

# NEW YORK POLICE ACADEMY

COLLEGE POINT, NEW YORK



PENN STATE AE SENIOR CAPSTONE PROJECT

SHAWN SIDELINGER – CONSTRUCTION MANAGEMENT

DR. ROBERT LEICHT – CM ADVISOR

# PROJECT BACKGROUND

## PRESENTATION OUTLINE

- I. PROJECT BACKGROUND
- II. ANALYSIS 1: CELLULAR BEAM REDESIGN
  - I. DESIGN
  - II. STRUCTURAL IMPACT
  - III. SCHEDULE/COST IMPACT
  - IV. ADDITIONAL DETAILS
- III. ANALYSIS 2: FUEL ROOM RESEQUENCING
  - I. ORIGINAL SEQUENCING
  - II. PROPOSED SEQUENCING
  - III. OSHA SAFETY DIFFERENCES
  - IV. SCHEDULE/COST IMPACT
- IV. ANALYSIS 3: PHOTOVOLTAIC SYSTEM INTEGRATION
  - I. SYSTEM DESIGN
  - II. ENERGY PRODUCTION
  - III. SCHEDULE / COST IMPACT
- V. ANALYSIS 4: FAÇADE REDESIGN
  - I. DESIGN
  - II. STRUCTURAL IMPACTS
  - III. SCHEDULE / COST IMPACTS
- VI. SUMMARY OF CONCLUSIONS
- VIII. ACKNOWLEDGMENTS



## LOCATION

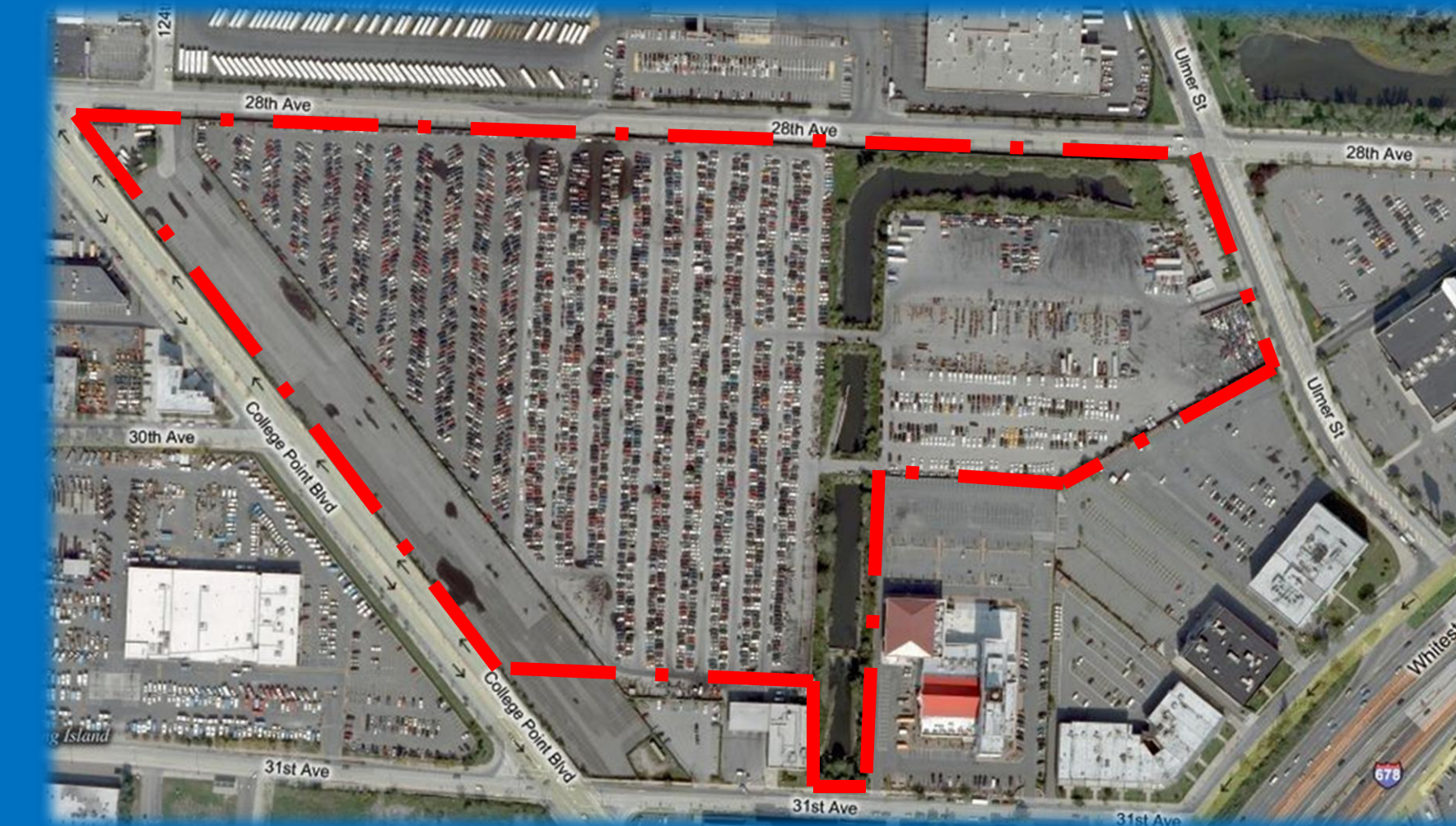
- 129-05 31<sup>ST</sup> AVENUE, COLLEGE POINT, NEW YORK
- FORMER NYPD COLLEGE POINT TOW POUND

## BUILDING PARAMETERS

- TWO SEPARATE FACILITIES
  - CENTRAL UTILITY PLANT / PHYSICAL TRAINING
  - ACADEMICS / ADMINISTRATIONS BUILDING
- MAIN CONCEPT: ONE CENTRALIZED FACILITY

## PROJECT PARAMETERS

- NEGOTIATED GMP: \$656 MILLION
- DELIVERY METHOD: MODIFIED FAST TRACK
- DATES OF CONSTRUCTION: 10/2011 – 01/2014
- 720,000 SQUARE FEET OF NEW CONSTRUCTION



# CELLULAR BEAM SYSTEM REDESIGN

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ORIGINAL DESIGN:  
- CELLULAR BEAMS WEIGH ON AVERAGE AS NORMAL BEAMS  
- ADDITIONAL WEIGHT DUE TO CONCRETE FILLED PIPES

PROPOSED DESIGN:  
- STRUCTURAL TRUSS SYSTEM LIGHTER THAN ORIGINAL DESIGN  
- REDUCED WEIGHT ALLOWS FOR A REDUCTION IN SUPPORTING BEAMS

COORDINATION WITH OTHER TRADES GOVERING FACTOR OF DESIGN

INSERT STRUCTURAL DATAT TABLE HERE

# FUEL ROOM RESEQUENCING

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### ORIGINAL SEQUENCING:

- CONCRETE SUBCONTRACTOR WILL PLACE 2<sup>ND</sup> STRUCTURAL MATT SLAB TO SUPPORT ADDITIONAL WEIGHT FROM FULL FUEL OIL TANKS
- ALLOWS FOR CONCRETE, A MAJOR ACTIVITY, TO REMAIN ON CRITICAL PATH WITHOUT DELAYING OVERALL PROJECT

### OSHA REQUIREMENTS:

- ONLY ALLOWED UNDER CERTAIN CRITERIA
- MUST ENSURE RIGGING EQUIPMENT IS CHECK PRIOR TO AND AFTER EACH LIFT
- PERSON OF COMPETENCE MUST BE PRESENT AT ALL TIMES

CURRENT SEQUENCING CAN BECOME COSTLY AND DELAY SCHEDULE

