



NOTE: THIS GUIDE IS PREPARED TO ASSIST THOSE WITH LEGITIMATE CONSTRUCTION EXPERIENCE. IT IS NOT A TOTALLY COMPREHENSIVE INSTRUCTION MANUAL FOR THOSE UNFAMILIAR WITH STANDARD CONSTRUCTION INDUSTRY PRACTICES.

PART 1. SOIL FORMED:

THE SIMPLEST INSTALLATION UTILIZES THE SOIL AS A FORM FOR THE CONCRETE.

AN EXCAVATOR USING A BUCKET 2" (50mm) NARROWER THAN THE GRADE BEAM DIMENSION CAN EXCAVATE THE SPECIFIED WIDTH AND DEPTH. THIS WILL REQUIRE A FAIRLY STIFF SOIL THAT WILL RETAIN ITS SHAPE WHEN THE TRÉNCH IS CUT.

ALTERNATIVELY, IN LOOSE OR UNSTABLE SOILS THE TRENCH WILL HAVE TO BE EXCAVATED WITH 45° SIDE SLOPES. THE BEAM CAN THEN BE FORMED AND POURED. AFTER A MINIMUM OF 24 HOURS THE FORMWORK CAN BE REMOVED AND BACKFILL INSTALLED. NOTE THAT WHEN BACKFILLING, PLACE EXCAVATED MATERIAL EQUALLY ON BOTH SIDES OF THE BEAM. BACKFILL IN 8" (200mm) LIFTS (LAYERS) AND COMPACT THOROUGHLY BEFORE INSTALLING SECOND LIFT.

NOTE: ANY GRADE BEAM INSTALLATION SHOULD BE UNDERTAKEN ONLY BY EXPERIENCED CONTRACTORS. THE FARLEY GROUP WILL NOT BE HELD RESPONSIBLE FOR ERRORS MADE BY INDIVIDUALS, OR GROUPS UNFAMILIAR WITH STANDARD CONSTRUCTION MATERIALS OR METHODS.

PART 2. REINFORCING STEEL:

THE GRADE BEAM IS USED AS BALLAST TO PREVENT UPLIFT OF YOUR AIR STRUCTURE. THE REINFORCING STEEL REQUIREMENTS ARE MINIMUM BUT REQUIRE ACCURATE INSTALLATION NONE

THE USUAL SIZE OF HORIZONTAL REBAR IS #5 (15M). VERTICAL REBAR IS TYPICALLY #4 (10M). PLACING TYPICALLY WILL BE AS SHOWN ON DRAWINGS. STIRRUPS SHOULD BE BENT AS SHOWN WITH THE INSIDE HOOK (I.E. INTERIOR OF STRUCTURE) BEING WITHIN 1" (25mm) OF THE RETENTION PROFILE AND 2" (50mm) FROM TOP OF CONCRETE. WITH ONE HORIZONTAL BAR RUNNING THROUGH THIS HOOK, THE RETENTION CAPACITY OF THE PROFILE IS IMPROVED.

NOTE: KEEP REINFORCING STEEL 2" (50mm) AWAY FROM OUTSIDE OF CONCRETE.

BOTH INSTALLATION METHOD PROCEDURES ARE BASICALLY THE SAME.

PART 3. RETENTION PROFILE:

THERE ARE TWO METHODS FOR INSTALLING THE RETENTION PROFILE. METHOD 'B' WILL BE USED FOR THIS PROJECT.

METHOD 'A' IS A FLUSH PROFILE (NOT SHOWN) GIVING ONLY 2" (50mm) OF TOP EXPOSED WHEN THE STRUCTURE IS DOWN. THIS METHOD IS SUITABLE FOR SMALLER STRUCTURES UP TO 118' (36m) WIDE AND HARD SURFACE COURTS.

METHOD 'B' IS A RECESSED PROFILE (DETAIL 1/AS3). ADVANTAGES OF THE RECESSED PROFILE INCLUDE INCREASED RETENTION FOR LARGER STRUCTURES AND CONDENSATION DRAINAGE CHANNEL ESPECIALLY GOOD IN CLAY COURT TENNIS STRUCTURES.

NOTE: MAKE SURE THE ROPE EDGE POCKET ON THE SIDE OF THE PROFILE FACES INTO THE STRUCTURE (DETAIL 1/AS3).

AS THE PROFILE IS MANUFACTURED IN 10' (3m) LENGTHS, 10' (3m) PIECES OF PRESSURE TREATED 2 X 4 STAGGERED ON PROFILE SECTIONS WORKS WELL FOR INSTALLATION.

SECTIONS OF PROFILE PACKED WITH PRESSURE TREATED 2 X 4 AND 1/8" (3mm) MASONITE PACKING ARE WIRED UP TO SPREADERS AT 4' (1220mm) o/c. THE SPREADERS SPAN THE GAP AND HOLD THE TOP EDGE FORMS THE CORRECT DISTANCE APART (DETAIL 2/AS3).

ON METHOD 'A' PROFILE INSTALLATIONS, A STRIP OF DUCT TAPE ALONG THE TOP WILL KEEP CONCRETE OUT AND EASE REMOVAL OF 2 X 4 LATER (NOT SHOWN).

USING FLEXIBLE TIE-WIRE, CLOSE THE PROFILE TIGHTLY AGAINST THE PACKING AND HANG FROM THE SPREADERS. 1½" (40mm) PACKING BETWEEN SPREADERS AND SIDE FORMS WILL EASE FINISHING OR, ALTERNATIVELY, SPREADERS CAN BE REMOVED WHEN CONCRETE HAS REACHED INITIAL SET TO SPEED FINISHING.

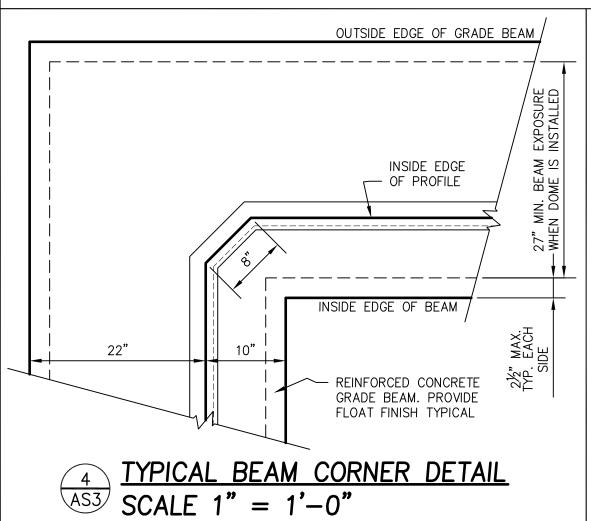
N.B.: REMOVE PACKING THE DAY AFTER POUR AS MOISTURE WILL SWELL LUMBER, MAKING REMOVAL DIFFICULT.

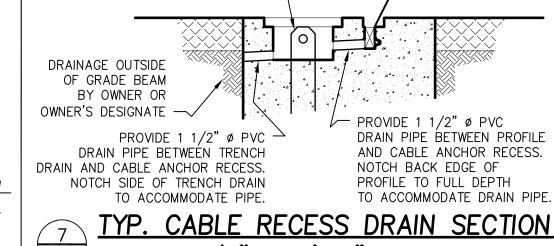
WITH THE 'B' METHOD, TWO PRESSURE TREATED 2 X 4'S WILL BE REQUIRED IN ADDITION TO THE 1/8" X 31/2" (3mm X 89mm) FIBREBOARD (MASONITE) PACKING. ALL OTHER INSTRUCTIONS ARE SIMILAR.

GENERAL DETAIL -- ON EACH CORNER OF THE STRUCTURE WILL BE A 45° ANGLE WHICH EASES INSTALLATION AND RELIEVES FABRIC STRESS (DETAIL 4/AS3). LAY A SHORT PIECE OF PROFILE ACROSS THE CORNER AS SHOWN AND CUT THROUGH INTERSECTIONS WITH A HAND SAW TO HAVE PERFECTLY MATCHING JOINTS.

PART 4. AIR STRUCTURE DRAINAGE:

DRAINAGE (WHERE APPLICABLE) -- TO FACILITATE DRAINAGE FROM YOUR PROFILE, ESPECIALLY IN SITUATIONS WHERE TOP OF BEAM IS ABOVE EXTERIOR GRADE, WE RECOMMEND INSTALLING MIN. 1 1/2" WIDE DRAIN CHANNELS AT EVERY CORNER AND SIMILAR DRAIN CHANNELS SHOULD BE INSTALLED AROUND THE ENTIRE PERIMETER OF THE BEAM AT A SPACING OF 50'-0" MAXIMUM AND EACH SIDE OF DOOR AND MECHANICAL CONCRETE PADS. ENSURE THAT THE PLACEMENT OF PERIMETER DRAINS DOES NOT INTERFERE WITH PADS OR OTHER ELEMENTS SUCH AS CAST-IN CABLE ANCHORS. PROVIDE A MINIMUM DISTANCE OF 3'-0" FROM ANY INTERFERING ELEMENTS



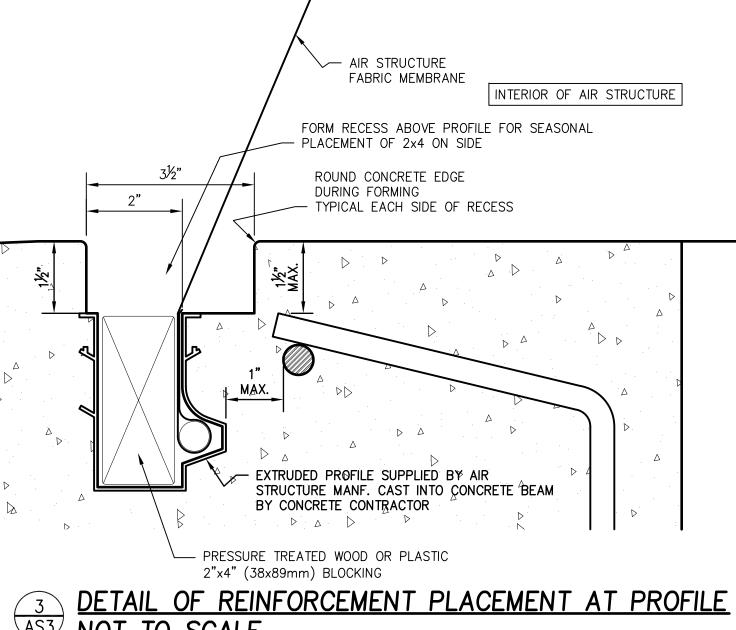


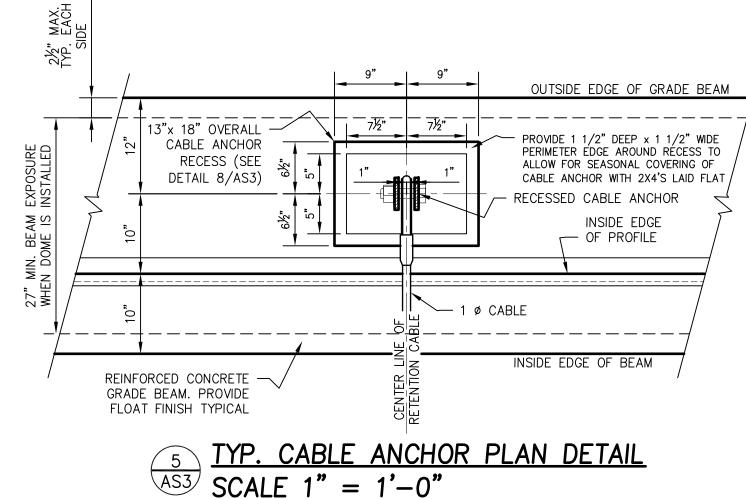
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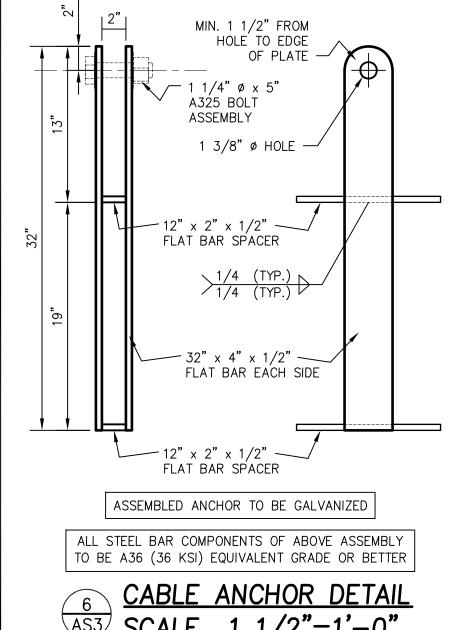
INSIDE

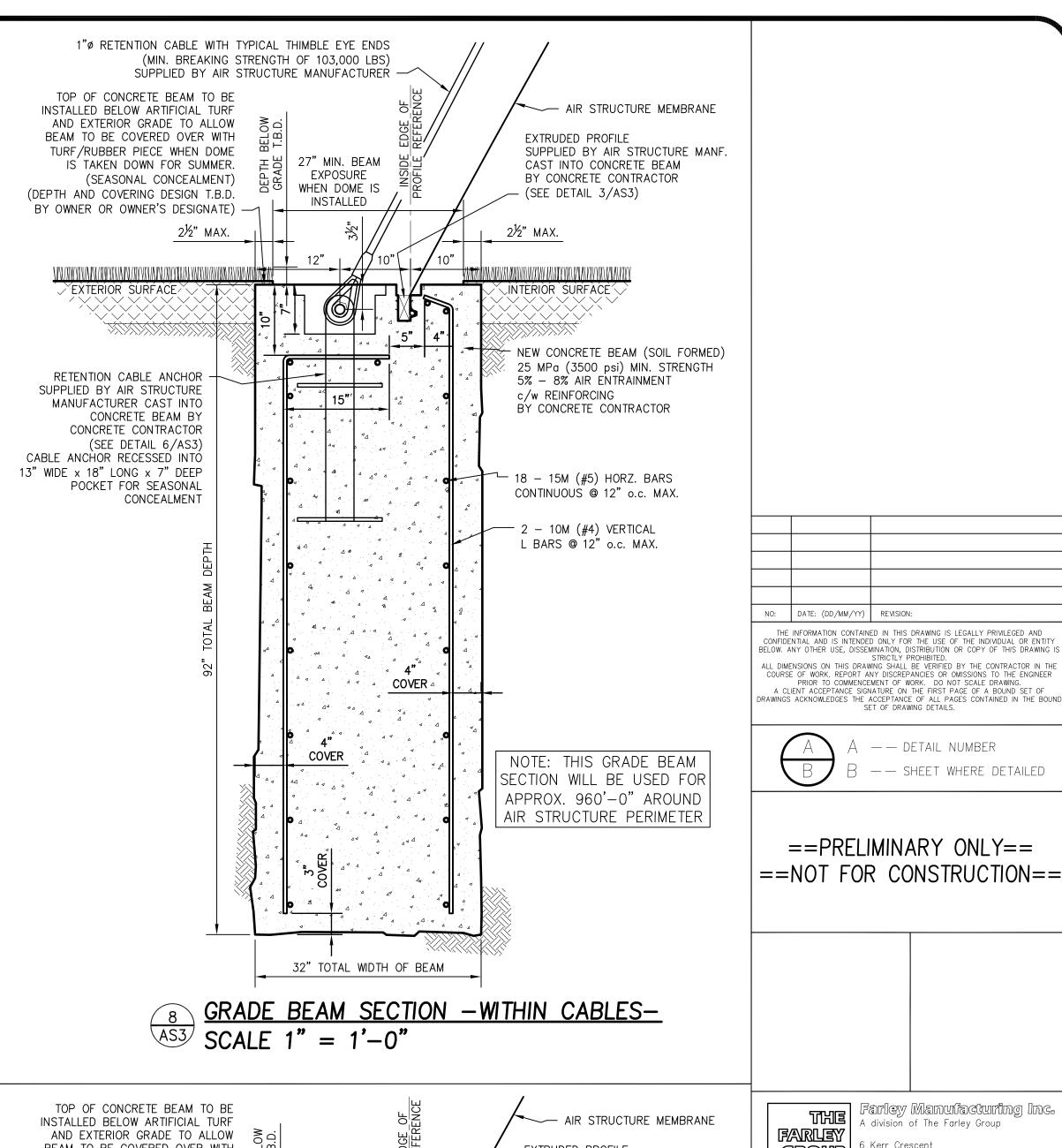
RECESSED CABLE ANCHOR —

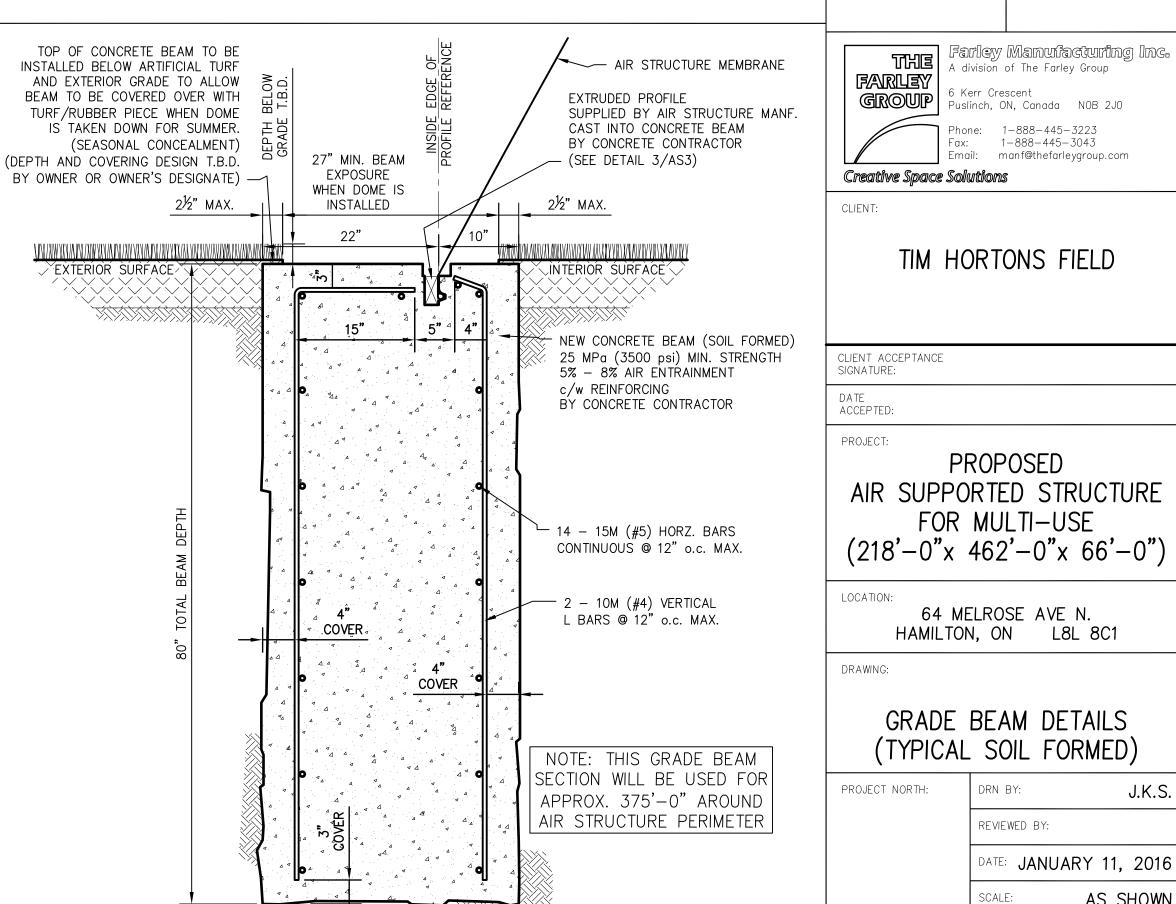
 $\frac{1}{4}$ SCALE 3/4" = 1'-0"

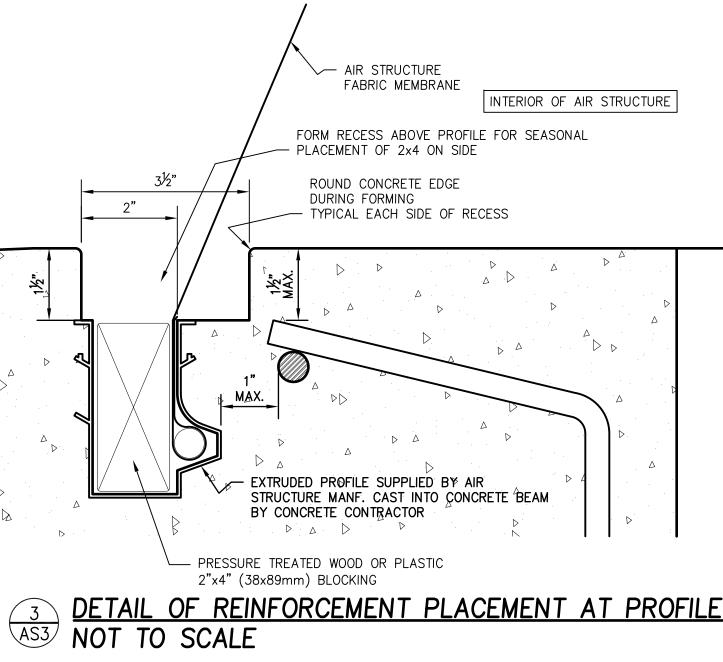


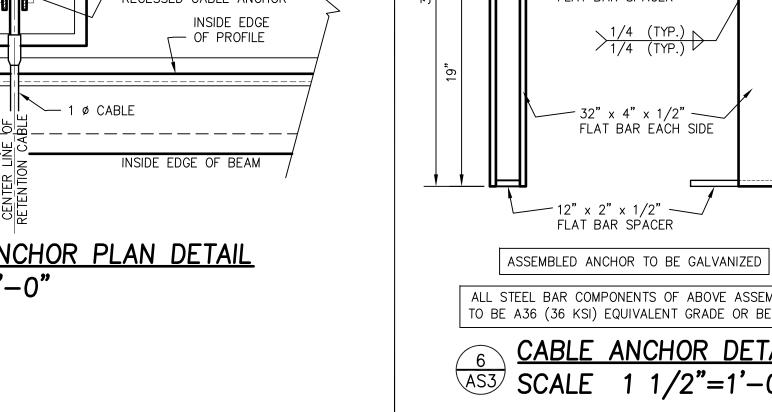












AS SHOWN 32" TOTAL WIDTH OF BEAM PLAN NORTH: PROJ. #: 9 GRADE BEAM SECTION -CORNERS-SCALE 1" = 1'-0"

NO: DATE: (DD/MM/YY) REVISION:

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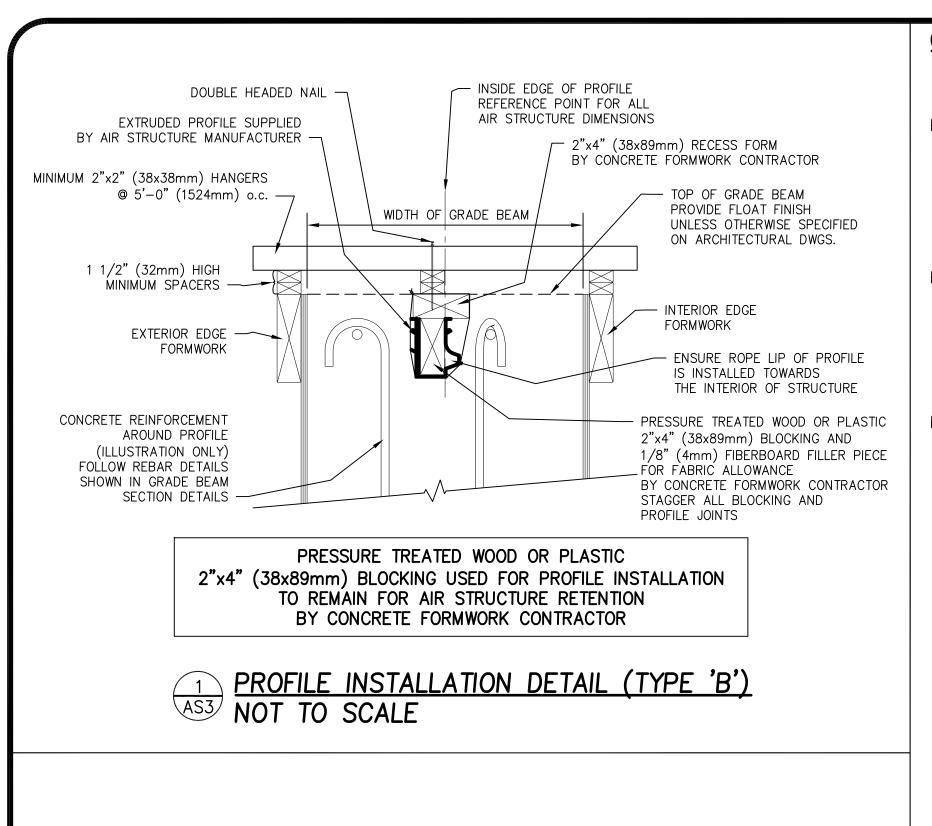
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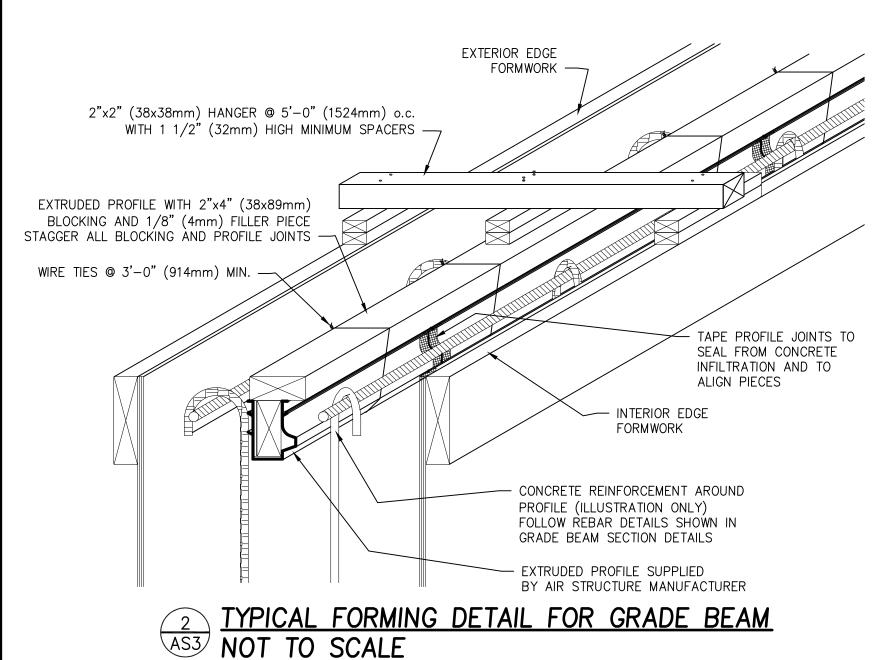
A CLIENT ACCEPTANCE SIGNATURE ON THE FIRST PAGE OF A BOUND SET OF RAWINGS ACKNOWLEDGES THE ACCEPTANCE OF ALL PAGES CONTAINED IN THE BOUND SET OF DRAWING DETAILS.

==PRELIMINARY ONLY==

— — DETAIL NUMBER

-- SHEET WHERE DETAILED







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WHERE POSSIBLE, FORMWORK SHOULD BE INSTALLED IN SUCH A MANNER TO ALLOW SOME CONCRETE TO FLOW UNDERNEATH FORM BOARDS DURING THE POURING PROCESS TO INCREASE SOIL RESISTANCE.

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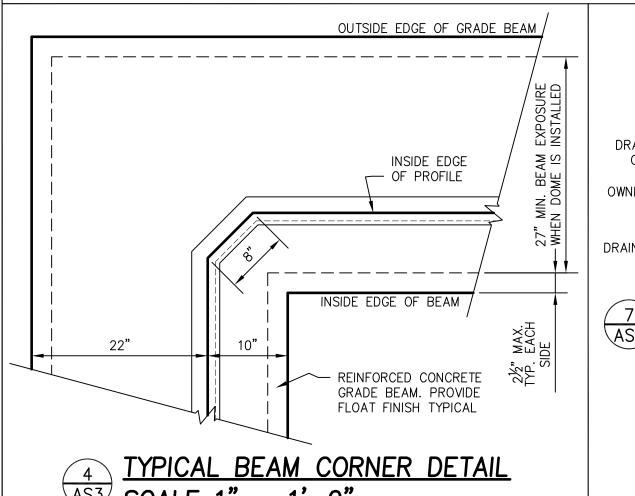
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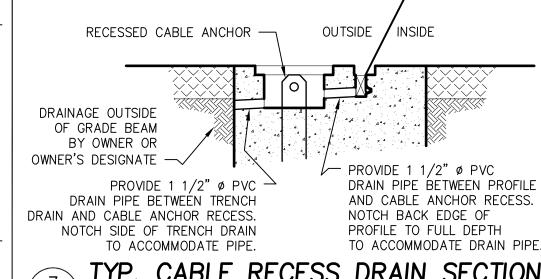
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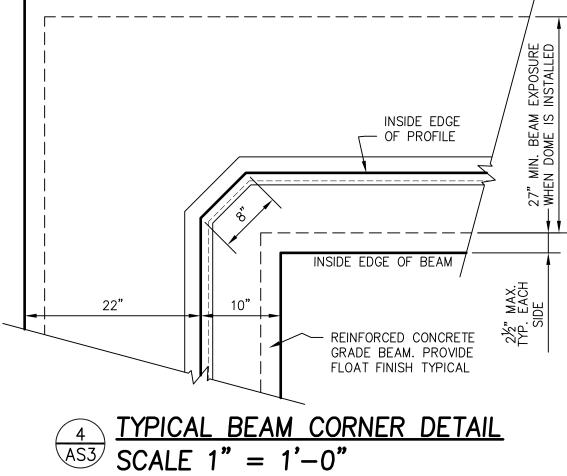
INSTALLATION.

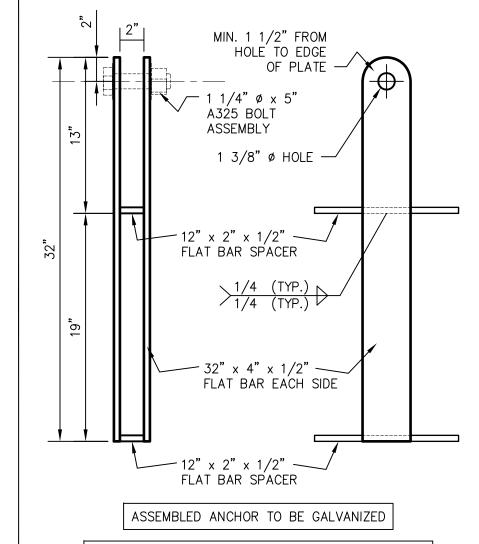
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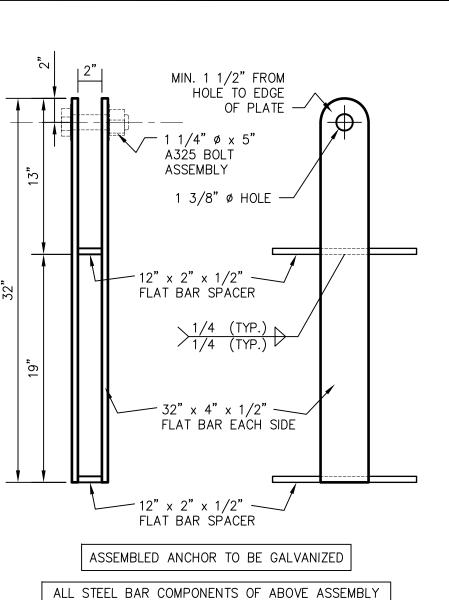




TYP. CABLE RECESS DRAIN SECTION $\frac{1}{4}$ SCALE 3/4" = 1'-0"







TO BE A36 (36 KSI) EQUIVALENT GRADE OR BETTER

CABLE ANCHOR DETAIL

SCALE 1" = 1'-0" TOP OF CONCRETE BEAM TO BE NSTALLED BELOW ARTIFICIAL TURF → AIR STRUCTURE MEMBRANE AND EXTERIOR GRADE TO ALLOW BEAM TO BE COVERED OVER WITH EXTRUDED PROFILE TURF/RUBBER PIECE WHEN DOME SUPPLIED BY AIR STRUCTURE MANF. IS TAKEN DOWN FOR SUMMER. CAST INTO CONCRETE BEAM (SEASONAL CONCEALMENT) BY CONCRETE CONTRACTOR (DEPTH AND COVERING DESIGN T.B.D. 27" MIN. BEAM (SEE DETAIL 3/AS3) **EXPOSURE** BY OWNER OR OWNER'S DESIGNATE) — WHEN DOME IS 2½" MAX. 2½" MAX. INSTALLED JINTÉRIOR SURFACES ~EXTERIOR SURFACE> NEW CONCRETE BEAM (CAST USING FORMWORK) 25 MPa (3500 psi) MIN. STRENGTH 5% - 8% AIR ENTRAINMENT c/w REINFORCING BY CONCRETE CONTRACTOR · 10M (#4) VERTICAL L BARS @ 12" o.c. MAX. - 14 - 15M (#5) HORZ. BARS CONTINUOUS @ 12" o.c. MAX. COVER[™] ∠COVER 1 NOTE: THIS GRADE BEAM SECTION WILL BE USED FOR APPROX. 375'-0" AROUND AIR STRUCTURE PERIMETER 2x4 SHEAR KEY 4 - 15M (#5) HORZ. BÄRŚ — 10M (#4) DOWELS CONTINUOUS @ 12" o.c. @ 16" o.c. MAX. -32" TOTAL WIDTH OF BEAM 10M (#4) DOWELS WALL ABOVE FOOTING 12" @ 12" o.c. 56" OVERALL WIDTH OF BEAM FOOTING GRADE BEAM SECTION - CORNERS-

1"Ø RETENTION CABLE WITH TYPICAL THIMBLE EYE ENDS

TOP OF CONCRETE BEAM TO BE

AND EXTERIOR GRADE TO ALLOW

BEAM TO BE COVERED OVER WITH

TURF/RUBBER PIECE WHEN DOME

(DEPTH AND COVERING DESIGN T.B.D.

YEXTERIOR SURFACE

RETENTION CABLE ANCHOR

MANUFACTURER CAST INTO

CONCRETE BEAM BY

(SEE DETAIL 6/AS3)

CONCRETE CONTRACTOR

CABLE ANCHOR RECESSED

x 7" DEEP POCKET FOR

SEASONAL CONCEALMENT

4 - 15M (#5)

HORZ. BÄRŚ

CONTINUOUS

@ 16" o.c. MAX. —

√

10M (#4) DOWELS

36**"**

@ 12" o.c.

INTO 13" WIDE x 18" LONG

SUPPLIED BY AIR STRUCTURE

BY OWNER OR OWNER'S DESIGNATE)

IS TAKEN DOWN FOR SUMMER.

(SEASONAL CONCEALMENT)

2½" MAX.

INSTALLED BELOW ARTIFICIAL TURF

(MIN. BREAKING STRENGTH OF 103.000 LBS)

27" MIN. BEAM

EXPOSURE

WHEN DOME I

INSTALLED

4 1 4

COVER

32" TOTAL WIDTH OF BEAM

WALL ABOVE FOOTING

56" OVERALL WIDTH OF BEAM FOOTING

GRADE BEAM SECTION - WITHIN CABLES-

COVER

SUPPLIED BY AIR STRUCTURE MANUFACTURER

ALTERNATE GRADE BEAM DESIGN DETAILS SHOWN ON THIS SHEET CAN BE USED AS A DIRECT SUPPLIED BY AIR STRUCTURE MANF. SUBSTITUTION FOR STANDARD SOIL FORMED BEAM DETAILS IN THEIR ENTIRETY OR AS A COMBINATION OF THE TWO DESIGNS (PART STANDARD AND PART ALTERNATE AROUND PERIMETER) TO SUIT SITE CONDITIONS.

→ AIR STRUCTURE MEMBRANE

EXTRUDED PROFILE

(SEE DETAIL 3/AS3)

2½" MAX.

´√INTERIOR SURFACE´

NEW CONCRETE BEAM

c/w REINFORCING

(CAST USING FORMWORK)

5% - 8% AIR ENTRAINMENT

BY CONCRETE CONTRACTOR

– 16 – 15M (#5) HORZ. BARS

⁻ 2 - 10M (#4) VERTICAL

L BARS @ 12" o.c. MAX.

NOTE: THIS GRADE BEAM SECTION WILL BE USED FOR

APPROX. 960'-0" AROUND

AIR STRUCTURE PERIMETER

10M (#4) DOWELS

@ 12" o.c.

- 2x4 SHEAR KEY

CONTINUOUS @ 12" o.c. MAX.

25 MPa (3500 psi) MIN. STRENGTH

CAST INTO CONCRETE BEAM

BY CONCRETE CONTRACTOR

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Farley Manufacturing Inc. A division of The Farley Group FARLEY GROUP Puslinch, ON, Canada NOB 2J0 Phone: 1-888-445-3223 1-888-445-3043 Email: manf@thefarleygroup.com Creative Space Solutions

TIM HORTONS FIELD

DATE ACCEPTED: PROJECT: PROPOSED AIR SUPPORTED STRUCTURE FOR MULTI-USE

CLIENT ACCEPTANCE

SIGNATURE:

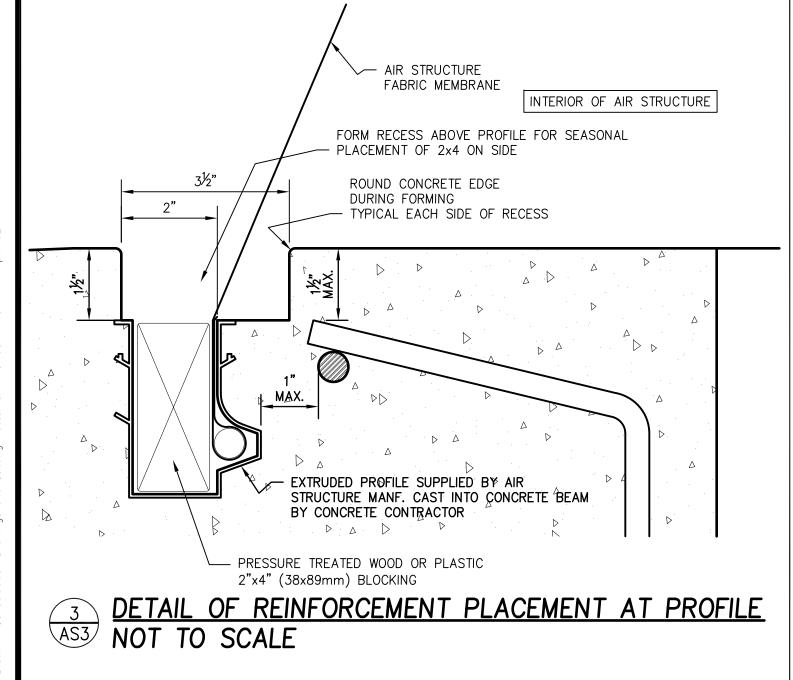
64 MELROSE AVE N.

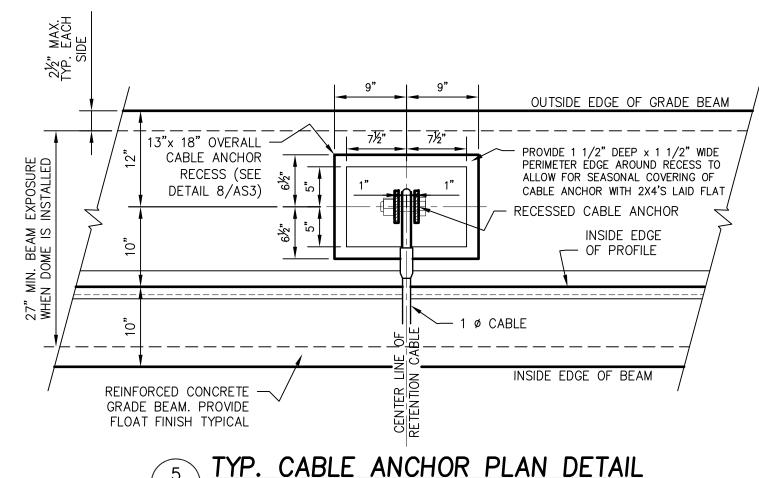
(218'-0"x 462'-0"x 66'-0")

HAMILTON, ON L8L 8C1

GRADE BEAM DETAILS -ALTERNATE DESIGN-(CAST USING FORMWORK)

PROJECT NORTH: ORN BY: J.K.S. REVIEWED BY: DATE: JANUARY 11, 2016 SCALE: AS SHOWN PLAN NORTH: PROJ. #:





 $\frac{5}{AS3}$ TYP. CABLE ANCHOR PLAN DETAIL SCALE 1" = 1'-0"