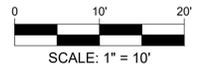


GRADING PLAN



ABBREVIATION KEY	
ABBREVIATION	DESCRIPTION
AI	AREA INLET
CB	CATCH BASIN
CI	CURB INLET
CPP	CORRUGATED HIGH DENSITY POLYETHYLENE PIPE
DCB	DOUBLE CATCH BASIN
EL	ELEVATION
FES	FLARED END SECTION
FL	FLOWLINE
HDPE	HIGH-DENSITY POLYETHYLENE
HP	HIGH-PERFORMANCE POLYPROPYLENE PIPE
JB	JUNCTION BOX
N/F	NOW AND FORMALLY
NFV	NOT FIELD VERIFIED
PT	POINT
PVC	POLYMERIZING VINYL CHLORIDE
RCP	REINFORCED CONCRETE PIPE
ROW	RIGHT-OF-WAY
STA	STATION
TBA	TO BE ADJUSTED
TBR	TO BE REMOVED
TBRE	TO BE REMOVED AND RELOCATED
TR	TO REMAIN
TYP	TYPICAL

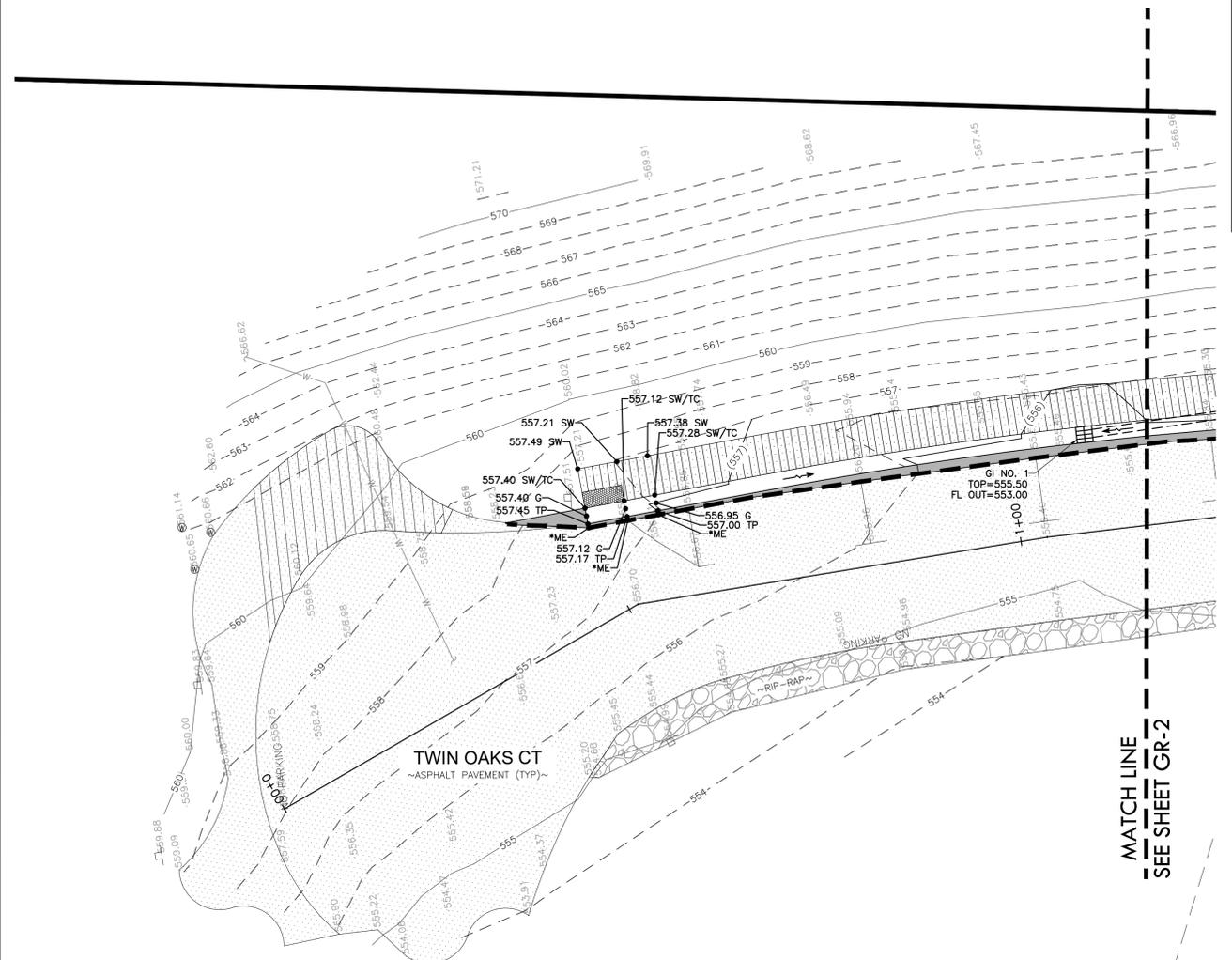
PAVEMENT LEGEND	
EXISTING	PROPOSED

GRADING PLAN LEGEND		
DESCRIPTION	PROPOSED	EXISTING
AERIAL ELECTRIC	—AE—	—AE—
UNDERGROUND ELECTRIC	—UE—	—UE—
UNDERGROUND TELEPHONE	—UT—	—UT—
GAS LINE	—G—	—G—
WATERLINE	—W—	—W—
FIBER OPTIC	—FO—	—FO—
CABLE LINE	—UC—	—UC—
SANITARY SEWER	—SS—	—SS—
STORM SEWER	—SS—	—SS—
RIGHT-OF-WAY	—	—
PROPERTY LINE	—	—
EASEMENT	—	—
CONTOURS	—(100)—	—(100)—
AREA INLET		
GRADED INLET		
FLARED END SECTION		
JUNCTION BOX		
SANITARY MANHOLE		
WATER METER		
WATER VALVE		
WATERLINE MARKER		
SIGN		
UTILITY POLE		
UTILITY POLE W LIGHT		
UTILITY BOX		
UTILITY PEDESTAL		
UTILITY MANHOLE		
TOP AND TOE OF SLOPE		

- GRADING NOTES:**
- Bearings referenced to Grid North of the Missouri Coordinate System 1983, East Zone per GPS observations utilizing the MoDOT VRS RTK Network.
 - Bearings referenced to Grid North of the Missouri Coordinate System 1983, East Zone per GPS observations utilizing the MoDOT VRS RTK Network.
 - Elevations tied into North American Vertical Datum of 1988 per GPS observations utilizing the MoDOT VRS RTK Network.
 - This site scales within Zone X, as per Federal Emergency Management Agency Flood Insurance Rate Map, Community Panel No. 29189C0303K dated February 4, 2015.
 - 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. Granular material shall be placed and compacted to a level equal to the trench depth at the time of the utility installations.
 - All trenching, pipe laying and backfilling shall be in accordance with federal OSHA Regulations.
 - 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 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.
 - Contractor to ensure the flowline of the gutter drains with no ponding.
 - The sitework for this project shall meet or exceed the "Technical Specifications".
 - 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.
 - All necessary inspections, approvals, and/or certifications required by codes and/or authorities shall be completed prior to final acceptance by the City of Twin Oaks.
 - 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% and 0.5% on all concrete paved surfaces.
 - The minimum depth of cover on all waterlines for this site shall meet Missouri-American Water Company standards. Actual depths of waterlines may vary.
 - 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 BFA and appropriate modifications will be issued.
 - Dimensions shown are to centerline of pipe or fitting.
 - Verify location of all existing utilities to be crossed and identify potential conflicts prior to starting construction or location of site utilities shall be verified by General Contractor the proper utility company providing service or Contractor to contact telephone, electric, gas, water, fiber optic, etc. companies to have underground utilities located on this site and adjacent to this site prior to doing any excavation.
 - All underground telephone lines "to be adjusted" and relocated shall have a minimum depth of cover of 18 inches.
 - The edges of all pavement on curb sections to be removed shall be sawcut. Remaining pavement and curb sections shall have smooth, clean edges. Depending on contractors means and methods, this may mean more than one sawcut will be necessary. All debris from removal operations must be removed from the site at the time of excavation. Stock piling of debris will not be permitted.
 - Contractor shall ensure all trees to remain shall not be harmed in construction and demolition process.
 - Contractor shall keep all existing parking, sidewalks, roads, etc. clear and free from any construction activity and/or material to ensure easy and safe pedestrian and vehicular access around site. Contractor shall coordinate all construction activities with the City of Twin Oaks to minimize disturbance and inconvenience to park operations.

- CONSTRUCTION PHASING NOTES:**
- BY SUBMITTING A BID, THE CONTRACTOR ACKNOWLEDGES THAT HE/SHE HAS EXAMINED THE PROJECT TO THE DEGREE NECESSARY TO PROVIDE A LUMP SUM PRICE FOR THE WORK AND THAT HE/SHE HAS ACCOUNTED FOR ANY ADDITIONAL TEMPORARY PROTECTION, TRAFFIC CONTROL, LOW IMPACT CONSTRUCTION EQUIPMENT, AND/OR WORK REQUIRED DURING SPECIFIED DATES AND HOURS THAT MAY BE REQUIRED TO MINIMIZE DISRUPTIONS AND/OR INCONVENIENCE TO THE COMMERCIAL AND RESIDENTIAL OCCUPANTS AND PROPERTY.
- PRIOR TO START OF CONSTRUCTION ACTIVITIES, BY THE CONTRACTOR, A PRECONSTRUCTION MEETING SHALL BE CONDUCTED BETWEEN THE CONTRACTOR, THE ENGINEER, AND THE CITY OF TWIN OAKS TO DISCUSS PROJECT PHASING AND TEMPORARY TRAFFIC CONTROL.
- CONTRACTOR SHALL MAINTAIN DEMATERING OPERATIONS AND EROSION AND SEDIMENT CONTROL BMP'S.
- TRAFFIC CONTROL:**
CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING TRAFFIC CONTROL MEASURES NECESSARY TO ENSURE THE SAFETY OF CONSTRUCTION CREWS, PEDESTRIANS, AND TRAFFIC DURING CONSTRUCTION. NO WORK SHALL BEGIN UNTIL ALL TRAFFIC CONTROL MEASURES ARE INSTALLED. ALL TRAFFIC CONTROL DEVICES AND SIGNAGE SHALL MEET MDDOT AND MUTCD STANDARDS.
- CONTRACTOR SHALL NOTIFY ADJACENT PROPERTY OWNERS OF ANY INTERRUPTION OF ACCESS TO PRIVATE DRIVEWAYS AT LEAST 24 HOURS IN ADVANCE.
- CONTRACTOR SHALL PROVIDE MESSAGE BOARDS AND DETOUR SIGNS 48 HOURS BEFORE ROAD CLOSURE. CONTRACTOR SHALL NOTIFY THE CITY OF TWIN OAKS 48 HOURS IN ADVANCE OF ANY INTENDED ALTERATIONS TO TRAFFIC FLOW.
APRIL MILNE (636) 225-7873
JAKE KEMPER (636) 225-7873
- NOTE TO CONTRACTOR - COORDINATION REQUIREMENTS:**
THROUGHOUT THE DURATION OF THE PROJECT THE GENERAL CONTRACTOR'S SUPERINTENDENT SHALL COORDINATE WITH THE CITY OF TWIN OAKS TO DISCUSS PROJECT SCHEDULING AND CONSTRUCTION PROGRESS.
- CONTRACTOR STAGING AREA REQUIREMENTS:**
THE CONTRACTOR'S STAGING AND STORAGE AREAS SHALL BE RETURNED TO THE PRE-CONSTRUCTION CONDITION (INCLUDING EXISTING ELEVATIONS) UPON COMPLETION OF THE PROJECT.

CITY PARK - STORMWATER & SIDEWALK
CITY OF TWIN OAKS
TWIN OAKS CT, TWIN OAKS
ST. LOUIS COUNTY, MO 63021



MATCH LINE
SEE SHEET GR-2

CAUTION - NOTICE TO CONTRACTOR REGARDING EXISTING UTILITIES

THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE PERFORMING ANY CONSTRUCTION ACTIVITIES TO REQUEST FIELD LOCATIONS OF THEIR UTILITIES. THE CONTRACTOR MUST BE AWARE THAT SOME EXISTING UTILITIES MAY NOT BE ACCURATELY SHOWN, KNOWN TO EXIST, AND/OR LOCATED BY LOCAL OR STATE UTILITY COMPANIES. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAKE NECESSARY ACCOMMODATIONS TO ACCURATELY LOCATE ALL EXISTING UTILITIES.

ALL EXISTING UTILITIES ON THIS PROJECT SITE OR ON ADJACENT DEVELOPMENTS SHALL REMAIN IN PLACE AND OPERATIONAL AT ALL TIMES DURING CONSTRUCTION. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE EXISTING UTILITIES WHEN NECESSARY TO FACILITATE THE REQUIRED IMPROVEMENTS SHOWN BY THESE PLANS. THE CONTRACTOR MUST COORDINATE ANY RELOCATIONS OR MODIFICATIONS TO THE EXISTING UTILITIES WITH THE APPROPRIATE UTILITY COMPANY, THE CITY OF TWIN OAKS, THE PROPERTY OWNER, AND BFA, INC.

SPOT GRADE LEGEND	
DESCRIPTION	SPOT GRADE
DIRECTION OF OVERLOAD FLOW	←
MATCH EXISTING	ME*
TOP OF CURB/CONCRETE	•000.00TC
SIDEWALK	•000.00SW
TOP OF PAVEMENT	•000.00TP
GUTTER ELEVATION @ FACE OF CURB	•000.00G

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.

PRELIMINARY DRAWING

FOR REVIEW PURPOSES ONLY

NOT TO BE USED FOR CONSTRUCTION

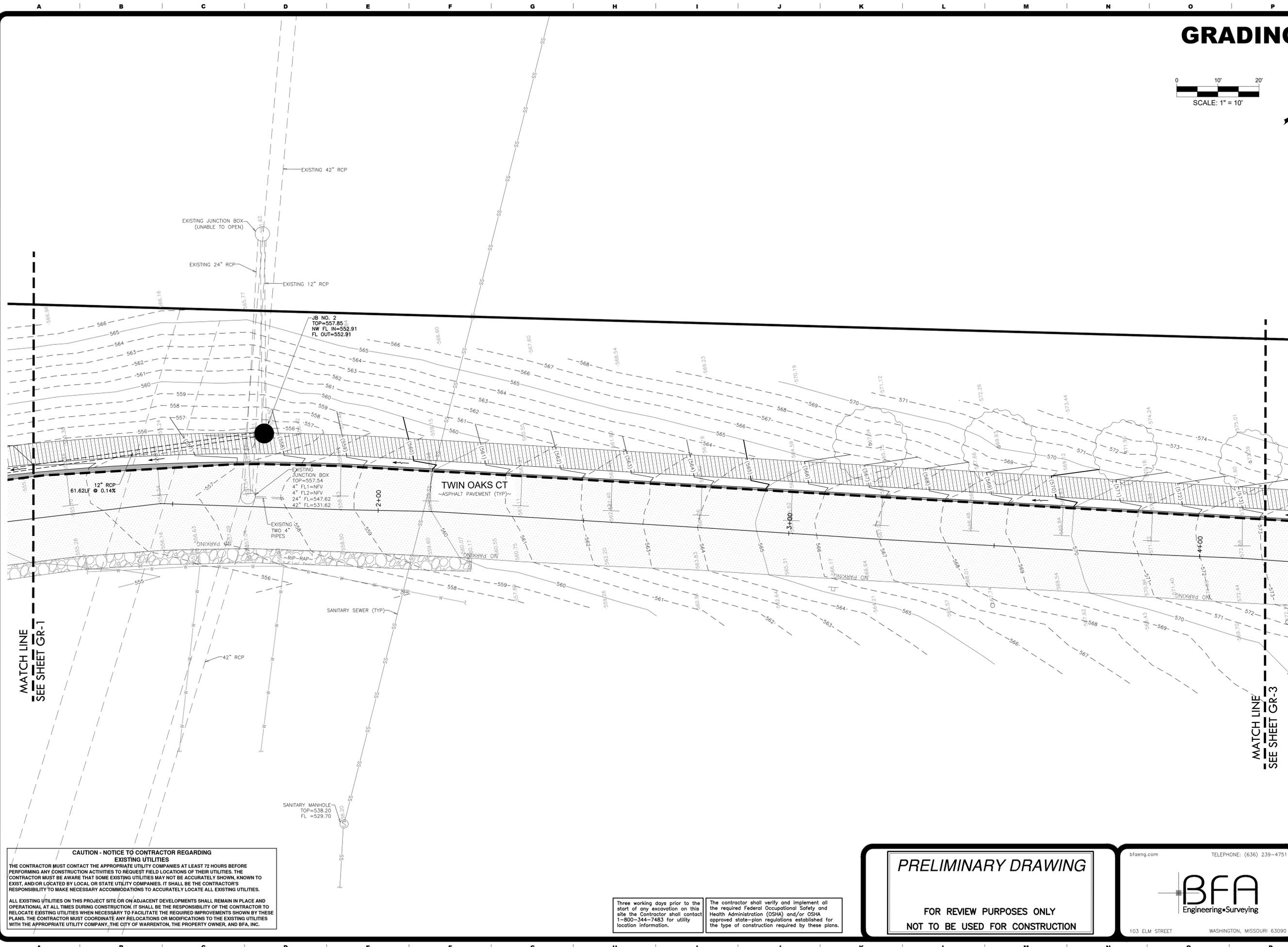
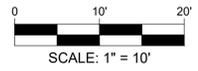
bfaeng.com TELEPHONE: (636) 239-4751

 103 ELM STREET WASHINGTON, MISSOURI 63090

DRAWN
A.J.R.
CHECKED
T.S.D.
DATE
2/12/2026
SCALE
1"=10'
JOB NO.
3497-3K
SHEET NAME
GRADING PLAN

GR-1
X OF X

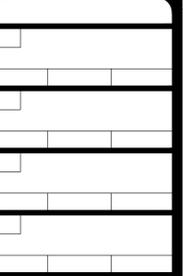
GRADING PLAN



MATCH LINE
SEE SHEET GR-1

MATCH LINE
SEE SHEET GR-3

**CITY PARK - STORMWATER & SIDEWALK
CITY OF TWIN OAKS
TWIN OAKS CT, TWIN OAKS
ST. LOUIS COUNTY, MO 63021**



DRAWN
A.J.R.
CHECKED
T.S.D.
DATE
2/13/2026
SCALE
1"=10'
JOB No.
3497-3K
SHEET NAME
GRADING PLAN

GR-2
X OF X

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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.
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PRELIMINARY DRAWING
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NOT TO BE USED FOR CONSTRUCTION

bfaeng.com TELEPHONE: (636) 239-4751
BFA
Engineering-Surveying
103 ELM STREET WASHINGTON, MISSOURI 63090

P:\Vault\3497-3K City Park - Sidewalk and Stormwater\3497-3K Plan Sheets\3497-3K Grading Plan.dwg
2/13/2026 10:47 AM

