Protection Notes

Contractor shall erect dust barriers (6-mil reinforced polyethylene on frame construction) to protect all areas outside of the work areas. Contractor to provide anti-tracking pads inside building at all entrances to work areas to contain shoe-borne debris. Contractor is responsible for a through cleaning of all work areas at substantial completion. Refer to project manual for additional requirements for temporary protection & cleaning.

Note: Contractor is responsible to coordinate with owner for allowed location for trailers and stagging/laydown area. Contractor must protect area and restore to pre-construction condition by substantial completion date.

Project Schedule Milestones

- Bid Award/Notice to Proceed (NTP) will be on or around January 2nd 2015
- All submittals shall be provided by contractor within 20 days of NTP
- Construction Begins: January 2nd 2015
- Substantial Completion/Occupancy: February 27th , 2015
- Punch-List Completion: March 6th, 2015

List of Drawings

- CSK-001 General Notes
- CSK-002 Site Location Plan
- CSK-003 Building Location Plan
- CSK-004 to CSK-005 Demolition Part Plan
- CSK-006 to 007 Construction Part Plan
- CSK-008 to 009 Dimension Part Plan
- CSK-010 to 11A Reflected Cieling Part Plan
- CSK-012 to CSK-013 Power/Telecommunication Plan
- CSK-014 to CSK-015 Elevations
- CSK-016 to CSK-018 Wall Types
- CSK-019 to CSK-021 Milwork Details
- CSK-022 to CSK-023 Transaction Counter Details
- CSK-024 to CSK025 Sections
- CSK-026 to CSK-033 Door Details
- E-001.00 to E-300.00 Electrical
- M-001.00 to M400.00 Mechanical
- P-001.00 to P-200.00 Plumbing
- SP-001.00 to SP-200 Sprinkler
-
-

General Notes

1. Do not scale drawings. Written dimensions govern.
2. The contractor is responsible for field verifying all square footage of work area prior to commencing any work.
3. The contractor is responsible for providing and maintaining clear public egress.
4. See the specifications for work rules.
5. The drawings and project manual are complementary and their intent is to include all items necessary for the proper execution and completion of the work. The contractor is to provide all labor, materials and equipment required for the construction of the project. The organization of the drawings & project manual shall not control the contractor in dividing the work among the subcontractors or in establishing the extend of work required by any trades.
6. Review documents, verify dimensions and field conditions and confirm that work is buildable as shown. The contractor shall report any conflicts and/or omissions to the Owner prior to performing any work in question.
7. Submit requests for substitutions, revisions and/or change to the Owner, in writing, for review prior to purchase, fabrication, or installation.
8. Maintain exits, exit lighting, fire protection devices, and alarms for the duration of the work.
9. Provide a duly authorized full-time representative on the job site at all times for supervision of the construction as outline in the project manual .

Demolition Notes

1. Comply with applicable local, state, and federal codes pertaining to safety of persons, property, and environmental protection.
2. If demolition is performed in excess of that required, restore effected areas to pre-demolition state and finish at no additional cost to Owner.
3. Remove from site daily and legally dispose of all refuse, debris, rubbish and other materials resulting from demolition operations.
4. Remove existing floor finishes and prepare subfloor as required to receive new scheduled floor finishes. Refer to abatement drawings and specs for additional information.
5. For all items scheduled for removal and re-installation, contractor shall verify and document, in writing, the condition and functionality of the item(s) prior to removal. Any damage to item(s) not documented shall be repaired by the Contractor at no additional cost to the Owner.

Construction Notes

1. All dimensions are dimensioned from finish face to finish face (unless otherwise noted). Maintain dimension marked "clear" or "hold". Allow for thickness of materials.
2. Coordinate and provide blocking within partitions/walls as required to support all millwork items mounted to walls or ceilings.
3. Patch and repair all existing and/or new penetrations through existing fire-rated partitions, ceilings, or slabs, as required, to maintain existing fire protection rating.
4. Patch and repair all existing walls, columns, and surfaces scheduled to remain as required to leave them smooth and even to receive new scheduled finishes. Refer to finish plans for additional information.

Power & Communication Notes

1. Coordinate installation of telecommunications, data, audio-visual, and equipment.
2. Verify equipment specifications, power and installation requirements with manufacturer to ensure proper fit and function.
3. Mount standard wall receptacles, switches, thermostats, strobes, and devices at heights required by Title 24 or ADA guidelines, or as indicated on drawings. Contractor to verify with Owner in the field prior to installation.
4. Architectural drawings only indicate device locations for power, telecommunications, audio-visual, mechanical, security, and fire alarm. Electrical contractor shall be responsible for verify all existing conditions, for complying will all applicable codes, proper sizing and circuiting of work and providing record "As-Built" documents.

Finish Notes

1. Ensure surfaces to receive new scheduled finishes are clean, true and free of irregularities. Do not proceed with work until unsatisfactory conditions have been corrected. Starting of work indicates installer acceptance of substrate.
2. Repair existing surfaces scheduled to remain, as required, for the application of new scheduled finish.
3. Unless otherwise noted, provide minimum three-coat painting system to substrate.
4. Provide straight, flush resilient base at carpeted areas and cove, top set resilient base at areas of resilient flooring, unless otherwise noted.
5. All exposed ductwork, sprinkler piping, misc. piping and conduit in area of exposed or no ceiling to be painted to match slab and/or adjoining wall surface (unless otherwise noted).

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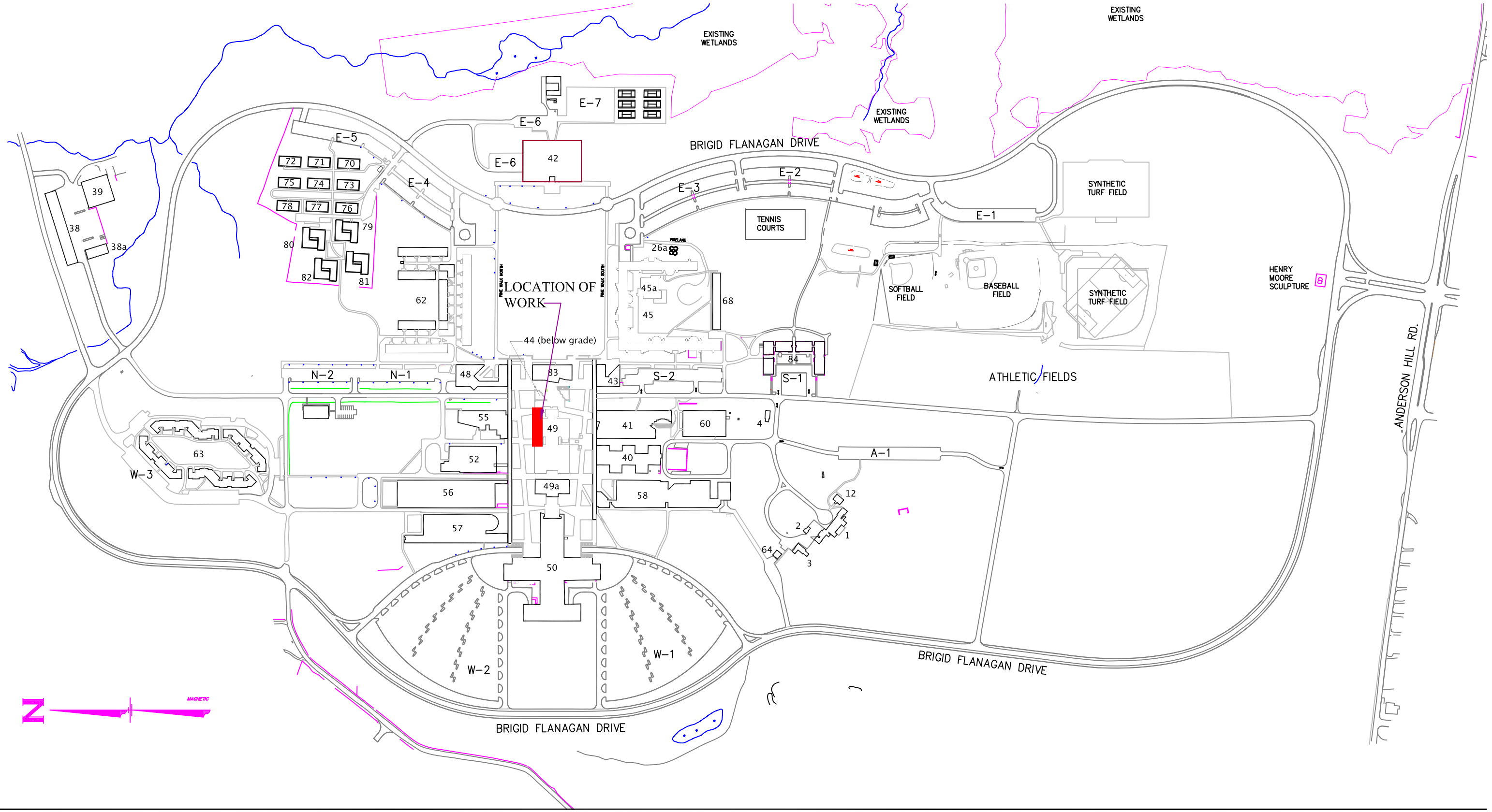
Project Name:	Mailroom / Receiving Area Renovation
Project Number:	#SU-120814
Location:	Plaza Lower Level- Proposed Mailroom/Post Office/Recieving Area.
Scale:	1/4" = 1'-0"
Date:	12/01/14
File Path:	Z:\Capital Planning Office\1-Projects\Mailroom\Drawings\General Notes.dwg

General Notes

Sketch Number: CSK-001



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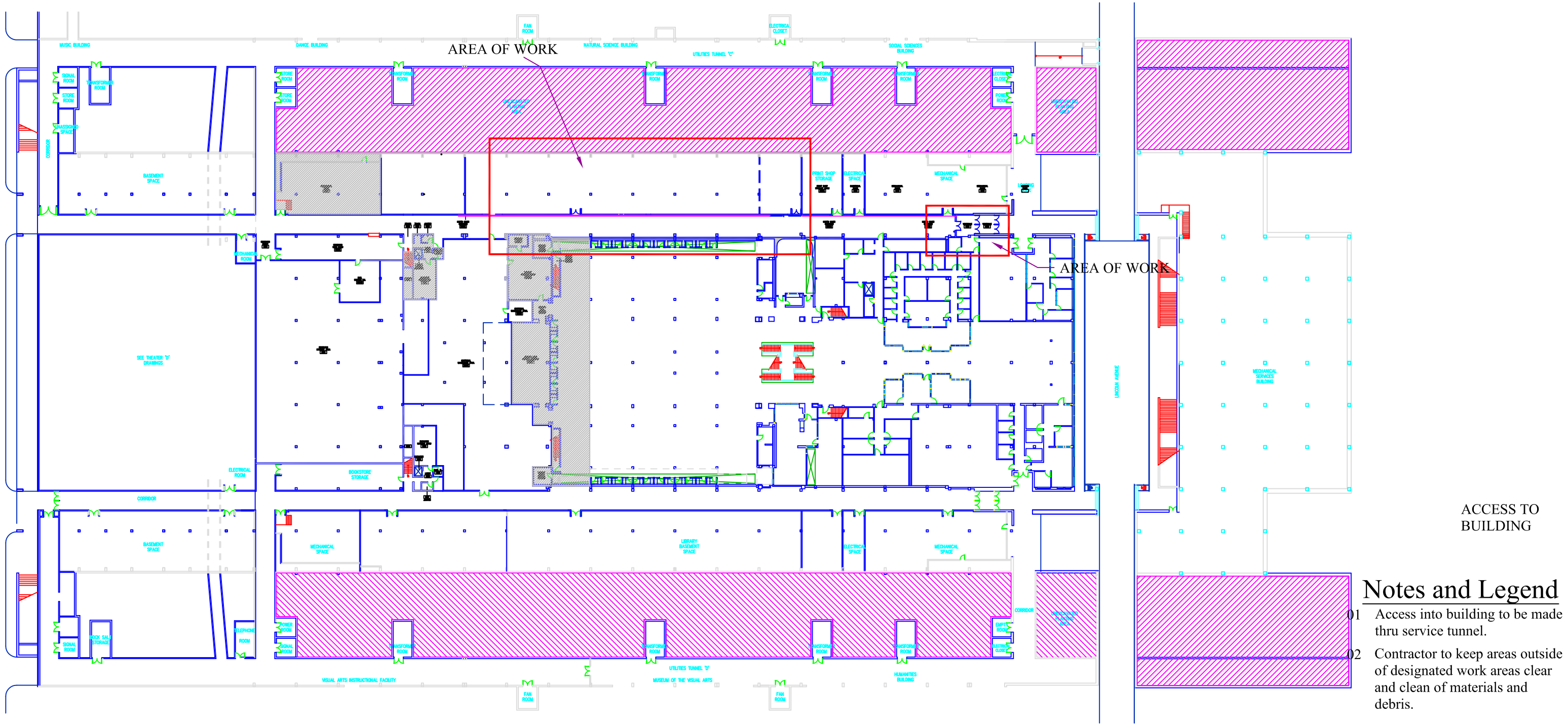
Project Name:	Mail and Recieving Area Renovation
Project Number:	#SU-12/08/14
Location:	Project Location Plan
Scale:	NTS
Date:	12/01/14
File Path:	Z:\Capital Planning Office\1-Projects\Mailroom-Recieving Renovation\Drawings\Drawing\ Final\Site Plan.dwg

Site Plan - Mailroom-Recieving

Sketch Number: CSK-002



ACCESS TO BUILDING

Notes and Legend

01 Access into building to be made thru service tunnel.

02 Contractor to keep areas outside of designated work areas clear and clean of materials and debris.

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Project Name:	Mailroom/ Receiving Area Renovation
Project Number:	#SU-12/08/14
Location:	Work Area Location Plan
Scale:	NTS
Date:	12/01/14
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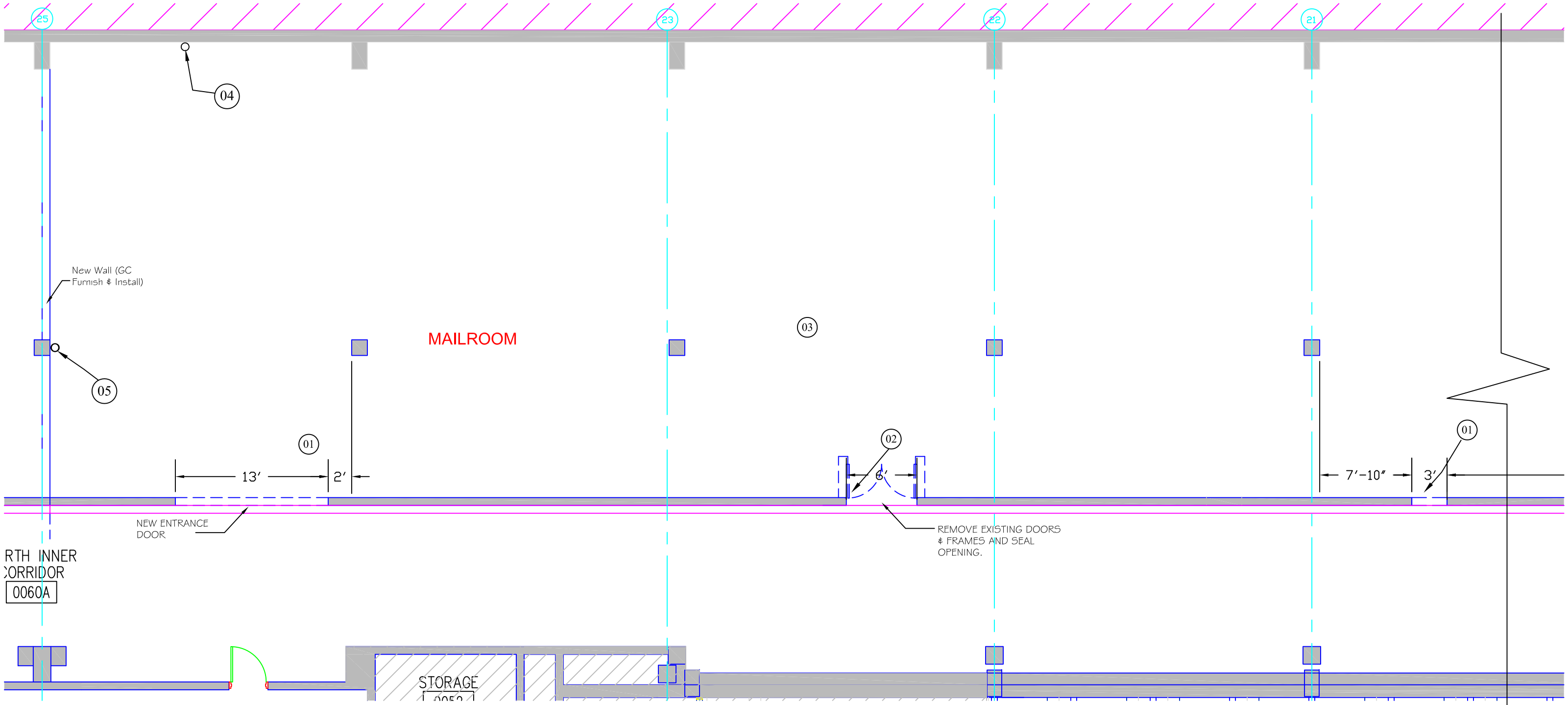
Work Location Plan - Mailroom-Recieving

Sketch Number: CSK-003



01 Provide new opening and lintel for new door

02 Remove existing Doors and Block wall and seal opening (Match existing)

03 Prep Floor to Recieve New Schedule Finish

04 Existing 7 inch drain pipe

05 Existing 8 inch drain pipe

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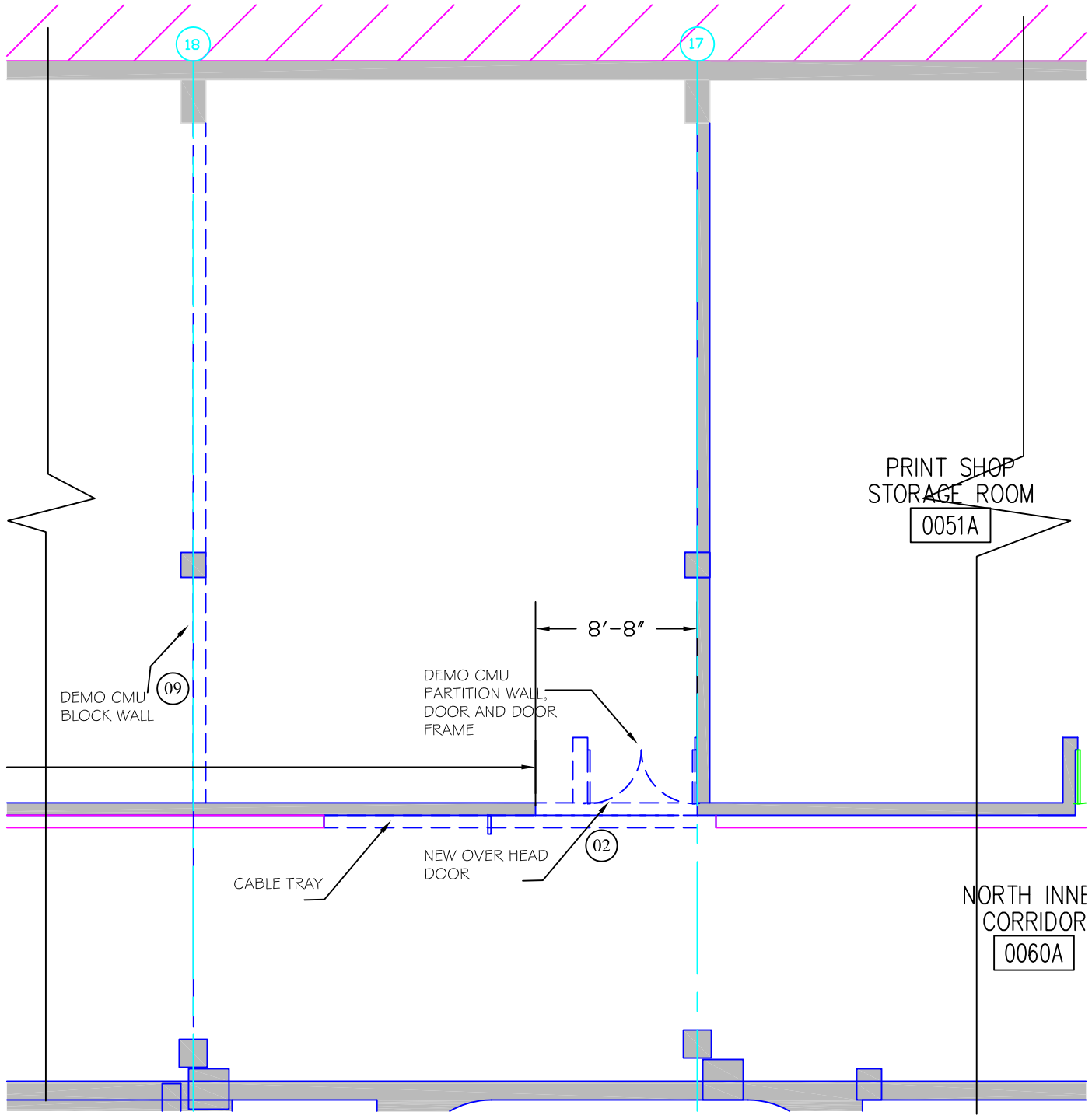
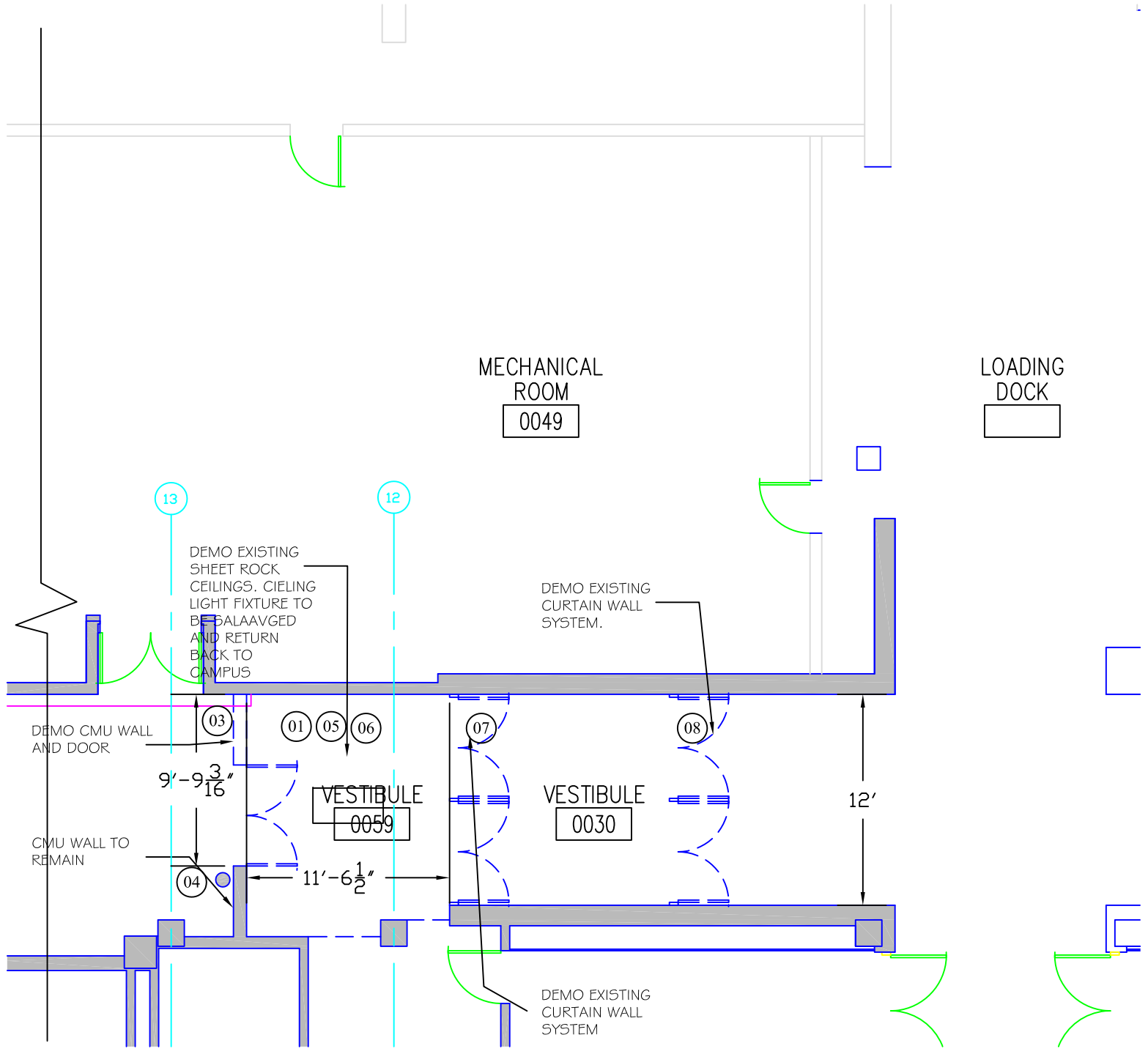
Location:	Plaza Lower Level - Proposed Mailroom / Post Office / Receiving Area
Scale:	1/8" = 1'-0"
Date:	12/08/14
File Path:	Z:\1-Projects\Mailroom-Receiving Renovation\Drawings\Final Demo plan

Mailroom-Receiving Demo Part Plan CSK-004





01 Demo existing GWB Ceiling and walls and associated cove Base.

02 Remove section of existing masonry block wall and prep for new roll-up door. Provide new steel lintel as required. Remove section of 8 ich cable tray and re-route the cables and cable tray above domestic water line.

03 Remove existing doors/ wall and enlarge opening. Paint and finish.

04 Protect existing drain pipe & Wall

05 Protect and secure all utility lines including cable tray and cables above the cieling.

06 Salavage existing light. Secure exiting sprinker at 10 feet hight approx same location. Remove existing vinyl tile and existing cove base

07 Remove existing doors and frame. The GWB wall above doors needs to be retrofiited to provide 8-6" foot clean opening. (Prep and finish)

08 Remove existing curtain wall system upto underside deck(Prep as required for new curtain wall system)

09 Demo CMU wall to underside deck (Paint & Finish)

10 Remove bracket and secure domestic water line with a suspended bracket from underside deck.

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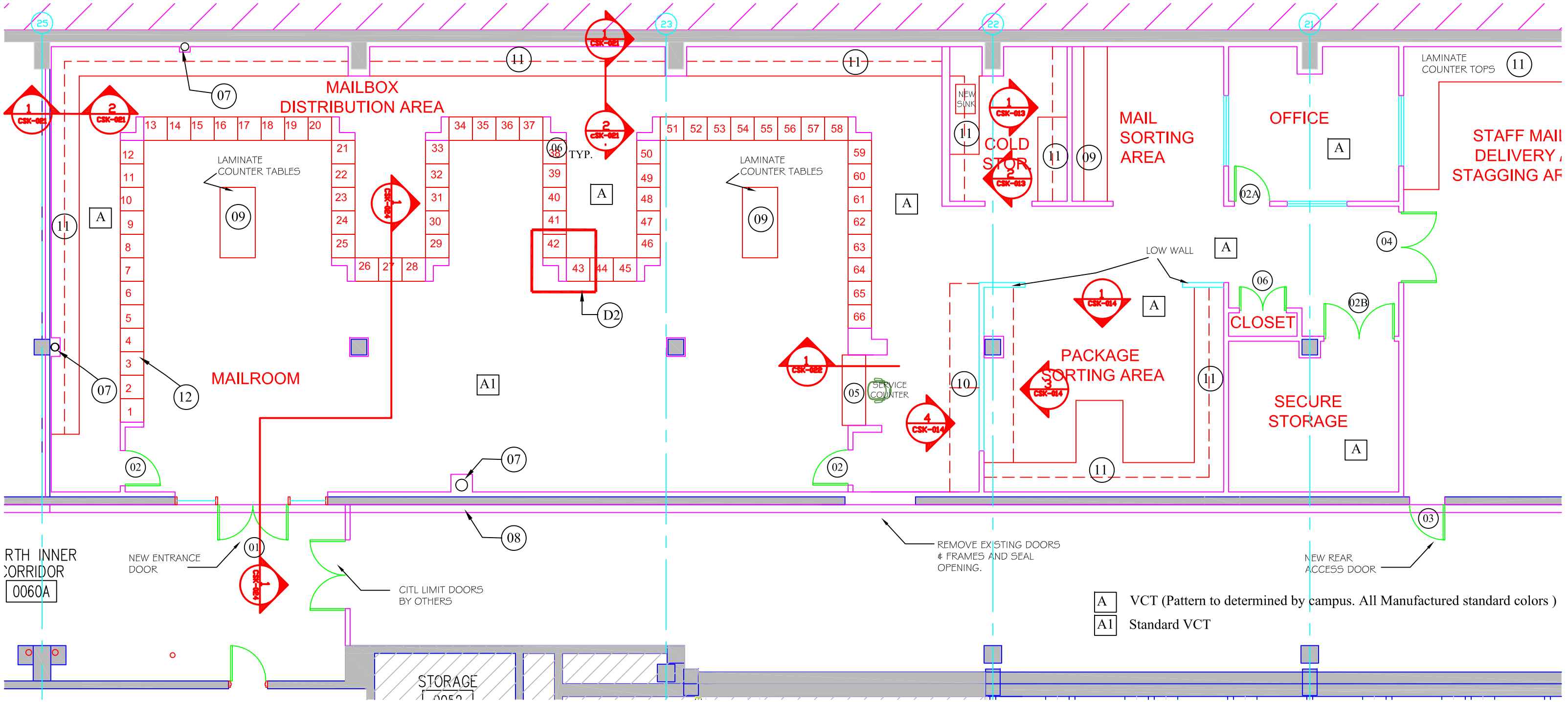
Scale:	1/8" = 1'-0"
Date:	12/02/14
File Path:	Z:\1-Projects\Mailroom-Receiving Renovation\Drawings\DemoPlan

Mailroom-Receiving Demo Part Plan CSK-005



A VCT (Pattern to determined by campus. All Manufactured standard colors)

A1 Standard VCT

01 New entrance Alumn/Glass doors & glass sidelights. Hardware Set #01. Provide Steel lintels as required. Engineering for lintels by G.C. Provide shop drawings for approval.

02 New HM door with heavy kick plate on push side side. Hardware Set #02

02A New HM door. Hardware Set#04

02B New HM door. Hardware Set#06

03 New entrance door HM standard door with heavy-duty kickplate on push side of doors. Hardwae set #03. Provide Steel Lintels as required. Engineering by GC. Provide shop drawings for approval..

04 New HM doors w/heavy duty kickplates on push side of the doors. Hardware set #07

05 Relocate exiting stone counter and roll down security door. Contractor is responsible for removal, furnish and install.

06 New Closrt door. Hardware#5. Refer to Door Detail CSK028

07 Fur-out around Existing drain pipe. Provide access panel for clean out.

08 Existing Cable tray

09 Mail Sorting table and laminate Counter table furnish and installed by Campus

10 Existing tables (Campus to provide)

11 Millwork

12 New Mail Boxes by GC.

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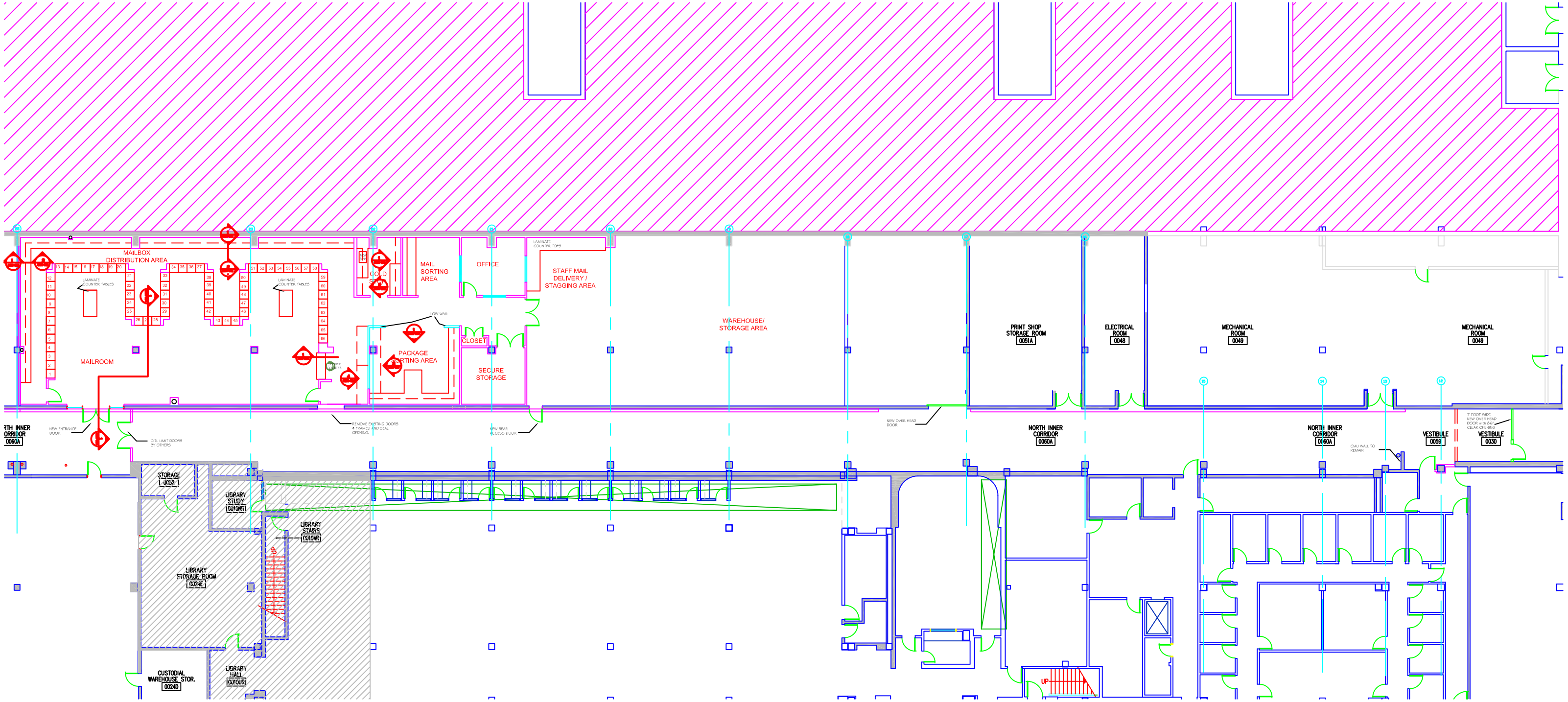
Scale:	1/8" = 1'-0"
Date:	12/02/14
File Path:	Z:\1-Projects\Mailroom-Receiving Renovation\Drawings\Construction Plan Final.

Mailroom-Receiving Construction Part Plan CSK-006



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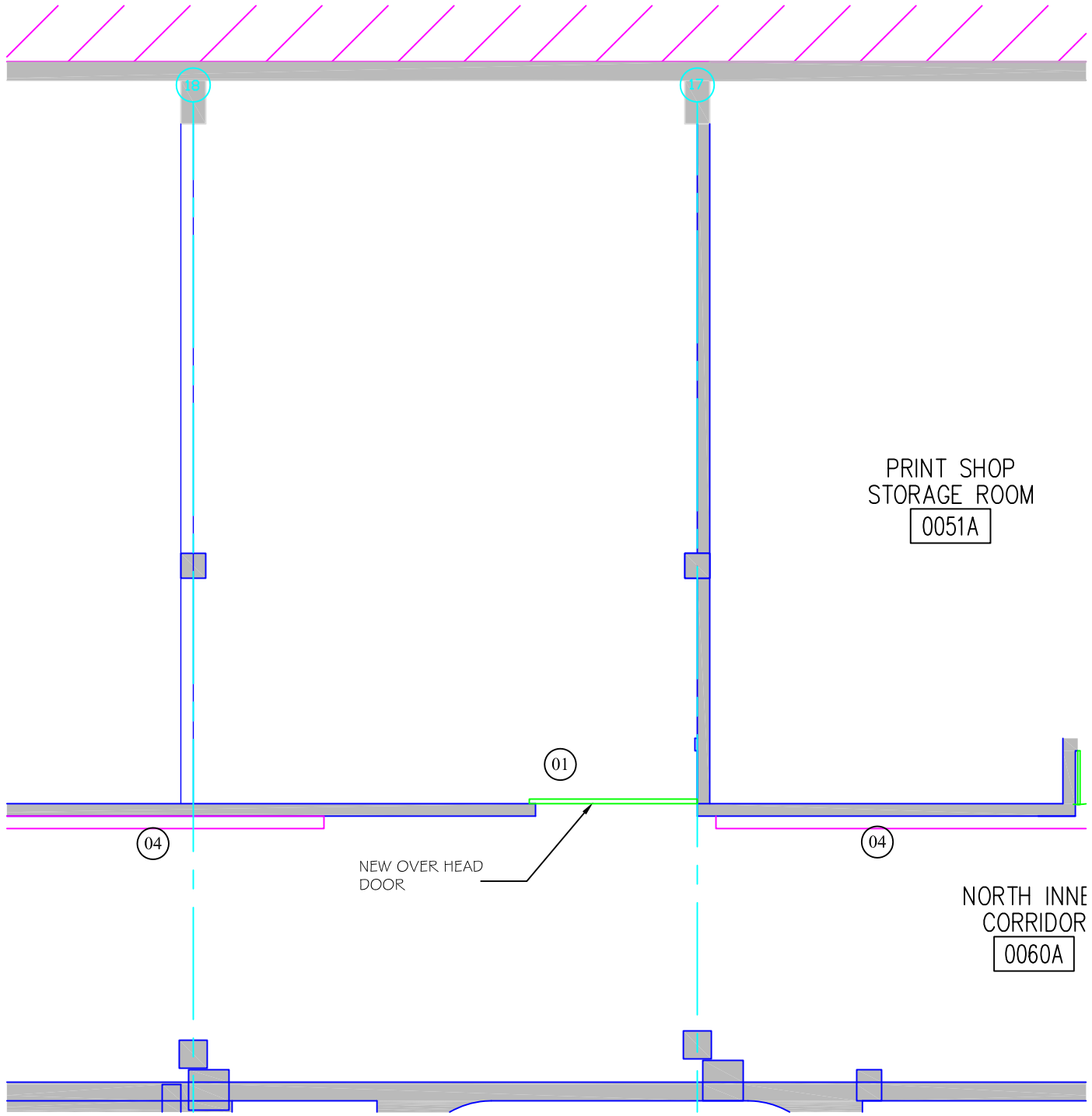
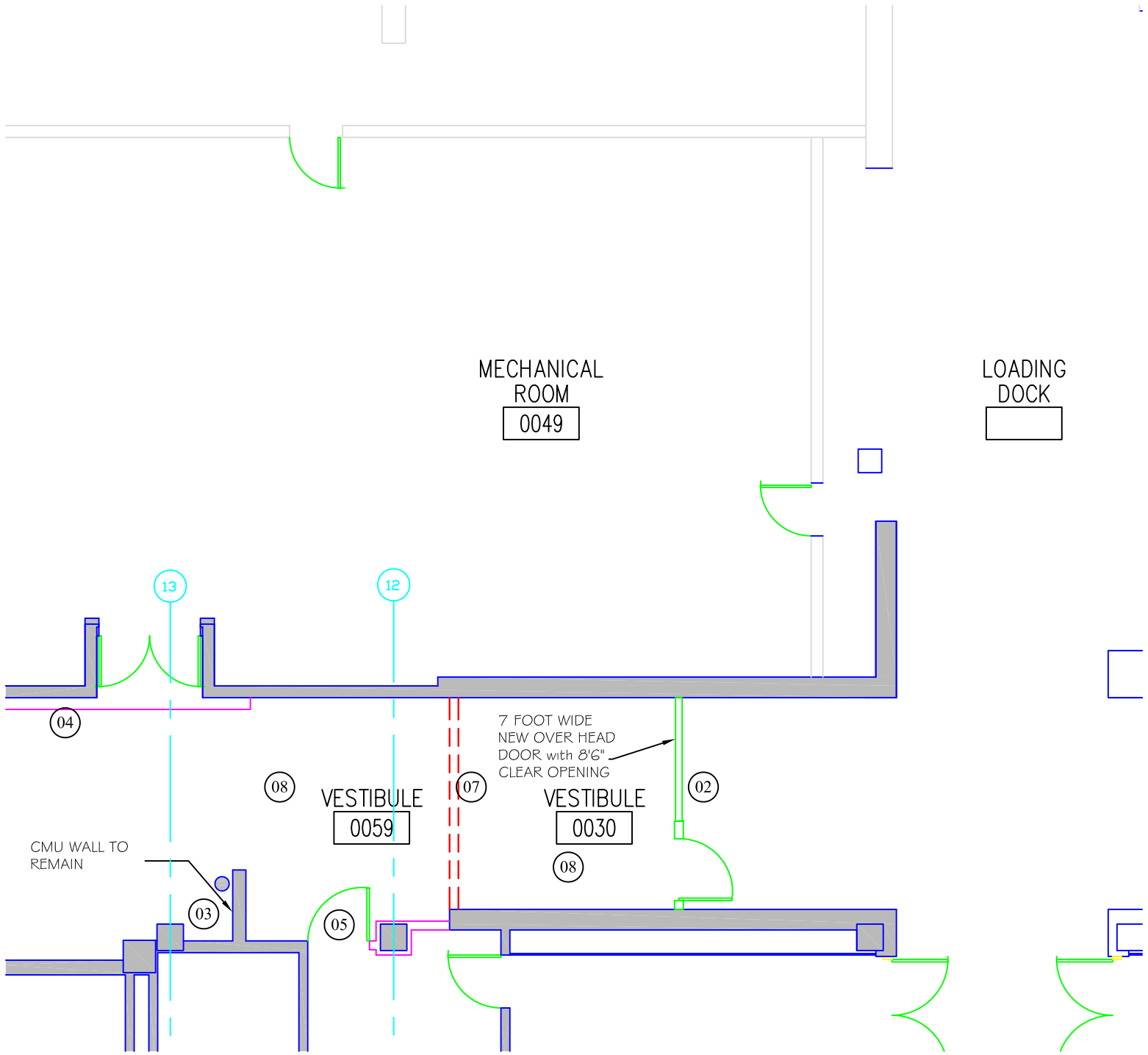
Project Number:	#SU-120814
Location:	Plaza Lower Level - Proposed Mailroom / Post Office / Receiving Area
Scale:	NTS
Date:	12/02/14
File Path:	Z:\1-Projects\Mailroom-Receiving Renovation\Drawings\Construction Plan Final.

Mailroom-Receiving Construction location Plan
CSK-006A





01 New electric roll up door and controls. Provide new steel lintel as required. Hardware # 8. Refer to detail CSK-030A (Engineering for Lintal by GC. Provide Shop drawings for approval to owner) Prep and finish as required for overhead door.

02 Provide 7 foot wide Roll up Door with 8'6" clear height (1) new 36" Metal/Glass Door with Hadware # 10. Engneering for Lintals for overhead doors by GC.Provide Shopdrawing for approval. Refer to CSK-031.detail 2.

03 Existing pipe to stay and CMU wall to remain.

04 Existing Cable tray to be secured and portected.

05 New Entrance HM Door with Heavy Duty Kick Plate on Inside. Hadware #09

07 Provide 8-6" clear opening. G.C to retrofit prep and finish.

08 GC to patch/repair walls/ cieling and floor as needed. Floor to be self level and seal.

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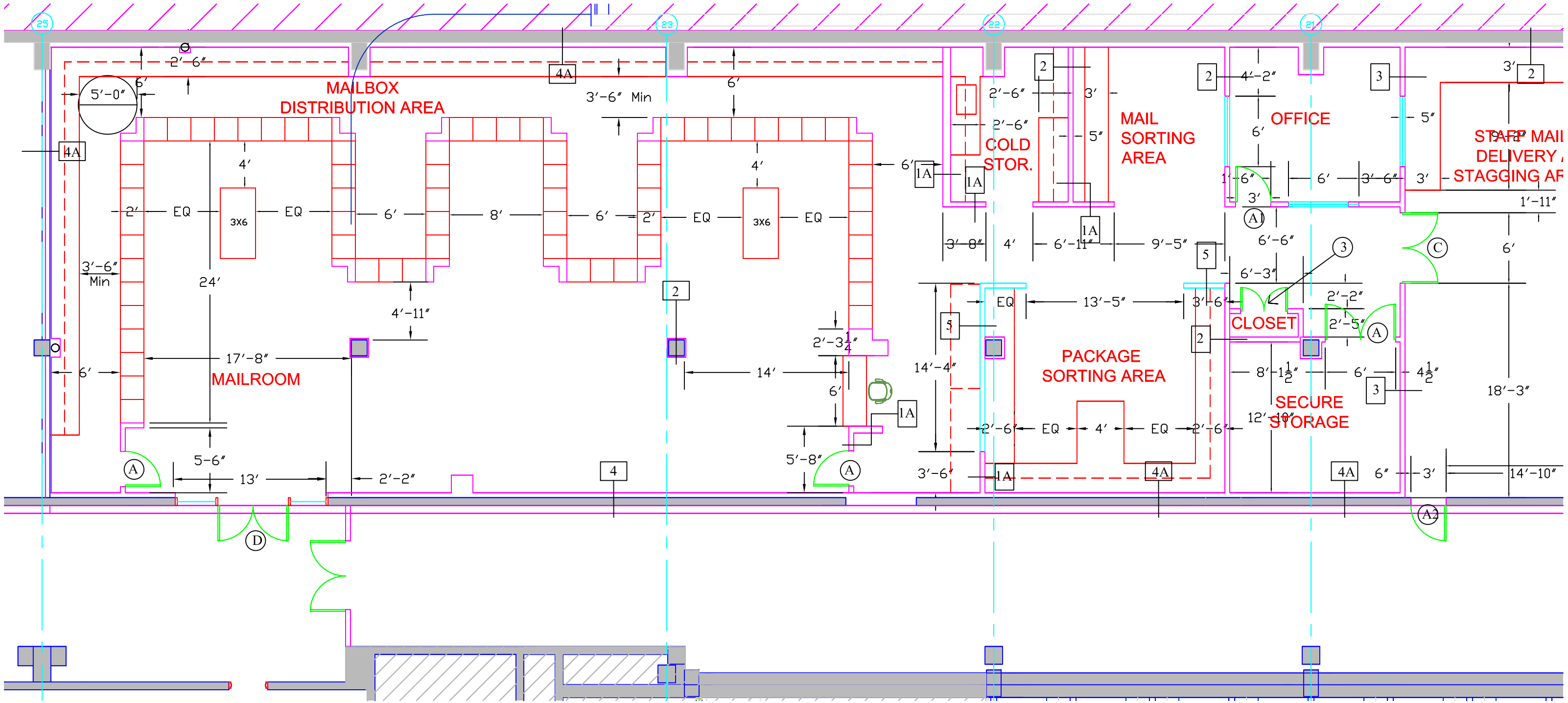
Location:	Plaza Lower Level - Proposed Mailroom / Post Office / Receiving Area/ Construction Plan
Scale:	1/8" = 1'-0"
Date:	12/08/14
File Path:	Z:\1-Projects\Mailroom-Receiving Renovation\Drawings\Construction Plan

Mailroom-Receiving Construction Part Plan CSK-007



(A) REFER TO CSK032 DOOR TYPE A

(A1) REFER TO CSK032 DOOR TYPE A1

(A2) REFER TO CSK032 DOOR TYPE A2

(C) REFER TO CSK032 DOOR TYPE C

(D) REFER TO CSK032 DOOR TYPE D

(3) REFER TO CSK028 DOOR CLOSET DETAIL TYPE 3

[1] G.C. NEED TO VERIFY REQUIRED HOLD DIMENSIONS FOR NEW MAILBOXES.

[1A] REFER TO CSK016 WALL TYPE 1A

[2] REFER TO CSK017 WALL TYPE 2

[3] REFER TO CSK017 WALL TYPE 3

[4/4A] REFER TO CSK018 WALL TYPE 4/4A

[5] REFER TO CSK018 WALL TYPE 5

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Location:	Plaza Lower Level - Proposed Mailroom / Post Office / Receiving Area - Construction
Scale:	1/8" = 1'-0"
Date:	12/02/14
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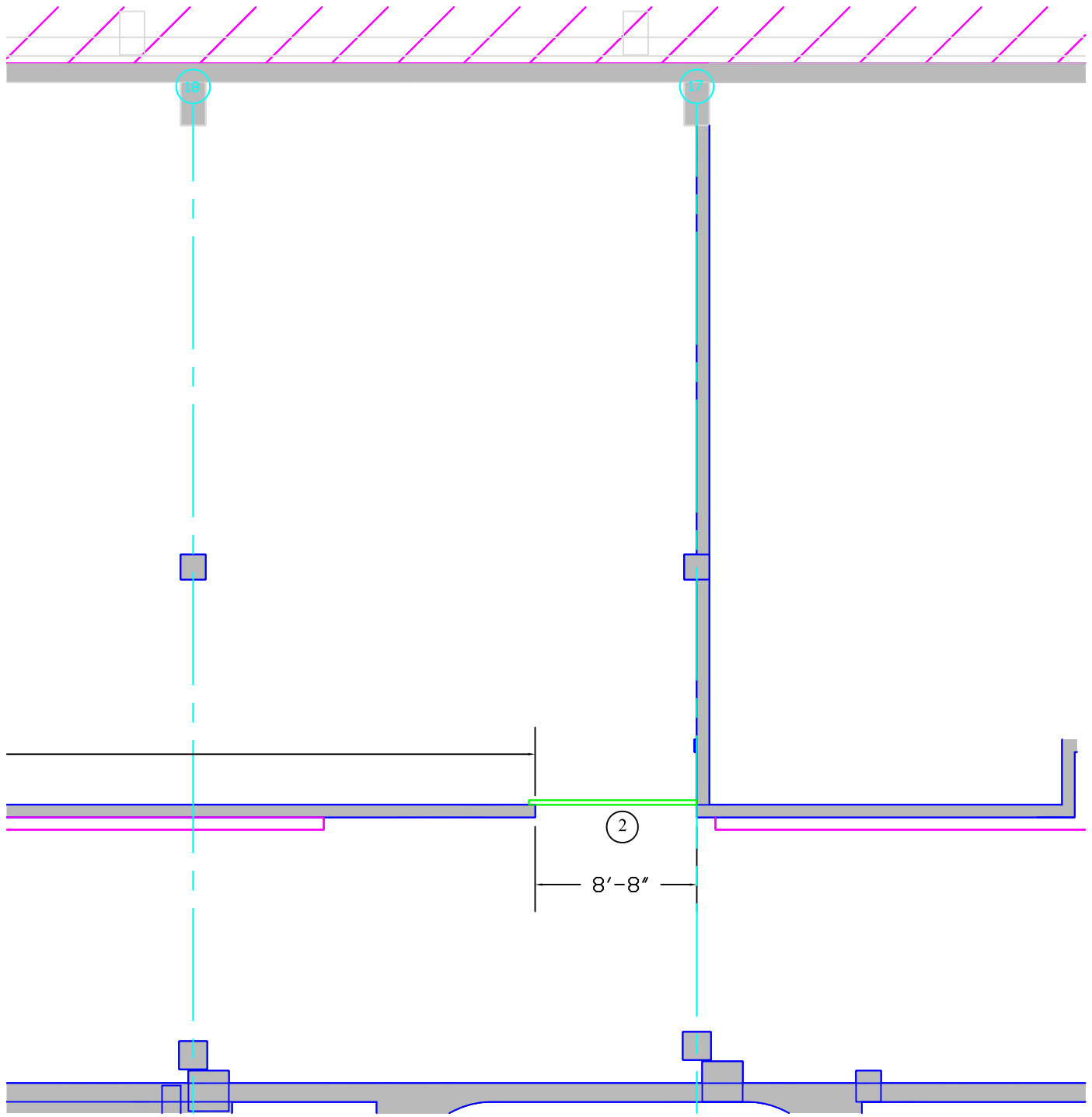
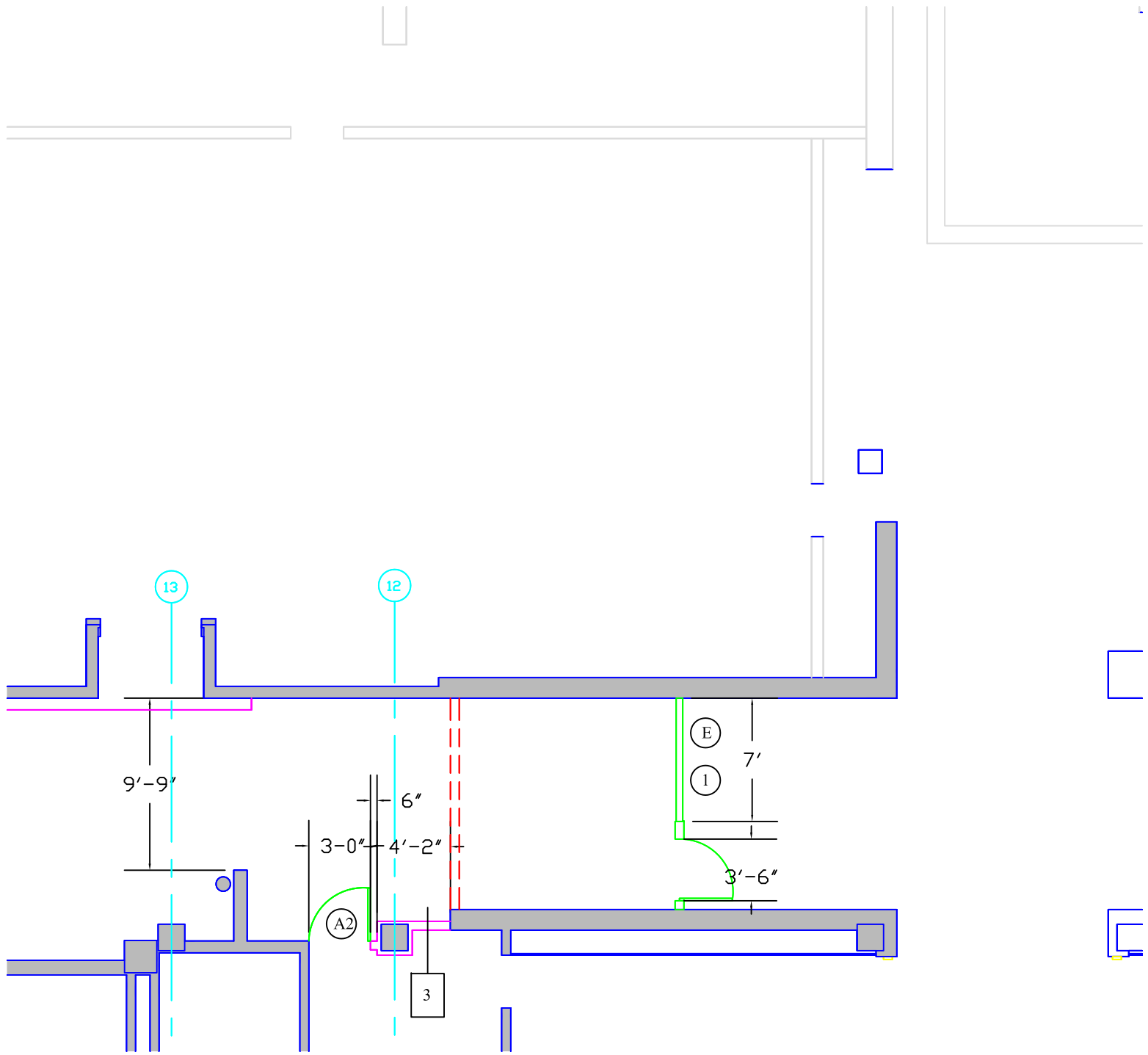
Mailroom-Receiving Dimension Part Plan CSK-008





(2) REFER TO CSK0033 DOOR TYPE 2 (VERIFY ALL CLEARENCE WITH MANUFACTURER)

(1) REFER TO CSK0031 DOOR TYPE 1

(E) REFER TO CSK0031 DOOR TYPE E

(A2) REFER TO CSK0032 DOOR TYPE A

[3] REFER TO CSK017 WALL TYPE 3

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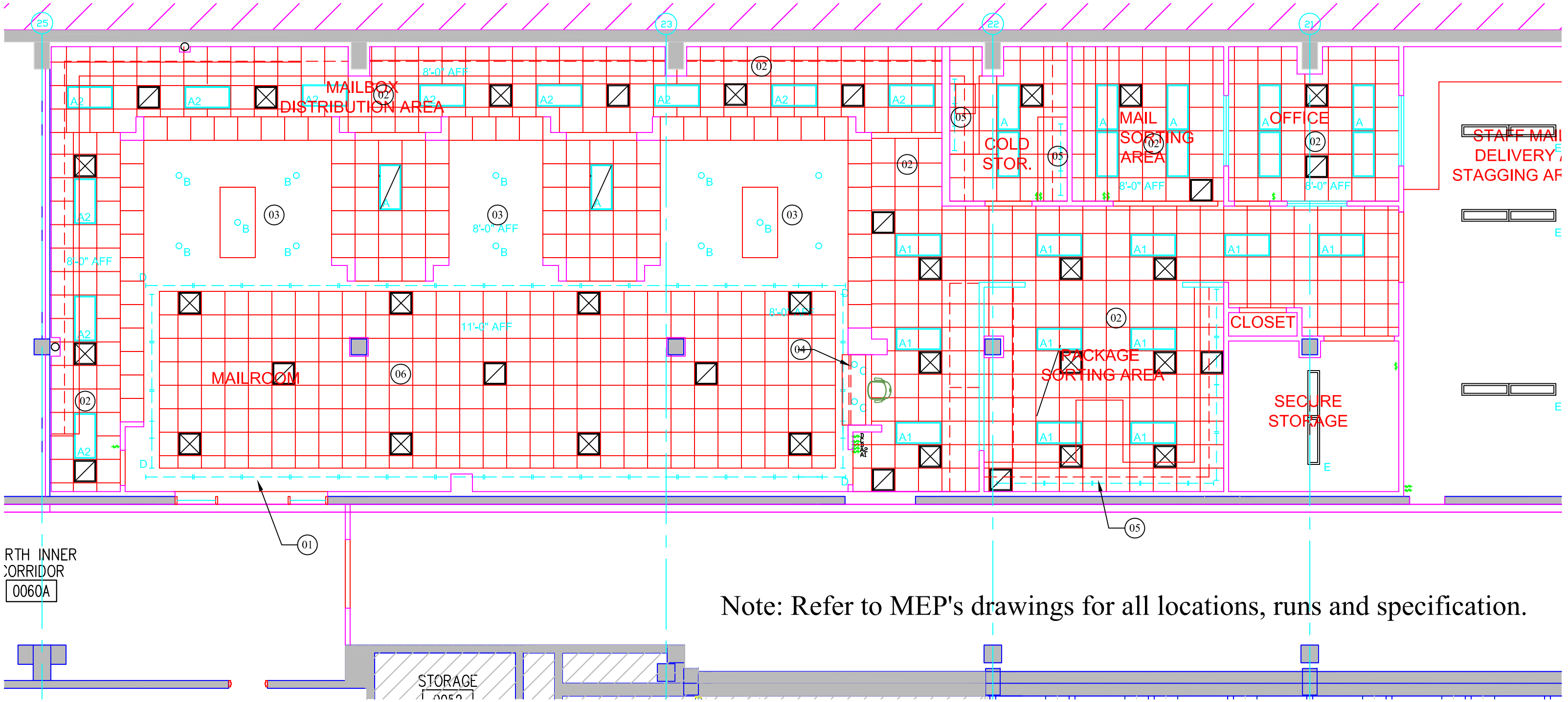
Location:	Plaza Lower Level - Proposed Mailroom / Post Office / Receiving Area
Scale:	1/8" = 1'-0"
Date:	12/08/14
File Path:	Z:\1-Projects\Mailroom-Receiving Renovation\Drawings\Dimension

Mailroom-Receiving Dimension Part Plan SK-009



Note: Refer to MEP's drawings for all locations, runs and specification.

01 New gypsum board light cove soffit at 8'-0" A.F.F. Refer to CSK-024

02 New 2 x 2 acoustic ceiling w/ lay-in tile in 9/16"grid system.

03 New Gypsum Board Cieling.

04 Soffit above service counter & integrated roll-down gate.

05 Under cabinet task lighting gang together with switches at end of runs.

06 New 2x2 acoustic cieling w/ tegular lay in tile in 91/16" bolt slot grid system.

2x4 recessed fluorescent light

Recessed downlight

Strip light at cove / undercabinet task light

Pendent industrial fixture

$ Light switch

2x2 supply air diffuser

2x2 return air diffuser

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Project Name:	Mailroom / Receiving Area Renovation Project
Project Number:	#SU-120214
Location:	Plaza Lower Level - Proposed Mailroom / Post Office / Receiving Area
Scale:	1/8" = 1'-0"
Date:	12/02/14
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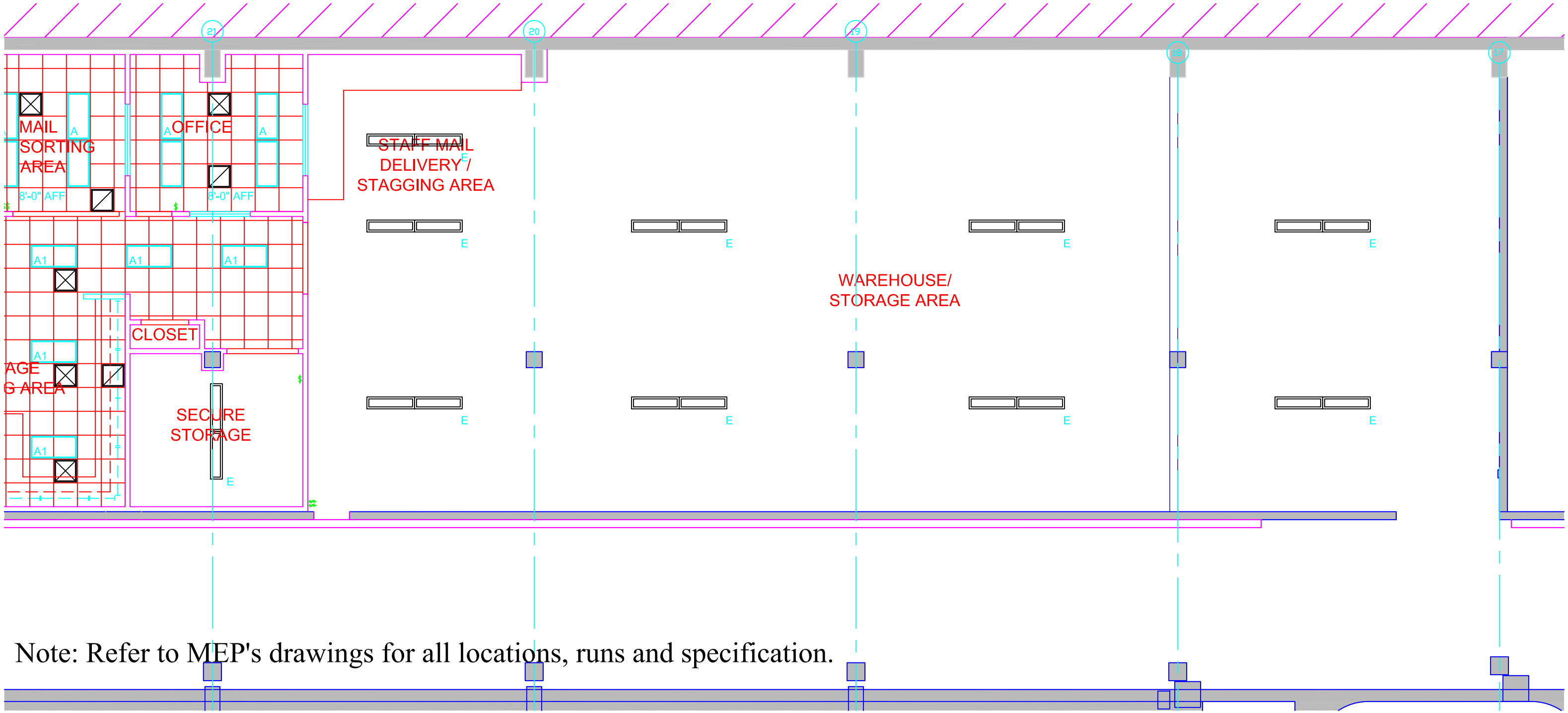
Mailroom-Receiving Reflected Ceiling Part Plan CSK-010



Note: Refer to MEP's drawings for all locations, runs and specification.

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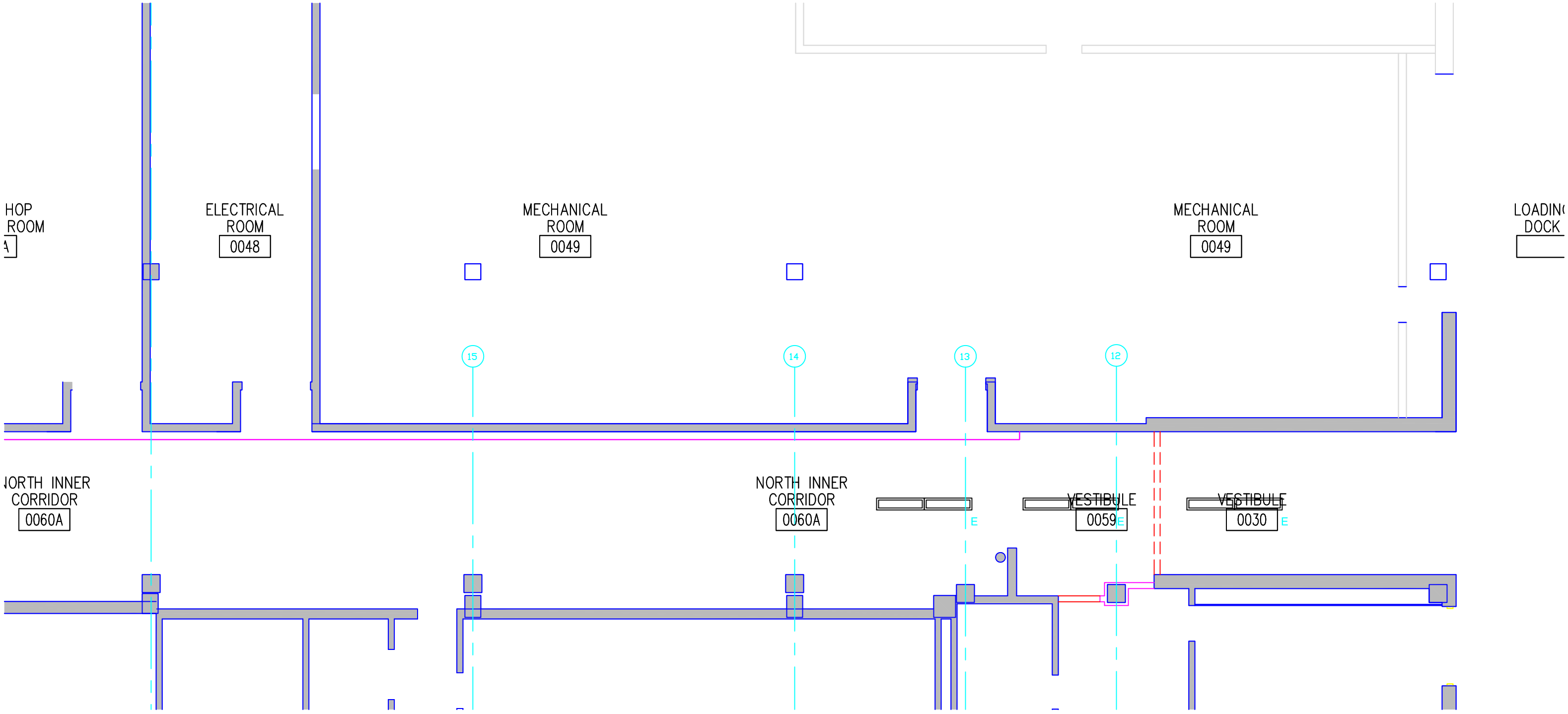
Project Name:	Mailroom / Receiving Area Renovation Study
Project Number:	#SU-120214
Location:	Plaza Lower Level - Proposed Mailroom / Post Office / Receiving Area
Scale:	1/8" = 1'-0"
Date:	12/04/14
File Path:	Z:\1-Projects\Mailroom-Receiving Renovation\Drawings\RC_00-Opt10.dwg

Mailroom-Receiving Reflected Ceiling Part Plan CSK-011



Note: Refer to MEP's drawings for all locations, runs and specification.

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Project Name:	Mailroom / Receiving Area Renovation Study
Project Number:	#SU-120214
Location:	Plaza Lower Level - Proposed Mailroom / Post Office / Receiving Area
Scale:	1/8" = 1'-0"
Date:	12/04/14
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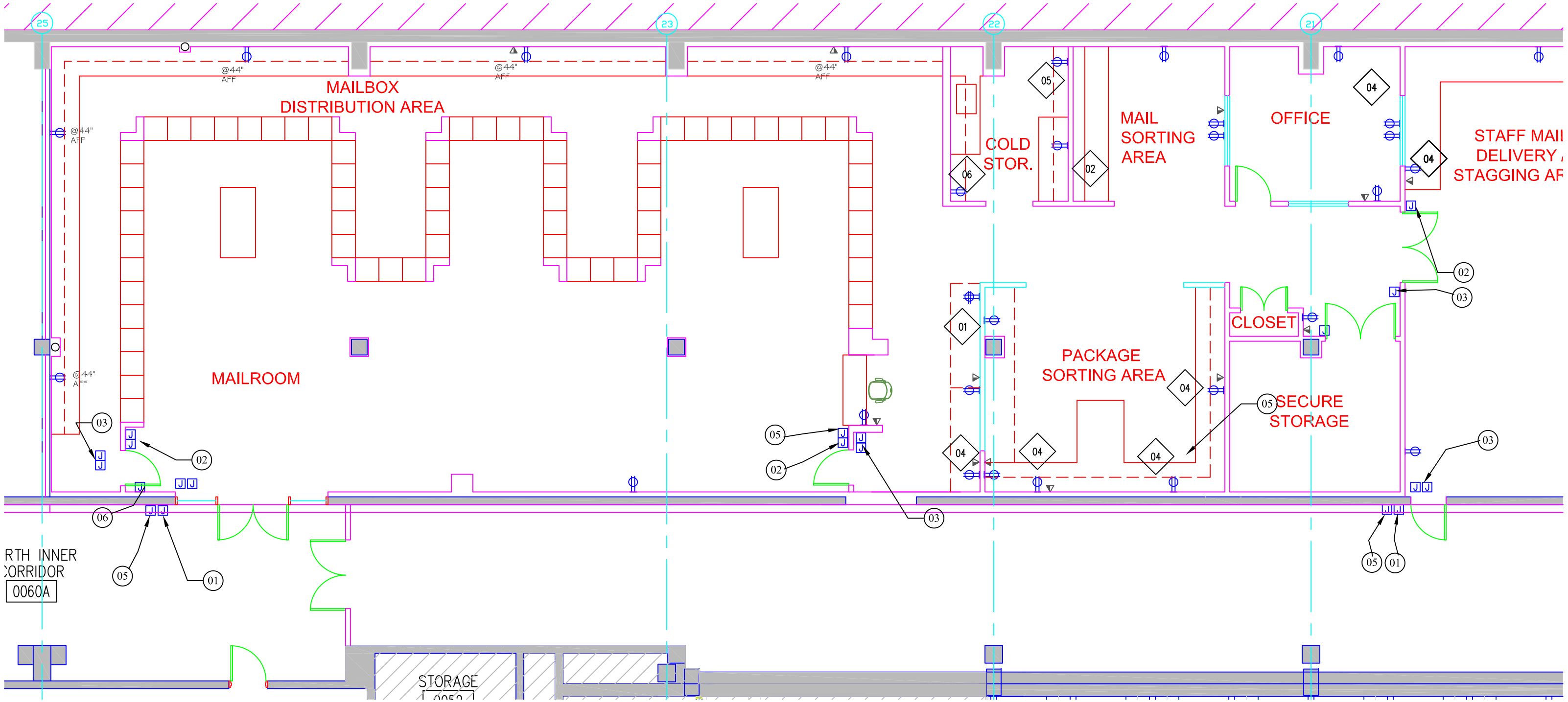
Mailroom-Receiving Reflected Ceiling Part Plan CSK-011A



01 Provide junction box w/blank plate for card reader. Feed thru wall to junction box located inside.

02 Provide junction box w/blank plate for card reader.

03 Provide electrical junction box above ceiling for security devices.

04 Not Used

05 Provide junction box for alarm panel. (Feed through wall to juction box located inside above ceiling) Existing burgelar alarm to be removed from old facility and reinstalled at new facility. 2 Zones required.

06 Relocate Fire alarm Strobe

.

01	Scale
02	Mailsorter
03	Not Used
04	Computer
05	New Freezer
06	Refrigerator

Note: Refer to E Drawings

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Scale:	1/8" = 1'-0"
Date:	12/02/14
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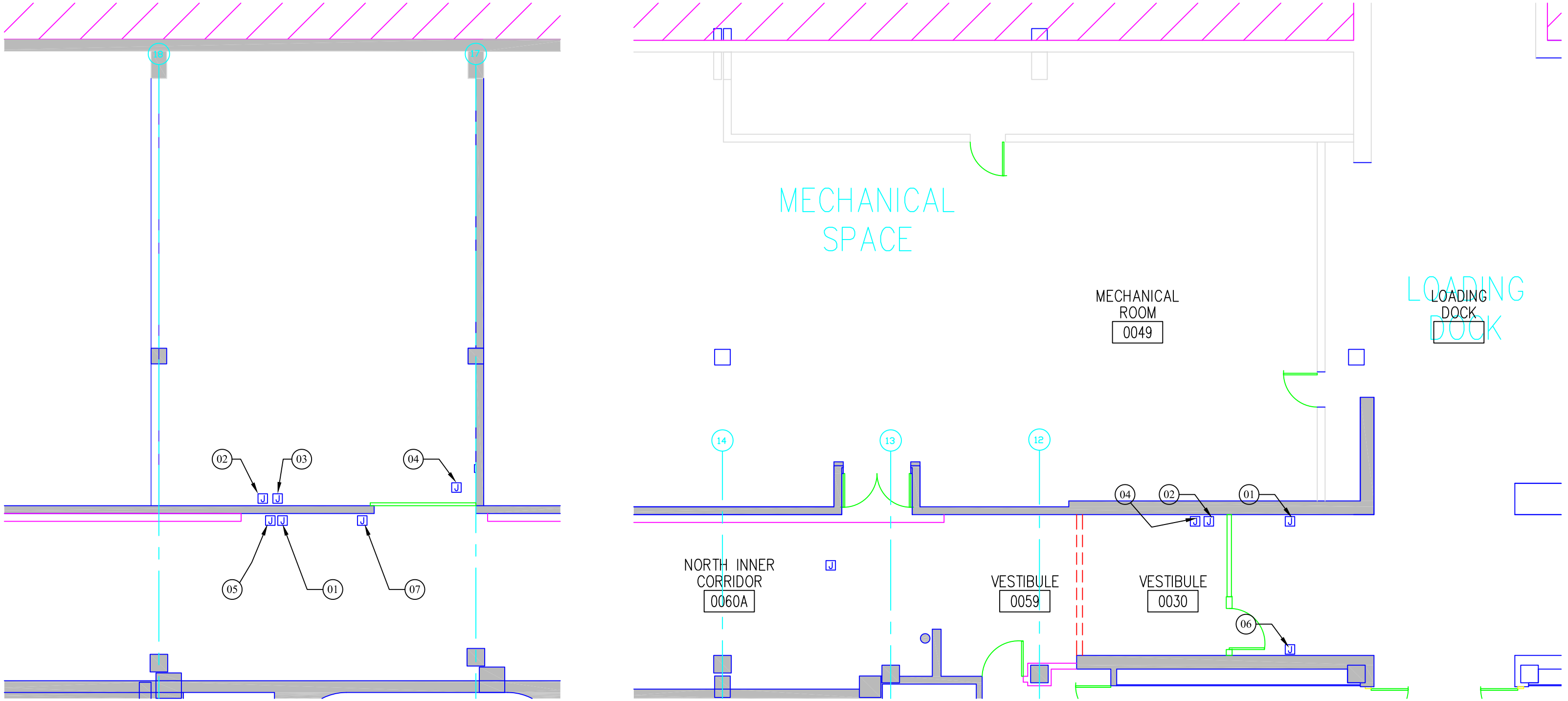
Mailroom-Receiving Power/Telecom Part Plan CSK-012



01 Provide junction box w/key switch for roll-up door.

02 Provide junction box for roll-up door controller.

03 Provide junction box for alarm panel.

04 Provide junction box for electrical power for roll-up door.

05 Provide junction box for electrical power for alram system(Feed through wall to juction boc above cieling)

06 Provide junction box for electrical power for ADA door (Feed through wall to juction boc above cieling)

07 Relocate Fire alarm strobe

Note: Refer to E Drawings.

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Date:	12/04/14
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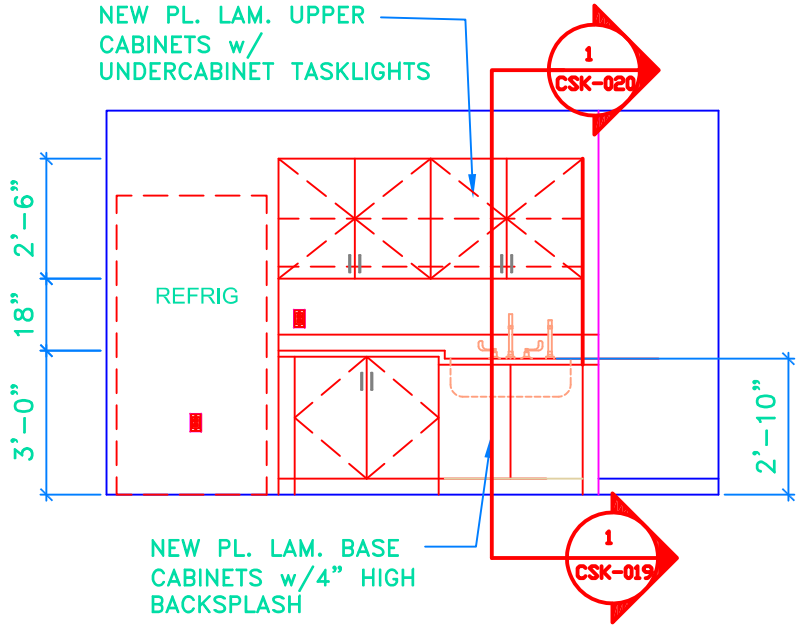
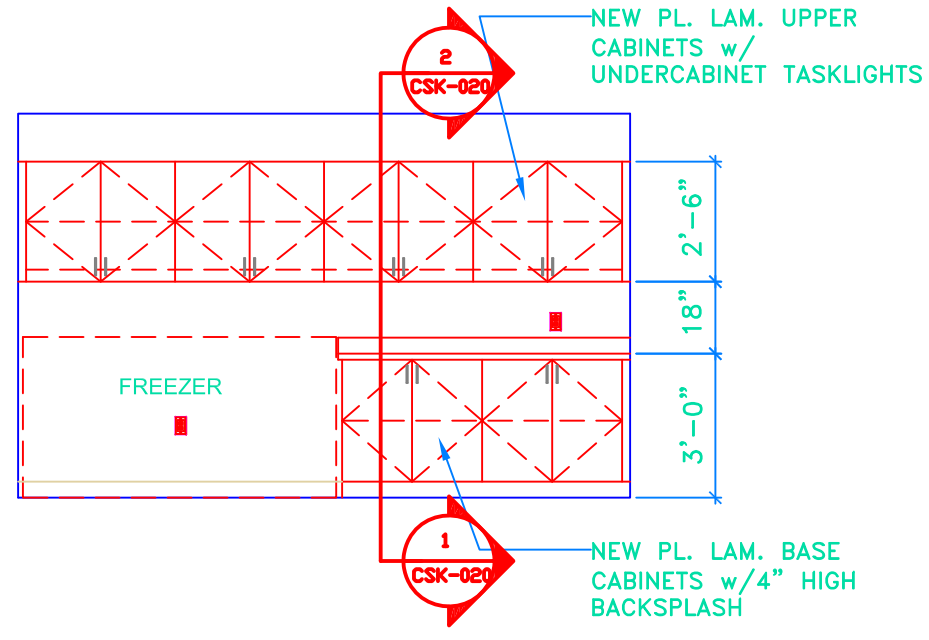
Mailroom-Receiving Power/Telecom Part Plan CSK-013



1 Elevation at West Wall Pantry



2 Elevation at East Wall Pantry

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Project Name:	Mailroom / Receiving Area Renovation Project
Project Number:	#SU-120814
Location:	Plaza Lower Level - Proposed Mailroom / Post Office / Receiving Area
Scale:	1/4" = 1'-0"
Date:	12/05/14
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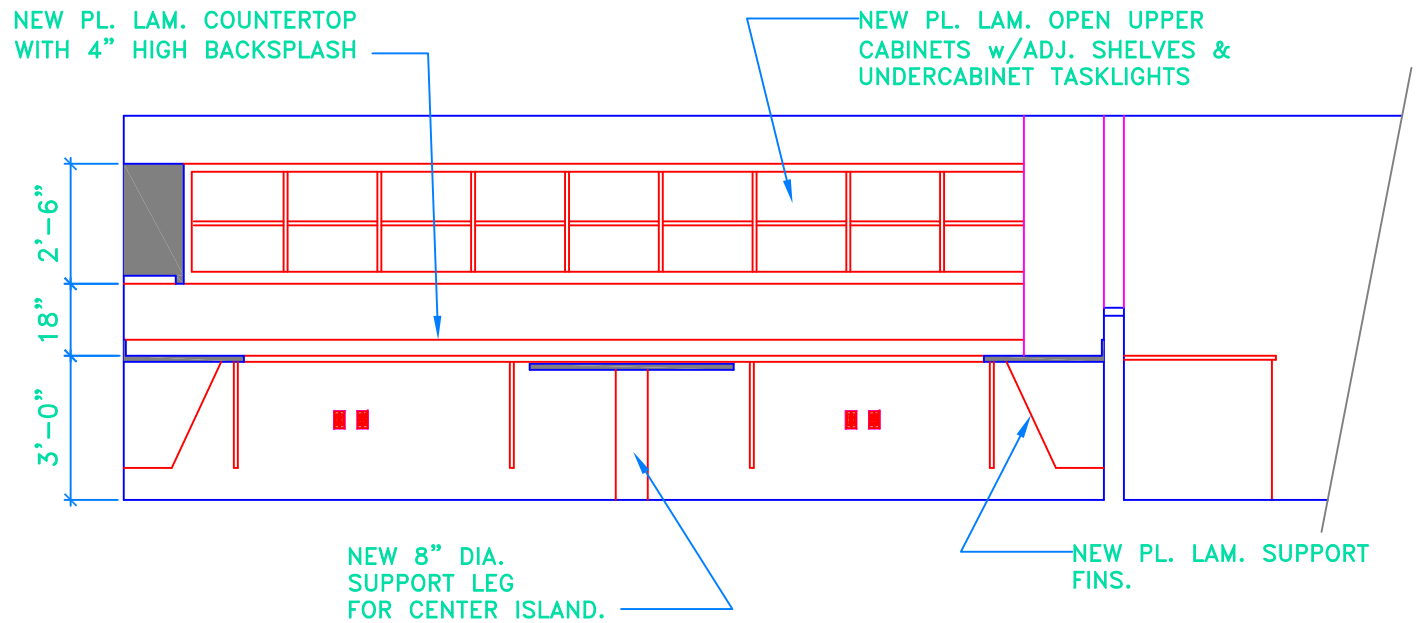
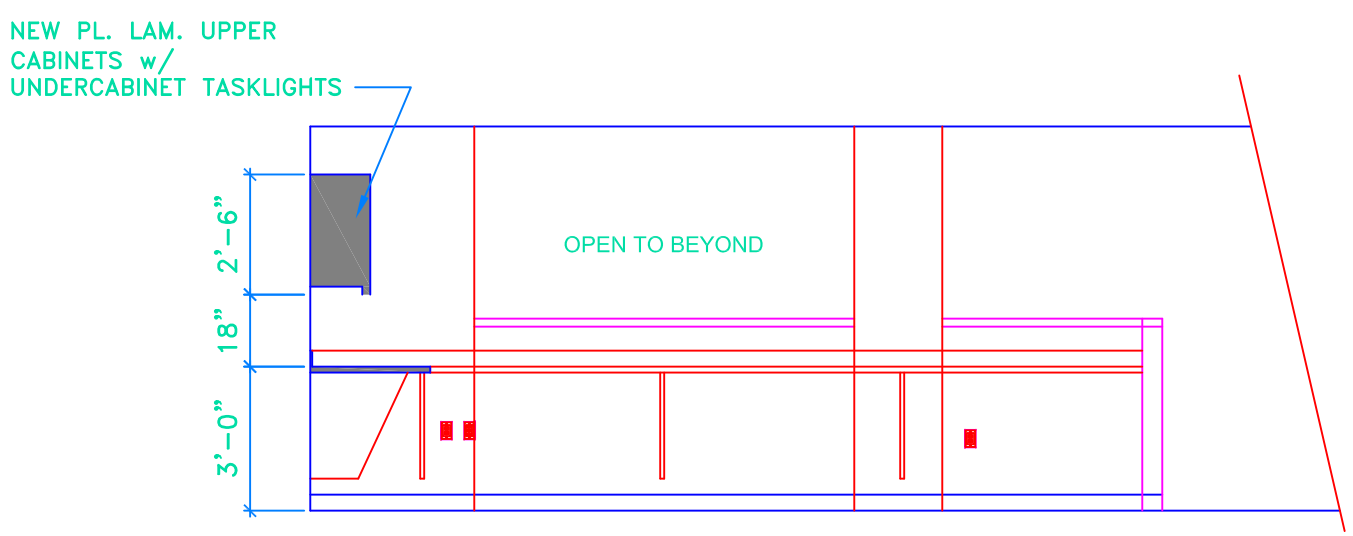
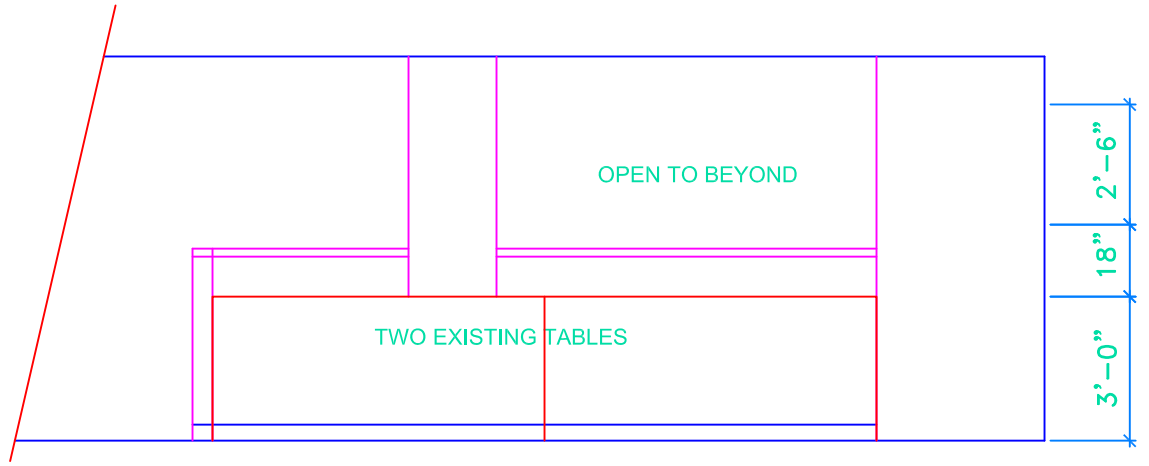
Mailroom-Receiving Elevations
CSK-014



1 Elevation at South Storage Area



3 Elevation at West Wall Mail Sorting Area

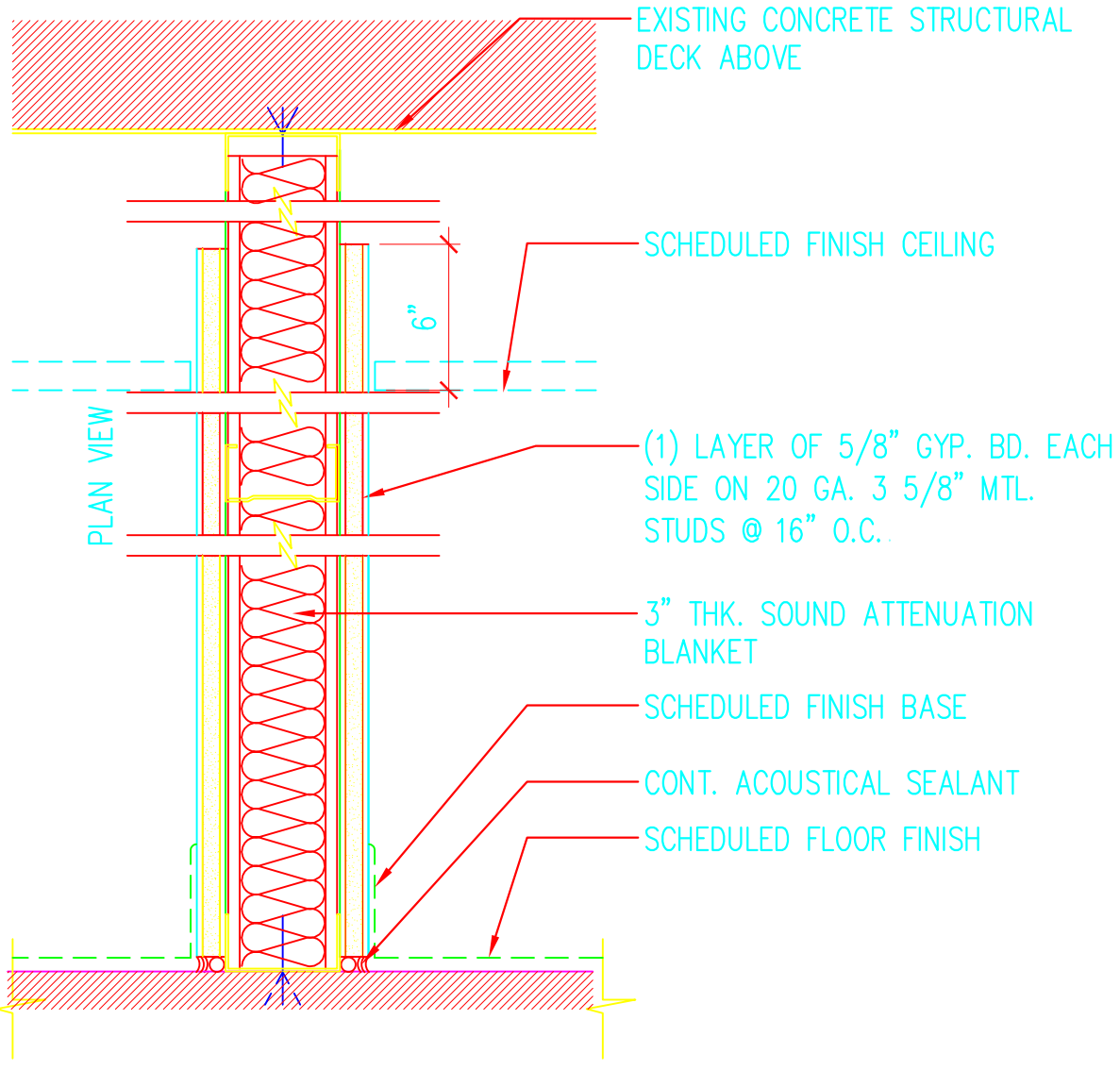


4 Elevation at East Wall Behind Service Counter

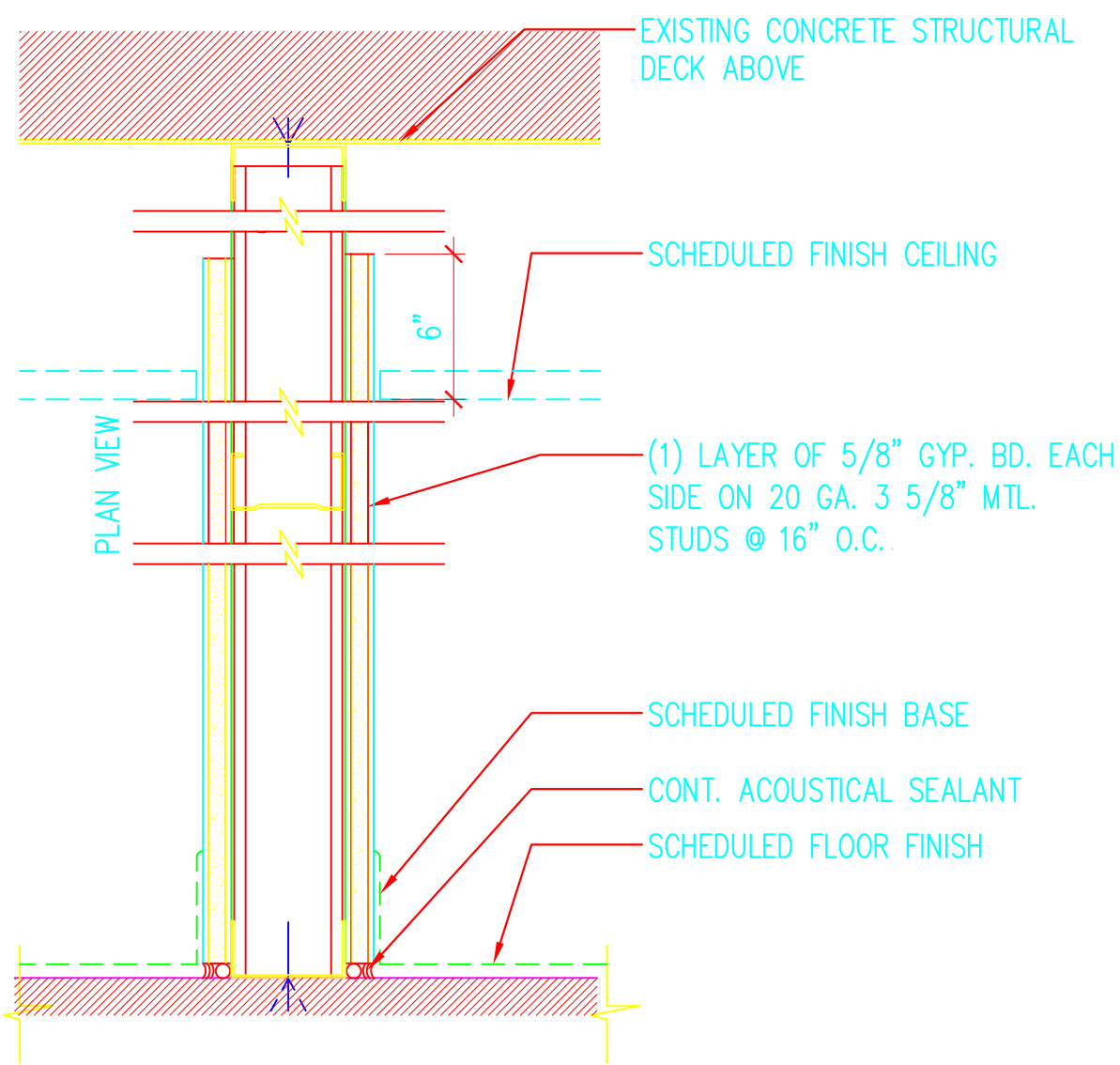
PURCHASE
COLLEGE
STATE UNIVERSITY OF NEW YORK
735 ANDERSON HILL RD.
PURCHASE, NY 10577-1400

Project Name:	Mailroom / Receiving Area Renovation Project
Project Number:	#SU120814
Location:	Plaza Lower Level - Proposed Mailroom / Post Office / Receiving Area/
Scale:	1/4" = 1'-0"
Date:	12/05/14
File Path:	Z:\1-Projects\Mailroom-Receiving Renovation\Drawings\IE_00-Opt10.dwg

Mailroom-Receiving
Elevations
CSK-015



1 Wall Type 1 - Single Layer GWB 6" Above Ceiling (Not Used)

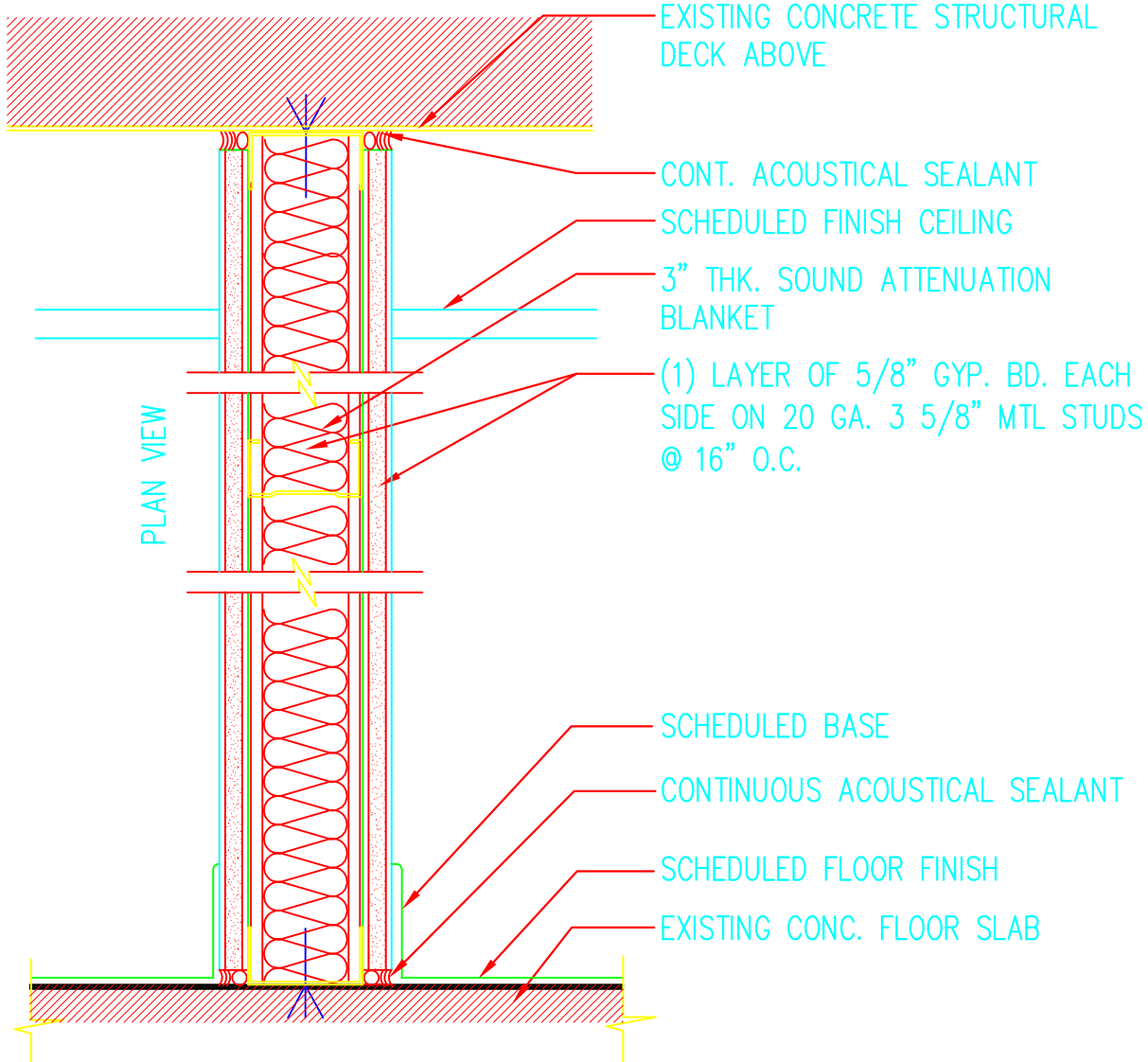


2 Wall Type 1A - Single Layer GWB to 6" Above Ceiling No Insulation

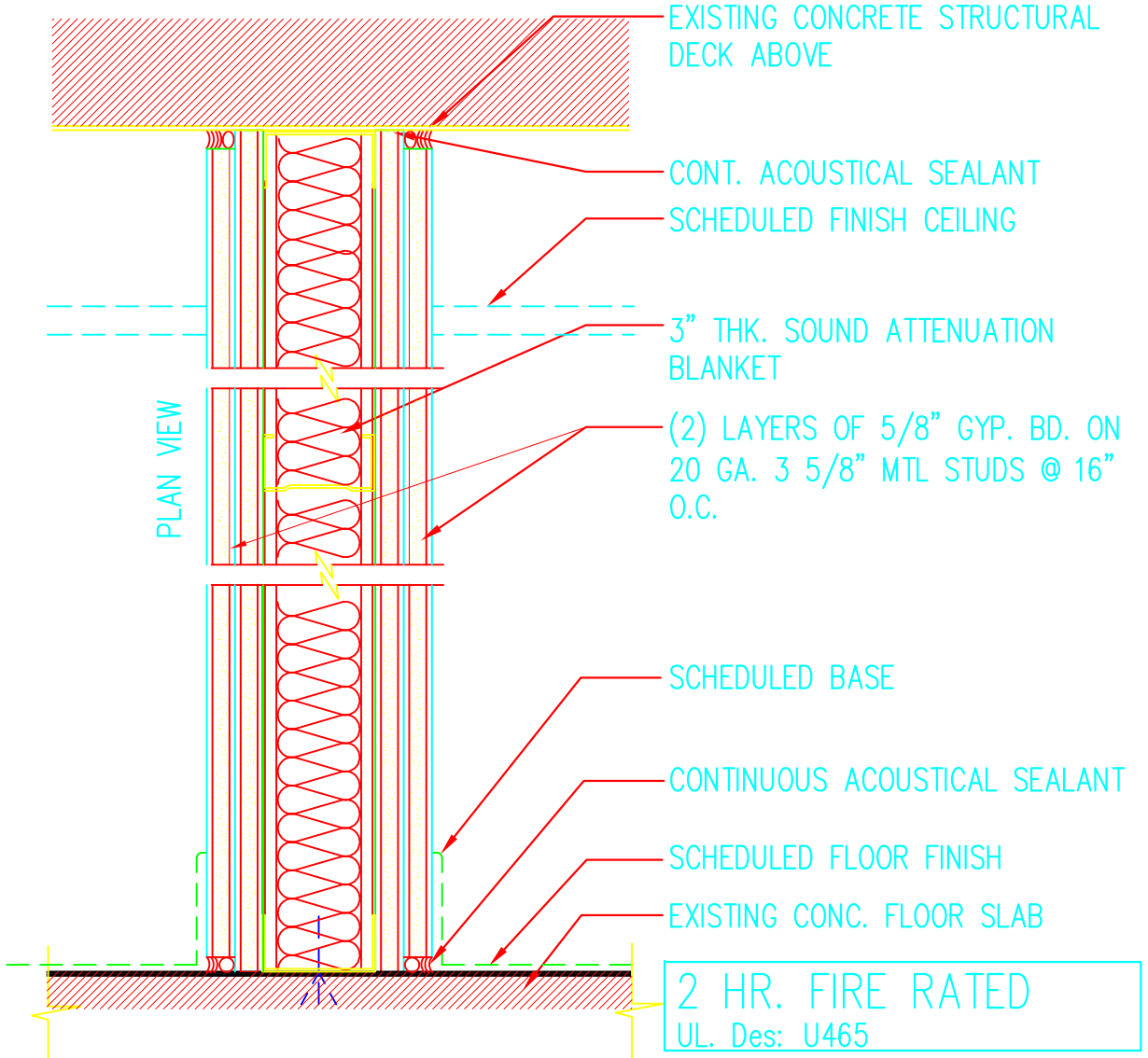
PURCHASE
COLLEGE
STATE UNIVERSITY OF NEW YORK
735 ANDERSON HILL RD.
PURCHASE, NY 10577-1400

Project Name:	Mailroom / Receiving Area Renovation Study
Project Number:	#SU-120814
Location:	Plaza Lower Level - Proposed Mailroom / Post Office / Receiving Area/ Wall Types
Scale:	3" = 1'-0"
Date:	11/17/14
File Path:	Z:\1-Projects\Mailroom-Receiving Renovation\Drawings\DT-WALLS.dwg

Mailroom-Receiving
Wall Type Details
CSK-016



1 Wall Type 2 - Single Layer GWB to Slab Above

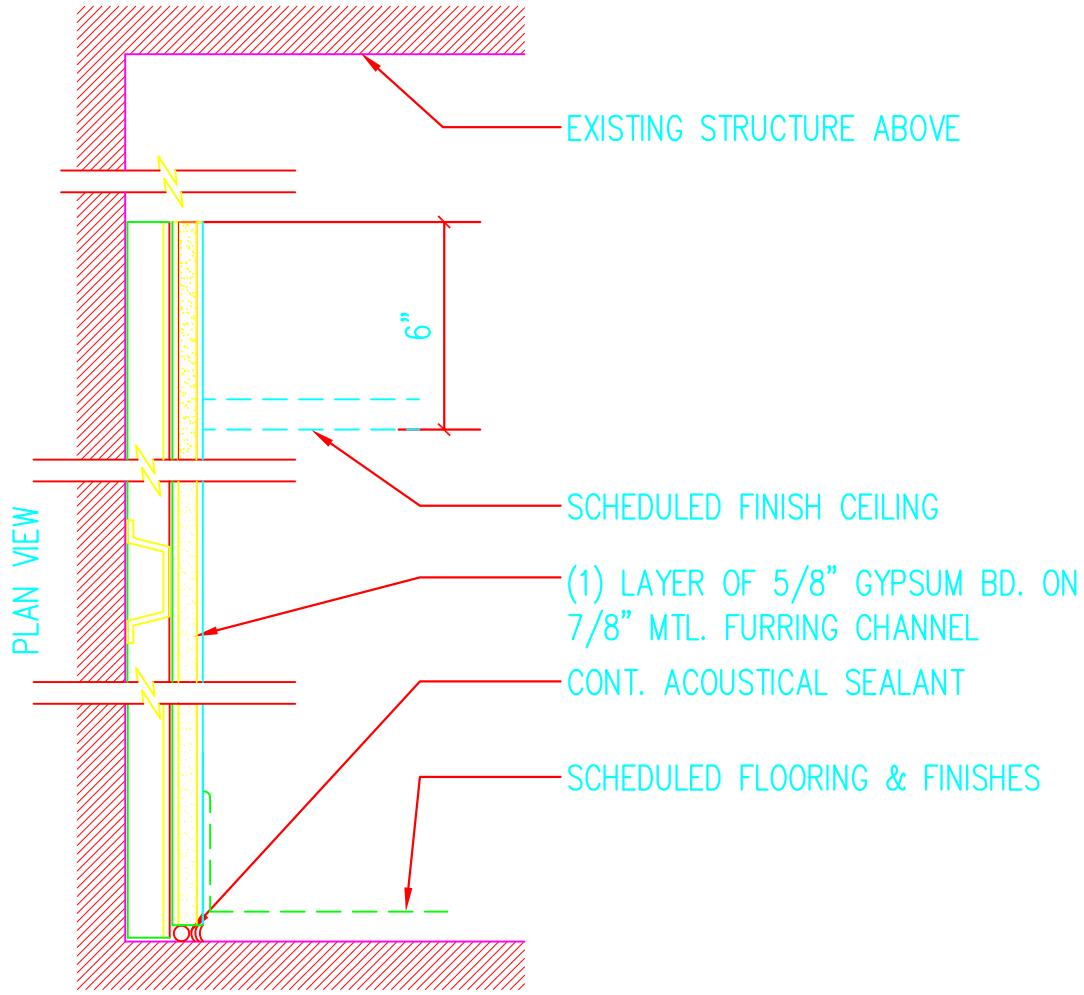


2 Wall Type 3 - 2 Hour Rated Wall

PURCHASE
COLLEGE
STATE UNIVERSITY OF NEW YORK
735 ANDERSON HILL RD.
PURCHASE, NY 10577-1400

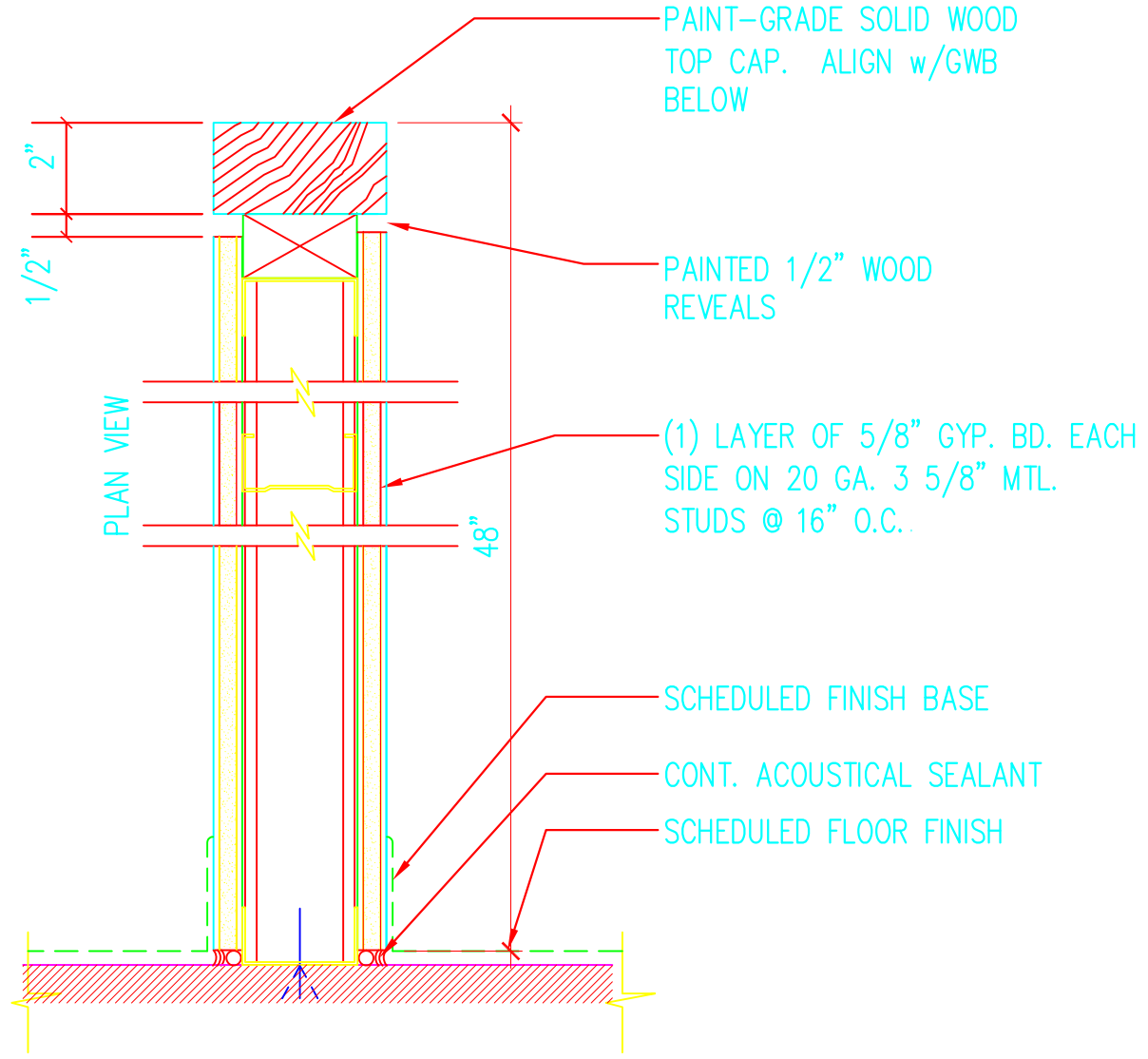
Project Name:	Mailroom / Receiving Area Renovation Study
Project Number:	#SU-120814
Location:	Plaza Lower Level - Proposed Mailroom / Post Office / Receiving Area/ Wall Types
Scale:	3" = 1'-0"
Date:	12/05/14
File Path:	Z:\1-Projects\Mailroom-Receiving Renovation\Drawings\DT-WALLS.dwg

Mailroom-Receiving
Wall Type Details
CSK-017



1 Wall Type 4/4A - Furred Single Layer GWB

4A (1 LAYER OF 5/8" GWB ON 20 GA3 5/8"MTL STUDS @16" O.C.)



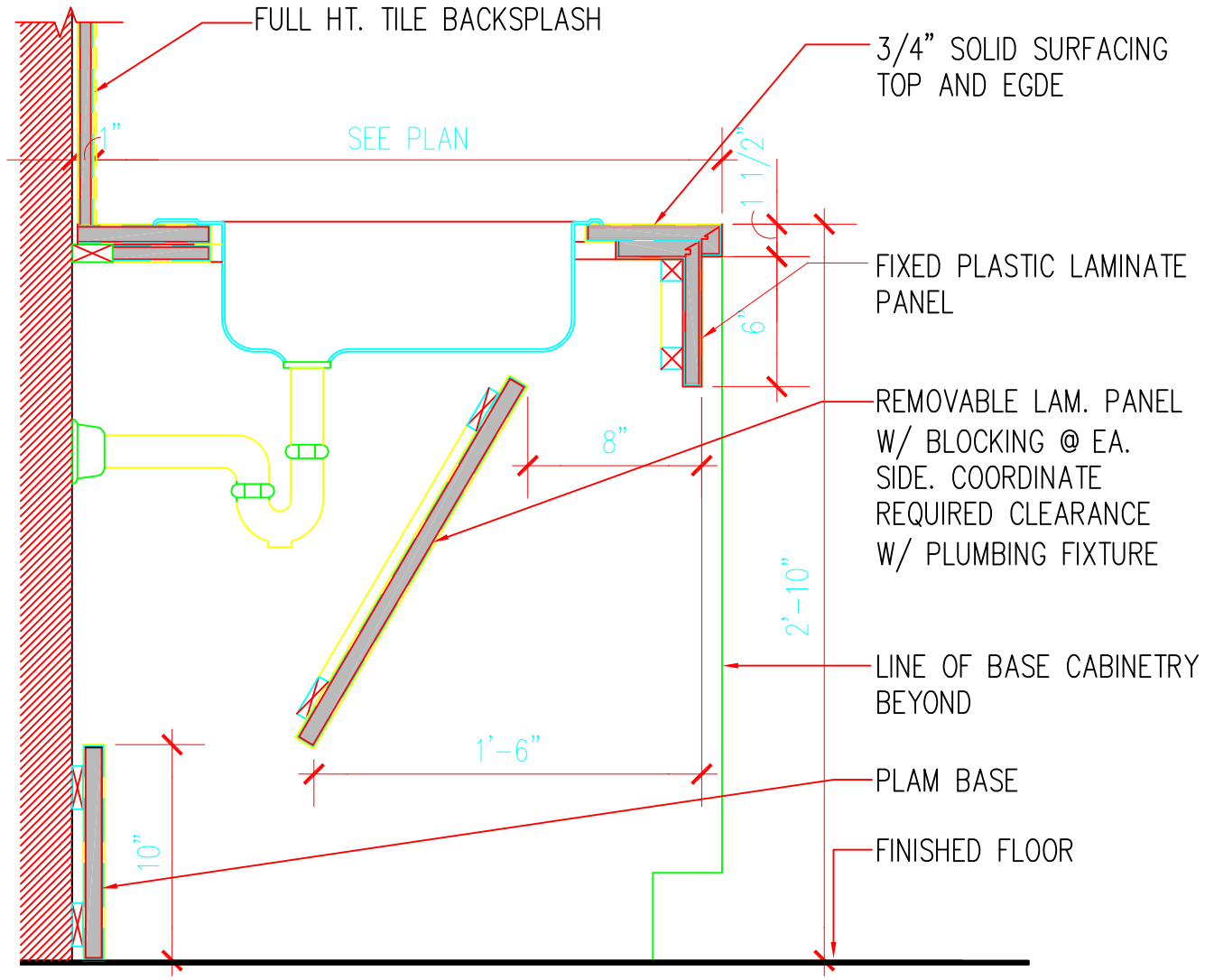
2 Wall Type 5 - Low Partition Wall

PURCHASE
COLLEGE
STATE UNIVERSITY OF NEW YORK

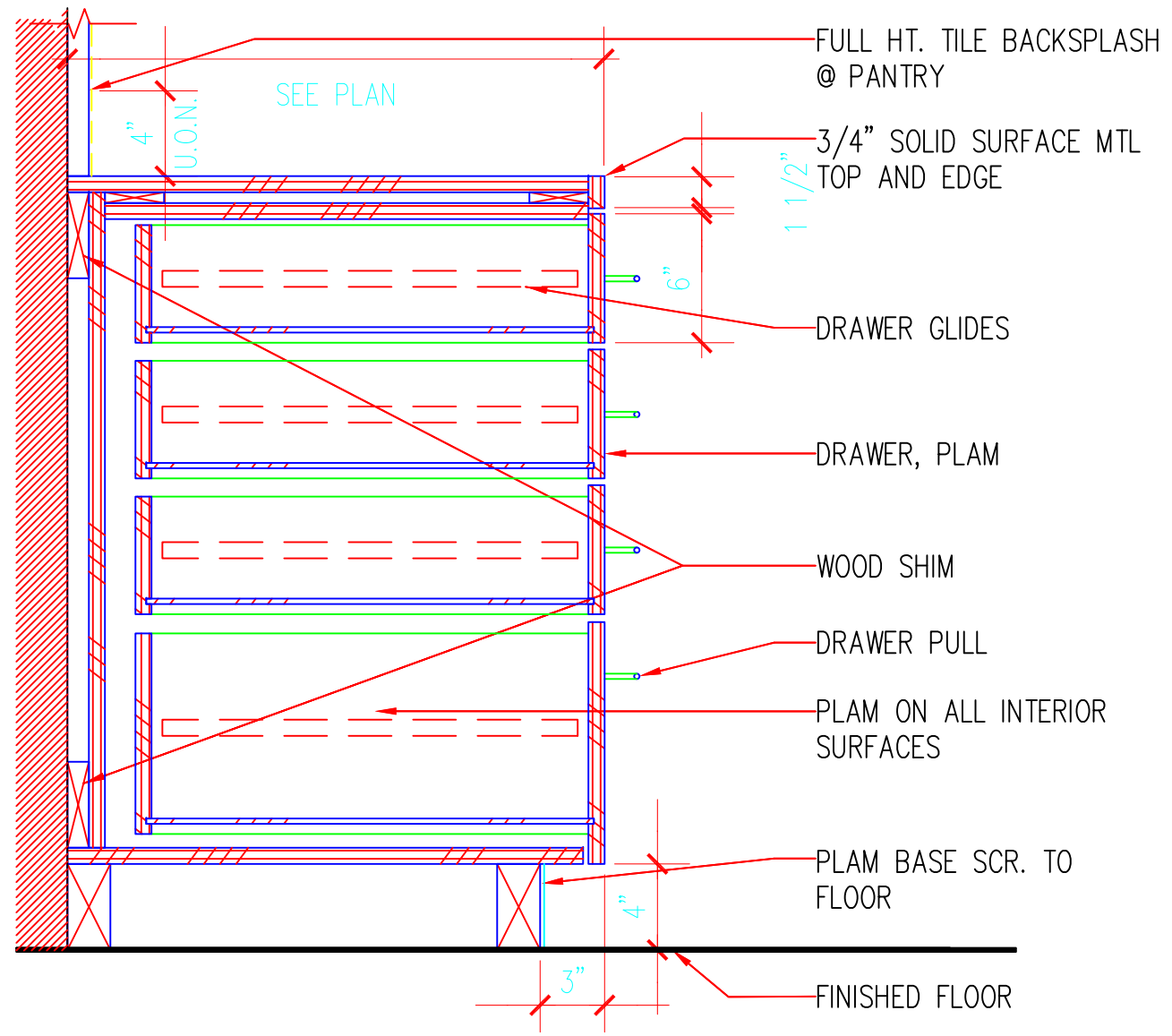
735 ANDERSON HILL RD.
PURCHASE, NY 10577-1400

Project Name:	Mailroom / Receiving Area Renovation Study
Project Number:	#SU-120814
Location:	Plaza Lower Level - Proposed Mailroom / Post Office / Receiving Area/ Wall Types
Scale:	3" = 1'-0"
Date:	12/05/14
File Path:	Z:\1-Projects\Mailroom-Receiving Renovation\Drawings\DT-WALLS.dwg

Mailroom-Receiving
Wall Type Details
CSK-018



1 Millwork Detail - Typical Base Cabinet w/Sink

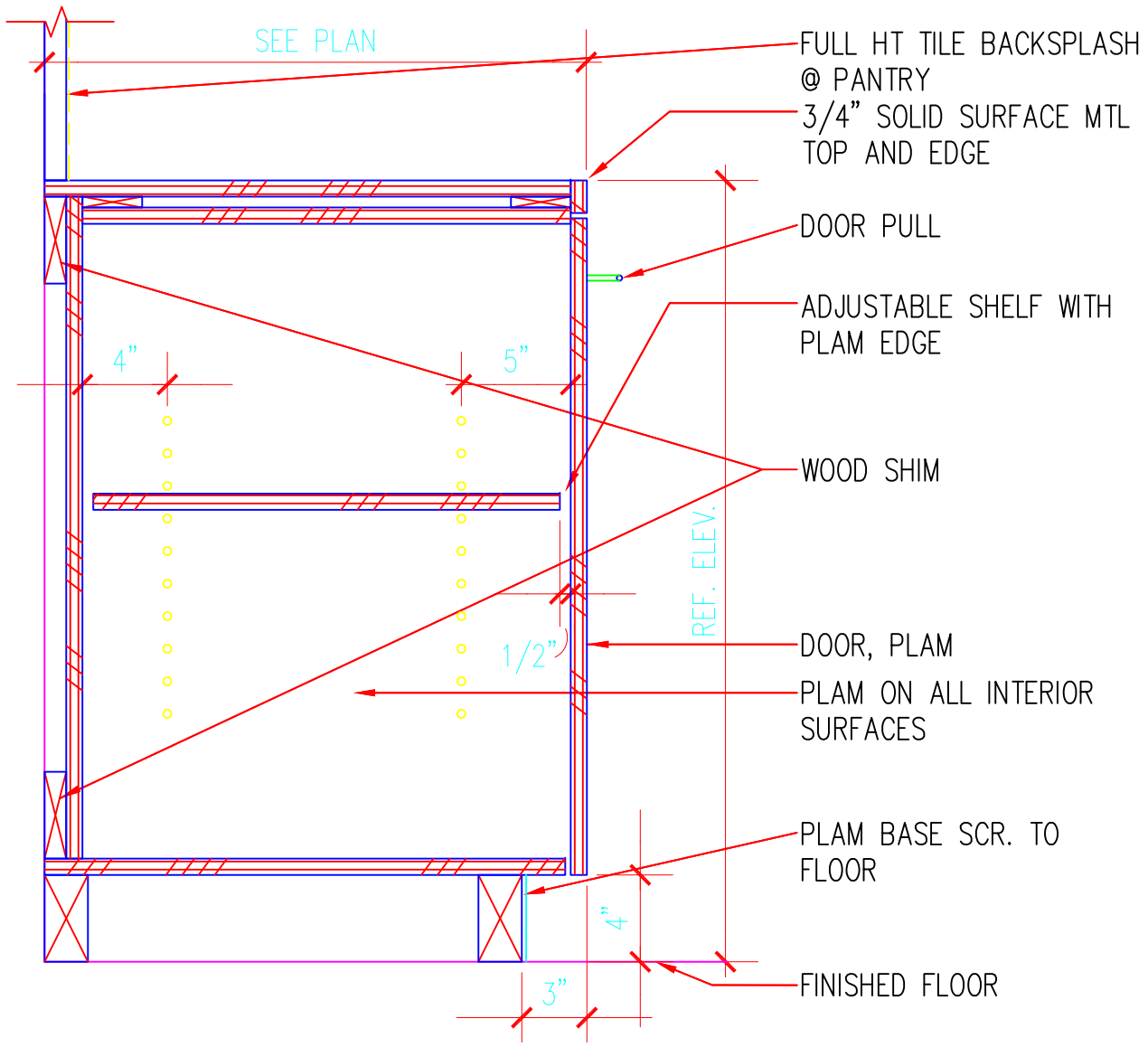


2 Millwork Detail - Typical Base Cabinet w/Drawers (NOT USED)

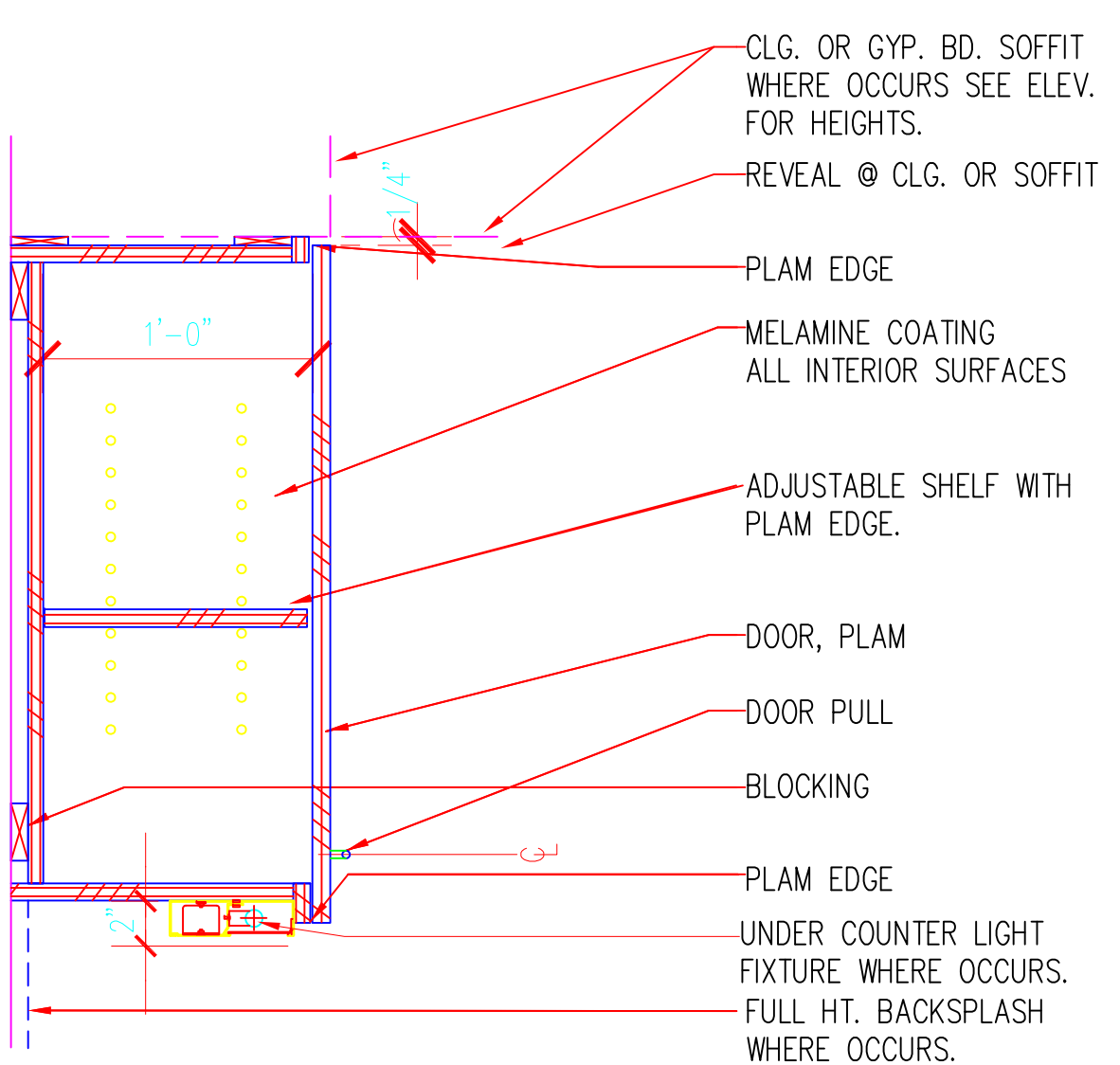
PURCHASE
COLLEGE
STATE UNIVERSITY OF NEW YORK
735 ANDERSON HILL RD.
PURCHASE, NY 10577-1400

Project Name:	Mailroom / Receiving Area Renovation Project
Project Number:	#SU-120814
Location:	Plaza Lower Level - Proposed Mailroom / Post Office / Receiving Area
Scale:	1-1/2" = 1'-0"
Date:	11/17/14
File Path:	Z:\1-Projects\Mailroom-Receiving Renovation\Drawings\DT-MILLWORK.dwg

Mailroom-Receiving Millwork Details
CSK-019



1 Millwork Detail - Typical Base Cabinet

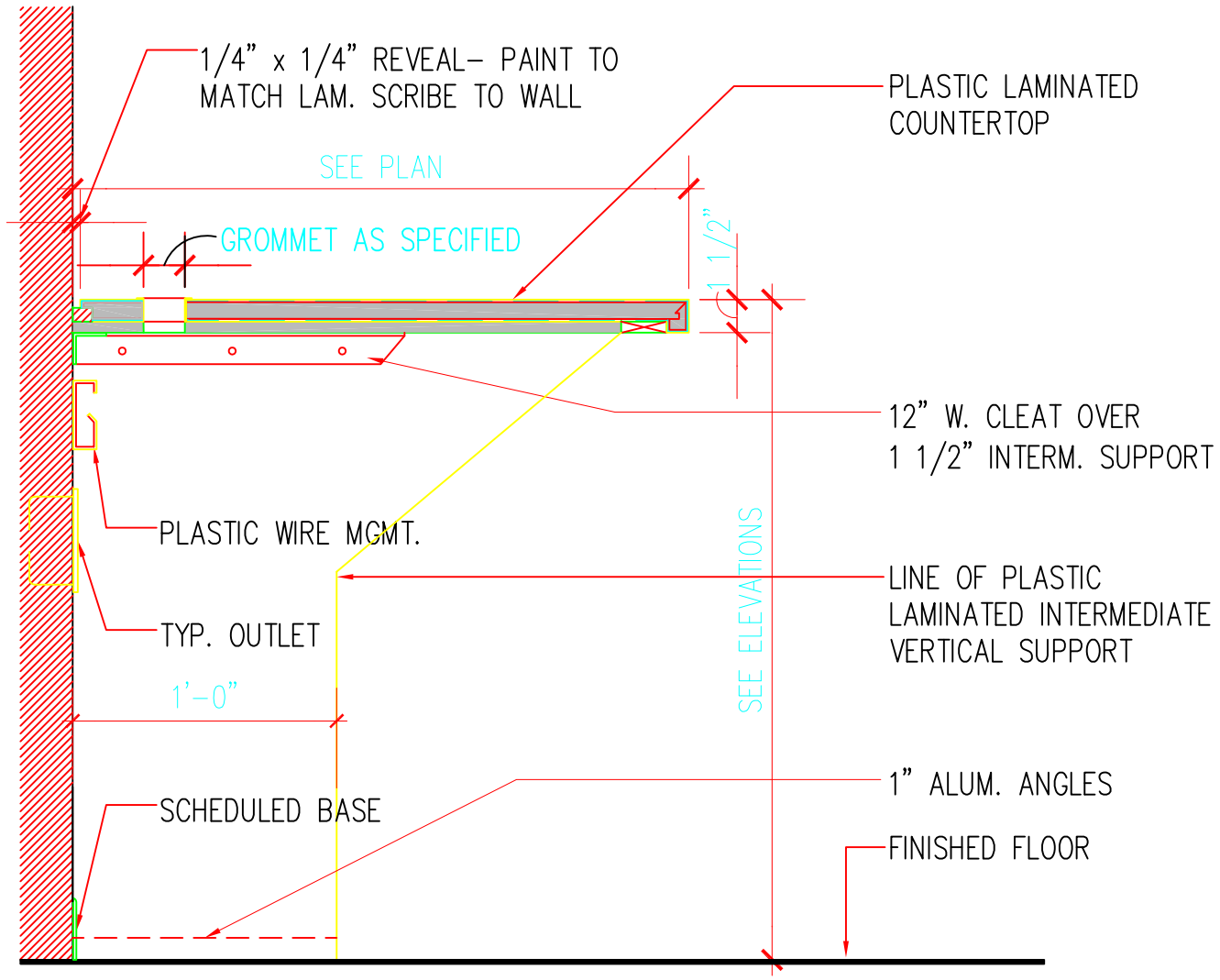


2 Millwork Detail - Typical Overhead Cabinet

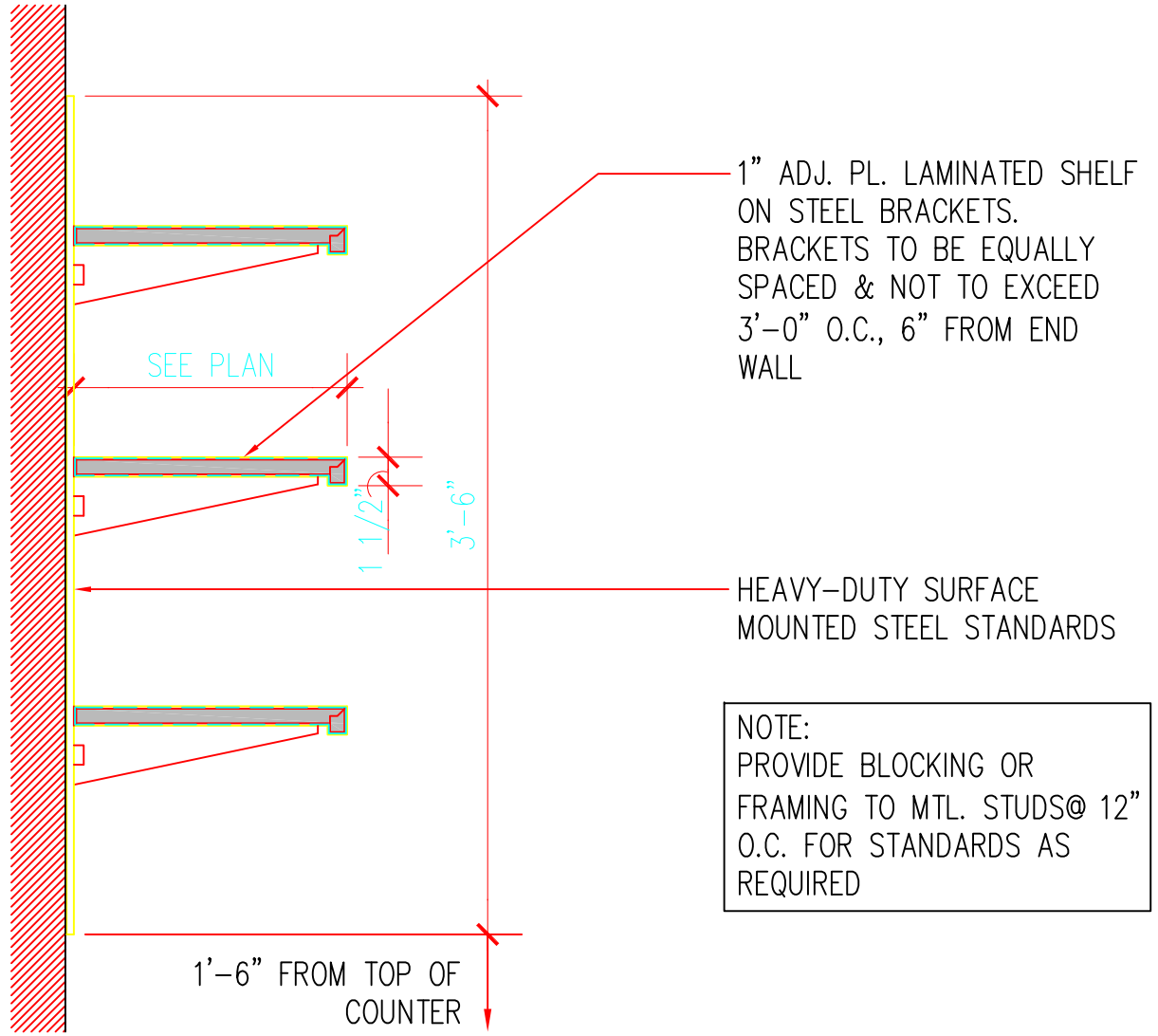
PURCHASE
COLLEGE
STATE UNIVERSITY OF NEW YORK
735 ANDERSON HILL RD.
PURCHASE, NY 10577-1400

Project Name:	Mailroom / Receiving Area Renovation Project
Project Number:	#SU-120814
Location:	Plaza Lower Level - Proposed Mailroom / Post Office / Receiving Area
Scale:	1-1/2" = 1'-0"
Date:	11/17/14
File Path:	Z:\1-Projects\Mailroom-Receiving Renovation\Drawings\DT-MILLWORK.dwg

Mailroom-Receiving
Millwork Details
CSK-020



1 Millwork Detail - Typical Work Counter



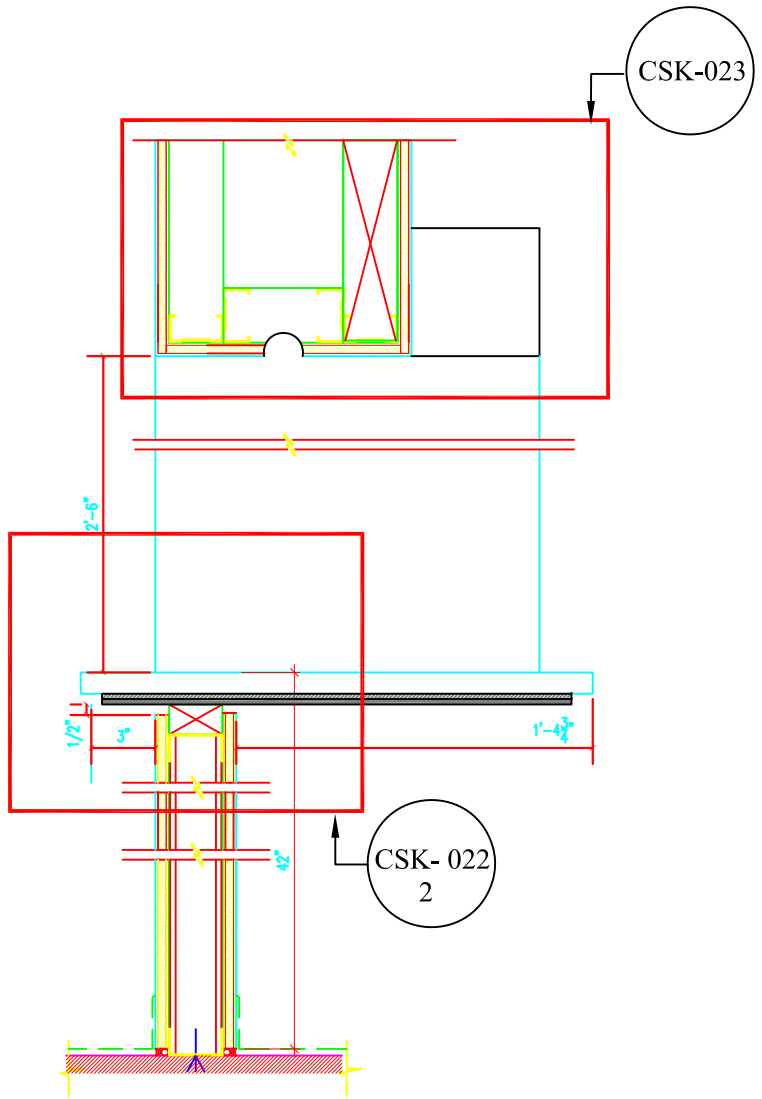
2 Millwork Detail - Typical Adjustable Shevling

PURCHASE
COLLEGE
STATE UNIVERSITY OF NEW YORK

735 ANDERSON HILL RD.
PURCHASE, NY 10577-1400

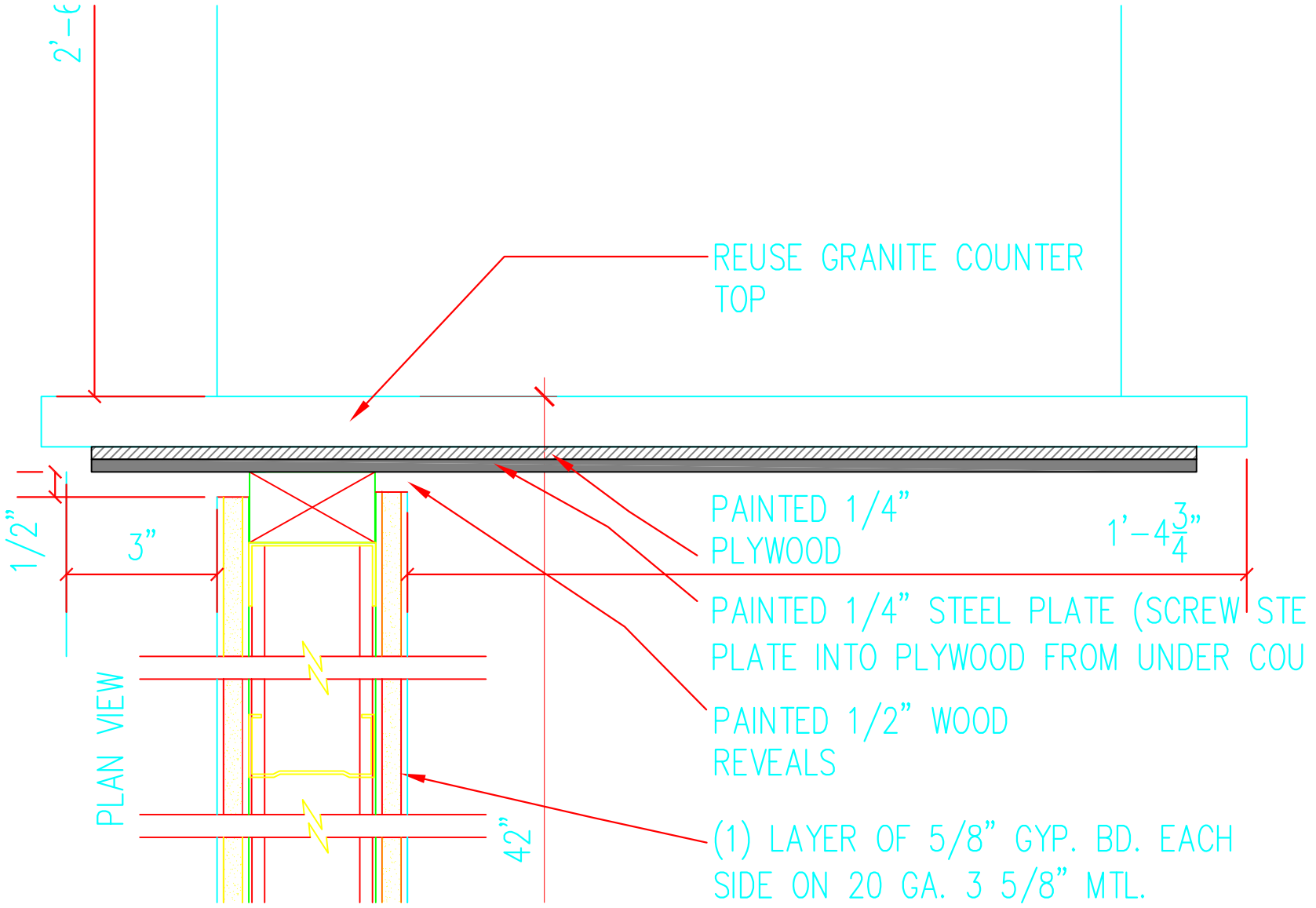
Project Name:	Mailroom / Receiving Area Renovation Project
Project Number:	#SU-120814
Location:	Plaza Lower Level - Proposed Mailroom / Post Office / Receiving Area/ Milwork
Scale:	1-1/2" = 1'-0"
Date:	11/17/14
File Path:	Z:\1-Projects\Mailroom-Receiving Renovation\Drawings\DT-MILLWORK.dwg

Mailroom-Receiving
Millwork Details
CSK-021



1 Section

Not to Scale

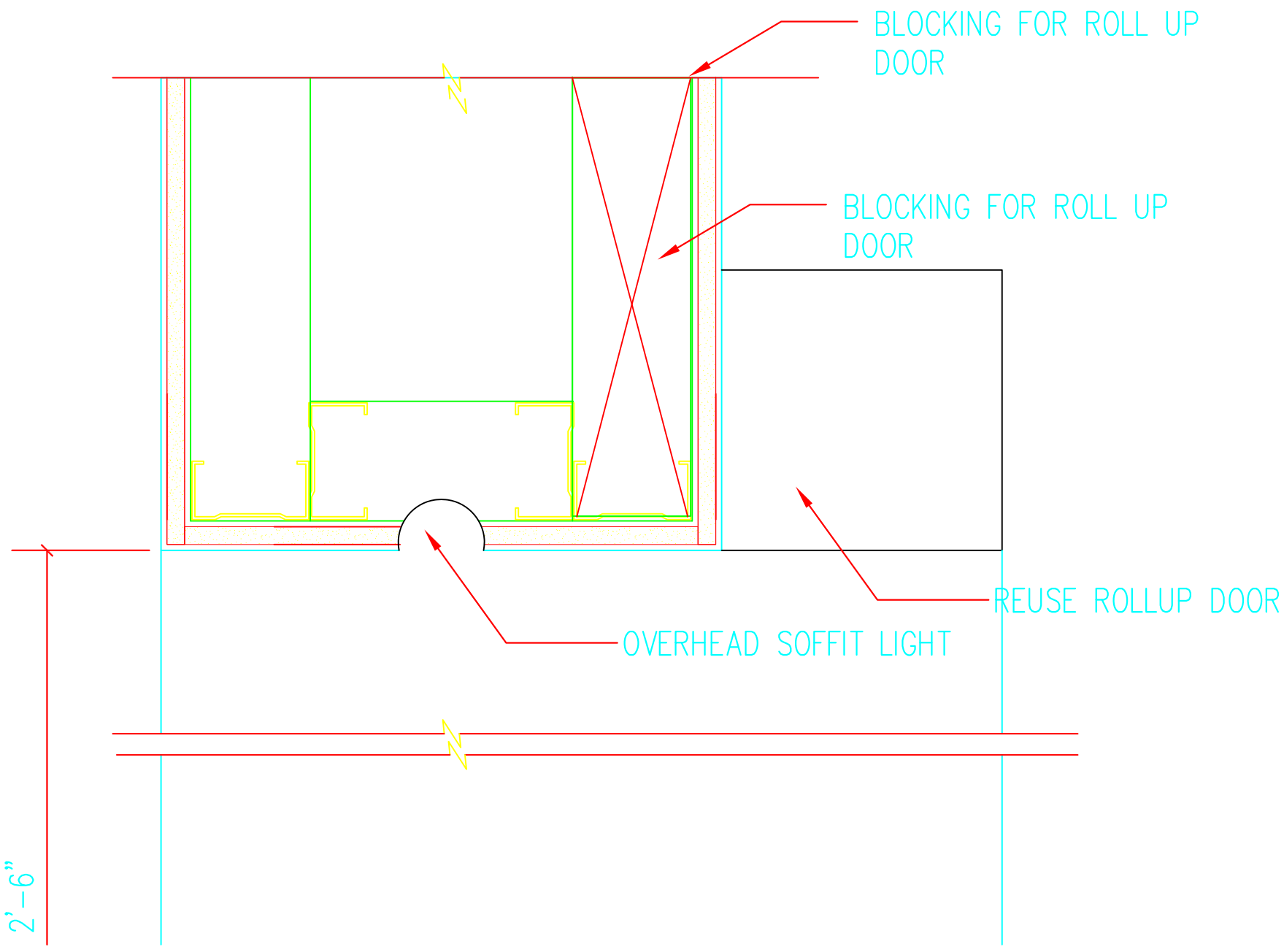


2 Detail at Transaction Counter

PURCHASE
COLLEGE
STATE UNIVERSITY OF NEW YORK
735 ANDERSON HILL RD.
PURCHASE, NY 10577-1400

Project Name:	Mailroom / Receiving Area Renovation Project
Project Number:	#SU-120814
Location:	Plaza Lower Level - Proposed Mailroom / Post Office / Receiving Area
Scale:	3" = 1'-0"
Date:	11/17/14
File Path:	Z:\1-Projects\Mailroom-Receiving Renovation\Drawings\Transaction Detail

Transaction Counter Details CSK-022



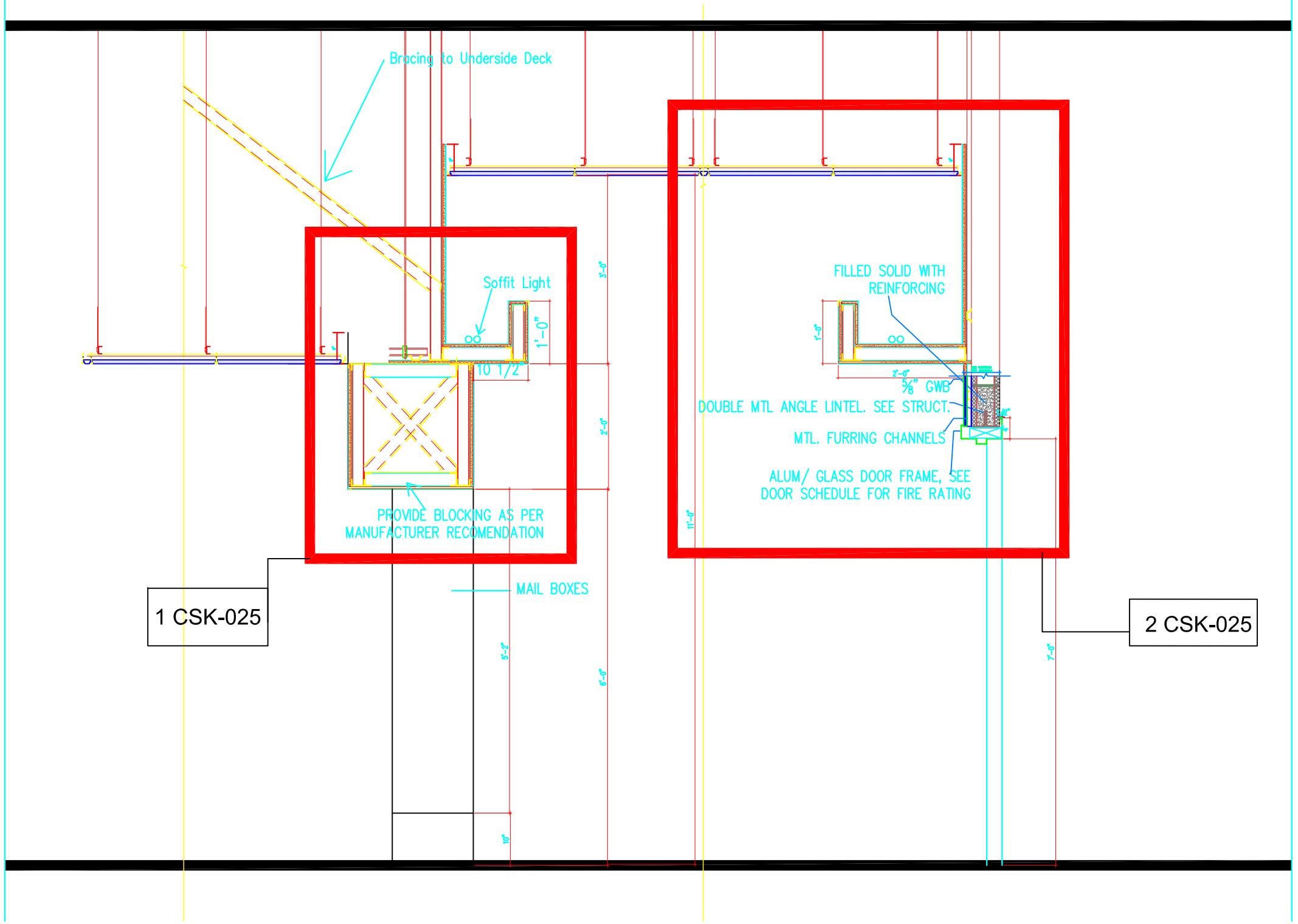
1 Detail at Transaction Counter Head

PURCHASE
COLLEGE
STATE UNIVERSITY OF NEW YORK

735 ANDERSON HILL RD.
PURCHASE, NY 10577-1400

Project Name:	Mailroom / Receiving Area Renovation Project
Project Number:	#SU-120814
Location:	Plaza Lower Level - Proposed Mailroom / Post Office / Receiving Area
Scale:	3" = 1'-0"
Date:	11/17/14
File Path:	Z:\1-Projects\Mailroom-Receiving Renovation\Drawings\Transaction Counter Detail.

Transaction Counter Details
CSK-023

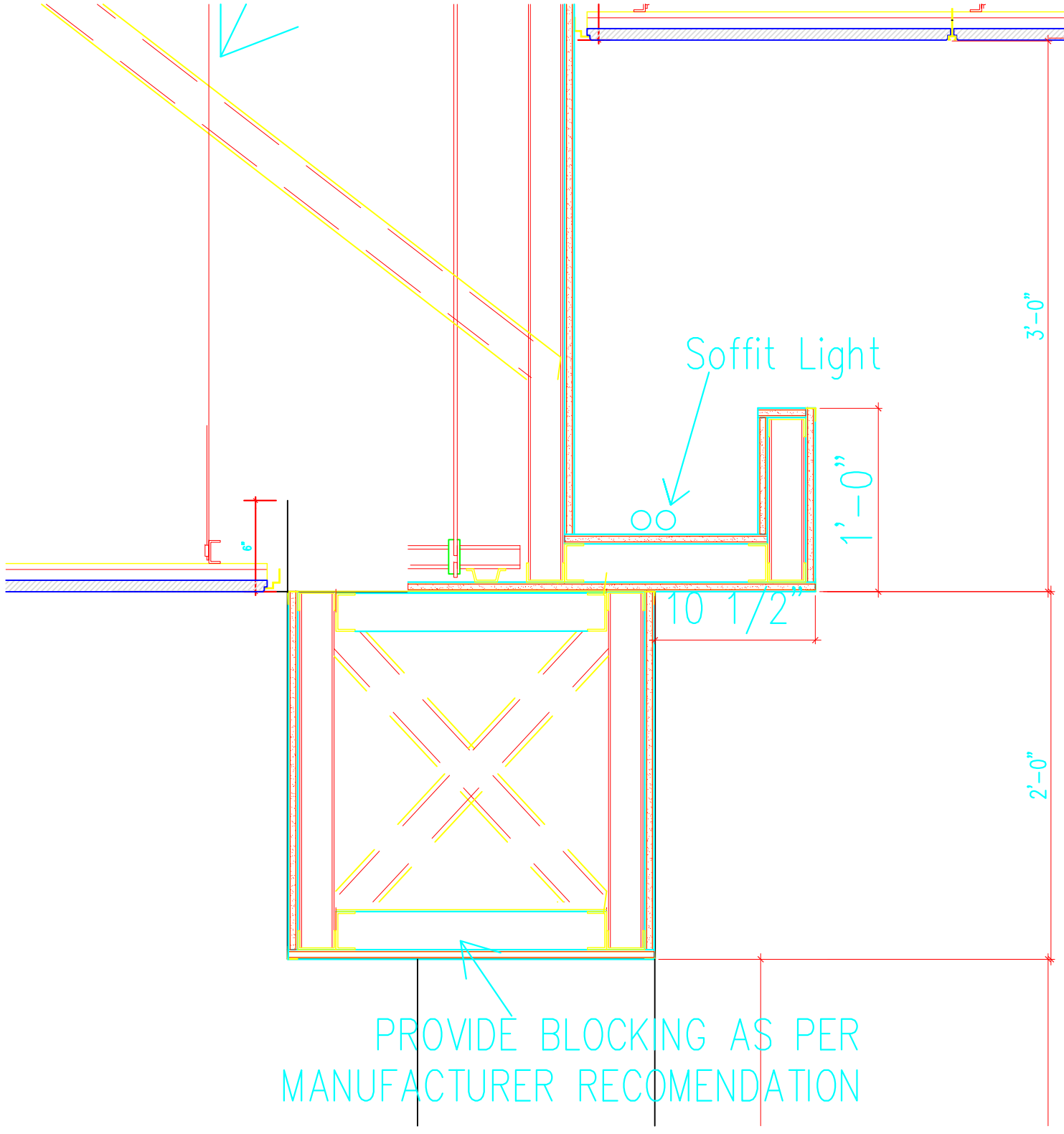


1 SOFITT SECTION

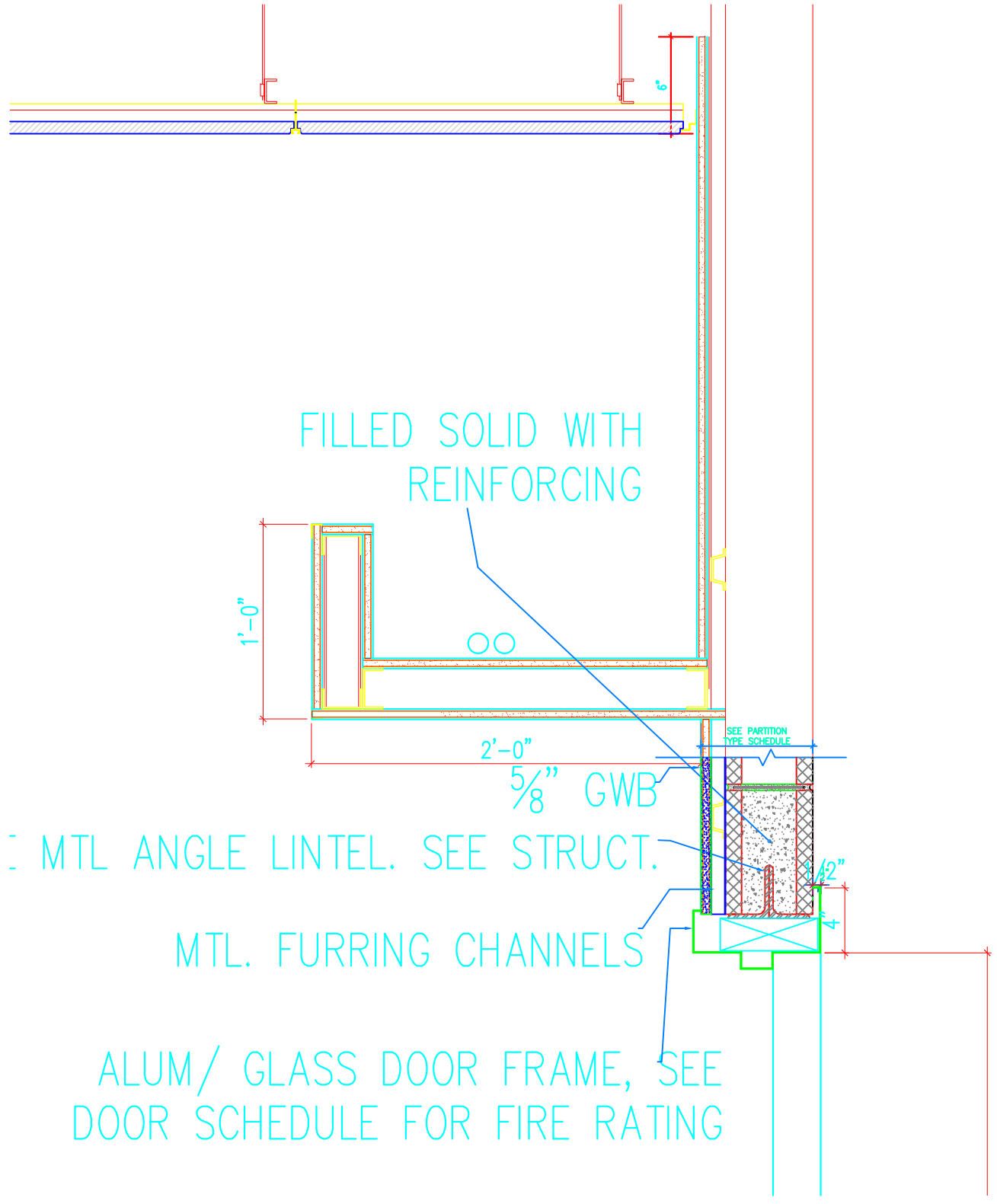
PURCHASE
COLLEGE
STATE UNIVERSITY OF NEW YORK
735 ANDERSON HILL RD.
PURCHASE, NY 10577-1400

Project Name:	Mailroom / Receiving Area Renovation Project
Project Number:	#SU-120814
Location:	Plaza Lower Level - Proposed Mailroom / Post Office / Receiving Area
Scale:	Not to Scale
Date:	11/17/14
File Path:	Z:\1-Projects\Mailroom-Receiving Renovation\Drawings\Soffit Section

Mailroom-Receiving Section Details CSK-024



1 Section

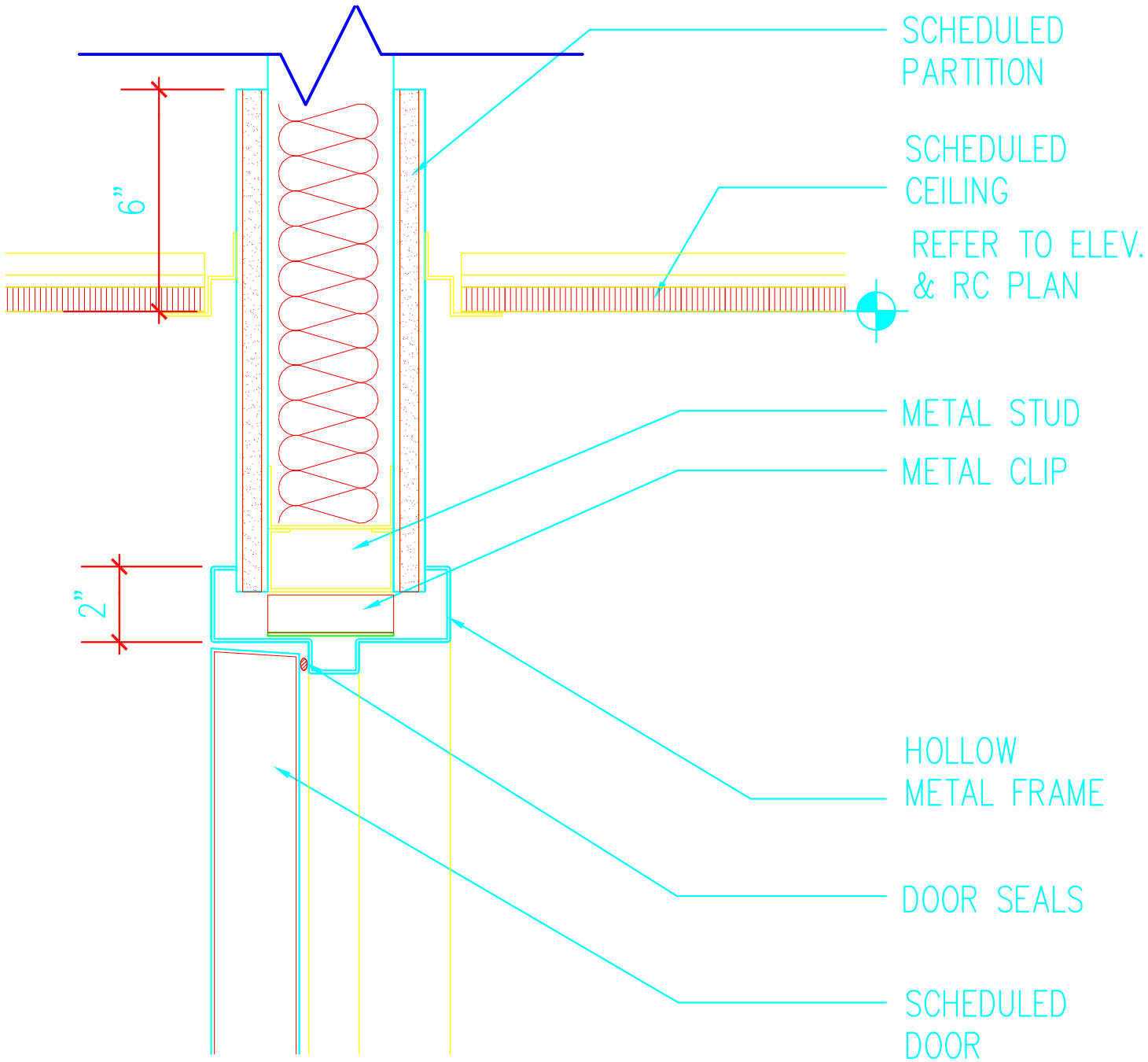


2 Section

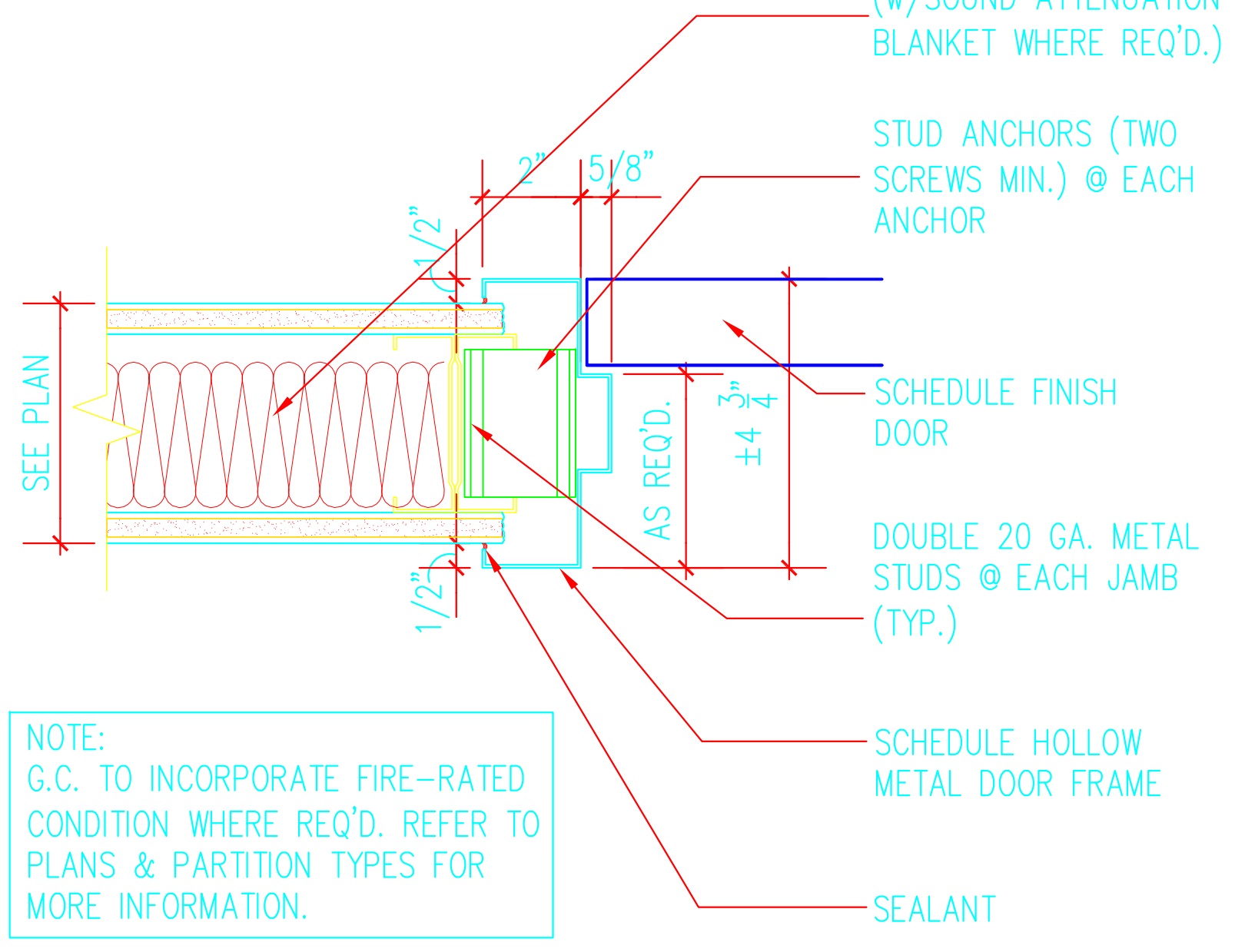
PURCHASE
COLLEGE
STATE UNIVERSITY OF NEW YORK
735 ANDERSON HILL RD.
PURCHASE, NY 10577-1400

Project Name:	Mailroom / Receiving Area Renovation Project
Project Number:	#SU-120814
Location:	Plaza Lower Level - Proposed Mailroom / Post Office / Receiving Area/ Wall Types
Scale:	1-1/2" = 1'-0"
Date:	11/17/14
File Path:	Z:\1-Projects\Mailroom-Receiving Renovation\Drawings\Soffit Detail

Mailroom-Receiving Soffit Details CSK-025



1 Door Type A&A1 - Head Detail



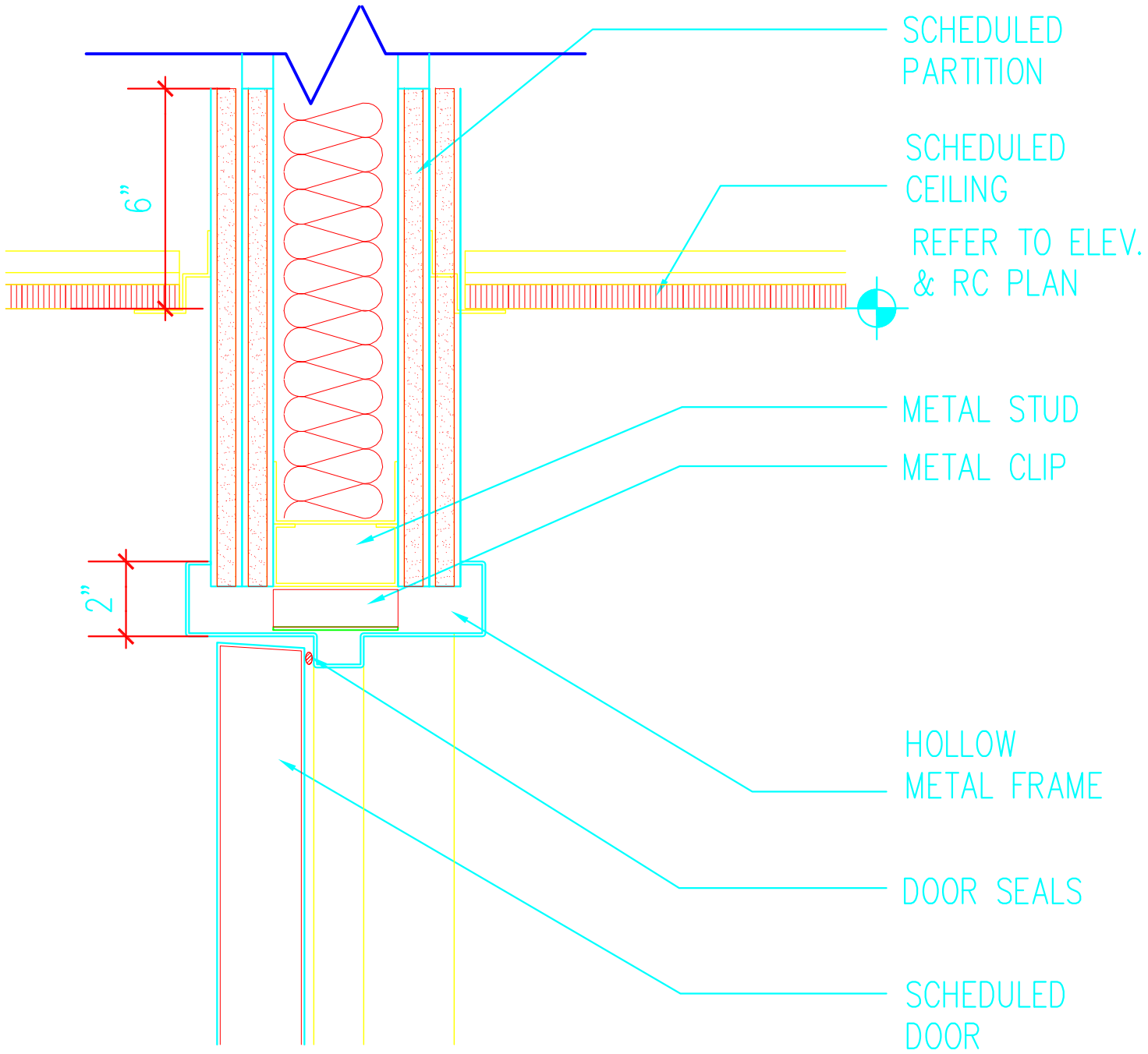
NOTE:
G.C. TO INCORPORATE FIRE-RATED CONDITION WHERE REQ'D. REFER TO PLANS & PARTITION TYPES FOR MORE INFORMATION.

2 Door Type A&A1, - Jamb Detail

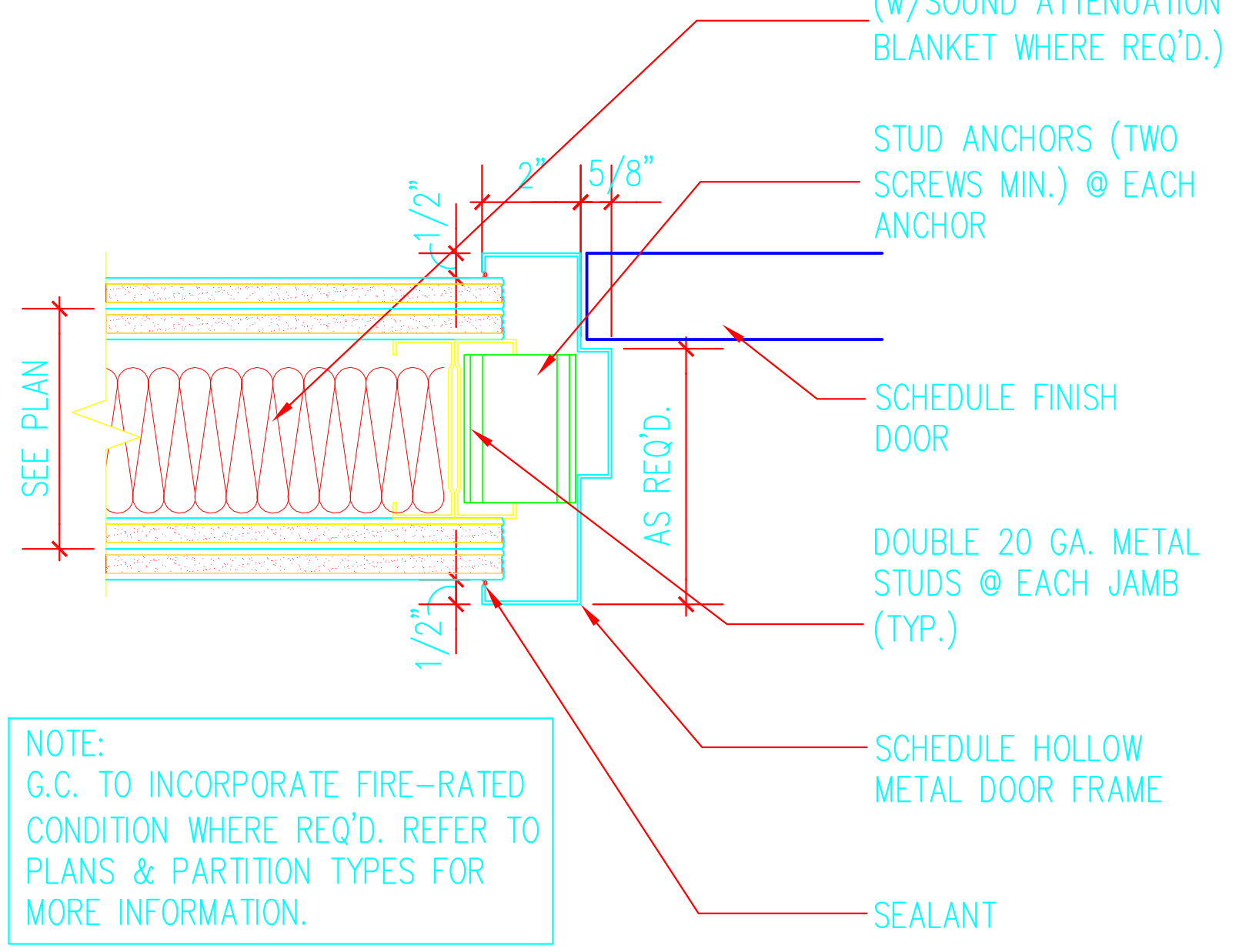
PURCHASE
COLLEGE
STATE UNIVERSITY OF NEW YORK
735 ANDERSON HILL RD.
PURCHASE, NY 10577-1400

Project Name:	Mailroom / Receiving Area Renovation Project
Project Number:	#SU-120814
Location:	Plaza Lower Level - Proposed Mailroom / Post Office / Receiving Area
Scale:	3" = 1'-0"
Date:	11/25/14
File Path:	Z:\1-Projects\Mailroom-Receiving Renovation\Drawings\Door Details.dwg

Mailroom-Receiving
Door Details
CSK-026



1 Door Type C - Head Detail - Rated Door

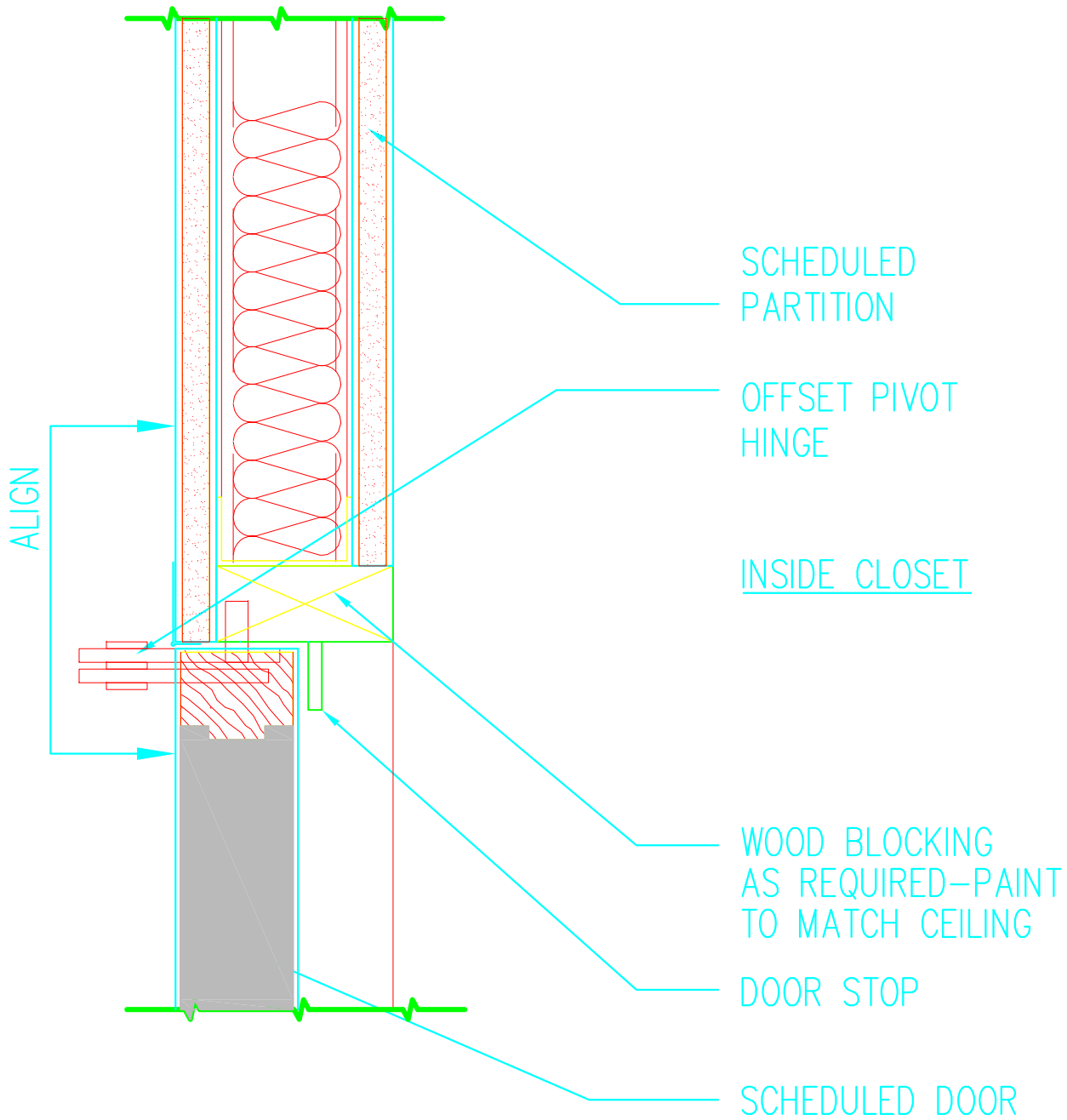


2 Door Type C - Jamb Detail - Rated Door

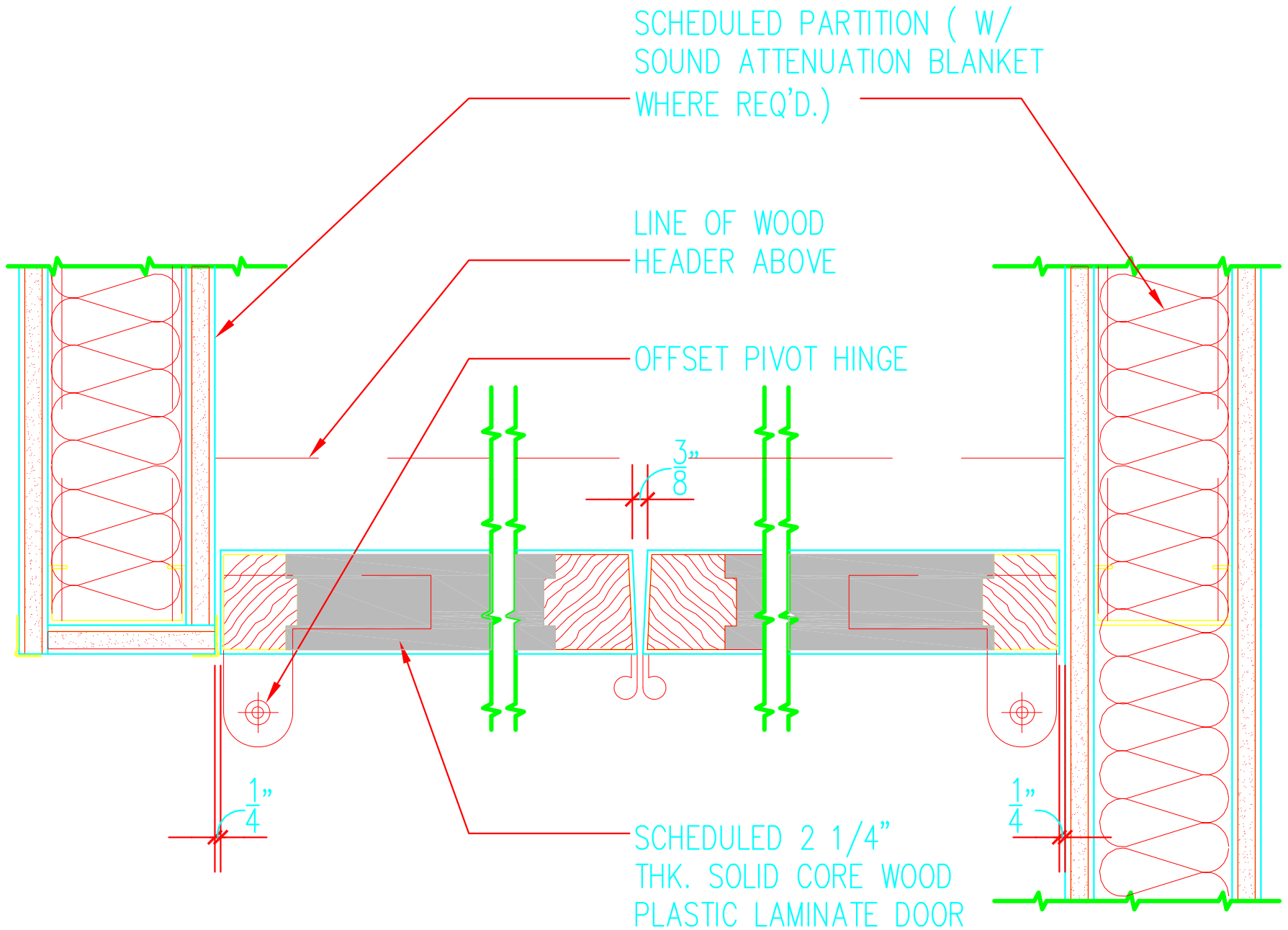
PURCHASE
COLLEGE
STATE UNIVERSITY OF NEW YORK
735 ANDERSON HILL RD.
PURCHASE, NY 10577-1400

Project Name:	Mailroom / Receiving Area/Project
Project Number:	#SU-120814
Location:	Plaza Lower Level - Proposed Mailroom / Post Office / Receiving Area
Scale:	3" = 1'-0"
Date:	12/08/14
File Path:	Z:\1-Projects\Mailroom-Receiving Renovation\Drawings

Mailroom-Receiving Door Details CSK-027



1 Door Type 3 - Head Detail - Coat Closet

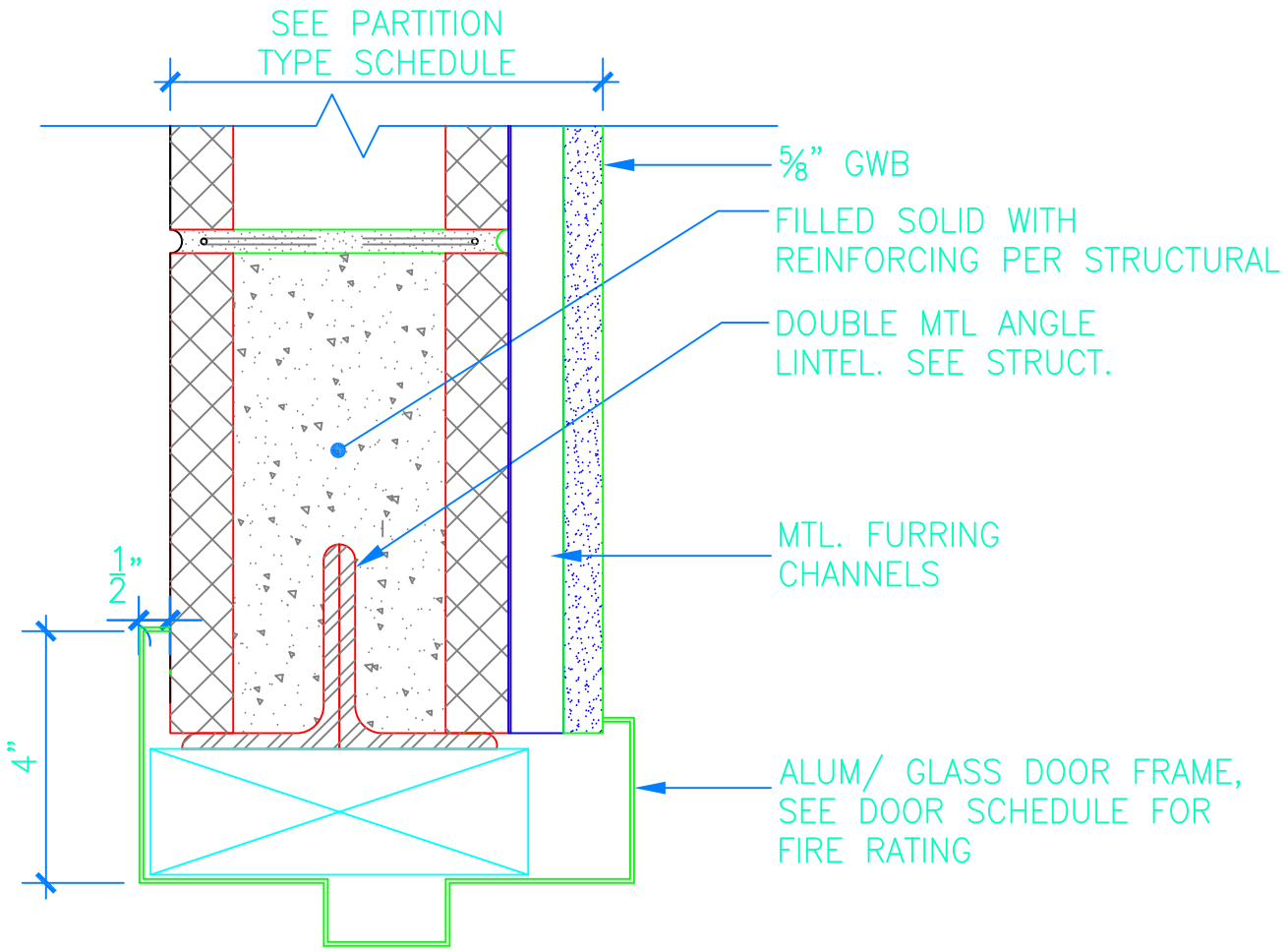


2 Door Type 3 - Jamb Detail - Coat Closet

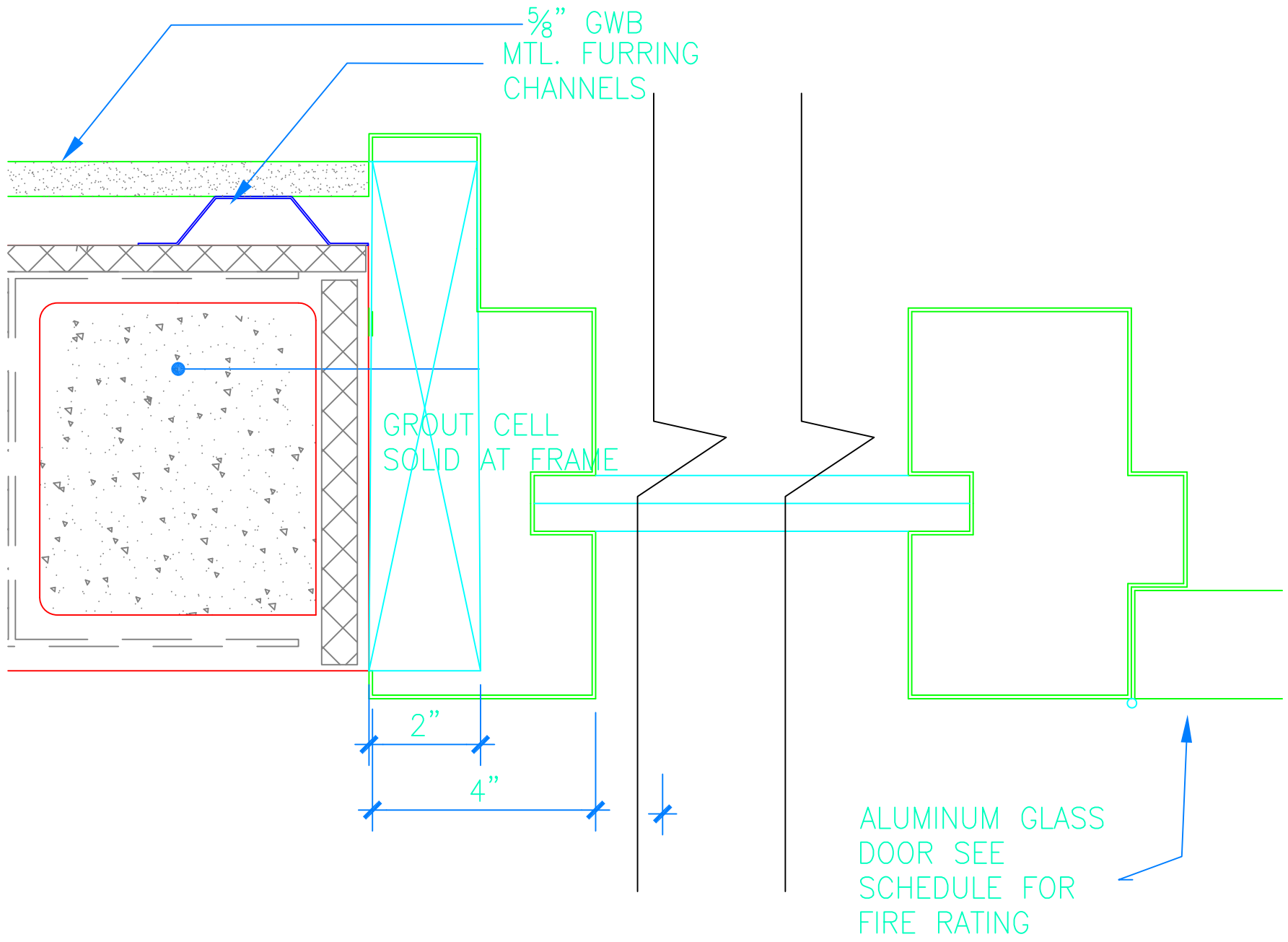
PURCHASE
COLLEGE
STATE UNIVERSITY OF NEW YORK
735 ANDERSON HILL RD.
PURCHASE, NY 10577-1400

Project Name:	Mailroom / Receiving Area Renovation Project
Project Number:	#SU-120814
Location:	Plaza Lower Level - Proposed Mailroom / Post Office / Receiving Area
Scale:	3" = 1'-0"
Date:	12/02/14
File Path:	Z:\1-Projects\Mailroom-Receiving Renovation\Drawings\Door Details.dwg

Mailroom-Receiving
Door Details
CSK-028



1 Door Type D - Head Detail - CMU Walls

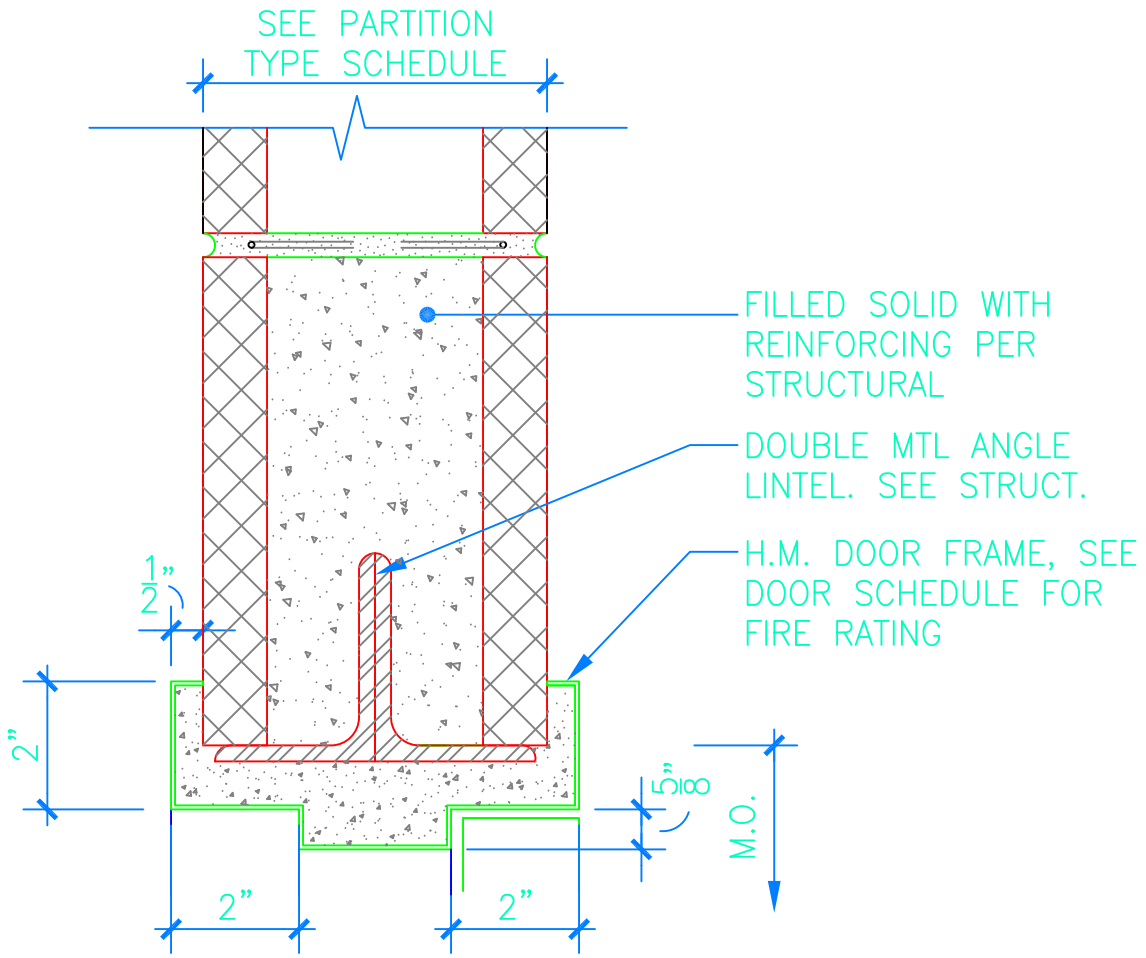


2 Door Type D - Jamb Detail - CMU Walls

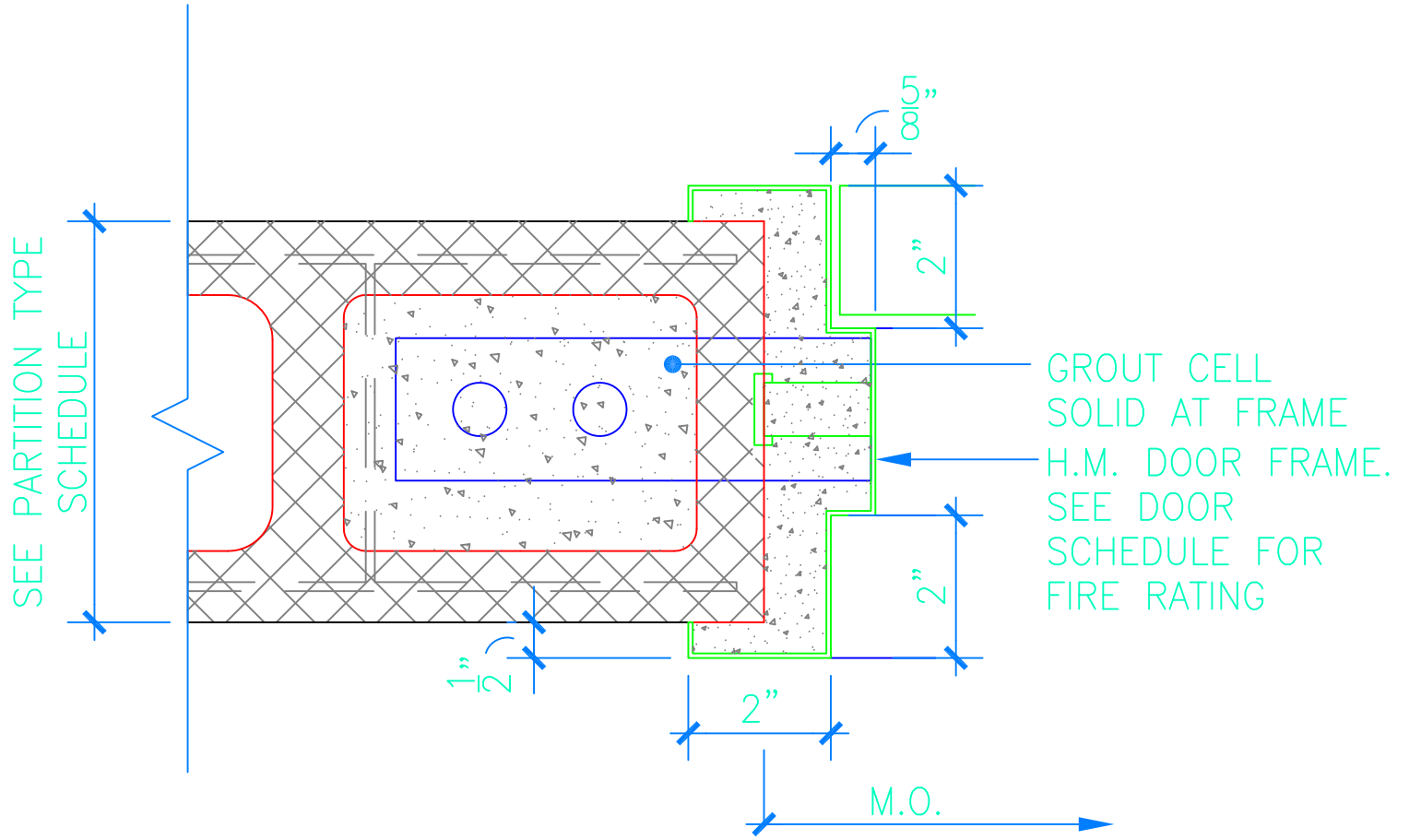
PURCHASE
COLLEGE
STATE UNIVERSITY OF NEW YORK
735 ANDERSON HILL RD.
PURCHASE, NY 10577-1400

Project Name:	Mailroom / Receiving Area Renovation Project
Project Number:	#SU-120814
Location:	Plaza Lower Level - Proposed Mailroom / Post Office / Receiving Area
Scale:	3" = 1'-0"
Date:	12/02/14
File Path:	Z:\1-Projects\Mailroom-Receiving Renovation\Drawings\Door Details.dwg

Mailroom-Receiving
Door Details
CSK-029



1 Door Type A2 - Head Detail - CMU Walls

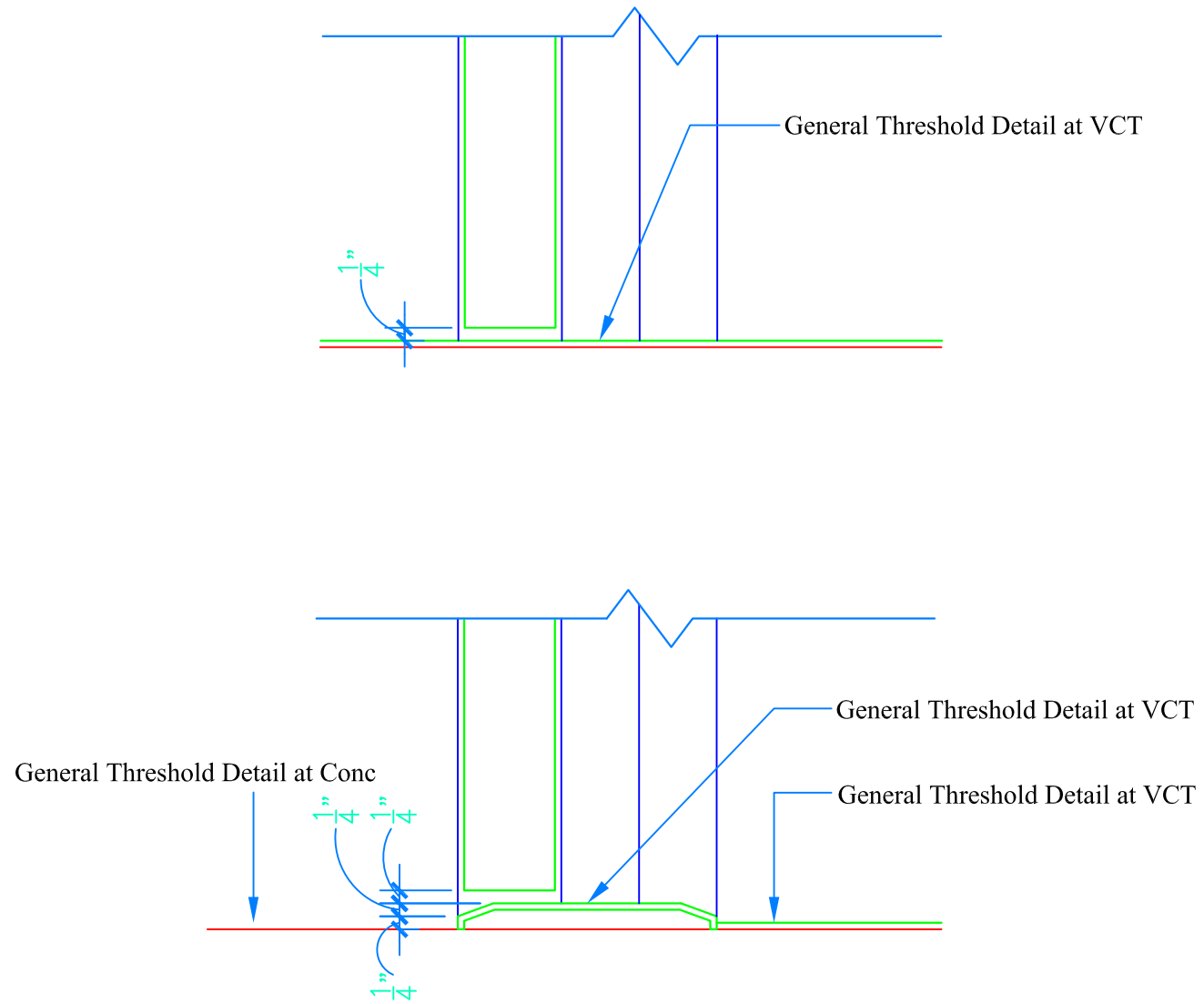


2 Door Type A2 - Jamb Detail - CMU Walls

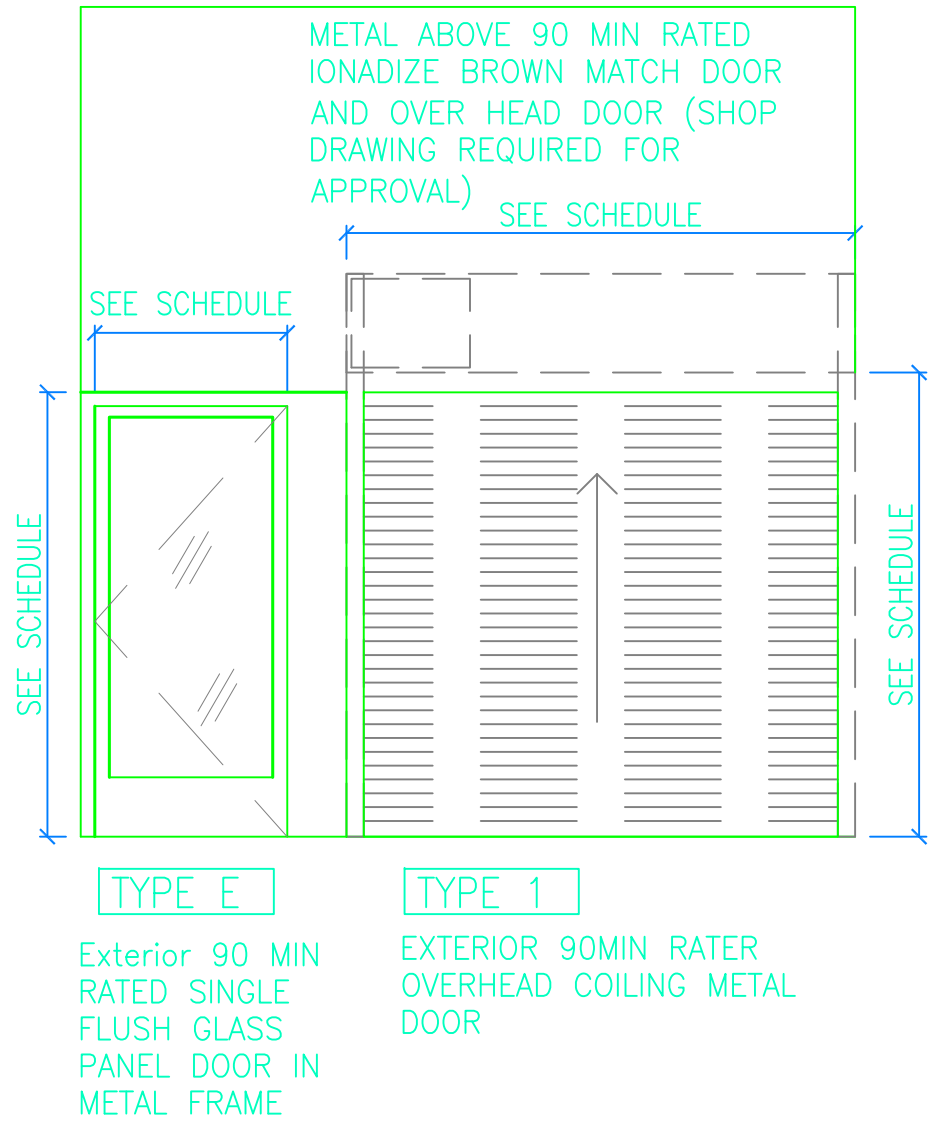
PURCHASE
COLLEGE
STATE UNIVERSITY OF NEW YORK
735 ANDERSON HILL RD.
PURCHASE, NY 10577-1400

Project Name:	Mailroom / Receiving Area Renovation Project
Project Number:	#SU-120814
Location:	Plaza Lower Level - Proposed Mailroom / Post Office / Receiving Area
Scale:	3" = 1'-0"
Date:	11/17/14
File Path:	Z:\1-Projects\Mailroom-Receiving Renovation\Drawings\Door Details.dwg

Mailroom-Receiving
Door Details
CSK-030



1 Typical Saddle Details

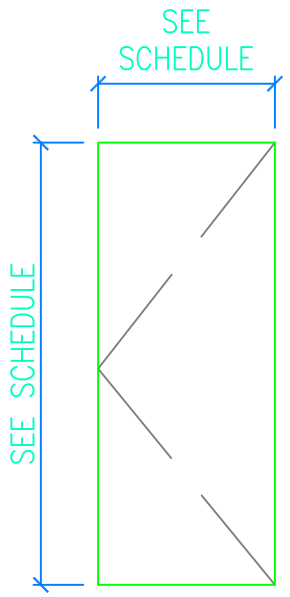


2 Door Type D Elevation

PURCHASE
COLLEGE
STATE UNIVERSITY OF NEW YORK
735 ANDERSON HILL RD.
PURCHASE, NY 10577-1400

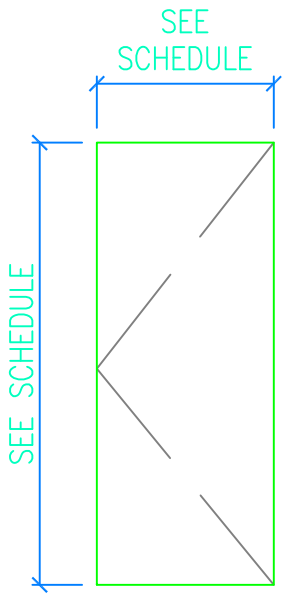
Project Name:	Mailroom / Receiving Area Renovation Project
Project Number:	#SU-120814
Location:	Plaza Lower Level - Proposed Mailroom / Post Office / Receiving Area
Scale:	3" = 1'-0"
Date:	11/17/14
File Path:	Z:\1-Projects\Mailroom-Receiving Renovation\Drawings\Door Details.dwg

Mailroom-Receiving Door Details CSK-031



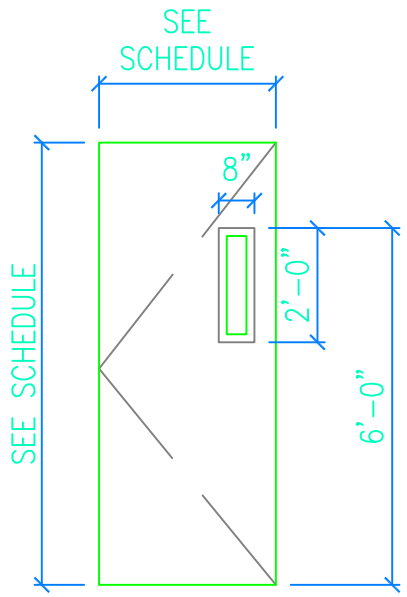
TYPE A2

SINGLE FLUSH 90 MIN RATED HOLLOW METAL FLUSH DOOR



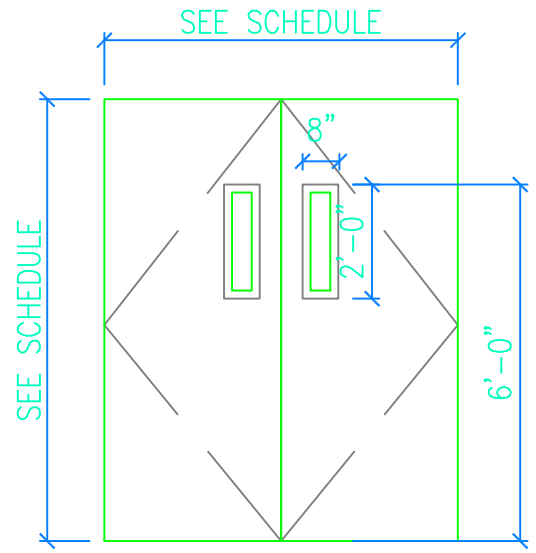
TYPE A1

SINGLE FLUSH HOLLOW METAL FLUSH DOOR



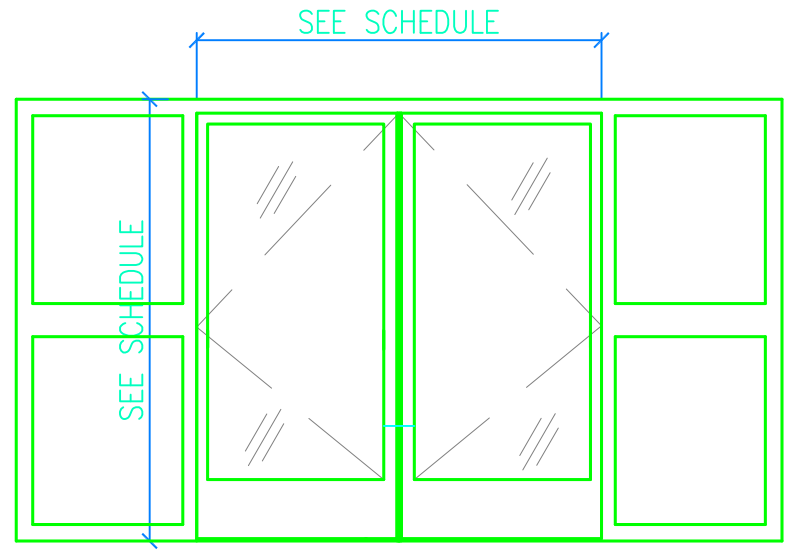
TYPE A

SINGLE FLUSH HOLLOW METAL FLUSH DOOR W/ VISION PANEL



TYPE C

DOUBLE FLUSH HOLLOW METAL DOORS W/ VISION PANEL – EQUAL LEAF



TYPE D

INTERIOR 90 MIN RATED DOUBLE FLUSH GLASS PANEL DOOR IN ALUMINUM FRAME WITH SIDE LIGHTS.

Door Elevations

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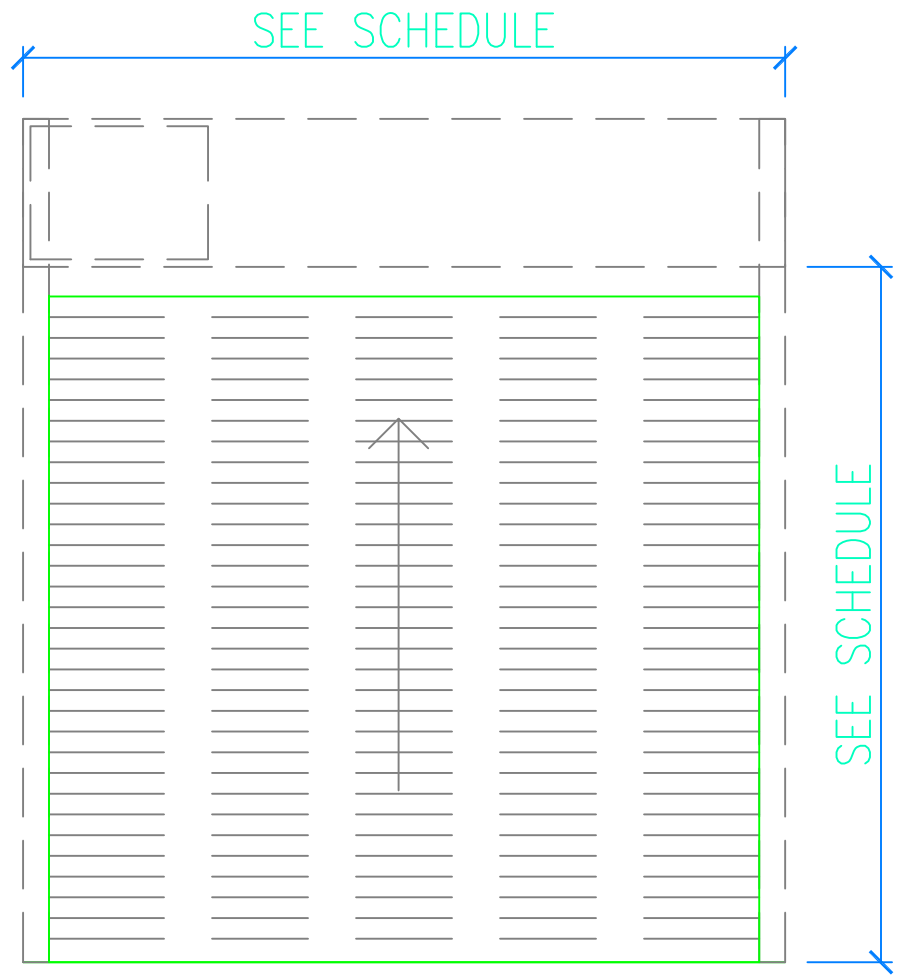
Project Name:	Mailroom / Receiving Area Renovation Project
Project Number:	#SU-120814
Location:	Plaza Lower Level - Proposed Mailroom / Post Office / Receiving Area
Scale:	Not to scale
Date:	11/17/14
File Path:	Z:\1-Projects\Mailroom-Receiving Renovation\Drawings\Door Details.dwg

Mailroom-Receiving
Door Details
CSK-032



TYPE 2

INTERIOR 90MIN RATER
OVERHEAD COILING METAL
DOOR

Door Elevation

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PURCHASE, NY 10577-1400

Project Name:	Mailroom / Receiving Area Renovation Project
Project Number:	#SU-120814
Location:	Plaza Lower Level - Proposed Mailroom / Post Office / Receiving Area
Scale:	3" = 1'-0"
Date:	11/17/14
File Path:	Z:\1-Projects\Mailroom-Receiving Renovation\Drawings\Door Details.dwg

Mailroom-Receiving
Door Details
CSK-033

HVAC SYMBOLS

(NOT ALL SYMBOLS ARE NECESSARILY USED ON THIS PROJECT)

SINGLE LINE DUCTWORK OR EQUIPMENT – NEW

SINGLE LINE DUCTWORK OR EQUIPMENT – EXISTING

DUCTWORK OR EQUIPMENT TO BE REMOVED

DOUBLE LINE DUCTWORK –NEW

DOUBLE LINE DUCTWORK – EXISTING

DUCTWORK WITH ACOUSTIC LINING

DUCT UNDER POSITIVE PRESSURE (SUPPLY AIR OR FAN DISCHARGE)

DUCT UNDER NEGATIVE PRESSURE (RETURN, EXHAUST OR OUTSIDE AIR)

VD — VOLUME DAMPER

FD&AD — FIRE DAMPER AND ACCESS DOOR

BDD — BACK DRAFT DAMPER

M — AUTOMATIC DAMPER (ELECTRIC)

M FSDE&AD — COMBINATION SMOKE AND FIRE DAMPER (ELECTRIC) AND ACCESS DOOR

R — RISE IN DUCTWORK (IN DIRECTION OF AIR FLOW)

D — DROP IN DUCTWORK (IN DIRECTION OF AIR FLOW)

℄ — CENTER LINE

OR CFM — CUBIC FEET PER MINUTE

DIAMETER

SQUARE FEET

L 1.0 ⌀ F.A. — LOUVER IN DOOR – MIN. 1.0 SF FREE AREA

UC — UNDERCUT DOOR

POINT OF CONNECTION

POINT OF DISCONNECTION

CD-A (400) — TYPE A CEILING DIFFUSER 400 CFM SUPPLY AIR

12x12 CD (400) — RECTANGULAR CEILING DIFFUSER WITH 12"x12" NECK 400 CFM SUPPLY AIR

10x8 CR(CG) (300) — 10" BY 8" CEILING REGISTER (CEILING GRILLE) 300 CFM RETURN AIR

RECTANGULAR DIFFUSER WITH BLANKING PLATE

10x6 TR (150) — 10" BY 6" TOP REGISTER, 150 CFM SUPPLY AIR

10x6 TR(TG) (150) — 10" BY 6" TOP REGISTER (TOP GRILLE) 150 CFM RETURN AIR

10x6 BR(BG) (150) — 10" BY 6" BOTTOM REGISTER (BOTTOM GRILLE) 150 CFM RETURN AIR

VANED ELBOW (SEE DETAIL)

VANED ELBOW (SEE DETAIL) OR RADIUS ELBOW

RADIUS ELBOW

SEE DUCT DETAILS FOR TYPE OF BRANCH CONNECTION

DUCT FLEXIBLE CONNECTION

VERTICAL DUCT DROP (IN DIRECTION OF AIRFLOW)

VERTICAL DUCT RISE (IN DIRECTION OF AIRFLOW)

T — THERMOSTAT

SE — DUCT SMOKE DETECTOR

SECTION DESIGNATION

SHEET NO. WHERE SECTION IS SHOWN

NEW PIPE WITH DIRECTION OF FLOW

EXISTING PIPING

PIPING TO REMOVED

PIPE DROP

PIPE RISE

U — PITCH UP IN DIRECTION OF FLOW

D — PITCH DOWN IN DIRECTION OF FLOW

UNION

CONCENTRIC REDUCER

ECCENTRIC REDUCER – FLAT BOTTOM

ECCENTRIC REDUCER – FLAT TOP

FLANGED CONNECTION

FLANGED END – BLIND FLANGE

DEAD END – SCREWED CAP

DEAD END – WELDED CAP

EXPANSION LOOP

PIPE EXPANSION JOINT

BALL JOINT

PIPE ALIGNMENT GUIDE

PIPE ANCHOR

GATE VALVE

COND — CONDENSATE

D — DRAIN

LPC — LOW PRESSURE CONDENSATE

LPS — LOW PRESSURE STEAM

MPC — MEDIUM PRESSURE CONDENSATE

MPS — MEDIUM PRESSURE STEAM

PC — PUMPED CONDENSATE

HVAC ABBREVIATIONS

A	AMPERES
AAV	AUTOMATIC AIR VENT
AC	AIR CONDITIONING
ACCU	AIR COOLED CONDENSING UNIT
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AL	ACOUSTICAL LINING
AP	ACCESS PANEL
BDD	BACK DRAFT DAMPER
BHP	BRAKE HORSEPOWER
BMS	BUILDING MANAGEMENT SYSTEM
BOD	BOTTOM OF DUCT
BOU	BOTTOM OF UNIT
BTU	BRITISH THERMAL UNIT
BTUH	BTU PER HOUR
CCW	COUNTER CLOCKWISE
CD	CEILING DIFFUSER
CFM	CUBIC FEET PER MINUTE
CG	CEILING GRILLE
CLG	CEILING
COND	CONDENSATE
CP	CONDENSATE PUMP
CR	CEILING RETURN REGISTER
CU FT	CUBIC FEET
CU IN	CUBIC INCHES
CV	CONSTANT VOLUME
CW	CLOCKWISE
D	DROP
DB	DRY BULB
DDB	DUAL DUCT BOX
DX	DIRECT EXPANSION
DHW	DOMESTIC HOT WATER
DIAM	DIAMETER
DN	DOWN
DWG	DRAWING
(E)	EXISTING TO REMAIN
EAT	ENTERING AIR TEMPERATURE
EDB	ENTERING DRY BULB TEMPERATURE
EF	EXHAUST FAN
EL	ELEVATION
ELEC	ELECTRIC
EQ	EQUAL
(ER)	EXISTING TO BE REMOVED
(ERR)	EXISTING TO BE REMOVED AND RELOCATED
EWB	ENTERING WET BULB
EWT	ENTERING WATER TEMPERATURE
EXH	EXHAUST
EXP	EXPANSION
EXIST	EXISTING
°F	DEGREES FAHRENHEIT
F&T	FLOAT AND THERMOSTATIC
FA	FREE AREA (SQ.FT.)
FC	FLEXIBLE CONNECTION
FD	FIRE DAMPER
FIN FL	FINISHED FLOOR
FLA	FULL LOAD AMPERES
FPI	FINS PER INCH
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FT	FEET
FTR	FINNED TUBE RADIATION
G	GAUGE
GAL	GALLON
HC	HEATING COIL
HD	HEAD
HR	HOUR
HT	HEIGHT
HV	HEATING AND VENTILATING
HZ	FREQUENCY
IN	INCH OR INCHES
KW	KILOWATT
L	LENGTH
LAT	LEAVING AIR TEMPERATURE
LBS	POUNDS
LDB	LEAVING DRY BULB TEMPERATURE
LIN FT	LINEAR FEET
LPS	LOW PRESSURE SUPPLY
LPR	LOW PRESSURE RETURN
LRA	LOCKED ROTOR AMPS
LWB	LEAVING WET BULB TEMPERATURE
LWT	LEAVING WATER TEMPERATURE
MAV	MANUAL AIR VENT
MAX	MAXIMUM
MBH	THOUSAND BTU PER HOUR
MER	MECHANICAL EQUIPMENT ROOM
MHP	MOTOR HORSEPOWER
MIN	MINIMUM
(N)	NEW
NO.	NUMBER
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OAI	OUTSIDE AIR INTAKE
OED	OPEN ENDED DUCT
PD	PRESSURE DROP
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PSIA	PSI ABSOLUTE
PSIG	PSI GAUGE
R	RISE
RA	RETURN AIR
RLA	RUNNING LOAD AMPS
RM	ROOM
ROT	ROTATION
RPM	REVOLUTIONS PER MINUTE
(RRO)	EXISTING TO BE REMOVED AND RETURNED TO OWNER
RPM	REVOLUTIONS PER MINUTE
SA	SUPPLY AIR
SP	STATIC PRESSURE
SPEC	SPECIFICATION
TEMP	TEMPERATURE
TR	TOP REGISTER
TYP	TYPICAL
TX	TOILET EXHAUST
V	VOLTS
VA	VENTILATION AIR

MECHANICAL DRAWING LIST

DRAWING NO.	DRAWING TITLE
M-001.00	MECHANICAL SYMBOLS, ABBREVIATIONS, NOTES, & DWG LIST
M-100.00	MECHANICAL WEST CORRIDOR PART PLAN
M-101.00	MECHANICAL EAST CORRIDOR PART PLAN
M-200.00	MECHANICAL DETAILS
M-300.00	MECHANICAL SCHEDULES AND CONTROLS DIAGRAM
M-400.00	MECHANICAL SPECIFICATIONS

AIR SYSTEMS

1. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF AIR DEVICES.
2. INTERNAL AIRFLOW DIMENSIONS ARE SHOWN FOR DUCTS. INCREASE DUCT SIZE AS NECESSARY TO MAINTAIN FREE FLOW AREA INDICATED.
3. USE FLAT TRANSVERSE SEAM FOR DUCTWORK WHERE SPACE AVAILABLE DICTATES.
4. DIFFUSER SIZES SHOWN ARE NECK SIZES. REGISTERS AND GRILLE SIZES ARE NOMINAL.
5. PROVIDE VOLUME DAMPERS OR OTHER APPROVED BALANCING DEVICES AT DUCT BRANCHES AND RUN OUTS, AND AT REGISTER GRILLE AND DIFFUSER NECKS IN SUPPLY, RETURN AND EXHAUST DUCTWORK WHETHER SHOWN OR NOT.
6. DUCTWORK DOWNSTREAM OF ALL AIR HANDLING UNITS SHALL BE LINED WITH 1" ACOUSTICAL LINING FOR A MINIMUM OF 15 FEET.
7. PROVIDE 36" CLEARANCE IN FRONT OF ALL ELECTRIC CONTROL PANELS PER N.E.C. AND MFG. REQUIREMENTS.

GENERAL NOTES

1. GENERAL NOTES, SYMBOL LIST AND DETAILS ARE APPLICABLE TO ALL HVAC/MECHANICAL DRAWINGS.
2. DRAWINGS ARE DIAGRAMMATIC. DETERMINE LOCATIONS OF SYSTEMS AND COMPONENTS IN FIELD. RELOCATE EXISTING WORK THAT INTERFERES WITH WORK OF THIS CONTRACT.
3. WORK IN THIS SECTION IS SPECIFIED IN SECTION 15000.
4. COORDINATE THIS WORK WITH THAT OF OTHER TRADES.
5. DIMENSIONS SHOWN ON PLAN ARE HORIZONTAL. DIMENSIONS SHOWN IN ELEVATION ARE VERTICAL EXCEPT IN WAY OF STRUCTURAL STEEL, DIMENSIONS ARE MEASURED PERPENDICULAR TO FLANGE.
6. NEITHER ACCURACY NOR COMPLETION OF SERVICES AND UTILITY LOCATIONS SHOWN ON DRAWINGS IS GUARANTEED. DETERMINE EXACT LOCATIONS OF EXISTING SERVICES AND UTILITIES IN FIELD, WHETHER OR NOT SHOWN ON DRAWINGS. EXERCISE CAUTION AND IDENTIFY LOCATIONS OF UNMARKED UTILITY LINES AS NECESSARY TO PERFORM WORK OF THIS SECTION.
7. PRODUCT INSTALLATION SHALL ADHERE TO MANUFACTURER'S RECOMMENDATIONS.
8. PROVIDE ACCESS PANELS FOR EQUIPMENT THAT REQUIRES PERIODIC SERVICE.
9. PROVIDE HANGERS, INSERTS, ANCHORS, SUPPLEMENTAL STEEL & SUPPORTS AS REQUIRED TO SUPPORT DUCTWORK, PIPING AND EQUIPMENT FROM STRUCTURE.
10. SCHEDULE WORK OF THIS SECTION TO AVOID INTERFERING WITH EXISTING OPERATIONS IN THE FACILITY.
11. COORDINATE ROOF PENETRATIONS WITH WORK OF OTHER SECTIONS AND WITH FLASHING REQUIREMENTS.
12. RUN DUCTS AND PIPING CONCEALED, UNLESS OTHERWISE SPECIFIED AND CLEAR OF CEILING INSERTS.
13. INSTALL THERMOSTATS 4'-6" ABOVE FINISHED FLOOR OR AS DIRECTED OTHERWISE BY ARCHITECT.
14. STRUCTURAL WELDING SHALL BE CONTINUOUS 1/4" FILLET UNLESS REQUIRED OTHERWISE.

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Location:	Plaza Lower Level - Proposed Mailroom / Post Office / Receiving Area
Scale:	AS SHOWN
Date:	09/19/14
File Path:	Z:\1-Projects\Mailroom-Receiving Renovation\Drawings\PP_00-Opt10.dwg

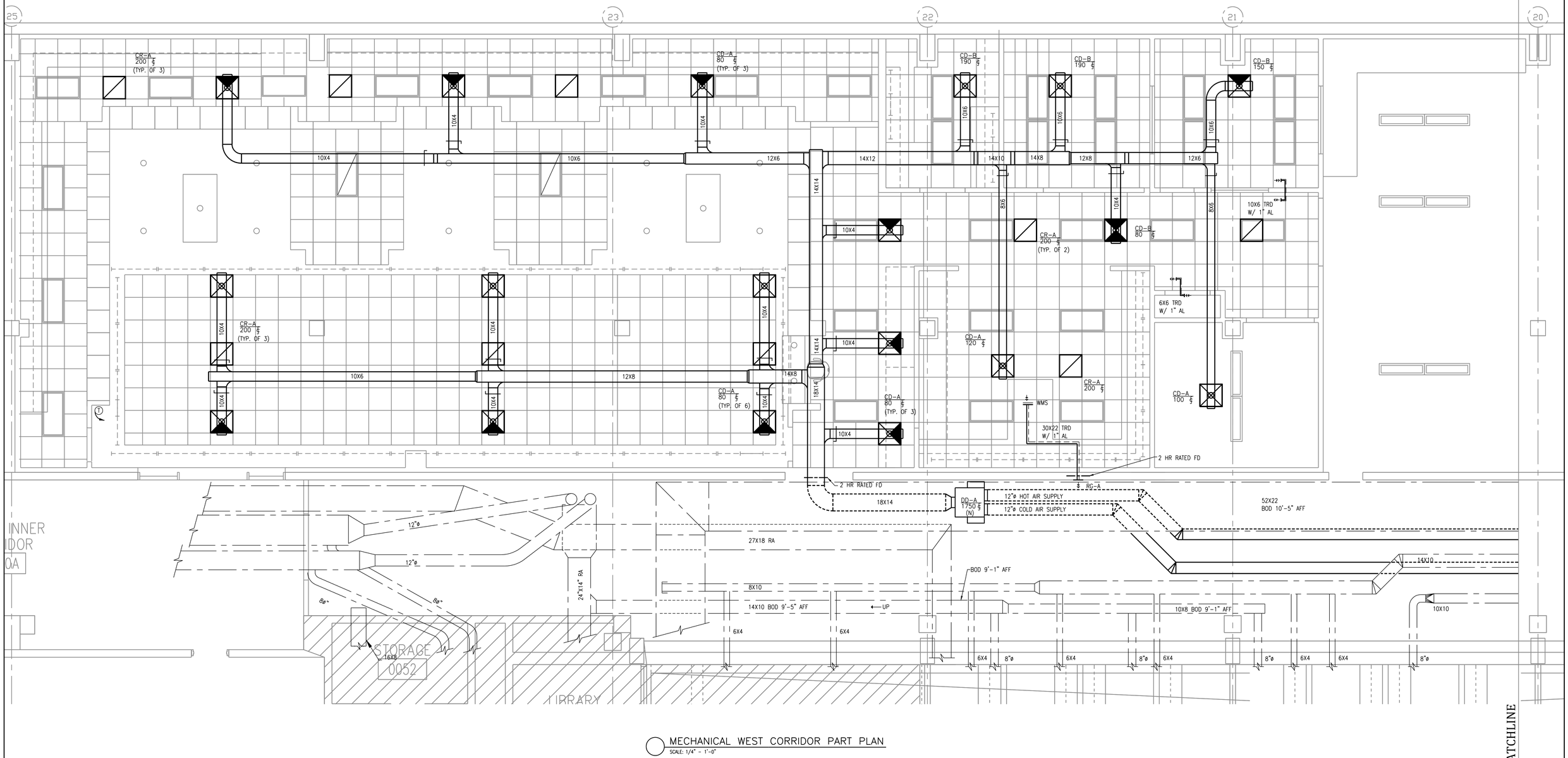
NO.	REVISIONS | SUBMISSIONS	DATE
	ISSUED FOR BID	12.08.2014

HVAC SYMBOLS, ABBREVIATIONS, NOTES, DRAWING LIST
M-001.00

GENERAL NOTES:

1. NOT ALL EXISTING DUCTWORK & PIPING IS SHOWN.
2. ALL NEW DUCTWORK SHALL BE INSTALLED AS HIGH AS POSSIBLE.
3. ALL EXISTING CONDITIONS SHALL BE FIELD VERIFIED.

M-100 M-101



MECHANICAL WEST CORRIDOR PART PLAN
SCALE: 1/4" = 1'-0"

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Project Name:	Mailroom / Receiving Area Renovation Project
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NO.	REVISIONS | SUBMISSIONS	DATE
	ISSUED FOR BID	12.08.2014

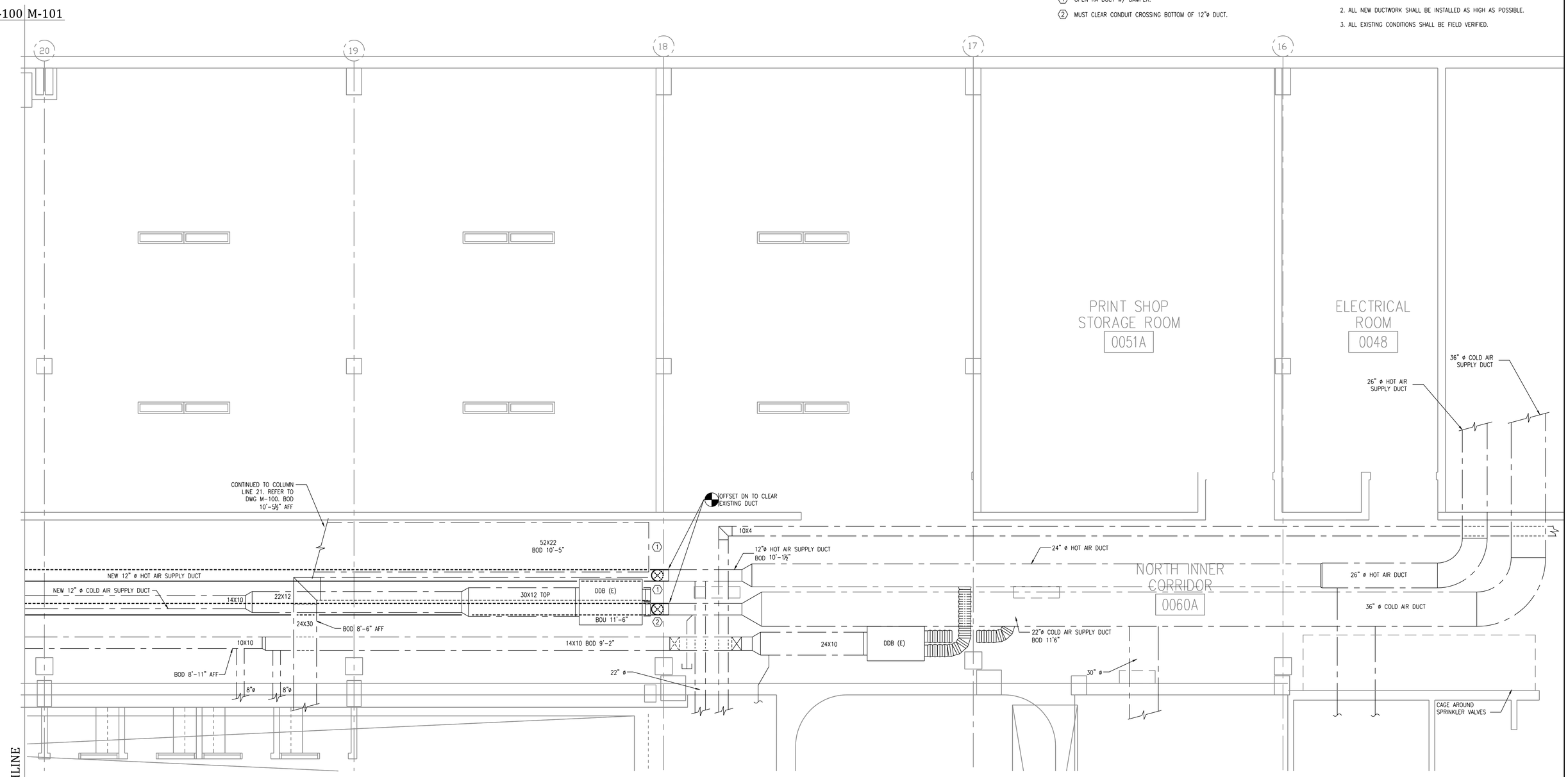
MECHANICAL WEST CORRIDOR PART PLAN
M-100.00

KEY NOTES:

1. OPEN RA DUCT W/ DAMPER.
2. MUST CLEAR CONDUIT CROSSING BOTTOM OF 12"ø DUCT.

GENERAL NOTES:

1. NOT ALL EXISTING DUCTWORK & PIPING IS SHOWN.
2. ALL NEW DUCTWORK SHALL BE INSTALLED AS HIGH AS POSSIBLE.
3. ALL EXISTING CONDITIONS SHALL BE FIELD VERIFIED.



MECHANICAL EAST CORRIDOR PART PLAN

SCALE: 1/4" = 1'-0"

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Project Name:	Mailroom / Receiving Area Renovation Project
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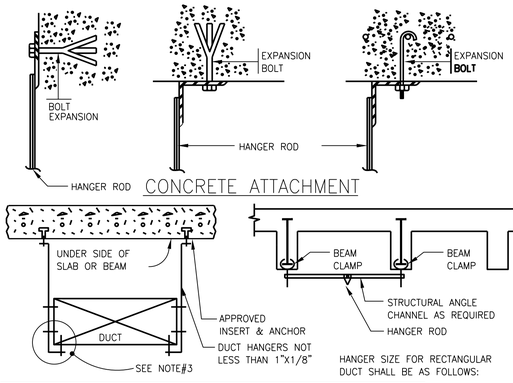
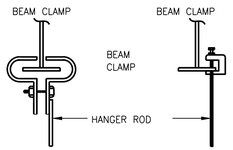
File Path:	Z:\1-Projects\Mailroom-Receiving Renovation\Drawings\PP_00-Opt10.dwg

NO.	REVISIONS | SUBMISSIONS	DATE
	ISSUED FOR BID	12.08.2014

MECHANICAL
EAST CORRIDOR
PART PLAN
M-101.00



CONCRETE ATTACHMENT



BEAM ATTACHMENT

HANGER SIZE FOR RECTANGULAR DUCT SHALL BE AS FOLLOWS:

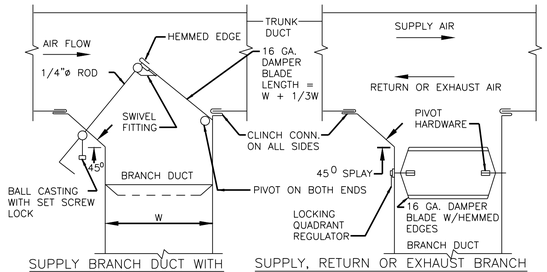
LONGEST DIMENSION OF DUCT	ROUND HANGERS	MAX. SPACING SEE NOTE #4	STRAP HANGERS	TRAPEZE SHELF ANGLES
UP TO 18"	8"GA.WIRE	8'-0"	1"X1/8"	1"X1"X 1/8"
19" TO 30"	1/4" ROD	8'-0"	1"X1/8"	1"X1"X 1/8"
31" TO 42"	1/4" ROD	8'-0"	1"X1/8"GA.	1 1/2"X 1 1/2"X 1/8"
43" TO 60"	3/8" ROD	4'-0"	———	1 1/2"X 1 1/2"X 1/8"
61" TO 84"	3/8" ROD	4'-0"	———	2"X2"X1/8"
85" TO 96"	3/8" ROD	4'-0"	———	2"X2"X 3/16"
OVER 97"	3/8" ROD	4'-0"	———	2"X2"X 1/4"

NOTES:

1. ALL DUCT TO BE HUNG FROM BUILDING CONSTRUCTION NOT TO BE SUPPORTED FROM HUNG CEILING.
2. WHEN DUCT AREA EXCEEDS 8 SQ.FT. ANGLE STIFFENERS REQUIRED AROUND CIRCUMFERENCE EVERY 4'-0.
3. FOR DUCT OVER 48"WIDE HANGERS SHALL TURN UNDER DUCT ATLEAST 2"AND SHALL BE FASTENED TO THE BOTTOM AS WELL AS TO THE SIDES OF THE DUCT.
4. FOR DUCTS WITH A CROSS SECTIONAL AREA OF 4 SQ.FT. OR LESS. HANGERS SHALL BE NO MORE THAN 8FT. A PART. FOR DUCTS WITH A CROSS SECTIONAL AREA OF MORE THAN 4 SQ.FT. BUT NOT OVER 8 SQ.FT. HANGERS SHALL BE NOT MORE THAN 6 FT. A PART. AND FOR DUCTS WITH A CROSS SECTIONAL AREA OF MORE THAN 8 SQ.FT. HANGERS SHALL BE NOT MORE THAN 4 FT. A PART. THE DISTANCES BETWEEN SHALL BE MEASURED LINEARLY ALONG THE DUCT.

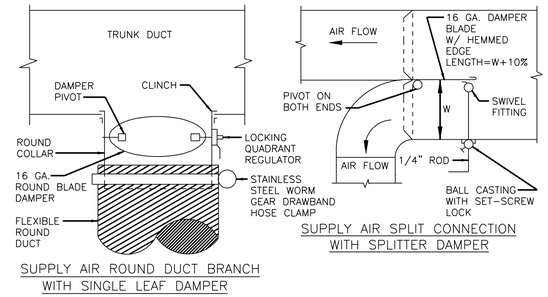
DUCT SUPPORT DETAIL

NOT TO SCALE



SUPPLY BRANCH DUCT WITH SPLITTER TYPE DAMPER

SUPPLY, RETURN OR EXHAUST BRANCH DUCT WITH SINGLE LEAF DAMPER



SUPPLY AIR ROUND DUCT BRANCH WITH SINGLE LEAF DAMPER

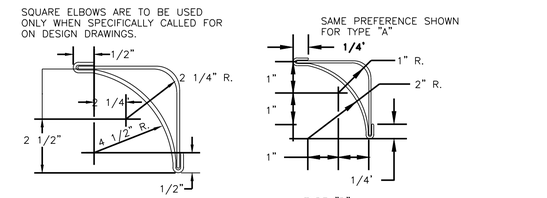
SUPPLY AIR SPLIT CONNECTION WITH SPLITTER DAMPER

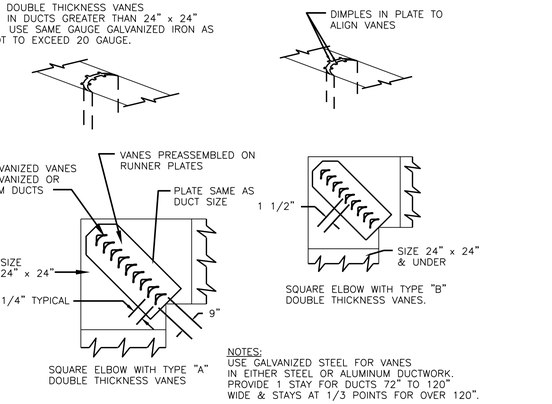
NOTES:

1. PROVIDE ALL BRANCH DUCTS WITH MANUALLY OPERATED VOLUME DAMPERS FOR BALANCING AIR SYSTEMS. THESE DAMPERS SHALL BE INDEPENDENT OF DAMPERS FURNISHED WITH DIFFUSERS AND REGISTERS, WHICH SHALL ONLY BE UTILIZED FOR TRIM BALANCING WITHOUT GENERATING NOISE.
2. FOR DUCTS WIDER THAN 48" USE MULTIPLE SINGLE LEAF DAMPERS OR OPPOSED-ACTION MULTI-BLADE DAMPERS; EACH WITH LOCKING QUADRANT REGULATOR.

BRANCH DUCT VOLUME DAMPERS

NOT TO SCALE

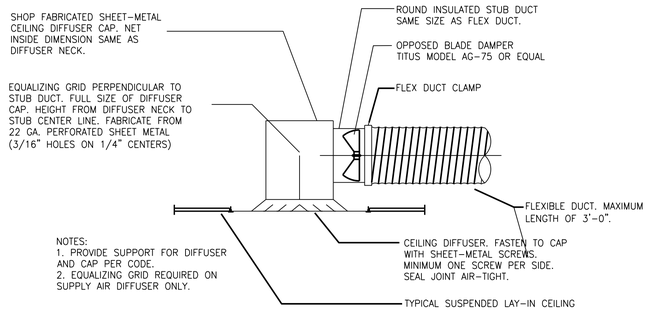




NOTES:
USE GALVANIZED STEEL FOR VANES IN EITHER STEEL OR ALUMINUM DUCTWORK. PROVIDE 1 STAY FOR DUCTS 72" TO 120" WIDE & STAYS AT 1/3 POINTS FOR OVER 120".

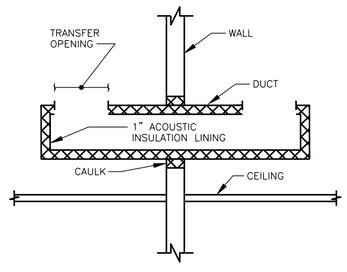
TURNING VANE DETAIL

NOT TO SCALE



TYPICAL CEILING LAY-IN DIFFUSER INSTALLATION DETAIL

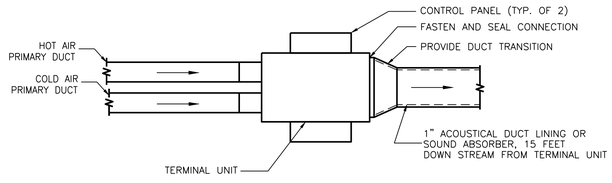
NOT TO SCALE



NOTE:
TRANSFER DUCTS SHALL BE SIZED FOR A VELOCITY OF 400 FPM.

TRANSFER DUCT DETAIL

NOT TO SCALE



PLAN VIEW

NOTES:

1. THE OPERATION OF VARIABLE VOLUME TERMINAL UNITS ARE AFFECTED BY EXCESSIVE TURBULENCE ON THE ENTERING SIDE OF EACH TERMINAL UNIT THEREFORE, TERMINAL UNITS MUST NOT BE INSTALLED TOO CLOSE TO MAIN DUCTS, ELBOWS AND FITTINGS.
2. WHEN MINIMUM UPSTREAM STRAIGHT DUCT CONNECTION TO TERMINALS AS INDICATED ABOVE CANNOT BE MAINTAINED, PROVIDE ORIFICE PLATE, STRAIGHTENING VANES OR OTHER DEVICE AS RECOMMENDED BY TERMINAL UNIT MANUFACTURER AND SUBMIT TO ENGINEER FOR REVIEW PRIOR TO INSTALLATION.
3. ARRANGE ACCESS TO PERMIT EASY FIELD BALANCE AND MAINTENANCE OF TERMINAL UNIT.
4. PROVIDE A FACTORY-WIRED 277V/24V TRANSFORMER FOR EACH VAV BOX.

DUAL DUCT TERMINAL UNIT INSTALLATION

NOT TO SCALE

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MECHANICAL DETAILS
M-200.00

DIFFUSER, GRILLE & REGISTER SCHEDULE — DESIGN BASIS: TITUS

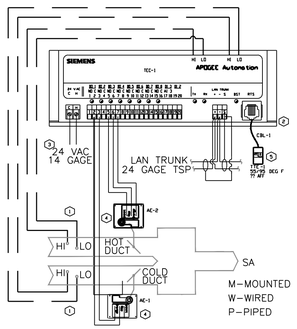
TAG	APPLICATION	MODEL	NECK SIZE	CFM RANGE	MAX P.D. (IN. W.C.)	NC	MATERIAL	MANUFACTURER & MODEL NO.	REMARKS
CD-A	SUPPLY	TITUS	6"ø	0-130	.13	19	STEEL	TITUS TMSA0612X123	12X12 MODULE, SEE NOTES 1,2,3,4,5
CD-B	SUPPLY	TITUS	8"ø	131-250	.087	17	STEEL	TITUS TMSA0824X243	24X24 MODULE, SEE NOTES 1,2,3,4,5
CR-A	RETURN	TITUS	22x22	0-360	.002	<10	STEEL	TITUS 350RL-RS	SEE NOTES 5,6,7,8
RG-A	TRANSFER	TITUS	30x22	420-2100	.018	16	STEEL	TITUS 350RL	SEE NOTES 5,6,8

NOTES:

1. FURNISH AND INSTALL DIFFUSERS WITH EQUALIZING GRIDS AND OPPOSED BLADE DAMPERS.
2. COORDINATE BORDERS WITH CEILING CONSTRUCTION.
3. WHERE 24X24 LAY IN CEILINGS ARE INSTALLED, AIR OUTLETS SHALL BE FULL TILE SIZE.
4. WHERE 12X12 LAY IN CEILINGS ARE INSTALLED, DIFFUSER SHOULD BE PANEL MOUNTED.
5. COORDINATE COLOR AND FINISH WITH ARCHITECT.
6. INSTALL RETURN GRILLES WITH OPPOSED BLADE DAMPERS
7. RETURN GRILLES SHALL BE INSTALLED INTO LAY IN CEILINGS.
8. RETURN GRILLES SHALL BE STEEL WITH ¾" SPACING.

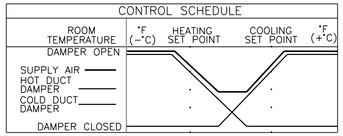
DUAL DUCT TERMINAL SCHEDULE — DESIGN BASIS: TITUS

UNIT NO.	INLET SIZE		CFM RANGE	AIR FLOW SETTING		MIN. STATIC PRESS. (IN. W.C.)	SOUND LEVEL AT MIN. S.P. (NC)	SOUND LEVEL AT MAX. S.P. (NC)	MANUFACTURER & MODEL NO.
	HOT	COLD		MIN. CFM	MAX. CFM				
DD-A	12	12	1790	1401	2000	1.0	30	36	TITUS DEDV3A290L1212



INSTALLATION NOTES:

1. VAV BOX INSTALLED BY MECHANICAL CONTRACTOR WITH 3 TO 5 STRAIGHT DUCT DIAMETERS UPSTREAM OF BOX TO PROVIDE PROPER FLOW SENSING
2. TEC-1 TO BE MOUNTED IN MANUFACTURER SUPPLIED CONTROLLER ENCLOSURE
3. COORDINATE WITH THE ELECTRICAL CONTRACTOR FOR POWER SUPPLY
4. MOUNT ACTUATOR WITH DAMPER IN FULL OPEN POSITION.
5. LOCATE AS SHOWN ON FLOOR PLANS/CONTRACT DOCUMENTS



DEVICE	SIEMENS		MANUFACTURER	DIVISION 23
	FITTER	ELEC.		
TTE-1		M,W	-	●
AE-1,2		M,W	-	●
TEC-1		M,W	-	●
LAN TRUNK		W	-	●
POWER (24VAC)		W	-	●

DUAL DUCT BOX CONTROL POINTS LIST

TYPE	NAME	DESCRIPTION	SIGNAL
AI	SPACE-T	SPACE TEMPERATURE	0-10 VDC
AI	SAF	SUPPLY AIR FLOW	0-10 VDC
AO	HADP	HOT AIR DAMPER POSITION	0-10 VDC
AO	CADP	COLD AIR DAMPER POSITION	0-10 VDC
AI	SAT	SUPPLY AIR TEMPERATURE	0-10 VDC

DUAL DUCT VAV CONTROLS DIAGRAM

NOT TO SCALE

PURCHASE COLLEGE
STATE UNIVERSITY OF NEW YORK
735 ANDERSON HILL RD.
PURCHASE, NY 10577-1400

Project Name:	Mailroom / Receiving Area Renovation Project
Project Number:	#SU-120814
Location:	Plaza Lower Level - Proposed Mailroom / Post Office / Receiving Area
Scale:	AS SHOWN
Date:	09/19/14
File Path:	Z:\1-Projects\Mailroom-Receiving Renovation\Drawings\PP_00-Opt10.dwg

NO.	REVISIONS | SUBMISSIONS	DATE
	ISSUED FOR BID	12.08.2014

MECHANICAL SCHEDULES AND CONTROLS DIAGRAM
M-300.00

HVAC SPECIFICATIONS

1. GENERAL

A. THE "GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION," AIA DOCUMENT A201, LATEST EDITION, AND THESE SPECIFICATIONS AS APPLICABLE ARE PART OF THIS CONTRACT.

B. ALL APPLICABLE CODES, LAWS AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK ARE HEREBY INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS, AND THEIR PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR WHO SHALL INFORM THE OWNER, PRIOR TO SUBMITTING A PROPOSAL, OF ANY WORK OR MATERIALS WHICH VIOLATE ANY OF THE ABOVE LAWS AND REGULATIONS. ANY WORK DONE BY THE CONTRACTOR CAUSING SUCH VIOLATION SHALL BE CORRECTED BY THE CONTRACTOR.

C. INVESTIGATE EACH SPACE THROUGH WITH EQUIPMENT MUST BE MOVED. WHERE NECESSARY, EQUIPMENT SHALL BE SHIPPED FROM MANUFACTURER IN SECTIONS OF SIZE SUITABLE FOR MOVING THROUGH AVAILABLE RESTRICTIVE SPACES. ASCERTAIN FROM OWNER AT WHAT TIMES OF DAY EQUIPMENT MAY BE MOVED THROUGH ALL AREAS, IF THERE ARE TIME RESTRICTIONS FOR RIGGING.

D. DUCTWORK IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL OFFSETS, DROPS AND RISES OF RUNS. THE CONTRACTOR SHALL ALLOW IN HIS PRICE FOR THE ROUTING OF DUCTWORK TO AVOID OBSTRUCTIONS. COORDINATION WITH THE EXISTING SERVICES, INCLUDING THOSE OF OTHER TRADES IS REQUIRED.

E. SUPPORT ALL DUCTWORK FROM BUILDING STRUCTURE AND/OR FRAMING IN AN APPROVED MANNER. WHERE OVERHEAD CONSTRUCTION DOES NOT PERMIT FASTENING OR SUPPORTS FOR EQUIPMENT, FURNISH ADDITIONAL FRAMING. INSERTS SHALL BE STEEL, SLOTTED TYPE AND FACTORY PAINTED. SINGLE ROD SHALL BE SIMILAR TO GRINNELL FIG. 281. MULTI-ROD SHALL BE SIMILAR TO FEE & MASON SERIES 9000 WITH END CAPS AND CLOSURE STRIPS. MAXIMUM LOADING INCLUDING DUCTWORK AND COVERING SHALL NOT EXCEED 75% OF RATED INSERT CAPABILITY. WHEN SUPPORTING FROM BUILDING USE BEAM CLAMPS IN APPROVED MANNER.

F. INSTALL WORK SO AS TO BE READILY ACCESSIBLE FOR OPERATION, MAINTENANCE AND REPAIR. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE TO ACCOMPLISH THIS, BUT CHANGES WHICH INVOLVE EXTRA COST SHALL NOT BE MADE WITHOUT APPROVAL.

G. REMOVAL AND RELOCATION OF CERTAIN EXISTING WORK WILL BE NECESSARY FOR THE PERFORMANCE OF THE GENERAL WORK. ALL EXISTING CONDITIONS CANNOT BE COMPLETELY DETAILED ON THE DRAWINGS. THE CONTRACTOR SHALL SURVEY THE SITE AND INCLUDE ALL CHANGES IN MAKING UP THE WORK PROPOSAL.

H. PLAN INSTALLATION OF NEW WORK AND CONNECTIONS TO EXISTING WORK TO INSURE MINIMUM INTERFERENCE WITH REGULAR OPERATION OF EXISTING FACILITIES. ALL SYSTEM SHUTDOWNS AFFECTING OTHER AREAS SHALL BE COORDINATED WITH BUILDING OWNER. PROVIDE TEMPORARY DUCT CAPS AND/OR CONNECTIONS TO MINIMIZE SHUTDOWN TIME.

I. CONNECT NEW WORK TO EXISTING WORK IN NEAT AND APPROVED MANNER. RESTORE EXISTING WORK DISTURBED WHILE INSTALLING NEW WORK TO ACCEPTABLE CONDITION AS DETERMINED BY ARCHITECT.

J. DISCONNECT, REMOVE AND/OR RELOCATE EXISTING MATERIAL, EQUIPMENT AND OTHER WORK AS NOTED OR REQUIRED FOR PROPER INSTALLATION OF NEW SYSTEM.

K. THE CONTRACTOR SHALL KEEP ALL EQUIPMENT AND MATERIALS, AND ALL PARTS OF THE BUILDING, EXTERIOR SPACES AND ADJACENT STREETS, SIDEWALKS AND PAVEMENTS, FREE FROM MATERIAL AND DEBRIS RESULTING FROM THE EXECUTION OF THIS WORK. EXCESS MATERIALS WILL NOT BE PERMITTED TO ACCUMULATE EITHER ON THE INTERIOR OR THE EXTERIOR.

L. SEAL OPENINGS AROUND DUCTS THROUGH PARTITIONS AND WALLS WITH MINERAL WOOL OR OTHER NONCOMBUSTIBLE MATERIAL.

M. ALL PRESENT MATERIAL, EQUIPMENT AND CONSTRUCTION DEBRIS TO BE REMOVED UNDER THIS CONTRACT SHALL BECOME THE PROPERTY OF THE CONTRACTOR WITH THE EXCEPTION OF SPECIFIC EQUIPMENT AND APPARATUS REQUESTED BY THE OWNER'S REPRESENTATIVE, OR AS NOTED TO BE RELOCATED ON THE DRAWINGS SHALL BE PROPERLY DISPOSED OF BY THIS CONTRACTOR.

N. MATERIALS AND WORKMANSHIP, UNLESS OTHERWISE NOTED, SHALL BE IN ACCORDANCE WITH THE OWNER'S BUILDING STANDARDS.

O. THE WORK IN THE BUILDING SHALL BE DONE WHEN AND AS DIRECTED, AND IN A MANNER SATISFACTORY TO THE OWNER. THE WORK SHALL BE PERFORMED SO AS TO CAUSE THE LEAST POSSIBLE INCONVENIENCE AND DISTURBANCE TO THE PRESENT OCCUPANTS.

P. THE CONTRACTOR'S PROPOSAL FOR ALL WORK SHALL BE PREDICATED ON THE PERFORMANCE OF THE WORK DURING REGULAR WORKING HOURS. WHEN SO DIRECTED, HOWEVER, THE CONTRACTOR SHALL INSTALL WORK IN OVERTIME AND THE ADDITIONAL COST TO BE CHARGED THEREFORE SHALL BE ONLY THE "PREMIUM" PORTION OF THE WAGES PAID.

Q. UNLESS OTHERWISE SPECIFICALLY NOTED, INCLUDE ALL CUTTING AND PATCHING OF EXISTING FLOORS, WALLS, PARTITIONS AND OTHER MATERIALS IN THE EXISTING BUILDING. THE CONTRACTOR SHALL RESTORE THESE AREAS TO ORIGINAL CONDITION.

R. REMOVABLE ACCESS TILE AND/OR ACCESS DOOR ARE REQUIRED IN HUNG CEILINGS AND WALLS FOR ALL VOLUME AND FIRE DAMPERS, AUTOMATIC DAMPERS AND ALL OTHER MECHANICAL EQUIPMENT AND DEVICES. THE HVAC CONTRACTOR SHALL FURNISH ACCESS LOCATION REQUIREMENTS TO GENERAL CONTRACTOR. ACCESS TILE IDENTIFICATION: PROVIDE BUTTONS, TABS, AND MARKERS TO IDENTIFY LOCATION OF CONCEALED DAMPERS AND EQUIPMENT.

S. ALL MATERIAL AND EQUIPMENT TO BE NEW UNLESS OTHERWISE NOTED AND SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS.

T. SUBMISSION OF A PROPOSAL SHALL BE CONSTRUED AS EVIDENCE THAT A CAREFUL EXAMINATION OF THE PORTIONS OF THE EXISTING BUILDING, EQUIPMENT, ETC., WHICH AFFECT THIS WORK, AND THE ACCESS TO SUCH SPACES, HAS BEEN MADE AND THAT THE CONTRACTOR IS FAMILIAR WITH EXISTING CONDITIONS AND DIFFICULTIES THAT WILL AFFECT THE EXECUTION OF THE WORK. LATER CLAIMS SHALL NOT BE MADE FOR LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN DURING SUCH AN EXAMINATION. THE ON-SITE INSPECTION SHALL VERIFY EXISTING DUCTWORK, PIPING (SIZES, CLEARANCES, ETC) AND CONDITIONS.

U. INSURANCE SHALL BE IN ACCORDANCE WITH THE OWNER'S REQUIREMENTS AND SHALL INCLUDE A HOLD HARMLESS CLAUSE FOR OWNER AND ENGINEER.

V. THE FINAL ACCEPTANCE WILL BE MADE AFTER THE CONTRACTOR HAS ADJUSTED HIS EQUIPMENT, BALANCED THE VARIOUS SYSTEMS, DEMONSTRATED THAT IT FULFILLS THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS AND HAS FURNISHED ALL THE REQUIRED CERTIFICATES OF INSPECTION AND APPROVAL.

W. SPECIFICATIONS ARE OF SIMPLIFIED FORM AND INCLUDE INCOMPLETE SENTENCES. WORDS OR PHRASES SUCH AS "THE CONTRACTOR SHALL," "SHALL BE," "FURNISH," "PROVIDE," "A," "THE," AND "ALL" HAVE BEEN OMITTED FOR BREVITY.

X. DEFINITIONS:

1) "PROVIDE": TO SUPPLY, INSTALL AND CONNECT UP COMPLETE AND READY FOR SAFE AND REGULAR OPERATION THE PARTICULAR WORK REFERRED TO UNLESS SPECIFICALLY OTHERWISE NOTED.

2) "INSTALL": TO ERECT, MOUNT AND CONNECT COMPLETE WITH RELATED ACCESSORIES.

3) "FURNISH" OR "SUPPLY": TO PURCHASE, PROCURE, ACQUIRE AND DELIVER COMPLETE WITH RELATED ACCESSORIES.

4) "WORK": LABOR, MATERIALS, EQUIPMENT, APPARATUS, CONTROLS, ACCESSORIES AND OTHER ITEMS REQUIRED FOR PROPER AND COMPLETE INSTALLATION.

5) "CONCEALED": EMBEDDED IN MASONRY OR OTHER CONSTRUCTION, INSTALLED IN FURRED SPACES, WITHIN DOUBLE PARTITIONS OR HUNG CEILINGS, IN TRENCHES, IN CRAWL SPACES, OR IN ENCLOSURES.

6) "EXPOSED": NOT INSTALLED UNDERGROUND OR "CONCEALED" AS DEFINED ABOVE.

7) "SIMILAR" OR "EQUAL": EQUAL IN MATERIALS, WEIGHT, SIZE, DESIGN AND EFFICIENCY OF SPECIFIED PRODUCT.

2. SCOPE OF WORK

A. THE WORK UNDER CONTRACT INCLUDES ALL LABOR, MATERIALS AND APPLIANCES NECESSARY FOR THE FURNISHING, INSTALLING AND TESTING, COMPLETE AND READY FOR SAFE OPERATION OF THE SYSTEMS. WORK SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER.

B. THE CONTRACTOR SHALL GIVE NECESSARY NOTICE, FILE DRAWINGS AND SPECIFICATIONS WITH THE DEPARTMENT HAVING JURISDICTION, OBTAIN PERMITS OR LICENSES NECESSARY TO CARRY OUT THIS WORK AND PAY ALL FEES THEREFORE. THE CONTRACTOR SHALL ARRANGE FOR INSPECTION AND TESTS OF ANY OR ALL PARTS OF THE WORK IF SO REQUIRED BY AUTHORITIES AND PAY ALL CHARGES FOR SAME. THE CONTRACTOR SHALL PAY ALL COSTS FOR, AND FURNISH TO THE OWNER BEFORE FINAL BILLING, ALL CERTIFICATES NECESSARY AS EVIDENCE THAT THE WORK INSTALLED CONFORMS WITH ALL REGULATIONS WHERE THEY APPLY TO THIS WORK.

C. THE CONTRACTOR SHALL FURNISH A WRITTEN GUARANTEE TO REPLACE OR REPAIR PROMPTLY AND ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED FOR ANY WORKMANSHIP AND EQUIPMENT IN WHICH DEFECTS DEVELOP WITHIN ONE YEAR FROM THE DATE OF FINAL CERTIFICATE FOR PAYMENT AND/OR FROM DATE OF ACTUAL USE OF EQUIPMENT OR OCCUPANCY OF SPACES, BY OWNER, INCLUDED UNDER THE VARIOUS PARTS OF THE WORK, WHICHEVER DATE IS EARLIER. THIS WORK SHALL BE DONE AS DIRECTED BY THE OWNER. THIS GUARANTEE SHALL ALSO PROVIDE THAT WHERE DEFECTS OCCUR, THE CONTRACTOR WILL ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED IN REPAIRING AND REPLACING WORK OF OTHER TRADES AFFECTED BY DEFECTS, REPAIRS OR REPLACEMENTS IN EQUIPMENT SUPPLIED BY THE CONTRACTOR.

D. CONTROLLED INSPECTION BY A LICENSED PROFESSIONAL ENGINEER TO BE HIRED BY THE OWNER.

E. PRIOR TO THE INSTALLATION OF ANY WORK AND PROCUREMENT OF EQUIPMENT PROVIDE COMPLETE SET OF COORDINATED SHOP DRAWINGS OF ALL NEW AND EXISTING EQUIPMENT, DUCTWORK, PIPING AND CONTROL SYSTEMS INDICATING CAPACITY DIMENSIONS AND SEQUENCE OF OPERATION FOR WRITTEN APPROVAL BY THE ENGINEER.

3. SHOP DRAWINGS

A. INDICATE ON EACH SUBMISSION: PROJECT NAME AND LOCATION, OWNER / ARCHITECT AND ENGINEER, ITEM IDENTIFICATION AND APPROVAL STAMP OF PRIME CONTRACTOR.

B. SUBMISSIONS:

1) SUBMISSIONS 11 IN. X 17 IN. OR SMALLER: IF THE SUBMISSION IS A CATALOG CUT, THE CONTRACTOR SHALL SUBMIT AN ELECTRONIC COPY TO THE ENGINEER WITH A COPY TO THE OWNER / ARCHITECT. ALL CATALOG CUTS SHALL BE COMPLETE.

2) SUBMISSIONS LARGER THAN 11 IN. X 17 IN.: SUBMIT AN ELECTRONIC PRINT TO THE ENGINEER AND COPY TO THE OWNER / ARCHITECT.

C. SUBMIT SHOP DRAWINGS FOR THE FOLLOWING:

1) DUCTWORK LAYOUT AND SHEET METAL DESIGNS.

2) DUCT INSULATION

3) DUAL DUCT AIR TERMINAL UNITS

4) VIBRATION ISOLATION.

5) AIR OUTLETS AND INLETS

6) BALANCING DAMPERS

7) AIR BALANCE REPORT

8) AUTOMATIC CONTROL SYSTEMS AND DEVICES

9) OPERATING SEQUENCES.

4. AS-BUILT DRAWINGS AND EQUIPMENT OPERATING INSTRUCTIONS

A. ON COMPLETION AND ACCEPTANCE OF WORK, THIS CONTRACTOR SHALL FURNISH WRITTEN INSTRUCTIONS, EQUIPMENT MANUALS AND DEMONSTRATE TO THE OWNER THE PROPER OPERATION AND MAINTENANCE OF ALL EQUIPMENT AND APPARATUS FURNISHED UNDER THIS CONTRACT.

B. THESE INSTRUCTIONS SHALL BE TYPED ON 8-1/2 IN. X 11 IN. PAPER AND BOUND IN THREE-RING BINDERS WITH CLEAR ACETATE COVERS. THE CONTRACTOR SHALL GIVE THREE COPIES OF THE INSTRUCTIONS TO THE OWNER AND ONE COPY TO THE ENGINEER.

C. THE INSTRUCTION BOOKLET SHALL BE ORGANIZED IN SECTIONS, WITH ONE SECTION PER SYSTEM. THE COVER OF THE INSTRUCTION BOOKLET SHALL BEAR THE NAME, ADDRESS AND PHONE NUMBER OF THE PROJECT, OWNER / ARCHITECT, ENGINEER, MECHANICAL CONTRACTOR AND SUBCONTRACTORS.

D. REPRODUCIBLE "AS-BUILT" DRAWINGS INDICATING AS-INSTALLED CONDITIONS SHALL BE PROVIDED TO THE OWNER AFTER COMPLETION OF THE INSTALLATION.

5. SHEET METAL WORK

A. EXCEPT AS OTHERWISE SHOWN OR NOTED, ALL DUCTWORK AND OTHER SHEET METAL WORK SHALL BE GALVANIZED SHEET STEEL AND SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION, INC. DUCT CONSTRUCTION STANDARDS, PRESSURE CLASSIFICATION 2 IN. W.G.

B. VOLUME DAMPERS: GALVANIZED STEEL, PER SMACNA "LOW VELOCITY MANUAL," EXCEPT PROVIDE BEARING AT ONE END OF DAMPER ROD AND QUADRANT, WITH LEVER AND LOCK SCREW AT OTHER END. FOR INSULATED DUCTS, QUADRANTS MOUNTED ON COLLAR TO CLEAR INSULATION. INSTALL WITH LEVERS ACCESSIBLE.

C. ACCESS DOORS: INSULATED OR UNINSULATED, SAME AS DUCT.

1) PROVIDE MINIMUM 20 IN. X 14 IN. ON MAIN DUCTS, AND 12 IN. X 6 IN. ON BRANCH DUCTS, UNLESS OTHERWISE APPROVED, AT FIRE DAMPERS, AND AT ALL DUCT ACCESSORIES SUCH AS HUMIDIFIERS, DUCT SMOKE DETECTORS, AUTO DAMPERS, AND LOUVERS.

2) ALL ACCESS DOORS TO BE HINGED, WITH LATCH SIMILAR TO VENTLOCK NO. 100.

D. FLEXIBLE CONNECTIONS: NEOPRENE-COATED GLASS FABRIC, 30 OZ PER SQ YD WITH SEWED AND CEMENTED SEAMS, SIMILAR TO VENT FABRICS. PROVIDE WITH METAL COLLARS. ALLOW MINIMUM MOVEMENT OF 1 IN.

E. TURNING VANES: GALVANIZED STEEL SMALL DOUBLE-THICKNESS VANES WITH 2 IN. INSIDE RADIUS.

F. FIRE DAMPERS: UL LISTED, GALVANIZED STEEL CONSTRUCTION, MULTI-BLADED TYPE, SPRING LOADED, EQUIPPED WITH FUSIBLE LINK, CONFORMING TO NFPA STANDARD 90A . SIMILAR TO GREENHECK, MODEL DFD, RATED AS REQUIRED.

G. ALL DUCT DIMENSIONS INDICATED ON PLANS ARE INSIDE CLEAR DIMENSIONS.

H. AUTOMATIC DAMPERS: COMPLETE WITH LINKAGE AND ELECTRIC OPERATOR. OPPOSED BLADE DAMPER OR GALVANIZED STEEL MIN. 4 IN., MAX. 8 IN. WIDE WITH COMPRESSIBLE EDGE SEALS TO PREVENT LEAKAGE. FACTORY-ASSEMBLE STEEL LINKAGE AND SHAFT WITH NYLON OR OIL-IMPREGNATED BRONZE BEARINGS. MOTOR WITH SUFFICIENT POWER TO LIMIT LEAKAGE TO 10 CFM PER SQ FT. LINKAGE TO WITHSTAND LOAD EQUAL TO TWICE MAXIMUM OPERATING FORCE WITHOUT DEFLECTION. DAMPER MOUNTED IN WELDED STEEL CHANNEL FRAME.

I. WIRE MESH SCREEN (WMS): NO. 16 USSG, 3/4 SQUARE MESH, IN 1 IN. WIDE GALVANIZED STEEL ENCLOSING FRAME. FLANGED DUCT OPENING TO RECEIVE FRAME.

J. LOW PRESSURE FLEXIBLE DUCT: SHALL BE A FACTORY FABRICATED HIGH TEMPERATURE COPOLYMER IMPREGNATED GLASS FABRIC, LOCKED TO COLD ROLLED FLAT STEEL SPIRAL. SIMILAR TO WIREMOLD 57. MAXIMUM INSTALLED LENGTH SHALL NOT EXCEED 18 IN.

6. AIR OUTLETS

A. GENERAL:

1) MARGIN TYPES, COLORS, FINISH AND METHODS OF ATTACHMENT FOR ALL DIFFUSERS, GRILLES AND REGISTERS SHALL BE COORDINATED WITH ARCHITECTURAL CEILING AND WALL DETAILS AND SPECIFICATIONS.

2) FRAME TYPE SUITABLE FOR MOUNTING IN CEILING OR WALL CONSTRUCTION AS INDICATED ON ARCHITECTURAL PLANS.

3) EXACT LOCATION OF ALL AIR OUTLETS AS PER ARCHITECTURAL PLANS.

4) SUITABLE FOR OPERATION AT 20% EXCESS AND 60% LESS THAN NOTED CAPACITY FOR VARIABLE VOLUME SYSTEMS. MANUFACTURER RESPONSIBLE FOR EXAMINING APPLICATION OF EACH OUTLET AND GUARANTEE THAT EACH WILL PROVIDE REQUIRED NC LEVELS AND COMFORT SPACE CONDITIONS WITHOUT DRAFTS THROUGHOUT OPERATING RANGE.

5) ALL REGISTERS AND DIFFUSERS SHALL BE PROVIDED WITH OPPOSED BLADE VOLUME DAMPERS. DAMPER OPERATING LEVERS SHALL BE ACCESSIBLE AT THE FACE OF AIR OUTLETS.

B. SQUARE DIFFUSERS: DIFFUSERS SHALL BE STEEL CONSTRUCTION PAINTED WHITE, SIMILAR TO TITUS MODEL TMSA SUITABLE FOR THE TYPE OF CEILING.

C. REGISTERS AND GRILLES:

1) RETURN GRILLES: STEEL CONSTRUCTION WITH VOLUME DAMPER. SIMILAR TO TITUS 350 RL OR RS.

2) TRANSFER GRILLES: STEEL CONSTRUCTION WITHOUT VOLUME DAMPER. SIMILAR TO TITUS 23-RL.

7. NOISE CONTROL

A. ALL ROOM NC LEVELS SHALL BE 35 OR LESS.

B. PROVIDE SOUND-LINING FOR THE FOLLOWING DUCTWORK:

1) ALL DUCTWORK DOWNSTREAM OF AIR TERMINAL UNITS FOR A MINIMUM OF 15 LF..

2) AIR TRANSFER DUCTS.

3) ALSO WHERE NOTED ON A DRAWING.

C. SOUND-LINING IN DUCTWORK: FIBROUS GLASS, MINIMUM 3 LB DENSITY, 1 IN. THICKNESS, MAXIMUM 0.25 K FACTOR AT 75 DEG F MEAN TEMPERATURE WITH ACRYLIC COATED FINISH FACTORY APPLIED EDGE COATING AND STENCILED IN ACCORDANCE WITH NFPA 90. FLAME SPREAD SHALL BE A MAXIMUM OF 25. LINING SHALL NOT SUPPORT MICROBIAL GROWTH AND SHALL BE TESTED IN ACCORDANCE WITH ASTM C 1071 AND ASTM G21/G22. SIMILAR TO MANVILLE PERMACOTE LINA COUSTIC.

D. ALL SOUND-LINING, ADHESIVES, FACES AND ACCESSORIES TO BE APPLIED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, EXCEPT AS OTHERWISE NOTED.

8. TESTING AND BALANCING

A. AIR BALANCING SHALL BE ACCOMPLISHED BY ADJUSTMENT OF FANS AND BRANCH DAMPERS FOR MAJOR ADJUSTMENTS. ADJUSTMENT OF TERMINAL DAMPERS AND DEVICES SHALL BE FOR TRIM OR MINOR ADJUSTMENT ONLY. THIS SHALL BE DONE TO PERMIT THE LEAST NOISE GENERATION IN THE TERMINAL AREAS AND UTILIZE MINIMUM FAN ENERGY.

B. UPON COMPLETION OF THE INSTALLATION, THE CONTRACTOR SHALL REBALANCE ANY EXISTING PORTIONS OF AIR DISTRIBUTION SYSTEM AFFECTED BY THE RENOVATION AND ALSO BALANCE ALL NEW WORK.

C. THE CONTRACTOR SHALL PROVIDE ALL LABOR, PRESSURE GAUGES, FLOW METERS, SHEAVES, AND BELTS REQUIRED TO BALANCE SYSTEMS.

D. BALANCING REPORT SHALL BE PROVIDED ON AABC-TYPE FORMS.

E. AIR TERMINAL UNITS SHALL BE BALANCED TO WITHIN +5% OF THEIR DESIGN CAPACITIES. ALL OTHER AIR QUANTITIES SHALL BE BALANCED TO WITHIN +10% OF THE DESIGN QUANTITIES.

F. BALANCING AND TESTING SHALL BE PERFORMED AND SUPERVISED BY ONE OF THE FOLLOWING INDEPENDENT FIRMS SPECIALIZING IN TESTING AND BALANCING:

1) D. L. FLOWTECH

2) AIR PERFECT TESTING AND BALANCING

3) PRECISION TESTING AND BALANCING, INC.

4) MERENDINO ASSOCIATES TESTING AND BALANCING

G. THE PERFORMANCE AND CAPACITY OF ALL SYSTEMS AND EQUIPMENT TO BE DEMONSTRATED BY THE CONTRACTOR.

9. INSULATION – GENERAL REQUIREMENTS

A. ALL INSULATION MATERIALS, INCLUDING JACKETS, FACING, ADHESIVE, COATINGS, AND ACCESSORIES ARE TO BE FIRE HAZARD RATED AND LISTED BY UNDERWRITERS LABORATORIES, INC. USING STEINER TUNNEL TEST METHOD FOR FIRE HAZARD CLASSIFICATION OF BUILDING MATERIALS, STANDARD UL 723 (ASTM E-84), (ASA A2.5-1963). FLAME SPREAD: MAXIMUM 25. FUEL CONTRIBUTED AND SMOKE DEVELOPED: MAXIMUM 50. FLAME-PROOFING TREATMENTS SUBJECT TO DETERIORATION FROM MOISTURE OR HUMIDITY ARE NOT ACCEPTABLE.

B. DEFINITIONS:

1) EXPOSED: INDOOR DUCTS OR EQUIPMENT LOCATED IN MECHANICAL EQUIPMENT ROOMS AND IN AREAS WHICH WILL BE VISIBLE WITHOUT REMOVING CEILINGS OR OPENING ACCESS PANELS.

2) CONCEALED: INDOOR DUCTS OR EQUIPMENT WHICH IS NOT EXPOSED.

10. DUCTWORK INSULATION

A. INSULATE ALL DUCTWORK IN ACCORDANCE WITH INSULATION SCHEDULE EXCEPT AS OTHERWISE NOTED.

INSULATION SCHEDULE – DUCTWORK

SERVICE	LOCATION	THICKNESS	MATERIAL	FINISH
SUPPLY / RETURN	CONCEALED	1"	D-1	VAPORSEAL
SUPPLY / RETURN	EXPOSED	1"	D-2	VAPORSEAL

B. REINSULATE ALL DUCTWORK AND PIPING WHICH IS EXISTING AND DAMAGED DURING CONSTRUCTION OR SHOWN OR REQUIRED TO BE RELOCATED. INSULATE WITH SAME MATERIAL AND THICKNESS.

C. NON-INSULATED DUCTWORK:

1) WHERE SOUND LINING IS OF MINIMUM THICKNESS SPECIFIED FOR INSULATION.

2) EXPOSED AIR CONDITIONING SUPPLY AIR DUCTWORK.

3) AIR CONDITIONING RETURN AIR DUCTWORK EXPOSED IN AIR CONDITIONED SPACES AND INSTALLED IN HUNG CEILINGS WHERE SPACE IMMEDIATELY ABOVE AND BELOW ARE BOTH AIR CONDITIONED.

D. MATERIAL:

1) TYPE D-1: MINIMUM 1-LB DENSITY FIBERGLASS BLANKET, MAXIMUM 0.28 K-FACTOR AT 75 DEG F MEAN TEMPERATURE WITH FACTORY-APPLIED FOIL-SKRIM-KRAFT FACING SIMILAR TO MANVILLE MICROLITE.

2) TYPE D-2: 3 LB. FIBERGLASS BOARD. THE MAXIMUM K FACTOR SHALL BE 0.23 AT 75 DEG F MEAN TEMPERATURE WITH A MINIMUM DENSITY OF 3 LB. THE INSULATION SHALL BE PROVIDED WITH A FACTORY-APPLIED ALL PURPOSE OR ALL SERVICE FACING. THE INSULATION SHALL BE EQUAL TO MANVILLE TYPE 814 SPIN-GLAS AP.

E. INSTALLATION:

1) FIBERGLASS BLANKET: 2 IN. LAP STRIPS AT ALL SEAMS. SECURE BOTTOM OF ALL DUCTS OVER 24 IN. WIDE WITH MIN. 2 ROWS OF WELD PINS 12 IN. ON CENTER. SECURE ALL SEAMS WITH FOIL VAPOR BARRIER TAPE AND VAPOR SEAL ADHESIVE.

2) FIBERGLASS BOARD: SEAL JOINTS AND BREAKS IN FACING WITH 3 IN. WIDE TAPE TO MATCH FACING AND ADHERE WITH VAPOR SEAL ADHESIVE. APPLY 5 IN. WIDE TAPE AT CORNERS, WELD PINS ON TOP, SIDES AND BOTTOM.

F. INSTALLATION:

1) BEFORE APPLYING INSULATION ALL PRESSURE AND LEAK TESTS SHALL BE COMPLETED AND APPROVED.

2) ALL INSULATION SHALL BE BUTTED FIRMLY TOGETHER. PROVIDE 2 IN. LAMP STRIPS AT ALL SEAMS SECURED WITH ADHESIVE. USE VAPOR BARRIER TAPE AND VAPORSEAL ADHESIVE WHERE REQUIRED. STAPLES NOT PERMITTED. REFRIGERANT PIPING INSULATION SHALL HAVE MITERED FITTINGS.

11. VIBRATION ISOLATION

A. GENERAL:

1) PROVIDE ISOLATION FOR EQUIPMENT AND DUCTWORK.

2) INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

3) PROVIDE LEVELING DEVICES AND APPROVED RESILIENT RESTRAINING DEVICES AS REQUIRED TO LIMIT EQUIPMENT MOTION IN EXCESS OF 1/4 IN.

4) ACCEPTABLE MANUFACTURERS:

a. MASON INDUSTRIES, INC.

b. VIBRATION ELIMINATOR CO.

c. KINETICS NOISE CONTROL

B. CEILING-HUNG EQUIPMENT:

1) PROVIDE SPRING HANGER ROD ISOLATORS. STEEL COMPRESSION SPRING AND NEOPRENE SOUND PAD WITHIN A STEEL RETAINER BOX. SIMILAR TO MASON TYPE PCHS.

2) 1 IN. MINIMUM STATIC DEFLECTION. 1/2 IN. MINIMUM RESERVE DEFLECTION. FACTORY-PRELOADED TO 75% OF RATED LOAD.

3) PROVIDE SUPPLEMENTAL STEEL AS REQUIRED WHERE EQUIPMENT OR STRUCTURE CANNOT SUPPORT POINT LOADS.

12. EQUIPMENT

A. DUAL DUCT AIR TERMINAL:

1) ACCEPTABLE MANUFACTURERS:

a. TITUS, MODEL DEDV WITH INTEGRAL MIXER / ATTENUATOR

b. ANEMOSTAT

c. PRICE

2) GENERAL

a. FURNISH AND INSTALL DUAL DUCT PRESSURE INDEPENDENT VARIABLE AIR VOLUME TERMINALS WITH INTEGRAL MIXER / ATTENUATOR OF THE SIZES AND CAPACITIES SHOWN IN THE PLANS. DIRECT DIGITAL CONTROLS SHALL BE FIELD INSTALLED BY THE CONTROLS CONTRACTOR.

b. TERMINALS SHALL BE CERTIFIED UNDER THE ARI STANDARD 880 CERTIFICATION PROGRAM AND CARRY THE ARI SEAL. NONCERTIFIED TERMINALS MAY BE SUBMITTED AFTER TESTING AT AN INDEPENDENT TESTING LABORATORY UNDER CONDITIONS SELECTED BY THE ENGINEER IN FULL COMPLIANCE WITH ARI STANDARD 880. THESE TESTS MUST BE WITNESSED BY THE ENGINEER WITH ALL COSTS TO BE BORNE BY THE TERMINAL UNIT MANUFACTURER. TESTING DOES NOT ENSURE ACCEPTANCE.

3) CONSTRUCTION

a. THE TERMINAL CASING SHALL BE MINIMUM 22-GAUGE GALVANIZED STEEL, INTERNALLY LINED WITH ENGINEERED POLYMER FOAM INSULATION WHICH COMPLIES TO UL181 AND NFPA 90A. INSULATION SHALL BE 1½ POUND DENSITY, CLOSED CELL FOAM. EXPOSED FIBERGLASS IS NOT ACCEPTABLE. THE INSULATION SHALL BE MECHANICALLY FASTENED TO THE UNIT CASING. THE CASING SHALL BE CONSTRUCTED TO HOLD LEAKAGE TO THE MAXIMUM VALUES SHOWN IN THE CASING LEAKAGE TABLE.

b. EACH TERMINAL SHALL INCLUDE A MIXER-ATTENUATOR SECTION AS AN INTEGRAL PART OF THE TERMINAL TO MINIMIZE DOWNSTREAM STRATIFICATION. THE TERMINAL SHALL PROVIDE LESS THAN 2°F DISCHARGE TEMPERATURE VARIATION WITH A 20° DIFFERENTIAL IN INLET TEMPERATURE.

c. COOLING AND HEATING INLETS SHALL HAVE SEPARATE DAMPER ASSEMBLIES FOR COMPLETE PRESSURE INDEPENDENT CONTROL OF EACH AIRSTREAM FOR VARIABLE VOLUME TOTAL DISCHARGE APPLICATIONS. TERMINALS WITH INLET DAMPERS MECHANICALLY INTERCONNECTED ARE NOT ACCEPTABLE. THE DAMPERS SHALL BE HEAVY GAUGE STEEL WITH SOLID SHAFT ROTATING IN SELF-LUBRICATING BEARINGS. NYLON BEARINGS ARE NOT ACCEPTABLE. THE SHAFT SHALL BE CLEARLY MARKED ON THE END TO INDICATE DAMPER POSITION. STICKERS OR OTHER REMOVABLE MARKINGS ARE NOT ACCEPTABLE. THE DAMPER SHALL INCORPORATE A MECHANICAL STOP TO PREVENT OVER-STROKING AND A SYNTHETIC SEAL TO LIMIT CLOSE-OFF LEAKAGE TO THE MAXIMUM VALUES SHOWN IN THE DAMPER LEAKAGE TABLE.

d. ACTUATORS SHALL BE CAPABLE OF SUPPLYING AT LEAST 35 INCHES PER POUND OF TORQUE TO THE DAMPER SHAFT AND SHALL BE MOUNTED EXTERNALLY FOR SERVICE ACCESS. TERMINALS WITH INTERNAL ACTUATOR MOUNTING OR LINKAGE CONNECTION MUST INCLUDE A GASKETED ACCESS PANEL, REMOVABLE WITHOUT DISTURBING DUCTWORK. CASING WITH ACCESS PANEL SHALL BE CONSTRUCTED TO HOLD LEAKAGE TO THE MAXIMUM VALUES SHOWN IN THE CASING LEAKAGE TABLE.

e. SOUND RATINGS FOR THE TERMINAL SHALL NOT EXCEED NC 30 AT 1" WC STATIC PRESSURE. SOUND PERFORMANCE SHALL BE ARI CERTIFIED.

13. AUTOMATIC CONTROLS – GENERAL REQUIREMENTS

A. FURNISH AND INSTALL A COMPLETE DIRECT DIGITAL CONTROL (DDC) SYSTEM TO PROVIDE TEMPERATURE CONTROL AS SPECIFIED UNDER THE SEQUENCE OF OPERATION.

B. WORK SHALL INCLUDE ALL INDICATED CONTROL POINTS, GRAPHICS, WIRING, CONTROL EQUIPMENT, 120 V TO 24 VOLT TRANSFORMER, AND ACCESSORIES NECESSARY TO MAKE THIS SYSTEM COMPLETE. ALL WIRING SHALL BE 24 VOLT. ALL DIRECT DIGITAL CONTROL DEVICES SHALL BE FIELD INSTALLED BY THE CONTROLS CONTRACTOR.

C. CONTROLS CONTRACTOR SHALL CONNECT THE NEW MAILROOM HVAC SYSTEM TO THE CAMPUS ENERGY MANAGEMENT SYSTEM TO ALLOW REMOTE MONITORING AND CONTROL CAPABILITY FROM THE REMOTE HEAD: END LOCATED AT THE CENTRAL HEATING PLANT FACILITY. THE CONNECTION TO THE CAMPUS NETWORK SHALL OCCUR AT THE EXISTING SIEMENS PANEL LOCATED IN THE NORTHEAST MECHANICAL ROOM.

D. ACCEPTABLE MANUFACTURERS:

3) SIEMENS.

E. SEQUENCE OF OPERATION:

1) DUAL DUCT AIR TERMINALS:

a. THE DUAL DUCT VARIABLE VOLUME (DDVAV) TERMINAL UNIT IS CONTROLLED INDEPENDENT OF SYSTEM PRESSURE FLUCTUATIONS BY AN APPLICATION SPECIFIC DDC CONTROLLER USING ELECTRIC ACTUATION. THE SPACE SERVED BY THE DUAL DUCT VARIABLE AIR VOLUME TERMINAL UNIT IS CONTROLLED IN OCCUPIED AND UNOCCUPIED MODES AS FOLLOWS:

b. OCCUPIED
THE VAV TERMINAL UNIT IS CONTROLLED WITHIN USER DEFINED MAXIMUM AND MINIMUM SUPPLY AIR VOLUME SETTINGS. THE CONTROLLER MONITORS THE SPACE TEMPERATURE AND HOT AND COLD DUCT AIR VELOCITY SENSORS AND MODULATES THE HOT DUCT AND COLD DUCT DAMPERS IN SEQUENCE TO MAINTAIN THE ROOM TEMPERATURE AT THE OCCUPIED SET POINT.

c. UNOCCUPIED
THE TERMINAL UNIT IS CONTROLLED USING THE UNOCCUPIED SET POINT. THE CONTROLLER MAY RESET TO THE OCCUPIED MODE FOR A PREDETERMINED TIME PERIOD UPON A SIGNAL FROM THE CONTROL SYSTEM.

END OF SECTION

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Project Name:	Mailroom / Receiving Area Renovation Project
Project Number:	#SU-120814
Location:	Plaza Lower Level - Proposed Mailroom / Post Office / Receiving Area
Scale:	AS SHOWN
Date:	09/19/14
File Path:	Z:\1-Projects\Mailroom-Receiving Renovation\Drawings\PP_00-Opt10.dwg

NO.	REVISIONS | SUBMISSIONS	DATE
	ISSUED FOR BID	12.08.2014

MECHANICAL SPECIFICATIONS
M-400.00

SYMBOLS LIST

$	SINGLE POLE WALL SWITCH RATED AT 20AMP, 120 VOLT. LOWERCASE LETTER INDICATES SWITCHING CONTROL.
$3	SINGLE POLE SWITCH 2=DOUBLE POLE 3=THREE-WAY 4=FOUR-WAY a=CONTROLLING OUTLET OR FIXTURE "a" D=DIMMER K=KEY OPERATED P=WITH PILOT LIGHT M=MOMENTARY CONTACT
EM	DUPLEX RECEPTACLE RATED AT 20-AMPS 120 VOLTS. C= IN CEILING F= UNDER RAISED FLOOR EM= EMERGENCY CL= CLEANING AC = ABOVE COUNTER
	GROUND FAULT INTERRUPTED WALL DUPLEX RECEPTACLE RATED AT 20-AMPS 120 VOLTS.
	WALL DOUBLE DUPLEX EACH RECEPTACLE RATED AT 20-AMPS 120 VOLTS. N ONE 4"X4" BOX
	COMBINATION VOICE/DATA OUTLET BOX. PROVIDE (1) 1" EMT CONDUIT FROM OUTLET BOX TO TELEPHONE CLOSET. U.O.N.
J	CEILING MOUNTED JUNCTION BOX (J-BOX) WITH HOMERUN CIRCUIT AND FLEXIBLE CONNECTION TO EQUIPMENT.
J	WALL MOUNTED JUNCTION BOX (J-BOX) WITH HOMERUN CIRCUIT AND FLEXIBLE CONNECTION TO EQUIPMENT.
	WALL MOUNTED EXIT LIGHTING FIXT: SHADED AREA INDICATES SIGN FACE. ARROW INDICATES DIRECTIONAL ARROW ON SIGN FACE. NEW FIXTURES TO MATCH EXISTING.
	CEILING MOUNTED EXIT LIGHTING FIXT: SHADED AREA INDICATES SIGN FACE. ARROW INDICATES DIRECTIONAL ARROW ON SIGN FACE. NEW FIXTURES TO MATCH EXISTING.
OS	DUAL TECHNOLOGY CEILING MOUNTED OCCUPANCY SENSOR. LETTER INDICATES MANUAL OVERRIDE SWITCH CONTROLLING SENSOR. MODEL #: GREENGATE OAC-DT-1000
OS	DUAL TECHNOLOGY WALL MOUNTED OCCUPANCY SENSOR. LETTER INDICATES MANUAL OVERRIDE SWITCH CONTROLLING SENSOR. MODEL #: GREENGATE OAWC-DT-120W
OS	DUAL TECHNOLOGY CEILING MOUNTED CORRIDOR OCCUPANCY SENSOR. LETTER INDICATES MANUAL OVERRIDE SWITCH CONTROLLING SENSOR. MODEL #: GREENGATE OAC-DT-2000
RM	BATTERY LIGHT FIXTURE. RM INDICATES EXISTING TO BE REMOVED. NEW FIXTURE TO MATCH EXISTING.

	CONCEALED CONDUIT
	EXPOSED CONDUIT
	CONDUIT UP
	CONDUIT DOWN
	CONDUIT RISING UP AND TERMINATE IN ACCESSABLE HUNG CEILING.
	PULL BOX
	UNFUSED DISCONNECT SWITCH; SWITCH SIZE TO BE GREATER THEN OR EQUAL TO OVER CURRENT PROTECTION. U.O.N.
	CAPPED CONDUIT
M	MOTOR
S	CEILING MOUNTED SPACE SMOKE DETECTOR
	CIRCUIT BREAKER
HA / 1	FEEDER DESIGNATION H=480V L=208V A=SWITCHBOARD A 1=FEEDER NUMBER ONE
A / 001	SECTION A
EX	COMBINATION SPEAKER STROBE. EX INDICATES EXISTING TO REMAIN. RM INDICATES EXISTING TO BE REMOVED. RL INDICATES RELOCATED DEVICE.
S RM	SMOKE DETECTOR. EX INDICATES EXISTING TO REMAIN. RM INDICATES EXISTING TO BE REMOVED. RL INDICATES RELOCATED DEVICE.
FS	WATER FLOW SWITCH
TS	TAMPER SWITCH

ELECTRICAL ABBREVIATIONS

@	"AT" OR "EACH AT"	HZ	HERTZ
A	AMPERE	JB	JUNCTION BOX
AC	ABOVE COUNTER	KV	KILOVOLT
AF	AMPERE FRAME	KVA	KILOVOLT AMPERE
AFF	ABOVE FINISHED FLOOR	KW	KILOWATT
ALM	ALARM	KWH	KILOWATT HOUR
AMM	AMMETER	LTG	LIGHTING
ASYM	ASYMMETRICAL	LV	LOW VOLTAGE
AT	AMPERE TRIP	MAX	MAXIMUM
AWG	AMERICAN WIRE GAUGE	MCB	MAIN CIRCUIT BREAKER
BKR	BREAKER	MIN	MINIMUM
C	CONDUIT	MTD	MOUNTED
°C	DEGREE CELSIUS	MTG	MOUNTING
CAB	CABINET	MUFS	MAIN UNFUSED SWITCH
CB	CIRCUIT BREAKER	N	NEUTRAL
CCTV	CLOSED CIRCUIT TELEVISION	NIC	NOT IN CONTRACT
CKT	CIRCUIT	NTS	NOT TO SCALE
CLG	CEILING	PB	PULLBOX
CNTL	CONTROL	ø	PHASE
CO	CONDUIT ONLY	PNL	PANEL
COMM	COMMUNICATION	PS	PRESSURE SWITCH
CU	COPPER	PWR	POWER
DEG	DEGREE	RECEPT	RECEPTACLE
DIA	DIAMETER	REQ	REQUIRED
DISC	DISCONNECT	RFL	RAISED FLOOR
DWG	DRAWING	RM	ROOM
E	EMERGENCY	RO	RACEWAY ONLY
EA	EACH	SCHED	SCHEDULE
EC	ELECTRICAL CONTRACTOR	SD	SMOKE DETECTOR
EL	ELEVATION	SECT	SECTION
ELEC	ELECTRICAL	SIG	SIGNAL
EM	EMERGENCY	SN	SOLID NEUTRAL
EQPT	EQUIPMENT	SPEC	SPECIFICATION
EXIST	EXISTING	SPKR	SPEAKER
EXT	EXTERIOR	SW	SWITCH
°F	DEGREE FAHRENHEIT	SWBD	SWITCHBOARD
FA	FIRE ALARM	SWGR	SWITCHGEAR
FAP	FIRE ALARM PANEL	SYM	SYMMETRICAL
FBO	FURNISHED BY OTHERS	TBD	TO BE DETERMINED
FDR	FEEDER	TEL	TELEPHONE
FDS	FUSED DISCONNECT SWITCH	TEMP	TEMPERATURE
FIXT	FIXTURE	TYP	TYPICAL
FL	FLOOR	UC	UNDER COUNTER
FLEX	FLEXIBLE	UNF	UNFUSED
FLUOR	FLUORESCENT	UON	UNLESS OTHERWISE NOTED
FT	FEET OR FOOT	V	VOLT OR VOLTAGE
G	GROUND	VA	VOLT AMPERE
GFI	GROUND FAULT INTERUPTER	VM	VOLTMETER
GND	GROUND	W	WATT
HC	HUNG CEILING	WP	WEATHERPROOF
HP	HORSEPOWER		

ELECTRICAL GENERAL NOTES

1. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. FOLLOW DRAWING IN LAYING OUT WORK AND CHECK DRAWINGS OF OTHER TRADES TO VERIFY SPACE CONDITIONS. MAINTAIN HEADROOM AND SPACE CONDITIONS.
2. SECURE ALL SUPPORTS TO BUILDING STRUCTURE UTILIZING TOGGLE BOLTS (HOLLOW MASONRY), EXPANSION SHIELDS OR INSERTS (CONCRETE AND BRICK), MACHINE SCREWS (METAL), BEAM CLAMPS (FRAMEWORK), WOOD SCREWS (WOOD) OR PAN THRU STRAPS (METAL DECK). NAILS, RAWL PLUGS AND WOOD PLUGS ARE NOT PERMITTED. WHERE REQUIRED BY STRUCTURE, PROVIDE THRU BOLTS AND FISH PLATES. SUPPORT HORIZONTAL RUNS OF METALLIC RACEWAYS NOT MORE THAN 10 FT APART.
3. RACEWAYS SHALL BE ALLOWED TO PASS OVER WATER, STEAM OR OTHER PIPING WHEN PULL BOXES ARE NOT REQUIRED. NO RACEWAY SHALL BE ROUTED WITHIN 3 INCHES OF STEAM OR HOT WATER PIPES, OR APPLIANCES, EXCEPT PERPENDICULAR CROSSINGS WHERE RACEWAY SHALL BE A MINIMUM OF 1 INCH FROM PIPE COVER.
4. CUT CONDUIT ENDS SQUARE, REAM SMOOTH. PAINT MALE THREADS OF FIELD THREADED RACEWAYS WITH GRAPHITE BASE PIPE COMPOUND. DRAW UP TIGHT WITH RACEWAY COUPLING.
5. HORIZONTAL OR CROSS RUNS IN PARTITIONS AND WALLS ARE NOT PERMITTED. DO NOT RUN CONDUIT IN 2 INCH SLAB.
6. LEAVE WIRES WITH SUFFICIENT SLACK TO PERMIT MAKING FINAL CONNECTIONS. PROVIDE FISH WIRE FOR ALL EMPTY CONDUITS.
7. SET BOXES SQUARE AND TRUE WITH BUILDING FINISH. ERECT WALL AND SWITCH OUTLETS IN ADVANCE OF FURRING AND FIREPROOFING. SECURE TO BUILDING STRUCTURE BY ADJUSTABLE STRAP IRONS.
8. VERIFY LOCATIONS OF OUTLETS AND SWITCHES IN FINISHED ROOMS WITH ARCHITECTURAL DRAWINGS OF INTERIOR DETAILS AND FINISH. IN CENTERING OUTLETS AND LOCATING BOXES AND OUTLETS, ALLOW FOR OVERHEAD PIPES, DUCTS AND MECHANICAL EQUIPMENT, VARIATIONS IN FIREPROOFING AND PLASTERING, WINDOW AND DOOR TRIM, PANELING, HUNG CEILINGS AND THE LIKE. CORRECT ANY INACCURACY RESULTING FROM FAILURE TO DO SO WITHOUT EXPENSE TO OWNER.
9. LOCATIONS INDICATED FOR LOCAL WALL SWITCHES ARE SUBJECT TO MODIFICATIONS AT OR NEAR DOORS. COORDINATE WITH ARCHITECT AND INSTALL SWITCH ON SIDE OPPOSITE HINGE. VERIFY FINAL HINGE LOCATIONS IN FIELD PRIOR TO SWITCH OUTLET INSTALLATION.
10. COVERS OF JUNCTION AND PULLBOXES SHALL BE READILY ACCESSIBLE.
11. PROVIDE PULLBOXES AS INDICATED, REQUIRED BY CODE AND WHEREVER NECESSARY TO FACILITATE PULLING OF WIRE. COORDINATE PULLBOX LOCATIONS WITH OTHER TRADES.
12. JUNCTION AND PULL BOXES SHOULD NOT BE LOCATED EXPOSED IN FINISHED SPACES. WHERE NECESSARY, REROUTE RACEWAYS OR MAKE OTHER ARRANGEMENTS FOR CONCEALMENT.
13. SEE APPENDIX FOR IT SPECIFICATIONS.

1. SUPPORT PANEL, JUNCTION AND PULL BOXES INDEPENDENTLY TO BUILDING STRUCTURE WITH NO WEIGHT BEARING ON RACEWAYS.
2. ALL ACCESS DOOR LOCATIONS SHALL BE REVIEWED BY ARCHITECT PRIOR TO INSTALLATION.
3. DO NOT PULL THERMOPLASTIC WIRES AT TEMPERATURES LOWER THAN 32°F (0°C) PROVIDE CABLE SUPPORTS FOR WIRE IN RISER CONDUITS AS REQUIRED BY CODE.
4. SEPARATE RACEWAYS FOR CONDUCTORS OF NORMAL AND EMERGENCY CIRCUITS. BOXES: PROVIDE BARRIERS BETWEEN EMERGENCY AND NORMAL WIRING.
5. HEIGHTS OF OUTLETS FROM FINISHED FLOOR TO CENTERLINE OF OUTLET:

RECEPTACLES AND TELEPHONES:	
GENERALLY	1'-0"
OVER WORK BENCHES	3'-6"
WALL SWITCHES	4'-0"
STROBES	8'-0"

   EXCEPTIONS: AT JUNCTION OF DIFFERENT WALL FINISH MATERIALS; ON MOLDING OR BREAK IN WALL SURFACE; IN VIOLATION OF CODE REQUIREMENTS; AS NOTED OR DIRECTED.
6. WIRE COLOR CODING: AS PER CODE. WHERE COLOR-CODED CABLE IS NOT AVAILABLE, CERTIFY IN WRITING AND REQUEST PERMISSION FOR OVERLAP COLOR TAPING OF CONDUCTORS (MINIMUM LENGTH 6") IN ACCESSIBLE LOCATIONS. COLOR CODING, ONCE SELECTED, MUST BE USED CONSISTENTLY FOR THE ENTIRE PROJECT.
7. INSTALL NEW WORK AND CONNECT TO EXISTING WORK WITH MINIMUM INTERFERENCE TO EXISTING FACILITIES. TEMPORARY SHUTDOWNS: ONLY WITH WRITTEN CONSENT OF OWNER. MAINTAIN CONTINUOUS OPERATION OF EXISTING FACILITIES. ALARM AND EMERGENCY SYSTEMS ARE NOT TO BE INTERRUPTED.
8. ALL LIGHT FIXTURES AND INSTRUMENTS THAT ARE REMOVED SHOULD BE CAREFULLY STORED FOR FUTURE USE. COORDINATE REMOVAL AND STORAGE OF ALL EQUIPMENT WITH BUILDING MANAGEMENT.
9. RUN EXPOSED RACEWAYS PARALLEL WITH OR AT RIGHT ANGLES TO WALLS.
10. FIRESTOPPING SHALL BE INSTALLED WHENEVER WIRING OR RACEWAYS CROSS FIRE RATED CONSTRUCTION.
11. POWER INTERRUPTIONS AND CORE DRILLING ONLY PERMITTED BETWEEN THE HOURS OF 6 PM AND 8 AM. AS APPROVED BY BUILDING MANAGER.
12. DO NOT SWITCH POWER TO BATTERY BALLAST FOR EMERGENCY FIXTURES SHOWN SWITCH CONTROLLED.
13. COORDINATE ALL EXPOSED CONDUIT RUNS WITH ARCHITECT PRIOR TO EXPOSED CONDUIT INSTALLATION.
14. FOR NEW ELECTRICAL PANEL, THE CONTRACTOR SHALL PROVIDE A TYPE WRITTEN DIRECTORY CARD TO REFLECT NEW CIRCUITING.
15. UPON COMPLETION OF THE WORK, A MARKED UP SET OF "AS-BUILT" DRAWINGS SHALL BE SUBMITTED TO THE BUILDING MANAGER AND TENANT.

ELECTRICAL DRAWING LIST

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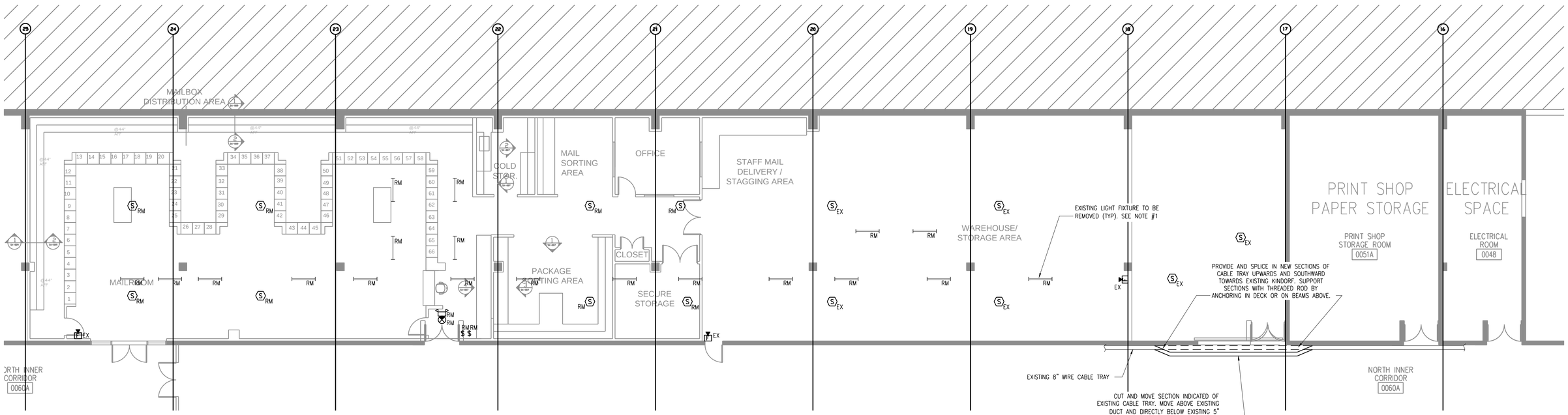
Project Name:	Mailroom / Receiving Area Renovation Project
Project Number:	#SU-120814
Location:	Plaza Lower Level - Proposed Mailroom / Post Office / Receiving Area
Scale:	AS SHOWN
Date:	09/19/14
File Path:	Z:\1-Projects\Mailroom-Receiving Renovation\Drawings\PP_00-Opt10.dwg

NO.	REVISIONS | SUBMISSIONS	DATE
	ISSUED FOR BID	12.08.2014

SYMBOL LIST, ABBREV, NOTES & DRAWING LIST
E-001.00



ELECTRICAL DEMOLITION PLAN

SCALE: 1/8"=1'-0"

NOTES

1. DISCONNECT AND REMOVE ALL LIGHTING FIXTURES AND ASSOCIATED LIGHTING CONTROLS, WIRING, AND CONDUIT BACK TO POWER SOURCE.

ELECTRICAL DEMOLITION NOTES

1. THE CONTRACTOR SHALL INCLUDE IN THE BID ALL COSTS ASSOCIATED WITH REMOVALS AND RELOCATIONS OF ELECTRICAL WORK AS DESCRIBED IN THE SPECIFICATIONS WITH ALLOWANCES FOR EXPECTED OR UNFORESEEN DIFFICULTIES WHEN CONCEALED WORK HAS BEEN OPENED. NO CLAIMS FOR ADDITIONAL WORK ASSOCIATED WITH DEMOLITION WILL BE ACCEPTED, EXCEPT IN CERTAIN CASES CONSIDERED JUSTIFIABLE BY THE ARCHITECT.
2. THE CONTRACTOR SHALL REMOVE AND/OR RELOCATE ALL EXISTING ELECTRICAL WORK WHICH INTERFERES WITH THE NEW ARCHITECTURAL AND ELECTRICAL LAYOUTS IN FULL COORDINATION WITH THE ARCHITECT'S DEMOLITION PLANS. ALL SYSTEMS WHICH ARE NO LONGER REQUIRED TO FUNCTION SHALL BE DE-ENERGIZED AND DISCONNECTED AT THE SOURCE OF THE POWER SUPPLY.
3. THE CONTRACTOR SHALL PERFORM DEMOLITION AND REMOVAL WORK WITH MINIMUM INTERFERENCE WITH FUNCTIONING ELECTRICAL SYSTEMS. ALL AFFECTED SYSTEMS SHALL BE RECONNECTED AND RESTORED.
4. DEMOLITION AND REMOVAL WORK SHALL BE PERFORMED IN A NEAT AND WORKMANLIKE MANNER. THE CONTRACTOR SHALL PATCH, REPAIR OR OTHERWISE RESTORE ANY DAMAGED INTERIOR OR EXTERIOR BUILDING SURFACE TO ITS ORIGINAL CONDITION.
5. THE CONTRACTOR SHALL REMOVE ALL ELECTRICAL OUTLETS, SWITCHES AND OTHER DEVICES, COMPLETE WITH ASSOCIATED WIRING, CONDUITS, ETC., FROM PARTITIONS THAT ARE TO BE REMOVED. WHERE THE REMOVAL OF THESE ITEMS DISRUPTS EXISTING WIRING THAT IS TO REMAIN, THE CONTRACTOR SHALL INSTALL JUNCTION BOXES AND OTHER DEVICES AND PROVIDE BYPASS CONNECTIONS NECESSARY TO MAKE CIRCUITS AFFECTED CONTINUOUS AND READY FOR OPERATION. OTHERWISE, WIRING SHALL BE REMOVED BACK TO THE NEAREST ELECTRICAL JUNCTION BOX THAT IS TO REMAIN OR TO PANELBOARD.
6. ALL RACEWAYS WHICH BECOME EXPOSED DURING THE ALTERATION WORK SHALL BE REMOVED AND REROUTED CONCEALED BEHIND FINISHED SURFACES.
7. ALL UNUSED OUTLET BOXES OR CAPPED FLOOR OUTLETS SHALL BE PROVIDED WITH MATCHING BLANK COVERS.
8. EXISTING PANEL DIRECTORIES AFFECTED BY THE ALTERATION WORK SHALL BE MODIFIED TO REFLECT THE BRANCH CIRCUIT WIRING CHANGES.
9. PORTIONS OF FEEDER RUNS TO BE REMOVED OR ABANDONED AS A RESULT OF DEMOLITION WORK, BUT WHICH ARE REQUIRED TO REMAIN ENERGIZED, SHALL BE CUT AT CONVENIENT LOCATIONS, REROUTED AND RECONNECTED. NEW FEEDER EXTENSIONS SHALL MATCH EXISTING ONES IN ALL RESPECTS, CABLE TYPE, CONDUCTOR AMPACITY, CONDUIT SIZES, ETC.
10. THE CONTRACTOR SHALL NOTIFY THE OWNER AT THE APPROPRIATE TIME OF THE PROJECT DEMOLITION AND PHASING SCHEDULE SO THAT REMOVAL OR RELOCATION OF AFFECTED UTILITIES MAY BE CARRIED OUT IN COORDINATION WITH THE PROJECT REQUIREMENTS. THE CONTRACTOR SHALL FOLLOW CLOSELY THE ARCHITECT'S DEMOLITION AND PHASING SCHEDULE AND PROCEED IN THE SPECIFIED SEQUENCE.
11. ALL EXISTING MATERIAL AND EQUIPMENT IN USABLE CONDITION, WHICH IS TO BE REMOVED UNDER THIS CONTRACT, SHALL REMAIN PROPERTY OF THE OWNER OR SHALL BE DISPOSED OF BY THE ELECTRICAL CONTRACTOR, AS DIRECTED BY THE OWNER.
12. MAINTAIN CONTINUITY OF CIRCUIT WIRING FOR ALL EXISTING DEVICES TO REMAIN.
13. DISCONNECT AND REMOVE ALL CONDUIT AND CABLE BACK TO POWER SOURCE FROM DEVICES/FIXTURES SLATED FOR REMOVAL.

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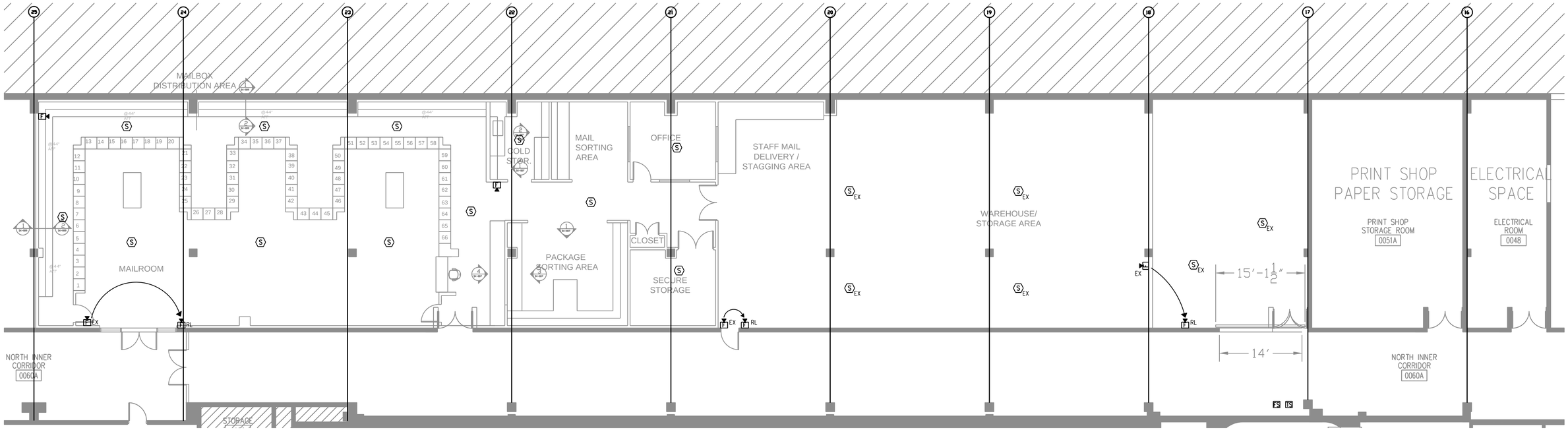
ELECTRICAL DEMOLITION PLAN
E-100.00



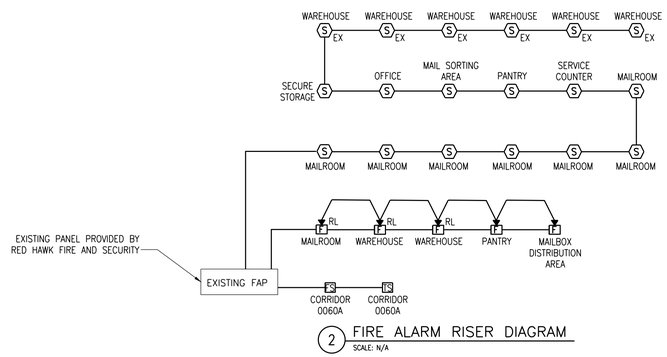
1 FIRE ALARM PLAN
SCALE: 1/8"=1'-0"

FIRE ALARM NOTES

1. CONTRACTOR SHALL EXTEND EXISTING FIRE ALARM CIRCUIT TO CONNECT NEW FIRE ALARM DEVICES.
2. RE-PROGRAM EXISTING FIRE ALARM PANEL (EXISTING PANEL PROVIDED BY RED HAWK FIRE AND SECURITY) TO COORDINATE WITH NEW SPACE USE.

FIRE ALARM GENERAL NOTES

1. ALL FIRE ALARM CIRCUITS SHALL BE SIZED TO A MAXIMUM OF 80% OF CAPACITY.
2. CONDUITS MAY NOT ENTER THE TOP OF ANY FIRE ALARM EQUIPMENT CABINET.
3. ALL FIRE ALARM EQUIPMENT SHALL BE INSTALLED WITH AESTHETICS IN MIND. CABINETS SHALL BE SEMI FLUSH MOUNTED AND CABLE TRAYS SHALL BE HIDDEN.
4. ALL FIRE ALARM JUNCTION BOXES SHALL BE PAINTED FIRE DEPARTMENT RED.
5. ALL FIRE ALARM WIRE SHALL BE CLEARLY LABELED IN JUNCTION BOXES AND CABINETS. ALL TERMINALS SHALL BE NUMBERED AND LABELED. ALL CONNECTIONS SHALL BE EITHER SOLDERED, APPROVED TERMINAL STRIPS OR SCOTCH LOCKS.
6. ALL LOW VOLTAGE FIRE ALARM CONDUCTORS SHALL BE PROTECTED BY EITHER BUILDING CONSTRUCTION OR CONDUIT TO 8 FEET ABOVE THE FINISHED FLOOR. SUPPRESSION AND EXTINGUISHING SYSTEM WIRING, MECHANICAL AND ELECTRICAL ROOMS AND OTHER LOCATIONS SUBJECT TO MECHANICAL DAMAGE SHALL BE IN FULL RIGID CONDUIT.
7. FIRE ALARM CABLES SHALL NOT BE MIXED WITH NON FIRE ALARM CABLING. LOW VOLTAGE FIRE ALARM CABLING SHALL NOT BE MIXED OR WIRED NEAR ANY AC CIRCUIT.
8. ALL NOTIFICATION CIRCUITS SHALL BE A MINIMUM OF 14 AWG AND ALL OTHER LOW VOLTAGE FIRE ALARM CIRCUITS SHALL BE 16 AWG MINIMUM.
9. POLARITY SHALL BE OBSERVED ON ALL CIRCUITS. T-TAPPING SHALL NOT BE ALLOWED ON ANY NOTIFICATION CIRCUITS (STROBE OR SPEAKER). T-TAPPING SHALL NOT BE PERMITTED ON ADDRESSABLE CIRCUITS.
10. ALL WIRING SHALL BE INSPECTED TO ASSURE THERE ARE NO OPENS, SHORTS OR EARTH GROUNDS.
11. SHIELDED CONDUCTORS OR RUNNING IN SEPARATE RACEWAY SHALL BE AS INSTRUCTED BY THE FIRE ALARM MANUFACTURER'S DOCUMENTATION. ALL NON-POWER LIMITED WIRING, INCLUDING CIRCUITS FOR CENTRALIZED AMPLIFIERS SHALL BE RUN IN A SEPARATE RACEWAY.
12. ALL AREA OR DUCT SMOKE DETECTORS SHALL BE PHOTO-ELECTRIC TYPE.
13. SMOKE DETECTORS MUST BE MOUNTED AT LEAST 3 FT AWAY FROM ANY AIR REGISTER.
14. ALL CEILING MOUNT DEVICES MUST BE SECURELY FASTENED TO BUILDING CONSTRUCTION.
15. DEVICE LOCATIONS MUST BE READILY ACCESSIBLE TO ALLOW FOR MAINTENANCE AND REPAIR.
16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ANY AND ALL ABANDONED FIRE ALARM CABINETS, DEVICES, AND WIRE. PAINT, PATCH AND CLEANUP SHALL ALSO BE INCLUDED.



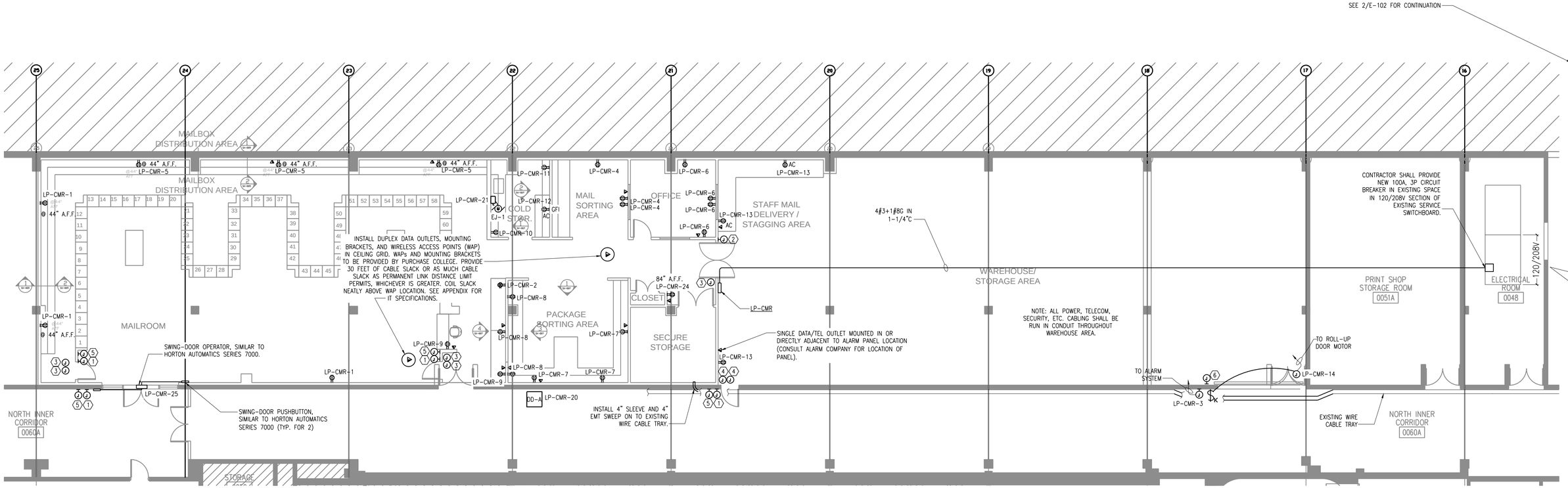
2 FIRE ALARM RISER DIAGRAM
SCALE: N/A

PURCHASE
COLLEGE
STATE UNIVERSITY OF NEW YORK
735 ANDERSON HILL RD.
PURCHASE, NY 10577-1400

Project Name:	Mailroom / Receiving Area Renovation Project
Project Number:	#SU-120814
Location:	Plaza Lower Level - Proposed Mailroom / Post Office / Receiving Area
Scale:	AS SHOWN
Date:	09/19/14
File Path:	Z:\1-Projects\Mailroom-Receiving Renovation\Drawings\PP_00-Opt10.dwg

NO.	REVISIONS | SUBMISSIONS	DATE
	ISSUED FOR BID	12.08.2014

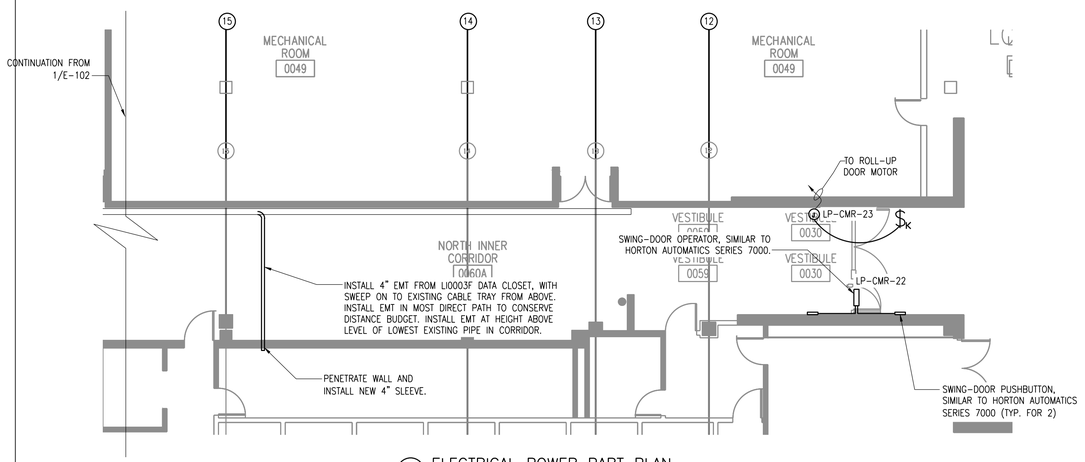
FIRE ALARM PLAN
E-101.00



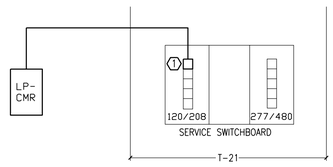
1 ELECTRICAL POWER PART PLAN
SCALE: 1/8"=1'-0"

ELECTRICAL KEYED NOTES

1. JUNCTION BOX FOR FUTURE CARD READER MOUNTED AT 48" A.F.F. PROVIDE 3/4" EMPTY CONDUIT FROM OUTLET BOX TERMINATING IN 90 DEGREE ELBOW IN ACCESSIBLE CEILING.
2. JUNCTION BOX FOR FUTURE CARD READER MOUNTED AT 48" A.F.F. PROVIDE 3/4" EMPTY CONDUIT FROM OUTLET BOX TERMINATING IN JUNCTION BOX 10'-0" A.F.F. FOR FUTURE EXTENSION.
3. JUNCTION BOX IN CEILING FOR FUTURE SECURITY DEVICES. PROVIDE 3/4" EMPTY CONDUIT FROM OUTLET BOX TERMINATING IN 90 DEGREE ELBOW IN ACCESSIBLE CEILING.
4. JUNCTION BOX IN CEILING FOR FUTURE SECURITY DEVICES. PROVIDE 3/4" EMPTY CONDUIT FROM OUTLET BOX TERMINATING IN JUNCTION BOX 10'-0" A.F.F. FOR FUTURE EXTENSION.
5. JUNCTION BOX FOR FUTURE ALARM PANEL. PROVIDE 3/4" EMPTY CONDUIT FROM OUTLET BOX TERMINATING IN 90 DEGREE ELBOW IN ACCESSIBLE CEILING.
6. JUNCTION BOX FOR FUTURE ALARM PANEL. PROVIDE 3/4" EMPTY CONDUIT FROM OUTLET BOX TERMINATING IN JUNCTION BOX 10'-0" A.F.F. FOR FUTURE EXTENSION.



2 ELECTRICAL POWER PART PLAN
SCALE: 1/8"=1'-0"



3 ELECTRICAL RISER DIAGRAM
SCALE: N/A

ELECTRICAL KEYED NOTES

1. PROVIDE 100A, 3P CIRCUIT BREAKER IN EXISTING SERVICE SWITCHBOARD 120/208V SECTION TO FEED LP-CMR. PROVIDE 4#3+1#8G IN 1-1/4"C TO LP-CMR.

PANEL NO. LP-CMR SECTION _____ ☐RECESSED ☐MAIN LUG ONLY REV. DATE _____
VOLTS 120/208 PH 3 W 4 G 1 ☒SURFACE MOUNTED ☒MAIN CB REV. DATE _____
MAIN CB 100A BUS 100A MIN. INTERRUPTING RATING _____ SYMM. ☐FEED THRU LUG REV. DATE _____

CKT NO.	TRIP (AMPS)	DESCRIPTION OF LOAD	LOAD (AMPS)	PER PHASE AMPS A	B	C	LOAD (AMPS)	DESCRIPTION OF LOAD	TRIP (AMPS)	CKT NO.
1	20	CONVENIENCE RECEPTACLES	4.5	9.500 000			5	SCALE	20	2
3	20	ALARM SYSTEM	10		14.50 0000		4.5	MAIL SORTING AREA RECEPTACLES	20	4
5	20	CONVENIENCE RECEPTACLES	4.5			10.50 0000	6	OFFICE RECEPTACLES	20	6
7	20	PACKAGE SORTING AREA RECEPTACLES	4.5	9.000 000			4.5	PACKAGE SORTING AREA RECEPTACLES	20	8
9	20	CONVENIENCE RECEPTACLES	3		13		10	FREEZER	20	10
11	20	REFRIGERATOR	10			11.50 0000	1.5	CONVENIENCE RECEPTACLE	20	12
13	20	DELIVERY AREA RECEPTACLES	4.5	14.50 0000			10	ROLL-UP DOOR	20	14
15	20	LIGHTING	9		22		13	LIGHTING	20	16
17	20	LIGHTING	11			24	13	LIGHTING	20	18
19	20	LIGHTING	13	13			0	DD-A	20	20
21	30	EJ-1 2#10+1#10G IN 3/4"C	7.3		12.30 0000		5	DOOR OPERATOR	20	22
23	20	ROLL-UP DOOR	10			20	10	BURGLAR ALARM	20	24
25	20	DOOR OPERATOR	5					SPARE	20	26
27	20	SPARE						SPARE	20	28
29		SPACE						SPACE		30
				46.00 0000	49.50 0000	46.00 0000				

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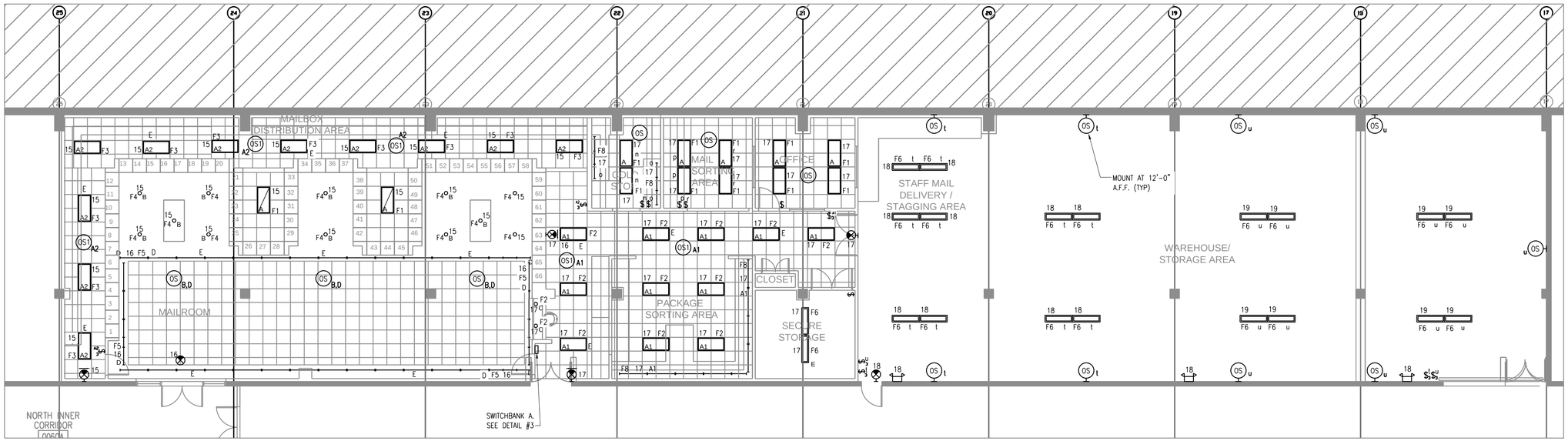
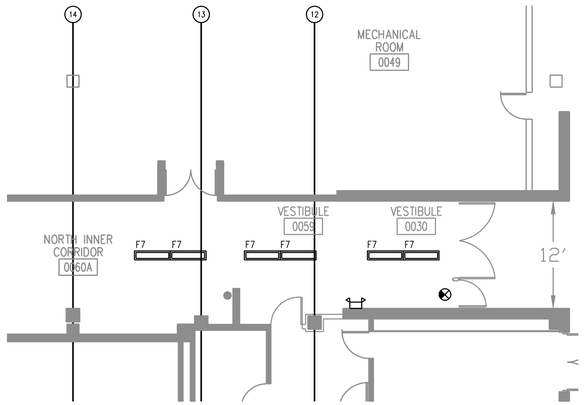
ELECTRICAL POWER PLAN
E-102.00



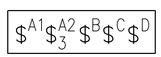
1 ELECTRICAL LIGHTING PART PLAN
SCALE: 1/8"=1'-0"

NOTE: ALL ELECTRICAL CIRCUITS INDICATED SHALL BE CONNECTED TO PANEL LP-CMR U.O.N.



2 ELECTRICAL LIGHTING PART PLAN
SCALE: 1/8"=1'-0"

NOTE: UTILIZE EXISTING LIGHTING CIRCUIT IN CORRIDOR TO FEED NEW LIGHTING.



3 SWITCH BANK 'A'
SCALE: N/A

LIGHTING FIXTURE SCHEDULE

SYMBOL	MANUFACTURER	MODEL #	FIXTURE DESIGNATION	WATTAGE	COMMENTS
▭	COOPER LIGHTING	24AC-LD4-44-120-L835-CD1-U	F1	41W	E INDICATES FIXTURE WITH EMERGENCY INSTALLED BATTERY PACK
▭	COOPER LIGHTING	24AC-LD3-48-120-L835-CD1-U	F2	48W	E INDICATES FIXTURE WITH EMERGENCY INSTALLED BATTERY PACK
▭	COLUMBIA LIGHTING	EMX-24-232G-M5-2-6-E104U	F3	60W	E INDICATES FIXTURE WITH EMERGENCY INSTALLED BATTERY PACK
○	PRESCOLITE	CFR8126UEB-ST492A1-SS-PL	F4	26W	
—	LEDALITE	3808-T01-E-XX*-1-1-E-W	F5	40W	E INDICATES FIXTURE WITH EMERGENCY INSTALLED BALLAST
▭	COOPER LIGHTING	VT4LED-LD3-20-W-UNV	F6	195W	
▭	COOPER LIGHTING	VT4LED-LD3-15-W-UNV	F7	130W	
—	PHILIPS	ARIS-11-301-120-PRL-DWC	F8	6W PER FOOT	WITH OPTIONAL HARD WIRING COMPARTMENT AND FLUSH CONNECTORS

* STRIP LIGHTING RUN LENGTHS ARE 15 FEET AND 60 FEET

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ELECTRICAL LIGHTING PLAN
E-200.00

1. GENERAL:

A. THE "GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION," AIA DOCUMENT A201, LATEST EDITION, AND THESE SPECIFICATIONS AS APPLICABLE ARE PART OF THIS CONTRACT.

B. ALL APPLICABLE CODES, LAWS AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK ARE HEREBY INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS, AND THEIR PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR WHO SHALL INFORM THE OWNER, PRIOR TO SUBMITTING A PROPOSAL, OF ANY WORK OR MATERIAL WHICH VIOLATES ANY OF THE ABOVE LAWS AND REGULATIONS. ANY WORK DONE BY THE CONTRACTOR CAUSING SUCH VIOLATION SHALL BE CORRECTED BY THE CONTRACTOR.

C. INVESTIGATE EACH SPACE THROUGH WHICH EQUIPMENT MUST BE MOVED. WHERE NECESSARY, EQUIPMENT SHALL BE SHIPPED FROM MANUFACTURER IN SECTIONS OF SIZE SUITABLE FOR MOVING THROUGH AVAILABLE RESTRICTIVE SPACES. ASCERTAIN FROM BUILDING OWNER AND TENANT AT WHAT TIMES OF DAY EQUIPMENT MAY BE MOVED THROUGH ALL AREAS.

D. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. CONDUIT ROUTING IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL OFFSETS, DROPS AND RISES OF RUNS. THE CONTRACTOR SHALL ALLOW IN HIS PRICE FOR ROUTING OF CONDUIT TO AVOID OBSTRUCTIONS. COORDINATION WITH EXISTING SERVICES, INCLUDING THOSE OF OTHER TRADES, IS REQUIRED. MAINTAIN HEADROOM AND SPACE CONDITIONS.

E. INSTALL WORK SO AS TO BE READILY ACCESSIBLE FOR OPERATION, MAINTENANCE AND REPAIR. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE TO ACCOMPLISH THIS, BUT CHANGES WHICH INVOLVE EXTRA COST SHALL NOT BE MADE WITHOUT APPROVAL.

F. REMOVAL AND RELOCATION OF CERTAIN EXISTING WORK MAY BE NECESSARY FOR THE PERFORMANCE OF THE GENERAL WORK. ALL EXISTING CONDITIONS CANNOT BE COMPLETELY DETAILED ON THE DRAWINGS. THE CONTRACTOR SHALL SURVEY THE SITE AND INCLUDE ALL CHANGES AND CHARGES IN MAKING UP THE WORK PROPOSAL.

G. CONNECTIONS TO EXISTING WORK: INSTALL NEW WORK AND CONNECT TO EXISTING WORK WITH MINIMUM INTERFERENCE TO EXISTING FACILITIES. TEMPORARY SHUTDOWNS OF EXISTING SERVICES SHALL BE PERFORMED AT NO ADDITIONAL CHARGES, AT TIMES NOT TO INTERFERE WITH NORMAL OPERATION OF EXISTING FACILITIES AND ONLY WITH WRITTEN CONSENT OF OWNER. ALARM AND EMERGENCY SYSTEMS SHALL NOT BE INTERRUPTED. MAINTAIN CONTINUOUS OPERATION OF EXISTING FACILITIES AS REQUIRED WITH NECESSARY TEMPORARY CONNECTIONS BETWEEN NEW AND EXISTING WORK. CONNECT NEW WORK TO EXISTING WORK IN NEAT AND ACCEPTABLE MANNER. RESTORE EXISTING DISTURBED WORK TO ORIGINAL CONDITION, INCLUDING MAINTENANCE OF WIRING CONTINUITY AS REQUIRED.

H. DISCONNECT, REMOVE AND/OR RELOCATE EXISTING MATERIAL, EQUIPMENT AND OTHER WORK AS NOTED OR REQUIRED FOR PROPER INSTALLATION OF NEW WORK.

I. THE CONTRACTOR SHALL KEEP ALL EQUIPMENT AND MATERIALS, AND ALL PARTS OF THE BUILDING, EXTERIOR SPACES AND ADJACENT STREETS, SIDEWALKS AND PAVEMENTS, FREE FROM MATERIAL AND DEBRIS RESULTING FROM THE EXECUTION OF THIS WORK. EXCESS MATERIALS WILL NOT BE PERMITTED TO ACCUMULATE EITHER ON THE INTERIOR OR THE EXTERIOR.

J. SEAL OPENINGS THROUGH PARTITIONS, WALLS AND FLOORS WITH MINERAL WOOL OR OTHER NONCOMBUSTIBLE MATERIAL.

K. PROVIDE ALL NECESSARY FLASHING AND COUNTERFLASHING TO MAINTAIN THE WATERPROOFING INTEGRITY OF THE BUILDING AS REQUIRED BY THE INSTALLATION OR REMOVAL OF CONDUIT AND EQUIPMENT. PROVIDE EQUIPMENT CURBS AS REQUIRED.

L. ALL EXISTING MATERIAL, EQUIPMENT AND CONSTRUCTION DEBRIS TO BE REMOVED UNDER THIS CONTRACT SHALL BECOME THE PROPERTY OF THE CONTRACTOR WITH THE EXCEPTION OF SPECIFIC EQUIPMENT AND APPARATUS REQUESTED BY THE BUILDING REPRESENTATIVE, ARCHITECT OR AS NOTED TO BE RELOCATED ON THE DRAWINGS. REMOVED EQUIPMENT SHALL BE PROPERLY DISPOSED OF BY THIS CONTRACTOR.

M. THE CONTRACTOR'S PROPOSAL FOR ALL WORK SHALL BE PREDICATED ON THE PERFORMANCE OF THE WORK DURING REGULAR WORKING HOURS. WHEN SO DIRECTED, HOWEVER, THE CONTRACTOR SHALL INSTALL WORK DURING OVERTIME HOURS AND THE ADDITIONAL COST TO BE CHARGED THEREFORE SHALL BE ONLY THE "PREMIUM" PORTION OF THE WAGES PAID.

N. UNLESS OTHERWISE SPECIFICALLY NOTED OR SPECIFIED, INCLUDE ALL CUTTING AND PATCHING OF EXISTING FLOORS, WALLS, PARTITIONS AND OTHER MATERIALS IN THE EXISTING BUILDING. THE CONTRACTOR SHALL RESTORE THESE AREAS TO ORIGINAL CONDITION.

O. ALL MATERIAL AND EQUIPMENT SHALL BE NEW UNLESS OTHERWISE NOTED AND SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS.

P. SUBMISSION OF A PROPOSAL SHALL BE CONSTRUED AS EVIDENCE THAT A CAREFUL EXAMINATION OF THE PORTIONS OF THE EXISTING BUILDING, EQUIPMENT, ETC., WHICH AFFECT THIS WORK, AND THE ACCESS TO SUCH SPACES, HAS BEEN MADE AND THAT THE CONTRACTOR IS FAMILIAR WITH EXISTING CONDITIONS AND DIFFICULTIES THAT WILL AFFECT THE EXECUTION OF THE WORK. THE CONTRACTOR IS RESPONSIBLE TO INDICATE ANY DISCREPANCIES BETWEEN THE CONTRACT DRAWINGS AND ACTUAL FIELD CONDITIONS PRIOR TO SUBMITTAL OF BID. SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE. LATER CLAIMS SHALL NOT BE MADE FOR LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN DURING SUCH AN EXAMINATION. THE ON-SITE INSPECTION SHALL VERIFY EXISTING CONDUIT (SIZES, CLEARANCES, ETC) AND CONDITIONS.

Q. INSURANCE: IN ACCORDANCE WITH BUILDING REQUIREMENTS AND SHALL INCLUDE A HOLD HARMLESS CLAUSE FOR OWNER AND ENGINEER.

R. THE FINAL ACCEPTANCE SHALL BE MADE AFTER THE CONTRACTOR HAS ADJUSTED HIS EQUIPMENT, TESTED THE VARIOUS SYSTEMS, DEMONSTRATED THAT IT FULFILLS THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS AND HAS FURNISHED ALL THE REQUIRED CERTIFICATES OF INSPECTION AND APPROVAL.

2. SCOPE OF WORK:

A. SCOPE OF WORK SHALL CONSIST OF PROVIDING LABOR, MATERIALS, EQUIPMENT, SERVICES AND FEES NECESSARY FOR COMPLETE AND SAFE INSTALLATION IN CONFORMITY WITH THE NATIONAL ELECTRICAL CODE (NEC) AND ALL OTHER APPLICABLE INDUSTRY, NATIONAL AND LOCAL CODES AND AUTHORITIES HAVING JURISDICTION, AS INDICATED ON DRAWINGS AND HEREIN SPECIFIED.

B. ALL DRAWINGS, PLANS, DETAILS, SPECIFICATIONS AND SPECIFICATION ADDENDA ARE MADE PART OF THIS CONTRACT AND SHALL APPLY TO ALL WORK UNDER THE CONTRACT UNLESS OTHERWISE AMENDED, MODIFIED, SUPPLEMENTED OR SPECIFIED HEREIN.

C. THE CONTRACTOR SHALL FURNISH A WRITTEN GUARANTEE TO REPLACE OR REPAIR PROMPTLY AND ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED FOR ANY WORKMANSHIP AND EQUIPMENT IN WHICH DEFECTS DEVELOP WITHIN ONE YEAR FROM THE DATE OF FINAL CERTIFICATE FOR PAYMENT AND/OR FROM DATE OR ACTUAL USE OF EQUIPMENT OR OCCUPANCY OF SPACES BY OWNER INCLUDED UNDER THE VARIOUS PARTS OF THE WORK, WHICHEVER DATE IS EARLIER. THIS WORK SHALL BE DONE AS DIRECTED BY THE OWNER. THIS GUARANTEE SHALL ALSO PROVIDE THAT WHERE DEFECTS OCCUR, THE CONTRACTOR WILL ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED IN REPAIRING AND REPLACING WORK OF OTHER TRADES AFFECTED BY DEFECTS, REPAIRS OR REPLACEMENTS IN EQUIPMENT SUPPLIED BY THE CONTRACTOR.

D. THE CONTRACTOR SHALL GIVE NECESSARY NOTICE, FILE DRAWINGS AND SPECIFICATIONS WITH ALL DEPARTMENTS HAVING JURISDICTION, OBTAIN PERMITS OR LICENSES NECESSARY TO CARRY OUT THIS WORK AND PAY ALL FEES THEREFORE. THE CONTRACTOR SHALL ARRANGE FOR INSPECTION AND TESTS OF ANY OR ALL PARTS OF THE WORK IF SO REQUIRED BY AUTHORITIES AND PAY ALL CHARGES FOR SAME. THE CONTRACTOR SHALL PAY ALL COSTS FOR, AND FURNISH TO THE OWNER BEFORE FINAL BILLING, ALL CERTIFICATES NECESSARY AS EVIDENCE THAT THE WORK INSTALLED CONFORMS WITH ALL REGULATIONS WHERE THEY APPLY TO THIS WORK.

3. SHOP DRAWINGS

A. PRIOR TO THE INSTALLATION OF ANY WORK AND PROCUREMENT OF EQUIPMENT, CONTRACTOR SHALL PROVIDE COMPLETE SETS OF COORDINATED SHOP DRAWINGS OF ALL NEW AND EXISTING EQUIPMENT, INDICATING CAPACITY, DIMENSIONS AND SEQUENCE OF OPERATION FOR WRITTEN APPROVAL BY THE ARCHITECT AND ENGINEER.

B. INDICATE ON EACH SHOP DRAWINGS SUBMITTED:

1) PROJECT NAME AND LOCATION
2) NAME OF ARCHITECT AND ENGINEER
3) ITEM IDENTIFICATION
4) APPROVAL STAMP OF PRIME CONTRACTOR

C. SUBMISSIONS:

1) SUBMISSIONS 11 IN. X 17 IN. OR SMALLER: IF THE SUBMISSION IS A CATALOG CUT, THEN THE CONTRACTOR SHALL SUBMIT ONE ORIGINAL AND TWO COPIES. OTHERWISE, HE SHALL SUBMIT THREE COPIES. THE ARCHITECT WILL FORWARD THE ORIGINAL AND ONE COPY (TWO COPIES WHEN NO ORIGINAL IS RECEIVED) TO THE ENGINEER. ALL CATALOG CUTS SHALL BE COMPLETE.
2) SUBMISSIONS LARGER THAN 11 IN. X 17 IN.: SUBMIT TWO PRINTS AND ONE PAPER SEPIA TO THE ARCHITECT. THE ARCHITECT WILL FORWARD ONE PRINT AND THE PAPER SEPIA TO THE ENGINEER.

D. SUBMIT SHOP DRAWINGS FOR THE FOLLOWING:

1) SWITCHES
2) CIRCUIT BREAKERS
3) PANELBOARDS (INCLUDING DIMENSIONS, SCHEDULES, AND CATALOG CUTS).
4) RACEWAYS
5) WIRE AND CABLE
6) WALL SWITCHES
7) INSERTION RECEPTACLES
8) SURFACE METAL RACEWAY
9) LIGHTING FIXTURES.

4. AS-BUILT DRAWINGS AND EQUIPMENT OPERATIONAL INSTRUCTIONS

A. UPON COMPLETION AND ACCEPTANCE OF WORK, CONTRACTOR SHALL FURNISH WRITTEN INSTRUCTIONS AND EQUIPMENT MANUALS AND DEMONSTRATE TO THE OWNER THE PROPER OPERATION AND MAINTENANCE OF ALL EQUIPMENT AND APPARATUS FURNISHED UNDER THIS CONTRACT.

B. THESE INSTRUCTIONS SHALL BE TYPED ON 8-1/2 IN. X 11 IN. PAPER AND BOUND IN THREE RING BINDERS WITH CLEAR ACETATE COVERS. CONTRACTOR SHALL GIVE THREE COPIES OF THE INSTRUCTIONS TO THE OWNER AND ONE COPY TO THE ENGINEER.

C. THE INSTRUCTION BOOKLET SHALL BEAR THE NAME, ADDRESS AND TELEPHONE NUMBER OF THE PROJECT, ARCHITECT AND ENGINEER.

D. REPRODUCIBLE "AS-BUILT" DRAWINGS SHALL BE PROVIDED INDICATING THE AS INSTALLED CONDITIONS OF THE WORK. "AS-BUILT" DRAWINGS SHALL BE PROVIDED TO THE ARCHITECT AFTER COMPLETION OF THE INSTALLATION.

5. GENERAL PROVISIONS FOR ELECTRICAL WORK:

A. SPECIFICATIONS ARE OF SIMPLIFIED FORM AND INCLUDE INCOMPLETE SENTENCES. WORDS OR PHRASES SUCH AS "THE CONTRACTOR SHALL," "SHALL BE," "FURNISH," "PROVIDE," "A," "THE," AND "ALL" HAVE BEEN OMITTED FOR BREVITY.

B. DEFINITIONS:

1) "PROVIDE": TO SUPPLY, INSTALL AND CONNECT UP COMPLETE AND READY FOR SAFE AND REGULAR OPERATION THE PARTICULAR WORK REFERRED TO UNLESS SPECIFICALLY OTHERWISE NOTED.
2) "INSTALL": TO ERECT, MOUNT AND CONNECT COMPLETE WITH RELATED ACCESSORIES.
3) "FURNISH" OR "SUPPLY: TO PURCHASE, PROCURE, ACQUIRE AND DELIVER COMPLETE WITH RELATED ACCESSORIES.
4) "WORK": LABOR, MATERIALS, EQUIPMENT, APPARATUS, CONTROLS, ACCESSORIES AND OTHER ITEMS REQUIRED FOR PROPER AND COMPLETE INSTALLATION.
5) "WIRING": RACEWAY, FITTINGS, WIRE, BOXES AND RELATED ITEMS.
6) "CONCEALED": EMBEDDED IN MASONRY OR OTHER CONSTRUCTION, INSTALLED IN FURRED SPACES, WITHIN DOUBLE PARTITIONS OR HUNG CEILINGS, IN TRENCHES, IN CRAWL SPACES, OR IN ENCLOSURES.
7) "EXPOSED": NOT INSTALLED UNDERGROUND OR "CONCEALED" AS DEFINED ABOVE.
8) "SIMILAR" OR "EQUAL": EQUAL IN MATERIALS, WEIGHT, SIZE, DESIGN AND EFFICIENCY OF SPECIFIED PRODUCT.

C. TEMPORARY LIGHT AND POWER: PROVIDE TEMPORARY LIGHT AND POWER SYSTEMS AT EARLIEST POSSIBLE DATE WITHIN THE CONSTRUCTION AREAS FOR THE REQUIREMENTS OF ALL TRADES AS HEREIN DESCRIBED. EXTEND SYSTEMS TO NEW CONSTRUCTION AS SOON AS PHYSICALLY POSSIBLE. MAINTAIN SYSTEM DURING WORKING HOURS OF ALL TRADES. COST OF ENERGY WILL BE PAID FOR BY OWNER. PROVIDE ALL REQUIRED MAINTENANCE, INCLUDING LAMPS AND SOCKETS.

D. QUALITY ASSURANCE

1) QUALITY AND GAUGE OF MATERIALS: NEW, BEST OF THEIR RESPECTIVE KINDS, FREE FROM DEFECTS AND LISTED BY UNDERWRITERS LABORATORIES, INC., OR OTHER NATIONALLY APPROVED TESTING AGENCY AND BEARING THEIR LABEL. MATERIALS AND EQUIPMENT OF SIMILAR APPLICATION SHALL BE OF SAME MANUFACTURER, EXCEPT AS NOTED.
2) GUARANTEE: ALL MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED AS DEFINED IN PARAGRAPH 2.C.
3) CURRENT CHARACTERISTICS:
   a. SERVICE: 120/208 VOLT, 3 PHASE, 4 WIRE, 60 HERTZ WITH GROUNDED NEUTRAL.
   b. DISTRIBUTION: 120/208 VOLT, 3 PHASE, 4 WIRE, 60 HERTZ WITH GROUNDED NEUTRAL.
4) HEIGHTS OF OUTLETS: FROM FINISHED FLOOR TO CENTERLINE OF OUTLETS FOR:
   a. RECEPTACLES AND TELEPHONES:1 FT-6 IN.
   b. WALL SWITCHES: 4 FT-0 IN.
   c. WALL FIXTURES: 7 FT-0 IN.
   d. STROBE LIGHTS: 6 FT-8 IN. OR 6 IN BELOW CEILING (WHICHEVER IS LOWER)
   e. STROBES: 7 FT-6 IN.
   f. FIRE ALARM PULL STATIONS: 4 FT-0 IN.

EXCEPTIONS: AT JUNCTION OF DIFFERENT WALL FINISH MATERIALS, ON MOLDING OR BREAK IN WALL SURFACE, IN VIOLATION OF CODE, OR AS NOTED OR DIRECTED.

E. PRODUCT DELIVERY, STORAGE AND HANDLING

1) MOVING OF EQUIPMENT: WHERE NECESSARY, SHIP IN CARTED SECTIONS OF SIZE TO PERMIT PASSING THROUGH AVAILABLE SPACES.
2) ACCESSIBILITY: FOR OPERATION, MAINTENANCE AND REPAIR. MINOR DEVIATIONS SHALL BE PERMITTED. CHANGES OF MAGNITUDE OR INVOLVING EXTRA COST ARE NOT PERMISSIBLE WITHOUT REVIEW. GROUP CONCEALED ELECTRICAL EQUIPMENT REQUIRING ACCESS WITH EQUIPMENT FREELY ACCESSIBLE THROUGH ACCESS DOORS.

F. MATERIALS

1) NAMEPLATES: PROVIDE BLACK LAMICOID SHEET WITH 3/4 IN. WHITE LETTERING, FASTENED WITH EPOXY CEMENT FOR EACH DISCONNECT SWITCH, CIRCUIT BREAKER, PANEL, CABINET, TRANSFORMER, ENCLOSURE, MOTOR CONTROLLER AND THE LIKE. NAMEPLATES SHALL DESCRIBE THE NAME AND NUMBER OF EACH COMPONENT.
2) CABLE TAGS: TAG EACH CONDUCTOR PASSING THROUGH SPLICE OR PULLBOX WITH A WHITE LINEN TAG, INDICATING POINT OF ORIGIN AND TERMINATION OF THE CIRCUIT.
3) INSERTS AND SUPPORTS:

   a. INSERTS: STEEL, SLOTTED TYPE, FACTORY PAINTED.
   - SINGLE ROD: SIMILAR TO GRINNELL FIG. 281.
   - MULTI-ROD: SIMILAR TO FEE AND MASON SERIES 9000 WITH END CAPS AND CLOSURE STRIPS.
   - CLIP FORM NAILS FLUSH WITH INSERTS.
   - MAXIMUM LOADING 75 PERCENT OF RATING.
   b. SUPPORTS FROM BUILDING CONSTRUCTION: INSERTS, BEAM CLAMPS, STEEL FISHPLATES (IN CONCRETE FILL ONLY), CANTILEVER BRACKETS OR OTHER MEANS. SUBMIT FOR REVIEW.
   c. GROUPED LINES AND SERVICES: TRAPEZE HANGERS OF BOLTED ANGLES OR CHANNELS.
   d. WHERE BUILDING CONSTRUCTION IS INADEQUATE: PROVIDE ADDITIONAL FRAMING. SUBMIT FOR REVIEW.

G. PAINT SHALL BE THE BEST GRADE FOR ITS PURPOSE. DELIVER IN ORIGINAL SEALED CONTAINERS AND APPLY IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. COLORS SHALL BE AS SELECTED BY ARCHITECT OR ENGINEER. UTILIZE GALVANIZED IRON PRIMER ON PANEL AND PULL BOXES, AFTER FABRICATION. UTILIZE HOT DIPPED GALVANIZED OR DIPPED IN ZINC BASED PRIMER FOR: OUTLET BOXES, JUNCTION BOXES, CONDUIT HANGERS, RODS, INSERTS AND SUPPORTS. ZINC BASED PRIMER WITH FINISH TO MATCH SURROUNDINGS SHALL BE USED FOR MARRED SURFACES OF STEEL EQUIPMENT AND RACEWAYS. A FIELD-APPLIED ZINC BASED PRIME COAT SHALL BE UTILIZED FOR STEEL OR IRONWORK.

H. BRUSH AND CLEAN WORK PRIOR TO CONCEALING, PAINTING AND ACCEPTANCE. PAINTED EXPOSED WORK SOILED OR DAMAGED; CLEAN AND REPAIR TO MATCH ADJOINING WORK BEFORE FINAL ACCEPTANCE. REMOVE DEBRIS FROM INSIDE AND OUTSIDE OF MATERIAL AND EQUIPMENT.

I. FINAL LOCATIONS AND MOUNTING ORIENTATIONS OF ALL SWITCHES, RECEPTACLES AND LIGHT FIXTURES SHALL BE VERIFIED WITH ARCHITECT.

J. ALL ACCESS DOOR LOCATIONS SHALL BE REVIEWED BY ARCHITECT PRIOR TO INSTALLATION.

6. LOW-VOLTAGE DISTRIBUTION EQUIPMENT:

A. PROVIDE COMPLETE EQUIPMENT INCLUDING: SWITCHES, FUSES, CIRCUIT BREAKERS, PANELS AND TRANSFORMERS.

B. ALL EQUIPMENT SHALL CONFORM TO NEMA, ANSI AND IEEE STANDARDS.

C. DISCONNECT SWITCHES SHALL BE FUSED OR NONFUSED AS NOTED. VOLTAGE SHALL BE AS REQUIRED. SWITCHES SHALL BE HEAVY DUTY, EXCEPT AS NOTED, AND HORSEPOWER RATED FOR MOTOR LOADS. TOGGLE TYPE SWITCHES SHALL BE NONFUSED, LOAD BREAK, HAVING MAXIMUM RATINGS OF 30 AMP AT 240 VOLTS.

E. CIRCUIT BREAKERS: MOLDED CASE BREAKERS SHALL BE THERMAL-MAGNETIC, QUICK-MAKE-QUICK-BREAK, BOLT-ON TYPE, MANUALLY OPERATED WITH INSULATED TRIP-FREE HANDLE. MULTI-POLE TYPE BREAKERS SHALL CONTAIN INTERNAL TRIP BAR. TERMINALS SHALL BE SUITABLE FOR COPPER OR ALUMINUM CABLE. FURNISH AUXILIARY DEVICES WHERE REQUIRED FOR SHUNT-TRIPPING, OPEN AND CLOSE MOTOR OPERATOR AND ALARM INDICATION. ENCLOSURES SHALL BE DEAD FRONT, NEMA TYPE 1, EXCEPT AS NOTED. FRAMES, IC AND INTERCHANGEABLE TRIPS SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED:

1) 120 VOLTS, 100-AMP FRAME: 10,000 AMPS, 1 POLE.
2) 208 VOLTS, 100-AMP FRAME: 18,000 AMPS, 2 AND 3 POLES

F. DISTRIBUTION PANELS: SWITCHING UNITS SHALL BE 3 PHASE, 4 WIRE CIRCUIT-BREAKER TYPE UNLESS OTHERWISE NOTED ON PANEL SCHEDULES. BUS BARS SHALL BE HARD DRAWN COPPER, MINIMUM 98 PERCENT CONDUCTIVITY, SILVER OR TIN-PLATED JOINTS. CABINETS SHALL BE GALVANIZED SHEET STEEL BACK BOX, WITH DOOR AND TRIM AND LAPPED AND WELDED CORNERS. HARDWARE SHALL BE CHROME-PLATED WITH FLUSH LOCK/LATCH HANDLE ASSEMBLY (UP TO 48 IN. HIGH DOORS) OR VAULT HANDLE, LOCK AND 3-POINT CATCH (LARGER THAN 48 IN. HIGH DOORS). HINGES SHALL BE SEMI-CONCEALED, 5-KNUCKLE STEEL WITH NONFERROUS PINS, 180-DEG OPENING, LOCATED A MAXIMUM 26 IN. ON CENTERS. MINIMUM GUTTER SPACES FOR LIGHTING PANELS SHALL BE 5-3/4 IN. SIDES, TOP AND BOTTOM. DIRECTORY HOLDER SHALL BE METAL FRAME WITH CLEAR PLASTIC, TRANSPARENT COVER. A TYPEWRITTEN LIST INDICATING FEEDER CABLE AND CONDUIT SIZE, CIRCUIT NUMBERS, OUTLETS SUPPLIED AND THEIR LOCATIONS SHALL BE PROVIDED.

G. BALANCE THE LOAD OVER PHASES WHEN NEW CIRCUITS ARE ADDED TO NEW OR EXISTING PANELS. PROVIDE MULTI-CABLE LUGS WHERE REQUIRED. DOUBLE LUGGING SHALL NOT BE PERMITTED. MOUNTING HEIGHT SHALL BE A MAXIMUM OF 6 FT-6 IN. FROM FLOOR TO TOP SWITCH UNIT. UPDATE DIRECTORIES ON EXISTING PANELBOARDS WHERE CIRCUITING IS CHANGED.

H. TESTS: OPEN AND CLOSE LOAD BREAK SWITCHING DEVICES UNDER LOAD.

7. RACEWAYS:

A. PROVIDE RACEWAYS COMPLETE WITH BOXES, FITTINGS AND ACCESSORIES. CONDUIT OR TUBING SIZES REFERRED TO IN SPECIFICATIONS AND ON DRAWINGS ARE NOMINAL DIAMETERS. MINIMUM DIAMETER SHALL BE 3/4 IN.

B. MATERIALS

1) RACEWAYS:
   a. RIGID STEEL CONDUIT: FULL-WEIGHT PIPE, GALVANIZED, THREADED.
   b. ELECTROMETALLIC TUBING (EMT): THIN WALL PIPE, GALVANIZED, THREADLESS.
   c. FLEXIBLE STEEL CONDUIT: CONTINUOUS SINGLE STRIP, GALVANIZED.
   d. WIREWAYS: WIRE SHALL BE AS NOTED, MINIMUM NO. 16 GAUGE STEEL WITH GROUND CONTINUITY. FINISH SHALL BE BAKED ENAMEL. COVERS SHALL BE SCREW-ON.
   e. SURFACE METAL RACEWAY: SIZE AS NOTED. BASE 0.04 IN., COVER 0.25 IN. MATERIAL SHALL BE STEEL. FINISH SHALL BE BAKED ENAMEL. COVERS SHALL BE SCREW-ON.
2) FITTINGS AND ACCESSORIES:
   a. RIGID STEEL: NONSPLIT, THREADED, STEEL OR MALLEABLE IRON. ZINC DIE CAST NOT PERMITTED.
   b. ELECTROMETALLIC TUBING: COMPRESSION TYPE. GALVANIZED RIGID STEEL ELBOWS, 2 IN. OR LARGER.
   c. FLEXIBLE METALLIC CONDUIT: ANGLE WEDGE TYPE WITH INSULATED THROAT.
   d. BUSHINGS: METALLIC INSULATED TYPE.
3) BOXES:
   a. OUTLET BOXES: EXCEPT AS OTHERWISE REQUIRED BY CONSTRUCTION, DEVICES OR WIRING, BOXES SHALL BE STAMPED STEEL, 4 IN. SQUARE OR OCTAGON FOR FIXTURES. BOXES ABOVE CEILING SHALL BE 1-1/2 IN. DEEP. BOXES IN CEILING OR SLAB SHALL BE 3 IN. DEEP. BOXES IN WALL FOR FIXTURES SHALL BE 2-3/4 IN. DEEP. BOXES IN WALL FOR RECEPTACLES AND SWITCHES SHALL BE 1-1/2 IN. DEEP. FURNISH WITH RAISED COVERS AND FIXTURE STUDS WHERE REQUIRED. WITHOUT FIXTURE OR DEVICE: FURNISH BLANK COVER. OFFSET BACK-TO-BACK OUTLETS WITH MINIMUM 6 IN. SEPARATION.
   b. JUNCTION AND PULL BOXES: GALVANIZED SHEET STEEL WITH SCREW-ON COVERS, EXCEPT AS NOTED. FURNISH WITH INSULATED SUPPORTS FOR CABLES. LOCATIONS SHALL BE AS NOTED OR REQUIRED AND ACCESSIBLE. TELEPHONE: BUSHED HOLE. POWER: DUPLEX RECEPTACLE OR OTHER AS NOTED. INCREASE SIZE TO SUIT AS NECESSARY. FLUSH OUTLETS SHALL BE HUBBELL #B2414 SERIES WITH FLUSH FLOOR FITTING FOR TELEPHONE AND FLUSH DUAL FLAP COVER WITH DUPLEX RECEPTACLE FOR POWER AS NOTED. INCREASE SIZE TO SUIT AS NECESSARY.

C. PROVIDE RACEWAYS ONLY AS HEREIN SPECIFIED, EXCEPT AS NOTED. RACEWAYS SHALL BE RUN CONCEALED, EXCEPT AS NOTED.

PROVIDE RACEWAY SUPPORT UTILIZING CEILING TRAPEZE, STRAP HANGERS, OR WALL BRACKETS.

SECURE ALL RACEWAYS TO SUPPORTS WITH PIPE STRAPS OR U-BOLTS. SPACING OF SUPPORTS SHALL BE A MINIMUM OF 10 FT ON CENTER FOR METALLIC RACEWAY AND AS REQUIRED FOR NONMETALLIC RACEWAY. SPACING SHALL BE 5 FT ON CENTER FOR WIREWAYS AND PER CODE AND AS NOTED FOR OTHERS. MOUNT SUPPORTS TO STRUCTURE MASONRY WITH TOGGLE BOLTS ON HOLLOW MASONRY, EXPANSION SHIELDS OR INSERTS IN CONCRETE AND BRICK, MACHINE SCREWS ON METAL, BEAM CLAMPS ON FRAMEWORK, WOOD SCREWS ON WOOD, AND PAN THROUGH STRAPS IN METAL DECK. NAILS, RAWL PLUGS OR WOOD PLUGS SHALL NOT BE PERMITTED. WHERE REQUIRED BY STRUCTURE, FURNISH THROUGH BOLTS AND FISHPLATES.

EXPOSED RACEWAYS SHALL BE RUN PARALLEL WITH OR AT RIGHT ANGLES TO WALLS. PROVIDE CLEARANCE WITH WATER, STEAM OR OTHER PIPING (MINIMUM 3 IN. SEPARATION FROM STEAM AND HOT WATER PIPES, EXCEPT 1 IN. FROM PIPE COVER AT CROSSINGS AND 18 IN. FOR PARALLEL RUNS). FOR HUNG CEILING OUTLETS, RUN IN HUNG CEILING AND CONNECT TO CEILING SUPPORT CHANNELS. IN MASONRY AND POURED CONCRETE, RUN VERTICALLY ONLY.

MAINTAIN GROUNDING CONTINUITY OF INTERRUPTED METALLIC RACEWAYS WITH GROUND CONDUCTOR, AND IN FLEXIBLE CONDUIT FOR FEEDERS AND MOTOR TERMINAL CONNECTIONS.

EMPTY RACEWAYS OVER 10 FT LONG: PROVIDE FISH OR PULL WIRE, GALVANIZED OR NYLON ROPE.

RIGID STEEL CONDUIT SHALL BE PERMITTED FOR FEEDERS AND BRANCH CIRCUITS. PAINT MALE THREADS OF FIELD-THREADED CONDUIT WITH GRAPHITE-BASE PIPE COMPOUND AND BUTT CONDUIT ENDS. TOUCH UP MARRED SURFACES AND FIELD-CUT THREADS, CRC-COLD GALVANIZED.

EMT SHALL BE PERMITTED FOR BRANCH CIRCUITS ONLY, IN DRY LOCATIONS, DRY WALLS, HUNG CEILINGS, HOLLOW BLOCK WALLS AND FURRED SPACES. EMT SHALL NOT BE PERMITTED IN RAISED FLOORS.

FLEXIBLE STEEL CONDUIT SHALL BE UTILIZED FOR SHORT CONNECTIONS WHERE RIGID CONDUIT IS IMPRACTICAL. FROM OUTLET BOX TO RECESSED LIGHTING FIXTURE: PROVIDE MINIMUM 4 FT AND MAXIMUM 6 FT LENGTHS. FOR FINAL CONNECTION TO MOTOR TERMINAL BOX, TRANSFORMER AND OTHER VIBRATING EQUIPMENT: PROVIDE WITH POLYVINYL SHEATHING AND GROUND CONDUCTOR. MINIMUM LENGTH: 18 IN. WITH SLACK. CONNECT GROUND CONDUCTOR TO ENCLOSURE OR RACEWAY AT EACH END. FOR EXPANSION JOINT CROSSINGS, CROSS AT RIGHT ANGLES AND ANCHOR ENDS.

CUT CONDUIT ENDS SQUARE. REAM SMOOTH. PAINT MALE THREADS OF FIELD THREADED RACEWAYS WITH GRAPHITE BASE PIPE COMPOUND. DRAW UP TIGHT WITH RACEWAY COUPLING.

ALL COUPLINGS SHALL BE COMPRESSION TYPE. NO SET SCREW FITTINGS.

EXPANSION FITTINGS SHALL BE INSTALLED AT RIGHT ANGLES WITH CLIP JOINT CENTERED IN EXPANSION JOINT. PROVIDE A LENGTH OF RUN IN ACCORDANCE MANUFACTURER'S RECOMMENDATIONS. PRESET FITTINGS SHALL ALLOW FOR TEMPERATURE VARIATION.

RACEWAYS PASSING THROUGH FIRE-RATED CONSTRUCTION: SEAL OPENING WITH FIRE SEALANT.

D. ERECT WALL AND SWITCH OUTLETS IN ADVANCE OF FURRING AND FIREPROOFING. OUTLET BOXES SHALL BE SET SQUARE AND TRUE WITH BUILDING FINISH. SECURE TO BUILDING STRUCTURE BY ADJUSTABLE STRAP IRON OR GROUT IN WITH MASONRY. VERIFY OUTLET LOCATIONS IN FINISHED SPACES WITH ARCHITECTURAL DRAWINGS OF INTERIOR DETAILS AND FINISHES. PROVIDE BARRIERS BETWEEN SWITCHES CONNECTED TO DIFFERENT PHASES FOR VOLTAGES EXCEEDING 150 VOLTS TO GROUND.

E. PANEL, JUNCTION AND PULL BOXES SHALL BE LOCATED CLEAR OF OTHER TRADES. CONCEAL JUNCTION AND PULL BOXES IN FINISHED SPACES. WHERE NECESSARY, REROUTE RACEWAYS OR MAKE OTHER ARRANGEMENTS FOR CONCEALMENT. BOXES SHALL BE ACCESSIBLE. SUPPORT BOXES FROM BUILDING STRUCTURE, INDEPENDENT OF CONDUIT. PROVIDE FLOOR-TO-CEILING CHANNELS FOR MOUNTING ON DRYWALL AND LIGHTWEIGHT CONSTRUCTION. OUTLET BOXES FOR FIXTURES RECESSED IN HUNG CEILINGS SHALL BE ACCESSIBLE THROUGH OPENING CREATED BY REMOVAL OF FIXTURE. SECURE TO BLACK IRON SUPPORT. MOTOR TERMINAL BOXES: COORDINATE WITH MOTOR BRANCH CIRCUIT CONDUIT AND WIRING; ADD BOX VOLUME WHERE REQUIRED.

F. FIRE SEALANTS: PROVIDE FOR RACEWAYS AND WIRE PASSING THROUGH FLOOR SLOTS, SLEEVES OR OPENINGS IN FIRE-PARTITIONS ROOMS.

G. PERFORM CONTINUITY TESTS OF RESISTANCE OF FEEDER CONDUITS FROM SERVICE TO POINT OF FINAL DISTRIBUTION USING 1 CONDUCTOR RETURN. MAXIMUM RESISTANCE SHALL BE 25 OHMS.

8. WIRE AND CABLE:

A. PROVIDE WIRE AND CABLE COMPLETE WITH ACCESSORIES. SIZE REFERENCE SHALL BE AWG EXCEPT AS NOTED.

B. CONDUCTORS SHALL BE COPPER, ASTM STANDARD SOLID (NO. 10 AND SMALLER) OR STRANDED (NO. 8 AND LARGER). GENERAL USE CABLING SHALL BE NO. 12 MINIMUM. AT 120 VOLTS AND OVER 100 FT CIRCUIT LENGTH PROVIDE NO. 10 MINIMUM.

CONTROL AND ALARM CABLING, EXCEPT AS NOTED, SHALL BE NO. 14 MINIMUM. AT 120 VOLTS AND OVER 200 FT CIRCUIT LENGTH PROVIDE NO. 12 MINIMUM.

OTHER VOLTAGES AND PHASES: ADJUST CABLE SIZING AS REQUIRED TO MAINTAIN VOLTAGE DROP. INCREASE RACEWAY SIZES FOR LARGER WIRE AS REQUIRED.

C. INSULATION SHALL BE RUBBER AND THERMOPLASTIC MEETING ASTM AND IPCEA STANDARDS. TYPE THW OR THWN SHALL BE UTILIZED FOR FEEDERS AND BRANCH CIRCUITS EXCEPT AS NOTED. TYPE SFF-2 SHALL BE UTILIZED FOR BRANCH CIRCUITS LOCATED IN WIRING CHANNELS OF CONTINUOUS FLUORESCENT FIXTURES AND IN AMBIENT TEMPERATURES OVER 90 DEG C.

E. COLOR CODING SHALL BE AS FOLLOWS:

1) 120/208 VOLT SYSTEM:
BLACK FOR A PHASE
RED FOR B PHASE
BLUE FOR C PHASE

2) NEUTRAL WIRE SHALL UTILIZE WHITE OUTER COVERING THROUGHOUT. EQUIPMENT GROUND WIRE SHALL UTILIZE GREEN OUTER COVERING THROUGHOUT.

F. PROVIDE FLAMEPROOF LINEN OR FIBER TAGS IN ACCESSIBLE LOCATIONS. FOR FEEDERS INDICATE FEEDER NUMBER, SIZE, PHASE AND POINTS OF ORIGIN AND TERMINATIONS. FOR CONTROL AND ALARM WIRING INDICATE TYPE (CONTROL OR ALARM), SIZE OF WIRE, AND POINTS OF ORIGIN AND TERMINATIONS.

G. TERMINATIONS, SPLICES AND TAPS UNDER 600 VOLTS: COPPER CONDUCTORS NO. 10 AND SMALLER SHALL UTILIZE COMPRESSION-TYPE OF TWIST-ON SPRING-LOADED CONNECTORS AND CLEAR NYLON-INSULATED COVERING. COPPER CONDUCTORS NO. 8 AND LARGER SHALL UTILIZE MECHANICAL BOLTED PRESSURE OR HYDRAULIC COMPRESSION TYPE USING MANUFACTURER'S RECOMMENDED TOOLING. CABLE LUGS AND CONNECTORS SHALL UTILIZE COMPRESSION TYPE OF SAME METAL AS CONDUCTOR. PROVIDE TO MATCH CABLE, WITH MARKING INDICATING SIZE AND TYPE. COPPER LUG CONNECTIONS TO BUS BARS: USE ANTISEIZE COMPOUND ON TANG.

H. NOT MORE THAN 3 LIGHTING OR CONVENIENCE OUTLET CIRCUITS SHALL BE INSTALLED IN ONE CONDUIT UNLESS OTHERWISE INDICATED. PULL NO THERMOPLASTIC WIRES AT TEMPERATURES LOWER THAN 32 DEG F.

I. LEAVE WIRES WITH SUFFICIENT SLACK TO PERMIT MAKING FINAL CONNECTIONS.

J. PERFORM CONTINUITY AND INSULATION TESTS. MEGGER TEST 100 PERCENT OF FEEDERS AND 10 PERCENT OF BRANCH CIRCUITS.

PERFORM TESTS PRIOR TO CONNECTING EQUIPMENT AND IN PRESENCE OF AUTHORIZED REPRESENTATIVES. SUBMIT WRITTEN REPORT OF RESULTS. CORRECT OR REPLACE CABLE TESTING BELOW MANUFACTURER'S STANDARDS.

9. DEVICES:

A. PROVIDE COMPLETE MATERIAL AND ACCESSORIES AS NOTED.

B. LOCAL WALL SWITCHES SHALL BE SPECIFICATION GRADE, TOGGLE, QUIET TYPE, RATED 20 AMP, 120/277 VOLT, AC. SIMILAR TO HUBBELL NOS. 1221 (SINGLE POLE), 1222 (DOUBLE POLE), 1223 (3-WAY) AND 1224 (4-WAY).

C. INSERTION RECEPTACLES SHALL BE SPECIFICATION GRADE DUPLEX CONVENIENCE 125 VOLTS, 2 POLE, 3 WIRE, U GROUND SLOT. GROUNDED, EXCEPT AS NOTED. MEETING NEMA STANDARDS, PUBLICATION WD-1-1971. SIMILAR TO HUBBELL NOS. 5362 (20 AMP) AND 5262 (15 AMP).

1) SINGLE, EXCEPT AS NOTED:

   a. 20 AMP STRAIGHT BLADE, SIMILAR TO HUBBELL NO. 5361.

   b. 125 VOLT, 2 POLE, 3 WIRE, GROUNDED.

2) GROUND FAULT INTERRUPTER RECEPTACLES:

   a. FEED-THRU TYPE. SIMILAR TO HUBBELL NOS. GF5362 (20 AMP) AND GF5262 (15 AMP).

D. MOMENTARY CONTACT SWITCHES. FOR REMOTE CONTROL SWITCHES, SIMILAR TO HUBBELL NO. 4354.

E. DEVICE PLATES: SEE ARCHITECT FOR TYPE. FOR RECEPTACLES WITH OTHER THAN 120 VOLT, INSCRIBED VOLTAGE AVAILABLE.

F. COLORS: COORDINATE COLORS WITH ARCHITECT.

G. MOUNTING ORIENTATION OF RECEPTACLES (HORIZONTAL OR VERTICAL): COORDINATE WITH ARCHITECT.

10. LIGHTING FIXTURES:

A. PROVIDE FIXTURES ("LUMINARIES"), COMPONENTS AND LAMPS. FIXTURES SHALL BE COMPLETELY FACTORY ASSEMBLED, WIRED AND EQUIPPED WITH ALL NECESSARY SOCKETS, BALLASTS, SUPPORTING HARDWARE AND ACCESSORIES. REFER TO DRAWINGS FOR INDIVIDUAL FIXTURE DESCRIPTIONS.

B. FIXTURE CATALOG NUMBERS USED TO ILLUSTRATE EQUIPMENT TYPE DO NOT NECESSARILY DENOTE REQUIRED MOUNTING EQUIPMENT OR ACCESSORIES. PROVIDE ACCESSORIES TO SUIT.

C. BALLAST: CLASS P, HIGH POWER FACTOR, LOWEST AVAILABLE NEMA RATED NOISE LEVEL, ET1 AND CBM APPROVED. ENERGY SAVING TYPE. TRIGGER START FOR 24-INCH LAMPS AND RAPID START FOR 48-INCH. TWO LAMP BALLASTS; NO THREE LAMP BALLASTS. BALLASTS SHALL BE ADVANCE MAGNETEK, UNIVERSAL OR EQUAL.

D. CONTINUOUS ROW, TWO LAMP STRIP FIXTURES SHALL BE STAGGERED TYPE.

11. TELEPHONE CONDUIT SYSTEM:

A. PROVIDE COMPLETE SYSTEM OF: CONDUIT, CABLING, PULL BOXES, OUTLETS, AND SLEEVES.

B. EQUIPMENT SHALL CONFORM TO REQUIREMENTS OF TELEPHONE COMPANY.

C. OUTLETS SHALL BE:

1) ALL: 4 IN. SQUARE WITH BUSHED COVER PLATE.

D. CONDUIT SHALL BE 3/4 IN. MINIMUM. FURNISH EMPTY CONDUIT FROM OUTLET TO NEAREST ACCESSIBLE HUNG CEILING.

E. SEE APPENDIX FOR IT SPECIFICATIONS.

PURCHASE
COLLEGE
STATE UNIVERSITY OF NEW YORK
735 ANDERSON HILL RD.
PURCHASE, NY 10577-1400

Project Name:	Mailroom / Receiving Area Renovation Project
Project Number:	#SU-120814
Location:	Plaza Lower Level - Proposed Mailroom / Post Office / Receiving Area
Scale:	AS SHOWN
Date:	09/19/14
File Path:	Z:\1-Projects\Mailroom-Receiving Renovation\Drawings\PP_00-Opt10.dwg

NO.	REVISIONS | SUBMISSIONS	DATE
	ISSUED FOR BID	12.08.2014

ELECTRICAL
SPECIFICATIONS
E-300.00

PLUMBING SYMBOLS & ABBREVIATIONS

(NOT ALL SYMBOLS & ABBREVIATIONS ARE NECESSARILY USED ON THIS PROJECT)

EXISTING PIPING	
EXISTING PIPING TO BE REMOVED	
DOMESTIC COLD WATER PIPING	
DOMESTIC HOT WATER PIPING	
DOMESTIC HOT WATER RETURN PIPING	
VENT PIPING (SANITARY)	
SOIL/WASTE/SANITARY PIPING	
GREASE INTERCEPTOR PIPING	
BURIED PIPING	
HEAT TRACED PIPING	
CLEAN OUT/PLUGGED OUTLET	
CAPPED OUTLET	
CONTINUED PIPING	
PIPE DOWN/DROP	
PIPE UP/RISE	
BOTTOM PIPE CONNECTION	
TOP PIPE CONNECTION	
P-TRAP	
SLOPED CHANGE IN PIPE ELEVATION	
CLEAN OUT WALL PLATE (COWP)	
CLEAN OUT DECK PLATE (CODP)	
RUNNING TRAP	
HOSE BIB	
VACUUM BREAKER	
DRAIN	
P-TRAP	
DISCONNECT FROM EXISTING	
CONNECT TO EXISTING	
BALL VALVE	
CHECK VALVE	
VALVE	
MIXING VALVE	
SOLENOID VALVE	
ANGLE RELIEF VALVE	
RELIEF VALVE	
PLUG VALVE	
FRESH AIR INLET	
PRESSURE GAUGE & COCK	
PUMP	
REDUCER	
SLEEVE	
THERMOMETER	
UNION	
WATERPROOF SLEEVE	

SANITARY STACK	
WATER RISERS	
STORM LEADERS	
GAS RISERS	
AD	AREA DRAIN
AFF	ABOVE FINISHED FLOOR
BLDG.	BUILDING
BFP	BACKFLOW PREVENTER
BOP	BOTTOM OF PIPE
CLG.	CEILING
C.O.	CLEAN OUT
CODP	CLEAN OUT DECK PLATE
CONN	CONNECT
CONT.	CONTINUED/CONTINUATION
C.V.	CHECK VALVE
CVO	CAPPED VALVE OUTLET
CW	COLD WATER
DIA	DIAMETER
DISCONN	DISCONNECT
DN	DOWN (PENETRATES FLOOR SLAB)
DR	DRAIN
DWG	DRAWING
EX	EXISTING
FAI	FRESH AIR INLET
FLR	FLOOR
GC	GENERAL CONTRACTOR
GEN	GENERATOR
H.B.	HOSE BIB
HW	HOT WATER
HWR	HOT WATER RETURN
HYD	HYDRANT
IW	INDIRECT WASTE
LAV	LAVATORY
MH	MANHOLE
N.C.	NORMALLY CLOSED
N.O.	NORMALLY OPEN
NTS	NOT TO SCALE
ODR	OVER DRAIN
PD	PUMP DISCHARGE
P.O.	PLUGGED OUTLET
SAN	SANITARY
SL	SOIL
ST	STORM
TYP	TYPICAL
UP	UP (PENETRATES FLOOR SLAB)
V	VENT
VO	VALVED OUTLET
VTR	VENT THROUGH ROOF
W	WASTE
WC	WATER CLOSET
WH	WALL HYDRANT

COMPLIANCE WITH NYC ECCC:

TO THE BEST OF MY KNOWLEDGE, BELIEF, AND PROFESSIONAL JUDGMENT, THIS APPLICATION IS IN COMPLIANCE WITH THE NEW YORK CITY ENERGY CONSERVATION CONSTRUCTION CODE.

WORK ITEM	PROPOSED DESIGN VALUES	CODE PRESCRIBED VALUE & CITATION
HOT WATER PIPE INSULATION	1" THICK AND CONDUCTIVITY < 0.27 BTU PER IN./HxFT2x°F	1" THICK AND CONDUCTIVITY < 0.27 BTU PER IN./HxFT2x°F

PLUMBING FIXTURE SCHEDULE

DESIGNATION	FIXTURE	SERVICE CONNECTION S	W	V	CW	HW	REMARKS
SK-1	LAVATORY	–	2"	1½"	¾"	¾"	

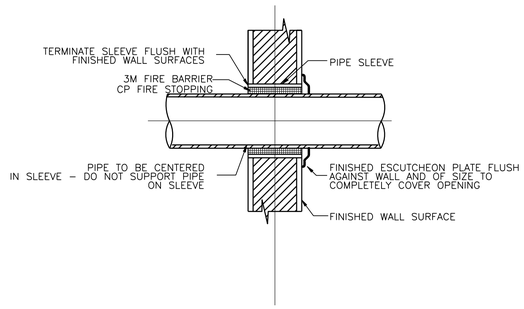
NOTES:
1. ALL FIXTURES ARE TO BE AS SCHEDULED ON ARCHITECTURAL DRAWINGS.
2. PROVIDE ALL FIXTURES COMPLETE WITH ALL TRIM & MOUNTING ACCESSORIES.

PUMP SCHEDULE

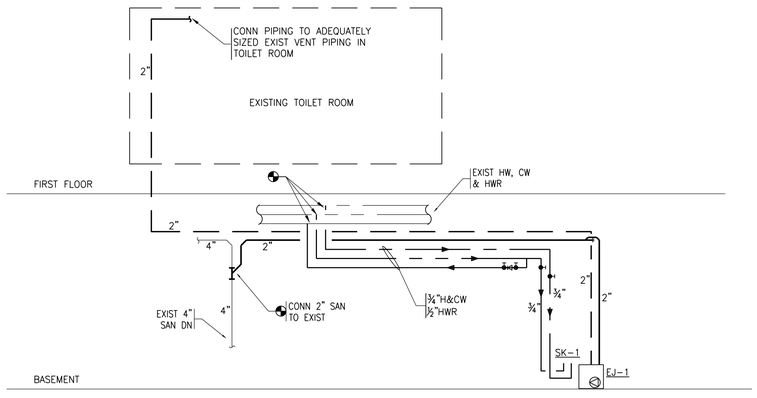
DESIGNATION	NO. REQUIRED	SERVICE	LOCATION	FLOW RATE (G.P.M.)	MAXIMUM TOTAL DYNAMIC HEAD (FT.)	MINIMUM TOTAL DYNAMIC HEAD (FT.)	CASING PRESSURE (PSIG)	MANUFACTURER MODEL NUMBER	STAGES	VERTICAL SPLIT	HORIZONTAL SPLIT	END SUCTION	IN LINE	VERTICAL TURBINE	SUBMERSIBLE	MOTOR MINIMUM H.P.	MOTOR R.P.M.	MOTOR VOLTS	MOTOR PHASE	MOTOR CYCLES (Hz)	MANUAL CONTROL	AUTOMATIC CONTROL	PILOT LIGHT	PRESSURE GAUGE RANGE	ALARMS REQUIRED	EMERGENCY POWER REQUIRED	REMARKS	DRAWING NO.
EJ-1	1	SANITARY	PANTRY	5	30.0	15	–	LIBERTY 405HV	–	–	–	–	–	–	X	1/2	–	208	1	60	–	X	–	–	X	–	PROVIDE LIBERTY 15"X14" DIA FIBERGLASS BASIN & QUICK TREE TECH FLOAT. PROVIDE QUICK DISCONNECT COUPLINGS ON ALL INLETS & OUTLET PIPING TO BASIN. ELEC CONN TO BE HARDWIRED	

PLUMBING DRAWING LIST

DRAWING NO.	DRAWING TITLE
P-001.00	PLUMBING SYMBOL LIST, NOTES, SCHEDULES, DETAILS & RISER DIAGRAM
P-100.00	PLUMBING CONSTRUCTION PLAN
P-200.00	PLUMBING SPECIFICATIONS



1 PIPE SLEEVE THRU INTERIOR PARTITION
SCALE: NONE



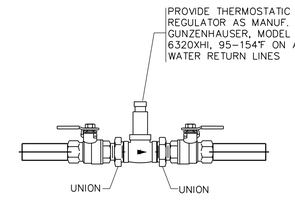
2 RISER DIAGRAM
SCALE: NONE

GENERAL NOTES

1. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NEW YORK CITY BUILDING CODE, FIRE DEPARTMENT RULES AND REGULATIONS, UTILITY COMPANY REQUIREMENTS, AND THE BEST TRADE PRACTICES.
2. BEFORE COMMENCING WORK, THE CONTRACTOR SHALL FILE ALL REQUIRED INSURANCE CERTIFICATES WITH THE DEPARTMENT OF BUILDINGS, OBTAIN ALL REQUIRED PERMITS, AND PAY ALL FEES REQUIRED BY THE GOVERNING NEW YORK CITY AGENCIES.
3. MINOR DETAILS NOT USUALLY SHOWN OR SPECIFIED, BUT REQUIRED FOR PROPER CONSTRUCTION OF ANY PART OF THE WORK SHALL BE INCLUDED AS IF THEY WERE INDICATED IN THE DRAWINGS.
4. THE CONTRACTOR SHALL COORDINATE ALL WORK PROCEDURES WITH THE STIPULATIONS OF LOCAL AUTHORITIES, BUILDING MANAGEMENT OR BOARD OF DIRECTORS.
5. THE CONTRACTOR SHALL LAY OUT HIS OWN WORK, AND SHALL PROVIDE ALL DIMENSIONS REQUIRED FOR OTHER TRADES: PLUMBING, ELECTRICAL, ETC.
6. PLUMBING WORK SHALL BE PERFORMED BY PERSONS LICENSED IN THEIR TRADES, WHO SHALL ARRANGE FOR AND OBTAIN THROUGH THE DEPARTMENT OF BUILDINGS ALL REQUIRED PERMITS, INSPECTIONS AND REQUIRED SIGN OFFS.
7. ELECTRICAL WORK SHALL BE PERFORMED BY PERSONS LICENSED IN THEIR TRADES, WHO SHALL ARRANGE FOR AND OBTAIN THROUGH THE BUREAU OF ELECTRICAL CONTROL ALL REQUIRED PERMITS, INSPECTIONS AND REQUIRED SIGN OFFS.
8. THE CONTRACTOR SHALL DO ALL CUTTING, PATCHING, REPAIRING AS REQUIRED TO PERFORM ALL OF THE WORK INDICATED ON THE DRAWINGS, AND ALL OTHER WORK THAT MAY BE REQUIRED TO COMPLETE THE JOB.
9. ALL PIPING AND WIRING SHALL BE REMOVED TO A POINT OF CONCEALMENT AND SHALL BE PROPERLY CAPPED OR PLUGGED.
10. PROVIDE VALVES ON ALL BRANCHES EXTENDING FROM MAIN LINE.
11. SEE RISER DIAGRAM FOR SIZES AND ADDITIONAL VALVING REQUIREMENTS.

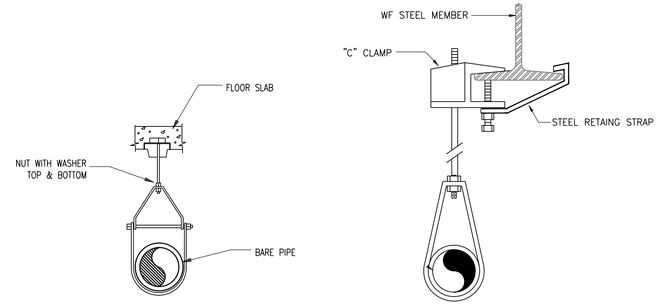
PLUMBING NOTES

1. THE DRAWINGS SHOW THE GENERAL ARRANGEMENT OF ALL PIPING AND EQUIPMENT AND INDICATE THE REQUIRED SIZE AND POINTS OF TERMINATION OF THE PIPING AND SUGGEST PROPER ROUTING OF SAME. HOWEVER, IT IS NOT THE INTENTION OF THE DRAWINGS TO SHOW ALL NECESSARY OFFSETS, OBSTRUCTIONS OR STRUCTURAL CONDITIONS. IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR TO INSTALL HIS WORK IN SUCH A MANNER THAT IT WILL CONFORM TO THE STRUCTURE, AVOID OBSTRUCTIONS, PRESERVE HEADROOM AND KEEP OPENINGS AND PASSAGEWAYS CLEAR WITHOUT FURTHER CONSTRUCTION OR COST.
2. INSTALL WORK SO AS TO BE READILY ACCESSIBLE FOR OPERATING, MAINTENANCE AND REPAIR. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE TO ACCOMPLISH THIS, BUT CHANGES OF MAGNITUDE WHICH INVOLVE EXTRA COST SHALL NOT BE MADE WITHOUT APPROVAL.
3. COORDINATE THE EXACT SIZE AND LOCATION OF NEW OPENINGS. PATCH AND INSULATE AS REQUIRED. THE CONTRACTOR SHALL FIRESTOP ALL PENETRATIONS OF PIPING, CONDUIT, DUCTWORK, ETC. THROUGH FIRE/ SMOKE BARRIERS. FIRE/SMOKE STOPPING SHALL BE 3M FIRE BARRIER CP 25 N/S CAULK UNLESS OTHERWISE NOTED.
4. THE CONTRACTOR SHALL INCUR ALL COSTS AND BURDENS ASSOCIATED WITH LOST OR STOLEN EQUIPMENT AND MATERIALS.
5. DAILY, DURING THE CONSTRUCTION PERIOD, THE CONTRACTOR SHALL REMOVE ALL RUBBISH AND EXCESS MATERIAL ACCUMULATED AS A RESULT OF HIS OPERATIONS. ALL AREAS AND EQUIPMENT AFFECTED UNDER THIS CONTRACT SHALL BE CLEAN OF DUST AND DEBRIS BEFORE FINAL ACCEPTANCE BY OWNER.
6. PROVIDE FOR LEGAL REMOVAL AND DISPOSAL OF ALL RUBBISH AND DEBRIS FROM THE BUILDING AND SITE.
7. THIS CONTRACTOR SHALL COORDINATE HIS WORK WITH ALL OTHER TRADES.
8. CONTRACTOR IS TO OBTAIN ALL PERMITS, PAY ALL FEES, CONNECTION CHARGES, ETC.
9. PAINT AND TOUCH-UP ALL SURFACES MARRED BY PERFORMANCE OF THE WORK.
10. ALL WORK SHOWN ON THESE DRAWINGS IS NEW UNLESS OTHERWISE NOTED.



NOTE:
ALL FLOW REGULATORS INSTALLED IN THE SAME HOT WATER ZONE MUST BE SET TO THE SAME SCALE VALUE.

3 HWR VALVE ASSEMBLY DETAIL
SCALE: NONE



NOTE:
ALL METHODS OF CONNECTION TO CONCRETE STRUCTURE TO BE REVIEWED AND APPROVED BY BASE BUILDING ENGINEER

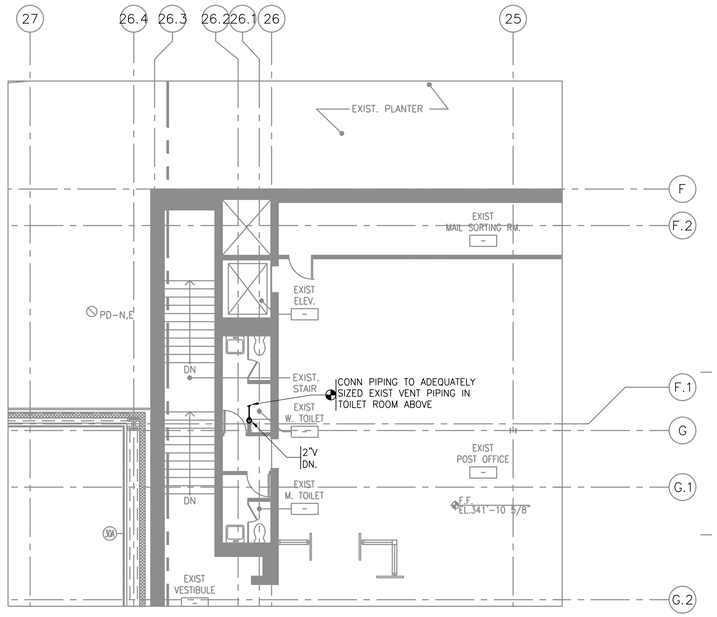
4 TYPICAL CLEVIS HANGER DETAIL
SCALE: NONE

PURCHASE COLLEGE
STATE UNIVERSITY OF NEW YORK
735 ANDERSON HILL RD.
PURCHASE, NY 10577-1400

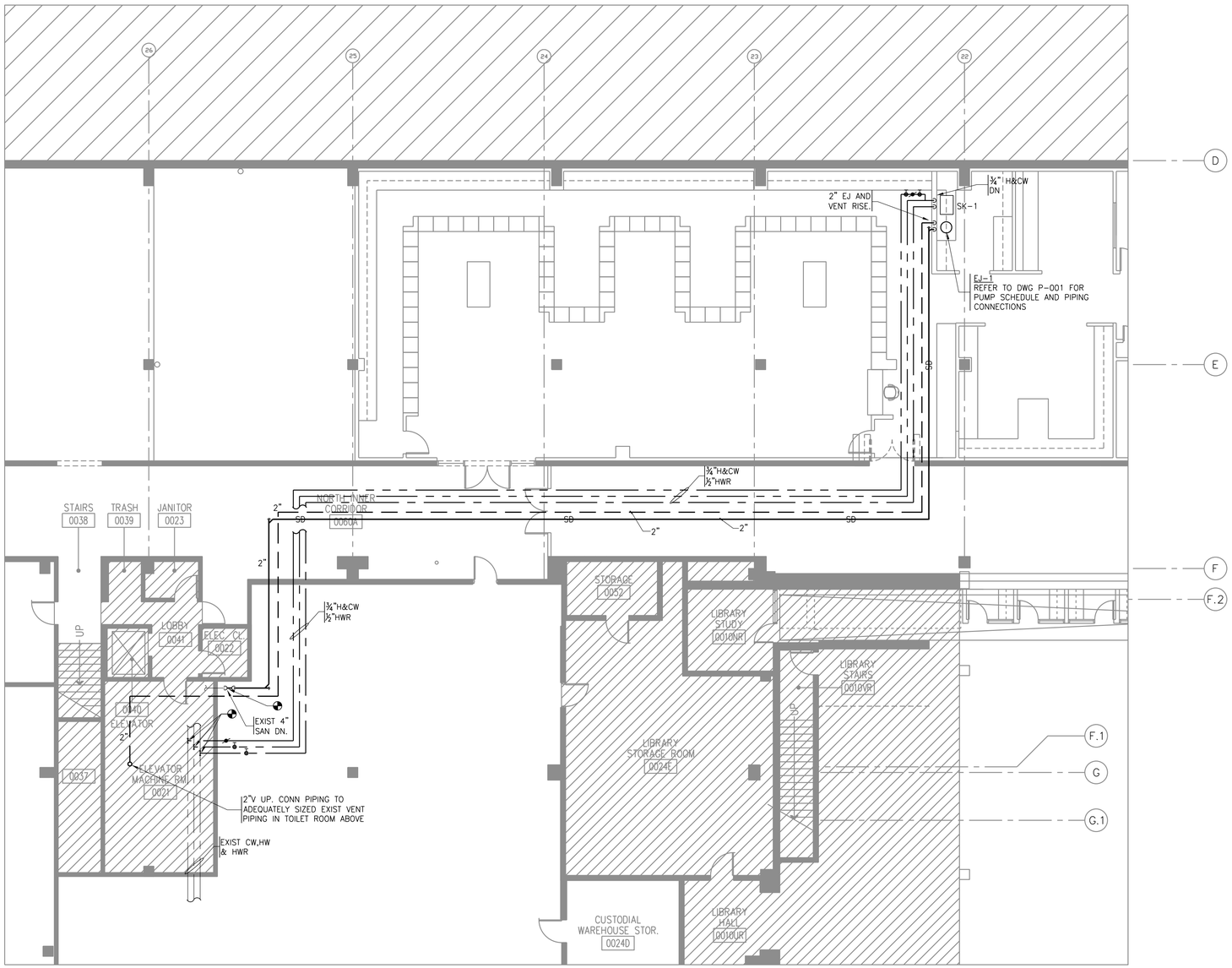
Project Name:	Mailroom / Receiving Area Renovation Project
Project Number:	#SU-120814
Location:	Plaza Lower Level - Proposed Mailroom / Post Office / Receiving Area
Scale:	AS SHOWN
Date:	09/19/14
File Path:	Z:\1-Projects\Mailroom-Receiving Renovation\Drawings\PP_00-Opt10.dwg

NO.	REVISIONS | SUBMISSIONS	DATE
	ISSUED FOR BID	12.08.2014

PLUMBING SYMBOLS, NOTES, SCHEDULE, DETAILS & RISER DIAGRAM
P-001.00



1 FIRST FLOOR CONSTRUCTION PLAN
SCALE: 1/8" = 1'-0"



2 BASEMENT CONSTRUCTION PLAN
SCALE: 1/8" = 1'-0"

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STATE UNIVERSITY OF NEW YORK
735 ANDERSON HILL RD.
PURCHASE, NY 10577-1400

Project Name:	Mailroom / Receiving Area Renovation Project
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Date:	09/19/14
File Path:	Z:\1-Projects\Mailroom-Receiving Renovation\Drawings\PP_00-Opt10.dwg

NO.	REVISIONS | SUBMISSIONS	DATE
	ISSUED FOR BID	12.08.2014

PLUMBING
CONSTRUCTION
PLAN
P-100.00

PLUMBING SPECIFICATIONS

1. GENERAL:

   A. THE "GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION," AIA DOCUMENT A201, LATEST EDITION AND THESE SPECIFICATIONS AS APPLICABLE ARE PART OF THIS CONTRACT.

   B. ALL APPLICABLE CODES, LAWS AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK ARE HEREBY INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS, AND THEIR PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR WHO SHALL INFORM THE OWNER, PRIOR TO SUBMITTING A PROPOSAL, OF ANY WORK OR MATERIAL WHICH VIOLATES ANY OF THE ABOVE LAWS AND REGULATIONS. ANY WORK DONE BY THE CONTRACTOR CAUSING SUCH VIOLATION SHALL BE CORRECTED BY THE CONTRACTOR.

   C. INVESTIGATE EACH SPACE THROUGH WHICH EQUIPMENT MUST BE MOVED. WHERE NECESSARY, EQUIPMENT SHALL BE SHIPPED FROM MANUFACTURER IN SECTIONS OF SIZE SUITABLE FOR MOVING THROUGH AVAILABLE RESTRICTIVE SPACES. ASCERTAIN FROM BUILDING OWNER AND TENANT AT WHAT TIMES OF DAY EQUIPMENT MAY BE MOVED THROUGH ALL AREAS.

   D. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. PIPE ROUTING IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL OFFSETS, DROPS AND RISES OF RUND. THE CONTRACTOR SHALL ALLOW IN HIS PRICE FOR ROUTING OF PIPE TO AVOID OBSTRUCTIONS. COORDINATION WITH THE EXISTING SERVICES, INCLUDING THOSE OF OTHER TRADES IS REQUIRED. MAINTAIN HEADROOM AND SPACE CONDITIONS.

   E. INSTALL WORK SO AS TO BE READILY ACCESSIBLE FOR OPERATION, MAINTENANCE AND REPAIR. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE TO ACCOMPLISH THIS, BUT CHANGES WHICH INVOLVE EXTRA COST SHALL NOT BE MADE WITHOUT APPROVAL.

   F. REMOVAL AND RELOCATION OF CERTAIN EXISTING WORK WILL BE NECESSARY FOR THE PERFORMANCE OF THE GENERAL WORK. ALL EXISTING CONDITIONS CANNOT BE COMPLETELY DETAILED ON THE DRAWINGS. THE CONTRACTOR SHALL SURVEY THE SITE AND INCLUDE ALL CHANGES IN MAKING UP THE WORK PROPOSAL.

   G. CONNECTIONS TO EXISTING WORK: INSTALL NEW WORK AND CONNECT TO EXISTING WORK WITH MINIMUM INTERFERENCE TO EXISTING FACILITIES. TEMPORARY SHUTDOWNS OF EXISTING SERVICES SHALL BE PERFORMED AT NO ADDITIONAL CHARGES, AT TIMES NOT TO INTERFERE WITH NORMAL OPERATION OF EXISTING FACILITIES AND ONLY WITH WRITTEN CONSENT OF OWNER. MAINTAIN CONTINUOUR OPERATION OF EXISTING FACILITIES AS REQUIRED WITH NECESSARY TEMPORARY CONNECTIONS BETWEEN NEW AND EXISTING WORK. CONNECT NEW WORK TO EXISTING WORK IN NEAT AND ACCEPTABLE MANNER. RESTORE EXISTING DISTURBED WORK TO ORIGINAL CONDITION.

   H. DISCONNECT, REMOVE AND/OR RELOCATE EXISTING MATERIAL, EQUIPMENT AND OTHER WORK AS NOTED OR REQUIRED FOR PROPER INSTALLATION OF NEW WORK.

   I. THE CONTRACTOR SHALL KEEP ALL EQUIPMENT AND MATERIALS, AND ALL PARTS OF THE BUILDING, EXTERIOR SPACES AND ADJACENT STREETS, SIDEWALKS AND PAVEMENTS, FREE FROM MATERIAL AND DEBRIS RESULTING FROM THE EXECUTION OF THIS WORK. EXCESS MATERIALS WILL NOT BE PERMITTED TO ACCUMULATE EITHER ON THE INTERIOR OR THE EXTERIOR.

   J. THE LOCATIONS OF THE EXISTING SERVICES ARE BELIEVED TO BE AS INDICATED ON THE DRAWINGS. THE CONTRACTOR SHALL VERIFY THE ACTUAL LOCATION OF THESE SERVICES AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO COMMENCING ANY WORK.

   K. SEAL OPENINGS THROUGH WALLS AND FLOORS WITH A U.L.-LISTED FIRESTOPPING ASSEMBLY.

   L. PROVIDE ALL NECESSARY FLASHING AND COUNTERFLASHING TO MAINTAIN THE WATERPROOFING INTEGRITY AS REQUIRED BY THE INSTALLATION OR REMOVAL OF PIPING AND EQUIPMENT.

   M. ALL PRESENT MATERIAL, EQUIPMENT AND CONSTRUCTION DEBRIS TO BE REMOVED UNDER THIS CONTRACT SHALL BECOME THE PROPERTY OF THE CONTRACTOR WITH THE EXCEPTION OF SPECIFIC EQUIPMENT AND APPARATUS REQUESTED BY THE BUILDING REPRESENTATIVE, ARCHITECT OR AS NOTED TO BE RELOCATED ON THE DRAWINGS. REMOVED EQUIPMENT SHALL BE PROPERLY DISPOSED OF BY THIS CONTRACTOR.

   N. THE WORK IN THE BUILDING SHALL BE DONE WHEN AND AS DIRECTED, AND IN A MANNER SATISFACTORY TO THE OWNER. THE WORK SHALL BE PERFORMED SO AS TO CAUSE THE LEAST POSSIBLE INCONVENIENCE AND DISTURBANCE TO THE PRESENT OCCUPANTS.

   O. THE CONTRACTOR'S PROPOSAL FOR ALL WORK SHALL BE PREDICATED ON THE PERFORMANCE OF THE WORK DURING REGULAR WORKING HOURS, WHEN SO DIRECTED, HOWEVER, THE CONTRACTOR SHALL INSTALL WORK IN OVERTIME AND THE ADDITIONAL COST TO BE CHARGED THEREFORE SHALL BE ONLY THE "PREMIUM" PORTION OF THE WAGES PAID.

   P. UNLESS OTHERWISE SPECIFICALLY SPECIFIED, INCLUDE ALL CUTTING AND ROUGH PATCHING OF EXISTING FLOORS, WALLS, PARTITIONS AND OTHER MATERIALS IN THE EXISTING BUILDING.

   Q. ALL MATERIAL AND EQUIPMENT TO BE NEW UNLESS OTHERWISE NOTED AND SHALL BE IN ACCORDANCE WITH ARCHITECTURAL SPECIFICATIONS.

   R. SUBMISSION OF A PROPOSAL SHALL BE CONSTRUED AS EVIDENCE THAT A CAREFUL EXAMINATION OF THE PORTIONS OF THE EXISTING BUILDING, EQUIPMENT, ETC., WHICH AFFECT THIS WORK, AND THE ACCESS TO SUCH SPACES, HAS BEEN MADE AND THAT THE CONTRACTOR IS FAMILIAR WITH EXISTING CONDITIONS AND DIFFICULTIES THAT WILL AFFECT THE EXECUTION OF THE WORK.

   S. INSURANCE: IN ACCORDANCE WITH BUILDING REQUIREMENTS AND SHALL INCLUDE A HOLD HARMLESS CLAUSE FOR ARCHITECT AND ENGINEER.

   T. THE FINAL ACCEPTANCE WILL BE MADE AFTER THE CONTRACTOR HAS ADJUSTED HIS EQUIPMENT, TESTED THE VARIOUS SYSTEMS, DEMONSTRATED THAT IT FULFILLS THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS AND HAS FURNISHED ALL THE REQUIRED CERTIFICATES OF INSPECTION AND APPROVAL.

2. SCOPE OF WORK:

   A. SCOPE OF WORK SHALL CONSIST OF PROVIDING LABOR, MATERIALS, EQUIPMENT, SERVICES & FEES NECESSARY FOR COMPLETE AND SAFE INSTALLATION IN CONFORMITY WITH THE NYC PLUMBING CODE AND ALL OTHER APPLICABLE INDUSTRY, NATIONAL AND LOCAL CODES AND AUTHORITIES HAVING JURISDICTION, AS INDICATED ON DRAWINGS AND HEREIN SPECIFIED.

   B. THE ARCHITECTURAL DRAWINGS, PLANS, DETAILS, SPECIFICATIONS AND SPECIFICATION ADDENDA ARE MADE PART OF THIS CONTRACT AND SHALL APPLY TO ALL WORK UNDER THE CONTRACT UNLESS OTHERWISE AMENDED, MODIFIED, SUPPLEMENTED OR SPECIFIED HEREIN.

   C. THE CONTRACTOR SHALL FURNISH A WRITTEN GUARANTEE TO REPLACE OR REPAIR PROMPTLY AND ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED FOR ANY WORKMANSHIP AND EQUIPMENT IN WHICH DEFECTS DEVELOP WITHIN ONE YEAR FROM THE DATE OF FINAL CERTIFICATE FOR PAYMENT AND/OR FROM DATE OR ACTUAL USE OF EQUIPMENT OR BENEFICIAL OCCUPANCY OF SPACES BY OWNER INCLUDED UNDER THE VARIOUS PARTS OF THE WORK, WHICHEVER DATE IS EARLIER. THIS WORK SHALL BE DONE AS DIRECTED BY THE OWNER. THIS GUARANTEE SHALL ALSO PROVIDE THAT WHERE DEFECTS OCCUR, THE CONTRACTOR WILL ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED IN REPAIRING AND REPLACING WORK OF OTHER TRADES AFFECTED BY DEFECTS, REPAIRS OR REPLACEMENTS IN EQUIPMENT SUPPLIED BY THE CONTRACTOR.

   D. THE CONTRACTOR SHALL GIVE NECESSARY NOTICE, FILE DRAWINGS AND SPECIFICATIONS WITH THE DEPARTMENT HAVING JURISDICTION, OBTAIN PERMITS OR LICENSES NECESSARY TO CARRY OUT THIS WORK AND PAY ALL FEES THEREFORE. THE CONTRACTOR SHALL ARRANGE FOR INSPECTION AND TESTS OF ANY OR ALL PARTS OF THE WORK IF SO REQUIRED BY AUTHORITIES AND PAY ALL CHARGES FOR SAME. THE CONTRACTOR SHALL PAY ALL COSTS FOR, AND FURNISH TO THE OWNER BEFORE FINAL BILLING, ALL CERTIFICATES NECESSARY AS EVIDENCE THAT THE WORK INSTALLED CONFORMS WITH ALL REGULATIONS WHERE THEY APPLY TO THIS WORK.

3. SHOP DRAWINGS:

   A. PRIOR TO THE INSTALLATION OF ANY WORK AND PROCUREMENT OF EQUIPMENT PROVIDE COMPLETE SET OF COORDINATED SHOP DRAWINGS OF ALL NEW AND EXISTING EQUIPMENT, INDICATING CAPACITY DIMENSIONS AND SEQUENCE OF OPERATION FOR WRITTEN APPROVAL BY THE ARCHITECT AND ENGINEER.

   B. INDICATE ON EACH SHOP DRAWING SUBMITTED:

      1. PROJECT NAME AND LOCATION
      2. NAME OF ARCHITECT AND ENGINEER
      3. ITEM IDENTIFICATION
      4. APPROVAL STAMP OF PRIME CONTRACTOR

   C. SUBMISSIONS:

      1. SUBMISSIONS 11" X 17" OR SMALLER:

         IF THE SUBMISSION IS A CATALOG CUT, THEN THE CONTRACTOR SHALL SUBMIT ONE ORIGINAL AND TWO COPIES, OTHERWISE, HE SHALL SUBMIT THREE COPIES. THE ARCHITECT WILL FORWARD THE ORIGINAL AND ONE COPY (TWO COPIES WHEN NO ORIGINAL IS RECEIVED) TO THE ENGINEER. ALL CATALOG CUTS SHALL BE COMPLETE.

      2. SUBMISSIONS LARGER THAN 11" X 17":

         SUBMIT TWO PRINTS AND ONE PAPER SEPIA TO THE ARCHITECT. THE ARCHITECT WILL FORWARD ONE PRINT AND THE PAPER SEPIA TO THE ENGINEER.

   D. SUBMIT SHOP DRAWINGS FOR THE FOLLOWING:

      1. PIPE AND FITTINGS
      2. VALVES
      3. PLUMBING FIXTURES AND TRIM
      4. PIPING LAYOUTS
      5. SUPPORTS, HANGERS AND GUIDES
      6. INSULATION

   E. COORDINATED COMPOSITE DRAWINGS

      1. THE CONTRACTOR SHALL PREPARE FULL COORDINATED COMPOSITE DRAWINGS FOR THE MECHANICAL, ELECTRICAL PLUMBING AND FIRE PROTECTION WORK. THE GENERAL CONTRACTOR SHALL OVERLAY EACH DISCIPLINE'S WORK (IN SEPARATE COLORS) ON A SEPIA SET OF SHEETMETAL DRAWINGS. ALL CONFLICTS AND POTENTIAL CONFLICTS SHALL BE CLEARLY IDENTIFIED ON THE SEPIA SHEETMETAL DRAWINGS. THIS SHALL INCLUDE BUT NOT BE LIMITED TO CONFLICTS WITH LIGHTS, EQUIPMENT, PIPING, DUCTWORK AND SUPPORTS OF OTHER TRADES, AS WELL AS CONFLICTS WITH ARCHITECTURAL AND STRUCTURAL WALLS, COLUMNS, CEILINGS AND STRUCTURAL BEAMS. THE SUBCONTRACTOR SHALL HAVE REPRESENTATIVE(S) ATTEND A WEEKLY JOB SITE COORDINATION MEETING IN THE GENERAL CONTRACTOR'S FIELD OFFICE. ALL TRADES SHALL RESOLVE CONFLICTS AT THESE MEETINGS AND SIGN OFF EACH SEPIA SHEETMETAL DRAWING INDICATING ACCEPTANCE AND SATISFACTORY RESOLUTION TO ALL CONFLICTS. ALL CONFLICTS THAT CANNOT BE RESOLVED SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR RESOLUTION.

4. AS-BUILT DRAWINGS AND EQUIPMENT OPERATIONAL INSTRUCTIONS:

   A. UPON COMPLETION AND ACCEPTANCE OF WORK, CONTRACTOR SHALL FURNISH WRITTEN INSTRUCTIONS AND EQUIPMENT MANUALS AND DEMONSTRATE TO THE OWNER THE PROPER OPERATION AND MAINTENANCE OF ALL EQUIPMENT AND APPARATUS FURNISHED UNDER THIS CONTRACT.

   B. THESE INSTRUCTIONS SHALL BE TYPED ON 8½" X 11" PAPER AND BOUND IN THREE RING BINDERS WITH CLEAR ACETATE COVERS. CONTRACTOR SHALL GIVE THREE COPIES OF THE INSTRUCTIONS TO THE OWNER AND ONE COPY TO THE ENGINEER.

   C. THE INSTRUCTION BOOKLET SHALL BEAR THE NAME, ADDRESS AND TELEPHONE NUMBER OF THE PROJECT, ARCHITECT AND ENGINEER.

   D. REPRODUCIBLE "AS-BUILT" DRAWINGS SHALL BE PROVIDED INDICATING THE AS INSTALLED CONDITIONS OF THE WORK. "AS-BUILT" DRAWINGS SHALL BE PROVIDED TO THE ARCHITECT AFTER COMPLETION OF THE INSTALLATION.

5. GENERAL PROVISIONS FOR PLUMBING WORK:

   A. SPECIFICATIONS ARE OF SIMPLIFIED FORM AND INCLUDE INCOMPLETE SENTENCES. WORDS OR PHRASES SUCH AS "THE CONTRACTOR SHALL," "SHALL BE," "FURNISH," "PROVIDE," "A," "THE," AND "ALL" HAVE BEEN OMITTED FOR BREVITY.

   B. QUALITY ASSURANCE:

      1. QUALITY AND GAUGE OF MATERIALS:

         NEW, BEST OF THEIR RESPECTIVE KINDS, AND FREE FROM DEFECTS. MATERIALS AND EQUIPMENT OF SIMILAR APPLICATION SHALL BE OF SAME MANUFACTURER, EXCEPT AS NOTED.

      2. GUARANTEE:

         ALL MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE OF WORK.

   C. PRODUCT DELIVERY, STORAGE AND HANDLING:

      1. MOVING OF EQUIPMENT:

         WHERE NECESSARY, SHIP IN CARTED SECTIONS OF SIZE TO PERMIT PASSING THROUGH AVAILABLE SPACES.

      2. ACCESSIBILITY:

         FOR OPERATION, MAINTENANCE AND REPAIR, MINOR DEVIATIONS SHALL BE PERMITTED. CHANGES OF MAGNITUDE OR INVOLVING EXTRA COST ARE NOT PERMISSIBLE WITHOUT REVIEW.

   E. BRUSH AND CLEAN WORK PRIOR TO CONCEALING, PAINTING AND ACCEPTANCE. PAINTED EXPOSED WORK THAT IS SOILED OR DAMAGED. CLEAN AND REPAIR TO MATCH ADJOINING WORK BEFORE FINAL ACCEPTANCE. REMOVE DEBRIS FROM INSIDE AND OUTSIDE OF MATERIAL AND EQUIPMENT.

   F. FINAL LOCATIONS AND MOUNTING ORIENTATIONS OF ALL PLUMBING FIXTURES SHALL BE VERIFIED BY ARCHITECT.

   G. ALL ACCESS DOOR LOCATIONS SHALL BE REVIEWED BY ARCHITECT PRIOR TO INSTALLATION.

6. PIPE AND FITTINGS:

   A. SANITARY DRAINAGE AND VENT:

      1. HUBLESS CAST IRON SOIL PIPE AND FITTINGS WITH EXTRA WIDE HEAVY DUTY GASKETED HUBLESS COUPLINGS HUSKIE SERIES 4000 COUPLINGS.

   B. DOMESTIC WATER:

      1. TYPE L HARD COPPER TUBING WITH CAST BRONZE OR WROUGHT COPPER FITTINGS AND 95/5 TIN ANTIMONY SOLDER JOINTS.
      2. STANDARD WEIGHT RED BRASS PIPE WITH STANDARD WEIGHT CAST BRONZE THREADED FITTINGS.

   C. NOT USED.

7. VALVES:

   A. GATE VALVES:

      1. BRONZE RISING STEM, 200 PSI WOG; SIMILAR TO STOCKHAM #B-105, B-109.

   B. BALL VALVES:

      1. TWO-PIECE, BRONZE, END ENTRY, 600 PSI WWP; SIMILAR TO STOCKHAM #S-216BR-R-T, #2-216 BR-R-S.

   C. CHECK VALVES:

      1. BRONZE, THREADED CAP, TEFLON DISC; SIMILAR TO STOCKHAM #B310T, B-320T.

8. INSULATION:

   A. ALL INSULATION (INCLUDING JACKET, FACING AND ADHESIVE) SHALL HAVE COMPOSITE FIRE AND SMOKE HAZARD RATINGS AS TESTED BY PROCEDURES LISTED IN ASTM E-84, NFPA 255 AND UL 273; NOT EXCEEDING A FLAME SPREAD OF 25 AND A SMOKE DEVELOPED OF 50.

   B. ON VALVES AND FITTINGS PROVIDE PREMOLDED FIBERGLASS FITTINGS. VAPOR SEAL INSULATION ON "CW".

   C. "CW" PIPING:

      1. PROVIDE ½" THICK FIBERGLASS SECTION PIPE COVERING WITH VAPOR BARRIER JACKET.

   D. "HW" PIPING:

      1. PROVIDE 1" THICK FIBERGLASS SECTIONAL PIPE COVERING.

9. PLUMBING FIXTURES:

   A. PROVIDE ALL FIXTURES WITH STOP VALVES AND SUPPLIES AND FIXTURE TRAPS AS REQUIRED.

   B. ALL FIXTURES SHALL BE AS INDICATED ON ARCHITECTURAL AND KITCHEN CONSULTANT DRAWINGS.

10. NOT USED.

11. PIPING SUPPORTS:

   A. SUPPORT ALL PIPING FROM BUILDING CONSTRUCTION BY PROVIDING INSERTS, BEAM CLAMPS, STEEL FISHPLATES (IN CONCRETE FILL ONLY), AND ACCEPTABLE BRACKETS. SUBMIT ALL METHODS FOR REVIEW.

   B. PROVIDE TRAPEZE HANGERS OF BOLTED ANGLES OR CHANNELS FOR GROUPED LINES AND SERVICES.

   C. PROVIDE ADDITIONAL FRAMING WHERE BUILDING CONSTRUCTION IS INADEQUATE. SUBMIT FOR REVIEW.

   D. SUSPENDED HORIZONTAL PIPING:

      1. SUPPORT ALL PIPING INDEPENDENTLY FROM STRUCTURE USING HEAVY IRON-HINGED TYPE HANGERS, SIMILAR TO GRINNEL CLEVIS NO. 260.
      2. PROVIDE ELECTROPLATED SOLID-BAND HANGERS SIMILAR TO AUTO-GRIP, FOR 2" AND SMALLER PIPE.
      3. PROVIDE WALL BRACKETS FOR WALL SUPPORTED PIPING AND PROVIDE PIPE SADDLES FOR FLOOR MOUNTED PIPING.
      4. PROVIDE SUPPORTS WITH COPPER LINING FOR UNINSULATED COPPER PIPING.
      5. SUSPEND PIPING FROM INSERTS, USING BEAM CLAMPS WITH RETAIN CLAMP OR LOCKNUT, STEEL FISHPLATES, CANTILEVER BRACKETS OR OTHER ACCEPTED MEANS. BEAM CLAMPS SHALL BE SIMILAR TO GRINNEL FIGURES 61, 87, 131 OR 225.
      6. SUSPEND PIPING BY RODS WITH DOUBLE NUTS.
      7. PROVIDE ADDITIONAL STEEL FRAMING AS REQUIRED AND ACCEPTED WHERE OVERHEAD CONSTRUCTION DOES NOT PERMIT FASTENING HANGER RODS IN REQUIRED LOCATIONS.
      8. SUPPORT BRANCH FIXTURE WATER PIPING IN CHASES WITH COPPER-PLATED METAL BRACKETS, SECURED TO STUDS, SIMILAR TO HOLDRITE NOS. 102-18, 107-18, 102-26 OR 101-26.

   E. PROVIDE 180° ARC GALVANIZED METAL COVERING SHIELDS ON HANGERS FOR INSULATED PIPING WITHOUT INCOMPRESSIBLE INSULATING BLOCK IN INSULATION AT HANGERS.

   F. MAXIMUM HANGER SPACING AS INDICATED:

      1. PIPE ⅜"-¾" SHALL BE EVERY 6'.
      2. PIPE 1" SHALL BE EVERY 10'.
      3. PIPE 1¼" AND LARGER SHALL BE EVERY 10'.
      4. COPPER TUBING 1¼" AND SMALLER SHALL BE EVERY 6'.
      5. COPPER TUBING 1½" AND LARGER SHALL BE EVERY 10'.
      6. CAST IRON: EVERY 5' AND AT EVERY FITTING OR JOINT.

   G. VERTICAL PIPING:

      1. PROVIDE SPACING AS INDICATED:

         a. THREADED PIPING SHALL BE EVERY OTHER FLOOR LEVEL, AT A MAXIMUM OF 25' ON CENTERS.

         b. CAST IRON PIPING SHALL BE EVERY FLOOR LEVEL, MAXIMUM 20' ON CENTERS; HUBLESS PIPE IS THE EXCEPTION, REQUIRING A MAXIMUM OF 10' ON CENTERS.

         c. TUBING SHALL BE EVERY FLOOR LEVEL MAXIMUM TEN FEET ON CENTERS.

12. TESTS:

   A. DOMESTIC WATER PIPING:

      1. TEST PIPING HYDROSTATICALLY AT A PRESSURE OF 125 PSI.
      2. DURATION OF TEST SHALL BE 2 HOURS WITHOUT A LOSS IN PRESSURE.

   B. DRAINAGE AND VENT PIPING:

      1. CAP ALL OUTLETS AND FILL PIPING SYSTEM TO OVERFLOWING FROM A POINT AT LEAST 10' ABOVE THE FLOOR.
      2. THE WATER LEVEL SHALL REMAIN CONSTANT THROUGHOUT THE TEST DURATION OF 2 HOURS.

   C. ARRANGE AND COORDINATE TESTS WITH OWNER 48 HOURS IN ADVANCE. NOTIFY ENGINEER AND ARCHITECT OF TEST AND DATE TIME.

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PURCHASE, NY 10577-1400

Project Name:	Mailroom / Receiving Area Renovation Project
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Location:	Plaza Lower Level - Proposed Mailroom / Post Office / Receiving Area
Scale:	AS SHOWN
Date:	09/19/14
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NO.	REVISIONS | SUBMISSIONS	DATE
	ISSUED FOR BID	12.08.2014

PLUMBING SPECIFICATIONS

P-200.00

SPRINKLER DRAWING LIST

SP-001	SPRINKLER SYMBOL LIST, NOTES, DETAILS, SCHEDULE & RISER DIAGRAM
SP-100	SPRINKLER CONSTRUCTION PLAN
SP-200	SPRINKLER SPECIFICATIONS

SPRINKLER SYMBOL LIST

	NEW SPRINKLER PIPE
	EXISTING SPRINKLER PIPING TO REMAIN
	PIPE UP
	PIPE DN
	POINT OF DISCONNECTION
	POINT OF NEW CONNECTION
	CAP
	FLOOR CONTROL ASSEMBELY
	REMOVE SPRINKLER HEAD
	RELOCATE SPRINKLER HEAD
	NEW SPRINKLER HEAD
F	FLOW SWTICH
T	GATE VALVE WITH TAMPER SWITCH
	BALL VALVE
P	PRESSURE SWITCH

SPECIAL INSPECTION NOTE:

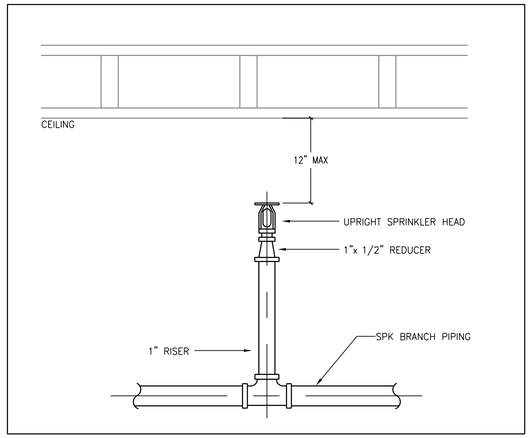
1. REQUIRED SPECIAL INSPECTIONS SHALL BE AS FOLLOWS:
   A. SPRINKLER SYSTEM
   B. FIRESTOPPING
   C. FINAL

COMPLIANCE WITH NYCECC:

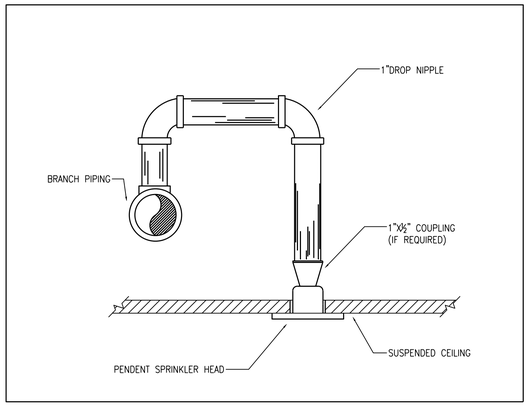
TO THE BEST OF MY KNOWLEDGE, BELIEF, AND PROFESSIONAL JUDGMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK CITY ENERGY CONSERVATION CODE. THE WORK BEING PERFORMED (THE MODIFICATION OF AN EXISTING SPRINKLER SYSTEM) IS NOT GOVERNED BY THE NYCECC.

NEW YORK CITY BUILDING DEPARTMENT NOTE:

THIS PLAN IS APPROVED ONLY FOR WORK INDICATED ON THE APPLICATION SPECIFICATION SHEET. ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON, OR TO BE CONSIDERED AS EITHER BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.



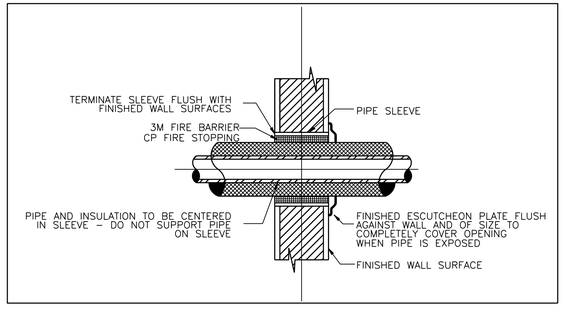
1 TYPICAL UPRIGHT SPRINKLER CONNECTION DETAIL
SCALE: NONE



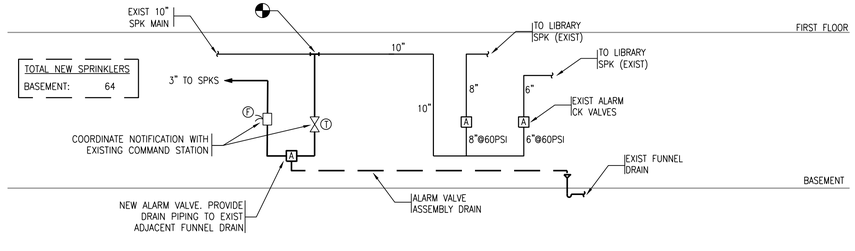
2 TYPICAL SPRINKLER CONNECTION DETAIL
SCALE: NONE

SPRINKLER HEAD SCHEDULE

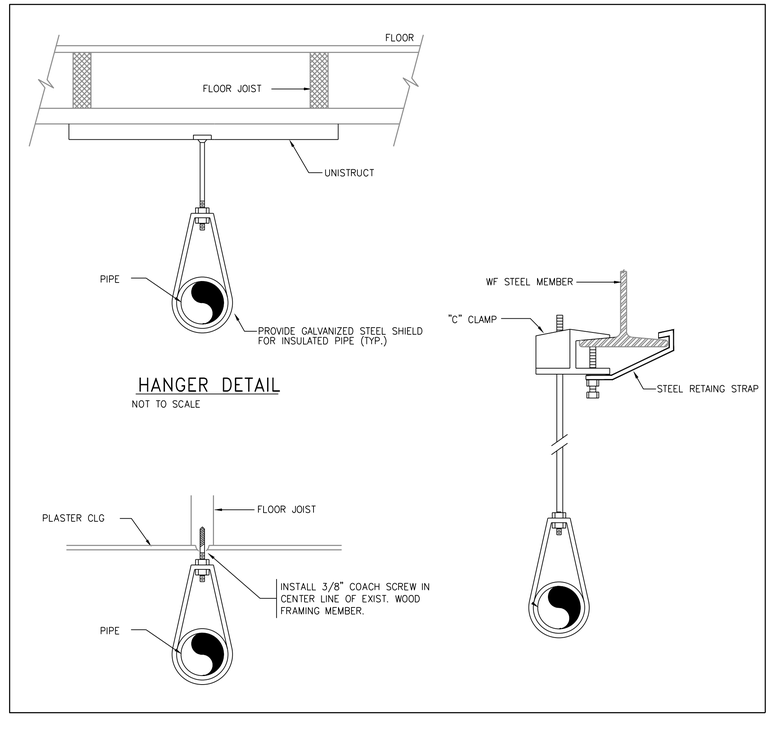
DESIGNATION	REQUIRED	MANUFACTURER/MODEL (CENTRAL / RELIABLE / VIKING)	CONCEALED	PENDANT	UPRIGHT	SIDEWALL	EXTENDED COVERAGE	FLUSH	DRY	DELUGE	REMARKS
⊙	●	F1FR56			●						
●	●	G4A	●	●							



4 PIPE SLEEVE THRU INTERIOR PARTITION
SCALE: NONE



3 PART SPRINKLER RISER DIAGRAM
SCALE: NONE



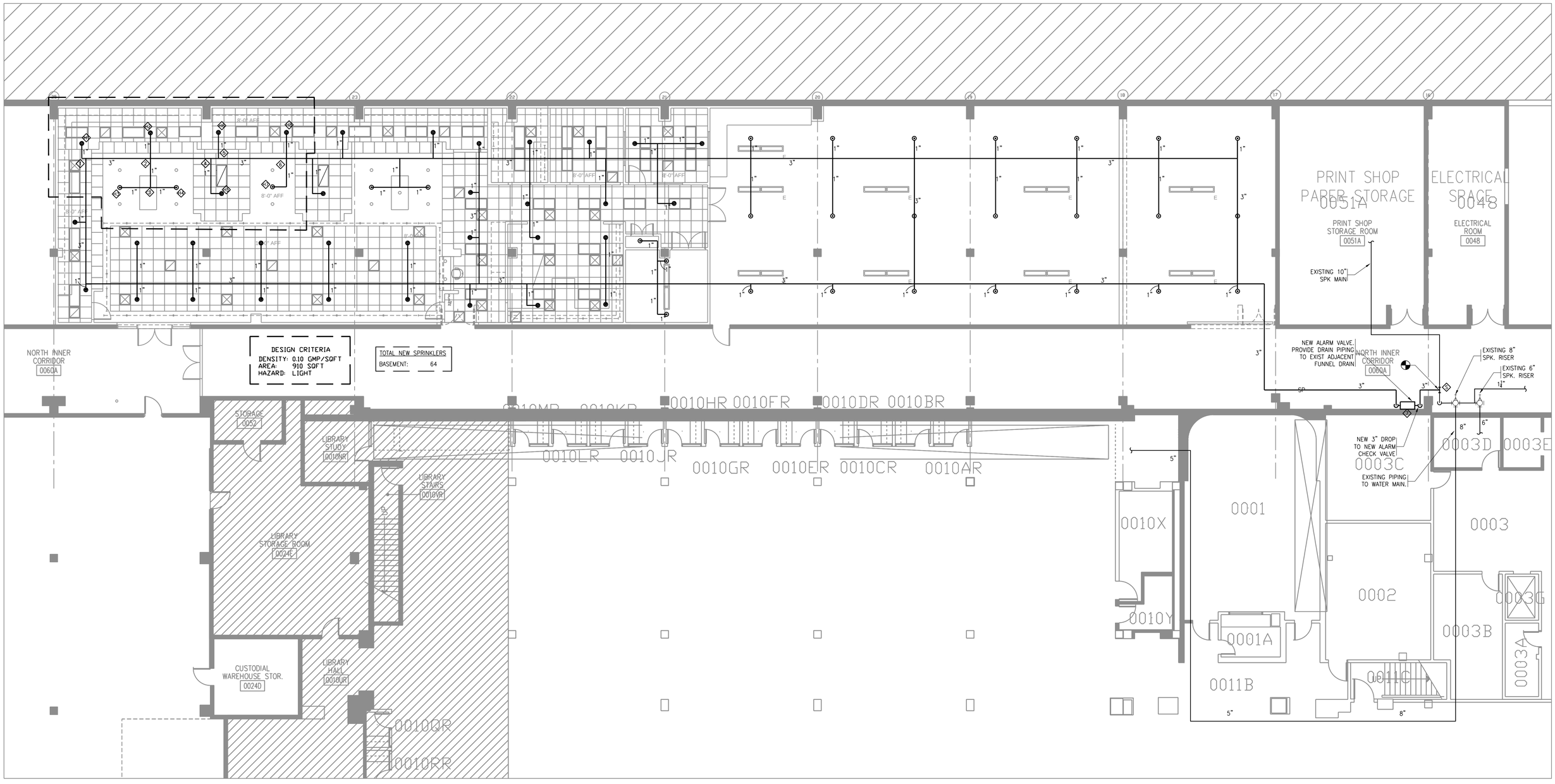
5 TYPICAL PIPE SUPPORT
SCALE: NONE

PURCHASE COLLEGE
STATE UNIVERSITY OF NEW YORK
735 ANDERSON HILL RD.
PURCHASE, NY 10577-1400

Project Name:	Mailroom / Receiving Area Renovation Project
Project Number:	#SU-120814
Location:	Plaza Lower Level - Proposed Mailroom / Post Office / Receiving Area
Scale:	AS SHOWN
Date:	09/19/14
File Path:	Z:\1-Projects\Mailroom-Receiving Renovation\Drawings\PP_00-Opt10.dwg

NO.	REVISIONS | SUBMISSIONS	DATE
	ISSUED FOR BID	12.08.2014

SPRINKLER SYMBOL LIST, NOTES, DETAILS, SCHEDULE & RISER DIAGRAM
SP-001.00



SPRINKLER INSTALLATION PLAN

SCALE: 1/8" = 1'-0"

PURCHASE COLLEGE
STATE UNIVERSITY OF NEW YORK
735 ANDERSON HILL RD.
PURCHASE, NY 10577-1400

Project Name:	Mailroom / Receiving Area Renovation Project
Project Number:	#SU-120814
Location:	Plaza Lower Level - Proposed Mailroom / Post Office / Receiving Area
Scale:	AS SHOWN
Date:	09/19/14
File Path:	Z:\1-Projects\Mailroom-Receiving Renovation\Drawings\PP_00-Opt10.dwg

NO.	REVISIONS | SUBMISSIONS	DATE
	ISSUED FOR BID	12.08.2014

SPRINKLER INSTALLATION PLAN
SP-100.00

FIRE PROTECTION SPECIFICATIONS

1. GENERAL:

   A. THE "GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION", AIA DOCUMENT A201, LATEST EDITION, AND THESE SPECIFICATIONS AS APPLICABLE ARE PART OF THIS CONTRACT.

   B. ALL APPLICABLE CODES, LAWS AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK ARE HEREBY INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS, AND THEIR PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR WHO SHALL INFORM THE OWNER, PRIOR TO SUBMITTING A PROPOSAL, OR ANY WORK OR MATERIAL WHICH VIOLATES ANY OF THE ABOVE LAWS AND REGULATIONS. ANY WORK DONE BY THE CONTRACTOR CAUSING SUCH VIOLATION SHALL BE CORRECTED BY THE CONTRACTOR.

   C. INVESTIGATE EACH SPACE THROUGH WHICH EQUIPMENT MUST BE MOVED. WHERE NECESSARY, EQUIPMENT SHALL BE SHIPPED FROM MANUFACTURER IN SECTIONS OF SIZE SUITABLE FOR MOVING THROUGH AVAILABLE RESTRICTIVE SPACES. ASCERTAIN FROM BUILDING OWNER AND TENANT AT WHAT TIMES OF DAY EQUIPMENT MAY BE MOVED THROUGH ALL AREAS.

   D. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. PIPE ROUTING IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL OFFSETS, DROPS AND RISES OF RUNS. THE CONTRACTOR SHALL ALLOW IN HIS PRICE FOR ROUTING OF PIPE TO AVOID OBSTRUCTIONS. COORDINATION WITH THE EXISTING SERVICES, INCLUDING THOSE OF OTHER TRADES IS REQUIRED. MAINTAIN HEADROOM AND SPACE CONDITIONS.

   E. INSTALL WORK SO AS TO BE READILY ACCESSIBLE FOR OPERATION, MAINTENANCE AND REPAIR. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE TO ACCOMPLISH THIS, BUT CHANGES WHICH INVOLVE EXTRA COST SHALL NOT BE MADE WITHOUT APPROVAL.

   F. REMOVAL AND RELOCATION OF CERTAIN EXISTING WORK WILL BE NECESSARY FOR THE PERFORMANCE OF THE GENERAL WORK. ALL EXISTING CONDITIONS CANNOT BE COMPLETELY DETAILED ON THE DRAWINGS. THE CONTRACTOR SHALL SURVEY THE SITE AND INCLUDE ALL CHANGES IN MAKING UP THE WORK PROPOSAL.

   G. CONNECTIONS TO EXISTING WORK: INSTALL NEW WORK AND CONNECT TO EXISTING WORK WITH MINIMUM INTERFERENCE TO EXISTING FACILITIES. TEMPORARY SHUTDOWNS OF EXISTING SERVICES SHALL BE PERFORMED AT NO ADDITIONAL CHARGES, AT TIMES NOT TO INTERFERE WITH NORMAL OPERATION OF EXISTING FACILITIES AND ONLY WITH WRITTEN CONSENT OF OWNER. MAINTAIN CONTINUOUS OPERATION OF EXISTING FACILITIES AS REQUIRED WITH NECESSARY TEMPORARY CONNECTIONS BETWEEN NEW AND EXISTING WORK. CONNECT NEW WORK TO EXISTING WORK IN NEAT AND ACCEPTABLE MANNER. RESTORE EXISTING DISTURBED WORK TO ORIGINAL CONDITION.

   H. DISCONNECT, REMOVE AND/OR RELOCATE EXISTING MATERIAL, EQUIPMENT AND OTHER WORK AS NOTED OR REQUIRED FOR PROPER INSTALLATION OF NEW WORK.

   I. THE CONTRACTOR SHALL KEEP ALL EQUIPMENT AND MATERIALS, AND ALL PARTS OF THE BUILDING, EXTERIOR SPACES AND ADJACENT STREETS, SIDEWALKS AND PAVEMENTS, FREE FROM MATERIAL AND DEBRIS RESULTING FROM THE EXECUTION OF THIS WORK. EXCESS MATERIALS WILL NOT BE PERMITTED TO ACCUMULATE EITHER ON THE INTERIOR OR THE EXTERIOR.

   J. THE LOCATIONS OF THE EXISTING SERVICES ARE BELIEVED TO BE AS INDICATED ON THE DRAWINGS. THE CONTRACTOR SHALL VERIFY THE ACTUAL LOCATION OF THESE SERVICES AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO COMMENCING ANY WORK.

   K. SEAL OPENINGS THROUGH PARTITIONS, WALLS AND FLOORS WITH A U.L.-LISTED FIRESTOPPING ASSEMBLY MATCHED TO THE RATING OF THE PENETRATED ELEMENT.

   L. PROVIDE ALL NECESSARY FLASHING AND COUNTERFLASHING TO MAINTAIN THE WATERPROOFING INTEGRITY OF THIS BUILDING AS REQUIRED BY THE INSTALLATION OR REMOVAL OF PIPING AND EQUIPMENT. PROVIDE EQUIPMENT CURBS AS REQUIRED.

   M. ALL PRESENT MATERIAL, EQUIPMENT AND CONSTRUCTION DEBRIS TO BE REMOVED UNDER THIS CONTRACT SHALL BECOME THE PROPERTY OF THE CONTRACTOR WITH THE EXCEPTION OF SPECIFIC EQUIPMENT AND APPARATUS REQUESTED BY THE BUILDING REPRESENTATIVE, ARCHITECT OR AS NOTED TO BE RELOCATED ON THE DRAWINGS. REMOVED EQUIPMENT SHALL BE PROPERLY DISPOSED OF BY THIS CONTRACTOR, OR AS DIRECTED BY THE OWNER.

   N. MATERIALS AND WORKMANSHIP, UNLESS OTHERWISE NOTED, SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS.

   O. THE WORK IN THE BUILDING SHALL BE DONE WHEN AND AS DIRECTED, AND IN A MANNER SATISFACTORY TO THE OWNER. THE WORK SHALL BE PERFORMED SO AS TO CAUSE THE LEAST POSSIBLE INCONVENIENCE AND DISTURBANCE TO THE PRESENT OCCUPANTS.

   P. THE CONTRACTOR'S PROPOSAL FOR ALL WORK SHALL BE PREDICATED ON THE PERFORMANCE OF THE WORK DURING REGULAR WORKING HOURS. WHEN SO DIRECTED, HOWEVER, THE CONTRACTOR SHALL INSTALL WORK IN OVERTIME AND THE ADDITIONAL COST TO BE CHARGED THEREFORE SHALL BE ONLY THE "PREMIUM" PORTION OF THE WAGES PAID.

   Q. UNLESS OTHERWISE SPECIFICALLY SPECIFIED, INCLUDE ALL CUTTING AND PATCHING OF EXISTING FLOORS, WALLS, PARTITIONS AND OTHER MATERIALS IN THE EXISTING BUILDING. THE CONTRACTOR SHALL RESTORE THESE AREAS TO ORIGINAL CONDITION.

   R. ALL MATERIAL AND EQUIPMENT TO BE NEW UNLESS OTHERWISE NOTED AND SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS.

      1. ALL MATERIAL AND EQUIPMENT ON SITE SHALL BE PROPERLY STORED SUCH THAT IT IS PROTECTED FROM DAMAGE AND EXPOSURE TO OUTSIDE ELEMENTS.

   S. SUBMISSION OF A PROPOSAL SHALL BE CONSTRUED AS EVIDENCE THAT A CAREFUL EXAMINATION OF THE PORTIONS OF THE EXISTING BUILDING, EQUIPMENT, ETC., WHICH AFFECT THIS WORK, AND THE ACCESS TO SUCH SPACES, HAS BEEN MADE AND THAT THE CONTRACTOR IS FAMILIAR WITH EXISTING CONDITIONS AND DIFFICULTIES THAT WILL AFFECT THE EXECUTION OF THE WORK. THE CONTRACTOR IS RESPONSIBLE TO INDICATE ANY DISCREPANCIES BETWEEN THE CONTRACT DRAWINGS AND ACTUAL FIELD CONDITIONS PRIOR TO SUBMITTAL OF BID. SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE. LATER CLAIMS SHALL NOT BE MADE FOR LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN DURING SUCH AN EXAMINATION. THE ON-SITE INSPECTION SHALL VERIFY EXISTING PIPE SIZES, CLEARANCES, ETC. AND CONDITIONS.

   T. INSURANCE: PROVIDE IN ACCORDANCE WITH BUILDING REQUIREMENTS AND POLICY SHALL INCLUDE A HOLD HARMLESS CLAUSE FOR OWNER AND ENGINEER.

   U. THE FINAL ACCEPTANCE WILL BE MADE AFTER THE CONTRACTOR HAS ADJUSTED HIS EQUIPMENT, TESTED THE VARIOUS SYSTEMS, DEMONSTRATED THAT IT FULFILLS THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS AND HAS FURNISHED ALL THE REQUIRED CERTIFICATES OF INSPECTION AND APPROVAL.

2. SCOPE OF WORK:

   A. SCOPE OF WORK SHALL CONSIST OF PROVIDING LABOR, MATERIALS, EQUIPMENT, SERVICES AND FEES NECESSARY FOR COMPLETE AND SAFE INSTALLATION IN CONFORMITY WITH THE NEW YORK CITY BUILDING CODE AND ALL OTHER APPLICABLE INDUSTRY, NATIONAL AND LOCAL CODES AND AUTHORITIES HAVING JURISDICTION, AS INDICATED ON DRAWINGS AND HEREIN SPECIFIED.

   B. MODIFY AND EXTEND EXISTING SPRINKLER PIPING TO SERVE NEW HEADS.

   C. PROVIDE COMPLETE HYDRAULICALLY CALCULATED AUTOMATIC WET PIPE SPRINKLER SYSTEM IN ALL AREAS OF WORK INCLUDING CONNECTION TO EXISTING RISER, FLOOR CONTROL VALVE ASSEMBLY, TEST/DRAIN, PIPING AND HEADS, AUXILIARY DRAINS. SUBMIT HYDRAULIC CALCULATIONS. SIGNED AND SEALED FROM THE P.E. TO THE ENGINEER.

   D. PROVIDE TEMPORARY SPRINKLER LOOP AND HEADS TO PROTECT EGRESS PATHS AND ELEVATOR LOBBIES DURING DEMOLITION AND CONSTRUCTION UNTIL SUCH TIME AS THE PERMANENT SYSTEM IS MADE ACTIVE.

   E. THE BASE BUILDING DRAWINGS, PLANS, DETAILS, SPECIFICATIONS AND SPECIFICATION ADDENDA ARE MADE PART OF THIS CONTRACT AND SHALL APPLY TO ALL WORK UNDER THE CONTRACT UNLESS OTHERWISE AMENDED, MODIFIED, SUPPLEMENTED OR SPECIFIED HEREIN.

   F. THE CONTRACTOR SHALL FURNISH A WRITTEN GUARANTEE TO REPLACE OR REPAIR PROMPTLY AND ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED FOR ANY WORKMANSHIP AND EQUIPMENT IN WHICH DEFECTS DEVELOP WITHIN ONE YEAR FROM THE DATE OF FINAL CERTIFICATE FOR PAYMENT AND/OR FROM DATE OR ACTUAL USE OF EQUIPMENT OR BENEFICIAL OCCUPANCY OF SPACES BY OWNER INCLUDED UNDER THE VARIOUS PARTS OF THE WORK, WHICHEVER DATE IS EARLIER. THIS WORK SHALL BE DONE AS DIRECTED BY THE OWNER. THIS GUARANTEE SHALL ALSO PROVIDE THAT WHERE DEFECTS OCCUR, THE CONTRACTOR WILL ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED IN REPAIRING AND REPLACING WORK OF OTHER TRADES AFFECTED BY DEFECTS, REPAIRS OF REPLACEMENTS IN EQUIPMENT SUPPLIED BY THE CONTRACTOR.

   G. THE CONTRACTOR SHALL GIVE NECESSARY NOTICE, FILE DRAWINGS AND SPECIFICATIONS WITH THE DEPARTMENT HAVING JURISDICTION, OBTAIN PERMITS OR LICENSES NECESSARY TO CARRY OUT THIS WORK AND PAY ALL FEES THEREFORE. THE CONTRACTOR SHALL ARRANGE FOR INSPECTION AND TESTS OF ANY OR ALL PARTS OF THE WORK IF SO REQUIRED BY AUTHORITIES AND PAY ALL CHARGES FOR SAME. THE CONTRACTOR SHALL PAY ALL COSTS FOR, AND FURNISH TO THE OWNER BEFORE FINAL BILLING, ALL CERTIFICATES NECESSARY AS EVIDENCE THAT THE WORK INSTALLED CONFORMS WITH ALL REGULATIONS WHERE THEY APPLY TO THIS WORK. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY AND REQUIRED SIGN-OFFS AND APPROVALS FOR THE WORK INSTALLED.

3. SHOP DRAWINGS:

   A. PRIOR TO THE INSTALLATION OF ANY WORK AND PROCUREMENT OF EQUIPMENT PROVIDE COMPLETE SET OF COORDINATED SHOP DRAWINGS OF ALL NEW AND EXISTING EQUIPMENT, INDICATING CAPACITY DIMENSIONS AND SEQUENCE OF OPERATION FOR WRITTEN APPROVAL BY THE ARCHITECT AND ENGINEER.

   B. INDICATE ON EACH SHOP DRAWINGS SUBMITTED:

      1. PROJECT NAME AND LOCATION.

      2. NAME OF ARCHITECT AND ENGINEER.

      3. ITEM IDENTIFICATION.

      4. APPROVAL STAMP OF PRIME CONTRACTOR.

   C. SUBMISSIONS:

      1. SUBMISSIONS 11in X 17in OR SMALLER: IF THE SUBMISSION IS A CATALOG CUT, THEN THE CONTRACTOR SHALL SUBMIT ONE ORIGINAL AND TWO COPIES. OTHERWISE, HE SHALL SUBMIT THREE COPIES. THE ARCHITECT WILL FORWARD THE ORIGINAAL AND ONE COPY (TWO COPIES WHEN NO ORIGINAL IS RECEIVED) TO THE ENGINEER. ALL CATALOG CUTS SHALL BE COMPLETE.

      2. SUBMISSIONS LARGER THAN 11in X 17in: SUBMIT TWO PRINTS AND ONE PAPER SEPIA TO THE ARCHITECT. THE ARCHITECT WILL FORWARD ONE PRINT AND THE PAPER SEPIA TO THE ENGINEER.

   D. SUBMIT SHOP DRAWINGS FOR THE FOLLOWING:

      1. PIPE AND FITTINGS.

      2. VALVES

      3. SPRINKLER HEADS AND ACCESSORIES.

      4. PIPING LAYOUTS.

      5. HYDRAULIC CALCULATIONS.

      6. SUPPORTS, HANGERS AND GUIDES.

4. AS BUILT DRAWINGS AND EQUIPMENT OPERATIONAL INSTRUCTION:

   A. UPON COMPLETION AND ACCEPTANCE OF WORK, CONTRACTOR SHALL FURNISH WRITTEN INSTRUCTIONS AND EQUIPMENT MANUALS AND DEMONSTRATE TO THE OWNER THE PROPER OPERATION AND MAINTENANCE OF ALL EQUIPMENT AND APPARATUS FURNISHED UNDER THIS CONTRACT.

   B. THESE INSTRUCTIONS SHALL BE TYPED ON 8½" X 11" PAPER AND BOUND IN THREE RING BINDERS WITH CLEAR ACETATE COVERS. CONTRACTOR SHALL GIVE THREE COPIES OF THE INSTRUCTIONS TO THE OWNER AND ONE COPY TO THE ENGINEER.

   C. THE INSTRUCTION BOOKLET SHALL BEAR THE NAME, ADDRESS AND TELEPHONE NUMBER OF THE PROJECT, ARCHITECT AND ENGINEER.

   D. REPRODUCIBLE "AS-BUILT" DRAWINGS SHALL BE PROVIDED INDICATING THE AS INSTALLED CONDITIONS OF THE WORK. "AS-BUILT" DRAWINGS SHALL BE PROVIDED TO THE ARCHITECT AFTER COMPLETION OF THE INSTALLATION.

5. GENERAL PROVISIONS FOR FIRE PROTECTION WORK:

   A. SPECIFICATIONS ARE OF SIMPLIFIED FORM AND INCLUDE INCOMPLETE SENTENCES. WORDS OR PHRASES SUCH AS "THE CONTRACTOR SHALL", "SHALL BE", "FURNISH", "PROVIDE", "A", "THE", AND "ALL" HAVE BEEN OMITTED FOR BREVITY.

   B. DEFINITIONS:

      1. "PROVIDE": TO SUPPLY, INSTALL AND CONNECT UP COMPLETE AND READY FOR SAFE AND REGULAR OPERATION THE PARTICULAR WORK REFERRED TO UNLESS SPECIFICALLY OTHERWISE NOTED.

      2. "INSTALL": TO ERECT, MOUNT AND CONNECT COMPLETE WITH RELATED ACCESSORIES.

      3. "FURNISH" OR "SUPPLY": TO PURCHASE, PROCURE, ACQUIRE AND DELIVER COMPLETE WITH RELATED ACCESSORIES.

      4. "WORK": LABOR, MATERIALS, EQUIPMENT, APPARATUS, CONTROLS, ACCESSORIES AND OTHER ITEMS REQUIRED FOR PROPER AND COMPLETE INSTALLATION.

      5. "CONCEALED": EMBEDDED IN MASONRY OR OTHER CONSTRUCTION, INSTALLED IN FURRED SPACES, WITHIN DOUBLE PARTITIONS OR HUNG CEILINGS, IN TRENCHES, IN CRAWL SPACES, OR IN ENCLOSURES.

      6. "EXPOSED": NOT INSTALLED UNDERGROUND OR "CONCEALED" AS DEFINED ABOVE.

      7. "SIMILAR" OR "EQUAL": EQUAL IN MATERIALS, WEIGHT, SIZE, DESIGN AND EFFICIENCY OF SPECIFIED PRODUCT.

   C. QUALITY ASSURANCE:

      1. QUALITY AND GAUGE OF MATERIALS: NEW, BEST OF THEIR RESPECTIVE KINDS, FREE FROM DEFECTS AND IF APPLICABLE LISTED BY UNDERWRITERS LABORATORIES, INC., AND FACTORY MUTUAL INC. OR BEARING THEIR LABEL. MATERIALS AND EQUIPMENT OF SIMILAR APPLICATION SHALL BE OF SAME MANUFACTURER, EXCEPT AS NOTED.

      2. GUARANTEE: ALL MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE OF WORK.

      3. ANY PRODUCTS BEING INSTALLED IN NEW YORK CITY SHALL BE APPROVED BY THE BOARD OF STANDARDS AND APPEALS.

   D. PRODUCT DELIVERY, STORAGE AND HANDLING:

      1. MOVING OF EQUIPMENT: WHERE NECESSARY, SHIP IN CARTED SECTIONS OF SIZE TO PERMIT PASSING THROUGH AVAILABLE SPACES.

      2. ACCESSIBILITY: FOR OPERATION, MAINTENANCE AND REPAIR, MINOR DEVIATIONS SHALL BE PERMITTED. CHANGES OF MAGNITUDE OR INVOLVING EXTRA COST ARE NOT PERMISSIBLE WITHOUT REVIEW.

   E. BRUSH AND CLEAN WORK PRIOR TO CONCEALING, PAINTING AND ACCEPTANCE. PAINTED EXPOSED WORK THAT IS SOILED OR DAMAGED. CLEAN AND REPAIR TO MATCH ADJOINING WORK BEFORE FINAL ACCEPTANCE. REMOVE DEBRIS FROM INSIDE AND OUTSIDE OF MATERIAL AND EQUIPMENT.

   F. FINAL LOCATIONS AND MOUNTING ORIENTATIONS OF ALL VISIBLE FIRE PROTECTION EQUIPMENT BE VERIFIED BY ARCHITECT.

   G. ALL ACCESS DOOR LOCATIONS SHALL BE REVIEWED BY ARCHITECT PRIOR TO INSTALLATION.

   H. SPRINKLER SYSTEM DESIGN CRITERIA:

      1. LIGHT HAZARD OCCUPANCIES: 225 SQ FT/HEAD MAXIMUM COVERAGE; 0.10 GPM/SQ FT DENSITY OVER THE MOST REMOTE 1,500 SQ FT OF THE SYSTEM.

      2. ORDINARY HAZARD OCCUPANCIES: 130 SQ FT/HEAD MAXIMUM COVERAGE; 0.16/SQ FT DENSITY OVER THE MOST REMOTE 1,500 SQ FT OF THE SYSTEM.

6. PRODUCTS:

   A. ESCUTCHEONS:

      1. ALL EXPOSED PIPING PASSING THROUGH WALLS, FLOORS, PARTITIONS AND CEILINGS SHALL BE PROVIDED WITH CHROME PLATED CAST BRASS ESCUTCHEONS HELD IN PLACE WITH SET SCREWS.

7. PIPE AND FITTINGS:

   A. PIPE:

      1. ALL SPRINKLER AND FIRE STANDPIPE PIPING ABOVE GRADE: STANDARD WEIGHT BLACK STEEL PIPE, SCHEDULE 40, WELDED OR SEAMLESS, WITH MANUFACTURER'S NAME ROLLED INTO EACH LENGTH.

      2. ALL SPRINKLER MAIN PIPING ABOVE GRADE WITH MAXIMUM WORKING PRESSURE OF 175 PSI: LIGHT WEIGHT SCHEDULE 10 PIPE WITH MANUFACTURER'S NAME ROLLED ONTO EACH LENGTH.

   B. FITTINGS:

      1. SUITABLE FOR FSP PRESSURE ZONE.

      2. ROLLED OR CUT GROOVE:

         a. "T"S, ELBOWS, NIPPLES, CAPS AND CROSSES OF DUCTILE OR MALLEABLE IRON; VICTAULIC PRODUCTS OR APPROVED EQUALS.

         b. BRANCH OUTLETS OF HOLE CUT TYPE WITH 2-PIECE BOLTED DUCTILE IRON HOUSINGS: VICTAULIC STYLE 920 AND STYLE 920N.

         c. ALL FITTINGS IN SCHEDULE 80 PIPING SYSTEMS SHALL BE VICAULIC STYLE 77, OR APPROVED EQUAL.

   C. JOINTS:

      1. THREADED (SCHEDULE 40 ONLY) WITH APPROVED COMPOUND.

      2. CUT GROOVE (SCHEDULE 40 ONLY) WITH RIGID MALLEABLE IRON BOLTED COUPLINGS WITH EPDM GASKETS, VICTAULIC STYLE 07, OR APPROVED EQUAL.

         a. FOR SCHEDULE 80 PIPE SYSTEMS, VICTAULIC STYLE 77 OR APPROVED EQUAL.

      3. ROLL GROOVE (SCHEDULE 40 OR SCHEDULE 10) WITH RIGID MALLEABLE IRON BOLTED COUPLINGS WITH EPDM GASKETS, VICTAULIC STYLE 07 OR APPROVED EQUAL.

         a. FOR ROLL GROOVE SCHEDULE 10 SPRINKLER MAINS WITH A MAXIMUM WORKING PRESSURE OF 175 PSI, FIRE SERVICE RIGID MALLEABLE IRON BOLTED COUPLINGS WITH EPDM GASKETS, VICTAULIC STYLE 005, OR APPROVED EQUAL.

   D. APPLICATIONS:

      1. THREADED: ALL SPRINKLER AND FIRE STANDPIPE SYSTEMS.

      2. GROOVED (ROLL OR CUT): ALL SPRINKLER RISERS/MAINS AND FIRE STANDPIPE SYSTEMS.

   E. ACCEPTABLE MANUFACTURERS: VICTAULIC CO., INTERFIT, SPRINK.

8. PIPING SUPPORTS:

   A. SUPPORT ALL PIPING FROM BUILDING CONSTRUCTION BY PROVIDING INSERTS, BEAM CLAMPS, STEEL FISHPLATES (IN CONCRETE FILL ONLY), AND ACCEPTABLE BRACKETS. SUBMIT ALL METHODS FOR REVIEW.

   B. PROVIDE ADDITIONAL FRAMING WHERE BUILDING CONSTRUCTION IS INADEQUATE. SUBMIT FOR REVIEW.

   C. SUSPEND HORIZONTAL PIPING:

      1. SUPPORT ALL PIPING INDEPENDENTLY FROM STRUCTURE USING HEAVY IRON-HINGED TYPE HANGERS, SIMILAR TO GRINNELL CLEVIS NO. 260.

      2. PROVIDE ELECTROPLATED SOLID BAND HANGERS SIMILAR TO AUTO-GRIP, FOR TWO-INCH AND SMALLER PIPE.

      3. PROVIDE WALL BRACKETS FOR WALL SUPPORTED PIPING, AND PROVIDE PIPE SADDLES FOR FLOOR MOUNTED PIPING.

      4. SUSPEND PIPING FROM INSERTS, USING BEAM CLAMPS WITH RETAINING CLAMP OR LOCKNUT, STEEL FISH PLATES, CANTILEVER BRACKETS OR OTHER ACCEPTED MEANS. BEAM CLAMPS SHALL BE SIMILAR TO GRINNELL FIGURES 61, 87, 131, OR 225.

      5. SUSPEND PIPING BY RODS WITH DOUBLE NUTS.

      6. PROVIDE ADDITIONAL STEEL FRAMING AS REQUIRED AND ACCEPTED WHERE OVERHEAD CONSTRUCTION DOES NOT PERMIT FASTENING HANGER RODS IN REQUIRED LOCATIONS.

      7. MAXIMUM HANGER SPACING AS INDICATED:

         a. PIPE 1 INCH AND SMALLER SHALL BE EVERY 8 FEET.

         b. PIPE 1-1/4 INCH AND LARGER SHALL BE EVERY 10 FEET.

      8. VERTICAL PIPING:

         a. PROVIDE EXTENSION PIPE CLAMPS BOLTED TO BARE PIPE ON EACH SIDE AND BEARING EQUALLY ON STRUCTURE OR WELDED TO BEAM.

         b. PROVIDE SPACING AS INDICATED:

            1) THREADED AND PIPING GROOVED PIPING SHALL BE EVERY OTHER FLOOR LEVEL, AT A MAXIMUM OF 25 FEET ON CENTERS.

   D. EXPANSION ANCHORS:

      1. PROVIDE SMOOTH WALL, NON-SELF-DRILLING INTERNAL PLUG EXPANSION TYPE ANCHORS CONSTRUCTED OF AISC 12L14 STEEL AND ZINC PLATED IN ACCORDANCE WITH FED. SPEC. 11-A-325 TYPE 1, CLASS 3.

      2. DO NOT EXCEED 1/4 OF AVERAGE VALVES FOR A SPECIFIC ANCHOR SIZE USING 2000 PSIG (13,800 KPA) CONCRETE ONLY, FOR MAXIMUM WORKING LOADS.

      3. PROVIDE SPACING AND INSTALL ANCHORS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

      4. EXPANSION ANCHORS SHALL BE QUALIFIED PER ASCE 93 AND HAVE AN ESR REPORT, QUALIFIED FOR CRACKED CONCRETE.

9. INSULATION:

   A. DURING CONSTRUCTION, PROPERLY CAP ALL LINES AND EQUIPMENT NOZZLES SO AS TO PREVENT THE ENTRANCE OF DIRT, DEBRIS, ETC.

   B. EACH SYSTEM OF PIPING SHALL BE FLUSHED (FOR THE PURPOSE OF MOVING DIRT, DEBRIS, ETC. FROM THE PIPING) FOR AS LONG A TIME AS IS REQUIRED TO THOROUGHLY CLEAN THE SYSTEM.

10. TESTS:

   A. FIRE PROTECTION SYSTEM PIPING SHALL BE HYDROSTATICALLY AT A PRESSURE OF 200 PSI FOR A DURATION OF THREE HOURS WITHOUT A LOSS IN PRESSURE.

   B. DEFECTS DISCLOSED BY THE TESTS SHALL BE REPAIRED OR REPLACED. TESTS SHALL BE REPEATED AS DIRECTED UNTIL ALL WORK IS PROVEN SATISFACTORY.

   C. TAKE ALL PRECAUTIONS NECESSARY TO PREVENT DAMAGE TO THE BUILDING AND ITS CONTENTS AS A RESULT OF SUCH TESTS. REPAIR ANY DAMAGE CAUSED.

   D. ARRANGE AND COORDINATE TESTS WITH OWNER 48 HOURS IN ADVANCE. NOTIFY ENGINEER AND ARCHITECT OF TEST DATE AND TIME.

PURCHASE
COLLEGE
STATE UNIVERSITY OF NEW YORK
735 ANDERSON HILL RD.
PURCHASE, NY 10577-1400

Project Name:	Mailroom / Receiving Area Renovation Project
Project Number:	#SU-120814
Location:	Plaza Lower Level - Proposed Mailroom / Post Office / Receiving Area
Scale:	AS SHOWN
Date:	09/19/14
File Path:	Z:\1-Projects\Mailroom-Receiving Renovation\Drawings\PP_00-Opt10.dwg

NO.	REVISIONS | SUBMISSIONS	DATE
	ISSUED FOR BID	12.08.2014

SPRINKLER SPECIFICATIONS

SP-200.00