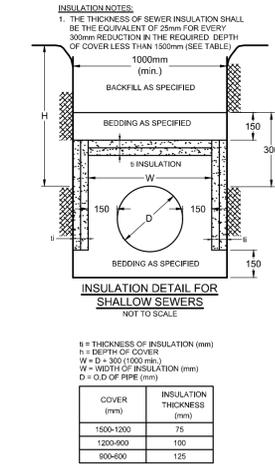


PROPOSED WATER SERVICE TABLE			
STATION	SURFACE ELEVATION	TWM ELEVATION	COMMENTS
0+000	95.35	92.35*	TEE CONNECTION TO EX. 300mmØ WM
0+001	95.32	92.35*	200mmØ VALVE AND VALVE BOX
0+004.7	95.23	92.53	CROSS ABOVE EX. 450Ø SAN (±0.85m CLEARANCE)
0+006	95.20	92.53	11.25' HORIZONTAL BEND
0+022	94.93	92.53	CROSS BELOW 250mmØ STM (±0.63m CLEARANCE)
0+025	95.00	92.53	-
0+050	94.98	92.53	-
0+058.2	94.93	92.53	CROSS BELOW 300mmØ STM (±0.75m CLEARANCE)
0+075	95.14	92.53	-
0+092.7	94.93	92.53	22.5' HORIZONTAL BEND
0+094.4	94.92	92.52	CROSS BELOW 375mmØ STM (±0.77m CLEARANCE)
0+098.1	94.90	92.50	22.5' HORIZONTAL BEND
0+100.9	94.87	92.57	200 x 200 x 150 HYDRANT TEE
0+102.9	94.98	92.58	200 x 150 REDUCER
0+103.9	94.99	92.59	45° HORIZONTAL BEND
0+106.0	95.01	92.61	150mmØ VALVE AND VALVE BOX
0+015.2	95.10	92.70	45° HORIZONTAL BEND
0+119.5	95.33	92.75	CAP 1.0m FROM BUILDING FACE
1+000	94.97	92.57	200 x 200 x 150 HYDRANT TEE
1+005	94.97	92.57	150mmØ VALVE AND VALVE BOX
1+007.5	95.15	92.57	FIRE HYDRANT

\* WATERMAIN NOT TO BE CONNECTED TO EXISTING 300mmØ WATERMAIN. DETERMINED.

- SUPPLY AND CONSTRUCT ALL WATERMANS AND APPURTENANCES IN ACCORDANCE WITH THE CITY OF OTTAWA STANDARDS AND SPECIFICATIONS. EXCAVATION, INSTALLATION, BACKFILL AND RESTORATION OF ALL WATERMANS BY THE CONTRACTOR. CONNECTIONS AND SHUT-OFFS AT THE MAIN AND CHLORINATION OF THE WATER SYSTEM SHALL BE PERFORMED BY THE CONTRACTOR IN THE PRESENCE CITY OF OTTAWA FORCES.
- SPECIFICATIONS:
 

ITEM	SPEC. No.	REFERENCE
WATERMAIN TRENCHING	W17	CITY OF OTTAWA
THERMAL INSULATION IN SHALLOW TRENCHES	W22	CITY OF OTTAWA
WATERMAIN	PVC DR 18	
- WATERMAIN SHALL BE MINIMUM 2.4m DEPTH BELOW GRADE UNLESS OTHERWISE INDICATED.
- PROVIDE MINIMUM 0.5m CLEARANCE BETWEEN OUTSIDE OF PIPES AT ALL CROSSINGS.
- WATER SERVICE IS TO BE CONSTRUCTED TO WITHIN 1.0m OF FOUNDATION WALL AND CAPPED, UNLESS OTHERWISE INDICATED.



AREA A-1: INLET CONTROL DEVICE DATA - CBMH 1						
DESIGN EVENT	ICD TYPE (CIRCULAR PLUG)	DIAMETER OF OUTLET PIPE (mm)	DESIGN FLOW (L/s)	DESIGN HEAD (m)	WATER ELEVATION (m)	VOLUME (m³)
1.5 YR	88mmØ ORIFICE	375	23.5	1.98	94.91	191.4
1:100 YR	88mmØ ORIFICE	375	24.1	2.08	95.01	448.4

AREA A-3: INLET CONTROL DEVICE DATA - CBMH 12						
DESIGN EVENT	ICD TYPE (CIRCULAR PLUG)	DIAMETER OF OUTLET PIPE (mm)	DESIGN FLOW (L/s)	DESIGN HEAD (m)	WATER DEPTH (m)	VOLUME (m³)
1.5 YR	100mmØ ORIFICE	375	28.1	1.70	94.90	22.9
1:100 YR	100mmØ ORIFICE	375	29.1	1.82	95.02	69.1

CAMP MART SITE FLOWS & STORMWATER MANAGEMENT TABLE								
DESIGN EVENT	PRE-DEVELOPMENT CONDITIONS			POST-DEVELOPMENT CONDITIONS				
	UNCONTROLLED FLOW (L/s)	ALLOWABLE RELEASE RATE (L/s)	A-0 FLOW (L/s)	A-1 FLOW (L/s)	A-2 FLOW (L/s)	A-3 FLOW (L/s)	TOTAL FLOW (L/s)	REDUCTION IN FLOW (L/s or %)*
1.5 YR	115.3	99.5	6.1	23.5	24.7	28.1	82.4	32.9 or 29%
1:100 YR	247.0	99.5	12.4	24.1	33.5	29.1	99.1	147.9 or 60%

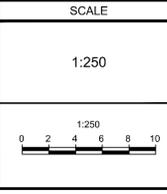
\* REDUCED FLOW COMPARED TO PRE-DEVELOPMENT UNCONTROLLED CONDITIONS

NOTE: THE POSITION OF ALL 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, DETERMINE THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

APPROVED  REFUSED   
 THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_  
 DERRICK MOODIE  
 MANAGER, DEVELOPMENT REVIEW - WEST  
 PLANNING, INFRASTRUCTURE & ECONOMIC  
 DEVELOPMENT DEPARTMENT, CITY OF OTTAWA

OWNER INFORMATION  
 20 FRANK NIGHBOR INC.  
 11266 FIFTH LINE  
 HALTON HILLS, ON L7G 4S6  
 SUNNY BAINS  
 PHONE: 1-877-401-3423  
 sbains35@gmail.com

No.	REVISION	DATE	BY
3	REVISED PER CITY COMMENTS	MAY 24/18	FST
2	REVISED PER CITY COMMENTS	APR 23/18	FST
1	ISSUED FOR SITE PLAN APPROVAL	FEB 9/18	FST



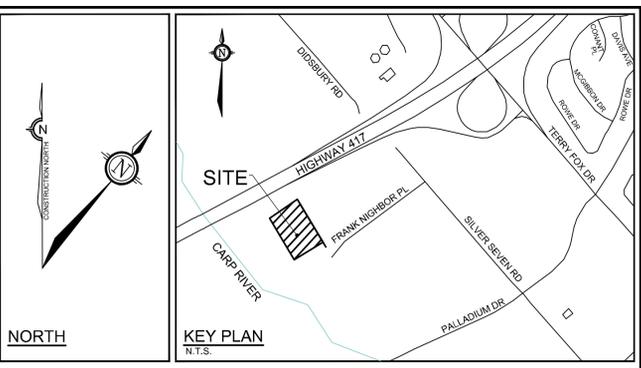
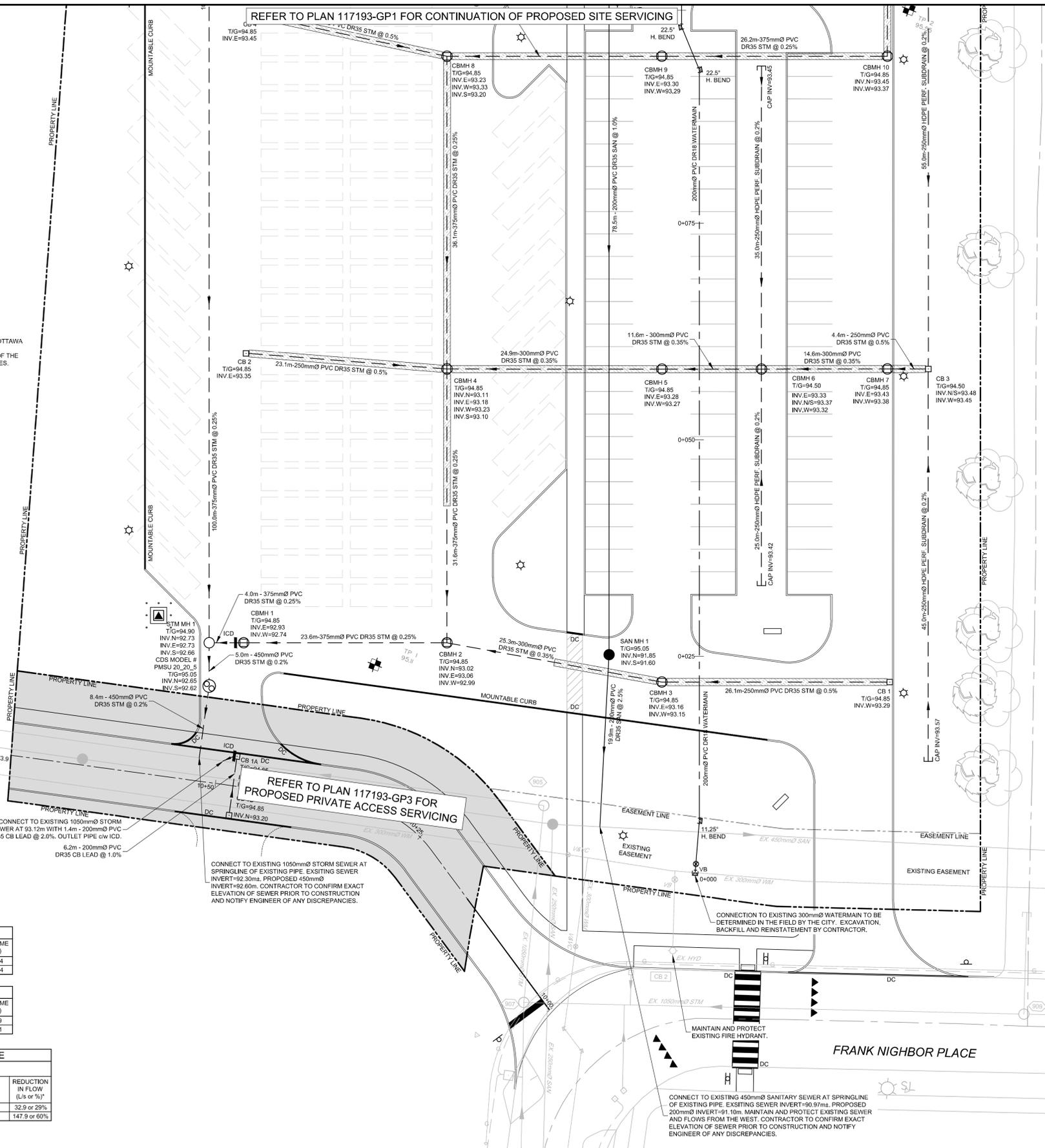
FOR REVIEW ONLY

DESIGN: SM / FST  
 CHECKED: FST  
 DRAWN: SM  
 CHECKED: SM / FST  
 APPROVED: FST

PROFESSIONAL ENGINEER  
 F.S. THAUETIE  
 100041209  
 MAY 24, 2018  
 PROVINCE OF ONTARIO

**NOVATECH**  
 Engineers, Planners & Landscape Architects  
 Suite 200, 240 Michael Cowland Drive  
 Ottawa, Ontario, Canada K2M 1P6  
 Telephone: (613) 254-9643  
 Facsimile: (613) 254-5867  
 Website: www.novatech-eng.com

LOCATION CITY OF OTTAWA 20 FRANK NIGHBOR PLACE - CAMP MART SITE		PROJECT No. 117193
DRAWING NAME GENERAL PLAN OF SERVICES		REV # REV #3
		DRAWING No. 117193-GP2



- LEGEND**
- SAN MH 1: PROPOSED SANITARY MH & SEWER
  - CBMH 3: PROPOSED CATCHBASIN MANHOLE c/w 3.0m RADIAL SUBDRAINS PER GETOCH & SEWER
  - STM MH 1: PROPOSED STORM MANHOLE & SEWER
  - CB 2: PROPOSED CATCH-BASIN c/w 3.0m RADIAL SUBDRAINS PER GETOCH AND LEAD
  - HYD: PROPOSED HYDRANT AND VALVE
  - DC: PROPOSED DEPRESSED CURB
  - 200mmØ: PROPOSED WATERMAIN AND DIAMETER
  - VB: PROPOSED VALVE AND VALVEBOX
  - BEND: PROPOSED BEND AND THRUSTBLOCK 11.25', 22.5', 45° or TEE
  - CAP: PROPOSED CAP
  - ICD: PROPOSED INLET CONTROL DEVICE
  - RD: CONTROLLED FLOW ROOF DRAIN
  - THermal INSULATION FOR SHALLOW SEWERS
  - PROPOSED BUILDING ENTRANCE
  - C.S.: PROPOSED CLAY SEAL SEEPAGE BARRIER (PER GEOTECHNICAL REPORT)
  - PROPOSED RETAINING WALL
- PROPERTY LINE**
- EXISTING CONCRETE CURB
  - EXISTING SANITARY MANHOLE AND SEWER
  - EXISTING CATCHBASIN MANHOLE
  - EXISTING STORM MANHOLE AND SEWER
  - EXISTING CATCHBASIN C/W CATCHBASIN LEAD
  - EXISTING HYDRANT
  - EXISTING UTILITY POLE C/W GUY WIRES
  - EXISTING WATERMAIN
  - EXISTING HYDRANT C/W VALVE & LEAD
  - EXISTING LIGHT STANDARD
  - EXISTING FENCE
  - EXISTING OVERHEAD UTILITY WIRES
  - PROPOSED WATER METER AND REMOTE METER
  - PROPOSED LIGHT STANDARD
  - AREA UNDER SITE PLAN DEVELOPMENT APPLICATION FOR THE SITE ACCESS ROAD

- GENERAL NOTES:**
- COORDINATE AND SCHEDULE ALL WORK WITH OTHER TRADES AND CONTRACTORS.
  - DETERMINE THE EXACT LOCATION, SIZE, MATERIAL AND ELEVATION OF ALL EXISTING UTILITIES PRIOR TO COMMENCING CONSTRUCTION. PROTECT AND ASSUME RESPONSIBILITY FOR ALL EXISTING UTILITIES WHETHER OR NOT SHOWN ON THIS DRAWING.
  - OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF OTTAWA BEFORE COMMENCING CONSTRUCTION.
  - BEFORE COMMENCING CONSTRUCTION OBTAIN AND PROVIDE PROOF OF COMPREHENSIVE, ALL RISK AND OPERATIONAL LIABILITY INSURANCE FOR \$5,000,000.00. INSURANCE POLICY TO NAME OWNERS, ENGINEERS AND ARCHITECTS AS CO-INSURED.
  - RESTORE ALL DISTURBED AREAS ON-SITE AND OFF-SITE, INCLUDING TRENCHES AND SURFACES ON PUBLIC ROAD ALLOWANCES TO EXISTING CONDITIONS OR BETTER TO THE SATISFACTION OF THE CITY OF OTTAWA AND ENGINEER.
  - REMOVE FROM SITE ALL EXCESS EXCAVATED MATERIAL, ORGANIC MATERIAL AND DEBRIS UNLESS OTHERWISE INSTRUCTED BY ENGINEER. EXCAVATE AND REMOVE FROM SITE ANY CONTAMINATED MATERIAL. ALL CONTAMINATED MATERIAL SHALL BE DISPOSED OF AT A LICENSED LANDFILL FACILITY.
  - ALL ELEVATIONS ARE GEODETIC.
  - REFER TO GEOTECHNICAL REPORT (NO. PG4409-1, DATED FEBRUARY 9, 2018), PREPARED BY PATERSON GROUP INC., FOR SUBSURFACE CONDITIONS, CONSTRUCTION RECOMMENDATIONS, AND GEOTECHNICAL INSPECTION REQUIREMENTS. THE GEOTECHNICAL CONSULTANT IS TO REVIEW ON-SITE CONDITIONS AFTER EXCAVATION PRIOR TO PLACEMENT OF THE GRANULAR MATERIAL.
  - REFER TO ARCHITECT'S AND LANDSCAPE ARCHITECT'S DRAWINGS FOR BUILDING AND HARDSCAPE AREAS AND DIMENSIONS.
  - REFER TO DSS & SWM REPORT (R-2018-011) PREPARED BY NOVATECH ENGINEERING CONSULTANTS LTD.
  - SAW CUT AND KEY GRIND ASPHALT AT ALL ROAD CUTS AND ASPHALT TIE IN POINTS AS PER CITY OF OTTAWA STANDARDS (R10).
  - PROVIDE LINE/PARKING PAINTING.
  - CONTRACTOR TO PROVIDE THE CONSULTANT WITH A GENERAL PLAN OF SERVICES INDICATING ALL SERVICES AS-BUILT INFORMATION SHOWN ON THIS PLAN, AS-BUILT INFORMATION MUST INCLUDE: PIPE MATERIAL, SIZES, LENGTHS, SLOPES, INVERT AND TIG ELEVATIONS, STRUCTURE LOCATIONS, VALVE AND HYDRANT LOCATIONS, TWM ELEVATIONS AND ANY ALIGNMENT CHANGES, ETC.

- SEWER NOTES:**
- SUPPLY AND CONSTRUCT ALL SEWERS AND APPURTENANCES IN ACCORDANCE WITH THE MOST CURRENT CITY OF OTTAWA STANDARDS AND SPECIFICATIONS.
  - SPECIFICATIONS:
 

ITEM	SPEC. No.	REFERENCE
CATCHBASIN (600x600mm)	705.010	OPSD
STORM / SANITARY MANHOLE (1200mmØ)	701.010	OPSD
CB, FRAME & COVER	400.020	OPSD
STORM / SANITARY MH FRAME & COVER	401.010	OPSD
WATERTIGHT MH FRAME AND COVER	401.030	OPSD
SEWER TRENCH	S6	CITY OF OTTAWA
STORM SEWER	PVC DR 35	
SANITARY SEWER	PVC DR 35	
CATCHBASIN LEAD	PVC DR 35	
  - ALL STORM AND SANITARY SERVICE LATERALS SHALL BE EQUIPPED WITH BACKFLOW PREVENTION DEVICES AS PER THE CITY OF OTTAWA STANDARD DETAILS S14 AND S14.1 OR S14.2.
  - INSULATE ALL PIPES (SAN/STM) THAT HAVE LESS THAN 1.5m COVER WITH H-40 INSULATION PER INSULATION DETAIL FOR SHALLOW SEWERS. PROVIDE 150mm CLEARANCE BETWEEN PIPE AND INSULATION.
  - SERVICES ARE TO BE CONSTRUCTED TO 1.0m FROM FACE OF BUILDING AT A MINIMUM SLOPE OF 1.0%.
  - PIPE BEDDING, COVER AND BACKFILL ARE TO BE COMPACTED TO AT LEAST 95% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY. THE USE OF CLEAR CRUSHED STONE AS A BEDDING LAYER SHALL NOT BE PERMITTED.
  - FLEXIBLE CONNECTIONS ARE REQUIRED FOR CONNECTING PIPES TO MANHOLES (FOR EXAMPLE KOR-N-SEAL, PSX, POSITIVE SEAL AND DURASEAL). THE CONCRETE CRADLE FOR THE PIPE CAN BE ELIMINATED.
  - THE OWNER SHALL REQUIRE THAT THE SITE SERVICING CONTRACTOR PERFORM FIELD TESTS FOR QUALITY CONTROL OF ALL SANITARY SEWERS. LEAKAGE TESTING SHALL BE COMPLETED IN ACCORDANCE WITH OPS 410.07.16, 410.07.16.04 AND 407.07.24. DYE TESTING IS TO BE COMPLETED ON ALL SANITARY SERVICES TO CONFIRM PROPER CONNECTION TO THE SANITARY SEWER MAIN. THE FIELD TESTS SHALL BE PERFORMED IN THE PRESENCE OF A CERTIFIED PROFESSIONAL ENGINEER WHO SHALL SUBMIT A CERTIFIED COPY OF THE TEST RESULTS.
  - ALL STORM MANHOLES AND CATCHBASIN MANHOLES ARE TO HAVE 300mm SUMPS UNLESS OTHERWISE INDICATED. ALL CATCHBASINS ARE TO HAVE 600mm SUMPS UNLESS OTHERWISE INDICATED.
  - ALL CATCHBASINS, MANHOLES AND/OR CATCHBASIN MANHOLES THAT ARE TO HAVE ICD'S INSTALLED WITHIN THEM ARE TO HAVE 600mm SUMPS.
  - ALL WEeping TILE CONNECTIONS ARE TO BE MADE TO THE PROPOSED STORM SEWER SYSTEM DOWNSTREAM OF ANY INLET CONTROL DEVICES.
  - CONTRACTOR TO TELEPHONE (CITY) ALL PROPOSED SEWERS, 200mmØ OR GREATER PRIOR TO BASE COURSE ASPHALT. UPON COMPLETION OF CONTRACT, THE CONTRACTOR IS RESPONSIBLE TO FLUSH AND CLEAN ALL SEWERS & APPURTENANCES.

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