

**SITE GRADING NOTES**

- CONTRACTOR IS RESPONSIBLE FOR DEMOLITION OF EXISTING UTILITIES INCLUDING REMOVAL OF ANY EXISTING UTILITIES SERVING THE STRUCTURE TO BE REMOVED TO THE RIGHT-OF-WAY.
- ALL CUT OR FILL AREAS SHALL BE 1:1 OR FLATTER UNLESS OTHERWISE NOTED.
- PRECAST STRUCTURES MAY BE USED AT CONTRACTOR'S OPTION.
- STORM PIPE TYPE AND JOINTS SHALL BE AS FOLLOWS AT CONTRACTOR'S OPTION UNLESS SPECIFIED:
  - CONCRETE PIPE (UNLESS OTHERWISE SPECIFIED):
    - FOR FILLS LESS THAN 20 FEET OVER TOP OF PIPE: CLASS III OR GREATER SHALL BE USED.
    - FOR FILLS 15 FEET TO 20 FEET OVER PIPE: CLASS IV OR GREATER SHALL BE USED.
    - FOR FILLS GREATER THAN 20 FEET OVER PIPE: CLASS V OR GREATER SHALL BE USED.
  - JOINT MATERIAL:
    - RUBBER GASKET: AASHTO M 198, TYPE B OR ASTM C 443
    - RUBBER O-RING GASKET: AASHTO M 198, TYPE B OR ASTM C 443
    - BITUMEN OR BUTYL-RUBBER SEALANT: ASTM C 890
    - FLARED END SECTIONS: ASTM C 76 OR, FOR SECTIONS WITH TOE WALL, AASHTO M 170.
    - HIGH DENSITY POLYETHYLENE PIPE (HDPE): AASHTO M 252 TYPE S, M 294 TYPE S, OR ASTM F 2306 SMOOTH INTERIOR/ANNUAL EXTERIOR.
  - PIPE WRAP:
    - RUBBER GASKET:
      - ADS N-12 WT BY ADVANCED DRAINAGE SYSTEMS, INC.
      - ADS N-12 ST BY ADVANCED DRAINAGE SYSTEMS, INC.
      - BLUE SEAL BY HANCOCK, INC.
    - SURE-LOK BY HANCOCK, INC.
      - CORRUGATED COUPLING BANDS.
      - H-Q BY HANCOCK, INC.
      - ADS N-12 BY ADVANCED DRAINAGE SYSTEMS, INC.
  - SPIRAL RIB METAL PIPE: ASTM A780 TYPE 18 OR TYPE 19. COATINGS SHALL MEET REQUIREMENTS OF ASTM A 929 AND SHALL BE GALVANNEED, ALUMINIZED, OR BITUMINOUS COATED.
    - PIPE GAUGE SHALL BE 16.
    - ACCEPTABLE MANUFACTURERS: PROVIDE THE FOLLOWING OR APPROVED EQUAL:
      - ULTRA FLO OR ULTRA FLO II BY CONTECH, INC.
      - MAX FLOW BY SOUTHEAST CULVERT, INC.
      - MAX FLOW BY ST. REGIS CULVERT, INC.
      - MAX FLOW BY THOMPSON CULVERT, INC.
- EXISTING DRAINAGE STRUCTURES TO BE INSPECTED AND REPAIRED AS NEEDED, AND EXISTING PIPES TO BE CLEANED OUT TO REMOVE ALL SILT AND DEBRIS.
- EXISTING GRADE CONTOUR SHOWN AT 1 FOOT INTERVALS.
- PROPOSED GRADE CONTOUR SHOWN AT 1 FOOT INTERVALS.
- IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITIONS OR BETTER.
- ALL STORM PIPE ENTERING STRUCTURES SHALL BE GROUDED TO ASSURE CONNECTION AT STRUCTURE IS WATERTIGHT.
- ALL STORM SEWER MANHOLES IN PAVED AREAS SHALL BE FLUSH WITH PAVEMENT, AND SHALL HAVE TRAFFIC BEARING RING & COVERS. MANHOLES IN UNPAVED AREAS SHALL BE 6" ABOVE FINISH GRADE. LIDS SHALL BE LABELED "STORM SEWER".
- THE CONTRACTOR SHALL ADHERE TO ALL TERMS & CONDITIONS AS OUTLINED IN THE GENERAL N.P.D.E.S. PERMIT FOR STORMWATER DISCHARGE ASSOCIATED WITH CONSTRUCTION ACTIVITIES.
- CONTRACTOR SHALL ADJUST AND/OR CUT EXISTING PAVEMENT AS NECESSARY TO ASSURE A SMOOTH FIT AND CONTIGUOUS GRADE.
- CONTRACTOR SHALL ASSURE POSITIVE DRAINAGE AWAY FROM BUILDINGS FOR ALL NATURAL AND PAVED AREAS.
- TOPOGRAPHIC INFORMATION TAKEN FROM A TOPOGRAPHIC SURVEY BY GEOSURVEY, LTD. IF CONTRACTOR DOES NOT ACCEPT EXISTING TOPOGRAPHY AS SHOWN ON THE PLANS, WITHOUT EXCEPTION, HE SHALL HAVE MADE, AT HIS EXPENSE, A TOPOGRAPHIC SURVEY BY A REGISTERED LAND SURVEYOR AND SUBMIT IT TO THE OWNER FOR REVIEW.
- ALL UNSATURATED AREAS DISTURBED BY GRADING OPERATION SHALL RECEIVE 4 INCHES OF TOPSOIL. CONTRACTOR SHALL APPLY STABILIZATION FABRIC TO ALL SLOPES AS INDICATED ON THE EROSION CONTROL PLANS. CONTRACTOR SHALL MAINTAIN GRASS DISTURBED AREAS IN ACCORDANCE WITH CITY/COUNTY SPECIFICATIONS UNTIL A HEALTHY STAND OF GRASS IS OBTAINED.
- CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE GOVERNING CODES AND BE CONSTRUCTED TO SAME.
- ALL STORM STRUCTURES SHALL HAVE A SMOOTH UNIFORM POURED MORTAR INVERT FROM INVERT-IN TO INVERT-OUT, & ALL UTILITIES PRIOR TO CONSTRUCTION.
- CONTRACTOR SHALL VERIFY HORIZONTAL & VERTICAL LOCATION OF ALL EXISTING STORM SEWER STRUCTURES, PIPES, & ALL UTILITIES PRIOR TO CONSTRUCTION.
- CLEARING & GRUBBING LIMITS SHALL INCLUDE ALL AREAS DISTURBED BY GRADING OPERATIONS. CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL UNDISTURBED AREAS, ALL PROPERTY CORNERS, & REPLACING ALL PINS ELIMINATED OR DAMAGED DURING CONSTRUCTION.

**GRADING/DRAINAGE PLAN LEGEND**

- STORM SEWER PIPING**
- JUNCTION BOX/STORM MANHOLE
  - DRAINAGE STRUCTURE INDICATOR
  - DOUBLE WING CATCH BASIN
  - SINGLE WING CATCH BASIN
  - SLOPE ARROW
  - CONCRETE FLUME
  - PRECAST APRON
  - PRECAST HEADWALL STRUCTURE WITH ENERGY DISSIPATER
  - CURB INLET (W/ NON-MOUNTABLE HOOD & GRATE)
  - AREA INLET
  - OUTLET CONTROL STRUCTURE
  - FLARED END SECTION
  - TC = TOP OF CURB
  - TP = TOP OF PAVEMENT

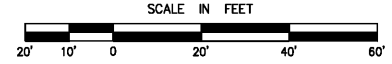
STRUCTURE TABLE				
STRUCTURE #	STRUCTURE TYPE	TOP OF CASTING	INVERT OUT	INVERT IN
ST1X	EXISTING HEADWALL			721.12 (ST2X)
ST2X	EXISTING GRATE INLET	728.10	721.10	721.20 (ST8)
ST3	OCS	728.70	721.82	721.82 (ST4X)
ST4X	EXISTING JUNCTION BOX	730.78	721.70	721.70 (ST5X)
ST5X	EXISTING HEADWALL		723.30	
ST6	JUNCTION BOX	730.14	721.35	721.85 (ST7)
ST7	OCS	728.70	723.00	

PIPE TABLE				
PIPE NAME	LENGTH	SIZE	SLOPE	
ST1X-ST2X	78	42	-0.03%	
ST2X-ST3	116	42	0.45%	
ST2X-ST6	15	18	1.00%	
ST3-ST4X	19	42	0.45%	
ST4X-ST5X	85	42	1.87%	
ST6-ST7	113	18	2.80%	

NOTE: CONTRACTOR TO REFER TO GEOTECHNICAL REPORT PREPARED BY TERRACON, DATED 12/12/2018, FOR LIMITS OF POOR SUBGRADE CONDITIONS AND PROPOSED TREATMENTS FOR BUILDING AND PARKING AREAS. CONTRACTOR TO PROVIDE SEPARATE LINE ITEM IN BID FOR UNDERCUT AND RECOMPACTION, INCLUDING UNIT COSTS.

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF ALL EXISTING UTILITIES (ABOVE OR BELOW GROUND) AS SHOWN ON THESE PLANS ARE APPROXIMATE AND WERE LOCATED BASED ON EITHER VISUAL OBSERVATIONS AT THE SITE, EXISTING SURVEYS AND/OR FROM UTILITY OWNERS. BUCKEL DESIGN GROUP, LLC INC. DOES NOT GUARANTEE THAT EXISTING UTILITY LOCATIONS SHOWN ARE EXACT. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE EXACT LOCATIONS OF EXISTING UTILITIES (ABOVE OR BELOW GROUND) BEFORE BEGINNING ANY CONSTRUCTION. THE CONTRACTOR SHALL CALL THE APPROPRIATE UTILITY COMPANIES AND THE UTILITIES PROTECTION CENTER AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY OWNER AND/OR ENGINEER OF ANY UTILITY CONFLICTS WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.

**GRADING PLAN**

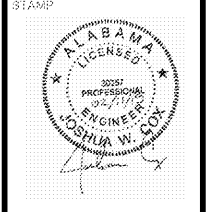


DATE: 02/14/2019  
 DRAWN: GDL  
 CHECKED: ADD  
 ISSUED DATE: 2/11/2019  
 ISSUED FOR PERMIT REVIEW  
 PROJECT NO: 18-188  
 FILE: 18-188 Main  
 SHEET: C-2

Know what's below  
 Call before you dig

3471 PAVILLE ST  
 PRICHARD, AL 36066  
 PHONE: 404-567-5701  
 FAX: 404-567-5703  
 WWW.BDGSE.COM

**BDG**  
 Buckel Design Group, LLC.



PROPOSED COMMERCIAL DEVELOPMENT  
 TRUSSVILLE, JEFFERSON COUNTY, AL

FOR: GEMCAP DEVELOPMENT  
 WINSTON-SALEM, NORTH CAROLINA

REVISION	BY

DRAWN: GDL  
 CHECKED: ADD  
 ISSUED DATE: 2/11/2019  
 ISSUED FOR PERMIT REVIEW  
 PROJECT NO: 18-188  
 FILE: 18-188 Main  
 SHEET: C-2