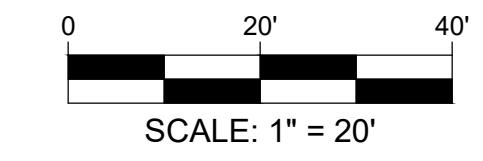


GRADING PLAN

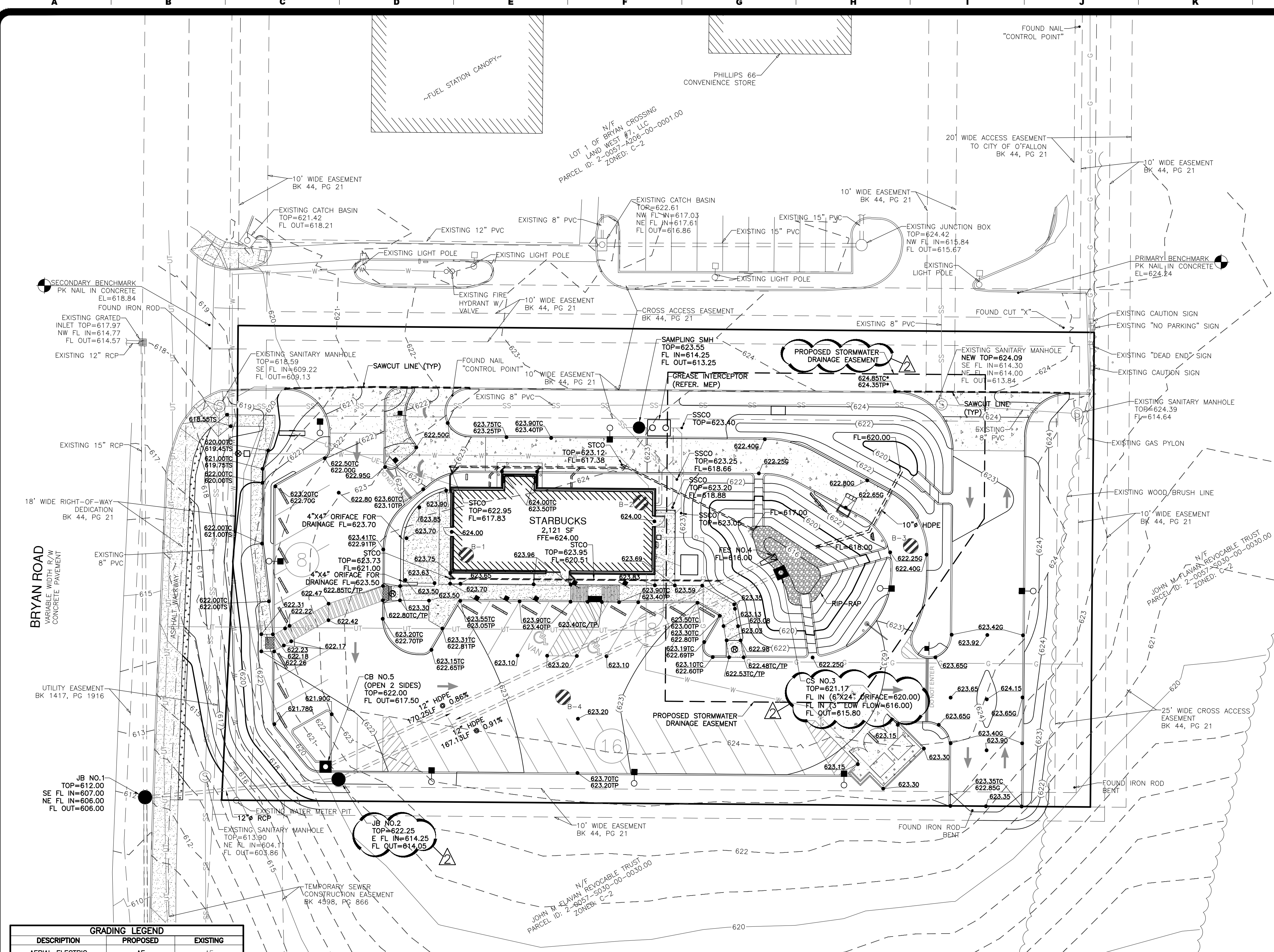


GRADING NOTES:

- Bearings referenced to Grid North of the Missouri Coordinate System 1983, East Zone per GPS observation utilizing the MoDOT VRS RTK Network (US Foot).
- Contractor shall verify elevation of temporary benchmarks based on the elevation of the primary benchmark, prior to the start of construction. Contractor shall notify engineer if elevations differ from those shown on these plans.
Primary Benchmark - PK Nail in concrete on north side of shared access road approximately 13 feet southeast of light pole base. EL=624.24
Secondary Benchmark - PK Nail in concrete in the center of access at Bryan Road approximately 29 feet northeast from center of sanitary manhole in sidewalk ramp. EL=618.84
- This site scales within Zone X, area of minimal flood hazard, as per Federal Emergency Management Agency Flood Insurance Rate Map Community Panel No. 29183C0240C, dated January 20, 2016.
- The Contractor is specifically cautioned that the location and/or elevation of existing utilities as shown on these plans is based on records of the various utility companies and, where possible, measurements taken in the field. The information is not to be relied on as being exact or complete. The Contractor must call the appropriate utility company to request exact field location of utilities. It shall be the responsibility of the Contractor to relocate all existing utilities which conflict with the proposed improvements shown on plans.
- All trenches under paved areas shall be backfilled with granular material and compacted to meet compaction requirements for the parking lot. Granular material shall be placed and compacted to a level equal to the trench depth at the time of the utility installations.
- All unsurfaced areas are to receive six inches of topsoil. Contractor to seed, mulch, fertilize, water, and maintain all areas outside of paved areas that were disturbed during construction until an acceptable stand of grass is established. Contractor shall be responsible to take whatever means necessary to establish permanent soil stabilization.
- The earthwork for all building foundations and slabs shall be in accordance with Building Plans & Specifications.
- The contractor is responsible for keeping storm water run-off and sediment under control during construction. All contractors shall refer to the Erosion and Sediment Control Plan throughout construction.
- The Contractor shall maintain the site in a well-drained manner in order to assure the shortest possible drying time after each rainfall. This will mean that pumping of standing water in low areas on the site will most likely be required during construction. Also pumping of ground water in utility trenches and deep excavations will be required during construction.
- The stitework for this project shall meet or exceed the applicable authorities having jurisdiction specifications, permit requirements, and manufacture specifications.
- Contractor shall refer to architectural plans for exact locations and dimensions of vestibules, exit porches, ramps, truck docks, downspouts, roof drains, precise building dimensions, exact building utility entrance locations and exact number and location of downspouts.
- Layers of pavement shall be placed perpendicular to each other with the final layer perpendicular to the finished contours on parking lot.
- All survey monuments disturbed during construction shall be replaced by a surveyor licensed in the state, in which this project is located, at the Contractors expense.
- The Contractor shall verify and/or perform all necessary inspections and/or certifications required by codes and/or utility companies prior to the announced building possession date and the final connections of utility services. All fees shall be paid by the contractor.
- Prior to placement of the base rock within the parking lot, the entire area shall be proof rolled with a loaded tandem axle dump truck, having no more than 3 axles and weighing a minimum of 40,000 pounds.
- Due to seasonal variations in rainfall and the groundwater level, the Contractor may be required to use light earth moving equipment to minimize pumping.
- The Contractor shall grade all areas to drain in order to prevent ponding water. The minimum allowable slope on all paved surfaces shall be 1 percent.
- The minimum depth of cover on all waterlines for this site is 42 inches.
- Unless indicated otherwise, all waterline and sanitary sewer crossings shall have a minimum 18 inch vertical separation and 10 feet horizontal separation. The Contractor shall note that the depths of existing utilities have been plotted from information provided by various utility companies and is to be considered approximate. If the minimum separations cannot be constructed as shown the Contractor shall notify the BFA and appropriate modifications will be issued.
- Spot boring locations shown on this plan were taken from the subsurface exploration and evaluation report prepared by SCI Engineering, Inc. dated May 8, 2020. Their locations are to be considered approximate only.

SOIL PREPARATION AND COMPACTION

Within all construction areas and five feet beyond, existing utilities, structures, foundations, footings, slabs, pavements, and related below-grade components to be abandoned shall be properly demolished and the debris removed from the site, unless specifically noted otherwise. Existing utilities, cisterns and septic fields, as well as their associated backfill, shall be removed from the site, unless specifically noted to remain. Excavations resulting from the removal of existing site improvements shall be backfilled with properly compacted fill material meeting site specific specifications. Excavations shall be protected from extreme temperatures, precipitation, and construction disturbances. Areas to be cut or to receive fill shall be stripped of any surface vegetation and/or organic topsoil. The strippings shall be removed from the site and/or stockpiled for later placement in landscaped or common ground areas. Masonry rubble, rocks, and pavement broken to less than 3 inches in maximum dimension may be used as fill, if properly blended with acceptable soil and placed as approved by the site testing firm. Prior to compaction, soils may require moisture adjustment. The entire site shall be proof-rolled by systematically passing over the subgrade to achieve complete coverage with proper compaction or loaded construction equipment, and observing the subgrade for pockets of excessively soft, wet, or otherwise unacceptable materials. Remove, replace, and/or repair unsuitable areas with suitable material meeting site geotechnical recommendations prior to placement of additional fill, then proof-roll again. Proof-roll passes shall be limited, particularly on silty subgrades, to reduce the potential for pumping of moisture from within the soil. Fill material shall be free of organics, debris, other deleterious material, shall contain no chemicals that may result in the material being classified as "contaminated", shall not contain rocks greater than three (3) inches in size, and shall be placed in loose lifts not to exceed eight (8) inches in thickness. Within building and pavement areas, fill material shall be mechanically compacted to at least 95 percent of its Standard Proctor maximum dry density (ASTM D 698) within a moisture content range of 2% of the soil's optimum moisture content for Structural fill (cohesive) and mechanically compacted to at least 98 percent of its Standard Proctor Maximum dry density (ASTM D 698) within a moisture content range of 2% of the soil's optimum moisture content for Structural fill (granular). Moisture content for granular soils shall be at a workable level to allow for compaction and prevent undue pumping. Fill material shall be low-plastic with a maximum liquid limit of 45 and a maximum plasticity index of 25. Soils that become unstable due to moisture or disturbance shall be scarified, dried, and recompact; or undercut to a suitable bearing subgrade and replaced with compacted fill material. The Contractor shall overexcavate and re-compact existing fill within and 5 feet beyond the outside edge of the footings and building footprint prior to the placement of additional fill. Fill clay within 2 feet beneath the bearing level of shallow spread footings and 3 feet beneath the bottom of the floor slab, shall be remediated. The overexcavation shall be backfilled with properly compacted low plastic soil or one-inch minus crushed limestone. Refer to the Building Plans for any additional earthwork criteria associated with the building pad preparation and to the geotechnical report for additional requirements, recommendations, and remediation associated with the site soils. All earthwork activities and soil remediation performed shall be included in the contractor's base bid.



| GRADING LEGEND | | |
|-----------------------|-----------|-----------|
| DESCRIPTION | PROPOSED | EXISTING |
| AERIAL ELECTRIC | —AE— | —AE— |
| UNDERGROUND ELECTRIC | —UE— | —UE— |
| UNDERGROUND TELEPHONE | —UT— | —UT— |
| GAS LINE | —G— | —G— |
| WATERLINE | —W— | —W— |
| SANITARY SEWER | —SS— | —SS— |
| STORM SEWER | ===== | ===== |
| EASEMENT | — — — — — | — — — — — |
| PROPERTY LINE | — — — — — | — — — — — |
| CONTOURS | —(100)— | —(100)— |
| UTILITY POLE | • | • |
| GUARD POST | •GP | •GP |
| SANITARY MANHOLE | • | • |
| WATER VALVE | • | • |
| FIRE HYDRANT | • | • |
| CATCH BASIN | ■ | ■ |
| JUNCTION BOX | • | • |
| FLARED END SECTION | ▭ | ▭ |
| CLEANOUT | • | • |
| GRADED INLET | ■ | ■ |
| SOIL BORING | ⊗ | ⊗ |

| ABBREVIATION LEGEND | |
|---------------------|-------------------------|
| ABBREVIATION | DESCRIPTION |
| JB | JUNCTION BOX |
| CS | CONTROL STRUCTURE |
| STCO | STORM SEWER CLEANOUT |
| FES | FLARED END SECTION |
| SMH | SANITARY MANHOLE |
| SSCO | SANITARY SEWER CLEANOUT |
| ⊗ | ADA RAMP |

| SPOT GRADE LEGEND | |
|----------------------|-----------|
| TOP OF CURB | •000.00TC |
| PAVEMENT ELEVATION | •000.00TP |
| • CURB/SIDEWALK | •000.00CP |
| INTERIOR PAVEMENT/ | •000.00 |
| GROUND ELEVATIONS | •000.00 |
| GUTTER ELEVATION | •000.00GG |
| • FACE OF CURB | •000.00FC |
| MATCH EXISTING GRADE | •000.00* |

Three working days prior to the start of any excavation on this site the Contractor shall contact 1-800-344-7483 for utility location information.

The contractor shall verify and implement all the required Federal Occupational Safety and Health Administration (OSHA) and/or OSHA approved state-plan regulations established for the type of construction required by these plans.

PERMIT SET

Rick Rohlfing

RICK G. ROHLFING, P.E. #E-29409
State of Missouri
Registered Professional Engineer
for BFA, Inc. Professional Engineer Corporation #00472

11/30/20
Date

bfaeng.com TELEPHONE: (636) 239-4751

BFA
Engineering-Surveying

103 ELM STREET WASHINGTON, MISSOURI 63090

BRYAN CROSSING LOT 2, LLC
950 Bryan Road
O'Fallon, St. Charles County,
Missouri 63366

| REVISIONS | |
|-----------|---|
| 1 | UPDATED SANITARY SEWER FLOWLINE By: G.W.C 11-05-20 App: J.B.S. |
| 2 | UPDATE PER CITY COMMENTS By: A.K.N. 11-30-20 App: J.B.S. |
| 3 | |
| 4 | |

DRAWN C.C.B.
CHECKED R.G.R.
DATE 11/30/2020
SCALE 1"=20'
JOB No. 5918
SHEET NAME GRADING PLAN
GR-1