

EROSION AND SEDIMENT CONTROL MEASURES:

**** CONTRACTOR IS RESPONSIBLE FOR ALL INSTALLATION, MONITORING, REPAIR AND REMOVAL OF ALL EROSION AND SEDIMENT CONTROL FEATURES ****

*****THE SEDIMENT AND EROSION CONTROL MEASURES MAY BE MODIFIED IN THE FIELD AT THE DISCRETION OF THE CITY OF OTTAWA SITE INSPECTOR OR CONSERVATION AUTHORITY*****

1. PRIOR TO START OF CONSTRUCTION:

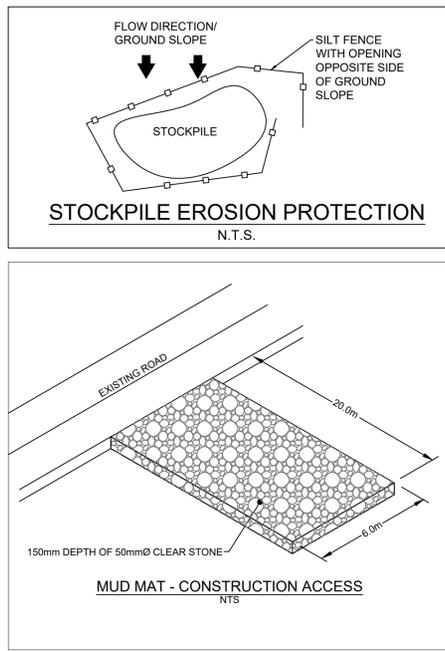
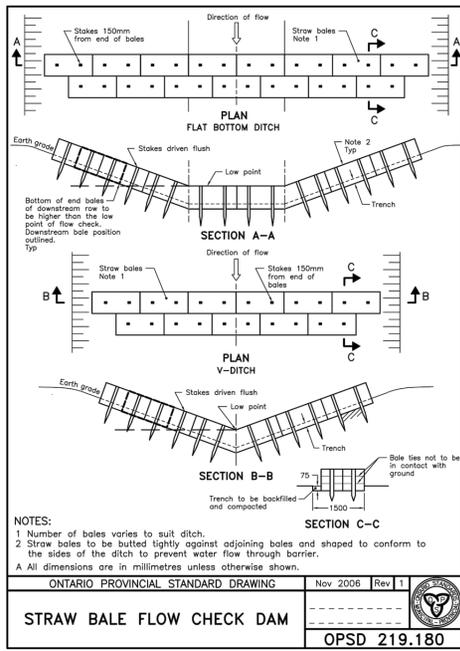
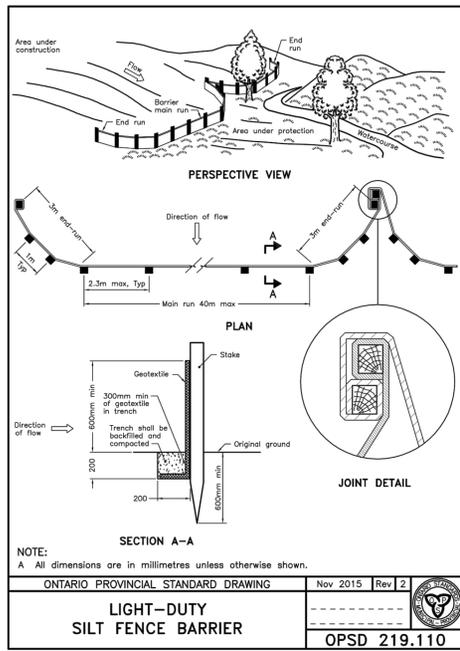
- PRIOR TO THE REMOVAL OF ANY VEGETATIVE COVER, MOVING OF SOIL AND CONSTRUCTION:
- INSTALL SILT FENCE IMMEDIATELY DOWNSTREAM FROM AREAS TO BE DISTURBED (SEE PLAN FOR LOCATION).
- INSTALL GEOSOCK INSERTS WITH AN OVERFLOW IN ALL THE DOWNSTREAM CATCHBASINS AND MANHOLES
- INSTALL SILT TRAP FILTERS IN ALL CONCRETE CATCH BASIN STRUCTURES
- INSPECT MEASURES IMMEDIATELY AFTER INSTALLATION.

2. DURING CONSTRUCTION:

- WORK TO BE DONE IN THE VICINITY OF MAJOR WATERWAYS TO BE CARRIED OUT FROM JULY TO SEPTEMBER ONLY.
- MINIMIZE THE EXTENT OF DISTURBED AREAS AND THE DURATION OF EXPOSURE.
- PROTECT DISTURBED AREAS FROM RUNOFF.
- PROVIDE TEMPORARY COVER SUCH AS SEEDING OR MULCHING IF DISTURBED AREA WILL NOT BE REHABILITATED WITHIN 30 DAYS.
- INSPECT SILT FENCES, FILTER CLOTHS AND CATCH BASIN SUMPS WEEKLY AND AFTER EVERY MAJOR STORM EVENT. CLEAN AND REPAIR WHEN NECESSARY.
- CONSTRUCT SWALES AS PER DETAIL.
- PLAN TO BE REVIEWED AND REVISED AS REQUIRED DURING CONSTRUCTION
- EROSION CONTROL FENCING TO BE ALSO INSTALLED AROUND THE BASE OF ALL STOCKPILES.
- DO NOT LOCATE TOPSOIL PILES AND EXCAVATION MATERIAL CLOSER THAN 2.5m FROM ANY PAVED SURFACE, OR ONE WHICH IS TO BE PAVED BEFORE THE PILE IS REMOVED. ALL TOPSOIL PILES ARE TO BE SEEDED IF THEY ARE TO REMAIN ON SITE LONG ENOUGH FOR SEEDS TO GROW (LONGER THAN 30 DAYS).
- CONTROL WIND-BLOWN DUST OFF SITE TO ACCEPTABLE LEVELS BY SEEDING TOPSOIL PILES AND OTHER AREAS TEMPORARILY (PROVIDE WATERING AS REQUIRED).
- ALL EROSION CONTROL STRUCTURES TO REMAIN IN PLACE UNTIL ALL DISTURBED GROUND SURFACES HAVE BEEN STABILIZED EITHER BY PAVING OR RESTORATION OF VEGETATIVE GROUND COVER.
- NO ALTERNATE METHODS OF EROSION PROTECTION SHALL BE PERMITTED UNLESS APPROVED BY THIS CONSULTING ENGINEER AND THE CITY DEPARTMENT OF PUBLIC WORKS.
- CONTRACTOR RESPONSIBLE FOR CITY ROADWAY AND SIDEWALK TO BE CLEANED OF ALL SEDIMENT FROM VEHICULAR TRACKING ETC. AT THE END OF EACH WORK DAY.
- PROVIDE GRAVEL ENTRANCE WHEREVER EQUIPMENT LEAVES THE SITE TO PREVENT MUD TRACKING ONTO PAVED SURFACES. GRAVEL BED SHALL BE A MINIMUM OF 15m LONG, 4M WIDE AND 0.3m DEEP AND SHALL CONSIST OF COARSE (50mm CRUSHER-RUN LIMESTONE) MATERIAL. MAINTAIN GRAVEL ENTRANCE IN CLEAN CONDITION.
- DURING WET CONDITIONS, TIRES OF ALL VEHICLES/EQUIPMENT LEAVING THE SITE ARE TO BE SCRAPPED.
- ANY MUD/MATERIAL TRACKED ONTO THE ROAD SHALL BE REMOVED IMMEDIATELY BY HAND OR RUBBER TIRE LOADER.
- TAKE ALL NECESSARY STEPS TO PREVENT BUILDING MATERIAL, CONSTRUCTION DEBRIS OR WASTE BEING SPILLED OR TRACKED ONTO ADJUTING PROPERTIES OR PUBLIC STREETS DURING CONSTRUCTION AND PROCEED IMMEDIATELY TO CLEAN UP ANY AREAS SO AFFECTED.

3. AFTER CONSTRUCTION:

- PROVIDE PERMANENT COVER CONSISTING OF TOPSOIL AND SEED TO DISTURBED AREAS.
- REMOVE STRAW BALE FLOW CHECK DAMS, SILT FENCES AND FILTER CLOTHS ON CATCH BASINS AND MANHOLE COVERS AFTER DISTURBED AREAS HAVE BEEN REHABILITATED AND STABILIZED.
- INSPECT AND CLEAN CATCH BASIN SUMPS AND STORM SEWERS.



LEGEND:

	EXISTING PROPERTY LINE
	PROPOSED CURB
	PROPOSED DEPRESSED CURB
	PROPOSED TERRACING (3:1 MAX.)
	PROPOSED SILT FENCE AS PER OPSD 219.110
	PROPOSED STRAW BALE CHECK DAM AS PER OPSD 219.180
	PROPOSED DOOR ENTRANCE/EXIT
	PROPOSED LANDSCAPED AREA
	PROPOSED CONCRETE FEATURES/SLAB
	PROPOSED HEAVY-DUTY ASPHALT
	PROPOSED LIGHT-DUTY ASPHALT
	PROPOSED RIP RAP
	PROPOSED ELEVATION
	PROPOSED HIGH POINT ELEVATION
	PROPOSED STORM SEWER
	PROPOSED SANITARY SEWER
	PROPOSED WATERMAIN
	EXISTING STORM SEWER
	EXISTING SANITARY SEWER
	EXISTING WATERMAIN
	EXISTING MANHOLE
	EXISTING CATCHBASIN
	PROPOSED CATCHBASIN-MANHOLE/CATCHBASIN
	PROPOSED STC300
	PROPOSED CURB STOP
	PROPOSED PIPE INSULATION
	PROPOSED 20m SETBACK
	PROPOSED 100 YEAR HIGH WATER LEVEL
	STORM WATERSHED EXTENT
	WATERSHED NAME
	RUNOFF COEFFICIENT
	AREA IN HECTARES

USE AND INTERPRETATION OF DRAWINGS

GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION ARE PART OF THE CONTRACT DOCUMENTS AND DESCRIBE THE SCOPE AND INTENT OF THE DRAWINGS. THE CONTRACTOR SHALL VERIFY THE ACCURACY AND INTENT OF THE DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF OTTAWA AND THE PROVINCE OF ONTARIO. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF OTTAWA AND THE PROVINCE OF ONTARIO. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF OTTAWA AND THE PROVINCE OF ONTARIO.

BY USE OF THE DRAWINGS FOR CONSTRUCTION OF THE PROJECT, THE OWNER CONFIRMS THAT HE HAS REVIEWED AND APPROVED THE DRAWINGS. THE CONTRACTOR CONFIRMS THAT HE HAS REVIEWED THE SITE, FAMILIARIZED HIMSELF WITH THE LOCAL CONDITIONS, VERIFIED FIELD DIMENSIONS AND CORRELATED HIS OBSERVATIONS WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

AS INSTRUMENTS OF SERVICE, ALL DRAWINGS, SPECIFICATIONS, CAD FILES OR OTHER ELECTRONIC MEDIA AND COPIES THEREOF FURNISHED BY THE ENGINEER ARE HIS PROPERTY. THEY ARE TO BE USED ONLY FOR THE PROJECT AND ARE NOT TO BE USED ON ANY OTHER PROJECT, INCLUDING REPEATS OF THE PROJECT. CHANGES TO THE DRAWINGS MAY NOT BE MADE BY THE ENGINEER.

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UNAUTHORIZED CHANGES:

IN THE EVENT THE CLIENT, THE CLIENT'S CONTRACTORS OR SUBCONTRACTORS, OR ANYONE FOR WHOM THE CLIENT IS LEGALLY LIABLE MAKES OR PERMITS TO BE MADE ANY CHANGES TO ANY REPORTS, PLANS, SPECIFICATIONS OR OTHER CONSTRUCTION DOCUMENTS PREPARED BY LRI ASSOCIATES LTD. (LRI) WITHOUT OBTAINING LRI'S PRIOR WRITTEN CONSENT, THE CLIENT SHALL ASSUME FULL RESPONSIBILITY FOR THE RESULTS OF SUCH CHANGES. THEREFORE THE CLIENT AGREES TO WAIVE ANY CLAIM AGAINST LRI AND TO RELEASE LRI FROM ANY LIABILITY ARISING DIRECTLY OR INDIRECTLY FROM SUCH UNAUTHORIZED CHANGES.

IN ADDITION, THE CLIENT AGREES TO THE FULLEST EXTENT PERMITTED BY LAW, TO INDEMNIFY AND HOLD HARMLESS LRI FROM ANY DAMAGES, LIABILITIES OR COSTS, INCLUDING REASONABLE ATTORNEY'S FEES AND COST OF DEFENSE, ARISING FROM SUCH CHANGES.

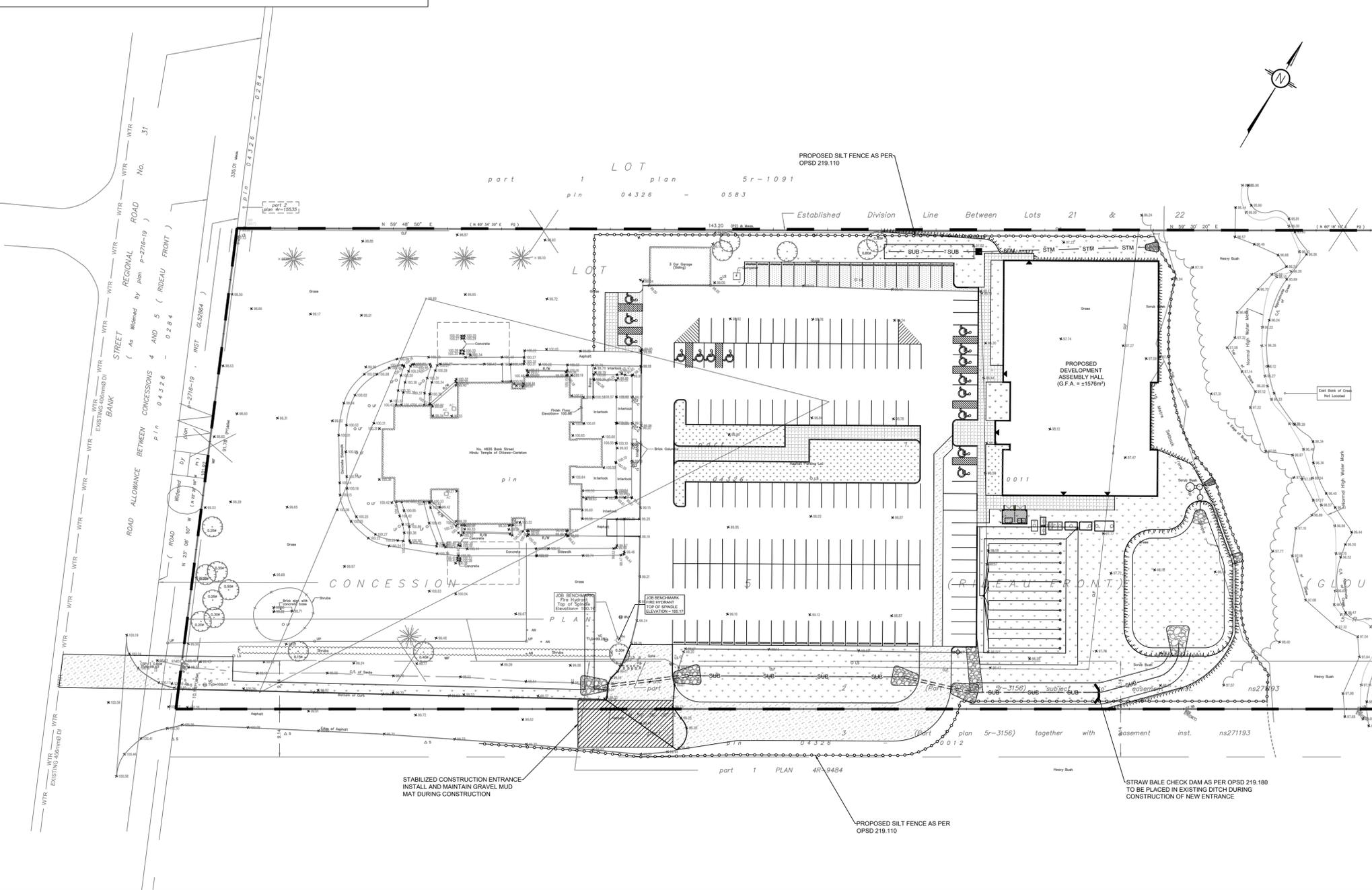
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CONTRACTOR TO VERIFY ALL DIMENSIONS AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES BEFORE WORK COMMENCES. DO NOT SCALE DRAWINGS.

SCALE: 1:500

10m 5 0 10 20m



TOPOGRAPHIC INFORMATION

TOPOGRAPHIC INFORMATION PROVIDED BY ANNIS, O'SULLIVAN, VOLLEBECK LTD.
PROJECT NO. 19814-17 HINDU TEMPLE
DATED APRIL 21st 2017, REVISED NOVEMBER 29th 2017

ELEVATION NOTES

- Elevations shown are geodetic and are referred to the CGVD28 geodetic datum.
- It is the responsibility of the user of this information to verify that the job benchmark has not been altered or disturbed and that its relative elevation and description agrees with the information shown on this drawing.
- Elevations derived from benchmark 019119680388 having an elevation of 92.16 metres.

UTILITY NOTES

- This drawing cannot be accepted as acknowledging all of the utilities and it will be the responsibility of the user to contact the respective utility authorities for confirmation.
- Only visible surface utilities were located.
- A field location of underground plants by the pertinent utility authority is mandatory before any work involving breaking ground, probing, excavating etc.

Bearings are grid, and are referred to the Central Meridian of MTM Zone 9 (76°30' West Longitude) NAD-83 (original).

For Bearing Comparisons, (P1) and (P2) are Astronomic Plans.

SITE AREA = 4.048 Hectares.

No.	REVISIONS	BY	DATE
05	RE-ISSUED FOR SITE PLAN APPLICATION	K.H.	31 OCT 2022
04	RE-ISSUED FOR SITE PLAN APPLICATION	K.H.	22 SEPT 2021
03	RE-ISSUED FOR SITE PLAN APPLICATION	K.H.	23 DEC 2020
02	ISSUED FOR CLIENT REVIEW	K.H.	11 DEC 2020
01	ISSUED FOR CLIENT APPROVAL	K.H.	11 MAR 2020

NOT AUTHENTIC UNLESS SIGNED AND DATED

LRI
ENGINEERING | INGENIERIE
5430 Canotek Road | Ottawa, ON, K1J 9G2
www.lri.ca | (613) 842-3434

CLIENT: **THE HINDU HERITAGE CENTRE OF OTTAWA CARLETON**

DESIGNED BY: P.P. DRAWN BY: K.H. APPROVED BY: M.B.

PROJECT: **PROPOSED ASSEMBLY HALL 4835 BANK STREET, OTTAWA**

DRAWING TITLE: **EROSION AND SEDIMENT CONTROL PLAN**

PROJECT NO. 170132
DATE: JAN2020

C101



KEY PLAN
N.T.S.

TOPOGRAPHIC INFORMATION

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PROJECT NO. 19614-17 HINDU TEMPLE
DATED APRIL 21st 2017, REVISED NOVEMBER 29th 2017

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	PROPOSED BOTTOM OF CURB ELEVATION
	PROPOSED TOP OF CURB ELEVATION
	MATCH INTO EXISTING ELEVATION
	EXISTING ELEVATION
	PROPOSED OVERLAND MAJOR FLOW ROUTE
	PROPOSED 100mmØ PERFORATED SUBDRAIN
	PROPOSED STORM SEWER
	PROPOSED SANITARY SEWER
	PROPOSED WATERMAIN
	EXISTING STORM SEWER
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GENERAL NOTES:

EXISTING SERVICES AND UTILITIES SHOWN ON THESE DRAWINGS ARE TAKEN FROM THE BEST AVAILABLE RECORDS, BUT MAY NOT BE COMPLETE OR TO DATE. CONTRACTOR SHALL VERIFY IN FIELD FOR LOCATION AND ELEVATION OF PIPES AND CHECK WITH THE UTILITY COMPANIES BEFORE DIGGING OR PERFORMING WORK.

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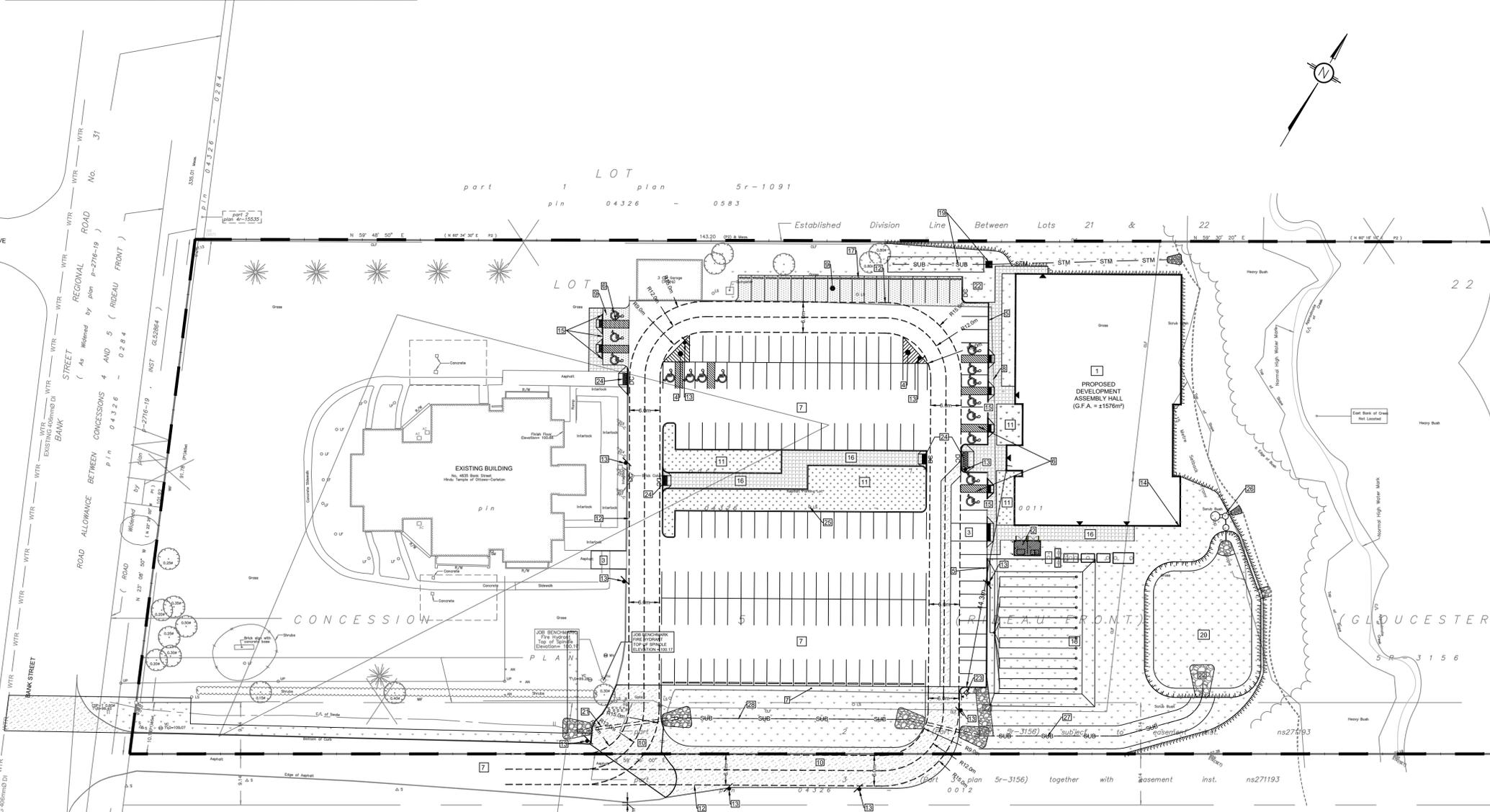
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10m 0 5 10 20m
SCALE: 1:500

SITE PLAN NOTES:

- PROPOSED DEVELOPMENT
- PROPOSED GARBAGE / WASTE CONTAINERS LOCATION (REFER TO ARCH SITE PLAN)
- PROPOSED NO PARKING AREA FOR GARBAGE & LOADING AREA (WITH NO PARKING SIGNS/PAVEMENT MARKINGS)
- PROPOSED PAVEMENT MARKINGS FOR FIRE ROUTE
- PROPOSED CONCRETE BARRIER CURB AS PER OPSD 600.110
- PROPOSED ACCESSIBLE SPACES C/W LINE PAINTING
- EXISTING ASPHALT TO REMAIN
- EXISTING ASPHALT PARKING LOT TO BE REMOVED & REPLACED WITH 100mm TOPSOIL & SOD
- PROPOSED LIGHT DUTY PAVEMENT STRUCTURE
- PROPOSED HEAVY TRAFFIC PAVEMENT STRUCTURE
- PROPOSED LANDSCAPING (AS PER LANDSCAPING PLAN)
- PROPOSED FIRE ROUTE
- PROPOSED FIRE ROUTE SIGNAGE
- PROPOSED ROOF DRAINAGE OUTLET
- 30 x 45 cm "DISABLED PARKING PERMIT" SIGN (Rb-03) AS PER MTO BOOK 5 AND AS PER SECTION 11 OF THE ONTARIO REGULATION 581/90. SIGN TO BE MOUNTED ON BUILDING WALL OR POST
- PROPOSED CONCRETE WALKWAY, AND VEHICULAR ACCESS ROUTE TO REAR SITE
- PROPOSED PRECAST CONCRETE BUMPER CURBS
- PROPOSED SEPTIC TANKS & LEACHING BED (REFER TO SEPTIC DESIGN BY GREEN VALLEY ENVIRONMENTAL)
- PROPOSED CATCHBASIN & INFILTRATION GALLERY
- PROPOSED STORMWATER DETENTION AREA
- EXISTING CULVERT TO BE REMOVED AND REPLACED
- PROP RIP-RAP FOR DEPRESSED CURBS & PIPE OUTLET
- PROPOSED FIRE HYDRANT
- PROPOSED TACTILE WALKING SURFACE INDICATOR AS PER CITY OF OTTAWA ACCESSIBILITY DESIGN STANDARDS SECTIONS 2.7 & 3.4.6.
- EXISTING LIGHT STANDARD TO REMAIN
- PROPOSED STORMWATER QUANTITY CONTROL AND TREATMENT UNITS
- PROPOSED DITCH W/ SUBDRAIN



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NOT AUTHENTIC UNLESS SIGNED AND DATED

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CLIENT: **THE HINDU HERITAGE CENTRE OF OTTAWA CARLETON**

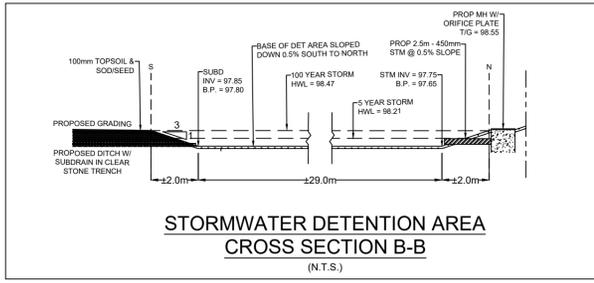
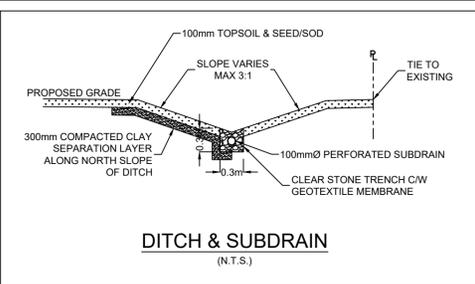
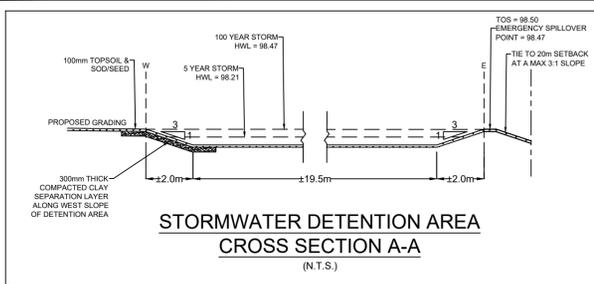
DESIGNED BY: P.P. DRAWN BY: K.H. APPROVED BY: M.B.

PROJECT: **PROPOSED ASSEMBLY HALL 4835 BANK STREET, OTTAWA**

DRAWING TITLE: **SITE DEVELOPMENT PLAN**

PROJECT NO: 170132
DATE: JAN2020

C201



PAVEMENT STRUCTURE

COURSE	MATERIAL	THICKNESS (mm)	
		AUTOMOBILE PARKING	TRUCK ROUTE (HEAVY TRAFFIC)
SURFACE	HL.3 A/C (PG 58-34)	50	40
BINDER	HL.8 A/C (PG 58-34)	--	50
BASECOURSE	GRANULAR "A"	150	150
SUBBASE	GRANULAR "B" TYPE II	350	450

NOTE: IN PREPARATION FOR PAVEMENT CONSTRUCTION AT THIS SITE, ANY SURFICIAL OR NEAR SURFACE/SUBGRADE LEVEL TOPSOIL AND ANY SOFT, WET OR DELETERIOUS MATERIALS SHOULD BE REMOVED FROM THE PROPOSED PAVED AREAS. THE EXPOSED SUBGRADE SHOULD BE INSPECTED AND APPROVED BY GEOTECHNICAL PERSONNEL AND ANY SOFT AREAS EVIDENT SHOULD BE SUBEXCAVATED AND REPLACED WITH SUITABLE EARTH BORROW APPROVED BY THE GEOTECHNICAL ENGINEER. THE SUBGRADE SHOULD BE SHAPED AND CROWNED TO PROMOTE DRAINAGE OF THE SITE DRAINAGE STRUCTURES. FOLLOWING APPROVAL OF THE PREPARATION OF THE SUBGRADE, THE PAVEMENT GRANULARS MAY BE PLACED. PAVEMENT STRUCTURE AS PER THE GEOTECHNICAL REPORT PREPARED BY LRL ASSOCIATES DATED NOVEMBER 2019.

LEGEND:

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- PROPOSED DEPRESSED CURB
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- PROPOSED HIGH POINT ELEVATION
- PROPOSED SWALE ELEVATION
- PROPOSED BOTTOM OF CURB ELEVATION
- PROPOSED TOP OF CURB ELEVATION
- MATCH INTO EXISTING ELEVATION
- EXISTING ELEVATION
- PROPOSED OVERLAND MAJOR FLOW ROUTE
- PROPOSED 100mm PERFORATED SUBDRAIN
- PROPOSED STORM SEWER
- PROPOSED SANITARY SEWER
- PROPOSED WATERMAIN
- EXISTING STORM SEWER
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- AREA IN HECTARES

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GENERAL NOTES:

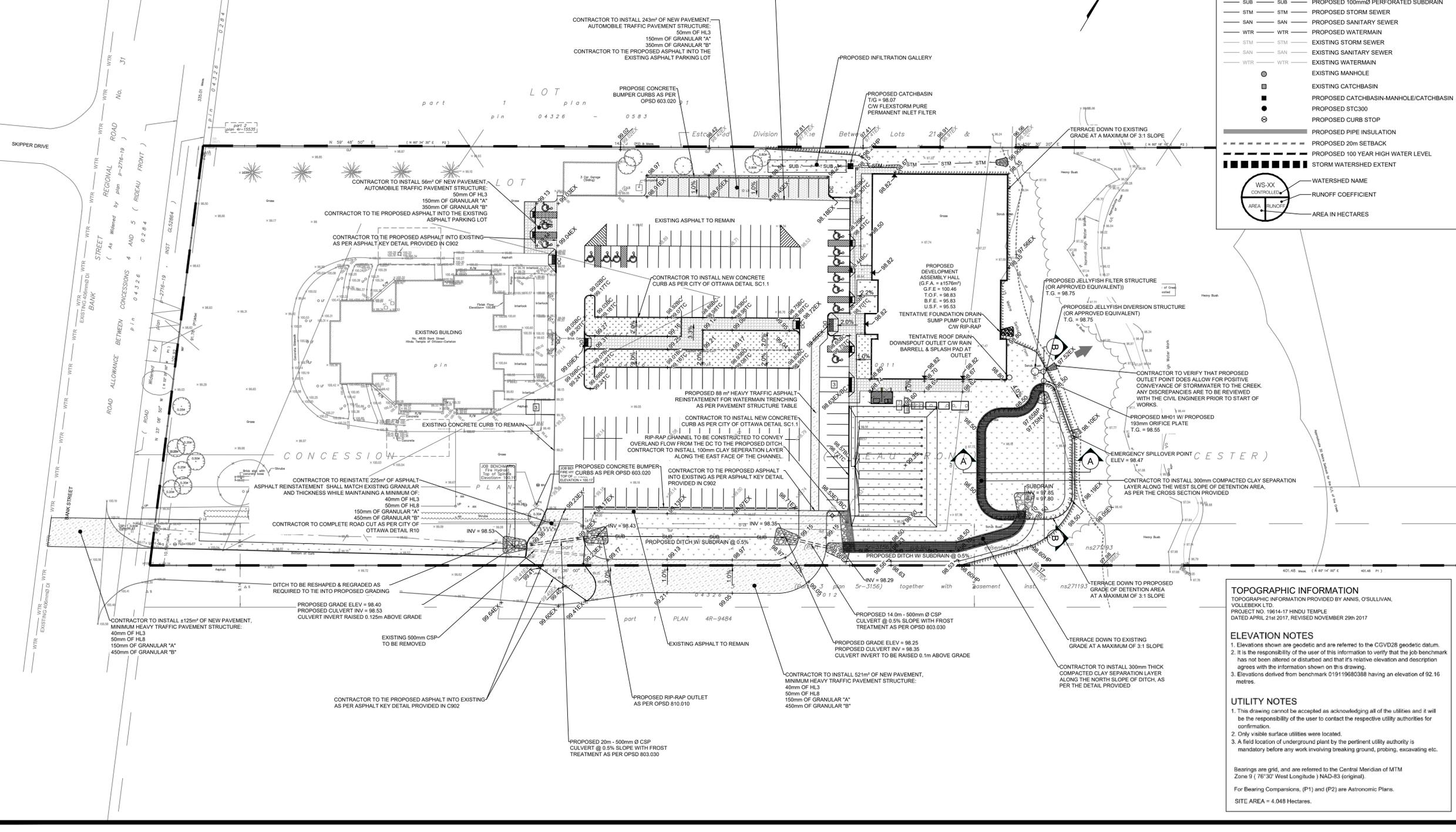
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10m 5 0 10 20m
SCALE: 1:500



TOPOGRAPHIC INFORMATION
 TOPOGRAPHIC INFORMATION PROVIDED BY ANNIS, O'SULLIVAN, VOLLEBEKK LTD.
 PROJECT NO. 19614-17 HINDU TEMPLE
 DATED APRIL 21st 2017, REVISED NOVEMBER 29th 2017

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 SITE AREA = 4.048 Hectares.

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02	ISSUED FOR CLIENT REVIEW	K.H.	11 DEC 2020
01	ISSUED FOR CLIENT APPROVAL	K.H.	11 MAR 2020

PROFESSIONAL ENGINEER
 M. BASNET
 100501990
 2022 (02/2)
 PROVINCE OF ONTARIO

LRL
 ENGINEERING | INGENIERIE
 5430 Canotek Road | Ottawa, ON, K1J 9G2
 www.lrl.ca | (613) 842-3434

CLIENT: THE HINDU HERITAGE CENTRE OF OTTAWA CARLETON

DESIGNED BY: P.P. DRAWN BY: K.H. APPROVED BY: M.B.

PROJECT: PROPOSED ASSEMBLY HALL 4835 BANK STREET, OTTAWA

DRAWING TITLE: GRADING AND DRAINAGE PLAN

PROJECT NO. 170132
 DATE: JAN2020
C301

NOTES: GENERAL

- CONTRACTOR IS RESPONSIBLE FOR ALL LAYOUT FOR CONSTRUCTION PURPOSES.
- ALL ELEVATIONS ARE GEODETIC AND UTILIZE METRIC UNITS.
- JOB BENCH MARK - CONFIRM WITH LRL PRIOR TO UTILIZATION.
- ALL GROUND SURFACES SHALL BE EVENLY GRADED WITHOUT PONDING AREAS AND WITHOUT LOW POINTS EXCEPT WHERE APPROVED SWALE, CATCH BASIN OUTLETS AND/OR STORM DETENTION AREAS ARE PROVIDED.
- STRIP AND REMOVE ALL TOPSOIL FROM IMPROVED AREAS.
- COORDINATE AND SCHEDULE ALL WORK WITH OTHER TRADES AND CONTRACTORS.
- ALL EDGES OF DISTURBED PAVEMENT SHALL BE SAW CUT TO FORM A CLEAN STRAIGHT LINE PRIOR TO PLACING NEW PAVEMENT. PAVEMENT REINSTATEMENT SHALL BE WITH STEP JOINTS OF 500mm WIDTH MINIMUM.
- CURBS TO BE BARRIER, CONSTRUCTED AS PER OPSD 600.110.
- ALL MATERIAL SUPPLIED AND PLACED FOR PARKING LOT AND ACCESS ROAD CONSTRUCTION SHALL BE TO OPSD STANDARDS AND SPECIFICATIONS UNLESS OTHERWISE NOTED. CONSTRUCTION TO OPSD 206, 310 & 314. MATERIALS TO OPSD 1001, 1003 & 1010.
- ABUTTING PROPERTY GRADE TO BE MATCHED.
- OBTAIN AND PAY FOR ALL NECESSARY PERMITS AND APPROVALS FROM THE MUNICIPAL AUTHORITIES PRIOR TO COMMENCING CONSTRUCTION.
- MINIMIZE DISTURBANCE TO EXISTING VEGETATION DURING THE EXECUTION OF ALL WORKS.
- FILTER FABRIC TO BE INSTALLED AND MAINTAINED BETWEEN THE FRAME AND COVER OF ALL CATCHBASINS, CATCHBASIN MANHOLES AND MANHOLES DURING THE CONSTRUCTION PERIOD TO MINIMIZE SEDIMENTS ENTERING THE STORM SEWER SYSTEM. ALL GRASSED AREAS MUST BE COMPLETED PRIOR TO THE REMOVAL OF THE FILTER FABRIC IN THE DRAINAGE STRUCTURES.
- REMOVE FROM SITE ALL EXCESS EXCAVATED MATERIAL UNLESS OTHERWISE DIRECTED FROM THE ENGINEER. EXCAVATE AND REMOVE ALL ORGANIC MATERIAL AND DEBRIS, IF ANY, LOCATED WITHIN THE PROPOSED BUILDING, PARKING AND ROADWAY LOCATIONS.
- THE APPROVAL OF THIS PLAN DOES NOT EXEMPT THE CONTRACTOR FROM THE REQUIREMENTS TO OBTAIN THE VARIOUS PERMITS/APPROVALS REQUIRED TO COMPLETE A CONSTRUCTION PROJECT, SUCH AS BUT NOT LIMITED TO: ROAD CUT PERMITS, SEWER PERMITS, WATER PERMIT, ETC.
- AT PROPOSED UTILITY CONNECTION POINTS AND CROSSINGS (I.E. STORM SEWER, SANITARY SEWER, WATER, ETC.) THE CONTRACTOR SHALL DETERMINE THE PRECISE LOCATION AND DEPTH OF EXISTING UTILITIES AND REPORT ANY DISCREPANCIES OR CONFLICTS TO THE ENGINEER BEFORE COMMENCING WORK.
- ALL SIDEWALK CONSTRUCTION TO BE AS PER OPSD 310.010 & OPSD 310.050.

NOTES: SEWERS

- SEWER BEDDING AS PER PIPE TRENCH DETAIL WITH GRANULAR 'A' BEDDING COMPACTED TO 95% OF ITS SPMD.
- ALL WORK SHALL BE PERFORMED, AS APPLICABLE IN ACCORDANCE WITH OPSD 407, AND 410.
- CONTRACTOR TO CONFIRM ELEVATION OF EXISTING SEWERS AT PROPOSED CONNECTION POINTS AND REPORT ANY DISCREPANCIES TO THE ENGINEER BEFORE COMMENCING ANY WORK.
- ALL SEWERS WITH LESS THAN 2.0m OF COVER ARE SUBJECT TO INSULATION DETAIL.

NOTES: WATER SERVICE

- PROPOSED WATER SERVICE TO BE INSULATED WHEN COVER IS LESS THAN 2.4m AS PER DETAIL PROVIDED IN C901.

TOPOGRAPHIC INFORMATION

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PROJECT NO. 19814-17 HINDU TEMPLE
DATED APRIL 21st 2017, REVISED NOVEMBER 29th 2017

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Existing Watermain Table				
Location	Station	Min. Obv	Grade	Notes
Connection to Existing Water Service	0+130.5	97.40	99.80	
Connection to Proposed Building	0+151.5	EX	99.63	

Proposed Watermain Table				
Location	Station	Min. Obv	Grade	Notes
Main Line				
Connection to City WM	0+000.0	Match Ex WM OBV	100.24	
Tee Fitting 1	0+034.4	97.65	100.05	
Tee Fitting 2	0+111.5	96.92	99.32	
45° Elbow Fitting 1	0+180.5	96.60	99.00	
45° Elbow Fitting 2	0+186.5	96.75	99.15	
Tee Fitting 3	0+191.2	96.40	98.80	
Fire Hydrant 1	0+195.5*	96.16	98.56	*diverges at Tee Fitting 3
45° Elbow Fitting 3	0+232.5	96.30	98.70	
45° Elbow Fitting 4	0+237.2	96.25	98.65	
Connection to Proposed Building	0+245.7	96.42	98.82	
Branch NW off Tee Fitting 1 @ 0+034.4				
Tee Fitting 1	0+034.4	96.92	99.32	
Elbow Fitting 5	0+037.6	96.86	99.26	
Elbow Fitting 6	0+040.4	97.03	99.43	
Connection to City WM	0+072.5	Match Ex WM OBV	100.28	
Branch NW off Tee Fitting 2 @ 0+111.5				
Tee Fitting 2	0+111.5	96.92	99.32	
Tee Fitting 4	0+122.9	96.9	99.30	
Existing Fire Hydrant	0+129.0*	96.88	99.28	**diverges at Tee Fitting 4
Connection to Existing Water Service	0+130.5	Match EX WTR OBV	99.46	

LEGEND:

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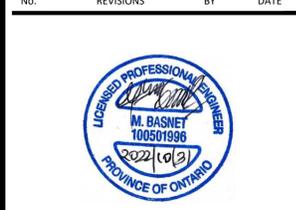
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NOT AUTHENTIC UNLESS SIGNED AND DATED

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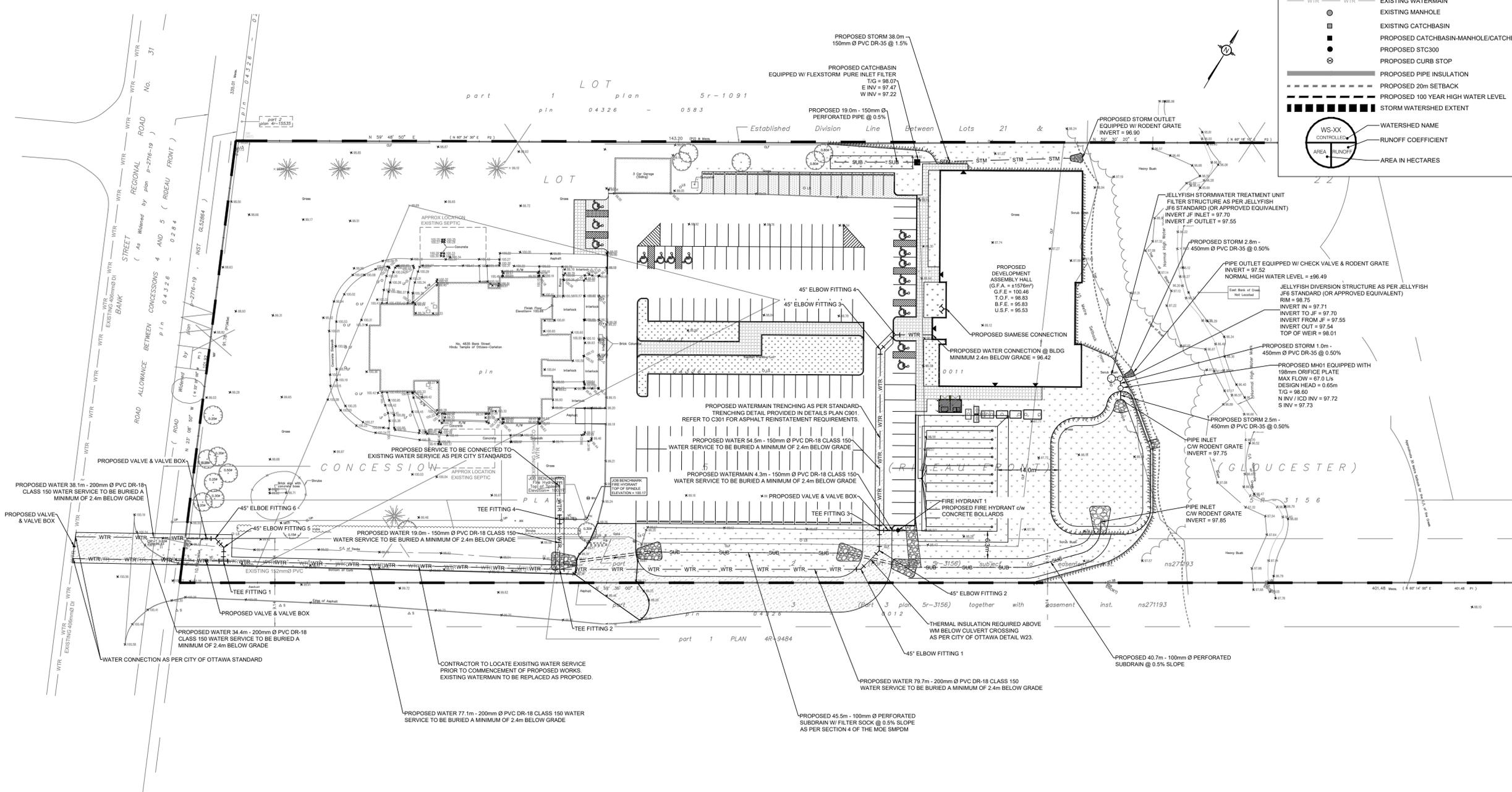
CLIENT: THE HINDU HERITAGE CENTRE OF OTTAWA CARLETON

DESIGNED BY: P.P. DRAWN BY: K.H. APPROVED BY: M.B.

PROJECT: PROPOSED ASSEMBLY HALL 4835 BANK STREET, OTTAWA

DRAWING TITLE: SERVICING PLAN

PROJECT NO: 170132
DATE: JAN2020



File no.: D017-12-20-0059

TOPOGRAPHIC INFORMATION
 TOPOGRAPHIC INFORMATION PROVIDED BY ANNIS, O'SULLIVAN,
 VOLLEBECK LTD.
 PROJECT NO. 19614-17 HINDU TEMPLE
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SCALE: 1:500
 10m 5 10 15 20m

No.	REVISIONS	BY	DATE
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04	RE-ISSUED FOR SITE PLAN APPLICATION	K.H.	22 SEPT 2021
03	RE-ISSUED FOR SITE PLAN APPLICATION	K.H.	23 DEC 2020
02	ISSUED FOR CLIENT REVIEW	K.H.	11 DEC 2020
01	ISSUED FOR CLIENT APPROVAL	K.H.	11 MAR 2020

NOT AUTHENTIC UNLESS SIGNED AND DATED



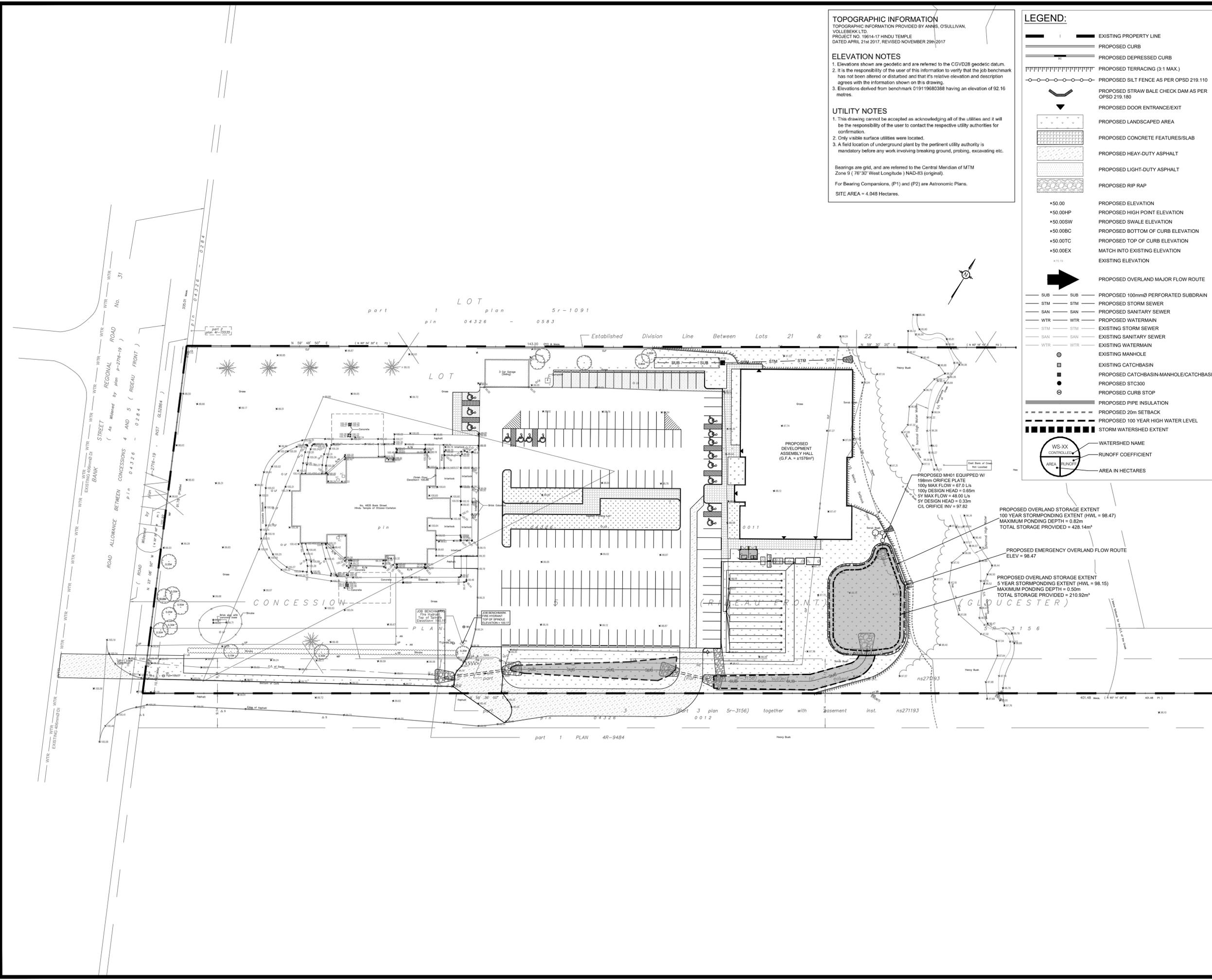
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CLIENT: THE HINDU HERITAGE CENTRE OF OTTAWA CARLETON
 DESIGNED BY: P.P. DRAWN BY: K.H. APPROVED BY: M.B.
 PROJECT: PROPOSED ASSEMBLY HALL 4835 BANK STREET, OTTAWA
 DRAWING TITLE: STORMWATER MANAGEMENT PLAN
 PROJECT NO.: 170132
 DATE: JAN2020

PROPOSED ASSEMBLY HALL
 4835 BANK STREET, OTTAWA

PROJECT NO.: 170132
 DATE: JAN2020
 C601



File no.: D017-12-20-0059

TOPOGRAPHIC INFORMATION
 TOPOGRAPHIC INFORMATION PROVIDED BY ANNIS, O'SULLIVAN, VOLLEBECK LTD.
 PROJECT NO. 19614-17 HINDU TEMPLE
 DATED APRIL 21st 2017, REVISED NOVEMBER 20th 2017

ELEVATION NOTES
 1. Elevations shown are geoidic and are referred to the CGVD28 geoidic datum.
 2. It is the responsibility of the user of this information to verify that the job benchmark has not been altered or disturbed and that its relative elevation and description agrees with the information shown on this drawing.
 3. Elevations derived from benchmark D19119680388 having an elevation of 92.16 metres.

UTILITY NOTES
 1. This drawing cannot be accepted as acknowledging all of the utilities and it will be the responsibility of the user to contact the respective utility authorities for confirmation.
 2. Only visible surface utilities were located.
 3. A field location of underground plant by the pertinent utility authority is mandatory before any work involving breaking ground, probing, excavating etc.

Bearings are grid, and are referred to the Central Meridian of MTM Zone 9 (76°30' West Longitude) NAD-83 (original).
 For Bearing Comparisons, (P1) and (P2) are Astronomic Plans.
 SITE AREA = 4.048 Hectares.

LEGEND:

- EXISTING PROPERTY LINE
- PROPOSED CURB
- PROPOSED DEPRESSED CURB
- PROPOSED TERRACING (3:1 MAX.)
- PROPOSED SILT FENCE AS PER OPSD 219.110
- PROPOSED STRAW BALE CHECK DAM AS PER OPSD 219.180
- PROPOSED DOOR ENTRANCE/EXIT
- PROPOSED LANDSCAPED AREA
- PROPOSED CONCRETE FEATURES/SLAB
- PROPOSED HEAVY-DUTY ASPHALT
- PROPOSED LIGHT-DUTY ASPHALT
- PROPOSED RIP RAP
- ×50.00 PROPOSED ELEVATION
- ×50.00HP PROPOSED HIGH POINT ELEVATION
- ×50.00SW PROPOSED SWALE ELEVATION
- ×50.00BC PROPOSED BOTTOM OF CURB ELEVATION
- ×50.00TC PROPOSED TOP OF CURB ELEVATION
- ×50.00EX MATCH INTO EXISTING ELEVATION
- ▽50.10 EXISTING ELEVATION
- PROPOSED OVERLAND MAJOR FLOW ROUTE
- SUB PROPOSED 100mmØ PERFORATED SUBDRAIN
- STM PROPOSED STORM SEWER
- SAN PROPOSED SANITARY SEWER
- WTR PROPOSED WATERMAIN
- STM EXISTING STORM SEWER
- SAN EXISTING SANITARY SEWER
- WTR EXISTING WATERMAIN
- EXISTING MANHOLE
- EXISTING CATCHBASIN
- PROPOSED CATCHBASIN-MANHOLE/CATCHBASIN
- PROPOSED STC300
- PROPOSED CURB STOP
- PROPOSED PIPE INSULATION
- PROPOSED 20m SETBACK
- PROPOSED 100 YEAR HIGH WATER LEVEL
- STORM WATERSHED EXTENT
- WS-XX CONTROLLED WATERSHED NAME
- AREA RUNOFF COEFFICIENT
- AREA IN HECTARES

USE AND INTERPRETATION OF DRAWINGS
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IN ADDITION, THE CLIENT AGREES TO INCLUDE IN ANY CONTRACTS FOR CONSTRUCTION APPROPRIATE LANGUAGE THAT PROHIBITS THE CONTRACTOR OR ANY SUBCONTRACTORS OF ANY TIER FROM MAKING ANY CHANGES OR MODIFICATIONS TO LRI'S CONSTRUCTION DOCUMENTS WITHOUT THE PRIOR WRITTEN APPROVAL OF LRI AND THAT FURTHER REQUIRES THE CONTRACTOR TO INDEMNIFY BOTH LRI AND THE CLIENT FROM ANY LIABILITY OR COST ARISING FROM SUCH CHANGES MADE WITHOUT SUCH PROPER AUTHORIZATION.

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 ENGINEERING | INGENIERIE
 5430 Canotek Road | Ottawa, ON, K1J 9G2
 www.lri.ca | (613) 842-3434

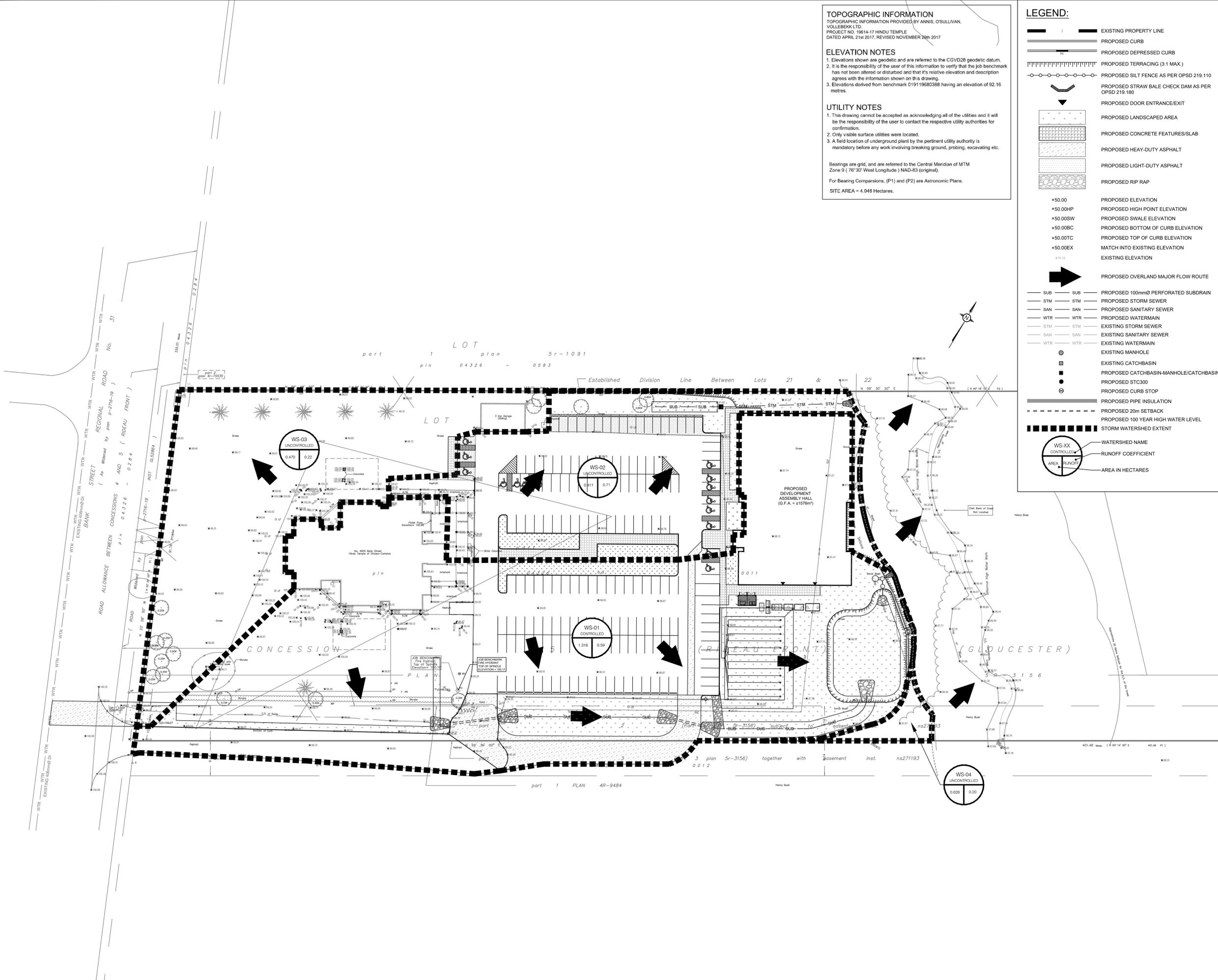
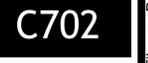
CLIENT: THE HINDU HERITAGE CENTRE OF OTTAWA CARLETON

DESIGNED BY: P.P. DRAWN BY: K.H. APPROVED BY: M.B.

PROJECT: PROPOSED ASSEMBLY HALL 4835 BANK STREET, OTTAWA

DRAWING TITLE: POST-DEVELOPMENT WATERSHED PLAN

PROJECT NO: 170132
 DATE: JAN2020



File no.: D017-12-20-0059

NOTES:

- FOR 100 - 400mm DIAMETER WATERMAINS, WHERE THE DEPTH OF COVER IS LESS THAN 250mm.
- THICKNESS OF INSULATION SHALL BE ADJUSTED TO 25mm.
- PROBABILITY OF MAINTENANCE HOLES, CATCHES, CARTRIDGES, ETC. INSULATION SHALL BE PLACED PER DETAIL W22.
- DEPTH OF COVER LESS THAN 150mm REQUIRES SPECIAL DESIGN.
- STAGGER JOINTS OF INSULATION SHEETS.
- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.

ONTARIO PROVINCIAL STANDARD DRAWING
PRECAST CONCRETE MAINTENANCE HOLE
 1200mm DIAMETER
 Nov 2014 Rev 5
 OPSD 701.010

ONTARIO PROVINCIAL STANDARD DRAWING
STANDARD ROAD CUT REINSTATEMENT
 DATE: MAY 2001
 REV: NONE
 DATE: MARCH 2006
 DWG. NO.: W22

NOTES:

- The sump is measured from the lowest invert.
- Granular backfill shall be placed to a minimum thickness of 300mm all around the maintenance hole.
- Precast concrete components shall be according to OPSD 701.030, 701.031, or 701.032.
- Structure exceeding 5.0m in depth shall include safety platform according to OPSD 404.020.
- Pipe support according to OPSD 708.020.
- For benching and pipe opening details, see OPSD 701.021.
- For adjustment unit and frame installation, see OPSD 704.010.
- All dimensions are nominal.
- All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING
PRECAST CONCRETE MAINTENANCE HOLE
 1200mm DIAMETER
 Nov 2014 Rev 5
 OPSD 701.010

NOTES:

- Sidewalk thickness at residential driveways and adjacent to curb shall be 150mm.
- At commercial and industrial driveways, the thickness shall be 200mm.
- This OPSD shall be read in conjunction with OPSD 310.030, 310.031, 310.032, 310.033 and 310.039.
- All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING
CONCRETE SIDEWALK
 Nov 2015 Rev 2
 OPSD 310.010

NOTES:

- THE FULL CURB DEPTH SHALL BE CARRIED THROUGH THE DEPRESSION CROSSING.
- A CONCRETE SUPPORT IS REQUIRED WHEN BUILT ADJACENT TO THE SIDEWALK.
- IF AN EXTENSION CURBING MACHINE IS USED, THE EXPANSION JOINTS SHALL BE PLACED AT THE END OF THE EXTRUSION.
- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.
- DUMMY JOINTS SHALL BE 20mm DEEP FROM FRONT, BACK AND TOP OF SECTION AT 2m SPACING.
- FOR DEPRESSION CURB AT ENTRANCES USE 250.
- DEPRESSION CURB HEIGHT - FOR PEDESTRIAN CURB RAMP IS 0 TO 6mm AND FOR PRIVATE ENTRANCES IS 20mm.

ONTARIO PROVINCIAL STANDARD DRAWING
CONCRETE BARRIER CURB FOR GRANULAR BASE PAVEMENT (MODIFIED OPSD-600.110)
 DATE: JANUARY 2003
 REV: NONE
 DATE: MARCH 2014
 DWG. NO.: SC1.1

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ONTARIO PROVINCIAL STANDARD DRAWING
HYDRANT LOCATION
 DATE: MAY 2001
 REV: NONE
 DATE: MARCH 2006
 DWG. NO.: W19

NOTES:

- FOR ALL WATERMAINS
- SEE DETAIL W20 FOR HYDRANTS IN DITCH AREAS.
- FOR WATERMAINS ABOVE AND UNDER, LOCATE VALVE WITH 10% OF CENTRELINE, RETAINING/RESTRAINING DEVICES TO BE UTILIZED. FOR WATERMAINS ABOVE AND UNDER, LOCATE VALVE WITH 10% OF CENTRELINE, RETAINING/RESTRAINING DEVICES TO BE UTILIZED.
- RETAINING/RESTRAINING DEVICES TO BE UTILIZED.
- HYDRANT BREAKABLE FLANGE ELEVATION TO BE ESTABLISHED PRIOR TO INSTALLATION. REFER TO W-19-A AND F-700.5.
- SEE W-19.1 FOR BACKFILL REQUIREMENTS IN THIS AREA.
- SEE W19 FOR HYDRANT LOCATION REQUIREMENTS.
- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.

ONTARIO PROVINCIAL STANDARD DRAWING
HYDRANT INSTALLATION
 DATE: MAY 2001
 REV: NONE
 DATE: MARCH 2007
 DWG. NO.: W19

NOTES:

- FOR AUXILIARY SERVICES AND ISOLATION VALVES.
- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.
- FOR 200 AND 250mm VALVES AND BEHIND BELOW THE CONCRETE BLOCKS AS REQUIRED TO RAISE BELL HIGH ENOUGH TO PREVENT CONTACT WITH THE VALVE BOWNET.

ONTARIO PROVINCIAL STANDARD DRAWING
VALVE BOX ASSEMBLY
 DATE: MAY 2001
 REV: NONE
 DATE: MARCH 2007
 DWG. NO.: W24

NOTES:

- PIPE EMBEDMENT MATERIAL - GRANULAR 'A'.
- FINAL BACKFILL - APPROVED NATIVE MATERIAL OR SELECT SUBGRADE IN ACCORDANCE WITH F-700.
- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.
- REFER TO W24.4 FOR RESTRAINED LENGTH REQUIREMENTS.
- REFER TO W23.9 AND W23.8 FOR THURST BLOCK REQUIREMENTS.
- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.

ONTARIO PROVINCIAL STANDARD DRAWING
STANDARD TRENCH DETAIL
 DATE: MAY 2001
 REV: NONE
 DATE: MARCH 2009
 DWG. NO.: W17

NOTES:

- FOR 300mm OR GREATER DIAMETER WATERMAIN BENDS SHALL BE MAXIMUM 225°.
- ISOLATION PER W22 AT EXISTING WATERMAIN.
- REFER TO W25.4 FOR RESTRAINED LENGTH REQUIREMENTS.
- REFER TO W23.9 AND W23.8 FOR THURST BLOCK REQUIREMENTS.
- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.

ONTARIO PROVINCIAL STANDARD DRAWING
TYPICAL CONNECTION DETAIL FROM NEW TO EXISTING WATERMAIN
 DATE: MAY 2001
 REV: NONE
 DATE: MARCH 2009
 DWG. NO.: W25.1

NOTES:

- Pipe embedment or bedding, cover, and backfill shall be according to:
 - a) Flexible OPSD 802.010, 802.013, 802.014, 802.020, 802.023, and 802.024.
 - b) Rigid - OPSD 802.030, 802.031, 802.032, 802.033, 802.034, 802.050, 802.051, 802.052, 802.053, and 802.054.
- Frost toppers shall start at bedding grade.

LEGEND:
 d - depth of roadbed granular
 k - depth of frost treatment below profile grade
 f - depth of frost penetration below profile grade

ONTARIO PROVINCIAL STANDARD DRAWING
FROST TREATMENT - PIPE CULVERTS FROST PENETRATION LINE BELOW BEDDING GRADE
 Nov 2015 Rev 3
 OPSD 803.030

NOTES:

- Covers shall be Type A or Type B, as specified.
- All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING
CAST IRON, SQUARE FRAME WITH CIRCULAR CLOSED OR OPEN COVER FOR MAINTENANCE HOLES
 Nov 2018 Rev 4
 OPSD 401.010

NOTES:

- The thickness of the rip-rap layer shall be at least 1.5 times the rip-rap mean diameter.
- All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING
GENERAL RIP-RAP LAYOUT FOR SEWER AND CULVERT OUTLETS
 Nov 2018 Rev 3
 OPSD 810.010

NOTES:

- INSULATION SHALL EXTEND 300mm EACH WAY FROM THE ENDS OF THE STRUCTURE, PARALLEL TO THE WATERMAIN.
- STAGGER JOINTS OF WALKING SHEETS.
- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.
- INSULATION CAN BE AT EITHER LOCATION OR BOTH.

ONTARIO PROVINCIAL STANDARD DRAWING
THERMAL INSULATION OF WATER-MAINS AT OPEN STRUCTURES
 DATE: MAY 2001
 REV: NONE
 DATE: FEB 2004
 DWG. NO.: W23

05 RE-ISSUED FOR SITE PLAN APPLICATION K.H. 31 OCT 2022

04 RE-ISSUED FOR SITE PLAN APPLICATION K.H. 22 SEPT 2021

03 RE-ISSUED FOR SITE PLAN APPLICATION K.H. 23 DEC 2020

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No. REVISIONS BY DATE

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CLIENT: THE HINDU HERITAGE CENTRE OF OTTAWA CARLETON

DESIGNED BY: P.P. DRAWN BY: K.H. APPROVED BY: M.B.

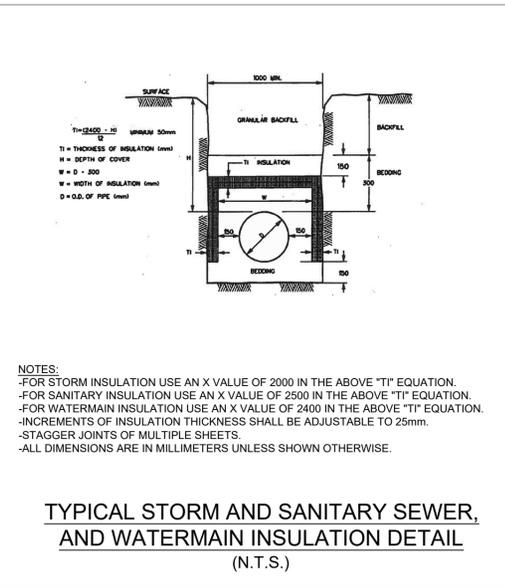
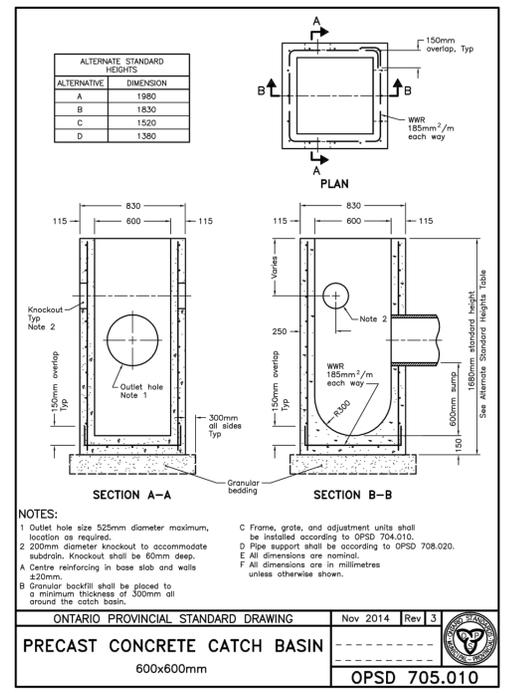
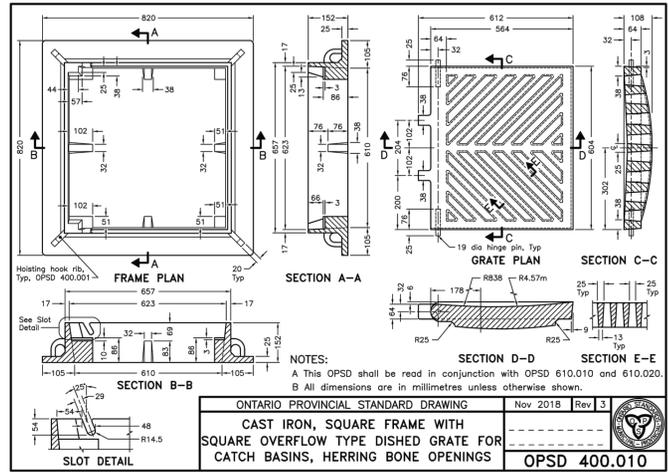
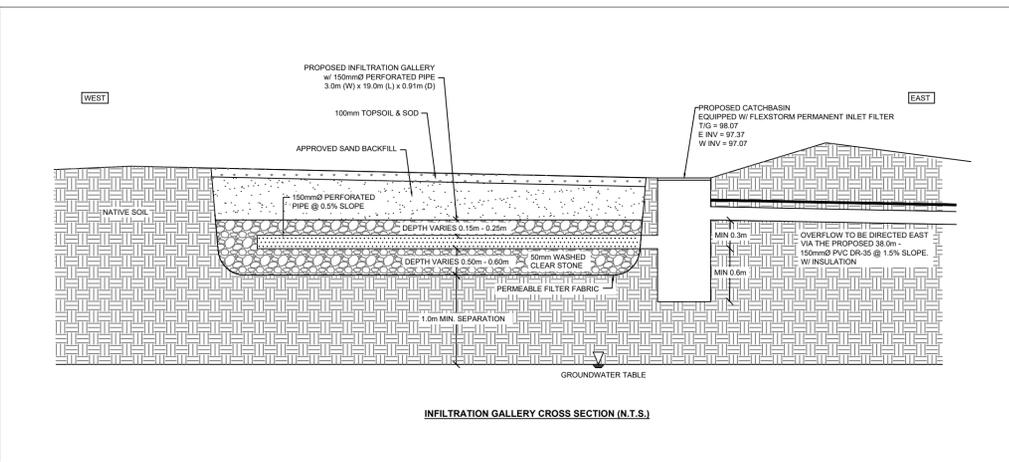
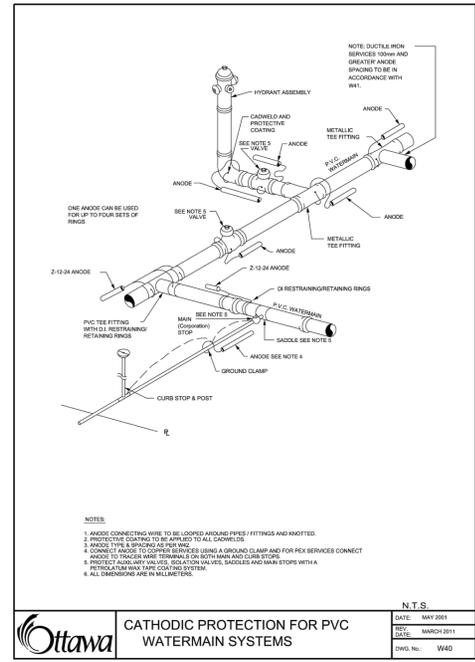
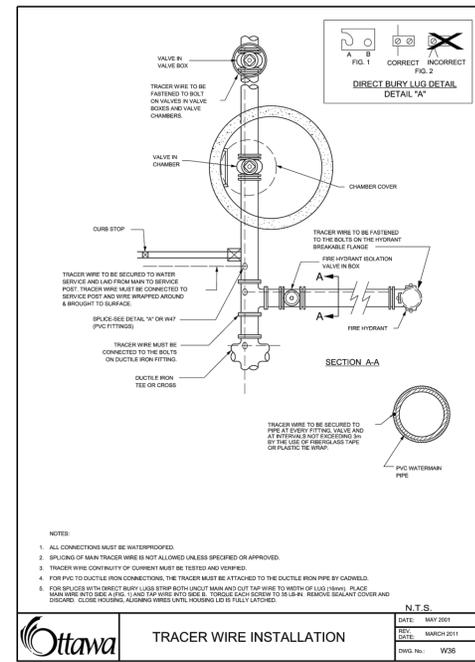
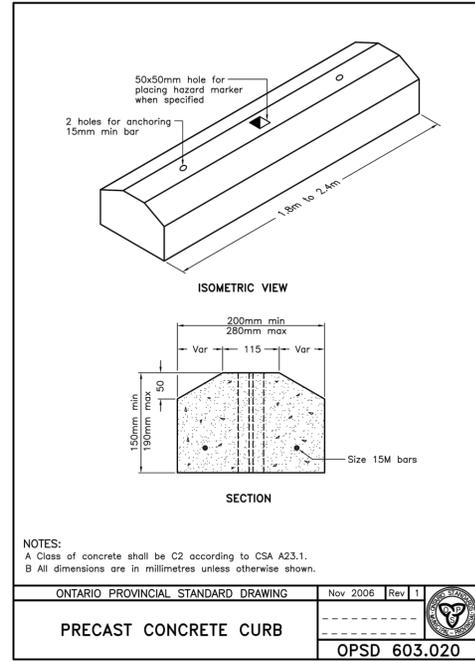
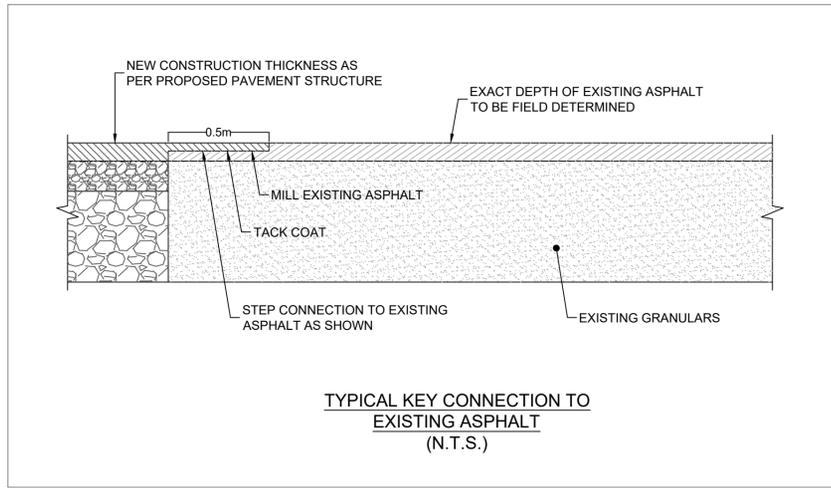
PROJECT: PROPOSED ASSEMBLY HALL 4835 BANK STREET, OTTAWA

DRAWING TITLE: CONSTRUCTION DETAIL PLAN

PROJECT NO.: 170132
 DATE: JAN 2020

C901

File no.: D017-12-20-0069



USE AND INTERPRETATION OF DRAWINGS

GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION ARE PART OF THE CONTRACT DOCUMENTS AND DESCRIBE USE AND INTENT OF THE DRAWING. THE CONTRACT DOCUMENTS INCLUDE NOT ONLY THE DRAWINGS, BUT ALSO THE OWNER-CONTRACTOR AGREEMENTS, CONDITIONS OF THE CONTRACT, THE SPECIFICATIONS, ADDENDA, AND MODIFICATIONS ISSUED AFTER EXECUTION OF THE CONTRACT. THESE CONTRACT DOCUMENTS ARE COMPLEMENTARY, AND WHAT IS REQUIRED BY ANY ONE SHALL BE BINDING AS REQUIRED BY ALL. WORK NOT COMPLETELY DELINEATED HEREON SHALL BE CONSTRUCTED OF THE SAME MATERIALS AND DETAILED SIMILARLY AS WORK SHOWN MORE COMPLETELY ELSEWHERE IN THE CONTRACT DOCUMENTS.

BY USE OF THE DRAWINGS FOR CONSTRUCTION OF THE PROJECT, THE OWNER CONFIRMS THAT HE HAS REVIEWED AND APPROVED THE DRAWINGS. THE CONTRACTOR CONFIRMS THAT HE HAS VISITED THE SITE, FAMILIARIZED HIMSELF WITH THE LOCAL CONDITIONS, VERIFIED FIELD DIMENSIONS AND CORRELATED HIS OBSERVATIONS WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

AS INSTRUMENTS OF SERVICE ALL DRAWINGS, SPECIFICATIONS, CAD FILES OR OTHER ELECTRONIC MEDIA AND COPIES THERE OF FURNISHED BY THE ENGINEER ARE HIS PROPERTY. THEY ARE TO BE USED ONLY FOR THIS PROJECT AND ARE NOT TO BE USED ON ANY OTHER PROJECT, INCLUDING REPEATS OF THE PROJECT. CHANGES TO THE DRAWINGS MAY ONLY BE MADE BY THE ENGINEER.

UNLESS THE REVISION TITLE IS "ISSUED FOR CONSTRUCTION", THESE DRAWINGS SHALL BE CONSIDERED PRELIMINARY AND SHALL NOT BE USED AS A CONSTRUCTION DOCUMENT.

THESE DRAWINGS ILLUSTRATE THE WORK TO BE DONE. THE ENGINEER IS NOT RESPONSIBLE FOR THE MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES USED TO DO THE WORK, OR THE SAFETY ASPECTS OF CONSTRUCTION, AND NOTHING ON THESE DRAWINGS EXPRESSED OR IMPLIED CHANGES THIS CONDITION. CONTRACTOR SHALL DETERMINE ALL CONDITIONS AT THE SITE AND SHALL BE RESPONSIBLE FOR KNOWING HOW THEY AFFECT THE WORK. SUBMITTAL OF A BID TO PERFORM THIS WORK IS ACKNOWLEDGEMENT OF THE RESPONSIBILITIES, AND THAT THEY HAVE BEEN FULLY CONSIDERED IN PLANNING OF THE WORK, AND THE BID PRICE. NO CLAIMS FOR EXTRA CHARGES DUE TO THESE CONDITIONS WILL BE FORTHCOMING.

UNAUTHORIZED CHANGES:

IN THE EVENT THE CLIENT, THE CLIENT'S CONTRACTORS OR SUBCONTRACTORS, OR ANYONE FOR WHOM THE CLIENT IS LEGALLY LIABLE MAKES OR PERMITS TO BE MADE ANY CHANGES TO ANY REPORTS, PLANS, SPECIFICATIONS OR OTHER CONSTRUCTION DOCUMENTS PREPARED BY LRL ASSOCIATES LTD. (LRL) WITHOUT OBTAINING LRL'S PRIOR WRITTEN CONSENT, THE CLIENT SHALL ASSUME FULL RESPONSIBILITY FOR THE RESULTS OF SUCH CHANGES. THEREFORE THE CLIENT AGREES TO WAIVE ANY CLAIM AGAINST LRL AND TO RELEASE LRL FROM ANY LIABILITY ARISING DIRECTLY OR INDIRECTLY FROM SUCH UNAUTHORIZED CHANGES.

IN ADDITION, THE CLIENT AGREES TO THE FULLEST EXTENT PERMITTED BY LAW, TO INDEMNIFY AND HOLD HARMLESS LRL FROM ANY DAMAGES, LIABILITIES OR COSTS, INCLUDING REASONABLE ATTORNEY'S FEES AND COST OF DEFENSE, ARISING FROM SUCH CHANGES.

GENERAL NOTES:

EXISTING SERVICES AND UTILITIES SHOWN ON THESE DRAWINGS ARE TAKEN FROM THE BEST AVAILABLE RECORDS, BUT MAY NOT BE COMPLETE OR TO DATE. CONTRACTOR SHALL VERIFY IN FIELD FOR LOCATION AND ELEVATION OF PIPES AND CHECK WITH THE UTILITY COMPANIES BEFORE DIGGING OR PERFORMING WORK.

CONTRACTOR IS ADVISED TO COLLECT INFORMATION ON SOIL CONDITIONS BEFORE START OF CONSTRUCTION.

THE ENGINEER WAIVES ANY AND ALL RESPONSIBILITY AND LIABILITY FOR PROBLEMS WHICH ARISE FROM FAILURE TO FOLLOW THESE PLANS, SPECIFICATIONS AND THE DESIGN INTENT THEY CONVEY, OR FOR PROBLEMS WHICH ARISE FROM OTHERS' FAILURE TO OBTAIN AND/OR FOLLOW THE ENGINEER'S GUIDANCE WITH RESPECT TO ANY ERRORS, OMISSIONS, INCONSISTENCIES AMBIGUITIES OR CONFLICTS WHICH ARE ALLEGED.

CONTRACTOR TO VERIFY ALL DIMENSIONS AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES BEFORE WORK COMMENCES. DO NOT SCALE DRAWINGS.

No.	REVISIONS	BY	DATE
05	RE-ISSUED FOR SITE PLAN APPLICATION	K.H.	31 OCT 2022
04	RE-ISSUED FOR SITE PLAN APPLICATION	K.H.	22 SEPT 2021
03	RE-ISSUED FOR SITE PLAN APPLICATION	K.H.	23 DEC 2020
02	ISSUED FOR CLIENT REVIEW	K.H.	11 DEC 2020
01	ISSUED FOR CLIENT APPROVAL	K.H.	11 MAR 2020

NOT AUTHENTIC UNLESS SIGNED AND DATED

LRL
 ENGINEERING | INGENIERIE
 5430 Canotek Road | Ottawa, ON, K1J 9G2
 www.lrl.ca | (613) 842-3434

CLIENT: THE HINDU HERITAGE CENTRE OF OTTAWA CARLETON

DESIGNED BY: P.P. DRAWN BY: K.H. APPROVED BY: M.B.

PROJECT: PROPOSED ASSEMBLY HALL 4835 BANK STREET, OTTAWA

DRAWING TITLE: CONSTRUCTION DETAIL PLAN

PROJECT NO.: 170132
 DATE: JAN2020

C902

File no.: D017-12-20-0069

GENERAL NOTES

- ALL DIMENSIONS INDICATED ARE IN MILLIMETERS (INCHES) UNLESS OTHERWISE SPECIFIED.
- JELLYFISH STRUCTURE INLET AND OUTLET PIPE SIZE AND ORIENTATION SHOWN FOR INFORMATIONAL PURPOSES ONLY.
- UNLESS OTHERWISE NOTED, INFRASTRUCTURE SUCH AS ALL UPSTREAM DIVERSION STRUCTURES, CONNECTING STRUCTURES, OR PIPE CONDUITS CONNECTING TO COMPLETE THE JELLYFISH SYSTEM SHALL BE PROVIDED AND ADDRESSED SEPARATELY.
- DRAWING FOR INFORMATION PURPOSES ONLY. REFER TO ENGINEERS SITEABILITY PLAN FOR STRUCTURE ORIENTATION.
- NO PRODUCT SUBSTITUTIONS SHALL BE ACCEPTED UNLESS SUBMITTED TO DAVIS PRIOR TO PROJECTS BID DATE, OR AS DIRECTED BY THE ENGINEER'S RECORD.

JELLYFISH STRUCTURE & DESIGN NOTES

- THE MAXIMUM MAINTENANCE ACCESS WALL TO BE USED FOR CLEANOUT AND ACCESS BELOW CARTRIDGE DECK.
- CARTRIDGE OR DOORS OF THE JELLYFISH MANHOLE STRUCTURE TO EXTEND TO DESIGN FINISH GRADE. DEPTHS IN EXCESS OF 3.81 M (12') MAY REQUIRE THE DESIGN AND INSTALLATION OF INTERMEDIATE SAFETY GRATES OR OTHER STRUCTURAL ELEMENTS.
- CARTRIDGES AND GRADE INGS, OR DOORS AND DOOR RISERS, OR BOTH SHALL BE GROUTED FOR WATER TIGHTNESS.
- STRUCTURE SHALL MEET ASHFTO R202, ASSUMING EARTH COVER OF 0.7', AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET ASHFTO M066 LOAD RATING AND BE CAST WITH THE MANHOLE LOGO.
- ALL STRUCTURAL SECTIONS AND PARTS TO MEET OR EXCEED ASTM C-476, ASTM C-443, AND ASTM A-507 CORRESPONDING TO ASHFTO SPECIFICATIONS, AND ANY OTHER SITE OR LOCAL STANDARDS.
- CONCRETE RISER SECTIONS FROM BOTTOM TO TOP WILL BE ADDED AS REQUIRED INCLUDING TRANSITION PIECES TO SMALLER DIAMETER RISERS FOR STRUCTURE ACCESSING TO BOTTOM OF CARTRIDGE DECK TO BOTTOM OF STRUCTURE. TOP SLAB SHALL BE REINFORCED TO WITHSTAND WINDY ELEVATIONS OR OTHER SITE CONSTRAINTS. ALTERNATIVE HATCH CONFIGURATIONS MAY BE AVAILABLE. HATCH DOORS SHOULD BE SIZED TO PROVIDE FULL ACCESS ABOVE THE CARTRIDGES TO ACCOMMODATE MAINTENANCE.
- STEPS TO BE APPROXIMATELY 300 MM (12") APART AND DIMENSIONS MUST MEET LOCAL STANDARDS. STEPS MUST BE INSTALLED AFTER CARTRIDGE DECK IS IN PLACE.
- CONCRETE RISER AND OUTLET PIPE CONDUIT TO MEET SITE'S NEEDS. IT IS THE RESPONSIBILITY OF OTHERS TO PROPERLY PROTECT THE TREATMENT DEVICE AND KEEP THE DEVICE OPEN DURING CONSTRUCTION. FILTER CARTRIDGES SHALL NOT BE INSTALLED UNTIL THE PROJECT SITE IS CLEAN AND FREE OF DEBRIS. BY OTHERS, THE PROJECT SITE INCLUDES ANY SURFACE THAT CONTRIBUTES TO RUNOFF TO THE TREATMENT DEVICE. CARTRIDGES SHALL BE FURNISHED NEW, AT THE TIME OF FINAL ACCEPTANCE. THIS DRAWING MUST BE VIEWED IN CONJUNCTION WITH THE STANDING JELLYFISH SPECIFICATION, AND STORMWATER QUALITY FILTER TREATMENT JELLYFISH DOCUMENTS.

INSTALLATION NOTES

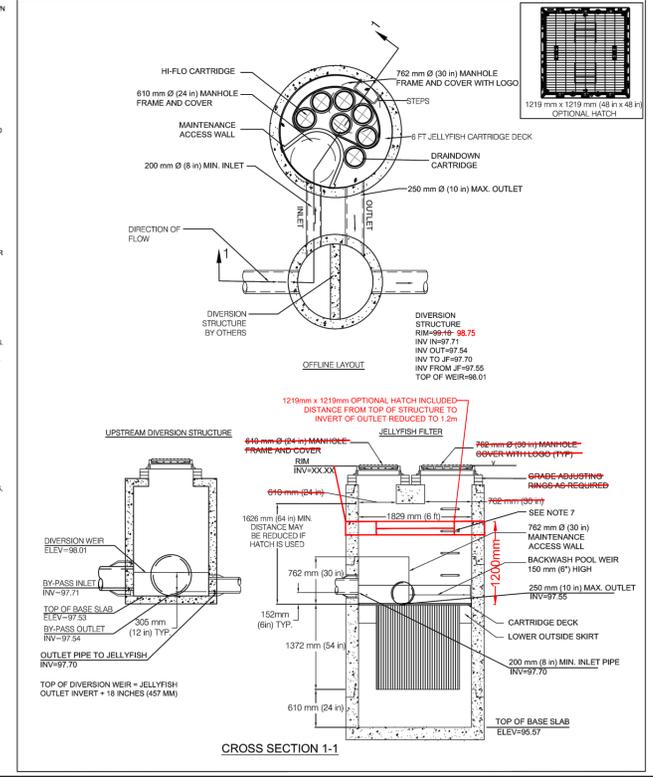
- ANY EXISTING BACKFILL, DEPTH, AND/OR ANTI-FILTRATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
- CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STRUCTURE LIFTING CLUTCHES PROVIDED.
- CONTRACTOR WILL INSTALL AND LEVEL THE STRUCTURE, SEALING THE JOINTS, LINE ENTRY AND EXIT POINTS NON-SHIPPING GROUT WITH APPROVED WATERPROOF OR FLEXIBLE BOOT).
- CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT CARTRIDGES FROM CONSTRUCTION-RELATED EROSION RUNOFF.
- CARTRIDGE INSTALLATION BY AIRRIAL SHALL OCCUR ONLY AFTER SITE HAS BEEN STABILIZED AND THE JELLYFISH UNIT IS CLEAN AND FREE OF DEBRIS. CONTACT MANUFACTURER TO COORDINATE CARTRIDGE INSTALLATION WITH SITE STABILIZATION.

STANDARD OFFLINE JELLYFISH RECOMMENDED PIPE DIAMETERS

NO. OF CARTRIDGES	INLET	OUTLET	BYPASS	OTHER
1	150	150	150	150
2	200	200	200	200
3	250	250	250	250
4	300	300	300	300
5	350	350	350	350
6	400	400	400	400
7	450	450	450	450
8	500	500	500	500
9	550	550	550	550
10	600	600	600	600

FOR SITE SPECIFIC DRAWINGS PLEASE CONTACT YOUR LOCAL JELLYFISH FILTER REPRESENTATIVE. SITE SPECIFIC DRAWINGS ARE BASED ON THE BEST AVAILABLE INFORMATION AT THE TIME. SOME FIELD REVISIONS TO THE SYSTEM LOCATION OR CONNECTIONS MAY BE NECESSARY BASED ON AVAILABLE SPACE OR SITE CONFIGURATION REVISIONS. ELEVATIONS SHOULD BE MAINTAINED EXCEPT WHERE NOTED ON BYPASS STRUCTURE.

DRAWING NOT TO BE USED FOR CONSTRUCTION



JELLYFISH DESIGN NOTES

JELLYFISH TREATMENT CAPACITY AS A FUNCTION OF THE CARTRIDGE SELECTION AND THE NUMBER OF CARTRIDGES. THE STANDING MANHOLE STYLE IS SHOWN. (RISER) MANHOLE JELLYFISH PEAK TREATMENT CAPACITY IS 2.8 L/s (1.16 CFS). TREATMENT FLOW RATE IS BASED ON 40% CARTRIDGE DEPTH.

CARTRIDGE DEPTH	15'	27'	40'	54'	67'	81'	94'	107'	121'	134'	148'	161'	175'	188'	202'	215'	229'	242'	256'	270'	283'	297'	310'	324'	338'	351'	365'	379'	392'	406'	420'	434'	448'	461'	475'	489'	503'	517'	530'	544'	558'	572'	586'	600'	614'	628'	642'	656'	670'	684'	698'	712'	726'	740'	754'	768'	782'	796'	810'	824'	838'	852'	866'	880'	894'	908'	922'	936'	950'	964'	978'	992'	1006'	1020'	1034'	1048'	1062'	1076'	1090'	1104'	1118'	1132'	1146'	1160'	1174'	1188'	1202'	1216'	1230'	1244'	1258'	1272'	1286'	1300'	1314'	1328'	1342'	1356'	1370'	1384'	1398'	1412'	1426'	1440'	1454'	1468'	1482'	1496'	1510'	1524'	1538'	1552'	1566'	1580'	1594'	1608'	1622'	1636'	1650'	1664'	1678'	1692'	1706'	1720'	1734'	1748'	1762'	1776'	1790'	1804'	1818'	1832'	1846'	1860'	1874'	1888'	1902'	1916'	1930'	1944'	1958'	1972'	1986'	2000'	2014'	2028'	2042'	2056'	2070'	2084'	2098'	2112'	2126'	2140'	2154'	2168'	2182'	2196'	2210'	2224'	2238'	2252'	2266'	2280'	2294'	2308'	2322'	2336'	2350'	2364'	2378'	2392'	2406'	2420'	2434'	2448'	2462'	2476'	2490'	2504'	2518'	2532'	2546'	2560'	2574'	2588'	2602'	2616'	2630'	2644'	2658'	2672'	2686'	2700'	2714'	2728'	2742'	2756'	2770'	2784'	2798'	2812'	2826'	2840'	2854'	2868'	2882'	2896'	2910'	2924'	2938'	2952'	2966'	2980'	2994'	3008'	3022'	3036'	3050'	3064'	3078'	3092'	3106'	3120'	3134'	3148'	3162'	3176'	3190'	3204'	3218'	3232'	3246'	3260'	3274'	3288'	3302'	3316'	3330'	3344'	3358'	3372'	3386'	3400'	3414'	3428'	3442'	3456'	3470'	3484'	3498'	3512'	3526'	3540'	3554'	3568'	3582'	3596'	3610'	3624'	3638'	3652'	3666'	3680'	3694'	3708'	3722'	3736'	3750'	3764'	3778'	3792'	3806'	3820'	3834'	3848'	3862'	3876'	3890'	3904'	3918'	3932'	3946'	3960'	3974'	3988'	4002'	4016'	4030'	4044'	4058'	4072'	4086'	4100'	4114'	4128'	4142'	4156'	4170'	4184'	4198'	4212'	4226'	4240'	4254'	4268'	4282'	4296'	4310'	4324'	4338'	4352'	4366'	4380'	4394'	4408'	4422'	4436'	4450'	4464'	4478'	4492'	4506'	4520'	4534'	4548'	4562'	4576'	4590'	4604'	4618'	4632'	4646'	4660'	4674'	4688'	4702'	4716'	4730'	4744'	4758'	4772'	4786'	4800'	4814'	4828'	4842'	4856'	4870'	4884'	4898'	4912'	4926'	4940'	4954'	4968'	4982'	4996'	5010'	5024'	5038'	5052'	5066'	5080'	5094'	5108'	5122'	5136'	5150'	5164'	5178'	5192'	5206'	5220'	5234'	5248'	5262'	5276'	5290'	5304'	5318'	5332'	5346'	5360'	5374'	5388'	5402'	5416'	5430'	5444'	5458'	5472'	5486'	5500'	5514'	5528'	5542'	5556'	5570'	5584'	5598'	5612'	5626'	5640'	5654'	5668'	5682'	5696'	5710'	5724'	5738'	5752'	5766'	5780'	5794'	5808'	5822'	5836'	5850'	5864'	5878'	5892'	5906'	5920'	5934'	5948'	5962'	5976'	5990'	6004'	6018'	6032'	6046'	6060'	6074'	6088'	6102'	6116'	6130'	6144'	6158'	6172'	6186'	6200'	6214'	6228'	6242'	6256'	6270'	6284'	6298'	6312'	6326'	6340'	6354'	6368'	6382'	6396'	6410'	6424'	6438'	6452'	6466'	6480'	6494'	6508'	6522'	6536'	6550'	6564'	6578'	6592'	6606'	6620'	6634'	6648'	6662'	6676'	6690'	6704'	6718'	6732'	6746'	6760'	6774'	6788'	6802'	6816'	6830'	6844'	6858'	6872'	6886'	6900'	6914'	6928'	6942'	6956'	6970'	6984'	6998'	7012'	7026'	7040'	7054'	7068'	7082'	7096'	7110'	7124'	7138'	7152'	7166'	7180'	7194'	7208'	7222'	7236'	7250'	7264'	7278'	7292'	7306'	7320'	7334'	7348'	7362'	7376'	7390'	7404'	7418'	7432'	7446'	7460'	7474'	7488'	7502'	7516'	7530'	7544'	7558'	7572'	7586'	7600'	7614'	7628'	7642'	7656'	7670'	7684'	7698'	7712'	7726'	7740'	7754'	7768'	7782'	7796'	7810'	7824'	7838'	7852'	7866'	7880'	7894'	7908'	7922'	7936'	7950'	7964'	7978'	7992'	8006'	8020'	8034'	8048'	8062'	8076'	8090'	8104'	8118'	8132'	8146'	8160'	8174'	8188'	8202'	8216'	8230'	8244'	8258'	8272'	8286'	8300'	8314'	8328'	8342'	8356'	8370'	8384'	8398'	8412'	8426'	8440'	8454'	8468'	8482'	8496'	8510'	8524'	8538'	8552'	8566'	8580'	8594'	8608'	8622'	8636'	8650'	8664'	8678'	8692'	8706'	8720'	8734'	8748'	8762'	8776'	8790'	8804'	8818'	8832'	8846'	8860'	8874'	8888'	8902'	8916'	8930'	8944'	8958'	8972'	8986'	9000'	9014'	9028'	9042'	9056'	9070'	9084'	9098'	9112'	9126'	9140'	9154'	9168'	9182'	9196'	9210'	9224'	9238'	9252'	9266'	9280'	9294'	9308'	9322'	9336'	9350'	9364'	9378'	9392'	9406'	9420'	9434'	9448'	9462'	9476'	9490'	9504'	9518'	9532'	9546'	9560'	9574'	9588'	9602'	9616'	9630'	9644'	9658'	9672'	9686'	9700'	9714'	9728'	9742'	9756'	9770'	9784'	9798'	9812'	9826'	9840'	9854'	9868'	9882'	9896'	9910'	9924'	9938'	9952'	9966'	9980'	9994'
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Jellyfish
JF6 STANDARD
Scale - 1:50

imbrinium
CONCRETE MANUFACTURER

DATE: #####
DESIGNED: DRAIN/BSF
CHECKED: BSP
PROJECT: PROJECT NAME
SHEET: of 2

JELLYFISH FILTER - SPECIFICATIONS

GENERAL

- DESIGN** - SPECIFIED REQUIREMENTS FOR CONSTRUCTION AND PERFORMANCE OF AN UNDERGROUND STORMWATER QUALITY MEMBRANE FILTRATION AND TREATMENT DEVICE THAT REMOVES POLLUTANTS FROM STORMWATER RUNOFF THROUGH THE USE OF MEMBRANE FILTRATION, FLOTATION, AND MEMBRANE FILTRATION.
- REFERENCE STANDARDS**
 - ASTM C1191 - SPECIFICATION FOR INSTALLATION OF UNDERGROUND PRECAST CONCRETE CITY STRUCTURES
 - ASTM C1192 - SPECIFICATION FOR PRECAST CONCRETE MANHOLE SECTIONS
 - ASTM C1193 - SPECIFICATION FOR JOINTS FOR CONCRETE MANHOLES USING PREFORMED FLEXIBLE JOINT SEALANTS
 - ASTM A1101 - SPECIFICATION FOR CONCRETE REINFORCING BARS
- SHOP DRAWINGS** - SHOP DRAWINGS FOR THE STRUCTURE AND PERFORMANCE ARE TO BE SUBMITTED WITH EACH ORDER TO THE CONTRACTOR. CONTRACTOR SHALL FORWARD SHOP DRAWINGS SUBMITTED TO THE CONSULTING ENGINEER FOR APPROVAL. SHOP DRAWINGS ARE TO DETAIL THE STRUCTURE PRECAST CONCRETE AND CALL OUT OR NOTE THE FIBERGLASS (FRP) INTERNAL COMPONENTS.
- PRODUCT SUBSTITUTIONS** - NO PRODUCT SUBSTITUTIONS SHALL BE ACCEPTED UNLESS SUBMITTED 14 DAYS PRIOR TO PROJECT BID DATE AND APPROVED BY THE ENGINEER OF RECORD. FOR PROXIMAL PERFORMANCE, IMPACT TO PROJECT DESIGN, EQUIVALENT TREATMENT PERFORMANCE AND ANY REQUIRED PROJECT PLAN AND REPORT SUBMISSIONS, WATER QUALITY, STORMWATER POLLUTION MODIFICATIONS THAT WOULD BE REQUIRED BY THE APPROVING JURISDICTIONS/AGENCIES. CONTRACTOR TO COORDINATE WITH THE ENGINEER OF RECORD ANY APPLICABLE MODIFICATIONS TO THE PROJECT ESTIMATES OF COST, BIDDING AMOUNT, DETERMINATIONS, PLAN CHECK, FEES FOR CHANGES TO APPROVED DOCUMENTS, AND/OR ANY OTHER REGULATORY REQUIREMENTS RESULTING FROM THE PROJECT SUBSTITUTION.
- HANDLING AND STORAGE** - PREVENT DAMAGE TO MATERIALS DURING STORAGE AND HANDLING.

PRODUCTS

- THE DEVICE SHALL BE A CYLINDRICAL OR RECTANGULAR ALL CONCRETE STRUCTURE INCLUDING RISERS, CONSTRUCTED FROM PRECAST CONCRETE RISER AND SLAB COMPONENTS OR MONOLITHIC PRECAST STRUCTURES, INSTALLED TO CONFORM TO ASTM C 819 AND TO ANY REQUIRED STATE HIGHWAY, MUNICIPAL, OR LOCAL SPECIFICATIONS, WHICHEVER IS MORE STRINGENT. THE DEVICE SHALL BE WATER TIGHT.
- THE CYLINDRICAL CONCRETE DEVICE SHALL INCLUDE A FIBERGLASS CARTRIDGE DECK INSERT. THE RECTANGULAR CONCRETE DEVICE SHALL INCLUDE A CONCRETE ALUMINUM INSERT. IN EITHER INSTANCE, THE INSERT SHALL BE SIZED AND SEALED TO WITHSTAND THE PRECAST CONCRETE WEIGHT. THE INSERT SHALL BE CAST AS AN INTEGRAL DIVIDER BETWEEN THE LOWER TREATMENT ZONE AND THE UPPER TREATED EFFLUENT ZONE. BE A CHECK FOR ATACHMENT OF FILTER CARTRIDGES SUCH AS TO BE SIZED AND SEALED TO WITHSTAND THE PRECAST CONCRETE WEIGHT. THE INSERT SHALL BE CAST AS A PLATFORM FOR MAINTENANCE WORKERS TO SERVICE THE FILTER CARTRIDGES (MAXIMUM MANHOLED WEIGHT + 400 POUNDS) (3) A CONDUIT FOR CONVEYANCE OF TREATED WATER TO EFFLUENT PIPE.
- MEMBRANE FILTER CARTRIDGES SHALL BE COMPRSED OF REUSABLE CYLINDRICAL MEMBRANE FILTER ELEMENTS CONNECTED TO A PERFORATED HEAD PLATE. THE NUMBER OF MEMBRANE FILTER ELEMENTS PER CARTRIDGE SHALL BE A MINIMUM OF ELEVEN (11) FILTER ELEMENTS OR GREATER DIAMETER ELEMENTS. THE LENGTH OF EACH FILTER ELEMENT SHALL BE A MINIMUM 15 INCHES (381 MM). EACH CARTRIDGE SHALL BE FITTED INTO THE CARTRIDGE DECK BY INSERTION INTO A CARTRIDGE RECEPTACLE THAT IS THREADED OVER THE RECEPTACLE ON SLAB MEMBRANE TO SECURE THE CARTRIDGE INTO THE DECK. THE MAXIMUM TREATMENT FLOW RATE OF A FILTER CARTRIDGE SHALL BE CONTROLLED BY AN ORIFICE IN THE CARTRIDGE ID, OR ON THE CARTRIDGE HEAD. EACH CARTRIDGE SHALL BE REUSABLE AND ALLOW FOR THE USE OF FILTRATION MEMBRANE RINSING PROCEDURES TO RESTORE FLOW CAPACITY AND REVERSE CLOGGING OF EXTENDING CARTRIDGE SERVICE LIFE.
- ACCESS SHALL HAVE A MINIMUM CLEAR HEIGHT OF 60" OVER ALL OF THE FILTER CARTRIDGES, OR BE ACCESSIBLE BY A HATCH OR OTHER MECHANISM THAT PROVIDES MINIMUM 60" VERTICAL CLEAR SPACE OVER ALL OF THE FILTER CARTRIDGES. FILTER CARTRIDGES SHALL BE ABLE TO BE LIFTED STRAIGHT VERTICALLY OUT OF THE RECEPTABLES AND DECK FOR THE ENTIRE LENGTH OF THE CARTRIDGE.
- THE DEVICE SHALL INCLUDE A MINIMUM 24 INCHES (610 MM) OF SLAB BELOW THE BOTTOM OF THE CARTRIDGES FOR SEDIMENT ACCUMULATION, UNLESS OTHERWISE SPECIFIED BY THE DESIGN ENGINEER. DEPTH LESS THAN 24" MAY HAVE AN IMPACT ON THE TOTAL PERFORMANCE AND LONGEVITY BETWEEN CARTRIDGE MAINTENANCE/REPLACEMENT OF THE DEVICE.
- ALL PRECAST CONCRETE COMPONENTS SHALL BE MANUFACTURED TO A MINIMUM LIVE LOAD OF 18-20 TRUCK LOADING OR GREATER BASED ON LOCAL REGULATORY SPECIFICATIONS, UNLESS OTHERWISE MODIFIED OR SPECIFIED BY THE DESIGN ENGINEER, AND SHALL BE WATER TIGHT.
- GASKETS AND/OR SEALANTS TO PROVIDE WATER TIGHT SEAL BETWEEN CONCRETE JOINTS. JOINTS SHALL BE SEALED WITH PERFORMED GASKET SEALING COMPANION CONFORMING TO ASTM C 819.
- FRAMES AND COVERS MUST BE MANUFACTURED FROM CAST-IRON OR OTHER COMPOSITE MATERIAL, TESTED TO WITHSTAND H-20 OR GREATER DESIGN LOADS, AND AS APPROVED BY THE LOCAL REGULATORY BODY. FRAMES AND COVERS MUST BE EMBOSSED WITH THE NAME OF THE DEVICE MANUFACTURER OR THE DEVICE BRAND NAME.
- LOOK AND MATERIALS: IF PROVIDED SHALL MEET DESIGNATED LOADS REQUIREMENTS OR AT A MINIMUM FOR INCIDENTAL VEHICULAR TRAFFIC.
- ALL CONCRETE COMPONENTS SHALL BE MANUFACTURED ACCORDING TO LOCAL SPECIFICATIONS AND SHALL MEET THE REQUIREMENTS OF ASTM C 1191.
- THE FIBERGLASS PORTION OF THE FILTER DEVICE SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE FOLLOWING STANDARD: ASTM A1101 - CONTACT MOLDED GLASS FIBER REINFORCED ORGANIC RESIN MATS.
- STEPS SHALL BE CONSTRUCTED ACCORDING TO ASTM G101 OF COPOLYMER POLYPROPYLENE, AND BE ORIGINALLY PREFORMED OR PRECURED IN PLACE AFTER THE CONCRETE HAS CURED, INSTALLED TO CONFORM TO APPLICABLE SECTIONS OF STATE, FEDERAL, AND MUNICIPAL BUILDING CODES, HIGHWAY, MUNICIPAL, OR LOCAL SPECIFICATIONS FOR THE CONSTRUCTION OF SUCH DEVICES.
- ALL PRECAST CONCRETE SECTIONS SHALL BE INSPECTED TO ENSURE THAT DIMENSIONS, APPEARANCE AND QUALITY OF THE PRODUCT MEET LOCAL MUNICIPAL SPECIFICATIONS AND ASTM C 1191.

PERFORMANCE

- THE STORMWATER QUALITY FILTER TREATMENT DEVICE SHALL FUNCTION TO REMOVE POLLUTANTS BY THE FOLLOWING UNIT TREATMENT PROCESSES: SEDIMENTATION, FLOTATION, AND MEMBRANE FILTRATION.
- THE STORMWATER QUALITY FILTER TREATMENT DEVICE SHALL REMOVE OIL, DEBRIS, TRASH, COARSE AND FINE PARTICULATES, PARTICULATES AND POLLUTANTS, METALS AND NUTRIENTS FROM STORMWATER DURING RUNOFF EVENTS.
- THE STORMWATER QUALITY FILTER TREATMENT DEVICE SHALL TYPICALLY UTILIZE AN EXTERNAL BYPASS TO DIVERT EXCESSIVE FLOWS. INTERNAL BYPASS SYSTEMS SHALL BE EQUIPPED WITH A FLOATABLE BATTLE, AND MUST PASS WATER OVER THE CARTRIDGE DECK AND AVOID PASSAGE THROUGH THE SLAB AND/OR CARTRIDGE RESTRICTION ZONE.
- THE STORMWATER QUALITY FILTER TREATMENT DEVICE SHALL TYPICALLY UTILIZE AN EXTERNAL BYPASS TO DIVERT EXCESSIVE FLOWS. INTERNAL BYPASS SYSTEMS SHALL BE EQUIPPED WITH A FLOATABLE BATTLE, AND MUST PASS WATER OVER THE CARTRIDGE DECK AND AVOID PASSAGE THROUGH THE SLAB AND/OR CARTRIDGE RESTRICTION ZONE.
- AT A MINIMUM, THE STORMWATER QUALITY FILTER TREATMENT DEVICE SHALL HAVE BEEN FIELD TESTED AND VERIFIED WITH A MINIMUM 25 QUALIFYING STORM EVENTS AND FIELD PERFORMANCE CONDUCTED ACCORDING TO THE TEST TIER 9 OR TAME FIELD TEST PROTOCOL, AND HAVE RECEIVED NCA1 VERIFICATION.
- THE STORMWATER QUALITY FILTER TREATMENT DEVICE SHALL HAVE DEMONSTRATED A MINIMUM MEDIAN TSS REMOVAL EFFICIENCY OF 95% AND A MINIMUM MEDIAN TOTAL PHOSPHORUS REMOVAL OF 95%.
- THE STORMWATER QUALITY FILTER TREATMENT DEVICE SHALL HAVE DEMONSTRATED THE ABILITY TO CAPTURE FINE PARTICLES AS INDICATED BY A MINIMUM MEDIAN REMOVAL EFFICIENCY OF 75% FOR THE PARTICLES FINER THAN 20 MICRONS, AN EFFLUENT D50 OF 15 MICRONS OR LOWER FOR ALL MONITORED STORM EVENTS, AND AN EFFLUENT TURBIDITY OF 15 NTU OR LOWER.
- THE STORMWATER QUALITY FILTER TREATMENT DEVICE SHALL HAVE DEMONSTRATED A MINIMUM MEDIAN TOTAL PHOSPHORUS REMOVAL OF 95% AND A MINIMUM MEDIAN TOTAL NITROGEN REMOVAL OF 90%.
- THE STORMWATER QUALITY FILTER TREATMENT DEVICE SHALL HAVE DEMONSTRATED A MINIMUM MEDIAN TOTAL ZINC REMOVAL OF 90% AND A MINIMUM MEDIAN TOTAL COPPER REMOVAL OF 75%.

INSPECTION AND MAINTENANCE

- A SCHEDULE OF VISITS AND INSPECTIONS SHALL BE ESTABLISHED DURING INSPECTION AND MAINTENANCE (REPAIR, RINSING, AND REINSERTION EVENTS), AND SITE SPECIFIC CONDITIONS THAT MAY HAVE HEAVIER OR LIGHTER LOADS ON THE CARTRIDGES AND POLLUTANT VARIABILITY THAT MAY IMPACT THE MEMBRANE TREATMENT EFFICIENCY. MEMBRANE MAINTENANCE AND REPLACEMENT SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- INSPECTION WHICH INCLUDES TRASH AND FIGHTABLES COLLECTION, SEDIMENT DEPTH, DETERMINATION, AND VISIBLE DETERMINATION OF BACKWASH POOL DEPTH SHALL BE EASILY CONDUCTED FROM GRADE (OUTSIDE THE STRUCTURE).
- MANUAL RINSING OF THE REUSABLE FILTER CARTRIDGES SHALL PROMOTE RESTORATION OF THE FLOW CAPACITY AND SEDIMENT CAPACITY OF THE FILTER CARTRIDGES, EXTENDING CARTRIDGE SERVICE LIFE.
- SEDIMENT REMOVAL FROM THE FILTER TREATMENT DEVICE SHALL BE ABLE TO BE CONDUCTED USING A STANDARD MAINTENANCE TRUCK AND VACUUM APPARATUS, AND A MINIMUM ONE POINT OF