LONGSTREET DRIVE IMPROVEMENTS

WILL BE IN CHAR Associated with Code Section 10	THE BELOW IS DESIGNATED AS THE RESPONSIBLE LAND DISTURBER WHO GE OF AND RESPONSIBLE FOR CARRYING OUT THE LAND DISTURBING ACTIVIT THIS PROJECT. THIS PERSON MEETS THE APPLICABLE REQUIREMENTS OF 0.1-563 AND 10.1-566 BY VIRTUE OF THE FOLLOWING:
RESPO	NSIBLE LAND DISTURBER CERTIFICATE
DCR C INSPEC	ERTIFICATION FOR COMBINED ADMINISTRATOR, ADMINISTRATOR, PLAN REVIEW
<u> X </u>	A PROFESSIONAL ENGINEER, LAND SURVEYOR, LANDSCAPE ARCHITECT, CHITECT.
RESPONSIBLE	E LAND DISTURBER CONTACT INFORMATION:
NAME (SIGNATUR	E) DATE
NAME (PRINT)	CHRISTOPHER J. LARGY, P.E.
CERTIFICATION/R	EGISTRATION NUMBER 0402063160
COMPANY	MICHAEL BAKER INTERNATIONAL
MAILING ADDRESS	272 BENDIX ROAD, VIRGINIA BEACH, VA. 23452-1367
TELEPHONE	(757) 463-8770 FAX (757) 463-0503
EMAIL	JDIBATTISTA@MBAKERINTL.COM
THIS DESIGNATI BE SUBMITTED	ON MAY ONLY BE CHANGED BY A PLAN COVER SHEET REVISION THAT MUST TO THE CITY FOR VERIFICATION AND APPROVAL.
THE DEPARTMEN COMMENCEMENT PRE-CONSTRUC	VT OF ENGINEERING MUST BE CONTACTED AT LEAST 48 HRS. PRIOR TO THE OF ANY LAND DISTURBING ACTIVITY IN ORDER TO SCHEDULE A TION MEETING. PLEASE CALL (757) 933–2311.
CONTRACTOR S REQUEST FOR PRIOR TO COM THE ABOVE RE ISSUANCE OF	HALL COMPLETE AND SUBMIT A COPY OF THE COVER SHEET WITH RESPONSIBLE LAND DISTURBER DESIGNATION AND RECEIPT OF PERM MENCEMENT OF WORK. SPONSIBLE LAND DISTURBER DESIGNATION SHALL TERMINATE UPON A NOTICE TO PROCEED TO A CONTRACTOR.



INTERNATIONAL



CITY OF MANASSAS MANASSAS, VIRGINIA



VICINITY MAP Scale: 1"=1000'

PREPARED BY:

MICHAEL BAKER INTERNATIONAL, INC. 10611 BALLS FORD ROAD, SUITE 140 MANASSAS, VA 20109

OCTOBER 2022

PROJECT STATISTICAL **INFORMATION**

TAX PARCEL NO.		N/A
PARCEL ZONING		R1
TOTAL PROJECT AREA	4.58	AC
EXISTING IMPERVIOUS AREA	2.85	AC
PROPOSED IMPERVIOUS AREA	3.40	AC
OPEN TRENCH WITHIN PAVED AREA	7,500	LF
OPEN TRENCH WITHIN GRASSED AREA	2,030	LF
TOTAL DISTURBED AREA	1.14	AC

<u>NOTES</u>

- 1. LAND DISTURBANCE WIDTH AT THE OPEN TRENCH IS APPROXIMATELY:
- 1.1. THREE (3) FEET (WATER)
- 1.2. FOUR (4) FEET (SEWER)
- 1.3. 3.5 TO SEVEN (7) FEET (STORMWATER, VARIES BY PIPE SIZE)
- 1.4. ONE (1) FOOT (WATER SERVICE LINE)
- 1.5. 1.5 FEET (SANITARY LATERAL)

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING ALL OFF-SITE ACTIVITIES, STAGING, LAYOUT AND STORAGE AREAS UTILIZE APPROPRIATE VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES, INCLUDING BUT NOT LIMITED TO SILT FENCE, INLET PROTECTION, ETC. THESE EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL ANDBOOK, LATEST EDITION, AND SHALL BE PLACED PRIOR TO, OR AS THE FIRST STEP IN, ESTABLISHING THE OFF—SITE AREA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THESI MEASURES UNTIL THE OFF-SITE AREA IS RESTORED AND PERMANENT STABILIZATION HAS OCCURRED. AND FOR INSTALLATION AND MAINTENANCE OF ANY ADDITIONAL CONTROL MEASURES NECESSARY T PREVENT EROSION AND SEDIMENTATION AS DEEMED NECESSARY BY THE CITY OF MANASSAS DURING USE OF THE OFF-SITE AREA. ALL OFF-SITE ACTIVITIES AND/OR PRIVATE AGREEMENTS FOR STAGING AND STORAGE AREAS ARE TO BE NEGOTIATED BY AND BETWEEN THE CONTRACTOR AND THE RESPECTIVE LAND OWNER(S), WITH A COPY OF THE AGREEMENT BEING PROVIDED TO THE CITY OF MANASSAS PRIO TO RIGHT-OF-WAY PERMIT ISSUANCE.

3. THIS PROJECT APPEARS TO BE IN ZONE X (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN). REFERENCE: FEDERAL EMERGENCY MANAGEMENT AGENCY, FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NUMBER 51153C0113D, MAP REVISED JANUARY 5, 1995.

No.	DATE	BY	REVISION

2022

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OCTOBER

IMPROVEMENTS

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LOCATION MAP Scale: 1"=1000'

CITY OF MANASSAS DEPARTMENT OF UTILITIES

DESIGNED: DRAWN: TNB CHECKED:

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	WEEMS ROAD IMPROVEMENTS - STA. 110+00 TO STA. 112+00
6A 6D	LONGSTREET DRIVE IMPROVEMENTS STA 32+50 TO STA 45+22
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8(18) VS 1 TO VS 25	SANITARY AND STORM SEWER DETAILS
XS-26 TO XS-28	WEEMS ROAD - CROSS SECTIONS

Michael Baker Intl., Inc. 10611 Balls Ford Road, Suite 140 Manassas, Virginia 20109 (703) 334-4915 Fax (703) 334-4914

EXISTING STRUCTURES & FEATURES

PROPOSED	FEATURES

—— E ——	Underground Electric
T	Underground Telephone
TV	Underground TV
——— FO ———	Underground Fiber Optic
UNK	Unknown Utility
0	Indicates IPF
•	Post
_	Sign
Μ	Mailbox
\oslash	Water Valve
\bigotimes	Water Meter
-\$-	Fire Hydrant
\longrightarrow	Guy Wire
G⊳	Gas Valve
Ø	Utility Pole
®	Satellite Dish
\bigcirc	Bush
S	Sanitary Manhole
ST	Storm Manhole
	Gravity Sewer Line
$\frown \frown \frown \frown \frown \frown \frown$	Woods Line
W	Water Main
G	Natural Gas Line
	Property Line/ R/W
====	Ex. Storm Sewer
OHE	Overhead Electric
	Ex. Stream
	Ex. Utility Easement

	= Curb & Gutter
	- Grading Limits: Cut
	— Grading Limits: Fill
	— Limits of Disturbance
	Temporary Construction Easement
	Proposed Mill & Overlay
	Proposed Full Depth
	Proposed 5' Sidewalk
	Proposed Storm Pipe
∘□○□	Proposed Storm Structure
	— Sawcut
	Curb and Gutter
	Storm Drain Pipe
•	Abandon Existing Storm
	Demolition of Existing Storm Structure
	Driveway Demolition
	Full Depth of Asphalt Pavement Demolition
	Existing Sidewalk
Μ	Existing Mailbox to be Relocated
P	Inlet Protection
CP	Culvert Protection
	EC-1 Outlet Protection
	Check Dam
SF	– Silt Fence
	Blankets/Matting
	Proposed Water Main
	- Valve
-\$-	- Fire Hydrant
	- Reducer
——————————————————————————————————————	- Cap Existing Water Main
/W//	_ Water Main To Be
	_ Sewer Line To Be
	Replaced In-Trench

ABBREVIATIONS

ACP – ASPHALT CONCRETE PAVEMENT

- C&G CURB AND GUTTER LOD – LIMITS OF DISTURBANCE
- PCC PORTLAND CEMENT CONCRETE
- (QLD) QUALITY LEVEL D (RECORDS DRAFTING)
- R/W RIGHT–OF–WAY
- TCE TEMPORARY CONSTRUCTION EASEMENT

CITY OF MANASSAS LONGSTREET DRIVE IMPROVEMENTS LOCATION MAP, SHEET INDEX, & LEGEND PROJECT

OCTOBER 2022 SHEET

GENERAL NOTES:

1. The Contractor shall contact the following in writing 14 days prior to start of construction in close proximity to the following areas/factilties: Dominion Virginia Power – Andrew Brooks (804) 771–3655 Northern Virginia Electric Cooperative – George Coutts (703) 392–1519 Verizon – William Lacy (703) 369–9571 Comcast – Paul Gum (703) 480–7812 FiberLight, LLC – Perry Jackson (703) 774–5588 Level (3) Communications, LLC – Megan Sturdevant (720) 888–3860 Washington Gas - (703) 750-4745 Survey information is based on the VCS 1983 for the horizontal datum, and the NAVD 2.

- 1988 for the vertical datum. All stationing and distances shown in the Drawings are based on horizontal 3. measurements.
- 4. Existing utilities, pipelines, and structures shown on the Drawings are provided by subsurface utility engineering. The Contractor shall notify Miss Utility prior to beginning any excavation. The Contractor shall verify the exact location, size, type, and elevation of all existing pipelines and structures.
- 5. The Contractor shall comply with all requirements of the VDOT Work Area Protection Manual. The Contractor shall utilize VDOT Work Area Protection Manual guidelines for establishing traffic control measures for construction.
- 6. Stations for appurtenances shown on the Drawings are intended as a guide to show approximate locations.
- Any existing structures, including fences, removed to facilitate installation of the Project 7. shall be reinstalled to their original condition upon completion of construction, unless indicated otherwise in the Drawings. If any such structure is damaged as a result of construction activities, it shall be replaced by the Contractor, at no additional cost to the City.

PAVEMENT NOTES:

1. The pavement materials on this project will be paid for on a tonnage basis. The weight will vary in accordance with the specific gravity of the aggregates and the asphaltic content of the mix actually used to secure the design depth. The weight of the asphalt concrete is based on 95% of theoretical maximum density. (See IIM-LD-158)

DRAINAGE NOTES:

1. The horizontal location of all drainage structures shown on these Drawings is approximate only, with the exception of structures showing specific stations and storm sewer systems.

- 2. The horizontal location and invert elevation(s) shown for proposed end walls, culverts, and storm sewer outfall pipes are based on required design criteria and existing site conditions at the time of survey. If, during construction, it is found that the horizontal location and/or invert elevation(s) shown on the Drawings differ significantly from the horizontal location or elevation(s) of the stream or swale in which the end wall, culvert or storm sewer outfall pipe is to be placed, the Contractor shall confer with, and obtain approval from, Engineer and City of Manassas prior to installing the end wall, culvert, or storm sewer outfall pipe.
- The "H" dimensions shown on the Drawings for drop inlets and junction boxes, and the "L.F." dimensions shown for manholes, are for estimating purposes and are based on the proposed invert elevations shown for the structure and the anticipated top (rim) elevation based on existing or proposed finished grade. The actual "H" or "L.F." dimensions are to be determined by Contractor from field conditions.
- 4. All pipe on this Project shall be Class III. For strength, sheet thickness, or class designation, available sizes, height of cover limitations, and other restrictions for a particular pipe type or height of cover, see the applicable sections of the VDOT Road and Bridge Standards PC-1.
- The proposed riprap may be omitted by the City of Manassas if the slope designated for 5. placement of riprap is found to be comprised of solid rock or closely consolidated boulders with soundness, size, and weight equal to, or exceeding, the specifications for the proposed riprap.
- 6. All existing drainage facilities labeled "To Be Abandoned" shall be left in place, backfilled, and plugged in accordance with the VDOT Road and Bridge Standard PP-1. Basis of Payment will be C.Y. of Flowable Backfill.
- Existing drainage facilities being utilized as a part of the drainage system, and 7. designated on the plans "To Be Cleaned Out", shall be cleaned as directed by the City of Manassas. The cost incidental to this shall be included in the contract price for other items.
- 8. Proposed drop inlets with a height (H) less than the standard minimum shown in the VDOT Road and Bridge Standards shall be considered and paid for as Standard Drop Inlets for the type specified. Pipes with less than standard minimum finished height of cover shall be noted as such in the drainage description for the pipe. Specific pipe bedding and cover requirements are provided in the applicable PB-1 and PC-1 standard drawings of the VDOT Road and Bridge Standards.
- Where the plans specify the installation of standard curb drop inlets adjacent to the City of Manassas Standard Curb and Gutter, the Standard Drop Inlets (as shown in the VDOT Road and Bridge Standards) shall be modified in accordance with details shown on sheet number (specify sheet number). These drop inlets shall be considered and paid for as Standard Drop Inlets for the type specified.
- 10. When Standard CG-6 or CG-7 is specified on a radius (such as at a street intersection), the City of Manassas may approve a decrease in the cross slope of the gutter to facilitate proper drainage.

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- 1. Working pressure for this Project shall be approximately 100 psi. Pipe shall be pressure 1. Prosecute the Work from Grant Avenue toward Weems Road, installing utilities prior to tested at 200 psi for 2 hours. installing/replacing curb and autter, installing sidewalk, and milling/overlaving pavement. Contractor shall conform to Virginia State Board of Health regulations (Part III Manual of Install E&SC measures for MOT Phases I and II. 2. Practice for Waterworks Design) Article 6, Section 12 VAC 5-590-1150, when crossing Replace water main and service lines, and sewer laterals to Traveller Street. Place water under all sanitary sewer lines. main between Grant Avenue and Traveller Street into service. These Drawings show a proposed top and bottom of pipeline, separation at utility 3. Install/replace storm sewer near Traveller Street. crossings, and pipeline cover requirement based on the use of ductile iron pipe for the Replace curb and gutter, install sidewalk, and mill and overlay pavement from Grant new water mains. All conflicts between elevation and cover requirements shall be Avenue to Traveller Street. immediately brought to the attention of the City of Manassas' Public Utilities. Install E&SC measures for MOT Phase III. Remove E&SC measures for MOT Phase I if Where it is necessary to deflect the pipe to the maximum allowable deflection, it shall be sufficient ground cover has been established for stabilization and upon approval of the 4. in accordance with the Contract Specifications. City inspector. 5. The proposed pipeline shall be installed with 3.5 feet minimum of earth cover in all Install storm sewer bypass from upstream of J12 to Longstreet Drive existing cross line. locations, except where otherwise shown or specified. Install new storm sewer main on Longstreet Drive, from Structure J1 to Structure J3. The Contractor shall be responsible for establishing and maintaining all lines and grades Install and plug first section of pipe from Structure J3 to Structure J4. Switch bypass necessary for water main installation. discharge from existing cross line to new cross line. Valves and fittings may be shifted as directed by City of Manassas or its Engineer to Install remainder of new storm sewer main, from J3 to J12. Remove storm sewer minimize field cuts. Adjusted stationing shall be shown on the Record Drawings prepared bypass. by the Contractor. Critical items as determined by City of Manassas or its Engineer shall 10. Install storm sewer branch connections serving remaining "J" structures. be installed to the exact position shown. 11. Replace water main and service lines, and sewer laterals, from Traveller Street to No additional payment will be made for restraining valves for testing purposes not shown Jackson Avenue. Place water main between Traveller Street and Jackson Avenue into on the Drawings as restrained. service.
- Contractor shall check in advance the size of all interconnections and submit tie-in details to be reviewed and approved by Engineer and City of Manassas.
- 10. All ductile iron pipe shall have the exterior coated with a layer of arc-sprayed zinc conforming ISO 8179-1. All ductile iron fittings shall have the exterior coated with zinc-rich paint conforming to ISO 8179-2. The zinc application rates shall be 200 g/m^2 of pipe surface area for arc-sprayed zinc and 150 g/m^2 for zinc-rich paint. A finishing topcoat shall be applied to the zinc. Fusion-bonded epoxy coating (6-8 mil thickness) of interior and exterior surfaces of fitting is an acceptable alternative to zinc coating with cement mortar lining.

SANITARY SEWER NOTES:

- 1. The in-trench sanitary sewer replacement requires by-pass pumping. Contractor shall prepare a sequence of construction for the sanitary sewer main and lateral replacements and submit to the City for review and approval prior to commencing sewer replacement
- 2. Contractor shall locate existing sanitary lateral connections along existing sanitary sewer gravity main and replace existing laterals in kind. Contractor shall replace laterals between the main and the property line cleanout.
- 3. Contractor to determine actual location of proposed sewer lateral into sewer main pipe, as well as existing property line clean—outs for reconnection to private sewer laterals. If no cleanout is found, Contractor shall install clean-out at the property line.
- Contractor shall field verify all lateral connections before proceeding with the work. Contractor to avoid conflicts with existing utilities and proposed water service lines. 5.
- Sewer cleanouts shall be 4". All service laterals must be connected to the sewer main 6. pipe by means of a pre-manufactured tee or wye, or with an approved saddle type connection, see details on Sheet 8(14). Prior to cutting the existing sewer main, the installed saddle shall be subjected to a ten-foot hydro-static head (4.3 PSI).
- Any sanitary laterals abandoned in place shall be grouted full with flowable fill. When replacing sanitary sewer main, sanitary laterals connecting to the main shall be 8. installed as the work progresses.

Michael Baker
 INTERNATIONAL
 Manassas, Virginia 20109

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 (703) 334-4915

 Fax (703) 334-4914
 Fax (703) 334-4914

Michael Baker Intl., Inc. 10611 Balls Ford Road, Suite 140

SUGGESTED SEQUENCE OF CONSTRUCTION:

- 12. Install/replace curb and gutter, install sidewalk, and mill and overlay pavement from Traveller Street to Jackson Avenue.
- 13. Install E&SC measures for MOT Phase IV. Remove E&SC measures for MOT Phase II if sufficient around cover has been established for stabilization and upon approval of the City inspector.
- 14. Replace water main and service lines, and sewer main and laterals, from Jackson Avenue to Weems Road. Place water main between Jackson Avenue to Weems Road into service. 15. Install curb and gutter, install sidewalk, and mill and overlay pavement from Jackson Avenue toward Weems Road.
- 16. Install/replace storm sewer system at Weems Road. Complete installation of curb and gutter, and sidewalk, and milling/overlaying pavement to Weems Road.
- 17. Install E&SC measures for MOT Phase V, and remove E&SC measures for MOT Phase III if sufficient around cover has been established for stabilization and upon approval of the City inspector.
- 18. Replace water main and service lines, and sewer main and laterals, from Weems Road to Portner Avenue, and place water main into service.
- 19. Mill and overlay pavement on Longstreet Drive from Weems Road to Portner Avenue. 20. Remove E&SC measures for MOT Phase IV if sufficient ground cover has been established for stabilization and upon approval of the City inspector.
- 21. Install curb and gutter, and sidewalk, from Weems Road to Sudley Road. Mill and overlay pavement.
- 22. Remove E&SC measures for MOT Phase V if sufficient ground cover has been established for stabilization and upon approval of the City inspector.



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CITY OF MANASSAS LONGSTREET DRIVE IMPROVEMENTS LONGSTREET DRIVE - ALIGNMENT DATA

Michael Baker Intl., Inc. 10611 Balls Ford Road, Suite 140 Manassas, Virginia 20109 (703) 334-4915 Fax (703) 334-4914

300 Ft. 1"=150'

SCALE

150' 0



PROJECT

OCTOBER 2022 SHEET 1A(1)



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		SCALE		
25	0	25	<u>5</u> 0 Ft.	1"=25'



CITY OF MANASSAS LONGSTREET DRIVE IMPROVEMENTS EXISTING CONDITIONS

PROJECT

OCTOBER 2022 SHEET 1B(1)



CITY OF	MANASSAS
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UTI	LITIES

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		SCALE		
25	0	25	50 Ft.	1"=25'

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CITY OF MANASSAS LONGSTREET DRIVE IMPROVEMENTS EXISTING CONDITIONS

PROJECT

OCTOBER 2022 SHEET 1B(2)



UTILITIES

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NO. DATE

EXISTING CONDITIONS

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OCTOBER 2022 SHEET 1B(3)



CHECKED:

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NO. DATE

EXISTING CONDITIONS

PROJECT

OCTOBER 2022 SHEET 1B(4)

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NO. DATE



EXISTING CONDITIONS



OCTOBER 2022 SHEET 1B(6)





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NO. DATE





CITY OF MANASSAS LONGSTREET DRIVE IMPROVEMENTS GRANT AVE & LONGSTREET DR - MOT PHASE I

SIGN SCHEDULE

<u>SIGNAGE</u>	<u>SIGN SIZE</u>	STANDARD <u>NUMBER</u>	ESTIMATED QUANTITY
END DETOUR	24"x18"	M4-8A	3
	36"x30"	M4-V1	1
	36"x30"	M4-V3L	3
	36"x30"	M4-V3R	3
ROAD CLOSED AHEAD LOCAL TRAFFIC ONLY	48"x30"	Modified R11—3a	3
GRANT AVE, CLOSED AT LONGSTREET DR. FOLLOW DETOUR	48"x30"	Modified R11—3a	2
ROAD CLOSED AHEAD FOLLOW DETOUR	48"x30"	Modified R11—3a	1

PROJECT

OCTOBER 2022 SHEET 1C(1)



DESIGNED: MMO CITY OF MANASSAS DEPARTMENT OF UTILITIES DRAWN: TNB CHECKED: CJL

NO. DATE

		SCALE		
200'	0	200'	400 Ft. 1"=200'	



CITY OF MANASSAS LONGSTREET DRIVE IMPROVEMENTS LONGSTREET DRIVE - MOT PHASE II



SIGN SCHEDULE

<u>SIGNAGE</u>	<u>SIGN SIZE</u>	STANDARD <u>NUMBER</u>	ESTIMATED QUANTITY
END DETOUR	24"x18"	M4-8A	2
	36"x30"	M4-V1	2
	36"x30"	M4-V3L	3
	36"x30"	M4-V3R	3
ROAD CLOSED AHEAD LOCAL TRAFFIC ONLY	48"x30"	Modified R11—3a	3
LONGSTREET DR. CLOSED AHEAD FOLLOW DETOUR	48"x30"	Modified R11—3a	1
ROAD CLOSED AHEAD FOLLOW DETOUR	48"x30"	Modified R11—3a	3

PROJECT

OCTOBER 2022 SHEET 1C(2)



CHECKED: CJL

NO. DATE



SIGN SCHEDULE

<u>SIGNAGE</u>	<u>SIGN SIZE</u>	STANDARD <u>NUMBER</u>	ESTIMATED <u>QUANTITY</u>
END DETOUR	24"x18"	M4-8A	2
	36"x30"	M4-V3L	2
	36"x30"	M4-V3R	1
ROAD CLOSED AHEAD LOCAL TRAFFIC ONLY	48"x30"	Modified R11—3a	5
JACKSON AVE. CLOSED AT LONGSTREET DR. FOLLOW DETOUR	48"x30"	Modified R11—3a	2

CITY OF MANASSAS LONGSTREET DRIVE IMPROVEMENTS LONGSTREET DR & JACKSON AVE - MOT PHASE III PROJECT

OCTOBER 2022 SHEET 1C(3)



DRAWN: CHECKED: CJL

NO. DATE

CITY OF MANASSAS LONGSTREET DRIVE IMPROVEMENTS LONGSTREET DR & WEEMS RD - MOT PHASE IV



SIGN SCHEDULE

<u>SIGNAGE</u>	<u>SIGN SIZE</u>	STANDARD <u>NUMBER</u>	ESTIMATED QUANTITY
END DETOUR	24"x18"	M4-8A	2
	36"x30"	M4-V3L	2
	36"x30"	M4-V3R	1
ROAD CLOSED AHEAD LOCAL TRAFFIC ONLY	48"x30"	Modified R11—3a	5
WEEMS RD. CLOSED AT LONGSTREET DR. FOLLOW DETOUR	48"x30"	Modified R11—3a	2

PROJECT

OCTOBER 2022 SHEET 1C(4)



DESIGNED: MMO DRAWN: CHECKED: CJL

TNB NO. DATE







SIGN SCHEDULE

<u>SIGNAGE</u>	<u>SIGN SIZE</u>	STANDARD <u>NUMBER</u>	ESTIMATED QUANTITY
END DETOUR	24"x18"	M4-8A	2
	36"x30"	M4-V3L	2
	36"x30"	M4-V3R	1
ROAD CLOSED AHEAD LOCAL TRAFFIC ONLY	48"x30"	Modified R11—3a	5
WEEMS RD. CLOSED AT SUDLEY RD. FOLLOW DETOUR	48"x30"	Modified R11—3a	2

CITY OF MANASSAS LONGSTREET DRIVE IMPROVEMENTS LONGSTREET DR & WEEMS RD - MOT PHASE V PROJECT

OCTOBER 2022 SHEET 1C(5)

	LANDOWNER SHEET				PRESCRIPTIVF			EASEMENTS			PROFFERS	
NU.		110.	101	AL	FEE TAKING	R/W	FEE REMAINDER	PERMANENT	UTILITY	TEMPORARY	TEMPORARY(ENTRANCES)	YES ,
001	UNITED METHODIST CHURCH	3	5.76 Ac.	250,954 SF			5.76 Ac.					
002	MIRANDA - MARROQUIN LEONE/WALDEMAR	3	0.40 Ac.	17,289 SF			0.40 Ac.					
003	KENNETH D SMITH & YUHONG Z.	3	0.41 Ac.	17,790 SF			0.41 Ac.					
004	ABDULLAH A FAROOQUE & ARIF KAMRUN	3	0.36 Ac.	15,491 SF			0.36 Ac.					
005	FIDA MAJID & KHAN MUHAMMED FAROOQ	3	0.36 Ac.	15,491 SF			0.36 Ac.					
006	GALEN F. & PATRICIA V. FREEZE	3	0.40 Ac.	17,500 SF			0.40 Ac.					
007	CHRISTOPHER A. & STEPHANIE R. ALGER	3	0.40 Ac.	17,500 SF			0.40 Ac.					
008	FREDY L. MOLINA	3	0.62 Ac.	27,195 SF			0.62 Ac.			2,521 SF		
009	JUDITH H. HALSEA	3	0.55 Ac.	23,851 SF			0.55 Ac.			1,800 SF		
010	MATTHEW JUDD QUINIO KELLY ANNE RANNELS	3	0.59 Ac.	25,605 SF			0.59 Ac.			1,370 SF		
011	SHAWN M. & RICHARD LEE HOLLEY	3	0.46 Ac.	20,000 SF			0.46 Ac.			1,000 SF		
012	RICHARD D. VISGER	4	0.36 Ac.	15,491 SF			0.36 Ac.			186 SF		
013	KENNETH W. TORIAN, SR.	4	0.36 Ac.	15,491 SF			0.36 Ac.					
014	GAIL C. HANSEN	4	0.41 Ac.	17,750 SF			0.41 Ac.					
015	JAMES R. & CHERYL A. MCINTOSH	4	0.46 Ac.	20,000 SF			0.46 Ac.					
016	DAVID & MARY SCHOFIELD	4	0.46 Ac.	20,000 SF			0.46 Ac.			76 SF		
017	PAUL W. & LISA J. BURKE	4	0.46 Ac.	20,000 SF			0.46 Ac.			76 SF		
018	CATHERINE & ROBERT L. CROFT, JR.	4	0.37 Ac.	16,250 SF			0.37 Ac.					
019	SHELBY & CHRIS SALISBURY	4	0.46 Ac.	20,000 SF			0.46 Ac.			1,000 SF		
020	RYAN D. & KELLY M. MARCUM	4	0.46 Ac.	20.000 SF			0.46 Ac.			1,000 SF		
021	PHILIP E. & MARY C. LAVIGNE	4	0.46 Ac.	20.000 SF			0.46 Ac.			1,500 SF		
022	TIMOTHY K. & JANE S. SUMNER	4	0.46 Ac.	20.000 SF			0.46 Ac.			1,500 SF		
)23	GEORGE H. & ANN M. CARVER	4	0.46 Ac.	20.000 SF			0.46 Ac.			1,500 SF		
024	ELIZABETH A. SCHRADER	4	0.46 Ac.	20,000 SF			0.46 Ac.			1,000 SF		
025	ROBERT HENRY CUTSFORTH	4	0.46 Ac.	20,000 SF						1.000 SF		
026	ROBERT J. & LORRAINE S. HART	5		20,000 SF					613 SF			
027	SOPHIA YOUNG	5		39 834 SF			0.91 Ac		2,980 SF			
028	THOMAS W. & ELIZABETH Y. MAJOR	5	0.82 Ac	35 865 SF			0.82 Ac			826 SF		
729	THOMAS W. MAJOR & JOAN W. LEGGETT	5		20,000 SF						125 SF		
0.30	JOAN W. LEGGETT	5		20,000 SF			0.46 Ac			637 SF		
000 031	JOSE A. SANDOVAL CERNA & BRENDA ELIZABETH RIVERA LEMUS	5	0.46 Ac.	20,000 SF			0.48 AC.			500 SF		
032	KATHY W. MILES	5	0.46 Ac.	20,000 SF			0.46 Ac.			1 000 SF		
)33	TERRY W. & BRENDA S. BERRY	5	0.46 Ac.	20,000 SF			0.46 Ac.			1,000 SF		
)34	JAMES A & SHELBY E TOMUNSON	5	0.40 AC.	20,001 SF			0.46 Ac.			2 178 SE		
)35		5	0.40 AC.	20,000 SF			0.46 Ac.			1 763 55		
0.36		5	U.46 AC.	20,000 SF			0.46 Ac.			540 55		
037	KIPK WILLIAM & DENISE KINCANNON	5	0.46 AC.	20,001 SF			0.46 AC.			549 SF		
038	ANGELA M. PALM	5	U.46 Ac.	20,000 SF			U.46 AC.					
039	RONALD S. KNOWLES	6	U.46 Ac.	20,000 SF			U.46 Ac.					
			U.46 Ac.	20,000 SF			0.46 Ac.					
		6	0.46 Ac.	20,000 SF			0.46 Ac.			500 SF		
		6	0.47 Ac.	20,456 SF	250 55		0.47 Ac.					
	NODEDT ODEODV ODNDODEE SD	6	0.46 Ac.	20,004 SF	150 CC		0.45 Ac.					
J43	KATHE WILCON TAYLOD & CONSTANCE WILCON	0	0.46 Ac.	20,004 SF	130 35		0.456 Ac.					
044	RATHIE WILSON TATLOR & CONSTANCE WILSON	Ø	0.46 Ac.	20,004 SF			0.46 Ac.			500 SF		
045	UUUGLAS & LINDA BELL	b C	0.46 Ac.	20,004 SF			0.46 Ac.			500 SF		
046		6	0.46 Ac.	20,004 SF			0.46 Ac.			514 SF		
047	DEBORAH L. CONDREY	6	0.46 Ac.	20,004 SF			0.46 Ac.			1,294 SF		
J48	SUSAN K. SEA	6	0.46 Ac.	20,004 SF			0.46 Ac.					

PRELIMINARY RIGHT OF WAY DATA SHEET

Michael Baker	Michael Baker Intl., Inc. 10611 Balls Ford Road, Suite 140 Manassas Virginia 20109	
INTERNATIONAL	(703) 334–4915 Fax (703) 334–4914	

CITY OF MANASSAS LONGSTREET DRIVE IMPROVEMENTS RIGHT OF WAY / EASEMENT DATA SHEET

TAX MAP:

BER 2022 sheet 1 D(1)

PARCEL NO.	LANDOWNER	SHEET NO.	TOT	ΓAL	FEE TAKING	PRESCRIPTIVE F	EE REMAINDER	PERMANENT	EA
049	9008 WEEMS RD	7	0.46 Ac.	19,880 SF			0.46 Ac.		
050	9043 SUDLEY RD	7	0.46 Ac.	20,004 SF	406 SF		0.45 Ac.		
051	IAN T. MCINTOSH & ANNE C. SOMMERS	7	0.40 Ac.	17,506 SF			0.40 Ac.		
052	JERRY L. HAMM & FRANCES H. HENDRICK	7	0.46 Ac.	20,015 SF			0.46 Ac.		
053	WILLIAM E. & ANNE S. DANCY	7	0.46 Ac.	20,003 SF			0.46 Ac.		
054	HOMES AT SUDLEY, LLC	7	0.46 Ac.	20,013 SF			0.46 Ac.		
055	WILLIAM H. & KELLY L. WHITE	7	0.51 Ac.	22,317 SF			0.51 Ac.		
056	JAMES C. & LINDA W. WINSTEAD	6B	0.46 Ac.	20.059 SF					
057	JEROME A. & MARILYN F. MCLEAN	6B	0.46 Ac.	20.059 SF					
058	MIRNA L. TOBAR	6B	0.46 Ac.	20.032 SF					
059	BRIAN THORNTON MERCHANT	6B	0.46 Ac.	20.077 SF					
060	LESLEY FARIENE VETTER TRUSTEE	6B		20,000 SF					
061	IOSE SOSA & ADRIANA MORALES	6B		20,000 SF					
062		68		20,005 ST					
063	A STEWART VETTER IR	6P		20,013 ST					
063	A. SIEWARI VEITER JR.	OB CD	0.46 Ac.	20,000 SF					
064	ERNEST J. AND DEBURAH FACEMIRE	0B	0.46 AC.	20,116 SF					
065	WILLIAMS & LORETTA J. STEPHENS	6B	0.46 AC.	20,010 SF					
000	ROBERT F. AND KATHERINE B. ZAEFFEL	ОВ	0.46 AC.	20,000 Sr					
						· · · · · · · · · · · · · · · · · · ·			
ITY OF MANA	SSAS DESIGNED: MMO			-		Michael Ba	Ker Michael Baker In 10611 Balls Ford Road, Manassas, Virginia 2010	n tl., Inc. Suite 140 9	
UTILITIES				-		INTERNATIO	NAL (703) 334–4915 Fax (703) 334–4914		

CHECKED: CJL

NO. DATE

PRELIMINARY RIGHT OF WAY DATA SHEET



		UPC No.:					
ASEMENTS			PROFFERS				
UTILITY	TEMPORARY	TEMPORARY(ENTRANCES)	YES / NO				
	578 SF						
	514 SF						

City/County: Manassas

CITY OF MANASSAS STREET DRIVE IMPROVEMENTS RIGHT OF WAY / EASEMENT DATA SHEET

PRO	JEC	

OCTOBER 2022 SHEET 1D(2)



ммо TNB CJL



NTS

CITY OF MANASSAS LONGSTREET DRIVE IMPROVEMENTS TYPICAL SECTIONS



PAVEMENT DESIGN (ROAD WIDENING WITH NEW CURB & GUTTER)

- 1 2" ASPHALT CONCRETE SURFACE COURSE TYPE SM-9.5A
- 2 3" ASPHALT CONCRETE TYPE BM-25.0A
- 3 8" AGGREGATE BASE MATERIAL
- (4) VDOT STD. CG-6
- 5 TOPSOIL AND SEEDING



PAVEMENT DESIGN (ROAD WIDENING WITH NEW CURB & GUTTER AND SIDEWALK)

- 1 2" ASPHALT CONCRETE SURFACE COURSE TYPE SM-9.5A
- 2 3" ASPHALT CONCRETE TYPE BM-25.0A
- 3 8" AGGREGATE BASE MATERIAL, TYPE 1, SIZE NO. 21-A
- (4) VDOT STD. CG-6 5 4" CONCRETE SIDEWALK
- 6 4" AGGREGATE

PAVEMENT DESIGN NOTE:

PAVEMENT DEPTHS AND INSET CALLOUTS ARE PRELIMINARY AND NOT TO BE USED FOR CONSTRUCTION.

DESIGN PAVEMENT DEPTHS SHALL BE IN ACCORDANCE WITH CITY OF MANASSAS MINIMUM PAVEMENT STRUCTURE DESIGN AND APPROVED BY CITY PRIOR TO CONSTRUCTION.

OCTOBER 2022 SHEET 2A(1)



Jane K. K DIRECTOR

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CITY	OF	MANA	ASSAS
DEPA	٩RTI	MENT	OF
	UTI	LITIES	

DESIGNED: DRAWN: CHECKED:

NO. DATE

ммо

TNB

CJL



		CATEGORY	SUBBASE	BASE	SURFACE								
MIN		I Up to 250 VPD	1. 6" Aggregate Subbase	3" BM-25A	1-1/2" SM-9.5A								
IMI		II 251 VPD to 400 VPD	1. 8" Aggregate Subbase	3" BM-25A	1-1/2" SM-9.5A								
ЛЛ		III 401 to 1000 VPD	 8" Aggregate Subbase 6" Cement CTA 	3" Asphalt Concrete Type BM-25A 3" BM-25A	2"SM-9.5D 2"SM-9.5D								
PA		IV 1001 to 1500 VPD	 10" Aggregate Subbase 2. 8" Aggregate Subbase 	3" Asphalt Concrete Type BM-25D 6" Asphalt Concrete Type BM-25D	2" SM-9.5D 1-1/2" SM-9.5D								
VEN		V 1501 to 3000 VPD	 6" Cement CTA & 5" Aggregate Subbase 12" Aggregate Subbase 8" Aggregate Subbase 	3" Asphalt Concrete Type BM-25D 3" Asphalt Concrete Type BM-25D 6" Asphalt Concrete Type BM-25D	1-1/2" SM-9.5D 2" SM-9.5D 2" SM-9.5D								
AEN		VI 3001 to 8000 VPD	 12" Aggregate Subbase 10" Aggregate Subbase 8" Cement CTA 	6" Asphalt Concrete Type BM-25D 8" Asphalt Concrete Type BM-25D 4" Asphalt Concrete Type BM-25D	2" SM-9.5D 2" SM-9.5D 2" SM-9.5D								
T		VII 8001+ VPD	 8" Cement CTA 12" Aggregate Subbase 	8" Asphalt Concrete Type BM-25D 8" Asphalt Concrete Type BM-25D	2"SM-9.5D 2"SM-9.5D								
STRU	This design is based upon a minimum CBR value of 10. Redesign is not permissible for higher C.B.R. values.												
JCT	Notes:												
UR	(1) When the projected traffic requires a four lane facility, 80% of the projected traffic shall be the basis for determining the applicable class for the pavement structure design.												
E DE	 (2) Sufficient engineer certified C.B.R. tests must be run to determine the soil support value (ssv) of the various soils in the subgrade. Details as to the VDOT approved method may be obtained through any VDOT District or Residency Office or its Central Office. 												
ISt	(3) C	BR Testing must be	provided to the City for any roadway wide	ening or improvements in the pu	blic right-of-way.								
GN	(4)	Pavement design in a latest revision is an	accordance with VDOT'S "Pavement design acceptable alternative.	guide for subdivision and second	ary roads in Virginia,"								
	(5)	Each street should h not be acceptable.	ave continuity of design throughout. The	erefore, multiple and/or variable	base design will								
2	(6)	Designs within a spec strengths and practic	eific traffic category may not be structur al construction consideration.	ally equal because of differences	in the materials flexural								
3VISION &	Not to S	(7) Cement Treated Aggregate (CTA) or full depth Bituminous Concrete can be substituted for any aggregate, subgrade stabilization, or select material on a basis of 1 inch of CTA or Bituminous Concrete for 2 inches of the other materials. Neither CTA nor Bituminous Concrete should not be placed directly on a resilient soil unless the soil is stabilized with cement or other stabilizing agent.											
DATE	c a](8) e	VDOT Standard WP-2	for pavement widening shall be used whe	enever existing asphalt pavement	is widened.								

SCALE

NTS

Michael Baker Intl., Inc. 10611 Balls Ford Road, Suite 140 Manassas, Virginia 20109 (703) 334-4915 Fax (703) 334-4914



PAVEMENT DESIGN (ROAD WIDENING WITH NEW CURB & GUTTER)

- 1 2" ASPHALT CONCRETE SURFACE COURSE TYPE SM-9.5A
- 2 3" ASPHALT CONCRETE TYPE BM-25.0A
- 3 8" AGGREGATE BASE MATERIAL
- 4 VDOT STD. CG-6
- 5 TOPSOIL AND SEEDING



PAVEMENT DESIGN (ROAD WIDENING WITH NEW CURB & GUTTER AND SIDEWALK)

- 1 2" ASPHALT CONCRETE SURFACE COURSE TYPE SM-9.5A
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CITY OF MANASSAS LONGSTREET DRIVE IMPROVEMENTS TYPICAL SECTIONS

OCTOBER 2022 SHEET 2A(2)





CITY OF MANASSAS	
DEPARTMENT OF	
UTILITIES	

DESIGNED:	ммо		
DRAWN:	TNB		
CHECKED:	CJL	NO.	DATE

Michael Baker Intl., Inc. 10611 Balls Ford Road, Suite 140 Manassas, Virginia 20109 (703) 334-4915 Fax (703) 334-4914

CITY OF MANASSAS LONGSTREET DRIVE IMPROVEMENTS PRIVATE ENTRANCE DETAILS

PROJECT

OCTOBER 2022 SHEET 2A(3)



NO. DATE

LONGSTREET DR AN	ID GRANT AVE NORTH
POINT	ELEVATION (FT)
A-01	262.02
A-02	261.83
A-03	261.89
A-04	261.99
A-05	262.20
A-06	262.50
A-07	262.40
A-08	262.10

LONGSTREET DR /	AND GRANT AVE SOUTH
POINT	ELEVATION (FT)
B-01	263.17
B-02	263.22
B-03	263.28
В-04	263.53
B-05	263.63
B-06	263.85
B-07	263.42
B-08	263.47









CITY OF MANASSAS LONGSTREET DRIVE IMPROVEMENTS CURB RAMP DETAILS

LONGSTREET DRIVE & WEEMS RD.

WEEMS RD. & SUDLEY RD.

PROJECT



LONGSTREET DR & WEEMS RD NW POINT FLEVATION (F 303.06 303.36
 303.46

 303.16

 303.26

 303.51

 303.41

 303.16

LONGSTREET D	R & WEEMS RD NE							
POINT	ELEVATION (FT)							
F-01	302.92							
F-02	302.96							
F-03	303.06							
F-04	303.36							
F-05	303.46							
F-06	303.16							
F-07	303.12							
F-08	303.42							
F-09	303.32							
F-10	303.02							

LONGSTREET D	R & WEEMS RD SW								
POINT	ELEVATION (FT)								
G-01	302.69								
G-02	302.67								
G-03	302.77								
G-04	303.07								
G-05	303.17								
G-06	302.87								
G-07	302.90								
G-08	303.20								
G-09	303.10								
G-10	302.80								

WEEMS RD & SUDLEY RD WEST

ELEVATION (FT)

306.80

306.90

306.97

307.23

307.23 307.37 307.07 306.97 307.27 307.17 306.97

POINT

H-01

H-02

H-03

H-04

H-05 H-06 H-07

H-08

POINT

J-02

J-06

J-08

J-09 J-10

H-09

WEEMS RD & SUDLEY RD EAST

ELEVATION (FT) 307.07

307.16

307.30

 307.30

 307.52

 307.62

 307.40

 307.28

 307.58

 307.48

 307.18

H-10

Sheet 8(3)	Sheet 8(4) (Cont'd)	Sheet 8(4) (Cont'd)	Sheet 8(5) (Cont'd)	Sheet 8(5) (Cont'd)
(T1)	⟨J3⟩ Shallow DI-4A w/ IS-I Req'd H=4.37′ Inv. 280.03	(J9) (J8) 39' - 15" RCP (2.4' Cover) Inv. In 286.15 Inv. Out 285.75	(W1)	(W6)
<pre></pre>	(J4)	⟨J9⟩ St′d. DI-3B Req′d L=12′ H=4.36′ Inv. 286.15	(W1) St'd DI-9 Req'd H=4.80' Inv. 297.24	⟨₩5⟩ St'd DI-3B Req'd L=6′ H=4.46′ Inv. 298.10
(72) (71) 146' - 15" RCP (2.3' Cover) Inv. In 279.32 Inv. Out 278.88	St'd JB-I w/ IS-I Req'd H=4.93′ W=4′ D=3.83′ Inv. 280.37 Type C Tower w/ MH-I Frame & Cover Req'd	⟨J10⟩⟨J9⟩ ′ - 5″ RCP (.6′ Cover) nv. n 286.50 nv. Out 286.35	(E4)	⟨₩6⟩ St'd DI-3B Req'd L=6′ H=4.63′ Inv. 298.02
<pre></pre>	(J5)	(J10) St'd DI-I Req'd H=3.00' Inv. 286.50	\\\\W2\\\\\W1\> 40' - 15" RCP (3.4' Cover) Inv. In 297.37 Inv. Out 297.24	(W7)
(73) 72 10' - 15" RCP (1.6' Cover) Inv. In 280.00 Inv. Out 279.52	(J6)	⟨J11⟩──⟨J8⟩ 51′ - 15″ RCP (1.9′ Cover) Inv. In 286.25 Inv. Out 285.75	<pre>W2</pre>	⟨₩7⟩ St′d DI-7 w∕ Grate B Req′d H=4.55′ Inv. 297.75
<pre></pre>	⟨J5⟩ St′d DI-I Req′d H=2.50′ Inv. 281.00	(<i>J12</i>)	(E5) (W2) 3' - 8" PVC (1.1' Cover) Inv. In 300.25 Inv. Out 300.00	(W8)
Sheet 8(4)	St'd JB-1 w/ IS-1 Req'd H=5.49' W=4' D=3.83' Inv. 283.33 Type B Tower w/ MH-1 Frame & Cover Req'd	⟨J11⟩ St′d DI-3B Req′d L=8′ H=4.50′ Inv. 286.25	(W3)	(W8) St'd DI-3B Req'd L=8' H=4.94' Inv. 298.20
I St'd ES-I Req'd Inv. 279.70 IO SY EC-I Class Al Req'd	(J7)	(<i>J12</i>) St'd ES- Req'd Inv. 285.64	(W4)	
(J2) - (J1) 12' - 30" RCP (1.7' Cover) Inv. In 279.74 Inv. Out 279.70	(<i>J8</i>)	Sheet 8(5)	(W3) St'd DI-3B Req'd L=6' H=4.42' Inv. 297.82	
√J2	⟨J7⟩ St′d DI-I Req′d H=2.50′ Inv. 284.00	/ E2 1 St'd. MH-1 Frame & Cover Reg'd.	(W4) St'd DI-3A Req'd H=4.66' Inv. 297.72	
(J3)	St'd JB-1 w/ IS-1 Req'd H=4.82′ W=4′ L=3.83′ Inv. 284.77 Type B Tower w/ MH-1 Frame & Cover Req'd	I St'd. DI-3B Req'd Remove and Replace Top L=8' H=6.95' Rim 303.63	(W5)	
Form LD-204				

Kev. May	2010											STORM	IWATER I	STORMWATER INLET COMPUTATION SHEET																		
ROUTE: N	Image: Note of the system Image System Image System Image System											CALCULATED BY: WKW DATE: 9/12/2022 CHECKED BY: LG										SHEET:	1	OF	1							
	INLET			DRAINIAGE																										SAG INLE		Y
NUMBER	TYPE	LENGTH (FT)	STATION	AREA (AC)	С	CA	Σ СА	l (IN/HR)	Q (CFS)	Q CARRYOVER (CFS)	Q _T	S (FT/FT)	S _X (FT/FT)	T (FT)	W (FT)	W/T	S _W (FT/FT)	s _w /s _x	Eo	a (IN)	S' _W	S _e	L _T (FT)	L (FT)	L/L _T	E	Qi (CFS)	Qb (CFS)	d (FT)	h (FT)	d/h	T @ SAG (FT)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)
T1	DI-3C	8	N/A	1.61	0.41	0.663	0.663	5.45	3.62	0.22	3.84		0.021		2	0.29	0.083	4	0.75	3.5	0.15	0.13		8			3.84	0.00	0.27	0.46	0.59	6.9
T2	DI-3B	6	N/A	0.47	0.71	0.336	0.336	5.45	1.83	0.08	1.91	0.008	0.021	9.07	2	0.22	0.083	4	0.62	3.5	0.15	0.11	8.6	6	0.70	0.88	1.69	0.22				
Т3	DI-1	N/A	N/A	0.96	0.29	0.281	0.281	5.45	1.53	0.00	1.53																1.53	0.00	0.07			2.9
J2	DI-4A	4	N/A	0.23	0.47	0.108	0.108	5.45	0.59	0.00	0.59	0.014	0.021	5.29	2	0.38	0.083	4	0.87	3.5	0.15	0.15	5.2	4	0.77	0.93	0.55	0.04				
J3	DI-4A	4	N/A	0.12	0.88	0.106	0.106	5.45	0.58	0.07	0.65	0.017	0.021	5.26	2	0.38	0.083	4	0.87	3.5	0.15	0.15	5.8	4	0.69	0.88	0.57	0.08				
J5	DI-1	N/A	N/A	1.67	0.38	0.635	0.635	5.12	3.25	0.00	3.25		_														3.25	0.00	0.35			4.6
J7	DI-1	N/A	N/A	0.48	0.48	0.230	0.230	5.45	1.26	0.00	1.26																1.26	0.00	0.19			3.6
J9	DI-3B	12	N/A	0.87	0.44	0.383	0.383	5.45	2.09	0.00	2.09	0.026	0.021	7.56	2	0.26	0.083	4	0.71	3.5	0.15	0.12	11.9	12	1.01	1.00	2.09	0.00				
J10	DI-1	N/A	N/A	0.33	0.37	0.122	0.122	5.45	0.67	0.00	0.67			100 100											201-201-2012		0.67	0.00	0.12			3.2
J11	DI-3B	8	N/A	0.23	0.88	0.202	0.202	5.45	1.10	0.00	1.10	0.056	0.021	5.16	2	0.39	0.083	4	0.88	3.5	0.15	0.15	10.3	8	0.78	0.93	1.03	0.07				└───′
E3	DI-3B	8	N/A	0.14	0.48	0.067	0.067	5.45	0.37		0.37	0.007	0.021	5.02	2	0.40	0.083	4	0.88	3.5	0.15	0.15	3.5	8	2.32	1.00	0.37	0.00				
W2	DI-3A	2.5	N/A	0.38	0.41	0.156	0.156	5.45	0.85	0.00	0.85		0.021		2	1.00	0.083	4	1.00	3.5	0.15	0.17		3			0.96	0.00	0.17	0.46	0.36	2.0
W3	DI-3B	6	N/A	0.30	0.41	0.123	0.123	5.45	0.67		0.67	0.021	0.021	5.13	2	0.39	0.083	4	0.88	3.5	0.15	0.15	6.2	6	0.96	1.00	0.67	0.00				
W4	DI-3A	2.5	N/A	0.00	0.00	0.000	0.000	5.45	0.00	0.00	0.00	0.007	0.021	6.20	2	1.00	0.083	4	1.00	3.5	0.15	0.1/	1.0	3	1.20	1.00	0.96	0.00	0.17	0.46	0.36	2.0
W5		ь с	N/A	0.14	0.86	0.120	0.120	5.45	0.66	0.00	0.55	0.007	0.021	6.30	2	0.32	0.083	4	0.79	3.5	0.15	0.14	4.6	ь	1.30	1.00	0.66	0.00				───′
VV6		6 N/A	N/A N/A	2 0.15	0.86	1.500	1.500	5.45	0.70	0.00	0.70	0.007	0.021	6.37	2	0.31	0.083	4	0.79	3.3	0.15	0.14	4.9	ь	1.23	1.00	0.70	0.00	0.59			C.E.
VV / \\\/R		N/A 8	N/A N/A	0.57	0.59	0.257	0.257	4.55	0.84	0.00	1.41	0.005	0.021	8.96	2	0.22	0.083	1	0.63	3.5	0.15	0.11	6.4	8	1 24	1.00	1.41	0.00	0.58			0.5
449	0-30	0	N/A	0.57	0.45	0.237	0.237	5.50	1.41		1.41	0.005	0.021	8.90	2	0.22	0.085	4	0.05	5.5	0.15	0.11	0.4	0	1.24	1.00	1.41	0.00				

Form LD-229

May 2016																		
STORM SET	WER DESIG		TIONS															
ROUTE: N/ STORM FR	ROUTE: N/A STORM FREQUENCY: 10-YR				PROJECT:)		CALCULATED BY: CHECKED BY:					DATE: SHEET:	8/23/2022 1 OF 1				
FROM	то	AREA	RUNOFF			INLET TIME	RAIN FALL	RUNOFF Q	INVERT ELE	VATIONS	LENGTH	SLOPE	DIA.	CAPACITY	VEL.	FLC	W TIME	REMARKS
POINT	POINT	DRAIN"A"	COEF.		CA				UPPER END	LOWER END					12 000000000000000000000000000000000000	INCREMENT	ACCUMULATED	
10 SAV-101000	28 - 200 - 2010 - 2010	ACRES	"C"	INCREMENT	ACCUMULATED	MINUTES	IN./HR.	C.F.S.	FT.	FT.	FT.	FT./FT.	IN.	C.F.S.	F.P.S	MINUTES	MINUTES	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)		(17)	(18)
T3	T2	0.96	0.29	0.278	0.278	10	5.45	1.52	280.00	279.52	10	0.048	15	14.2	6.7	0.0	10.0	
T2	T1	0.47	0.71	0.334	0.612	10	5.45	3.34	279.32	278.88	146	0.003	15	3.6	3.1	0.8	10.8	
T1	E1	1.61	0.41	0.660	1.272	10	5.45	6.93	278.68	278.51	36	0.005	15	4.5	3.6	0.2	11.0	
E1	EO	0.327	0.56	0.183	1.455	10	5.45	7.93	278.41	275.61	127	0.022	15	5.7	4.9	0.4	11.4	
J11	J8	0.23	0.88	0.201	0.201	10	5.45	1.10	286.25	285.75	51	0.010	15	6.4	3.7	0.2	10.2	
J10	J9	0.33	0.37	0.122	0.122	10	5.45	0.67	286.50	286.35	11	0.014	15	7.6	3.3	0.1	10.1	
J9	J8	0.87	0.44	0.383	0.505	10	5.45	2.75	286.15	285.75	39	0.010	15	6.6	5.1	0.1	10.2	
Ditch	J12	7.2	0.34	2.419	2.419	18	4.35	10.52	287.00	285.64	90	0.015	N/A	30.2	4.6	0.3	18.3	24x36
J12	J8	0.65	0.46	0.296	2.715	10	5.45	14.80	285.64	284.87	42	0.018	30	55.7	9.5	0.1	18.4	
J8	J6				3.421		5.45	18.64	284.77	283.43	46	0.029	30	70.2	12.0	0.1	18.5	
J7	J6	0.48	0.48	0.232	0.232	10	5.45	1.27	284.00	283.75	24	0.010	15	6.6	4.0	0.1	10.1	
J6	J4				3.653		5.45	19.91	283.33	280.47	126	0.023	30	62.0	11.2	0.2	18.7	
J5	J4	1.67	0.38	0.641	0.641	12	5.12	3.28	281.00	280.80	8	0.025	15	10.2	7.4	0.0	12.0	
J4	J3				4.295		5.45	23.41	280.37	280.13	48	0.005	30	29.1	6.2	0.1	18.8	
J3	J2	0.12	0.88	0.106	4.400	10	5.45	23.98	280.03	279.84	37	0.005	N/A	29.2	6.1	0.1	18.9	38x24
J2	J1	0.23	0.47	0.108	4.508	10	5.45	24.57	279.74	279.70	12	0.003	30	23.7	5.3	0.0	18.9	
W6	W4	0.15	0.61	0.092	0.092	10	5.45	0.50	298.02	297.92	48	0.002	15	3.0	1.7	0.5	10.5	
W5	W4	0.14	0.61	0.085	0.085	10	5.45	0.47	298.10	297.92	50	0.004	15	3.9	1.9	0.4	10.4	
W4	W2				0.177			0.96	297.72	297.57	36	0.004	15	4.2	2.7	0.2	10.7	
W3	W2	0.3	0.47	0.141	0.141	10	5.45	0.77	297.82	297.67	57	0.003	15	3.3	2.2	0.4	10.4	
E5	W2								300.25	300.00	3	0.083	8	4.5				Yard Drn
W2	W1	0.38	0.37	0.141	0.459	10	5.45	2.50	297.37	297.24	40	0.003	15	3.7	3.1	0.2	10.9	
E4	W1								300.24	300.00	7	0.034	8	2.9			_	Yard Drn
W1	E3				0.459			2.50	297.24	296.88	106	0.003	15	3.8	3.1	0.6	11.5	
E3	E2	0.14	0.48	0.067	0.526	10	5.45	2.87	296.68	296.30	65	0.006	18	8.1	4.2	0.3	11.7	
W8	W7	0.57	0.45	0.257	0.257	10	5.45	1.40	298.20	297.95	28	0.009	15	6.1	4.0	0.1	10.1	
W7	E2	3.87	0.39	1.505	1.762	16	4.53	7.98	297.75	297.50	66	0.004	18	6.5	4.2	0.3	16.3	ļ
Ex. 16A	Ex. 16	0.73	0.45	0.329	0.329	10	5.45	1.79	301.65	297.40	22	0.193	15	28.5	10.7	0.0	10.0	
Ex. 16	E2	0.16	0.48	0.077	0.405	10	5.45	2.21	297.15	296.40	36	0.021	15	9.3	6.1	0.1	10.1	
E2	17				2.693			13.05	296.20	293.78	186	0.013	24	25.9	8.1	0.4	16.6	

DESIGNED: ммо DRAWN: TNB CHECKED: CJL

NO. DATE

DRAINAGE DESCRIPTIONS

SCALE

NTS

IYDRAUL																Those of .		C DITAC (TICAN					
	C GRADE LIN	E (HGL)														SHEET:	3	1	of	1		-	
			Outlet											JUNCTIC	N LOSS							Inlet	
INLET			Water	D_{o}	Q_{o}	L _o	S fo	H_{f}											1.3	0.5	Final	Water	Rin
STATION			Surface				%		Vo	H_{o}	Qi	V	$Q_i V_i$	V _i ²	H _i	Angle	H_Δ	H_{t}	H_{t}	H _t	Н	Surface	Elev
(Line #)	From	То	Elev.										_	2g								Elev.	
(Units)	Structure	Structure	(ft.)	(in.)	(cfs)	(ft.)		(ft.)	(ft./sec.)	(ft.)	(cfs)	(ft./sec.)	(cfs-ft/s)	(ft.)	(ft.)		(ft.)	(ft.)	(ft.)	(ft.)	(ft.)	(ft.)	(ft.)
(1)			(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)		(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21
1	E1	EO	276.61	15	7.93	127	2.22	2.82	5.23	0.11	6.93	3.42	23.71	0.18	0.06	0	0.00	0.17			2.99	279.60	282.5
2	T1	E1	279.51	15	6.93	36	0.45	0.16	3.42	0.05	3.34	3.74	12.48	0.22	0.08	90	0.08	0.20	0.26	0.13	0.29	279.80	282.5
3	T2	T1	279.88	15	3.34	146	0.33	0.48	3.74	0.05	1.52	7.22	10.95	0.81	0.28	90	0.28	0.62	0.81	0.40	0.88	280.76	283.2
4	T3	T2	280.52	15	1.52	10	1.25	0.13	7.22	0.20	22.62	2.44	00.50	0.40	0.00	22	0.00	0.07		0.44	0.13	280.65	283.0
1	J2	J1	281.70	30	24.57	12	0.50	0.06	6.14 2.44	0.15	23.98	3.44	82.50	0.18	0.06	30	0.06	0.27		0.14	0.20	281.90	284.2
2	13	J2	281.84	30	23.98	37	0.51	0.19	3.44	0.05	23.41	3.42	80.05	0.18	0.06	90	0.13	0.24		0.12	0.31	282.15	284.4
3	J4	13	282.13	30	23.41	48	0.50	0.24	3.42	0.05	19.91	4.33	80.22 10.70	0.29	0.10	0	0.00	0.15		0.07	0.31	282.44	285.3
3	IC	14	202 17	20	10.01	176	2 20	2 00	1 22	0.07	3.Zð 19.CA	3.07	12.70	0.23	0.08	90	0.16	0.24		0.00	2.00	20E 4E	2001
4	10	J4	202.47	50	19.91	120	2.29	2.09	4.55	0.07	1 27	4.55	04.40 1 5 <i>1</i>	0.52	0.11	45	0.00	0.16		0.09	2.90	265.45	269.0
4	18	16	285 13	30	18 64	16	2 85	1 2 1	1 52	0.08	1.27	2.22	2.54	0.02	0.01	40	0.01	0.02		0.05	136	286 79	780 (
5	10	10	203.45	50	10.04	40	2.05	1.51	4.55	0.08	2.75	4.46	2.55	0.08	0.03	70	0.00	0.11		0.05	1.50	200.79	209.0
5											14 80	4.40	59 78	0.25	0.09	70	0.15	0.26					
6	J11	18	286.75	15	1.10	51	1.02	0.52	2.31	0.02	11.00		00.70	0.20	0.00		0.17	0.20			0.52	287.27	290.5
7	J9	J8	286.75	15	2.75	39	1.00	0.39	4.46	0.08											0.39	287.14	290.5
8	J5	J4	281.80	15	3.28	8	2.50	0.20	3.87	0.06											0.20	282.00	284.7
9	J7	J6	284.75	15	1.27	31	0.86	0.27	1.22	0.01											0.27	285.02	288.0
10	J12	J8	286.87	30	14.80	42	1.88	0.79	4.04	0.06											0.79	287.66	289.0
11	J10	19	287.35	15	0.67	11	0.65	0.07	1.81	0.01											0.07	287.42	290.0
1	E2	17	295.38	24	13.05	186	1.30	2.42	7.15	0.20	2.21	2.24	4.95	0.08	0.03	98	0.08	0.30			2.72	298.10	303.4
1											7.98	4.42	35.26	0.30	0.11	10	0.04	0.15					
1											2.87	1.95	5.59	0.06	0.02	83	0.04	0.06					
2	16	E2	297.40	15	2.21	35	2.14	0.75	2.24	0.02	1.79	3.04	5.44	0.14	0.05	0	0.00	0.07	0.09		0.84	298.24	303.4
3	16A	16	298.40	15	1.79	14	30.36	4.25	3.04	0.04						0					4.25	302.65	303.4
4	W7	E2	298.70	18	7.98	66	0.38	0.25	4.42	0.08	1.40	1.44	2.01	0.03	0.01	93	0.03	0.12	0.16		0.41	299.11	301.0
5	E3	E2	297.50	18	2.87	70	0.54	0.38	1.95	0.01	2.50	2.57	6.42	0.10	0.04	0	0.00	0.05			0.43	297.93	303.6
6	W1	E3	297.88	15	2.50	106	0.35	0.37	2.57	0.03	2.50	2.60	6.50	0.10	0.04	94	0.10	0.17			0.54	298.42	302.7
7	W2	W1	298.24	15	2.50	40	0.33	0.13	2.60	0.03	0.96	1.29	1.24	0.03	0.01	0	0.00	0.04	0.05		0.18	298.42	303.0
7	1474	14/2	200 57	45	0.00	26	0.44	0.45	4.20	0.04	0.77	0.70	0.54	0.01	0.00	0	0.00	0.00			0.47	200 74	202 (
8	W4	W2	298.57	15	0.96	36	0.41	0.15	1.29	0.01	0.50	0.87	0.43	0.01	0.00	94	0.01	0.02			0.17	298.74	302.0
8	14/0	14/7	200 05	15	1.40	20	0 00	0.25	1 4 4	0.01	0.47	0.86	0.40	0.01	0.00	80	0.01	0.01			0.25	200.20	202 5
9	0VV	VV7	298.95	15	0.77	20	0.89	0.25	1.44	0.01											0.25	299.20	303.3
11	WS MG	VVZ \\\//	230.07	15	0.77	27 /18	0.20	0.15	0.70	0.00											0.15	230.02 290.02	302.8
12	W5	W4	298.92	15	0.47	50	0.36	0.18	0.86	0.00											0.10	299.10	302.1
ngla			00	00	70	<u> </u>	FO	40	20	25	20	4 5	10	F		$H = 0.25 V^2$	120	$\mu = K \chi^2 / 2$	-				

Michael Baker Intl., Inc. 10611 Balls Ford Road, Suite 140 Manassas, Virginia 20109 (703) 334–4915 Fax (703) 334–4914

CITY OF MANASSAS LONGSTREET DRIVE IMPROVEMENTS DRAINAGE DESCRIPTIONS











XS ID	BED MATERIAL	RECOMMENDED 2-YR MAX. WATER VEL. (FPS)	2-YR PRE-PROEJCT PEAK FLOW (CFS)	2-YR PRE-PROJECT WSEL (FT)	2-YR PRE-PROJECT VEL (FPS)	2-YR POST-PROEJCT PEAK FLOW (CFS)	2-YR POST-PROJECT WSEL (FT)	2-YR POST-PROJECT VEL (FPS)	10-YR PRE-PROEJCT PEAK FLOW (CFS)	10-YR PRE-PROJECT WSEL (FT)	10-YR PRE-PROJECT VEL (FPS)	10-YR POST-PROEJCT PEAK FLOW (CFS)	10-YR POST-PROJECT WSEL (FT)	10-YR POST-PROJECT VEL (FPS)
410				280.3	2.9		280.3	2.9		280.3	3.1		280.3	3.1
361		75	5.2	279.5	2.1	5.2	279.5	2.1	77	279.6	2.4		279.6	2.4
311		5.5	5.2	279.0	3.5	J.2	279.0	3.5	/./	279.1	3.9	_	279.1	3.9
261				278.5	1.8		278.5	1.8		278.7	2.0		278.7	2.0
210				278.0	4.1		278.0	4.1		278.1	4.4		278.1	4.4
161		4.5	6.0	277.0	3.8	6 1	277.0	3.9	8.0	277.2	4.6		277.2	4.7
111	JILII GRAVEL	4 .J	0.0	276.1	3.7] 0.1	276.1	3.7	0.9	276.2	4.2		276.2	4.2
61				273.9	3.9		273.9	3.9		274.1	4.5		274.1	4.6

OUTFALL:	MUD BOTTOM WI	TH MOWN G	RASSE	D BANKS			
PRE-DEVEL	OPMENT (D.A. =	=11.8	AC.)				
Sub-area	Storm Event	D.A.(ac.)	С	Tc min.	l in./hr.	Q cfs.	
			0.53	20			
	2 YR.				0.82	5.2	=Pre Q2
	10 YR.				1.22	7.7	=Pre Q10
	100 YR.						=Pre Q100
POST-DEVE	LOPMENT (D.A.	=11.8	_ AC.)				
Sub-area	Storm Event	D.A.(ac.)	С	Tc min.	l in./hr.	Q cfs.	
			0.53	20			
	2 YR.				0.82	5.2	=Pre Q2
	10 YR.				1.22	7.7	=Pre Q10
	100 YR.						=Pre Q100

CITY OF MANASSAS LONGSTREET DRIVE IMPROVEMENTS ADEQUATE OUTFALL



Cross Section 210











OUTFALL CROSS SECTIONS

PROJECT

OCTOBER 2022 SHEET 2B(1)

Project Name	Cityo	f Manassas Lo	ngstreet Drive Imp	rovements		CLEAR	. ALL	data input cells			
Date:	and a	1111111111111111111111	6/8/2022			CLEAP	CALL	constant values			
		Linear Dev	elopment Project?	Yes				calculation cells			
Site Information								final results	L		
Past Dovalopment Project	(Troatmo)	at Valuma	and Loade)	1							
Post-Development Project	(Treatment	nt volume			A 61	-		01-1			
	1	Ente	er Total Disturbe	d Area (<i>acres</i>) →	0.64	-	BMP Design Spe	Check: cifications List:	2013 Drai	t Stds & Specs	
			Maximum	reduction required;	20%			Linear project?	Yes		
		The site's net i Post-Develoom	ncrease in impervi ent TP Load Reduc	ous cover (acres) is: tion for Site (lb/vr):	0.153192		and cover areas ent Total disturbed	ered correctly? area entered?	4		
					and a second					T	
Pre-ReDevelopment Land Cover (acre	s) A Soils	B Šojis	C Soils	D Soils	Totals	-	7	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	r		unanti ana ana ana ana ana ana ana ana ana an
Forest/Open Space (acres) undisturbed	AGOIN	0.00113	Cooks	D'SUIS	0.00						
Managed Turf (acres) – disturbed, graded for			1.48		1.48						
impervious Cover (acres)	1		2.61		2.61						
				L	4.09	1	1				
Post-Development Land Cover (acres))										
Corner/Ones Cases (acres) - undisturbed	A Soils	B Soils	C Soils	D Soils	Totals]					
arotected forest/open space or reforested land					0.00				ļ		
variaged (un facres) – disturbed, graded for vards or other turf to be mowed/managed			1.32		1,32						
mpervious Cover (acres)			2.77		2.77						
Area Check	OK.	OK.	OK.	ОК.	4.09						
•											
Lonstants Annual Rainfall (inches)	43		Kunoff Coefficien	A Soils	B Soils	C Soils	D Soils				
Farget Rainfall Event (inches) Total Phosphorus (TP) EMC (mg/L)	1.00 0.26		Forest/Open Space Managed Turf	0.02	0.03	0.04	0.05				
Total Nitrogen (TN) EMC (mg/L) Target TP Load (lb/acre/vr)	1.86		Impervious Cover	0.95	0.95	0.95	0.95				
 J (unitless correction factor) 	0.90										
LAND COVER SUMMARY P	RE-REDEVE	LOPMENT				LAND COVE	R SUMMARY P	OST DEVEL	OPMEN	ri 👘	
Land Cover Summ	ary-Pre	_		Land Cover Summary	y-Post (Final)	1	Land Cover Sun	ımary-Past		Land Cover Summa	ary-Post
Pre-ReDevelopment	Listed	Adjusted ¹		Post ReDev. & New	Impervious	_	Post-ReDeve	lopment		Post-Development New	Impervious
Forest/Open Space Cover (acres)	0.00	0.00		Cover (acres)	0.00		Cover (acres)	0.00			
Weighted Kv(forest) % Forest	0.00	0.00		% Forest	0%	-	% Forest	0.00			
Managed Turf Cover (acres)	1.48	1.32		Managed Turf Cover (acres)	1.32		Managed Turf Cover (acres)	1.32			
Weighted Rv(turf)	0.22	0.22		Weighted Rv (turf)	0.22		Weighted Rv (turf)	0.22			
% Managed Turf	36%	34%	-	% Managed Turf	32%	-	% Managed Turf	34%			
Impervious Cover (acres)	2.61	2.61		Impervious Cover	2,77		ReDev. Impervious	2.61		New Impervious Cover	0.15
Rv(impervious)	0.95	0.95		Rv(impervious)	0.95	-	Rv(impervious)	0.95		Rv(impervious)	0.95
% Impervious	64%	66%	-	% Impervious	68%		% Impervious	66%			
Total Site Area (acres)	4.09	3.94		Final Site Area (acres)	4.09		Total ReDev. Site Area (acres)	3.94			
Site Rv	0.69	0.70		Final Post Dev Site Rv	0.71		ReDev Site Rv	0.70			
Treatment Volume and	Nutrient Lo	ad				Trea	tment Volume and	Nutrient Loa	ad		
Pre-ReDevelopment Treatment Volume (acre-ft)	0.2340	0.2311		Final Post-Development Treatment Volume (acre-ft)	0.2433		Post-ReDevelopment Treatment Volume (acre-ft)	0.2311		Post-Development Treatment Volume jacre-ft)	0.0121
Pre-ReDevelopment Treatment Volume (cubic feet)	10,191	10,069		Final Post-Development Treatment Volume (cubic feet)	10,597	1	Post-ReDevelopment Treatment Volume (cubic feet)	10,069	T	Post-Development reatment Volume (cubic feet)	528
Pre-ReDevelopment TP Load (Ib/yr)	6.40	6.33		Final Post- Development TP Load (Ib/yr)	6.66		Post-ReDevelopment Load (TP) (lb/yr)*	6.33		Post-Development TP Load (lb/yr)	0.33
Pre-ReDevelopment TP Load per acre (lb/acre/vr)	1,57	1,61		Final Post-Development TP Load per acre (Ib/acre/yr)	1.63		Post-ReDevelopment TP Load per acre (Ib/acre/yr)	1.61			
Baseline TP Load (lb/yr) (0.41 lbs/acce/yr applied to pre-redevelopment area land proposed for new impervious cov	exduding pervious rer)	1.61					Max. Reduction Required (Below/ Pre- ReDevelopment Load)	20%			
Adjusted Land Cover Summary: re ReDevelopment land cover minus pervious lan nanaged turf) acreage proposed for new impervi ndjusted total acreage is consistent with Post-ReD f new impervious cover).	nd cover (forest/op) ous cover. Development acrea	en space or ge (minus acreage					TP Load Reduction Required for Redeveloped Area (Ib/yr)	1.27		TP Load Reduction Required for New mpervious Area (lb/yr)	0.27
Column I shows load reduction requriement for ne levelopment load limit, 0.41 lbs/acre/year).	ew impervious cove	r (based on new									21
			Post-Dev	elopment Requir	rement for	Site Area					
			TP Load	Reduction Required (lb/yr)	1.53					
			Linear Pr	oject TP Load Reduction	Required (lb/w	r): <u>1.54</u>					
			and the second s		Statements Street, or other						

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	Area Checks	D.A. A	1	D.A. B	D.A. C	D.A. D	D.A. E	AREA CHEC
FORES	ST/OPEN SPACE (ac)	0.00		0.00	0.00	0.00	0.00	ОК.
IMPE	RVIOUS COVER (ac)	0.00		0.00	0.00	0.00	0.00	OK.
IMPERVIOUS C	OVER TREATED (ac)	0.00		0.00	0.00	0.00	0.00	OK.
MANAG	GED TURF AREA (ac)	0.00		0.00	0.00	0.00	0.00	OK.
MANAGED TURF	AREA TREATED (ac)	0.00		0.00	0.00	0.00	0.00	OK.
	OK.		OK.	ОК.	OK.	OK.		
Site Treatme	nt Volume (ft ³)	10,597						
Runoff Reduction Volume and TP By	Drainage Area							
	-	D.A. A		D.A. B	D.A. C	D.A. D	D.A. E	TOTAL
RUNOFF REDUCTION VOL	JME ACHIEVED (ft ³)	0		0	0	0	0	0
TP LOAD AVAILABLE FO	R REMOVAL (lb/yr)	0.00		0.00	0.00	0.00	0.00	0.00
TP LOAD REDUCTIO	N ACHIEVED (lb/yr)	0.00		0.00	0.00	0.00	0.00	0.00
TP LOAD	REMAINING (Ib/yr)	0.00		0.00	0.00	0.00	0.00	0.00
NITROGEN LOAD REDUCTIO	N ACHIEVED (lb/yr)	0.00		0.00	0.00	0.00	0.00	0.00
Tota			-	LINEAR PROJECT				
FINAL POST-DEVELOPM	ENT TP LOAD (lb/yr)	-			6.66	1	20 10	
TP LOAD REDUCTIO	N REQUIRED (lb/yr)				1.54			
TP LOAD REDUCTIO	N ACHIEVED (lb/yr)	-			0.00			<u> </u>
TP LOAD	REMAINING (lb/yr):			_	6.66			
REMAINING TP LOAD REDUCTION	N REQUIRED (Ib/yr):	*			1.54	-		
Total Nitrogen (For Informa	tion Purposes)							
POST-DEVELOF	MENT LOAD (Ib/yr)	47.63						
NITROGEN LOAD REDUCTIO	N ACHIEVED (lb/yr)	0.00						
REMAINING POST-DEVELOPMENT NITE	ROGEN LOAD (Ib/yr)	47.63						
	l'-				·			
	DESIGNED:	ммо						
CITY OF MANASSAS								
CITY OF MANASSAS DEPARTMENT OF	DRAWN:	TNB						







Michael Baker Intl., Inc. 10611 Balls Ford Road, Suite 140 Manassas, Virginia 20109 (703) 334-4915 Fax (703) 334-4914

CITY OF MANASSAS LONGSTREET DRIVE IMPROVEMENTS HYDROLOGY AND WATER QUALITY

<u>GENERAL NOTES</u>

- 1. RECEIVING WATER BODY IS SUMNER LAKE.
- 2. NUTRIENT CREDITS FOR THE REQUIRED TP LOAD REDUCTION OF 1.54 LB/YR CAN BE PURCHASED FROM THE VIRGINIA OAKS NON-POINT SOURCE BANK.
- 3. HYDROLOGIC SOIL GROUP "C" IS ASSUMED FOR WATER QUALITY CALCULATIONS.

PROJECT

OCTOBER 2022 SHEET 2B(2)

1	I/A		9VAC25-840-40 MINIMU	M STANDARDS				DESCRIBE HOW MS IS ADDRESSED OI PLAN
		MS1: PERMANENT OR TEMPORARY SOIL STA GRADE IS REACHED ON ANY PORTION OF TH DENUDED AREAS THAT MAY NOT BE AT FINA STABILIZATION SHALL BE APPLIED TO AREAS	BILIZATION SHALL BE APPL E SITE. TEMPORARY SOIL _ GRADE BUT WILL REMAIN THAT ARE TO BE LEFT DO	IED TO DENUDED STABILIZATION SH I DORMANT FOR L RMANT FOR MOR	AREAS W IALL BE AI ONGER T E THAN O	ITHIN SEVEN DAY PPLIED WITHIN SE HAN 14 DAYS. PEI NE YEAR.	'S AFTER FINAL EVEN DAYS TO RMANENT	PERMANENT AND TEMPORARY SEEDING SPECIFICATION SHALL BE FOLLOWED, SEE TABLES 3.31-B AND 3.32-E THIS SHEET.
		MS2: DURING CONSTRUCTION OF THE PROJE WITH SEDIMENT TRAPPING MEASURES. THE STABILIZATION OF ALL SOIL STOCKPILES ON PROJECT SITE.	CT, SOIL STOCK PILES AN APPLICANT IS RESPONSIBI SITE AS WELL AS BORROV	D BORROW AREAS LE FOR THE TEMP V AREAS AND SOII	S SHALL B ORARY PI L INTENTIO	E STABILIZED OR ROTECTION AND I DNALLY TRANSPC	PROTECTED PERMANENT PRTED FROM THE	SILT FENCE SHALL BE INSTALLED AROUND TEMPORARY STOCK PILE AREA.
		MS3: A PERMANENT VEGETATIVE COVER SH PERMANENT VEGETATION SHALL NOT BE CO MATURE ENOUGH TO SURVIVE AND WILL INH	ALL BE ESTABLISHED ON D NSIDERED ESTABLISHED U IBIT EROSION.	ENUDED AREAS N JNTIL A GROUND (IOT OTHE COVER IS	RWISE PERMANEI ACHIEVED THAT I	NTLY STABILIZED. S UNIFORM,	STABILIZATION BLANKET & PERMANENT SEEDING SPECIFICATION SHALL BE FOLLOWED, SEE SHEET 2C(2), AND TABLE 3.32-E THIS SHEET.
		MS4: SEDIMENT BASINS AND TRAPS, PERIME SHALL BE CONSTRUCTED AS A FIRST STEP II LAND DISTURBANCE TAKES PLACE.	TER DIKES, SEDIMENT BAR NANY LAND-DISTURBING A	RIERS AND OTHE	R MEASUI LL BE MAI	RES INTENDED TO DE FUNCTIONAL E) TRAP SEDIMENT EFORE UPSLOPE	SILT FENCE SHALL BE INSTALLED AROUND THE PERIMETER OF THE DISTURBED AREA.
	x	MS5: STABILIZATION MEASURES SHALL BE AN IMMEDIATELY AFTER INSTALLATION.	PPLIED TO EARTHEN STRU	CTURES SUCH AS	DAMS, DI	KES AND DIVERS	ONS	NONE ON THE PROJECT
	x	MS6: SEDIMENT TRAPS AND SEDIMENT BASIN TO BE SERVED BY THE TRAP OR BASIN.	IS SHALL BE DESIGNED AN	ID CONSTRUCTED	BASED U	PON THE TOTAL I	DRAINAGE AREA	NONE ON THE PROJECT
		A. THE MINIMUM STORAGE CAPACITY OF THE TRAP SHALL ONLY CONTROL DRAIN	A SEDIMENT TRAP SHALL AGE AREAS LESS THAN TH	BE 134 CUBIC YAF REE ACRES.	RDS PER A			
		B. SURFACE RUNOFF FROM DISTORBED EQUAL TO THREE ACRES SHALL BE CON BASIN SHALL BE 134 CUBIC YARDS PER A THE STRUCTURAL INTEGRITY OF THE BA USED IN RUNOFF CALCULATIONS SHALL EXIST WHILE THE SEDIMENT BASIN IS UT	AREAS THAT IS COMPRISE IROLLED BY A SEDIMENT F CRE OF DRAINAGE AREA. SIN DURING A 25-YEAR ST CORRESPOND TO A BARE ILIZED.	D OF FLOW FROM BASIN. THE MINIMI THE OUTFALL SYS ORM OF 24-HOUR EARTH CONDITIO	DRAINAG JM STORA STEM SHA DURATIO N OR THO	E AREAS GREATE IGE CAPACITY OF LL, AT A MINIMUM N. RUNOFF COEF SE CONDITIONS E	A SEDIMENT A SEDIMENT I, MAINTAIN FICIENTS EXPECTED TO	
		MS7: CUT AND FILL SLOPES SHALL BE DESIG ARE FOUND TO BE ERODING EXCESSIVELY V SLOPE STABILIZING MEASURES UNTIL THE P	NED AND CONSTRUCTED II /ITHIN ONE YEAR OF PERM ROBLEM IS CORRECTED.	N A MANNER THAT IANENT STABILIZA	T WILL MIN	IMIZE EROSION. S LL BE PROVIDED	SLOPES THAT WITH ADDITIONAL	PROVIDE STABILIZATION BLANKET ON ALL SLOPES STEEPER THAN OR EQUAL TO 30% GRADE, OR WHERE OTHERWISE DIRECTED BY OWNER
	x	MS8: CONCENTRATED RUNOFF SHALL NOT F TEMPORARY OR PERMANENT CHANNEL, FLU	LOW DOWN CUT OR FILL S ME OR SLOPE DRAIN STRU	LOPES UNLESS C JCTURE.	ONTAINED	WITHIN AN ADEC	QUATE	NONE ON THE PROJECT
	x	MS9: WHENEVER WATER SEEPS FROM A SLC	PE FACE, ADEQUATE DRA	NAGE OR OTHER	PROTECT	ION SHALL BE PR	OVIDED.	NONE ON THE PROJECT
		MS10: ALL STORM SEWER INLETS THAT ARE SEDIMENT-LADEN WATER CANNOT ENTER TH REMOVE SEDIMENT.	MADE OPERABLE DURING	CONSTRUCTION S WITHOUT FIRST B	HALL BE I EING FILT	PROTECTED SO T ERED OR OTHER	HAT WISE TREATED TO	INLET PROTECTION SHALL BE PROVIDED FOR ALL INLETS IN THE PROJECT AREA.
		MS11: BEFORE NEWLY CONSTRUCTED STOR OUTLET PROTECTION AND ANY REQUIRED T CONVEYANCE CHANNEL AND RECEIVING CH	MWATER CONVEYANCE CH EMPORARY OR PERMANEN ANNEL.	IANNELS OR PIPE IT CHANNEL LININ	S ARE MA G SHALL E	DE OPERATIONAL BE INSTALLED IN I	., ADEQUATE BOTH THE	STANDARDS FOR OUTLET PROTECTION SHALL BE FOLLOWED.
	x	MS12: WHEN WORK IN A LIVE WATERCOURSE CONTROL SEDIMENT TRANSPORT AND STAB NONERODIBLE MATERIAL SHALL BE USED FO USED FOR THESE STRUCTURES IF ARMORED	IS PERFORMED, PRECAU LIZE THE WORK AREA TO R THE CONSTRUCTION OF BY NONERODIBLE COVER	TIONS SHALL BE T THE GREATEST E CAUSEWAYS ANI MATERIALS.	AKEN TO XTENT PO D COFFER	MINIMIZE ENCRO. SSIBLE DURING C DAMS. EARTHEN	ACHMENT, ONSTRUCTION. FILL MAY BE	NONE ON THE PROJECT
	x	MS13: WHEN A LIVE WATERCOURSE MUST BE PERIOD, A TEMPORARY VEHICULAR STREAM	CROSSED BY CONSTRUC CROSSING CONSTRUCTED	TION VEHICLES M O OF NONERODIBI	IORE THAI	I TWICE IN ANY S AL SHALL BE PRO	IX-MONTH DVIDED.	NONE ON THE PROJECT
		MS14: ALL APPLICABLE FEDERAL, STATE AND WATERCOURSES SHALL BE MET.	LOCAL REQUIREMENTS P	ERTAINING TO WO	orking in	OR CROSSING LI	VE	STANDARDS FOR WORKING IN OR CROSSING LIVE WATERCOURSES SHALL BE FOLLOWED.
		MS15: THE BED AND BANKS OF A WATERCOU COMPLETED.	RSE SHALL BE STABILIZED	IMMEDIATELY AF	TER WOR	K IN THE WATERO	COURSE IS	STANDARDS FOR STABILIZING WATERCOURSE BANKS SHALL BE FOLLOWED.
		MS16: UNDERGROUND UTILITY LINES SHALL OTHER APPLICABLE CRITERIA:	BE INSTALLED IN ACCORD	ANCE WITH THE F		S STANDARDS IN	ADDITION TO	UTILITY INSTALLATION STANDARDS SHALL BE FOLLOWED.
		A. NO MORE THAN 500 LINEAR FEET OF T B. EXCAVATED MATERIAL SHALL BE PLAC C. EFFLUENT FROM DEWATERING OPER/ TRAPPING DEVICE, OR BOTH, AND DISCH OFF-SITE PROPERTY.	RENCH MAY BE OPENED A CED ON THE UPHILL SIDE C ATIONS SHALL BE FILTEREI IARGED IN A MANNER THA	AT ONE TIME. OF TRENCHES. D OR PASSED THF T DOES NOT ADVE	ROUGH AN ERSELY AF	APPROVED SED	MENT STREAMS OR	
		D. MATERIAL OSED FOR BACKFILLING TR PROMOTE STABILIZATION. E. RESTABILIZATION SHALL BE ACCOMPL F. APPLICABLE SAFETY REQUIREMENTS	ISHED IN ACCORDANCE W SHALL BE COMPLIED WITH	ITH THIS CHAPTE	R.	TO MINIMIZE ER	JSION AND	
	x	MS17: WHERE CONSTRUCTION VEHICLE ACC MINIMIZE THE TRANSPORT OF SEDIMENT BY TRANSPORTED ONTO A PAVED OR PUBLIC R	ESS ROUTES INTERSECT F VEHICULAR TRACKING ON DAD SURFACE, THE ROAD	PAVED OR PUBLIC TO THE PAVED SL SURFACE SHALL	ROADS, F JRFACE. V BE CLEAN	ROVISIONS SHAL HERE SEDIMENT ED THOROUGHLY	L BE MADE TO IS AT THE END OF	NONE ON THE PROJECT
		EACH DAY. SEDIMENT SHALL BE REMOVED F CONTROL DISPOSAL AREA. STREET WASHIN PROVISION SHALL APPLY TO INDIVIDUAL DEV	ROM THE ROADS BY SHOV 3 SHALL BE ALLOWED ONL ELOPMENT LOTS AS WELL	ELING OR SWEEP Y AFTER SEDIMEI AS TO LARGER L	ING AND NT IS REM AND-DIST	RANSPORTED TO OVED IN THIS MA JRBING ACTIVITIE) a sediment NNER. This Es.	
		MS18: ALL TEMPORARY EROSION AND SEDIM STABILIZATION OR AFTER THE TEMPORARY I AUTHORITY. TRAPPED SEDIMENT AND THE D SHALL BE PERMANENTLY STABILIZED TO PRI	ENT CONTROL MEASURES MEASURES ARE NO LONGE ISTURBED SOIL AREAS RE EVENT FURTHER EROSION	SHALL BE REMOVER R NEEDED, UNLE SULTING FROM TH AND SEDIMENTA	Ved With SS other He dispos Tion.	N 30 DAYS AFTEF WISE AUTHORIZE SITION OF TEMPO	EFINAL SITE ED BY THE VESCP RARY MEASURES	STANDARDS FOR REMOVAL OF EROSION AND SEDIMENT CONTROL MEASURES SHALL BE FOLLOWED.
		PROPERTIES AND WATERWAYS DOWNSTRE/ EROSION AND DAMAGE DUE TO INCREASES FREQUENCY STORM OF 24-HOUR DURATION PESTORATION AND BELOCATION DRO LECTS	IN FROM DEVELOPMENT S IN VOLUME, VELOCITY AND IN ACCORDANCE WITH TH THAT INCORDODATE NATI	DITES SHALL BE PR DEAK FLOW RAT E FOLLOWING ST	ROTECTED E OF STO ANDARDS	FROM SEDIMEN RMWATER RUNOF AND CRITERIA. S	T DEPOSITION, FF FOR THE STATED TREAM MAN MADE	STANDARDS FOR EROSION AND SEDIMENT CONTROL SHALL BE FOLLOWED
		CHANNELS AND SHALL BE EXEMPT FROM AN CHANNELS:	Y FLOW RATE CAPACITY A	ND VELOCITY REG	QUIREMEN	ITS FOR NATURA	OR MAN-MADE	
		A. CONCENTRATED STORING LER KONOCH NATURAL OR MAN-MADE RECEIVING CH/ DISCHARGED INTO A PIPE OR PIPE SYST SHALL BE PERFORMED.	ANNEL, PIPE OR STORM SE EM, DOWNSTREAM STABIL	WER SYSTEM. FO	R THOSE	SITES WHERE RU FALL OF THE PIPI	NOFF IS OR PIPE SYSTEM	
		 B. ADEQUACY OF ALL CHANNELS AND PIPE (1) THE APPLICANT SHALL DEMONSTRA IS 100 TIMES GREATER THAN THE C (2) (A) NATURAL CHANNELS SHALL BE A 	S SHALL BE VERIFIED IN T TE THAT THE TOTAL DRAII ONTRIBUTING DRAINAGE A NALYZED BY THE USE OF	HE FOLLOWING M NAGE AREA TO TH REA OF THE PRO A TWO-YEAR STO	ANNER: IE POINT (JECT IN Q RM TO VE	OF ANALYSIS WITI JESTION; OR RIFY THAT STORI	HIN THE CHANNEL	
		OVERTOP CHANNEL BANKS NOR CA (B) ALL PREVIOUSLY CONSTRUCTED VERIFY THAT STORMWATER WILL NOT	USE EROSION OF CHANNE MAN-MADE CHANNELS SH OT OVERTOP ITS BANKS A	L BED OR BANKS; ALL BE ANALYZE ND BY THE USE O	D BY THE	USE OF A 10-YEAI EAR STORM TO D	R STORM TO DEMONSTRATE	
		(C) PIPES AND STORM SEWER SYST STORMWATER WILL BE CONTAINED C. IF EXISTING NATURAL RECEIVING CHANI	E EROSION OF CHAINNEL EMS SHALL BE ANALYZED WITHIN THE PIPE OR SYST NELS OR PREVIOUSLY CON	BED OR BANKS, A BY THE USE OF A EM. ISTRUCTED MAN-I	10-YEAR S	STORM TO VERIF	THAT ARE NOT	
		ADEQUATE, THE APPLICANT SHALL: (1) IMPROVE THE CHANNELS TO A CON STORM WILL NOT CAUSE EROSION ⁻ (2) IMPROVE THE PIPE OR PIPE SYSTEM	DITION WHERE A 10-YEAR TO THE CHANNEL, THE BEE 1 TO A CONDITION WHERE	STORM WILL NOT), OR THE BANKS; THE 10-YEAR STO	OVERTOF	THE BANKS AND	A TWO-YEAR THE	
		APPURTENANCES; (3) DEVELOP A SITE DESIGN THAT WILL INCREASE WHEN RUNOFF OUTFALL DATE FORM A 40 YEAR OTOPM TO IN	NOT CAUSE THE PRE-DEV S INTO A NATURAL CHANN	ELOPMENT PEAK	RUNOFF I	RATE FROM A TW	D-YEAR STORM TO ENT PEAK RUNOFF	
		(4) PROVIDE A COMBINATION OF CHANI SATISFACTORY TO THE VESCP AUT D. THE APPLICANT SHALL PROVIDE EVIDEN	ICREASE WHEN KUNOFF C NEL IMPROVEMENT, STORI HORITY TO PREVENT DOW CE OF PERMISSION TO MA	MWATER DETENTI NSTREAM EROSIC KE THE IMPROVE	MAN-MADI ON OR OT N. MENTS.	HER MEASURES	WHICH IS	
		 E. ALL HYDROLOGIC ANALYSES SHALL BE DEVELOPMENT CONDITION OF THE SUB. F. IF THE APPLICANT CHOOSES AN OPTION VESCE OF A PLAN FOR MAINTENANCE OF 	BASED ON THE EXISTING V IECT PROJECT. THAT INCLUDES STORMW	VATERSHED CHAF	RACTERIS [®]	L OBTAIN APPRO	TIMATE	
		G. OUTFALL FROM A DETENTION FACILITY AND T PLACED AT THE OUTFALL OF ALL DETEN	HE PERSON RESPONSIBLE SHALL BE DISCHARGED TO TION FACILITIES AS NECES	FOR PERFORMIN A RECEIVING CH. SSARY TO PROVID	IG THE MA ANNEL, AN DE A STAB	INTENANCE. ID ENERGY DISSI LIZED TRANSITIO	PATORS SHALL BE N FROM THE	
		 FACILITY TO THE RECEIVING CHANNEL. H. ALL ON-SITE CHANNELS MUST BE VERIF INCREASED VOLUMES OF SHEET FLOWS DIVERTED TO A STABLE OUTLET, ADEOL 	ED TO BE ADEQUATE. THAT MAY CAUSE EROSIC	ON OR SEDIMENTA		ADJACENT PROP	ERTY SHALL BE	
		J. IN APPLYING THESE STORMWATER MAN INDUSTRIAL DEVELOPMENT SHALL NOT DEVELOPMENT, AS A WHOLE, SHALL BE	AGEMENT CRITERIA, INDIV BE CONSIDERED TO BE SE CONSIDERED TO BE A SIN	IDUAL LOTS OR PARATE DEVELOR GLE DEVELOPMEN	ARCELS IN PMENT PR	I A RESIDENTIAL, OJECTS. INSTEAD CT. HYDROLOGIC	COMMERCIAL OR), THE PARAMETERS	
		THAT REFLECT THE ULTIMATE DEVELOP K. ALL MEASURES USED TO PROTECT PRO IMPACTS ON THE PHYSICAL, CHEMICAL J MANY DI AN ADPROVED PRIOR TO JULY 1	MENT CONDITION SHALL B PERTIES AND WATERWAYS AND BIOLOGICAL INTEGRIT	E USED IN ALL EN S SHALL BE EMPLO Y OF RIVERS, STR	IGINEERIN OYED IN A REAMS AN	G CALCULATIONS MANNER WHICH D OTHER WATER	S. MINIMIZES S OF THE STATE.	
		L. ANY PLAN APPROVED PRIOR TO JOLY 1, RATE CAPACITY AND VELOCITY REQUIR CAPACITY AND VELOCITY REQUIREMEN DETAIN THE WATER QUALITY VOLUME A	EMENTS FOR NATURAL OR SFOR NATURAL OR MAN- ND TO RELEASE IT OVER 4	MAN-MADE CHAN MADE CHANNELS 8 HOURS; (II) DET/	INELS SHA IF THE PR AIN AND R	LINT THAT ADDRE	FLOW RATE SIGNED TO (I) 24-HOUR PERIOD	
		THE EXPECTED RAINFALL RESULTING FI RATE RESULTING FROM THE 1.5, 2, AND FLOW RATE FROM THE SITE ASSUMING FOR THE DEAK FILL OW PATE BY A PEDI	ROM THE ONE YEAR, 24-HC 10-YEAR, 24-HOUR STORM T WAS IN A GOOD FOREST	OUR STORM; AND (S TO A LEVEL THA ED CONDITION, A	(III) REDUC AT IS LESS CHIEVED	E THE ALLOWAB THAN OR EQUAL THROUGH MULTIF	LE PEAK FLOW TO THE PEAK PLICATION OF THE	
		A GOOD FORESTED CONDITION DIVIDED EXEMPT FROM ANY FLOW RATE CAPACI IN ANY REGULATIONS PROMULGATED PI	BY THE RUNOFF VOLUME IY AND VELOCITY REQUIR JRSUANT TO § 62.1-44.15:5	FROM THE SITE II EMENTS FOR NAT 4 OR 62.1-44.15:65	N ITS PRO URAL OR OF THE A	POSED CONDITIO MAN-MADE CHAN CT.	N, AND SHALL BE NELS AS DEFINED	
		M. FOR PLANS APPROVED ON AND AFTER J A OF THE ACT AND THIS SUBSECTION SI STORMWATER MANAGEMENT ACT (§ 62. SUCH LAND-DISTURBING ACTIVITIES (1) /	ULY 1, 2014, THE FLOW RA HALL BE SATISFIED BY COM 1-44.15:24 ET SEQ. OF THE RE IN ACCORDANCE MUTH	I E CAPACITY AND IPLIANCE WITH W CODE OF VIRGINI	VELOCIT ATER QUA A) AND AT	Y REQUIREMENTS INTITY REQUIRED TENDANT REGUL	5 OF § 62.1-44.15:52 IENTS IN THE ATIONS, UNLESS ILITY OF	
		APPROVED DESIGN CRITERIA IN 9VAC25 MANAGEMENT PROGRAM (VSMP) REGUL § 62.1-44.15:52 A OF THE ACT SHALL APP	-870-47 OR GRANDFATHER ATION, IN WHICH CASE TH LY, OR (II) ARE EXEMPT PU	E FLOW RATE CAI	0-48 OF TH PACITY AN 1-44.15:34	E VIRGINIA STOP	WWATER UIREMENTS OF	
		N. COMPLIANCE WITH THE WATER QUANTI MANAGEMENT PROGRAM (VSMP) REGUL	Y MINIMUM STANDARDS S ATION SHALL BE DEEMED	ET OUT IN 9VAC2 TO SATISFY THE I	5-870-66 C REQUIREN	F THE VIRGINIA S IENTS OF THIS SU	I URMWATER JBDIVISION 19.	
	· T \/		DESIGNED:	ммо			-	
C	ITY Def	OF MANASSAS PARTMENT OF	DESIGNED: DRAWN:	MMO TNB				

UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (CURRENT EDITION) AND THE CITY OF MANASSAS EROSION AND SEDIMENT CONTROL ORDINANCE.

THE CONTRACTOR SHALL APPLY PERMANENT OR TEMPORARY SOIL STABILIZATION TO ALL DENUDED OR DISTURBED AREAS WITHIN 7 DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. SOIL STABILIZATION MUST ALSO BE APPLIED TO DENUDED OR DISTURBED AREAS WHICH MAY NOT BE AT FINAL GRADE BUT WHICH WILL REMAIN UNDISTURBED FOR LONGER THAN 14 DAYS. SOIL STABILIZATION MEASURES INCLUDE VEGETATIVE ESTABLISHMENT, MULCHING, AND THE EARLY APPLICATION OF GRAVEL BASE MATERIAL ON AREAS TO BE PAVED.

ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN LAND DISTURBANCE.

THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH RUNOFF PRODUCING RAINFALL EVENT. ANY NECESSARY REPAIRS TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES AND CLEANUP OF SEDIMENTATION ARE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE MADE IMMEDIATELY.

SEDIMENT SHALL BE REMOVED FROM PAVED AREAS ON A DAILY BASIS.

STOCKPILES OF SOIL AND OTHER ERODIBLE MATERIALS SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE CONTRACTOR IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION FOR STOCKPILES ONSITE AS WELL AS FOR MATERIALS TRANSPORTED FROM THE PROJECT SITE.

THE CONTRACTOR SHALL MONITOR AND TAKE PRECAUTIONS TO CONTROL DUST INCLUDING (BUT NOT LIMITED TO) USE OF WATER, MULCH OR CHEMICAL DUST ADHESIVES AND CONTROL OF CONSTRUCTION SITE TRAFFIC.

EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT ADJACENT PROPERTIES, WETLANDS, WATERWAYS, OR THE STORM DRAINAGE SYSTEM.

THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION AND MAINTENANCE OF ANY ADDITIONAL CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED NECESSARY BY THE PLAN APPROVING AUTHORITY.

. TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES ARE NOT TO BE REMOVED UNTIL ALL DISTURBED AREAS ARE STABILIZED. AFTER STABILIZATION IS COMPLETE, ALL MEASURES SHALL BE REMOVED WITHIN 30 DAYS. TRAPPED SEDIMENT SHALL BE SPREAD AND SEEDED.

. ALL EARTHEN STOCKPILES AND SURCHARGE MOUNDS GREATER THAN 10' IN HEIGHT OR HAVING SIDE SLOPES GREATER THAN 3:1 MUST BE ENCAPSULATED BY A DOUBLE ROW OF SILT FENCE. THE FIRST ROW OF SILT FENCE SHALL BE SPACED NO GREATER THAN 10' FROM THE TOE OF THE MOUND. THE SECOND ROW OF SILT FENCE SHALL BE SPACED 5' FROM THE FIRST ROW. IN THE EVENT THAT THE SITE DOES NOT HAVE PERIMETER EROSION AND SEDIMENTATION CONTROLS INSTALLED, THEN DOUBLE ROW SILT FENCING IS REQUIRED REGARDLESS OF THE STOCKPILE OR SURCHARGE HEIGHT.

PROJECT NARRATIVE

ROJECT DESCRIPTION - THIS PROJECT INVOLVES THE CONSTRUCTION OF A REPLACEMENT SANITARY SEWER SYSTEM, WATER YSTEM, AND STORMWATER SYSTEM, AND INSTALLATION OF A SIDEWALK. THE GRAVITY SEWER AND WATER REPLACEMENT IS OCATED ALONG LONGSTREET DRIVE, FROM GRANT STREET TO PORTNER AVENUE. THE STORMWATER REPLACEMENT IS LOCATED ALONG LONGSTREET DRIVE, FROM GRANT STREET TO WEEMS ROAD, AND ALONG THE WEST SIDE OF WEEMS ROAD, FROM ONGSTREET DRIVE TO SUDLEY ROAD. THE SIDEWALK IS LOCATED ALONG THE SOUTH SIDE OF LONGSTREET DRIVE, FROM GRANT STREET TO WEEMS ROAD, AND ALONG THE WEST SIDE OF WEEMS ROAD, FROM LONGSTREET DRIVE TO SUDLEY ROAD. HE TOTAL DISTURBED AREA OF THE PROJECT OUTSIDE OF THE RIGHT-OF-WAY IS 0.55 AC.

XISTING SITE CONDITIONS – THE SITE IS AN ESTABLISHED RESIDENTIAL NEIGHBORHOOD WITHOUT SIDEWALK ALONG ONGSTREET DRIVE. THE GRAVITY SEWER MAIN IS PRIMARILY LOCATED ON THE STREET CENTERLINE. THE WATER MAIN IS OCATED IN THE NORTH QUARTER OF LONGSTREET DRIVE, FROM GRANT STREET TO JACKSON AVENUE, AND ALONG THE SOUTH EDGE OF LONGSTREET DRIVE, FROM JACKSON AVENUE TO PORTNER AVENUE. STORM DRAINAGE PIPE IS INSTALLED AT THE INTERSECTIONS OF LONGSTREET DRIVE WITH GRANT STREET, JACKSON AVENUE, AND WEEMS ROAD: THE REMAINDER OF HE STORM DRAINAGE SYSTEM IS COMPRISED OF ROADSIDE DITCHES WITH DRIVEWAY CULVERTS. PORTIONS OF LONGSTREET RIVE INCLUDE CURB AND GUTTER.

ADJACENT AREAS – THIS PROJECT BORDERS RESIDENTIAL PROPERTIES ALONG LONGSTREET DRIVE AND WEEMS ROAD.

OFF-SITE AREAS - NO OFF-SITE PROPERTIES WILL BE DISTURBED DURING THE CONSTRUCTION OF THIS PROJECT.

SOILS – A GEOTECHNICAL INVESTIGATION WAS NOT CONDUCTED. A SOIL TYPE IS NOT LISTED BY THE NATURAL RESOURCES ONSERVATION SERVICE. THE PREDOMINANT MAPPED SOIL TYPE IN THE VICINITY OF THE PROJECT IS ARCOLA SILT LOAM.

<u>RITICAL AREAS</u> – NO CRITICAL AREAS HAVE BEEN IDENTIFIED AS HAVING POTENTIALLY SERIOUS EROSION PROBLEMS.

ROSION AND SEDIMENT CONTROL MEASURES - EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IN ACCORDANCE VITH THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND AS SHOWN ON THE CONTRACT DRAWINGS.

ERMANENT STABILIZATION – THE SITE WILL BE PERMANENTLY STABILIZED THROUGH PERMANENT SEEDING IN ACCORDANCE /ITH THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND THE PROJECT MANUAL.

TORMWATER RUNOFF CONSIDERATION - THE PROJECT WILL CAUSE A NEGLIGIBLE INCREASE IN THE AMOUNT OF STORMWATER NUNOFF FROM THE RIGHT-OF-WAY.

CALCULATIONS – DRAINAGE CALCULATIONS HAVE BEEN COMPLETED FOR THE PROJECT.

EDIMENT CONTROL PROGRAM - PHASE I

- PHASE I EROSION AND SEDIMENT CONTROL PLAN ESTABLISHES PERIMETER CONTROL MEASURES.
- 1. INSTALL PERIMETER CONTROLS AND SILT FENCE AS SHOWN ON CONSTRUCTION DRAWINGS. 2. CLEAR THE VICINITY OF THE ACTIVE WORK AREA TO NO MORE THAN THE LIMITS SHOWN ON THE CONSTRUCTION

EDIMENT CONTROL PROGRAM - PHASE II

DRAWINGS.

PHASE II EROSION AND SEDIMENT CONTROL PLAN PROVIDES CONTROL MEASURES DURING THE FINAL STAGES OF MPROVEMENTS.

- 1. INSPECT CONTROL MEASURES AT LEAST ONCE DAILY.
- 2. STABILIZE WITH PERMANENT SEEDING AFTER EXCAVATION, BACKFILL, COMPACTION, AND FINAL GRADING. 3. REMOVE CONTROL MEASURES ONLY AFTER ALL DISTURBED AREAS HAVE BEEN STABILIZED AND ONLY AS APPROVED AND DIRECTED BY THE CITY INSPECTOR.

PERMAN	TABLE 3.32-E(Revised June 2003)NENT SEEDING SPECIFICATIONS FOR COASTA	L PLAIN AREA
	SEED ¹	12 July 1 10
LAND USE	SPECIES	APPLICATION RATES
<u>Minimum Care Lawn</u> (Commercial or Residential)	Tall Fescue ¹ or Bermudagrass ¹	175 - 200 lbs 75 lbs
High-Maintenance Lawn	Tall Fescue ¹ or Bermudagrass ¹ (seed)	200-250 lbs 40 lbs. (unhulled
	or Bermudagrass ¹ (by other vegetative establishment method, see Std. & Spec. 3.34)	30 lbs. (hulled
<u>General Slope (3:1 or less)</u>	Tall Fescue ¹ Red Top Grass or Creeping Red Fescue Seasonal Nurse Crop ²	128 lbs 2 lbs <u>20 lbs</u> TOTAL: 150 lbs
Low-Maintenance Slope (Steeper than 3:1)	Tall Fescue ¹ Bermudagrass ¹ Red Top Grass or Creeping Red Fescue Seasonal Nurse Crop ² Sericea Lespedeza ³	93-108 lbs 0-15 lbs 2 lbs 20 lbs <u>20 lbs</u> TOTAL: 150 lbs
1 - When selecting varieties of turfgrass variety list. Quality so variety list is available at the lo http://sudan.cses.vt.edu/html/2	turfgrass, use the Virginia Crop Improvement Asso eed will bear a label indicating that they are approv cal County Extension office or through VCIA at 804 Turf/turf/publications/publications2 html	ociation (VCIA) recommended ved by VCIA. A current turfgrass I-746-4884 or at
 Use seasonal nurse crop ir - Use through October, use lused, include in any slope or lot 	accordance with seeding dates as stated below: February, March - April May 1 st - August September, October - November 15 th November 16 th - January hulled seed. All other seeding periods, use unhulle by maintenance mixture during warmer seeding pe	Annual Rye Foxtail Millet Annual Rye Winter Rye d seed. If Weeping Lovegrass is riods, increase to 30 -40 lbs/acre.
	FERTILIZER & LIME	
 Apply 10-20-10 fer Apply Pulverized A NOTE: A soil test is necessary to de Incorporate the lime and fert When applying Slowly Avail 	tilizer at a rate of 500 lbs. / acre (or 12 lbs. / 1,000 Agricultural Limestone at a rate of 2 tons/acre (or etermine the actual amount of lime required to adjust ilizer into the top 4 – 6 inches of the soil by disking able Nitrogen, use rates available in <u>Erosion & Sed</u>	sq. ft.) 90 lbs. / 1,000 sq. ft.) st the soil pH of site. or by other means. iment Control Technical Bulletin #

PERMANENT SEEDING SPECIFICATIONS

TABLE 3.31-B (Revised June 2003) TEMPORARY SEEDING SPECIFICATIONS QUICK REFERENCE FOR ALL REGIONS								
SEED								
APPLICATION DATES SPECIES	APPLICATION RATES							
Sept. 1 - Feb. 15 florum) & Cereal (Winter) Rye (Secale cereale)	50 -100 (Ibs/acre)							
Feb. 16 - Apr. 30 Annual Ryegrass (Iolium multi-florum)	60 - 100 (lbs/acre)							
May 1 - Aug. 31 German Millet	50 (Ibs/acre)							
EERTILIZER & LIME								
 Apply 10-10-10 fertilizer at a rate of 450 lbs. / acre (or 10 lbs. / Apply Pulverized Agricultural Limestone at a rate of 2 tons/ac NOTE: 1 - A soil test is necessary to determine the actual amount of lime required to 2 - Incorporate the lime and fertilizer into the top 4 – 6 inches of the soil by construction of the soil by construction of the soil by construction of the soil of the soil by construction of the soil by constructing the solution of the soil by constructing the soluting the	1,000 sq. ft.) cre (or 90 lbs. / 1,000 sq. ft.) to adjust the soil pH of site. disking or by other means. <u>n & Sediment Control Technical Bulletir</u> ate.va.us/sw/e&s.htm#pubs							

TEMPORARY SEEDING SPECIFICATIONS



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CITY	OF M	ANAS	SSAS			P
STREET [DRIVE	IMP	ROVEM	ENT	ΓS	
SEDIMENT	CONT	ROL	NOTES	&	NARRATIVE	TAX MAP:

PROJECT

OCTOBER 2022 SHEET 2C(1)

RARY SEEDING SPECIFICATI REFERENCE FOR ALL REGIO	ONS DNS					
SEED						
SPECIES	APPLICATION RATES					
ual Ryegrass (lolium multi- (Winter) Rye (Secale cereale)	50 -100 (lbs/acre)					
s (Iolium multi-florum)	60 - 100 (Ibs/acre)					
	50 (Ibs/acre)					
FERTILIZER & LIME						
te of 450 lbs. / acre (or 10 lbs. / 1,000 sq. ft.) Limestone at a rate of 2 tons/acre (or 90 lbs. / 1,000 sq. ft.)						
actual amount of lime required to adjust the soil pH of site.						





CITY OF MANASSAS LONGSTREET DRIVE IMPROVEMENTS EROSION AND SEDIMENT CONTROL DETAILS



-GATHER EXCESS AT CORNERS





THESE DETAILS INCORPORATED FOR REFERENCE ONLY:

THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE EROSION AND SEDIMENT CONTROL MEASURES DURING ALL PHASES OF THE WORK. THE EROSION AND SEDIMENT CONTROLS SHOWN ON THE PLANS ARE THE MINIMUM REQUIRED. DEPENDING ON HIS CONSTRUCTION OPERATIONS, THE CONTRACTOR MAY BE REQUIRED TO MODIFY OR PROVIDE ADDITIONAL CONTROLS AS NECESSARY.

CONNECT TO $18"^{\Delta}$ BUTTERFLY VALVE

PROJECT

OCTOBER 2022 SHEET 2C(2)





(\mathbb{P})		INLET PROTECTION
CP		CULVERT PROTECTION
ØP	\square	EC-1 OUTLET PROTECTION
$\mathbb{C}\mathbb{D}$		CHECK DAM
SF) –	↓ O	SILT FENCE
B		BLANKETS/MATTING

OCTOBER 2022 SHEET 2C(3)



DEPARTMENT OF UTILITIES

DRAWN: CHECKED:

TNB CJL

NO. DATE

25 0 1"=25'

<u>LEGEND</u>

DISTURBANCE
N OF EXISTING CURB ER
N OF EXISTING STORM 'E
EXISTING STORM
N OF EXISTING RUCTURE

(\mathbb{P})	
CP	
OP	\square
\mathbb{CD}	
SF) —	
₽£)	

CULVERT PROTECTION
EC-1 OUTLET PROTECTION
CHECK DAM
SILT FENCE
BLANKETS/MATTING

LONGSTREET DRIVE IMPROVEMENTS DEMOLITION AND EROSION & SEDIMENT CONTROL PLAN TAX MAP:

OCTOBER 2022 SHEET 2C(4)



LAG	1	24"	15"
LAG	2	30"	18"







LEGEND						
	LIMITS OF DISTURBANCE					
	SAWCUT					
	DEMOLITION OF EXISTING CURB AND GUTTER					
	DEMOLITION OF EXISTING STORM DRAIN PIPE					
1000000000000000000000000000000	ABANDON EXISTING STORM DRAIN PIPE					
	DEMOLITION OF EXISTING STORM STRUCTURE					
	DRIVEWAY DEMOLITION					
	FULL DEPTH ASPHALT PAVEMENT DEMOLITION					
	EXISTING SIDEWALK DEMOLITION					
Μ	EXISTING MAILBOX TO BE RELOCATED					
P	INLET PROTECTION					
CP	CULVERT PROTECTION					
OP 🖉	EC-1 OUTLET PROTECTION					
CD	CHECK DAM					
SF	SILT FENCE					
	BLANKETS/MATTING					
	TEMPORARY CONSTRUCTION EASEMENT PROPOSED UTILITY EASEMENT					
	PROPOSED RIGHT OF WAY					

LONGSTREET DRIVE IMPROVEMENTS DEMOLITION AND EROSION & SEDIMENT CONTROL PLAN TAX MAP:

PROJECT

OCTOBER 2022 SHEET 2C(6)

DESIGNED: DRAWN: CHECKED:

ммо TNB CJL

NO. DATE



____ ------Μ (\mathbb{P}) CP ØP \square \bigcirc SF)-- - - - -B

<u>LEGEND</u> LIMITS OF DISTURBANCE SAWCUT DEMOLITION OF EXISTING CURB AND GUTTER DEMOLITION OF EXISTING STORM DRAIN PIPE ABANDON EXISTING STORM DRAIN PIPE DEMOLITION OF EXISTING STORM STRUCTURE

DRIVEWAY DEMOLITION

FULL DEPTH ASPHALT PAVEMENT DEMOLITION

EXISTING SIDEWALK DEMOLITION EXISTING MAILBOX TO BE RELOCATED

INLET PROTECTION

CULVERT PROTECTION

EC-1 OUTLET PROTECTION

CHECK DAM

SILT FENCE

BLANKETS/MATTING

TEMPORARY CONSTRUCTION EASEMENT PROPOSED UTILITY EASEMENT PROPOSED RIGHT OF WAY

DEMOLITION AND EROSION & SEDIMENT CONTROL PLAN TAX MAP:





CITY	OF	MANA	ASSAS
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	UTI	LITIES	



	CITY OF MANASSAS	DE	
	DEPARTMENT OF	DF	
UTILITIES			

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NO. DATE

		SCALE		
25	0	25	<u>5</u> 0 Ft.	1"=25'



CITY OF MANASSAS LONGSTREET DRIVE IMPROVEMENTS LONGSTREET DRIVE PROPOSED GRADING - STA. 17+50 TO STA. 25+00

PROJECT

OCTOBER 2022 SHEET 2D(4)







25 1"=25'

UTILITIES

CHECKED:

CJL

NO. DATE

LONGSTREET DRIVE IMPROVEMENTS LONGSTREET DRIVE PROPOSED GRADING- STA. 32+50 TO STA. 38+50 WEEMS ROAD PROPOSED GRADING - STA. 110+00 TO STA. 112+00

<u>LEGEND</u>

_____ - - LIMITS OF DISTURBANCE

---- GRADING LIMITS: CUT GRADING LIMITS: FILL

PROJECT

OCTOBER 2022 SHEET 2D(6)

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	CI	TΥ	OF	Μ	ANA	SSAS				
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OPO	SED	GR.	ADING	_	STA.	112+0	о то	STA.	115+3	6


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50 Ft. 25 0 1"=25'

LONGSTREET DRIVE IMPROVEMENTS - STA. 10+00 TO STA. 17+50

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CITY OF MANASSAS	
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UTILITIES	

DESIGNED: DRAWN: CHECKED:

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1	Conc.
2	4" Co
3	Privat
4	Privat
5	ACP [
6	PCC I
7	ACP F
8	ACP (
9	CG-1
10	CG-1
11	Reloco
12	24" C
13	24" S

SCALE 50 Ft. 25 0 1"=25'

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Stop Bar Markings

◦ □ ○ □ PROPOSED STORM STRUCTURES

PROPOSED STORM PIPE

CITY OF MANASSAS LONGSTREET DRIVE IMPROVEMENTS LONGSTREET DRIVE IMPROVEMENTS - STA. 17+50 TO STA. 25+00 PROJECT

OCTOBER 2022 SHEET 4







CITY	OF	MANA	ASSAS
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	UTI	LITIES	

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SCALE <u>5</u>0 Ft. 25 0 1"=25'

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	O_{2} and O_{1} O_{2} O_{2}		GRADING	LIMITS: CUT	
	Conc. Curb Sta CG-6		GRADING	UMITS: FILL	
2	4" Conc. Sidewalk				
3	Private Entrance Type 1		LIMITS O	F DISTURBANCE	
4	Private Entrance Type 2		TEMPORA EASEMEN	RY CONSTRUCTION T	
5	ACP Driveway		PROPOSE	D UTILITY EASEMENT	
6	PCC Driveway		PROPOSE	D RIGHT OF WAY	
7	ACP Pavement		MILL ANI	D OVERLAY	
8	ACP Overlay			PTH PAVEMENT	
9	CG-12 Type B		TOLL DL		
10	CG-12 Type B Modified		PROPOSI	ED 5' SIDEWALK	
11	Relocate Mailbox				
12	24" Crosswalk Markings		PROPOSI RECONS	ED DRIVEWAY TRUCTION	
13	24" Stop Bar Markings	\ <u>````````````````````````````````````</u>			
			PROPOSI	ED STORM PIPE	
		° [] () [_]	PROPOSI	ED STORM STRUCTURES	
	CITY OF MANIACCAC			PROJECT	OCTOBER 20
					SHEET
LONG	GSTREET DRIVE IMPROVEN	MENTS			5

LONGSTREET DRIVE IMPROVEMENTS - STA. 25+00 TO STA. 32+50

2022 5





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50 Ft. 25 0 1"=25'

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OCTOBER 2022

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052 #9018 LONGSTREET DR TM#: 101-15-3-9 DB. 201905240035164 JERRY L. HAMM & FRANCES H. HENDRICK	storma state crid North	
	CONSTRUC	TION NOTES
	1 Conc. Cur	b St'd CG-6
	2 4" Conc.	Sidewalk
	3 Private Er	ntrance Type 1
	4 Private Er	ntrance Type 2
	5 ACP Drive	way
	6 PCC Drive	way
	7 ACP Pave	ment
	8 ACP Overl	ay
	9 CG-12 Ty	pe B
	10 CG-12 Ty	pe B Modified
	11 Relocate	Mailbox
	12 24 Cross	walk Markings
	[13] 24 Stop	Bar Markings
	LEG	END
		GRADING LIMITS: CUT
		GRADING LIMITS: FILL
		LIMITS OF DISTURBANCE
		TEMPORARY CONSTRUCTION EASEMENT PROPOSED UTILITY EASEMENT
		PROPOSED RIGHT OF WAY
		MILL AND OVERLAY
		FULL DEPTH PAVEMENT
		PROPOSED 5' SIDEWALK
		PROPOSED DRIVEWAY RECONSTRUCTION
		PROPOSED STORM PIPE

◦ □ ○ □ PROPOSED STORM STRUCTURES

CITY OF MANASSAS LONGSTREET DRIVE IMPROVEMENTS WEEMS ROAD IMPROVEMENTS- STA. 112+00 TO STA. 115+36 PROJECT





LONGSTREET	DRIVE	WATER	MAIN	COORD	INATES	· · · · · · · · · · · · · · · · · · ·	
DESC.	I	NORTHING	EAST	ΓING	STA.		
8" TEE		6,962,938.95'	11,7	74,405.61'	0+00		
45° BEND		6,962,918.08'	11,7	74,426.70'	0+30	TAX I 89	VAP 112-01-0 10 JACKSON A
8"x6" TEE		5,962,918.11'	11,7	74,432.02'	0+35	CHARLES A. INSTRUM	YOUNG AND SU ENT #20031030
45° BEND	(5 ,9 62,918.27'	11,7	74,463.98'	0+67		
8"x4" TEE	(6,962,717.13'	11,7	74,693.95'	3+72		
8"x6" TEE	(5 ,962,426.51'	11,7	75,028.86'	8+16		
8"x4" TEE	(6,962,415.04'	11,7	75,042.06'	8+33		
8"x6" TEE	(5,962,096.95'	11,7	75,408.78'	13+19) ()	<u> </u>
8"x6" TEE	(6,961,785.37 '	11,7	75,766.59'	17+93	Z g r ₩-	TTT
8" TEE		6,961,770.07'	11,7	75,784.21'	18+17		
8" TEE		6 ,9 61,756.97'	11,7	75,799.33'	18+37		000
45° BEND		6,961,747.86'	11,7	75,809.82'	18+51		
45° BEND		6,961,742.47'	11,7	75,810.20'	18+54		
8"x6" TEE		6,961,443.04'	11,7	76,157.03'	23+14		
8" TEE		5,961,190.44'	11,7	76,454.37'	27+04		TAX 900
8" TEE		6,961,186.52'	11,7	76,458.86'	27+10		Liberia L
8"x6" TEE		6,960,942.03'	11,7	76,772.25'	31+09		
45° BEND		6,960,775.55'	11,7	77,079.22'	34+59		
45° BEND, 8" W/M TH	E-IN	6,960,749.61'	11,7	77,088.40'	34+86		

GRANT AVENUE	WATER MAIN	COORDINA	TES
DESC.	NORTHING	EASTING	STA.
6" W/M TIE-IN	6,962,956.82'	11,774,408.68'	0+00
8"x6" REDUCER	6,962,945.09'	11,774,409.05'	0+12
45° BEND	6,962,942.51'	11,774,409.13'	0+14
8" TEE	6,962,938.95'	11,774,405.61'	0+19
45° BEND	6,962,934.70'	11,774,401.40'	0+25
45° BEND	6,962,873.15'	11,774,408.71'	0+87
8"x6" REDUCER	6,962,871.13'	11,774,411.57'	0+91
45° BEND	6,962,866.10'	11,774,418.74'	1+00
6"W/M TIE-IN	6,962,863.14'	11,774,419.25'	1+03



CITY OF MANASSAS	PROJECT	OCTOBER 20
		SHEET
STREET DRIVE IMPROVEMENTS		8(2)
& PROFILE - STA. 0+00 TO STA. 7+50	TAX MAP:	











CITY OF MANASSAS	PROJECT
STREET DRIVE IMPROVEMENTS	
PROFILE - STA. 30+00 TO STA. 34+87	TAX MAP:

35

OCTOBER 2022 SHEET 8(6)

330

-Off Assembly Ir Bend (Conc. Ar	Ex. 8* D.I.P.		320
Blow- 8"-45°			310
	Approx. Elev. Ex.		300
	8" D.I.P. W/M Ex. 8" Clay San. Sewer	-	290
	mv290.23		280
-			270
		-	





DESIGNED: DRAWN: CHECKED:

ммо TNB CJL

NO.	DATE	
NO.	DATE	





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CITY OF MANASSAS LONGSTREET DRIVE IMPROVEMENTS WATER MAIN INTERCONNECTION PROFILES PROJECT

OCTOBER 2022 $\frac{\text{SHEET}}{8(8)}$













OCTOBER 2022



(Plan View, See Sheet 8(3))



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CITY OF MANASSAS					
DEPARTMENT OF	DRAWN:	TNB			
UTILITIES	TIES				
		CJL	NO.	DATE	
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CITY OF MANASSAS LONGSTREET DRIVE IMPROVEMENTS STORM DRAIN PROFILES

PROJECT

OCTOBER 2022 sheet 8(14)









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CITY OF MANASSAS LONGSTREET DRIVE IMPROVEMENTS STORM DRAIN CONNECTIONS

Scale: 1"=10' Horiz. 1"=10' Vert. (Plan View, See Sheet 8(5))

PROJECT

OCTOBER 2022 sheet 8(15)



)N(CRETE THRUST BLOCKS		
]	HORIZONTAL BENDS		
		REVISION	& DATE
96	CITY OF MANASSAS, VIRGINIA	DRAWING	NUMBER
E	DEPARTMENT OF PUBLIC WORKS	W –	2.0



GATE VALVE SETTING	
	REVISION & DATE
CITY OF MANASSAS VIRGINIA	DRAWING NUMBER
DFPAPTMENT OF PUBLIC WORK	$\mathbf{W} = 6.0$
TE DELANIMENT OF TODLIC WORK	



WATER SERVICE CONNECTIONS 2-INCH AND SMALLER

S	CALE
AS	NOTED

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CITY OF MANASSAS LONGSTREET DRIVE IMPROVEMENTS WATER MAIN STANDARD DETAILS

PROJECT

OCTOBER 2022 SHEET 8(16)



		MMO		
CITY OF MANASSAS	DESIGNED:			
DEPARTMENT OF	DRAWN:	TNB		
UTILITIES				
	CHECKED:	CJL	NO.	DATE





Michael Baker Intl., Inc. 10611 Balls Ford Road, Suite 140







DESIGNED:	ммс
DRAWN:	TNB
CHECKED:	CJL

NO. DATE





SCALE AS NOTED

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		-50	-45	-40			85		_
	- 26))							
		5							
		-50	-45	-40			35		_
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DESIGNED: DRAWN: CHECKED:

ммо TNB CJL

NO. DATE



SCALE

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<u>5</u>0 Ft.

1"=25'

Michael Baker Intl., Inc. 10611 Balls Ford Road, Suite 140 Manassas, Virginia 20109 (703) 334-4915 Fax (703) 334-4914

CITY OF MANASSAS LONGSTREET DRIVE IMPROVEMENTS LONGSTREET DRIVE - CROSS SECTIONS



PROJECT

OCTOBER 2022 SHEET XS-1

		00F: 16.79 00F: 265.41 00F: 265.51 00F: 265.53 00F
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		15 20 25 30 35 40 45 50
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DESIGNED: DRAWN: CHECKED:

ммо TNB CJL

NO. DATE



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CITY OF MANASSAS LONGSTREET DRIVE IMPROVEMENTS LONGSTREET DRIVE - CROSS SECTIONS

PROJECT

OCTOBER 2022 SHEET XS-2

	0EE: 16.80 0EE: 16.80 0EE: 16.80 0EE: 16.80 0EE: 270.43 0EE: 270.43 0EE: 270.43 0EE: 270.43 0EE: 270.43 0EE: 270.44 0E: 270.44
-50 -45 -40 -85 -30 -25 -20 -15 -0 -5 0 5 10 11 13+00.00 -275 -50 -45 -40 -35 -50 -25 -20 -15 -0 -5 0 5 10 1	5 20 25 30 35 40 45 50 25 20 25 20 25 20 25 20 20 20 20 20
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DESIGNED: DRAWN: CHECKED:

ммо TNB CJL

NO. DATE

SCALE 50 Ft. 1"=25' 25 0

Michael Baker Intl., Inc. 10611 Balls Ford Road, Suite 140 Manassas, Virginia 20109 (703) 334-4915 Fax (703) 334-4914

CITY OF MANASSAS LONGSTREET DRIVE IMPROVEMENTS LONGSTREET DRIVE - CROSS SECTIONS

PROJECT

OCTOBER 2022 SHEET XS-3

280				
275				
-50	-45	-40	-85	_
-270				
280				
275				
-50	-45	-40	-35	_
270				
280				
-50	15	-10	_ 85	
275	-+5	-40	-95	
280				
-50	-45	-40	-85	
275				
280				
275				
-50	-45	-40	-35	
270				

DESIGNED: DRAWN: CHECKED:

ммо TNB CJL

NO. DATE



d, Suite 140	
109	

Michael Baker Intl., Inc. 10611 Balls Ford Road, Suite 140 Manassas, Virginia 20109 (703) 334-4915 Fax (703) 334-4914

SCALE

25 0

50 Ft.

1"=25'

CITY OF MANASSAS LONGSTREET DRIVE IMPROVEMENTS LONGSTREET DRIVE - CROSS SECTIONS

-280------

275

270

280

275

270

280

275

280

275

280

275

-270-

PROJECT

OCTOBER 2022 SHEET XS-4

	OFF: 12.36 ELEV: 276.59 OFF: 14.36 ELEV: 276.59 OFF: 14.36 ELEV: 276.31 OFF: 16.86 ELEV: 276.33 OFF: 276.93 ELEV: 276.93
	275 275 275 276 276 276 270 270 270 270 270 270 270 270
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280 	

DESIGNED: DRAWN: CHECKED:

ммо TNB CJL

NO. DATE

SCALE 50 Ft. 1"=25'

25 0

Michael Baker Intl., Inc. 10611 Balls Ford Road, Suite 140 Manassas, Virginia 20109 (703) 334–4915 Fax (703) 334–4914

CITY OF MANASSAS LONGSTREET DRIVE IMPROVEMENTS LONGSTREET DRIVE - CROSS SECTIONS PROJECT

OCTOBER 2022 SHEET XS-5



DESIGNED: DRAWN: CHECKED:

ммо TNB CJL

NO. DATE

25	<u> </u>	
		1"=25'

25 0

CITY OF MANASSAS LONGSTREET DRIVE IMPROVEMENTS LONGSTREET DRIVE - CROSS SECTIONS

PROJECT

OCTOBER 2022 SHEET XS-6

28													OFF: 12.47 CF: 12.47 ELEV: 280.03 OFF: 14.47 ELEV: 279.94	OFF: 16,47 ELEV: 279.77 OFF: 16.97 ELEV: 279.78	OFF: 21.99 ELEV: 279.88 ELEV: 279.88 ELEV: 281.40	
27	-50	-45	#0	-35	-30	-25	-20	-15		- <u>5</u> 17	• 7+50.00	\$ 1D	15	2		50 275
	30												OFF: 12.43 OFF: 12.43 CFF: 12.43 OFF: 14.43 OFF: 14.43	OFF: 16.43 ELEV: 279.81 OFF: 16.93 ELEV: 279.82	OFF: 21.92 ELEV: 279.92 ELEV: 232.22 ELEV: 232.22	285
27	-50 75	-45	-40	-35	-30	-25	-20	- 15		<u>-</u> 5 17	¢ 7+53.66	5 1D	15	2	20 25 30 35 40 45	50 275
28	9 5													OFF: 16.82 ELEV: 280.44	OFF: 21.82 ELEV: 280.54 OFF: 22.82 ELEV: 280.56 ELEV: 25.43 ELEV: 25.43 ELEV: 281.43	- 285
	-50	-45	-40	-35	-30	-25	-20	15		-5 17	• 7+75.00	\$ 1D		2		
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28	-50	-#5			-30	-25	-20	-15		-5		5 10		OFF: 17.01 ELEV: 280.97	0 F: 22.01 0 F: 23.01 0 F: 23.01 0 0 F: 0 F: 23.01 0 0 F: 0 F: 25.92 0 F: 25.92 0 F: 25.92 0 F: 25.92 1 F: 55.92 1 F: 55.92 <t< td=""><td>285</td></t<>	285
										18	3+25.00					

DESIGNED: DRAWN: CHECKED:

ммо TNB CJL

NO. DATE



Michael Baker Intl., Inc. 10611 Balls Ford Road, Suite 140 Manassas, Virginia 20109 (703) 334–4915 Fax (703) 334–4914

CITY OF MANASSAS LONGSTREET DRIVE IMPROVEMENTS LONGSTREET DRIVE - CROSS SECTIONS

PROJECT

OCTOBER 2022 SHEET XS-7
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DESIGNED: DRAWN: CHECKED:

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NO. DATE



SCALE		Misheel Deless
<u>2</u> 5	<u>5</u> 0 Ft.	Michael Baker
	1"=25'	INTERNATIONAL

25 0

Michael Baker Intl., Inc. 10611 Balls Ford Road, Suite 140 Manassas, Virginia 20109 (703) 334–4915 Fax (703) 334–4914 CITY OF MANASSAS LONGSTREET DRIVE IMPROVEMENTS LONGSTREET DRIVE – CROSS SECTIONS

	ELEV: 282.72		ELEV: 282.52	ELEV: 282.52
35	35	35	35	
40	40	40	40	
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PROJECT

october 2022 Sheet XS-8

285					
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-50	45	-4	10	-35	
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DESIGNED: DRAWN: CHECKED:

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NO. DATE





Michael Baker Intl., Inc. 10611 Balls Ford Road, Suite 140 Manassas, Virginia 20109 (703) 334–4915 Fax (703) 334–4914

CITY OF MANASSAS LONGSTREET DRIVE IMPROVEMENTS LONGSTREET DRIVE - CROSS SECTIONS

PROJECT

OCTOBER 2022 SHEET XS-9

	0FF: 17.07 0FF: 282.56 0FF: 282.66 0FF: 23.07 0FF: 23.07 0FF: 23.07 0FF: 23.07 0FF: 23.07 0FF: 282.66 0FF: 282.68 0FF: 283.73 0FF: 283.74 0FF: 283.74	290 290 285 50 280 280
	OFF: 16.58 OFF: 15.58 OFF: 17.08 B COFF: 17.08 B COFF: 282.12 B COFF: 282.23 B COFF: 282.23 B COFF: 282.23 B COFF: 282.35 B COFF: 282.35	290 290 285 50 280
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	OFF: 16.60 ELEV: 282.38 OFF: 17.10 ELEV: 282.38 GF: 282.39 GF: 282.39 GF: 282.49 COFF: 33.90 OFF: 33.90 CF: 284.43 GF: 282.49 CF: 284.43 GF: 282.49 CF: 284.43 GF: 282.49 CF: 284.43 GF: 284.444 GF: 284.444 GF: 284.444 GF: 284.444 GF: 284.4	290 290 285 50 280

DESIGNED: DRAWN: CHECKED:

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NO. DATE



Michael Baker Intl., Inc. 10611 Balls Ford Road, Suite 140 Manassas, Virginia 20109 (703) 334-4915 Fax (703) 334-4914

CITY OF MANASSAS LONGSTREET DRIVE IMPROVEMENTS LONGSTREET DRIVE - CROSS SECTIONS

PROJECT

OCTOBER 2022 SHEET XS-10

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DESIGNED: DRAWN: CHECKED:

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NO. DATE



Michael Baker Intl., Inc. 10611 Balls Ford Road, Suite 140 Manassas, Virginia 20109 (703) 334–4915 Fax (703) 334–4914

CITY OF MANASSAS LONGSTREET DRIVE IMPROVEMENTS LONGSTREET DRIVE - CROSS SECTIONS

PROJECT

OCTOBER 2022 SHEET XS-11

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DESIGNED: DRAWN: CHECKED:

ммо TNB CJL

NO. DATE





Michael Baker Intl., Inc. 10611 Balls Ford Road, Suite 140 Manassas, Virginia 20109 (703) 334-4915 Fax (703) 334-4914

CITY OF MANASSAS LONGSTREET DRIVE IMPROVEMENTS LONGSTREET DRIVE - CROSS SECTIONS

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PROJECT

OCTOBER 2022 SHEET XS-12

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SCALE

25 0

CITY OF MANASSAS DEPARTMENT OF UTILITIES

DESIGNED: DRAWN: CHECKED:

ммо TNB CJL

NO. DATE

1"05'	Michael Baker	Michael Baker Intl., Inc. 10611 Balls Ford Road, Suite 140 Manassas Virginia 20109
1"=25'	INTERNATIONAL	Manassas, Virginia 20109 (703) 334—4915 Fax (703) 334—4914

CITY OF MANASSAS LONGSTREET DRIVE IMPROVEMENTS LONGSTREET DRIVE - CROSS SECTIONS PROJECT

OCTOBER 2022 SHEET XS-13

285					<pre></pre>	d OFF: 12.80 d E_EV: 283.19 d OFF: 14.80 d ELEV: 283.09 OFF: 17.50 OFF: 17.50 ELEV: 283.52 OFF: 23.42 d OFF: 23.53 d OFF: 23.42 d OFF: 23.53 d OFF: 23.54 d OFF: 23.55 d OFF: 23.55
285 	-45				• • • • • • • • • • • • • • • • • • •	3:56 6 3:56 6 3:56 6 3:56 6 3:56 6 3:56 6 3:56 6 6:87 6 6:87 6 83.31 0 17.37 6 83.31 0 17.37 6 83.31 0 17.37 6 83.31 0 17.37 6 283.91 0 283.91 0 283.91 0 283.91 0 283.91 0 283.91 0 283.91 0 283.93 0 284.00 6 6 0 7 6 7 0 284.00 6 6 0 7 0 7 0 8 0 17.33 0 284.00 6 6 6 7 6 7 6 8 6 8 6 8 6 8 6
285 	-45			05	• • • • • • • • • • • • • • • • • • •	FF: 12.95 FF: 12.95 FF: 14.95 FF: 14.95 FF: 14.95 FF: 14.95 FF: 14.95 FF: 14.95 FF: 14.95 FF: 16.95 FF: 16.95 FF: 16.95 FF: 16.95 FF: 17.45 FF: 283.43 FF: 283.44 FF: 284.17 FF: 284.
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DESIGNED: DRAWN: CHECKED:

ммо TNB CJL

NO. DATE

Michael Baker	Michael Baker Intl., Inc. 10611 Balls Ford Road, Suite 140 Manassas Virginia 20109
INTERNATIONAL	(703) 334–4915 Fax (703) 334–4914

CITY OF MANASSAS LONGSTREET DRIVE IMPROVEMENTS LONGSTREET DRIVE - CROSS SECTIONS

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SCALE

25 0

50 Ft.

PROJECT

OCTOBER 2022 SHEET XS-14



DESIGNED: DRAWN: CHECKED:

ммо TNB CJL

NO. DATE

		SCALE		
25	0	25	50 Ft.	1"=25

Michael Baker Intl., Inc. 10611 Balls Ford Road, Suite 140 Manassas, Virginia 20109 (703) 334–4915 Fax (703) 334–4914



CITY OF MANASSAS LONGSTREET DRIVE IMPROVEMENTS LONGSTREET DRIVE - CROSS SECTIONS

PROJECT

OCTOBER 2022 SHEET XS-15

	-54 -54 -54 -54 -54 -54 -54 -54 -54 -54 -54 -54 -54 -54 -54 -54 -54 -54 -54 -54 -54 -54 -54 -54 -54 -55 -54 -56 -54 -56 -54 -56 -54 -56 -54 -56 -54 -56 -57 -57	0 0 0 0 0 0 0 0 0 0 0 0 0 0
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	OFF: -22.49 ELEV: 285.82 OFF: -18.00 FLEV: 285.33 OFF: -18.00 FLEV: 285.39 OFF: -16.67 OFF: -16.67 OFF: -16.67 OFF: -16.50 OFF: -16.50 OFF: -16.50 OFF: -16.50 OFF: -16.50 OFF: -16.50 OFF: -285.96 OFF: -285.96	OFF: 13.11 ELEV: 285.92 OFF: 17.50 ELEV: 286.92 OFF: 17.50 OFF: 17.50 OFF: 287.03 OFF: 287.03 OFF: 287.03 OFF: 287.03 OFF: 287.03 OFF: 287.03 OFF: 287.03 OFF: 287.05 OFF: 287
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DESIGNED: DRAWN: CHECKED:

ммо TNB CJL

NO. DATE

SCALE 50 Ft. 1"=25'

25 0

Michael Baker Intl., Inc. 10611 Balls Ford Road, Suite 140 Manassas, Virginia 20109 (703) 334-4915 Fax (703) 334-4914

CITY OF MANASSAS LONGSTREET DRIVE IMPROVEMENTS LONGSTREET DRIVE - CROSS SECTIONS

PROJECT

OCTOBER 2022 SHEET XS-16

	285				
	-50	- 4 5	-40	-35	-3
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	200				
	-50	-45	-40	-35	-3
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DESIGNED: DRAWN: CHECKED:

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1"=25'

CITY OF MANASSAS LONGSTREET DRIVE IMPROVEMENTS LONGSTREET DRIVE - CROSS SECTIONS PROJECT

OCTOBER 2022 SHEET XS-17

TAX MAP:

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DESIGNED: DRAWN: CHECKED:

TNB CJL

NO. DATE

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ELEV: 293.08		OFF: 13.00 ELEV: 291.52 OFF: 15.00 ELEV: 291.42 OFF: 17.00 ELEV: 291.25 OFF: 17.50 ELEV: 291.25 OFF: 23.50 ELEV: 291.85 OFF: 23.50 ELEV: 291.85 OFF: 23.50 ELEV: 291.85 OFF: 290.71
0 - 2 - 20.86 0 - 2 - 2 - 2 - 20.86 0 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 -	-5 29+38.03 96:5-7 -5 0 -5 -5 0 -5 -5 0 -5 -5 -5 -5 -5 -5 -5 -5 -5 -5	0 0
-52- -52- -52- -52- -17.50 -52- -17.50 -52- -17.50 -1	96:5 -5 -5 -5 -5 -29+75.00	0FF: 11.04 e 0FF: 11.04 e 0FF: 15.00 e 0FF: 17.00 b 0FF: 17.00 c 0FF: 293.27 c 0FF: 293.39 c 0FF: 23.50 c 0FF: 23.02 c 0FF: 23.02 c 0FF: 23.02 c 0FF: 23.03 c 0FF: 23.03 <
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-25 -20 -15 -10 -25 -20 -15 -0 -25 -10 -0 -25 -20 -15 -0 -25 -0 -25 -20 -15 -0 -25 -20 -15 -0 -25 -20 -15 -0 -25 -0 -0 -25 -0 -0 -15 -0 -0 -15 -0 -0 -15 -0 -0 -0 -15 -0 -0 -0 -0 -0 -0 -0 -0 -0 -0		0 OFF: 11.04 1 0

SCALE

25 0

<u>5</u>0 Ft.

1"=25'

Michael Baker Intl., Inc. 10611 Balls Ford Road, Suite 140 Manassas, Virginia 20109 (703) 334-4915 Fax (703) 334-4914

CITY OF MANASSAS LONGSTREET DRIVE IMPROVEMENTS LONGSTREET DRIVE - CROSS SECTIONS

-40

-295

-290------

285

295

290

300

-295

290

290

305

290

PROJECT

OCTOBER 2022 SHEET XS-18

	OFF: -18.66 ELEV: 297.33 OFF: -18.50 OFF: -17.50 OFF: -17.50 ELEV: 297.28 OFF: -17.00 FLEV: 296.93 ELEV: 296.93		OFF: 11.04 ELEV: 296.52 CFF: 15.00 CFF: 17.00 ELEV: 296.17 OFF: 17.00 ELEV: 296.17 OFF: 17.50 ELEV: 296.18 ELEV: 296.28 ELEV: 296.04 ELEV: 296.04	
		-5 • 5 30+31.59		
	OFF: -18.82 ELEV: 298.49 0FF: -17.50 0FF: -17.50 0FF: -17.50 0FF: -17.60 ELEV: 298.37 0FF: -17.00 ELEV: 298.37 0FF: -15.00 ELEV: 298.03	96:96 5 5 5 5 5 5 5 5 5 	GFF: 11.04 ELEV: 297.52 ELEV: 297.52 ELEV: 297.34 OFF: 17.00 CFF: 17.00 CFF: 17.00 CFF: 22.50 CFF: 22.50 CFF: 23.50 CFF:	
	OFF: -18.85 ELEV: 299.88 OFF: -18.50 ELEV: 300.00 ELEV: 300.00 ELEV: 299.98 OFF: -17.00 FLEV: 299.48 OFF: -15.00 ELEV: 299.65	OFF: -5.96 CELCV: 299.46 CELCV: 29	OFF: 11.04 ELEV: 298.9 OFF: 15.00 ELEV: 298.74 OFF: 17.00 ELEV: 298.57 OFF: 17.00 ELEV: 299.07 ELEV: 299.17 OFF: 23.50 ELEV: 299.19 OFF: 23.50 ELEV: 298.45 ELEV: 298.45	
35 -30 -25 35 -30 -25 35 -30 4 -30 5 -30	OFF: -17.50 CF: -17.50 CF: -17.00 ELEV: 301.02 OFF: -17.00 ELEV: 301.01 OFF: -15.00 CF: -15.00 OFF: -15.00 OFF: -15.00 OFF: -15.00 OFF: -17.00 CF: -17.00 CF: -17.00 OFF: -15.00 OFF: -15	-5 • 5 30+75.00 96.9- 96.9- 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.	OFF: 11 04 ELEV: 300.21 ELEV: 300.21 ELEV: 300.00 OFF: 17.00 ELEV: 299.83 OFF: 17.00 ELEV: 299.83 OFF: 17.50 ELEV: 299.83 OFF: 23.50 ELEV: 299.79 ELEV: 299.79	
OFF: -31.68	OF: -17.50 CF: -17.50 CF: -17.00 CF: -17.00 CF: -15.00 CF: -15.00 CF: -15.00 CF: -15.00	OFF: -6.96 -6.000 -6.000 -6.000 -6.000 -6.000 -6.000 -6.000 -6.0	OFF: 11.04 ELEV: 300.27 ELEV: 300.05 OFF: 15.00 ELEV: 300.05 OFF: 17.00 ELEV: 299.89 OFF: 22.50 ELEV: 300.49 OFF: 23.50 ELEV: 299.84 ELEV: 299.84	
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DESIGNED: DRAWN: CHECKED:

ммо TNB CJL

NO. DATE



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CITY OF MANASSAS LONGSTREET DRIVE IMPROVEMENTS LONGSTREET DRIVE - CROSS SECTIONS PROJECT

OCTOBER 2022 SHEET XS-19

	OFF: -19.72 COFF: -19.72 COFF: -19.72 COFF: -19.72 COFF: -17.50 COFF: -17.00 COFF: -17.00 COFF: -17.00 COFF: -17.00 COFF: -15.00 COFF: -15.00 COF	O E E E E E C	OFF: 11.04 ELEV: 301.41 ELEV: 301.27 OFF: 17.00 ELEV: 301.71 OFF: 17.00 ELEV: 301.71 OFF: 23.50 ELEV: 301.71 OFF: 23.50 CFF: 23.50 CFF: 23.50 CFF: 25.49 CFF: 201.06 ELEV: 301.71	
-50 -45 -40 $-85295-40$ $-85-305-40$ $-35-40$ $-35-40$ $-35-305-50$ -40 -35	-30 -25 -20 -5 -30 -25 -20 -5 ELEV: 303.26 0FF: -19.71 0FF: -13.50 0FF: -13.50 0FF: -17.00 FIEV: 303.24 0FF: -17.00 FIEV: 302.90 ELEV: 302.90 0FF: -302.90 0FF: -15.00 0FF: -302.90 0FF:	-10 -5 0 5 31+25.00 96.9 96.9 96.9 1.1.1 0.1.	0 0 <td>45 50 295 295 295 295 295 295 295 295 295 295</td>	45 50 295 295 295 295 295 295 295 295 295 295
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DESIGNED: DRAWN: CHECKED:

ммо TNB CJL

NO. DATE

SCALE 50 Ft. 1"=25' 25 0

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CITY OF MANASSAS LONGSTREET DRIVE IMPROVEMENTS LONGSTREET DRIVE - CROSS SECTIONS PROJECT

OCTOBER 2022 SHEET XS-20

310					
305					
-50 -4	45	 40	-1	55	
500					
710					
510					
305					
-50 -4	45	 40	-	55	
500					
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50	45	 40	-	55	
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DESIGNED: MMO DRAWN: CHECKED:

TNB CJL

NO. DATE

OFF: -17.50 OFF: -17.50 OFF: -17.50 OFF: -17.50 OFF: -17.50 OFF: -17.00 ELEV: 304.70 OFF: -17.50 OFF: -15.00 ELEV: 304.36	OFF: -6.96 ELEV: 304.37	OFF: 12.04 ELEV: 304.03 OFF: 15.00 ELEV: 303.94 OFF: 17.00 ELEV: 303.78 ELEV: 303.78 ELEV: 303.78 ELEV: 303.78 ELEV: 303.78	310
	-10 -5 0 5 32+17.62		5 50
-52- 50- 05F: -19.16 CF: -17.50 CF: -17.50 CF: -17.00 CF: -17.00 CF: -17.00 CF: -17.00 CF: -17.00 CF: -17.00 CF: -17.00 CF: -15.00 CF: -15.	-10 -5 0 5	4 0	310 310 305 305
-52 - 20 - 21 - 19.89 ELEV: 304.44 ELEV: 304.90 OFF: -17.50 ELEV: 304.88 ELEV: 304.55 ELEV: 304.55 ELEV: 304.55 ELEV: 304.55 ELEV: 304.55 ELEV: 304.55	32+25.42 96.9 96.9 97.9 96.9 97	0 6 0	310 310 305 305
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	32+75.00 32+75.00 96.9 96.9 97.5 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1	d 0 0 13.99 d 0 13.99 0 d 0 13.99 0 d 0 17.00 0 d 0 17.00 0 d 0 17.00 0 d 0 17.50 0 d 0 0 17.50 d 0 0 17.50 <td></td>	

SCALE

25 0

50 Ft. 1"=25'

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CITY OF MANASSAS LONGSTREET DRIVE IMPROVEMENTS LONGSTREET DRIVE - CROSS SECTIONS

PROJECT

OCTOBER 2022 SHEET XS-21

52 52 53 0 63 0 64 0 65 0 66 0 67 0 68 0 69 0 61 17.50 61 0 62 0 64 0 65 -17.50 66 0 67		GFF: 10.04 GFF: 10.04 GFF: 15.00 GFF: 15.00 GFF: 17.00 CFF: 17.00 CFF: 17.00 CFF: 17.00 CFF: 17.00 CFF: 17.00 CFF: 17.00 CFF: 17.00 CFF: 24.92 GFF: 24.92 CFF: 2	30 35 40 45 50
52- 52- 52- 53- 54.41 50.4.41 50.4.41 50.4.85 50.4.85 50.4.85 50.4.85 50.4.85 50.4.85 50.4.85 50.4.85 50.4.85 50.4.85 50.4.85 50.4.85 50.4.85 50.4.33 50.4.85 50.4.49 51.5.000 51.5.000 51.5.000 51.5.000 51.5.0000000000		d d d d d d d d d d d d d d	
-52- -52-	33+25.00 982 997 997 997 997 997 997 997 99	GF: 10.04 GF: 10.04 GF: 10.04 GF: 15.00 GF: 17.00 GF: 17.00	
	-10 -5 0 5	GF: 10.04 GF: 10.04 GF: 10.04 GF: 15,00 GF: 17,00 GF: 17,00 GF: 17,50 ELEV: 303.41 OFF: 17,50 ELEV: 303.68 GF: 22,50 OFF: 22,50 GF: 24,54 GF: 23,53 GF: 24,54 GF: 23,53 GF: 24,54 GF: 23,53 GF: 24,54 GF: 24,54 GF: 23,58 GF: 24,54 GF: 23,58 GF: 24,54 GF: 23,53 GF: 24,54 GF: 24,54 GF: 24,54 GF: 23,53 GF: 24,54 GF: 24,54 GF: 23,53 GF: 24,54 GF: 23,550 GF: 24,54 GF: 24,54 GF: 23,550 GF: 24,54 GF: 24,54 GF: 24,550 GF: 24,54 GF: 24,550 GF: 24,550 GF: 24,54 GF: 23,550 GF: 24,54 GF: 24,550 GF: 24,550 GF	
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DESIGNED: DRAWN: CHECKED:

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NO. DATE



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CITY OF MANASSAS LONGSTREET DRIVE IMPROVEMENTS LONGSTREET DRIVE - CROSS SECTIONS PROJECT

OCTOBER 2022 SHEET XS-22

310 310 310 310 310 305 305 305 305 305 305 305 30	06F: 15.00 06F: 15.00 06F: 15.00 06F: 15.00 06F: 15.00 06F: 17.00 06F: 23.50 06F: 25.50 06F: 25.50 07.50
305 	06F: 10.04 06F: 10.04 06F: 10.04 06F: 15.00 06F: 17.00 06F: 17.00 06F: 20.303.04 06F: 22.50 06F: 24.23 06F: 24.23 06F: 24.23 06F: 22.50 06F: 24.23 06F: 24.23 06F: 24.24 06F: 24.23 06F: 24.24 06F: 24.23 06F: 24.24 06F: 24.23 06F: 24.24 06F: 24.24 06F: 24.24 06F: 24.24 06F: 24.24 06F: 24.24 07 07 08 07 09 08 09 08 09 <t< th=""></t<>
34+19.47 34+19.47 305 305 305 -6 -6 -6 -6 -6 -6 -6 -6 -6 -6	06F: 10.04 07: 10.04 06F: 15.00 06F: 17.00 06F: 17.00 06F: 17.00 06F: 17.50 06F: 17.50 06F: 17.50 06F: 17.50 06F: 203.07 06F: 203.07 06F: 203.07 06F: 203.06 06F: 203.07 06F: 203.07 06F: 203.06 06F: 203.07 06F: 203.08 06F: 203.04 06F: 203.05 06F: 203.06 06F: 203.07 06F: 203.08 06F: 203.04
34+25.00 365 305 305 305 305 305 305 305 30	OFF: 9.04 OFF: 9.04 OFF: 9.04 OFF: 9.04 OFF: 17.00 OFF: 17.00
00.00 00 00 00 00 00 00 00 00 0	DFF: 9.04 DFF: 9.04 DFF: 302.68 DFF: 17.00 DFF: 17.50 ELEV: 302.37 OFF: 17.50 ELEV: 302.37 OFF: 17.50 ELEV: 302.37 OFF: 17.50 ELEV: 302.39 OFF: 17.50 DFF: 17.50 DFF: 17.50 DFF: 17.50 DFF: 23.50 DFF: 24.41 DFF: 24.41
2015 2015	OFF: 9.03 CF: 17.00 CF: 17.00 CF: 17.00 CF: 22.50 CF: 22.50

DESIGNED: DRAWN: CHECKED:

ммо TNB CJL

NO. DATE

SCALE 50 Ft. 1"=25' 25 0

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CITY OF MANASSAS LONGSTREET DRIVE IMPROVEMENTS LONGSTREET DRIVE - CROSS SECTIONS PROJECT

OCTOBER 2022 SHEET XS-23

305			
50	45 –	40 —	35 –
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305			
-50 -	45 –	40 —	35 –
705			
202			
-50 - 	45 –	-40	85 -
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305			
305			
305			
305			
-50	45	40	35
305 -50 - 300	45 –	40	35
-50	45 -	40	35 -
305 -50 -	45 –	40	35 -
305 	45 -	40	35 -
305 -50 -	45 -	40 -	35 -
305 -50 - 300	45 -	40	35 -
305 50	45	40	35
305 	45	40	35
305	45	40	35
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305 50	45	40	
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CITY OF MANASSAS DEPARTMENT OF UTILITIES

DESIGNED: DRAWN: CHECKED:

ммо TNB CJL

NO. DATE

-225 52	G C C C C C C C C C C C C C	OFF: -9.96 ELEV: 302.26 202.26	• 5 35+00.00	CFF: 9.03 CFF: 9	GE: 15.00 ELEV: 302.18 OFF: 17.00 ELEV: 302.01 OFF: 17.50 ELEV: 302.51 ELEV: 302.51	OFF: 22.50 ELEV: 302.61 OFF: 23.50 ELEV: 302.63 OFF: 23.50 OFF: 23.50	6 ELEV: 202.01	
-225 -225	0 0 <td>OFF: -9.96 ELEV: 302.32</td> <td>• • • • • • • • • • • • • • • • • • •</td> <td>OFF: 9.03</td> <td>OFF: 15.00 CF: 15.00 CFF: 17.00 CFF: 17.00 CFF: 17.49 CFF: 17.49 CFF: 17.49 CFF: 17.49 CFF: 17.49</td> <td>COFF: 22.50 COFF: 301.92</td> <td>6. 1.91</td> <td></td>	OFF: -9.96 ELEV: 302.32	• • • • • • • • • • • • • • • • • • •	OFF: 9.03	OFF: 15.00 CF: 15.00 CFF: 17.00 CFF: 17.00 CFF: 17.49 CFF: 17.49 CFF: 17.49 CFF: 17.49 CFF: 17.49	COFF: 22.50 COFF: 301.92	6. 1.91	
-52 -52 FI FV. 302 40	B 0FF: -18:50 ELEV: 302.43 0FF: -17.50 F 0FF: -17.00 F ELEV: 302.08	OFF: -9.96 O ELEV: 302.32 C - 0 C - 10 C - 1	• * 35+25.00	OFF: 9.03	CF: 15.00 CF: 15.00 CF: 17.00 CF: 17.00 CF: 17.50 CF: 17.50 CF: 17.50 CF: 17.50	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ELEV: 301.87	
-225 -52 -52	G C C C C C C C C C C C C C	OFF: -9.95 CELEV: 302.36 CELEV: 302.36 CELEV: 302.36	• 5 35+50.00	OfF: 9.03 OfF: 9.03 ELEV: 302.26	GFF: 15.00 GFF: 15.00 GFF: 17.00 GFF: 17.00 GFF: 17.50 GFF: 17.50 CFF: 17.50 ELEV: 302.42	0FF: 22.50 0FF: 22.50 0FF: 23.50 0FF: 23.50 0FF: 23.50	۹ <u>ح</u> 0FF: 25.67 ELEV: 301.81	
OGFE: -24.00 -52 -52	OFF: -17.50 OFF: -17.50 DFF: 302.10 ELEV: 302.09 - OFF: - 0FF: - 0FF: - 17.00 - 0FF: - 05F:	OFF: -9.96 CF: -9.96 CF: -302.40 CF: -0 CF:	• * 35+61.89	OFF: 9.02	GFE: 15.00 GFE: 15.00 GFE: 17.00 GFE: 17.00 GFE: 17.50 CFE: 1	OFF: 22.50 OFF: 22.50 OFF: 23.50 OFF: 23.50 OFF: 23.50 OFF: 23.50 OFF: 23.50 OFF: 23.50	ELEV: 201.92	
-52 DCF: -19.68	B CFF: -10.30 B CFF: -17.50 CFF: -17.50 CFF: -17.00 FEEV: 302.61 CFF: -17.00 FEEV: 302.11 CFF: -15.00 FEEV: 302.28	0 ELEV: 302.43 0 ELEV: 302.43 0 - - - - - - - - - - - - -	• 5 35+75.00	OFF: 9.02	CEF: 15.00 CEF: 15.00 CFF: 17.00 CFF: 17.00 CFF: 17.50 CFF: 17.50 CFF: 17.50 CFF: 17.50 CFF: 17.50	OFF: 22.50 ELEV: 302.61 OFF: 23.50 OFF: 23.50 OFF: 23.50 OFF: 23.50	C C C C C C C C C C C C C C C C C C C	
-22 -22	0F: 0F: 0F: 02.75 0F: 0F: 17.50 0F: 0F: 17.50 0F: 0F: 17.00 0F: 0F: 17.00 0F: 0F: 17.00 0F: 0F: 17.00 ELEV: 302.74 0F: 0F: 0F: 15.00 ELEV: 302.40	OFF: -9.96 ELEV: 302.52 ELEV: 302.52		0FF: 9.01 0FF: 302.40	CF: 15.00 CF: 15.00 CF: 302.26 OF: 17.00 CF: 17.00 CF: 17.50 CF: 17.50 CF: 17.50 CF: 17.50	OFF: 22.50 ELEV: 302.37 OFF: 23.50 CF: 23.50	ч Дег: 24.64 ЕLEV: 302.01	

36+00.00

SCALE <u>5</u>0 Ft. 25

1"=25'

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CITY OF MANASSAS LONGSTREET DRIVE IMPROVEMENTS LONGSTREET DRIVE - CROSS SECTIONS

305

300

305

300

305

300

305

50

50

50

40

- ____ ____ 4

5

50

45

PROJECT

OCTOBER 2022 SHEET XS-24

300 300 300 300 300 300 300 300	GFF: 9.02 GFF: 9.02 GFF: 9.02 GFF: 9.02 GFF: 15.00 GFF: 15.00 GFF: 15.00 GFF: 15.00 GFF: 17.00 GFF: 22.30 GFF: 22.30 GFF: 22.30 GFF: 23.01.91 GFF: 23.01.91	-305
300 -	Bellevi 302.58 Bellevi 302.58 Bellevi 302.58 Bellevi 302.30 Bellevi 302.30 Bellevi 302.90 Bellevi 302.90 Bellevi 302.90 Bellevi 302.90 Bellevi 302.90 Bellevi 302.90 Bellevi 301.69 Bellevi 301.69 Bellevi 301.69	
	6 7 0 6 7 0 6 7 0 1 1 0 1 <td>-305</td>	-305
305 305 305 305 305 305 305 305	GF: 9.02 GF: 15.00 GF: 15.00 GF: 17.50 GF: 17.50 GF: 17.50 GF: 17.50 GF: 17.50 GF: 17.50 GF: 17.50 GF: 17.50 GF: 23.50 GF: 24 GF: 25.50 GF:	
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NO. DATE



SCALE 50 Ft. 1"=25' 25 0

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CITY OF MANASSAS LONGSTREET DRIVE IMPROVEMENTS LONGSTREET DRIVE - CROSS SECTIONS PROJECT

OCTOBER 2022 SHEET XS-25

305 305 305 305 305 305 305 305	
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NO. DATE

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CITY OF MANASSAS LONGSTREET DRIVE IMPROVEMENTS WEEMS ROAD - CROSS SECTIONS

PROJECT

OCTOBER 2022 SHEET XS-26

		o -5 o 5 113+00.00	di OFF: 12.56 di OFF: 12.56 di OFF: 12.56 di OFF: 17.00 di ELEV: 304.26 di OFF: 22.50 di ELEV: 304.28 di OFF: 23.50 di OFF: 23.50 di OFF: 23.50 di OFF: 23.50
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NO. DATE

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SCALE 25 0 <u>5</u>0 Ft. 1"=25'

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MMO TNB CJL NO.	DATE			250	SCALE	50 Ft. 1"=25'	Michael Baker	Michael Baker Intl., Inc. 10611 Balls Ford Road, Suite 140 Manassas, Virginia 20109 (703) 334–4915 Fax (703) 334–4914	LONG WE

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CITY OF MANASSAS GSTREET DRIVE IMPROVEMENTS EEMS ROAD - CROSS SECTIONS

PROJECT

OCTOBER 2022 SHEET XS-28