OLD DOMINION UNIVERSITY

OCTOBER 12, 2018

[INSERT Official Project Name] Project Management Kick Off Agenda
[INSERT Meeting Date, Time, Location]

- Introductions
- Project Team *(Refer to Chapter One – Project General Requirements for committee member descriptions)*
  - Executive Committee
  - Building Planning Committee
  - Management Team
  - Stakeholders
  - A/E Team – Key Staff including all consultants
  - CMaR – On Board by Schematics
  - Envelop Consultant

(Identify the members of each project specific group, provide contact information to establish Project Directory/Sign-in Sheet)

- Campus Design Standards
  - Design Standards Variance Request Form – complete at the end of each VE session
  - Design Standards Compliance Form
  - Submittal Review
  - Design Phase Approval
  - Room Numbering Process
- Project Specific Communications Protocols
  - Project Identification
  - Advance Meeting Agendas & Draft Presentations
  - Sign-in Sheets
  - Meeting Minutes
  - A/E Web Based Project (i.e. Newforma, Sharepoint, etc.)
  - e-Builder, Box Account

Establish expectations of meeting minute completion, contents, distribution

- Schedule
  - Microsoft Project Template
  - Design Workshop / Meeting Schedule
  - Monthly Microsoft Project Updates for import into e-Builder
  - Identify Specific Project Vision | Goals | Expectations Session and documentation expectations

Provide MPP file

- Scope & Budget
  - Confirm Construction Budget, Scope and Total GSF, Pool Project
  - Identify Key Budget and Scope Metrics
  - Review Design Contingencies to be carried in design phase estimates
  - Review FF&E, AV, IT and other budgets
  - Review VE format and procedures
- BIM
  - A/E BIM Execution Plan
  - BIM Model Exchange at Design Submittals
- Close Out
  - Final BIM Model – all disciplines
  - Record Drawings, Construction Submittals

Provide VE excel File

[INSERT Official Project Name] Project Kick Off Agenda
[INSERT Meeting Date, Time, Location]

- Introductions
- Project Team
    - Project Stakeholders, Identify Decision Makers
    - A/E Team – Key Staff including all consultants
    - Communications Protocols
        - Project Identification on all documents. Project Number provided by FM or BCOM
        - Meeting Minutes
- Project Permit Requirements
    - Annual Permit Worksheet
- Project Schedule
    - Overall Design, Permit and Construction Schedule
    - Anticipated Design Meeting Dates
    - Procurement Method
- Program
    - Confirm project program and scope
- Budget
    - Confirm Budget and funding sources/requirements for Project
    - Identify Other Budgets / Costs: FF&E, AV, IT and other budgets
    - Review VE format and procedures
- Project Vision Goals & Expectations Discussion
    - Vision – Discuss desired outcome of project for the users.
    - Goals – Identify specific achievable goals, such as quality, budget, schedule
    - Expectations
        - Campus Design Standards
        - Room Numbering Process & Signage

OLD DOMINION UNIVERSITY

BUILDING STANDARDS VARIANCE REQUEST FORM

The *Design Standards* were developed to work in conjunction with the requirements of the Construction and Professional Services Manual (CPSM) of the State of Virginia. This variance request form is for the *Old Dominion University Design Standards* only and will not address any variances associated with the CPSM. Variance Requests are specific to Physical aspects of the Design Standards and do not apply to any process deviations.

Exceptions to any design or construction requirement herein may be discussed and modified. The requirements are not meant to replace professional judgment or practice. If variances are necessary to satisfy project specific conditions, the A/E Professional must submit a request to the ODU Project Manager and receive approval for such variance in writing prior to proceeding with any change. If no variances are requested on a project, then ODU assumes the A/E Professional to have complied with all requirements of the *Design Standards* and assumes responsibility for same.

PROJECT NAME: _____ **DATE SUBMITTED:** _____

PROJECT IDENTIFICATION CODE: _____ **VARIANCE REQUEST NUMBER:** _____

ODU PROJECT MANAGER: _____

A/E PROFESSIONAL: _____

CMaR: _____

DESIGN STANDARDS SECTION REFERENCE: _____

Reason for request (Pros & Cons – Cost, Operation, Maintenance, Etc.) _____

_____

_____

_____

_____

_____

_____

_____

ODU Project Manager Reviewer: _____ Date Reviewed: _____

Facilities Reviewer: _____ Date Reviewed: _____

University Architect Reviewer: _____ Date Reviewed: _____

☐ **Approved** ☐ **Rejected** ☐ **Additional Info Required** ***(Check One)***

Remarks: _____

_____

_____

_____

_____

Remarks By: _____

Distribution: ☐ Dir. of FM ☐ Project Planning Committee ☐ Assist. Dir. of Engineering ☐ Assist Dir. Facility Ops & Maintenance

OLD DOMINION UNIVERSITY

DESIGN STANDARDS REVISION REQUEST FORM

The *Design Standards* were developed to work in conjunction with the requirements of the Construction and Professional Services Manual (CPSM) of the State of Virginia. This Design Standard Revision Request form is for the *Old Dominion University Design Standards* only and will not address any revisions associated with the CPSM.

Please complete all sections of this form in writing, and submit it to the Director of Design & Construction. Include attachments as necessary for proper and timely review of the request. If you are submitting an updated version of a previously published department standard referenced in the *Design Standards*, please clearly indicate the changes made to the updated version.

The requested revision to the *Design Standards* will be reviewed by the University for integration into the standards. Please submit your request at least one month prior to an anticipated *Design Standards* update.

REQUESTED BY: _____ **DATE REQUESTED:** _____

TITLE: _____

ODU DEPARTMENT / COMPANY: _____

Section of the Design Standards Being Considered:

Brief Description of the Current Requirement:

Suggested Wording for the Proposed Addition / Deletion / Change:

Justification (Pros & Cons – Cost, Operation, Maintenance, Etc.):

Committee Review Date:

Committee Decision / Actions Assignment:

☐ **Approved** ☐ **Rejected** ☐ **Additional Info Required** ***(Check One)***

Instructions:
ODU PM to fill in the Submittal Phase and dates.
ODU will collect all internal review comments and provide these to the A/E.
A/E will respond to the comments AND if applicable, will indicate if the comment impacts cost or project schedule.
ODU will approve or disapprove any comments that impact cost or schedule.
ODU will attach the completed form to Appendix P - Design Phase Approvals

NAME & PROJECT CODE #

OLD DOMINION UNIVERSITY

Submittal Phase:	
Dates:	
Submittal	
Comments to A/E	
A/E Response To Comment	
A/E of Record	

Department	Reviewer	email	Date Drawings Received	Date Comments Provided to PM
Project Manager	Willie Spencer	spencer@odu.edu		
Project Manager	Christopher Pewterbaugh	cpewterb@odu.edu		
Project Manager	Craig Borkman			
Project Inspector	Brian Crawford	bcrawfor@odu.edu		
Project Inspector	Tom O'Bryan	tobryan@odu.edu		
BUILDING USER REPRESENTATIVES				
Residence Life				
Facilities Manager Housing & Residence Life	Terry Durkin	tdurkin@odu.edu		
Dean of Students, Associate Vice President SEES	Don Stansberry	dstansbe@odu.edu		
Director for Residence Education Housing & Residence Life	Brittany Blount	b1blount@odu.edu		
Asstant to the Dean of Students - Housing and Residence Life	Susan Boyd	s1boyd@odu.edu		
Interim Associate Dean of Students	Bridget Nemeth	bnemeth@odu.edu		
Athletics				
Assoc. Athletic Dir. Operations	Rick French	rfrench@odu.edu		
Assoc. Athletic Dir. Facilities	Greg Smith	gcsmith@odu.edu		
Director of Athletic Marching Band	Alex Trevino	atrevino@odu.edu		
Senior Associate Athletic Director - Sports Administration	Bruce Stewart	bstewart@odu.edu		
Program Assistant	Isaiah Lucas	ilucas@odu.edu		
Senior Associate Athletic Director for Development	Jena Virga	jvirga@odu.edu		
Director of Athletics	Wood Selig	wselig@odu.edu		
Assistant Athletic Director, Athletic Development ODAF	Drew Turner	ja1turne@odu.edu		
Basketball	Ken Brown	klbrown@odu.edu		
Athletic Facilities & Event Coordinator	Drew Jacobs	apjacobs@odu.edu		
Assistant Athletic Director for Marketing	Carolyn Cooper	cacooper@odu.edu		
OD Athletic Foundation	Christopher Schaefer	cschaefe@odu.edu		
Assistant Athletic Director for Communications	Eric Bohannon	ebohanno@odu.edu		
Associate Athletic Director for Revenue & Strategi Marketing	Jason Chandler	jichandl@odu.edu		
Assistant Director of ODAF / Assistant Director of Football Recruiting	Jay Haeseker	jhaeseke@odu.edu		
Director of Leadership & Student Involvement	Nicole Kiger	nkiger@odu.edu		
Assistant Director of Ticketing - Athletics	Ryan Parrish	ryan_parrish@comcastspectacor.com		
Assistant Recruiting Coordinator	Spencer Grubbs	sgrubbs@odu.edu		
Athletic Operations & Event Coordinator	Merideth Warinner	mwarinne@odu.edu		
General Manager (Specta Venue Management)	Mike Fryling	Mike_Fryling@comcastspectacor.com		
Director of Football Operations	Tim Kovacs	tkovacs@odu.edu		
Associate Athletic Director, Creative/Video Services	Tina Price	tprice@odu.edu		
UNIVERSITY FACILITIES REPRESENTATIVES				
Director of D&C	Dale Feltes	dfeltes@odu.edu		
Asst. Director of D&C	Dave Robichaud	drobicha@odu.edu		
University Architect	Jean Kennedy Sleeman	jkennedy@odu.edu		
Director of Facilities Management	Mike Brady	mbrady@odu.edu		
Assistant Director Facilities Ops & Maintainence	John Hasher	jhasher@odu.edu		
Assistant Director Building Services	Thomas Maddox	TAMaddox@odu.edu		
Assistant Director Engineering	Jay Graven	jgraven@odu.edu		
Plant Operations	Bobby Jackson	bjjackso@odu.edu		
FM	Chad Luettel	cmluette@odu.edu		
FM - Grounds	Chad Peevy	CPeevy@odu.edu		
FM - Housekeeping	Anthony Tyler	ABTyler@odu.edu		
FM- Electrical	Craig T. Marshall	ctmarsha@odu.edu		
ITS - Infrastructure	Rick Lovelace	rlovelac@odu.edu		
ITS - Classroom	Dwayne Smith	DLSmith@odu.edu		
ITS - Infrastructure	Anthony Redifer	ARedifer@odu.edu		
ITS - Door Access	Paul Ledbetter	pledbett@odu.edu		
OCCS Classroom Central Engineer	Kevin Guerin	kguerin@odu.edu		
Fire Safety Engineer, Emergency Management	Greg Wooldridge	gwooldri@odu.edu		
Director of Transportation and Parking	Scott Silsdorf	ssilsdor@odu.edu		
Physical Security Specialist	Jim Boothe	jboothe@odu.edu		
(Mechanical Controls) Seimens	Stuart Burleson	stuart.burleson@siemens.com		
(Mechanical Controls) Seimens	John Tipton	john.tipton@siemens.com		
Simplex Grinnell	Frank Kleczewski	fkleczewski@simplexgrinnell.com		
PROJECT SPECIFIC UNIVERSITY REPRESENTATIVES				
Associate VP for University Services & CIO	Rusty Waterfield	rwater@odu.edu		
Director of Environmental Health & Safety	Doug Alexander	dalexand@odu.edu		
Aramark's Resident District Manager	Janet McLaughlin	jmclaugh@odu.edu		
Assistant Vice President for Auxiliary Services	Todd Johnson	tjohnso@odu.edu		

NAME & PROJECT CODE #

Instructions:
ODU PM to fill in the Submittal Phase and dates.
ODU will collect all internal review comments and provide these to the A/E.
A/E will respond to the comments AND if applicable, will indicate if the comment impacts cost or project schedule.
ODU will approve or disapprove any comments that impact cost or schedule.
ODU will attach the completed form to Appendix P - Design Phase Approvals

OLD DOMINION UNIVERSITY

Submittal Phase:	0
Dates:	
Submittal	1/0/1900
Comments	
Response To Comments	
A/E of Record	0

PAGE/SHEET #	REVIEWER	ODU COMMENT	A/E RESPONSE	SCHEDULE COST IMPACT	ODU DISPOSITION	ODU BACK CHECK

OLD DOMINION UNIVERSITY
Summary of Value Engineering Recommendations

Project Phase

Project Code: **Date:** 7/09/2018
Agency Name: Old Dominion University
Project Name:

Action Codes
A = Accept VE recommendation, without modification
R = Reject VE recommendation
P = Pending further Information

			Stakeholder Disposition						Status			
Item	**Description**	**Estimated Potential Effect on Item Cost**	**A/E**	**D&C**	**FM**	**User**	**Stakeholder Comments**	**Final Action**	**Accepted**	**Rejected**	**Pending**	**Remarks**
1	EXAMPLE: Use CMU in lieu of cast-in-place concrete walls	$ 155,000	A	A	A	A	A/E - Will Require structural redesign. Add Service and potential schedule delay. D&C - no issues FM - no issues CMaR - CMU will be faster to construct	A	$ 155,000	$ 0	$ 0	Retain concrete walls in areas requiring retainage.
2	EXAMPLE: Change ceramic tile	$ 25,000	R	A	A	A	A/E - Less recycled content, possible impact to LEED	R	$ 0	$ 25,000	$ 0	
3	EXAMPLE: Change type of Brick proposed	$ 45,000	P	P	P	A	D&C - Needs approval by COO	P	$ 0	$ 0	$ 45,000	
4									$ 0	$ 0	$ 0	
	Total of all Proposed Value Engineering Items	**$ 225,000**										
									$ 155,000 Total Accepted	$ 25,000 Total Rejected	$ 45,000 Total Pending	

Construction Budget	2,000,000
Current Estimate	2,500,000
Under (Over) Budget	**(500,000)**
Accepted VE	$ 155,000
Pending VE	$ 45,000
	$ 200,000
Remaining Value to Cut (Accepted + Pending)	$ 300,000
Remaining Value to Cut (Accepted only)	$ 345,000

This is an example of the VE format used at ODU. It is a modified version of the form required by BCOM. The A/E and or CMaR should ask the ODU PM for the Excel verson for use.

Project Name | Project Number **Date**

Original Building Classification Updated Building Classification (if Applicable)

Use Group

Construction Type

Building Code

Year of Construction

Date of Project Specific Annual Permit Discussion:

Attendees:

Attachments:

Annual Permit - Appendix P of the CPSM

Character of work as described below would require construction documents prepared under the supervision of and signed and sealed by a registered Architect or Engineer and submitted for review to the State Building Official.

Projects involving the following:

Annual Permit Requirement	**Specific Project Response**
Construction of structure(s) and site improvements, including new structures that contain occupieable space.	None
Special Inspection(s)	
Site work, utility work, and foundations for Industrialized Buildings.	
Changing the use of a building either within the same use Group or to a different use Group.	
Removal or cutting a structural beam or bearing support.	
Addition, removal, alteration, or relocation of all, or a part of, a Means of Egress, Exit, or Fire Rated Assembly	
Addition, removal, replacement, alteration, or relocation of Elevators and Conveying Systems.	
Addition of or removal of an HVAC, Electrical, Plumbing, Gas Piping, Fire Sprinkler, Fire Suppression, and/or Fire Alarm System.	
Mechanical: alteration or relocation of the quantity or source of ventilation, exhaust, or combustion air; alteration or relocation of boilers, water heaters, pressure vessels, or refrigeration equipment; change in refrigerant classification for replacement in kind of refrigeration equipment.	
Electrical: alteration or relocation of circuits greater than 1 phase, 240 volt, 50 amp - or – 1 phase, 277 volt, 30 amp	
Plumbing: alteration or relocation of plumbing fixtures, water supply, water distribution, sanitary waste, special waste, or storm drainage.	
Gas Piping: alteration or relocation of fuel gas or fuel oil piping systems.	
Fire Sprinkler: alteration or relocation of water supply or equipment other than sprinkler heads; relocation of more than 25% of sprinkler heads per story.	
Fire Alarm: alteration of system logic; alteration or relocation of equipment other than alarm devices; relocation of more than 25% of alarm devices per story.	
Utility structures including communication towers, water tanks, and water and wastewater treatment.	
Roof replacement projects where the work is the replacement of more than 25 percent of an existing roof covering.	
Temporary structures.	
Demolition of structures (CO-17.1 Demolition Permit w/attachments required).	

I.01. Philosophy: Because this is a large institution and we are managing the maintenance on a number of facilities, we do not follow the typical requirements for "extra materials," or attic stock, that is found in standard specifications. We do not want to store products that are readily available or that rarely need to be replaced. Below is a list, by specification section, of the typical materials found in each building. Extra materials are listed when desired and what quantities should be turned over at the project's closeout. Projects are broken down into three categories: ACADEMIC & GENERAL, ATHELTICS and HOUSING. Coordinate specification to furnish the extra materials as noted for the specific project type.

IMPORTANT NOTE: If there are products specified on a project that meet any of the following criteria, these should be identified to the ODU project manager who will discuss with University personnel, requirements for extra materials and communicate those to the A/E for inclusion in the specifications.

1. *Replacement part is a long lead item, (long lead is defined as taking over four (4) weeks to receive).*
2. *Product is manufactured (all or in part) and/or shipped from outside the United States.*
3. *Product is a finish item that may be out of production within 3 years of the opening of the building, such as tile, carpet or fabrics.*
4. *Item differs from what is called out in the design standards.*

I.02. Refer to the Operations and Maintenance Manual section of these standards for the required materials list to be turned over to the university at closeout.

I.03. Specifications should be modified to indicate the contractor to furnish extra materials described below that match products installed.

I.04. Package each product by specification section. Package with protective covering for storage and identified with protected labels securely fixed to the box indicating the following:

a. Building Name and Project Identifying number
b. Specification Section Number
c. List of contents by product description, number, color number, size etc.

Division 8 - OPENINGS

08 100 DOOR HARDWARE

ACADEMIC & GENERAL: None

ATHLETICS: Furnish 25 Cores. Furnish special wrenches and tools applicable to each different or special hardware component. Furnish maintenance tools and accessories supplied by hardware component manufacturer. One of each type of the following:

1. Door Closers
2. Hinges
3. Exit Devices
4. Push/Pulls
5. Locksets
6. Cylinder
7. Protection Plates
8. Door Stops
9. Wall Stops

10. Overhead Stops
11. Gasketing

HOUSING: None

08 4113 ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS

ALL: If custom colors are approved by the university and specified, provide 200 feet per building of custom colored frames, stored within the building.

Windows: Attic stock stops for doors or windows shall be required in quantities of 200 feet per building and must be stored in a designated building storage room for the specific building.

Division 9 - FINISHES

09 3000 TILE

ACADEMIC & GENERAL: Furnish 2 cove base tiles, if specified, of each color and size; Furnish 2 pieces of each color and size accent tile bands or trim if specified; Furnish one bag of unopened grout for each type, composition and color specified.

HOUSING: Furnish one unopened box of tile for each tile color, pattern, and size specified.

ATHLETICS: Furnish quantity of full sized Tile and Trim units equal to 3 percent of amount installed, for each type, composition, color, pattern, trim profile and size indicated.

09 5113 ACOUSTICAL PANEL CEILINGS

ACADEMIC & GENERAL: Furnish 2% in unopened boxes of each type full-sized acoustical panel ceiling tile specified, but no more than 10 boxes.

ATHLETICS: Furnish 2 Percent of the amount installed of each type of full sized acoustical ceiling units; suspension system components, hold down clips.

HOUSING: Furnish two (2) unopened boxes of each type full-sized acoustical panel ceiling tile specified per building.

09 5423 LINEAR METAL CEILINGS

ALL: Linear Metal Ceiling Components: Quantity of each pan, carrier, accessory, and exposed molding and trim equal to 2 percent of quantity installed.

09 5133 ACOUSTICAL METAL PAN CEILINGS

ALL: Full-size Acoustical Metal Pans equal to 2 percent of quantity installed.

09 6513 RESILIENT WALL BASE AND ACCESSORIES

ACADEMIC & GENERAL: None

ATHLETICS: Furnish 10 percent of resilient base of the total quantity installed in each type and color.

HOUSING: None

09 6519 RESILIENT FLOOR TILE

ACADEMIC & GENERAL: None

ATHLETICS: Furnish one (1) box for every 50 boxes or fraction thereof, of each type, color, and pattern of floor tile installed.

HOUSING: Furnish one (1) box of resilient floor tile for each type, color and patterned of floor tile installed.

09 6566 RESILIENT ATHLETIC FLOORING

ACADEMIC & GENERAL: None

ATHLETICS: It is the intent to have the contractor furnish full-width rolls of not less than 10 linear feet for each 500 linear feet or fraction thereof, of each type, color, and pattern of flooring installed. The A/E should confirm this with the ODU Project Manager prior to specifications.

HOUSING: None

09 6516 RESILIENT SHEET FLOORING

ACADEMIC & GENERAL: None

ATHLETICS: Floor Covering: Furnish quantity not less than 15 linear feet for every 400 linear feet or fraction thereof, in roll form and in full roll width for each color, pattern, and type of floor covering installed.

HOUSING: None

09 6816 CARPET

Note: No rolled carpet shall be provided on any project without a Design Standards Variance Request Form (Appendix B) submitted and approved by ODU.

ACADEMIC & GENERAL: One box of full-size units for each type, pattern and color installed.

ATHLETICS: Full Sized units equal to 5 percent of amount installed for each type, pattern and color indicated, but not less than 10 square feet.

HOUSING: Carpet Tile: One box of full-size units for each type, pattern and color installed.

09 7100 ACOUSTICAL WALL TREATMENT

ALL: Furnish 4 linear yards of each type, color, and pattern of material, exclusive of material required to properly complete installation.

09 7200 WALL COVERINGS

ALL: Furnish ten (10) linear yards of each type, pattern, and color of wall covering installed in the form of full roll width material, exclusive of custom graphic wall covering intended as a single graphic image.

09 9113 EXTERIOR PAINTING

ACADEMIC & GENERAL: None

ATHLETICS: Furnish an additional 5 percent, but not less than 1 whole unopened gallon of each type of material and color applied.

HOUSING: None

09 9123 INTERIOR PAINTING

ACADEMIC & GENERAL: None

ATHLETICS: Furnish an additional 5 percent, but not less than 1 whole unopened gallon of each type of material and color applied.

HOUSING: Furnish one (1) whole unopened gallon of each material and color applied.

Division 10 – SPECIALTIES

10 2113 TOILET COMPARTMENTS

ALL:

1. Door Hinges: One hinge(s) with associated fasteners.
2. Latch and Keeper: One latch(es) and keeper(s) with associated fasteners.
3. Door Bumper: One door bumper(s) with associated fasteners.
4. Door Pull: One door pull(s) with associated fasteners.
5. Fasteners: Ten fasteners of each size and type.

10 2123 CUBICLE CURTAINS AND TRACKS

ALL: 1. Full-size curtain carriers and track end caps equal to 3 percent of amount installed for each size indicated, but no fewer than ten (10) units. Full-size curtain units equal to 10 percent of amount installed for each size indicated, but no fewer than two (2) units.

10 2600 WALL AND DOOR PROTECTION

ALL: Full-size plastic corner guard covers of maximum length equal to 2 percent of each type, color, and texture of cover installed, but no fewer than two, 48-inch- long units.

10 5116 WOOD LOCKERS

ACADEMIC & GENERAL: None

ATHLETICS: Furnish full-size wood locker doors, complete with specified door hardware. Furnish no fewer than three doors of each type and color installed. Furnish full-size units of the following wood locker hardware items equal to 10 percent of amount installed for each type and finish installed, but no fewer than five units:

1. Hinges.
2. Pulls.
3. Shelf rests.
4. Cylinder and drawer locks.

HOUSING: None

10 5626 MOBILE STORAGE UNITS

ACADEMIC & GENERAL: None

ATHLETICS: 5 percent of amount installed but no less than 10 Shelf Label Holders. 5 percent of book supports installed, but not less than 20. 1 paint touchup kit for every 3 end panels installed. 1 paint touch up kit for every 5 shelves installed.

HOUSING: None

Division 12 - FURNISHINGS

12 2113 HORIZONTAL LOUVER BLINDS

ACADEMIC & GENERAL: None

ATHLETICS: Furnish 1 horizontal louver blind for each size, color and texture installed.

HOUSING: Furnish five (5) Horizontal Louver Blind for each standards student room size, color, and texture installed, per building.

12 2413 ROLLER WINDOW SHADES

ACADEMIC & GENERAL: None

ATHLETICS: Furnish 1 Roller Window Shade for each size, color and texture installed.

HOUSING: None

12 2414 MOTORIZED ROLLER WINDOW SHADES

ACADEMIC & GENERAL: None

ATHLETICS: Furnish 1 Roller Window Shade for each size, color and texture installed.

HOUSING: None

12 3553 LABORATORY CASEWORK

ALL: Cabinet Mounting Clips and Related Hardware: Quantity equal to 5 percent of amount installed, but no fewer than 20 of each type.

12 6100 FIXED AUDIENCE SEATING

ACADEMIC & GENERAL: 5 upholstered padded seats and backs for each seat type installed. 6 center standards, 3 left end standards and 3 right end standards. Furnish 10 standard cup holders. Furnish I duplicate set of row letters and seat numbers.

ATHLETICS: 5 upholstered padded seats and backs for each seat type installed. 6 center standards, 3 left end standards and 3 right end standards. Furnish 10 standard cup holders. Furnish I duplicate set of row letters and seat numbers.

HOUSING: Not Applicable

12 9300 SITE FURNISHINGS

ALL: Trash / Recycling Receptacle Inner Containers: 2 full-size units for each size indicated.

13 1213 EXTERIOR FOUNTAIN

ACADEMIC & GENERAL: None

ATHLETICS: 1 additional replacement element is to be furnished for all cartridge filters and 1 extra solenoid for water make-up assembly.

HOUSING: None

Division 21 – FIRE SUPPRESSION

21 1313 WET-PIPE SPRINKLER SYSTEMS

ACADEMIC & GENERAL: Nothing required, handled under ODU sprinkler maintenance contract.

ATHLETICS: Furnish finished, wall-mounted, steel cabinet with hinged cover, and with space for minimum of six spare sprinklers plus sprinkler wrench. Furnish separate cabinet and wrench for each type of sprinkler used on the Project.

HOUSING: Nothing required, handled under ODU sprinkler maintenance contract

Division 22 – PLUMBING

22 5190 GENERAL-SERVICE PACKAGED AIR COMPRESSORS AND RECEIVERS

ACADEMIC & GENERAL: None

ATHLETICS: Equal to 10 percent of Air-Compressor, Inlet-Air-Filer Elements installed, but no fewer than 2 units. Furnish two belts for each belt-driven compressor.

HOUSING: None

22 4200 COMMERCIAL PLUMBING FIXTURES

ACADEMIC & GENERAL: None

ATHLETICS: Faucet Washers, Cartridges and O-Rings: Equal to 10 percent of amount of each type and size installed.

HOUSING: None

22 6600 CHEMICAL-WASTE SYSTEMS

ACADEMIC & GENERAL: Water-Treatment Chemicals are handled by ODU contractor.

ATHLETICS: Neutralization-Tank Limestone: Equal to 200 percent of amount required for each tank sump initial charge. Furnish limestone in 50-lb bags.

HOUSING: Water-Treatment Chemicals are handled by ODU contractor.

Division 23 - HEATING VENTILATING AND AIR CONDITIONING

23 2123 HYDRONIC PUMPS

ACADEMIC & GENERAL: None

ATHLETICS: Mechanical Seals: One mechanical seal(s) for each pump.

HOUSING: None

23 2124 HYDRONIC PIPING

Water-Treatment Chemicals are handled by ODU contractor.

23 3300 AIR DUCT ACCESSORIES

ACADEMIC & GENERAL: None

ATHLETICS: Furnish fusible links quantity equal to 10 percent of amount installed.

HOUSING: None

23 3423 HVAC POWER VENTILATORS

ACADEMIC & GENERAL: None

ATHLETICS: Belts: One set(s) for each belt-driven unit.

HOUSING: None

23 4100 PARTICULATE AIR FILTRATION

ACADEMIC & GENERAL: None

ATHLETICS: Furnish one complete set(s) of filters for each filter bank. If system includes prefilters, furnish only prefilters. Furnish one container(s) of red oil for inclined manometer filter gage.

HOUSING: None

23 6500 COOLING TOWERS

ACADEMIC & GENERAL: None

ATHLETICS: Furnish one match set of fan belts for each fan belt-drive fan. Furnish three nozzles for each cell. Furnish one gasket for each access door. Provide one valve seat for each make-up or control valve.

HOUSING: None

23 7200 AIR-TO-AIR ENERGY RECOVERY EQUIPMENT

ACADEMIC & GENERAL: None

ATHLETICS: Furnish one set(s) of filters for each air-handling unit. Furnish one set of gaskets for each access door. Furnish one set(s) of fan belts for each air-handling unit fan. Furnish one set(s) of wheel belts for each enthalpy wheel.

HOUSING: None

23 7313 MODULAR CENTRAL-STATION AIR-HANDLING UNITS

ACADEMIC & GENERAL: None

ATHLETICS: Furnish one set(s) of filters for each air-handling unit. Furnish one set(s) of gaskets for each access door. Furnish one set(s) of fan belts for each air-handling unit fan.

HOUSING: None

23 7413 PACKAGED, OUTDOOR, CENTRAL-STATION AIR-HANDLING UNITS

ACADEMIC & GENERAL: None

ATHLETICS: Furnish one set of fan belts for each drive-driven fan. Furnish two sets of filters for each unit.

HOUSING: None

23 7433 DEDICATED OUTDOOR-AIR UNITS

ACADEMIC & GENERAL: None

ATHLETICS: Furnish one set of fan belts for each drive-driven fan. Furnish two sets of filters for each unit.

HOUSING: None

23 8126 SPLIT-SYSTEM AIR-CONDITIONERS

ACADEMIC & GENERAL: None

ATHLETICS: Furnish one set(s) of filters for each unit. Furnish one set(s) of gaskets for each access door.

HOUSING: None

23 8239 CABINET UNIT HEATERS

ACADEMIC & GENERAL: None

ATHLETICS: Cabinet Unit-Heater Filters: Furnish one spare filter(s) for each filter installed.

HOUSING: None

23 8413 HUMIDIFIERS

ACADEMIC & GENERAL: None

ATHLETICS: Supply one replacement electrode cylinder with each self-contained humidifier.

HOUSING: None

23 8219 FAN-COIL UNITS

ACADEMIC & GENERAL: None

ATHLETICS: Fan-Coil-Unit Filters: Furnish one spare filter for each filter installed.

HOUSING: None

Division 26 – Electrical

26 0943 RELAY-BASED LIGHTING CONTROLS

ACADEMIC & GENERAL: None

ATHLETICS: Furnish lighting control relays equal to 10 percent of amount installed for each size indicated, but no fewer than one.

HOUSING: None

26 3213 ENGINE GENERATOR

ACADEMIC & GENERAL: None

ATHLETICS: Furnish one fuse for every 10 of each type and rating, but no fewer than one of each. Furnish two indicator lamps for every six of each type used, but no fewer than two of each. Furnish one set of filters each of lubricating oil, fuel, and combustion-air filters.

HOUSING: None

26 2413 SWITCHBOARDS

ACADEMIC & GENERAL: None

ATHLETICS: Furnish fuses equal to 10 percent of quantity installed for each size and type, but no fewer than three of each size and type. Furnish indicating lights equal to 10 percent of quantity installed for each size and type, but no fewer than one of each size and type.

HOUSING: None

26 2416 PANELBOARDS

ACADEMIC & GENERAL: None

ATHLETICS: Furnish two spare keys for each type of panelboard cabinet lock. Furnish two spare circuit breakers Including GFCI and GFEP for each panelboard. Furnish fuses for fused switches equal to 10 percent of quantity installed for each size and type, but no fewer than three of

each size and type. Furnish fuses for Fused Power-Circuit Devices equal to 10 percent of quantity installed for each size and type, but no fewer than three of each size and type.

HOUSING: None

26 2726 WIRING DEVICES

ACADEMIC & GENERAL: None

ATHLETICS: Floor Service-Outlet Assemblies: One for every 10, but no fewer than one.

HOUSING: None

26 2813 FUSES

ACADEMIC & GENERAL: None

ATHLETICS: Fuses: Equal to 10 percent of quantity installed for each size and type, but no fewer than three of each size and type.

HOUSING: None

26 2816 ENCLOSED SWITCHES AND CIRCUIT BREAKERS

ACADEMIC & GENERAL: None

ATHLETICS: Fuses equal to 10 percent of quantity installed for each size and type, but no fewer than three of each size and type. Two for each size and type of Fuse Pullers.

HOUSING: None

26 2913 ENCLOSED CONTROLLERS

ACADEMIC & GENERAL: None

ATHLETICS: Furnish one spare fuse for every ten installed, but no fewer than one set of three of each type and rating. Furnish two of each type and color of indicating light installed. Furnish fuses of fused switched equal to 10 percent of quantity installed for each size and type, but no fewer than three of each size and type. Furnish control power fuses equal to 10 percent of quantity installed for each size and type, but no fewer than two of each size and type. Furnish one spare(s) auxiliary contacts for each size and type of magnetic controller installed. Furnish three spare(s) power contact for each size and type of magnetic contactor installed.

HOUSING: None

26 2923 VARIABLE-FREQUENCY MOTOR CONTROLLERS

ACADEMIC & GENERAL: None

ATHLETICS: Furnish power fuses equal to 10 percent of quantity installed for each size and type, but no fewer than three of each size and type. Furnish Control Power Fuses equal to 10 percent of quantity installed for each size and type, but no fewer than two of each size and type. Furnish two indicating lights for each type and color installed. Furnish one spare(s) auxiliary contact for each size and type of magnetic controller installed. Furnish three spare Power Contact for each size and type of magnetic contactor installed.

HOUSING: None

26 3213 ENGINE GENERATORS

ACADEMIC & GENERAL: None

ATHLETICS: Furnish one fuse for every 10 of each type and rating, but no fewer than one of each. Furnish two indicator lamps for every six of each type used, but no fewer than two of each. Furnish one set of lubricating oil, fuel, and combustion-air filters.

HOUSING: None

26 3323 CENTRAL BATTERY EQUIPMENT FOR EMERGENCY LIGHTING

ACADEMIC & GENERAL: None

ATHLETICS: Furnish on fuse for every 10 of each type and rating, but no fewer than one of each type. Furnish one output circuit breaker for every 10 of each type and rating, but no fewer than one of each type. Furnish one Output Circuit Breaker Open/Tripped Alarm Contacts for every 10 supplied, but no fewer than one of each type. Furnish one complete set of Cabinet Ventilation Filters. Furnish one space circuit board for each critical circuit.

HOUSING: None

26 5100 INTERIOR LIGHTING – NON LED

ACADEMIC & GENERAL: None

ATHLETICS: Furnish one ballast/driver for every 100 of each type and rating installed. Furnish ten fluorescent lamps for every 100 of each type and rating installed. Furnish one diffuser and lens for every 100 of each type and rating installed. Furnish one Fluorescent-luminaire-mounted emergency battery pack for every 20 emergency lighting unit installed. Furnish one set of Globes and Guards for every 20 of each type and rating installed. Furnish at least one of each type for all items requested.

HOUSING: None

26 5119 INTERIOR LIGHTING – LED

ACADEMIC & GENERAL: None

ATHLETICS: Furnish one set of Globes and Guards for every 20 of each type and rating installed. Furnish at least one of each type for all items requested

HOUSING: None

26 5219 EXIT SIGNS

ACADEMIC & GENERAL: None

ATHLETICS: Furnish one Luminaire-mounted, emergency battery pack for every 20 emergency lighting units. Furnish one diffusers and lens for every 100 of each type and rating installed. Furnish one Globe and Guard for every 20 of each type and rating installed. Furnish at least one of each type for all items requested.

HOUSING: None

26 5600 EXTERIOR LIGHTING

ACADEMIC & GENERAL: None

ATHLETICS: Furnish 10 Lamps for every 100 of each type and rating installed. Furnish one Diffuser and Lens for every 100 of each type and rating installed. Furnish one Ballast for every 100 of each type and rating installed. Furnish at least one of each type for all items requested.

HOUSING: None

26 5626 SPORTS FIELD LIGHTING

ACADEMIC & GENERAL: None

ATHLETICS: None

HOUSING: None

Division 28 - ELECTRONIC SAFETY AND SECURITY

28 3111 DIGITAL, ADDRESSABLE FIRE-ALARM SYSTEM

ACADEMIC & GENERAL: Handled by ODU contractor

ATHLETICS: Furnish Strobe Units equal to 10 percent of amount installed, no more than 10. Furnish Smoke Detectors and Heat Detectors equal to 10 percent of amount of each type installed, no more than 10. Furnish Detector Bases equal to 2 percent of amount of each type installed. Furnish one extra set of Keys and Tools for access to locked and tamper-proofed components. Furnish two fuses of each type installed in the system. Furnish Lamps for Remote Indicating Lamp Units equal to 10 percent of amount installed, but no fewer than 1 unit. Furnish one Audible and Visual Notification Appliances of each type installed. Furnish at least one of each type for all items requested.

HOUSING: Handled by ODU contractor

Division 32 – EXTERIOR IMPROVEMENTS

321813 SYNTHETIC GRASS SURFACING

ALL: Turf for future repairs furnish material that may be roll ends or cutoffs; however, each piece of fabric shall be at least 5' x 10' with at least one piece of the primary turf being at least 10' x 15'. Furnish 500 square feet, minimum, of the field turf and 100 linear feet of the line turf, minimum.

BUILDING FACT SHEET

October 12, 2018

BUILDING No.: 0000

BUILDING NAME:

BUILDING ADDRESS: # Street, City, VA Zip

FAACS NUMBER: 2210127

PROJECT CODE: 00000-000 (Official Number excluding the 221)

SUBSTANTIAL COMPLETION DATE:

BUILDING OCCUPANCY TYPE:

CONSTRUCTION TYPE:

BUILDING VALUE: Final Construction Cost

FF&E: Final FF&E Cost

DESIGN LOADS:

Seismic:
Floor:
Wind:

OCCUPANT LOAD: Total Building Design Occupant Load

FIRE SAFETY: Sprinkler System Type

NUMBER of FLOORS: 3

BUILDING FOOT PRINT (GSF) Total GSF

Building Footprint GSF includes all exterior occupiable spaces, including unenclosed space such as dinning terraces or loading docks

GROSS SQUARE FOOTAGE (gsf): Total GSF

Level 1: GSF
Level 2: GSF
Level 3: GSF

GSF is taken from the outside side face of exterior wall, with cut outs removed (open to below areas).

ASSIGNABLE SQUARE FOOTAGE (asf): **Total ASF**

Level 1: ASF
Level 2: ASF
Level 3: ASF

ASF excludes all rooms numbered in the 9000's, i.e. non-departmental space

USABLE SQUARE FOOTAGE (sf): **Total SF**

Level 1: SF
Level 2: SF
Level 3: SF

All interior areas excluding walls and mechanical shafts that can be used. Note: Elevator shafts are included in the usable space.

BUILDING HEIGHT: Ground plane to highest parapet in Feet – Inches

Level 1: Floor to Floor Height
Level 2: Floor to Floor Height
Level 3: Floor to Floor Height

1ST FLOOR FINISHED FLOOR ELEVATION: **9.6 +/-**

FLOOD ZONE:

PRESSURE VESSEL:

ELECTRONIC DRAWING: Identify the file type and year for the as built drawings/model.

HISTORY:

Substantial completion and occupancy of building in YYYY.

INSERT PICTURE OF CURRENT BLDG AT COMPLETION	INSERT PICTURE OF CURRENT BLDG AT COMPLETION

Addition

(xxx)

Renovation

(xxx)

ADA

(xxx)

Maintenance:

(xxx)

DESIGN TEAM:

Room Numbering Procedures

L.01. **Purpose:** The purpose of these procedures is to standardize the room numbering system for Old Dominion University's facilities, while (1) providing a fluid traffic flow for the occupants and guests within a building, (2) setting final room numbers PRIOR to construction, (3) creating direct agreement between the University's capital construction documents and its Facilities Inventory and (4) correlating the room numbers to the FICM codes required to be tracked for University and state reporting. See **APPENDIX AE – FICM CODES** for reference. The FICM codes are broken down into two main categories: assignable and non-assignable space. Keeping this in mind when numbering the building and locating room separation lines within the BIM model will go a long way to getting the building numbered correctly. Not every space is listed in the FICM codes, but the list gives you an idea of how things are categorized. It is not the intent to have the A/E assign FICM codes to each space, the list is provided for reference only.

a. These procedures apply to two (2) groups of university buildings:
    i. Office/Academic/Research/Athletic Buildings
    ii. Residence Halls/Dormitories/Other Residences.

L.02. **Implementation:** Prior to the **Preliminary Design Submittal** the A/E shall submit a copy of the floor plans numbered per this procedure to the project specific University Project Manager for review and approval by the University Space Manager. Allow at least two weeks for review and comment. The plans shall also indicate the proposed room name for each space.

a. Refer to **APPENDIX J- ROOM SIGNAGE** for standard room signs.

L.03. Office/Academic/Research/Athletic Buildings:

a. Room Types: There are two versions of the room numbers.
    i. Those to designate an actual *room assignable to a user*. ("users" include departmental rooms, offices, assembly spaces)
    ii. Those to designate *building common area space or non-assignable space* (i.e. stairs, hallways, vestibules, electrical rooms, mechanical rooms, etc.).

L.04. Residence Halls**:**

a. Follow the same general organization and system as academic buildings except for the following:
    i. Room Numbers should stack, floor to floor.
    ii. Even numbers shall all be on one side of the hall, odd on the opposite, consistently floor to floor.
    iii. Where the building naturally defines itself as two wings by virtue of the layout, number to rooms in clusters, such as 1 – 200 on one side and 300 – 400 on the other, or similar. Allowing clear signage similar to a hotel directing visitors to the right stair/elevator core within the building.

L.05. Composition:

a. The room number will be a four character numeric with the option of one additional alpha character.
    i. In the case of a *room assignable to a user*, the first character shall indicate the floor of the building (1, 2, 3, etc.). For *building common area space* the first character shall be a "9" to indicate that the room or area is part of the building common area.
    ii. The second character will be used either (1) to indicate an area/wing of the building or in association with the third and fourth characters to create a three digit room number in the case of a *room assignable to a user* or (2) to indicate the floor of the building the *building common area room/space* is located on.

iii. The third and fourth characters will simply be sequential room numbers for *rooms assignable to a user*. In the case of *building common area space/room* numbers these will run sequentially from one side of the building to the opposite side.

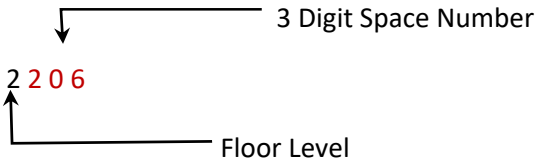
iv. For rooms *assignable to a user*, the fifth character, the alpha, will be used to indicate a room within a room, which has no access to a common area hallway. When a *building common area* space/room is a room within a room, the alpha characters below will be used, NOT an A or B to designate a sub room.

b. For *building common area space/rooms (including stairs and elevators)* the following alpha characters are not optional and will be used to indicate the use of the room/area:

Space	**Room Name**	**Alpha Character in Room Number**
Stairs, both egress and communicating stairs	STAIR A, STAIR B, etc.	S
Hallways/Corridors Entry Vestibules	CORRIDOR VESTIBULE	H
Data and/or Telecommunications rooms	COMMUNICATIONS	D
Mechanical Spaces including fire pump rooms, Utility entrance rooms etc.	MECHANICAL UTILITY FIRE PUMP	M
Electrical Rooms	ELECTRICAL	E
Elevator Equipment/Machine Rooms	ELEVATOR EQUIP ROOM	L
Elevator	ELEVATOR	V
Rest Room** Men's Women's Gender Neutral Family	MEN WOMEN INCLUSIVE RESTROOM FAMILY	R
Custodial or Housekeeping rooms	HOUSEKEEPING	J
Audio Visual Equipment Rooms	AV	P
Loading Docks Receiving	LOADING DOCK RECEIVING	F
Recycling Rooms	RECYCLING	G
Building Storage Rooms – non assignable	BLDG STG	T
Public building Locker or shower rooms	LOCKERS SHOWERS	X

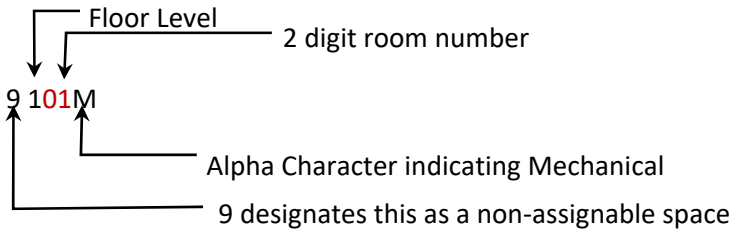
L.06. Examples:

Assignable Spaces



Non-Assignable Spaces

Building Common Area Spaces



L.07. NOTE: All room numbers that begin with a 9 for *building common area* space/rooms will ALSO be followed by an alpha character. (i.e. a warming kitchen would have a regular room designation as it is used by and assigned to the department using the building, even though it might be located in the building core. If the A/E has any questions, highlight these in the initial submission of the building's room names and numbers for university review.

** Public Restrooms are non-assignable spaces and receive a 9000 number. While most restrooms are non-assignable, in some cases the rest room is an assignable space and should receive a regular room such as a rest room accessed from a locker room, and for the specific use of an individual or group of individuals such as coaches or teams.

L.08. **Room Names:**

a. *Rooms assignable to a user* shall be named per the space program. *Building common area spaces* shall be specifically named per the guidelines above:

b. Elevators shall be numbered (i.e. Elevator 1, and Elevator 2) and corresponding space number should reflect this (i.e. 9101V, 9102V)

c. Stairs shall be designated by a letter for each stair. (i.e. Stair A, Stair B) and the corresponding space number should reflect this (i.e. 910AS, 910BS)

ROOM NUMBERING PROCEDURES:
Room numbers shall be assigned according to Appedix L - Room Number Procedures and shall be complete and signed off on by ODU prior to the Preliminary Design Submittal.

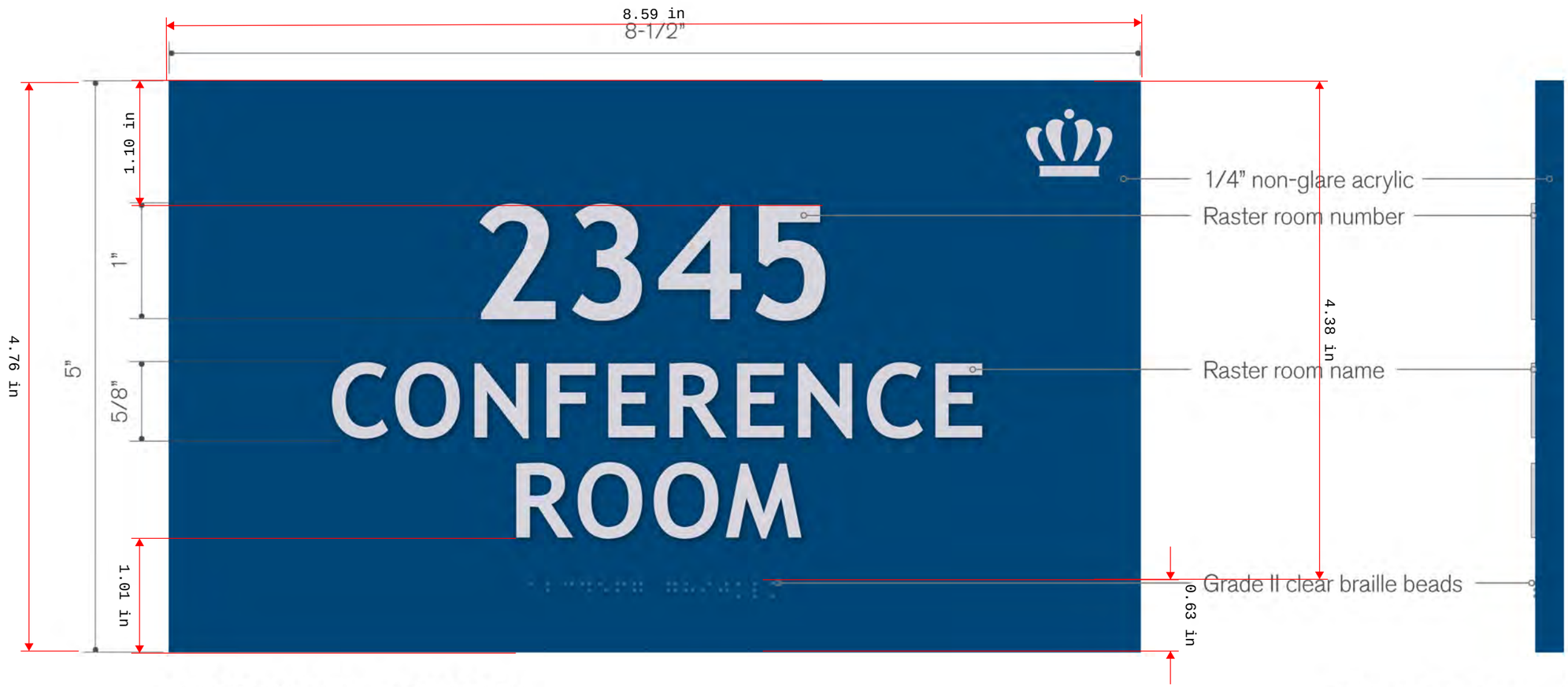
ROOM SIGNAGE PROCEDURES:
The A/E shall indicate, in the Working Drawing Submittal, the location of all signs. Standard room signs can be covered via a note, general graphic or schedule, but all other signage, such as directories, overhead signs, wall mounted exit signage, evacuation signage, etc. shall be located in plan and shown on interior elevations when appropriate.

The A/E shall review the signage shop drawings & submittals during construction and return a marked up copy to the University for final review and approval PRIOR to returning the submittal to the contractor. Allow two weeks for the University Project Manager and University Department Architect to process the submittal and return it to the A/E.

OLD DOMINION
UNIVERSITY

ROOM SIGNAGE SCHEDULE

A	ROOM ID Room Number & Room Name
B	ROOM ID SLIDER Room Number / Slider Insert Room Name
C1a	PICTOGRAM (Restroom) Women’s
C1b	PICTOGRAM (Restroom) Men’s
C1c	PICTOGRAM (Restroom) Inclusive
C1d	PICTOGRAM (Restroom) Family
C2	PICTORGRAM (Exit Stair)
C3	PICTOGRAM (In Case of Fire)
D	MAX OCCUPANCY
E	EXIT
F	EXIT STAIR - Code required Interior Exist Stair Signs
G	WASH HANDS - Employees must wash hands
H	ROOM ID - Room Name Only (Building Support Rooms) or Room Number Only (IT/Data Spaces)
J1	SPRINKLER CONTROL VALVE
J2	FDC
J3	SPRINKLER ROOM



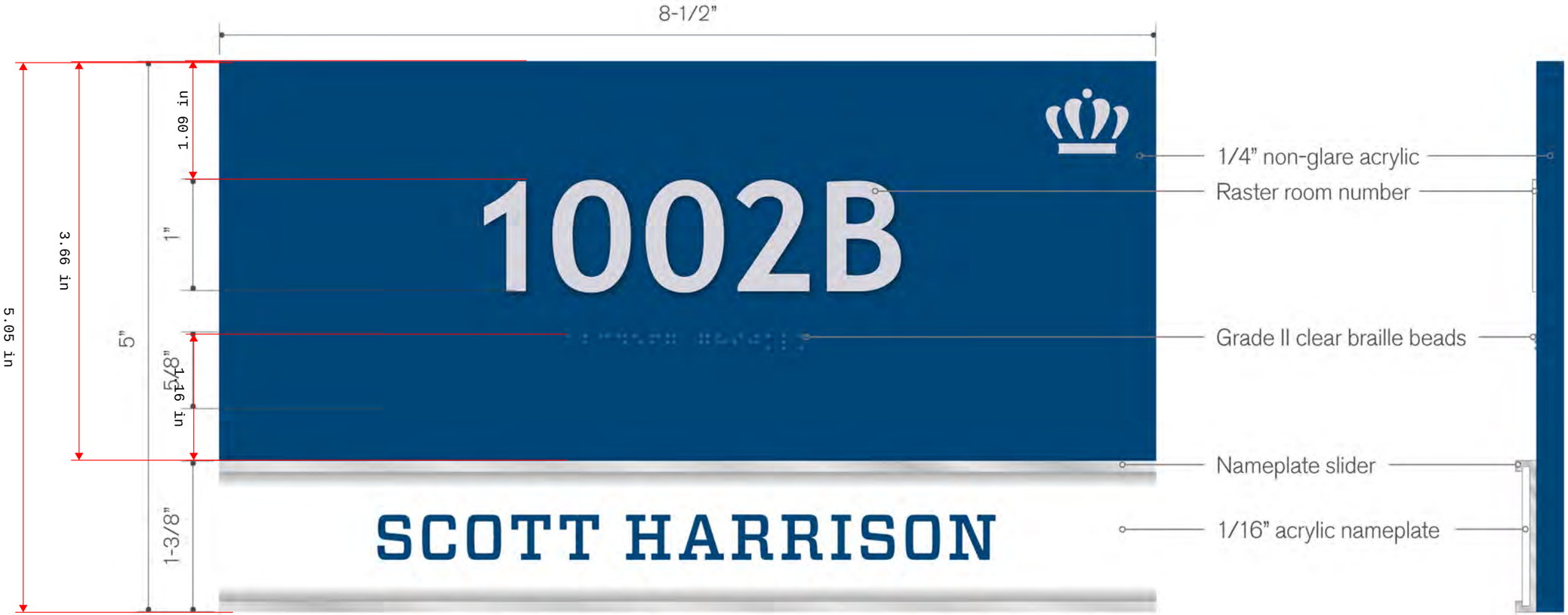
SIGN TYPE A - ROOM ID

1/4" clear non-glare acrylic base, second-surface print, 1/32" gray raised raster numbering/lettering. Grade II clear braille beads. Adhesive mount.

Rowmark 306 - Pearl Gray for Raised Letters

FONT Trebuchet MS

SIGN TYPE A - SIDE VIEW



SIGN TYPE B - SLIDER ID

1/4" clear non-glare acrylic base, second-surface print, 1/32" gray raised raster numbering/lettering. Grade II clear braille beads. Satin anodized nameplate slider. 1/16" acrylic nameplate, etch and paint PMS 540 and white. Adhesive mount.

FONT Trebuchet MS

SIGN TYPE B - SIDE VIEW

SIGN TYPE C1 - ROOM ID

1/4" clear non-glare acrylic base, second-surface print, 1/32" gray raised raster lettering/pictogram. Grade II clear braille beads. Grade II clear braille beads. Adhesive mount.

SIGN TYPE C - SIDE VIEW

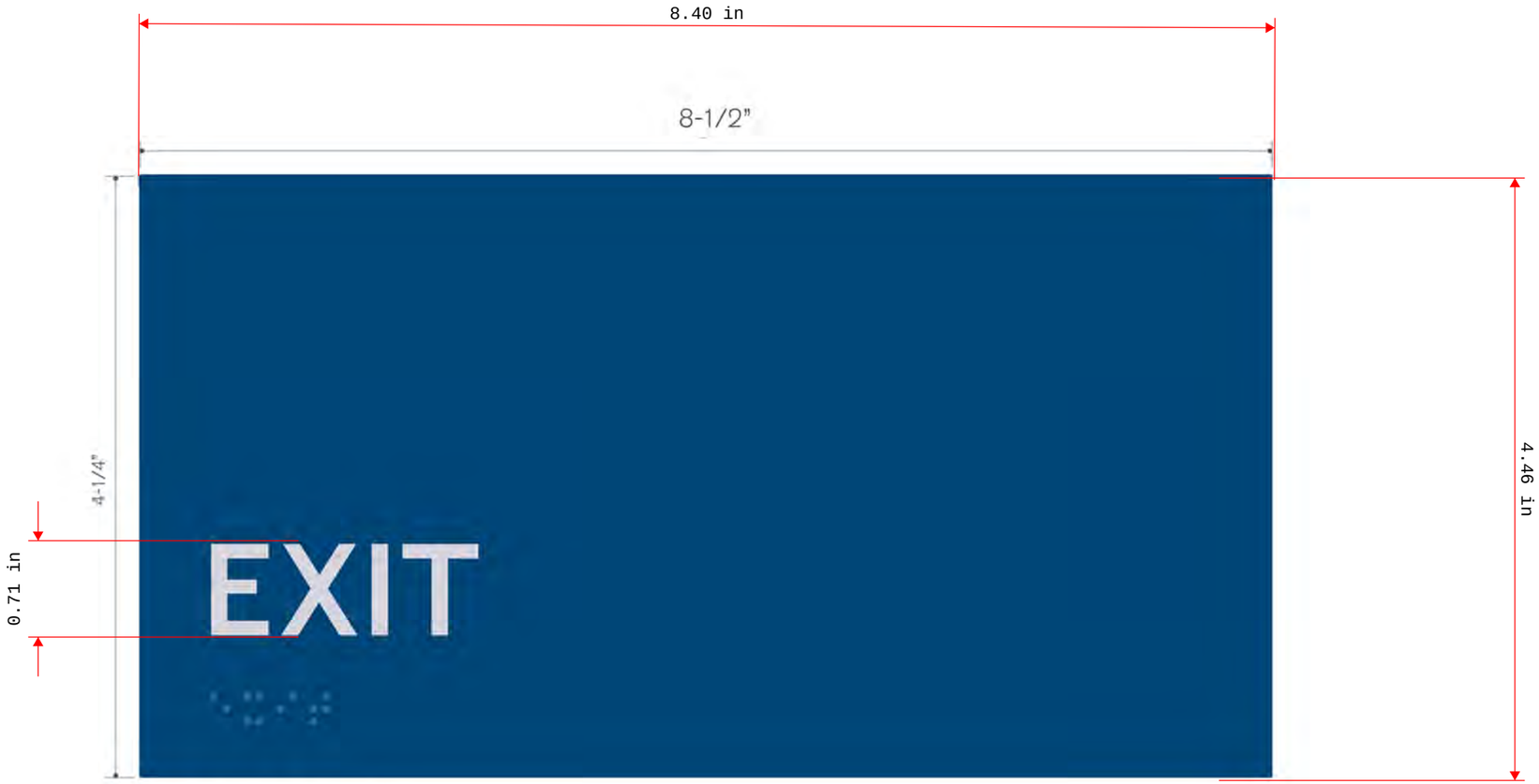
SIGN TYPE C1b

SIGN TYPE C1c

SIGN TYPE C1d

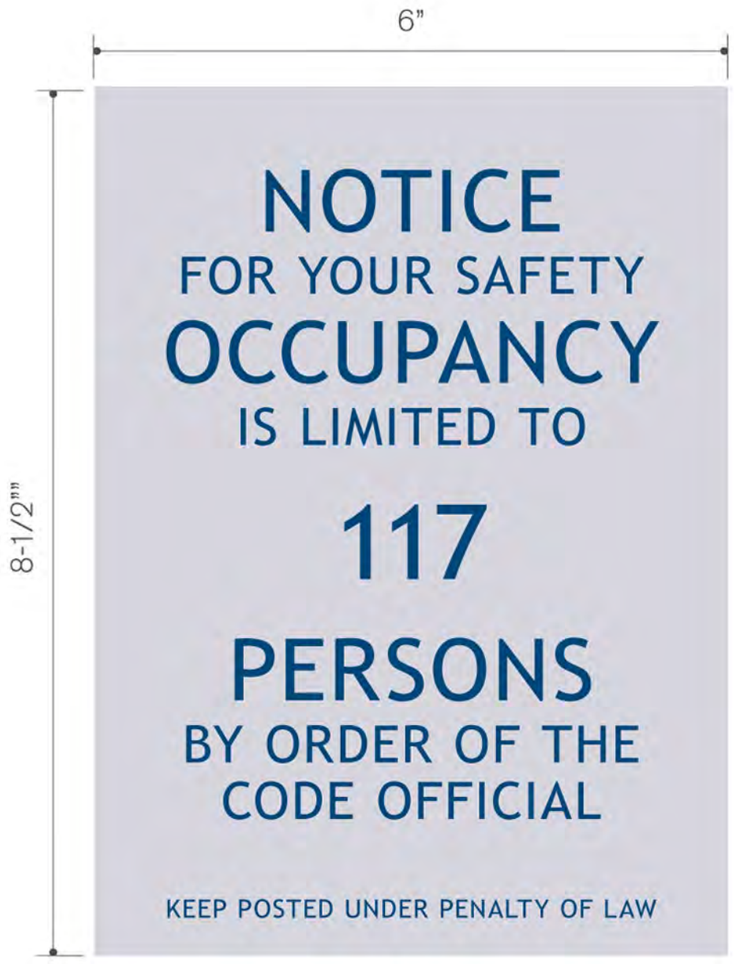
SIGN TYPE C2 - IN CASE OF FIRE

SIGN TYPE C3 - EXIT STAIR



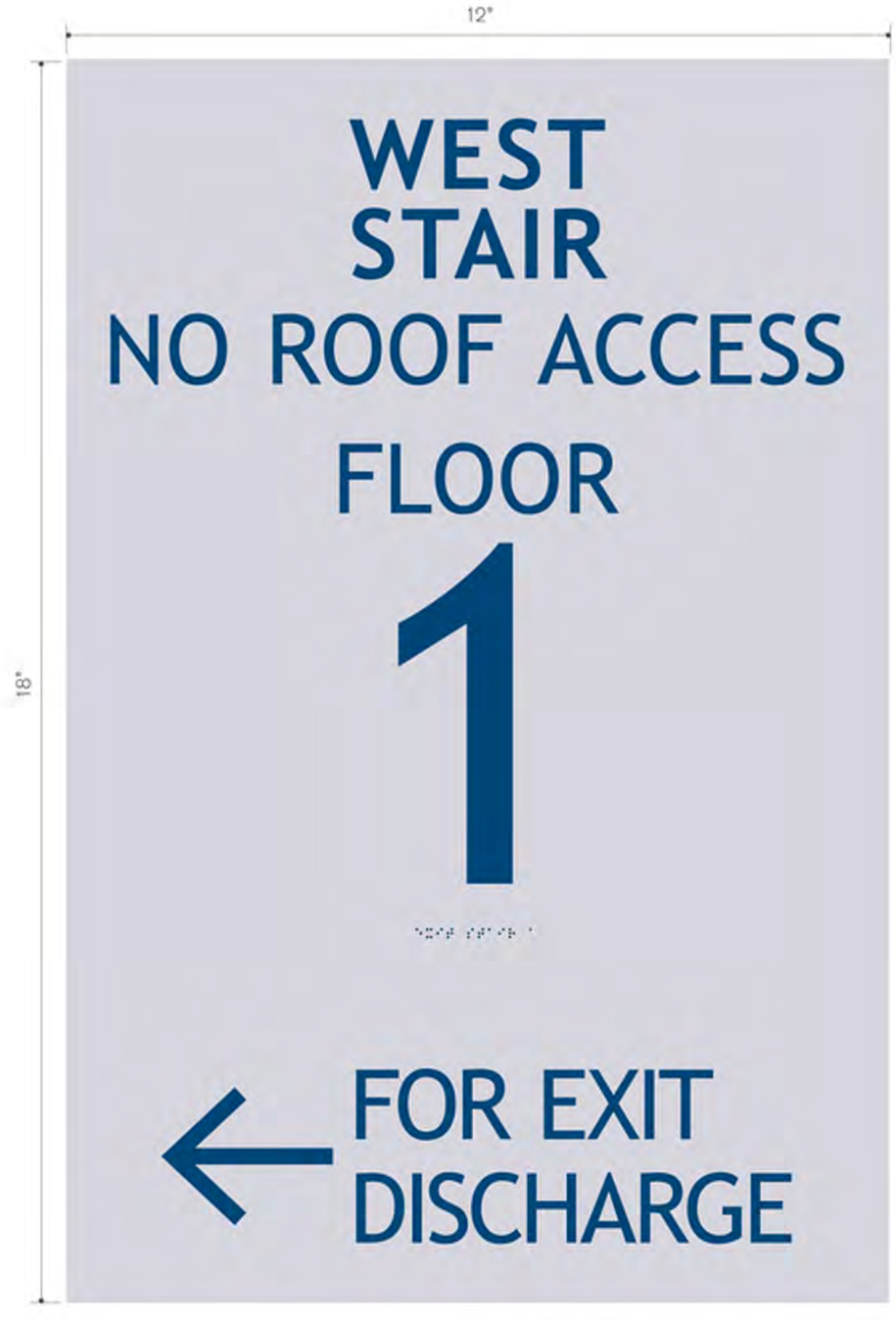
SIGN TYPE D EXIT

1/4" acrylic base, direct print, raster lettering, clear braille beads. Adhesive mount.



SIGN TYPE E MAX OCCUPANCY

1/8” ACM, direct print graphics. Adhesive mount.



SIGN TYPE F EXIT STAIR

1/4" acrylic base, direct print, raster lettering, clear braille beads. Adhesive mount.
Letters and arrow shall be raised 1/32"

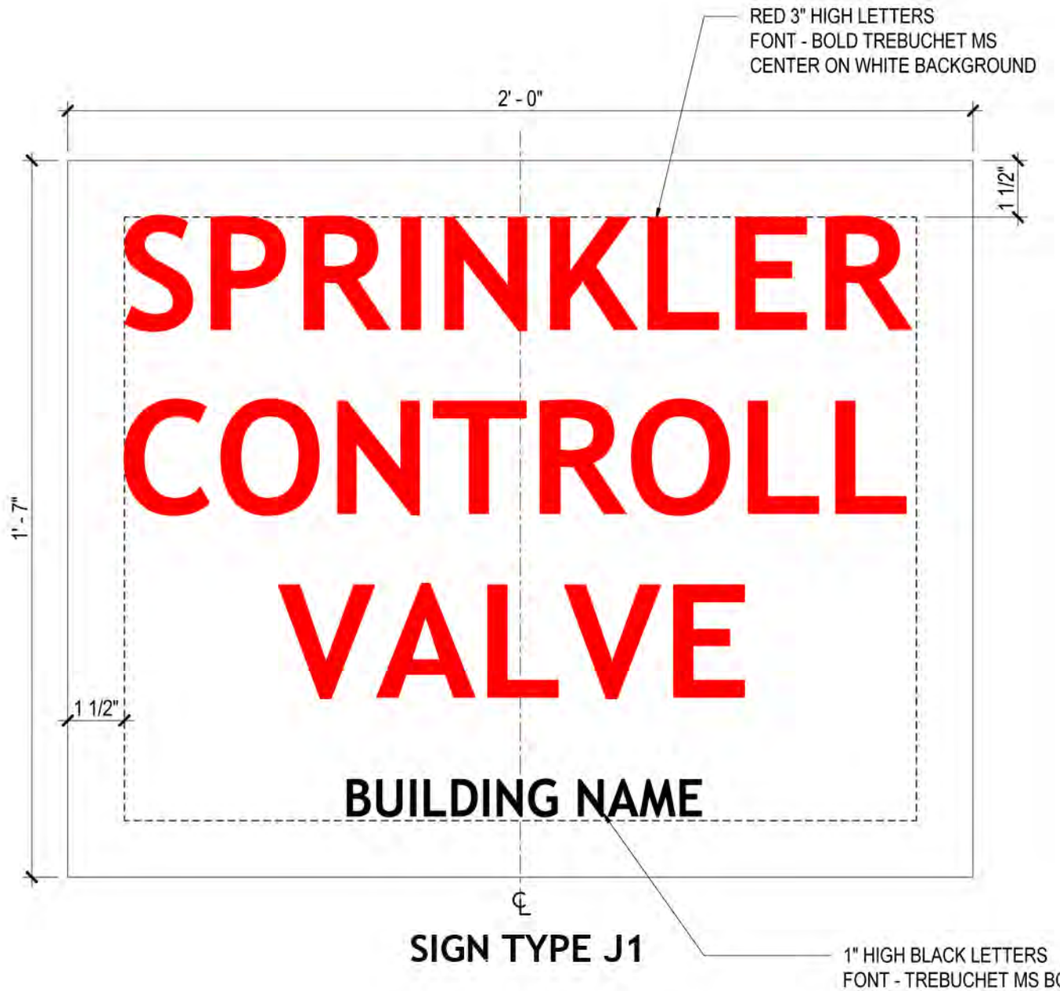
SIGN TYPE G - WASH HANDS

1/8" direct print ACM. Adhesive mount.

SIGN TYPE H - ROOM ID

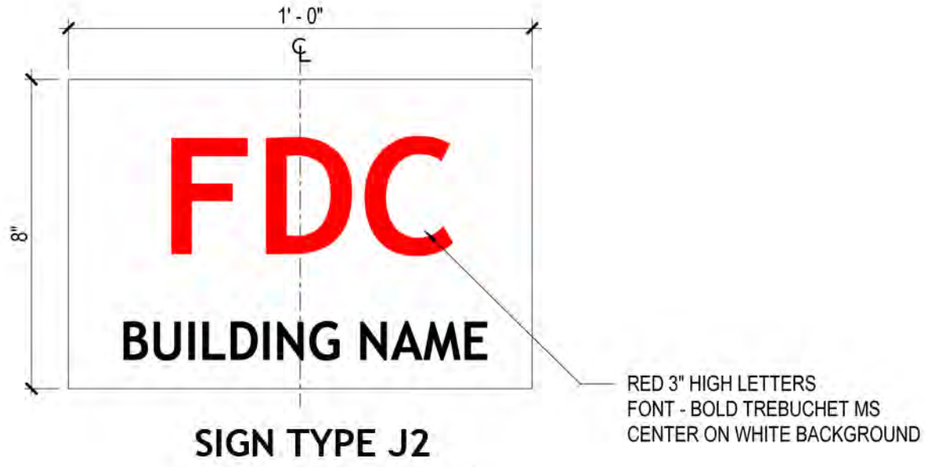
1/4" clear non-glare acrylic base, second-surface print, 1/32" gray raised raster numbering/lettering. Grade II clear braille beads. Adhesive mount.

SIDE VIEW



SIGN TYPE J1

NOTE: DIMENSIONS ARE APPROXIMATE, COORDINATE FINAL DIMENSIONS AS APPROPRIATE FOR SPECIFIC INTERIOR BUILDING MOUNTING CONDITIONS. FONT TYPE AND LETTER HEIGHT TO REMAIN FIXED



SIGN TYPE J2

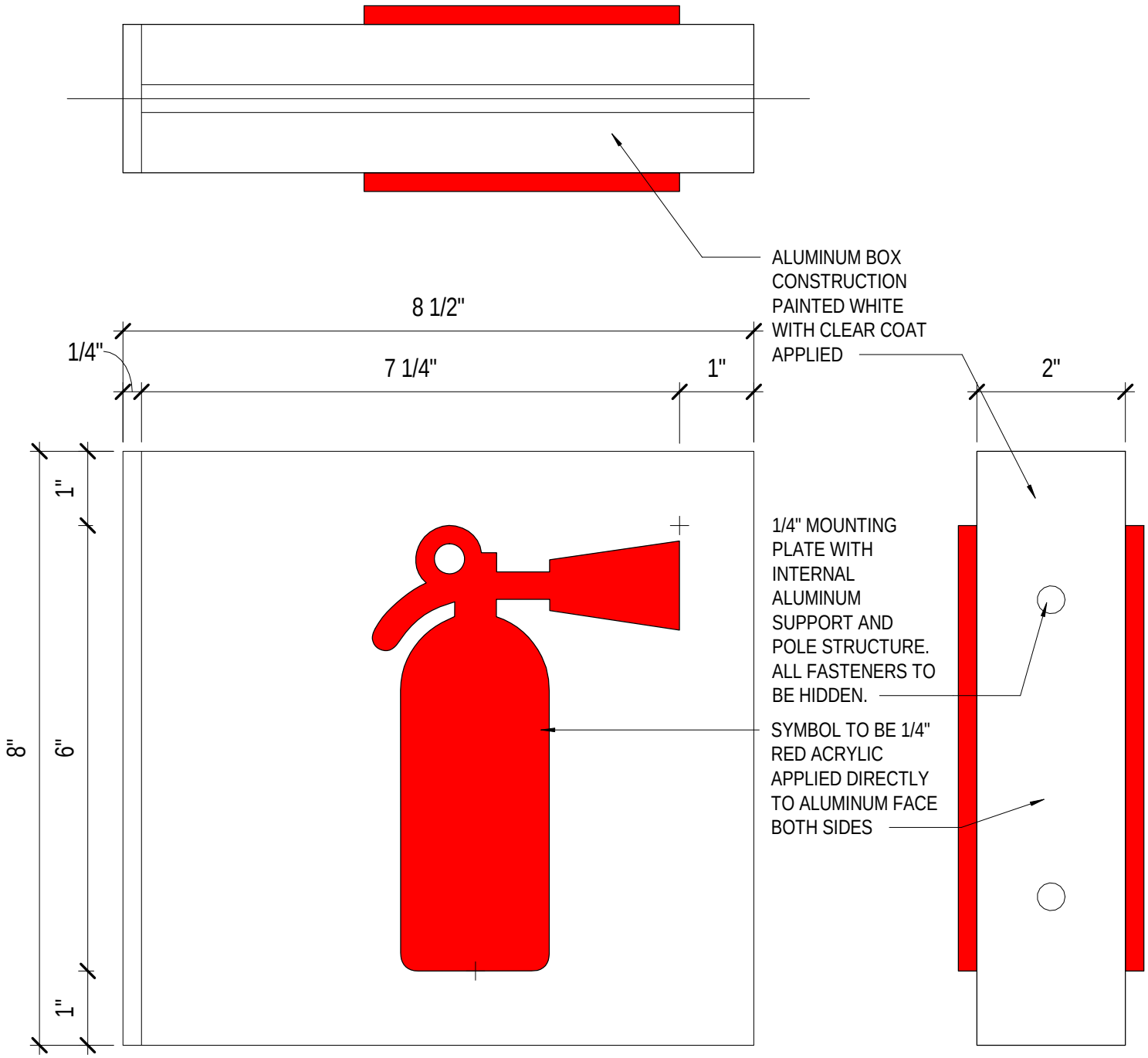
SIGN TYPE J3

NOTE: IF ADDITIONAL SIGNAGE IS REQUIRED TO DIRECT THE FIRE DEPARTMENT TO THE LOCATION OF THE SPRINKLER ROOM, SIGNAGE SHALL BE INLCUDED IN THE OVERALL SIGNAGE DRAWING PACKAGE.

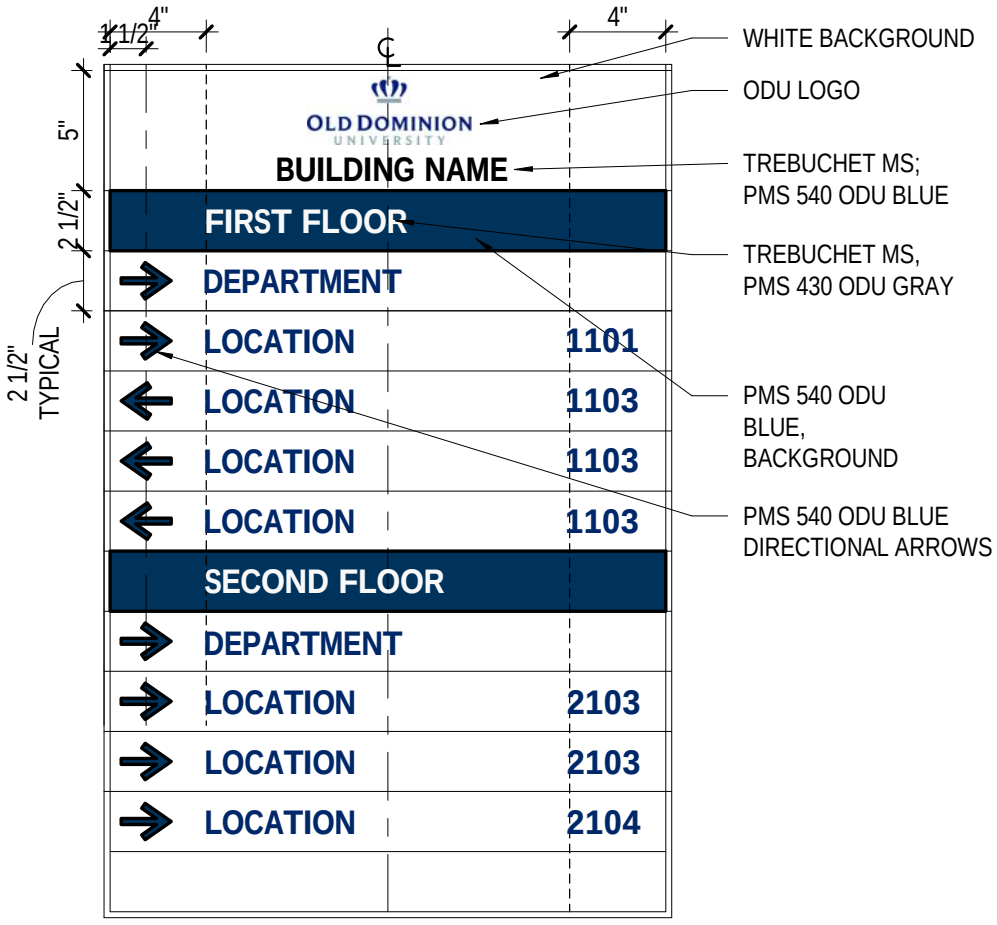
ALL EXTERIOR MOUNTED SIGNAGE SHALL BE SHOWN AND DIMENSIONED ON THE EXTERIOR ELEVATIONS IN THE PRELIMINARY DESIGN SUBMITTAL.

This is a non-smoking facility.
Smoking prohibited within 25 feet of the building

SIGN TYPE N
NO SMOKING DECAL

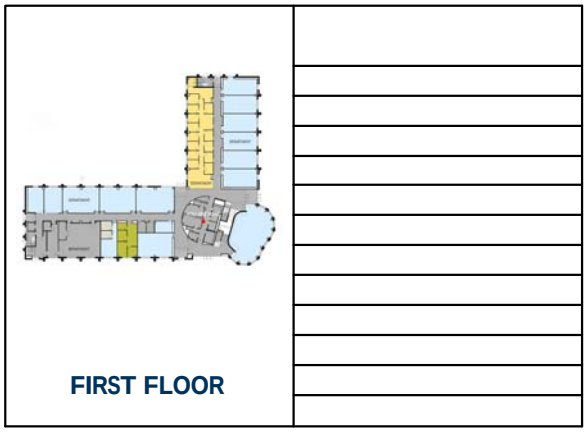


SIGN TYPE O
FIRE EXTINGUISHER

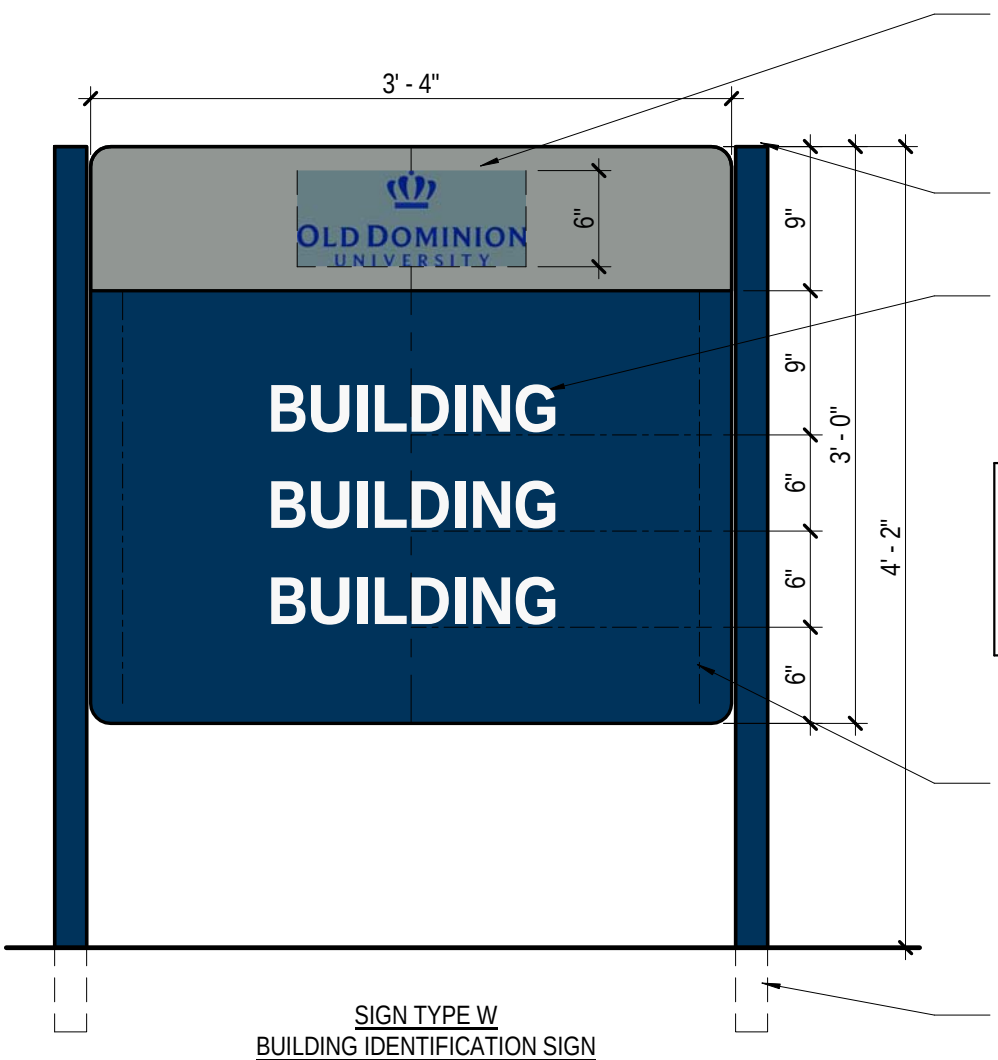


SIGN TYPE P
BUILDING DIRECTORIES

BASIS OF DESIGN
D600 VISTA D19 DIRECTORY WITH PRINTED INSERTS



PROVIDE A GRAPHIC PLAN ADJACENT TO EACH DIRECTORY
LOCATE THE "YOU ARE HERE" POINT
IDENTIFY MAJOR DEPARTMENTS WITH TEXT AND COLOR
IDENTIFY RESTROOMS WITH AN ICON
IDENTIFY MAJOR SPACES
BE SURE TO ORIENT THE MAP BASED ON THE RELATIVE POSITION OF THE PLAN AT THE YOU ARE HERE POINT,
DO NOT DEFULAT TO PLAN NORTH



ENGINEERING GRADE REFLECTIVE VINYL
GRAY BACKGROUND (PMS 430)
WITH ALL BLUE LOGO (PMS 540)

2" X 2" 1/4" THICK STEEL POSTS WITH RADIUS EDGES
TOP OF POST SHALL BE CLOSED WITH STEEL CAP

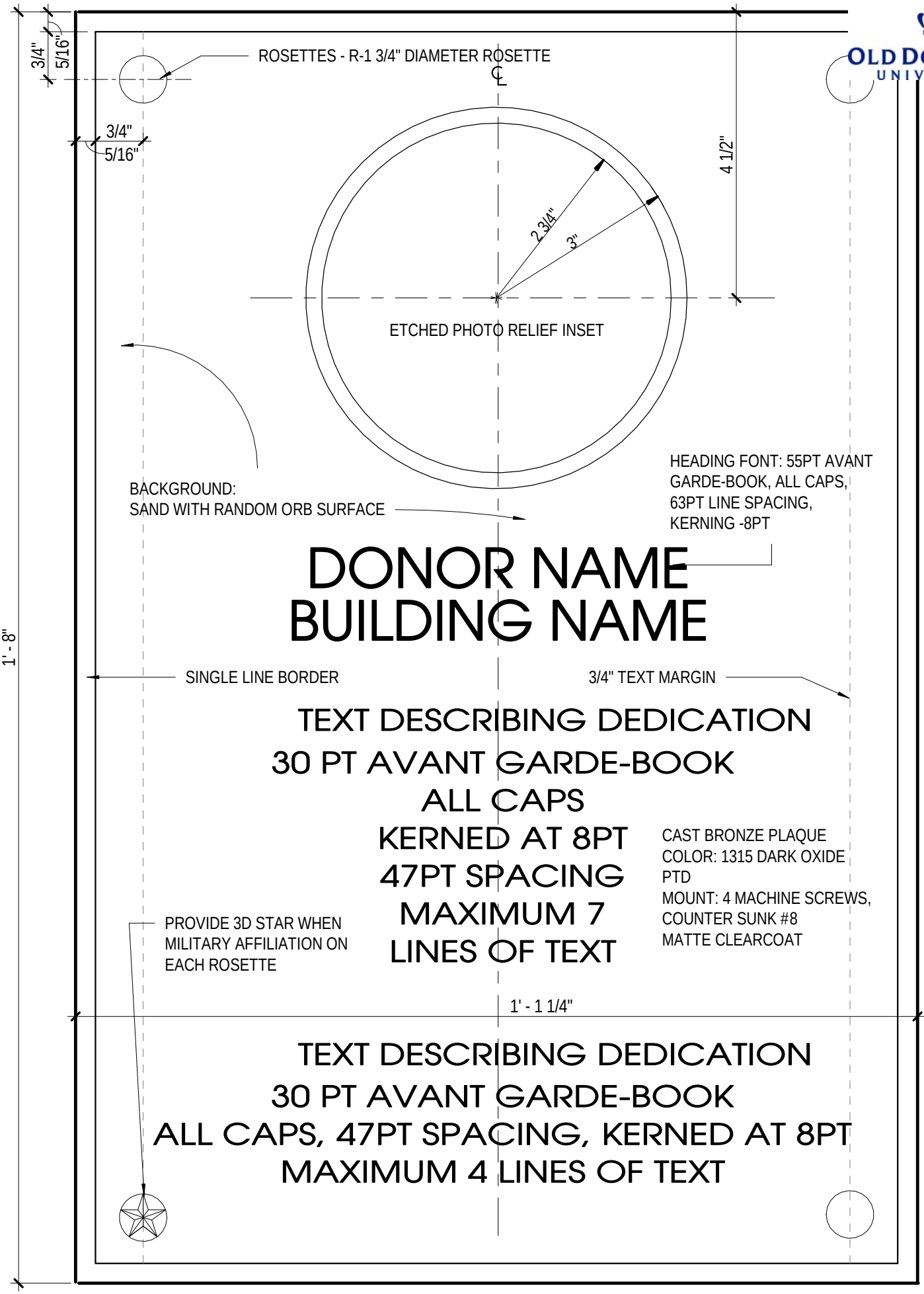
BUILDING NAME
3 1/2" TALL (MAXIMUM) LETTERS USING
ENGINEERING GRADE REFLECTIVE WHITE VINYL

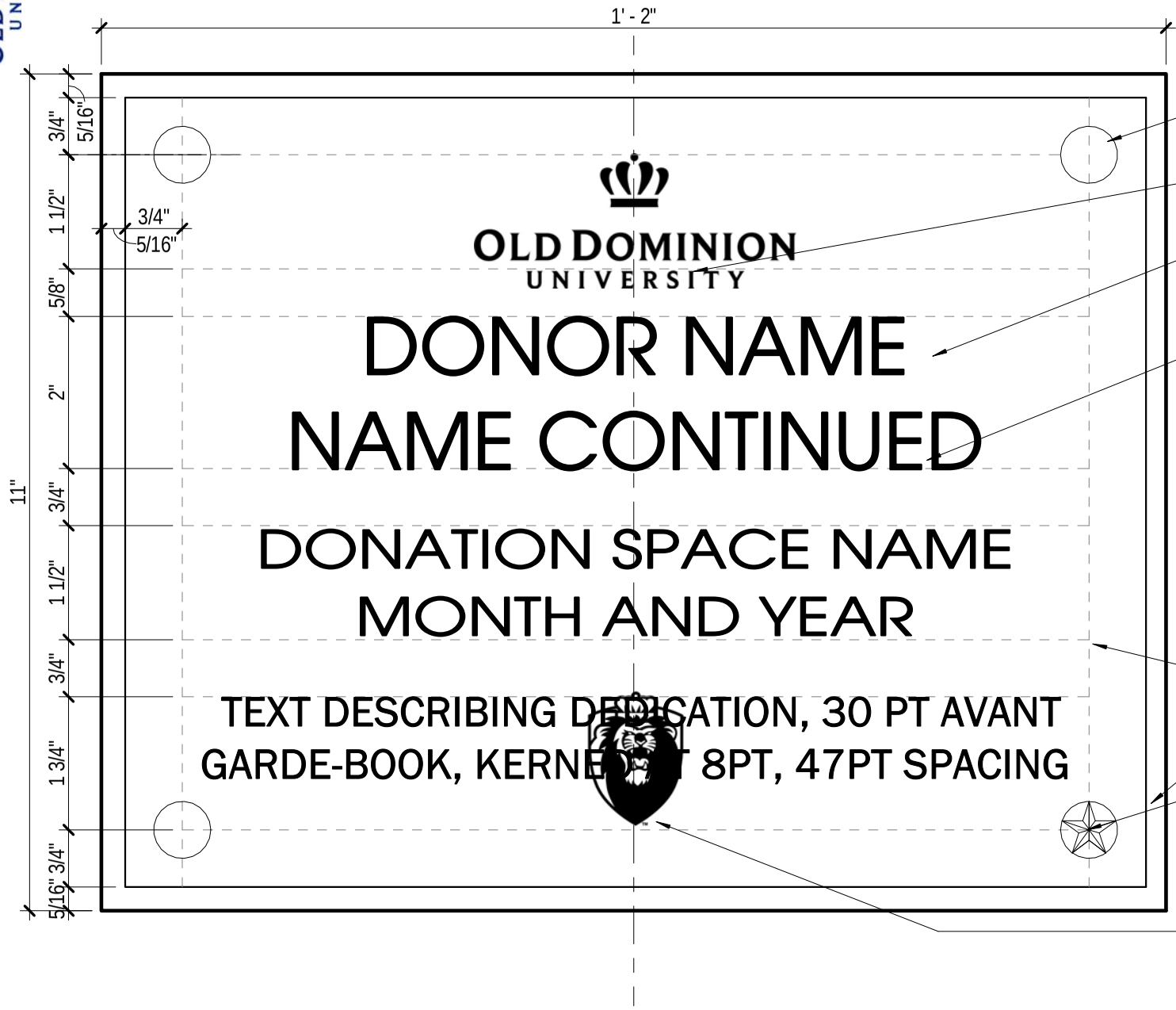
LETTERING HEIGHT AND WIDTH CAN BE ADJUSTED AS NEEDED TO ACCOMODATE BUILDING NAME. FINAL DESIGN TO BE APPROVED BY ODU, PRIOR TO FABRICATION

MAINTAIN A 2" MINIMUM MARGIN
ON RIGHT AND LEFT SIDES

EXTEND POSTS X" BELOW SURFACE
SET IN CONCRETE????

SIGN TYPE W
BUILDING IDENTIFICATION SIGN
PROVIDE A MINIMUM OFONE SIGN, POSSIBLE TWO BASED ON SITE PLAN
A/E TO LOCATE SIGNS IN RENDERINGS AND PLANS


ROSETTES - R-1 3/4" DIAMETER ROSETTE
3/4"
5/16"
3/4"
5/16"
4 1/2"
2 3/4"
3"
ETCHED PHOTO RELIEF INSET
BACKGROUND:
SAND WITH RANDOM ORB SURFACE
HEADING FONT: 55PT AVANT GARDE-BOOK, ALL CAPS, 63PT LINE SPACING, KERNING -8PT
DONOR NAME
BUILDING NAME
1' - 8"
SINGLE LINE BORDER
3/4" TEXT MARGIN
TEXT DESCRIBING DEDICATION
30 PT AVANT GARDE-BOOK
ALL CAPS
KERNED AT 8PT
47PT SPACING
MAXIMUM 7
LINES OF TEXT
CAST BRONZE PLAQUE
COLOR: 1315 DARK OXIDE PTD
MOUNT: 4 MACHINE SCREWS, COUNTER SUNK #8
MATTE CLEARCOAT
PROVIDE 3D STAR WHEN MILITARY AFFILIATION ON EACH ROSETTE
1' - 1 1/4"
TEXT DESCRIBING DEDICATION
30 PT AVANT GARDE-BOOK
ALL CAPS, 47PT SPACING, KERNED AT 8PT
MAXIMUM 4 LINES OF TEXT



ROSETTES - R-1 3/4" DIAMETER ROSETTE

ODU LOGO -

BACKGROUND: SAND WITH RANDOM ORB SURFACE

HEADING FONT: 60PT AVANT GARDE-BOOK, ALL CAPS

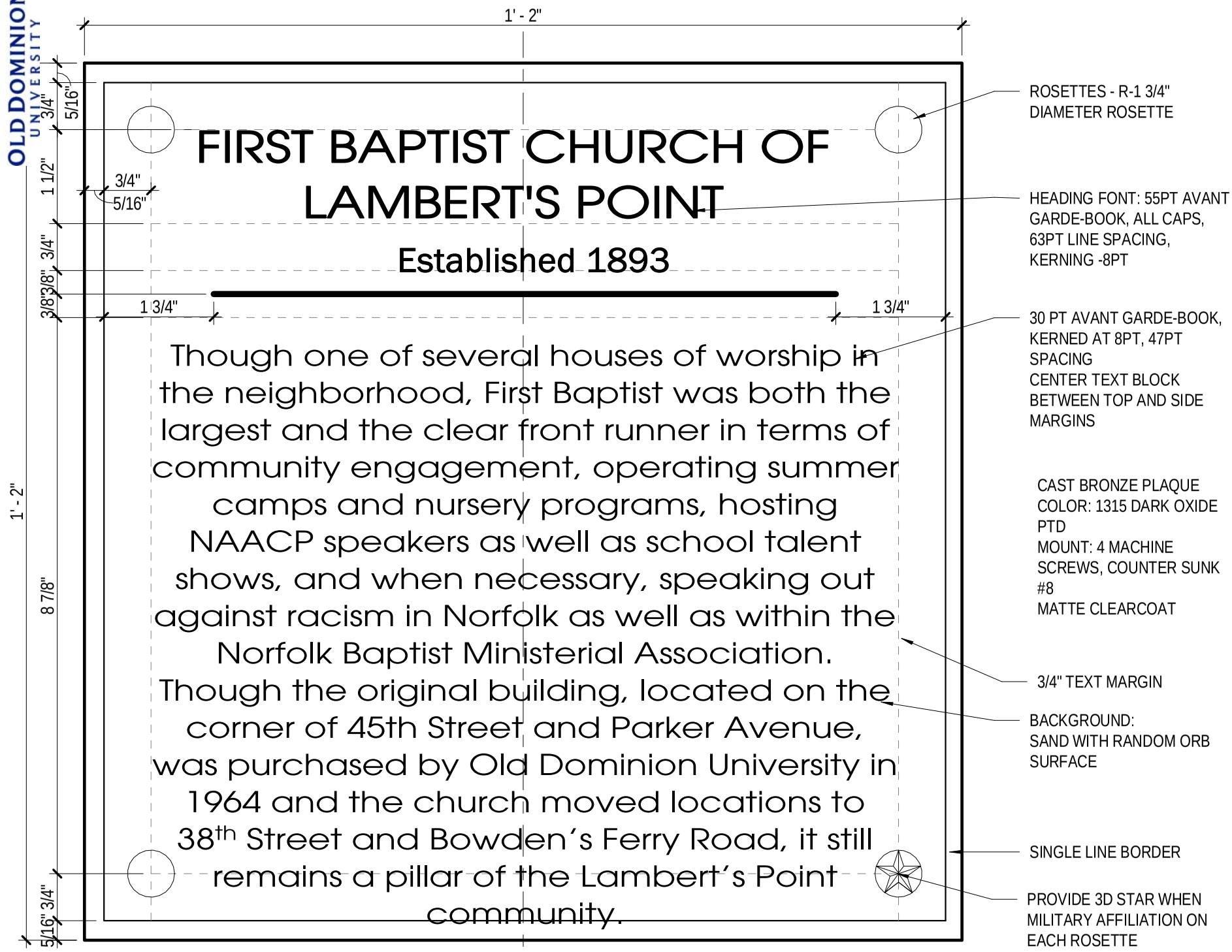
CAST BRONZE PLAQUE
COLOR: 1315 DARK OXIDE PTD
MOUNT: 4 MACHINE SCREWS, COUNTER SUNK #8
MATTE CLEARCOAT

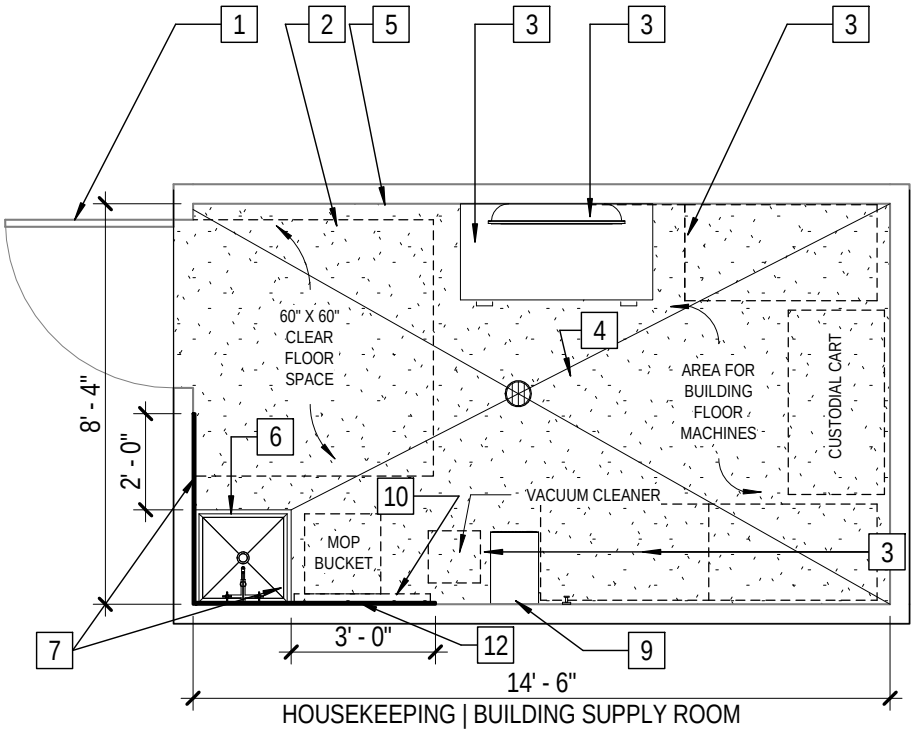
3/4" TEXT MARGIN

SINGLE LINE BORDER

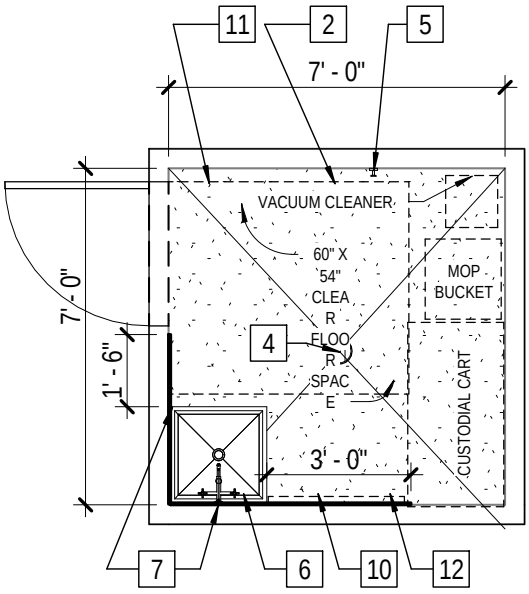
PROVIDE 3D STAR WHEN MILITARY AFFILIATION ON EACH ROSETTE

USE OF AN APPROVED ATHLETIC LOGO CAN BE USED IN PLACE OF TEXT WHEN DESIRED BY ATHLETICS


OLD DOMINION UNIVERSITY
1' - 2"
3/4"
5/16"
1 1/2"
3/4"
3/8"
3/8"
1 3/4"
1 3/4"
1' - 2"
8 7/8"
5/16"
3/4"
FIRST BAPTIST CHURCH OF LAMBERT'S POINT
Established 1893
Though one of several houses of worship in the neighborhood, First Baptist was both the largest and the clear front runner in terms of community engagement, operating summer camps and nursery programs, hosting NAACP speakers as well as school talent shows, and when necessary, speaking out against racism in Norfolk as well as within the Norfolk Baptist Ministerial Association. Though the original building, located on the corner of 45th Street and Parker Avenue, was purchased by Old Dominion University in 1964 and the church moved locations to 38th Street and Bowden's Ferry Road, it still remains a pillar of the Lambert's Point community.
ROSETTES - R-1 3/4" DIAMETER ROSETTE
HEADING FONT: 55PT AVANT GARDE-BOOK, ALL CAPS, 63PT LINE SPACING, KERNING -8PT
30 PT AVANT GARDE-BOOK, KERNED AT 8PT, 47PT SPACING
CENTER TEXT BLOCK BETWEEN TOP AND SIDE MARGINS
CAST BRONZE PLAQUE
COLOR: 1315 DARK OXIDE PTD
MOUNT: 4 MACHINE SCREWS, COUNTER SUNK #8
MATTE CLEARCOAT
3/4" TEXT MARGIN
BACKGROUND:
SAND WITH RANDOM ORB SURFACE
SINGLE LINE BORDER
PROVIDE 3D STAR WHEN MILITARY AFFILIATION ON EACH ROSETTE
HISTORIC MARKER | APPENDIX M - BUILDING SIGNAGE
07.09.2018



HOUSEKEEPING | BUILDING SUPPLY ROOM



HOUSEKEEPING CLOSET

1. 42" WIDE DOOR
2. MAINTAIN CLEAR FLOOR SPACE
3. PROVIDE 12 LINEAR FEET OF 24" DEEP OPEN METAL SHELVING PER 30,000 NET SQUARE FEET SHELVES TO BE A MINIMUM OF 18" HIGH
4. FLOOR DRAIN
5. ROBE HOOK, 1 PER 30,000 NSF IN HKG ROOM, 1 IN EACH HKG CLOSET
6. FLOOR MOUNTED MOP SINK
7. PROVIDE FRP PANELS BEHIND SINK - 4' AFF, 4' EACH SIDE OF SINK
8. HOSE BIB
9. 1 METAL LOCKER / 30,000 NSF
10. MOP HOLDER
11. 36" WIDE DOOR
12. 36"W x 24"H ALUMINUM FRAME NATURAL CORK BULLETIN BOARD; MOUNT ABOVE MOP HOLDER
13. WALL MOUNTED COMPUTER MONITOR OR LOCATE ON WALL SHELF.
14. PROVIDE A 48" DESK OR COUNTER FOR COMPUTER STATION.

OLD DOMINION UNIVERSITY

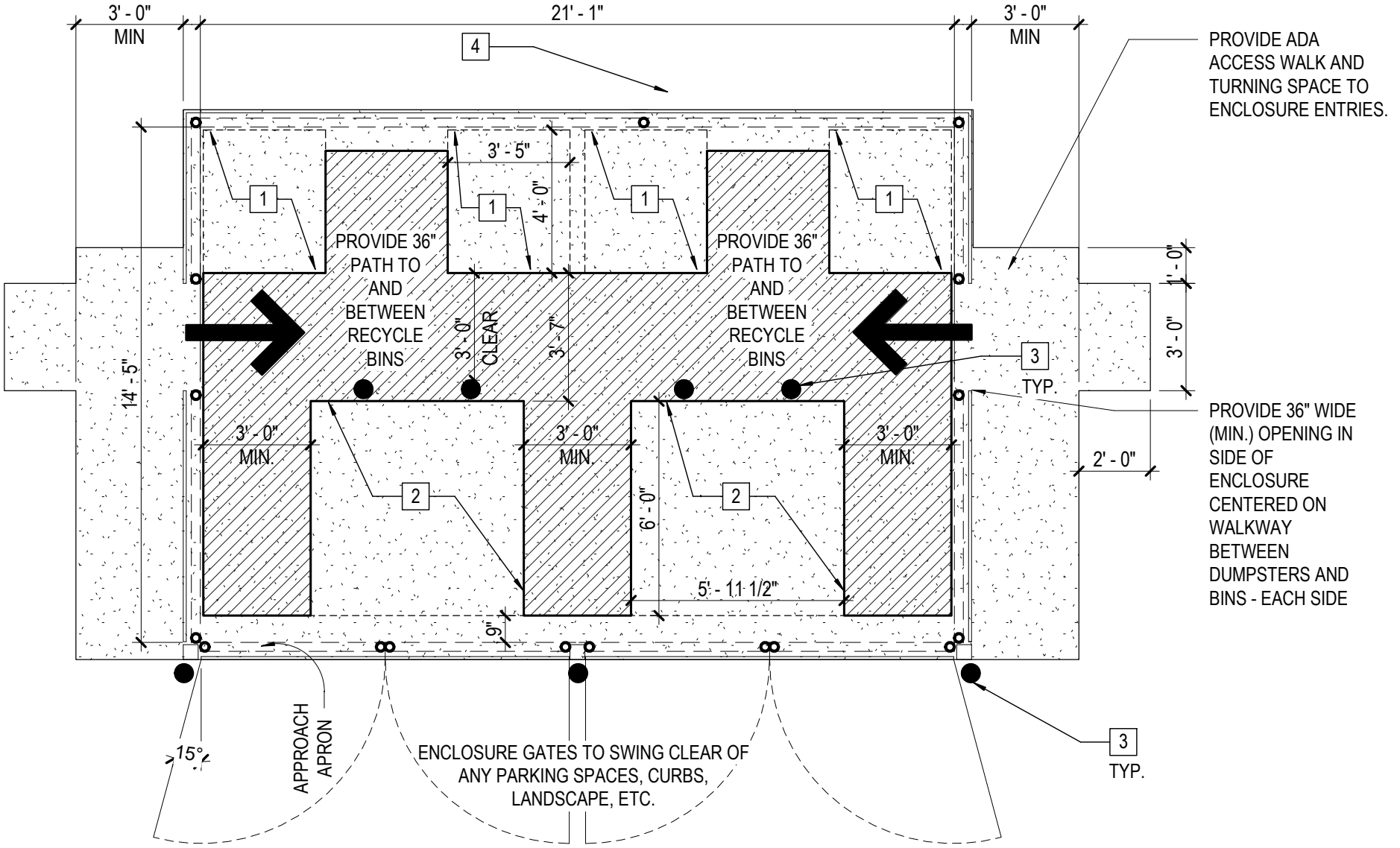
1 OPEN WIRE RECYCLE BIN

2 8 YARD BOX DUMPSTER - SIDE LOAD

3 6" CONCRETE BOLLARD. PAINTED YELLOW

4 CONCRETE DUMPSTER PAD

0' 8' 16' 24'



DUMPSTER ENCLOSURE - DOUBLE | APPENDIX Q - DUMPSTER LAYOUT

10.05.2021

OLD DOMINION UNIVERSITY

WARRANTY WORK REQUEST FORM

After project completion, there is a designated warranty period which typically begins at the date of substantial completion and runs for 12 months, during which time the general contractor will respond to issues related to the building, site and equipment. Warranty work does not negate the need for the building users and Facilities Management to preform regular maintenance. Use a separate form for each warranty item request.

PROJECT NAME: _____ **DATE SUBMITTED:** _____

ODU PROJECT MANAGER: _____ **EMAIL ADDRESS:** _____

GENERAL CONTRACTOR: _____ **SUBJECT:** _____

WARRANTY WORK REQUESTED
Item Description and Location:
REQUESTED BY: _____ **DATE:** _____ **EMAIL ADDRESS:** _____
RESPONSIBLE SUBCONTRACTOR: (as Identified by the General Contractor)
CORRECTIVE ACTION TAKEN: Please provide detailed response in the space below:
SUBCONTRACTOR SIGNATURE: _____ **DATE:** _____
OWNER RESPONSE:
☐ **Work Preformed is Acceptable:** ☐ **Additional Work is Required: (If checked please provide comments below)**
OWNER SIGNITURE: _____ **DATE:** _____

Distribution: ☐ Dir. of FM ☐ Assist. Dir. of Engineering ☐ Assist Dir. Facility Ops & Maintenance ☐ Dir. Design & Construction

OLD DOMINION UNIVERSITY

PROJECT INSPECTOR INSPECTION REQUEST FORM

Inspections should be requested 24 hours in advance, as a minimum, 48 hours in advance is preferred.

PROJECT TITLE:_____ **PROJECT CODE:**_____

GENERAL CONTRACTOR:_____

SUBCONTRACTOR (If requesting inspection): _____

REQUESTED BY: (Individual):_____ **DATE & TIME REQUESTED:** _____

TYPE OF TEST / INSPECTION REQUESTED:_____

INSPECTION DATE & TIME: _____

LOCATION: _____

_____

_____

_____

_____

_____

☐ **PASS** ☐ **FAIL** ***(Check One)***

EXPLANATION: _____

_____

_____

_____

_____

_____

STATE PROJECT INSPECTOR: _____

FIRE SAFETY ENGINEER: _____

OLD DOMINION UNIVERSITY
Design and Construction
4401 Powhatan Avenue, Norfolk, VA 23529 • Phone: 757/683-4555 • Fax: 757/683-5325

Capital Outlay Routing Form

Project Nr.:		Contractor or A/E	
Project Name:			
Purchase Order:			
Budget Code:			
CO Form No:			
CO Form Name:			
Change Order #:	Change Order Amount:	Change Order Percent:	
Total Change Orders:	Total Change Order Amount:	Total Change Order Percent:	

Approved by:	Signature:	Date:
Project Manager's Name:		
V.P. For Administration & Finance (Greg DuBois)		
CIO & Associate V.P. for University Services (Rusty Waterfield)		
Associate V.P for Financial Services (Deb Swiecinski)		
Director of Design & Construction (Dale Feltes – All Except Maintenance Reserve)		
Assistant Director of Design & Construction (David Robichaud – All Except Maintenance Reserve)		
Director of Facilities Management (Mike Brady – Maintenance Reserve Only)		
Director, Procurement Services (Etta Henry)		
Assistant Director, Procurement Services (Harry Smithson)		
Procurement Manager, Construction (Dwayne Young)		
Capital Accountant (Shawnda English)		

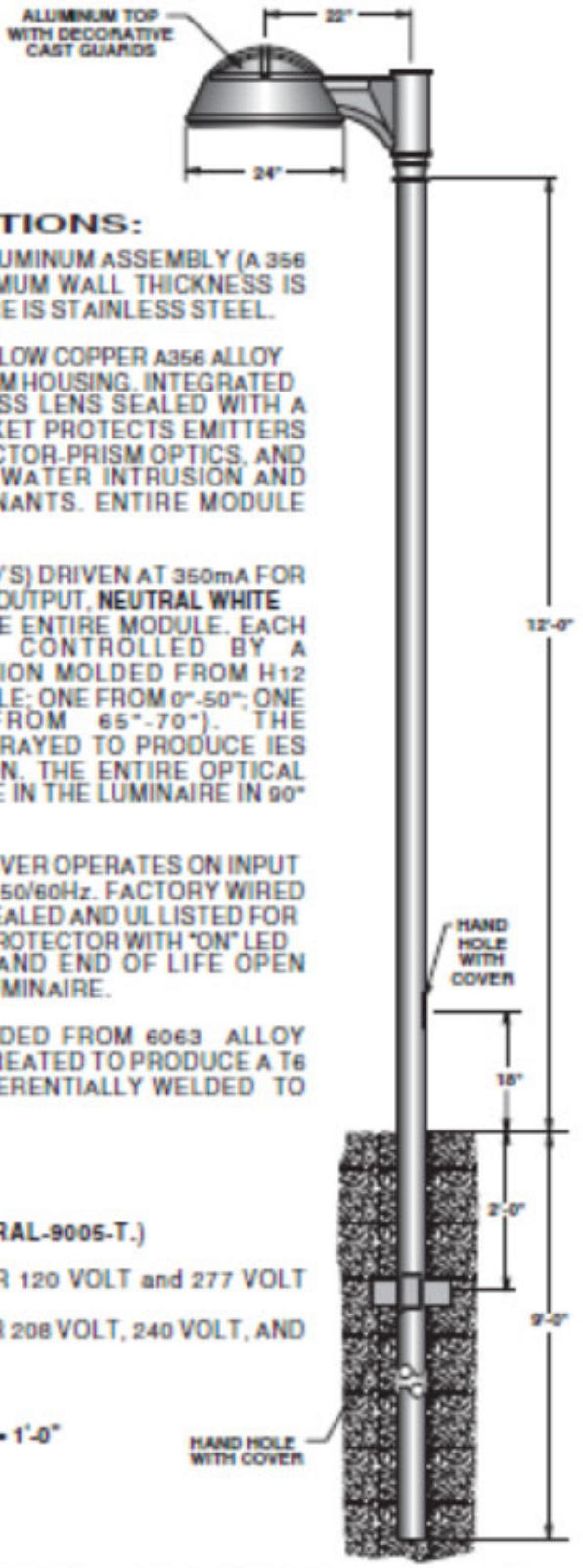
Comments/Exceptional Processing Actions and Justification

U.S. ARCHITECTURAL LIGHTING

SBMTL-3445
REV. 5

CUSTOMER APPROVAL:
X _____ DATE: _____
A signed approval will be required with the released order

PROPRIETARY SUBMITTAL, DO NOT MODIFY.



SPECIFICATIONS:

LUMINAIRE: HEAVY CAST LOW COPPER ALUMINUM ASSEMBLY (A 356 ALLOY,<0.2% COPPER). MINIMUM WALL THICKNESS IS .188. ALL EXPOSED HARDWARE IS STAINLESS STEEL.

VLED OPTICAL MODULE: SEALED LED OPTICAL MODULE. LOW COPPER A356 ALLOY (<.2% COPPER) CAST ALUMINUM HOUSING. INTEGRATED CLEAR TEMPERED 3/16" GLASS LENS SEALED WITH A CONTINUOUS SILICONE GASKET PROTECTS EMITTERS (LED'S) AND EMITTER REFLECTOR-PRISM OPTICS, AND SEALS THE MODULE FROM WATER INTRUSION AND ENVIRONMENTAL CONTAMINANTS. ENTIRE MODULE MEETS IP67 RATING

VLED EMITTERS AND OPTICS: 120 LUXEON T EMITTERS (LED'S) DRIVEN AT 350mA FOR 132 TOTAL INPUT WATTS. HIGH OUTPUT, **NEUTRAL WHITE** NOMINAL 4000K CCT FOR THE ENTIRE MODULE. EACH EMITTER IS OPTICALLY CONTROLLED BY A REFLECTOR-PRISM INJECTION MOLDED FROM H12 ACRYLIC (3 TYPES PER MODULE: ONE FROM 0°-50°; ONE FROM 50°-65°; ONE FROM 65°-70°). THE REFLECTOR-PRISMS ARE ARRAYED TO PRODUCE IES **TYPE IV** LIGHT DISTRIBUTION. THE ENTIRE OPTICAL MODULE IS FIELD ROTATABLE IN THE LUMINAIRE IN 90° INCREMENTS.

VLED DRIVER: CONSTANT CURRENT LED DRIVER OPERATES ON INPUT VOLTAGES FROM 120 - 277 V., 50/60Hz. FACTORY WIRED DRIVER IS INDEPENDENTLY SEALED AND UL LISTED FOR WET LOCATION. 20KA SURGE PROTECTOR WITH "ON" LED OPERATIONAL INDICATOR AND END OF LIFE OPEN CIRCUIT PROTECTION FOR LUMINAIRE.

SHAFT: 4" DIA. (.188 WALL) EXTRUDED FROM 6063 ALLOY ALUMINUM. SHAFT IS HEAT TREATED TO PRODUCE A T6 TEMPER. SHAFT IS CIRCUMFERENTIALLY WELDED TO BASE.

ANCHORAGE: DIRECT BURIAL.

FINISH: POLYESTER POWDER COAT
(COLOR: **BLACK TEXTURED, RAL-9005-T.**)

NOTES: -SINGLE FUSE SUPPLIED FOR 120 VOLT and 277 VOLT ASSEMBLIES.
-DOUBLE FUSE SUPPLIED FOR 208 VOLT, 240 VOLT, AND 480 VOLT ASSEMBLIES.

SCALE: 1/2" = 1'-0"

650 W. AVENUE O, PALMDALE, CA. 93551 (661) 233-2000 FAX NO. (661) 233-2001 www.usaltg.com

October 12, 2018

x= evergreen foliage

Key	Botanical Name	Common Name	Plant Type	Light reqs.	Moisture	pH	Habit	Mature height
PA	Platanus x acerifolia 'Bloodgood'	London Planetree	tree, street	full sun to light shade	tolerates heat and drought	withstands high ph	open and widespread	70-100 ft. ht., 65-80 ft. spread
QP	Quercus phellos	Willow Oak	tree, street	full sun	moist well drained but is adaptable	acid or neutral	rounded crown	40-60 ft ht., 30-40 ft. spread
QL	Quercus laurifolia	Laurel Oak	tree, street	full sun	well drained	adaptable	Pyramidal-rounded	40-60 ft ht., 30-40 ft. spread
Ac	Amelanchier canadensis	Shadblow Serviceberry	tree, ornamental	full sun to part shade	wet to dry	adaptable	multi-stem	15-20 ft. ht. with variable spread.
Bn	Betula nigra 'Dura Heat'	River Birch	tree, ornamental	full sun to part shade	wet to dry	acid	multi-stemmed	40-70 ft ht. with comparable spread
Cb	Carpinus betulus 'columnaris'	Columnar Hornbeam	tree, ornamental	full sun	well drained	adaptable	Columnar	30-50 ft. ht., 12-14 ft. spread.
Cc	Carpinus caroliniana	American Hornbeam	tree, ornamental	tolerates shade	tolerates flood		wide-spreading	20-30 ft. ht. with equal spread.
Ck	Cornus kousa	Chinese Dogwood	tree, ornamental	full sun	well drained	acid	vase multi-stemmed	20-30 ft. ht. with equal spread.
Cp	Crataegus phaenopyrum	Washington Hawthorn	tree, ornamental	full to partial sun	dry	adaptable	broadly oval to rounded	25-30 ft. ht., 20-25 ft. spread.
Hi	Hamamelis x intermedia 'Diane'	Diane Witchhazel	tree, ornamental	full sun to part shade				15-20 ft. ht. with variable spread
Li	Lagerstroemia indica	Crape Myrtle	tree, ornamental	full sun	moist well drained to dry		multi-stemmed	10-15 ft. ht., 6-8 ft. spread
Ms	Magnolia x soulangiana	Saucer Magnolia	tree, ornamental	full sun to light shade	moist	acid	multi-stemmed	20-30 ft. ht. with vairiable spread.
MV	Magnolia virginiana	Sweetbay Magnolia	tree, ornamental				multi-stemmed	10-20 ft. ht. with equal spread.
VA	Vitex agnus-castus 'Latifolia'	Chase Tree	tree, ornamental	sun to shade	moist well drained		multi-stemmed	10-20 ft ht with equal spread
IO	Ilex opaca	American Holly	tree, evergreen	part sun to shade	moist	acid	pyrimidal, conical crown	40-50 ft. ht., 15-30 ft. spread.
IN	Ilex x 'Nellie R. Stevens'	Steven's Holly	tree, evergreen	part shade to sun	dry, very drought tolerant when mature	acid	pyrimidal	15-25 ft. ht., 6-8 ft. spread.
MG	Magnolia grandiflora	Southern Magnolia	tree, evergreen	full sun to part shade	moist	acid	pyrimidal	60-80 ft. ht., 30-50 ft. spread.
PS	Pinus strobus	Eastern White Pine	tree, evergreen	full sun	highly adaptable	avoid extreme acid, adaptable	pyrmidal, soft	50-70 ft. ht., 20-40 ft. spread.
PT	Pinus taeda	Loblolly Pine	tree, evergreen	full sun	moist	adaptable	young pyramid/old: oval	15-20 ft. ht, 15-20 ft. spread
GB	Ginkgo biloba	Maidenhair Tree	tree, canopy	full sun	moderately moist; adaptable	adaptable	upright	50-80 ft. ht, wider than ht at maturity
GS	Gleditsia triacanthos inermis 'Shademaster'	Honeylocust	tree, canopy	full sun	highly adaptable	adaptable	upright	30-70 ft. ht. with an equal spread.
LS	Liquidambar styraciflua	American Sweetgum	tree, canopy	full sun	moist	slight acid	Open and widespread	60-75 ft. ht., 30 ft. spread
NS	Nyssa sylvatica	Blackgum / Sourgum	tree, canopy	full sun or part shade	dry	alkaline	pyramid	30-50 ft. ht., 20-30 ft. spread.
QB	Quercus bicolor	Swanp White Oak	tree, canopy	full sun to part shade	moist	acid	Open and widespread	50-70 ft. ht, 50-70 ft. spread
QL	Quercus laurifolia	Laurel Oak	tree, canopy	full sun to part shade	adaptable. Grows more quickly in moist	acid	dense oval crown, columnar	60-70 ft. ht, 30-35 ft. width.
QF	Quercus falcata	Spanish Oak	tree, canopy	Full sun	dry	acid	Open and widespread	70-80 ft. ht., equal or greater spread.
QV	Quercus velutina	Black Oak	tree, canopy	Full sun	moist	acid	irregularly crowned	50-60 ft. ht., crown varies
QW	Quercus virginiana	Live Oak	tree, canopy	Full sun	Wet to moist	acid	Massive w/ wide arching branches	40-80ft ht., 60-100ft spread
SJ	Sophora japonica 'Regent'	Japanese Pagoda Tree	tree, canopy	Full sun	dry	adaptable	broad, round crown.	50-75 ft. ht. with an equal spread.
TD	Taxodium distichum	Bald Cypress	tree, canopy	Full sun	tolerant of wet, moist and dry. Will grow in water	acid	columnar in youth; conical	50-70ft ht; 20-30ft wide
ZS	Zelkova serrata 'Village Green'	Japanese Zelkova	tree, canopy	Full sun	moist	adaptable	vase	50-75 ft. ht., with an equal spread.
ICR	Ilex cornuta 'Rotunda'	Dwarf Horned Holly	shrub, evergreen	Full sun to part shade	highly adaptable	adaptable	dense rounded shrub/tree	4-6 ft. ht., 3-5 ft. spread.
	Ilex cornuta 'Carissa'	Carissa holly	shrub, evergreen	Full sun to part shade	highly adaptable	adaptable	dense rounded shrub/tree	3-4 ft. tall, 4-6' spread
IVN	Ilex vomitoria 'Nana'	Dwarf Yaupon Holly	shrub, evergreen	full sun to part shade	highly adaptable	acid	dense dwarf, broad, rounded	3-4 ft. ht., 8-112 ft spread
IGL	Ilex glabra	Inkberry Holly	shrub, evergreen	best full sun, but very shade tolerant	moist	acid (but not excessively)	Upright & erect rounded	6-8 ft. ht., 8-10 ft spread
IGC	Ilex glabra 'Compacta'	Dwarf Inkberry Holly	shrub, evergreen	best full sun, but very shade tolerant	moist	acid (but not excessively)	compact & oval, fine tex	4-6 ft. ht. with similar spread. (dwarf)
JCK	Juniperus chinensis 'Kaizuka'	Hollywood Juniper	shrub, evergreen	Full sun	moist, well-drained. Established will take dry	adaptable	narrow, conical	20-30 ft. ht., 10 ft. spread.
JHB	Juniperus horizontalis 'Blue Pacific'	Blue Pacific Juniper	shrub, evergreen	Full sun	dry	adaptable	low, dense & bushy	
	Myrica cerifera	southern bayberry	shrub, evergreen	Full sun to part shade	tolerates very poor soils; moisture level adaptable	acid	upright	8 ft. ht., 12 ft. spread, colonizes in patches.
	Myrica cerifera 'don's dwarf'	southern bayberry (dwarf)	shrub, evergreen	Full sun to part shade	drought tolerent, salt sandy soils, wet soils	acid	dense	4 - 6 ' tall & spread
NDO	Nandina domestica	Heavenly Bamboo	shrub, evergreen	full sun or shade	adaptable	adaptable	clumping	6-8 ft ht., patches spread approx 8ft.
	Nandina domestica 'dwarf'	harbor dwarf	shrub, evergreen	full sun or shade	adaptable	adaptable	clumping	1 - 2' tall 3' spread
OHG	Osmanthus heterophyllus 'Gulftide'	Holly Tea Olive "False Holly"	shrub, evergreen	full sun	moist, well-drained	acid, can adapt	Dense, upright oval, compact	10-15 ft ht., 6 ft. spread
RIN	Raphiolepis indica	Indian Hawthorne	shrub, evergreen	Part sun to Part Shade	adaptable	adaptable	Low, dense hedge, oval crown	3-7ft ht height, 6-10ft spread

x= evergreen foliage

Key	Botanical Name	Common Name	Plant Type	Light reqs.	Moisture	pH	Habit	Mature height
RHE	Rhododendron ' Hellen curtis'	"Hellen Curtis" Azalea	shrub, evergreen	Partial shade	moist, good drainage absolutely essential	acid	rounded, dense	6ft ht, 5ft spread
VXP	Vivurnum x pragense	Prague Viburnum	shrub, evergreen	Full sun to part shade	moist, well-drained	acid	Upright, rounded	10-12 ft. ht.; 10-12 ft. spread
CAL	Clethra alnifolia	Clethra	shrub, deciduous	full sun to part shade	wet, salt tolerant	acid	oval, erect, dense leafy	4-8 ft ht, 4-6 ft spread
HXA	Hibiscus x 'Anne Arundel'	Hibiscus	shrub, deciduous	full sun to part shade	wet	slightly acid	upright	4-5 ft. ht. with equal spread
HMA	Hydrangea macrophylla	Bigleaf Hydrangea	shrub, deciduous	full sun to part shade	moist, well drained	adaptable	rounded	3-6 ft. ht, equal spread
HQS	Hydrangea quercifolia 'Snow Queen'	Oakleaf Hydrangea	shrub, deciduous	full sun to part shade	moist, well drained	acidic	upright	4-6 ft. ht with equal or wider spread
	Rhododendron x 'Girard Hybrids'	Girard Azalea 'rose'	evergreen	full sun to part shade	moist, well drained	acidic	upright	3' tall harfy to -10F
REX	Rhododendron x 'Exbury Hybrids'	Exbury Azalea	shrub, deciduous	part to full shade	moist, well drained	acidic	upright	7 ft. ht., 9 ft. spread
RAZ	Rhododendron yedoense var. poukhanense	Poukanensis Azalea	shrub, deciduous	part to full shade	moist well drained	acidic	rounded	3-6 ft. ht, equal spread
VPT	Viburnum plicatum tomentosum 'Mariesii'	Maries Doublefile Viburnum	shrub, deciduous	full sun to part shade	moist, well drained	prefer slight acid but adaptable	horizontal	8-10 ft. ht., 9-12 ft spread
VXB	Viburnum x burkwoodii	Burkwood Viburnum	shrub, deciduous	full sun to part shade	moist, well drained	prefer slight acid but adaptable	upright multi-stemmed	7-10 ft. ht. with spread 2/3 its ht.
	Viburnum awabuki 'Chindo'	Chindo viburnum	evergreen	full sun to part shade	drought tolerant	prefer slight acid but adaptable	upright dense	10 - 15' tall
	Camelia japonica	Camelia japonica	evergreen, spring bloom	part shade	medium	acid	upright shrub	7 - 12' tall
	Camelia sasanqua	Camelia sasanqua	evergreen, fall bloom	part shade	medium	acid	upright shrub	8 - 12' tall
	Cleyera Japonica	Japanese cleyera	evergreen	full sun to part shade	medium			6 - 10' tall
Cpl	Ceratostigma plumbaginoides	Leadwort	perennial, groundcover	full sun to partial shade	wet to dry	adaptable	spreading	6-12 inches tall
Eve	Epimedium x versicolor 'Sulphureum'	Barrenwort	perennial, groundcover	light to moderate shade	drought tolerant	adaptable	spreading	9-12 inches tall
Hor	Helleborus orientalis	Lenten Rose	perennial, groundcover	shade to part shade	moist	adaptable	clumping	12-18 inches tall
Hca	Hypericum calycinum	Aaron's Beard / St. John's Wort	perennial, groundcover	full sun to part shade	moist well drained	adaptable	spreading	12 inches tall
	Liriope muscari	Lilyturf	perennial, groundcover	sun to shade	well drained	adaptable	creeping	10 inches tall
Lsp	Liriope spicata	Lilyturf	perennial, groundcover	sun to shade	well drained	adaptable	creeping	10 inches tall
Tch	Teucrium chamaedrys	Germander	perennial, groundcover	full sun	well drained	alkaline	creeping	12 inches tall
Cve	Coreopsis verticillata 'Moonbeam'	~~Cutleaf Tickseed~~ (threadleaf)	perennial	full sun to light shade	tolerates dry soils	adaptable	clumping	18-24 inches tall
Epu	Eupatorium purpureum 'Gateway'	Joe-Pye Weed	perennial	full sun to partial shade	tolerates wet soils	adaptable	upright	36-48 inches tall
Hha	Hemerocallis 'Happy Returns'	Happy Returns Daylily	perennial	full sun to light shade	moist well drained	adaptable	clumping	18-24 inches tall
Hch	Hemerocallis 'Chicago Apache'	Chicago Apache Daylily	perennial	full sun to light shade	moist well drained	adaptable	clumping	36-48 inches tall
Hla	Hemerocallis 'Lacey Queen'	Lacy Queen Daylily	perennial	full sun to light shade	moist well drained	adaptable	clumping	40 inches tall
Hst	Hemerocallis 'Stella d'Oro'	Stella d'Oro Daylily	perennial	full sun to light shade	moist well drained	adaptable	clumping	6-12 inches tall
Hbr	Heuchera x brizoides 'June Bride'	June Bride Coral Bells	perennial	full sun to partial shade	moist well drained	adaptable	clumping	12-18 inches tall
His	Hosta sieboldiana 'Elegans'	Blue Plantain Lily	perennial	full to partial shade	moist well drained	slightly acid	clumping	36 inches tall
Hpl	Hosta plantaginea 'Grandiflora'	Autumn plantain lily	perennial	sun to partial shade	moist well drained	slightly acid	mounding	36 inches tall
Isi	Iris sibirica 'Butter & Surgar'	Butter & Sugar Siberian Iris	perennial	full sun to light shade	wet to dry		upright	24-30 inches tall
Lsi	Liatris spicata	Gayfeather / Blazing Star	perennial	full sun to light shade		adaptable	upright	24-36 inches tall
Rfu	Rudbeckia fulgida 'Goldsturm'	Black-eyed Susan	perennial	full sun to light shade	drought tolerant	slightly acid	upright	36-40 inches tall
Sne	Salvia nemorosa 'Mainacht'	May Night Salvia	perennial	full sun to light shade	tolerant of dry conditions	slightly acid	compact	12-18 inches tall
Ste	Sedum x telephium 'Autumn Joy'	Autumn Joy Sedum	perennial	full sun	drought tolerant	acid to slightly alkaline	Upright	18-24 inches tall
Cac	Calamagrostis x acutiflora 'Stricta'	Feather Reed Grass	grass	full sun to light shade	adaptable	adaptable	upright	2-4 ft. tall
Hse	Helictotrichon sempervirens	Blue Oat Grass	grass	full sun	well drained	adaptable	mounded	2-3 ft. tall with equal spread
Pvi	Panicum virgatum 'Rotstrahlbusch'	Red Switch Grass	grass	full sun	moist well drained but is adaptable	adaptable		3-4 ft. tall
Pal	Pennisetum alopecuroides	Fountain Grass	grass	full sun to light shade	well drained		mounded	2-3 ft tall
	Narcissi trumpet large cup perennializing "Carlton"	Daffodil early spring	Bulb	full sun to light shade	well drained	adaptable	upright	14 - 16 inches tall

328400 PLANTING IRRIGATION

PART 1 – GENERAL

1. Scope of Work
   A. Provide all materials, labor, equipment and services necessary to complete the detailed design and installation of the irrigation work as indicated on the Irrigation Performance Plan. Work shall include, but is not limited to:
      1. Coordinate the location and type of meters, controllers, water tap and backflow preventers with the University.
      2. Indicate the “limits of Irrigation” on the landscape drawings. Provide a complete irrigation system design and installation within this defined limit.
      3. Coordinate system design with underground utilities shown on the project site survey. Identify any conflicts to the University’s Representative.
      4. The Contractor shall coordinate work of this section with work of all related trades and subcontractors to assure smooth progression of work.
      5. Protection and/or restoration of all existing improvements, including trees and root zones.
      6. Trenching and backfilling for all pipes, valves and drain pits.
      7. Furnishing and installing all mains, laterals, risers and fittings, sprinkler heads, quick-coupling valves, gate valves, control valves, controllers, electric wire, controls, etc., and all necessary specialties and accessories.
      8. Furnishing and installing all sleeves beneath walkways, roads, and driveways where required.
      9. Testing of completed irrigation system in presence of ODU Campus Grounds Manager .
      10. Regulating and adjusting all sprinkler heads, time sequence control devices and section valves.
      11. Furnishing and installing water meters and reduced pressure backflow preventers and heated enclosures on water system for irrigation water supply.
      12. Preparation of electronic PDF as-built record plans for submittal to the University.

   B. Based on this performance specification and the Irrigation Performance Plan submit plans, details and calculations to the University for review and approval prior to submitting shop drawings through the general contractor The plans/ details of the irrigation system, including but not limited to, piping, valves, sprinkler heads, wiring, meters, backflow preventers, etc. shall be designed by an individual certified a Certified Landscape Architect, or Certified Irrigation Association Designer.

2. Definitions
   A. Grounds Manager refers to the ODU Campus Grounds Manager
   B. University or Owner’s Representative refers to the ODU Project Specific Project Manager
   C. Irrigation Performance Plan
   D. Contractor refers to the Irrigation Contractor or Irrigation Subcontractor
   E. Owner’s Construction Representative refers to the General Contractor
   F. A/E refers to the Architect and/or Engineer of Record

3. Irrigation Documents
   A. Other documents included or related to this contract:
      1. Landscape Plans and Details
      2. Civil Plans and Details
      3. Building Plans and Details

2. Related Work
   A. Electrical stubout for irrigation controller.
   B. The irrigation system point of connection shall be coordinated with the mechanical/plumbing system. Pressure and flow information shall be field verified.
   C. Planting, seeding and sodding.

3. Quality Assurance
   A. The irrigation system shall be designed and the drawings sealed by a Certified Landscape Architect, or Certified Irrigation Association Designer.
   B. Installer's Qualifications: Upon request, the Contractor shall provide examples of relevant projects with the following information: name of project, address of project, name of owner and phone number .
      1. The following documentation shall be provided, if these criterion cannot be met, then the contractor will be disqualified:
         a) Virginia Class A Contractor's License showing a specialty in irrigation.
         b) General liability insurance to $1,000,000.
         c) Five verifiable prior projects with references to attest to the Contractor's ability to install.
         d) Projects shall be of the size and complexity of this project
   C. Design Drawings: The Irrigation Plan must include a layout of the areas indicated on the Irrigation Performance Plan. The Irrigation Plan must be drawn to a minimum scale of 1"=20'-0". The Irrigation Plan must contain and clearly define the following data as listed below.
      1. Static pressure (psi) and gallons per minute (GPM) upon which the design is based.
      2. Complete layout indicating placement of all system components.
      3. Specify all pipe sizes, material (polyethylene, PVC, etc.) and class rating (Class 200, Schedule 40, etc.)
      4. Specify manufacturer and model number (size if applicable) of all irrigation system components.
      5. Size, material, schedule and placement of all sleeves.
      6. Electric valve locations including size, type and station designation and flow per zone.
      7. Design calculations for each zone, including pressure and friction loss.
      8. Specify for all spray heads - nozzle, spray pattern, radius, gallons per minute, operating psi.
      9. Zones. The Irrigation plans shall be drawn as an overlay to the planting plans for the project. For clarity sake, shrub and perennial symbols within beds may be turned off, but all trees and large shrubs within turf areas shall be shown, and all bed edges shall be clearly visible. Turf Zones shall be irrigated on separate valves than Shrub Zones.
      10. Installation details must be provided for all irrigation system components.
      11. Operating schedule must be provided for all irrigation systems and submitted with the design.
   D. Requirements of Regulatory Agencies

1. All work and materials shall be in full accordance with the current building codes, rules and regulations of the state of Virginia, including but not limited to the Virginia Construction Code, and the International Building Code (IBC), OSHA ; International Energy Efficiency Code, International Plumbing Code and other applicable laws or regulations, including any local Codes.

E. Testing
   1. Preliminary review of completed installation will be made prior to backfilling of trenches and then again during hydrostatic testing.
   2. Final review shall be made in conjunction with the final review of lawn, shrub and tree planting.
   3. The review and testing shall be scheduled with the Grounds Manager at least 48 hours prior to testing.

F. Permits and Inspections
   1. Any permits for the installation or construction of any work included under this contract, which are required by any of the legally constituted authorities having jurisdiction, shall be obtained and paid for by the Contractor, each at the proper time.
   2. The Contractor shall also arrange for and pay all costs in connection with any inspection and examination required by these authorities.

4. Submittals
   A. Contractor shall furnish electronic plans, details and specifications, in PDF format, to the Owner's Construction Representative for review and approval.
   B. Contractor shall furnish one electronic service manual to the University and the Owner's Construction Representative. PDF shall be compiled into one file with documents bookmarked. Manuals shall contain complete drawings of all equipment installed showing components and catalog numbers together with the manufacturer's name and address.
   C. The Contractor shall furnish an electronic PDF of the Annual Maintenance Manual with annual maintenance procedures recommended by the irrigation designer, the irrigation system component manufacturers and the Contractor.

5. Additional Materials
   A. Loose irrigation equipment, operating keys and spare parts will be furnished by the Contractor in quantities as shown below.
      1. Two (2) valve keys for gate valves.
      2. Two (2) keys for each controller.
      3. Two (2) sets of special tools required for removing, disassembling and adjusting each type of sprinkler and valve supplied on this project.

6. As-Buillt Record Drawings
   A. The Contractor shall maintain one record set of prints of the irrigation system in good condition at the site and mark on them the exact "Record" location of all components. The Contractor shall make a daily record of all work installed during each day. Plans shall indicate the exact location of check valves, gate valves, wire locations, head layout, automatic valves, quick couplers, all irrigation and drainage piping, etc.. Locations should be shown by the triangular system for measurements from easily identified permanent

features, such as buildings, curbs, fences, walks, etc.. Drawings shall show approved substitutions, if any, of material including Manufacturer's name and catalogue number. Drawings shall be to scale and all information shall be recorded in a neat, orderly way.

B. At the time of the irrigation mainline test, the Contractor shall provide a preliminary set of As Built Record" Drawings to the Owner's Construction Representative.

C. The Contractor shall provide final AutoCAD or REVIT files of as-built drawingsin addition to the PDF's of same to the University's A/E for inclusion in the final project documents.

7. Job Conditions
   A. Examination of Site
      1. The bidder acknowledges that he has examined the site, plans and specifications and the submission of a quotation shall be considered evidence that examinations have been made.
   B. Field Conditions
      1. The Contractor shall verify drawing dimensions with actual field conditions and inspect related work and adjacent surfaces. The contractor shall report to the Owner's Construction Representative all conditions which prevent proper execution of his work.
   C. The exact location of all existing utilities, structures and underground utilities, which may not be indicated on the drawings, shall be determined by the Contractor and he shall conduct his work so as to prevent interruption of service or damage to them. The Contractor shall protect existing structures and utility services and be responsible for their replacement if damaged by him.
   D. The Contractor shall verify the correctness of all finish grades within the work area to insure the proper soil coverage of the irrigation system pipes.

8. Materials Storage and Clean-Up
   A. The Contractor shall keep the premises free from rubbish and debris at all times and shall arrange his material storage so as not to interfere with the operation of the project. All unused materials, rubbish and debris shall be removed from the site.

9. Completion and Acceptance
   A. The completion of the contract will be accepted and Notice of Completion recorded only when the entire contract is completed to the satisfaction of the Owner's Construction Representation.
   B. Within ten (10) days of the Contractor's notification that the installation is complete, the Owner's Construction Representative will inspect the installation and, if final acceptance is not given, will prepare a "punch list."
   C. Final Acceptance -- Work under this Section will be accepted by the Owner's Construction Representative upon satisfactory completion of all work including "punch list" items.

10. Warranty
    A. The entire irrigation system shall be unconditionally guaranteed by the contractor as to material and workmanship, including settling of backfilled areas below grade for the following periods:
       1. One year guarantee on parts and labor, underground piping and fittings.
       2. Two year guarantee on sprinkler heads against rotary failure

B. It shall be the Contractor's responsibility to insure complete coverage as specified herein of the areas to be irrigated. During the warranty period the Contractor shall make any adjustments as necessary to maintain proper coverage.
C. If, within one (1) year from the date of completion, settlement occurs, and adjustments in pipes, valves and sprinkler heads, lawn areas or paving are necessary to bring the system, grade or paving to the proper level of permanent grades, the Contractor, as part of the work under his Contract, shall make all adjustments without extra cost to the University, including the restoration of all damaged planting, paving or other improvements of any kind.
D. Should any operational difficulties in connection with the irrigation system develop within the specified guarantee period, which in the opinion of the University may be due to inferior material and/or workmanship, corrections shall be undertaken within 48 hours of notice to the Contractor. Corrections shall be to the satisfaction of the University at no additional cost, , including any and all other damages caused by such defects.
E. If the Contractor fails to make repairs, the University will make the repairs at the expense of the Contractor.

11. Operation and Maintenance
    A. The entire irrigation system shall be under fully automatic operation for a period of three (3) days prior to any planting.
    B. Operation of the irrigation system shall be confined to hours as specified by the university Grounds Manager.
    C. Important: It is the Landscape Contractor's responsibility to determine water application rates and timer cycling. The Contractor will instruct the Landscape Contractor on the operation and programming of the controller and will assist the Landscape Contractor as necessary in such operations throughout the one (1) year maintenance period. Any adjustments, repairs, etc., other than programming are the sole responsibility of the Contractor.
    D. The Contractor shall maintain the irrigation system for a period of not less than 30 days commencing from the time the installation is complete to the satisfaction of the Owner's Construction Representative.
    E. The Contractor shall maintain the irrigation system at his expense until accepted by the University.

PART 2 - MATERIALS

1. All materials to be incorporated in this system shall be new and without flaws or defects and of quality and performance as specified and meeting the requirements of this specification.

2. Water Supply
    A. A tap from potable water system has been provided and installed for irrigation use.

3. Backflow Preventer
    A. Backflow preventer shall be a reduced pressure model as manufactured by Febco, Wilkins, Zurn or Watts or approved equal. The backflow preventer may be installed in an interior mechanical room or designated exterior location as approved by the University. Exterior installations shall be protected from freezing. The

backflow preventer shall be installed at least one foot higher than the highest sprinkler head or discharge, as required by local code.

4. Pipe
   A. All piping shall be from virgin parent material. The pipe shall be homogeneous throughout and free from visible cracks, holes, foreign materials, blisters, deleterious wrinkles and dents. All pipe shall be National Sanitation Foundation (NSF) approved.
      1. Piping on pressure side of irrigation control valves:
         a) Shall be Polyvinyl Chloride (PVC) 1120 with a minimum class rating of 200, sized to maintain a flow velocity of less than five (5) feet per second (FPS).
         b) Type I, Grade I, Pressure Rated Pipe.
         c) Materials shall meet the requirements set forth in ASTM D-1784-60T.
         d) Outside diameter of pipe shall be the same size as iron pipe.
         e) Pipe shall be marked at intervals (not to exceed 5 feet) with the following information: Manufacturer's name or trademark, nominal pipe size, schedule, PVC type and grade (i.e. PVC 1120), SDR rating class, working pressure at 73 degrees F, and (NSF) approval.
         f) PVC Type I shall not be threaded.
         g) Caution should be utilized in handling Type I pipe due to the possibility of cracking or splitting when dropped or handled improperly.
         h) When connection is plastic to metal, male adapters shall be used. The male adapter shall be hand tightened, plus one turn with a strap wrench.
      2. Piping on non-pressure side of irrigation control valves shall meet the following requirements.
         a) Polyvinyl Chloride (PVC) 1120 with a minimum class rating of 200 psi, NFS approved, sized to maintain a flow velocity of less than five (5) feet per second (FPS).
      3. Piping for sleeving shall meet the following requirements.
         a) High impact type pipe, polyvinyl chloride (PVC) 1120, minimum Schedule 40.

5. Solvent for PVC Pipe
   A. Solvent for PVC pipe shall be #705 Gray NFS approved, or as recommended and documented by the pipe and fitting manufacturer.

6. Fittings
   A. Fittings for solvent-weld PVC pipe.
      1. Schedule 40 or 80, polyvinyl chloride (PVC), Type I, to meet ASTM D2466-73 and D2467-73 NSF approved.
      2. Threaded PVC nipples shall be Schedule 80.

7. Gate Valves
   A. Gate valves up to three (3) inch size; 125 pound bronze construction, non-rising stem type, sized to line.

8. Quick Coupling Valves
   A. Valve and key shall be "Rainbird", #33RC, Toro #470, single lug brass with 1" inlet.

B. Furnish a 1” valve key and 1”x 3/4” swivel hose ells for each key.

C. All quick coupling valve keys and hose swivels shall be of the same manufacturer as the quick couplers.

9. Valve Boxes

A. Valve boxes to be injection-moulded of polyesters and febrous inorganic temperature resistant components. Box and lid to be green, manufactured by MacLean Highline Access Boxes (formerly known as Armor Access Boxes, Ametek and Pentek), 888-773-2776 Ft. Hill, South Carolina or Oldcastle Precast Enclosure Solutions Carson line Auburn, Washington (800) 735-5566.

1. Remote control valve box shall be rectangular in shape and sized to provide adequate clearance to operate and service valve.
2. Shut off Valve and Quick Coupler Valve boxes shall be round, approximately nine (9) inches inside diameter by ten (10) inches.
3. Six (6) inch or seven (7) inch economy valve boxes are not acceptable.

10. Manual Drain Valve

A. Manual drain valve shall be manual angle valve and shall be installed as required to adequately drain the system.

12. Sprinkler Head

A. All sprinkler heads shall be pop up type heads. Acceptable manufacturers are

1. Toro Riverside, California 877-345-TORO (8676)
2. Rain Bird Sales, Inc. Azusa, CA 91702, (818) 812–3400
3. Hunter Industries, San Marcos, California (760) 744 - 5240

B. All rotors within turf areas shall have a minimum pop-up stroke of three (3) to four (4) inches, and all spray heads within turf shall have a pop-up height of four (4) inches. All rotors and spray heads within planted areas to have a minimum pop-up height of twelve (12) inches.

13. Spray Nozzles for Sprinkler Heads

A. Spray nozzles for sprinkler heads, if required, shall be of the same manufacturer as the sprinkler head. Rotors and Spray heads to have interchangeable nozzles to allow for matched precipitation rates within a zone. Nozzles shall be pressure compensating to ensure efficient operation at various pressures.

14. Automatic Controller

A. Provide a fully automatic controller model Weather-Trak ET Pro2 manufactured by Hydropoint. **or equal.**

B. The WeatherTRAK ET Pro^2 Smart Water Manager Central shall have Internet-based management, reporting and remote control.

A. Installer must be Certified Landscape Auditor (CLIA), Intelli-Sense certified, must be a Water Sense partner, must possess a City of Norfolk Backflow Installation and Testing Certificate.

15. Electric Conduit and Fittings

A. Underground plastic conduit shall be Class III, FS W-C1094.

16. Control Wire
    A. Wire shall be solid copper wire, U>L. Approved for direct burial in ground. Minimum gauge: #14 UF. (#12 UF for runs over 2,000 LF.) Common ground wire shall be white. Control wires shall be red. Spare wires shall be blue or a separate color.
    B. Spare wires: Furnish and install two spare conductors rom the controller to the most distant electric control valve on each mainline section. Loop the spares into each passed valve box and label as “SPARE” in each passed valve box.

17. Splicing Materials
    A. Splicing Materials shall be 3M Direct Bury (DBY) splice kits by 3M Corporation, Austin, Texas 888-364-3577 or “Snip-Snap” connector by Imperial, Lenexa, Kansas (913) 469-5700.

18. Remote Control Valves
    A. Remote control valves shall be electric type valves, with optional pressure regulation. Acceptable models and manufacturers listed below:
        1. Rainbird
        2. Toro
        3. Hunter
        4. Irritrol

PART 3 - EXECUTION

1. General
    A. The Contractor shall carefully schedule his work with the General Contractor and Landscape Contractor.
    B. Sleeves are required wherever piping or electrical wires are placed under paved surfaces. Install sleeves prior to commencement of paving. Install sleeves as required under all existing hardscape via boring. Sleeves may be installed by trenching where hardscape features are not in place.
    C. Full and complete coverage is required. Contractor shall make any necessary minor adjustments to layout as required to achieve full coverage of irrigated areas at no additional cost to the University. Major changes will require review and acceptance in writing from the the ODU Campus Grounds Manager.
    D. It shall be the Contractor’s responsibility to establish the location of all sprinkler heads in order to assure proper coverage of all areas. In no case shall spacing of sprinkler heads exceed distances as recommended by the manufacturer. All pipe damaged or rejected because of defects shall be removed from the site at the time of said rejection.
    E. Install irrigation system after completion of site grading. The irrigation system shall be installed and completely operational three days prior to the installation of any planting operations.
    F. Examine the site for the conditions under which the work is to be performed. Communicate the existence of any unsatisfactory site conditions to the Owner’s Representative prior to the commencement of installation. Start of installation means contractor accepts existing site conditions.
    G. Contractor’s on-site field supervisor must have thorough knowledge of the irrigation design. Owner’s Representative must have a means of communication with field supervisor through pager or mobile phone for emergency purposes.

H. Protect all hardscape and planted areas from damage due to system installation. Preserve all existing tree roots over 1.5” by avoiding trenching route through drip line of existing trees, or hand trenching these areas.

2. Trenching
   A. Locate and mark all underground utilities prior to the commencement of any trenching. These may include, but are not limited to gas, water, cable television, fiber optic, telecommunication and electric lines. Any damage to underground utilities caused by the contractor shall be repaired at the contractor’s expense.
   B. Perform all excavations as required for installation of work included under this Section, including shoring of earth banks, if necessary. Restore all surfaces, existing underground installation, etc., damaged or cut as a result of the excavations, to their original condition.
   C. Trenches shall be open, vertical sided construction, wide enough to provide free working space around work installed and to provide ample space for backfilling and compacting.
   D. When two (2) pipes are to be placed in the same trench, a two (2) inch space is to be maintained between the pipes. The Contractor shall not install two pipes with one directly above the other.
   E. Trenches located under paving shall be backfilled with sand (a layer six (6) inches below the pipe and three (3) inches above the pipe) and compacted in layers of 95% compaction. Depth of trenches shall be 12 inches over all pipes.
   F. The Contractor shall cut trenches for pipe to required grade lines and compact trench bottom to prove accurate grade and uniform bearing for the full length of the line.
   G. All laterals and mainline shall be sufficiently sloped to provide positive drainage through drain valves.
   H. The Contractor shall be held responsible for any damages caused by these operations and shall immediately repair or replace damaged parts.

3. Water Supply and Backflow Prevention Device
   A. Water supply from water well or potable system and backflow prevention device shall be installed per local requirements.

4. Pipe Line Assembly
   A. General
      1. Install pipes and fittings in accordance with manufacturers latest printed instructions.
      2. Clean all pipes and fittings of dirt, scales and moisture before assembly.
      3. All pipe, fittings and valves, etc., shall be carefully placed in the trenches. Interior of pipes shall be kept free from dirt and debris and when pipe laying is not in progress, open ends of pipe shall be closed by approved means.
      4. All lateral connections to the main line as well as all other connections shall be made to the side of the main line pipe. No connections to the top of the line shall be allowed.
   B. Solvent-Weld Joints for PVC Pipes
      1. Use solvents and methods recommended by pipe and solvent manufacturers.
      2. Cure joint a minimum of one hour before applying any external stress on the piping and at least twenty four (24) hours before placing the joint under water pressure, unless otherwise specified by manufacturer.
   C. Threaded Joints for PVC Pipes

1. Use Teflon tape on all threaded PVC fittings.
2. Use strap-type friction wrench only. Do not use metal-jawed wrench.
3. When connection is plastic to metal, male adapters shall be used. The male adapter shall be hand tightened, plus one turn with a strap wrench.

D. Laying of Pipe
1. Pipes shall be bedded in at least two (2) inches of finely divided material with no rocks or clods over one (1) inch diameter to provide a uniform bearing.
2. Pipe shall be snaked from side to side of trench bottom to allow for expansion and contraction. One (1) additional foot per 100 feet of pipe is the minimum allowance for snaking.
3. Do not lay PVC pipe when there is water in the trench.
4. Plastic pipe shall be cut with PVC pipe cutters or hacksaw, or in a manner so as to ensure a square cut. Burrs at cut ends shall be removed prior to installation so that a smooth unobstructed flow will be obtained.
5. All plastic to plastic joints will be solvent-weld joints or slip seal joints. All plastic pipe and fittings shall be installed as outlined and instructed by the pipe manufacturer and it shall be the Contractor's responsibility to make arrangements with the pipe manufacturer for any field assistance that may be necessary. The Contractor shall assume full responsibility for the correct installation.

E. PVC Sleeves and Electrical Conduit
1. All PVC sleeves shall be minimum of twice (2X) the diameter of the pipe to be sleeved.
2. All PVC control wire conduit shall be of sufficient size to hold the required quantity of control and common wires. Electrical wires are not to be placed in the same sleeve with water pipes.
3. Sleeves shall be placed under all walks, drives and other hard surface paving and shall be provided for water lines and wiring. Electrical conduit is not required for wiring under lawns and planting beds.

F. Thrust Blocks.
1. For Mainlines 2.5" and larger. concrete thrust blocks must be provided on the thrust side of the mainline pipe wherever the pipe line:
    a) Changes direction, as at tees or bends.
    b) Dead ends.
    c) Any other spot where thrust is to be expected.

5. Shuff Off Valves

A. Shut off valves shall be located in the following locations:
1. After backflow preventer and prior to main supply loop.
2. Place shut off valves within planting and lawn areas, in valve boxes.

6. Irrigation Control Valves

A. Install control valves in valve boxes grouping together where practical. Place no closer than twelve (12) inches to walk edges, buildings and walls.

B. Pressure regulating remote control valves shall be adjusted so that the most remote sprinkler heads operate at the pressure specified.

C. Valves shall be installed as shown in details and in accordance with manufacturer's instructions and the specifications.

7. Quick Coupling Valves
   A. Quick coupling valves shall be set a minimum of twelve (12) inches from walks, curbs, or paved areas where applicable or otherwise noted. Quick coupling valves shall be housed in valve boxes.
   B. Valves shall be installed on a three (3) elbow PVC Schedule 80 swing joint assembly as detailed on the drawings.

8. Valve Boxes
   A. Valve boxes shall be set flush with finish grade in lawn areas and one half (1/2) inch above finish grade in ground cover and shrub bed areas.

9. Sprinkler Heads
   A. All sprinkler heads within a zone shall have matched precipitation rates.
   B. All heads operating on one valve (zone) shall do so at the same pressure.
   C. All heads shall be pop-up type heads. Permanent shrub risers are not permitted.
   D. Do not mix different type heads within a zone.
   E. Shrub beds and lawn areas are to be on separate valves (zones).
   F. Place part circle pop up sprinkler heads six (6) inches from edge of adjacent walks, curbs and mowing bands, or paved areas at time of installation.
   G. All sprinkler nozzles shall be adjusted for the proper radius and direction of spray pattern. Make adjustments where possible to prevent over-spraying onto walks, pavement or buildings.
   H. Sprinkler heads and quick coupling valves shall be set perpendicular to finished grade.
   I. Sprinkler heads shall be installed according to recommendations of the manufacturer.

10. Drain Valves
    A. All laterals shall be provided with manual drain valves to be installed as required to completely drain the system.
    B. The main line shall be drained with manual drain valves to be installed as required to completely drain the system.
    C. Drain valves are to be provided at sufficient intervals to provide complete drainage of all piping.

11. Automatic Controller
    A. The automatic controller shall be installed at the approximate location shown on the plan. Controller shall be wall mounted in a locking box. Suitable power supply will be supplied by other trades to electrical panel in equipment room. Contractor shall be responsible for electrical supply from panel to controllers and system.
    B. All local and other applicable codes shall take precedence in connecting the 110 volt electrical service to the controller.
    C. Install per local code, manufacturer's latest printed instructions, and as detailed.
    D. Connect remote control valves to controller in sequence to correspond with station setting beginning with Stations 1, 2, 3, etc.
    E. Affix controller name (i.e. "Controller A") on inside of controller cabinet door with letters minimum of one (1) inch high. Affix a non-fading copy of irrigation diagram to cabinet door below controller name. Irrigation

diagram to be sealed between two (2) sheets of 20 mil (minimum) plastic. Irrigation diagram shall be reduced copy of the “As Built” drawing and shall show clearly all valves operated by the Controller, showing station number, valve size and type of planting irrigated.

12. Control Wiring
    A. All electric equipment and wiring shall comply with local and state codes and be installed by those skilled and licensed in the trade.
    B. Wiring shall occupy the same trench and shall be installed along the same route as pressure supply or lateral lines wherever possible, and shall have a minimum of eighteen (18) inch cover.
    C. Control wires shall be installed to the side of the main line whenever possible. Placement over pipes is not permitted.
    D. Where more than one (1) wire is placed in a trench, the wiring shall be taped together at intervals of ten (10) feet.
    E. An expansion curl shall be provided within three (3) feet of each wire connection and at least every one hundred (100) feet of wire length on runs of more than one hundred (100) feet in length. Expansion curls shall be formed by wrapping at least five (5) turns of wire around a one (1) inch diameter pipe, then withdrawing pipe.
    F. Control wire splices at remote control valves to be crimped and sealed with specified splicing materials. Line splices will be allowed only on runs of more than five hundred (500) feet and they must be located in ten (10) inch round splice boxes which are green in color. The connector shall be 3 MD BY splice kit by 3M Corporation, or “Snip-Snap” connector by Imperial. Use one (1) splice per connector sealing packs.

13. Closing of Pipe and Flushing of Lines
    A. All testing shall be done under the supervision of the Owner’s Construction Representative. Submit written requests for inspections to the Owner’s Construction Representative at least three (3) days prior to anticipated inspection date.
        1. Thoroughly flush out all water lines under a full head of water before installing heads, valves, quick coupler assemblies, etc. Maintain flushing for a minimum of three (3) minutes at the valve located furthest from water supply.
        2. After flushing, cap or plug all openings to prevent entrance of materials that would obstruct the pipe or clog heads. Leave in place until removal is necessary for completion of installation.
        3. Test as specified below.
        4. Upon completion of testing, complete assembly and adjust sprinkler heads for proper distribution. All sprinkler heads and quick coupling valves shall be set perpendicular to finished grades. Sprinkler heads adjacent to existing walls, curbs and other paved areas, shall be set to grade. Sprinkler heads which are to be installed in lawn areas where the turf has not yet been established shall be set one (1) inch above the proposed finish grade. Heads installed in this manner will be lowered to grade when the turf is sufficiently established to allow walking on it without appreciable destruction. Such lowering of heads shall be done by this Contractor as part of the original contract with no additional cost to the University.

14. Testing

A. Make hydrostatic test showing welded PVC joints have cured as per manufacturer's instructions.
    1. Pressurized Mains
        a) Completely install mains, isolation valves and control valves. Do not install laterals.
        b) Open all isolation valves.
        c) Fill all lines with water and shut off at meter.
        d) Pressurize the main with air or water to 70 psi. Monitor gauge for pressure loss for four (4) hours.
        e) Leave lines and fittings exposed throughout testing period.
        f) Leaks resulting from tests shall be repaired and test repeated until the system passes.
        g) Test all isolation valves for leakage.
    2. Non Pressure Laterals
        d) Test piping, as above, after laterals and risers are installed and system is fully operational. Leave trenches open to detect possible leaks.

15. Inspection
    A. The Contractor shall maintain proper facilities and provide safe access for inspection to all parts of the work.
    B. Irrigation inspection shall consist of a minimum of:
        1. Main line pressure test
        2. Coverage test
        3. Final irrigation inspection
    C. The Contractor shall give the Owner's Representative two (2) days notice of its readiness for inspection.
    D. The Contractor shall be solely responsible for notifying Owner's Construction Representative where and when such work is in readiness for testing.
    E. If any work should be covered up without approval of the Owner's Construction Representative, it must be uncovered, if required, for examination at Contractor's expense.
    F. No inspection will commence without "Record" drawings and without completing previously noted corrections, or without preparing the system for inspection.

16. Backfill and Compacting
    A. After system is operating and required tests and inspections have been made, backfill excavations and trenches.
    B. Backfill for all trenches, regardless of the type of pipe covered, shall be compacted to minimum 95 percent density under pavements 85 percent under planted areas.
    C. Backfill material shall be approved soil. Unsuitable material, including clods and rocks over two (2) inches in size shall be removed from the site.
    D. A fine granular material shall be placed initially on all lines, with a minimum of three (3) inches cover. No foreign matter larger than one half (1/2) inch in size shall be permitted in the initial backfill.
    E. Trenches located under paving shall be backfilled with sand (a layer six (6) inches below the pipe and three (3) inches above the pipe) and compacted in layers of 95 percent compaction.
    F. Compact trenches in areas to be planted, by thoroughly flooding the backfill.
    G. Within all planting and lawn areas the existing four (4) inch layer of topsoil shall be restored to its original condition and finish grade.

H. The Contractor shall dispose of surplus earth remaining after backfilling offsite.

END OF SECTION

POLICY ON MEMORIAL BENCHES AND TREES

The University welcomes requests for memorials from individuals or groups associated with Old Dominion University. To ensure consistency and responsiveness, the following procedures have been developed.

Memorial Bench Procedure

Fill in the attached **MEMORIAL BENCH REQUEST FORM** and submit the completed form to the Office of Advancement who will review the application and send it to the VP of Administration and Finance for approval. Upon approval the Office for Advancement will initiate a requisition through the Director of Facilities Management (FM) to purchase the bench and plaque after sufficient funds have been raised.

The donation required for the standard steel memorial bench is **$2,500** made payable to Old Dominion University. The University will not begin any efforts on purchasing or installing a memorial bench until the entire gift is funded. The donation covers the cost of the bench, the fabrication of the plaque and attaching it to the bench, the installation of the bench, and on-going maintenance of the bench. Please note that the cost does not include the replacement of the bench once it has reached the end of its useful life. (Note-Effective 7/1/2018, teak benches will no longer be purchased.)

Once the form and accompanying donation have been received by the Office of Advancement, they will forward the form and a copy of the check to the Director of Facilities Management who, in partnership with FM personnel, will work closely with the donor to identify a suitable location appropriate to the individual being honored and that conforms to the campus landscape plan.

The University acknowledges and appreciates memorial gifts honoring those with connection to the institution, but at the same time, it is important that any memorial designations fit appropriately into the overall physical environment of the campus and that they be placed in areas where future construction is not anticipated in the campus-wide Master Plan. The University will determine whether an additional bench is needed on campus and will be under no obligation to install a memorial bench if no need exists. We do regret that we may be unable to accept all offers for benches, as the number and style of benches ODU selects is a major consideration on keeping the campus attractive, uncluttered, and in agreement with the campus-wide Master Plan.

Funds donated will cover the cost of a pre-approved small commemorative plaque and purchase and installation of the designated bench. The University will determine all aspects of the physical bench (composition, size, style, etc.) and the appropriate foundation to align with the Campus Design Standards.

Plaques must meet specific guidelines in size, shape and wording and must be approved by the VP of Administration and Finance. The text on the plaque shall take into consideration the amount of space available for appropriate text.

Memorial benches are the exclusive property of the University. Benches will receive the same level of maintenance and care as other University assets and may be relocated at a future date due to changing campus needs. Teak Memorial benches will remain on the grounds until they become damaged, unsafe, or unacceptable for an aesthetic standpoint, at which time they will be replaced with the new standard steel bench. If a bench has to be removed, the donor will be informed. If the donor wishes to replace the memorial bench, the replacement bench can be provided at the donation level which is located on the most current memorial policy. The University is under no obligation to replace the bench or to move the plaque to another bench.

Steel memorial benches will be maintained on an ongoing basis and may be removed, temporarily for repairs or maintenance.

To acknowledge our donor's generosity, our staff at ODU will take all reasonable steps to honor and respect your bench you have chosen to sponsor.

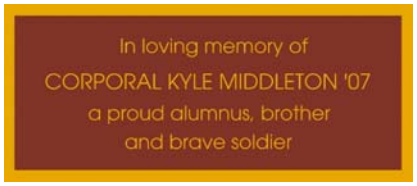
Campus Design Standard Bench

Keystone Ridge Designs (Reading 6' Bench)

Campus Design Standard Memorial Plaque

Bronze Plaque (7" x 3")

Centered below Old Dominion University



Memorial Tree Procedure

The Director of Facilities Management manages requests for gifts of tree plantings on campus in the memory of a member of the faculty, students, staff or alumni. Fill in the attached **MEMORIAL TREE REQUEST FORM** and submit the completed form to the Director who will review and approve the application. Upon approval Facilities Management (FM) will requisition the purchase of the tree after sufficient funds have been raised.

The donation required for a memorial tree is **$1,000**, made payable to Old Dominion University. The University will not begin any efforts on purchasing or installing a memorial tree until the entire gift is funded.

The Grounds Manager and FM personnel will work closely with the donor to select an appropriate species and an appropriate location and coordinate the installation and maintenance of the memorial gift. Locations will consider the campus master plan and future construction when finding an appropriate location.

Neither plaques nor commemorative markers are permitted on trees. Plaques may only be installed as part of a memorial bench, which can be given in association with a tree. Donors are welcome to arrange a ceremony as a dedication.

The tree becomes the exclusive property of the University and the campus staff cannot guarantee the perpetuation of the tree. Memorial trees will remain on the grounds until they become damaged, unsafe, or impede new building construction.

OLD DOMINION UNIVERSITY

MEMORIAL BENCH REQUEST FORM

Date: _____

I/We (list all individuals and/or Groups)

_____

_____

_____

would like to donate $2,500 for a 6' steel bench to be installed on the campus of Old Dominion University.

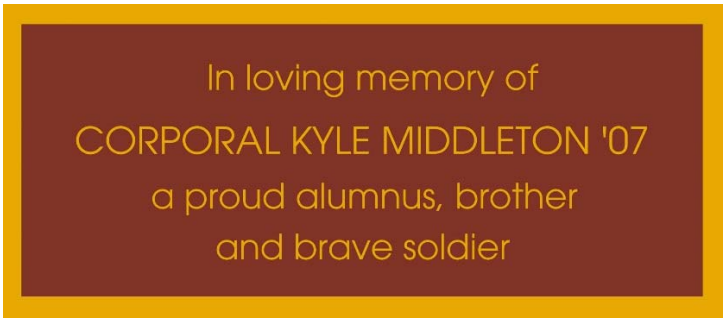
Contact Person Name: _____ Phone: _____

Please complete a form for each individual bench you wish to donate and identify a contact person for that donation. The contact person can be the same for multiple benches if so desired.

Submit your donation (Please make checks payable to: **Old Dominion University)** along with a copy of this form to:

Office of Advancement
4417 Monarch Way Fl. 4
Norfolk, VA 23529

SAMPLE PLAQUE



Please place the exact lettering for the plaque on the lines provided below. Keep in mind there is a maximum of 28 characters/spaces per line. The bench plaque will be 3" x 7" in size and will be made from Bronze. Three lines are usually recommended.

Line 1:_____
Line 2:_____
Line 3:_____
Line 4:_____

If you have questions please feel free to call the Office of Advancement at 757-683-3090.

Office of Advancement shall forward completed form and copy of the check to the Director of Facilities.

We appreciate this opportunity to honor your donation.

OLD DOMINION UNIVERSITY

MEMORIAL TREE REQUEST FORM

Date: _____

I/We (list all individuals and/or Groups)

_____

_____

_____

would like to donate $1,000.00 for a tree to be installed on the campus of Old Dominion University.

Contact Person Name: _____ Phone: _____

Please complete a form for each individual tree you wish to donate and identify a contact person for that donation. The contact person can be the same for multiple trees if so desired.

Please keep in mind, in order to ensure we are able to meet our commitment, there are designated cut-off dates for the submittal of Memorial Tree Request forms for each planting season.

Spring Planting – March 1st Fall Planting – September 1st

The following is a suggested list of trees available for named tree donations. The actual species will be selected by the University Grounds Manager.

Shade trees, flowering trees, and evergreens. Species will be discussed with Landscape Manager.

The fee provides one of the following design standards:

- 1-1/2" to 2" caliper shade tree
- 1-3/4" to 2" caliper flowering tree
- 7' - 8' evergreen tree

Submit your donation (Please make checks payable to: **Old Dominion University)** along with a copy of this form to:

Director of Facilities Management
4401 Powhatan Avenue
Norfolk, VA 23529

If you have questions please feel free to call Facilities Management at 757-683-4269.
We appreciate this opportunity to honor your donation.

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		Budgeted Location							
Item #.	**Description**	**GC**	**O**	**AV**	**ITS**	**Other**	**FF&E**	**NIC**	**Notes**
Miscellaneous									
G.01	Building Permits Fees		X			X			
G.02	Site Permit (SWPP) Fees	X							
G.03	Fundamental Building Commissioning Agent Fees		X						
G.04	Enhanced Building Commissioning Agent Fees		X						
G.05	Special/Third Party Inspections		X						
G.06	CMaR Construction Contingency	X							Owner Controlled in Construction Budget
G.07	Design Contingency	X							See General Project Requirements for % by Phase
G.08	Owner Contingency		X						Owner Controlled Construction Contingency
G.09	Wayfinding Design Fees					X			
G.10	FF&E Design Fees					X			
G.11									
A/V Equipment									
AV.01	Camera's		OFCI						
AV.02	Conduit path to Production Studios	CFCI							
AV.03a	Projection Screens (Wall Mounted or Ceiling Surface Mounted)			OFOI					Classroom Central procures and installs
AV.03b	Projection Screens (Recessed Ceiling Units)	CFCI							
AV.04	Speaker Systems			OFOI					
AV.05	Ceiling Mounted Speakers			OFOI					
AV.06	Projectors			OFOI					
AV.07	Projector Ceiling / Wall Mounts			OFOI					
AV.08	Audio/Visual Cabling - Interior			OFOI					
AV.09	Audio Visual Cabling - Exterior			OFOI					
AV.10	Floor Boxes	CFCI							
AV.11a	Visual Display Surfaces / Non Electronic (Rooms)			OFOI					Must be Discussed on A project by project Basis
AV.11b	Visual Display Surfaces / Non Electronic (Public Space: Corridors, Lobbies)	CFCI							
AV.12	Box and Conduit to above ceiling at accessible wall locations	CFCI							
AV.13	Conduits at inaccessible locations	CFCI							
AV.14	Electronic Display Boards			OFOI					
AV.15	Handwriting Capture Systems			OFOI					
AV.16	Televisions / Flat Screen Displays			OFOI					
AV.17	Recessed wall boxes for television / flat screen displays	CFCI							Recesses as required by ADA
AV.18	Wall mounted arm for television / flat screen displays			OFOI					
AV.19	Cable converters			OFOI					
AV.20	Patch Panels at tables & walls for Television / Flat Panel monitor displays			OFOI					
AV.21	Equipment Racks			OFOI					
AV.22	Classroom Capture Systems			OFOI					
AV.23	Stadium / Venue Sound System	CFCI							
AV.24	Sound System Structural Supports	CFCI							
AV.25									
Security Systems									
SS.01	Security Cameras (Exterior & Interior)				OFOI				
SS.02	Electrified Hinges	CFCI							
SS.03	Electric Locksets	CFCI							
SS.04	Electric Strikes	CFCI							
SS.05	Card Readers | Proximity Readers				OFOI				
SS.06	Motion Sensors					OFCI			Provided by ODU Police Department
SS.07	Front End Controllers (Door Access)				OFOI				
SS.08	Front End Controllers (Intrusion Detection System)					OFCI			Provided by ODU Police Department
SS.09	Power Transformers 12V - 24V for door access equipment				OFOI				
SS.09	Power Transformers below 120V (other than door access)					OFOI			
SS.10	Security Cabling (Door Access)				OFOI				
SS.11	Security Cabling (Special Systems)					OFOI			Determined on a case by case basis
SS.12	Security System Conduits at inaccessible locations	CFCI							
SS.13	Box & Conduit above ceiling at accessible wall locations	CFCI							
SS.14	Security Camera Signage					OFOI			Provided by ODU Police Department
SS.15									
Communications									
C.01	Routers				OFOI				
C.02	Servers				OFOI				
C.03	Switches				OFOI				
C.04	Server Racks				OFOI				
C.05	Cabling				OFOI				
C.06	Cable Tray	CFCI							
C.07	Uninterruptable Power Supplies (Small Equipment Size Units)				OFOI				Provided by ITS
C.08	Conduits in inaccessible areas	CFCI							
C.09	Box and conduits in accessible wall locations	CFCI							
C.10	Wi-Fi Transmitters				OFOI				
C.11	Exterior Cabling				OFOI				
C.12	Desktop Computers and Accessories							X	
C.13	Telephones and Telephone Controllers				OFOI				
C.14									
Restrooms / Locker Rooms / Housekeeping									

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		Budgeted Location							
Item #.	**Description**	**GC**	**O**	**AV**	**ITS**	**Other**	**FF&E**	**NIC**	**Notes**
TA.01	Housekeeping Lockers	CFCI							**Notes**
TA.02	Hand Driers	CFCI							
TA.03	Soap dispensers (Public Restrooms)						OFCI		
TA.04	Trash Receptacles						OFOI		
TA.05	Sanitary Napkins Disposal Units						OFCI		Free Standing
TA.06	Diaper Changing Stations	CFCI							
TA.07	Coat / Robe Hooks	CFCI							
TA.08	Towel Bars	CFCI							
TA.09	Benches in Locker Rooms	CFCI							
TA.10	Mirrors	CFCI							
TA.11	Toilet Seat Covers						OFOI		
TA.12	Mop Sink Chemical Proportioner						OFOI		Only if requested by user
TA.13	FRP Behind Mop Sink	CFCI							Coordinate with backflow on Faucet
TA.14	Housekeeping Room Shelving						CFCI		
TA.15	Toilet Paper Dispenser						OFCI		
TA.16	Toilet Paper Dispenser (Res Hall Student Bathroom)	CFCI							
TA.17	Concourse Trashcans (Stadium)						OFOI		
Athletic Equipment									
AE.01	Fitness Equipment (treadmills, weights, etc.)						OFOI		
AE.02	Fitness Equipment Power	CFCI							
AE.03	Fitness Equipment Communications Conduit	CFCI							
AE.04	Fitness Equipment Communications Wiring					OFOI			Wiring needs to be determined. ITS may not be able install.
AE.05	Spectator Stands	CFCI							
AE.06	Goal Posts / Goals	CFCI							
AE.07	Embeds for Goal Posts/Goals	CFCI							
AE.08	Timing Systems					OFOI			
AE.09	Scoreboards	CFCI							
AE.10	Public Address (PA) systems			OFOI					
AE.11	Empty Conduits for PA/Timing Systems	CFCI							
AE.12	Loose Field Markers							X	
AE.13	Striping on Artificial Turf					OFOI			
AE.14	Inlaid logos on Artificial Turf					OFOI			
AE.15	Artificial turf watering systems (if desired)					OFOI			
AE.16	Basketball Backstops						OFOI		
AE.17	Wall Mounted Safety Pads						OFOI		
AE.18	Gym Divider Curtain	CFCI							
AE.19	Home Team Lockers	CFCI							
AE.20	Visiting Team Lockers	CFCI							
AE.21	Officials Lockers	CFCI							
AE.22	Coaches Lockers	CFCI							
AE.23	Locker Room Benches (including ADA)	CFCI							
AE.24	Exterior Basketball Backboards / hoops	CFCI							
AE.25	Athletic Field Lighting	CFCI							
AE.26									
Pool Equipment									
PE.01	Pool Pumps	CFCI							
PE.02	Pool Heater	CFCI							
PE.03	Pool Filter	CFCI							
PE.04	Pool Chemical Feeders	CFCI							
PE.05	Pool CO2 Tank and Controller		OFOI						
PE.06	Pool Piping	CFCI							
PE.07	Pool Automatic Vacuum System		OFOI						
PE.08	Pool Maintenance Supplies (Pole, Brush, Hoses, Etc.)		OFOI						
PE.09	Pool Chemical Test Kit		OFOI						
PE.10	Pool Chemicals		OFOI						
PE.11	Pool Controllers		OFOI						
PE.12	Lifeguard Chairs						OFOI		
PE.13	Life Ring						OFOI		
PE.14	Pool Play Structures / Slide / Diving Board	CFCI							
PE.15	Pool Ladders	CFCI							
PE.16	Misc. Pool Supplies not Listed							X	
PE.17									
Kitchen Equipment									
KE.01	Kitchen Cookware (Pots/Pans)					X			
KE.02	Kitchen Soft wares (Utensils, glassware, trays, etc.)					X			
KE.03	Kitchen Commercial Exhaust Hoods	CFCI							
KE.04	Kitchen Commercial Ware Washer						CFCI		
KE.05	Commercial Freestanding Refrigerators/Freezers						CFCI		
KE.06	Walk in Coolers / Freezers / Refrigerators						CFCI		
KE.07	Commercial Kitchen Equipment						CFCI		
KE.08	Soda Fountain Equipment						OFOI		
KE.09	Soda Fountain Syrup Box Racks						OFOI		
KE.10	Syrup/CO2 Line sets						OFOI		

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Item #.	**Description**	**GC**	**O**	**AV**	**ITS**	**Other**	**FF&E**	**NIC**	**Notes**
KE.11	CO2 Tank/ Regulator						OFOI		
KE.12	Empty Conduits for Soda Line Sets	CFCI							
KE.13	Commercial Kitchen Equipment utility connections	CFCI							
KE.14	Residential Appliances						OFOI		
KE.15	Grease Interceptors	CFCI							
KE.16	3 Compartment Sinks						CFCI		
KE.17	Hand Sinks	CFCI							
KE.18									
Furnishings & Other Equipment									
F.01	Movable Furniture						OFOI		
F.02	Fixed Casework	CFCI							
F.03	Reception Lobby Desks (Built in)	CFCI							
F.04	Open Office Furniture						OFOI		
F.05	Carpet and Carpet Tile	CFCI							On non Capital Projects - OFOI
F.06	Window Treatments	CFCI							
F.07	Motorized Window Treatments	CFCI							
F.08	Code required Signage	CFCI							
F.09	Room Signage	CFCI							
F.10	Exterior Building Mounted (Building Name) Signage	CFCI							Architect to Locate, Only at Named buildings
F.11	Permanent Building Identification Sign (Pylon)					OFOI			Architect to locate
F.12	Interior Wayfinding signage							X	
F.13	Stadium Wayfinding Signage						CFCI		
F.14	Parking Signage	CFCI							
F.15	Toilet Partitions	CFCI							
F.16	Department Specific Equipment							X	
F.17	Dark Room Equipment							X	
F.18	Stage Lighting						CFCI		
F.19	Fire Extinguishers						OFOI		
F.20	Fire Extinguisher Cabinets	CFCI							
F.21	Impact Wall Protection	CFCI							
F.22	Wall and Door Protection	CFCI							
F.23	Operable Partitions	CFCI							
F.24	Cubicle Curtains	CFCI							
F.25	Postal Specialties	CFCI							
F.26	Loading Dock Bumper, Seals, Lifts	CFCI							
F.27	Maintenance Anchors	CFCI							
F.28	Library Theft Protection Equipment	CFCI							
F.29	Banquette Seating						OFOI		
F.30	Lecture Hall Fixed Strip Tables	CFCI							
F.31	Lecture Hall Fixed Seating	CFCI							
F.32									
Laboratory									
L.01	Lab Bench Casework (Fixed or movable)	CFCI							
L.02	Lab Fixtures	CFCI							
L.03	DI Water System	CFCI							
L.04	Lab Gases	CFCI							
L.05	Fume Hoods	CFCI							
L.06	Emergency Power	CFCI							
L.07	Loose Scientific Equipment							X	
L.08	Special Purpose Scientific Equipment							X	
L.09	Autoclaves						OFCI		
L.10	Cage Wash						CFCI		
L.11	Snorkel Exhaust Systems	CFCI							
L.12	RO Water System	CFCI							
L.13									
Sitework									
SW.01	Landscaping	CFCI							
SW.02	Landscaping Irrigation (Permanent & Temporary)	CFCI							
SW.03	Temporary Site Construction Fence and Gate(s)	CFCI							
SW.04	Permanent Site Fencing	CFCI							
SW.05	Site Lighting	CFCI							
SW.06	Power to Site Signage	CFCI							
SW.07	Dewatering during construction	CFCI							
SW.08	Unsuitable Soils								See Technical Divisions for additional info.
SW.09	Asphalt Paving	CFCI							
SW.10	Concrete Sidewalks	CFCI							
SW.11	Site Benches						OFOI		
SW.12	Site Bench Pad	CFCI							
SW.13	Bike Racks	CFCI							
SW.14	Bike Shelters	CFCI							
SW.15	Trash and Ash Urns						OFOI		
SW.16	Traffic Bollards	CFCI							
SW.17	Bollard Lights	CFCI							
SW.18	Traffic Signage	CFCI							

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SW.19	Pavement Markings	CFCI							
SW.20	Dumpster(s)						OFOI		
SW.21	Dumpster Enclosure(s)	CFCI							
SW.22	Dumpster Pads	CFCI							
SW.23	Pest Control	CFCI							
SW.24	Skateboard Racks						OFOI		
SW.25	Skateboard Deterrents	CFCI							
SW.26									
Utilities									
U.01	Generator (s) including Automatic Transfer Switches	CFCI							
U.02	UPS systems(Building or Room)	CFCI							Most Projects would not have this, very specific
U.03	Electrical Secondary	CFCI							
U.04	Temporary Power Usage Fees								See Technical Divisions for additional information.
U.05	Temporary Power Connection Fees								
U.06	Permanent Power Connection Fees								
U.07	Permanent Natural Gas Connection Fees								
U.08	Permanent Natural Gas Usage Fees								
U.09	Permanent Water Usage Fees								
U.10	Temporary Water	OFCI							
U.11	Irrigation Meter	CFCI							
U.12	Fire Meter	CFCI							
U.13	Water Meter	CFCI							
U.14	Gas Meter	CFCI							
U.15	Fiber Optic Connections				OFOI				
U.16	Duct Banks	CFCI							
U.17	Existing Manhole Relocations	CFCI							
U.18	Overhead Power Pole Relocations					OFOI			
U.19									

Contractor Key Request

Requests for building keys for use by a contractor doing renovation or warranty work on campus must follow the procedures noted below:

1. Authorization for Issue of Temporary Keys –
    a. This form must be filled out by the ODU Project Manager, whose information should be included at the top of the form, followed by the contractor's information.
    b. Select one time issue or multiple issues.
        i. Multiple issues mean that a key will be checked out on more than one occasion over a period of time. If you choose this option, please indicate the end date for the authorization on the expected date of return line. The contractor will still need to return the key each day by 5:00 and check it out again when they return to continue the job.
    c. The ODU Project Manager shall route the form to be signed by either the Director or Assistant Director of Design and Construction and/or the Director or Assistant Director of Facilities Management.
    d. Submit the completed form to the Front Desk in the Facilities Management Office.
        i. The Front Desk will log the request and route it to the structural shop for approval. Once approved, the from will be sent back to the Facilities Office Manager who will review it for completion and submit it to the Assistant Director of Facilities Management for their final approval.
    e. Allow adequate time for the form to be completed, submitted and reviewed.
2. Facilities Management Department - Acknowledgement of Responsibility - Contractor Key Use Agreement
    a. This form should be reviewed with the contractor before handing out the key to them. The contractor will need to initial each statement and sign the bottom. *(Next Page)*

Facilities Management Department
Acknowledgement of Responsibility
Contractor Key Use Agreement

Please read each statement and initial beside same.

_____ I understand that I have been issued and/or authorized to sign out University keys on a temporary basis for use during my current contract.

_____ I understand that I am personally responsible and accountable for the security and safekeeping of such key(s).

_____ I understand that the key(s) issued to my company or signed out by me will not be loaden to others and will not be duplicated under any circumstances. I am responsible for maintaining control of keys issued to me at all times while they are in my possession. I am never to lay the keys down or leave them in a door lock.

_____ I will return all keys issued to me to the Facilities Management Department upon the completion or termination of my contract.

_____ I understand that I am required to report any lost or misplaced key(s) to Facilities Management **immediately.**

_____ I understand that my company if financially responsible for all costs associated with the negligent care or use of keys issued to me and key loss.

I certify that I have read each of the above statements and that I understand them and agree to abide by these requirements.

Name (Print)	Company Name
Signature	Date

I have reviewed all of the above statements with this contractor.

ODU Personnel Name	ODU Departments
Signature	Date

OLD DOMINION UNIVERSITY

Authorization for Issue of Temporary Key(s)

REQUESTOR PROVIDED INFORMATION:

Name: _____

UIN: _____

Position: _____

Department: _____

E-Mail Address: _____

CONTRACTOR INFORMATION, IF KEY IS TO BE ISSUED TO CONTRACTOR:

Company Name: _____

Contact Information: _____

Individual(s) to be issued key(s): _____

One-time issue: ☐ Expected Date of Return: _____

Multiple issues: ☐

Key Identification (Building, Room #, etc.)	Total	Purpose

Approval: _____ _____

Department Manager (Signature) Print Name Phone #

Budget Code: _____ Date: _____

Temporary Key Request: APPROVED ☐ DISAPPROVED ☐

Associate Director: _____

Richard Le Moal

Reason for Disapproval: _____

(To Be Completed by Facilities Management Administrative Department)

Continuous Authorization terminated ☐

Terminated by: _____ Date: _____

REV 11/6/13

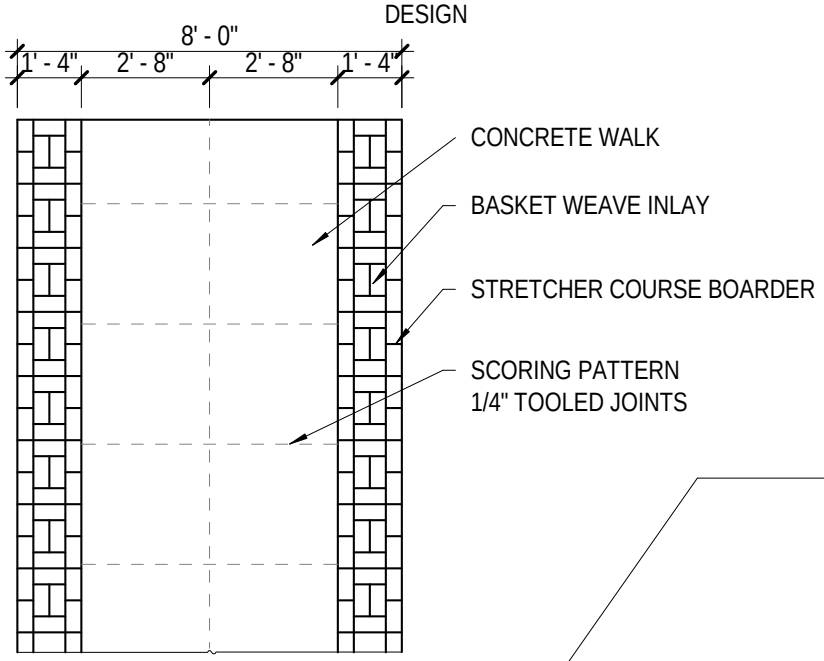
FICM Categories	Color Code	Color
ASSIGNABLE AREAS		
100 Classroom Facilities	**TAN**	
110 Classroom	205-175-150	
115 Classroom Service	130-100-75	
200 Laboratory Facilities	**GREEN**	
210 Class Laboratory	225-240-225	
215 Class Laboratory Service	195-230-185	
220 Open Laboratory	165-215-155	
225 Open Laboratory Service	130-205-115	
250 Research/Nonclass Laboratory	70-155-55	
255 Research/Nonclass Laboratory Service	60-100-40	
300 Office Facilities	**BLUE**	
310 Office	185-220-230	
315 Office Service	145-205-220	
350 Conference Room	50-135-155	
355 Conference Room Service	35-90-105	
400 Study Facilities	**YELLOW**	
410 Study Room	255-250-15	
420 Stack	235-230-0	
430 Open-Stack Study Room	200-195-0	
440 Processing Room	165-160-0	
455 Study Service	130-130-0	
500 Special Use Facilities	**MULTI**	
510 Armory	240-220-220	
515 Armory Service	230-185-185	
520 Athletic or Physical Education	220-150-150	
523 Athletic Facilities Spectator Seating	150-55-50	
525 Athletic or Physical Education Service	100-35-35	
530 Media Production	228-223-236	
535 Media Production Service	204-192-218	
540 Clinic	177-160-199	
545 Clinic Service	96-73-122	
550 Demonstration	110-50-160	
555 Demonstration Service	65-50-80	
560 Field Building	220-215-195	
570 Animal Facilities	195-190-150	
575 Animal Facilities Services	180-170-125	
580 Greenhouse	150-140-85	
585 Greenhouse Service	105-100-60	
590 Other (All Purpose)	75-70-40	

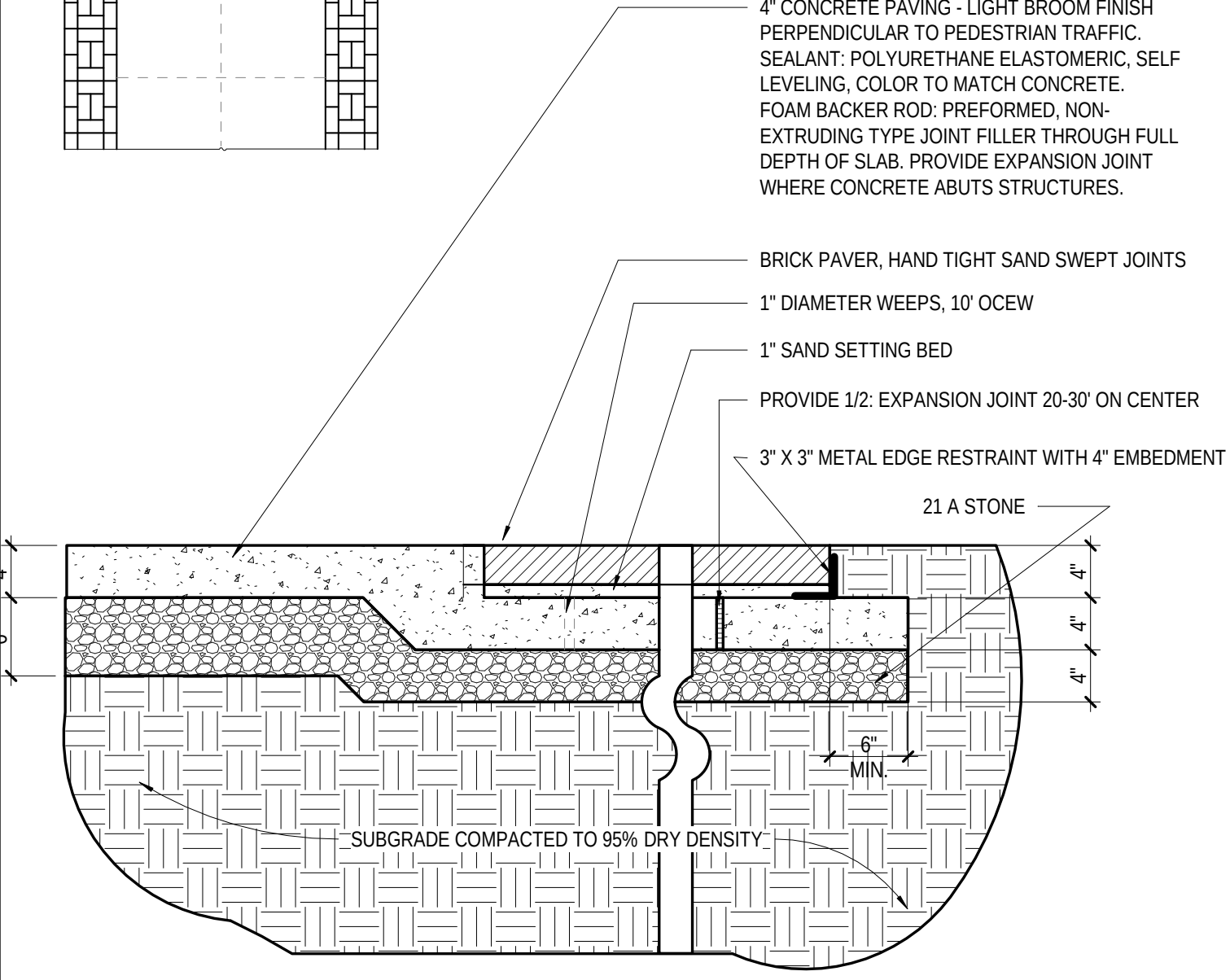
FICM Categories	Color Code	Color
600 General Use Facilities	**TORQUISE**	
610 Assembly	190-225-255	
615 Assembly Service	120-255-255	
620 Exhibition	0-255-255	
625 Exhibition Service	0-225-220	
630 Food Facility	50-200-200	
635 Food Facility Service	45-180-180	
640 Day Care	40-155-150	
645 Day Care Service	205-235-255	
650 Lounge	135-215-255	
655 Lounge Service	100-205-255	
660 Merchandising	51-155-255	
665 Merchandising	51-100-255	
670 Recreation	51-51-255	
675 Recreation Service	51-51-205	
680 Meeting Room	51-51-155	
685 Meeting Room Service	0-0-100	
700 Support Facilities	**GREY**	
710 Central Computer or Telecommunications	240-240-240	
715 Central Computer or Telecommunications	225-225-225	
720 Shop	205-205-205	
725 Shop Service	185-185-185	
730 Central Storage	165-165-165	
735 Central Storage Service	145-145-145	
740 Vehicle Storage	135-135-135	
745 Vehicle Storage Service	120-120-120	
750 Central Service	110-110-110	
755 Central Service Support	95-95-95	
760 Hazardous Materials Storage	85-85-85	
770 Hazardous Waste Storage	70-70-70	
775 Hazardous Waste Service	55-55-55	
780 Unit Storage	10-10-10	
800 Health Care Facilities	**ORANGE**	
810 Patient Bedroom	255-155-85	
815 Patient Bedroom Service	255-125-35	
820 Patient Bath	255-100-0	
830 Nurse Station	255-235-225	
835 Nurse Station Service	250-215-185	
840 Surgery	250-190-140	
845 Surgery Service	250-170-105	
850 Treatment/Examination Clinic	245-150-70	
855 Treatment/Examination Clinic Service	245-125-25	
860 Diagnostic Service Laboratory	225-105-10	
865 Diagnostic Service Laboratory Support	200-95-10	
870 Central Supplies	165-80-5	
880 Public Waiting	150-70-5	
890 Staff On-Call Facility	120-55-5	
895 Staff On-Call Facility Service	100-50-0	

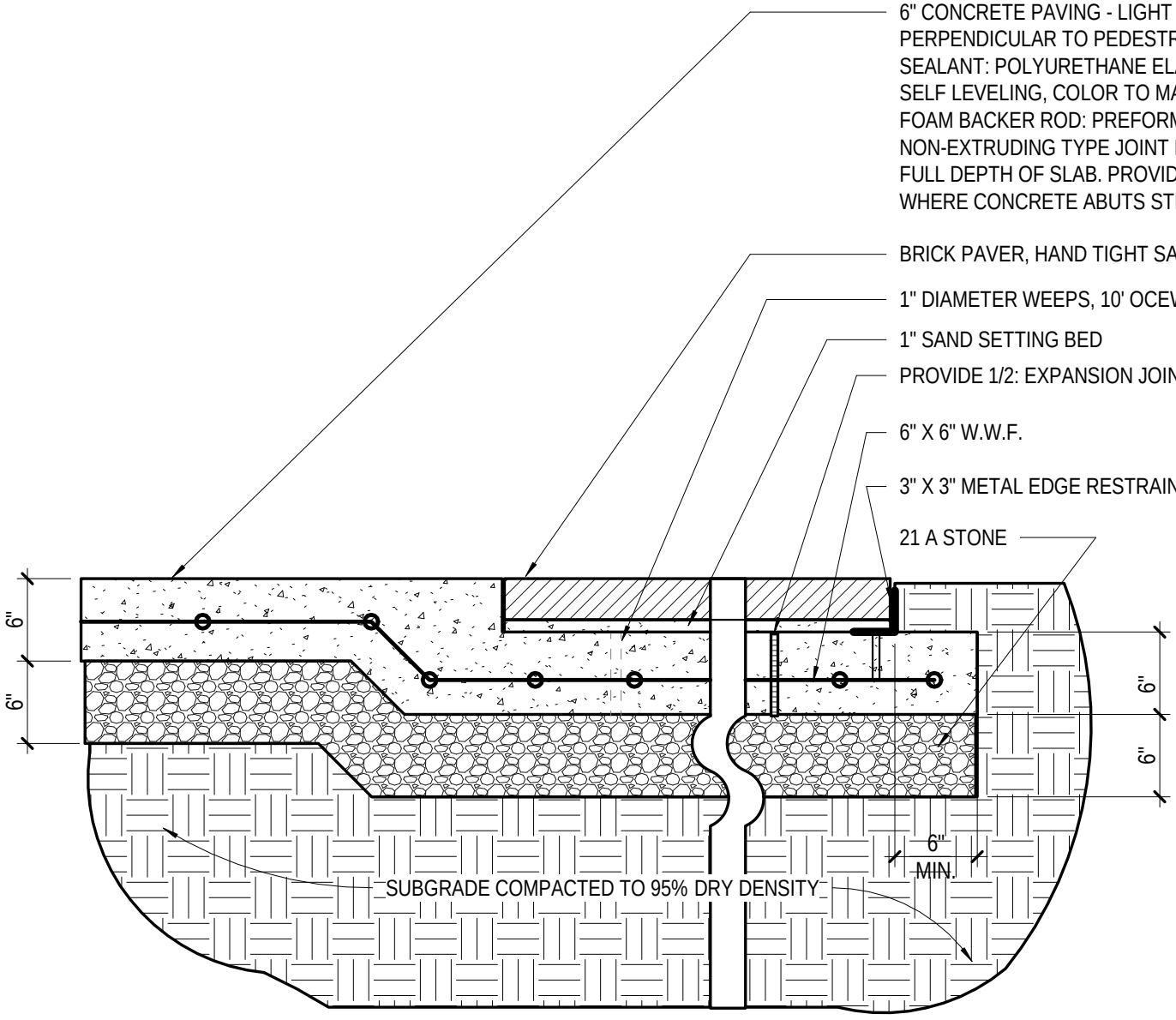
FICM Categories	Color Code	Color
900 Residential Facilities	**PINK**	
910 Sleep/Study Without Toilet or Bath	255-185-220	
919 Toilet or Bath	255-155-205	
920 Sleep/Study With Toilet or Bath	255-100-155	
935 Sleep/Study Service	255-125-130	
950 Apartment	255-0-100	
955 Apartment Service	175-0-90	
970 House	155-0-50	
000 Unclassified Facilities	**RED**	
050 Inactive Area	255-0-0	
060 Alteration or Conversion Area	255-100-100	
070 Unfinished Area	255-165-165	
NON-ASSIGNABLE AREAS		
WWW Circulation Area		
W01 Bridge/Tunnel	220-220-175	
W02 Elevator	205-210-170	
W03 Escalator	255-250-225	
W04 Loading Dock	255-240-195	
W05 Lobby	255-230-150	
W06 Public Corridor	255-225-120	
W07 Stairway	255-190-0	
XXX Building Service Area		
X01 Custodial Supply Closet	205-155-0	
X02 Janitor Room	155-100-50	
X03 Public Rest Room	100-50-0	
X04 Trash Room	75-30-25	
YYY Mechanical Area		
Y01 Central Utility Plant	150-230-230	
Y02 Fuel Room	50-205-205	
Y03 Shaft	0-155-155	
Y04 Utility/Mechanical Space	0-100-100	

OLD DOMINION UNIVERSITY

PRIMARY STANDARD WALKWAY WIDTHS ARE 6', 8' AND 10'.
SECONDARY WALKWAYS SHALL NOT HAVE PAVER BOARDER
CONFIRM LOCATIONS OF PRIMARY AND SECONDARY WALKWAYS WITH UNIVERSITY ARCHITECT AND GROUNDS MANAGER DURING PRELIMINARY DESIGN

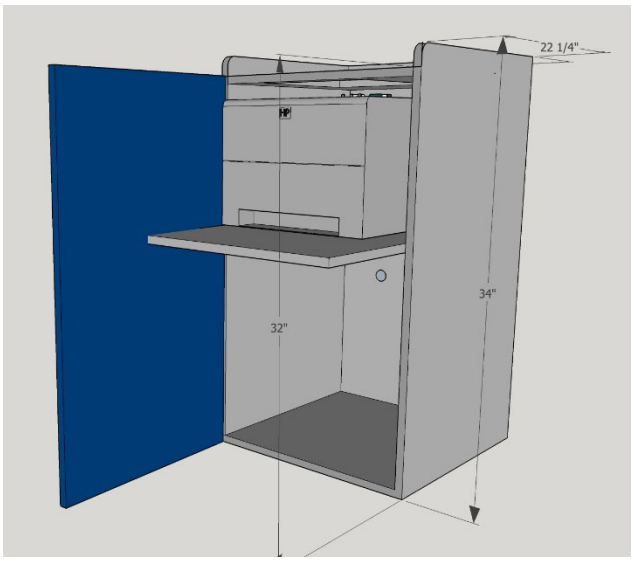





6" CONCRETE PAVING - LIGHT BROOM FINISH
PERPENDICULAR TO PEDESTRIAN TRAFFIC.
SEALANT: POLYURETHANE ELASTOMERIC,
SELF LEVELING, COLOR TO MATCH CONCRETE.
FOAM BACKER ROD: PREFORMED,
NON-EXTRUDING TYPE JOINT FILLER THROUGH
FULL DEPTH OF SLAB. PROVIDE EXPANSION JOINT
WHERE CONCRETE ABUTS STRUCTURES.
BRICK PAVER, HAND TIGHT SAND SWEPT JOINTS
1" DIAMETER WEEPS, 10' OCEW
1" SAND SETTING BED
PROVIDE 1/2: EXPANSION JOINT 20-30' ON CENTER
6" X 6" W.W.F.
3" X 3" METAL EDGE RESTRAINT WITH 4" EMBEDMENT
21 A STONE
6"
6"
6"
6"
6"
MIN.
SUBGRADE COMPACTED TO 95% DRY DENSITY

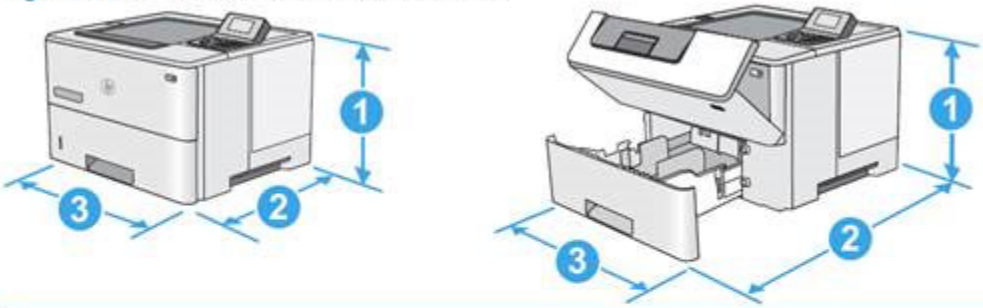
ITS Provided Student Use Printer Cabinet

Dimensions: 26.5” wide, 23.25” deep, 35 “ tall

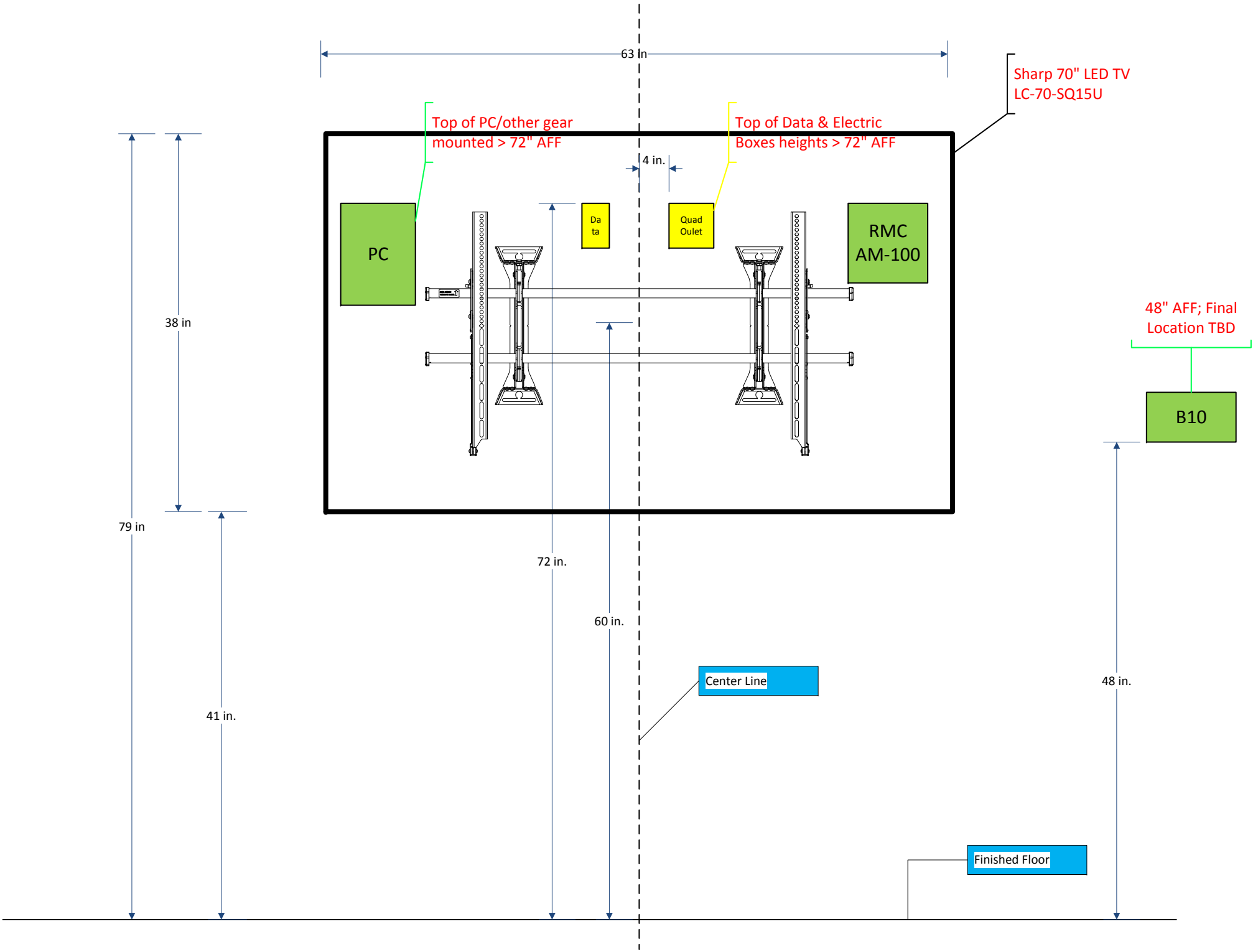


Printer dimensions

Figure 1-1 Dimensions for the n and dn models



	Printer fully closed	Printer fully opened
1. Height	296 mm (11.7 in)	296 mm (11.7 in)
2. Depth	Tray 2 dust cover closed: 376 mm (14.8 in)	569 mm (22.4 in)
	Tray 2 dust cover open: 444 mm (17.5 in)	
3. Width	410 mm (16.1 in)	410 mm (16.1 in)
Weight	12 kg (26.5 lb)	


63 In
Sharp 70" LED TV
LC-70-SQ15U
Top of PC/other gear
mounted > 72" AFF
Top of Data & Electric
Boxes heights > 72" AFF
4 in.
PC
Da
ta
Quad
Oulet
RMC
AM-100
48" AFF; Final
Location TBD
B10
38 in
79 in
72 in.
60 in.
41 in.
48 in.
Center Line
Finished Floor

Old Dominion University comprises three campuses and a multitude of buildings totaling millions of square feet. Managing the documents associated with the number of buildings and ongoing renovations is a daunting task and as such obtaining and logging all of the key data associated with a project is vital to the effectiveness of Facilities Management and Construction. We have set up a digital library file structure to provide consistency when searching for information, typically well after the original building is built. It is vital that we receive the files noted below in the organized format requested. The quantity of information may vary project to project, but the intent is the same. The ODU Project Manager is responsible for confirming that the files below have been received and delivered to the Digital Library Manager who stores them on the secured drive, prior to closing out contracts. Too often we get PDF files that are immense and not able to be opened on an average computer.

Folder Name	File Name	Description	File Format	✓
A/E BIM & AutoCAD Models				
YYYY_ORIGINAL (ADD or RENO)	These can remain named as the A/E has called them originally because they are linked files.	The Models have to be detached before sending to ODU. Note we do not use BIM 360 so it is important that you confirm these will open without issue.	.rvt	
	As originally named	Civil Drawing Files	.dwg	
	As originally named	Landscape drawing files	.dwg	
A/E Record Drawings & Specifications				
02 AE Record Drwgs	00 GENERAL	Cover sheet and any other general information sheets	PDF - Bookmarked	
	02 CIVIL	Single PDF of each discipline		
	03 LANDSCAPE			
	04 STRUCTURAL			
	05 ARCHITECHTURAL			
	06 PLUMBING			
	07 MECHANICAL			
	08 ELECTRICAL			
	09 FIRE ALARM			
	10 FIRE PROTECTION			
	10 (NAME)	Add a folder for each (if any) specialty disciplines such as equipment, interiors, etc.		
	YYYY_Project Manual VOL 1		PDF -Bookmarked	
	YYYY_Project Manual VOL 2			
	YYYY_Project Manual VOL 3			
	YYYY_Geotech Report	Be sure this includes the Geo Tech Report either as a separate PDF or a separate file		
GC As Builts				
03 GC As Builts	Follow the same structure as noted above for the A/E Record Drawings.		PDF of each Discipline - Bookmarked	
Submittals and Shop Drawings				
04 Construction Submittals	DIV 01	Final Approved Shop Drawings/Submittals, grouped by division, not individual submittal folders. **IMPORTANT - file names that are too long cannot be copied to digital library and will cause all files to be set back to be redone by the AE or GC.**	Individual PDF's of each approved submittal	
	DIV 02			
	Continue with DIV folders up through DIV 33			

Furniture Fixtures and Equipment				
05 FFE	YYYY_FFE Specs		PDF	
	YYYY_FFE Plans		PDF	
	YYYY_FFE Boards	If presentations were done digitally, then include the most up to date presentation. If boards were produced provide a photograph of the board and legends.	Jpeg or PDF	
O&M Manuals				
03 OM Manuals				
YYYY_ORIGINAL (ADD or DEMO)			PDF - Bookmarked	
Interior Finishes	YYYY_FINISHES	Record finish legend identifying each interior finish material used on the project by finish code, manufacturer, product name, size and color	PDF	
Exterior Materials	YYYY_EXT MATERIALS	Comprehensive list of all exterior materials used on the building, listing the manufacturer, style, color etc. Specifically list the brick including the percentage of each brick used for blends.	PDF	
Training	YYYY_(Name of Training)	Training Videos. Include an image of the Sign In sheet for each training session at the start of the training video.	Video file	
Warranties	YYYY_WARRANTIES	At the front of the warrantee package provide a list of all warrantees with contact information and relative effective start and end dates	PDF	
Maintenance	YYYY_OM	Along with the technical maintenance requirement, provide a list summarizing the contents of this section	PDF – Book marked	

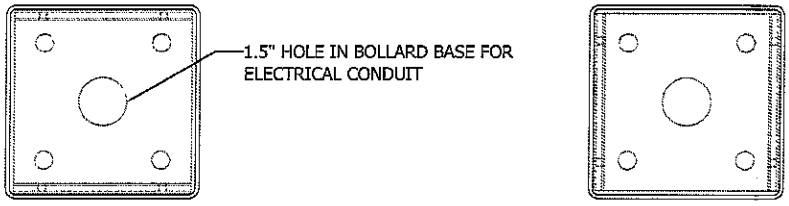
If you have any questions regarding the desired format please ask before sending files that we cannot use.

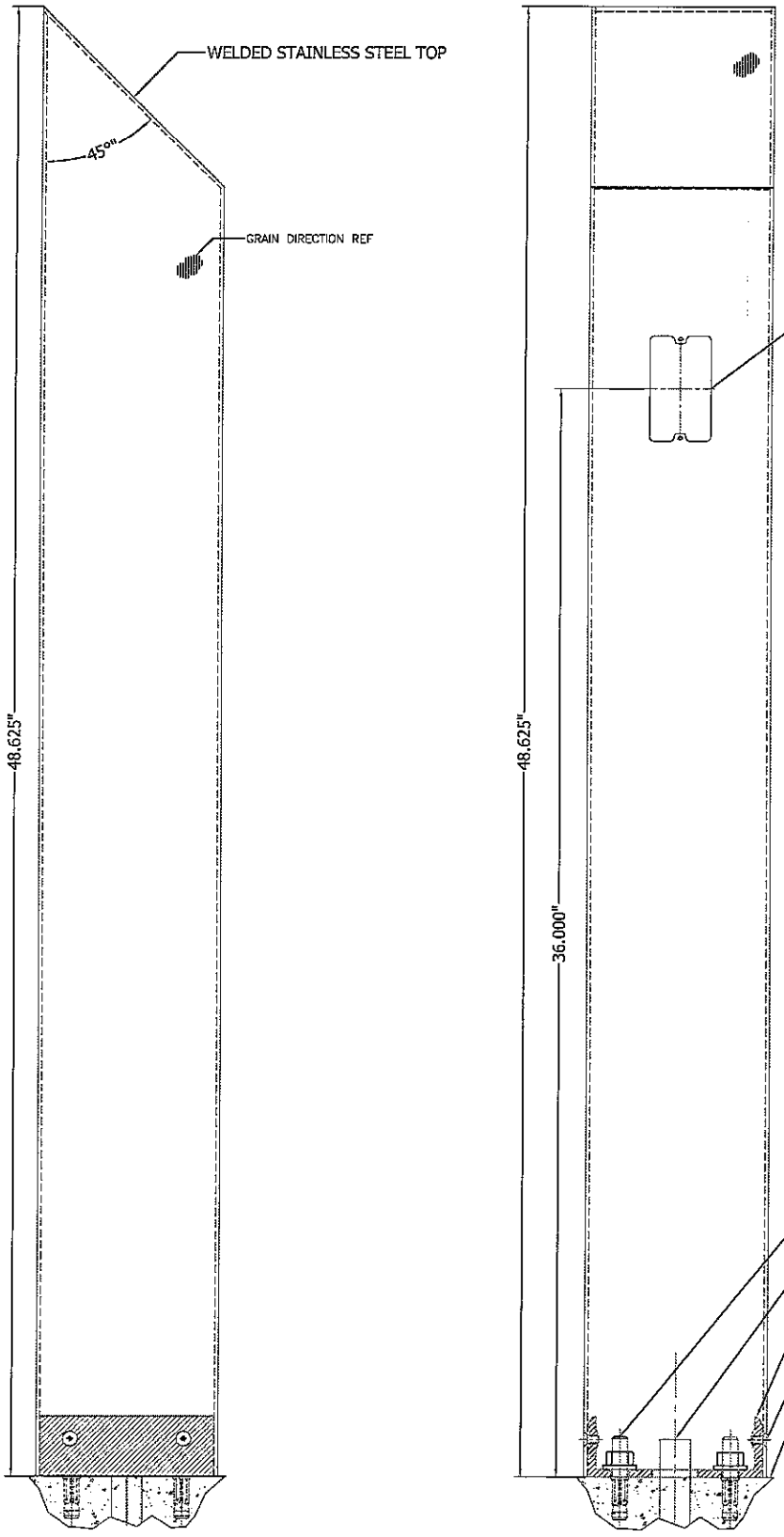
PRE-PRODUCTION DRAWING.
NOT FOR FABRICATION

CUSTOMER APPROVAL

INITIAL:_____

DATE:_____





MATERIAL: STAINLESS STEEL TYPE 304
FINISH: US32D SATIN

QUANTITY: 1

Exact product dimensions and features may vary slightly from example shown above.

Wikk Industries, Inc.
6169 Industrial Ct.
Greendale,WI 53129-0167
Phone: 877-421-9490
Fax: 877-421-3158

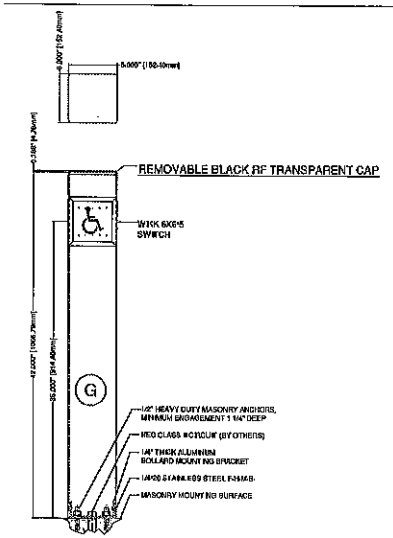
SCALE	DRAWN BY/DATE	CHECKED BY/DATE
N.T.S.	JK/260CT10	

TITLE: ANGLED TOP SQUARE US32D BOLLARD

DRAWING NUMBER: BOLLARDS\NEW PROJECTS\BPA SM TUBE 32D

WIKK PART NO.: BPA SM-TUBE 32D

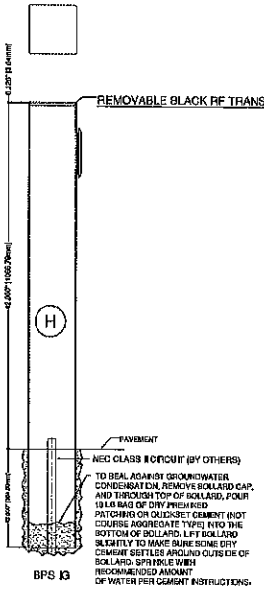
Examples shown are representative of, but not limited to, bollards that can be manufactured.



STANDARD 6" X 6" X 42" SQUARE BOLLARD WITH WIKK 6X6•5 SWITCH AT 36" FROM FINISHED FLOOR AND REMOVABLE RF TRANSPARENT BLACK CAP

BPSSM

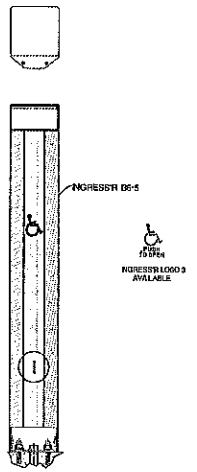
- 6" X 6" X 42"
- SINGLE GANG PREP
- REMOVABLE BLACK RF TRANSPARENT CAP
- SURFACE MOUNT



BPS I3

INGROUND OPTION AVAILABLE FOR ALL BOLLARDS

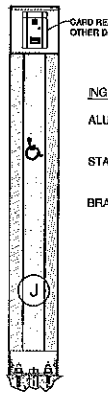
- 6" X 6" X 54"
- SINGLE GANG PREP
- REMOVABLE BLACK RF TRANSPARENT CAP
- 12" INGROUND



BOLLARD WITH INGRESS'R

BPS SM-INGR

- 6" X 6" X 42"
- INGRESS'R PREP
- REMOVABLE BLACK RF TRANSPARENT CAP
- SURFACE MOUNT



BOLLARD WITH INGRESS'R AND CARD READER

BPS SM-ING48

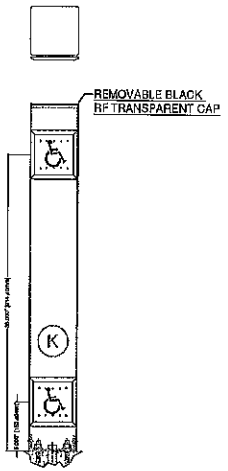
- 6" X 6" X 48"
- INGRESS'R PREP
- PREP FOR CARD READER OR OTHER DEVICE
- REMOVABLE BLACK RF TRANSPARENT CAP
- SURFACE MOUNT

INGRESS'R MATERIAL AND FINISH OPTIONS

ALUMINUM: ANODIZED CLEAR (628)
ANODIZED DARK BRONZE (710)

STAINLESS STEEL: MIRROR (629 US32)
SATIN (630 US32D)

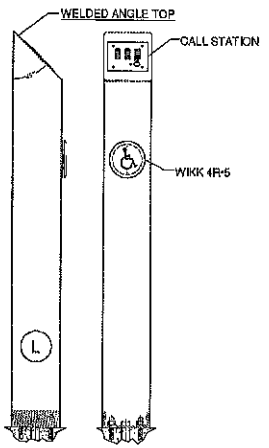
BRASS: MIRROR (606 UNCOATED)
SATIN (608 UNCOATED)



BOLLARD WITH SWITCHES AT 6" AND 36" (HIGH / LOW)

BPSSM HILO

- 6" X 6" X 42"
- HIGH / LOW SWITCHES
- REMOVABLE BLACK RF TRANSPARENT CAP
- SURFACE MOUNT



BOLLARD WITH WELDED ANGLE TOP

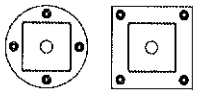
BPA SM

- 6" X 6" X 7" (SIZE VARIES WITH CUSTOMER NEEDS)
- SINGLE GANG PREP AND PREP ON ANGLE TOP
- WELDED ANGLE TOP
- SURFACE MOUNT

NON-PRODUCTION DRAWING. NOT FOR FABRICATION.
ALL BOLLARD IMAGES ARE FOR EXAMPLE ONLY AND ARE THE PROPERTY OF WIKK INDUSTRIES, INC. AND MAY NOT BE REPRODUCED WITHOUT PERMISSION.

NOTE FOR HELP DESIGNING SPECIALTY BOLLARDS PLEASE REFER TO OUR BOLLARD CHECK LISTS

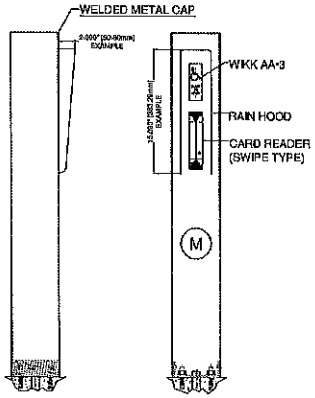
WELDED BASE PLATE OPTIONS



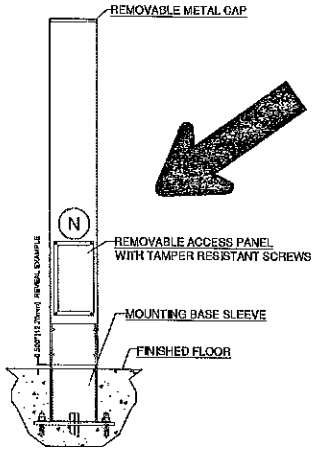
MATERIAL AND FINISH :

STAINLESS STEEL
#304 ALLOY
US32 MIRROR (629)
US32D SATIN (630)

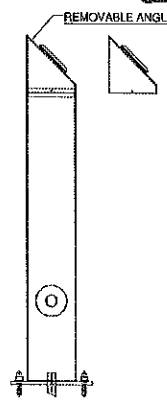
MILL ALUMINUM
6063 ALLOY
FOR PAINTING OR POWDERCOATING
FINISH BY WIKK OR OTHERS



- 6" X 6" BOLLARD
- CARD READER AND ADA SWITCH
- RAIN HOOD (SIZE VARIES WITH DEVICES)
- WELDED METAL CAP
- SURFACE MOUNT

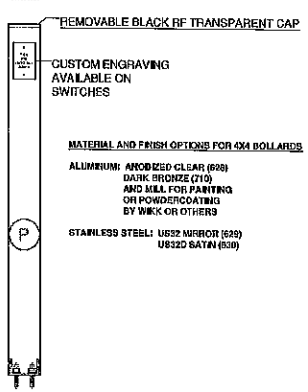


- 6" X 6" BOLLARD
- ACCESS PANEL WITH TAMPER RESISTANT SCREWS
- REMOVABLE METAL CAP
- CONCEALED MOUNTING BASE SLEEVE



BOLLARD WITH REMOVABLE ANGLE TOP AND WELDED MOUNTING BASEPLATE

- 6" X 6" BOLLARD
- REMOVABLE ANGLED TOP
- SURFACE MOUNT WITH
- WELDED BASEPLATE



MATERIAL AND FINISH OPTIONS FOR 4X4 BOLLARDS

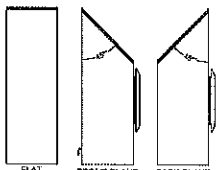
ALUMINUM: ANODIZED CLEAR (628)
DARK BRONZE (710)
AND MILL FOR PAINTING OR POWDERCOATING BY WIKK OR OTHERS

STAINLESS STEEL: US32 MIRROR (629)
US32D SATIN (630)

B4S SM-PREP36 -

- 4" X 4" BOLLARD
- SINGLE GANG PREP
- REMOVABLE BLACK RF TRANSPARENT CAP
- SURFACE MOUNT

TOP OPTIONS



NOTE: ANGLED TOPS ARE MANUFACTURED IN 5° INCREMENTS I.E. 35°, 40°, 45° ETC.

Wikk Industries, Inc.
6169 Industrial Ct.
Greendale,WI 53129-01
Phone: 877-421-9490
Fax: 877-421-3158

SCALE	DRAWN BY/DATE	CHECKED BY/DATE
N.T.S.	JK/07FEB12	LK/07FEB1

TITLE: SQUARE BOLLARD COMPOSITE DRAWING

DRAWING NUMBER: BOLLARDS\BOLLARD EXAMPLES\ BOLLARD SPECIAL COMPOSITE DRAWI

WIKK PART NO.

Old Dominion University
Close Out Document Check List (In Digital Library File Structure)

	Description/Notes	Responsible Party	File Format
BLDG NAME_0000			
01 3D Models CAD			
YYYY_ORIGINAL (ADD or RENO or DEMO)			
AutoCAD			
Civil AutoCAD files	Final Site Survey File, Civil and Landsacpe AutoCAD Files	A/E	.dwg
Landscape AutoCAD Files		A/E	.dwg
REVIT			
YYYY_ORIGINAL (ADD or RENO or DEMO)	Final Revit Models for all disciplines. Request the A/E purge models and **detatch** from central, all models.	A/E	.rvt
Architectural Model		A/E	.rvt
Structural Model		A/E	.rvt
Mechanical / Plumbing Model (s)		A/E	.rvt
Electrical Model		A/E	.rvt
Specialty Consultant (If applicable)		A/E	.rvt
02 CONSTRUCTION			
YYYY_ORIGINAL (ADD or RENO or DEMO)			
01 Cost	Final Pay Ap with Scchedule of Values	ODU PM	PDF
02 AE Record Drawings			
01 General	Each sheet should be a PDF, or each Discipline. **DO NOT submitt PDF's by Volume or with restrictions that do not allow the PDF to be split**.	A/E	PDF 2
02 Life Safety		A/E	PDF 2
03 Civil		A/E	PDF 2
04 Landscape		A/E	PDF 2
05 Structural		A/E	PDF 2
06 Architectural		A/E	PDF 2
07 Plumbing		A/E	PDF 2
08 Mechanical		A/E	PDF 2
09 Electrical		A/E	PDF 2
10 Fire Alarm		A/E	PDF 2
11 Fire Protection		A/E	PDF 2
12 AV		A/E	PDF 2
13 Data		A/E	PDF 2
14 Food Service		A/E	PDF 2
15 Laboratory		A/E	PDF 2
16 Specialty Consultant		A/E	PDF 2
17 Access Control		A/E	PDF 3
YYYY MMDD_Specifications		A/E	PDF 1
YYYY MMDD_Geotech Report		A/E	PDF 1
03 GC As Builts			
01 General	Each sheet should be a PDF, or each Discipline. **DO NOT submitt PDF's by Volume or with restrictions that do not allow the PDF to be split.**	CMaR/GC	PDF 2
02 Life Safety		CMaR/GC	PDF 2
03 Civil		CMaR/GC	PDF 2
04 Landscape		CMaR/GC	PDF 2
05 Structural		CMaR/GC	PDF 2
06 Architectural		CMaR/GC	PDF 2
07 Plumbing		CMaR/GC	PDF 2
08 Mechanical		CMaR/GC	PDF 2
09 Electrical		CMaR/GC	PDF 2
10 Fire Alarm		CMaR/GC	PDF 2
11 Fire Protection		CMaR/GC	PDF 2
12 AV		CMaR/GC	PDF 2
13 Data		CMaR/GC	PDF 2
14 Food Service		CMaR/GC	PDF 2
15 Laboratory		CMaR/GC	PDF 2
16 Specialty Consultant		CMaR/GC	PDF 2
17 Access Control		CMaR/GC	PDF 2
04 Construction Submittals		A/E	
DIV 01		A/E	PDF 1
DIV 02		A/E	PDF 1

Old Dominion University
Close Out Document Check List (In Digital Library File Structure)

		Description/Notes	Responsible Party	File Format
BLDG NAME_0000				
	DIV 03		A/E	PDF 1
	DIV 04		A/E	PDF 1
	DIV 05		A/E	PDF 1
	DIV 06		A/E	PDF 1
	DIV 07		A/E	PDF 1
	DIV 08		A/E	PDF 1
	DIV 09		A/E	PDF 1
	DIV 10	Final Approved Shop Drawings/Submittals, grouped by division, not individual submittal folders. **IMPORTANT - file names that are too long cannot be copied to digital library and will cause all files to be set back to be redone by the AE.**	A/E	PDF 1
	DIV 11		A/E	PDF 1
	DIV 12		A/E	PDF 1
	DIV 13		A/E	PDF 1
	DIV 14		A/E	PDF 1
	DIV 21		A/E	PDF 1
	DIV 22		A/E	PDF 1
	DIV 23		A/E	PDF 1
	DIV 26		A/E	PDF 1
	DIV 27		A/E	PDF 1
	DIV 28		A/E	PDF 1
	DIV 31		A/E	PDF 1
	DIV 32		A/E	PDF 1
	DIV 33		A/E	PDF 1
05	FFE			
	Specifications_YYYY MMDD		A/E	PDF 1
	Plans_YYYY MMDD	PDF	A/E	PDF 1
	Boards_YYYY MMDD	images of furniture selected, colors, fabrics,	A/E	PDF 1
06	*Closeout Documents*			
	DEB Forms			
	CO 13 - Affidavit of Payment of Claims		ODU PM	PDF 4
	CO 13.1 - Certificate of Completion by A/E or Project Manager		ODU PM	PDF 4
	CO 13.1a – Certificate of Partial or Substantial Completion by Architect		ODU PM	PDF 4
	CO 13.1b – Final Report of Special Inspections		ODU PM	PDF 4
	CO 13.1c - Certificate of Partial or Substantial Completion		ODU PM	PDF 4
	CO 13.2 - Certificate of Completion by Contractor		ODU PM	PDF 4
	CO 13.2a - Certificate of Partial or Substantial Completion by Contractor		ODU PM	PDF 4
	CO 13.3 - Certificate of Occupancy		ODU PM	PDF 4
	CO 13.4 - Building Permit Closeout		ODU PM	PDF 4
	CO 13.5 - Beneficial Occupancy (if applicable)		ODU PM	PDF 4
	State Fire Marshall Documents			
	Fire Marshal's Final Acceptance Report		ODU PM	PDF 4
	Fire Alarm Record of Completion Documentation		ODU PM	PDF 4
	NFPA “A” Certification		ODU PM	PDF 4
	NFPA “U” Certification		ODU PM	PDF 4
	Fire Alarm and Fire Sprinkler Acceptance from AHJ		ODU PM	PDF 4
	Fire Door Drop Certifications		ODU PM	PDF 4
	Misc. Documents			
	Preliminary TAB Report		ODU PM	PDF 4
	Lightning Protection Certification		ODU PM	PDF 4
	Elevator Inspection Certificate		ODU PM	PDF 4
	Roof Inspection Report & Punch List Open Items (if any)		ODU PM	PDF 4
	Potable Water Test Report		ODU PM	PDF 4
	Blackflow Preventer Certifications		ODU PM	PDF 4
	Pressure Vessel Inspection Reports		ODU PM	PDF 4
	Document Stating Asbestos Abatement, if any, is complete		ODU PM	PDF 4
07	Commissioning	Final Report	CX	PDF 1
03	**OM Manuals**			**PDF 1**
	YYYY_ORIGINAL (ADD or RENO or DEMO)			

Old Dominion University
Close Out Document Check List (In Digital Library File Structure)

	Description/Notes	Responsible Party	File Format
BLDG NAME_0000			
Interior Finishes	Record finish legend identifying each interior finish material used on the project by finish code, manufacturer, product name, size and color on 8 ½ x 11 in PDF format.	A/E	PDF 1
Exterior Materials	**Comprehensive** list of all exterior materials used on the building, listing the manufacturer, style, color etc. Specifcally list the brick including the percentage of each brick used for blends.	A/E	PDF 1
Training	Training Videos. Include an image of the Sign In sheet for each training session at the start of the training video.	CMaR/GC	
Warranties	Warrantee list with contact information and relative dates	CMaR/GC	PDF 1
Maintenance	Provide a list of Maintenance Requirements	CMaR/GC	PDF 2
Through Wall Flashing Log	requirements.	CNaR/GC	PDF 1
06 Images			
Photos	Place and final professional images of the completed project in this folder	ODU PM	.JPG
Renderings	Place any renderings or other images developed during design in this folder	ODU PM	JPG

NOTES

PDF Type 1 *= Single* ***Bookmarked*** *PDF, File Name = Description_YYYY MMDD (SD Estimate_2016 0523)*

PDF Type 2 *= Single PDF of each sheet/report, File name = sheet number_description (AP101_1st Floor Plan) or Daily*

PDF Type 3 *= Linked PDF Embedded*

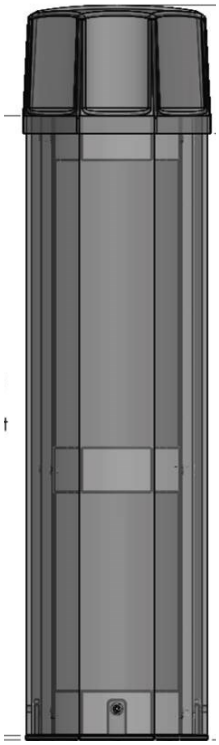
PDF Type 4 *= Single PDF of each sheet/report, File name = sheet number_description (AP101_1st Floor Plan) or Daily Report Number_YYYY MMDD (DR100_2016 0523)* ***PLUS a Binder with hard copy of all pages compiled with a TOC***

Outdoor Wireless Bollard

Wi-Fi and Wireless Enclosure for High Density Environments

Ventev's compact, aesthetically pleasing Outdoor Wireless Bollard enables seamless Wi-Fi and wireless communications in any outdoor environment such as in courtyards, along walkways, and across campuses. Constructed of durable, RF-transparent, UV-resistant fiberglass and polycarbonate, the NEMA 3R-rated Bollard is designed to protect and secure most Wi-Fi access points, antennas, switches, media converters and power supplies from harsh weather and tampering. Includes built-in cable management.

Tapered Cap Bollard
Tessco No. 272637

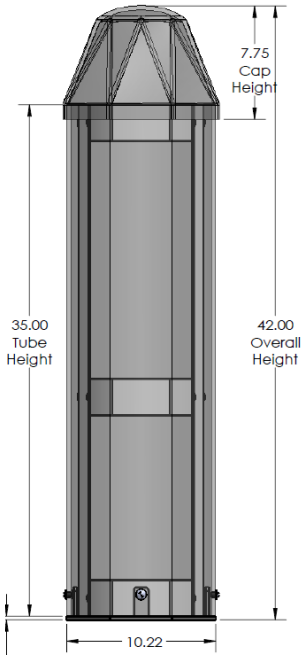


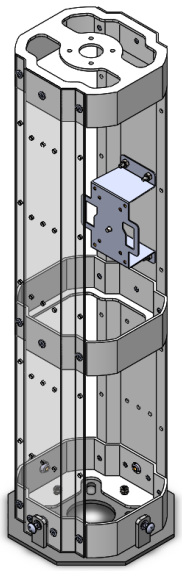
Octagonal Cap Bollard
Tessco No. 212287

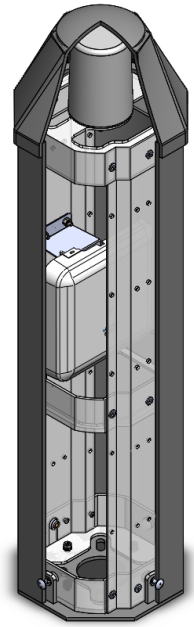
Specifications		
SKU	272637	212287
Model	BLRD-FRPB-4210	BLRD-FRPB-4210C1
Outside Dimensions (Length x Width x Depth)	42 x 11.6 x 11.6 in 1076 x 295 x 295 mm	
Inside Dimensions	9.63 in. (244 mm) inside diameter by (889 mm) 35 in. bollard length	
Exterior Construction	UV-resistant, RF transparent fiberglass with polycarbonate cap. Product color is black and is paintable, using non-metallic paint	
Interior Construction	Reinforced and high-impact polycarbonate structure that is virtually RF transparent and heavy-gage 5052 Aluminum anchor base	
Mounting	Anchors to pre-installed concrete pedestal using tamperproof hardware. Cabling routes through conduit in pedestal.	
Weight	36 lbs / 16.4 kg approximate	
NEMA Rating	NEMA 3R	

Outdoor Wireless Bollard

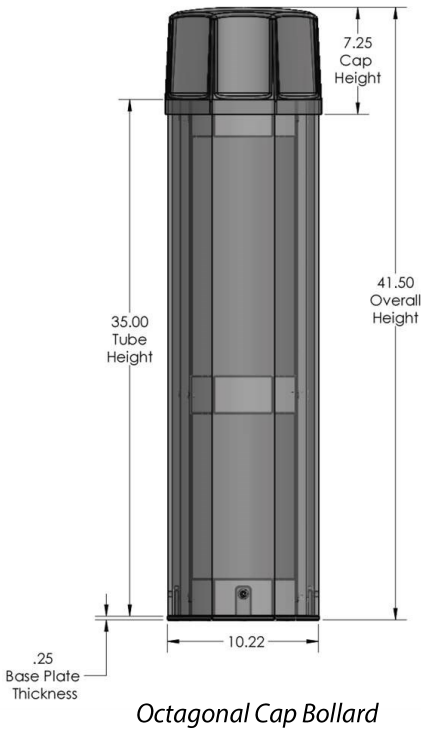
Wi-Fi and Wireless Enclosure for High Density Environments

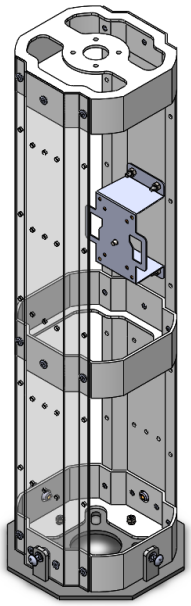


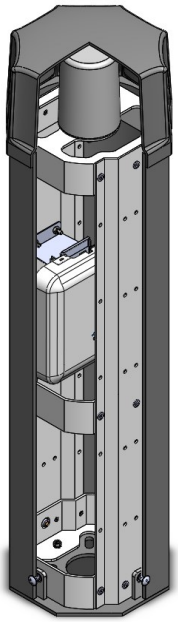




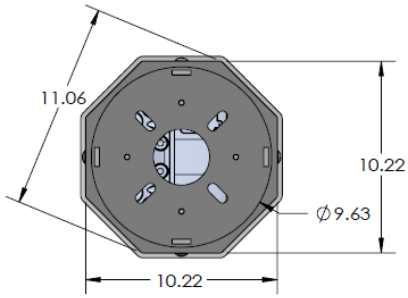
Tapered Cap Bollard







Octagonal Cap Bollard



Shown above with access point and antenna for reference only. (AP and antenna not included)

Products ship with:

- One (1) fiberglass Bollard with bonded polycarbonate cap
- One (1) fully-assembled internal structure for equipment mounting
- One (1) AP Mounting Bracket and 1/4" Hardware (Bracket fits most indoor Cisco & Aruba APs)
- Four (4) 5/16"-18 Tamper-Resistant Screws

Outdoor Wireless Bollard

Wi-Fi and Wireless Enclosure for High Density Environments

Compatible Access Points for Outdoor Wireless Bollard		
Indoor AP with External Antenna		Outdoor or Industrial APs
Cisco	3800 Series	1572EAC/EC *
	2802 Series	1562E/I/D
	1850 Series	1542 I/D
Meraki	MR53E	MR84
	MR42E	MR74
Aruba	AP-514/515	AP-365
	AP-344/345	AP-367
	AP-334/335	
	AP-324/325	
	AP-314/315	
	AP-304/305	
	AP-318	
	AP-228	

* Needs Mounting Bracket-Tessco No. 264023

** Please check with Ventev for additional equipment not listed here

Compatible Antennas	
Small Form Factor Omni Wi-Fi Antennas	
269528	2.4/5 GHz 6 dBi 4" Omni Antenna, 4 RPTNC Plugs
220851	2.4/5 GHz 6 dBi 4" Omni Antenna, 4 RPSMA Plugs
276884	2.4/5 GHz 6 dBi 4" Omni Antenna, 4 N Plugs
Small Form Factor Patch Wi-Fi Antennas	
581764	6 dBi Micro Patch with 4 Dual Band Leads, N Plug Connectors
535265	6 dBi Micro Patch with 4 Dual Band Leads, RPTNC Plug Connectors
524086	6 dBi Micro Patch with 4 Dual Band Leads, RPTNC Plug Connectors
251676	6 dBi Micro Patch with 4 Dual Band Leads, RPSMA Plug Connectors

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E-mail: info@interlockonline.com

BASELINE COLOR COMPOSITES

Virginia Natural #01

Virginia Red #222

Dune #03

Chestnut #04

Oxford #05

Charcoal #06

Tradition Grey #07

Tradition Red #08

Tradition Brown #09

Buff #10

TRANSITIONAL COMPOSITE BLEND DERIVATIVES

Cobble Blend #16

Heritage Blend #25

Hatteras Blend #34

Colonial Blend #26

Tidewater Blend #610

Chesapeake Blend #35

Shenandoah Blend #237

Albermarle Blend #246

Nansemond Blend #239

Tradition Blend #789

Highlands Blend #46

COLOR CHART NOTES:

- Interlock™ Paving Systems, Inc. Paving stone colors are available in 10 baseline color composites and 11 transitional composite blend derivatives.
- Final color selection should be made from actual paving stones, with the understanding that exact color matching cannot and therefore should not be expected. Interlock Paving Systems, Inc. neither represents or guarantees exact color shade. Actual colors can vary from batch to batch, cube to cube, and unit to unit.
- Paver colors are subject to seasonal effects of temperature, moisture and raw materials variations; these items being characteristic in composite concrete manufacturing.
- For best results, and to help blend the overall color presentation of the pavers, mix pavers by working vertically from different cubes, sequentially numbered, throughout the installation process.
- The mixed Transitional cubes occur in the production cycle as one color transfers into another (e.g. #02, 2/3, #03, 3/7, #07,7/2 make up Shenandoah Blend #237.)
- Two (2) color transitional blends require a minimum order of three (3) cubes.
- Three (3) color transitional blends require a minimum order of six (6) cubes.
- Baseline color composites, Hand Blended at Jobsite, are recommended for orders less than minimum requirements.

ICPI
INTERLOCKING CONCRETE PAVEMENT INSTITUTE
PRODUCER MEMBER

EAC CONDUIT DIAGRAMS

Diagram 1 - MLR Exit Device w/ Auto Operator, Card Reader, Door Position Switch & Request to Exit

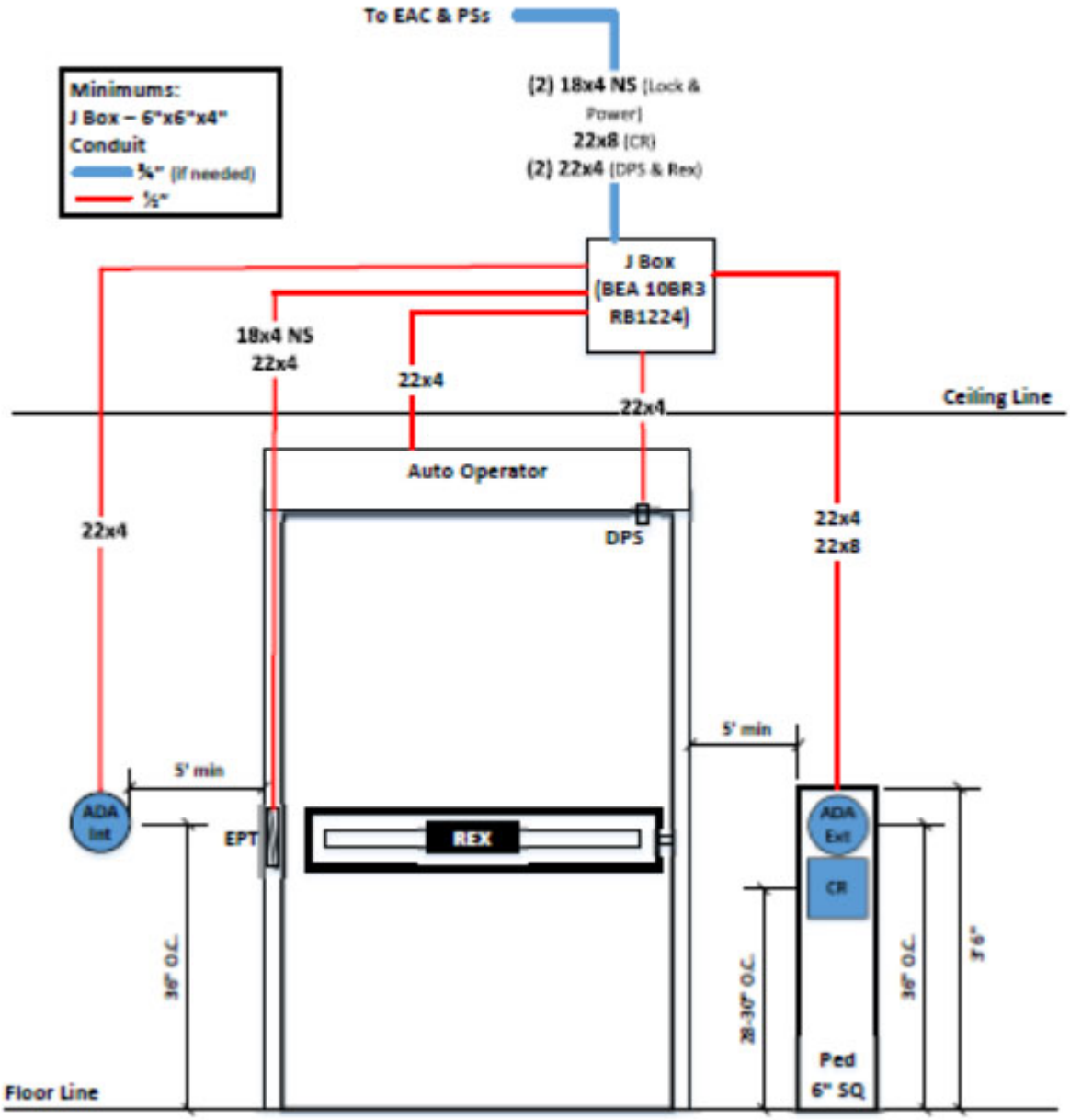

Diagram 2 - MLR Exit Device Non-Card Reader/Auto Operator in a Pair of Doors, Door Position Switch; Request to Exit

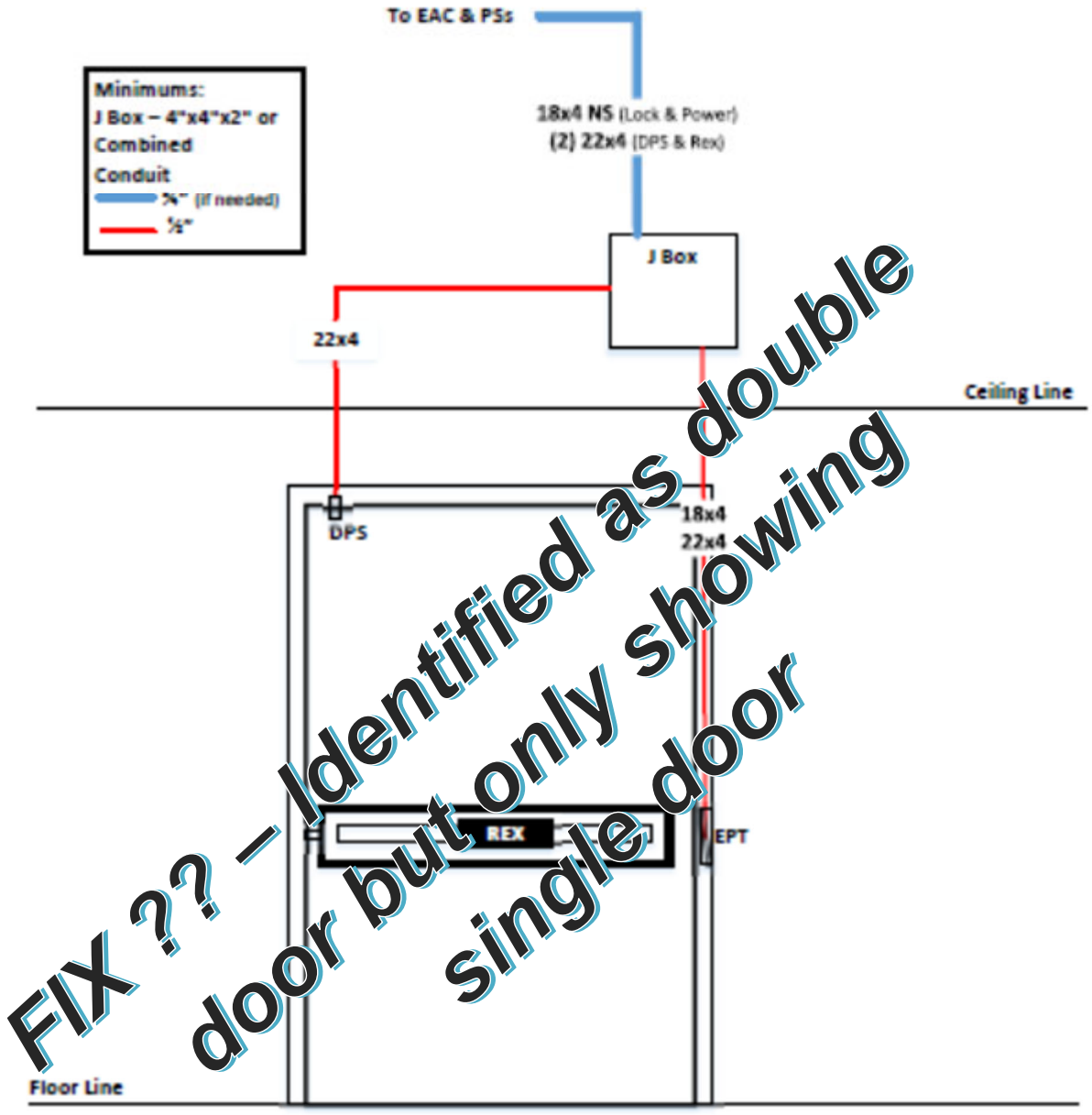

Diagram 3 - Electrified Strike w/ Auto Operator, Card Reader, Door Position Switch & PIR Request to Exit

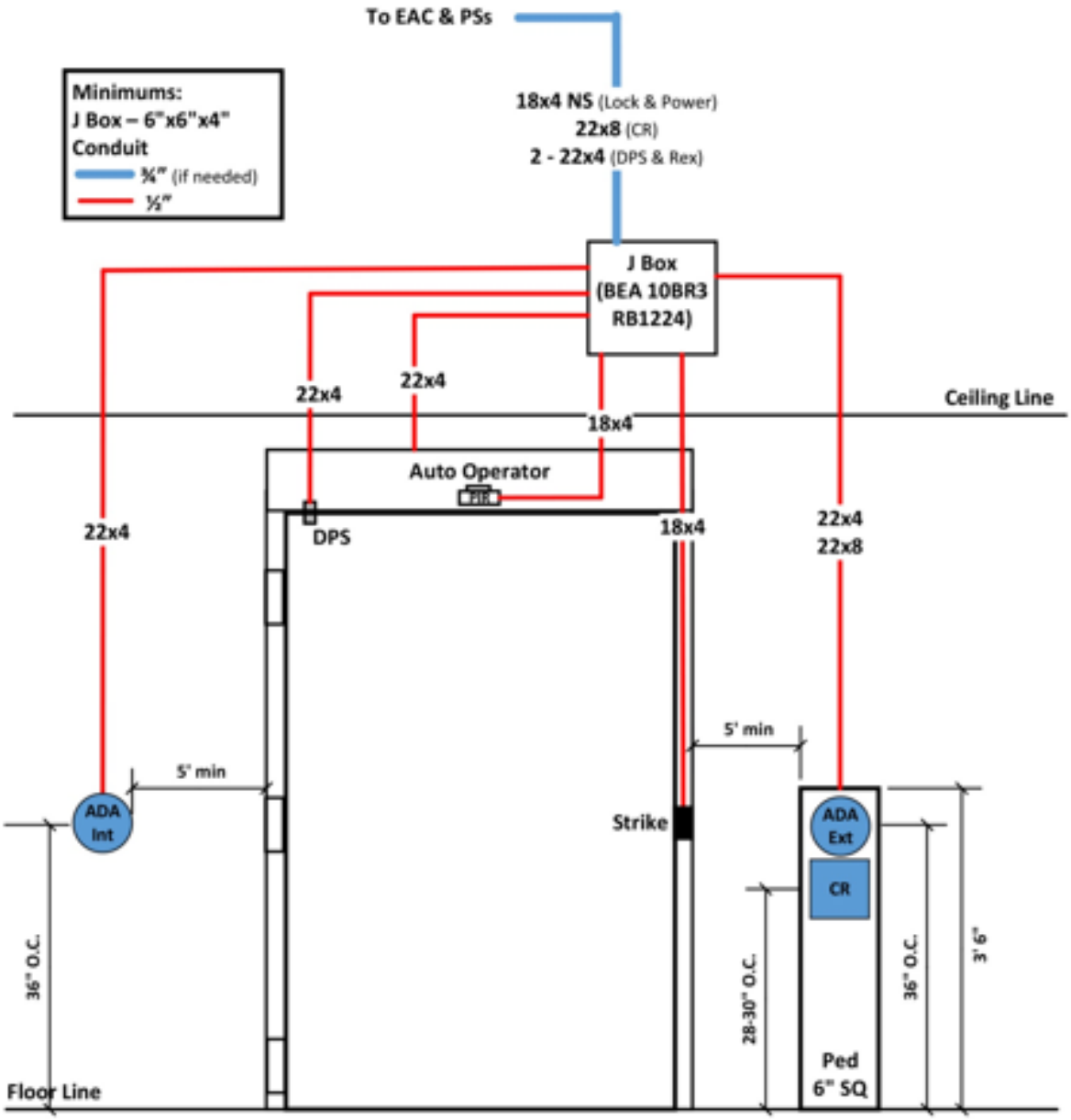

Diagram 4 - Electrified Strike w/o Auto Operator, w/ Card Reader, Door Position Switch & PIR Request to Exit

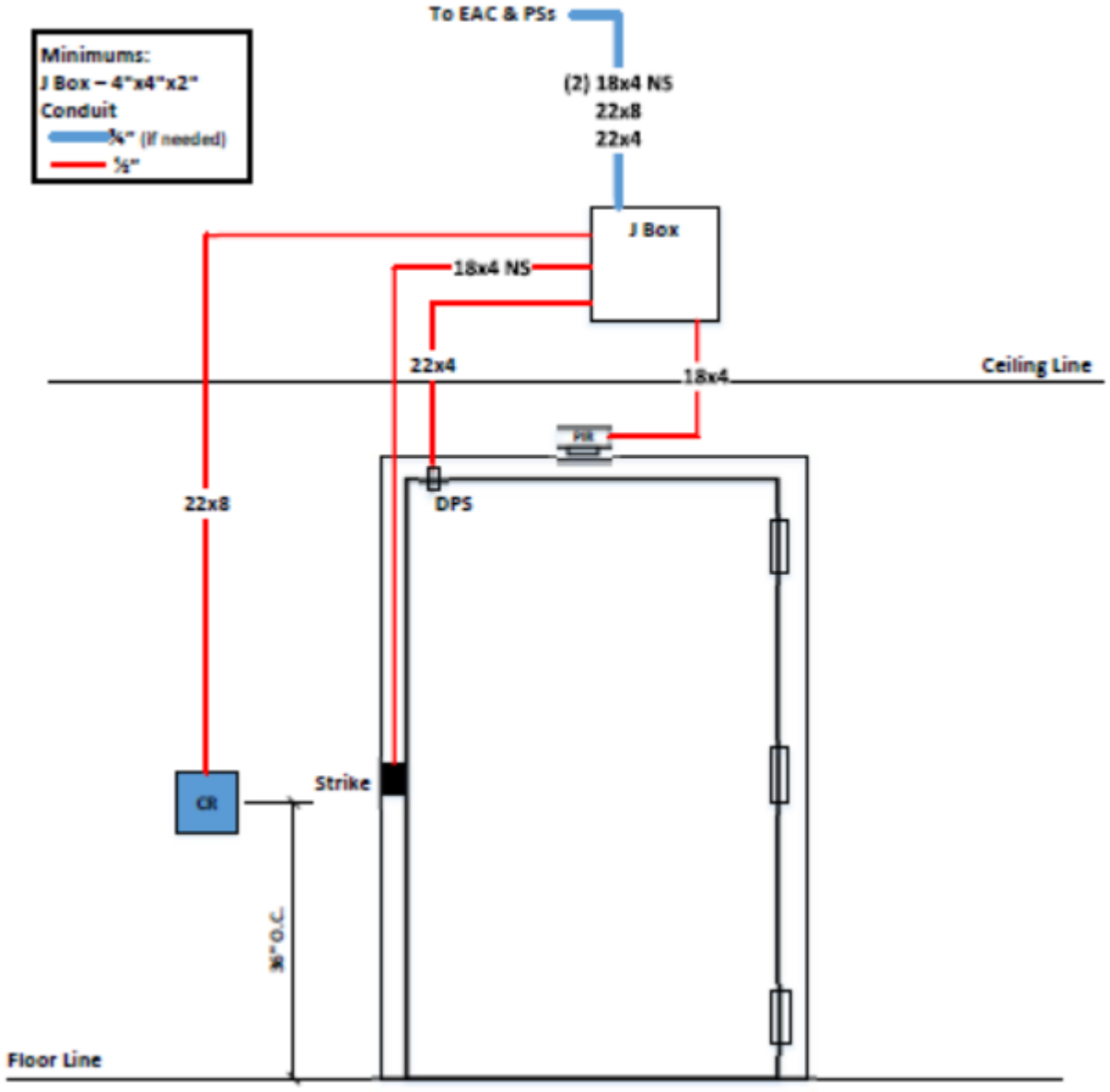

Diagram 5 - Electrified Strike w/o Auto Operator or Card Reader, w/ Door Position Switch & PIR Request to Exit

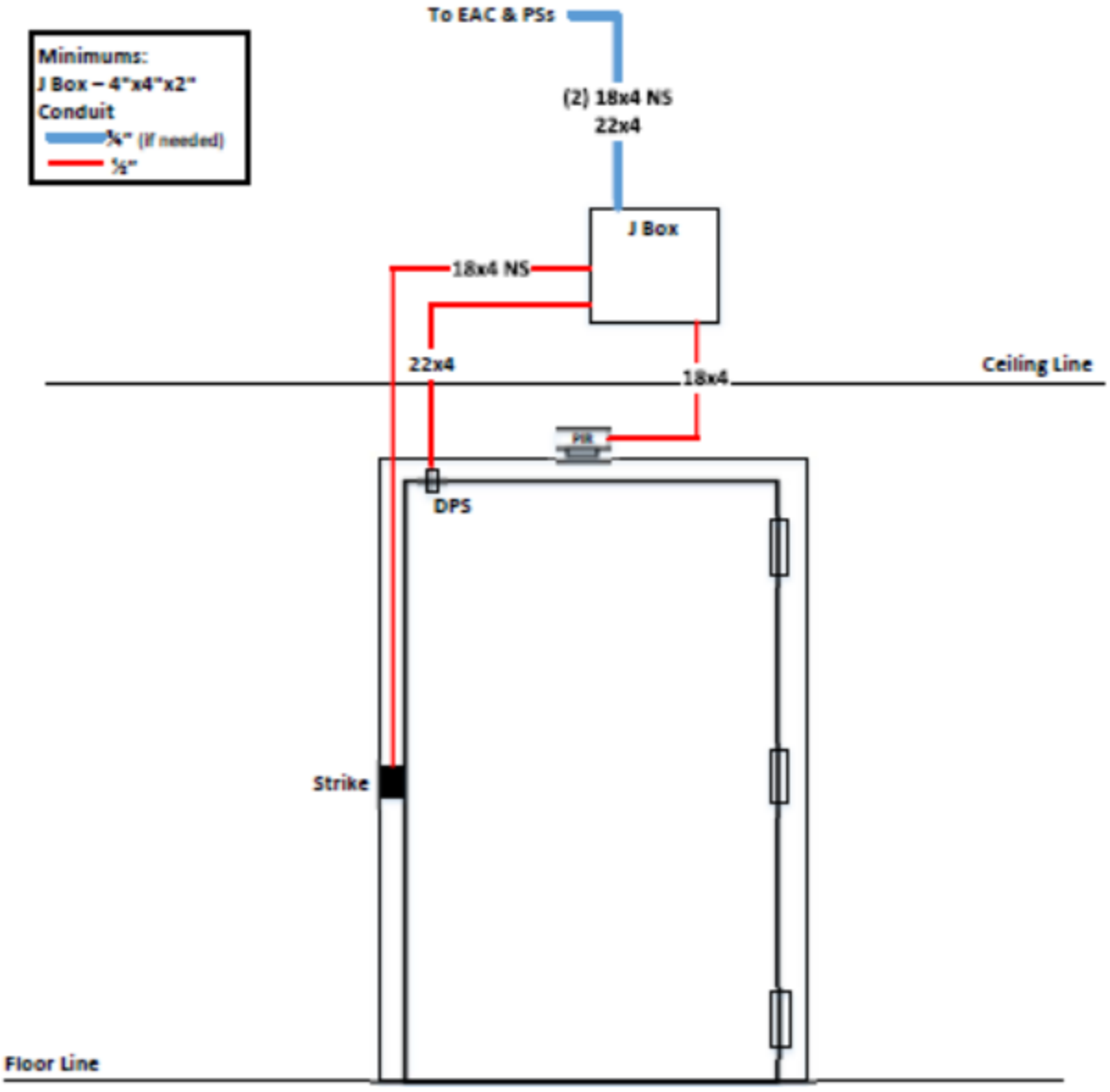

Diagram 6 - Exit Only Exit Device w/ Door Position Switch, Request to Exit and Horn

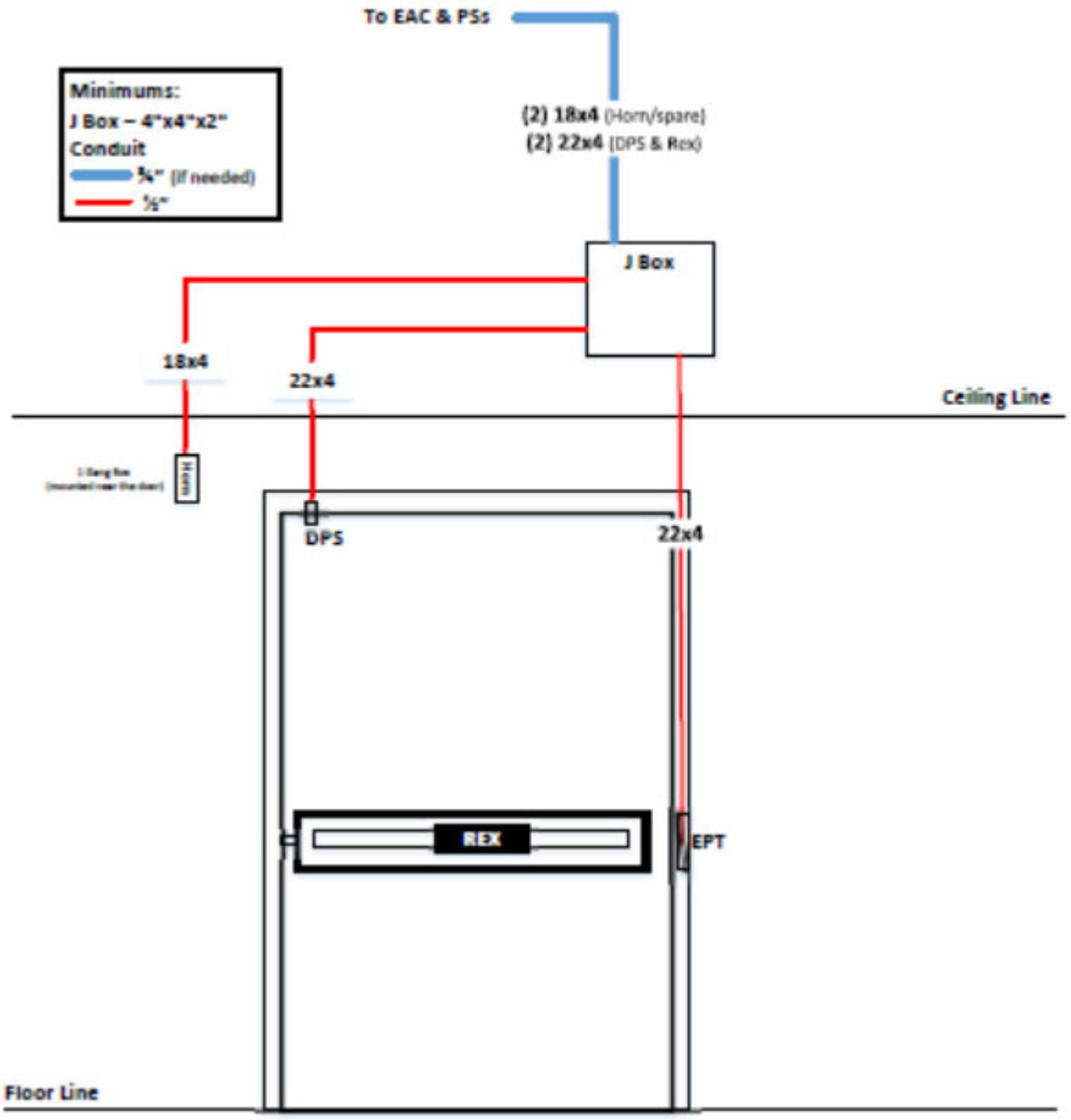

Diagram 7 - Exit Only PIR w/ Door Position Switch, PIR Request to Exit and Horn

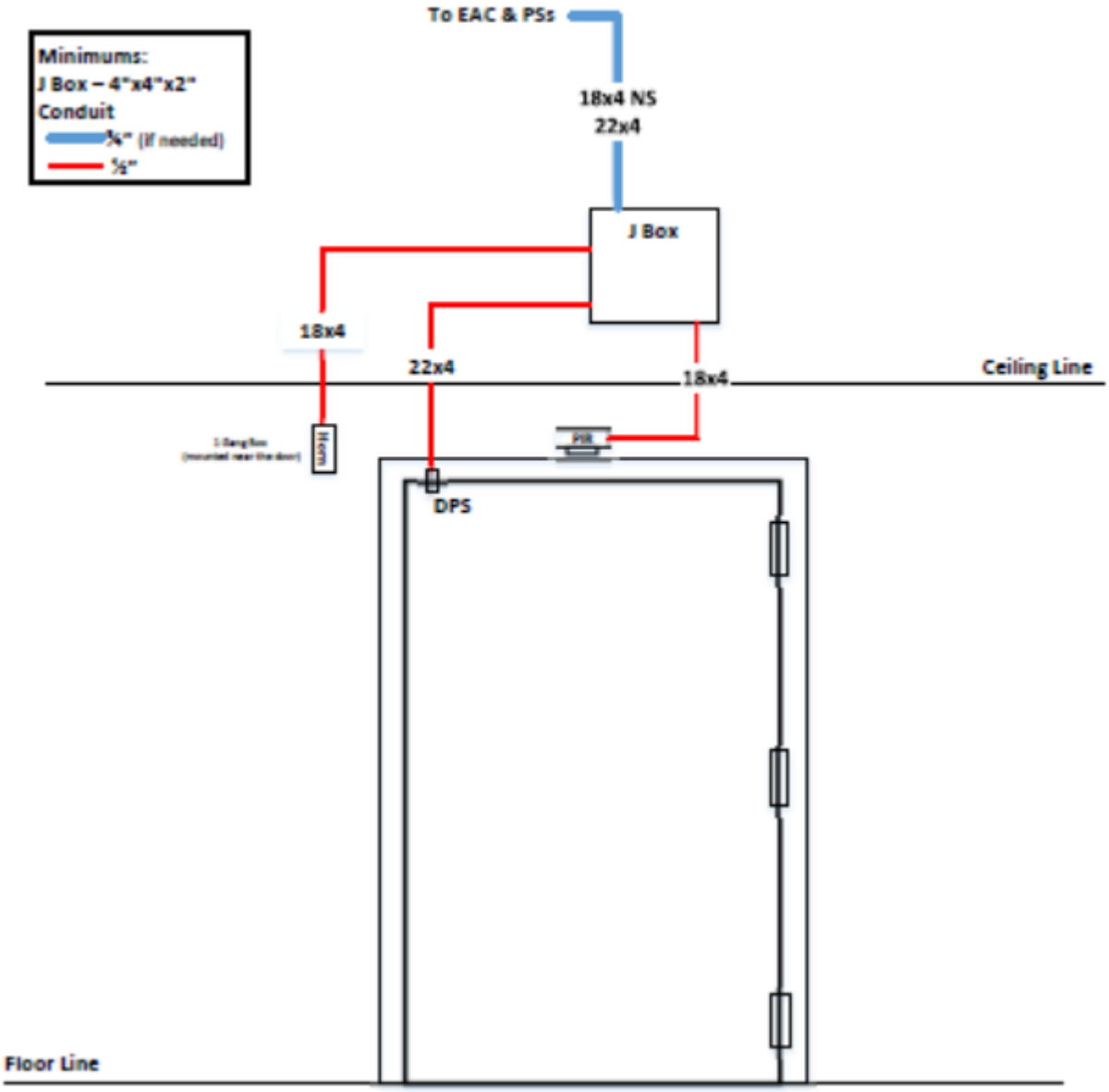

Diagram 8 - Emergency Exit Only w/ Door Position Switch & Horn Only

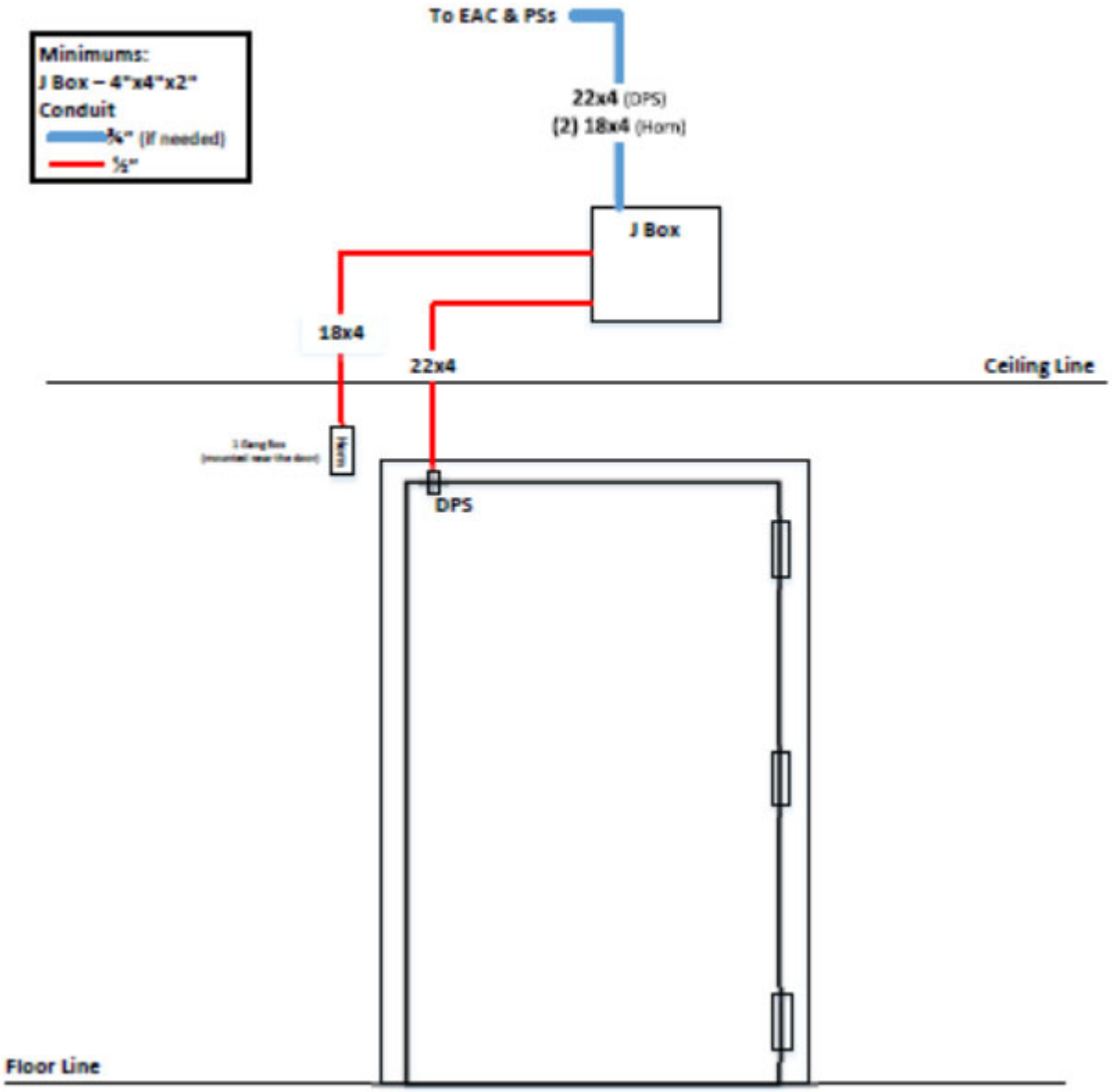

Diagram 9 - AD300

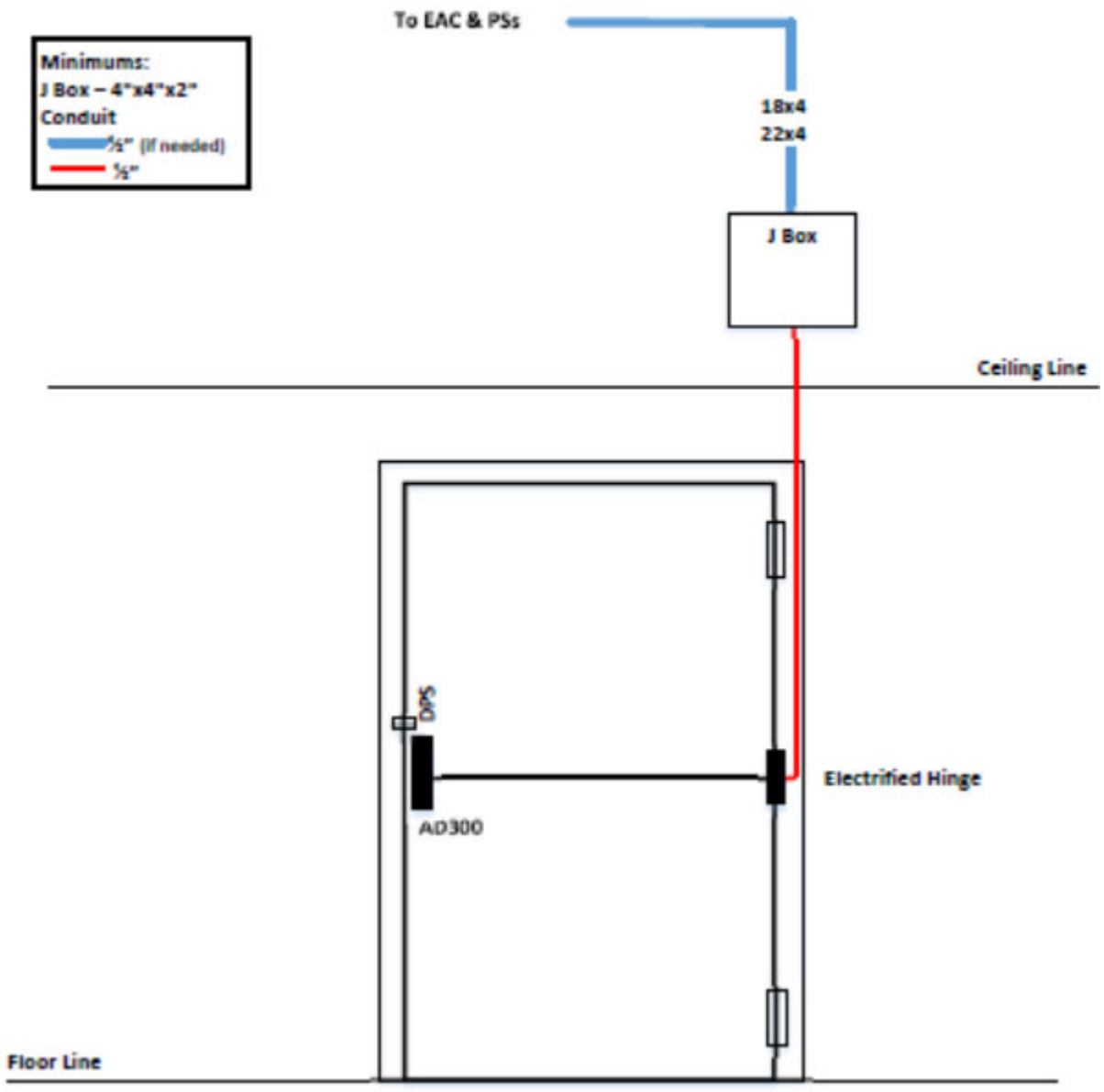

Diagram 10 – MLR double door w/Auto Operator, Card Reader, Door Position Switch & Request to Exit