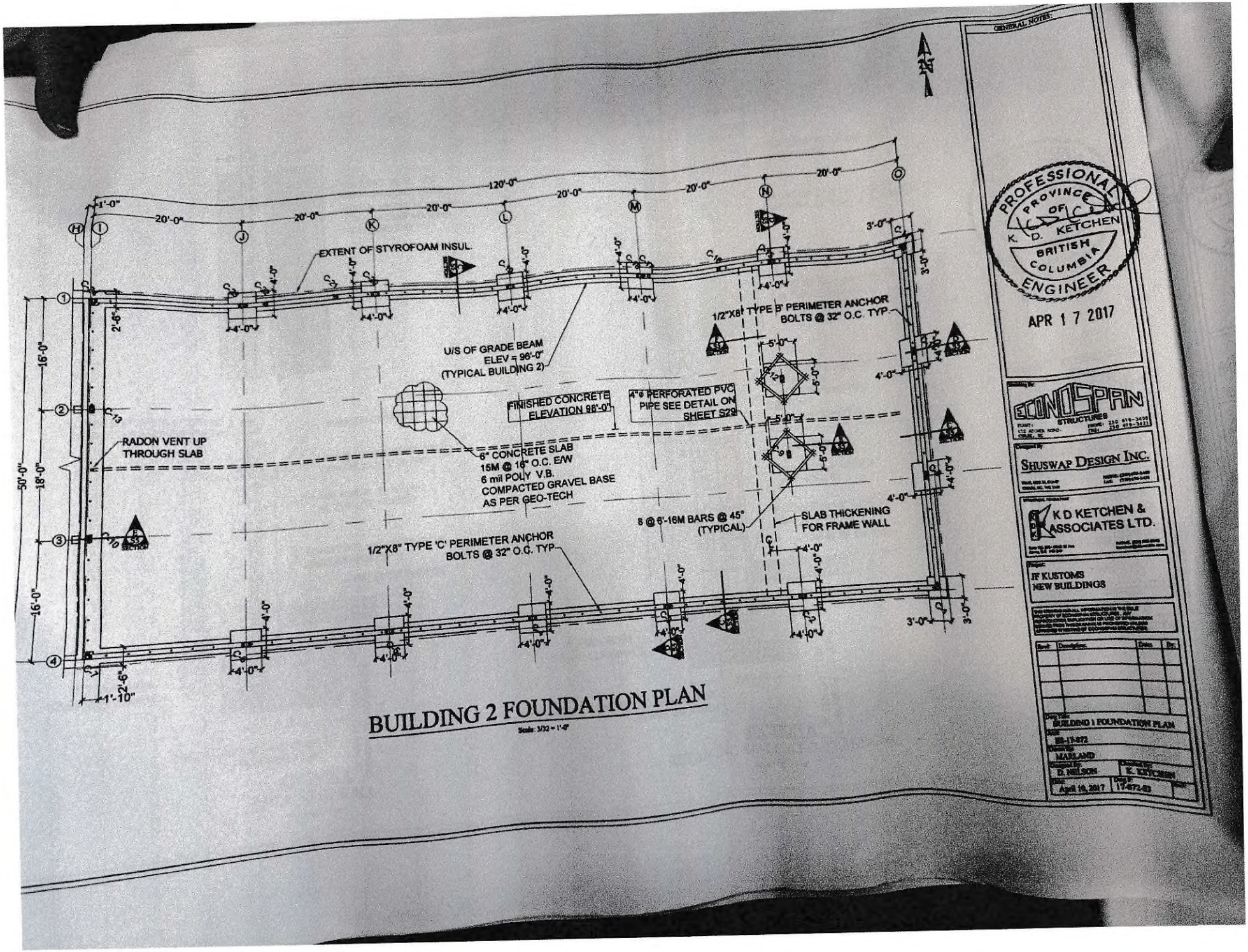


BUILDING 2 FOUNDATION PLAN

Scale: 3/32" = 1'-0"

GENERAL NOTES:

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
K. D. KETCHEN

APR 17 2017

SPANSPAN STRUCTURES

SHUSWAP DESIGN INC.

K D KETCHEN & ASSOCIATES LTD.

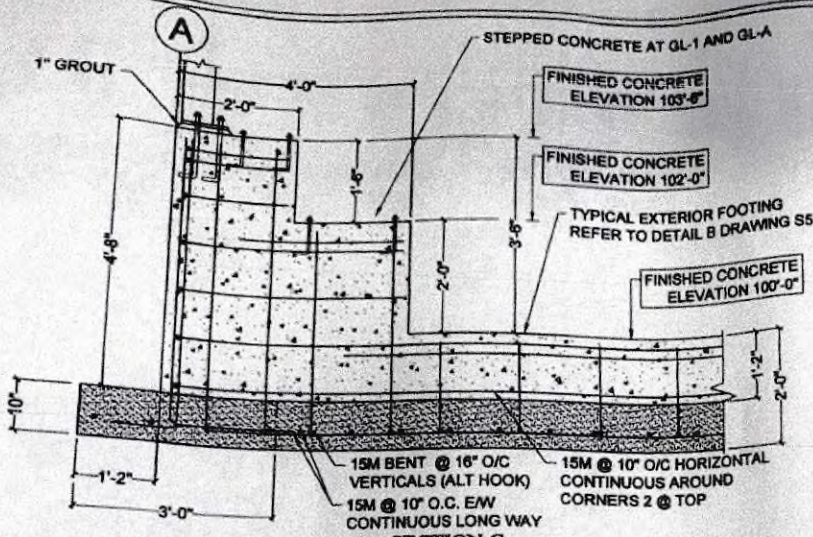
JF KUSTOMS
NEW BUILDINGS

BUILDING 1 FOUNDATION PLAN

MAILAND

D. NELSON | K. KETCHEN

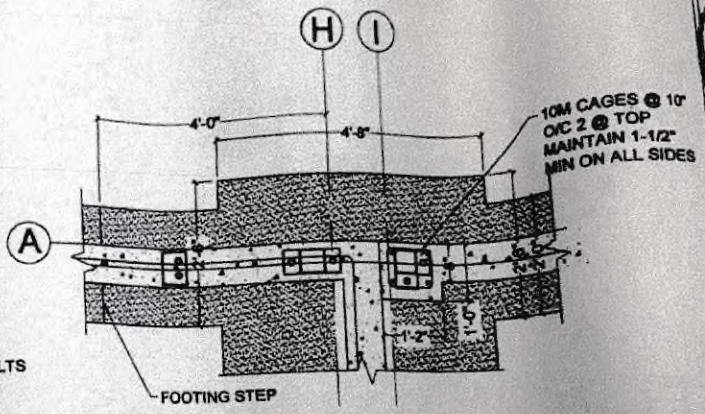
April 19, 2017 | 17-872-03



SECTION G

CONCRETE STEP AT GRIDLINE A

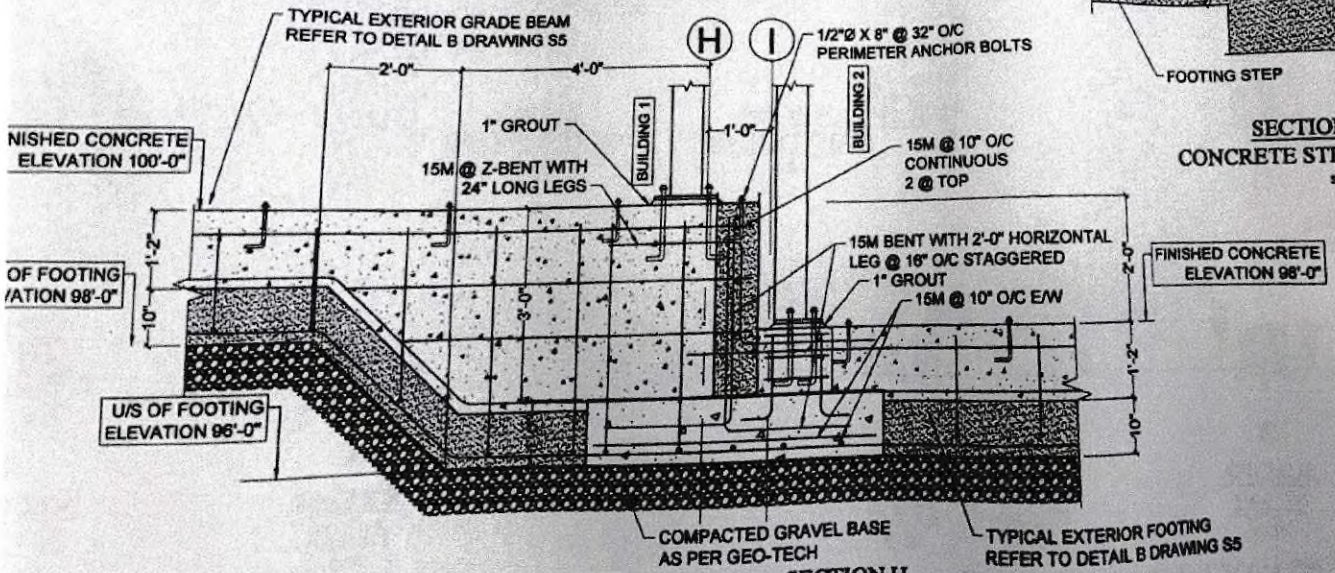
Scale: 1/2" = 1'-0"



SECTION H TOP VIEW

CONCRETE STEP AT GRIDLINE H & I

Scale: 1/2" = 1'-0"



SECTION H

CONCRETE STEP AT GRIDLINE H & I

Scale: 1/2" = 1'-0"

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
K. D. KETCHE

APR 17 2017

SHUSWAP DESIGN

K D KETCHE ASSOCIATES

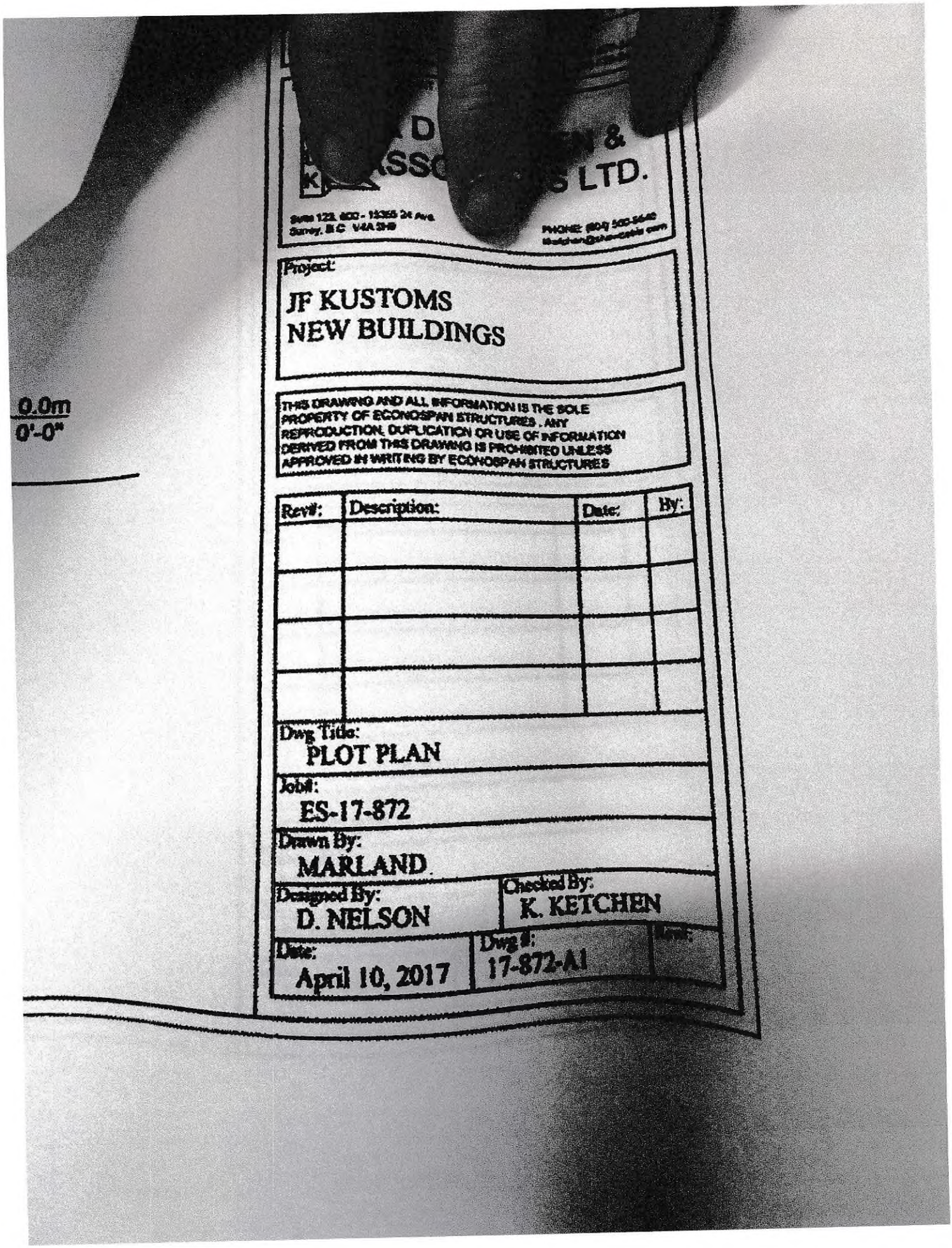
JF KUSTOMS NEW BUILDINGS

FOUNDATION

MARLAND

D. NELSON

April 10, 2017



0.0m
0'-0"

LTD.

Project:
JF KUSTOMS
NEW BUILDINGS

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Rev#:	Description:	Date:	By:

Dwg Title:
PLOT PLAN

Job#:
ES-17-872

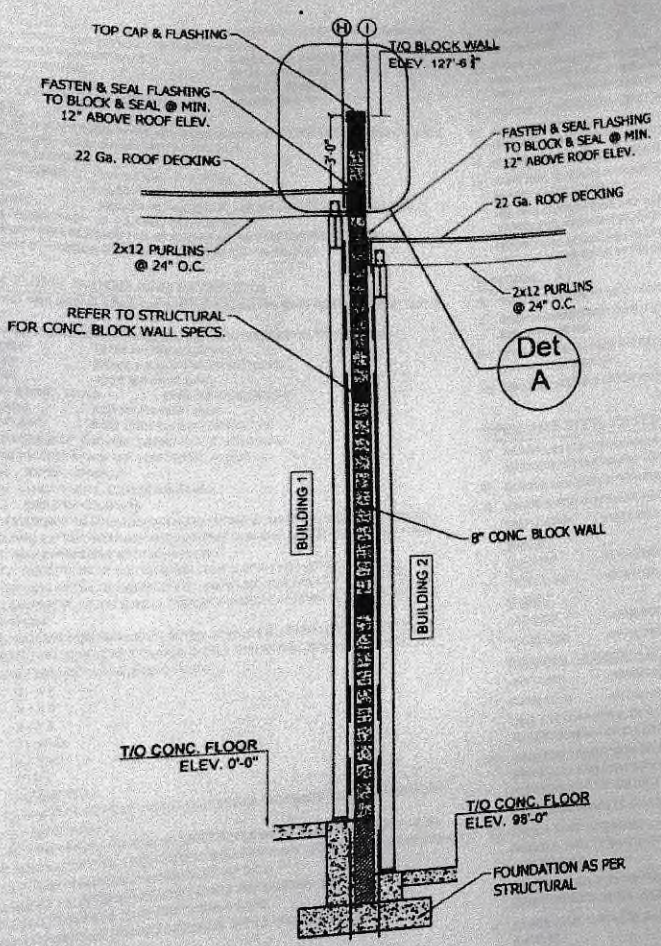
Drawn By:
MARLAND

Designed By:
D. NELSON

Checked By:
K. KETCHEN

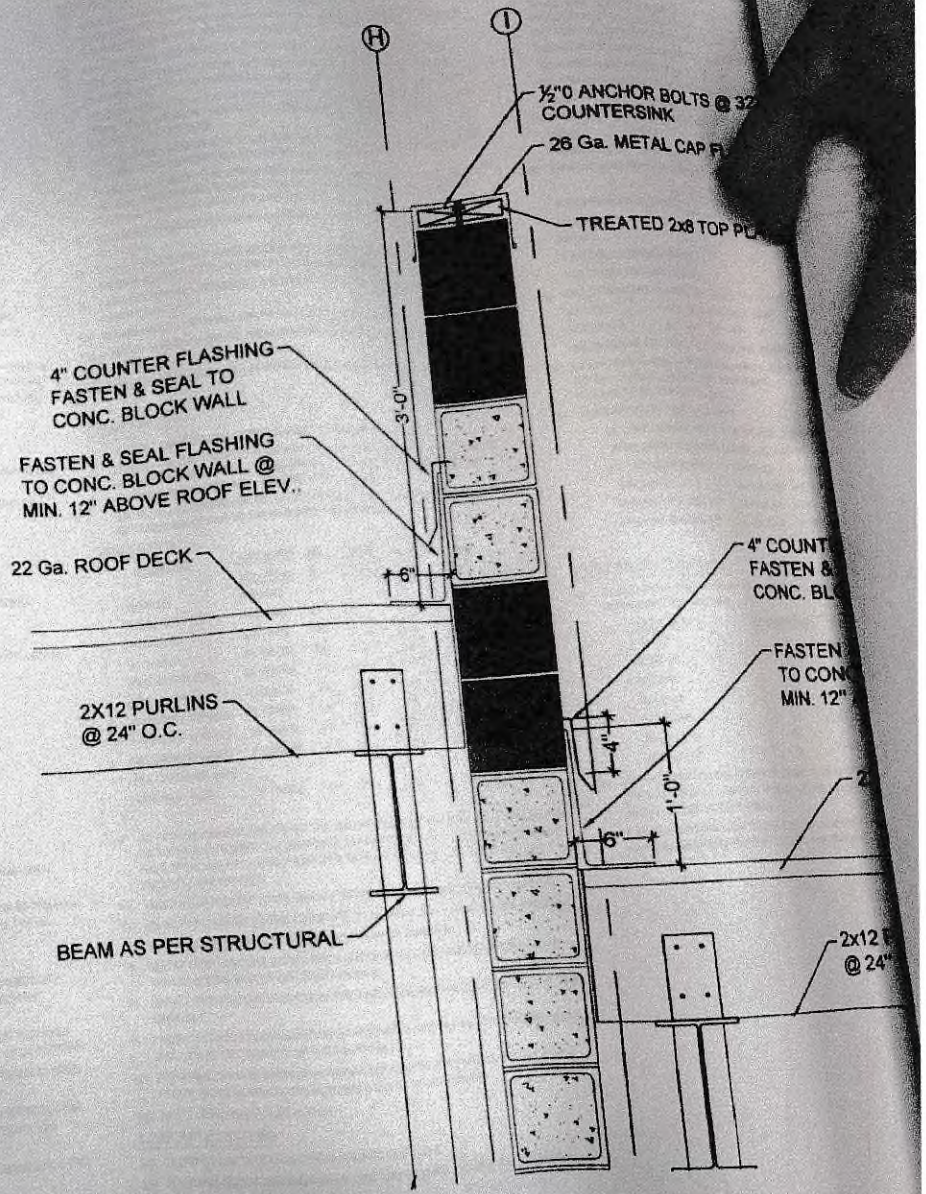
Date:
April 10, 2017

Dwg #:
17-872-A1



FIREWALL DETAIL

Scale: 3/16"=1'-0"



DETAIL A

Scale: 1"=1'-0"

GENERAL STRUCTURAL NOTES:

1) READ STRUCTURAL DRAWINGS IN CONJUNCTION WITH THE ARCHITECTURAL AND MECHANICAL DRAWING'S FOR DETAILED DIMENSIONS OF DOORS, WINDOWS, DUCTS, OPENINGS, REBATES, CHASES, NAILERS, ETC
2) CHECK AND VERIFY ALL DIMENSIONS WITH THE ARCHITECTURAL DRAWINGS BEFORE COMMENCING WITH ANY WORK, NOTIFY THE ARCHITECT OF ANY ERRORS OR OMISSIONS.
3) DRAWING SHOW COMPLETED STRUCTURES ONLY. TEMPORARY BRACING FOR CONTRACTION LOADING CONDITIONS IS THE RESPONSIBILITY OF THE CONTRACTOR.
4) DO NOT CONSTRUCT FROM THESE DRAWINGS UNLESS MARKED "ISSUED FOR CONSTRUCTION".

INSPECTIONS:

5) PHONE 250-768-9385 (KUNT KETCHEN, PROJECT ENGINEER) 48 HOURS IN ADVANCE FOR INSPECTIONS AND APPROVAL OF THE FOLLOWING:

CONCRETE REINFORCEMENT	BEFORE EACH CONCRETE POUR
WOOD FRAMING	AFTER COMPLETION
STRUCTURAL STEEL	AFTER COMPLETION
INSULATION AND VAPOR BARRIER	BEFORE COVER UP

DESIGN:

) ALL NEW STRUCTURAL WORK INCLUDING REQUIREMENTS FOR EARTHQUAKES HAS BEEN DESIGNED IN ACCORDANCE WITH B.C.B.C. 2012.
) DESIGN CRITERIA:
SNOW LOADS: S_s = 1.1 kpa S_r = 0.1kpa
WIND: q1/10 = 0.31 q1/50 = 0.40
SEISMIC: S_a(0.2) 0.29, S_a(0.5) 0.19, S_a(1.0) 0.12, S_a(2.0) 0.071, PGA 0.14
2nd FLOOR LOAD: LL = 2.4 kpa, DL = 0.72 kpa
UNDATION WAS DESIGNED FOR AN ALLOWABLE BEARING CAPACITY OF 144 KPA AS I REPORT BY HORIZON GEOTECHNICAL LTD, DATED FEB. 16, 2017

RUCTURAL WOOD AND PLYWOOD:

SUPPLY AND INSTALL STRUCTURAL WOOD DECKING TO CSA 086 AND PART 9 OF B.C.B.C. 2012
PROVIDE THE FOLLOWING GRADES OTHERWISE SPECIFIED ON THE DRAWINGS

TIMBER	#1 OR BETTER DOUGLAS FIR
JOISTS	GRADE 2 X 12 SPF #2 OR BETTER KD
PLATES	#2 KD SPF OR #2 D FIR
HORZ. & VERT. STUDS	#2 KD SPF OR #2 HEM-FIR
HEADERS	#2 HEM-FIR OR #2 D FIR
SHEATHING	D-FIR OR SPRUCE PLYWOOD, T&G

SE TAPERS @16" O/C FOR SLOPES WITH 2" MIN DEPTH
NGER JOINTED STUDS ARE ACCEPTABLE, EXCEPT AT:
a) EXTERIOR WALLS
b) SHEAR WALL HOLD DOWN STUDS
c) BUILD UP COLUMNS
L SHEATHING TO FRAMING MEMBERS WITH 2 ½" NAILS @ 16" O/C ON ALL PANEL ES AND 12" O/C INTERMEDIATE BEARING MEMBERS. BLOCK ALL EDGES OF FLOOR ATHING UNLESS T&G JOIST IS PROVIDED
. 2X6 DECKING WITH 1-4" FACE NAIL AND 1-4" TOE NAIL AT EACH SUPPORT.
VIDE 16ga METAL FRAMING ANGLES EACH SIDE OF JOISTS FRAMING INTO FLUSH AS (SIMPSON A35 OR EQUAL). PRESSURE BLOCKING ACCEPTABLE ON JOIST SPANS THEN 10'
SS AS NOTED OTHERWISE ON PLANS, SUPPORT ALL BEAMS/ HEADERS/ GIRDER S(G.T.) ON SOLID STUDS CARRIED DOWN TO FOUNDATIONS AS NOTED BELOW:
/ HEADER/ (G.T.) NUMBER OF STUDS

) 2 - 2 X	2
) 3 - 2 X	3
) 4 - 2 X	3
) 3 - ¼ SCL	3
) 5 - ¼ SCL	4
) 7" SCL	5
) GIRDER TRUSS	4

T ALL WOOD IN CONTACT WITH CONCRETE OR GROUND WITH, GREEN CUPRINOL UAL PRESERVATIVE.
T AT SHEAR WALLS, FASTEN EXTERIOR STUDS WALLS TO CONCRETE WITH ¼" dia. OR BOLTS @ 32" O/C AND INTERIOR WALLS WITH 3/8" HEAD DIA X 3" LONG DRIVE 0.170" MIN SHANK DIA.) OR EQUAL AT 16" O/C.
BLOCK AT ALL INTERIOR BEARING WALLS AND DROPPED BEAMS OR HEADERS SUPPORTING MORE THEN ONE FLOOR + ROOF.
ULT-UP BEAMS OR HEADER TOGETHER WITH 2 ROWS OF 3" NAILS @ 12" O/C.

SHEATHING:	
NO CONCRETE TOPPING	=MIN 5/8" T&G PLY
CONCRETE TOPPING	=MIN 5/8" SQUARE EDGE PLY
SHEATHING:	
OOFS	=MIN 5/8" T&G PLY
G ROOFS	=MIN 1/2" PLY
SHEATHING:	
	=MIN 1/2" PLY
	=MIN 5/8" PLY GLUED & SCREWED @GABLE WALLS

STRUCTURAL STEEL:

1) FABRICATE AND ERECT STRUCTURAL STEEL TO CSA S16-01
2) PROVIDE STRUCTURAL STEEL TO CSA G40.21 WITH THE FOLLOWING GRADES:

WIDE FLANGE BEAMS AND COLUMNS	50W
CHANNELS AND ANGLES	44W
HSS SECTIONS (CLASS C)	50W
STRUCTURAL BARS & PLATES	44W
MISCELLANEOUS STEEL	96W OR 44W
PIPE COLUMNS	ASTM A53 GR.B
ERECTION BOLTS	MIN ¾"ASTM A325
ANCHOR BOLTS	ASTM A307
GALVANIZING	G164

3) DESIGN OF CONNECTIONS TO CSA S16-01 UNLESS DETAILED ON THE DRAWINGS. USE MIN. 2 BOLTS PER CONNECTION AND DESIGN FOR BEARING CONNECTIONS WITH THREADS INCLUDED IN SHEAR PLANE.
4) TIGHTEN ALL BOLTS WITH IMPACT WRENCH, USING TURN OF THE NUT METHOD.
5) PROVIDE CONTINUOUS 35 MPa GROUT BED BENEATH BASE PLATES AND OTHER CONNECTION BEARING ONTO CONCRETE.
6) FRAME OPENING IN STEEL DECK GREATER THEN 18" WITH L 3 X 3 X ¼" MINIMUM.
7) PAINT STEEL SURFACES INTENDED FOR HEATED INTERIOR AREAS WITH 2 COATS OF PRIMER TO CISC / CPMA-73A.

USE TWO COATS OF CGSB 1-GP-40 PRIMER FOR ALL STEEL SURFACES EXPOSED DIRECTLY TO WEATHER AND FOR STEEL IN UNHEATED BUT COVERED AREAS SUCH AS CANOPIES.

PRIMERS MAY BE EXCLUDED ONLY WHERE SPRAYED FIRE PROOFING OS SPECIFIED OR SPECIFICALLY APPROVED BY THE OWNER AND ENGINEER.

WELDING:

8) WELD TO CSA W59 TO S16-01 QUALIFIED TO CSA W47 1.
9) WELD REINFORCEMENT STEEL TO CSA W 186. USE WELD ABLE REINFORCEMENT TO CSA G30.18 GRADE 400.
10) MINIMUM SIZE OF FIELD WELDS, 1/16" LESS THAN THE THICKNESS OF THE MATERIAL BUT NOT LESS THEN 1/4".
11) TOUCH UP ALL FIELD WELDS WITH PRIMER AFTER SLAG IS REMOVED.

OPEN WEB STEEL JOISTS:

1) DESIGN AND FABRICATE OPEN WEB JOIST TO CSA S16-01 (S136 FOR COLD ROLLED SECTIONS) FOR DEPTHS AND LOADINGS SHOWN ON THE DRAWINGS.
2) CAMBER REQUIREMENTS TO CSA S16 UNLESS NOTED ON DRAWINGS.
3) UNLESS NOTED OTHERWISE, DESIGN JOISTS FOR THE FOLLOWING DEFLECTION LIMITS:

SIMPLE SPAN	CANTILEVER
ROOFS:	
LIVE LOAD	=SPAN/300 LENGTH/600
TOTAL LOAD	=SPAN/180 LENGTH/360
FLOORS:	
LIVE LOAD	=SPAN/360 LENGTH/720
TOTAL LOAD	=SPAN/240 LENGTH/480
INDUSTRIAL / WAREHOUSE ROOFS:	
LIVE LOADS	=SPAN/240 LENGTH/480
TOTAL LOAD	=SPAN/180 LENGTH/360

LIMIT LIVE LOAD DEFLECTION TO 1" MAXIMUM FOR EDGE JOISTS ALIGNING WITH PERIMETER WALLS OR GLAZING

4) WELD SEAT CONNECTION OR FIELD BOLT. DESIGN JOIST SEAT PERIMETER OF BUILDING, SHEAR WALL AND DRAG STRUTS FOR MINIMUM FACTORED SHEAR FORCE OF 9k PERPENDICULAR TO THE JOIST AXIS.
5) PROVIDE MINIMUM 11 GAUGE (0.120") MATERIAL FOR TOP CHORD.
6) EXTEND BOTTOM CHORDS TO COLUMN OR BEAM FLANGE WHERE INDICATED ON FRAMING PLAN. DESIGN CHORD EXTENSIONS FOR 9k FACTORED TENSION OR COMPRESSION.
7) PROVIDE CROSS BRIDGING TO CSA S16-01. DESIGN FOR MIN 12 PSF NET FACTORED UPLIFT ON ROOF JOISTS. LOCATE FIRST ROW OF BRIDGING WITHIN 6'-0" OF SUPPORT.
8) DESIGN ROOF JOISTS FOR RAINWATER POOLING LOADS FOR THE SPECIFIED 24 HOUR RAINFALL.
9) PAINT STEEL JOIST AND BRIDGING WITH ONE COAT OF PRIMER TO CISC/CPMA 1-73A EXCEPT WHERE SPRAYED FIRE PROOFING IS SPECIFIED OR WHERE SPECIFICALLY EXCLUDED BY THE OWNER.
10) DESIGN JOIST FOR POINT LOADS AS SHOWN ON DRAWING RE: RTU. MONORAILS. ETC.

FOUNDATIONS:

1) PREPARE FOUNDATION SOILS MIN 100% PROCTOR DENSITY. COMPLY WITH THE REQUIREMENTS FOR STRUCTURAL BACKFILL, PANNS AND SLAB SUB-BASE. PROVIDE 2'-0" MINIMUM COVER FOR FROST PROTECTION.
2) ALLOWABLE BEARING PRESSURES: PAD FOOTINGS 144 kPA MIN STRIP FOOTINGS.
3) AFTER EXCAVATION BUT BEFORE BACKFILLING, ENSURE THAT THE GEOTECHNICAL ENGINEER INSPECTS THE BEARING SOILS AND CONFIRMS THE LOAD CARRYING CAPACITY.
4) FOOTING ELEVATIONS IF SHOWN ARE NOT FINAL, AND MAY VARY ACCORDING TO SITE CONDITIONS. EXTEND ALL FOOTINGS TO A BEARING LAYER APPROVED BY THE GEOTECHNICAL ENGINEER.
5) VARY FOOTINGS MAY HAVE TO BE LOWERED TO ACCORDANCE WITH "TYPICAL STEPPED FOOTING" DETAILS SHOWN ON STRUCTURAL DRAWINGS.
6) FOOTINGS MAY HAVE TO BE LOWERED TO ACCOMMODATE MECHANICAL OR ELECTRICAL SERVICES, SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR ELEVATIONS. DO NOT UNDERMINE FOOTINGS BY EXCAVATING FOR SERVICES, PIPES, ETC.
7) CENTER FOOTINGS UNDER COLUMNS OR WALLS UNLESS NOTED OTHERWISE ON DRAWINGS.
8) TIE ALL DOWELS AND ANCHOR BOLTS IN PLACE BEFORE POURING CONCRETE. USE ANCHOR BOLT TEMPLATES TO ENSURE CORRECT PLACEMENT.
9) PROVIDE CONCRETE GROUND SEAL UNDER FOOTINGS AS REQUIRED BY GEOTECHNICAL CONDITIONS.
10) SEE ARCHITECTS DRAWINGS FOR GROUND ELEVATIONS AND DRAINAGE SLOPES.
11) PROTECT BEARING SURFACES FROM FREEZING BEFORE AND AFTER FOOTINGS ARE POURED.
12) CONFORM TO CSA S23. 1 FOR CONCRETE PLACED UNDER WATER.

CONCRETE:

1) PROVIDE CONCRETE AND PERFORM WORK TO CSA A23.1.
2) MINIMUM 28 DAY COMPRESSIVE STRENGTHS AS INDICATED BELOW ALL CONCRETE NORMAL WEIGHT, 150 PCF. TYPE 10 CEMENT, TYPE 50 FOR SLAB ON GRADE OR CONCRETE IN CONTACT WITH GROUND, TYPE F FLY ASH.

USE 20mm AGGREGATE FOR ALL CONCRETE UNLESS NOTED OTHERWISE SUBMIT PROPOSED MIX DESIGN TO THE ENGINEER FOR APPROVAL.

STRENGTHS:

LOCATIONS:	STRENGTH Mpa (PSI):	AIR %:	SLUMP ± 20mm:	EXPOSURE CLASS:	AGGR SIZE:
FOOTINGS	25 (3600)	1-4	70	N	20mm
RET. WALL& FTGS	25 (3600)	4-7	70	F2	20mm
INT'R S.O.G.	35 (5075)	5-8	70	C1	20mm
EXT'R S.O.G.	35 (5075)	5-8	70	C1	20mm
INT'R SUSP'D SLAB	25 (3600)	1-4	70	N	20mm
EXT'R SUSP'D SLAB	35 (5075)	5-8	70	C1	20mm
STEEL DECK TOPPING	25 (3600)	1-4	70	N	20mm
INT'R COLS & WALLS	25 (3600)	1-4	70	N	20mm
EXTERIOR COLUMNS	25 (3600)	4-7	70	F-2	20mm
PILE CAPS & GR. BMS AND PILES SLABS	25 (3600)	1-4	70	N	20mm

3) DO NOT USE ADMIXTURES OTHER THE AIR ENTRAINMENT, STANDARD WATER REDUCERS, OR SUPER PLASTICIZERS. ALL PROPOSED CONCRETE MIXTURES AND PROCEDURES MUST HAVE APPROVAL OF THE GROTECH ENGINEER (DON POWELL 250-374-1775) BEFORE USING ON THIS PROJECT.
4) REJECT ALL CONCRETE WHEN TIME BETWEEN BATCHING AND PLACING EXCEEDS 2HRS.
5) DO NOT ADD WATER TO THE CONCRETE ON SITE UNLESS AUTHORIZED BY THE ENGINEER.
6) CONSOLIDATE ALL CONCRETE USING MECHANICAL VIBRATORS
7) USE ZIP STRIP CONTROL JOINTS FOR SLABS ON GRADE MAXIMUM 20' SPACING OR AT THE LOCATIONS SHOWN ON THE DRAWINGS.
8) INSTALL CONSTRUCTION JOINTS AS SHOWN ON THE DRAWINGS OR AS DIRECTED BY THE ENGINEER.
9) PROTECT CONCRETE FROM ADVERSE WEATHER CONDITIONS IN ACCORDANCE WITH CSA A23.1 OR AS DETERMINED BY THE ENGINEER.
10) CONSTRUCT FRAME WORK IN ACCORDANCE WITH WCB REGULATION AND CSA S269.3. FRAME WORK DESIGN IS THE RESPONSIBILITY OF THE CONTRACTOR.
11) APPLY CONCRETE COLOR EVENLY.

CONCRETE TESTING:

12) TESTING CONCRETE IN ACCORDANCE WITH CSA A23.2.
13) FOOTINGS AND RETAINING WALLS: ONE TEST OF THREE CYLINDERS FOR EACH POUR.

REINFORCEMENT:

1) NEW DEFORMED BARS TO CSA G30.18 GRADE 400. WELDED WIRE [illegible]
2) PLACE REINFORCEMENT TO CSA A23. 3 TIE ALL BARS SECURELY IN PLACE [illegible] DISPLACEMENT. SUPPORT SLAB REINFORCEMENT ON SUITABLE CHAIRS [illegible] 4 FT CENTERS. PROVIDE CORNER BARS TO MATCH HORIZONTAL WALL [illegible]
3) PROVIDE CLEAR CONCRETE COVER FOR REINFORCEMENT AS FOLLOW.
SURFACE POURED AGAINST GROUND: 3"
FORMED SURFACE EXPOSED TO GROUND OR WEATHER: 2"
BEAMS: 2" TO MAIN STEEL
COLUMNS: 2" TO MAIN STEEL
SLABS: 1"
PARKING SLABS: 1 ½" TO TOP STEEL
4) PROVIDE CLEAR CONCRETE COVER FOR FIRE RATING OVER PRINCIPAL RE[illegible]

	2HR:	3HR:	4HR:
COLUMNS & SHEAR WALLS:	2"	2"	2 ½"
SLABS:	1"	1 ½"	1 ½"
BEAMS:	2"	2"	2"
WALLS (EXPOSED ONE SIDE):	1"	1 ½"	1 ½"
WALLS (EXPOSED BOTH SIDES):	2"	2"	2 ½"

5) SPLICE REINFORCEMENT AS FOLLOWS (UNLESS NOTED OTHERWISE):

BAR SIZE:	10M	15M	20M	25M	30M
LAP SPLICE:	18"	24"	30"	48"	54"

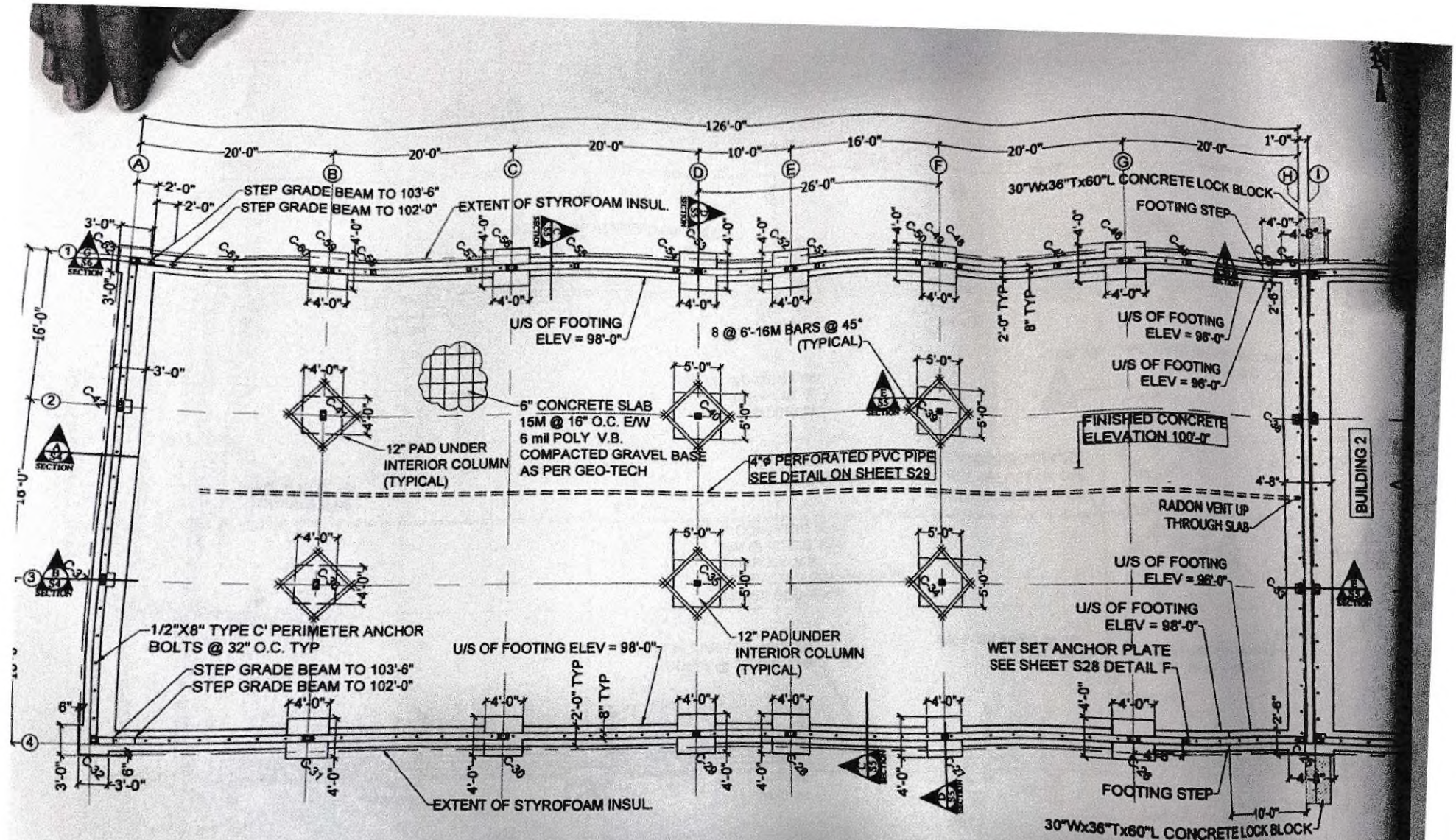
INCREASE LAP 20%, FOR BAR SPACING LESS THAN 6".
6) PROVIDE MINIMUM 2-15M BARS AROUND ALL OPENING LARGER THAN 18" AT EACH [illegible] OF THE OPENING, EXTEND 2'-0" PAST CORNER. PROVIDE 1-15M04.0 DIAGONAL AT EACH CORNER OF ALL OPENINGS.
7) DESIGNATION OF REINFORCEMENT:
a) BARS SHOWN IN TOP OF BEAM AND SLABS, OR IN NEAR FACE OF WALL.
BARS SHOWN IN BOTTOM OF BEAMS, AND SLABS, OR IN FAR FACE OF WALL.
b) STRAIGHT BARS: 6-10M15.0 MEANS: 6-10M BARS 15'-0" LONG
BENT BARS: 13-15M06.3 MEANS: 13-15M BARS 6'-3" LONG
HOOKED ONE END 180° 3-15M13.4 MEANS: 3-15M BARS 13'-4" LONG
HOOKED ONE END 90° 2-15M13.4 MEANS: 2-15M BARS 13'-4" LONG

EXTERNAL CLADDING:

1) DESIGN EXTERNAL CLADDING/ WALLS TO CARRY THE FOLLOWING UNFACTORED WIND PRESSURES AND SUCTIONS:

HEIGHT (FT):	PRESSURE (psf)
0 TO 20	23
20 TO 39	25
39 TO 66	28
66 TO 98	30
98 TO 144	33
144 TO 210	35
210 TO 279	38

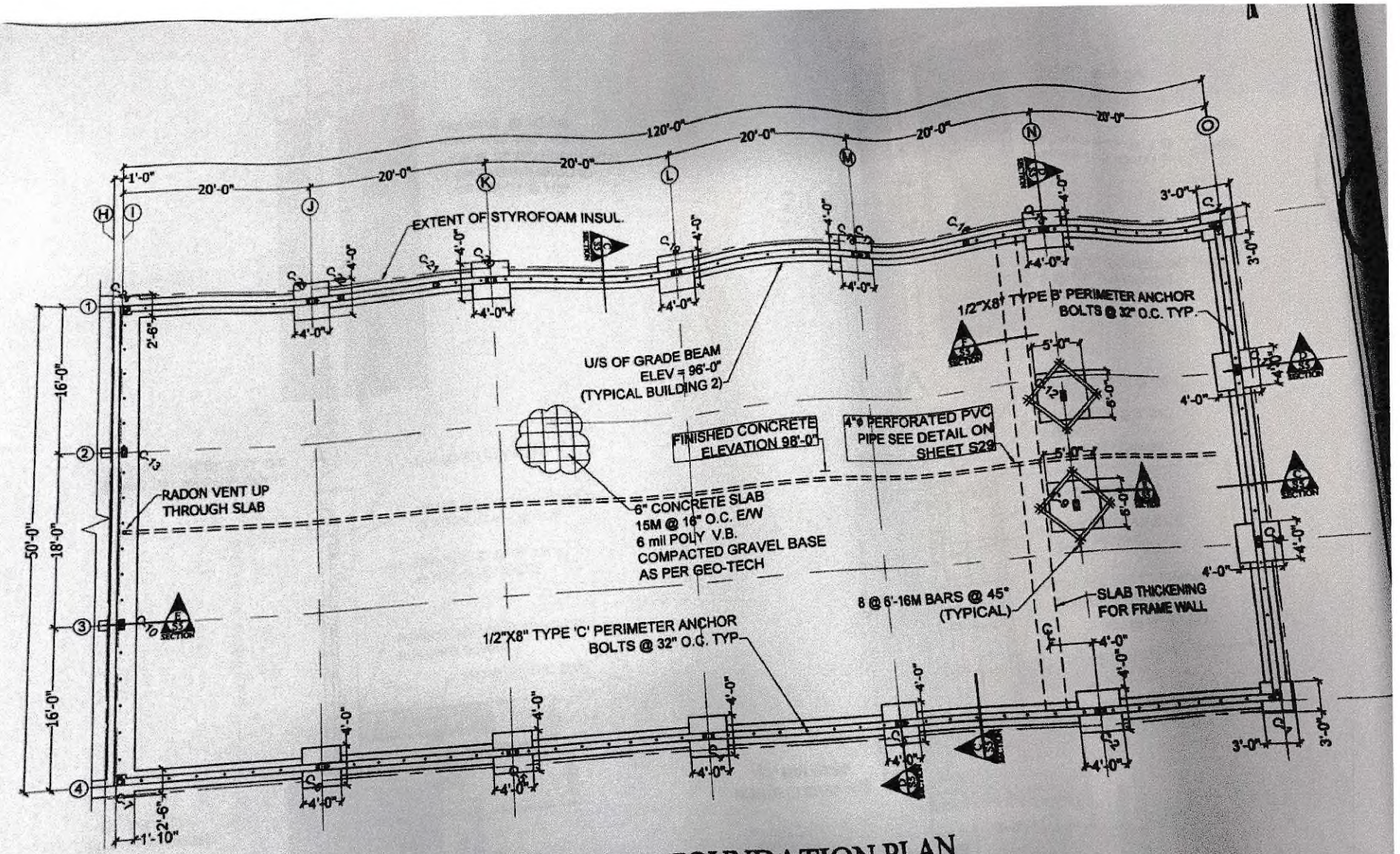
2) MAX DEFLECTION FOR THE ABOVE WIND LOADS NOT TO EXCEED L/360 (L/720 WHEN USED AS BACK UP FOR BRICK VENEER OR EIFS) MINIMUM 18 GAUGE FOR ALL STUDS IN BRICK VENEER BACK UP WALLS.
3) DESIGN EXTERIOR LIGHT GAUGE STEEL WALLS WITH "UNSHEATHED" PROPERTIES PROVIDE BRIDGING TO RESIST LATERAL AND TORSION, BUCKLING OF THE STUDS.



BUILDING 1 FOUNDATION PLAN

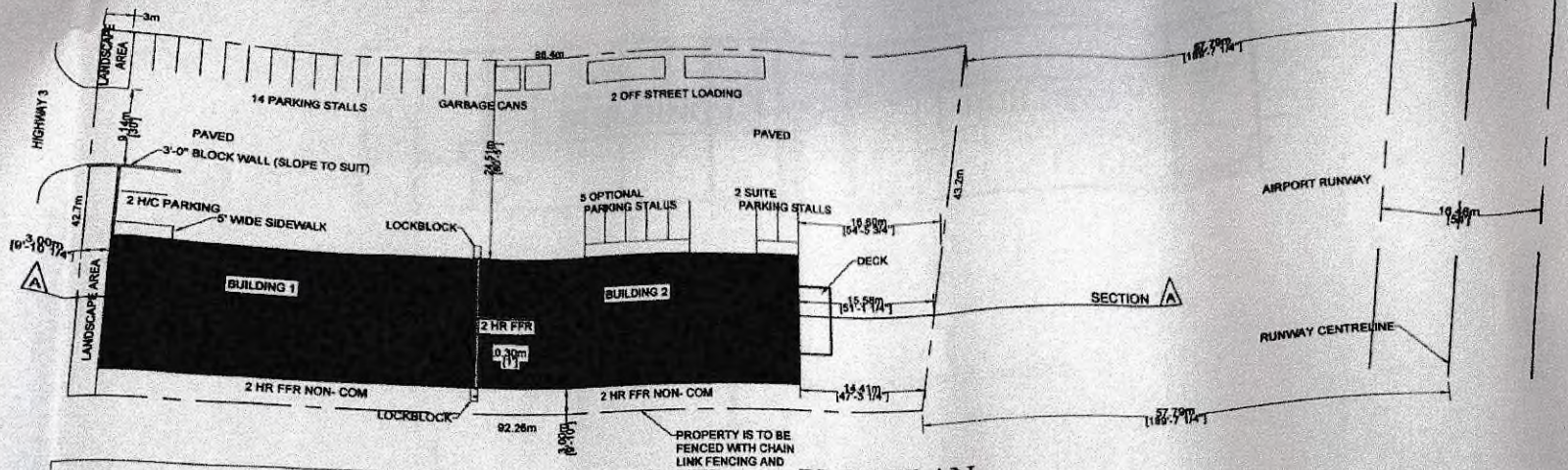
Scale: 3/32" = 1'-0"

54 AM, Marland Fisher, ASCT.



BUILDING 2 FOUNDATION PLAN

Scale: 1/32 = 1'-0"

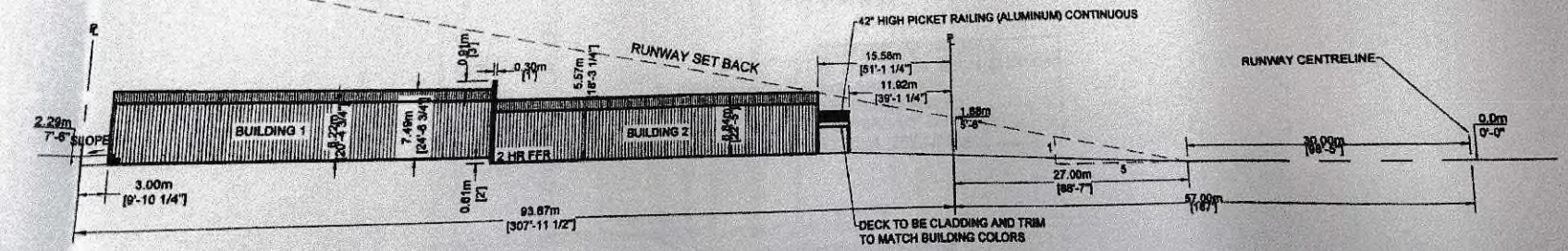


PLOT PLAN

Scale: 1:500

LANDSCAPE NOTES:
- GROUND COVER: NATURAL DECORATIVE GRAVEL (SANDY COLORED) ON GROUND CLOTH
- 6 ROCK HIGH LIGHT AREAS
- 10 SAGEBRUSHES SPACED EQUALLY AND RANDOMLY
- 5 GEASE BRUSHES SPACED EQUALLY AND RANDOMLY
- HIGHLIGHT HERITAGE ITEMS FOR DECORATION

BOTH BUILDINGS
3.2.2.78 GROUP F2, DIV 2 UP TO 2 STOREYS
3 STREETS, 900M3 ALLOWED 585 AND 557.4 SQ. M PROVIDED



SECTION A-A

Scale: 1:500

GENERAL NOTES

ECONOSPEC STRUCTURES

SHUSWAP DESIGN

K D KETCHUM & ASSOCIATES

JF KUSTOMS
NEW BUILDINGS

PLOT PLAN

29-17-872

MARLAND

D. NELSON

April 10, 2017