



**Mattson
Macdonald
Young**
structural
engineers

Bassett Creek Business Center
901 North 3rd Street, #100
Minneapolis, MN 55401

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April 29, 2011

Nic Beltrante
BUDDY SWISS INC.
1261 Brighton Square
New Brighton, MN 55112

RE: Design of New Foundation Wall at 1091 Cook Avenue East, St. Paul, MN

MMY Project No. 11199

Dear Nic:

As requested, we designed new structural foundations for the above referenced project. We have designed the new foundations in accordance with the Minnesota State Building Code. Our work only includes designing the new foundation as shown at the above referenced project and is based on a site visit on April 28, 2011 and from our conversations. Attached are Structural Notes and sheets S1 and S2 with notes showing the new members and connections.

When installed as indicated above, the new foundation shown on the attached sheets shall support the loads as required in accordance with the Minnesota State Building Code. The risks have been allocated so that Mattson Macdonald Young Inc.'s total liability to the Client shall not exceed the total amount of twenty five times Mattson Macdonald Young's received payment or one million dollars whichever is less.

The opinions and recommendations contained in this report are based on information provided by the Owner or other consultants hired by the Owner, on field investigations performed as a part of this project, and on design-check calculations performed that were based on the information gathered. This report does not address any portion of the structure other than those areas mentioned. It does not provide any warranty, either expressed or implied, for any portion of the structure.

If you have any questions or concerns, please feel free to contact us.

Sincerely,

Mattson Macdonald Young, Inc.

Shannon W. Pierce, E.I.T.

Eric M. Bunkers, P.E.
MN Reg. No. 26490

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of Minnesota.

Eric M. Bunkers

Date: April 29, 2011 Reg. No. 26490

STRUCTURAL NOTES

Unless noted otherwise on the plans and/or in the details, these notes shall apply. If there are discrepancies between the plans/details and these notes, the contractor shall conform to the more stringent requirements, unless clarified with the Structural Engineer of Record (SER) prior to work.

MATERIAL STRENGTHS

Structural Steel Fasteners

Anchor rods – ASTM F1554, Gr. 36, $F_y = 36$ ksi

Reinforcing Steel

Deformed Bars – ASTM A615, Gr. 60, $F_y = 60$ ksi

Concrete

f'_c = compressive strength in 28 days
4,000 psi walls
3,000 psi for footings

Structural Lumber

All dimensional lumber - #2 Spruce Pine Fir (SPF) or equal
Treated lumber - #2 Southern Pine or equal

DESIGN LOADS

Roof

Dead load
15 psf

Roof Snow load
35 psf

Floors

Dead load
15 psf

Live loads
Typical 40 psf
Habitable attics and sleeping areas 30 psf

EXISTING CONDITIONS

Contractor shall verify all dimensions, elevations, and details of existing structure where they affect this construction prior to fabrication.

GENERAL NOTES

The contractor is solely responsible for site safety including all temporary precautionary measures and safety programs.

EXISTING CONDITIONS

Contractor shall verify all dimensions, elevations, and details of existing structure where they affect this construction. Notify Engineer if there are any deviations from that shown or described. Contractor shall field verify dimensions and elevations prior to fabrication of structural members.

SHORING

Contractor shall be responsible for temporary shoring of existing construction until new construction is in place and properly anchored in final form.

TEMPORARY BRACING

Contractor is responsible for bracing, without overstressing, all structural elements as required at all stages of construction until completion of this project. Provide temporary lateral support for all walls until walls are adequately braced by permanent structure. Shore foundation walls retaining earth until floor framing and basement slab are in place. Use caution when operating equipment adjacent to foundation walls.

GENERAL SOIL NOTES

The structure has been designed using a presumptive load-bearing value of 2000 psf in accordance with Table R401.4.1 of the 2006 IRC on virgin soil or compacted granular fill for footings.

Remove all top soil, uncompacted fill, or other poor soil from the construction area.

Slope the site to drain away from the building.

Install gutters and downspouts.

Install drain tile.

Backfill with granular soils.

FOOTINGS/FOUNDATIONS

All footings are to be formed. All stumps, roots and debris must be removed from the soil to a depth of at least 12" below the surface of the ground in the area occupied by the building. Footings shall be placed on virgin soil or compacted granular fill.

Wall footings are cast-in-place concrete with continuous reinforcing placed 3" clear of bottom and 2" clear at top and sides.

Wall footings are centered under walls.

Provide 30 bar diameter lap at splices and full crossing lap at corners and intersections. Tie all reinforcing in place. Set footing reinforcing on chairs or masonry brick to obtain 3" clearance from bottom of footing.

Maintain minimum frost depth of 42" for all exterior footings.

Cast dowels in footing for foundation walls above. Dowels shall be the same quantity, size, and spacing as the vertical wall reinforcing.

Dowels shall be 30" long and extend to 3" clear of bottom of footing.

Contractor shall be responsible for implementing hot weather concrete requirements per ACI 305 and cold weather concrete requirements per ACI 306.

Shore all foundation walls appropriately before backfilling and compacting.

Foundations supporting wood shall extend at least 6" above the adjacent finished grade.

The contractor shall verify the location of all existing underground utilities and tanks prior to beginning excavation.

CONCRETE

Provide ready-mixed concrete per ASTM C94. Portland cement shall be ASTM C150, Type I. Use only one brand of cement throughout the work. Provide concrete aggregates meeting the requirements of ASTM C33.

Maximum aggregate size shall be 3/4" for grade beams and slabs. Water shall be clean, free of deleterious amounts of acids, alkalis, or organic materials, and shall be considered potable. Provide admixtures to reduce water content, provide air-entrainment, or alter the quality of the concrete to meet the job conditions.

Provide #4 x 4'-0" long (equal legs) horizontal reinforcing corner bars at 24" o.c. at outside corner of wall and 1 - #5 vertical corner bar.

All wall openings larger than 12" shall have 2 - #5 at all sides extending 2'-0" beyond each edge of opening with 2 - #5 x 4'-0" diagonal bars at each corner of opening.

Slump shall be determined by ASTM C143 as follows:

Footings	3" - 4"
Walls	3" - 5"
Slabs on grade	3" - 4"

Concrete shall not be laid when the temperature of the outside air is below 40 degrees Fahrenheit, unless approved methods are used during construction to prevent damage to the concrete. All materials used and surfaces built upon shall be free of snow and ice.

Wood beams pocketed into concrete shall be provided with a 1/2" air space on top, end, and sides unless treated wood or steel plates are used.

SLABS ON GRADE

All slabs on grade shall be reinforced with either WWF6x6-W1.4 x W1.4 in center of slab or polypropylene fiber reinforcement.

Slabs on grade adjacent to foundation walls retaining earth shall be a minimum of 3 1/2" thick.

All control/construction joints shall be continuous and not staggered or offset.

Control joints shall be cleaned and sealed for curing purposes as soon as possible.

Verify floor finishes, sump pits and control/construction joint locations with owner.

DIMENSION LUMBER

Design assumes lumber is free of significant splits and checks, and contractor will visually inspect during installation.

Sills and all other lumber in contact with concrete or masonry and within 8" of finished grade shall be preservative treated wood. In crawlspaces or unexcavated areas within the building foundation, wood shall be preservative treated for joists within 18" of exposed ground and/or girders within 12" of exposed ground.

Preservative treated wood shall be in accordance with the American Wood Protection Association, Standard U1.

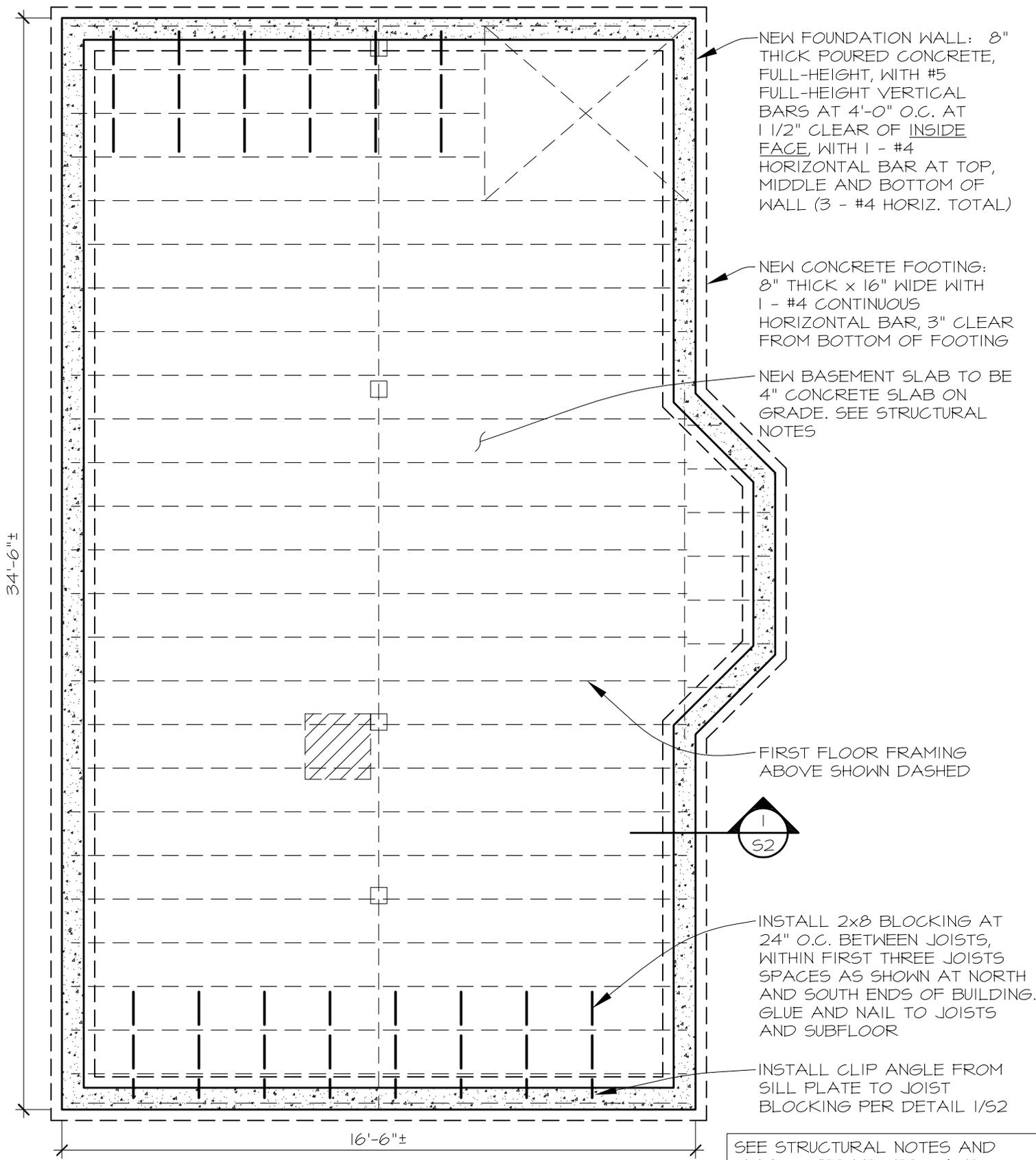
All lumber is to be grade stamped, which is to contain grading agency, mill number or name, grade of lumber, species or species grouping or combination designation, rules under which graded, where applicable, and condition of seasoning at time of manufacture.

All lumber shall be seasoned to a moisture content of 19% or less, with the indication of "S-Dry" on the grade stamp.

All lumber shall be protected from the elements.

Sill plates to be bolted to foundation wall with 5/8" diameter anchor bolts at 4'-0" o.c. maximum. Each sill plate to have a minimum of 2 bolts with one bolt located not more than 12 inches or less than 4 1/2 inches from each end of the plate section. Use 1/8" x 2" washers, slightly crushing plate.

Minimum nailing shall be in accordance with Table R602.3(1) of the 2006 IRC unless noted otherwise.



NEW FOUNDATION WALL: 8" THICK POURED CONCRETE, FULL-HEIGHT, WITH #5 FULL-HEIGHT VERTICAL BARS AT 4'-0" O.C. AT 1 1/2" CLEAR OF INSIDE FACE, WITH 1 - #4 HORIZONTAL BAR AT TOP, MIDDLE AND BOTTOM OF WALL (3 - #4 HORIZ. TOTAL)

NEW CONCRETE FOOTING: 8" THICK x 16" WIDE WITH 1 - #4 CONTINUOUS HORIZONTAL BAR, 3" CLEAR FROM BOTTOM OF FOOTING

NEW BASEMENT SLAB TO BE 4" CONCRETE SLAB ON GRADE. SEE STRUCTURAL NOTES

FIRST FLOOR FRAMING ABOVE SHOWN DASHED

INSTALL 2x8 BLOCKING AT 24" O.C. BETWEEN JOISTS, WITHIN FIRST THREE JOISTS SPACES AS SHOWN AT NORTH AND SOUTH ENDS OF BUILDING. GLUE AND NAIL TO JOISTS AND SUBFLOOR

INSTALL CLIP ANGLE FROM SILL PLATE TO JOIST BLOCKING PER DETAIL 1/S2

SEE STRUCTURAL NOTES AND MMY COVER LETTER, DATED 04/29/11, FOR ADDITIONAL INFORMATION AND REQUIREMENTS

FOOTING AND FOUNDATION PLAN

NOT TO SCALE



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structural engineers

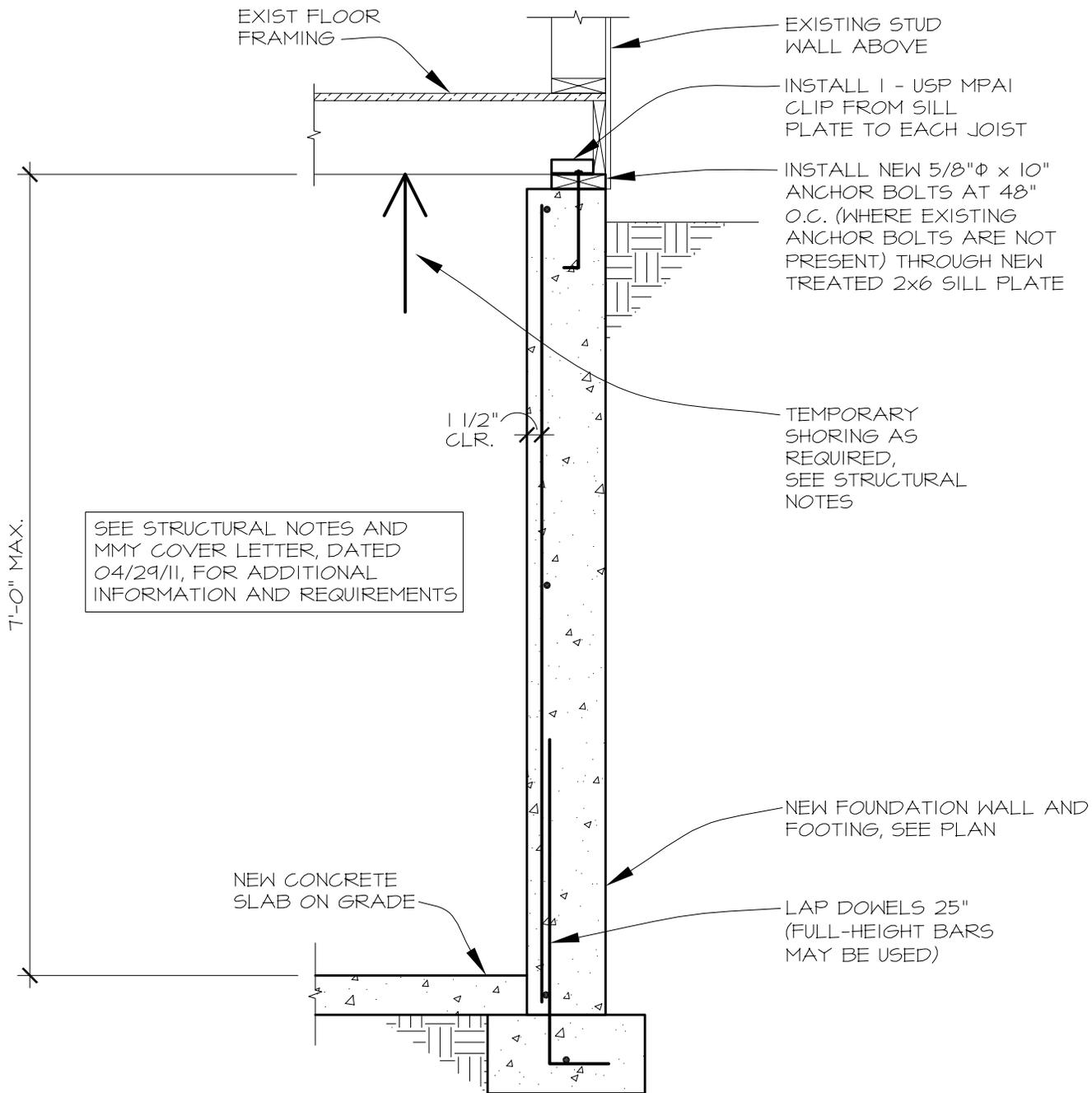
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1091 COOK AVE. E
ST. PAUL, MN 55106

FOUNDATION REPAIR

Proj. No. 11199
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Drawn By SKP

S1



1
52

NEW FOUNDATION WALL SECTION

3/4" = 1'-0"



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S2