Robinson+Cole

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Also admitted in Massachusetts
and New York

May 27, 2021

Via Electronic Mail

Melanie A. Bachman, Esq.
Executive Director/Staff Attorney
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: **Notice of Exempt Modification – Facility Modification**
139 North Main Street, West Hartford, Connecticut

Dear Attorney Bachman:

Cellco Partnership d/b/a Verizon Wireless ("Cellco") currently maintains an existing wireless telecommunications facility at the above-referenced property address (the "Property"). The facility consists of antennas, remote radio heads and related equipment inside a clock tower structure. The clock tower and Cellco's use of the clock tower were approved by the Council in June of 2013 in Docket No 434. A copy of the Docket No. 434's Decision and Order is included in Attachment 1.

Cellco now intends to modify its facility by removing three (3) existing antennas and installing three (3) Samsung MT6407-77A antennas on Cellco's existing antenna mounts. A set of project plans showing Cellco's proposed facility modifications and new antennas specifications are included in Attachment 2.

Please accept this letter as notification pursuant to R.C.S.A. § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to West Hartford's Chief Elected Official and Land Use Officer.

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2).

1. The proposed modifications will not result in an increase in the height of the existing tower. Cellco's replacement antennas will be installed on Cellco's existing antenna platform.

2. The proposed modifications will not involve any change to ground-mounted equipment and, therefore, will not require the extension of the site boundary.

3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.

4. The installation of Cellco's new antennas will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. A cumulative General Power Density table for the modified facility is included in Attachment 3. The modified facility will be capable of providing Cellco's 5G wireless service.

5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.

6. According to the attached Structural Analysis ("SA") and Mount Analysis ("MA"), the existing clock tower structure and antenna mounting devices inside the clock tower can support Cellco's proposed modifications. A copy of the combined SA and MA is included in Attachment 4.

A copy of the parcel map and Property owner information is included in Attachment 5. A Certificate of Mailing verifying that this filing was sent to municipal officials is included in Attachment 6.

For the foregoing reasons, Cellco respectfully submits that the proposed modifications to the above-referenced telecommunications facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

Kenneth C. Baldwin

Enclosures
Copy to:
Shari Cantor, West Hartford Mayor
Todd Dumais, Town Planner
American School for the Deaf at Hartford, Property Owner
Aleksey Tyurin

ATTACHMENT 1

DOCKET NO. 434 – Cellco Partnership d/b/a Verizon Wireless Application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a relocated telecommunications facility at 139 North Main Street, West Hartford, Connecticut	}	Connecticut Siting Council June 27, 2013

Decision and Order

Pursuant to Connecticut General Statutes §16-50p and the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, maintenance, and operation of a telecommunications facility, including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate, either alone or cumulatively with other effects, when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application, and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes **§** 16-50k, be issued to Cellco Partnership d/b/a Verizon Wireless, hereinafter referred to as the Certificate Holder, for a telecommunications facility at the proposed site, located at 139 North Main Street, West Hartford, Connecticut.

Unless otherwise approved by the Council, the facility shall be constructed, operated, and maintained substantially as specified in the Council's record in this matter, and subject to the following conditions:

1. The tower shall be constructed as a stealth clock tower, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of the Certificate Holder and other entities, both public and private, but such tower shall not exceed a height of 90 feet above ground level at the top of the cupola dome.

2. All wireless telecommunications carriers' equipment and antennas shall be located inside the tower structure.

3. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be served on the Town of (West Hartford) for comment, and all parties and intervenors as listed in the service list, and submitted to and approved by the Council prior to the commencement of facility construction and shall include:
    a. a final site plan(s) of site development to include specifications for the clock tower, tower foundation, antennas, equipment room configuration, backup generator, radio equipment, access/parking area, garden wall, utility line, and landscaping; and
    b. construction plans for site clearing, grading, landscaping, water drainage, and erosion and sedimentation controls consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.

4. The Eastern Box Turtle Protection Program shall be implemented to mitigate any possible impacts to Eastern Box Turtles in the event any are found in the vicinity of the site.

5. Prior to the commencement of operation, the Certificate Holder shall provide the Council worst-case modeling of the electromagnetic radio frequency power density of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall ensure a recalculated report of the electromagnetic radio frequency power density be submitted to the Council if and when circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.

6. Upon the establishment of any new state or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.

7. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.

8. Unless otherwise approved by the Council, if the facility authorized herein is not fully constructed with at least one fully operational wireless telecommunications carrier providing wireless service within eighteen months from the date of the mailing of the Council's Findings of Fact, Opinion, and Decision and Order (collectively called "Final Decision"), this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made. The time between the filing and resolution of any appeals of the Council's Final Decision shall not be counted in calculating this deadline. Authority to monitor and modify this schedule, as necessary, is delegated to the Executive Director. The Certificate Holder shall provide written notice to the Executive Director of any schedule changes as soon as is practicable.

9. Any request for extension of the time period referred to in Condition 8 shall be filed with the Council not later than 60 days prior to the expiration date of this Certificate and shall be served on all parties and intervenors, as listed in the service list, and the Town of West Hartford. Any proposed modifications to this Decision and Order shall likewise be so served.

10. If the facility ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.

11. Any nonfunctioning antenna, and associated antenna mounting equipment, on this facility shall be removed within 60 days of the date the antenna ceased to function.

12. In accordance with Section 16-50j-77 of the Regulations of Connecticut State Agencies, the Certificate Holder shall provide the Council with written notice two weeks prior to the commencement of site construction activities. In addition, the Certificate Holder shall provide the Council with written notice of the completion of site construction, and the commencement of site operation.

13. The Certificate Holder shall remit timely payments associated with annual assessments and invoices submitted by the Council for expenses attributable to the facility under Conn. Gen. Stat. §16-50v.

14. This Certificate may be transferred in accordance with Conn. Gen. Stat. §16-50k(b), provided both the Certificate Holder/transferor and the transferee are current with payments to the Council for their respective annual assessments and invoices under Conn. Gen. Stat. §16-50v. In addition, both the Certificate Holder/transferor and the transferee shall provide the Council a written agreement as to the entity responsible for any quarterly assessment charges under Conn. Gen. Stat. §16-50v(b)(2) that may be associated with this facility.

15. The Certificate Holder shall maintain the facility and associated equipment, including but not limited to, the tower, tower foundation, antennas, equipment compound, radio equipment, access road, utility line and landscaping in a reasonable physical and operational condition that is consistent with this Decision and Order and a Development and Management Plan to be approved by the Council.

16. If the Certificate Holder is a wholly-owned subsidiary of a corporation or other entity and is sold/transferred to another corporation or other entity, the Council shall be notified of such sale and/or transfer and of any change in contact information for the individual or representative responsible for management and operations of the Certificate Holder within 30 days of the sale and/or transfer.

We hereby direct that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed in the Service List, dated March 7, 2013, and notice of issuance published in The Hartford Courant.

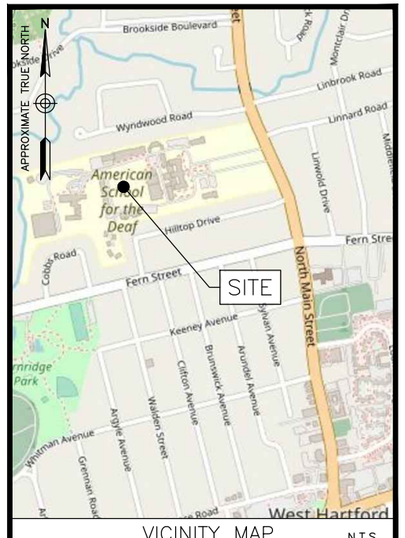
By this Decision and Order, the Council disposes of the legal rights, duties, and privileges of each party named or admitted to the proceeding in accordance with Section 16-50j-17 of the Regulations of Connecticut State Agencies.

ATTACHMENT 2

W HARTFORD W CT RELO

139 NORTH MAIN ST.
WEST HARTFORD, CT 06107

FUZE PROJECT ID: 16232041
PSLC: 472708



VICINITY MAP N.T.S.

ENGINEER

DEWBERRY ENGINEERS INC.
99 SUMMER ST.
SUITE 700
BOSTON, MA 02110

PHONE # (617) 531-0800

CONTACT: BENJAMIN REVETTE, PE

CONSTRUCTION

VERIZON WIRELESS
118 FLANDERS ROAD
WESTBOROUGH, MA 01581-3956

COORDINATES*:

LATITUDE: 41° 46' 14.2" N
LONGITUDE: 72° 44' 58.6" W
*PER RFDS

GROUND ELEVATION*:

159'±
*PER GOOGLE EARTH

PROJECT INFORMATION

PMI ACCESSED AT:	N/A
SMART TOOL VENDOR PROJECT NUMBER:	N/A
VZW LOCATION CODE (PSLC):	472708
FUZE NUMBER:	16232041
MOUNT MODIFICATION REQUIRED?	YES

CONTRACTOR PMI REQUIREMENTS

THIS DOCUMENT WAS DEVELOPED TO REFLECT A SPECIFIC SITE AND ITS SITE CONDITIONS AND IS NOT TO BE USED FOR ANOTHER SITE OR WHEN OTHER CONDITIONS PERTAIN. REUSE OF THIS DOCUMENT IS AT THE SOLE RISK OF THE USER.

A.D.A. COMPLIANCE:
FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION.

1. REPLACE EXISTING FIBERGLASS SIDING WITH FUNCTIONAL FIBERGLASS LOUVRES ABOVE CLOCK SECTION.
2. REMOVE (3) EXISTING ANTENNAS FROM THE LOWER VERIZON WIRELESS CENTERLINE.
3. RELOCATE AND MODIFY EXISTING ANTENNA MOUNTS AT THE UPPER VERIZON WIRELESS CENTERLINE.
4. INSTALL (3) NEW VERIZON WIRELESS MT6407-77A ANTENNAS WITH INTEGRATED RRHS ON EXISTING ANTENNA MAST PIPES.
5. REMOVE (3) EXISTING RRH'S (1/SECTOR) FROM INSIDE SHELTER.
6. REPLACE (2) EXISTING 6-OVPs WITH (1) NEW 12-OVP.
7. REPLACE (2) EXISTING 6x12 HYBRID CABLES WITH (1) 12x24 HYBRID CABLE FROM THE EQUIPMENT ROOM TO THE SECTOR OVP.
8. INSTALL NEW JUMPER CABLES AS REQUIRED BY RFDS.

SCOPE OF WORK

SHT. NO.	DESCRIPTION
T-1	TITLE SHEET
GN-1	GENERAL NOTES
C-1	SITE PLAN
C-2	ELEVATION
C-3	EXISTING & PROPOSED ANTENNA PLANS
C-4	CONSTRUCTION DETAILS
C-5	FINAL EQUIPMENT CONFIGURATION

SHEET INDEX

VERIZON WIRELESS
118 FLANDERS ROAD
WESTBOROUGH, MA 01581-3956

W HARTFORD W CT RELO

ANTMO DRAWINGS		
B	05/26/21	FOR REVIEW
A	05/21/21	FOR REVIEW

Dewberry Engineers Inc.
99 SUMMER ST.
SUITE 700
BOSTON, MA 02110
PHONE: 617.695.3400
FAX: 617.695.3310

DRAWN BY: MR
REVIEWED BY: CDH
CHECKED BY: BBR
PROJECT NUMBER: 50121487
JOB NUMBER: 50121762

SITE NUMBER
472708

SITE ADDRESS
139 NORTH MAIN ST.
WEST HARTFORD, CT
06107

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

GENERAL CONSTRUCTION NOTES :

1. ALL WORK SHALL CONFORM TO ALL CURRENT APPLICABLE FEDERAL, STATE, AND LOCAL CODES, AND COMPLY WITH VERIZON WIRELESS SPECIFICATIONS.
2. CONTRACTOR SHALL CONTACT "DIG SAFE" (888-344-7233) FOR IDENTIFICATION OF UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.
3. CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL REQUIRED INSPECTIONS.
4. ALL DIMENSIONS TO, OF, AND ON EXISTING BUILDINGS, DRAINAGE STRUCTURES, AND SITE IMPROVEMENTS SHALL BE VERIFIED IN FIELD BY CONTRACTOR WITH ALL DISCREPANCIES REPORTED TO THE ENGINEER.
5. DO NOT CHANGE SIZE OR SPACING OF STRUCTURAL ELEMENTS.
6. DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
7. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY WHICH IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
8. CONTRACTOR SHALL BRACE STRUCTURES UNTIL ALL STRUCTURAL ELEMENTS NEEDED FOR STABILITY ARE INSTALLED. THESE ELEMENTS ARE AS FOLLOWS: LATERAL BRACING, ANCHOR BOLTS, ETC.
9. CONTRACTOR SHALL DETERMINE EXACT LOCATION OF EXISTING UTILITIES, DRAIN PIPES, VENTS, ETC. BEFORE COMMENCING WORK.
10. INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE OWNER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH REMEDIAL ACTION SHALL REQUIRE WRITTEN APPROVAL BY THE OWNER'S REPRESENTATIVE PRIOR TO PROCEEDING.
11. EACH CONTRACTOR SHALL COOPERATE WITH THE OWNER'S REPRESENTATIVE, AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.
12. CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED BY CONSTRUCTION OF THIS PROJECT TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE VERIZON WIRELESS CONSTRUCTION MANAGER.
13. ALL CABLE/CONDUIT ENTRY/EXIT PORTS SHALL BE WEATHERPROOFED DURING INSTALLATION USING A SILICONE SEALANT.
14. WHERE EXISTING CONDITIONS DO NOT MATCH THOSE SHOWN IN THIS PLAN SET, CONTRACTOR WILL NOTIFY ENGINEER, VERIZON WIRELESS PROJECT CONSTRUCTION MANAGER, AND LANDLORD IMMEDIATELY.
15. CONTRACTOR SHALL ENSURE ALL SUBCONTRACTORS ARE PROVIDED WITH A CURRENT SET OF DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT.
16. ALL ROOF WORK SHALL BE DONE BY A QUALIFIED AND EXPERIENCED ROOFING CONTRACTOR IN COORDINATION WITH ANY CONTRACTOR WARRANTING THE ROOF TO ENSURE THAT THE WARRANTY IS MAINTAINED.
17. CONTRACTOR SHALL REMOVE ALL RUBBISH AND DEBRIS FROM THE SITE AT THE END OF EACH DAY.
18. CONTRACTOR SHALL COORDINATE WORK SCHEDULE WITH LANDLORD AND TAKE PRECAUTIONS TO MINIMIZE IMPACT AND DISRUPTION OF OTHER OCCUPANTS OF THE FACILITY.
19. CONTRACTOR SHALL FURNISH VERIZON WIRELESS WITH THREE AS-BUILT SETS OF DRAWINGS UPON COMPLETION OF WORK.
20. ANTENNAS AND CABLES ARE TYPICALLY PROVIDED BY VERIZON WIRELESS. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH PROJECT MANAGER TO DETERMINE WHAT, IF ANY, ITEMS WILL BE PROVIDED BY VERIZON WIRELESS. ALL ITEMS NOT PROVIDED BY VERIZON WIRELESS SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR. CONTRACTOR WILL INSTALL ALL ITEMS PROVIDED BY VERIZON WIRELESS.
21. PRIOR TO SUBMISSION OF BID, CONTRACTOR WILL COORDINATE WITH VERIZON WIRELESS PROJECT MANAGER TO DETERMINE IF ANY PERMITS WILL BE OBTAINED BY VERIZON WIRELESS. ALL REQUIRED PERMITS NOT OBTAINED BY VERIZON WIRELESS MUST BE OBTAINED, AND PAID FOR, BY THE CONTRACTOR.
22. GENERAL CONTRACTOR SHALL HAVE A LICENSED HVAC CONTRACTOR START THE HVAC UNITS, SYNCHRONIZE THE THERMOSTATS, ADJUST ALL SETTINGS ON EACH UNIT ACCORDING TO VERIZON WIRELESS CONSTRUCTION MANAGER'S SPECIFICATIONS, AND THOROUGHLY TEST AND BALANCE EACH UNIT TO ENSURE PROPER OPERATION PRIOR TO TURNING THE SITE OVER TO OWNER.
23. CONTRACTOR SHALL INSTALL ALL SITE SIGNAGE IN ACCORDANCE WITH VERIZON WIRELESS SPECIFICATIONS AND REQUIREMENTS.
24. CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO ENGINEER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
25. UNLESS OTHERWISE NOTED VERIZON WIRELESS SHALL PROVIDE ALL REQUIRED RF MATERIAL FOR CONTRACTOR TO INSTALL, INCLUDING ANTENNAS, TMA'S, BIAS-T'S, COMBINERS, PDU, DC BLOCKS, SURGE ARRESTORS, GPS ANTENNA, GPS SURGE ARRESTOR, COAXIAL CABLE.
26. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL VERIFY ALL EQUIPMENT TO BE PROVIDED BY VERIZON WIRELESS FOR INSTALLATION BY CONTRACTOR.
27. ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND LOCATED ACCORDING TO VERIZON WIRELESS SPECIFICATIONS, AND AS SHOWN IN THESE PLANS.
28. DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
29. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
30. CONTRACTOR SHALL NOTIFY THE ENGINEER A MINIMUM OF 48 HOURS IN ADVANCE PRIOR TO CONSTRUCTION START, MORE SPECIFICALLY BEFORE; SEALING ANY FLOOR, WALL OR ROOF PENETRATION, FINAL UTILITY CONNECTIONS, POURING CONCRETE, BACKFILLING UTILITY TRENCHES AND STRUCTURAL POST OR MOUNTING CONNECTIONS, FOR ENGINEERING REVIEW AND INSPECTION.
31. SEAL PENETRATIONS THROUGH FIRE RATED AREAS WITH UL LISTED D FIRE CODE APPROVED MATERIALS.
32. REPAIR ANY DAMAGE DURING CONSTRUCTION TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE CONSTRUCTION MANAGER AND LANDLORD.
33. ALL DISRUPTIVE WORK AND WORK WITHIN TENANT SPACES TO BE COORDINATED WITH BUILDING REPRESENTATIVE.

CODE SPECIFICATIONS:

1. ALL WORK SHALL COMPLY WITH THE FOLLOWING APPLICABLE CODES:

   2018 CONNECTICUT STATE BUILDING CODE WITH THE FOLLOWING APPLICABLE CODES:
   2015 INTERNATIONAL RESIDENTIAL CODE (IRC)
   2015 INTERNATIONAL EXISTING BUILDING CODE (IEBC)
   2017 INTERNATIONAL BUILDING CODE (IBC)
   2015 INTERNATIONAL MECHANICAL CODE (IMC)
   2017 NATIONAL ELECTRICAL CODE (NEC) (NFPA 70)
   2015 INTERNATIONAL PLUMBING CODE (IPC)
   2015 INTERNATIONAL ENERGY CONSERVATION CODE (IECC)

   IN THE EVENT OF CONFLICT, THE MOST RESTRICTIVE CODE SHALL PREVAIL.
2. ALL STRUCTURAL WORK TO BE DONE IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION MANUAL, 13TH EDITION (AISC 13TH ED.)
3. ALL CONCRETE WORK TO BE DONE IN ACCORDANCE WITH THE AMERICAN CONCRETE INSTITUTE (ACI 301) SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS (ACI 318) AND BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE.
4. ALL REINFORCING STEEL WORK TO BE DONE IN ACCORDANCE WITH THE (ACI 315) MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES.

GROUNDING NOTES:

1. GROUNDING SHALL COMPLY WITH NEC ART. 250.
2. GROUNDING CONDUCTORS SHALL BE #6 COPPER STRANDED WIRE WITH GREEN COLOR INSULATION FOR INDOOR USE.
3. ALL GROUND CONNECTIONS TO BE BURNDY HYGROUND COMPRESSION TYPE CONNECTORS OR CADWELD EXOTHERMIC WELD DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.
4. ROUTE GROUNDING CONNECTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE, EXCEPT AS OTHERWISE INDICATED. GROUNDING LEADS SHOULD NOT BE BENT AT RIGHT ANGLE. ALWAYS MAKE 12" RADIUS BENDS. #6 WIRE CAN BE BENT AT 6" RADIUS WHEN NECESSARY.
5. CONNECTIONS TO GROUNDING BAR SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
6. TEST COMPLETED GROUNDING SYSTEM AND RECORD RESISTANCE VALUES FOR PROJECT CLOSE-OUT DOCUMENTATION. GROUND RESISTANCE SHALL NOT EXCEED 5 OHMS.
7. GROUNDING CONDUCTORS BETWEEN MGB AND WATERMAIN SHALL BE #2/0. BONDING JUMPERS FROM METALLIC SURFACES SHALL BE #2 MINIMUM. ALL GROUND CONDUCTORS AND BONDING JUMPERS SHALL BE SOFT DRAWN ANNEALED, TINNED, BARE STRANDED COPPER WIRE. COAXIAL CABLES SHALL BE GROUNDED AT A MINIMUM OF TWO LOCATIONS USING VERIZON PROVIDED GROUNDING KITS. EXACT LOCATIONS SHALL BE FINALIZED IN THE FIELD BY THE CONSTRUCTION MANAGER.

STRUCTURAL STEEL NOTES:

1. STRUCTURAL STEEL SHALL CONFORM TO THE LATEST EDITION OF THE AISC "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
2. STRUCTURAL STEEL ROLLED SHAPES, PLATES, AND BARS SHALL CONFORM TO THE FOLLOWING ASTM DESIGNATIONS:

ASTM A-992, GRADE 50	ALL W SHAPES, UNLESS NOTED OR A992 OTHERWISE.
ASTM A-36	ALL OTHER ROLLED SHAPES, PLATES AND BARS UNLESS NOTED OTHERWISE.
ASTM A-500, GRADE B	HSS SECTION (SQUARE, RECTANGULAR, ROUND)
ASTM A-325, TYPE SC OR N	ALL BOLTS FOR CONNECTING STRUCTURAL MEMBERS.
F1554, GRADE 36	ALL ANCHORS BOLTS, UNLESS NOTED OTHERWISE.
ASTM A-53, GRADE B	STEEL PIPE

3. ALL WELDING SHALL BE DONE USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND AWS D1.1 WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION", 14TH EDITION. WHERE WELD LENGTH IS NOT INDICATED, USE FULL LENGTH WELD. AT THE COMPLETION OF ALL WELDING, ALL DAMAGE TO GALVANIZED COATING SHALL BE REPAIRED.
4. BOLTED CONNECTIONS SHALL USE BEARING TYPE GALVANIZED ASTM A325 BOLTS (3/4" DIA.) SUPPLIED WITH A NUT AND WASHER UNDER TURNED END AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE.
5. DO NOT DRILL HOLES THROUGH STRUCTURAL STEEL MEMBERS EXCEPT AS SHOWN AND DETAILED ON STRUCTURAL DRAWINGS.
6. NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE 5/8" DIA. GALVANIZED ASTM A 307 BOLTS UNLESS NOTED OTHERWISE.
7. USE PRECAUTIONS & PROCEDURES PER AWS D1.1 WHEN WELDING GALVANIZED METALS.
8. ALL EXISTING BEAM AND COLUMN DIMENSIONS SHALL BE FIELD VERIFY BY CONTRACTOR PRIOR TO FABRICATION. ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THOSE SHOWN SHALL BE REPORTED TO DEWBERRY ENGINEER IMMEDIATELY.
9. CONNECTION DESIGN BY FABRICATOR WILL BE SUBJECT TO REVIEW AND APPROVAL BY ENGINEER.
10. ALL EXTERIOR STEEL WORK SHALL BE GALVANIZED IN ACCORDANCE WITH SPECIFICATION ASTM A123/A123M-00 HOT-DIP GALVANIZED FINISH UNLESS OTHERWISE NOTED. GALVANIZING SHALL BE PERFORMED AFTER SHOP FABRICATION TO THE GREATEST EXTENT POSSIBLE. ALL DINGS, SCRAPES, MARS, AND WELDS IN THE GALVANIZED AREAS SHALL BE REPAIRED. REPAIR DAMAGED GALVANIZED COATINGS ON GALVANIZED ITEMS WITH GALVANIZED REPAIR PAINT ACCORDING TO ASTM A780 AND MANUFACTURER'S WRITTEN INSTRUCTIONS, PRIOR TO COMPLETION OF WORK. TOUCHUP ALL DAMAGED GALVANIZED STEEL WITH APPROVED COLD ZINC, "GALVANOX", "DRY GALV", "ZINC-IT", OR APPROVED EQUIVALENT, IN ACCORDANCE WITH MANUFACTURERS GUIDELINES. TOUCHUP DAMAGED NON GALVANIZED STEEL WITH SAME PAINT APPLIED IN SHOP OR FIELD.
11. ALL WELDED COMPONENTS TO BE SHOP WELDED PRIOR TO INSTALLATION. NO WELDING ACTIVITIES IS PERMITTED DURING INSTALLATION OF PROPOSED EQUIPMENT5 AND/OR HARDWARE ON SITE.

verizon WIRELESS

VERIZON WIRELESS
118 FLANDERS ROAD
WESTBOROUGH, MA 01581-3956

W HARTFORD W CT RELO

ANTMO DRAWINGS		
B	05/26/21	FOR REVIEW
A	05/21/21	FOR REVIEW

Dewberry®

Dewberry Engineers Inc.
99 SUMMER ST.
SUITE 700
BOSTON, MA 02110
PHONE: 617.695.3400
FAX: 617.695.3310

DRAWN BY:	MR
REVIEWED BY:	CDH
CHECKED BY:	BBR
PROJECT NUMBER:	50121487
JOB NUMBER:	50121762

SITE NUMBER

472708

SITE ADDRESS

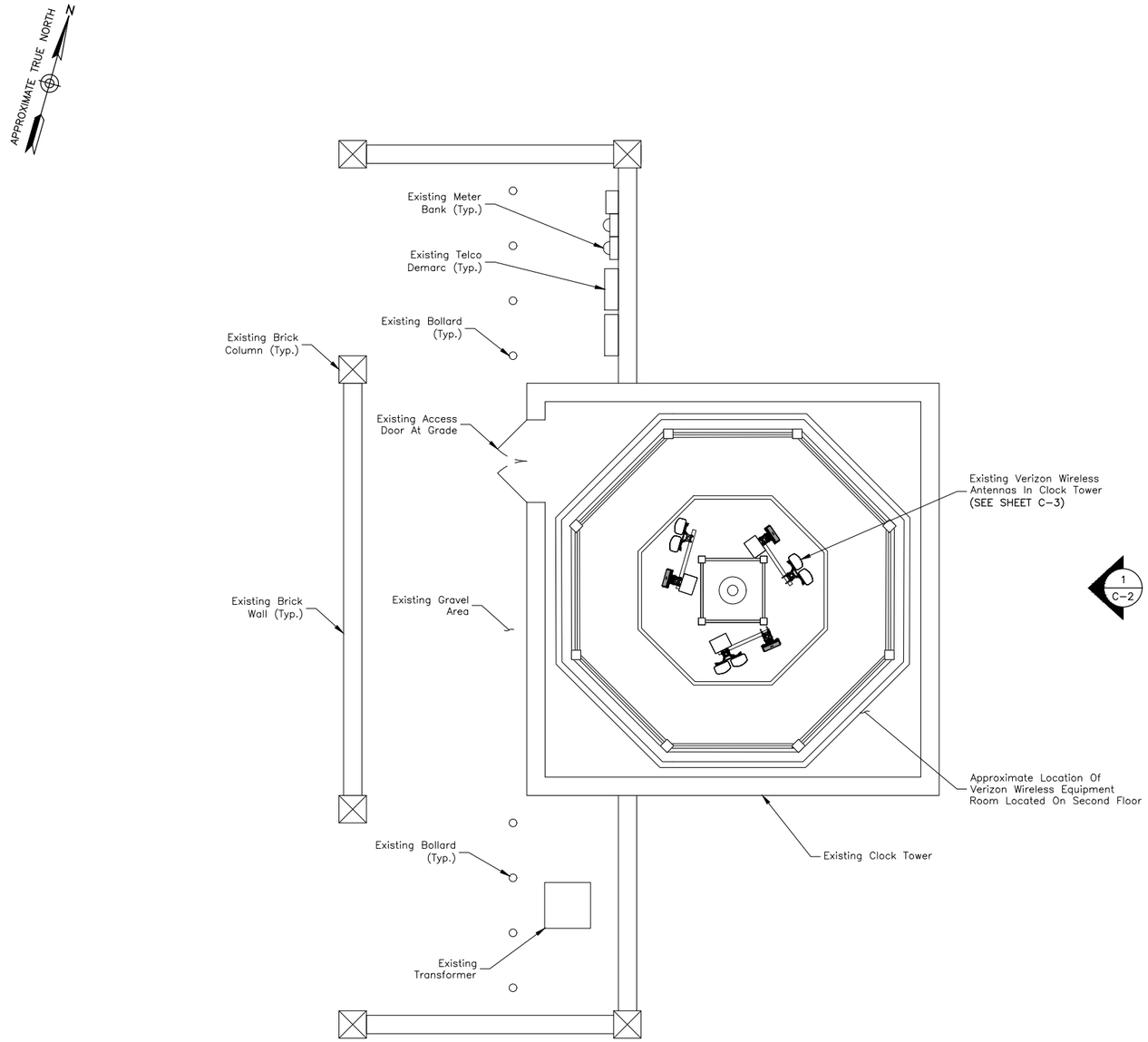
139 NORTH MAIN ST.
WEST HARTFORD, CT
06107

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-1



SITE PLAN 1

SCALE: 1"=10' FOR 11"x17"
1"=5' FOR 22"x34"

0' 5' 10'

NOTES:

1. NORTH SHOWN AS APPROXIMATE.
2. SOME EXISTING AND PROPOSED INFORMATION NOT SHOWN FOR CLARITY.
3. SITE PLAN & ELEVATION BASED ON A SITE VISIT BY DEWBERRY ENGINEERS INC. ON 06/11/20.
4. EXISTING ANTENNAS SHOWN AS APPROXIMATE. ELEVATION BASED ON EXISTING INFORMATION AND VISUAL INSPECTION AND HAVE NOT BEEN VERIFIED THROUGH AN ANTENNA MAPPING.
5. MOUNT ALL ANTENNAS, COAX, RRH'S, OVP BOXES, ETC. IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS, & STRUCTURAL ANALYSIS BY DEWBERRY ENGINEERS INC. DATED 05/30/21.
6. REUSE EXISTING MOUNTS AND COAX. INSPECT FOR DAMAGE OR DECAY AND REPLACE AS NEEDED PER STRUCTURAL ANALYSIS.
7. THIS DOCUMENT WAS DEVELOPED TO REFLECT A SPECIFIC SITE AND ITS SITE CONDITIONS AND IS NOT TO BE USED FOR ANOTHER SITE OR WHEN OTHER CONDITIONS PERTAINS. REUSE OF THIS DOCUMENT IS AT THE SOLE RISK OF THE USER.

verizon WIRELESS
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ANTMO DRAWINGS		
B	05/26/21	FOR REVIEW
A	05/21/21	FOR REVIEW

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Dewberry Engineers Inc.
99 SUMMER ST.
SUITE 700
BOSTON, MA 02110
PHONE: 617.695.3400
FAX: 617.695.3310

DRAWN BY:	MR
REVIEWED BY:	CDH
CHECKED BY:	BBR
PROJECT NUMBER:	50121487
JOB NUMBER:	50121762

SITE NUMBER

472708

SITE ADDRESS

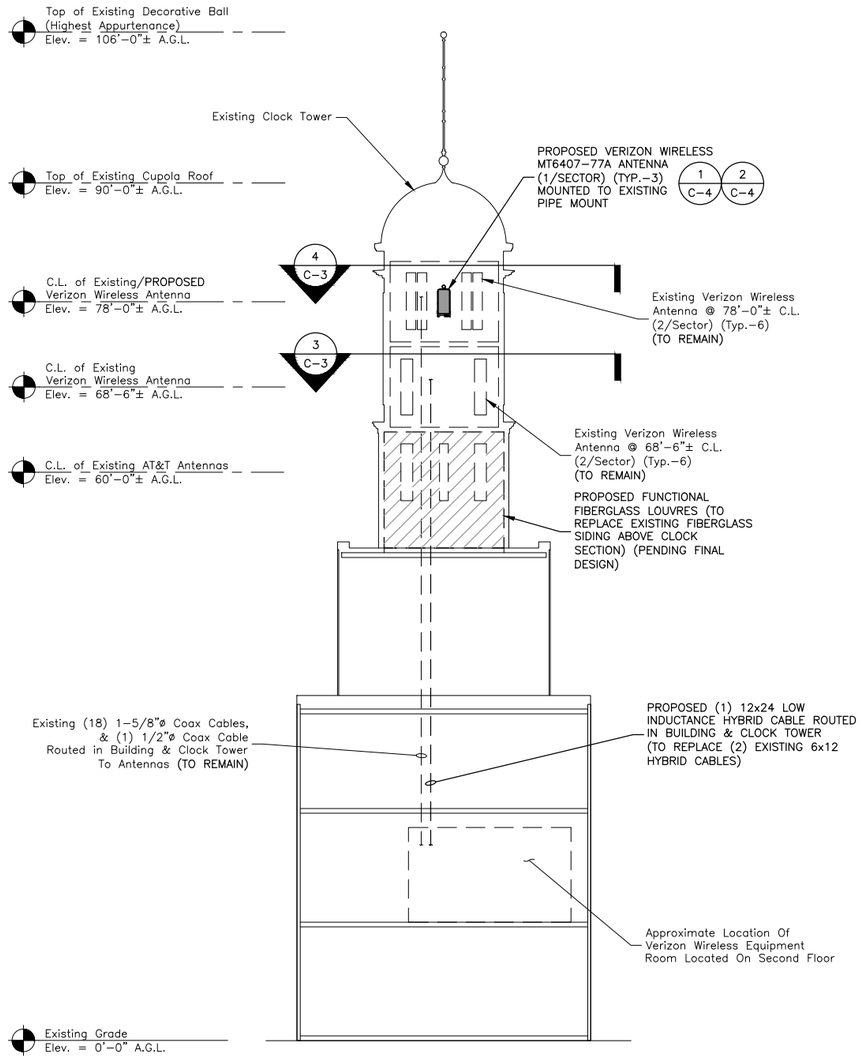
139 NORTH MAIN ST.
WEST HARTFORD, CT
06107

SHEET TITLE

SITE PLAN

SHEET NUMBER

C-1



ELEVATION 1

SCALE: 1/16"=1' FOR 11"x17"
1/8"=1' FOR 22"x34"

0' 4' 8' 16'

A.G.L. = ABOVE GRADE LEVEL
C.L. = CENTER LINE
A.R.L. = ABOVE ROOF LEVEL

NOTES:

1. ELEVATION SHOWN AS APPROXIMATE.
2. SOME EXISTING AND PROPOSED INFORMATION NOT SHOWN FOR CLARITY.
3. SITE PLAN & ELEVATION BASED ON A SITE VISIT BY DEWBERRY ENGINEERS INC. ON 06/11/20.
4. EXISTING ANTENNAS SHOWN AS APPROXIMATE. ELEVATION BASED ON EXISTING INFORMATION AND VISUAL INSPECTION AND HAVE NOT BEEN VERIFIED THROUGH AN ANTENNA MAPPING.
5. MOUNT ALL ANTENNAS, COAX, RRH'S, OVP BOXES, ETC. IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS, & STRUCTURAL ANALYSIS BY DEWBERRY ENGINEERS INC. DATED 05/30/21.
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139 NORTH MAIN ST.
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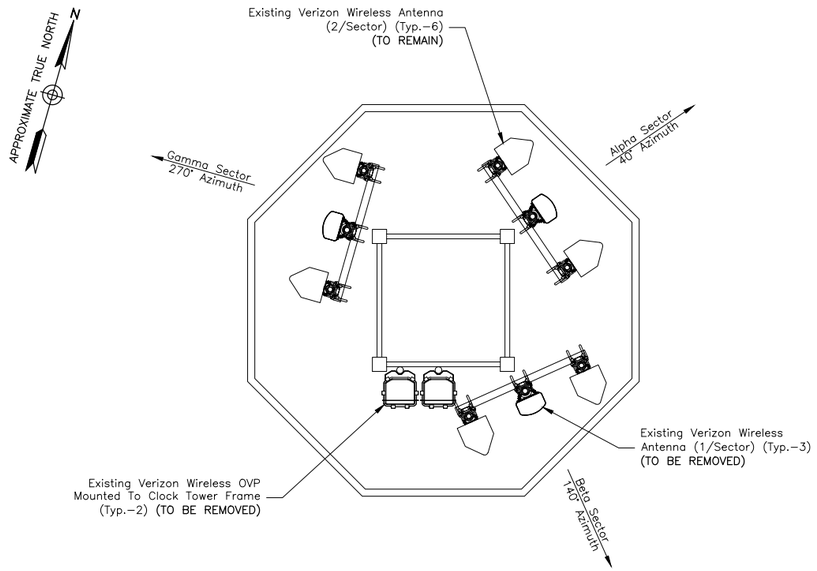
06107

SHEET TITLE

ELEVATION

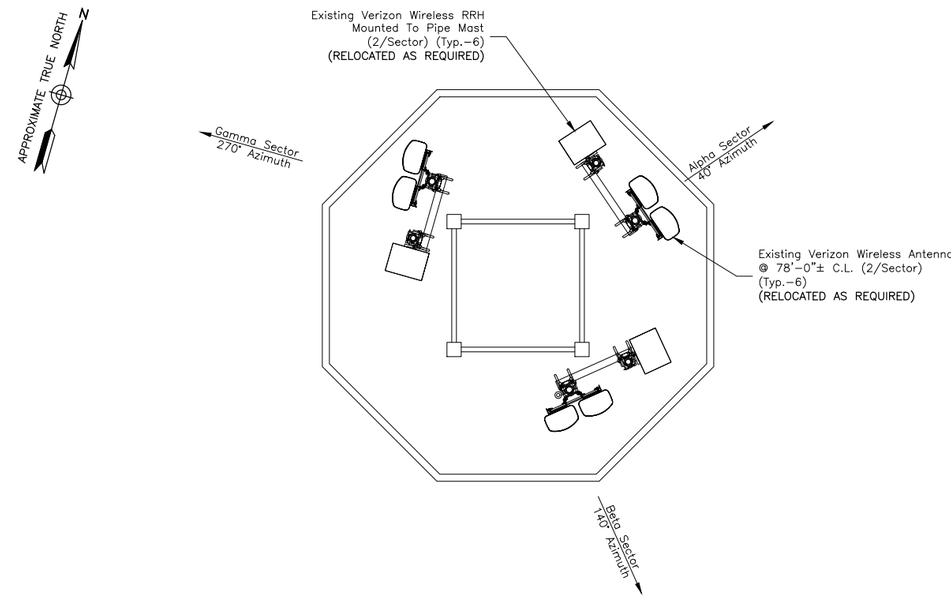
SHEET NUMBER

C-2



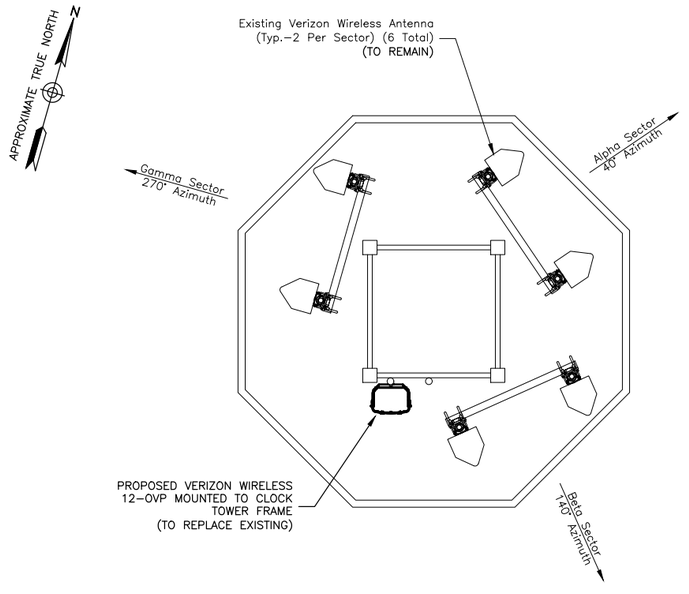
EXISTING ANTENNA PLAN @ 68'-6"± C.L. 1

SCALE: N.T.S.



EXISTING ANTENNA PLAN @ 78'-0"± C.L. 2

SCALE: N.T.S.



PROPOSED ANTENNA PLAN @ 68'-6"± C.L. 3

SCALE: N.T.S.

NOTES:

1. NORTH SHOWN AS APPROXIMATE.
2. SOME EXISTING AND PROPOSED INFORMATION NOT SHOWN FOR CLARITY.
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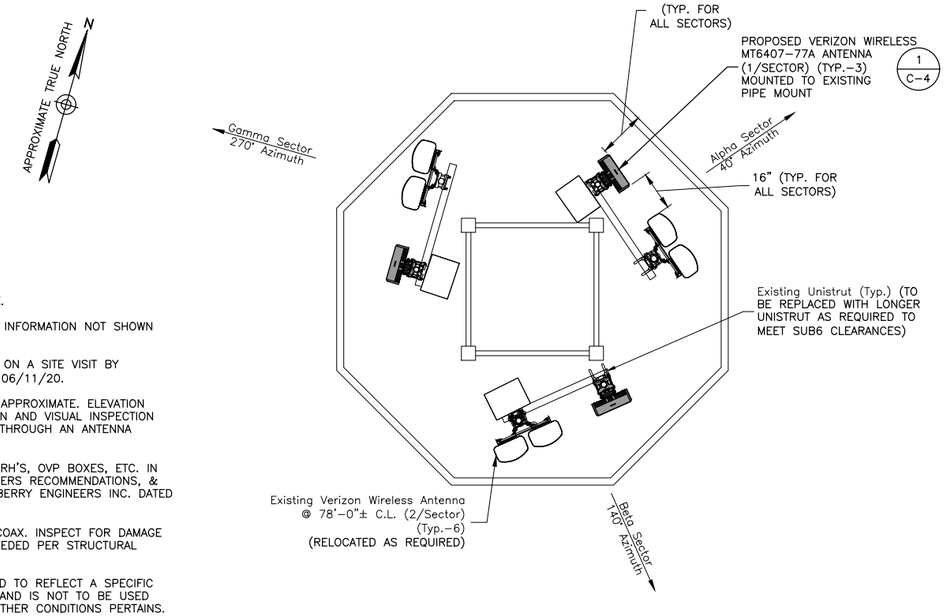

PROPOSED ANTENNA PLAN @ 78'-0"± C.L. 4

SCALE: N.T.S.

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CHECKED BY:	BBR
PROJECT NUMBER:	50121487
JOB NUMBER:	50121762

SITE NUMBER

472708

SITE ADDRESS

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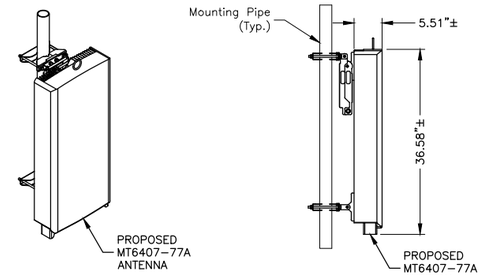
WEST HARTFORD, CT
06107

SHEET TITLE

EXISTING & PROPOSED
ANTENNA PLANS

SHEET NUMBER

C–3



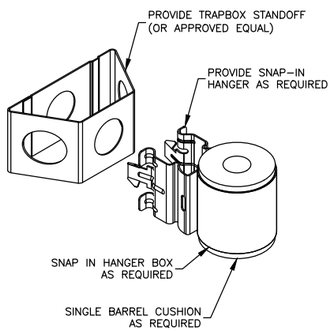
MODEL:	MT6407-77A
DIMENSIONS:	35.1"H X 16.1"W X 5.5"D (NOT TO EXCEED)
WEIGHT:	87.1 LBS (NOT TO EXCEED)

NOTES:

1. INSTALL ALL EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS. USE APPROPRIATE MOUNTING HARDWARE FOR CONSTRUCTION TYPE.

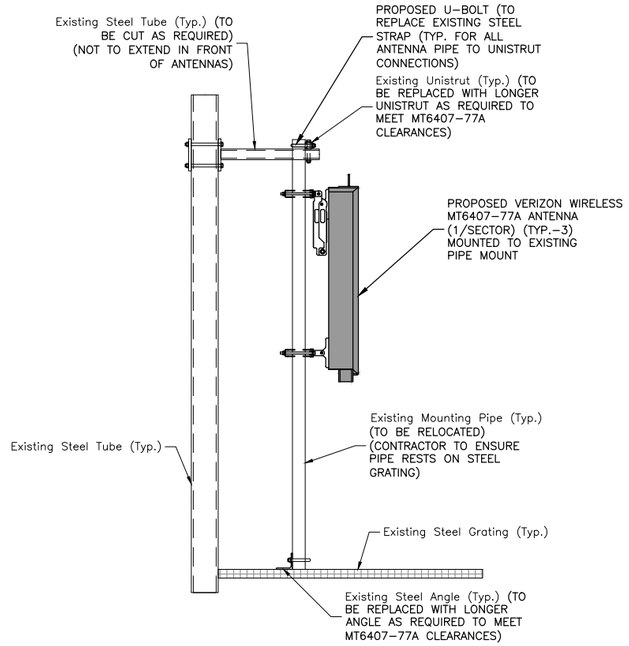
PIPE MOUNTED ANTENNA DETAIL 1

SCALE: N.T.S.



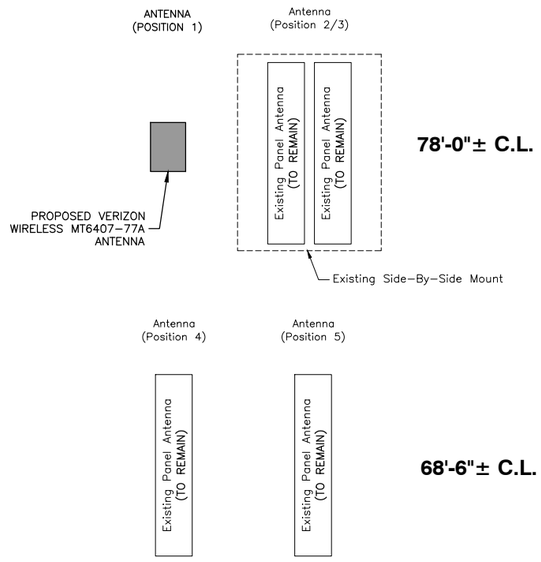
JUMPER MOUNT 4

SCALE: N.T.S.



PROPOSED ANTENNA MOUNTING PLAN 2

SCALE: N.T.S.

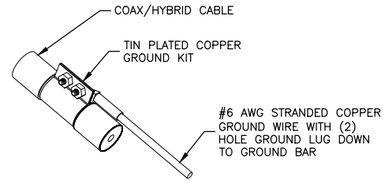


NOTES:

1. AS VIEWED BEHIND THE ANTENNAS.
2. TYPICAL FOR ALL (3) SECTORS.

ANTENNA CONFIGURATION 5

SCALE: N.T.S.

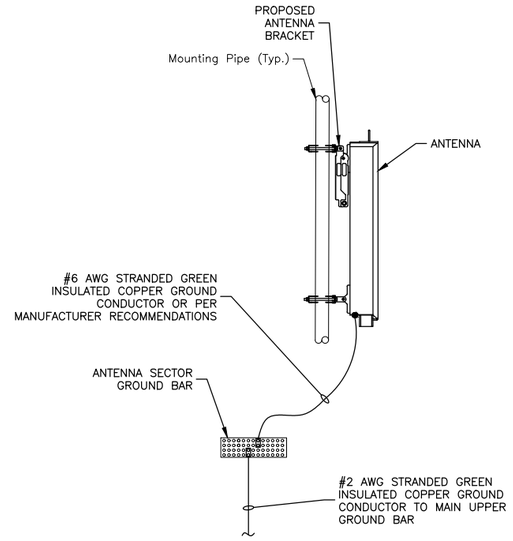


NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND. ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. GROUNDING KIT SHALL BE TIN PLATED COPPER WITH TWO-HOLE LUG, SIZE PER COAX DIAMETER.
3. WEATHER SEAL GROUND KIT PER CARRIER REQUIREMENTS.
4. COAX CABLE GROUND KIT LOCATION & QUANTITY SHALL BE PER CARRIER SPECIFICATIONS & STANDARDS.

COAX/HYBRID GROUNDING DETAIL 3

SCALE: N.T.S.



NOTES:

1. VERIFY EXISTING GROUNDING SYSTEM IS INSTALLED PER VERIZON WIRELESS STANDARDS.
2. BOND NEW EQUIPMENT INTO EXISTING GROUND SYSTEM IN ACCORDANCE WITH VERIZON WIRELESS STANDARDS AND MANUFACTURER'S RECOMMENDATIONS.

TYPICAL ANTENNA GROUNDING DETAIL 6

SCALE: N.T.S

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REVIEWED BY:	CDH
CHECKED BY:	BBR
PROJECT NUMBER:	50121487
JOB NUMBER:	50121762

SITE NUMBER

472708

SITE ADDRESS

139 NORTH MAIN ST.
WEST HARTFORD, CT
06107

SHEET TITLE

CONSTRUCTION DETAILS

SHEET NUMBER

C-4

FINAL EQUIPMENT CONFIGURATION

SECTOR	POSITION	TECHNOLOGY	ANTENNA MODEL	VENDOR	RRH (QTY./MODEL)	CENTERLINE	AZIMUTH	OVP	HYBRID CABLE TYPE	FEED LINE LENGTH*
ALPHA	A1	5G	(P) MT6407-77A	SAMSUNG	(1) (P) MT6407-77A	78'-0"±	40°	(1) (P) 12-OVP BOX REPLACE EXISTING	(1) (P) 12X24 LI HYBRID CABLE TO REPLACE EXISTING	90'±
	A2	LTE 700/850	(E) SBNHH-1D65B	COMMSCOPE	(1) (E) B5/B13 RFV01U-D2A (1) (E) B5/B66A RFV01U-D1A	78'-0"±	40°			
	A3	LTE 1900/AWS	(E) SBNHH-1D65B	COMMSCOPE		78'-0"±	40°			
	A4	CDMA 850	(E) LPA-80063/6CF 2	ANDREW	-	68'-6"±	40°			
	A5	CDMA 850	(E) LPA-80063/6CF 2	ANDREW	-	68'-6"±	40°			
BETA	B1	5G	(P) MT6407-77A	SAMSUNG	(1) (P) MT6407-77A	78'-0"±	140°			
	B2	LTE 700/850	(E) SBNHH-1D65B	COMMSCOPE	(1) (E) B5/B13 RFV01U-D2A (1) (E) B5/B66A RFV01U-D1A	78'-0"±	140°			
	B3	LTE 1900/AWS	(E) SBNHH-1D65B	COMMSCOPE		78'-0"±	140°			
	B4	CDMA 850	(E) LPA-80063/6CF 2	ANDREW	-	68'-6"±	140°			
	B5	CDMA 850	(E) LPA-80063/6CF 2	ANDREW	-	68'-6"±	140°			
GAMMA	G1	5G	(P) MT6407-77A	SAMSUNG	(1) (P) MT6407-77A	78'-0"±	270°			
	G2	LTE 700/850	(E) SBNHH-1D65B	COMMSCOPE	(1) (E) B5/B13 RFV01U-D2A (1) (E) B5/B66A RFV01U-D1A	78'-0"±	270°			
	G3	LTE 1900/AWS	(E) SBNHH-1D65B	COMMSCOPE		78'-0"±	270°			
	G4	CDMA 850	(E) LPA-80063/6CF 2	ANDREW	-	68'-6"±	270°			
	G5	CDMA 850	(E) LPA-80063/6CF 2	ANDREW	-	68'-6"±	270°			

*CONTRACTOR TO FIELD VERIFY HYBRID CABLE LENGTHS PRIOR TO CONSTRUCTION. LENGTH IS ESTIMATED FROM THE BASE EQUIPMENT OVP TO SECTOR OVP WITH 15% BUFFER.

(E) = Existing
(P) = PROPOSED

FINAL EQUIPMENT CONFIGURATION (1)
SCALE: N.T.S.

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DRAWN BY: MR
REVIEWED BY: CDH
CHECKED BY: BBR
PROJECT NUMBER: 50121487
JOB NUMBER: 50121762
SITE NUMBER
472708
SITE ADDRESS
139 NORTH MAIN ST.
WEST HARTFORD, CT
06107
SHEET TITLE
FINAL EQUIPMENT CONFIGURATION
SHEET NUMBER
C-5

SAMSUNG

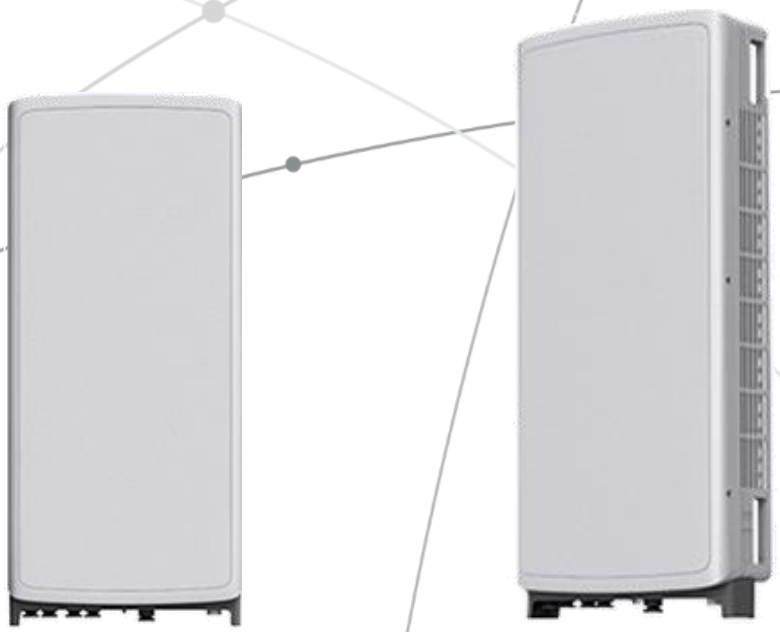
SAMSUNG

C-Band 64T64R Massive MIMO Radio

for High Capacity and Wide Coverage

Samsung C-Band 64T64R Massive MIMO Radio enables mobile operators to increase coverage range, boost data speeds and ultimately offer enriched 5G experiences to users in the U.S..

Model Code : MT6407-77A

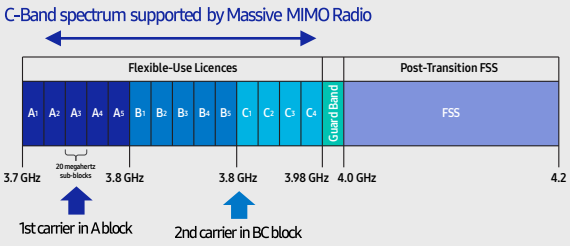


Points of Differentiation

Wide Bandwidth

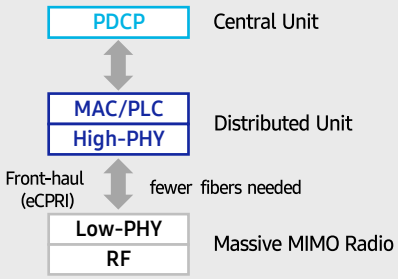
With capability to support up to 2 CC carrier configuration, Samsung C-Band massive MIMO Radio supports 200 MHz bandwidth in the C-Band spectrum.

Samsung C-Band massive MIMO Radio covers the entire C-Band 280 MHz spectrum, so it can meet the operator's needs in current A block and future B/C blocks



Future Proof Product

Samsung C-Band 64T64R Massive MIMO radio supports not only CPRI but also eCPRI as front-haul interface.
It enables operators can cut down on OPEX/CAPEX by reducing front-haul bandwidth through low layer split and using ethernet based higher efficient line.



Enhanced Performance

C-Band massive MIMO Radio creates sharp beams and extends networks' coverage on the critical mid-band spectrum using a large number of antenna elements and high output power to boost data speeds.

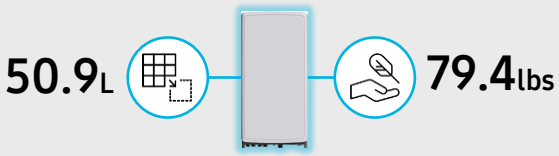
This helps operators reduce their CAPEX as they now need less products to cover the same area than before.

Furthermore, as C-Band massive MIMO Radio supports MU-MIMO(Multi-user MIMO) , it enables to increase user throughput by minimizing interference.

Well Matched Design

Samsung C-Band Massive MIMO radio utilizes 64 antennas, supports up to 280MHz bandwidth, and delivers a 200W output power. despite the above advanced performance, the Radio has a compact size of 50.9L and 79.4lbs. This makes it easy to install the Radio.

It is designed to look solid and compact, with a low profile appearance so that, when installed, harmonizes well with the surrounding environment..



Technical Specifications

Item	Specification
Tech	NR
Band	n77
Frequency Band	3700 - 3980 MHz
EIRP	78.5dBm (53.0 dBm+25.5 dBi)
IBW/OBW	280 MHz / 200 MHz
Installation	Pole/Wall
Size/ Weight	16.06 x 35.06 x 5.51 inch (50.86L)/ 79.4 lbs

SAMSUNG

About Samsung Electronics Co., Ltd.

Samsung inspires the world and shapes the future with transformative ideas and technologies. The company is redefining the worlds of TVs, smartphones, wearable devices, tablets, digital appliances, network systems, and memory, system LSI, foundry and LED solutions.

129 Samsung-ro, Yeongtong-gu, Suwon-si Gyeonggi-do, Korea

ATTACHMENT 3

	General	Power	Density					
Site Name: West Harford W Relo								
Tower Height: 68.7 and 78ft								
CARRIER	**# OF CHAN.**	**WATTS ERP**	**HEIGHT**	**Operating Freq.**	**Calculated Power Density**	**MAX. PERMISS. EXP.**	**FRACTION MPE**	**Total**
*AT&T	2	982	44.5	880	0.4765	0.5867	8.12%	
*AT&T	2	1355	44.5	1900	0.6575	1.0000	6.57%	
*AT&T	1	491	44.5	880	0.1191	0.5867	2.03%	
*AT&T	4	813	44.5	1900	0.7890	1.0000	7.89%	
*AT&T	1	1313	44.5	734	0.3186	0.4893	6.51%	
VZW 700	**4**	**346**	**78**	**751**	**0.0082**	**0.5007**	**1.63%**	
VZW CDMA	**2**	**498**	**68.7**	**877.26**	**0.0076**	**0.5848**	**1.30%**	
VZW PCS	**4**	**1581**	**78**	**1975**	**0.0374**	**1.0000**	**3.74%**	
VZW AWS	**4**	**1581**	**78**	**2120**	**0.0374**	**1.0000**	**3.74%**	
VZW CBAND	**4**	**6531**	**78**	**3730.005**	**0.1544**	**1.0000**	**15.44%**	
VZW Cellular	**4**	**788**	**78**	**869**	**0.0186**	**0.5793**	**3.22%**	
								60.19%
* Source: Siting Council								

ATTACHMENT 4

Dewberry

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May 20, 2021

Verizon Wireless
99 East River Drive
East Hartford, CT 06108

Re: West Hartford Relo CT
Site ID: 472708
Fuze #: 15626601
SMART Tool Project #: 10016513
139 North Main Street
West Hartford, CT 06107

To Whom It May Concern:

Verizon Wireless (VZW) has proposed to install new equipment within the VZW equipment levels within the existing clock tower at the site referenced above. The final equipment configuration according to the antenna design sheets (dated 11/17/20) is as follows:

Final (VZW) Equipment Configuration

Rad Center 78'-0"
- **(3) new MT6407-77A antennas – 87.1 lbs ea. (1 per sector)**
- (6) SBNHH-1D65B antennas – 40.6 lbs ea. (2 per sector)
  - (3) BSAMNT-SBS-1-2 side by side mounting brackets - 25.4 lbs ea. (1 per sector)
- (3) B2/B66A RRH-BR049 – 97.5 lbs ea. (1 per sector)
- (3) B5/B13 RRH BR04C – 82.0 lbs ea. (1 per sector)

Rad Center 68'-6"
- (6) LPA-80063/6CF antennas – 27.0 lbs ea. (2 per sector)
  - (6) Mounting brackets – 15 lbs ea. (2 per sector)
- **(1) new 12-OVP junction box – 45 lbs ea. (1 total)**

Cabling
- (12) 1-5/8" COAX cables
- **(1) new 2" hybrid cable**
- (1) 1/2" GPS COAX cable
- (1) 1/4" ground cable
- (1) 12x24 cable
- (1) 6x12 cable

The proposed configuration as shown above represents a total increase in load of 261.3 lbs which is negligible in comparison to the overall structure loading. The analysis concludes the existing clock tower and antenna mounts, as described in the permit drawings provided, has sufficient structural capacity to support the proposed equipment configuration. Under the proposed conditions and existing design loads, the maximum utilization of a single structural member is 63.8%.
Our assessment is based on the assumption that the existing structure is in good condition, constructed according to the drawings provided and were constructed in conformance with all applicable state and local

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building codes. If, during construction, any damage, deterioration, and/or discrepancies are noticed, Dewberry is to be notified to assess any deviation from the assumed condition. Any alteration in equipment loading described above and on the associated plans will void any conclusions expressed herein and will require further analysis and design.

If you have any questions, please do not hesitate to call me at 617-531-0800.

Sincerely,
Dewberry Engineers Inc.

Ben Revette, P.E.
Associate Vice President

Dewberry Engineers, Inc.
Structural Analysis Summary Sheet

Job No.:	50002925/50114615	**By:**	AMD	**Date:**	12/15/20
Job Name:	West Hartford Relo CT	**Checked:**	SA	**Date:**	12/16/20

Location: 139 North Main Street, West Hartford, CT 06107
Client: Verizon

Scope of Work:

- Proposed installation of three (3) new MT6407-77A antennas.
- Analysis of the existing clock tower building and existing antenna mounts.

Codes / Standards / References:

- IBC 2015
- 2018 Connecticut State Building Code – Amendments to IBC 2015
- AISC 14th Ed.
- RFDS dated 07/31/19
- Site visit by Dewberry Engineers on 11/01/19.
- Existing drawings by CENTEK Engineering dated 10/21/13.

Design & Analysis Assumptions:

- Assume antennas are mounted inside the existing clock tower.
- Analysis is limited to the existing clock tower only.
- Design and analysis are based on dead, wind, live, seismic and snow loads. The analysis checks for normal bending and shear stresses.
- Assumes minimum concrete compressive strength of 3000 psi and density of 115 lb/ft^3 and reinforcement strength of 60 ksi for the composite decks
- Assumes minimum concrete compressive strength of 3000 psi and density of 150 lb/ft^3 and reinforcement strength of 60 ksi for the lower level and foundation.
- Assumes composite concrete decks modeled with equivalent shear studs 1/2" dia.
- Assumes FRP panel thickness of ¼".
- Assumed exterior foundation walls to take all soil pressure loads and are designed according to soil parameters of the site.
- Assumed minimum allowable soil bearing capacity of 2500 psf

Conclusion / Recommendations:

- The existing structure and antenna mounts have sufficient capacity to support the proposed installation.

Dewberry

Job Number	50114615
Made by:	AMD
Date:	12/15/20
Checked by:	SA
Date:	12/16/20

(West Hartford Relo CT) - Structure Loading

\\CAPECOD\Projects\50121487\50121762 - W Hartford W CT\Engineering\Structural\Rev 0\Calcs\50114615 - Clock Tower.xlsx

Site Name: West Hartford Relo CT

Existing Building Information

- Existing Clock Tower drawings by CENTEK Engineering dated 10/21/13
- 2018 Conneticut State Building Code (IBC 2015 , ASCE 7-10)
- Assumed 3000 psi concrete
- Assumed equivalent shear studs 1/2" dia. for composite action

Existing Dead Load

- Estimated building dead load:

Roof Dead Load =	18.5 psf	*(existing building drawings - slab weight- structural steel)*
Floor Dead Load =	14 psf	*(existing building drawings - slab weight- structural steel)*
Grating Platform Dead Load =	20 psf	*(estimated)*
Ext. Stud Walls w/ Brick Veneer =	48 psf	*(ASCE 7-10,Table C3-1)*
Exterior FRP Reinforced Walls =	7.5 psf	*(0.25" panel with 4x4 tube reinforcements)*

Existing Live Load

- Design building live load:

Floor =	150 psf	*(existing building drawings)*
Stairs/ Landing =	100 psf	*(existing building drawings)*
Mechanical Areas =	150 psf	*(existing building drawings)*
Platforms =	50 psf	*(assumed)*
Roof =	20 psf	*(existing building drawings)*

Snow Load (ASCE 7-10)

General Design Criteria

Exposure Factor, C_e =	1.0	*(ASCE 7-10, Table 7-2)*
Thermal Factor, C_t =	1.0	*(ASCE 7-10, Table 7-3)*
Importance Factor, I_s =	1.0	*(ASCE 7-10, Table 1.5-2)*
Min. Flat Roof Load, $p_{f\,min}$ =	30 psf	*(Connecticut State Building Code 2018)*
Ground Snow Load, p_g =	30 psf	*(ASCE 7-10, Hazard Tool)*

Design Snow Load, $p_f = 0.7 C_e C_t I_s p_g$ *(ASCE 7-10, Eqn. 7.3-1)*

$= 21.0$ psf ***(Use 30 psf)***

Dewberry

Job Number	50114615
Made by:	AMD
Date:	12/15/20
Checked by:	SA
Date:	12/16/20

(West Hartford Relo CT) - Design Wind Load on the Clock Tower

\\CAPECOD\Projects\50121487\50121762 - W Hartford W CT\Engineering\Structural\Rev 0\Calcs\50114615 - Clock Tower.xlsx

Site Name: West Hartford Relo CT

Wind Load per ASCE 7-10, Chapter 27

- wind load on the upper dome is conservativly applied as if to a flat surface

Design Criteria

Height, h =	90.00 ft	*(Mean roof height)*
Risk Category =	II	*(Table 1.5-1, ASCE 7-10)*
Basic Wind Speed, V =	125 mph	*(Connecticut State Building Code 2018, Appendix V)*
K_d =	0.85	*(Table 26.6-1, ASCE 7-10)*
Exposure Category =	B	*(Sect. 26.7.3, ASCE 7-10)*
K_{zt} =	1	*(Sect.26.8.2, ASCE 7-10)*
G =	0.85	*(Sect. 26.9.4, ASCE 7-10)*
K_h =	0.960	*(Table 27.3-1, ASCE 7-10)*

Velocity Pressure

$q_h = 0.00256*K_h*K_{zt}*K_d*V^2$ *(Eqn. 27.3-1, ASCE 7-10)*

$= 32.64 \text{ lb/ft}^2$

Design Wind Force

- Conservatively using q_h for all sides

$p_w = q_h G C_p - q_h(GC_{pi})$ *(Eqn. 27.4-1, ASCE 7-10)*

$p_{w(+)\text{ windward}}$ =	16.3 psf	*(+ Internal Pressure)*
$p_{w(+)\text{ leeward}}$ =	-19.7 psf	
$p_{w(+)\text{ side}}$ =	-25.3 psf	
$p_{w(-)\text{ windward}}$ =	28.1 psf	*(- Internal Pressure)*
$p_{w(-)\text{ leeward}}$ =	-8.0 psf	
$p_{w(-)\text{ side}}$ =	-13.5 psf	

where:

(+) GC_{pi} =	0.18	*(Table 26.11-1, ASCE 7-10)*
(-) GC_{pi} =	-0.18	*(Table 26.11-1, ASCE 7-10)*
$C_{p\text{ windward}}$ =	0.80	*(Fig. 27.4-1, ASCE 7-10)*
$C_{p\text{ leeward}}$ =	-0.50	*(Fig. 27.4-1, ASCE 7-10)*
$C_{p\text{ side}}$ =	-0.70	*(Fig. 27.4-1, ASCE 7-10)*

Job Information

	Engineer	Checked	Approved
Name:	AMD	SA	
Date:	12/15/2020	12/16/2020	

Project ID	
Project Name	

Structure Type	SPACE FRAME

Number of Nodes	246	Highest Node	275
Number of Elements	567	Highest Beam	674
Number of Plates	68	Highest Plate	652

Number of Basic Load Cases	9
Number of Combination Load Cases	23

Included in this printout are data for:

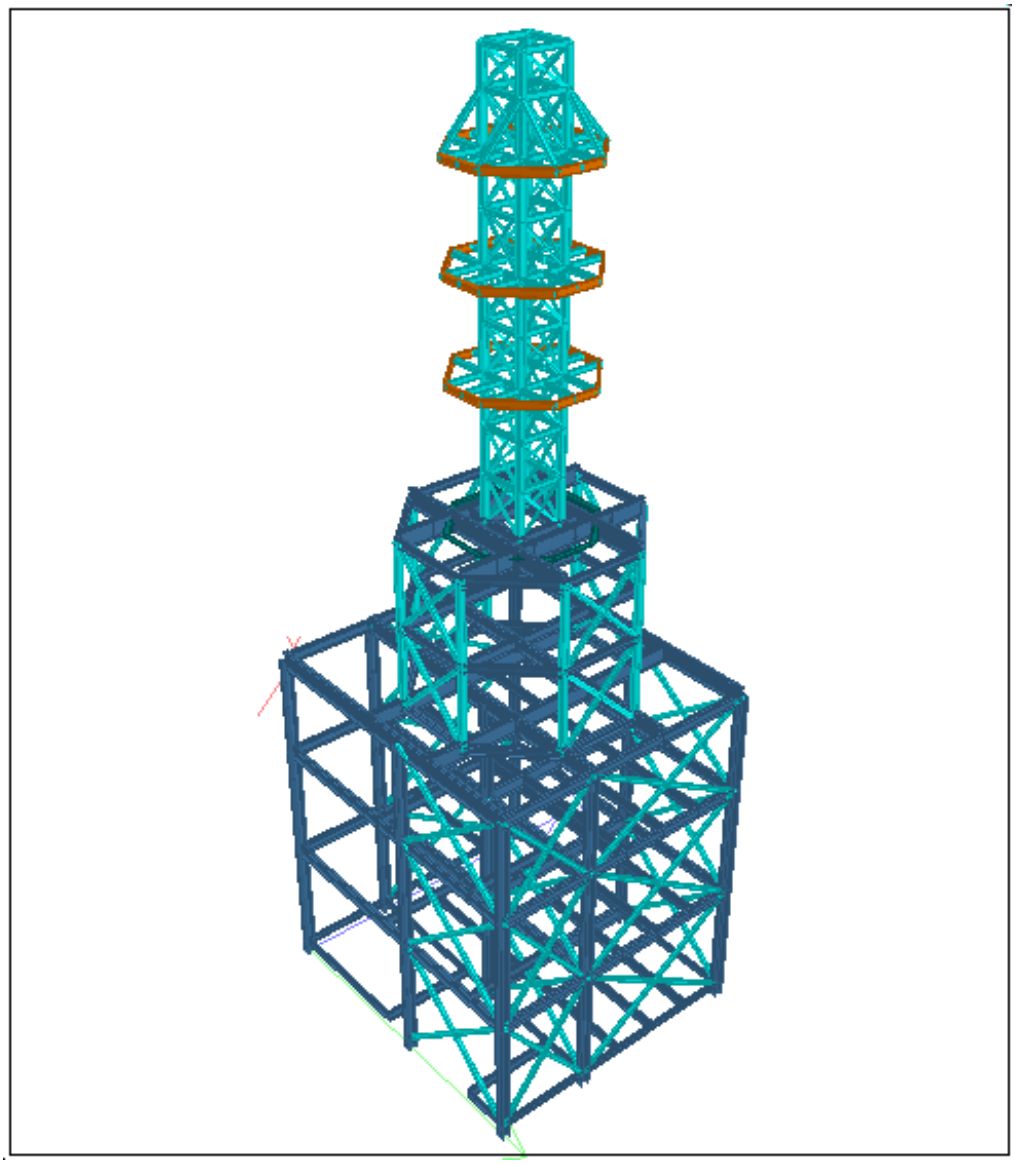
All	The Whole Structure

Included in this printout are results for load cases:

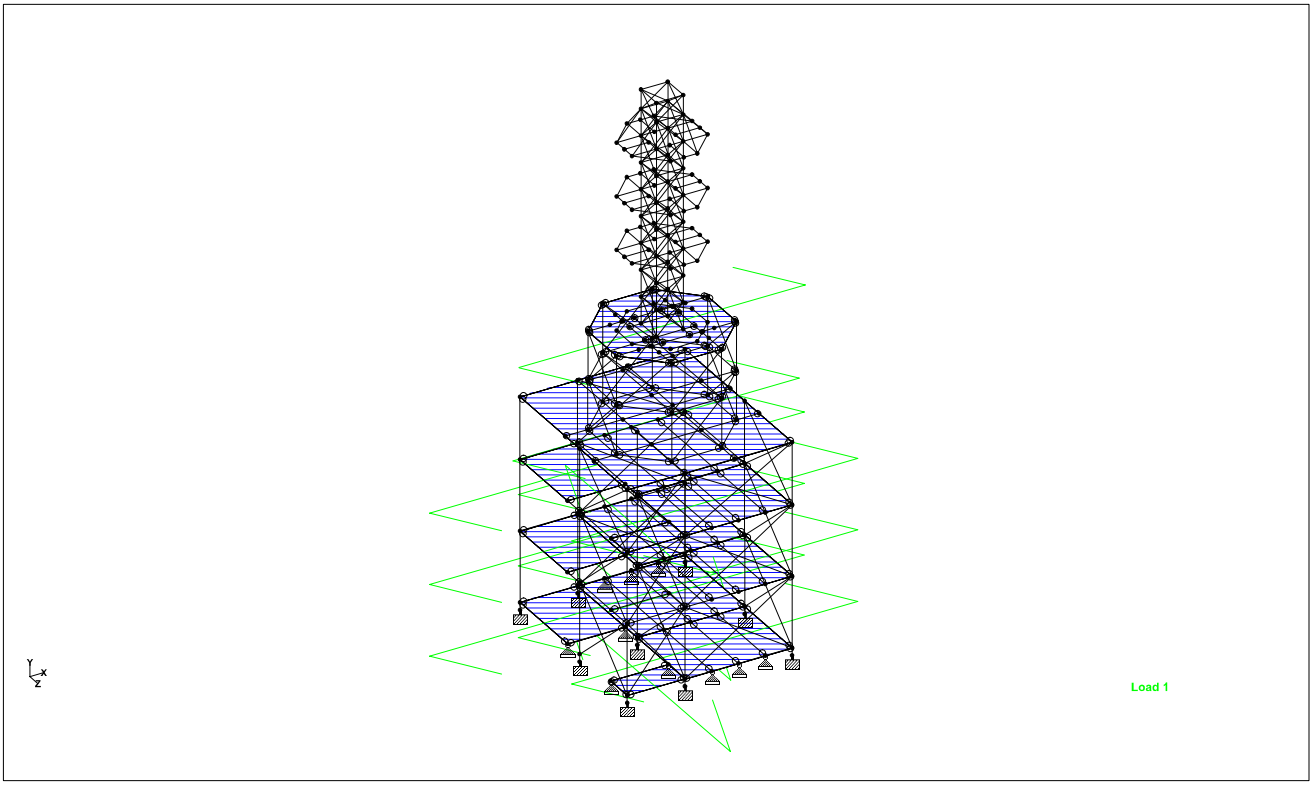
Type	L/C	Name
Primary	1	EQ(X)
Primary	2	EQ(Z)
Primary	3	DEAD
Primary	4	LIVE
Primary	5	SNOW
Primary	6	LIVE ROOF
Primary	7	WIND(X-)
Primary	8	WIND(Z-)
Combination	9	1.4D
Combination	10	1.2D+1.6L+0.5LR
Combination	12	1.2D+1.6L+0.5S
Combination	13	1.2D+1.6LR+L
Combination	14	1.2D+1.6LR+0.5W(X)
Combination	15	1.2D+1.6LR+0.5W(Z)
Combination	19	1.2D+1.6S+L
Combination	20	1.2D+1.6S+0.5W(X)
Combination	21	1.2D+1.6S+0.5W(Z)
Combination	22	1.2D+1.0W(X)+L+0.5LR
Combination	23	1.2D+1.0W(Z)+L+0.5LR
Combination	26	1.2D+1.0W(X)+L+0.5S
Combination	27	1.2D+1.0W(Z)+L+0.5S
Combination	28	1.2D+1.0E(X)+L+0.2S
Combination	29	1.2D+1.0E(Z)+L+0.2S
Combination	30	1.2D-1.0E(X)+L+0.2S

Job Information Cont...

Type	L/C	Name
Combination	34	0.9D+1.0E(X)
Combination	35	0.9D+1.0E(Z)
Combination	36	0.9D-1.0E(X)
Combination	37	0.9D-1.0E(Z)



3D Rendered View



Composite Slabs

Nodes

Node	X (ft)	Y (ft)	Z (ft)
1	0	0	0
2	9.667	0	0
3	27.667	0	0
4	0	0	17.333
5	9.667	0	17.333
6	27.667	0	17.333
7	0	0	31.167
8	9.667	0	31.167
9	27.667	0	31.167
10	0	1.250	0
11	9.667	1.250	0
12	27.667	1.250	0
13	0	1.250	17.333
14	9.667	1.250	17.333
15	27.667	1.250	17.333
16	0	1.250	31.167
17	9.667	1.250	31.167
18	27.667	1.250	31.167
19	0	13.250	0

Nodes Cont...

Node	X (ft)	Y (ft)	Z (ft)
20	9.667	13.250	0
21	27.667	13.250	0
22	0	13.250	17.333
23	9.667	13.250	17.333
24	27.667	13.250	17.333
25	0	13.250	31.167
26	9.667	13.250	31.167
27	27.667	13.250	31.167
28	0	25.250	0
29	9.667	25.250	0
30	27.667	25.250	0
31	0	25.250	17.333
32	9.667	25.250	17.333
33	27.667	25.250	17.333
34	0	25.250	31.167
35	9.667	25.250	31.167
36	27.667	25.250	31.167
37	0	35.750	0
38	9.667	35.750	0
39	27.667	35.750	0
40	0	35.750	17.333
41	9.667	35.750	17.333
42	27.667	35.750	17.333
43	0	35.750	31.167
44	9.667	35.750	31.167
45	27.667	35.750	31.167
46	9.667	13.250	13.833
47	0	13.250	13.833
48	14.167	13.250	17.333
49	18.667	13.250	17.333
50	23.167	13.250	17.333
51	14.167	13.250	0
52	18.667	13.250	0
53	23.167	13.250	0
54	14.167	13.250	31.167
55	18.667	13.250	31.167
56	23.167	13.250	31.167
57	0	13.250	26.500
58	9.667	13.250	26.500
59	0	25.250	13.833
60	0	25.250	26.500
61	14.167	25.250	31.167
62	23.167	25.250	0
63	14.167	25.250	17.333
64	9.667	25.250	13.833

Nodes Cont...

Node	X (ft)	Y (ft)	Z (ft)
65	9.667	25.250	26.500
66	18.667	25.250	17.333
67	23.167	25.250	17.333
68	14.167	25.250	0
69	18.667	25.250	0
70	18.667	25.250	31.167
71	23.167	25.250	31.167
72	18.000	35.750	0
74	18.000	35.750	31.167
75	0	35.750	13.167
76	9.667	35.750	13.167
77	27.667	35.750	13.167
78	18.000	35.750	13.167
79	0	35.750	21.500
80	9.667	35.750	21.500
81	27.667	35.750	21.500
82	18.000	35.750	21.500
83	3.771	35.750	13.167
84	3.771	35.750	21.500
85	23.896	35.750	13.167
86	23.896	35.750	21.500
87	9.667	35.750	7.271
88	18.000	35.750	7.271
89	9.667	35.750	27.396
90	18.000	35.750	27.396
91	3.771	44.000	13.167
92	3.771	44.000	21.500
93	23.896	44.000	13.167
94	23.896	44.000	21.500
95	9.667	44.000	7.271
96	18.000	44.000	7.271
97	9.667	44.000	27.396
98	18.000	44.000	27.396
99	3.771	52.250	13.167
100	3.771	52.250	21.500
101	23.896	52.250	13.167
102	23.896	52.250	21.500
103	9.667	52.250	7.271
104	18.000	52.250	7.271
105	9.667	52.250	27.396
106	18.000	52.250	27.396
107	18.000	44.000	13.167
108	9.667	44.000	13.167
109	18.000	44.000	21.500
110	9.667	44.000	21.500

Nodes Cont...

Node	X (ft)	Y (ft)	Z (ft)
111	9.667	52.250	13.167
112	9.667	52.250	21.500
113	18.000	52.250	13.167
114	18.000	52.250	21.500
115	11.583	52.250	13.167
116	11.583	52.250	21.500
117	16.083	52.250	13.167
118	16.083	52.250	21.500
119	9.667	52.250	19.583
120	11.583	52.250	19.583
121	16.083	52.250	19.583
122	18.000	52.250	19.583
123	9.667	52.250	15.083
124	11.583	52.250	15.083
125	16.083	52.250	15.083
126	18.000	52.250	15.083
127	11.583	65.750	19.583
128	16.083	65.750	19.583
129	11.583	65.750	15.083
130	16.083	65.750	15.083
131	11.583	74.750	19.583
132	16.083	74.750	19.583
133	11.583	74.750	15.083
134	16.083	74.750	15.083
135	11.583	83.750	19.583
136	16.083	83.750	19.583
137	11.583	83.750	15.083
138	16.083	83.750	15.083
139	11.583	91.500	19.583
140	16.083	91.500	19.583
141	11.583	91.500	15.083
142	16.083	91.500	15.083
167	7.500	83.750	19.583
168	7.500	83.750	15.083
169	20.167	83.750	19.583
170	20.167	83.750	15.083
171	11.583	83.750	11.000
172	16.083	83.750	11.000
173	11.583	83.750	23.667
174	16.083	83.750	23.667
175	7.500	65.750	15.083
176	7.500	65.750	19.583
177	11.583	65.750	23.667
178	16.083	65.750	23.667
179	20.167	65.750	19.583

Nodes Cont...

Node	X (ft)	Y (ft)	Z (ft)
180	20.167	65.750	15.083
181	16.083	65.750	11.000
182	11.583	65.750	11.000
183	16.083	74.750	11.000
184	11.583	74.750	11.000
185	7.500	74.750	15.083
186	7.500	74.750	19.583
187	11.583	74.750	23.667
188	16.083	74.750	23.667
189	20.167	74.750	19.583
190	20.167	74.750	15.083
191	11.583	56.750	15.083
192	11.583	61.250	15.083
193	16.083	56.750	15.083
194	16.083	61.250	15.083
195	16.083	56.750	19.583
196	16.083	61.250	19.583
197	11.583	56.750	19.583
198	11.583	61.250	19.583
199	11.583	70.250	15.083
200	11.583	79.250	15.083
201	16.083	70.250	15.083
202	16.083	79.250	15.083
203	16.083	70.250	19.583
204	16.083	79.250	19.583
205	11.583	70.250	19.583
206	11.583	79.250	19.583
207	11.583	88.250	15.083
208	16.083	88.250	15.083
209	16.083	88.250	19.583
210	11.583	88.250	19.583
211	16.083	65.750	17.333
212	13.833	65.750	15.083
213	11.583	65.750	17.333
214	13.833	65.750	19.583
215	13.833	65.750	23.667
216	13.833	65.750	11.000
217	7.500	65.750	17.333
218	20.167	65.750	17.333
219	13.833	74.750	19.583
220	13.833	74.750	23.667
221	13.833	74.750	15.083
222	13.833	74.750	11.000
223	11.583	74.750	17.333
224	7.500	74.750	17.333

Nodes Cont...

Node	X (ft)	Y (ft)	Z (ft)
225	16.083	74.750	17.333
226	20.167	74.750	17.333
227	13.833	83.750	19.583
228	13.833	83.750	23.667
229	13.833	83.750	15.083
230	13.833	83.750	11.000
231	11.583	83.750	17.333
232	7.500	83.750	17.333
233	16.083	83.750	17.333
234	20.167	83.750	17.333
235	7.500	52.250	19.583
237	16.083	52.250	23.667
239	20.167	52.250	15.083
241	11.583	52.250	11.000
243	7.500	52.250	15.083
244	16.083	52.250	11.000
245	20.167	52.250	19.583
246	11.583	52.250	23.667
247	9.417	52.250	13.167
248	9.417	52.250	21.500
249	9.667	52.250	12.917
250	18.000	52.250	12.917
251	18.250	52.250	13.167
252	18.250	52.250	21.500
253	9.667	52.250	21.750
254	18.000	52.250	21.750
255	14.167	1.250	17.333
256	18.667	1.250	17.333
257	23.167	1.250	17.333
258	14.167	1.250	31.167
259	14.167	1.250	0
260	18.667	1.250	31.167
261	18.667	1.250	0
262	23.167	1.250	31.167
263	23.167	1.250	0
264	7.500	52.250	13.167
265	7.500	52.250	21.500
266	9.667	52.250	11.000
267	18.000	52.250	11.000
268	20.167	52.250	13.167
269	20.167	52.250	21.500
270	9.667	52.250	23.667
271	18.000	52.250	23.667
272	9.667	1.250	13.833
273	0	1.250	13.833

Nodes Cont...

Node	X (ft)	Y (ft)	Z (ft)
274	9.667	1.250	26.333
275	0	1.250	26.333

Beams

Beam	Node A	Node B	Length (ft)	Property	β (degrees)
1	1	10	1.250	2	0
2	10	19	12.000	2	0
3	19	28	12.000	2	0
4	28	37	10.500	2	0
5	2	11	1.250	2	0
6	11	20	12.000	2	0
7	20	29	12.000	2	0
8	29	38	10.500	2	0
9	3	12	1.250	2	0
10	12	21	12.000	2	0
11	21	30	12.000	2	0
12	30	39	10.500	2	0
13	6	15	1.250	2	0
14	15	24	12.000	2	0
15	24	33	12.000	2	0
16	33	42	10.500	2	0
17	9	18	1.250	2	0
18	18	27	12.000	2	0
19	27	36	12.000	2	0
20	36	45	10.500	2	0
21	8	17	1.250	2	0
22	17	26	12.000	2	0
23	26	35	12.000	2	0
24	35	44	10.500	2	0
25	7	16	1.250	2	0
26	16	25	12.000	2	0
27	25	34	12.000	2	0
28	34	43	10.500	2	0
29	4	13	1.250	2	0
30	13	22	12.000	2	0
31	22	31	12.000	2	0
32	31	40	10.500	2	0
33	5	14	1.250	2	0
34	14	23	12.000	2	0
35	23	32	12.000	2	0
36	32	41	10.500	2	0
37	19	47	13.833	5	0

Beams Cont...

Beam	Node A	Node B	Length (ft)	Property	β (degrees)
38	22	57	9.167	5	0
39	25	26	9.667	6	0
40	26	54	4.500	5	0
41	27	24	13.833	5	0
42	24	21	17.333	5	0
43	21	53	4.500	5	0
44	20	19	9.667	6	0
45	23	48	4.500	4	0
46	20	46	13.833	5	0
47	23	58	9.167	5	0
48	47	46	9.667	3	0
49	46	23	3.500	5	0
50	47	22	3.500	5	0
51	48	49	4.500	4	0
52	49	50	4.500	4	0
53	50	24	4.500	4	0
54	51	20	4.500	5	0
55	52	51	4.500	5	0
56	53	52	4.500	5	0
57	54	55	4.500	5	0
58	55	56	4.500	5	0
59	56	27	4.500	5	0
60	54	48	13.833	3	0
61	48	51	17.333	3	0
62	55	49	13.833	3	0
63	49	52	17.333	3	0
64	56	50	13.833	3	0
65	50	53	17.333	3	0
66	57	25	4.667	5	0
67	58	26	4.667	5	0
68	57	58	9.667	3	0
69	28	59	13.833	5	0
70	31	60	9.167	5	0
71	34	35	9.667	6	0
72	35	61	4.500	6	0
73	36	33	13.833	5	0
74	33	30	17.333	5	0
75	30	62	4.500	6	0
76	29	28	9.667	6	0
77	32	63	4.500	4	0
78	29	64	13.833	5	0
79	32	65	9.167	5	0
80	59	64	9.667	3	0
81	64	32	3.500	5	0
82	59	31	3.500	5	0

Beams Cont...

Beam	Node A	Node B	Length (ft)	Property	β (degrees)
83	63	66	4.500	4	0
84	66	67	4.500	4	0
85	67	33	4.500	4	0
86	68	29	4.500	6	0
87	69	68	4.500	6	0
88	62	69	4.500	6	0
89	61	70	4.500	6	0
90	70	71	4.500	6	0
91	71	36	4.500	6	0
92	61	63	13.833	3	0
93	63	68	17.333	3	0
94	70	66	13.833	3	0
95	66	69	17.333	3	0
96	71	67	13.833	3	0
97	67	62	17.333	3	0
98	60	34	4.667	5	0
99	65	35	4.667	5	0
100	60	65	9.667	3	0
101	37	38	9.667	6	0
102	38	72	8.333	6	0
103	39	77	13.167	7	0
104	42	81	4.167	7	0
105	37	75	13.167	7	0
106	40	79	4.167	7	0
107	43	44	9.667	6	0
108	44	74	8.333	6	0
109	38	87	7.271	7	0
110	41	80	4.167	7	0
111	72	39	9.667	6	0
112	72	88	7.271	7	0
113	74	45	9.667	6	0
114	82	78	8.333	7	0
115	75	40	4.167	7	0
116	76	41	4.167	7	0
117	77	42	4.167	7	0
119	79	43	9.667	7	0
120	80	89	5.896	7	0
121	81	45	9.667	7	0
122	82	90	5.896	7	0
123	75	83	3.771	7	0
124	76	78	8.333	7	0
125	78	85	5.896	7	0
126	79	84	3.771	7	0
127	80	82	8.333	7	0
128	82	86	5.896	7	0

Beams Cont...

Beam	Node A	Node B	Length (ft)	Property	β (degrees)
129	83	76	5.896	7	0
130	84	80	5.896	7	0
131	85	77	3.771	7	0
132	86	81	3.771	7	0
133	87	76	5.896	7	0
134	88	78	5.896	7	0
135	89	44	3.771	7	0
136	90	74	3.771	7	0
137	83	84	8.333	8	0
138	85	86	8.333	8	0
139	89	90	8.333	8	0
140	87	88	8.333	8	0
141	83	87	8.338	8	0
142	88	85	8.338	8	0
143	86	90	8.338	8	0
144	89	84	8.338	8	0
145	83	91	8.250	9	0
146	91	99	8.250	9	0
147	87	95	8.250	9	0
148	95	103	8.250	9	0
149	88	96	8.250	9	0
150	96	104	8.250	9	0
151	85	93	8.250	9	0
152	93	101	8.250	9	0
153	86	94	8.250	9	0
154	94	102	8.250	9	0
155	90	98	8.250	9	0
156	98	106	8.250	9	0
157	89	97	8.250	9	0
158	97	105	8.250	9	0
159	84	92	8.250	9	0
160	92	100	8.250	9	0
161	91	108	5.896	5	0
162	92	110	5.896	5	0
163	95	108	5.896	5	0
164	96	107	5.896	5	0
165	95	96	8.333	10	0
166	96	93	8.338	10	0
167	93	94	8.333	10	0
168	94	98	8.338	10	0
169	98	97	8.333	10	0
170	97	92	8.338	10	0
171	92	91	8.333	10	0
172	91	95	8.338	10	0
173	107	93	5.896	5	0

Beams Cont...

Beam	Node A	Node B	Length (ft)	Property	β (degrees)
174	108	107	8.333	5	0
175	109	94	5.896	5	0
176	110	109	8.333	5	0
177	110	97	5.896	5	0
178	108	110	8.333	5	0
179	109	98	5.896	5	0
180	107	109	8.333	5	0
181	99	264	3.729	7	0
182	100	265	3.729	7	0
183	103	266	3.729	7	0
184	104	267	3.729	7	0
185	103	104	8.333	10	0
186	104	101	8.338	10	0
187	101	102	8.333	10	0
188	102	106	8.338	10	0
189	106	105	8.333	10	0
190	105	100	8.338	10	0
191	100	99	8.333	10	0
192	99	103	8.338	10	0
193	113	251	0.250	7	0
194	111	115	1.917	7	0
195	114	252	0.250	7	0
196	112	116	1.917	7	0
197	112	253	0.250	7	0
198	111	123	1.917	7	0
199	114	254	0.250	7	0
200	113	126	1.917	7	0
201	89	98	11.726	14	0
202	97	90	11.726	14	0
203	105	98	11.726	14	0
204	97	106	11.726	14	0
205	91	100	11.726	14	0
206	83	92	11.726	14	0
207	84	91	11.726	14	0
208	92	99	11.726	14	0
209	95	104	11.726	14	0
210	103	96	11.726	14	0
212	88	95	11.726	14	0
213	94	101	11.726	14	0
214	102	93	11.726	14	0
215	86	93	11.726	14	0
216	94	85	11.726	14	0
217	87	96	11.726	14	0
218	115	117	4.500	7	0
219	116	118	4.500	7	0

Beams Cont...

Beam	Node A	Node B	Length (ft)	Property	β (degrees)
220	115	124	1.917	5	0
221	117	113	1.917	7	0
222	118	114	1.917	7	0
223	117	125	1.917	5	0
224	119	112	1.917	7	0
225	120	116	1.917	5	0
226	119	120	1.917	5	0
227	121	118	1.917	5	0
228	120	121	4.500	5	0
229	122	114	1.917	7	0
230	121	122	1.917	5	0
231	123	119	4.500	7	0
232	124	120	4.500	5	0
233	123	124	1.917	5	0
234	125	121	4.500	5	0
235	124	125	4.500	5	0
236	126	122	4.500	7	0
237	125	126	1.917	5	0
238	124	191	4.500	9	0
239	129	199	4.500	9	0
240	133	200	4.500	9	0
241	137	207	4.500	9	0
242	125	193	4.500	9	0
243	130	201	4.500	9	0
244	134	202	4.500	9	0
245	138	208	4.500	9	0
246	121	195	4.500	9	0
247	128	203	4.500	9	0
248	132	204	4.500	9	0
249	136	209	4.500	9	0
250	120	197	4.500	9	0
251	127	205	4.500	9	0
252	131	206	4.500	9	0
253	135	210	4.500	9	0
267	137	168	4.083	12	0
269	138	172	4.083	12	0
271	136	169	4.083	12	0
273	135	173	4.083	12	0
275	167	232	2.250	11	0
279	135	167	4.083	12	0
280	171	230	2.250	11	0
281	170	234	2.250	11	0
282	174	228	2.250	11	0
283	137	171	4.083	12	0
284	138	170	4.083	12	0

Beams Cont...

Beam	Node A	Node B	Length (ft)	Property	β (degrees)
285	136	174	4.083	12	0
286	137	231	2.250	12	0
287	135	227	2.250	12	0
288	136	233	2.250	12	0
289	138	229	2.250	12	0
290	133	223	2.250	12	0
291	131	219	2.250	12	0
292	132	225	2.250	12	0
293	134	221	2.250	12	0
294	128	211	2.250	12	0
295	130	212	2.250	12	0
296	129	213	2.250	12	0
297	127	214	2.250	12	0
299	129	175	4.083	12	0
300	176	217	2.250	11	0
301	127	176	4.083	12	0
303	127	177	4.083	12	0
304	178	215	2.250	11	0
305	128	178	4.083	12	0
307	128	179	4.083	12	0
308	180	218	2.250	11	0
309	130	180	4.083	12	0
311	130	181	4.083	12	0
312	182	216	2.250	11	0
313	129	182	4.083	12	0
315	134	183	4.083	12	0
316	184	222	2.250	11	0
317	133	184	4.083	12	0
319	133	185	4.083	12	0
320	186	224	2.250	11	0
321	131	186	4.083	12	0
323	131	187	4.083	12	0
324	188	220	2.250	11	0
325	132	188	4.083	12	0
327	132	189	4.083	12	0
328	190	226	2.250	11	0
329	134	190	4.083	12	0
330	191	192	4.500	9	0
331	192	129	4.500	9	0
332	193	194	4.500	9	0
333	194	130	4.500	9	0
334	195	196	4.500	9	0
335	196	128	4.500	9	0
336	197	198	4.500	9	0
337	198	127	4.500	9	0

Beams Cont...

Beam	Node A	Node B	Length (ft)	Property	β (degrees)
338	191	197	4.500	12	0
339	197	195	4.500	12	0
340	195	193	4.500	12	0
341	193	191	4.500	12	0
342	192	198	4.500	12	0
343	198	196	4.500	12	0
344	196	194	4.500	12	0
345	194	192	4.500	12	0
346	198	191	6.364	13	0
347	192	197	6.364	13	0
348	192	193	6.364	13	0
349	191	194	6.364	13	0
350	193	196	6.364	13	0
351	194	195	6.364	13	0
352	195	198	6.364	13	0
353	196	197	6.364	13	0
354	197	124	6.364	13	0
355	191	120	6.364	13	0
356	191	125	6.364	13	0
357	124	193	6.364	13	0
358	120	195	6.364	13	0
359	197	121	6.364	13	0
360	195	125	6.364	13	0
361	193	121	6.364	13	0
362	127	196	6.364	13	0
363	128	198	6.364	13	0
364	127	192	6.364	13	0
365	198	129	6.364	13	0
366	129	194	6.364	13	0
367	130	192	6.364	13	0
368	130	196	6.364	13	0
369	128	194	6.364	13	0
370	199	133	4.500	9	0
371	200	137	4.500	9	0
372	201	134	4.500	9	0
373	202	138	4.500	9	0
374	203	132	4.500	9	0
375	204	136	4.500	9	0
376	205	131	4.500	9	0
377	206	135	4.500	9	0
378	199	205	4.500	12	0
379	205	203	4.500	12	0
380	203	201	4.500	12	0
381	201	199	4.500	12	0
382	205	129	6.364	13	0

Beams Cont...

Beam	Node A	Node B	Length (ft)	Property	β (degrees)
383	199	127	6.364	13	0
384	199	130	6.364	13	0
385	129	201	6.364	13	0
386	127	203	6.364	13	0
387	205	128	6.364	13	0
388	203	130	6.364	13	0
389	201	128	6.364	13	0
390	131	203	6.364	13	0
391	132	205	6.364	13	0
392	203	134	6.364	13	0
393	201	132	6.364	13	0
394	134	199	6.364	13	0
395	201	133	6.364	13	0
396	133	205	6.364	13	0
397	199	131	6.364	13	0
398	200	202	4.500	12	0
399	202	204	4.500	12	0
400	204	206	4.500	12	0
401	206	200	4.500	12	0
402	200	131	6.364	13	0
403	206	133	6.364	13	0
404	206	132	6.364	13	0
405	131	204	6.364	13	0
406	204	134	6.364	13	0
407	202	132	6.364	13	0
408	202	133	6.364	13	0
409	200	134	6.364	13	0
410	200	138	6.364	13	0
411	137	202	6.364	13	0
412	202	136	6.364	13	0
413	138	204	6.364	13	0
414	204	135	6.364	13	0
415	136	206	6.364	13	0
416	206	137	6.364	13	0
418	135	200	6.364	13	0
419	207	141	3.250	9	0
421	208	142	3.250	9	0
423	209	140	3.250	9	0
425	210	139	3.250	9	0
427	207	208	4.500	12	0
428	208	209	4.500	12	0
429	209	210	4.500	12	0
430	210	207	4.500	12	0
431	207	135	6.364	13	0
432	210	137	6.364	13	0

Beams Cont...

Beam	Node A	Node B	Length (ft)	Property	β (degrees)
433	210	136	6.364	13	0
434	135	209	6.364	13	0
435	209	138	6.364	13	0
436	208	136	6.364	13	0
437	208	137	6.364	13	0
438	207	138	6.364	13	0
439	207	168	6.076	14	0
440	210	167	6.076	14	0
441	208	170	6.076	14	0
442	209	169	6.076	14	0
443	208	172	6.076	14	0
444	207	171	6.076	14	0
445	210	173	6.076	14	0
446	209	174	6.076	14	0
447	141	142	4.500	12	0
448	142	140	4.500	12	0
449	139	141	4.500	12	0
450	140	139	4.500	12	0
451	141	208	5.551	13	0
452	142	207	5.551	13	0
453	139	209	5.551	13	0
454	140	210	5.551	13	0
455	142	209	5.551	13	0
456	140	208	5.551	13	0
457	141	210	5.551	13	0
458	207	139	5.551	13	0
459	26	36	21.633	14	0
460	27	35	21.633	14	0
461	35	25	15.409	14	0
462	26	34	15.409	14	0
463	22	34	18.313	14	0
464	25	31	18.313	14	0
465	26	32	18.313	14	0
466	23	35	18.313	14	0
467	29	21	21.633	14	0
468	30	20	21.633	14	0
469	29	39	20.839	14	0
470	38	30	20.839	14	0
471	43	31	17.367	14	0
472	40	34	17.367	14	0
473	43	35	14.272	14	0
474	44	34	14.272	14	0
475	35	45	20.839	14	0
476	36	44	20.839	14	0
477	27	33	18.313	14	0

Beams Cont...

Beam	Node A	Node B	Length (ft)	Property	β (degrees)
478	36	24	18.313	14	0
479	36	42	17.367	14	0
480	45	33	17.367	14	0
483	175	182	5.775	11	0
484	181	180	5.775	11	0
485	179	178	5.775	11	0
486	177	176	5.775	11	0
487	211	130	2.250	12	0
488	212	129	2.250	12	0
489	213	127	2.250	12	0
490	214	128	2.250	12	0
491	215	177	2.250	11	0
492	214	215	4.083	12	0
493	216	181	2.250	11	0
494	212	216	4.083	12	0
495	217	175	2.250	11	0
496	213	217	4.083	12	0
497	218	179	2.250	11	0
498	211	218	4.083	12	0
499	185	184	5.775	11	0
500	183	190	5.775	11	0
501	189	188	5.775	11	0
502	187	186	5.775	11	0
503	219	132	2.250	12	0
504	220	187	2.250	11	0
505	219	220	4.083	12	0
506	221	133	2.250	12	0
507	222	183	2.250	11	0
508	221	222	4.083	12	0
509	223	131	2.250	12	0
510	224	185	2.250	11	0
511	223	224	4.083	12	0
512	225	134	2.250	12	0
513	226	189	2.250	11	0
514	225	226	4.083	12	0
515	168	171	5.775	11	0
516	172	170	5.775	11	0
517	169	174	5.775	11	0
518	173	167	5.775	11	0
519	227	136	2.250	12	0
520	228	173	2.250	11	0
521	227	228	4.083	12	0
522	229	137	2.250	12	0
523	230	172	2.250	11	0
524	229	230	4.083	12	0

Beams Cont...

Beam	Node A	Node B	Length (ft)	Property	β (degrees)
525	231	135	2.250	12	0
526	232	168	2.250	11	0
527	231	232	4.083	12	0
528	233	138	2.250	12	0
529	234	169	2.250	11	0
530	233	234	4.083	12	0
531	26	18	21.633	14	0
532	27	17	21.633	14	0
533	26	16	15.409	14	0
534	25	17	15.409	14	0
535	25	13	18.313	14	0
536	22	16	18.313	14	0
537	18	24	18.313	14	0
538	15	27	18.313	14	0
539	21	11	21.633	14	0
540	20	12	21.633	14	0
541	14	26	18.313	14	0
542	17	23	18.313	14	0
583	235	243	4.500	15	45
584	237	246	4.500	15	45
585	239	245	4.500	15	45
586	241	244	4.500	15	45
587	243	247	2.711	15	45
588	244	250	2.711	15	45
589	245	252	2.711	15	45
590	246	253	2.711	15	45
591	247	111	0.250	7	0
592	248	112	0.250	7	0
593	249	111	0.250	7	0
594	250	113	0.250	7	0
595	251	268	1.917	7	0
596	252	269	1.917	7	0
597	253	270	1.917	7	0
598	254	271	1.917	7	0
599	249	241	2.711	15	45
600	247	249	0.353	15	45
601	251	239	2.711	15	45
602	250	251	0.353	15	45
603	254	237	2.711	15	45
604	252	254	0.353	15	45
605	248	235	2.711	15	45
606	253	248	0.353	15	45
631	14	255	4.500	4	0
632	255	256	4.500	4	0
633	256	257	4.500	4	0

Beams Cont...

Beam	Node A	Node B	Length (ft)	Property	β (degrees)
634	257	15	4.500	4	0
635	258	255	13.833	3	0
636	255	259	17.333	3	0
637	260	256	13.833	3	0
638	256	261	17.333	3	0
639	262	257	13.833	3	0
640	257	263	17.333	3	0
641	264	247	1.917	7	0
642	265	248	1.917	7	0
643	266	249	1.917	7	0
644	267	250	1.917	7	0
645	268	101	3.729	7	0
646	269	102	3.729	7	0
647	270	105	3.729	7	0
648	271	106	3.729	7	0
653	10	11	9.667	16	0
654	11	259	4.500	16	0
655	259	261	4.500	16	0
656	261	263	4.500	16	0
657	263	12	4.500	16	0
658	12	15	17.333	16	0
659	15	18	13.833	16	0
660	18	262	4.500	16	0
661	262	260	4.500	16	0
662	260	258	4.500	16	0
663	258	17	4.500	16	0
664	17	16	9.667	16	0
665	10	273	13.833	16	0
667	273	272	9.667	3	0
668	17	274	4.833	16	0
669	14	272	3.500	16	0
670	272	11	13.833	16	0
672	274	14	9.000	16	0
673	275	16	4.833	16	0
674	274	275	9.667	3	0

Plates

Plate	Node A	Node B	Node C	Node D	Property
543	19	22	13	10	1
544	22	25	16	13	1
545	25	26	17	16	1
546	26	27	18	17	1
547	27	24	15	18	1
548	24	21	12	15	1
549	21	20	11	12	1
550	20	19	10	11	1
551	30	29	20	21	1
552	29	28	19	20	1
553	39	38	29	30	1
554	38	37	28	29	1
555	37	40	31	28	1
556	28	31	22	19	1
557	40	43	34	31	1
558	31	34	25	22	1
559	43	44	35	34	1
560	34	35	26	25	1
561	44	45	36	35	1
562	35	36	27	26	1
563	45	42	33	36	1
564	36	33	24	27	1
565	33	30	21	24	1
566	42	39	30	33	1
567	92	97	89	84	1
568	97	98	90	89	1
569	98	94	86	90	1
570	94	93	85	86	1
571	93	96	88	85	1
572	96	95	87	88	1
573	95	91	83	87	1
574	91	92	84	83	1
575	103	99	91	95	1
576	99	100	92	91	1
577	100	105	97	92	1
578	105	106	98	97	1
579	106	102	94	98	1
580	102	101	93	94	1
581	101	104	96	93	1
582	104	103	95	96	1
607	175	176	235	243	1
608	176	177	246	235	1
609	177	178	237	246	1
610	178	179	245	237	1
611	179	180	239	245	1

Plates Cont...

Plate	Node A	Node B	Node C	Node D	Property
612	180	181	244	239	1
613	181	182	241	244	1
614	182	175	243	241	1
615	184	185	175	182	1
616	185	186	176	175	1
617	186	187	177	176	1
618	187	188	178	177	1
619	188	189	179	178	1
620	189	190	180	179	1
621	190	183	181	180	1
622	183	184	182	181	1
623	172	171	184	183	1
624	171	168	185	184	1
625	168	167	186	185	1
626	167	173	187	186	1
627	173	174	188	187	1
628	174	169	189	188	1
629	169	170	190	189	1
630	170	172	183	190	1
649	141	139	167	168	1
650	139	140	174	173	1
651	140	142	170	169	1
652	142	141	171	172	1

Section Properties

Prop	Section	Area (in^2)	I_{yy} (in^4)	I_{zz} (in^4)	J (in^4)	Material
2	W10X54	15.800	103.000	303.000	1.820	STEEL
3	W12X22	6.480	4.660	156.000	0.293	STEEL
4	W18X50	14.700	40.100	800.000	1.240	STEEL
5	W12X30	8.790	20.300	238.000	0.457	STEEL
6	W12X26	7.650	17.300	204.000	0.300	STEEL
7	W21X50	14.700	24.900	984.000	1.140	STEEL
8	W8X35	10.300	42.600	127.000	0.769	STEEL
9	HSST6X6X0.25	5.240	28.600	28.600	44.690	STEEL
10	W8X18	5.260	7.970	61.900	0.172	STEEL
11	C8X11	3.370	1.310	32.500	0.130	STEEL
12	HSST6X3X0.25	3.840	5.700	17.000	13.904	STEEL
13	HSST2X2X0.125	0.840	0.486	0.486	0.776	STEEL
14	HSST4X4X0.25	3.370	7.800	7.800	12.455	STEEL
15	L60606	4.380	24.518	6.256	0.208	STEEL
16	W8X10	2.960	2.090	30.800	0.0426	STEEL

Plate Thickness

Prop	Node A (in)	Node B (in)	Node C (in)	Node D (in)	Material
1	0.250	0.250	0.250	0.250	-

Materials

Mat	Name	E (kip/in^2)	ν	Density (kip/in^3)	α (/°F)
1	CONCRETE	3.15E+3	0.170	8.7e-05	5E -6
2	ALUMINUM	10E+3	0.330	9.8e-05	13E -6
3	STEEL_50_KSI	29E+3	0.300	0.000283	6.5E -6
4	STAINLESSSTEEL	28E+3	0.300	0.000283	9.9E -6
5	STEEL_36_KSI	29E+3	0.300	0.000283	6.5E -6
6	STEEL_275_NMM2	29.7E+3	0.300	0.000	6.67E -6
7	STEEL	29E+3	0.300	0.000283	6E -6
8	STEEL_355_NMM2	29.7E+3	0.300	0.000	6.67E -6

Supports

Node	X (kip/in)	Y (kip/in)	Z (kip/in)	rX (kip-ft/deg)	rY (kip-ft/deg)	rZ (kip-ft/deg)
1	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
2	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
3	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
4	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
5	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
6	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
7	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
8	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
9	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed

Releases

Beam ends not shown in this table are fixed in all directions.

Beam	Node	x	y	z	rx	ry	rz
37	19	Fixed	Fixed	Fixed	Fixed	Pin	Pin
38	22	Fixed	Fixed	Fixed	Fixed	Pin	Pin
39	25	Fixed	Fixed	Fixed	Fixed	Pin	Pin
39	26	Fixed	Fixed	Fixed	Fixed	Pin	Pin
40	26	Fixed	Fixed	Fixed	Fixed	Pin	Pin
41	27	Fixed	Fixed	Fixed	Fixed	Pin	Pin
41	24	Fixed	Fixed	Fixed	Fixed	Pin	Pin
42	24	Fixed	Fixed	Fixed	Fixed	Pin	Pin
42	21	Fixed	Fixed	Fixed	Fixed	Pin	Pin
43	21	Fixed	Fixed	Fixed	Fixed	Pin	Pin
44	20	Fixed	Fixed	Fixed	Fixed	Pin	Pin
44	19	Fixed	Fixed	Fixed	Fixed	Pin	Pin
45	23	Fixed	Fixed	Fixed	Fixed	Pin	Pin
46	20	Fixed	Fixed	Fixed	Fixed	Pin	Pin
47	23	Fixed	Fixed	Fixed	Fixed	Pin	Pin
48	47	Fixed	Fixed	Fixed	Fixed	Pin	Pin
48	46	Fixed	Fixed	Fixed	Fixed	Pin	Pin
49	23	Fixed	Fixed	Fixed	Fixed	Pin	Pin
50	22	Fixed	Fixed	Fixed	Fixed	Pin	Pin
53	24	Fixed	Fixed	Fixed	Fixed	Pin	Pin
54	20	Fixed	Fixed	Fixed	Fixed	Pin	Pin
59	27	Fixed	Fixed	Fixed	Fixed	Pin	Pin
60	54	Fixed	Fixed	Fixed	Fixed	Pin	Pin
60	48	Fixed	Fixed	Fixed	Fixed	Pin	Pin
61	48	Fixed	Fixed	Fixed	Fixed	Pin	Pin
61	51	Fixed	Fixed	Fixed	Fixed	Pin	Pin
62	55	Fixed	Fixed	Fixed	Fixed	Pin	Pin
62	49	Fixed	Fixed	Fixed	Fixed	Pin	Pin
63	49	Fixed	Fixed	Fixed	Fixed	Pin	Pin
63	52	Fixed	Fixed	Fixed	Fixed	Pin	Pin
64	56	Fixed	Fixed	Fixed	Fixed	Pin	Pin
64	50	Fixed	Fixed	Fixed	Fixed	Pin	Pin
65	50	Fixed	Fixed	Fixed	Fixed	Pin	Pin
65	53	Fixed	Fixed	Fixed	Fixed	Pin	Pin
66	25	Fixed	Fixed	Fixed	Fixed	Pin	Pin
67	26	Fixed	Fixed	Fixed	Fixed	Pin	Pin
68	57	Fixed	Fixed	Fixed	Fixed	Pin	Pin
68	58	Fixed	Fixed	Fixed	Fixed	Pin	Pin
69	28	Fixed	Fixed	Fixed	Fixed	Pin	Pin
70	31	Fixed	Fixed	Fixed	Fixed	Pin	Pin
71	34	Fixed	Fixed	Fixed	Fixed	Pin	Pin
71	35	Fixed	Fixed	Fixed	Fixed	Pin	Pin
72	35	Fixed	Fixed	Fixed	Fixed	Pin	Pin
73	36	Fixed	Fixed	Fixed	Fixed	Pin	Pin

Releases Cont...

Beam	Node	x	y	z	rx	ry	rz
73	33	Fixed	Fixed	Fixed	Fixed	Pin	Pin
74	33	Fixed	Fixed	Fixed	Fixed	Pin	Pin
74	30	Fixed	Fixed	Fixed	Fixed	Pin	Pin
75	30	Fixed	Fixed	Fixed	Fixed	Pin	Pin
76	29	Fixed	Fixed	Fixed	Fixed	Pin	Pin
76	28	Fixed	Fixed	Fixed	Fixed	Pin	Pin
77	32	Fixed	Fixed	Fixed	Fixed	Pin	Pin
78	29	Fixed	Fixed	Fixed	Fixed	Pin	Pin
79	32	Fixed	Fixed	Fixed	Fixed	Pin	Pin
80	59	Fixed	Fixed	Fixed	Fixed	Pin	Pin
80	64	Fixed	Fixed	Fixed	Fixed	Pin	Pin
81	32	Fixed	Fixed	Fixed	Fixed	Pin	Pin
82	31	Fixed	Fixed	Fixed	Fixed	Pin	Pin
85	33	Fixed	Fixed	Fixed	Fixed	Pin	Pin
86	29	Fixed	Fixed	Fixed	Fixed	Pin	Pin
91	36	Fixed	Fixed	Fixed	Fixed	Pin	Pin
92	61	Fixed	Fixed	Fixed	Fixed	Pin	Pin
92	63	Fixed	Fixed	Fixed	Fixed	Pin	Pin
93	63	Fixed	Fixed	Fixed	Fixed	Pin	Pin
93	68	Fixed	Fixed	Fixed	Fixed	Pin	Pin
94	70	Fixed	Fixed	Fixed	Fixed	Pin	Pin
94	66	Fixed	Fixed	Fixed	Fixed	Pin	Pin
95	66	Fixed	Fixed	Fixed	Fixed	Pin	Pin
95	69	Fixed	Fixed	Fixed	Fixed	Pin	Pin
96	71	Fixed	Fixed	Fixed	Fixed	Pin	Pin
96	67	Fixed	Fixed	Fixed	Fixed	Pin	Pin
97	67	Fixed	Fixed	Fixed	Fixed	Pin	Pin
97	62	Fixed	Fixed	Fixed	Fixed	Pin	Pin
98	34	Fixed	Fixed	Fixed	Fixed	Pin	Pin
99	35	Fixed	Fixed	Fixed	Fixed	Pin	Pin
100	60	Fixed	Fixed	Fixed	Fixed	Pin	Pin
100	65	Fixed	Fixed	Fixed	Fixed	Pin	Pin
101	37	Fixed	Fixed	Fixed	Fixed	Pin	Pin
103	39	Fixed	Fixed	Fixed	Fixed	Pin	Pin
105	37	Fixed	Fixed	Fixed	Fixed	Pin	Pin
107	43	Fixed	Fixed	Fixed	Fixed	Pin	Pin
109	38	Fixed	Fixed	Fixed	Fixed	Pin	Pin
111	39	Fixed	Fixed	Fixed	Fixed	Pin	Pin
112	72	Fixed	Fixed	Fixed	Fixed	Pin	Pin
113	45	Fixed	Fixed	Fixed	Fixed	Pin	Pin
119	43	Fixed	Fixed	Fixed	Fixed	Pin	Pin
121	45	Fixed	Fixed	Fixed	Fixed	Pin	Pin
123	75	Fixed	Fixed	Fixed	Fixed	Pin	Pin
126	79	Fixed	Fixed	Fixed	Fixed	Pin	Pin
131	77	Fixed	Fixed	Fixed	Fixed	Pin	Pin

Releases Cont...

Beam	Node	x	y	z	rx	ry	rz
132	81	Fixed	Fixed	Fixed	Fixed	Pin	Pin
135	44	Fixed	Fixed	Fixed	Fixed	Pin	Pin
136	74	Fixed	Fixed	Fixed	Fixed	Pin	Pin
137	83	Fixed	Fixed	Fixed	Fixed	Pin	Pin
137	84	Fixed	Fixed	Fixed	Fixed	Pin	Pin
138	85	Fixed	Fixed	Fixed	Fixed	Pin	Pin
138	86	Fixed	Fixed	Fixed	Fixed	Pin	Pin
139	89	Fixed	Fixed	Fixed	Fixed	Pin	Pin
139	90	Fixed	Fixed	Fixed	Fixed	Pin	Pin
140	87	Fixed	Fixed	Fixed	Fixed	Pin	Pin
140	88	Fixed	Fixed	Fixed	Fixed	Pin	Pin
141	83	Fixed	Fixed	Fixed	Fixed	Pin	Pin
141	87	Fixed	Fixed	Fixed	Fixed	Pin	Pin
142	88	Fixed	Fixed	Fixed	Fixed	Pin	Pin
142	85	Fixed	Fixed	Fixed	Fixed	Pin	Pin
143	86	Fixed	Fixed	Fixed	Fixed	Pin	Pin
143	90	Fixed	Fixed	Fixed	Fixed	Pin	Pin
144	89	Fixed	Fixed	Fixed	Fixed	Pin	Pin
144	84	Fixed	Fixed	Fixed	Fixed	Pin	Pin
161	91	Fixed	Fixed	Fixed	Fixed	Pin	Pin
162	92	Fixed	Fixed	Fixed	Fixed	Pin	Pin
163	95	Fixed	Fixed	Fixed	Fixed	Pin	Pin
164	96	Fixed	Fixed	Fixed	Fixed	Pin	Pin
165	95	Fixed	Fixed	Fixed	Fixed	Pin	Pin
165	96	Fixed	Fixed	Fixed	Fixed	Pin	Pin
166	96	Fixed	Fixed	Fixed	Fixed	Pin	Pin
166	93	Fixed	Fixed	Fixed	Fixed	Pin	Pin
167	93	Fixed	Fixed	Fixed	Fixed	Pin	Pin
167	94	Fixed	Fixed	Fixed	Fixed	Pin	Pin
168	94	Fixed	Fixed	Fixed	Fixed	Pin	Pin
168	98	Fixed	Fixed	Fixed	Fixed	Pin	Pin
169	98	Fixed	Fixed	Fixed	Fixed	Pin	Pin
169	97	Fixed	Fixed	Fixed	Fixed	Pin	Pin
170	97	Fixed	Fixed	Fixed	Fixed	Pin	Pin
170	92	Fixed	Fixed	Fixed	Fixed	Pin	Pin
171	92	Fixed	Fixed	Fixed	Fixed	Pin	Pin
171	91	Fixed	Fixed	Fixed	Fixed	Pin	Pin
172	91	Fixed	Fixed	Fixed	Fixed	Pin	Pin
172	95	Fixed	Fixed	Fixed	Fixed	Pin	Pin
173	93	Fixed	Fixed	Fixed	Fixed	Pin	Pin
175	94	Fixed	Fixed	Fixed	Fixed	Pin	Pin
177	97	Fixed	Fixed	Fixed	Fixed	Pin	Pin
179	98	Fixed	Fixed	Fixed	Fixed	Pin	Pin
181	99	Fixed	Fixed	Fixed	Fixed	Pin	Pin
182	100	Fixed	Fixed	Fixed	Fixed	Pin	Pin

Releases Cont...

Beam	Node	x	y	z	rx	ry	rz
183	103	Fixed	Fixed	Fixed	Fixed	Pin	Pin
184	104	Fixed	Fixed	Fixed	Fixed	Pin	Pin
185	103	Fixed	Fixed	Fixed	Fixed	Pin	Pin
185	104	Fixed	Fixed	Fixed	Fixed	Pin	Pin
186	104	Fixed	Fixed	Fixed	Fixed	Pin	Pin
186	101	Fixed	Fixed	Fixed	Fixed	Pin	Pin
187	101	Fixed	Fixed	Fixed	Fixed	Pin	Pin
187	102	Fixed	Fixed	Fixed	Fixed	Pin	Pin
188	102	Fixed	Fixed	Fixed	Fixed	Pin	Pin
188	106	Fixed	Fixed	Fixed	Fixed	Pin	Pin
189	106	Fixed	Fixed	Fixed	Fixed	Pin	Pin
189	105	Fixed	Fixed	Fixed	Fixed	Pin	Pin
190	105	Fixed	Fixed	Fixed	Fixed	Pin	Pin
190	100	Fixed	Fixed	Fixed	Fixed	Pin	Pin
191	100	Fixed	Fixed	Fixed	Fixed	Pin	Pin
191	99	Fixed	Fixed	Fixed	Fixed	Pin	Pin
192	99	Fixed	Fixed	Fixed	Fixed	Pin	Pin
192	103	Fixed	Fixed	Fixed	Fixed	Pin	Pin
220	115	Fixed	Fixed	Fixed	Fixed	Pin	Pin
223	117	Fixed	Fixed	Fixed	Fixed	Pin	Pin
225	116	Fixed	Fixed	Fixed	Fixed	Pin	Pin
226	119	Fixed	Fixed	Fixed	Fixed	Pin	Pin
227	118	Fixed	Fixed	Fixed	Fixed	Pin	Pin
230	122	Fixed	Fixed	Fixed	Fixed	Pin	Pin
233	123	Fixed	Fixed	Fixed	Fixed	Pin	Pin
237	126	Fixed	Fixed	Fixed	Fixed	Pin	Pin
631	14	Fixed	Fixed	Fixed	Fixed	Pin	Pin
634	15	Fixed	Fixed	Fixed	Fixed	Pin	Pin
635	258	Fixed	Fixed	Fixed	Fixed	Pin	Pin
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637	260	Fixed	Fixed	Fixed	Fixed	Pin	Pin
637	256	Fixed	Fixed	Fixed	Fixed	Pin	Pin
638	256	Fixed	Fixed	Fixed	Fixed	Pin	Pin
638	261	Fixed	Fixed	Fixed	Fixed	Pin	Pin
639	262	Fixed	Fixed	Fixed	Fixed	Pin	Pin
639	257	Fixed	Fixed	Fixed	Fixed	Pin	Pin
640	257	Fixed	Fixed	Fixed	Fixed	Pin	Pin
640	263	Fixed	Fixed	Fixed	Fixed	Pin	Pin
645	101	Fixed	Fixed	Fixed	Fixed	Pin	Pin
646	102	Fixed	Fixed	Fixed	Fixed	Pin	Pin
647	105	Fixed	Fixed	Fixed	Fixed	Pin	Pin
648	106	Fixed	Fixed	Fixed	Fixed	Pin	Pin
653	10	Fixed	Fixed	Fixed	Fixed	Pin	Pin

Releases Cont...

Beam	Node	x	y	z	rx	ry	rz
653	11	Fixed	Fixed	Fixed	Fixed	Pin	Pin
654	11	Fixed	Fixed	Fixed	Fixed	Pin	Pin
657	12	Fixed	Fixed	Fixed	Fixed	Pin	Pin
658	12	Fixed	Fixed	Fixed	Fixed	Pin	Pin
658	15	Fixed	Fixed	Fixed	Fixed	Pin	Pin
659	15	Fixed	Fixed	Fixed	Fixed	Pin	Pin
659	18	Fixed	Fixed	Fixed	Fixed	Pin	Pin
660	18	Fixed	Fixed	Fixed	Fixed	Pin	Pin
663	17	Fixed	Fixed	Fixed	Fixed	Pin	Pin
664	17	Fixed	Fixed	Fixed	Fixed	Pin	Pin
664	16	Fixed	Fixed	Fixed	Fixed	Pin	Pin
665	10	Fixed	Fixed	Fixed	Fixed	Pin	Pin
665	273	Fixed	Fixed	Fixed	Fixed	Pin	Pin
667	273	Fixed	Fixed	Fixed	Fixed	Pin	Pin
667	272	Fixed	Fixed	Fixed	Fixed	Pin	Pin
668	17	Fixed	Fixed	Fixed	Fixed	Pin	Pin
669	14	Fixed	Fixed	Fixed	Fixed	Pin	Pin
670	11	Fixed	Fixed	Fixed	Fixed	Pin	Pin
672	14	Fixed	Fixed	Fixed	Fixed	Pin	Pin
673	275	Fixed	Fixed	Fixed	Fixed	Pin	Pin
673	16	Fixed	Fixed	Fixed	Fixed	Pin	Pin
674	274	Fixed	Fixed	Fixed	Fixed	Pin	Pin
674	275	Fixed	Fixed	Fixed	Fixed	Pin	Pin

Reference Load Cases

Number	Name	Type
R1	REF DEAD	Mass

Primary Load Cases

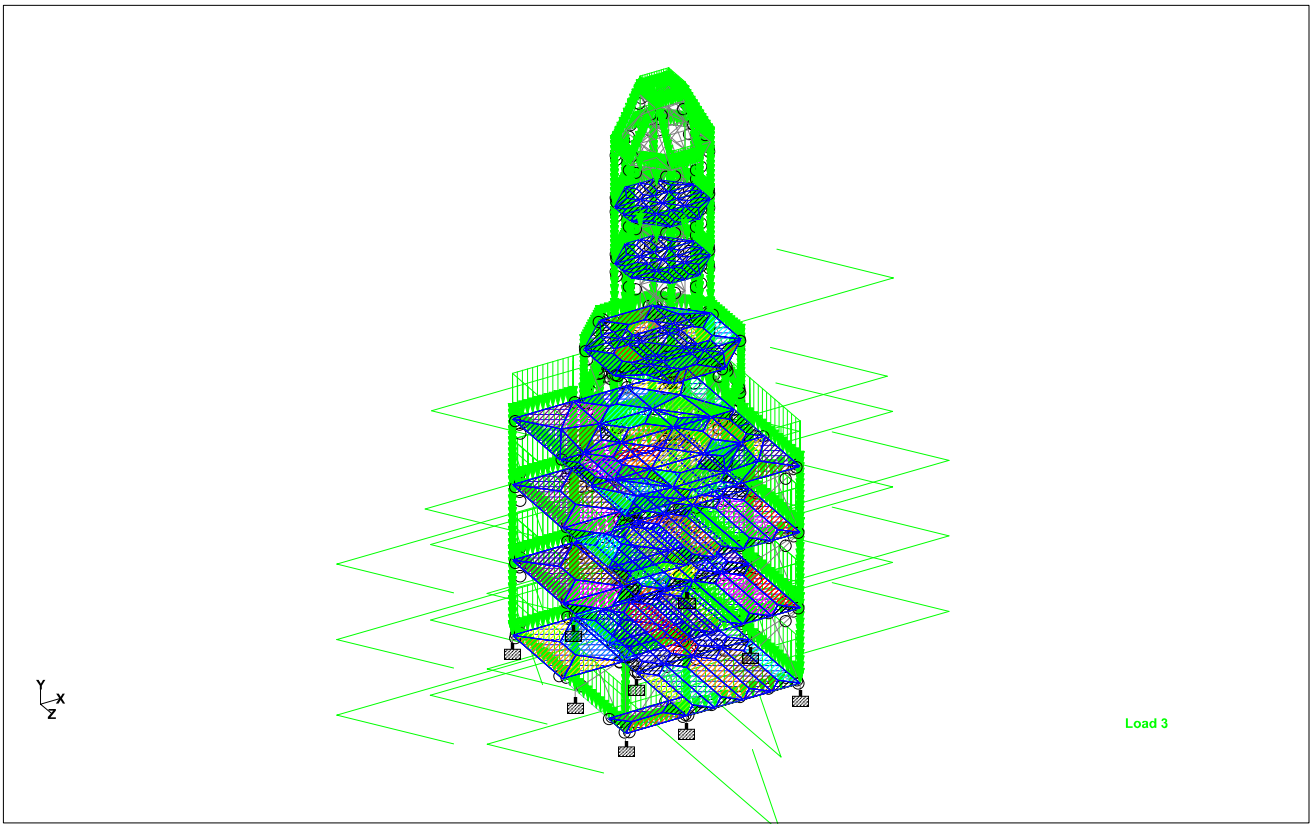
Number	Name	Type
1	EQ(X)	Seismic
2	EQ(Z)	Seismic
3	DEAD	Dead
4	LIVE	Live
5	SNOW	Snow
6	LIVE ROOF	Roof Live
7	WIND(X-)	Wind
8	WIND(Z-)	Wind

Combination Load Cases

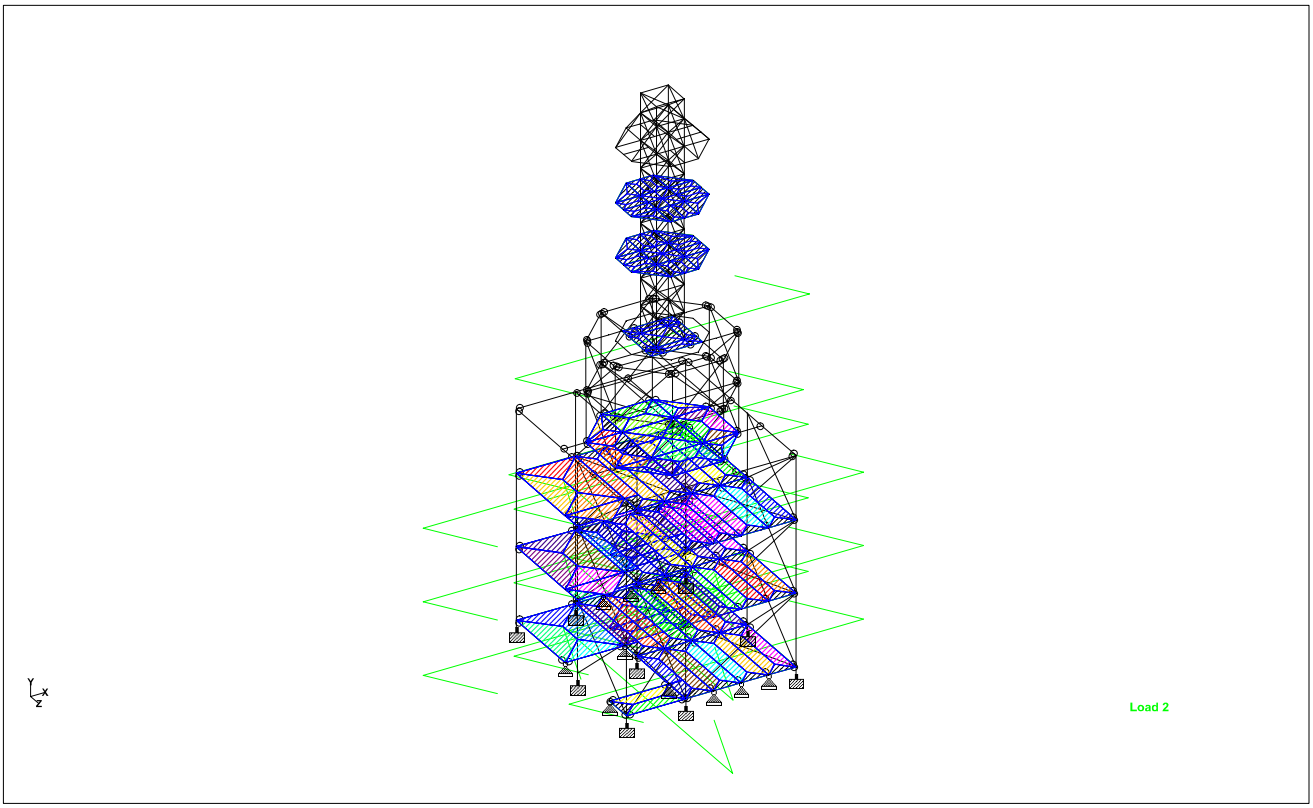
Comb.	Combination L/C Name	Primary	Primary L/C Name	Factor
9	1.4D	3	DEAD	1.40
10	1.2D+1.6L+0.5LR	3	DEAD	1.20
		4	LIVE	1.60
		6	LIVE ROOF	0.50
12	1.2D+1.6L+0.5S	3	DEAD	1.20
		4	LIVE	1.60
		5	SNOW	0.50
13	1.2D+1.6LR+L	3	DEAD	1.20
		4	LIVE	1.00
		6	LIVE ROOF	1.60
14	1.2D+1.6LR+0.5W(X)	3	DEAD	1.20
		6	LIVE ROOF	1.60
		7	WIND(X-)	0.50
15	1.2D+1.6LR+0.5W(Z)	3	DEAD	1.20
		6	LIVE ROOF	1.60
		8	WIND(Z-)	0.50
19	1.2D+1.6S+L	3	DEAD	1.20
		4	LIVE	1.00
		5	SNOW	1.60
20	1.2D+1.6S+0.5W(X)	3	DEAD	1.20
		7	WIND(X-)	0.50
		5	SNOW	1.60
21	1.2D+1.6S+0.5W(Z)	3	DEAD	1.20
		8	WIND(Z-)	0.50
		5	SNOW	1.60
22	1.2D+1.0W(X)+L+0.5LR	3	DEAD	1.20
		4	LIVE	1.00
		6	LIVE ROOF	0.50
		7	WIND(X-)	1.00
23	1.2D+1.0W(Z)+L+0.5LR	3	DEAD	1.20
		4	LIVE	1.00
		6	LIVE ROOF	0.50
		8	WIND(Z-)	1.00
26	1.2D+1.0W(X)+L+0.5S	3	DEAD	1.20
		4	LIVE	1.00
		7	WIND(X-)	1.00
		5	SNOW	0.50
27	1.2D+1.0W(Z)+L+0.5S	3	DEAD	1.20
		4	LIVE	1.00
		8	WIND(Z-)	1.00
		5	SNOW	0.50
28	1.2D+1.0E(X)+L+0.2S	3	DEAD	1.20
		4	LIVE	1.00
		1	EQ(X)	1.00
		5	SNOW	0.20

Combination Load Cases Cont...

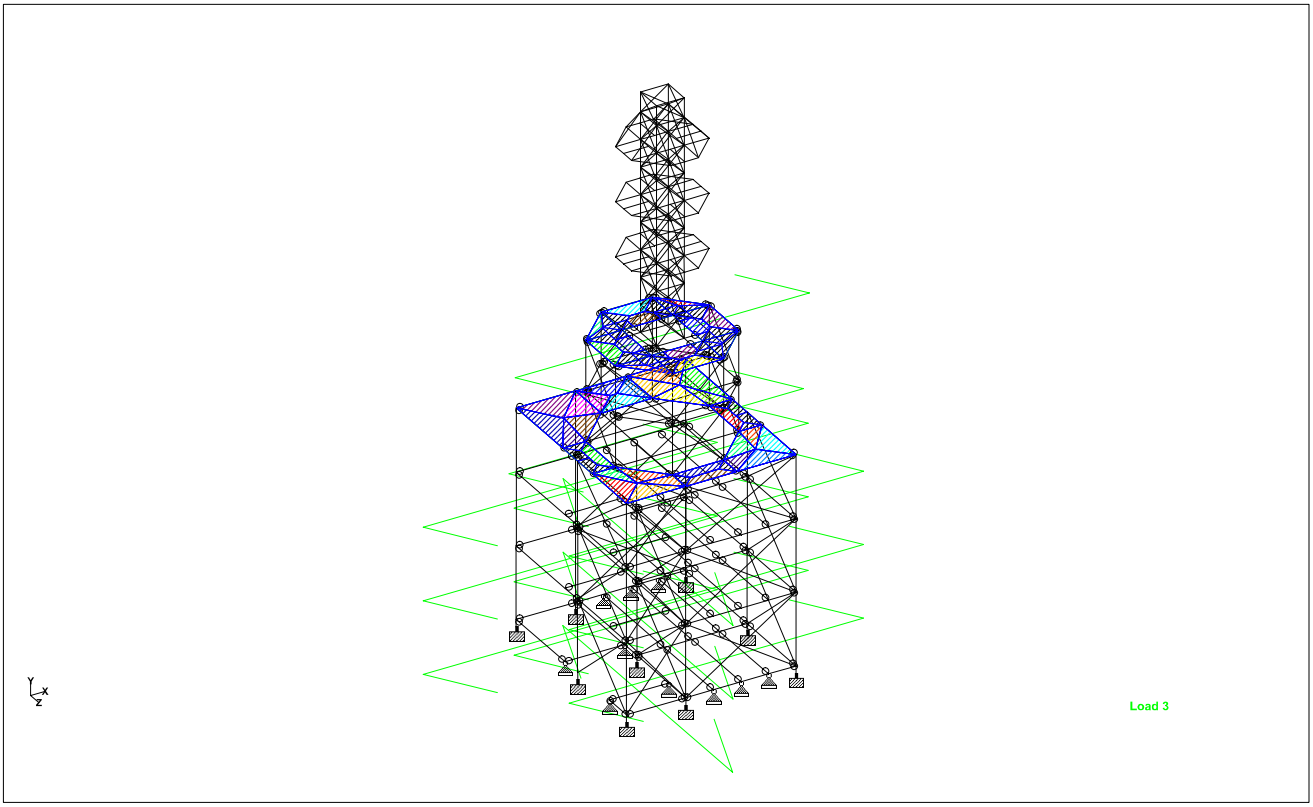
Comb.	Combination L/C Name	Primary	Primary L/C Name	Factor
29	1.2D+1.0E(Z)+L+0.2S	3	DEAD	1.20
		4	LIVE	1.00
		2	EQ(Z)	1.00
		5	SNOW	0.20
30	1.2D-1.0E(X)+L+0.2S	3	DEAD	1.20
		4	LIVE	1.00
		1	EQ(X)	-1.00
		5	SNOW	0.20
31	1.2D-1.0E(Z)+L+0.2S	3	DEAD	1.20
		4	LIVE	1.00
		2	EQ(Z)	-1.00
		5	SNOW	0.20
32	0.9D+1.0W(X)	3	DEAD	0.90
		7	WIND(X-)	1.00
33	0.9D+1.0W(Z)	3	DEAD	0.90
		8	WIND(Z-)	1.00
34	0.9D+1.0E(X)	3	DEAD	0.90
		1	EQ(X)	1.00
35	0.9D+1.0E(Z)	3	DEAD	0.90
		2	EQ(Z)	1.00
36	0.9D-1.0E(X)	3	DEAD	0.90
		1	EQ(X)	-1.00
37	0.9D-1.0E(Z)	3	DEAD	0.90
		2	EQ(Z)	-1.00



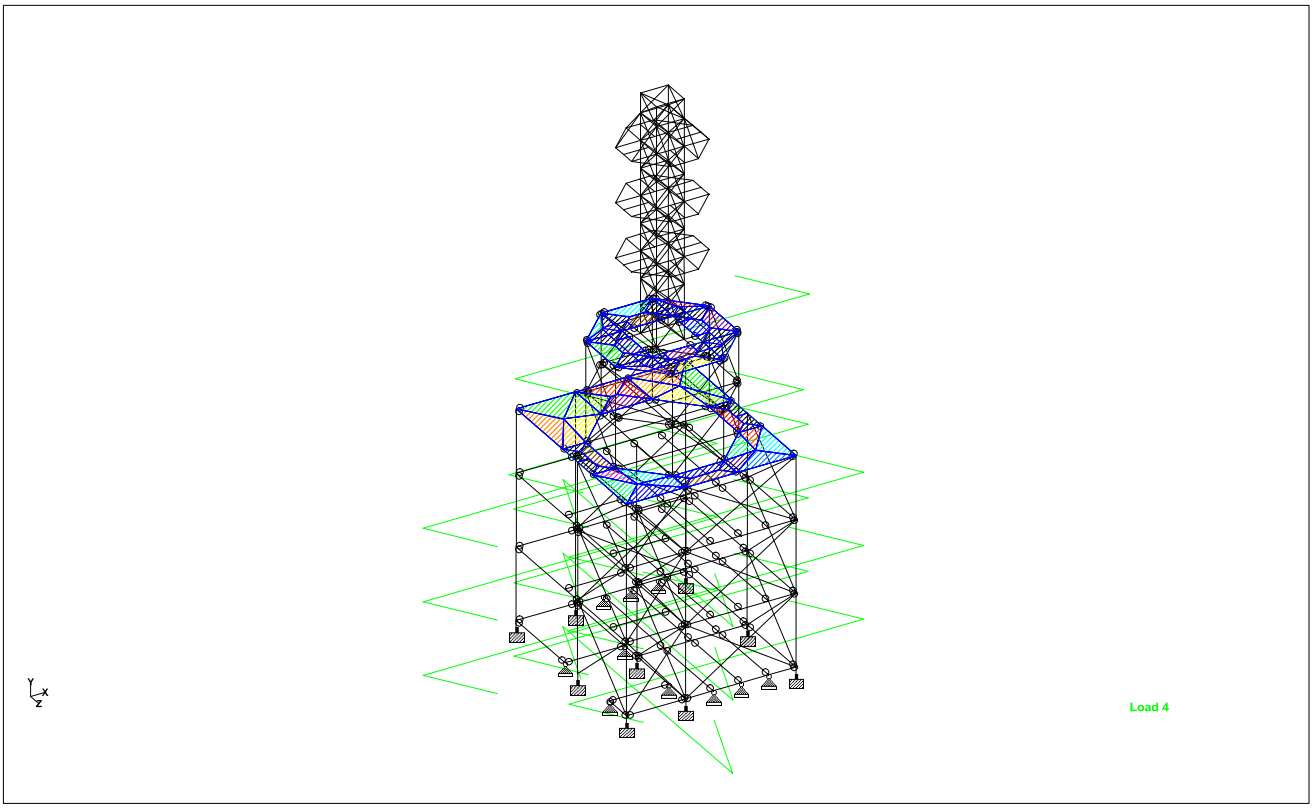
Dead Loads



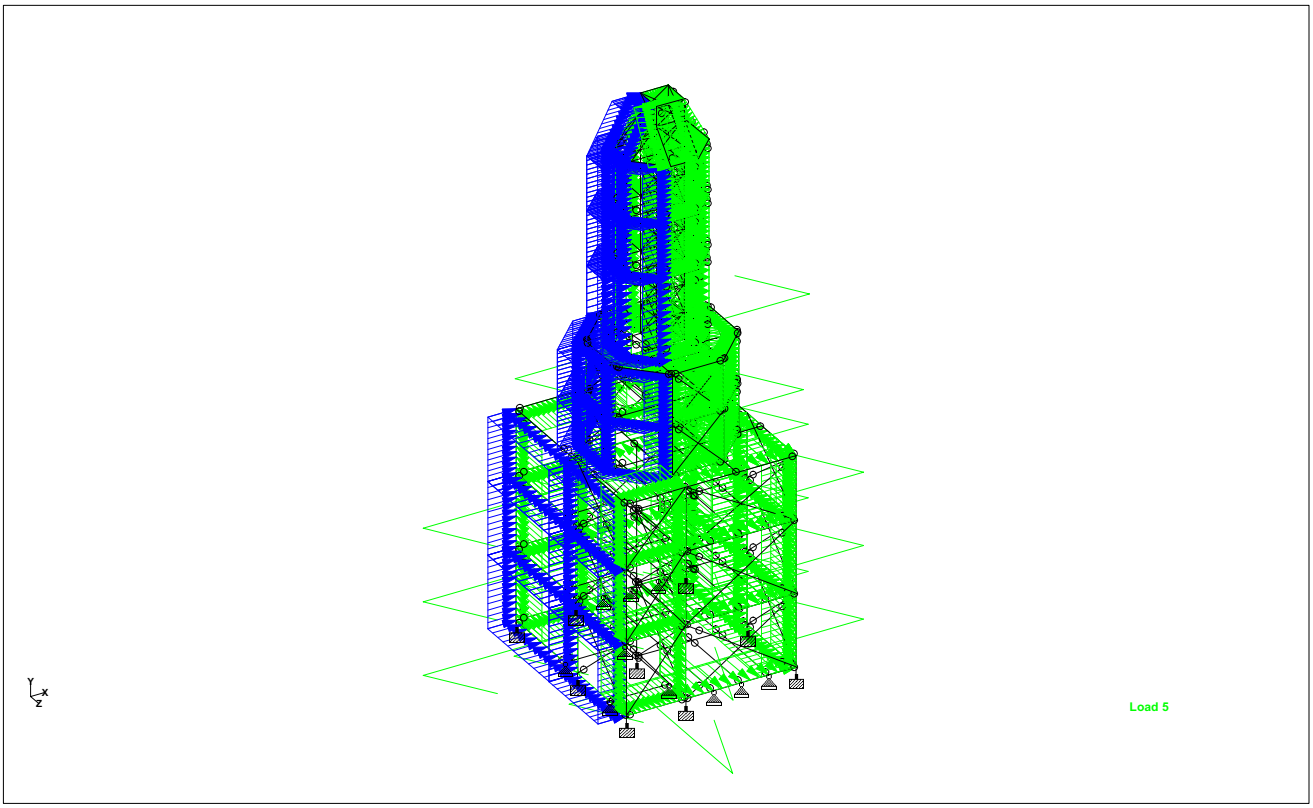
Live Loads



Snow Loads



Roof Live Load



Typical Wind Loads

Utilization Ratio

Beam	Analysis Property	Design Property	Actual Ratio	Allowable Ratio	Ratio (Act./Allow.)	Clause	L/C	Ax (in^2)	Iz (in^4)	Iy (in^4)	Ix (in^4)
1	W10X54	W10X54	0.305	1.000	0.305	Eq. H1-1b	12	15.800	303.000	103.000	1.820
2	W10X54	W10X54	0.089	1.000	0.089	Sec. E1	12	15.800	303.000	103.000	1.820
3	W10X54	W10X54	0.061	1.000	0.061	Sec. E1	12	15.800	303.000	103.000	1.820
4	W10X54	W10X54	0.036	1.000	0.036	Eq. H1-1b	26	15.800	303.000	103.000	1.820
5	W10X54	W10X54	0.160	1.000	0.160	Sec. E4	12	15.800	303.000	103.000	1.820
6	W10X54	W10X54	0.129	1.000	0.129	Sec. E1	12	15.800	303.000	103.000	1.820
7	W10X54	W10X54	0.097	1.000	0.097	Sec. E1	12	15.800	303.000	103.000	1.820
8	W10X54	W10X54	06838	1.000	0.06838	Eq. H1-2	19	15.800	303.000	103.000	1.820
9	W10X54	W10X54	0.481	1.000	0.481	Eq. H1-1a	26	15.800	303.000	103.000	1.820
10	W10X54	W10X54	0.167	1.000	0.167	Sec. E1	12	15.800	303.000	103.000	1.820
11	W10X54	W10X54	0.117	1.000	0.117	Sec. E1	12	15.800	303.000	103.000	1.820
12	W10X54	W10X54	0.053	1.000	0.053	Sec. E1	26	15.800	303.000	103.000	1.820
13	W10X54	W10X54	0.280	1.000	0.280	Eq. H1-1a	26	15.800	303.000	103.000	1.820
14	W10X54	W10X54	0.173	1.000	0.173	Sec. E1	12	15.800	303.000	103.000	1.820
15	W10X54	W10X54	0.150	1.000	0.150	Sec. E1	26	15.800	303.000	103.000	1.820
16	W10X54	W10X54	0.109	1.000	0.109	Sec. E1	26	15.800	303.000	103.000	1.820
17	W10X54	W10X54	0.531	1.000	0.531	Eq. H1-1a	26	15.800	303.000	103.000	1.820
18	W10X54	W10X54	0.160	1.000	0.160	Sec. E1	26	15.800	303.000	103.000	1.820

Utilization Ratio Cont...

Beam	Analysis Property	Design Property	Actual	Allowable	Ratio (Act./Allow.)	Clause	L/C	Ax (in^2)	Iz (in^4)	Iy (in^4)	Ix (in^4)
19	W10X54	W10X54	0.113	1.000	0.113	Sec. E1	26	15.800	303.000	103.000	1.820
20	W10X54	W10X54	0.050	1.000	0.050	Sec. E1	26	15.800	303.000	103.000	1.820
21	W10X54	W10X54	0.185	1.000	0.185	Eq. H1-1b	27	15.800	303.000	103.000	1.820
22	W10X54	W10X54	0.113	1.000	0.113	Sec. E1	27	15.800	303.000	103.000	1.820
23	W10X54	W10X54	0.093	1.000	0.093	Sec. E1	27	15.800	303.000	103.000	1.820
24	W10X54	W10X54	0.085	1.000	0.085	Eq. H1-1b	27	15.800	303.000	103.000	1.820
25	W10X54	W10X54	0.345	1.000	0.345	Eq. H1-1b	27	15.800	303.000	103.000	1.820
26	W10X54	W10X54	0.085	1.000	0.085	Sec. E1	27	15.800	303.000	103.000	1.820
27	W10X54	W10X54	0.060	1.000	0.060	Sec. E1	27	15.800	303.000	103.000	1.820
28	W10X54	W10X54	41436	1.000	0.041436	Eq. H1-1b	26	15.800	303.000	103.000	1.820
29	W10X54	W10X54	0.148	1.000	0.148	Eq. H1-1b	26	15.800	303.000	103.000	1.820
30	W10X54	W10X54	0.115	1.000	0.115	Eq. H1-1b	26	15.800	303.000	103.000	1.820
31	W10X54	W10X54	0.076	1.000	0.076	Sec. E1	12	15.800	303.000	103.000	1.820
32	W10X54	W10X54	0.067	1.000	0.067	Eq. H1-1b	26	15.800	303.000	103.000	1.820
33	W10X54	W10X54	0.345	1.000	0.345	Eq. H1-1a	12	15.800	303.000	103.000	1.820
34	W10X54	W10X54	0.403	1.000	0.403	Eq. H1-1a	12	15.800	303.000	103.000	1.820
35	W10X54	W10X54	0.328	1.000	0.328	Eq. H1-1a	12	15.800	303.000	103.000	1.820
36	W10X54	W10X54	0.224	1.000	0.224	Eq. H1-1b	26	15.800	303.000	103.000	1.820
37	W12X30	W12X30	0.107	1.000	0.107			27.522	930.617	5.27E+3	1.75E+3
38	W12X30	W12X30	0.171	1.000	0.171	LRFD-H1-1B-	12	8.790	238.000	20.300	0.457
39	W12X26	W12X26	0.023	1.000	0.023			16.693	676.427	608.128	815.956
40	W12X30	W12X30	0.419	1.000	0.419	LRFD-H1-1B-	12	8.790	238.000	20.300	0.457
41	W12X30	W12X30	0.060	1.000	0.060			17.510	741.043	550.048	796.981
42	W12X30	W12X30	0.095	1.000	0.095			17.510	741.043	550.048	796.981
43	W12X30	W12X30	0.513	1.000	0.513	LRFD-H1-1B-	12	8.790	238.000	20.300	0.457
44	W12X26	W12X26	0.096	1.000	0.096	LRFD-H1-1B-	12	7.650	204.000	17.300	0.300
45	W18X50	W18X50	0.370	1.000	0.370	LRFD-H1-1B-	10	14.700	800.000	40.100	1.240
46	W12X30	W12X30	0.240	1.000	0.240			46.254	1.07E+3	42E+3	3.74E+3
47	W12X30	W12X30	0.138	1.000	0.138			17.510	741.044	550.058	796.986
48	W12X22	W12X22	0.222	1.000	0.222	LRFD-H1-1B-	10	6.480	156.000	4.660	0.293
49	W12X30	W12X30	0.166	1.000	0.166			17.510	741.044	550.058	796.986
50	W12X30	W12X30	0.365	1.000	0.365	LRFD-H1-1B-	26	8.790	238.000	20.300	0.457
51	W18X50	W18X50	0.557	1.000	0.557	LRFD-H1-1B-	10	14.700	800.000	40.100	1.240
52	W18X50	W18X50	0.564	1.000	0.564	LRFD-H1-1B-	12	14.700	800.000	40.100	1.240
53	W18X50	W18X50	0.381	1.000	0.381	LRFD-H1-1B-	12	14.700	800.000	40.100	1.240
54	W12X30	W12X30	0.516	1.000	0.516	LRFD-H1-1B-	12	8.790	238.000	20.300	0.457
55	W12X30	W12X30	0.586	1.000	0.586	LRFD-H1-1B-	12	8.790	238.000	20.300	0.457
56	W12X30	W12X30	0.578	1.000	0.578	LRFD-H1-1B-	12	8.790	238.000	20.300	0.457
57	W12X30	W12X30	0.494	1.000	0.494	LRFD-H1-1B-	12	8.790	238.000	20.300	0.457
58	W12X30	W12X30	0.485	1.000	0.485	LRFD-H1-1B-	12	8.790	238.000	20.300	0.457
59	W12X30	W12X30	0.412	1.000	0.412	LRFD-H1-1B-	12	8.790	238.000	20.300	0.457
60	W12X22	W12X22	0.117	1.000	0.117			23.920	704.953	4.24E+3	1.66E+3
61	W12X22	W12X22	0.186	1.000	0.186			23.920	704.953	4.24E+3	1.66E+3
62	W12X22	W12X22	0.117	1.000	0.117			23.920	704.952	4.24E+3	1.66E+3
63	W12X22	W12X22	0.186	1.000	0.186			23.920	704.952	4.24E+3	1.66E+3

Utilization Ratio Cont...

Beam	Analysis Property	Design Property	Actual	Allowable	Ratio (Act./Allow.)	Clause	L/C	Ax (in^2)	Iz (in^4)	Iy (in^4)	Ix (in^4)
			Ratio	Ratio							
64	W12X22	W12X22	0.117	1.000	0.117			23.920	704.952	4.24E+3	1.66E+3
65	W12X22	W12X22	0.186	1.000	0.186			23.920	704.952	4.24E+3	1.66E+3
66	W12X30	W12X30	0.157	1.000	0.157	LRFD-H1-1B-	12	8.790	238.000	20.300	0.457
67	W12X30	W12X30	0.131	1.000	0.131			17.510	741.044	550.058	796.986
68	W12X22	W12X22	0.056	1.000	0.056			15.523	590.950	595.488	824.526
69	W12X30	W12X30	0.107	1.000	0.107			27.522	930.617	5.27E+3	1.75E+3
70	W12X30	W12X30	0.167	1.000	0.167	LRFD-H1-1B-	12	8.790	238.000	20.300	0.457
71	W12X26	W12X26	0.023	1.000	0.023			16.693	676.427	608.128	815.956
72	W12X26	W12X26	0.478	1.000	0.478	LRFD-H1-1B-	12	7.650	204.000	17.300	0.300
73	W12X30	W12X30	0.060	1.000	0.060			17.510	741.043	550.048	796.981
74	W12X30	W12X30	0.095	1.000	0.095			17.510	741.043	550.048	796.981
75	W12X26	W12X26	0.572	1.000	0.572	LRFD-H1-1B-	12	7.650	204.000	17.300	0.300
76	W12X26	W12X26	0.082	1.000	0.082	LRFD-H1-1B-	12	7.650	204.000	17.300	0.300
77	W18X50	W18X50	0.366	1.000	0.366	LRFD-H1-1B-	10	14.700	800.000	40.100	1.240
78	W12X30	W12X30	0.184	1.000	0.184			46.254	1.07E+3	42E+3	3.74E+3
79	W12X30	W12X30	0.136	1.000	0.136			17.510	741.044	550.058	796.986
80	W12X22	W12X22	0.223	1.000	0.223	LRFD-H1-1B-	10	6.480	156.000	4.660	0.293
81	W12X30	W12X30	0.166	1.000	0.166			17.510	741.044	550.058	796.986
82	W12X30	W12X30	0.384	1.000	0.384	LRFD-H1-1B-	26	8.790	238.000	20.300	0.457
83	W18X50	W18X50	0.576	1.000	0.576	LRFD-H1-1B-	10	14.700	800.000	40.100	1.240
84	W18X50	W18X50	0.587	1.000	0.587	LRFD-H1-1B-	12	14.700	800.000	40.100	1.240
85	W18X50	W18X50	0.384	1.000	0.384	LRFD-H1-1B-	12	14.700	800.000	40.100	1.240
86	W12X26	W12X26	0.588	1.000	0.588	LRFD-H1-1B-	12	7.650	204.000	17.300	0.300
87	W12X26	W12X26	0.638	1.000	0.638	LRFD-H1-1B-	12	7.650	204.000	17.300	0.300
88	W12X26	W12X26	0.624	1.000	0.624	LRFD-H1-1B-	12	7.650	204.000	17.300	0.300
89	W12X26	W12X26	0.538	1.000	0.538	LRFD-H1-1B-	12	7.650	204.000	17.300	0.300
90	W12X26	W12X26	0.521	1.000	0.521	LRFD-H1-1B-	12	7.650	204.000	17.300	0.300
91	W12X26	W12X26	0.456	1.000	0.456	LRFD-H1-1B-	12	7.650	204.000	17.300	0.300
92	W12X22	W12X22	0.117	1.000	0.117			23.920	704.953	4.24E+3	1.66E+3
93	W12X22	W12X22	0.186	1.000	0.186			23.920	704.953	4.24E+3	1.66E+3
94	W12X22	W12X22	0.117	1.000	0.117			23.920	704.952	4.24E+3	1.66E+3
95	W12X22	W12X22	0.186	1.000	0.186			23.920	704.952	4.24E+3	1.66E+3
96	W12X22	W12X22	0.117	1.000	0.117			23.920	704.952	4.24E+3	1.66E+3
97	W12X22	W12X22	0.186	1.000	0.186			23.920	704.952	4.24E+3	1.66E+3
98	W12X30	W12X30	0.146	1.000	0.146	LRFD-H1-1B-	12	8.790	238.000	20.300	0.457
99	W12X30	W12X30	0.132	1.000	0.132			17.510	741.044	550.058	796.986
100	W12X22	W12X22	0.056	1.000	0.056			15.523	590.950	595.488	824.526
101	W12X26	W12X26	0.033	1.000	0.033			25.249	816.318	4.37E+3	1.64E+3
102	W12X26	W12X26	0.151	1.000	0.151			25.249	816.318	4.37E+3	1.64E+3
103	W21X50	W21X50	0.122	1.000	0.122			32.311	2.78E+3	4.39E+3	3.09E+3
104	W21X50	W21X50	0.137	1.000	0.137			22.007	2.07E+3	336.621	1.37E+3
105	W21X50	W21X50	0.071	1.000	0.071			32.311	2.78E+3	4.39E+3	3.09E+3
106	W21X50	W21X50	0.055	1.000	0.055			22.007	2.07E+3	336.607	1.37E+3
107	W12X26	W12X26	0.001	1.000	0.001			25.249	816.318	4.37E+3	1.64E+3
108	W12X26	W12X26	0.186	1.000	0.186			25.249	816.318	4.37E+3	1.64E+3

Utilization Ratio Cont...

Beam	Analysis Property	Design Property	Actual Ratio	Allowable Ratio	Ratio (Act./Allow.)	Clause	L/C	Ax (in^2)	Iz (in^4)	Iy (in^4)	Ix (in^4)
109	W21X50	W21X50	0.195	1.000	0.195			30.848	2.7E+3	3.39E+3	2.83E+3
110	W21X50	W21X50	0.128	1.000	0.128			42.273	3.13E+3	16.8E+3	4.91E+3
111	W12X26	W12X26	0.130	1.000	0.130			25.249	816.318	4.37E+3	1.64E+3
112	W21X50	W21X50	0.079	1.000	0.079			30.848	2.7E+3	3.39E+3	2.83E+3
113	W12X26	W12X26	0.156	1.000	0.156			25.249	816.318	4.37E+3	1.64E+3
114	W21X50	W21X50	0.083	1.000	0.083			42.273	3.13E+3	16.8E+3	4.91E+3
115	W21X50	W21X50	0.078	1.000	0.078			22.007	2.07E+3	336.607	1.37E+3
116	W21X50	W21X50	0.131	1.000	0.131			42.273	3.13E+3	16.8E+3	4.91E+3
117	W21X50	W21X50	0.156	1.000	0.156			22.007	2.07E+3	336.621	1.37E+3
119	W21X50	W21X50	0.055	1.000	0.055			32.311	2.78E+3	4.39E+3	3.09E+3
120	W21X50	W21X50	0.241	1.000	0.241			30.848	2.7E+3	3.39E+3	2.83E+3
121	W21X50	W21X50	0.107	1.000	0.107			32.311	2.78E+3	4.39E+3	3.09E+3
122	W21X50	W21X50	0.105	1.000	0.105			30.848	2.7E+3	3.39E+3	2.83E+3
123	W21X50	W21X50	0.193	1.000	0.193			32.311	2.78E+3	4.39E+3	3.09E+3
124	W21X50	W21X50	0.195	1.000	0.195			32.311	2.78E+3	4.39E+3	3.09E+3
125	W21X50	W21X50	0.360	1.000	0.360			32.311	2.78E+3	4.39E+3	3.09E+3
126	W21X50	W21X50	0.157	1.000	0.157			32.311	2.78E+3	4.39E+3	3.09E+3
127	W21X50	W21X50	0.191	1.000	0.191			32.311	2.78E+3	4.39E+3	3.09E+3
128	W21X50	W21X50	0.352	1.000	0.352			32.311	2.78E+3	4.39E+3	3.09E+3
129	W21X50	W21X50	0.175	1.000	0.175			32.311	2.78E+3	4.39E+3	3.09E+3
130	W21X50	W21X50	0.148	1.000	0.148			32.311	2.78E+3	4.39E+3	3.09E+3
131	W21X50	W21X50	0.409	1.000	0.409			32.311	2.78E+3	4.39E+3	3.09E+3
132	W21X50	W21X50	0.397	1.000	0.397			32.311	2.78E+3	4.39E+3	3.09E+3
133	W21X50	W21X50	0.188	1.000	0.188			30.848	2.7E+3	3.39E+3	2.83E+3
134	W21X50	W21X50	0.121	1.000	0.121			30.848	2.7E+3	3.39E+3	2.83E+3
135	W21X50	W21X50	0.257	1.000	0.257			30.848	2.7E+3	3.39E+3	2.83E+3
136	W21X50	W21X50	0.057	1.000	0.057			30.848	2.7E+3	3.39E+3	2.83E+3
137	W8X35	W8X35	0.026	1.000	0.026			29.032	628.009	5.29E+3	1.14E+3
138	W8X35	W8X35	0.026	1.000	0.026			29.032	628.009	5.29E+3	1.14E+3
139	W8X35	W8X35	0.037	1.000	0.037			28.393	621.499	4.77E+3	1.1E+3
140	W8X35	W8X35	0.038	1.000	0.038			28.393	621.499	4.77E+3	1.1E+3
141	W8X35	W8X35	0.023	1.000	0.023			28.393	621.499	4.77E+3	1.1E+3
142	W8X35	W8X35	0.023	1.000	0.023			28.393	621.499	4.77E+3	1.1E+3
143	W8X35	W8X35	0.021	1.000	0.021			28.393	621.499	4.77E+3	1.1E+3
144	W8X35	W8X35	0.021	1.000	0.021			28.393	621.499	4.77E+3	1.1E+3
145	HSST6X6X0	HSST6X6X0	0.088	1.000	0.088	Eq. H1-1b	12	5.240	28.600	28.600	45.600
146	HSST6X6X0	HSST6X6X0	0.078	1.000	0.078	Eq. H1-1b	12	5.240	28.600	28.600	45.600
147	HSST6X6X0	HSST6X6X0	0.092	1.000	0.092	Eq. H1-1b	12	5.240	28.600	28.600	45.600
148	HSST6X6X0	HSST6X6X0	0.061	1.000	0.061	Eq. H1-1b	12	5.240	28.600	28.600	45.600
149	HSST6X6X0	HSST6X6X0	0.084	1.000	0.084	Eq. H1-1b	12	5.240	28.600	28.600	45.600
150	HSST6X6X0	HSST6X6X0	0.056	1.000	0.056	Eq. H1-1b	12	5.240	28.600	28.600	45.600
151	HSST6X6X0	HSST6X6X0	0.166	1.000	0.166	Eq. H1-1b	26	5.240	28.600	28.600	45.600
152	HSST6X6X0	HSST6X6X0	0.101	1.000	0.101	Eq. H1-1b	26	5.240	28.600	28.600	45.600
153	HSST6X6X0	HSST6X6X0	0.166	1.000	0.166	Eq. H1-1b	26	5.240	28.600	28.600	45.600
154	HSST6X6X0	HSST6X6X0	0.100	1.000	0.100	Eq. H1-1b	26	5.240	28.600	28.600	45.600

Utilization Ratio Cont...

Beam	Analysis Property	Design Property	Actual	Allowable	Ratio (Act./Allow.)	Clause	L/C	Ax (in^2)	Iz (in^4)	Iy (in^4)	Ix (in^4)
155	HSST6X6X0	HSST6X6X0	0.075	1.000	0.075	Eq. H1-1b	12	5.240	28.600	28.600	45.600
156	HSST6X6X0	HSST6X6X0	0.071	1.000	0.071	Eq. H1-1b	27	5.240	28.600	28.600	45.600
157	HSST6X6X0	HSST6X6X0	0.127	1.000	0.127	Eq. H1-1b	27	5.240	28.600	28.600	45.600
158	HSST6X6X0	HSST6X6X0	0.084	1.000	0.084	Eq. H1-1b	27	5.240	28.600	28.600	45.600
159	HSST6X6X0	HSST6X6X0	0.086	1.000	0.086	Eq. H1-1b	12	5.240	28.600	28.600	45.600
160	HSST6X6X0	HSST6X6X0	0.078	1.000	0.078	Eq. H1-1b	12	5.240	28.600	28.600	45.600
161	W12X30	W12X30	0.017	1.000	0.017	Eq. H1-1b	9	8.790	238.000	20.300	0.457
162	W12X30	W12X30	0.018	1.000	0.018	Eq. H1-1b	9	8.790	238.000	20.300	0.457
163	W12X30	W12X30	0.018	1.000	0.018	Eq. H1-1b	9	8.790	238.000	20.300	0.457
164	W12X30	W12X30	0.026	1.000	0.026	Eq. Sec. D2	26	8.790	238.000	20.300	0.457
165	W8X18	W8X18	30194	1.000	0.030194	Sec. E1	8	5.260	61.900	7.970	0.172
166	W8X18	W8X18	0.020	1.000	0.020	Eq. Sec. D2	26	5.260	61.900	7.970	0.172
167	W8X18	W8X18	0.059	1.000	0.059	Eq. Sec. D2	26	5.260	61.900	7.970	0.172
168	W8X18	W8X18	0.018	1.000	0.018	Eq. Sec. D2	26	5.260	61.900	7.970	0.172
169	W8X18	W8X18	0.028	1.000	0.028	Eq. Sec. D2	33	5.260	61.900	7.970	0.172
170	W8X18	W8X18	33791	1.000	0.033791	Eq. Sec. D2	27	5.260	61.900	7.970	0.172
171	W8X18	W8X18	0.037	1.000	0.037	Sec. E1	7	5.260	61.900	7.970	0.172
172	W8X18	W8X18	0.023	1.000	0.023	Sec. E1	8	5.260	61.900	7.970	0.172
173	W12X30	W12X30	0.020	1.000	0.020	Eq. H1-1b	27	8.790	238.000	20.300	0.457
174	W12X30	W12X30	0.021	1.000	0.021	Eq. H1-1b	9	8.790	238.000	20.300	0.457
175	W12X30	W12X30	0.020	1.000	0.020	Eq. H1-1b	27	8.790	238.000	20.300	0.457
176	W12X30	W12X30	0.023	1.000	0.023	Eq. H1-1b	27	8.790	238.000	20.300	0.457
177	W12X30	W12X30	0.019	1.000	0.019	Eq. H1-1b	9	8.790	238.000	20.300	0.457
178	W12X30	W12X30	0.021	1.000	0.021	Eq. H1-1b	9	8.790	238.000	20.300	0.457
179	W12X30	W12X30	0.026	1.000	0.026	Eq. Sec. D2	26	8.790	238.000	20.300	0.457
180	W12X30	W12X30	0.026	1.000	0.026	Eq. Sec. D2	26	8.790	238.000	20.300	0.457
181	W21X50	W21X50	0.140	1.000	0.140			32.311	2.78E+3	4.39E+3	3.09E+3
182	W21X50	W21X50	0.141	1.000	0.141			32.311	2.78E+3	4.39E+3	3.09E+3
183	W21X50	W21X50	0.079	1.000	0.079			23.121	2.18E+3	501.996	1.55E+3
184	W21X50	W21X50	0.080	1.000	0.080			23.121	2.18E+3	501.994	1.55E+3
185	W8X18	W8X18	0.029	1.000	0.029			22.458	370.637	4.07E+3	1.1E+3
186	W8X18	W8X18	0.017	1.000	0.017			22.458	370.637	4.07E+3	1.1E+3
187	W8X18	W8X18	0.029	1.000	0.029			22.458	370.637	4.07E+3	1.1E+3
188	W8X18	W8X18	0.017	1.000	0.017			22.458	370.637	4.07E+3	1.1E+3
189	W8X18	W8X18	0.029	1.000	0.029			22.458	370.637	4.07E+3	1.1E+3
190	W8X18	W8X18	0.017	1.000	0.017			22.458	370.637	4.07E+3	1.1E+3
191	W8X18	W8X18	0.029	1.000	0.029			22.458	370.637	4.07E+3	1.1E+3
192	W8X18	W8X18	0.017	1.000	0.017			22.458	370.637	4.07E+3	1.1E+3
193	W21X50	W21X50	0.316	1.000	0.316			32.311	2.78E+3	4.39E+3	3.09E+3
194	W21X50	W21X50	0.282	1.000	0.282			32.311	2.78E+3	4.39E+3	3.09E+3
195	W21X50	W21X50	0.316	1.000	0.316			32.311	2.78E+3	4.39E+3	3.09E+3
196	W21X50	W21X50	0.315	1.000	0.315			32.311	2.78E+3	4.39E+3	3.09E+3
197	W21X50	W21X50	0.228	1.000	0.228			32.311	2.78E+3	4.39E+3	3.09E+3
198	W21X50	W21X50	0.171	1.000	0.171			18.414	1.65E+3	65.837	761.699
199	W21X50	W21X50	0.232	1.000	0.232			32.311	2.78E+3	4.39E+3	3.09E+3

Utilization Ratio Cont...

Beam	Analysis Property	Design Property	Actual	Allowable	Ratio (Act./Allow.)	Clause	L/C	Ax (in^2)	Iz (in^4)	Iy (in^4)	Ix (in^4)
200	W21X50	W21X50	0.184	1.000	0.184			18.414	1.65E+3	65.835	761.689
201	HSST4X4X0	HSST4X4X0	0.039	1.000	0.039	Sec. E1	27	3.370	7.800	7.800	12.800
202	HSST4X4X0	HSST4X4X0	0.010	1.000	0.010	Sec. E1	7	3.370	7.800	7.800	12.800
203	HSST4X4X0	HSST4X4X0	16302	1.000	0.016302	Sec. E1	26	3.370	7.800	7.800	12.800
204	HSST4X4X0	HSST4X4X0	27098	1.000	0.027098	Sec. E1	27	3.370	7.800	7.800	12.800
205	HSST4X4X0	HSST4X4X0	0.018	1.000	0.018	Sec. E1	31	3.370	7.800	7.800	12.800
206	HSST4X4X0	HSST4X4X0	0.024	1.000	0.024	Sec. E1	31	3.370	7.800	7.800	12.800
207	HSST4X4X0	HSST4X4X0	0.028	1.000	0.028	Sec. E1	27	3.370	7.800	7.800	12.800
208	HSST4X4X0	HSST4X4X0	26392	1.000	0.026392	Sec. E1	27	3.370	7.800	7.800	12.800
209	HSST4X4X0	HSST4X4X0	0.016	1.000	0.016	Sec. E1	30	3.370	7.800	7.800	12.800
210	HSST4X4X0	HSST4X4X0	0.019	1.000	0.019	Sec. E1	26	3.370	7.800	7.800	12.800
212	HSST4X4X0	HSST4X4X0	0.009	1.000	0.009	Sec. E1	32	3.370	7.800	7.800	12.800
213	HSST4X4X0	HSST4X4X0	0.022	1.000	0.022	Sec. E1	27	3.370	7.800	7.800	12.800
214	HSST4X4X0	HSST4X4X0	0.018	1.000	0.018	Sec. E1	26	3.370	7.800	7.800	12.800
215	HSST4X4X0	HSST4X4X0	0.035	1.000	0.035	Sec. E1	26	3.370	7.800	7.800	12.800
216	HSST4X4X0	HSST4X4X0	0.038	1.000	0.038	Sec. E1	26	3.370	7.800	7.800	12.800
217	HSST4X4X0	HSST4X4X0	0.018	1.000	0.018	Sec. E1	30	3.370	7.800	7.800	12.800
218	W21X50	W21X50	0.259	1.000	0.259			32.311	2.78E+3	4.39E+3	3.09E+3
219	W21X50	W21X50	0.265	1.000	0.265			32.311	2.78E+3	4.39E+3	3.09E+3
220	W12X30	W12X30	0.070	1.000	0.070			21.224	831.408	1.56E+3	1.13E+3
221	W21X50	W21X50	0.323	1.000	0.323			32.311	2.78E+3	4.39E+3	3.09E+3
222	W21X50	W21X50	0.323	1.000	0.323			32.311	2.78E+3	4.39E+3	3.09E+3
223	W12X30	W12X30	0.100	1.000	0.100			21.224	831.407	1.56E+3	1.13E+3
224	W21X50	W21X50	0.215	1.000	0.215			18.414	1.65E+3	65.837	761.699
225	W12X30	W12X30	0.118	1.000	0.118			21.224	831.408	1.56E+3	1.13E+3
226	W12X30	W12X30	0.125	1.000	0.125			26.398	916.217	4.38E+3	1.64E+3
227	W12X30	W12X30	0.118	1.000	0.118			21.224	831.407	1.56E+3	1.13E+3
228	W12X30	W12X30	0.183	1.000	0.183			26.398	916.217	4.38E+3	1.64E+3
229	W21X50	W21X50	0.216	1.000	0.216			18.414	1.65E+3	65.835	761.689
230	W12X30	W12X30	0.165	1.000	0.165			26.398	916.217	4.38E+3	1.64E+3
231	W21X50	W21X50	0.180	1.000	0.180			18.414	1.65E+3	65.837	761.699
232	W12X30	W12X30	0.161	1.000	0.161			21.224	831.408	1.56E+3	1.13E+3
233	W12X30	W12X30	0.092	1.000	0.092			26.398	916.217	4.38E+3	1.64E+3
234	W12X30	W12X30	0.161	1.000	0.161			21.224	831.407	1.56E+3	1.13E+3
235	W12X30	W12X30	0.183	1.000	0.183			26.398	916.217	4.38E+3	1.64E+3
236	W21X50	W21X50	0.181	1.000	0.181			18.414	1.65E+3	65.835	761.689
237	W12X30	W12X30	0.164	1.000	0.164			26.398	916.217	4.38E+3	1.64E+3
238	HSST6X6X0	HSST6X6X0	0.136	1.000	0.136	Eq. H1-1b	8	5.240	28.600	28.600	45.600
239	HSST6X6X0	HSST6X6X0	0.047	1.000	0.047	Sec. E1	30	5.240	28.600	28.600	45.600
240	HSST6X6X0	HSST6X6X0	0.036	1.000	0.036	Sec. E1	9	5.240	28.600	28.600	45.600
241	HSST6X6X0	HSST6X6X0	0.030	1.000	0.030	Sec. E1	9	5.240	28.600	28.600	45.600
242	HSST6X6X0	HSST6X6X0	0.225	1.000	0.225	Eq. H1-1b	26	5.240	28.600	28.600	45.600
243	HSST6X6X0	HSST6X6X0	0.062	1.000	0.062	Sec. E1	22	5.240	28.600	28.600	45.600
244	HSST6X6X0	HSST6X6X0	0.038	1.000	0.038	Sec. E1	22	5.240	28.600	28.600	45.600
245	HSST6X6X0	HSST6X6X0	0.031	1.000	0.031	Sec. E1	9	5.240	28.600	28.600	45.600

Utilization Ratio Cont...

Beam	Analysis Property	Design Property	Actual	Allowable	Ratio (Act./Allow.)	Clause	L/C	Ax (in^2)	Iz (in^4)	Iy (in^4)	Ix (in^4)
246	HSST6X6X0	HSST6X6X0	0.228	1.000	0.228	Eq. H1-1b	27	5.240	28.600	28.600	45.600
247	HSST6X6X0	HSST6X6X0	0.062	1.000	0.062	Sec. E1	22	5.240	28.600	28.600	45.600
248	HSST6X6X0	HSST6X6X0	0.038	1.000	0.038	Sec. E1	22	5.240	28.600	28.600	45.600
249	HSST6X6X0	HSST6X6X0	0.030	1.000	0.030	Sec. E1	9	5.240	28.600	28.600	45.600
250	HSST6X6X0	HSST6X6X0	0.230	1.000	0.230	Eq. H1-1b	27	5.240	28.600	28.600	45.600
251	HSST6X6X0	HSST6X6X0	0.062	1.000	0.062	Sec. E1	23	5.240	28.600	28.600	45.600
252	HSST6X6X0	HSST6X6X0	0.038	1.000	0.038	Sec. E1	23	5.240	28.600	28.600	45.600
253	HSST6X6X0	HSST6X6X0	0.030	1.000	0.030	Sec. E1	9	5.240	28.600	28.600	45.600
267	HSST6X3X0	HSST6X3X0	0.016	1.000	0.016	Eq. H1-1b	9	3.840	17.000	5.700	14.200
269	HSST6X3X0	HSST6X3X0	0.016	1.000	0.016	Eq. H1-1b	9	3.840	17.000	5.700	14.200
271	HSST6X3X0	HSST6X3X0	16272	1.000	0.016272	Eq. H1-1b	9	3.840	17.000	5.700	14.200
273	HSST6X3X0	HSST6X3X0	0.016	1.000	0.016	Eq. H1-1b	9	3.840	17.000	5.700	14.200
275	C8X11	C8X11	0.013	1.000	0.013	Eq. H1-1b	22	3.370	32.500	1.310	0.121
279	HSST6X3X0	HSST6X3X0	0.016	1.000	0.016	Eq. H1-1b	9	3.840	17.000	5.700	14.200
280	C8X11	C8X11	12879	1.000	0.012879	Eq. H1-1b	23	3.370	32.500	1.310	0.121
281	C8X11	C8X11	0.012	1.000	0.012	Eq. H1-1b	9	3.370	32.500	1.310	0.121
282	C8X11	C8X11	0.011	1.000	0.011	Eq. H1-1b	9	3.370	32.500	1.310	0.121
283	HSST6X3X0	HSST6X3X0	0.016	1.000	0.016	Eq. H1-1b	9	3.840	17.000	5.700	14.200
284	HSST6X3X0	HSST6X3X0	0.016	1.000	0.016	Eq. H1-1b	9	3.840	17.000	5.700	14.200
285	HSST6X3X0	HSST6X3X0	0.016	1.000	0.016	Eq. H1-1b	9	3.840	17.000	5.700	14.200
286	HSST6X3X0	HSST6X3X0	0.007	1.000	0.007	Eq. H1-1b	9	3.840	17.000	5.700	14.200
287	HSST6X3X0	HSST6X3X0	0.007	1.000	0.007	Eq. H1-1b	9	3.840	17.000	5.700	14.200
288	HSST6X3X0	HSST6X3X0	0.009	1.000	0.009	Eq. H1-1b	23	3.840	17.000	5.700	14.200
289	HSST6X3X0	HSST6X3X0	0.010	1.000	0.010	Eq. H1-1b	22	3.840	17.000	5.700	14.200
290	HSST6X3X0	HSST6X3X0	0.026	1.000	0.026	Eq. H1-1b	10	3.840	17.000	5.700	14.200
291	HSST6X3X0	HSST6X3X0	0.026	1.000	0.026	Eq. H1-1b	10	3.840	17.000	5.700	14.200
292	HSST6X3X0	HSST6X3X0	0.029	1.000	0.029	Eq. H1-1b	23	3.840	17.000	5.700	14.200
293	HSST6X3X0	HSST6X3X0	0.029	1.000	0.029	Eq. H1-1b	22	3.840	17.000	5.700	14.200
294	HSST6X3X0	HSST6X3X0	0.057	1.000	0.057	Eq. H1-1b	23	3.840	17.000	5.700	14.200
295	HSST6X3X0	HSST6X3X0	0.057	1.000	0.057	Eq. H1-1b	22	3.840	17.000	5.700	14.200
296	HSST6X3X0	HSST6X3X0	0.036	1.000	0.036	Eq. H1-1b	8	3.840	17.000	5.700	14.200
297	HSST6X3X0	HSST6X3X0	0.037	1.000	0.037	Eq. H1-1b	7	3.840	17.000	5.700	14.200
299	HSST6X3X0	HSST6X3X0	0.050	1.000	0.050	Eq. H1-1b	22	3.840	17.000	5.700	14.200
300	C8X11	C8X11	0.028	1.000	0.028	Eq. H1-1b	23	3.370	32.500	1.310	0.121
301	HSST6X3X0	HSST6X3X0	0.056	1.000	0.056	Eq. H1-1b	23	3.840	17.000	5.700	14.200
303	HSST6X3X0	HSST6X3X0	0.050	1.000	0.050	Eq. H1-1b	23	3.840	17.000	5.700	14.200
304	C8X11	C8X11	0.029	1.000	0.029	Eq. H1-1b	22	3.370	32.500	1.310	0.121
305	HSST6X3X0	HSST6X3X0	0.056	1.000	0.056	Eq. H1-1b	22	3.840	17.000	5.700	14.200
307	HSST6X3X0	HSST6X3X0	0.056	1.000	0.056	Eq. H1-1b	23	3.840	17.000	5.700	14.200
308	C8X11	C8X11	0.020	1.000	0.020	Eq. H1-1b	23	3.370	32.500	1.310	0.121
309	HSST6X3X0	HSST6X3X0	0.050	1.000	0.050	Eq. H1-1b	22	3.840	17.000	5.700	14.200
311	HSST6X3X0	HSST6X3X0	0.056	1.000	0.056	Eq. H1-1b	22	3.840	17.000	5.700	14.200
312	C8X11	C8X11	0.020	1.000	0.020	Eq. H1-1b	22	3.370	32.500	1.310	0.121
313	HSST6X3X0	HSST6X3X0	50627	1.000	0.050627	Eq. H1-1b	23	3.840	17.000	5.700	14.200
315	HSST6X3X0	HSST6X3X0	36547	1.000	0.036547	Eq. H1-1b	10	3.840	17.000	5.700	14.200

Utilization Ratio Cont...

Beam	Analysis Property	Design Property	Actual	Allowable	Ratio (Act./Allow.)	Clause	L/C	Ax (in^2)	Iz (in^4)	Iy (in^4)	Ix (in^4)
316	C8X11	C8X11	14701	1.000	0.014701	Eq. H1-1b	23	3.370	32.500	1.310	0.121
317	HSST6X3X0	HSST6X3X0	0.036	1.000	0.036	Eq. H1-1b	10	3.840	17.000	5.700	14.200
319	HSST6X3X0	HSST6X3X0	0.036	1.000	0.036	Eq. H1-1b	10	3.840	17.000	5.700	14.200
320	C8X11	C8X11	0.015	1.000	0.015	Eq. H1-1b	22	3.370	32.500	1.310	0.121
321	HSST6X3X0	HSST6X3X0	0.036	1.000	0.036	Eq. H1-1b	10	3.840	17.000	5.700	14.200
323	HSST6X3X0	HSST6X3X0	0.036	1.000	0.036	Eq. H1-1b	10	3.840	17.000	5.700	14.200
324	C8X11	C8X11	0.012	1.000	0.012	Eq. H1-1b	22	3.370	32.500	1.310	0.121
325	HSST6X3X0	HSST6X3X0	0.036	1.000	0.036	Eq. H1-1b	10	3.840	17.000	5.700	14.200
327	HSST6X3X0	HSST6X3X0	36219	1.000	0.036219	Eq. H1-1b	10	3.840	17.000	5.700	14.200
328	C8X11	C8X11	0.012	1.000	0.012	Eq. H1-1b	10	3.370	32.500	1.310	0.121
329	HSST6X3X0	HSST6X3X0	0.036	1.000	0.036	Eq. H1-1b	10	3.840	17.000	5.700	14.200
330	HSST6X6X0	HSST6X6X0	0.073	1.000	0.073	Eq. Sec. D2	7	5.240	28.600	28.600	45.600
331	HSST6X6X0	HSST6X6X0	0.061	1.000	0.061	Sec. E1	30	5.240	28.600	28.600	45.600
332	HSST6X6X0	HSST6X6X0	0.126	1.000	0.126	Sec. E1	22	5.240	28.600	28.600	45.600
333	HSST6X6X0	HSST6X6X0	0.092	1.000	0.092	Sec. E1	22	5.240	28.600	28.600	45.600
334	HSST6X6X0	HSST6X6X0	0.126	1.000	0.126	Sec. E1	22	5.240	28.600	28.600	45.600
335	HSST6X6X0	HSST6X6X0	0.093	1.000	0.093	Sec. E1	22	5.240	28.600	28.600	45.600
336	HSST6X6X0	HSST6X6X0	0.127	1.000	0.127	Sec. E1	23	5.240	28.600	28.600	45.600
337	HSST6X6X0	HSST6X6X0	0.093	1.000	0.093	Sec. E1	23	5.240	28.600	28.600	45.600
338	HSST6X3X0	HSST6X3X0	0.067	1.000	0.067	Eq. H1-1b	27	3.840	17.000	5.700	14.200
339	HSST6X3X0	HSST6X3X0	0.065	1.000	0.065	Eq. H1-1b	26	3.840	17.000	5.700	14.200
340	HSST6X3X0	HSST6X3X0	0.068	1.000	0.068	Eq. H1-1b	27	3.840	17.000	5.700	14.200
341	HSST6X3X0	HSST6X3X0	0.065	1.000	0.065	Eq. H1-1b	26	3.840	17.000	5.700	14.200
342	HSST6X3X0	HSST6X3X0	55753	1.000	0.055753	Eq. H1-1b	27	3.840	17.000	5.700	14.200
343	HSST6X3X0	HSST6X3X0	0.056	1.000	0.056	Eq. H1-1b	22	3.840	17.000	5.700	14.200
344	HSST6X3X0	HSST6X3X0	0.056	1.000	0.056	Eq. H1-1b	27	3.840	17.000	5.700	14.200
345	HSST6X3X0	HSST6X3X0	0.056	1.000	0.056	Eq. H1-1b	22	3.840	17.000	5.700	14.200
346	HSST2X2X0	HSST2X2X0	0.139	1.000	0.139	Eq. Sec. D2	8	0.840	0.486	0.486	0.796
347	HSST2X2X0	HSST2X2X0	0.332	1.000	0.332	Eq. H1-1a	23	0.840	0.486	0.486	0.796
348	HSST2X2X0	HSST2X2X0	0.329	1.000	0.329	Eq. H1-1a	22	0.840	0.486	0.486	0.796
349	HSST2X2X0	HSST2X2X0	0.140	1.000	0.140	Eq. Sec. D2	7	0.840	0.486	0.486	0.796
350	HSST2X2X0	HSST2X2X0	0.139	1.000	0.139	Eq. Sec. D2	8	0.840	0.486	0.486	0.796
351	HSST2X2X0	HSST2X2X0	0.330	1.000	0.330	Eq. H1-1a	23	0.840	0.486	0.486	0.796
352	HSST2X2X0	HSST2X2X0	0.329	1.000	0.329	Eq. H1-1a	22	0.840	0.486	0.486	0.796
353	HSST2X2X0	HSST2X2X0	0.139	1.000	0.139	Eq. Sec. D2	7	0.840	0.486	0.486	0.796
354	HSST2X2X0	HSST2X2X0	0.117	1.000	0.117	Eq. Sec. D2	8	0.840	0.486	0.486	0.796
355	HSST2X2X0	HSST2X2X0	0.299	1.000	0.299	Eq. H1-1a	27	0.840	0.486	0.486	0.796
356	HSST2X2X0	HSST2X2X0	0.332	1.000	0.332	Eq. H1-1a	26	0.840	0.486	0.486	0.796
357	HSST2X2X0	HSST2X2X0	0.119	1.000	0.119	Eq. Sec. D2	7	0.840	0.486	0.486	0.796
358	HSST2X2X0	HSST2X2X0	0.144	1.000	0.144	Sec. E1	23	0.840	0.486	0.486	0.796
359	HSST2X2X0	HSST2X2X0	0.299	1.000	0.299	Eq. H1-1a	26	0.840	0.486	0.486	0.796
360	HSST2X2X0	HSST2X2X0	0.141	1.000	0.141	Sec. E1	22	0.840	0.486	0.486	0.796
361	HSST2X2X0	HSST2X2X0	0.296	1.000	0.296	Eq. H1-1a	27	0.840	0.486	0.486	0.796
362	HSST2X2X0	HSST2X2X0	0.308	1.000	0.308	Eq. H1-1a	22	0.840	0.486	0.486	0.796
363	HSST2X2X0	HSST2X2X0	0.132	1.000	0.132	Eq. Sec. D2	7	0.840	0.486	0.486	0.796

Utilization Ratio Cont...

Beam	Analysis Property	Design Property	Actual	Allowable	Ratio (Act./Allow.)	Clause	L/C	Ax (in^2)	Iz (in^4)	Iy (in^4)	Ix (in^4)
364	HSST2X2X0	HSST2X2X0	0.131	1.000	0.131	Eq. Sec. D2	8	0.840	0.486	0.486	0.796
365	HSST2X2X0	HSST2X2X0	0.310	1.000	0.310	Eq. H1-1a	23	0.840	0.486	0.486	0.796
366	HSST2X2X0	HSST2X2X0	0.309	1.000	0.309	Eq. H1-1a	22	0.840	0.486	0.486	0.796
367	HSST2X2X0	HSST2X2X0	0.132	1.000	0.132	Eq. Sec. D2	7	0.840	0.486	0.486	0.796
368	HSST2X2X0	HSST2X2X0	0.309	1.000	0.309	Eq. H1-1a	23	0.840	0.486	0.486	0.796
369	HSST2X2X0	HSST2X2X0	0.131	1.000	0.131	Eq. Sec. D2	8	0.840	0.486	0.486	0.796
370	HSST6X6X0	HSST6X6X0	0.043	1.000	0.043	Sec. E1	30	5.240	28.600	28.600	45.600
371	HSST6X6X0	HSST6X6X0	).0319	1.000	0.0319	Sec. E1	9	5.240	28.600	28.600	45.600
372	HSST6X6X0	HSST6X6X0	0.052	1.000	0.052	Sec. E1	22	5.240	28.600	28.600	45.600
373	HSST6X6X0	HSST6X6X0	0.034	1.000	0.034	Sec. E1	22	5.240	28.600	28.600	45.600
374	HSST6X6X0	HSST6X6X0	0.052	1.000	0.052	Sec. E1	22	5.240	28.600	28.600	45.600
375	HSST6X6X0	HSST6X6X0	0.032	1.000	0.032	Sec. E1	22	5.240	28.600	28.600	45.600
376	HSST6X6X0	HSST6X6X0	52101	1.000	0.052101	Sec. E1	23	5.240	28.600	28.600	45.600
377	HSST6X6X0	HSST6X6X0	0.032	1.000	0.032	Sec. E1	23	5.240	28.600	28.600	45.600
378	HSST6X3X0	HSST6X3X0	0.014	1.000	0.014	Eq. H1-1b	23	3.840	17.000	5.700	14.200
379	HSST6X3X0	HSST6X3X0	0.014	1.000	0.014	Eq. H1-1b	22	3.840	17.000	5.700	14.200
380	HSST6X3X0	HSST6X3X0	0.014	1.000	0.014	Eq. H1-1b	23	3.840	17.000	5.700	14.200
381	HSST6X3X0	HSST6X3X0	0.014	1.000	0.014	Eq. H1-1b	22	3.840	17.000	5.700	14.200
382	HSST2X2X0	HSST2X2X0	0.053	1.000	0.053	Sec. E1	31	0.840	0.486	0.486	0.796
383	HSST2X2X0	HSST2X2X0	0.110	1.000	0.110	Sec. E1	23	0.840	0.486	0.486	0.796
384	HSST2X2X0	HSST2X2X0	0.123	1.000	0.123	Sec. E1	22	0.840	0.486	0.486	0.796
385	HSST2X2X0	HSST2X2X0	0.052	1.000	0.052	Sec. E1	30	0.840	0.486	0.486	0.796
386	HSST2X2X0	HSST2X2X0	0.053	1.000	0.053	Sec. E1	30	0.840	0.486	0.486	0.796
387	HSST2X2X0	HSST2X2X0	0.111	1.000	0.111	Sec. E1	22	0.840	0.486	0.486	0.796
388	HSST2X2X0	HSST2X2X0	0.053	1.000	0.053	Sec. E1	31	0.840	0.486	0.486	0.796
389	HSST2X2X0	HSST2X2X0	0.109	1.000	0.109	Sec. E1	23	0.840	0.486	0.486	0.796
390	HSST2X2X0	HSST2X2X0	0.099	1.000	0.099	Sec. E1	22	0.840	0.486	0.486	0.796
391	HSST2X2X0	HSST2X2X0	0.050	1.000	0.050	Sec. E1	30	0.840	0.486	0.486	0.796
392	HSST2X2X0	HSST2X2X0	0.097	1.000	0.097	Sec. E1	23	0.840	0.486	0.486	0.796
393	HSST2X2X0	HSST2X2X0	0.050	1.000	0.050	Sec. E1	31	0.840	0.486	0.486	0.796
394	HSST2X2X0	HSST2X2X0	0.049	1.000	0.049	Sec. E1	30	0.840	0.486	0.486	0.796
395	HSST2X2X0	HSST2X2X0	0.100	1.000	0.100	Sec. E1	22	0.840	0.486	0.486	0.796
396	HSST2X2X0	HSST2X2X0	0.098	1.000	0.098	Sec. E1	23	0.840	0.486	0.486	0.796
397	HSST2X2X0	HSST2X2X0	0.050	1.000	0.050	Sec. E1	31	0.840	0.486	0.486	0.796
398	HSST6X3X0	HSST6X3X0	0.006	1.000	0.006	Eq. H1-1b	22	3.840	17.000	5.700	14.200
399	HSST6X3X0	HSST6X3X0	0.005	1.000	0.005	Eq. H1-1b	23	3.840	17.000	5.700	14.200
400	HSST6X3X0	HSST6X3X0	0.006	1.000	0.006	Eq. H1-1b	22	3.840	17.000	5.700	14.200
401	HSST6X3X0	HSST6X3X0	0.006	1.000	0.006	Eq. H1-1b	23	3.840	17.000	5.700	14.200
402	HSST2X2X0	HSST2X2X0	0.050	1.000	0.050	Sec. E1	23	0.840	0.486	0.486	0.796
403	HSST2X2X0	HSST2X2X0	0.034	1.000	0.034	Sec. E1	31	0.840	0.486	0.486	0.796
404	HSST2X2X0	HSST2X2X0	0.051	1.000	0.051	Sec. E1	22	0.840	0.486	0.486	0.796
405	HSST2X2X0	HSST2X2X0	0.033	1.000	0.033	Sec. E1	30	0.840	0.486	0.486	0.796
406	HSST2X2X0	HSST2X2X0	0.034	1.000	0.034	Sec. E1	31	0.840	0.486	0.486	0.796
407	HSST2X2X0	HSST2X2X0	0.049	1.000	0.049	Sec. E1	23	0.840	0.486	0.486	0.796
408	HSST2X2X0	HSST2X2X0	0.032	1.000	0.032	Sec. E1	30	0.840	0.486	0.486	0.796

Utilization Ratio Cont...

Beam	Analysis Property	Design Property	Actual	Allowable	Ratio (Act./Allow.)	Clause	L/C	Ax (in^2)	Iz (in^4)	Iy (in^4)	Ix (in^4)
409	HSST2X2X0	HSST2X2X0	0.052	1.000	0.052	Sec. E1	22	0.840	0.486	0.486	0.796
410	HSST2X2X0	HSST2X2X0	0.030	1.000	0.030	Sec. E1	30	0.840	0.486	0.486	0.796
411	HSST2X2X0	HSST2X2X0	0.048	1.000	0.048	Sec. E1	22	0.840	0.486	0.486	0.796
412	HSST2X2X0	HSST2X2X0	0.033	1.000	0.033	Sec. E1	31	0.840	0.486	0.486	0.796
413	HSST2X2X0	HSST2X2X0	45103	1.000	0.045103	Sec. E1	23	0.840	0.486	0.486	0.796
414	HSST2X2X0	HSST2X2X0	0.047	1.000	0.047	Sec. E1	22	0.840	0.486	0.486	0.796
415	HSST2X2X0	HSST2X2X0	0.031	1.000	0.031	Sec. E1	30	0.840	0.486	0.486	0.796
416	HSST2X2X0	HSST2X2X0	0.046	1.000	0.046	Sec. E1	23	0.840	0.486	0.486	0.796
418	HSST2X2X0	HSST2X2X0	0.031	1.000	0.031	Sec. E1	31	0.840	0.486	0.486	0.796
419	HSST6X6X0	HSST6X6X0	0.019	1.000	0.019	Sec. E1	9	5.240	28.600	28.600	45.600
421	HSST6X6X0	HSST6X6X0	0.019	1.000	0.019	Sec. E1	9	5.240	28.600	28.600	45.600
423	HSST6X6X0	HSST6X6X0	0.019	1.000	0.019	Sec. E1	9	5.240	28.600	28.600	45.600
425	HSST6X6X0	HSST6X6X0	0.019	1.000	0.019	Sec. E1	9	5.240	28.600	28.600	45.600
427	HSST6X3X0	HSST6X3X0	0.009	1.000	0.009	Eq. Sec. D2	9	3.840	17.000	5.700	14.200
428	HSST6X3X0	HSST6X3X0	0.010	1.000	0.010	Eq. Sec. D2	22	3.840	17.000	5.700	14.200
429	HSST6X3X0	HSST6X3X0	0.009	1.000	0.009	Eq. Sec. D2	23	3.840	17.000	5.700	14.200
430	HSST6X3X0	HSST6X3X0	0.009	1.000	0.009	Eq. Sec. D2	9	3.840	17.000	5.700	14.200
431	HSST2X2X0	HSST2X2X0	0.030	1.000	0.030	Sec. E1	23	0.840	0.486	0.486	0.796
432	HSST2X2X0	HSST2X2X0	0.026	1.000	0.026	Sec. E1	9	0.840	0.486	0.486	0.796
433	HSST2X2X0	HSST2X2X0	0.030	1.000	0.030	Sec. E1	22	0.840	0.486	0.486	0.796
434	HSST2X2X0	HSST2X2X0	0.026	1.000	0.026	Sec. E1	9	0.840	0.486	0.486	0.796
435	HSST2X2X0	HSST2X2X0	0.027	1.000	0.027	Sec. E1	9	0.840	0.486	0.486	0.796
436	HSST2X2X0	HSST2X2X0	0.029	1.000	0.029	Sec. E1	23	0.840	0.486	0.486	0.796
437	HSST2X2X0	HSST2X2X0	0.025	1.000	0.025	Sec. E1	9	0.840	0.486	0.486	0.796
438	HSST2X2X0	HSST2X2X0	0.031	1.000	0.031	Sec. E1	22	0.840	0.486	0.486	0.796
439	HSST4X4X0	HSST4X4X0	0.012	1.000	0.012	Eq. Sec. D2	9	3.370	7.800	7.800	12.800
440	HSST4X4X0	HSST4X4X0	0.012	1.000	0.012	Eq. Sec. D2	23	3.370	7.800	7.800	12.800
441	HSST4X4X0	HSST4X4X0	0.012	1.000	0.012	Eq. Sec. D2	9	3.370	7.800	7.800	12.800
442	HSST4X4X0	HSST4X4X0	0.012	1.000	0.012	Eq. Sec. D2	23	3.370	7.800	7.800	12.800
443	HSST4X4X0	HSST4X4X0	12336	1.000	0.012336	Eq. Sec. D2	22	3.370	7.800	7.800	12.800
444	HSST4X4X0	HSST4X4X0	0.012	1.000	0.012	Eq. Sec. D2	9	3.370	7.800	7.800	12.800
445	HSST4X4X0	HSST4X4X0	0.011	1.000	0.011	Eq. Sec. D2	9	3.370	7.800	7.800	12.800
446	HSST4X4X0	HSST4X4X0	0.012	1.000	0.012	Eq. Sec. D2	22	3.370	7.800	7.800	12.800
447	HSST6X3X0	HSST6X3X0	0.004	1.000	0.004	Sec. E1	23	3.840	17.000	5.700	14.200
448	HSST6X3X0	HSST6X3X0	0.003	1.000	0.003	Sec. E1	23	3.840	17.000	5.700	14.200
449	HSST6X3X0	HSST6X3X0	0.004	1.000	0.004	Sec. E1	22	3.840	17.000	5.700	14.200
450	HSST6X3X0	HSST6X3X0	0.003	1.000	0.003	Sec. E1	22	3.840	17.000	5.700	14.200
451	HSST2X2X0	HSST2X2X0	0.009	1.000	0.009	Eq. H1-1b	22	0.840	0.486	0.486	0.796
452	HSST2X2X0	HSST2X2X0	0.009	1.000	0.009	Eq. H1-1b	9	0.840	0.486	0.486	0.796
453	HSST2X2X0	HSST2X2X0	0.009	1.000	0.009	Eq. H1-1b	22	0.840	0.486	0.486	0.796
454	HSST2X2X0	HSST2X2X0	0.009	1.000	0.009	Eq. H1-1b	9	0.840	0.486	0.486	0.796
455	HSST2X2X0	HSST2X2X0	0.009	1.000	0.009	Eq. H1-1b	23	0.840	0.486	0.486	0.796
456	HSST2X2X0	HSST2X2X0	0.009	1.000	0.009	Eq. H1-1b	9	0.840	0.486	0.486	0.796
457	HSST2X2X0	HSST2X2X0	0.009	1.000	0.009	Eq. H1-1b	23	0.840	0.486	0.486	0.796
458	HSST2X2X0	HSST2X2X0	0.009	1.000	0.009	Eq. H1-1b	9	0.840	0.486	0.486	0.796

Utilization Ratio Cont...

Beam	Analysis Property	Design Property	Actual Ratio	Allowable Ratio	Ratio (Act./Allow.)	Clause	L/C	Ax (in^2)	Iz (in^4)	Iy (in^4)	Ix (in^4)
459	HSST4X4X0	HSST4X4X0	0.026	1.000	0.026	Sec. E1	30	3.370	7.800	7.800	12.800
460	HSST4X4X0	HSST4X4X0	0.077	1.000	0.077	Sec. E1	26	3.370	7.800	7.800	12.800
461	HSST4X4X0	HSST4X4X0	0.064	1.000	0.064	Sec. E1	27	3.370	7.800	7.800	12.800
462	HSST4X4X0	HSST4X4X0	0.051	1.000	0.051	Sec. E1	26	3.370	7.800	7.800	12.800
463	HSST4X4X0	HSST4X4X0	0.006	1.000	0.006	Sec. E1	37	3.370	7.800	7.800	12.800
464	HSST4X4X0	HSST4X4X0	0.048	1.000	0.048	Sec. E1	27	3.370	7.800	7.800	12.800
465	HSST4X4X0	HSST4X4X0	0.337	1.000	0.337	Eq. H1-1a	27	3.370	7.800	7.800	12.800
466	HSST4X4X0	HSST4X4X0	0.162	1.000	0.162	Sec. E1	12	3.370	7.800	7.800	12.800
467	HSST4X4X0	HSST4X4X0	0.063	1.000	0.063	Sec. E1	26	3.370	7.800	7.800	12.800
468	HSST4X4X0	HSST4X4X0	0.029	1.000	0.029	Sec. E1	30	3.370	7.800	7.800	12.800
469	HSST4X4X0	HSST4X4X0	0.009	1.000	0.009	Sec. E1	36	3.370	7.800	7.800	12.800
470	HSST4X4X0	HSST4X4X0	0.046	1.000	0.046	Sec. E1	26	3.370	7.800	7.800	12.800
471	HSST4X4X0	HSST4X4X0	0.008	1.000	0.008	Eq. Sec. D2	27	3.370	7.800	7.800	12.800
472	HSST4X4X0	HSST4X4X0	0.045	1.000	0.045	Sec. E1	27	3.370	7.800	7.800	12.800
473	HSST4X4X0	HSST4X4X0	0.017	1.000	0.017	Sec. E1	26	3.370	7.800	7.800	12.800
474	HSST4X4X0	HSST4X4X0	0.044	1.000	0.044	Sec. E1	27	3.370	7.800	7.800	12.800
475	HSST4X4X0	HSST4X4X0	0.011	1.000	0.011	Sec. E1	36	3.370	7.800	7.800	12.800
476	HSST4X4X0	HSST4X4X0	0.068	1.000	0.068	Sec. E1	26	3.370	7.800	7.800	12.800
477	HSST4X4X0	HSST4X4X0	0.092	1.000	0.092	Sec. E1	27	3.370	7.800	7.800	12.800
478	HSST4X4X0	HSST4X4X0	0.038	1.000	0.038	Sec. E1	26	3.370	7.800	7.800	12.800
479	HSST4X4X0	HSST4X4X0	0.073	1.000	0.073	Sec. E1	27	3.370	7.800	7.800	12.800
480	HSST4X4X0	HSST4X4X0	0.006	1.000	0.006	Eq. Sec. D2	23	3.370	7.800	7.800	12.800
483	C8X11	C8X11	0.026	1.000	0.026	Eq. H1-1b	10	3.370	32.500	1.310	0.121
484	C8X11	C8X11	0.029	1.000	0.029	Eq. H1-1b	22	3.370	32.500	1.310	0.121
485	C8X11	C8X11	0.029	1.000	0.029	Eq. H1-1b	23	3.370	32.500	1.310	0.121
486	C8X11	C8X11	0.028	1.000	0.028	Eq. H1-1b	23	3.370	32.500	1.310	0.121
487	HSST6X3X0	HSST6X3X0	0.037	1.000	0.037	Eq. H1-1b	8	3.840	17.000	5.700	14.200
488	HSST6X3X0	HSST6X3X0	0.037	1.000	0.037	Eq. H1-1b	7	3.840	17.000	5.700	14.200
489	HSST6X3X0	HSST6X3X0	0.057	1.000	0.057	Eq. H1-1b	23	3.840	17.000	5.700	14.200
490	HSST6X3X0	HSST6X3X0	0.057	1.000	0.057	Eq. H1-1b	22	3.840	17.000	5.700	14.200
491	C8X11	C8X11	0.020	1.000	0.020	Eq. H1-1b	23	3.370	32.500	1.310	0.121
492	HSST6X3X0	HSST6X3X0	0.014	1.000	0.014	Eq. H1-1b	22	3.840	17.000	5.700	14.200
493	C8X11	C8X11	0.029	1.000	0.029	Eq. H1-1b	22	3.370	32.500	1.310	0.121
494	HSST6X3X0	HSST6X3X0	0.014	1.000	0.014	Eq. H1-1b	22	3.840	17.000	5.700	14.200
495	C8X11	C8X11	0.020	1.000	0.020	Eq. H1-1b	23	3.370	32.500	1.310	0.121
496	HSST6X3X0	HSST6X3X0	0.014	1.000	0.014	Eq. H1-1b	23	3.840	17.000	5.700	14.200
497	C8X11	C8X11	0.029	1.000	0.029	Eq. H1-1b	23	3.370	32.500	1.310	0.121
498	HSST6X3X0	HSST6X3X0	0.014	1.000	0.014	Eq. H1-1b	23	3.840	17.000	5.700	14.200
499	C8X11	C8X11	0.019	1.000	0.019	Eq. H1-1b	23	3.370	32.500	1.310	0.121
500	C8X11	C8X11	0.020	1.000	0.020	Eq. H1-1b	23	3.370	32.500	1.310	0.121
501	C8X11	C8X11	18064	1.000	0.018064	Eq. H1-1b	23	3.370	32.500	1.310	0.121
502	C8X11	C8X11	0.019	1.000	0.019	Eq. H1-1b	22	3.370	32.500	1.310	0.121
503	HSST6X3X0	HSST6X3X0	0.029	1.000	0.029	Eq. H1-1b	22	3.840	17.000	5.700	14.200
504	C8X11	C8X11	0.012	1.000	0.012	Eq. H1-1b	23	3.370	32.500	1.310	0.121
505	HSST6X3X0	HSST6X3X0	0.012	1.000	0.012	Eq. H1-1b	12	3.840	17.000	5.700	14.200

Utilization Ratio Cont...

Beam	Analysis Property	Design Property	Actual	Allowable	Ratio (Act./Allow.)	Clause	L/C	Ax (in^2)	Iz (in^4)	Iy (in^4)	Ix (in^4)
506	HSST6X3X0	HSST6X3X0	0.025	1.000	0.025	Eq. H1-1b	10	3.840	17.000	5.700	14.200
507	C8X11	C8X11	0.015	1.000	0.015	Eq. H1-1b	23	3.370	32.500	1.310	0.121
508	HSST6X3X0	HSST6X3X0	12306	1.000	0.012306	Eq. H1-1b	12	3.840	17.000	5.700	14.200
509	HSST6X3X0	HSST6X3X0	0.029	1.000	0.029	Eq. H1-1b	23	3.840	17.000	5.700	14.200
510	C8X11	C8X11	0.015	1.000	0.015	Eq. H1-1b	22	3.370	32.500	1.310	0.121
511	HSST6X3X0	HSST6X3X0	0.012	1.000	0.012	Eq. H1-1b	12	3.840	17.000	5.700	14.200
512	HSST6X3X0	HSST6X3X0	0.026	1.000	0.026	Eq. H1-1b	10	3.840	17.000	5.700	14.200
513	C8X11	C8X11	0.013	1.000	0.013	Eq. H1-1b	23	3.370	32.500	1.310	0.121
514	HSST6X3X0	HSST6X3X0	0.012	1.000	0.012	Eq. H1-1b	12	3.840	17.000	5.700	14.200
515	C8X11	C8X11	0.020	1.000	0.020	Sec. E1	22	3.370	32.500	1.310	0.121
516	C8X11	C8X11	0.021	1.000	0.021	Sec. E1	23	3.370	32.500	1.310	0.121
517	C8X11	C8X11	0.016	1.000	0.016	Sec. E1	31	3.370	32.500	1.310	0.121
518	C8X11	C8X11	0.020	1.000	0.020	Sec. E1	22	3.370	32.500	1.310	0.121
519	HSST6X3X0	HSST6X3X0	0.009	1.000	0.009	Eq. H1-1b	22	3.840	17.000	5.700	14.200
520	C8X11	C8X11	0.012	1.000	0.012	Eq. H1-1b	9	3.370	32.500	1.310	0.121
521	HSST6X3X0	HSST6X3X0	0.002	1.000	0.002	Eq. H1-1b	9	3.840	17.000	5.700	14.200
522	HSST6X3X0	HSST6X3X0	0.006	1.000	0.006	Eq. H1-1b	9	3.840	17.000	5.700	14.200
523	C8X11	C8X11	0.013	1.000	0.013	Eq. H1-1b	23	3.370	32.500	1.310	0.121
524	HSST6X3X0	HSST6X3X0	0.003	1.000	0.003	Eq. H1-1b	9	3.840	17.000	5.700	14.200
525	HSST6X3X0	HSST6X3X0	0.009	1.000	0.009	Eq. H1-1b	23	3.840	17.000	5.700	14.200
526	C8X11	C8X11	0.013	1.000	0.013	Eq. H1-1b	22	3.370	32.500	1.310	0.121
527	HSST6X3X0	HSST6X3X0	0.002	1.000	0.002	Eq. H1-1b	9	3.840	17.000	5.700	14.200
528	HSST6X3X0	HSST6X3X0	0.007	1.000	0.007	Eq. H1-1b	9	3.840	17.000	5.700	14.200
529	C8X11	C8X11	0.012	1.000	0.012	Eq. H1-1b	9	3.370	32.500	1.310	0.121
530	HSST6X3X0	HSST6X3X0	0.003	1.000	0.003	Eq. H1-1b	9	3.840	17.000	5.700	14.200
531	HSST4X4X0	HSST4X4X0	0.131	1.000	0.131	Sec. E1	26	3.370	7.800	7.800	12.800
532	HSST4X4X0	HSST4X4X0	0.047	1.000	0.047	Sec. E1	30	3.370	7.800	7.800	12.800
533	HSST4X4X0	HSST4X4X0	0.107	1.000	0.107	Sec. E1	27	3.370	7.800	7.800	12.800
534	HSST4X4X0	HSST4X4X0	0.069	1.000	0.069	Sec. E1	27	3.370	7.800	7.800	12.800
535	HSST4X4X0	HSST4X4X0	27818	1.000	0.027818	Sec. E1	31	3.370	7.800	7.800	12.800
536	HSST4X4X0	HSST4X4X0	0.078	1.000	0.078	Sec. E1	27	3.370	7.800	7.800	12.800
537	HSST4X4X0	HSST4X4X0	0.154	1.000	0.154	Sec. E1	27	3.370	7.800	7.800	12.800
538	HSST4X4X0	HSST4X4X0	0.075	1.000	0.075	Sec. E1	26	3.370	7.800	7.800	12.800
539	HSST4X4X0	HSST4X4X0	55022	1.000	0.055022	Sec. E1	30	3.370	7.800	7.800	12.800
540	HSST4X4X0	HSST4X4X0	0.129	1.000	0.129	Sec. E1	26	3.370	7.800	7.800	12.800
541	HSST4X4X0	HSST4X4X0	0.272	1.000	0.272	Eq. H1-1a	12	3.370	7.800	7.800	12.800
542	HSST4X4X0	HSST4X4X0	0.476	1.000	0.476	Eq. H1-1a	27	3.370	7.800	7.800	12.800
583	L60606	N/A						4.380	6.203	24.571	0.205
584	L60606	N/A						4.380	6.203	24.571	0.205
585	L60606	N/A						4.380	6.203	24.571	0.205
586	L60606	N/A						4.380	6.203	24.571	0.205
587	L60606	N/A						4.380	6.203	24.571	0.205
588	L60606	N/A						4.380	6.203	24.571	0.205
589	L60606	N/A						4.380	6.203	24.571	0.205
590	L60606	N/A						4.380	6.203	24.571	0.205

Utilization Ratio Cont...

Beam	Analysis Property	Design Property	Actual	Allowable	Ratio	Clause	L/C	Ax (in^2)	Iz (in^4)	Iy (in^4)	Ix (in^4)
			Ratio	Ratio	(Act./Allow.)						
591	W21X50	W21X50	0.246	1.000	0.246			32.311	2.78E+3	4.39E+3	3.09E+3
592	W21X50	W21X50	0.248	1.000	0.248			32.311	2.78E+3	4.39E+3	3.09E+3
593	W21X50	W21X50	0.159	1.000	0.159			32.311	2.78E+3	4.39E+3	3.09E+3
594	W21X50	W21X50	0.160	1.000	0.160			32.311	2.78E+3	4.39E+3	3.09E+3
595	W21X50	W21X50	0.298	1.000	0.298			32.311	2.78E+3	4.39E+3	3.09E+3
596	W21X50	W21X50	0.297	1.000	0.297			32.311	2.78E+3	4.39E+3	3.09E+3
597	W21X50	W21X50	0.170	1.000	0.170			23.121	2.18E+3	501.993	1.55E+3
598	W21X50	W21X50	0.173	1.000	0.173			23.121	2.18E+3	501.990	1.55E+3
599	L60606	N/A						4.380	6.203	24.571	0.205
600	L60606	N/A						4.380	6.203	24.571	0.205
601	L60606	N/A						4.380	6.203	24.571	0.205
602	L60606	N/A						4.380	6.203	24.571	0.205
603	L60606	N/A						4.380	6.203	24.571	0.205
604	L60606	N/A						4.380	6.203	24.571	0.205
605	L60606	N/A						4.380	6.203	24.571	0.205
606	L60606	N/A						4.380	6.203	24.571	0.205
631	W18X50	W18X50	0.104	1.000	0.104	LRFD-H1-1B-	10	14.700	800.000	40.100	1.240
632	W18X50	W18X50	0.225	1.000	0.225	LRFD-H1-1B-	10	14.700	800.000	40.100	1.240
633	W18X50	W18X50	0.225	1.000	0.225	LRFD-H1-1B-	10	14.700	800.000	40.100	1.240
634	W18X50	W18X50	0.105	1.000	0.105	LRFD-H1-1B-	10	14.700	800.000	40.100	1.240
635	W12X22	W12X22	0.032	1.000	0.032			23.920	704.953	4.24E+3	1.66E+3
636	W12X22	W12X22	0.050	1.000	0.050			23.920	704.953	4.24E+3	1.66E+3
637	W12X22	W12X22	0.032	1.000	0.032			23.920	704.952	4.24E+3	1.66E+3
638	W12X22	W12X22	05045	1.000	0.05045			23.920	704.952	4.24E+3	1.66E+3
639	W12X22	W12X22	0.032	1.000	0.032			23.920	704.952	4.24E+3	1.66E+3
640	W12X22	W12X22	05045	1.000	0.05045			23.920	704.952	4.24E+3	1.66E+3
641	W21X50	W21X50	0.226	1.000	0.226			32.311	2.78E+3	4.39E+3	3.09E+3
642	W21X50	W21X50	0.227	1.000	0.227			32.311	2.78E+3	4.39E+3	3.09E+3
643	W21X50	W21X50	0.116	1.000	0.116			23.121	2.18E+3	501.996	1.55E+3
644	W21X50	W21X50	0.117	1.000	0.117			23.121	2.18E+3	501.994	1.55E+3
645	W21X50	W21X50	0.184	1.000	0.184			32.311	2.78E+3	4.39E+3	3.09E+3
646	W21X50	W21X50	0.184	1.000	0.184			32.311	2.78E+3	4.39E+3	3.09E+3
647	W21X50	W21X50	0.115	1.000	0.115			23.121	2.18E+3	501.993	1.55E+3
648	W21X50	W21X50	0.117	1.000	0.117			23.121	2.18E+3	501.990	1.55E+3
653	W8X10	N/A						2.960	30.800	2.090	0.0426
654	W8X10	N/A						2.960	30.800	2.090	0.0426
655	W8X10	N/A						2.960	30.800	2.090	0.0426
656	W8X10	N/A						2.960	30.800	2.090	0.0426
657	W8X10	N/A						2.960	30.800	2.090	0.0426
658	W8X10	N/A						11.680	194.944	531.838	535.752
659	W8X10	N/A						11.680	194.944	531.838	535.752
660	W8X10	N/A						2.960	30.800	2.090	0.0426
661	W8X10	N/A						2.960	30.800	2.090	0.0426
662	W8X10	N/A						2.960	30.800	2.090	0.0426
663	W8X10	N/A						2.960	30.800	2.090	0.0426

Utilization Ratio Cont...

Beam	Analysis Property	Design Property	Actual Ratio	Allowable Ratio	Ratio (Act./Allow.)	Clause	L/C	Ax (in^2)	Iz (in^4)	Iy (in^4)	Ix (in^4)
664	W8X10	N/A						12.326	198.231	658.482	579.586
665	W8X10	N/A						21.692	227.145	5.25E+3	1.24E+3
667	W12X22	W12X22	0.025	1.000	0.025	LRFD-H1-1B-	10	6.480	156.000	4.660	0.293
668	W8X10	N/A						11.680	194.944	531.848	535.756
669	W8X10	N/A						11.680	194.944	531.848	535.756
670	W8X10	N/A						40.424	254.542	42E+3	2.62E+3
672	W8X10	N/A						11.680	194.944	531.848	535.756
673	W8X10	N/A						2.960	30.800	2.090	0.0426
674	W12X22	W12X22	0.009	1.000	0.009			15.846	597.443	661.052	854.763

Failed Members

There is no data of this type.

Statics Check Results

L/C		FX (kip)	FY (kip)	FZ (kip)	MX (kip-in)	MY (kip-in)	MZ (kip-in)
1:EQ(X)	Loads	17.859	0	0	0	3.54E+3	-8.97E+3
1:EQ(X)	Reactions	-17.859	0.000	-0.000	0.000	-3.54E+3	8.97E+3
	Difference	0.000	0.000	-0.000	0.000	0.000	-0.000
2:EQ(Z)	Loads	0	0	17.859	8.97E+3	-2.98E+3	0
2:EQ(Z)	Reactions	-0.000	-0.000	-17.859	-8.97E+3	2.98E+3	-0.000
	Difference	-0.000	-0.000	0.000	0.000	-0.000	-0.000
3:DEAD	Loads	0.000	-554.566	0	107E+3	0.000	-93.5E+3
3:DEAD	Reactions	-0.000	553.400	-0.000	-107E+3	-0.000	93.5E+3
	Difference	0.000	-1.165	-0.000	282.137	-0.000	0.000
4:LIVE	Loads	0	-309.683	0	59.3E+3	0	-55E+3
4:LIVE	Reactions	0.000	309.232	-0.000	-59.2E+3	0.000	55E+3
	Difference	0.000	-0.451	-0.000	92.405	0.000	0.000
5:SNOW	Loads	0	-23.785	0	4.41E+3	0	-3.95E+3
5:SNOW	Reactions	0.000	23.785	-0.000	-4.41E+3	0.000	3.95E+3
	Difference	0.000	-0.000	-0.000	0.000	0.000	0.000
6:LIVE ROOF	Loads	0	-15.857	0	2.94E+3	0	-2.63E+3
6:LIVE ROOF	Reactions	0.000	15.857	-0.000	-2.94E+3	0.000	2.63E+3
	Difference	0.000	-0.000	-0.000	0.000	0.000	0.000
7:WIND(X-)	Loads	71.853	0.643	1.512	419.627	13.8E+3	-31.7E+3
7:WIND(X-)	Reactions	-71.853	-0.643	-1.512	-419.627	-13.8E+3	31.7E+3
	Difference	0.000	0.000	-0.000	0.000	0.000	-0.000
8:WIND(Z-)	Loads	-0.000	0.643	67.494	30.7E+3	-11.2E+3	106.758
8:WIND(Z-)	Reactions	-0.000	-0.643	-67.494	-30.7E+3	11.2E+3	-106.758
	Difference	-0.000	-0.000	0.000	0.000	-0.000	-0.000

Reaction Summary

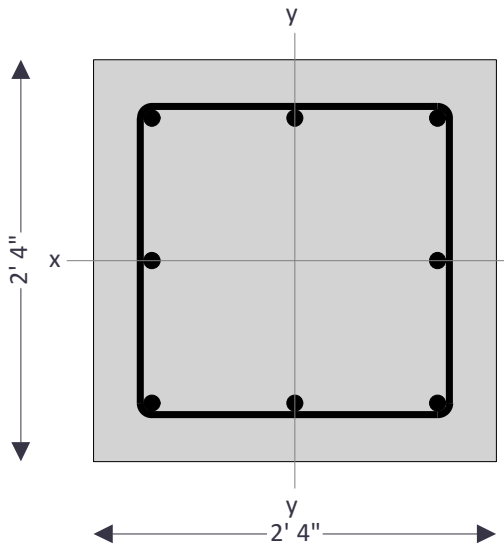
	Node	L/C	Horizontal FX (kip)	Vertical FY (kip)	Horizontal FZ (kip)	Moment MX (kip-in)	Moment MY (kip-in)	Moment MZ (kip-in)
Max FX	1	12:1.2D+1.6L+	**21.088**	96.727	15.393	201.844	-0.000	-279.928
Min FX	3	26:1.2D+1.0W(	**-26.716**	153.291	19.079	250.974	0.000	359.040
Max FY	5	12:1.2D+1.6L+	0.012373	**236.735**	1.106	13.854	0.000	-6.667
Min FY	7	7:WIND(X-)	-11.077	**-36.371**	4.786	58.404	-0.000	155.374
Max FZ	3	12:1.2D+1.6L+	-19.990	150.048	**20.353**	268.001	0.000	266.096
Min FZ	9	27:1.2D+1.0W(	-16.336	148.794	**-27.187**	-357.815	-0.000	217.101
Max MX	3	12:1.2D+1.6L+	-19.990	150.048	20.353	**268.001**	0.000	266.096
Min MX	9	27:1.2D+1.0W(	-16.336	148.794	-27.187	**-357.815**	-0.000	217.101
Max MY	4	26:1.2D+1.0W(	-5.443	49.897	1.383	18.408	**0.004**	338.240
Min MY	8	31:1.2D-1.0E(Z	1.248	86.022	-2.500	-36.362	**-0.001**	-15.379
Max MZ	3	26:1.2D+1.0W(	-26.716	153.291	19.079	250.974	0.000	**359.040**
Min MZ	1	12:1.2D+1.6L+	21.088	96.727	15.393	201.844	-0.000	**-279.928**

Maximum reactions used in column analysis on following pages.

Tekla Tedds Dewberry Engineers Inc. 99 Summer St. Boston, MA 02110	Project West Hartford Relo CT				Job Ref. 50114615	
	Section Concrete Column				Sheet no./rev. 1	
	Calc. by AMD	Date 12/15/2020	Chk'd by SA	Date 12/16/2020	App'd by	Date

RC RECTANGULAR COLUMN DESIGN (ACI318-14)

Tedds calculation version 2.2.02



8 × No. 9 longitudinal bars

No. 4 ties @ 12 in c/c

Applied loads

Ultimate axial force acting on column	P_{u_act} = **236.735** kips	
Ultimate moment about major (X) axis	M_{ux_act} = **29.82** kips_ft	357.812 kip-in
Ultimate moment about minor (Y) axis	M_{uy_act} = **29.92** kips_ft	359.040 kip-in
Contour beta factor	= **0.650**	

Geometry of column

Depth of column (larger dimension of column)	h = **28.0** in
Width of column (smaller dimension of column)	b = **28.0** in
Clear cover to reinforcement (both sides)	c_c = **3.0** in
Unsupported height of column about x axis	l_{ux} = **10.5** ft
Effective height factor about x axis	k_x = **0.65**
Column state about the x axis	Unbraced
Unsupported height of column about y axis	l_{uy} = **10.5** ft
Effective height factor about y axis	k_y = **1.20**
Column state about the y axis	Unbraced

Check on overall column dimensions

Column dimensions are OK - h < 4b

Reinforcement of column

Numbers of bars of longitudinal steel	N = **8**
Longitudinal steel bar diameter number	D_{bar_num} = **9**
Diameter of longitudinal bar	D_{long} = **1.128** in
Stirrup bar diameter number	D_{stir_num} = **4**
Diameter of stirrup bar	D_{stir} = **0.500** in
Specified yield strength of reinforcement	f_y = **60000** psi
Specified compressive strength of concrete	f'_c = **3000** psi

Modulus of elasticity of bar reinforcement E_s = **29 × 10^6** psi

Modulus of elasticity of concrete $E_c = 57000 \quad f'_c{}^{1/2} \quad (1psi)^{1/2}$ = **3122019** psi

Yield strain $_y = f_y / E_s$ = **0.00207**

Ultimate design strain $_c$ = **0.003** in/in

Check for minimum area of steel - 10.6.1.1

Gross area of column $A_g = h \quad b$ = **784.000** in^2

Area of steel $A_{st} = N \quad (\quad D_{long}{}^2) / 4$ = **7.995** in^2

Minimum area of steel required $A_{st\_min} = 0.01 \quad A_g$ = **7.840** in^2

A_{st}> A_{st_min}, PASS- Minimum steel check

Check for maximum area of steel - 10.6.1.1

Permissible maximum area of steel $A_{st\_max} = 0.08 \quad A_g$ = **62.720** in^2

A_{st}< A_{st_max}, PASS - Maximum steel check

Slenderness check about x axis

Radius of gyration $r_x = 0.3 \quad h$ = **8.4** in

Actual slenderness ratio $s_{rx\_act} = k_x \quad l_{ux} / r_x$ = **9.75**

Slenderness ratio is less than 22, slenderness effects may be neglected

Slenderness check about y axis

Radius of gyration $r_y = 0.3 \quad b$ = **8.4** in

Actual slenderness ratio $s_{ry\_act} = k_y \quad l_{uy} / r_y$ = **18**

Slenderness ratio is less than 22, slenderness effects may be neglected

Axial load capacity of axially loaded column

Strength reduction factor = 0.65

Area of steel on compression face $A'_s = A_{st} / 2$ = **3.997** in^2

Area of steel on tension face $A_s = A_{st} / 2$ = **3.997** in^2

Net axial load capacity of column $P_n = 0.8 \quad (0.85 \quad f'_c \quad (A_g - A_{st}) + f_y \quad A_{st})$ = **1966.793** kips

Ultimate axial load capacity of column $P_u = \quad P_n$ = **1278.415** kips

PASS : Column is safe in axial loading

Net moments for biaxial column

Assuming strength reduction factor = 0.65

Net moment about major (X) axis $M_{nx} = M_{ux\_act} /$ = **45.88** kips_ft

Net moment about minor (Y) axis $M_{ny} = M_{uy\_act} /$ = **46.03** kips_ft

Axial load capacity with zero moment

Nominal axial load capacity $P_{n0} = 0.85 \quad f'_c \quad (A_g - A_{st}) + A_{st} \quad f_y$ = **2458** kips

Strength reduction factor = **0.650**

Ultimate axial load capacity $P_{u0} = \quad P_{n0}$ = **1598** kips

Maximum nominal axial load capacity $P_{n,max} = 0.8 \quad P_{n0}$ = **1967** kips

Maximum ultimate axial load capacity $P_{u,max} = 0.8 \quad P_{u0}$ = **1278** kips

Axial and bending capacity at maximum axial capacity (bending about x axis)

Moment of resistance of concrete

Depth to neutral axis c_{x0} = **27.7** in

Depth of equivalent rectangular stress block	$a_{x0} = \min((\ _1\ c_{x0}), h) =$ **24** in
Concrete compression force	$P_{xcon0} = 0.85\ f'_c\ b\ a_{x0} =$ **1678.7** kips
Concrete moment of resistance	$M_{xcon0} = P_{xcon0}\ (h / 2 - (a_{x0} / 2)) =$ **314.0** kip_ft

Moment of resistance of reinforcement

Strain in layer 1	$_{x10} =\ _c\ (1 - x_{x1} / c_{x0}) =$ **0.00256**
Stress in layer 1	$_{x10} = \min(f_y, E_s\ _{x10}) - 0.85\ f'_c =$ **57450.00** psi
Force carried by layer 1	$P_{x10} = N_x\ A_{bar}\ _{x10} =$ **172.234** kips
Moment carried by steel layer 1	$M_{x10} = P_{x10}\ ((h / 2) - x_{x1}) =$ **142.610** kip_ft
Strain in layer 2	$_{x20} =\ _c\ (1 - x_{x2} / c_{x0}) =$ **0.00148**
Stress in layer 2	$_{x20} = \min(f_y, E_s\ _{x20}) - 0.85\ f'_c =$ **40414.96** psi
Force carried by layer 2	$P_{x20} = 2\ A_{bar}\ _{x20} =$ **80.776** kips
Moment carried by steel layer 2	$M_{x20} = P_{x20}\ ((h / 2) - x_{x2}) =$ **0.000** kip_ft
Strain in layer 3	$_{x30} =\ _c\ (1 - x_{x3} / c_{x0}) =$ **0.00040**
Stress in layer 3	$_{x30} = \min(f_y, E_s\ _{x30}) =$ **11712.67** psi
Force carried by layer 3	$P_{x30} = N_x\ A_{bar}\ _{x30} =$ **35.114** kips
Moment carried by steel layer 3	$M_{x30} = P_{x30}\ ((h / 2) - x_{x3}) =$ **-29.075** kip_ft

Combined axial load and moment resistance

Sum of forces	$P_{nx0} =$ **1966.8** kips
Sum of moments	$M_{ox0} =$ **427.5** kip_ft
Strength reduction factor	$_x =$ **0.650**
Utilmate axial load capacity	$P_{ux0} =\ _x\ P_{nx0} =$ **1278.4** kips
Utilmate moment load capacity	$M_{uox0} =\ _x\ M_{ox0} =$ **277.9** kip_ft

Axial and bending capacity with zero strain in tension face reinforcement (bending about x axis)

Moment of resistance of concrete

Depth to neutral axis	$c_{x1} =$ **23.9** in
Depth of equivalent rectangular stress block	$a_{x1} = \min((\ _1\ c_{x1}), h) =$ **20** in
Concrete compression force	$P_{xcon1} = 0.85\ f'_c\ b\ a_{x1} =$ **1452.7** kips
Concrete moment of resistance	$M_{xcon1} = P_{xcon1}\ (h / 2 - (a_{x1} / 2)) =$ **463.3** kip_ft

Moment of resistance of reinforcement

Strain in layer 1	$_{x11} =\ _c\ (1 - x_{x1} / c_{x1}) =$ **0.00249**
Stress in layer 1	$_{x11} = \min(f_y, E_s\ _{x11}) - 0.85\ f'_c =$ **57450.00** psi
Force carried by layer 1	$P_{x11} = N_x\ A_{bar}\ _{x11} =$ **172.234** kips
Moment carried by steel layer 1	$M_{x11} = P_{x11}\ ((h / 2) - x_{x1}) =$ **142.610** kip_ft
Strain in layer 2	$_{x21} =\ _c\ (1 - x_{x2} / c_{x1}) =$ **0.00125**
Stress in layer 2	$_{x21} = \min(f_y, E_s\ _{x21}) - 0.85\ f'_c =$ **33564.30** psi
Force carried by layer 2	$P_{x21} = 2\ A_{bar}\ _{x21} =$ **67.084** kips
Moment carried by steel layer 2	$M_{x21} = P_{x21}\ ((h / 2) - x_{x2}) =$ **0.000** kip_ft
Strain in layer 3	$_{x31} =\ _c\ (1 - x_{x3} / c_{x1}) =$ **0.00000**
Stress in layer 3	$_{x31} = \min(f_y, E_s\ _{x31}) =$ **0.00** psi
Force carried by layer 3	$P_{x31} = N_x\ A_{bar}\ _{x31} =$ **0.000** kips
Moment carried by steel layer 3	$M_{x31} = P_{x31}\ ((h / 2) - x_{x3}) =$ **0.000** kip_ft

Combined axial load and moment resistance

Sum of forces P_{nx1} = **1692.0** kips

Sum of moments M_{ox1} = **605.9** kip_ft

Strength reduction factor $_x$ = **0.650**

Utilmate axial load capacity $P_{ux1} = {}_x \; P_{nx1}$ = **1099.8** kips

Utilmate moment load capacity $M_{uox1} = {}_x \; M_{ox1}$ = **393.8** kip_ft

Axial and bending capacity with tension face reinforcement at half yield strain (bending about x axis)

Moment of resistance of concrete

Depth to neutral axis c_{x2} = **17.8** in

Depth of equivalent rectangular stress block $a_{x2} = \min((\; _1 \; c_{x2}), h)$ = **15** in

Concrete compression force $P_{xcon2} = 0.85 \; f'_c \; b \; a_{x2}$ = **1080.2** kips

Concrete moment of resistance $M_{xcon2} = P_{xcon2} \; (h / 2 - (a_{x2} / 2))$ = **579.3** kip_ft

Moment of resistance of reinforcement

Strain in layer 1 $_{x12} = {}_c \; (1 - x_{x1} / c_{x2})$ = **0.00232**

Stress in layer 1 $_{x12} = \min(f_y, E_s \; _{x12}) - 0.85 \; f'_c$ = **57450.00** psi

Force carried by layer 1 $P_{x12} = N_x \; A_{bar} \; _{x12}$ = **172.234** kips

Moment carried by steel layer 1 $M_{x12} = P_{x12} \; ((h / 2) - x_{x1})$ = **142.610** kip_ft

Strain in layer 2 $_{x22} = {}_c \; (1 - x_{x2} / c_{x2})$ = **0.00064**

Stress in layer 2 $_{x22} = \min(f_y, E_s \; _{x22}) - 0.85 \; f'_c$ = **16017.51** psi

Force carried by layer 2 $P_{x22} = 2 \; A_{bar} \; _{x22}$ = **32.014** kips

Moment carried by steel layer 2 $M_{x22} = P_{x22} \; ((h / 2) - x_{x2})$ = **0.000** kip_ft

Strain in layer 3 $_{x32} = {}_c \; (1 - x_{x3} / c_{x2})$ = **-0.00103**

Stress in layer 3 $_{x32} = \max(-1 \; f_y, E_s \; _{x32})$ = **-30000.00** psi

Force carried by layer 3 $P_{x32} = N_x \; A_{bar} \; _{x32}$ = **-89.940** kips

Moment carried by steel layer 3 $M_{x32} = P_{x32} \; ((h / 2) - x_{x3})$ = **74.470** kip_ft

Combined axial load and moment resistance

Sum of forces P_{nx2} = **1194.5** kips

Sum of moments M_{ox2} = **796.4** kip_ft

Strength reduction factor $_x$ = **0.650**

Utilmate axial load capacity $P_{ux2} = {}_x \; P_{nx2}$ = **776.4** kips

Utilmate moment load capacity $M_{uox2} = {}_x \; M_{ox2}$ = **517.7** kip_ft

Axial and bending capacity with tension face reinforcement at yield strain (bending about x axis)

Moment of resistance of concrete

Depth to neutral axis c_{x3} = **14.2** in

Depth of equivalent rectangular stress block $a_{x3} = \min((\; _1 \; c_{x3}), h)$ = **12** in

Concrete compression force $P_{xcon3} = 0.85 \; f'_c \; b \; a_{x3}$ = **859.7** kips

Concrete moment of resistance $M_{xcon3} = P_{xcon3} \; (h / 2 - (a_{x3} / 2))$ = **571.7** kip_ft

Moment of resistance of reinforcement

Strain in layer 1 $_{x13} = {}_c \; (1 - x_{x1} / c_{x3})$ = **0.00214**

Stress in layer 1 $_{x13} = \min(f_y, E_s \; _{x13}) - 0.85 \; f'_c$ = **57450.00** psi

Force carried by layer 1	$P_{x13} = N_x \quad A_{bar} \quad _{x13}$ = **172.234** kips
Moment carried by steel layer 1	$M_{x13} = P_{x13} \quad ((h / 2) - x_{x1})$ = **142.610** kip_ft
Strain in layer 2	$_{x23} = \ _c \quad (1 - x_{x2} / c_{x3})$ = **0.00004**
Stress in layer 2	$_{x23} = \min(f_y, E_s \quad _{x23})$ = **1020.72** psi
Force carried by layer 2	$P_{x23} = 2 \quad A_{bar} \quad _{x23}$ = **2.040** kips
Moment carried by steel layer 2	$M_{x23} = P_{x23} \quad ((h / 2) - x_{x2})$ = **0.000** kip_ft
Strain in layer 3	$_{x33} = \ _c \quad (1 - x_{x3} / c_{x3})$ = **-0.00207**
Stress in layer 3	$_{x33} = \max(-1 \quad f_y, E_s \quad _{x33})$ = **-60000.00** psi
Force carried by layer 3	$P_{x33} = N_x \quad A_{bar} \quad _{x33}$ = **-179.879** kips
Moment carried by steel layer 3	$M_{x33} = P_{x33} \quad ((h / 2) - x_{x3})$ = **148.940** kip_ft

Combined axial load and moment resistance

Sum of forces	P_{nx3} = **854.1** kips
Sum of moments	M_{ox3} = **863.2** kip_ft
Strength reduction factor	$_x$ = **0.650**
Utilmate axial load capacity	$P_{ux3} = \ _x \quad P_{nx3}$ = **555.2** kips
Utilmate moment load capacity	$M_{uox3} = \ _x \quad M_{ox3}$ = **561.1** kip_ft

Axial and bending capacity with tension face reinforcement strain of 0.005 (bending about x axis)

Moment of resistance of concrete

Depth to neutral axis	c_{x4} = **9.0** in
Depth of equivalent rectangular stress block	$a_{x4} = \min((\ _1 \quad c_{x4}), h)$ = **8** in
Concrete compression force	$P_{xcon4} = 0.85 \quad f'_c \quad b \quad a_{x4}$ = **544.8** kips
Concrete moment of resistance	$M_{xcon4} = P_{xcon4} \quad (h / 2 - (a_{x4} / 2))$ = **462.4** kip_ft

Moment of resistance of reinforcement

Strain in layer 1	$_{x14} = \ _c \quad (1 - x_{x1} / c_{x4})$ = **0.00164**
Stress in layer 1	$_{x14} = \min(f_y, E_s \quad _{x14}) - 0.85 \quad f'_c$ = **45059.63** psi
Force carried by layer 1	$P_{x14} = N_x \quad A_{bar} \quad _{x14}$ = **135.088** kips
Moment carried by steel layer 1	$M_{x14} = P_{x14} \quad ((h / 2) - x_{x1})$ = **111.853** kip_ft
Strain in layer 2	$_{x24} = \ _c \quad (1 - x_{x2} / c_{x4})$ = **-0.00168**
Stress in layer 2	$_{x24} = \max(-1 \quad f_y, E_s \quad _{x24})$ = **-48695.19** psi
Force carried by layer 2	$P_{x24} = 2 \quad A_{bar} \quad _{x24}$ = **-97.325** kips
Moment carried by steel layer 2	$M_{x24} = P_{x24} \quad ((h / 2) - x_{x2})$ = **0.000** kip_ft
Strain in layer 3	$_{x34} = \ _c \quad (1 - x_{x3} / c_{x4})$ = **-0.00500**
Stress in layer 3	$_{x34} = \max(-1 \quad f_y, E_s \quad _{x34})$ = **-60000.00** psi
Force carried by layer 3	$P_{x34} = N_x \quad A_{bar} \quad _{x34}$ = **-179.879** kips
Moment carried by steel layer 3	$M_{x34} = P_{x34} \quad ((h / 2) - x_{x3})$ = **148.940** kip_ft

Combined axial load and moment resistance

Sum of forces	P_{nx4} = **402.6** kips
Sum of moments	M_{ox4} = **723.2** kip_ft
Strength reduction factor	$_x$ = **0.900**
Utilmate axial load capacity	$P_{ux4} = \ _x \quad P_{nx4}$ = **362.4** kips
Utilmate moment load capacity	$M_{uox4} = \ _x \quad M_{ox4}$ = **650.8** kip_ft

Axial and bending capacity with axial capacity of zero (bending about x axis)

Moment of resistance of concrete

Depth to neutral axis — c_{x5} = **4.5** in

Depth of equivalent rectangular stress block — $a_{x5} = \min((\ _1\ c_{x5}), h)$ = **4** in

Concrete compression force — $P_{xcon5} = 0.85\ f'_c\ b\ a_{x5}$ = **273.9** kips

Concrete moment of resistance — $M_{xcon5} = P_{xcon5}\ (h / 2 - (a_{x5} / 2))$ = **275.7** kip_ft

Moment of resistance of reinforcement

Strain in layer 1 — $_{x15} = _c\ (1 - x_{x1} / c_{x5})$ = **0.00030**

Stress in layer 1 — $_{x15} = \min(f_y, E_s\ _{x15})$ = **8649.87** psi

Force carried by layer 1 — $P_{x15} = N_x\ A_{bar}\ _{x15}$ = **25.932** kips

Moment carried by steel layer 1 — $M_{x15} = P_{x15}\ ((h / 2) - x_{x1})$ = **21.472** kip_ft

Strain in layer 2 — $_{x25} = _c\ (1 - x_{x2} / c_{x5})$ = **-0.00631**

Stress in layer 2 — $_{x25} = \max(-1\ f_y, E_s\ _{x25})$ = **-60000.00** psi

Force carried by layer 2 — $P_{x25} = 2\ A_{bar}\ _{x25}$ = **-119.919** kips

Moment carried by steel layer 2 — $M_{x25} = P_{x25}\ ((h / 2) - x_{x2})$ = **0.000** kip_ft

Strain in layer 3 — $_{x35} = _c\ (1 - x_{x3} / c_{x5})$ = **-0.01291**

Stress in layer 3 — $_{x35} = \max(-1\ f_y, E_s\ _{x35})$ = **-60000.00** psi

Force carried by layer 3 — $P_{x35} = N_x\ A_{bar}\ _{x35}$ = **-179.879** kips

Moment carried by steel layer 3 — $M_{x35} = P_{x35}\ ((h / 2) - x_{x3})$ = **148.940** kip_ft

Combined axial load and moment resistance

Sum of forces — P_{nx5} = **0.0** kips

Sum of moments — M_{ox5} = **446.2** kip_ft

Strength reduction factor — $_x$ = **0.900**

Utilmate axial load capacity — $P_{ux5} = _x\ P_{nx5}$ = **0.0** kips

Utilmate moment load capacity — $M_{uox5} = _x\ M_{ox5}$ = **401.5** kip_ft

Axial and bending capacity at maximum axial capacity (bending about y axis)

Moment of resistance of concrete

Depth to neutral axis — c_{y0} = **27.7** in

Depth of equivalent rectangular stress block — $a_{y0} = \min((\ _1\ c_{y0}), b)$ = **24** in

Concrete compression force — $P_{ycon0} = 0.85\ f'_c\ h\ a_{y0}$ = **1678.7** kips

Concrete moment of resistance — $M_{ycon0} = P_{ycon0}\ (b / 2 - (a_{y0} / 2))$ = **314.0** kip_ft

Moment of resistance of reinforcement

Strain in layer 1 — $_{y10} = _c\ (1 - x_{y1} / c_{y0})$ = **0.00256**

Stress in layer 1 — $_{y10} = \min(f_y, E_s\ _{y10}) - 0.85\ f'_c$ = **57450.00** psi

Force carried by layer 1 — $P_{y10} = N_y\ A_{bar}\ _{y10}$ = **172.234** kips

Moment carried by steel layer 1 — $M_{y10} = P_{y10}\ ((b / 2) - x_{y1})$ = **142.610** kip_ft

Strain in layer 2 — $_{y20} = _c\ (1 - x_{y2} / c_{y0})$ = **0.00148**

Stress in layer 2 — $_{y20} = \min(f_y, E_s\ _{y20}) - 0.85\ f'_c$ = **40414.96** psi

Force carried by layer 2 — $P_{y20} = 2\ A_{bar}\ _{y20}$ = **80.776** kips

Moment carried by steel layer 2 — $M_{y20} = P_{y20}\ ((b / 2) - x_{y2})$ = **0.000** kip_ft

Strain in layer 3	$\varepsilon_{y30} = \varepsilon_c (1 - x_{y3} / c_{y0}) =$ **0.00040**
Stress in layer 3	$f_{y30} = \min(f_y, E_s \varepsilon_{y30}) =$ **11712.67** psi
Force carried by layer 3	$P_{y30} = N_y A_{bar} f_{y30} =$ **35.114** kips
Moment carried by steel layer 3	$M_{y30} = P_{y30} ((b / 2) - x_{y3}) =$ **-29.075** kip_ft

Combined axial load and moment resistance

Sum of forces	$P_{ny0} =$ **1966.8** kips
Sum of moments	$M_{oy0} =$ **427.5** kip_ft
Strength reduction factor	$\phi_y =$ **0.650**
Utilmate axial load capacity	$P_{uy0} = \phi_y P_{ny0} =$ **1278.4** kips
Utilmate moment load capacity	$M_{uoy0} = \phi_y M_{oy0} =$ **277.9** kip_ft

Axial and bending capacity with zero strain in tension face reinforcement (bending about y axis)

Moment of resistance of concrete

Depth to neutral axis	$c_{y1} =$ **23.9** in
Depth of equivalent rectangular stress block	$a_{y1} = \min((\beta_1 c_{y1}), b) =$ **20** in
Concrete compression force	$P_{ycon1} = 0.85 f'_c h a_{y1} =$ **1452.7** kips
Concrete moment of resistance	$M_{ycon1} = P_{ycon1} (b / 2 - (a_{y1} / 2)) =$ **463.3** kip_ft

Moment of resistance of reinforcement

Strain in layer 1	$\varepsilon_{y11} = \varepsilon_c (1 - x_{y1} / c_{y1}) =$ **0.00249**
Stress in layer 1	$f_{y11} = \min(f_y, E_s \varepsilon_{y11}) - 0.85 f'_c =$ **57450.00** psi
Force carried by layer 1	$P_{y11} = N_y A_{bar} f_{y11} =$ **172.234** kips
Moment carried by steel layer 1	$M_{y11} = P_{y11} ((b / 2) - x_{y1}) =$ **142.610** kip_ft
Strain in layer 2	$\varepsilon_{y21} = \varepsilon_c (1 - x_{y2} / c_{y1}) =$ **0.00125**
Stress in layer 2	$f_{y21} = \min(f_y, E_s \varepsilon_{y21}) - 0.85 f'_c =$ **33564.30** psi
Force carried by layer 2	$P_{y21} = 2 A_{bar} f_{y21} =$ **67.084** kips
Moment carried by steel layer 2	$M_{y21} = P_{y21} ((b / 2) - x_{y2}) =$ **0.000** kip_ft
Strain in layer 3	$\varepsilon_{y31} = \varepsilon_c (1 - x_{y3} / c_{y1}) =$ **0.00000**
Stress in layer 3	$f_{y31} = \min(f_y, E_s \varepsilon_{y31}) =$ **0.00** psi
Force carried by layer 3	$P_{y31} = N_y A_{bar} f_{y31} =$ **0.000** kips
Moment carried by steel layer 3	$M_{y31} = P_{y31} ((b / 2) - x_{y3}) =$ **0.000** kip_ft

Combined axial load and moment resistance

Sum of forces	$P_{ny1} =$ **1692.0** kips
Sum of moments	$M_{oy1} =$ **605.9** kip_ft
Strength reduction factor	$\phi_y =$ **0.650**
Utilmate axial load capacity	$P_{uy1} = \phi_y P_{ny1} =$ **1099.8** kips
Utilmate moment load capacity	$M_{uoy1} = \phi_y M_{oy1} =$ **393.8** kip_ft

Axial and bending capacity with tension face reinforcement at half yield strain (bending about y axis)

Moment of resistance of concrete

Depth to neutral axis	$c_{y2} =$ **17.8** in
Depth of equivalent rectangular stress block	$a_{y2} = \min((\beta_1 c_{y2}), b) =$ **15** in
Concrete compression force	$P_{ycon2} = 0.85 f'_c h a_{y2} =$ **1080.2** kips

Concrete moment of resistance $M_{ycon2} = P_{ycon2} \quad (b / 2 - (a_{y2} / 2)) =$ **579.3** kip_ft

Moment of resistance of reinforcement

Strain in layer 1 $\quad _{y12} = \ _{c} \quad (1 - x_{y1} / c_{y2}) =$ **0.00232**

Stress in layer 1 $\quad _{y12} = \min(f_y, E_s \quad _{y12}) - 0.85 \quad f'_c =$ **57450.00** psi

Force carried by layer 1 $\quad P_{y12} = N_y \quad A_{bar} \quad _{y12} =$ **172.234** kips

Moment carried by steel layer 1 $\quad M_{y12} = P_{y12} \quad ((b / 2) - x_{y1}) =$ **142.610** kip_ft

Strain in layer 2 $\quad _{y22} = \ _{c} \quad (1 - x_{y2} / c_{y2}) =$ **0.00064**

Stress in layer 2 $\quad _{y22} = \min(f_y, E_s \quad _{y22}) - 0.85 \quad f'_c =$ **16017.51** psi

Force carried by layer 2 $\quad P_{y22} = 2 \quad A_{bar} \quad _{y22} =$ **32.014** kips

Moment carried by steel layer 2 $\quad M_{y22} = P_{y22} \quad ((b / 2) - x_{y2}) =$ **0.000** kip_ft

Strain in layer 3 $\quad _{y32} = \ _{c} \quad (1 - x_{y3} / c_{y2}) =$ **-0.00103**

Stress in layer 3 $\quad _{y32} = \max(-1 \quad f_y, E_s \quad _{y32}) =$ **-30000.00** psi

Force carried by layer 3 $\quad P_{y32} = N_y \quad A_{bar} \quad _{y32} =$ **-89.940** kips

Moment carried by steel layer 3 $\quad M_{y32} = P_{y32} \quad ((b / 2) - x_{y3}) =$ **74.470** kip_ft

Combined axial load and moment resistance

Sum of forces $\quad P_{ny2} =$ **1194.5** kips

Sum of moments $\quad M_{oy2} =$ **796.4** kip_ft

Strength reduction factor $\quad _{y} =$ **0.650**

Utilmate axial load capacity $\quad P_{uy2} = \ _{y} \quad P_{ny2} =$ **776.4** kips

Utilmate moment load capacity $\quad M_{uoy2} = \ _{y} \quad M_{oy2} =$ **517.7** kip_ft

Axial and bending capacity with tension face reinforcement at yield strain (bending about y axis)

Moment of resistance of concrete

Depth to neutral axis $\quad c_{y3} =$ **14.2** in

Depth of equivalent rectangular stress block $\quad a_{y3} = \min((\ _{1} \quad c_{y3}), b) =$ **12** in

Concrete compression force $\quad P_{ycon3} = 0.85 \quad f'_c \quad h \quad a_{y3} =$ **859.7** kips

Concrete moment of resistance $\quad M_{ycon3} = P_{ycon3} \quad (b / 2 - (a_{y3} / 2)) =$ **571.7** kip_ft

Moment of resistance of reinforcement

Strain in layer 1 $\quad _{y13} = \ _{c} \quad (1 - x_{y1} / c_{y3}) =$ **0.00214**

Stress in layer 1 $\quad _{y13} = \min(f_y, E_s \quad _{y13}) - 0.85 \quad f'_c =$ **57450.00** psi

Force carried by layer 1 $\quad P_{y13} = N_y \quad A_{bar} \quad _{y13} =$ **172.234** kips

Moment carried by steel layer 1 $\quad M_{y13} = P_{y13} \quad ((b / 2) - x_{y1}) =$ **142.610** kip_ft

Strain in layer 2 $\quad _{y23} = \ _{c} \quad (1 - x_{y2} / c_{y3}) =$ **0.00004**

Stress in layer 2 $\quad _{y23} = \min(f_y, E_s \quad _{y23}) =$ **1020.72** psi

Force carried by layer 2 $\quad P_{y23} = 2 \quad A_{bar} \quad _{y23} =$ **2.040** kips

Moment carried by steel layer 2 $\quad M_{y23} = P_{y23} \quad ((b / 2) - x_{y2}) =$ **0.000** kip_ft

Strain in layer 3 $\quad _{y33} = \ _{c} \quad (1 - x_{y3} / c_{y3}) =$ **-0.00207**

Stress in layer 3 $\quad _{y33} = \max(-1 \quad f_y, E_s \quad _{y33}) =$ **-60000.00** psi

Force carried by layer 3 $\quad P_{y33} = N_y \quad A_{bar} \quad _{y33} =$ **-179.879** kips

Moment carried by steel layer 3 $\quad M_{y33} = P_{y33} \quad ((b / 2) - x_{y3}) =$ **148.940** kip_ft

Combined axial load and moment resistance

Sum of forces $\quad P_{ny3} =$ **854.1** kips

Sum of moments	M_{oy3} = **863.2** kip_ft
Strength reduction factor	$_{y}$ = **0.650**
Utilmate axial load capacity	P_{uy3} = $_{y}$ P_{ny3} = **555.2** kips
Utilmate moment load capacity	M_{uoy3} = $_{y}$ M_{oy3} = **561.1** kip_ft

Axial and bending capacity with tension face reinforcement strain of 0.005 (bending about y axis)

Moment of resistance of concrete

Depth to neutral axis	c_{y4} = **9.0** in
Depth of equivalent rectangular stress block	a_{y4} = min(($_{1}$ c_{y4}), b) = **8** in
Concrete compression force	P_{ycon4} = 0.85 f'_c h a_{y4} = **544.8** kips
Concrete moment of resistance	M_{ycon4} = P_{ycon4} (b / 2 - (a_{y4} / 2)) = **462.4** kip_ft

Moment of resistance of reinforcement

Strain in layer 1	$_{y14}$ = $_{c}$ (1 - x_{y1} / c_{y4}) = **0.00164**
Stress in layer 1	$_{y14}$ = min(f_y, E_s $_{y14}$) - 0.85 f'_c = **45059.63** psi
Force carried by layer 1	P_{y14} = N_y A_{bar} $_{y14}$ = **135.088** kips
Moment carried by steel layer 1	M_{y14} = P_{y14} ((b / 2) - x_{y1}) = **111.853** kip_ft
Strain in layer 2	$_{y24}$ = $_{c}$ (1 - x_{y2} / c_{y4}) = **-0.00168**
Stress in layer 2	$_{y24}$ = max(-1 f_y, E_s $_{y24}$) = **-48695.19** psi
Force carried by layer 2	P_{y24} = 2 A_{bar} $_{y24}$ = **-97.325** kips
Moment carried by steel layer 2	M_{y24} = P_{y24} ((b / 2) - x_{y2}) = **0.000** kip_ft
Strain in layer 3	$_{y34}$ = $_{c}$ (1 - x_{y3} / c_{y4}) = **-0.00500**
Stress in layer 3	$_{y34}$ = max(-1 f_y, E_s $_{y34}$) = **-60000.00** psi
Force carried by layer 3	P_{y34} = N_y A_{bar} $_{y34}$ = **-179.879** kips
Moment carried by steel layer 3	M_{y34} = P_{y34} ((b / 2) - x_{y3}) = **148.940** kip_ft

Combined axial load and moment resistance

Sum of forces	P_{ny4} = **402.6** kips
Sum of moments	M_{oy4} = **723.2** kip_ft
Strength reduction factor	$_{y}$ = **0.900**
Utilmate axial load capacity	P_{uy4} = $_{y}$ P_{ny4} = **362.4** kips
Utilmate moment load capacity	M_{uoy4} = $_{y}$ M_{oy4} = **650.8** kip_ft

Axial and bending capacity with axial capacity of zero (bending about y axis)

Moment of resistance of concrete

Depth to neutral axis	c_{y5} = **4.5** in
Depth of equivalent rectangular stress block	a_{y5} = min(($_{1}$ c_{y5}), b) = **4** in
Concrete compression force	P_{ycon5} = 0.85 f'_c h a_{y5} = **273.9** kips
Concrete moment of resistance	M_{ycon5} = P_{ycon5} (b / 2 - (a_{y5} / 2)) = **275.7** kip_ft

Moment of resistance of reinforcement

Strain in layer 1	$_{y15}$ = $_{c}$ (1 - x_{y1} / c_{y5}) = **0.00030**
Stress in layer 1	$_{y15}$ = min(f_y, E_s $_{y15}$) = **8649.87** psi
Force carried by layer 1	P_{y15} = N_y A_{bar} $_{y15}$ = **25.932** kips
Moment carried by steel layer 1	M_{y15} = P_{y15} ((b / 2) - x_{y1}) = **21.472** kip_ft

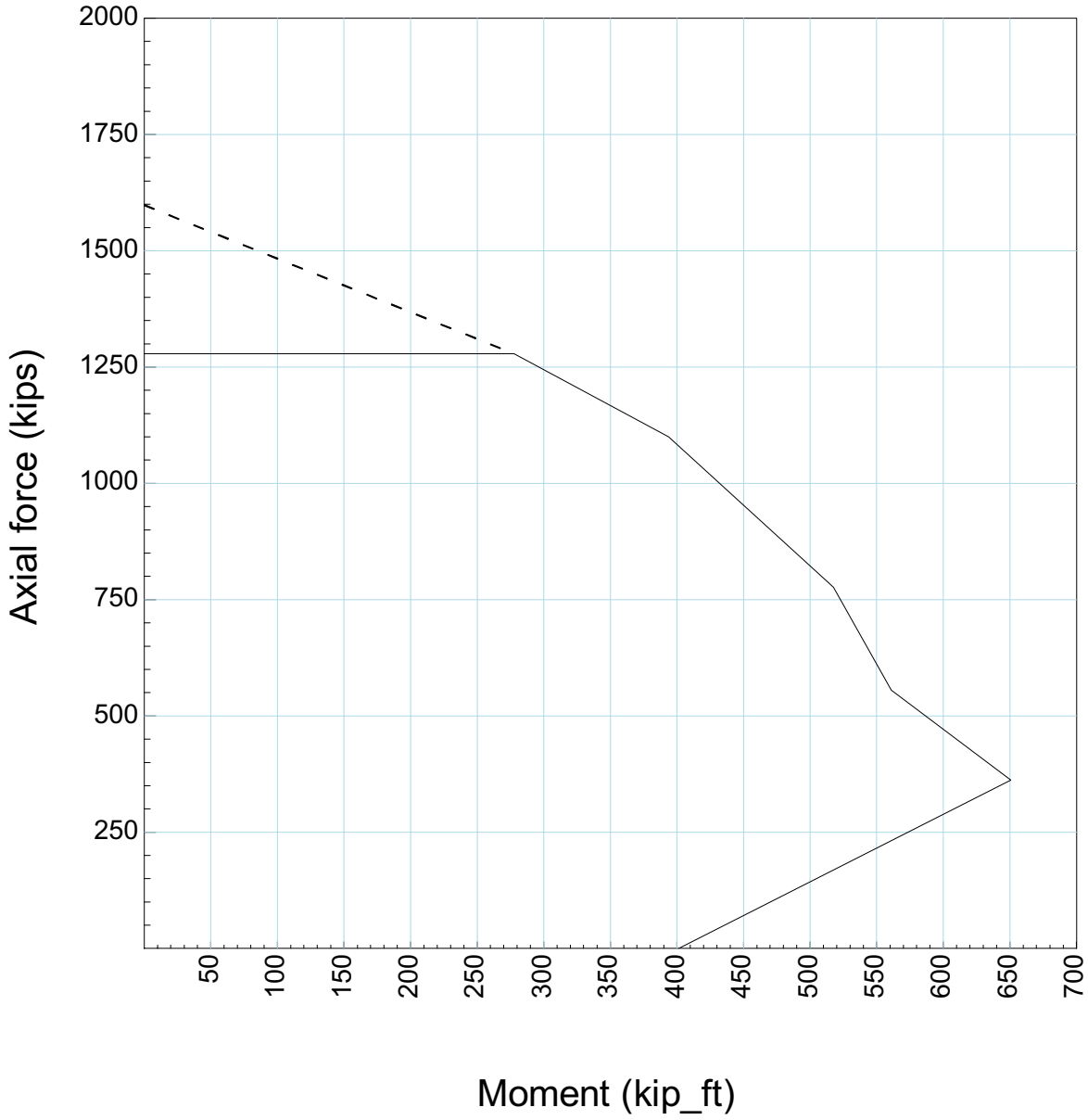
Strain in layer 2	$\varepsilon_{y25} = \varepsilon_c (1 - x_{y2} / c_{y5}) =$ **-0.00631**
Stress in layer 2	$f_{y25} = \max(-1 f_y, E_s \varepsilon_{y25}) =$ **-60000.00** psi
Force carried by layer 2	$P_{y25} = 2 A_{bar} f_{y25} =$ **-119.919** kips
Moment carried by steel layer 2	$M_{y25} = P_{y25} ((b / 2) - x_{y2}) =$ **0.000** kip_ft
Strain in layer 3	$\varepsilon_{y35} = \varepsilon_c (1 - x_{y3} / c_{y5}) =$ **-0.01291**
Stress in layer 3	$f_{y35} = \max(-1 f_y, E_s \varepsilon_{y35}) =$ **-60000.00** psi
Force carried by layer 3	$P_{y35} = N_y A_{bar} f_{y35} =$ **-179.879** kips
Moment carried by steel layer 3	$M_{y35} = P_{y35} ((b / 2) - x_{y3}) =$ **148.940** kip_ft

Combined axial load and moment resistance

Sum of forces	$P_{ny5} =$ **0.0** kips
Sum of moments	$M_{oy5} =$ **446.2** kip_ft
Strength reduction factor	$\phi_y =$ **0.900**
Utilmate axial load capacity	$P_{uy5} = \phi_y P_{ny5} =$ **0.0** kips
Utilmate moment load capacity	$M_{uoy5} = \phi_y M_{oy5} =$ **401.5** kip_ft

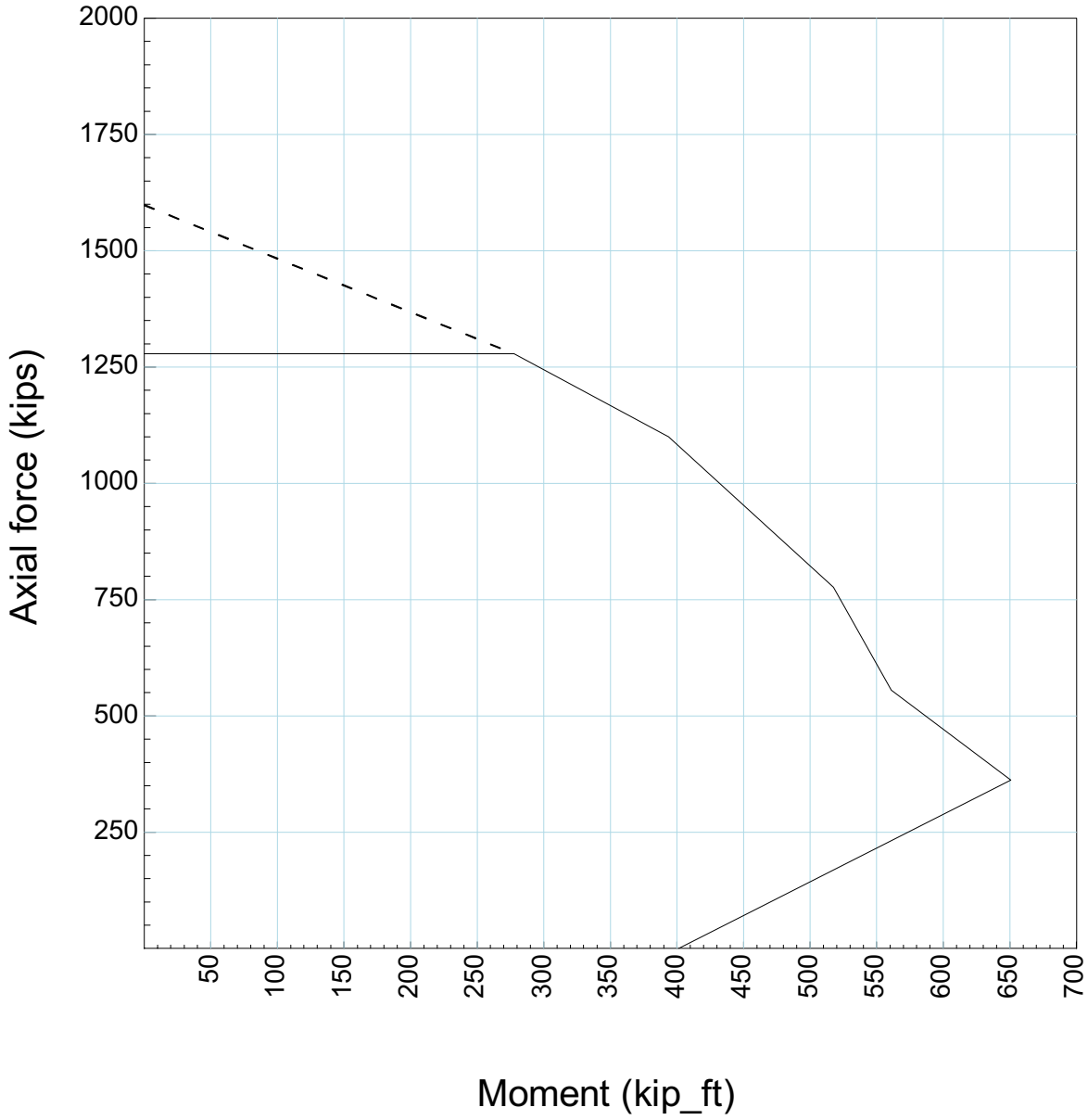
Interaction diagram for bending about x axis

28 in x 28 in column, 8 × No. 9 longitudinal bars



Interaction diagram for bending about y axis

28 in x 28 in column, 8 × No. 9 longitudinal bars



Specification

◆ AWS FDD MMU

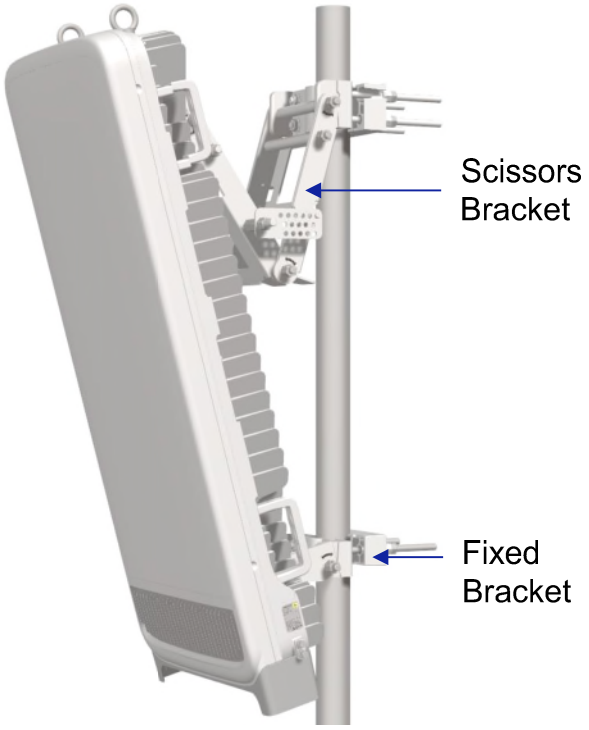
Contents	MF3201-66A	Remarks
Operating frequency	(B66) TX: 2,110~2,180MHz / RX: 1,710~1,780MHz	
Duplex Method	FDD	
Air Standard	LTE+5G NR	
Channel Bandwidth	5, 10, 15, 20MHz	
RF Chain	32T32R	
RF Output Power	Max. 160W (5W/path)	
Capacity	3 Carrier	
Beam Steering Range	Horizontal : N/A	
	Vertical : -10~+10°	('+' is the direction of down-tilt.)
Operating Temperature	-30~50°C without solar load @ wind load 0.5m/s -30~45°C with solar load @ wind load 0.5m/s	
Operating Humidity	5~100[%] (RH)	
Dimension (WDH)	469 × 156.4 × 1087 mm	18.5 x 6.2 x 42.8 inch
Weight	60 kg 132.3 lbs	
Operating Voltage	-48 VDC (-38VDC to -57VDC)	
Power Consumption	- W	
Installation method	Pole, Wall	
Cooling Type	Natural Convection	
Wind Resistance / Earthquake	67m/s(GR-487 Wind Resistance) / Earthquake-Zone 4(GR-63 Earthquake)	

Specification

1.1 Mounting Bracket

- Pole mounting bracket for MF3201

Item	Specification
Part Number	EP97-01647A
Material	Aluminum Alloy 6061 Steel
Powder-Coat Paint	Sand blast 80#
Dimension(WDH)	-
Weight	13.9 kg 30.6 lbs
Installable Pole diameter	50A ~ 100A
Tilting	0 ~ -15 ° , 0 ~ +15 ° (1 ° step)
Azimuth	0 °
Part List	1SET Scissors Bracket 1SET Fixed Bracket
Maker	SEOJIN (http://seojinsystem.net, Korea/Vietnam)

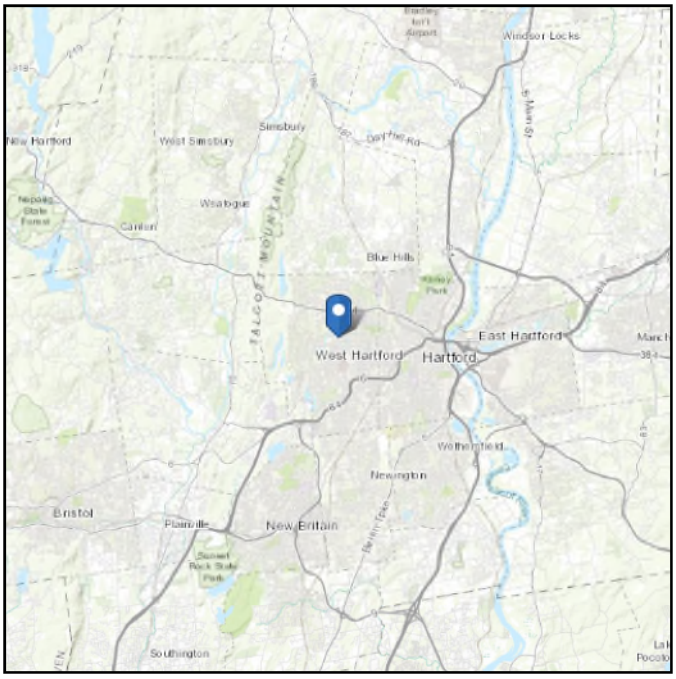


ASCE 7 Hazards Report

Address:
139 N Main St
West Hartford, Connecticut
06107

Standard: ASCE/SEI 7-10
Risk Category: II
Soil Class: D - Stiff Soil

Elevation: 107.29 ft (NAVD 88)
Latitude: 41.771318
Longitude: -72.743939



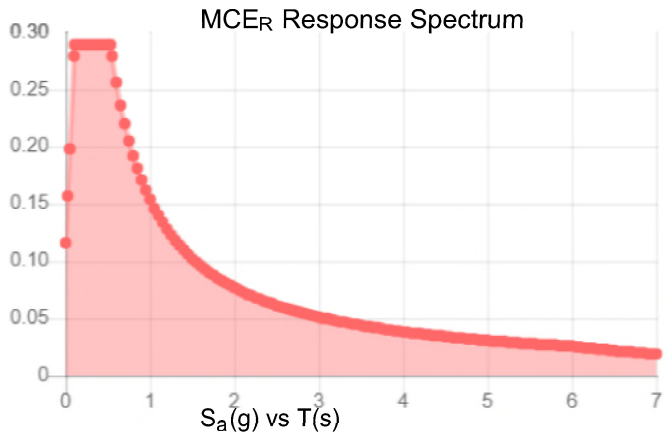
Seismic

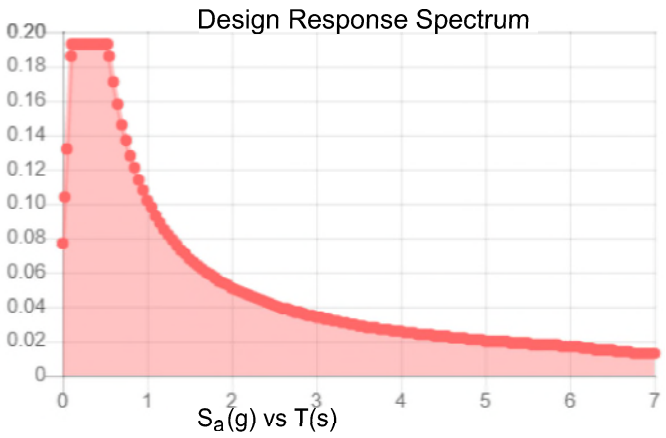
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.181	S_{DS} :	0.193
S_1 :	0.064	S_{D1} :	0.102
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.091
S_{MS} :	0.289	PGA_M :	0.146
S_{M1} :	0.154	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B





Data Accessed: Fri Nov 08 2019

Date Source: USGS Seismic Design Maps based on ASCE/SEI 7-10, incorporating Supplement 1 and errata of March 31, 2013, and ASCE/SEI 7-10 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-10 Ch. 21 are available from USGS.

The ASCE 7 Hazard Tool is provided for your convenience, for informational purposes only, and is provided “as is” and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE 7 standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

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ATTACHMENT 5


American School
for the Deaf
HILLTOP DR
HILLTOP DR
NORTH MAIN ST
LINNARD RD
FERN ST
FERN ST
FERN ST
COBBS RD
SYLVAN AV

WEST HARTFORD,CT

137 NORTH MAIN STREET

Location
137 NORTH MAIN STREET
Mblu
F7/ 3836/ 137/ /
Parcel ID
3836 1 137 0001
Owner
AMERICAN SCHOOL FOR THE
Assessment
$27,608,280
Appraisal
$39,440,400
Vision Id #
20037
Building Count
16

Current Value

Appraisal

Valuation Year	Improvements	Land	Total
2020	$32,777,000	$6,663,400	$39,440,400

Assessment

Valuation Year	Improvements	Land	Total
2020	$22,943,900	$4,664,380	$27,608,280

Owner of Record

Owner	AMERICAN SCHOOL FOR THE
Co-Owner	DEAF AT HARTFORD
Address	139 NORTH MAIN STREET WEST HARTFORD, CT 06107
Sale Price	$0
Certificate	1
Book & Page	0382/0423
Sale Date	
Instrument	U

Ownership History

Ownership History

Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
AMERICAN SCHOOL FOR THE	$0	1	0382/0423	U	
	$0	1	0343/0043	U	
	$0	1	0038/0059	U	

Building Information

Building 1 : Section 1

Year Built:	2013
Living Area:	60,992
Replacement Cost:	$20,767,320
Building Percent Good:	97
Replacement Cost Less Depreciation:	$20,144,300

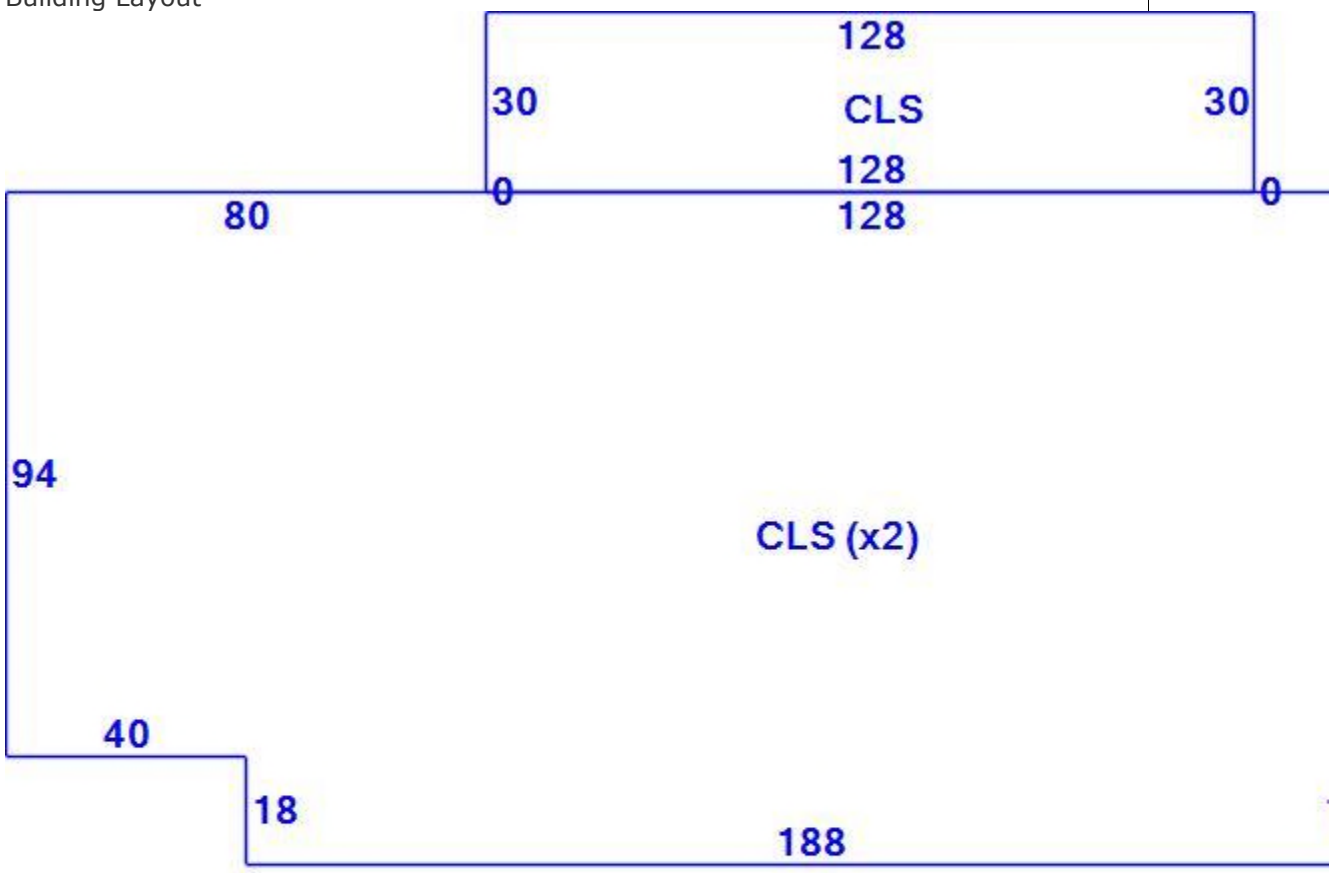
Building Attributes

Field	Description
Style:	Classroom Bldg
Model	Comm/Ind
Grade	A 1.50
Stories:	2

Occupancy	1.00
Exterior Wall 1	Brick
Exterior Wall 2	
Roof Structure	
Roof Cover	
Interior Wall 1	
Interior Wall 2	
Floor Type	
Floor Cover	
Heating Fuel	
Heating Type	
AC Type	
As Built Use	
Bldg Use	Exempt Commercial
Num of Bedrooms	
Total Baths	
Type	
Wet Sprinkler	
Dry Sprinkler	
1st Floor Use:	
Class	
Frame Type	Rigid Steel
Plumbing	
Ceiling	
Group1	
Wall Height	10.00
Adjustment	

Building Photo

Building Layout



Building Sub-Areas (sq ft) Legend

Code	Description	Gross Area	Living Area
CLS	CLASS ROOM BLDG	60,992	60,992
		60,992	60,992

Building 2 : Section 1

Year Built:	1951
Living Area:	1,022
Replacement Cost:	$163,783

Building Percent Good:	57
Replacement Cost	
Less Depreciation:	$93,400

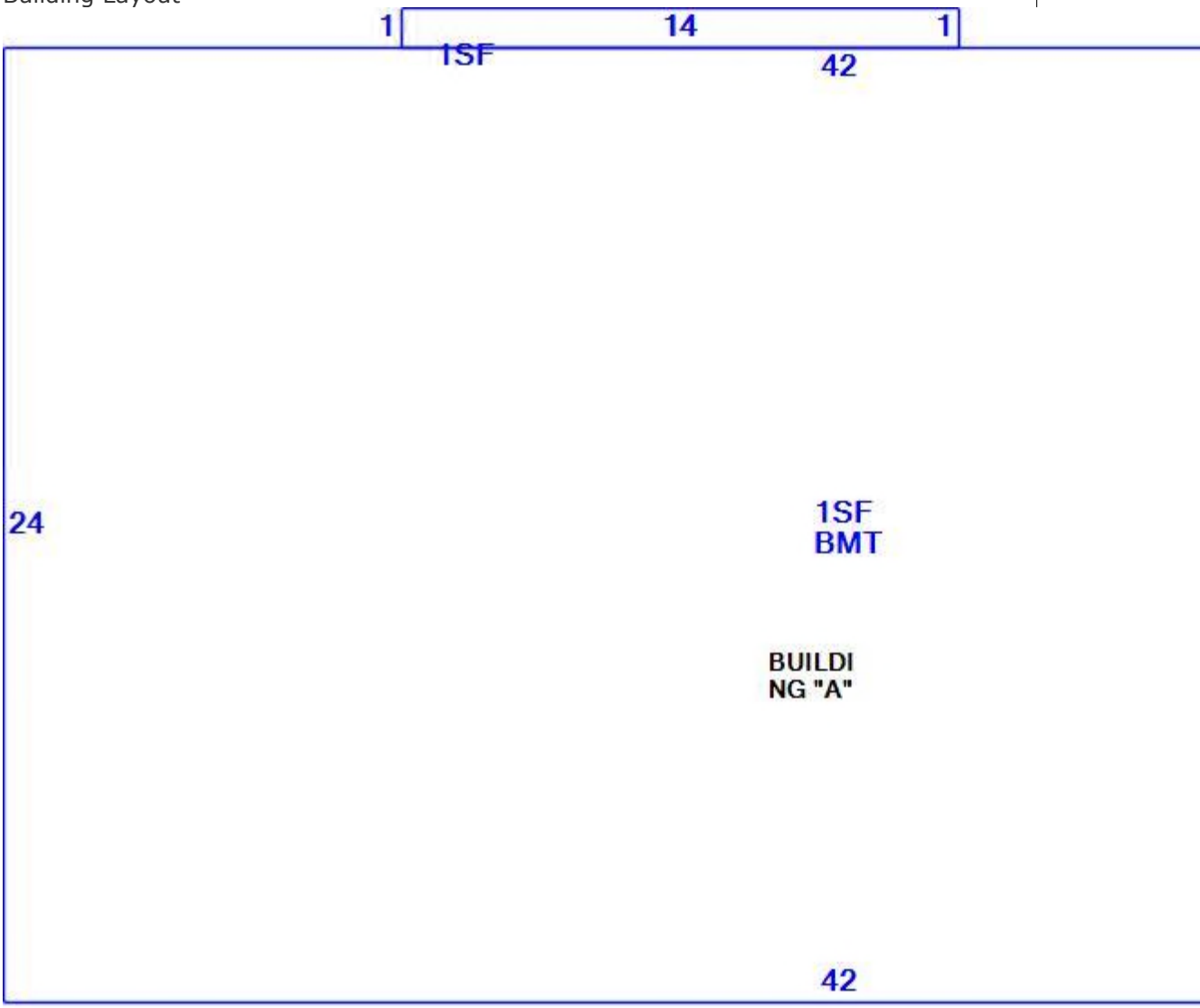
Building Attributes : Bldg 2 of 16

Field	Description
Style	Ranch
Model	Residential
Grade	C+
Stories	1.0
Occupancy	1
Exterior Wall 1	Brick
Exterior Wall 2	
Roof Structure	Typical
Roof Cover	Typical
Interior Wall 1	Typical
Interior Wall 2	
Interior Flr 1	Typical
Interior Flr 2	
Heat Fuel	Oil
Heat Type	Hot Water
AC Type:	No
Num of Bedrooms	3
Full Bthrms	1
Half Baths	0
Extra Fixtures	0
Total Rooms:	6
Bath Style	Typical
Kitchen Style:	Original

Extra Kitchens	
Cndtn	5
Fireplaces	1
Prefab Fpl(s)	
Bsmt Egress	
Foundation	Conc Per Piers
Bsmt Garage(s)	None
Fin Bsmt/RRm	
Bsmt Rec Rm	
FBLA	
Int Condition	Typical
Attic Access	03
Dormer LF	
Fndtn Cndtn	
Basement	

Building Photo

Building Layout



Building Sub-Areas (sq ft) Legend

Code	Description	Gross Area	Living Area
1SF	1 STORY	1,022	1,022
BMT	BSMT UNFIN RES	1,008	0
		2,030	1,022

Building 3 : Section 1

Year Built: 1951

Living Area:	1,202
Replacement Cost:	$180,475
Building Percent Good:	57
Replacement Cost Less Depreciation:	$102,900

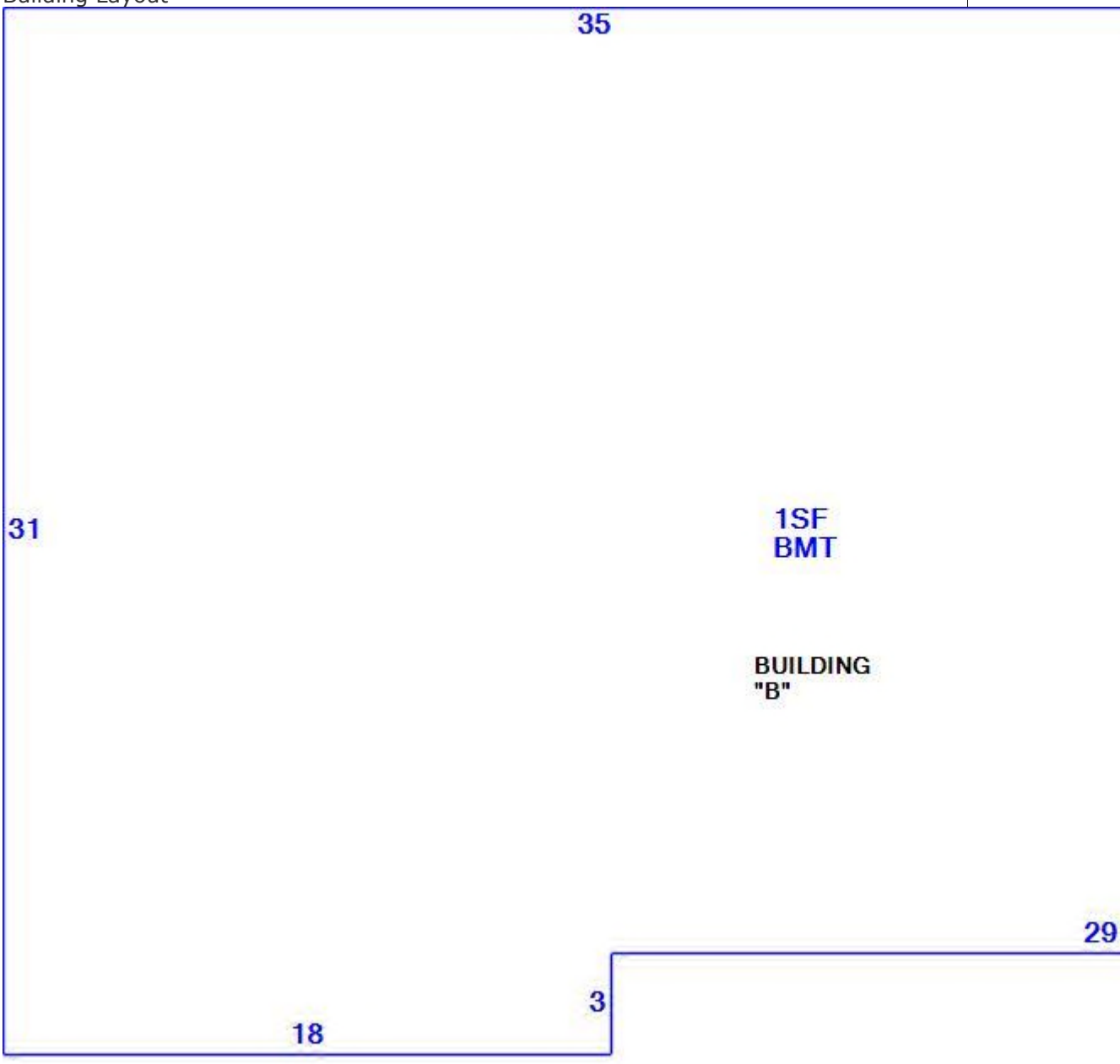
Building Attributes : Bldg 3 of 16

Field	Description
Style	Ranch
Model	Residential
Grade	C
Stories	1.0
Occupancy	1
Exterior Wall 1	Brick
Exterior Wall 2	
Roof Structure	Typical
Roof Cover	Typical
Interior Wall 1	Typical
Interior Wall 2	
Interior Flr 1	Typical
Interior Flr 2	
Heat Fuel	Oil
Heat Type	Hot Water
AC Type:	No
Num of Bedrooms	3
Full Bthrms	1
Half Baths	0
Extra Fixtures	0
Total Rooms:	6
Bath Style	Typical

Kitchen Style:	Typical
Extra Kitchens	
Cndtn	5
Fireplaces	1
Prefab Fpl(s)	
Bsmt Egress	
Foundation	Conc Per Piers
Bsmt Garage(s)	None
Fin Bsmt/RRm	
Bsmt Rec Rm	
FBLA	
Int Condition	Typical
Attic Access	03
Dormer LF	
Fndtn Cndtn	
Basement	

Building Photo

Building Layout



Building Sub-Areas (sq ft) Legend

Code	Description	Gross Area	Living Area
1SF	1 STORY	1,202	1,202
BMT	BSMT UNFIN RES	1,202	0

RP4	ENCLOSED PORCH	168	0
		2,572	1,202

Building 4 : Section 1

Year Built:	1952
Living Area:	1,046
Replacement Cost:	$177,662
Building Percent Good:	57
Replacement Cost Less Depreciation:	$101,300

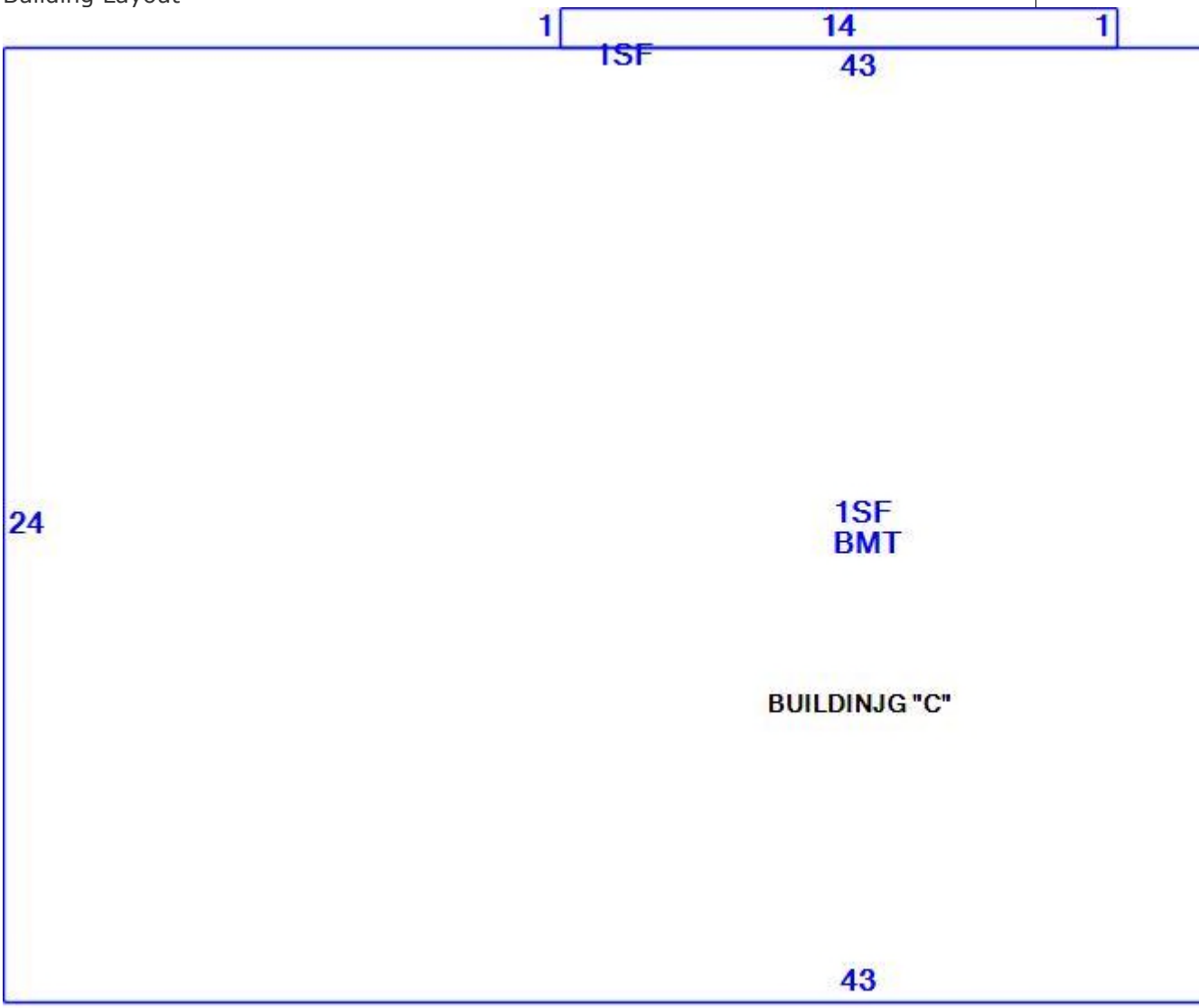
Building Attributes : Bldg 4 of 16

Field	Description
Style	Ranch
Model	Residential
Grade	C+
Stories	1.0
Occupancy	1
Exterior Wall 1	Brick
Exterior Wall 2	
Roof Structure	Typical
Roof Cover	Typical
Interior Wall 1	Typical
Interior Wall 2	
Interior Flr 1	Typical
Interior Flr 2	
Heat Fuel	Oil
Heat Type	Hot Water
AC Type:	No
Num of Bedrooms	2
Full Bthrms	1

Half Baths	0
Extra Fixtures	0
Total Rooms:	6
Bath Style	Typical
Kitchen Style:	Typical
Extra Kitchens	
Cndtn	5
Fireplaces	1
Prefab Fpl(s)	
Bsmt Egress	
Foundation	Conc Per Piers
Bsmt Garage(s)	None
Fin Bsmt/RRm	
Bsmt Rec Rm	
FBLA	
Int Condition	Typical
Attic Access	03
Dormer LF	
Fndtn Cndtn	
Basement	

Building Photo

Building Layout



Building Sub-Areas (sq ft) Legend

Code	Description	Gross Area	Living Area
1SF	1 STORY	1,046	1,046
BMT	BSMT UNFIN RES	1,032	0
		2,078	1,046

Building 5 : Section 1

Year Built:	1952
Living Area:	1,180
Replacement Cost:	$177,210
Building Percent Good:	57
Replacement Cost Less Depreciation:	$101,000

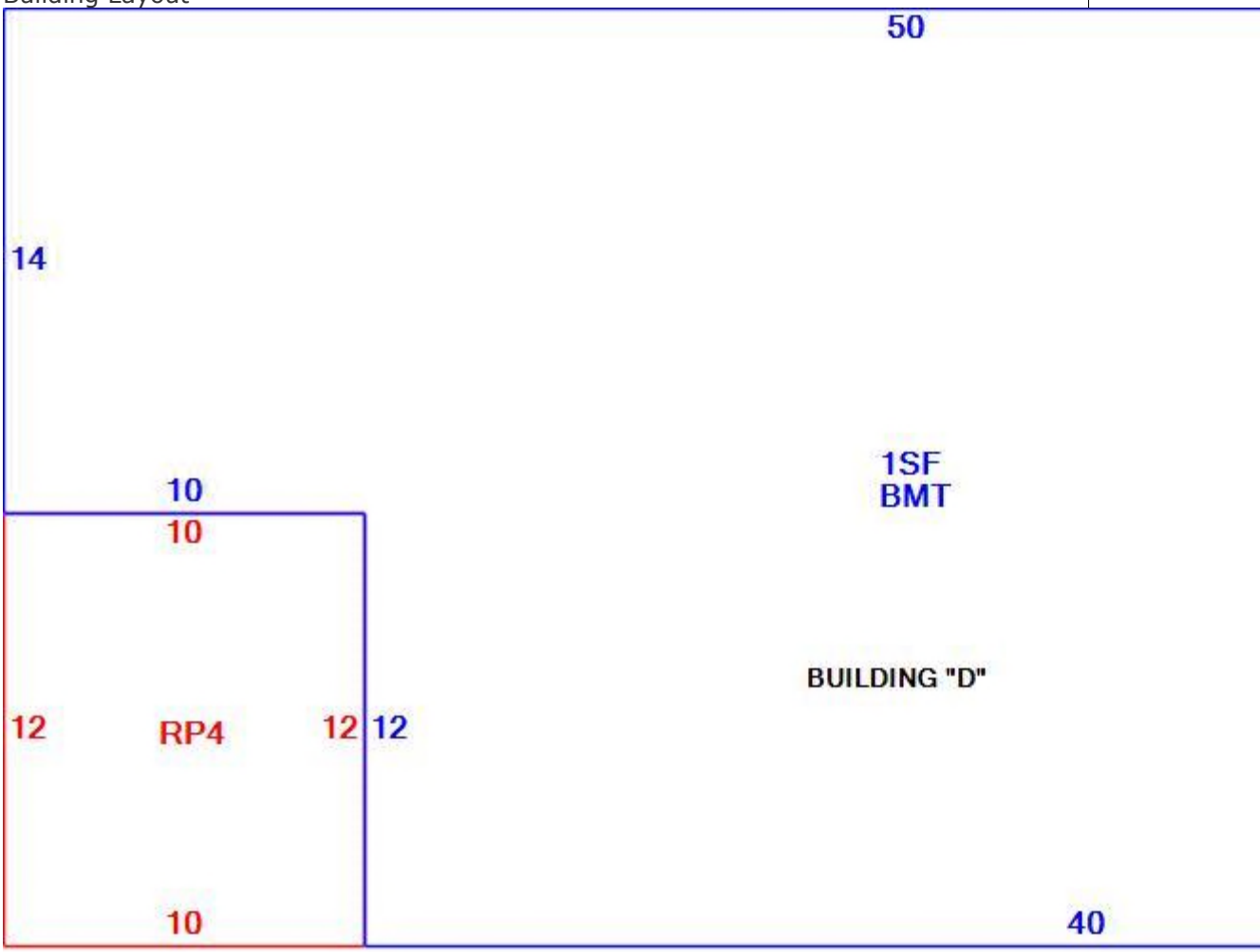
Building Attributes : Bldg 5 of 16

Field	Description
Style	Ranch
Model	Residential
Grade	C+
Stories	1.0
Occupancy	1
Exterior Wall 1	Brick
Exterior Wall 2	
Roof Structure	Typical
Roof Cover	Typical
Interior Wall 1	Typical
Interior Wall 2	
Interior Flr 1	Typical
Interior Flr 2	
Heat Fuel	Oil
Heat Type	Hot Water
AC Type:	No
Num of Bedrooms	2
Full Bthrms	1
Half Baths	0
Extra Fixtures	0
Total Rooms:	6

Bath Style	Typical
Kitchen Style:	Original
Extra Kitchens	
Cndtn	5
Fireplaces	1
Prefab Fpl(s)	
Bsmt Egress	
Foundation	Conc Per Piers
Bsmt Garage(s)	None
Fin Bsmt/RRm	
Bsmt Rec Rm	
FBLA	
Int Condition	Typical
Attic Access	03
Dormer LF	
Fndtn Cndtn	
Basement	

Building Photo

Building Layout



Building Sub-Areas (sq ft) Legend

Code	Description	Gross Area	Living Area
1SF	1 STORY	1,180	1,180
BMT	BSMT UNFIN RES	1,180	0
RP4	ENCLOSED PORCH	120	0
		2,480	1,180

Building 6 : Section 1

Year Built: 1952

Living Area: 1,180

Replacement Cost:	$209,425
Building Percent Good:	57
Replacement Cost Less Depreciation:	$119,400

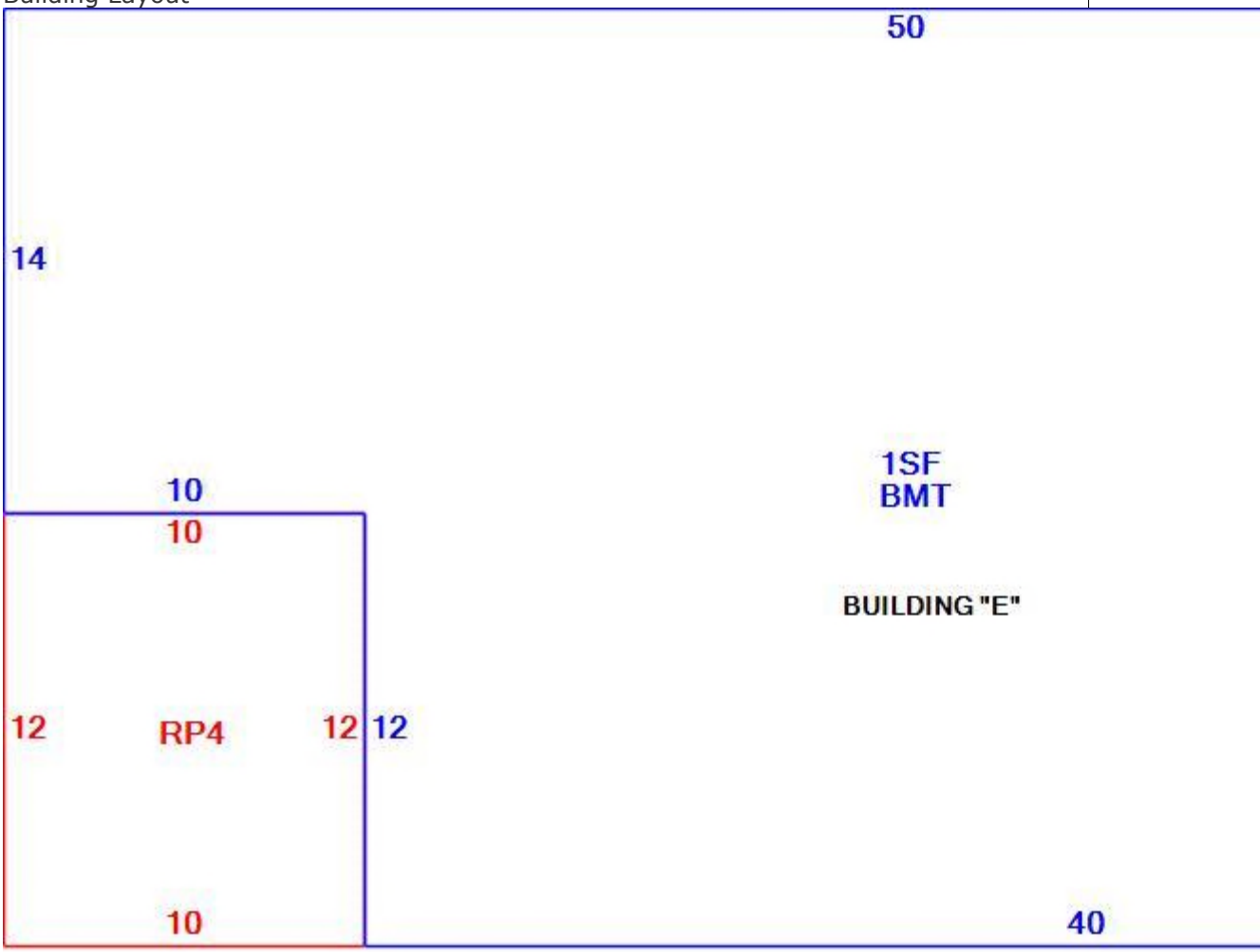
Building Attributes : Bldg 6 of 16

Field	Description
Style	Ranch
Model	Residential
Grade	C+
Stories	1
Occupancy	1
Exterior Wall 1	Brick
Exterior Wall 2	
Roof Structure	Typical
Roof Cover	Typical
Interior Wall 1	Typical
Interior Wall 2	
Interior Flr 1	Typical
Interior Flr 2	
Heat Fuel	Gas/LP
Heat Type	Hot Water
AC Type:	No
Num of Bedrooms	4
Full Bthrms	3
Half Baths	1
Extra Fixtures	0
Total Rooms:	10
Bath Style	Typical

Kitchen Style:	Typical
Extra Kitchens	
Cndtn	13
Fireplaces	3
Prefab Fpl(s)	
Bsmt Egress	
Foundation	Conc Per Piers
Bsmt Garage(s)	None
Fin Bsmt/RRm	
Bsmt Rec Rm	
FBLA	
Int Condition	Typical
Attic Access	03
Dormer LF	
Fndtn Cndtn	
Basement	

Building Photo

Building Layout



Building Sub-Areas (sq ft) Legend

Code	Description	Gross Area	Living Area
1SF	1 STORY	1,180	1,180
BMT	BSMT UNFIN RES	1,180	0
RP4	ENCLOSED PORCH	120	0
		2,480	1,180

Building 7 : Section 1

Year Built: 1927

Living Area: 3,626

Replacement Cost:	$495,799
Building Percent Good:	50
Replacement Cost Less Depreciation:	$247,900

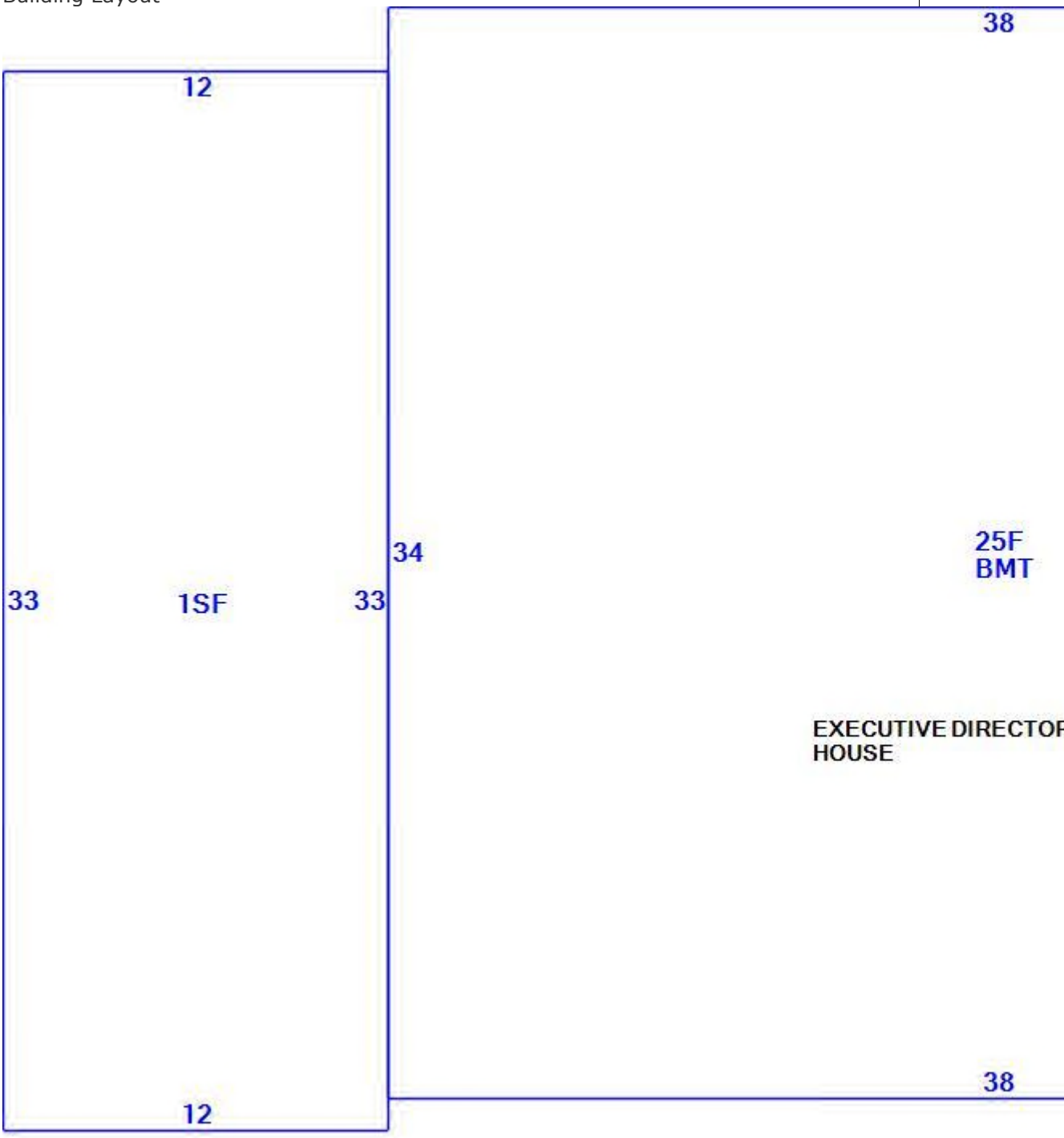
Building Attributes : Bldg 7 of 16

Field	Description
Style	Colonial
Model	Residential
Grade	B
Stories	2
Occupancy	1
Exterior Wall 1	Brick
Exterior Wall 2	
Roof Structure	Typical
Roof Cover	Typical
Interior Wall 1	Typical
Interior Wall 2	
Interior Flr 1	
Interior Flr 2	
Heat Fuel	Gas/LP
Heat Type	Hot Water
AC Type:	
Num of Bedrooms	4
Full Bthrms	3
Half Baths	1
Extra Fixtures	0
Total Rooms:	10
Bath Style	Typical

Kitchen Style:	Typical
Extra Kitchens	
Cndtn	
Fireplaces	1
Prefab Fpl(s)	
Bsmt Egress	
Foundation	Conc Per Piers
Bsmt Garage(s)	
Fin Bsmt/RRm	
Bsmt Rec Rm	
FBLA	
Int Condition	Typical
Attic Access	
Dormer LF	
Fndtn Cndtn	
Basement	

Building Photo

Building Layout



Building Sub-Areas (sq ft) Legend

Code	Description	Gross Area	Living Area
25F	2.5 STORY FINISHED	1,292	3,230
1SF	1 STORY	396	396
BMT	BSMT UNFIN RES	1,292	0
		2,980	3,626

Building 8 : Section 1

Year Built:	1970
Living Area:	9,480
Replacement Cost:	$1,303,385
Building Percent Good:	64
Replacement Cost Less Depreciation:	$834,200

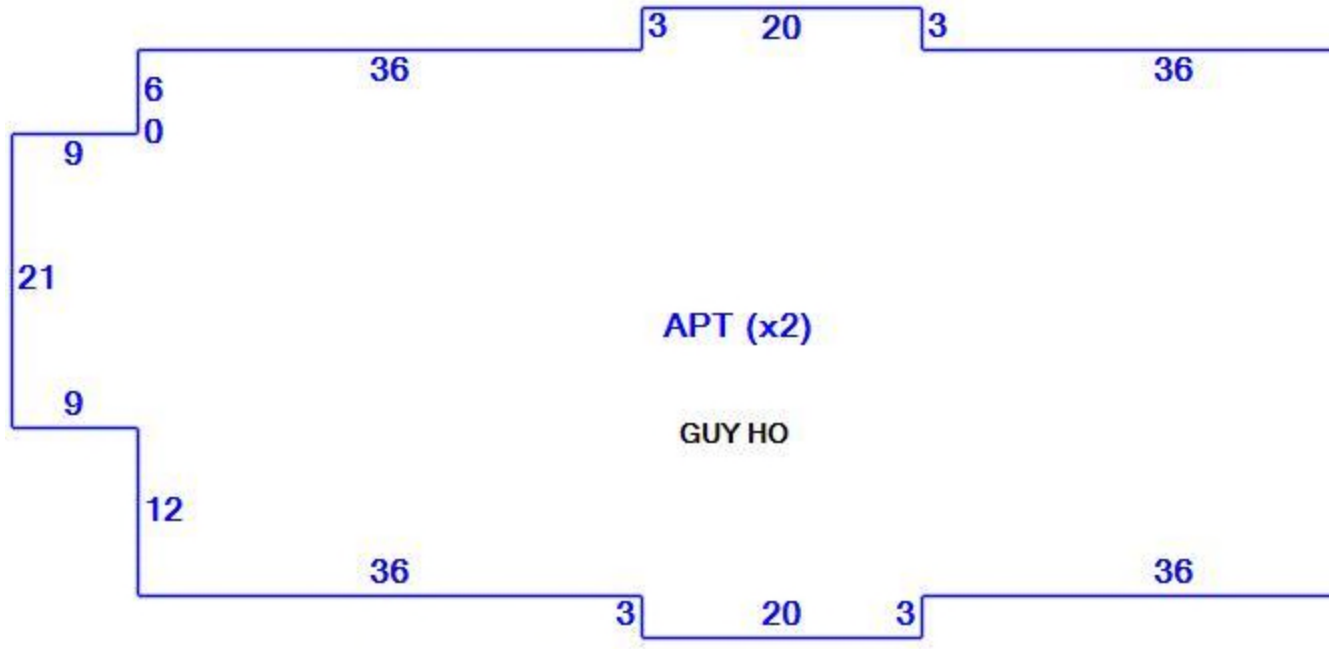
Building Attributes : Bldg 8 of 16

Field	Description
Style:	Dormitory
Model	Comm/Ind
Grade	B 1.00
Stories:	2
Occupancy	
Exterior Wall 1	Brick
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Comp - Shingle
Interior Wall 1	Typical
Interior Wall 2	
Floor Type	Reinf Concrete
Floor Cover	Asphalt
Heating Fuel	Typical
Heating Type	Steam Boiler

AC Type	None
As Built Use	SPE
Bldg Use	Exempt Commercial
Num of Bedrooms	
Total Baths	
Type	01
Wet Sprinkler	
Dry Sprinkler	
1st Floor Use:	
Class	Class B
Frame Type	Masonry
Plumbing	LIGHT
Ceiling	Plaster
Group1	SCH
Wall Height	10.00
Adjustment	

Building Photo

Building Layout



Building Sub-Areas (sq ft) Legend

Code	Description	Gross Area	Living Area
APT	APARTMENT	9,480	9,480
		9,480	9,480

Building 9 : Section 1

Year Built:	1970
Living Area:	9,480
Replacement Cost:	$1,303,385
Building Percent Good:	64
Replacement Cost Less Depreciation:	$834,200

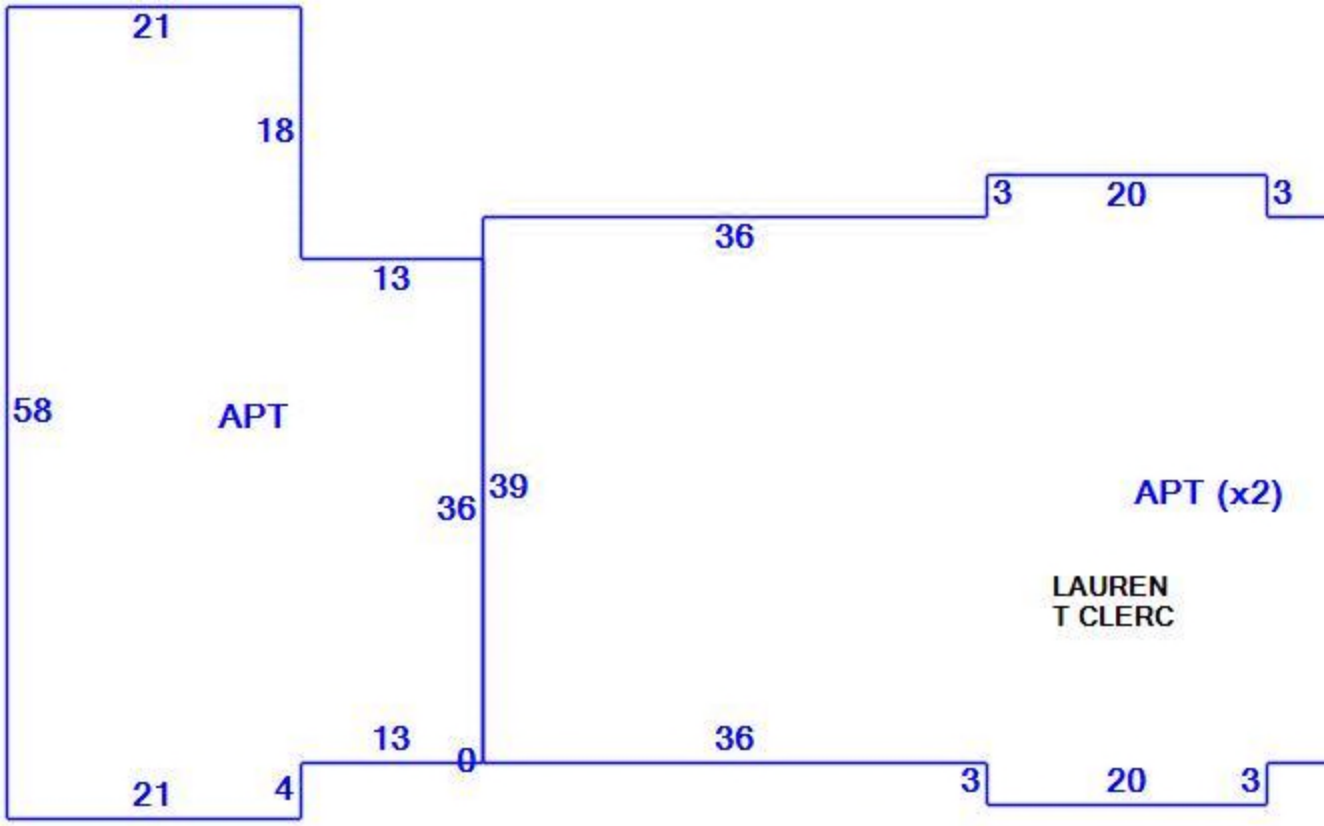
Building Attributes : Bldg 9 of 16

Field	Description
Style:	Dormitory
Model	Comm/Ind
Grade	B 1.00
Stories:	2
Occupancy	
Exterior Wall 1	Brick
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Comp - Shingle
Interior Wall 1	Typical
Interior Wall 2	
Floor Type	Reinf Concrete
Floor Cover	Asphalt
Heating Fuel	Typical
Heating Type	Steam Boiler
AC Type	None
As Built Use	SPE
Bldg Use	Exempt Commercial
Num of Bedrooms	
Total Baths	
Type	01
Wet Sprinkler	
Dry Sprinkler	
1st Floor Use:	
Class	Class B
Frame Type	Masonry

Plumbing	LIGHT
Ceiling	Plaster
Group1	SCH
Wall Height	11.00
Adjustment	

Building Photo

Building Layout



Building Sub-Areas (sq ft) Legend

Code	Description	Gross Area	Living Area
APT	APARTMENT	9,480	9,480
		9,480	9,480

Building 10 : Section 1

Year Built:	1951
Living Area:	9,020
Replacement Cost:	$1,974,343
Building Percent Good:	58
Replacement Cost Less Depreciation:	$1,145,100

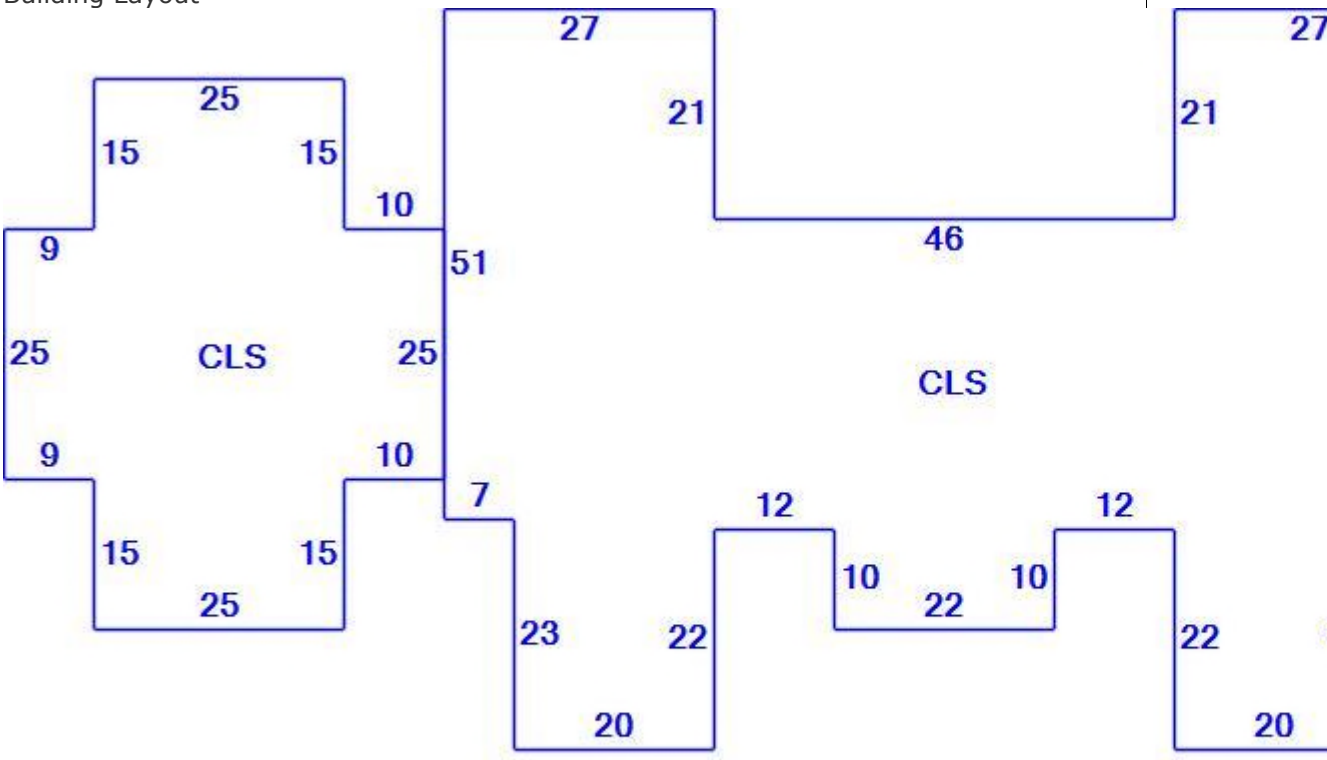
Building Attributes : Bldg 10 of 16

Field	Description
Style:	Classroom
Model	Comm/Ind
Grade	B 1.00
Stories:	1
Occupancy	
Exterior Wall 1	Concrete Block
Exterior Wall 2	Brick Veneer
Roof Structure	Flat
Roof Cover	Built Up
Interior Wall 1	Typical
Interior Wall 2	
Floor Type	Concrete Slab
Floor Cover	Asphalt
Heating Fuel	Typical
Heating Type	Steam Boiler
AC Type	None
As Built Use	SPE
Bldg Use	Exempt Commercial
Num of Bedrooms	
Total Baths	
Type	01
Wet Sprinkler	
Dry Sprinkler	
1st Floor Use:	
Class	Class B
Frame Type	Rigid Steel

Plumbing	LIGHT
Ceiling	Plaster
Group1	SCH
Wall Height	11.00
Adjustment	

Building Photo

Building Layout



Building Sub-Areas (sq ft) Legend

Code	Description	Gross Area	Living Area
CLS	CLASS ROOM BLDG	9,020	9,020
		9,020	9,020

Building 11 : Section 1

Year Built:	2015
Living Area:	900
Replacement Cost:	$255,793
Building Percent Good:	99
Replacement Cost Less Depreciation:	$700,000

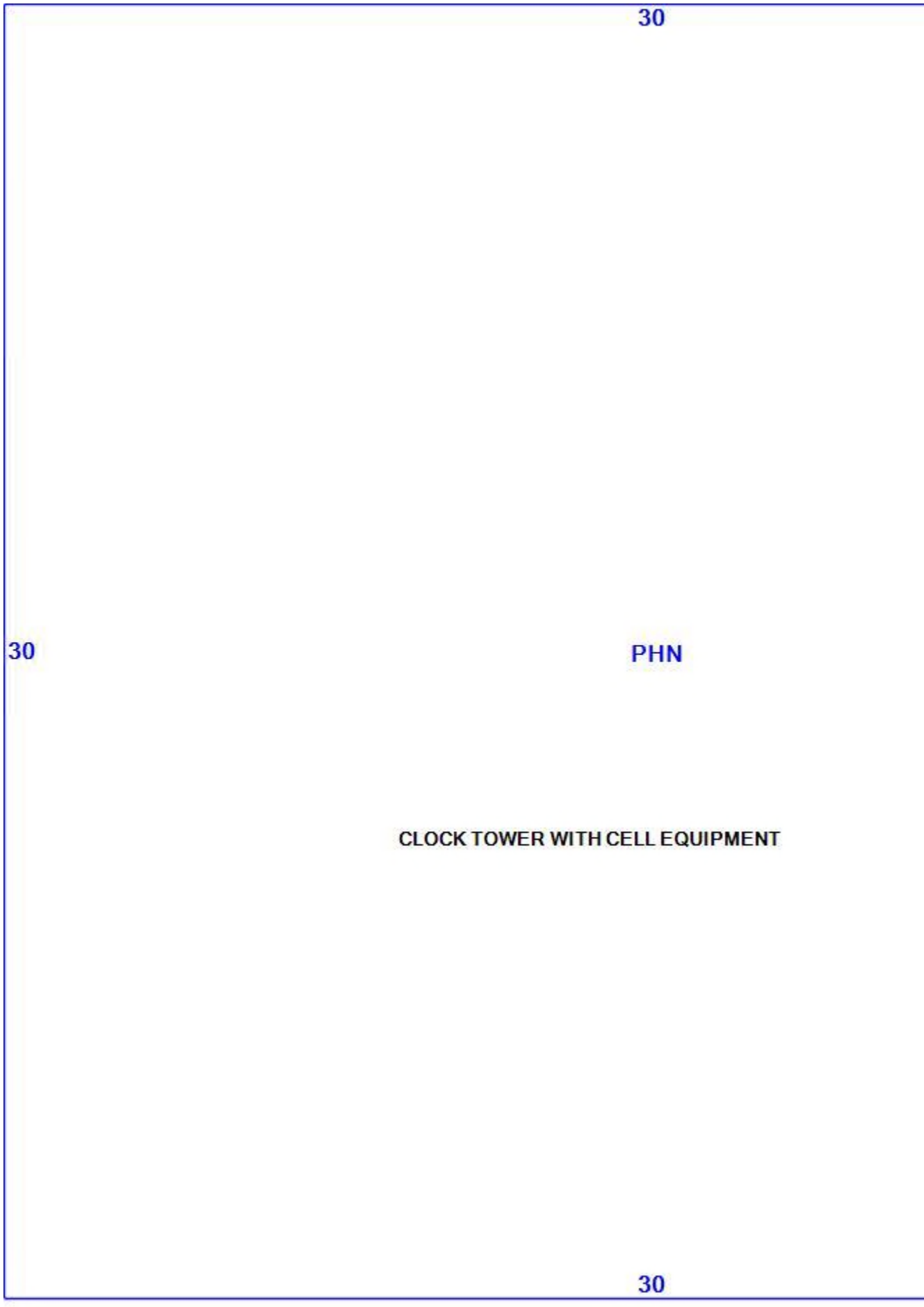
Building Attributes : Bldg 11 of 16

Field	Description

Style:	Telephone Exchange
Model	Comm/Ind
Grade	A 1.50
Stories:	2
Occupancy	
Exterior Wall 1	Brick
Exterior Wall 2	
Roof Structure	Other
Roof Cover	
Interior Wall 1	Typical
Interior Wall 2	
Floor Type	Typical
Floor Cover	Typical
Heating Fuel	Typical
Heating Type	No Data
AC Type	None
As Built Use	
Bldg Use	Commercial
Num of Bedrooms	
Total Baths	
Type	01
Wet Sprinkler	
Dry Sprinkler	
1st Floor Use:	
Class	Class B
Frame Type	Masonry
Plumbing	AVERAGE

Ceiling	None
Group1	
Wall Height	20.00
Adjustment	

Building Photo


30
30
PHN
CLOCK TOWER WITH CELL EQUIPMENT
30

Building Sub-Areas (sq ft) Legend

Code	Description	Gross Area	Living Area
PHN	TELEPHONE EXCHANGE	900	900
		900	900

Building 12 : Section 1

Year Built:	1967
Living Area:	17,370
Replacement Cost:	$3,393,684
Building Percent Good:	63
Replacement Cost Less Depreciation:	$2,138,000

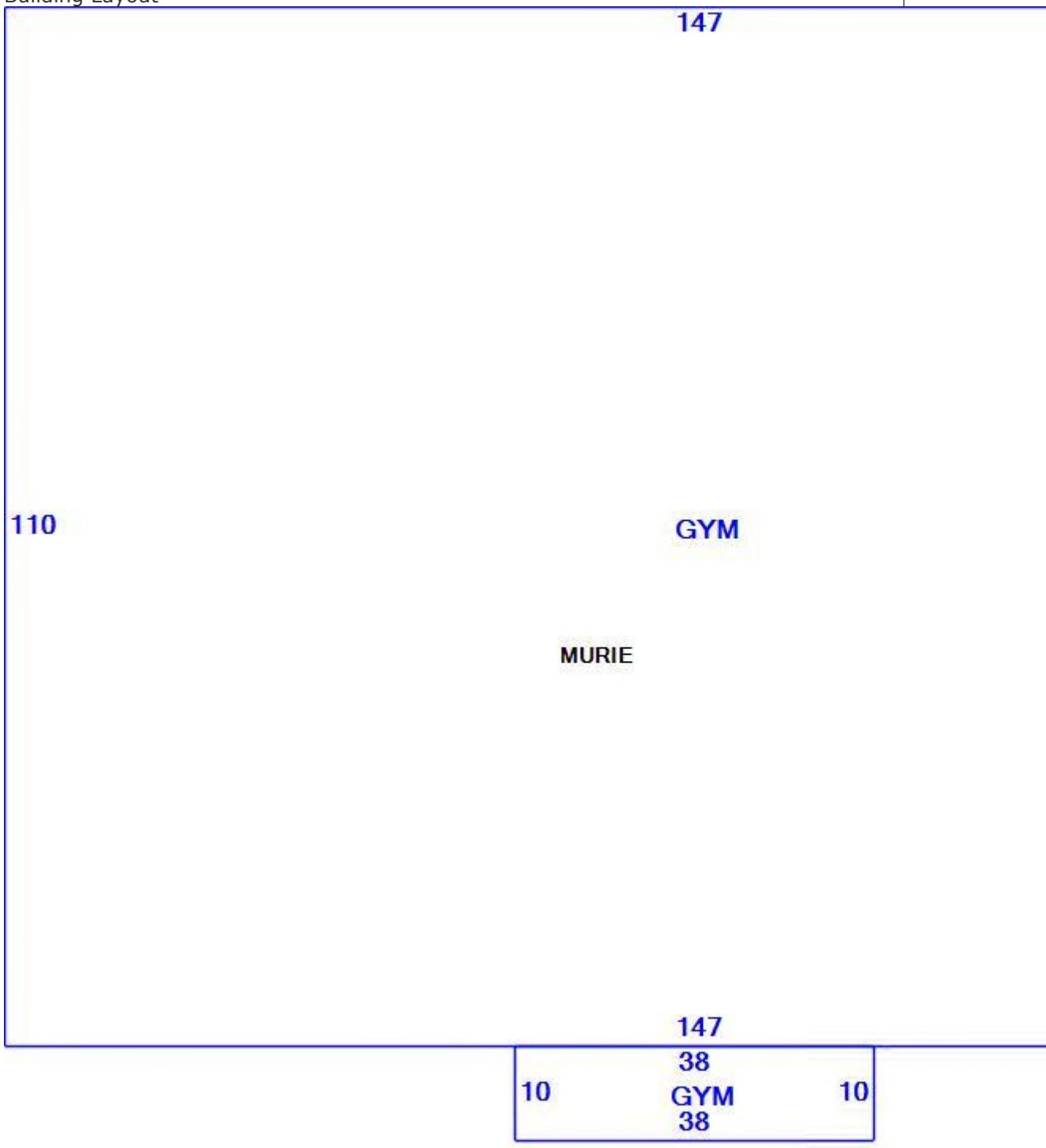
Building Attributes : Bldg 12 of 16

Field	Description
Style:	Gymnasium Bldg
Model	Comm/Ind
Grade	B 1.00
Stories:	1
Occupancy	
Exterior Wall 1	Concrete Block
Exterior Wall 2	Brick Veneer
Roof Structure	Flat
Roof Cover	Built Up
Interior Wall 1	Typical
Interior Wall 2	
Floor Type	Concrete Slab
Floor Cover	Soft Wood
Heating Fuel	Typical
Heating Type	Steam Boiler

AC Type	None
As Built Use	GYM
Bldg Use	Exempt Commercial
Num of Bedrooms	
Total Baths	
Type	01
Wet Sprinkler	
Dry Sprinkler	
1st Floor Use:	
Class	Class B
Frame Type	Rigid Steel
Plumbing	LIGHT
Ceiling	Not Applicable
Group1	SCH
Wall Height	28.00
Adjustment	

Building Photo

Building Layout



Building Sub-Areas (sq ft) Legend

Code	Description	Gross Area	Living Area
GYM	GYMNASIUM BLDG	17,370	17,370
		17,370	17,370

Building 13 : Section 1

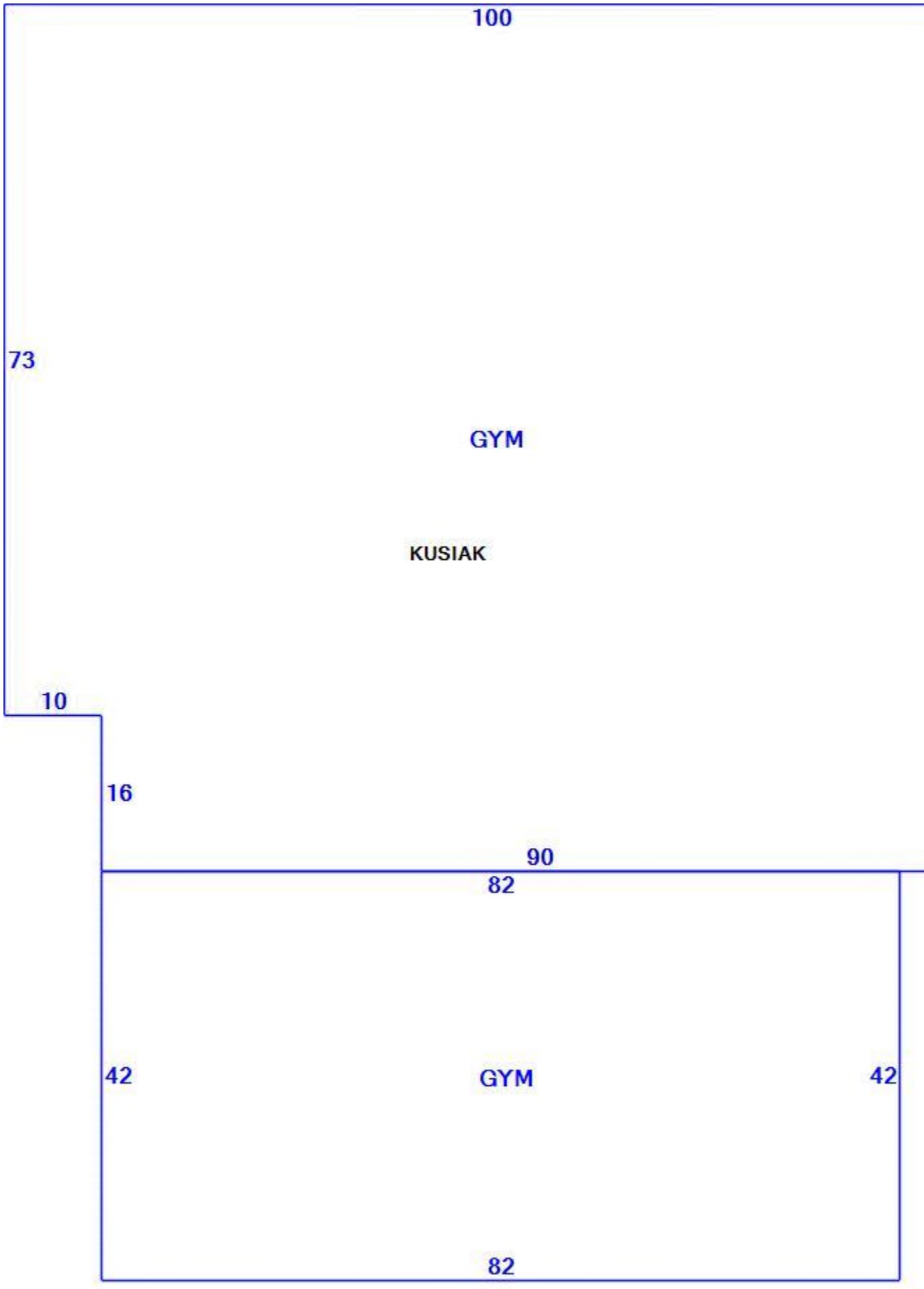
Year Built:	1922
Living Area:	12,184
Replacement Cost:	$2,380,463
Building Percent Good:	58
Replacement Cost Less Depreciation:	$1,380,700

Building Attributes : Bldg 13 of 16

Field	Description
Style:	Gymnasium Bldg
Model	Comm/Ind
Grade	B 1.00
Stories:	1
Occupancy	
Exterior Wall 1	Brick
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Comp - Shingle
Interior Wall 1	Typical
Interior Wall 2	
Floor Type	Concrete Slab
Floor Cover	Hardwood
Heating Fuel	Typical
Heating Type	Steam - No Blr

AC Type	None
As Built Use	GYM
Bldg Use	Exempt Commercial
Num of Bedrooms	
Total Baths	
Type	01
Wet Sprinkler	
Dry Sprinkler	
1st Floor Use:	
Class	Class B
Frame Type	Masonry
Plumbing	LIGHT
Ceiling	Not Applicable
Group1	SCH
Wall Height	25.00
Adjustment	

Building Photo


100
73
GYM
KUSIAK
10
16
90
82
42
GYM
42
82

Building Sub-Areas (sq ft) Legend

Code	Description	Gross Area	Living Area
GYM	GYMNASIUM BLDG	12,184	12,184
		12,184	12,184

Building 14 : Section 1

Year Built:	1956
Living Area:	4,208
Replacement Cost:	$242,406
Building Percent Good:	60
Replacement Cost Less Depreciation:	$145,400

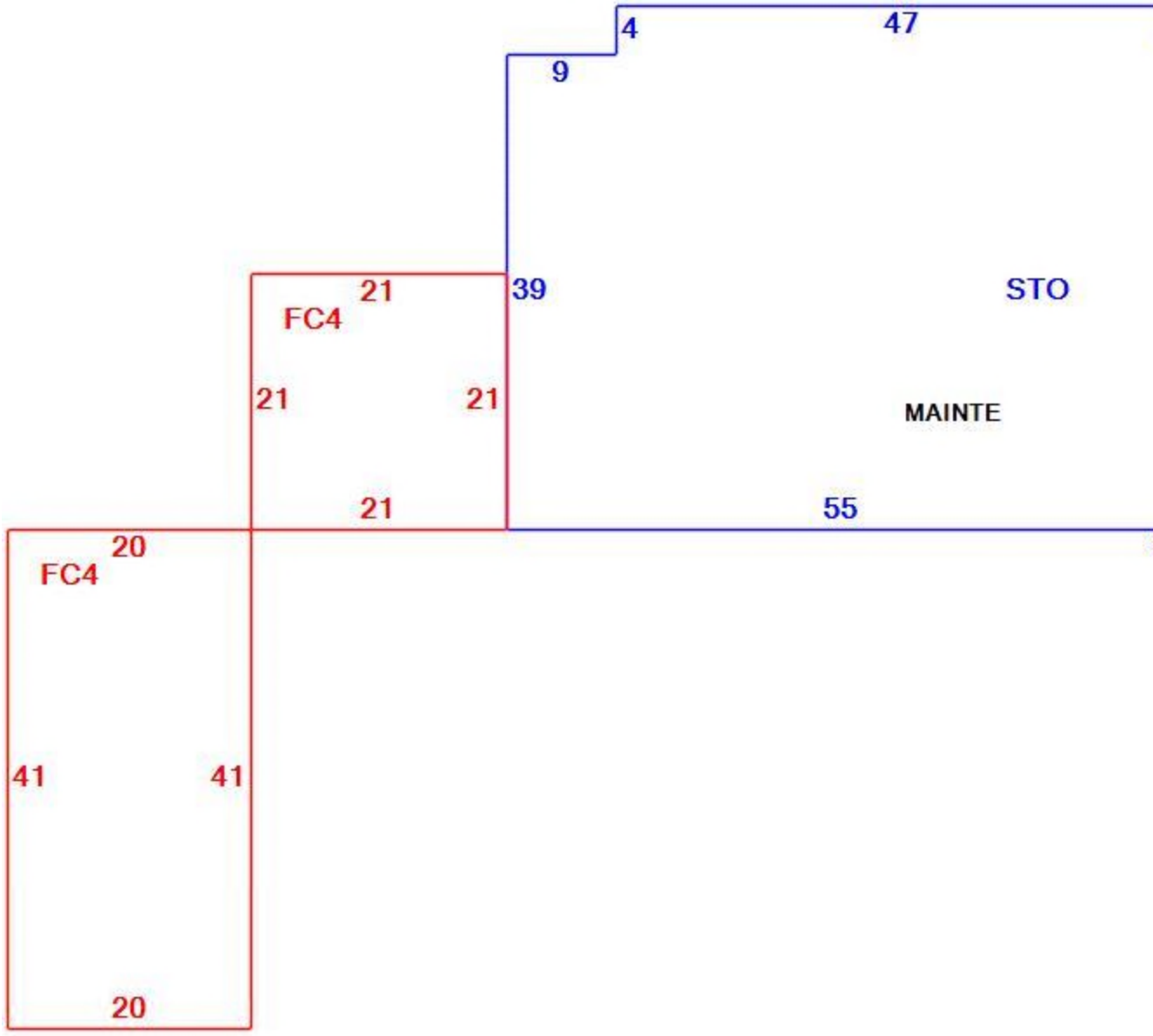
Building Attributes : Bldg 14 of 16

Field	Description
Style:	Garage, Storage
Model	Comm/Ind
Grade	C 1.00
Stories:	1
Occupancy	
Exterior Wall 1	Brick w/Frame
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Built Up
Interior Wall 1	Typical
Interior Wall 2	
Floor Type	Concrete Slab
Floor Cover	Asphalt
Heating Fuel	Typical
Heating Type	Steam Boiler

AC Type	None
As Built Use	SPE
Bldg Use	Exempt Commercial
Num of Bedrooms	
Total Baths	
Type	01
Wet Sprinkler	
Dry Sprinkler	
1st Floor Use:	
Class	Class C
Frame Type	Masonry
Plumbing	LIGHT
Ceiling	Drywall
Group1	SCH
Wall Height	12.00
Adjustment	

Building Photo

Building Layout



Building Sub-Areas (sq ft) Legend

Code	Description	Gross Area	Living Area
STO	STORAGE AREA MIXED	4,208	4,208
FC4	FIN METAL SHED	1,261	0
		5,469	4,208

Building 15 : Section 1

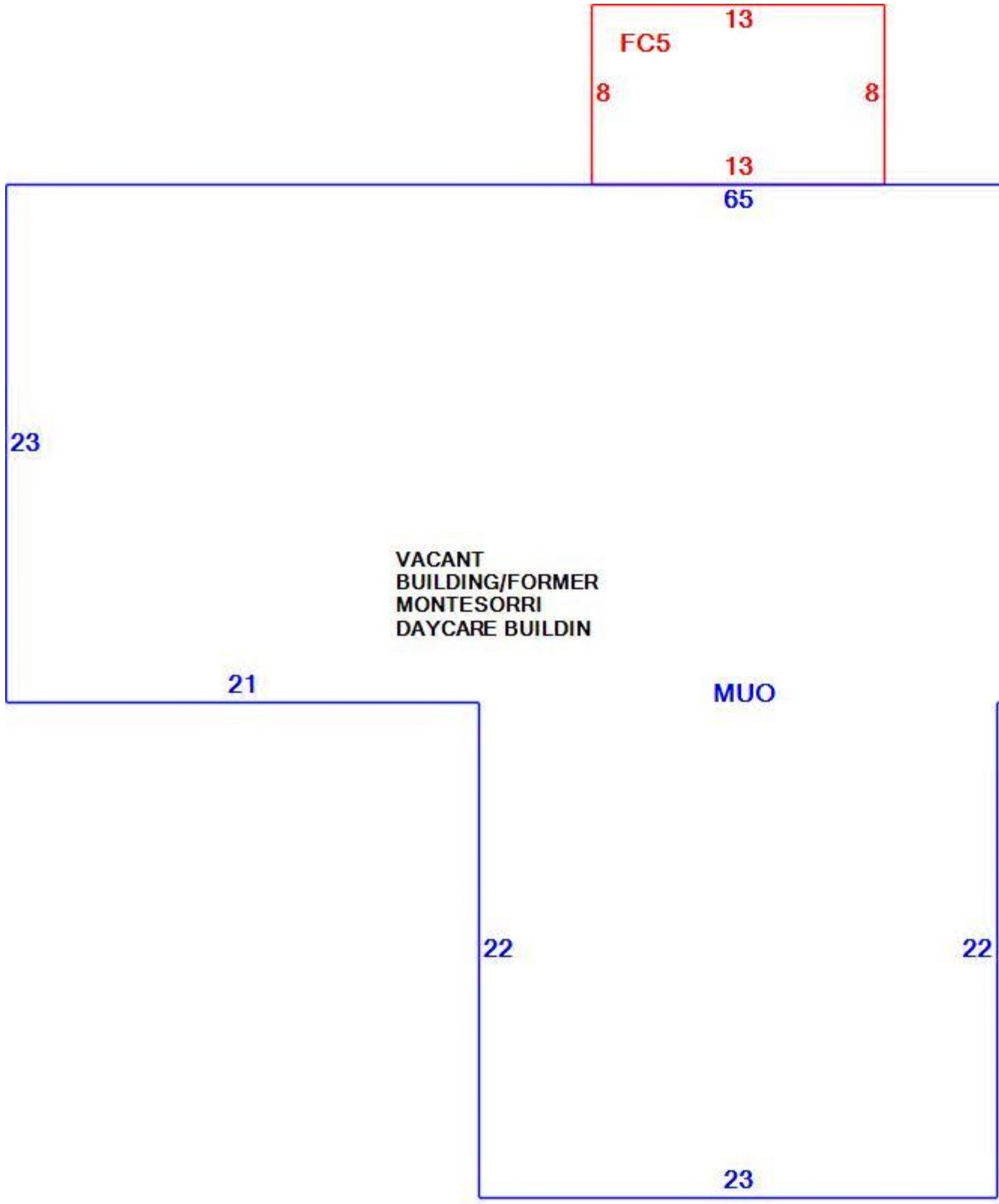
Year Built:	1959
Living Area:	2,001
Replacement Cost:	$211,854
Building Percent Good:	41
Replacement Cost Less Depreciation:	$86,900

Building Attributes : Bldg 15 of 16

Field	Description
Style:	Classroom
Model	Comm/Ind
Grade	C 1.00
Stories:	1
Occupancy	
Exterior Wall 1	Wood Siding
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Comp - Shingle
Interior Wall 1	Typical
Interior Wall 2	
Floor Type	Concrete Slab
Floor Cover	Carpet
Heating Fuel	Typical
Heating Type	Forced Hot Air
AC Type	Central - Zone
As Built Use	SPE
Bldg Use	Exempt Commercial
Num of Bedrooms	
Total Baths	
Type	01

Wet Sprinkler	
Dry Sprinkler	
1st Floor Use:	
Class	Class C
Frame Type	Wood Frame
Plumbing	LIGHT
Ceiling	Drywall
Group1	SCH
Wall Height	11.00
Adjustment	

Building Photo


13
FC5
8
8
13
65
23
VACANT
BUILDING/FORMER
MONTESORRI
DAYCARE BUILDIN
21
MUO
22
22
23

Building Sub-Areas (sq ft) Legend

Code	Description	Gross Area	Living Area
MUO	MULTI USE OFFICE	2,001	2,001
FC5	CONCRETE BLK SHED	104	0
		2,105	2,001

Building 16 : Section 1

Year Built:	1955
Living Area:	36,186
Replacement Cost:	$7,768,208
Building Percent Good:	59
Replacement Cost Less Depreciation:	$4,583,200

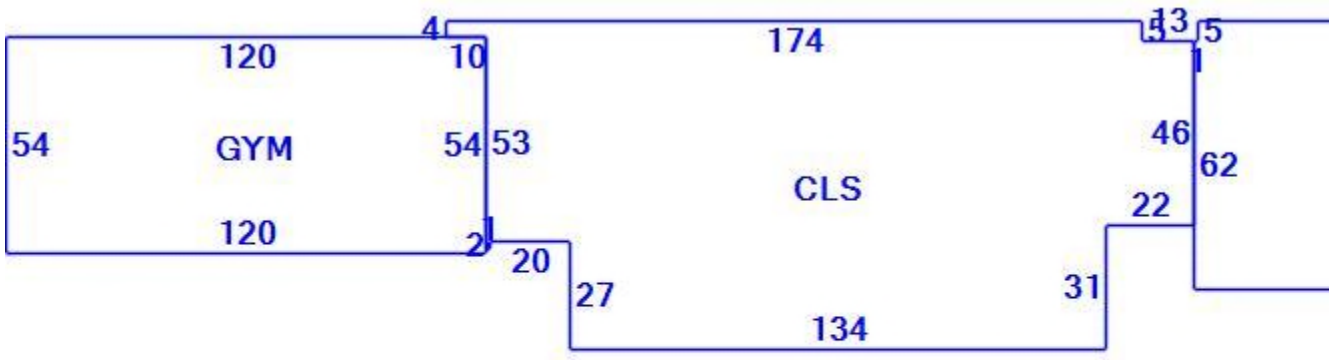
Building Attributes : Bldg 16 of 16

Field	Description
Style:	Classroom
Model	Comm/Ind
Grade	B 1.00
Stories:	2
Occupancy	
Exterior Wall 1	Concrete Block
Exterior Wall 2	Brick Veneer
Roof Structure	Flat
Roof Cover	Built Up
Interior Wall 1	Typical
Interior Wall 2	
Floor Type	Concrete Slab
Floor Cover	Asphalt
Heating Fuel	Typical

Heating Type	Steam Boiler
AC Type	None
As Built Use	SPE
Bldg Use	Exempt Commercial
Num of Bedrooms	
Total Baths	
Type	01
Wet Sprinkler	
Dry Sprinkler	
1st Floor Use:	
Class	Class C
Frame Type	Rigid Steel
Plumbing	LIGHT
Ceiling	Drywall
Group1	SCH
Wall Height	9.00
Adjustment	

Building Photo

Building Layout



Building Sub-Areas (sq ft) Legend

Code	Description	Gross Area	Living Area
CLS	CLASS ROOM BLDG	29,706	29,706
GYM	GYMNASIUM BLDG	6,480	6,480
		36,186	36,186

Extra Features

Extra Features Legend

Code	Description	Size	Value	Bldg #
RP4	Enclosed Porch	120.00 SF	$2,600	5
RP4	Enclosed Porch	120.00 SF	$2,600	6
RP4	Enclosed Porch	168.00 SF	$3,300	3

Land

Land Use

Use Code	902
Description	Exempt Commercial
Zone	R-10
Neighborhood	
Alt Land Appr	No

Category	
Land Line Valuation	
Size (Acres)	28.35
Frontage	
Depth	
Assessed Value	$4,664,380
Appraised Value	$6,663,400

Outbuildings

Outbuildings Legend

Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
RG4	Garage 1.0 Story Detached			420.00 SF	$10,600	7

Valuation History

Appraisal

Valuation Year	Improvements	Land	Total
2020	$32,777,000	$6,663,400	$39,440,400
2019	$32,777,000	$6,663,400	$39,440,400
2018	$32,777,000	$6,663,400	$39,440,400

Assessment

Valuation Year	Improvements	Land	Total
2020	$22,943,900	$4,664,380	$27,608,280
2019	$22,943,900	$4,664,380	$27,608,280
2018	$22,943,900	$4,664,380	$27,608,280

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ATTACHMENT 6

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3.	American School for the Deaf at Hartford 139 North Main Street West Hartford, CT 06107				
4.					
5.					
6.					

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