

LOADING SCHEDULE

SUPERIMPOSED DEAD LOADING: SELF WEIGHT OF CONCRETE SLAB AND METAL DECK IS NOT INCLUDED IN THE FOLLOWING VALUES.

- FIRST FLOOR SLAB ON GRADE 17 PSF
- SECOND FLOOR 17 PSF
- ROOF 15 PSF

LIVE LOADING:

- FIRST FLOOR 100 PSF
- SECOND FLOOR 80 PSF @ CORRIDORS
50PSF @ ROOMS
- ROOF 20 PSF
- DUNNAGE 100 PSF

SNOW LOADING:

- GROUND SNOW LOAD PG= 30 PSF
- SNOW EXPOSURE FACTOR CE= .9
- IMPORTANCE FACTOR IS= 1
- THERMAL FACTOR CT= 1
- FLAT ROOF SNOW LOAD PF= 20 PSF
- SLOPE ROOF SNOW LOAD CS= 1.0
- SLOPE ROOF SNOW LOAD PS= 20 PSF
- DRIFT
 - SNOW DENSITY = 17.9 PCF
 - DRIFT HEIGHT HD = 3.52 FT
 - DRIFT HEIGHT PD = 63 PSF
- MAXIMUM DRIFT LOAD = 83 PSF
- DRIFT LOAD AT END = 20 PSF
- DRIFT WIDTH W= 14 FT
- FROST DEPTH = 4'-0" BELOW GRADE

WIND LOADING:

- BASIC WIND VELOCITY V= 115 MPH
- EXPOSURE FACTOR B
- IMPORTANCE FACTOR IW= 1
- ASCE 7-10 SIMPLIFIED PROCEDURE WIND LOADS
 - BUILDING OCCUPANCY II
 - g = 4.0
 - TERRAIN FACTOR KZT= 1.0
 - ROOF MEAN HEIGHT HR= 30 FT

- WIND FORCE MWFRS HORIZONTAL PRESSURE.
 - ZONE = 20.16 PSF

- WIND FORCE MWFRS VERTICAL PRESSURE.
 - ZONE = -22 PSF

- TOTAL BASE SHEAR OFFICE BUILDING.
 - N-S = 29 KIPS
 - E-W = 77 KIPS

- TOTAL BASE SHEAR ASRS BUILDING.
 - N-S = 186 KIPS
 - E-W = 160 KIPS

COMPONENTS AND CLADDING

- DISTANCE a= 21.0 FT
- EFFECTIVE WIND AREA OF C&C = 50 SF.
- WIND FORCE C&C HORIZONTAL PRESSURE.
 - WALL = 26 PSF

- WIND FORCE C&C VERTICAL PRESSURE.
 - ROOF = -28 PSF (UP)
 - ROOF = 16 PSF (DOWN)

SEISMIC LOADING OFFICE BUILDING:

- SEISMIC LOADING CALCULATED AS PER ASCE 7-10.
- SEISMIC OCCUPANCY II
- SS= 0.26g
- S1= 0.07g
- SPECTRAL RESPONSE COEFFICIENT SDS= 0.27 g
- SPECTRAL RESPONSE COEFFICIENT SD1= 0.114 g
- SITE CLASS C

- SEISMIC DESIGN CATEGORY B
- BASIC SEISMIC FORCE RESISTING SYSTEM: STEEL ORDINARY BRACED FRAMES
- RESPONSE MODIFICATION COEFFICIENT R= 3.25
- SYSTEM OVER STRENGTH FACTOR 'Wo' = 2.00
- DEFLECTION AMPLIFICATION FACTOR 'Cd' = 3.25
- CS= 0.084%g
- TOTAL BASE SHEAR = 536 KIPS

SEISMIC LOADING ASRS BUILDING:

- BASIC SEISMIC RESISTING FROM SYSTEM: ORDINARY CONCENTRIC BRACED FRAMES
- R = 3.25
- = 2.0
- Cd = 3.25
- CS = 0.084g
- TOTAL BASE SHEAR = 284 KIPS

NEW YORK STATE SPECIAL INSPECTION NOTES

- THE DESIGNATED INSPECTING AGENCY FOR SPECIAL INSPECTION APPROVED BY THE CODE ENFORCEMENT OFFICIAL AND ACCEPTABLE TO THE STRUCTURAL ENGINEER RETAINED BY THE OWNER/CONTRACTOR SHALL PERFORM ON SITE INSPECTION AND TESTING IN ACCORDANCE WITH NEW YORK STATE BUILDING CODE REGULATIONS UNDER THE SUPERVISION OF A NEW YORK STATE LICENSED PROFESSIONAL. SPECIAL INSPECTION ITEMS INCLUDE THE FOLLOWING LISTED BELOW.
- THE SPECIAL INSPECTION ENGINEERS ARE RESPONSIBLE FOR FILING AND OBTAINING APPROVAL OF ALL STATEMENTS, TEST AND INSPECTION REPORTS, INCLUDING STEEL, CONCRETE, MASONRY PRODUCER'S CERTIFICATES. COPIES TO BE SENT TO ENGINEER OF RECORD.
- ALL TESTING AGENCY REPORTS SHALL BE SIGNED AND SEALED BY A NEW YORK STATE LICENSED PROFESSIONAL ENGINEER. TECHNICAL REPORTS SHALL BE FILED WITH THE BUILDING DEPARTMENT FOR APPROVAL OF SAID REPORTS.
- CONTRACTOR TO NOTIFY THE SPECIAL INSPECTION ENGINEERS AT LEAST 72 HOURS BEFORE THE SPECIFIC WORK COMMENCES. THE CONTRACTOR SHALL PROVIDE AMPLE TIME FOR THE TESTING AGENCY TO COMPLETE THEIR WORK.
- CONTRACTOR SHALL NOT CONCEAL ANY WORK REQUIRING SPECIAL INSPECTION UNTIL SUCH WORK IS INSPECTED OR TESTED AND DEEMED TO MEET PROJECT CRITERIA AND CODE REQUIREMENTS.

SPECIAL INSPECTION	CODE SECTION	EMPLOYED BY
SOILS SITE PREPARATION	1704.7.1	OWNER
SOIL-FILL PLACEMENT AND IN-PLACE DENSITY	1704.7.2, 1704.7.3	OWNER
CONCRETE - CAST IN PLACE	TABLE 1704.4	OWNER
CONCRETE DESIGN MIX	1904 & 1905	CONTRACTOR
CONCRETE TEST CYLINDERS *	1905.6	OWNER
ADHESIVE ANCHOR AS REQ'D BY MANUFACTURER	N/A	OWNER
EXCAVATION - SHEETING, SHORING AND BRACING	3304.4.1	OWNER
UNDERPINNING		OWNER

UNDERPINNING NOTES

- BEFORE THE START OF UNDERPINNING WORK THE CONTRACTOR SHALL TAKE PHOTOGRAPHS TO DOCUMENT THE CONDITION OF THE EXISTING BUILDING AT 10 DUNNIGAN DRIVE FOR TWO COLUMN BAYS IN EVERY DIRECTION FORM THE FOUNDATION BEING UNDERPINNED. A REPORT CONTAINING THE PHOTOS AND DESCRIPTIONS OF ANY EXISTING CRACKS OR OTHER DAMAGE SHALL BE SUBMITTED TO THE OWNER BEFORE THE START OF UNDERPINNING WORK.
- CONTRACTOR SHALL SUBMIT A DETAILED UNDERPINNING PROCEDURE FOR REVIEW BY THE ENGINEER PRIOR TO THE START OF THE UNDERPINNING WORK. UNDERPINNING WORK SHALL NOT BEGIN UNTIL THIS PROCEDURE HAS BEEN APPROVED.
- THE SPECIAL INSPECTOR SHALL BE PRESENT AT ALL TIMES DURING ALL UNDERPINNING OPERATIONS.
- CONCRETE FOR UNDERPINNING PIERS SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4000PSI. TYPE III CEMENT MAY BE USED.
- TIMBER LAGGING SHALL HAVE A MINIMUM ALLOWABLE BENDING STRESS OF 1,200 PSI AND A MINIMUM ALLOWABLE SHEAR STRESS OF 175 PSI. USE 2" LAGGING ABOVE 6'-0" DEPTH AND 3" L
- SIZES OF THE PIT PIERS ARE SHOWN ON THE CONTRACT DRAWINGS.
- EXCAVATE TO THE TOP OF THE ADJACENT FOOTING. DURING EXCAVATION OF EACH PIT, RECORD THE ELEVATION OF THE BOTTOM OF THE FOUNDATION. DEMOLITION OF THE OUTER EDGE OF THE FOOTINGS SHALL BE PERFORMED AFTER THE UNDERPINNING PIERS ARE FULLY INSTALLED.
- ONLY PITS HAVING THE SAME LETTER SHALL BE OPEN AT THE SAME TIME.
- PITS OF THE NEXT LETTER SHALL NOT BE OPENED UNTIL THE PREVIOUS PIT IS WEDGED AND DRYPACKED, THE DOWELS THROUGH THE FOOTING ARE INSTALLED, AND THE APPROACH PIT FOR THE CONSTRUCTION OF THE PREVIOUS PIT IS BACKFILLED.
- NO EXCAVATION FACE SHALL BE LEFT EXPOSED (UNLAGGED) FOR MORE THAN 3 HOURS.
- EXCAVATION BENEATH THE EXISTING STRUCTURE SHALL BE PERFORMED WITH HAND-HELD SHOVELS. CAREFULLY HAND TRIM THE EXCAVATION FACES. USE OF BACKHOES IS PROHIBITED FOR EXCAVATION OF UNDERPINNING PIT PIERS.
- EXCAVATION SHALL NOT EXTEND MORE THAN ONE FOOT BENEATH THE LOWEST INSTALLED LAGGING BOARD.
- ALL FOUR SIDES OF THE EXCAVATION SHALL BE LAGGED AND CLEATED BEFORE PROCEEDING WITH SUBSEQUENT EXCAVATION.
- PROVIDE LOUVERS BETWEEN LAGGING BOARDS AS SHOWN ON **SE-310**.
- IMMEDIATELY BACKPACK ANY VOIDS BEHIND THE LAGGING BOARDS.
- EXCAVATION OF UNDERPINNING PITS BELOW THE WATER TABLE IS PROHIBITED.
- IF GROUND WATER IS ENCOUNTERED IN A PIT, BACKFILL TO ABOVE THE GROUND WATER TABLE. PROVIDE A WELL POINT NEAR THE PIT TO LOWER THE WATER TABLE BENEATH THE REQUIRED PIT SUBGRADE ELEVATION. RESUME PIT EXCAVATION AFTER THE GROUNDWATER LEVEL HAS BEEN LOWERED.
- ALL UNDERPINNING PIERS SHALL BEAR ON UNDISTURBED NATURAL SAND. CONCRETE SHALL NOT BE PLACED UNTIL PIT SUBGRADE IS INSPECTED AND APPROVED BY THE SPECIAL INSPECTOR.
- THE UNDERPINNING SHALL BE INSTALLED IN A MANNER SUCH THAT THE EXPOSED FACE OF THE CONCRETE IS VERTICAL, CLEAN AND NEAT.
- EACH UNDERPINNING PIER SHALL BE A CONSTRUCTED IN ONE LIFT WITHOUT INTERMEDIATE HORIZONTAL CONSTRUCTION JOINTS (COLD JOINTS)
- THE UNDERSIDE OF THE FOOTING SHALL BE CLEANED OF SOIL AND LOOSE MATERIAL PRIOR TO INSTALLING WEDGES AND DRYPACKING.
- WEDGING SHALL BE PERFORMED AFTER CONCRETE HAS ATTAINED A MINIMUM STRENGTH OF 2,000 PSI. STRENGTH SHALL BE CONFIRMED BY BREAKING LABORATORY TEST SAMPLES PRIOR TO WEDGING.
- TACK WELD WEDGES AFTER DRIVING. INSTALL DRYPACK AFTER TACK WELDING IS PERFORMED.
- DRYPACK SHALL CONSIST OF A MIXTURE OF 1 PART CEMENT AND 1.5 PARTS MOIST SAND.
- DRYPACK SHALL BE RAMMED INTO SPACE BETWEEN TOP OF PIER CONCRETE AND THE UNDERSIDE OF THE FOOTING USING THE END OF A 2x4 OR SIMILAR INSTRUMENT. THE ENTIRE VOID BETWEEN THE PIER CONCRETE AND THE BOTTOM OF THE FOOTING SHALL BE FILLED WITH DRYPACK IN THIS MANNER.
- DRYPACK THICKNESS SHALL NOT EXCEED 3".
- DO NOT PLACE BACKFILL AGAINST NEW UNDERPINNING SEGMENT UNTIL A MINIMUM OF 24 HOURS HAS PASSED SINCE COMPLETION OF THE CONCRETE PLACEMENT. BACKFILL CURRENT EXCAVATION TO THE TOP OF THE FOOTING PRIOR TO STARTING EXCAVATION FOR NEXT PIER.
- TIMBER SHEETING FOR UNDERPINNING AND APPROACH PITS SHALL REMAIN IN PLACE UNTIL GENERAL EXCAVATION IS PERFORMED.

TIEBACK NOTES

- TIEBACKS SHOWN ON THE CONTRACT DRAWINGS UNDER 10 DUNNIGAN DRIVE SHALL BE DESIGNED BY THE CONTRACTOR FOR THE LOADS SHOWN ON THE CONTRACT DRAWINGS IN ACCORDANCE WITH THE REQUIREMENTS OF PTI DC35.1-14, "RECOMMENDATIONS FOR PRESTRESSED ROCK AND SOIL ANCHORS".
- A COMPLETE SET DESIGN CALCULATIONS DOCUMENTING THE STRUCTURAL AND GEOTECHNICAL CAPACITY OF THE TIEBACKS, SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NY SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW.
- TIEBACKS SHALL BE TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF PTI DC35.1-14, "RECOMMENDATIONS FOR PRESTRESSED ROCK AND SOIL ANCHORS".

OPTICAL MONITORING NOTES:

- CONTRACTOR SHALL PREPARE AN OPTICAL MONITORING PLAN SHOWING THE LOCATIONS OF THE MONITORING POINTS, AND MONITORING POINT DESIGNATIONS AND SUBMIT THE PLAN FOR REVIEW BY THE ENGINEER PRIOR TO THE START OF WORK.
- PRIOR TO THE START OF WORK, INSTALL A DEFORMATION MONITORING POINT, MIDWAY UP THE COLUMN AT EACH FOUNDATION THAT IS TO BE UNDERPINNED AND AT 25-FOOT INTERVALS ALONG THE NORTH AND WEST WALL OF 20 DUNNIGAN DRIVE, AND ALONG THE EAST AND WEST WALLS OF 10 DUNNIGAN DRIVE.
- TAKE TWO BASELINE READINGS OF ALL MONITORING POINTS PRIOR TO THE START OF EXCAVATION.
- DURING UNDERPINNING OPERATIONS, DEFORMATION MONITORING POINTS THE COLUMNS AT THE FOOTINGS BEING UNDERPINNED SHALL BE OPTICALLY MONITORED FOR VERTICAL AND LATERAL MOVEMENTS AT LEAST TWICE DAILY. ALL MEASUREMENTS SHALL BE REFERENCED TO FIXED BACK-SITE REFERENCE POINTS ESTABLISHED AND AGREED TO WITH THE ENGINEER. MEASUREMENTS SHALL BE PROVIDED TO THE ENGINEER AT THE END OF EACH DAY. AFTER UNDERPINNING IS COMPLETE, TAKE READINGS WEEKLY FOR 4 MORE WEEKS.
- DEFORMATION MONITORING POINTS ON ADJACENT BUILDINGS SHALL BE OPTICALLY MONITORED DAILY DURING ACTIVE EXCAVATION IN FRONT OF BUILDING AND WEEKLY AND UNTIL FOUNDATION CONSTRUCTION IS COMPLETE. MONITORING REPORTS SHALL BE SUBMITTED TO THE ENGINEER AT THE END OF EACH WEEK.
- AT THE END OF EACH DAY DURING UNDERPINNING OPERATIONS, THE SPECIAL INSPECTOR AND THE UNDERPINNING CONTRACTOR SHALL VISUALLY REVIEW THE CONDITION OF THE BUILDING IN EACH COLUMN BAY ADJACENT TO THE UNDERPINNING TO CHECK FOR SIGNS OF SETTLEMENT OR DAMAGE.
- IF MOVEMENT OF 1/4" IS RECORDED AT ANY MONITORING POINT, INFORM THE ENGINEER AND PROJECT OWNER IMMEDIATELY. A MEETING SHALL BE HELD WITH THE OWNER, CONTRACTOR AND ENGINEER TO REVIEW THE CONSTRUCTION PROCEDURES AND DETERMINE IF MODIFICATIONS ARE REQUIRED.
- IF MOVEMENT OF 1/2" IS RECORDED AT ANY MONITORING POINT, STOP ALL WORK, BACKFILL ANY INCOMPLETE UNDERPINNING PITS. DO NOT RESUME WORK UNTIL REVISED PROCEDURES ARE DETERMINED AND AGREED UPON.

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REV	DESCRIPTION	DATE
1	ISSUED FOR BID	10.15.21
2	CD SET	11.30.21
3	REVISED BID SET	01.20.22
4	ISSUED FOR CONSTRUCTION	04.04.22

DRAWN BY : D. CHECHURIN

CHECKED BY : I. BEER

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NOTES



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