GENERAL NOTES

DESIGN:

BUILDING CODE: 2012 INTERNATIONAL BUILDING CODE WITH 2014 INDIANA AMENDMENTS

1. DESIGN LIVE LOADS
   - A. ROOF LOADS
     - 1.1. MINIMUM ROOF LIVE LOAD = 20 PSF
     - 1.2. GROUND SNOW LOAD = 30 PSF
       - 1.2.a. SNOW EXPOSURE FACTOR (CE) = 1.0
       - 1.2.b. SNOW IMPORTANCE FACTOR (IS) = 1.0
     - 1.3. FLAT ROOF SNOW LOAD (PF) = 30 PSF
     - 1.4. TOTAL DESIGN SNOW LOAD = 30 PSF + DRIFTING
2. DESIGN WIND LOADS
   - A. BASIC WIND SPEED (3 SECOND GUST) = 93 MPH (NOM), 120 MPH (ULT)
     - 2.1. EXPOSURE = C
     - 2.2. IMPORTANCE FACTOR (IW) = 1.15
3. SEISMIC (IBC)
   - S1 = 0.061 SS = 0.113
   - SDS = 0.121 SD1 = 0.098
   - SEISMIC IMPORTANCE FACTOR (LE) 1.25 SEISMIC DESIGN CATEGORY B
   - RESPONSE MODIFICATION FACTOR (R) 6.5 SEISMIC SITE CLASS D
   - SEISMIC RESPONSE COEFFICIENT (CS) 0.094
   - BASIC SEISMIC FORCE RESISTANCE SYSTEM – ORIDINARY MASONRY SHEAR WALLS
   - ANALYSIS PROCEDURES EQUIVALENT LATERAL FORCE METHOD
   - ANALYSIS PROCEDURES EQUIVALENT LATERAL FORCE METHOD
   - DESIGN BASE SHEAR (V) V=0.125W

FOUNDATIONS – GENERAL:

1. CONTINUOUS FOOTINGS SHALL BEAR ON SOILS CAPABLE OF SUPPORTING A NET ALLOWABLE BEARING PRESSURE OF 1500 PSF.
2. ALL BEARING MATERIAL SHALL BE INSPECTED BY THE INDEPENDENT TESTING AGENCY PRIOR TO CONCRETE PLACEMENT. THE INDEPENDENT TESTING AGENCY SHALL BE THE SOLE JUDGE AS TO THE SUITABILITY OF THE BEARING MATERIAL. FOOTING ELEVATIONS SHALL BE ADJUSTED AS REQUIRED.
3. FOUNDATION WALLS THAT RETAIN EARTH SHALL BE BRACED AGAINST BACKFILLING PRESSURES UNTIL FLOOR SLABS AT TOP AND BOTTOM ARE IN PLACE.
4. WHERE FOUNDATION WALLS ARE TO HAVE EARTH PLACED ON EACH SIDE, PLACE FILL SIMULTANEOUSLY SO AS TO MAINTAIN A COMMON ELEVATION ON EACH SIDE OF THE WALL.

CONCRETE AND REINFORCING STEEL:

1. CONCRETE SHALL CONFORM TO ACI BUILDING CODE (318R–08) AND SHALL HAVE A 28–DAY COMPRESSIVE STRENGTH AND DENSITY, IN ACCORDANCE WITH THE FOLLOWING:

	STRENGTH PSI	DENSITY PCF	MAX W/C RATIO
INTERIOR SLABS, EXTERIOR SLABS	4000	145	0.45
CURBS, SIDEWALKS	4000	145	0.50
ALL OTHER CONCRETE (U.N.O.)	3000	145	0.55

2. REINFORCING SHALL CONFORM TO ASTM A615, GRADE 60, UNLESS NOTED OTHERWISE.
3. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185.
4. MINIMUM CONCRETE COVER, UNLESS NOTED OTHERWISE:
   - UNFORMED SURFACE IN CONTACT WITH THE GROUND. 3 IN.
   - FORMED SURFACES EXPOSED TO EARTH OR WEATHER.
     - #6 BARS AND LARGER 2 IN.
     - #5 BARS AND SMALLER 1–1/2 IN.
   - FORMED SURFACES NOT EXPOSED TO EARTH OR WEATHER:
     - BEAMS, GIRDERS, AND COLUMNS 1–1/2 IN.
     - SLABS, WALLS, AND JOISTS
       - #11 BARS AND SMALLER 3/4 IN.
       - #14 AND #18 BARS 1–1/2 IN.
5. LAP SPLICES SHALL BE IN ACCORDANCE WITH THE FOLLOWING TABLE, UNLESS NOTED OTHERWISE. WHERE CLASSES ARE NOT CALLED OUT ON DRAWINGS, USE CLASS "B" SPLICES. SPLICES SHALL BE STAGGERED AT LEAST 24 INCHES.

BAR SIZE	TENSION SPLICES (INCHES) TOP BARS A	TOP BARS B	OTHER BARS A	OTHER BARS B	COMPRESSION SPLICES (INCHES)
#3	16	21	12	16	12
#4	21	28	16	21	15
#5	27	35	21	27	19
#6	35	46	27	35	23
#7	48	62	37	48	26
#8	63	82	48	63	30
#9	80	104	61	80	34

COMPRESSION DOWEL EMBEDMENT: 22 BAR DIAMETERS LAP WELDED WIRE FABRIC ONE SPACING OF CROSS WIRES PLUS 2".

6. BASE PLATES, ANCHOR BOLTS, SUPPORT ANGLES, ETC., BELOW GRADE SHALL BE COVERED WITH A MINIMUM OF 3" OF CONCRETE.

REINFORCED MASONRY:

1. REINFORCED MASONRY SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH, f'm, OF 1500 PSI. MASONRY UNITS SHALL BE NORMAL WEIGHT BLOCK CONFORMING TO ASTM C90, GRADE N, AND SHALL HAVE A MINIMUM NET AREA COMPRESSIVE STRENGTH OF 1900 PSI. MORTAR SHALL CONFORM TO ASTM C270, TYPE S, U.N. AND TYPE N FOR INTERIOR WALLS. GROUT SHALL CONFORM TO ASTM C476. GROUT SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 2000 psi AND MAXIMUM DENSITY OF 115 pcf. SLUMP AT POINT OF PLACEMENT SHALL BE 9" +/– 1".
2. REINFORCING BARS SHALL CONFORM TO ASTM A615, GRADE 60, UNLESS NOTED OTHERWISE.
3. CONTINUOUS WIRE REINFORCING (JOINT REINFORCING) SHALL BE GALVANIZED TRUSS OR LADDER TYPE FORMED FROM 9 GAUGE COLD – DRAWN STEEL WIRE COMPLYING WITH ASTM A82. JOINT REINFORCING SHALL BE SPACED AT 16" O.C. VERTICALLY IN ALL MASONRY WALLS.
4. SEE DRAWINGS FOR LOCATIONS OF VERTICAL CONTROL JOINTS. HORIZONTAL BOND BEAM AND LINTEL REINFORCING SHALL BE CONTINUOUS ACROSS VERTICAL CONTROL JOINTS. JOINT REINFORCING SHALL BE STOPPED EITHER SIDE OF VERTICAL CONTROL JOINTS.
5. ALL REINFORCED CELLS, ALL CELLS BELOW GRADE AND ALL CELLS BELOW FINISH FLOOR SHALL BE GROUTED SOLID.
6. WHEN A FOUNDATION DOWEL DOES NOT LINE UP WITH A VERTICAL BLOCK CORE, IT SHALL NOT BE SLOPED MORE THAN ONE HORIZONTAL IN 6 VERTICAL. DOWELS MAY BE GROUTED INTO A CELL IN VERTICAL ALIGNMENT, EVEN THOUGH IT IS IN AN ADJACENT CELL TO THE VERTICAL WALL REINFORCING.
7. REINFORCING STEEL SHALL BE SECURED IN PLACE BEFORE GROUTING STARTS.
8. SPLICED REINFORCING SHALL BE LAPPED 48 BAR DIAMETERS OR 24 INCHES, WHICHEVER IS GREATER. SPLICED BARS SHALL BE WIRED TOGETHER.
9. VERTICAL BARS SHALL BE HELD IN POSITION AT TOP AND BOTTOM AND AT INTERVALS NOT EXCEEDING 200 DIAMETERS OF THE REINFORCING, NOR 10 FEET. BARS SHALL BE IN PLACE PRIOR TO GROUTING.
10. VERTICAL REINFORCING BARS SHALL HAVE A MINIMUM CLEARANCE OF 1/4 OF AN INCH FROM THE MASONRY FOR FINE GROUT AND 1/2 INCH FOR COARSE GROUT.
11. VERTICAL CELLS THAT WILL BE GROUTED SHALL HAVE A VERTICAL ALIGNMENT TO MAINTAIN A CONTINUOUS UNOBSTRUCTED CELL AREA NOT LESS THAN 3"x4".
12. GROUTING SHALL BE STOPPED 1–1/2" BELOW THE TOP OF A COURSE SO AS TO FORM A KEY AT THE POUR JOINT.
13. GROUTING OF MASONRY BEAMS OVER OPENINGS SHALL BE DONE IN ONE CONTINUOUS OPERATION.
14. ALL BOLTS, ANCHORS, ETC., INSERTED IN THE WALLS, SHALL BE GROUTED SOLID INTO POSITION.

STRUCTURAL STEEL:

1. STEEL SHALL CONFORM TO THE FOLLOWING GRADES:

ALL CHANNELS, ANGLES, PLATES, ETC. (UNO)	A36 (Fy=36)
ALL WF	A992 (Fy=50) U.N.
STRUCTURAL TUBE	A500 (Fy=46)
STEEL PIPE	A53 (Fy=35)
ANCHOR BOLTS	A307
BOLTS	A325
WELDING ELECTRODES	E70XX
THREADED ROD ANCHORS	A36
SHEAR STUDS	A108

2. ALL STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE AISC CODE OF STANDARD PRACTICE, EXCEPT AS MODIFIED IN THESE NOTES AND THE PROJECT SPECIFICATIONS.
3. THE STEEL STRUCTURE IS LATERAL UNSTABLE AND IS DEPENDENT UPON DIAPHRAGM ACTION OF THE METAL ROOF DECK AND ATTACHMENT TO THE WALL SYSTEM FOR STABILITY AND FOR RESISTANCE TO WIND AND SEISMIC FORCES. PROVIDE ALL TEMPORARY SUPPORTS REQUIRED FOR STABILITY AND FOR RESISTANCE TO WIND AND SEISMIC FORCES UNTIL THESE ELEMENTS ARE FULLY SECURED TO EACH OTHERB AND CAPABLE OF PROVIDING THIS SUPPORT.
4. THE FABRICATOR IS RESPONSIBLE FOR THE DESIGN OF ALL CONNECTIONS. CONNECTIONS SHOWN ON THE STRUCTURAL DRAWINGS ARE SCHEMATIC AND ARE ONLY INTENDED TO SHOW THE RELATIONSHIP OF MEMBERS CONNECTED. CONNECTION DETAILS INDICATED ON THE DRAWINGS SHALL BE INCORPORATED INTO FABRICATOR'S CONNECTION DESIGN. SEE SPECIFICATIONS. ALL SHOP DRAWINGS SHALL BE SIGNED AND SEALED BY THE FABRICATOR'S ENGINEER WITH THE ENGINEER'S SEAL FOR THE STATE WHERE THE STRUCTURE IS LOCATED. ENGINEER'S SEAL MAY BE QUALIFIED "FOR DESIGN OF CONNECTIONS ONLY.

METAL ROOF DECK:

1. METAL ROOF DECK SHALL COMPLY WITH THE REQUIREMENTS OF THE STEEL DECK INSTITUTE "SPECIFICATIONS AND COMMENTARY FOR STEEL ROOF DECK" (LATEST).
2. METAL ROOF DECK SHALL BE CONFIGURATION, DEPTH AND MINIMUM GAGE AS SHOWN ON THE DRAWINGS. MINIMUM YIELD STRENGTH SHALL BE 33,000 psi. ATTACHMENT TO THE SUPPORTING STRUCTURE SHALL BE AS SHOWN ON THE DRAWINGS. SEE ROOF PLAN NOTES. STELL ROOF DECK AND CONNECTORS SHALL CONFORM TO FACTORY MUTUAL
3. PUBLICATION I–28 AND I–28S, CLASS I–60, WINDSTORM RESISTANCE. INSTALLATION SHALL BE BY AND OSHA CERTIFIED OPERATOR IN ACCORDANCE WITH THE FASTENER MANUFACTURER'S INSTRUCTIONS AND INITIAL FASTENING UNDER THE SUPERVISION OF THE MANUFACTURER'S REPRESENTATIVE. STEEL ROOF DECK SHALL BE ATTACHED AS FOLLOWS:
   - AT SUPPORTS: 5/8" DIAMETER WELDS.
   - AT SIDELAPS: BUILDEX TRAXX #10–14 STANDARD HEX WASHER HEAD SCREWS.
4. DO NOT HANG OR SUPPORT ANY LOADS FROM METAL ROOF DECK.
5. METAL ROOF DECK SHALL BE CONTINUOUS OVER A MINIMUM OF THREE SPANS.

WELDING:

1. ALL STRUCTURAL STEEL WELDING SHALL CONFORM TO AMERICAN WELDING SOCIETY STANDARD D1.1, LATEST EDITION.
2. REINFORCING STEEL WELDING SHALL CONFORM TO AWS D1.4. REINFORCING SHALL CONFORM TO ASTM A–706.
3. ALL STRUCTURAL STEEL WELDING ELECTRODES SHALL CONFORM TO AWS A5.1 OR A5.5 E–70XX.
4. FIELD WELDING SHALL BE SHOWN ON ERECTION DRAWINGS.
5. ALL FIELD FULL PENETRATION WELDS SHALL BE INSPECTED AND TESTED BY A TESTING AGENCY TO BE PAID BY THE OWNER.
6. ALL EXPOSED WELDED CONNECTIONS SHALL BE GROUND SMOOTH AND SUBJECT TO ARCHITECT APPROVAL. THE CONTRACTOR SHALL SUBMIT WRITTEN PROCEDURE AND DETAILS TO THE ARCHITECT FOR REVIEW PRIOR TO COMMENCING THE WORK.
7. PAINT ALL WELDS WITH RUST INHIBITIVE PAINT.

MISCELLANEOUS:

1. THESE GENERAL NOTES SUPPLEMENT THE PROJECT SPECIFICATIONS. REFER TO PROJECT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. STRUCTURAL DRAWINGS ARE INTENDED TO BE USED WITH ARCHITECTURAL, MECHANICAL, ELECTRICAL, CIVIL AND FIRE SPRINKLER DRAWINGS. CONTRACTOR IS RESPONSIBLE FOR COORDINATING SUCH REQUIREMENTS INTO THEIR SHOP DRAWINGS AND CONSTRUCTION.
3. NO OPENINGS SHALL BE MADE IN ANY STRUCTURAL MEMBER WITHOUT THE WRITTEN APPROVAL OF THE PROFESSIONAL OF RECORD.
4. NO CHANGE IN SIZE, MATERIAL OR DIMENSION OF STRUCTURAL MEMBERS SHALL BE MADE WITHOUT THE WRITTEN APPROVAL OF THE PROFESSIONAL OF RECORD.
5. OPENINGS 1'–4" AND LESS ON A SIDE ARE GENERALLY NOT SHOWN ON THE STRUCTURAL DRAWINGS. REFER TO ARCHITECTURAL AND MECHANICAL DRAWINGS FOR SUCH OPENINGS.
6. THE CONTRACTOR IS RESPONSIBLE FOR LIMITING THE AMOUNT OF CONSTRUCTION LOAD IMPOSED UPON STRUCTURAL FRAMING. CONSTRUCTION LOADS SHALL NOT EXCEED THE DESIGN CAPACITY OF THE FRAMING AT THE TIME THE LOADS ARE IMPOSED.
7. THE STRUCTURE IS DESIGNED TO FUNCTION AS A UNIT UPON COMPLETION. THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING ALL TEMPORARY BRACING AND/ OR SUPPORT THAT MAY BE REQUIRED AS THE RESULT OF THE CONTRACTOR'S CONSTRUCTION METHODS AND/OR SEQUENCES.
8. DO NOT SCALE THESE DRAWINGS, USE DIMENSIONS.
9. CONTRACTOR'S CONSTRUCTION AND/OR ERECTION SEQUENCES SHALL RECOGNIZE AND CONSIDER THE EFFECTS OF THERMAL MOVEMENTS OF STRUCTURAL ELEMENTS DURING THE CONSTRUCTION PERIOD.
10. THE CONTRACTOR SHALL INFORM THE PROFESSIONAL OF RECORD IN WRITING OF ANY DEVIATION FROM THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL NOT BE RELIEVED OF THE RESPONSIBILITY OF SUCH DEVIATION BY THE PROFESSIONAL OF RECORD REVIEW OF SHOP DRAWINGS, PRODUCT DATA, ETC., UNLESS THE CONTRACTOR HAS SPECIFICALLY INFORMED THE PROFESSIONAL OF RECORD OF SUCH DEVIATION AT THE TIME OF SUBMISSION, AND THE PROFESSIONAL OF RECORD HAS GIVEN WRITTEN APPROVAL TO THE SPECIFIC DEVIATION.
11. CONNECTIONS OF ALL ITEMS SUPPORTED BY THE STRUCTURE ARE THE RESPONSIBILITY OF THE DISCIPLINES WHO ARE MAKING THESE ATTACHMENTS. THESE ATTACHMENTS SHALL BE DESIGNED TO RESIST ALL GRAVITY, WIND, WIND UPLIFT, SEISMIC, THERMAL LOADS, ETC.
12. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS.
13. UNLESS NOTED, SUBMIT SHOP DRAWINGS OF ALL FABRICATED MATERIALS FOR REVIEW. DESIGN DRAWINGS SHALL NOT BE PRODUCED FOR USE AS SHOP DRAWINGS. SHOP DRAWINGS WILL NOT BE REVIEWED UNLESS THEY WERE CHECKED, BEAR THE INITIAL OF THE CHECKER AND ARE STAMPED "APPROVED" BY THE GENERAL CONTRACTOR.

Proj. 20180129
MICHAEL E. HAAS REGISTERED PE10800826 STATE OF INDIANA PROFESSIONAL ENGINEER
exp. 7/31/18

TRIA ARCHITECTURE

MEP ENGINEER: Millies Engineering Group 9711 VALPARAISO DR #A MUNSTER, INDIANA 46321 (P) 219.924.8400 (F) 219.924.5032

STRUCTURAL ENGINEER: GreenbergFarrow 1000 Burr Ridge Pkwy., Suite 201 Burr Ridge, IL 60527 P: 630 686 4021

DUNELAND SCHOOL CORPORATION

2018 ADDITION AT:
BRUMMITT ELEMENTARY SCHOOL
2500 INDIAN BOUNDARY ROAD CHESTERTON, INDIANA 46304

DUNELAND SCHOOL CORPORATION Chesterton

PROJECT NUMBER:	17-063
PROJECT MANAGER:	MMG
DRAWN BY:	PSN
ISSUED FOR BID AND PERMIT:	01/31/2018

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GENERAL NOTES

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