"As-Built Plans"

# A ~~SITE PLAN~~ OF S.A.K. CONSTRUCTION STORAGE YARD ADDITION

A TRACT OF LAND BEING PART OF THE NORTHEAST 1/4 OF THE SOUTHEAST 1/4 OF SECTION 23, TOWNSHIP 47 NORTH, RANGE 2 EAST, CITY OF O'FALLON, ST. CHARLES COUNTY, MISSOURI

## SITE PLAN NOTES FROM P&Z APPROVAL

1. Existing Area of Site: 10.00 Acres.
   Proposed Area of Site: 14.45 Acres.
2. Present Zoning Classification: I–2 – Heavy Industrial District
3. This Site is served by the following utilities:

   Water: City of O'Fallon
   Sanitary Sewer: City of O'Fallon
   Electric: Ameren UE or Cuivre River Electric Co–op
   Gas:
   Telephone: CenturyTel
4. This Site is located in the following service areas:

   Fire Protection: O'Fallon Fire Protection District
   School District: Fort Zumwalt
5. The following Height and Area Requirements pertain to this site:

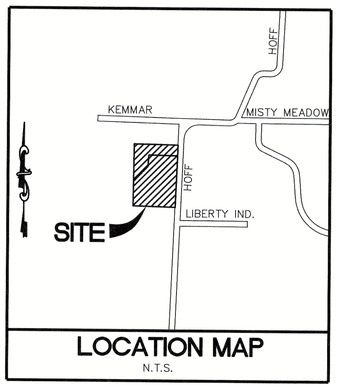
   Minimum Front Yard: 30 feet
   Minimum Side Yard: 25 feet
   Minimum Rear Yard: 50 feet
   Maximum Height of Building: 50 feet
6. Underground utilities have been plotted from available information and therefore their locations shall be considered approximate only. The verification of the location of all underground utilities, either shown or not shown on these plans shall be the responsibility of the contractor, and shall be located prior to any grading or construction of the improvements.
7. All construction procedures and materials shall conform to the current City of O'Fallon standards.
8. Project Benchmark: A Standard Missouri DNR GRS aluminum disk stamped "SC–06 1990", located on the east shoulder of the north bound lane of Missouri Highway 79 about 0.5 mile north of Interstate 70 in St. Charles County. Elev. = 529.13 (U.S.G.S.).
9. This site is located in the Peruque Creek watershed and is unaffected by the 100–year Special Flood Hazard Areas per the National Flood Insurance Program Flood Insurance Rate Map 29183C0210, dated August 2, 1996.
10. This site does not contain wetlands and is not subject to United States Corp of Engineers (COE) regulations.
11. Site coverage is as follows:

    | | | |
    |---|---|---|
    | Building: | 0.05 Acres – | 0.5% |
    | Pavement | 0.13 Acres – | 1.3% |
    | Gravel: | 6.17 Acres – | 61.7% |
    | Grass/Woods: | 3.65 Acres – | 36.5% |
12. Stormwater detention requirements, including the 100 year storm due to the site being located in the Peruque Creek watershed, will be address by an on–site detention basin located on the eastern portion of the site.
13. Existing trees on site to remain.
14. The site will comply with the City of O'Fallon's Article XIII of the Zoning Code, Performance Standards.
15. The site will conform with the City of O'Fallon's adopted Comprehensive Plan.
16. The storage yard will not be striped.
17. All items stored on site, which are not housed inside a physical strucure, shall be maintained inside the designated storage area.
18. Hours of operation:

    Normal weekday hours (Mon. thru Fri.): 7:00 AM to 7:00 PM
    Occasional Saturday maintenance hours: 7:00 AM to 5:00 PM
    In cases of emergency, SAK Construction may be required to mobilize at any time.
19. The storage yard will not be lighted.
20. The storage yard will be graded to surface drain to the storm water detention basin. A storm water cleansing structure is being considered at the outfall structure/outfall pipe system, to comply with NPDES Phase II storm water requirements.
21. The storage yard surface will be the maintenance responsibility of SAK Construction. Additional aggregate material may be added over time to properly maintain the yard surface; as determined necessary by SAK's Engineers.
22. The hauling of heavy equipment to and from SAK Construction will be performed under appropriate permits for overweight and/or oversize loads issued by the Missouri Dept. of Transportation. In review of such an application MODOT considers weight, number of axle and tire combination and axle spacing. In issuing such a permit, MODOT designates the route based upon bridges and height/weight restrictions, if any. To date, no specific restriction or concern has been identified for Hoff Road.
23. No slopes shall be steeper than 3 (horizontal) to 1 (vertical).
24. All paving to be in accordance with St. Charles County standards and specifications except as modified by the City of O'Fallon ordinances.
25. All siltation control devices shall follow "St. Charles County Soil and Water Conservation District Erosion and Sediment Control" guidelines
26. All proposed fencing will require a separate permit through the Building and Safety Division.
27. Trash service will be provided at the S.A.K. facility located at 864 Hoff Road.
28. All new utilities will be located underground.
23. Present Owner
    SAK Construction, LLC
    Attn: Cary Shaw
    864 Hoff Road
    O'Fallon, MO 63366
    (636) 379–2350

## ADDITIONAL CITY NOTES

1. All installations and construction shall conform to the approved engineering drawings. However, if the developer chooses to make minor modifications in design and/or specifications during construction, he/she shall make such changes at his/her own risk, without any assurance that the City Engineer will approve the completed installation or construction. It shall be the responsibility of the developer to notify the City Engineer of any changes from the approved drawings. The developer may be required to correct the installed improvements so as to conform to the approved engineering drawings. The developer may request a letter from the Construction Inspection Division regarding any field changes approved by the City Inspectors.




LOCATION MAP
N.T.S.

## DRAWING INDEX

Included w / As-Built Plans



STORM SEWER & DETENTION BASIN MEASUREMENTS (AS–BUILT)

THE EXISTING SEWER LENGTH, SIZE, FLOWLINES, DEPTHS OF STRUCTURES, HORIZONTAL LOCATIONS, ETC.HAVE BEEN MEASURED. THE RESULTS OF THOSE MEASUREMENTS ARE SHOWN ON THIS SET OF FINAL MEASUREMENT PLANS.

## BENCHMARKS

PROJECT BENCHMARK: A Standard Missouri DNR GRS aluminum disk stamped "SC–06 1990", located on the east shoulder of the north bound lane of Missouri Highway 79 about 0.5 mile north of Interstate 70 in St. Charles County. Elev. = 529.13 (U.S.G.S.).

SITE BENCHMARK: Set stake at northwest corner of property boundary. Elev. = 576.63 (U.S.G.S.).

PLANNING & ZONING COMMISSION REQUIREMENTS AND CONDITIONS OF APPROVAL:

STAFF RECOMMENDATIONS:

1. The petitioner shall provide raised expanded metal mesh with a 75% obscurity on the chain link fence proposed along Hoff Road. A detail of the fence with the mesh shall be provided on the Construction Plans.
2. The City's Traffic Consultant, Hanson Professional Services has reviewed the proposed plan. The recommendations in the attached report shall be reflected on the Construction Plans.
3. The Construction Plans shall address the Municipal Code Requirements listed below.

MUNICIPAL CODE REQUIREMENTS:

1. Provide the size of stone for the base aggregate and surface aggregate for the storage on the Construction Plans.
2. All developments are required to provide long term post construction BMP's such as; low impact design, source controls and treatment controls that protects water quality and controls run off to the maximum extent practical. (Ordinance 5082, Section 405.245). Provide the location of and label the proposed storm water cleansing devices on the Construction Plans.

BOARD OF ADJUSTMENT VARIANCE AND CONDITIONS OF APPROVAL:

BA–V–11–04, 1012 Hoff Road, SAK Construction, LLC – Section 400.510.2 – Surface Material Motion of action on a variance request to allow a parking area used for the standing and maneuvering of vehicles and equipment to be constructed of a non–hard surface material.

Date of Approval: 11 May 2011

STAFF RECOMMENDATIONS:

1. The 30 foot building setback shall be from the 20 foot right–of–way dedication, not from the propoerty line.

* City of O'Fallon construction work hours per City Ordinance # 3249 as shown in Section 500.420 of the Municipal Code of the City of O'Fallon are as follows:

  October 1 through May 31: 7:00 A.M. to 7:00 P.M. Monday through Sunday
  June 1 through September 30: 6:00 A.M. to 8:00 P.M. Monday through Friday, and 7:00 A.M. to 8:00 P.M. Saturday and Sunday

* The area of land disturbed is 8.89 acres

CITY OF O'FALLON
COMMUNITY DEVELOPMENT DEPARTMENT
ACCEPTED FOR CONSTRUCTION
BY: Jeanni Greenlee DATE: 11/18/2019
PROFESSIONAL ENGINEER'S SEAL
INDICATES RESPONSIBILITY FOR DESIGN

UTILITY CONTACTS

SANITARY SEWER
City of O'Fallon
100 N. Main Street
O'Fallon, MO. 63366
636–281–2858

WATER
City of O'Fallon
100 N. Main Street
O'Fallon, MO. 63366
636–281–2858

STORM SEWER
City of O'Fallon
100 N. Main Street
O'Fallon, MO. 63366
636–281–2858

ELECTRIC
Ameren UE
200 Callahan Road
Wentzville, MO. 63385
636–639–8312

GAS
Laclede Gas Company
6400 Graham Road
St. Louis, MO. 63134
314–522–2297

TELEPHONE
Century Tel
1151 Century Tel Drive
Wentzville, MO. 63385
636–332–7261

FIRE DEPARTMENT
O'Fallon Fire Protection District
119 East Elm Street
O'Fallon, MO. 63366
636–372–3493

10–10–19 CITY OF O'FALLON DETENTION BASIN/OUTFALL STRUCTURE AS–BUILT SUBMITTAL

"AS-BUILT PLANS"

PROJECT TITLE: S.A.K. CONST.

COVER SHEET

| DATE: | NO.: | REVISION: | DRAWN: | CHECKED: | PROJECT NO.: | SHEET NO.: |
|---|---|---|---|---|---|---|
| 11/04/19 | 4 | CITY COMMENTS | J.R.S. | | 11-1230A | |
| 8/29/12 | 3 | REVISED BASIN, STORM SEWER & OVERFLOW STRUCTURE | | | | |
| 8/6/11 | 2 | CITY COMMENTS | | | | |


MUSLER ENGINEERING COMPANY
CIVIL ENGINEERING – PLANNING – LAND SURVEYING
32 Portwest Court, St. Charles, Missouri 63303
Telephone: (636) 916–0444
Fax: (636) 916–3444
CERTIFICATE OF AUTHORITY: ENGINEERING E–1230–D, LAND SURVEYING LS–284–D


DISCLAIMER OF RESPONSIBILITY

I hereby specify that the documents intended to be authenticated by my seal are limited to this sheet, and I hereby disclaim any responsibility for all other Drawings, Specifications, Estimates, Reports or other documents or instruments relating to or intended to be used for any part or parts of the architectural or engineering project or survey.

STATE OF MISSOURI
RICHARD SCOTT MUSLER
NUMBER PE-18838
11-11-19
PROFESSIONAL ENGINEER

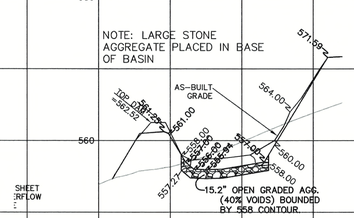
RICHARD S. MUSLER – ENGINEER
Signed MO# E–18838

PREPARED FOR:
S.A.K. CONSTRUCTION, LLC
MR. CARY SHAW
864 HOFF ROAD
O'FALLON, MISSOURI 63366
TELEPHONE: 636–379–2350
FAX: 636–379–2461
E–mail: cashaw@sakcon.com

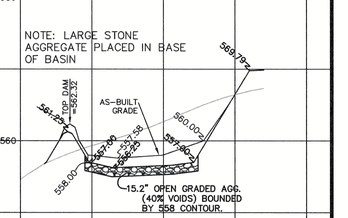
P & Z No.
12–10.01 & 12–10.02
City No.

Page No. 1

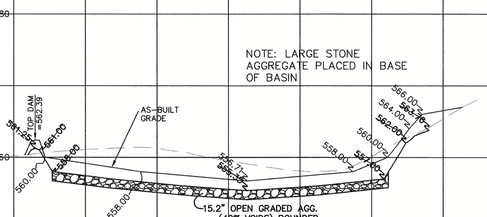
SCALE: HORIZ: 1"=50'
VERT: 1"=10'




DETENSION BASIN SECTION "A" A.B.




DETENSION BASIN SECTION "B" A.B.




DETENSION BASIN SECTION "C" A.B.

REQUIRED SEDIMENT STORAGE VOLUME:

VOLUME = 0.2 IN.(SITE AREA)
= (0.2 IN./12 IN./FT.)(11.00 ACRES)(43,560 SQ. FT./ACRE)
= 7,986 CU. FT.

USE BASE OF DETENTION BASIN TO STORE REQUIRED SEDIMENT VOLUME.

ASSUME 40% VOID SPACE TO DETERMINE DEPTH OF STORAGE.

TOTAL VOL. = STORAGE VOLUME/0.40
= 7,986 CU. FT./0.40
= 19,965 CU. FT.

REQUIRED DEPTH:

BASE OF DETENTION BASIN AT ELEVATION 558 = 15,812 SQ. FT.

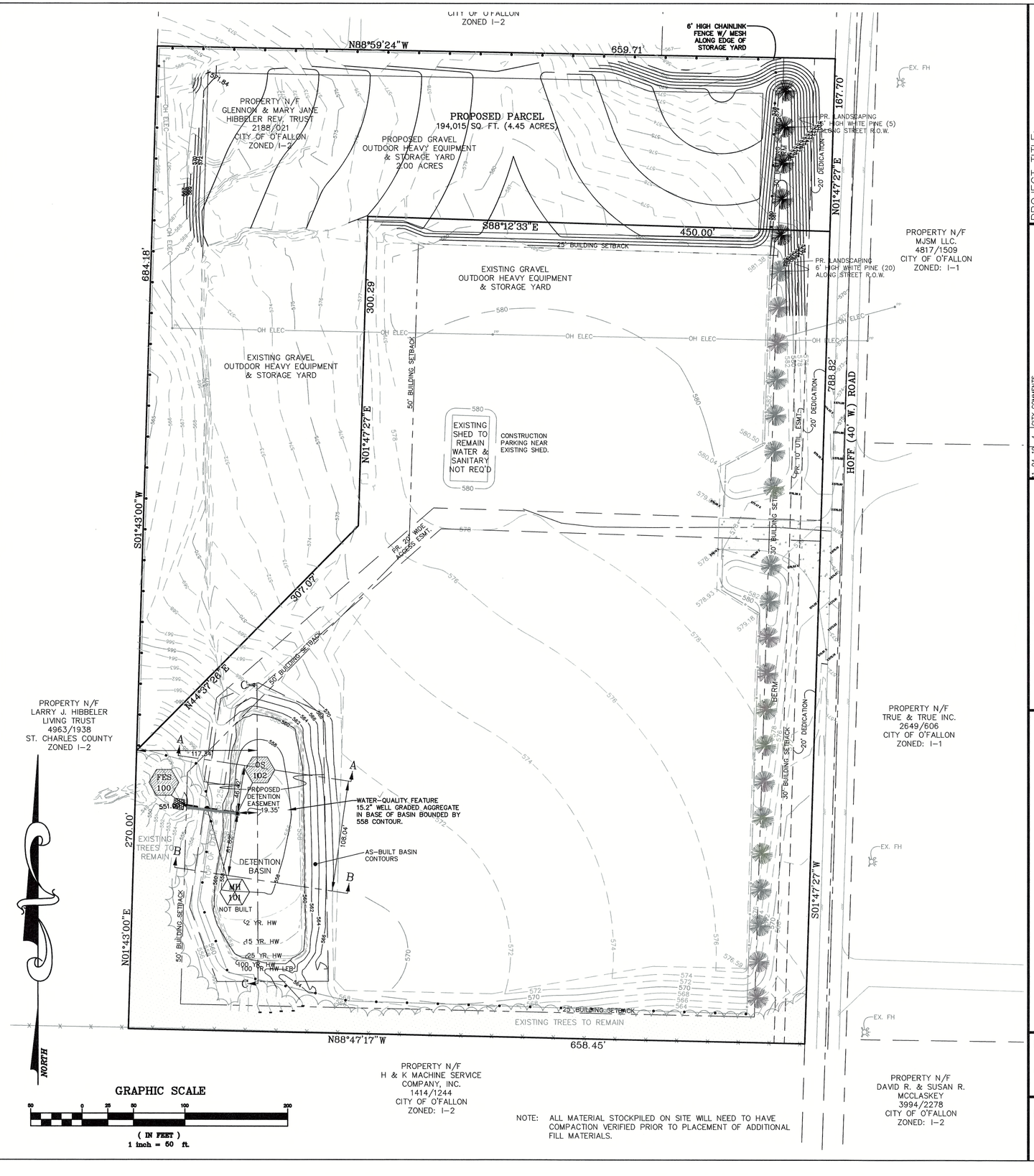
DEPTH = 19,965 CU. FT./15,812 SQ. FT.
= 1.26 FT. (15.2 IN.)

Call Before you DIG
TOLL FREE
1-800-344-7483
MISSOURI ONE-CALL SYSTEM INC.

Underground facilities, structures and utilities have been plotted from available surveys, records and information, and therefore, do not necessarily reflect the actual existence, non-existence, size, type, number of, or location of these facilities, structures, and utilities. The Contractor shall be responsible for verifying the actual location of all underground facilities, structures, and utilities, either shown or not shown on these plans. The underground facilities, structures, and utilities shall be located in the field prior to any grading, excavation or construction of improvements. These provisions shall in no way absolve any party from complying with the Underground Facility Safety and Damage Prevention Act, Chapter 319, RSMO.

10-10-19 CITY OF O'FALLON DETENTION BASIN/OUTFALL STRUCTURE AS-BUILT SUBMITTAL

"AS-BUILT PLANS"




NOTE: ALL MATERIAL STOCKPILED ON SITE WILL NEED TO HAVE COMPACTION VERIFIED PRIOR TO PLACEMENT OF ADDITIONAL FILL MATERIALS.

PROJECT TITLE:
S.A.K. CONST.

SITE PLAN

| DATE: | NO.: | REVISION: |
|---|---|---|
| 1-04-19 | 4 | CITY COMMENTS |
| 8/29/12 | 3 | REVISED BASIN, STORM SEWER & OVERFLOW STRUCTURE |
| 2/17/15 | 1 | CITY COMMENTS |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32 Portwest Court, St. Charles, Missouri 63303
Telephone: (636) 916-0444
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DATE: JAN. 2015 | DRAWN: J.R.S. | CHECKED: | PROJECT NO.: 11-1230A | SHEET NO.:

DISCLAIMER OF RESPONSIBILTY

I hereby specify that the documents intended to be authenticated by my seal are limited to this sheet, and I hereby disclaim any responsibility for all other Drawings, Specifications, Estimates, Reports or other documents or instruments relating to or intended to be used for any part or parts of the architectural or engineering project or survey.

STATE OF MISSOURI
RICHARD S. MUSLER
NUMBER PE-18838
11-11-19
PROFESSIONAL ENGINEER

RICHARD S. MUSLER – ENGINEER
Signed MO# E-18838

PREPARED FOR:
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864 HOFF ROAD
O'FALLON, MISSOURI 63366
TELEPHONE: 636-379-2350
FAX: 636-379-2461
E-mail: cashaw@sakcon.com

P & Z No.
12-10.01 & 12-10.02
City No.

Page No.
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# O'FALLON REQUIRED NOTES

GENERAL NOTES

GN # 1 Driveway locations shall not interfere with the sidewalk handicap ramps, or curb inlet sumps

GN # 2 Sidewalks, curb ramps, ramps and accessible parking spaces shall be constructed in accordance with the current approved "American with Disabilities Act Accessibility Guidelines" (ADAAG) along with the required grades, construction materials, specifications and signage. If any conflict occurs between the above information and the plans, the ADAAG guidelines shall take precedence and the contractor prior to any construction shall notify the Project Engineer.

GN # 3 Truncated domes for curb ramps located in public right of way shall meet ADA requirements and shall be constructed using red pre cast truncated domes such as those manufactured by Armor Tile or approved equal.

GN # 4 Any proposed pavilions or playground areas will need a separate permit from the Building Division.

GN # 5 The Contractor is responsible to call Missouri One Call and The City of O'Fallon for the location of utilities. Contact the City of O'Fallon (636) 379–3814 for the location of City maintained cable for street lights and traffic signals, all other utilities call Missouri One Call 1–800–DIG–RITE. 1–800–344–7483

GN # 6 All proposed utilities and/or utilitiy relocations shall be located underground.

GN # 7 All proposed fencing requires a separate permit from the Building and Safety Division.

GN # 8 All construction operations and work zone traffic control within the right of way will follow MoDOT or M.U.T.C.D. standards whichever is more stringent.

GN # 9 All free standing signs shall be located a minimum of ten (10) feet away from any right of way line and/or property line and a minimum of three (3) feet from the back of curbing or sidewalk. All signs shall abide by the regulations for visibility at corners, including corners from driveways and the street it intersects per Section 400.260 of the O'Fallon Zoning Code.

GN #10 All subdivision identification or directional sign(s) must have the locations and sizes approved and permitted separately through the Planning and Development Division.

GN #11 All materials to be disposed of and not reused, including trees, organic debris, rubble, foundations, and other deleterious material shall be removed from the site and disposed of in compliance with all applicable laws and regulations. If the material listed previously are revised, a letter from a soil Engineer must clarify amount, location, depth. ect. and be approved with the construction plans. Landfill tickets for such disposal shall be maintained on file by the developer. Burning on site shall be allowed only by permit from the local fire district. If a burn pit is proposed the location and mitigation shall be shown on the grading plan and documented by the soils engineer.

GN #12 Twenty–four (24) hours prior to starting any of the work covered by the above plans and after approval thereof, the developer shall make arrangements with the Construction Inspection Office to provide for inspection of the work, sufficient in the opinion of the City Engineer, to assure compliance with the plans and specifications as approved.

GN #13 The City Engineer or their duly authorized representative shall make all necessary inspections of City infrastructure, escrow items or infrastructure located on the approved plans.

EROSION CONTROL NOTES

EN # 1 The Permittee shall assume complete responsibility for controlling all siltation and erosion of the project area. The Permittee shall use whatever means necessary to control erosion and siltation including, but not limited to, staked straw bales and/or siltation fabric fences (possible methods of control are detailed in the plan). Control shall commence with the clearing operations and be maintained throughout the project until acceptance of the work by City of O'Fallon and as needed by MoDOT. The Permittee's responsibilities include all design and implementation as required to prevent erosion and the depositing of silt. The City of O'Fallon and as required by MoDOT may at their option direct the Permittee in his methods as deemed fit to protect property and improvements. Any depositing of silt or mud on new or existing pavement shall be removed immediately. Any depositing of silts or mud in new or existing storm sewers and/or swales shall be removed after each rain and affected areas cleaned to the satisfaction of the City of O'Fallon and as required by MoDOT."

EN # 2 All erosion control systems are to be inspected and corrected weekly, especially within 48 hours of any rain storm resulting in one–half inch of rain or more. Any silt or debris leaving the site and affecting public right of way or storm water drainage facilities shall be cleaned up within 24 hours after the end of the storm.

EN # 3 Erosion control devices (silt fence, sediment basin, etc.) shall be in accordance with St. Charles County Soil and Water Conservation District Erosion and Sediment Control guidelines.

EN # 4 This development is required to provide long term post construction BMP's such as; low impact design, source control and treatment controls that protects water quality and controls run off to maximum extent practical in compliance with Phase II Illicit Storm Water Discharge Guidelines. (Ord. 5082, section 405.0245)

EN #5 Graded areas shall be seeded and mulched (strawed) within 14 days of stopping land disturbance activities. Unless it can be shown to the City Engineer that weather conditions are not favorable, vegetative growth is to be established within 6 weeks of stopping grading work on the project. The vegetative growth established shall be sufficient to prevent erosion and the standard shall be as required by EPA and DNR. (70% coverage per square foot) Ord. 5242, Section 405.070.

GRADING NOTES

GRN # 1 Developer must supply City construction inspectors with soil reports prior to and during site soil testing. The soil report will be required to contain the following information on soil test curves (Proctor reports) for projects within the City:

1. Maximum dry density
2. Optimum moisture content
3. Maximum and minimum allowable moisture content
4. Curve must be plotted to show density from a minimum of 90% Compaction and above as determined by the "Modified AASHTO T–180 Compaction Test" (A.S.T.M.–D–1157) or from a minimum of 95% as determined by the "Standard Proctor Test ASSHTO T–99, Method C" (A.S.T.M.–D–698). Proctor type must be designated on document.
5. Curve must have at least 5 density points with moisture content and sample locations listed on document
6. Specific gravity
7. Natural moisture content
8. Liquid limit
9. Plastic limit

Be advised that if this information is not provided to the City's Construction Inspector the City will not allow grading or construction activities to proceed on any project site.

GRN # 2 All fill placed in areas other than proposed storm sewers, sanitary sewers, proposed roads, and paved areas shall be compacted from the bottom of the fill up in 8" lifts and compacted to 90% maximum density as determined by Modified AASHTO T–180 compaction test or 95% of maximum density as determined by the Standard Proctor Test AASHTO T–99. Ensure the moisture content of the soil in fill areas corresponds to the compactive effort as defined by the Standard or Modified Proctor Test. Optimum moisture content shall be determined using the same test that was used for compaction. Soil compaction curves shall be submitted to the City of O'Fallon prior to the placement of fill.

GRN # 3 The surface of the fill shall be finished so it will not impound water. If at the end of a days work it would appear that there may be rain prior to the next working day, the surface shall be finished smooth. If the surface has been finished smooth for any reason, it shall be scarified before proceeding with the placement of succeeding lifts. Fill shall not be placed on frozen ground, nor shall filling operations continue when the temperature is such as to permit the layer under placement to freeze.

GRN # 4 All sediment and detention basins are to be constructed during the initial phase of the grading operation.

GRN # 5 When grading operations are complete or suspended for more than 14 days, permanent grass must be established at sufficient density to provide erosion control on site. Between permanent grass seeding periods, temporary cover shall be provided according to St. Charles Soil and Water Conservation District – Model Sediment and Erosion Control Regulations. All finished grades (areas not to be disturbed by improvements) in excess of 20% slopes (5:1) shall be mulched and tacked at a rate of 100 pounds per 1000 square feet when seeded.

GRN # 6 No slopes shall exceed 3 (horizontal): 1 (vertical).

GRN # 7 All low places whether on site or off shall be graded to provide drainage with temporary ditches.

GRN # 8 All existing wells on site shall be capped per DNR standards.

GRN #10 All trench back fills under paved areas shall be granular back fill, and compacted mechanically. All other trench back fills may be earth material (free of large clods, or stones) and compacted using either mechanical or water jetting, Granular material and earth material associated with new consatruction outside of pavements may be jetted, taking care to avoid damage to newly laid sewers. The jetting shall be performed with a probe route on not greater than 7.5 foot centers with the jetting probe centered over and parallel with the direction of the pipe. Trench widths greater than 10 feet will require multiple probes every 7.5 foot centers.

a) Depth, Trench back fills less than 8 feet deep shall be probed to a depth extending half the depth of the trench back fill, but not less than 3 feet. Trench back fill greater than 8 feet in depth shall be probed to half the depth of the trench back fill but not greater than 8 feet.
b) Equipment, The jetting probe shall be a metal pipe with an interior diameter of 1.5 to 2 inches.
c) Method, Jetting shall be performed from the lowest surface topographic point and proceed toward the highest point, and from the bottom of the trench back fill toward the surface. The flooding of each jetting probe shall be started slowly allowing slow saturation of the soil. Water is not allowed to flow away from the trench without first saurating the trench.
d) Surface Bridging, The contractor shall identify the locations of the surface bridging (the tendency for the upper surface to crust and arch over the trench rather than collapse and consolidate during the jetting process). The contractor shall break down the bridged areas using an appropriate method such as wheels or bucket of a backhoe. When surface crust is collapsed, the void shall be back filled with the same material used as trench back fill and rejetted. Compaction of the materials within the sunken/jetted area shall be compacted such that no further surface subsidence occurs.

GRN #11 Site grading.

a). Within City right–of–way. Material is to be placed in eight (8) inch to twelve (12) inch loose lifts and compacted per the approved compaction requirements. One (1) compaction test will be performed every two hundred fifty (250) feet along the centerline for each lift.
b). Outside of City right–of–way. Material is to be placed in eight (8) inch to twelve (12) inch loose lifts and compacted per the approved compaction requirements. One (1) compaction test will be performed at two (2) foot vertical intervals and approximately every one thousand (1,000) cubic yards.

FLOOD PLAIN INFORMATION

FP #1 Approval from the US Army Corps of Engineers and Missouri Department of Natural Resources is required for all work in the flood plain.

# PROJECT NOTES

GENERAL NOTES PERTINENT TO ALL CONSTRUCTION OPERATIONS

1. Underground utilities shown on these plans have been plotted from available records and information, and their locations shall be considered approximate only. The verification of the actual location of all underground utilities, either shown or not shown on these plans, shall be the responsibility of the contractor(s) and the verification of the actual location shall be performed prior to beginning work.
2. Easements and right–of–ways will be provided for streets, sanitary sewers, storm sewers, water mains and private utilities on the subdivision plat (record plat). See the subdivision plat (record plat) for location and size of easements anf rights–of–ways.
3. All construction shall be performed in accordance with the specifications, ordinances, rules, regulations, guidelines and/or policies of the policies of the local governing jurisdictional authority.

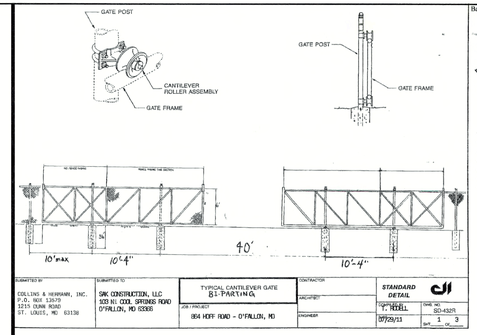
GRADING NOTES

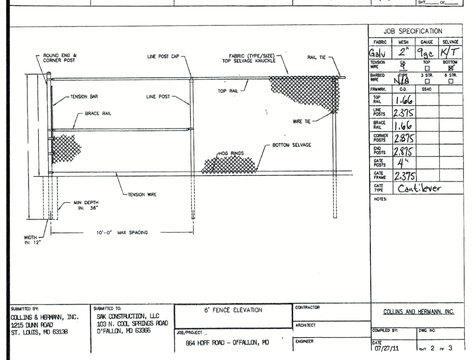
I. GENERAL

1. No area shall be cleared without authorization from the Project Engineer.
2. All grading work performed shall be within a 0.2 foot tolerance of the grades shown on the grading plan.
3. A Geotechnical Engineer shall be employed by the owner and be on site during grading operations.
4. The grading contractor shall perform a complete grading and compaction operations as shown on the plans, stated in these notes, or reasonably implied therefrom, all in accordance with the plans and notes as interpreted by the Geotechnical Engineer.
5. Before the grading begins, the contractor shall employ a competent, licensed surveyor to establish all lines and grades.
6. The contractor shall notify the Geotechnical Engineer at least two days in advance of the start of the grading operations.
7. The developer shall supply City construction inspectors with soil reports prior to or during site soil testing.
8. No slope shall be steeper than 3 (horizontal) to 1 (vertical).
9. No graded area is to remain bare for over 2 weeks.
10. All erosion control systems shall be inspected and necessary corrections made within 24 hours of a rainstorm resulting in one–half inch of rain or more.

II. SPECIFICATIONS

1. Site preparation includes the clearing of all stumps, trees, bushes, shrubs and weeds; the grubbing and removal of roots and other surface obstructions from the site; and the demolition and removal of any man–made structures. The unsuitable material shall be burned (after securing permits) and/or properly disposed of on site. Topsoil and grass in the fill areas shall be thoroughly disced prior to the placement of any fill. The Geotechnical Engineer shall approve the discing operation.
2. Compaction equipment shall consist of tamping rollers, pneumatic–tired rollers, vibratory rollers, or high speed impact type drum rollers acceptable to the Geotechnical Engineer. The roller shall be designed so as to avoid the creation of a layered fill without proper blending of successive fill layers.
3. Observation and Testing: The Geotechnical Engineer shall observe and test the placement of the fill to verify that specifications are met. A series of fill density test will be determined of each lift of fill. Interim reports showing fill quality will be made to the owner at regular intervals.
4. The Geotechnical Engineer shall notify the contractor of rejection of a lift of fill or portion thereof. The contractor shall rework the rejected portion of fill and obtain notification from the Geotechnical Engineer of its acceptance prior to the placement of additional fill.
5. Placing and Compaction of Fill: All areas to recieve fill shall be scarified to a depth of not less than 6 inches and then compacted to at least 90 percent of the maximum dry density as determined from the Modified Proctor Test (ASTM–D–1557). Natural slopes steeper than 1 vertical to 5 horizontal to receive fill will have horizontal benches, with minimum widths of 12 feet and maximum height of 5 feet, cut into the before the placement of any fill. The fill shall be loosely placed in horizontal layers not exceeding 8 inches in thickness and compacted in accordance with the specifications given below. The Geotechnical Engineer shall be responsible for determining the acceptability of the soils placed. Any unacceptable soils placed shall be removed at the contractor's expense.
6. The sequence of operation in the fill areas will be fill, compact, verify acceptable soil density, and repetition of the sequence.
7. The surface of the fill shall be finished so that it will not impound water. If at the end of a day's work, it would appear that there may be rain prior to the next working day, the surface shall be finise=hed smooth. If the surface has been finished smooth for any reason, it shall be scarified before proceeding with the placement od succedding lifts. Fill should not be placed on frozen ground, nor shall filling operations continue when the temperature is such as to permit the layer under placement to freeze.
8. All fills shall be compacted to 90% of maximum density as determined by the "Modified AASHTO T–1800 Compaction Test" (ASTM D–1557).
9. All fill placed under proposed storm and sanitary sewer, proposed roads, and/or paved areas shall be compacted to 95% of maximum density as determined by the Modified AASHTO T–180 Compaction Test or 100% of maximum density as determined by the Standard Proctor Test AASHTO T–99. All fill placed in proposed roads shall be compacted from the bottom of the fill up. All tests shall be verified by a soils engineer concurrent with grading and backfilling operations. The moisture content of the soil in the fill areas is to correspond to the compactive effort as defined by the Standard or Modified Proctor Test. Optimum moisture content shall be determined using the same test that was used for compaction. Soil compaction curves shall be submitted to the City of O'Fallon prior to placement of fill. Proof rollong may be required to verify soil stability at the discretion of the City of O'Fallon.





# CHAIN-LINK FENCE PRIVACY DETAIL

N.T.S.

# CHAIN-LINK FENCE DETAIL

N.T.S.

10–10–19 CITY OF O'FALLON DETENTION BASIN/OUTFALL STRUCTURE AS–BUILT SUBMITTAL

"AS-BUILT PLANS"

PROJECT TITLE: S. A. K. CONST.

NOTES AND SPECIFICATIONS

| DATE: | NO.: | REVISION: |
|---|---|---|
| 1–04–19 | 4 | CITY COMMENTS |
| 8/8/11 | 1 | CITY COMMENTS |
| DATE: | NO.: | REVISION: |


MUSLER ENGINEERING COMPANY
CIVIL ENGINEERING – PLANNING – LAND SURVEYING
32 Portwest Court, St. Charles, Missouri 63303
Telephone: (636) 916–0444
Fax: (636) 916–9444
CERTIFICATE OF AUTHORITY: ENGINEERING: E–1320–D, LAND SURVEYING: LS–284–D


DATE: JAN. 2015 | DRAWN: J.R.S. | CHECKED: | PROJECT NO.: 11–1230A | SHEET NO.:

DISCLAIMER OF RESPONSIBILITY

I hereby specify that the documents intended to be authenticated by my seal are limited to this sheet, and I hereby disclaim any responsibility for all other Drawings, Specifications, Estimates, Reports or other documents or instruments relating to or intended to be used for any part or parts of the architectural or engineering project or survey.

STATE OF MISSOURI
RICHARD S. OPT MUSLER
NUMBER PE-18838
11-11-19
PROFESSIONAL ENGINEER

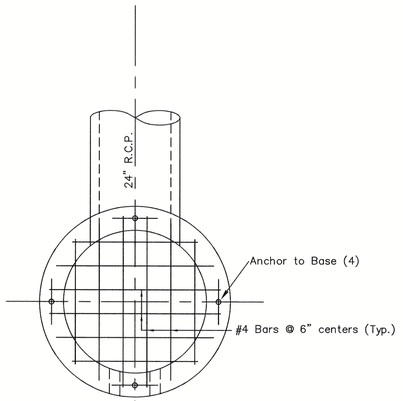
RICHARD S. MUSLER – ENGINEER
Signed MO# E–18838

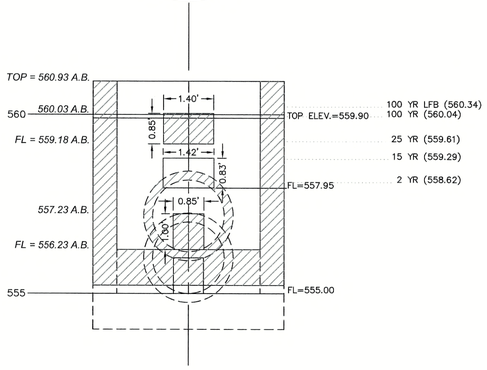
PREPARED FOR:
S.A.K. CONSTRUCTION, LLC
MR. CARY SHAW
864 HOFF ROAD
O'FALLON, MISSOURI 63366
TELEPHONE: 636–379–2350
FAX: 636–379–2461
E–mail: cashaw@sakcon.com

P & Z No.
12–10.01 & 12–10.02
City No.

Page No. 2

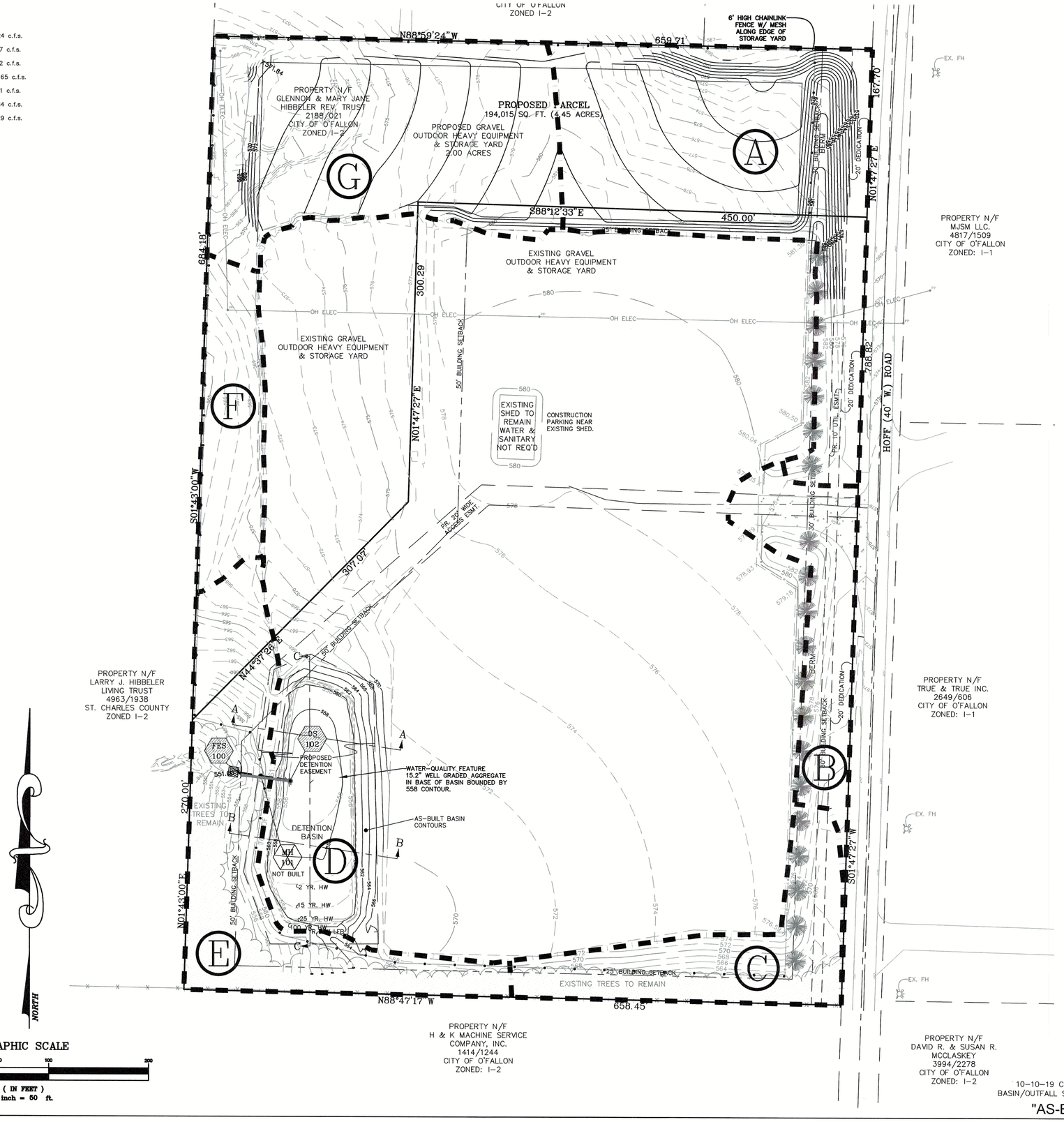
| | | | |
|---|---|---|---|
| A | (TO NORTHEAST – HOFF RD. DITCH) | (0.92Ac)(3.19) + (0.70Ac)(1.87) | = 4.24 c.f.s. |
| B | (TO SOUTHEAST – HOFF RD. DITCH) | (0.09Ac)(3.85) + (0.03Ac)(3.19) + (0.39Ac)(1.87) | = 1.17 c.f.s. |
| C | (TO SOUTH – FIELD DITCH) | (0.60Ac)(1.87) | = 1.12 c.f.s. |
| D | (TO DETENTION BASIN – INC. FUTURE) | (0.05Ac)(3.85) + (7.72Ac)(3.19) + (0.98Ac)(1.87) | = 26.65 c.f.s. |
| E | (BY-PASS DETENTION TO WEST) | (1.02Ac)(1.87) | = 1.91 c.f.s. |
| F | (TO WEST – JUNKYARD) | (0.03Ac)(3.19) + (0.40Ac)(1.87) | = 0.84 c.f.s. |
| G | (TO NORTHWEST – JUNKYARD) | (1.10Ac)(3.19) + (0.31Ac)(1.87) | = 4.29 c.f.s. |




## OVERFLOW STRUCTURE 102
(PRECAST 48" MANHOLE)
N.T.S.

AS-BUILT STRUCTURE







GRAPHIC SCALE
50 0 25 50 100 200
( IN FEET )
1 inch = 50 ft.

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MISSOURI ONE-CALL SYSTEM INC.

Underground facilities, structures and utilities have been plotted from available surveys, records and information, and therefore, do not necessarily reflect the actual existence, non-existence, size, type number of, or location of these facilities, structures, and utilities. The Contractor shall be responsible for verifying the actual location of all underground facilities, structures, and utilities, either shown or not shown on these plans. The underground facilities, structures, and utilities shall be located in the field prior to any grading, excavation or construction of improvements. These provisions shall in no way absolve any party from complying with the Underground Facility Safety and Damage Prevention Act, Chapter 319, RSMO.

PROJECT TITLE:
S.A.K. CONST.

PROPOSED
DRAINAGE AREA

| DATE: | NO.: | REVISION: |
|---|---|---|
| 1-04-19 | 4 | CITY COMMENTS |
| 8/29/12 | 3 | REVISED BASIN, STORM SEWER & OVERFLOW STRUCTURE |
| 8/8/11 | 1 | CITY COMMENTS |


MUSLER ENGINEERING COMPANY
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Telephone: (636) 916-0444
Fax: (636) 916-3444
CERTIFICATE OF AUTHORITY: ENGINEERING: E-1230-D, LAND SURVEYING: LS-284-D


| DRAWN: | CHECKED: | PROJECT NO.: | SHEET NO.: |
|---|---|---|---|
| J.R.S. | | 11-1230A | |

DATE: JAN. 2015

DISCLAIMER OF RESPONSIBILITY

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STATE OF MISSOURI
RICHARD SCOTT MUSLER
NUMBER PE-18838
PROFESSIONAL ENGINEER
11-11-19

RICHARD S. MUSLER – ENGINEER
Signed MO# E-18838

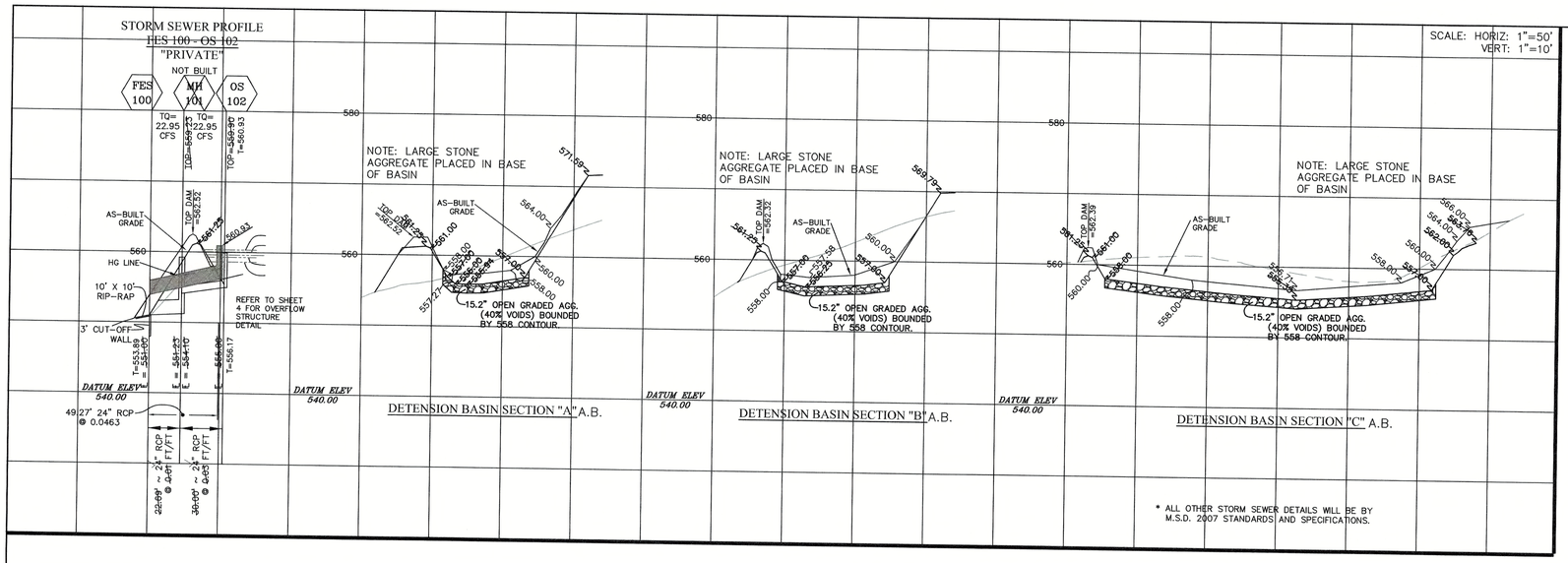

PREPARED FOR:
S.A.K. CONSTRUCTION, LLC
MR. CARY SHAW
864 HOFF ROAD
O'FALLON, MISSOURI 63366
TELEPHONE: 636-379-2350
FAX: 636-379-2461
E-mail: cashaw@sakcon.com


P & Z No.
12-10.01 & 12-10.02
City No.

Page No.
4

10-10-19 CITY OF O'FALLON DETENTION BASIN/OUTFALL STRUCTURE AS-BUILT SUBMITTAL

"AS-BUILT PLANS"




St Charles County Government
Hydraulic Review Output Data

C:\Local Disk (C)\Land Projects 3\11-1230-SAK-HOFF-ROAD\11230_OS Calcs_08-14-19.txt
8/14/2019
Calculations Under Full Flow

| | Upp Str | Low Str | PL | S | Upp FL LN | Low FL LN | PS | Upp ST EL | Depth HY GR | Upp HY EL | Low HY EL | Hydr Grade | FR Head | VEL | VEL Head | Junc Loss | Turn Loss | Curve Loss | STR Grade | Int Cap | DR Area | P.I. | Q | TQ | Pipe Cap | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | OS 102 | MH 100 | 49 | .24 | 556.17 | 553.89 | 4.63 | 560.93 | 3.24 | 557.69 | 555.89 | 0.01390 | 0.68 | 8.48 | 1.12 | 1.12 | 0.00 | 0.00 | 0 | 36.25 | 8.25 | 3.23 | 26.65 | 26.65 | 48.68 | HW 555.89 Inside TOP |

## Hydraulic Calculations FE-100 thru OS-102

PROJECT TITLE:
S.A.K. CONST.

BASIN SECTIONS & DETAILS

| DATE: | NO.: | CITY COMMENTS |
|---|---|---|
| 1-04-19 | 4 | CITY COMMENTS |
| 8/29/12 | 3 | REVISED BASIN, STORM SEWER & OVERFLOW STRUCTURE |
| DATE: | NO.: | REVISION: |

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CERTIFICATE OF AUTHORITY: ENGINEERING, E-1230-D, LAND SURVEYING, LS-284-D

| DRAWN: | CHECKED: | SHEET NO.: |
|---|---|---|
| J.R.S. | | |
| DATE: | PROJECT NO.: | |
| JUNE 2011 | 11-1230 | |

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RICHARD SCOTT MUSLER
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PROFESSIONAL ENGINEER
11-11-19

RICHARD S. MUSLER - ENGINEER
Signed MO# E-18838

PREPARED FOR:
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