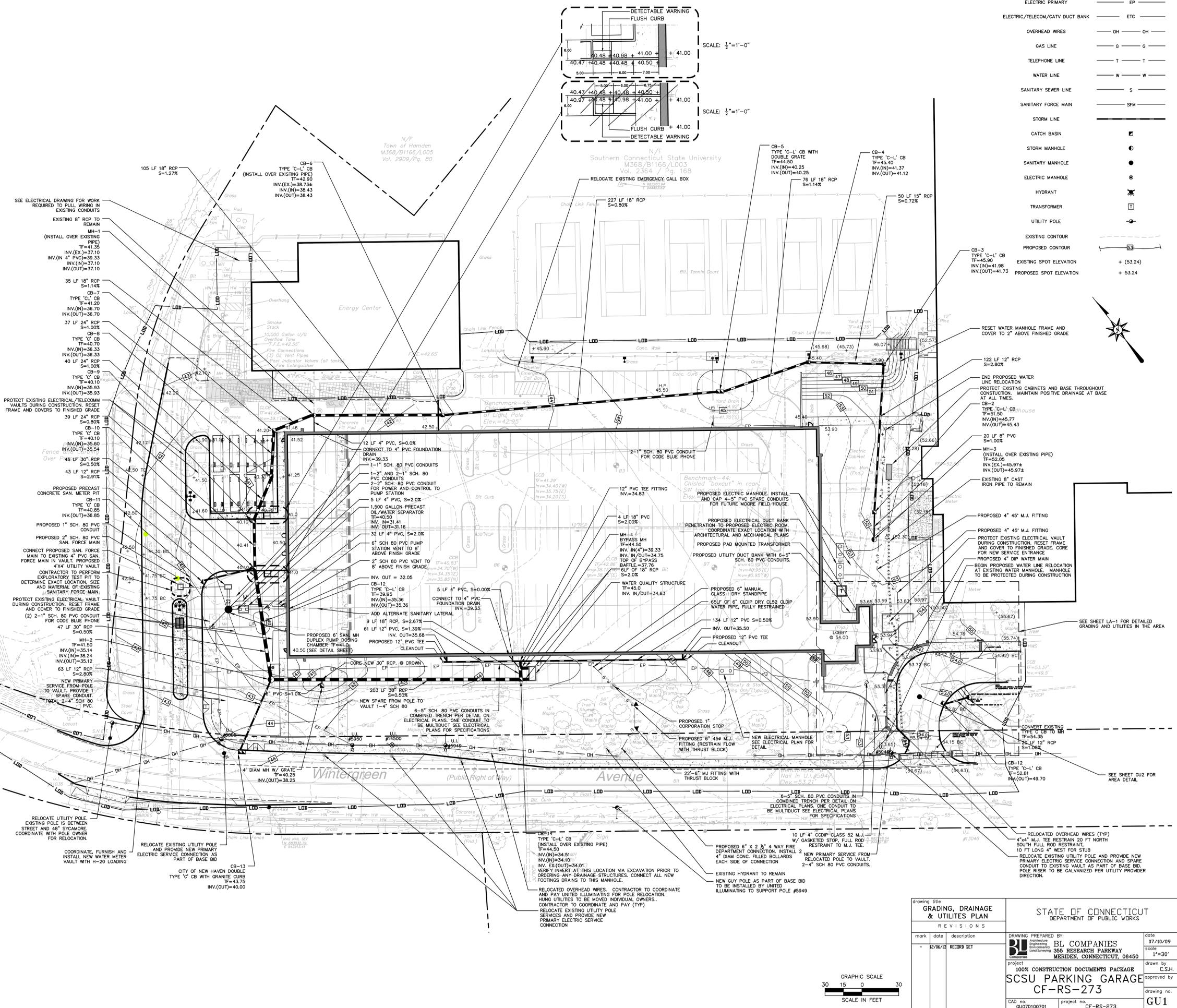


# GRADING, DRAINAGE AND UTILITIES NOTES

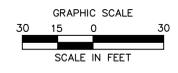
- GRADING GENERAL NOTES:**
- SEE SITE PLAN FOR ADDITIONAL GENERAL NOTES.
  - THIS DRAWING IS INTENDED TO DESCRIBE GRADING AND UTILITIES ONLY. REFER TO SITE PLAN FOR GENERAL INFORMATION, AND DETAIL SHEETS FOR DETAILS. SEE MEP DRAWINGS FOR BUILDING CONNECTION LOCATIONS AND DETAILS.
  - THE CONTRACTOR SHALL PRESERVE EXISTING VEGETATION WHERE POSSIBLE AND/OR AS NOTED ON DRAWINGS. REFER TO EROSION CONTROL PLAN FOR LIMIT OF DISTURBANCE AND NOTES.
  - TOPSOIL SHALL BE STRIPPED AND STOCKPILED FOR USE IN FINAL LANDSCAPING.
  - THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS REQUIRED BY GOVERNMENT AND LOCAL AGENCIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FROM THE LOCAL MUNICIPALITIES REQUIRED TO PERFORM ALL REQUIRED WORK, INCLUDING FOR STREET CUTS AND CONNECTIONS TO EXISTING UTILITIES. THE CONTRACTOR SHALL POST ALL BONDS, PAY ALL FEES, PROVIDE PROOF OF INSURANCE AND PROVIDE TRAFFIC CONTROL NECESSARY FOR THIS WORK.
  - THE CONTRACTOR SHALL PROVIDE AND MAINTAIN TRAFFIC DEVICES FOR PROTECTION OF VEHICLES AND PEDESTRIANS CONSISTING OF DRUMS, BARRIERS, SIGNS, LIGHTS FENCES AND UNIFORMED TRAFFIC CONTROLLERS AS REQUIRED, ORDERED BY THE ENGINEER OR REQUIRED BY THE STATE AND LOCAL GOVERNING AUTHORITIES.
  - THE CONTRACTOR SHALL COMPACT FILL IN 8" MAXIMUM LIFTS UNDER ALL PARKING, BUILDING, AND DRIVE AREAS TO 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D1557 (MODIFIED PROCTOR TEST), OR AS DIRECTED BY THE GEOTECHNICAL ENGINEER.
  - UNDERDRAINS SHALL BE ADDED, IF DETERMINED NECESSARY IN THE FIELD BY THE OWNER/ENGINEER, AFTER SUBGRADE IS ROUGH GRADED.
  - VERTICAL DATUM IS NAVD 88.
  - CLEARING LIMITS SHALL BE PHYSICALLY MARKED IN THE FIELD AND APPROVED BY THE CT DEPARTMENT OF PUBLIC WORKS ENVIRONMENTAL AGENT PRIOR TO THE START OF WORK ON THE SITE.
  - PROPER CONSTRUCTION PROCEDURES SHALL BE FOLLOWED ON ALL IMPROVEMENTS WITHIN THIS PARCEL SO AS TO PREVENT THE SILING OF ANY WATERCOURSE OR WETLANDS IN ACCORDANCE WITH THE REGULATIONS OF THE DEPARTMENT OF ENVIRONMENTAL PROTECTION GUIDELINES FOR SOIL EROSION AND SEDIMENT POLLUTION CONTROL. IN ADDITION, THE CONTRACTOR SHALL STRICTLY ADHERE TO THE "EROSION CONTROL PLAN" CONTAINED HEREIN. THE CONTRACTOR SHALL BE RESPONSIBLE TO POST ALL BONDS AS REQUIRED BY THE LOCAL MUNICIPALITIES, OR SOIL CONSERVATION SERVICE WHICH WOULD GUARANTEE THE PROPER IMPLEMENTATION OF THE PLAN.
  - ALL SITE WORK, MATERIALS FOR CONSTRUCTION, AND CONSTRUCTION METHODS FOR EARTHWORK, STORM DRAINAGE AND UTILITY WORK SHALL CONFORM TO THE SPECIFICATIONS AND DETAILS AND APPLICABLE SECTIONS OF THE STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION UNLESS OTHERWISE STATED IN THE PROJECT MANUAL SPECIFICATIONS. ALL FILL MATERIAL UNDER STRUCTURES AND PAVED AREAS SHALL BE PER THE SPECIFICATIONS, AND/OR PROJECT GEOTECHNICAL REPORT, AND SHALL BE PLACED IN ACCORDANCE WITH THE SPECIFICATIONS OF THE DOT, UNDER THE SUPERVISION OF A QUALIFIED PROFESSIONAL ENGINEER. MATERIAL SHALL BE COMPACTED IN 8" LIFTS TO 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D 1557 AT 3 +/- PERCENT OF OPTIMUM MOISTURE CONTENT.
  - ALL DISTURBANCE INCURRED TO TOWN OR STATE PROPERTY DUE TO CONSTRUCTION SHALL BE RESTORED TO ITS PREVIOUS CONDITION OR BETTER, TO THE SATISFACTION OF THE CT DEPARTMENT OF PUBLIC WORKS (CTDPW) AND STATE OF CONNECTICUT.
  - ALL CONSTRUCTION SHALL COMPLY WITH THE LOCAL MUNICIPALITY'S STANDARDS AND STATE OF CONNECTICUT DOT SPECIFICATIONS. ALL CONSTRUCTION WITHIN A DOT RIGHT OF WAY SHALL COMPLY WITH ALL DEPARTMENT OF TRANSPORTATION STANDARDS, WHERE SPECIFICATIONS OR STANDARDS ARE IN CONFLICT, THE MORE STRINGENT SPECIFICATION OR STANDARD SHALL BE SUPERIOR.
- UTILITY CONSTRUCTION NOTES:**
- CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE LOCAL MUNICIPALITIES AND PROVIDERS TO SECURE PERMITS AND FOR PAYMENT OF FEES FOR STREET CUTS AND CONNECTIONS TO EXISTING UTILITIES.
  - THE CONTRACTOR SHALL PROVIDE AND MAINTAIN TRAFFIC DEVICES FOR PROTECTION OF VEHICLES AND PEDESTRIANS CONSISTING OF DRUMS, BARRIERS, SIGNS, LIGHTS FENCES AND UNIFORMED TRAFFIC CONTROLLERS AS REQUIRED, ORDERED BY THE ENGINEER OR REQUIRED BY THE LOCAL GOVERNING AUTHORITIES.
  - THIS PLAN DETAILS PIPES UP TO 5' FROM THE BUILDING FACE. REFER TO DRAWINGS BY OTHERS FOR BUILDING CONNECTIONS. CONTRACTOR SHALL SUPPLY AND INSTALL PIPE ADAPTERS AS NECESSARY AT BUILDING CONNECTION POINT OR AT EXISTING UTILITY OR PIPE CONNECTION POINT.
  - THE CONTRACTOR SHALL VISIT THE SITE AND VERIFY THE ELEVATION AND LOCATION OF ALL UTILITIES BY VARIOUS MEANS PRIOR TO BEGINNING ANY EXCAVATION. TEST PITS SHALL BE DUG AT ALL LOCATIONS WHERE SEWERS CROSS-EXISTING UTILITIES, AND THE HORIZONTAL AND VERTICAL LOCATIONS OF THE UTILITIES SHALL BE DETERMINED. THE CONTRACTOR SHALL CONTACT THE SITE ENGINEER IN THE EVENT OF ANY DISCOVERED OR UNDESIGNED CONFLICTS BETWEEN EXISTING AND PROPOSED UTILITIES SO THAT AN APPROPRIATE MODIFICATION MAY BE MADE.
  - UTILITY CONNECTION DESIGN AS REFLECTED ON THE PLAN MAY CHANGE SUBJECT TO UTILITY CO. AND CITY STAFF REVIEW.
  - THE CONTRACTOR SHALL ENSURE THAT ALL UTILITY COMPANIES AND CITY STANDARDS FOR MATERIALS AND CONSTRUCTION METHODS ARE MET. THE CONTRACTOR SHALL PERFORM PROPER COORDINATION WITH THE RESPECTIVE UTILITY COMPANY.
  - THE CONTRACTOR SHALL ARRANGE FOR AND COORDINATE WITH THE RESPECTIVE UTILITY COMPANIES FOR SERVICE INSTALLATIONS AND CONNECTIONS. THE CONTRACTOR SHALL COORDINATE WORK TO BE PERFORMED BY THE VARIOUS UTILITY COMPANIES AND SHALL PAY ALL FEES FOR CONNECTIONS, DISCONNECTION, RELOCATIONS, INSPECTIONS, AND DEMOLITION.
  - ALL EXISTING PAVEMENT WHERE UTILITY PIPING IS TO BE INSTALLED SHALL BE SAW CUT.
  - ALL PIPES SHALL BE LAID ON STRAIGHT ALIGNMENTS AND EVEN GRADES USING A PIPE LASER OR OTHER ACCURATE METHOD.
  - SANITARY LATERAL SHALL MAINTAIN (10" MIN. HORIZONTAL 1.5" VERTICAL MIN.) SEPARATION DISTANCE FROM WATER LINES, OR ADDITIONAL PROTECTION MEASURES WILL BE REQUIRED WHERE PERMITTED.
  - RELOCATION OF UTILITY COMPANY FACILITIES SUCH AS POLES, TO BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE UTILITY OWNERS.
  - THE CONTRACTOR SHALL STABLE THE PIPE BACKFILL IN 8" LIFTS ACCORDING TO THE PIPE BEDDING DETAILS. TRENCH BOTTOM SHALL BE COMPACT IN HIGH GROUNDWATER AREAS. A PIPE FOUNDATION SHALL BE USED IN AREAS OF ROCK EXCAVATION. STORM SEWERS MAY BE PLACED PRIOR TO PLACING FILL.
  - CONTRACTOR TO PROVIDE SLEEVES UNDER FOOTINGS FOR UTILITY CONNECTIONS.
  - UTILITY PENETRATIONS AND LOCATIONS ARE SHOWN FOR THE CONTRACTOR'S INFORMATION AND SHALL BE VERIFIED WITH THE MEP DRAWINGS AND CONSTRUCTION MANAGER.
  - ALL UTILITY CONSTRUCTION IS SUBJECT TO INSPECTION FOR APPROVAL PRIOR TO BACKFILLING, IN ACCORDANCE WITH THE APPROPRIATE UTILITY COMPANY AND/OR THE LOCAL MUNICIPALITIES' REQUIREMENTS.
  - A ONE-FOOT MINIMUM CLEARANCE BETWEEN WATER, GAS, ELECTRICAL, AND TELEPHONE LINES AND STORM SEWERS SHALL BE PROVIDED. A SIX-INCH MINIMUM CLEARANCE SHALL BE MAINTAINED BETWEEN STORM AND SANITARY SEWER WITH A CONCRETE ENCASMENT.
  - CONTRACTOR SHALL PROVIDE ALL FITTINGS, ADAPTERS, ETC., AS REQUIRED FOR PIPE CONNECTIONS TO BUILDING STUB OUTS, INCLUDING ROOF/FOOTING DRAIN CONNECTIONS TO ROOF LEADERS AND TO STORM DRAINAGE SYSTEM.
  - MANHOLE RIMS AND CATCH BASIN GRATES SHALL BE SET TO ELEVATIONS SHOWN. SET ALL EXISTING MANHOLE RIMS AND VALVE COVERS TO BE RAISED OR LOWERED FLUSH WITH FINAL GRADE AS NECESSARY.
  - SITE CONTRACTOR SHALL COORDINATE INSTALLATION OF CONDUIT AND CABLES FOR SITE LIGHTING WITH THE BUILDING ELECTRICIAN.
  - CONTRACTOR SHALL COORDINATE INSTALLATION FOR ELECTRICAL SERVICES TO SITE LIGHTING WITH THE BUILDING ELECTRICIAN.
  - THE CONTRACTOR SHALL RESTORE ANY UTILITY STRUCTURE, PIPE, UTILITY, PAVEMENT, CURBS, SIDEWALKS, OR LANDSCAPED AREAS DISTURBED DURING CONSTRUCTION, TO THEIR ORIGINAL CONDITION OR BETTER.
  - INFORMATION ON EXISTING UTILITIES AND STORM DRAINAGE HAS BEEN COMPILED FROM AVAILABLE INFORMATION INCLUDING UTILITY COMPANY AND MUNICIPAL RECORD MAPS AND/OR FIELD SURVEY AND IS NOT GUARANTEED CORRECT OR COMPLETE. UTILITIES AND STORM DRAINAGE ARE SHOWN TO ALERT THE CONTRACTOR TO THEIR PRESENCE. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL LOCATIONS AND ELEVATIONS OF UTILITIES AND STORM DRAINAGE INCLUDING SERVICES "CALL BEFORE YOU DIG" WILL NOT COVER UTILITIES ON THE SCHOOL CAMPUS. A UTILITY LOCATION COMPANY WILL NEED TO BE HIRED BY THE CONTRACTOR TO VERIFY ALL UNDERGROUND AND OVERHEAD UTILITY AND STORM DRAINAGE LOCATIONS.
  - THE CONTRACTOR SHALL ARRANGE AND COORDINATE WITH UTILITY COMPANIES AND THE CTDPW FOR WORK TO BE PERFORMED BY UTILITY COMPANIES OR BY CTDPW. THE CONTRACTOR SHALL PAY ALL UTILITY FEES AND REPAIR PAYMENTS AS NECESSARY.
  - ELECTRIC, AND TELEPHONE SERVICES SHALL BE INSTALLED UNDERGROUND FROM EXISTING UTILITY VAULT AS SHOWN ON ELECTRICAL PLANS. THE CONTRACTOR SHALL INSTALL AND BACKFILL PVC CONDUITS FOR ELECTRIC PRIMARY AND SECONDARY SERVICES (SCHEDULE 80 UNDER PAVEMENT, SCHEDULE 40 IN NON PAVEMENT AREAS) AS SHOWN ON THE ELECTRICAL PLANS AND ON THIS SHEET. SERVICES MAY BE INSTALLED IN A COMMON TRENCH PER THE DETAILS. MINIMUM COVER IS 36" ON ELECTRIC CONDUITS. SERVICES SHALL BE MARKED WITH MAGNETIC LOCATOR TAPE AND SHALL BE BEDDED, INSTALLED, AND BACKFILLED IN ACCORDANCE WITH ELECTRIC COMPANY STANDARDS. GALVANIZED STEEL ELECTRICAL CONDUIT SHALL BE USED AT TRANSFORMER LOCATIONS. INSTALL HANDHOLES AS REQUIRED.
  - ALL WATER LINES TO HAVE A MINIMUM COVER OF 4 FEET. ALL LINES SHALL BE BEDDED IN 6" SAND AND BACKFILLED WITH 12" SAND.
  - ALL WATER MAINS, WATER SERVICES AND SANITARY SEWER LATERAL SHALL CONFORM TO THE CTDPW, SCORNA, OR THE APPROPRIATE LOCAL UTILITY COMPANY SPECIFICATIONS, AS WELL AS TO OTHER APPLICABLE CODES AND SPECIFICATIONS FOR POTABLE WATER SYSTEMS.
  - THE CONTRACTOR SHALL MAINTAIN ALL FLOWS AND UTILITY CONNECTIONS TO EXISTING BUILDINGS TO REMAIN WITHOUT INTERRUPTION UNLESS/AS AUTHORIZED TO DISCONNECT BY THE OWNERS, THE PROJECT ENGINEER, UTILITY COMPANIES AND GOVERNING AUTHORITIES.
  - ANY EXISTING POTABLE WELL AND SEPTIC TANKS/ABSORPTION AREAS SHALL BE ABANDONED AND REMOVED PER THE CTDPW AND CT HEALTH CODE REQUIREMENTS.
  - INSTALL CONCRETE ENCASMENT ON PRIMARY ELECTRIC CONDUITS.

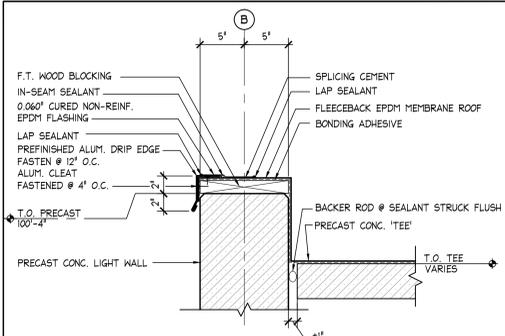


## SITE UTILITY LEGEND

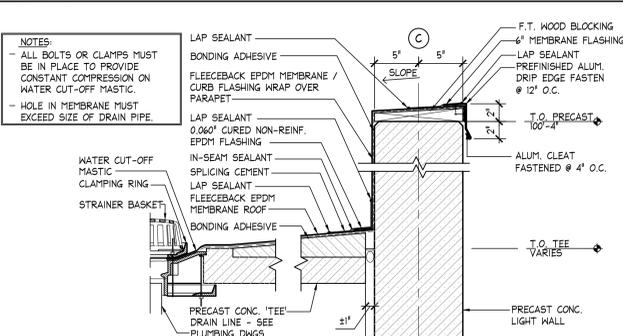
- ELECTRIC LINE — E — E —
- ELECTRIC PRIMARY — EP —
- ELECTRIC/TELECOM/CATV DUCT BANK — ETC —
- OVERHEAD WIRES — OH — OH —
- GAS LINE — G — G —
- TELEPHONE LINE — T — T —
- WATER LINE — W — W —
- SANITARY SEWER LINE — S —
- SANITARY FORCE MAIN — SFM —
- STORM LINE —
- CATCH BASIN
- STORM MANHOLE
- SANITARY MANHOLE
- ELECTRIC MANHOLE
- HYDRANT
- TRANSFORMER
- UTILITY POLE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING SPOT ELEVATION + (53.24)
- PROPOSED SPOT ELEVATION + 53.24

|                                    |          |  |          |
|------------------------------------|----------|--|----------|
| drawing title                      |          | STATE OF CONNECTICUT<br>DEPARTMENT OF PUBLIC WORKS   |          |
| GRADING, DRAINAGE & UTILITIES PLAN |          | DRAWING PREPARED BY:                                 |          |
| DESCRIPTIONS                       |          | BL COMPANIES   |          |
| mark                               | date     | revision   | date     |
| -                                  | 12/06/13 | RECORD SET   | 07/16/09 |
| project                            |          | 365 RESEARCH PARKWAY<br>MERRIDEN, CONNECTICUT, 06450 |          |
| project                            |          | 100% CONSTRUCTION DOCUMENTS PACKAGE                  |          |
| project                            |          | SCSU PARKING GARAGE                                  |          |
| project                            |          | CF-RS-273  |          |
| CAD no.                            |          | project no.  |          |
| GU07D100701                        |          | CF-RS-273  |          |

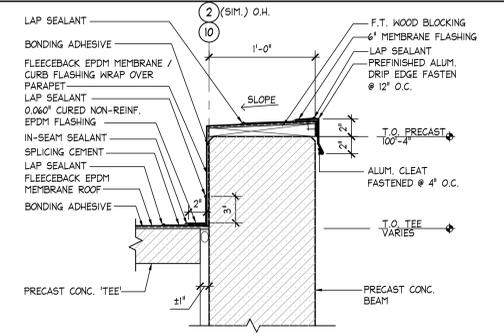




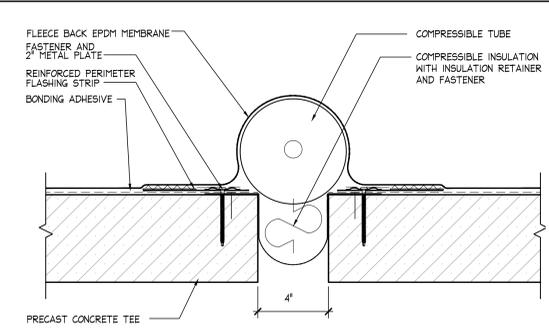
**1 PARAPET DETAIL ALT#3**  
1 1/2" = 1'-0"



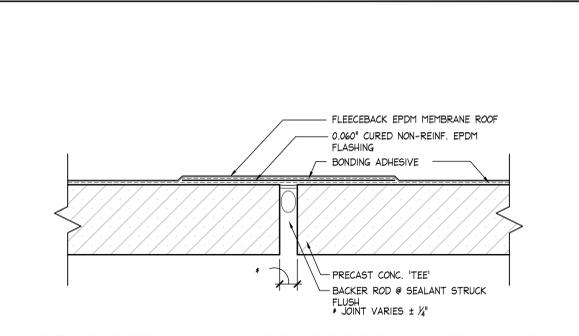
**2 ROOF DRAIN ALT#3**  
1 1/2" = 1'-0"



**3 PARAPET DETAIL ALT#3**  
1 1/2" = 1'-0"

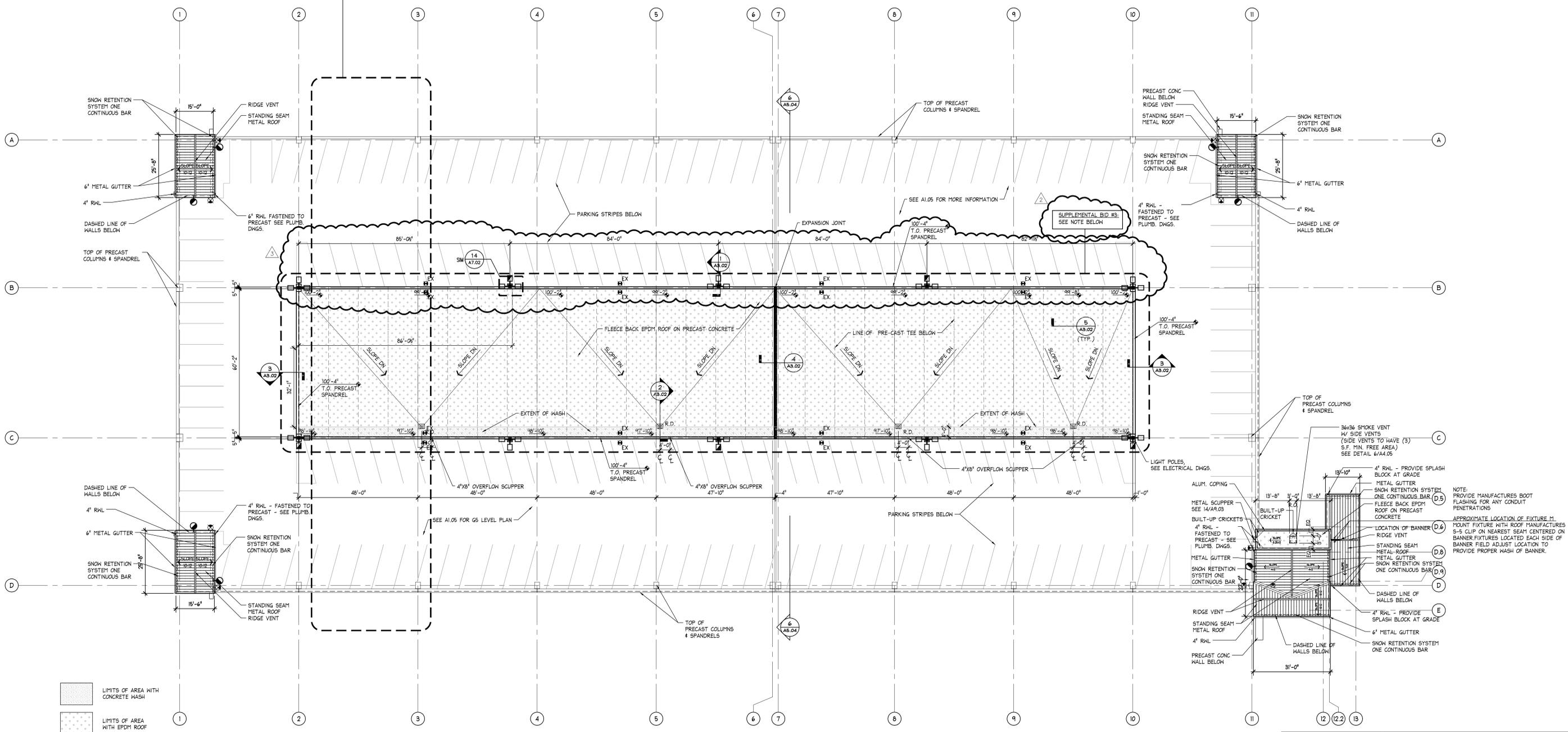


**4 EXPANSION JOINT DETAIL ALT#3**  
3" = 1'-0"



**5 ROOF DETAIL @ PRECAST TEE JOINTS ALT#3**  
3" = 1'-0"

**SUPPLEMENTAL BID #2:**  
INCLUDE GARAGE STRUCTURE, FINISHES, ELECTRICAL, FIRE STANDPIPE AND PLUMBING BETWEEN COLUMN LINES 2 AND 3.  
BASE BID SHOULD NOT INCLUDE THIS AREA. DRAINS WILL SHIFT ONE BAY OVER AND HIGH END OF TEE SLOPE WILL SHIFT A HALF OF BAY OVER.



**SUPPLEMENTAL BID #3:**  
INCLUDE ROOF OVER AREA FROM STRUCTURAL LINE '2'-10' & 'B'-1' TO 'C', AS SHOWN ON DRAWING A1.06, A3.02, A5.01, E1.04, E1.04A & H1.04. THIS ALTERNATE APPLIES ONLY IN ADDITION TO SUPPLEMENTAL BID #2

| REVISIONS |          |                        | DRAWING PREPARED BY:                                |          | DATE     |
|-----------|----------|------------------------|---|----------|----------|
| MARK      | DATE     | DESCRIPTION            | BY  | SCALE    |          |
| 2         | 5/26/10  | ISSUED FOR APPENDIX #4 | BL COMPANIES  | AS NOTED | 07/10/09 |
| 3         | 1/27/12  | LIGHT POLE LOCATIONS   | 355 RESEARCH PARKWAY<br>MERRIDEN, CONNECTICUT 06450 | M.G.     |          |
|           | 12/06/13 | RECORD SET             |   |          |          |

|  |                                     |
|--|-------------------------------------|
| STATE OF CONNECTICUT<br>DEPARTMENT OF PUBLIC WORKS |                                     |
| PROJECT:   | 100% CONSTRUCTION DOCUMENTS PACKAGE |
| DRAWING TITLE:                                     | SCSU PARKING GARAGE                 |
| DRAWING NO.:                                       | CF-RS-273                           |
| CAD NO.:   | A0781007302                         |
| PROJECT NO.:                                       | CF-RS-273                           |
| DRAWING NO.:                                       | A3.02                               |

**6 OVERALL SUPPLEMENTAL BID #3 ROOF PLAN**  
1/16" = 1'-0"



| PANEL RP1       |                            |           |         |                   |      |           |       |                      |         |                     |                       |        |  |
|-----------------|----------------------------|-----------|---------|-------------------|------|-----------|-------|----------------------|---------|---------------------|-----------------------|--------|--|
| VOLTAGE:        |                            | 208/120   |         | MAIN BUS RATING:  |      | 225 A     |       | MOUNTING:            |         | SURFACE             |                       |        |  |
| PHASE:          |                            | 3         |         | MAIN DEVICE TYPE: |      | MCB       |       | LOCATION:            |         | ELECTRICAL ROOM 103 |                       |        |  |
| ENCLOSURE TYPE: |                            | NEMA 1    |         | MAIN SIZE:        |      | 225 A     |       | INTERRUPTING RATING: |         | 22 KAIR RMS SYMM    |                       |        |  |
| CKT No          | DESCRIPTION                | WIRE SIZE | CB TRIP | POLES             | KVA  | PER PHASE | PHASE | POLES                | CB TRIP | WIRE SIZE           | DESCRIPTION           | CKT No |  |
| 1               | G1 SECURITY                | 6         | 15      | 1                 | 1.2  | 1.2       |       | 1                    | 15      | 6                   | G2 SECURITY           | 2      |  |
| 3               | G1 SECURITY                | 6         | 15      | 1                 |      |           |       | 1                    | 15      | 6                   | G2 SECURITY           | 4      |  |
| 5               | G1 SECURITY                | 6         | 15      | 1                 |      |           |       | 1                    | 15      | 6                   | G2 SECURITY           | 6      |  |
| 7               | G3 SECURITY                | 6         | 15      | 1                 | 1.2  | 1.2       |       | 1                    | 15      | 6                   | G2 SECURITY           | 8      |  |
| 9               | G3 SECURITY                | 6         | 15      | 1                 |      |           |       | 1                    | 15      | 6                   | G2 SECURITY           | 10     |  |
| 11              | G3 SECURITY                | 6         | 15      | 1                 |      |           |       | 1                    | 15      | 6                   | G2 SECURITY           | 12     |  |
| 13              | G5 SECURITY                | 6         | 15      | 1                 | 1.2  | 0.5       |       | 1                    | 20      | 8                   | CODE BLUE PHONE       | 14     |  |
| 15              | G5 SECURITY                | 6         | 15      | 1                 |      |           |       | 1                    | 20      | 12                  | TELECOMM ROOM         | 16     |  |
| 17              | G5 SECURITY                | 6         | 15      | 1                 |      |           |       | 1                    | 20      | 12                  | TELECOMM ROOM         | 18     |  |
| 19              | CODE BLUE PHONE WEST       | 6         | 20      | 1                 | 0.5  | 1.2       |       | 1                    | 20      | 12                  | TELECOMM ROOM         | 20     |  |
| 21              | CODE BLUE PHONE WEST       | 6         | 20      | 1                 |      |           |       | 1                    | 20      | 12                  | TELECOMM ROOM         | 22     |  |
| 23              | RECEPT. ELEV. LOBBY 101    | 12        | 20      | 1                 |      |           |       | 1                    | 20      | 12                  | FACP                  | 24     |  |
| 25              | RECEPT. LOBBY 202 TO 205   | 12        | 20      | 1                 | 0.8  | 0.6       |       | 1                    | 20      | 12                  | WAITING 202           | 26     |  |
| 27              | RECEPT. LOBBY 202 TO 205   | 12        | 20      | 1                 |      |           |       | 1                    | 20      | 6                   | CODE BLUE PHONE NORTH | 28     |  |
| 29              | RECEPT. ELEG. ROOM 103     | 12        | 20      | 1                 |      |           |       | 1                    | 20      | 10                  | RECEPT. ELEV. PIT     | 30     |  |
| 31              | RECEPT. ELEV. MACHINE ROOM | 12        | 20      | 1                 | 0.2  | 0.5       |       | 1                    | 20      | 10                  | LIGHT. ELEV. PIT      | 32     |  |
| 33              | MAIN FACP                  | 12        | 20      | 1                 |      |           |       | 1                    | 20      | 12                  | PS-100 AND PS-300     | 34     |  |
| 35              | MAIN FACP                  | 12        | 20      | 1                 |      |           |       | 1                    | 20      | 12                  | DIRECTIONAL SIGNS     | 36     |  |
| 37              | VEHICLE DETECTION LOOP CTR | 8         | 20      | 1                 | 1.0  | 10.2      |       | 3                    | 125     | 2                   | RP2                   | 40     |  |
| 39              | GUARD BOOTH                | 1         | 125     | 2                 |      |           |       |                      |         |                     |                       | 42     |  |
| 41              | GUARD BOOTH                | 1         | 125     | 2                 |      |           |       |                      |         |                     |                       | 42     |  |
|                 |                            |           |         |                   | 6.1  | 15.4      | 7.9   | 15.6                 | 7.6     | 15.0                | TOTAL KVA :           | 67.6   |  |
|                 |                            |           |         |                   | 21.5 | 23.5      | 22.8  |                      |         |                     | TOTAL AMPS :          | 187.6  |  |

NOTES:  
Provide 225A Fully Rated Main Circuit Breaker

| PANEL RP2       |                       |           |         |                   |      |           |       |                      |         |                     |                       |        |                       |    |
|-----------------|-----------------------|-----------|---------|-------------------|------|-----------|-------|----------------------|---------|---------------------|-----------------------|--------|-----------------------|----|
| VOLTAGE:        |                       | 208/120   |         | MAIN BUS RATING:  |      | 125 A     |       | MOUNTING:            |         | SURFACE             |                       |        |                       |    |
| PHASE:          |                       | 3         |         | MAIN DEVICE TYPE: |      | MLO       |       | LOCATION:            |         | ELECTRICAL ROOM 103 |                       |        |                       |    |
| ENCLOSURE TYPE: |                       | NEMA 1    |         | MAIN SIZE:        |      | 225 A     |       | INTERRUPTING RATING: |         | 22 KAIR RMS SYMM    |                       |        |                       |    |
| CKT No          | DESCRIPTION           | WIRE SIZE | CB TRIP | POLES             | KVA  | PER PHASE | PHASE | POLES                | CB TRIP | WIRE SIZE           | DESCRIPTION           | CKT No |                       |    |
| 1               | G1 SECURITY OR SYSTEM | 6         | 15      | 1                 | 1.5  | 1.5       |       | 1                    | 15      | 6                   | G3 SECURITY OR SYSTEM | 2      |                       |    |
| 3               | G2 SECURITY OR SYSTEM | 6         | 15      | 1                 |      |           |       | 1                    | 15      | 6                   | G4 SECURITY OR SYSTEM | 4      |                       |    |
| 5               | AG-1                  | 12        | 15      | 2                 |      |           |       | 0.1                  | 1.5     | 1                   | G5 SECURITY OR SYSTEM | 6      |                       |    |
| 7               |                       | 12        |         |                   | 0.1  | 0.4       |       |                      |         |                     |                       | 8      |                       |    |
| 9               | GJ-1                  | 12        | 30      | 2                 |      |           |       | 1.7                  | 0.4     | 3                   | 20                    | 8      | SANITARY PUMP         | 10 |
| 11              |                       | 12        |         |                   |      |           |       | 1.7                  | 0.4     |                     |                       | 8      |                       | 12 |
| 13              | CHARGER #1            | 8         | 40      | 2                 | 3.1  | 0.5       |       | 1                    | 20      | 12                  | MAIN FACP             | 14     |                       |    |
| 15              |                       | 8         |         |                   |      |           |       | 3.1                  | 0.5     | 1                   | 20                    | 12     | MAIN FACP             | 16 |
| 17              | CHARGER #2            | 8         | 40      | 2                 |      |           |       | 3.1                  | 1.0     | 1                   | 20                    | 12     | REMOTE COMMAND CENTER | 18 |
| 19              |                       | 8         |         |                   | 3.1  | 0.0       |       |                      |         |                     | SPACE                 | 20     |                       |    |
| 21              | CHARGER 3#            | 8         | 40      | 2                 |      |           |       | 3.1                  | 0.0     |                     | SPACE                 | 22     |                       |    |
| 23              |                       | 8         |         |                   |      |           |       | 3.1                  | 0.0     |                     | SPACE                 | 24     |                       |    |
| 25              |                       |           |         |                   |      |           |       |                      |         |                     |                       | 26     |                       |    |
| 27              |                       |           |         |                   |      |           |       |                      |         |                     |                       | 28     |                       |    |
| 29              |                       |           |         |                   |      |           |       |                      |         |                     |                       | 30     |                       |    |
| 31              |                       |           |         |                   |      |           |       |                      |         |                     |                       | 32     |                       |    |
| 33              |                       |           |         |                   |      |           |       |                      |         |                     |                       | 34     |                       |    |
| 35              |                       |           |         |                   |      |           |       |                      |         |                     |                       | 36     |                       |    |
| 37              |                       |           |         |                   |      |           |       |                      |         |                     |                       | 38     |                       |    |
| 39              |                       |           |         |                   |      |           |       |                      |         |                     |                       | 40     |                       |    |
| 41              |                       |           |         |                   |      |           |       |                      |         |                     |                       | 42     |                       |    |
|                 |                       |           |         |                   | 7.8  | 2.4       | 9.4   | 2.4                  | 8.0     | 2.9                 | TOTAL KVA :           | 33.0   |                       |    |
|                 |                       |           |         |                   | 10.2 | 11.8      | 10.9  |                      |         |                     | TOTAL AMPS :          | 91.7   |                       |    |

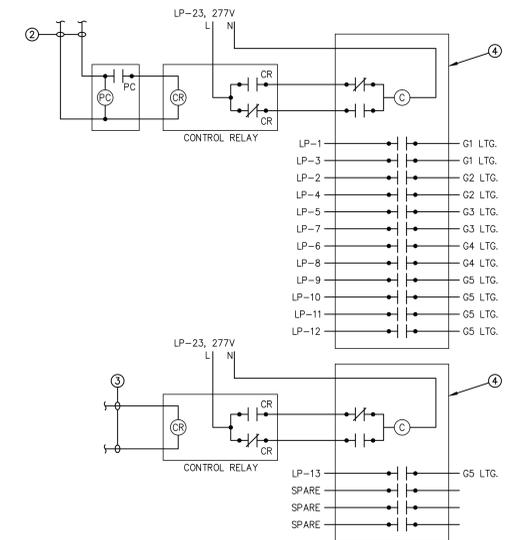
NOTES:

| PANEL LP        |                |           |         |                   |      |           |       |                      |         |                     |                   |        |  |
|-----------------|----------------|-----------|---------|-------------------|------|-----------|-------|----------------------|---------|---------------------|-------------------|--------|--|
| VOLTAGE:        |                | 480/277   |         | MAIN BUS RATING:  |      | 225 A     |       | MOUNTING:            |         | SURFACE             |                   |        |  |
| PHASE:          |                | 3         |         | MAIN DEVICE TYPE: |      | MLO       |       | LOCATION:            |         | ELECTRICAL ROOM 103 |                   |        |  |
| ENCLOSURE TYPE: |                | NEMA 1    |         | MAIN SIZE:        |      | 225 A     |       | INTERRUPTING RATING: |         | 22 KAIR RMS SYMM    |                   |        |  |
| CKT No          | DESCRIPTION    | WIRE SIZE | CB TRIP | POLES             | KVA  | PER PHASE | PHASE | POLES                | CB TRIP | WIRE SIZE           | DESCRIPTION       | CKT No |  |
| 1               | LTG G1 - P1    | 6         | 20      | 1                 | 3.0  | 3.0       |       | 1                    | 20      | 6                   | LTG G2 - P1       | 2      |  |
| 3               | LTG G1 - P2    | 6         | 20      | 1                 |      |           |       | 1                    | 20      | 6                   | LTG G2 - P2       | 4      |  |
| 5               | LTG G3 - P1    | 6         | 20      | 1                 |      |           |       | 1                    | 20      | 6                   | LTG G4 - P1       | 6      |  |
| 7               | LTG G3 - P2    | 6         | 20      | 1                 | 3.0  | 3.0       |       | 1                    | 20      | 6                   | LTG G4 - P2       | 8      |  |
| 9               | LTG G5 - L1    | 6         | 20      | 1                 |      |           |       | 1                    | 20      | 6                   | LTG G5 - L4       | 10     |  |
| 11              | LTG G5 - L2    | 6         | 20      | 1                 |      |           |       | 1                    | 20      | 6                   | LTG G5 - L5       | 12     |  |
| 13              | LTG G5 - L3    | 6         | 20      | 1                 | 3.0  | 3.0       |       | 1                    | 20      | 6                   | LTG G2 - L        | 14     |  |
| 15              | LTG G1 - L     | 6         | 20      | 1                 |      |           |       | 1                    | 20      | 6                   | LTG G2 - L        | 16     |  |
| 17              | LTG G1 - L     | 6         | 20      | 1                 |      |           |       | 1                    | 20      | 6                   | LTG G4 - L        | 18     |  |
| 19              | LTG G3 - L     | 6         | 20      | 1                 | 3.0  | 3.0       |       | 1                    | 20      | 6                   | LTG G4 - L        | 20     |  |
| 21              | LTG G3 - L     | 6         | 20      | 1                 |      |           |       | 1                    | 20      | 8                   | LTG BOLLARDS      | 22     |  |
| 23              | CONTACTOR COOL | 12        | 20      | 1                 |      |           |       | 1                    | 20      | 8                   | LTG BOLLARDS      | 24     |  |
| 25              | SPARE          | 20        | 1       | 0.0               | 1.0  |           |       | 1                    | 20      | 8                   | LTG SHRUBS        | 26     |  |
| 27              | SPARE          | 20        | 1       |                   |      |           |       | 1                    | 20      | 8                   | LTG SIGNL AND M   | 28     |  |
| 29              | SPARE          | 20        | 1       |                   |      |           |       | 1                    | 20      | 6                   | LTG ENTRANCE POLE | 30     |  |
| 31              | SPARE          | 20        | 1       | 0.0               | 2.0  |           |       | 1                    | 20      | 8                   | LTG POLE MOUNTED  | 32     |  |
| 33              | SPARE          | 20        | 1       |                   |      |           |       | 1                    | 20      |                     | SPARE             | 34     |  |
| 35              | SPARE          | 20        | 1       |                   |      |           |       | 1                    | 20      |                     | SPARE             | 36     |  |
| 37              | SPARE          | 20        | 1       |                   |      |           |       | 1                    | 20      |                     | SPARE             | 38     |  |
| 39              | SPARE          | 20        | 1       |                   |      |           |       | 1                    | 20      |                     | SPARE             | 40     |  |
| 41              | SPARE          | 20        | 1       |                   |      |           |       | 1                    | 20      |                     | SPARE             | 42     |  |
|                 |                |           |         |                   | 12.0 | 15.0      | 11.6  | 11.0                 | 8.0     | 13.1                | TOTAL KVA :       | 70.7   |  |
|                 |                |           |         |                   | 27.0 | 22.6      | 21.1  |                      |         |                     | TOTAL AMPS :      | 85.0   |  |

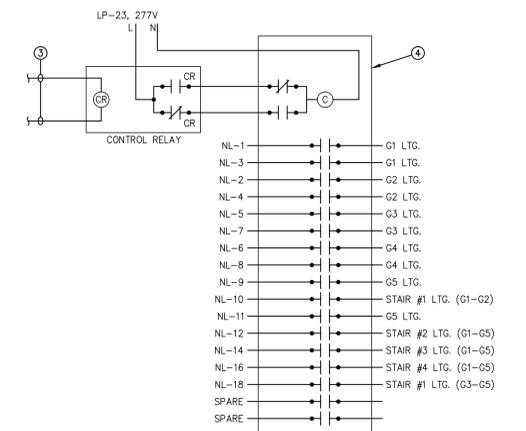
NOTES:

| PANEL NL (NIGHT LIGHTS) |              |           |         |                   |     |           |       |                      |         |                     |                      |        |  |
|-------------------------|--------------|-----------|---------|-------------------|-----|-----------|-------|----------------------|---------|---------------------|----------------------|--------|--|
| VOLTAGE:                |              | 480/277   |         | MAIN BUS RATING:  |     | 125 A     |       | MOUNTING:            |         | SURFACE             |                      |        |  |
| PHASE:                  |              | 3         |         | MAIN DEVICE TYPE: |     | MLO       |       | LOCATION:            |         | ELECTRICAL ROOM 103 |                      |        |  |
| ENCLOSURE TYPE:         |              | NEMA 1    |         | MAIN SIZE:        |     | 225 A     |       | INTERRUPTING RATING: |         | 22 KAIR RMS SYMM    |                      |        |  |
| CKT No                  | DESCRIPTION  | WIRE SIZE | CB TRIP | POLES             | KVA | PER PHASE | PHASE | POLES                | CB TRIP | WIRE SIZE           | DESCRIPTION          | CKT No |  |
| 1                       | LTG G1 - NL1 | 6         | 20      | 1                 | 1.8 | 1.4       |       | 1                    | 20      | 6                   | LTG G2 - NL1         | 2      |  |
| 3                       | LTG G1 - NL2 | 6         | 20      | 1                 |     |           |       | 1                    | 20      | 6                   | LTG G2 - NL2         | 4      |  |
| 5                       | LTG G3 - NL1 | 6         | 20      | 1                 |     |           |       | 1                    | 20      | 6                   | LTG G4 - NL1         | 6      |  |
| 7                       | LTG G3 - NL2 | 6         | 20      | 1                 | 1.4 | 1.4       |       | 1                    | 20      | 6                   | LTG G4 - NL2         | 8      |  |
| 9                       | LTG G5 - NL1 | 6         | 20      | 1                 |     |           |       | 1                    | 20      | 8                   | LTG STAIR #1 (G1-G2) | 10     |  |
| 11                      | LTG G5 - NL2 | 6         | 20      | 1                 |     |           |       | 1                    | 20      | 6                   | LTG STAIR #2 (G1-G5) | 12     |  |
| 13                      | SPARE        | 20        | 1       | 0.0               | 1.4 |           |       | 1                    | 20      | 6                   | LTG STAIR #3 (G1-G5) | 14     |  |
| 15                      | SPARE        | 20        | 1       |                   |     |           |       | 1                    | 20      | 8                   | LTG STAIR #4 (G1-G5) | 16     |  |
| 17                      | SPARE        | 20        | 1       |                   |     |           |       | 1                    | 20      | 8                   | LTG STAIR #5 (G3-G5) | 18     |  |
| 19                      | SPARE        |           |         |                   | 0.0 | 0.0       |       | 1                    | 20      | 8                   | SPACE                | 20     |  |
| 21                      | SPARE        |           |         |                   | 0.0 | 0.0       |       |                      |         |                     | SPACE                | 22     |  |
| 23                      | SPARE        |           |         |                   |     |           |       |                      |         |                     | SPACE                | 24     |  |
| 25                      |              |           |         |                   |     |           |       |                      |         |                     |                      | 26     |  |
| 27                      |              |           |         |                   |     |           |       |                      |         |                     |                      | 28     |  |
| 29                      |              |           |         |                   |     |           |       |                      |         |                     |                      | 30     |  |
| 31                      |              |           |         |                   |     |           |       |                      |         |                     |                      | 32     |  |
| 33                      |              |           |         |                   |     |           |       |                      |         |                     |                      | 34     |  |
| 35                      |              |           |         |                   |     |           |       |                      |         |                     |                      | 36     |  |
| 37                      |              |           |         |                   |     |           |       |                      |         |                     |                      | 38     |  |
| 39                      |              |           |         |                   |     |           |       |                      |         |                     |                      | 40     |  |
| 41                      |              |           |         |                   |     |           |       |                      |         |                     |                      | 42     |  |
|                         |              |           |         |                   | 3.0 | 4.2       | 4.6   | 5.8                  | 3.4     | 5.7                 | TOTAL KVA :          | 26.7   |  |
|                         |              |           |         |                   | 7.2 | 10.4      | 9.1   |                      |         |                     | TOTAL AMPS :         | 32.1   |  |

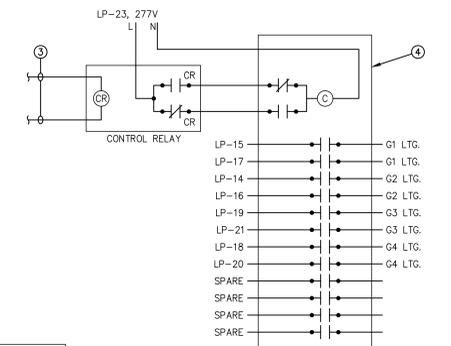
NOTES:



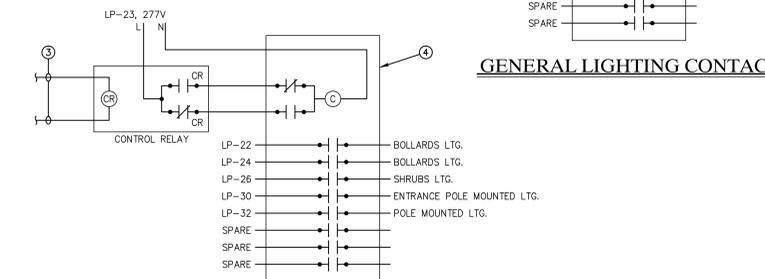
**PERIMETER LIGHTING CONTACTOR**



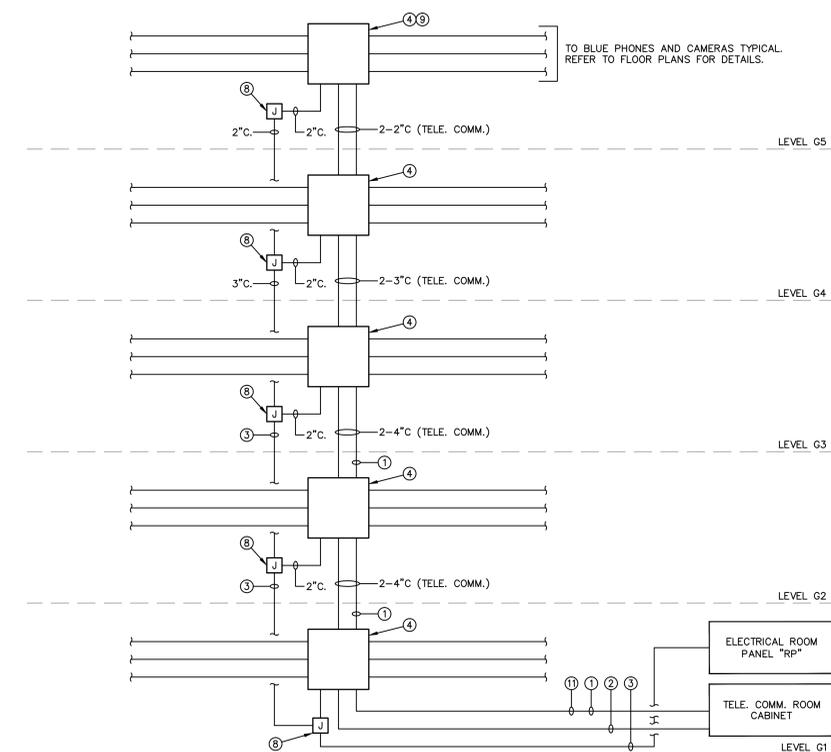
**NIGHT LIGHT "NL" CONTACTOR**



**GENERAL LIGHTING CONTACTOR**



**OUT DOOR LIGHTING CONTACTOR**



**SECURITY SYSTEM RISER DIAGRAM**  
N.T.S.

**SECURITY RISER DIAGRAM KEY NOTES:**

- FURNISH AND INSTALL 4" EMT MULTIGUARD 3 CELL CONDUIT FOR INSIDE THE GARAGE, WITH 3 INNERDUCT EACH 1 1/2". CARLON CATALOG #MESS35-010.
- 4" EMT CONDUIT TERMINATE IN TELECOMMUNICATION ROOM CABINET PER SCSU.
- 4" EMT CONDUIT, (POWER CIRCUITS). REFER TO PANEL SCHEDULE "RP".
- DOUBLE HINGED WALL MOUNT CABINET HOFFMAN CATALOG #P1DHS24242464 NEMA 4 TYPE. (TYPICAL OF 5).
- FURNISH AND INSTALL 1-4" CARLON MULTIGUARD MESS35-010 PVC EMT CONDUIT SUPPLIED WITH THREE 1 1/2" INNERDUCTS, FROM TELECOM ROOM CABINET UP TO STAIR #4 AS SHOWN ON DWG. EP2.01 INSIDE THE PARKING GARAGE AND ONE 4" PVC SCHEDULE 80 MULTIGUARD WITH 3 INNERDUCTS CARLON #MSS35-020 UNDERGROUND TO THE TELECOM MANHOLE. THE DESIGNATED MANHOLE SHALL PROVIDE BACKBONE CONNECTION TO GRANOFF HALL VIA UNDERGROUND CONDUITS.
- FURNISH AND INSTALL 1-4" EMT CONDUIT FROM TELECOM ROOM UP TO STAIR #4, INSIDE THE GARAGE AND ONE 4" PVC SCHEDULE 80 UNDERGROUND TO THE TELECOM MANHOLE. THE CONDUITS ARE INSTALLED FOR COMMUNICATION, SECURITY COPPER AND OPTICAL FIBER BACKBONE TO GRANOFF HALL.
- EXISTING BACKBONE TO GRANOFF HALL VIA UNDERGROUND CONDUITS.
- POWER WIRING JUNCTION BOX 12" X 12" X 8" (TYPICAL OF 5).
- HOFFMAN CABINET FOR G5 LEVEL SHALL BE MOUNTED UNDER THE G5 LEVEL SLAB. EXACT LOCATION TO BE FIELD VERIFIED.
- CABLING: 4UTP CATEGORY 6 CABLE FOR CAMERAS (BY OTHERS), 4UTP CATEGORY 5E CABLE FOR CODE BLUE PHONES (BY OTHERS).
- FURNISH AND INSTALL LIGHTING CONTROL CABLES VIA TELECOM CONDUIT TO EXISTING TELECOM MANHOLE.
- ALL WIRING FOR SECURITY CAMERAS AND BLUE PHONES SHALL BE BY SCSU.

**CONTACTOR KEY NOTES:**

**INVERTER SPECIFICATIONS:**

HIGH-LITES MODEL H3FT-24000-U-P-OCB-SEISMIC-MOD-SNMP-FS (OR EQUAL).

INPUT VOLTAGES: 277/480 3Ø, 4-WIRE PLUS GROUND  
 VOLTAGE RANGE: +10% -15%  
 INPUT FREQUENCY: 60HZ ± 3%  
 POWER FACTOR: 0.5 LEAD/LAG  
 INRUSH CURRENT: 1.25 TIMES NOMINAL INPUT CURRENT.  
 CURRENT LIMIT: 125% OF NOMINAL INPUT CURRENT  
 CURRENT DISTORTION: <3% THD MAXIMUM FROM 50% TO FULL LOAD  
 SURGE PROTECTION: MEETS ANSI C62.41 (IEEE 587) AND ANSI C62.42.45 (CAT. A&B) STANDARDS

OUTPUT VOLTAGES: 277/480 3Ø, 4-WIRE PLUS GROUND.  
 STATIC VOLTAGE STABILITY: LOAD CURRENT CHANGE ± 2%  
 DYNAMIC VOLTAGE STABILITY: ± 2% FOR 25% STEP LOAD, ± 3% FOR 50% STEP LOAD.  
 DYNAMIC RECOVERY TIME TO WITHIN 1% OF NOMINAL: 3 HZ  
 OUTPUT DISTORTION: <3% THD (WITH LINEAR LOAD)  
 OUTPUT FREQUENCY: 60HZ (± .05HZ IN EMERGENCY MODE)  
 TRANSFER TIME: 2 MS  
 LOAD POWER FACTOR RANGE: 0.5 LEAD TO 0.5 LAG  
 OUTPUT POWER RATING: KVA = KW  
 OVERLOAD PROTECTION: 110% CONTINUOUS, 115% FOR 5 MINUTES  
 CREST FACTOR: <= 2.8

**BATTERIES AND CHARGER:**  
 CHARGER TYPE: FULLY AUTOMATIC, MICROPROCESSOR CONTROLLED.  
 TEMPERATURE COMPENSATING CHARGER  
 RECHARGE DUTY CYCLE: 24 HOURS  
 CHARGER PROTECTION: FUSED OUTPUT AND AUTOMATIC LOW VOLTAGE BATTERY DISCONNECT.  
 STANDARD BATTERY: SEALED LEAD CALCIUM (10 YEAR LIFE)  
 BATTERY VOLTAGE: 240VDC  
 RUNTIME: 90 MINUTES STANDARD - BASED ON BATTERY PERFORMANCE AT 77°F (25°C).

**ENVIRONMENTAL:**  
 ALTITUDE: < 10,000 FEET ABOVE SEA LEVEL WITHOUT DERATING  
 OPERATING TEMPERATURE RANGE: 20 TO 30°C.  
 RELATIVE HUMIDITY: 95% NON-CONDENSING.  
 FURNISH SEISMIC MOUNTING KIT, MEETS ZONE 4 REQUIREMENTS.

**CONTROL PANEL:**  
 TYPE: 2X20-CHARACTER DISPLAY WITH TOUCH PAD CONTROL, FIVE LED FUNCTION INDICATORS AND ALARM ANNUNCIATOR WITH RINGBACK FEATURE.  
 COMMUNICATIONS TYPE: RS-232 PORT (DB9) STANDARD ON ALL MODELS.

**INSTALLATION:**  
 MOUNTING: FREESTANDING CABINETS BOLT TOGETHER WHEN MORE THAN ONE CABINET IS REQUIRED. A SEISMIC KIT FOR SECURING SYSTEMS SHALL BE INSTALLED.

**WIRING:** ALL BATTERY AND INTER-CABINET WIRING IS PROVIDED PRE-CUT AND TERMINATED ALONG WITH THE NECESSARY INTER-CABINET HARDWARE AND ELECTRICAL FITTINGS REQUIRED FOR PROPER INSTALLATION.

**CODE INFORMATION:**  
 UL924 LISTED AND MEETS NFPA 101 LIFE SAFETY CODE, NFPA 70, NFPA 110, UBC, SBCCI, NEC, OSHA, LOCAL AND STATE CODES

**WARRANTY:**  
 SYSTEM: 1-YEAR FULL COVERAGE AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP FROM DATE OF SHIPMENT  
 BATTERY: STANDARD LEAD CALCIUM BATTERY: 1 YEAR FULL WARRANTY PLUS 9 YEARS OF PRO-RATA COVERAGE.

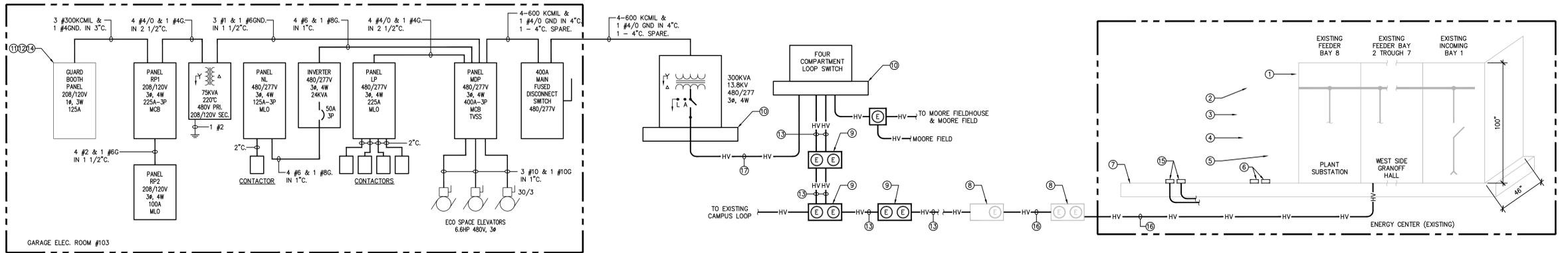
**SWITCH GEAR SPECIFICATION:**

- THE PROPOSED FEDERAL PACIFIC METAL ENCLOSED SWITCHGEAR SECTION SHALL MATCH THE EXISTING FEDERAL PACIFIC METAL ENCLOSED, AUTO-LET SWITCHGEAR, 333F, SERIAL #H452A MANUFACTURED DATE 03/03. HEIGHT 100", WIDTH 41" AND DEPTH 46".
- METAL ENCLOSED SWITCHGEAR SHALL BE RATED:
  - MAIN BUS 1200A.
  - VOLTAGE 15 KV.
  - FREQUENCY 60 HZ.
  - INSULATION LEVEL 95 KV.
  - CONTINUOUS CURRENT 600 AMPS.
  - LOAD CURRENT 600 AMPS.
  - 40 KA RMS SYMM.
  - MOMENTARY 40 KA RMS ASYM.
  - FAULT CLOSING 40 KA RMS ASYM.
  - DIE ELECTRIC STRENGTH WITHSTAND 36 KV.
  - MVA 3Ø SYM. 550.
- SWITCH SHALL BE MECHANICALLY INTERLOCKED SUCH THAT THE SWITCH SHALL BE IN OPEN STATUS BEFORE ALLOWING ACCESS TO FUSE COMPARTMENT.
- NAME PLATE SIGN SHALL INDICATE (13,800 VOLTS, FEEDER FOR PARKING GARAGE, POSITION 9).
- PROVIDE A BLACK PHENOLIC LABEL WITH WHITE LETTERS OR A RED PHENOLIC LABEL WITH WHITE LETTERS ON THE 400A MAIN DISCONNECT SWITCH STATING "OPENING OF THE MAIN DISCONNECT SWITCH WILL CAUSE THE INVERTER TO ENERGIZE".
- OPENING OF THE MAIN DISCONNECT SWITCH WILL CAUSE THE INVERTER TO ENERGIZE.

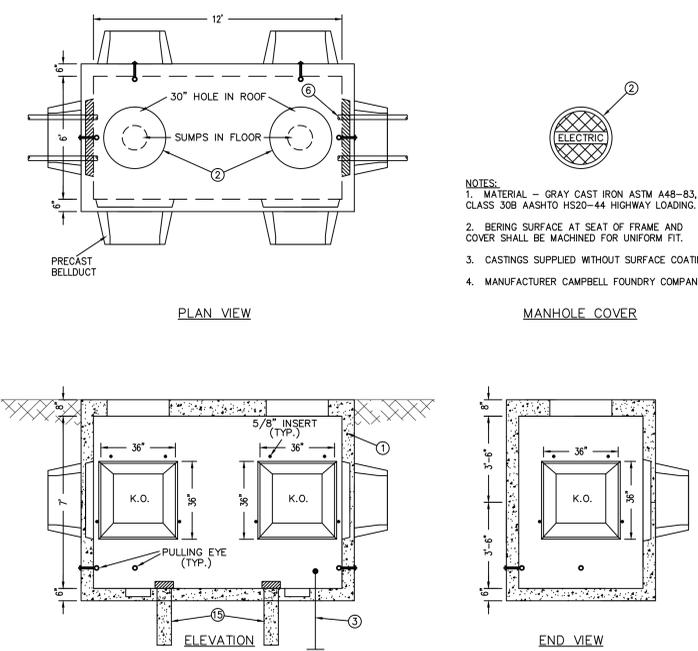
**NOTE:**  
 ELECTRICAL CONTRACTOR TO PROVIDE LISTED CHOKES OR BONDING BUSHINGS AS REQUIRED PER NEC WHEN BONDING GROUND CONDUCTORS TO TRANSFORMERS OR BUILDING STEEL.

**KEY NOTES:**

- EXISTING METAL ENCLOSED SWITCHGEAR 15KV INDOOR.
- NOT USED.
- NOT USED.
- NOT USED.
- NOT USED.
- EXISTING CONDUITS 5" DIA.
- EXISTING PAD.
- EXISTING ELECTRIC MANHOLES.
- PROPOSED MANHOLE. REFER TO DETAILS ON THIS DWG.
- PROPOSED CONCRETE PAD. REFER TO TRANSFORMER PAD DETAILS ON DWG. E4.01 DETAIL #5.
- THE ELECTRICAL CONTRACTOR SHALL INSTALL FEEDER TO GUARD BOOTH AND CONNECT TO PANEL. FURNISH AND INSTALL GROUNDING PER CODE AND SCSU AUTHORITIES. FURNISH EMT CONDUIT INSIDE THE BOOTH.
- FURNISH AND INSTALL MAIN LUG KIT OR CABLE SIZE REDUCER TO CONNECT FEEDER TO BOOTH PANEL.
- FURNISH AND INSTALL PROPOSED 15KV FEEDER 3 #4/0 & 1 #4/0 GND. IN 5°C. 5-5°C. SPARE FOR FUTURE USE.
- BOOTH PANEL SHALL BE SUPPLIED BY BOOTH MANUFACTURER.
- EXISTING TWO 5" DIA. CONDUITS UNDER FLOOR TO GENERATOR ROOM.
- FURNISH AND INSTALL 3 #2 CU & 1 #4/0 GND. 15KV FEEDER IN EXISTING CONDUIT.
- FURNISH AND INSTALL 15 KV FEEDER 3 #1/0 CU & 1 #4/0 GND IN 5°C. 1-5" SPARE.



**1 ONE - LINE RISER DIAGRAM**  
 N.T.S.



**2 ELECTRIC MANHOLE DETAIL**  
 N.T.S.

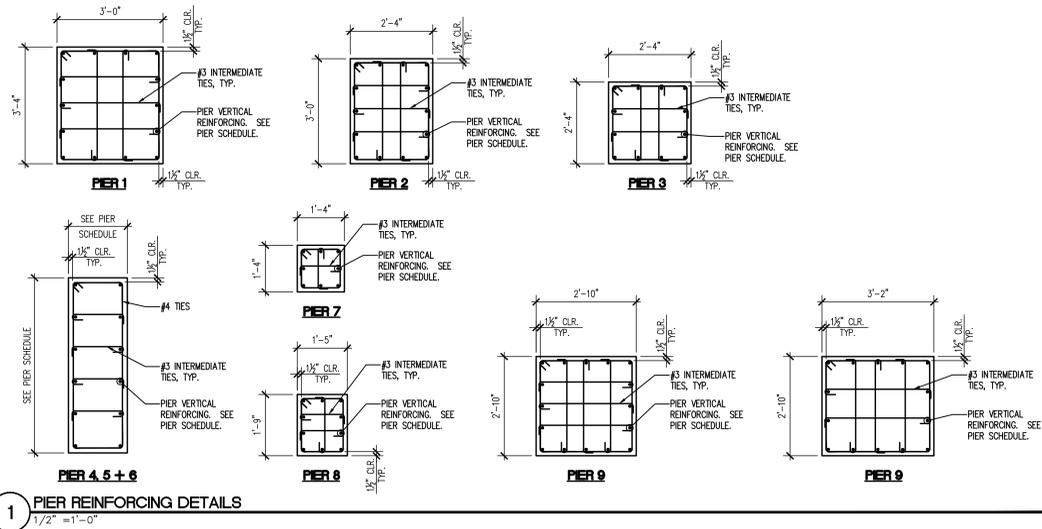
**KEY NOTES:**

- MANHOLE 12' L X 6' W X 7'D.
- HEAVY DUTY CAST IRON ROUND TRAFFIC RATED WATER TIGHT FRAME AND COVER. 30" MINIMUM DIAMETER LABELED "ELECTRIC".
- GROUND ROD 5/8" DIAMETER X 10' LONG WITH #4/0 BARE COPPER CABLE THROUGH WATERTIGHT SEAL TO INSIDE MANHOLE.
- BOND ALL INTERNAL MANHOLE METAL PARTS WITH #4/0 BARE COPPER CONDUCTOR.
- SUPPORT CABLES WITH CABLE CLAMPS TO MANHOLE WALL.
- CONDUIT END BELL AND SEAL.
- MANHOLE TO SIT ON A MINIMUM OF 12" CRUSHED STONE AND SET LEVEL OF COMPACTED SUB-GRADE WITH A MINIMUM SOIL BEARING CAPACITY OF 1000 LBS PER SQUARE FOOT.
- THIS MANHOLE IS INTENDED FOR THE INSTALLATION OF 600A, 15KV CABLING AND EQUIPMENT. REFER TO UTILITIES DWG. GU-1 FOR QUANTITY REFER TO DWG. EP2.02 AND E6.01.
- CONCRETE 5000 PSI @ 28 DAYS.
- REINFORCEMENT-ASTM, A-615, GR. 60.
- LOADING-HS20-44.
- JOINTS SEALED WITH BUTYL RUBBER.
- CONFORMS TO UNITED ILLUMINATING SPECS.
- MANUFACTURER: ARROW CONCRETE PRODUCTS.
- CAST IRON DRAIN GRATING, 12" SQUARE.
- 6" PIPE 18" LONG FIELD WITH CRUSHED STONE.

| MAIN DISTRIBUTION PANEL MDP |                |           |         |       |      |           |       |         |           | TVSS 120KA           |             |       |
|-----------------------------|----------------|-----------|---------|-------|------|-----------|-------|---------|-----------|----------------------|-------------|-------|
| CKT No                      | DESCRIPTION    | WIRE SIZE | CB TRIP | POLES | KVA  | PER PHASE | POLES | CB TRIP | WIRE SIZE | DESCRIPTION          | CKT No      |       |
| 1                           |                | 10        | 20      | 3     | 2.2  | 25.0      |       | 1       | 1         |                      | 2           |       |
| 3                           | ELEVATOR 6.6HP | 10        | 20      | 3     | 2.2  | 25.0      |       | 1       | 1         | TX (RPI AND RPI2)    | 4           |       |
| 5                           |                | 10        | 20      | 3     | 2.2  | 25.0      |       | 1       | 1         |                      | 6           |       |
| 7                           |                | 10        | 20      | 3     | 2.2  | 25.0      |       | 1       | 1         |                      | 8           |       |
| 9                           | ELEVATOR 6.6HP | 10        | 20      | 3     | 2.2  | 25.0      |       | 1       | 1         | INVERTER (PANEL NL)  | 10          |       |
| 11                          |                | 10        | 20      | 3     | 2.2  | 25.0      |       | 1       | 1         |                      | 12          |       |
| 13                          |                | 10        | 20      | 3     | 2.2  | 25.0      |       | 1       | 1         |                      | 14          |       |
| 15                          | ELEVATOR 6.6HP | 10        | 20      | 3     | 2.2  | 25.0      |       | 1       | 1         | LIGHTING PANEL (LP)  | 16          |       |
| 17                          |                | 10        | 20      | 3     | 2.2  | 25.0      |       | 1       | 1         |                      | 18          |       |
| 19                          | SPARE          | 20        | 1       | 0.0   | 1.5  |           |       | 1       | 20        | RADIANT PANEL        | 20          |       |
| 21                          | SPARE          | 20        | 1       | 0.0   | 1.5  |           |       | 1       | 20        | RADIANT PANEL        | 22          |       |
| 23                          | SPARE          | 20        | 1       | 0.0   | 1.5  |           |       | 1       | 20        | RADIANT PANEL        | 24          |       |
| 25                          | SPARE          | 20        | 1       | 0.0   | 3.0  |           |       | 1       | 20        | HEATER IN ELEC. ROOM | 26          |       |
| 27                          | SPARE          | 20        | 1       | 0.0   | 0.0  |           |       | 1       | 20        | SPACE                | 28          |       |
| 29                          | SPARE          | 20        | 1       | 0.0   | 0.0  |           |       | 1       | 20        | SPACE                | 30          |       |
| 31                          | SPARE          | 20        | 1       | 0.0   | 0.0  |           |       | 1       | 20        | SPACE                | 32          |       |
| 33                          | SPACE          | 20        | 1       | 0.0   | 0.0  |           |       | 1       | 20        | SPACE                | 34          |       |
| 35                          | SPACE          | 20        | 1       | 0.0   | 0.0  |           |       | 1       | 20        | SPACE                | 36          |       |
| 37                          | SPACE          | 20        | 1       | 0.0   | 0.0  |           |       | 1       | 20        | SPACE                | 38          |       |
| 39                          | SPACE          | 20        | 1       | 0.0   | 0.0  |           |       | 1       | 20        | SPACE                | 40          |       |
| 41                          | SPACE          | 20        | 1       | 0.0   | 0.0  |           |       | 1       | 20        | SPACE                | 42          |       |
|                             |                |           |         |       | 6.6  | 61.3      | 6.6   | 58.3    | 6.6       | 58.3                 | TOTAL KVA : | 197.7 |
|                             |                |           |         |       | 67.9 | 64.9      | 64.9  |         |           |                      | TOTAL AMPS: | 237.8 |

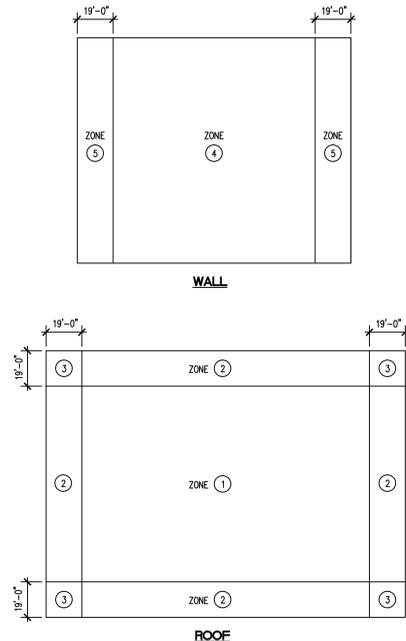
NOTES:  
 1. FURNISH TVSS RATED 120KA.

|  |         |   |  |
|--|---------|---|--|
| drawing title<br><b>ELECTRICAL POWER ONE-LINE DIAGRAM &amp; DETAILS</b>      |         | STATE OF CONNECTICUT DEPARTMENT OF PUBLIC WORKS |  |
| REVISIONS  |         |   |  |
| mark   | date    | description                                     |  |
| -  | 12.6.18 | RECORD SET                                      |  |
| DRAWING PREPARED BY:<br><b>BL COMPANIES</b>                                  |         | date<br>07/10/09                                |  |
| PROJECT<br>100% CONSTRUCTION DOCUMENTS PACKAGE<br><b>SCSU PARKING GARAGE</b> |         | scale<br>AS NOTED                               |  |
| drawing no.<br><b>CF-RS-273</b>  |         | approved by<br>G.M.K.                           |  |
| drawing no.<br><b>E6.01</b>  |         | drawing no.                                     |  |
| CAD no.<br>E07D1007601A  |         | project no.<br>CF-RS-273                        |  |



**ASCE 7-02 WIND LOADS ON COMPONENTS + CLADDING**  
WIND VELOCITY 110 MPH  
EXPOSURE "B"

| ZONE | FT <sup>2</sup> | TRIBUTORY AREA |       |       |     |
|------|-----------------|----------------|-------|-------|-----|
|      |                 | 10             | 20    | 50    | 100 |
| ①    | +11.3           | +10.4          | +9.4  | +9.0  |     |
|      | -27.8           | -27.1          | -26.6 | -25.4 |     |
| ②    | +11.3           | +10.4          | +9.4  | +9.0  |     |
|      | -46.6           | -41.4          | -34.8 | -30.1 |     |
| ③    | +11.3           | +10.4          | +9.4  | +9.0  |     |
|      | -70.2           | -57.7          | -42.1 | -30.1 |     |
| ④    | +25.4           | +24.5          | +22.8 | +21.7 |     |
|      | -27.5           | -26.6          | -25.0 | -23.8 |     |
| ⑤    | +25.4           | +24.5          | +22.8 | +21.7 |     |
|      | -33.9           | -31.8          | -28.7 | -26.6 |     |



**FOOTING SCHEDULE**

| FIG. MARK | SIZE (LxWxH)             | REINFORCEMENT (BOTTOM, U.N.O.)  |
|-----------|--------------------------|---|
| F7        | 7'-0" x 7'-0" x 1'-4"    | (6)-#6 BARS, EACH WAY   |
| F8        | 8'-0" x 8'-0" x 1'-6"    | (9)-#7 BARS, EACH WAY   |
| F8A       | 8'-0" x 8'-0" x 2'-6"    | (9)-#7 BARS, EACH WAY   |
| F10       | 12'-0" x 10'-0" x 1'-10" | #8 BARS AT 10" OC, EACH WAY   |
| F12       | 12'-0" x 12'-0" x 2'-6"  | (13)-#9 BARS, EACH WAY  |
| F14       | 14'-0" x 14'-0" x 3'-0"  | (15)-#10 BARS, EACH WAY   |
| F14A      | 14'-6" x 14'-6" x 3'-2"  | (16)-#10 BARS, EACH WAY   |
| F16       | 16'-0" x 16'-0" x 3'-4"  | (20)-#10 BARS, EACH WAY   |
| F18       | 50'-0" x 18'-0" x 4'-0"  | SEE PLANS FOR HORIZ. REINFG.<br>#4 VERT AT 12" OC, EACH VERT. FACE.<br>HOOK ENDS OF #4 VERT AT 12" OC |
| F20       | 52'-0" x 20'-0" x 4'-0"  | SEE PLANS FOR HORIZ. REINFG.<br>#4 VERT AT 12" OC, EACH VERT. FACE.<br>HOOK ENDS OF #4 VERT AT 12" OC |

**PIER SCHEDULE**

| PIER MARK | SIZE (LxW)    | REINFORCEMENT                                     | REFERENCE |
|-----------|---------------|---|-----------|
| P1        | 3'-4"x3'-0"   | (4)-#9 VERT. SHORT FACE<br>(5)-#9 VERT. LONG FACE | -         |
| P2        | 3'-0"x2'-4"   | (4)-#8 VERT. SHORT FACE<br>(5)-#8 VERT. LONG FACE | -         |
| P3        | 2'-4"x2'-4"   | (4)-#8 VERT. EACH FACE                            | -         |
| P4        | 5'-10"x1'-8"  | (6)-#7 VERT. EA. LONG FACE                        | -         |
| P5        | 16'-0"x1'-8"  | (17)-#7 VERT. EA. LONG FACE                       | -         |
| P6        | 17'-1"x1'-8"  | (18)-#7 VERT. EA. LONG FACE                       | -         |
| P7        | 1'-4"x1'-4"   | (3)-#6 VERT. EACH FACE                            | -         |
| P8        | 1'-9"x1'-5"   | (3)-#6 VERT. SHORT FACE<br>(4)-#6 VERT. LONG FACE | -         |
| P9        | 2'-10"x2'-10" | (5)-#8 VERT. EACH FACE                            | -         |
| P10       | 3'-2"x2'-10"  | (4)-#7 VERT. SHORT FACE<br>(5)-#7 VERT. LONG FACE | -         |

NOTE: USE #3 TIES AT 12" OC AT PIERS, TYP., U.N.O. (DOUBLED AT TOP OF PIER)  
SEE PIER REINFORCING DETAILS, THIS SHEET, FOR ADDITIONAL INFORMATION.

**PRECAST CONCRETE NOTES**

ALL STRUCTURAL PRECAST CONCRETE SHALL BE DESIGNED FOR THE SPAN AND LOADING CONDITIONS SHOWN ON THE DRAWINGS OR AS REQUIRED BY APPLICABLE CODES, INCLUDING BUT NOT LIMITED TO THE ERECTION SEQUENCES AND METHODS, BY A PRECAST MANUFACTURER'S PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF CONNECTICUT. ALL DESIGN CALCULATIONS, INCLUDING THE ANALYSIS AND DESIGN FOR LATERAL AND GRAVITY LOADS AND THE DESIGN OF ALL STRUCTURAL ELEMENTS AND CONNECTIONS, SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW PRIOR TO THE START OF FABRICATION. FOUNDATION FOR THE STRUCTURE HAS BEEN DESIGNED FOR PRELIMINARY LATERAL AND GRAVITY LOADS. FINAL FOUNDATION DESIGN MAY CHANGE BASED ON ACTUAL PRECAST DESIGN LATERAL AND GRAVITY LOADS.

DETAILED AND CHECKED SHOP DRAWINGS SHOWING ALL STRUCTURAL ELEMENTS, DETAILS AND CONNECTIONS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW PRIOR TO THE START OF FABRICATION.

THE PRECAST CONCRETE MANUFACTURER SHALL BE RESPONSIBLE FOR FULL COORDINATION OF ALL ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING DETAILS AS THEY AFFECT THE STRUCTURAL SYSTEM.

THERE SHALL BE NO FIELD CUTTING OF PRECAST ELEMENTS WITHOUT THE PRIOR REVIEW OF THE ENGINEER OF RECORD AND SUBSEQUENT WRITTEN CONSENT BY THE PRECAST MANUFACTURER.

ALL DETAILING, FABRICATION, AND PLACING OF REINFORCING BARS SHALL CONFORM TO ACI "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", ACI-318-02, AND "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES", ACI-315.

SEE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR SPECIAL ARCHITECTURAL CONCRETE REQUIREMENTS TO INCLUDE LOCATION, MIX DESIGN, FORMWORK, FINISH, ETC.

THE CONTRACTOR SHALL COORDINATE PRECAST, CAST-IN-PLACE AND STRUCTURAL STEEL WORK WITH THE ARCHITECTURAL AND STRUCTURAL DRAWINGS AND PROVIDE ALL NECESSARY INSERTS, REGLETTS, ETC. REQUIRED.

CONCRETE SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 5000 PSI AT TWENTY-EIGHT (28) DAYS.

ALL REINFORCING SHALL CONFORM TO ASTM A615 GRADE 60, UNLESS OTHERWISE NOTED.

REINFORCING STEEL BARS WELDED TO STEEL INSERTS AND STRUCTURAL SHAPES SHALL CONFORM TO ASTM A615 GRADE 40 OR ASTM A706 GRADE 60, AND WELDING SHALL CONFORM TO AWS D1.4 "STRUCTURAL WELDING CODE - REINFORCING STEEL". ALL WELDMENTS SHALL RECEIVE TWO (2) COATS OF PRIMER.

ALL WELDED WIRE MESH SHALL CONFORM TO ASTM A185.

ALL PRESTRESSING STEEL SHALL CONFORM TO ASTM A416, STRESS RELIEVED, LOW RELAXATION, 7-WIRE STRAND, GRADE 270 KSI.

ALL FLANGE-TO-FLANGE CONNECTIONS BETWEEN ADJACENT DOUBLE TEES AND EXPANSION BEARING ASSEMBLIES SHALL BE STAINLESS STEEL. ALL CONNECTION PLATES, INSERTS, BOLTS, NUTS AND WASHERS, COIL RODS AND COIL INSERTS SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A123, OR ASTM A153, AS APPLICABLE. SURFACE PREPARATION OF THE COMPONENTS PRIOR TO GALVANIZING SHALL BE CONSISTENT WITH RECOMMENDATIONS BY THE STRUCTURAL STEEL PAINTING COUNCIL (SSPC). AREAS OF EMBEDS DESIGNATED FOR FIELD WELDING SHALL BE FREE OF GALVANIZING WITHIN 3" OF THE WELD.

ALL DAMAGED GALVANIZING, AS WELL AS FIELD WELDED CONNECTIONS, SHALL BE CLEANED OF LOOSE AND DELETERIOUS MATERIALS AND TOUCHED UP WITH TWO (2) COATS OF ZINC RICH PAINT IN ACCORDANCE WITH SSPC-PAINT 20.

THREAD COIL RODS OR EQUIVALENT ALONG SPANDRELS TO EXTEND IN TO C.I.P. TOPPING FOR DIAPHRAGM ACTION AS REQUIRED.

ALL GROUT SHALL BE OF THE NON-SHRINK, NON-FERROUS TYPE WITH MINIMUM  $f_c = 6000$  PSI 28-DAY STRENGTH.

PRECAST UNITS SHALL BE ERECTED WITHOUT EXCEEDING TOLERANCE LIMITS SPECIFIED IN PCI MNL-127.

THE FOUNDATION FOR THE PRECAST STRUCTURE IS DESIGNED TO SUPPORT THE COMPLETED SUPERSTRUCTURE. DURING ERECTION OF THE SUPERSTRUCTURE, THE CONTRACTOR SHALL FURNISH ALL TEMPORARY BRACING AND SUPPORTS AS THE RESULT OF THE CONTRACTOR'S CONSTRUCTION METHODS AND/OR SEQUENCE SO THAT STRUCTURAL INTEGRITY OF THE FOUNDATION IS NOT COMPROMISED.

SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

**STEEL ROOF DECK NOTES**

STEEL ROOF DECK SHALL CONFORM TO AISI SPECIFICATION FOR THE DESIGN OF LIGHT GAGE, COLD-FORMED STRUCTURAL STEEL MEMBERS AND THE STEEL DECK INSTITUTE'S DESIGN REQUIREMENTS. COMPOSITE STEEL FLOOR DECK SHALL CONFORM TO ASTM A-611, GRADE C AND D, OR FROM A-653-94 STRUCTURAL QUALITY GRADE 33 OR HIGHER.

STEEL ROOF DECK, UNLESS SPECIFIED OTHERWISE, SHALL BE 1.5" DEEP, 20 GAGE MINIMUM, TYPE "B" BY VULCRRAFT OR APPROVED EQUAL. STEEL DECK SHALL BE GALVANIZED 660.

STEEL ROOF DECK SHALL BE CONTINUOUS OVER A MINIMUM OF THREE SPANS, AND SHALL BE FASTENED TO THE SUPPORTS AT THE UNIT ENDS AND AT INTERMEDIATE SUPPORTS AS RECOMMENDED BY THE STEEL DECK MANUFACTURER. MINIMUM ATTACHMENT REQUIREMENTS SHALL BE #6 TEK SCREWS AT 12" OC AT EVERY SUPPORT AND 4" OC AT DECK PERIMETER. #6 PUDDLE WELDS MAY BE SUBSTITUTED IN LIEU OF #6 TEK SCREWS WHERE STEEL DECK BEARS ON STRUCTURAL STEEL.

ALL WELDING SHALL BE IN ACCORDANCE WITH AWS D1.3 - "STRUCTURAL WELDING CODE - SHEET STEEL".

PROVIDE FIELD TOUCH UP OF ALL WELDS IN DECK WITH ZRC COLD GALVANIZING COMPOUND.

ALL ACCESSORIES TO THE STEEL DECK, INCLUDING EDGE ANGLES, POUR STOPS, COLUMN CLOSURES, END CLOSURES, COVER PLATES AND GRIDER FILLERS, ETC., SHALL BE IN ACCORDANCE WITH THE STEEL DECK INSTITUTE.

**COLD FORMED METAL FRAMING NOTES**

ALL LIGHTWEIGHT STEEL PRODUCTS, DETAILING, FABRICATION AND INSTALLATION SHALL MEET THE REQUIREMENTS OF AISI NASPEC 2001, "NORTH AMERICAN SPECIFICATION FOR DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS".

ALL PREMANUFACTURED METAL TRUSS PRODUCTS, DETAILING, FABRICATION AND INSTALLATION SHALL MEET THE REQUIREMENTS OF "STANDARD FOR COLD-FORMED STEEL FRAMING - TRUSS DESIGN", 2001 EDITION.

STEEL GRADES:  
12, 14, & 16 GAGE COMPONENTS  $F_y$  (MIN) = 50 ksi (ASTM A-446 GRADED)  
18 GAGE COMPONENTS  $F_y$  (MIN) = 33 ksi (ASTM A-446 GRADE B)  
20 GAGE COMPONENTS  $F_y$  (MIN) = 33 ksi (ASTM A-446 GRADE A)

ALL COMPONENTS SHALL BE ZINC COATED (660 GALVANIZED) IN ACCORDANCE WITH ASTM A-525.

FLAME CUTTING OF MEMBERS OR HOLES IS NOT PERMITTED.

ALL FIELD CONNECTIONS SHALL CONFORM TO DETAILS SHOWN ON FABRICATION PLANS.

ALL STUDS, HARDWARE, ACCESSORIES, AND FASTENERS SHALL BE GALVANIZED.

ALL WELDING SHALL BE IN ACCORDANCE WITH AWS D1.3 - "STRUCTURAL WELDING CODE - SHEET STEEL".

**CONCRETE NOTES**

ALL CONCRETE WORK SHALL CONFORM TO ACI "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", ACI-318-02, AND "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES", ACI-315.

BASIC STRUCTURAL SYSTEM = BEARING WALL SYSTEMS  
SEISMIC RESISTING SYSTEM = ORDINARY REINFORCED CONCRETE SHEAR WALLS  
RESPONSE MODIFICATION COEFFICIENT,  $R = 4$   
DEFLECTION AMPLIFICATION FACTOR,  $C_d = 4$   
ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE ANALYSIS  
DESIGN BASE SHEAR = 1,200k EAST  
1,400k WEST

ALL CONCRETE FOR FOUNDATIONS AND SLABS ON GRADE SHALL BE NORMAL WEIGHT CONCRETE WITH A MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS OF 4,500 PSI.

REMOVE ALL DEBRIS FROM BOTTOM OF FOOTINGS PRIOR TO PLACING CONCRETE. DO NOT PLACE CONCRETE ON FROZEN SOIL, ICE, MUD, OR IN STANDING WATER. ALL FOUNDATION SUBGRADES SHALL BE INSPECTED AND APPROVED UNDER THE SUPERVISION OF A REGISTERED PROFESSIONAL ENGINEER WITH GEOTECHNICAL ENGINEERING EXPERIENCE PRIOR TO BEING CONCREDED.

ALL CONCRETE SHALL BE CONTINUOUSLY MOIST CURED FOR SEVEN (7) DAYS MINIMUM. CONCRETE SHALL BE KEPT MOIST BY FOG SPRAYING, CURING PAPER AND/OR ACCEPTABLE CURING COMPOUNDS.

CONTRACTOR SHALL SUBMIT MIX DESIGNS FOR APPROVAL. MIX DESIGN SHALL INDICATE 28-DAY STRENGTHS, CEMENT CONTENT, AIR CONTENT, WATER-CEMENT RATIO, AMOUNT OF FINE AND COARSE AGGREGATES, AND ADMIXTURES.  
MAX. WATER-CEMENT RATIO = 0.42 FOR 4,500 PSI SLUMP:  
4" FOR SLABS  
5" FOR ALL OTHER CONCRETE  
MAX. AGGREGATE SIZE -  
FOOTINGS & FOUNDATIONS - 3/4" TO 1 1/2"  
SLAB-ON-GRADE - 3/4" TO 1"  
CONCRETE FILL - 1/2"

CEMENT SHALL BE PORTLAND CEMENT, TYPE I OR II, CONFORMING TO ASTM C-150. AGGREGATES SHALL CONFORM TO ASTM C-33. AIR ENTRAINING ADMIXTURES SHALL CONFORM TO ASTM C-260. NON-SHRINK GROUT SHALL CONFORM TO ASTM C-109. EXPANSION JOINTS SHALL BE 1/2" THICK ASPHALT IMPREGNATED FIBERBOARD JOINT MATERIAL, CONFORMING TO ASTM D-1751. CURING COMPOUND SHALL BE CLEAR, CONFORMING TO ASTM C-309.

COLD WEATHER CONCRETE WORK SHALL CONFORM TO ACI-306. HOT WEATHER CONCRETE WORK SHALL CONFORM TO ACI-305.

GROUND FLOOR CONCRETE SLAB-ON-GRADE IS NOT DESIGNED AS A STRUCTURAL DIAPHRAGM.

THE MAXIMUM LENGTH BETWEEN CONSTRUCTION JOINTS OF WALLS AND FOOTINGS SHALL NOT EXCEED 40 FEET, EXCEPT AS INDICATED ELSEWHERE ON THESE DRAWINGS.

ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60. WELDED WIRE MESH SHALL CONFORM TO ASTM A185 AND ASTM A82.

WELDED WIRE MESH SHALL HAVE MINIMUM END AND SIDE LAPS OF 1'-0".

CONCRETE ACCESSORIES SHALL BE ADEQUATE TO MAINTAIN REINFORCING ACCURATELY IN PLACE AND BE NON-CORROSIVE, NON-STAINING TYPE.

LAP ALL BAR REINFORCING PER ACI-318. STAGGER SPLICES IN WALLS AND SLABS AND ALL HORIZONTAL REINFORCEMENT.

CONCRETE SHALL NOT BE DROPPED THROUGH REINFORCING STEEL (AS IN WALLS AND COLUMNS) SO AS TO CAUSE SEGREGATION OF AGGREGATES. USE HOPPERS, CHUTES OR TRUNKS OF VARYING LENGTHS SO THAT THE FREE UNCONFINED FALL OF CONCRETE SHALL NOT EXCEED FIVE (5) FEET.

MINIMUM REINFORCEMENT COVER, UNLESS NOTED OTHERWISE:  
-CONCRETE CAST AGAINST EARTH: 3"  
-CONCRETE EXPOSED TO EARTH OR WEATHER:  
No. 6 TO No. 18 BARS - 2"  
No. 5 AND SMALLER - 1 1/2"  
-CONCRETE NOT EXPOSED TO EARTH OR WEATHER:  
No. 11 AND SMALLER - 3/4"

**MASONRY NOTES**

NEW MASONRY WALLS ARE DESIGNED IN ACCORDANCE WITH ACI 530-02 USING WORKING STRESS DESIGN, WITH APPENDIX A.3 SPECIAL PROVISIONS FOR SEISMIC DESIGN.

CONSTRUCTION SHALL CONFORM TO ACI 530I-02, "SPECIFICATIONS FOR MASONRY STRUCTURES."

ALL MASONRY CONSTRUCTION SHALL BE INSPECTED AND TESTED TO ASSURE CONFORMANCE WITH THE DETAILS SHOWN ON THESE PLANS.

MASONRY UNITS SHALL CONFORM TO ASTM C90 WITH COMPRESSIVE STRENGTH OF 1900 PSI, LIGHT WEIGHT BLOCK.

MASONRY MORTAR FOR STRUCTURAL CMU SHALL BE TYPE "S," CONFORMING TO ASTM C270.

ALL BAR REINFORCING SHALL CONFORM TO ASTM A615, GRADE 60.

ALL BAR REINFORCING SHALL BE GROUTED SOLID FULL HEIGHT USING LOW LIFT METHOD.

ALL BOND BEAMS SHALL BE GROUTED SOLID.

GROUT SHALL CONFORM TO ASTM C94 OF C476.

PROVIDE No. 9 WIRE STANDARD LAJUR-TYPE HORIZONTAL REINFORCEMENT AT 16" o.c. TYPICAL, UNLESS OTHERWISE NOTED.

PROVIDE GALVANIZED TRI-TIES AT 16" o.c. AT ALL STEEL COLUMNS IN CONTACT WITH MASONRY.

PROVIDE (2)-#5 VERTICAL (ONE IN EACH CORE) SOLIDLY GROUTED AT ALL DOOR, WINDOW, AND CONSTRUCTION JOINTS.

**GENERAL NOTES**

DESIGNED IN ACCORDANCE WITH THE STATE OF CONNECTICUT BASIC BUILDING CODE, 2003 IBC WITH STATE OF CONNECTICUT AMENDMENTS.

IF ANY FIELD CONDITIONS PRECLUDE COMPLIANCE WITH THESE DRAWINGS AND/OR CONDITIONS SPECIFIED, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND SHALL NOT PROCEED WITH THE AFFECTED WORK.

TYPICAL DETAILS AND NOTES SHOWN HEREIN SHALL APPLY UNLESS SPECIFICALLY SHOWN OR NOTED OTHERWISE. CONSTRUCTION DETAILS NOT FULLY SHOWN OR NOTED SHALL BE SIMILAR TO DETAILS SHOWN FOR SIMILAR CONDITIONS.

ALL UNDERGROUND UTILITY LOCATIONS SHALL BE VERIFIED PRIOR TO STARTING EXCAVATION WORK. CALL BEFORE YOU DIG PRIOR TO STARTING ANY EXCAVATION.

WORK AREAS SHALL BE MARKED, FENCED, AND OTHERWISE SECURED SO AS TO PROVIDE PROPER PROTECTION FOR THE PUBLIC, AND AS REQUIRED BY THE BUILDING INSPECTOR.

IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO DESIGN AND PROVIDE ADEQUATE SHORING, BRACING AND FORMWORK, ETC., AS REQUIRED FOR THE PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION. THIS INCLUDES PROVIDING TEMPORARY BRACING, SHORING, GUYS OR TIE-DOWNS. THESE TEMPORARY SUPPORTS SHALL REMAIN IN PLACE UNTIL ALL STRUCTURAL COMPONENTS ARE STABLE AND COMPLETED.

FOUNDATION DESIGN BASED ON GEOTECHNICAL ENGINEERING REPORT BY "DR. CLARENCE WELT, P.E., P.C. GEOTECHNICAL ENGINEERING" DATED JUNE 4, 2008.

ROOF (LEVEL GS) LOADS:  
LIVE LOAD = 40 PSF UNIFORM, 3000 LBS CONCENTRATED (PARKING)  
GROUND SNOW LOAD,  $P_g = 30$  PSF (CT SUPPLEMENT - APPENDIX K)  
EXPOSURE FACTOR,  $C_e = 0.9$   
THERMAL FACTOR,  $C_t = 1.2$   
IMPORTANCE FACTOR,  $I_s = 1.0$   
FLAT ROOF SNOW LOAD,  $P_f = 23$  PSF (USE 30 PSF MIN. PER STATE OF CONNECTICUT AMENDMENTS)  
SNOW LOADS INCREASED FOR DRIFT, SLIDING, ETC. WHERE APPLICABLE.

FLOOR LIVE LOADS:  
PARKING GARAGE = 40 PSF UNIFORM, 3000 LBS CONCENTRATED  
STAIRS AND LOBBIES = 100 PSF UNIFORM

WIND LOADS:  
BASIC WIND SPEED (3-SEC. GUST) = 110 MPH (CT SUPPLEMENT - APPENDIX K)  
IMPORTANCE FACTOR = 1.00  
EXPOSURE = "B"  
INTERNAL PRESSURE COEFFICIENT,  $C_{pi} = \pm 0.18$   
WIND LOADS DETERMINED USING ASCE 7-02 PROVISIONS.  
MAIN WIND-FORCE PRESSURES: NORMAL TO RIDGE,  $W_{HLW} = 23.2$  PSF  
PARALLEL TO RIDGE,  $W_{HLW} = 19.3$  PSF  
SEE TABLE, THIS SHEET, FOR COMPONENTS AND CLADDING PRESSURES

SEISMIC DESIGN CRITERIA:  
 $S_a = 0.243$   $S_1 = 0.062$  (CT SUPPLEMENT - APPENDIX K)  
SEISMIC IMPORTANCE FACTOR,  $I_e = 1.00$   
SEISMIC USE GROUP = 1  
SITE CLASS = "D"  
 $S_{ds} = 0.259$   $S_{d1} = 0.099$   
SEISMIC DESIGN CATEGORY = "B"  
BASIC STRUCTURAL SYSTEM = BEARING WALL SYSTEMS  
SEISMIC RESISTING SYSTEM = ORDINARY REINFORCED CONCRETE SHEAR WALLS  
RESPONSE MODIFICATION COEFFICIENT,  $R = 4$   
DEFLECTION AMPLIFICATION FACTOR,  $C_d = 4$   
ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE ANALYSIS  
DESIGN BASE SHEAR = 1,200k EAST  
1,400k WEST

MISCELLANEOUS LOADS:  
HANDRAILS AND GUARDS = 50 PLF OR 200 LBS AT ANY POINT  
VEHICLE BARRIERS = 6000 LBS HORIZONTALLY APPLIED AT 18 INCHES ABOVE FLOOR LEVEL  
SOIL LATERAL LOADS: AT-REST COEFFICIENT FOR RESTRAINED RETAINING WALLS,  $K_a = 0.45$   
ACTIVE PRESSURE COEF. FOR CANTILEVERED RET. WALLS,  $K_a = 0.28$

ALL COMPACTED CONTROLLED FILL BEING PLACED MUST BE TESTED BY AN APPROVED TESTING LABORATORY DURING THE FILL OPERATION. SLABS AND FOOTINGS SHALL NOT BE PLACED UNTIL FILL TEST REPORTS HAVE BEEN CHECKED AND APPROVED BY THE ENGINEER. PRIOR TO PLACING CONCRETE, EXISTING SOIL CONDITIONS SHALL BE INSPECTED AND VERIFIED BY THE GEOTECHNICAL ENGINEER. ALL UNSUITABLE SOIL SHALL BE REMEDIATED AS DIRECTED BY THE GEOTECHNICAL ENGINEER. BUILDING PAD PREPARATION SHALL BE IN ACCORDANCE WITH THE SITE DRAWINGS, SPECIFICATIONS, AND GEOTECHNICAL REPORT REQUIREMENTS.

ALL SPECIAL INSPECTION REPORTS PREPARED IN ACCORDANCE WITH THE STATEMENT OF SPECIAL INSPECTIONS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW IN A TIMELY MANNER. THE FINAL REPORT OF SPECIAL INSPECTIONS SHALL NOT BE ISSUED UNTIL ALL SPECIAL INSPECTION REPORTS HAVE BEEN RECEIVED AND APPROVED BY THE ENGINEER.

**STRUCTURAL STEEL NOTES**

STEEL SHALL CONFORM TO THE "SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS, ALLOWABLE STRESS DESIGN AND PLASTIC DESIGN", AISC 335-89/91, OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION.

ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM A992, EXCEPT AS MODIFIED BELOW:  
ALL MISCELLANEOUS STRUCTURAL STEEL SHALL CONFORM TO ASTM A36.  
ALL HOLLOW STRUCTURAL SECTIONS SHALL CONFORM TO ASTM A500, GRADE B.  
ALL ANCHOR BOLTS SHALL CONFORM TO ASTM F1554, GRADE 36.

ALL WELDS SHALL USE E70XX ELECTRODES AND CONFORM TO THE "STRUCTURAL WELDING CODE (STEEL)", AWS D1.1, LATEST EDITION. ALL WELDERS SHALL BE CERTIFIED IN ACCORDANCE WITH AWS REQUIREMENTS.

ALL BOLTED CONNECTIONS SHALL BE BEARING TYPE, UTILIZING 3/4" DIA. ASTM A325-N TENSION CONTROL BOLTS, UNLESS SHOWN OTHERWISE.

ALL BOLTS, NUTS, AND WASHERS SHALL BE IN ACCORDANCE WITH THE LATEST SPECIFICATIONS APPROVED BY THE RESEARCH COUNCIL ON RIVETED AND BOLTED STRUCTURAL JOINTS. USE DIRECT TENSION INDICATORS, CONFORMING TO ASTM F959, ON ALL A325 BOLTS.

ALL STRUCTURAL STEEL SHALL BE SHOP PRIMED (ONE COAT OF 2 MIL DRY FILM, MIN.). SHOP PRIMER TO BE FABRICATOR'S STANDARD COLOR.

OPENINGS THROUGH BEAMS AND COLUMNS SHALL NOT BE PERMITTED UNLESS APPROVED BY THE STRUCTURAL ENGINEER.

FIELD FLAME CUTTING OF ANY STRUCTURAL MEMBERS IS NOT PERMITTED.

EXPOSED TOPS OF ALL STEEL HOLLOW STRUCTURAL SECTION COLUMNS SHALL BE COVERED WITH A SHOP WELDED CAP PLATE AND SHALL BE WATERTIGHT.

ALL STEEL SHALL BE FABRICATED, ERECTED, AND TESTED IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES"

STRUCTURAL STEEL SHOP DRAWINGS, PREPARED BY THE STEEL SUBCONTRACTORS, SHOWING COMPLETE DIMENSIONS, DETAILS, SIZES, AND GRADES OF STEEL MEMBERS AND CONNECTIONS, TYPE AND NUMBER OF WELDS AND BOLTS, SHALL BE SUBMITTED FOR APPROVAL PRIOR TO THE FABRICATION OF THE STEEL COMPONENTS. THE STRUCTURAL STEEL SUBCONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING, VERIFICATION AND COORDINATION OF DIMENSIONS AND DETAILS WITH THE STRUCTURAL AND OTHER PORTIONS OF THE CONTRACT DRAWINGS. THE STEEL SUBCONTRACTOR SHALL REPRODUCE ANY PORTION OF THE STRUCTURAL CONTRACT DRAWINGS FOR UTILIZATION AS SHOP DRAWINGS, UNLESS APPROVAL OF THE STRUCTURAL ENGINEER IS OBTAINED.

THE STEEL FABRICATOR SHALL BE AISC (AMERICAN INSTITUTE OF STEEL CONSTRUCTION) CERTIFIED.

ALL STRUCTURAL STEEL ERECTION AND SHORING SHALL BE INSPECTED BY AN INDEPENDENT TESTING AGENCY RETAINED BY THE OWNER FOR THE FOLLOWING ITEMS:  
USUALLY INSPECT ALL CONNECTIONS, INCLUDING, BUT NOT LIMITED TO, BOLTS, WELDS, METAL DECK WELDS TO SUPPORT STRUCTURE, AND METAL DECK SIDE LAPS.  
INSPECT WELDS AT MOMENT CONNECTIONS.  
INSPECT STEEL ERECTION FOR ORIENTATION AND PLUMBNESS.

ALL STEEL CONNECTIONS SHALL BE DESIGNED BY THE STEEL FABRICATOR TO RESIST MINIMUM THE REACTIONS SHOWN THUS XXX ON THESE DRAWINGS. REACTIONS NOT SHOWN SHALL BE DESIGNED TO RESIST 5 KIPS MINIMUM.

**GEOTECHNICAL NOTES**

ALL FOOTINGS HAVE BEEN DESIGNED FOR AN ALLOWABLE NET SOIL BEARING PRESSURE OF 6,000 PSF, PER GEOTECHNICAL ENGINEERING REPORT BY "DR. CLARENCE WELT, P.E., P.C. GEOTECHNICAL ENGINEERING" DATED JUNE 4, 2008. NO FOOTINGS SHALL BEAR ON LOAM OR SOIL FILL. IF UNSUITABLE SOIL OR ROCK IS ENCOUNTERED AT PROPOSED BOTTOM OF FOOTING ELEVATIONS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER.

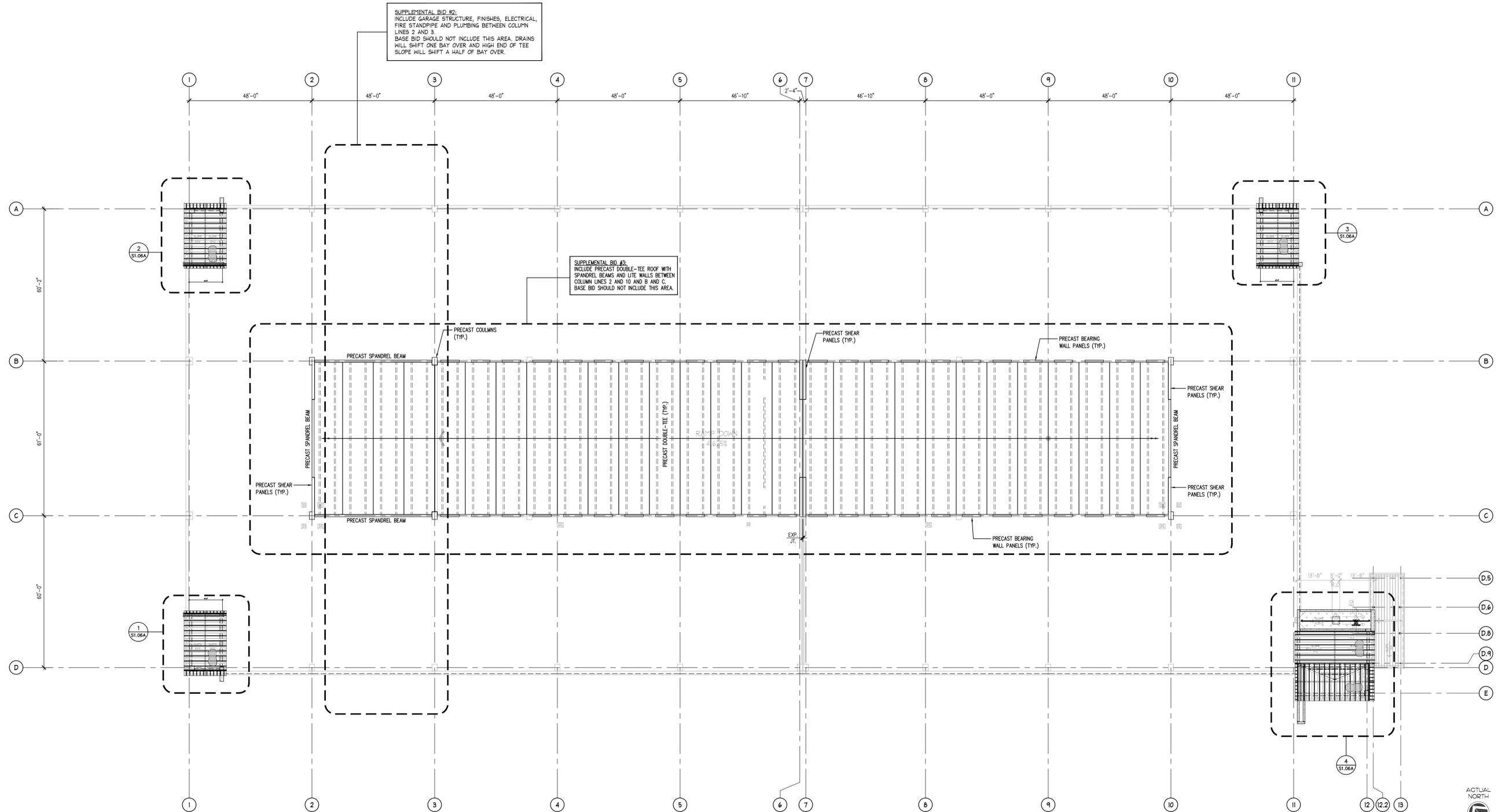
PLACE THREE (3) FEET OF 3/4" MINUS COMPACTED PROCESSED STONE BASE BENEATH ALL FOUNDATIONS AND PROOF ROLL THE SUBGRADES TO AT LEAST 85% OF MODIFIED OPTIMUM DENSITY WITH A 6+ TON VIBRATORY COMPACTOR. THE PROCESSED STONE BASE SHALL EXTEND BEYOND THE FOOTINGS FOR A HORIZONTAL DISTANCE EQUAL TO AT LEAST THE DEPTH OF THE FILL BENEATH THE FOOTINGS. SEE GEOTECHNICAL REPORT FOR ADDITIONAL INFORMATION.

THE BOTTOM OF ALL EXTERIOR FOOTING ELEVATIONS SHALL BE A MINIMUM OF 3'-6" BELOW FINISHED EXTERIOR GRADE, UNLESS NOTED OTHERWISE. COMPACT BOTTOM OF FOOTING SUBGRADE WITH A GRANULAR COMPACTOR. SEE GEOTECHNICAL REPORT FOR ADDITIONAL FOOTING SUBGRADE PREPARATION AND REQUIREMENTS.

CONTROLLED FILL SHALL BE INERT, GRANULAR FILL FREE FROM ORGANICS. SEE GEOTECHNICAL REPORT FOR CONTROLLED FILL REQUIREMENTS.

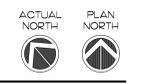
ALL CONTROLLED FILL PLACED SHALL BE COMPACTED TO A MINIMUM OF 95% OF MAXIMUM DRY UNIT WEIGHT AS DETERMINED BY THE MODIFIED PROCTOR TEST, ASTM D1557. MINIMUM COMPACTION REQUIREMENTS REFER TO PERCENTAGES OF THE MAXIMUM DRY DENSITY DETERMINED IN ACCORDANCE WITH ASTM D1557C.

|  |          |  |  |
|--|----------|--|--|
| drawing title<br><b>GENERAL NOTES</b>                                      |          | STATE OF CONNECTICUT<br>DEPARTMENT OF PUBLIC WORKS |  |
| REVISIONS  |          |  |  |
| mark   | date     | description  |  |
| -  | 12/06/13 | RECORD SET   |  |
| DRAWING PREPARED BY:   |          | DATE   |  |
| <b>BL COMPANIES</b><br>959 RESEARCH PARKWAY<br>MERIDEN, CONNECTICUT, 06450 |          | 07/10/09   |  |
| PROJECT  |          | SCALE  |  |
| 100% CONSTRUCTION DOCUMENTS PACKAGE  |          | AS NOTED   |  |
| SCSU PARKING GARAGE  |          | DRAWN BY   |  |
| CF-RS-273  |          | LP   |  |
| CAD no. 507D1007100  |          | APPROVED BY  |  |
| project no. CF-RS-273  |          | CA   |  |
|  |          | DRAWING no.  |  |
|  |          | S1.00  |  |



**1 ROOF LEVEL FRAMING PLAN**  
1/16"=1'-0"

1. ROOF CONSTRUCTION CONSISTS OF PRECAST DOUBLE TEES SUPPORTED ON PRECAST SPANDREL BEAMS OR PRECAST BEARING WALL PANELS.
2. FOR DOOR OPENING SIZES AND LOCATIONS SEE ARCHITECTURAL DRAWINGS. FOR SLAB AND TEE PENETRATIONS, SEE MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS.



|   |             |  |          |
|---|-------------|--|----------|
| drawing title<br><b>G5 LEVEL FRAMING PLAN</b> |             | STATE OF CONNECTICUT<br>DEPARTMENT OF PUBLIC WORKS |          |
| REVISIONS                                     |             |  |          |
| mark  | date        | description  |          |
| -   | 12/06/13    | RECORD SET   |          |
| DRAWING PREPARED BY:                          |             | date   | 07/10/09 |
| BL COMPANIES                                  |             | scale  | AS NOTED |
| 355 RESEARCH PARKWAY                          |             | drawn by   | LP       |
| MERIDEN, CONNECTICUT, 06450                   |             | approved by  | CA       |
| project                                       |             | drawing no.  | S1.06    |
| 100% CONSTRUCTION DOCUMENTS PACKAGE           |             |  |          |
| SCSU PARKING GARAGE                           |             |  |          |
| CF-RS-273                                     |             |  |          |
| CAD no.                                       | project no. |  |          |
| 507D1007106                                   | CF-RS-273   |  |          |