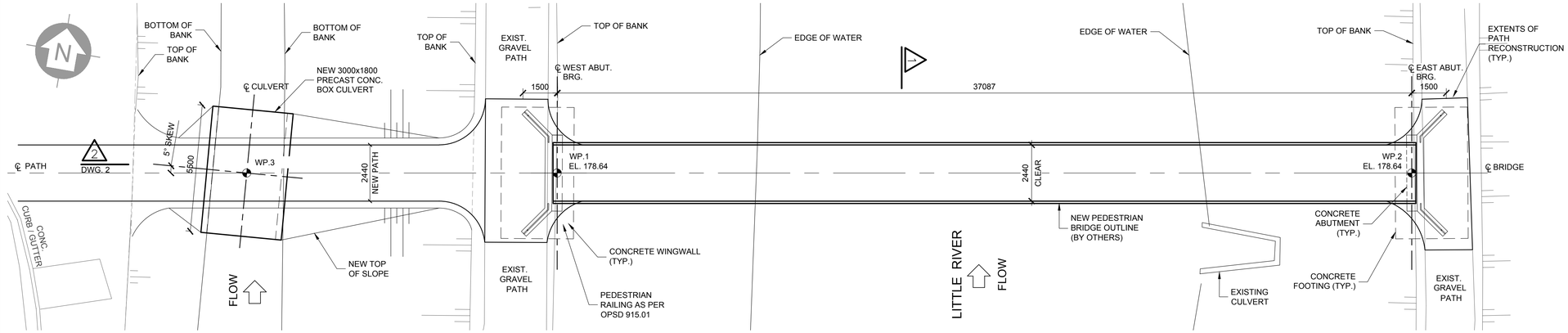
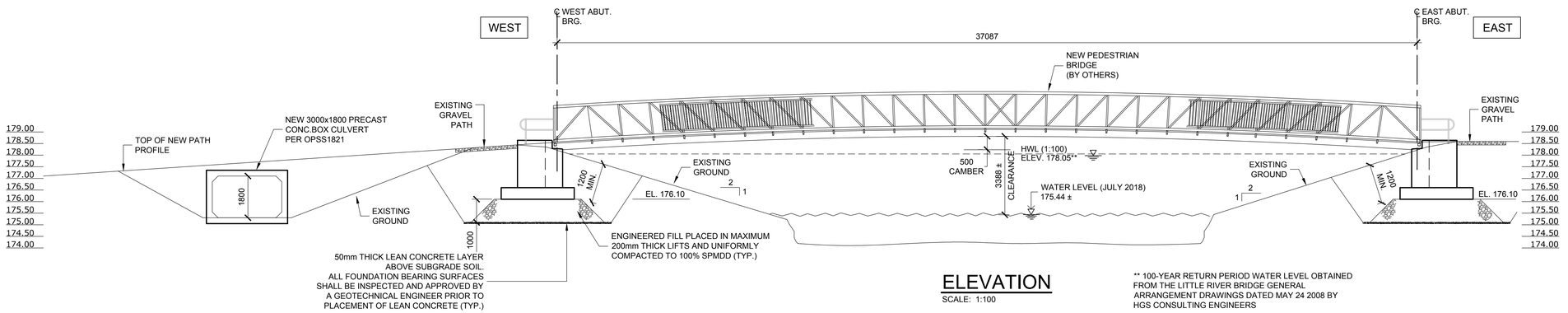


PLAN
SCALE: 1:100



ELEVATION
SCALE: 1:100

** 100-YEAR RETURN PERIOD WATER LEVEL OBTAINED FROM THE LITTLE RIVER BRIDGE GENERAL ARRANGEMENT DRAWINGS DATED MAY 24 2008 BY HGS CONSULTING ENGINEERS

WORKING POINT DATA		
	NORTHING	EASTING
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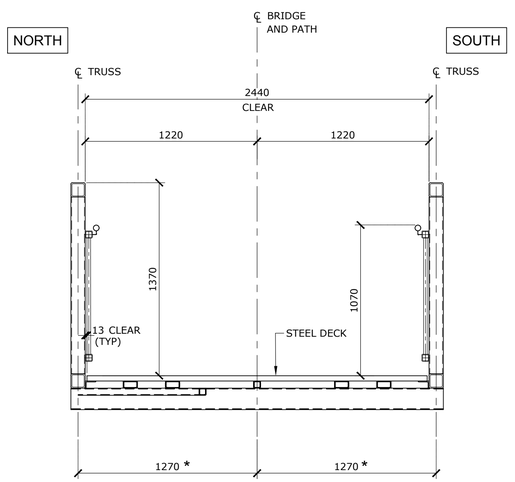
WP.2	4700243.633	358669.106
WP.3	4691549.540	308863.646



SECTION 1
SCALE: 1:20

NOTE:
* DENOTES DIMENSIONS TO BE REVIEWED WITH PRE-ENGINEERED BRIDGE SHOP DRAWING

GENERAL NOTES:

CODE: CSA S6-14
LIVE LOAD: PEDESTRIAN LOAD

1. CONCRETE

- ALL CONCRETE CONSTRUCTION TO BE CARRIED OUT IN ACCORDANCE WITH CSA STANDARD A23.1-14/ A23.2-14.
- MINIMUM CONCRETE STRENGTH TO BE 35MPa (AT 28 DAYS) CLASS C-1, UNLESS OTHERWISE NOTED.
- CLEAR COVER TO CONCRETE:
  CONCRETE CAST AGAINST EARTH
  AND PERMANENTLY EXPOSED TO EARTH.....100mm ± 25
  REMAINDER, UNLESS OTHERWISE NOTED..... 70mm ± 20
- ALL EXPOSED CONCRETE EDGES TO BE CHAMFERED 20mm UNLESS OTHERWISE NOTED.

2. REINFORCING STEEL

- REINFORCING STEEL SHALL BE GRADE 400W UNLESS OTHERWISE NOTED.
- TENSION LAP SPLICES SHALL BE CLASS 'B' UNLESS OTHERWISE NOTED.
- BAR HOOKS SHALL BE STANDARD LENGTH UNLESS OTHERWISE NOTED.

3. STRUCTURAL STEEL

- STRUCTURAL STEEL FOR TRUSS MEMBERS SHALL CONFORM TO CAN/CSA G40.20/G40.21 GRADE 350 AT. HOLLOW STRUCTURAL SECTIONS TO CONFORM TO CAN/CSA G40.20/G40.21 GRADE 350AT, CLASS 'C'. THE CHARPY IMPACT ENERGY REQUIREMENTS SHALL BE 27 JOULES AND THE TEST TEMPERATURE SHALL BE -30°C
- ALL OTHER STRUCTURAL STEEL SHALL CONFORM TO CAN/CSA G40.20/G40.21 GRADE 350 A.
- BOLTS ON WEATHERING STEEL SHALL BE ASTM A325M, TYPE 3. BOLT THREADS SHALL BE EXCLUDED FROM THE SHEAR PLANE.
- BOLTS SHALL BE INSTALLED BY THE TURN OF NUT METHOD.
- WELDING SHALL CONFORM TO CSA CAN3-W59-13 AND AWS D.1.5.
- UNLESS OTHERWISE NOTED, THE MINIMUM FILLET WELD SHALL BE AS FOLLOWS:

MATERIAL THICKNESS OF THICKER PART JOINED (mm)	MINIMUM SIZE OF SINGLE PASS FILLET WELD (mm)
TO 12mm INCLUSIVE	5
OVER 12 TO 20	6
OVER 20 TO 40	7
OVER 40 TO 60	10
OVER 60 TO 120	12

- ALL ELEMENTS OF THE BEARING TO BE DESIGNED BY EAGLE BRIDGE OR THE PRE-ENGINEERED BRIDGE SUPPLIER.
- BRIDGE SUPERSTRUCTURE SHALL BE CAMBERED TO THE VALUE SHOWN ON THE DEVELOPED ELEVATION ON THE CONTRACT DRAWINGS AND SHALL INCLUDE AN ALLOWANCE FOR SUPERSTRUCTURE SELF-WEIGHT AND SUPERIMPOSED DEAD LOADS.

4. GEOTECHNICAL:

LOAD BEARING CAPACITY:

ULS = 240 KPa
SLS = 160 KPa

- ABUTMENT FOOTINGS ARE TO BE CONSTRUCTED ON 1m ENGINEERED FILL AS SHOWN ON THE CONTRACT DRAWINGS.
- GEOTECHNICAL REPORT #SWW187089 DATED AUGUST 16TH, 2018 COMPLETED BY WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS.

5. TRAIL NOTES:

- MAXIMUM LONGITUDINAL RUNNING TRAIL SLOPE SHALL NOT EXCEED 6%, AND MAXIMUM TRANSVERSE CROSS FALL SLOPE SHALL NOT EXCEED 2%.
- THE USE OF NATIVE MATERIAL AS BACKFILL IS NOT ALLOWED UNLESS APPROVED IN WRITING BY THE CONTRACT ADMINISTRATOR. THE TRAIL SUB-GRADE SHALL BE PROOF-ROLLED AND ANY LOOSE SOFT, WET OR UNSTABLE AREAS SUB-EXCAVATED AND BACKFILLED WITH 50mm CRUSHER LIMESTONE. 50mm CRUSHER LIMESTONE FOR TRAIL CONSTRUCTION SHALL BE PLACED IN A MINIMUM LIFT(S) OF 150mm THICK AND COMPACTED TO A MINIMUM 98% STANDARD PROCTOR MAXIMUM DRY DENSITY (SPMDD).
- THE TRAIL 19mm CRUSHER RUN LIMESTONE BASE COURSE SHALL BE PLACED IN MAXIMUM LIFT(S)OF 150mm THICK AND COMPACTED TO A MINIMUM 100% STANDARD PROCTOR MAXIMUM DRY DENSITY (SPMDD).
- THE CONTRACTOR SHALL SUBMIT GRANULAR SIEVES TO ILLUSTRATE COMPLIANCE WITH APPLICABLE MUNICIPAL OPSS STANDARDS AT LEAST 2 WEEKS PRIOR TO START OF CONSTRUCTION.

CONSTRUCTION NOTES:

1. PONY TRUSS BRIDGE SUPERSTRUCTURE DESIGN IS PROVIDED SCHEMATICALLY ONLY. THE CONTRACTOR SHALL DESIGN, SUPPLY AND INSTALL THE PONY TRUSS BRIDGE SUPERSTRUCTURE. STAMPED SHOP DRAWINGS SHALL BE SUBMITTED TO THE CONTRACT ADMINISTRATOR FOR REVIEW PRIOR TO FABRICATION.
2. PONY TRUSS BRIDE SHALL BE DESIGNED IN ACCORDANCE WITH THE CANADIAN HIGHWAY BRIDGE DESIGN CODE CAN/CSA S6-14.
3. THE ABUTMENT ARRANGEMENT AND DESIGN ARE BASED ON A PRE-ENGINEERED SUPERSTRUCTURE DESIGN BY EAGLE BRIDGE. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL COSTS FOR THE CONSULTANT TO REDESIGN THE ABUTMENTS AND AMEND THE CONTRACT DOCUMENTS SHOULD ANOTHER PRE-ENGINEERED BRIDGE SUPPLIER BE UTILIZED.
4. ALL WORK SHALL CONFORM TO CHBDC AND ALL STANDARDS REFERENCED WITHIN LOCAL REGULATIONS AND BYLAWS AND THE OCCUPATIONAL HEALTH AND SAFETY ACT FOR CONSTRUCTION PROJECTS. THE LATEST VERSIONS OF THE STANDARDS SHALL APPLY.
5. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, DETAILS, ELEVATIONS AND UTILITIES SHOWN ON STRUCTURAL DRAWINGS. ANY DISCREPANCIES SHALL BE REPORTED TO THE CONTRACT ADMINISTRATOR BEFORE PROCEEDING WITH THE WORK.
6. THE CONTRACTOR SHALL ENSURE THE STABILITY OF ALL COMPONENTS DURING HANDLING, TRANSPORTATION AND ERECTION.
7. THE ABUTMENT FOOTING BEARING SURFACE MUST BE INSPECTED BY A COMPETENT GEOTECHNICAL ENGINEER OR THEIR REPRESENTATIVE TO CONFIRM THE BEARING SURFACE. THE FOOTING SHALL BEAR ON THE ENGINEERED FILL AS SHOWN ON THE CONTRACT DRAWINGS.
8. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ADEQUATE PROTECTION OF THE UTILITIES, SERVICES, STRUCTURES, ROADWAYS, ETC. DURING CONSTRUCTION OPERATIONS AT NO COST TO THE CITY. THE CONTRACTOR'S METHOD OF PROTECTION ARE TO BE SUBMITTED TO THE CONTRACT ADMINISTRATOR FOR REVIEW.
9. THE CONTRACTOR SHALL PROVIDE A THOROUGHLY PLANNED DEBRIS CONTAINMENT SYSTEM TO BE INSTALLED PRIOR TO START OF WORK, TO PREVENT DEBRIS FROM FALLING INTO THE WATERCOURSE. THE DEBRIS CONTAINMENT SYSTEM SHALL BE INSTALLED TO THE SATISFACTION OF THE CONTRACT ADMINISTRATOR.
10. GRADES SHOWN ARE APPROXIMATE. FINISHED GRADE IS TO BE APPROVED IN THE FIELD BY THE ENGINEER.
11. WHERE EXISTING CONDITIONS ARE SHOWN AND THEY ARE NOT NECESSARILY ACCURATE OR COMPLETE, THE CONTRACTOR SHALL CONFIRM ALL EXISTING DIMENSIONS AND LOCATIONS.

REV. #	DESCRIPTION	DATE	APP.BY

wood.
11865 County Road 42
Tecumseh, ON, N8N 2M1
(P) 519-735-2499

CLIENT: THE CITY OF WINDSOR

PROJECT: McHUGH PEDESTRIAN BRIDGE
CITY OF WINDSOR, ONTARIO

TITLE: GENERAL ARRANGEMENT & NOTES

DWN BY:	PROJECTION:	DATE:
ME	UTM Zone 17	07/02/2019
CHK'D BY:	DATUM:	PROJECT NO:
SV	NAD83	SWW187089-S1 - McHugh
REV. NO.:	SCALE:	FIGURE No.
N/A	As Noted	1

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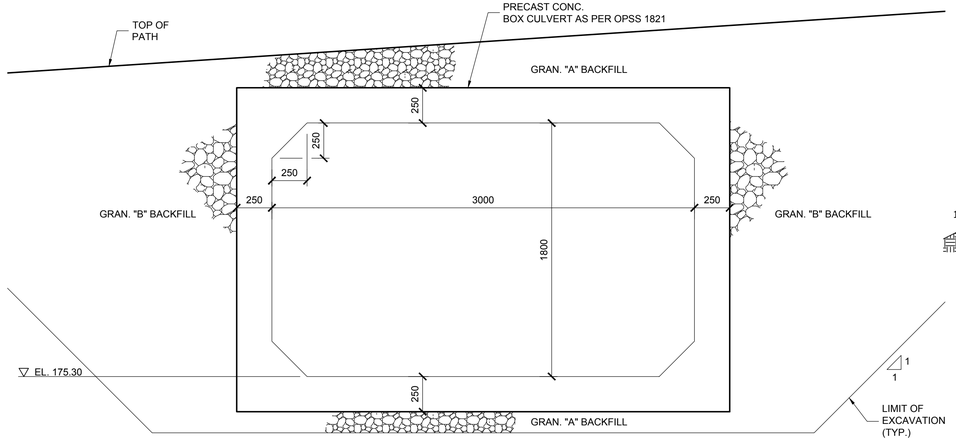
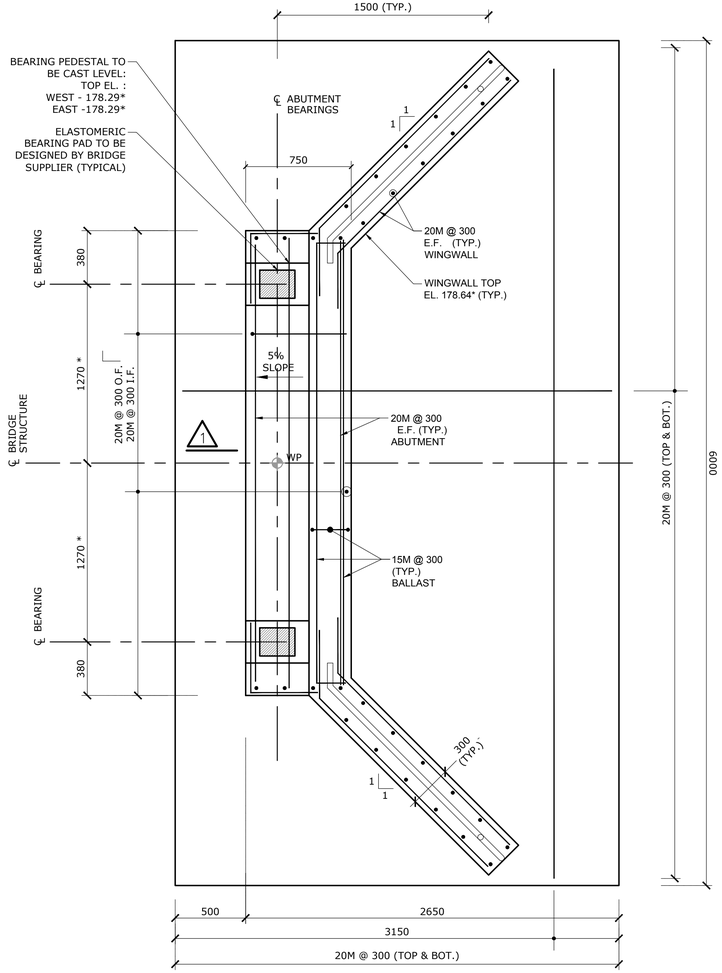


CULVERT SECTION 2

SCALE: 1:20 DWG. 1

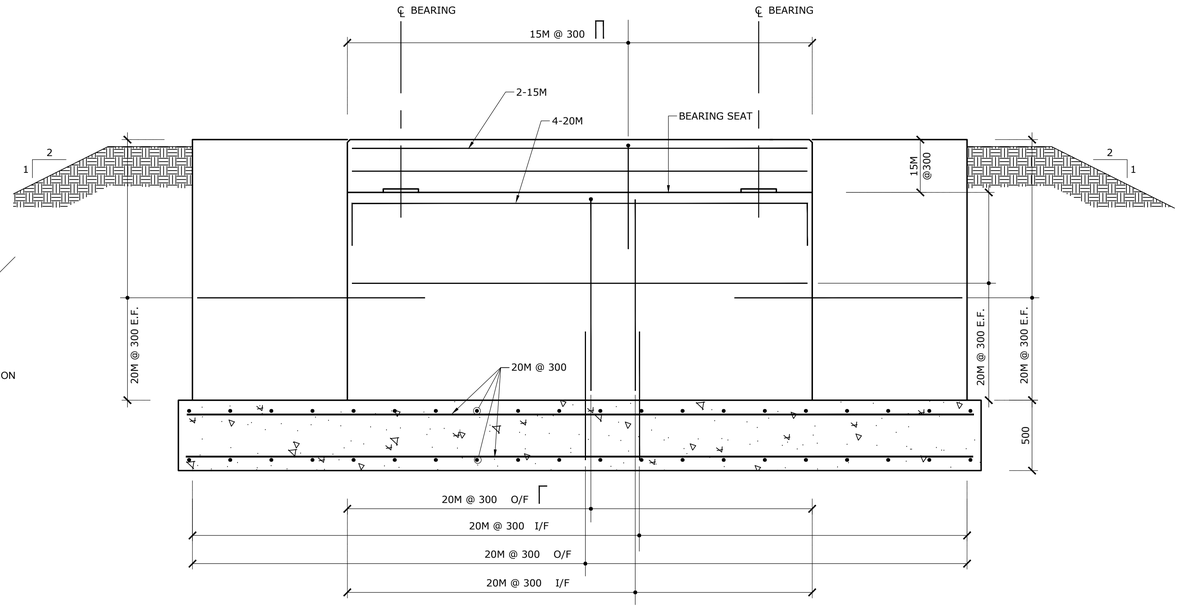


PLAN

SCALE: 1:20

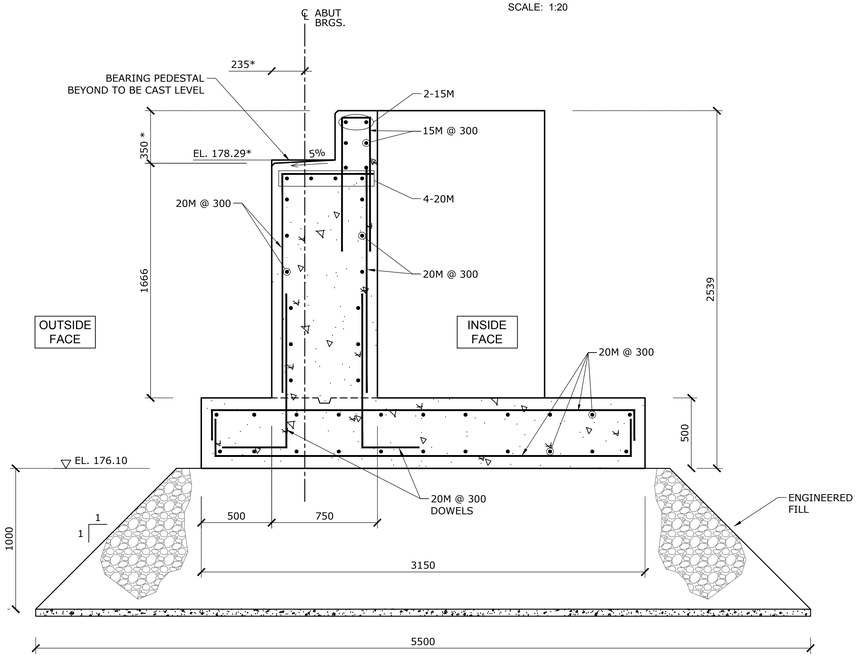
NOTE:

THIS DRAWING IS TO BE READ WITH GENERAL ARRANGEMENT DRAWING



ELEVATION

SCALE: 1:20



SECTION 1

SCALE: 1:20

NOTE:

★ DENOTES DIMENSIONS TO BE REVIEWED WITH PRE-ENGINEERED BRIDGE SHOP DRAWING

REV. #	DESCRIPTION	DATE	APP.BY

wood.
11865 County Road 42
Tecumseh, ON, N8N 2M1
(P) 519-735-2499

CLIENT: THE CITY OF WINDSOR

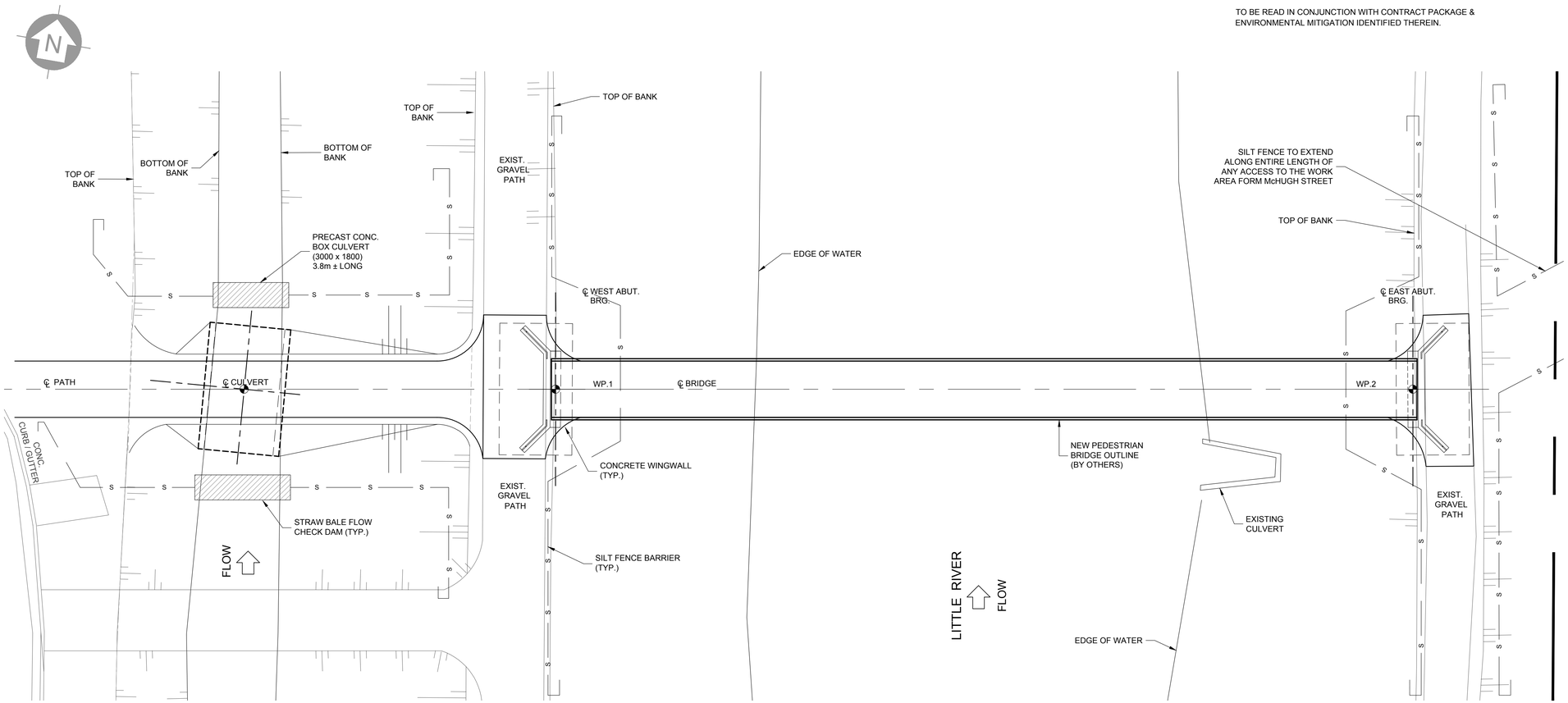
PROJECT: McHUGH PEDESTRIAN BRIDGE
CITY OF WINDSOR, ONTARIO

TITLE: ABUTMENT AND WINGWALL - SECTION AND DETAILS

DWN BY: ME	PROJECTION: UTM Zone 17	DATE: 11/12/2018	
CHK'D BY: SV	DATUM: NAD83	PROJECT NO.: SWW187089-S2 - McHugh	
REV. NO.: N/A	SCALE: As Noted	FIGURE No. 2	

NOTE:

TO BE READ IN CONJUNCTION WITH CONTRACT PACKAGE & ENVIRONMENTAL MITIGATION IDENTIFIED THEREIN.



CONSTRUCTION NOTES:

GENERAL NOTES:

1. NO ACCESS TO THE NATURAL SHORELINE AND AREAS ADJACENT TO THE LITTLE RIVER BEYOND THE ABUTMENT EXCAVATION.
2. OPERATE, STORE, AND MAINTAIN EQUIPMENT, VEHICLES, AND ASSOCIATED MATERIALS IN A MANNER THAT PREVENTS THE ENTRY OF ANY DELETERIOUS SUBSTANCE FROM ENTERING THE LITTLE RIVER.
3. IMPLEMENT DRIP PANS UNDER MACHINERY (I.E. GENERATORS, PUMPS, ETC.) IN OPERATION WITHIN THE WORK AREA.
4. ANY RE-FUELING IS TO BE UNDERTAKEN AT LEAST 30 M FROM THE LITTLE RIVER AND ANY OTHER SURFACE DRAINAGE FEATURE.
5. TEMPORARILY STORE, HANDLE AND DISPOSE OF ALL MATERIALS USED OR GENERATED (E.G. ORGANICS, SOILS, CONSTRUCTION WASTE AND DEBRIS, ETC.) DURING SITE PREPARATION, CONSTRUCTION, AND CLEAN-UP IN A MANNER THAT PREVENTS THEIR ENTRY TO WATERCOURSE AND NATURAL ENVIRONMENT.
6. ENSURE A SPILL MANAGEMENT PLAN (INCLUDING SPILL KIT MATERIALS, INSTRUCTIONS REGARDING THEIR USE, EDUCATION OF STAFF, AND EMERGENCY CONTACT NUMBERS) IS PRESENT ON-SITE AT ALL TIMES FOR IMPLEMENTATION IN THE EVENT OF AN ACCIDENTAL SPILL. ALL SPILLS ARE TO BE REPORTED TO THE ONTARIO MINISTRY OF THE ENVIRONMENT, CONSERVATION AND PARKS (MECP) SPILLS ACTION CENTRE (SAC) AT 1_800-268-6060.
7. ENSURE THAT MACHINERY ARRIVES ON SITE IN A CLEAN CONDITION AND IS MAINTAINED FREE OF FLUID LEAKS, INVASIVE SPECIES AND NOXIOUS WEEDS.

EROSION AND SEDIMENT CONTROL:

1. LIGHT-DUTY SILT FENCE BARRIER TO BE INSTALLED AS SHOWN ON THE DRAWING. SILT FENCE TO ALSO BE INSTALLED AROUND ANY TEMPORARY STAGING/STORAGE AREA(S). SILT FENCE TO BE INSTALLED AS PER OPSS 805 AND OPSD 219.110. THE LAYOUT OF THE SILT FENCE AS DEPICTED ON THE DRAWING IS A MINIMUM ONLY AND MAY REQUIRE ADJUSTMENT TO SUIT SITE SPECIFIC CONDITIONS OR CHANGES TO WORK OPERATIONS.
2. ALL DEWATERING DISCHARGE SHALL BE DIRECTED TO A FILTER BAG TO REMOVE SUSPENDED SEDIMENT. THE FILTER BAG SHALL BE LOCATED IN AN AREA THAT IS SUFFICIENTLY VEGETATED, STABLE AND DOES NOT DISPLAY ANY EVIDENCE OF EROSION OR INSTABILITY. THE FLOW DISCHARGE PATH SHALL BE MONITORED FOR EVIDENCE OF EROSION DURING ACTIVE DEWATERING. ADDITIONAL MEASURES TO BE IMPLEMENTED AS REQUIRED TO ENSURE WATER QUALITY IMPACTS TO THE LITTLE RIVER ARE MINIMIZED.
3. MEASURES ARE TO BE IMPLEMENTED TO CONTAIN AND STABILIZE WASTE MATERIAL (E.G., EXCAVATION SPOILS, CONSTRUCTION WASTE AND MATERIALS). THE LOCATION OF ANY SUCH AREA SHALL BE ABOVE THE ORDINARY HIGH WATER MARK (OHWM) OF THE LITTLE RIVER AND NOT WITHIN OR ADJACENT TO ANY SURFACE DRAINAGE FEATURE.
4. REGULAR INSPECTION AND MAINTENANCE OF PROTECTION MEASURES ARE TO BE UNDERTAKEN. MAINTENANCE AND CORRECTION ACTION TO BE COMPLETED AS REQUIRED TO MEET OPSS 805. ADDITIONAL MEASURES TO PROTECT THE WATERCOURSE AND NATURAL ENVIRONMENT MAY BE REQUIRED BASED ON SITE CONDITIONS.
5. ALL NON-BIODEGRADABLE PROTECTIONS MEASURES ARE TO BE REMOVED ONCE THE SITE HAS BEEN STABILIZED WITH A DEVELOPED VEGETATIVE COVER.
6. STABILIZATION WILL INCLUDE THE APPLICATION OF TOPSOIL AND NATIVE SEED MIX IN AGREEMENT WITH OPSS 804.

FISH AND FISH HABITAT:

1. TO PROTECT THE LOCAL FISH COMMUNITY DURING CRITICAL LIFE STAGES (I.E. SPAWNING AND REARING), NO IN-WATER WORK WILL BE PERMITTED FROM MARCH 31ST TO JULY 1ST IN ANY GIVEN YEAR. IN-WATER WORK IS DEFINED AS *'ALL WORKS FOLLOWING EARTH DISTURBANCE ALONG THE EMBANKMENT IN PREPARATION FOR ABUTMENT EXCAVATION TO BACKFILL, GRADING AND EMBANKMENT STABILIZATION WITH TOPSOIL AND SEED'*. THE ERECTION OF THE BRIDGE SUPERSTRUCTURE CAN BE COMPLETED OUTSIDE OF THE TIMING RESTRICTION AS THIS WORK DOES NOT POSE ANY SIGNIFICANT RISK OF IMPACTING FISH.
2. ALL CONCRETE WASHOUTS SHALL BE UNDERTAKEN WITHIN A DESIGNATED AREA AND SECURED AREA IN THE TEMPORARY STAGING/STORAGE AREA. CONCRETE WASHOUT WILL NOT BE PERMITTED ADJACENT TO OR WITHIN PROXIMITY TO THE WATERCOURSE.
3. ALL PROJECT RELATED WORKS ARE TO BE UNDERTAKEN IN COMPLIANCE WITH OPSS 182.

WILDLIFE:

1. REMOVAL OF WOODY VEGETATION IS TO OCCUR OUTSIDE OF THE MIGRATORY BIRD NESTING PERIOD (APRIL 1 TO AUGUST 15) AND ACTIVITIES WILL OCCUR IN ACCORDANCE WITH THE *MIGRATORY BIRDS CONVENTION ACT* (MBCA) AND *MIGRATORY BIRD REGULATIONS*. THESE TIMING CONSTRAINTS SHOULD NOT BE PERCEIVED AS ABSOLUTES.
2. FOR ACTIVITIES WHICH MAY OCCUR DURING THE BIRD NESTING SEASON, SURVEYS TO IDENTIFY NESTING ACTIVITY WILL BE COMPLETED BY A QUALIFIED AVIAN BIOLOGIST WITHIN 48 HOURS OF SCHEDULED WORK ACTIVITIES. THE AVIAN BIOLOGIST CONDUCTING THE SURVEYS MUST BE ABLE TO IDENTIFY BIRDS BY SPECIES AND BE KNOWLEDGEABLE OF NESTING SEASONS AND ACTIVITIES FOR APPROPRIATE SPECIES.
3. IF NESTING ACTIVITY IS DETECTED WITHIN THE WORK AREA, ACTIVITIES WHICH MAY POTENTIALLY IMPACT THE NEST WILL NOT BE UNDERTAKEN.

SPECIES AT RISK:

1. IF A SAR SPECIES IS ENCOUNTERED, IT SHOULD BE GIVEN ADEQUATE TIME TO LEAVE THE AREA BEFORE STARTING WORK. IF A SAR SPECIES MUST BE MOVED, A QUALIFIED BIOLOGIST SHOULD BE CONTACTED FOR ADVICE/HELP BEFORE IT IS MOVED.
2. ANY SAR INDIVIDUAL THAT IS PRESENT AT THE PROJECT SITE SHOULD BE REPORTED TO THE MNRF AYLMER DISTRICT STAFF (519-773-4751 OR ESA.AYLMER@ONTARIO.CA) WITHIN 48 HOURS OF THE OBSERVATION OR THE NEXT WORKING DAY, WHICHEVER COMES FIRST.
3. IF AN INJURED OR DECEASED SAR IS FOUND OR A SAR INDIVIDUAL IS ACCIDENTALLY UNEARTHED FROM OVERWINTERING, THE SPECIMEN MUST BE PLACED IN A NON-AIRTIGHT CONTAINER THAT IS MAINTAINED AT AN APPROPRIATE TEMPERATURE AND A WILDLIFE CUSTODIAN SHOULD BE CONTACTED. MNRF MUST BE CONTACTED IMMEDIATELY AFTER THE OCCURRENCE.
4. DIGGING/EXCAVATION ACTIVITIES AND VEGETATION CLEARING SHOULD BE CONDUCTED BEFORE MARCH 30TH OR AFTER JUNE 1ST. IF THIS IS NOT POSSIBLE, THE AREA TO BE EXCAVATED/CLEARED OF VEGETATION MUST BE WALKED AND VISUALLY SURVEYED FOR THE PRESENCE OF SAR SNAKES EACH DAY PRIOR TO (RE)INITIATING THESE ACTIVITIES.
5. TEMPORARY SNAKE BARRIER FENCING (SILT FENCE) SHOULD BE INSTALLED AS DEPICTED ON THE DRAWING AND ALONG THE LIMITS OF THE CONSTRUCTION FOOTPRINT IN ORDER TO EXCLUDE SNAKES FROM ENTERING THE AREA. FENCING MUST ALSO BE PLACED AROUND THE FULL PERIMETER, INCLUDING ACCESS POINTS, OF ANY TEMPORARY STAGING AND STORAGE AREA(S). FENCING AT ACCESS POINTS CAN BE TEMPORARILY REPOSITIONED DURING THE DAY WITH FULL CLOSURE TO BE RE-INSTATED AT THE END OF THE WORKING DAY.
6. FENCING MATERIAL, INSTALLATION AND MAINTENANCE SPECIFICATIONS ARE TO ADHERE TO *MNRF SPECIES AT RISK BRANCH - BEST PRACTICES TECHNICAL NOTE - REPTILE AND AMPHIBIAN EXCLUSION FENCING, VERSION 1.1* (JULY 2013).
7. FENCING, INCLUDING LIGHT-DUTY SILT FENCE BARRIER, MUST NOT INCLUDE ANY SUPPORTIVE MESH OR NETTING MATERIAL.
8. CONSTRUCTION EQUIPMENT THAT IS LEFT IDLE FOR OVER ONE (1) HOUR OR IS PARKED OVERNIGHT ON THE PROPERTY SHOULD BE SURVEYED FOR THE PRESENCE OF SAR SNAKES BEFORE (RE)IGNITION. THIS VISUAL EXAMINATION SHOULD INCLUDE ALL LOWER COMPONENTS OF THE MACHINERY, INCLUDING OPERATIONAL EXTENSIONS AND RUNNING GEAR.

APPLICABLE STANDARD DRAWINGS:

ALL ESC MEASURES SHALL BE IMPLEMENTED IN AGREEMENT WITH THE RELEVANT OPSS/OPSD.

REV. #	DESCRIPTION	DATE	APP.BY

wood.
11865 County Road 42
Tecumseh, ON, N8N 2M1
(P) 519-735-2499

CLIENT: THE CITY OF WINDSOR

PROJECT: McHUGH PEDESTRIAN BRIDGE
CITY OF WINDSOR, ONTARIO

TITLE: EROSION AND SEDIMENT CONTROL PLAN

DWN BY: ME	PROJECTION: UTM Zone 17	DATE: 16/11/2018
CHK'D BY: SV	DATUM: NAD83	PROJECT NO: SWW187089-S3 - McHUGH
REV. NO.: N/A	SCALE: As Noted	FIGURE No. 3

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