

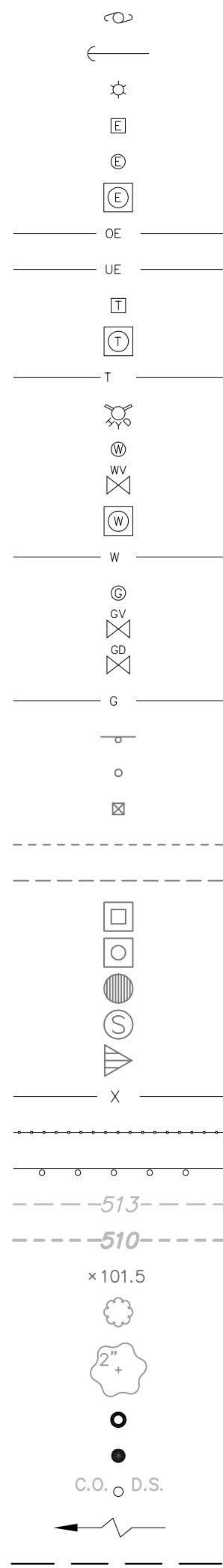
VILLA DUCHESNE FIELD HOCKEY PAVILION

PART OF SECTION 14, TOWNSHIP 45 NORTH, RANGE 6 EAST
CITY OF FRONTENAC
ST. LOUIS COUNTY, MISSOURI

SITE IMPROVEMENT PLANS

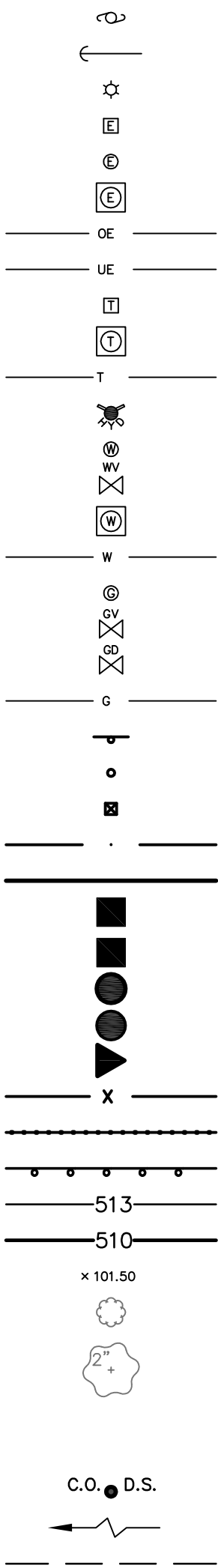
LEGEND

EXISTING



UTILITY POLE
GUY WIRE
LIGHT STANDARD
ELECTRIC BOX
ELECTRIC METER
ELECTRIC MANHOLE
OVERHEAD ELECTRIC LINE
UNDERGROUND ELECTRIC LINE
TELEPHONE BOX
TELEPHONE MANHOLE
UNDERGROUND TELEPHONE LINE
FIRE HYDRANT
WATER METER
WATER VALVE
WATER MANHOLE
WATER LINE
GAS METER
GAS VALVE
GAS DRIP
GAS LINE
STREET SIGN
BOLLARD OR POST
MAILBOX
SANITARY SEWER
STORM SEWER
STORM DRAIN GRATE INLET
STORM DRAIN AREA INLET
STORM DRAIN MANHOLE
SANITARY SEWER MANHOLE
FLARED END SECTION
FENCE: CHAIN LINK OR WIRE
FENCE: WOOD CONSTRUCTION
GUARDRAIL
MINOR CONTOUR INTERVAL
MAJOR CONTOUR INTERVAL
SPOT ELEVATION
BUSH OR SHRUB
TREE W/APPROXIMATE DIAMETER SIZE
FOUND SURVEY MONUMENT AS NOTED
SET SURVEY MONUMENT AS NOTED
CLEAN-OUT/DOWN-SPOUT
SWALE
UTILITY EASEMENT

PROPOSED



LOCATOR MAP

PROPERTY OWNER

VILLA DUCHESNE OAK HILL SCHOOL INC

EXISTING ZONING

R-1, ONE ACRE RESIDENCE

SITE ACREAGE

61.03 ACRES

SITE ADDRESS

795 S SPOEDE RD

M.S.D. P#

TBD

INDEX

C1.0	TITLE
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ABBREVIATIONS

ADS - ADVANCED DRAINAGE SYSTEMS, INC.	N.T.S. - NOT TO SCALE
ATG - ADJUST TO GRADE	O.C. - ON CENTER
B.M. - BENCHMARK	PAVT. - PAVEMENT
C.I. - CURB INLET	P.C. - PORTLAND CEMENT
C.O. - CLEAN OUT	PCC - PRECAST CONCRETE
CMP - CORRUGATED METAL PIPE	P.S.I. - POUNDS/SQUARE INCH
CONC. - CONCRETE	PROP. - PROPOSED
C.Y. - CUBIC YARDS	R.C. - REINFORCED CONCRETE
D.C.I. - DOUBLE CURB INLET	R.R. - RAIL ROAD
DIP - DUCTILE IRON PIPE	RCP - REINFORCED CONCRETE PIPE
DIA. - DIAMETER	S.F. - SQUARE FOOT
DS - DOWNSPOUT	S.Y. - SQUARE YARD
ELEV. - ELEVATION	SAN - SANITARY
EX - EXISTING	SCH - SCHEDULE
FD - FLOOR DRAIN	SWPPP - STORM WATER POLLUTION PREVENTION PLAN
FF - FINISH FLOOR	TBA - TO BE ABANDONED
FL - FLOW LINE	TBR - TO BE REMOVED
G.I. - GRATE INLET	TYP. - TYPICAL
GAL. - GALLON	UIP - USE IN PLACE
H.G. - HYDRAULIC GRADE	VCP - VTRIFIED CLAY PIPE
HYD - HYDRANT	YD - YARD DRAIN
MAX - MAXIMUM	WV - WATER VALVE
MH - MANHOLE	
MIN - MINIMUM	

GRIMES CONSULTING ENGINEERS, INC. AND THE UNDERSIGNED ENGINEER HAVE NO RESPONSIBILITY FOR SERVICES PROVIDED BY OTHERS TO IMPLEMENT THE IMPROVEMENTS SHOWN ON THIS PLAN AND ALL OTHER DRAWINGS WHERE THE UNDERSIGNED ENGINEER'S SEAL APPEARS. THE CONSTRUCTION MEANS AND METHODS ARE THE SOLE RESPONSIBILITY OF THE OWNER AND CONTRACTOR. GRIMES CONSULTING ENGINEERS, INC. HAS NO RESPONSIBILITY TO VERIFY FINAL IMPROVEMENTS AS SHOWN ON THIS PLAN UNLESS SPECIFICALLY ENGAGED AND AUTHORIZED TO DO SO BY THE OWNER OR CONTRACTOR.

STORMWATER MANAGEMENT NOTE:
LAND AREA DISTURBED = 0.31 ACRES
DISTURBED AREA RUNOFF DIFFERENTIAL=-0.02 CFS

ANY FUTURE LAND DISTURBANCE AND/OR INCREASE IN IMPERVIOUS AREA ON THIS SITE MAY REQUIRE ADDITIONAL STORM WATER MANAGEMENT PER MSD REGULATIONS IN PLACE AT THAT TIME (INCLUDING TOTAL LAND DISTURBANCE AND/OR IMPERVIOUSNESS ADDED ON THIS PLAN.)

PRIOR TO OBTAINING A CONSTRUCTION PERMIT FROM THE METROPOLITAN ST. LOUIS SEWER DISTRICT, THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE THE DISTRICT WITH A COPY OF AN EXECUTED CERTIFICATE OF INSURANCE INDICATING THAT THE PERMITTEE HAS OBTAINED AND WILL CONTINUE TO CARRY COMMERCIAL GENERAL LIABILITY AND COMPREHENSIVE AUTO LIABILITY INSURANCE. THE REQUIREMENTS AND LIMITS SHALL BE AS STATED IN THE RULES AND REGULATIONS AND ENGINEERING DESIGN REQUIREMENTS FOR SANITARY AND STORMWATER DRAINAGE FACILITIES, SECTION 10.090. (ADDENDUM)

NOTICE TO CONTRACTOR: THIS PROJECT INCLUDES CONSTRUCTION OF GREEN INFRASTRUCTURE OR RELOCATION, ALTERATION, OR RECONSTRUCTION OF EXISTING MSD FACILITIES. IN ACCORDANCE WITH MSD RESOLUTION 326.3, THE DISTRICT REQUIRES THE WAGE RATE TO BE AT LEAST EQUAL TO THE MISSOURI PREVAILING WAGE RATE AT THE TIME OF CONSTRUCTION START. AN AFFIDAVIT CERTIFYING THAT THE MISSOURI PREVAILING WAGE RATE AT THE TIME OF CONSTRUCTION START HAS BEEN PAID FOR ALL WORK RELATED TO GREEN INFRASTRUCTURE OR RELOCATION, ALTERATION, OR RECONSTRUCTION OF EXISTING MSD FACILITIES IS REQUIRED PRIOR TO MSD CONSTRUCTION APPROVAL OF THIS PROJECT.

UTILITY/AGENCY CONTACTS

WATER
MISSOURI AMERICAN WATER
727 CRAIG RD
CREVE COEUR, MO 63141
(314) 430-0820

GAS
SPIRE
720 OLIVE ST.
ST. LOUIS MO 63101
(314) 342-0709

ELECTRIC
AMEREN U.E.
P.O. BOX 66149, MC 700
ST. LOUIS, MO 63166-6149
(314) 554-2821

SEWER DISTRICT
METROPOLITAN ST. LOUIS SEWER DISTRICT
2350 MARKET ST.
ST. LOUIS, MO 63103
CONTACT: PLAN REVIEW
(314) 768-6200

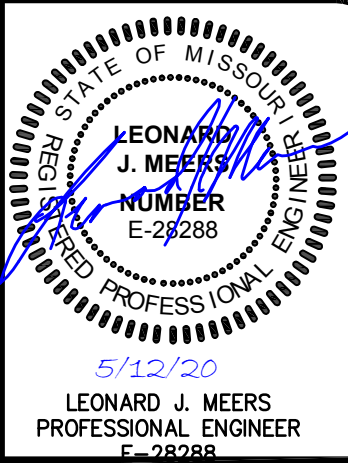
FIRE PROTECTION
FRONTENAC FIRE DEPARTMENT
10555 CLAYTON RD
ST. LOUIS, MO 63131
(314) 994-1801



Underground facilities, structures & utilities have been plotted from available surveys, records & information, and therefore, do not necessarily reflect the actual existence, nonexistence, size, type, number of, or location of these facilities, structures, & utilities. The Contractor shall be responsible for verifying the actual location of all underground facilities, structures, & utilities, either shown or not shown on these plans. The underground facilities, structures, & 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.

PREPARED FOR:
VILLA DUCHENSNE
CONTACT: DR. WILLIAM GUECK
54 ROAN LANE
ST. LOUIS, MO 63124
EMAIL: WGUECK@SURGCENTER.COM

M.S.D. BASE MAP 19N
LOC. NO. 19N610141
ZIP CODE 63131



GRIMES CONSULTING, INC.
12300 OLD TESSON RD.
SUITE 300D
ST. LOUIS, MO 63128
PH (314) 849-6100
FAX (314) 849-6010
www.grimesconsulting.com
PE COA# E-1470-D
PLS COA# LS-343-D

REV. NO.	DATE	REMARKS
1		
2		
3		
4		

IMPROVEMENT PLANS FOR
FIELD HOCKEY
PAVILION
795 S SPOEDE RD, ST LOUIS, MO 63131

SHEET TITLE
TITLE

JOB NUMBER:	3391
DRAWN BY:	BDN
DATE:	4/20/20
CHECKED BY:	JLW
DATE:	4/20/20
SHEET:	

C1.0

BID SET ISSUED 05/12/2020

GENERAL NOTES:

1. THE UTILITIES SHOWN HEREIN WERE PLOTTED FROM AVAILABLE INFORMATION AND DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, NONEXISTENCE, SIZE, TYPE, OR LOCATION OF THESE OR OTHER UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE VERIFYING THE ACTUAL LOCATION OF ALL UTILITIES, SHOWN OR NOT SHOWN, AND SAID UTILITIES SHALL BE LOCATED IN THE FIELD PRIOR TO ANY 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
2. ALL ELEVATIONS ARE BASED ON U.S.G.S. DATUM.
3. PROPOSED CONTOURS SHOWN ARE FINISHED ELEVATIONS ON PAVED AREAS.
4. NO SLOPES SHALL EXCEED 3 (HORIZONTAL) TO 1 (VERTICAL), UNLESS APPROVED BY THE CITY OF GREEN PARK.
5. STORM WATER SHALL BE DISCHARGED AT AN ADEQUATE NATURAL DISCHARGE POINT. SINKHOLES ARE NOT ADEQUATE POINTS.
6. THE CONTRACTOR WILL PROVIDE SEDIMENTATION AND EROSION CONTROL DEVICES SUCH AS SILT FENCES, ETC., AT ALL DOWNSLOPE LOCATIONS AND AROUND ALL STORM WATER INLETS. SUCH CONTROLS WILL BE INSPECTED AFTER EACH RAINFALL EVENT AND WILL BE REPLACED AS REQUIRED.
7. ALL UTILITY CONNECTION TO THE BUILDING ARE APPROXIMATE.
8. ALL TRASH CONTAINERS MUST BE FULLY ENCLOSED (OR LOCATED WITHIN AN ENCLOSED AREA) AS SHOWN HEREON.
9. OUTSIDE STORAGE IS PROHIBITED.
10. ALL LIGHTING, OTHER THAN PUBLICLY INSTALLED STREET LIGHTS, SHALL BE LOCATED AND INSTALLED TO REFLECT THE LIGHT AWAY FROM ABUTTING PROPERTIES ZONED FOR OR DEVELOPED WITH RESIDENTIAL STRUCTURES AND SHALL BE SHIELDED, SO THAT MINIMUM GLARE WILL EXTEND TO ADJACENT PROPERTY. MAXIMUM 0.5 FOOT CANDLES AT THE PROPERTY LINE.
11. COMMERCIAL VEHICLE TRAFFIC IS PROHIBITED ON GREEN PARK ROAD BETWEEN KOHRS LANE AND TESSON FERRY PER 340.230 OF THE GREEN PARK CODE. "COMMERCIAL VEHICLE" IS DEFINED IN THE CODE AS ANY VEHICLE DESIGNED, MAINTAINED OR USED PRIMARILY FOR THE TRANSPORTATION OF PROPERTY, INCLUDING REFUSE AND/OR DEBRIS OF ANY KIND, WHICH IS LICENSED FOR A GROSS VEHICLE WEIGHT IN EXCESS OF EIGHTEEN THOUSAND (18,000) POUNDS. FOR THAT REASON, COMMERCIAL VEHICLES USING THE SITE MUST ACCESS AND LEAVE THE SITE VIA GREEN PARK ROAD TO UNION.
12. THE FRONT, SIDE, REAR, BUILDING, PARKING, ECT. SHALL BE AS SHOWN HEREON.
13. SITE SHALL BE LANDSCAPED AS SHOWN ON HEREON; ALL AREAS NOT PAVED OR PLANTED SHALL HAVE A GRASS COVER
14. APPLICANT/PROPERTY OWNER SHALL BE RESPONSIBLE FOR MAINTENANCE IF ALL ELEMENTS OF THE FINAL DEVELOPMENT PLAN, INCLUDING ALL PAVED AREAS AND LANDSCAPING, AND ALL CONDITIONS OF PLAN APPROVAL, THE RESTRICTIONS ON REDEVELOPMENT AND THE RESPONSIBILITY FOR CONTINUING MAINTENANCE AND COMPLIANCE WITH THE LIMITED DEVELOPMENT PLAN, INCLUDING LANDSCAPING, SHALL BE BINDING UPON ALL SUCCESSORS AND ASSIGNS UNLESS THE PLAN IS AMENDED IN CONFORMANCE WITH THE PROCEDURES SET FORTH IN THE CITY CODE.
15. NO HEAVY INDUSTRIAL OR FREIGHT TERMINAL USES (AS DEFINED IN THE CITY'S CODE) SHALL BE PERMITTED ONSITE. APPLICANT SHALL KEEP ADJACENT STREETS CLEAR OF MUD AD DEBRIS DURING CONSTRUCTION AND THEREAFTER.
16. APPLICANT SHALL KEEP ADJACENT STREETS CLEAR OF MUD AND DEBRIS DURING CONSTRUCTION AND THEREAFTER
17. ALL MATERIALS AND WORKMANSHIP ASSOCIATED WITH THE WORK PERFORMED IN THE RIGHT-OF-WAY SHALL CONFORM TO THE LATEST STANDARDS AND SPECIFICATIONS OF THE CITY OF FRONTENAC AND ST. LOUIS COUNTY DEPARTMENT OF HIGHWAYS & TRAFFIC.
18. A FRONTENAC RIGHT-OF-WAY PERMIT WILL BE REQUIRED PRIOR TO ANY WORK WITHIN CITY RIGHT-OF-WAY. LOT ACCESS ONTO ROCK CLIFF COURT (PRIVATE ACCESSWAY) SHALL BE ONLY AS SHOWN HEREON PER CITY OF FRONTENAC AND ST. LOUIS COUNTY STANDARDS.
19. GRADING AND SILTATION CONTROL SHALL BE IN ACCORDANCE WITH AND SUBJECT TO A GRADING PERMIT ISSUED BY THE CITY PRIOR TO GRADING ON SITE.
20. ALL PARKING FOR THE SITE SHALL BE OFF-STREET. ON-STREET PARKING ADJACENT TO THE SITE IS PROHIBITED.
21. NO CONSTRUCTION PARKING PERMITTED ON CONWAY RD.

SWPPP REQUIREMENTS

- I. INTRODUCTION
- This Stormwater Pollution Prevention Plan is for Villa Duchesne and Oak Hill School. (see location map) The proposed use for the site is field hockey pavilion
- SITE OWNER: VILLA DUCHESNE OAK HILL SCHOOL INC
795 S SPOEDE RD
ST. LOUIS, MO 63131
Contact: DR. WILLIAM GUECK
EMAIL: WGUECK@SURGCENTER.COM
- THE ONSITE CONTACT (GENERAL CONTRACTOR) IS RESPONSIBLE TO CONTACT THE SPECIAL INSPECTOR FOR INSPECTIONS AFTER RAINFALL EVENTS.
- II. SITE INFORMATION
- A: Soils
The soil found on site is classified as 'Urban Land-Harvester Complex, Korstl'.
- B: Existing Run-Off Water Quality
No run-off water quality is available for this site.
- C: Surface Waters and Receiving Waters
The site is part of a watershed that is located in the Gravois Creek watershed. The existing site drains east into the existing Gravois Creek as well as west into an existing storm sewer system. The proposed site will drain to one of three proposed bio-retention basins and discharge to the existing storm sewer system in a similar manner as the existing condition.
- D Site Area and Run-Off Coefficient
The total site area is 61.03 acres. It is planned to disturb 0.31 acres of the site and offsite area and grade the area all at one time. The run-off coefficient after grading is complete will be about 0.52. The present coefficient is estimated to be 0.47.
- III. CONSTRUCTION ACTIVITY
- The purpose of this project is to construct a new building with a parking lot and truck docks. Siltation controls will be installed as indicated on the plans prior to clearing. As the designated area has been cleared, the area will then be seeded with winter wheat to establish a vegetative cover resistant to erosion.
- IV. OFF-SITE VEHICLE TRACKING
- A stabilized construction entrance shall be provided to help reduce vehicle tracking of sediments. The paved street adjacent to the site entrance will be swept daily to remove any excess mud, dirt or rock tracked from the site. Dump trucks hauling material to or from the construction site will be covered with a tarpaulin.
- V. MAINTENANCE/INSPECTION PROCEDURES
- A. These are the inspection and maintenance procedures that shall be used by the contractor to maintain erosion and sediment controls.
- B. All control measures shall be inspected by the contractor at least once each week and no later than 48 hours a rainfall that that causes stormwater runoff to occur onsite.
- C. All measures shall be maintained by the contractor in good order with necessary repairs initiated within 24 hours of report.
- D. Sediment accumulation shall be checked monthly by the contractor and removed by the contractor if the accumulation exceeds 10% of the capacity.
- E. Where natural vegetation is removed during grading, vegetation shall be reestablished in such a density as to prevent erosion.
- F. When clearing and/or grading operations are completed or suspended for more than 5 days, all necessary precautions shall be taken to retain soil materials on site, protective measures may be required such as permanent seeding, periodic wetting, mulching, or other suitable means.
- G. If cut and fill operations occur during a season not favorable for immediate establishment of a permanent ground cover within such as a fast germinating annual such as rye grasses or sudan grasses the germinate within 2 weeks shall be utilized to retard erosion.
- H. Storm sewer pipes, outlets and channels shall be protected by silt barriers and kept free of waste and silt at all times priq,to final surface stabilization and/or paving.
- I. Close attention shall be paid to the repair of damaged silt fence, end runs and undercutting beneath the silt fence.
- J. Soil stockpiles must be stabilized or covered at the end of each workday or perimeter controls must be in place to prevent silt from the stockpile from leaving the site.

(CONTINUED ON NEXT COLUMN)

(SWPPP REQUIREMENTS CONTINUED)

- K. DUST CONTROLS MEASURES SHALL BE UTILIZED DURING PERIODS OF DRY WEATHER. WATER UNTIL THE SURFACE IS WET AND REPEAT AS NEEDED. WATER SHALL BE APPLIED AT RATES SO THAT RUNOFF DOES NOT OCCUR. TREATED SOIL SURFACES THAT RECEIVE VEHICLE TRAFFIC REQUIRE A STONE TRACKING PAD OR TIRE WASHING AT ALL POINT OF ACCESS.
- L. ALL SEDIMENT REMOVED DURING THE MAINTENANCE OF THE BMP'S SHALL BE PLACE ON THE SOILS STOCKPILE UNTIL SUCH TIME AS IT IS NEEDED.
- VI COMPLETION OF CONSTRUCTION ACTIVITIES
- A. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER SILTATION CONTROL. BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDDED.
- B. ALL FINISHED GRADES (AREAS NOT TO BE DISTURBED BY FUTURE IMPROVEMENT) IN EXCESS OF 20% SLOPES (5:1) SHALL BE MULCHED AND TACKED AT THE RATE OF 100 POUNDS PER 1000 SQUARE FEET WHEN SEEDDED.
- VI.1 CONTAMINATION FAILURE PLAN
- A. IN THE EVENT OF ANY LOSS OF CONTAINED SEDIMENT:
1. REPAIR ANY DAMAGED SILTATION FENCES.
2. CLEAN UP ANY NECESSARY SILTED AREAS.
3. RESTORE ANY NECESSARY SITED AREAS.
4. PROVIDE DOCUMENTATION OF ACTIONS & MANDATORY REPORTING TO ST. LOUIS COUNTY DEPARTMENT OF PUBLIC WORKS.
- VII ENVIRONMENTAL CONCERNS
- A. NO ENDANGERED SPECIES OR HISTORIC PROPERTIES ARE KNOWN TO EXIST ON THIS PROPERTY.
- B. THE SITE DOES NOT DRAIN TO "VALUABLE RESOURCE WATER" AS DEFINED BY MODNR.
- IX SIGNAGE
- A. THE CONTRACTOR SHALL PROVIDE, INSTALL, MAINTAIN & REMOVE A PUBLIC NOTIFICATION SIGN PER PAGES 42-43 OF THE ST. LOUIS COUNTY SEDIMENT & EROSION CONTROL MANUAL.
- X. INDUSTRIAL ACTIVITIES
- A. NO INDUSTRIAL ACTIVITIES, SUCH AS CONCRETE OR ASPHALT BATCH PLANTS, PROPOSED ONSITE.

XI. NON-STORMWATER DISCHARGES

- A. SEE LIST OF NON-STORMWATER DISCHARGES ALLOWED (THIS SHEET), ONLY PROPOSED DISCHARGE IS WATER LINE FLUSHING.

BEST MANAGEMENT PRACTICE:

- CLEARING AND GRADING
- * ONCE ANY EXISTING BUILDINGS AND PAVEMENT HAVE BEEN DEMOLISHED, THE DEBRIS SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN A PROPER MANNER. PAVEMENT DEBRIS MAY BE USED AS FILL UNDER THE GUIDANCE OF THE GEOTECHNICAL ENGINEER.
 - * STORMWATER RUNOFF WILL BE DIRECTED TO A SILTATION CONTROL DEVICE SUCH AS A SILT FENCE. THIS DEVICE WILL BE MAINTAINED AS DIRECTED BY THE SWPPP
 - * ANY SILT LEAVING THE SITE SHALL BE CLEANED UP AND ANY DAMAGE CAUSED SHALL BE REPAIRED PROMPTLY.
 - * ALL VEHICLES LEAVING THE SITE WILL BE WASHED OF ALL MUD. SEE SHEET **C5.0** FOR DESIGNATED WASH DOWN AREA. THE CONTRACTOR WILL MAINTAIN THIS WASH DOWN AREA AND EXCESSIVE MATERIAL WILL BE REMOVED ON A REGULAR BASIS. THE WASH DOWN AREA WILL NOT BE REMOVED UNTIL A PORTION OF NEW ONSITE PAVEMENT HAS BEEN ESTABLISHED FOR CONSTRUCTION PARKING.

- UTILITIES
- * ALL EXCAVATION SHALL CONFORM TO OSHA STANDARDS.
 - * ALL OPEN TRENCHES SHALL BE MARKED WITH A TEMPORARY BARRIER TO PREVENT BODILY INJURY.

- CONCRETE FLATWORK
- * A DROP CLOTH IS TO BE WASHED INTO A SEWER DRAIN, SWALE, OR STREAM. TRUCKS WILL DUMP EXCESS MATERIAL AND BE WASHED OF ALL CONCRETE AND MUD. SEE SHEET **C5.0** FOR DESIGNATED WASH DOWN AREA.

- ASPHALT PAVING
- * DO NOT ALLOW ANY PETROLEUM PRODUCTS TO BE WASHED INTO A SEWER DRAIN, SWALE, OR STREAM. PRODUCTS SHALL BE STORED IN ORIGINAL CONTAINERS AND SEALED WHILE NOT BEING USED.

- FOOTINGS AND FOUNDATIONS
- * ALL EXCAVATION SHALL CONFORM TO OSHA STANDARDS.
 - * DO NOT ALLOW FRESH CONCRETE TO BE WASHED INTO A SEWER DRAIN, SWALE, OR STREAM. TRUCKS WILL DUMP EXCESS MATERIAL AND BE WASHED OF ALL CONCRETE AND MUD. SEE SHEET **C5.0** FOR DESIGNATED WASH DOWN AREA.

- USE OF PAINT, SOLVENTS, AND ADHESIVES
- * A DROP CLOTH IS TO BE USED TO PREVENT PAINT (FRESH OR DRY) TO ENTER STORM DRAIN, SWALE, OR STREAM.
 - * SOILED RAGS SHALL BE PLACED IN CONTAINERS APPROVED FOR PAINT, SOLVENTS, AND ADHESIVES
 - * ALL SPILLS WILL BE CLEANED UP IMMEDIATELY.
 - * ALL ONSITE EQUIPMENT WILL NOT BE USED IF FLUID LEAKS ARE PRESENT. LEAKS WILL BE FIXED PROMPTLY.

- HANDLING WASTES
- * ALL MATERIAL WASTE SHALL BE DISPOSED OF PROPERLY.
 - * ENSURE ALL WORKERS KNOW PROPER PROCEDURES.
 - * A DESIGNATED AREA FOR WASTE STORAGE SHALL BE IDENTIFIED ON SITE.
 - * EQUIPMENT BATTERIES WILL BE STORED IN AN AREA PROTECTED FROM RAIN WATER.

- CONSTRUCTION MANAGEMENT
- * MAKE SURE ALL BMPs ARE FOLLOWED.
 - * OCCURRENCES NOT LISTED ABOVE SHALL BE HANDLED IN A MANNER AS TO PROTECT PEOPLE AND THE ENVIRONMENT FROM EXPOSURE.
 - * ENSURE ALL EMPLOYEES UNDERSTAND THE PROJECT SWPPP AND BMPs.

- ON-SITE FUELING
- * ON-SITE FUELING FACILITIES SHALL ADHERE TO FEDERAL AND STATE REGULATIONS FOR STORAGE AND DISPENSERS

- TOILET FACILITIES
- * PORTABLE TOILETS SHALL BE PROVIDED AT A RATION OF 1 TOILET PER 7 EMPLOYEES ONSITE.
 - * A WASHING STATION SHALL BE LOCATED NEXT TO THE TOILETS.

- SPILL PREVENTION
- * CONTAINMENT SYSTEMS EMPLOYED SHALL BE CONSTRUCTED OF MATERIALS COMPATIBLE WITH THE SUBSTANCES CONTAINED AND SHALL BE ADEQUATE TO PROTECT BOTH SURFACE AND GROUND WATER.

- DEWATERING
- * ANY AREAS THAT ARE DEWATERD SHALL BE DRAINED BY PUMPING THE WATER OUT THROUGH A "US FILTER BAG" OR APPROVED EQUAL TO STABILIZED AREA. THE SILT TRAPPED IN THE "US FILTER BAG" SHALL BE SPREAD OVER THE SITE, SEEDDED AND MULCHED.
 - **THERE IS NO PROPOSED DEWATERING FOR THIS PROJECT** ANY DEWATERING REQUIRED MUST BE TREATED BY AN APPROPRIATE CONTROL BEFORE BEING DISCHARGED OFFSITE

NATURAL RESOURCES		
NATURAL RESOURCES	PRESENCE	IMFORMATION
WETLANDS	NO	NO COE/MODNR 404/401 PERMITS REQUIRED
STREAMS AND FLOODPLAINS	NO	NONE LOCATED WITH DEVELOPMENT
KARST	NO	NOT IDENTIFIED DURING SITE WALK
PONDS	NO	NONE LOCATED WITH DEVELOPMENT
SPRINGS	NO	NONE LOCATED WITH DEVELOPMENT
SEEPS	NO	NONE LOCATED WITH DEVELOPMENT
SINKHOLES	NO	NONE LOCATED WITH DEVELOPMENT

STORM & SANITARY SEWER NOTES:

STANDARD CONSTRUCTION:

ALL STORM AND SANITARY SEWER STRUCTURES AND APPURTENANCES TO BE DEDICATED TO MSD, OR TO BE PRIVATE UNDER MSD INSPECTION, SHALL CONFORM TO THE METROPOLITAN ST. LOUIS SEWER DISTRICT, STANDARD CONSTRUCTION SPECIFICATIONS FOR SEWERS AND DRAINAGE FACILITIES, 2009. THAT WILL INCLUDE STANDARD DETAILS SHOWN THEREIN, AND SHALL INCLUDE ALL SUBSEQUENT CHANGES MADE THEREO.

SOME RECENT CHANGES CONCERN PLASTIC PIPE MATERIALS AND PIPE FIELD TESTING AND PERFORMANCE. AND INCLUDE THE FOLLOWING:

PART 2 --- MATERIALS OF CONSTRUCTION

HIGH DENSITY POLYETHYLENE (HDPE) PIPE IS NOT ALLOWED FOR GRAVITY SEWERS FOR STORM, COMBINED, OR SANITARY SEWERS THAT ARE "PUBLIC" OR "PRIVATE" UNDER MSD INSPECTION

POLYPROPYLENE (PP) PIPE IS ALLOWED AS FOLLOWS FOR GRAVITY SEWERS THAT ARE "PUBLIC" OR "PRIVATE" UNDER MSD INSPECTION:

FOR USE IN SANITARY AND COMBINED SEWERS 12 TO 60 INCHES IN DIAMETER IT SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2764 "STANDARD SPECIFICATION FOR 6 TO 60 IN. POLYPROPYLENE (PP) CORRUGATED DOUBLE AND TRIPLE WALL PIPE AND FITTINGS FOR NON-PRESSURE SANITARY SEWER APPLICATIONS." FOR USE IN STORM SEWERS 12 TO 24 INCHES IN DIAMETER IT SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2881 "STANDARD SPECIFICATIONS FOR 12 TO 60 IN POLYPROPYLENE (PP) DUAL WALL PIPE FITTINGS FOR NON-PRESSURE STORM SEWER APPLICATIONS;" OR

FOR USE IN STORM SEWERS 12 TO 60 INCHES IN DIAMETER IT SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2764 "STANDARD SPECIFICATIONS FOR 6 TO 60 IN. POLYPROPYLENE (PP) CORRUGATED DOUBLE AND TRIPLE WALL PIPE FITTINGS FOR NON-PRESSURE SANITARY SEWER APPLICATIONS."

PART 4 --- PIPE SEWER CONSTRUCTION

SECTION B, PIPE FIELD TESTS, PARAGRAPH 2, REACH INTEGRITY TESTING --- DELETE THE FIRST SENTENCE AND THE FOLLOWING REPLACEMENT APPLIES:

ALL SANITARY AND COMBINED SEWERS SHALL SUSTAIN A MAXIMUM LEAKAGE LIMIT OF 100 GALLONS/INCH OF PIPE DIAMETER/MILE OF LINE/DAY, AS REQUIRED BY THE MISSOURI DEPARTMENT OF NATURAL RESOURCES SPECIFICATIONS.

SECTION B, PIPE FIELD TESTS, PARAGRAPH 2, REACH INTEGRITY TESTING, SUBPARAGRAPH C, INFILTRATION/EXFILTRATION TESTING --- DELETE THE SIXTH SENTENCE, CONCERNING LEAKAGE LIMITS, AND THE FOLLOWING REPLACEMENT APPLIES:

THE MEASUREMENT OF LEAKAGE SHALL NOT EXCEED 100 GALLONS/INCH OF PIPE DIAMETER/MILE OF LINE/DAY, AS REQUIRED BY THE MISSOURI DEPARTMENT OF NATURAL RESOURCES SPECIFICATIONS.

SECTION B, PIPE FIELD TESTS, PARAGRAPH 4, MANHOLE TESTING, SUBPARAAGRAPH A, VACUUM TESTING --- AFTER THE FIRST SENTENCE, THE FOLLOWING ADDITION APPLIES:

THE VACUUM TEST MUST BE PERFORMED PRIOR TO BACKFILLING AROUND THE MANHOLE UNLESS THE CONTRACTOR PROVIDES DOCUMENTATION FROM THE PRECAST MANHOLE MANUFACTURER STATING THAT THE MANHOLE MAY BE VACUUM TESTED AFTER BACKFILLING HAS TAKEN PLACE. THE CONTRACTOR MUST SUBMIT THIS DOCUMENTATION PRIOR TO BACKFILLING AROUND ANY MANHOLE.

SECTION B, PIPE FIELD TESTS, PARAGRAPH 4, MANHOLE TESTING, SUBPARAGRAPH B, EXFILTRATION TESTING --- DELETE THE SECOND SENTENCE, CONCERNING LEAKAGE LIMITS, AND THE FOLLOWING ADDITION APPLIES:

FOR EXFILTRATION TESTING, THE ALLOWABLE LEAKAGE LIMIT IS 100 GALLONS/INCH OF PIPE DIAMETER/MILE OF LINE/DAY WHEN THE AVERAGE HEAD ON THE TEST SECTION IS THREE FEET (3') OR LESS.

SILTATION NOTES:

1. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING AND INSPECTING ALL SILTATION CONTROL DEVICES.
2. EROSION AND SILTATION CONTROL SHALL BE INSTALLED PRIOR TO ANY GRADING AND BE MAINTAINED THROUGHOUT THE PROJECT UNTIL ACCEPTANCE OF THE WORK BY THE OWNER AND/OR CONTROLLING REGULATORY AGENCY AND ADEQUATE VEGETATIVE GROWTH INSURES NO FURTHER EROSION OF THE SOIL.
3. NO SLOPES SHALL BE GRADED STEEPER THAN 3:1 (HORIZONTAL : VERTICAL).
4. PARKING ON NON-SURFACED AREAS IS DISCOURAGED IN ORDER TO ELIMINATE THE CONDITION WHEREBY MUD FROM CONSTRUCTION AND EMPLOYEE VEHICLES IS TRACKED ONTO PAVEMENT CAUSING HAZARDOUS ROADWAY AND DRIVING CONDITIONS. CONTRACTOR SHALL KEEP ROAD CLEAR OF MUD AND DEBRIS. THE OWNER SHALL, AT ALL TIMES, CONTAIN MUD AND OTHER SPOILS ON THIS SITE. NO VEHICLE, TRAILER OR CONSTRUCTION EQUIPMENT IS TO DEPOSIT MUD OR ANY OTHER MATERIAL ON PUBLIC STREETS.
5. STORM WATER PIPES, OUTLETS AND CHANNELS SHALL BE PROTECTED BY SILT BARRIERS AND KEPT FREE OF WASTE AND SILT BY THE CONTRACTOR AT ALL TIMES PRIOR TO FINAL SURFACE STABILIZATION AND/OR PAVING.
6. SILTATION FENCES SHALL BE INSPECTED BY CONTRACTOR WEEKLY FOR DAMAGE AND FOR THE AMOUNT OF SEDIMENT WHICH HAS ACCUMULATED. REMOVAL OF SEDIMENT WILL BE REQUIRED WHEN IT REACHES 1/2 THE HEIGHT OF THE SILTATION FENCE.
7. SILT FENCING SHALL BE INSPECTED BY CONTRACTOR PERIODICALLY FOR DETERIORATION. FENCE WHICH HAVE ROTTED OR FAILED SHALL BE REPLACED. REMOVAL OF SEDIMENT WILL BE REQUIRED WHEN IT REACHES 1/2 THE HEIGHT OF THE FENCE.
8. IF CUT AND FILL OPERATIONS OCCUR DURING A SEASON NOT FAVORABLE FOR IMMEDIATE ESTABLISHMENT OF A PERMANENT GROUND COVER, A FAST GERMINATING ANNUAL SUCH AS RYE GRASSES OR SUDAN GRASSES SHALL BE UTILIZED TO RETARD EROSION, IF ADEQUATE STORMWATER DETENTION AND EROSION CONTROL DEVICES HAVE NOT BEEN ESTABLISHED.

ALLOWABLE NON-STORM WATER DISCHARGES

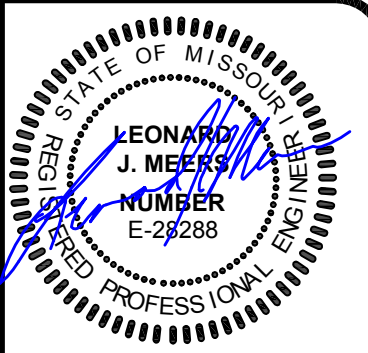
THE FOLLOWING NON-STORM WATER DISCHARGES ARE AUTHORIZED PROVIDED IT HAS BEEN DETERMINED BY THE PERMITTEE THAT THEY ARE NOT SIGNIFICANT CONTRIBUTORS OF POLLUTANTS TO THE MS4. IF THESE DISCHARGES ARE IDENTIFIED AS SIGNIFICANT CONTRIBUTORS TO THE MS4, IMPLEMENTATION OF POLLUTION PREVENTION MEASURES FOR NON-STORM WATER DISCHARGES IS REQUIRED FOR SIGNIFICANT CONTRIBUTORS.

1. WATER LINE FLUSHING,
2. LANDSCAPE IRRIGATION,
3. DIVERTED STREAM FLOW,
4. RISING GROUND WATERS,
5. UNCONTAMINATED GROUND WATER INFILTRATION (AS DEFINED AT 40 CFR 35.2005(20)),
6. UNCONTAMINATED PUMPED GROUND WATER,
7. DISCHARGE FROM POTABLE WATER SOURCES,
8. FOUNDATION DRAINS,
9. AIR CONDITIONING CONDENSATION,
10. IRRIGATION WATER, SPRINGS,
11. WATER FROM CRAWL SPACE PUMPS,
12. FOOTING DRAINS,
13. LAWN WATERING,
14. INDIVIDUAL RESIDENT CAR WASHING,
15. FLOWS FROM RIPARIAN HABITATS AND WETLANDS,
16. DECHLORINATED SWIMMING POOL DISCHARGES,
17. STREET WASH WATER, AND
18. RESIDENTIAL BUILDING WASH WATERS, WITHOUT DETERGENTS.

DISCHARGES OR FLOWS FROM FIRE FIGHTING ACTIVITIES OCCUR DURING EMERGENCY SITUATIONS. THE PERMITTEE IS NOT EXPECTED TO EVALUATE FIRE FIGHTING DISCHARGES WITH REGARD TO POLLUTANT CONTRIBUTIONS. THEREFORE, THESE DISCHARGES ARE AUTHORIZED AS ALLOWABLE NON-STORM WATER DISCHARGES, UNLESS IDENTIFIED, BY EPA, AS SIGNIFICANT SOURCES OF POLLUTANTS TO WATERS OF THE U.S..

SITE GRADING SPECIFICATIONS:

1. THE UTILITIES SHOWN HEREIN WERE PLOTTED FROM AVAILABLE INFORMATION AND DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, NONEXISTENCE, SIZE, TYPE, OR LOCATION OF THESE OR OTHER UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE VERIFYING THE ACTUAL LOCATION OF ALL UTILITIES, SHOWN OR NOT SHOWN, AND SAID UTILITIES SHALL BE LOCATED IN THE FIELD PRIOR TO ANY CONSTRUCTION OF IMPROVEMENTS.
- CONTRACTOR MUST CONTACT "MISSOURI ONE-CALL" (1-800-344-7483) FOR UTILITY LOCATIONS BEFORE PERFORMING ANY EXCAVATION ON THE SITE.
- CONTRACTOR TO CONTACT ALL SEWER, GAS, TELEPHONE, WATERLINE AND ANY OTHER UTILITIES PRIOR TO CONSTRUCTION. ALL CONNECTIONS OR REPAIRS ARE TO BE MADE IN ACCORDANCE WITH LOCAL CODES AND/OR UTILITY COMPANIES REQUIREMENTS.
2. ALL ELEVATIONS ARE BASED ON U.S.G.S. DATUM.
3. BOUNDARY AND TOPOGRAPHIC SURVEY BY GRIMES CONSULTING, INC.
4. ALL SIDEWALKS, CURB RAMPS, RAMP 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.
5. ALL PROPOSED IMPROVEMENTS SHALL BE CONSTRUCTED TO THE CITY OF FRONTENAC STANDARDS.
6. ALL GRADING AND DRAINAGE TO BE IN CONFORMANCE WITH THE CITY OF FRONTENAC, AND THE METROPOLITAN ST. LOUIS SEWER DISTRICT.
7. NO SLOPES SHALL EXCEED 3 (HORIZONTAL) TO 1 (VERTICAL), UNLESS JUSTIFIED BY GEOTECHNICAL REPORT WHICH HAS BEEN ACCEPTED/APPROVED BY THE CITY OF FRONTENAC AND THE OFFICE OF THE ENGINEER.
8. ALL DRIVEWAYS INTERSECTING ROADWAYS SHALL HAVE ONSITE TURNAROUND CAPABILITY.
9. STORMWATER SHALL BE DISCHARGED AT AN ADEQUATE NATURAL DISCHARGE POINT. SINKHOLES ARE NOT ADEQUATE DISCHARGE POINTS.
10. PRESENT ZONING -- R-1, ONE ACRE RESIDENTIAL.
11. ALL MATERIALS AND METHODS OF CONSTRUCTION TO MEET THE CURRENT STANDARDS AND SPECIFICATIONS OF THE CITY OF FRONTENAC AND ST. LOUIS COUNTY.
12. ALL GRADED AREAS SHALL BE PROTECTED FROM EROSION BY EROSION CONTROL DEVICES AND/OR SEEDING AND MULCHING AS REQUIRED BY THE CITY OF FRONTENAC. REFER TO SILTATION NOTES.
13. PRIOR TO BEGINNING ANY WORK ON THE SITE, THE CONTRACTOR SHALL CONTACT THE OFFICE OF THE ENGINEER FOR SPECIFIC INSTRUCTIONS RELEVANT TO THE SEQUENCING OF WORK.
14. ALL FILLS AND BACKFILLS SHALL BE MADE OF SELECTED EARTH MATERIALS, FREE FROM BROKEN MASONRY, ROCK, FROZEN EARTH, RUBBISH, ORGANIC MATERIAL AND DEBRIS.
15. GRADING CONTRACTOR SHALL KEEP EXISTING ROADWAYS CLEAN OF MUD AND DEBRIS AT ALL TIMES.
16. PROPOSED CONTOURS SHOWN ARE FINISH ELEVATIONS ON PAVED AREAS.
17. A GRADING PERMIT IS REQUIRED PRIOR TO ANY GRADING ON THE SITE. NO CHANGE IN WATERSHEDS SHALL BE PERMITTED.
18. INTERIM STORMWATER DRAINAGE CONTROL IN THE FORM OF SILTATION CONTROL MEASURES ARE REQUIRED.
19. THE OWNER IS REQUIRED TO PROVIDE ADEQUATE STORMWATER SYSTEMS IN ACCORDANCE WITH THE CITY OF FRONTENAC STANDARDS.
20. ADEQUATE TEMPORARY OFF-STREET PARKING SHALL BE PROVIDED FOR CONSTRUCTION EMPLOYEES. PARKING ON NON-SURFACED AREAS SHALL BE PROHIBITED IN ORDER TO ELIMINATE THE CONDITION WHEREBY MUD FROM CONSTRUCTION AND EMPLOYEE VEHICLES IS TRACKED ONTO THE PAVEMENT CAUSING HAZARDOUS ROADWAY AND DRIVING CONDITIONS.
21. PRIOR TO ISSUANCE OF FOUNDATION OR BUILDING PERMITS, ALL APPROVALS FROM THE CITY OF FRONTENAC AND THE METROPOLITAN SEWER DISTRICT(MSD) MUST BE RECEIVED.
22. INSTALLATION OF LANDSCAPING AND ORNAMENTAL ENTRANCE MONUMENT OR IDENTIFICATION SIGNAGE CONSTRUCTION IF PROPOSED, SHALL BE REVIEWED BY THE CITY OF FRONTENAC FOR SIGHT DISTANCE CONSIDERATIONS AND APPROVED PRIOR TO INSTALLATION OR CONSTRUCTION.
23. THE OWNER IS ADVISED THAT UTILITY COMPANIES WILL REQUIRE COMPENSATION FOR RELOCATION OF THEIR UTILITY FACILITIES WITHIN PUBLIC ROAD RIGHT-OF-WAY. UTILITY RELOCATION COST SHALL BE CONSIDERED THE OWNERS RESPONSIBILITY. THE OWNER SHOULD ALSO BE AWARE OF EXTENSIVE DELAYS IN UTILITY COMPANY RELOCATION AND ADJUSTMENTS.
24. ADDITIONAL SILTATION CONTROL SHALL BE INSTALLED AS REQUIRED BY THE CITY OF FRONTENAC AND ST. LOUIS COUNTY.
25. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO COORDINATE WITH THE UTILITY COMPANIES THE REMOVAL OF EXISTING UTILITY COMPANY FACILITIES THAT CONFLICT WITH THE NEW DEVELOPMENT AND THE INSTALLATION OF THE NEW SYSTEMS TO SERVE THE PROPOSED DEVELOPMENT.
26. ALL CONSTRUCTION OF PUBLIC IMPROVEMENTS AND ALL CONSTRUCTION WITHIN CITY R.O.W. SHALL COMPLY WITH THE CITY STANDARD CONSTRUCTION SPECIFICATIONS FOR SUBDIVISIONS. THE CITY SHALL BE NOTIFIED AT LEAST 1 WEEK IN ADVANCE OF THE START OF SAID CONSTRUCTION AND ALL APPLICABLE PERMITS SHALL BE OBTAINED PRIOR TO THE START OF SAID CONSTRUCTION.
27. ALL FILLED PLACES UNDER PROPOSED STORM AND SANITARY SEWER, PROPOSED ROADS, AND/OR PAVED AREAS SHALL BE COMPACTED TO 90% OF MAXIMUM DENSITY AS DETERMINED BY THE MODIFIED AASHTO T-180 COMPACTION TEST OR 95% 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.
28. ALL WORK WITHIN ST. LOUIS COUNTY RIGHT-OF-WAY SHALL BE TO ST. LOUIS COUNTY STANDARDS.



5/12/20
LEONARD J. MEERS
PROFESSIONAL ENGINEER
E-28288



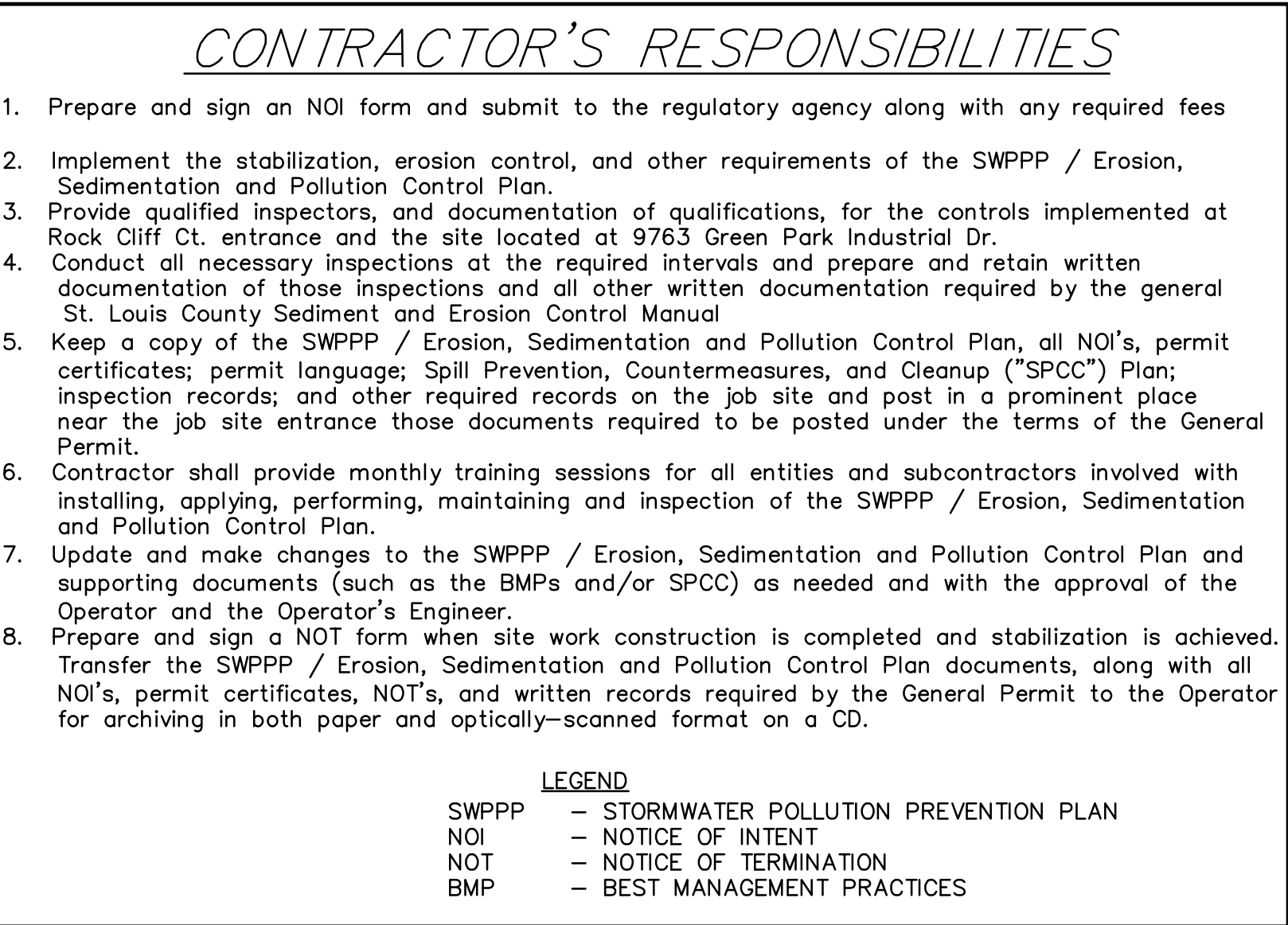
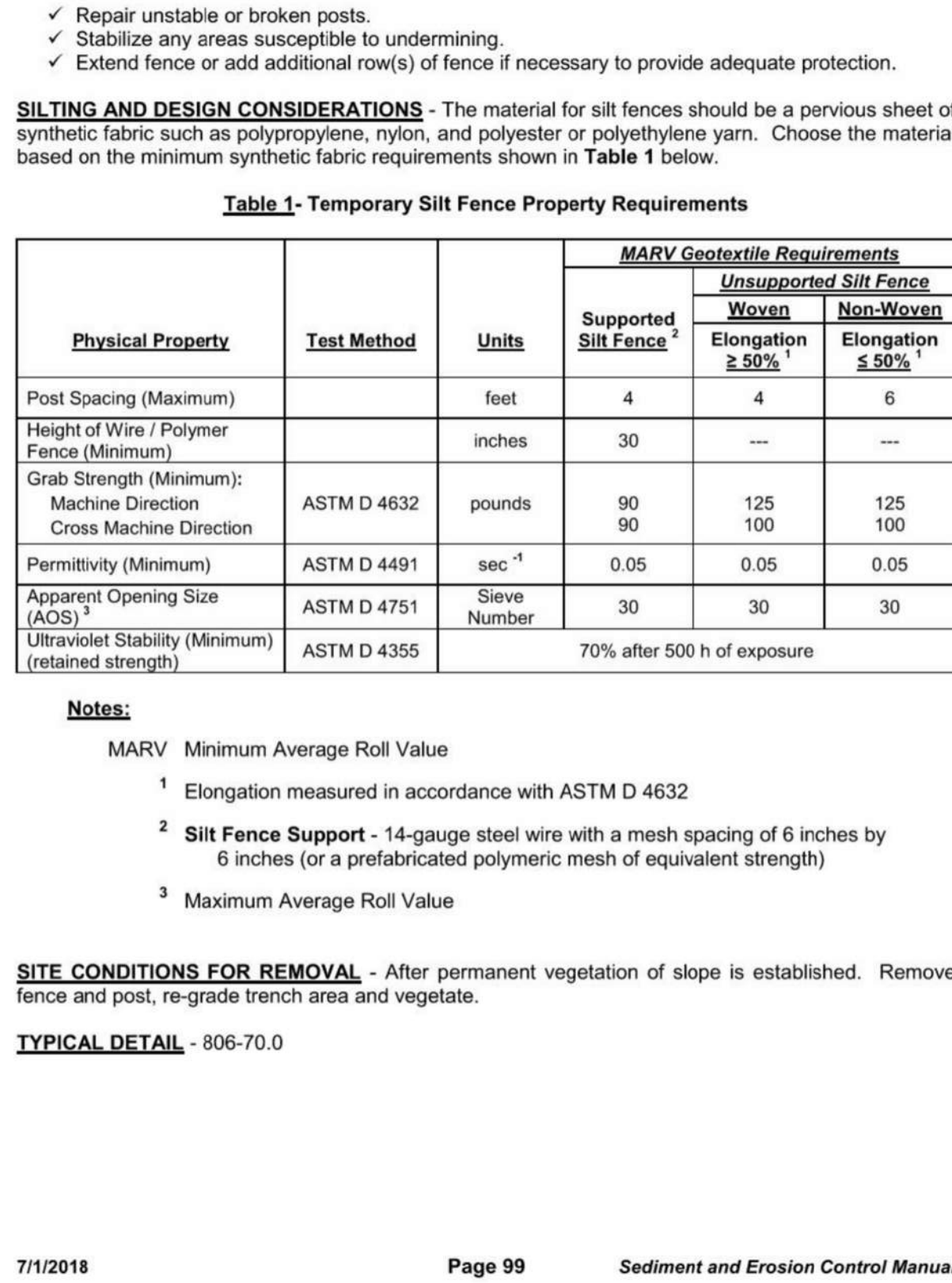
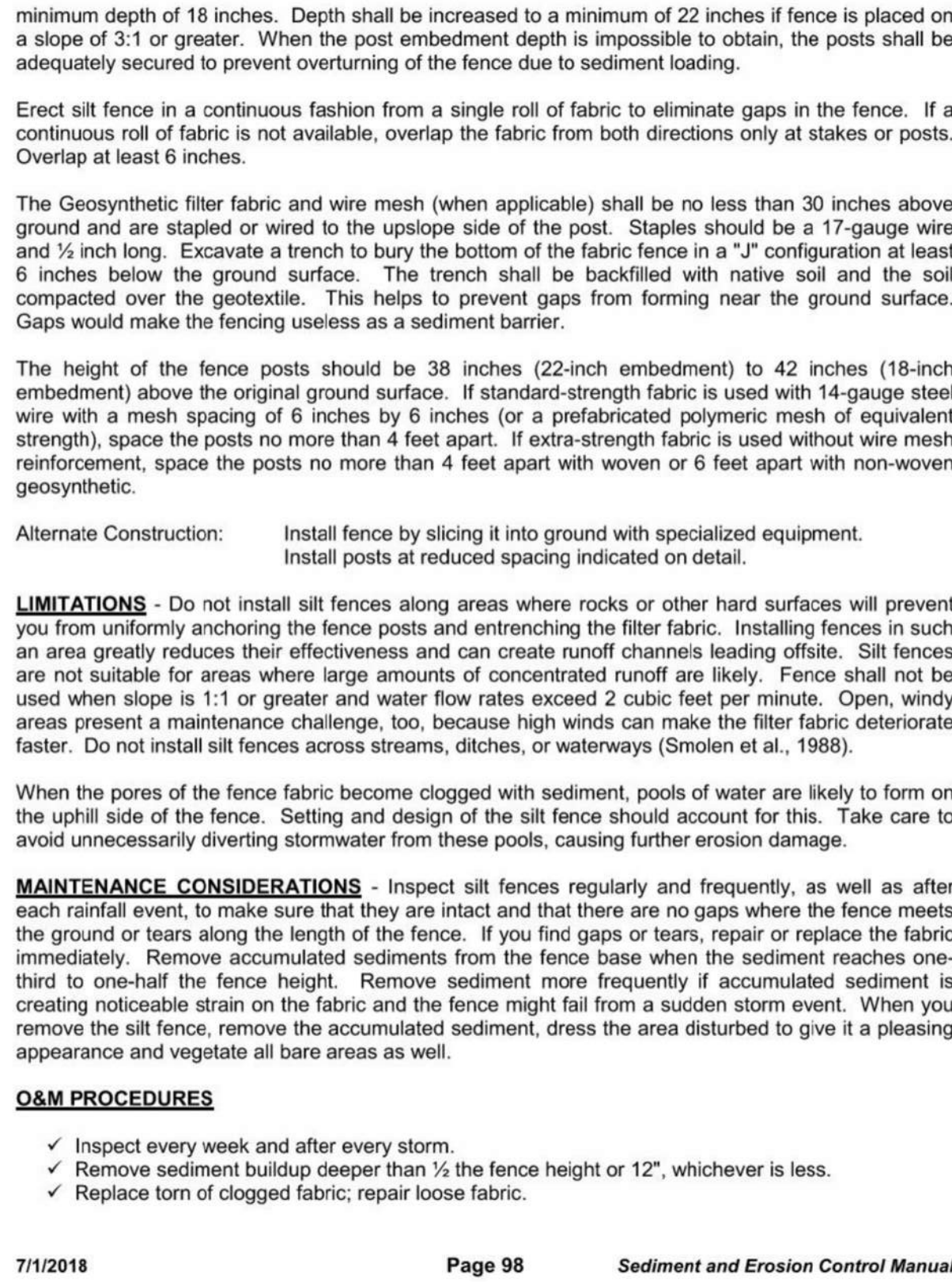
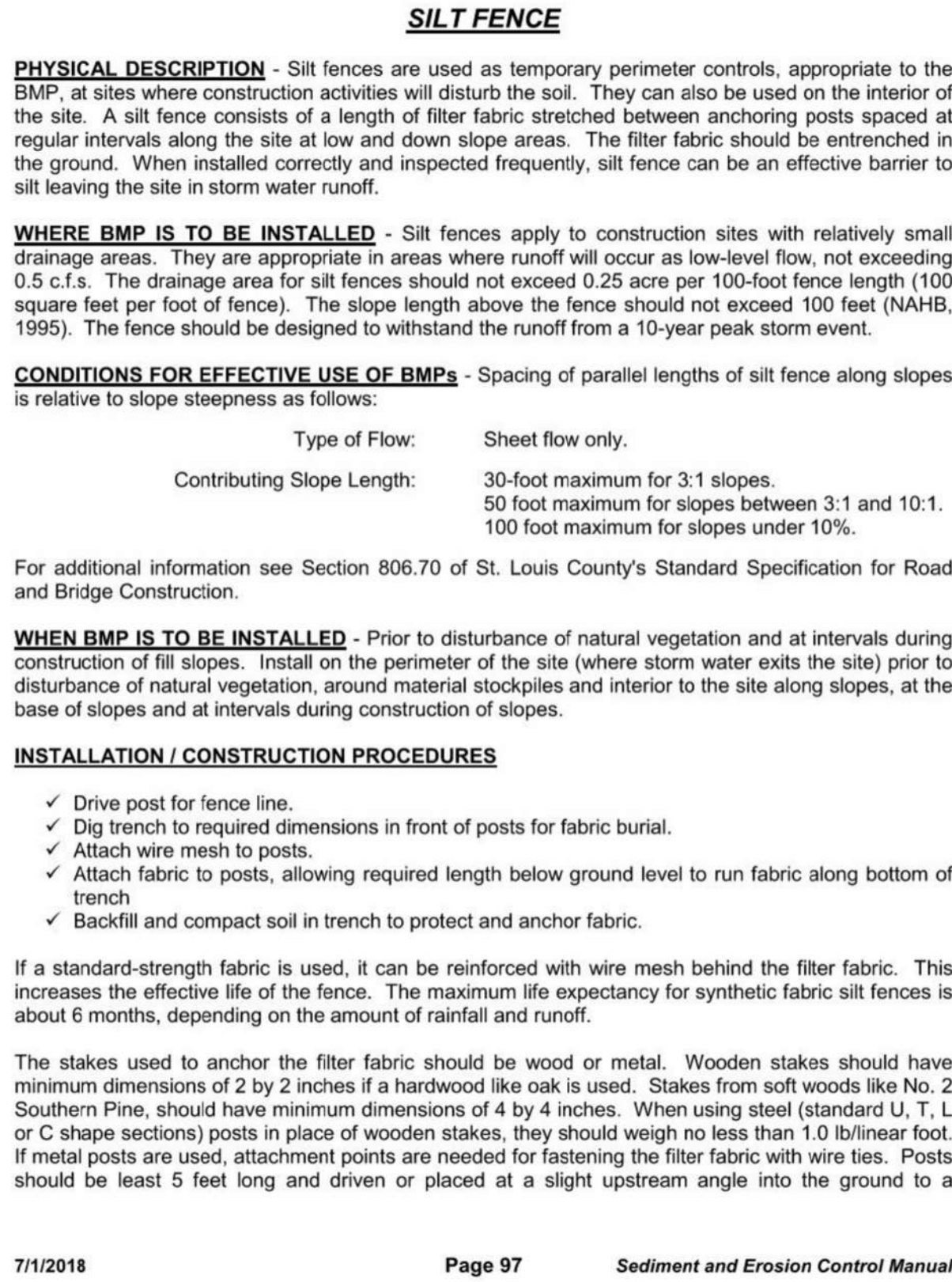
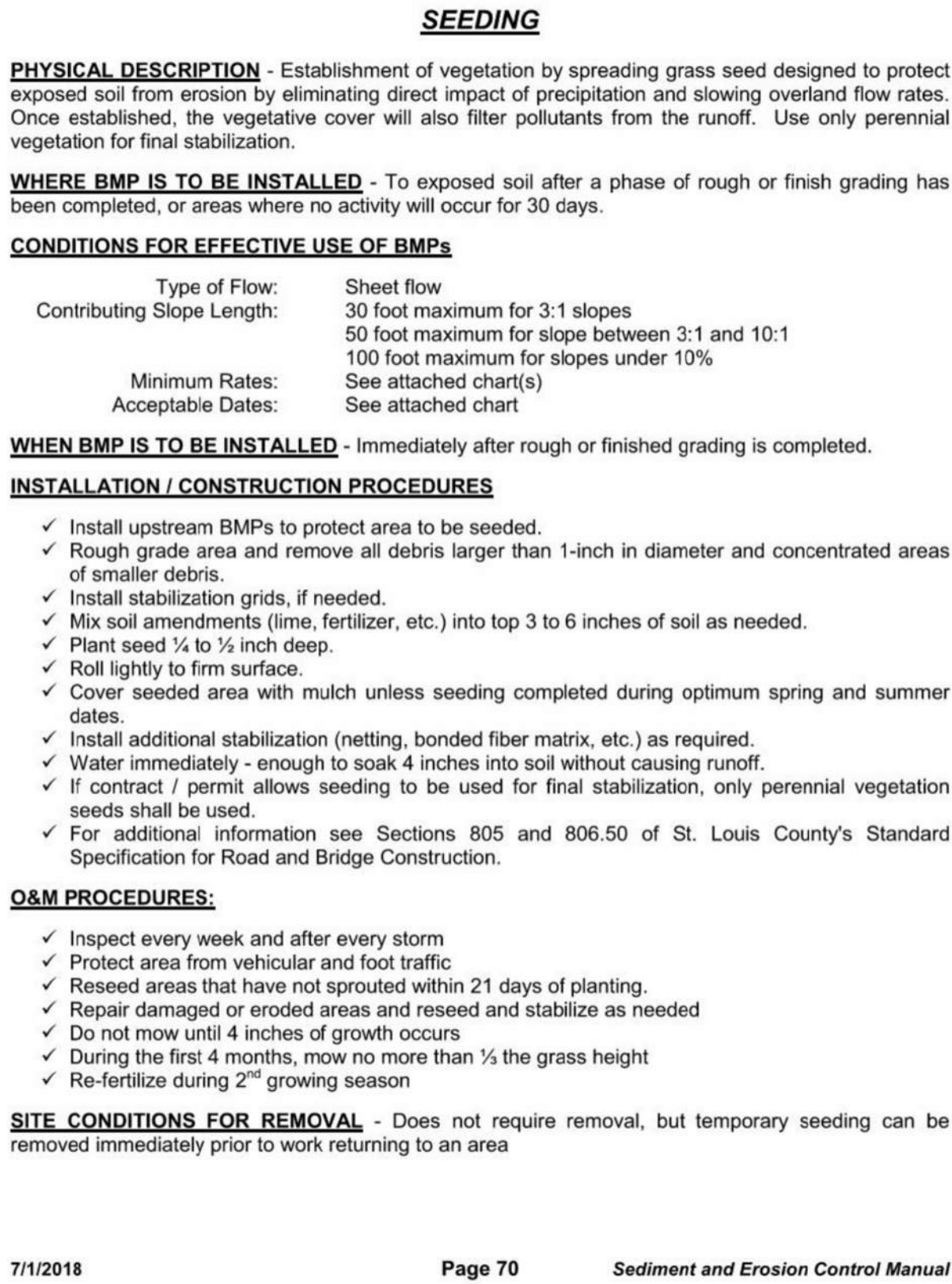
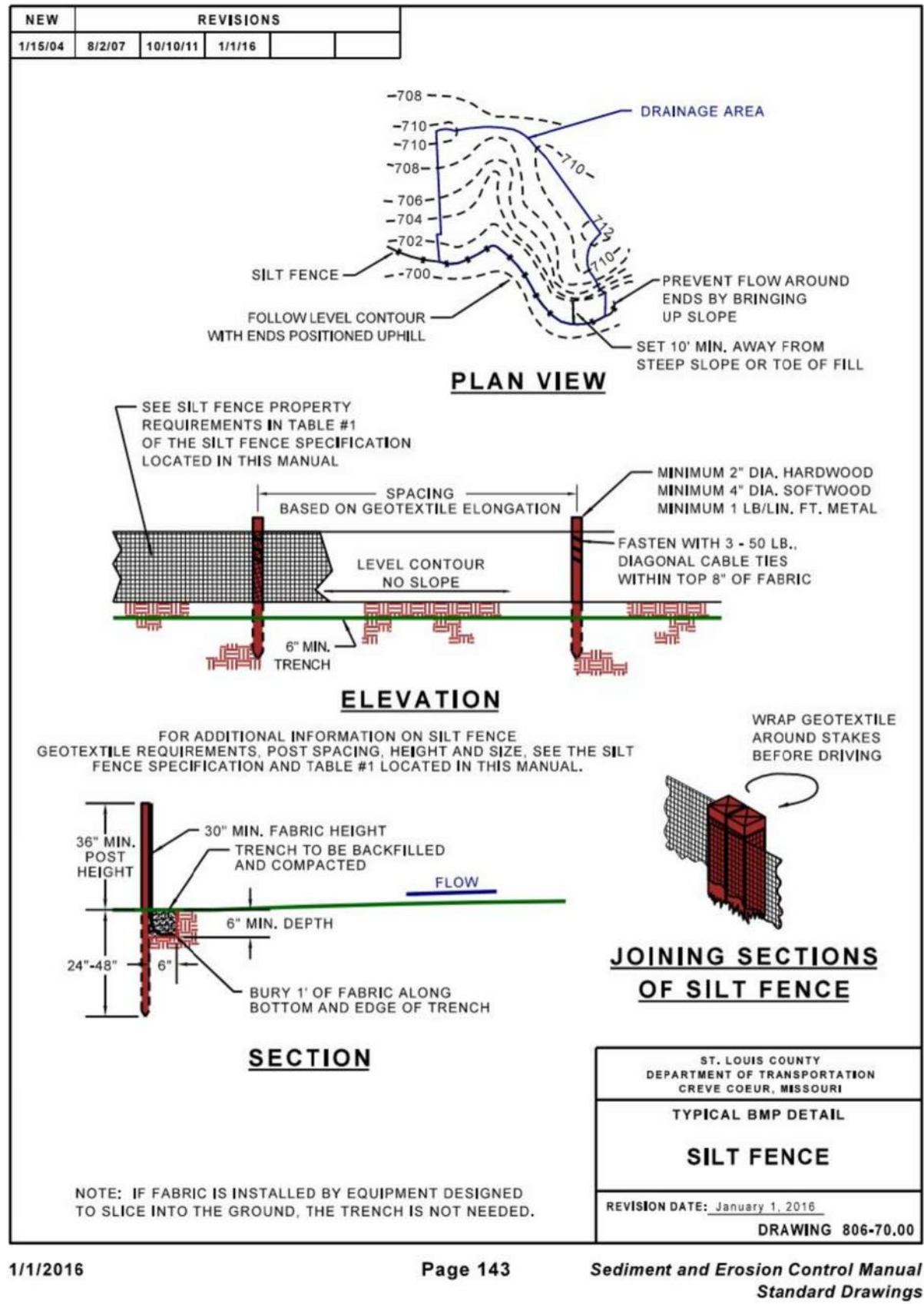
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PLS COA# LS-343-D

DATE				
REMARKS				
REV. NO.	1	2	3	4

IMPROVEMENT PLANS FOR
FIELD HOCKEY
PAVILION

SHEET TITLE	NOTES
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JOB NUMBER:	3391
DRAWN BY:	BDN
DATE:	4/20/20
CHECKED BY:	JLW
DATE:	4/20/20
SHEET:	

C2.0



TOTAL BMP QUANTITY TAKE-OFF			
SEDIMENT CAPTURE DEVICES			
QUANTITY	ITEM		
322 L.F.	SILT FENCE	806-70.00	TEMPORARY
1 EACH	CONCRETE WASTE MANAGEMENT	PG. 108	TEMPORARY

LEGEND	
SWPPP	STORMWATER POLLUTION PREVENTION PLAN
NOI	NOTICE OF INTENT
NOT	NOTICE OF TERMINATION
BMP	BEST MANAGEMENT PRACTICES

CONCRETE WASHOUT NOTES

- CONCRETE WASHOUT
- 10 FT. TYP.
- 10 FT. TYP.
- 2 FT. TYP.
- 2:1 OR FLATTER SIDE SLOPE
- PLAN
- SECTION A-A

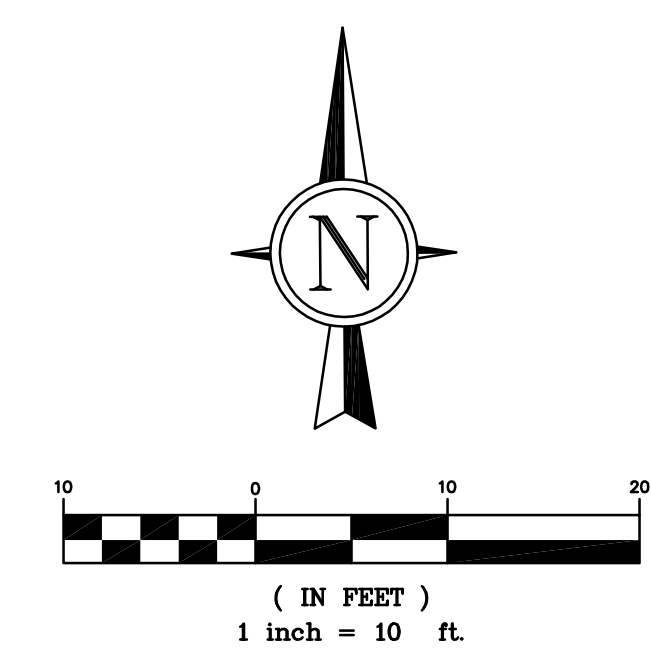
IMPROVEMENT PLANS FOR FIELD HOCKEY PAVILION

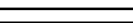




795 S SPOEDE RD, ST LOUIS, MO 63131

BMP NOTES AND DETAILS

BID SET ISSUED 05/12/2020

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LEGEND	
DEMO EXISTING CONCRETE	
DEMO EXISTING ASPHALT	
FEATURES TO BE REMOVED	
EXISTING FEATURES	
PAVEMENT SAWCUT	

1. THE UTILITIES SHOWN HEREIN WERE PLOTTED FROM AVAILABLE INFORMATION AND DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, NONEXISTENCE, SIZE, TYPE, OR LOCATION OF THESE OR OTHER UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE VERIFYING THE ACTUAL LOCATION OF ALL UTILITIES, SHOWN OR NOT SHOWN, AND SAID UTILITIES SHALL BE LOCATED IN THE FIELD PRIOR TO ANY CONSTRUCTION OF IMPROVEMENTS.

CONTRACTOR MUST CONTACT "DIG-RITE" (1-800-344-7483) FOR UTILITY LOCATIONS BEFORE PERFORMING ANY EXCAVATION ON THE SITE.

CONTRACTOR TO CONTACT ALL SEWER, GAS, TELEPHONE, WATERLINE AND ANY OTHER UTILITIES PRIOR TO CONSTRUCTION. ALL CONNECTIONS OR REPAIRS ARE TO BE MADE IN ACCORDANCE WITH LOCAL CODES AND/OR UTILITY COMPANIES REQUIREMENTS.

2. GENERAL CONTRACTOR RESPONSIBLE TO COORDINATE DEMOLITION, RELOCATING, DISCONNECTING, AND CAPPING OF ALL EXISTING UTILITIES PRIOR TO DEMOLITION WITH APPROPRIATE UTILITY COMPANY.
3. DUE CARE IS TO BE TAKEN TO AVOID UNDUE DAMAGE TO ADJACENT STRUCTURES/FINISHES AND SCHEDULED ITEMS TO REMAIN.
4. GENERAL CONTRACTOR TO REMOVE ALL DEBRIS, RUBBISH, AND OTHER MATERIAL RESULTING FROM DEMOLITION OPERATIONS FROM THE BUILDING SITE. COORDINATE LOCATION OF DUMPSITE WITH OWNER PRIOR TO ITS DELIVERY. ALL DEBRIS REMOVED FROM SITE SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL STATE AND LOCAL REQUIREMENTS IN A LICENSED DEMOLITION LANDFILL.
5. IF UNANTICIPATED ELECTRICAL, PLUMBING, OR STRUCTURAL ELEMENTS ARE ENCOUNTERED WHICH CONFLICT WITH THE INTENDED FUNCTION OR DESIGN, NOTIFY ENGINEER IMMEDIATELY.
6. GENERAL CONTRACTOR TO COORDINATE ALL PHASING OF DEMOLITION AND NEW CONSTRUCTION WITH OWNER.
7. PROMPTLY REPAIR DAMAGES TO ADJACENT AREAS SCHEDULED TO REMAIN CAUSED BY DEMOLITION WORK.
8. GENERAL CONTRACTOR SHALL CATALOG AND PROPERLY STORE ALL EXISTING ITEMS SCHEDULED TO BE REINSTALLED.
9. ALL SEWER STRUCTURES TO BE ABANDONED SHALL HAVE THE STRUCTURE COMPLETELY REMOVED. ALL PIPES TO THE STRUCTURE SHALL BE CAPPED.
10. ALL EXISTING SEWER STRUCTURES TO BE USED IN PLACE (U.I.P.) SHALL BE PROTECTED BY THE PLACEMENT OF BARRICADES OR A SIMILAR DEVICE AROUND THE STRUCTURE.
11. CONTRACTOR TO PROTECT ALL TREES & SHRUBS ADJACENT TO DISTURBED AREA. CONTRACTOR TO ONLY REMOVE TREES & SHRUBS DESIGNATED FOR REMOVAL ON PLANS. IF ADDITIONAL TREE OR SHRUB REMOVAL IS REQUIRED TO PERFORM THE PROJECT SCOPE, THE CONTRACTOR SHALL CONTACT THE ENGINEER PRIOR TO REMOVAL.

5/12/20

LEONARD J. MEERS
PROFESSIONAL ENGINEER
E-28288



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PLS COA# LS-343-D

REV. NO.	REMARKS	DATE
△		
△		
△		
△		
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**IMPROVEMENT PLANS FOR
FIELD HOCKEY
PAVILION**

PROJECT TITLE

EXISTING SITE

JOB NUMBER: 3391

DRAWN BY: **BDN**

DATE: 4/20/20

CHECKED BY: JLW

SHEET:

C4.0

PREPARED FOR:
VILLA DUCHENSNE
CONTACT: DR. WILLIAM GUECK
54 ROAN LANE
ST. LOUIS, MO 63124
EMAIL: WGUECK@SURGCENTER.COM

M.S.D. BASE MAP 19N
LOC. NO. 19N610141
ZIP CODE 63131

J:\3391\3391 Drawings\Engineering\Construction Plans\3391 Site.dwg(5/12/2020 10:39 AM)Erin Neal

PREPARED FOR:
VILLA DUCHENSNE
CONTACT: DR. WILLIAM GUECK
54 ROAN LANE
ST. LOUIS, MO 63124
EMAIL: WGUECK@SURGCENTER.COM

19N2-0415
SAN. MH
TOP=553.92
FL=538.92

19N2-0425
SAN. MH
TOP=565.81
FL=558.71

(A)
ROLL-IN 6"x8" WYE
FL (B)=555.80

(B)
CLEAN OUT
TOP=573.91
FL (C)=567.37
FL OUT=567.37

(C)
CLEAN OUT
TOP=575.06
FL (D)=569.37
FL OUT=569.37

(D)
CLEAN OUT
TOP=575.37
FL (E)=571.37
FL OUT=571.37

(E)
CLEAN OUT
TOP=577.78
FL (F)=573.78
FL OUT=573.78

(G)
CLEAN OUT
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FL OUT=584.61

(F)
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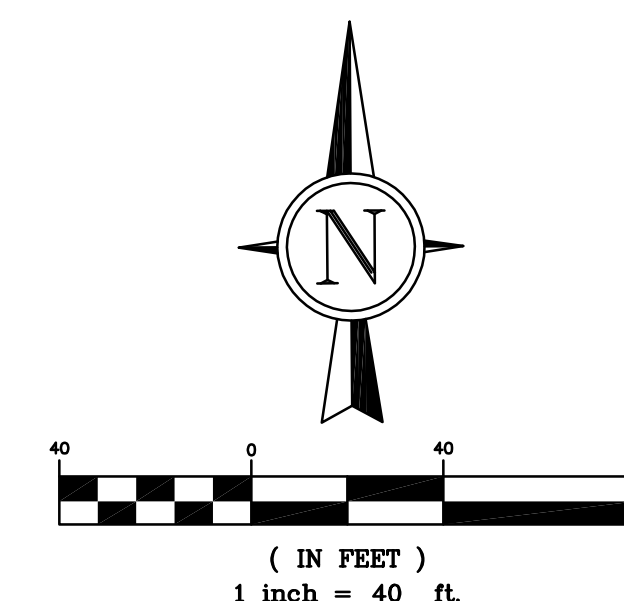
(I)
SAMPLE MH
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FL (J)=587.07
FL OUT=587.07

(H)
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TOP=591.67
FL (I)=585.95
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(K)
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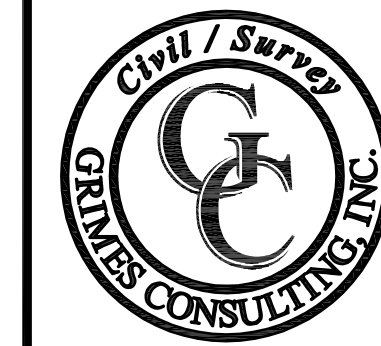
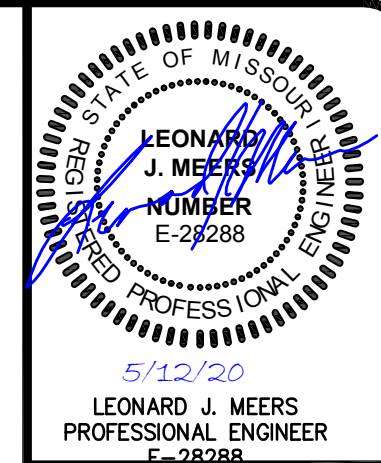
PAVILION
2,476
F.F.=592.00



LEGEND	
CONCRETE SIDEWALK	
ASPHALT PAVEMENT	
CONCRETE PAVEMENT	

PROPOSED UTILITY LEGEND	
SANITARY SEWER	
SANITARY SEWER STRUCTURE	
WATERLINE	

APPROX. LOCATION FROM PLAN
CONTRACTOR TO LOCATE PRIOR TO
CONSTRUCTION



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REV. NO.	DATE	REMARKS
1		
2		
3		
4		
5		

IMPROVEMENT PLANS FOR
**FIELD HOCKEY
PAVILION**
795 S SPOEDE RD, ST LOUIS, MO 63131

SHEET TITLE
OVERALL SITE

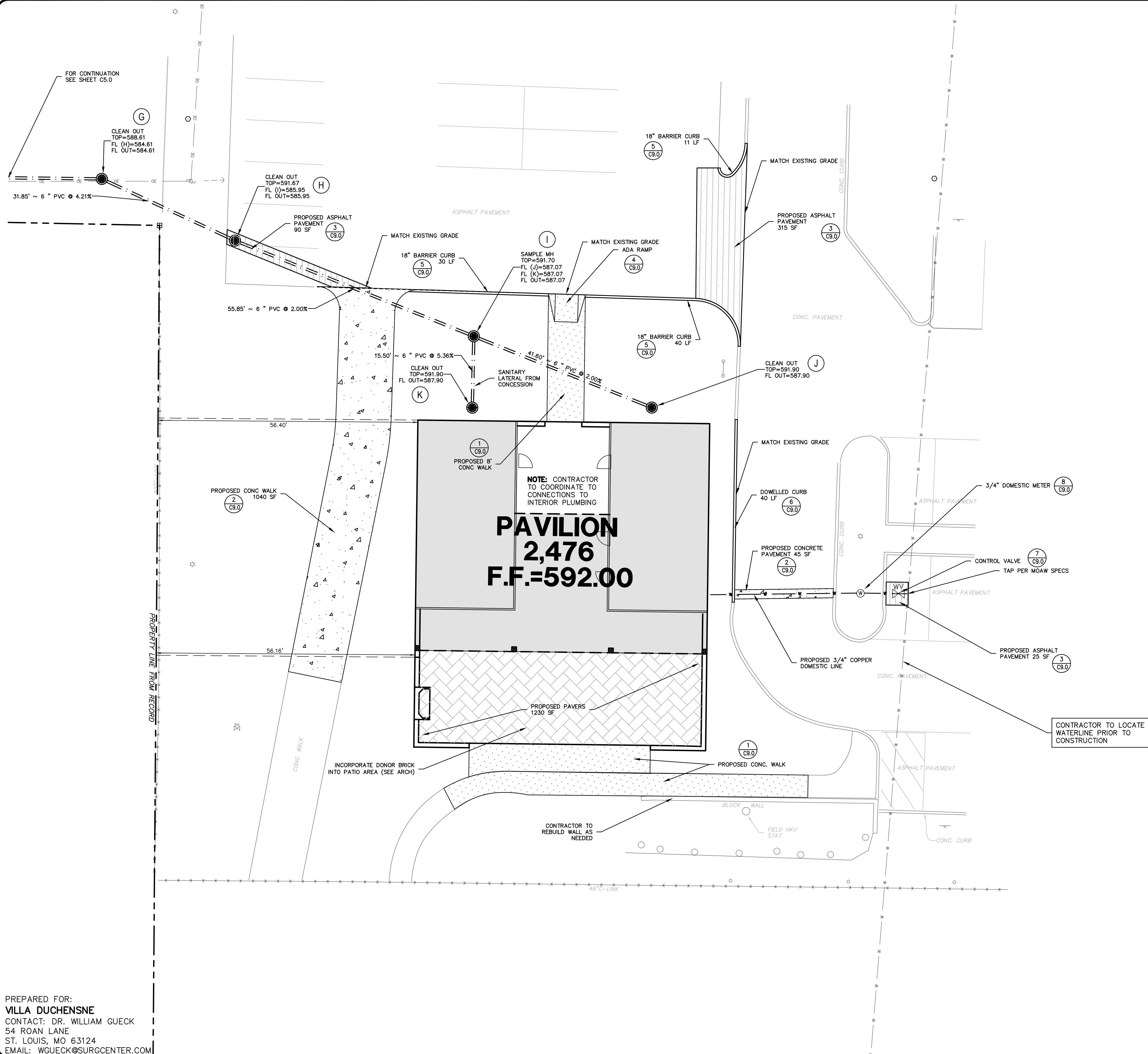
JOB NUMBER:	3391
DRAWN BY:	BDN
DATE:	4/20/20
CHECKED BY:	JLW
DATE:	4/20/20
SHEET:	C5.0

BID SET ISSUED 05/12/2020

M.S.D. BASE MAP 19N
LOC. NO. 19N610141
ZIP CODE 63131

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PREPARED FOR:
VILLA DUCHENSNE
CONTACT: DR. WILLIAM GUECK
54 ROAN LANE
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EMAIL: WGUECK@SURGCENTER.COM



PERTINENT DATA

PROPERTY OWNER	VILLA DUCHESNE OAK HILL SCHOOL INC
SITE ADDRESS	795 S. SPOEDE RD ST. LOUIS, MO 63131
CURRENT ZONING	R-1 ONE ACRE RESIDENTIAL
PROPOSED ZONING	R-1 ONE ACRE RESIDENTIAL
LOC. NO.	19N610141
SITE AREA	61.03±AC (2,660,000 SQ. FT.)
PROP. USE	FIELD HOCKEY PAVILION
WATER SHED	CREVE COEUR CREEK
WATER DISTRICT	MISSOURI AMERICAN
FIRE DISTRICT	FRONTENAC
SCHOOL DISTRICT	LADUE
SEWER DISTRICT	MSD
FEMA MAP NUMBER	29189C0193K
DATE:	FEB 4, 2015

BID SET ISSUED 05/12/2020

STATE OF MISSOURI
LEONARD J. MEERS
NUMBER
E-28288
5/12/20
LEONARD J. MEERS
PROFESSIONAL ENGINEER
E-28288

Civil / Survey
GRIMES CONSULTING, INC.

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PE COA# E-1470-D
PLS COA# LS-343-D

DATE	
REMARKS	
REV. NO.	

IMPROVEMENT PLANS FOR
FIELD HOCKEY
PAVILION

795 S SPOEDE RD, ST LOUIS, MO 63131

SHEET TITLE
SITE PLAN

JOB NUMBER: 3391
DRAWN BY: BDN
DATE: 4/20/20
CHECKED BY: JLW
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SHEET:

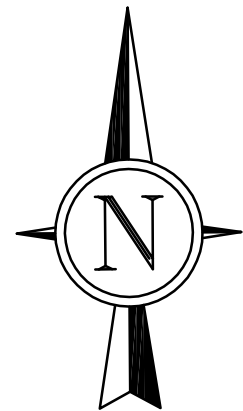
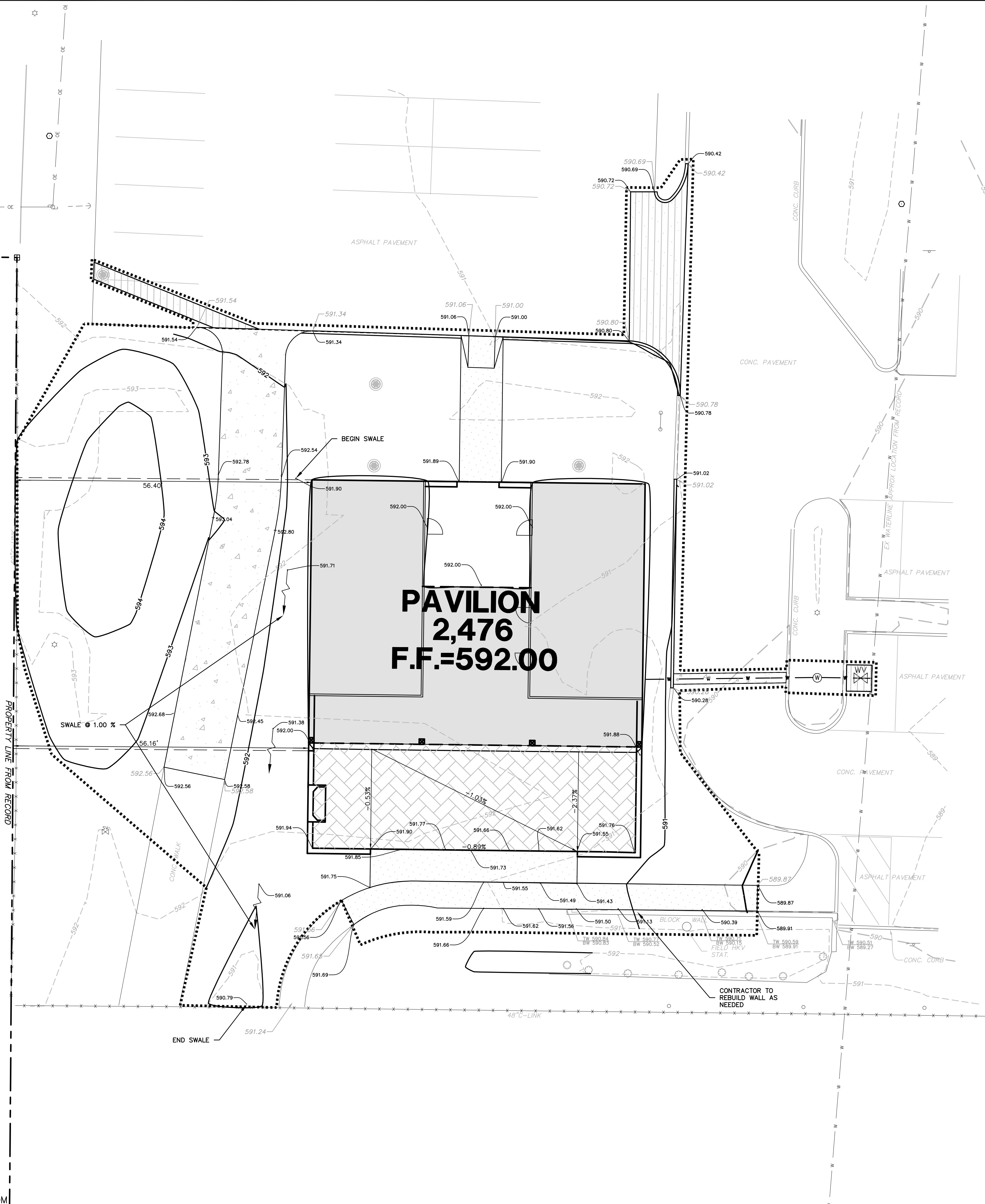
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ST. LOUIS, MO 63124
EMAIL: WGUECK@SURGCENTER.COM



(IN FEET)
1 inch = 10 ft.

LEGEND	
CONCRETE PAVEMENT	
CONCRETE SIDEWALK	
ASPHALT PAVEMENT	
PROPOSED FEATURES	
EXISTING FEATURES	
CONSTRUCTION LIMITS	

LIMITS OF DISTURBANCE = 0.33 AC (±)
TOTAL SITE AREA = 61.03 ACRES (±)

EARTHWORK NOTES:

NOTE: 15% SHRINKAGE FACTOR SHALL BE VERIFIED WITH GEOTECHNICAL CONSULTANT.

BULK CUT..... 65. CY+ CUBIC YARD
BULK FILL..... 65. CY (w/15% SHRINKAGE)+ CUBIC YARD
0 CY TO BE HAULED OFF-SITE

THE ENGINEER HAS CALCULATED THE ABOVE QUANTITIES OF EARTHWORK TO BE REGARDED AS AN ESTIMATE OF THE BULK MOVEMENT OR REDISTRIBUTION OF SOILS ON THIS PROJECT. AS AN ESTIMATE, THESE QUANTITIES ARE INTENDED FOR GENERAL USE, AND THE ENGINEER ASSUMES NO LIABILITY FOR COST OVERRUNS DUE TO EXCESS EXCAVATED MATERIALS OR SHORTAGES OF MATERIALS AND LABOR.

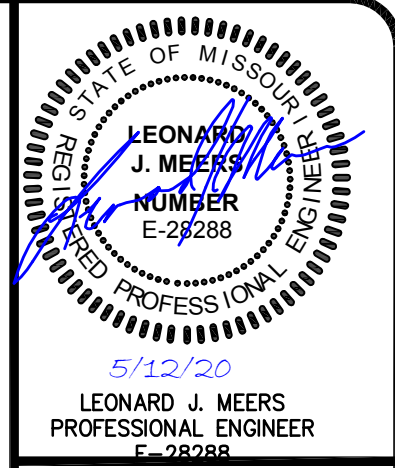
THE QUANTITIES ESTIMATED FOR EACH OF THE IMPROVEMENT ITEMS LISTED ABOVE ARE BASED UPON THE HORIZONTAL AND VERTICAL LOCATION OF THE IMPROVEMENTS AS PROPOSED ON THE SITE ENGINEERING PLANS PREPARED BY GRIMES CONSULTING.

ALL QUANTITIES SHALL BE VERIFIED BY THE CONTRACTOR. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ALL LABOR AND EQUIPMENT NECESSARY TO MOVE REQUIRED QUANTITY OF MATERIALS TO COMPLETE THE PROJECT IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.

THE ENGINEER'S EARTHWORK ESTIMATE DOES NOT INCLUDE ANY OF THE FOLLOWING ITEMS REQUIRING EARTHWORK THAT MAY BE NECESSARY FOR COMPLETION OF THE PROJECT: MISCELLANEOUS UNDERGROUND CONDUITS, INCLUDING SEWER LINES AND WATER MAINS LESS THAN TWENTY-FOUR INCHES IN DIAMETER, STANDARD MANHOLES, PROCESS OR TRANSFER PIPING, ELECTRICAL OR TELEPHONE CONDUITS; BASES FOR LIGHT STANDARDS; BUILDING FOOTINGS AND FOUNDATIONS, ETC.

THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE ACTUAL SIZE OF THE FIELD EXCAVATIONS MADE FOR THE INSTALLATION OF UNDERGROUND STRUCTURES, AND AS SUCH, THE ACTUAL QUANTITIES OF EARTHWORK FROM SUCH ITEMS MAY VARY FROM THE ESTIMATE SHOWN ABOVE.

THE ENGINEER ASSUMES NO RESPONSIBILITY FOR COSTS INCURRED DUE TO REMOVAL OF UNSUITABLE MATERIAL WHICH MUST BE REMOVED FROM SITE.



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FAX (314) 849-6010
www.grimesconsulting.com
PE COA# E-1470-D
PLS COA# LS-343-D

DATE	REMARKS	REV. NO.

IMPROVEMENT PLANS FOR
FIELD HOCKEY PAVILION
795 S SPOEDE RD, ST LOUIS, MO 63131

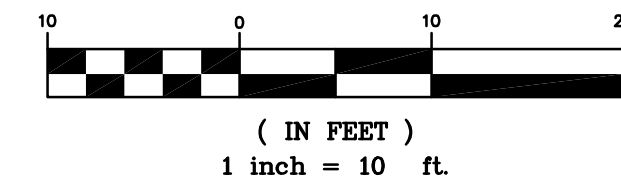
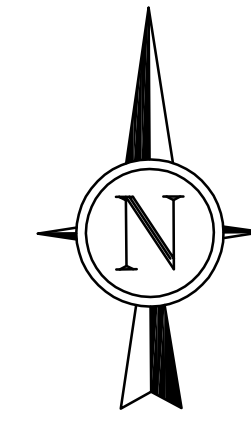
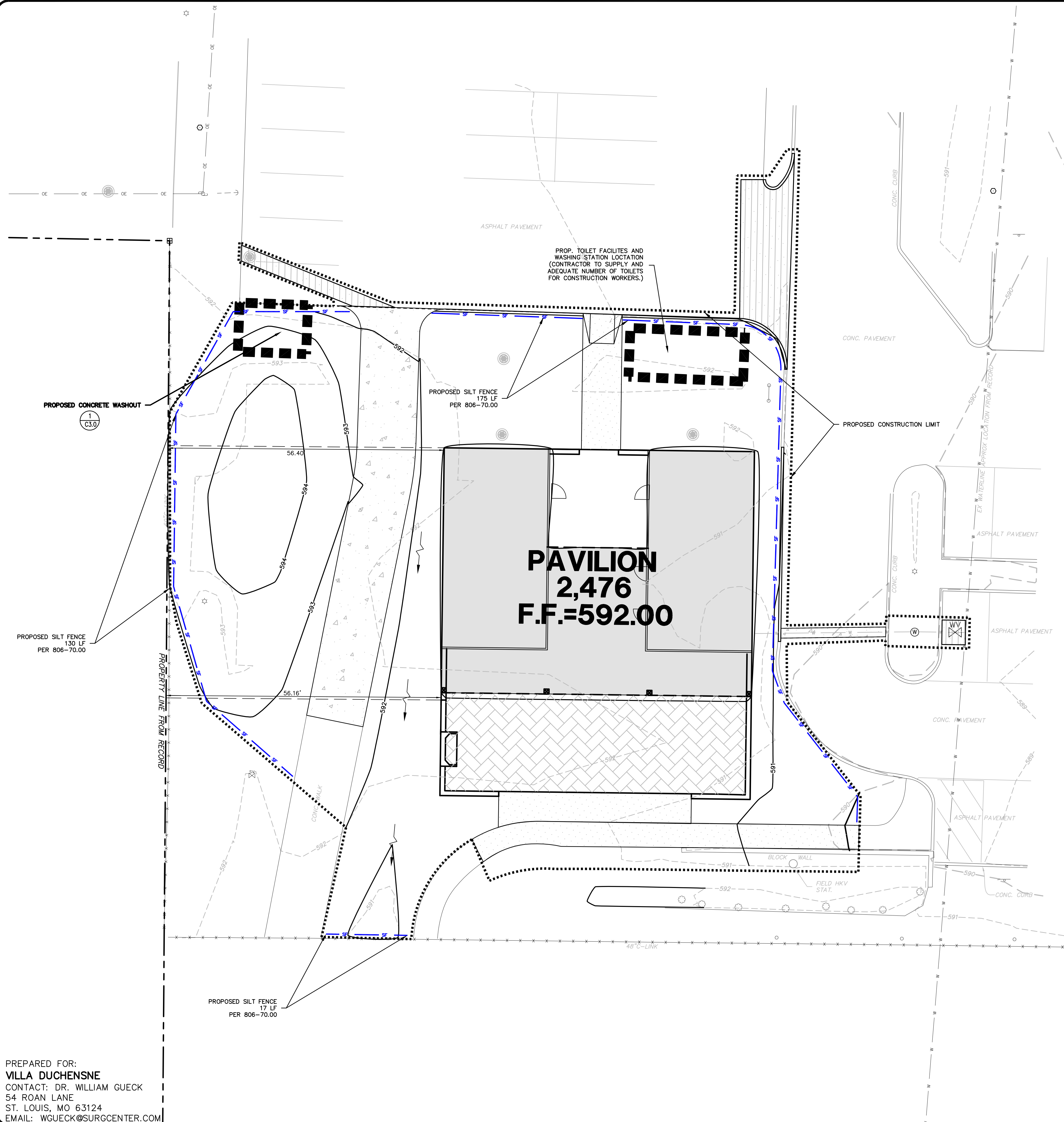
SHEET TITLE
GRADING PLAN

JOB NUMBER:	3391
DRAWN BY:	BDN
DATE:	4/20/20
CHECKED BY:	JLW
DATE:	4/20/20
SHEET:	

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M.S.D. BASE MAP 19N
LOC. NO. 19N610141
ZIP CODE 63131



LEGEND

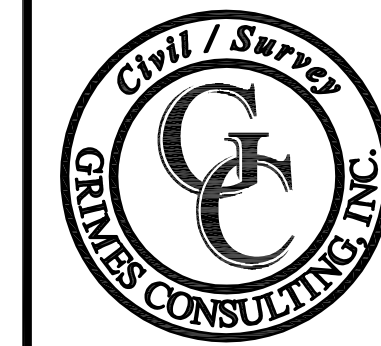
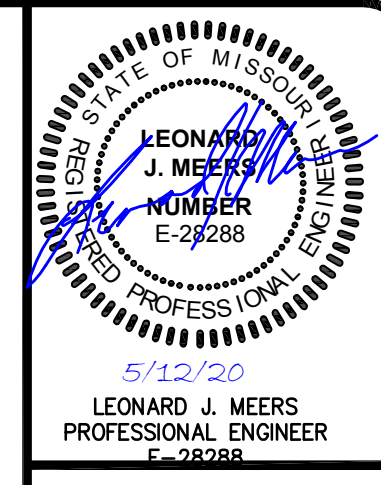
CONCRETE PAVEMENT	
CONCRETE SIDEWALK	
ASPHALT PAVEMENT	
PROPOSED FEATURES	
EXISTING FEATURES	
CONSTRUCTION LIMITS	
SILT FENCE	

LIMITS OF DISTURBANCE = 0.31 AC (±)
TOTAL SITE AREA = 61.03 ACRES (±)

NOTE: ALL CUT AND FILL SLOPES MUST BE SURFACED ROUGHENED AND VEGETATED WITHIN FOURTEEN (14) DAYS OF THEIR CONSTRUCTION.

NOTE: THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR, OR CONCURRENT WITH LAND DISTURBING ACTIVITIES

NOTE: MAINTENANCE OF ALL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES AND PRACTICES WHETHER TEMPORARY OR PERMANENT, SHALL BE AT ALL TIMES THE RESPONSIBILITY OF THE CONTRACTOR / PRIMARY PERMITTEE



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REV. NO.	REMARKS	DATE
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IMPROVEMENT PLANS FOR
FIELD HOCKEY
PAVILION

SHEET TITLE

SWPPP

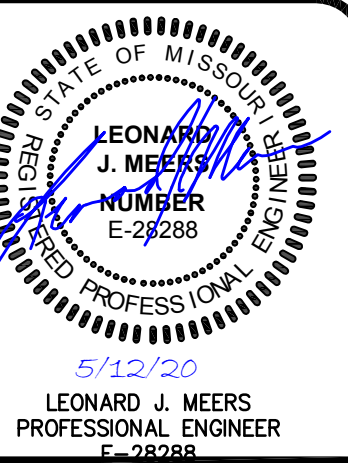
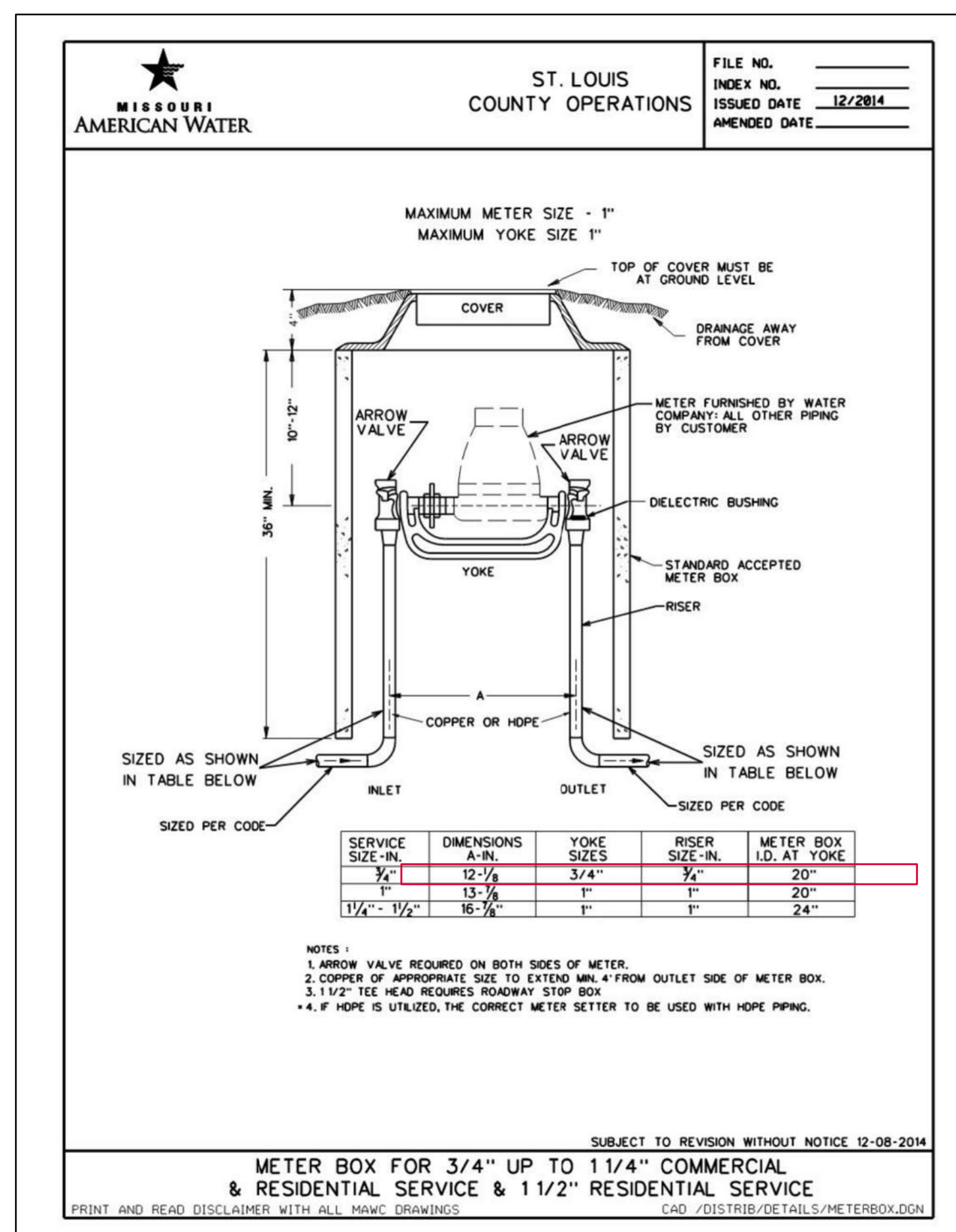
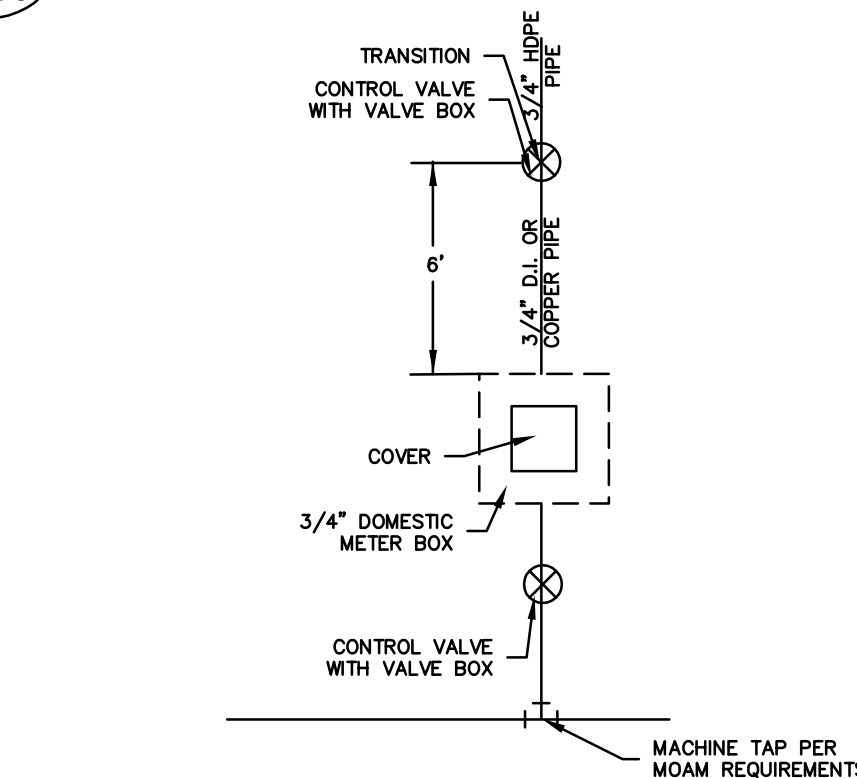
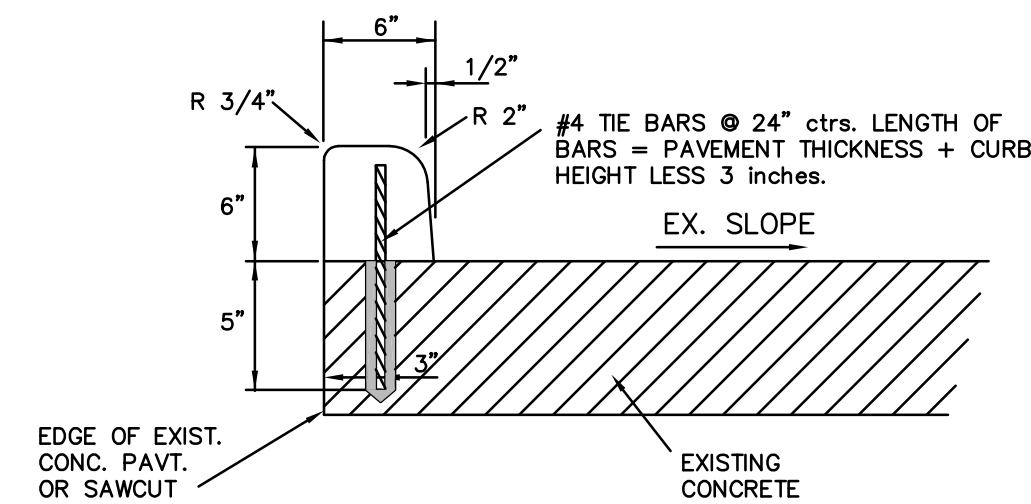
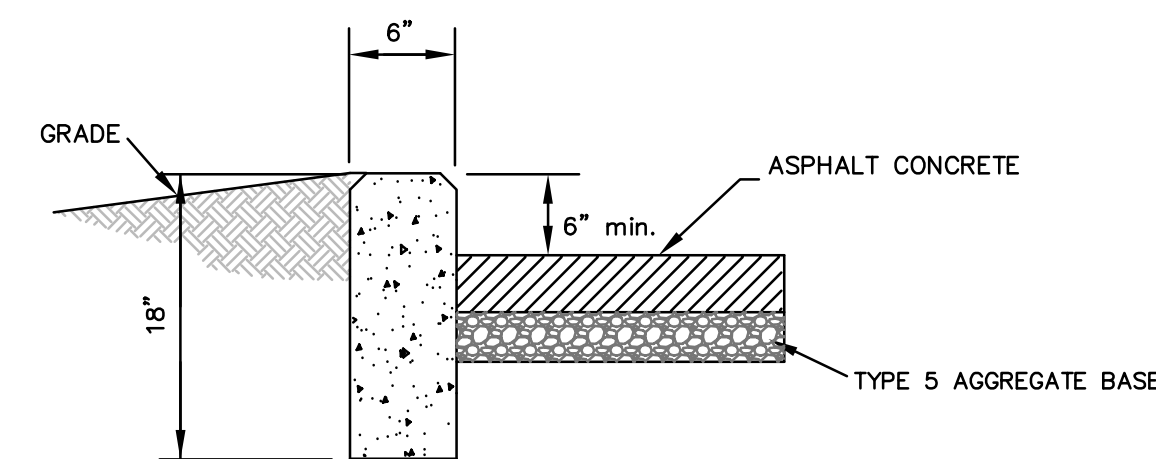
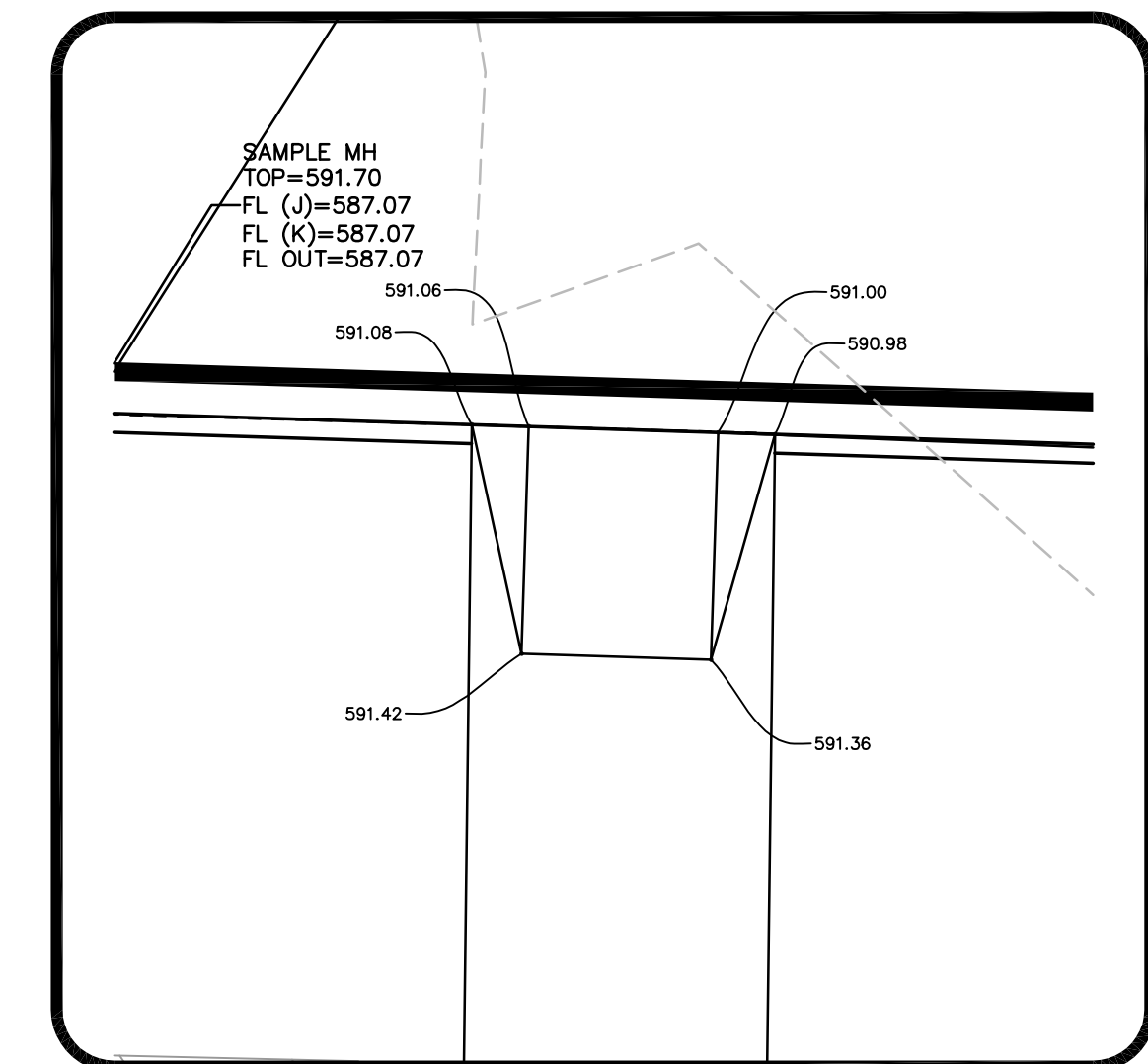
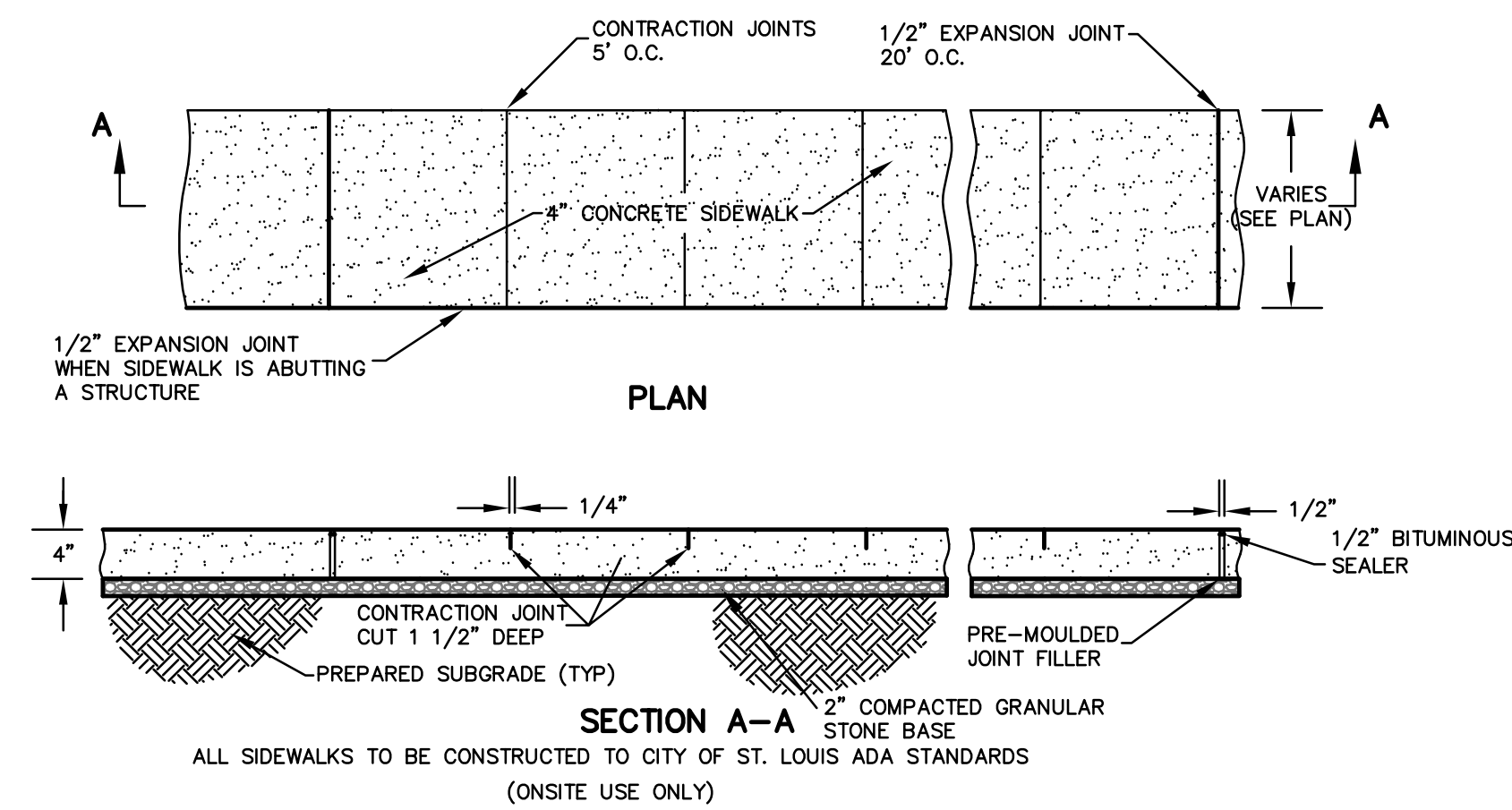
JOB NUMBER:	3391
DRAWN BY:	BDN
DATE:	4/20/20
CHECKED BY:	JLW
DATE:	4/20/20
SHEET:	

C8.0

PREPARED FOR:
VILLA DUCHENSNE
CONTACT: DR. WILLIAM GUECK
54 ROAN LANE
ST. LOUIS, MO 63124
EMAIL: WGUECK@SURGCENTER.COM

M.S.D. BASE MAP 19N
LOC. NO. 19N610141
ZIP CODE 63131

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REV. NO.	REMARKS	DATE
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**IMPROVEMENT PLANS FOR
FIELD HOCKEY
PAVILION**

SHEET TITLE

DETAILS

JOB NUMBER: 3391

DRAWN BY: **BDN**

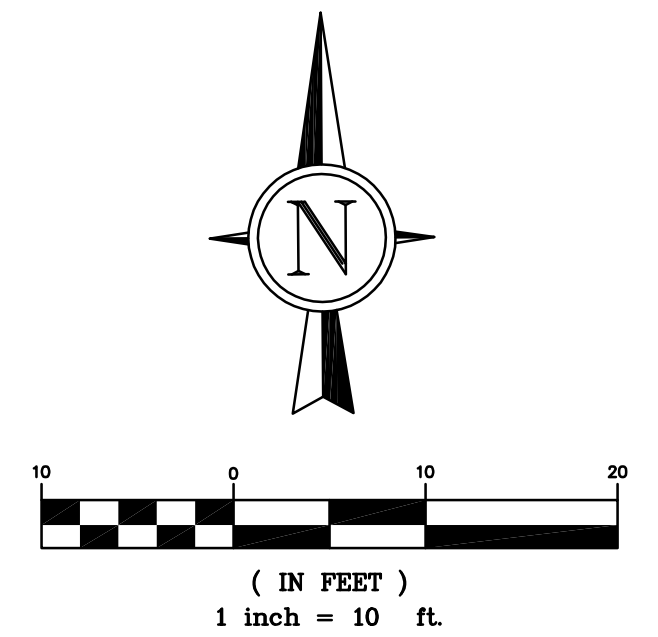
DATE: 4/20/20

CHECKED BY: JLW

DATE: 4/20/20

SHEET:

NOTE: NOT FOR CONSTRUCTION FOR DRAINAGE PURPOSES ONLY



ANY FUTURE LAND DISTURBANCE AND/OR INCREASE IN IMPERVIOUS AREA ON THIS SITE MAY REQUIRE ADDITIONAL STORM WATER MANAGEMENT PER MSD REGULATIONS IN PLACE AT THAT TIME (INCLUDING TOTAL LAND DISTURBANCE AND/OR IMPERVIOUSNESS ADDED ON THIS PLAN P-TBD)

LIMITS OF DISTURBED AREA =

DIFFERENTIAL CALCS (VILLA DUCHESNE FIELD HOCKEY PAVILION)							
PROPOSED	ACRES	PI FACTOR	Q (CFS)	EXISTING	ACRES	PI FACTOR	Q (CFS)
Roof	0.00	4.20	0.00		0.00	4.20	0.00
Roof (disconnected)	0.06	3.54	0.21		0.00	3.54	0.00
Pavement	0.11	3.54	0.39		0.18	3.54	0.64
Pervious Pavement	0.00	1.70	0.00		0.00	1.70	0.00
Grass	0.16	1.70	0.27		0.15	1.70	0.26
Total Q (cfs)			0.87				0.89
total Area	0.33				0.33		
Impervious Area	0.17	CN=98			0.18	CN=98	
Pervious Area	0.16	CN=80			0.15	CN=80	
Differential Runoff			89				90

Note: Runoff Reduction Is Not Accounted For in CN Calc.

Note: Runoff Reduction Is Not Accounted For In CN Calc

15 YEAR STORM

STRUCTURE NUMBER	GRASS AREA (ACRES)	P. FACTOR (GRASS)	GRAVEL AREA (ACRES)	P.I. FACTOR (C/P)	PAVT. AREA (ACRES)	P.I. FACTOR (PVMT)	DISCONNECTED ROOF AREA (ACRES)	P.I. FACTOR	TOTAL AREA (ACRES)	TOTAL Q (CFS)
BYPASS	0.16	1.70	0.00	3.15	0.11	3.54	0.06	3.54	0.33	0.87

PAVILION
2,476
F.F.=592.00

PREPARED FOR:
VILLA DUCHENSNE
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EMAIL: WGUECK@SURGCENTER.COM

M.S.D. BASE MAP 19N
LOC. NO. 19N610141
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5/12/20

LEONARD J. MEERS
PROFESSIONAL ENGINEER
E-28288



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**IMPROVEMENT PLANS FOR
FIELD HOCKEY
PAVILION**

SHEET TITLE

DAM

JOB NUMBER: **3391**

DRAWN BY: **BDN**

DATE: 4/20/20

DATE: 4/20/20

SHEET:

C10.0

BID SET ISSUED 05/12/2020

**IMPROVEMENT PLANS FOR
FIELD HOCKEY
PAVILION**