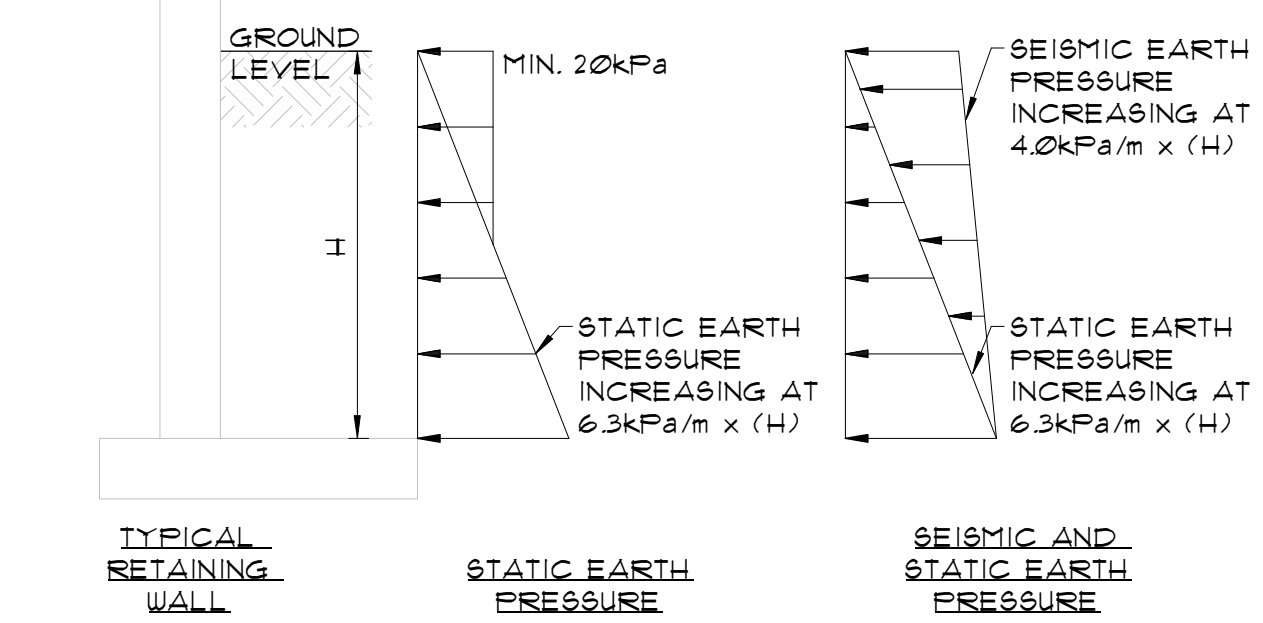


GENERAL NOTES

- DESIGN
1. THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH THE LATERAL EARTH PRESSURE LOADS AS PROVIDED BY THE GEOTECHNICAL ENGINEER.



FOUNDATION

1. FOUNDATIONS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE RECOMMENDATIONS IN THE GEOTECHNICAL REPORT PREPARED BY THURBER ENGINEERING DATED MAY 09, 2023 AND UPDATED GEOTECHNICAL MEMO BY THURBER ENGINEERING DATED JANUARY 11, 2025.
2. FOUNDATIONS TO BEAR ON:
- 1) STRUCTURAL FILL WITH A SLS BEARING PRESSURE OF 180KPa.
 - 2) GLACIAL TILL WITH AIAN SLS/CLS BEARING PRESSURE OF 1200KPa.
- ALL EXISTING FILLS TO BE REMOVED AND REPLACED WITH COMPACTED STRUCTURAL FILL TO GEOTECHNICAL ENGINEER'S APPROVAL.
3. FOUNDATION BEARING MATERIAL TO BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACING CONCRETE.
4. FOOTINGS TO BE CENTRED UNDER WALLS AND COLUMNS UNLESS NOTED OTHERWISE ON THE DRAWINGS.
5. WALLS AND COLUMNS TO BE DOUBLED TO FOUNDATIONS WITH DOUELS HOOKED ONE END OF THE SAME SIZE AND SPACING AS VERTICAL REINFORCEMENT.
6. ELEVATIONS SHOWN THIS 5000 ARE TOP OF FOOTING ELEVATIONS AND ARE FOR ESTIMATING PURPOSES ONLY. FINAL ELEVATIONS ARE TO BE DETERMINED BY SITE CONDITIONS. TOP OF FOOTING TO BE MINIMUM 450mm BELOW FLOOR ELEVATION.
7. STEPS BETWEEN ADJACENT FOOTING SHALL BE A MAXIMUM SLOPE OF 2 HORIZONTAL : 1 VERTICAL.
8. SLAB ON-GRADE TO BE UNDERLAIN BY 250mm (10 mil) POLY OVER 150mm MINIMUM COMPACTED GRANULAR BASE MATERIAL AS SPECIFIED IN THE GEOTECHNICAL REPORT.

CONCRETE

1. CONCRETE MATERIALS AND METHODS OF CONSTRUCTION SHALL CONFORM TO CSA A23.1-14 AND A23.3-14.
2. CONCRETE PROPERTIES TO BE AS PER TABLE THESE DRAWINGS.
3. FOR AREAS OF CONGESTED REINFORCEMENT AND THIN CONCRETE SECTIONS USE A REDUCED AGGREGATE SIZE IN THE CONCRETE MIX AND ADD SUPERPLASTICIZER TO MIX ON SITE TO INCREASE WORKABILITY.
4. CONCRETE MIX DESIGNS TO BE SUBMITTED TO THE CONSULTANT FOR REVIEW PRIOR TO COMMENCING THE WORK.
5. CURING AND PROTECTION OF CONCRETE FOR HOT, COLD, OR DRY WEATHER TO BE IN ACCORDANCE WITH CSA A23.3. PROVIDE MOIST CURE FOR 3 DAYS MINIMUM (ANY ALTERNATIVE METHODS MUST BE REVIEWED BY CONSULTANT).
6. LOCATION AND DETAILS OF CONSTRUCTION JOINTS TO BE REVIEWED BY THE CONSULTANT. SEE DETAILS ON THE DRAWINGS.
7. HORIZONTAL CONSTRUCTION JOINTS IN WALLS TO BE CLEAN AND INTENTIONALLY ROUGHENED TO A MINIMUM 5mm AMPLITUDE.
8. ALL EXTERIOR EXPOSED CONCRETE CONSTRUCTION JOINTS SHALL BE PREPARED USING THE KEYTOL WATERSTOP SYSTEM BY KEYTOL FOLLOW THE MANUFACTURER'S INSTRUCTIONS FOR THE INTERNAL OR EXTERNAL GROUT METHOD.
9. CALCIUM CHLORIDE IS NOT PERMITTED IN CONCRETE MIXES.
10. SEE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR EXTENT OF FLOOR HARDENERS AND ARCHITECTURAL CONCRETE FINISHES.
11. SEE ARCHITECTURAL DRAWINGS FOR LOCATION AND EXTENT OF ALL REVEALS, DRIPS, RECEDES, AND OTHER ADDITIONAL FEATURES.
12. CONCRETE COVER TO BE AS PER TABLE THESE DRAWINGS.
13. CONCRETE TESTING TO BE IN ACCORDANCE WITH CSA A23.2-14 & 8413. TESTING TO BE PAID FOR BY THE OWNERS.

REINFORCING STEEL

1. BARS SHOWN THIS: ——— INDICATE TOP REINFORCING STEEL.
2. BARS SHOWN THIS: ——— INDICATE BOTTOM REINFORCING STEEL.
3. ALL REINFORCING STEEL TO BE DEFORMED BARS CONFORMING TO CSA S20.8-11, GRADE 400W.
4. MINIMUM LAPS OF REINFORCEMENT TO BE AS PER TABLE THESE DRAWINGS.
5. HOOKS AND FABRICATION DETAILS TO CONFORM TO CSA A23.1-14.
6. ALL HOOKS TO BE "STANDARD" IN ACCORDANCE WITH A23.1-14, UNLESS NOTED OTHERWISE.
7. 'H/E' DENOTES HOOK ONE END, LENGTH NOTED INCLUDES HOOK.
8. CLEAR SPACING BETWEEN REINFORCING BARS PLACED IN ONE LAYER OR MINIMUM CLEAR SPACING BETWEEN LAYERS OF REINFORCEMENT TO BE AS FOLLOWS: (UNLESS NOTED OTHERWISE)
- 20M & SMALLER - 35mm
 - 25M - 35mm
 - 30M - 40mm
9. PROVIDE MINIMUM REINFORCEMENT IN ALL CAST-IN-PLACE CONCRETE WALLS AS PER TABLE THESE DRAWINGS.
10. REINFORCED EXTERIOR PAVING, SLABS, AND SIDEWALKS SHALL HAVE 10M/400 O.C. E.W. MID-DEPTH UNLESS NOTED OTHERWISE.
11. PROVIDE HOOKED DOUELS IN SLABS AND FOUNDATIONS TO MATCH ALL VERTICAL WALL AND COLUMN REINFORCEMENT. EXTEND HOOKED END DOWN TO BOTTOM REINFORCEMENT IN SLAB OR FOUNDATION, AND PROVIDE MINIMUM LAP SPlice TO VERTICAL REINFORCEMENT AS PER TABLE THESE DRAWINGS.
12. STARTER DOUELS FOR WALL DISTRIBUTED VERTICAL REINFORCEMENT SHALL BE PLACED IN THE SAME PLANE AS THE VERTS AND NOT OFFSET INSIDE THE WALL. OFFSETS SHOWN IN SECTIONS AND DETAILS ARE A GRAPHICAL REPRESENTATION FOR EASE OF VISIBILITY.

CHAIRING OF REINFORCEMENT

1. PROVIDE SPACER BARS FOR BEAMS WITH MULTIPLE LAYERS OF REINFORCEMENT AT MAXIMUM 1200 O.C.
2. USE 10M SUPPORT BARS AT 1200 MAXIMUM O.C. AS WELL AS ONE 10M EACH SIDE OF SUPPORTING WALL OR BEAM'S.
3. FLYING ENDS OF TOP BARS NOT TO EXCEED 450mm.
4. CHAIR SUPPORT BARS AT 1200 O.C. MAXIMUM.
5. CHAIR BOTTOM REINFORCING AT 1200 O.C. MAXIMUM EACH WAY.
6. CHAIR AND BOLSTERS TO BE PURPOSE MADE NON-METALLIC.
7. POSITION CHAIRS FOR EXPOSED CONCRETE SLAB AND BEAM SOFFITS IN A REGULAR PATTERN CONFORMING WITH FINAL ARCHITECTURAL FINISH.
8. PLASTIC TIES OR PLASTIC-COATED WIRES SHALL BE USED FOR TYING EPOXY-COATED REINFORCEMENT.
9. PROVIDE REBAR CHAIRS FOR TOP BARS IN FOOTINGS.

EXTRA REINFORCEMENT

1. PROVIDE 2-10M CONTINUOUS EACH FACE AT THE ENDS AND TOPS OF WALLS AND EDGES OF ALL SLABS MINIMUM.
2. PROVIDE 2-10M EXTRA TOP, BOTTOM, AND EACH SIDE OF OPENINGS IN WALLS AND SLABS. RUN BARS 650 MINIMUM BEYOND OPENING. PROVIDE 10M/1200 DIAGONAL BAR EACH FACE AT EACH CORNER OF THE OPENING.
3. FOR OPENINGS UP TO 450 WIDE, FLARE REINFORCEMENT AROUND OPENING. FOR OPENINGS OVER 450 WIDE, TERMINATE REINFORCEMENT AT OPENING. PROVIDE BARS OF EQUAL NUMBER AND AREA TO THAT TERMINATED, ON EACH SIDE OF OPENING IN ADDITION TO THAT SPECIFIED ABOVE. RUN ALL EXTRA BARS CONTINUOUS TO THE SUPPORTS.
4. PROVIDE CORNER BARS x 1200 LONG MINIMUM (4/E 600) TO MATCH SIZE AND SPACING OF REINFORCEMENT IN WALLS, FOOTINGS AND GRADE BEAMS, UNLESS NOTED OTHERWISE. REFER TO TYPICAL DETAIL ON THESE DRAWINGS.
5. PROVIDE 20M/300 LONG DIAGONAL BARS AT ALL CORNERS, COLUMNS AND OPENINGS IN SLAB ON GRADE.

CONDUITS, PIPES, & SLEEVES EMBEDDED IN CONCRETE

1. PIPES, CONDUITS, AND SLEEVES EMBEDDED IN CONCRETE SHALL BE ALLOWED ONLY IF INSTALLED IN ACCORDANCE WITH THE FOLLOWING GUIDELINES:
2. SUBMIT LAYOUT OF CONDUITS AT POINTS OF CONGESTION AND PROVIDE ADDITIONAL REINFORCING AND/OR THICKEN SLAB AND/OR RE-ROUTE AS DIRECTED BY THE CONSULTANT, AT CONTRACTOR'S EXPENSE.
3. SLABS AND WALLS (CONDUITS IN PLANE OF):
- A. LOCATE BETWEEN TOP AND BOTTOM REINFORCING IN SLAB OR EACH FACE OF WALL.
 - B. MAXIMUM SIZE OF CONDUIT IN ONE LAYER TO BE NOT MORE THAN ONE-QUARTER (1/4) CONCRETE THICKNESS.
 - C. CENTRE-LINE SPACING BETWEEN PARALLEL CONDUITS TO BE NOT LESS THAN 3 DIAMETERS OF THE LARGEST CONDUIT.
 - D. MAXIMUM TOTAL SIZE OF CONDUITS CROSSING SHALL BE NOT MORE THAN ONE-THIRD (1/3) CONCRETE THICKNESS.
 - E. THREE OR MORE LAYERS CROSSING WILL NOT BE PERMITTED.
4. SLEEVES THROUGH SLABS ARE NOT ALLOWED NEAR SUPPORTS WITHOUT PRIOR APPROVAL OF THE CONSULTANT. MINIMUM DISTANCE FROM FACE OF SUPPORT TO THE EDGE OF SLEEVE IS TWICE THE SLAB THICKNESS.

COLD WEATHER CONCRETE

- PROCEDURES TO BE IN ACCORDANCE WITH CSA 23.1 AND THE FOLLOWING MINIMUM REQUIREMENTS:
1. PROTECTION SHALL BE PROVIDED WHEN THERE IS A PROBABILITY OF THE AIR TEMPERATURE FALLING BELOW 5 DEGREES CELSIUS WITHIN 24 HOURS OF PLACING.
 2. ALL SNOW AND ICE TO BE REMOVED FROM ALL SURFACES PRIOR TO POURING CONCRETE.
 3. CALCIUM CHLORIDE OR OTHER SALTS SHALL NOT BE USED AS A DE-ICING AGENT IN THE FORM'S.
 4. CONCRETE SHALL NOT BE PLACED AGAINST ANY SURFACE THAT WILL LOWER THE CONCRETE TEMPERATURE BELOW 10 DEGREES CELSIUS PRIOR TO ADEQUATE PROTECTION TO MAINTAIN THE CONCRETE AT A MINIMUM OF 10 DEGREES CELSIUS FOR 1 DAYS AND UNTIL THE CONCRETE REACHED 10% OF ITS DESIGN STRENGTH.
 5. TEMPERATURE PROTECTION TO BE PROVIDED BY HEAT ENCLOSURES, COVERINGS, INSULATION, OR A SUITABLE COMBINATION OF THESE METHODS.
 6. WHEN SUPPLEMENTARY HEAT IS PROVIDED ENSURE ALL EXHAUST IS VENTED AWAY FROM THE SURFACE OF THE CONCRETE OR PROVIDE SUPPLEMENTARY PROTECTION TO THE CONCRETE.
 7. DURING FREEZING TEMPERATURES REMOVE ALL STANDING WATER FROM THE SURFACE AT THE END OF THE CURING STAGE.
 8. TO AVOID THE CRACKING OF CONCRETE DUE TO SUDDEN TEMPERATURE CHANGE, THE PROTECTIONS PROVIDED SHALL REMAIN IN-PLACE UNTIL THE CONCRETE HAS REACHED THE ALLOWABLE TEMPERATURE DIFFERENTIAL AS SPECIFIED IN CSA 23.1.
 9. USE NON-CHLORIDE ACCELERATORS.

HOT WEATHER CONCRETE RECOMMENDATIONS FOR FLATWORK

- SLAB ON-GRADE, SUSPENDED SLAB:
1. REVIEW CONCRETE REQUIREMENTS WITH SUPPLIER PRIOR TO THE DAY OF THE POUR.
 2. DO NOT USE RETARDERS OR ACCELERATORS IN THE CONCRETE MIX, UNLESS AUTHORIZED BY THE CONSULTANT.
 3. KEEP SUPERPLASTICIZERS AVAILABLE AT THE SITE TO INCREASE WORKABILITY. DO NOT EXCEED RECOMMENDED STANDARD DOSAGES.
- PLACING:
1. DO NOT ATTEMPT LARGE CONCRETE PLACEMENTS ON HOT DAYS.
 2. SCHEDULE THE POUR FOR AN EARLY MORNING START SO THE PLACEMENT IS COMPLETED BEFORE NOON.
 3. FOR SLAB ON-GRADE, DAMPEN THE SUB-GRADE THE DAY BEFORE THE POUR.
 4. POLY BENEATH THE SLAB IS SOMETIMES BENEFICIAL IN HOT WEATHER CONCRETE PLACEMENTS. IT SHOULD BE PERFORATED WITH DRAIN HOLES AT 300mm O.C. UNLESS REQUIRED AS A VAPOUR BARRIER.
 5. DIRECT WIND BREAKS TO PREVENT EXCESSIVE AND RAPID MOISTURE LOSS.
 6. PLACE CONCRETE DIRECTLY FROM TRUCK CHUTE WHERE POSSIBLE. ENSURE THERE ARE SUFFICIENT PLACERS AND FINISHERS AVAILABLE ON SITE.
 7. USE EVAPORATION RETARDANT SUCH AS "MASTERKURE ER 500" BY MASTER BUILDERS. DO NOT ATTEMPT TO PLACE FLATWORK ON SUNNY DAYS WHERE PREDICTED TEMPERATURES EXCEED +30 DEGREES CELSIUS.
- CURING:
1. APPLY SURFACE SEALERS AS SOON AS POSSIBLE AFTER THE FINAL TROUPE.
 2. WET CURE CONCRETE FOR AT LEAST 3 DAYS. USE CONTINUOUS SPRINKLING OR FLOODING.

SECONDARY STRUCTURAL AND NON-STRUCTURAL COMPONENTS

1. SECONDARY STRUCTURAL & NON-STRUCTURAL COMPONENTS INCLUDE, BUT ARE NOT LIMITED TO:
- A. HANDRAILS, GUARDRAILS, AND BALCONY RAILINGS.
 - B. MECHANICAL AND ELECTRICAL EQUIPMENT AND THEIR CONNECTIONS.
 - C. SHOTCRETE WALLS.
2. SECONDARY STRUCTURAL AND NON-STRUCTURAL COMPONENTS INCLUDING THEIR CONNECTIONS SHALL BE DESIGNED AND REVIEWED IN THE FIELD BY A SPECIALTY STRUCTURAL ENGINEER REGISTERED IN BRITISH COLUMBIA.
3. THE SPECIALTY STRUCTURAL ENGINEER SHALL BE EMPLOYED BY THE CONTRACTOR OR THE SUPPLIER OF THE COMPONENT, AND SHALL PROVIDE SEALED DRAWINGS, FIELD REVIEW, AND LETTERS OF ASSURANCE STATING THE WORK HAS BEEN DESIGNED TO THE APPLICABLE CODES AND HAS BEEN INSTALLED IN ACCORDANCE WITH THE DESIGN.
4. SEALED SHOP DRAWINGS SHALL BE SUBMITTED FOR REVIEW PRIOR TO COMMENCING THE WORK. THE DRAWINGS MUST SHOW ALL DESIGN LOADS, MEMBER SIZES, MOVEMENT DETAILS, AND CONNECTION DETAILS.

CONCRETE PROPERTIES			UNLESS NOTED OTHERWISE				
ELEMENT	28 DAY STRENGTH MIN(MPa)	EXPOSURE CLASS	AIR CONTENT	MAX AGGREGATE (mm)	SUMP (mm)	CEMENT REDUCTION	
FOUNDATIONS	NOTE-1	30	N	1 to 3%	20	80% 20	40%
FOUNDATION WALLS AND EXTERIOR WALLS		30	F2	4 to 1%	20	80% 20	25%
EXTERIOR SLABS AND SLAB-ON-GRADE		35	C1	5 to 8%	20	80% 20	25%

NOTES:

1. FOUNDATIONS MAY REACH THE DESIGN COMPRESSION STRENGTH AT 56 DAYS.

2. CEMENT REDUCTION IS THE REDUCTION OF CEMENT CONTENT THROUGH REPLACEMENT OF FLY ASH OR EQUIVALENT COMPARED TO A LEED BASE DESIGN MIX WITH NO FLY ASH.

3. SEE ARCHITECTURAL SPECIFICATIONS FOR USE AND EXTENT OF KEYTOL "KIM" WATERPROOFING ADMIXTURE.

4. SPECIFIED SLUMP IS PRIOR TO THE ADDITION OF SUPERPLASTICIZER.

MINIMUM REINFORCEMENT SPLICE LENGTHS			UNLESS NOTED OTHERWISE	
BAR SIZE	VERT. OR BOT. REINFORCING	HORIZ. OR TOP REINFORCING		
10M	450	550		
15M	600	800		
20M	750	950		
25M	1000	1300		
30M	1400	1850		

MINIMUM WALL REINFORCEMENT			UNLESS NOTED OTHERWISE	
WALL SIZE	VERTICAL REINF.	HORIZONTAL REINF.		
150 WALL	10M/400	10M/150		
200 WALL	10M/400	10M/150		
250 WALL	10M/400 E.F.	10M/150 E.F.		
300 WALL	10M/400 E.F.	10M/150 E.F.		
400 WALL	10M/400 E.F.	10M/150 E.F.		

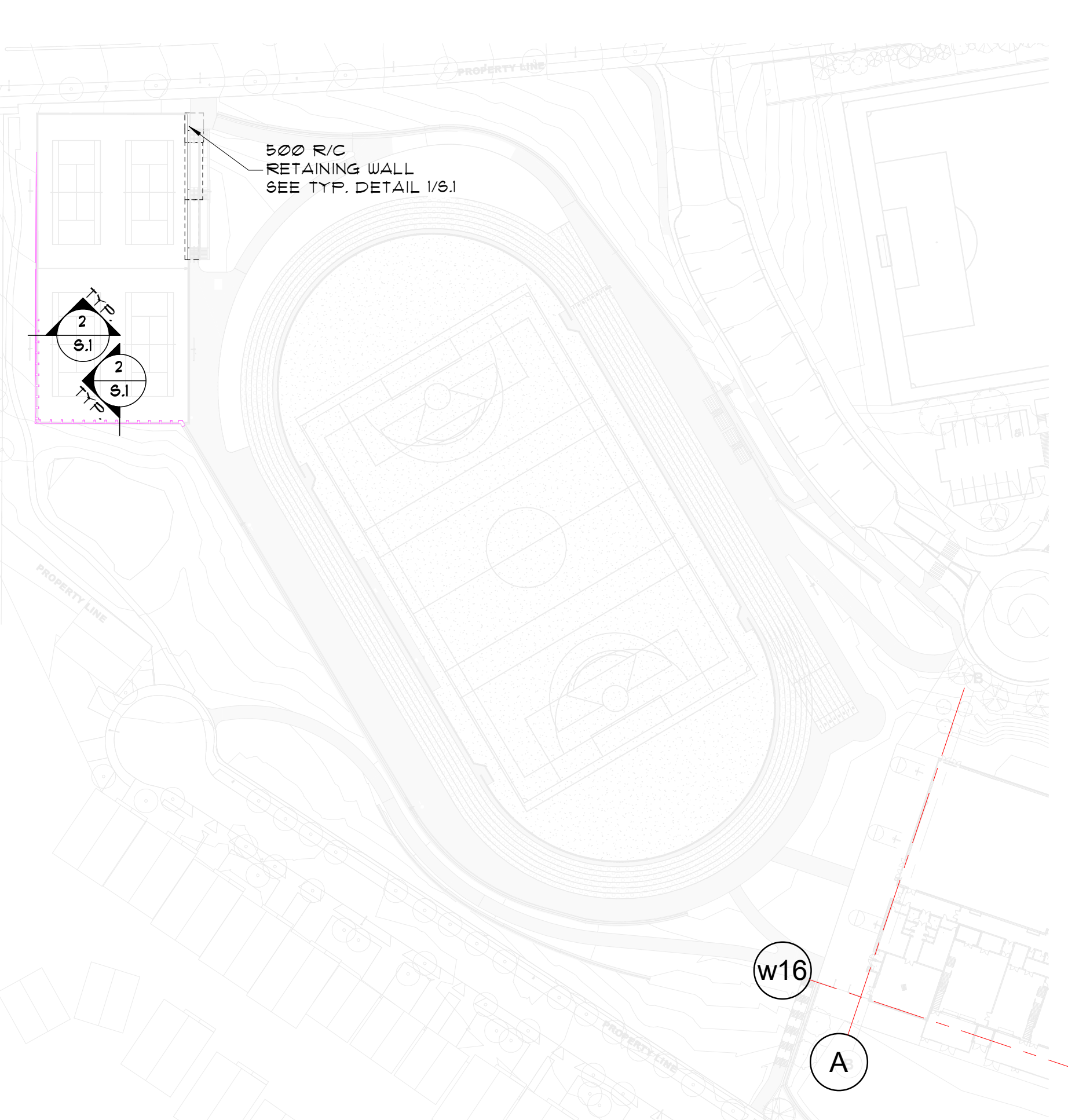
NOTE: REFER TO PLANS AND SCHEDULE FOR WALL ZONE REINFORCING

CONCRETE COVER (mm)			UNLESS NOTED OTHERWISE	
ELEMENT				FIRE RATING
SURFACES CAST AGAINST GROUND				2 HR.
WALLS				
EXPOSED TO GROUND OR WEATHER				50
25mm BARS AND SMALLER				

NOTES:

1. CONCRETE COVER SHALL BE MEASURED FROM INSIDE FACE OF REINFORCEMENT.

2. PRINCIPAL REINFORCEMENT IS VERTICAL BARS IN COLUMNS AND FLATERS, AND LONGITUDINAL BARS IN BEAMS.



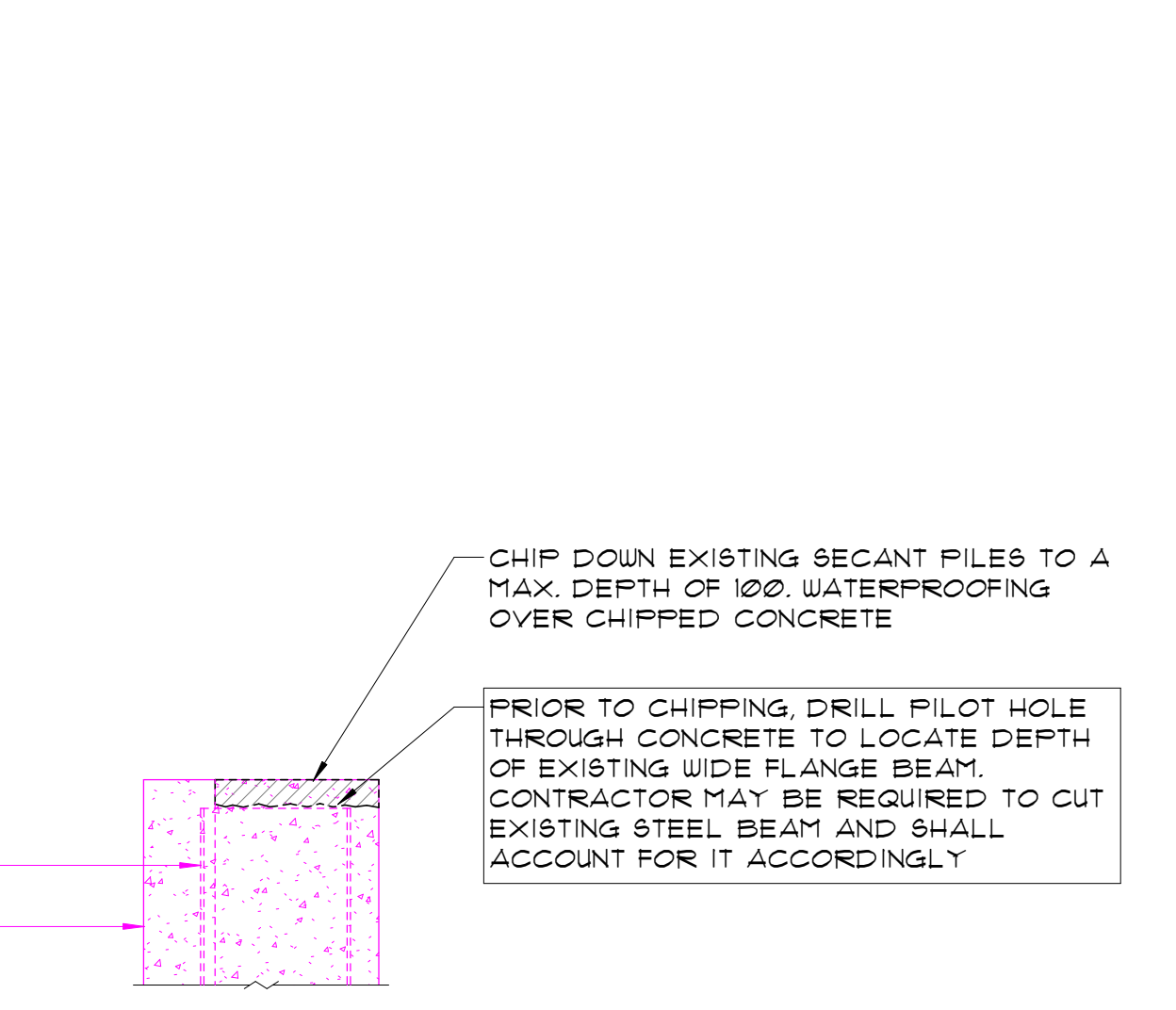
SITE KEY PLAN

MAX. RETAINING 'H'	FTG. WIDTH 'W'	FTG. DEPTH 'D'	BAR'S 'A'	BAR'S 'B'	BAR'S 'C'	SP. LICE LENGTH 'L'	WALL THK. 'I'
3800 TO 5100	3100	600	25M/250	30M/125	30M/125	2200	500
2800 TO 3800	3000	500	25M/300	25M/150	25M/150	1200	300
1800 TO 2800	2100	400	10M/300	20M/115	20M/115	1000	250
UP TO 1800	1000	400	10M/300	10M/300	10M/300	450	250

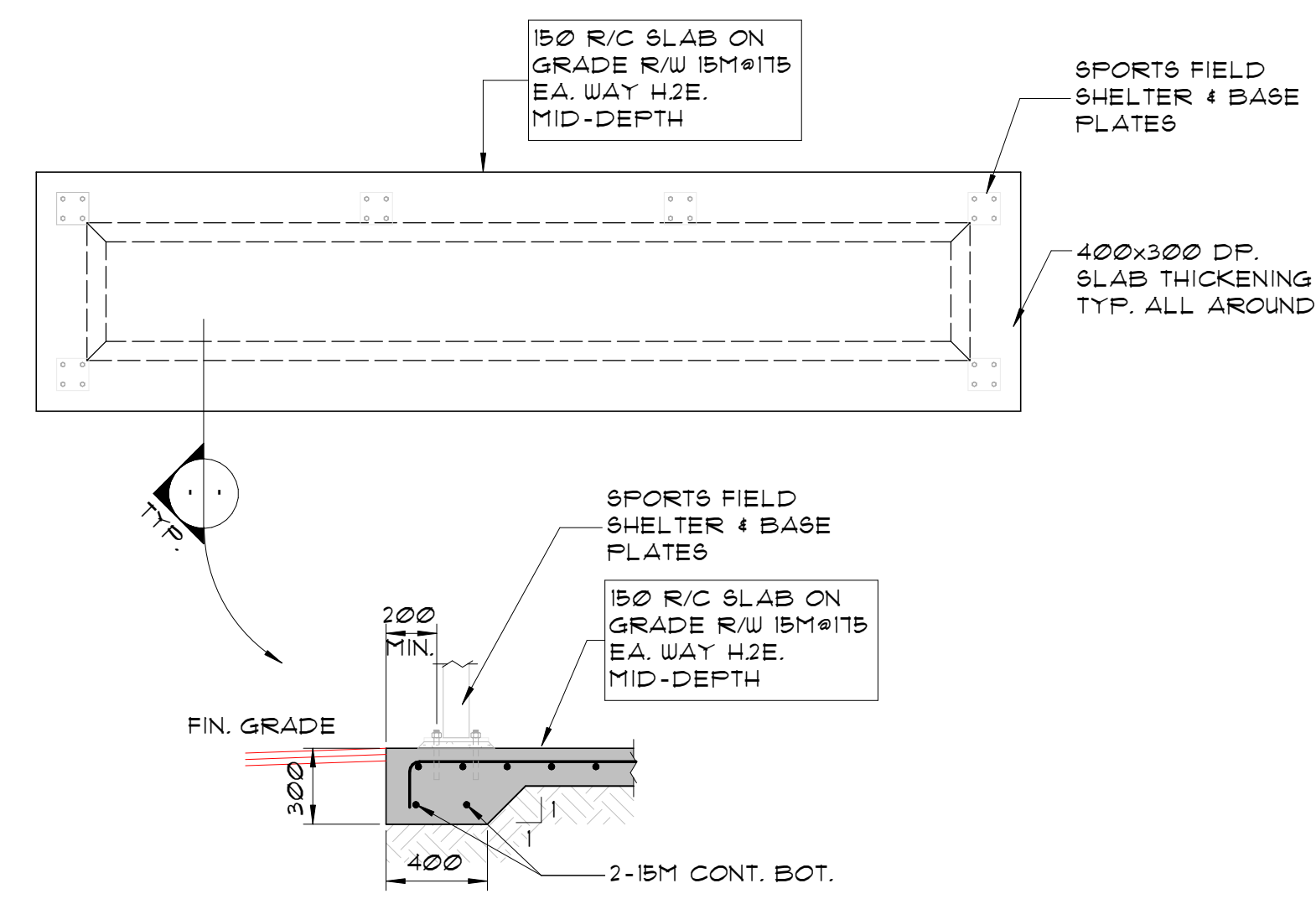
NOTE:

1. RETAINING WALL DESIGN LOADS BASED ON UPDATED GEOTECHNICAL MEMO BY THURBER ENGINEERING DATED JANUARY 17, 2025

1 TYPICAL EXTERIOR RETAINING WALL 1 : 25



2 EXISTING SECANT PILE MODIFICATION DETAIL 1 : 25



3 SPORTS FIELD SHELTER FOUNDATION 1 : 25