ROLLINGWOOD DRIVE PHASE 1 IMPROVEMENTS
FOREST HILLS
CITY OF WILSON

WILSON, NC

PROPOSED STORM DRAIN SCHEDULE
Parkside Drive - Rollingwood Drive Storm Drainage Improvements
10-Year Storm

		n =	0.013																		
*FROM	*TO	PIPE RUN	INLET AREA (SF)	INLET AREA (ACRES)	A TOTAL AREA (ACRES)	INLET TIME (MIN)	PIPE TIME (MIN)	tc TIME OF CONC (MIN)	I INTENSITY (IN/HR)	Cc RUNOFF COEFF	Q10 DSCHRG (CFS)	SLOPE (FT/FT)	Dtheo (INCHES)	SIZE (INCHES)	Vfull (FT/SEC)	LENGTH PIPE (FT)	SEGMENT TIME (MIN)	UPPER INVERT	LOWER INVERT	*FROM	*TO
CB #40025	CB #40030	1	104,400	2.40	2.40	10	0.17	10.00	6.09	0.4	5.8	1.54%	13	12	5.6	57	0.17	138.83	137.95	CB #40025	CB #40030
CB #40030	ST. MH #40031	2	18,000	0.41	2.81	5	0.13	10.13	6.07	0.4	6.8	0.50%	17	15	3.7	28	0.13	137.30	137.16	CB #40030	ST. MH #40031
CB #40036	CB #40032	3	85,250	1.96	1.96	10	0.17	10.00	6.09	0.4	4.8	1.49%	12	12	5.5	57	0.17	138.68	137.83	CB #40036	CB #40032
CB #40032	ST. MH #40031	4	52,000	1.19	3.15	5	0.02	10.02	6.09	0.4	7.7	2.00%	14	15	7.4	9	0.02	137.44	137.26	CB #40032	ST. MH #40031
ST. MH #40031	ST. MH #40011	5	259,650	5.96	5.96	5	0.68	10.70	5.96	0.4	14.2	0.49%	23	18	4.2	169	0.68	136.64	135.81	ST. MH #40031	ST. MH #40011
CB #40008	ST. MH #40011	6	49,800	1.14	1.14	10	0.01	10.00	6.09	0.4	2.8	5.57%	8	12	10.7	7	0.01	136.70	136.31	CB #40008	ST. MH #40011
CB #40014	ST. MH #40011	7	4,800	0.11	0.11	5	0.12	5.00	7.22	0.4	0.3	0.29%	6	24	3.8	28	0.12	136.00	135.92	CB #40014	ST. MH #40011
ST. MH #40011	PROP. ST. MH # 1	8	314,250	7.21	7.21	5	0.43	11.12	5.89	0.4	17.0	1.20%	21	24	7.9	202	0.43	135.92	133.50	ST. MH #40011	PROP. ST. MH # 1
PROP. ST. MH # 1	PROP. ST. MH # 2	9	0	0.00	7.21	5	0.52	11.64	5.80	0.4	16.7	0.77%	22	24	6.3	195	0.52	133.50	132.00	PROP. ST. MH # 1	PROP. ST. MH # 2
PROP. ST. MH # 2	ST. MH #40250	10	0	0.00	7.21	5	0.19	11.83	5.76	0.4	16.6	3.69%	17	24	13.8	157	0.19	132.00	126.20	PROP. ST. MH # 2	ST. MH #40250
HEADWALL INLET	DI #40415	11	52,800	1.21	1.21	10	0.32	10.00	6.09	0.4	3.0	1.46%	10	15	6.3	123	0.32	129.66	127.87	HEADWALL INLET	DI #40415
DI #40415	CB #40247	12	40,000	0.92	2.13	5	0.13	10.13	6.07	0.4	5.2	1.63%	13	15	6.7	54	0.13	127.55	126.67	DI #40415	CB #40247
CB #40247	ST. MH #40250	13	27,950	0.64	2.77	5	0.01	10.15	6.07	0.4	6.7	4.82%	11	18	13.0	11	0.01	126.66	126.13	CB #40247	ST. MH #40250

PHASE 1 IMPROVEMENTS

CITY OF WILSON

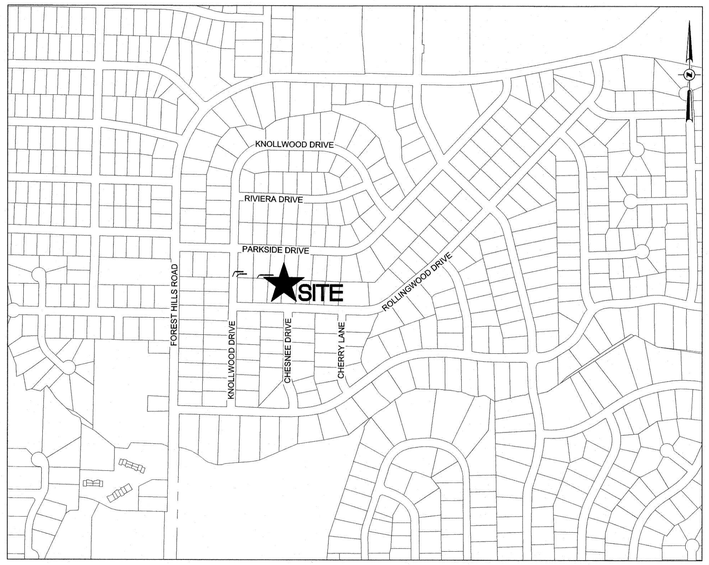
MAYOR: CARLTON L. STEVENS

COUNCIL MEMBERS: GILLETTIA M. MORGAN
WILLIAM THOMAS FYLE
JAMES M. JOHNSON, III
DONALD I. EVANS
LOGAN T. LILES
DERRICK D. CREECH

CITY MANAGER: GRANT GOINGS

SHEET INDEX

SHEET INDEX:



LOCATION MAP
SCALE 1" = 500'

NO ADDITIONS, DELETIONS, CHANGES OR MODIFICATIONS WERE MADE TO THIS PLAN OTHER THAN THOSE REQUESTED BY THE CITY OF WILSON TECHNICAL REVIEW COMMITTEE.

ENGINEER/SURVEYOR/ARCHITECT SIGNATURE & SEAL DATE

GREEN ENGINEERING
WATER, WASTEWATER, SURVEYING, PLANNING, PROJECT MANAGEMENT
NC FIRM LICENSE: P-0115
303 GOLDSBORO ST. E. P.O. BOX 609 WILSON, N.C. 27893
TEL (252) 237-5365 FAX (252) 243-7489 OFFICE @ GREENENG.COM

NORTH CAROLINA PROFESSIONAL SEAL 022594 ENGINEER III LEO GREEN

1-26-2023

PROPOSED STORM DRAIN SCHEDULE

Parkside Drive - Rollingwood Drive Storm Drainage Improvements

10-Year Storm

*FROM	*TO	PIPE RUN	n = INLET AREA (SF)	0.013 INLET AREA (ACRES)	A TOTAL AREA (ACRES)	INLET TIME (MIN)	PIPE TIME (MIN)	tc TIME OF CONC (MIN)	I INTENSITY (IN/HR)	Cc RUNOFF COEFF	Q10 DSCHRG (CFS)	SLOPE (FT/FT)	Dtheo (INCHES)	SIZE (INCHES)	Vfull (FT/SEC)	LENGTH PIPE (FT)	SEGMENT TIME (MIN)	UPPER INVERT	LOWER INVERT	*FROM	*TO
CB #40025	CB #40030	1	104,400	2.40	2.40	10	0.17	10.00	6.09	0.4	5.8	1.54%	13	12	5.6	57	0.17	138.83	137.95	CB #40025	CB #40030
CB #40030	ST. MH #40031	2	18,000	0.41	2.81	5	0.13	10.13	6.07	0.4	6.8	0.50%	17	15	3.7	28	0.13	137.30	137.16	CB #40030	ST. MH #40031
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ST. MH #40011	PROP. ST. MH # 1	8	314,250	7.21	7.21	5	0.43	11.12	5.89	0.4	17.0	1.20%	21	24	7.9	202	0.43	135.92	133.50	ST. MH #40011	PROP. ST. MH # 1
PROP. ST. MH # 1	PROP. ST. MH # 2	9	0	0.00	7.21	5	0.52	11.64	5.80	0.4	16.7	0.77%	22	24	6.3	195	0.52	133.50	132.00	PROP. ST. MH # 1	PROP. ST. MH # 2
PROP. ST. MH # 2	ST. MH #40250	10	0	0.00	7.21	5	0.19	11.83	5.76	0.4	16.6	3.69%	17	24	13.8	157	0.19	132.00	126.20	PROP. ST. MH # 2	ST. MH #40250
HEADWALL INLET	DI #40415	11	52,800	1.21	1.21	10	0.32	10.00	6.09	0.4	3.0	1.46%	10	15	6.3	123	0.32	129.66	127.87	HEADWALL INLET	DI #40415
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CB #40247	ST. MH #40250	13	27,950	0.64	2.77	5	0.01	10.15	6.07	0.4	6.7	4.82%	11	18	13.0	11	0.01	126.66	126.13	CB #40247	ST. MH #40250

LEGEND

- 100 — EXISTING MAJOR CONTOUR
- 101 — EXISTING MINOR CONTOUR
- EXISTING PROPERTY LINE
- EXISTING RIGHT-OF-WAY
- EXISTING EDGE OF PAVEMENT
- EXISTING BACK OF CURB
- OPT — OPT — EXISTING FIBER LINE
- GAS — EXISTING GAS LINE
- EXISTING WATER LINE
- ESD — EXISTING STORM SEWER LINE
- ESS — EXISTING SEWER LINE
- EXISTING SEWER MANHOLE
- EXISTING STORM MANHOLE
- EXISTING DROPINLET
- EXISTING CATCH BASIN
- EXISTING WATER METER
- EXISTING WATER VALVE

GREEN ENGINEERING

WATER, WASTEWATER, SURVEYING, PLANNING, PROJECT MANAGEMENT

NORTH CAROLINA FIRM LICENSE: P-0115

303 GOLDSBORO STREET EAST, P.O. BOX 609 WILSON, N.C. 27893

TEL (252) 237-5365 FAX (252) 243-7489 OFFICE@GREENENG.COM

NORTH CAROLINA PROFESSIONAL SEAL 022594 ENGINEER E. CRAIG GREEN III

1-26-2023

CITY OF WILSON

ROLLINGWOOD DRIVE PHASE 1 IMPROVEMENTS

CITY OF WILSON — WILSON COUNTY, NORTH CAROLINA

EXISTING CONDITIONS

REVISION	DATE	BY

DATE: January 26, 2023

GRAPHIC SCALE

0 50 100

SCALE IN FEET

CLIENT CODE: WILSO
JOB NUMBER: 20-148
FIELD BOOK: RP
CADFILE: 20148 BM-PH_1.dwg
ASCII FILE:
LAST MODIFIED: 26-Jan-23
MODIFIED BY: CBJ

SHEET NO. 2 OF 5

XX-X-XXX

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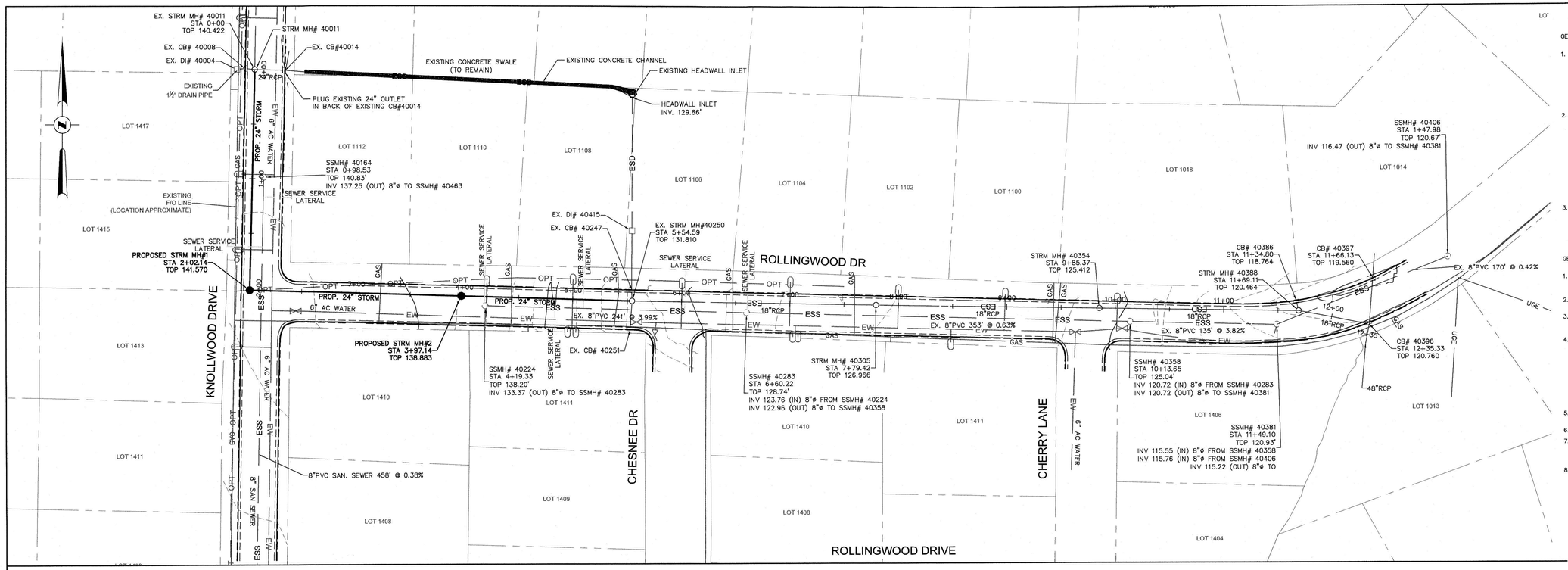


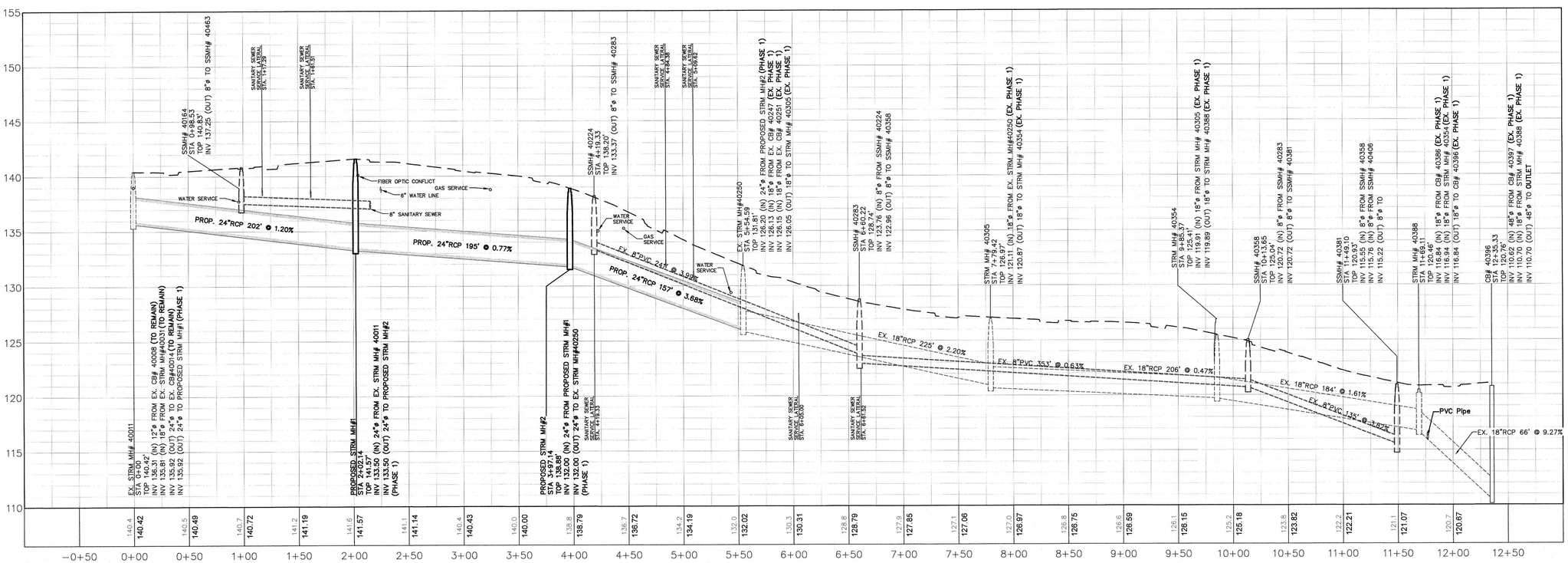
GENERAL PROJECT NOTES

1. THE PURPOSE OF THIS PROJECT IS TO REROUTE THE EXISTING STORM WATER RUNOFF CURRENTLY ENTERING A CONCRETE CHANNEL LOCATED ON THE EAST SIDE OF KNOLLWOOD DRIVE BETWEEN PARKSIDE DRIVE NW AND ROLLINGWOOD DRIVE NW. THE CONCRETE CHANNEL DISCHARGES INTO A DRAINAGE PIPE NETWORK, LOCATED BETWEEN 1106 & 1108 ROLLINGWOOD DRIVE NW, AND DISCHARGES INTO THE PIPED DRAINAGE SYSTEM IN ROLLINGWOOD DRIVE. DURING PERIODS OF MODERATE TO HEAVY RAINFALL THE CONCRETE CHANNEL OVERFLOWS AND CREATES FLOOD CONDITIONS ON THE AFOREMENTIONED LOTS. THIS PROJECT WILL REDUCE THE FREQUENCY OF FLOODING IN THIS AREA.
2. THE PROJECT IS PROPOSED TO BE CONSTRUCTED IN TWO PHASES. PHASE I WILL BE TO INSTALL A SERIES OF 24-INCH DIAMETER STORM DRAINAGE PIPES BETWEEN EXISTING STORM DRAINAGE MANHOLE NO. 40011 ON KNOLLWOOD DRIVE AND STORM DRAINAGE MANHOLE NO. 40250 LOCATED ON ROLLINGWOOD DRIVE WHICH WILL DIVERT THE STORM WATER RUNOFF AWAY FROM THE CONCRETE CHANNEL. ALSO TO BE INSTALLED WITH THE PHASE 1 PROJECT WILL BE TWO CATCH BASINS ON ROLLINGWOOD DRIVE OUT OF EXISTING STORM DRAINAGE MANHOLES NO. 40305 AND 40354. THE INTENT OF THE CATCH BASINS IS TO PROVIDE AN OUTLET FOR THE STORM WATER, THEREBY REDUCING THE HYDRAULIC GRADE LINE, AS THE EXISTING 18 INCH DRAINAGE PIPES BECOME SURCHARGED. STORM WATER WILL BE DISCHSRGED OUT OF THE PROPOSED CATCH BASINS AND ONTO ROLLINGWOOD DRIVE NW AND PREVENT THE DISCHARGE OF STORM WATER OUT OF EXISTING DROP INLET NO. 40415 LOCATED BETWEEN 1106 & 1108 ROLLINGWOOD DRIVE NW IN LOWER TO MEDIUM RAINFALL INTENSITY EVENTS.
3. PHASE II WILL BE TO UPGRADE THE EXISTING 18 INCH STORM DRAINAGE PIPE IN ROLLINGWOOD DRIVE, FROM STORM DRAINAGE MANHOLE NO. 40250 TO CATCH BASIN NO. 40396, TO 24 INCH DRAINAGE PIPE. THE PHASE II PROJECT WILL ONLY BE CONSTRUCTED IF THE PHASE I PROJECT DOES NOT COMPLETELY ELIMINATE FLOODING FREQUENCIES TO THE SATISFACTION OF THE CITY OF WILSON.

GENERAL CONSTRUCTION NOTES

1. A PRE-CONSTRUCTION CONFERENCE SHALL TAKE PLACE AND THOSE IN ATTENDANCE, AT A MINIMUM, SHALL BE REPRESENTATIVES OF THE CITY OF WILSON, GREEN ENGINEERING AND THE CONTRACTOR.
2. THE CONTRACTOR SHALL CALL NC811 TO LOCATE / HAVE LOCATED ALL EXISTING UTILITIES PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITIES.
3. ALL PHASE I AND PHASE II CONSTRUCTION ACTIVITIES SHALL TAKE PLACE WITHIN THE RIGHTS OF WAY OF KNOLLWOOD AND ROLLINGWOOD DRIVES. ACCESS TO PRIVATE PROPERTIES SHOULD NOT BE REQUIRED.
4. THE PROPOSED STORM DRAINAGE IMPROVEMENTS HAVE BEEN DESIGNED AT DEPTHS TO AVOID POTENTIAL CONFLICTS WITH EXISTING RESIDENTIAL SERVICES SUCH AS SANITARY SEWER, GAS AND POTABLE WATER. HOWEVER, IT IS RECOMMENDED THAT THE CONTRACTOR BE REQUIRED TO LOCATE, UNCOVER AND OBTAIN AN ELEVATION ON ALL SANITARY SEWER SERVICES ALONG THE ROUTE OF THE PROPOSED IMPROVEMENTS PRIOR TO THE INSTALLATION OF THE PROPOSED IMPROVEMENTS. IF IT IS DETERMINED THAT A CONFLICT DOES EXIST THERE IS ADEQUATE FALL ALONG THE LENGTH OF THE POJECT TO LOWER THE PROPOSED STORM DRAINAGE PIPE AND AVOID THE CONFLICT. WATER AND GAS SERVICES ARE FLEXIBLE AND NOT GRADE DEPENDENT AND CAN BE ADJUSTED TO AVOID A CONFLICT.
5. ALL ASPHALT REQUIRED TO BE REMOVED FOR INSTALLATION OF THE PROPOSED DRAINAGE IMPROVEMENTS SHALL BE SAWCUT.
6. THERE ARE NO AREAS ALONG THE PROJECT'S LENGTH TO STORE MATERIALS.
7. THE CONTRACTOR SHALL PROVIDE A TRAFFIC CONTROL / TRAFFIC DETOUR PLAN. ROADS SHOULD REMAIN OPEN TO THROUGH TRAFFIC WHEN AND WHERE POSSIBLE AND NO ROADS SHALL REMAIN CLOSED OVER NIGHT UNLESS APPROVED BY THE CITY OF WILSON.
8. THE CONTRACTOR IS RESPONSIBLE FOR KEEPING AN ACCURATE SET OF AS-BUILT DRAWINGS WHICH WILL BE PROVIDED TO THE CITY OF WILSON AND GREEN ENGINEERING UPON COMPLETION OF CONSTRUCTION.

NOTE: LOCATION OFF ALL UTITLIES OTHER THAN SANITARY AND STORM SEWER ARE APPROXIMATE



LEGEND

- PROPOSED STORM SEWER
- PROPOSED STORM MANHOLE
- PROPOSED CATCH BASIN
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING PROPERTY LINE
- EXISTING RIGHT-OF-WAY
- EXISTING EDGE OF PAVEMENT
- EXISTING BACK OF CURB
- EXISTING FIBER LINE
- EXISTING GAS LINE
- EXISTING WATER LINE
- EXISTING STORM SEWER LINE
- EXISTING SEWER LINE
- EXISTING SEWER MANHOLE
- EXISTING STORM MANHOLE
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TEL (252) 237-5365 FAX (252) 243-7489 OFFICE@GREENENG.COM

NORTH CAROLINA PROFESSIONAL SEAL 022594 ENGINEER LEO GREEN
1-24-2023

CITY OF WILSON
ROLLINGWOOD DRIVE PHASE 1 IMPROVEMENTS

CITY OF WILSON — WILSON COUNTY, NORTH CAROLINA

PHASE 1 ROLLINGWOOD DRIVE STORM DRAINAGE IMPROVEMENTS

REVISION	DATE	BY

DATE: January 26, 2023

GRAPHIC SCALES
0 25 50 100
PLAN & PROFILE (HORIZONTAL)
0 5 10
PROFILE (VERTICAL)

CLIENT CODE: WILSO
JOB NUMBER: 20-148
FIELD BOOK: RP
CADFILE: 20148 BM-PH_1.dwg
ASCII FILE:
LAST MODIFIED: 26-Jan-23
MODIFIED BY: CBJ

SHEET NO. 3 OF 5

XX-X-XXX

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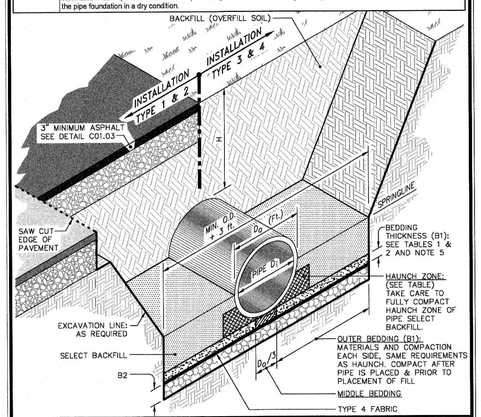
H=	The fill height measured vertically at any point along the pipe from the top of the pipe to the top of the embankment at that point. Do not operate heavy equipment over any pipe culvert until the pipe culvert has been properly backfilled and covered with at least 3 feet of approved material.
	Undisturbed earth material
	Bedding (Middle and Outer): Loosely placed select backfill material meeting NCDOT Class II, Type 1 (washed or unwashed crushed stone screenings) or Class III, Type 1 (NCDOT 2S or 2MS fine aggregate). Leave section directly beneath pipe uncompacted as pipe seating and backfill will accomplish compaction.
	Select Backfill (Below springline): Select backfill material meeting NCDOT Class II, Types 1 or 2 or NCDOT Class III, Types 1 or 2.
	Backfill: Approved suitable local compactable material above springline of pipe meeting City of Wilson specifications.
	Rock Foundation or Unsuitable Material Foundation: Select material NCDOT Class V (#78M stone) or NCDOT Class VI (#57 stone) for foundation conditioning. Encapsulate with engineering fabric as directed by the Engineer. Type 4 soil stabilization fabric (NCDOT Table 1056-1). Overlap all transverse and longitudinal joints in fabric at least 18 inches. Maintain the pipe foundation in a dry condition.



Public Services Departments
1800 Herring Avenue, / P.O. Box 10
Wilson, North Carolina 27894

CITY of WILSON, N.C.
USE WITH THE CITY OF WILSON STANDARD SPECIFICATIONS ONLY

Voice (252) 399-2465
FAX (252) 399-2453
www.wilsonnc.org

STORM DRAIN PIPE INSTALLATION

SCALE: Not To Scale | DETAIL # 631.01
REVISION DATE: June, 2019 | SHEET # 1 of 2

Table 1
Equivalent USCS[a] and AASHTO Soil Classifications for SIDD[b] Soil Designations

SIDD	USCS	NCDOT/AASHTO
Gravelly Sand (Category I)	SW, SP, GW, GP	- NCDOT Class II-Type I (crushed stone screenings), LL < 30; PI ≤ 6. - NCDOT Class III, Type 1 (2S or 2MS), LL < 30; PI ≤ 6.
Sandy Silt (Category II)	GM, SM. Also GC, SC with less than 20% passing #200 sieve	- NCDOT Class II Type 1 (crushed stone screenings) and Class II, Type 2 (AASHTO M145 for A-2-4 with maximum PI of 6, A-4 w/ max 45% passing No. 200 Sieve and a maximum PI of 6) - NCDOT Class III, Type 1 (2S or 2MS) or Class III, Type 2 (AASHTO M145 for soil classification A-1 or A-3)
Silty Clay (Category III)	CL, MH, GC, SC	A5, A6

[a] Unified Soil Classification System
[b] Standard Installations Direct Design

Table 2
Standard Installations Soils and Minimum Compaction Requirements

Installation Type	Bedding Thickness	Outer Bedding (B1) Note 5 (% compaction/Category)	Haunch Zone & Select Backfill Area (% compaction/Category)	Location
Type 1	B1 = Do/6 (6" min) B2 = If Rock foundation or over unsuitable foundation, ½'ft of 'H', 12" min/24" max	95% Category I	90% Category I, 95% Category II	Paved Areas with 2' or less bury
Type 2	B1 = Do/6 (6" min) B2 = If Rock foundation or over unsuitable foundation, ½'ft of 'H', 12" min/24" max	90% Category I	85% Category I, 90% Category II	Paved Areas with greater than 2' of bury
Type 3	B1 = Do/6 (6" min) B2 = If Rock foundation or over unsuitable foundation, ½'ft of 'H', 12" min/24" max	85% Category I 90% Category II	85% Category I, 90% Category II, or 95% Category III	In R/W outside of Pavement
Type 4	B1 = Do/6 (6" min) B2 = If Rock foundation or over unsuitable foundation, ½'ft of 'H', 12" min/24" max	No Compaction required, except if Category III, use 85% Category III	No Compaction required, except if Category III, use 85% Category III	Natural Areas

NOTES:

1. Compaction and soil symbols – i.e. '95% Category I' – refers to Category I soil material with minimum standard Proctor compaction of 95%.
2. Soil in the outer bedding, haunch, and lower side zones, except under the middle 1/3 of the pipe, shall be compacted to at least the same compaction as the majority of the soil in the overfill (backfill) zone.
3. For trenches, the top elevation shall be no lower than 0.1H below finished grade or, for roadways, its top shall be no lower than an elevation of 1-foot below the bottom of the pavement base material.
4. For trenches, the width shall be wider than shown if required for adequate space to attain the specified compaction in the haunch and bedding zones.
5. Compact outer bedding after pipe is placed and prior to placement of select fill. Middle bedding is uncompacted.
6. Overfill (Backfill) soils to be placed per standard specification 02630 Storm Drainage for the applicable backfill type and bury limitations.
7. These two tables were excerpted from Design Data 9 and modified to generally conform to the NCDOT Standards as shown in Detail 300.01, Rigid Pipe in Trench Condition.

Reference Sources:

1. ACPA Design Data 9 [April, 2009] (formerly Design Data 40).
2. 2018 NCDOT Standard Specifications for Roads and Structures and NCDOT Standard Details 300.01 for Rigid Pipe, 'Trench Condition.'

Public Services Departments
1800 Herring Avenue, / P.O. Box 10
Wilson, North Carolina 27894

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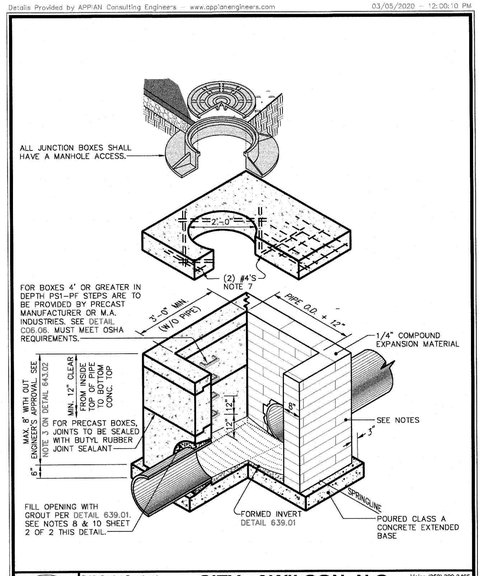
STORM DRAIN PIPE INSTALLATION

SCALE: Not To Scale | DETAIL # 631.01
REVISION DATE: June, 2019 | SHEET # 2 of 2



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TYPICAL JUNCTION BOX DETAIL

SCALE: Not To Scale | DETAIL # 634.01
REVISION DATE: June, 2019 | SHEET # 1 of 2

NOTES:

1. Use either concrete building brick – ASTM C55, grade N, type 1 or clay brick – ASTM C32, grade MS.
2. Mortar to be type M.
3. Concrete pipe to be class III.
4. Reinforcing shown is adequate for a maximum clear span of 4' based on 200 PSF live load plus weight of top (Non traffic). NCPE to design for loads & spans that are greater. If traffic bearing, design for H20 loading.
5. Precast boxes to conform to latest ASTM C-913.
6. All boxes over 4' in depth shall be provided with steps (12" O.C.).
7. Provide 2' diameter opening and additional edge & diagonal reinforcing in concrete top at Manhole frame access.
8. All penetrations in boxes shall be inspected prior to backfilling structure with stone around pipe.
9. For precast boxes, provide a minimum of 6" of #57 stone for bedding.
10. Place #57 stone around pipe penetrations into box. See detail 639.01.
11. All Iron Castings to be domestic made.
12. Engineer to review shop drawings prior to approving / fabricating pre-fabricated concrete box & slabs. Applies to both private and public jobs.
13. No corner entry allowed on either precast or brick boxes. (Detail 639.01)
14. Precast bottom slab allowed in lieu of poured in place class A concrete extended base.
15. See detail 634.03 for minimum precast box depths & clearances.

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TYPICAL JUNCTION BOX DETAIL

SCALE: Not To Scale | DETAIL # 634.01
REVISION DATE: July, 2019 | SHEET # 2 of 2

Drainage Structures Notes:

1. Boxes may be reinforced masonry, masonry, precast concrete or cast-in-place reinforced concrete.
2. Any non-standard box (non-standard meaning not shown in this manual), is to be designed by a NC Professional Engineer and approved by the City Engineer.
3. The maximum height of an un-reinforced masonry drainage structure with 8" walls shall be limited to 8'-0" from invert of the outlet pipe to the top of the casting. Depths greater than 8'-0" shall have walls 12" thick. Basins over 12' in total depth shall be designed by a NC Professional Engineer and approved by the City engineer. Four inch walls are not allowed on drainage structures. Bottom slab on structures shall be reinforced when box depth exceeds 8 ft. All reinforced slabs to be designed H20, detailed by a NC Professional Engineer and approved by the City engineer.
4. Steps are to be provided on all basins deeper than 48".
5. Steps are to be PS1-PF as manufactured by M. A. Industries or an approved equal. Locate on non-pipe walls. Steps shall meet OSHA requirements.
6. Mortar in masonry boxes is to be type M.
7. Clay brick structures are not to be allowed.
8. Concrete pipe is to be minimum class III.
9. Concrete building brick is to meet ASTM C-55, Grade N, Type 1 and must be NCDOT standard.
10. All cast-in-place or precast concrete drainage structures located in paved areas accessible to truck loadings to be designed to meet AASHTO HS 20-44 loading. See manufacturers details for wall, top and bottom thickness.
11. Inside of boxes shall allow for 8" of clearance on both sides of pipe. The dimension shown on the structures in this manual are minimum dimensions. For boxes with greater dimensions, either corbel walls, add a reinforced concrete top slab or lengthen box by adding additional grates & frames. Top and bottom slabs to be designed by NC Professional Engineer and approved by the City Engineer for H20 loading.
12. Maximum horizontal span of an 8" thick wall shall not exceed 8' for boxes of 8 feet or less in depth and 10 feet for boxes 12 feet or less in depth.
13. See detail 634.03 for minimum precast box depths & clearances.
14. Engineer to review shop drawings prior to approving / fabricating pre-fabricated concrete box and slab. Applies to both private and public jobs.
15. No corner entry allowed on either precast or brick boxes. (Detail 639.01)

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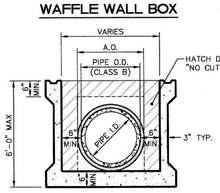
DRAINAGE STRUCTURES NOTES

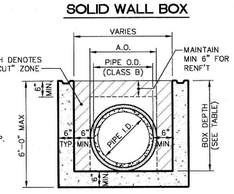
SCALE: Not To Scale | DETAIL # 634.02
REVISION DATE: July, 2019 | SHEET # 1 of 1

MINIMUM PRECAST BOX DEPTHS AND CLEARANCES

WAFFLE WALL BOX



SOLID WALL BOX



PIPE I.D.	PIPE O.D. (WALL THK)	TYPICAL A.O. (ANNULAR OP'G [A])	MIN BOX BASE DEPTH [B]
15"	19 1/2" (2 1/4")	24"	30"
18"	23" (2 1/2")	28"	34"
24"	30" (3")	36"	42"
30"	37" (3 1/2")	42"	48"
36"	44" (4")	48"	54"
42"	51" (4 1/2")	57"	63"
48"	58" (5")	64"	70"

[A] CAST BY BOX MANUFACTURER
[B] OTHERWISE USE BRICK BOX

NOTES:

1. Waffle boxes cannot be used in load bearing applications unless approved on a case-by-case basis by the city engineer.

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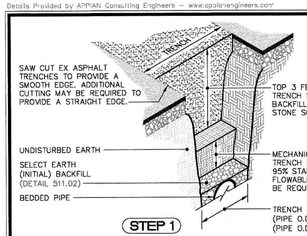
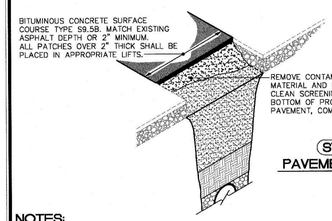
MINIMUM PRECAST BOX DEPTHS & CLEARANCES WAFFLE WALL BOX

SCALE: Not To Scale | DETAIL # 634.03
REVISION DATE: July, 2019 | SHEET # 1 of 1



STEP 1
TRENCH CUT AND TEMPORARY BACKFILL



STEP 2
PAVEMENT REPAIR

NOTES:

1. See Detail 511.01 for location of metallic tape and locating element (e.g. tracer wire) over all pipelines.
2. All exposed asphalt surfaces shall be tacked.
3. A min. 1 1/2" thick overlay of type S9.5B asphalt, 25 lf each way along pavement from c/l of trench may be required by the city.
4. Detail applies to max 4' x 4' square cuts. Saw cut ex. asphalt when trench.

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PAVEMENT SURFACE REPAIR

SCALE: Not To Scale | DETAIL # C01.03
REVISION DATE: July, 2019 | SHEET # 1 of 1

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TEL (252) 237-5365 FAX (252) 243-7489 OFFICE@GREENENG.COM

NORTH CAROLINA PROFESSIONAL SEAL 022594 ENGINEER LEO GREEN III
1-26-2023

CITY OF WILSON
ROLLINGWOOD DRIVE PHASE 1 IMPROVEMENTS

CITY OF WILSON — WILSON COUNTY, NORTH CAROLINA

DETAILS

REVISION	DATE	BY

DATE: January 26, 2023
GRAPHIC SCALE (AS SHOWN)

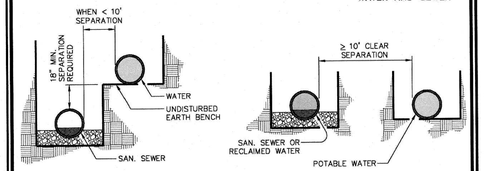
CLIENT CODE: WILSO
JOB NUMBER: 20-148
FIELD BOOK: RP
CADFILE: 20148 BM-PH_1.dwg
ASCII FILE:
LAST MODIFIED: 26-Jan-23
MODIFIED BY: CBJ

SHEET NO. 4 OF 5

XX-X-XXX

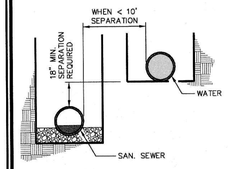
PARALLEL INSTALLATIONS

WATER AND SEWER

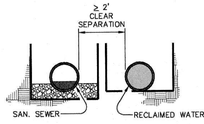


(P1) POTABLE WATER BENCHED CONDITION
< 10' HORIZONTAL SEPARATION

(P3) POTABLE WATER TRENCHED CONDITION
≥ 10' HORIZONTAL SEPARATION



(P2) POTABLE WATER TRENCHED CONDITION
< 10' HORIZONTAL SEPARATION



(P4) RECLAIMED WATER TRENCHED CONDITION
≥ 2' HORIZONTAL SEPARATION
NOTE: IF LESS THAN 2' HORIZONTAL SEPARATION, USE (P1) OR (P2) TYPE INSTALLATION

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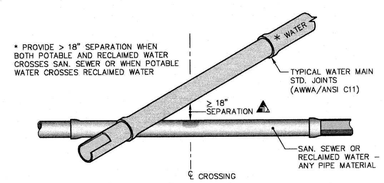
MINIMUM SEPARATION OF UTILITIES AND OTHER FEATURES

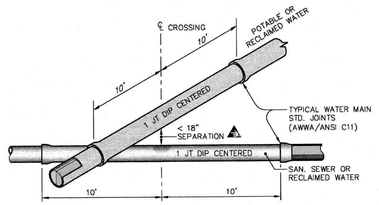
SCALE: Not To Scale | DETAIL # C01.04 | REVISION DATE: June, 2010 | SHEET # 1 of 5

PERPENDICULAR CROSSING

WATER AND SEWER



(C1) PREFERRED CONDITION
POTABLE OR RECLAIMED WATER ABOVE SAN. SEWER WITH ≥ 18" SEPARATION



(C2) POTABLE OR RECLAIMED WATER ABOVE SAN. SEWER WITH < 18" SEPARATION

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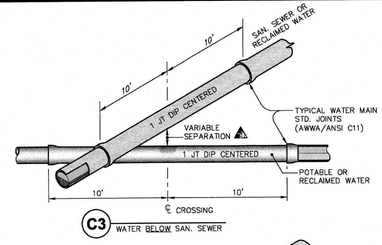
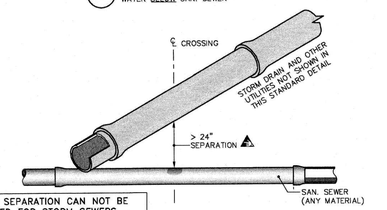
MINIMUM SEPARATION OF UTILITIES AND OTHER FEATURES

SCALE: Not To Scale | DETAIL # C01.04 | REVISION DATE: June, 2010 | SHEET # 2 of 5



(C3) WATER BELOW SAN. SEWER



IF 24" SEPARATION CAN NOT BE ACHIEVED FOR STORM SEWERS, ENGINEERING SOLUTIONS SUCH AS DUCTILE IRON PIPE (SEWER) OR STRUCTURAL BRIDGING TO PREVENT CRUSHING THE UNDERLYING SEWER PIPE ARE ALLOWED.

(C4) PREFERRED CONDITION
STORM DRAIN ABOVE SAN SEWER WITH ≥ 24" SEPARATION

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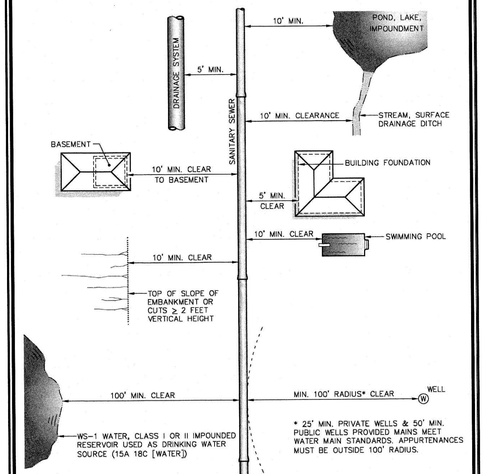
MINIMUM SEPARATION OF UTILITIES AND OTHER FEATURES

SCALE: Not To Scale | DETAIL # C01.04 | REVISION DATE: June, 2010 | SHEET # 3 of 5

MINIMUM LATERAL OFFSET REQUIREMENTS



* 25' MIN. PRIVATE WELLS & 50' MIN. PUBLIC WELLS PROVIDED MAINS MEET WATER MAIN STANDARDS. APPURTENANCES MUST BE OUTSIDE 100' RADIUS.

REFERENCES: 15A NCAC 02L (GROUNDWATER QUALITY STANDARDS), 02C (WELLS), 02T (SEWER), AND 18C (WATER)

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MINIMUM SEPARATION OF UTILITIES AND OTHER FEATURES

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1-26-2023

CITY OF WILSON

ROLLINGWOOD DRIVE PHASE 1 IMPROVEMENTS

CITY OF WILSON — WILSON COUNTY, NORTH CAROLINA

DETAILS

REVISION	DATE	BY

DATE: January 26, 2023
GRAPHIC SCALE (AS SHOWN)

CLIENT CODE: WILSO
JOB NUMBER: 20-148
FIELD BOOK: RP
CADFILE: 20148 BM-PH_1.dwg
ASCII FILE:
LAST MODIFIED: 26-Jan-23
MODIFIED BY: CBJ

SHEET NO. 5 OF 5

XX-X-XXX