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Be Prepared!

37<sup>th</sup> Annual AHCA Seminar and Expo

October 17-19, 2021

ead113@miami.edu

# The Importance of Owner Design Standards

Course Number: AHCA2021\_04

Credit Designation: 1 LU| HSW

AIA CES Provider Number: E240



The AHCA seminar has teamed with a registered provider of AIA-approved continuing education under Provider Number E240. All registered AIA CES Providers must comply with the AIA Standards for Continuing Education Programs.

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ORIECTIVE

Learn the UM's processes to develop Standard Designs for our Clinical Operations. Several UM Standards will be reviewed with Lessons Learned

OBJECTIVE

Implementing Lessons Learned with Design Consultants.

3 OBJECTIVE

Construction Lessons Learned including value of Mock-up.

OBJECTIVE

Participants will understand and be able to work on implementing Standards at their Facilities as well as have a greater understanding of the value of having Standard Designs.







# The Importance of Owner Design Standards

Elizabeth Delgado, Senior Interior Designer Edward L. Hengtgen, LEED AP, RA, Assistant VP Facilities Operations and Planning Planning Design and Construction

## **University of Miami Health System - UHealth**



Only NCI-Designated
Cancer Center in South Florida



Ranked #1 in USA

By U.S. News and World Report in
Ophthalmology for the 20th Time!



**UHealth Ranked #2 in South Florida - Health Care Systems** 

The University of Miami Health System delivers leading-edge patient care by the region's best doctors, powered by the groundbreaking research of the University of Miami Leonard M. Miller School of Medicine. As South Florida's only University-Based Health System, UHealth is a vital component of the community that is leading the next generation of health care.

UHealth combines exceptional patient care, breakthrough research, and novel education to create an innovative approach to health care. Within the UHealth system, patients can participate in clinical trials and benefit from the latest discoveries that are fast-tracked from the laboratory to the bedside.

<u>UHealth is made up of more than 1,200 physicians and scientists</u> who are highly trained specialists focused on providing state-of-the-art medical care. From diagnosis to treatment and follow-up, physicians work in teams to deliver care that is tailored to each patient.

Patients from around the world turn to UHealth - University of Miami Health System in their search for expert care from our top ranked physicians. <u>UHealth is home to the number one eye hospital in the United States, Bascom Palmer Eye Institute, the only NCI-designated cancer center in South Florida, Sylvester Comprehensive Cancer Center, a pioneering minimally invasive cardiac surgery program, and offers expertise in more than <u>100 medical specialties</u>. <u>UHealth's comprehensive network also</u> includes more than 30 outpatient sites in Miami-Dade, Broward, Palm Beach, and Collier counties.</u>



## **FOP – PDC Department Overview**



 Currently Managing over 580 Active Projects In excessive of \$1.3 BILLION Dollars as part of our 5 Year Capital Plan!

## PDC Services;

 Project Management, planning and programming, campus architecture and design, building and signage standards, interior design standards, sustainability, and capital budgeting support.

## Projects Include;

• Healthcare (hospital and non-hospital based), Administration, and Academic Research.

## Project Types include;

 New Buildings, Renovations, Master Planning, Interior Design, Campus Improvements, Deferred Maintenance & Utilities, Programming and Space Planning, Development Initiatives and Forecasting.

## PDC Department Staffing;

- 28 Staff and Support
- Licensed Architects, Interior Designers and Engineers





## **Lennar Foundation Medical Center**

Architect: Perkins + Will

**Size:** 206,000 sf **Budget:** \$155 M





## **Bascom Palmer Eye Institute Naples**

**Architect:** Gresham, Smith and Partners

**Size:** 20,000 sf **Budget:** \$20 M









## **UHealth SCCC Proton**

Architect: Stantec Size: 155,000 sf Budget: \$50M









## **New Cancer Research Building**

Architect: HOK Size: 155,000 sf Budget: \$150M





Background on Standards.
UM Legacy
Projects

## The Advantages of Design Standards

- Design standards can improve patient care and outcomes
  - Identifying best design standards for specified spaces achieves consistent operational practices which ultimately improve patient outcomes.
- Design standards can improve patient satisfaction and staff retention.
- Consistent experience for patient and staff
- Design standards allow for an accurate representation of the brand
- Provides a plan to communicate goals and expectations to Consultants and Users









## The Advantages of Design Standards for UHealth

- UM Repetitive Space Consistency
- Multiple Sites 5 million Square feet of space
- 30 Outpatient Clinical Buildings (3 in Design)
- 1,200 Exam Rooms (165 in Design)
- 330 CTU Bays/Pods (150 in Design)
- 65 Operating Rooms (14 in Design)















MILLER SCHOOL of MEDICINE





Clutter

\_Gloves and sharps together.



Battery Clock



Unorganized
Educational
material to give
to patients



unorganized



**Existing Exam Rooms - Multidiscipline** 



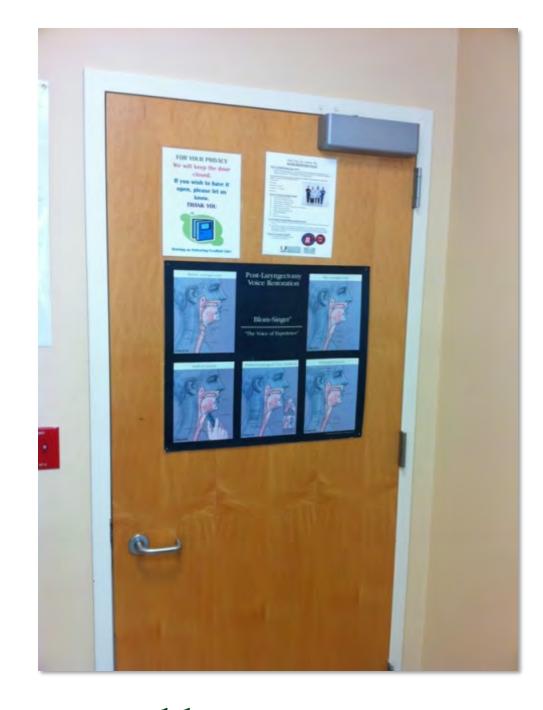


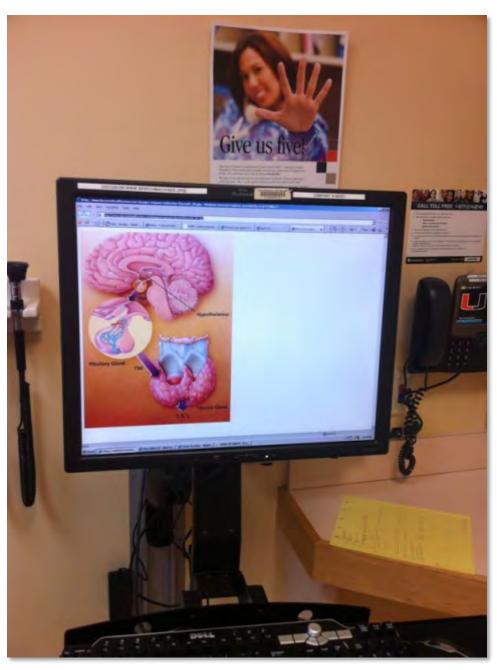




Drawers just filled with miscellaneous supplies







Having material posted on wall is not good for multi discipline clinics. Patients see the cancer poster and get worried.

We need to be using monitor with favorite web sites to show pictures of related exam visit information.

Posters and other material taped looks unprofessional.













Countertop.

Brochures on Sink in Counter contaminates any supplies laid out on Countertop

**Upper Cabinets** have linen storage. Very unkept.

- Dirty linen hole in counter, contaminates the counter. Soiled Linen below counter.

**Drawers** storing junk/empty/ underutilized



**Existing Exam Rooms - Multidiscipline** 



-Red bag trash needs to be omitted and use of small bags to reduce cost of disposal and non-red bag waste from being included.

Large white trash receptable needs room, bad graphics.

Drawers with misc. supplies or empty

Soiled linen hamper with front load.

Counters
Drawers with
misc. supplies or
empty

**Cluttered** 



Hand Washing

**Contaminates** 

Counter items.

Sink in Counter,

**Existing Exam Rooms - Multidiscipline** 



Poor Wire
Management, No
Outlet Below



Wall Mounted Phone and Monitor



File/Chart Holders. Old Film Illum.



- CPU on floor. Poor wire management.



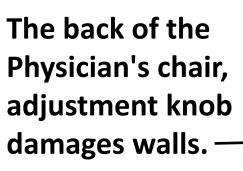
**Typical Desk Area – Existing Exam Rooms** 

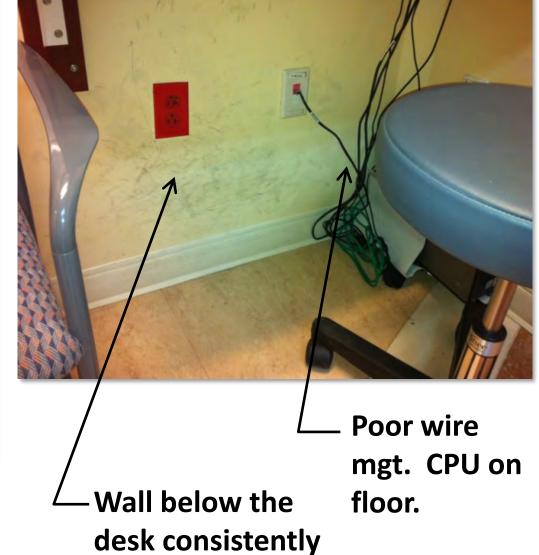




Guest Chair Wall Damage -





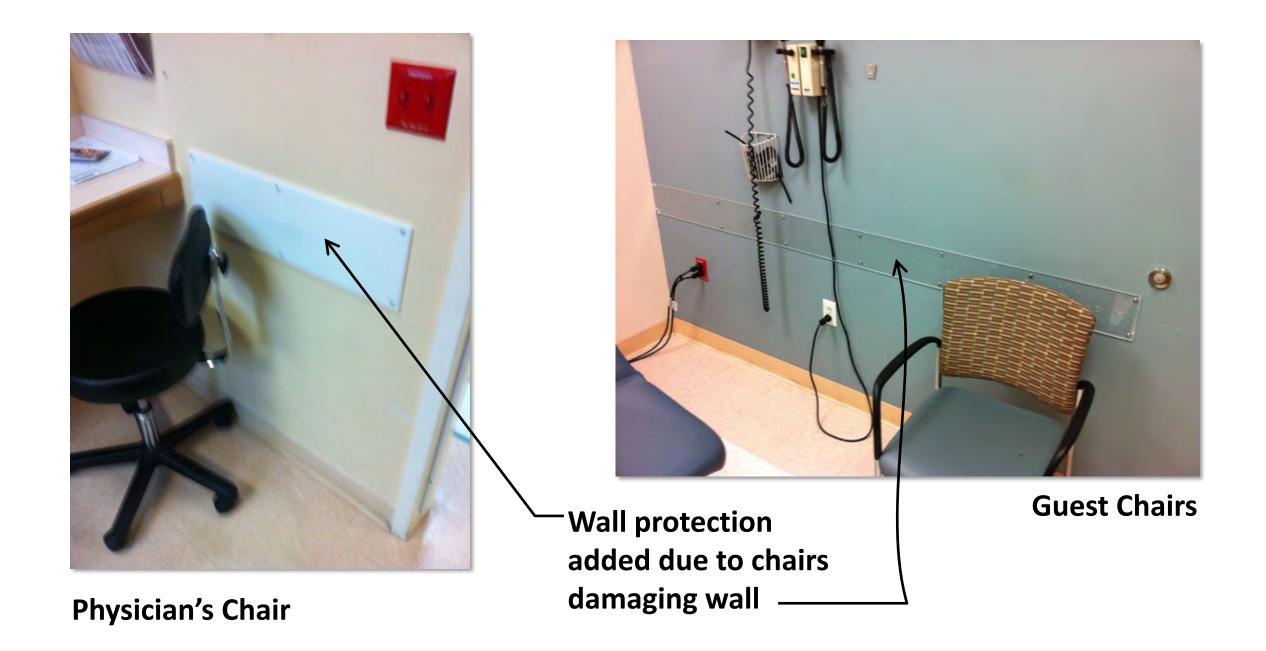




**Typical Desk Area – Wall Damage** 

marked up with

shoe scuff marks.







# Physical Plant Partnership

## Standards for Physical Plant and Maintenance Personnel

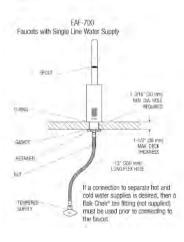
- Provides a turn-key maintenance plan
  - Consistent materials and products makes it easier when maintenance is needed.
- Provides **efficiency** for personnel maintaining the buildings.
- Sharing Finish Standards with Physical Plant and maintenance personnel allows them to keep materials in stock and readily available.
- Prepares maintenance personnel on what to expect.
- Improves communication between Physical Plant,
   Maintenance Personnel, and Design and Construction Teams.

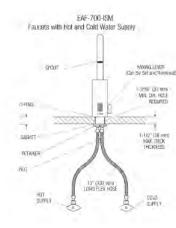






## Standards for Physical Plant and Maintenance Personnel





## SLOAN.

#### **OPTIMA® SENSOR FAUCET** EAF-700-PLG-ISM-CP-1.5GPM-LAM-IR-IQ-FCT (General Model Name: EAF700-P-ISM CP ELECT FAUCET)

#### CODE NUMBER

3335079

#### DESCRIPTION

Plug Adapter Power Supply, Integrated Side Mixer, Polished Chrome Finish, 1.5 gpm, Laminar Spray, Infrared Sensor, Optima® Hardwired-Powered Deck-Mounted Gooseneck Body Faucet.

#### DETAILS

- Flow Rate: 1.5 gpm (6 Lpm) (1.5GPM)
- · Spray Type: Laminar (LAM)
- Sensor Type: Infrared (IR)
- · Mounting Type: Single Hole
- · Power Supply: Plug Adapter (PLG)
- Temperature Mixer: Integrated Side Mixer (ISM)
- Finish: Polished Chrome (CP)
- . Factory Default Timeout: 30s
- Factory Default GPC: 0.75

#### **FEATURES**

Commercial Grade, ADA Compliant, Electronic, Sensor-Activated, Cast Brass Gooseneck Hand Washing Faucet with the following features:

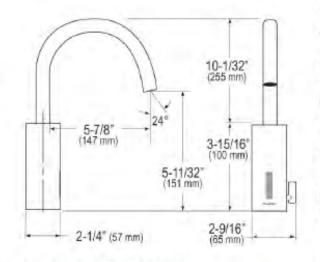
- 12/24 hour Hygienic Rinse Line Purge Function Field Settable
- Unitary Spout Housing Assembly for Easy Cleaning
- Modular One-piece Construction with all Concealed Components
- Double Infrared Sensors with Automatic Setting Feature and Microprocessor
- Bi-stable Magnetic Solenoid Valve
- · Water Supply Connection with Flexible High-pressure Hose and
- . 123 VAC/6.75 VDC Plug-in Adapter (must be ordered separately for Less Adapter (-LT) faucets)
- . IQ-Click feature permits activation of continuous run and temporary off modes
- · Appropriate Mounting Hardware included
- . IQ-Click feature permits activation of continuous run and temporary off modes

#### **ELECTRICAL SPECIFICATIONS**

- . Battery Life: 3 years 8,000 cycles/month
- Optional power harvesting significantly extends service life.
- Timeout Adjustment Settings: 30s

#### DOWN! OADS





#### **COMPLIANCES & CERTIFICATIONS**











(ADA Compliant, ASME A112.18.1 Compliant, CEC Compliant, cUPC Certified, cUPC Low Lead Compliant, Proposition 65, TAS, UPC Certified, UPC Low Lead Compliant)

## American Standard

Style That Works Better

& BARRIER FREE

#### MURRO™ UNIVERSAL DESIGN WALL-HUNG LAVATORY

- Vitreous china
- Rear overflow
- · Recessed self-draining deck
- · For concealed arm or wall support
- · Shown with optional vitreous china shroud/ knee contact guard 0059.020 available
- ☐ 0954.000 Faucet holes on 102mm (4") Ctrs (Illustrated)
- 0954.023 Faucet holes on 102mm (4") Ctrs · Extra right-hand hole
- ☐ 0954.021 Faucet holes on 102mm (4") Ctrs . Extra left-hand hole
- 0958.000 Faucet holes on 203mm (8") Ctrs
- O955,000 Center hole only
- ☐ 0955.023 Center hole · Extra right-hand hole
- ☐ 0955.021 Center hole
- Extra left-hand hole

#### Nominal Dimensions:

559mm (22") deep, 540mm (21-1/4") wide

#### Bowl sizes:

394mm (15-1/2") wide, 343mm (13-1/2") front to back, 127mm (5") deep

☐ 0059.020 Shroud/Knee Contact Guard (Vitreous China) (Must be specified separately)

#### Compliance Certifications -

Meets or Exceeds the Following Specifications: ASME A112.19.2 for Vitreous China Fixtures

#### To Be Specified:

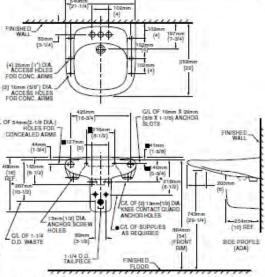
- Color: White Bone Silver
- Optional Vitreous China Shroud/Knee Contact guard: 0059.020
- ☐ Faucet\*
- Faucet Finish:
- Supplies:
- ☐ 1-1/4" Trap:
- □ Nipple:
- See faucet section for additional models available

MEETS THE AMERICANS WITH DISABILITIES ACT GUIDE-MEETS THE AMERICANS WITH DISABILITIES ACT GU LINES AND ANSI A117.1 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES - CHECK LOCAL CODES. Top of front rim mounted 864mm (34") from finished floor

For Universal Design Options, top of rim may be mounted at 813mm (32") from finished floor to meet ADA and ANSI A117.1 requirements. Check local codes.

#### MURRO™ UNIVERSAL DESIGN WALL-HUNG LAVATORY





### SEE REVERSE FOR ADDITIONAL ROUGHING-IN

NOTES: ● LOOSE KEY ANGLE STOPS, LESS WALL ESCUTCHEONS, SUPPLIES \* DIMENSIONS SHOWN FOR LOCATION OF SUPPLIES AND "P" TRAP ARE

SHROUD/KNEE CONTACT GUARD 0059.020 NOT INCLUDED AND MUST BE

ORDERIO SEPARATELY.

■ SUITABLE FOR REINFORCEMENT ONLY, ACTUAL DIMENSIONS MUST BE TAKEN FROM PILITURE.

BE TARENT FROM FIA TURE.

FITTINGS NOT INCLUDED AND MUST BE ORDERED SEPARATELY.
PROVIDE SUTABLE REINFORCEMENT FOR ALL WALL SUPPORTS.
INSTALLATION INSTRUCTIONS SUPPLIED WITH LAVATORY.

IMPORTANT: Dimensions of fixures are nominal and may vary within the range of tolerances established by ANSI Standard 4112:19.2.

These measurements are subject to change or cancellation. No responsibility is assumed for use of superseded or voided pages.





Design Process, UM's Standard Exam Development

## **Process of Developing Standards**

**Exam Rooms have been evolving** based on Accessibility Codes, Care Delivery Models and Technologically. UM's Exam Rooms have become Multi-Specialty. Various modalities will flex between Exams and Exam Corridors based on Daily and Weekly Block Sessions. Our Physician's also have Sessions in Various Locations during the week within our health system, unlike many small family practice clinics where one or two physicians are there 5 days a week.

We want to reinforce common features in all exam rooms as well as provide Privacy, easy of physician access, Changing Technology and Clinical Practice Methods.

There are three trends, specifically, that are influencing our Exam Room Designs;

**Education** is playing a greater role in the healthcare delivery system. As an academic medical center, we often have Clinicians, their Scribes and Fellows in with patient and their family. Our Exams are larger allowing for Team Care. Orientation of the family zone and Exam table to the clinician's monitor has also become critical for education of both the patient and the family members.

**Families (Partners-in-care)** are also are playing a greater role in healthcare processes. Exams rooms are including larger family spaces for partners, interpreters, or friends, to participate in patients' healthcare process.

**Technology** is playing an ever-increasing role in exam room planning. Flexibly planned exam rooms bring services and technology to the patient. Video-based telemedicine, for instance, allows patients and primary caregivers to consult with specialists remotely.







## **Process of Developing Standards**

## **Distinct Spaces Facilitate Patient-Provider Conversations**

#### **Problems with Current Designs**

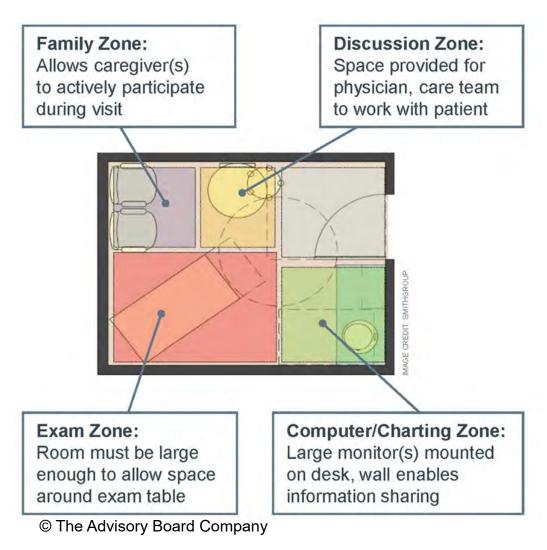
Static design for past 50 years, despite changing technologies and processes

Rooms create unequal "top-down" footing between doctor and patient

Dominated by exam table and tools despite limited use during visit

Inflexible use of furniture and space to accommodate patient needs

#### Four Zones of the Ideal Exam Room



# <u>UM's Standard Exam incorporates and improves on this thought process;</u>

- 1. Family Zone includes Patient Wardrobe.
- 2. Discussion zone includes Charting and monitor that can swivel to share information.
- 3. Exam Zone is large enough to allow access to the patient from staff and instruments.
- 4. Computer zone is included in the discussion zones, so physician's backs are not to the patient when taking notes. Sink is not mixed into the computer zone to allow papers or computers to get wet.
- 5. Hand washing zone is immediately at entrance of room to encourage Infection control best practices and hand washing on entering and exiting the room.



# **Process of Developing Standards**













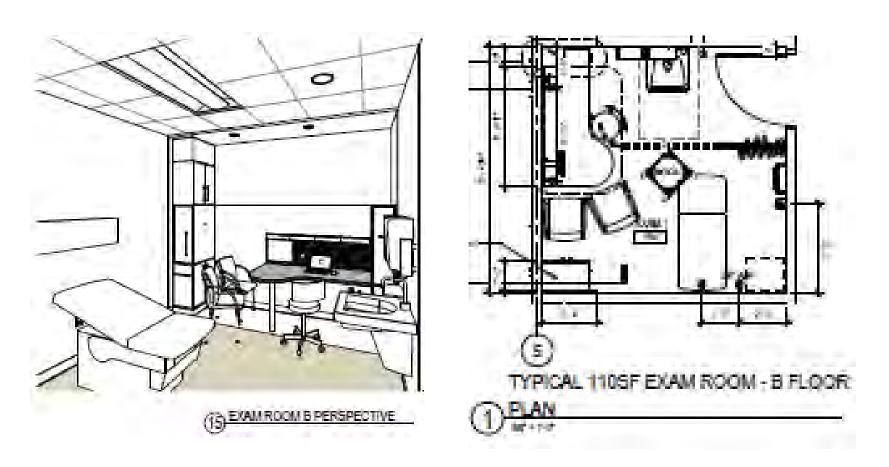


**Furniture Vendor Designs to Accommodate their Products** 

# **Conceptual Design and Mockups**







Initial Full Scale Plywood Mock-up in room with all Accessories, outlets and equipment for review and testing by Physicians.



# **Mockup Designs - Finished**

Full Scale PLAM
Mock-up in room
with all
Accessories and
equipment
labeled in room.





Desk that was tested by Physicians and marked for modification

Full Room Set up that was tested by Physicians





Field Modified Desk based on comments that final Desk was based on.



**Concepts and Mockups** 

# **Mockup Designs - Final**



Final Full-Scale Mock-Up with Solid Surface and Final Colors/laminates for approval.

Set up in Lobby space for review by clinic staff and physicians.

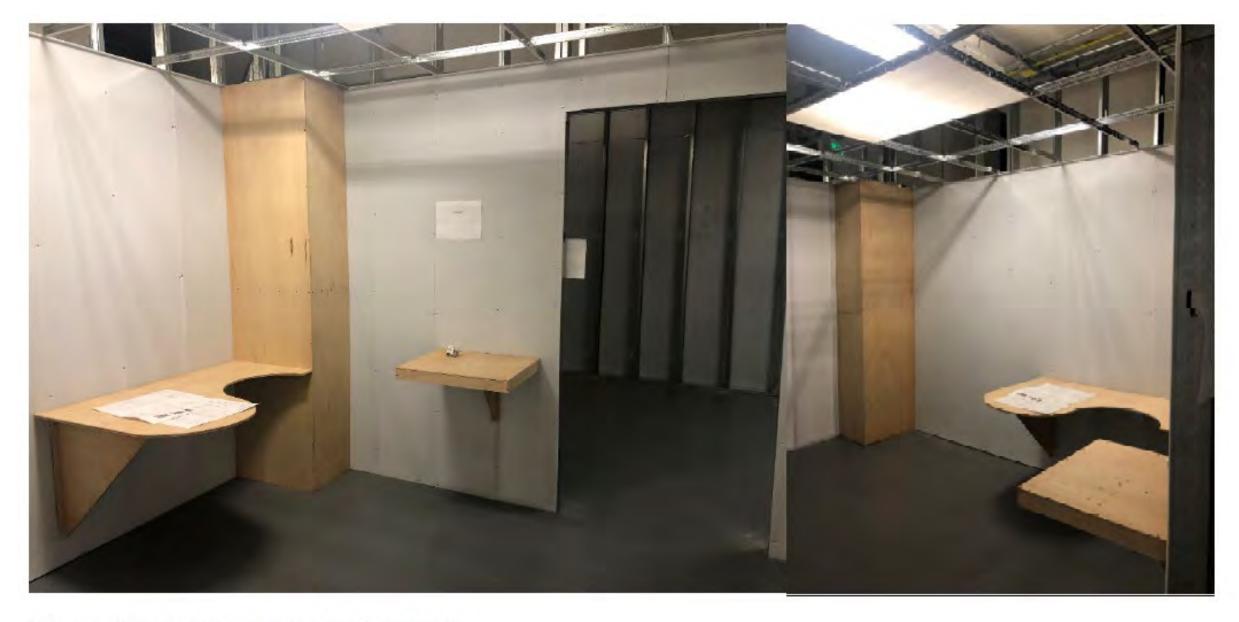
# Mockup Designs – Full Scale



(Photo of Infusion Mock Up taken 10/11/2019): Infusion room mock up is incomplete. Missing hand wash sink & overhead cabinet. Solid surface casework & base cabinet do not match the floor plans. There is currently no side panel installed at the entrance & exit side. No soffit header installed above solid surface counter.



# Mockup Designs – Full Scale



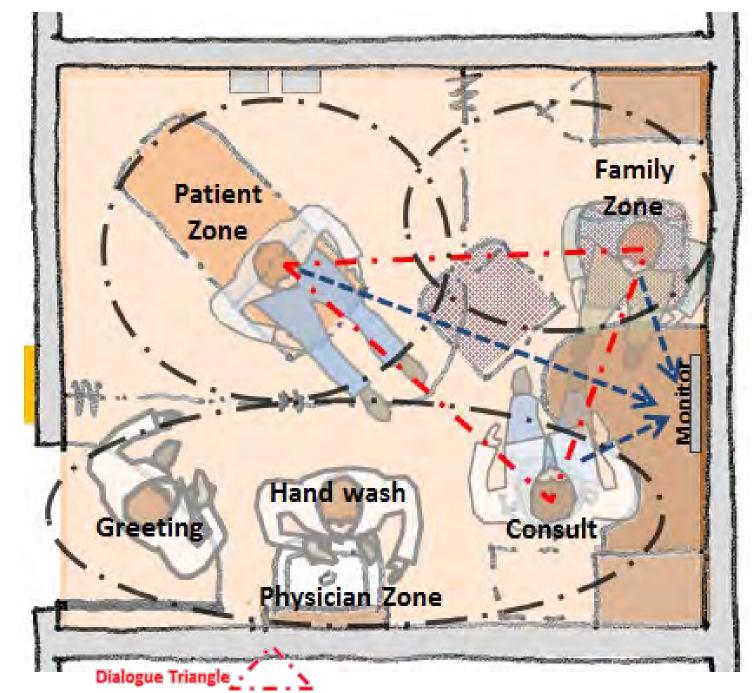
(Photo of Typical Room taken 10/11/2019):



## **Final Exam Documentation**

## **UM Standard Exam Features**;

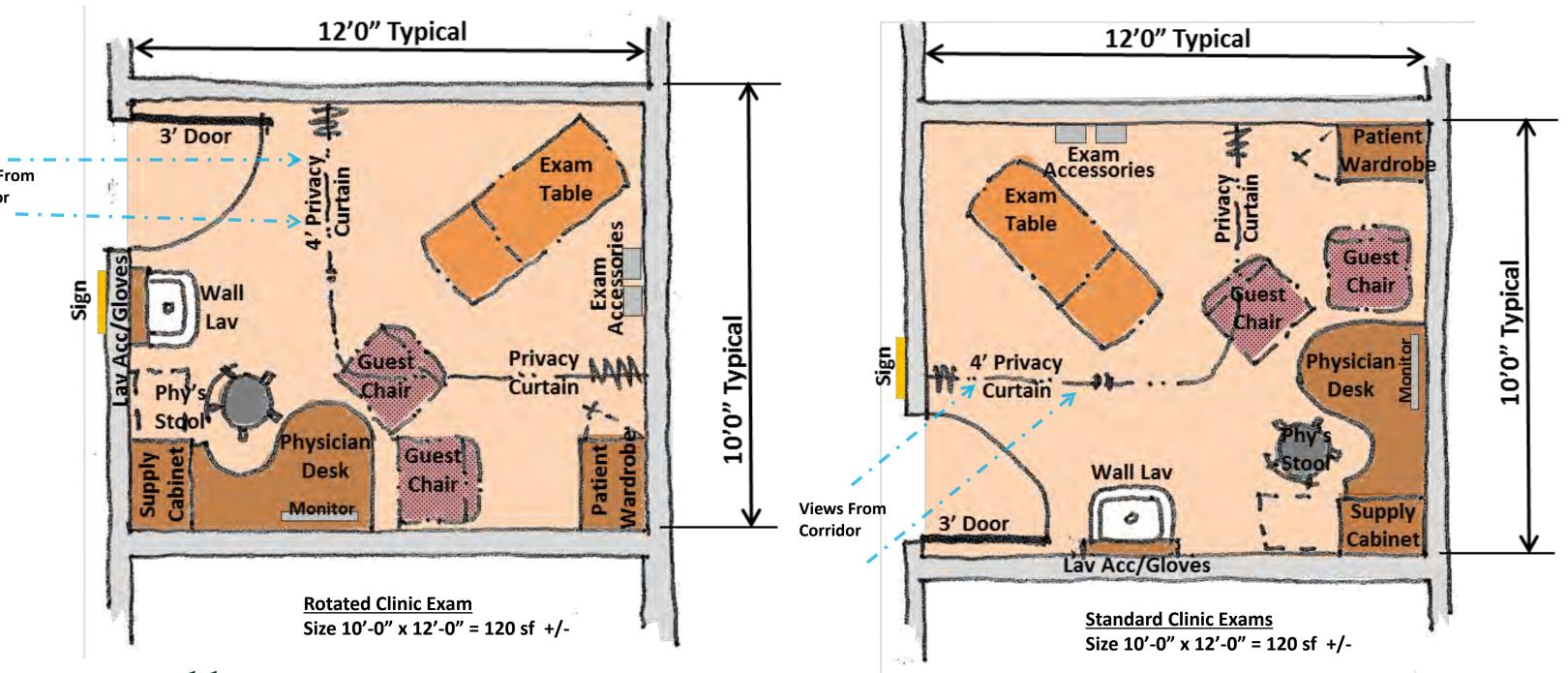
- 1. Physician's Desk layout, Monitor and flexible arm bracket to allow Patient and Family to have visual access to Monitor Content.
- 2. Physician Stool Exam Table Patient Chair Orientation/Geometry (see below.) To allow Patient never to be behind Physician. Allow physician easy access and exit when room is occupied.
- 3. Exam Table Orientation and Accessories locations. For easy access by staff.
- 4. Supply Cabinet design and location. For storage of supplies in staff zone and patient garments in family zone.
- 5. Sink/Lavatory location designed for Infection Control Best Practices immediately on entering the room. Cabinet for paper towel, soap and gloves.
- 6. All rooms are Right-Handed/Single-Handed, no mirrored rooms. For Standardization and repetitive use memorization.
- 7. Cubical Curtains are in two parts, for Patient Privacy from corridor and when dressing in room.
- 8. Door is 3' wide, lever hardware, no closer typically for ADA.
- 9. Electrical, Mechanical, ceilings, designed for adequate lighting and sound control.



Monitor Visualization

**User Meetings and Concepts** 

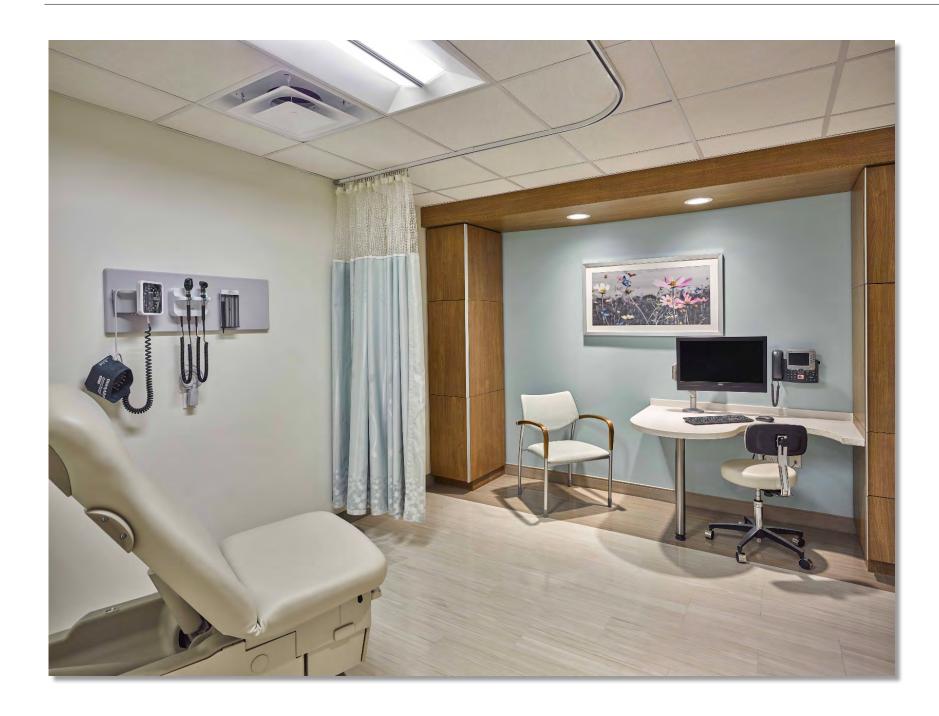
## Final Exam Documentation - Alternate Layout





**Exam Room Concepts – Single Handed Design for Repetition** 

# **Designing New Standards**



















**Before** 



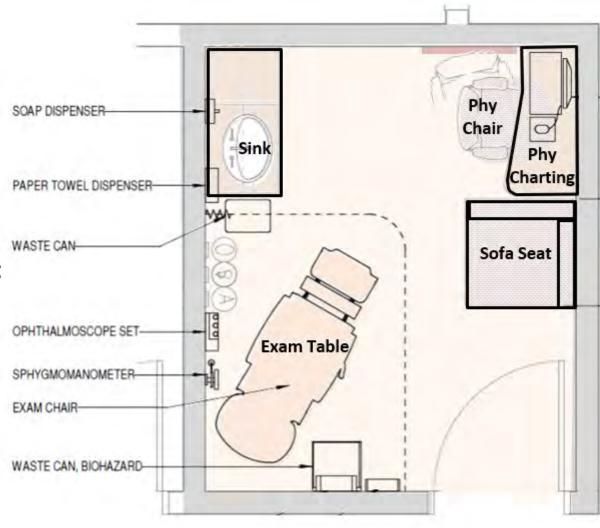
**After** 

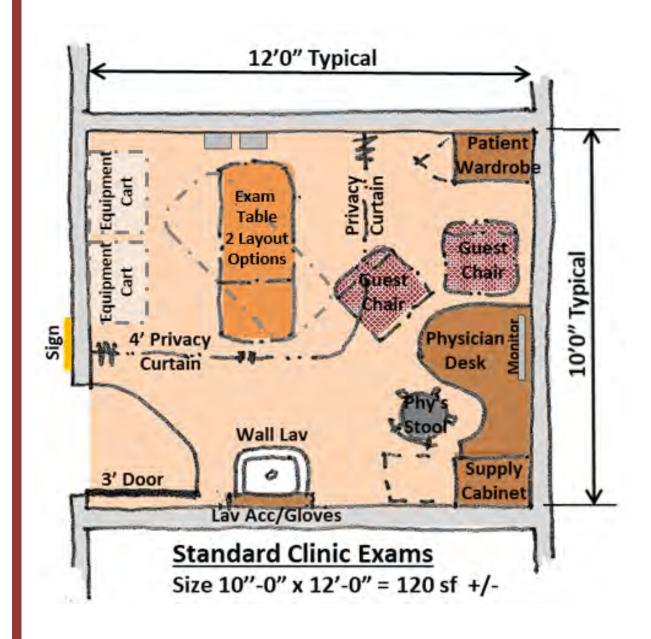


#### Alternate Standard Exam Room Design Review

#### **UM Design Concerns Of Note:**

- Sink is as far from Door as Possible.
- Phys Stool will beat up wall with every turn.
- No Second Guest Chair, Second Guest Chair will block access to Supplies and Sink.
- Limited Room for Equipment Carts
- Clinical Supplies in wrong location/Zone for Staff Physician access.
- Sofa Seat is problematic for maintenance / Patient movement.







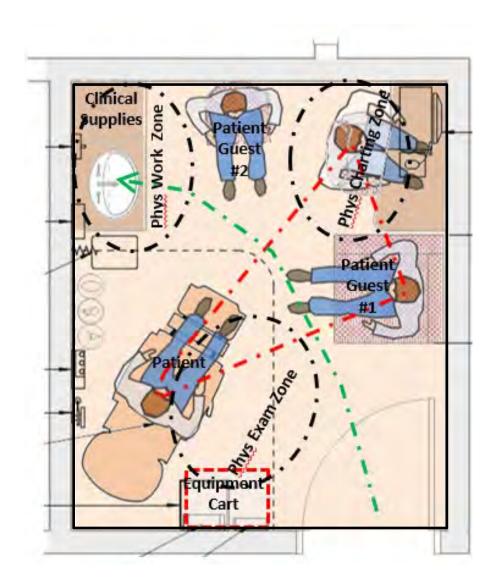


**Alternate Exam Comparison to Standard Exam** 

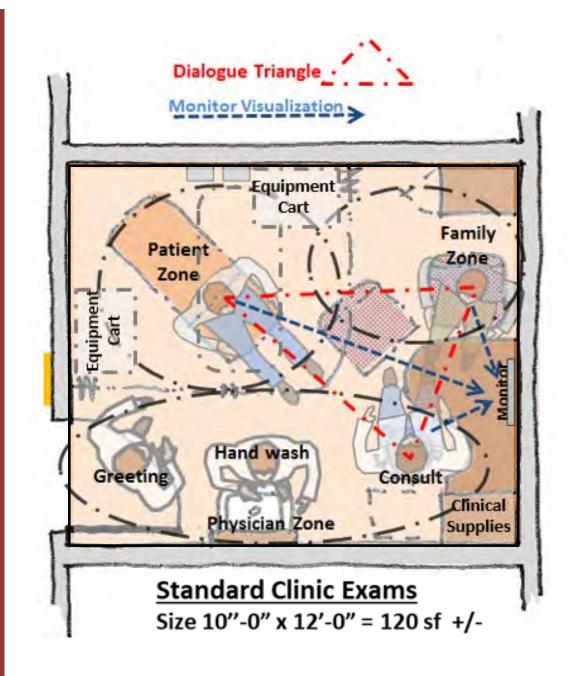
#### Alternate Standard Exam Room Design Review

#### **UM Operational Concerns:**

- Phys Rotation to see Patient on Exam Table is not conducive to charting.
- Phys needs to travel through Guest legs to examine Patient on Table.
- Distance between Phys and Patient on exam is extended.
- Sharing Images on Monitor will be a challenge.
- Phys Zone is split up in room.
- Hand washing is not accessible directly on entering and exiting the room. Infection Control has high level of concerns Phys/Staff will not wash hands.
- Staff access to sink while room is occupied is difficult and requires crossing through patient/Family Legs.
- Second Guest Chair is behind Phys.
- Equipment Carts count is reduced.
- Clinical Supplies in wrong location/Zone for Staff Physician access during exam process.



**Proposed Alternate Model** 





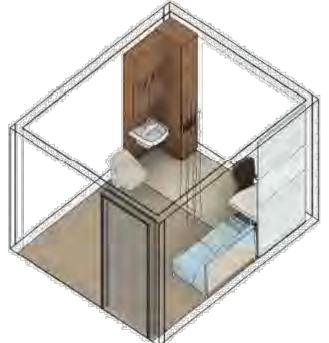
**Alternate Exam Comparison to Standard Exam** 

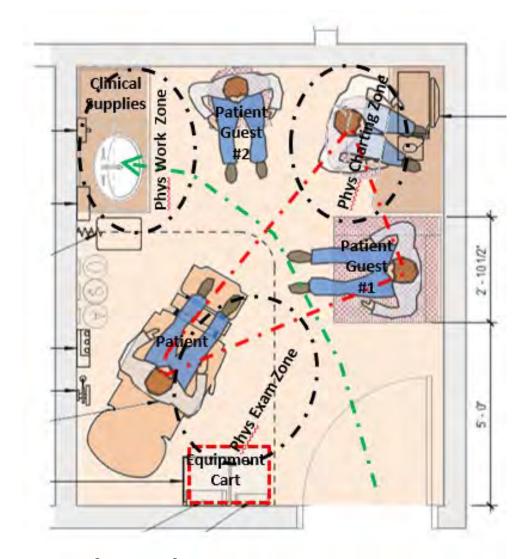
#### Alternate Standard Exam Design Review



**Full Scale Mockups** 





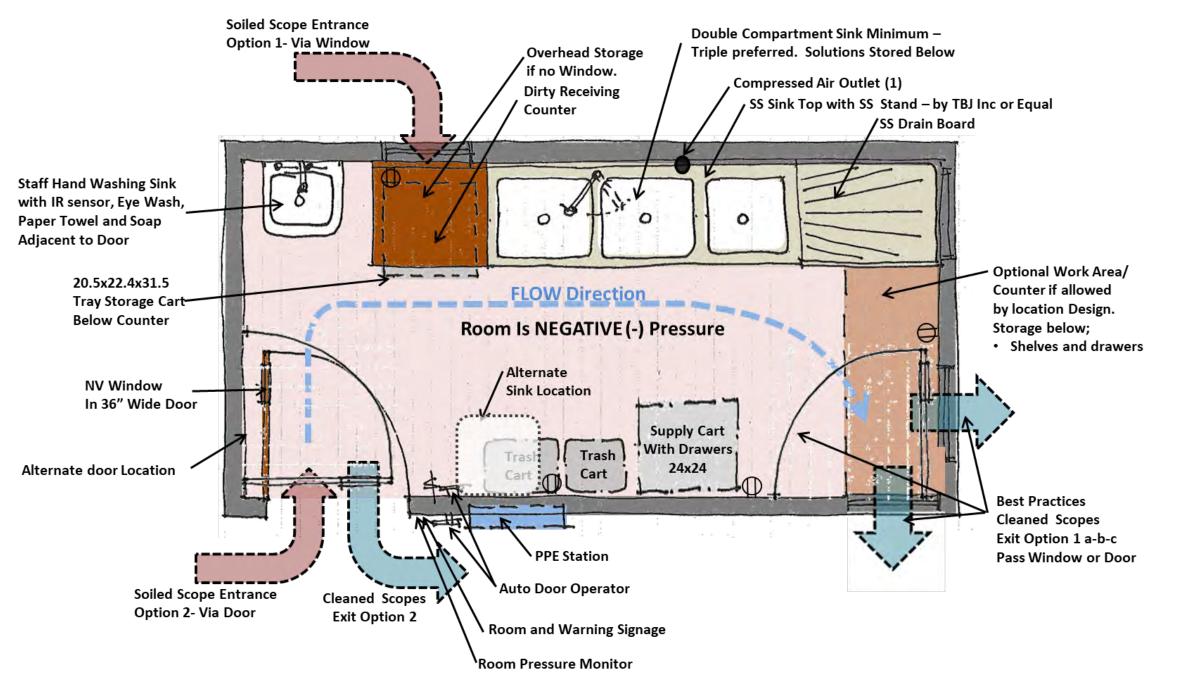


**Floor Plan** 



**Alternate Exam Comparison to Standard Exam** 

#### Standard Room Designs – Key Processes



#### **General Notes**;

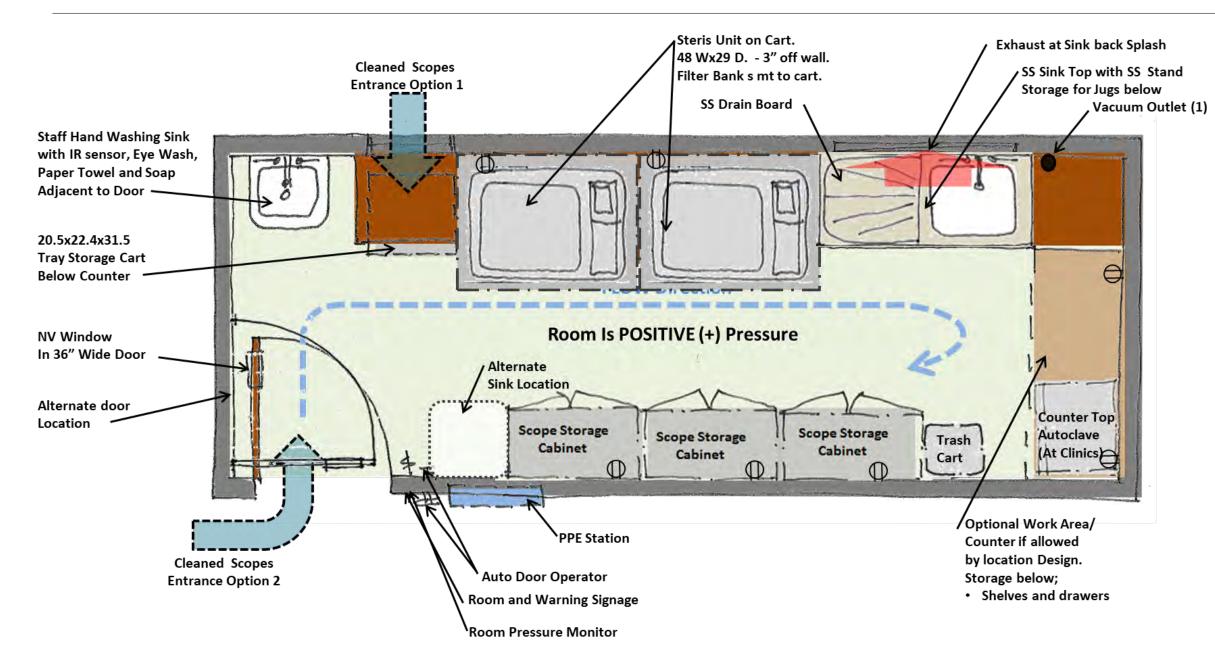
- 1. Left or Right-handed works
- 2. Will need computer and Phones
- 3. Temperature Control 68-72 deg.
- 4. 30-60 Relative Humidity
- 5. Floors are Seamless/Welded
- 6. Integral Base required
- 7. Wall Protection needed.
- 8. Wall to have latest Operational Posters
- 9. Provide Power as needed
- 10.Provide Lighting and ventilation as needed.

**UM Scope Cleaning Prototypical Layout** 



**Decontamination / Scope Cleaning Room** 

#### Standard Room Designs – Key Processes

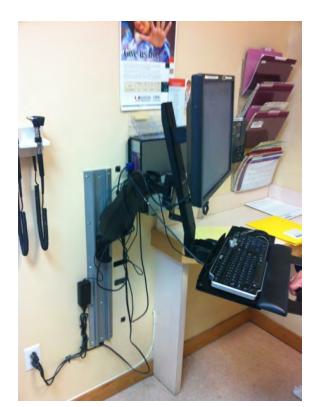


#### **General Notes:**

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**UM Scope Cleaning Prototypical Layout** 







**No Wire Management** 

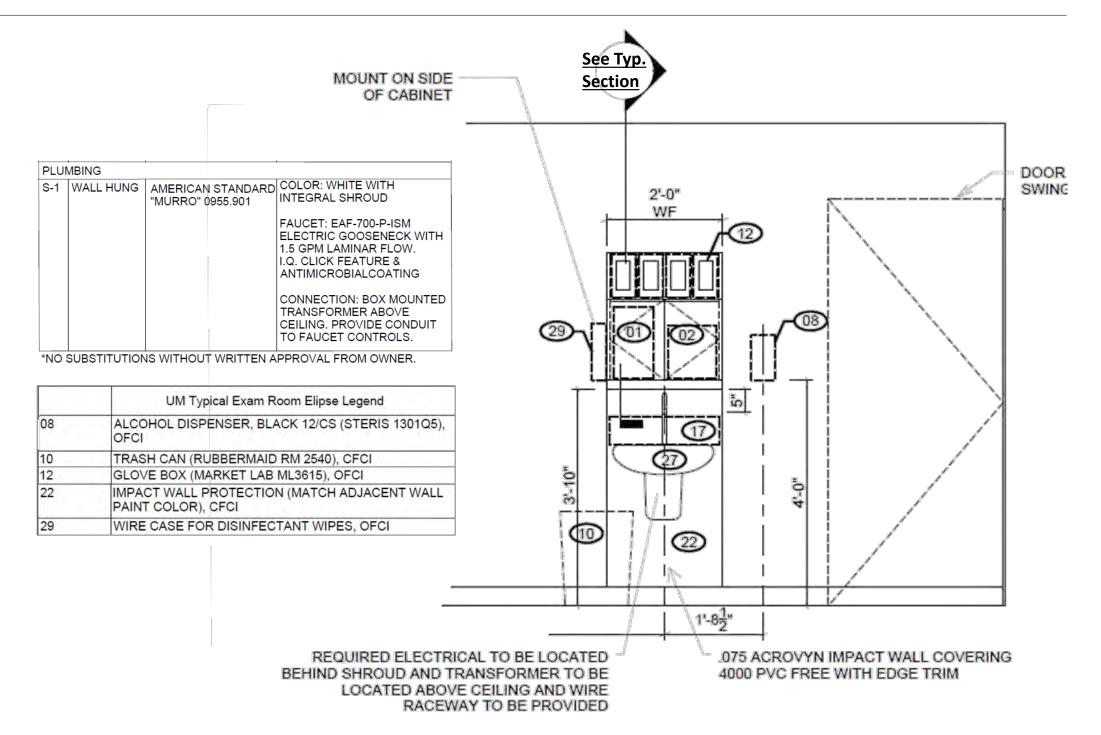


Wire Management



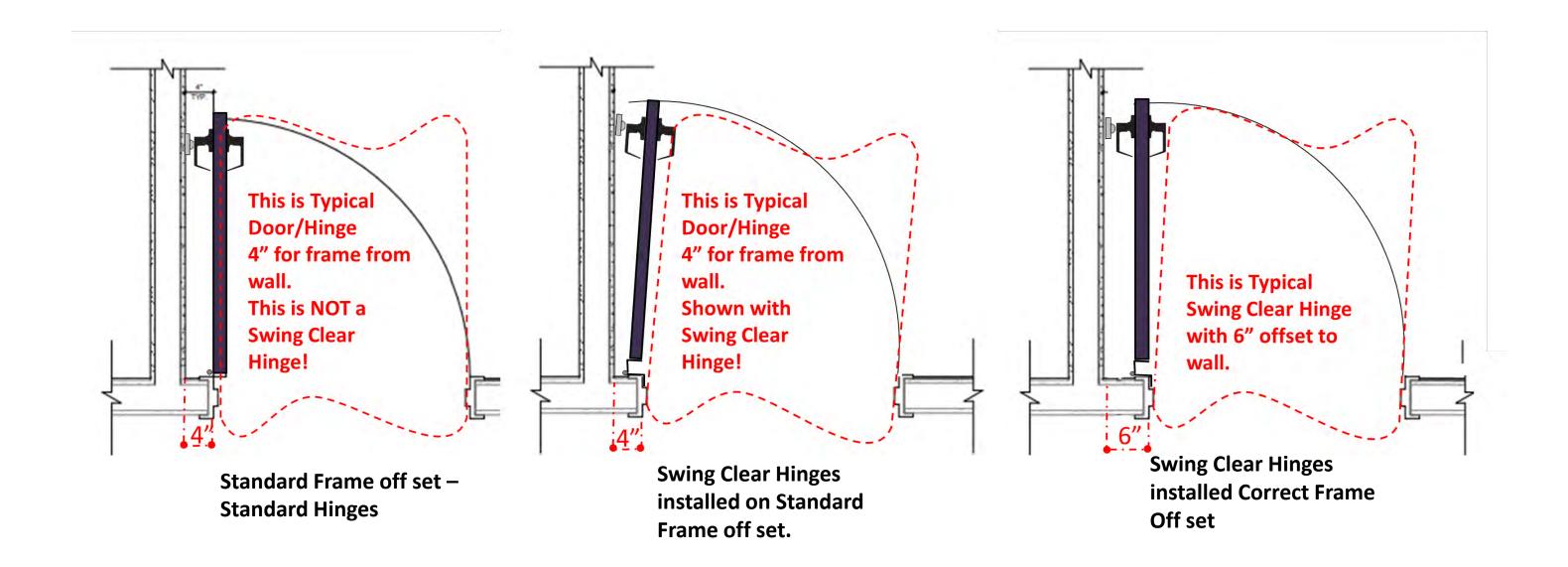


**Typical Handwashing Station Sink** 

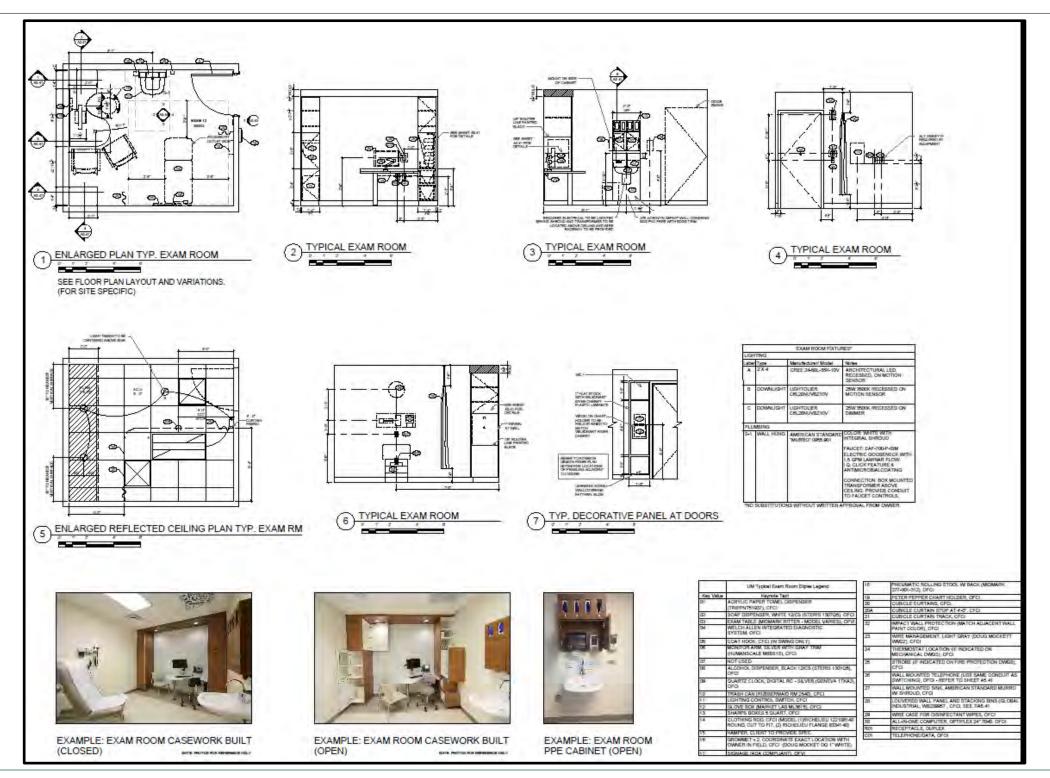




**Typical Handwashing Station** 

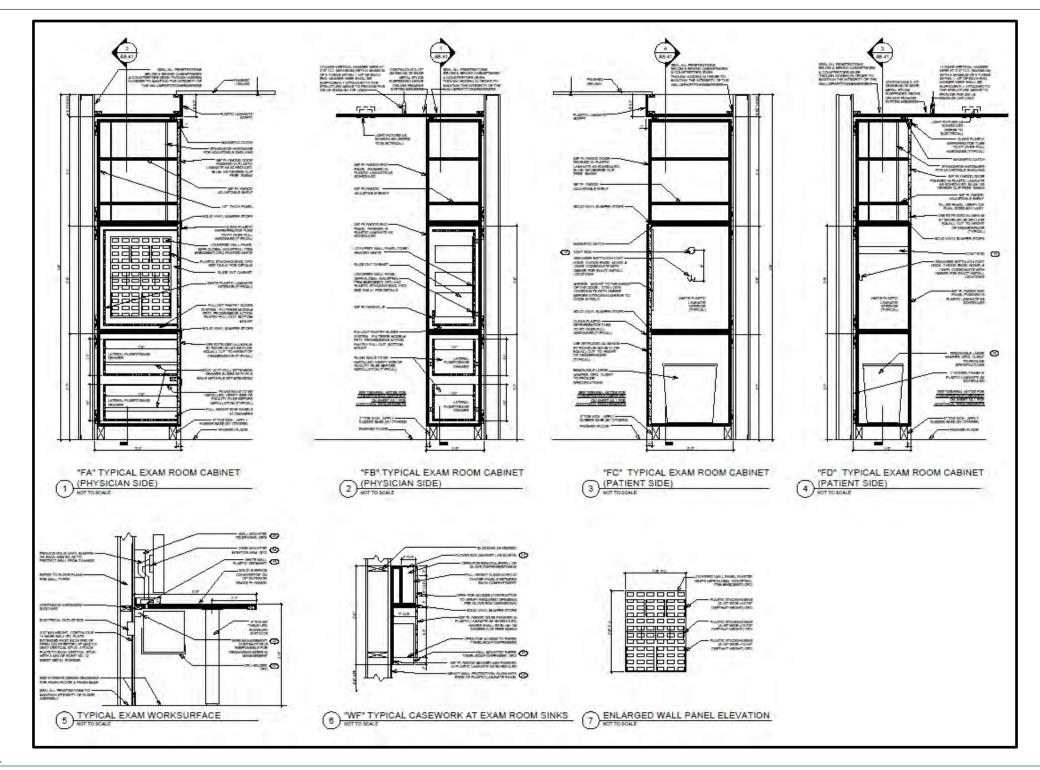








**Typical CD's** 



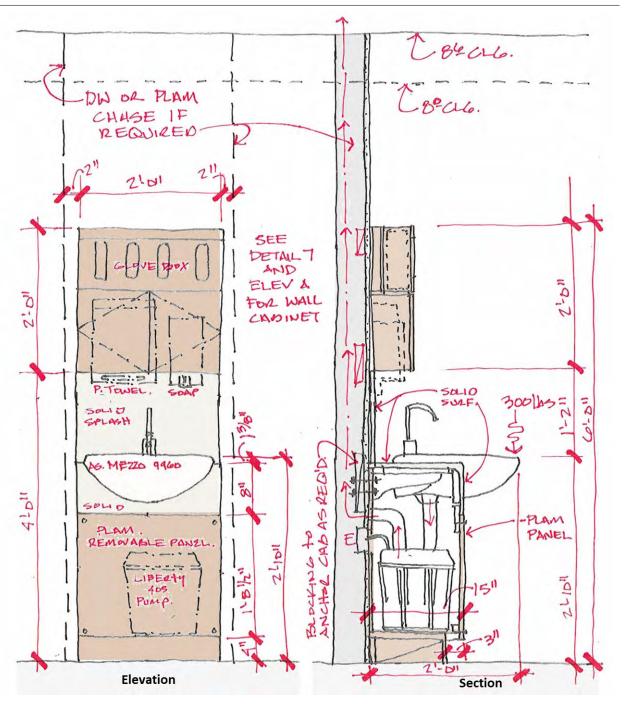


**Typical CD's** 





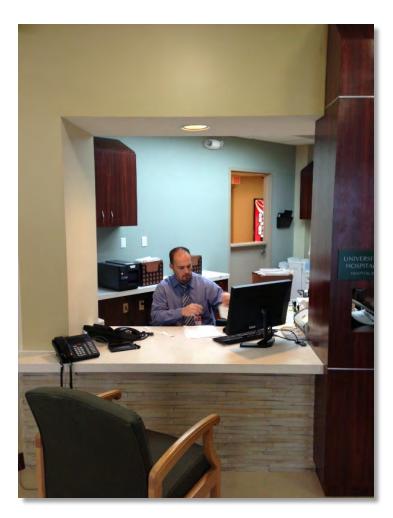






**Standard Exam - Pump Sink** 

#### **Standard Reception & Registration Desks**

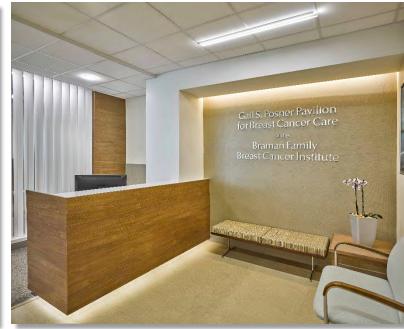






#### **Standard Reception & Registration Desks**

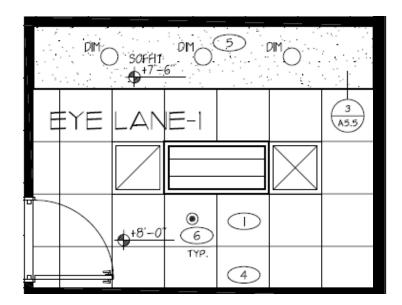


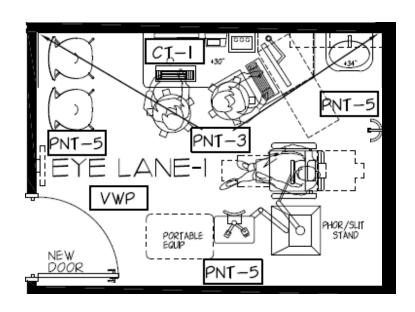


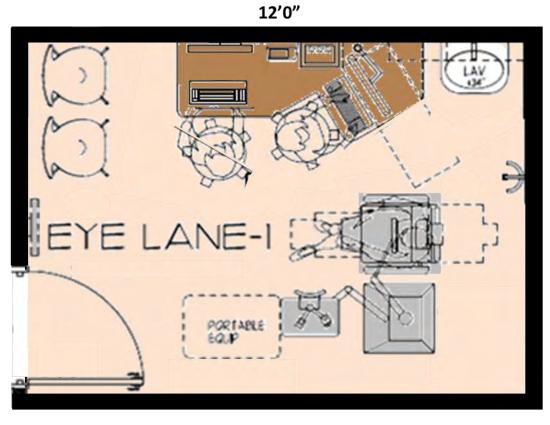












**Floor Plan** 









- Interior Design standards can include:
  - Finish Standards
  - Furniture Standards
  - Artwork Standards
  - Room Signage, Donor Signage, and Departmental Signage Standards
  - Equipment and Accessory Standards
  - Fixture Standards
  - Lighting Standards



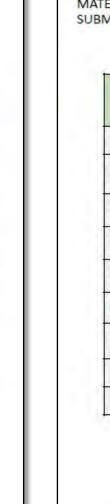


- Finish Standards
- Furniture Standards
- Artwork Standards
- Room Signage, Donor Signage, and Departmental Signage Standards
- Equipment and Accessory Standards
- Fixture Standards
- Lighting Standards



Standard Binders,
Divided by building or department





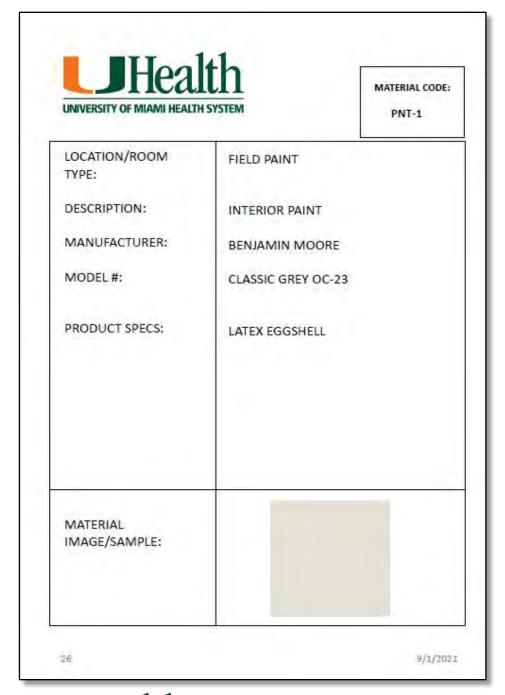


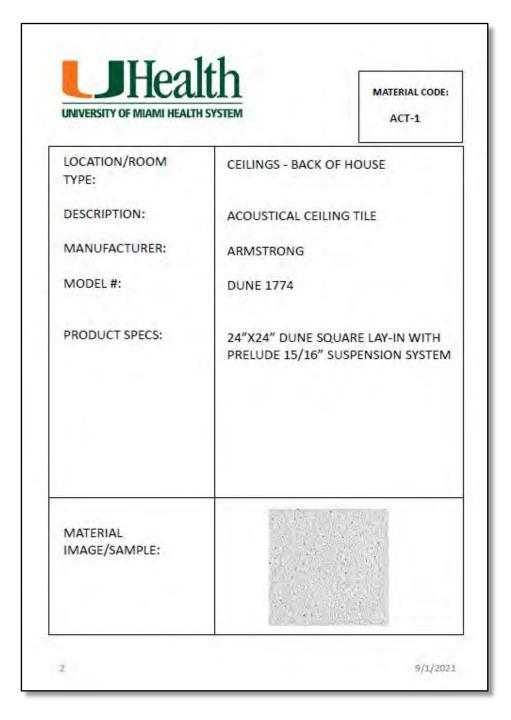
1	CEILING FINISHES	
2	FLOOR FINISHES	
3	WALL FINISHES	
4	PAINT FINISHES	
5	CASEWORK FINISHES	
6	ROLLER SHADES	
7	MISCELLANEOUS	

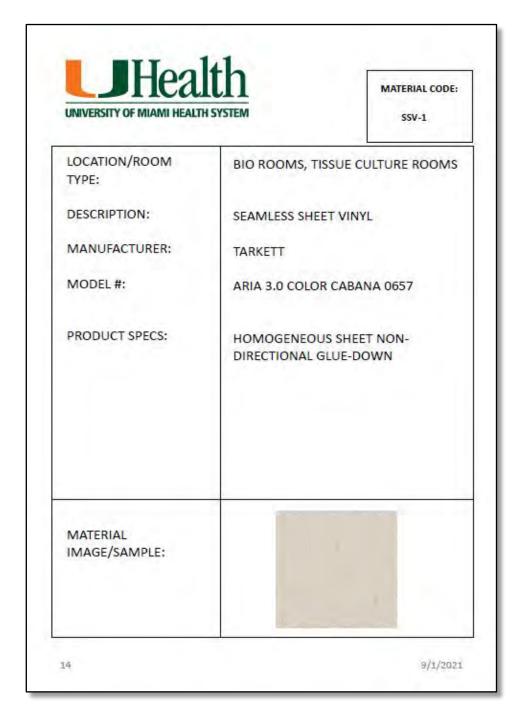
1

**Digital Standards** 











**Finish Standards** 









#### **Furniture Standards**



**Photos of University** Mascot, Sebastian the Ibis







**Standard Frames** 







**Photos of University** 

Mascot, White Ibis

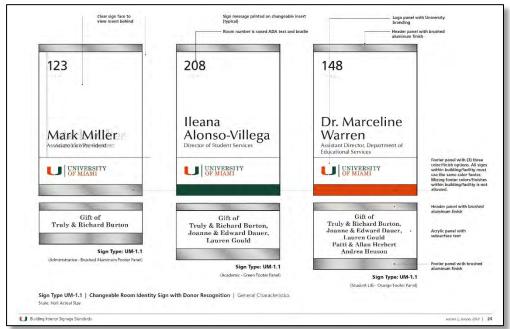


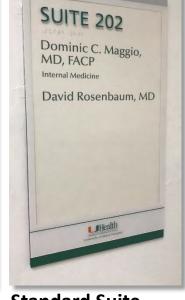


Artwork Standard: Flora and Fauna, Regional Photography



**Artwork Standards** 





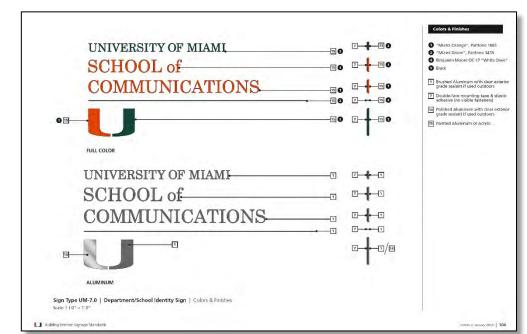
Standard Suite Signage







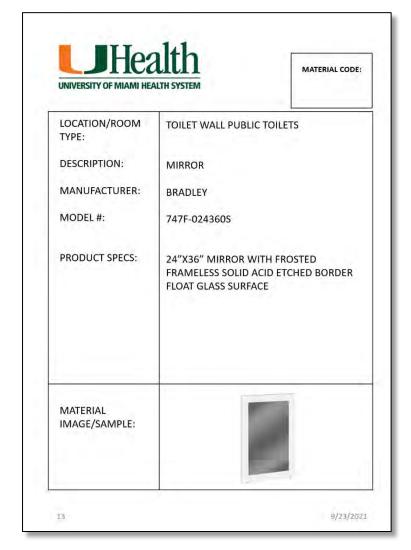
**Departmental and Entry Signage** 

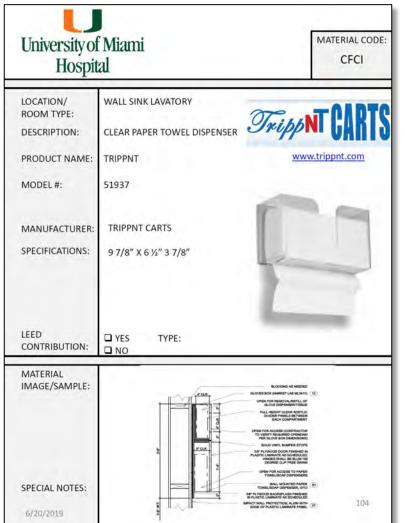


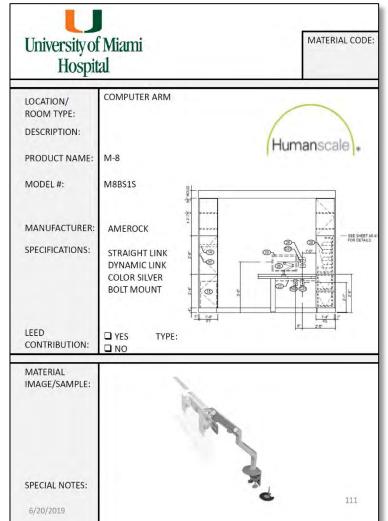
**Signage Standard Documentation** 

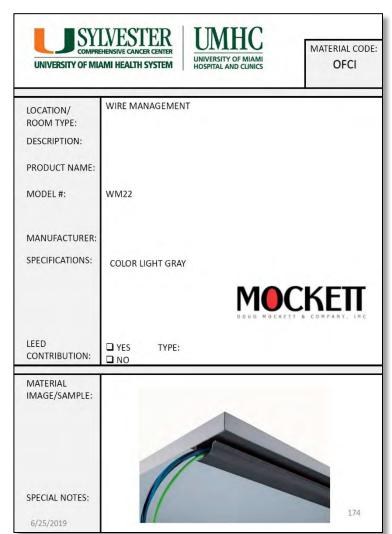


**Signage Standards** 









- Toilet Fixtures and Accessories
- Exam Room and Clinic Accessories
- Wire Management and Technology Accessories
- Clinic and Lab Equipment



#### Interior Design Standards, Creating a Brand



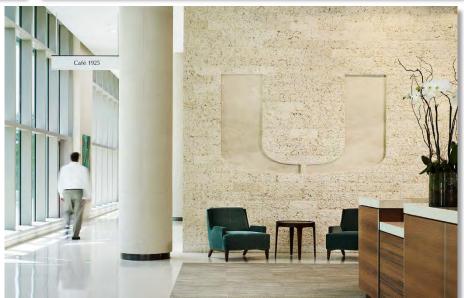












**Artwork Standards** 

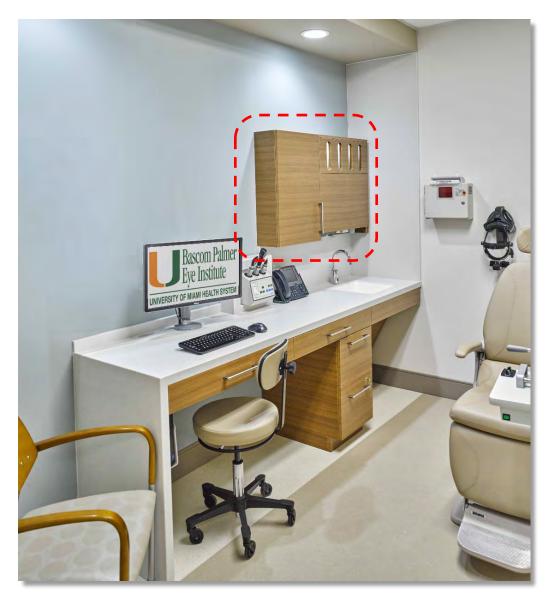




# Contractor Challenges



**Incorrect** 



**Correct** 









**Incorrect** Correct

**Value Engineering Consequences.** 

- 1. Wrist blades, This is an infection control issue.
- 2. Sink with lots of flat surfaces, also an infection control issue.
- 3. Sink with hard corners? We have round corners as they sink is in a high traffic location.
- 4. Don't see a waste/supply pipe shroud yet. We have a solid attractive shroud.













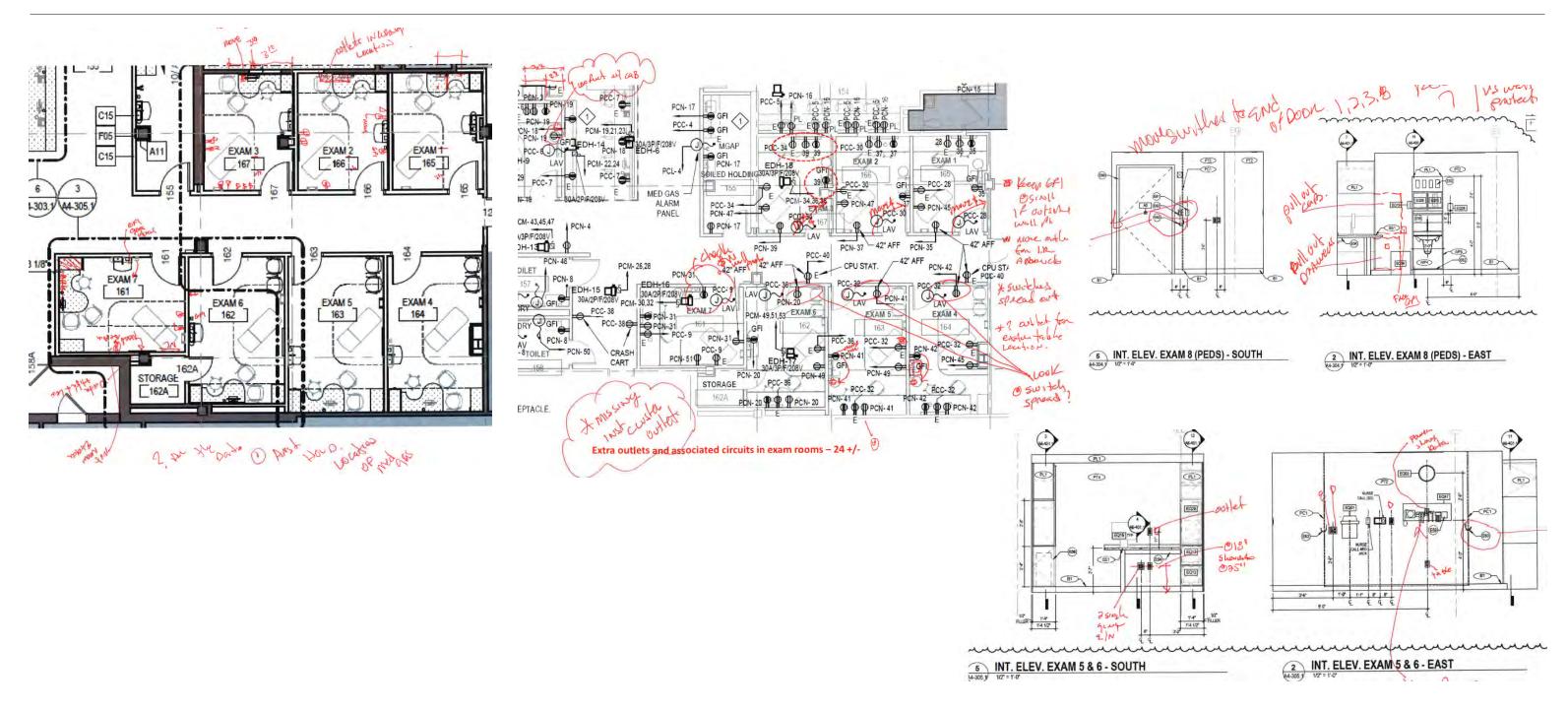








#### **Architect Challenges**









## Thank you for your attention!

