

# GENERAL STRUCTURAL NOTES

## DESIGN AND LOADING

THE STRUCTURAL DESIGN OF THIS BUILDING IS IN ACCORDANCE WITH THE VIRGINIA STATEWIDE BUILDING CODE 2015. ALL BUILDING COMPONENTS ARE TO BE DESIGNED PER AFOREMENTIONED CODE. FABRICATION AND ERECTION OF ALL BUILDING ELEMENTS TO COMPLY WITH ALL OSHA AND OTHER APPLICABLE SAFETY REGULATIONS.

THE LIVE LOADS USED IN DESIGN ARE AS FOLLOWS:

GROUND SNOW (Pg)	- 20 PSF
FLAT ROOF SNOW (P <sub>f</sub> )	- 25 PSF (REF. SNOW DRIFT DIAGRAM, THIS SHEET)
ROOF LIVE LOAD	- 20 PSF
WIND	- V <sub>ult</sub> /V <sub>std</sub> 115/90 MPH 3 SECOND GUST EXP. B
SEISMIC:	
DESIGN CATEGORY	- B
S <sub>s</sub>	- 0.152 <sub>g</sub>
S <sub>1</sub>	- 0.050 <sub>g</sub>
S <sub>0.1</sub>	- 0.152 <sub>g</sub>
S <sub>w</sub>	- 0.093 <sub>g</sub>
SITE CLASS	- D

## FOUNDATION NOTES

FOUNDATION DESIGN IS BASED ON AN ASSUMED DESIGN SOIL BEARING CAPACITY OF 2000 PSF. A GEOTECHNICAL ENGINEER SHALL PERFORM REQUIRED TESTING & CONFIRM VALUES PRIOR TO CONSTRUCTION.

DESIGN SOIL BEARING PRESSURE OF 2000 PSF.

PLACE BACKFILL EQUALLY ON BOTH SIDES OF FOUNDATION WALLS OR GRADE BEAMS.

THE CONTRACTOR SHALL NOTIFY THE ARCHITECT IMMEDIATELY IN THE EVENT THAT THE SOILS CONDITIONS ENCOUNTERED VARY FROM THOSE SHOWN ON THE BORING LOGS. PRIOR TO THE CONTRACTOR REQUESTING A BUILDING DEPT. FOUNDATION INSPECTION, THE SOILS ENGINEER SHALL ADVISE THE BUILDING OFFICIAL, IN WRITING, THAT: A) THE BUILDING PAD WAS PREPARED ACCORDING TO THE SOILS REPORT. B) THE FOUNDATION EXCAVATIONS COMPLY WITH THE INTENT OF THE SOILS REPORT. C) THE UTILITY TRENCHES HAVE BEEN PROPERLY BACK FILLED AND COMPACTED. D) THE DIFFERENTIAL SETTLEMENT IS WITHIN REQUIRED TOLERANCES OF OWNER & PARTIES CONCERNED.

## CONCRETE AND REINFORCING

### CONCRETE MATERIALS

ALL CONCRETE SHALL BE IN ACCORDANCE WITH 'AMERICAN CONCRETE INSTITUTE BUILDING CODE' (ACI 318) AND WITH 'SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS' (ACI 301), LATEST EDITION.

ALL NORMAL WEIGHT CONCRETE (145 PCF) SHALL OBTAIN A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3,000 PSI EXCEPT AS FOLLOWS:

- INTERIOR SLABS 3,500 PSI
- EXTERIOR SLABS 4,000 PSI

REINFORCING BARS SHALL BE DEFORMED BARS OF NEW BILLET STEEL CONFORMING TO ASTM A615, GRADE 60. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185. ALL REINFORCING AND ACCESSORIES SHALL BE DETAILED AND PLACED IN ACCORDANCE WITH ACI STANDARD 315-80 AND 315-80. REINFORCING BARS SHALL BE KEPT CLEAN AND FREE OF RUST.

ALL EXTERIOR CONCRETE, SUBJECTED TO FREEZING AND THAWING, SHALL ACHIEVE AN AIR CONTENT OF 4% - 7%. ALL INTERIOR FLOORS SHALL HAVE A MAXIMUM AIR CONTENT OF 3%. TEST CYLINDERS SHALL BE MADE AND TESTED AS OUTLINED IN ACI 301 OR AS PER ARCHITECTURAL SPECIFICATIONS.

PORTLAND CEMENT SHALL CONFORM TO ASTM C150 'SPECIFICATIONS FOR PORTLAND CEMENT' TYPE I OR II. FLY ASH OR SLAG SHALL BE USED IN ALL CONCRETE REQUIRED TO BE SULFATE RESISTANT FOR ALL MODERATE EXPOSURE.

AGGREGATES FOR CONCRETE OF NORMAL WEIGHT SHALL CONFORM TO ASTM C33 'SPECIFICATIONS FOR CONCRETE AGGREGATES'. FINE AGGREGATE SHALL BE NATURAL, CLEAN, HARD SAND. WATER REDUCING, HIGH RANGE WATER REDUCING, AND MID-RANGE WATER REDUCING ADMIXTURES SHALL CONFORM TO ASTM C494, 'SPECIFICATIONS FOR CHEMICAL ADMIXTURES FOR CONCRETE' AND SHALL CONTAIN NOT MORE THAN 0.05% CHLORIDE IONS.

MIXING WATER USED IN THE CONCRETE SHALL BE FRESH, CLEAN AND DRINKABLE.

CONCRETE MIXES SHALL BE PROPORTIONED TO ACHIEVE A MAXIMUM SLUMP OF 8" FOR CONCRETE CONTAINING HRWR, 6" FOR CONCRETE CONTAINING A MID-RANGE WATER REDUCING ADMIXTURE, OR 4" FOR OTHER CONCRETE. ALL MIXES SHALL HAVE A WATER SLUMP OF 2" - 3" (3" - 4" FOR CONCRETE RECEIVING A 'DRY-SHAKE' HARDENER).

NO ALUMINUM OF ANY TYPE SHALL BE ALLOWED IN THE CONCRETE UNLESS COATED TO PREVENT ALUMINUM-CONCRETE REACTION. THIS INCLUDES PUMPING THROUGH ALUMINUM PIPE.

ALL CONCRETE SUBJECT TO FREEZING AND THAWING SHALL HAVE A MAXIMUM WATER/CEMENT RATIO OF 0.50 (4000 PSI AT 28 DAYS OR MORE). ALL CONCRETE SUBJECT TO DEICERS AND/OR REQUIRED TO BE WATER TIGHT SHALL HAVE A MAXIMUM WATER/CEMENT RATIO OF 0.45 (4500 PSI AT 28 DAYS OR MORE). ALL REINFORCED CONCRETE SUBJECT TO BRACKISH WATER, SALT SPRAY OR DEICERS SHALL HAVE A MAXIMUM WATER/CEMENT RATIO OF 0.40 (5000 PSI AT 28 DAYS OR MORE). ALL TROWEL FINISHED INTERIOR SLABS, SUBJECT TO VEHICULAR TRAFFIC SHALL HAVE A MAXIMUM W/C RATIO OF 0.53.

ALL MIX DESIGNS SHALL BE PREPARED IN ACCORDANCE WITH ACI 301, SECTION 4.2.3 ON THE BASIS OF PREVIOUS FIELD EXPERIENCE OR TRIAL MIXES. USE 1/2" TOP SIZE AGGREGATE, A MAXIMUM W/CM OF 0.53, AND A MINIMUM OF 12.25 CUBIC FEET OF COARSE AGGREGATE IN ALL MIXES FOR SLABS ON GRADE.

SLAG CEMENT OR FLY ASH MAY BE SUBSTITUTED FOR PORTLAND CEMENT, NOT EXCEEDING 30% FOR SLAG CEMENT AND 15% FOR FLY ASH BY WEIGHT.

### CONCRETE MIXING

ALL CONCRETE SHALL BE READY-MIXED CONCRETE, BATCHED, MIXED AND TRANSPORTED IN ACCORDANCE WITH ASTM C94, 'SPECIFICATIONS FOR READY-MIXED CONCRETE'. ALL EQUIPMENT AND FACILITIES SHALL CONFORM TO THE 'CHECK LIST FOR CERTIFICATION OF READY MIXED CONCRETE PRODUCTION FACILITIES' OF THE NATIONAL READY MIXED CONCRETE ASSOCIATION.

THE READY-MIXED CONCRETE PRODUCER SHALL SUBMIT DUPLICATE DELIVERY TICKETS, ONE FOR THE CONTRACTOR AND ONE FOR THE ENGINEER WITH EACH LOAD OF CONCRETE DELIVERED TO THE JOB SITE.

CONCRETE MIXES SHALL BE DESIGNED BY A RECOGNIZED TEST LABORATORY AND COPIES OF THE DESIGN SHALL BE SENT TO THE ARCHITECT AND THE ENGINEER. COMPRESSIVE STRENGTH TEST REPORTS SHALL BE SUBMITTED TO THE ARCHITECT AND ENGINEER.

## CURING AND PROTECTION

BEGINNING IMMEDIATELY AFTER PLACEMENT, CONCRETE SHALL BE PROTECTED FROM PREMATURE DRYING AND MECHANICAL INJURY AND SHALL BE MAINTAINED ABOVE 50 DEGREES F WITH MINIMAL MOISTURE LOSS FOR 7 DAYS. THIS TEMPERATURE REQUIREMENT MAY BE REDUCED TO 3 DAYS WHEN HIGH EARLY STRENGTH CONCRETE IS USED.

FOR CONCRETE SURFACES NOT IN CONTACT WITH FORMS, ONE OF THE FOLLOWING PROCEDURES SHALL BE APPLIED IMMEDIATELY AFTER COMPLETION OF PLACEMENT AND FINISHING: PONDING OR CONTINUOUS SPRINKLING; APPLICATION OF ABSORPTIVE MATS OR FABRIC; APPLICATION OF WATERPROOF SHEET MATERIALS; APPLICATION OF A CURING COMPOUND.

MOISTURE LOSS FROM SURFACES PLACED AGAINST WOODEN OR METAL FORMS EXPOSED TO HEATING BY THE SUN SHALL BE MINIMIZED BY WETTING.

CURING SHALL BE CONTINUED FOR AT LEAST 7 DAYS FOR ALL CONCRETE.

PROTECTIVE MEASURES SUCH AS WIND BREAKS, SHADING, FOG SPRAYING, PONDING, SPRINKLING, AND WET COVERINGS SHALL BE TAKEN WHEN THE TEMPERATURE OF THE CONCRETE AT THE TIME OF PLACING IS GREATER THAN 85 DEGREES F.

DURING THE CURING PERIOD, CONCRETE SHALL BE PROTECTED FROM DAMAGING MECHANICAL DISTURBANCES SUCH AS LOAD STRESSES, HEAVY SHOCK AND EXCESSIVE VIBRATION. ALL FINISHED CONCRETE SURFACES SHALL BE PROTECTED FROM DAMAGE BY CONSTRUCTION EQUIPMENT, MATERIALS OR METHODS OR BY APPLICATION OF CURING PROCEDURES.

ALL SLABS MAY BE CURED WITH A STRIPPABLE CURING COMPOUND SUCH AS KUREZ DR VOX OR KUREX W VOX BY THE EUCLID CHEMICAL COMPANY OR BY AN APPROVED CONTINUOUS MOIST CURING METHOD.

## CONCRETE PLACING

WELDING OF REINFORCING BARS SHALL NOT BE ALLOWED.

PROVIDE ALL ACCESSORIES NECESSARY TO SUPPORT REINFORCEMENT AT POSITIONS SHOWN ON THE PLANS AND DETAILS. PLASTIC COATED ACCESSORIES SHALL BE USED IN ALL EXPOSED CONCRETE WORK.

FOUNDATION WALLS AND GRADE BEAMS SHALL HAVE A MINUM OF TWO #5 BARS TOP AND BOTTOM CONTINUOUS, UNLESS OTHERWISE NOTED.

PLACE TWO #5 BARS (EACH FACE) WITH 2'-0" PROJECTION AROUND ALL OPENINGS IN CONCRETE, UNLESS OTHERWISE NOTED.

REINFORCEMENT SHALL BE CONTINUOUS ACROSS JOINTS AND AROUND CORNERS OR SPLICE BARS SHALL BE PROVIDED IN ACCORDANCE WITH ACI 315-80 OR ACI 315-80B OR CORNER BARS SHALL BE PROVIDED AT ALL WALL CORNERS EQUAL TO THE HORIZONTAL WALL REINFORCEMENT.

MINIMUM LAP OF REINFORCEMENT BARS SHALL BE EQUIVALENT TO A CLASS "B" SPLICE, UNLESS OTHERWISE NOTED.

CONTRACTION (CONTROL) JOINTS FOR SLABS ON GRADE SHALL BE IN A SQUARE PATTERN (PANEL SHALL NOT EXCEED 15 TO 1 RATIO). MAXIMUM JOINT SPACING SHALL BE 36 TIMES SLAB THICKNESS UNLESS OTHERWISE NOTED.

THE GENERAL CONTRACTOR SHALL CHECK WITH ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS AND THE SUB-CONTRACTOR FOR OPENINGS, SLEEVES, ANCHORS, HANGERS, INSERTS, SLAB DEPRESSIONS AND OTHER ITEMS RELATED TO THE CONCRETE WORK AND SHALL ASSUME RESPONSIBILITY FOR THEIR PROPER LOCATION. FITCH CONCRETE SLABS AS REQUIRED TO FLOOR DRAINS.

NO STRUCTURAL CONCRETE OR SLAB CONCRETE SHALL BE PLACED UNTIL THE CONCRETE DESIGN MIXES, THE CONCRETE PLACEMENT PROCEDURE, THE LOCATION OF CONSTRUCTION AND CONTROL JOINTS, AND THE SETTING OF REINFORCING STEEL IS REVIEWED BY THE ENGINEER.

NO ALUMINUM OF ANY TYPE SHALL BE ALLOWED IN THE CONCRETE UNLESS COATED TO PREVENT ALUMINUM-CONCRETE REACTION. THIS INCLUDES PUMPING THROUGH ALUMINUM PIPE.

COLD WEATHER CONCRETING SHALL BE DONE IN ACCORDANCE WITH ACI 306 LATEST EDITION. HOT WEATHER CONCRETING SHALL BE DONE IN ACCORDANCE WITH ACI 308 LATEST EDITION.

## WOOD

ALL WOOD TO WOOD CONNECTIONS SHALL EMPLOY METAL ANCHORS, BUSHES, WHICH ARE SPECIFIED BY SIMPSON STRONG TIE CO. INSTALL ALL THE MANUFACTURER SPECIFIED NAILS IN THE MEMBERS CONNECTED. ALTERNATE MANUFACTURER CONNECTORS MAY BE SUBMITTED FOR REVIEW.

ALL BOLTED OR NAILED STRAP CONNECTIONS SHALL HAVE AN EQUAL NUMBER OF BOLTS OR NAILS EACH SIDE AT THE SPLICE JOINT. THE FIRST BOLT OR NAIL FROM EACH SIDE OF THE SPLICED OR TREATED MEMBER SHALL BE EQUAL DISTANCE FROM THE END OF THE STRAPS USING 16d NAILS ON 2X MATERIAL SHALL BE INSTALLED AT 1 1/2" EDGE OF THE MEMBER.

ALL WOOD TO WOOD CONNECTIONS FOR PRESERVATIVE TREATED WOOD SHALL BE AS FOLLOWS: G165 HOT-DIP GALVANIZED CONNECTORS AND FASTENERS SHALL BE USED FOR ALL WOOD TREATED WITH DOT SODIUM BORATE (SBX), ALKALINE COPPER QUAT (ACQ-C) OR ACQ (SODIUM BORATE), COPPER AZOLE (CBA-A AND CA-B), OR SBX (DOT) WITH NAD50 USE IN ALL OTHER TYPES OF PRESERVATIVE TREATED WOOD. THE CONNECTORS AND FASTENERS SHALL BE OF THE SAME MATERIAL AS ALL WOOD TO WOOD CONNECTIONS FOR PRESERVATIVE TREATED WOOD.

MOISTURE CONTENT SHALL NOT BE GREATER THAN 19%.

ALL STRUCTURAL DIMENSIONAL LUMBER SHALL BE SOUTHERN PINE STAMPED IN ACCORDANCE WITH STANDARD GRADING RULES WITH MINIMUM GRADES AS SHOWN BELOW:

MEMBER	GRADE
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ALL OTHER MEMBERS #2  
ROOF SHEATHING SHALL BE AS NOTED ON PLAN.  
ALL SHEATHING SHALL HAVE SPAN RATING AND THICKNESS AS INDICATED. ALL WALL SHEATHING SHALL BE FASTENED TO ALL FRAMING W/ 10d NAILS @ 6" O.C. U.N.O. IN SHEAR WALL SCHEDULE.  
LAY UP WITH MINIMUM 1/8" CLEAR BETWEEN PANELS TO ALLOW FOR EXPANSION. SECURE WITH GALVANIZED NAILS TO EACH SUPPORT AS NOTED IN PLAN.

SEE SHEARWALL NOTES FOR SHEATHING NAILING PATTERNS.  
ALL PANEL JOINTS IN SHEARWALLS TO BE BLOCKED W/ 2x BLOCKING. NO OVERDRIVEN NAILS WILL BE ACCEPTABLE IN SHEARWALL OR ROOF.  
SILL PLATES AND ALL WOOD IN CONTACT WITH CONCRETE SHALL BE PRESSURE TREATED (P.P.T.) ALL ANCHOR BOLTS THRU SILL PLATES SHALL BE HOT DIP GALVANIZED.

ALL MICROLAM LAMINATED VENEER LUMBER (LVL) BEAMS SHALL MEET THE FOLLOWING MINIMUM STRESS PROPERTIES:

ALLOWABLE BENDING STRESS	2600 PSI
SHEAR STRESS	285 PSI
COMPRESSIVE STRESS	750 PSI (PERPENDICULAR TO GRAIN)
MODULUS OF ELASTICITY	1,900,000 PSI (1.9 E)

ALL PARALLAM PARALLEL STRAND LUMBER (PSL) BEAMS SHALL MEET THE FOLLOWING MINIMUM STRESS PROPERTIES:

ALLOWABLE BENDING STRESS	2900 PSI
SHEAR STRESS	290 PSI
COMPRESSIVE STRESS	750 PSI (PERPENDICULAR TO GRAIN)
MODULUS OF ELASTICITY	2,000,000 PSI (2.0 E)

ALL PARALLAM PARALLEL STRAND LUMBER (PSL) POSTS SHALL MEET THE FOLLOWING MINIMUM STRESS PROPERTIES:

ALLOWABLE BENDING STRESS	2,400 PSI
COMPRESSIVE STRESS	2,500 PSI (PARALLEL TO GRAIN)
MODULUS OF ELASTICITY	1,800,000 PSI (1.8 E)

## SPECIAL INSPECTIONS

CONTRACTOR TO PROVIDE SPECIAL INSPECTIONS IN ACCORDANCE WITH CHAPTER 17 OF THE 2012 NCBC FOR THE FOLLOWING ITEMS:

- ALL CONCRETE PER SECTION 1704.4 & TABLE 1704.4
- STEEL CONNECTIONS IN CONCRETE INCLUDING ANCHORS AND BOLTS
- STEEL CONNECTIONS PER SECTION 1704.3 AND TABLE 1704.3

CONCRETE CHECK MASONRY PER TABLE 1704.5  
SPRAY APPLIED FIRE PROTECTION PER SECTION 1705.10  
CHEMICAL ANCHORS PER SECTION 1705.10

SPECIAL INSPECTION SERVICES SHALL BE PROVIDED BY A CERTIFIED TESTING LABORATORY APPROVED BY THE OWNER.

## NOTICES

ALL DIMENSIONS ON STRUCTURAL DRAWINGS TO BE CHECKED AGAINST ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS BY THE GENERAL CONTRACTOR AND ANY DISCREPANCIES ARE TO BE REPORTED TO THE ARCHITECT IMMEDIATELY.

THE CONTRACTOR SHALL ASSUME RESPONSIBILITY, UNRELIEVED BY REVIEW OF SHOP DRAWINGS OR PERIODIC OBSERVATION OF CONSTRUCTION, FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS, FOR FABRICATION PROCESSES AND CONSTRUCTION TECHNIQUES, AND FOR SAFE CONDITIONS ON THE JOB SITE.

DO NOT SCALE DRAWINGS. ALL DIMENSIONS AND FIT SHALL BE DETERMINED AND VERIFIED BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF WORK.

DETAILS NOT FULLY OR SPECIFICALLY SHOWN SHALL BE OF SAME NATURE AS OTHER SIMILAR CONDITIONS.

## LIGHT GAUGE METAL FRAMING

WITH EACH TYPE OF METAL FRAMING REQUIRED PROVIDE MANUFACTURERS STANDARD STEEL RUNNERS (TRACKS), BLOCKING, LINTELS, CLIP ANGLES, SHOES, REINFORCEMENTS, FASTENERS, AND ACCESSORIES AS RECOMMENDED BY MANUFACTURER FOR APPLICATIONS INDICATED, AS NEEDED TO PROVIDE A COMPLETE METAL FRAMING SYSTEM.

STEEL SHALL CONFORM TO ASTM A570 GRADE C FOR D, 16 GAUGE UNLESS NOTED OTHERWISE. MECHANICAL ANCHORS TO METAL FRAMING SHALL BE NO. 10 SELF-TAPPING AND SELF-DRILLING SCREWS UNLESS NOTED OTHERWISE. METAL TO BE GALVANIZED SHALL BE PER ASTM A90 WITH G165 THICKNESS.

FRAMING COMPONENTS MAY BE PREFABRICATED INTO PANELS PRIOR TO ERECTION. FABRICATE PANELS PLUMB, SQUARE, TRUE TO LINE AND BRACED AGAINST KINKING. ALL JOINTS WELDED. PERFORM LIFTING OF PREFABRICATED PANELS IN A MANNER TO PREVENT DAMAGE OR DISTORTION.

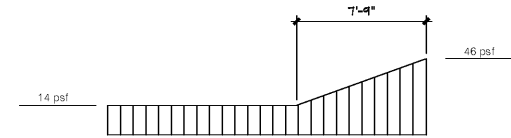
ATTACH SIMILAR COMPONENTS BY WELDING. ATTACH DISSIMILAR COMPONENTS BY WELDING, BOLTING, OR SCREW FASTENERS, AS STANDARD WITH MANUFACTURER WIRE TYING OF FRAMING COMPONENTS IS PERMITTED. METAL FRAMING SYSTEM IN ACCORDANCE WITH MANUFACTURER PROVIDED OR WRITTEN INSTRUCTIONS AND RECOMMENDATIONS UNLESS OTHERWISE INDICATED.

INSTALLATION OF STUD TRACKS AS NOTED. SECURE TRACKS AS RECOMMENDED BY STUD MANUFACTURER. TRACKS TO BE NOTED, EXCEPT DO NOT EXCEED 24" O.C. FOR OTHER TYPES OF ATTACHMENT WHERE STUD SYSTEM ABUS IS STRUCTURAL. COLUMN STUDS SHALL, ANCHOR ENDS OF STUDENERS TO SUPPORTING STRUCTURE. SECURE STUDS TO TOP AND BOTTOM RUNNER TRACKS BY WELDING AT BOTH INSIDE AND OUTSIDE FLANGES.

FRAME WALL OPENINGS LARGER THAN 16' WITH DOUBLE STUD AT EACH JAMB OF FRAME EXCEPT WHERE MORE THAN 2 ARE EITHER SHOWN OR INDICATED IN MANUFACTURER'S INSTRUCTIONS. INSTALL HORIZONTAL STIFFENERS IN STUD SYSTEM, SPACED VERTICAL DISTANCE AT NOT MORE THAN 4'-0" O.C. WELD AT EACH INTERSECTION. WELD ALL CONNECTIONS IN ACCORDANCE WITH AWS D11.1 STRUCTURAL WELDING CODE. PROVIDE A 1'-12" HORIZONTAL BRIDGING CHANNEL IN EXTERIOR WALLS, SET AT THE MID-HEIGHT OF BUILDING STORY AND WELDED TO EACH STUD, UNLESS OTHERWISE SHOWN OR REQUIRED BY THE WALL OPENINGS.

WELDING SHALL BE IN ACCORDANCE WITH APPLICABLE CODES AND THE AWS STANDARDS FOR FUSION AND GAS CUTTING OR WELDING. WELDING SHALL BE DONE ON THE UNEXPOSED SIDES TO PREVENT PITTING, DISCOLORING, WELD-HALO, AND OTHER SURFACE IMPERFECTIONS.

METAL OF 16ga AND THINNER TO BE 33 KSI YIELD STRENGTH  
METAL OF 16ga AND THICKER TO BE 50 KSI YIELD STRENGTH



SNOW DRIFT DIAGRAM

Pg = 14  
Wd = 32  
hr = 7-9"

NRD Project # 18228

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**OWNER**  
**BN**

NO.	DATE	DESCRIPTION

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