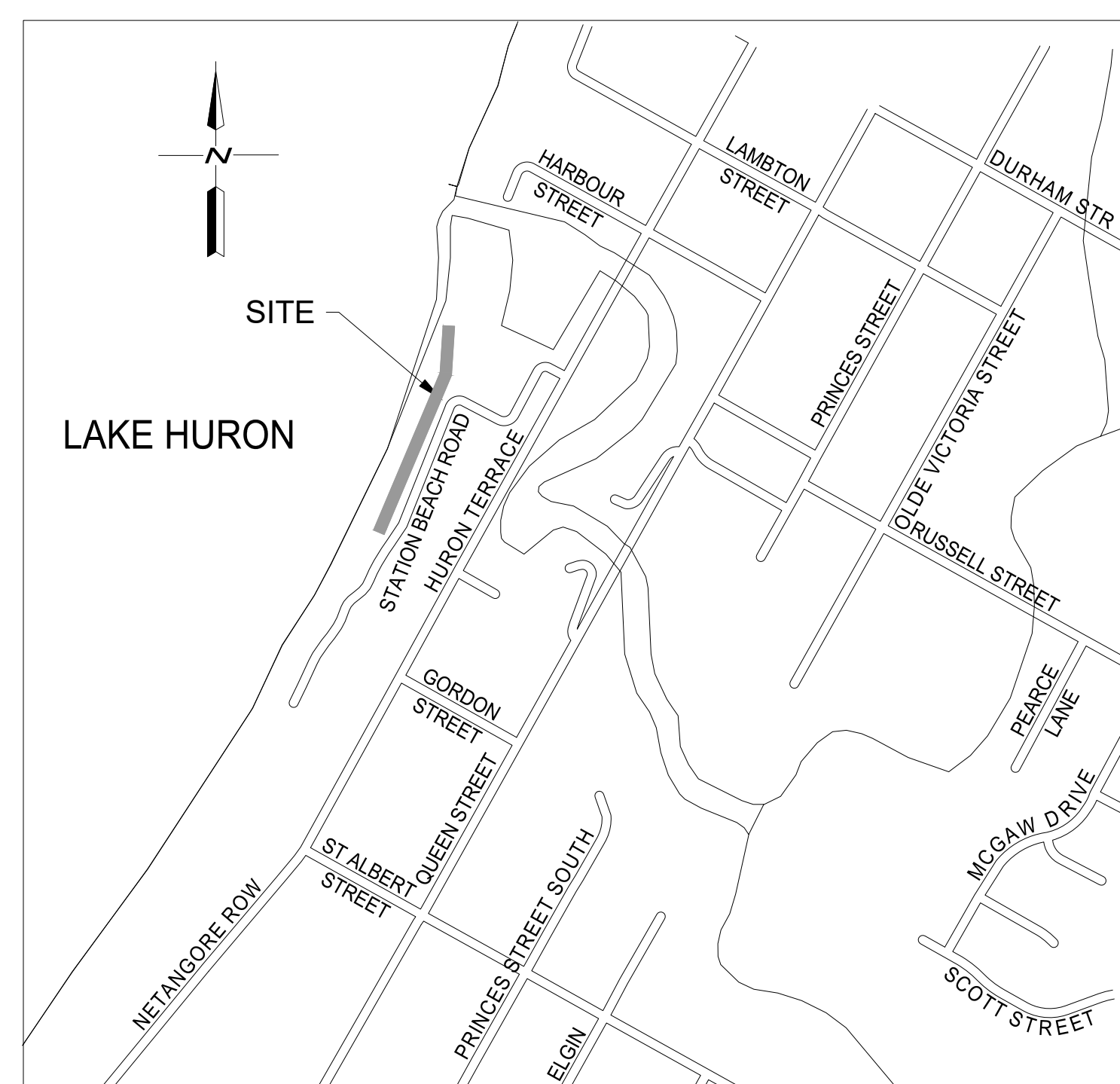


STATION BEACH BOARDWALK RECONSTRUCTION

MUNICIPALITY OF KINCARDINE

RFT CS-2025-11



KEY PLAN

NOT TO SCALE

SHEET INDEX

<u>SHEET NO.</u>	<u>DRAWING NO.</u>	<u>TITLE</u>
1	TS	COVER SHEET
2	C1	EXISTING CONDITIONS & REMOVALS
3	C2	EXISTING CONDITIONS & REMOVALS
4	C3	PROPOSED WORKS
5	C4	PROPOSED WORKS
6	DE1	DETAILS AND NOTES
7	S1	STRUCTURAL NOTES & DETAILS
8	S2	BOARDWALK DETAILS
9	RA1	PROPOSED RESTORATION PLANTING PLAN
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11	RA3	PROPOSED RESTORATION PLANTING PLAN
12	RD1	PROPOSED RESTORATION PLANTING PLAN DETAILS
13	RD2	PROPOSED RESTORATION PLANTING PLAN DETAILS

PREPARED FOR:

THE MUNICIPALITY OF
KINCARDINE
1475 CONCESSION 5, RR #5,
KINCARDINE, ON
519-396-3468



PREPARED BY:

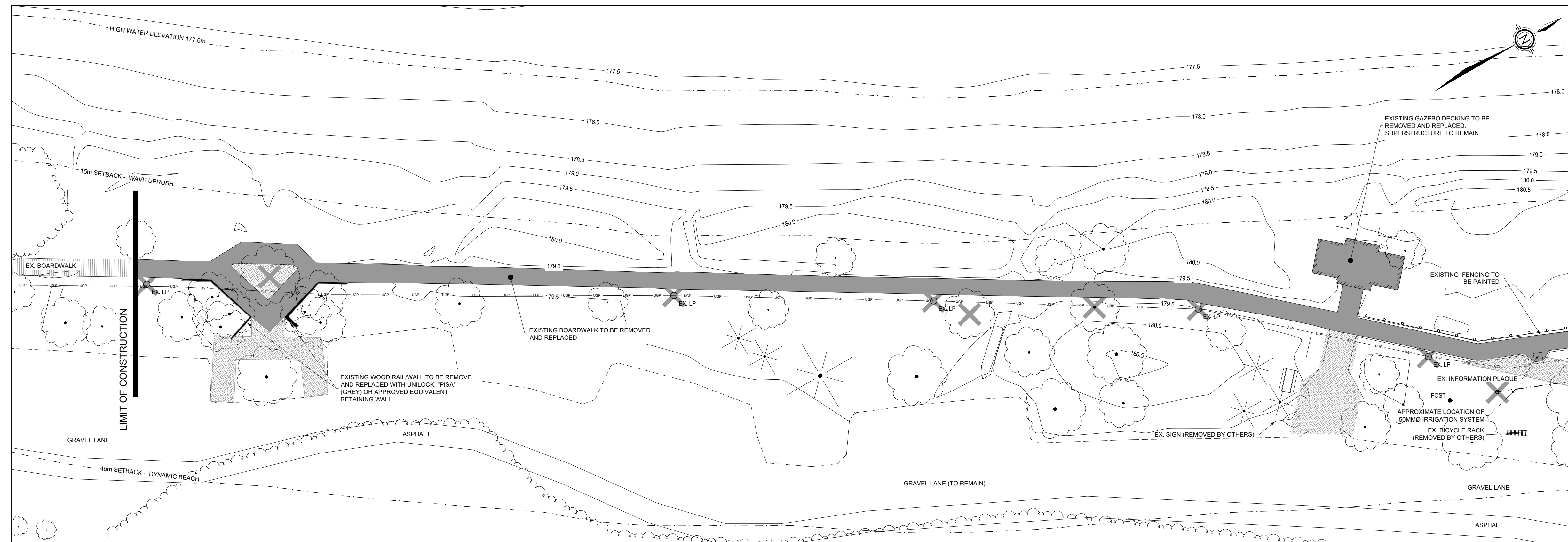
GEI CONSULTANTS CANADA, INC.
1260 2ND AVENUE EAST
OWEN SOUND, ON
UNIT 1
519-376-1805



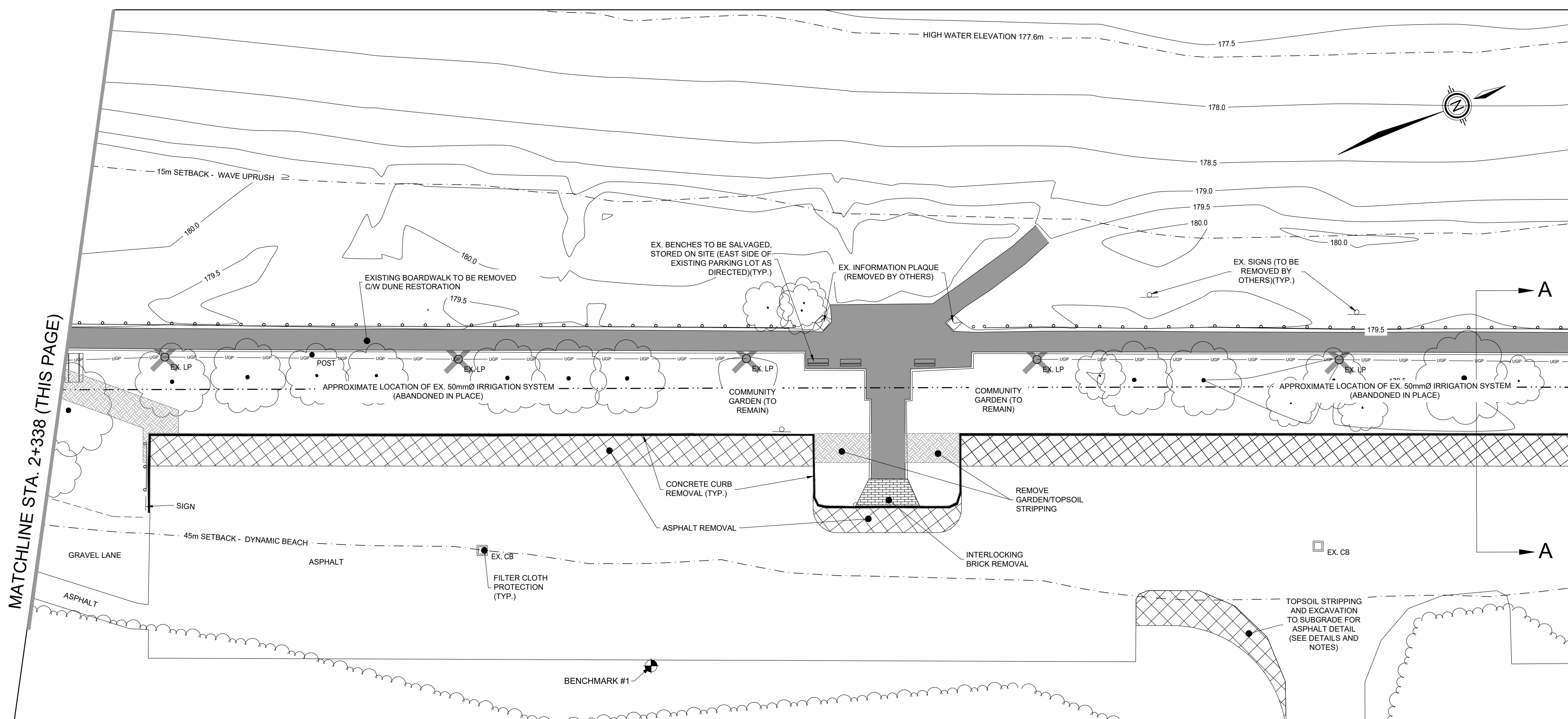
					DRAWING NO. : TS
2	8/5/2025	ISSUED FOR TENDER	A.J.F.		
1	7/4/2025	ISSUED FOR S.V.C.A. REVIEW	A.J.F.		
NO.	DATE	ISSUE/REVISION	APP		

GEI PROJECT NO. 2401516

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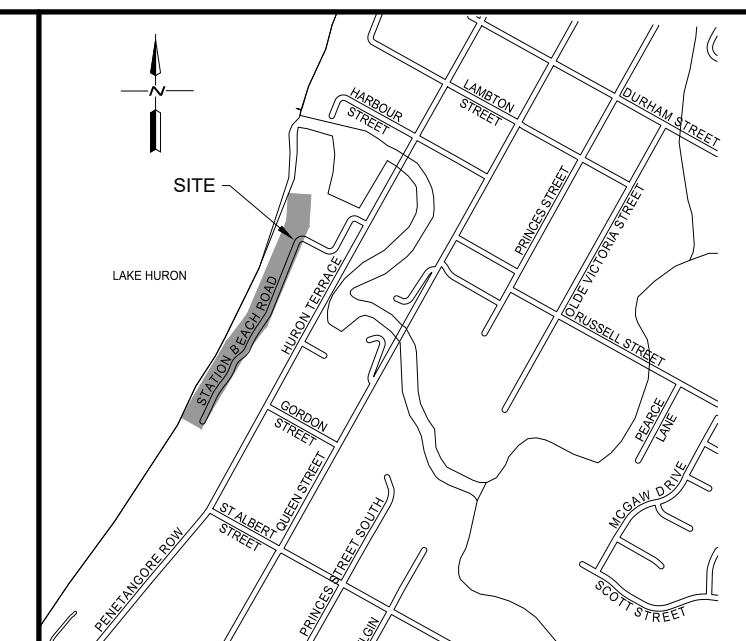


PLAN VIEW
SCALE = 1:250



PLAN VIEW
SCALE = 1:250

MATCHLINE STA. 2+338 (THIS PAGE)



MUNICIPALITY OF KINCARDINE
KEY PLAN
NOT TO SCALE

NOTES

1. TOPOGRAPHIC SURVEYS CONDUCTED BY GM BLUEPLAN ENGINEERING LIMITED, SEPTEMBER 19, 2023.
2. COORDINATES ON THIS PLAN ARE ADJUSTED GROUND COORDINATES DERIVED FROM GRID COORDINATES OF THE UTM 17N NAD83(CSRG17) COORDINATE SYSTEM AND ARE BASED ON EARTH'S GEODETIC FRAMEWORK OF PERMANENT GPS/GNSS REFERENCE STATIONS.
3. ELEVATIONS ON THIS PLAN ARE REFERENCED TO CANADIAN GEODETIC VERTICAL DATUM OF 1928 (CGVD28) BY CONVERTING ELIPSOIDAL HEIGHTS TO ORTHOMETRIC ELEVATIONS USING THE HTV2.0(2010) GEOD MODEL PROVIDED BY NATURAL RESOURCES CANADA.
4. ALL DIMENSIONS AND ELEVATIONS ARE IN METRIC UNLESS OTHERWISE NOTED.

BENCHMARK 1 ELEV. - 179.41m

TOP OF CUT CROSS, AS SHOWN ON PLAN

BENCHMARK 2 ELEV. - 179.37m

TOP OF CUT CROSS, AS SHOWN ON PLAN

BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR ANY DAMAGE TO THEM.

BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR ANY DAMAGE TO THEM.

3	08/05/2025	ISSUED TENDER	A.
2	07/04/2025	ISSUED FOR S.V.C.A APPROVAL	A.
1	08/08/2024	ISSUED FOR CLIENT REVIEW	A.
NO.	DATE	REVISION DESCRIPTION	CH

GEI Consultants
GEI CONSULTANTS CANADA LTD.
1260-2ND AVENUE EAST
OWEN SOUND, ONTARIO N4K 2J3
(519) 376-1805

BOARDWALK RECONSTRUCTION

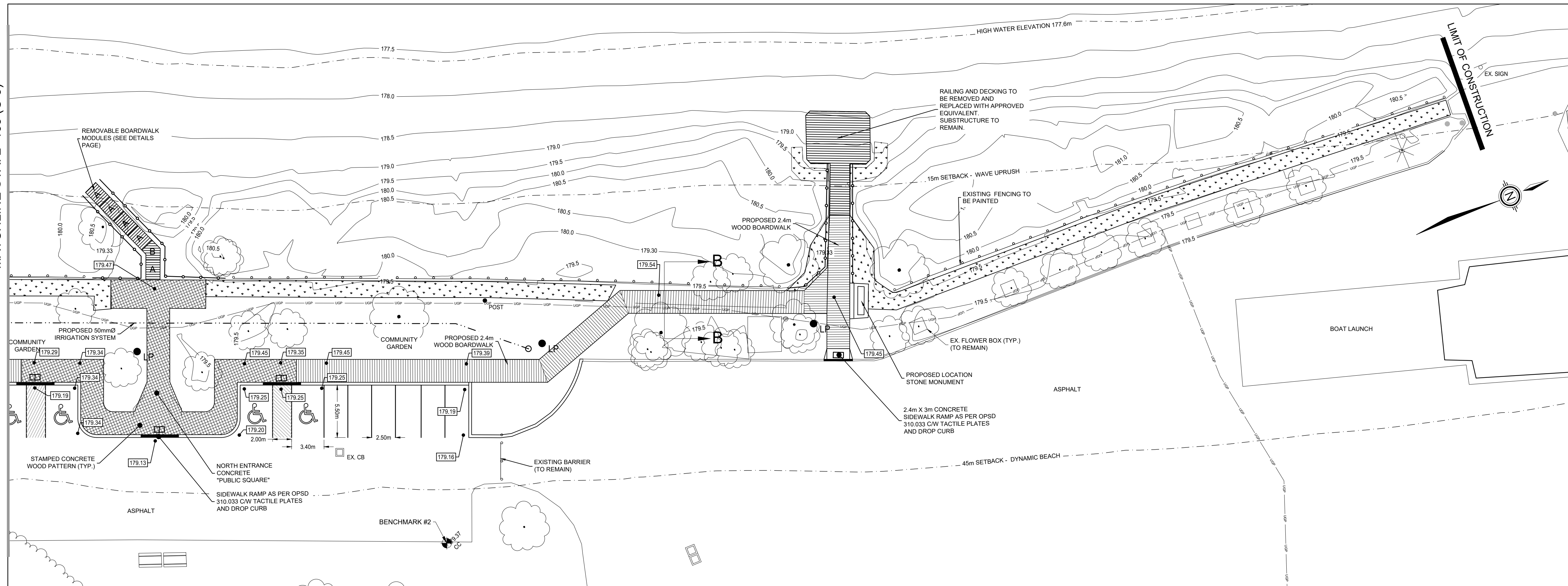
MUNICIPALITY OF KINCARDINE

STATION BEACH

EXISTING CONDITIONS AND REMOVALS

DRAWN BY : T.J.J.	APPROVED BY : A.J.F.	PROJECT NO. : 2401516	DRAWING NO. C1
DESIGNED BY : A.J.F.	DATE : JAN. 2024	SCALE : AS SHOWN	

MATCHLINE STA. 2+463 (C-3)



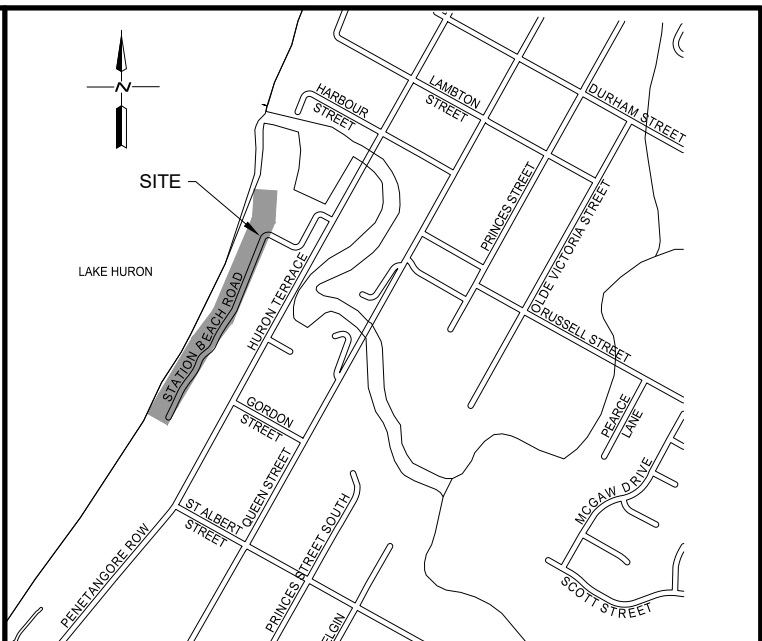
PLAN VIEW
SCALE = 1:250

LEGEND

- EXISTING GROUND CONTOUR
- EXISTING EDGE OF PAVEMENT
- EXISTING EDGE OF GRAVEL
- EXISTING UNDERGROUND HYDRO
- EXISTING IRRIGATION SYSTEM
- EXISTING POST AND TUBE FENCE
- EXISTING TREE (DRIP LINE)
- EXISTING CONIFEROUS/DECIDUOUS TREES
- EXISTING LIGHT POST
- EXISTING WOOD POST
- EXISTING CATCH BASIN
- EXISTING SIGN
- PROPOSED PATTERNED CONCRETE
- WOODEN BOARD WALK
- DUNE RESTORATION AREA
- CONCRETE CURB & GUTTER
- NEW POST AND ROPE FENCE
- NEW POST AND TUBE FENCE
- PROPOSED GRADE
- NEW LIGHT POST
- TACTILE PLATES (OPSD 310.039)

NOTE:

- ALL EXISTING ELECTRICAL WIRING AND LIGHTS TO BE REMOVED BY CONTRACTOR (6 LIGHT STANDARDS TO BE SALVAGED).
- ALL EXISTING IRRIGATION SYSTEM TO BE REMOVED BY CONTRACTOR.
- ALL EXISTING SIGNAGE, WASTE BINS, PICNIC TABLES AND BENCHES TO BE REMOVED BY OTHERS.



MUNICIPALITY OF KINCARDINE
KEY PLAN
NOT TO SCALE

NOTES

- TOPOGRAPHIC SURVEYS CONDUCTED BY GM BLUEPLAN ENGINEERING LIMITED, SEPTEMBER 19, 2023.
- COORDINATES ON THIS PLAN ARE ADJUSTED GROUND COORDINATES DERIVED FROM GRID COORDINATES OF THE UTM 17N NAD83(CRS-77) COORDINATE SYSTEM AND ARE BASED ON OBSERVATIONS FROM A NETWORK OF PERMANENT GPS/GNSS REFERENCE STATIONS.
- ELEVATIONS ON THIS PLAN ARE REFERENCED TO CANADIAN GEODETIC VERTICAL DATUM OF 1928 (CGVD28) BY CONVERTING ELIPSODAL HEIGHTS TO ORTHOMETRIC ELEVATIONS USING THE HTV2.0(2010) GEOID MODEL PROVIDED BY NATURAL RESOURCES CANADA.
- ALL DIMENSIONS AND ELEVATIONS ARE IN METRIC UNLESS OTHERWISE NOTED.

BENCHMARK 1 ELEV. - 179.41m

TOP OF CUT CROSS. AS SHOWN ON PLAN

BENCHMARK 2 ELEV. - 179.37m

TOP OF CUT CROSS. AS SHOWN ON PLAN

THE POSITION OF POLE LINES, CONDUITS, WATERMANS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS AND WHERE SHOWN THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED.

BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR ANY DAMAGE TO THEM.

NO.	DATE	REVISION DESCRIPTION	CHKD
3	06/05/2025	ISSUED TENDER	A.J.F.
2	07/04/2025	ISSUED FOR S.V.C.A. APPROVAL	A.J.F.
1	08/08/2024	ISSUED FOR CLIENT REVIEW	A.J.F.



BOARDWALK RECONSTRUCTION

MUNICIPALITY OF KINCARDINE

STATION BEACH

PROPOSED WORKS

DRAWN BY : T.J.J.	APPROVED BY : A.J.F.	PROJECT NO. : 223321	DRAWING NO. : C4
DESIGNED BY : A.J.F.	DATE : JAN. 2024	SCALE : AS SHOWN	

1. DRAWINGS ARE NOT TO BE SCALED.
2. ALL DIMENSIONS TO BE CHECKED AND VERIFIED ON THE SITE PRIOR TO ANY CONSTRUCTION. ANY DISCREPANCIES ARE TO BE REPORTED TO THE ENGINEER BEFORE PROCEEDING.
3. UNLESS OTHERWISE NOTED ON THE DRAWINGS THE STANDARD MUNICIPALITY OF KINCARDINE, MTO AND OPSD DRAWINGS AND OPSD ARE TO CONSTITUTE PART OF THIS CONTRACT AND DRAWINGS.
4. REFER TO O.B.C. - 2012 STANDARDS AND SPECIFICATIONS AND MUNICIPALITY OF KINCARDINE STANDARD SPECIFICATIONS AND DRAWINGS FOR LIST OF APPROVED MANUFACTURERS AND MATERIALS.
5. EXISTING STRUCTURES ARE NOT TO BE DISTURBED, NOR ENCRONCH ON ADJACENT PROPERTIES UNLESS INSTRUCTED BY THE ENGINEER.
6. S.V.C.A. PERMIT REQUIRED (BY OTHERS) PRIOR TO CONSTRUCTION.
7. THE APPROVAL OF THIS PLAN DOES NOT EXEMPT THE OWNERS CONTRACTOR FROM OBTAINING, BUT NOT LIMITED TO THE FOLLOWING PERMITS, ROAD CUTS SEWER PERMITS, RELOCATION OF SERVICES, ENCRONCHMENT AGREEMENTS, APPROACH APPROVAL PERMITS, ETC.
8. THESE ARE TO BE READ IN CONJUNCTION WITH THE STRUCTURAL PLANS, LANDSCAPE PLAN, AND ANY OTHER PLANS OR DRAWINGS WHICH DEPICT WORKS THAT ARE PROPOSED FOR THIS SITE.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL AND SAFETY MEASURES DURING THE CONSTRUCTION PERIOD, INCLUDING THE SUPPLY, INSTALLATION AND REMOVAL OF ALL NECESSARY SIGNAGE, DELINEATORS, MARKERS AND BARRIERS. ALL SIGNS, ETC. SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS FOR THE MUNICIPALITY AND THE MTO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR ONTARIO.
10. THE CONTRACTOR SHALL ENDEAVOUR TO PREVENT MUD TRACKING ONTO EXISTING RIGHT-OF-WAYS AND SHALL PROVIDE FOR CLEANUP AT HIS OWN EXPENSE AS DIRECTED BY THE MUNICIPALITY. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE TO CONTROL DUST ON THE PROJECT AND HE SHALL PROVIDE CONTROLLING MEASURES AS DIRECTED BY THE MUNICIPALITY.
11. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING AND PROTECTING ALL EXISTING UTILITIES PRIOR TO AND DURING CONSTRUCTION. LOCATION OF EXISTING UTILITIES TO BE VERIFIED IN THE FIELD.
12. ALL CONSTRUCTION WORK IS TO BE CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS.


1. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR CONTACTING GEI CONSULTANTS LIMITED FOR THE COMPLETION OF ALL REQUIRED SITE INSPECTIONS.

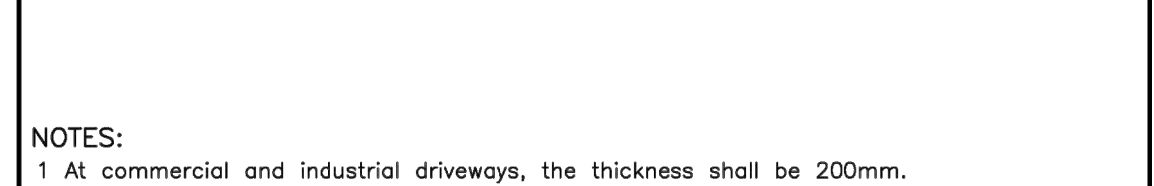
- ## SEDIMENT AND EROSION CONTROL NOTES
1. SITE WORKS ARE TO BE STAGED IN SUCH A MANNER THAT EROSION WILL BE MINIMIZED AND THAT BARRIERS AND SEDIMENTATION FACILITIES WITHIN THE SITE ARE PROVIDED TO CONTROL EROSION DURING CONSTRUCTION.
 2. CLEARING AND GRUBBING OF THE SITE SHOULD BE KEPT TO A MINIMUM AND VEGETATION REMOVED ONLY IN ADVANCED OF IMMEDIATE CONSTRUCTION.
 3. STOCKPILES OF EARTH OR TOPSOIL ARE TO BE LOCATED AND PROTECTED TO MINIMIZE ENVIRONMENTAL INTERFERENCE. STOCKPILES SHOULD NOT BE LOCATED IMMEDIATELY ADJACENT TO DITCHES OR ROAD ALLOWANCES. EROSION CONTROL FENCING IS TO BE INSTALLED AROUND THE BASE OF ALL STOCKPILES. PERMANENT VEGETATION OR NETTING ARE TO BE USED. SEDIMENTATION TRAP SHOULD BE INSTALLED AROUND THE STOCKPILE. MATERIALS SURPLUS TO THE NEEDS OF THE SITE DEVELOPMENT ARE TO BE REMOVED BY THE CONTRACTOR.
 4. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED AS SITE DEVELOPMENT PROGRESSES. THE CONTRACTOR IS TO PROVIDE ALL ADDITIONAL EROSION CONTROL STRUCTURES.
 5. THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT MUNICIPAL ROADWAYS AND SUBWAYS ARE KEPT OPEN AND ACCESSIBLE TO TRAFFIC FROM VEHICULAR TRACKING ETC. TO AND FROM THE SITE AT THE END OF EACH WORK DAY.

1. CONTRACTOR TO RESTORE ADJACENT LANDS THAT HAVE BEEN DISTURBED DURING CONSTRUCTION TO PREVIOUS CONDITION OR BETTER
2. ALL FILL WITHIN THE SITE TO BE COMPACTED TO A MIN. OF 98% STD. PROCTOR DENSITY. ALL FILL WITHIN THE SITE PARKING AREA TO BE COMPACTED TO A MIN. OF 95% STD. THE SUITABILITY OF ALL FILL MATERIALS ARE TO BE CONFIRMED BY A RECOGNIZED SOILS CONSULTANT TO THE MUNICIPALITY, PRIOR TO INSTALLATION OF ANY ROAD BASE MATERIALS.
3. GRASS AREAS TO BE RESTORED WITH 150mm TOPSOIL. (OPSS 802) AND SOD (OPSS 803).
4. ALL COMPACTION TO BE CERTIFIED BY A GEOTECHNICAL CONSULTANT.

NOTES:

- 1 When sidewalk is continuously adjacent, the dropped curb at entrances shall be reduced to 75mm.
- 2 For slipforming procedure a 5% batter is acceptable.
- A Treatment at entrances shall be according to OPSD 351.010.
- B Outlet treatment shall be according to the OPSD 610 Series.
- C The transition from one curb type to another shall be a minimum length of 3.0m, except in conjunction with guide rail where it shall be according to the OPSD 900 Series.
- D All dimensions are in millimetres unless otherwise shown.


ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2012	Rev 2	
CONCRETE BARRIER CURB			
	OPSD 600.110		

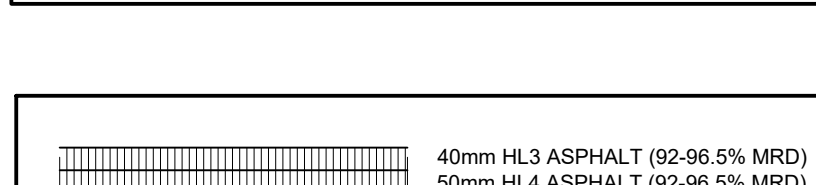


NOTES:

- 1 At commercial and industrial driveways, the thickness shall be 200mm.
- 2 Sidewalk width shall be wider when specified.
- 3 This OPSD shall be read in conjunction with OPSD 310.030, 310.031, 310.033, and 310.039.

A All dimensions are in millimetres unless otherwise shown.

All dimensions are in millimetres unless otherwise shown.	
ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2019 Rev 3
CONCRETE SIDEWALK ADJACENT TO CURB WITH GUTTER	
QPSD 310.020	



THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED.

BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR ANY DAMAGE TO THEM.

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3	08/05/2025	ISSUED TENDER	A.J.F.
2	07/04/2025	ISSUED FOR S.V.C.A APPROVAL	A.J.F.
1	08/08/2024	ISSUED FOR CLIENT REVIEW	A.J.F.
NO.	DATE	REVISION DESCRIPTION	CHKD



DETAILS AND NOTES

DRAWN BY : T.J.J.	APPROVED BY : A.J.F.	PROJECT NO. : 223321	DRAWING NO. : DE1
DESIGNED BY : A.J.F.	DATE : JAN. 2024	SCALE : AS SHOWN	

GENERAL – STRUCTURAL

1. READ STRUCTURAL DRAWINGS IN CONJUNCTION WITH OTHER CONTRACT DOCUMENTS.
2. DO NOT RELY ON DRAWINGS UNLESS THEY ARE SIGNED AND SEALED.
3. THE CONTRACTOR IS TO CHECK AND VERIFY ALL DIMENSIONS ON THE STRUCTURAL DRAWINGS ON SITE BEFORE CONSTRUCTION. ANY DISCREPANCIES OR ERRORS MUST BE REPORTED TO THE ENGINEER PRIOR TO COMMENCING WORK.
4. DO NOT SCALE DRAWINGS.
5. DESIGN LIVE LOADS FOR EACH PORTION OF THE STRUCTURE ARE SHOWN. DO NOT EXCEED THESE LOADS DURING CONSTRUCTION.
6. FEATURES OF CONSTRUCTION NOT FULLY SHOWN ARE OF THE SAME CHARACTER AS THOSE NOTED FOR SIMILAR CONDITIONS.
7. STRUCTURAL DESIGN IS BASED ON THE LATEST EDITION OF THE NATIONAL AND ONTARIO BUILDING CODES.
8. THE CONTRACTOR IS RESPONSIBLE FOR ARRANGING FOR THE TESTING OF CONCRETE. COMPACTION, REVIEW OF STRUCTURAL REINFORCING AND STRUCTURAL STEEL FOR ALIGNMENT. BOLTS AND WELDED CONNECTIONS AND FOR THE PROMPT SUBMISSION OF ALL REPORTS TO THE ENGINEER AND ARCHITECT.
9. ANY TEMPORARY SHORING REQUIRED TO CONSTRUCT THE WORKS NOT SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
10. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT THE START OF THE PROJECT AND ARRANGE FOR ALL REVIEWS IN ACCORDANCE WITH CLAUSE 10.2 OF THE BUILDING CODE ACT AND DIV. C, PART 1 OF THE ONTARIO BUILDING CODE. PROVIDE MINIMUM 48 HOURS NOTICE WHEN A REVIEW IS REQUIRED. GEI CONSULTANTS CANADA LTD. MAY BE CONTACTED BY PHONE AT (519) 376-1805 TO ARRANGE REVIEWS.
11. WHERE DEMOLITION OR RENOVATION OF EXISTING BUILDINGS IS INVOLVED, IT IS THE RESPONSIBILITY OF THE OWNER TO COMPLETE A DESIGNATED SUBSTANCE SURVEY. A COPY OF THIS SURVEY SHALL BE FORWARDED TO THE ENGINEER AND TO THE CONTRACTOR PRIOR TO BEGINNING CONSTRUCTION.
12. WHERE IMPORTING OR EXPORTING OF SOILS FROM THE SITE IS REQUIRED, THE OWNER OR GENERAL CONTRACTOR SHALL ENSURE THAT SOIL IS MANAGED IN ACCORDANCE WITH MECP EXCESS SOIL STANDARDS (O.Reg.407/19).
13. GEI CONSULTANTS CANADA LTD.'S SCOPE OF WORK IS LIMITED TO:
 - CONCEPTUAL DESIGN OF BOTH CONCRETE AND WOOD FRAMED BOARDWALK
 - FIELD REVIEW OF CONSTRUCTION.
14. GEI CONSULTANTS CANADA LTD. CANNOT BE RESPONSIBLE FOR CHANGES MADE DURING CONSTRUCTION FOR ANY REASON, UNLESS WRITTEN APPROVAL IS PROVIDED BY THE ENGINEER. THE OWNER AND CONTRACTOR ARE RESPONSIBLE FOR COORDINATING MECHANICAL, GRADING, DRAINAGE, ENERGY EFFICIENCY, ARCHITECTURAL, AND FIRE AND LIFE SAFETY DETAILS TO ENSURE THAT ALL RELEVANT CODES AND REGULATIONS ARE MET.

WOOD

1. THE STRUCTURAL TIMBER & LUMBER SHALL BE No. 1 OR 2 GRADE SPECIES SPF OR BETTER UNLESS NOTED OTHERWISE.
2. THE DESIGN OF THE BEAMS, COLUMNS AND LINTELS IS BASED ON THE LIMIT STATES DESIGN SPECIFIED UNDER CSA 086 (LATEST EDITION). ANY SUBSTITUTIONS OF SPECIES, GRADE OR GROUP MUST BE APPROVED BY THE ENGINEER PRIOR TO THE COMMENCING OF WORK.
3. THE LUMBER WAS DESIGNED FOR A MOISTURE CONTENT GREATER THAN 15% AT THE TIME OF MANUFACTURE AND LESS THAN 15% IN SERVICE.
4. DURING CONSTRUCTION, ENSURE ALL MEMBERS ARE IN GOOD BEARING CONTACT.
5. CONNECTION HARDWARE IS TO RECEIVE ONE COAT OF ZINC CHROMATE PRIMER OR EQUAL. ENSURE THAT ALL HARDWARE AND FASTENERS IN CONTACT WITH PRESSURE TREATED WOOD ARE COMPATIBLE WITH THE PRESSURE TREATING CHEMICALS.
6. ALL PLYWOOD JOINTS ARE TO BE STAGGERED. NAIL ALL FLOOR, ROOF AND WALL SHEATHING AT 150mm (6") o.c. AT EDGES AND 300mm (1 ft) CENTRES ELSEWHERE UNLESS NOTED OTHERWISE.
7. PROVIDE SOLID BLOCKING IN THE EXTERIOR STUD WALLS AT THE LOCATION OF ALL JOINTS IN THE PLYWOOD AND AT MAXIMUM VERTICAL SPACING OF 1200mm ± (4 ft). SECURELY NAIL AT A 150 mm (6") MAXIMUM SPACING THE PLYWOOD TO THE SOLID BLOCKING.
8. ALL PLYWOOD SHALL CONFORM TO CSA 0121 (LATEST EDITION) OR CSA 0151 (LATEST EDITION).
9. PROVIDE STANDARD JOIST HANGERS AS REQUIRED BY SIMPSON, RSC OR APPROVED EQUIVALENT.
10. ALL WOOD IN CONTACT WITH CONCRETE SHALL BE PRESSURE TREATED.
11. PRESSURE TREATED WOOD SHALL BE NON-INCISED.
12. MAXIMUM BRIDGING SPACING FOR SAWN LUMBER JOISTS SHALL BE 2300 mm (7'-6") o.c.
13. WHERE A BUILT-UP WOOD BEAM IS CONTINUOUS OVER MORE THAN ONE SPAN, INDIVIDUAL MEMBERS ARE PERMITTED TO BE BUTTED TOGETHER TO FORM A JOINT AT OR WITHIN 150 mm (6") OF THE END QUARTER POINTS OF THE CLEAR SPANS, PROVIDED THE QUARTER POINTS ARE NOT THOSE CLOSEST TO THE ENDS OF THE BEAM.
14. SPIKE EACH LAMINATION OF BUILT-UP BEAMS @ 300 mm (12") o.c. AS FOLLOWS:
 - 1 ROW OF 90 mm (3½") LONG NAILS FOR 140 mm (5½") DEPTH
 - 2 ROWS OF 90 mm (3½") LONG NAILS FOR GREATER DEPTH
15. SPIKE AND GLUE BUILT-UP POSTS @ 220 mm (8½") o.c. AS PER CODE AS FOLLOWS:
 - 1 ROW FOR 38 x 89 (2x4)
 - 2 ROWS FOR LARGER SIZES
16. THE ROOF TRUSSES ARE TO BE "FLAT" OWWJ OR PROFILED TRUSSES DESIGNED FOR THE SPECIFIED LOADS. THE SUPPLIER IS TO PROVIDE ERECTION AND MEMBER FABRICATION DRAWINGS STAMPED BY A PROFESSIONAL ENGINEER REGISTERED OR LICENSED IN THE PROVINCE OF ONTARIO. THE DRAWINGS MUST INDICATE DESIGN LOADS, TIMBER SPECIES, GRADES, BRACING AND CONNECTORS. ALL TRUSSES MUST BE ANCHORED WITH APPROPRIATE TIE-DOWN METAL ANCHORS TO RESIST UPLIFT AS CALCULATED AND SHOWN IN THE TRUSS DESIGN CALCULATIONS.
17. THE BEARING SHOWN ON THE DRAWINGS IS THE MAXIMUM WIDTH TO BE PROVIDED AND THE TRUSS MANUFACTURER MUST DESIGN THE TRUSSES TO SUIT THE BEARING WIDTH.
18. SPIKING OF TRUSS BRACING SHALL CONFORM TO THE TPC MANUAL AS FOLLOWS:
 - LATERAL BRACES: 2 - 2½" (64 mm) COMMON WIRE NAILS (1x4)
 - 2 - 3" (76 mm) COMMON WIRE NAILS (2x4)
 - "T" BRACES: 3" (76 mm) COMMON WIRE NAILS @ 6" (152 mm) o.c.
19. ALL PERMANENT BRACING FOR TRUSSES SHALL BE SECURELY ANCHORED BY BACK BRACING DIAGONALLY OR ATTACHING TO END WALLS ACCORDING TO GUIDELINES PUBLISHED IN THE "GUIDE TO GOOD PRACTICE FOR HANDLING, INSTALLING, RESTRAINING AND BRACING OF METAL PLATE CONNECTED WOOD TRUSSES", BY BUILDING COMPONENT SAFETY INFORMATION CANADA.
20. ROOF OVERFRAMING (EG. TO CREATE VALLEYS ABOVE PRINCIPAL ROOF FRAMING) SHALL BE SUPPORTED BY PRINCIPAL FRAMING BELOW. PROVIDE 2x4 (38 x 89) VERTICAL POSTS AT EACH LOCATION WHERE THE OVER-FRAMING RAFTERS PASS OVER THE PRINCIPAL FRAMING. WHERE OVERFRAMING RUNS PARALLEL TO PRINCIPAL FRAMING, PROVIDE VERTICAL POSTS AT 2'-0" (610mm) o.c. MAX. VERTICAL POSTS LONGER THAN 6'-0" (1829 mm) TO HAVE LATERAL BRACING SO THAT THE DISTANCE BETWEEN THE END POINT AND / OR ROWS OF BRACING DOES NOT EXCEED 6'-0" (1829 mm).
21. CONTINUITY OF POSTS MUST BE MAINTAINED THROUGH FLOORS BY SOLID BLOCKING OR POST EXTENSIONS.
22. SHEAR WALLS SHALL BE CONSTRUCTED WHERE NOTED ON DRAWINGS USING ½" (12 mm) PLYWOOD AND MIN. 2x4 (38 x 89) SPP#2 STUDS SPACED @ 1'-4" (406 mm) o.c. NAILED WITH 2½" (64 mm) ARDOX NAILS SPACED AT 6" (152 mm) o.c. PROVIDE SIMPSON HDBA HOLD DOWN CLIPS AT EACH END.

CONSTRUCTION JOINTS

1. CONSTRUCTION JOINTS SHALL BE DESIGNED AND LOCATED SO AS NOT TO IMPAIR THE STRENGTH OF THE STRUCTURE. IF CONSTRUCTION JOINTS ARE NOT SPECIFICALLY LOCATED AND THERE IS ANY DOUBT CONCERNING THE LOCATION, THE CONTRACTOR MUST CONSULT WITH THE ENGINEER.
2. WHERE A CONSTRUCTION JOINT IS TO BE MADE, THE SURFACE OF THE SET CONCRETE SHALL BE THOROUGHLY CLEANED OF FOREIGN MATTER AND LAITANCE, SATURATED WITH WATER AND LEFT IN A DAMP CONDITION WITH NO FREE WATER ON THE SURFACE IMMEDIATELY BEFORE PLACING ADJACENT CONCRETE.
3. A 38 mm X 89 mm (1½" x 3½") KEYWAY MUST BE PLACED IN THE WALL AT ALL CONSTRUCTION JOINTS IN CONCRETE WALLS.
4. REINFORCING STEEL PROJECTING THROUGH CONSTRUCTION JOINT SHALL BE THOROUGHLY CLEANED OF LOOSE FLAKY RUST, MUD, OIL, DRIED CONCRETE OR OTHER COATINGS WHICH WOULD DESTROY OR REDUCE BOND.
5. THE MAXIMUM SPACING OF THE CONTROL JOINTS IN POURED CONCRETE FOUNDATION OR RETAINING WALLS SHALL BE 11 m (36'-0").
6. REFER TO MASONRY NOTES FOR MASONRY CONTROL JOINT LOCATIONS.

SLAB ON GRADE

1. REMOVE ALL TOPSOIL AND SOILS CONTAINING ORGANICS. CONTRACTOR IS TO REFER TO SOILS REPORT, IF AVAILABLE FOR INDICATION OF DEPTHS OF UNSUITABLE SOIL AND IS TO REMOVE SOFT OR WEAK AREAS TO COMPETENT MATERIAL. ALL OF THIS WORK IS TO BE CARRIED OUT UNDER THE DIRECT INSTRUCTIONS OF THE SOILS ENGINEER.
2. PROOF ROLL SUB-GRADE AS DIRECTED BY SOILS ENGINEER.
3. BACKFILL WITH GRANULAR MATERIAL SUITABLE TO SOILS ENGINEER.
4. BACKFILL SHOULD BE COMPACTED IN LAYERS NOT EXCEEDING 150 mm (6") IN COMPACTED THICKNESS, AND SHOULD BE COMPACTED TO A UNIFORM DRY DENSITY OF 98% STANDARD PROCTOR MAXIMUM DRY DENSITY. MATERIAL SHALL CONSIST OF GRANULAR B UP TO 150 mm (6") BELOW THE UNDERSIDE OF THE CONCRETE SLAB, WITH 150 mm (6") OF GRANULAR A OR CRUSHED STONE DIRECTLY BELOW THE SLAB.
5. PLACE SLABS-ON-GRADE ON MATERIAL CAPABLE OF SUSTAINING 24 kN/m² (500 psf) WITHOUT SETTLEMENT RELATIVE TO THE BUILDING FOUNDATIONS.
6. REINFORCE SLAB-ON-GRADE WITH WWM 152x152 (6"x6") MW18.7XMMW18.7 UNLESS NOTED OTHERWISE ON THE DRAWINGS. ROLLED REINFORCING MESH IS UNACCEPTABLE. SHEETS OF MESH MUST BE USED. SITUATE MESH ON "CHAIRS" ABOVE SUB-GRADE AT MID-DEPTH OF SLAB. JOINTS TO OVERLAP 300 mm (12") IN EACH DIRECTION.
7. PROVIDE SLAB THICKENING UNDER ALL MASONRY PARTITIONS.
8. REFER TO THE "CAST-IN-PLACE CONCRETE" SECTION FOR THE REQUIREMENTS FOR COMPRESSIVE STRENGTH, WATER CEMENT RATIO, AND AIR ENTRAINMENT REQUIREMENTS. IF THE SLAB IS TO BE STEEL TROWEL FINISHED, AND EXPOSURE CLASS C-4, S-1, S-2, OR S-3 APPLIES, THEN THE REQUIREMENT FOR AIR ENTRAINMENT MAY BE WAIVED, AS PER CSA A23.1 / A23.2 (LATEST EDITION), TABLE 2.
9. PROVIDE CONTROL JOINTS OR SAW-CUTS TO CREATE AREAS 4.5 m x 4.5 m (15' x 15') MAX. PROVIDE DIAMOND CUT PATTERN AROUND COLUMNS AND AT DOORWAYS.

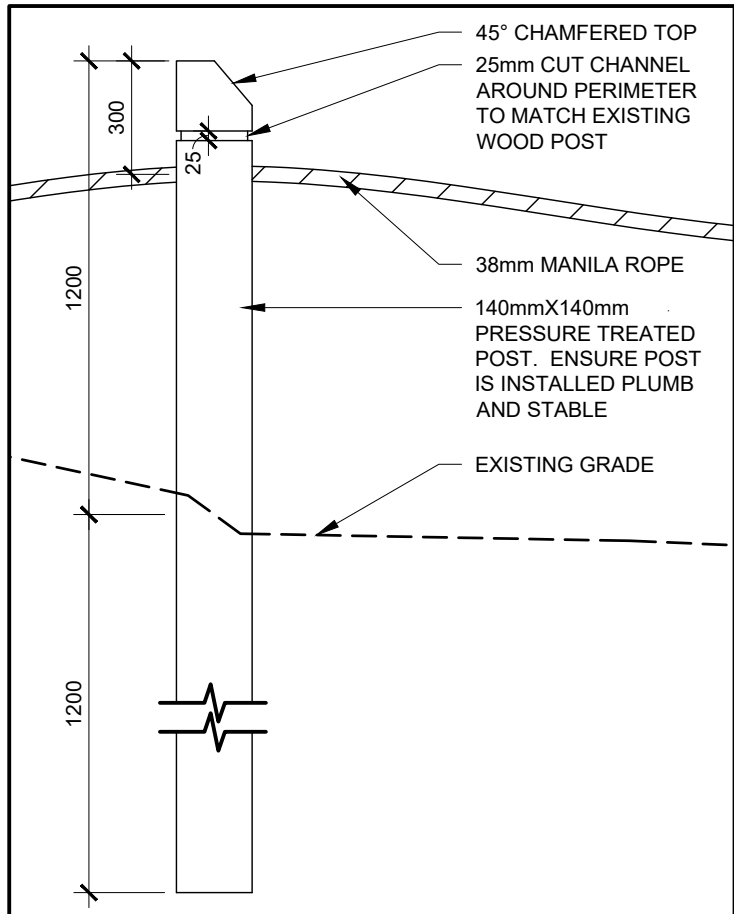
DESIGN INFORMATION

1. ALL DESIGN LOADINGS SHOWN ARE SPECIFIED (UNFACTORED) LOADS.
2. IMPORTANCE FACTOR, I: NORMAL (1.0)
3. BASIC SNOW LOAD FACTOR, C_s: 0.80
4. SNOW:
 - GROUND SNOW LOAD, S_g: 2.6 kPa (54.3 psf)
 - RAIN LOAD, S_r: 0.4 kPa (8.4 psf)
 - WIND LOAD, C_w: 1.0
 - SLOPE, C_s: 1.0
 - SHAPE, C_e: 1.0
 - ROOF SNOW LOAD: $I [(S_g \times C_w \times C_e \times C_s \times C_e) + S_r]$
= 1.0 [(2.6 x 1.0 x 1.0 x 1.0 x 0.8) + 0.4] = 2.48 kPa (51.8 psf)
5. HOURLY WIND PRESSURES: 1/10 YEAR: 0.37 kPa (7.7 psf)
1/50 YEAR: 0.48 kPa (10.0 psf)
6. DEAD:
 - BOARDWALK LOAD: 0.72 kPa (15 psf)
7. LIVE:
 - OCCUPANCY LOAD: 4.8 kPa (100 psf)
8. VEHICLE:
 - MAX AXLE LOAD: 22.5kN (5000lbs)

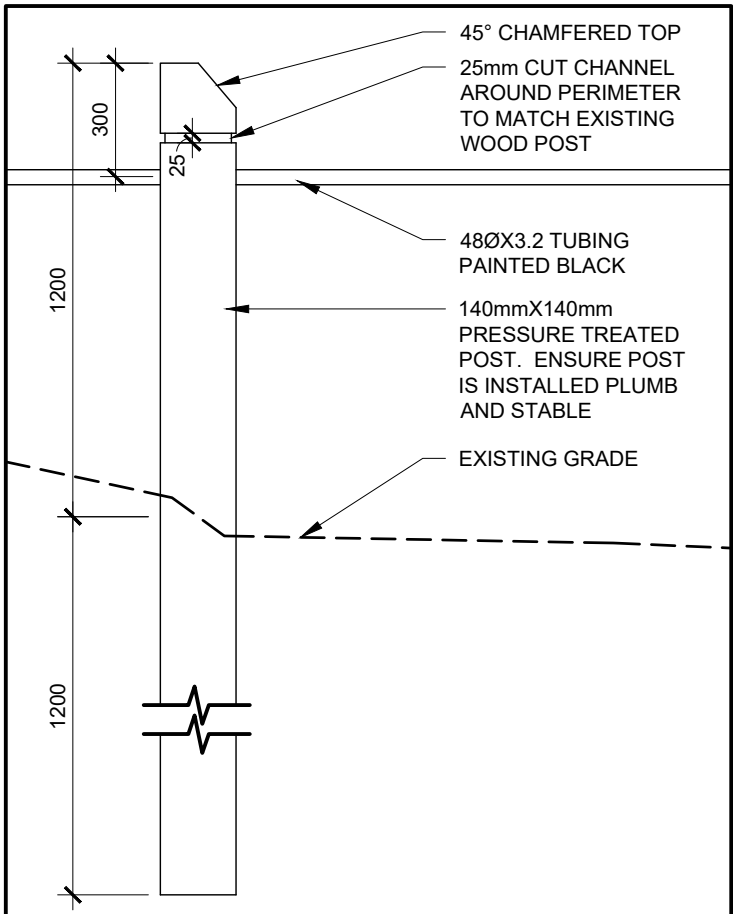
CAST-IN-PLACE CONCRETE

1. ALL CONCRETE MATERIALS, FORMWORK, TOLERANCES AND CONSTRUCTION SHALL CONFORM TO CSA A23.1 / A23.2 (LATEST EDITION).
2. REINFORCING STEEL BARS SHALL BE DEFORMED BILLET STEEL BARS, GRADE 400R CONFORMING TO CSA G30.18 (LATEST EDITION), UNLESS NOTED.
3. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185 (LATEST EDITION) FOR SMOOTH WIRE FABRIC AND ASTM A1064 / A1064M (LATEST EDITION) FOR DEFORMED WIRE FABRIC. WELDED WIRE FABRIC SHALL HAVE A MINIMUM YIELD STRENGTH OF 448 MPa.
4. THE FABRICATOR SHALL SUPPLY PLACING DRAWINGS AND BAR LISTS IN ACCORDANCE WITH THE REINFORCING STEEL INSTITUTE OF CANADA, MANUAL OF STANDARD PRACTICE, CHAPTER 5, "SUBMISSION OF PLACING DRAWINGS AND BAR LISTS."
5. ALL REINFORCING BARS SHALL BE SECURELY TIED, SUPPORTED IN THE FORMS AND SPACED WITH STANDARD ACCESSORIES SO THAT THERE IS NO MOVEMENT DURING CONCRETE PLACEMENT.
6. REINFORCING IS TO BE PLACED IN GENERAL ACCORDANCE WITH REINFORCING STEEL INSTITUTE OF CANADA, MANUAL OF STANDARD PRACTICE, CHAPTER 7. ALL SPLICES SHALL BE A CLASS "B" SPLICE, UNLESS OTHERWISE NOTED.
7. CONCRETE COVER TO REINFORCING:
 - a) ALL CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH ... 75 mm (3")
 - b) ALL CONCRETE CAST IN FORMS, EXPOSED TO:
 - chlorides ... 60 mm (2½")
 - freezing and thawing only ... 40 mm (1½")
 - c) CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
 - slab and walls ... 20 mm (¾")
 - beams and columns ... 30 mm (1½")
8. ALL REINFORCING STEEL IN PLACE TO BE MADE AVAILABLE FOR REVIEW BY ENGINEER BEFORE POURING THE CONCRETE. ENGINEER TO BE NOTIFIED WELL IN ADVANCE OF POURING SCHEDULE. ENGINEER TO CARRY OUT REVIEW AT THEIR DISCRETION.
9. PROVIDE PORTLAND CEMENT OF CANADIAN MANUFACTURE CONFORMING WITH CSA-A3000 (LATEST EDITION), TYPE GU.
10. PROVIDE CLEAN, UNCOATED SAND AND COARSE AGGREGATES FROM APPROVED SOURCES WHICH CONFORM WITH CSA A23.1 / A23.2 (LATEST EDITION). NOMINAL SIZE OF COARSE AGGREGATES TO BE 14 mm (½") - 20 mm (¾").
11. CONCRETE SLUMPS SHALL BE CONSISTENT AT 80 mm (3") ± 20 mm (¾"). ADMIXTURES, WHERE APPROVED BY THE ENGINEER, SHALL CONFORM TO ASTM C494/C494M, AND MAY BE USED TO INCREASE THE SLUMP ABOVE THIS VALUE.
12. ALL CONCRETE ADMIXTURES SHALL CONFORM TO CAN/CSA A23.1 / A23.2 (LATEST EDITION) CLAUSE 4.2.4.
13. CURE CONCRETE FOR A MINIMUM OF SEVEN DAYS (CONTINUOUS WET CURE).
14. UNSHRINKABLE FILL SHALL HAVE THE FOLLOWING PROPERTIES:
 - MAX. 25 kg/m³ OF TYPE GU PORTLAND CEMENT (TYPE MH MAY BE USED FOR WINTER CONSTRUCTION)
 - SLUMP SHALL BE BETWEEN 150 mm AND 200 mm.
 - 4%-6% AIR ENTRAINMENT SHALL BE PROVIDED WHERE EXPOSURE TO FREEZE / THAW IS EXPECTED IN ACCORDANCE WITH CSA A23.1 / A23.2 (LATEST EDITION).
 - 28 DAY COMPRESSIVE STRENGTH SHALL BE 0.4 MPa.

CONCRETE WALKWAY SPECIFICATIONS					
COMPONENT	ENVIRONMENT (SEE NOTE 2)	CLASS OF EXPOSURE	MIN. 28 DAY COMPRESSIVE STRENGTH MPa (psi)	AIR CONTENT (SEE NOTE 3)	CURING TYPE (SEE NOTE 1)
SLAB ON GRADE	c) EXTERIOR	C-2	32 (4,600)	5%-8%	2
NOTES:					
1. CURING TYPE 1 - 10°C FOR 3 DAYS (OR UNTIL 40% OF SPECIFIED STRENGTH IS OBTAINED) CURING TYPE 2 - 10°C FOR 10 DAYS (OR UNTIL 70% SPECIFIED STRENGTH IS OBTAINED)					
2. "HEATED" REFERS TO A SPACE WHICH WILL BE INSULATED AND OR MAINTAINED AT OR ABOVE 10°C ON A CONSISTENT BASIS ALL YEAR.					
3. CONTRACTOR TO VERIFY NOMINAL SIZE OF AGGREGATE, REPORT TO ENGINEER IF SIZE IS NOT WITHIN RANGE OF 14 mm - 20 mm.					
4. REFER TO CSA A23.1 / A23.2 (LATEST EDITION) FOR MAX. WATER TO CEMENT RATIO.					
5. SLUMP SHALL BE 80mm ± 20mm UNLESS APPROVED OTHERWISE BY ENGINEER.					
EXPOSURE CLASS DEFINITIONS:					
C-2	NON-STRUCTURALLY REINFORCED (PLAIN) CONCRETE EXPOSED TO CHLORIDES AND FREEZING AND THAWING. EXAMPLES INCLUDE GARAGE FLOORS, PORCHES, STEPS, PAVEMENTS, SIDEWALKS, CURBS, AND GUTTERS.				



1 ROPE FENCE DETAIL



2 TUBE FENCE DETAIL

THE POSITION OF POLE LINES, CONDUITS, WATERMANS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED.

BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR ANY DAMAGE TO THEM.

2	08/05/2025	ISSUED FOR TENDER	Z.S.
1	07/15/2025	SVCA APPLICATION	Z.S.
NO	DATE	REVISION DESCRIPTION	CHKD

GEI

Consultants

GEI CONSULTANTS CANADA LTD.
1260-2ND AVENUE EAST
OWEN SOUND, ONTARIO N4K 2J3
(519)376-1805

BOARDWALK RECONSTRUCTION

MUNICIPALITY OF KINCARDINE

STATION BEACH

STRUCTURAL NOTES & DETAILS

DRAWN BY : B.I.W.W.	APPROVED BY : A.J.F.	PROJECT NO. : 2401516	DRAWING NO. : S1
DESIGNED BY : Z.S.	DATE : JUNE 2025	SCALE : AS SHOWN	

1 TYPICAL SECTION 'A-A'

S2

SCALE: 1/25

2 TYPICAL SECTION 'B-B'

S2

SCALE: 1/25

3 MODULAR BOARDWALK LEGEND

4 MODULAR BOARDWALK - FRAMING AND CONNECTION PLAN

5 MODULAR BOARDWALK - TYPICAL SECTION
S2

12 CONCRETE BOARDWALK - TYPICAL SECTION

6 PLATE #1 DETAIL

7 PLATE #2 DETAIL
S2

8 PLATE #3 DETAIL
S2

9 PLATE #4 DETAIL
S2

10 PLATE #5 DETAIL
S2

11 PLATE #6 DETAIL
S2

THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED.

BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR ANY DAMAGE TO THEM.

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BOARDWALK RECONSTRUCTION

MUNICIPALITY OF KINCARDINE

STATION BEACH

BOARDWALK DETAILS

DRAWN BY : B.W.W.	APPROVED BY : A.J.F.	PROJECT NO. : 2401516	DRAWING NO. : S2
DESIGNED BY : Z.S.	DATE : JUNE 2025	SCALE : AS SHOWN	

PHASE 1
BACKDUNE RESTORATION PLANT LIST

DECIDUOUS TREES						
KEY	QTY	SCIENTIFIC NAME	COMMON NAME	SIZE	CONDITION	SPACING
PD	3	<i>Populus deltoides</i>	Eastern Cottonwood	100-150 cm ht	1 to 3 gal potted	3.0-5.0m O.C.
PG	4	<i>Populus grandidentata</i>	Large-Tooth Aspen	100-150 cm ht	1 to 3 gal potted	3.0-5.0m O.C.
PT	8	<i>Populus tremuloides</i>	Trembling Aspen	100-150 cm ht	1 to 3 gal potted	3.0-5.0m O.C.
Total	15					
CONIFEROUS TREES						
KEY	QTY	SCIENTIFIC NAME	COMMON NAME	SIZE	CONDITION	SPACING
PS	3	<i>Pinus strobus</i>	White Pine	100 cm ht	3 gal potted	3.0-5.0m O.C.
TO	2	<i>Thuja occidentalis</i>	White Cedar	100 cm ht	3 gal potted	3.0-5.0m O.C.
Total	5					
SHRUBS						
KEY	QTY	SCIENTIFIC NAME	COMMON NAME	SIZE	CONDITION	SPACING
Au	51	<i>Arctostaphylos uva-ursi</i>	Bearberry	25 cm ht	2 to 3 gal potted	0.6-1.0 m O.C.
Cs	6	<i>Cornus sericea</i>	Red-Osier Dogwood	40-60 cm ht	2 to 3 gal potted	0.6-1.0 m O.C.
Cr	25	<i>Cornus racemosa</i>	Grey Dogwood	40-60 cm ht	2 to 3 gal potted	1-1.5 m O.C.
Hk	45	<i>Hypericum kalmianum</i>	Kalm's St. John's Wort	40-60 cm ht	2 to 3 gal potted	0.6-1.0 m O.C.
Jh	16	<i>Juniperus horizontalis</i>	Creeping Juniper	25 cm ht	2 to 3 gal potted	1-1.5 m O.C.
Po	27	<i>Physocarpus opulifolius</i>	Ninebark	40-60 cm ht	2 to 3 gal potted	1-1.5 m O.C.
Pf	24	<i>Potentilla fruticosa</i>	Shrubby Cinquefoil	40-60 cm ht	2 to 3 gal potted	1-1.5 m O.C.
Pp	8	<i>Prunus pumila</i>	Sand Cherry	40-60 cm ht	2 to 3 gal potted	1-1.5 m O.C.
Ra	6	<i>Rhus aromatica</i>	Fragrant Sumac	40-60 cm ht	2 to 3 gal potted	1-1.5 m O.C.
SM	3	<i>Salix myricoides</i>	Bayberry Willow	40-60 cm ht	2 to 3 gal potted	1-1.5 m O.C.
Total	211					

BACKDUNE RESTORATION SEED MIX			
	Scientific Name	Common Name	% of Mix
GRASSES / SEDGES			
	<i>Andropogon gerardii</i>	Big Bluestem	15.00%
	<i>Calamovilfa longifolia</i>	Sand Reed	18.00%
	<i>Cyperus houghtonii</i>	Smooth Sand Sedge	5.00%
	<i>Elymus canadensis</i>	Canada Wild Rye	18.00%
	<i>Koeleria macrantha</i>	June Grass	2.00%
	<i>Panicum virgatum</i>	Switch Grass	4.00%
	<i>Schizachyrium scoparium</i>	Little Bluestem	18.00%
FORBS			
	<i>Asclepias syriaca</i>	Common Milkweed	3.00%
	<i>Lathyrus japonicus</i>	Beach Pea	12.00%
	<i>Liatis aspera</i>	Rough Blazing-star	2.00%
	<i>Oenothera biennis</i>	Evening Primrose	3.00%
			100.00%

*CONTACT PROJECT ECOLOGIST FOR SUBSTITUTIONS AND/OR CHANGES TO % OF SEED MIX
MINIMUM RECOMMENDED APPLICATION RATE OF 15.68 Kg/ha

SUBSEQUENT PHASING
FOREDUNE AND UNDESIGNATED PATHWAY INFILL PLANTING (INCLUDING MARRAM GRASS APPLICATION)

PLUGS / SALVAGED *						
KEY	QTY	SCIENTIFIC NAME	COMMON NAME	SIZE	CONDITION	SPACING
ab	5250	<i>Ammophila breviligulata</i>	Marram Grass / American Beachgrass	-	plugs / salvaged	0.3 m O.C.
Total	5250					

- * NOTE:
- SUGGEST USING A MIX OF NURSERY STOCK AND SALVAGED TRANSPLANTED MARRAM GRASS FROM PHASE 1 AREA AFTER IT HAS BEEN ESTABLISHED TO PLANT THE SUBSEQUENT PHASING AREAS
 - MIX OF NURSERY GROWN AND SALVAGED MATERIAL IS SUBJECT TO AVAILABILITY AND GROWING CONDITIONS OF THE PHASE 1 AREA.

DECIDUOUS TREES						
KEY	QTY	SCIENTIFIC NAME	COMMON NAME	SIZE	CONDITION	SPACING
PD	1	<i>Populus deltoides</i>	Eastern Cottonwood	100-150 cm ht	1 to 3 gal potted	3.0-5.0m O.C.
PG	3	<i>Populus grandidentata</i>	Large-Tooth Aspen	100-150 cm ht	1 to 3 gal potted	3.0-5.0m O.C.
PT	1	<i>Populus tremuloides</i>	Trembling Aspen	100-150 cm ht	1 to 3 gal potted	3.0-5.0m O.C.
Total	5					
CONIFEROUS TREES						
KEY	QTY	SCIENTIFIC NAME	COMMON NAME	SIZE	CONDITION	SPACING
PS	2	<i>Pinus strobus</i>	White Pine	100 cm ht	3 gal potted	3.0-5.0m O.C.
TO	6	<i>Thuja occidentalis</i>	White Cedar	100 cm ht	3 gal potted	3.0-5.0m O.C.
Total	8					

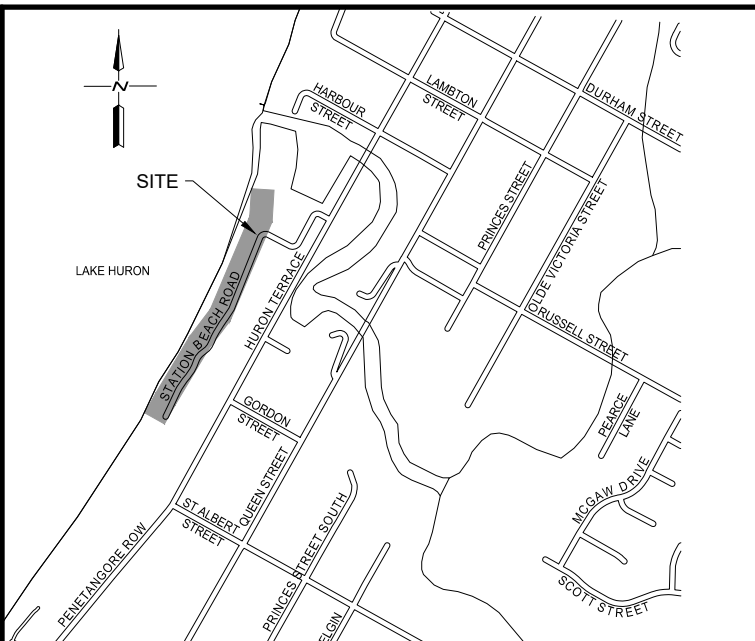
GENERAL NOTES:

- THE CONTRACTOR SHALL MAKE CAREFUL EXAMINATION OF EXISTING SITE SURFACE CONDITIONS AND TOPOGRAPHY AND ADVISE THE LANDSCAPE ARCHITECT OF UNSATISFACTORY SITE SURFACE CONDITIONS AND TOPOGRAPHY PRIOR TO COMMENCEMENT OF CONSTRUCTION. COMMENCEMENT OF CONSTRUCTION WILL MEAN THAT THE CONTRACTOR HAS ACCEPTED THE EXISTING SITE SURFACE CONDITIONS AND TOPOGRAPHY AND NO ALLOWANCE WILL BE MADE LATER FOR ANY EXPENSES INCURRED THROUGH FAILURE TO NOTE UNSATISFACTORY CONDITIONS.
 - DO NOT SCALE DRAWINGS. CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB AND THE LANDSCAPE ARCHITECT SHALL BE INFORMED OF ANY VARIATIONS FROM THE DIMENSIONS AND CONDITIONS SHOWN ON THE DRAWINGS PRIOR TO CONTINUING WITH THE WORK.
 - ALL WORKMANSHIP TO CONFORM WITH THE STANDARDS OF THE ONTARIO LANDSCAPE CONTRACTOR'S ASSOCIATION AND LANDSCAPE ONTARIO'S SPECIFICATION STANDARDS.
 - ALL DRAWINGS TO BE READ IN CONJUNCTION WITH PROJECT SPECIFICATIONS.
 - ALL TEMPORARY PROTECTIVE FENCING INCLUDING EROSION SEDIMENT CONTROL FENCING SHALL BE MAINTAINED BY THE CONTRACTOR TO THE SATISFACTION OF THE PROJECT MANAGER FOR THE DURATION OF THE CONSTRUCTION.
 - EXISTING VEGETATION TO BE PROTECTED UNDER THIS CONTRACT SHALL BE SECURED BY THE CONTRACTOR FOR THE DURATION OF THE CONTRACT. ANY DAMAGES INCURRED TO BE RECTIFIED AT THE COST TO THE CONTRACTOR.
 - THE CONTRACTOR IS TO ENSURE THAT THERE IS NO PUBLIC ACCESS THROUGH THE PROJECT DURING THE ENTIRE CONSTRUCTION PERIOD AND IN CONFORMANCE WITH THE OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATION.
 - THE CONTRACTOR SHALL BE AWARE OF ALL ADMINISTRATIVE PRACTICES REQUIRED AND SHALL ENSURE THE SAFETY OF EMPLOYEES AND THE GENERAL PUBLIC AT ALL TIMES. SAFETY MEASURE TO BE UNDERTAKEN BY THE CONTRACTOR SHALL INCLUDE, BUT NOT BE LIMITED TO, THE INSTALLATION AND MAINTENANCE OF TEMPORARY FENCING AND WARNING SIGNAGE AS PER DRAWINGS AND WHEREVER ELSE IS REQUIRED TO ENSURE PUBLIC SAFETY. RESTRICT ENTRY TO CONSTRUCTION AREAS, STAGING AREAS AND EQUIPMENT, AND TO PROTECT AREAS THAT ARE TO REMAIN UNCHANGED. SAFETY MEASURES SHALL REMAIN IN PLACE UNTIL THE CONSTRUCTION AREAS ARE SAFE FOR PUBLIC USE.
 - THE CONTRACTOR SHALL ENSURE ANY MUD TRACKING OFF SITE FROM VEHICLES LEAVING THE CONSTRUCTION SITE IS REMOVED AND CLEANED AT NO ADDITIONAL COST.
 - THE CONTRACTOR WILL CLEAN AND REINSTATE ALL AREAS AFFECTED BY WORKS OUTSIDE OF THE CONSTRUCTION ZONES TO CONDITIONS THAT EXISTED BEFORE CONSTRUCTION OR BETTER AND TO THE SATISFACTION OF THE LANDSCAPE ARCHITECT AND AT THE EXPENSE OF THE CONTRACTOR.
 - ALL AREAS DISTURBED DURING CONSTRUCTION TO BE RESTORED WITH 300mm TOPSOIL AND SEED/SOD TO THE SATISFACTION OF THE ECOLOGIST. ALL CONSTRUCTION ACCESS AREAS AND MATERIAL STOCKPILE AREAS TO BE SCARIFIED / ROTO-TILLED TO A DEPTH OF 150mm AND STABILIZED FOR SEEDING COMPACTION RATE TO BE 80% SPD.
 - THE CONTRACTOR WILL ARRANGE AND PAY FOR ALL STAKEOUTS TO LOCATE ALL EXISTING BURIED SERVICES. HAND DIG WITHIN 2 METRES OF ALL SERVICES ON ALL SIDS TO ALLOW ACCESS TO SERVICES.
 - THE CONTRACTOR WILL CLEAN AND REINSTATE ALL AREAS AFFECTED BY WORKS OUTSIDE OF THE CONSTRUCTION ZONES TO CONDITIONS THAT EXISTED BEFORE CONSTRUCTION OR BETTER AND TO THE SATISFACTION OF THE LANDSCAPE ARCHITECT AND AT THE EXPENSE OF THE CONTRACTOR.
 - FINAL INSPECTION TO OCCUR AFTER THE 2nd YEAR ON HARDSCAPE AND PLANT MATERIAL. DEPENDING ON THE NATURE OF REPLACEMENTS REQUIRED, EXTENDED WARRANTIES MAY APPLY. REPLACEMENTS SHALL BE MADE WITHIN 30 DAYS FROM THE DATE OF INSPECTION UNLESS OTHERWISE DIRECTED BY THE LANDSCAPE ARCHITECT. CONTRACTOR IS RESPONSIBLE TO MAINTAIN WATERING, TRIMMING, AND REPLACEMENT OF DEAD MATERIAL (WITHIN 2 WEEKS) DURING WARRANTY PERIOD.
- LAYOUT NOTES:
- THE CONTRACTOR IS RESPONSIBLE TO ACCURATELY SURVEY AND LAYOUT THE PROPOSED WORK FOR CONSTRUCTION. ANY DISTURBED OR LOST SURVEY MARKERS TO BE REPLACED, AS REQUIRED, BY THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE TO VERIFY GRADES, LINES, LEVELS, DIMENSIONS AND EXISTING CONDITIONS, AND REPORT ANY ERRORS, OMISSIONS, OR INCONSISTENCIES TO THE LANDSCAPE ARCHITECT BEFORE COMMENCING WORK.
 - ALL SITE DIMENSIONS IN METRES UNLESS OTHERWISE NOTED.
- PLANTING NOTES:
- THE CONTRACTOR IS RESPONSIBLE TO VERIFY GRADES, LINES, LEVELS, DIMENSIONS AND EXISTING CONDITIONS, AND REPORT ANY ERRORS, OMISSIONS, OR INCONSISTENCIES TO THE CONTRACT ADMINISTRATOR BEFORE COMMENCING WORK.
 - ALL NURSERY STOCK SHALL MEET STANDARDS OF THE CANADIAN NURSERY TRADES ASSOCIATION, LATEST EDITION. ALL PLANT MATERIAL SHALL BE STAKED FOR INSPECTION AND APPROVAL BY THE CONTRACT ADMINISTRATOR.
 - PLANTINGS MAY BE MINIMALLY ADJUSTED TO SUIT LOCATIONS OF SITE UTILITY STRUCTURES OR SERVICES.
 - CONTRACTOR SHALL MAINTAIN ALL AREAS OF PROJECT UNTIL SUBSTANTIAL COMPLETION OF PROJECT.
 - WOODY STOCK WILL BE PLANTED AS ILLUSTRATED (I.E. IN CLUSTERS, RANDOM SCATTER PLANTING).
 - WOODY STOCK ARE TO BE INSTALLED IN LATE FALL, IN THE SAME FALL THAT THE SAND FENCING IS INSTALLED. MARRAM GRASS (*Ammophila breviligulata*) WILL BE PLANTED ACCORDING TO PHASING PLAN AND PLANTED IN A TRIANGULAR PATTERN 30 CENTIMETERS APART.

- CONTRACTOR TO PROVIDE 72 HOURS NOTICE TO THE CONTRACT ADMINISTRATOR IF SPECIES, SIZE AND/OR QUANTITY IS NOT AVAILABLE AND SUBSTITUTIONS ARE NEEDED.
- CONTRACTED ECOLOGIST / BOTANIST TO IDENTIFY SUITABLE SUBSTITUTIONS AND ADVISE CONTRACT ADMINISTRATOR TO HAVE THESE SUBSTITUTIONS APPROVED BY THE TOWN AND CONSERVATION AUTHORITY. SUBSTITUTIONS SHOULD REFLECT SUITABLE SPECIES AS PER THE LAKE HURON CENTRE FOR COASTAL CONSERVATION'S DUNE PLANTING GUIDE.
- SEED MIX TICKETS (WITH SCIENTIFIC NAMES AND % CONTENT OF EACH SPECIES), SEED RATE AND PERCENT LIVE SEED (PLS) ARE TO BE PROVIDED TO THE CONTRACT ADMINISTRATOR AND APPROVED BY THE CONTRACTED ECOLOGIST / BOTANIST BEFORE SEED IS APPLIED.
- CONTRACTOR TO RE-APPLY SEED AND MAINTAIN ALL SEEDED AREAS AT NO COST TO THE OWNER.
- ALL WOODY MATERIAL (TREES AND SHRUBS) SHALL BE WATERED AT THE TIME OF PLANTING.
- WATERING IS REQUIRED TO PROMOTE HEALTHY GROWTH. TREES SHALL BE WATERED REGULARLY DURING THE FIRST TWO YEARS OF ESTABLISHMENT. WATERING ON A 5-DAY CYCLE TO OCCUR DURING PERIODS OF DROUGHT AND HIGH DEGREE DAYS (25C AND ABOVE) AFTER PLACEMENT TO ENSURE ROOT ESTABLISHMENT AND GERMINATION.
- TREES SHOULD RECEIVE WATER THOROUGHLY IN LATE FALL PRIOR TO FREEZE UP TO SATURATE SOIL AROUND ROOT SYSTEM
- ALL DECIDUOUS TREES ARE TO RECEIVE A WHITE SPIRAL PLASTIC TREE GUARD. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR MONITORING GROWTH OF TREES WITH TREE GUARDS AND REMOVING AND PROPERLY DISPOSING OF EVERY TREE GUARD WITHIN THE RESTORATION. A TREE GUARD IS READY TO BE REMOVED WHEN AN INDIVIDUAL TREE HAS REACHED FREE TO GROW STAGE AND/OR THE TREE GUARD IS VISIBLY CONSTRAINING TREE GROWTH.
- INSPECTION SHALL OCCUR ONCE THE 2 YEAR WARRANTY PERIOD IS UP. REPLACEMENTS MAY BE REQUIRED AT THIS TIME. REPLACEMENTS SHALL BE PLANTED WITHIN 30 DAYS FROM THE DATE OF INSPECTION, UNLESS OTHERWISE DIRECTED, IN ACCORDANCE WITH ACCEPTED HORTICULTURAL PRACTICES.
- AT THE TIME OF FINAL INSPECTION, ALL PLANT MATERIAL SHALL BE IN A HEALTHY, VIGOROUS GROWING CONDITION, PLANTED INFULL ACCORDANCE WITH DRAWINGS AND CONDITIONS.

HAND DISPERSAL SEEDING NOTES

- HAND DIRECT SEEDING IS TO BE EXECUTED FOLLOWING COMPLETION OF THE TREE AND SHRUB PLANTING OPERATIONS.
 - AT THE TIME OF HAND DIRECT SEEDING ALL SURFACE DESIGNATED FOR THIS OPERATION SHALL BE FRABLE AND FINE GRADED TO A RELATIVE UNIFORM SURFACE. THE SURFACE SHALL HAVE BEEN CULTIVATED TO A MINIMUM DEPTH OF 50MM (2") AND A MAXIMUM DEPTH OF 75MM (3"). 300MM OF TOPSOIL WILL HAVE BEEN APPLIED PRIOR TO PLANTING AND SEEDING WORKS BEGINNING.
 - SEEDING AND OR RE-SEEDING SHALL NOT BE CARRIED OUT UNDER ADVERSE FIELD CONDITIONS SUCH AS HIGH WIND, FROZEN GROUND OR GROUND COVERED WITH SNOW, ICE OR STANDING WATER.
 - THE SITE AND EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL VEGETATIVE COVER IS ESTABLISHED.
 - NO SEEDING OR COVER APPLICATION SHALL COME IN CONTACT WITH THE FOLIAGE OF EXISTING VEGETATION. NO SEED OR COVER SHALL COME IN CONTACT WITH EXISTING WATER BODIES.
- WOOD SNOW/SAND FENCING
- SAND FENCING CAN BE LEFT UP YEAR ROUND OR AS A MINIMUM SAND FENCING CAN BE INSTALLED PRIOR TOBY THE THANKSGIVING WEEKEND AND REMOVED JUST BEFORE THE VICTORIA DAY LONG WEEKEND.
 - SAND FENCING TO BE INSTALLED PERPENDICULAR TO THE PREVAILING WINDS AND THREE TO FOUR METRES LAKESIDE FROM THE EXISTING DUNE. GENERALLY, SAND DEPOSITION WILL OCCUR BEHIND THE FENCE, AT A LINEAR DISTANCE OF EIGHT TIMES THE HEIGHT OF THE FENCE.
 - SAND DEPOSITION CAN BURY THE SAND FENCING, MONITOR FENCING AND CONSIDER MOVING IT TO AVOID IT BEING BURIED.
 - DURING LOW LAKE LEVEL PERIODS, CONSIDER INSTALLING MORE THAN ONE ROW OF SAND FENCING. THIS ACTION WILL REDUCE SAND BLOWING INLAND, AND KEEP THE SAND ON THE BEACH.
 - DUNE GRASSES TO BE INSTALLED IN THE SAND DEPOSITION AREAS, SHORTLY AFTER THE SAND FENCE IS INSTALLED (THAT FALL).
 - SAND FENCING TO BE USED UNTIL PLANTED DUNE VEGETATION IS ESTABLISHED, TYPICALLY TWO TO FOUR YEARS.



MUNICIPALITY OF KINCARDINE
KEY PLAN
NOT TO SCALE

NOTES

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BENCHMARK 1 ELEV. - 179.41m

TOP OF CUT CROSS. AS SHOWN ON PLAN

BENCHMARK 2 ELEV. - 179.37m

TOP OF CUT CROSS. AS SHOWN ON PLAN

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NOT FOR CONSTRUCTION UNLESS SIGNED & DATED

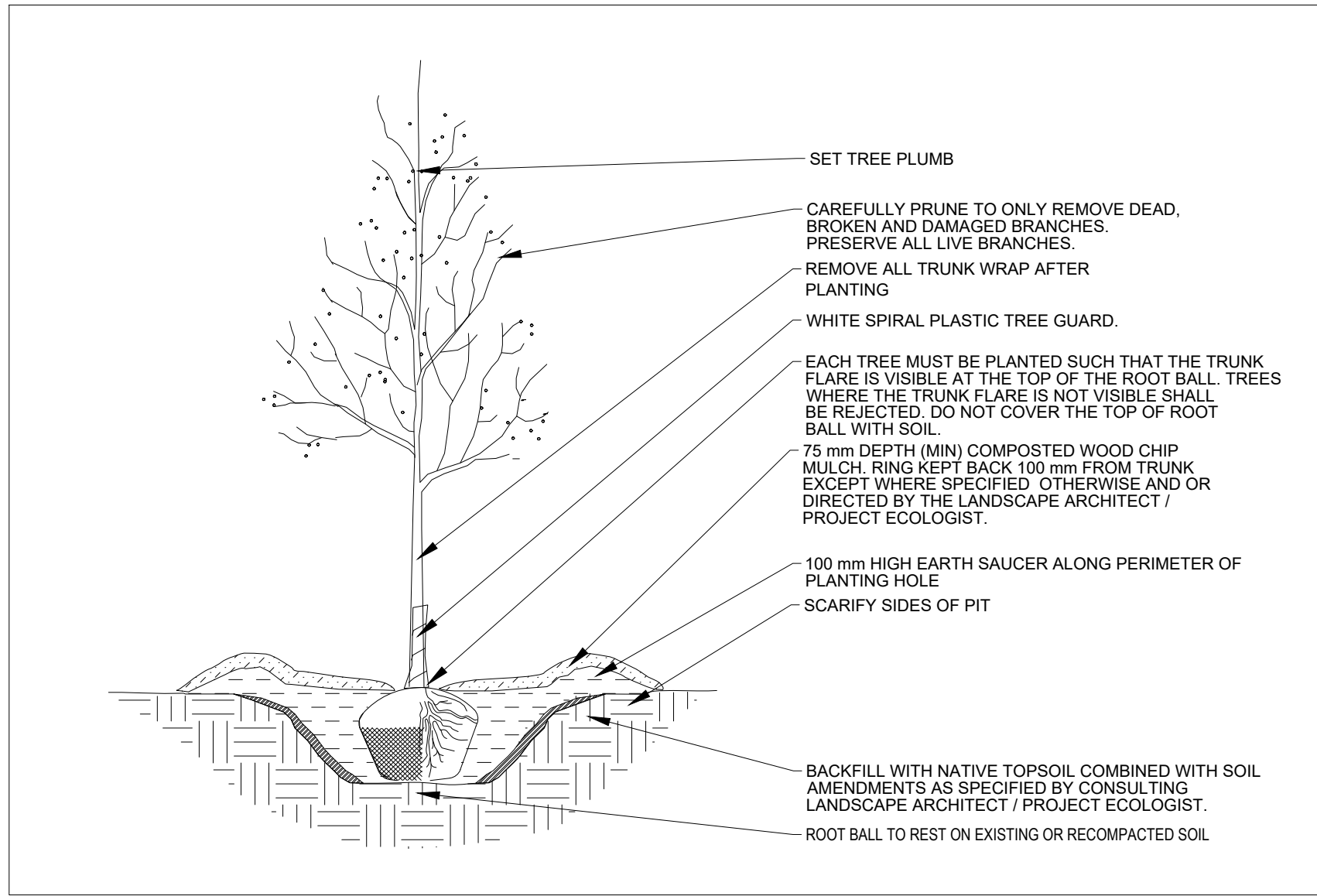
NO.	DATE	REVISION DESCRIPTION	CHKD.
3	08/08/2025	ISSUED FOR TENDER	C.W.
2	06/19/2025	BOARDWALK UPDATE	A.J.F.
1	12/20/2024	ISSUED FOR CLIENT REVIEW	J.W./H.W.

NO.

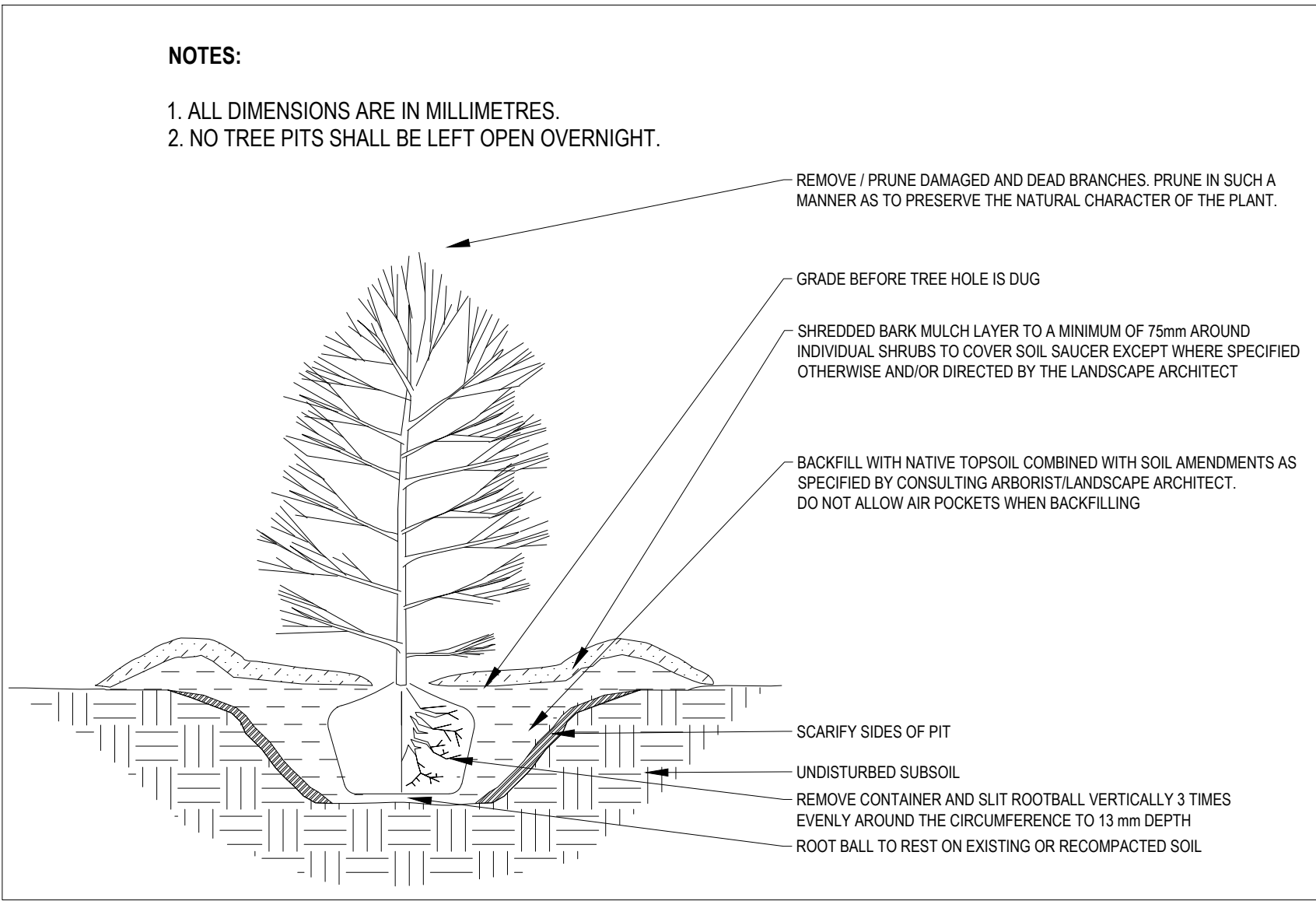
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REVISION DESCRIPTION

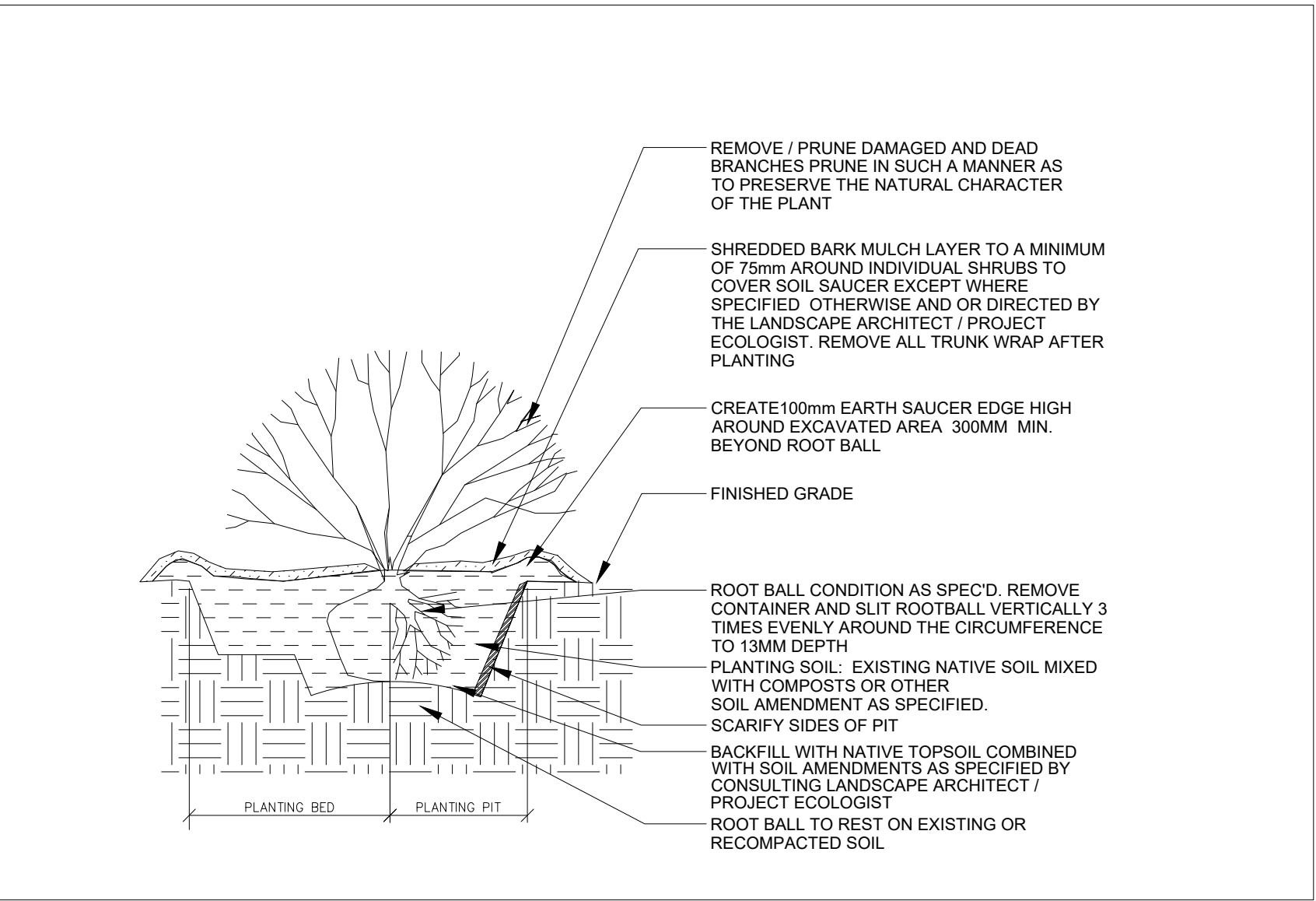
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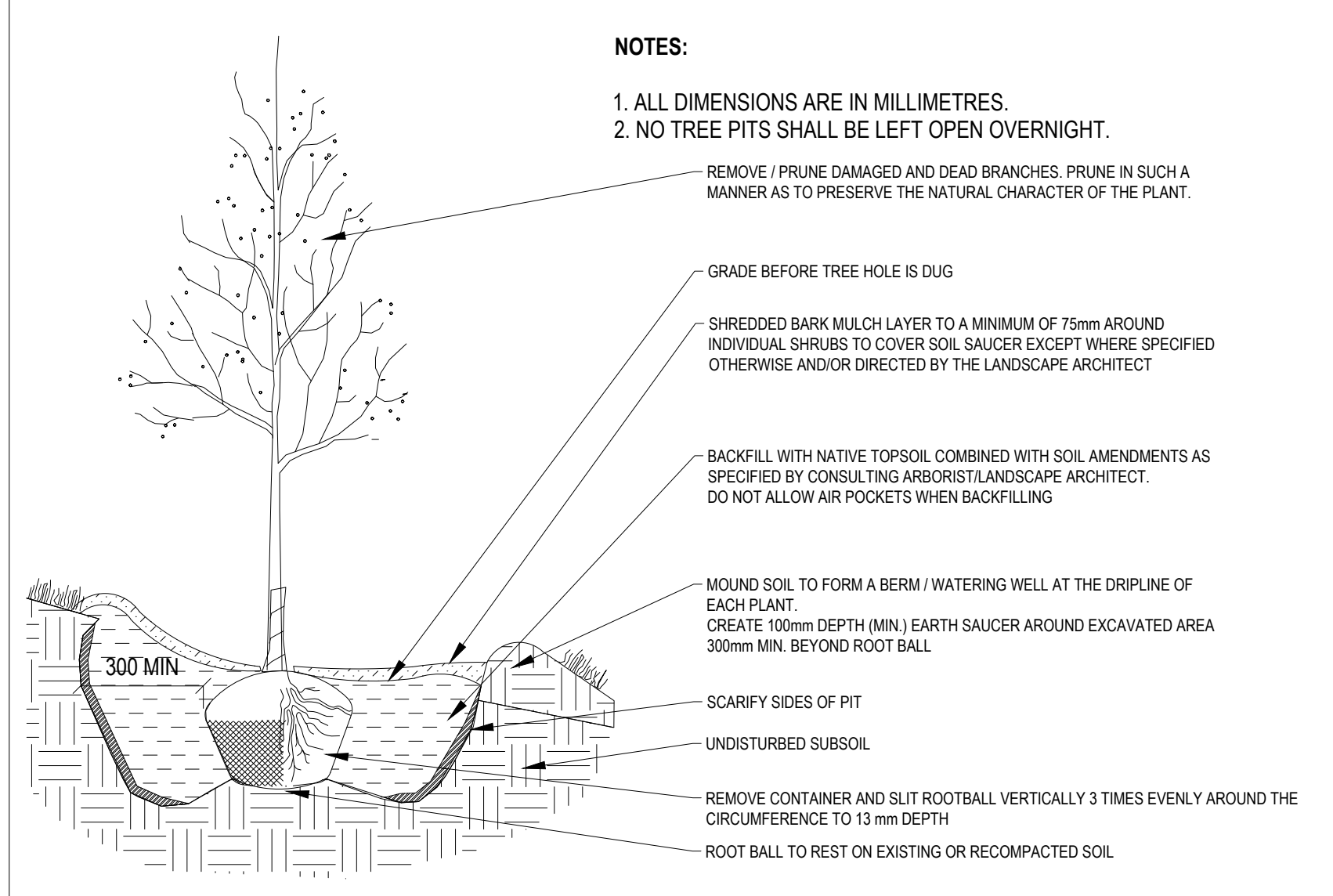
DECIDUOUS TREE WHIP PLANTING DETAIL
NTS.



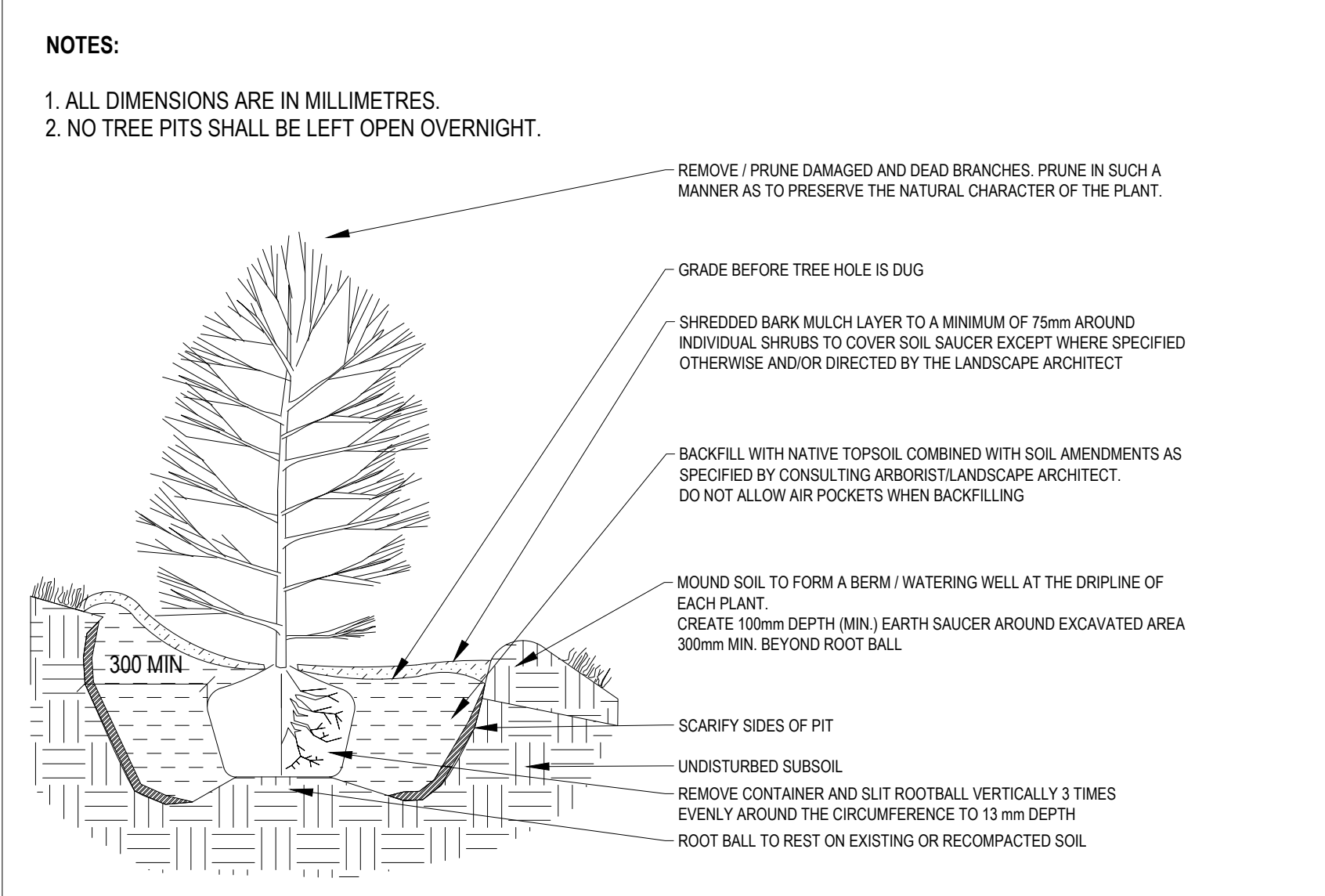
CONIFEROUS TREE PLANTING DETAIL
NTS.



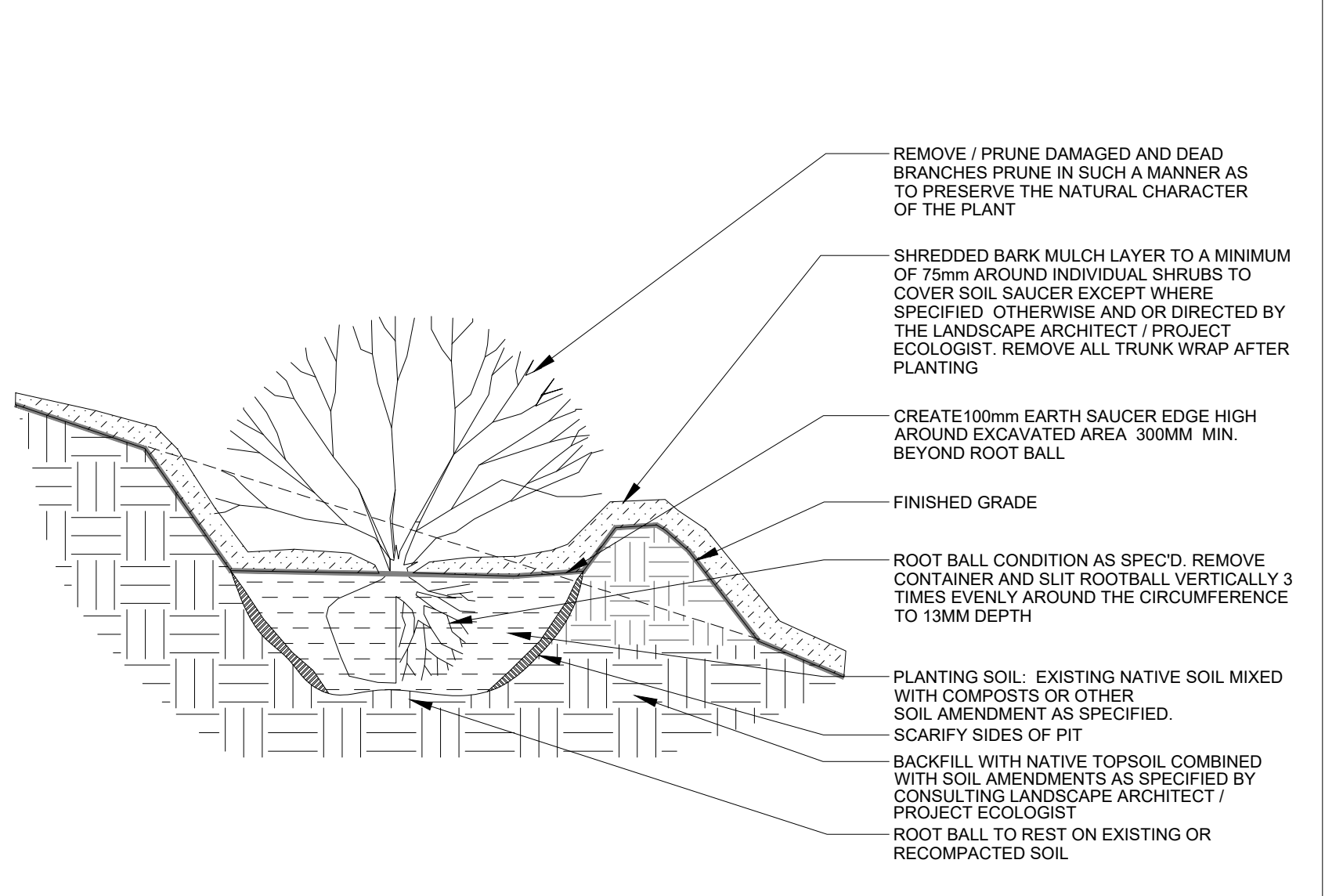
SHRUB PLANTING DETAIL
NTS.



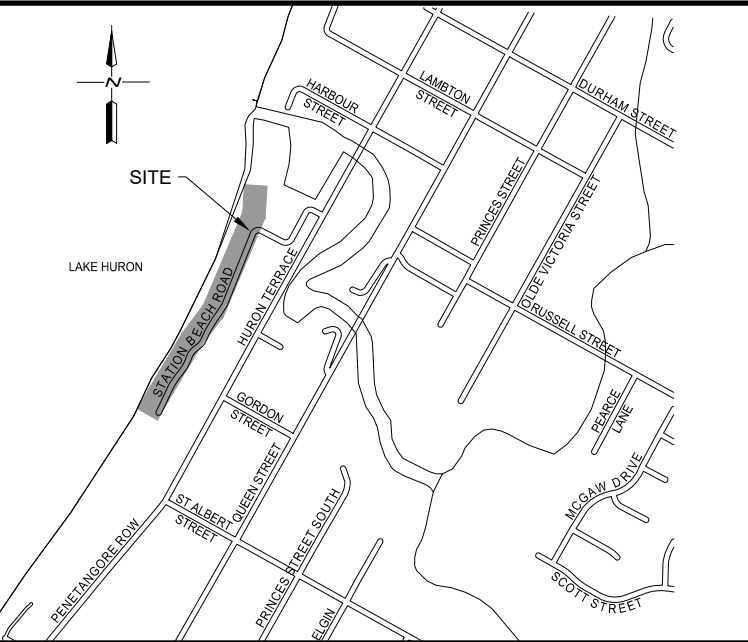
DECIDUOUS TREE WHIP PLANTING ON SLOPE DETAIL
NTS.



CONIFEROUS TREE PLANTING ON SLOPE DETAIL
NTS.



SHRUB PLANTING ON SLOPE DETAIL
NTS.



MUNICIPALITY OF KINCARDINE
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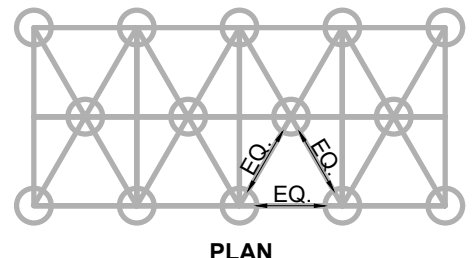
BOARDWALK RECONSTRUCTION

MUNICIPALITY OF KINCARDINE

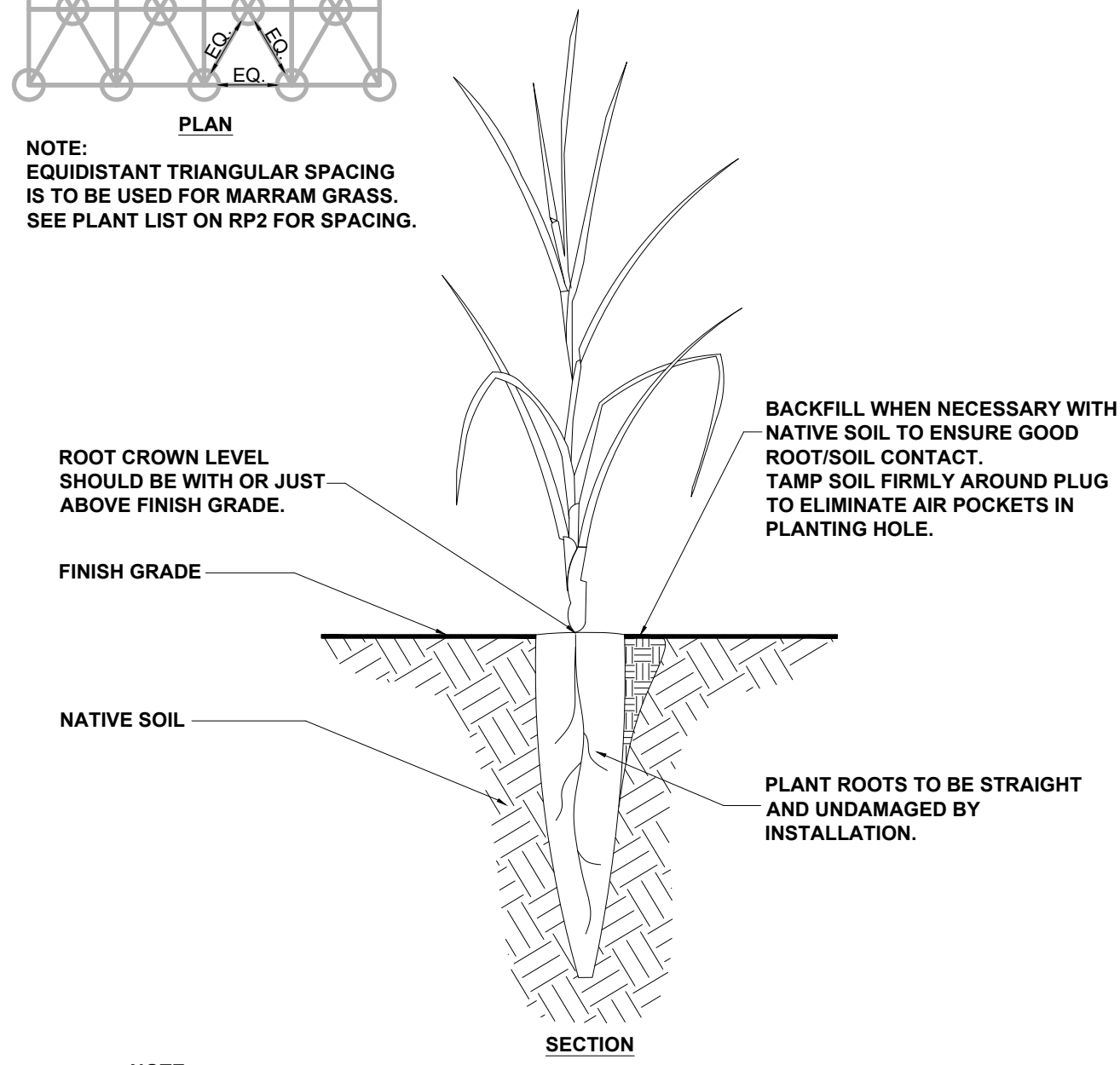
STATION BEACH

PROPOSED RESTORATION
PLANTING PLAN DETAILS

DRAWN BY : J.W./T.J.J.	APPROVED BY : H.W./N.C.	PROJECT NO. : 223321	DRAWING NO. : RD1
DESIGNED BY : J.W.	DATE : JULY 2025	SCALE :	



NOTE:
EQUIDISTANT TRIANGULAR SPACING
IS TO BE USED FOR MARRAM GRASS.
SEE PLANT LIST ON RP2 FOR SPACING.



- NOTE:
- LEAVES AND ROOT CROWN TO REMAIN UNDAMAGED DURING PLANTING
 - CREATE PLANTING HOLE BY DRIVING A PLUG-PUSHER, STEEL SPIKE, TROWEL, OR SHOVEL
 - PLANT AT THE SAME DEPTH AS GROWN IN THE NURSERY
 - PLANT SO ROOTS ARE FULLY EXTENDED INTO PLANTING HOLE.
 - DO NOT FORCE ROOTS INTO SMALL OR SHALLOW PLANTING HOLE.

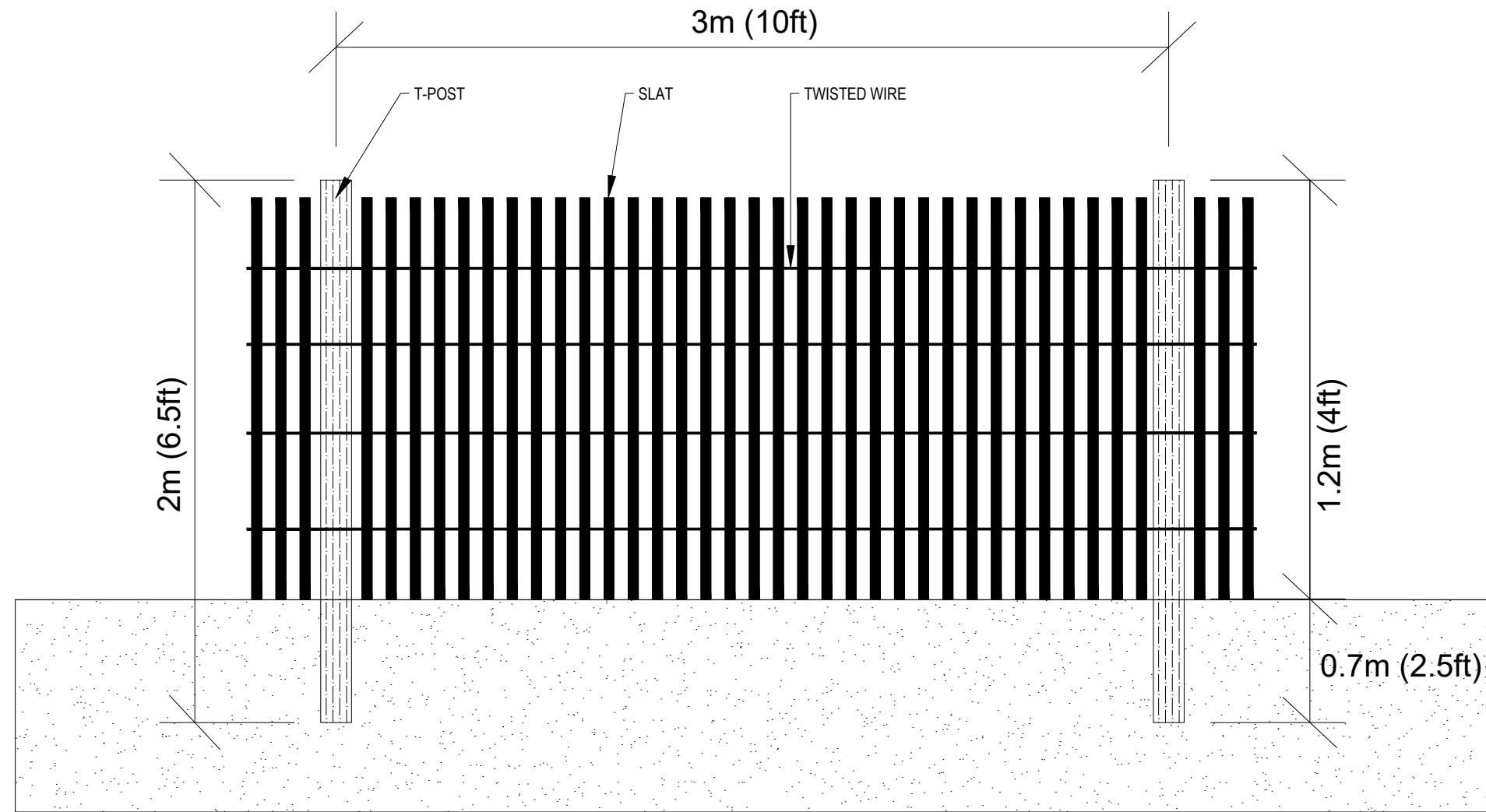
4" POTTED/PLUG PLANTING DETAIL
NTS.

DIMENSIONS AND SPECS:

SLATS SHALL BE SPACED ~6cm (2 1/4 in) APART
PLUS OR MINUS 1cm

SLAT SPECS: ~1cm (3/8 in) x 2.5cm-3.8cm (1-1/2 in) NATURAL WOOD SLATS.

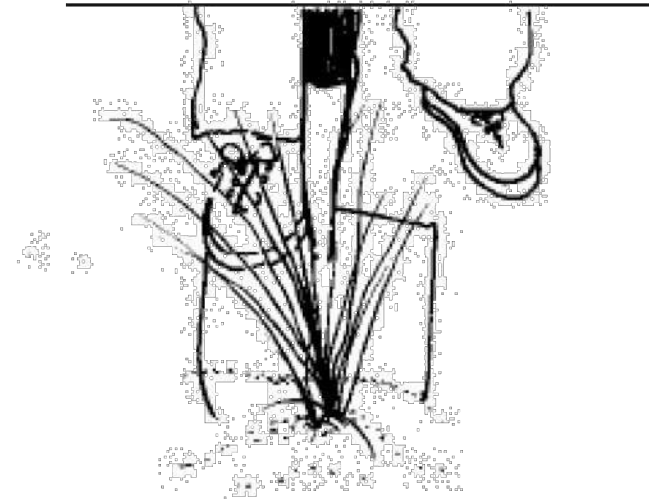
WIRE SPECS: 4 STRANDS OF 14-ga TWISTED WIRE SUPPORT OR EQUIVALENT



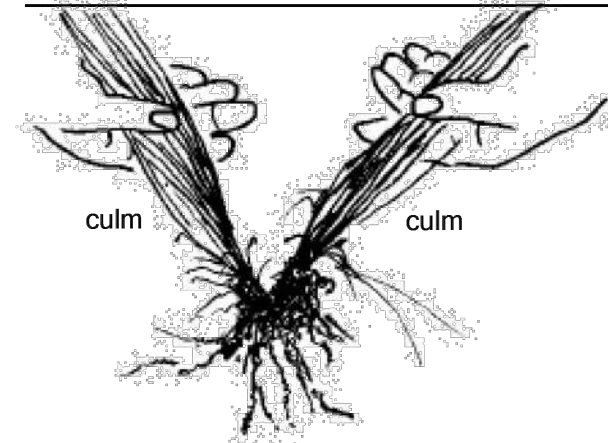
- NOTE:
- SAND FENCING SHOULD BE COMPOSED OF NATURAL WOOD WHICH HAS NOT BEEN CHEMICALLY TREATED AND THAT BREAKS DOWN OVER TIME.
 - WOODEN SLAT FENCING CAN BE BOUGHT IN 18-30 m (60-100 ft) ROLLS AND IS 1 m (3 ft) IN HEIGHT, ALONG WITH 2 m (7 ft) T-POSTS TO ANCHOR THE FENCE. ALTERNATELY, 4x4 INCH WOODEN POSTS AVAILABLE FROM THE LUMBER YARD COULD BE USED.

WOOD SNOW/SAND FENCING DETAIL
NTS.

Step 1: Cut plants with a spade and make sure to cut the underground roots, in order to get the whole plant.



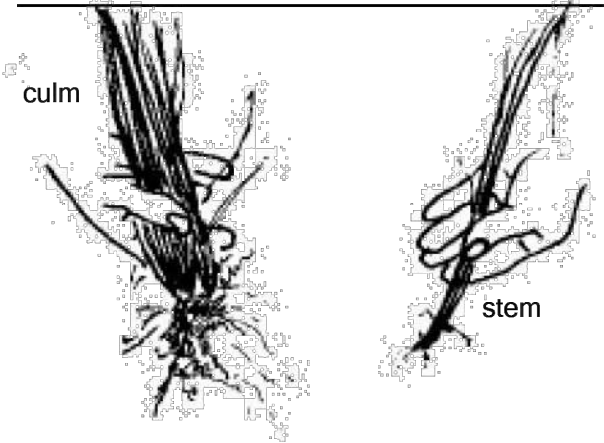
Step 3: Separate the plant into single culms.



Step 2: Grab leaves of the plant and pull, shaking off sand.

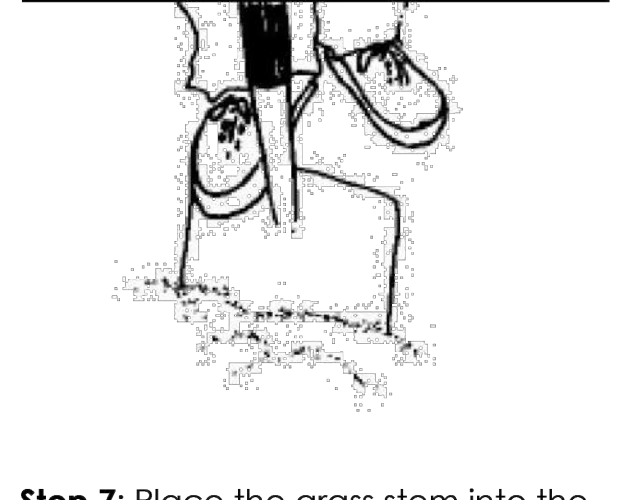


Step 4: Each stem will not typically have much of a root system.

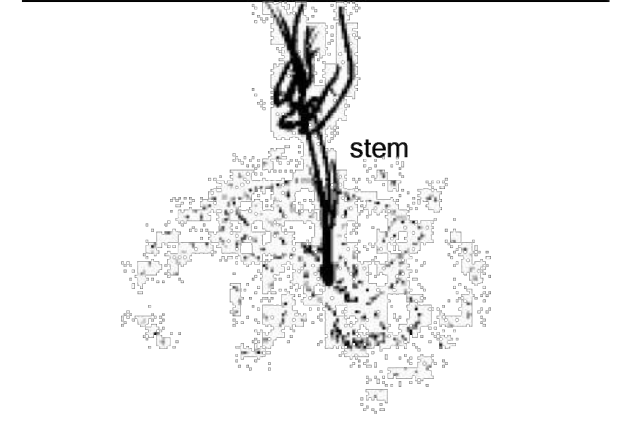


MARRAM GRASS SALVAGE AND TRANSPLANT PLANTING DETAIL
NTS.

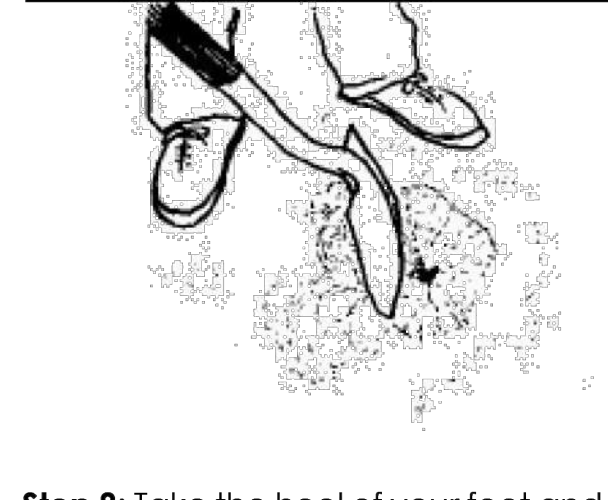
Step 5: To plant the grass, push the spade's blade 20-30 cm into the sand.



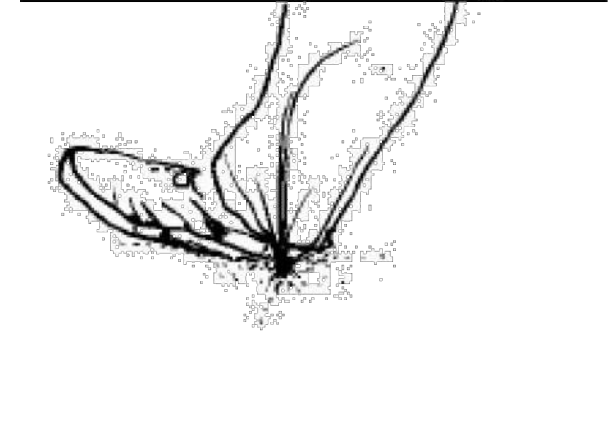
Step 7: Place the grass stem into the hole. The grass should be planted 15-20 cm into the sand. The stem tolerates being buried.



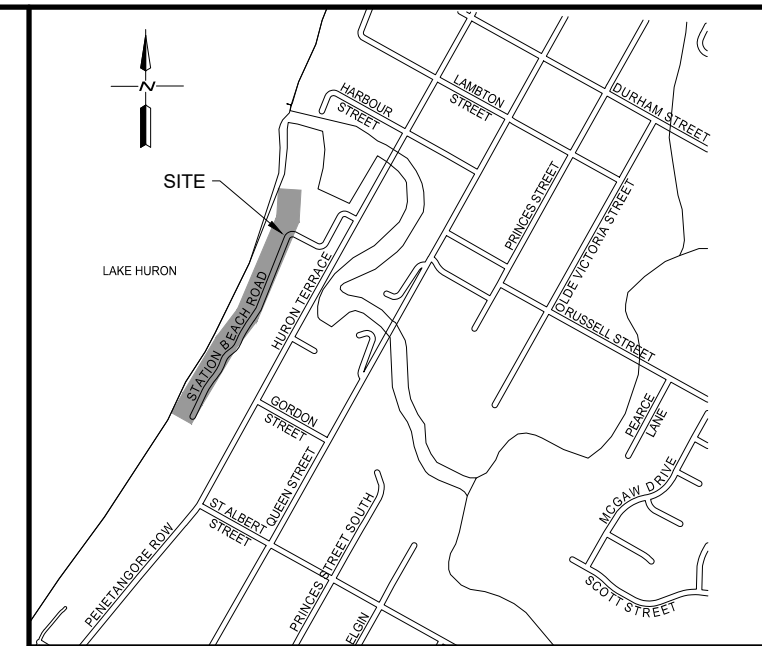
Step 6: Move the spade's handle forward, creating a hole in the sand.



Step 8: Take the heel of your foot and pack the sand around the plant to eliminate any air pockets around the roots. Do not water.



MARRAM GRASS PLANTING DETAIL NOTES
NTS.



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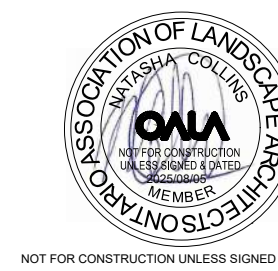
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BOARDWALK RECONSTRUCTION

MUNICIPALITY OF KINCARDINE

STATION BEACH

PROPOSED RESTORATION
PLANTING PLAN DETAILS

DRAWN BY : J.W./T.J.J.	APPROVED BY : H.W./N.C.	PROJECT NO. : 223321	DRAWING NO. : RD2
DESIGNED BY : J.W.	DATE : JULY 2025	SCALE : AS SHOWN	