

**GENERAL STRUCTURAL NOTES**

**GOVERNING CODES & SPECIFICATIONS:**

EC International Building Code 2002  
 American Institute of Steel Construction (AISC)  
 American Concrete Institute (ACI) (318-02)  
 American Welding Society (AWS)  
 Latest supplements and revisions, thereto.

**DESIGN LOADINGS:**

**ROOF:**  
 Dead Load  
 Live Load  
 1/2 plus snow drifting



**WIND LOAD:**

Basic wind speed: 90 mph  
 Exposure Category: B  
 Importance Factor (I): 1.0  
 Seismic: S<sub>MS</sub> = 0.168  
 S<sub>MS</sub> + 0.058  
 Occupancy Category: II  
 Seismic Importance Factor: 1.0  
 Seismic Design Category: B  
 Seismic Site Class: D (presumed-default)

**ALLOWABLE SOIL BEARING PRESSURE:**

Allowable soil bearing = 3000 psf (assumed for all spread and continuous footing foundations).  
 All footings shall bear on virgin, undisturbed soils.  
 All allowable bearing capacities shall be field verified by a qualified Soil Testing Laboratory.

**EXCAVATION AND BACKFILL:**

Bear foundations at elevations indicated on the drawings or deeper as necessary to reach subgrade materials with adequate bearing characteristics and capacities.  
 All excavation slopes shall be constructed such that they provide safe, stable conditions. OSHA regulations regarding excavation slope slopes shall be followed.  
 All soils shall become softened or loosened during construction shall be removed down to an approved undisturbed soil surface prior to the placement of foundation concrete or structural fill.  
 All backfill materials along walls and under building slabs shall be free draining granular material (DOT) fill materials for all site areas shall be placed in layers not exceeding 5' and compacted to 95% minimum density in accordance with ASTM D1557, until final subgrade is attained.  
 Foundation walls which are to retain soil on one side shall attain full design strength and shall be braced with permanent construction at their top and bottom before any backfilling operations begin. Retaining walls shall be backfilled only after having reached design strength or until being temporarily braced until final curing of its fill support.  
 Provide temporary sheeting as required if the nature of the material does not allow for gradual sloping to the excavation.

**CONCRETE:**

f'c = 3000 psi @ 28 days; all concrete not noted otherwise.  
 f'c = 4000 psi @ 28 days; all sub-grade concrete.  
 All concrete shall be placed, mixed and placed in accordance with ACI recommendations and requirements and standards.  
 Contractor shall provide the Architect, in sufficient time to allow for review, copies of the mix design and shall not proceed with its use without Architect consent.  
 Calculus Chloride or admixtures containing same shall not be permitted in any concrete.  
 All concrete shall contain plasticizing admixture and all concrete subject to freeze-thaw shall be air entrained 6% air.  
 Concrete Contractor shall not pour concrete in adverse weather conditions or when such is forecast for the time period following the pour, unless proper curing and protection is provided continuously until concrete develops its design strength.  
 Waterstops under indicated shall be PVC Topped type 6" wide minimum and continuous.  
 Unless otherwise noted, principal reinforcement shall have the following concrete protection:  
 (a) Surfaces not formed: 3 inch  
 (b) Formed surfaces in contact with soil or water, or exposed to weather: 2 inch  
 (c) Formed surfaces not in contact with soil or water, or exposed to weather: 3/4 inch  
 All concrete for walls-on-grade shall have a minimum water/cement ratio of .45.

**REINFORCING AND WELDED WIRE FABRIC:**

ASTM A618 Grade 60; plates to ACI clearances.  
 All reinforcing unless detailed otherwise.  
 ASTM A495; for all welded wire fabric (W.W.F.).  
 All reinforcing shall be placed to clearances per the ACI and in accordance with the recommendations of the ACI and the Concrete Reinforcing Steel Institute (CRS).  
 Detail all W.W.F. in accordance with the latest edition of the Welded Wire Fabric Manual of Standard Practice (WRF Manual AP-100).  
 Provide bar supports and other accessories in accordance with CRSI recommendations and standard practices and, as necessary to hold reinforcing in proper position during concreting. All W.W.F. shall be supported in position prior to concrete placement.  
 Minimum bar laps shall be 36 bar diameters unless detailed otherwise.  
 Reinforcing shall be cleaned of all oil, scale, rust, etc. which may impair bond.  
 Place "L" bars at all corners and wall intersections. Size and spacing shall match those of the horizontal reinforcing details.  
 Place 2 #5 additional bars all around wall openings. Extend 2'-0" beyond opening edge.  
 Reinforcing shop drawings shall show clearances to all bars.

**SLAB AND WALL CONSTRUCTION JOINTS:**

Floor slabs shall be placed with joints spaced at 5'-0" maximum if not shown otherwise. Locate joints on column center lines, and equally spaced between. Construction joints shall be keyed at midspan. Hold all W.W.F. 1" clear of all construction joints.

**PRECAST CONCRETE WALL PANELS:**

All panels shall be designed, manufactured and erected in accordance with the requirements of ACI and the Precast Concrete Institute (PCI).  
 Provide used plates and other attachments as required and as indicated on the details.  
 Field cutting of the units will be allowed only after location is reviewed by the Engineer, and if the cutting will not result in structural deficiencies.  
 f'c 4000 psi minimum for all panels.  
 Free-standing precast concrete wall panels shall be braced adequately to withstand a wind load of 20 psf minimum during construction.

**STRUCTURAL STEEL:**

ASTM A992 (Fy=50ksi); all wide-flange shapes.  
 ASTM A36; all angles and plates.  
 ASTM A305 or ASTM A490; 3/4" minimum bolts.  
 For all connections:  
 ASTM A36 anchor bolts, embedded 12" plus 6" hook, unless detailed otherwise.  
 ASTM A500 Grade B (Fy=46ksi) for all structural tubing (ST).  
 ASTM A501 or ASTM A53, Types E or S, Grade B; for all structural pipe (SP).  
 ASTM E70; all welding shall be by welders qualified within the past 12 months, to used in the required positions, in accordance with AISC Standards and recommendations.  
 All steel shall be fabricated, detailed and erected in accordance with AISC Specifications latest edition and with the AISC Code of Standard Practice.

Field cutting of structural steel shall not be permitted. Fabricator shall select beam connections capable of carrying either the reaction forces when indicated or one-half of the total uniform load for the given size span and grade of the beam as tabulated in the AISC tables for allowable loads.  
 All connections shall be fully detailed on shop drawings. All connections to tube columns shall be thru-plates unless otherwise noted.  
 All columns shall be set upon non-shrink grout with minimum strength of 3000 psi @ 28 days using setting plates, 1/4" thick and same size as base plate.  
 Contractor shall verify locations and conditions of all anchor bolts set for his use. He shall immediately notify the Architect of any dimensional discrepancies or existence of conditions of the bolts which will not allow him to properly erect the steel.  
 Coordinate all requirements with the permit trades.  
 All steel shall have one coat of light gray rust inhibitive primer paint.

**STEEL JOISTS:**

Steel joists for this project are K Series.  
 In accordance with the Steel Joist Institute (SJI) Standards for design, manufacture and erection.  
 Certification of compliance with SJI Standards shall be noted on the Shop Drawings.  
 Provide loose ceiling extensions for all joists in areas where ceilings are noted.  
 Anchor joists to steel supports in accordance with SJI and as detailed.

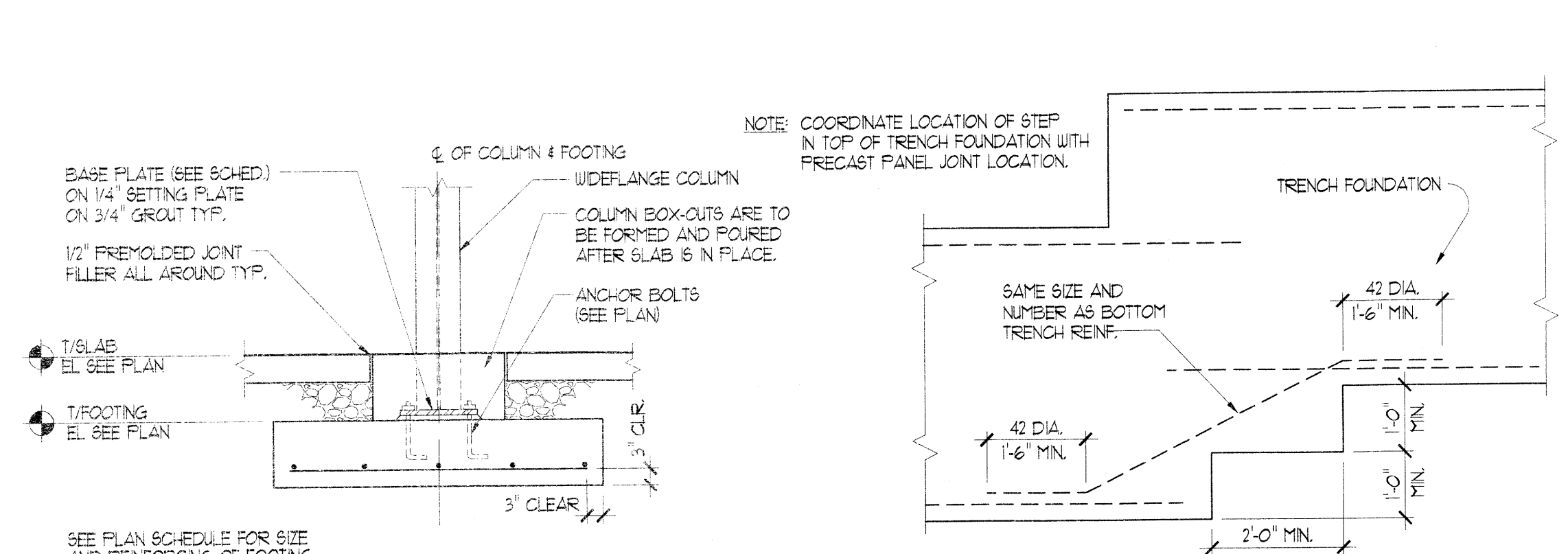
**METAL ROOF DECK:**

Deck to be 1/2" deck with structural properties corresponding to deck type noted on the drawings.  
 Deck shall be designed, fabricated, and installed in accordance with the requirements of the Steel Deck Institute (SDI).  
 Deck shall provide 3 span minimum coverage.  
 Openings to 12" perpendicular to the deck span and whether shown or not on the Architectural and/or Structural Drawings may be cut into the deck without reinforcing after review with the Architect/Engineer to insure continued integrity of the deck.  
 Openings greater than 12" perpendicular to the deck span, and whether shown or not on the Architectural and/or Structural Drawings shall be reinforced with additional framing members spanning between the main deck support members. Additional framing members shall be provided and installed by the trade requiring the opening and shall submit sizes and arrangement of the additional members to the Architect, for his review before fabrication of members.  
 Coordinate location of openings not shown on the drawings and submit for the Architect/Engineer's review before cutting of the deck.

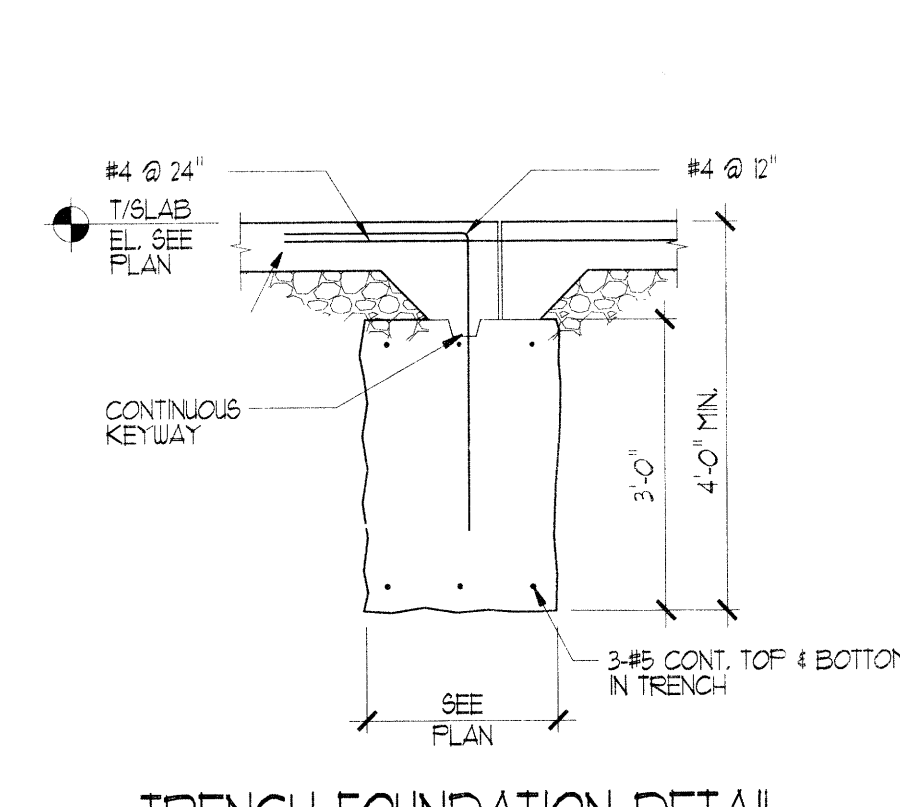
**COORDINATION:**

All dimensions shown on the Structural Drawings shall be checked against the Architectural, and other drawings, by the General Contractor and any discrepancies are to be reported immediately to the Architect.  
 Contractor shall coordinate all pitches and depressions in the floor slabs, and openings in the foundation walls, with the permit trades, and shall review locations of such openings as they may relate to the weakening of the Structure.  
 Sleeves for openings shall be provided by the relevant trade.  
 Shop Drawings shall be submitted for review by the Structural Engineer, or all structural items before fabrications. Should it become evident that the Shop Drawings are being submitted with the appearance of not having been properly checked by the detailer prior to the submission, they will be returned by the Engineer to the Detailer, without review, and the material will be classified as a "non-structural".  
 The information contained on the Structural Drawings is, in itself, incomplete and void unless used in conjunction with all of the Contract Documents and all Specifications, trade practices, or applicable standards, codes, etc., incorporated therein by reference.  
 Use of these documents as shop drawings, in whole or in part, is prohibited, and will be cause for the rejection of the entire submittal.

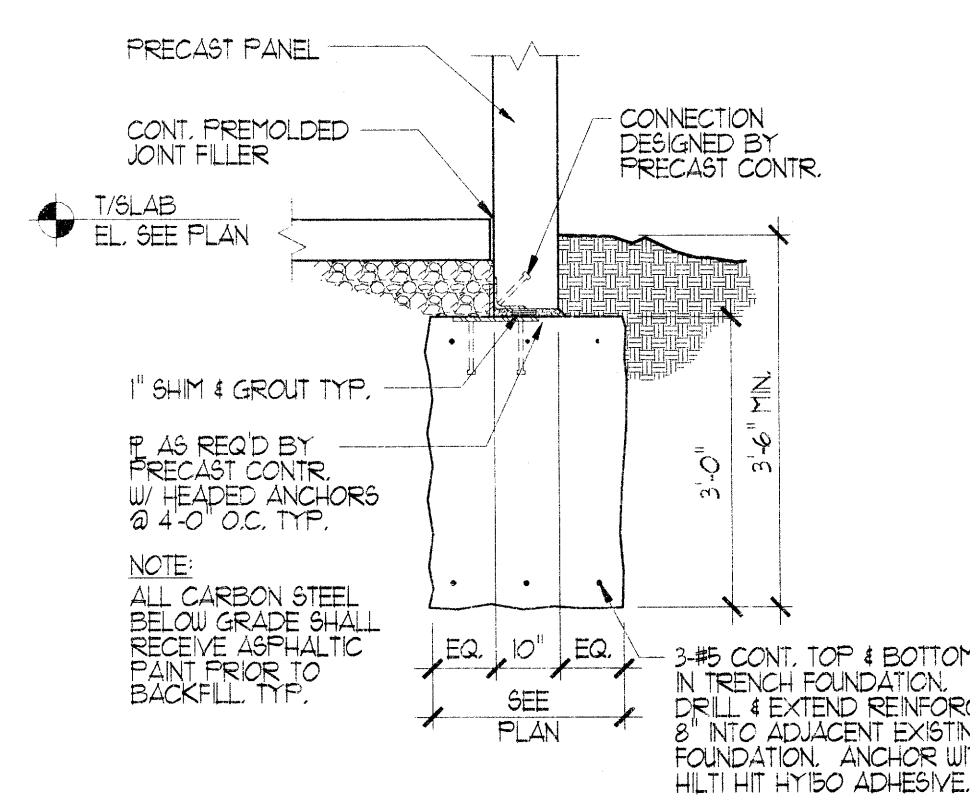
Failure to identify a code violation during the review of the plans DOES NOT give the permit applicant the right to violate the code. The final installation must be in conformance with the codes & ordinances of the Village of Lake Zurich.  
 Approved: *[Signature]* Date: 4/7/17  
 Building Official



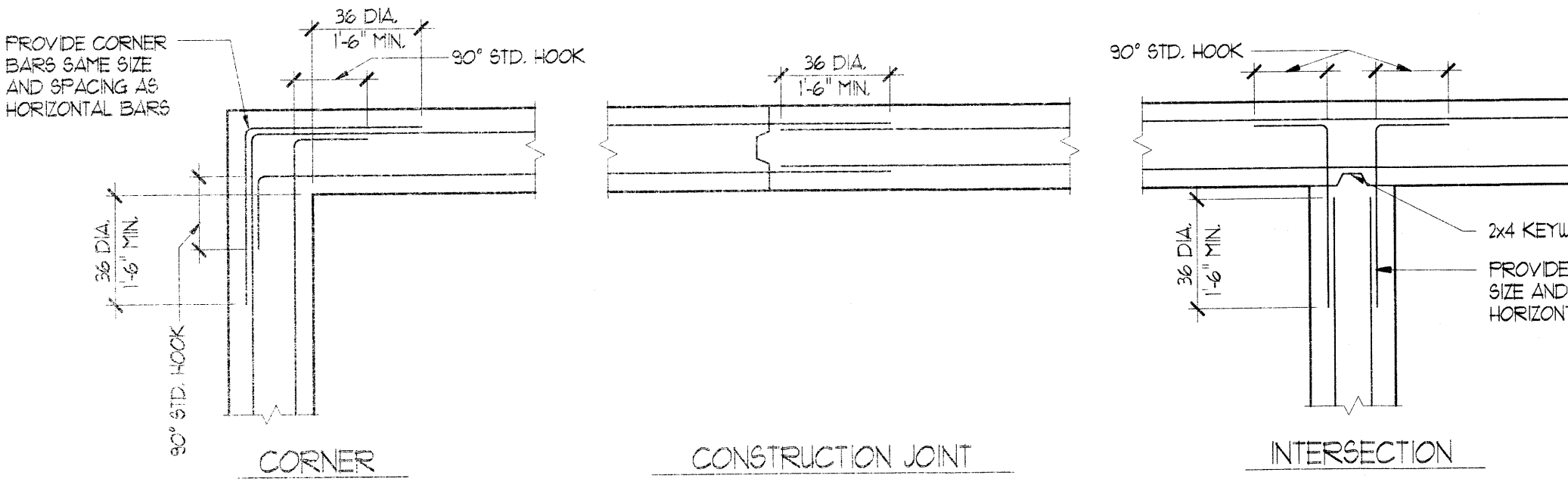
6 TYPICAL COLUMN FOOTING DETAIL  
 SCALE: 1/2" = 1'-0"



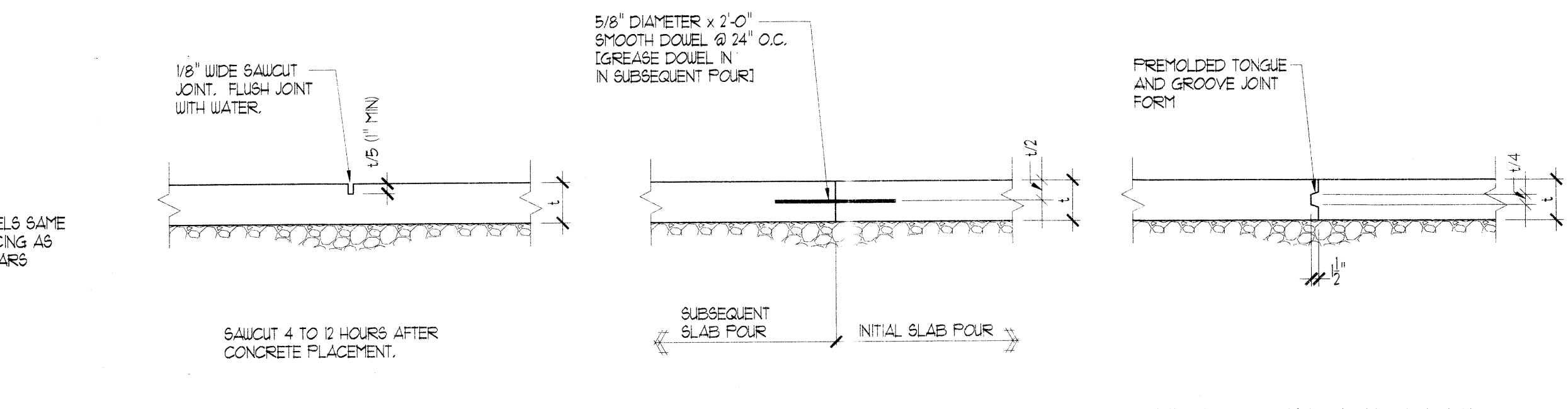
5 TYPICAL STEP FOOTING DETAIL  
 AT DOOR OPENING  
 SCALE: 1/2" = 1'-0"



3 TRENCH FOUNDATION DETAIL  
 AT PRECAST PANEL WALL  
 SCALE: 1/2" = 1'-0"



2 TYPICAL REINFORCING DETAILS (WALLS & FOOTINGS)  
 SCALE: NTS



1 TYPICAL CONCRETE SLAB JOINT DETAILS  
 SCALE: NTS

ISSUE	DATE
ISSUE FOR PERMIT	02.10.17
PERMIT CORRECTIONS	03.20.17

SCREENCOR  
 585 CAPITAL DR. LAKE ZURICH, IL.

P.O. BOX 518  
 LAKE ZURICH IL 60047  
 847-540-0200  
**ALEX**  
 CONSTRUCTION CORPORATION

DATE	01.20.17
SCALE:	NOTED
DRAWN	
JOB	

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