

GENERAL NOTES FOR STRUCTURES:

GENERAL

- THE METRIC SYSTEM OF MEASUREMENT IS USED ON ALL DRAWINGS. ELEVATIONS AND STATIONS ARE SHOWN IN METRES AND ALL OTHER DIMENSIONS ARE SHOWN IN MILLIMETRES.
- CONTRACTOR MUST VERIFY ALL EXISTING AND PROPOSED GEOMETRY, DIMENSIONS, ELEVATIONS AND LAYOUT IN THE FIELD PRIOR TO FABRICATION AND CONSTRUCTION AND NOTIFY THE CONTRACT ADMINISTRATOR OF ANY CHANGES. EXISTING DIMENSIONS ARE APPROXIMATE ONLY.
- CONTRACTOR MUST VERIFY, SAFEGUARD AND PROTECT ALL EXISTING UTILITIES PRIOR TO EXCAVATION OR CONSTRUCTION. ANY DAMAGE TO EXISTING STRUCTURES AND UTILITIES BY THE CONTRACTORS OPERATIONS MUST BE REPAIRED BY THE CONTRACTOR AT HIS OWN COST.
- ALL REFERENCES TO CODES, STANDARDS, SPECIFICATIONS, GUIDELINES, ETC. SHALL MEAN THE LATEST EDITION.
- THESE DRAWINGS TO BE READ IN CONJUNCTION WITH THE CONTRACT SPECIFICATIONS.
- ALL WORK SHALL CONFORM TO THE 2010 MANITOBA BUILDING CODE.
- ALL WORK TO BE PERFORMED IN ACCORDANCE WITH APPLICABLE LEGISLATION AND REGULATIONS INCLUDING, BUT NOT LIMITED TO, OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS.

EXCAVATION AND BACKFILL

- ALL EXCAVATIONS SHALL BE COMPLETELY DEWATERED DURING CONSTRUCTION TO PREVENT UPLIFT OF THE STRUCTURE. KEEP EXCAVATION DEWATERED TO, AT LEAST, 300 mm BELOW LOWEST ELEVATION OF EXCAVATION.
- PLACE ALL CONCRETE IN THE DRY.
- THE FOUNDATION SLABS SHALL BEAR ON LAYER OF WELL GRADED GRANULAR/CRUSHED ROCK COMPACTED TO 100% STANDARD PROCTOR DRY DENSITY (SPDD) UNLESS OTHERWISE INDICATED.

CAST IN PLACE CONCRETE

- CONCRETE MATERIAL, QUALITY, MIXING, PLACING, FORM WORK AND OTHER CONSTRUCTION PRACTICES TO CONFORM TO CSA A23.1 / A23.2 - 2009
- ALL EXPOSED CORNERS SHALL HAVE A 20 mm CHAMFER OR FILLET UNLESS OTHERWISE NOTED.

TYPE	SUPPLY AND PLACE STRUCTURAL CONCRETE	STRENGTH (MPa)	EXP. CLASS
1	PILES, SCALE HOUSE FOUNDATIONS & SUSPENDED SLABS	35 @ 56 DAYS	S-1
2	RETAINING WALLS, STAIRS, STRUCTURAL SLABS & SCALE FOUNDATIONS	35 @ 28 DAYS	C-1

ANCHOR BOLTS FOR LIGHT STANDARDS

- ANCHOR BOLTS SHALL BE IN ACCORDANCE WITH ASTM F1554 GRADE 55 (380MPa), HOT DIPPED GALVANIZED.
- ANCHOR BOLTS SHALL BE 25Ø x 915 LONG C/W 150 HOOK.
- CONFIRM ANCHOR BOLT SIZE, B.C.D. AND PROJECTION WITH LIGHT STANDARD SUPPLIER PRIOR TO INSTALLATION.
- PROTECT THREADS FROM FOULING DURING CONCRETE POUR.
- ANCHOR BOLTS TO BE SET USING STEEL SETTING TEMPLATE (MIN. 10 THICK) TO BE REMOVED AFTER MIN. 24hr CURING PERIOD.
- REFER TO SHEET S5 FOR ALIGNMENT OF ANCHOR BOLTS.
- B.C.D. = BOLT CIRCLE DIAMETER.

POST-INSTALLED ANCHOR BOLTS

- UNLESS OTHERWISE NOTED, POST-INSTALLED ANCHOR BOLTS SHALL BE HILTI KWIK BOLT TZ - SS TO THE DIAMETER AND LENGTH AS INDICATED ON THE DRAWINGS OR EQUAL AS APPROVED BY THE CONTRACT ADMINISTRATOR.
- CONTRACTOR SHALL FOLLOW MANUFACTURER'S INSTALLATION INSTRUCTIONS.

HANDRAILS AND GUARDRAILS

- STEEL PIPE SHALL BE IN ACCORDANCE WITH ASTM A53 TYPE S GRADE A OR B.
- GALVANIZE IN ACCORDANCE WITH ASTM A123-09 TO A NET RETENTION OF 610 g/m²
- GALVANIZING HANDRAIL AND GUARDRAILS SHALL RESULT IN A SMOOTH SURFACE FREE OF SHARP EDGES AND PROJECTIONS.
- VENT HOLE SIZE AND LOCATIONS AS PER GALVANIZING PROCESS REQUIREMENTS.
- EXPANSION JOINTS SHALL BE LOCATED TO ACCOMMODATE GALVANIZING PROCESS.

MISCELLANEOUS METAL FABRICATIONS

- STEEL SHALL BE IN ACCORDANCE WITH CSA G40.21 GRADE 300W UNLESS OTHERWISE NOTED.
- ALL FABRICATIONS SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A123-09 TO A NET RETENTION OF 610 g/m²
- CONTRACTOR SHALL PREPARE AND SUBMIT DETAILED SHOP DRAWINGS PRIOR TO COMMENCING FABRICATION.

REINFORCING STEEL FOR CAST-IN-PLACE CONCRETE

- ALL REINFORCING SHALL BE BLACK STEEL CONFORMING TO CSA G30.18-09, GRADE 400W.
- ALL REBAR SHALL BE STORED ON WOOD BLOCKING AT THE SITE.
- CONCRETE CLEAR COVER TO REINFORCEMENT UNLESS NOTED OTHERWISE:

PILES	75 mm
RETAINING WALLS	60 mm
STRUCTURAL SLABS:	
TOP LAYER	60 mm
BOTTOM LAYER	50 mm

REINFORCING LAP SPLICES/PROJECTION LENGTH UNLESS NOTED OTHERWISE:

BAR SIZE	TOP BARS (mm)	OTHER BARS (mm)	PROJECTION (mm)
10	700	450	700
15	1000	650	1000
20	1200	800	1200
25	1900	1200	1900
30	2200	1550	2200
35	2650	1800	2650

- LOCATE REINFORCING SPLICES NOT INDICATED ON THE DRAWINGS AT POINTS OF MINIMUM STRESS. LOCATION OF SPLICES TO BE APPROVED BY THE CONTRACT ADMINISTRATOR.
- PROJECTION SHOWN SHALL BE PROVIDED AT CONSTRUCTION JOINTS UNLESS NOTED OTHERWISE.
- BEFORE PLACING REBAR ENSURE IT IS CLEAN, FREE OF LOOSE SCALE, DIRT OR OTHER DELETERIOUS MATERIAL WHICH WOULD REDUCE THE BOND TO CONCRETE.
- CONTRACTOR SHALL PREPARE AND SUBMIT DETAILED REINFORCING STEEL SHOP DRAWINGS AND BAR LISTS PRIOR TO COMMENCING FABRICATION.

CAST-IN-PLACE PILES

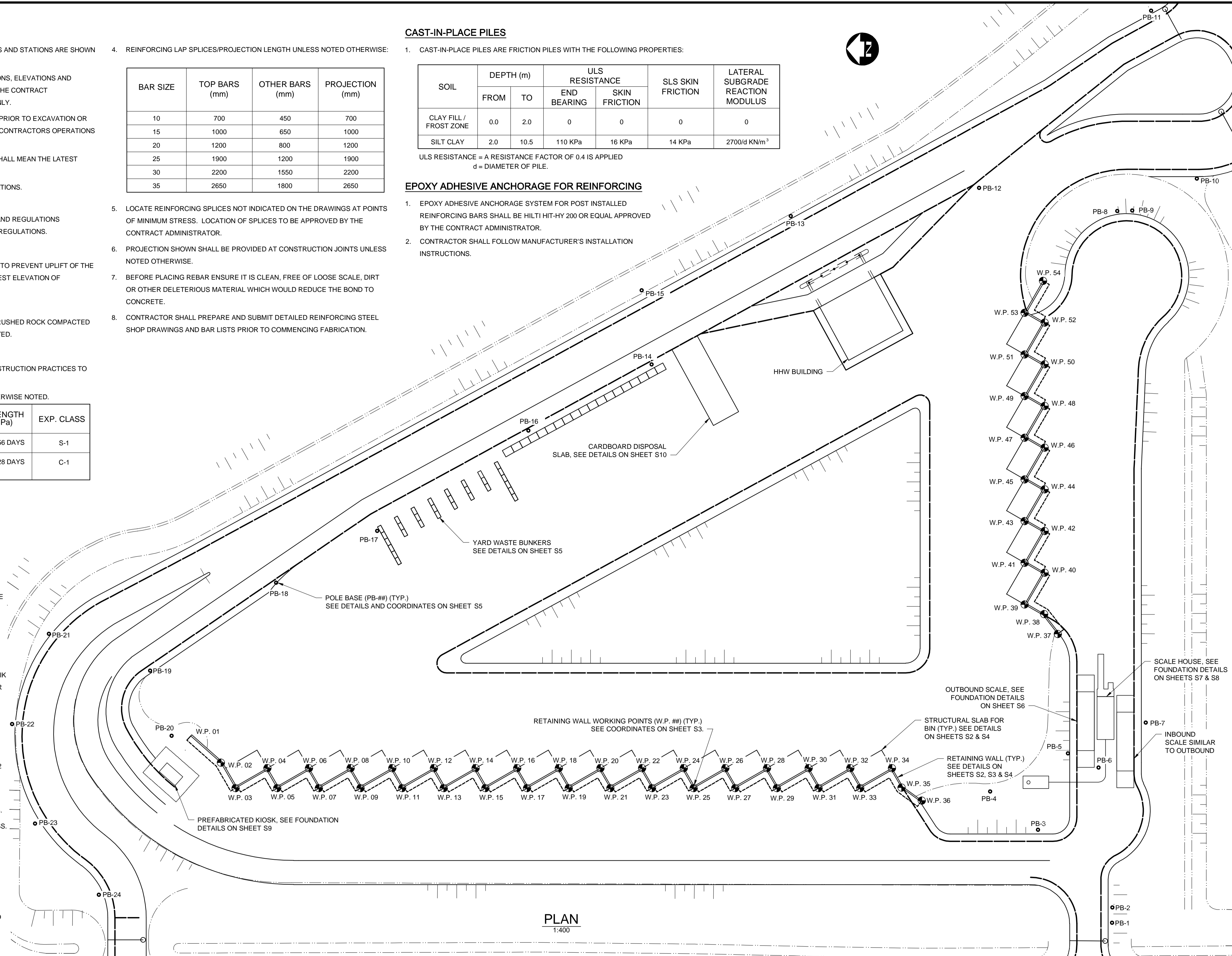
- CAST-IN-PLACE PILES ARE FRICTION PILES WITH THE FOLLOWING PROPERTIES:

SOIL	DEPTH (m)		ULS RESISTANCE		SLS SKIN FRICTION	LATERAL SUBGRADE REACTION MODULUS
	FROM	TO	END BEARING	SKIN FRICTION		
CLAY FILL / FROST ZONE	0.0	2.0	0	0	0	0
SILT CLAY	2.0	10.5	110 KPa	16 KPa	14 KPa	2700/d KN/m ³

ULS RESISTANCE = A RESISTANCE FACTOR OF 0.4 IS APPLIED
d = DIAMETER OF PILE.

EPOXY ADHESIVE ANCHORAGE FOR REINFORCING

- EPOXY ADHESIVE ANCHORAGE SYSTEM FOR POST INSTALLED REINFORCING BARS SHALL BE HILTI HIT-HY 200 OR EQUAL APPROVED BY THE CONTRACT ADMINISTRATOR.
- CONTRACTOR SHALL FOLLOW MANUFACTURER'S INSTALLATION INSTRUCTIONS.



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