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November 29, 2007

Joseph A. Yavonditte, P.E.
Chief, Remedial Section B
Remedial Bureau A
New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway
Albany, NY 12233-7015

Re: Sub-Slab Depressurization System Design and Site Management Plan
Golden Horseshoe Shopping Center
Scarsdale, New York
NYSDEC Voluntary Cleanup Program
Site Number V – 00309-3
Index No. D3-0001-00-05

Dear Mr.Yavonditte:

In accordance with the NYSDEC letter dated March 12, 2007, TRC is submitting for your review the enclosed drawings showing the proposed design for the sub-slab depressurization system (SSDS), and the site-specific site management plan (SMP) for the Golden Horseshoe Shopping Center in Scarsdale, New York (the "Site").

The overall objective of the SSDS is to mitigate the potential for soil vapor intrusion into the 1963 and 1984 additions to the Building. The SSDS design and SMP have been completed in accordance with the New York State Department of Health (NYSDOH) document titled *Guidance for Evaluating Soil Vapor Intrusion in the State of New York,* October 2006.

The SSDS will consist of two sub-slab depressurization pits and four monitoring points installed in the floor slab of the United States Post Office space. Each sub-slab depressurization pit will connect via 6-inch diameter piping below the floor slab to one 6-inch diameter riser that will extend through the building roof.

Above the building roof each riser will connect to a suction fan, which will apply a vacuum to the sub-slab depressurization pits and depressurize the space below the building floor slab.

Following complete installation and startup of the SSDS, the pressure differential between the indoor and the sub-slab air will be monitored. If insufficient vacuum in the sub-slab is present the system will be re-evaluated and the fan size will be increased and/or additional suction pits will be installed.

Construction coordination of the SSDS and implementation of the SMP will proceed after receiving your approval of the attachments. The plans and work schedule are subject to coordination with the current tenant, the United States Postal Service.

Please do not hesitate to call me if you have any questions or comments.

Very truly yours,
TRC

Jennifer Guido
Project Manager

cc: R. Mitchell, NYSDOH
R. Orlusky, United States Postal Service
D. Roth, Greenbaum, Rowe, Smith & Davis
D. Glass, TRC

Attachments: Site Management Plan and Sub Slab Depressurization System Drawings

ATTACHMENTS

Sub-Slab Depressurization System Site Management Plan
Golden Horseshoe Shopping Center
Scarsdale, New York

In the space occupied by the United States Postal Service at the Golden Horseshoe Shopping Center (the "Building"), an active sub-slab depressurization system (SSDS) will be installed to prevent vapors in soil gas below the Building floor slab from entering the Building. This site management plan (SMP) was completed in accordance with the requirements of New York State Department of Health (NYSDOH) document titled *Guidance for Evaluating Soil Vapor Intrusion in the State of New York,* October 2006. The principal components of the SSDS for the Site will consist of:

- Two suction pits beneath the floor slab
- Horizontal 6-inch diameter pipe below the floor slab from each suction pit connecting to a 6-inch diameter vertical riser extending through the Building roof and discharging to the outdoors
- Exterior suction fans connected to the discharge of each riser
- Monitoring points at selected locations throughout the Building floor slab
- A warning device to alarm when a suction fan is not operating, the flow drops below the set point, or the vacuum goes above the set point

The SSDS design is shown on the attached drawings. The requirements for the SSDS will consist of start up testing, routine maintenance and monitoring, and non-routine maintenance activities. Each is described in the following subsections.

Sub Slab Depressurization System Start Up

This subsection outlines the procedures for confirming the effectiveness and proper installation of the SSDS. The goal for operation of the SSDS will be to achieve a uniform minimum differential sub-slab pressure of –0.002 inches of water relative to indoor air. With this goal in mind, the following actions will be performed shortly after initial startup of the SSDS:

- The sub-slab pressure at each monitoring point will be measured utilizing an appropriate hand-held vacuum gauge.

- If insufficient vacuum is measured at each monitoring point, the system will be reevaluated and the fan size will be increased and/or additional suction pits will be installed.

- After confirming a sub-slab differential pressure of –0.002 inches of water relative to indoor air, smoke tests will be performed to identify any leaks through cracks in the concrete floor, floor joints, floor penetrations, and monitoring points. Identified leaks will be resealed until smoke tests indicate that an appropriate seal of the floor slab has been achieved.

- Appliances relying on natural draft for exhaust of carbon monoxide and other combustion gases will be tested for back draft caused by the operation of the SSDS. Back draft poses a potential health concern because of carbon monoxide. Testing for back draft will entail utilizing a carbon monoxide meter to detect the presence of this compound in the air near exhausts for appliances. If necessary, any back draft caused by the SSDS will be corrected by sealing any leaks in the floor slab, as indicated above.

- The operation of the warning device for the suction fan will be confirmed.

Routine Maintenance and Monitoring of the Sub Slab Depressurization System

Routine maintenance and inspection will be conducted to verify that the SSDS is operating properly until NYSDEC and NYSDOH has determined no need for such a system.

On an annual basis, the following will performed:

- Conduct a visual inspection of the complete system, including but not limited to the suction fans, piping, warning device and alarm, and labelling.

- Inspect suction fans for bearing failures or signs of other abnormal operations, and repair or replace if required.

- Inspect the discharge location of the vent pipe to verify that no air intake or operable window has been located nearby.

- Determine, through discussions with Building management, if any Heating, Ventilation, and Air Conditioning (HVAC) system modifications occurred that might effect the performance of the SSDS.

- Inspect the floor slab and foundation walls for evidence of cracks and/or holes, and repair cracks and/or holes, if required.

- Test the integrity of the riser pipe(s), via smoke tests, and repair the riser pipe, if required.

In addition, preventative maintenance will be performed on the suction fans in accordance with the manufacturer's recommendations.

Non-routine Maintenance Activities of the Sub Slab Depressurization System

Non-routine maintenance would typically occur when the warning device indicates the system is not working properly, the system becomes damaged, or if the Building's HVAC has undergone modifications that may reduce the effectiveness of the system. The scope of non-routine maintenance will vary depending upon the situation. In general, the following actions will be taken as part of non-routine maintenance:

- Examine the Building for structural or HVAC system changes, or other changes that may affect the performance of the depressurization system (e.g., new combustion appliances or deterioration of the concrete slab).

- Examine and address the operation of the warning device and the suction fan, and measure the sub-slab pressure at monitoring points, with a vacuum gauge.

- Repair or adjust the SSDS as appropriate.

Sub Slab Depressurization System Deactivation

If supported by sub-slab vapor sampling results, the New York State Department of Environmental Conservation (NYSDEC) and NYSDOH will be requested to consider deactivation of the SSDS and associated monitoring. Deactivation of the SSDS will occur only after NYSDEC's and NYSDOH's approval.

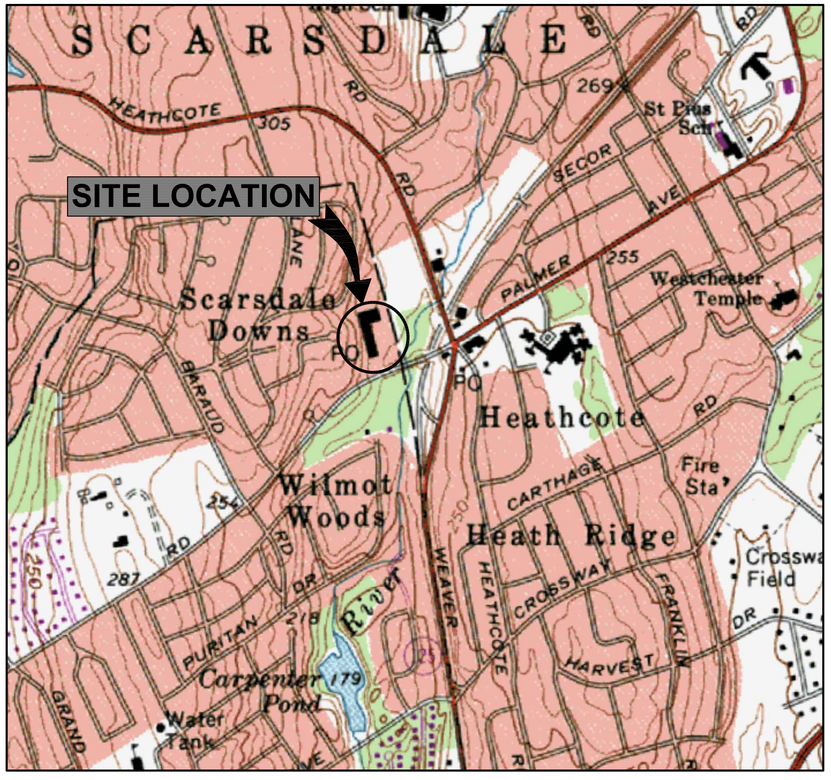
DRAWINGS

GOLDEN HORSESHOE SHOPPING CENTER

SCARSDALE, NEW YORK

SUB-SLAB DEPRESSURIZATION SYSTEM

LIST OF DRAWINGS	
DRAWING NO.	DESCRIPTION
1	TITLE SHEET
2	SPECIFICATIONS
3	SUB-SLAB PIT AND MONITORING POINT LOCATION PLAN
4	DETAILS



SITE LOCATION
1:24,000

REVISIONS				
NO.	DESCRIPTION	BY	DATE	PAPER SIZE: 22" x 34"

TRC
1430 BROADWAY, 10TH FLOOR
NEW YORK, NEW YORK 10018
212-221-7822

DESIGN BY: JG	
DRAWN BY: JE	
CHECK BY: DSG	
DATE: JULY 2007	
SCALE: AS SHOWN	
PROJECT NUMBER: 150515.0000.00000	

PROJECT NAME:
GOLDEN HORSESHOE SHOPPING CENTER SCARSDALE, NEW YORK

DRAWING TITLE:
TITLE SHEET

DWG. NO.
1

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

007319 – HEALTH AND SAFETY REQUIREMENTS

1. ATTENTION IS DIRECTED TO FEDERAL, STATE AND LOCAL LAWS, RULES AND REGULATIONS CONCERNING SAFETY AND HEALTH STANDARDS. THE CONTRACTOR SHALL ENSURE ALL WORKERS WORK IN SURROUNDINGS AND UNDER CONDITIONS WHICH ARE SANITARY AND ARE NOT HAZARDOUS OR DANGEROUS TO HEALTH AND SAFETY. PRECAUTIONS SHALL BE EXERCISED AT ALL TIMES FOR THE PROTECTION OF PERSONS AND PROPERTY. IT IS MANDATORY THAT THE SAFETY PROVISIONS OF APPLICABLE LOCAL LAWS, OSHA REGULATIONS AND BUILDING AND CONSTRUCTION CODES BE OBSERVED.

2. CONTRACTOR SHALL BE COMPLETELY RESPONSIBLE FOR CONSTRUCTION MEANS AND METHODS, JOB SITE SAFETY, TEMPORARY CONSTRUCTION AND ENSURING COMPLIANCE WITH ALL APPLICABLE SAFETY AND HEALTH REGULATIONS.

DIVISION 01 – GENERAL REQUIREMENTS

01000 - GENERAL REQUIREMENTS

1. THE CONTRACTOR SHALL VISIT THE SITE OF THE PROPOSED WORK AND BECOME FULLY ACQUAINTED WITH THE CONDITIONS AS THEY EXIST IN ORDER THAT THE RESTRICTIONS ATTENDING THE WORK ARE UNDERSTOOD. ALL AREAS AND DIMENSIONS OF THE DRAWINGS SHALL BE VERIFIED BY THE CONTRACTOR AT THE SITE. FAILURE OF THE CONTRACTOR TO EXAMINE AND VISIT THE SITE SHALL NOT RELIEVE THE CONTRACTOR FROM ANY OBLIGATION. THE SUBMISSION OF A QUOTATION SHALL ACKNOWLEDGE THAT THE CONTRACTOR AND HIS SUBCONTRACTORS HAVE FULLY EXAMINED THE SITE AND KNOW THE EXISTING CONDITIONS AND HAVE MADE PROVISIONS FOR OPERATING UNDER THE CONDITIONS AS THEY EXIST AT THE SITE AND THAT ALL NECESSARY ITEMS ARE INCLUDED.

2. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK USING THE BEST CONSTRUCTION SKILLS AND ATTENTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE AND HAVE CONTROL OVER CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COORDINATING ALL PORTIONS OF THE WORK.

3. PLANS ARE NOT TO BE SCALED. THE PLANS ARE INTENDED TO BE A DIAGRAMMATIC OUTLINE ONLY, UNLESS OTHERWISE NOTED.

4. THE TYPE AND QUANTITY OF WORK SPECIFIED ARE ESTIMATES THAT HAVE BEEN SHOWN SOLELY FOR THE CONVENIENCE OF THE OWNER, ENGINEER AND CONTRACTOR, AND MAY NOT NECESSARILY INCLUDE ALL OF THE ITEMS OF WORK REQUIRED.

5. THE DRAWINGS INDICATE THE EXTENT AND GENERAL ARRANGEMENT OF THE WORK. THE SPECIFIC EQUIPMENT PROPOSED FOR USE BY THE CONTRACTOR ON THE PROJECT MAY REQUIRE CHANGES IN THE CONSTRUCTION DETAILED ON THE DRAWINGS, AND ALL SUCH CHANGES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL AND SHALL BE MADE WITHOUT ADDITIONAL COST TO THE OWNER.

6. IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES HAVING JURISDICTION, CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY BEARING ON THE PERFORMANCE AND EXECUTION OF THE WORK. ELECTRICAL SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE MUNICIPAL AND STATE JURISDICTIONAL CODES, THE NATIONAL ELECTRICAL CODE, AND UTILITY COMPANY SPECIFICATIONS. ALL WORK SHALL BE PERFORMED IN STRICT ADHERENCE WITH THE LATEST EDITIONS OF THE BOCA NATIONAL BUILDING CODES, THE STATE OF NEW YORK UNIFORM CONSTRUCTION CODE AND THE OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) REGULATIONS. ALL MATERIALS, WORKMANSHIP AND CONSTRUCTION SHALL CONFORM TO ALL CURRENT PREVAILING STATE, COUNTY, MUNICIPAL AND/OR UTILITY COMPANY SPECIFICATIONS, STANDARDS AND REQUIREMENTS.

7. IF ANY LAW, REGULATION, THE PLANS AND/OR CONTRACT DOCUMENTS HAVE CONTRADICTING REQUIREMENTS, THEN THE MOST STRINGENT REQUIREMENT SHALL APPLY, AS DETERMINED BY THE ENGINEER.

8. THE CONTRACTOR SHALL IDENTIFY, APPLY FOR AND OBTAIN AND PAY ALL FEES FOR LICENSES, PERMITS, APPROVALS AND INSURANCE REQUIRED FROM FEDERAL, STATE AND LOCAL GOVERNMENT AND PUBLIC AGENCIES AND AUTHORITIES AS NECESSARY TO PERFORM THE WORK. THE CONTRACTOR SHALL PROVIDE INDEMNIFICATION TO PUBLIC AND PRIVATE AGENCIES AND AUTHORITIES AS NECESSARY TO PERFORM THE WORK.

9. THE POLICIES OF INSURANCE REQUIRED TO BE PURCHASED AND MAINTAINED BY THE CONTRACTOR SHALL INCLUDE AS ADDITIONAL INSURED:
   1. TRC ENGINEERS, INC, INCLUDING THE OFFICERS, DIRECTORS, PARTNERS, EMPLOYEES, AND AGENTS OF THE ENGINEER.
   2. SCARSDALE SHOPPING CENTER ASSOCIATES, LLC INCLUDING ITS MEMBERS, OFFICERS, DIRECTORS, SHARE HOLDERS, EMPLOYEES, AND AGENTS.

   THE INSURANCE AFFORDED TO THE ADDITIONAL INSUREDS SHALL PROVIDE PRIMARY COVERAGE FOR ALL CLAIMS COVERED THEREBY.

10. THE TERM "PROVIDE" MEANS FURNISH AND INSTALL COMPLETE AND READY FOR INTENDED USE, AS APPLICABLE IN EACH INSTANCE, ALL MATERIAL AND EQUIPMENT SHOWN, SPECIFIED AND/OR REQUIRED FOR THE INTENDED USE SHALL BE FURNISHED AND INSTALLED.

11. THE TERM "ENGINEER" SHALL MEAN TRC ENGINEERS, INC.

12. USE OF ONLY OWNER PRE-APPROVED SUBCONTRACTORS SHALL BE PERMITTED.

011100 - SUMMARY OF WORK

1. FURNISH AND INSTALL AN ACTIVE SUB-SLAB DEPRESSURIZATION SYSTEM (SSDS) AS SPECIFIED AND AS SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL FURNISH AND INSTALL A SSDS COMPLETE AND READY FOR USE.

2. THE SUB-SLAB PVC PIPING SHALL CONNECT TO PVC VERTICAL RISERS EXTENDING THROUGH THE ROOF. ALL PVC PIPING SHALL BE 6-INCH DIAMETER SCHEDULE 80.

3. FURNISH AND INSTALL SUCTION FANS CONNECTING TO VERTICAL RISERS AND SSDS PIPING. SUCTION FANS SHALL BE INSTALLED ABOVE THE ROOF AT THE TERMINATION OF EACH VERTICAL RISER (A TOTAL OF TWO SEPARATE VERTICAL RISERS AND TWO SUCTION FANS SHALL BE FURNISHED AND INSTALLED).

4. FURNISH AND INSTALL PRESSURE GAUGES, AIR FLOW SWITCHES, AND VOLUME CONTROLLING DAMPERS IN VENT RISERS CONNECTING TO SUCTION FANS. FURNISH AND INSTALL ALL PARTS AND MATERIALS NECESSARY TO CONNECT SSDS VENT RISERS TO SUCTION FANS.

5. EACH SUCTION FAN SHALL BE PROVIDED WITH A LOCAL POWER DISCONNECT SWITCH. INDICATORS SHALL BE PROVIDED TO SHOW SEPARATELY FOR EACH SUCTION FAN THE FOLLOWING CONDITIONS: RUNNING AND LOW FLOW.

6. FURNISH AND INSTALL AS PART OF THE SSDS SUB-SLAB MONITORING POINTS.

7. REPAIR CRACKS IN CONCRETE FLOOR SLAB.

8. FURNISH ALL LABOR, EQUIPMENT, MATERIALS, SUPPLIES, FACILITIES, WATER, POWER AND INCIDENTALS AS NECESSARY TO CONSTRUCT AND FULLY COMPLETE THE WORK AS SHOWN, AS SPECIFIED AND AS DIRECTED BY THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PERFORMING ALL THE WORK DESCRIBED AND SHOWN INCLUDING ITEMS NOT SPECIFICALLY IDENTIFIED AS REQUIRED TO COMPLETE THE WORK AND PROVIDE A SSDS, READY FOR USE.

9. SUBSTANTIALLY COMPLETE THE WORK TO THE SATISFACTION OF THE OWNER WITHIN 30 CALENDAR DAYS OF NOTICE TO PROCEED. SITE WORK (INCLUDING DELIVERIES) SHALL BE PERFORMED BETWEEN THE HOURS OF 8:00 A.M. AND 6:00 P.M. MONDAY THROUGH FRIDAY, EXCEPT STATE AND FEDERAL HOLIDAYS. LIQUIDATED DAMAGES IN THE AMOUNT OF $500 PER CALENDAR DAY SHALL BE PAID BY THE CONTRACTOR TO THE OWNER FOR EACH DAY AFTER THE 30-DAY SUBSTANTIAL COMPLETION TIME UNTIL THE WORK IS SUBSTANTIALLY COMPLETED. FINAL COMPLETION OF ALL WORK SHALL BE COMPLETED WITHIN 30 CALENDAR DAYS OF THE DATE OF SUBSTANTIAL COMPLETION. LIQUIDATED DAMAGES IN THE AMOUNT OF $250 PER CALENDAR DAY SHALL BE PAID BY THE CONTRACTOR TO THE OWNER FOR EACH DAY AFTER THE 30-DAY PERIOD UNTIL THE FINAL COMPLETION OF THE WORK.

10. FURNISH, INSTALL, AND TEST ALL SYSTEM COMPONENTS AS INDICATED, SPECIFIED, AS SHOWN ON THE DRAWINGS AND AS DIRECTED BY THE ENGINEER.

11. STARTUP AND SUCCESSFUL OPERATION OF THE SSDS, INCLUDING DEMONSTRATING PROPER OPERATION OF INSTRUMENTATION AND CONTROLS, SHALL BE REQUIRED FOR SUBSTANTIAL COMPLETION.

12. ALL MATERIALS AND EQUIPMENT FURNISHED SHALL BE NEW, IN FIRST-CLASS CONDITION, SUPPLIED DIRECTLY FROM ORIGINAL EQUIPMENT MANUFACTURERS AND INSTALLED IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS.

011416 – COORDINATION WITH OCCUPANTS

1. DURING CONSTRUCTION, THE OWNER, ITS EMPLOYEES, SUPPLIERS, CLIENTS, TENANTS AND VISITORS SHALL CONTINUE TO OCCUPY AND USE THE FACILITY. THE CONTRACTOR SHALL SCHEDULE AND COORDINATE THE WORK ACCORDINGLY.

013300 – SUBMITTAL PROCEDURES

1. SUBMIT MANUFACTURER PRODUCT DATA, INCLUDING INSTALLATION INSTRUCTIONS AND MOUNTING DETAILS FOR SUCTION FANS, SWITCHES, DAMPERS, AND PRESSURE GAUGES. SUBMIT COMPLETE SHOP DRAWINGS OF ALL WORK RELATED TO INSTALLATION OF SUCTION FANS, SHOWING DIMENSIONS AND LOCATIONS OF ALL ITEMS INCLUDING CLEARANCE REQUIREMENTS. SUBMIT ELEMENTARY ELECTRIC CONTROL SCHEMATIC DIAGRAMS, INTERCONNECTING WIRING DIAGRAMS, AND ELECTRIC MOTOR DATA SHEETS.

2. FOR SUCTION FANS, SUBMIT MANUFACTURERS' DATA REGARDING FLOW RATE, NOISE, FAN SPEED, STATIC PRESSURE, EFFICIENCY, PERFORMANCE CURVE, MOTOR REQUIREMENTS, MATERIALS OF CONSTRUCTION AND COMPLETE CATALOGUE INFORMATION, INCLUDING ACCESSORIES.

3. SUBMIT OWNER'S MANUALS/OPERATIONS AND MAINTENANCE MANUALS FOR SUCTION FANS, SWITCHES, AND PRESSURE GAUGES.

4. FOR ALL PIPING, COUPLINGS AND FITTINGS SUBMIT MANUFACTURERS' DATA REGARDING MATERIALS OF CONSTRUCTION, OPERABLE PRESSURE RANGES, COLLAPSE PRESSURE, COMPATIBILITY WITH FLUIDS, TEMPERATURE TOLERANCES AND COMPLETE CATALOGUE INFORMATION.

5. SUBMIT MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION OF FIRE STOP MATERIALS FOR SLEEVES FOR PIPES.

6. SUBMIT CERTIFICATION PREPARED, SIGNED, AND SEALED BY A NEW YORK STATE LICENSED PROFESSIONAL ENGINEER. CERTIFICATION SHALL STATE THAT PROFESSIONAL ENGINEER CERTIFIES THAT ALL COMPONENTS INSTALLED ARE PROPERLY SUPPORTED FOR ANTICIPATED LOADS, INCLUDING WIND LOADS FOR ROOF EQUIPMENT.

7. SUBMIT NAME, ADDRESS, AND TELEPHONE NUMBER OF MANUFACTURER AUTHORIZED SERVICE TECHNICIAN FOR SUCTION FANS.

8. OBTAIN ENGINEER'S APPROVAL OF SUBMITTALS PRIOR TO DELIVERY OF MATERIALS.

014500 – QUALITY CONTROL

1. CONTRACTOR'S RESPONSIBILITIES INCLUDE ARRANGING INSPECTIONS AND OBTAINING THE ENGINEER'S APPROVAL PRIOR TO CONCEALMENT OF WORK. AT A MINIMUM, INSPECTION BY THE OWNER OR ITS APPROVED REPRESENTATIVE OF ALL COMPONENTS OF THE SYSTEMS SHALL BE REQUIRED AND THE CONTRACTOR SHALL BE REQUIRED TO OBTAIN APPROVAL OF ALL COMPONENTS OF THE SYSTEMS BY THE OWNER OR ITS APPROVED REPRESENTATIVE UPON COMPLETION OF INSTALLATION. ADDITIONAL INSPECTIONS, EXAMINATIONS AND QUALITY CONTROL MEASURES MAY BE REQUIRED AS PER MANUFACTURERS' RECOMMENDATION AND ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE OWNER RESERVES THE RIGHT TO PERFORM ADDITIONAL INSPECTIONS OR QUALITY CONTROL TESTS AS DEEMED NECESSARY BY THE OWNER AT ANY POINT DURING THE INSTALLATION PROCESS AT NO ADDITIONAL COST TO THE OWNER.

2. WHENEVER CONSTRUCTION WORK IS IN PROGRESS OR PREPARATION, THE CONTRACTOR SHALL PERMIT ACCESS AND INSPECTION AND SHALL PROVIDE PROPER AND NECESSARY FACILITIES TO REPRESENTATIVES OF THE OWNER, ENGINEER AND REGULATORY AGENCIES. CONTRACTOR SHALL FULLY COOPERATE WITH ALL TESTING PERFORMED BY THE OWNER DURING CONSTRUCTION AND SHALL NOT MAKE ANY CLAIMS FOR ADDITIONAL TIME OR PAYMENT FOR COOPERATING FULLY.

3. AT A MINIMUM, ALL COMPONENTS IDENTIFIED ON THE FOLLOWING INSPECTION SCHEDULE FOR THE INSTALLATION OF THE SSDS SHALL BE INSPECTED AND APPROVED BY THE OWNER OR ITS APPROVED REPRESENTATIVE UPON COMPLETION OF EACH PHASE OF THE WORK, AND PRIOR TO COMMENCING EACH SUBSEQUENT PHASE OF WORK.

4. INSPECTION SCHEDULE

#	INSPECTION SCHEDULE – MILESTONE DESCRIPTION
1.	COMPLETION OF ALL SSDS SUBSURFACE COMPONENTS PRIOR TO CONCRETE SLAB POURS.
2.	OBSERVATION OF PRESSURE TEST OF COMPLETED INTERIOR RISER PIPES. SEE ARTICLE 014523 REGARDING TEST REQUIREMENTS.
3.	FINAL INSPECTION OF COMPLETED SYSTEM.

014523 - TESTING AND INSPECTING SERVICES

1. ALL OF THE INTERIOR RISERS SHALL BE SUBJECT INDIVIDUALLY TO A PRESSURE TEST TO ENSURE ALL COMPONENTS OF THE SSDS THAT PASS THROUGH THE FACILITY INTERIOR ARE AIRTIGHT AT 10.0 PSIG AIR PRESSURE.

2. A CLEANOUT SHALL BE PERMANENTLY INSTALLED ON EACH RISER PIPE WITH INVERT 12-INCHES ABOVE FINISHED FLOOR OF THE PIPE ENTRY INTO THE FACILITY AND BELOW THE CLEANOUT SHALL BE AN UNINTERRUPTED STRAIGHT PIPE RUN, WITHOUT COUPLINGS, JOINTS OR FITTINGS. A PRESSURE-STOP BALLOON SHALL BE INFLATED BETWEEN THE FOUNDATION FLOOR AND THE CLEANOUT CREATING AN AIRTIGHT SEAL. A TEMPORARY AIRTIGHT SEAL SHALL BE PLACED AT THE RISER TERMINATION ON THE ROOF. A STATIC PRESSURE OF AT LEAST 10.0 PSIG SHALL BE APPLIED TO THE PIPE AT THE CLEANOUT LOCATION AND MAINTAINED FOR A MINIMUM OF 30 MINUTES. ALL MATERIALS, GAUGES AND EQUIPMENT FOR THIS TEST SHALL BE PROVIDED BY THE CONTRACTOR. PRESSURE TESTING MUST BE WITNESSED BY A REPRESENTATIVE OF THE OWNER.

3. IF THE PIPE RISER DOES NOT SUCCESSFULLY MAINTAIN PRESSURE, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO IDENTIFY AND SEAL ALL LEAKS. THE TEST SHALL BE PERFORMED UNTIL RESULTS SATISFACTORY TO THE INSPECTOR ARE DEMONSTRATED.

015700 - ENVIRONMENTAL CONTROLS

1. CONTRACTOR'S VEHICLES AND EQUIPMENT SHALL BE SUCH AS TO MINIMIZE NOISE TO THE GREATEST DEGREE PRACTICABLE. NOISE LEVELS SHALL CONFORM TO OSHA STANDARDS AND LOCAL CODES.

2. CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO PREVENT THE MIGRATION OF DUST DUE TO THE WORK ACTIVITIES. NO OILS, CALCIUM CHLORIDE OR LIQUIDS OTHER THAN POTABLE WATER SHALL BE USED FOR DUST CONTROL.

016500 – PRODUCT DELIVERY REQUIREMENTS

1. DELIVER PRODUCTS TO SITE IN MANUFACTURER'S ORIGINAL PACKAGING, WITH LABELS CLEARLY IDENTIFYING PRODUCT AND MANUFACTURER.

016600 – PRODUCT STORAGE AND HANDLING REQUIREMENTS

1. STORE MATERIALS IN A CLEAN, DRY AREA IN ACCORDANCE WITH MANUFACTURERS' INSTRUCTIONS.

2. PROTECT MATERIALS DURING HANDLING AND INSTALLATION TO PREVENT DAMAGE.

3. EXAMINE ALL EQUIPMENT BEFORE INSTALLATION. DO NOT INSTALL ANY UNIT THAT IS FOUND TO BE DEFECTIVE. PROTECT ALL MATERIALS DURING HANDLING AND INSTALLATION TO PREVENT DAMAGE.

017123 - FIELD ENGINEERING

1. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL LOCATIONS, DIMENSIONS AND ELEVATIONS. NO DATA OTHER THAN WRITTEN ORDER OF THE ENGINEER SHALL JUSTIFY DEPARTURE FROM THE DIMENSIONS AND ELEVATIONS REQUIRED BY THE DRAWINGS.

2. THE CONTRACTOR SHALL EMPLOY AND RETAIN AT THE LOCATION OF THE WORK A FIELD ENGINEER AND/OR SUPERINTENDENT CAPABLE OF PERFORMING ALL ENGINEERING TASKS REQUIRED OF THE CONTRACTOR.

017319 - INSTALLATION

1. EQUIPMENT AND MATERIALS SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS HEREIN, AS SHOWN IN THE DRAWINGS, IN ACCORDANCE WITH MANUFACTURERS' SPECIFICATIONS/RECOMMENDATIONS AND WITH APPLICABLE BUILDING CODE REQUIREMENTS.

2. CONTRACTOR SHALL PERMANENTLY SUPPORT ALL SYSTEM COMPONENTS IN ACCORDANCE WITH BUILDING CODE REQUIREMENTS.

3. PERFORM ALL REQUIRED WIRING AND ELECTRICAL WORK FOR FULLY FUNCTIONAL SYSTEM.

4. INSTALL IN-LINE PRESSURE GAUGES TO ALLOW FOR REPLACEMENT WITH THREADED AIRTIGHT CONNECTIONS.

5. INSTALLATION OF THE VENT RISERS
   A. INSTALL VERTICAL PIPE TRULY PLUMB IN ALL DIRECTIONS.
   B. CUT PIPE FROM MEASUREMENTS TAKEN AT SITE, NOT FROM DRAWINGS.
   C. MAKE JOINTS IN ACCORDANCE WITH THE PIPE MANUFACTURER'S RECOMMENDATIONS AND THE REQUIREMENTS BELOW AND AS SHOWN ON DRAWINGS.
   D. PROVIDE SCHEDULE 40 STAINLESS STEEL PIPE SLEEVES WHERE PIPES PASS THROUGH WALLS, PARTITIONS, FLOORS, AND ROOF UNLESS OTHERWISE SHOWN OR SPECIFIED. SLEEVES THROUGH FLOORS SHALL BE FLUSH WITH FLOOR SPACE.
   E. PROVIDE ALL NECESSARY ADAPTERS, SPECIALS AND CONNECTION PIECES REQUIRED WHEN CONNECTING DIFFERENT TYPES AND SIZES OF PIPE OR CONNECTING PIPE MADE BY DIFFERENT MANUFACTURERS.
   F. VENT RISERS SHALL BE AS IDENTIFIED IN THE CONTRACT DOCUMENTS AND DRAWINGS. VENT RISERS SHALL BE INSTALLED, TESTED AND LABELED.
   G. CONTINUOUS TAPE LABELING ON ALL INTERIOR RISER PIPES BEGINNING AT THE FLOOR SLAB ELEVATION AND CONTINUING TO THE INSTALLATION OF SUCTION FANS ABOVE ROOF PENETRATIONS SHALL BE PERMANENTLY INSTALLED ON EACH RISER AND SHALL INDICATE FLOW DIRECTION AND SHALL READ:

   CAUTION: DO NOT TAP OR PUNCTURE
   SUBSURFACE VAPOR VENT PIPE
   NOT FOR DOMESTIC USE

6. INSTALLATION OF SUCTION FANS
   A. FURNISH, INSTALL, TEST AND PLACE IN SATISFACTORY OPERATION, AS SHOWN ON THE DRAWINGS, AS SPECIFIED AND IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, TWO SUCTION FANS WITH ALL APPURTENANCES, ACCESSORIES, AND SPARE PARTS AS REQUIRED PRODUCING A COMPLETE AND WORKABLE INSTALLATION.
   B. EACH SUCTION FAN SHALL BE CAPPED WITH A RAIN CAP. RAIN CAPS SHALL BE INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS. SEAL VENT RISER PIPES TO PREVENT ENTRY OF PRECIPITATION PRIOR TO INSTALLATION OF RAIN CAPS.
   C. INSTALL FANS TO WITHSTAND LOADS (WINDS, ETC.)
   D. THE FAN EXHAUST PIPE SHALL BE:
      i. ABOVE THE EAVE OF THE ROOF.
      ii. AT LEAST TEN FEET AWAY FROM ANY OPENING THAT IS LESS THAN TWO FEET BELOW THE EXHAUST POINT.
      iii. TEN FEET FROM ANY ADJOINING OR ADJACENT BUILDING, OR HVAC INTAKES OR SUPPLY REGISTERS.

7. FURNISH, INSTALL, TEST AND PLACE IN SATISFACTORY OPERATION AS SHOWN ON THE DRAWINGS, AS SPECIFIED AND IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, TWO FLOW INDICATOR SWITCHES WITH ALL APPURTENANCES, ACCESSORIES, AND SPARE PARTS AS REQUIRED PRODUCING A COMPLETE AND WORKABLE INSTALLATION.

8. THE FLOW SWITCHES SHALL BE MOUNTED FOR HORIZONTAL FLOW.

9. INDICATORS SHALL BE PROVIDED TO SHOW SEPARATELY FOR EACH SUCTION FAN AT LOW FLOW CONDITIONS THE FOLLOWING:

   SUB-SLAB GAS VENTING SYSTEM
   FAN MALFUNCTION IF LIT
   SERVICE FAN IMMEDIATELY

10. THE INDICATORS SHALL INCLUDE A WARNING LIGHT, NEMA ENCLOSURE AND ASSOCIATED RELAYS.

11. FURNISH, INSTALL, TEST AND PLACE IN SATISFACTORY OPERATION AS SHOWN ON THE DRAWINGS, AS SPECIFIED AND ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. TWO VACUUM GAUGES WITH ALL APPURTENANCES, ACCESSORIES AND SPARE PARTS AS REQUIRED PRODUCING A COMPLETE AND WORKABLE INSTALLATION.

12. MONITORING POINTS SHALL BE INSTALLED THROUGH THE FLOOR SLAB AND SHALL BE CONSTRUCTED WITH 1-INCH DIAMETER STAINLESS STEEL PIPE AS SHOWN ON THE DRAWINGS.

13. PERFORM CONCRETE REPAIR IN ACCORDANCE WITH THE REQUIREMENTS HEREIN, AS SHOWN IN THE DRAWINGS, AND IN ACCORDANCE WITH APPLICABLE BUILDING CODE REQUIREMENTS. PRIOR TO POURING CONCRETE FURNISH AND INSTALL A SINGLE PIECE OF 10 MIL. POLYETHYLENE PLASTIC SHEETING ABOVE PLYWOOD AND WASHED STONE.

017329 - CUTTING AND PATCHING

1. THE CONTRACTOR SHALL PERFORM ALL CUTTING AND PATCHING AS REQUIRED TO PROVIDE ACCESS FOR INSTALLATION OF VARIOUS PARTS OF THE WORK. ALL CUTTING SHALL BE PERFORMED SO AS TO MINIMIZE DAMAGE TO ADJACENT SURFACES. PATCHING OF EXISTING MATERIALS SHALL BE PERFORMED IN A NEAT AND WORKMANLIKE MANNER. ALL HOLES IN MASONRY OR CONCRETE FLOORS AND WALLS SHALL BE CORE DRILLED OR SAW CUT. PATCHING SHALL INCLUDE THE RESTORATION OF PAINTED SURFACES.

2. CONTRACTOR SHALL REPAIR EXISTING CRACKS IN FLOOR SLAB AT VARIOUS LOCATIONS THROUGHOUT THE BUILDING AS DIRECTED BY THE OWNER. THE PATCHSEALANT SHALL BE SIKATOP 111 PLUS BY SIKA CORPORATION OF LYNDHURST, NJ, OR APPROVED EQUAL. THE SEALANT SHALL MATCH THE EXISTING SURFACE IN COLOR.

3. PROVIDE U.L. LISTED FIRE STOPS WHERE PENETRATIONS ARE MADE THROUGH FIRE RATED FLOOR AND WALL ASSEMBLIES.

017400 – CLEANING AND WASTE MANAGEMENT

1. KEEP CONTRACT AREA CLEAN AND HAZARD FREE THROUGHOUT THE DURATION OF THE WORK. DISPOSE OF ALL DEBRIS AND RUBBISH.

017516 – STARTUP PROCEDURES

1. THE CONTRACTOR SHALL PLACE ALL EQUIPMENT AND ACCESSORIES INSTALLED INTO SUCCESSFUL OPERATION TO INSURE FULL COMPLIANCE WITH THE SPECIFICATIONS.

2. CONTRACTOR SHALL SHOW THAT THE DESIGN FLOW RATE CAN BE ACHIEVED AND THAT ALL INSTRUMENTATION AND CONTROLS OPERATE AS INTENDED.

3. FOLLOWING THE COMPLETION OF CONSTRUCTION OF THE SSDS, THE SUCTION FANS SHALL BE CONNECTED TO THE SSDS VENT RISERS ON THE ROOF OF THE BUILDING. CONTRACTOR SHALL START UP THE FANS AND DEMONSTRATE SATISFACTORY OPERATION, INCLUDING OPERATION OF CONTROLS, IN THE PRESENCE OF OWNER DESIGNATED REPRESENTATIVE.

4. THE CONTRACTOR SHALL PROVIDE ALL MATERIAL, LABOR, TOOLS, INSTRUMENTS, POWER, UTILITIES AND EXPENDABLES REQUIRED FOR THE START UP AND TESTING.

017600 – PROTECTING INSTALLED CONSTRUCTION

1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT NO DAMAGE OCCURS TO COMPONENTS OF THE SSDS PRIOR TO, DURING OR FOLLOWING INSTALLATION OF SYSTEM. ANY DAMAGES TO THE SSDS DURING PERFORMANCE OF THE WORK SHALL BE REPAIRED AND TESTED AT NO ADDITIONAL COST TO THE OWNER.

017700 - CLOSE-OUT PROCEDURES

1. CONTRACTOR SHALL THOROUGHLY CLEAN ALL MATERIALS, EQUIPMENT AND STRUCTURES; ALL MARRED SURFACES SHALL BE TOUCHED UP TO MATCH ADJACENT SURFACES; REMOVE LABELS, TAGS, PACKING MATERIALS AND OTHER FOREIGN ITEMS OR SUBSTANCES FROM INTERIOR AND EXTERIOR SURFACES, EQUIPMENT, SIGNS AND LETTERING.

2. AT THE TIME OF SUBSTANTIAL COMPLETION AN INSPECTION SHALL BE HELD. AT THIS TIME THE CONTRACTOR SHALL ALSO PROVIDE MANUFACTURERS' OWNER'S MANUALS AND WARRANTIES.

3. LEGALLY TRANSPORT AND DISPOSE OF OFF-SITE ALL WASTE GENERATED.

4. FOR A ONE YEAR PERIOD BEGINNING ON THE DAY AFTER SUBSTANTIAL COMPLETION DESIGNATED BY THE OWNER, THE CONTRACTOR SHALL AT NO ADDITIONAL COST TO THE OWNER REPAIR OR REPLACE MATERIAL AND EQUIPMENT AS NECESSARY TO CORRECT ANY DEFECTS IN THE WORK. DURING THE ONE YEAR PERIOD, AT NO ADDITIONAL COST TO THE OWNER, REPAIRS AND REPLACEMENTS SHALL BE MADE TO THE SATISFACTION OF THE ENGINEER OF ANY DEFECTS, RESULTING FROM ANY CAUSE OTHER THAN OWNER ERROR OR NEGLIGENCE OR DAMAGE CAUSED BY OTHERS. THE CONTRACTOR SHALL RESPOND TO REQUESTS FOR SERVICE BY THE OWNER BY DISPATCHING A QUALIFIED TECHNICIAN TO THE SITE WITHIN 48 HOURS. WITHIN 10 BUSINESS DAYS (EXCLUDING PARTS DELIVERY TIME) OF NOTICE FROM THE OWNER, REPAIRS/REPLACEMENTS SHALL BE COMPLETED. LIQUIDATED DAMAGES OF $100 PER BUSINESS DAY SHALL BE PAID BY THE CONTRACTOR TO THE OWNER FOR EACH BUSINESS DAY DURING WHICH WORK IS NOT COMPLETE AFTER THE 10-DAY PERIOD.

DIVISION 02 EXISTING CONDITIONS

020100 – MAINTENANCE OF EXISTING CONDITIONS

1. CONTRACTOR SHALL MAKE ALL NECESSARY PROVISIONS TO PROTECT ALL EXISTING AREAS OF THE PROJECT SITE FROM DAMAGE FOR THE DURATION OF THE WORK. ALL AFFECTED AREAS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION UPON COMPLETION OF THE WORK.

020101 - PROTECTION OF ON-SITE UTILITIES

1. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR IDENTIFYING, MARKING OUT AND PROTECTING ALL ABOVEGROUND AND UNDERGROUND UTILITIES AND STRUCTURES.

2. THE CONTRACTOR IS RESPONSIBLE FOR ARRANGING MARK OUTS AND PERFORMING FIELD LOCATIONS FOR ALL UTILITIES AND SUBSURFACE FACILITIES.

3. THE CONTRACTOR IS REQUIRED TO TAKE ALL PRECAUTIONS NECESSARY TO LOCATE, SUPPORT AND PROTECT UTILITIES DURING CONSTRUCTION. ALL COSTS ASSOCIATED WITH PROTECTING, MAINTAINING, RELOCATING, SUPPORTING, LOCATING, DIGGING PITS, ETC. FOR ALL UTILITIES SHALL BE INCLUDED IN THE QUOTED PRICE.

4. OBTAIN PERMISSION FROM THE OWNER AND ALL UTILITIES PRIOR TO EXCAVATION. UTILIZE THE "CALL BEFORE YOU DIG" HOT LINE PRIOR TO EXCAVATION.

5. CLEARLY STAKE AND MARK ALL EXISTING UNDERGROUND UTILITIES AND STRUCTURES AND EXTENT OF NEW EXCAVATIONS AND FIELD LOCATE.

6. ANY EXCAVATIONS WITHIN 24" OF A UTILITY SHALL BE CAREFULLY PERFORMED BY HAND.

7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND CONNECTING TEMPORARY GENERATOR SETS, PUMPS, ETC. TO MAINTAIN OPERATIONS FOR ANY PROPERTY OWNER FUNCTIONS WHICH ARE DISRUPTED BY ANY PORTION OF THIS WORK. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR TEMPORARY AND PERMANENT REPAIR OF ALL UTILITIES AND FACILITIES DAMAGED BY HIS WORK.

DIVISION 03 - CONCRETE

032100 - REINFORCING STEEL

1. REINFORCING BARS SHALL BE DEFORMED NEW EPOXY COATED BILLET STEEL BARS CONFORMING TO ASTM A 615, GRADE 60 (FY=60KSI).

033000 - CAST IN PLACE CONCRETE

1. CONCRETE CONSTRUCTION SHALL CONFORM TO THE LATEST EDITIONS OF THE AMERICAN CONCRETE INSTITUTE "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" (ACI 318), AND THE AMERICAN CONCRETE INSTITUTE "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS" (ACI 301). THIS INCLUDES ALL APPLICABLE REFERENCE STANDARDS.

2. MIX CONCRETE IN ACCORDANCE WITH ASTM C94, ALTERNATIVE NO. 2. USE ADMIXTURES ONLY WHEN APPROVED BY THE ENGINEER. CAST-IN-PLACE CONCRETE SHALL BE NORMAL WEIGHT AIR ENTRAINED CONCRETE AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS. THE MAXIMUM SLUMP SHALL BE 3 ± 1 INCHES. AIR ENTRAINMENT SHALL BE 5.5% ± 1%.

3. ALL CONCRETE MIXES SHALL BE PROPORTIONED SO THAT NO MORE THAN 635 POUNDS OF CEMENT ARE USED PER CUBIC YARD O

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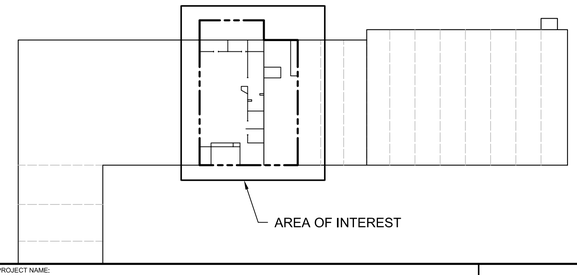
LEGEND

- POST OFFICE BOUNDARY
- MP-1 — PROPOSED SUB-SLAB MONITORING POINT LOCATION AND IDENTIFICATION NUMBER. (NOT TO SCALE)
- VR-1 — PROPOSED VENT RISER LOCATION AND IDENTIFICATION NUMBER. EXTEND THROUGH ROOF TO SUCTION FAN. (NOT TO SCALE)
- P-1 — PROPOSED SUB-SLAB DEPRESSURIZATION SYSTEM PIT LOCATION AND IDENTIFICATION NUMBER (BENEATH FLOOR SLAB)
- AREA OF POST OFFICE FORMERLY OCCUPIED BY DRY CLEANER

SITE LOCATION MAP
NOT TO SCALE



REVISIONS			
NO.	DESCRIPTION	BY	DATE

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APPROXIMATE SCALE: 1" = 5'
PAPER SIZE: 22" x 34"

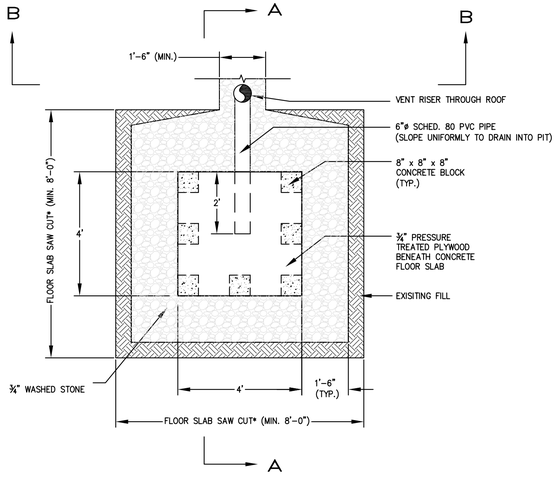
TRC
1430 BROADWAY, 10TH FLOOR
NEW YORK, NEW YORK 10018
212-221-7822

DESIGN BY: JG
DRAWN BY: HD
CHECK BY: DSG
DATE: JULY 2007
SCALE: NONE
PROJECT NUMBER: 150515.0000.00000

PROJECT NAME:
GOLDEN HORSESHOE SHOPPING CENTER
SCARSDALE, NEW YORK

DRAWING TITLE:
SUB-SLAB PIT AND MONITORING POINT LOCATION PLAN

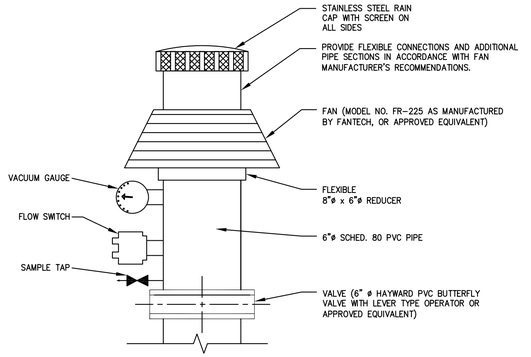
DWG. NO.
3



PLAN VIEW BELOW FLOOR SLAB
SUB-SLAB DEPRESSURIZATION PIT

NTS

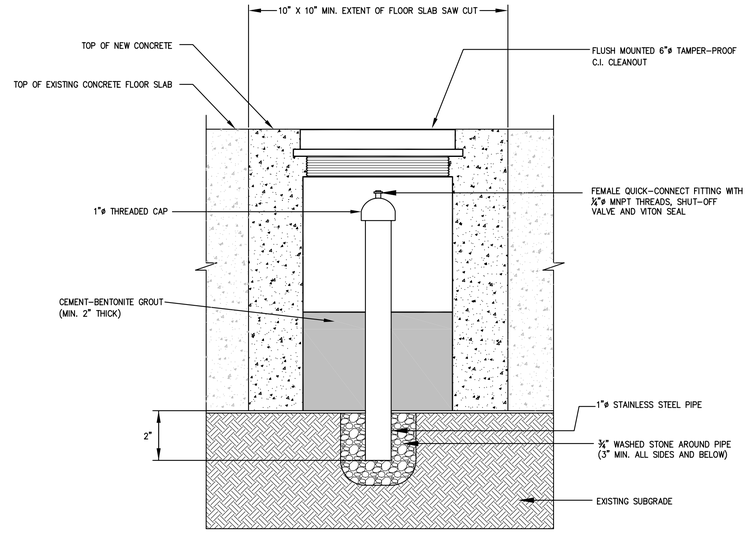
*- NEATLY CUT THROUGH DEPTH OF FLOOR SLAB AS SHOWN IN CONCRETE REPAIR SECTION.



NOTE: CONTRACTOR SHALL BE REQUIRED TO SUBMIT A DRAWING FOR ENGINEER'S APPROVAL SHOWNG ROOF PENETRATION DETAILS.

ABOVE ROOF DETAIL

NTS



MONITORING POINT DETAIL

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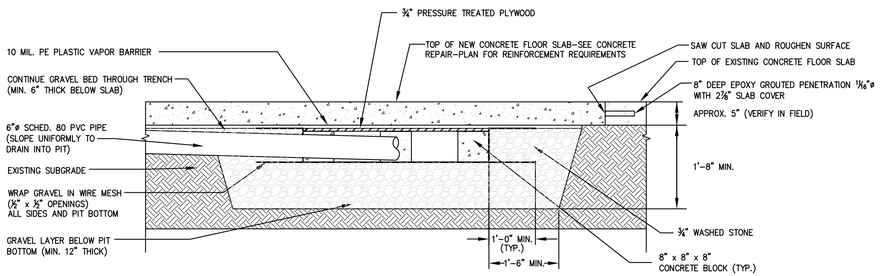
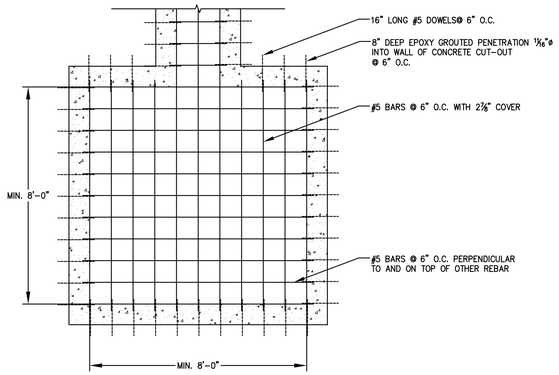


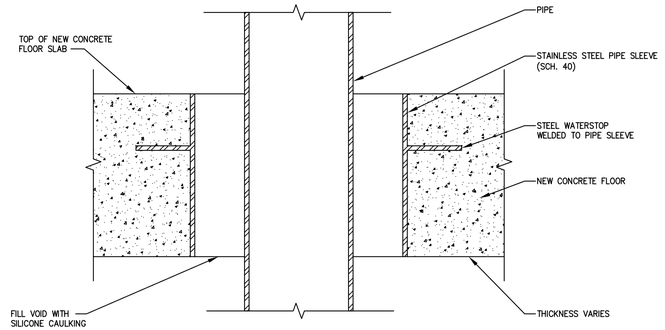
SECTION A-A
SUB-SLAB DEPRESSURIZATION PIT

NTS



PIT AND TRENCH
CONCRETE REPAIR - PLAN

NTS



TYPICAL PIPE PENETRATION
THROUGH FLOOR SLAB

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DRAWING TITLE:
DETAILS

DWG. NO.
4