limited to:

- **LAWA approved Tenant HVAC design.**
- **Supplemental** Air Handling Units and/or Fan Coil Units provided by Tenant to be located within Tenant space.
- **HVAC Ducting**: including but not limited to terminal air units, supply, return, outside air intake, exhaust, relief, air inlets and outlets controls, and grease exhaust..
- **Plenums** for outside air and relief air – air intake or discharge velocity past louver free area shall not exceed 400 fpm.
- **Duct connections to louvers** for OSA and relief air constructed to suit Tenant build-out design requirements; airflow not to exceed 1500 fpm.
- **BTUH Meters** for Chilled Water and Hot Water usage to be provided by Tenant and tied in to the Base Building, Building Automation System (BAS).
- **Humidification** equipment.
- **Maintenance program** and proof of compliance based on regular documentation
- **Structural supports**, structural upgrades and code defined access shall be provided for all Tenant equipment.
- **Equipment anchorage** calculation if required by City of Los Angeles.
- **Grease exhaust** pollution control unit and necessary exhaust fan(s), ducts and related components to remove grease, smoke and odors from hood exhaust air prior to discharge in accordance with all authorities having jurisdiction.
- **Other exhaust** for toilet rooms, pantry and dishwasher exhaust, or other as required by LAWA or AHJ: Provide fan unit installed in Tenant space and connect to Owner provided exhaust stub-outs or provide duct work to roof directly from Tenant space. Refer to Tenant Lease Exhibits for location of exhaust POCs.

7.3.12. Plumbing POCs and design criteria:

- **Other exhaust** for toilet rooms
- **Cold Water** Point of Connection as shown on the Tenant Lease Exhibit.
- **Domestic hot water** 1-1/2". Tenant shall provide back-up electric heater.
- **Sanitary Sewer** POC at area below Tenant footprint.
- **Vent risers** POC located in Tenant demising wall or adjacent shaft. Vent risers to be combined.
- **Grease Waste** POC below Tenant slab. Capped, separate, heat traced grease line located below the footprint of the Tenant space, piped directly to LAWA provided grease interceptor for restaurants with kitchens.
- **Natural Gas** POC shall be 7" low pressure gas
  - Restaurants with kitchens – 4"
  - Concessions – 2-1/2"

7.3.13. Any plumbing items not listed above shall be provided by Tenant including, but not limited to:

- **Electric domestic hot water heater**, and associated distribution piping.
- **All Plumbing distribution** piping and accessories.
- **Water treatment** or soft water equipment
- **Sanitary waste piping** from Tenant space to Landlord provided POC, located below Tenant footprint.

- **Vent piping** and connections to landlord provided vent riser/connection.
- **Domestic water** distribution piping.
- **Grease waste** piping, with heat tracing from POC to termination within Tenant space.
- **Natural gas** meter, regulator and earthquake valve and all piping and components required to extend gas from POC to termination in the Tenant space.
- **Meters** for monthly billing of Tenant usage shall be provided by Tenant and must be tied in to the base Building Automation System (BAS). Meters shall be proprietary to the BAS system and provided and installed by the BAS system base building contractor. Meters to be by Tenant for systems listed below.
  - **BTUH meter** for Chilled Water and Hot Water usage.
  - **Gas meter/regulator** with a minimum capacity of 1,000,000 BTU/hr.
  - **Water meter** for cold water

7.3.14. Electrical points of connection and design criteria:

- **Emergency power:** One 277V circuit for connection of exit lighting and pathway illumination for each 5000 SF of Tenant space. This is not metered power and is for provision of code required exit pathway power only. No provision for additional Standby or Emergency Power is included and Tenant may only use this power for the purpose intended.
- **Normal power:** Conduit only normal power stub-out into Tenant space from designated Tenant power system distribution panel via Tenant metering panels. The 2-1/2" feeder conduit will be routed from the distribution panels to the Tenant space through a metering cabinet.
- **Power demand allowance** of 10 watts per SF has been allowed for the purposes of Tenant planning. Provisions for power above the demand allowance must be reviewed and approved by LAWA at the initial submittal of Tenant design documents for review.

Any power distribution not listed above shall be provided by Tenant including, but not limited to:

- **LAWA approved Tenant power and lighting design.**
- **Connection to meter** equipment in LAWA Electrical closet
- **Power distribution** in entire Tenant space
- **Transformers** where required shall be provided within Tenant space
- **Conductors** in stubbed out conduit from building distribution system
- **Circuit breakers** in distribution boards to feed Tenant spaces
- **Branch circuit panels** for Tenant spaces installed in Tenant spaces
- **Power feeds** to mechanical equipment required for Tenant spaces

7.3.15. Lighting: Emergency lighting only for pre-improvement shell space will be provided. No emergency lighting fixtures or exit signage will be provided within Tenant shell space.

7.3.16. Any lighting not listed above shall be provided by Tenant including, but not limited to:

- **Exit signage** within tenant spaces
- **Exit pathway illumination** within tenant spaces
- **All typical, decorative, display, advertising, and task** illumination will be the sole responsibility of the tenant

7.3.17. Fire Suppression: Full fire sprinkler coverage for pre-improvement shell space is provided. The Tenant is responsible to provide a system design approved by the Los Angeles Fire Department to accompany the Tenant improvement design. Tenant is responsible to install all modifications, additions, and connections to the fire sprinkler system within the Tenant space.

7.3.18. Fire Alarm: Full fire alarm speakers and strobe coverage for pre-improvement shell space is provided. The Tenant is responsible to provide a system design approved by the Los Angeles Fire Department to accompany the Tenant improvement design. **All equipment and installation of the fire alarm system shall be fully integrated and based on the system provided in the base building. The design of the system and its installation is the responsibility of the Tenant. Tenant is required to use the base building fire alarm installer for the installation of the Tenant modifications and additions to the system and for all testing and commissioning**

- **The proprietary equipment** is Edwards System Technology to match submittals approved for construction of the Bradley West Core and Concourses.
- **The proprietary contractor** for system is Building Electronic Controls for Bradley West Core and Concourses.
- The proprietary equipment and contractor has not been determined for TBIT Modifications.

7.3.19. IT/Communications: Tenants are not allowed to install conduit and or cable tray outside of the Tenant space in the Bradley West Core, Concourses, and TBIT Renovation areas. To accomplish the hand off of regulated and LAWA services to the Tenant population without permitting access to LAWA telecomm rooms or involvement by LAWA staff in the circuit provisioning of LAWA infrastructure to Tenants, LAWA has provided an infrastructure of Tenant Wire Closets (interface rooms) that provide tie cabling interfaces between the regulated Minimum Pont of Entry (MPOE) and the LAWA telecomm rooms. Defined herein are the guidelines for accessing the Tenant Wiring Closets and other services.

- **Tenant Equipment:** Tenants are responsible for provisions of all required equipment and for installation within the Tenant lease space.
- **Access to Local Exchange Carrier (LEC):** LAWA will provide access to regulated telephone services or "Local Exchange Carrier" (LEC) and "Competitive Local Exchange Carriers" (CLEC) service.
- **Radio Equipment Installation:** LAWA will provide a path for radio equipment installation (see access to Tenant Wiring Closets below). Tenants must coordinate with LAWA for all radio equipment design and installation.
- **Access to Tenant Wiring Closets (TWC):**
  - Level 3 TWCs – Level 3 TWCs are to be used for cable terminations only. No active Tenant equipment is allowed in this space.
  - Level 5 TWCs – Tenants can utilize the Level 5 TWCs to install their own radio equipment (only) into half height cabinets provided by LAWA in the TWC. Space in cabinets may have to be shared with other Tenants. Tenants who require secure cabinets that are exclusively utilized by that Tenant must provide for space for that equipment within their designated lease space.
  - LAWA will provide a data transport path between new TWCs designated for connection to new Tenant spaces and to existing Tenant wiring closets and/or LAWA telecom closets where fiber exists. Tenants that require a data transport path from locations in the new building (Bradley West Core, Concourses or TBIT Renovation areas) to locations in the existing building must provide conduit from the Tenant space in the existing building to an existing Tenant wiring closets and/or LAWA telecom closet. LAWA will identify the closest existing Tenant wiring closet or LAWA Telecom Room.
  - Tenant must provide data transport requirements to LAWA for coordination / assignment of the appropriate transport method.

- Tenant will provide wiring from the designated Tenant Wiring Closet to the Tenant space, utilizing the LAWA provided cable tray. LAWA will provide instructions for laying cable within the cable tray and will assign which patch panel to connect to within the TWC.
- Tenant shall submit their cable requirements to LAWA for review, approval, and coordination.

o **Data Cable Requirements:** Tenant must comply with LAWA fiber, copper and coax cable requirements listed below:
- **Copper** - CAT 6A – Systimax Gigaspeed X10 Category 6A – 2091 Plenum or approved equal
- **Fiber** – Single Mode, Plenum rated, jacket color yellow, Corning Unitized MIC Plenum Rated (request for fiber will be evaluated on case-by-case basis)
- **Coax** – Belden 9116P or approved equal

o **Common Use Terminal Equipment (CUTE) and Baggage Reconciliation System (BRS)**
- LAWA will provide access to LAWA Network to support common use CUTE and BRS Connectivity.
- Tenant must provide CUTE workstations, and BRS handhelds/workstations in Tenant space. All Tenant provided equipment must adhere to LAWA IT defined CUTE Standards for workstation and operating systems (OS). All CUTE and BRS equipment procurement, programming, system configuration, and setup is proprietary and is to be completed by the existing CUTE maintenance provider, SITA. Contact for SITA is Tony Thien, (310)652-5257.
- LAWA will provide all gate equipment.

o **CATV**
- Tenant to contact LAWA's Cable TV provider, Time Warner, to establish CATV services in Tenant space. LAWA will provide access to the CATV data tap in the TWC for CATV services. Tenant to provide coax cable from Tenant space to the TWC (see 7.4.1 E.1)

o **CCTV**
- Tenant may provide CCTV system of their choosing within the Tenant space. Any request for CCTV cameras outside of the Tenant space must be submitted to LAWA for review/approval.

o **ACAMS**
- Any request for ACAMS within a Tenant space must be submitted to LAWA for review/approval.

o **Wireless Network**
- LAWA is in the process of expanding its current wireless network within and around the terminal and LAWA is very concerned about potential interference with any Tenant wireless network.
- Tenant is required to submit their wireless network design to LAWA for review and approval. The design documentation must include AP type, manufacturer, and model, AP locations/layout, antenna type, quantity of APs, coverage map, how wired to their network (physical location within Tenant space where AP cables terminates).
- Tenant shall use the lowest possible transmit powers to achieve the required connectivity.

- Tenant must constrain the wireless signal for their wireless network within the Tenant space. Tenant shall attempt to achieve a -85dBM signal strength at the boundary of the Tenant's leased space and at the building perimeter wall (if applicable).
- Wherever the Tenant operates unlicensed wireless systems within shared Tenant spaces, the Tenant is responsible for resolving any radio frequency interference issues between impacted users.
- If interference occurs, Tenant shall correct the problem through the use of engineering techniques and directional antennas within thirty days of notification.
- The Tenant understands and agrees that when LAWA expands its wireless networks where Tenant and LAWA's networks are not compatible due to interference, the Tenant agrees to decommission Tenant's wireless network and subscribe to LAWA's network at the existing fair market rates as defined by LAWA's Commercial Development Group.
- Failure to comply with the conditions specified herein may result in the required removal of the installed system.

7.3.20. Security: There are no provisions for security systems within the Tenant Lease Space. All security systems within the Tenant space are the responsibility of the Tenant and subject to approval by LAWA.

End of Section.

8.0

Submittals and Procedures

8.0 Introduction

The following section of the Guidelines outlines the steps required to submit and receive design approval to proceed with Tenant Improvements in the Bradley West Modernization terminal and concourses to be built and opened for operation parallel and concurrent with the completion of the Terminal and Concourse construction.

Please note that LAWA is not a self – permitting agency. This submittal process is in addition to any other required submittals to the Los Angeles Department of Building and Safety, the Los Angeles Fire Department, the Los Angeles Country Department of Environmental Health and or any other governing agency.

In preparing the documents for food and beverage services, it is recommended that the Tenant hire a kitchen consultant who is familiar with the plan check procedures for the Los Angeles County Department of Health.

Refer to the flow chart at the end of this section for an illustration of the LAWA Bradley West Modernization submittal process.

8.1 Submittal Protocol

Submissions shall be sent to LAWA at the following address:

Los Angeles World Airports
Airport Development Group
Project Controls, 9th Floor
7301 World Way West
Los Angeles, CA 90045

All submissions are at the expense of the Tenant. Refer to the Submittal descriptions in this section for the drawings and materials required with the scheduled submittal.

LAWA will review all submittal documents at the prescribed intervals for adherence to and compliance with the Guidelines and Standards applicable to the Bradley West Modernization. Throughout the submittal process, LAWA reserves the right to require design refinements as they deem necessary or appropriate. All work associated with the Tenant's assigned space shall be executed to maintain the intent of the approved design. No construction may commence without first obtaining written approval to proceed from LAWA.

8.2 Required Submittals

The Tenant shall proceed with the submittals outlined below as soon as they receive approval for their **Definitive Improvement Plan**. The contents and requirements of the Definitive Improvement Plan are contained in the Tenant's agreement.

At the prescribed intervals, each Tenant is required to submit drawings to LAWA for review. Submittals made in accordance with the approved Tenant Submittal and Construction Schedule will receive comments and/or approval within 10 business days. All comments shall be incorporated into the subsequent submittals. Failure to satisfactorily address LAWA comments may result in additional submittals to obtain written approval to proceed from LAWA.

Should the Tenant proceed to the next submittal, it shall be at their own risk as comments may be forthcoming from LAWA that may affect their design.

The primary submittals are as follows:

Submittal #1 – Concept Design	LAWA Executive approval required to proceed; Submit to LAWA CDG
Submittal #2 – 30% Construction Documents	Submit to LAWA ADG
Submittal #3 – 60% Construction Documents	Submit to LAWA ADG
Submittal #4 – 100% Construction Documents	Submit to LADBS & AHJs; Submit to LAWA ADG when required by comment at the 60% submittal
Submittal #5 – Issue for Construction	Submit to LAWA ADG, LADBS and AHJs
Submittal #6 – Record Documents	Submit to LAWA ADG

A **Tenant Submittal and Construction Schedule** shall be provided as part of the Definitive Improvement Plan indicating the proposed submittal dates for Submittals #1 - #4. It shall also include proposed dates for submittal to LADBS and AHJs; bid and negotiation period; and construction start and completion dates.

Refer to Figure 8.1 Bradley West Submittal and Design Review Process at the end of this section

8.3 Submittal Requirements

At the prescribed intervals, the Tenant is required to submit documents to LAWA for review and approval.

The drawings for each of the following submittals shall be prepared in accordance with LAWA CADD Standards. Refer to http://www.lawa.org/welcome_LAWA.aspx?id=542.

The description of the requirement for each submittal is as follows:

8.4 Submittal #1 – Concept Design

The purpose of the Concept Design is to illustrate and clearly articulate the intent and design philosophy of the individual concession or combined concession program. The Tenant's approach to meeting the Design Guidelines should clearly illustrate the concepts for storefront design, signage and lighting and indicate the character and development of the concept which shows an understanding of the Guidelines and the intent to provide a functional and aesthetically pleasing design. Actual material samples are not required however, a discussion of the proposed material palette must be provided.

The following documents are required for this submittal:

☐ **Architectural**
- o Sheet Index
- o Site Plan
  - Location of plan in context of the Bradley West Core and Concourses
- o Floor Plan
  - Location of proposed improvements
  - Conceptual furniture and equipment layout
  - Conceptual floor pattern
  - Passenger circulation and queue space
  - For food service illustrate kitchen concept
- o Elevations
  - Storefront concept design
  - Signage concept and proposed materials

☐ **Other Documents**
- o Project Narrative
  - Describe the interpretation of the Design Guidelines application to the project; design intent and use of materials; concepts for building systems integration; special design features. For food and beverage provide draft menus and list of featured products.
- o Rendering(s)
  - Illustrate in 3-dimension the tenant storefront and juxtaposition with adjacent public areas and/or other storefront.
- o Contact List for key members of Tenant's team
- o Preliminary Tenant Document Submittal and Construction Schedule
- o A rough order of magnitude (ROM) cost estimate
- o Draft menu, where applicable

8.5 Submittal #2 – 30% Construction Documents

The purpose of the 30% Construction Documents submittal for Conditional Approval is to confirm the design feasibility of the Definitive Improvement Plan and to illustrate the application of Design Guidelines and Standards to the development of the project. Preliminary engineering and code research should be completed to the level which confirms the feasibility to execute the design and meet the requirements of LAWA and the Authorities Having Jurisdiction (AHJ). Comments provided on the Definitive Improvement Plan shall be incorporated.

Submit 6 half-scale sets of drawings, specifications, reports and any other written documentation required below. Submit 6 copies of Tenant Submittal and Construction Schedule. Submit 1 sample board of proposed finish materials.

- ☐ **Architectural**
  - o Sheet Index all disciplines
  - o Project Description
    - Preliminary code research documentation
    - Food service description
      - Type of facility: Dine-in or Take-out
      - Grease interceptor assumptions, sizing and calculations for connection to base building system
      - Identify if washable dishes/utensils or disposable paper pates/plastic utensils will be used for dishwasher requirements
  - o Preliminary Egress Plan
    - Preliminary Plans – 1/16 scale minimum
    - Preliminary occupant load summaries
    - Preliminary egress loads
  - o Accessible Path of Travel Plan(s)
    - Indicate path of travel from Parking Structure Assigned Space to nearest Accessible Rest Room
  - o Preliminary Floor Plan(s)
    - Locate storefront, grille closures, all equipment and fixtures, fixed tables, seats, counters, bars, etc.
    - Locate toilet rooms and utility rooms
    - Preliminary kitchen layout with appliances and equipment
    - Dimension of major features
    - Wall types including rated construction where required
  - o Reflected Ceiling Plan(s)
    - Preliminary ceiling plan and lighting layout
  - o Finish Plan(s)
    - Floor finish limits, materials and patterns
    - Special finish applications
  - o Furniture Plan
    - General layout of seating area

- o Elevations and Sections
  - Storefront and public wall elevations including surrounding base building context.
  - Illustrate finish materials, dimensions of major elements
  - Indicate detail at intersections of tenant construction with base building construction
  - Connections and support of tenant finishes and closures
- o Preliminary Signage Drawings
  - Indicate location, size, materials and overall design intent for tenant identity signage.

☐ **Food Service Drawings**
- o Food service equipment layout and kitchen plan
- o Equipment elevations
- o Exhaust Hood Drawing

☐ **Mechanical Drawings**
- o General Notes, Symbols, Legend and Equipment Schedules
- o Exhaust / Grease hood and pollution control equipment selections
- o Indicate grease exhaust POC
- o Preliminary mechanical layout and POC to base building systems
- o Supplemental mechanical equipment including location and required POC to base building systems
- o Preliminary heating/cooling load calculations

☐ **Electrical Drawings**
- o General Notes, Symbols, Legend, Preliminary Lighting Schedule
- o Preliminary Floor Plans
  - Locate proposed Exit signs and fire alarm stations.
  - Indicate emergency lighting.
  - Primary electrical loads defined.
  - Identify panel for connection to base building
  - Identify all points of connection (POC) to base building systems
  - Identify meter panel location and disconnect in tenant space
- o Reflected Ceiling Plans
  - Indicate preliminary lighting layout
  - Indicate preliminary fire life safety device and sign locations

☐ **Plumbing Drawings**
- o General Notes, Symbols, Legend, Preliminary Equipment Schedules (if any).
- o Preliminary Floor Plans
  - Indicate preliminary system layouts and POC to all base building systems including domestic water, hot water, chilled water, sewer and vents, grease waste, natural gas, etc.
  - Indicate location of all tenant meters
  - Show location of tenant hot water heater within tenant space
  - Identify utility points of connection (POC) and shut-offs.

☐ **Fire Protection Drawings**
- o Reflected Ceiling Plan
  - Indicate preliminary modifications to sprinkler system included relocation or supplemental heads, additional zones, etc.
  - Provide a narrative description of proposed modifications to base building system and interface of tenant system with base building system

☐ **Communication Drawings**
- o Indicate tenant interface with base building POC
- o Indicate location of tenant IT equipment within tenant space

☐ **Signage Package Schematic Design**
- o Location plan and elevation
- o Letter style, sign type, materials, colors and illumination

☐ **Additional Required Documents:**
- o Tenant Submittal and Construction Schedule
- o Outline Specification in CSI Format.
- o Preliminary Logistical Plan
- o CAL Green and Title 24 preliminary compliance review

8.6 Submittal #3 – 60% Construction Documents

The purpose of the 60% Construction Documents submittal is to confirm the implementation of the project with respect to: the original design intent and previous submittals; satisfactory application and incorporation of design guidelines and standards; coordination of tenant systems with base building systems; proprietary equipment and systems required for interface to base building systems is acceptable; the completed design will be meet all LAWA requirements. All previous LAWA comments should be incorporated and responded to in the submittal.

At the time of this submittal the Tenant shall provide documentation to LAWA that meetings with the Los Angeles Department of Building and Safety and other Authorities Having Jurisdiction (AHJ) have been held to confirm that code and regulatory requirements are being met and the Tenant has a clear understanding of the requirements for approvals and permitting.

Submit 6 half-scale sets of drawings, specifications, reports and any other written documentation required below. Submit 6 copies of updated Tenant Submittal and Construction Schedule.

☐ **Architectural**
- o Sheet Index for all disciplines
- o Project Description
  - Final code research documentation
  - Final food service description
- o Egress Plan
  - Final egress information
  - Occupant load summaries
  - Egress loads
  - Fire separations and opening protection
- o Path of Travel Plan(s)
  - Final disabled access information
- o Floor Plan(s)
  - Update all information provided in previous submittal.
  - Plan dimensions, room names & numbers, detail and section marks, wall types
  - Indicate wet and dry storage areas
  - Identify linear feet of dry storage capacity

- Reflected Ceiling Plan(s)
  - Update information provided in previous submittal
  - Indicate emergency and life safety devices
  - Indicate security cameras and other devices
  - Dimension, detail and section marks, ceiling heights, grid start points
- Door Schedule
  - All door information, frame details, hardware schedule
  - Coordinate lock standards with LAWA
- Finish Plan(s)
  - Update all information provided in previous submittal.
  - Finish Material List
  - Finish Schedule
- Furniture Plan
  - Final furniture layout
- Elevations
  - Update information provided in previous submittal
  - Elevate all public area walls and features
  - Millwork and casework elevations
  - Storefront and public wall elevations including surrounding base building context.
- Sections and Details
  - Illustrate details and sections noted on plans and elevations
  - Detail of storefront closures/grilles and connections to existing structure
  - Millwork details
  - Verify all casework and equipment are ADA compliant
  - Provide waterproofing detail(s) for any interior “wet areas” such as kitchens including drains.
  - Provide floor drains under all “wet” equipment.
  - Provide fire stop details
  - Ensure that the appropriate assemblies, components and equipment have corresponding Los Angeles Research Report (LARR) numbers.
- Signage Drawings
  - Update information provided in previous submittal
  - Detail sign support and any connections to existing structure or base building components.
  - Indicate all connections to power including transformers. All power must be distributed from the tenant electrical panel.

☐ **Food Service Drawings**

- Update information provided in previous submittal
- Indicate soap & towel dispenser at hand sink
- Indicate supply shelf and adjacent wall finishes in utility closets/mop sink area
- Elevations and details
- Food service equipment cut sheets

☐ **Structural Drawings**
- o Indicate sizes, weights and location of HVAC units both suspended and floor mounted
- o Indicate weights of all food service equipment
- o Provide applicable calculations
- o Connection and support details for all tenant provided components including storefronts; closures/grilles; signage; floor mounted and suspended equipment; etc.
- o If applicable, list what equipment etc. will be a deferred submittal

☐ **Mechanical Drawings**
- o Update information provided in previous submittal
- o Indicate final location of all HVAC equipment both floor mounted and suspended
- o Indicate ductwork, diffusers, grilles, and all HVAC distribution
- o Indicate zone control and control interface with base building BAS
- o Indicate tenant meters and interface with BAS
- o Indicate access panel locations

☐ **Electrical Drawings**
- o Update information provided in previous submittal
- o Single Line Diagram with load calculations
- o Power plan and panel schedule(s)
- o Fire Alarm Plan and Riser Diagram
  - Indicate POC to base building fire alarm panel and isolation of tenant space alarm/detection from base building and other tenant circuits/path
- o Reflected Ceiling Plans
  - Final lighting layout and controls
  - Final fire life safety device and sign locations
- o Standard details
- o Coordinate electrical drawings with Signage Package

☐ **Plumbing Drawings**
- o Update information provided in previous submittal
- o Locate floor drains, plumbing fixtures, roughs, etc.
- o Indicate all horizontal piping over 2”.
- o Indicate gas lines with shut off valves at POC. Indicate tenant meter installation.
- o Provide riser diagrams for wet and vent systems.
- o Plumbing calculations as applicable

☐ **Fire Protection Drawings**
- o Reflected Ceiling Plan
  - Update information provided in previous submittal
  - Indicate final modifications to sprinkler system including relocation or supplemental heads, additional zones, etc.
  - Indicate POC and shut off valve located within tenant space

☐ **Communication Drawings**
- o Indicate tenant interface with base building POC
- o Floor plan
  - Indicate equipment types and location including mounting heights
  - Indicate conduit size and location
- o Single Line diagram(s)
  - ACAMS Network
  - CCTV Network
  - Intercom Network
  - Video and CATV
- o Typical details

☐ **Signage and Graphics Package (separate submission to LADBS)**
- o Updated plans and elevations
- o Finish samples
- o Power plans

☐ **Additional Required Documents**
- o Updated submittal schedule
- o Updated construction schedule
- o Equipment cut sheets and equipment drawings (only those not already provided on drawings)
- o Interdisciplinary composite coordination drawings to illustrate coordination of multiple systems within the tenant space and at base building POCs
- o Update CAL Green and Title 24 preliminary compliance review
- o Final finish board with samples.

8.7 Submittal #4 – 100% Construction Documents

The 100% Construction Documents submittal will serve as the plan check submittal to the Los Angeles Department of Building and Safety, the Los Angeles County Department of Health, the Los Angeles Fire Department and any other governing agency with jurisdiction over this project. Prior to submission, the Tenant shall coordinate with LADBS and the applicable governing agencies to schedule a review which will assure the Tenant can receive comments and respond with corrections in a manner to assure a permit will be issued and the Tenant's work can begin as planned in their approved Construction Schedule. Obtaining the Building Permit and all required agency permits is the responsibility of the Tenant. A copy of the approved permit(s) shall be submitted to LAWA ADG prior to beginning construction.

Refer to Regulatory Compliance section of these Guidelines for additional information regarding requirements and coordination with LADBS and AHJs.

The submittal consists of drawings, specifications, calculations and any other documents that are appropriate to be issued for bid documents.

The submittal shall incorporate any and all comments or revisions requested by LAWA during the previous submittal reviews.

In this submittal it is expected that all appropriate assemblies, components and equipment have corresponding *Los Angeles Research Report (LARR)* numbers clearly identified on the drawings.

Submission to LAWA for review will not be required unless the previous submittal was deemed insufficient and LAWA has indicated it will require a 100% submittal.

Refer to LADBS and AHJs for their submittal requirements and procedures.

8.8 Submittal #5 - Issue for Construction

This submittal shall incorporate all revisions required by governing agencies as a condition of plan check approval. A record of revisions and supplemental submittals to the agencies is maintained by the Tenant and is available to LAWA for review upon request.

This submittal shall have all clouds and revision dates removed and have the same issue date for all documents.

A record copy of the Issue for Construction shall be maintained on site. Revisions to the Issue for Construction documents shall be posted on the record set and available for review by LADBS, AHJs and LAWA ADG representatives.

8.9 Submittal #6 – Record Documents

This submittal shall be furnished to LAWA promptly upon completion of work. Record Documents shall include all elements including but not limited to building architectural, structural, mechanical, electrical and plumbing systems and components, utilities and substructures, permits and permit numbers, and all sub meter locations and meter numbers. Record drawings for Tenant improvements shall be prepared and submitted using "LAWA's Computer Assisted Drawing and Design (CADD) Standards and Procedures." Copies of this document are available at http://www.lawa.org/welcome_LAWA.aspx?id=542
Airport Engineering LAX

All drawings submitted by the Tenant shall be accompanied by the CADD computer file used to print or plot the drawings. These computer files shall comply with the current LAWA CADD Standards and Procedures and shall contain all drawing data, which appears on the drawings.

End of Section.

Bradley West Submittal & Design Review Process

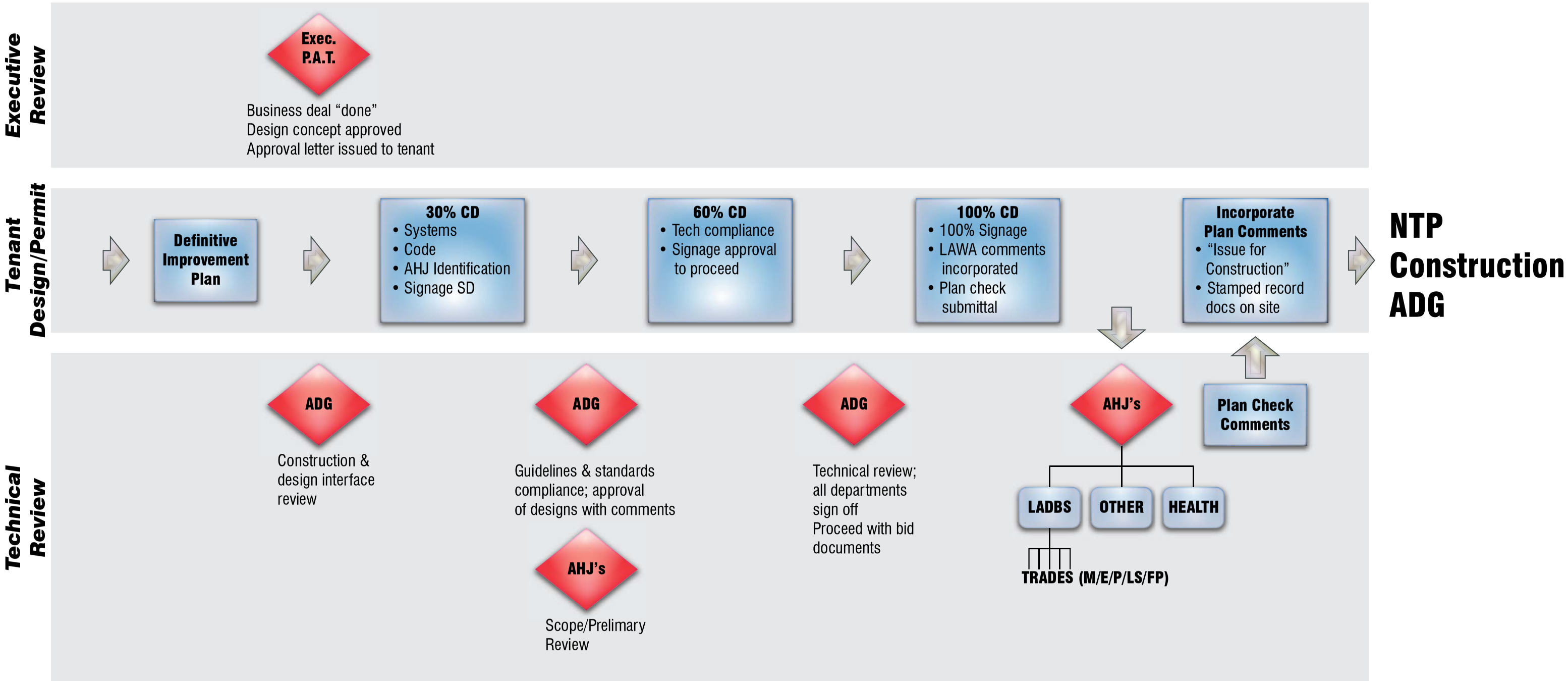


Figure 8.1

03/15/11

9.0

Regulatory Compliance Guidelines

Applicable Building Codes

Plan Check Submittal

Special Code Considerations for Bradley Core

Industrial Waste Permit

Environmental Health

Preliminary Plan Check Service

Los Angeles Department of Cultural Affairs Clearance

Los Angeles World Airports Clearance

LADBS Plan Check Approval Process Chart Figure 9.1

9.0 Introduction

This section provides an overview of the regulatory requirements applicable to work at LAX. Mentioned in this section are the codes and guidelines that the Tenant is encouraged to become familiar with. This list is neither exhaustive nor inclusive. The Tenant responsibility with respect to knowledge and application of codes and regulations to his project is covered in Section 2 “Introduction” of this document.

9.1 Applicable Building Codes

Special conditions and requirements specific to the Project are recorded in the **Memorandum of Understanding (MOU) dated December 16, 2009** between the Los Angeles Department of Building and Safety, the Los Angeles Fire Department and the Los Angeles World Airport. A copy of the MOU is included in this document as Appendix 11.2

The Life Safety Documents for the construction of the Bradley West Core and Concourses base building including Tenant “shell” are provided for Tenant information and included in this document as Appendix 11.1

Accessibility Requirements: All plans shall comply with the City of Los Angeles and Title 24, California Code of Accessibility Regulations in conjunction with the American with Disabilities Act (ADA) and ANSI 117.1.

Food and Beverage Tenants are also required to comply with the following:

The California Retail Food Code – Part 7 of the California Health and Safety Code, effective January 1, 2009, or the current edition of same.

Retail Construction Guidelines as issued by the County of Los Angeles, Department of Environmental Health.

The Los Angeles Industrial Waste Control Ordinance – Section 64.30 of the Los Angeles Municipal Code.

2010 California Green Building Standards Code – otherwise known as the CALGreen Code.

9.2 Plan Check Submittal

Upon completion of 100% construction documents, the Tenant shall be submit drawings for plan check to the Los Angeles Department of Building and Safety (LADBS) which is located at 221 N. Figueroa in downtown Los Angeles. At this office, there is a group of plan checkers who have been assigned specifically to review and process all projects at LAX.

The following LADBS case manager is assigned to address all building code matters related to the work covered by the Guidelines:

Lily Teng
Structural Engineer Associate
Case Manager/Plan Checker
LADBS Case Management Neighborhood Government Services Division
201 N. Figueroa, 10th Floor, Room 1030
Los Angeles, CA 90012
TEL: (213)482-6871
FAX: (213)482-6874
lily.ten@lacity.org

Prior to submitting drawings to the city for plan check approval, it is suggested that the Tenant contact the case manager to coordinate the plan check submittal with the available plan checkers.

Refer to Figure 9.1 at the end of this Section for the Los Angeles Department of Building and Safety Plan Check Process.

Important: All Building, Electrical and Mechanical Products, either existing or new, including kitchen equipment, dishwashers, coffee makers, water purifiers, etc., that are specified for projects within the City of Los Angeles are required to have a Los Angeles Research Number. These numbers shall be listed on the drawings submitted for plan check. For a list of approved products for the City of Los Angeles refer to http://netinfo.ladbs.org/rreports.nsf.

9.3 Special Code Considerations for Bradley Core

The Central Core will consist of a mixed use project that will be constructed as a non-separated building in accordance with LABC Section 508.3.2. Since the building will be provided with a sprinkler system and voice alarm communication fire alarm system throughout, fire-resistive occupancy separation will not be required for all occupancies, excluding Group S storage uses, as the building will comply with the most restrictive Chapter 9 fire protection requirements. Group S storage uses will be considered separated uses in accordance with LABC Section 508.3.3 and will be separated from other occupancies with one-hour fire resistive construction as required by LABC Table 508.3.3. Where more stringent criteria are provided in these Guidelines, the Tenant must comply with the Guidelines.

Appended to the Guidelines is a copy of the **Memorandum of Understanding** dated December 16, 2009, between the Los Angeles Department of Building and Safety, Los Angeles Fire Department and Los Angeles World Airports. This memorandum of understanding should be reviewed and understood by Tenants and any exceptions or modifications will be subject to the interpretation and approval of the parties.

The **Smoke Control System Model** for the building was developed by Aon Risk Analysis. Tenants may be required to provide smoke control analysis where the AHJs determine that the proposed Tenant construction has the potential to alter the performance of the Smoke Control System. The original model information may be obtained by contacting:

Aon Risk Solutions | www.AonFPE.com
21221 S. Western Avenue, Suite 100
Torrance, CA 90501
Tel: 310-782-0850

Christopher S. Prueher, P.E., Assistant Manager chris.prueher@aon.com
Frank Wang, P.E. frank.wang@aon.com

9.4 Industrial Waste Permit

All Food Service Establishments (FSE) that generate waste Fats, Oils and Grease (FOG) are required to obtain an Industrial Wastewater Permit from the City of Los Angeles. Such a permit is issued by the Los Angeles Department of Public Works Bureau of Sanitation, Industrial Waste Management Division.

The Project has designed POCs to common use Grease Interceptors. The interceptors have been approved by the Industrial Waste Management Division. Extension of the connections to the grease interceptor lines is subject to approval by the Industrial Waste Management Division.

9.5 Environmental Health

All Retail Food Facilities are required to submit 100% drawings to Los Angeles County, Environmental Health Department. A Retail Food Facility is defined as a place where food is stored, prepared, served, packaged, transported, salvaged or otherwise handled for dispensing or sale to the general public. This list includes but is not limited to, bakeries, restaurants, cocktail lounges, micro breweries, soda fountains, coffee shops, or other food and beverage entities.

9.6 Preliminary Plan Check Service

In an effort educate design professionals with the process of obtaining all of the necessary approvals and clearances for their projects, the Los Angeles Department of Building and Safety has established a Preliminary Plan Check Service.

This service allows the future applicant for plan check to meet with a plans examiner to discuss code requirements, submittal procedures, and any other issues or concerns regarding their project.

Upon completion of a Preliminary Plan Check review, the design professional will have a better understanding on the various code requirements and required clearances from other governing agencies. The Tenant is encouraged to use this service as it will result in minimizing processing delays and facilitate the timely review and comment by the various agencies.

This service is available for a fee for the following disciplines:

- Building Code
- Disabled Access
- Signs
- Land Subdivision (zoning)
- Mechanical (HVAC) System
- Electrical
- Plumbing
- Fire Sprinkler Systems.

All tenants are strongly encouraged to take advantage of this opportunity and utilize this service. The preliminary plan check application is available on-line at www.ladbs.org.

9.7 Los Angeles Department of Cultural Affairs Clearance

As part of the plan check approval process, all Tenant improvement projects will require a permit application clearance from the Los Angeles Department of Cultural Affairs.

This department was created in an effort to promote long-term design excellence in all public architecture and public art that best reflects Los Angeles' international stature as a vibrant and creative cultural center.

The Los Angeles City Cultural Affairs Commission has the power to review and approve all public architectural designs and public art projects in the City of Los Angeles.

Upon determining that such a clearance is required, proceed with the following two step procedure for contacting the department.

Step 1 – call Haroot Avanesian at 213-202-5501 and leave a voice mail message that you'll be sending him a follow-up email with the plan check number and a brief description of your project.

Step 2 – send an email to haroot.avanesian@lacity.org describing your project. In this email elaborate on any modifications to the exterior of the Terminal and/or if any new mechanical equipment that is being proposed to be located on the roof.

Upon submitting this information, you may be contacted by the department for further review and clarification. Otherwise, an electronic clearance may be granted.

All projects will be reviewed on a case by case basis.

9.8 Los Angeles World Airports Clearance

All new concession projects at LAX will be required to obtain a clearance from Los Angeles World Airports. This agency, as listed on the clearance sheet from the LADBS, is the planning entity for the airport and will review your plans to verify compliance with the Specific Plan for LAX. Herb Glasgow is the person who will be processing these clearances. He can be reached at 424-646-5180.

Upon receiving the clearance request from the LADBS, call Herb and leave him a voice mail message briefly describing your project and telling him that you'll be sending him a follow-up email at hglasgow@LAWA.org. Refer to Appendix 11.9 for checklist.

In the follow-up email, provide the following information pertaining to your project:

1. The Building Permit Number
2. A reduced copy of the plan. Indicate the relationship between your project and the overall Terminal.
3. A project description.

Herb will review your email and very likely provide the electronic clearance.

In the event that Herb is not readily accessible, feel free to contact his assistant, Evelyn Quintanilla at 424-646-5188. Her email address is equintanilla@lawa.org.

For additional information, refer to the following website www.ourlax.org.

End of Section.

LADBS Plan Check – Approval Process Chart

Note: This chart diagrams the approval process for architectural and structural drawings, only. Plan Check Approval for Mechanical, Electrical and Plumbing Permits involve separate drawing submittals to the separate departments.

Submittal Requirements
Two sets of Architectural & Structural Drawings

Los Angeles Department of Building and Safety.

LADBS

Case Manager: Lily Teng
213-482-6871
Lily.Teng@lacity.org

Review Time:
Plan Check review time may vary depending on project scope and complexity. Contact LADBS for anticipated duration of review.

LADBS will submit one set of drawings to Disabled Access.

Disabled Access

Submittal Requirements:
Contact
Herb Glasgow
310-646-5180
hglasgow@lawa.org

Los Angeles World Airports

Submittal Requirements
Contact Cultural Affairs Dept
Haroot Avanesian
213-202-5501
haroot.avanesian@lacity.org

Cultural Affairs

Submittal Requirements
One set of Architectural Drawings

Fire Department

Other Clearances

Corrections

Corrections

Corrections

Corrections

Corrections

Corrections

All Clearances Approved

READY TO ISSUE

Submittal Requirements for the Health Dept.

- 3 sets of plans
- Plan Check Application
- Plan Check Fee
- Public Health Permit for Remodel

Health Department
6053 Bristol
Culver City, CA

Review Time:
Approximately 20 business days per submittal.

Corrections

Approval

Submittal Requirements for Industrial Waste

- Plans approved (stamped) by Health Services
- Industrial Waste Permit Application w/ check for $356.00 payable to Dept. of Public Works.
- LADBS Clearance Summary Sheet
- LADBS Application for Building Permit
- 3 Sets of Plumbing Plans w/ Details
- Letter from Property Owner

Industrial Waste
2714 Media Center Drive
Los Angeles, CA

Corrections

Food & Beverage

Food & Beverage are required to submit to the Health Dept and Industrial Waste in addition to the other clearances noted by LADBS.

News & Gifts **and** Food & Beverage

Figure 9.1

10.0

Construction Requirements

Reference Design Standards and Specifications

LAX Security Badge Requirements

Risk Management Conditions

Project Management and Coordination

Parking and Busing

Trash and Restrooms

Schedule of Costs

Deliveries and Storage

Safety

Temporary Partitions and Access to TIC Designated Work Areas

Utilities

Temporary Offices and Storage Facilities

10.1 **Reference Design Standards and Specifications:** Refer to **"*LAWA Design and Construction Handbook"*** *(latest version)* for LAWA design and construction guidelines. This handbook is supplemented by the Construction Requirements provided in this section of the Guidelines. A copy of the Handbook is available at http://www.lawa.org/laxdev/Handbook.aspx.

10.2 **All personnel assigned to LAX by Tenant Improvement Contractors (TIC) will be required to be security badged** in order to be allowed access to the Project site**.**

- **Each TIC will be required to obtain the required LAWA insurance** coverage before commencing the individual personnel badging process.
- **Each TIC must assign a security badge coordinator** who will be required to make a badge application and attend training through the badge office. When training is completed the badge coordinator will receive their security badge and will be responsible for administering badge applications and training for additional personnel of the specified TIC. Each company is required to have their own security badge coordinator and to administer their badge applications and badge holders.
- Information regarding the requirements and procedures for obtaining LAWA badges is available from the **LAX Security Badge Office, P.O. Box 92216, Los Angeles, CA 90009, (424)-646-5500**.
- **Obtaining badges is a multi-step process** and will require time and coordination to complete the necessary application, training and interview requirements. Prospective tenants and their contractors should become familiar with the requirements and manage their project to assure that this does not affect the scheduled completion of tenant improvements work.

10.3 **Risk Management Conditions:** Refer to Section 1.7 of the LAWA Design and Construction Handbook latest edition. The required coverage shall include the naming of additionally insured parties including Walsh Austin JV; Walsh Construction and Austin Commercial, LP; as well as LAWA designated additionally insured parties.

- **Liability Insurance**: The Tenant shall coordinate with the Risk Management Division – Insurance Compliance Services, 7301 World Way West, 2nd Floor, Los Angeles, CA 90045, telephone (310) 417-0557 for the insurance requirements for the Project. The Tenant shall provide the following information to the Risk Management Division.
  - Name of the Contractor
  - Tenant Project Location
  - Term of the Tenant Project
  - Scope of Work
  - AOA Access: Yes/No
  - Motor Vehicle Access to AOA: Yes/No
- **No Tenant or Tenant Contractor vehicles** shall have access to the airfield unless the proper liability insurance has been provided.
- **Prior to commencing work,** the Tenant must provide evidence of insurance that conforms to the insurance requirements of the permit set by the Risk Management Division – Insurance Compliance Services**. Proof of insurance compliance is required in order to submit badge applications.** The instructions for insurance requirements are also available on the internet on the LAWA website: http://www.lawa.org/welcome_LAWA.aspx?id+630.
- **Special requirements for insurance of vehicles with AOA access** must be confirmed with LAWA Risk Management.

10.4 Project Management and Coordination

- **Project Management:** The Tenant Improvement Contractor (TIC) shall designate, in writing, a Project Manager to coordinate with the ADG designated representative and the WAJV designated representative.
- **Coordination:** The Project Manager shall regularly and formally, through the ADG and WAJV designated representatives, coordinate construction operations with those of other contractors, entities and stakeholders and with construction operations to ensure efficient and orderly installation of the Tenant Improvement Work. Weekly status and coordination meetings should be anticipated.
- **Logistics and Planning:** The TIC shall provide the following to the ADG designated representative:
  - Schedule for completion of the Work including major milestones and anticipated dates for testing and inspection of systems. Weekly review of a 3-week Look Ahead should be anticipated.
  - Site access and coordination plan to indicate planned method for personnel access, work hours, material delivery, staging, provisions for temporary utilities and construction office facility. Weekly coordination meetings should be anticipated.
  - Construction refuse removal plan including location of refuse containers within designated tenant work area, equipment and method of removal to designated dumpster location. WAJV will provide dumpsters and maintain a location(s) for trash disposal outside the tenant space. Morning huddle meetings should be anticipated. Cost to be as provided elsewhere.
- **Pre-construction meeting:** A pre-construction meeting will be scheduled with the ADG and WAJV designated representatives to review the following:
  - Site specific safety plan and project inspector
  - Contractor's Certificate of Insurance
  - Tenant contact list with 24/7 on-call contacts

10.5 Parking and Busing

- **Parking for personnel and for construction vehicle staging** will be in Parking Lot E located at 5555 111th Street, Los Angeles, CA. The TIC is responsible to arrange for transport of personnel to the Project site from this or other locations. It is anticipated that shuttle buses will be in operation on a regularly scheduled basis from Parking Lot E and can be available for use by the TIC and craftsmen if coordinated with WAJV.

10.6 Trash and Restrooms

- **All construction refuse and trash** will be accumulated and staged within the TIC designated work area. Scheduled removal of trash from TIC work area will be coordinated with WAJV and ADG. WAJV will maintain a designated area(s) for disposal of TIC refuse. TIC will remove refuse from designated work area without damaging work by others. TIC is responsible for damage to work by others and for restoration to original condition.
- **A restroom** will be available for use by contractor personnel within the building. WAJV will provide and maintain facilities in close proximity to the work being performed for use by the TIC.

10.7 Schedule of Costs

- **A schedule of costs will be provided** for trash, parking and busing, trash removal, temporary restroom facilities and other provisions on behalf of the TIC and craftsmen.

10.8 Deliveries and Storage

- **Deliveries must be coordinated** with WAJV designated field representatives. Deliveries will be made via the VSR (vehicle service road) with service to level 3 of the building. Materials can be offloaded and taken through the double doors just south of NE5/37 to Elevator C8EL01. The elevator will provide access to Levels 4, 5 and 6. TIC will have access through the WAJV construction site to their areas of work on these floors. Other areas of access are noted in Exhibit 11.4.
- **TIC will be responsible** for providing an elevator operator and for protecting, maintaining and servicing the elevator during use. TIC will be responsible for any damages to the elevator while in their control. Alternate elevators or supply paths may be agreed to by WAJV and TIC.
- **Delivery of materials** will be through an opening in the west curtainwall on the 4th floor. The area will allow for access to the TIC area of work on Level 4. Additionally, a landing will be provided for getting materials in and out of the building at this location. TIC will be responsible for providing a fork lift to get materials to Level 4 and through the opening provided.
- **Hoisting of materials** is the responsibility of the TIC for all materials for work to be completed including provision of cranes and lifts where required. Hoisting may be necessary inside of the building for moving materials from Level 4 to Level 5 and Level 6.
- **Limited temporary lay-down and storage will be provided** outside of the TIC designated work area as provided in 10.10. Materials and equipment may not be staged within the building outside of the TIC designated work area.
- **TIC cannot use Security Post 23 for deliveries**. All deliveries will be through a security gate(s) designated by ADG.

10.9 Safety

- **All TIC will be required to attend** the WAJV project safety orientation in order to gain access to the site and will be required to adhere to the Project Safety Plan. If TIC does not adhere to the plan, they will not be permitted to remain on site.
- **Fire watch must be provided** for any hot work performed on site or in the event that any fire alarm devices are disabled for any activities. Fire watch must remain in place until all fire alarm devices are placed back in service and are fully functional.

10.10 Temporary Partitions and Access to TIC Designated Work Areas

- **TIC designated work area will be separated** from WAJV work areas by temporary partitions. WAJV will provide temporary partitions as shown on Exhibit 11.4. Additional temporary partitions will be the responsibility of the TIC. Maintenance and upkeep of all temporary partitions will be the responsibility of the TIC for the designated work area. Additionally, TIC will be required to protect the flooring and other finished surfaces for the duration of the TIC contract and will be responsible for repair and restoration to original condition of any finishes and materials damaged during construction.

- **Removal of temporary partitions** at the completion of the work by the TIC is the sole responsibility of the TIC.
- **TIC will be required to maintain proper dust control** for their designated work area.
- **Work hours** will be in eight hour shifts and are anticipated to be performed as follows:
  - 11:00 AM to 7:00 PM
  - 7:00 PM to 3:00 AM
  - 3:00 AM to 11:00 AM
- **Adjustments to work hours** may be required to accommodate site access requirements. Adjustments will be made with the participation and agreement of WAJV and TIC.

10.11 Utilities

- **The designated tenant areas** will be provided as substantially complete shell space with the minimum fire and life safety systems including lighting, sprinkler and fire alarm installed for temporary certificate of occupancy of shell space only.
- **Points of connection (POC)** to building systems including power, HVAC, fire alarm, plumbing, etc. are shown on the lease exhibit documents provided to the tenant.
- **TIC will coordinate connection** to designated tenant electrical panel circuit in WAJV work areas with WAJV.
- **TIC will coordinate mechanical** equipment installation outside of designated tenant areas in WAJV work areas with WAJV.
- **Temporary utilities are not provided** and it is the responsibility of the TIC to make provisions for temporary services from the tenant designated POCs or other temporary provisions through arrangement with WAJV. Water for construction use will be available in the restroom designate for construction use.

10.12 Temporary Offices and Storage Facilities

- **ADG will designate a location on site** for a temporary “POD” facility for storage and other TIC use. No connections to temporary services will be provided or allowed and relocation of the “POD” will be done as required to facilitate the project work.
- **WAJV will designate a small lay down area.**

End of Section

Appendix 11.1

Life Safety Drawings

Bradley West Core and Concourses

Appendix 11.2

Memorandum of Understanding – Code Discussions

Date: December 16, 2009

To: Jameson Lee, M.S. S.E.
Department of Building and Safety

Captain Robert Holloway
Los Angeles Fire Department

From: Michael J. Doucette, R.A.
Los Angeles World Airports

SUBJECT: MEMORANDUM OF UNDERSTANDING – CODE DISCUSSIONS

This memorandum is intended to document the understandings reached and the decisions made over the last 6 months between the LAX Design Team, the Department of Building and Safety (LADBS) and the Fire Department with regard to the LAX Bradley West modernization project. The following issues have been discussed during previous Design Team and Authority meetings. The design is proceeding based on these understandings:

1. **Codes and Standards**

   The following codes will be used in the design of the Tom Bradley International Terminal modernization project for plans submitted prior to the approval of the next edition of the Los Angeles Building Code. It is anticipated that the submissions for permits for the North &, South Concourses and the Core will be in late 2009 and early 2010 and these codes will apply to the project throughout the duration of construction to final occupancy (2014). Plan check time is 18 months from the date of submittal. After 18 months newly submitted drawings must be reviewed by DAD (Disabled Access Department) and Zoning Division.

   - Los Angeles Building Code (LABC) 2008 edition
   - Los Angeles Mechanical Code (LAMC) 2008 edition
   - Los Angels Plumbing Code (LAPC) 2008 edition
   - Los Angeles Electric code (LAEC) 2008 edition
   - California Fire Code 2007 edition
   - Los Angeles Fire Code current edition
   - NFPA 72 National Fire Alarm Code 2007 edition
   - NFPA 13 Standards for the installation of fire sprinkler systems, 2002 edition
   - NFPA 14 Standards for the installation of fire standpipes and hose systems, 2003 edition (as amended by the Los Angeles Plumbing Code, Chapter 20)
   - NFPA 415 Standards for airport terminal building fueling, ramp drainage and loading walkways, 2008 edition
   - Los Angeles Zoning Code – Chapter 1 LA municipal Code and LAX Specific Plan
   - State of California Title 24 Energy Code 2007.
   - State of California 2004 Elevator Code
   - 2006 American Welding Society Standards

2. **Building Construction Type**

The Design Team confirmed and LADBS and LAFD conceptually agreed that the design could proceed with a Type I-B (fully sprinklered) construction type for the design of the Concourses, Central Core and existing TBIT. The following features will be provided:

- One-hour fire-resistive protection for roof beams
- One-hour fire-resistive rated columns supporting roof 20-feet above the concourse floor
- Two-hour fire-resistive protection for all remaining portions of structural frame (i.e. concourse and sterile corridor floor members)
- Two-hour fire-resistive floor construction at the departure level (per Table 601)
- No fire-resistive separations required between Concourses, Central Core or existing TBIT (except as required for a smoke barrier for smoke control design purposes)
- potential for one additional lounge level is allowed
- Exiting analysis to conform to 2008 LABC

In addition to the above, LADBS requested that the two-hour rated protection be extended to 20-feet above the concourse floor on the columns supporting the roof. A letter from the structural engineer confirming that the skewed columns are carrying only roof load (refer to attached Exhibit A). LADBS also indicated that the portion of roof deck that is within the 20-feet allowable height exclusion under Table 601 Note "c2" would have to be rated one-hour. The attached sketch (Exhibit B) illustrates the typical approach to fire protection of structural members. It was agreed with LADBS and LAFD that currently permitted work, specifically the modernization project, would continue to be inspected as originally permitted under the 1984 code as a type I FR building. Any new permits issued after the signing of this letter will be designed, inspected and granted occupancy permits as a type IB building under the 2007 Los Angeles Building code.

3. **Occupancy Classification**

The new Concourses and Central Core will be classified as a mixed-use building according to Section 508 of the 2008 LABC. The following occupancies will be included;

Occupancy description	**Classification**	**Load factor**	**Max. occupant load with one exit allowed**
Hold Rooms or fixed seating areas	A-3	15 SF per occupant or per fixed seats	49
Queuing at security check points	A-3	7 SF per occupant	49
Circulation - Concourse	A-3	100 SF per occupant	49
Baggage Claim	A-3	20 SF per occupant	49
Concession - Dining	A-2	15 SF per occupant	49
Concession – Service (i.e. Kitchen Area)	B	200 SF per occupant	49
Concession - Retail	M	30 SF per occupant	49
Office Support	B	100 SF per occupant	29

Occupancy description (continued)	Classification	Load factor	Max. occupant load with one exit allowed
Storage, Low Hazard	S-2	300 SF per occupant	29
Storage, Moderate Hazard	S-1	300 SF per occupant	29
Baggage Handling, EDS screening	S-1	300 SF per occupant	29

4. **Life Safety Special Conditions of Approval**

The new North & South Concourse and Central Core will be required to comply with a project specific Fire/Life Safety Design Package that includes the following features as discussed during Meeting #6 (February 11, 2009):

- **Smoke Control System** –Schirmer Engineering has prepared a draft work plan for the design of the smoke control system that is currently being reviewed by LADBS and LAFD once the general approach is approved a detailed analysis will be prepared for future discussion.
- **Fire Pump** – The existing TBIT building has two electric fire pumps rated at 750 GPM at 75 PSI and that fire pump will be utilized to serve the new addition. The capacity of the fire pump will be adequate to serve both new and existing TBIT and a capacity will be confirmed in the permit submission. An additional 500 GPM at 75 PSI electric fire pump will be required to meet the demand of the proposed deluge system.
- **Emergency Generator** – The existing TBIT building has emergency generators and t this emergency power will be supplemented as required to supply the new structure.
- **Emergency Lighting** – Will be provided.
- **Fire Sprinklers** – Will be provided.
- **Fire Department Communications System** – Will be provided.
- **Pressurized Stairs** – The fire department and LADBS agreed that pressurized stairs would not be required if a smoke removal system is provided and the highest floor level does not exceed 75' in height per high-rise definition.

5. **Mobile Kiosks and Food Courts in the Concourses and Central Core**

LADBS and LAFD conceptually agreed that Kiosks and Food Courts would be allowed in these spaces to be treated similar to food courts and kiosks under the "mall provisions" of section 402 of the LABC. The Kitchens in the Food Court restaurants will be separated from the public areas by a one hour fire rated assembly. Permits are required for each kiosk to insure that all requirements of Section 402 regulations are upheld.

6. **Mixed Use Occupancy**

The Concourses and Central Core will consist of a mixed use building that will be constructed as a non-separated use in accordance with LABC Section 508.3.2. Since the new construction will be provided with a sprinkler system and voice alarm communication fire alarm system throughout, fire-resistive occupancy separations will not be required as the building will comply with the most restrictive Chapter 9 fire protection requirements.

7. **Fire Alarm Control Room**
   The Design Team reviewed the proposed location of the relocated fire control room with LADBS and LAFD and it was agreed that the location indicated on the attached sketch (Exhibit C). The fire control room will be located to the north of the existing TBIT structure; it will house the annunciation equipment for the existing structure and the new structures as they are occupied so that fire control will be maintained throughout the construction phases.

8. **Roof Access**
   Due to the height of the structure and the slope of the curved roof it was agreed that roof access was not required for the vaulted roofs over the Concourses and Central Core. Flat roofs that house mechanical equipment will be accessed via a roof hatch.

IN WITNESS WHEREOF, Los Angeles World Airports, the Los Angeles Department of Building & Safety and the Los Angeles Fire Department have caused the MOU to be executed by the duty authorized representatives:

LOS ANGELES WORLD AIRPORTS:

_____ DATE: 12/18/09

LOS ANGELES DEPARTMENT OF BUILDING & SAFETY:

_____ DATE: 12/22/09

LOS ANGELES FIRE DEPARTMENT:

_____ DATE: 12-22-09

MJD:CR:clm

Attachments:
Exhibit 'A' – Letter from John A. Martin and Associates confirming loading conditions at roof, Dated March 26, 2009
Exhibit 'B' – Diagram showing fireproofing of structural frame
Exhibit 'C' – Location for the fire control room

cc:

Michael Roberts	LAXDP	Mark Casey	LADBS
Scott Woodard	LAXDP	Wilbert Guerrero	LADBS
Geoff Egginton	LAXDP	Charmie Huynh	LADBS
Kris Vogt	LAXDP	Lily Teng	LADBS
Rachel Martinez	Laguna Geosciences	Braxton Clark	LAFD
Jack Cook	Fentress Architects	Robert Holloway	LAFD
Thom Walsh	Fentress Architects	Lynn McCain	LAFD
Greg Billingham	Fentress Architects	Robert Franz	LAFD
Ned Kirschbaum	Fentress Architects	Hani G. Malki	LAFD
Holly Carson	Fentress Architects	Bob Vezis	TMADTG
Alexa Taylor	Fentress Architects	Muhaned Aziz	TMADTG
Nathan Kibler-Silengo	Fentress Architects	Marc Savelle	TMADTG
Evan Miller	Fentress Architects	Francesca Perazzelli	HNTB
Jeff Anglada	Fentress Architects	Jeff Burton	HNTB
Corey Ochsner	Fentress Architects	Mike McDonald	HNTB
Kristen Hurty	Fentress Architects	Carl Newth	Syska
Chris Rooney	Fentress Architects	Chris Prueher	Schirmer Engineering

MARTIN & associates
JOHN A. MARTIN
& ASSOCIATES, INC.
Structural Engineers
950 S. Grand Ave., Fourth Floor
Los Angeles, CA 90015
www.johnmartin.com
Phone (213) 483-6490
Fax (213) 483-3084

26 March 2009

Mr. Chris Rooney
Fentress Architects
421 Broadway
Denver, CO 80203

via email: rooney@FentressArchitects.com

RE: LAX Modernization Program
Task F12 – Loading Conditions for the Structural Frames

Dear Chris:

Attached is a sketch indicating Fentress Architects' interpretation of the required fire ratings for the structural framing. A question was raised regarding the loading condition of the structural members indicated on the sketch to receive 1-hour protection. The question is with respect to "footnote b" of Table 601 of the 2007 CBC (see attached), whereas the required fire protection can be reduced by 1-hour for structural frames that only support a roof.

The framing members indicated on the sketch to receive 1-hour protection only support a roof. Some of those members are part of moment resisting frames for lateral resistance of the building and others only support gravity loading. For both situations, the members only support a roof and, therefore, "footnote b" would apply to those members.

Sincerely,

Steven C. Ball, P.E., S.E.
Project Principal
John A. Martin & Associates
213-785-3153 work
619-339-2574 cell
sball@JohnMartin.com

cc Jack Cook – Fentress Architects cook@FentressArchitects.com

TABLE 601
FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (hours)

BUILDING ELEMENT	TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
	A	B	A[e]	B	A[e]	B	HT	A[e]	B
Structural frame[a]	3[b]	2[b]	1	0	1	0	HT	1	0
Bearing walls									
Exterior[g]	3	2	1	0	2	2	2	1	0
Interior	3[b]	2[b]	1	0	1	0	1/HT	1	0
Nonbearing walls and partitions Exterior	See Table 602								
Nonbearing walls and partitions Interior[f]	0	0	0	0	0	0	See Section 602.4.6	0	0
Floor construction Including supporting beams and joists	2	2	1	0	1	0	HT	1	0
Roof construction Including supporting beams and joists	$1^1/_2$[c]	1[c, d]	1[c, d]	0[d]	1[c, d]	0[d]	HT	1[c, d]	0

For SI: 1 foot = 304.8 mm.

a. The structural frame shall be considered to be the columns and the girders, beams, trusses and spandrels having direct connections to the columns and bracing members designed to carry gravity loads. The members of floor or roof panels which have no connection to the columns shall be considered secondary members and not a part of the structural frame.

b. Roof supports: Fire-resistance ratings of structural frame and bearing walls are permitted to be reduced by 1 hour where supporting a roof only.

c. Except in *high-rise buildings*, Group *A, E*, F-1, H, *I, L*, M, *R-1, R-2* and S-1 occupancies, fire protection of structural members shall not be required, including protection of roof framing and decking where every part of the roof construction is 20 feet or more above any floor immediately below. *For high-rise buildings, Group A, E, I, L, R-1 and R-2 occupancies and other applications listed in Section 111 regulated by the Office of the State Fire Marshal, fire protection of members other than the structural frame shall not be required, including protection of roof framing and decking where every part of the roof construction is 20 feet or more above any floor immediately below.* Fire-retardant-treated wood members shall be allowed to be used for such unprotected members.

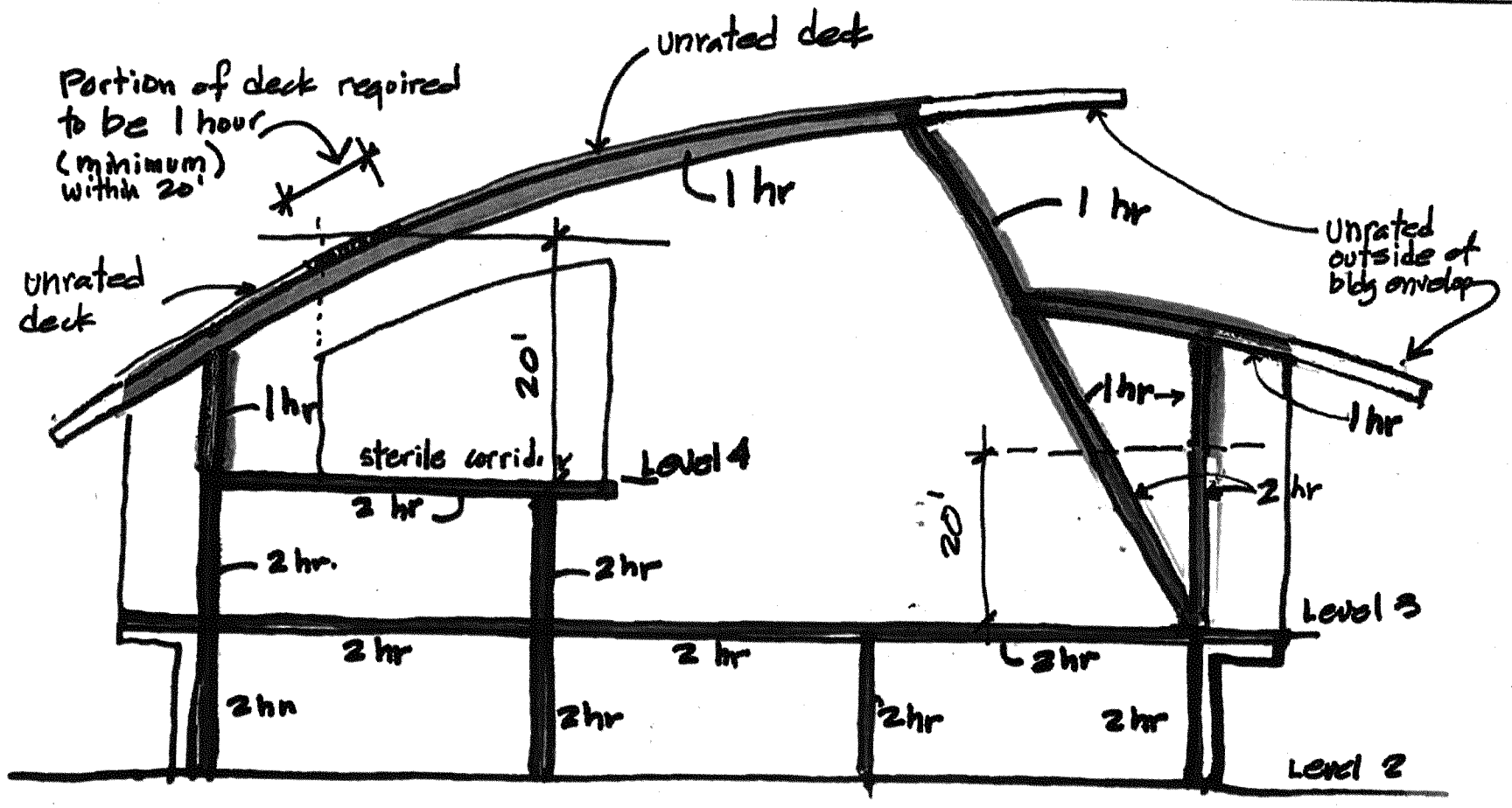
d. In all occupancies, heavy timber shall be allowed where a 1-hour or less fire-resistance rating is required.

e. An approved automatic sprinkler system in accordance with Section 903.3.1.1 shall be allowed to be substituted for 1-hour fire-resistance-rated construction, provided such system is not otherwise required by other provisions of the code or used for an allowable area increase in accordance with Section 506.3 or an allowable height increase in accordance with Section 504.2. The 1-hour substitution for the fire resistance of exterior walls shall not be permitted.

f. Not less than the fire-resistance rating required by other sections of this code.

g. Not less than the fire-resistance rating based on fire separation distance (see Table 602).

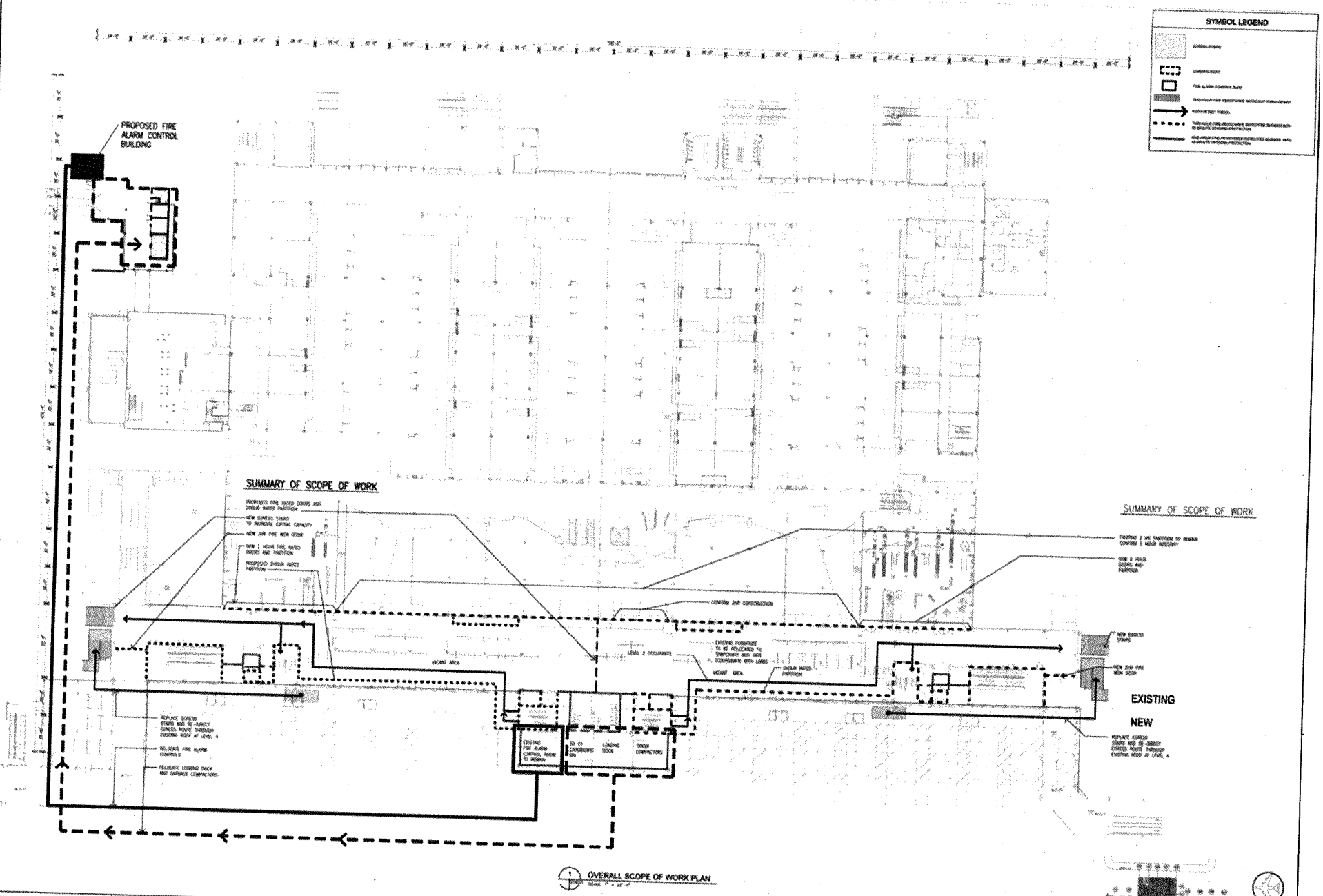
3/20/2009



CONCOURSE SECTION

2 hr Structural frame supporting gravity loads

1 hr: Gravity members & members that are part of lateral frames that support roof loads only



FENTRESS | ARCHITECTS
421 Broadway, Denver, CO 80203
HNTB

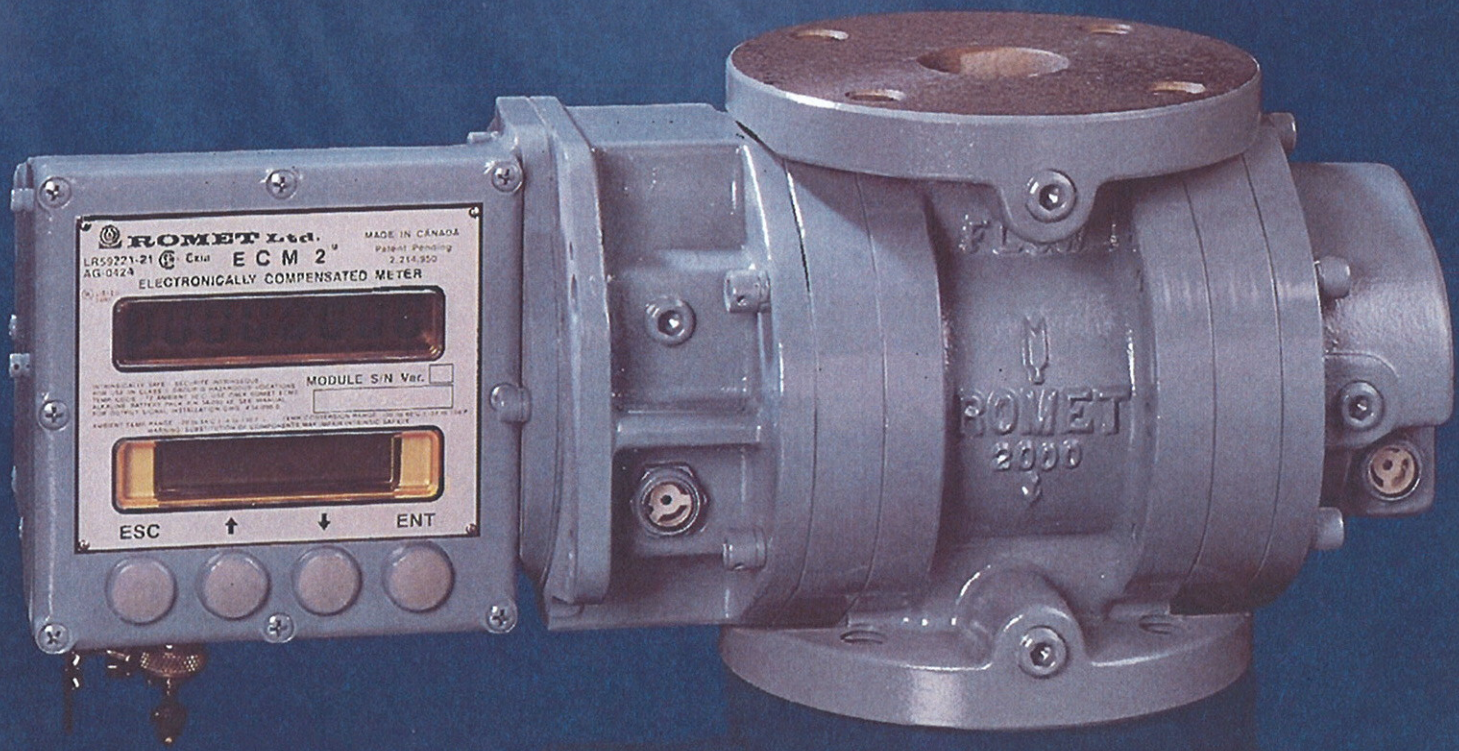
Los Angeles World Airports
Tom Bradley International Terminal Modifications
OVERALL SCOPE OF WORK PLAN
Bradley West Core - Enabling Projects

G0400

Appendix 11.3

Gas Meter

ROMET



ROTARY GAS METERS

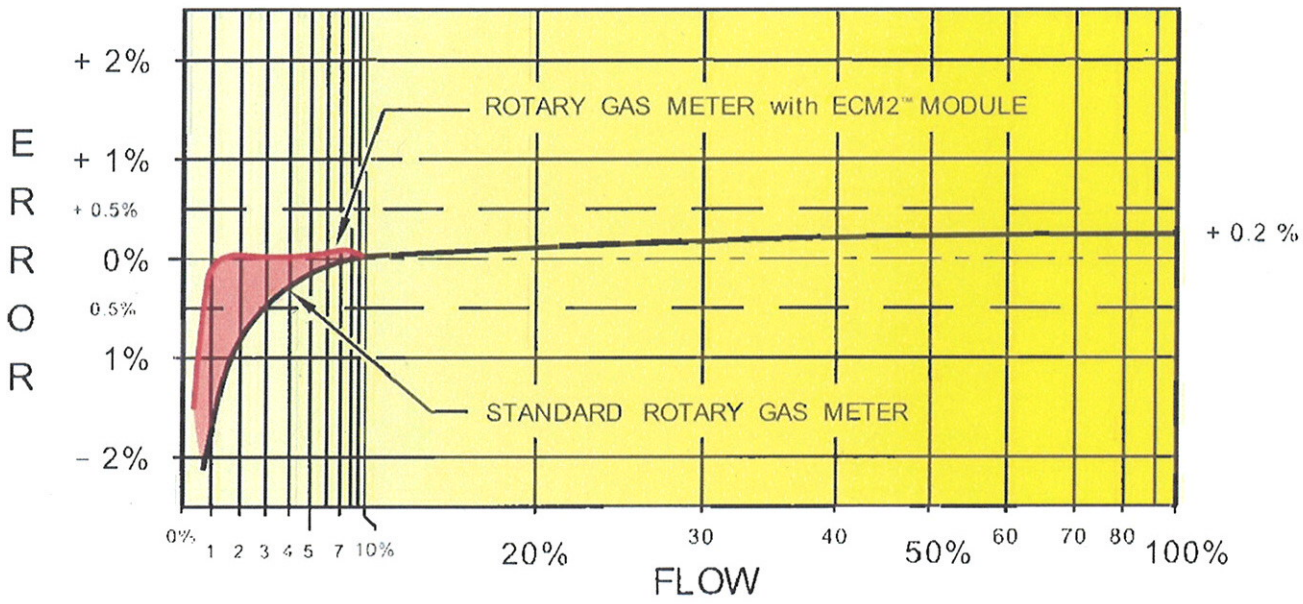
ECM2™

GAS METER

THE ECM2™ DELIVERS A MEASURABLE DIFFERENCE

- SUPERIOR LOW FLOW MEASUREMENT WITH A RANGEABILITY OF OVER 200:1 WITH LESS THAN 1% ERROR
- VERY LOW START FLOWS (AS LOW AS 1 CFH OR 0.03m³/ h)
- TEMPERATURE COMPENSATION ERROR OF LESS THAN 0.3%

GAS METER



ECM2™ TYPICAL ACCURACY CURVE

THE ECM2™ ENSURES THE INTEGRITY OF THE GAS REGISTRATION

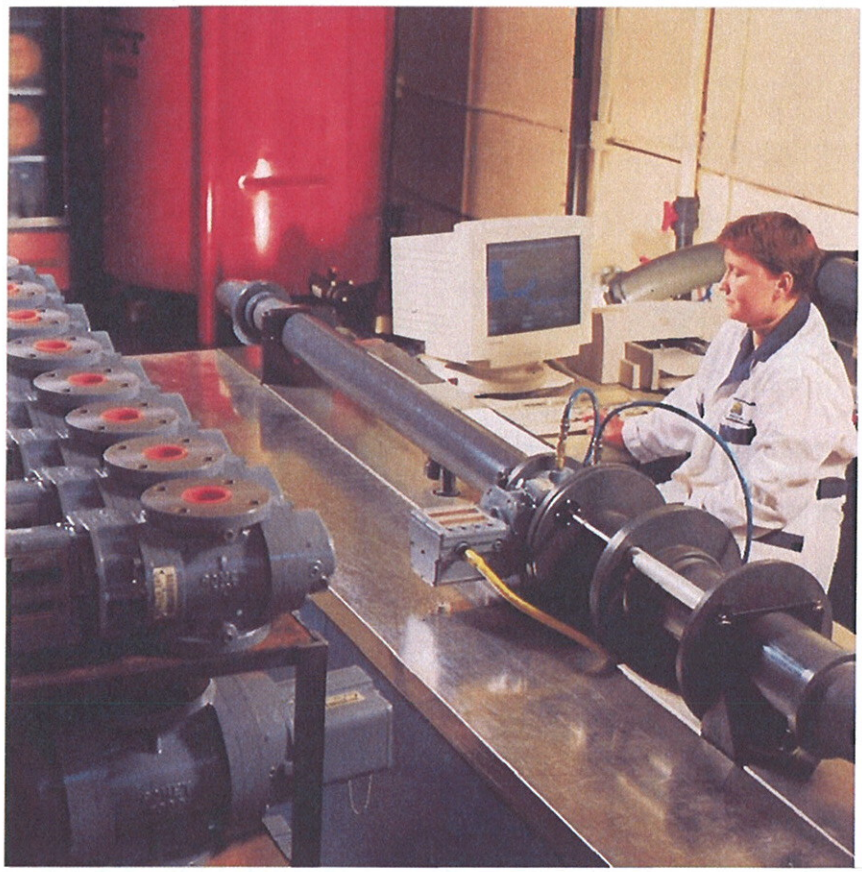
- ALL KEY DATA IS PROTECTED IN THE EVENT OF A POWER LOSS
  - LAST HOURLY COR & UNC INDEXES WITH THE DATE & TIME
  - SET UP CONFIGURATION OF ALL THE PARAMETERS
  - CALIBRATION SETTINGS
  - ACCESS PASSWORD
- UNAUTHORIZED ACCESS IS PREVENTED BY THE COMBINATION OF A PASSWORD AND SEALABLE TAMPER SWITCH
- UNIQUE BATTERY MONITORING PROGRAM PROVIDES AN ADVANCED ALARM (6 MONTHS) OF THE BATTERY EXPIRATION

THE ECM2™ IS USER FRIENDLY

- UNIVERSAL MODULE THAT ADAPTS TO ALL ROMET METERS WILL REDUCE INVENTORIES AND FACILITATE THE UPGRADING OF MECHANICAL MODULES
- TWO LARGE DISPLAYS (ONE LCD AND ONE ALPHA-NUMERIC) THAT SHOW BOTH THE PARAMETER VALUE AND THE CORRESPONDING DESCRIPTION – NO CODES TO REMEMBER
- EASY TO FOLLOW MENUS THAT CAN BE QUICKLY SCROLLED WITH THE FOUR LARGE BUTTONS ON THE FRONT FACE
- LIVE FLOW RATE IS DISPLAYED AT THE TOUCH OF A BUTTON – THE CLOCKING OF A MECHANICAL INDEX IS ELIMINATED

THE ECM2™ PERKS

- SELECTABLE, PRECISE FIXED PRESSURE FACTOR FOR PFM APPLICATIONS
- PEAK FLOW RATE MONITORING PROVIDES A CHECK ON THE METER SIZING
- SOLID-STATE OUTPUTS (COR VOLUME, UNC VOLUME & ALARM) THAT PROVIDE A RELIABLE INPUT TO AN AMR SYSTEM
- PROVING MODE PRODUCES A PRECISE PULSE OUTPUT THAT IS COMPATIBLE WITH MOST PROVER SYSTEMS. THE TEST VOLUME CAN BE REDUCED BY 90% BY SELECTING A SMALLER PULSE WEIGHT.



PERFORMANCE SPECIFICATION

ACCURACY
- Total correction error ± 0.2% typical: ± 0.3% max.

TEMPERATURE
- Operating range: -20°C to 65°C to / -7 F to 149°F
  Low temperature option : -40°C to 65°C / -40°F to 149 F
- Resolution: 0.1 F / 0.1°C
- Temperature error: ± 0.3°C / 0.5°F typical: ± 0.7°C / 1.0°F max.

DISPLAYS
- Parameter value: LCD, 7 segment, 8 character
- Parameter description: LCD, dot matrix, 16 character

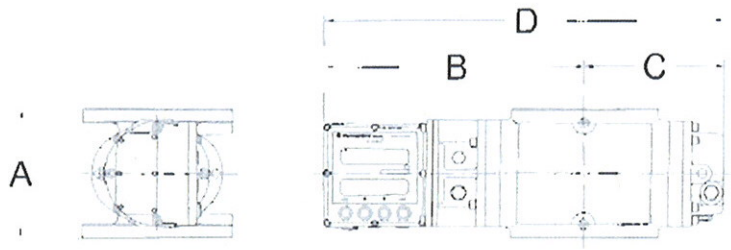
ELECTRICAL
- Power: Two versions - lithium battery pack and (6) alkaline "C" cells
- Circuitry: 3V surface mount technology
- Intrinsically safe, rated for Class 1: Div. 1; Group D
- CSA LR 59221; UL 29R1

INPUT
- High frequency solid state sensor

OUTPUT
- Form "A" opto-isolated solid state (3 outputs)
  - Corrected volume 1 output
  - Uncorrected volume 1 output
  - Alarm 1 output
- Operating voltage: 0-25 VDC
- Current: 0-100 ma
- Pulse width: 50ms

PHYSICAL CHARACTERISTICS
- Cast aluminum enclosure
- Dimensions: 133mm x 143mm x 108mm / 5.25" x 5.62" x 4.25"
- ECM2™ module weight: 2.5 kg / 5.5 lb.

DIMENSIONS



METER SIZE	A (mm)	B (mm)	C (mm)	D (mm)	DIN FLANGE (mm)	FLANGE ANSI 150	WEIGHT (kg)
G40 / RG2000	171	275	126	401	40 or 50	2"	10.8
G65 / RG3000	171	300	151	451	50	2"	11.8
G100 / RG5000	171	350	201	551	80	3"	14.5
G160 / RG7000	241	352	201	553	80 or 100	3"	23.6
G250 / RG11000	241	401	250	651	100	4"	29.9
G400 / RG16000	241	452	301	753	100	4"	33.2

METER SIZE	A (inches)	B (inches)	C (inches)	D (inches)		FLANGE ANSI 150	WEIGHT (lbs.)
RM2000 / RM55	6.75	10.63	4.75	15.38	–	2"	23.5
RM3000 / RM85	6.75	11.46	5.58	17.04	–	2"	25.0
RM5000 / RM140	6.75	13.18	7.30	20.48	–	3"	30.0
RM7000 / RM200	9.50	12.84	6.90	19.74	–	3"	46.6
RM11000 / RM300	9.50	15.21	9.27	24.48	–	4"	57.7
RM16000 / RM450	9.50	15.78	9.84	25.62	–	4"	65.8
RM23000 / RM650	9.50	17.78	11.84	29.62	–	4"	73.0

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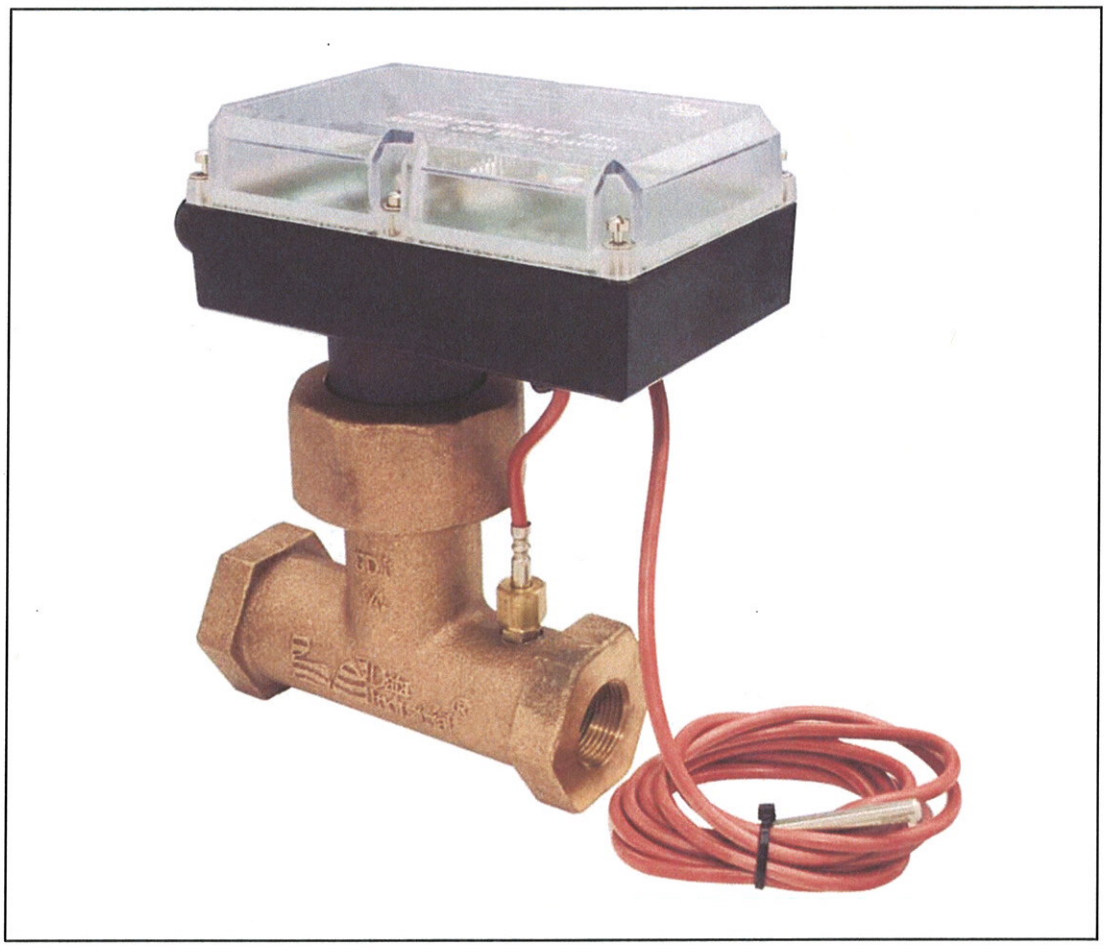
Appendix 11.4

Domestic Water Meter

Series 380 Impeller Btu System	380CS/HS	Installation & Operation Manual



DOMESTIC WATER (SUITABLE FOR BOTH COLD & HOT WATER)

Badger Meter

INTRODUCTION

The Badger Meter Series 380 Btu Systems provide a low cost system for metering cold or hot systems. The 380CS/HS can accurately measure flow and temperature differential to compute energy. Utilizing BACnet or Modbus RS-485 communications protocols or a scaled pulse output, the Btu System can interface with many existing control systems.

The rugged design incorporates an impeller flow sensor and two temperature probes. One temperature probe is conveniently mounted directly in the flow sensor tee. The second temperature probe is placed on either the supply or the return line depending on ease of installation for the application. These minimal connections help simplify installation and save time.

The main advantage of the Series 380 Btu System is the cost savings over other systems offered on the market today. The integration of flow and temperature sensors, along with metering components provide a single solution for metering. With this system it will be possible to meter energy where it hasn't been cost effective before.

Commissioning of this meter can be completed in the field via a computer connection. Setup includes energy measurement units, measurement method, communications protocol, pulse output control, fluid density, and specific heat parameters.

Cold Service (380CS)

Designed for operating in fluid temperatures of -4°F to 140°F (-20 to 60°C). Refer to the pressure vs. temperature chart on page 4.

Hot Service (380HS)

Designed for operating in fluid temperatures of 40°F to 260°F (4 to 125°C). Refer to the pressure vs. temperature chart on page 4.

Series 380

The 380 combines an electronics package with a PEEK sensor probe inserted in a 3/4", 1", 1 1/4", 1 1/2", and 2" proprietary cast bronze pipe tee with treaded NPT connections.

Series 380 BTU System Ordering Matrix

	380	0	7	0	0	0	-	1	2	0	0
Type											
CS - Cold Service		0									
HS - Hot Service		1									
Size											
0.75"			07								
1"			10								
1.25"			12								
1.5"			15								
2"			20								
Electronic Housing											
Polycarbonate				0							
Output											
Scaled Pulse and RS-485 (Modbus and BACnet)					0						
Display											
N/A						0					
O-Ring											
EPDM (CS - Cold Service)								1			
Aflas® (HS - Hot Service)								2			
Shaft											
Tungsten Carbide [Standard]									2		
Impeller											
Stainless Steel										0	
Bearing											
Torlon® (CS - Cold Service)											0
Ketron® (HS - Hot Service)											2

MECHANICAL INSTALLATION

General

The accuracy of flow measurement for all flow measuring devices is highly dependent on proper location of the sensor in the piping system. Irregular flow velocity profiles caused by valves, fittings, pipe bends, etc. can lead to inaccurate overall flow rate indications even though local flow velocity measurement may be accurate. A sensor located in the pipe where it can be affected by air bubbles, floating debris, or sediment may not achieve full accuracy and could be damaged. Badger flow sensors are designed to operate reliably under adverse conditions, but the following recommendations should be followed to ensure maximum system accuracy.

1) Choose a location along the pipe where 10 pipe diameters upstream and 5 pipe diameters downstream of the sensor provide no flow disturbances. Pipe bends, valves, other fittings, pipe enlargements and reductions should not be present in this length of pipe.

2) The recommended location for the sensor around the circumference of a horizontal pipe is on top. The sensor should never be located at the bottom of the pipe, as sediment may collect there. Locations off top dead center cause the impeller friction to increase, which may affect performance at low flow rates. Any circumferential location is correct for installation in vertical pipes. Rising flow is preferred to reduce effects of any trapped air.

To Install the Sensor Tee

1) There must be free, unrestricted pipe for at least 10 pipe diameters upstream and 5 pipe diameters downstream of the tee.

2) Apply pipe compound over the first 3 or 4 threads of the mating pipe.

3) Thread the pipe into the sensor tee until hand tight.

4) Tighten the pipe, using a wrench, an additional 1 1/2 turns.

ELECTRICAL INSTALLATION

1) Connect your power supply to terminals 1 and 2 next to the "POWER" label. This connection is not polarity sensitive.

2) Proceed to step three if RS-485 is not being utilized. Using the terminals next to the "RS485" label, connect the positive side of the network cable to terminal 1 (+). Connect the negative side to terminal 2 (-) and the shield to the terminal 3 (GND).

3) If using RS-485, see step 2. Using the terminals next to the "PULSE OUTPUT" label, connect the negative side of a power supply (the same voltage as the "POWER") to terminal 2. Connect the positive side of the power supply to a counter's positive terminal. Lastly connect the negative side of the counter to terminal 1.

NOTE: The pulse and RS-485 may be used simultaneously.

COMMISSIONING

All setup and commissioning of the 380 is done using a USB to Mini USB cable and the Badger® Series 380 commisioning software (see next page).

Figure 1 shows the main setup screen. Flow and Energy rate's and total's units can be selected or a custom unit can be put in with the correct conversion factor.

For the temperature sensors the user can select the units along with the calculation mode (i.e. T1>T2, Absolute, or T1<T2). The Diff Zero parameter is the difference between T1 and T2 that will still read 0 energy rate.

If the Scaled Pulse Output is going to be used, the user can select what the pulse is representing (Energy or Flow) along with Units/Pulse and the pulse width. If the Scaled Pulse Output is not going to be used, this can be set to Off.

Filter Coefficents should be left at 5 for best readings of flow and temperature.

Figure 2 shows the communication paramters tab. Here the user can select BACnet or Modbus along with the network address. If using BACnet the user will need to enter in the Device Name, Device ID BACnet BitRate and the Max Master number that is appropriate for the network that the 380 is being connected to.

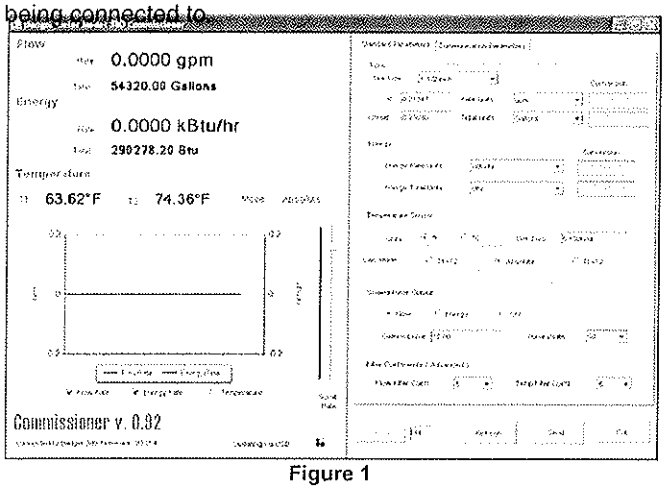


Figure 1

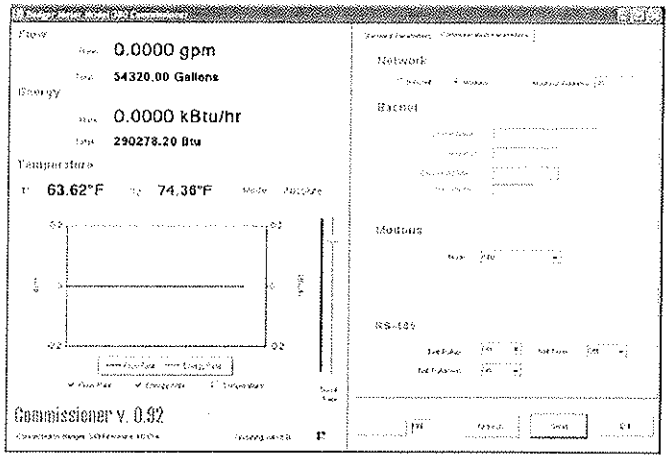


Figure 2

If the network is Modbus then the user will need to specify the mode (RTU or ASCII). The BitRate will also need to be configured for proper communication for the network that the 380 is being connected to (9600, 19200, 38400, 76800).

Depending on the network that the 380 is being connected to, network pullup, network pulldown, and/or network termination may be needed. These parameters are not physical jumpers but rather are progammed in on the Communication Parameters tab.

Model 380 Modbus Register Map

Register Name	Add.	Data Type
Temp 1	0	IEEE754 Float
Temp 2	2	IEEE754 Float
Volume Rate	4	IEEE754 Float
Energy Rate	6	IEEE754 Float
Volume Total	8	IEEE754 Float
Energy Total	10	IEEE754 Float
Temperature Mode	12	IEEE754 Float
Flow Coefficient	14	IEEE754 Float
Temp Coefficient	16	IEEE754 Float
Specific Heat Coeff	18	IEEE754 Float
Fluid Density Coeff	20	IEEE754 Float

Model 380 BACnet Object Map

Object Name	Instance	Object Type
TempIn	1	Analog Input
TempOut	2	Analog Input
VolumeFlow	1	Analog Value
EnergyFlow	2	Analog Value
TotalVol	3	Analog Value
TotEnergy	4	Analog Value
TempMode	5	Analog Value
FFiltCoef	6	Analog Value
TFiltCoef	7	Analog Value
SpecHeat	8	Analog Value
Density	9	Analog Value
SerialNum	10	Analog Value

SPECIFICATIONS

Sensor Assembly:

Housing: PEEK
Impeller: 316SS
Shaft: Tungston Carbide
CS Specific: Torlon® Bearing, EDPM O-Rings
HS Specific: Ketron® Bearing, Aflas® O-Rings

Tee: Cast Bronze

ENVIRONMENTAL

Fluid Temp. -4°F to 140°F (-20°C to 60°C) - chilled
40°F to 260°F (4°C to 125°C) - hot

Ambient Temp. 4°F to 150°F (-20°C to 65°C)

Pressure Ratings:

380CS and 380HS*				
Temp F	PSIG	Type	Temp** F Range	COMMENTS
40	400	380CS	-20 > +180	Torlon Brgs & EPDM seals
60	400	380CS	-20 > +180	Torlon Brgs & EPDM seals
80	400	380CS	-20 > +180	Torlon Brgs & EPDM seals
100	380	380CS	-20 > +180	Torlon Brgs & EPDM seals
120	365	380CS	-20 > +180	Torlon Brgs & EPDM seals
140	350	380CS	-20 > +180	Torlon Brgs & EPDM seals
160	340	380CS	-20 > +180	Torlon Brgs & EPDM seals
180	**320**	380CS	-20 > +180	**Upper Limit for Torlon & EPDM**
200	300	380HS	+30 > +250	Ketron Brgs & Aflas seals***
220	280	380HS	+30 > +250	Ketron Brgs & Aflas seals
240	260	380HS	+30 > +250	Ketron Brgs & Aflas seals
250	230	380HS	+30 > +250	Ketron Brgs & Aflas seals
*Rating is based on PvT of Brass RTD fitting.				
**Non-Freezing.				
***Special: Ketron Brgs & EPDM seals for < +30F.				

MECHANICAL

Mass: Less than 13 lbs.

ELECTRICAL

Inputs

Power: 12-24VDC
12-18VAC

Communication: Modbus RTU
BACnet MSTP

Output

Scaled Pulse: Open Drain
0.01 Hz min. to 100 Hz max.

MATERIALS

Housing: Polycarbonate
Flow Sensor: PEEK
Potting Material: Polyurethane
Tee: Brass

Sensor Body Sizes

Tee Sizes: 0.75", 1", 1.25", 1.5", and 2" NPT

Recommended Design Flow Range: 1 to 15 FPS

Diameter (Inches)	380 Btu Meter Flow Range (GPM)		
0.75	1.65	to	24.69
1	2.70	to	40.48
1.25	4.66	to	69.93
1.5	6.35	to	95.18
2	10.49	to	157.34
This chart is based on ASME/ANSI B36.10 Welded and Seamless Wrought Steel Pipe and ASME/ANSI B36.19 Stainless Steel Pipe			

Accuracy

Flow Calculation: ±2% of flow rate within flow range
±0.5% Repeatability
RTD Meets IEC751 Class B

Output Pulse Width

10, 50, 150, 200, 250, 500mS

BACnet Standardized Device Profile

Device Profile	Tested
BACnet Smart Actuator (B-SA)	✓

Supported BIBBs

Supported BIBBs	BIBB Name	Tested
DS-RP-B	ReadProperty - B	✓
DS-WP-B	WriteProperty - B	✓
DM-DDB-B	Dynamic Device Binding - B (Who-Is, I-Am)	✓

Standard Object Types Supported

Object Type	Creatable	Deletable	Tested
Analog Input	No	No	✓
Analog Value	No	No	✓
Device	No	No	✓

Data Link Layer Options

Data Link	Options	Tested
MS/TP Slave	baud rates: 9600, 19200, 38400, 76800 bps	✓

Segmentation Capability

Segmentation Type	Supported	Window Size (MS/TP product limited to 1)	Tested
Able to transmit segmented messages	No		N/A

Device Address Binding

Static Binding Supported	Tested
No	N/A

Character Sets

Character Sets supported	Tested
ANSI X3.4	✓

Data Industrial®

Please see our website at **www.badgermeter.com**
for specific contacts.

Due to continuous research, product improvements and enhancements, Badger Meter reserves the right to change product or system specifications without notice, except to the extent an outstanding contractual obligation exists.

Badger Meter
P.O. Box 581390, Tulsa, Oklahoma 74158
(918) 836-8411 / Fax: (918) 832-9962
www.badgermeter.com

Appendix 11.5

BTU Meter

BTU Meter 1/3

• SYSTEM-10-BAC BTU METER •
BACnet MS/TP COMPATIBLE

ONICON INCORPORATED

DESCRIPTION

The System-10 BTU Meter provides highly accurate thermal energy measurement in chilled water, hot water and condenser water systems based on signal inputs from two matched temperature sensors (included) and any of ONICON's insertion or inline flow meters (ordered separately). The System-10-BAC-MS/TP provides energy flow and temperature data on a local alphanumeric display and to the network via the BACnet communications MS/TP driver. An optional auxiliary input is also available to totalize pulses from another device and communicates the total directly to the BACnet MS/TP network.

APPLICATIONS

Chilled water, hot water and condenser water systems for:

- Commercial office tenant billing
- Central plant monitoring
- University campus monitoring
- Institutional energy cost allocation
- Performance/efficiency evaluations
- Performance contracting energy monitoring

FEATURES

BACnet Compatible Serial Communications - Provides complete energy, flow and temperature data to the control system through a single BACnet MS/TP network connection, reducing installation costs.

Simple Installation and Commissioning - Factory programmed and ready for use upon delivery. All process data and programming functions are accessible via front panel display and keypad.

Single Source Responsibility - One manufacturer is responsible for every aspect of the energy measurement process ensuring component compatibility and overall system accuracy.

N.I.S.T. Traceable Calibration with Certification - Each Btu measurement system is individually calibrated using application specific flow and temperature data and is provided with calibration certifications.

Precision Solid State Temperature Sensors - Custom calibrated and matched to an accuracy better than ±0.15° F over calibrated range.

Highly Accurate Flow Meters – ONICON offers a wide variety of insertion and inline type flow measurement technologies including turbine, electromagnetic and vortex sensing. Each type offers unique advantages depending on the application. All ONICON flow meters are individually wet calibrated and designed to operate over a wide flow velocity range with accuracies ranging from ±0.2% to ±2.0% of rate depending on the model.

Complete Installation Package - All mechanical installation hardware, color coded interconnecting cabling and installation instructions are provided to ensure error-free installation and accurate system performance.

ORDERING INFORMATION

The System-10 BTU Meter is sold complete with temperature sensors and standard thermowells. Flow meters are purchased separately.

ITEM #	DESCRIPTION
SYSTEM-10-BAC MS/TP	System-10 BTU Meter BACnet MS/TP compatible
SYSTEM-10-OPT1	Add for 6" and larger pipes
SYSTEM-10-OPT2	Add for 2.5" - 3" copper tube
SYSTEM-10-OPT3	Add for 4" copper tube
SYSTEM-10-OPT4	Upgrade to outdoor thermowells (pair)
SYSTEM-10-OPT5	Upgrade to hot tap thermowells (pair)
SYSTEM-10-OPT8	High temperature sensors (over 200°F)
SYSTEM-10-OPT9	Add one analog output
SYSTEM-10-OPT10	Add four analog outputs
SYSTEM-10-OPT11	Auxiliary pulse input
Choose from the following flow meters:	
F-1100/F-1200	Insertion Turbine Flow Meter (1 1/4" - 72")
F-1300	Inline Turbine Flow Meter (3/4" - 1")
F-2000 Series	Full Bore Vortex Flow Meter
F-3000 Series	Full Bore Electromagnetic Flow Meter
F-3500	Insertion Electromagnetic Flow Meter (3"- 72")
Refer to catalog for flow meter installation kits. Consult with ONICON for additional flow meter types.	

UL LISTED
PROCESS CONTROL EQUIPMENT
3GF5

1500 North Belcher Road, Clearwater, Florida 33765 • Tel (727) 447-6140 • Fax (727) 442-5699
www.onicon.com • sales@onicon.com

SYSTEM-10 BTU METER SPECIFICATIONS

Btu Meter 2/3

ONICON INCORPORATED

CALIBRATION
Flow meters and temperature sensors are individually calibrated followed by a complete system calibration.
Field commissioning is also available.

ACCURACY
Differential temperature accuracy ±0.15° F over calibrated range
Computing nonlinearity within ±0.05%

PROGRAMMING
Factory programmed for specific application
Field programmable via front panel interface

MEMORY
Non-volatile EEPROM memory retains all program parameters and totalized values in the event of power loss.

DISPLAY
Alphanumeric LCD displays total energy, total flow, energy rate, flow rate, supply temperature and return temperature.
Alpha: 16 character, 0.2" high; Numeric: 6 digit, 0.4" high

OUTPUT SIGNALS
BACnet MS/TP Points List

Name	BACnet Object Type	Units
Total Energy	Analog Value	Btu, kW-hrs or ton-hrs
Energy Rate	Analog Input	Btu/hr, kW or tons
Total Flow	Analog Value	gallons, liters or meters^3
Flow Rate	Analog Input	gpm, gph, mgd, l/s, l/m, l/hr or m^3/hr
Supply Temperature	Analog Input	°F or °C
Return Temperature	Analog Input	°F or °C
Delta-T	Analog Input	°F or °C
Energy Total Reset	Binary Value	Not applicable
Flow Total Reset	Binary Value	Not applicable
Auxiliary Input Total	Analog Value	Pulse Accumulator
Auxiliary Input Reset	Binary Value	Not Applicable

Baud Rate: 76,800, 38,400, 19,200 or 9,600 bps
Optional Interval Data Logging:
This option provides up to 24 hours of rate and total data logging in 15 minute intervals. Data includes date/time stamp, measured value & scaling factors when appropriate.
Isolated solid state dry contact for energy total:
Contact rating: 100 mA, 50 V
Contact duration: 0.5, 1, 2, or 6 sec
Optional Analog Output(s): 4-20 mA, 0-10 V or 0-5 V
One or four analog output(s) available for flow rate, energy rate, supply/return temps, or delta-T.

LIQUID FLOW SIGNAL INPUT
0-15 V pulse output from any ONICON flow meter

TEMPERATURE SENSORS
Solid state sensors are custom calibrated using N.I.S.T. traceable temperature standards.
Current based signal (mA) is unaffected by wire length.

TEMPERATURE RANGE
Liquid temperature range: 32° F to 200° F
Optional liquid temperature range: 122° F to 302° F
Ambient temperature range: -20° F to 140° F

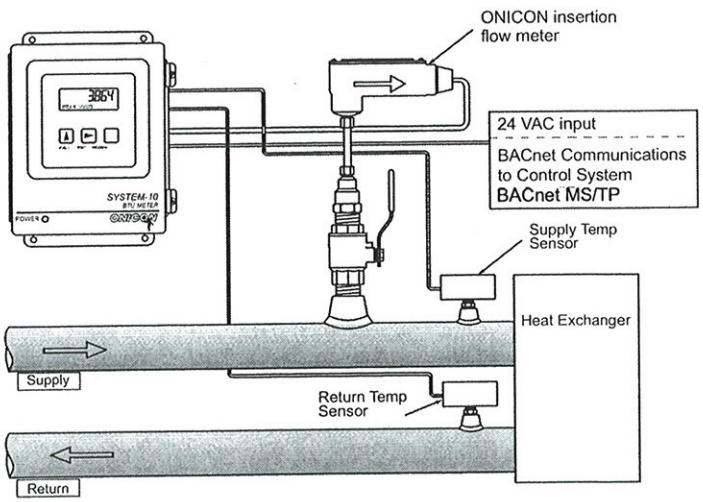
MECHANICAL
Electronics Enclosure:
Standard: Steel NEMA 13, wall mount, 8"x10"x4"
Optional: NEMA 4 (Not UL listed)
Approximate weight: 12 lbs
Temperature Thermowells:
Standard: 1/2" NPT brass thermowells (length varies with pipe size) with junction box
Note: 6" pipes and larger require SS thermowell option.
Optional:
- 1/2" NPT stainless steel thermowells
- Outdoor junction box with thermal insulation
- Hot tap thermowells with isolation valves are available in plated brass or stainless steel.

ELECTRICAL
Input Power*:
Standard: 24 VAC, 50/60 Hz, 500 mA
Optional: 120 VAC, 50/60 Hz, 200 mA
230 VAC, 50 Hz, 150 mA
*Based on Btu meters configured for network connection without the optional analog outputs
Internal Supply:
Provides 24 VDC at 200 mA to electronics and flow meter
Wiring:
Temperature signals: Use 18-22 ga twisted shielded pair.
Flow signals: Use 18 - 22 ga - see flow meter specification sheet for number of conductors.

Note: Specifications are subject to change without notice.

TYPICAL SYSTEM-10-BAC-MS/TP INSTALLATION

Insertion turbine flow meter shown. Any ONICON flow meter may be used with the System-10 BTU Meter. Consult with ONICON for additional flow meter types.



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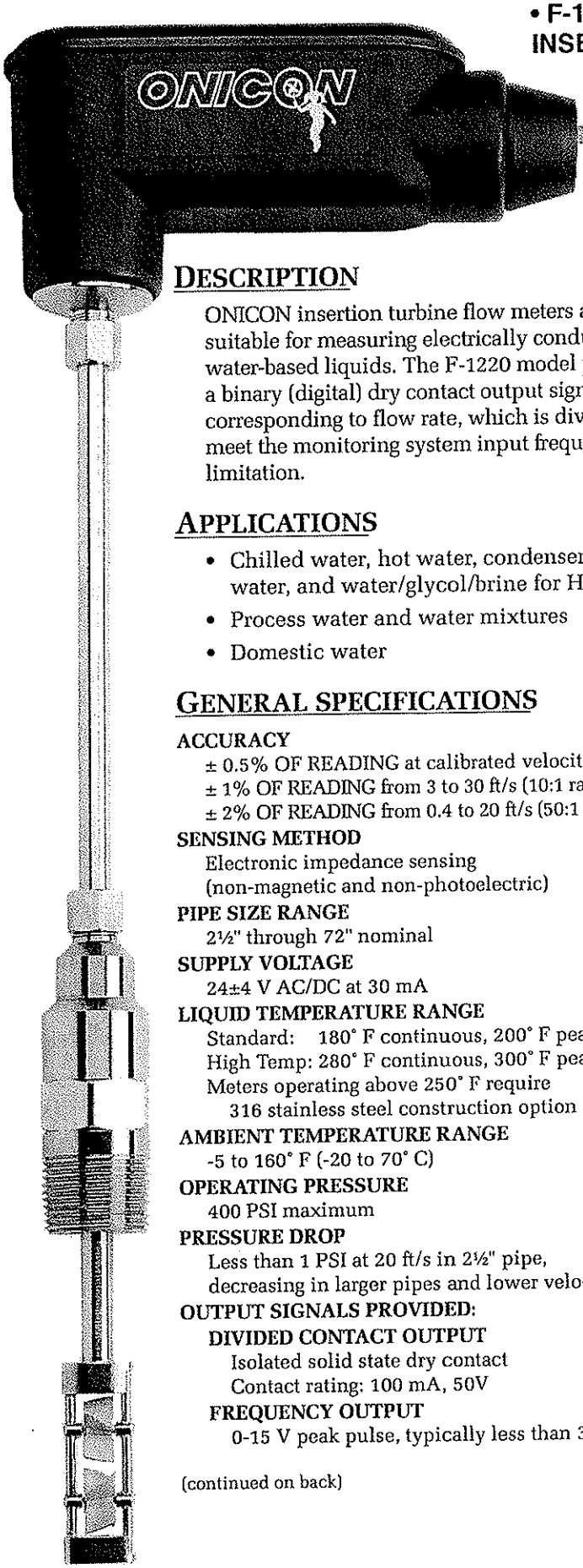
BTU Meter 3/3

• F-1220 DUAL TURBINE • INSERTION FLOW METER DIVIDED OUTPUT

ONICON INCORPORATED



Made in the USA

DESCRIPTION

ONICON insertion turbine flow meters are suitable for measuring electrically conductive water-based liquids. The F-1220 model provides a binary (digital) dry contact output signal corresponding to flow rate, which is divided to meet the monitoring system input frequency limitation.

APPLICATIONS

- Chilled water, hot water, condenser water, and water/glycol/brine for HVAC
- Process water and water mixtures
- Domestic water

GENERAL SPECIFICATIONS

ACCURACY
± 0.5% OF READING at calibrated velocity
± 1% OF READING from 3 to 30 ft/s (10:1 range)
± 2% OF READING from 0.4 to 20 ft/s (50:1 range)

SENSING METHOD
Electronic impedance sensing
(non-magnetic and non-photoelectric)

PIPE SIZE RANGE
2½" through 72" nominal

SUPPLY VOLTAGE
24±4 V AC/DC at 30 mA

LIQUID TEMPERATURE RANGE
Standard: 180° F continuous, 200° F peak
High Temp: 280° F continuous, 300° F peak
Meters operating above 250° F require
316 stainless steel construction option

AMBIENT TEMPERATURE RANGE
-5 to 160° F (-20 to 70° C)

OPERATING PRESSURE
400 PSI maximum

PRESSURE DROP
Less than 1 PSI at 20 ft/s in 2½" pipe,
decreasing in larger pipes and lower velocities

OUTPUT SIGNALS PROVIDED:

DIVIDED CONTACT OUTPUT
Isolated solid state dry contact
Contact rating: 100 mA, 50V

FREQUENCY OUTPUT
0-15 V peak pulse, typically less than 300 Hz

(continued on back)

CALIBRATION

Every ONICON flow meter is wet-calibrated in our flow laboratory against primary volumetric standards directly traceable to NIST. Certification of calibration is included with every meter.

FEATURES

Unmatched Price vs. Performance - Custom calibrated, highly accurate instrumentation at very competitive prices.

Excellent Long-term Reliability - Patented electronic sensing is resistant to scale and particulate matter. Low mass turbines with engineered jewel bearing systems provide a mechanical system that virtually does not wear.

Industry Leading Two-year "No-fault" Warranty - Reduces start-up costs with extended coverage to include accidental installation damage (miswiring, etc.). Certain exclusions apply; see our complete warranty statement for details.

Installation Flexibility - Patented dual turbine models deliver outstanding accuracy in short pipe runs.

Simplified Hot Tap Insertion Design - Standard on every insertion flow meter. Allows for insertion and removal by hand without system shutdown.

OPERATING RANGE FOR
COMMON PIPE SIZES
0.17 TO 20 ft/s
± 2% accuracy begins at 0.4 ft/s

Pipe Size (Inches)	Flow Rate (GPM)
2½	2.5 - 230
3	4 - 460
4	8 - 800
6	15 - 1800
8	26 - 3100
10	42 - 4900
12	60 - 7050
14	72 - 8600
16	98 - 11,400
18	120 - 14,600
20	150 - 18,100
24	230 - 26,500
30	360 - 41,900
36	510 - 60,900

1500 North Belcher Road, Clearwater, Florida 33765 Tel (727) 447-6140 Fax (727) 442-5699
www.onicon.com E-mail: sales@onicon.com

Appendix 11.6

Fire Alarm Device

BEC
Building Electronic Controls, Inc.

State Contractors License 729905

FIRE ALARM DEVICE SUBMITTAL

LOS ANGELES INTERNATIONAL AIRPORT
BRADLEY WEST GATES – BP #11
380 WORLD WAY
LOS ANGELES, CA 90045

Date Issued: 10/22/2010

BUILDING ELECTRONIC CONTROLS, INC.
FIRE/LIFE SAFETY

2246 Lindsay Way • Glendora • California • 91740
Phone (909) 305-1600 FAX (909) 305-1603

Overview

Fire, security, access control, and Mass Notification/Emergency Communication (MNEC): no matter what the combination, EST3 provides a total life safety system. With fire alarm providing the backbone, EST3 meets all legislated requirements – namely, that life safety takes precedence among the activities orchestrated by the control panel. Only a truly synergistic system design can assure that card access activity will not affect the priority and network response speed of fire reporting mandated by codes and standards.

The benefits of this method are many. Security and card access functions now benefit from the survivability and reliability mandated by the fire codes and life safety standards. Costs are reduced because system resources are shared. Installation of a single integrated system is vastly more efficient than installing multiple interconnected systems. There is no finger pointing, patchwork protocols or gateways that combine one system with another. Just the simple elegance of a single system unencumbered by needless redundancy. EST3 achieves true system synergy with single-system responsibility.

Standard Features

- Listed for Mass Notification/Emergency Communication, Fire, Security, Access Control, and Emergency Voice Alarm
- True seamless integration of Fire, Security and MNEC functions
- 168-character LCD
- Exceptional alarm response times
- Network supports copper, multi-mode fiber, single-mode fiber, or a combination of all three
- Total network wiring over 300,000 feet
- Eight channels of multiplexed digital audio on a single pair of wires or fiber filiment
- Zoned, distributed and banked audio amplifier options
- Local, Proprietary, and Central Station system operations
- In retrofit applications, existing wiring may be used if code compliant
- Supports GE Security Signature Series detectors and modules
- Designed in accordance with ISO-9000 quality standards
- Supports over 4,000 access controlled doors
- Up to 255 security partitions
- Arm/Disarm keypad and system status display
- UL Ninth Edition listed

EST3 Life Safety System

With Security, Access Control, and Emergency Communications

Appendix 11.7

Softforms Neutral Strip

SSB-358-8
SNAP-ON BULLNOSE

SAMPLE SPECIFICATION

specify as: SOFTFORMS® Model # SSB-358-8
Model # SC-358-*XXX*

Pittcon SOFTFORMS®, LLC

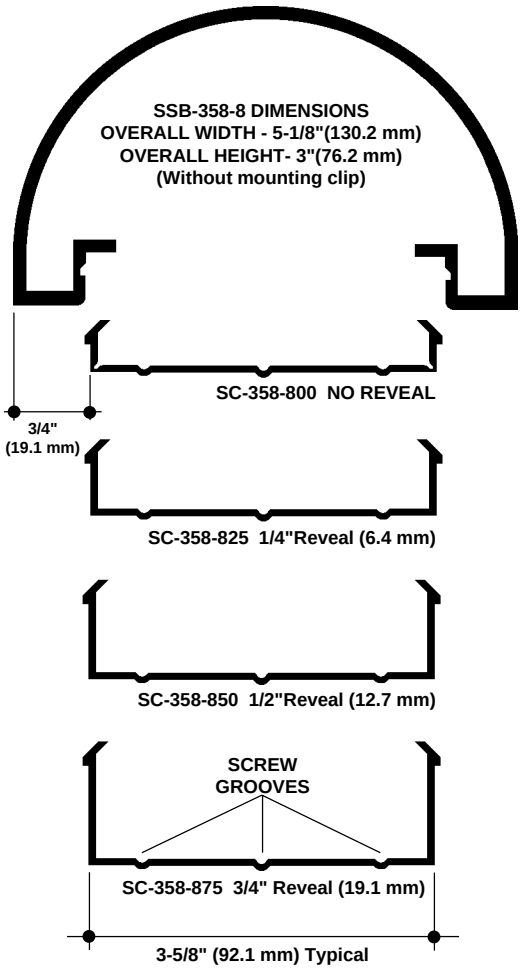
6409 Rhode Island Avenue
Riverdale, MD 20737
(800) 637-7638
(301) 927-1000
Fax: (301) 699-8690

3330 W. Flower Street
Phoenix, AZ 85043
(800) 637-7638
(602) 233-9100
Fax: (602) 233-9400

The extruded aluminum profiles shall be 1/8" thick at the exposed portion and shall incorporate a continuous integral grooved angle to mate with the SC-358-800, SC-358-825, SC-358-850, or SC-358-875 extended clip mount.

MATERIAL: Aluminum alloy.....6063 T5 or equal
Finish.....Mill Finish

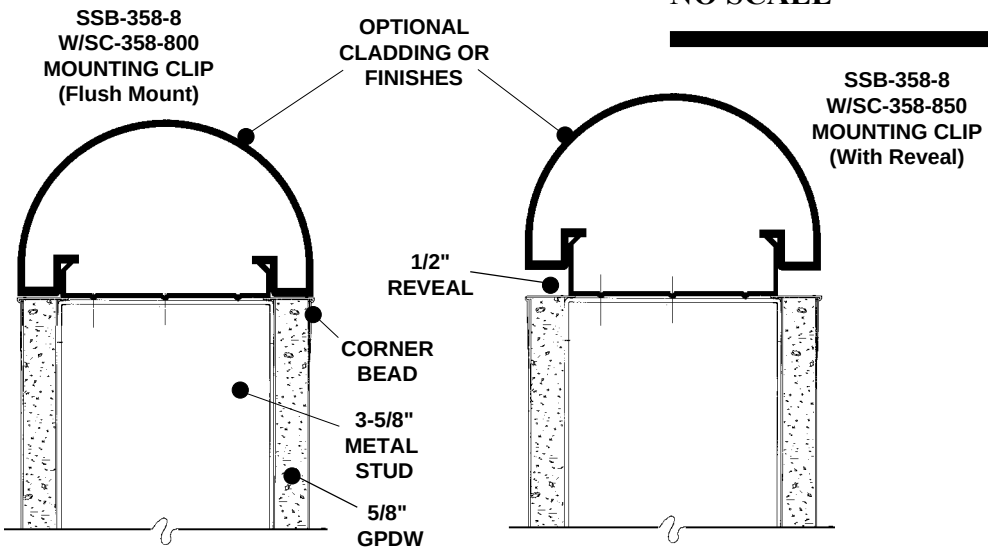
Optional factory applied finishes are available. Please check with factory for pricing and availability of your desired finish.



SSB-358-8 SNAP-ON BULLNOSE W/CLIP MOUNTS
NO SCALE SECTIONS

EXAMPLE DETAIL

For use with 3-5/8" metal stud construction and 5/8" GPDW. The SSB-358-8 works as a wall termination (where a reveal is desired) for vertical and horizontal wall applications with standard metal or wood stud construction.



SSB-358-8 @ 3-5/8" PARTITION END
NO SCALE PLAN/SECTION

Softforms®
PREFORMED ARCHITECTURAL PROFILES
FOR DRYWALL CONSTRUCTION

Appendix 11.8

Walsh Austin Joint Venture

Core and Construction Site Utilization Plans

TEMP PARTITION

TUG PASS

STAIR ACCESS

ELEVATOR ACCESS

4 YARD DUMPSTER @ APRON LEVEL

USE TUG PASS FOR DELIVERIES

STAIR ACCESS TO LEVEL 5

USE TUG PASS FOR DELIVERIES

ACCESS TO LEVEL 4

PROTECT EXISTING FINISHES THROUGHOUT

C16 C15 C14 C13

C12 C11 C10 C9

C8 C7 C6 C5

C4 C3 C2 C1

EXISTING TOM BRADLEY INTERNATIONAL TERMINAL

SECURE CONNECTION TO TERMINAL 3

SECURE CONNECTION TO TERMINAL 4, N.I.C.

CHILDRENS PLAY AREA

SPECIALTY

DUTY FREE

F & B

F & B CONCESSION STORAGE

CONCESSION STORAGE

RESTAURANT/BAR

COFFEE/NEWS STAND

F & B BAR

CONVENIENCE

PUBLIC SEATING

HOLDROOM

TSA SCREENING

SSCP QUEUE

TENANT SPACE

PET RELIEF AREA

MECHANICAL

KEY PLAN

FENTRESS ARCHITECTS

NORTH

A2400

1 OVERALL FLOOR PLAN LEVEL 04

WALSH AUSTIN JOINT VENTURE

WALSH AUSTIN JOINT VENTURE

Owner: LAWA

Project Name: BRADLEY WEST GATES & CORE

CORE SITE UTILIZATION PLAN LEVEL 4			
Project Number	209050	SUP-1	
Date	3/212011	SCALE	NTS

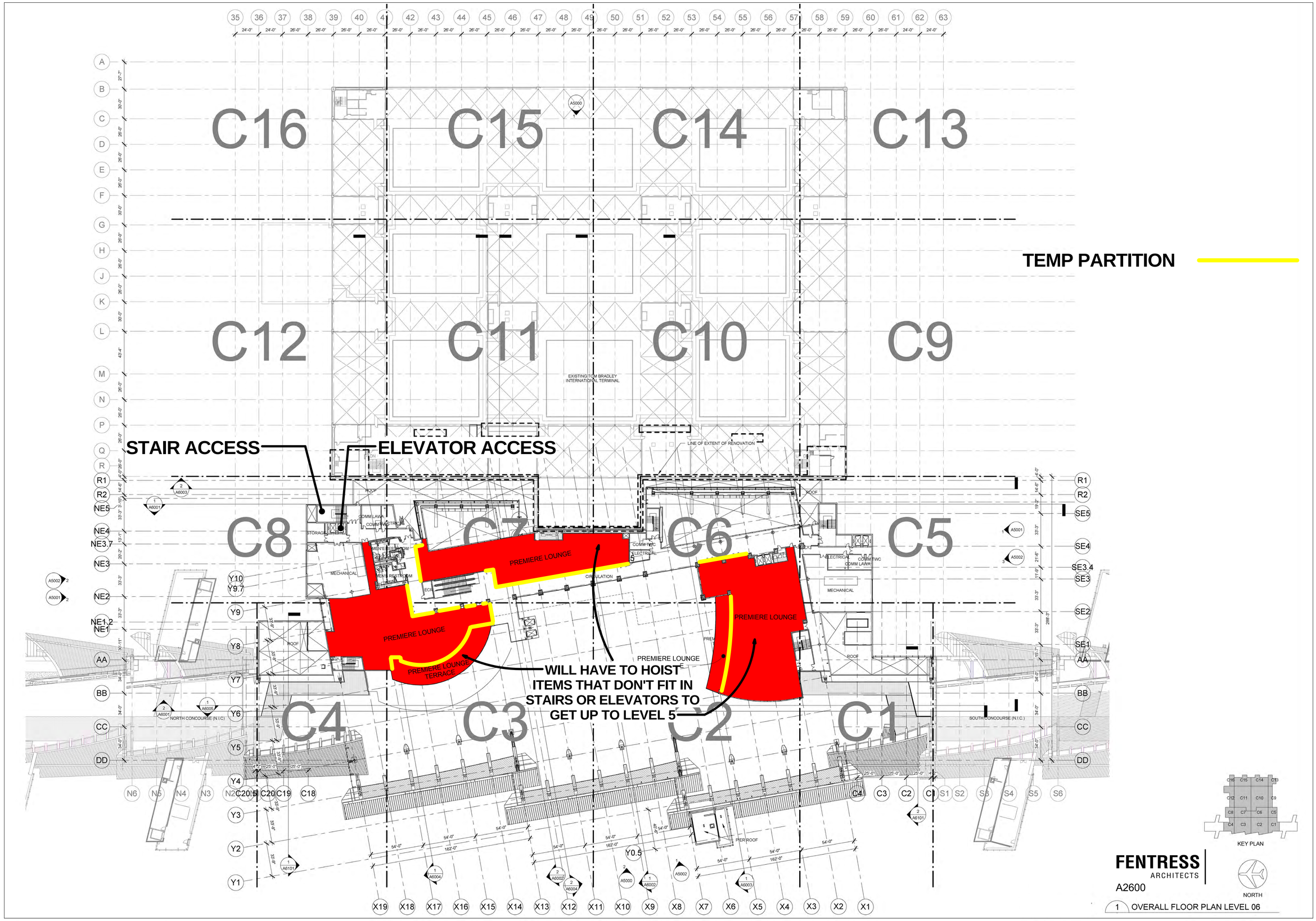
WALSH AUSTIN JOINT VENTURE

WALSH AUSTIN
JOINT VENTURE

Owner: LAWA

Project Name: BRADLEY WEST GATES & CORE

CORE SITE UTILIZATION PLAN LEVEL 5			
Project Number	209050	SUP-2	
Date	3/21/2011	SCALE	NTS



FENTRESS ARCHITECTS

A2600

1 OVERALL FLOOR PLAN LEVEL 06

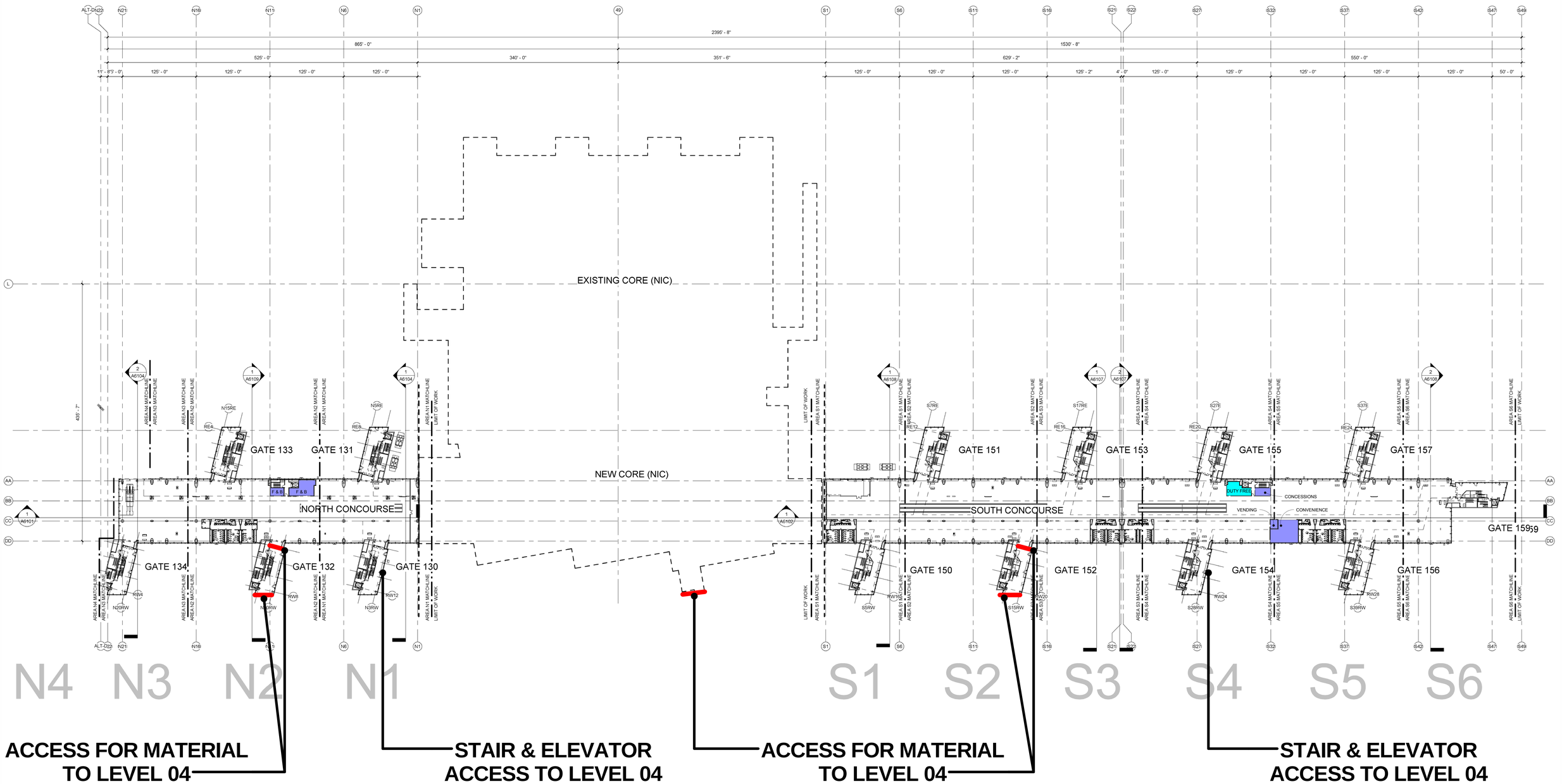
WALSH AUSTIN JOINT VENTURE

WALSH AUSTIN JOINT VENTURE

Owner: LAWA

Project Name: BRADLEY WEST GATES & CORE

CORE SITE UTILIZATION PLAN LEVEL 6			
Project Number	209050	SUP-3	
Date	3/21/2011	SCALE	NTS



FENTRESS ARCHITECTS

A2400

1 FLOOR PLAN LEVEL 04

WALSH AUSTIN JOINT VENTURE

WALSH AUSTIN JOINT VENTURE

Owner: LAWA

Project Name: BRADLEY WEST GATES & CORE

CONCOURSE SITE UTILIZATION PLAN LEVEL 4			
Project Number	209050	SUP-4	
Date	3/21/2011	SCALE	NTS

Appendix 11.9

CEQA Environmental Checklist Form

Appendix G

Environmental Checklist Form

1. Project title:
   _____

2. Lead agency name and address:
   _____

   _____

   _____

3. Contact person and phone number:
   _____

4. Project location:
   _____

5. Project sponsor's name and address:
   _____

   _____

   _____

   _____

6. General plan designation: _____ 7. Zoning: _____

8. Description of project: (Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or off-site features necessary for its implementation. Attach additional sheets if necessary.)
   _____

   _____

   _____

9. Surrounding land uses and setting: Briefly describe the project's surroundings:
   _____

   _____

   _____

10. Other public agencies whose approval is required (e.g., permits, financing approval, or

participation agreement.)

_____

_____

_____

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

❒ Aesthetics	❒ Agriculture Resources	❒ Air Quality
❒ Biological Resources	❒ Cultural Resources	❒ Geology/Soils
❒ Hazards & Hazardous Materials	❒ Hydrology/Water Quality	❒ Land Use/Planning
❒ Mineral Resources	❒ Noise	❒ Population/Housing
❒ Public Services	❒ Recreation	❒ Transportation/Traffic
❒ Utilities/Service Systems	❒ Mandatory Findings of Significance	

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

❒ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

❒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

❒ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

❒ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

❒ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature	Date
Printed Name	For

EVALUATION OF ENVIRONMENTAL IMPACTS:

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).

5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR

or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

a) Earlier Analysis Used. Identify and state where they are available for review.

b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9) The explanation of each issue should identify:

a) the significance criteria or threshold, if any, used to evaluate each question; and

b) the mitigation measure identified, if any, to reduce the impact to less than significance

SAMPLE QUESTION

Issues:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
I. AESTHETICS -- Would the project:				
a) Have a substantial adverse effect on a scenic vista?	❒	❒	❒	❒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	❒	❒	❒	❒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	❒	❒	❒	❒
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	❒	❒	❒	❒
II. AGRICULTURE RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	❒	❒	❒	❒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	❒	❒	❒	❒
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	❒	❒	❒	❒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
III. AIR QUALITY -- Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	❒	❒	❒	❒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	❒	❒	❒	❒
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	❒	❒	❒	❒
d) Expose sensitive receptors to substantial pollutant concentrations?	❒	❒	❒	❒
e) Create objectionable odors affecting a substantial number of people?	❒	❒	❒	❒
IV. BIOLOGICAL RESOURCES -- Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	❒	❒	❒	❒
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	❒	❒	❒	❒
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal,	❒	❒	❒	❒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
filling, hydrological interruption, or other means?				
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	❒	❒	❒	❒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	❒	❒	❒	❒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	❒	❒	❒	❒
V. CULTURAL RESOURCES -- Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?	❒	❒	❒	❒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	❒	❒	❒	❒
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	❒	❒	❒	❒
d) Disturb any human remains, including those interred outside of formal cemeteries?	❒	❒	❒	❒
VI. GEOLOGY AND SOILS -- Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	❒	❒	❒	❒
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	❒	❒	❒	❒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
ii) Strong seismic ground shaking?	❒	❒	❒	❒
iii) Seismic-related ground failure, including liquefaction?	❒	❒	❒	❒
iv) Landslides?	❒	❒	❒	❒
b) Result in substantial soil erosion or the loss of topsoil?	❒	❒	❒	❒
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	❒	❒	❒	❒
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	❒	❒	❒	❒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	❒	❒	❒	❒
VII. HAZARDS AND HAZARDOUS MATERIALS -- Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	❒	❒	❒	❒
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	❒	❒	❒	❒
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	❒	❒	❒	❒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	❒	❒	❒	❒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	❒	❒	❒	❒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	❒	❒	❒	❒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	❒	❒	❒	❒
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	❒	❒	❒	❒
VIII. HYDROLOGY AND WATER QUALITY -- Would the project:				
a) Violate any water quality standards or waste discharge requirements?	❒	❒	❒	❒
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	❒	❒	❒	❒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or	❒	❒	❒	❒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
river, in a manner which would result in substantial erosion or siltation on- or off-site?				
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	❒	❒	❒	❒
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	❒	❒	❒	❒
f) Otherwise substantially degrade water quality?	❒	❒	❒	❒
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	❒	❒	❒	❒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	❒	❒	❒	❒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	❒	❒	❒	❒
j) Inundation by seiche, tsunami, or mudflow?	❒	❒	❒	❒
IX. LAND USE AND PLANNING - Would the project:				
a) Physically divide an established community?	❒	❒	❒	❒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	❒	❒	❒	❒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	❒	❒	❒	❒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
X. MINERAL RESOURCES -- Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	❒	❒	❒	❒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	❒	❒	❒	❒
XI. NOISE -- Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	❒	❒	❒	❒
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	❒	❒	❒	❒
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	❒	❒	❒	❒
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	❒	❒	❒	❒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	❒	❒	❒	❒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	❒	❒	❒	❒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XII. POPULATION AND HOUSING -- Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	❒	❒	❒	❒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	❒	❒	❒	❒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	❒	❒	❒	❒
XIII. PUBLIC SERVICES				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	❒	❒	❒	❒
Police protection?	❒	❒	❒	❒
Schools?	❒	❒	❒	❒
Parks?	❒	❒	❒	❒
Other public facilities?	❒	❒	❒	❒
XIV. RECREATION				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	❒	❒	❒	❒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	❒	❒	❒	❒
XV. TRANSPORTATION/TRAFFIC -- Would the project:				
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	❒	❒	❒	❒
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	❒	❒	❒	❒
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	❒	❒	❒	❒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	❒	❒	❒	❒
e) Result in inadequate emergency access?	❒	❒	❒	❒
f) Result in inadequate parking capacity?	❒	❒	❒	❒
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	❒	❒	❒	❒
XVI. UTILITIES AND SERVICE SYSTEMS -- Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	❒	❒	❒	❒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	❒	❒	❒	❒
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	❒	❒	❒	❒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	❒	❒	❒	❒
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	❒	❒	❒	❒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	❒	❒	❒	❒
g) Comply with federal, state, and local statutes and regulations related to solid waste?	❒	❒	❒	❒
XVII. MANDATORY FINDINGS OF SIGNIFICANCE				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	❒	❒	❒	❒
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental	❒	❒	❒	❒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?				
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	❒	❒	❒	❒

Note: Authority cited: Sections 21083 and 21087, Public Resources Code. Reference: Sections 21080(c), 21080.1, 21080.3, 21082.1, 21083, 21083.3, 21093, 21094, 21151, Public Resources Code; Sundstrom v. County of Mendocino, 202 Cal.App.3d 296 (1988); Leonoff v. Monterey Board of Supervisors, 222 Cal.App.3d 1337 (1990).