SANITARY SEWERS

- SANITARY SEWAGE COLLECTION SYSTEMS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE RULES, REGULATIONS, STANDARDS AND SPECIFICATIONS OF THE CITY OF BEXLEY, OHIO EPA, OHIO DEPARTMENT OF HEALTH AND THE CURRENT EDITION OF THE GREAT LAKES-UPPER MISSISSIPPI RIVER BOARD (TEN STATES) - RECOMMENDED STANDARDS FOR WASTEWATER FACILITIES.
- 2. THE MINIMUM REQUIREMENTS FOR SANITARY SEWER PIPE WITH DIAMETERS 15 INCHES AND SMALLER SHALL BE REINFORCED CONCRETE PIPE ASTM C76 CLASS 3, OR PVC SEWER PIPE ASTM D3034, SDR 35. PIPE FOR 6-INCH DIAMETER HOUSE SERVICE LINES SHALL BE PVC PIPE ASTM D3034, SDR 35. PVC PIPE SHALL NOT BE USED AT DEPTHS GREATER THAN 28 FEET. PIPE MATERIALS AND RELATED STRUCTURES SHALL BE SHOP TESTED IN ACCORDANCE WITH CITY OF BEXLEY CONSTRUCTION INSPECTION DIVISION QUALITY CONTROL REQUIREMENTS. PIPE JOINTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM D3212.
- 3. THE MINIMUM REQUIREMENTS FOR SANITARY SEWER PIPES WITH DIAMETERS GREATER THAN 15 INCHES SHALL BE REINFORCED CONCRETE PIPE ASTM C76 WITH CLASS DESIGNATION SPECIFIED IN THE APPROVED CONSTRUCTION DRAWINGS.
- 4. ALL IN-LINE WYE AND TEE CONNECTIONS IN CONCRETE SEWERS, 18-INCH DIAMETER AND LARGER, SHALL BE EITHER KOR-N-TEE OR KOR-N-SEAL CONNECTIONS CONFORMING TO THE MANUFACTURER'S RECOMMENDATIONS.
- 5. GRANULAR BACKFILL SHALL BE COMPACTED GRANULAR MATERIAL ACCORDING TO ITEM 912 OF THE STANDARD SPECIFICATIONS OR CONTROLLED DENSITY BACKFILL ACCORDING TO ITEM 613, TYPE II OF THE STANDARD SPECIFICATIONS AS DIRECTED BY THE CITY ENGINEER.
- 6. ALL MANHOLE LIDS SHALL BE PROVIDED WITH CONTINUOUS SELF-SEALING GASKETS. THE APPROVED CONSTRUCTION DRAWINGS SHALL SHOW WHERE BOLT-DOWN LIDS ARE REQUIRED SANITARY SEWER MANHOLES SHALL BE PRECAST CONCRETE OR AS APPROVED BY THE CITY ENGINEER AND CONFORM TO THE CITY OF BEXLEY SANITARY MANHOLE STANDARD DRAWING. MANHOLE LIDS SHALL INCLUDE CITY OF BEXLEY LOGO.
- 7. ALL PVC SEWER PIPES SHALL BE DEFLECTION TESTED NO LESS THAN 60 DAYS AFTER COMPLETION OF BACKFILLING OPERATIONS. ALL OTHER REQUIREMENTS SHALL BE ACCORDING TO ITEM 901.21 OF THE STANDARD SPECIFICATIONS.
- 8. ALL SANITARY SEWERS INCLUDING SANITARY SEWER SERVICE LINES SHALL BE SUBJECTED TO AND PASS INFILTRATION OR EXFILTRATION TESTS ACCORDING TO ITEM 901 OF THE STANDARD SPECIFICATIONS AND MUST BE APPROVED FOR USE BY THE CITY ENGINEER BEFORE ANY SERVICE CONNECTIONS ARE TAPPED INTO SEWERS.
- 9. FOR SANITARY SEWER INFILTRATION, LEAKAGE THROUGH JOINTS SHALL NOT EXCEED 100 GALLONS PER INCH OF TRIBUTARY SEWER DIAMETER PER 24 HOURS PER MILE OF LENGTH OR THE COMPUTED EQUIVALENT. ALL SANITARY SEWERS SHALL BE TESTED.
- 10. AT THE DETERMINATION OF THE CITY ENGINEER, THE CONTRACTOR MAY BE REQUIRED TO PERFORM A TV INSPECTION OF THE SANITARY SEWER SYSTEM PRIOR TO FINAL ACCEPTANCE BY THE CITY. THIS WORK SHALL BE COMPLETED BY THE CONTRACTOR AT HIS EXPENSE.
- 11. VISIBLE LEAKS OR OTHER DEFECTS OBSERVED OR DISCOVERED DURING TV INSPECTION SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.
- 12. ROOF DRAINS, FOUNDATION DRAINS, FIELD TILE OR OTHER CLEAN WATER CONNECTIONS TO THE SANITARY SEWER SYSTEM ARE STRICTLY PROHIBITED ACCORDING TO SECTION 51.23 OF THE BEXLEY CODE OF ORDINANCES.
- 13. ALL WATER LINES SHALL BE LOCATED AT LEAST 10 FEET HORIZONTALLY AND 18 INCHES VERTICALLY, FROM SANITARY SEWERS AND STORM SEWERS, TO THE GREATEST EXTENT PRACTICABLE. WHERE SANITARY SEWERS CROSS WATER MAINS OR OTHER SEWERS OR OTHER UTILITIES, TRENCH BACKFILL SHALL BE PLACED BETWEEN THE PIPES CROSSING AND SHALL BE COMPACTED GRANULAR MATERIAL ACCORDING TO ITEM 912 OF THE STANDARD SPECIFICATIONS. IN THE EVENT THAT A WATER LINE MUST CROSS WITHIN 18 INCHES OF A SANITARY SEWER, THE SANITARY SEWER SHALL BE CONCRETE ENCASED OR CONSIST OF DUCTILE IRON PIPE MATERIAL.
- 14. SERVICE RISERS SHALL BE INSTALLED WHERE THE DEPTH FROM WYES TO PROPOSED GROUND ELEVATION EXCEEDS 10 FEET. TOPS OF RISERS SHALL BE NO LESS THAN 9 FEET BELOW PROPOSED GROUND ELEVATION IF BASEMENT SERVICE IS INTENDED.
- 15. WHERE SERVICE RISERS ARE NOT INSTALLED, A MINIMUM 5-FOOT LENGTH OF SANITARY SEWER SERVICE PIPE OF THE SAME SIZE AS THE WYE OPENING SHALL BE INSTALLED.
- 16. THE CONTRACTOR SHALL FURNISH AND PLACE, AS DIRECTED, APPROVED WYE POLES MADE OF 2 INCHES X 2 INCHES LUMBER AT ALL WYE LOCATIONS, ENDS OF EXTENDED SERVICES, OR AT THE END OF EACH RISER WHERE RISERS ARE REQUIRED. WYE POLES SHALL BE VISIBLE BEFORE ACCEPTANCE BY THE CITY. THE COST OF THESE POLES SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR THE VARIOUS SEWER ITEMS.
- 17. EXISTING SANITARY SEWER FLOWS SHALL BE MAINTAINED AT ALL TIMES. COSTS FOR PUMPING AND BYPASSING SHALL BE INCLUDED IN THE CONTRACTOR'S UNIT PRICE BID FOR THE RELATED ITEMS.
- 18. THE CONTRACTOR SHALL FURNISH ALL MATERIAL, EQUIPMENT, AND LABOR TO MAKE CONNECTIONS TO EXISTING MANHOLES. THE SEWER PIPE TO MANHOLE CONNECTIONS FOR ALL SANITARY SEWERS SHALL BE FLEXIBLE AND WATERTIGHT. ALL HOLES SHALL BE NEATLY CORED. THE SEWER PIPE BARREL AT THE SPRINGLINE SHALL NOT EXTEND MORE THAN 1 INCH BEYOND THE INSIDE FACE OF THE MANHOLE. TO MAINTAIN FLEXIBILITY IN THE CONNECTION, A 1-INCH SPACE SHALL BE LEFT BETWEEN THE END OF THE PIPE INSIDE THE MANHOLE AND THE CONCRETE CHANNEL; THIS SPACE SHALL BE FILLED WITH A WATERPROOF FLEXIBLE JOINT FILLER. ANY METAL THAT IS USED SHALL BE TYPE 300 SERIES STAINLESS STEEL. THE CONNECTION MAY BE ANY OF THE FOLLOWING TYPES:
 - A. RUBBER SLEEVE WITH STAINLESS STEEL BANDING.
 - 1) KOR-N-SEAL AS MANUFACTURED BY NATIONAL POLLUTION CONTROL SYSTEMS, INC. 2) LOCK JOINT FLEXIBLE MANHOLE SLEEVE AS MANUFACTURED BY INTERPACE CORPORATION.
 - 3) OR EQUAL AS APPROVED BY THE CITY ENGINEER.
 - B. RUBBER GASKET COMPRESSION.
 - 1) PRESS WEDGE II AS MANUFACTURED BY PRESS-SEAL GASKET CORPORATION. 2) DURA SEAL III AS MANUFACTURED BY DURA TECH, INC.
 - 3) LINK-SEAL AS MANUFACTURED BY THUNDERLINE CORPORATION.
 - 4) OR EQUAL AS APPROVED BY THE CITY ENGINEER.

STORM SEWER

- ALL STORM WATER DETENTION AND RETENTION AREAS AND MAJOR FLOOD ROUTING SWALES SHALL BE CONSTRUCTED TO FINISH GRADE AND HYDRO-SEEDED AND HYDRO-MULCHED ACCORDING TO ITEMS 203 AND 659 OF THE STANDARD SPECIFICATIONS.
- WHERE PRIVATE STORM SEWERS CONNECT TO PUBLIC STORM SEWERS, THE LAST RUN OF PRIVATE STORM SEWER CONNECTING TO THE PUBLIC STORM SEWER SHALL BE REINFORCED CONCRETE PIPE CONFORMING TO ASTM DESIGNATION C76, WALL B, CLASS IV FOR PIPE DIAMETERS 12 INCHES TO 15 INCHES, CLASS III FOR 18 INCHES TO 24 INCH PIPES, AND 27 INCHES AND LARGER PIPE SHALL BE CLASS II, UNLESS OTHERWISE SHOWN ON THE APPROVED CONSTRUCTION DRAWINGS. INSPECTION IS REQUIRED BY THE CITY OF BEXLEY'S DIVISION OF ENGINEERING.

THE STANDARD SPECIFICATIONS OR CONTROLLED DENSITY BACKFILL ACCORDING TO ITEM 613. TYPE II OF THE STANDARD SPECIFICATIONS AS DIRECTED BY THE CITY ENGINEER.

- ALL STORM SEWERS SHALL BE REINFORCED CONCRETE PIPE CONFORMING TO ASTM DESIGNATION C76, WALL B, CLASS IV FOR PIPE DIAMETERS 12 INCHES TO 15 INCHES, CLASS III FOR 18 INCHES TO 24 INCH PIPES, AND 27 INCHES AND LARGER PIPE SHALL BE CLASS II, UNLESS OTHERWISE SHOWN ON THE APPROVED CONSTRUCTION DRAWINGS.
- 5. HEADWALLS AND ENDWALLS SHALL BE REQUIRED AT ALL STORM SEWER INLETS OR OUTLETS TO AND FROM STORMWATER MANAGEMENT FACILITIES. NATURAL STONE AND/OR BRICK APPROVED BY THE CITY ENGINEER SHALL BE PROVIDED ON ALL VISIBLE HEADWALLS AND/OR ENDWALLS SURFACES.
- STORM INLETS OR CATCH BASINS SHALL BE CHANNELIZED AND HAVE BICYCLE SAFE GRATES. MANHOLE LIDS SHALL INCLUDE CITY OF BEXLEY LOGO AND ALL CURB INLET AND CATCH BASIN GRATES SHALL INCLUDE ENGRAVED LETTERING: "DUMP NO WASTE; DRAINS TO RIVER."
- 7. STORM SEWER OUTLETS GREATER THAN 18 INCHES IN DIAMETER ACCESSIBLE FROM STORMWATER MANAGEMENT FACILITIES OR WATERCOURSES SHALL BE PROVIDED WITH SAFETY GRATES, AS APPROVED BY THE CITY ENGINEER.

WATER SYSTEM GENERAL NOTES

- 1. THE CONTRACTOR SHALL NOTIFY THE OWNER AT LEAST TWO (2) WORKING DAYS IN ADVANCE OF ANY WORK ON THEIR SYSTEMS.
- 2. THE PROPOSED WATERLINE SHALL HAVE A 4 FOOT MINIMUM COVER OVER THE TOP OF THE PIPE AT ALL LOCATIONS EXCEPT AT SPECIFIC HYDRANT TEE LOCATIONS AS SHOWN ON THE PLANS. HIGH POINTS IN THE WATERLINE MUST OCCUR AT THE STATIONED HYDRANT TEE LOCATIONS.
- 3. ALL SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR PRELIMINARY CHECKING. THE ENGINEER SHALL FORWARD THE CHECKED SHOP DRAWINGS TO THE OWNER FOR FINAL APPROVAL.
- 4. LOCATION OF STERILIZATION AND TESTING CONNECTIONS AT VALVES SHALL BE DIRECTED BY THE OWNER AND ALL COST ASSOCIATED WITH PLACING AND UTILIZING SAID STERILIZATION AND TESTING CONNECTIONS SHALL BE PAID BY THE CONTRACTOR.
- CHLORINATION TO BE COMPLETED BY THE CONTRACTOR IN ACCORDANCE WITH OWNER REQUIREMENTS AND ALL ASSOCIATED COSTS PAID BY THE CONTRACTOR.
- 6. ALL WATER MAIN PIPE SHALL BE AWWA C-900 DR18 (150 PSI) PVC. ALL VALVES SHALL BE MECHANICAL JOINT CONFORMING TO AWWA. VALVES 12" AND SMALLER SHALL BE RESILIENT-SEATED GATE VALVES PER AWWA C-504.
- 7. NO WATER SERVICE CONNECTIONS TO ANY BUILDING SHALL BE PERMITTED PRIOR TO FINAL ACCEPTANCE BY THE THE OWNER WHICH SHALL INCLUDE APPROVED RECTIFICATION OF ALL PUNCH LIST ITEMS.
- 8. ZINC ANODE CAPS SHALL BE PLACED ON ALL BOLTS. CATHODIC PROTECTION WILL BE ON ALL METALLIC MATERIAL. COORDINATE WITH CATHODIC CONSULTANT.
- 9. FIRE HYDRANTS SHALL BE CLOW VALVE COMPANY MEDALLION HYDRANT ASSEMBLY MODEL F-2545 WITH 5 1/4" MAIN VALVE WITH 2 - 1/2" HOSE OUTLETS.
- 10. PROVIDE ELECTRONICALLY SUPERVISED POST INDICATING VALVE SHALL BE MUELLER COMPANY A-20808, REFER TO ELECTRICAL DRAWINGS FOR POWER SUPPLY.
- 11. ALL WATER LINE RESTRAINT BENDS SHALL BE BULLDOG TYPE RESTRAINED SYSTEM (SEE TABLES BELOW FOR RESTRAINT LENGTHS AND THRUST FORCE) WITH MEGALUG OR EQUAL INSTALLED AT ALL, HYDRANTS, TEES, ETC.

DEWATERING

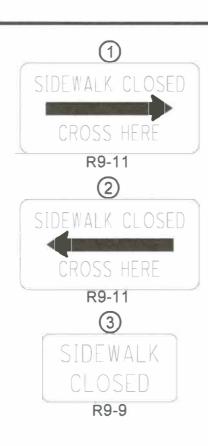
- THE COST OF ALL DEWATERING REQUIRED FOR THE CONSTRUCTION OF THIS PROJECT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE VARIOUS IMPROVEMENT ITEMS.
- ANY WELL, WELL POINT, PIT OR OTHER DEVICE INSTALLED FOR THE PURPOSE OF LOWERING THE GROUND WATER TO FACILITATE CONSTRUCTION OF THIS PROJECT SHALL BE PROPERLY ABANDONED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 3745-9-10 OF THE OHIO ADMINISTRATIVE CODE OR IN ACCORDANCE WITH THE PROVISIONS OF THIS PLAN AS DIRECTED BY THE DIRECTOR OR HIS REPRESENTATIVE.
- ANY CONTRACTOR INSTALLING ANY WET WELL, WELL POINT, PIT OR OTHER DEVICE USED FOR 3 THE PURPOSE OF REMOVING GROUND WATER FROM AN AQUIFER SHALL COMPLETE AND FILE A WELL LOG AND DRILLING REPORT FROM THE OHIO DEPARTMENT OF NATURAL RESOURCES (ODNR). DIVISION OF WATER, WITHIN 30 DAYS OF THE WELL COMPLETION IN ACCORDANCE WITH THE OHIO REVISED CODE SECTION 1521.01 AND 1524.05 5. IN ADDITION, ANY SUCH FACILITY IS TO BE COMPLETED IN ACCORDANCE WITH SECTION 1521.16 OF THE OHIO REVISED CODE. FOR COPIES OF THE NECESSARY WELL LOG, DRILLING REPORT OR REGISTRATION FORMS, PLEASE CONTACT:

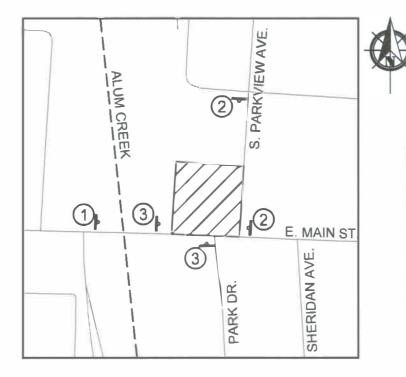
OHIO DEPARTMENT OF NATURAL RESOURCES DIVISION OF WATER 2045 MORSE ROAD, BUILDING B COLUMBUS, OHIO 43229-6693 (614) 265-6740

THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE TO ODNR FOR THE REGISTRY, 4. MAINTENANCE AND ABANDONMENT OF ANY WITHDRAW DEVICE USED IN THE CONSTRUCTION OF THIS PROJECT.

COTA - BUS AND/OR BUS STOPS

1. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL CONTACT SENIOR SERVICE PLANNER OF THE CENTRAL OHIO TRANSIT AUTHORITY (COTA) AT PH: (614) 308-4373 OR FAX: (614) 275-5933 TO COORDINATE PROPER BUS MOVEMENTS THROUGH OR AROUND THE JOB SITE DURING THE CONSTRUCTION. THIS WILL INCLUDE, BUT IS NOT LIMITED TO, THE TEMPORARY RELOCATION OR REMOVAL OF COTA SIGNS AND/OR BUS STOP LOCATIONS. FINAL PLACEMENT TO BE PERFORMED BY COTA.





NOTES

REFER TO CITY OF COLUMBUS STANDARD DRAWING 1500 (SHEETS 1-3) & 1550 (SHEET 1) FOR MAINTENANCE OF TRAFFIC OPERATIONS ASSOCIATED WITH THIS PROJECT.

THE DURATION OF THE PHASE OF WORK TO CONSTRUCT STORM SEWER IMPROVEMENTS IN THE RIGHT-OF-WAY WHICH MAY AFFECT VEHICULAR OR PEDESTRIAN TRAFFIC AS SHOWN IN THE PLANS, IS 30 DAYS. THE PERMIT ASSOCIATED WITH THIS WORK IS NOT TO BE VALID FOR OTHER PROJECT WORK ITEM AND PHASES.

PEDESTRIAN MAINTENANCE OF TRAFFIC

THESE QUANTITIES HAVE BEEN PROVIDED ONLY AS AN ESTIMATE TO THE SCOPE OF THE WORK. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE TO EVALUATE THE COMPLETE PROJECT AS DETAILED IN THE NOTES, PLANS, AND SPECIFICATIONS AND PROCEDURES NECESSARY FOR THE COMPLETION OF THE PLAN IMPROVEWENTS AND SUBMIT HIS TOTAL PROJECT COST ACCORDINGLY.			
ITEM	QUANTITY	UNIT	DESCRIPTION DEMOLITION
201 202	LUMP 1430	SUM SF	WALK REMOVED
202	1430	EACH	DETECTABLE WARNING REMOVED
202	14	EACH	PARKING BLOCK REMOVED
202	125	LF	CURB REMOVED
202	668	SF	CONCRETE APPROACH REMOVED
202	75	LF	CURB & GUTTER REMOVED
202	1	EACH	MANHOLE REMOVED
202	1	EACH	
202	1	EACH	HEADWALL REMOVED
202	157	LF	STORM PIPE REMOVED
202	157	EACH	UTILITY POLE REMOVED (COMPLETE)
202	1	EACH	GAS METER REMOVED
202	1	EACH	MONITORING WELL REMOVED
202	2	EACH	MONITORING WELL, ADJUSTED TO GRADE
202	1	EACH	TRASH RECEPTACLE REMOVED & REPLACED
SITE			
203	LUMP	SUM	
203	1468	SY	SUBGRADE COMPACTION
204	LUMP	SUM	TEMPORARY SEDIMENT AND EROSION CONTROLS
253	145	SUM	PAVEMENT REPAIR
304	309	CY	AGGREGATE BASE
407	64	GAL	TACK COAT
448	62	CY	1.25" ASPHALT CONCRETE INTERMEDIATE COURSE
448	45	CY	1.75" ASPHALT CONCRETE SURFACE COURSE
452	87	SY	8" NON-REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT
608	1341	SF	4" CONCRETE WALK (2300)
608	831	SF	4" CONCRETE WALK (PRIVATE)
608	1	EACH	COC TYPE "A" CURB RAMP (2319)
608	2	EACH	COC TYPE "C" CURB RAMP (2319)
609	123	LF	CURB, STRAIGHT 18" (2000)
609	696	LF	CURB, STRAIGHT 18" (PRIVATE)
609	35	LF	COMBINATION CURB AND GUTTER (2010)
614	LUMP	SUM	MAINTAINING TRAFFIC
630	1	EACH	DO NOT ENTER SIGN (COMPLETE)
630	2	EACH	ADA ACCESSIBLE PARKING SIGN (COMPLETE)
642	2	EACH	HANDICAP SYMBOL MARKING
642	264	SF	HANDICAP ISLAND MARKING
642	36	SF	ISLAND & CROSSWALK MARKING
642	656	LF	PARKING LOT STALL MARKING
642	7	EACH	LANE ARROWS
644	6	LF	CENTER LINE
644	13	LF	CHANNELIZING LINE, 10 IN
659	LUMP	SUM	SEEDING AND MULCHING
STORM			
601	3	CY	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER
604	1	EACH	COC 60" TYPE "C" MANHOLE (AA-S102) W/ CITY OF BEXLEY LID "STORM LID
604	1	EACH	COC 60" CURB INLET MANHOLE (AA-S121) W/ GRATE (AA-S-142) FUX GRATE
604	1	EACH	COC PRECAST HEADWALL (AA-S168)
901	55	LF	12" RCP CLASS IV STORM PIPE W/ TYPE 1 BEDDING, WITH ITEM 912 BACKFILL
901	136	LF	24" RCP CLASS III STORM PIPE W/ TYPE 1 BEDDING, WITH ITEM 911 BACKFILL
901	11	LF	24" RCP CLASS III STORM PIPE W/ TYPE 1 BEDDING, WITH ITEM 912 BACKFILL
WATER			
801 148 LF 2" TYPE "K" COPPER PIPE & APPURTENANCES			
805	1	EACH	2" CORPORATION STOP
805	1	EACH	2" CURB STOP W/ STD DUTY BOX
808	1	EACH	WATER SERVICE TAP ABANDONED
000		LAON	SANITARY
915	1	EACH	8" X 6" DIAMETER WYE FITTING
915	1	EACH	CLEANOUT
915	41	LF	6" SANITARY SERVICE PIPE
910 41 LF O SANITART SERVICE FIFE			
MIS-200	1	EACH	STREET LIGHT FOUNDATION, 4'
MIS-503	1	EACH	STREET LIGHT FOUNDATION, 4
SPEC	2	EACH	6" STEEL BOLLARD
SPEC	1	EACH	UNDERGROUND DETENTION SYSTEM (COMPLETE)
SPEC	7	EACH	PARKING BLOCK
01 20		LAUT	
		TE: 1/11/2019	CHECKED: OSD DATE: 1/11/2019

The GYZ PAVEMENT MATCHLING OR Fox PARKING LOT

COC CURB RAMPS NOT BOUMTHED USE CAPY OF BOX STO DWGS & BRICK DERECTABLE WARNING

CM OF COWMBUS MOT 1500 STO DWG NOT APPLICABLE TO CIM OF BESSLEY COMBUS PERMITE NOT REQUIRED

SIDENALIK DETOUR NEWDS TO SHOW CROSSING AT SIGN AUZOD IN THESECTIONS WITH CROSSWARKS CANNOT CROSS MID BLOCK ALSO NEED TO LIMIT TIME DURATION

