

1.0 GENERAL

- A. THIS PROJECT IS COMPOSED OF A THREE-STORY PARKING GARAGE WITH A PLANNED FUTURE EXPANSION OF TWO ADDITIONAL STORIES.
- B. MINNEAPOLIS, MINNESOTA
- C. DESIGN CODES USED FOR STRUCTURAL DESIGN
1. MINNESOTA STATE CODE
 2. IBC 2006 ADOPTED PER MINNESOTA
- D. CIVIL DATUM
1. PLAN ELEVATION OF 100'-0" CORRESPONDS TO CIVIL ELEVATION OF 840.80'.
- E. STRUCTURAL MEMBER PLACEMENT
1. ALL COLUMNS ARE TO BE CENTERED ON GRID LINES UNLESS NOTED OTHERWISE.
 2. ALL COLUMN FOOTINGS ARE TO BE CENTERED ON COLUMNS UNLESS NOTED OTHERWISE.
 3. ALL WALL FOOTINGS ARE TO BE CENTERED ON WALLS UNLESS NOTED OTHERWISE.
- F. ELEVATOR
1. ELEVATOR OPENING AND SUPPORT DIMENSIONS ARE APPROXIMATE. OBTAIN ACTUAL LOCATIONS AND DIMENSIONS FROM THE ELEVATOR MANUFACTURER PRIOR TO SHOP DRAWING PREPARATION.
- G. MECHANICAL PENETRATIONS AND SLEEVES
1. OPENINGS FOR MECHANICAL EQUIPMENT AND DUCTS ARE APPROXIMATE. OBTAIN ACTUAL LOCATIONS AND DIMENSIONS FROM THE MECHANICAL CONTRACTOR PRIOR TO SHOP DRAWINGS PREPARATION.

1.1 ABBREVIATIONS

- A. FOUNDATION PLAN ABBREVIATIONS
1. TFE = TOP OF FOOTING ELEVATION
 2. TPE = TOP OF PIER ELEVATION
 3. TLE = TOP OF LEDGE ELEVATION
 4. TWE = TOP OF WALL ELEVATION
 5. TSE = TOP OF SLAB ELEVATION
 6. FS = FOOTING STEP
- B. FRAMING PLAN ABBREVIATIONS
1. TSE = TOP OF SLAB ELEVATION
 2. TDE = TOP OF DECK ELEVATION
 3. TBE = TOP OF BEAM ELEVATION
 4. TTE = TOP OF DOUBLE TEE ELEVATION
 5. BDE = BOTTOM OF DECK ELEVATION

2.0 DESIGN LOADS (IBC SECTION 1603)

- A. DEAD LOAD
1. SELF WEIGHT
 2. ASSUMED SUPERIMPOSED MEP
 3. ASSUMED SUPERIMPOSED ROOFING
- B. FLOOR LIVE LOAD (IBC 1603.1.1)
1. GARAGE
 2. STAIRS AND EXIT
 3. VEHICLE BARRIER
 4. SIDEWALKS
- C. ROOF LIVE LOAD (IBC 1603.1.2)
1. ROOF LIVE LOAD
 2. LIVE LOAD REDUCTION
- D. ROOF SNOW LOAD (IBC 1603.1.3)
1. GROUND SNOW LOAD
 2. FLAT ROOF SNOW LOAD
 3. SNOW EXPOSURE FACTOR
 4. SNOW LOAD IMPORTANCE FACTOR
 5. THERMAL FACTOR
- E. WIND DESIGN DATA (IBC 1603.1.4)
1. BASIC WIND SPEED (3s GUST)
 2. WIND IMPORTANCE FACTOR
 3. OCCUPANCY CATEGORY
 4. WIND EXPOSURE
 5. INTERNAL PRESSURE COEFFICIENT
 6. COMPONENTS AND CLADDING

2.0 DESIGN LOAD NOTES

- A. RESTRICTIONS ON LOADING: IT SHALL BE UNLAWFUL TO PLACE, OR CAUSE OR PERMIT TO BE PLACED, ON ANY FLOOR OR ROOF OF A BUILDING, STRUCTURE OR PORTION THEREOF, A LOAD GREATER THAN IS PERMITTED BY THESE REQUIREMENTS. (IBC 1603.2)
- B. LIVE LOADS POSTED: WHERE THE LIVE LOADS FOR WHICH EACH FLOOR OR PORTION THEREOF OF A COMMERCIAL OR INDUSTRIAL BUILDING IS OR HAS BEEN DESIGNED TO EXCEED 50 PSF, SUCH DESIGN LIVE LOADS SHALL BE CONSPICUOUSLY POSTED BY THE OWNER IN THAT PART OF EACH STORY IN WHICH THEY APPLY, USING DURABLE SIGNS. IT SHALL BE UNLAWFUL TO REMOVE OR DEFACE SUCH NOTICES. (IBC 1603.3)
- C. OCCUPANCY PERMITS FOR CHANGED LOADS: OCCUPANCY PERMITS FOR BUILDINGS HEREAFTER ERECTED SHALL NOT BE ISSUED UNTIL THE FLOOR LOAD SIGNS HAVE BEEN INSTALLED.

3.0 STRUCTURAL TESTS AND SPECIAL INSPECTIONS (IBC CHAPTER 17)

- A. SPECIAL INSPECTORS WILL KEEP RECORDS OF INSPECTIONS AND FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL AND THE ENGINEER OF RECORD.
- B. LIST OF ITEMS TO BE INSPECTED:
1. FABRICATION AND IMPLEMENTATION PROCEDURES
 2. STRUCTURAL STEEL
 3. WELD FILLER MATERIAL
 4. HIGH STRENGTH BOLTING
 5. WELDING
 6. DETAIL COMPLIANCE WITH CONSTRUCTION DOCUMENTS
- C. PROCEDURES FOR COMPLETENESS AND ADEQUACY RELATIVE TO THE CODE REQUIREMENTS
- D. STEEL CONSTRUCTION
1. MATERIAL VERIFICATION
 2. STRUCTURAL STEEL
 3. WELD FILLER MATERIAL
 4. HIGH STRENGTH BOLTING
 5. WELDING
 6. DETAIL COMPLIANCE WITH CONSTRUCTION DOCUMENTS
- E. CONCRETE CONSTRUCTION
1. PRIOR TO CONCRETE PLACEMENT
 2. FORMWORK
 3. EMBEDDED ITEMS
 4. WELDED ITEMS
 5. REINFORCING STEEL PLACEMENT: MILD AND PRESTRESSING
 6. DURING CONCRETE PLACEMENT
 7. VERIFY DESIGN MIX
 8. MATERIAL TESTING IN FIELD
 9. CONCRETE PLACEMENT
 10. CURING TECHNIQUE
 11. AFTER CONCRETE PLACEMENT
 12. VERIFICATION OF CONCRETE STRENGTH
 13. PRE-STRESSING FORCES
 14. ERECTION OF PRECAST MEMBERS
 15. MASONRY CONSTRUCTION
 16. AT ONSET OF WORK
 17. MATERIAL VERIFICATION
 18. MORTAR JOINT CONSTRUCTION
 19. SIZE AND LOCATION OF REINFORCEMENT, ANCHORS, AND EMBEDDED ITEMS
 20. WELDING
 21. PROTECTION OF MASONRY DURING EXTREME TEMPERATURES
 22. PRIOR TO GROUTING
 23. GROUT PROPORTIONS
 24. GROUT SPACE CLEARANCE
 25. PLACEMENT OF REINFORCEMENT
 26. MORTAR JOINT CONSTRUCTION
 27. GROUT PLACEMENT
 28. MATERIAL TESTING
 29. SOILS
 30. VERIFY MATERIAL BELOW FOOTINGS
 31. VERIFY EXCAVATION DEPTH
 32. CLASSIFICATION AND TESTING
 33. VERIFY MATERIAL AND PLACEMENT

4.0 FOUNDATION AND SOIL INVESTIGATION

- A. A REPORT WAS PREPARED PER IBC 1802.6.
1. PREPARED BY NORTHERN TECHNOLOGIES, INC.
 2. DATE OF REPORT MARCH 28, 2011
 3. REPORT NUMBER 11.50534.100
 4. ADDENDUM #1 OCTOBER 04, 2011
- B. SOIL DESIGN RECOMMENDATIONS (IBC 1802.6)
1. SOIL CLASSIFICATION
- C. CONVENTIONAL SPREAD FOOTINGS WERE DESIGNED TO BEAR ON A SOIL IMPROVEMENT OF RAMMED AGGREGATE PIERS. THE ASSUMED BEARING PRESSURE FOR THIS SYSTEM IS 5500 PSF.
- D. NON-BEARING WALLS MAY BEAR ON THE SOIL IF ORGANIC SOILS AND FILL ARE SUBCUT AND REPLACED WITH ENGINEERED FILL.
1. ALLOWABLE SOIL BEARING

4.1 SPREAD FOOTINGS

- A. FROST REQUIREMENTS
1. SEE THE GEOTECHNICAL REPORT FOR WINTER CONSTRUCTION GUIDELINES. FOOTINGS CONSTRUCTED DURING THE WINTER IN UNHEATED AREAS MUST BEAR 5'-0" BELOW GRADE.
 2. ALL FOOTING ELEVATIONS MUST BE REVIEWED BY THE GEOTECHNICAL ENGINEER AT TIME OF EXCAVATION. THE GEOTECHNICAL ENGINEER IS TO VERIFY ALL ELEVATIONS AND BEARING CAPACITIES.
- B. OTHER
1. ALL FOOTINGS ARE CENTERED UNDER COLUMNS OR WALLS, UNO.
 2. PROVIDE A THICKENED SLAB UNDER CMU WALLS THAT DO NOT HAVE A CONTINUOUS FOOTING PER DETAIL 9 / SS-501.

5.0 CONCRETE (IBC 1901.4)

- A. CONCRETE COMPRESSIVE STRENGTH
1. TYPICAL 28 DAYS 4000 PSI
- B. REINFORCEMENT GRADE AND STRENGTH
1. TYPICAL GRADE 60 60 KSI
 2. WELDABLE (DBA) GRADE 60 60 KSI
 3. EPOXY GRADE 60 60 KSI
- C. REINFORCEMENT: ANCHORAGE LENGTH AND LAP LENGTHS
1. TYPICAL SEE 1 / SS-501
- D. CONTRACTION AND ISOLATION JOINTS
1. DETAILS SEE 6 AND 7 / SS-501
- 5.1 CONCRETE NOTES (ACI)
- A. REINFORCING STEEL IS TO BE NEW AND ALL BARS ARE TO BE DEFORMED.
- B. CONCRETE PROTECTION FOR REINFORCEMENT
1. CONCRETE CAST AGAINST AND EXPOSED TO EARTH 3"
 2. CONCRETE EXPOSED TO EARTH OR WEATHER 2"
 3. CONCRETE NOT EXPOSED
 4. SLABS, WALLS, JOISTS 1"
 5. BEAMS, COLUMNS 1 1/2"
 6. PRESTRESSED CONCRETE PER ACI

5.2 PRECAST CONCRETE

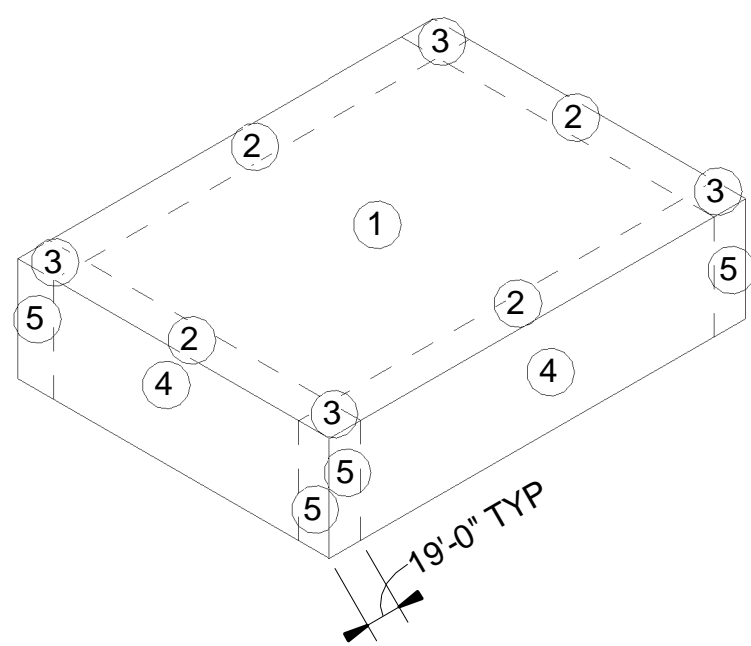
- A. THE DESIGN AND MANUFACTURE OF ALL PRESTRESSED CONCRETE UNITS SHALL CONFORM TO ACI 318.
- B. PRECAST, PRESTRESSED MEMBERS SHALL BE DESIGNED FOR THE SUPERIMPOSED LOADS AS DESCRIBED IN THE GENERAL STRUCTURAL NOTES.
- C. PRECAST, PRESTRESSED MEMBERS ARE DESIGNED FOR "IN PLACE" LOADS. IT SHALL BE THE RESPONSIBILITY OF THE PRECAST MANUFACTURER TO TRANSPORT AND ERECT THE PRECAST MEMBERS WITHOUT OVERSTRESSING OR OTHERWISE DISTRESSING THEM IN ANY MANNER.
- D. VERIFY ALL OPENINGS SHOWN ON CONTRACT DOCUMENTS. ADDITIONAL OPENINGS OF GREATER THAN 8" DIMENSION SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL OF THE PRECAST MANUFACTURER.
- E. DESIGN MUST INCLUDE ALL CONCENTRATED LOADS FROM MECHANICAL EQUIPMENT, HEADERS, ETC.
- F. PRECAST MANUFACTURER SHALL FURNISH AND DESIGN HEADERS FOR OPENINGS AS REQUIRED OR INDICATED ON THE DRAWINGS. PRECAST MANUFACTURER SHALL PROVIDE WELD PLATES AND OTHER EMBEDDED ITEMS NOTED ON THE DRAWINGS.

6.0 MASONRY (IBC 2101.3)

- A. MASONRY COMPRESSIVE STRENGTH
1. TYPICAL 1500 PSI
 2. MORTAR TYPE S 2000 PSI
 3. GROUT 28 DAYS 2000 PSI
- B. REINFORCEMENT GRADE AND STRENGTH
1. TYPICAL GRADE 60 60 KSI
 2. WALL TIES TRUSS 33 KSI

6.1 MASONRY NOTES (ACI)

- A. PROVIDE STANDARD HORIZONTAL JOINT REINFORCEMENT AT 16" OC FULL HEIGHT OF WALL.
- B. LAP ALL VERTICAL AND HORIZONTAL REINFORCEMENT 48 BAR DIAMETERS.
- C. ALL LINTELS OR STEEL BEAMS ARE TO BEAR A MINIMUM OF 8" ON SOLID MASONRY. FILL BLOCK CORES UNDER ALL BEARING WITH GROUT A MINIMUM OF 3 COURSES DOWN FOR A 24" LENGTH OF WALL UNLESS NOTED OTHERWISE.
- D. FILL ALL BLOCK LINTELS AND BOND BEAMS SOLID WITH GROUT.
- E. ALL BEARING PLATES ARE TO BE CENTERED ON WALLS AND CMU COLUMNS UNLESS NOTED OTHERWISE.
- F. SEE ARCHITECTURAL DRAWINGS FOR LOCATION OF CONTROL JOINTS, MASONRY OPENINGS, AND EMBEDDED ANCHORS FOR DOORS. EXTEND CONTROL JOINTS FULL HEIGHT OF WALL.



DESIGN WIND PRESSURE (PSF)			
	TRIBUTARY AREA (SQ FT)		
ZONE	10	100	500
1	30.9	28.9	28.9
2	46.9	32.9	32.9
3	66.9	32.9	32.9
4	32.9	29.9	26.9
5	38.9	31.9	26.9

NOTES:

1. IT IS PERMITTED TO INTERPOLATE BETWEEN VALUES OF TRIBUTARY AREA.
2. SEE ASCE 7 FOR ADDITIONAL INFORMATION.

7.0 STEEL

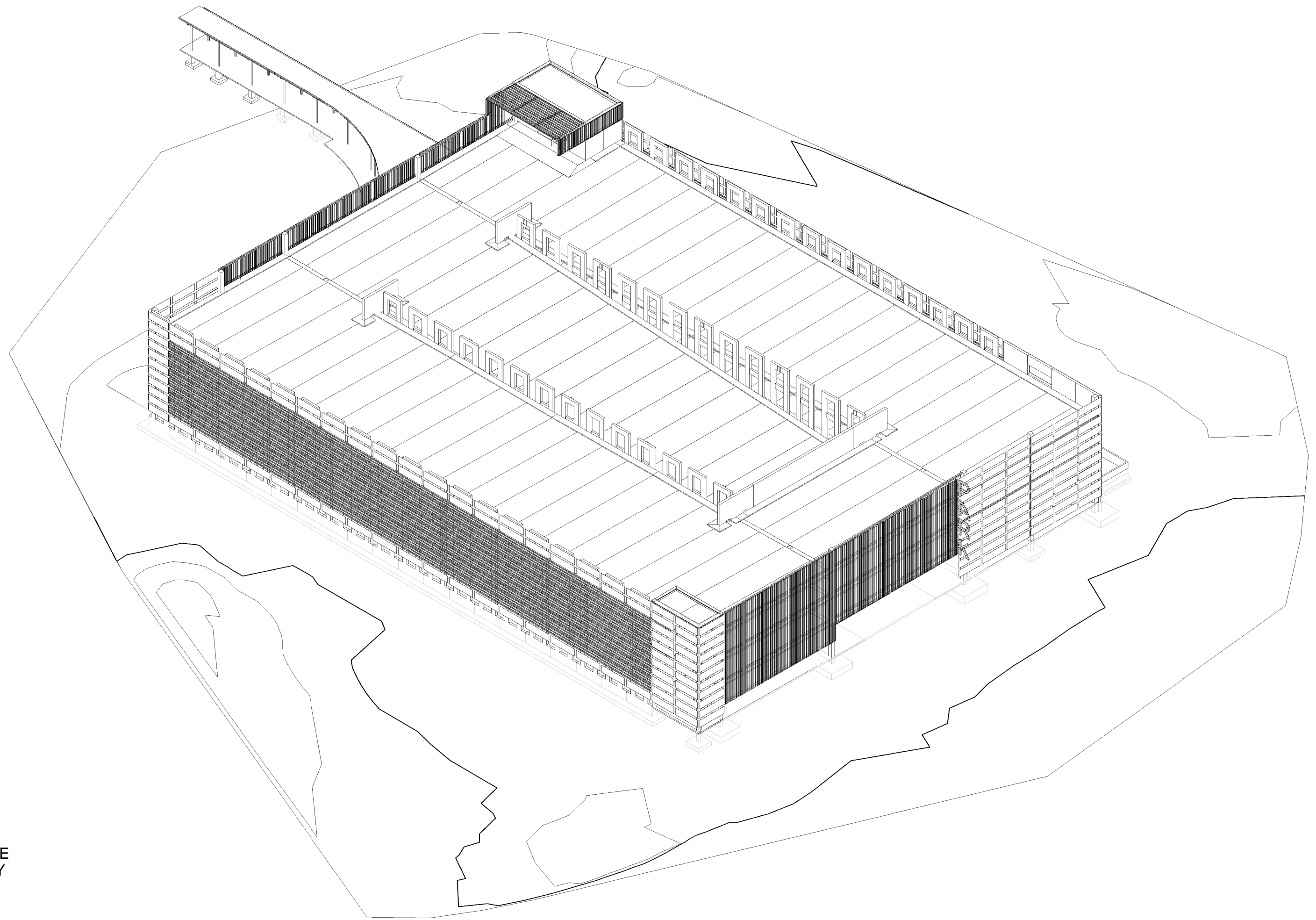
- A. MATERIALS
1. WIDE FLANGE I-SHAPES AND WT SHAPES (ASTM A992) 50 KSI
 2. PLATES, CHANNELS, AND ANGLES (ASTM A36) 36 KSI
 3. HSS SQUARE, RECTANGULAR, AND ROUND (ASTM A500, GRADE B) 46 KSI
 4. PIPE (ASTM A53, GRADE B) 35 KSI

7.1 STEEL NOTES (AISC)

- A. UNLESS NOTED OTHERWISE, ALL CONNECTIONS ARE TO BE MADE WITH 3/4" DIAMETER ASTM A325 HIGH STRENGTH BOLTS.
- B. COMPOSITE BEAMS ARE NOT TO BE SHORED AT MIDSPAN DURING CONSTRUCTION.
- C. ALL EXPOSED STEEL TO BE GALVANIZED.
- D. STEEL ERECTOR IS TO PROVIDE THE NECESSARY BRACING FOR STRUCTURE STABILITY DURING ERECTION AND UNTIL ALL STEEL IS PLUMB AND SECURED.

7.2 STEEL DECKING

- A. MATERIAL STRENGTH
1. ROOF DECKING 33 KSI
 2. COMPOSITE DECKING 40 KSI
- B. ALL DECK IS TO BE GALVANIZED.
- C. CONTRACTOR TO PROVIDE ADDITIONAL ANGLES TO SUPPORT DECKING AT AREAS WHERE DECK IS CUT FOR COLUMNS OR OTHER PENETRATIONS TO INSURE NO WEAKENED AREAS IN DECKING.
- D. PROVIDE CLOSURE PLATES FOR DECK AT EDGES OF ALL CONCRETE UNLESS NOTED OTHERWISE.
- E. SCREED THE CONCRETE TO THE DECK. DO NOT USE LASER SCREEDS UNLESS APPROVED BY THE ARCHITECT.



18 WIND - COMPONENTS AND CLADDING
SS-001 1/16" = 1'-0"

19 STRUCTURAL ISOMETRIC
SS-001

CONSTRUCTION DOCUMENTS

		CONSULTANTS:		ARCHITECTS/ENGINEERS:		Drawing Title: GENERAL NOTES		Project Title		Project Number		Office of Construction and Facilities Management Department of Veterans Affairs	
		SIGNAGE		LEO A DALY		I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am duly licensed Professional Engineer under the laws of the State of Minnesota		CONSTRUCT PARKING RAMP DESIGN		618-820			
		SIGNIA DESIGN		730 Second Avenue South, Suite 1100 Minneapolis, MN 55402-2455 USA Tel 612-338-8741 Fax 612-338-4840 Project #023-10131-000		Signature: <i>[Signature]</i>		Location		Building Number			
		2395 UNIVERSITY AVENUE W., SUITE 316 SAINT PAUL, MN 55114 PHONE: 651-209-6254						1 VETERANS DRIVE MINNEAPOLIS, MN 55417		78			
		LANDSCAPE						Printed Name: Joy R. Beers Date: 02-24-2012 License: 42765		Drawing Number			
		ANDERSON ENGINEERING								Date		Checked	
		13605 1ST AVENUE NORTH, SUITE 100 PLYMOUTH, MN 55441 PHONE: 763-412-4000								02-24-2012		Checker	
		Revisions:								Modeled		Author	
		Date								SS-001		Drawing 035 of 116	