ADDENDUM NO.: 3
IFB or RFP NO.: Re Bid No. 641
Bid Title: Furnish, Deliver and Install Laser Curtains
Project: City College of New York
Bid Opening Date: October 16, 2019

Specifics of the Addendum: The purpose of this Addendum is to provide a revised scope and associated drawings.

SCOPE:

BID FORM CHANGES:
Deduct Alternate: Typical Enclosure Laser Safety Components
1. Delete the following components at one laser curtain enclosure
    a. SLC Curtain Entry Door
    b. Request for Entry Button
    c. Request for Exit Button
    d. Emergency Stop Switch
2. Add standard curtain entry with By-Pass hardware and 6" curtain overlap at entry.

SPECIFICATION CHANGES:
Replaced Sections: The following sections issued in this Addendum replace those previously issued.
1. Section 11 5363 – Laser Safety Equipment

DRAWING SHEET CHANGES:
Revised and Reissued Sheets: The following Sheets are revised and reissued by this Addendum. The revised Sheets void and supersede previously issued Sheets of like number:
1. Sheet GN-000 Cover Sheet & Drawing List
2. Sheet AE-221 Partial Laboratory Floor Plan Level 2 - South
3. Sheet AE-222 Partial Laboratory Floor Plan Level 2 – North
4. Sheet AB-221 Partial Reflected Ceiling Plan Level 2 - South
5. Sheet AB-222 Partial Reflected Ceiling Plan Level 2 - North

Revised Sheets: The following Sheets are revised as written below. These sheets are not reissued.
1. Sheet EP-221:
    a. Revise receptacles with Sheet Keynote 8 to be fixed connections.
    b. Revise Sheet Keynote 8 to read "POWER FOR ENTRY-GUARD CONTROL PANEL. PROVIDE LOW VOLTAGE WIRING AND DOOR SENSOR SHOWN ON ARCHITECTURAL DRAWINGS. COORDINATE REQUIRMENTS INCLUDING EXACT LOCATION AND MOUNTING HEIGHT OF FIXED CONNECTION WITH LASER CONTROL SYSTEM MANUFACTURER'S INSTALLATION INSTRUCTIONS."
2. Sheet EP-222:
    a. Revise receptacles with Sheet Keynote 3 to be fixed connections.
    b. Revise Sheet Keynote 3 to read "POWER FOR ENTRY-GUARD CONTROL PANEL. PROVIDE LOW VOLTAGE WIRING AND DOOR SENSOR SHOWN ON ARCHITECTURAL DRAWINGS. COORDINATE REQUIRMENTS INCLUDING EXACT LOCATION AND MOUNTING HEIGHT OF FIXED CONNECTION WITH LASER CONTROL SYSTEM MANUFACTURER'S INSTALLATION INSTRUCTIONS."

ATTACHMENTS:
Combined Addendum; including Specifications & Drawings.

See attached.

All other terms and conditions of the original Invitation for Bid shall remain the same.

SECTION 11 5363 – LASER SAFETY EQUIPMENT

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Laser safety curtain, track, hardware, and accessories.
2. Laser safety entry control system.

1.2 RELATED SECTIONS

A. Section 05 5000 METAL FABRICATIONS - for structural support of laser curtain track and assembly not specified in this section.

1.3 REFERENCE STANDARDS

A. Comply with the following applicable standards and requirements:

1. NFPA 701-2010 – Fire tests for flame propagation of textiles and films.
2. ASTM E84 Flame Spread and Smoke Developed Fire Testing.
3. ANSI Z136.1-2007 American National Standard for Safe Use of Lasers.
4. ANSI Z136.7-2008 American National Standard for Testing and Labeling of Laser Protective Equipment.
5. International Electro-technical Commission (IEC) SS-60825-4 and BS EN12254:2010
6. All applicable Federal, State and Municipal codes, laws and regulations regarding Flammability and smoke generation of interior finishes.

1.4 SUBMITTALS

A. Product Data:

1. For laser safety curtain and track. Include data on physical characteristics, durability, fade resistance, and performance and flame-resistance characteristics.
2. For laser entry control system: Include product data and electrical requirements.

B. Shop Drawings: Indicate locations, dimensions, and mounting details for laser curtain track and entry control system.

1. For laser curtain and track, include plans, elevations, dimensions, details, and installation instructions.
2. For entry control system, submit plans, elevations of system components mounted to wall or curtain, details, wiring and control diagrams, and design and testing data.

C. Samples: Submit sample for each curtain and component specified, including the following:

1. Laser safety curtain, 12 x 12 inch square
2. Laser safety track, 12 inches long
3. Valance assembly, 12 inches long
4. Window blocking material, complete with hook and loop attachment, 12 inch square

D. Certificates:

1. Submit manufacturer's documentation indicating laser safety curtain complies with specified requirements.
2. Submit Certificate of Fitness for New York City Fire Department (FDNY) Flame Retardant Treatment (C-15), certifying materials of this section are flame retardant or inherently flame resistant.

E. Maintenance Data: Include operation and maintenance information for laser curtains and laser entry control system in the operation and maintenance manual.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Installers shall have minimum five years of documented experience for installation of products of this Section.

1. Laser Entry Control System: Installers shall be approved by system manufacturer.

B. Single Source: Provide laser safety curtains, laser entry control system and track assemblies by a single manufacturer. Laser entry control system shall be fully integrated into laser safety curtains.

1.6 PROJECT CONDITIONS

A. Environmental Limitations: Do not install laser curtains and laser entry control system until spaces are enclosed and weatherproof, wet work in spaces is complete and dry, work above ceilings is complete, and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Laser Safety Curtains shall be tested to show compliance with the following performance requirements.

B. Fire Test Response Characteristics:

1. Surface-Burning Characteristics: Comply with ASTM E84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
   a. Flame-Spread: 25 or less (Class A)
   b. Smoke-Developed Index: 450 or less
2. Meet requirements of State of California test and in accordance with NFPA Standard No. 701-2010, test methods 1 and 2.

C. No part of curtain or track shall release toxic fumes following laser exposure.

2.2 MANUFACTURERS

A. Integrated System: Curtains, tracks, and laser entry control system shall be provided by a single source.

B. Basis of Design: Flex-Guard Laser Safety Curtains and Tracks and Entry-Guard Laser Entry Safety Interlock System: Kentek; www.kentek-laser.com.

C. Provide the named manufacturer and products or equal product and system from one of the following:

1. Beamstop'r Laser Barriers, Inc.: www.beamstopr.com.
2. Rockwell Laser Industries, Inc.: www.rli.com.

2.3 LASER SAFETY CURTAIN AND TRACK

A. Steel Track: Roll-formed steel, 16 gauge; nominal 1-1/2 inches wide by 1-1/4 inch high.

1. Track: Straight and curved.
2. Finish: Baked enamel, acrylic, or epoxy; matte black.
3. End Stop: Removable with carrier hook.
4. Curtain Carriers: Two nylon rollers and nylon axle with chrome-plated steel hook
5. Wall Termination: Provide vertical track attachment at walls.
6. Track Accessories: Fabricate splices, corners, end caps, connectors, end stops, coupling and joining sleeves, wall flanges, brackets, ceiling clips, and other accessories from same material and with same finish as track.

B. Laser Safety Curtain Fabric:

1. Fabric: 0.044 inch thick flame retardant, non-fraying and chemical resistant flexible fabric; lock-stitched and with critical seams double-stitched.
2. Barrier Threshold Limit: 250 watts/cm2 for 100 seconds.
3. One-inch black, hook and loop fasteners where applicable.
4. 0.020 inch dusted vinyl pocket-style window for signage or equipment documentation.
5. Color: Matte black.

C. Laser Safety Curtain Fabrication:

1. Curtains shall conform to ANSI Z136.1 “Safe Use of Lasers”.
2. Curtain Size: Curtains shall be fabricated at least 10 percent wider than track length and long enough to overlap finished floor minimum 2 inches. Bottom of curtain shall be weighted.
3. Seams: All seams shall lay flat, free of creasing, gathering, or wrinkles. Seam ends shall be back-stitched. Critical seams shall be double-stitched and back-stitched.
    a. Overlap vertical seams between panels and provide with 1 inch wide minimum hook and loop strips to facilitate light-tight overlaps.
4. Hems: Sew all hems French style with no visible raw edges. Crooked or selvaged edges in lieu of side or bottom hems are prohibited.
    a. Top Hem: Shall have heavy gauge fabric reinforcing strip inserted.
    b. Bottom Hem: Shall have weights sewn in.
5. Grommets: Non-reflective #1 Black steel, 12 inches on center maximum at top hem.
6. Edges: Provide overlapping hook and loop strips, 1 inch wide minimum, sealing at outside vertical edges of curtain at panel to panel and panel to wall (at vertical track).
7. Provide stay-put type fasteners as required.
8. Custom Valance: Fabricated using laser safety fabric and suspended from ceiling using miscellaneous steel framing; seals top of curtain for light-tight closure to contain laser beams.
    a. Valances shall be same material as curtains with sewn-on hook and loop strips for mounting.
    b. Valance Height: 12 inches
9. Exposed Fasteners: Manufacturer’s standard.

D. Curtain Carriers: Two nylon rollers and nylon axle with chrome-plated steel or aluminum hook.

E. Fasteners: Per laser safety curtain track manufacturer.

F. Accessories: Provide the following accessories:

1. By-Pass Entrances: Provide by-pass roller assembly at top of curtain panel to overlap 9 inches minimum on single track closure. By-pass roller assembly shall be offset to accommodate valances.

2. Interlocked Panels: All laser safety curtain panels shall be equipped with panel-to-panel or wall-to-panel low voltage connections that shall be coordinated with the laser entry control system, and can interface with the interlock feature of the laser. Laser will be shut off and will not operate if curtains are not properly closed. 24" lead wire will be accessible from end panel (typically at wall).
    a. Panel to Panel Interlock: Curtain Panels terminate with rigid metal closure piece and handle, which will latch into receiving rigid metal closure piece and handle at adjoining curtain panel. Assembly shall include interlock, wire, and latching posts.
        1) Basis of Design: Flex-Guard, SLC-Door with Interlock Curtain-To-Curtain
    b. Panel to Wall Interlock: Curtain Panel terminates with rigid metal closure piece and handle which latch into metal channel secured to wall. Assembly shall include interlock, wire, and latching posts.
        1) Basis of Design: Flex-Guard, SLC-Door with Interlock Wall-To-Curtain
    c. Coordinate heights of rigid closure pieces with floor to ceiling height. Note curtain fabric is longer to ensure light tight condition at floor; closure pieces will need to be accurately sized

2.4 LASER ENTRY CONTROL SYSTEM

A. Laser Entry Control System: Integrated system to control entry to and egress from laser operation areas and laser emission to areas where there is accessible or exposed laser energy, meeting requirements of ANSI Z136.1.

B. Laser Safety Access Component Schedule:
    1. See Part 4 at the end of this specification section.

C. System Components:
    1. Control Module:
        a. Wall-mounted, painted metal enclosure with front-mounted controls, housing microprocessor controller.
        b. Program control modules to control multiple laser operation areas, in separated zones, as indicated on the Drawings.
        c. Front panel controls include the following:
            1) Key lock.
            2) System power key switch.
            3) Start, Stop, Exit, and Emergency Stop buttons.
            4) System status indicators including, but not limited to, Power On, Entryway/Doors Closed, and Interlock/Maglock On.
        d. Basis of Design: ETG-CP Entry Guard
        e. Location: As indicated on the Drawings and/or Laser Safety Component Schedule
    2. Safety Interlocks (SLC):
        a. Basis of Design: ETG-INLK Entry-Guard.
        b. Location: As indicated on the Drawings and/or Laser Safety Component Schedule
    3. Dual Interlock Receptacle:
        a. Basis of Design: ETG-X1 Entry-Guard.
        b. Location: As required for a complete installation

4. Interlock Connector Plug:
    a. Basis of Design: ETG-X2 Entry-Guard.
    b. Locations: As required for a complete installation
5. Entry Keypads:
    a. System shall be programmable to allow access to or egress from laser operation area without the shutdown of laser with the entry of passcode or keycard to Entry Keypad.
    b. Basis of Design: ETG-KP
    c. Location: As indicated on the Drawings and/or Laser Safety Component Schedule
6. Electromagnetic Lock (Mag-Lock):
    a. Basis of Design: ETG-ML (single doors); ETG-ML-2 (multiple doors)
    b. Location: As indicated on the Drawings and/or Laser Safety Component Schedule
7. Emergency stop buttons:
    a. Basis of Design: ETG-ES-F Entry Guard
    b. Location: As indicated on the Drawings and/or Laser Safety Component Schedule
8. Illuminated Laser Safety Sign/ Status Sign:
    a. Metal, lighted sign box with translucent plastic laser status signs; back-mounted or edge-mounted as required.
    b. Two-way and two color to indicate Safe - No Laser Hazard and Danger - Laser Radiation.
    c. Basis of Design: ETG-DLS-2 Entry-Guard.
    d. Locations: As indicated on the Drawings and/or Laser Safety Component Schedule
9. Emergency Access Switch
    a. Basis of Design: ETG-EA-FC with cover
    b. Locations: As indicated on the Drawings and/or Laser Safety Component Schedule
10. Circuitry: Manufacturer's standard.
11. Accessories: Manufacturer's standard.

D. System Operation and Controls:
1. Emergency stop and external emergency access controls.
2. Isolated, normally open, relay closures for control of laser interlocks and shutters.
3. Isolated, normally open/normally closed, auxiliary laser interlock relays.
4. Isolated, magnetic, door latch relay.
5. Universal interface to entry key cards or dedicated key pads.
6. Automated, illuminated laser safety sign control.
7. Audible indicator for interlock timeout and exit delay (defeatable).
8. Adjustable exit delay; 5 to 90 seconds.
9. Automatic shutdown of lasers and unlocking of doors by building fire or evacuation alarm.
10. Automatic shutdown of lasers when access parameters are violated.
11. Optically isolated external inputs.
12. Two, automatic, warning sign modes.
13. Easy remote of system Enable and Exit Request controls.
14. External computer/access controller monitor interface.
15. Full function diagnostic indicators.
16. Built-in, low voltage power supply.

2.5 LASER WINDOW BLOCKING

1. Provide window blocking panels as indicated on the Drawings. Blocking panels shall be fabricated from same material as laser safety curtain.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Laser Safety Curtains and Track:

1. Install tracks level and plumb, according to manufacturer's written instructions. Tracks shall be secured to structural supports as indicated on the Drawings. Brace as necessary.
2. Provide track fabricated from one continuous length, up to 16 feet.
3. Track Accessories: Install splices, corners, end caps, connectors, end stops, coupling and joining sleeves, and other accessories as required for a secure and operational installation.
4. Curtain Carriers: Provide enough curtain carriers for 6 inch spacing along full length of curtain plus an additional carrier.
5. Install curtain panels plumb, level, and true to height as indicated on the Drawings.
6. Where curtain abuts wall, secure hook and loop strip to the wall for light-tight curtain connection.
7. Secure hook and loop strip valance to outside of track surface for light-tight closure of curtain panels to ceiling.

B. Laser Entry Control System:

1. All components to be installed as required and where indicated on the Drawings and/or Laser Safety Component Schedule.
2. System to be fully integrated with laser safety curtains and track, laser equipment, and connected per Owner’s requirements.

C. Laser Window Blocking:

1. Laser window blocking to be cut to sizes as indicated on the Drawings.
2. Secure window blocking to face of glazing with hook and loop strips.
3. Ensure window blocking is covers entire window and is light-tight.

3.2 CLEANING AND ADJUSTING

A. All cleaning and adjusting shall be in accordance with manufacturer’s maintenance procedures.

B. All repairs shall be conducted by an installer approved by laser safety manufacturer.

C. Repair or remove and replace defective work. Repairs shall be indistinguishable from undamaged curtain and track.

3.3 TRAINING

A. Manufacturer shall provide a half-day demonstration and training for lab users.

PART 4 - SCHEDULE

Laser Safety Access Control Components Schedule

Lab / Laser Safety Zone	Door / Table ID	Laser Safety Components
22110 Zone 1	**Entry Vestibule to 22110C**	Entry Keypad
		Mag Lock
		Laser In-Use Status Light
		Emergency Access Switch (for Zone)
	C	Control Module
		SLC - Curtain to Wall Opening
		Request for Entry Button (at curtain opening)
	B	SLC - Curtain to Curtain Opening
		Request for Entry Button (at curtain opening)
		Request to Exit Button (at curtain opening)
		Emergency Stop Switch
	A	SLC - Curtain to Wall Opening
		Request for Entry Button (at curtain opening)
		Request to Exit Button (at curtain opening)
		Emergency Stop Switch
		Request for Exit Button (to LER)
	LER to 22110A	Mag Lock
		Request for Entry Keypad
		Laser In-Use Status Light
22110 Zone 2	**Entry Vestibule to 22110F**	Entry Keypad
		Mag Lock
		Laser In-Use Status Light
		Emergency Access Switch (for Zone)
	F	Control Module
		SLC - Curtain to Wall Opening
		Request for Entry Button (at curtain opening)
	E	SLC - Curtain to Curtain Opening
		Request for Entry Button (at curtain opening)
		Request to Exit Button (at curtain opening)
		Emergency Stop Switch
	D	SLC - Curtain to Wall Opening
		Request for Entry Button (at curtain opening)
		Request to Exit Button (at curtain opening)
		Emergency Stop Switch
		Request for Exit Button (to LER)
	LER to 22110D	Mag Lock
		Request for Entry Keypad
		Laser In-Use Status Light
22120 Zone 3	**Entry Vestibule to 22120H**	Entry Keypad
		Mag Lock
		Laser In-Use Status Light
		Emergency Access Switch (for Zone)
	H	Control Module
		SLC - Curtain to Wall Opening
		Request for Entry Button (at curtain opening)
	G	SLC - Curtain to Wall Opening
		Request for Entry Button (at curtain opening)
		Request to Exit Button (at curtain opening)
		Emergency Stop Switch
		Request for Exit Button (to 22121 Nano Support)
	22121 Nano Support to 22120G	Mag Lock
		Request for Entry Keypad
		Laser In-Use Status Light
22130 Zone 4	**Entry Vestibule to 22130**	Entry Keypad
		Mag Lock
		Laser In-Use Status Light
		Emergency Access Switch (for Zone)
	J K L M	Control Module
		Request for Exit Button (to 22121 Nano Support)
	LER to 22130	Mag Lock
		Request for Entry Keypad
		Laser In-Use Status Light

Lab / Laser Safety Zone	Door / Table ID	Laser Safety Components
22210 Zone 5	**Entry Vestibule to 22210P**	Entry Keypad
		Mag Lock
		Laser In-Use Status Light
		Emergency Access Switch (for Zone)
	P	Control Module
		SLC - Curtain to Curtain Opening
		Request for Entry Button (at curtain opening)
		Request to Exit Button (at curtain opening)
	N	Request for Entry Button (at curtain opening)
		Request to Exit Button (at curtain opening)
		Emergency Stop Switch
22210 Zone 6	**Entry Vestibule to 22210 Lab**	Entry Keypad
		Mag Lock
		Laser In-Use Status Light
		Emergency Access Switch (for Zone)
	S	Control Module
		SLC - Curtain to Wall Opening
		Request for Entry Button (at curtain opening)
		Request to Exit Button (at curtain opening)
	R	SLC - Curtain to Curtain Opening
		Request for Entry Button (at curtain opening)
		Request to Exit Button (at curtain opening)
		Emergency Stop Switch
	Q	SLC - Curtain to Wall Opening
		Request for Entry Button (at curtain opening)
		Request to Exit Button (at curtain opening)
		Emergency Stop Switch
	LER to 22210 Lab	Mag Lock
		Request for Entry Keypad
		Laser In-Use Status Light
22220 / 22221 Zone 7	**Entry Vestibule to 22220W**	Entry Keypad
		Mag Lock
		Laser In-Use Status Light
		Emergency Access Switch (for Zone)
	W	Control Module
		SLC - Curtain to Wall Opening
		Request for Entry Button (at curtain opening)
		Request to Exit Button (at curtain opening)
		Request for Exit Button (to 22221 Photonics)
		Laser In-Use Status Light
	V	Request for Entry Button (at curtain opening)
		Request to Exit Button (at curtain opening)
		Emergency Stop Switch
	U	SLC - Curtain to Wall Opening
		Request for Entry Button (at curtain opening)
		Request to Exit Button (at curtain opening)
		Emergency Stop Switch
		Request for Exit Button (to 22220 Photonics)
		Laser In-Use Status Light
	T	SLC - Curtain to Wall Opening
		Request for Entry Button (at curtain opening)
		Request to Exit Button (at curtain opening)
		Emergency Stop Switch
	LER to 22221T	Mag Lock
		Request for Entry Keypad
		Laser In-Use Status Light

END OF SECTION

THE CITY UNIVERSITY OF NEW YORK

ASRC/CCNY SCIENCE RESEARCH CENTER

The City College of New York

New York, New York

DASNY Project Number:
257110
Flad Project Number:
05432-82

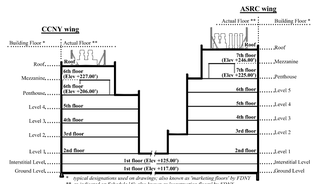
ASRC PHOTONICS LABORATORY RENOVATIONS

October 4th, 2019

Drawing Sheet Index

Project Sheet No.	NYC DoB Sheet No.		Sheet Name	CONSTRUCTION DOCUMENTS 5/6/2019	ADDENDUM 01 6/11/2019	ADDENDUM 2 10/4/2019			
GN General									
GN-000	T	000.00	COVER SHEET, DRAWING LIST & PLOT PLAN	x	x	x			
GN-001	G	001.00	PLOT PLAN & BUILDING NOTES	x					
GN-101	G	101.00	PARTIAL LIFE SAFETY PLAN - GROUND LEVEL	x					
GN-220	G	220.00	LIFE SAFETY PLAN - LEVEL 2	x					
DM Plans									
AD-221	DM	220.00	PARTIAL DEMOLITION FLOOR PLAN - LEVEL 2 - SOUTH	x					
AD-222	DM	221.00	PARTIAL DEMOLITION FLOOR PLAN - LEVEL 2 - NORTH	x					
DPL-221	DM	222.00	DEMOLITION PLAN SECOND LEVEL SOUTH	x					
DPL-222	DM	223.00	DEMOLITION PLAN SECOND LEVEL NORTH	x					
DM-018	DM	018.00	DEMOLITION PLAN 1ST LEVEL (+125.00) INTERSTITIAL AREA 4	x					
DM-221	DM	224.00	DEMOLITION PLAN SECOND LEVEL SOUTH	x					
DM-222	DM	225.00	DEMOLITION PLAN SECOND LEVEL NORTH	x					
A Plans									
AE-014	A	014.00	PARTIAL LABORATORY PLAN - GROUND LEVEL	x					
AE-221	A	221.00	PARTIAL LABORATORY FLOOR PLAN - LEVEL 2 - SOUTH	x		x	1		
AE-222	A	222.00	PARTIAL LABORATORY FLOOR PLAN - LEVEL 2 - NORTH	x		x			
AB-221	A	321.00	PARTIAL REFLECTED CEILING PLAN - LEVEL 2 - SOUTH	x		x			
AB-222	A	322.00	PARTIAL REFLECTED CEILING PLAN -LEVEL 2 - NORTH	x		x			
AE-600	A	600.00	EQUIPMENT LIST	x					
AE-850	A	850.00	INTERIOR ELEVATIONS	x	x				
AE-900	A	900.00	SCHEDULES AND DETAILS	x	x				
AE-901	A	901.00	DETAILS	x	x				
AE-902	A	901.00	DETAILS	x					
P Plans									
PL-000	P	000.00	PLUMBING SYMBOLS AND ABBREVIATIONS	x					
PL-014	P	014.00	FLOOR PLAN GROUND LEVEL (+117.00) AREA 4	x					
PL-018	P	018.00	FLOOR PLAN 1ST LEVEL (+125.00) INTERSTITIAL AREA 4	x					
PL-221	P	221.00	FLOOR PLAN SECOND LEVEL SOUTH	x					
PL-222	P	222.00	FLOOR PLAN SECOND LEVEL NORTH	x					
M Plans									
M-000	M	000.00	MECHANICAL SYMBOLS AND ABBREVIATIONS	x					
M-014	M	014.00	FLOOR PLAN GROUND LEVEL (+117.00) AREA 4	x					
M-018	M	018.00	FLOOR PLAN 1ST LEVEL (+125.00) INTERSTITIAL AREA 4	x					
M-221	M	221.00	FLOOR PLAN SECOND LEVEL SOUTH	x					
M-222	M	222.00	FLOOR PLAN SECOND LEVEL NORTH	x					
M-300	M	300.00	MECHANICAL DETAILS	x					
M-400	M	400.00	PARTIAL FLOOR PLAN SHAFT AND EXHAUST RISER	x					
M-500	M	500.00	MECHANICAL SCHEDULES	x					
M-600	M	600.00	MECHANICAL LAB CONTROL DIAGRAMS	x					
E Plans									
E-000			ELECTRICAL SYMBOLS AND ABBREVIATIONS	x					
E-400			ELECTRICAL PANEL SCHEDULES	x					
E-401			ELECTRICAL PANEL SCHEDULES	x					
E-402			ELECTRICAL PANEL SCHEDULES	x					

Project Sheet No.	NYC DoB Sheet No.		Sheet Name	CONSTRUCTION DOCUMENTS 5/6/2019					
EL (Lighting) Plans									
DEL-014			DEMOLITION PLAN LIGHTING GROUND LEVEL (+117.00) AREA 4	x					
DEL-221			DEMOLITION PLAN LIGHTING SECOND LEVEL SOUTH	x					
DEL-222			DEMOLITION PLAN LIGHTING SECOND LEVEL NORTH	x					
EL-014			FLOOR PLAN LIGHTING GROUND LEVEL (+117.00) AREA 4	x					
EL-221			FLOOR PLAN LIGHTING SECOND LEVEL SOUTH	x					
EL-222			FLOOR PLAN LIGHTING SECOND LEVEL NORTH	x					
EP (Power) Plans									
DEP-014			DEMOLITION PLAN POWER GROUND LEVEL (+117.00) AREA 4	x					
DEP-221			DEMOLITION PLAN POWER SECOND LEVEL SOUTH	x					
DEP-222			DEMOLITION PLAN POWER SECOND LEVEL NORTH	x					
EP-014			FLOOR PLAN POWER GROUND LEVEL (+117.00) AREA 4	x					
EP-221			FLOOR PLAN POWER SECOND LEVEL SOUTH	x					
EP-222			FLOOR PLAN POWER SECOND LEVEL NORTH	x					
FA Plans									
DEF-014	DM	014.00	DEMOLITION PLAN FIRE ALARM GROUND LEVEL (+117.00) AREA 4	x					
DEF-221	DM	221.00	DEMOLITION PLAN FIRE ALARM SECOND LEVEL SOUTH	x					
DEF-222	DM	222.00	DEMOLITION PLAN FIRE ALARM SECOND LEVEL NORTH	x					
EF-014	FA	014.00	FLOOR PLAN FIRE ALARM GROUND LEVEL (+117.00) AREA 4	x					
EF-221	FA	221.00	FLOOR PLAN FIRE ALARM SECOND LEVEL SOUTH	x					
EF-222	FA	222.00	FLOOR PLAN FIRE ALARM SECOND LEVEL NORTH	x					
FA-515	FA	515.00	ELECTRICAL MODIFICATION TO EXISTING PRE-ACTION SYSTEM PARTIAL LABORATORY PLAN GROUND LEVEL	x					
SP Plans									
FX-001	SP	001.00	SPRINKLER NOTES, KEY OF SYMBOL, PLOT PLAN AND DRAWING LIST	x					
FX-002	SP	002.00	SPRINKLER NOTES AND SPECIFICATIONS	x					
FX-003	SP	003.00	FLOOD INSURANCE RATE MAP 3604970079G	x					
FX-004	SP	004.00	FLOOD INSURANCE RATE MAP 3604970079F	x					
FX-014	SP	014.00	SPRINKLER PARTIAL LABORATORY PLAN GROUND LEVEL	x					
FX-100	SP	100.00	SPRINKLER DEMOLITION PARTIAL REFLECTED CEILING PLAN LEVEL—2 SOUTH	x					
FX-101	SP	101.00	SPRINKLER DEMOLITION PARTIAL REFLECTED CEILING PLAN LEVEL—2 NORTH	x					
FX-220	SP	320.00	SPRINKLER PARTIAL REFLECTED CEILING PLAN LEVEL—2 SOUTH	x					
FX-221	SP	321.00	SPRINKLER PARTIAL REFLECTED CEILING PLAN LEVEL—2 NORTH	x					
FX-400	SP	400.00	SPRINKLER RISER DIAGRAM	x					
FX-401	SP	401.00	SPRINKLER PRE-ACTION NOTES & SEQUENCE OF OPERATION (FOR REFERENCE ONLY)	x					
FX-501	SP	501.00	SPRINKLER SCHEDULES & DETAILS	x					



FLOOR DESIGNATION CONVERSION CHART

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Cosentini Associates

BY:

Rev	Date	Description of Issue
2	10/04/19	ADDENDUM 02
1	06/11/19	ADDENDUM 01
0	05/06/19	CONSTRUCTION DOCUMENTS

Project Title

Dormitory Authority State Of New York
DASNY Project Number – 257110

The City University of New York

ASRC Photonics Lab Renovations

The City College of New York

85 St Nicholas Terrace
New York, NY 10027

DASNY # 257110

Scale N/A

Company Drawn By: Flad Architects

Project Phase: CONSTRUCTION DOCUMENTS

Date: 06/11/2019 | Drawn By: KS

Flad Project Number: 05432-82 | Checked By: DH

Sheet Title
Cover Sheet & Drawing List

Sheet Number
GN-000

NYC DOB Sheet Number
T-000.00

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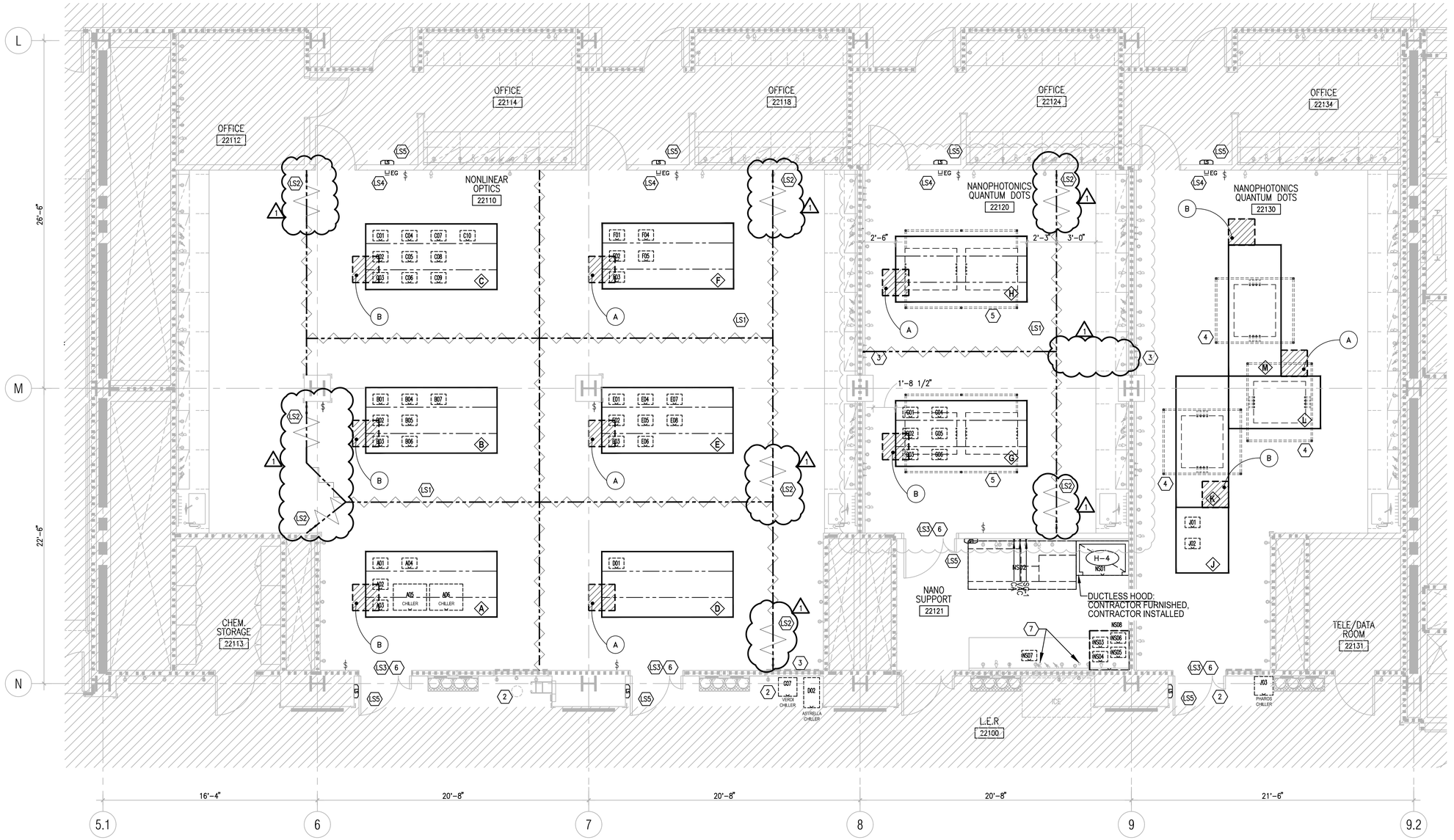
1 OF 1

Application No.

DOB BSCAN



1 LABORATORY PLAN - LEVEL 2 - SOUTH

1/4" = 1'-0"

GENERAL NOTES

NOTES:

1. ALL LABORATORY CASEWORK IS "EXISTING TO REMAIN" U.O.N.
2. LASER AIR TABLES "A" THROUGH "W" PROVIDED BY OWNER.
3. EXISTING "LASER IN USE" ILLUMINATED SIGNS IN L.E.R. TO BE REMOVED AND REPLACED WITH NEW DUAL-STATUS ILLUMINATED SIGN. INSTALL NEW SIGN AT EXISTING SIGN LOCATION TO REUSE EXISTING JUNCTION BOX AND WIRING.
4. NEW DUAL-STATUS ILLUMINATED SIGN IN OFFICE VESTIBULES WILL BE INSTALLED AT JUNCTION BOX PROVIDED DURING CONSTRUCTION BULLETIN 2.
5. SEE RCP FOR LASER SAFETY CURTAIN LOCATION AND COORDINATION WITH SUSPENDED CEILING AND MECHANICAL SYSTEMS. LAB PLAN DIMENSIONS FOR REFERENCE ONLY.

KEYNOTES

PLAN KEYNOTES

1. NOT USED
2. SEE ELECTRICAL AND PLUMBING DRAWINGS FOR COORDINATION OF LOCAL CHILLERS.
3. PROVIDE 2" DIAMETER THROUGH-WALL CONDUIT FOR FUTURE FIBER OPTIC CABLE. SEE DETAIL 8/AE-900.
4. SUSPENDED OVERHEAD SHELVING TYPE "A". SEE DETAIL 1/AE-902.
5. SUSPENDED OVERHEAD SHELVING TYPE "B". SEE DETAIL 2/AE-902.
6. PROVIDE ASTRAGAL SEAL TO EXISTING DOOR PANELS.
7. PROVIDE GROMMET FOR EACH WORKSTATION, 2" DIAMETER.

LASER SAFETY KEYNOTES

- LS1 CEILING MOUNTED LASER SAFETY CURTAIN AND TRACK. SEE ELECTRICAL DRAWINGS FOR COORDINATION OF LASER SAFETY DEVICES (INCLUDING "LASER IN USE" ILLUMINATED SIGNAGE, CURTAIN POSITION SENSORS, AND AREA CONTROL MODULE).
- LS2 REQUEST FOR ENTRY/EXIT - PROVIDE CONTROL AT BOTH SIDES OF CURTAIN OPENING
- LS3 REPAIR / INSTALL LASER SAFETY WINDOW BLOCK / CURTAIN ON L.E.R. DOOR GLAZING
- LS4 LASER EQUIPMENT CONTROL MODULE AND DISCONNECT
- LS5 "LASER IN USE" ILLUMINATED STATUS SIGNAGE CONNECTED TO EXISTING ELECTRICAL BOX (SEE ELECTRICAL DRAWINGS)
- LS6 TAILOR CURTAIN TO MATCH PROFILE OF EXISTING LAB CASEWORK NECESSARY TO PROVIDE LIGHT BLOCKING CURTAIN INSTALLATION WHEN PAIRED WITH APPROVED CLOSURE (ie VELCRO). INSTALL CONTINUOUS CLOSURE AT FULL VERTICAL PROFILE ENGAGED BY CURTAIN. INSTALL LASER RATED WINDOW BLOCKING ON GLAZED WALL CABINET DOORS WITHIN THE VERTICAL PLANE OF THE LASER CURTAIN AND TRACK.

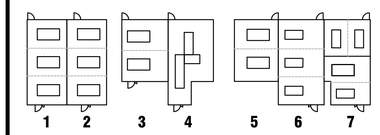
LEGENDS

- LASER SAFETY CURTAIN AND CURTAIN TRACK
- SLC CURTAIN ENTRY SYSTEM
- LASER SAFETY SHADE / WINDOW BLOCK
- DUAL-STATUS ILLUMINATED LASER SAFETY SIGN
- EG "ENTRY GUARD" CONTROL MODULE AND EMERGENCY EQUIPMENT SHUT-OFF
- CONTROL FOR INDIVIDUAL LASER WORKSTATION LIGHTING. (SUGGESTED LOCATION, SEE ELECTRICAL DRAWINGS)
- OPTICAL TABLE (NIC)
- XO1 PHOTONICS EQUIPMENT TAG. SEE EQUIPMENT SCHEDULE.
- SERVICE PANEL - SEE SCHEDULE ON SHEET AE-900

LINE TYPE LEGEND

- NEW WORK
- EXISTING TO REMAIN
- EXISTING TO BE REMOVED
- NOT IN SCOPE

LASER SAFETY ZONES



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KEY PLAN NORTH

Rev	Date	Description of Issue
1	10/04/19	ADDENDUM 02
0	05/06/19	CONSTRUCTION DOCUMENTS

Project Title

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DASNY Project Number – 257110

The City University of New York

ASRC Photonics Lab Renovations

The City College of New York

85 St Nicholas Terrace
New York, NY 10027

DASNY # 257110

Scale 1/4" = 1'-0"

Company Drawn By: Flad Architects

Project Phase: CONSTRUCTION DOCUMENTS

Date: 05/06/2019 | Drawn By: KS

Flad Project Number: 05432-82 | Checked By: DH

Sheet Title: **Partial Laboratory Floor Plan Level 2 - South**

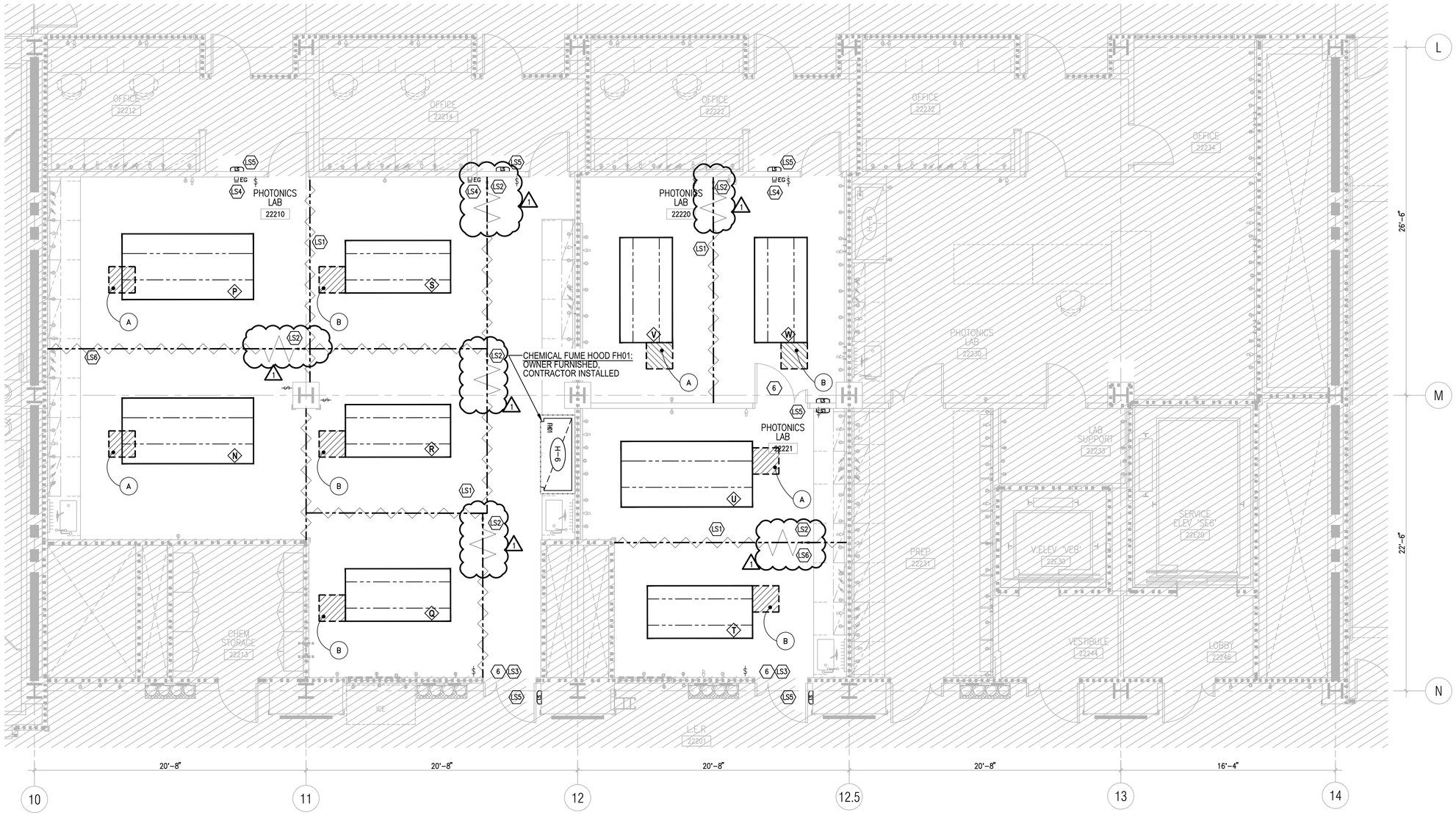
Sheet Number: AE-221

NYC DOB Sheet Number: **A-221.00**

Page No.: 2 OF 10

Application No.:

DOB BSCAN



1 LABORATORY PLAN - LEVEL 2 - NORTH

1/4" = 1'-0"

GENERAL NOTES

NOTES:

1. ALL LABORATORY CASEWORK IS "EXISTING TO REMAIN" U.O.N.
2. LASER AIR TABLES "A" THROUGH "W" PROVIDED BY OWNER.
3. EXISTING "LASER IN USE" ILLUMINATED SIGNS IN L.E.R. TO BE REMOVED AND REPLACED WITH NEW DUAL-STATUS ILLUMINATED SIGN. INSTALL NEW SIGN AT EXISTING SIGN LOCATION TO REUSE EXISTING JUNCTION BOX AND WIRING.
4. NEW DUAL-STATUS ILLUMINATED SIGN IN OFFICE VESTIBULES WILL BE INSTALLED AT JUNCTION BOX PROVIDED DURING CONSTRUCTION BULLETIN 2.
5. SEE RCP FOR LASER SAFETY CURTAIN LOCATION AND COORDINATION WITH SUSPENDED CEILING AND MECHANICAL SYSTEMS. LAB PLAN DIMENSIONS FOR REFERENCE ONLY.
6. SEE ELECTRICAL AND PLUMBING DRAWINGS FOR COORDINATION OF LOCAL CHILLERS.

KEYNOTES

PLAN KEYNOTES

1. NOT USED.
2. NOT USED.
3. PROVIDE 2" DIAMETER THROUGH-WALL CONDUIT FOR FUTURE FIBER OPTIC CABLE. SEE DETAIL 8/AE-900.
4. NOT USED.
5. NOT USED.
6. PROVIDE ASTRAGAL SEAL TO EXISTING DOOR PANELS

LASER SAFETY KEYNOTES

- LS1 CEILING MOUNTED LASER SAFETY CURTAIN AND TRACK. SEE ELECTRICAL DRAWINGS FOR COORDINATION OF LASER SAFETY DEVICES (INCLUDING "LASER IN USE" ILLUMINATED SIGNAGE, CURTAIN POSITION SENSORS, AND AREA CONTROL MODULE).
- LS2 REQUEST FOR ENTRY/EXIT - PROVIDE CONTROL AT BOTH SIDES OF CURTAIN OPENING
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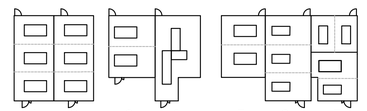
LEGENDS

- LASER SAFETY CURTAIN AND CURTAIN TRACK
- LASER SAFETY SHADE / WINDOW BLOCK
- LS DUAL-STATUS ILLUMINATED LASER SAFETY SIGN
- EG "ENTRY GUARD" CONTROL MODULE AND EMERGENCY EQUIPMENT SHUT-OFF
- CONTROL FOR INDIVIDUAL LASER WORKSTATION LIGHTING, (SUGGESTED LOCATION, SEE ELECTRICAL DRAWINGS)
- X OPTICAL TABLE (NIC)
- X01 PHOTONICS EQUIPMENT TAG. SEE EQUIPMENT SCHEDULE.
- B SERVICE PANEL - SEE SCHEDULE ON SHEET AE-900
- SLC CURTAIN ENTRY SYSTEM

LINE TYPE LEGEND

- NEW WORK
- EXISTING TO REMAIN
- EXISTING TO BE REMOVED
- NOT IN SCOPE

LASER SAFETY ZONES



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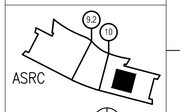


KEY PLAN NORTH

BY:		
0	05/06/19	CONSTRUCTION DOCUMENTS
Rev	Date	Description of Issue

Project Title

Dormitory Authority State Of New York
DASNY Project Number – 257110

The City University of New York

ASRC Photonics Lab Renovations

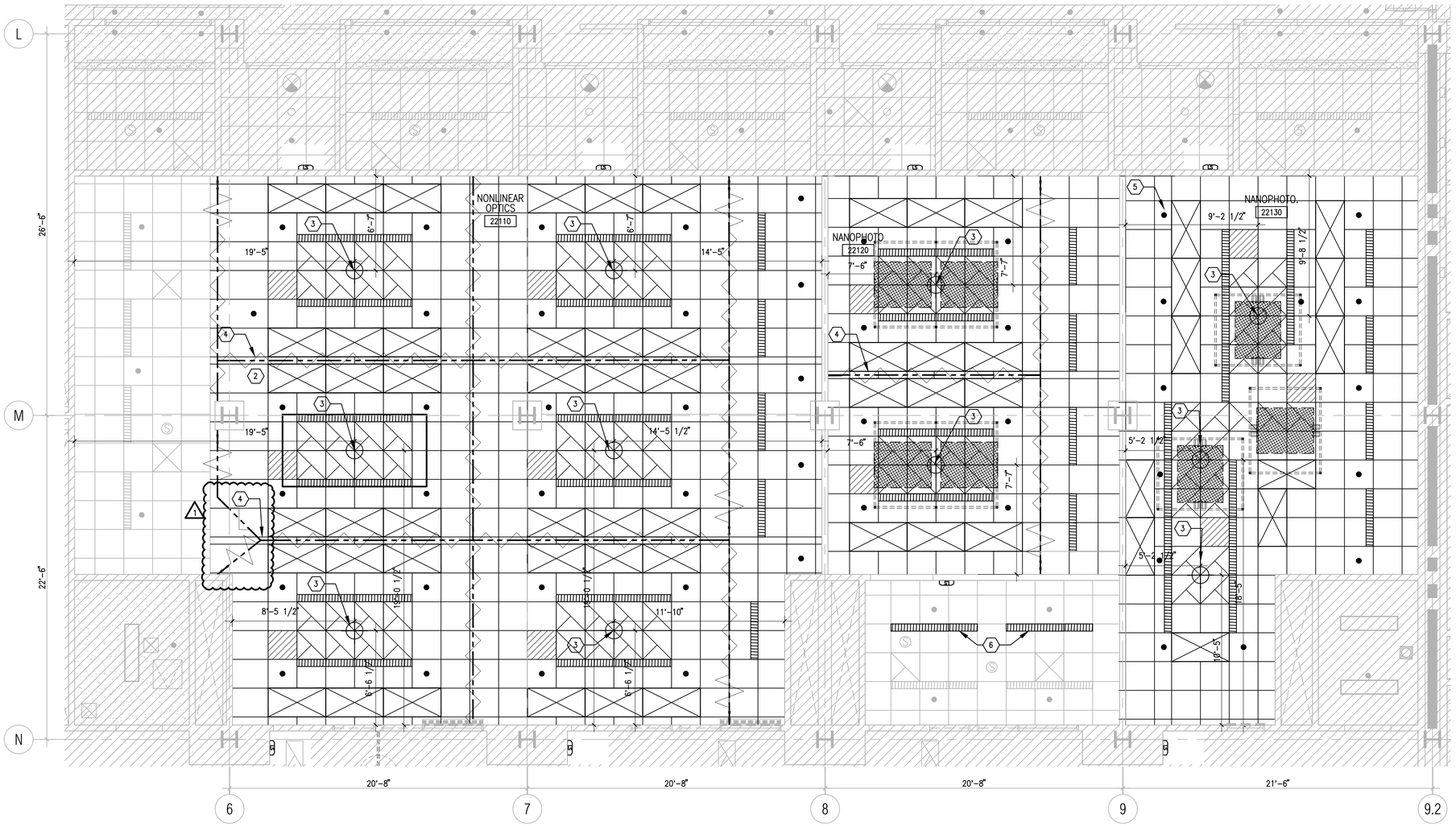
The City College of New York

85 St Nicholas Terrace
New York, NY 10027

DASNY # 257110
Scale 1/4" = 1'-0"
Company Drawn By: Flad Architects
Project Phase: CONSTRUCTION DOCUMENTS
Date: 05/06/2019 | Drawn By: KS
Flad Project Number: 05432-82 | Checked By: DH

Sheet Title: **Partial Laboratroy Floor Plan Level 2 - North**

Sheet Number: AE-222
NYC DOB Sheet Number: **A-222.00**
Page No.: 3 OF 10
Application No.:
DOB BSCAN



1 REFLECTED CEILING PLAN - LEVEL 2 - SOUTH

1/4" = 1'-0"

0 1' 5' 10'

1/4" = 1'-0"

RCP NOTES

1. ALL ACT LAY-IN CEILINGS TO BE ACT-2, 10'-0" AFF, U.N.O.
2. REFER TO ELEC. & MECH. DRAWINGS FOR TYPE & QUANTITY OF FIXTURES & DEVICES AS WELL AS FOR DEVICES NOT DIMENSIONED.
3. LIGHTS, SPRINKLER HEADS, SENSORS AND OTHER CEILING MOUNTED DEVICES TO BE CENTERED IN CEILING TILE U.N.O.
4. VERIFY SIZE, LOCATION, & QUANTITY OF ACCESS PANELS WITH MECHANICAL CONTRACTOR AND CONFIRM LOCATION WITH ARCHITECT
5. COORDINATE CEILING PENETRATION FOR LAB EQUIPMENT WITH MECHANICAL DRAWINGS
6. MIDDLE GRID OR MIDDLE ACT TILE TO BE CENTERED ON ROOM DIMENSIONS, U.N.O.
7. ALL EMERGENCY LIGHT LOCATIONS ARE INDICATED GRAPHICALLY, REFER TO ELECTRICAL PLANS FOR FIXTURE TYPE AND DIRECTION ACCORDING TO LIFE SAFETY DRAWINGS.
8. REFER TO Q-SERIES FOR TASK LIGHTING LOCATIONS AT LAB CASEWORK. REFER TO ELEC. FOR CASEWORK TASK LIGHTING FIXTURE SPECS.
9. ALL HEADERS NOT IDENTIFIED WITH HEIGHT AFF TO BE 8'-0" TO MATCH DOOR HEIGHT U.N.O.

KEYNOTES

1. POINT EXHAUST CONNECTION
2. LASER SAFETY CURTAIN, SEE FLOOR PLANS FOR LASER SAFETY KEYNOTES, DETAILS 3 & 6/AE-901, AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
3. START POINT- START CEILING FROM THIS LOCATION, STOP WHEN REACHING A "CUT" TILE AND BEGIN FROM OTHER START POINT. ONCE MEETING IN MIDDLE, CUT TILE ACCORDING TO FIELD CONDITION.
4. CUT TILE TO 6"
5. CUT TILE V.I.F.
6. RELOCATED LIGHT FIXTURES - SEE ELECTRICAL LIGHTING DRAWINGS.
7. SUSPENDED OVERHEAD SHELVING TYPE "A", CENTERED WITHIN CEILING ARRANGEMENT (LIGHT FIXTURES AND DIFFUSERS) OVER LASER TABLE. SEE DETAIL 1/AE-902.
8. SUSPENDED OVERHEAD SHELVING TYPE "B", CENTERED WITHIN CEILING ARRANGEMENT (LIGHT FIXTURES AND DIFFUSERS) OVER LASER TABLE. SEE DETAIL 2/AE-902.

LEGENDS

- ACT (ACOUSTICAL CEILING TILE)
- EXPOSED
- SUSPENDED PERFORATED METAL SHELVING
- 1X4 FLUORESCENT LIGHT FIXTURE
- 2X4 FLUORESCENT LIGHT FIXTURE
- RECESSED LIGHT FIXTURE
- SUSPENDED LIGHT FIXTURE
- DOWN LIGHT FIXTURE
- LASER SAFETY CURTAIN, SEE KEYNOTE #2
- LASER SAFETY SHADE
- LS WALL MOUNTED, ILLUMINATED LASER SAFETY SIGN
- CEILING DIFFUSER
- CEILING DIFFUSER
- AIR RETURN GRILL
- ACCESS PANEL
- WALL ACCESS PANEL
- LINEAR DIFFUSER
- 2X2 CEILING SERVICE PANEL
- 2X4 EXHAUST HOOD
- POINT EXHAUST
- SS SAFETY SHOWER
- UMBILICAL
- SPRINKLER HEAD
- EXIT LIGHT-CEILING MOUNTED (REFER TO ELEC.)
- EXIT LIGHT-WALL MOUNTED (REFER TO ELEC.)
- OCCUPANCY SENSOR-CEILING MOUNTED
- SMOKE DETECTOR (REFER TO ELEC.)
- C SECURITY CAMERA
- SP SPEAKER (AV)
- W CEILING MOUNT WIRELESS ACCESS DEVICE (REFER TO ELEC.)
- CJ CEILING CONTROL JOINT

LINE TYPE LEGEND

- NEW WORK
- EXISTING TO REMAIN
- EXISTING TO BE REMOVED
- NOT IN SCOPE

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KEY PLAN NORTH

Rev	Date	Description of Issue
1	10/04/19	ADDENDUM 02
0	05/06/19	CONSTRUCTION DOCUMENTS

Project Title

Dormitory Authority State Of New York
DASNY Project Number – 257110

The City University of New York

ASRC Photonics Lab Renovations

The City College of New York

85 St Nicholas Terrace
New York, NY 10027

DASNY # 257110

Scale 1/4" = 1'-0"

Company Drawn By: Flad Architects

Project Phase: CONSTRUCTION DOCUMENTS

Date: 05/06/2019 | Drawn By: KS

Flad Project Number: 05432-82 | Checked By: DH

Sheet Title: **Partial Reflected Ceiling Plan Level 2- South**

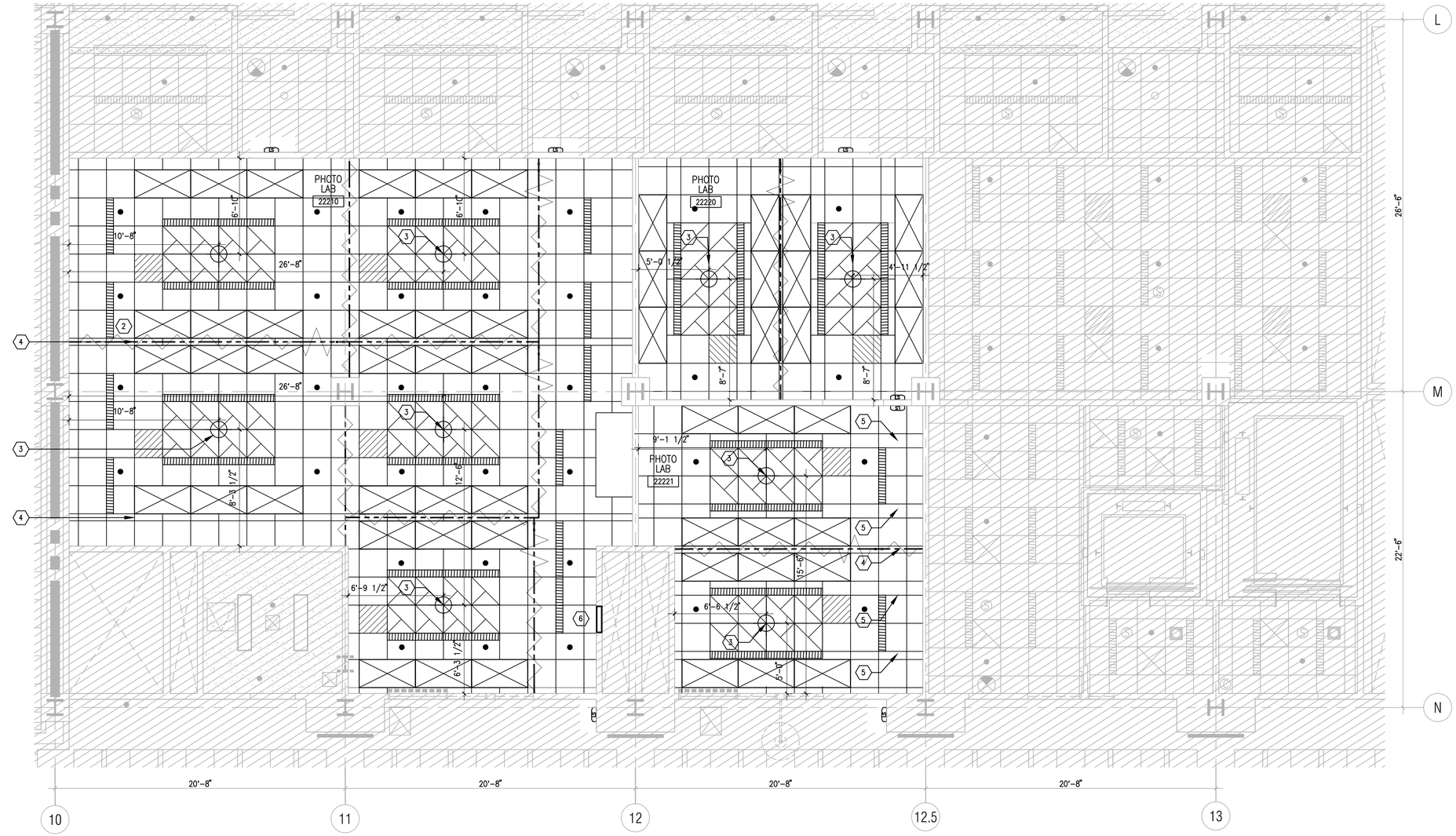
Sheet Number: AB-221

NYC DOB Sheet Number: **A-321.00**

Page No.: 4 OF 10

Application No.:

DOB BSCAN



1 REFLECTED CEILING PLAN - LEVEL 2 - NORTH

1/4" = 1'-0"

0 1' 5' 10'

1/4" = 1'-0"

RCP NOTES

1. ALL ACT LAY-IN CEILINGS TO BE ACT-2, 10'-0" AFF, U.N.O.
2. REFER TO ELEC. & MECH. DRAWINGS FOR TYPE & QUANTITY OF FIXTURES & DEVICES AS WELL AS FOR DEVICES NOT DIMENSIONED.
3. LIGHTS, SPRINKLER HEADS, SENSORS AND OTHER CEILING MOUNTED DEVICES TO BE CENTERED IN CEILING TILE U.N.O.
4. VERIFY SIZE, LOCATION, & QUANTITY OF ACCESS PANELS WITH MECHANICAL CONTRACTOR AND CONFIRM LOCATION WITH ARCHITECT
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7. ALL EMERGENCY LIGHT LOCATIONS ARE INDICATED GRAPHICALLY. REFER TO ELECTRICAL PLANS FOR FIXTURE TYPE AND DIRECTION ACCORDING TO LIFE SAFETY DRAWINGS.
8. REFER TO Q-SERIES FOR TASK LIGHTING LOCATIONS AT LAB CASEWORK. REFER TO ELEC. FOR CASEWORK TASK LIGHTING FIXTURE SPECS.
9. ALL HEADERS NOT IDENTIFIED WITH HEIGHT AFF TO BE 8'-0" TO MATCH DOOR HEIGHT U.N.O.

KEYNOTES

1. POINT EXHAUST CONNECTION
2. LASER SAFETY CURTAIN. SEE FLOOR PLANS FOR LASER SAFETY KEYNOTES. DETAILS 3 & 6/AE-901, AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
3. START POINT- START CEILING FROM THIS LOCATION. STOP WHEN REACHING A "CUT" TILE AND BEGIN FROM OTHER START POINT. ONCE MEETING IN MIDDLE, CUT TILE ACCORDING TO FIELD CONDITION.
4. CUT TILE TO 6"
5. CUT TILE V.I.F.
6. 2 HOUR RATED SHAFTWALL AT FUME HOOD EXHAUST PENETRATION ABOVE CEILING - PARTITION TYPE P8, SEE SHEET AE-900.

LEGENDS

- ACT (ACOUSTICAL CEILING TILE)
- RECESSED LIGHT FIXTURE
- DOWN LIGHT FIXTURE
- LASER SAFETY CURTAIN, SEE KEYNOTE #2
- LASER SAFETY SHADE
- WALL MOUNTED, ILLUMINATED LASER SAFETY SIGN
- CEILING DIFFUSER
- AIR RETURN GRILL
- 2X2 CEILING SERVICE PANEL
- 2X4 EXHAUST HOOD
- POINT EXHAUST
- SPRINKLER HEAD
- EXIT LIGHT-CEILING MOUNTED (REFER TO ELEC.)
- EXIT LIGHT-WALL MOUNTED (REFER TO ELEC.)
- OCCUPANCY SENSOR-CEILING MOUNTED
- SMOKE DETECTOR (REFER TO ELEC.)
- SECURITY CAMERA
- SPEAKER (AV)
- CEILING MOUNT WIRELESS ACCESS DEVICE (REFER TO ELEC.)

LINE TYPE LEGEND

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- EXISTING TO REMAIN
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Company Drawn By: Flad Architects

Project Phase: CONSTRUCTION DOCUMENTS

Date: 05/06/2019 | Drawn By: KS

Flad Project Number: 05432-82 | Checked By: DH

Sheet Title: **Partial Reflected Ceiling Plan Level 2- North**

Sheet Number: AB-222

NYC DOB Sheet Number: **A-322.00**

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Application No.:

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