

## GENERAL NOTES

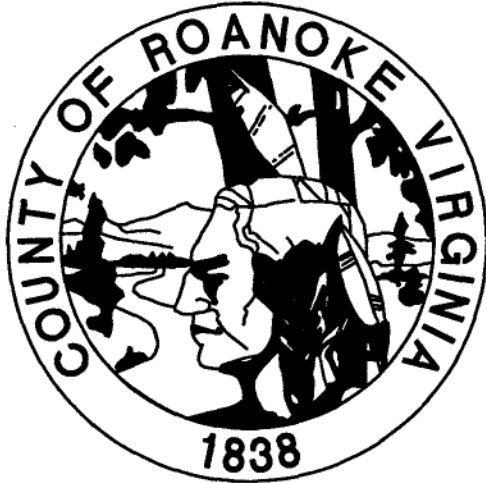
### PRE-CONSTRUCTION MEETING AND CONSTRUCTION COMMENCEMENT:

- All construction methods and materials shall conform to the Construction Standards and Specifications of Roanoke County, the Western Virginia Water Authority, and the Virginia Department of Transportation.
- Stormwater Management Agreements with an attached 8 1/2" x 11" or 8 1/2" x 14" plat must be approved and recorded prior to the pre-construction meeting.
- Once all required items are submitted to the County of Roanoke, the developer must contact the Development Review Coordinator to indicate that a pre-construction meeting needs to be scheduled. The pre-construction meeting will be scheduled with the owner/developer two (2) working days later.
- Please note the 2001 General Assembly revisions to Va Erosion and Sediment Control Law. Effective July 1, 2001, all land disturbing projects that require approval of an erosion and sediment control plan, grading or clearing permit shall require that the applicant provide the name of an individual who will be responsible for land disturbing activities and that this individual hold a Responsible Land Disturber (RLD) Certificate from the Department of Conservation and Recreation. The Responsible Land Disturber can be anyone from the Project team that is certified by the State of Virginia to be in charge of carrying out the land disturbing activity for the project.
- It is the responsibility of the owner/developer to notify the certified Responsible Land Disturber and the Utility Contractor to attend the pre-construction meeting.
- The Development Review Coordinator will schedule the pre-construction meeting with the County Review Engineer, the County Inspector, and the Western Virginia Water Authority and the Town of Vinton Public Works Department if applicable.
- An approved set of plans and all permits must be available at the construction site at all times.
- The developer and/or contractor shall supply all utility companies with copies of approved plans, advising them that all grading and installation shall conform to approved plans.
- The project engineer will inform the owner/developer verbally and in writing of the County's obligation to perform inspections on site. Everyone in the meeting will be required to sign a pre-construction checklist indicating their knowledge of Roanoke County's obligation to perform inspections on site.
- The Erosion Control Permit is given to the developer at this pre-construction meeting.
- The developer **MUST** contact the project inspector 24 hours before beginning any grading or construction on the property.
- The project inspector will visit the site within 48 hours of the developer's call to ensure that all necessary erosion and sediment control measures are properly installed according to the approved plan.
- All work shall be subject to inspection by Roanoke County, the Western Virginia Water Authority and the Virginia Department of Transportation Inspectors.
- Contractors shall notify utilities of proposed construction at least two (2), but not more than ten (10) working days in advance. Area public utilities may be notified thru "Miss Utility": 1-800-552-7001.
- 100 year Floodway and Floodplain information shall be shown where applicable. FIRM Index Date shall be shown on the plans. The 100 year Floodway shall be staked prior to any construction.
- Grade stakes shall be set for all curb and gutter, culvert, sanitary sewer and storm sewer at all times of construction.
- The Department of Community Development shall be notified when a spring is encountered during construction.
- Construction debris shall be containerized in accordance with the Virginia Litter Control Act. No less than one litter receptacle shall be provided on site.
- The contractor shall provide adequate means of cleaning mud from trucks and/or other equipment prior to entering public streets or rights of ways. It is the contractors responsibility to insure that the streets are in a clean, mud and dust free condition at all times.
- Plan approval in no way releases the developer or contractors of the responsibilities contained within the erosion and sediment control policies.
- Field construction shall honor proposed drainage divides as shown on plans.
- Field corrections shall be approved by the Roanoke County Engineering Division and/or the Western Virginia Water Authority and the Professional of Record, prior to such construction.
- The developer or contractor shall supply the County and the Western Virginia Water Authority with correct As-Built plans before final acceptance.

### VIRGINIA DEPARTMENT OF TRANSPORTATION:

- Plan approval by Roanoke County does not guarantee issuance of any permits by the Virginia Department of Transportation.
- A permit must be obtained from the Virginia Department of Transportation, Salem Residency Office prior to construction in the highway right-of-way.
- The preliminary pavement designs should be based on a predicted sub-grade CBR value of 7.0 and with a Resiliency Factor (RF) of 2.0 as shown in Appendix I of the 2000 Virginia Department of Transportation Pavement Design Guide for Subdivision and Secondary Roads. The sub-grade soil is to be tested by an independent laboratory and the results submitted to the Virginia Department of Transportation prior to base construction. Should the sub-grade CBR value and/or the RF value be less than the predicted values, additional base material will be required in accordance with Departmental specifications. Refer to the same manual as the number and locations of the required soil samples to be tested. All pavement designs shall be submitted to the Department for review and approval. The sub-grade shall be approved by the Virginia Department of Transportation prior to placement of the base. Base shall be approved by the Virginia Department of Transportation for depth, template, and compaction before the surface is applied.
- Standard guardrail with safety end sections may be required on fills or in areas where hazards exist as deemed necessary. After completion of rough grading operations, the County Engineer and Virginia Department of Transportation shall be contacted to schedule a field review. Where guard rail is warranted, the standard shoulder width shall be provided and the guard rail shall be installed in accordance with the 2001 VDOT Road and Bridge Standards as part of this development.
- Standard street and traffic control signs shall be erected at each intersection by the developer prior to final street acceptance.
- All traffic devices shall be in accordance with current edition of the manual: "Uniform Traffic Control Devices (MUTCD)"
- All unsuitable material shall be removed from the construction limits of the roadway before placing embankment.

The Project Engineer shall provide electronic copies of the approved plans to the Development Review Coordinator within 5 working days of the pre-construction meeting. This sheet may not be modified.



NAME OF DEVELOPMENT	Friendship Health & Rehabilitation Center South	OWNER/DEVELOPER: I HEREBY CERTIFY THAT I AGREE TO COMPLY WITH THESE REQUIREMENTS AND THE THIRTY (30) POINTS SHOWN ON THIS COVER SHEET UNLESS MODIFIED IN ACCORDANCE WITH LOCAL LAW.
MAGISTERIAL DISTRICT(S)	Cave Spring	
OWNER (name, address, telephone)	Friendship Retirement Community 327 Hershberger Road, N.W. 24012 540.265.2100	
DEVELOPER (name, address, telephone)	Friendship Retirement Community	
ENGINEER, ARCHITECT OR SURVEYOR (name, address, telephone)	Engineering Concepts, Inc. 20 South Roanoke Street, Fincastle, VA 24090 540.473.1253	
TAX MAP NO(S)	087.18-01-37.00	

## WATER NOTES

All water facilities shall be installed according to the Western Virginia Water Authority Design and Construction Standards/ (Latest Edition).

A minimum cover of three (3) feet is required over proposed lines.

Contractor shall be responsible for locating and uncovering valve vaults after paving and adjustment to final grade if necessary.

All existing utilities may not be shown in their exact location. The contractor shall comply with the (State Water Works Regulations, Section 12VAC5-590-1150, where lines cross.

All trenches in existing or future highway right-of-ways shall be compacted according to Virginia Department of Transportation standards.

Lines shall be staked prior to construction.

Water main shall be minimum Class 350 Ductile Iron in accordance to AWWA C151 or DR-14 PVC in accordance with AWWA C-900.

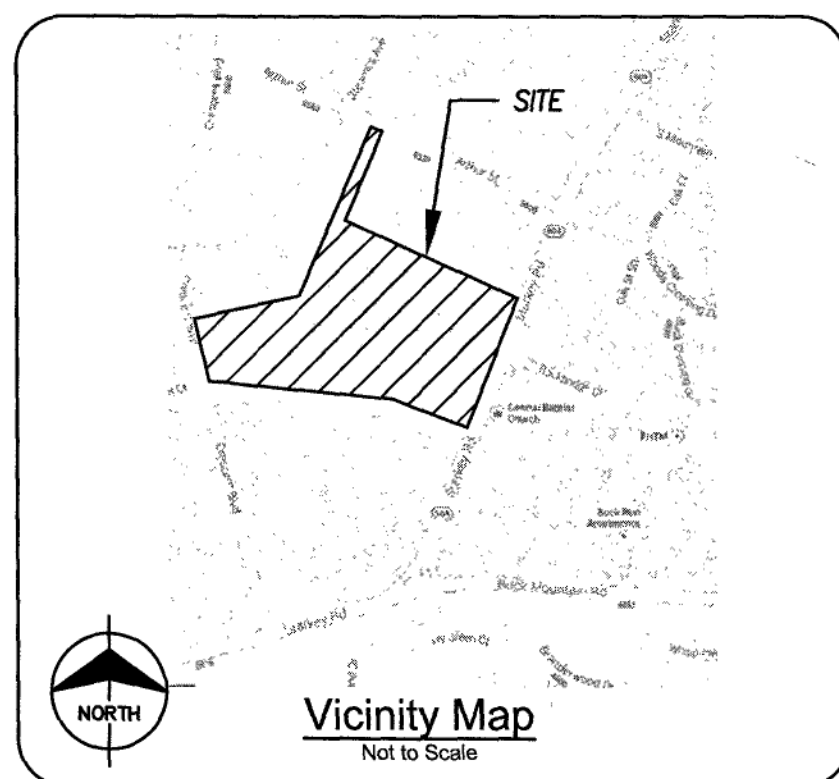
Ductile Iron Pipe in accordance with the Western Virginia Water Authority Design and Construction Standards shall be required for all pipe with a working pressure equal to or greater than 100 p.s.i.

Western Virginia Water Authority

Availability letter number: N/A

## RETAINING WALLS

A separate review and building permit application are required for all retaining wall(s). A copy of the approved site plan must be submitted with the building permit application for the retaining wall(s) plan.



## LEGEND

Property Line	---
Right-of-way	--- R/W ---
Centerline	--- CL ---
Minimum Building Line	--- MBL ---
Existing Storm Sewer	--- ST --- ST ---
Existing Sanitary Sewer	--- SS --- SS ---
Existing Water Main	--- W --- W ---
Existing Contour	--- 1045 ---
Proposed Contour	--- 1045 ---
Proposed Drainage Divide	---<---
Proposed Limits of Clearing	--- ST --- ST ---
Proposed Storm Sewer	--- SS --- SS ---
Proposed Sanitary Sewer	--- W --- W ---
Proposed Water Main	--- W --- W ---
Proposed Roof Collector	--- RC --- RC ---
Proposed Foundation Drain	--- FDN --- FDN ---

# County of Roanoke, Va

## SEWER NOTES

All sanitary sewer facilities shall be installed according to the Western Virginia Water Authority Design and Construction Standards. (Latest Edition).

A minimum cover of three (3) feet is required over proposed lines.

Contractor shall be responsible for locating and uncovering all manholes after paving. Manhole tops shall be adjusted to grade if necessary.

All existing utilities may not be shown in their exact location. The contractor shall comply with (State Water Works Regulations, Section 12VAC5-590-1150, where lines cross.

All trenches in existing or future rights-of-way shall be compacted according to Virginia Department of Transportation standards.

Lines shall be staked prior to construction.

Contractor shall provide one or more closed circuit television (CCTV) inspection(s) for all newly installed public sewer prior to substantial completion.

## PRIVATE UTILITIES

Underground utilities installed on private property or in private utility easements and building related storm drains shall be designed and installed per the current edition of the Virginia Uniform Statewide Building Code. Design and installation requirements issued by the Western Virginia Water Authority that meet or exceed the USBC requirements are acceptable for private utilities. All private utilities are to be permitted through and inspected by the Roanoke County Inspections Office. Vaults, valves and other devices installed by or under the control of the Western Virginia Water Authority may not be substituted for the code required devices.

- COVER SHEET
- GENERAL NOTES
- EXISTING CONDITIONS SURVEY
- OVERALL SITE & UTILITY EXTENSIONS
- PROPOSED EASEMENT
- EROSION & SEDIMENT CONTROL
- SITE PLAN - EAST
- SITE PLAN - WEST
- LANDSCAPE PLAN
- WATERLINE & MISCELLANEOUS PROFILES
- SEWER PROFILE
- STORM PROFILES & DETAILS
- STORM PROFILES & DETAILS
- FILTERRA & STORM TECH DETAILS
- FILTERRA & STORM TECH DETAILS
- FILTERRA & STORM TECH DETAILS
- FILTERRA & STORM TECH DETAILS
- FILTERRA & STORM TECH DETAILS
- WATER DETAILS
- SANITARY SEWER DETAILS
- MISCELLANEOUS DETAILS
- EROSION & SEDIMENT CONTROL NOTES
- MISCELLANEOUS DETAILS

Index

## SURVEY INFORMATION

Horizontal and vertical control surveys were performed in year: 2013  
By: ENGINEERING CONCEPTS, INC.

All vertical elevations must be referenced to the National Geodetic Vertical Datum of 1929 or 1988.  
All horizontal elevations must be referenced to the North American Datum of 1927 or 1983.

Source of topographic mapping is dated: 2013

Boundary was performed by ENGINEERING CONCEPTS, INC., dated: 2013

Benchmark Information: Reference Point #1 - Existing fire hydrant on the easterly side of Starkey Road (Rte. 604) - Elev.: 1191.44 Reference Point #2 - Existing fire hydrant on the easterly side of Crescent Blvd. near most western point of parcel - Elev.: 1201.16.

The professional seal and signature certifies the boundary survey and topographic mapping to be accurate and correct.

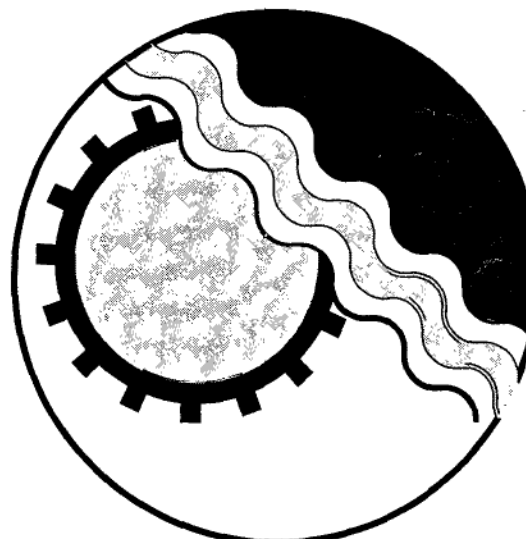
## QUANTITY & COST ESTIMATE

ITEM	QUANTITY	UNIT	UNIT PRICE	COST	BONDABLE
CLEARING AND GRUBBING	1	LUMP SUM	2,500	2,500	2,500
EXCAVATION	1	LUMP SUM	100,000	100,000	100,000
EMBANKMENT		C.Y.			
CURB INLET DI-1	4	EACH	2,000	8,000	8,000
CURB INLET DI-3B	1	EACH	3,500	3,500	3,500
CURB INLET DI-3C	2	EACH	3,500	7,000	7,000
CURB INLET DI-7	1	EACH	2,500	2,500	2,500
MANHOLE MH-SANITARY	4	EACH	3,500	14,000	14,000
MANHOLE MH-STORM	5	EACH	3,000	15,000	15,000
MANHOLE MH-SANITARY SAMPLING	1	EACH	2,500	2,500	2,500
24-IN. H.D.P.E. (STORM)	1,500	LIN. FT.	50	75,000	75,000
12-IN. H.D.P.E. (STORM)		LIN. FT.			
8-IN PVC (SANITARY)	1,200	LIN. FT.	66	79,200	79,200
-IN. C.M. CULVERT		LIN. FT.			
-IN. C.M. CULVERT		LIN. FT.			
BOX CULVERT		LUMP SUM			
PAVED DITCH		LIN. FT.			
RIPRAP - CLASS		S.F.			
SODDED SWALE		S.Y.			
-IN. CONCRETE ENDWALL EW-		EACH			
24 -IN. END SECTION EW-1	2	EACH	1,750	3,500	3,500
HEADER CURB & GUTTER CG-2	3,380	LIN. FT.	20	67,600	67,600
CURB & GUTTER CG-		LIN. FT.			
VALLEY GUTTER	30	LIN. FT.	25	750	750
GRAVEL BASE		S.Y.			
GRAVEL SHOULDER		S.Y.			
STANDARD DUTY ASPHALT	3,135	S.Y.	25	78,375	
-IN. BIT. CONC. TYPE B-		S.Y.			
-IN. BIT. CONC. TYPE S-		S.Y.			
-IN. BASE MATERIAL		C.Y.			
-IN. SUBBASE MATERIAL		C.Y.			
HEAVY DUTY ASPHALT	5,425	S.Y.	35	189,875	
TRAFFIC BARRICADE		EACH			
8" WATER LINE		LIN. FT.	40		
6" WATER LINE	1155	LIN. FT.	35	40,425	40,425
4" WATER LINE	885	LIN. FT.	32	28,320	28,320
FIRE HYDRANT ASSEMBLIES	4	EACH	4,000	16,000	16,000
2" - BLOW OFFS W/VAULT, FRAME & COVER	4	EACH	1,500	6,000	6,000
4-IN. GATE VALVES, W/VAULT, FRAME & COVER	4	EACH	750	3,000	3,000
6-IN. GATE VALVES, W/VAULT, FRAME & COVER	4	EACH	850	3,400	3,400
WATER VAULT & APPURTENANCES	2	LUMP SUM	15,000	30,000	30,000
11 1/4" BEND	2	EACH	250	500	500
22 1/2" BEND	5	EACH	250	1,250	1,250
45" BEND	15	EACH	250	3,750	3,750
6" TEE	6	EACH	500	3,000	3,000
STANDARD MANHOLE W/FRAME & COVER		EACH			
SAMPLING MANHOLE/PORT		EACH			
LANDSCAPING	1	LUMP SUM	75,000	75,000	75,000
SIDEWALK	8,300	SQ. FT.	5	41,500	41,500
FILTERRA ROOF COLLECTOR	4	EACH	20,000	80,000	80,000
FILTERRA CURB INLET	4	EACH	35,000	140,000	140,000
FILTERRA BOXLESS UNIT	1	LUMP SUM	25,000	25,000	25,000
U/G STORMWATER MANAGEMENT SYSTEMS (STORMTECH)	1	LUMP SUM	150,000	150,000	150,000
AS-BUILT PLANS (STORM SEWER SYSTEMS)	1	LUMP SUM	500	500	500
AS-BUILT PLANS (STORMWATER MANAGEMENT)	1	LUMP SUM	2,500	2,500	2,500
SUBTOTAL				1,299,446	1,031,196
10% CONTINGENCY				129,945	103,120
ESTIMATED TOTAL				\$1,429,391	\$1,134,316

I HEREBY CERTIFY THAT THE FOREGOING ESTIMATE REFLECTS THE CURRENT IMPROVEMENT COSTS OF THIS PROJECT.

SIGNED:

DATE:



ENGINEERING CONCEPTS, INC.

20 S. ROANOKE ST., PO BOX 619  
FINCASTLE, VIRGINIA 24090  
540.473.1253 FAX: 540.473.1254

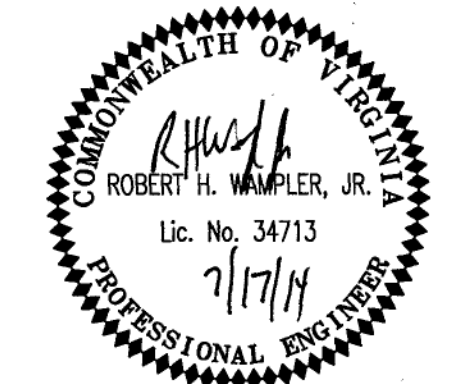
Friendship Health and  
Rehab Center South  
5647 Starkey Rd  
Roanoke, Virginia

SHEET  
1  
OF  
22

APPROVAL



DEVELOPMENT PLAN APPROVED FOR CONSTRUCTION BY ROANOKE COUNTY	DATE	DATE	DATE	DATE
Department	1/1/14	1/1/14	1/1/14	1/1/14
Development Review	1/1/14	1/1/14	1/1/14	1/1/14
Engineering	1/1/14	1/1/14	1/1/14	1/1/14
Water & Sewer	1/1/14	1/1/14	1/1/14	1/1/14
Grading & Paving	1/1/14	1/1/14	1/1/14	1/1/14



CHARLES CRUSH  
AS-BUILTS  
12-11-2015