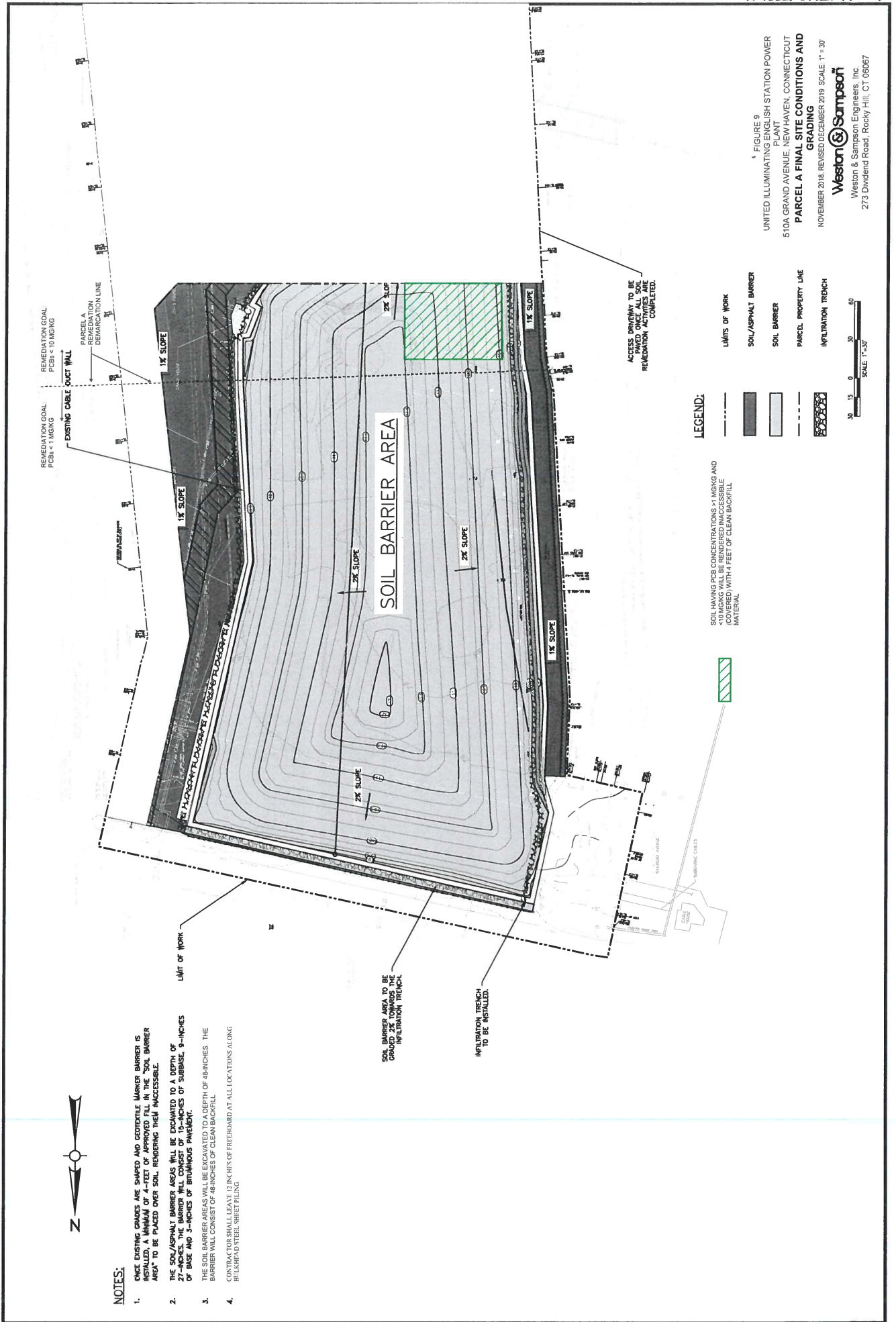




PCB-IMPACTED SOILS > 50 MG/KG TO BE EXCAVATED AND DISPOSED OFF-SITE PER SPECIFICATION SECTION 02 61 00 16 - HANDLING, TRANSPORTATION, AND OFF-SITE DISPOSAL OF EXCAVATED MATERIALS

ANTICIPATED LOCATIONS OF SHEET PILE INSTALLATION

- [illegible]



Utilities

**Letters of disconnection from Regional Water Authority,
Greater New Haven Water Pollution Control Authority, United
Illuminating Co., Southern Connecticut Gas Company, and
Frontier Communications**

South Central Connecticut Regional Water Authority
90 Sargent Drive, New Haven, Connecticut 06511-5966 203.562.4020
<http://www.rwater.com>

June 26, 2019

Building Department
City of New Haven
200 Orange Street
New Haven, CT 06510

Re: 510 Grand Avenue, New Haven (front building aka Station B)

To Whom It May Concern:

The water service at this location is in the following condition as of June 26, 2019:

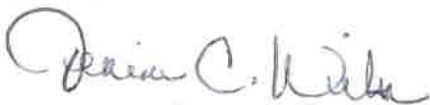
- ☐ Tap disconnected at main. Main in street abandoned.
- ☐ Valve shut at curb and tap at main will be discontinued as soon as possible.
 - ☐ By Water Company ☐ By Others
- ☐ Valve shut at curb until water main is abandoned due to reconstruction of redevelopment.
- ☒ Other Conditions: Meters removed and water services shut at curb. Water services will be reused per contractor, ACV Enviro.
- ☐ No record of water service to the shed

DEMOLITION CONTRACTOR TO CUT SERVICE ON BUILDING SIDE OF CURB VALVE.

Building permit (X) can ☐ cannot be issued at this time.

Very truly yours,

REGIONAL WATER AUTHORITY



Jenine C. Wilson
Contracts Records Technician

C: Shawn Crosby, ACV Enviro



Date: 4 April 2019

To: Shawn Crosbie
United Illuminating
Marsh Hill Rd.
Orange, Ct 06477

From: Bill Rossetti
Frontier Communications
4 Hamilton St.
New Haven, Ct. 06511

Subject: Removal of Frontier facilities.

This letter is to inform you that the telephone equipment, cables, wires, and associated attachments have been removed and/or are not attached to the addresses listed below:

510A Grand Ave, New Haven, Ct 06510

This job was performed 30 January 2019 in response to a request to demolish the above addresses by: **Shawn Crosbie, United Illuminating**

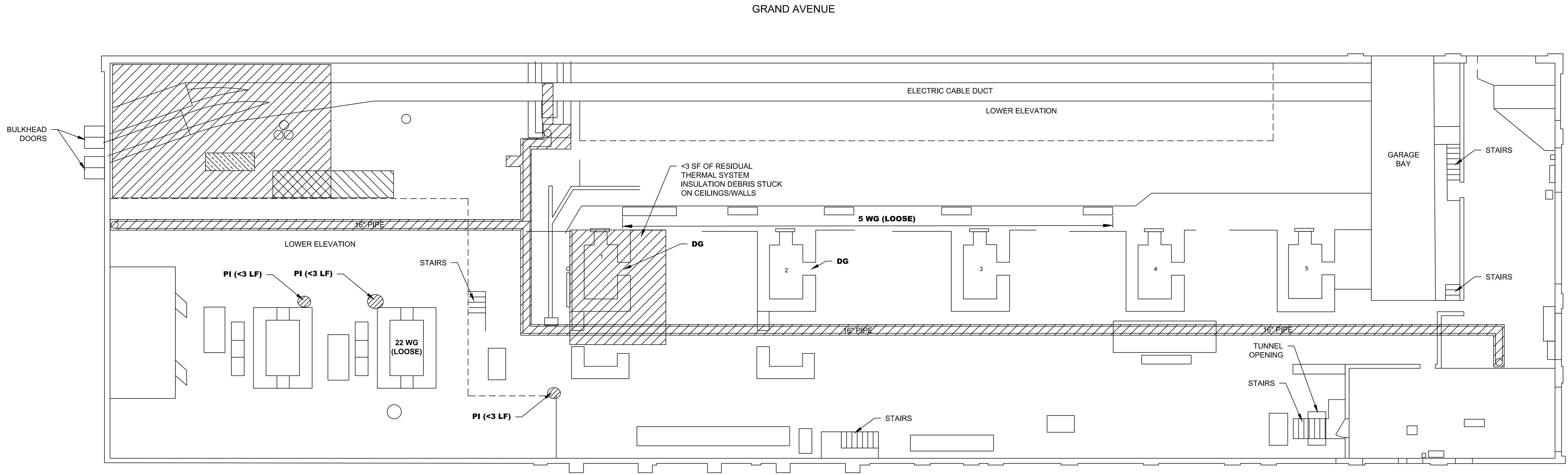
Sincerely,

Bill Rossetti
Telecommunications Specialist-ONE
Frontier Communications
4 Hamilton St
New Haven, Ct 06511
William.J.Rossetti@ftr.com
(203) 771-4303

APPENDIX B

Drawings and Technical Specifications for Abatement and Demolition

2408 -- ATTACHED REF'S: TRC-1112 NAD38 -- ATTACHED IMAGES: GEI Plan-18, GEI Plan-19, GEI Plan-20, GEI Plan-21, DRAWING NAME: J:\CAD\United Illuminating\English Station-263951\Station B Building Demolition-000014000002\Station B Sampling.dwg --- PLOT DATE: July 09, 2018 - 4:05PM --- LAYOUT: Figure 1-Basement

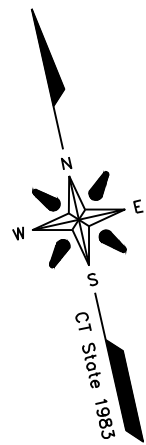


ACM LEGEND

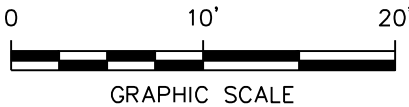
	PIPE INSULATION (PI) AND/OR DEBRIS
	WIRE WRAP DEBRIS
	TANK INSULATION
DG	RESIDUAL DOOR GASKET
WG	WINDOW GLAZING


- ASBESTOS NOTES:**
- ACM INSULATION COMPONENTS ARE ASSUMED IN ALL CIRCUIT BOXES AND ELECTRICAL PANELS.
 - PIPE FLANGE GASKETS ARE ASSUMED TO BE ACM.

- PCB NOTE:**
- EXTENSIVE PAINT COATINGS ON THE INTERIOR AND EXTERIOR OF THE BUILDING COMPONENTS (WALLS, STRUCTURAL STEEL, ROOF DECK, ETC.) HAVE BEEN IDENTIFIED AS EXCLUDED PCB PRODUCT (>1<50 PPM). IN ADDITION, VARIOUS ROOFING MATERIALS, TARS, ADHESIVES, FLOOR COVERINGS, COVE BASES, GASKETS, CAULKINGS AND GLAZINGS HAVE ALSO BEEN IDENTIFIED AS EXCLUDED PCB PRODUCT (>1<50 PPM). REFER TO SECTION 028433 FOR A COMPREHENSIVE LISTING (WITH LOCATIONS) OF ALL EXCLUDED PCB PRODUCTS (>1<50 PPM).

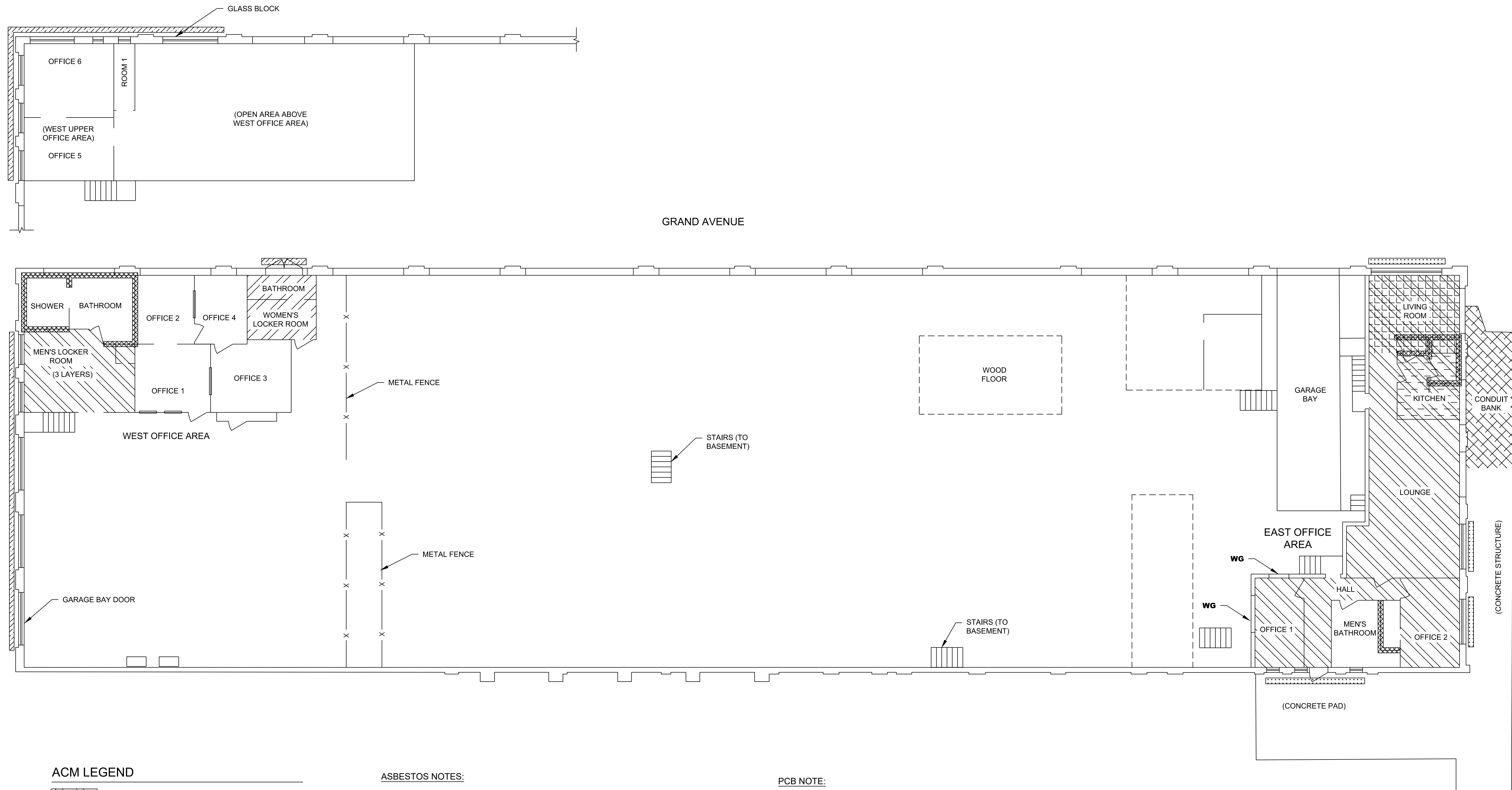


SOURCE:
MAP TITLED "PLAN PREPARED FOR UNITED ILLUMINATING COMPANY, ENGLISH STATION, NEW HAVEN, CONNECTICUT, BASEMENT LEVEL - STATION B", SCALE: NTS, DATED: JAN. 2000, BY GEI CONSULTANTS, INC.



PROJECT: UNITED ILLUMINATING ENGLISH STATION POWER PLANT 510 Grand Avenue New Haven, Connecticut	
TITLE: STATION B ASBESTOS AND PCB LOCATIONS BASEMENT FLOOR	
DRAWN BY: K. Hollenbeck	PROJ. NO.: 263951-000014-000002
CHECKED BY: G. Kaczynski	Figure 1
APPROVED BY: M. Kearney	
DATE: 07/05/2018	
	
21 Griffin Road North Windsor, CT 06095 Phone: 860.298.9692 www.trcsolutions.com	
FILE NO.: Station B Sampling.dwg	

2408 -- ATTACHED REF'S: TRC-1112, NAD38 -- ATTACHED IMAGES: GEI Plan-18, GEI Plan-19, GEI Plan-20, GEI Plan-21, DRAWING NAME: J:\CAD\United Illuminating\English Station-263951\Station B Building Demolition-000014000002\Station B Sampling.dwg --- PLOT DATE: July 09, 2018 - 4:07PM --- LAYOUT: Figure 2-First Floor



ACM LEGEND

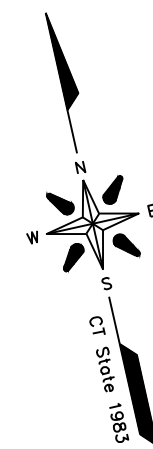
	FLOOR TILE MASTIC
	LINOLEUM
	GALBESTOS ROOFING (W/CORRUGATED TRANSITE PANEL BENEATH)
	JOINT COMPOUND
	PLASTER SKIMCOAT AND DEBRIS
	PIPE INSULATION/MUDED FITTINGS PRESUMED IN WALL
	EXTERIOR CAULKING AND INTERIOR/EXTERIOR WINDOW GLAZING
	INTERIOR/EXTERIOR CAULKING AND INTERIOR/EXTERIOR WINDOW GLAZING
WG	WINDOW GLAZING

ASBESTOS NOTES:

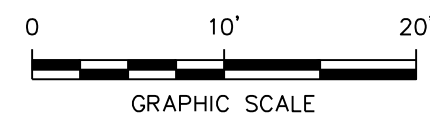
1. ACM INSULATION COMPONENTS ARE ASSUMED IN ALL CIRCUIT BOXES AND ELECTRICAL PANELS.
2. PIPE FLANGE GASKETS ARE ASSUMED TO BE ACM.
3. GALBESTOS ROOFING DEBRIS ON EAST END OF BUILDING SHALL ALSO BE REMOVED.
4. ACM CAULKING IS ALSO ON CMU IN FILLED FORMER WINDOWS (ON METAL LINTELS AND OTHER LOCATIONS).
5. ACM FLASHING TAR IS ON DOOR OVERHANG/ROOF OF SOUTH ENTRANCE TO EAST OFFICE AREA.
6. ACM STEP FLASHING AND CAPSTONE CAULK IS ON THE BRICK WALL OF THE EXTERIOR CONCRETE PAD/STRUCTURE OFF THE SOUTHEAST CORNER OF THE BUILDING.
7. ROOFING DEBRIS SCATTERED ON GROUND SURFACES TO THE EAST, WEST AND SOUTH OF THE BUILDING SHALL ALSO BE REMOVED.
8. THE INTERIOR OF THE CABLE VAULT OFF THE SE CORNER OF THE BUILDING WAS INACCESSIBLE AT THE TIME OF THE INSPECTION; SHOULD ANY SUSPECT BUILDING MATERIALS BE ENCOUNTERED DURING DEMOLITION ACTIVITIES, THE MATERIALS SHOULD BE INSPECTED BY THE ENGINEER PRIOR TO FURTHER DISTURBANCE.

PCB NOTE:

1. EXTENSIVE PAINT COATINGS ON THE INTERIOR AND EXTERIOR OF THE BUILDING COMPONENTS (WALLS, STRUCTURAL STEEL, ROOF DECK, ETC.) HAVE BEEN IDENTIFIED AS EXCLUDED PCB PRODUCT (>1<50 PPM). IN ADDITION, VARIOUS ROOFING MATERIALS, TARS, ADHESIVE'S, FLOOR COVERINGS, COVE BASES, GASKETS, CAULKINGS AND GLAZINGS HAVE ALSO BEEN IDENTIFIED AS EXCLUDED PCB PRODUCT (>1<50 PPM). REFER TO SECTION 028433 FOR A COMPREHENSIVE LISTING (WITH LOCATIONS) OF ALL EXCLUDED PCB PRODUCTS (>1<50 PPM).

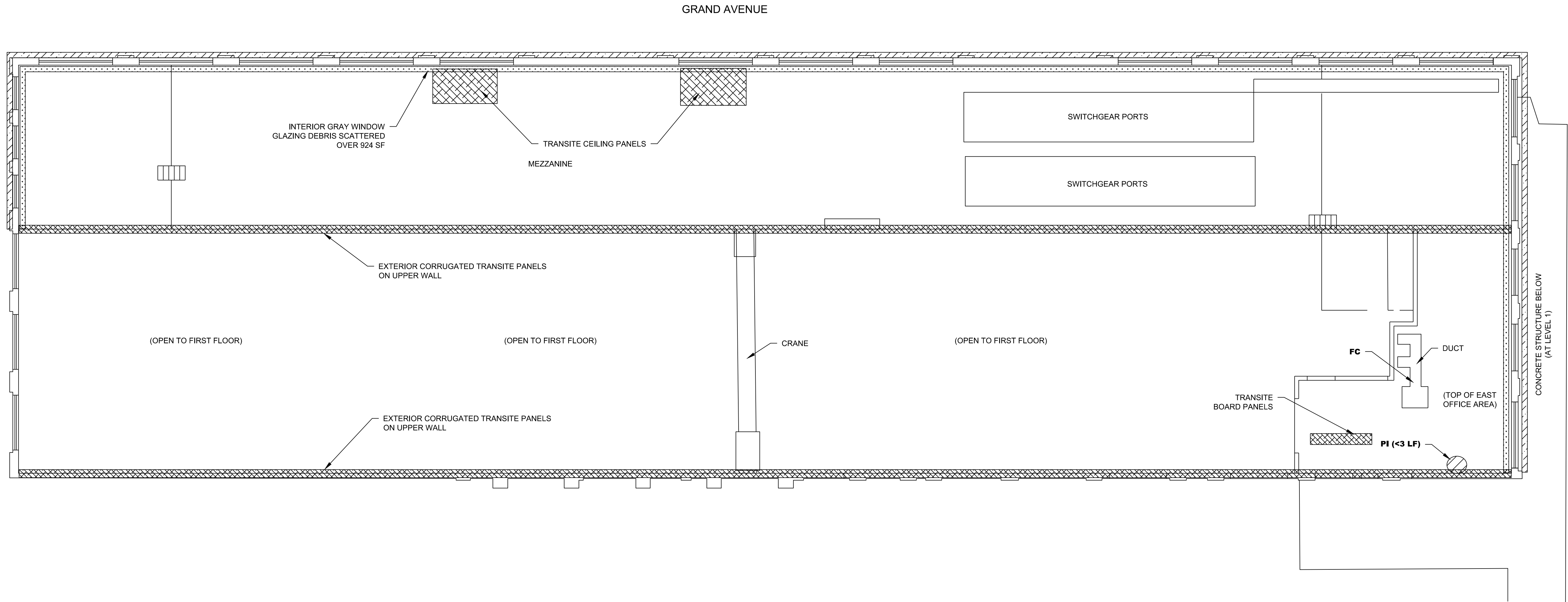


SOURCE:
MAP TITLED "PLAN PREPARED FOR UNITED ILLUMINATING COMPANY, ENGLISH STATION, NEW HAVEN, CONNECTICUT, FIRST FLOOR - STATION B", SCALE: NTS, DATED: JAN. 2000, BY GEI CONSULTANTS, INC.



PROJECT: UNITED ILLUMINATING ENGLISH STATION POWER PLANT 510 Grand Avenue New Haven, Connecticut	
TITLE: STATION B ASBESTOS AND PCB LOCATIONS FIRST FLOOR	
DRAWN BY: K. Hollenbeck	PROJ. NO.: 263951-000014-000002
CHECKED BY: G. Kaczynski	Figure 2
APPROVED BY: M. Kearney	
DATE: 07/06/2018	
21 Griffin Road North Windsor, CT 06095 Phone: 860.298.9692 www.trcsolutions.com	
FILE NO.: Station B Sampling.dwg	

24x36 - ATTACHED REF'S: TRC-1112 NAD38 - ATTACHED IMAGES: GEI Plans-18, GEI Plans-19, GEI Plans-20, GEI Plans-21, DRAWING NAME: J:\CAD\United Illuminating\English Station-263951\Station B Building Demolition-000140000021 Station B Sampling.dwg --- PLOT DATE: July 09, 2018 - 4:25PM --- LAYOUT: Figure 3-Second Floor



ACM LEGEND

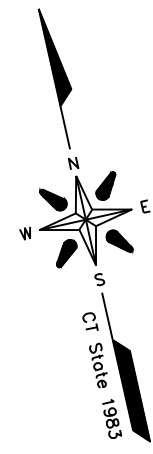
	PI (PIPE INSULATION)
	TRANSITE PANELS
	EXTERIOR CAULKING AND INTERIOR/EXTERIOR WINDOW GLAZING
	INTERIOR WINDOW GLAZING DEBRIS
FC	FLEX CONNECTOR

ASBESTOS NOTES:

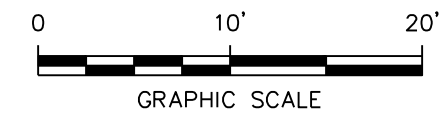
1. ACM INSULATION COMPONENTS ARE ASSUMED IN ALL CIRCUIT BOXES AND ELECTRICAL PANELS.
2. PIPE FLANGE GASKETS ARE ASSUMED TO BE ACM.
3. ACM CAULKING IS ALSO ON CMU IN FILLED FORMER WINDOWS (NON-METAL LINTELS AND OTHER LOCATIONS).
4. ACM CAULK IS ASSUMED BEHIND THE UPPER CORRUGATED TRANSITE PANELING ON THE SOUTH SIDE OF STATION B.
5. A BUCKET OF ACM FLASHING TAR (ASSUMED) IS LOCATED ON THE EAST END OF THE MEZZANINE.

PCB NOTE:

1. EXTENSIVE PAINT COATINGS ON THE INTERIOR AND EXTERIOR OF THE BUILDING COMPONENTS (WALLS, STRUCTURAL STEEL, ROOF DECK, ETC.) HAVE BEEN IDENTIFIED AS EXCLUDED PCB PRODUCT (>1<50 PPM). IN ADDITION, VARIOUS ROOFING MATERIALS, TARS, ADHESIVE'S, FLOOR COVERINGS, COVE BASES, GASKETS, CAULKINGS AND GLAZINGS HAVE ALSO BEEN IDENTIFIED AS EXCLUDED PCB PRODUCT (>1<50 PPM). REFER TO SECTION 028433 FOR A COMPREHENSIVE LISTING (WITH LOCATIONS) OF ALL EXCLUDED PCB PRODUCTS (>1<50 PPM).

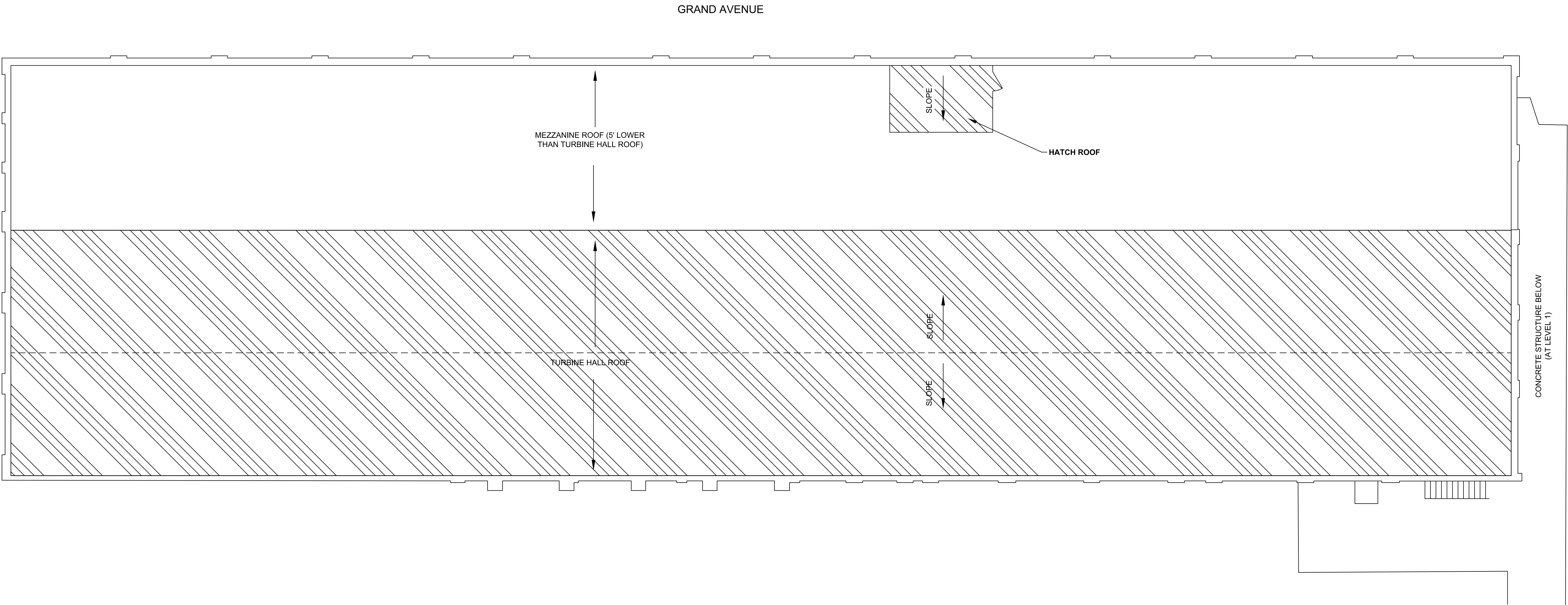


SOURCE:
MAP TITLED "PLAN PREPARED FOR UNITED ILLUMINATING COMPANY, ENGLISH STATION, NEW HAVEN, CONNECTICUT, SECOND FLOOR - STATION B", SCALE: NTS, DATED: JAN. 2000, BY GEI CONSULTANTS, INC.



PROJECT: UNITED ILLUMINATING ENGLISH STATION POWER PLANT 510 Grand Avenue New Haven, Connecticut	
TITLE: STATION B ASBESTOS AND PCB LOCATIONS SECOND FLOOR	
DRAWN BY: K. Hollenbeck	PROJ. NO.: 263951-000014-000002
CHECKED BY: G. Kaczynski	Figure 3
APPROVED BY: M. Kearney	
DATE: 07/09/2018	
21 Griffin Road North Windsor, CT 06095 Phone: 860.298.9692 www.trcsolutions.com	
FILE NO.: Station B Sampling.dwg	

2408 -- ATTACHED REF'S: TRC-1112 NAD38 -- ATTACHED IMAGES: GEI Plans-18, GEI Plans-19, GEI Plans-20, GEI Plans-21, DRAWING NAME: J:\CAD\United Illuminating\English Station-263951\Station B Building Demolition-000140000021 Station B Sampling.dwg --- PLOT DATE: July 06, 2018 - 3:03PM --- LAYOUT: Figure 4Roof Plan



ACM LEGEND

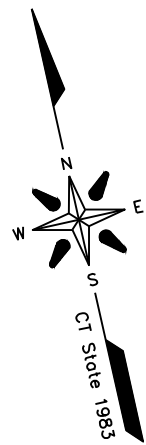
 ROOF FIELD (ALL LAYERS)

ASBESTOS NOTES:

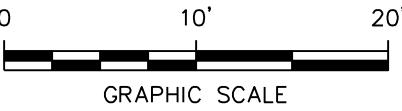
1. ACM BLACK FLASHING TAR/FELT LAYERS ARE ON ALL ROOFING PENETRATIONS, PERIMETERS, AND PARAPET WALLS AND CORRUGATED TRANSITE PANELS (NORTH WALL ONLY).
2. EXPANSION JOINT CAULK (C1) IS ON PARAPET WALL CAPSTONES (COVERED BY FLASHING).
3. REPOINTING TAR (T3) IS APPLIED IRREGULARLY AT BRICK JOINTS/PENETRATIONS ALONG THE EXTERIOR SOUTH FACADE OF THE BUILDING AND THE MAJORITY OF THE SOUTH FACADE HAS SINCE BEEN PAINTED/SEALED OVER; COVERING MANY OF THE LOCATIONS T3 HAS BEEN APPLIED.
4. ROOFING DEBRIS SCATTERED ON GROUND SURFACES TO THE EAST, WEST AND SOUTH OF THE BUILDING SHALL ALSO BE REMOVED.


PCB NOTE:

1. EXTENSIVE PAINT COATINGS ON THE INTERIOR AND EXTERIOR OF THE BUILDING COMPONENTS (WALLS, STRUCTURAL STEEL, ROOF DECK, ETC.) HAVE BEEN IDENTIFIED AS EXCLUDED PCB PRODUCT (>1<50 PPM). IN ADDITION, VARIOUS ROOFING MATERIALS, TARS, ADHESIVE'S, FLOOR COVERINGS, COVE BASES, GASKETS, CAULKINGS AND GLAZINGS HAVE ALSO BEEN IDENTIFIED AS EXCLUDED PCB PRODUCT (>1<50 PPM). REFER TO SECTION 028433 FOR A COMPREHENSIVE LISTING (WITH LOCATIONS) OF ALL EXCLUDED PCB PRODUCTS (>1<50 PPM).

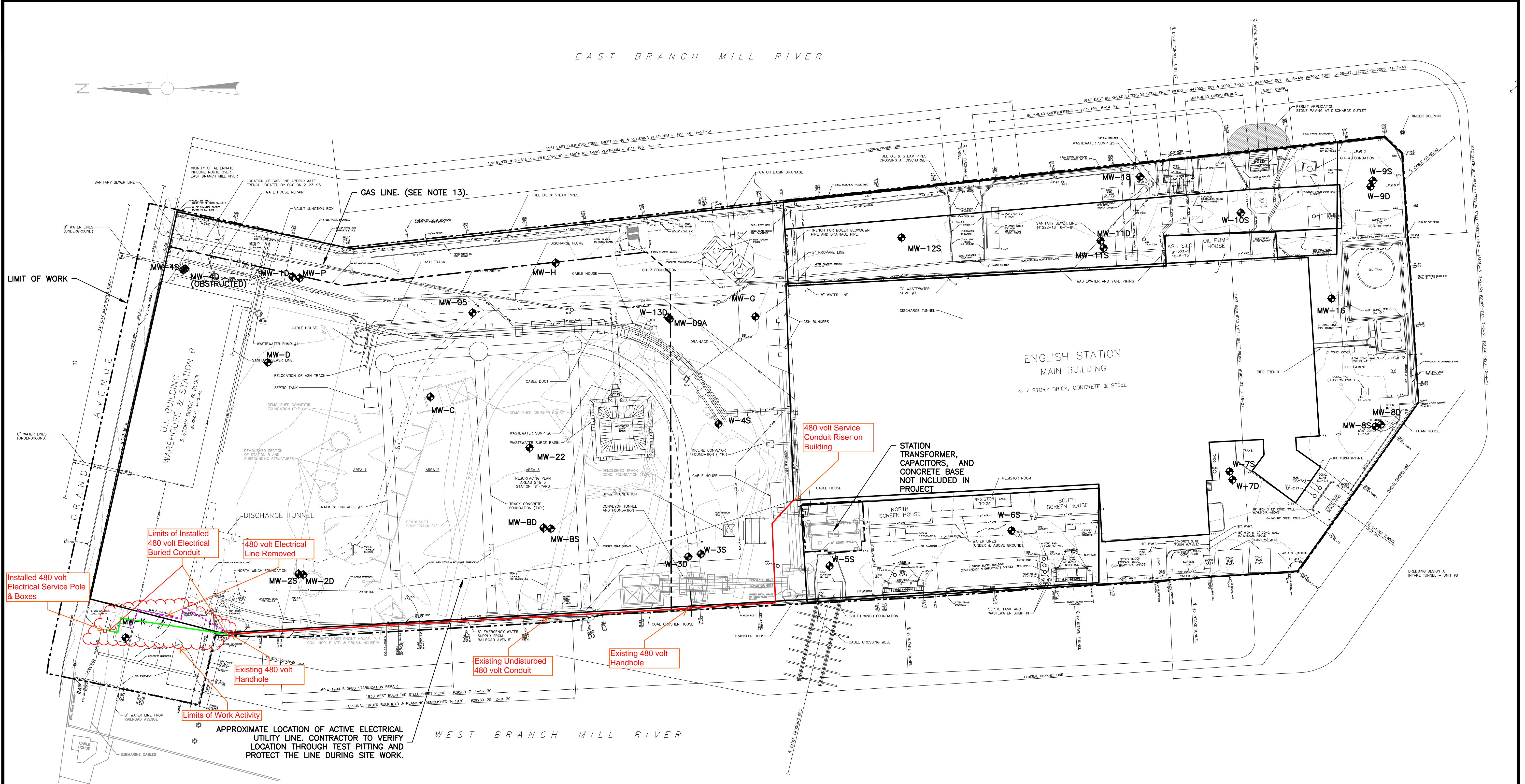


SOURCE:
MAP TITLED "PLAN PREPARED FOR UNITED ILLUMINATING COMPANY, ENGLISH STATION, NEW HAVEN, CONNECTICUT, PLAN MAP - ROOFING, STATION B", SCALE: NTS, DATED: JAN. 2000, BY GEI CONSULTANTS, INC.



PROJECT: UNITED ILLUMINATING ENGLISH STATION POWER PLANT 510 Grand Avenue New Haven, Connecticut	
TITLE: STATION B ASBESTOS AND PCB LOCATIONS ROOF PLAN	
DRAWN BY: K. Hollenbeck	PROJ. NO.: 263951-000014-000002
CHECKED BY: G. Kaczynski	Figure 4
APPROVED BY: M. Kearney	
DATE: 07/06/2018	
 <div>21 Griffin Road North Windsor, CT 06095 Phone: 860.298.9692 www.trcsolutions.com</div>	
FILE NO.: Station B Sampling.dwg	

P:\CT_RockyHill\Server\Working\Drawings\English\Station\040 File\Updated WSE Formatted File\Draft C40\Contract Plans\3_C-SHEETS.dwg

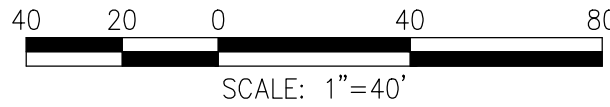


NOTES:

1. BASE MAP ADAPTED FROM PLAN TITLED "SITE HISTORICAL GENERAL PLAN" BY OCEAN AND COASTAL CONSULTANTS, INC. DATED FEBRUARY 5, 1998. TOPOGRAPHIC INFORMATION ADAPTED FROM GENERAL LOCATION SURVEY PLAN BY GODFREY-HOFFMAN ASSOCIATES, LLC. DATED JANUARY 4, 2002.
2. LOCATIONS OF BUILDINGS, SURFACE FEATURES, UTILITIES AND UTILITY PIPE SIZES SHOWN ON THIS DRAWING HAVE NOT BEEN FIELD VERIFIED BY WESTON & SAMPSON. CONTRACTOR SHALL FIELD VERIFY SITE FEATURES PRIOR TO COMMENCING WORK AT THE SITE AND EXCAVATE TEST PITS FOR THE PURPOSE OF LOCATING UNDERGROUND UTILITIES OR STRUCTURES. SEE SPECIFICATION SECTION 01 14 00 - SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.

LEGEND:

- LIMITS OF WORK
- W-3S EXISTING MONITORING WELL
- PARCEL PROPERTY LINE
- Existing Undisturbed 480 volt Conduit
- Removed Existing 480 volt Conduit
- Installed New Buried 480 volt Conduit
- Limits of Electrical Service Work Activity



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NEW HAVEN, CONNECTICUT
UNITED ILLUMINATION

ENGLISH STATION SOIL REMEDIATION PROJECT

EXISTING CONDITIONS PLAN

FILE NO. 234-11

SHEET 3 OF 13

Weston & Sampson

Weston & Sampson Engineers, Inc.
273 Dividend Road, Rocky Hill, CT 06067
860.513.1473
www.westonandsampson.com

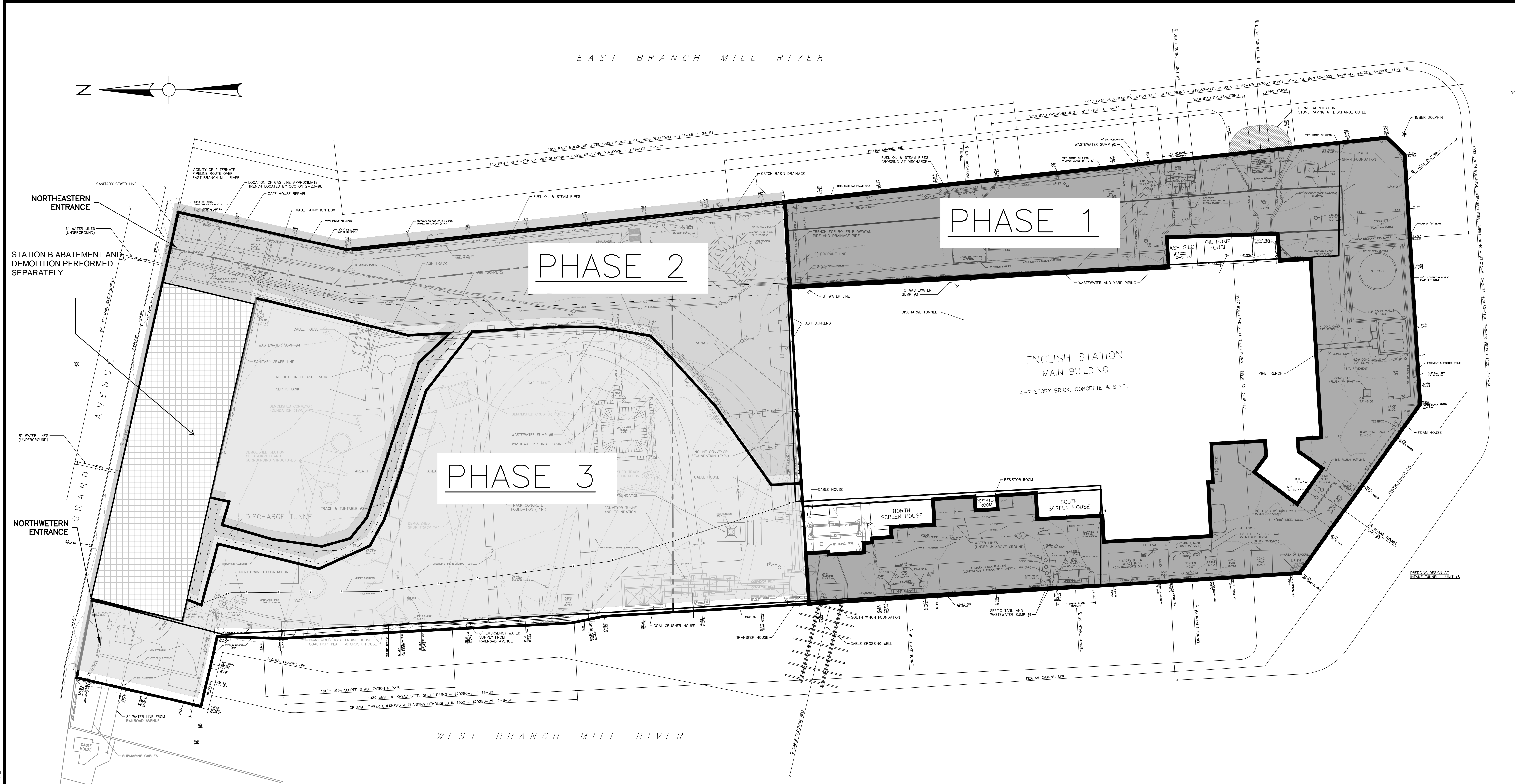
No.	Date	Dr. By	Ch. By	App. By	Description
		A	P	R	O
					V
					E
					D

REGISTERED PROFESSIONAL ENGINEER

DATE

STATE OF CONNECTICUT
PUBLIC ENGINEERING
No. 17843
PROFESSIONAL ENGINEER
1/10/16

F:\CTY_RockyHill\GIS\Server\Working\Drawn\English Station\CAD File\Updated WSE Formatted File\Drawn Draft CAD\Contract Plans\3_C-SHEETS.dwg
P:\CTY_RockyHill\GIS\Server\Working\Drawn\English Station\CAD File\Updated WSE Formatted File\Drawn Draft CAD\Contract Plans\3_C-SHEETS.dwg

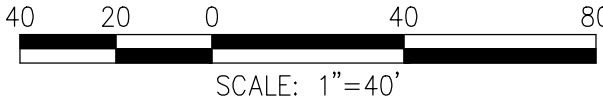


NOTES:

1. THE CONTRACTOR SHALL NOTE THAT ANOTHER CONSTRUCTION PROJECT IN THE ENGLISH STATION BUILDING MAY BE ONGOING DURING THIS PROJECT. COORDINATION BETWEEN CONTRACTORS MAY BE REQUIRED. INTERFERENCE AND DELAYS RESULTING FROM THE LACK OF COORDINATION BY ALL PARTIES SHALL NOT BE A BASIS FOR CLAIMS AGAINST UNITED ILLUMINATING. THE CONTRACTOR WILL HAVE ACCESS TO THE SITE FROM THE NORTHWESTERN ENTRANCE DURING ALL PHASES OF THE REMEDIATION. THE CONTRACTOR WILL ACCESS THE SITE FROM THE NORTHEASTERN GATE DURING PHASE 2 ONLY. THE SITE EGRESS WILL BE THROUGH THE NORTHEASTERN ENTRANCE FOR PHASE 1, 2, AND 3. SEE SPECIFICATION SECTION 01 12 13 - SCOPE AND SEQUENCE OF WORK FOR ADDITIONAL INFORMATION.
2. SOME WORK IN PHASE AREAS MAY OCCUR CONCURRENTLY - THE ACCESS DRIVEWAY AND DECONTAMINATION STATION SHOWN ON SHEET C-3 WILL BE CONSTRUCTED PRIOR TO DEMOLITION AND SOIL EXCAVATION ACTIVITIES IN PHASE 1. IN ADDITION, THE PCB SOIL EXCAVATIONS SHOWN ON SHEET C-4 IN THE PHASE 3 AREA WILL REQUIRE EXCAVATION AND BACKFILLING SO THE ACCESS DRIVEWAY CAN BE COMPLETED.
3. SEE SPECIFICATION SECTION 01 12 16 - SCOPE AND SEQUENCE OF WORK FOR ADDITIONAL PHASING DETAILS.

LEGEND:

- CONSTRUCTION PHASE 1 AREA
- CONSTRUCTION PHASE 2 AREA
- CONSTRUCTION PHASE 3 AREA
- PARCEL PROPERTY LINE



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Weston & Sampson

Weston & Sampson Engineers, Inc.
273 Dividend Road, Rocky Hill, CT 06067
860.513.1473
www.westonandsampson.com

No.	Date	Dr. By	Ch. By	App. By	Description	DATE		
		A	P	R	O	V	E	D

REGISTERED PROFESSIONAL ENGINEER

9/18/19

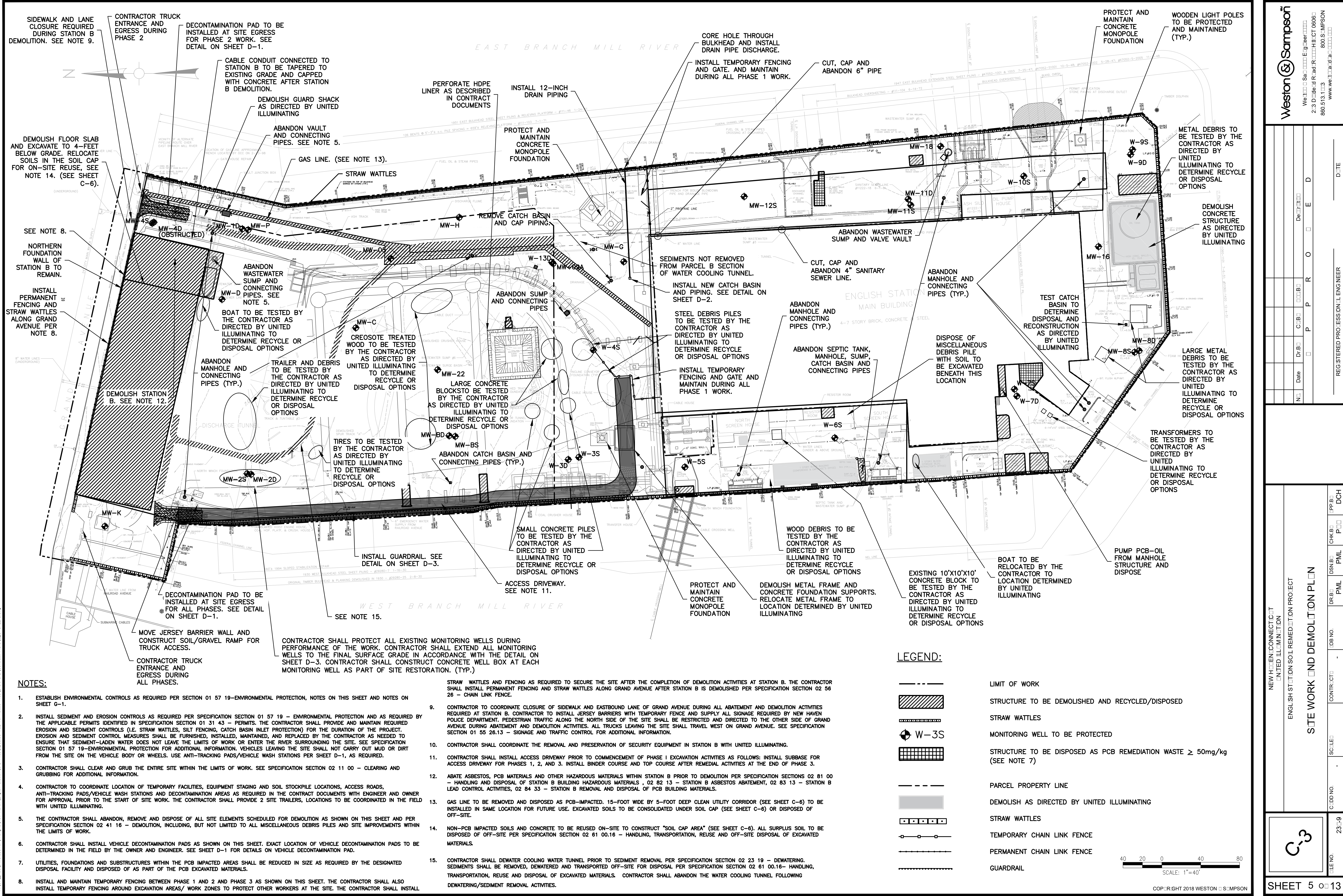
NEW HAVEN, CONNECTICUT
UNITED ILLUMINATING

ENGLISH STATION SOIL REMEDIATION PROJECT

CONSTRUCTION PHASING PLAN

FILE NO.	CADD NO.	SCALE:	CONTRACT:	JOB NO.	DR BY	DSN BY	CHK BY	APP BY	DCH
C-2	234-19	-	-	-	PML	PML	PVU	PVU	DCH

SHEET 4 OF 13



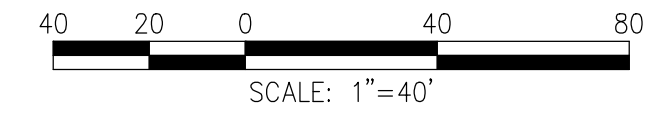
NOTES:

- 1. ESTABLISH ENVIRONMENTAL CONTROLS AS REQUIRED PER SECTION 01 57 19-ENVIRONMENTAL PROTECTION, NOTES ON THIS SHEET AND NOTES ON SHEET G-1.
- 2. INSTALL SEDIMENT AND EROSION CONTROLS AS REQUIRED PER SPECIFICATION SECTION 01 57 19 - ENVIRONMENTAL PROTECTION AND AS REQUIRED BY THE APPLICABLE PERMITS IDENTIFIED IN SPECIFICATION SECTION 01 31 43 - PERMITS. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN REQUIRED EROSION AND SEDIMENT CONTROLS (I.E. STRAW WATTLES, SILT FENCING, CATCH BASIN INLET PROTECTION) FOR THE DURATION OF THE PROJECT. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE FURNISHED, INSTALLED, MAINTAINED, AND REPLACED BY THE CONTRACTOR AS NEEDED TO ENSURE THAT SEDIMENT-LADEN WATER DOES NOT LEAVE THE LIMITS OF WORK OR ENTER THE RIVER SURROUNDING THE SITE. SEE SPECIFICATION SECTION 01 57 19-ENVIRONMENTAL PROTECTION FOR ADDITIONAL INFORMATION. VEHICLES LEAVING THE SITE SHALL NOT CARRY OUT MUD OR DIRT FROM THE SITE ON THE VEHICLE BODY OR WHEELS. USE ANTI-TRACKING PADS/VEHICLE WASH STATIONS PER SHEET D-1, AS REQUIRED.
- 3. CONTRACTOR SHALL CLEAR AND GRUB THE ENTIRE SITE WITHIN THE LIMITS OF WORK. SEE SPECIFICATION SECTION 02 11 00 - CLEARING AND GRUBBING FOR ADDITIONAL INFORMATION.
- 4. CONTRACTOR TO COORDINATE LOCATION OF TEMPORARY FACILITIES, EQUIPMENT STAGING AND SOIL STOCKPILE LOCATIONS, ACCESS ROADS, ANTI-TRACKING PADS/VEHICLE WASH STATIONS AND DECONTAMINATION AREAS AS REQUIRED IN THE CONTRACT DOCUMENTS WITH ENGINEER AND OWNER FOR APPROVAL PRIOR TO THE START OF SITE WORK. THE CONTRACTOR SHALL PROVIDE 2 SITE TRAILERS, LOCATIONS TO BE COORDINATED IN THE FIELD WITH UNITED ILLUMINATING.
- 5. THE CONTRACTOR SHALL ABANDON, REMOVE AND DISPOSE OF ALL SITE ELEMENTS SCHEDULED FOR DEMOLITION AS SHOWN ON THIS SHEET AND PER SPECIFICATION SECTION 02 41 16 - DEMOLITION, INCLUDING, BUT NOT LIMITED TO ALL MISCELLANEOUS DEBRIS PILES AND SITE IMPROVEMENTS WITHIN THE LIMITS OF WORK.
- 6. CONTRACTOR SHALL INSTALL VEHICLE DECONTAMINATION PADS AS SHOWN ON THIS SHEET. EXACT LOCATION OF VEHICLE DECONTAMINATION PADS TO BE DETERMINED IN THE FIELD BY THE OWNER AND ENGINEER. SEE SHEET D-1 FOR DETAILS ON VEHICLE DECONTAMINATION PAD.
- 7. UTILITIES, FOUNDATIONS AND SUBSTRUCTURES WITHIN THE PCB IMPACTED AREAS SHALL BE REDUCED IN SIZE AS REQUIRED BY THE DESIGNATED DISPOSAL FACILITY AND DISPOSED OF AS PART OF THE PCB EXCAVATED MATERIALS.
- 8. INSTALL AND MAINTAIN TEMPORARY FENCING BETWEEN PHASE 1 AND 2 AND PHASE 3 AS SHOWN ON THIS SHEET. THE CONTRACTOR SHALL ALSO INSTALL TEMPORARY FENCING AROUND EXCAVATION AREAS/ WORK ZONES TO PROTECT OTHER WORKERS AT THE SITE. THE CONTRACTOR SHALL INSTALL

- 9. CONTRACTOR TO COORDINATE CLOSURE OF SIDEWALK AND EASTBOUND LANE OF GRAND AVENUE DURING ALL ABATEMENT AND DEMOLITION ACTIVITIES REQUIRED AT STATION B. CONTRACTOR TO INSTALL JERSEY BARRIERS WITH TEMPORARY FENCE AND SUPPLY ALL SIGNAGE REQUIRED BY NEW HAVEN POLICE DEPARTMENT. PEDESTRIAN TRAFFIC ALONG THE NORTH SIDE OF THE SITE SHALL BE RESTRICTED AND DIRECTED TO THE OTHER SIDE OF GRAND AVENUE DURING ABATEMENT AND DEMOLITION ACTIVITIES. ALL TRUCKS LEAVING THE SITE SHALL TRAVEL WEST ON GRAND AVENUE. SEE SPECIFICATION SECTION 01 55 28.13 - SIGNAGE AND TRAFFIC CONTROL FOR ADDITIONAL INFORMATION.
- 10. CONTRACTOR SHALL COORDINATE THE REMOVAL AND PRESERVATION OF SECURITY EQUIPMENT IN STATION B WITH UNITED ILLUMINATING.
- 11. CONTRACTOR SHALL INSTALL ACCESS DRIVEWAY PRIOR TO COMMENCEMENT OF PHASE I EXCAVATION ACTIVITIES AS FOLLOWS: INSTALL SUBBASE FOR ACCESS DRIVEWAY FOR PHASES 1, 2, AND 3. INSTALL BINDER COURSE AND TOP COURSE AFTER REMEDIAL ACTIVITIES AT THE END OF PHASE 3.
- 12. ABATE ASBESTOS, PCB MATERIALS AND OTHER HAZARDOUS MATERIALS WITHIN STATION B PRIOR TO DEMOLITION PER SPECIFICATION SECTIONS 02 81 00 - HANDLING AND DISPOSAL OF STATION B BUILDING HAZARDOUS MATERIALS , 02 82 13 - STATION B ASBESTOS ABATEMENT, 02 83 13 - STATION B LEAD CONTROL ACTIVITIES, 02 84 33 - STATION B REMOVAL AND DISPOSAL OF PCB BUILDING MATERIALS.
- 13. GAS LINE TO BE REMOVED AND DISPOSED AS PCB-IMPACTED. 15-FOOT WIDE BY 5-FOOT DEEP CLEAN UTILITY CORRIDOR (SEE SHEET C-6) TO BE INSTALLED IN SAME LOCATION FOR FUTURE USE. EXCAVATED SOILS TO BE CONSOLIDATED UNDER SOIL CAP (SEE SHEET C-6) OR DISPOSED OF OFF-SITE.
- 14. NON-PCB IMPACTED SOILS AND CONCRETE TO BE REUSED ON-SITE TO CONSTRUCT "SOIL CAP AREA" (SEE SHEET C-6). ALL SURPLUS SOIL TO BE DISPOSED OF OFF-SITE PER SPECIFICATION SECTION 02 61 00.16 - HANDLING, TRANSPORTATION, REUSE AND OFF-SITE DISPOSAL OF EXCAVATED MATERIALS.
- 15. CONTRACTOR SHALL DEWATER COOLING WATER TUNNEL PRIOR TO SEDIMENT REMOVAL PER SPECIFICATION SECTION 02 23 19 - DEWATERING. SEDIMENTS SHALL BE REMOVED, DEWATERED AND TRANSPORTED OFF-SITE FOR DISPOSAL PER SPECIFICATION SECTION 02 61 00.16- HANDLING, TRANSPORTATION, REUSE AND DISPOSAL OF EXCAVATED MATERIALS. CONTRACTOR SHALL ABANDON THE WATER COOLING TUNNEL FOLLOWING DEWATERING/SEDIMENT REMOVAL ACTIVITIES.

LEGEND:

- LIMIT OF WORK
- [Hatched Box] STRUCTURE TO BE DEMOLISHED AND RECYCLED/DISPOSED
- [Dashed Line] STRAW WATTLES
- [Circle with Cross] W-3S MONITORING WELL TO BE PROTECTED
- [Grid Box] STRUCTURE TO BE DISPOSED AS PCB REMEDIATION WASTE ≥ 50mg/kg (SEE NOTE 7)
- PARCEL PROPERTY LINE
- [Solid Grey Box] DEMOLISH AS DIRECTED BY UNITED ILLUMINATING
- [Dashed Line] STRAW WATTLES
- [Line with Crosses] TEMPORARY CHAIN LINK FENCE
- [Line with Dots] PERMANENT CHAIN LINK FENCE
- [Line with Triangles] GUARDRAIL



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DATE	2/28/2018
PROJECT	NEW HAVEN CONNECTICUT UNITED ILLUMINATING ENGLISH STATION SOIL REMEDIATION PROJECT
CLIENT	NEW HAVEN CONNECTICUT UNITED ILLUMINATING
DESIGNER	WESTON & SAMPSON
CHECKED	WESTON & SAMPSON
DATE	2/28/2018

SITE WORK AND DEMOLITION PLAN

C-3

FILE NO.

23-19

C-DO NO.

13

SCALE

1"=40'

CONTRACT

13

DR. NO.

13

DSM. NO.

13

CHK. NO.

13

PP. NO.

13

DCH

13

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1/6



SECTION 02 41 16

DEMOLITION

PART 1 - GENERAL

1.01 WORK INCLUDED:

- A. Demolish structures as shown on the Contract Drawings prior to the commencement of excavation work within each Phase area. Demolition work to be phased as described in Section 01 12 16 – SCOPE AND SEQUENCE OF WORK.
- B. Sample concrete debris onsite as shown on Sheet C-3 as per the requirements of SECTION 02 11 00 0 CLEARING AND GRUBBING. Demolish the concrete as per the requirements of this Section and dispose or recycle based upon the data collected by the Contractor.
- C. Demolish utilities and miscellaneous foundations and substructures (excluding piles) within the excavation areas, unless otherwise specified or required by the Engineer.
- D. Partially demolish and abandon subsurface structures including catch basins, manhole structures, vaults and the Station B cooling water tunnel.
- E. Demolish Station B to the concrete slab, unless otherwise noted, as specified herein and on the Contract Drawings.
- F. The Contractor shall make penetrations in all subgrade structures that are to remain (e.g., Station B concrete slab, manholes/catch basins, cooling water tunnel) to allow for drainage. At a minimum, penetrations shall be 4-inch holes in a 10-foot grid unless otherwise specified herein.

1.02 REGULATORY REQUIREMENTS:

- A. Conform to applicable codes and requirements for demolition of structure, safety of adjacent structures, dust control, service utilities, and discovered hazards.
- B. Dispose of concrete, masonry, steel and other building materials indicated on Sheet C-3 as being impacted with PCBs in accordance with the requirements of the Code of Federal Regulations, Chapter 40, Part 761 (40 CFR Part 761), Subpart D. Dispose or recycle all other demolition debris in accordance with all applicable regulations and the requirements of these Technical Specifications.

1.03 RELATED WORK:

- A. Section 01 12 16 – SCOPE AND SEQUENCE OF WORK
- B. Section 01 14 19.16 – DUST CONTROL
- C. Section 01 55 26.13 – SIGNAGE AND TRAFFIC CONTROL

- D. Section 02 00 00 – EARTHWORK
- E. Section 02 11 00 – CLEARING AND GRUBBING
- F. Section 02 61 00.16 – HANDLING, TRANSPORTATION, OFF-SITE DISPOSAL OF EXCAVATED MATERIALS
- G. Section 02 61 26.13 – ASBESTOS ABATEMENT FOR UNDERGROUND UTILITIES
- H. Section 02 82 00 – HANDLING AND DISPOSAL OF HAZARDOUS BUILDING MATERIALS
- I. Section 02 82 13 –ASBESTOS ABATEMENT
- J. Section 02 83 13 –LEAD CONTROL ACTIVITIES
- K. Section 02 84 33 – REMOVAL AND DISPOSAL OF PCB BUILDING MATERIALS

1.04 SUBMITTALS

- A. A Demolition and Waste Management Plan shall be initially included as part of the Bid Submittal as specified herein. Based on comments from United Illuminating and the Engineer, prior to the start of demolition work, and no later than 30 calendar days after the date of the Notice to Proceed, submit a comprehensive Demolition and Waste Management Plan for the Engineer's review and approval prior to demolition work. The Demolition and Waste Management Plan shall be coordinated with, and as appropriate include reference to, the various plans and submittals required by these Specifications. At a minimum, the Contractor's Demolition and Waste Management Plan shall specifically include and address the following.
 - 1. A schedule that details the overall sequence for the structures being demolished under this Contract.
 - 2. Methods, equipment and operations. Include information such as demolition method and approach, equipment types and placement, name and address of all demolition debris transporters, and protection controls, including protection to active buildings, traffic, and passersby.
 - 3. Indicate the types of wastes to be generated and the proposed disposal or recycling locations. Include back-up disposal and recycling facilities. In accordance with the EPA's Principles for Greener Cleanups, the Contractor is encouraged to clean and salvage/reuse/recycle demolition debris as much as possible.
 - 4. Copies of any authorizations and permits required to perform the work, including disposal/recycling facility permits.
 - 5. Identify stockpile and staging areas within the Limit of Work for approval by the Engineer.
 - 6. Do not proceed with the demolition until the Engineer has given written acceptance of the demolition plan.
- B. The Demolition and Waste Management Plan shall, at a minimum, contain the following:
 - Disposal/Recycling facility name(s).
 - Disposal/Recycling facility address(es).

- Name and title of contact person for each disposal/recycling facility to be used.
- Telephone number of contact person for each disposal/recycling facility to be used.
- For each disposal/recycling facility to be used, copies of licenses or permits to operate and confirmation that they are permitted to accept demolition materials to be taken to that facility.
- Lists matching each facility with the materials it will accept for this project, and specifying whether the facility is a treatment, storage, recycling or disposal facility.
- Confirmation from the facility(ies) that they will accept the type and quantities of demolition materials from this project.
- Description of Contractor's procedures to manage and track materials and example of Contractor's material tracking log.

C. Traffic Control Plan:

1. Submit a Traffic Control Plan for review and approval by the Engineer prior to coordinating traffic control with the City of New Haven as specified in Section 01 55 26.13 – SIGNAGE AND TRAFFIC CONTROL. The Contractor will be responsible for coordinating Police presence and sidewalk/lane closure during the demolition. Include traffic control signage and sidewalk/lane closure information in the Traffic Control Plan.

D. Contract Closeout Submittals (throughout project and prior to authorization of final payment):

1. Records of the amounts of waste generated, by waste type. Shall be submitted and up to date with each request for payment. Requests for payment will be returned, in the event that this requirement is not met.
2. Evidence of lawful disposal or recycling of all wastes generated, including waste shipment manifests, shipping records, and weight slips shall be submitted and up to date with each request for payment. Requests for payment will be returned, in the event that this requirement is not met.
3. Documentation of underground structures and utilities as identified in Part 3 of this Section.

1.05 REGULATORY REQUIREMENTS

- A. Contractor is solely responsible for obtaining permits or approvals which may be required to perform the work of this Section, including all costs, fees and taxes required or levied. All legally imposed charges made by local authorities for the work of this Section involving the connection, inspection and approval services of all bureaus administering all applicable codes and regulations shall be provided hereunder at no additional expense to United Illuminating.
- B. Notify and obtain such permits or approvals from all agencies having jurisdiction over demolition prior to starting work including, but not limited to Health, Building, and

Fire Departments of the municipality and local, State and Federal agencies. The Contractor shall give the proper authorities all required notices or information relating to the Work, pay all fees necessary to obtain all official licenses, permits and certificates, and comply with the rules of the Connecticut Department of Public Health (CT DPH).

- C. Comply with all applicable Federal, State, and local environmental, safety and health requirements and regulations regarding the demolition of structures and other site features and recycling or disposal of demolition debris, as applicable.
- D. Conform to applicable codes and requirements for demolition of structures, safety of adjacent structures, dust control, service utilities, and discovered hazards.
- E. Contractor shall be aware that the existing equipment/structures may be coated with lead paint. Hence, demolition of the structures shall comply with all applicable lead paint regulations. Contractor performing this work shall be thoroughly knowledgeable of all federal, state and local laws, rules, and regulations regarding hazardous waste containing lead. By bidding this contract, the Contractor is stating his expertise in this work and the Owner shall not be responsible for any additional costs incurred by the Contractor as a result of any misunderstanding or disagreement with the applicable federal, state, and local laws, rules and codes.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.01 PREPARATION:

- A. Provide, erect, and maintain temporary barriers and security devices.
- B. Notify United Illuminating of procedures which may affect property, of potential noise, utility outage, or disruption. Coordinate with United Illuminating and Engineer.

3.02 DEMOLITION REQUIREMENTS:

- A. Conduct demolition in accordance with the Demolition and Waste Management Plan prepared by the Contractor and approved by the Engineer, so as to minimize interference with adjacent building areas.
- B. Under no circumstances shall explosives be used.
- C. The Contractor shall perform air monitoring and dust control during demolition of any concrete structures as described in Section 01 14 19.16 - DUST CONTROL.
- D. Maintain protected access and egress at all times. Do not close or obstruct roadways without permits.

- E. Cease operations immediately if adjacent structure appears to be in danger. Notify Engineer.

3.03 SITE FEATURE DEMOLITION:

- A. Demolish and dispose of all site features/improvements, in an orderly and careful manner as indicated on the Contract Drawings and these Technical Specifications.
- B. The Contractor shall demolish four structures on the east side of the English Station Building as shown on Sheet C-3. Each of the structures will be abated for asbestos containing materials and these materials disposed as ACM. United Illuminating will provide the Contractor with hazardous building material survey data needed to perform the abatement which will be performed according to the requirements of SECTION 02 82 13 – Asbestos Abatement and handle and store hazardous building materials as per the requirements of SECTION 02 81 00 – HANDLING AND DISPOSAL OF HAZARDOUS BUILDING MATERIALS. The Contractor shall demolish the remainder of the structures onto the concrete pad beneath and handle, store, and dispose of the demolished materials as PCB Remediation Waste ≥ 50 mg/kg as per the requirements of SECTION 02 61 00.16 - HANDLING, TRANSPORTATION, AND OFF-SITE DISPOSAL OF EXCAVATED MATERIALS. The Contractor shall then demolish the concrete pad for each of these structures and handle, store, and dispose of as PCB Remediation Waste ≥ 50 mg/kg as per the requirements of SECTION 02 61 00.16 - HANDLING, TRANSPORTATION, AND OFF-SITE DISPOSAL OF EXCAVATED MATERIALS. The Engineer shall then sample exposed soil per the requirements of 40 CFR Part 761 Subpart O. The Engineer shall then direct the Contractor to perform additional soil excavations as needed. The Contractor shall perform the additional soil excavation as per the requirements SECTION 02 00 00 – EARTHWORK and handle, store and dispose of excavated soil as per the requirements of SECTION 02 61 00.16 - HANDLING, TRANSPORTATION, AND OFF-SITE DISPOSAL OF EXCAVATED MATERIALS. The Contractor shall submit proposed landfills for disposal of these materials to the Engineer for review and approval prior to performing any demolition work.
- C. The Contractor shall demolish the oil tank and containment structures on the south side of the English Station Building as shown on Sheet C-3. The Contractor shall demolish the aboveground portions of the structures onto the concrete pad beneath and recycle or dispose of the concrete off-site as non-PCB containing materials. The Contractor shall then perform remedial soil excavations around the perimeter of the structure as shown on the Contract Drawings and per the requirements of SECTION 02 00 00 – EARTHWORK and handle, store and dispose of excavated soil as per the requirements of SECTION 02 61 00.16 - HANDLING, TRANSPORTATION, AND OFF-SITE DISPOSAL OF EXCAVATED MATERIALS. The Engineer shall then sample exposed concrete and direct the Contractor to perform additional concrete demolition as needed. The Contractor shall perform the additional demolition work as per the requirements of this section and handle, store and dispose of excavated soil as per the requirements of SECTION 02 61 00.16 - HANDLING, TRANSPORTATION, AND OFF-SITE DISPOSAL OF EXCAVATED MATERIALS. The Contractor shall submit proposed

landfills for disposal or recycling of these materials to the Engineer for review and approval prior to performing any demolition work.

- D. The Contractor shall demolish guard shack on the west side of Station B as shown on Sheet C-3. The structure will be abated for asbestos and PCB-containing materials and these materials disposed as per the requirements of SECTION 02 81 00 – HANDLING AND DISPOSAL OF HAZARDOUS BUILDING MATERIALS. United Illuminating will provide the Contractor with hazardous building material survey data needed to perform the abatement which will be performed according to the requirements of SECTION 02 82 13 – Asbestos Abatement and SECTION 02 84 33 – REMOVAL AND DISPOSAL OF PCB BUILDING MATERIALS. The Contractor shall demolish the remainder of the structures onto the concrete pad beneath and handle, store, and dispose of the demolished materials as directed by the Engineer. The Contractor shall then demolish the concrete pad for each of these structures and handle, store, and dispose of as directed by the Engineer. The Contractor shall submit proposed landfills for disposal of these materials to the Engineer for review and approval prior to performing any demolition work.
- E. PCB-containing demolition debris shall be maintained within the footprint of the structure demolished. If PCB-containing demolition debris falls outside the footprint of the structure being demolished, the Contractor shall place the materials back within the footprint as soon as discovered and may be directed by the Engineer to perform additional removal actions (e.g., remove soil or concrete in contact with the debris) at no additional cost to United Illuminating.
- F. The Contractor shall load PCB-containing demolition debris on the same day that it is generated if possible. If PCB-containing debris is to be left within the building footprint overnight, the Contractor shall cover the debris pile with 6-mil poly sheeting in good condition and secure the sheeting around the perimeter of the pile to the satisfaction of the Engineer.
- G. Remove and dispose of utilities, foundations and substructures (excluding any pile supports) encountered within the excavation areas. Utilities, foundations and substructures within the PCB impacted areas shall be disposed of as PCB impacted material per Section 02 61 00.16 – HANDLING, TRANSPORTATION, AND OFF-SITE DISPOSAL OF EXCAVATED MATERIALS from the PCB areas they are located (≥ 50 ppm, < 50 ppm but ≥ 10 ppm, or < 10 ppm).
- H. Utilities shall be cut and capped at the edge of the excavation areas. The pipes shall be capped with Portland cement concrete or masonry plugs, as required by the Engineer.
- I. The Contractor shall abandon the Station B Cooling Water Tunnel as shown on Sheet C-3. The Contractor shall demolish the entire roof and sidewalls of the structure to 12 inches beneath the proposed finished grade. Demolished concrete shall be left in the Tunnel. However, the Contractor shall size concrete pieces to less than 6-inches as the tunnels will be backfilled as part of the abandoning of the structures. Rebar shall be removed from the broken concrete and used to backfill the tunnel and shall be placed with other scrap metal debris left onsite. The Contractor shall also fully penetrate the

base of the Tunnel structure every five linear feet along the length of the tunnel. The Contractor shall remove the section of the Tunnel where the Clean Utility Corridor will be installed as shown on the Drawings. Backfill the tunnel with soil material in accordance with Section 02 00 00 – EARTHWORK.

- J. The Contractor shall abandon manhole structures, vaults and catch basins as shown on Sheet C-3. The Contractor shall first remove sediments and water from each of the structures. These water and sediment mixture may be discharged to the groundwater effluent treatment system for the purposes of separating solids from the water. If the water and sediments are to be disposed of by a different means, the Contractor shall filter solids from the water and dispose of the two streams separately. Following dewatering and pipe sealing, the Contractor shall collect samples of the bottom concrete for PCB analysis before proceeding to the next step, if no prior analysis is available.
- K. After water and sediment have been removed from the manhole structures, vaults and catch basins, the Contractor shall cap the pipes entering the structures with Portland cement concrete or masonry plugs, as required by the Engineer. If the results of the bottom concrete PCB analysis are less than 10mg/kg, the Contractor shall fully penetrate the base of the structure and backfill the structure to grade in accordance with Section 02 00 00 – EARTHWORK; otherwise the structure shall be fully demolished and disposed of as PCB remediation waste in accordance with Section 02 61 00.16 – HANDLING, TRANSPORTATION, AND OFF-SITE DISPOSAL OF EXCAVATED MATERIALS. Following demolition and removal of manhole structures, catch basins, and vaults with PCB concentrations >10 mg/kg, the Contractor shall sample soil at the base of the removal action. Soil excavation will be required if PCB concentrations in the soil are >10 mg/kg. The Contractor shall perform additional soil removal actions and then verify the soil excavation following the sampling procedures found in 40 CFR Part 761 Subpart O.
- L. The Contractor shall remove accumulated soil and piping found within trenches as shown on Drawing C-5 and dispose at a Chemical Waste Landfill as PCB Remediation Waste ≥ 50 mg/kg and asbestos-containing. Following removal of the piping and accumulated soil, the Contractor shall demolish the trench and dispose of the concrete at a Chemical Waste Landfill as PCB Remediation Waste ≥ 50 mg/kg or at a Subtitle C Landfill permitted to accept such wastes. The Contractor shall sample soil beneath the demolished trench following removal of concrete following the procedures in 40 CFR Part 761 Subpart O. Soil excavation will be required if PCB concentrations in the soil are >10 mg/kg. The Contractor shall perform additional soil removal actions and then verify the soil excavation following the sampling procedures found in 40 CFR Part 761 Subpart O.

3.04 STATION B DEMOLITION

- A. The Contractor shall prepare and submit an Alternative Work Practices (AWPs) for review and approval by the CT DPH for abatement of asbestos containing materials (ACM) in the roofing, window units, and the asbestos-containing coating on the south wall of the Station B Building. The Contractor shall submit to the Engineer and United Illuminating for review prior to submittal to CT DPH. See Sections 02 82 00 –

HANDLING AND DISPOSAL OF STATION B HAZARDOUS BUILDING MATERIALS, 02 82 13 – STATION B ASBESTOS ABATEMENT, 02 83 13 – STATION B LEAD CONTROL ACTIVITIES, and 02 84 33 – REMOVAL AND DISPOSAL OF STATION B PCB BUILDING MATERIALS for additional requirements for the abatement and demolition of Station B. Refer to Station B figures attached as Appendix B for additional information.

- B. The Contractor shall collect and dispose miscellaneous ACM roof debris within the building and on the outside of the building. See Section 02 82 13 – STATION B ASBESTOS ABATEMENT for additional information and requirements.
- C. PCBs are present in building materials but at levels less than 50 mg/kg and they are classified as PCB Excluded Products. The Contractor shall be responsible for segregation of waste streams and for performing all characterization sampling for the waste streams as required by the designated disposal facility. As part of the Contractor's Demolition and Waste Management Plan, the Contractor shall identify wastes streams to be generated, designating the facilities to receive the wastes, and waste profiling information required by the facilities to the Engineer for review and approval. The Contractor shall not designate facilities for recycling of any PCB-containing wastes. The Contractor should be aware that PCB TCLP testing will be required for waste profiling. Final disposal will depend upon the results from the waste characterization sampling. See Section 02 84 33 – REMOVAL AND DISPOSAL OF STATION B PCB BUILDING MATERIALS for additional information and requirements
- D. Contractor shall be responsible for obtaining a demolition permit from the City of New Haven. The Contractor shall submit the Demolition Permit for review and approval by the Engineer and United Illuminating prior to submittal to the City.
- E. The Contractor shall be responsible for preparing a Traffic Control Plan and submitting to the Engineer and United Illuminating for review and approval prior to coordinating traffic control with the City of New Haven. The Contractor will be responsible for coordinating Police presence and sidewalk/lane closure during the demolition and for all costs associated with measures needed to manage traffic and for police presence. The Contractor shall erect and maintain traffic control signage, as required by the City of New Haven at no additional cost to United Illuminating.
- F. Contractor shall be responsible for obtaining any other permits required by the City of New Haven prior to performing the work and for costs associated with obtaining those permits.

3.05 CLEAN UP:

- A. Manage demolished materials from site as work progresses.
- B. Leave areas of work in clean condition.

END OF SECTION

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SECTION 02 81 00

HANDLING AND DISPOSAL OF HAZARDOUS BUILDING MATERIALS

PART 1 - GENERAL

1.01 SCOPE

- A. Work under this item shall include the management (handling and disposal) of regulated items and all associated work by persons who are employed by a CTDEEP permitted Spill Contractor and trained/certified in accordance with OSHA hazard communication requirements. Regulated items include hazardous and other materials and wastes the disposal of which is restricted by Federal and/or State laws and regulations and which may be a component of equipment or other items located on-site. Regulated items include those listed herein, or additional similar items identified on site by the Engineer/United Illuminating. Work under this item does not include asbestos containing materials, lead paint, contaminated or hazardous soils.
- B. Activities shall be performed in accordance with, but not limited to, the current revision of the USEPA & CTDEEP Hazardous Waste Regulations (40 CFR 260-282, 22a-209 and 22a-449(c)), USEPA PCB Regulations (40 CFR 761), CTDEEP PCB Regulations (22a-463 through 469), USEPA Protection of Stratospheric Ozone (40 CFR 82), OSHA Hazard Communication (29 CFR 1910.1200), OSHA Hazardous Waste & Emergency Response Regulations (29 CFR 1910.120), USDOT Hazardous Materials Regulation (49 CFR 171-180), OSHA, RCRA, CERCLA, CAA, TSCA, and all other laws and regulations.
- C. The work activities include the removal, handling, packing, labeling, transport, manifesting, and recycling or disposal of various regulated items to be impacted at the Project site as part of the remediation project.
- D. The Contractor is responsible for verifying actual locations and quantities of the items with hazardous/regulated material/waste constituents and for their proper handling and disposal. The recycling or proper disposal, as appropriate, of all regulated items shall be performed as part of the remediation project.
- E. Deviations from the Specifications require the written approval of the Engineer/United Illuminating.

1.02 DESCRIPTION OF WORK

- A. In conjunction with demolition activities, properly remove, handle, pack, label, transport, manifest and recycle or dispose of the regulated items from the list below for hazardous/regulated materials identified in Station B and will be impacted as part of this demolition project:

1. Connecticut Regulated Waste (CRW)
 - a. PCB ballasts/DEHP ballasts
 - b. PCB capacitors (microwave ovens)
 - c. Chemical waste solids – fire extinguishers
 - d. Chemical waste liquids – paint thinner, soap dispenser, bucket of enamel
 - e. Oils (overhead crane, spill absorbent, transformers, capacitor components, etc.)
2. Universal Waste (UW)
 - a. Hg lamps – fluorescent bulbs, sodium light, halogen lights,
 - b. Hg ampoules/switches - thermostat
 - c. Used electronics - electric heaters, loose electrical components, fan unit, clocks, computer monitor, smoke detector, televisions, microwave ovens, stove/oven, motor for roll-up door, Electrical fuse panels, GE coupling capacitor device, Circuit breakers, switches, controls
3. CFCs/Freon
 - a. Wall- or window-mounted A/C units
 - b. Refrigerators
 - c. Water fountains
4. Ignitable (I)
 - a. Charcoal lighter fluid
 - b. Propane tanks
 - c. Gas pumps (dis-connected)
 - d. Gasoline (Crane)
5. Inhalation Hazard (IH)
 - a. Pigeon guano and animal feces
 - b. Mold/microbial contamination
6. Unknowns
 - a. (10 gallon drum)

Contractor shall make every effort to recycle hazardous materials rather than dispose of them to promote waste minimization efforts required under RCRA and LEEDS (Leadership in Energy and Environmental Design)

- B. Upon discovery of any previously unidentified regulated items during remediation activities, the Contractor shall immediately notify the Engineer and work shall cease in that area until the Engineer can determine the extent of any impact and proper handling procedures are implemented.
- C. Contractor will be provided with a list of hazardous building materials in a separate document for the other small structures that are to be demolished as part of the remediation.

1.03 SUBMITTALS AND NOTICES

- A. Seven (7) days prior to commencement of work involving the management of regulated items, the Contractor shall submit to the Engineer/United Illuminating for approval, the following documentation:
1. Regulated Items Handling and Disposal Work Plan and Schedule, to include:
 - a. Spill prevention, containment, and cleanup contingency measures to be implemented.
 2. Copy of Spill Contractor Permit registration issued by the CTDEEP.
 3. Ozone depleting substance service technician certification (as applicable).
 4. Hazard communication training for all employees performing this work.
 5. List of waste handling equipment to be used in performing the work, to include cleaning, volume reduction, storage and transport equipment.
 6. Requirements for acceptance of wastes at the facilities, and confirmation from the treatment or disposal facility that the materials have met the acceptance requirements and have been properly classified.
 7. A program and schedule for waste containment, removal and disposal. Wastes shall be cleaned up and containerized daily.
 8. Provisions for submitting detailed delivery tickets and/or waste manifests, signed and dated by an agent of the landfill, certifying the amount of materials delivered to the landfill, and within 30 days of delivery of the regulated materials.
 9. A program for ensuring documentation of accurate disposal quantities, including recording of scale calibration and truck weight.
 10. Names, locations, qualifications and 24-hour points of contact of the treatment facilities, recycling facilities and/or disposal facilities the Contractor intends to use to receive each type of regulated item.
 11. Names, locations, qualifications, and 24-hour points of contact of the Hazardous Material Transporter(s) the Contractor intends to use to transport hazardous materials from this Project.
 12. Treatment, Recycling and/or Disposal facilities permits and USEPA ID#'s for accepting the waste Contractor intends to transport to that destination.
 13. Hazardous Material Transporter USDOT Certificate of Registration for each transporter.
 14. Hazardous Waste Transporter Permit for the State of Connecticut, the destination state(s), and all other applicable states for each transporter.
- B. The Contractor shall use United Illuminating's EPA Hazardous Waste Generator ID number to manifest all hazardous wastes removed and disposed of from the site.

- C. Within thirty (30) days after completion of the on-site project work, the Contractor shall submit to the Engineer copies of the following completed documents:
1. Certified Hazardous Waste Manifests
 2. Waste Shipment Records/Bills of Lading
 3. Recycling Receipts
 4. Certificates of Destruction
 5. Weight from certified scale, if applicable
- D. Documents 1 through 4, as listed above, must include the signature of an authorized disposal facility representative acknowledging receipt of hazardous materials.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. All materials shall be suitable for the management of regulated items and shall meet all applicable federal, state and local regulations. Such materials include, but are not limited to, proper containers, packing materials, labels, signs, shipping papers, personal protective equipment (PPE) and spill kits.
- B. The Contractor shall provide fire retardant polyethylene sheet in roll size to minimize the frequency of joints shall be delivered to job site with factory label indicating four (4) or six (6) mil.
- C. The Contractor shall provide containers that are impermeable and both air and watertight.
- D. The Contractor shall provide labels and signs that shall conform to OSHA, USEPA, CTDEEP and DOT Standards.
- E. The Contractor shall provide DOT approved containers for proper transport and disposal/recycling of hazardous materials.

2.02 TOOLS AND EQUIPMENT

- A. The Contractor shall provide tools and equipment that are suitable for hazmat removal.
- B. The Contractor shall maintain a spill kit for cleaning up spills that occur during handling of hazardous materials.

PART 3 - EXECUTION

3.01 GENERAL REQUIREMENTS

- A. The Contractor's OSHA Competent Person shall be in control on the job site at all times during hazardous material management work activities. This person must be capable of identifying existing hazards, possess the authority to implement corrective measures to reduce/eliminate the hazards, comply with applicable Federal, State and Local regulations that mandate work practices, and be capable of performing the work of this contract. All employees who perform regulated material management related work shall be properly trained and qualified to perform such duties.
- B. All labor, materials, tools, equipment, services, testing, insurance, and incidentals which are necessary or required to perform the work in accordance with applicable governmental regulations, industry standards and codes, and these specifications, shall be provided by the Contractor.
- C. Ladders and/or scaffolds shall be in compliance with OSHA requirements, and of adequate length, strength and sufficient quantity to support the scope of work. Use of ladders/scaffolds shall be in conformance with OSHA 29 CFR 1926 Subpart L and X requirements.
- D. Work performed at heights exceeding six feet (6') shall be performed in accordance with the OSHA Fall Protection Standard 29 CFR 1926 Subpart M including the use of fall arrest systems as applicable.
- E. Inventory data from investigative surveys throughout the building are included herein and are presented for informational purposes only. *Under no circumstances shall this information be the sole means used by the Contractor for determining the quantities or extent of the regulated items to be managed.* The Contractor shall be responsible for verification of all field conditions affecting performance of the work. The Contractor shall submit to the Engineer for concurrence any additional items not listed herein that it believes to be regulated items included under this item. However, compliance with applicable requirements is solely the responsibility of the Contractor.
- F. The Engineer will monitor the activities of the Contractor and inspect the work required. Environmental sampling shall be conducted as deemed necessary by the Engineer. Spill areas shall be cleaned by the Contractor until accepted by the Engineer. The Engineer may sample the spill area to demonstrate Contractor compliance with an acceptable standard.

3.02 PERSONNEL PROTECTION

- A. Prior to commencing work, the Contractor shall provide hazard communication training to all employees as necessary in accordance with OSHA 29 CFR 1926.59 and 29 CFR 1910.1200 and instruct all workers in all aspects of personnel protection, work procedures, emergency procedures and use of equipment including procedures unique to this project. Worker health and safety protocols that address potential and/or actual risk of exposure to site specific hazards are solely the responsibility of the Contractor.

- B. The Contractor shall provide respiratory protection that meets the requirements of OSHA as required in 29 CFR 1910.134 and 29 CFR 1926.103. A formal respiratory protection program, including appropriate medical surveillance, must be implemented in accordance with OSHA standards. The Contractor shall, as necessary, conduct exposure assessment air sampling, analysis and reporting to ensure the workers are afforded appropriate respiratory protection.
- C. The Contractor shall provide and require all workers to wear appropriate personnel protective equipment, including protective clothing, gloves, eye protection and respiratory protection, as required, within regulated work areas which exceed OSHA Personnel Exposure Limits (PELs) or when handling hazardous materials.

3.03 REGULATED ITEM MANAGEMENT WORK PRACTICES - GENERAL

- A. The Contractor shall not begin work until the Engineer is on-site.
- B. Prior to beginning work on-site, the Contractor shall prepare waste characterization profile forms for each type of waste stream to be generated and forward such forms to the Engineer for review, approval and signature. Upon approval, the Contractor shall forward such forms to the appropriate disposal facilities for acceptance.
- C. The Contractor shall utilize all appropriate engineering controls and safety and protective equipment while performing the work in accordance with OSHA, USEPA, USDOT, CTDEEP and Connecticut Department of Public Health DPH regulations.
- D. The Contractor shall employ work practices so as to minimize the disturbance of the constituents in the regulated items, and prevent breakage and spills. In the event of a spill, the Contractor shall cordon off the area and notify the Engineer. The Contractor is responsible to have spills and the affected areas decontaminated to the acceptance of the Engineer by personnel trained in hazardous waste operator emergency response.
- E. The Contractor shall carefully and properly remove, handle, pack, label and manifest all of the regulated items in waste containers specified and suitable to contain the waste in accordance with all federal and state regulations.
- F. Prior to transportation and recycling and/or disposal, all proper USEPA, OSHA, CTDEEP and USDOT labels and placards shall be affixed to the waste containers and hazardous materials shipping papers such as waste manifests/bills of lading shall be completed.

3.04 MERCURY THERMOSTATS/SWITCHES/GAUGES – SPECIAL REQUIREMENTS

- A. Mercury thermostats/switches/gauges and other assorted controls may contain a small quantity of mercury in an ampoule. Mercury ampoules are regulated under the Resource Conservation and Recovery Act (RCRA), which is administered by the

USEPA and mercury thermostats are considered a Universal Waste according to 40 CFR Part 273.

- B. The Contractor shall remove the ampoules from thermostats/switches/gauges without breaking and dispose of whole ampoules at an approved recycling facility. Damaged ampoules shall be disposed of as a hazardous waste at an approved TSD facility for destruction, or an approved recycling facility.
- C. To prevent mercury-containing ampoules from breaking, ampoules must be properly packed for storage and transportation by the Contractor in DOT approved containers.
- D. The containers containing the universal waste mercury ampoules must be properly labeled by the Contractor with the words "Universal Waste – Mercury Thermostats" in accordance with USEPA 40 CFR Part 273. Pre-printed labels that meet USEPA/DOT regulations are recommended for high-volume disposal.
- E. The Contractor shall prepare a non-hazardous waste manifest or bill of lading for each shipment, and shall ensure the Engineer receives a copy of the completed manifest verifying that the mercury thermostats were properly recycled or destroyed.

3.05 FLUORESCENT LAMPS – SPECIAL REQUIREMENTS

- A. Fluorescent, neon, mercury vapor, halogen and high-intensity discharge (HID) lamps contain a small quantity of mercury. Mercury is regulated under the Resource Conservation and Recovery Act (RCRA), which is administered by the USEPA and mercury lamps are considered a Universal Waste according to 40 CFR Part 273.
- B. The Contractor shall remove lamps from fixtures without breaking and dispose of whole lamps at an approved recycling facility. Damaged lamps shall be disposed of as a hazardous waste at an approved TSD facility for destruction, or an approved recycling facility.
- C. To prevent used lamps from breaking, lamps must be properly packed for storage and transportation by the Contractor in crush-proof boxes. When stacking boxes of used lamps for storage the contractor should avoid crushing the bottom boxes. Broken lamps are considered Hazardous Waste and shall be placed into a UN approved poly drum, rather than Universal Waste, and shall be treated as such.
- D. The boxes or containers containing the universal hazardous waste lamps must be properly labeled by the Contractor with the words "Universal Waste – Lamps" in accordance with USEPA 40 CFR Part 273. Pre-printed labels that meet USEPA/DOT regulations are recommended for high-volume disposal.
- E. The Contractor shall prepare a non-hazardous waste manifest or bill of lading for each shipment, and shall ensure the Engineer receives a copy of the completed manifest verifying that the lamps were properly recycled or destroyed.

3.06 BALLASTS - SPECIAL REQUIREMENTS

- A. Retain the services of a licensed electrician to disconnect the power from active lights prior to ballast removal. Conform to all OSHA lock-out/tag-out procedures.
- B. Ballasts that contain PCBs are regulated under TSCA (40 CFR 761.60(b)(2)(ii)).
- C. Inspect each light ballast for a label. Oil filled ballasts without a “No PCB” label shall be assumed to contain PCBs and managed as such. Fluorescent and HID oil filled ballasts which are labeled “No PCBs” may contain DEHP and shall be managed the same way as PCB ballasts, properly packed for recycling/destruction as hazardous waste. All other oil filled ballasts shall be assumed to be PCB containing. Newer non-oil filled ballasts are electronic and shall be segregated for management as universal waste – used electronics as described below.
- D. Inspect each light fixture/ballast for evidence of PCB leakage. Leaking PCB units can be identified typically by a clear to yellow, oily liquid, the PCB oil itself, or an oily tar-like substance, the liquefied potting material of the ballast. All materials (fixture housing, wires, etc.) including the ballast that contact this substance are considered PCB waste, and are subject to TSCA requirements and must be removed for proper disposal in accordance with EPA 40 CFR 761. Where leaking ballasts are identified ensure the space is properly ventilated when removing the ballasts and impacted materials and proper PPE is employed. Place 6-mil poly sheeting beneath the light fixtures to ensure no further contamination of the spaces while dismantling the affected ballast/lighting fixture.
- E. Intact fluorescent and HID PCB ballasts that are not leaking shall be recycled by an approved TSCA recycling facility. Leaking PCB-containing ballasts must be incinerated at a USEPA-approved high-temperature incinerator.
- F. Ballasts shall be placed in DOT approved drums containing a sorbent material for proper transport, with segregation maintained between intact ballasts and leaking ballasts and associated impacted materials.
- G. All waste drums shall be identified with the following yellow label:

CAUTION
Contains PCBs
(Polychlorinated Biphenyls)

- H. A uniform Hazardous Waste Manifest must be prepared by the Contractor and accompany the waste wherever it travels. Each handler of the waste must sign the manifest and keep one copy. When the waste reaches its destination, the owner of that facility returns a copy of the manifest to the generator to confirm that the waste arrived. The Contractor shall ensure the Engineer receives a completed copy of the waste

manifest as well as provide the Engineer with documents verifying destruction of the PCBs whether they are incinerated at high temperatures or recycled.

- I. Any spills of PCB liquid/oil shall be immediately reported to the Engineer and cleaned up, along with assessment of impact to affected substrates/soils and decontamination in accordance with EPA 40 CFR 761 at no cost to the Engineer/United Illuminating.

3.07 PCB CAPACITORS – SPECIAL REQUIREMENTS

- A. Equipment with PCB containing capacitors shall have the capacitors removed for proper disposal prior to the disposal of the bulk equipment.
- B. Procedures for handling, packing and disposal of PCB containing capacitors shall be equivalent to those listed in Section 3.06.

3.08 “MISC. HOUSEHOLD HAZARDOUS WASTES” – SPECIAL REQUIREMENTS

- A. Many “miscellaneous household hazardous waste” products contain regulated or hazardous wastes due to their constituents. These products may be either USEPA listed hazardous wastes (F, K, U & P wastes), exhibit a characteristic of USEPA hazardous waste (ignitable – D001, corrosive – D002, reactive – D003, or toxic – D004 to D043), or be defined as Universal Wastes (certain pesticides) or Connecticut Regulated or Special Wastes. (CR01 to CR05).
- B. The Contractor shall properly gather, pack, label, transport, manifest and recycle/dispose of the “household hazardous waste” products at the site in accordance with USEPA and CTDEEP Hazardous Waste Regulations.

3.09 REFRIGERANTS (CFCs) – SPECIAL REQUIREMENTS

- A. Equipment with refrigerants (Freon, CFCs, HCFCs, etc.) shall have the refrigerant recovered in accordance with USEPA 40 CFR Part 82 (Protection of Stratospheric Ozone) by persons trained in the performance of this work as an EPA Ozone Depleting Substance (ODS) Service Technician prior to disposal of the equipment. This may entail the removal of the equipment off-site for refrigerant recovery on recovery on-site.
- B. The Contractor shall provide documentation that the refrigerant has been properly recovered and recycled or treated.

3.10 PRESSURIZED CYLINDER – SPECIAL REQUIREMENTS

- A. The Contractor shall securely transport the pressurized cylinders to a recycling facility following DOT transportation regulations for recovery of any remaining gas/chemical and proper cylinder reuse/disposal.
- B. The Contractor shall complete a bill of lading for the transport of such cylinders.

3.11 SMOKE/CO DETECTORS – SPECIAL REQUIREMENTS

- A. Ionization smoke and carbon monoxide (CO) detectors contain a low-level radioactive source which emits alpha particles, and also may contain electronic circuit boards.
- B. The Contractor shall securely pack and transport the smoke/CO detectors to a recycling facility and/or manufacturer following DOT transportation regulations for recovery/reuse of any remaining radioactive source and used electronic circuit boards.
- C. The Contractor shall prepare a bill of lading for each shipment.

3.12 USED ELECTRONICS – SPECIAL REQUIREMENTS

- A. Used electronic equipment containing cathode ray tubes (CRTs) and/or circuit boards often contain various quantities of heavy metals such as lead, silver and cadmium which are regulated under RCRA. Used electronics are considered a Universal Waste according to CTDEEP 22a-449(c)-113.
- B. The Contractor shall remove the used electronic equipment, securely pack, transport and dispose of whole at an approved reclamation/recycling facility for recovery/reuse of any remaining components in accordance with USEPA RCRA and CTDEEP waste management requirements.
- C. The containers containing the used electronics must be properly labeled by the Contractor with the words “Universal Waste – Used Electronics” in accordance with CTDEEP 22a-449(c)-113.
- D. The Contractor shall prepare a non-hazardous waste manifest or bill of lading for each shipment, and shall ensure the Engineer receives a copy of the completed manifest verifying that the used electronics were properly recycled or destroyed.

3.13 BATTERIES – SPECIAL REQUIREMENTS

- A. Batteries containing nickel-cadmium, lithium-ion and/or lead acids are regulated under the USEPA RCRA Hazardous Waste Regulations as Universal Waste under 40 CFR Part 273.
- B. The Contractor shall properly gather, pack, label, transport, manifest and dispose of the Universal Waste Batteries at the site in accordance with USEPA and CTDEEP Hazardous Waste Regulations in approved DOT containers.
- C. Batteries showing evidence of leakage, spillage, or damage shall be contained in closed containers compatible with the contents of the battery.
- D. Batteries must be sorted by type in order to send them to the appropriate destination facilities for recycling or treatment.

- E. The Contractor shall label the containers in accordance with USEPA 40 CFR Part 273 with the words “Universal Waste – Batteries”.

3.14 TRANSFORMER/HYDRAULIC FLUIDS/OILS – SPECIAL REQUIREMENTS

- A. The Contractor shall remove the hydraulic fluid/oil from the transformer/hydraulic piston/equipment item for proper disposal using personnel appropriately trained for such duties, including cutting open the container to ensure all residual fluids, products and sludges are properly cleaned out.
- B. Hydraulic fluids/oils may contain PCBs. The Contractor shall be responsible for determining if PCBs are present in the fluid.
- C. If PCBs are present in the fluid, the Contractor shall dispose of the fluid in accordance with the USEPA PCB Regulations (40 CFR Part 761).
- D. If no PCBs are present in the fluid, the Contractor shall dispose of the fluid as CTDEEP Regulated Waste Oil in accordance with CTDEEP Regulations and USEPA Waste Oil Regulations (40 CFR Part 279).
- E. If a spill of PCB fluid occurs, the Contractor shall be responsible for having the spill and the effected areas decontaminated by personnel trained in emergency hazmat response. The Engineer shall then conduct clearance sampling at the Contractors expense following the USEPA Guidance Document “Verification of PCB Spill Cleanup by Sampling and Analysis”, and in accordance with EPA 40 CFR 761.

3.15 BIRD/RODENT DROPPING CONTAMINATION – SPECIAL REQUIREMENTS

- A. Activities disturbing areas containing or contaminated with bird droppings have been known to expose workers to levels of airborne fungus and aerosolized spores, which can cause lung damage/disease such as *Histoplasmosis* and *Cryptococcosis*. The Contractor shall conduct removal work in a manner that minimizes exposure to such environmental health hazards.
- B. Waste generated from the removal of bird droppings, while an environmental health hazard, is not classified as a biological waste and may be disposed of in a bulky waste landfill.
- C. Specific work practice requirements include:
 - 1. Implementing engineering controls and work practices to reduce employee exposure to airborne dust from the bird droppings, such as negative pressure enclosures (NPE), HEPA filtered vacuums, wetting the material with a mild bleach solution or other disinfecting agent prior to gross removal and packing the material in heavy-duty waste disposal bags.

2. Providing respiratory protection for those employees who shall work directly with the bird dropping clean up. Minimum respiratory protection should include full face negative pressure air purifying respirators with P100 HEPA filters in combination with a filter for the disinfectant utilized (i.e. a pesticide filter for bleach or an ammonia filter for ammonia)
3. Providing protective clothing for employees who shall work directly with the bird dropping clean-up, including, at a minimum, disposable coveralls with a hood/booties and appropriate protective gloves.
4. Providing clean change areas, hand wash facilities and/or full shower decontamination facilities as appropriate for employees exposed to bird dropping matter.
5. Providing hazard communication training for each employee who shall work directly with the bird dropping clean up.
6. Disinfecting the cleaned area with a solution, which has both bactericidal and sporicidal properties (e.g. sodium hypochlorite bleach or other disinfecting agent).

3.16 MOLD/MICROBIAL CONTAMINATION – SPECIAL REQUIREMENTS

- A. Activities disturbing areas containing or contaminated with mold have been known to expose workers to levels of airborne fungus and aerosolized spores. The Contractor shall conduct removal work in a manner that minimizes exposure to such environmental health hazards.
- B. Waste generated from the removal of mold, while an environmental health hazard, is not classified as a biological waste and may be disposed of in a bulky waste landfill.
- C. Specific work practice requirements include:
 1. Implementing engineering controls and work practices to reduce employee exposure to airborne dust from the mold, such as negative pressure enclosures (NPE), HEPA filtered vacuums, wetting the material with a mild bleach solution or other disinfecting agent prior to gross removal and packing the material in heavy-duty waste disposal bags.
 2. Providing respiratory protection for those employees who shall work directly with the mold clean up. Minimum respiratory protection should include full face negative pressure air purifying respirators with P95 respirator.
 3. Providing protective clothing for employees who shall work directly with the microbial clean-up, including, at a minimum, disposable coveralls with a hood/booties and latex gloves.
 4. Providing clean change areas, hand wash facilities and/or full shower decontamination facilities as appropriate for employees exposed to microbial matter.
 5. Providing hazard communication training for each employee who shall work directly with the mold/microbial clean up.
 6. Disinfecting the cleaned area with a solution, which has both bactericidal and sporicidal properties (e.g. sodium hypochlorite bleach or other disinfecting

agent).

3.17 UNKNOWNNS – SPECIAL REQUIREMENTS

- A. The contractor shall safely assess and characterize the unknown constituents for disposal.

3.18 WASTE DISPOSAL/RECYCLING

- A. Efforts shall be made to recycle the constituents of the regulated items rather than dispose of them in accordance with the waste minimization efforts required under RCRA.
- B. RCRA hazardous waste shall not be stored on the job site in excess of 90 calendar days from the accumulation start date.
- C. Connecticut Regulated Waste shall not be transported to a RCRA or TSCA permitted facility for disposal, unless otherwise allowed by the Engineer in writing.
- D. All non-RCRA hazardous waste materials, regulated waste materials and recyclable waste items shall be manifested separately from RCRA and TSCA hazardous waste, and documented properly on non-hazardous waste manifests, waste shipment records, bills of lading or other appropriate shipping papers for transportation to the recycling and/or disposal facility.
- E. The Contractor shall prepare each lab pack list and shipping document (manifests, waste shipment records, bills of lading, etc.) with all of the required information completed (including types of waste, proper shipping name, categories, packing numbers, amounts of waste, etc.) in accordance with applicable federal and state regulations. The document will be signed by an authorized agent representing United Illuminating as the Generator for each load that is packed to leave the site.
- F. All waste containers shall be appropriately labeled following applicable USEPA and USDOT standards, including the date the items were placed into the container.
- G. The Contractor shall forward the appropriate original copies of shipping papers to the Engineer/United Illuminating the same day the regulated items leave the project site.
- H. All vehicles departing the site transporting hazardous materials shall display proper USDOT placards, as appropriate for the type of waste being transported.

END OF SECTION

SECTION 02 82 13

ASBESTOS ABATEMENT

PART 1 - GENERAL

1.01 SCOPE

- A. Work under this item shall include the abatement of asbestos containing materials (ACM) and associated work by persons who are knowledgeable, qualified, trained and licensed in the removal, treatment, handling, and disposal of ACM and the subsequent cleaning of the affected environment. ACM shall include material composed of any type of asbestos in amounts greater than one percent (1%) by weight. The Contractor performing this work shall possess a valid Asbestos Abatement Contractor license issued by the Connecticut Department of Public Health (CTDPH). Some of the areas to be abated also contain materials with PCBs and/or lead; the Contractor shall follow this Specification as well as Specification 02 83 13 and 02 84 33 for those areas.
- B. These Specifications govern all work activities that disturb asbestos containing materials. All activities shall be performed in accordance with, but not limited to, the current revision of the OSHA General Industry Standard for Asbestos (29 CFR 1910.1001), the OSHA Asbestos in Construction Regulations (29 CFR 1926.1101), the USEPA Asbestos National Emission Standards for Hazardous Air Pollutants (NESHAP) Regulations (40 CFR Part 61 Subpart M), the CTDPH Standards for Asbestos Abatement, Licensure and Training (19a-332a-1 through 16, 20-440-1 through 9 & 20-441), and the CTDEEP Special Waste Disposal Regulations (22a-209-8(i)).
- C. The asbestos abatement work shall include the removal and disposal of all ACM as identified on the Contract Plans and Specifications. On behalf of United Illuminating Company, the Engineer will provide the services of a State of Connecticut licensed Project Monitor for protection of its interests and those using the building.
- D. Deviations from these Specifications require the written approval of the Engineer and United Illuminating.
- E. The Contractor may elect to utilize an Alternative Work Practice (AWP), if approved by the CTDPH and the Engineer and United Illuminating prior to the initiation of the abatement activities. An AWP is a variance from certain CTDPH asbestos regulatory requirements, which must provide the equivalent or a greater measure of asbestos emission control than the standard work practices prescribed by the CTDPH.

1.02 DESCRIPTION OF WORK

- A. The following details the extent of each phase of operation designated for this project. Phase areas may be combined or divided at the direction of the Engineer. Proceed through the sequencing of the work phases under the direction of the Engineer.

- B. The asbestos abatement work shall include the removal of asbestos-containing materials as specified herein for the Station B Building. The Contractor shall also abate four structures to the east of the English Station Building and the Guard Shack prior to demolition. A list of asbestos containing building materials within these structures will be provided to the Contractor in a separate document:

1. Phase 1 – First Floor – East Office Area

Includes the removal of:

- a. Plaster skimcoat (walls/ceiling)
- b. Debris on horizontal surfaces below plaster ceiling
- c. Joint compound (walls/ceiling)
- d. Floor tile/mastic (FT7, FT8)
- e. Interior window glazing (WG6)
- f. Pipe insulation/mudded fittings in walls (LPW1)

Notes:

- Refer to Asbestos Removal Phase Figure 2 for delineation of locations.
- WG6 also contains Excluded PCB Product (>1 ppm<50ppm), therefore abatement and disposal of this material will coincide with PCB remediation as outlined in Section 02 84 33.
- Extensive lead containing paint flakes and debris were identified on the floor in this area, therefore, abatement and disposal impacting these materials will coincide with Section 02 83 13.
- The floor debris is presumed to contain bird/rodent droppings and mold, therefore abatement of this material will coincide with Section 02 81 00.

Contractor shall be responsible for removal of all equipment, debris, etc., necessary in order to access the ACM. Asbestos removal shall be performed under full containment conditions with a pressure differential and contiguous decontamination system in accordance with CTDPH 19a-332a-5, 6 and 7, OSHA Class I & II and USEPA NESHAP requirements. Re-occupancy air clearance testing (performed by the Engineer's Project Monitor) shall utilize Phase Contrast Microscopy (PCM) or Transmission Electron Microscopy (TEM) analysis, as applicable per CTDPH 19a-332a-12.

2. Phase 2 – First Floor – West Office Area

Includes the removal of:

- a. Linoleum (LIN1)
- b. Floor tile/mastic (FT4, FT5, FT6)
- c. Pipe insulation/mudded fittings in walls (LPW1)

Notes:

- Refer to Asbestos Removal Phase Figure 2 for delineation of locations.
- Extensive lead containing paint flakes and debris were identified on the

floor in this area, therefore, abatement and disposal impacting these materials will coincide with Section 02 83 13.

- The floor debris is presumed to contain bird/rodent droppings and mold, therefore abatement of this material will coincide with Section 02 81 00.
- LIN1, FT4, FT5, FT6 also contain Excluded PCB Product (>1 ppm<50ppm), therefore abatement and disposal of this material will coincide with PCB remediation as outlined in Section 02 84 33.

Contractor shall be responsible for removal of all equipment, debris, etc., necessary in order to access the ACM. Asbestos removal shall be performed under full containment conditions with a pressure differential and contiguous decontamination system in accordance with CTDPH 19a-332a-5, 6 and 7, OSHA Class II and USEPA NESHAP requirements. Re-occupancy air clearance testing (performed by the Engineer's Project Monitor) shall utilize Phase Contrast Microscopy (PCM) or Transmission Electron Microscopy (TEM) analysis, as applicable per CTDPH 19a-332a-12.

3. Phase 3 – First Floor & Second Floor (Mezzanine)

Includes the removal of:

- a. Insulation components in circuit boxes (Assumed)
- b. Transite board panels (Mezzanine – Above East Office Area)
- c. Flex connector on duct (Mezzanine – Above East Office Area)
- d. Pipe flange gaskets (Assumed)
- e. Bucket roofing tar (Assumed)

Notes:

- Refer to Asbestos Removal Phase Figure 2 & 3 for delineation of locations.

Asbestos removal shall be performed by removing the entire unit intact without disturbance of the ACM in accordance with the CTDPH Regulatory Interpretation Memo of April 7, 2003 Regarding Intact Removal of Non-Friable Asbestos Containing Materials, OSHA Class II and USEPA Asbestos NESHAP requirements. No containment required or air clearances, material will be disposed of intact in two layers of 6-mil poly waste bags.

4. Phase 4 – Mezzanine (East)

Includes the clean-up and removal of:

- a. Interior gray window glazing debris on horizontal surfaces.
- b. Loose, hanging gray window glazing debris in danger of falling from window components shall be removed.

Notes:

- Refer to Asbestos Removal Phase Figure 3 for delineation of locations.
- Window sills, floors and any other horizontal surfaces (approximately 3'

out from windows/walls) on the East side and the East half of the North side of the Mezzanine and above the East Office area shall be cleaned of all interior gray window glazing debris.

- The interior gray window glazing debris also contains Excluded PCB Product (>1 ppm<50ppm), therefore abatement and disposal of this material will coincide with PCB remediation as outlined in Section 02 84 33.
- The floor debris is presumed to contain lead paint, therefore abatement and disposal of this material will coincide with Section 02 83 13.
- The floor debris is presumed to contain bird/rodent droppings and mold, therefore abatement of this material will coincide with Section 02 81 00.

Contractor shall be responsible for removal of all equipment, debris, etc., necessary in order to access the ACM debris. Asbestos removal shall be performed under full containment conditions with a pressure differential and contiguous decontamination system in accordance with CTDPH 19a-332a-5, 6 and 7, OSHA Class II and USEPA NESHAP requirements. Re-occupancy air clearance testing (performed by the Engineer's Project Monitor) shall utilize Phase Contrast Microscopy (PCM) or Transmission Electron Microscopy (TEM) analysis, as applicable per CTDPH 19a-332a-12.

5. Phase 5 – Mezzanine – Spot Repair

Includes the removal of:

- a. Pipe insulation (TS1) (1 location)

Notes:

- Refer to Asbestos Removal Phase Figure 3 for delineation of locations.

Asbestos removal shall be performed as a spot repair involving less than three (3) linear or square feet of asbestos, following the OSHA glovebag techniques or using another means of air-tight barriers, in accordance with OSHA Class III and CTDPH 19a-332a-10 requirements, with a remote decontamination system.

6. Phase 6 – Basement

Includes the removal of:

- a. Insulation and outer covering (PW1) from 16" diameter pipe
- b. Pipe insulation
- c. Pipe insulation debris
- d. Tank insulation
- e. Residual TSI debris stuck on ceiling and walls
- f. Residual door gaskets
- g. Wire wrap debris

Notes:

- Refer to Asbestos Removal Phase Figure 1 for delineation of locations.
- The black covering over ACM insulated pipe (PW1) is an Excluded PCB

Product (>1 ppm<50ppm), therefore abatement associated with PW1 pipe and disposal of this waste will coincide with PCB remediation as outlined in Section 02 84 33.

Contractor shall be responsible for removal of all equipment, debris, etc., necessary in order to access the ACM. Asbestos removal shall be performed under full containment conditions with a pressure differential and contiguous decontamination system in accordance with CTDPH 19a-332a-5, 6 and 7, OSHA Class I and USEPA NESHAP requirements. Re-occupancy air clearance testing (performed by the Engineer's Project Monitor) shall utilize Phase Contrast Microscopy (PCM) or Transmission Electron Microscopy (TEM) analysis, as applicable per CTDPH 19a-332a-12.

7. Phase 7 – Basement – Spot Repairs

Includes the:

- a. Removal of pipe insulation debris (3 locations in SW area)

Notes:

- o Refer to Asbestos Removal Phase Figure 1 for delineation of locations.

Asbestos removal shall be performed as a spot repair involving less than three (3) linear or square feet of asbestos, following the OSHA glovebag techniques or using another means of air-tight barriers, in accordance with OSHA Class III and CTDPH 19a-332a-10 requirements, with a remote decontamination system.

8. Phase 8 – Basement

Includes the removal of:

- a. Window glazing on loose windows (WG3, WG9, WG10)
- b. Pipe flange gaskets (Assumed)
- c. Insulation components in circuit boxes (Assumed)

Notes:

- o Refer to Asbestos Removal Phase Figure 1 for delineation of locations.
- o WG3, WG9, WG10 also contains Excluded PCB Product (>1ppm<50ppm), therefore abatement and disposal of this material will coincide with PCB remediation as outlined in Section 02 84 33.
- o Window components contain lead paint, therefore abatement and disposal of this material will coincide with Section 02 83 13.

Asbestos removal shall be performed by removing the entire unit intact without disturbance of the ACM in accordance with the CTDPH Regulatory Interpretation Memo of April 7, 2003 Regarding Intact Removal of Non-Friable Asbestos Containing Materials, OSHA Class II and USEPA Asbestos NESHAP requirements. No containment required or air clearances, material will be disposed of intact in two layers of 6-mil poly

waste bags.

9. Phase 9 – Exterior (Pre-Demolition)

Includes the removal of:

- a. Interior window caulking (C3)
- b. Exterior window/door/frame caulking (C4, C5, C6, C7)
- c. Interior/exterior window glazing (WG7, WG9, WG10)
- d. Interior window glazing on mezzanine windows
- e. Corrugated transite panels (Upper wall on South end of Turbine Hall)
- f. Caulking assumed behind corrugated transite panels (Upper wall on South end of Turbine Hall)
- g. Galbestos roof (RF10) (including corrugated transite paneling beneath)
- h. Galbestos roof debris (East end of building)
- i. Step flashing (FL6) on brick wall above cable vault
- j. Light grey caulking (C10) on capstones of brick wall above cable vault
- k. Roofing debris on ground surfaces at East, West and South end of building

Notes:

- Refer to Asbestos Removal Phase Figure 2-4 for delineation of locations.
- ACM caulking is also on CMU in-filled former windows (on metal lintels and other locations).
- The C3, C4, C5, C7, FL6, WG7, WG9, WG10, RF10 and interior glazing on mezzanine windows are Excluded PCB Products (>1ppm<50ppm), therefore removal and disposal of these wastes will coincide with PCB remediation as outlined in Section 02 84 33.
- Removal of step flashing (FL6) and capstone caulking (C10) on brick wall will occur only on sections of wall scheduled for demolition.
- Window components contain lead paint, therefore abatement and disposal of this material will coincide with Section 02 83 13.

A regulated area(s) shall be established at the perimeter of the work area(s), and access shall be controlled by the Contractor. A remote personnel decontamination unit shall be utilized. Removal shall be undertaken in accordance with OSHA Class II and USEPA Asbestos NESHAP requirements. Visual inspection shall be performed by the Engineer's Project Monitor prior to work area being deregulated.

10. Phase 10 – Exterior/Interior (In Conjunction with Demolition)

Includes the removal of:

- a. Transite ceiling panel (Mezzanine interior)
- b. Interior gray window glazing debris on horizontal surfaces (West half of Mezzanine interior)
- c. Black flashing tar/sealer and/or felt layers on all roofing penetrations, perimeters, parapet walls and corrugated transite panels (North Wall only)
- d. Roof field (Turbine Hall Roof - all layers)

- e. Expansion joint caulk on roof parapet walls (C1)
- f. Asphalt shingle/tar layers (Hatch roof - RF5, RF6)
- g. Corrugated transite panels (Upper wall on North end of Turbine Hall)
- h. Repointing tar (T3) at brick joints/penetrations (South Wall)

Notes:

- o Refer to Asbestos Removal Phase Figure 2-4 for delineation of locations.
- o The interior of the cable vault off the SE corner of the building was inaccessible at the time of the inspection; should any suspect building materials be encountered during demolition activities, the materials should be inspected by the ENGINEER prior to further disturbance.
- o Due to safety concerns, it is presumed these ACM will be removed as part of the demolition utilizing an Alternative Work Practice (AWP) approved by the CTDPH and the Engineer and United Illuminating.
- o The repointing tar (T3) was applied irregularly along the exterior south façade and the majority of the south façade has been painted/sealed over, covering up many of the locations where T3 was applied.
- o The roof field (Turbine Hall) and associated penetrations, perimeters and parapet walls black flashing tar/felt layers (all roofs) are an Excluded PCB Product (>1ppm<50ppm), therefore removal and disposal of this waste will coincide with PCB remediation as outlined in Section 02 84 33.

A regulated area(s) shall be established at the perimeter of the work area(s), and access shall be controlled by the Contractor. A remote personnel decontamination unit shall be utilized. Removal shall be undertaken in accordance with OSHA Class II and USEPA Asbestos NESHAP requirements. Visual inspection shall be performed by the Engineer's Project Monitor prior to work area being deregulated.

1.03 SUBMITTALS AND NOTICES

- A. The Contractor shall submit, in accordance with CTDPH Standard 19a-332a-3 and EPA 40 CFR 61.145 (b), proper notification using the prescribed forms, to the Commissioner of the State of Connecticut Department of Public Health and EPA Region 1, not fewer than ten (10) days (10 business days) prior to the commencement of work as follows:
 - 1. Asbestos abatement projects involving greater than ten (10) linear feet (LF) or twenty-five (25) square feet (SF) of ACM (friable or non-friable) within a facility (i.e. interior abatement) and/or greater than 10 LF or 25 SF of friable ACM outside a facility, require a CTDPH Asbestos Abatement Notification. Also, abatement projects greater than one hundred sixty (160) SF, two hundred sixty (260) LF of interior/exterior or 35 cubic feet (CF) of interior/exterior Regulated Asbestos containing materials (RACM) require Notification of Demolition & Renovation to EPA Region 1.
 - 2. At sites scheduled for demolition, asbestos abatement of exterior non-friable

ACM or interior abatement involving less than 10 LF or 25 SF of ACM (friable or non-friable), and/or exterior abatement involving less than 10 LF or 25 SF of friable ACM require a CTDPH Demolition Notification. In most cases, the Demolition Contractor is responsible for filing the CTDPH Demolition Notification not fewer than ten (10) days prior to the commencement of demolition. However, if a portion of the demolition activities are scheduled to be conducted in conjunction with and/or under the supervision of an Asbestos Abatement Contractor (i.e. in the event of a structure which has been condemned, structurally damaged, and/or deemed unsafe for asbestos abatement activities); then it is the responsibility of the Asbestos Abatement Contractor to submit the CTDPH Demolition Notification.

3. In the event that a CTDPH Asbestos Abatement Notification and EPA Notification of Demolition & Renovation have been submitted and the subject facility is scheduled for demolition, a separate Demolition Notification form does not need to be submitted. In such cases, the submission of the CTDPH Asbestos Abatement Notification and EPA Notification of Demolition & Renovation forms shall be deemed as satisfying the requirement for the notification of the demolition of the facility.
 4. The Contractor filing the proper notification is responsible for all associated fees.
 5. If the Contractor intends to dispose of ACM waste within the State of Connecticut, a copy of the Asbestos Abatement/Demolition Notification must also be submitted to the Department of Energy and Environmental Protection, Solid Waste Management Unit, and the Contractor must obtain a CTDEEP Special Waste Disposal authorization. ACM waste containing Excluded PCB Product shall be disposed at an out of state facility permitted to accept this combined waste stream. The Contractor shall be required to provide TCLP leaching tests for PCBs to support waste profile characterization for any Subtitle D landfill facility proposed for disposal.
- B. Alternative Work Practice (AWP) methods may be used if approved by CTDPH and the Engineer and United Illuminating. Should the Contractor desire to use AWP procedures that have not been pre-approved, the Contractor shall submit in writing a description of the proposed methods to the Engineer and United Illuminating for review and approval prior to submittal to CTDPH. Alternative procedures shall provide equivalent or greater protection than procedures which they replace. The Contractor is responsible for all fees associated with filing AWP applications which have not been pre-approved. Submission of AWP applications requires a CTDPH Project Designer License. The Contractor shall not proceed with any AWP other than those listed in this Specification without approval from both the CTDPH and the Engineer and United Illuminating.
- C. Seven (7) working days prior to the commencement of asbestos abatement work (Pre-abatement Meeting), the Contractor shall submit to the Engineer for review and acceptance and/or acknowledgment of the following:

1. Copies of all required notifications.
 2. Contractor-prepared AWP applications/approvals.
 3. Permits and licenses for the removal, transport, and disposal of asbestos-containing or contaminated materials, including a CTDPH valid asbestos removal contractor's license.
 4. Documentation dated within the previous twelve (12) months, certifying that all employees have received USEPA Model Accreditation Plan approved asbestos worker/supervisor training in the proper handling of materials that contain asbestos; understand the health implications and risks involved, including the illnesses possible from exposure to airborne asbestos fibers; understands the use and limits of respiratory equipment to be used; and understands the results of monitoring of airborne quantities of asbestos as related to health and respiratory equipment as indicated in 29 CFR 1926.1101 on an initial and annual basis, and copies of all employees CTDPH asbestos worker and/or supervisor licenses.
 5. Documentation from the Contractor, typed on company letterhead and signed by the Contractor, certifying that all employees listed herein have received the following:
 - a. Medical monitoring within the previous twelve (12) months, as required in 29 CFR 1926.1101
 - b. Respirator fit testing within the previous twelve (12) months, as detailed in 29 CFR 1910.134 (for all employees who must also don a tight-fitting face piece respirator)
 6. Copies of the EPA/State-approved certificates for the proposed asbestos landfill.
 7. Name and qualifications of the Asbestos Abatement Site Supervisor. This individual shall be the OSHA Competent Person for the abatement activities, shall have a minimum of three years working experience as an Asbestos Abatement Site Supervisor, shall be capable of identifying existing asbestos hazards and shall have the authority to implement corrective measures to eliminate such hazards. The Asbestos Abatement Site Supervisor shall be on-site at all times asbestos abatement is occurring, shall comply with applicable Federal, State and Local regulations which mandate work practices, and shall be capable of performing the work of this contract.
- D. No abatement shall commence until a copy of all required submittals have been received and found acceptable to the Engineer. Those employees added to the Contractor's original list will be allowed to perform work only upon submittal to, and receipt of, all required paperwork by the Engineer.
- E. Provide the Engineer and United Illuminating, within 30 days of completion of asbestos abatement, a compliance package; which shall include, but not be limited to, the following:
- Asbestos Abatement Site Supervisor job log;
OSHA personnel air sampling data and exposure assessments;
Completed waste shipment records.

1.04 SEQUENCE OF WORK

- A. The Contractor shall proceed in accordance with the sequence of work as directed by the Engineer and United Illuminating. Work shall be divided into convenient Work Areas, each of which is to be completed as a separate unit.
- B. The Contractor shall use the following sequence for the asbestos abatement work:
 - 1. Release of work area to Contractor.
 - 2. A visual inspection of the work area to determine pre-existing damage to facility components.
 - 3. Provide the necessary protection and “make-safe” measures to protect workers from falling debris and deficient structural building elements.
 - 4. Removal of all moveable objects from the Work Areas undergoing abatement by the Contractor.
 - 5. All temporary utilities required for the project shall be on site and operational prior to the initiation of asbestos work.
 - 6. Abatement of all asbestos-containing materials by the Contractor.
 - 7. Final visual inspections by the Engineer’s Project Monitor.
 - 8. Air sampling by the Engineer’s Project Monitor for re-occupancy.
 - 9. Cleanup by the Contractor. Work Areas must be returned to their original condition or as directed by the Engineer.
 - 10. Removal of waste from the site.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. All materials shall be delivered to the job site in the original packages, containers, or bundles bearing the name of the manufacturer, the brand name and product technical description.
- B. No damaged or deteriorating materials shall be used. If material becomes contaminated with asbestos, the material shall be decontaminated or disposed of as asbestos-containing waste material. The cost to decontaminate and dispose of this material shall be at the expense of the Contractor.
- C. Fire retardant polyethylene sheet shall be in roll size to minimize the frequency of joints, with factory label indicating four (4) or six (6) mil thickness.
- D. Six (6) mil polyethylene disposable bags shall have pre-printed OSHA/EPA/DOT labels and shall be transparent.
- E. Tape (or equivalent) capable of sealing joints in adjacent polyethylene sheets and for the attachment of polyethylene sheets to finished or unfinished surfaces must be capable of adhering under both dry and wet conditions.

- F. Surfactant is a chemical wetting agent added to water to improve penetration and shall consist of fifty (50) percent polyoxyethylene ether and fifty (50) percent polyoxyethylene ester, or equivalent. The surfactant shall be mixed with water to provide a concentration one (1) ounce surfactant to five (5) gallons of water, or as directed by the manufacturer.
- G. Spray equipment must be capable of mixing necessary chemical agents with water, generating sufficient pressure and volume; and equipped with adequate hose length to access all necessary work areas.
- H. Mechanical mastic removal equipment shall be suitable for the application and shall be operated in a manner which prevents damage to the underlying floor. Sanders, grinders, wire brushes and needle-gun type removal equipment shall be equipped with a High Efficiency Particulate Air (HEPA) filtered vacuum dust collection system.
- I. Containers for storage, transportation and disposal of asbestos containing waste material shall be impermeable and both air and watertight.
- J. Labels and warning signs shall conform to OSHA 29 CFR 1926.1101, USEPA 40 CFR Part 61.150, and USDOT 49 CFR Part 172 as appropriate.
- K. Encapsulant, a material used to chemically entrap asbestos fibers to prevent these fibers from becoming airborne, shall be of the type which has been approved by the Engineer. Use shall be in accordance with manufacturer's printed technical data. The encapsulant shall be clear and must be compatible with new materials being installed, if any.
- L. Glovebag assembly shall be manufactured of six (6) mil transparent polyethylene or PVC with two (2) inward projecting long sleeve gloves, an internal pouch for tools, and an attached labeled receptacle for waste.
- M. Mastic removal chemicals shall be low odor and non-citrus based, with a flash point in excess of 140° F.
- N. Any planking, bracing, shoring, barricades and/or temporary sheet piling, necessary to appropriately perform work activities shall conform to all applicable federal, state and local regulations.
- O. Air filtration devices and vacuum units shall be equipped with HEPA filters.

2.02 TOOLS AND EQUIPMENT

- A. Air monitoring equipment of the type and quantity required to monitor operations and conduct personnel exposure surveillance shall conform to OSHA requirements.
- B. Protective clothing, respirators, filter cartridges, air filters and sample filter cassettes shall be provided in sufficient quantities for the project.

- C. Electrical equipment, protective devices and power cables shall conform to all applicable codes.
- D. Shower stalls and plumbing shall include sufficient hose length and drain system or an acceptable alternate. Showers shall be equipped with hot and cold or warm running water. One shower stall shall be provided for each ten workers in compliance with OSHA 1910.141(d)(3). Water is filtered through a 5 micron and a 10 micron filter prior to being discharged into the city sewer/sanitary system.
- E. Electrical service will be available to the Contractor from an existing electric panel on the outside at the west end of the building. The Contractor is responsible to utilize a licensed electrician for proper connection and installation of electrical wiring and shall ensure safe installation of electrical equipment, transformers, electrical breaker sub-panels and other disconnects in compliance with applicable electrical codes and OSHA requirements.
- F. Exhaust air filtration units shall be equipped with HEPA filters capable of providing sufficient air exhaust to create a minimum pressure differential of 0.02 inches of water column, and to allow a sufficient flow of air through the area providing 4 air changes per hour. An automatic warning system shall be incorporated into the equipment to indicate pressure drop or unit failure. No air movement system or air filtering equipment shall discharge unfiltered air outside the Regulated Area. The Contractor shall provide actual airflow measurement of filtration units while the unit is in place and calculate actual air exchange rates.
- G. Pressure differential monitoring equipment shall be provided to ensure exhaust air filtration devices provide the minimum pressure differential required between the Work Area and occupied areas of the facility.
- H. Vacuum units, of suitable size and capabilities for the project, shall have HEPA filters capable of trapping and retaining at least 99.97 percent of all monodispersed particles of three micrometers in diameter or larger.
- I. Ladders and/or scaffolds shall be of adequate length, strength and sufficient quantity to support the work schedule.
- J. Other materials such as lumber, nails and hardware necessary to construct and dismantle the decontamination enclosures and the barriers that isolate the Work Area shall be provided as appropriate for the work.
- K. Spray equipment shall be capable of mixing wetting agent with water and capable of generating sufficient pressure and volume. Hose length shall be sufficient to reach all of the Regulated area.
- L. Mechanical mastic removal equipment shall be suitable for the application and shall be operated in a manner which prevents excessive damage to the underlying floor.

PART 3 - EXECUTION

3.01 GENERAL REQUIREMENTS

- A. The Abatement Contractor/Subcontractor shall possess a valid State of Connecticut Asbestos Contractor License. Should any portion of the work be subcontracted, the subcontractor must also possess a valid State of Connecticut Asbestos Contractor License. The Asbestos Abatement Site Supervisor employed by the Contractor shall be in control on the job site at all times during asbestos abatement work. All employees of the Contractor who shall perform work (i.e. Asbestos Abatement Site Supervisor, Asbestos Abatement Worker) shall be properly certified/licensed by the State of Connecticut to perform such duties.
- B. All labor, materials, tools, equipment, services, testing required for disposal, re-testing fees for failed re-occupancy air clearance testing, insurance (with specific coverage for work on asbestos), and incidentals which are necessary or required to perform the work in accordance with applicable governmental regulations, industry standards and codes, and these Specifications shall be provided by the Contractor. The Contractor shall be prepared to work all shifts and weekends throughout the course of this project.
- C. Prior to beginning work, the Engineer and Contractor shall perform a visual survey of each work area and review conditions at the site for safety reasons. In addition, the Contractor shall instruct all workers in all aspects of personnel protection, work procedures, emergency evacuation procedures and use of equipment including procedures unique to this project.
- D. The Contractor shall:
 - 1. Shutdown and isolate heating, cooling, and ventilating air systems to prevent contamination and fiber dispersal to the other areas of the building.
 - 2. Shut down and lock out electrical power, including all receptacles and light fixtures, when feasible. The use or isolation of electrical power will be coordinated with all other ongoing uses of electrical power at the site.
 - 3. Coordinate all power and fire alarm isolation with the appropriate representatives.
 - 4. Provide temporary power and adequate lighting and ensure safe installation of electrical equipment, including ground fault protection and power cables, in compliance with applicable electrical codes and OSHA requirements. The Contractor is responsible for proper connection and installation of electrical wiring by a licensed electrician.
- E. Electrical service will be available to the Contractor from an existing electric panel on the outside at the west end of the building. The Contractor is responsible to utilize a

- licensed electrician for proper connection and installation of electrical wiring and shall ensure safe installation of electrical equipment, transformers, electrical breaker sub-panels and other disconnects in compliance with applicable electrical codes and OSHA requirements.
- F. Negative pressure must be continuously maintained in each work area, until the area achieves satisfactory reoccupancy criteria and is approved by the Project Monitor to be deregulated. Negative air pressure must be maintained twenty-four (24) hours per day, seven (7) days per week.
 - G. Water service is currently not available on-site for use by the Contractor for this project. The Contractor will be fully responsible for securing water from either the South Central Regional Water Authority at a nearby hydrant on Grand Avenue or from another offsite source.
 - H. Ladders and/or scaffolds shall be in compliance with OSHA requirements, and of adequate length, strength and sufficient quantity to support the scope of work. Use of ladders/scaffolds shall be in conformance with OSHA 29 CFR 1926 Subpart L and X requirements.
 - I. Work performed at heights exceeding six feet (6') shall be performed in accordance with the OSHA Fall Protection Standard 29 CFR 1926 Subpart M including the use of fall arrest systems as applicable.
 - J. Data provided regarding asbestos sampling conducted throughout the structure(s) is for informational purposes only. Under no circumstances shall this information be the sole means used by the Contractor for determining the presence and location of all asbestos containing materials. The Contractor shall verify all field conditions affecting performance of the work as described in these Specifications in accordance with OSHA, USEPA, USDOT, CTDPH and CTDEEP standards. Compliance with the applicable requirements is solely the responsibility of the Contractor.
 - K. United Illuminating will provide a Project Monitor to oversee the activities of the Contractor. No asbestos work shall be performed until the Project Monitor is on-site. Pre-abatement, during abatement and post-abatement air sampling will be conducted as deemed necessary by the Project Monitor.

3.02 PREPARATION OF WORK AREA ENCLOSURE SYSTEM

- A. Pre-clean the work areas using HEPA filtered equipment (vacuum) and/or wet methods as appropriate, collecting and properly containing all dust and debris from floor surfaces as asbestos-containing/asbestos contaminated waste. Vacuum units, of suitable size and capabilities for the project, shall have HEPA filters capable of trapping and retaining at least 99.97 percent of all monodispersed particles of three micrometers in diameter or larger. Do not use methods that raise dust, such as dry sweeping or

vacuuming with equipment not equipped with HEPA filters.

- B. After pre-cleaning, movable objects shall be removed from the work areas with the utmost care to prevent damage of any kind and relocated to a temporary storage location coordinated with the Engineer. The Contractor is responsible for protecting all fixed objects that are permanent fixtures or are too large to remove and remain inside the Regulated Area. Fixed objects shall be enclosed with one layer of six (6) mil polyethylene sheeting sealed with tape.

3.03 WORKER DECONTAMINATION ENCLOSURE SYSTEM

- A. The Contractor shall establish contiguous to the Regulated Area, a Worker Decontamination Enclosure System consisting of Equipment Room, Shower Room and Clean Room in series, as detailed below. Access to the Regulated Area shall only be through this enclosure.
- B. Access between rooms in the Worker Decontamination Enclosure System shall be through airlocks. Other effective designs are permissible. The Clean Room, Shower Room and Equipment Room located within the Worker Decontamination Enclosure, shall be contiguously connected with taped airtight edges, thus ensuring the sole source of airflow originates from outside the regulated areas, once the negative pressure differential within the Regulated Area is established.
- C. The Clean Room shall be adequately sized to accommodate workers and shall be equipped with a suitable number of hooks, lockers, shelves, etc., for workers to store personal articles and clothing. Changing areas of the Clean Room shall be suitably screened from areas occupied by the public.
- D. The Shower Room shall be of sufficient capacity to accommodate the number of workers. One shower stall shall be provided for each ten workers in compliance with OSHA 1910.141(d)(3). Showers shall be equipped with hot and cold or warm running water through the use of electric hot water heaters supplied by the Contractor. No worker or other person shall leave a Regulated Area without showering. Shower water shall be collected and filtered using best available technology and dumped down an approved sanitary drain. Shower stalls and plumbing shall include sufficient hose length and drain system or an acceptable alternate.

3.04 EQUIPMENT DECONTAMINATION ENCLOSURE SYSTEM

- A. The Contractor shall establish contiguous to the Regulated Area an Equipment/Waste Removal Decontamination Enclosure System consisting of two (2) totally enclosed chambers divided by a double flap curtained opening. Other effective designs are permissible. This enclosure must be constructed so as to ensure that no personnel enter or exit through this unit.
- B. The Contractor shall ensure that no personnel or equipment be permitted to leave the Regulated Area until proper decontamination procedures (including HEPA vacuuming, wet wiping and showering) to remove all asbestos debris have occurred. No asbestos-

contaminated materials or persons shall enter the Clean Room.

3.05 SEPARATION OF WORK AREAS FROM OCCUPIED AREAS

- A. Seal off all windows, doorways, skylights, ducts, grilles, diffusers, vents, light fixtures, electrical receptacles, suspended ceiling tile systems and any other openings between the Regulated Area and the uncontaminated areas outside of the Regulated Area, including the outside of the building, with critical barriers consisting of a minimum of one (1) layer of six (6) mil polyethylene sheeting securing the edges with tape. Doorways and corridors which will not be used for passage during work and separate the regulated areas from occupied areas must be sealed with fixed critical barriers constructed of 2" x 4" wood or metal framing 16" O.C., with ½" plywood on the occupied side and two layers of six (6) mil polyethylene sheeting on the Regulated Area side to prevent unauthorized access or air flow.
- B. The Contractor shall create a negative pressure differential in the range of 0.02 to 0.04 inches of water column between the Regulated Area and surrounding areas by the use of acceptable negative air pressure equipment. Exhaust air filtration units shall be equipped with HEPA filters capable of providing sufficient air exhaust to create a minimum pressure differential of 0.02 inches of water column, and to allow a sufficient flow of air through the area providing 4 air changes per hour. The Contractor shall provide a sufficient quantity of HEPA air filters to maintain the pressure differential throughout the duration of the project. An automatic warning system shall be incorporated into the equipment to indicate pressure drop or unit failure. Continuously monitor the pressure differential between the Regulated Area and surrounding area to ensure exhaust air filtration equipment maintains a minimum pressure differential of 0.02 inches of water column. The Contractor shall provide actual air flow measurement of filtration units while the unit is in place and calculate actual air exchange rates. No air movement system or air filtering equipment shall discharge unfiltered air outside the Regulated Area.
- C. A Negative Pressure Enclosure (NPE) shall be constructed via covering of floor and wall surfaces with polyethylene sheeting sealed with tape. Polyethylene shall be applied alternately to floors and walls. Cover floors first, with a layer of six (6) mil polyethylene sheeting, so that polyethylene extends at least twelve (12) inches up on wall. Cover wall with a layer of four (4) mil polyethylene sheeting to twelve (12) inches beyond the wall/floor intersection, thus overlapping the floor material by a minimum of twenty-four (24) inches. Repeat the process for the second layer of polyethylene. There shall be no seams at wall-to-floor joints.
- D. Conspicuously label and maintain emergency and fire exits from the Regulated Area satisfactory to fire officials.
- E. Post warning signs meeting the specifications of OSHA 29 CFR 1910.1001 and 29 CFR 1926.1101 at each Regulated Area. In addition, signs shall be posted at all approaches to Regulated Areas so that an employee or building occupant may read the sign and take the necessary protective steps before entering the area. Additional signs

may require posting following construction of workplace enclosure barriers.

3.06 ALTERNATE EXTERIOR NON-FRIABLE ASBESTOS SET-UP PROCEDURES

- A. In lieu of the establishment of a negative pressure enclosure (NPE) system as described by CTDPH Sections 19a-332a-5(c), 5(d), 5(e), and 5(h), non-friable ACM will be removed from exterior work areas within an outdoor Regulated Area(s). The regulated work area will be established by the use of appropriately labeled barrier tape and postings in compliance with CTDPH 19a-332a-5(a) as well as OSHA 29 CFR 1926.1101. A remote personnel decontamination unit as specified in Section 19a-332a-6 will be required. This method shall only be utilized provided exposure assessment air sampling data collected during the removal of the exterior non-friable materials indicates that the exposure levels during removal of such materials do not exceed 0.1 asbestos f/cc. Should exposure assessment air sampling data exceed this level, and engineering efforts to reduce the airborne fiber levels not be successful in reducing the levels to less than 0.1 f/cc, removal shall occur within these areas under full containment conditions.

3.07 ALTERNATE "SPOT REPAIR" ASBESTOS PROCEDURES

- A. In lieu of the establishment of a negative pressure enclosure (NPE) system as described by CTDPH Sections 19a-332a-5(c), 5(d), 5(e), and 5(h), less than 3 LF or 3 SF of ACM will be removed as a "spot repair" in accordance with CTDPH Section 19a-332a-10. A regulated area will be established by the use of appropriately labeled barrier tape and postings in compliance with CTDPH 19a-332a-5(a) as well as OSHA 29 CFR 1926.1101. A remote personnel decontamination unit as specified in Section 19a-332a-6 will be required. Air-tight barriers will be constructed to assure that asbestos fibers released during abatement activities are contained within the work area. (Glovebags are permitted, as specified below.) ACM will be adequately wet prior to disturbance and remain wet until placed in leak-tight container. Following abatement, clean-up methods within the work area will include HEPA-filtered vacuuming or wet cleaning techniques until no visible residue remains.
- B. Glovebags utilized to perform "spot repair" activities on asbestos containing pipe insulation/mudded fitting insulation, in conformance with OSHA 29 CFR 1926.1101(g)(5)(ii), shall be:
1. constructed of 6 mil poly, seamless at bottom, unmodified
 2. installed so that it completely covers the circumference of pipe or other structure where work is to be done, with impermeable dropcloths placed on all surfaces beneath the work area
 3. smoke-tested for leaks and sealed, as needed
 4. used only once, may not be moved
 5. used only on surfaces with temperatures <150°F
 6. collapsed by removing air via HEPA-vacuum, prior to disposal
 7. adhered to surfaces which are intact, surfaces with loose and friable material shall be sealed in two layers of 6 mil poly or otherwise rendered intact

8. capable of sustaining integrity at connection site to attached waste bag, which must have equivalent of sliding valve for disconnection (as applicable)
9. performed by a minimum of two (2) persons

- C. Glovebags may also be used for “spot repair” abatement procedures involving additional materials (e.g. floor tile/linoleum, transite, etc.) provided that the glovebag is capable of fully enclosing the material to be removed.

3.08 PERSONNEL PROTECTION

- A. The Contractor shall utilize all appropriate engineering controls and safety and protective equipment while performing the work in accordance with OSHA, USEPA, USDOT, CTDEEP and CTDPH regulations.
- B. The Contractor shall provide and require all workers to wear protective clothing in the Regulated Areas where asbestos fiber concentrations may reasonably be expected to exceed the OSHA established Permissible Exposure Limits (PEL) or where asbestos contamination exists. Protective clothing shall include impervious coveralls with elastic wrists and ankles, head covering, gloves and foot coverings.
- C. Respiratory protection shall be provided and selection shall conform to the requirements of OSHA 29 CFR 1910.134 and 29 CFR 1926.1101 as well as the requirements of the CTDPH regulations and 42 CFR Part 84. A formal respiratory protection program must be implemented in accordance with 29 CFR 1926.1101 and 29 CFR 1910.134.
- D. All other necessary personnel protective equipment (i.e. hardhat, work boots, safety glasses, hearing protection, etc.) required to perform the asbestos abatement work activities shall conform to all applicable federal, state and local regulations.
- E. All other qualified and authorized persons entering into a Regulated Area (i.e. Project Monitor, Regulatory Agency Representative) shall adhere to the requirements of personnel protection as stated in this section and all other applicable provisions of the Contract.

3.09 ASBESTOS ABATEMENT PROCEDURES

- A. The Asbestos Abatement Site Supervisor, as the OSHA Competent Person shall be at the site at all times.
- B. The Contractor shall not begin abatement work until authorized by the Engineer’s Project Monitor, following a pre-abatement visual inspection of individual work areas.
- C. All workers and authorized persons shall enter and leave the Regulated Area through the Worker Decontamination Enclosure System, leaving contaminated protective clothing in the Equipment Room for reuse or disposal of as asbestos contaminated waste. No one shall eat, drink, smoke, chew gum or tobacco, or apply cosmetics while in a Regulated Area.

- D. During removal, the Contractor shall spray asbestos materials with amended water using airless spray equipment capable of providing a "mist" application to reduce the release of airborne fibers. Spray equipment shall be capable of mixing wetting agent with water and capable of generating sufficient pressure and volume. Hose length shall be sufficient to reach all of the Regulated Area. Do not "flood" the area with hose type water supply equipment with the potential to create water releases from the regulated area.
- E. The Contractor shall continue to spray the asbestos materials with amended water, as necessary, throughout removal activities to ensure the asbestos materials remain adequately wet. The asbestos materials shall not be allowed to dry out.
- F. In order to minimize airborne asbestos concentrations inside the Regulated Area, the Contractor shall remove the adequately wetted asbestos in manageable sections. In addition, asbestos materials removed from any elevated level shall be carefully lowered to the floor.
- G. The Contractor shall promptly place the adequately wet asbestos material in disposal containers (six (6) mil polyethylene bags/fiber drum/poly-lined dumpsters, etc.) as it is removed. Large components removed intact may be wrapped in two (2) layers of six (6) mil polyethylene sheeting secured with tape. As the disposal containers are filled, the Contractor shall promptly seal the containers, apply caution labels and clean the containers before transportation to the equipment decontamination area. Bags shall be securely sealed to prevent accidental opening and leakage by taping in gooseneck fashion. Small components and asbestos-containing waste with sharp-edged components (e.g. nails, screws, metal lath, tin sheeting) which could tear polyethylene bags and sheeting shall be placed in clean drums and sealed with locking ring tops. All waste containers shall be leak-tight, (typically consisting of two layers of 6 mil poly (or bags)), and shall be properly labeled and placarded with OSHA Danger labels, DOT shipping labels, markings and placards and USEPA NESHAP generators labels. Containers shall be decontaminated by wet cleaning and HEPA vacuuming within the equipment decontamination area prior to exiting the regulated area. Wet clean each container thoroughly before moving to Holding Area.
- H. If at any time during asbestos removal, the Engineer's Project Monitor should suspect contamination of areas outside the Regulated Area, the Contractor shall immediately stop all abatement work and take steps to decontaminate these areas and eliminate causes of such contamination. Unprotected individuals shall be prohibited from entering contaminated areas until air sampling and/or visual inspections determine decontamination.
- I. After completion of abatement work, all surfaces from which asbestos has been removed shall be wet brushed, using a nylon brush, wet wiped and sponged or cleaned by an equivalent method to remove all visible material (wire brushes are not permitted). During this work the surfaces being cleaned shall be kept wet. Cleaning shall also include the use of HEPA filtered vacuum equipment.

3.10 CLEAN-UP PROCEDURES

- A. The Contractor shall also remove and containerize all visible accumulations of asbestos-containing and/or asbestos-contaminated debris which may have splattered or collected on the polyethylene engineering controls/barriers.
- B. The Contractor shall clean surfaces of contaminated containers and equipment thoroughly by vacuuming with HEPA filtered equipment and wet sponging or wiping before moving such items into the Equipment Decontamination Enclosure System for final cleaning and removal to uncontaminated areas.
- C. The Contractor shall remove contamination from the exteriors of the air filtration devices, scaffolding, ladders, extension cords, hoses and other equipment inside the Regulated Area. Cleaning may be accomplished by brushing, HEPA vacuuming and/or wet cleaning. The Contractor shall wet wipe the Regulated Area beginning at the point farthest away from the negative air filtration units using cotton rags or lint free paper towels. Rags and towels shall be disposed of after each use. Workers should avoid the use of dirty rags to insure proper cleaning of surfaces. Mop the entire floor with a clean mop head and amended water. Water shall be changed frequently. For those Regulated Areas where lead is also disturbed, the cleaning shall also include a wet washing with a high phosphate detergent solution and HEPA vacuuming. Waste water shall be filtered using best available technology into leak-proof disposal containers for proper disposal.
- D. Once the Regulated Area surfaces have dried, the Engineer's Project Monitor shall perform a thorough post abatement visual inspection utilizing protocols from the ASTM Standard E1368-90 *Standard Practice for Visual Inspection of Asbestos Abatement Projects* or current revision. All surfaces within the Regulated Area, including but not limited to ledges, beams, and hidden locations shall be inspected for visible residue. Evidence of asbestos contamination identified during this inspection will necessitate further cleaning as heretofore specified. The area shall be re-cleaned at the Contractor's expense, until the standard of cleaning is achieved.
- E. Once the area has received a satisfactory post-abatement visual inspection, any equipment, tools or materials not required for completion of the work, shall be removed by the Contractor from the Regulated Area. Negative air filtration devices shall remain in place and operating for the remainder of the clean-up operation.
- F. Following the post-abatement visual, the Contractor shall apply a lock-down encapsulant to all surfaces within the Regulated Area from which asbestos has been removed and the cleaned inner layer of polyethylene.

3.11 AIR MONITORING REQUIREMENTS

- A. The Contractor shall:

1. Provide air monitoring equipment including sample filter cassettes of the type and quantity required to properly monitor operations and personnel exposure surveillance throughout the duration of the project.
 2. Conduct personnel exposure assessment air sampling, as necessary, to assure that workers are using appropriate respiratory protection in accordance with OSHA Standard 1926.1101. Documentation of air sampling results must be recorded at the work site within twenty-four (24) hours and shall be available for review until the job is complete.
- B. The Project Monitor, acting as the representative of United Illuminating during abatement activities, will:
1. Collect air samples in accordance with the current revision of the NIOSH 7400 Method of Air Sampling for Airborne Asbestos Fibers while overseeing the activities of the Abatement Contractor. Frequency and duration of the air sampling during abatement will be representative of the actual conditions at the abatement site. The size and configuration of the asbestos project will be a factor in the number of samples required to monitor the abatement activities and shall be determined by the Engineer's Project Monitor. The following schedule of samples may be collected by the Engineer's Project Monitor:
 - a. Pre-Abatement (Optional)
 - 1) Background areas
 - 2) Area(s) adjacent to Work Area(s)
 - 3) Work Area(s)
 - b. During Abatement (Optional)
 - 1) At the exhaust of air filtering device
 - 2) Within Regulated Area(s)
 - 3) Area(s) adjacent to Regulated Areas(s)
(exterior to critical barriers)
 - 4) At the Decontamination Enclosure System
 - c. Post-Abatement (reoccupancy air clearance testing) (**REQUIRED**)
 - 1) Interior Regulated NPE Area - At least five (5) per homogenous area

Abatement Activity	Pre- Abatemen t	During Abatemen t	Post- Abatemen t
Greater than 1500 SF/500 LF – Interior	PCM	PCM	TEM
Greater than 3 LF/3 SF and Less than 1500 SF/500 LF – Interior	PCM	PCM	PCM
Spot Removal and Glovebag Procedures (<3 LF/3 SF)	---	PCM	---
Exterior Friable/Non-Friable	---	PCM	---

- C. If air samples collected outside of the Regulated Area during abatement activities indicate airborne fiber concentrations greater than original background levels, or greater than 0.1 f/cc, as determined by Phase Contrast Microscopy, whichever is larger, an examination of the Regulated Area perimeter shall be conducted and the integrity of barriers shall be restored. Cleanup of surfaces outside the Regulated Area using HEPA vacuum equipment or wet cleaning techniques shall be done prior to resuming abatement activities.

3.12 POST-ABATEMENT REOCCUPANCY PROCEDURES

- A. For interior NPE Regulated Areas, clearance air sampling will be performed by the Engineer's Project Monitor as specified in the Air Sampling Schedule. Clearance sampling will be undertaken using aggressive sampling techniques. Sampling and analysis of clearance samples will follow State of Connecticut Regulations, Section 19a-332a-12. Areas which do not comply shall continue to be cleaned by and at the Contractors expense, until the specified Standard of Cleaning is achieved as evidenced by results of air testing. When the Regulated Area passes the re-occupancy clearance, controls established by these Specifications may be removed.
 - 1. Air sampling will not begin until after the area has received an acceptable post abatement visual inspection, encapsulation has been completed, and no visible water, liquid encapsulant or condensation remain in the Regulated Area.
 - 2. Sampling equipment will be placed at random throughout the Regulated Area.
 - 3. The following aggressive air sampling procedures will be used within the Regulated Area during all air clearance monitoring:
 - a. Before starting the sampling pumps, direct the exhaust from forced air equipment (such as a 1 horsepower leaf blower) against all walls, ceilings, floors, ledges and other surfaces in the Regulated Area.
 - b. Pre-calibrate the sampling pump flow rates through the use of a rotameter calibrated to a primary standard.
 - c. Start the sampling pumps and sample for the required time.
 - d. Post-calibrate the sampling pump flow rates.
 - 4. Air volumes taken for clearance sampling shall be sufficient to accurately determine (to a 95 percent probability) fiber concentrations to 0.010 f/cc of air (1,200 liters).
 - 5. Analysis shall follow the requirements of CTDPH 19a-332a-12.
 - 6. Each homogeneous Regulated Area which does not meet the clearance criteria shall be thoroughly re-cleaned using HEPA vacuuming and/or wet cleaning, with the negative pressure ventilation system in operation. New samples shall be collected in the Regulated Area as described above. The process shall be

repeated until the Regulated Area passes the test, with the cost of repeat sampling being borne entirely by the Contractor.

7. The release criterion shall be applied independently to each Regulated Area.
8. These clearance sampling procedures may also be implemented for exterior NPE work areas at the discretion of the Engineer.

3.13 POST ABATEMENT WORK AREA DEREGULATION

- A. The Contractor shall remove all remaining polyethylene, excluding outer layer of sheeting at critical barriers at exterior window and door openings, and Decontamination Enclosure Systems leaving negative air filtration devices in operation. HEPA vacuum and/or wet wipe any visible residue which is uncovered during this process. All waste generated during this disassembly process shall be discarded as ACM waste.
- B. A final visual inspection of the work area shall be conducted by the Engineer's Competent Person and the Engineer's Project Monitor to ensure that all visible accumulations of suspect materials have been removed and that no equipment or materials associated with the abatement project remain.
- C. The Contractor shall restore all work areas and auxiliary areas utilized during work to conditions equal to or better than original. Any damage caused during the performance of the work activity shall be repaired by the Contractor at no additional expense to United Illuminating.

3.14 WASTE DISPOSAL

- A. Unless otherwise specified, all removed materials and debris resulting from execution of this project shall become the responsibility of the Contractor to properly manage, store, transport and dispose off-site. Materials not scheduled for reuse shall be removed from the site and disposed of in accordance with all applicable Federal, State and Local requirements.
- B. Waste removal dumpsters and cargo areas of transport vehicles shall be lined with a layer of six (6) mil polyethylene sheeting to prevent contamination from leaking or spilled containers. Floor sheeting shall be installed first, and shall be extended up sidewalls 12-inches. Wall sheeting shall overlap floor sheeting 24-inches and shall be taped into place.
- C. OSHA "Danger" signs must be attached to vehicles used to transport asbestos-containing waste prior to loading ACM waste. The signs must be posted so that they are plainly visible.
- D. Waste haulers and disposal facilities utilized shall match those indicated on the submitted CTDPH notification.

- E. Ensure all waste containers (bags, drums, etc.) are properly packed, sealed and labeled with USEPA NESHAP generator labels, OSHA danger labels and DOT shipping labels. For each shipment of ACM waste, the Contractor shall complete an EPA-approved asbestos waste shipment record.
- F. Authorized representatives signing waste shipment records on behalf of the generator must have USDOT Shipper Certification training in accordance with 49 CFR Parts 171-180 Hazardous Materials Regulation (HMR).
- G. Transport vehicles hauling ACM and PCB waste shall have appropriate USDOT placards visible on all four (4) sides of the vehicle.
- H. The Contractor shall dispose of asbestos-containing and/or asbestos contaminated material at an EPA authorized site and must be in compliance with the requirements of the Special Waste Provisions of the Office of Solid Waste Management, Department of Energy and Environmental Protection, State of Connecticut, or other designated agency having jurisdiction over solid waste disposal.
- I. Any asbestos-containing and/or asbestos-contaminated waste materials which also contain other hazardous contaminants shall be managed, stored, transported and disposed of by the Contractor in accordance with the EPA's Resource Conservation and Recovery Act (RCRA), Toxic Substances Control Act (TSCA), CTDEEP, ConnDOT, and USDOT requirements. Materials may be required to be stored on-site and tested by the Engineer's Project Monitor to verify proper waste disposal requirements, but the Contractor is responsible for all waste characterization sampling and testing required for disposal.

END OF SECTION

SECTION 02 83 13

LEAD CONTROL ACTIVITIES

PART 1 - GENERAL

1.01 SCOPE

- A. Work under this item shall include the special handling measures and work practices required for paint impacted during abatement and demolition activities; such as impacting various materials containing or covered by lead paint, including the loading, transportation and final off-site disposal of non-hazardous and/or hazardous lead construction waste, the recycling of metallic components covered with lead paint, and the subsequent cleaning of the affected environment. Lead paint includes paint found to contain any detectable amount of lead by Atomic Absorption Spectrophotometry (AAS) or X-Ray Fluorescence (XRF).
- B. All activities shall be performed in accordance with, but not limited to, the current revision of the OSHA Lead in Construction Regulations (29 CFR 1926.62), the USEPA RCRA Hazardous Waste Regulations (40 CFR Parts 260 through 273), the CTDEEP Hazardous Waste Regulations (22a-209-1 and 22a-449(c)), and the USDOT Hazardous Materials Regulations (49 CFR Parts 171 through 180).
- C. All activities shall be performed by individuals with appropriate levels of OSHA lead awareness and hazard communication training and shall be supervised by the Contractor's Competent Person on the job site at all times. The Contractor's Competent Person is one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.
- D. Hazardous lead debris shall be transported from the Project by a licensed hazardous waste transporter and disposed of at an EPA permitted hazardous waste facility within 90 days from the date of generation.
- E. Deviations from these Specifications require the written approval of the Engineer/United Illuminating.

1.02 DESCRIPTION OF WORK

- A. All work impacting the lead painted materials identified below shall be conducted within an established Regulated Area with a remote wash facility/decontamination system and the OSHA Lead in Construction Standard. In accordance with 29 CFR 1926.62, engineering controls and work practices shall be utilized to prevent the spread of lead dust and debris beyond the Regulated Area and limit the generation of airborne lead. All wastes containing lead paint shall be properly contained and secured for storage, transportation and disposal.

- B. Data for representative lead testing conducted on surfaces throughout the buildings as well as any waste characterization results are available from the Engineer for informational purposes only. Under no circumstances shall this information be the sole means used by the Contractor for determining the extent of lead painted materials. The Contractor shall be responsible for verification of all field conditions affecting performance of the work as described in these Specifications in accordance with OSHA, USEPA, USDOT and CTDEEP standards. Compliance with the applicable requirements is solely the responsibility of the Contractor.
- C. The Contractor shall conduct exposure assessments for all tasks which impact lead paint in accordance with OSHA 29 CFR 1926.62(d) and shall implement appropriate personal protective equipment until negative exposure assessments are developed.
- D. The following details the extent of each phase of operation designated for this project. Phase areas may be combined or divided at the direction of the Engineer/United Illuminating. Proceed through the sequencing of the work phases under the direction of the Engineer/United Illuminating.

1. Non-Metallic Components To Be Impacted - OSHA

Lead paint has been identified on various non-metallic components throughout the facility including walls, ceilings, door/window components, floors and shelving. All work impacting those materials shall be conducted within an established lead control (regulated) area with a remote handwash facility/decontamination system in accordance with OSHA Lead in Construction Standards. In accordance with OSHA 29 CFR 1926.62, engineering controls and work practices shall be utilized to prevent the spread of lead dust and debris beyond the Regulated Area and limit the generation of airborne lead. All wastes containing lead paint shall be properly contained and secured for storage, transportation and disposal.

2. Metal Components To Be Impacted - OSHA

Lead paint has been identified on various metal interior components throughout the facility including door/window/stair components, miscellaneous components (roof drains, pipes, etc.) and structural steel (columns, beams, etc.). Lead metal flashing has been identified around the entire perimeter of the Mezzanine Roof. All work impacting those materials shall be conducted within an established lead control (regulated) area with a remote handwash facility/decontamination system in accordance with OSHA Lead in Construction Standards. In accordance with OSHA 29 CFR 1926.62, engineering controls and work practices shall be utilized to prevent the spread of lead dust and debris beyond the Regulated area and limit the generation of airborne lead.

3. Surface Preparations - OSHA

Surface preparation techniques such as sanding, sandblasting, scraping, etc. which are utilized on surfaces coated with lead paint must be conducted in accordance with the OSHA worker protection and USEPA RCRA/CTDEEP waste disposal standards. All work impacting those materials shall be conducted within an established lead control (regulated) area with a remote handwash facility/decontamination system in accordance with OSHA Lead in Construction Standards. In accordance with OSHA 29 CFR 1926.62, engineering controls and work practices shall be utilized to prevent the spread of lead dust and debris beyond the Regulated Area and limit the generation of airborne lead. All wastes containing lead paint shall be properly contained and secured for storage, transportation and disposal.

- E. The Engineer has previously characterized the waste stream generated from the removal of the interior window glazing debris, as described in Phase 4 of Specification Section 02 82 13, in the Mezzanine Work Area as hazardous for lead.
- F. The Engineer has previously characterized the waste stream generated from the removal/demolition of the roofing and underlying wooden deck as non-hazardous for lead. This does not include the lead metal flashing around the entire perimeter of the Mezzanine Roof; this material must be segregated from roofing and underlying wooden deck materials.
- G. The Engineer has previously characterized the waste stream generated from the removal/demolition of the South brick wall as non-hazardous for lead.
- H. The Engineer has previously characterized the waste stream generated from the demolition of the building (to grade), excluding the roofing and underlying wooden deck, South brick wall and walls/flooring below grade, as non-hazardous for lead.
- I. All other waste streams generated from removal/demolition of materials with lead containing paint, as described in Sections 02 83 13 or 02 84 33, require proper waste characterization prior to disposal. The Contractor will be responsible to provide TCLP leaching tests for Lead to support waste profile characterization for disposal.
- J. If the lead metal flashing can be separated from the asbestos-containing flashing tar, segregate the lead metal flashing for recycling as scrap metal. If the lead metal flashing cannot be separated from the asbestos-containing flashing tar, the lead metal flashing waste will require proper characterization prior to disposal.
- K. Segregate all steel and metal components generated from the project, regardless of lead content, for recycling as scrap metal. Recycling of lead painted metal is exempt from regulation by the USEPA and CTDEEP as hazardous waste.

1.03 SUBMITTALS AND NOTICES

- A. Any work that will generate RCRA hazardous lead waste (waste code D008) will require an EPA Hazardous Waste Generators ID. United Illuminating will provide the

Contractor with the existing EPA Hazardous Waste Generator ID for the site, which will be used by the Contractor on all manifests for wastes being transported and disposed of under the D008 waste classification.

- B. At least seven (7) days prior to the generation of any hazardous waste, provide a copy of the USEPA permit for disposal of hazardous lead bearing waste for each proposed hazardous waste treatment storage disposal facility. Also provide a copy of each proposed hazardous waste transporter's current USDOT Certificate of Registration and current Hazardous Waste Transporter permits for the State of Connecticut, the hazardous waste destination state and any other applicable states.
- C. Seven (7) working days prior to beginning work that impacts lead paint, the Contractor shall submit the following to the Engineer:
 - 1. Work plan for work impacting lead paint including engineering controls, methods of containment of debris and work practices to be employed, as needed, to minimize employee exposure and prevent the spread of lead contamination outside the Regulated Area.
 - 2. Copies of all employee certificates, dated within the previous twelve (12) months, relating to OSHA lead awareness and hazard communication training, USEPA RRP training and/or training in the use of lead-safe work practices. SSPC, HUD LSWP and USEPA RRP training programs may be deemed acceptable as meeting these requirements if it can be demonstrated that such training addressed all required OSHA topics.
 - 3. Name and qualifications of Contractor's OSHA Competent Person under 29 CFR 1926.62.
 - 4. Documentation from the Contractor, typed on company letterhead and signed by the Contractor, certifying that all employees listed therein have received the following:
 - a. medical monitoring within the previous twelve (12) months, as required in 29 CFR 1926.62;
 - b. biological monitoring within the previous six (6) months, as required in 29 CFR 1926.62;
 - c. respirator fit testing within the previous twelve (12) months, as required in 29 CFR 1910.134 (for those who don a tight-fitting face piece respirator)
 - 5. Names of the proposed non-hazardous construction and demolition (C&D) lead debris bulky waste disposal facility (CTDEEP-permitted Solid Waste landfill)
 - 6. Names of the proposed scrap metal recycling facilities. The Contractor shall submit to the Engineer all documentation necessary to demonstrate the selected facility is able to accept lead-painted scrap metal.

7. Negative exposure assessments conducted within the previous 12 months documenting that employee exposure to lead for each task is below the OSHA Action Level of 30 $\mu\text{g}/\text{m}^3$. If a negative exposure assessment has not been conducted, the Contractor shall submit its air monitoring program for the work tasks.
- D. No activity shall commence until all required submittals have been received and found acceptable to the Engineer/United Illuminating. Those employees added to the Contractor's original list will be allowed to perform work only upon submittal of acceptable documentation to, and review by, the Engineer/United Illuminating.
- E. Provide the Engineer/United Illuminating, within thirty (30) days of completion of the project site work, a compliance package; which shall include, but not be limited to, the following:
 1. Competent persons (supervisor) job log;
 2. OSHA-compliant personnel air sampling data and exposure assessments;
 3. Completed waste shipment papers for non-hazardous lead construction and demolition (C&D) bulky waste disposal and scrap metal/concrete recycling
 4. Completed certified hazardous waste manifests for any hazardous lead debris.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. All materials shall be delivered to the job site in the original packages, containers, or bundles bearing the name of the manufacturer, the brand name and product technical description, with MSDS sheets as applicable.
- B. No damaged or deteriorating materials shall be used. If material becomes contaminated with lead, the material shall be decontaminated or disposed of as lead-containing waste material. The cost to decontaminate and dispose of this material shall be at the expense of the Contractor.
- C. Fire retardant polyethylene sheet shall be in roll size to minimize the frequency of joints, with factory label indicating six (6) mil thickness.
- D. Polyethylene disposable bags shall be six (6) mils thick.
- E. Tape (or equivalent) capable of sealing joints in adjacent polyethylene sheets and for the attachment of polyethylene sheets to finished or unfinished surfaces must be capable of adhering under both dry and wet conditions.

- F. Cleaning agents and detergent shall be lead specific, such as TriSodium Phosphate (TSP).
- G. Any chemical strippers and chemical neutralizers to be utilized shall be compatible with the substrate as well as with each other. Such chemical strippers shall contain less than 50% volatile organic compounds (VOCs) in accordance with RCSA 22a-174-40 Table 40-1.
- H. Labels and warning signs shall conform to OSHA 29 CFR 1926.62, USEPA 40 CFR 745, USEPA 40 CFR 260 through 273 and USDOT 49 CFR 172 as appropriate.
- I. Any planking, bracing, shoring, barricades and/or temporary sheet piling, necessary to appropriately perform work activities shall conform to all applicable federal, state and local regulations.
- J. Air filtration devices and vacuum units shall be equipped with HEPA filters.

2.02 TOOLS AND EQUIPMENT

- A. The Contractor shall provide tools and equipment that are suitable for lead paint related activity:
 - 1. Air monitoring equipment of the type and quantity required to monitor operations and conduct personnel exposure surveillance in accordance with OSHA requirements.
 - 2. Electrical equipment, protective devices and power cables shall conform to all applicable codes.
 - 3. Where lead exposures are above the OSHA Action Level or PEL, the Contractor shall provide wash facilities/shower stalls and plumbing that include sufficient hose length and drain system or an acceptable alternate. One shower stall shall be provided for each ten workers in compliance with OSHA 1910.141(d)(3).
 - 4. Where lead exposures are above the OSHA PEL, the Contractor shall provide exhaust air filtration units that are equipped with HEPA filters to provide local exhaust ventilation at the work area to reduce airborne lead emissions.
 - 5. The Contractor shall provide vacuum units of suitable size and capabilities for the project which have HEPA filters capable of trapping and retaining at least 99.97 percent of all monodispersed particles of three micrometers in diameter or larger. HEPA vacuums shall also be equipped with a beater bar.

6. The Contractor shall provide ladders and/or scaffolds of adequate length, strength and sufficient quantity to support the work schedule. Scaffolds shall be equipped with safety rails and kick boards in compliance with OSHA requirements.
7. Protective clothing, respirators, and HEPA P100 filter cartridges shall be provided in sufficient quantities for the project.
8. Equipment suitable for building renovation/demolition and proper waste/debris collection/packing/removal, (e.g. excavators, grapples, backhoes, roll-offs, etc.) shall be provided by the Contractor as required.

PART 3 - EXECUTION

3.01 GENERAL REQUIREMENTS

- A. All employees of the Contractor who perform work impacting lead paint shall be properly trained to perform such duties. In addition, the Contractor shall instruct all workers in all aspects of personnel protection, work procedures, emergency evacuation procedures and use of equipment including procedures unique to this project.
- B. Contractor shall provide all labor, materials, tools, equipment, services, testing, insurance (with specific coverage for work on lead), and incidentals which are necessary or required to perform the work in accordance with applicable governmental regulations, industry standards and codes, and these Specifications.
- C. Prior to beginning work, the Engineer and Contractor shall perform a visual survey of each work area and review conditions at the site.
- D. As necessary, the Contractor shall:
 1. Shutdown and isolate heating, cooling, and ventilating air systems to prevent contamination and particulate dispersal to the other areas of the building.
 2. Shut down and lock out electrical power, including all receptacles and light fixtures, when feasible. The use or isolation of electrical power will be coordinated with all other ongoing uses of electrical power at the site.
 3. Coordinate all power and fire alarm isolation with the appropriate representatives.
 4. When necessary, provide temporary power and adequate lighting and ensure safe installation of electrical equipment, including ground fault protection and power cables, in compliance with applicable electrical codes and OSHA requirements. The Contractor is responsible for proper connection and installation of electrical wiring.

- E. Ladders and/or scaffolds to be utilized throughout this project shall be in compliance with OSHA requirements, and of adequate length, strength and sufficient quantity to support the scope of work. Use of ladders/scaffolds shall be in conformance with OSHA 29 CFR 1926 Subpart L and X requirements.
- F. Work performed at heights exceeding six feet (6') shall be performed in accordance with the OSHA Fall Protection Standard 29 CFR 1926 Subpart M including the use of fall arrest systems as applicable.
- G. Electrical service will be available to the Contractor from an existing electric panel on the outside at the west end of the building. The Contractor is responsible to utilize a licensed electrician for proper connection and installation of electrical wiring and shall ensure safe installation of electrical equipment, transformers, electrical breaker sub-panels and other disconnects in compliance with applicable electrical codes and OSHA requirements.
- H. Water service is currently not available on-site for use by the Contractor for this project. The Contractor will be fully responsible for securing water from either the South Central Regional Water Authority at a nearby hydrant on Grand Avenue or from another offsite source.
- I. United Illuminating will provide a Project Monitor to monitor compliance of the Contractor. In such cases no activity impacting lead paint shall be performed until the Project Monitor is on-site. Ambient air sampling will be conducted by the Engineer/Project Monitor as deemed necessary throughout the project. Air monitoring to comply with the Contractor's obligations under OSHA remains solely the responsibility of the Contractor. Environmental sampling, including, TCLP waste stream sampling and/or dust wipe sampling, will be responsibility of the Contractor under the direct supervision of the Engineer.
- J. If air samples collected outside of the Regulated Area during activities impacting lead paint indicate airborne lead concentrations greater than original background levels or 30 ug/m³, whichever is larger, or if at any time visible emissions of lead paint extend out from the Regulated Area, an examination of the Regulated Area shall be conducted and the cause of such emissions corrected. Cleanup of surfaces outside the Regulated Area using HEPA vacuum equipment or wet cleaning techniques shall be done prior to resuming work.
- K. Work outside the initial designated area(s) will not be paid for by United Illuminating. The Contractor will be responsible for all costs incurred from these activities including repair of any damage.

3.02 ESTABLISHMENT OF REGULATED WORK AREAS

- A. The Contractor shall establish a Regulated Area, through the use of appropriate barrier tape, or other means to control unauthorized access into the area when activities impacting lead paint are occurring.

- B. Warning signs meeting the requirements of OSHA 29 CFR 1926.62 shall be posted at all approaches to Regulated Areas. These signs shall read:

WARNING
LEAD WORK AREA
POISON
NO SMOKING OR EATING

- C. The Contractor shall implement appropriate engineering controls such as critical barriers, poly drop cloths, negative pressure, local exhaust ventilation, wet dust suppression methods, etc. as necessary, and as approved by the Engineer, to prevent the spread of lead contamination beyond the Regulated Area in accordance with the Contractor's approved work plan. Should the previously submitted work plan prove to be insufficient to contain the contamination, the Contractor shall modify its plan and submit it for review by the Engineer.
- D. For exterior work areas, the Contractor shall use a High Efficiency Particulate Air (HEPA) filtered vacuum dust collection system to remove any visible existing paint chips from the ground to a distance of 20' out from the base of the exterior surface scheduled for lead paint activity prior to commencement of work and extend a 6 mil polyethylene sheet drop cloth on the ground adjacent to the exterior surface scheduled for lead paint activity to contain debris/contamination.

3.03 WASH FACILITIES

- A. The Contractor shall provide handwash facilities in compliance with 29 CFR 1926.51(f) and 29 CFR 1926.62 regardless of airborne lead exposure.
- B. If employee exposure to airborne lead exceeds the OSHA Permissible Exposure Limit (PEL) of 50 micrograms per cubic meter of air ($\mu\text{g}/\text{m}^3$), shower rooms must be provided. The Shower Room shall be of sufficient capacity to accommodate the number of workers. One shower stall shall be provided for each ten workers in compliance with OSHA 1910.141(d)(3). Showers shall be equipped with hot and cold or warm running water. Shower water shall be collected and filtered using best available technology and disposed of in accordance with all federal, state and local laws, regulations and ordinances.

3.04 PERSONNEL PROTECTION

- A. Exposure Assessments: The Contractor shall initially determine if any employee performing construction tasks impacting lead paint may be exposed to lead at or above the OSHA Action Level of 30 micrograms per cubic meter ($30 \mu\text{g}/\text{m}^3$). Assessments shall be based on initial air monitoring results as well as other relevant information. The Contractor may rely on historical air monitoring data obtained within the past 12 months under workplace conditions closely resembling the process, type of material, control methods, work practices and environmental conditions used and prevailing in the Contractor's current operations to satisfy the exposure assessment requirements.

Monitoring shall continue as specified in the OSHA standard until a negative exposure assessment is developed.

- B. Until a negative exposure assessment is developed for each task impacting lead paint, the Contractor shall ensure that all workers and authorized person entering the Regulated Area wear protective clothing and respirators in accordance with OSHA 29 CFR 1926.62. Protective clothing shall include impervious coveralls with elastic wrists and ankles, head covering, gloves and foot coverings. Sufficient quantities shall be provided to last throughout the duration of the project.
- C. Protective clothing provided by the Contractor and used during chemical removal operations shall be impervious to caustic materials. Gloves provided by the Contractor and used during chemical removal shall be of neoprene composition with glove extenders.
- D. Respiratory protective equipment shall be provided and selection shall conform to 42 CFR Part 84, 29 CFR Part 1910.134, and 29 CFR Part 1926.62. A formal respiratory protection program must be implemented in accordance with 29 CFR Part 1926.62 and 29 CFR Part 1910.134.

3.05 AIR MONITORING REQUIREMENTS

- A. The Contractor shall:
 - 1. Provide air monitoring equipment including sample filter cassettes of the type and quantity required to properly monitor operations and personnel exposure surveillance throughout the duration of the project.
 - 2. Conduct initial exposure monitoring to determine if any employee performing construction tasks impacting lead paint may be exposed to lead at or above the OSHA Action Level of 30 micrograms per cubic meter. Monitoring shall continue as specified in the OSHA standard until a negative exposure assessment is developed.
 - 3. Conduct personnel exposure assessment air sampling, as necessary, to assure that workers are using appropriate respiratory protection in accordance with OSHA Standard 1926.62. Documentation of air sampling results must be recorded at the work site within twenty-four (24) hours and shall be available for review until the job is complete.

3.06 LEAD PAINT ACTIVITY PROCEDURES

- A. Work impacting lead paint shall not begin abatement work until authorized by the Engineer, following a pre-abatement visual inspection by the Project Monitor.
- B. Any activity impacting lead painted surfaces shall be performed in a manner which minimizes the spread of lead dust contamination and generation of airborne lead.

- C. The Contractor shall ensure proper entry and exit procedures for workers and authorized persons who enter and leave the Regulated Area. All workers and authorized persons shall leave the Regulated Area and proceed directly to the wash or shower facilities where they will HEPA vacuum gross debris from work suit, remove and dispose of work suit, wash and dry face and hands, and vacuum clothes. Do not remove lead chips or dust by blowing or shaking of clothing. Wash water shall be collected, filtered, and disposed of in accordance with federal, state and local water discharge standards. Any permit required for such discharge shall be the responsibility of the Contractor.
- D. No one shall eat, drink, smoke, chew gum or tobacco, or apply cosmetics while in the Regulated Area.
- E. Utilize appropriate engineering controls and work practices (e.g. wet methods) as directed by 29 CFR 1926.62 (and 40 CFR 745.85 as applicable) to control lead emissions and contamination.
- F. Properly contain wastes containing lead paint for appropriate storage, transport and disposal.
- G. Stop all work in the regulated area and take steps to decontaminate non-work areas and eliminate causes of such contamination should lead contamination be discovered in areas outside of the regulated area.

3.07 CLEAN-UP AND VISUAL INSPECTION/VERIFICATION

- A. The Contractor shall remove and containerize all lead waste material and visible accumulations of debris, paint chips and associated items.
- B. During clean up the Contractor shall utilize rags and sponges wetted with lead-specific detergent and water as well as HEPA filtered vacuum equipment.
- C. The Engineer will conduct a visual inspection of the work areas in order to document that all surfaces have been maintained as free as practicable of accumulations of lead in accordance with OSHA 29 CFR 1926.62(h). If visible accumulations of waste, debris, lead paint chips or dust are found in the work area, the Contractor shall repeat the cleaning, at the Contractor's expense, until the area is in compliance. The visual inspection will detect incomplete work, damage caused by the abatement activity, and inadequate clean up of the work site.

3.08 POST ABATEMENT WORK AREA DEREGULATION

- A. Following the visual inspection, (and clearance/verification testing if appropriate/specified), any engineering controls and warning signs implemented may be removed.

- B. A final visual inspection of the work area shall be conducted by the Competent Person and the Project Monitor to ensure that all visible accumulations of suspect materials have been removed and that no equipment or materials associated with the abatement project remain. If this final visual inspection is acceptable, the Contractor shall reopen the Regulated Area and remove all signage.
- C. The Contractor shall restore all work areas and auxiliary areas utilized during work to conditions equal to or better than original. Any damage caused during the performance of the work activity shall be repaired by the Contractor at no additional expense to the Engineer/United Illuminating.

3.09 HAZARDOUS LEAD WASTE DISPOSAL

- A. The Contractor shall utilize a certified/permitted transporter for hazardous waste in compliance with DOT 49 CFR Part 172 and USEPA 40 CFR 260-273 and a permitted hazardous waste treatment storage disposal facility (TSDF) in compliance with USEPA 40 CFR 260-273.
- B. Hazardous lead bearing material must be offered for transportation and transported in compliance with the Code of Federal Regulations, Title 49, Chapter 1, Part 173, Subparts A, B, C, and D. Transport vehicles (hopper or dump type) must be free from leaks and discharge openings must be securely closed during transportation. All storage containers (roll offs or drums) shall have a protective liner and removable lid. These containers shall not have any indentations or damage that would allow seepage of the contained material.
- C. The disposal of hazardous lead bearing material must be in compliance with the requirements of, and authorized by, the Office of Solid Waste Management, Department of Energy and Environmental Protection, State of Connecticut, and the USEPA.
- D. The disposal of hazardous lead bearing waste shall comply with the requirements of the Resource Conservation and Recovery Act (RCRA).
- E. Previous waste characterizations have been completed by the Engineer, but this information is made available for information only. All generated waste shall be containerized and stored on-site for hazardous waste determination via TCLP testing. Waste sampling and TCLP analysis shall be the responsibility of the Contractor under the direct supervision of the Engineer.
- F. The dumpsters/containers containing hazardous waste are to be kept closed and covered and locked when not in active use for the loading of materials.
- G. All containers of hazardous lead bearing material shall be labeled in accordance with 29 CFR 1926.62 and EPA 40 CFR 260-270.

- H. All hazardous lead-bearing waste removed from the site by the Contractor shall be containerized in lined roll-offs or barrels. Store waste materials in U.S. Department of Transportation (49 CFR 178) approved containers. Properly label and placard each container to identify the type of waste (49 CFR 172) and the date the container was filled. The disposal containers shall be labeled by the Contractor with a six inch square, yellow, weatherproof, hazardous waste sticker in accordance with U.S. DOT regulations.
- I. The Contractor may not store containerized hazardous lead waste on the job site for in excess of 90 calendar days from the accumulation start date.
- J. When required to dispose of hazardous waste, the Contractor shall utilize a certified/permitted transporter for hazardous waste in compliance with USDOT 49 CFR Part 172 and USEPA 40 CFR 260-273 and a permitted hazardous waste treatment storage disposal facility (TSDF) in compliance with USEPA 40 CFR 260-273.
- K. The Contractor shall complete a Uniform Hazardous Waste Manifest, EPA Form 8700-22, and submit to the Engineer for review and generator sign-off prior to each load of hazardous waste scheduled to leave the site. Completed copies of the manifest shall be delivered by the Contractor to the Engineer within 30 calendar days following the date the load leaves the site.
- L. When all necessary procedures have been completed, then the hazardous waste shall be shipped to the hazardous waste disposal facility.
- M. Any spillage of debris during disposal operation, i.e., loading, transport and unloading, shall be cleaned up at the Contractor's expense in accordance with the Code of Federal Regulations, Title 40, Chapter 1, Part 265, Subparts C and D.
- N. The Contractor is liable for any fines, costs or remediation costs incurred as a result of the failure to be in compliance with this special provision and all federal, state and local laws.
- O. Final payment requisitions for the contract will not be processed until a signed copy of the manifest from the treatment or disposal facility certifying the amount of lead-containing materials delivered is returned and a copy is furnished to the Engineer.

END OF SECTION

SECTION 02 84 33

REMOVAL AND DISPOSAL OF PCB BUILDING MATERIALS

PART 1 - GENERAL

1.01 APPLICABLE PUBLICATIONS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to this work.
- B. EPA PCB Regulations 40 CFR Part 761
- C. CTDEEP PCB Regulations 22a-463 through 469
- D. CTDEEP Remediation Standards Regulations 22a-133k-1 through 3

1.02 DESCRIPTION

Work under this item shall include the removal of Excluded PCB Products (>1 ppm and <50 ppm) impacted as part of the pre-demolition asbestos abatement and demolition of the building. The work shall be performed by persons who are knowledgeable, qualified, trained and licensed in the removal, treatment, handling, and disposal of PCB contaminated wastes and the subsequent cleaning of the affected environment. The workers shall also have all the required asbestos licensing/training as required in Specification Section 028213 and all the required lead licensing/training as required in Specification 028313. The removal of interior Excluded PCB Product (>1 ppm and <50 ppm) during pre-demolition activities (e.g. asbestos abatement) shall be performed inside containments (as described in Section 3.10) unless authorization is received from Engineer/Owner.

The list of materials are for those determined for Station B. The Contractor shall be provided with a list of PCB-containing building materials in the four structures east of the English Station Building and the Guard Shack prior to performing that work.

A. REQUIREMENTS

Excluded PCB Products (>1<50 ppm) is defined as any building material manufactured with total PCB concentrations >1 ppm and < 50 ppm. Identified building materials to be impacted as part of the Asbestos Abatement shall be removed from the site and disposed of per these Specifications by the CONTRACTOR.

Building Materials found to be >1 ppm and <50 ppm in Station B are:

- **Dark green paint (P1)** on lower brick wall (6' high) on interior of exterior walls on South, North (below mezzanine) and West Sides of Turbine Hall
- **Light green paint (P1)** on upper brick wall (>6' high) on interior of exterior walls on South, North (below mezzanine) and West Sides, East wall on terra cotta block in the Turbine Hall
- **Dark green paint (P3)** on lower 6' of all structural metal columns/bracing in the Turbine Hall
- **Light green paint (P4)** on upper (>6' high) structural metal columns/beams, (including crane support beams) in the Turbine Hall
- **White paint (P5)** on concrete deck (underside of Mezzanine level) & in West upper office area
- **White paint (P6)** on structural steel associated with concrete deck (underside of Mezzanine level) & in West upper office area
- **Yellow paint (P7)** on metal stairwell systems to basement from Turbine Hall
- **Yellow marking paint (P8)** on concrete floor of 1st floor
- **Green paint (P9)** on metal downspouts in Turbine Hall
- **Green paint (P16)** on metal stairwell system used to access West upper office area from Turbine Hall
- **Asphaltic rolled roofing (RR2)** (loose rolls) in SW corner of Turbine Hall
- **Window glazing (WG8)** on metal framed windows of the west wall in Turbine Hall
- **Beige paint (P10)** on concrete ceiling/deck in men's locker room, shower and bathroom, office 2, office 4 in the West Office Area and the concrete deck on underside of mezzanine level above West office area
- **Beige paint (P11)** on concrete ceiling/deck in men's locker room, shower and bathroom, office 2, office 4 in the West Office Area and the concrete deck on underside of mezzanine level above West office area
- **Beige paint (P12)** on CMU walls in men's locker room, office 1, office 2, office 3, office 4 of West Office Area
- **White paint (P13)** on wood door/window frames in men's locker room, men's bathroom, office 1 of West Office Area
- **White paint (P14)** on metal doors and window/door casings throughout the West Office Area
- **White paint (P15)** on wood and sheetrock walls in office 1-4, ladies locker room & bathroom of West Office Area
- **Mastic (FTM1)** associated with white 12" floor tile (FT1-top layer) in office 1-4 of the West Office Area
- **Yellow floor tile/mastic (FT2/FTM2)** in office 2 & 4 (bottom layer) of West Office Area
- **Green 12" floor tile (FT4)** in men's locker room (middle layer) of West Office Area
- **Mastic (FT5M)** associated with grey 12" floor tile (FT5-top layer) in men's locker room of West Office Area
- **Mastic (FT6M)** associated with black floor tile (FT6-bottom layer) in men's

locker room of West office Area

- **Brown linoleum sheeting (LIN1)** in ladies bathroom and locker room of West Office Area
- **4" cove base/mastic (CB1/CBM1)** in office 1, 2 & 4 of the West Office Area
- **6" cove base/mastic (CB2/CBM2)** in office 3 and men's locker room of the West Office Area
- **Ceramic wall tile glue (G4)** in ladies bathroom of West Office Area
- **Interior black window glazing (WG1)** in office 1 & 4 of West Office Area
- **Interior grey window glazing (WG2)** in office 1 of West Office Area
- **Carpet glue (CG1)** in office 5 of the West Upper Office Area
- **Black/brown cove base (CB4)** in lounge, hall, men's bathroom, office 2 of East Office Area
- **Brown cove base/mastic (CB5/CBM5)** in office 1 of East Office Area
- **Glue daubs (G2)** on wood wall panels in kitchen of East Office Area
- **Grey flexible caulk (C2)** on hall doors to exterior and turbine hall from East Office Area
- **Interior white flexible caulk (C3)** on exterior windows of East Office Area
- **Interior glazing (WG6)** on metal framed interior windows on north and west walls of office 1 in the East Office Area
- **Interior window glazing (WG7)** on exterior windows of East Office Area
- **Green paint (P17)** on concrete/wood components of switchgear port structures on the Mezzanine
- **Light green/yellow paint (P18)** on all metal window unit/frames (including loose windows in basement) throughout building
- **White paint (P19)** on west brick wall of Mezzanine
- **Light green paint (P20)** on north and west brick walls of the Mezzanine
- **Light green paint (P21)** on steel beams throughout Mezzanine
- **Brown paint (P22)** on metal roof access ladder on north wall of Mezzanine
- **Black paint (P23)** on stair systems, hoist rail and light boxes throughout Mezzanine
- **White paint (P24)** on upper metal roof deck supports (I-beams, columns and bracing) for Turbine Hall and Mezzanine
- **White paint (P25)** on wood roof deck and wood roof beams of Turbine Hall and Mezzanine
- **Light green paint (P26)** on metal lentils above all mezzanine windows
- **Black paint (P27)** on metal hoist I-beam running west to east below roof deck in Mezzanine
- **Green paint (P28)** on metal support beam above east office are in Mezzanine
- **Black paint** on overhead rolling crane unit and associated components in the Turbine Hall
- **Orange paint** on overhead rolling crane unit in the Turbine Hall
- **Green paint** on steel pipe on the south side of Mezzanine
- **Window glazing (WG2) on metal framed window in SE corner on top of east office are in Mezzanine**

- **Interior gray window glazing** associated with large multi-pane metal framed windows on windows (West, North & East sides), top of East Office area (excluding SE most window) of Mezzanine.
- **Black paint (P29)** on steel beams and columns throughout Basement
- **Orange paint (P30)** on steel column supports in SW lower elevation area in Basement
- **Black paint (P31)** on large pipes throughout Basement
- **Black paint (P32)** on concrete pad/walls throughout Basement
- **Red paint (P33)** on newer metal support columns throughout Basement
- **Light green paint (P34)** on metal columns throughout Basement
- **Red paint (P35)** on added steel support beam throughout Basement
- **Maroon paint (P36)** on metal ceiling beams throughout Basement
- **Red paint (P37)** on discarded metal pipe and boiler doors throughout Basement
- **Green paint (P38)** on concrete/wood ceiling and upper brick wall of center passage on north side of turbine pedestals 1-4 in Basement
- **Dark green paint (P39)** on doors/door casings and stairwell throughout Basement
- **Black wrap (PW1)** over insulated pipe (16" diameter) which runs the length of the Basement
- **Black coating (T1)** on interior concrete wall of turbine pedestals 1-5 in the Basement
- **Pipe gaskets (PG1)** hanging on board in center passage north of turbine pedestal 2 in basement
- **Roof field (RF1)** (Multi-layered) on Turbine Hall Roof
- **All roof flashing tar/felt layers (FL1, FL2, FL3, FL5)** on perimeter, penetrations, parapet walls and on corrugated transite siding on Turbine Hall & Mezzanine Roofs
- **Black shingle roofing (RF7)** on Hatch roof (bottom layer)
- **Felt membrane (RF8)** on Hatch roof
- **Edge flashing tar/black flashing tar (FL4)** on Hatch roof
- **White paint (P46)** on metal angle iron on Exterior south side
- **Green paint (P47)** on wood door/window components throughout the Exterior and on loose wood windows (WG10) and bricked over (from exterior) windows (WG4) on North wall in Basement
- **Exterior caulking (C4)** around metal windows of West Upper Office Area – office 5 & 6 and room 1 windows in open area above west office area.
- **Beige caulk (C9) on CMU joints/surface** on various CMU in-filled former windows on North and East sides of Exterior.
- **Black roof shingles (RF9)** on south entrance door overhang roof.
- **Galbestos roof (RF10)** over conduit bank on east side of building.
- **Vapor barrier coating (VB1)** on west wall of basement
- **Black paint (P48)** on railing of exterior concrete pad and cable vault enclosure on the SE side of the building
- **Black step flashing (FL6)** on the exterior cable vault enclosure on the SE side of

the building

- **Red/rust paint (P49)** on former pipe support/gate structure on exterior SE side of the building

NOTES:

- **All porous substrates (brick, terracotta, concrete, CMU, wood, etc.) and non-porous substrates (metal, glass, etc.) abutting/adjacent to Excluded PCB Products (>1<50 ppm) are presumed contaminated and shall be disposed of as Excluded PCB Products (>1<50 ppm) as well.**
- **No verification sampling is required.**
- **Excluded PCB Products (>1<50 ppm) shall be disposed of in a permitted Construction and Demolition (C&D) landfill or solid waste landfill able to receive such wastes.**
- **Where possible, steel and metal components coated with Excluded PCB Products (>1<50 ppm) shall be recycled at a scrap metal recycling facility able to receive these materials.**
- **The following building materials (FT4, FT5M, FT6M, LIN1, C3, WG6, WG7, P18, interior gray window glazing (on Mezzanine), PW1, RF1, FL1-FL5, P47, C4, C5, C7, C9, RF10, FL6) also contain asbestos (or are inseparable from an adjacent ACM), therefore removal and disposal of this waste will coincide with Asbestos Abatement as outlined in Section 02 82 13.**
- **All painted building materials contain, or are presumed to contain, lead. Therefore, the removal and disposal of these materials will coincide with the Lead Removal as outlined in Section 02 83 13.**
- **Loose Hazardous/Regulated items (fluorescent bulbs, ballasts, etc.) were also identified within the work areas. Removal and disposal of these items will follow Specification Section 02 81 00**

Visual inspection shall be performed by the Engineer's Project Monitor prior to the work area being deregulated. The area shall be considered cleaned when no visible dust/debris residue remains. No re-occupancy wipe tests or substrate verification sampling is required.

These Specifications govern all work activities that disturb Excluded PCB Products (>1 ppm and <50 ppm). All activities shall be performed in accordance with, but not limited to, OSHA Regulation 29 CFR 1926, EPA PCB Regulation 40 CFR Part 761 and RCRA 22a-463 through -469 inclusive.

Abatement work shall include the removal, management, storage, transportation, and disposal of all Excluded PCB Product Wastes as identified on the Contract Documents and Specifications. Excluded PCB Products (>1<50 ppm) shall be disposed of in a permitted Construction and Demolition (C&D) landfill or solid waste landfill able to receive such wastes.

Deviations from these Specifications require the written approval from United

Illuminating.

1.03 DEFINITIONS

A. Contaminant Zones

Contaminant zones are those areas of active abatement and the waste storage area.

B. Abatement

The removal of bulk building materials (paint, caulk, tar, adhesive, etc.) containing Excluded PCB Product ($>1<50$ ppm) and any adjacent contaminated building materials (metal, brick, concrete, etc.) in the manner specified in this section.

C. Excluded PCB Product ($>1<50$ ppm) Waste

Non-federally/state regulated PCB waste derived from manufactured products containing PCBs in a non-liquid state, at any concentration where the concentration at the time of designation for disposal is ≥ 1 ppm and < 50 ppm PCBs.

D. PCB Contaminated Building Materials

Consists of any building materials identified as Excluded PCB Product ($>1<50$ ppm) Waste. Also may include the building materials in which the materials are in contact with which includes, but not limited to, window frames, window glass, brick, concrete, mortar, metal, and stone/or window sills.

E. Suitable Waste Storage Container

A container in which Excluded PCB Product wastes are placed for storage prior to transport offsite for disposal that is water tight, lined, and equipped with a cover that prevents the infiltration of rainwater into the container.

F. Waste Storage Area

The secured location in which the Contractor shall store Excluded PCB Product wastes prior to offsite transport for disposal. The Contractor shall consult with United Illuminating and the Engineer to identify the location of the Waste Storage Areas prior to generating any wastes. This area shall be secured and signed by the Contractor.

G. Engineer

Responsible for overseeing work and for performing and evaluating any

characterization and verification sample data on behalf of the OWNER. The ENGINEER shall be represented daily onsite by the PROJECT MONITOR.

H. Owner

The Owner is The United Illuminating Company, as further defined in the General Conditions.

I. Project Monitor

The onsite representative for the Engineer responsible for overseeing daily work activities. The Engineer's Project Monitor shall approve all containments prior to performance of abatement work, perform sampling during and after abatement activities, and for verifying that abatement has been successfully performed and allowing containments to be removed for reoccupancy.

1.04 SUBMITTALS

- A. Submit the following documentation to ensure compliance with the applicable regulations. An up to date copy shall be retained at the job site at all times. Submission must be made prior to the Pre-abatement Meeting, which will be held prior to the start of abatement at the Engineer's direction. The Abatement Contractor, Engineer, and United Illuminating's Representatives shall be present at the meeting.

1. The following must be provided to United Illuminating and the Engineer within seven (7) days after execution of the Contract.

As related to the Abatement work, site-specific Health and Safety Plan including the Emergency Response Plan and provisions for decontamination and a contingency plan for unforeseen emergencies. United Illuminating or the Engineer shall review such plan only to determine if the plan meets basic regulatory requirements and the minimum requirements of these Specifications. The review will not determine the adequacy of the plan to address all potential hazards, as that remains the sole responsibility of the Contractor.

A Contractor Site Work Plan describing, in detail, all containments or regulated areas, work practices and air monitoring that will be employed during abatement activities. This work plan should also include information on how and where wastes will be stored and disposed of, how field equipment will be decontaminated and how the various tasks will be sequenced and accomplished.

Current certification of employee's OSHA health and safety training (HAZWOPER).

Certification of additional required health and safety training for Supervisors.

Qualifications and experience of the Site Safety and Health Officer (SSHO).

2. Prior to any worker accessing the site to perform the work described in this section, the Contractor shall provide documentation, typed on company letterhead and signed by the Contractor, certifying that all employees assigned to the Abatement work listed therein have received the following:

Medical monitoring within the previous twelve (12) months, as required in 29 CFR 1910.120;

Respirator fit testing within the previous twelve (12) months as detailed in 29 CFR 1910.134 (for all employees who must also don a tight-fitting face piece respirator).

3. At least seven (7) days prior to performing any Abatement work that shall generate Excluded PCB Product wastes, the Contractor shall submit copies of the EPA/State-approved permits for the proposed disposal and a waste profile approved by the proposed disposal facility indicating that the waste materials to be generated are acceptable to the facility.
4. Seven (7) days prior to the start of abatement work, material information for any proposed encapsulant indicating that these materials conform to the specifications contained within, if applicable.
5. No Abatement work shall commence until a copy of all required submittals have been received and found acceptable to United Illuminating and the Engineer. Those employees added to the Contractor's original list will be allowed to perform work only upon submittal, and receipt of, all the above required paperwork to United Illuminating and the Engineer.
6. Copies of all permits, licenses, certifications, including but not limited to, manifests and/or bill of lading for the removal, transport, and disposal of Excluded PCB Product waste material shall be submitted to United Illuminating and Engineer no later than seven (7) business days after the Contractor receives such documents.
7. Notice shall be provided to United Illuminating and the Engineer at least seven (7) business days prior to the start of work under this Specification. Such notice shall include an estimated completion date. If this work is phased over the duration of the project, then such notification requirements shall apply to each phase.

1.05 REGULATORY REQUIREMENTS

- A. All abatement and decontamination wastes are to be handled and stored in accordance with the provision of 40 CFR Part 761 Subpart D. The Contractor shall be responsible for all costs associated with investigation and remediation of any releases due to their failure to handle abatement wastes in accordance with the regulatory requirements.

1.06 DELIVERY AND STORAGE

- A. The Contractor shall deliver and store materials in a manner to prevent contamination, segregation, freezing, and other damage.

1.07 PROTECTION

- A. Structures and Surfaces

The Contractor shall protect adjacent structures and surfaces from traffic or any other damage. The Contractor shall repair and reestablish damaged building materials that are to remain in place following the completion of the work.

PART 2 - PRODUCTS

- 2.01 All materials shall be delivered to the job site in the original packages, containers, or bundles bearing the name of the manufacturer, the brand name and product technical description.
- 2.02 No damaged or deteriorating materials shall be used. If material becomes contaminated with PCBs, the material shall be disposed of as Excluded PCB Product waste material. The cost to dispose of this material shall be at the expense of the CONTRACTOR.
- 2.03 Fire retardant polyethylene sheet shall be in roll size to minimize the frequency of joints, with factory label indicating six (6) mil thickness.
- 2.04 Tape (or equivalent) capable of sealing joints in adjacent polyethylene sheets and for the attachment of polyethylene sheets to finished or unfinished surfaces must be capable of adhering under both dry and wet conditions.
- 2.05 Containers for storage, transportation and disposal of Excluded PCB Product waste material shall be impermeable and both air and watertight.
- 2.06 Labels and warning signs shall conform to OSHA 29 CFR 1926, USEPA 40 CFR Part 761, CTDEEP 22a-463 through 469, and USDOT 49 CFR Part 172 as appropriate.
- 2.07 Any planking, bracing, shoring, barricades and/or temporary sheet piling, necessary to appropriately perform work activities shall conform to all applicable federal, state and local regulations.

- 2.08 Air filtration devices and vacuum units shall be equipped with HEPA filters.

PART 3 - EXECUTION

- 3.01 General Requirements for PCB Containing Building Material Abatement.
- A. All labor, materials, tools, equipment, services, testing, insurance, and incidentals which are necessary or required to perform the work in accordance with applicable governmental regulations, industry standards and codes, and these Specifications shall be provided by the Contractor. The Contractor shall be prepared to work all shifts and weekends throughout the course of this work.
 - B. Prior to beginning work per these Specifications, the Engineer and Contractor shall perform a visual survey of each work area and review conditions at the site for safety reasons. In addition, the Contractor shall instruct all workers in all aspects of personnel protection, work procedures, emergency evacuation procedures and use of equipment including procedures unique to this work.
- 3.02 Prior to the performance of any abatement work, the Contractor shall perform the following tasks.
- A. Shut down and lock out electrical power, including all receptacles and light fixtures, when feasible. The use or isolation of electrical power will be coordinated with all other ongoing uses of electrical power at the site.
 - B. Coordinate all power and fire alarm isolation with the appropriate representatives.
 - C. When necessary, provide temporary power and adequate lighting and ensure safe installation of electrical equipment, including ground fault protection and power cables, in compliance with applicable electrical codes and OSHA requirements. The Contractor is responsible for proper connection and installation of electrical wiring.
- 3.03 Electrical service will be available to the Contractor from an existing electric panel on the outside at the west end of the building. The Contractor is responsible to utilize a licensed electrician for proper connection and installation of electrical wiring and shall ensure safe installation of electrical equipment, transformers, electrical breaker sub-panels and other disconnects in compliance with applicable electrical codes and OSHA requirements.
- 3.04 Negative pressure must be maintained in each active NPE work area, until the area achieves satisfactory re-occupancy criteria and is approved by the Project Monitor to be deregulated.

- 3.05 Water service is currently not available on-site for use by the Contractor for this project. The Contractor will be fully responsible for securing water from either the South Central Regional Water Authority at a nearby hydrant on Grand Avenue or from another offsite source.
- 3.06 Ladders and/or scaffolds shall be in compliance with OSHA requirements, and of adequate length, strength and sufficient quantity to support the scope of work. Use of ladders/scaffolds shall be in conformance with OSHA 29 CFR 1926 Subpart L and X requirements.
- 3.07 Work performed at heights exceeding six feet (6') shall be performed in accordance with the OSHA Fall Protection Standard 29 CFR 1926 Subpart M including the use of fall arrest systems as applicable.
- 3.08 Data provided regarding PCB sampling conducted throughout the structure(s) is for informational purposes only. Under no circumstances shall this information be the sole means used by the Contractor for determining the presence and location of all Excluded PCB Product Waste. The Contractor shall verify all field conditions affecting performance of the work as described in these Specifications in accordance with applicable OSHA, USEPA, USDOT, and CTDEEP standards. Compliance with the applicable requirements is solely the responsibility of the Contractor.
- 3.09 The Engineer will provide a Project Monitor to oversee the activities of the Contractor. No Abatement work shall be performed until the Engineer's Project Monitor is on-site.
- 3.10 Establishment of interior and exterior abatement areas for Excluded PCB Product (>1<50 ppm) abatement being performed prior to building demolition.
- A. The abatement Contractor shall establish a Control Area around each area where removal actions are being performed. Only properly trained personnel associated with the removal or abatement will be allowed within the Control Areas that will be established by placing barriers with signs indicating that access to the area is restricted. The Contractor's site supervisor will maintain the Control Areas and escort unauthorized personnel from the area promptly. Only those personnel actively working on the removal and abatement actions will be allowed within the Regulated/Containment Area and they shall be equipped with appropriate Personal Protective Equipment (PPE).
- B. The Contractor shall establish remote to the Regulated Area but within the Control Area, a Worker Decontamination Enclosure System consisting of Equipment Room, Shower Room and Clean Room in series.
- C. The Shower Room shall be of sufficient capacity to accommodate the number of workers. One shower stall shall be provided for each ten workers in compliance with OSHA 1910.141(d)(3). Showers shall be equipped with hot and cold or warm running

water through the use of electric hot water heaters supplied by the Contractor. No worker or other person shall leave a Regulated Area without showering. Shower water shall be collected.

- D. The Contractor shall ensure that no personnel or equipment be permitted to leave the Control Area until proper decontamination procedures (including HEPA vacuuming, wet wiping and showering) to remove all Excluded PCB Product debris have occurred. No PCB-contaminated materials or persons shall enter the Clean Room.
- E. For interior and exterior work areas, at a minimum, a Regulated Area will be established and floor/ground surfaces will be covered with 2 layers of 6 mil polyethylene sheeting to capture/collect any debris generated, and secured to prevent movement. For the exterior work areas, the sheeting will extend a minimum of ten feet beyond the building area to be remediated and will be adhered to the building to prevent it from moving during the course of abatement. Barrier tape will be used to delineate both interior and exterior regulated work areas.
- F. If a Containment Enclosure is constructed, the Contractor first shall seal off all windows, doorways, skylights, ducts, grilles, diffusers, vents, light fixtures, electrical receptacles, suspended ceiling tile systems and any other openings between the Regulated Area and the uncontaminated areas outside of the Regulated Area, including the outside of the building, with critical barriers consisting of a minimum of one (1) layer of six (6) mil polyethylene sheeting securing the edges with tape.
- G. If a Containment Enclosure is constructed, it shall be constructed by the Contractor via covering of floor and wall surfaces with polyethylene sheeting sealed with tape. Polyethylene shall be applied alternately to floors and walls. Cover floors first, with a layer of six (6) mil polyethylene sheeting, so that polyethylene extends at least twelve (12) inches up on wall. Cover walls with a layer of four (4) mil polyethylene sheeting to twelve (12) inches beyond the wall/floor intersection, thus overlapping the floor material by a minimum of twenty-four (24) inches. There shall be no seams at wall-to-floor joints. Contiguous to the containment, construct a single chamber airlock from six (6) mil polyethylene sheeting for entry/exit purposes into the regulated area. Where no walls exist (such as exterior work spaces) or a room is to be divided in half, the polyethylene sheeting itself shall comprise the containment structure and shall be supported with materials which will form the containment structure and which shall maintain such integrity throughout the duration of use.
- H. If a Containment Enclosure is constructed, the Contractor shall also create a negative pressure differential within the containment in the range of 0.02 to 0.04 inches of water column between the Regulated Area and surrounding areas by the use of acceptable negative air pressure equipment to establish a Negative Pressure Enclosure (NPE). Exhaust air filtration units shall be equipped with HEPA filters capable of providing sufficient air exhaust to create a minimum pressure differential of 0.02 inches of water column, and to allow a sufficient flow of air through the area providing 4 air changes

per hour. The Contractor shall provide a sufficient quantity of HEPA air filters to maintain the pressure differential throughout the duration of the project. An automatic warning system shall be incorporated into the equipment to indicate pressure drop or unit failure. Continuously monitor the pressure differential between the Regulated Area and surrounding area to ensure exhaust air filtration equipment maintains a minimum pressure differential of 0.02 inches of water column. The Contractor shall provide actual air flow measurement of filtration units while the unit is in place and calculate actual air exchange rates. No air movement system or air filtering equipment shall discharge unfiltered air outside the Regulated Area.

- I. Conspicuously label and maintain emergency and fire exits from the Regulated Area satisfactory to fire officials.
 - J. The Contractor shall post warning signs to deter unauthorized personnel from entry. Additional signs may require posting following construction of workplace enclosure barriers.
 - K. Provide the necessary protection and “make-safe” measures to protect workers from falling debris and deficient structural building elements.
- 3.11 Establishment of exterior abatement areas for Excluded PCB Product (>1<50 ppm) abatement being performed in conjunction with building demolition.
- A. The abatement Contractor shall establish a Control Area around each area where removal actions are being performed. Only properly trained personnel associated with the removal or abatement will be allowed within the Control Areas that will be established by placing barriers with signs indicating that access to the area is restricted. The Contractor’s site supervisor will maintain the Control Areas and escort unauthorized personnel from the area promptly. Only those personnel actively working on the demolition and abatement actions will be allowed within the Regulated/Containment Area and they shall be equipped with appropriate Personal Protective Equipment (PPE).
 - B. The Contractor shall establish remote to the Regulated Area but within the Control Area, a Worker Decontamination Enclosure System consisting of Equipment Room, Shower Room and Clean Room in series.
 - C. The Shower Room shall be of sufficient capacity to accommodate the number of workers. One shower stall shall be provided for each ten workers in compliance with OSHA 1910.141(d)(3). Showers shall be equipped with hot and cold or warm running water through the use of electric hot water heaters supplied by the Contractor. No worker or other person shall leave a Regulated Area without showering. Shower water shall be collected.
 - D. The Contractor shall ensure that no personnel or equipment be permitted to leave the

Control Area until proper decontamination procedures (including HEPA vacuuming, wet wiping and showering) to remove all Excluded PCB Product debris have occurred. No PCB-contaminated materials or persons shall enter the Clean Room.

- E. Ground Cover Protection - With the intent of protecting the uncontaminated soil/ground cover around Station B, the ground will be covered with 2 layers of 10 mil polyethylene sheeting, plywood and a 3rd layer of 10 mil polyethylene sheeting on the top. This groundcover protection will be applied a minimum of ten (10) feet out from the outermost wall around the entire structure and will be secured to prevent movement. Hay bales and silt fencing will surround all ground cover protection to prevent contaminated runoff and building materials from penetrating the soil.
- F. Conspicuously label and maintain emergency and fire exits from the Regulated Area satisfactory to fire officials.
- G. The Contractor shall post warning signs to deter unauthorized personnel from entry. Additional signs may require posting following construction of workplace enclosure barriers.

3.12 Personnel Protection

- A. The Contractor shall utilize all appropriate engineering controls and safety and protective equipment while performing the work in accordance with applicable OSHA, USEPA, USDOT, CTDEEP, CTDPH regulations, and other Contract provisions.
- B. The Contractor shall provide and require all workers to wear protective clothing in the Regulated Areas where PCB contamination exists or is likely to exist. Protective clothing shall include impervious coveralls with elastic wrists and ankles, head covering, gloves and foot coverings.
- C. Respiratory protection shall be provided and selection shall conform to the requirements of OSHA 29 CFR 1910.134 and 42 CFR Part 84. A formal respiratory protection program must be implemented in accordance with 29 CFR 1910.134.
- D. All other necessary personnel protective equipment (i.e. hardhat, work boots, safety glasses, hearing protection, etc.) required to perform the Excluded PCB Product abatement work activities shall conform to all applicable federal, state and local regulations and other applicable provisions of the Contract.
- E. All other qualified and authorized persons by United Illuminating and/or Contractor entering into a Regulated Area shall be required to adhere to the requirements of personnel protection as stated in this section and all other applicable provisions of the Contract.

3.13 Air Monitoring Requirements

- A. For Excluded PCB Product removals, periodic dust monitoring for total suspended particulates (TSP) will be performed in the Control Area immediately outside the Regulated/Containment Area prior to initiating the removal action, during performance of the action, and following the removal (which will include the break-down of the Regulated/Containment Area). The background concentration within interior Control Areas will be determined prior to initiating remedial actions and a control area background level will be established. If, during the performance of air monitoring during removals, dust levels outside the Regulated/Containment Area are observed to increase by 25-percent (25%) over the background level determined prior to the remediation, the Contractor shall be instructed to stop work and to inspect and reestablish, as necessary, the Regulated/Containment Area and associated engineering controls. The Contractor shall then be required to decontaminate the Control Area outside Regulated/Containment Area if it is found that the containment or engineering controls failed or were not functioning properly. The Engineer is responsible for dust monitoring at the site.

3.14 PCB Abatement Procedures

- A. The Contractor's Site Supervisor, as the OSHA Competent Person shall be at the site at all times during the performance of abatement work.
- B. The Contractor shall not begin abatement work until authorized by the Project Monitor, following a pre-abatement visual inspection.
- C. All workers and authorized persons shall enter and leave the Regulated Area through the contiguous airlock, leaving contaminated protective clothing in the airlock for disposal of as Excluded PCB Product waste. No one shall eat, drink, smoke, chew gum or tobacco, or apply cosmetics while in a Regulated Area.
- D. Phasing of the work areas is to be coordinated with the Engineer. Phase areas may be combined or divided at the direction of the Engineer/United Illuminating. Proceed through the sequencing of the work phases under the direction of the Engineer.
- E. During removal, the Contractor shall spray PCB containing building material with water using airless spray equipment capable of providing a "mist" application to reduce airborne dust. Hose length shall be sufficient to reach all of the Regulated Area. Do not "flood" the area with hose type water supply equipment with the potential to create water releases from the regulated area.
- F. The methods employed by the Contractor must not damage the integrity of the containment structure and shall not create a breach through which contaminated dust may escape. The Contractor shall be responsible for all costs associated with decontamination and remediation in the case of a containment breach.

- G. In order to minimize PCB concentrations inside the Regulated Area, the Contractor shall remove the materials in manageable sections. In addition, Excluded PCB Product Waste materials removed from any elevated level shall be carefully lowered to the floor.
- H. The Contractor shall promptly place the Excluded PCB Product Waste material in disposal containers (six (6) mil polyethylene bags/ poly-lined dumpsters, etc.) as it is removed. Large components removed intact may be wrapped in one (1) layer of six (6) mil polyethylene sheeting secured with tape. As the disposal containers are filled, the Contractor shall promptly seal the containers, apply caution labels and clean the containers before transportation to the airlock. Bags shall be securely sealed to prevent accidental opening and leakage by taping in gooseneck fashion. Small components and Excluded PCB Product Waste material with sharp-edged components (e.g. nails, screws, metal lath, tin sheeting) which could tear polyethylene bags and sheeting shall be placed in clean drums and sealed with locking ring tops.
- I. All waste containers shall be leak-tight. Containers shall be decontaminated by wet cleaning and HEPA vacuuming within the airlock prior to exiting the regulated area. Wet clean each container thoroughly before moving to a Waste Holding Area.
- J. If at any time during Excluded PCB Product Waste removal, the Engineer's Project Monitor should suspect contamination of areas outside the Regulated Area (from visible emissions, water runoff, etc.), the Contractor shall immediately stop all abatement work and take steps to decontaminate these areas and eliminate causes of such contamination. Unprotected individuals shall be prohibited from entering contaminated areas.
- K. After completion of abatement work, all surfaces from which Excluded PCB Product Waste has been removed shall be wet brushed, using a nylon brush, wet wiped and sponged or cleaned by an equivalent method to remove all visible material. Cleaning shall also include the use of HEPA filtered vacuum equipment.
- L. The Contractor shall also remove and containerize all visible accumulations of Excluded PCB Product Waste and/or Excluded PCB Product debris which may have splattered or collected on the polyethylene engineering controls/barriers.
- M. The Contractor shall clean surfaces of contaminated containers and equipment thoroughly by vacuuming with HEPA filtered equipment and wet sponging or wiping before moving such items into the airlock for final cleaning and removal to uncontaminated areas.
- N. The Contractor shall remove contamination from the exteriors of the air filtration devices, scaffolding, ladders, extension cords, hoses and other equipment inside the Regulated Area. Cleaning may be accomplished by brushing, HEPA vacuuming and/or wet cleaning. The Contractor shall wet wipe the Regulated Area beginning at the point

farthest away from the negative air filtration units using cotton rags or lint free paper towels. Rags and towels shall be disposed of after each use. Workers should avoid the use of dirty rags to insure proper cleaning of surfaces. Mop the entire floor with a clean mop head and amended water. Water shall be changed frequently.

- O. Once the Regulated Area surfaces have dried, the Engineer's Project Monitor shall perform a thorough post abatement visual inspection. The Engineer's Project Monitor will visually inspect the Regulated Area and the surrounding Control Area to determine that the Contractor has sufficiently decontaminated and removed any dust that might contain PCBs. All surfaces within the Regulated Area, including but not limited to ledges, beams, and hidden locations shall be inspected for visible residue. Evidence of dust contamination that would be indicative of PCB contamination identified during this inspection will necessitate further cleaning as heretofore specified. The area shall be re-cleaned at the Contractor's expense, until the standard of cleaning is achieved.
- P. Once the area has received a satisfactory post-abatement visual inspection, any equipment, tools or materials not required for completion of the work, shall be removed by the Contractor from the Regulated Area. Negative air filtration devices shall remain in place and operating for the remainder of the clean-up operation.

3.15 Additional Procedures for PCB Abatement in conjunction with Demolition

- A. The Contractor shall provide a "Dust Boss", or similar apparatus, which will provide a constant mist on the site. It will be applied in such a manner to eliminate dust/visible emissions and at the same time, limit excess water build-up on-site. If it is not sufficient in eliminating visible emissions, demolition will stop until an alternative method is adopted,
- B. Demolition of building, with excavator, will be by controlled descent to limit dust and debris scatter. No demolition by hand will be allowed.
- C. PCB contaminated building debris will be live loaded daily. Stockpiling should be avoided and will not be allowed outside the regulated area.
- D. If at any time during the demolition water begins to pool in the foundation (or other areas) from site misting, rain etc., the Contractor will be responsible for collecting and characterizing the liquid waste for disposal purposes.
- E. The contractor shall monitor the integrity of the poly/plywood ground cover barrier to ensure that it remains intact. Breaches in the barrier will be immediately repaired to prevent ground cover contamination. If the excavator, or any other heavy equipment used, repeatedly tears the poly/plywood barrier; rubber treads or other engineering controls shall be considered.

3.16 Phased PCB Abatement Procedures

- A. Should the potential exist for an unsafe condition to be produced by removing Excluded PCB Product contaminated building materials prior to removing clean materials, then the Contractor shall notify United Illuminating and the Engineer and Project Monitor of such concerns and mitigate potentially unsafe conditions.

3.17 Post-Abatement Verification Procedures

A. PCB-Containing Materials

In work areas where PCB containing materials (Excluded PCB Product (>1<50 ppm) Waste) have been removed the remedial standard to be achieved is appropriate cleaning of the substrate such that no visible PCB containing dust or debris remains. The Engineer's Project Monitor shall perform the visual inspection to verify appropriate cleaning.

3.18 Post Abatement Work Area Deregulation

- A. The Contractor shall remove all remaining polyethylene, including critical barriers, and airlocks with the negative air filtration devices in operation. HEPA vacuum and/or wet wipe any visible residue which is uncovered during this process. All waste generated during this disassembly process shall be discarded as Excluded PCB Product (>1<50 ppm).
- B. A final visual inspection of the work area shall be conducted by the Contractor's Site Supervisor and the Engineer's Project Monitor to ensure that all visible accumulations of Excluded PCB Product Waste materials have been removed and that no equipment or materials associated with the abatement work remain.
- C. The Contractor shall restore all work areas and auxiliary areas utilized during work to conditions equal to or better than original. Any damage caused during the performance of the work activity shall be repaired by the Contractor at no additional expense to United Illuminating.

3.19 Waste Disposal

- A. If the Contractor chooses to store Excluded PCB Product Waste onsite prior to transport offsite for disposal, the Contractor shall construct a secured Waste Storage Area at a location agreed to by the Contractor and the Engineer within contract limit lines. The contract limit lines are to be secured as described elsewhere in these Specifications and entry shall be limited to Contractor Personnel only. The Waste Storage Area shall enclose all Suitable Waste Storage Containers actively in use with temporary fencing.
- B. Unless otherwise specified by United Illuminating, all removed materials and debris resulting from execution of this work shall become the responsibility of the Contractor

to properly transport and dispose of offsite. Materials not scheduled for reuse shall be removed from the site and disposed of in accordance with all applicable Federal, State and Local requirements.

- C. Waste removal dumpsters and cargo areas of transport vehicles shall be lined with a layer of six (6) mil polyethylene sheeting to prevent contamination from leaking or spilled containers. Floor sheeting shall be installed first, and shall be extended up sidewalls 12-inches. Wall sheeting shall overlap floor sheeting 24-inches and shall be taped into place. A single liner may be employed as long as it entirely covers the interior of the waste container.
- D. All containers used to transport PCB Waste for disposal must be marked to indicate PCB content. The signs must be posted so that they are plainly visible.
- E. Ensure all waste containers (bags, etc.) are properly packed, sealed and labeled with USEPA and USDOT shipping labels. For each shipment of Excluded PCB Product Waste, the Contractor shall complete a waste shipment manifest.
- F. Authorized representatives signing waste shipment records on behalf of the generator must have USDOT Shipper Certification training in accordance with 49 CFR Parts 171-180 Hazardous Materials Regulation (HMR).
- G. Transport vehicles hauling Excluded PCB Product Waste shall have appropriate USDOT placards visible on all four (4) sides of the vehicle.
- H. Excluded PCB Products (>1<50 ppm) shall be disposed of in a permitted Construction and Demolition (C&D) landfill or solid waste landfill able to receive such wastes. Excluded PCB Product (>1<50 ppm) waste shall be managed and profiled as such. Any further waste characterization sampling to satisfy Contractor's selected landfill shall be paid for by Contractor.
- I. Any Excluded PCB Product Waste materials which also contain other hazardous contaminants shall be disposed of in accordance with the EPA's Resource Conservation and Recovery Act (RCRA), Toxic Substance Control Act (TSCA), and CTDEEP requirements. Materials may be required to be stored on-site and tested by the Engineer's Project Monitor to determine proper waste disposal requirements.

3.20 Decontamination

- A. The Contractor shall decontaminate all moveable equipment that contacts Excluded PCB Product Materials and Wastes in accordance with the procedures specified in 40 CFR Part 761.79(c). The Contractor shall not remove any equipment from the Contaminant Zone until it has been properly decontaminated.
- B. Specifically, the Contractor shall employ double wash/rinse procedures as specified in

40 CFR Part 761 Subpart S or swab non-porous surfaces that have contacted Excluded PCB Product materials and wastes with a solvent as specified in 40 CFR Part 761.79(c)(2)(i). The Contractor shall segregate all liquid waste streams and be responsible for characterizing these wastes for disposal purposes. Solid wastes generated during decontamination shall be stored for disposal with the other Excluded PCB Product wastes generated during remediation activities.

- C. The Engineer shall be responsible for ensuring that decontamination procedures are followed and that wastes are appropriately characterized and disposed of properly.

3.21 Project Closeout Data:

- A. Provide United Illuminating and the Engineer, within 30 days after Excluded PCB Product Waste has been disposed of, a compliance package; which shall include, but not be limited to, the following:

1. Site Supervisor job log;
2. Completed waste shipment records
3. Post-Decontamination PCB Sample Results
4. Completed Waste Shipment Records and Certificates of Disposal
5. Certified scale weight receipts

- B. The Contractor shall submit the original completed waste shipment records to the Engineer.

3.22 Remedial Action Report

- A. The Remedial Action Report (RAR) will be prepared upon receipt of all analytical data confirming that the removal action was complete and receipt of certifications of treatment/disposal from the treatment/disposal facility. The RAR report will be prepared by the Engineer and will include the following.

1. Site description
2. A description of field procedures
3. Waste characterization sample data
4. Waste transport and treatment disposal information
5. Copies of waste manifests and bills of lading

END OF SECTION

APPENDIX C
Traffic Control Plan

ENVIRONMENTAL REMEDIATION

WORK ORDER 33990160

STATION B - BUILDING DEMOLITION

GRAND AVENUE

CITY of NEW HAVEN



The United Illuminating Company
100 Marsh Hill Road, Orange, CT 06477

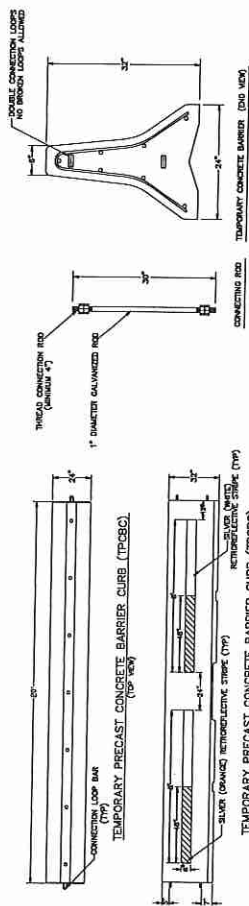
DRAWING LEGEND LIST	
DWG. NO.	CONTENT
CVR-1	COVER SHEET
MPT-1	TRAFFIC PLANS
MPT-2	TRAFFIC SIGNAL, BARRIER AND FENCE DETAILS

CONSTRUCTION PLAN LEGEND

	PROPOSED U.I. CONDUIT AND SPLICE CHAMBER
	EXISTING U.I. CONDUIT AND SPLICE CHAMBER
	EXISTING TEL. CO. CONDUIT AND MANHOLE
	EXISTING TRAFFIC CONTROL CONDUIT AND/OR LOOPS
	EXISTING GAS MAIN
	EXISTING WATER MAIN
	EXISTING SANITARY, STORM, & DRAINAGE SYSTEM
	ROCK OR ROCK OUTCROP
	RETAINING WALL
	WIRE ROPE GUIDE RAIL
	METAL BEAM GUIDE RAIL
	FENCE
	HEDGE
	STONE WALL
	HIGHWAY AND/OR STREET LINE & MONUMENT
	CATCH BASIN
	WATER GATE OR GAS GATE
	UTILITY POLE
	FIRE HYDRANT
	TREE
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	AS NOTED
	INVERTED SIPHON
	DRAIN POLE BASE
	LIGHT POLE
	TEST PIT LOCATION

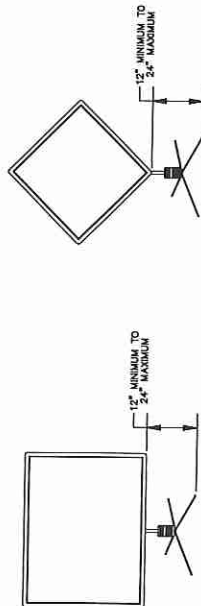


No.	Date	Revision	By	Chkd.	Eng.	Supv.
1	11-16-18	ADD SIGNAL AND BARRIER FENCE COMMENTS				
2	11-16-18	ADD SIGNAL AND BARRIER FENCE COMMENTS				
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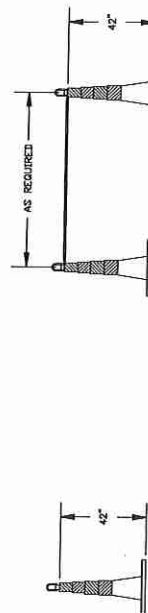
GENERAL NOTES:

1. ALL TRAFFIC CONES AND TRAFFIC DRUMS, CHANNELIZING DEVICES, WARNING SIGNS, AND BARRICADES SHALL CONFORM TO THE REQUIREMENTS OF THE MUTCD, 3RD AND THE LATEST EDITION OF THE MUTCD.
2. ALL CONSTRUCTION BARRICADES AND CHANNELIZING DEVICES SHALL CONFORM TO THE REQUIREMENTS OF THE MUTCD, 3RD AND THE LATEST EDITION OF THE MUTCD.
3. THE SIZE AND TYPE OF CHANNELIZING DEVICES, WARNING SIGNS, AND BARRICADES SHALL BE DETERMINED BY THE STATE DOT AND/OR THE CITY, TOWN OR OTHER GOVERNING ENTITY.

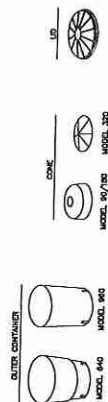
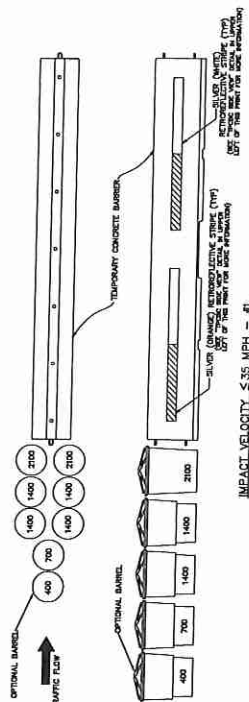


PORTABLE RECTANGULAR WARNING SIGN

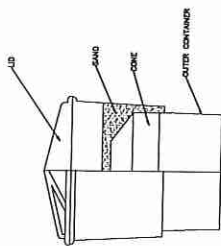
PORTABLE DIAMOND WARNING SIGN



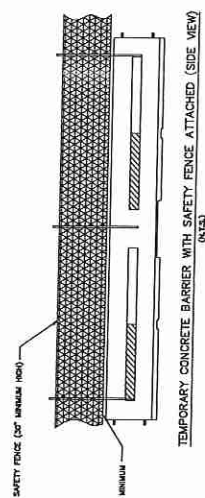
DOUBLE WEIGHTED TRAFFIC CONE WITH RETRACTABLE CONE BAR BARRICADE (TO BE USED ON PEDESTRIAN/SIDEWALK SIDE OF WORK ZONE)



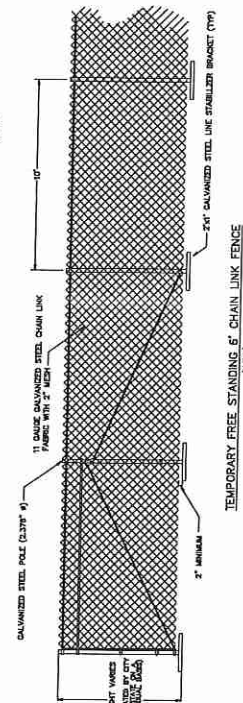
INTERNAL LARGES	OUTER CONTAINER MODEL	CONE MODEL	LB
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200	400	80/400	200
250	500	80/500	250
300	600	80/600	300
350	700	80/700	350
400	800	80/800	400



TYPICAL BARREL ASSEMBLY



END VIEW



TEMPORARY FREE STANDING 6' CHAIN LINK FENCE

CIVIL UNDERGROUND CONSTRUCTION		GRAND AVENUE CITY OF NEW HAVEN TRAFFIC CONTROL DETAILS	
The United Illuminating Company 100 Merch Row Road, Orange, CT 06477		CITY OF NEW HAVEN	
Drawn	Date	Scale	AS NOTED
By	Checked	Design	Supervisor
Revision		CDD FILE NAME	
No		DATE	
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95. 11-18-18		11/18/18	
96. 11-18-18		11/18/18	
97. 11-18-18		11/18/18	
98. 11-18-18		11/18/18	
99. 11-18-18		11/18/18	
100. 11-18-18		11/18/18	

APPENDIX D
Storm Water Pollution Control Plan

**STORMWATER POLLUTION
CONTROL PLAN
English Station Site
Soil Remediation Project
510 Grand Avenue
New Haven, CT**

Prepared for

The United Illuminating Company
Orange, Connecticut

Prepared by

TRC
Windsor, Connecticut

January 2019

**STORMWATER POLLUTION
CONTROL PLAN
English Station Site
Soil Remediation Project
510 & 510A Grand Avenue
New Haven, CT**

Prepared for
The United Illuminating Company
180 Marsh Hill Road
Orange, Connecticut

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- F Plan Preparer, Registrant and Engineer Certification

1.0 **INTRODUCTION**

1.1 **General**

Construction activities (including other land-disturbing activities) that disturb one acre or more are regulated under the National Pollutant Discharge Elimination System (NPDES) stormwater program. Under the authority of the Clean Water Act, the State of Connecticut General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities – DEEP-WPED-GP-015 (General Permit), made effective on October 1, 2018, requires such activities to obtain coverage under the General Permit, and as a requirement of coverage under the permit, prepare and implement a Stormwater Pollution Control Plan (SPCP).

As a requirement of State of Connecticut Partial Consent Order No. COWSPCB 15-001 to remediate the former English Station site (Site), The United Illuminating Company (UI) is performing removal of polluted soil, backfilling, filling, site regrading, surface restoration and Station B building abatement and demolition activities. This project meets the definition of a “construction activity” in accordance with the General Permit. A copy of the General Permit and associated General Permit Registration Form are included in **Appendix A**. This SPCP was prepared in accordance with the requirements of the General Permit. The purpose of this Plan is to minimize pollution caused by soil erosion and sedimentation during and after construction and stormwater pollution caused by use of the site after construction is completed, including, but not limited to, driveways, paved areas and the maintenance of grassed areas.

As a requirement of State of Connecticut Partial Consent Order No. COWSPCB 15-001 to remediate the former English Station site (Site), The United Illuminating Company (UI) is performing removal of polluted soil, backfilling, filling, site regrading, surface restoration and Station B building abatement and demolition activities. The purpose of this SPCP is to minimize pollution caused by soil erosion and sedimentation during and after construction and stormwater pollution caused by use of the site after construction is completed, including, but not limited to, driveways, paved areas and the maintenance of grassed areas.

During construction, the construction contractor(s) shall be responsible for implementing all elements of the erosion and sedimentation control measures as defined in the Contract Documents and in this SPCP. After construction, the contractor or UI’s agent shall be responsible for maintaining the applicable erosion and sedimentation controls and stormwater pollution prevention measures, until such time that the site owner(s) are granted permission to regain control

of the Site. Throughout the construction process, UI or the UI's agent and the Contractor shall periodically inspect all erosion control measures and conduct stormwater monitoring as applicable. This construction project will not be considered complete until all disturbed areas have been satisfactorily stabilized, all erosion has been repaired, and all temporary erosion control measures have been removed.

1.2 Plan Organization

The SPCP is organized into seven parts including a summary of the key provisions of the SPCP (Section 1.0); a site description (Section 2.0); a description of the construction sequence (Section 3.0); a description of the stormwater controls to be used to attain SPCP objectives (Section 4.0); inspection procedures (Section 5.0); and monitoring procedures (Section 6.0).

1.3 Revisions to the SPCP

In accordance with the requirements of Section 58, the SPCP will be amended whenever:

- (1) there is a change in contractors or subcontractors at the site; or
- (2) there is a change in design, construction, operation or maintenance at the site which has the potential for the discharge of pollutants to the waters of the State and which has not otherwise been addressed in the SPCP; or
- (3) if the actions required by the SPCP fail to prevent applicable forms of pollution.

The City of New Haven may also require the registrant to revise the SPCP if it does not meet one or more of the minimum requirements of the regulation.

2.0 SITE DESCRIPTION

2.1 Site Location

The entire Site consists of 8.69 acres of land located on a man-made island (Ball Island) situated within the tidally influenced reach of the Mill River which flows north to south into the Long Island Sound. The Site has been split into two parcels (Parcel A and Parcel B), which are not owned by UI. The Site is retained via steel bulkhead which surrounds the Site to the east, west, and south. Grand Avenue forms the northerly boundary of the Site. The Site location is shown in **Figure 1**. Geographic coordinates for the Site are:

Latitude/Longitude:	41°18' 23" North/72°54' 24" West
UTM Coordinates:	Zone 18
	675,239.9 meters Northing
	4,574,883.6 meters Easting

The north side of the Site, includes Parcel A and the paved driveway to Parcel B. Parcel A covers an area of approximately 3.37 acres. This portion of the Site is developed with a two-story former electrical generating plant, referred to as Station B. In addition to Station B, the north side of the Site also includes paved entrances on the east and west ends of Station B, former locations of a mostly paved coal bin storage area, a lined waste water surge basin, cable houses, and a subsurface cooling water tunnel which formerly discharged water from Station B to the Mill River. The tunnel is no longer connected to the Mill River. The south side of the Site, includes Parcel B, which covers 5.32 acres of land. Several structures currently stand within this portion of the Site including the former English Station power generating plant. Of the 5.3 acres of land in the Southern Side of the Site, the former power plant building encompasses approximately 2.3 acres. Other buildings within this portion of the Site including a former assembly hall, storage building, and a foam house.

The Site was first occupied by Enos S. Kimberly and Company in the late 1880s and was utilized as a coal and lumber facility. In 1890, New Haven Electric Company purchased the Site and began the construction of Station B. As part of this construction, Ball Island's footprint was expanded via the filling of the portion of the Mill River south of the Site. Station B reportedly operated as a coal-fired power plant until 1903.

UI purchased the property in 1914 and began the construction of the English Station Power Plant in 1924. The initial construction consisted of a coal-fired, low-pressure boiler and turbine areas, which were completed in 1929. Sometime between 1948 and 1952, two additional coal fired, high-pressure boilers and turbines were constructed at the southern end of English Station. At that time, Ball Island was further expanded to the South by the additional filling of the Mill River. The English Station Power plant operated as a coal-fired power plant until sometime in the mid-1950s when the plant was converted into an oil-fired plant. English Station then operated as an oil-fired plant until 1992 when it was placed on deactivated reserve status.

While the site functioned as an active power generating facility, much of the site was covered by bituminous concrete pavement, building structures and concrete pads. Since the facility discontinued operation in 1992, there are areas that have been partially disturbed by bulkhead replacement and other prior remediation activities. Much of the site still remains impervious surface, except for the disturbed areas, which have scrub invasive woody species and grasses. Since August 2016, UI has been responsible for site security and maintenance until the terms of the PCO are completed. UI periodically has a vegetative maintenance crew cut the larger scrub vegetation to maintain site security using remote cameras and motion sensors. Access to the site is controlled along Grand Avenue via chain link fence and solid metal panel fencing. Station B, which parallels Grand Avenue also limits access to the site. The driven steel sheet pile bulkhead underwent a complete replacement in three phases from 1999 to 2003. The bulkhead is currently in good condition and it retains all of the Site fill material along the waterside of the property.

Existing site drainage features, including pervious and impervious areas, are shown on **Figure 2**. The Mill River runs along both the east and west bulkheads and the two legs of the river rejoin along the southerly bulkhead. The Mill River at the site is close to the confluence with the Quinnipiac River and New Haven Harbor. The entire reach along the site is tidally influenced. The Mill River drainage area is approximately 38.3 square miles at the south bulkhead confluence. There are no inland wetlands and watercourses on the site. There are no tidal wetlands on the site or adjacent to the site.

The site is generally flat with the surface grade varying between Elevation +6.5 and +8.0 on National Geodetic Vertical Datum 1929 (NGVD 1929). The elevation of the site along Grand Avenue is slightly higher, where the surface grade is at +8.5 at the west gate and +10 at the east gate. The Coastal Jurisdictional Line (CJL), which is the highest predictable elevation of high tide

is Elevation +4.6 on NAVD 1988, which when converted to NGVD 1926 is Elevation +5.64. The entire site therefore lies above the CJL. All of Ball Island lies within the FEMA Coastal Floodplain Zone (Revised July 8, 2013 – MAP 09009C0441J) designated as AE (1% Annual Chance Flood or 100 Year Flood), with a flood elevation of +13 on NAVD 1988. The flood elevation converted to NAVD 1929 is therefore +14.04. The FEMA Limit of Moderate Wave Action is coincident with the Site bulkhead structure.

Most of the surface runoff discharges directly to the Mill River along the top of the steel bulkhead or through infiltration at the edge of the bulkhead. There are only two catch basin structures present on the entire site with outfalls to the Mill River. CB-1 is located at the northeast corner of the main English Station building within a paved area along the front entrance or north face of the building (Parcel B). The basin discharges directly to the Mill River through a 12-inch diameter pipe that penetrates the steel bulkhead due east of the basin. CB-2 is located at the southwest corner of the English Station main building in an unpaved area (Parcel B). This basin discharges directly to the Mill River through the steel bulkhead due south through a 12-inch diameter pipe. The main building has other roof drains piped directly to the Mill River. There are three cooling water intake and discharge structures that are associated with the former main generating station. The cooling intake and discharge structure associated with the oldest portion of the plant is completely sealed off from the Mill River. The two intake and discharge structures associated with the southerly end of the main plant are still connected to the Mill River at each end, but don't receive storm drainage and are no longer in use.

Groundwater at the Site is classified as GB by the CT DEEP, indicating that it is not suitable for human consumption without treatment. Based on previous Site investigations, groundwater is generally observed in shallow overburden fill materials between approximately 3 and 5 feet below ground surface. Water level measurements indicated that groundwater at the Site is tidally influenced with an approximately 0.5 to 1.0-foot fluctuation between high and low tidal cycles. Groundwater flows at low tide are typically towards the bulkhead. Groundwater flow at high tide depends upon the level of groundwater at the site which can be influenced by recent precipitation.

2.2 Description of the Construction Activity

The overall objective of remediation will be to remediate PCB-impacted soil and soil polluted with other constituents of concern to facilitate site redevelopment. To achieve this objective, planned remedial activities will include:

- Site preparation and establishment of temporary facilities, including site security, signage and erosion and sedimentation controls;
- Excavation and off-site disposal of PCB-impacted soil, sediment and porous materials with total PCB concentrations greater than 1 mg/kg on Parcel A north of the Demarcation Line;
- South of the Demarcation Line, PCB impacts <10 mg/kg will be rendered inaccessible by construction of a soil barrier;
- Collection of verification soil samples for PCB analysis to confirm the limits of soil remediation;
- Dewatering and removal of sediment from the cooling water tunnel;
- Excavation and off-Site disposal of surplus non-PCB-impacted soil;
- Collection of verification soil samples for non-PCB-impacted soil, analysis to confirm the limits of soil remediation;
- Preparation of sub-grade and on-Site relocation of soils in areas of capping;
- Construction of soil and asphalt caps to render soils inaccessible; and
- Final restoration of soil excavation areas and cooling tunnel with suitable backfill soil and filling to the proposed finish grade elevations.

These remedial goals assume that an Industrial/Commercial Environmental Land Use Restriction (ELUR) will be placed on the Site and that residential criteria will not be applicable.

Erosion and sedimentation control features, as described in more detail later in this document, are incorporated into the final design to minimize potential impacts on stormwater quality during and after construction.

SITE SECURITY

The proximity of building demolition and soil excavation areas to roadways that will be used during the performance of Site activities and to other commercial properties will require procedures to address public health and safety during construction. These factors will be addressed using signage, permanent and temporary fencing to restrict access to the Site and prevent trespassing, and physical barriers to minimize potential physical hazards on the Site during remediation. It is anticipated that traffic control will be required during certain phases of the remediation project and the Remedial Contractor will be required to work with the City of New

Haven to obtain necessary permits and to arrange for police presence when required. The Remedial Contractor will also be required to erect fencing following the demolition of Station B.

EROSION AND SEDIMENTATION CONTROLS

Prior to initiating soil excavation, erosion and sedimentation controls will be deployed around designated work areas and site perimeter as designated in the Stormwater Pollution Control Plan. Erosion control measures incorporated into the remedial action were designed in accordance with the 2002 edition of the “Connecticut Guidelines for Soil Erosion and Sediment Control” (CT DEP Bulletin 34) as published by The Connecticut Council on Soil and Water Conservation, in cooperation with the CTDEEP. Installation details and detailed erosion and sediment control notes are provided in the **Contract Drawings**, which are included in **Appendix D**. The controls will also be inspected and maintained throughout construction and removed following final stabilization of disturbed surfaces and demobilization of remedial equipment.

DUST MONITORING

Dust monitoring for total particulate emissions and fugitive dust within work areas and at the site perimeter will be implemented during building demolition and soil excavation and handling activities to reduce potential exposures to on- and off-site receptors during remediation. Monitoring will be conducted continuously using real-time measurement equipment.

DEBRIS REMOVAL AND HANDLING

Piles of debris are found at several locations at the Site. Debris that is in non-PCB remediation areas will be removed from the Site and disposed of appropriately.

Debris located within PCB remediation areas will be handled and disposed of in the same manner as the soil it is in contact with. As an alternative, the Contractor may decontaminate the debris.

CLEARING AND GRUBBING

Limited clearing and grubbing of brush at the Site will be required to clear remediation areas and to allow site access. Vegetation at the Site is limited to brushy vegetation and no trees are present.

Within non-PCB remediation areas, brushy vegetation will be removed with the roots. The Remedial Contractor will be responsible for the removal of the clearing and grubbing wastes from the Site. Within PCB remediation areas, the Remedial Contractor will cut the brushy vegetation approximately six inches from the ground surface and the Remedial Contractor will be responsible

for the removal of the clearing wastes from the site. The roots will be handled and disposed of in the same manner as the soil it is in contact with.

SUBSURFACE STRUCTURES

These structures include manholes and catch basins. The following procedures will be employed to abandon manholes and catch basins on Parcel A:

- Non-impacted water and sediments will be pumped out of the structures and sent to the dewatering effluent system for treatment prior to discharge;
- Pipe and conduit openings into the subsurface structure will be abandoned by blocking the pipe or conduit and then filling the remaining void with concrete;
- Concrete at the base of the structure will be sampled for total PCBs by EPA Methods 3540 and 8082;
 - If PCB concentrations in concrete at the base of the structure in contact with sediments within the structure are equal to or less than 1 mg/kg, no further remediation will be performed; or
 - If PCB concentrations in concrete at the base of the structure are greater than 1 mg/kg, the concrete will be removed and disposed of as PCB Remediation Waste and exposed soil tested for total PCBs to determine if soil remediation is also required.
- If the concrete is not removed as part of a remedial action, a hole will be drilled in the base of the structure so that stormwater will not accumulate within the structure.

DEMOLITION OF STRUCTURES

Structures to be demolished during the remediation will be demolished as follows:

- Station B – Will be demolished because of its deteriorating condition. The building has been remediated as per an EPA Approved self-implementing remedial plan and no PCB Remediation Wastes or PCB Bulk Product Wastes remain on the structure. However, Excluded PCB Product-containing paints, caulks, glazing and mastics are present. Measures will be employed to prevent the release materials containing Excluded PCB Product during demolition and the wastes generated will be disposed.
- Station B Cooling Water Tunnel – The tunnel will be dewatered and the sediments removed. Following remediation, holes will be drilled in the base of the structure to allow

water to drain, the concrete demolished and left in the tunnel, and then the tunnel will be backfilled with soil.

The Remedial Contractor will be responsible for preparing Building Demolition Plans and submitting to UI for review and approval prior to performing the Work. The Remedial Contractor will also be responsible for obtaining demolition permits from the City of New Haven and any other permits necessary for the performance of the Work.

SOIL EXCAVATIONS

Prior to performing soil excavations, the Remedial Contractor shall survey and mark the extent of the excavations in the field. Soil excavations will be performed to the depths indicated on the figures at a minimum and will be extended if verification sample results indicate that remedial goals have not been achieved.

SITE-SPECIFIC DESIGN CONSIDERATIONS

It is anticipated that groundwater will be encountered at approximately three to five ft bgs and that this level will fluctuate under tidal influences. As such, dewatering and excavation supports will be required for all excavations that extend greater than four feet below grade. The Remedial Contractor will be required to obtain the services of a Professional Engineer to design the dewatering system and effluent treatment system as well as excavation support systems. The Remedial Contractor will submit stamped plans for dewatering and excavation support to UI for review and approval prior to the Remedial Contractor performing the work.

STATION B COOLING WATER TUNNEL

The cooling water tunnel will be dewatered to the extent practicable and the dewatering effluent will be treated in the system built to treat dewatering effluent from excavations prior to discharge. The remaining sediments will be removed from the entire extent of the cooling water tunnel and placed in a lined waste-storage container. It is anticipated that the sediments will require the addition of amendments to stabilize the material prior to shipment offsite for disposal.

Sediment removal will be verified visually prior to demolition of the structure and the remedial goal is to remove all sediments. No verification samples will be collected from the concrete base of the tunnel and previously collected characterization presented in Table 8 indicate that PCB impacts to the concrete are limited and do not exceed 1 mg/kg.

Following performance of the remedial actions described above, the tunnel will be demolished.

WASTE MANAGEMENT

Soil and Concrete

Excavated soil and concrete from PCB-impacted demolitions will either be live-loaded into waste containers for transport offsite for disposal or transported to the onsite waste storage areas.

Waste storage areas for PCB Remediation Wastes will be constructed in accordance with the requirements of §761.65(c)(9). A high strength geomembrane will be placed at the base of the waste storage areas. If, at the completion of work, the geomembrane is intact and has not been penetrated, no sampling is proposed to close out the Waste Storage Area. However, if the geomembrane has been damaged during Site operations, sampling will be performed within the footprint of the area on a Subpart N grid frequency. Additional remediation will be performed as needed to remove PCB impacts.

Approximately 3,400 cubic yards of soil excavated from the Site will be placed under the soil cap that will be constructed on Parcel A. However, PCB-impacted soil, sediment and porous materials will not be placed beneath this soil cap.

SITE RESTORATION

Site restoration will be performed following the completion of removal actions (i.e., soil excavation and structure demolition) at the Site. The purpose of the site restoration activities will be to stabilize areas of removal actions and to create barriers to render soil beneath the restored areas inaccessible. Final grades and other site features to be included as part of the site restoration are shown on **Drawings C-6 and C-7 of the Contract Drawings**.

BACKFILLING EXCAVATIONS

Excavations will be backfilled with suitable backfill materials. Backfill will be tested at a frequency of one analytical sample per every 500 tons of material to be transported to the Site. Each sample will be tested for volatile organic chemicals (VOCs), semi-volatile organic chemicals (SVOCs), extractable total petroleum hydrocarbons (ETPH), pesticides, PCBs, and RSR-15 metals.

Backfill materials will be considered to be non-polluted (i.e., not impacted by a release) if organics (e.g., VOCs, SVOCs, ETPH, pesticides, PCBs) are not detected and metal concentrations are comparable to background concentrations determined for the State of Connecticut.

Only non-polluted soil will be used to backfill excavations below the groundwater surface which is approximately four ft. bgs. All backfill materials will be placed and compacted in one foot lifts and compaction to 90% of the modified proctor density will be required.

ESTABLISHING TURF

Areas to be completed with turf will be completed with six inches of topsoil and then hydroseeded. Topsoil will be tested for VOC, SVOCs, ETPH, pesticides, and metals at a frequency of one sample per every 500 tons of material to be transported to the Site. The topsoil shall be determined to be a non-polluted material free from impacts due to release.

CONSTRUCTION OF SOIL CAPS

Soil caps will be constructed in all areas not to be completed with pavement to render the soil beneath inaccessible. In Parcel A and northern piece of Parcel B, a portion of the Site will be mounded to raise the final grade. The mound will be constructed with maximum slopes of 4:1 (H:V) and minimum slopes of four percent. The maximum slopes can be mowed easily and can be maintained. The minimum slopes can be constructed to allow for drainage without ponding.

PAVING

Paving materials and paving operations will be performed in accordance with the requirements of the Connecticut Department of Transportation Form 817. Prior to placing subbase for the asphalt, the limits of excavation areas to be prepared will be smoothed and compacted, an orange geotextile will be placed at the base of the excavation area, subbase and base materials will be placed and compacted (minimum 24 inches thick), and then completed with a minimum of 3 inches of bituminous concrete. Areas to be completed with paving are shown on **Drawings C-6 and C-7 of the Contract Drawings**.

SURVEY

The final horizontal and vertical extent of soil excavations will be surveyed prior to backfilling. Final surface grades will be surveyed following the completion of Site Restoration. All surveys will be performed by a Connecticut-Licensed Land Surveyor and shall comply with A-2 and T-2 standards.

With regard to the Natural Diversity Database, UI was issued a letter from the CTDEEP on December 12, 2018 regarding threatened and endangered species as they pertain to the project. The letter indicates the CTDEEP does not anticipate that the project will result in any negative impact to State-listed species.

2.3 Area of Disturbance and Runoff Considerations

The general intent of the Project grading plan is to restore the surface condition to the existing surface grade and condition around the former English Station building located on Parcel B in the southerly portion of the site. Within the northerly portion of the site the paved east and west entrances to the site must be maintained to ensure access to both parcels and provide access for maintenance. The area of the site currently occupied by Station B and the former paved coal storage yard will receive fill material to create a soil mound to render underlying polluted soils inaccessible. This entire area which is mostly impervious surfaces will be covered with a grass and will significantly reduce the surface runoff from this portion of the site. The two existing catch basins previously described will be maintained during the Project and will collect the localized surface runoff from the areas surrounding those catch basins. The remainder of the surface runoff from the site from both paved and unpaved surfaces will be graded toward the steel sheet pile bulkhead, except along the west bulkhead in Parcel A. The paved driveway will be graded back toward the Soil Cap Area and the stone filled infiltration trench. The surface grade along the bulkhead will be kept 6 inches to 12 inches below the top of the sheeting. This will ensure that the sheet flow will be slowed and filtered before reaching the Mill River. This will also force much of the runoff to infiltrate through the soil at the bulkhead, especially where the surface is vegetative cover. The soil mound (Soil Cap Area) will have a stone filled infiltration trench around the entire perimeter of the area to further induce infiltration of surface runoff.

The total disturbed area within the entire Site (Parcel A & B) will be approximately 6.4 acres.

The following tables characterize “Existing” and “Post-Construction” drainage areas and provide site runoff coefficients. Existing drainage areas are shown on **Figure 2** while post-construction drainage areas are shown on **Figure 3**.

Existing

Drainage Area ID	Area (acres)	Location/Description	Immediate Receiving Water Body	Ultimate Receiving Water Body
CB-01	0.34	NE corner of Main Bldg.	Mill River	Mill River
CB-02	0.22	SW corner of Main Bldg.	Mill River	Mill River
Remainder of Site	8.13	Balance of site area with no defined stormwater outfall	Mill River	Mill River

Drainage Area ID	Drainage Area (acres)		
	Bldg/ Pavement	Grass / Vegetation	Total
Run-off Coefficient	0.80	0.15	
CB-01	0.34	0.0	0.34
CB-02	0.1	0.12	0.22
Remainder of Site	6.46	1.67	8.13
Total	6.9	1.79	8.69

Drainage Area ID	Drainage Areas x Runoff Coefficient (acres)		
	Bldg/ Pavement	Grass / Vegetation	Total
CB-01	0.272	0.0	0.272
CB-02	0.08	0.018	0.098
Remainder of Site	5.168	0.251	5.419
Total	5.52	0.269	5.789

Existing Site Runoff Coefficient = $5.789/8.69 = 0.666$

Post-Construction

Drainage	Area Disturbed (acres)	Area Not Disturbed (acres)	Immediate Receiving Water Body	Ultimate Receiving Water Body
CB-01	0.59	0.0	Mill River	Mill River
CB-02	0.27	0.0	Mill River	Mill River
Remainder of Site	5.53	2.3	Mill River	Mill River
Total	6.39	2.3	Mill River	Mill River

Drainage Area ID	Drainage Area (acres)		
	Bldg/ Pavement	Grass / Vegetation	Total
Run-off Coefficient	0.80	0.15	
CB-01	0.35	0.24	0.59
CB-02	0.0	0.27	0.27
Remainder of Site	4.2	3.63	7.83
Total	4.55	4.14	8.69

Drainage Area ID	Drainage Areas x Runoff Coefficient (acres)		
	Bldg/ Pavement	Grass / Vegetation	Total
CB-01	0.28	0.036	0.316
CB-02	0.0	0.041	0.041
Remainder of Site	3.36	0.545	3.905
Total	3.64	0.622	4.262

Post-Construction Site Runoff Coefficient = $4.262/8.69 = 0.490$

Based on the above calculations, the existing site runoff coefficient has been calculated at 0.666 and the post-construction site runoff coefficient at 0.490.

2.4 Soil Cap Area Infiltration Trench

Within the northern portion of the Site a soil mound will be created to render the underlying polluted soil inaccessible. The Soil Cap Area will receive a 6-inch layer of topsoil and then be seeded to establish turf grass. The entire perimeter of the Soil Cap Area will be ringed with a crushed stone filled infiltration trench to induce infiltration of surface runoff from the soil mound and reduce the runoff discharging directly to the Mill River. The stone trench is 4 feet wide by 4 feet deep. The new paved driveway along the west bulkhead is graded inward toward the stone filled infiltration trench.

2.5 Stormwater Discharge Information

Since the total building/asphalt (impervious) area on the site is being reduced from 6.9 acres to 4.55 acres the total runoff from the site will be reduced. Most of the site discharges to the Mill River via direct runoff to the bulkhead to the river. Roof drainage from the main building will continue to discharge to the Mill River via existing drain pipes. There are only two catch basins collecting surface runoff, designated CB-1 and CB-2 on Figures 2 and 3, that discharge directly to the Mill River via pipe outfall. There is a third catch basin in Parcel A along the west bulkhead that discharges to a perforated galvanized pipe infiltration dry well behind the bulkhead. This basin and the drywell will be completely abandoned following the remediation project. CB-1 will be replaced with a new catch basin and pipe outfall through the bulkhead in approximately the same location as the existing outfall. CB-2 will remain.

2.6 Receiving Waters

As described above, all stormwater runoff from the Site, eventually flows into the Mill River. Existing stormwater outfall locations have been identified on **Figure 2**. The proposed stormwater patterns and outfalls will essentially remain unchanged following remediation.

3.0 CONSTRUCTION SEQUENCE

All of the project activities will be completed in a single construction season. Access to the construction area will be via Grand Avenue through both the east and west gates. During construction, the following main activities will occur in a sequential fashion, anticipated to occur as outlined below:

WORK PHASING

Remediation work at the Site will be separated into three major phase areas. These areas are as follows:

- Phase 1 Area – Includes the south side of Parcel B and consists of the area outside of the English Station Building which is discussed in the RAP for Parcel B.
- Phase 2 Area – Includes the north side of Parcel B and consists of the area currently paved along the east side of Ball Island north of the English Station Building which is also discussed in the RAP for Parcel B.
- Phase 3 Area – Parcel A, including demolition of Station B, and portions of Parcel B north and west of the English Station Building.

The Contractor may choose to overlap work between the Phase Areas but shall complete PCB remediation within each Phase area before addressing other impacts.

4.0 CONTROLS

The following sections address the controls and measures to be implemented on this site both during and after construction to minimize erosion and stormwater pollution to the waters of the State of Connecticut.

4.1 Erosion and Sediment Controls

One goal of this Plan is to control erosion on the site and to control movement of sediment into the Mill River or storm sewer systems. Note that erosion and sediment controls shall conform to the requirements of the previously referenced “Connecticut Guidelines for Soil Erosion and Sediment Control,” dated May 2002, which will hereafter be referred to as the Guidelines.

To meet the goals of this Plan, stabilization, structural and maintenance practices shall be implemented by the construction contractor/subcontractors (herein after referred to collectively as the Contractor), as outlined below.

4.1.1 Stabilization Practices

Both temporary and permanent stabilization practices shall be implemented to minimize erosion of soil from the disturbed site areas during and after construction. When construction activities have permanently ceased, or if they are temporarily suspended for more than 30 days, or when final grades are reached in any portion of the site, stabilization practices shall be implemented within ten days.

The stabilization practices to be implemented during the project are as follows:

- **Temporary Vegetative Cover** – Due to the relatively short nature of each phase of the proposed project activities, it is not likely that temporary stabilization will be required. However, if any exposed areas or stockpiles will be inactive for more than 30 days and have not yet reached finished grades, they shall receive a temporary vegetative cover. The temporary vegetative cover shall consist of annual rye grass. The rye grass shall be planted at a rate of not less than 1 pound per 1,000 square feet. Also, fertilizer shall be applied at a rate of 7.5 pounds per 1,000 square feet of 10-10-10 or equivalent and limestone shall be applied at a rate of 90 pounds per 1,000 square feet. Seed bed preparation and seeding shall be conducted as outlined in the Guidelines.
- **Permanent Vegetative Cover** – Permanent vegetation shall be hydroseeded on exposed areas within ten days of final grading. The final vegetative cover shall consist of a grass seed mix consisting of bentgrass, fescue, trefoil and ryegrass as

defined in the project specifications. Acceptable planting periods are from April 1 through June 15 and September 1 through October 15.

- **Erosion Control Matting** – A flexible growth medium (FGM) (Flexterra or equivalent), made of long-strand, thermally processed wood fibers, crimped interlocking fibers, and additives, shall be hydraulically applied to all required surfaces after placement of final cover and seeding. FGM forms a bond with the soil surface to create a continuous, porous, absorbent and erosion-resistant blanket that allows for rapid germination and accelerated plant growth.

4.1.2 Structural Practices

Structural practices shall be implemented to control the movement of sediment and minimize the discharge of pollutants from the site. The structural practices to be implemented during construction are described in the Contract Drawings and include:

- **Filtration barriers** - Silt fence, will be installed along the site perimeter and toe of all critical slopes. The silt fence will reduce downgradient siltation by acting as sediment filters. These filters will remove sediment transported by sheet flow from stormwater runoff.
- **Straw wattles** – Straw wattles will be placed continuously along the inside face of the steel bulkhead on the inside face of the silt fence. Straw wattles are 8-12 inch diameter cylinders approximately 20 feet long of recycled, compressed, 100% agricultural straw wrapped in tubular, UV-stabilized black synthetic netting or jute material. They are installed in a shallow trench forming a continuous barrier along the contour (across the slope) to intercept water running down a slope.
- **Fiber filtration tubes (with polymer)** – Fiber filtration tubes (FFT's) will be placed horizontally across slopes at specified locations to minimize the migration of soil particles. FFT's will be used along the edge of the proposed stone infiltration trench in the Soil Cap Area. The FFT's shall consist of an engineered composite of wood fibers and performance-enhancing polymers encased within cylindrical tubes of a heavy-duty, knitted, high density polyethylene mesh. The FFT's allow water to flow freely through the tube matrix while providing three-dimensional filtration of soil particles. The FFT's also facilitate the release of flocculants to coagulate and aggregate suspended soil particles.
- **Inlet Sedimentation Control** – New and existing catch basins will be protected by silt sack inlet sediment control devices. These devices utilize high strength, high flow, woven geotextile filter fabric to prevent silt and sediment from entering the catch basins. The fabric is in the shape of a cone-shaped sack that fits under the storm drain grate.
- **Anti-Tracking Aprons** – To prevent soil or sediment from being carried off site by construction equipment, anti-tracking aprons will be installed before construction

traffic into and out of the project area begins. The width of the anti-tracking apron shall not be less than the width of any ingress or egress. Adjacent roadways shall be swept daily to remove any material that may be tracked onto pavement.

4.1.3 Maintenance

The erosion and sediment controls must be maintained in a condition that will protect resource areas from pollution during site construction. The Contractor shall conduct the following maintenance to ensure the proper performance of erosion and sediment control measures during construction.

- **Temporary and Permanent Vegetation:** Any eroded areas shall be repaired by filling to finished grades, replacing vegetative support material, and seeding, fertilizing and liming, as specified for temporary and permanent stabilization.
- **Filtration Barriers, Straw Wattles, FFTs and Inlet Sedimentation Control:** Silt fence, FFTs and silt sacks shall be inspected within 24 hours of the end of any rainfall that is 0.1 inches or greater. Any required repairs and/or cleaning of sediment shall be made within 24 hours. Should any of these features become ineffective while still needed and require replacement, they shall be replaced promptly.

Should sediment deposits reach approximately one-half the height of the silt fence barrier, they shall be removed and disposed of on-site as non-structural fill. Any sediment deposits remaining in place after the barrier is no longer required shall be removed and placed in a stockpile surrounded by silt fence in a suitable location.

- **Maintenance Supplies:** A stockpile of unused silt fence, FFT's, crushed stone and erosion control blankets will be maintained on-site to allow for ready access to materials in the event they are needed for quick repairs.

4.2 Dewatering Wastewaters

Dewatering effluent from soil excavations will be treated prior to discharge. The Remedial Contractor will be responsible for the design of the dewatering effluent treatment system and drawings are to be stamped by a Professional Engineer prior to submittal to UI for review and approval.

It is anticipated that dewatering effluent will be discharged to surface water. UI and the Remedial Contractor shall obtain a General Permit for the Discharge of Groundwater Remediation Wastewater to Surface Water. The treated water will be discharged directly to the Mill River.

The Remedial Contractor will submit a Decontamination Plan that will include decontamination of the dewatering treatment system for review by UI prior to the start of work.

All components of the treatment system that contact dewatering effluent with solids (i.e., those components of the system prior to filtration of solids) will either be disposed of decontaminated as per the requirements of §761.79(b) or (c). For those components that only contact water, they will only be decontaminated if effluent PCB concentrations are found to be $>0.5 \mu\text{g/L}$. If this occurs, this equipment will also be decontaminated as per the requirements of §761.79(b) or (c).

4.3 Post-Construction Stormwater Management

At the end of construction, all areas disturbed by construction activities shall be stabilized. As a result, the potential for erosion at this site after construction is minimal. Properly maintained grassed areas will serve as a filter to remove sediment from runoff. All post-construction stormwater management measures that will be taken are shown on the Contract Drawings.

4.4 Vehicle Tracking and Dust Control

The access roads to be used by construction vehicles when entering and leaving the site are shown on the Contract Drawings. The Contractor is required to immediately remove any material transported outside the contract boundaries and deposited on public roadways. The Contractor shall also provide water or alternate means of dust suppression as necessary to control dust from construction activities.

4.5 Waste Disposal

The contractor shall dispose of debris and litter in contained dumpsters or roll-off bins and stage material during demolition only in areas with suitable controls. Lids must be implemented, where practicable, to prevent stormwater from entering dumpsters. Litter and debris will not be allowed to enter storm water drainage systems or surface water. In addition, dumping of liquid waste in storm sewers or storm water conveyance swales is prohibited.

4.6 Spill Control

The contractor shall maintain spill kits, including absorbent pads and booms, on the site at all times during construction activities. All chemical and petroleum product containers stored on the site (excluding those contained within vehicles and equipment) shall be provided with impermeable containment which will hold at least 110% of the volume of the largest container, or 10% of the total volume of all containers in the area, whichever is larger, without overflow from the

containment area. All chemicals and their containers shall be stored under a roofed area except for those chemicals stored in containers of 100-gallon capacity or more, in which case a roof is not required. Double-walled tanks satisfy this requirement.

4.7 Decontamination

Any equipment that contacts PCB Remediation Wastes will either be (1) disposed with the PCB Remediation Wastes or (2) decontaminated prior to removal from the Site or being used for non-PCB work. Non-porous surfaces will either be (1) swabbed with a solvent containing greater than seventy-five percent terpene hydrocarbons or (2) double washed/rinsed in accordance with the procedures outlined in 40 CFR 761, Subpart S.

Solid wastes generated during decontamination will be placed with PCB Remediation Wastes or containerized for appropriate off-site disposal. Wash water from the decontamination of equipment will either be treated with dewatering effluent for discharge or collected and pumped to an on-Site temporary storage tank. Accumulated wash water will be sampled for disposal characterization analysis and transported and disposed of off-Site based on the characterization data.

Washout of containers, vehicles, and equipment for concrete residue shall be minimized on the project to the extent practicable. If required due to the nature of the construction activities washout activities shall be limited to a designed washout area. There shall be no surface discharge of washout wastewaters. All wastes including hardened concrete waste from washouts shall be disposed of below the Soil Capping Area.

Other vehicle washing and vehicle maintenance activities shall not be allowed on the Site.

5.0 INSPECTION

Within the first 30 days following commencement of the construction activity at the site, UI shall contact a qualified soil erosion and sediment control professional or qualified professional engineer to inspect the site. Documentation of the qualifications of the inspector(s) will be required. The site shall be inspected at least once and no more than three times during the first 90 days of construction activities to confirm compliance with the general permit and proper implementation of all control measures designated as part of this plan for the site for the initial phase of construction.

UI's agent and qualified personnel provided by the Contractor shall inspect disturbed areas of the construction activity that have not been permanently stabilized, structural control measures, and locations where vehicles enter or exit the site at least once every seven calendar days and within 24 hours of the end of a storm that generated 0.1 inches during a twenty-four hour period. A rain gauge shall be maintained on-site to document rainfall amounts. For storms that end on a weekend, holiday or other time after which normal working hours will not commence within 24 hours, an inspection is only required within 24 hours for storms that equal or exceed 0.5 inches. For storms of less than 0.5 inches, an inspection shall occur immediately upon the start of the subsequent normal working hours. Where areas have been temporarily or finally stabilized, inspections shall be conducted at least once every month for three months.

Disturbed areas and areas used for storage of materials that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion and sediment control measures identified in the plan shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be visually inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters. Locations where vehicles enter or exit the site shall be inspected for evidence of off-site sediment tracking.

Based on the results of the inspections, the description of potential sources and pollution prevention measures identified in this plan shall be revised as appropriate by the City or its assigned agent as soon as practicable after such inspection. Such modifications shall provide for timely implementation of any changes to the site within 24 hours and implementation of any changes to the SPCP within 3 calendar days following the inspection.

A report shall be prepared and retained as part of the plan. This report shall summarize the scope of the inspection, name and qualifications of personnel completing the inspection, the date of the inspection, the weather conditions including precipitation information and major observations relating to erosion and sediment controls. The report will also discuss implementation of the plan including a description of the stormwater discharges from the site and any water quality monitoring performed during the inspection. The report and all actions taken shall be retained as part of the SPCP for at least three years after the date of inspection. The report shall be signed by UI or its assigned agent.

6.0 MONITORING

Monitoring requirements are based on the amount of site disturbance and whether a registration is required. The project will disturb greater than 5 acres and therefore monthly turbidity monitoring is required by the CTDEEP General Permit. The turbidity sampling method will be consistent with 40 CFR Part 136.

6.1 Stormwater Monitoring Procedures and Personnel

Sampling shall be conducted at least once every month, when there is discharge of stormwater from the site while construction activity is ongoing, until final stabilization of the drainage area associated with each outfall. If there is no stormwater discharge during a month, sampling is not required.

Monitoring is only required during “normal working hours”, defined by the CTDEEP General Permit to be at a minimum Monday through Friday between the hours of 7:00 am and 3:00 pm. If sampling is discontinued due to the end of the normal working hours, the General Permit specifies that sampling shall resume the following morning or the next working day following a weekend or holiday, as long as the discharge continues. Sampling may temporarily be suspended any time conditions exist that may reasonably pose a threat to the safety of the person taking the sample. Such conditions may include high winds, lightning, impinging wave or tidal activity, intense rainfall or other hazardous condition. Once the unsafe condition is no longer present, sampling shall resume.

All samples shall be collected from discharges resulting from a storm event that occurs at least 24 hours after any previous storm event generating discharge. Any sample containing snow or ice melt in the absence of a storm event is not a valid sample.

Samples shall be grab samples taken at least three (3) separate times during a storm event and shall be representative of the flow and characteristics of the discharge(s). The first sample shall be taken within the first hour of the stormwater discharge from the site. In cases where samples are collected manually and the discharge begins outside of normal working hours, the first sample shall be taken at the start of normal working hours. The stormwater turbidity value for each sampling point shall be determined by taking the average of the turbidity values of the three (3) samples taken at the sampling point during the given storm.

6.2 Sampling Locations

Sampling is required by the CTDEEP General Permit of all point source discharges of stormwater from disturbed areas. Where there are two or more discharge points that discharge substantially identical runoff, based on similarities of the exposed soils, slope and type of stormwater controls used, a sample may be taken from just one of the discharge points. In this case, it must be reported that the results also apply to the substantially identical discharge points. No more than 5 substantially identical outfalls may be identified for one representative discharge. If a project is planned to continue for more than one year, the sampling locations must be rotated every six months.

Most of the stormwater generated during construction will consist of sheet flow toward the bulkhead. All other stormwater will be directed toward the previously described catch basins, which will discharge to the Mill River, as shown on the Contract Drawings.

Initial existing outfall locations have been identified as O-1 (CB-1 pipe outfall at northeast corner of the English Station building) and O-2 (CB-2 pipe outfall at southwest corner of English Station building). Existing stormwater outfall locations have been identified on **Figure 2**.

The post-construction outfall/sample locations are the same as the two described above.

6.3 Reporting

Within 30 days following the end of each month, UI must enter the stormwater sampling results on the Stormwater Monitoring Report (SMR) form and submit it to CTDEEP in accordance with the NetDMR provisions of the General Permit. Alternatively, the Commissioner may approve of submittal of SMRs in hard copy form through the use of the “opt-out” request.

If there is no discharge during any given monitoring period, a report indicating “no discharge” must be submitted. If monitoring is conducted more frequently than required by the CTDEEP General Permit, results of this monitoring must be included in the SMRs for the month in which the samples were collected. If sampling protocols are modified due to limitations of normal working hours or unsafe conditions as described in the CTDEEP General Permit, a description and/or reason for the modifications must be included in the SMR. If representative discharges are sampled, the names or locations of these discharge points must be included in the SMR.

7.0 CONTRACTORS

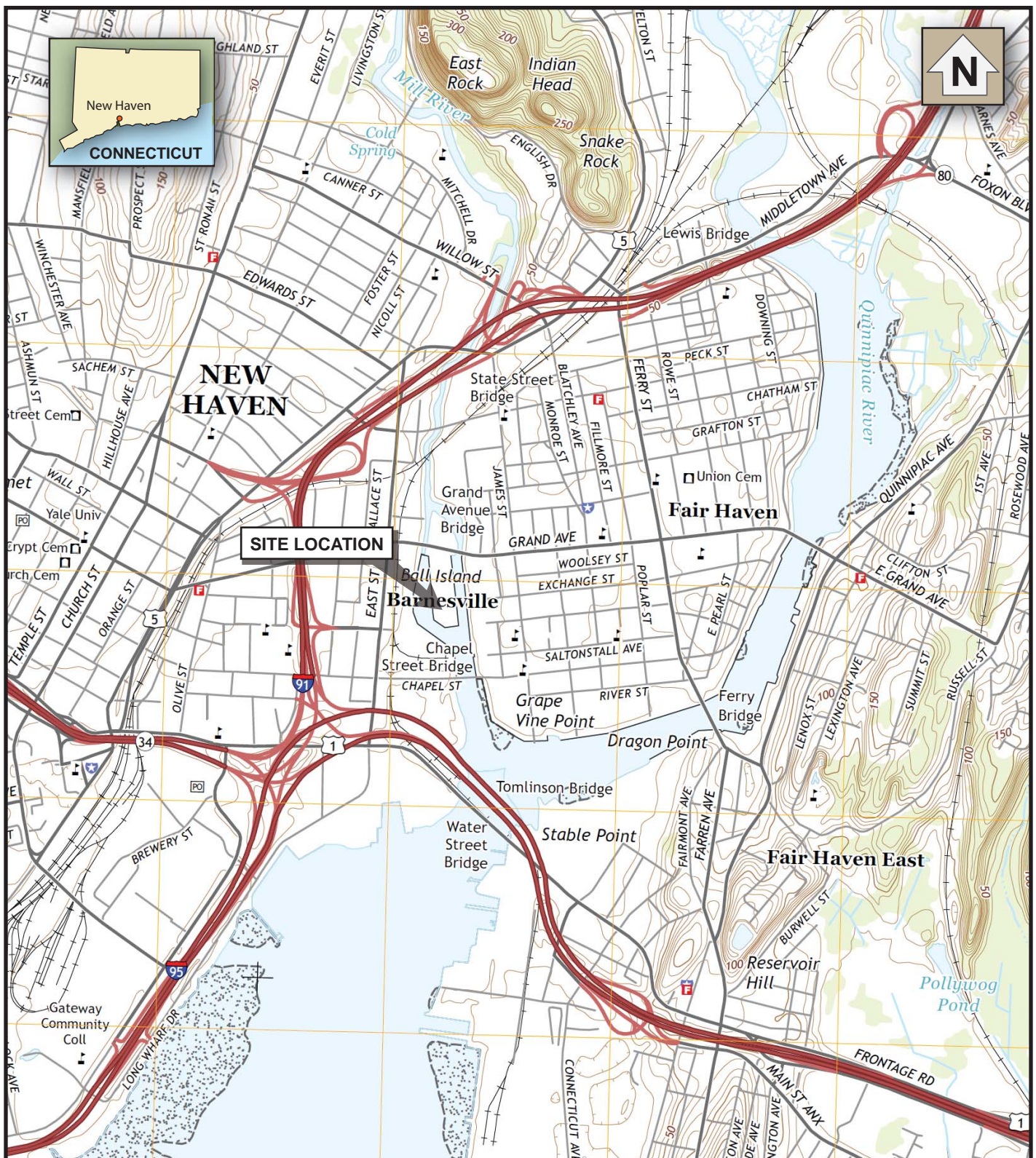
7.1 General

All Contractors and subcontractors who will perform actions on site that may reasonably be expected to cause or have the potential to cause pollution of the waters of the State are identified on the Form Contained within **Appendix C**.

7.2 Certification Statement

All Contractors and subcontractors must sign the certification included in **Appendix C**. All signed certifications shall be included in this Stormwater Pollution Control Plan.

FIGURES



0 2000
Approximate Scale FT

0 1
Approximate Scale MILE

1:24000

BASE CREATED WITH 7.5' USGS TOPOGRAPHIC MAP
NEW HAVEN, CT 2015



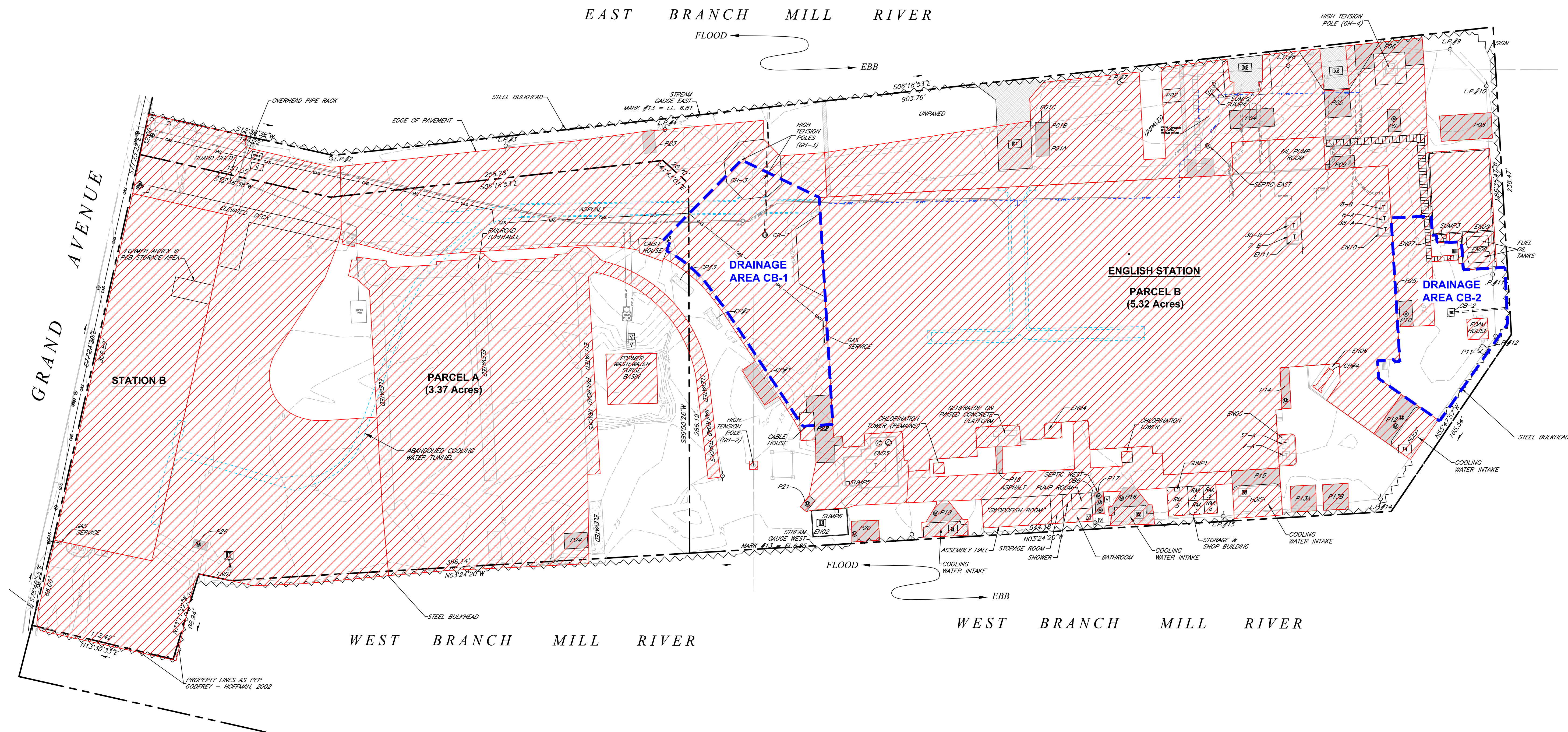
21 Griffin Road North
Windsor, CT 06095
Phone: 860.298.9692

ENGLISH STATION
510 GRAND AVENUE, NEW HAVEN, CT

FIGURE 1-1 SITE LOCATION MAP

DATE: 10/2016

PROJECT NO. 263951.0000.000000



SITE FEATURE LEGEND

General Notes

PROJECT: UNITED ILLUMINATING
ENGLISH STATION POWER PLANT
510 Grand Avenue
New Haven, Connecticut

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APPENDIX A

**STORMWATER DISCHARGE REGISTRATION FORM
AND
GENERAL PERMIT FOR THE DISCHARGE OF
STORMWATER AND DEWATERING WASTEWATERS
FROM CONSTRUCTION ACTIVITIES**

APPENDIX B

**INSPECTION REPORT FORM AND STORM WATER
MONITORING REPORT FORM**

INSPECTION REPORT FORM

ENGLISH STATION SOIL REMEDIATION PROJECT 510 GRAND AVENUE – NEW HAVEN, CT

Date of Inspection _____

Inspector's Name _____

Employed By _____

Circle Type of Inspection: Monthly / Weekly / Within 24 hrs of Storm

Stabilization Practices ⁽¹⁾

Major Observations or Deficiencies	Actions Taken	Date Completed

Structural Practices ⁽²⁾

Major Observations or Deficiencies	Actions Taken	Date Completed

Signature of Inspector

Date

Signature of Owner

Date

⁽¹⁾Stabilization practices to be inspected include: grading, disturbed area, temporary vegetative cover, permanent vegetative cover.

⁽²⁾Structural practices to be inspected include: filtration barriers, fiber filtration tubes, erosion control blankets, anti-tracking aprons, temporary sedimentation basins, inlet sedimentation controls and detention basins.



**Connecticut Department of
Energy & Environmental Protection**
Bureau of Materials Management & Compliance Assurance
Water Permitting & Enforcement Division

**General Permit for the Discharge of Stormwater and Dewatering Wastewaters from
Construction Activities, issued 8/21/13, effective 10/1/13**
Stormwater Monitoring Report

SITE INFORMATION

Permittee:	_____
Mailing Address:	_____
Business Phone:	_____ ext.: _____ Fax: _____
Contact Person:	_____ Title: _____
Site Name:	_____
Site Address:	_____
Receiving Water (name, basin):	_____
Stormwater Permit No.	<u>GSN</u> _____

SAMPLING INFORMATION (Submit a separate form for each outfall)

Outfall Designation:	_____	Date/Time Collected:	_____
Outfall Location(s) (lat/lon or map link):	_____		
Person Collecting Sample:	_____		
Storm Magnitude (inches):	_____	Storm Duration (hours):	_____
Size of Disturbed Area at any time:	_____		

MONITORING RESULTS

Sample #	Parameter	Method	Results (units)	Laboratory (if applicable)
1	Turbidity			
2	Turbidity			
3	Turbidity			
4	Turbidity			

(provide an attachment if more than 4 samples were taken for this outfall)

Avg =

STATEMENT OF ACKNOWLEDGMENT

I certify that the data reported on this document were prepared under my direction or supervision in accordance with the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities. The information submitted is, to the best of my knowledge and belief, true, accurate and complete.

Authorized Official: _____
Signature: _____ Date: _____

Please send completed form to:

DEPARTMENT OF ENERGY & ENVIRONMENTAL PROTECTION
BUREAU OF MATERIALS MANAGEMENT AND COMPLIANCE ASSURANCE
79 ELM STREET
HARTFORD, CT 06106-5127
ATTN: NEAL WILLIAMS

APPENDIX C

**CONTRACTOR IDENTIFICATION AND
CERTIFICATION**

**ENGLISH STATION SOIL REMEDIATION PROJECT
510 GRAND AVENUE – NEW HAVEN, CT**

General Contractor	Point of Contact	Phone

Sub-Contractors	Point of Contact	Phone

**ENGLISH STATION SOIL REMEDIATION PROJECT
510 GRAND AVENUE – NEW HAVEN, CT**

GENERAL CONTRACTOR

“I certify under penalty of law that I have read and understand the terms and conditions of the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities. I understand that as a contractor or subcontractor at the site, I am authorized by this general permit, and must comply with the terms and conditions of this general permit, including but not limited to the requirements of the Stormwater Pollution Control Plan prepared for the site.”

Signed: _____

Date: _____

Printed Name: _____

Telephone: _____

Title: _____

Firm: _____

Address: _____

**ENGLISH STATION SOIL REMEDIATION PROJECT
510 GRAND AVENUE – NEW HAVEN, CT**

SUBCONTRACTOR

“I certify under penalty of law that I have read and understand the terms and conditions of the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities. I understand that as a contractor or subcontractor at the site, I am authorized by this general permit, and must comply with the terms and conditions of this general permit, including but not limited to the requirements of the Stormwater Pollution Control Plan prepared for the site.”

Signed: _____

Date: _____

Printed Name: _____

Telephone: _____

Title: _____

Firm: _____

Address: _____

APPENDIX D
CONTRACT DRAWINGS

APPENDIX E

DESIGN CALCULATIONS