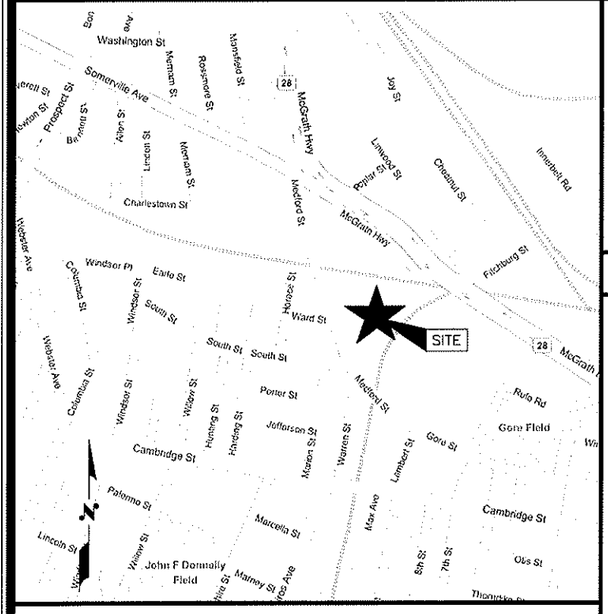
metroPCS
Unlimit Yourself.

BOSH005B
PLANET SELF STORAGE SOMERVILLE
39R MEDFORD ST.
SOMERVILLE, MA. 02143

VICINITY MAP (NOT TO SCALE)



DRIVING DIRECTIONS

DEPART 285 BILLERICA RD, CHELMSFORD, MA 01824 ON BILLERICA RD (SOUTH-EAST), TAKE RAMP (RIGHT) ONTO US-3 TOWARDS US-3 / BURLINGTON / BOSTON. KEEP STRAIGHT ONTO RAMP. AT EXIT 32B, TAKE RAMP (LEFT) ONTO I-95 [US-3]. AT EXIT 37A, TAKE RAMP (RIGHT) ONTO I-93 TOWARDS I-93 / BOSTON. AT EXIT 30, TURN RIGHT ONTO RAMP TOWARDS RT-28 / RT-38 / MYSTIC AVE / SOMERVILLE. TURN LEFT (SOUTH-EAST) ONTO SR-38 [MYSTIC AVE]. BEAR RIGHT (SOUTH) ONTO SR-28 [MCGRATH HWY]. TURN RIGHT ONTO RAMP TOWARDS SOMERVILLE AVE. BEAR RIGHT (SOUTH) ONTO MEDFORD ST.
ARRIVE 39 MEDFORD ST, SOMERVILLE, MA 02143

PROJECT DESCRIPTION

1. THIS IS AN UNMANNED FACILITY – NO SOLID WASTE. THE SITE WILL CREATE NO TRASH, THUS REQUIRES NO DUMPSTER.
2. DEVELOPMENT AND USE OF THIS FACILITY WILL CONFORM TO ALL APPLICABLE CODES AND ORDINANCES.

PROJECT SUMMARY:

APPLICANT INFORMATION

METRO PCS MASSACHUSETTS LLC
285 BILLERICA ROAD-THIRD FLOOR
CHELMSFORD, MA 01824

APPLICANT REPRESENTATIVE

WELLMAN ASSOCIATES, INC.
70 BROADWAY ST.
WESTFORD, MA 01886
PHONE: (978) 589-9870

PROPERTY OWNER INFORMATION

SITE ADDRESS:	39R MEDFORD ST. SOMERVILLE, MA. 02143
OWNER:	SURE LOCK BUILDING TRUST 3 SEAL HARBOR RD. WINTHROP, MA.
CONTACT:	BRYCE GREFE STORAGE INVESTMENT MANAGEMENT INC.
PHONE:	(781) 335-1604
MAP/BLOCK/LOT:	113/B/2
BOOK/PAGE:	22639/139
LATITUDE/LONGITUDE:	N 42° 22' 29", W 71° 05' 14"
AREA OF CONSTRUCTION:	±1200 SQ. FT.
CURRENT ZONING:	IP – INDUSTRIAL PARK DISTRICT
OCCUPANCY TYPE:	UTILITY
STRUCTURE TYPE:	WAREHOUSE
HANDICAP REQUIREMENTS:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. HANDICAPPED ACCESS NOT REQUIRED.

CODE COMPLIANCE

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES.

BUILDING CODE: MASSACHUSETTS STATE BUILDING CODE, 6TH EDITION

ELECTRICAL CODE: NEC 2005

PROJECT TEAM

ARCHITECT/ENGINEER INFORMATION
HUDSON DESIGN GROUP LLC
1600 OSGOOD ST.
BUILDING 20 NORTH, SUITE 2-101
NORTH ANDOVER, MA 01845
PHONE: (978) 557-5553

ELECTRICAL ENGINEER INFORMATION
McCABE ASSOCIATES CONSULTING ENGINEERS
75 GOODHUE ROAD,
DERRY, NH 03038
PHONE: (603) 437-2002

UTILITY COMPANY INFORMATION
NSTAR/BOSTON EDISON

TELEPHONE COMPANY INFORMATION
VERIZON

CALL
BEFORE YOU DIG
CALL TOLL FREE 888-DIG-SAFE

INDEX:

DO NOT SCALE DRAWINGS

CONTRACTOR SHALL VERIFY ALL PLANS & EXISTING DIMENSIONS & CONDITIONS ON THE JOB SITE & SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME

APPROVALS

TITLE	SIGNATURES	DATE
METRO PCS PROJECT MANAGER		
RF ENGINEERING		
CONSTRUCTION MANAGER		
SITE ACQUISITION		
LANDLORD		

metroPCS
Unlimit Yourself.
285 BILLERICA ROAD-THIRD FLOOR
CHELMSFORD, MA 01824

Hudson Design Group LLC
1600 OSGOOD STREET
BUILDING 20 NORTH, SUITE 2-101
N. ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

PROFESSIONAL STAMP

COMMONWEALTH OF MASSACHUSETTS
DANIEL P. HUDYMA
No. 40729
REGISTERED PROFESSIONAL ENGINEER

DRAWN BY: MH | CHECKED BY: DPH

JOB #: BOSH005B

CONSTRUCTION DRAWINGS

0	4-29-09	CONSTRUCTION
A	2-12-09	FOR REVIEW

SITE NAME:
BOSH005B
PLANET SELF
STORAGE SOMERVILLE
GENERATOR PLAN

SITE ADDRESS:
39R MEDFORD ST.
SOMERVILLE, MA. 02143

SHEET TITLE:
TITLE SHEET

SHEET NUMBER:
T-1

DIVISION 01000 – GENERAL REQUIREMENTS

PART 1 GENERAL

REFER TO METRO PCS STANDARD CONSTRUCTION SPECIFICATIONS. IN CASE OF A CONFLICT, METRO PCS STANDARD CONSTRUCTION SPECIFICATIONS (LATEST EDITION) SHALL BE FOLLOWED.

PART 2 GENERAL NOTES

1. THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK. THE WORK PERFORMED ON THE PROJECT AND THE MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES.

2. THE ARCHITECT/ENGINEER HAVE MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONTRACT DOCUMENTS THE COMPLETE SCOPE OF WORK. THE CONTRACTOR BIDDING THE JOB IS NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND OR SPECIFICATIONS SHALL NOT EXCUSE SAID CONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.

3. THE CONTRACTOR OR BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) METRO PCS'S REPRESENTATIVE OF ANY CONFLICTS, ERRORS OR OMISSIONS PRIOR TO THE SUBMISSION OF CONTRACTOR'S PROPOSAL OR PERFORMANCE OF WORK.

4. THE SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, LABOR AND ALL OTHER MATERIALS AND LABOR DEEMED NECESSARY TO COMPLETE THE WORK/PROJECT AS DESCRIBED HEREIN.

5. THE CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO THE SUBMISSION OF BIDS OR PERFORMING WORK TO FAMILIARIZE HIMSELF WITH THE FIELD CONDITIONS AND TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONSTRUCTION DRAWINGS.

6. THE CONTRACTOR SHALL OBTAIN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS / CONTRACT DOCUMENTS.

7. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO THE MANUFACTURER'S / VENDOR'S SPECIFICATIONS UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.

8. THE CONTRACTOR SHALL MAINTAIN A FULL SET OF CONSTRUCTION DOCUMENTS AT THE SITE UPDATED WITH THE LATEST REVISIONS AND ADDENDUM'S OR CLARIFICATIONS AVAILABLE FOR THE USE OF ALL PERSONNEL INVOLVED WITH THE PROJECT.

9. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.

10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS WHICH MAY BE REQUIRED FOR THE WORK BY THE ARCHITECT/ENGINEER, THE STATE, COUNTY OR LOCAL GOVERNMENT AUTHORITY.

11. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING SITE CONDITIONS DURING CONSTRUCTION. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL REPAIR ANY DAMAGE THAT MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY.

12. THE CONTRACTOR SHALL KEEP THE GENERAL WORK AREA CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT, DEBRIS, RUBBISH AND REMOVE ALL UNNECESSARY MATERIAL.

13. THE CONTRACTOR SHALL COMPLY WITH ALL PERTINENT SECTIONS OF THE STATE BASIC BUILDING CODE, LATEST EDITION, AND ALL OSHA REQUIREMENTS AS THEY APPLY TO THIS PROJECT. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY THE ARCHITECT/ENGINEER.

14. THE CONTRACTOR SHALL NOTIFY METRO PCS'S REPRESENTATIVE WHERE A CONFLICT OCCURS ON ANY OF THE CONTRACT DOCUMENTS. THE CONTRACTOR IS NOT TO ORDER MATERIAL OR CONSTRUCT ANY PORTION OF THE WORK THAT IS IN CONFLICT UNTIL THE CONFLICT IS RESOLVED BY METRO PCS'S REPRESENTATIVE.

15. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC. ON THE JOB.

16. THE CONTRACTOR SHALL NOTIFY THE RF ENGINEER FOR ANTENNA AZIMUTH VERIFICATION (DURING ANTENNA INSTALLATION) PRIOR TO CONDUCTING SITE SWEEPING.

17. THE GENERAL CONTRACTOR SHALL IN ALL INSTANCES CONFORM TO THE SPECIFICATIONS ISSUED BY METRO PCS.

18. PROVIDE CORE DRILLING AS NECESSARY FOR PENETRATIONS OR RISERS THROUGH THE BUILDING,. DO NOT PENETRATE STRUCTURAL MEMBERS WITHOUT STRUCTURAL ENGINEER'S APPROVAL. SLEEVES AND/OR PENETRATIONS IN FIRE RATED CONSTRUCTION SHALL BE PACKED WITH FIRE RATED MATERIAL WHICH SHALL MAINTAIN THE FIRE RATING OF THE STRUCTURE. FILL FOR FLOOR PENETRATIONS SHALL PREVENT PASSAGE OF WATER, SMOKE FIRE AND FUMES. ALL MATERIAL SHALL BE UL APPROVED FOR THIS PURPOSE.

CONCRETE

CAST-IN-PLACE CONCRETE

PART 1 – GENERAL

1.01 DESCRIPTION

WORK INCLUDES CONSTRUCTION OF CAST-IN-PLACED CONCRETE FOUNDATIONS, INCLUDING FURNISHING AND INSTALLING READY-MIX CONCRETE, REINFORCING, FORMWORK, AND ACCESSORY MATERIALS AS SHOWN ON THE DRAWINGS. CAST-IN-PLACE CONCRETE INCLUDES ALL SITE CONCRETE, INCLUDING FOUNDATIONS, SLABS ON GRADE, EQUIPMENT PADS, AND GUARD POST FOUNDATIONS.

1.02 RELATED WORK

A. COORDINATE UNDER SLAB CONDUITS

B. COORDINATE WITH GROUNDING

1.03 APPLICABLE STANDARDS

A. ACI-301 – SPECIFICATIONS FOR STRUCTURAL CONCRETE BUILDINGS.

B. ACI 347 – GUIDE TO FORMWORK FOR CONCRETE.

C. ASTM C33 – CONCRETE AGGREGATES

D. ASTM C94 – READY-MIXED CONCRETE

E. ASTM C150 – PORTLAND CEMENT

F. ASTM C260 – AIR-ENTRAINING ADMIXTURES FOR CONCRETE.

G. ASTM C309 – LIQUID MEMBRANE FORMING COMPOUNDS FOR CURING CONCRETE.

H. ASTM C494 – CHEMICAL ADMIXTURES FOR CONCRETE.

I. ASTM A615 – DEFORMED STEEL BARS FOR CONCRETE REINFORCEMENT.

J. ASTM A185 – STEEL WELDED WIRE FABRIC FOR CONCRETE REINFORCEMENT

1.04 QUALITY ASSURANCE

CONCRETE MATERIALS AND OPERATIONS SHALL BE TESTED AND INSPECTED BY THE ENGINEER AS DIRECTED BY METRO PCS.

1.05 TESTS

CONCRETE TESTS SHALL BE AS DETAILED BELOW OR AS DIRECTED BY METRO PCS. CONCRETE MATERIALS AND OPERATIONS SHALL BE TESTED AND INSPECTED BY THE ENGINEER AS THE WORK PROGRESSES. FAILURE TO DETECT ANY DEFECTIVE WORK OR MATERIAL SHALL NOT IN ANY WAY PREVENT LATER REJECTION WHEN SUCH DEFECT IS DISCOVERED NOR SHALL IT OBLIGATE THE ENGINEER FOR FINAL ACCEPTANCE.

A. THREE CONCRETE TEST CYLINDERS SHALL BE TAKEN OF THE TOWER PIER FOUNDATION. ONE SHALL BE TESTED Φ THREE DAYS, ONE Φ TWENTY-EIGHT DAYS. THE THIRD CYLINDER SHALL BE KEPT SEPARATELY. (IF REQUIRED TO BE USED IN THE FUTURE.)

B. ONE SLUMP TEST SHALL BE TAKEN FOR EACH SET OF TEST CYLINDERS TAKEN. SLUMP SHALL NOT EXCEED 4" UNLESS OTHERWISE NOTED.

PART 2 – PRODUCT

2.01 CONCRETE MATERIALS

CONCRETE SHALL BE COMPOSED OF PORTLAND CEMENT, WATER, FINE AND COARSE AGGREGATES, AND ADMIXTURES AS SPECIFIED BELOW, ALL WELL MIXED AND BROUGHT TO PROPER CONSISTENCY, CLASS I, II, III, OR V.

A. CEMENT: CEMENT SHALL BE TYPE II, GRAY COLOR, LOW-ALKALI PORTLAND CEMENT CONFORMING TO ASTM C150.

B. FINE AND COARSE AGGREGATES: AGGREGATES FOR USE IN CONCRETE SHALL COMPLY WITH ASTM C33.

C. WATER: WATER FOR MIXING AND CURING CONCRETE SHALL BE FREE FROM SEWAGE, OIL, ACID, ALKALI, AND SALTS AND SHALL BE FREE FROM OBJECTIONABLE QUANTITIES OF SILT, ORGANIC MATTER, AND OTHER DELETERIOUS SUBSTANCES.

2.02 ADMIXTURES

A. CHEMICAL ADMIXTURE: ASTM C494, TYPE A- WATER REDUCING OR TYPE D – WATER REDUCING AND RETARDING.

2.03 CURING COMPOUND: ASTM C309, TYPE1. CLASS B; TRANSLUCENT.

2.04 ACCESSORIES

A. NONSHRINK GROUT: PREMIXED COMPOUND CONSISTING OF NONMETALLIC AGGREGATE, CEMENT, WATER REDUCING AND PLASTICIZING AGENTS; CAPABLE OF DEVELOPING MINIMUM COMPRESSIVE STRENGTH OF 7,000 PSI IN 28 DAYS.

B. JOINT FILLER: BITUMINOUS TYPE, ASTM D1751 OR NON-BITUMINOUS TYPE ASTM D1752.

C. ANCHOR BOLTS: ASTM A307. UNPRIMED.

2.05 CONCRETE MIX

A. CONCRETE SHALL BE PROPORTIONED PER REQUIREMENTS OF ACI 301 & METRO PCS CONSTRUCTION SPECIFICATIONS FOR DESIGN STRENGTH & WORKABILITY. CONCRETE SHALL BE DELIVERED WITHIN 45 MINUTES OF ADDITION OF WATER TO MIX.

B. THE FOLLOWING STRENGTHS SHALL BE USED:
1. FENCE POST FOUNDATIONS – DESIGN COMPRESSIVE STRENGTH AT 28 DAYS OF 3,000 PSI.
2. EQUIPMENT FOUNDATION – DESIGN COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS UNLESS OTHERWISE NOTED. (CONTRACTOR FURNISH 4,000 PSI CONCRETE).
3. CONCRETE STRENGTH FOR MONOPOLE OR TOWER FOUNDATION SHALL BE 1,000 PSI MORE THAN THE MANUFACTURER'S RECOMMENDATIONS, 4,000 PSI MINIMUM.

C. USE ACCELERATING ADMIXTURES IN COLD WEATHER AND RETARDING ADMIXTURES IN HOT WEATHER ONLY WHEN APPROVED BY THE ENGINEER.

D. TOTAL AIR CONTENT SHALL BE 5 PERCENT PLUS OR MINUS 1 PERCENT.

PART 3 – EXECUTION

3.01 INSPECTION

THE CONTRACTOR SHALL VERIFY ANCHORS, SEATS, PENETRATIONS, PLATES, REINFORCEMENT, AND OTHER ITEMS TO CAST INTO CONCRETE ARE ACCURATELY PLACED, HELD SECURELY, AND SHALL NOT CAUSE HARDSHIP IN PLACING CONCRETE.

3.02 PREPARATION

A. THE CONTRACTOR SHALL PREPARE PREVIOUSLY PLACED CONCRETE BY CLEANING WITH STEEL BRUSH AND APPLYING BONDING AGENT. APPLY BONDING AGENT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

3.03 PLACING CONCRETE

A. THE ENGINEER SHALL BE NOTIFIED NOT LESS THAN 24 HOURS IN ADVANCE OF CONCRETE PLACEMENT. UNLESS INSPECTION IS WAIVED IN EACH CASE, PLACING OF CONCRETE SHALL BE PERFORMED ONLY IN THE PRESENCE OF THE ENGINEER.

CONCRETE SHALL NOT BE PLACED UNTIL ALL FORM WORK, EMBEDDED PARTS, STEEL REINFORCEMENT, FOUNDATION SURFACES, AND JOINTS INVOLVED IN THE PLACING HAVE BEEN APPROVED, AND UNTIL FACILITIES ACCEPTABLE TO THE METRO PCS REPRESENTATIVE HAVE BEEN PROVIDED AND MADE READY FOR ACCOMPLISHMENT OF THE WORK AS SPECIFIED. CONCRETE MAY NOT BE ORDERED FOR PLACEMENT UNTIL ALL ITEMS HAVE BEEN APPROVED AND METRO PCS HAS PERFORMED A FINAL INSPECTION AND GIVEN APPROVAL TO START PLACEMENT IN WRITING.

B. UNLESS SPECIFIED TO BE BEVELED, EXPOSED EDGES OF FLOATED OR TROWELED SURFACES SHALL BE EDGED WITH A TOOL HAVING A 1/4" CORNER RADIUS.

C. PLACEMENT OF CONCRETE SHALL BE IN ACCORDANCE WITH ACI 301.

D. THE CONTRACTOR SHALL ENSURE THAT REINFORCEMENT, INSERTS, EMBEDDED PARTS, FORMED JOINTS AND VAPOR BARRIERS ARE NOT DISTURBED DURING CONCRETE PLACEMENT.

E. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
CONCRETE CAST AGAINST EARTH.....3 IN.
CONCRETE EXPOSED TO EARTH OR WEATHER:
#6 AND LARGER.....2 IN.
#5 AND SMALLER & WWF.....1 1/2 IN.
CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND.
SLAB AND WALL.....3/4 IN.
BEAMS AND COLUMNS.....1 1/2 IN.

3.04 SURFACE FINISHES

A. SURFACES AGAINST WHICH BACK FILL OR CONCRETE SHALL BE PLACED REQUIRE NO TREATMENT EXCEPT REPAIR OF DEFECTIVE AREAS.

B. SURFACES THAT WILL BE PERMANENTLY EXPOSED SHALL PRESENT A UNIFORM FINISH PROVIDED BY THE REMOVAL OF FINS AND THE FILLING OF HOLES AND OTHER IRREGULARITIES WITH DRY PACK GROUT, OR BY SACKING WITH UTILITY OR ORDINARY GROUT.

C. SURFACES THAT WOULD NORMALLY BE LEVEL AND WHICH WILL BE PERMANENTLY EXPOSED TO THE WEATHER SHALL BE SLOPED FOR DRAINAGE. UNLESS ENGINEER'S DESIGN DRAWING SPECIFIES A HORIZONTAL SURFACE OR SHOWS THE SLOPE REQUIRED. THE TOPS OF NARROW SURFACES, SUCH AS STAIR TREADS, WALLS, CURBS, AND PARAPETS SHALL BE SLOPED APPROXIMATELY 3/8" /FT OF WIDTH. BROADER SURFACES SUCH AS WALKS, ROADS, PARKING AREAS AND PLATFORMS SHALL BE SLOPED APPROXIMATELY 1/4" /FT.

D. SURFACES THAT WILL BE COVERED BY BACKFILL OR CONCRETE SHALL BE SMOOTH SCREENED.

E. EXPOSED SLAB SURFACES SHALL BE CONSOLIDATED, SCREENED, FLOATED, AND "STEEL TROWELED." HAND OR POWER-DRIVEN EQUIPMENT MAY BE USED FOR FLOATINGS WHICH SHALL BE STARTED AS SOON AS THE SCREENED SURFACE HAS ATTAINED A STIFFNESS TO PERMIT FINISHING OPERATIONS. ALL EDGES MUST HAVE A 3/4" CHAMFER. CONCRETE EXPANSION ANCHORS AND EPOXY ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS, SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS. MANUFACTURER'S MINIMUM CONCRETE EDGE DISTANCE SHALL BE MAINTAINED DURING INSTALLATION.

3.05 PATCHING

THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY UPON REMOVAL OF THE FORMS TO OBSERVE CONCRETE SURFACE CONDITIONS. IMPERFECTIONS SHALL BE PATCHED ACCORDING TO THE ENGINEERS DIRECTION.

3.06 DEFECTIVE CONCRETE

THE CONTRACTOR SHALL MODIFY OR REPLACE CONCRETE NOT CONFORMING TO REQUIRED LEVELS AND LINES, DETAILS, AND ELEVATIONS AS SPECIFIED IN ACI 301.

3.07 PROTECTION

A. IMMEDIATELY AFTER PLACEMENT, THE CONTRACTOR SHALL PROTECT THE CONCRETE FROM PREMATURE DRYING. EXCESSIVELY HOT OR COLD TEMPERATURES, AND MECHANICAL INJURY. FINISHED WORK SHALL BE PROTECTED.

B. CONCRETE SHALL BE MAINTAINED WITH MINIMAL MOISTURE LOSS AT RELATIVELY CONSTANT TEMPERATURE FOR PERIOD NECESSARY FOR HYDRATION OF CEMENT AND HARDENING OF CONCRETE.

C. ALL CONCRETE SHALL BE WATER CURED PER ACCEPTABLE PRACTICES SPECIFIED BY ACI CODE.

METALS

PART 1 – GENERAL

1.01 WORK INCLUDED

A. THE WORK CONSISTS OF THE FABRICATION AND INSTALLATION OF ALL MATERIALS TO BE FURNISHED, AND WITHOUT LIMITING THE GENERALITY THEREOF, INCLUDES ALL EQUIPMENT, LABOR AND SERVICES REQUIRED FOR ALL STRUCTURAL STEEL WORK, INCLUDING ALL ITEMS INCIDENTAL THERETO AS SPECIFIED HEREIN AND AS SHOWN ON THE DRAWINGS. INCLUDING:

1. STEEL FRAMING INCLUDING BEAMS, ANGLES, CHANNELS AND PLATES.

2. WELDING AND BOLTING OF ATTACHMENTS.

1.02 REFERENCE STANDARDS

A. THE WORK SHALL CONFORM TO THE CODES AND STANDARDS OF THE FOLLOWING AGENCIES AS FURTHER CITED HEREIN:

1. ASTM: AMERICAN SOCIETY FOR TESTING AND MATERIALS, AS PUBLISHED IN "COMPILATION OF ASTM STANDARDS IN BUILDING CODES"

2. AWS: AMERICAN WELDING SOCIETY INC., AS PUBLISHED IN "STANDARD D1.1–2006, STRUCTURAL WELDING CODE".

3. AISC: AMERICAN INSTITUTE FOR STEEL CONSTRUCTION, AS PUBLISHED IN "CODE FOR STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES"; "SPECIFICATIONS FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".

4. EIA/TIA–222–F STRUCTURAL STANDARDS FOR STEEL ANTENNA SUPPORTING STRUCTURES.

PART 2 – STRUCTURAL NOTES

ALL STEEL WORK SHALL BE PAINTED OR GALVANIZED IN ACCORDANCE WITH THE DRAWINGS AND METRO PCS SPECIFICATION 25252-000-3PS-GET-00001 UNLESS OTHERWISE NOTED. STRUCTURAL STEEL SHALL BE ASTM-992-50 UNLESS OTHERWISE NOTED ON THE SITE SPECIFIC DRAWINGS. STEEL DESIGN, INSTALLATION AND BOLTING SHALL BE IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "MANUAL OF STEEL CONSTRUCTION". MISC. STEEL TO BE A36.

1. DESIGN REQUIREMENTS ARE PER STATE BUILDING CODE AND APPLICABLE SUPPLEMENTS, ANSI/TIA–222–F STRUCTURAL STANDARDS FOR STEEL ANTENNA SUPPORTING STRUCTURES.

2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE CONSTRUCTION MANAGER AND ENGINEER OF RECORD.

3. DESIGN AND CONSTRUCTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".

4. STEEL PIPE SHALL CONFORM TO ASTM A500 "COLD-FORMED WELDED & SEAMLESS CARBON STEEL STRUCTURAL TUBING", GRADE A, OR ASTM A53 PIPE STEEL BLACK AND HOT-DIPPED ZINC-COATED WELDED AND SEAMLESS TYPE E OR S, GRADE B. PIPE SIZES INDICATED ARE NOMINAL. ACTUAL OUTSIDE DIAMETER IS LARGER.

5. STRUCTURAL CONNECTION BOLTS SHALL BE HIGH STRENGTH BOLTS (BEARING TYPE)AND CONFORM TO ASTM A325 "HIGH STRENGTH BOLTS FOR STRUCTURAL JOINTS, INCLUDING SUITABLE NUTS AND PLAIN HARDENED WASHERS". UNLESS OTHERWISE NOTED, ALL BOLTS SHALL BE 5/8" DIA TYPE X.

6. ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS OTHERWISE NOTED.

7. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS OTHERWISE NOTED.

8. FIELD WELDS, DRILL HOLES, SAW CUTS AND ALL DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED WITH AN ORGANIC ZINC REPAIR PAINT COMPLYING WITH REQUIREMENTS OF ASTM A780. GALVANIZING REPAIR PAINT SHALL HAVE 65 PERCENT ZINC BY WEIGHT, ZIRP BY DUNCAN GALVANIZING, GALVA BRIGHT PREMIUM BY CROWN OR EQUAL. THICKNESS OF APPLIED GALVANIZING REPAIR PAINT SHALL BE NOT NOT LESS THAN 4 COATS (ALLOW TIME TO DRY BETWEEN COATS) WITH A RESULTING COATING THICKNESS REQUIRED BY ASTM A123 OR A153 AS APPLICABLE.

9. CONTRACTOR SHALL COMPLY WITH AWS CODE FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS, AND FOR METHODS USED IN CORRECTING WELDING. ALL WELDERS AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES". ALL WELDING SHALL BE DONE USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND D1.1. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION", 9TH EDITION.

10. INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE CONSTRUCTION MANAGER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE CONSTRUCTION MANAGER APPROVAL.

11. UNISTRUTS SHALL BE FORMED STEEL CHANNEL STRUT FRAMING AS MANUFACTURED BY UNISTRUT CORP, WAYNE, MI OR EQUAL. STRUT MEMBERS SHALL BE 1 5/8"x1 5/8"x12GA. UNLESS OTHERWISE NOTED, AND SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION FOR EXTERNAL USE APPLICATIONS.

12. UNLESS OTHERWISE NOTED, EPOXY ANCHOR ASSEMBLY SHALL CONSIST OF 1/2" DIAMETER STAINLESS STEEL ANCHOR ROD WITH NUTS & WASHERS. AN INTERNALLY THREADED INSERT, A SCREEN TUBE AND A EPOXY ADHESIVE. THE ANCHORING SYSTEM SHALL BE THE HILTI-HIT HY-20 AND OR HY-150 SYSTEMS (AS SPECIFIED AN DWG.) OR ENGINEERS APPROVED EQUAL WITH 4-1/4" MIN. EMBEDMENT DEPTH.

13. UNLESS OTHERWISE NOTED, EXPANSION BOLTS SHALL CONFORM TO FEDERAL SPECIFICATION FF-S-325, GROUP II, TYPE 4, CLASS 1, HILTI KWIK BOLT II OR APPROVED EQUAL. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. MINIMUM EMBEDMENT SHALL BE THREE AND ONE HALF (3 1/2) INCHES.

14. WHERE ROOF PENETRATIONS ARE REQUIRED, THE CONTRACTOR SHALL CONTACT AND COORDINATE RELATED WORK WITH THE BUILDING OWNER AND THE EXISTING ROOF INSTALLER. WORK SHALL BE PERFORMED IN SUCH A MANNER AS TO NOT VOID THE EXISTING ROOF WARRANTY.

WOOD

1. ENGINEERED WOOD:
A. ALL ENGINEERED LUMBER, INCLUDING LVL'S, I-JOIST, RIM JOISTS, ETC., CALLED OUT IN THESE DRAWINGS SHALL BE MANUFACTURED BY BOISE CASCADE OR APPROVED EQUAL.
B. HANDLING, STORAGE AND INSTALLATION OF ENGINEERED LUMBER ARE TO FOLLOW THE MANUFACTURER'S RECOMMENDATIONS.

2. ROUGH CUT LUMBER:
UNLESS CALLED OUT DIFFERENTLY IN THESE DRAWINGS, ALL FRAMING LUMBER TO BE KILN DRIED, S-P-F, NO. 2 GRADE OR BETTER MATERIAL.

3. PLYWOOD:
ALL PLYWOOD TO BE TYPE I AND MEET THE MINIMUM REQUIREMENT OF THE A.P.A. (AMERICAN PLYWOOD ASSOCIATION). PLYWOOD THICKNESS AND OTHER REQUIRED PROPERTIES ARE AS CALLED OUT IN THESE PLANS.

4. JOIST HANGERS:
UNLESS CALLED OUT DIFFERENTLY ALL HANGERS ARE TO BE HEAVY GALVANIZED MANUFACTURED BY SIMPSON STRONG-TIE OR APPROVED EQUAL.

SPECIAL CONSTRUCTION ANTENNA INSTALLATION

PART 1 – GENERAL

1.01 WORK INCLUDED

A. ANTENNAS AND COAXIAL CABLES SHALL BE AS SPECIFIED ON THESE DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF PERSONNEL AND PROPERTY. STRICT ADHERENCE TO OSHA STANDARDS IS MANDATED.

B. INSTALL ANTENNAS AS INDICATED ON DRAWINGS AND METRO PCS SPECIFICATIONS.

C. INSTALL GALVANIZED STEEL ANTENNA MOUNTS AS INDICATED ON DRAWINGS.

D. INSTALL COAXIAL CABLES AND TERMINATION'S BETWEEN ANTENNAS AND EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS. WEATHERPROOF ALL CONNECTORS BETWEEN THE ANTENNA AND EQUIPMENT PER MANUFACTURER'S REQUIREMENTS. TERMINATE ALL COAXIAL CABLE THREE (3) FEET IN EXCESS OF ENTRY PORT LOCATION UNLESS OTHERWISE STATED.

E. ANTENNA MOUNTS AND HARDWARE SHALL BE PAINTED TO MATCH EXISTING CONDITIONS.

F. ANTENNA AND COAXIAL CABLE GROUNDING:
1. ALL EXTERIOR #6 GREEN GROUND WIRE "DAISY CHAIN" CONNECTIONS ARE TO BE WEATHER SEALED.
2. ALL COAXIAL CABLE GROUNDING KITS ARE TO BE INSTALLED ON STRAIGHT RUNS OF COAXIAL CABLE (NOT WITHIN BENDS).

ROOF WORK

1. IF ROOF WORK IS REQUIRED, CAUTION SHALL BE EXERCISED WHILE WORKING ON THE ROOF. EVERY EFFORT MUST BE MADE TO PRESERVE THE ROOF WARRANTY.

2. WHEN ROOF PENETRATIONS ARE REQUIRED, THE CONTRACTOR SHALL CONTACT AND COORDINATE THE WORK WITH THE BUILDING OWNER AND THE EXISTING ROOFING INSTALLER.

RELATED WORK (ROOF TOP SITES)

FURNISHED THE FOLLOWING WORK AS SPECIFIED UNDER CONSTRUCTION DOCUMENTS, BUT COORDINATE WITH OTHER TRADES PRIOR TO BID:

1. FLASHING OF OPENING INTO OUTSIDE WALLS
2. SEALING AND CAULKING ALL OPENINGS
3. PAINTING
4. CUTTING AND PATCHING

1.03 REQUIREMENTS OR REGULATOR AGENCIES

A. FURNISH U.L. LISTED EQUIPMENT WHERE SUCH LABEL IS AVAILABLE. INSTALL IN CONFORMANCE WITH U.L. STANDARDS WHERE APPLICABLE.

B. INSTALL ANTENNA, ANTENNA CABLES, GROUNDING SYSTEM IN ACCORDANCE WITH DRAWINGS AND SPECIFICATION IN EFFECT AT PROJECT LOCATION AND RECOMMENDATIONS OF STATE AND LOCAL BUILDING CODES, AND SPECIAL CODES HAVING JURISDICTION OVER SPECIFIC PORTIONS OF WORK. THIS WORK INCLUDES BUT IS NOT LIMITED TO THE FOLLOWING:

1. EIA/TIA – ELECTRONIC INDUSTRIES ASSOCIATION RS – 222. STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES.

2. FAA – FEDERAL AVIATION ADMINISTRATION ADVISORY CIRCULAR AC 70/7460-1H, OBSTRUCTION MARKING AND LIGHTING.

3. FCC – FEDERAL COMMUNICATIONS COMMISSION RULES AND REGULATIONS FORM 715, OBSTRUCTION MARKING AND LIGHTING SPECIFICATION FOR ANTENNA STRUCTURES AND FORM 715A, HIGH INTENSITY OBSTRUCTION LIGHTING SPECIFICATIONS FOR ANTENNA STRUCTURES.

4. NEC – NATIONAL ELECTRICAL CODE

5. UL – UNDERWRITER'S LABORATORIES APPROVED ELECTRICAL PRODUCTS.

6. IN ALL CASES, PART 77 OF THE FAA RULES AND PARTS 17 AND 22 OF THE FCC RULES ARE APPLICABLE AND IN THE EVENT OF CONFLICT, SUPERSEDE ANY OTHER STANDARDS OR SPECIFICATIONS.

IF ASSUMED EXISTING CONDITION DIFFERS, ENGINEER MUST BE INFORMED OF ACTUAL FIELD CONDITION.

metroPCS.
Unlimit Yourself.

285 BILLERICA ROAD–THIRD FLOOR
CHELMSFORD, MA 01824

Hudson Design Group LLC

1600 OSGOOD STREET
BUILDING 20 NORTH, SUITE 2-101
N. ANDOVER, MA 01845

TEL: (978) 557-5553
FAX: (978) 336-5586

PROFESSIONAL STAMP

COMMONWEALTH OF MASSACHUSETTS
DANIEL P. HUYNH
No. 40728
REGISTERED PROFESSIONAL ENGINEER

DRAWN BY: MH	CHECKED BY: DPH

JOB #: BOSH005B

CONSTRUCTION DRAWINGS

0	4-29-09	CONSTRUCTION
A	2-12-09	FOR REVIEW

SITE NAME:

BOSH005B
PLANET SELF
STORAGE SOMERVILLE
GENERATOR PLAN

SITE ADDRESS:

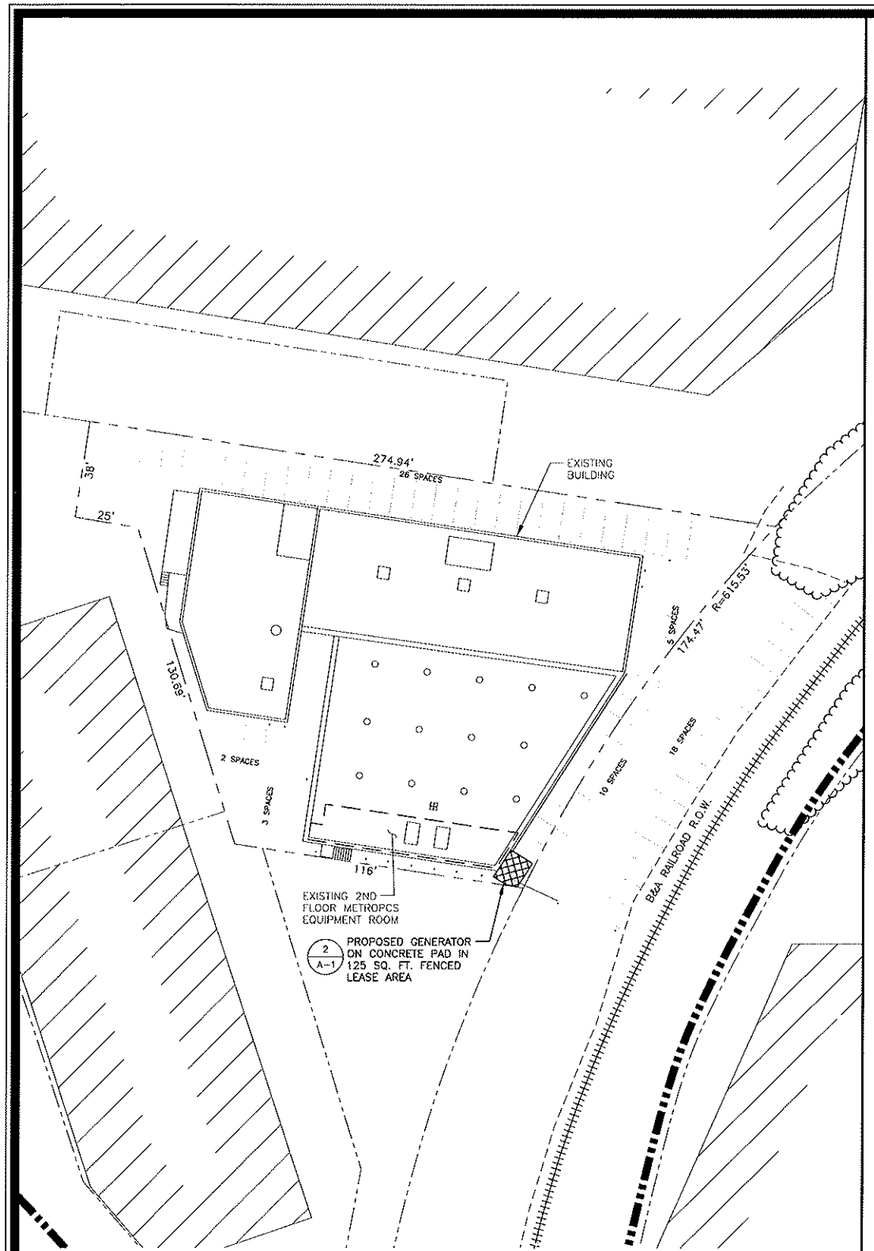
39R MEDFORD ST.
SOMERVILLE, MA. 02143

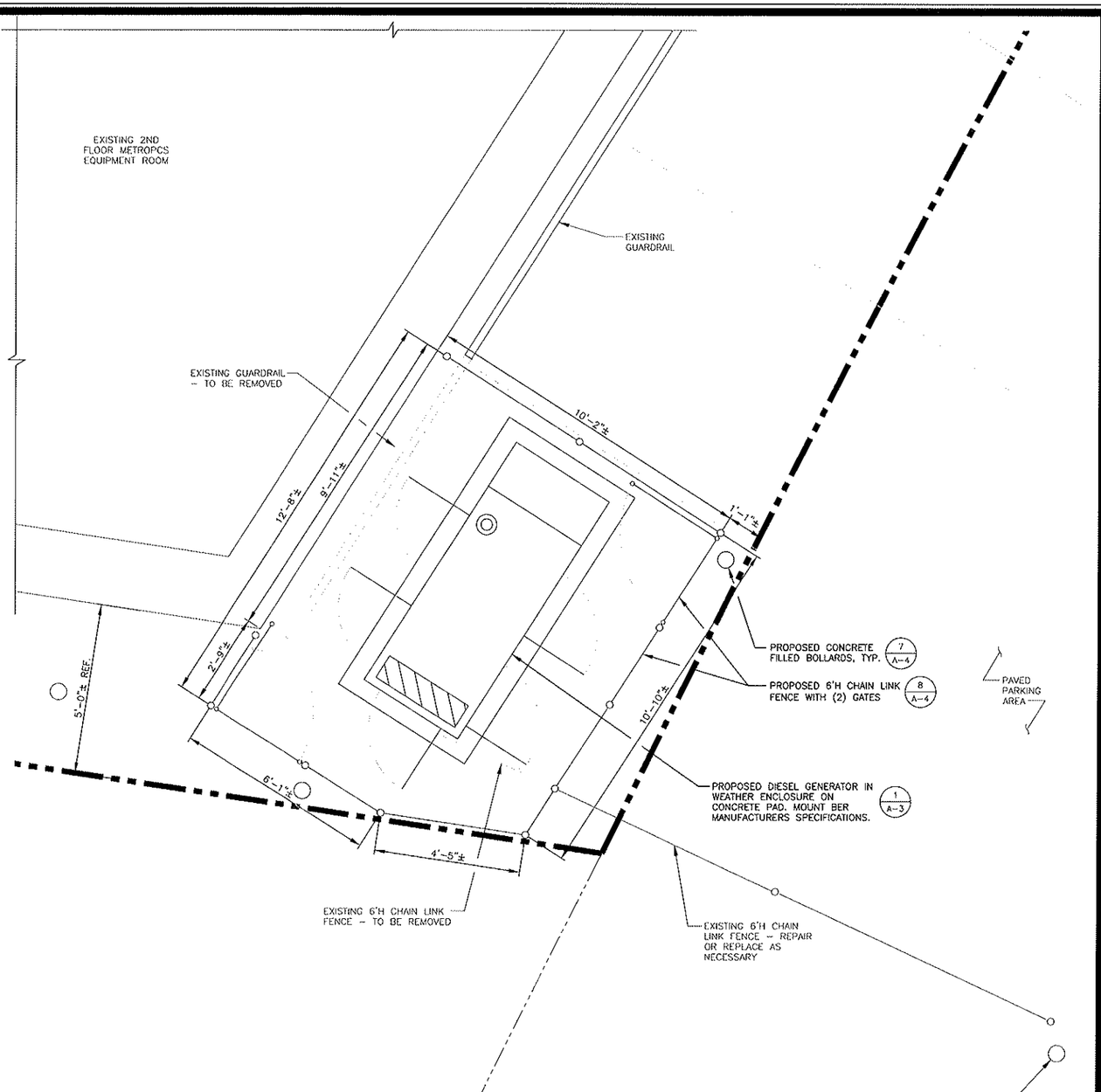
SHEET TITLE:

GENERAL NOTES

SHEET NUMBER:

GN-1





SOURCE:

1. SURVEY PLAN DONE BY OTTE & DWYER, INC. DATED 02/24/98.
2. SURVEY PLAN DONE BY HUNTLEY ASSOC., P.C. DATED 04/29/09.
3. CITY OF SOMERVILLE GIS AND ASSESSOR'S DATA.

SITE SPECIFIC NOTES:

1. SITE SURVEY HAS NOT BEEN CONDUCTED BY HUDSON DESIGN GROUP, LLC FOR THIS PROJECT. ALL BOUNDARY DIMENSIONS SHOWN ON THIS PLAN IS BASED ON ABOVE REFERENCED DRAWINGS.

TRUE NORTH

IF ASSUMED EXISTING CONDITION DIFFERS THAN SHOWN, ENGINEER MUST BE INFORMED OF ACTUAL FIELD CONDITION

THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS WHICH EFFECT THE CONTRACTOR'S WORK.

1 SITE PLAN — 30' 15' 0 30' 60 FEET — SCALE: 1"= 30'

2 PROPOSED GENERATOR PLAN — 2' 1' 0 2' 4 FEET — SCALE: 1/2"= 1'-0"

metroPCS.
Unlimit Yourself.

285 BILLERICA ROAD–THIRD FLOOR
CHELMSFORD, MA 01824

Hudson Design Group LLC

1600 OSGOOD STREET
BUILDING 20 NORTH, SUITE 2-101
N. ANDOVER, MA 01845

TEL: (978) 557-5553
FAX: (978) 336-5586

PROFESSIONAL STAMP

COMMONWEALTH OF MASSACHUSETTS
DANIEL P. HAMM
No. 40726
REGISTERED PROFESSIONAL ENGINEER

DRAWN BY: MH | CHECKED BY: DPH

JOB #: BOSH005B

CONSTRUCTION DRAWINGS

0	4-29-09	CONSTRUCTION
A	2-12-09	FOR REVIEW

SITE NAME:

BOSH005B
PLANET SELF STORAGE SOMERVILLE
GENERATOR PLAN

SITE ADDRESS:

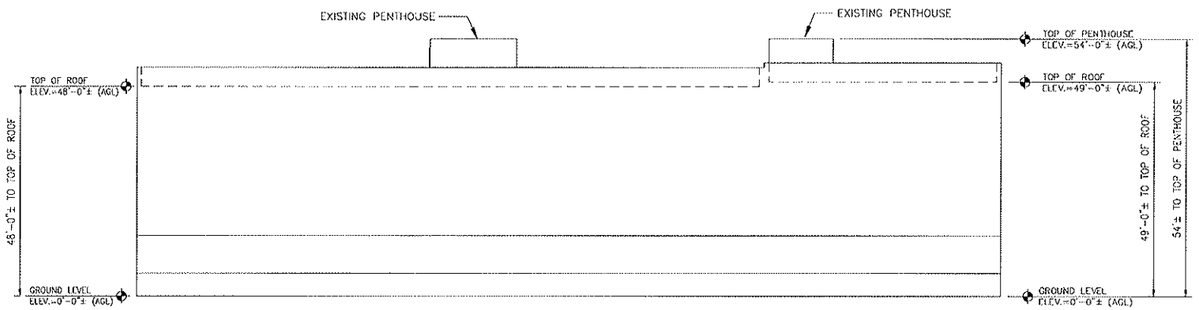
39R MEDFORD ST.
SOMERVILLE, MA. 02143

SHEET TITLE:

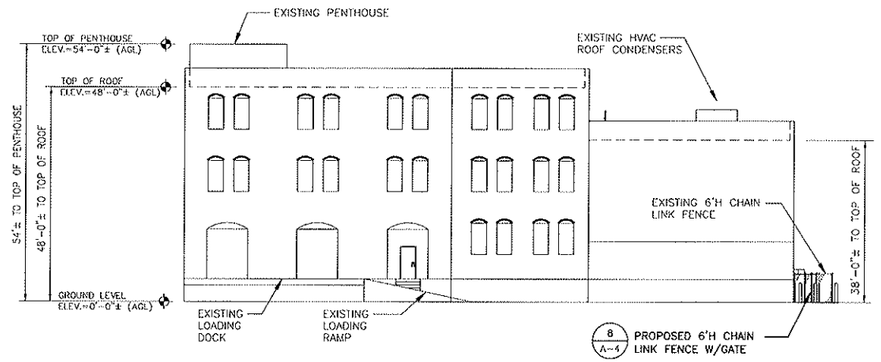
SITE & GENERATOR PLANS

SHEET NUMBER:

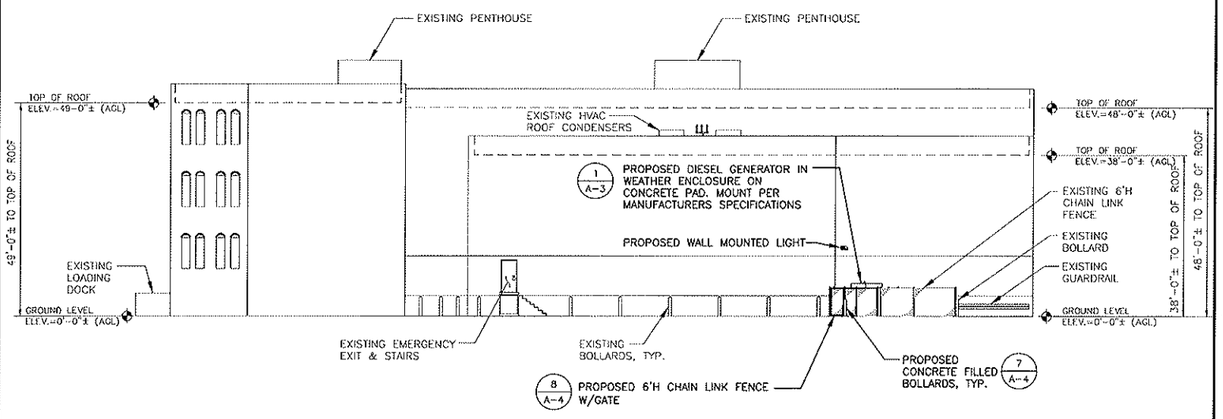
A-1



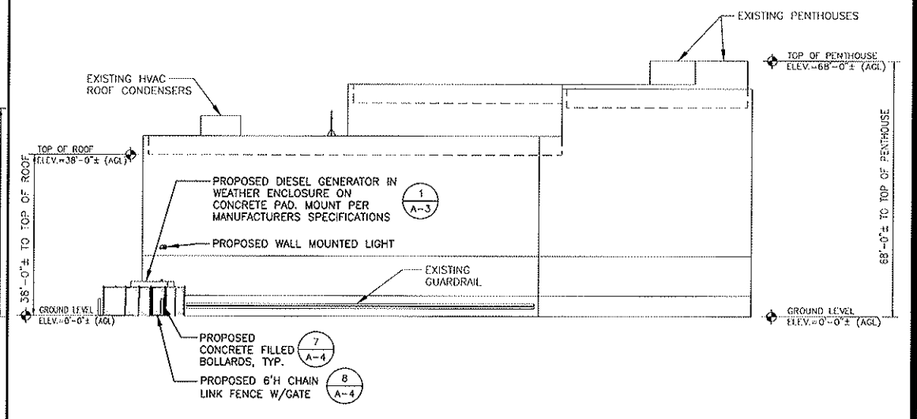
1 NORTH ELEVATION — 16 8 0 16 32 FEET — SCALE: 1/16"= 1'-0"



2 WEST ELEVATION — 16 8 0 16 32 FEET — SCALE: 1/16"= 1'-0"



3 SOUTH ELEVATION — 16 8 0 16 32 FEET — SCALE: 1/16"= 1'-0"



4 EAST ELEVATION — 16 8 0 16 32 FEET — SCALE: 1/16"= 1'-0"

metroPCS.
Unlimit Yourself.

285 BILLERICA ROAD–THIRD FLOOR
CHELMSFORD, MA 01824

Hudson Design Group LLC

1600 OSGOOD STREET
BUILDING 20-NORTH, SUITE 2-101
N. ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

PROFESSIONAL STAMP

COMMONWEALTH OF MASSACHUSETTS
DANIEL P. HUDSON
No. 40729
REGISTERED PROFESSIONAL ENGINEER

DRAWN BY: MH | CHECKED BY: DPH

JOB #: BOSH005B

CONSTRUCTION DRAWINGS

0	4-29-09	CONSTRUCTION
A	2-12-09	FOR REVIEW

SITE NAME:

BOSH005B
PLANET SELF STORAGE SOMERVILLE
GENERATOR PLAN

SITE ADDRESS:

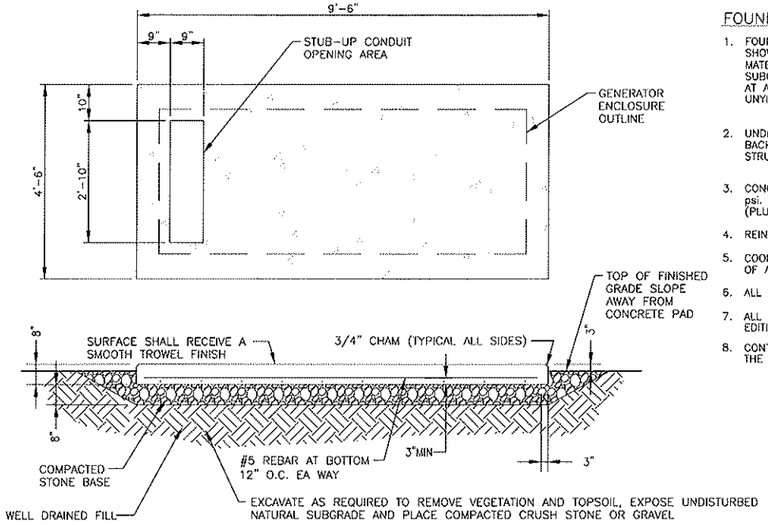
39R MEDFORD ST.
SOMERVILLE, MA. 02143

SHEET TITLE:

ELEVATIONS

SHEET NUMBER:

A-2



FOUNDATION NOTES & CONCRETE SPECIFICATIONS

1. FOUNDATION AREA SHALL BE EXCAVATED TO THE DEPTH AND DIMENSIONS SHOWN ON THE PLANS. EXISTING LEDGE AND ALL OTHER EXISTING UNSUITABLE MATERIAL SHALL BE REMOVED AND LEGALLY DISPOSED OF OFF-SITE. THE SUBGRADE SHALL BE ROLLED WITH A 1-TON, VIBRATORY, WALK-BEHIND ROLLER AT A SPEED OF LESS THAN 2 FPS, 6 PASSES MINIMUM, TO PROVIDE UNYIELDING SURFACE.
2. UNDERCUT SOFT OR "WEAVING" AREAS A MINIMUM OF 12 INCHES DEEP. BACKFILL UNDERCUT AREA WITH FILL MEETING THE SPECIFICATIONS OF STRUCTURAL FILL.
3. CONCRETE TO HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH (f'c)=4000 psi. CONCRETE TO BE AIR ENTRAINED, DESIRED AIR CONTENT TO BE 6% (PLUS OR MINUS 2%)
4. REINFORCING BAR TO BE ASTM A615 GRADE 60.
5. COORDINATE WITH MANUFACTURER OF GENERATOR FOR LOCATION OF ATTACHMENTS TO BASE SLAB.
6. ALL REINFORCING TO HAVE MINIMUM CONCRETE COVER PER ACI SPECIFICATIONS.
7. ALL CONCRETE MATERIALS AND WORKMANSHIP SHALL CONFORM TO LATEST EDITION OF ACI 318 AND APPLICABLE STATE BUILDING CODE.
8. CONTRACTOR TO SUBMIT SLAB AND REBAR SHOP DRAWINGS FOR APPROVAL BY THE ENGINEER BEFORE PURCHASING ANY MATERIALS OR BEGINNING ANY WORK.

2 CONCRETE PAD DETAIL — SCALE: N.T.S.

GENERAL CONSTRUCTION NOTES:

1. ALL DIMENSIONS SHOWN THUS ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS WHICH EFFECT THE CONTRACTORS WORK. CONTRACTOR TO VERIFY ALL DISCREPANCIES WITH OWNER PRIOR TO CONSTRUCTION.
2. THE CONTRACTOR AND OR HIS SUB CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS WHICH MAY BE REQUIRED FOR THE WORK BY THE ARCHITECT/ENGINEER, THE STATE, COUNTRY OR LOCAL GOVERNMENT AUTHORITY.
3. CABLE CONNECTORS AND EQUIPMENT SHALL BE PROVIDED BY THE OWNER AND IS NOT INCLUDED IN THESE CONSTRUCTION DOCUMENTS. ALL OTHER HARDWARE TO BE PROVIDED BY THE CONTRACTOR. CONNECTION HARDWARE SHALL BE STAINLESS STEEL.
4. COORDINATION, LAYOUT, AND FURNISHING OF CONDUIT, CABLE AND ALL APPURTENANCES REQUIRED FOR PROPER INSTALLATION OF ELECTRICAL AND TELECOMMUNICATION SERVICE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
5. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF UTILITY COMPANY ENGINEERING.
6. ALL UTILITY WORK SHALL BE IN ACCORDANCE WITH LOCAL UTILITY COMPANY REQUIREMENTS AND SPECIFICATIONS.

ABBREVIATIONS

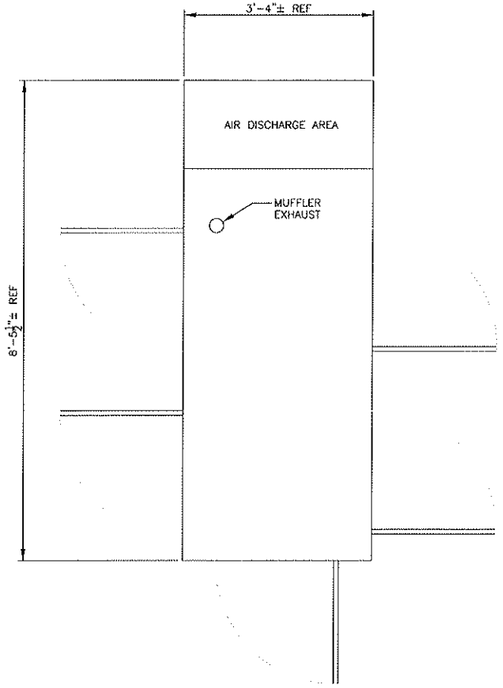
ADJ	ADJUSTABLE	MAX	MAXIMUM
APPROX	APPROXIMATE	MECH	MECHANICAL
BTS	BASE TRANSMISSION STATION	MFR	MANUFACTURER
C	CONDUIT	MGB	MASTER GROUND BAR
CMU	CONCRETE MASONRY UNIT	MIN	MINIMUM
CONC	CONCRETE	MTL	METAL
CONT	CONTINUOUS	NIC	NOT IN CONTRACT
CJ	CONSTRUCTION JOINT	NTS	NOT TO SCALE
DIA	DIAMETER	OC	ON CENTER
DWG	DRAWING	OPP	OPPOSITE
EGB	EQUIPMENT GROUND BAR	SF	SQUARE FOOT
EA	EACH	SHT	SHEET
ELEC	ELECTRICAL	SIM	SIMILAR
EL	ELEVATION	STL	STEEL
EQ	EQUAL	TOC	TOP OF CONCRETE
EQUIP	EQUIPMENT	TOM	TOP OF MASONRY
EX	EXISTING	TYP	TYPICAL
EXT	EXTERIOR	VIF	VERIFY IN FIELD
FF	FINISHED FLOOR	LG	LONG
FG	FINISHED GRADE	WWF	WELDED WIRE FABRIC
GA	GAUGE	W/	WITH
GALV	GALVANIZED	LNA	LOW NOISE AMPLIFIER
GC	GENERAL CONTRACTOR	PL	PLATE
GWB	GYPSUM WALLBOARD	&	AND
UON	UNLESS OTHERWISE NOTED	@	AT
PCS	PERSONAL COMMUNICATIONS SERVICES	RB	RESILIENT BASE
		VCT	VINYL COMPOSITION TILE

SYMBOLS AND MATERIALS

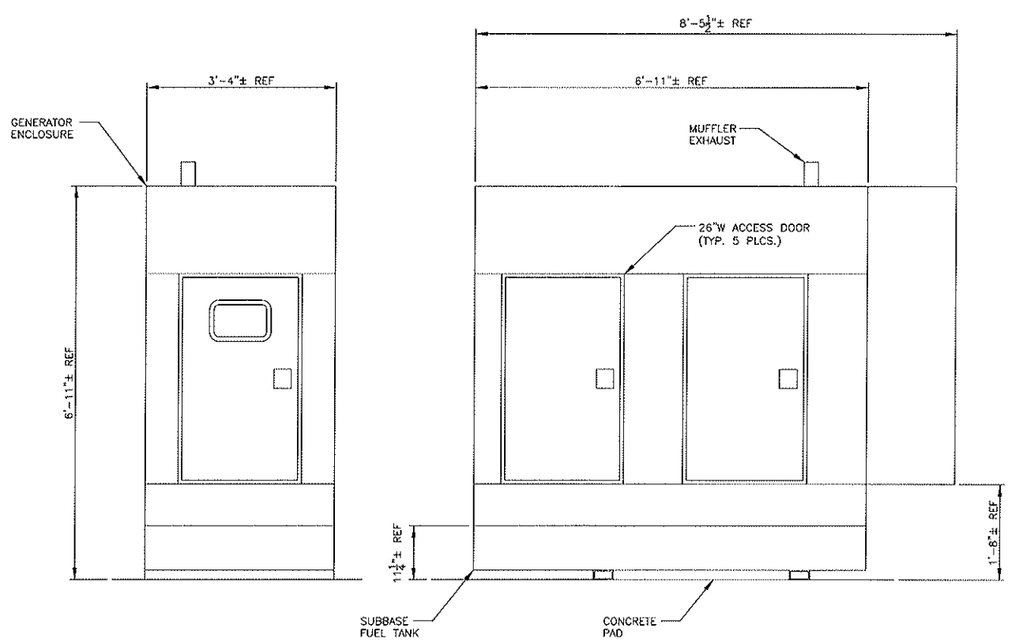
- NEW ANTENNA
- EXISTING ANTENNAS
- ASPHALT
- NEW ACCESS EASEMENT
- CONCRETE
- ELECTRIC BOX
- LIGHT POLE
- FND. MONUMENT
- SPOT ELEVATION
- SET POINT
- REVISION
- GRID REFERENCE
- DETAIL REFERENCE
- ELEVATION
- SECTIONS & DETAILS
- WALL SECTIONS
- DOOR TYPES
- EXISTING DOOR TO REMAIN
- EXISTING DOOR TO BE REMOVED
- NEW DOOR & FRAME
- GROUT OR PLASTER
- GWB
- EXISTING CONSTRUCTION
- CONCRETE
- EARTH
- GRAVEL
- PLYWOOD
- SAND
- WOOD CONT.
- WOOD BLOCKING
- STEEL
- CENTER LINE
- PROPERTY LINE
- STEPPED FOOTING
- MATCH LINE
- WORK POINT
- GROUND WIRE
- COAXIAL CABLE
- CHAIN LINK FENCE
- EXISTING WALL TO REMAIN
- EXISTING WALL TO BE REMOVED
- NEW 1 HR. FIRE RATED PARTITION
- NEW 2 HR. FIRE RATED PARTITION
- NEW NON-RATED DRYWALL PARTITION
- WORK ITEM NOTE

LEGEND

- PROPERTY LINE - SUBJECT PARCEL
- PROPERTY LINE - ABUTTERS
- ZONING
- XX-XXX-XXXX ASSESSORS PARCEL I.D. NO.
- EXISTING BUILDINGS



PLAN



ELEVATIONS

NOTE:
MOUNT GENERATOR AND ENCLOSURE PER MANUFACTURERS SPECIFICATIONS.

1 GENERATOR ENCLOSURE DETAIL

4 2 0 4 8 FEET

SCALE: 1/4"= 1'-0"

metroPCS.
Unlimit Yourself.
285 BILLERICA ROAD-THIRD FLOOR
CHELMSFORD, MA 01824

Hudson Design Group LLC
1400 OSGOOD STREET
BUILDING 20 NORTH, SUITE 2-101
N. ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

PROFESSIONAL STAMP

COMMONWEALTH OF MASSACHUSETTS
DANIEL P. HAWK
No. 40724
REGISTERED PROFESSIONAL ENGINEER

DRAWN BY: MH | CHECKED BY: DPH

JOB #: BOSH005B

CONSTRUCTION DRAWINGS

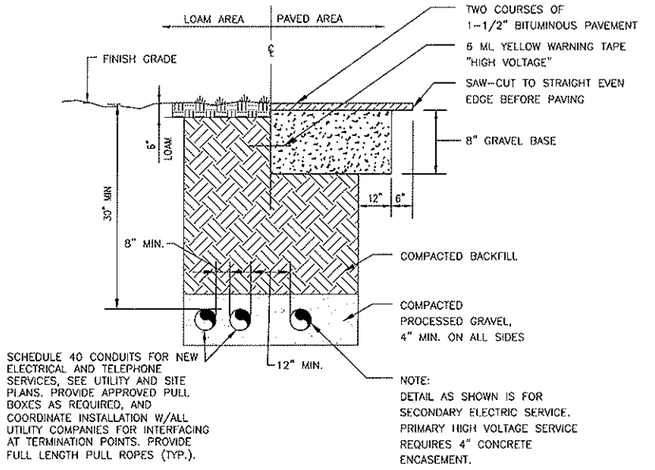
0	4-29-09	CONSTRUCTION
A	2-12-09	FOR REVIEW

SITE NAME:
BOSH005B
PLANET SELF STORAGE SOMERVILLE GENERATOR PLAN

SITE ADDRESS:
39R MEDFORD ST.
SOMERVILLE, MA. 02143

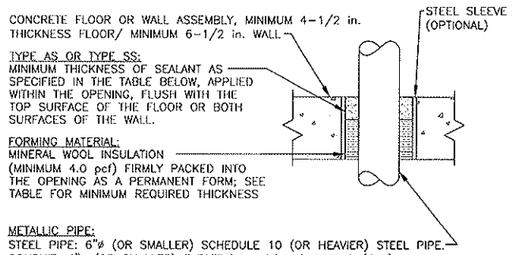
SHEET TITLE:
DETAILS & NOTES

SHEET NUMBER:
A-3



1 BURIED CONDUIT DETAIL SCALE: N.T.S.

MAXIMUM PIPE DIAMETER (%)	MAXIMUM EMT	ANNULAR SPACE (in.)	FORMING MATERIAL THICKNESS (in.)	MINIMUM SEALANT THICKNESS (in.)	F RATING (HOURS)	T RATING (HOURS)
1-1/2	–	3/8 TO 2-1/8	2-1/2	2	3	1
6	4	3/8 TO 3/4	3-1/2	1	3	0
6	4	3/8 TO 1	2-1/2	2	3	0

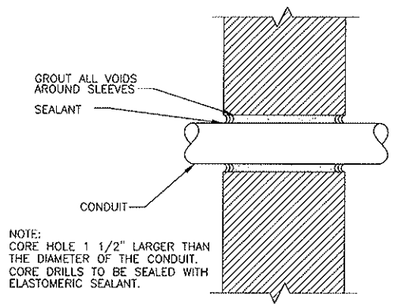


UL SYSTEM NUMBER: C-AJ-1020
F RATING – 3 HR.

2 PIPE AND CONDUIT PENETRATION DETAIL IN CONCRETE OR MASONRY SCALE: N.T.S.

ALL CORES THROUGH ELECTRIC ROOMS TO BE FIRE-STOPPED.

USE FULL CONDUIT RUNS THROUGH PENETRATIONS



3 PIPE AND CONDUIT PENETRATION DETAIL IN NON-RATED PARTITION SCALE: N.T.S.

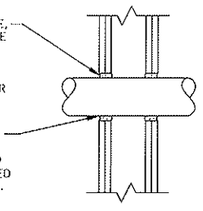
WALL HR	MAX DIAM OF THROUGH PENETRANT in.	T RATING HR
1	2	1
1	1-1/4	1
2	2	1
2	1-1/4	1 1/2

THE HOURLY F RATING OF THE FIRESTOP SYSTEM IS EQUAL TO THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED.

THROUGH PENETRANTS: ONE 2"ø NONMETALLIC PIPE, CONDUIT OR RACEWAY TO BE CENTERED WITHIN THE FIRESTOP SYSTEM. A NOM ANNULAR SPACE OF 5/16 in. IS REQUIRED WITHIN THE FIRESTOP SYSTEM. PIPE, CONDUIT OR RACEWAY TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF THE FLOOR OR WALL ASSEMBLY.

FILL, VOID OR CAVITY MATERIAL – SEALANT: MIN 5/8 in. THICKNESS OF FILL MATERIAL APPLIED WITHIN ANNULUS, FLUSH WITH BOTH SURFACES OF WALL. ADDITIONAL FILL MATERIAL TO BE INSTALLED SUCH THAT A MIN 1/4 in. THICK CROWN IS FORMED AROUND THE PENETRATING ITEM AND LAPPING 1 in. BEYOND THE PERIPHERY OF THE OPENING.

SPECIFIED TECHNOLOGIES INC: SPECSEAL SERIES SSS SEALANT, SPECSEAL LCI SEALANT.



UL SYSTEM NUMBER: W-L-2093
F RATING – 1 & 2 HR.

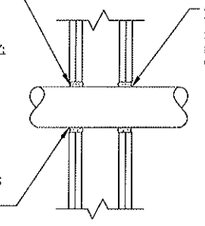
4 PVC CONDUIT PENETRATION DETAIL IN GYPSUM WALLBOARD SCALE: N.T.S.

PACKING MATERIAL: MIN. 1 in. THICKNESS OF MIN. 3.5 pcf FIBERGLASS INSULATION SHALL BE WRAPPED AROUND THE THROUGH-PENETRANT AND SECURED TOGETHER BY MEANS OF NO. 24 AWG STEEL TIE WIRE. PACKING MATERIAL SHALL BE CENTERED AT MID-DEPTH OF OPENING AND RECESSED FROM BOTH SURFACES OF WALL ASSEMBLY REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL.

FILL, VOID OR CAVITY MATERIAL – CAULK OR PUTTY: IN 2 HR FIRE RATED ASSEMBLIES MIN 3/4 IN. THICKNESS FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH BOTH SURFACES OF WALL. ADDITIONAL FILL MATERIAL TO BE INSTALLED SUCH THAT A MIN 1/4 in. CROWN IS FORMED AROUND THE PENETRATING ITEM. IN 1 HR FIRE RATED ASSEMBLIES, MIN 5/8 in. THICKNESS OF FILL MATERIAL APPLIED WITHIN ANNULUS ON BOTH SURFACES OF WALL. ADDITIONAL FILL MATERIAL TO BE INSTALLED SUCH THAT A MIN 3/8 in. CROWN IS FORMED AROUND THE PENETRATING ITEM AND LAPPING 1 in. BEYOND THE PERIPHERY OF THE OPENING.

SPECIFIED TECHNOLOGIES INC: SPECSEAL SERIES SSS SEALANT, SPECSEAL LCI SEALANT OR SPECSEAL PUTTY.

PIPE OR CONDUIT	ANNULAR SPACE IN.	MIN. FILL MATERIAL THICKNESS	F RATING HR
PIPE	3/4"	1 1/4"	2
CONDUIT	3/4"	3/4"	1

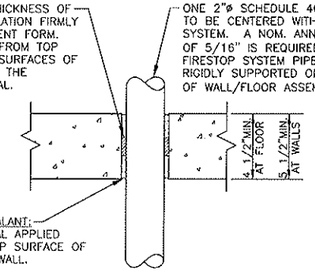


UL SYSTEM NUMBER: W-L-1029
F RATING – 1 & 2 HR.

5 PIPE AND CONDUIT PENETRATION DETAIL IN GYPSUM WALLBOARD SCALE: N.T.S.

PACKING MATERIAL: MIN 1-1/2 in. THICKNESS OF MIN 6 pcf MINERAL WOOL BATT INSULATION FIRMLY PACKED INTO OPENING AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF WALL AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL.

ONE 2"ø SCHEDULE 40 PVC PIPE TO BE CENTERED WITHIN FIRESTOP SYSTEM. A NOM. ANNULAR SPACE OF 5/16" IS REQUIRED WITHIN THE FIRESTOP SYSTEM PIPE SHALL BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL/FLOOR ASSEMBLY

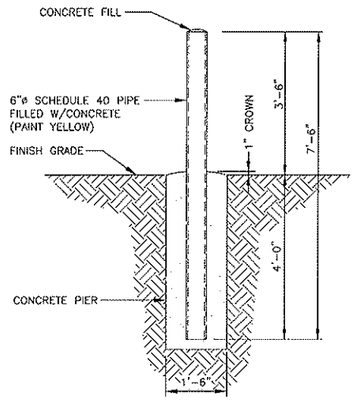


FILL, VOID OR CAVITY MATERIAL – SEALANT: MIN 2 in. THICKNESS OF FILL MATERIAL APPLIED WITHIN ANNULUS, FLUSH WITH THE TOP SURFACE OF FLOOR OR WITH BOTH SURFACES OF WALL.

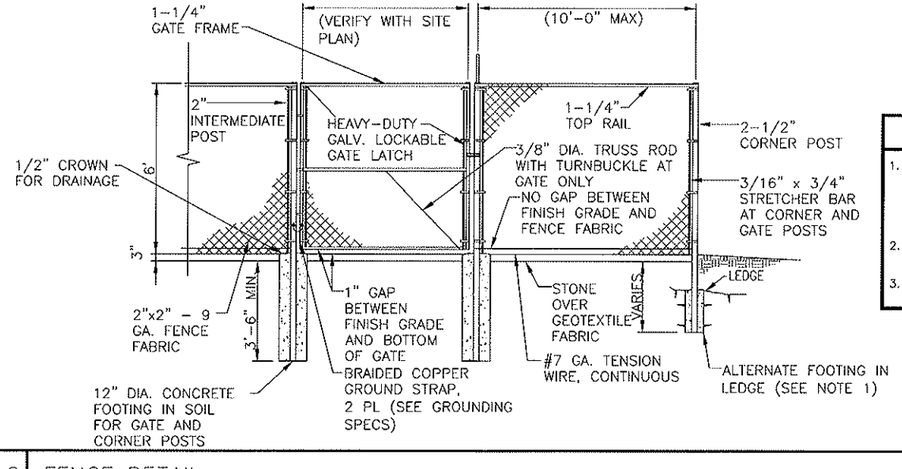
SPECIFIED TECHNOLOGIES INC: SPECSEAL SERIES SSS SEALANT OR SPECSEAL LCI SEALANT.

UL SYSTEM NUMBER: C-AJ-2057
F RATING – 2 HR.

6 PVC CONDUIT PENETRATION DETAIL IN CONCRETE OR MASONRY SCALE: N.T.S.



7 CONCRETE FILLED BOLLARD SCALE: N.T.S.



FENCE NOTES

1. ALTERNATE FOOTINGS FOR ALL FENCE POSTS IN LEDGE: IF LEDGE IS ENCOUNTERED AT GRADE, OR AT A DEPTH SHALLOWER THAN 3'-6", CORE DRILL AN 8" DIA HOLE 18" INTO THE LEDGE. CENTER POST IN THE HOLE AND FILL WITH CONCRETE OR GROUT. IF LEDGE IS BELOW FINISH GRADE, COAT BACKFILLED SECTION OF POST WITH COAL TAR, AND BACKFILL WITH WELL-DRAINING GRAVEL.
2. ATTACH EACH GATE WITH 1-1/2 PAIR OF NON-LIFT-OFF TYPE, MALLEABLE IRON OR FORGING, PIN-TYPE HINGES. ASSEMBLIES SHALL ALLOW FOR 180° OF GATE TRAVEL.
3. FENCING TO BE NON-CLIMB VINYL COATED GREEN TO MATCH EXISTING FENCE.

8 FENCE DETAIL SCALE: N.T.S.

metroPCS
Unlimit Yourself.
285 BILLERICA ROAD-THIRD FLOOR
CHELMSFORD, MA 01824

Hudson Design Group LLC
1600 OSGOOD STREET
BUILDING 20 NORTH, SUITE 2-101
N. ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

PROFESSIONAL STAMP

COMMONWEALTH OF MASSACHUSETTS DANIEL P. HAMM No. 40728 REGISTERED PROFESSIONAL ENGINEER

DRAWN BY: MH | CHECKED BY: DPH

JOB #: BOSH005B

CONSTRUCTION DRAWINGS

0	4-29-09	CONSTRUCTION
A	2-12-09	FOR REVIEW

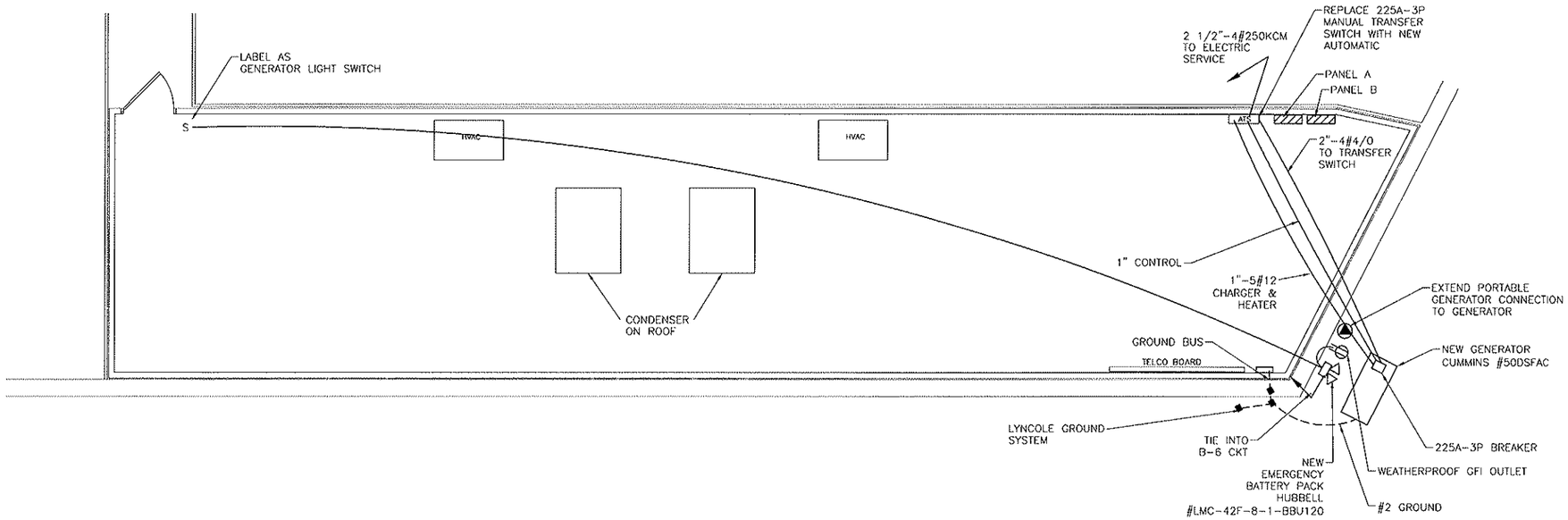
SITE NAME:
BOSH005B
PLANET SELF STORAGE SOMERVILLE GENERATOR PLAN

SITE ADDRESS:
39R MEDFORD ST.
SOMERVILLE, MA. 02143

SHEET TITLE:
DETAILS

SHEET NUMBER:
A-4

NOTE:
SCHEMATIC LAYOUT SHOWN. ACTUAL UNDERGROUND CONDUIT TO BE ROUTED TO MEET ALL ELECTRICAL CODE REQUIREMENTS AND SITE CONDITIONS.



TRUE NORTH

1 GENERATOR ELECTRICAL PLAN

4' 2' 0 4' 8 FEET

SCALE: 1/4" = 1'-0"

GENERATOR SCHEDULE

CUMMINS MODEL #50DSFAC

FUEL:	DIESEL	PHASE:	3
FREQUENCY, HZ:	60	VOLTAGE:	120/240 DELTA
DUTY:	STANDBY		
RUNNING KW:	49.7	CUMULATIVE STEP KW:	103.5
RUNNING KVA:	60.6	CUMULATIVE STEP KVA:	127.8
RUNNING PF:	0.82		
STEP 1			
RUNNING KW:	29.6	STARTING KW:	35.4
RUNNING KVA:	35.4	STARTING KVA:	42.7
CUMULATIVE STEP KW:	35.4	RUNNING AMPS:	98.4
CUMULATIVE STEP KVA:	42.7		
STEP 2			
RUNNING KW:	9.2	STARTING KW:	63.8
RUNNING KVA:	11.5	STARTING KVA:	79.8
CUMULATIVE STEP KW:	93.4	RUNNING AMPS:	32.0
CUMULATIVE STEP KVA:	115.2		
STEP 3			
RUNNING KW:	0.9	STARTING KW:	1.8
RUNNING KVA:	1.1	STARTING KVA:	2.2
CUMULATIVE STEP KW:	40.6	RUNNING AMPS:	3.0
CUMULATIVE STEP KVA:	49.2		
STEP 4			
RUNNING KW:	9.2	STARTING KW:	63.8
RUNNING KVA:	11.5	STARTING KVA:	79.8
CUMULATIVE STEP KW:	103.5	RUNNING AMPS:	32.0
CUMULATIVE STEP KVA:	127.8		
STEP 5			
RUNNING KW:	0.9	STARTING KW:	1.8
RUNNING KVA:	1.1	STARTING KVA:	2.2
CUMULATIVE STEP KW:	50.6	RUNNING AMPS:	3.0
CUMULATIVE STEP KVA:	61.7		

2 GENERATOR SCHEDULE

SCALE: N.T.S.

metroPCS.
Unlimit Yourself.

205 BILLERICA ROAD-THIRD FLOOR
CHELMSFORD, MA 01824

Hudson Design Group LLC

1600 OSGOOD STREET
BUILDING 20 NORTH, SUITE 2-101
N. ANDOVER, MA 01845

TEL: (978) 557-5553
FAX: (978) 336-5586

PROFESSIONAL STAMP

COMMONWEALTH OF MASSACHUSETTS
STEVEN R. HOULE
No. 46743
REGISTERED PROFESSIONAL ENGINEER

DRAWN BY: | CHECKED BY: DPH

JOB #: BOSH005B

CONSTRUCTION DRAWINGS

0	4-29-09	CONSTRUCTION
A	2-12-09	FOR REVIEW

SITE NAME:
BOSH005B
PLANET SELF STORAGE SOMERVILLE
GENERATOR PLAN

SITE ADDRESS:
39R MEDFORD ST.
SOMERVILLE, MA. 02143

SHEET TITLE:
GENERATOR PLAN & SCHEDULE

SHEET NUMBER:
E-1

PANEL "A"

AMPS 225 MAIN LUGS ONLY VOLTS 120/208 PHASE 3 MOUNTING SURFACE LOCATION

BRKR A	BRKR P	DESCRIPTION	CIRCUIT VA	CIRCUIT NO	PHASE LOADS A	PHASE LOADS B	PHASE LOADS C	CIRCUIT NO	CIRCUIT VA	DESCRIPTION	BRKR A	BRKR P
30	2	RECTIFIER	2392	1	4784			2	2392	RECTIFIER	30	2
			2392	3		4784		4	2392			
30	2	RECTIFIER	2392	5			4784	6	2392	RECTIFIER	30	2
			2392	7	4784			8	2392			
30	2	RECTIFIER	2392	9		4352		10	1960	PANEL B	30	2
			2392	11			4352	12	1960			
30	3	HVAC ROOFTOP UNIT	4776	13	9552			14	4776	HVAC ROOFTOP UNIT	30	3
			4776	15		9552		16	4776			
			4776	17			9552	18	4776			
30	3	HVAC INDOOR UNIT	780	19	1560			20	780	HVAC INDOOR UNIT	15	3
			780	21		1560		22	780			
			780	23			1560	24	780			
--	1	SPACE ONLY	--	25	--			26	--	SPACE ONLY	--	1
--	1	SPACE ONLY	--	27		--		28	--	SPACE ONLY	--	1
--	1	SPACE ONLY	--	29			--	30	--	SPACE ONLY	--	1
--	1	SPACE ONLY	--	31	--			32	--	SPACE ONLY	--	1
--	1	SPACE ONLY	--	33		--		34	--	SPACE ONLY	--	1
--	1	SPACE ONLY	--	35			--	36	--	SPACE ONLY	--	1
--	1	SPACE ONLY	--	37	--			38	--	SURGE SUPPRESSOR	60	3
--	1	SPACE ONLY	--	39		--		40				
--	1	SPACE ONLY	--	41			--	42				
					20680	20248	20248					

TOTAL LOAD 61176 VA / 170 AMPS

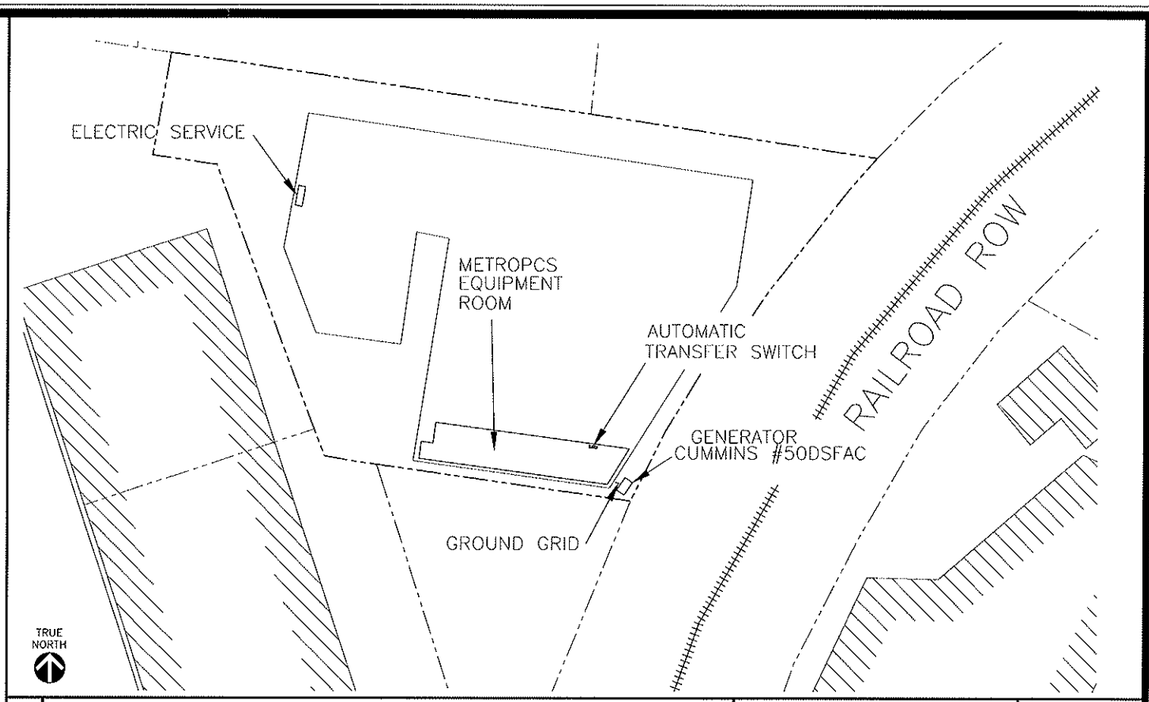
PANEL "B"

AMPS 30 MAIN LUGS ONLY VOLTS 120/240 PHASE 1 MOUNTING SURFACE LOCATION

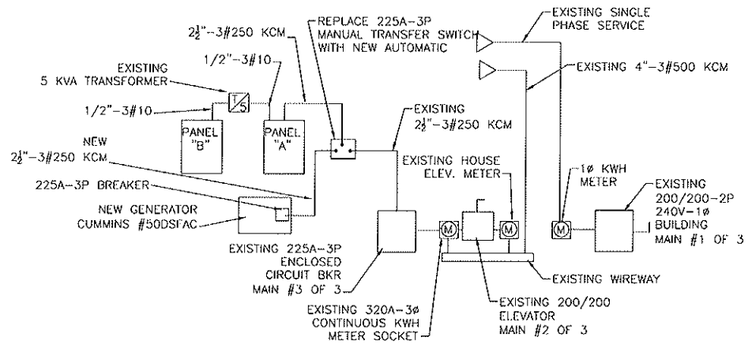
BRKR A	BRKR P	DESCRIPTION	CIRCUIT VA	CIRCUIT NO	PHASE LOADS A	PHASE LOADS BC	CIRCUIT NO	CIRCUIT VA	DESCRIPTION	BRKR A	BRKR P
--	2	MAIN	--	1	--		2	--	SPACE ONLY	--	2
			--	3		--	4	--			
20	1	LIGHTING	1500	5	1860		6	360	GFI OUTLETS	20	1
20	1	RECEPTACLES	1080	7		1580	8	500	PREACTION VALVES	20	1
20	1	SPARE	--	9	--		10	--	SPARE	20	1
20	1	HVAC CONTROL	100	11		460	12	360	TELCO	20	1
20	1	SMOKE DETECTORS	20	13	20		14	--	SPARE	20	1
20	1	SPARE	--	15		--	16	--	SPARE	20	1
--	1	SPACE ONLY	--	17	--		18	--	SPACE ONLY	--	1
--	1	SPACE ONLY	--	19		--	20	--	SPACE ONLY	--	1
--	1	SPACE ONLY	--	21	--		22	--	SPACE ONLY	--	1
--	1	SPACE ONLY	--	23		--	24	--	SPACE ONLY	--	1
--	1	SPACE ONLY	--	25	--		26	--	SPACE ONLY	--	1
--	1	SPACE ONLY	--	27		--	28	--	SPACE ONLY	--	1
--	1	SPACE ONLY	--	29	--		30	--	SPACE ONLY	--	1
--	1	SPACE ONLY	--	31		--	32	--	SPACE ONLY	--	1
--	1	SPACE ONLY	--	33	--		34	--	SPACE ONLY	--	1
--	1	SPACE ONLY	--	35		--	36	--	SPACE ONLY	--	1
--	1	SPACE ONLY	--	37	--		38	--	SPACE ONLY	--	
--	1	SPACE ONLY	--	39		--	40	--	SPACE ONLY	--	1
--	1	SPACE ONLY	--	41	--		42	--	SPACE ONLY	--	1
					1880	2040					

TOTAL LOAD 3920 VA / 16 AMPS

1 ELECTRICAL SCHEDULES SCALE: N.T.S.



4 ELECTRICAL SITE PLAN 30 15 0 30 60 FEET SCALE: 1" = 30'-0"



3 ONE LINE DIAGRAM SCALE: N.T.S.

ELECTRICAL SYSTEM

BUILDING		EQUIPMENT ROOM	
VOLTAGE	240	VOLTAGE	240
PHASE	3 DELTA	PHASE	3 DELTA
AMPS	400	AMPS	225

AUTOMATIC TRANSFER SWITCH SPECIFICATIONS

1. AUTOMATIC TRANSFER SWITCH SHALL BE FURNISHED BY METRO PCS AND INSTALLED BY THIS CONTRACTOR.
2. THE ATS SHALL BE 225A-3P AUTOMATIC 240V-3ø DELTA, CUMMINGS OTPC-225
3. THE ATS SHALL BE FROM THE SAME MANUFACTURER AS THE GENERATOR.

2 ATF SPECIFICATIONS SCALE: N.T.S.

metroPCS
Unlimit Yourself.
285 BILLERICA ROAD-THIRD FLOOR
CHELMSFORD, MA 01824

Hudson Design Group LLC
1600 OSGOOD STREET
BUILDING 20 NORTH, SUITE 2-101
N. ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

PROFESSIONAL STAMP

COMMONWEALTH OF MASSACHUSETTS
STEVEN R. HOULE No. 46743 REGISTERED PROFESSIONAL ENGINEER

DRAWN BY: | CHECKED BY: DPH

JOB #: BOSH005B

CONSTRUCTION DRAWINGS

0	4-29-09	CONSTRUCTION
A	2-12-09	FOR REVIEW

SITE NAME:
BOSH005B
PLANET SELF STORAGE SOMERVILLE
GENERATOR PLAN

SITE ADDRESS:
39R MEDFORD ST.
SOMERVILLE, MA. 02143

SHEET TITLE:
ELECTRICAL SCHEDULES
ONE LINE DIAGRAM
& PLAN

SHEET NUMBER:
E-2

GENERATOR SPECIFICATIONS

1. PROVIDE COMPLETE FACTORY ASSEMBLED GENERATOR SET EQUIPMENT WITH DIGITAL (MICROPROCESSOR-BASED) ELECTRONIC GENERATOR SET CONTROLS, DIGITAL GOVERNOR, AND DIGITAL VOLTAGE REGULATOR.

2. PROVIDE FACTORY TEST, STARTUP BY A SUPPLIER AUTHORIZED BY THE EQUIPMENT MANUFACTURER, AND ON-SITE TESTING OF THE SYSTEM.

3. THE GENERATOR SET MANUFACTURER SHALL WARRANT ALL EQUIPMENT PROVIDED. TECHNICIANS SPECIFICALLY TRAINED AND CERTIFIED BY THE MANUFACTURER TO SUPPORT THE PRODUCT AND EMPLOYED BY THE GENERATOR SET SUPPLIER SHALL SERVICE THE GENERATOR SETS.

4. THE GENERATOR SET INSTALLATION AND ON-SITE TESTING SHALL CONFORM TO THE REQUIREMENTS OF THE FOLLOWING CODES AND STANDARDS, AS APPLICABLE. THE GENERATOR SET SHALL INCLUDE NECESSARY FEATURES TO MEET THE REQUIREMENTS OF THESE STANDARDS.

   A. ANSI S1.13-1971-MEASUREMENT OF SOUND PRESSURE LEVELS IN AIR
   B. CSA 282, 1989 EMERGENCY ELECTRICAL POWER SUPPLY FOR BUILDINGS
   C. IEEE446 - RECOMMENDED PRACTICE FOR EMERGENCY AND STANDBY POWER SYSTEMS FOR COMMERCIAL AND INDUSTRIAL APPLICATIONS
   D. NFPA 30 - FLAMMABLE AND COMBUSTIBLE LIQUIDS
   E. NFPA 37 - STANDARD FOR THE INSTALLATION AND USE OF STATIONARY COMBUSTION ENGINES AND GAS TURBINES
   F. NFPA 70 - NATIONAL ELECTRICAL CODE. EQUIPMENT SHALL BE SUITABLE FOR USE IN SYSTEMS IN COMPLIANCE TO ARTICLE 700, 701, AND 702.
   G. NFPA 110 - EMERGENCY AND STANDBY POWER SYSTEMS. THE GENERATOR SET SHALL MEET ALL REQUIREMENTS FOR LEVEL 1 SYSTEMS. LEVEL 1PROTOTYPE TESTS REQUIRED BY THIS STANDARD SHALL HAVE BEEN PERFORMED ON A COMPLETE AND FUNCTIONAL UNIT, COMPONENT LEVEL TYPE TESTS WILL NOT SUBSTITUTE FOR THIS REQUIREMENT.

5. THE GENERATOR SET AND SUPPLIED ACCESSORIES SHALL MEET THE REQUIREMENTS OF THE FOLLOWING STANDARDS:

   A. NEMA MG1-1998 PART 32. ALTERNATOR SHALL COMPLY WITH THE REQUIREMENTS OF THIS STANDARD.
   B. UL142 - SUB-BASE TANKS
   C. UL1236 - BATTERY CHARGERS
   D. UL2200. THE GENERATOR SET SHALL BE LISTED TO UL2200 OR SUBMIT TO AN INDEPENDENT THIRD PARTY CERTIFICATION PROCESS TO VERIFY COMPLIANCE AS INSTALLED.
   E. THE GENERATOR SET RATING SHALL BE BASED ON EMERGENCY/STANDBY SERVICE AND MARKED AS SUCH PER NFPA110.

6. THE CONTROL SYSTEM FOR THE GENERATOR SET SHALL COMPLY WITH THE FOLLOWING REQUIREMENTS.

   A. CSA C22.2, NO. 14 - M91 INDUSTRIAL CONTROL EQUIPMENT.
   B. EN50082-2, ELECTROMAGNETIC COMPATIBILITY - GENERIC IMMUNITY REQUIREMENTS, PART 2: INDUSTRIAL.
   C. EN55011, LIMITS AND METHODS OF MEASUREMENT OF RADIO INTERFERENCE CHARACTERISTICS OF INDUSTRIAL, SCIENTIFIC AND MEDICAL EQUIPMENT.
   D. FCC PART 15, SUBPART B.
   E. IEC8528 PART 4. CONTROL SYSTEMS FOR GENERATOR SETS
   F. IEC STD 801.2, 801.3, AND 801.5 FOR SUSCEPTIBILITY, CONDUCTED, AND RADIATED ELECTROMAGNETIC EMISSIONS.

7. ONLY APPROVED BIDDERS SHALL SUPPLY EQUIPMENT PROVIDED UNDER THIS CONTRACT. EQUIPMENT SPECIFICATIONS FOR THIS PROJECT ARE BASED ON MICROPROCESSOR-BASED GENERATOR SETS MANUFACTURED BY CUMMINS POWER GENERATION. EQUIPMENT BY OTHER SUPPLIERS THAT MEETS THE REQUIREMENT OF THIS SPECIFICATION ARE ACCEPTABLE, IF APPROVED NOT LESS THAN 2 WEEKS BEFORE SCHEDULED BID DATE. PROPOSALS MUST INCLUDE A LINE BY LINE COMPLIANCE STATEMENT BASED ON THIS SPECIFICATION.

8. THE GENERATOR SET SHALL OPERATE AT 1800 RPM AND AT A VOLTAGE OF: 120/208, VOLTS AC, THREE PHASE, 4-WIRE, 60 HERTZ. THE COMPLETE GENERATOR SET SHALL BE RATED PER ISO8528 AT 1.0 PF, STANDBY.

9. VOLTAGE REGULATION SHALL NOT EXCEED ONE PERCENT FOR ANY CONSTANT LOAD BETWEEN NO LOAD AND RATED LOAD. FREQUENCY REGULATION SHALL BE ISOCHRONOUS FROM STEADY STATE NO LOAD TO STEADY STATE RATED LOAD.

10. THE ALTERNATOR SHALL PRODUCE A CLEAN AC VOLTAGE WAVEFORM, WITH NOT MORE THAN 5% TOTAL HARMONIC DISTORTION AT FULL LINEAR LOAD, WHEN MEASURED FROM LINE TO NEUTRAL, AND WITH NOT MORE THAN 3% IN ANY SINGLE HARMONIC, AND NO 3RD ORDER HARMONICS OR THEIR MULTIPLES. TELEPHONE INFLUENCE FACTOR SHALL BE LESS THAN 40.

11. THE GENERATOR SET, COMPLETE WITH SOUND ATTENUATED ENCLOSURE, SHALL BE TESTED BY THE GENERATOR SET MANUFACTURER PER ANSI S1.13. DATA DOCUMENTING PERFORMANCE SHALL BE PROVIDED WITH SUBMITTAL DOCUMENTATION.

12. ELECTRIC STARTER CAPABLE OF THREE COMPLETE CRANKING CYCLES WITHOUT OVERHEATING.

13. PROVIDE A COOLANT HEATER IN THE ENGINE. THE COOLANT HEATER SHALL BE SIZED AS RECOMMENDED BY THE ENGINE MANUFACTURER TO WARM THE ENGINE TO A MINIMUM OF 40C IN A 15C AMBIENT, IN COMPLIANCE WITH NFPA110 REQUIREMENTS, AS A MINIMUM.

14. PROVIDE VIBRATION ISOLATORS, SPRING/PAD TYPE, QUANTITY AS RECOMMENDED BY THE GENERATOR SET MANUFACTURER. ISOLATORS SHALL INCLUDE SEISMIC RESTRAINTS.

15. STARTING AND CONTROL BATTERIES SHALL BE LEAD ACID TYPE, 12 VOLT DC, SIZED AS RECOMMENDED BY THE ENGINE MANUFACTURER FOR COMPLIANCE TO NFPA110 STARTING REQUIREMENTS, COMPLETE WITH BATTERY CABLES AND CONNECTORS.

16. PROVIDE EXHAUST SILENCER FOR EACH ENGINE OF SIZE AND TYPE AS RECOMMENDED BY THE GENERATOR SET MANUFACTURER AND APPROVED BY THE ENGINE MANUFACTURER. THE MUFFLERS SHALL BE CRITICAL GRADE. EXHAUST SYSTEM SHALL BE INSTALLED ACCORDING TO THE ENGINE MANUFACTURER'S RECOMMENDATIONS AND APPLICABLE CODES AND STANDARDS.

17. PROVIDE FULLY REGULATED, CONSTANT VOLTAGE, CURRENT LIMITED, MULTI-RATE BATTERY CHARGER.

18. PROVIDE AN ANTI-CONDENSATION HEATER FOR THE ALTERNATOR.

19. PROVIDE VOLTMETER, AMMETER, FREQUENCY METER, AND KILOWATT (KW) METER. VOLTMETER AND AMMETER SHALL DISPLAY ALL THREE PHASES.

20. THE GENERATOR SET SHALL BE PROVIDED WITH ALARM AND STATUS INDICATING LAMPS TO INDICATE NON-AUTOMATIC GENERATOR STATUS, AND EXISTING WARNING AND SHUTDOWN CONDITIONS. THE FOLLOWING ALARM, SHUTDOWN, AND STATUS CONDITIONS ARE REQUIRED, AS A MINIMUM:

   A. LOW OIL PRESSURE (ALARM)
   B. LOW OIL PRESSURE (SHUTDOWN)
   C. OIL PRESSURE SENDER FAILURE (ALARM)
   D. LOW COOLANT TEMPERATURE (ALARM)
   E. HIGH COOLANT TEMPERATURE (ALARM)
   F. HIGH COOLANT TEMPERATURE (SHUTDOWN)
   G. ENGINE TEMPERATURE SENDER FAILURE (ALARM)
   H. LOW COOLANT LEVEL (ALARM OR SHUTDOWN---SELECTABLE)
   I. FAIL TO CRANK (SHUTDOWN)
   J. FAIL TO START/OVERCRANK (SHUTDOWN)
   K. OVERSPEED (SHUTDOWN)
   L. LOW DC VOLTAGE (ALARM)
   M. HIGH DC VOLTAGE (ALARM)
   N. WEAK BATTERY (ALARM)
   O. LOW FUEL-DAYTANK (ALARM)
   P. HIGH AC VOLTAGE (SHUTDOWN)
   Q. LOW AC VOLTAGE (SHUTDOWN)
   R. UNDER FREQUENCY (SHUTDOWN)
   S. OVER CURRENT (WARNING)
   T. OVER CURRENT (SHUTDOWN)
   U. SHORT CIRCUIT (SHUTDOWN)
   V. GROUND FAULT (ALARM)
   W. OVER LOAD (ALARM)
   X. EMERGENCY STOP (SHUTDOWN)

21. PROVIDE NORMALLY CLOSED CONTACT TO INDICATE EXISTENCE OF ANY ALARM OR SHUTDOWN CONDITION ON THE GENERATOR SET.

22. THE FOLLOWING INFORMATION SHALL BE AVAILABLE FROM A DIGITAL STATUS PANEL ON THE GENERATOR SET CONTROL :

   A. ENGINE OIL PRESSURE (PSI OR KPA)
   B. ENGINE COOLANT TEMPERATURE (DEGREES F OR C)
   C. ENGINE OIL TEMPERATURE (DEGREES F OR C)
   D. ENGINE SPEED (RPM)
   E. NUMBER OF HOURS OF OPERATION (HOURS)
   F. NUMBER OF START ATTEMPTS
   G. BATTERY VOLTAGE (DC VOLTS)

23. THE CONTROL SYSTEM SHALL ALSO INCORPORATE A DATA LOGGING AND DISPLAY PROVISION TO ALLOW LOGGING OF A MINIMUM OF THE LAST 20 WARNING OR SHUTDOWN INDICATIONS ON THE GENERATOR SET, THE TIME OF THE LAST FAULT OF EACH TYPE, AND THE NUMBER OF FAULTS OF EACH TYPE, AND TOTAL TIME OF OPERATION AT VARIOUS LOADS AS A PERCENT OF THE STANDBY RATING OF THE GENERATOR SET.

24. THE GENERATOR SET SHALL BE PROVIDED WITH AN OUTDOOR SOUND-ATTENUATED ENCLOSURE, WITH THE ENTIRE PACKAGE LISTED UNDER UL2200. THE ENCLOSURE SHALL REDUCE THE SOUND LEVEL OF THE GENERATOR SET WHILE OPERATING AT FULL RATED LOAD TO A MAXIMUM OF 73.3 DBA AT ANY LOCATION 7 METERS FROM THE GENERATOR SET IN A FREE FIELD ENVIRONMENT. THE PACKAGE SHALL COMPLY WITH THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE FOR ALL WIRING MATERIALS AND COMPONENT SPACING. ALL DOORS SHALL BE LOCKABLE.

25. PROVIDE A SUB-BASE FUEL TANK FOR THE GENERATOR SET, SIZED TO ALLOW FOR FULL LOAD OPERATION OF THE GENERATOR SET FOR 24 HOURS. THE SUB-BASE FUEL TANK SHALL BE UL142 LISTED AND LABELED. INSTALLATION SHALL BE IN COMPLIANCE TO NFPA37. THE FUEL TANK SHALL BE A DOUBLE-WALLED, STEEL CONSTRUCTION AND INCLUDE THE FOLLOWING FEATURES:

   A. EMERGENCY TANK AND BASIN VENTS.
   B. MECHANICAL LEVEL GAUGE.
   C. FUEL SUPPLY AND RETURN LINES, CONNECTED TO GENERATOR SET WITH FLEXIBLE FUEL LINES AS RECOMMENDED BY THE ENGINE MANUFACTURER AND IN COMPLIANCE TO UL2200 AND NFPA 37 REQUIREMENTS.
   D. LEAK DETECTION PROVISIONS, WIRED TO THE GENERATOR SET CONTROL FOR LOCAL AND REMOTE ALARM INDICATION.
   E. HIGH AND LOW LEVEL FLOAT SWITCHES TO INDICATE FUEL LEVEL. WIRE SWITCHES TO GENERATOR CONTROL FOR LOCAL AND REMOTE INDICATION OF FUEL LEVEL
   F. BASIN DRAIN.
   G. INTEGRAL LIFTING PROVISIONS.

26. EQUIPMENT SHALL BE INSTALLED BY THE CONTRACTOR IN ACCORDANCE WITH FINAL SUBMITTALS AND CONTRACT DOCUMENTS. INSTALLATION SHALL COMPLY WITH APPLICABLE STATE AND LOCAL CODES AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION. INSTALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND INSTRUCTIONS INCLUDED IN THE LISTING OR LABELING OF UL LISTED PRODUCTS.

27. THE COMPLETE INSTALLATION SHALL BE TESTED TO VERIFY COMPLIANCE WITH THE PERFORMANCE REQUIREMENTS OF THIS SPECIFICATION FOLLOWING COMPLETION OF ALL SITE WORK. TESTING SHALL BE CONDUCTED BY REPRESENTATIVES OF THE MANUFACTURER, WITH REQUIRED FUEL SUPPLIED BY CONTRACTOR. THE ENGINEER SHALL BE NOTIFIED IN ADVANCE AND SHALL HAVE THE OPTION TO WITNESS THE TESTS. THE GENERATOR SET MANUFACTURER SHALL PROVIDE A SITE TEST SPECIFICATION COVERING THE ENTIRE SYSTEM. TESTS SHALL INCLUDE:

28. PROVIDE COMPLETE FACTORY ASSEMBLED POWER TRANSFER EQUIPMENT WITH FIELD PROGRAMMABLE DIGITAL ELECTRONIC CONTROLS DESIGNED FOR FULLY AUTOMATIC OPERATION AND INCLUDING: SURGE VOLTAGE ISOLATION, VOLTAGE SENSORS ON ALL PHASES OF BOTH SOURCES, AC POWERED OPERATOR, POSITIVE MECHANICAL AND ELECTRICAL INTERLOCKING, AND MECHANICALLY HELD CONTACTS FOR BOTH SOURCES.

29. THE AUTOMATIC TRANSFER SWITCH INSTALLATION AND APPLICATION SHALL CONFORM TO THE REQUIREMENTS OF THE FOLLOWING CODES AND STANDARDS:

   A. CSA 282, EMERGENCY ELECTRICAL POWER SUPPLY FOR BUILDINGS
   B. IBC2006 - THE TRANSFER SWITCH(ES) SHALL BE PROTOTYPE-TESTED AND 3RD PARTY CERTIFIED TO COMPLY WITH THE REQUIREMENTS OF THE IBC GROUP III OR IV, CATEGORY D/F. THE EQUIPMENT SHALL BE SHIPPED WITH INSTALLATION INSTRUCTIONS NECESSARY TO ATTAIN INSTALLATION COMPLIANCE.
   C. IEEE446 - RECOMMENDED PRACTICE FOR EMERGENCY AND STANDBY POWER SYSTEMS FOR COMMERCIAL AND INDUSTRIAL APPLICATIONS.
   D. NFPA70 - NATIONAL ELECTRICAL CODE. EQUIPMENT SHALL BE SUITABLE FOR USE IN SYSTEMS IN COMPLIANCE TO ARTICLE 700, 701, AND 702.
   E. NFPA110 - EMERGENCY AND STANDBY POWER SYSTEMS. THE TRANSFER SWITCH SHALL MEET ALL REQUIREMENTS FOR LEVEL 1 SYSTEMS.
   F. NEMA ICS10-1993 - AC AUTOMATIC TRANSFER SWITCHES.
   G. UL1008 - TRANSFER SWITCHES. TRANSFER SWITCHES AND ENCLOSURES SHALL BE UL1008 LISTED AS A PACKAGED, AND LABELED TO BE SUITABLE FOR USE IN EMERGENCY, LEGALLY REQUIRED, AND OPTIONAL STANDBY APPLICATIONS.

30. THE TRANSFER SWITCH SHALL INCLUDE THE MECHANICAL AND CONTROL PROVISIONS NECESSARY TO ALLOW THE DEVICE TO BE FIELD-CONFIGURED FOR OPERATING SPEED. TRANSFER SWITCH OPERATION WITH MOTOR LOADS SHALL BE AS IS RECOMMENDED IN NEMA MG1. PHASE MONITORING/TIMING EQUIPMENT IS NOT AN ACCEPTABLE SUBSTITUTE FOR THIS FUNCTIONALITY.

31. TRANSFER SWITCH SHALL BE PROVIDED WITH A CONTROL PANEL TO ALLOW THE OPERATOR TO VIEW THE STATUS AND CONTROL OPERATION OF THE TRANSFER SWITCH.

32. THE CONTROL SYSTEM SHALL CONTINUOUSLY LOG INFORMATION ON THE NUMBER OF HOURS EACH SOURCE HAS BEEN CONNECTED TO THE LOAD, THE NUMBER OF TIMES TRANSFERRED, AND THE TOTAL NUMBER OF TIMES EACH SOURCE HAS FAILED.

33. DISPLAY REAL TIME CLOCK DATA, INCLUDING DATE, AND TIME IN HOURS, MINUTES, AND SECONDS. THE REAL TIME CLOCK SHALL INCORPORATE PROVISIONS FOR AUTOMATIC DAYLIGHT SAVINGS TIME AND LEAP YEAR ADJUSTMENTS. THE CONTROL SHALL ALSO LOG TOTAL OPERATING HOURS FOR THE CONTROL SYSTEM.

34. THE MANUFACTURER OF THE TRANSFER SWITCH SHALL MAINTAIN SERVICE PARTS INVENTORY AT A CENTRAL LOCATION WHICH IS ACCESSIBLE TO THE SERVICE LOCATION 24 HOURS PER DAY, 365 DAYS PER YEAR.

35. PROVIDE TO METROPCS A COMPLETE SET OF SERVICE AND MAINTENANCE SOFTWARE FOR USE IN PROPERLY SUPPORTING THE PRODUCT. THE SOFTWARE SHALL BE PROVIDED AT A TRAINING CLASS ATTENDED BY THE METROPCS PERSONAL, TO QUALIFY METROPCS PERSONAL IN PROPER USE OF THE SOFTWARE.

36. PROVIDE TRAINING FOR THE METROPCS PERSONNEL COVERING OPERATION AND MAINTENANCE OF THE EQUIPMENT PROVIDED. THE TRAINING PROGRAM SHALL BE NOT LESS THAN 4 HOURS IN DURATION AND THE CLASS SIZE SHALL BE LIMITED TO 5 PERSONS. TRAINING DATE SHALL BE COORDINATED WITH METROPCS. THE TRAINING SHALL INCLUDE INSTRUCTION ON OPERATION OF THE TRANSFER EQUIPMENT, GENERATOR, BATTERIES, NORMAL TESTING AND EXERCISE, ADJUSTMENTS TO THE ENTIRE SYSTEM, USE OF THE PC BASED SERVICE AND MAINTENANCE TOOLS PROVIDED UNDER THIS CONTRACT, AND EMERGENCY OPERATION PROCEDURES. THE CLASS DURATION SHALL BE AT LEAST 4 HOURS IN LENGTH, AND INCLUDE PRACTICAL OPERATION WITH THE INSTALLED EQUIPMENT.

SCALE: N.T.S.

metroPCS
Unlimit Yourself.

285 BILLERICA ROAD-THIRD FLOOR
CHELMSFORD, MA 01824

Hudson Design Group LLC

1600 OSGOOD STREET
BUILDING 20 NORTH, SUITE 2-101
N. ANDOVER, MA 01845

TEL: (978) 557-5553
FAX: (978) 336-5586

PROFESSIONAL STAMP

COMMONWEALTH OF MASSACHUSETTS
STEVEN R. HOULE
No. 46743
REGISTERED PROFESSIONAL ENGINEER

DRAWN BY: | CHECKED BY: DPH

JOB #: BOSH005B

CONSTRUCTION DRAWINGS

0	4-29-09	CONSTRUCTION
A	2-12-09	FOR REVIEW

SITE NAME:
BOSH005B
PLANET SELF STORAGE SOMERVILLE
GENERATOR PLAN

SITE ADDRESS:
39R MEDFORD ST.
SOMERVILLE, MA. 02143

SHEET TITLE:
GENERATOR SPECIFICATIONS

SHEET NUMBER:
E-3