



Environment &  
Climate Change  
Canada

Real Property Management  
Division Technical Services

Ontario Region

Environnement et  
Changement Climatique  
Canada

Services d'architecture  
et Services Techniques

Région de l'Ontario

MIDLAND, ONTARIO.  
WYE MARSH WILDLIFE CENTRE

WATERMAIN REPLACEMENT &  
PARKING LOT RESURFACING

Canada

LIST OF DRAWINGS

CIVIL



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ND-1  
GS-1  
WM-1  
WM-2  
WM-3  
SG-1  
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NOTES AND DETAILS  
GENERAL SERVICING  
WATER MAIN PLAN 1  
WATER MAIN PLAN 2  
WATERMAIN PLAN 3  
SITE GRADING PLAN 1  
EROSION PROTECTION PLAN



## 5. DIRECTIONAL DRILL WATERMAIN INSTALLATION

- A. DIRECTIONAL DRILLING TO BE COMPLETED FOLLOWING OPSS 450 (REVISED NOV. 2018).
- B. DIRECTIONAL DRILLING TO BE AT AN AVERAGE DEPTH OF 2.5m WHERE POSSIBLE.
- C. CONTRACTOR TO COMPLETE LOCATES ALONG THE PROPOSED DRILLING ALIGNMENT PRIOR TO THE COMMENCEMENT OF ANY DRILLING WORKS.
- D. WORK SITE ADJACENT TO DRILLING EQUIPMENT SHALL BE GRADED OR FILLED TO PROVIDE A LEVEL WORKING AREA FOR THE DRILLING RIG.
- E. AFTER SUCCESSFULLY REAMING THE BORE TO THE REQUIRED DIAMETER, THE WATERMAIN SHALL BE PULLED THROUGH THE BORE PATH COMPLETE WITH TRACER WIRE AS OPSS 450. ONCE THE CULLETS ARE OPERATED AND COMPLETED IT SHALL CONTINUE WITHOUT INTERRUPTION UNTIL THE PRODUCT IS COMPLETELY PULLED INTO THE BORE.
- F. UPON COMPLETION OF DRILLING WORKS, CONTRACTOR TO REINSTATE ALL DISTURBED AREAS TO PRE-CONSTRUCTION CONDITION OR BETTER.
- G. CONTRACTOR TO PROVIDE CONTINUOUS VERTICAL AND HORIZONTAL SURVEY INFORMATION DURING INSTALLATION (20m INTERVALS) FOR AS-BUILT INFORMATION PURPOSES.
- H. CONTRACTOR TO PROVIDE ONSITE HEADS TO DRILL A "BURP HOLE" FOR THE DIRECTIONAL DRILLING WORKS AND CONTAIN SLURRY WITH SILTATION FENCE DURING CONSTRUCTION.
- I. PRIOR TO CONSTRUCTION, CONTRACTOR IS TO PREPARE WORK PLAN FOR THE DIRECTIONAL DRILLING WORKS AND A CONTINGENCY PLAN TO ADDRESS "TRAK-OUT".

## 6. OPEN CUT WATERMAIN INSTALLATION

- A. UNSUPPORTED TEMPORARY EXCAVATION ABOVE THE GROUNDWATER TABLE SHOULD NOT EXCEED SIDE SLOPES OF 1H:1V. IF EXCAVATIONS ARE CARRIED OUT BELOW THE GROUNDWATER TABLE WITHOUT POSITIVE DEWATERING, SIDE SLOPES SHOULD NOT EXCEED 3H:1V.
- B. FLATTENING AND/OR BLANKETING OF THE SLOPES MAY BE REQUIRED TO MAINTAIN STABILITY AND CONTROL LOSS OF GROUND.
- C. SURFACE RUNOFF SHOULD BE DIRECTED AWAY FROM OPEN EXCAVATIONS. ALL EXCAVATIONS TO BE CARRIED OUT IN ACCORDANCE WITH THE APPLICABLE OHS&S REQUIREMENTS.
- D. STOCKPILES OF EXCAVATED MATERIAL TO BE KEPT AT LEAST THE SAME HORIZONTAL DISTANCE FROM THE TOP EDGE OF THE EXCAVATION AS THE EXCAVATION DEPTH TO PREVENT SLOPE INSTABILITY.
- E. BOUNDLES LARGER THAN A DIAMETER OF 0.3m TO BE REMOVED FROM SIDE SLOPES TO ENSURE WORKER SAFETY.
- F. EXCAVATIONS TO BE KEPT OPEN FOR AS SHORT A DURATION AS POSSIBLE AND COMPLETELY FILLED IN AT THE END OF EVERY WORK DAY.
- G. SHOULD A TRENCH LINER BOX BE USED TO REDUCE THE LATERAL EXTENT OF THE EXCAVATIONS, THE BOX WILL ONLY PROVIDE PROTECTION ONCE IN PLACE.
- H. ANY VOIDS BETWEEN THE EXCAVATION WALL AND THE TRENCH LINER BOX TO BE FILLED IMMEDIATELY TO REDUCE THE POTENTIAL FOR LOSS OF GROUND AND SUPPORT OF ADJACENT UTILITIES, ROADWAYS, ETC.

I. TRENCH EXCAVATIONS TO BE CARRIED OUT

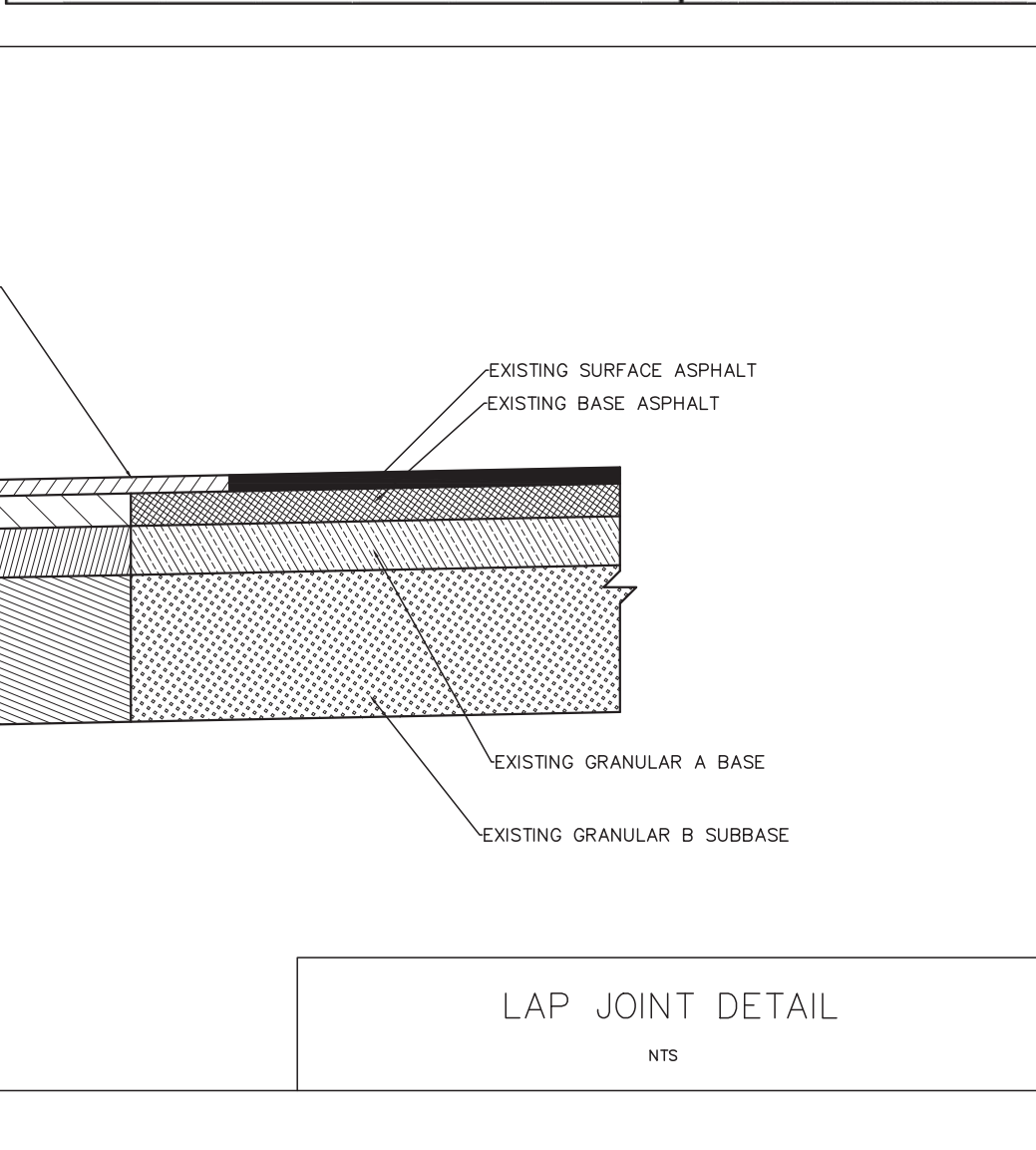
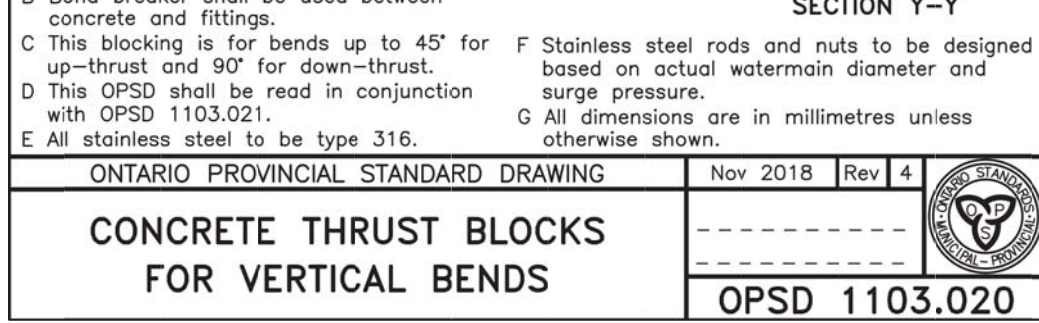
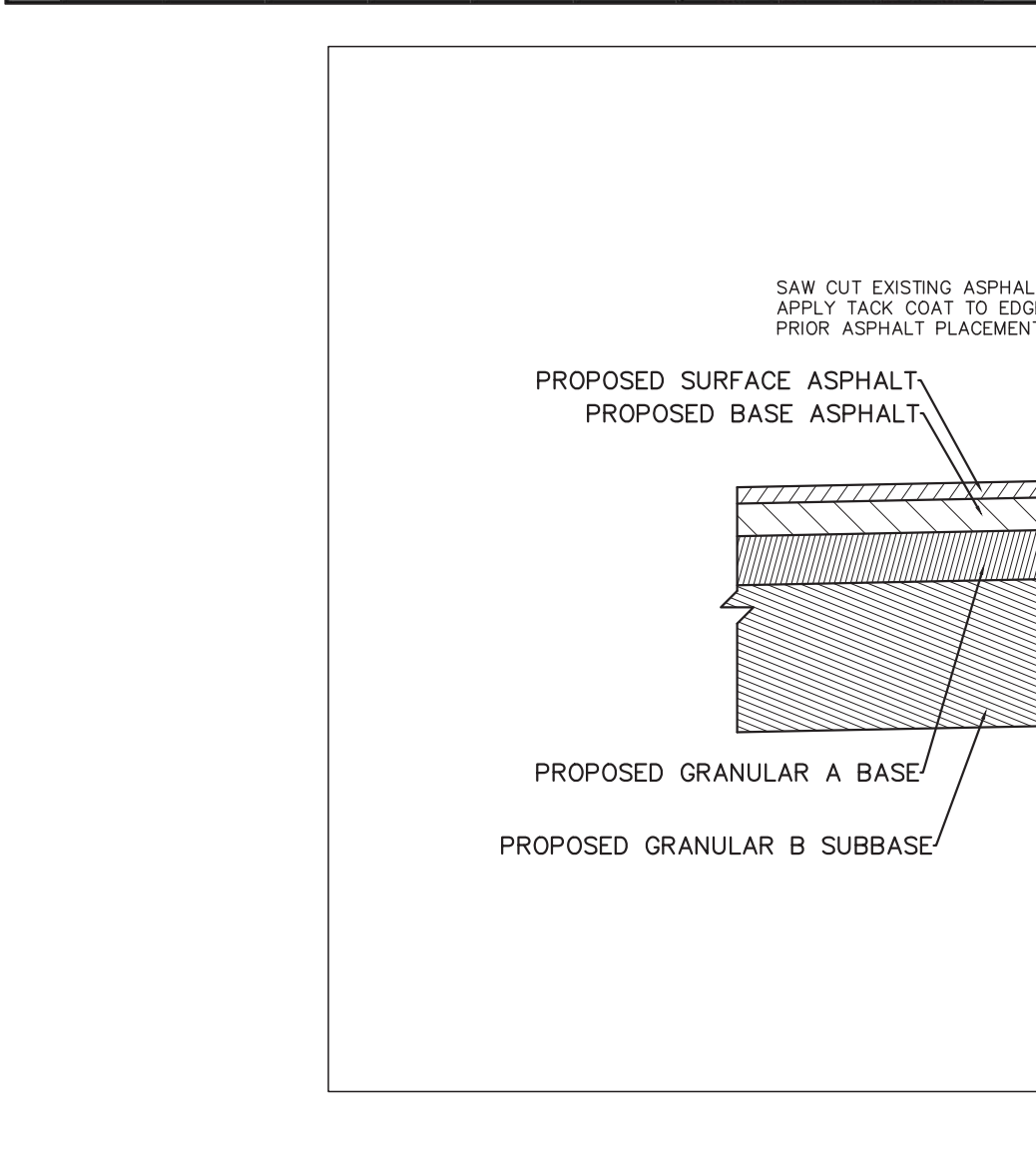
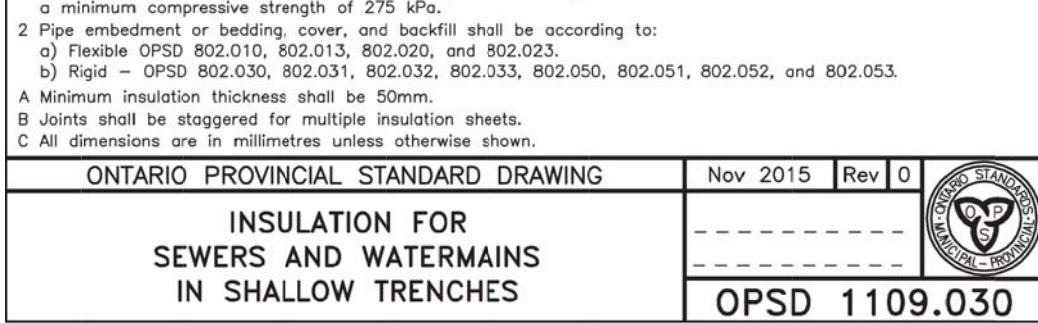
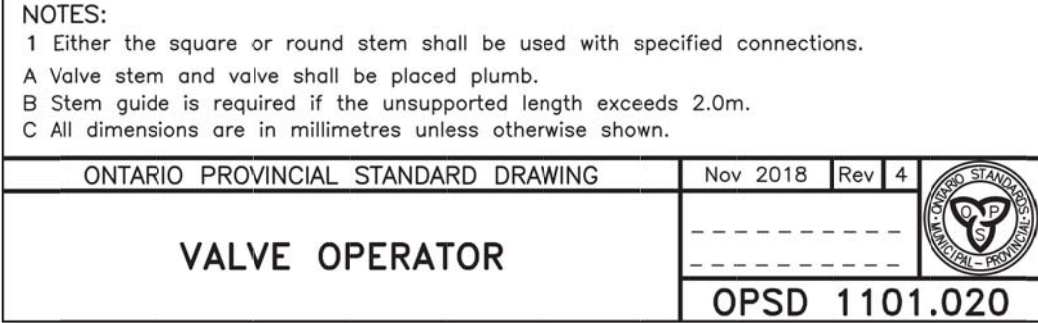
- K. WATERMAN SHALL BE CONSTRUCTED WITH BEDDINGS AS PER OPSD 802.030 (GRAN. 'A' EMBEDMENT MATERIAL) FOR FLEXIBLE PIPES AND OPSD 802.030 OR 802.031 (CLASS 'B' GRAN. 'A' BEDDING MATERIAL, GRAN. 'A' OR SELECT NATIVE COVER MATERIAL) FOR RIGID PIPE UNLESS OTHERWISE APPROVED BY THE DIRECTOR OF MUNICIPAL WORKS OR SAND FILLING AND BEDDING MATERIALS. BEDDING MATERIAL SHALL BE OF THE PROCTOR DENSITY. GEOTECHNICAL CERTIFICATION OF MATERIAL AND COMPACTION MUST BE PROVIDED WITHIN THE TIME FRAME OF THE PROJECT. THE BEDDING MUST INCLUDE THE ENTIRE EMBEDMENT ENVELOPE (HAUNCHES, BEDDING AND TOP OF PIPE).

## 7. PAVEMENT RESURFACING

- A. CONTRACTOR TO REMOVE EXISTING ASPHALT WITHIN THE WYE MARSH WILDLIFE CENTRE PARKING LOT AND DISPOSE OFF SITE.
- B. ALL ASPHALT THAT IS PROPOSED TO BE REMOVED, IS TO BE REMOVED TO THE FULL DEPTH (75-100mm).
- C. CONTRACTOR SHALL COORDINATE PARKING LOT WORKS WITH THE WYE MARSH WILDLIFE CENTRE TO PROVIDE PARKING DURING RESURFACING WORKS.
- D. SELECT SUBGRADE MATERIAL APPROVED BY THE ENGINEER, COMPACTED TO 100% SPWDD.
- E. AS PER THE GEOTECHNICAL REPORT COMPLETED BY GOLDER ASSOCIATES LTD THE PAVEMENT STRUCTURE IS AS FOLLOWS:  
PAVEMENT STRUCTURE  
 60mm OF SUPER PAVE 12.5  
 - 150mm GRANULAR 'A'
- F. LINE PAINTING SHALL CONFORM TO OPS5 1712 FOR BASE ASPHALT LINE PAINTING AND TO OPS 5 SURFACE COURSE ASPHALT YELLOW PAINT USED TO REPLICATE THE EXISTING LINE WORK FOR PARKING SPACES AND ACCESSIBLE PARKING SYMBOLS
- G. FINISHED SURFACE ELEVATIONS ARE TO MATCH PROPOSED GRADES INDICATED ON DRAWINGS


H. ALL CURB ON-SITE TO REMAIN. IF DAMAG

- CONSTRUCTION PHOTOS TO VERIFY ALL DISTURBED AREAS HAVE BEEN REINSTATE TO EXISTING CONDITIONS OR BETTER, AS PER THE APPROVED ENGINEERING DRAWINGS.
- ## 8. MISCELLANEOUS ITEMS
- A. IN THE EVENT OF EXISTING WATERMAIN IS DAMAGED, CONTRACTOR TO ENSURE THAT 2 WASHROOM FACILITIES BE AVAILABLE AND EXISTING WATERMAIN BE REPAIRED AND OPERATIONAL WITHIN 8 HOURS OF BREAK. AN ALTERNATE SOURCE OF POTABLE WATER WILL BE REQUIRED DURING TESTING AND COMMISSIONING OF NEW WATERMAIN, SHOULD EXISTING WATERMAIN BE DAMAGED DURING CONSTRUCTION.
  - B. DIRECTIONAL DRILL TO AVOID EXISTING 100mm WATERMAIN, IF EXISTING WATERMAIN IS DAMAGED DURING THE DIRECTIONAL DRILLING PROCESS, CONTRACTOR TO REPAIR AT NO EXTRA COST TO THE CONTRACT.
  - C. IF ADDITIONAL RECEIVING PITTS / SENDING PITS ARE REQUIRED FOR DIRECTIONAL DRILLING INSTALL, THEY SHALL BE SUPPLIED AT NO EXTRA COST TO THE CONTRACT.
  - D. CONTRACTOR TO HAVE ARCHEOLOGIST JOHN TIGGS ON SITE FOR ALL SUBSURFACE EXCAVATIONS WITHIN THE ST. MARIE AMONG THE HURON'S PROPERTY.



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SEAL





The seal is circular with a double-lined border. The outer ring contains the text "PROFESSIONAL ENGINEER" at the top and "PROVINCE OF ONTARIO" at the bottom. Inside the ring, the name "M.W. DEJEAN" is printed in a bold, sans-serif font. Below the name is a horizontal oval containing the date "Jan. 23, 2020". A blue ink signature, which appears to be "M.W. Dejean", is written across the top half of the seal, overlapping the "PROFESSIONAL ENGINEER" text and the name.

1	ISSUED FOR CONSTRUCTION	01/23/20
revision		date

Do not scale drawings.  
Verify all dimensions and conditions on site and  
immediately notify the engineer of all discrepancies.

 A Detail No.  
No. du détail

 B drawing no. — where detail required  
dessin no. — où détail exigé

 C drawing no. — where detailed  
dessin no. — où détaillé

project title  
titre du projet

WYE\_MARSH\_WILDLIFE\_CENTER  
16160\_HIGHWAY\_12\_EAST  
MIDLAND\_ONTARIO

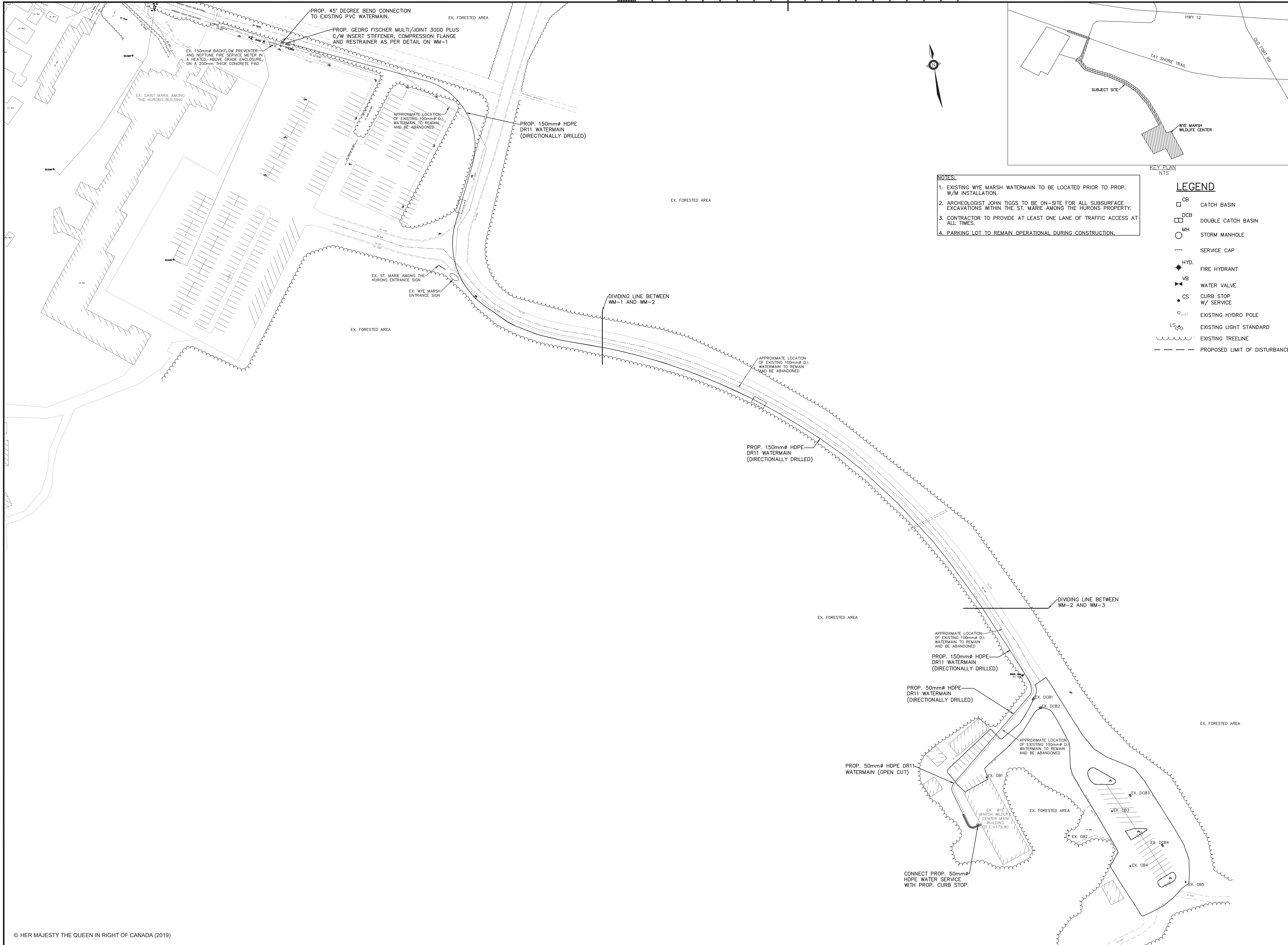
WYE MARSH WATERMAIN REPLACEMENT &  
PARKING LOT RESURFACING

drawing title  
titre du dessin

NOTES AND DETAILS 1

drawn by dessiné par	PG	
designed by conc par	MB	
approved by approuvé par	GMP	
tender soumission		project manager administrateur de projets ROD_KHALED
project date date du projet	2019/04/17	
project no. no. du projet	18070	
drawing no. dessiné no.	ND-1	





## NOTES:

1. EXISTING WYE MARSH WATERMAIN TO BE LOCATED PRIOR TO PROP. W/M INSTALLATION.
2. ARCHEOLOGIST JOHN TIGGS TO BE ON-SITE FOR ALL SUBSURFACE EXCAVATIONS WITHIN THE ST. MARIE AMONG THE HURONS PROPERTY.
3. CONTRACTOR TO PROVIDE AT LEAST ONE LANE OF TRAFFIC ACCESS AT ALL TIMES.
4. PARKING LOT TO REMAIN OPERATIONAL DURING CONSTRUCTION.

## LEGEND

- CB CATCH BASIN
- DCB DOUBLE CATCH BASIN
- MH STORM MANHOLE
- SERVICE CAP
- HYD. FIRE HYDRANT
- VB WATER VALVE
- CS CURB STOP W/ SERVICE
- HP EXISTING HYDRO POLE
- LS EXISTING LIGHT STANDARD
- EXISTING TREELINE
- PROPOSED LIMIT OF DISTURBANCE

## KEY PLAN

NTS



Environment and Climate  
Change Canada  
Real Property Management Division and  
Technical Services, Ontario Region  
Environnement et Changement  
Climatique Canada  
Services d'architecture et Services Techniques  
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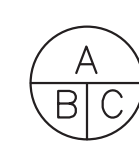


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project title  
titre du projet  
**WYE\_MARSH\_WILDLIFE\_CENTER**  
**16160\_HIGHWAY\_12\_EAST**  
**MIDLAND\_ONTARIO**

**WYE MARSH WATERMAIN REPLACEMENT &  
PARKING LOT RESURFACING**

drawing title  
titre du dessin  
**GENERAL SERVICING 1**

drawn by  
dessiné par **PG**

designed by  
conc par **MB**

approved by  
approuvé par **GMP**

tender  
soumission

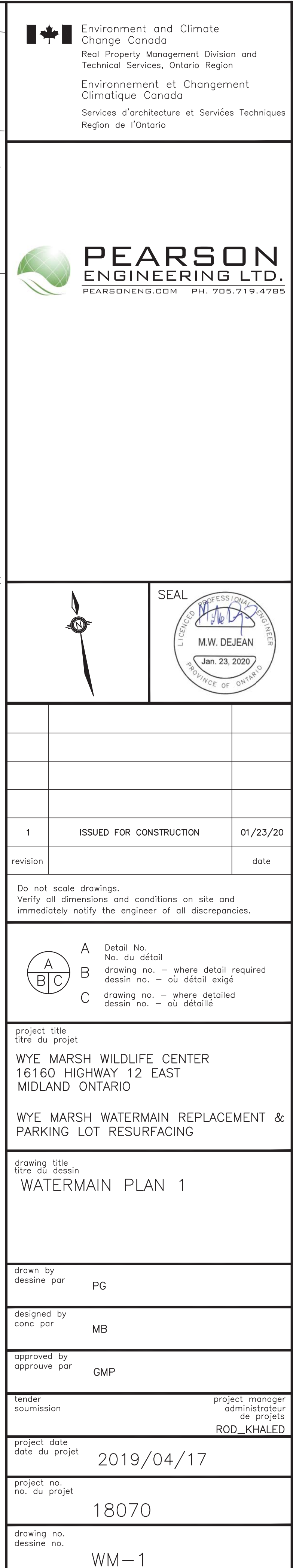
project manager  
administrateur  
de projets  
**ROD\_KHALED**

project date  
date du projet **2019/04/17**

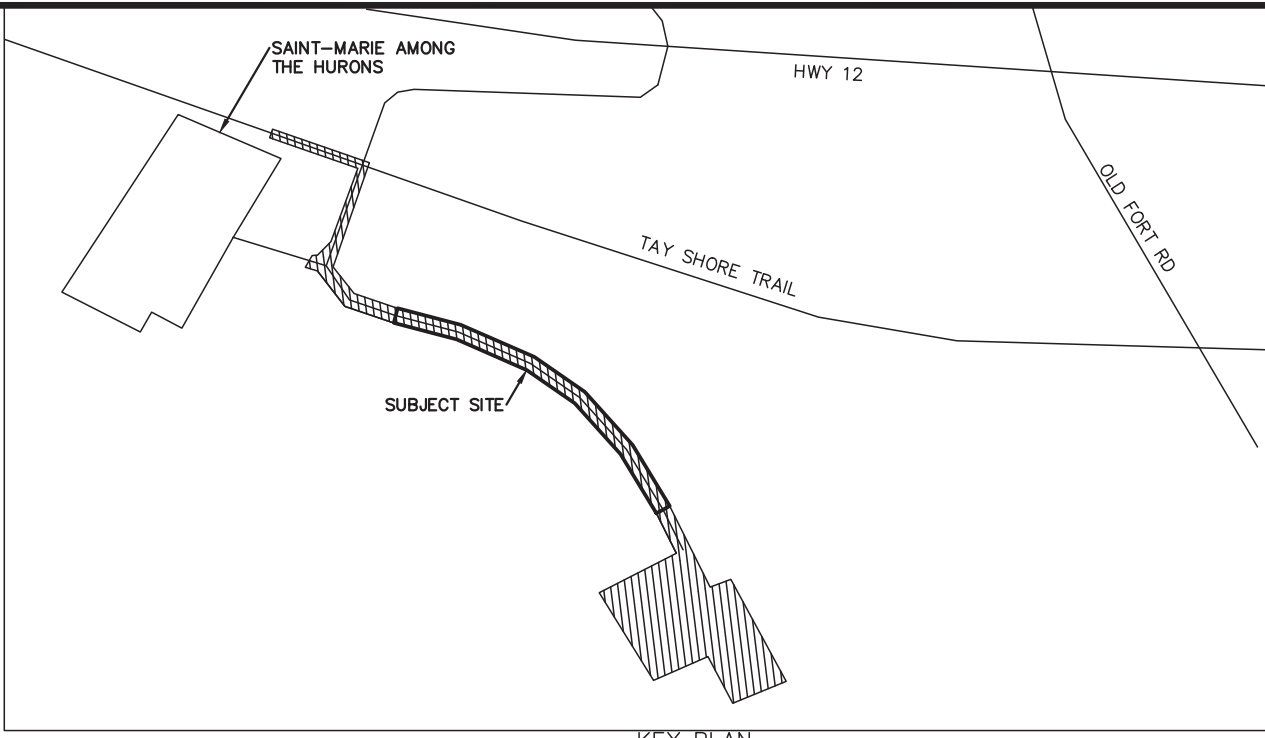
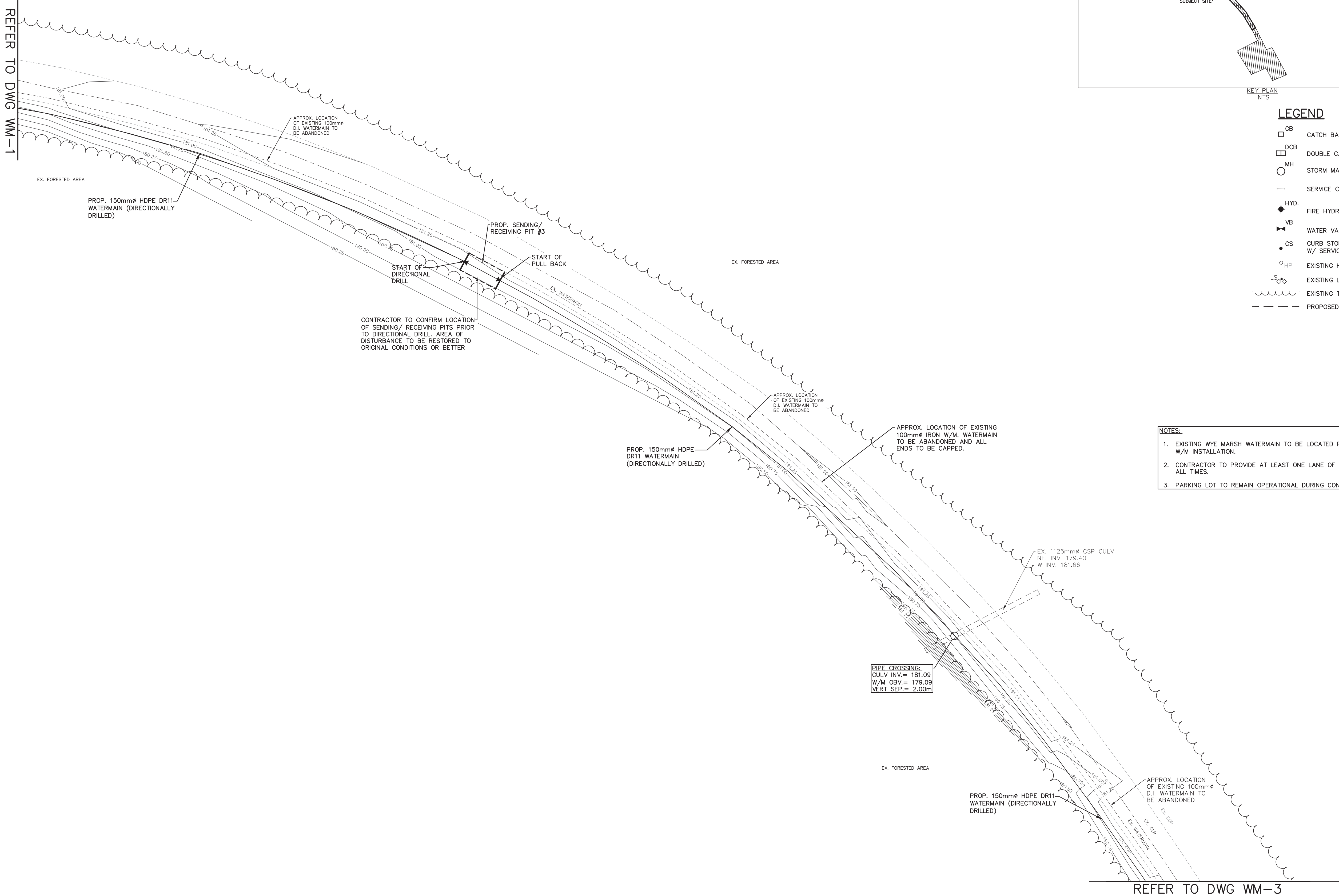
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no. du projet **18070**

drawing no.  
dessiné no. **GS-1**









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- - - PROPOSED LIMIT OF DISTURBANCE

NOTES:

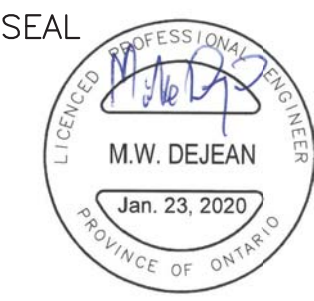
- EXISTING WYE MARSH WATERMAIN TO BE LOCATED PRIOR TO PROP. W/M INSTALLATION.
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- PARKING LOT TO REMAIN OPERATIONAL DURING CONSTRUCTION.

PIPE CROSSING:  
CULV INV. = 181.09  
W/M OBV. = 179.09  
VERT. SEP. = 2.00m

REFER TO DWG WM-3

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project title  
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WYE MARSH WILDLIFE CENTER  
16160 HIGHWAY 12 EAST  
MIDLAND ONTARIO

WYE MARSH WATERMAIN REPLACEMENT &  
PARKING LOT RESURFACING

drawing title  
titre du dessin  
WATERMAIN PLAN 2

drawn by  
dessiné par PG

designed by  
conc par MB

approved by  
approuvé par GMP

tender  
soumission project manager  
administrateur  
de projets  
ROD\_KHALED

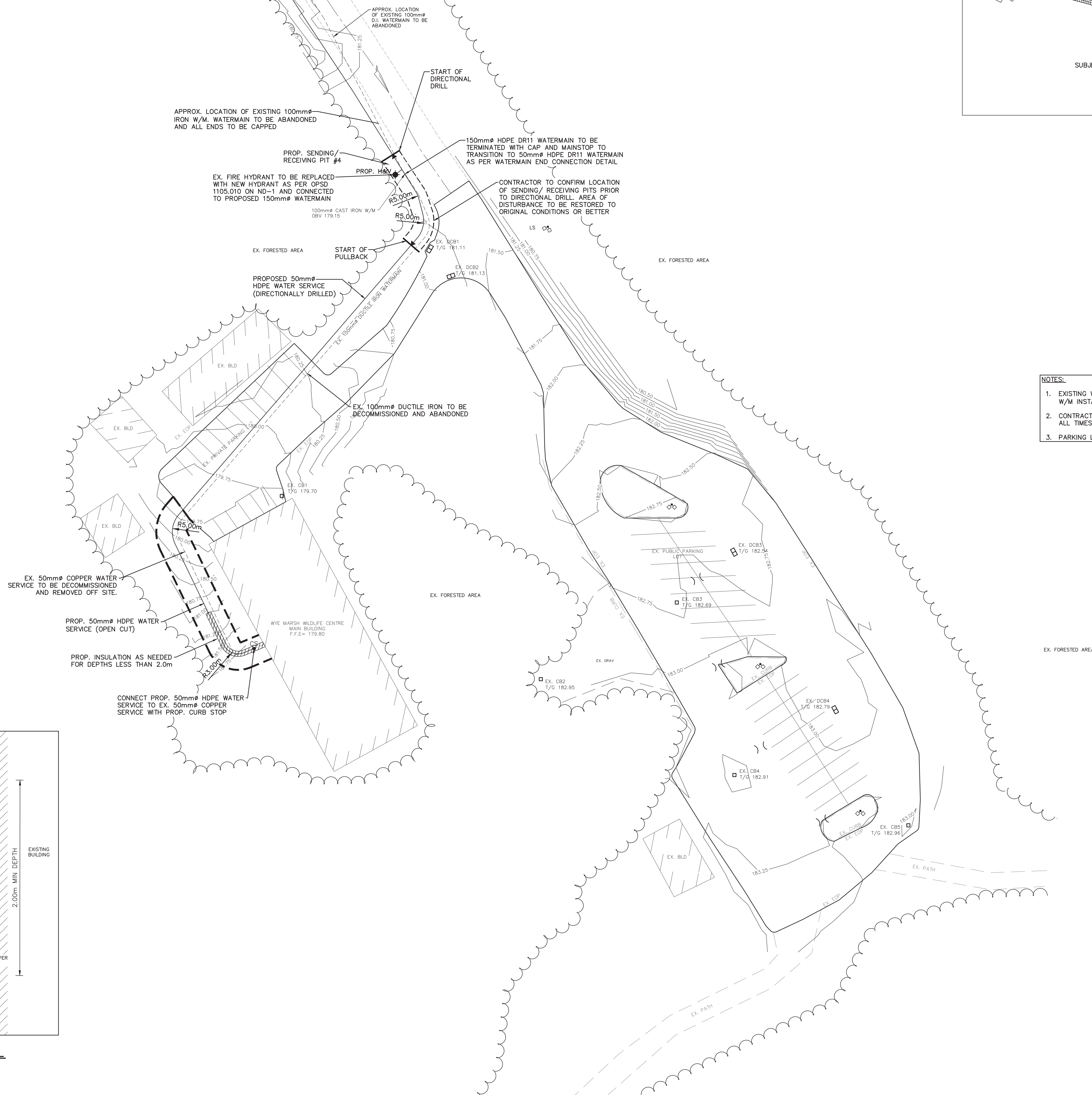
project date  
date du projet 2019/04/17

project no.  
no. du projet 18070

drawing no.  
dessiné no. WM-2



REFER TO DWG WM-2



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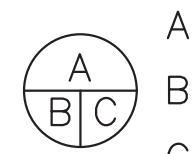


SEAL



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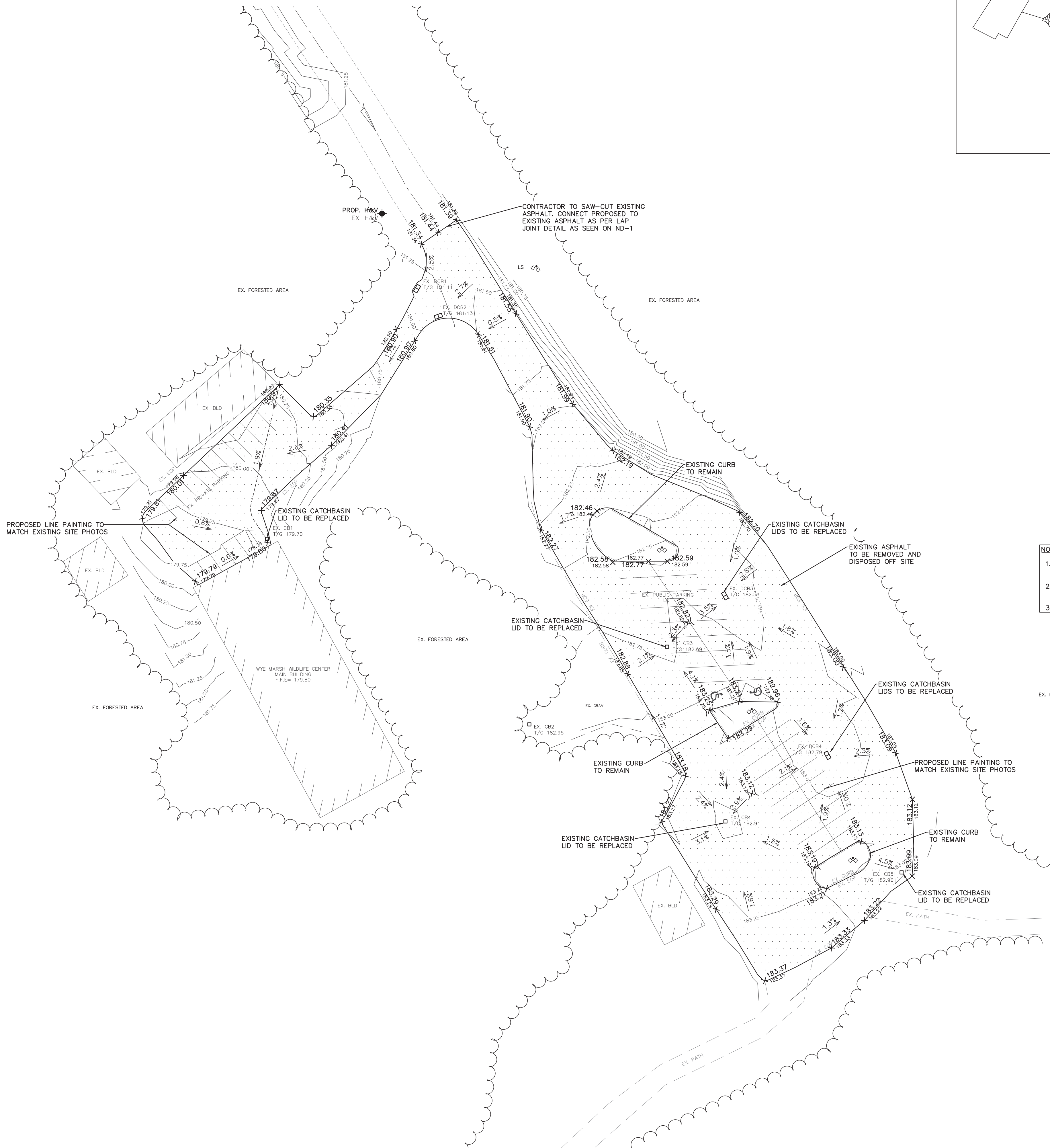
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WYE MARSH WILDLIFE CENTER 16160 HIGHWAY 12 EAST MIDLAND ONTARIO
WYE MARSH WATERMAIN REPLACEMENT & PARKING LOT RESURFACING
drawing title titre du dessin
WATERMAIN PLAN 3

drawn by dessiné par	PG
designed by conc par	MB
approved by approuvé par	GMP
tender soumission	project manager administrateur de projets ROD_KHALED
project date date du projet	2019/04/17
project no. no. du projet	18070
drawing no. dessiné no.	WM-3

## WATERMAIN END CONNECTION DETAIL

SCALE - NTS



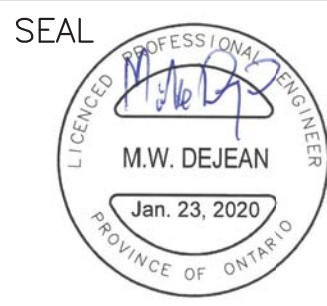


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- EXISTING TREELINE
- PROPOSED LIMIT OF DISTURBANCE
- 254.63 PROPOSED ELEVATION
- 254.09 EXISTING ELEVATION
- 1.5% PROPOSED DIRECTION AND GRADE
- BACK OF CURB
- EDGE OF PAVEMENT
- HIGH POINT
- PROPOSED AREA OF ASPHALT REMOVAL AND REPLACEMENT

- NOTES:
1. EXISTING WYE MARSH WATERMAIN TO BE LOCATED PRIOR TO PROP. W/M INSTALLATION.
  2. CONTRACTOR TO PROVIDE AT LEAST ONE LANE OF TRAFFIC ACCESS AT ALL TIMES.
  3. PARKING LOT TO STAY OPERATIONAL DURING CONSTRUCTION.

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MIDLAND ONTARIO  
WYE MARSH WATERMAIN REPLACEMENT &  
PARKING LOT RESURFACING  
drawing title  
titre du dessin  
SITE GRADING PLAN 1

drawn by dessiné par	PG
designed by conc par	MB
approved by approuvé par	GMP
tender soumission	project manager administrateur de projets ROD_KHALED
project date date du projet	2019/04/17
project no. no. du projet	18070
drawing no. dessiné no.	SG-1



