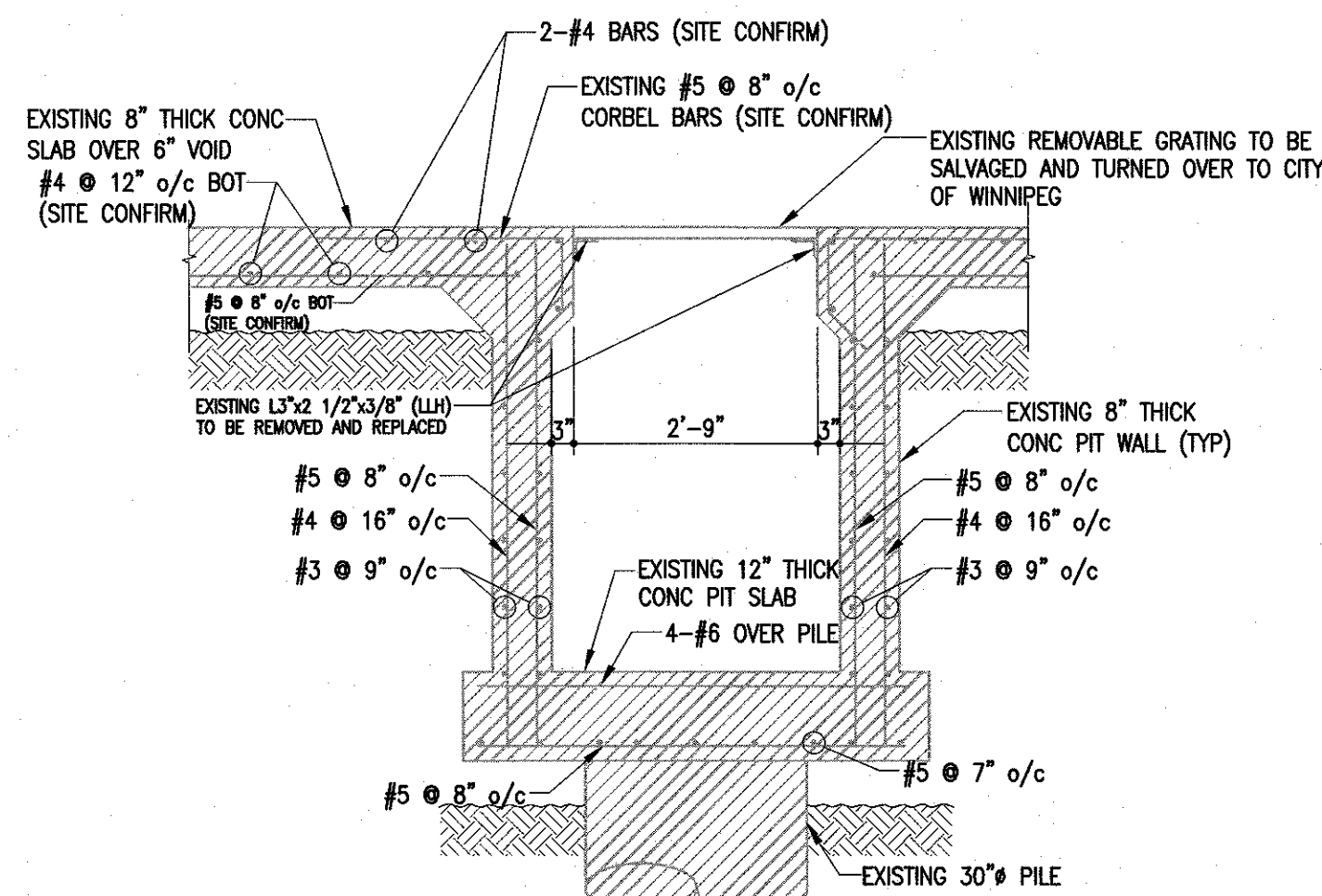
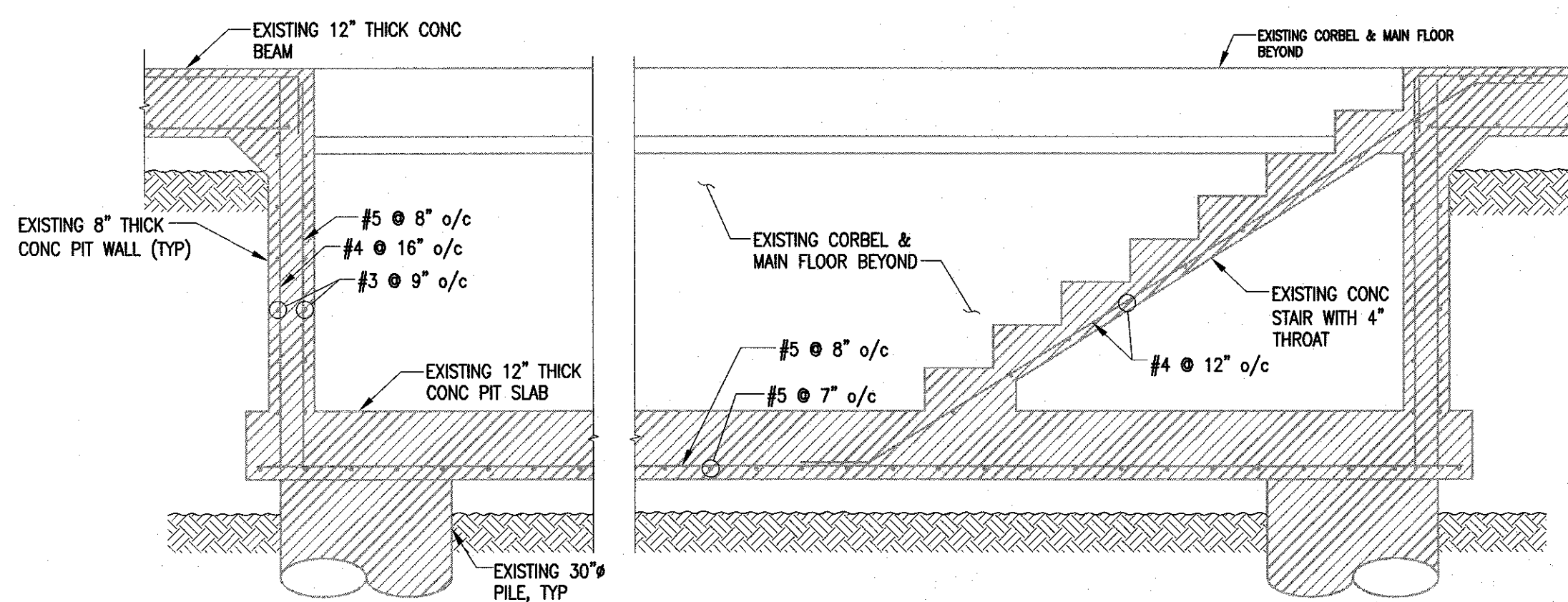


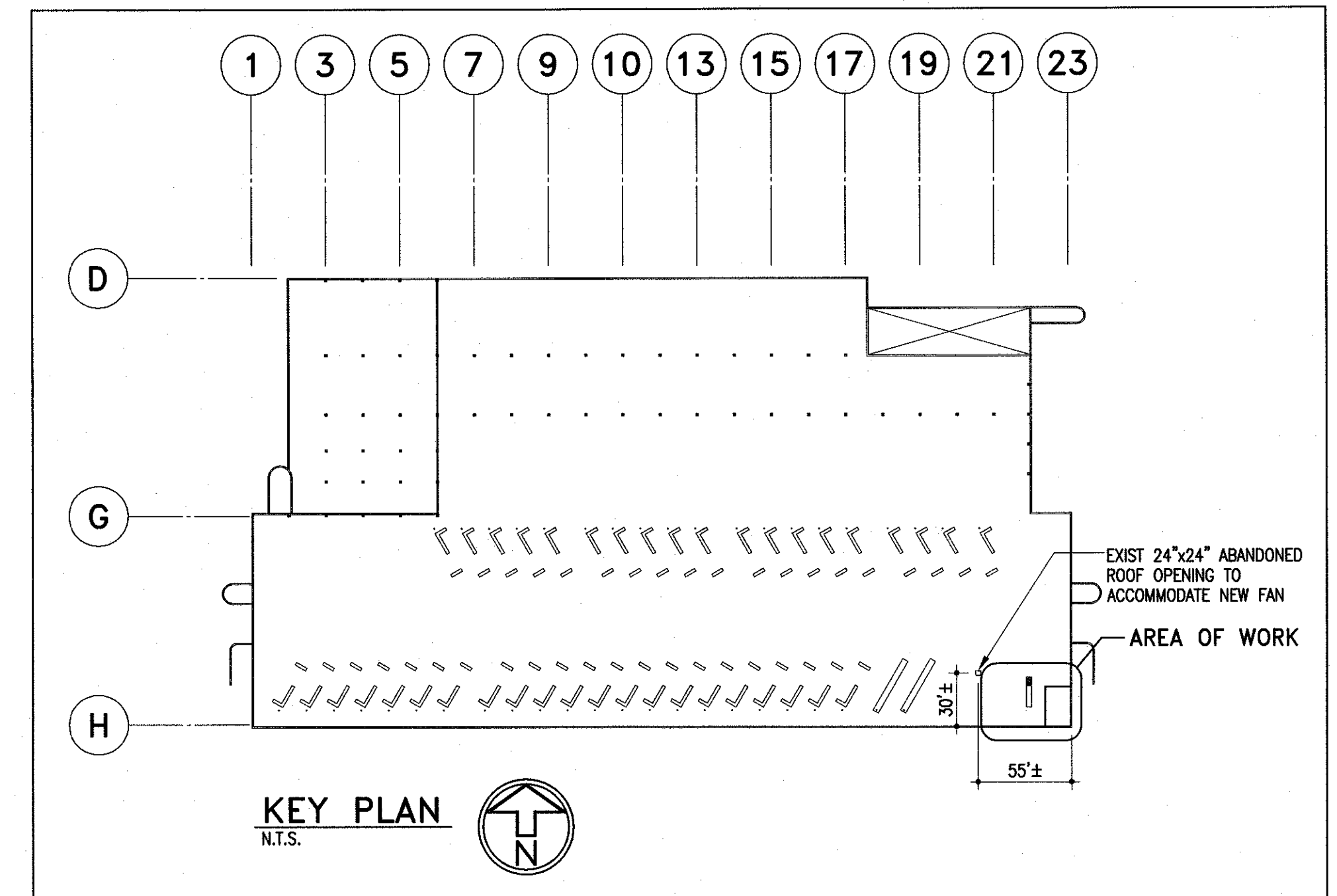
PARTIAL FLOOR FRAMING PLAN
SCALE: 1/4" = 1'-0"



1 EXISTING SECTION
S-1 1/2" = 1'-0"



2 EXISTING SECTION
S-1 1/2" = 1'-0"



GENERAL NOTES

- DO NOT SCALE DRAWINGS.
- ALL DIMENSIONS ARE TO BE VERIFIED WITH EXISTING SITE CONDITIONS PRIOR TO CONSTRUCTION.
- THESE STRUCTURAL DRAWINGS SHOW THE COMPLETED STRUCTURE AND DO NOT INDICATE ALL COMPONENTS NECESSARY FOR SAFETY DURING CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SAFETY ON AND AROUND THE JOBSITE DURING CONSTRUCTION.

CAST-IN-PLACE CONCRETE

I CONCRETE

- ALL CONCRETE IS TO BE MANUFACTURED AND INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF CAN/CSA-A23.1-09 "CONCRETE MATERIALS AND METHODS OF CONCRETE CONSTRUCTION" AND CAN/CSA-A23.2-09 "METHOD OF TEST FOR CONCRETE".
- PROVIDE CERTIFICATION THAT MIX PROPORTIONS SELECTED WILL PRODUCE CONCRETE OF QUALITY, YIELD AND STRENGTH AS SPECIFIED IN CONCRETE MIXES, AND WILL COMPLY WITH CAN/CSA-A23.1. CERTIFICATION LETTER TO BE SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF MANITOBA.
- PROVIDE CERTIFICATION THAT PLANT, EQUIPMENT, AND MATERIALS TO BE USED IN CONCRETE COMPLY WITH REQUIREMENTS OF CAN/CSA-A23.1. CERTIFICATION LETTER TO BE SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF MANITOBA.
- CONCRETE PROPERTIES SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE ON THE DRAWINGS.

25 MPa MIN. AT 28 DAYS
CLASS OF EXPOSURE: N
ENTRAINED AIR/CATEGORY: N/A
AGGREGATE MAX. 20 mm
CURING TYPE: TYPE 2 - ADDITIONAL

UNLESS INDICATED OTHERWISE THE CONTRACTOR SHALL SPECIFY CONCRETE SLUMP APPROPRIATE WITH PLACEMENT METHODS AND SITE CONDITIONS. THE CONTRACTOR SPECIFIED SLUMP MUST BE SHOWN ON THE CERTIFICATION LETTER AND CONCRETE DELIVERY TICKET.

II REINFORCING STEEL

- ALL REINFORCING STEEL TO BE CAN/CSA-G30.18M GRADE 400R DEFORMED BARS EXCEPT 10M TIES AND BEAM STIRRUPS WHICH SHALL BE GRADE 400M STEEL. ALL REINFORCING IS TO BE DETAILED IN ACCORDANCE WITH THE LATEST EDITION OF THE REINFORCING STEEL INSTITUTE OF CANADA - MANUAL OF STANDARD PRACTICE, EXCEPT OTHERWISE NOTED.
- WELDED STEEL WIRE MESH SHALL BE TO ASTM A185-02, 400 MPa YIELD, FLAT SHEETS ONLY.
- REINFORCING STEEL COVER IS TO CONFORM TO CAN/CSA A23.3-04 "DESIGN OF CONCRETE STRUCTURES FOR BUILDINGS" AND AS FOLLOWS:

INTERIOR WALLS:
EXPOSURE CLASS: N 3/4 IN. EACH FACE

INTERIOR STRUCTURAL SLABS:
EXPOSURE CLASS: N 3/4 IN. TOP 3/4 IN. BOTTOM

- IN WALLS AND GRADE BEAMS, BEND ALL TOP AND INTERMEDIATE HORIZONTAL STEEL 600 mm 2'-0" AROUND CORNERS, OR USE EXTRA L BARS 1200 mm 4'-0" LONG. ALL OPENINGS IN WALLS TO HAVE 2-15M EACH SIDE AND 2-25M OVER, EXCEPT AS NOTED.
- ALL REINFORCING TO BE HELD IN PLACE, AND TIED BY THE USE OF PROPER ACCESSORIES, SUCH AS HI-CHAIRS, SPACERS, ETC. TO BE SUPPLIED BY THE REINFORCING STEEL FABRICATOR. HI-CHAIRS TO HAVE 4 LEGS AND TO BE STAPLED OR NAILED TO THE FORMWORK.
- FOR ALL STRUCTURAL SLABS A MINIMUM OF 50% OF THE BOTTOM STEEL SHALL BE CONTINUED A MINIMUM DISTANCE OF 150 mm 6 IN. INTO ALL SUPPORTING WALLS AND BEAMS. IF KEYS ARE USED AT JOINTS BETWEEN SLABS AND WALLS OR BEAMS, BOTTOM DOWELS EQUAL TO BOTTOM REINFORCEMENT OR 10M AT 300 mm 12 IN. O/C SHALL BE PROVIDED WHICHEVER IS GREATER.

III FORMWORK

- SHEARMAT OR APPROVED CARDBOARD VOIDFORM WITH A MIN. DEPTH OF 6 IN. SHALL BE USED AS THE BOTTOM FORM FOR STRUCTURAL SLABS AT GRADE, GRADE BEAMS, AND WALLS IN CONTACT WITH SOIL. SELECT AND INSTALL IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- ACCESSORIES SUCH AS HI-CHAIRS, SPACERS, ETC. SHALL BE SUPPORTED BY PADS OF PLYWOOD OR TEMPERED HARDBOARD TO PREVENT PUNCTURING THE VOIDFORM.
- PLACE 10 MIL POLYETHYLENE UNDER ALL SLABS ON FILL AND OVER TOP OF VOIDFORM.

CONCRETE REPAIRS

I GENERAL

- THE CONTRACTOR WILL BE REQUIRED TO FURNISH ALL MATERIALS, LABOUR, ACCESS, AND EQUIPMENT REQUIRED TO THE COMPLETE CONCRETE REPAIRS IN ACCORDANCE WITH DRAWINGS AND SPECIFICATIONS.
- THE LOCATION, NUMBER AND EXTENT OF REPAIRS SHOWN ON DRAWINGS ARE FOR REFERENCE ONLY. CONCRETE REPAIRS WILL BE DETERMINED BY SOUNDING SURVEY COMPLETED BY THE CONTRACT ADMINISTRATOR IN THE PRESENCE OF AND WITH THE ASSISTANCE OF THE CONTRACTOR. THE EXTENT OF THE REPAIR WILL BE MARKED ON THE SURFACE OF THE MEMBER AND THE LOCATION AND EXTENT RECORDED.
- UNLESS OTHERWISE NOTED ON DRAWINGS REPAIR AREAS TO MATCH EXISTING PROFILES AND DIMENSION.
- CONCRETE TO BE MIXED, DELIVERED AND PLACED IN ACCORDANCE WITH CSA-A23.1.

II CONCRETE DELAMINATION REMOVAL

- THE PERIMETER OF THE AREAS MARKED AS DELAMINATED ARE TO BE SAWCUT TO A DEPTH OF 1/2". IF REINFORCING STEEL IS ENCOUNTERED, THE SAW DEPTH MUST BE IMMEDIATELY REDUCED AS REQUIRED. CHECK DEPTH OF THE CUT REGULARLY.
- THE ENTIRE AREA WITHIN THE SAWCUT MUST HAVE A MINIMUM OF 2 1/4" OF CONCRETE REMOVED FROM THE TOP SURFACE USING A MAXIMUM 15 LB. ELECTRIC CHIPPING HAMMER.
- WHERE THE BOND BETWEEN EXISTING CONCRETE AND REINFORCING STEEL OR MESH HAS BEEN DESTROYED (EITHER BY THE CONCRETE'S DETERIORATION OR CORROSION OF THE REINFORCING STEEL) OR IF THE CHIPPING OPERATION HAS CAUSED THE PERIPHERY OF A BAR TO BE EXPOSED FOR A DISTANCE OF 6" OR MORE, THE CONCRETE ADJACENT TO THE BAR SHALL BE REMOVED BY HANDCHIPPING OR WITH THE USE OF SHORT STROKE ELECTRIC CHIPPING HAMMERS TO A DEPTH THAT WILL PERMIT NEW CONCRETE TO BOND TO THE ENTIRE PERIPHERY OF THE BAR SO EXPOSED AND A MINIMUM OF 3/4" CLEARANCE ALL AROUND.
- AFTER ALL DELAMINATED, UNSOUND, OR LOOSE MATERIAL IS REMOVED FROM THE SLAB SURFACE, THE CONTRACTOR SHALL REQUEST AN INSPECTION FROM THE CONTRACT ADMINISTRATOR. THIS INSPECTION IS TO BE DONE IN THE PRESENCE OF THE CONTRACTOR AND IF ANY FURTHER WORK IS REQUIRED, THE CONTRACTOR IS TO COMPLETE IT IMMEDIATELY.

III CONCRETE SUBSTRATE PREPARATION

- WITHIN 24 HOURS PRIOR TO INFILLING, SANDBLAST THE SUBSTRATE TO REMOVE LOOSE AND DETERIORATED CONCRETE, LANTANCE, DUST, DIRT, OIL, AND ANY OTHER MATERIAL THAT COULD INTERFERE WITH THE BOND OF THE NEW CONCRETE. PROVIDE A UNIFORM SURFACE PROFILE OF ICRI-CSP-5 OR BETTER.
- EXPOSED REINFORCING STEEL TO BE CLEANED TO NEAR WHITE METAL AND TOTALLY FREE OF RUST.
- VACUUM CLEAN SURFACE AND/OR AIR BLAST WITH OIL FREE COMPRESSED AIR TO REMOVE RESIDUE AND SPENT MEDIA CREATED BY SURFACE PREPARATION.
- WATERBLAST SUBSTRATE AT MINIMUM 3,000 PSI TO REMOVE ANY RESIDUAL DUST AND DIRT. MAINTAIN SUBSTRATE IN A SATURATED CONDITION FOR A PERIOD OF NOT LESS THAN FOUR (4) HOURS PRIOR TO CONCRETE PLACEMENT. IF THE CONCRETE SURFACE BECOMES WET AND SUBSEQUENTLY DRIES, THE SURFACE PREPARATION AND CLEANING PROCEDURE MUST BE REPEATED.

IV PLACEMENT

- APPLY BONDING SLURRY TO A SATURATED SURFACE DRY (SSD) SUBSTRATE WITH NO STANDING WATER AND DRY TO THE TOUCH. A SSD SUBSTRATE TYPICALLY EXHIBITS A COLOUR CHANGE OF DARK GREY TO LIGHT GREY. REMOVE STANDING WATER BY VACUUMING.
- BONDING SLURRY SHALL CONSIST OF CEMENT-SAND GROUT MIXED IN A 1:1 RATIO BY WEIGHT TO A MAXIMUM WATER-CEMENT RATIO OF 0.40 IN ACCORDANCE WITH CSA A32.1. ALTERNATIVELY, SCRUB PLASTIC CONCRETE FROM REPAIR MIX INTO SUBSTRATE TO A 1/8" THICKNESS AND REMOVE ALL COARSE AGGREGATE PRIOR TO INFILLING REMAINDER WITH CONCRETE.
- SCRUB BONDING SLURRY INTO SUBSTRATE WITH STIFF BRISTLED BROOM OR BRUSH TO PRODUCE A UNIFORM THICKNESS OF 1/8" OVER ENTIRE AREA.
- PLACE CONCRETE WHILE THE BONDING SLURRY IS STILL PLASTIC. DO NOT RETEMPER.
- IMMEDIATELY PLACE CONCRETE INTO THE PREPARED AREA FROM ONE SIDE TO THE OTHER. WORK THE MATERIAL FIRMLY INTO THE BOTTOM AND SIDES OF THE PATCH, AND UNDERNEATH REINFORCING STEEL, TO ASSURE GOOD BOND.
- CONTINUOUSLY CONSOLIDATE AND FINISH TO MATCHING ELEVATIONS.
- FOLLOWING CONSOLIDATION AND SCREEDING, BULL-FLOAT TO CLOSE AND SMOOTH THE SURFACE.
- SURFACE FINISH TO MATCH ADJACENT EXISTING SURFACES. CONFIRM ACCEPTABLE FINISH WITH CITY OF WINNIPEG AND CONTRACT ADMINISTRATOR.
- APPLY APPROVED EVAPORATION RETARDANT AT MANUFACTURER'S RECOMMENDED COVERAGE RATE IMMEDIATELY FOLLOWING FINAL FINISHING. DO NOT APPLY EVAPORATION RETARDANT DURING ANY FINISHING OPERATION OR WORK IT INTO THE SURFACE.
- PROTECT FRESHLY PLACED CONCRETE FROM EXPOSURE TO DUST, DEBRIS AND PRECIPITATION.

V CURING

- COMMENCE WET CURING AS SOON AS THE SURFACE WILL SUPPORT THE WEIGHT OF THE WETTED BURLAP WITHOUT DEFORMATION.
- WET CURING WITH BURLAP AND WATER MUST BE MAINTAINED FOR A MINIMUM PERIOD OF 7 DAYS.

VI FIELD QUALITY CONTROL

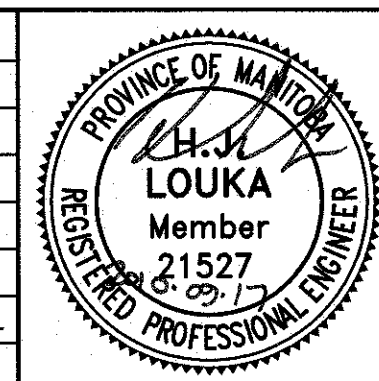
- INSPECTION AND TESTING OF CONCRETE AND CONCRETE MATERIALS WILL BE CARRIED OUT BY A CSA CERTIFIED TESTING LABORATORY APPROVED BY THE CITY OF WINNIPEG IN ACCORDANCE WITH CSA A23.1 AND AS DESCRIBED HEREIN.
- ONE CONCRETE TEST WILL BE REQUIRED FOR EACH DAY OF CASTING, SLUMP, AIR MEASUREMENTS, AND THREE CYLINDERS SHALL BE OBTAINED AT POINT OF DISCHARGE. THE CONTRACTOR WILL PAY FOR COSTS OF TESTS.
- TESTING AGENCY TO SUBMIT COPIES OF CONCRETE TEST REPORTS DIRECTLY TO CITY OF WINNIPEG AND CONTRACT ADMINISTRATOR.
- THE MINIMUM ACCEPTABLE BOND STRENGTH BETWEEN THE OVERLAY AND SUBSTRATE IS 1.0 MPA AT 28 DAYS. IF THE BOND STRENGTH IS SUSPECTED OF BEING BELOW 1.0 MPA, THE CONTRACT ADMINISTRATOR MAY REQUIRE A BOND STRENGTH TEST IN ACCORDANCE WITH CSA-A23.2-6B TO BE PAID FOR BY THE CONTRACTOR.

VII DEFECTIVE CONCRETE

- DEFECTIVE CONCRETE: BOND STRENGTHS BELOW MINIMUM SPECIFIED VALUE, CRACKING, SPALLING, SCALING AND CONCRETE NOT CONFORMING TO REQUIRED LINES, DETAILS, DIMENSIONS, TOLERANCES, FINISHES OR SPECIFIED REQUIREMENTS.
- REPAIR OR REPLACEMENT OF DEFECTIVE CONCRETE WILL BE DETERMINED BY THE CONTRACT ADMINISTRATOR, BASED ON THE SPECIFICATIONS AND THE ABOVE GUIDELINES.
- DO NOT PATCH, FILL, TOUCH UP, REPAIR OR REPLACE EXPOSED CONCRETE EXCEPT UPON EXPRESS DIRECTION OF CONTRACT ADMINISTRATOR FOR EACH INDIVIDUAL USE.



No.	Date	Issue/Revision	By
0	SEPT 17 2010	ISSUED FOR TENDER	H.J.L.



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CONSULTING STRUCTURAL ENGINEERS

The General Contractor shall check & verify all dimensions and report any errors or omissions to the designers.

Project WINNIPEG TRANSIT GARAGE 421 OSBORNE STREET WINNIPEG, MANITOBA					Sheet No. S-1
Sheet Title KEY PLAN, PARTIAL FLOOR PLAN EXISTING SECTIONS & GENERAL NOTES					
Design H.J.L.	Drawn MS	Checked H.J.L.	Scale AS NOTED	Date SEPT 2010	File 2008-1160