

LEGEND

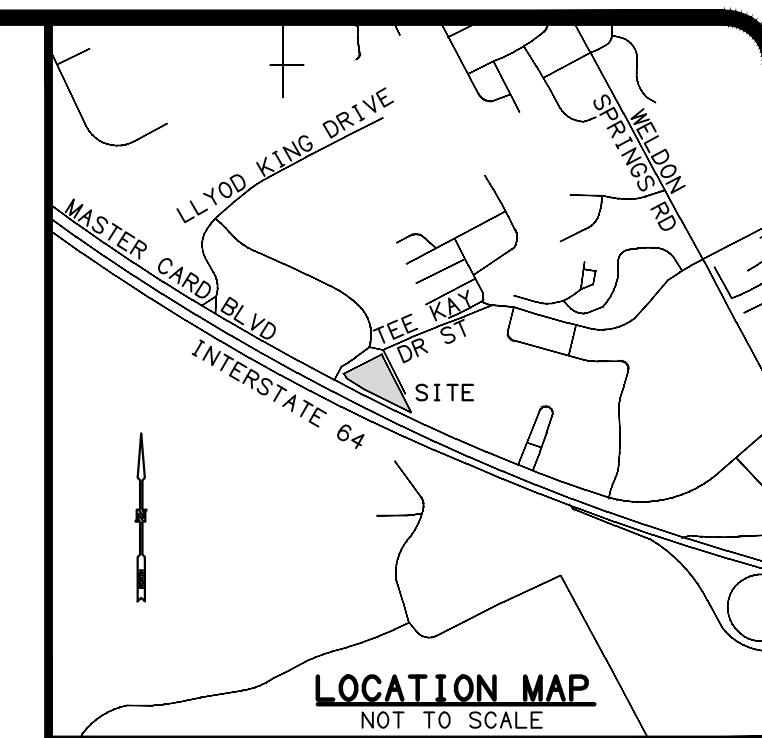
- 665--- PROPOSED CONTOURS
- - - - - EXISTING CONTOURS
- SPOT ELEVATION
- MEG MATCH EXISTING GRADE
- PROPOSED STORM DRAIN
- DRAINAGE FLOW ARROW
- EROSION CONTROL BLANKET

CONTRACTOR HAS THE OPTION TO SUBMIT AN ALTERNATIVE BRAND OF WATER QUALITY UNIT TO THE ENGINEER OF RECORD FOR REVIEW, SO LONG AS IT MEETS THE STANDARDS & REQUIREMENTS OF ALL REVIEWING AGENCIES AND PROVIDES THE REQUIRED WATER QUALITY VOLUME & FLOW RATE.

BENCHMARKS:
 TBM A FOUND IRON PIPE (FNIPPE) S26°45'24"E OF NE CORNER LOT 2 EL. 575.02
 TBM B TOP SANITARY MANHOLE N 73°W 95'-1" OF NE CORNER LOT 2 EL. 577.71
 OFFSITE TBM C TOP SANITARY MANHOLE N29°W 384'-1" OF NE CORNER LOT 2 EL. 569.02

PROPOSED STORMWATER MANAGEMENT:
 STORMWATER QUANTITY DETENTION FOR THIS PROPOSED DEVELOPMENT WILL BE HANDLED VIA THE EXISTING PERMIMON POINTE REGIONAL DETENTION BASIN.
 AN ONSITE PROPRIETARY STORMWATER DEVICE WILL BE INSTALLED TO TREAT WATER QUALITY.

- ### STORM DRAIN NOTES
- ALL HYDRAULIC DATA FOR THE STORM DRAINAGE PIPES ARE BASED ON THE 25-YEAR DESIGN STORM TO BE CONSERVATIVE TO THE MURFREESBORO REQUIRED 10-YEAR DESIGN REQUIREMENTS.
 - ALL INLET DIMENSIONS SHALL HAVE A MINIMUM INSIDE DIMENSION OF 4' DIAMETER (CIRCULAR) OR 4'x4' (SQUARE). STRUCTURES SHALL BE UPSIZED AS NEEDED TO ACCOMMODATE THE CONNECTING PIPE SIZES/ ANGLES.
 - STORM DRAIN PIPE SHALL BE CLASS III WALL 18" ROP IN ACCORDANCE WITH ASTM C-76, UNLESS NOTED OTHERWISE.
 - HIGH DENSITY POLYETHYLENE PIPE (HDPE) MAY BE USED AS AN ALTERNATE. ALL HDPE PIPE JOINTS AND FITTINGS SHALL MEET THE REQUIREMENTS OF AASHTO DESIGNATIONS M252 AND M294 TYPE S.
 - PIPE LENGTHS ARE BASED ON HORIZONTAL DISTANCE FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE AND USED FOR DESIGN ONLY. CONTRACTOR TO FIELD VERIFY ACTUAL PIPE LENGTHS NEEDED FOR CONSTRUCTION.
 - CONTRACTOR IS RESPONSIBLE FOR COMPARING THE STORM DRAIN WITH THE PROFILES FOR THE STORM DRAIN LINES AND INFORMING THE ENGINEER OF ANY CONFLICTS OR DISCREPANCIES PRIOR TO COMMENCEMENT OF CONSTRUCTION.
 - STORM DRAIN PIPE SHALL HAVE WATER TIGHT JOINTS IN ACCORDANCE WITH ASTM C 361, C443, AND D322.



REVISIONS	BY

CONTRACTOR TO ENSURE THAT ALL STORM PIPES ARE WATER TIGHT AND TESTED PER ASTM C902-02.

CONTRACTOR TO ENSURE ALL STORM DRAIN PIPE SHALL HAVE WATER TIGHT JOINTS IN ACCORDANCE WITH ASTM C 361, C443 AND D322.

STORM PIPE TABLE

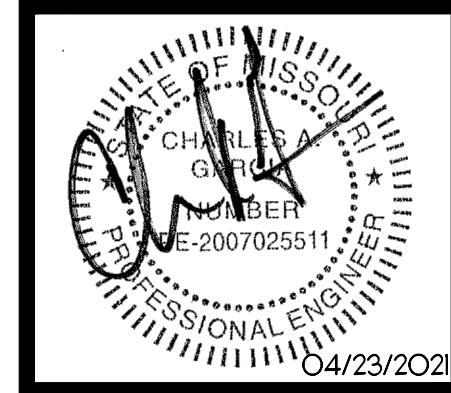
STORM DRAIN PIPE	SIZE	LENGTH	SLOPE	INV. IN	INV. OUT
A-1 - EX. I	24"	4'	0.79%	570.45'	570.34'
A-2 - A-1	18"	89'	0.70%	571.78'	570.45'
A-3 - A-2	18"	40'	0.70%	572.26'	570.98'
A-4 - A-3	18"	76'	0.70%	572.99'	572.46'
A-5 - A-4	18"	74'	1.09%	574.00'	573.89'
B-1 - A-1	24"	109'	1.87%	572.50'	570.45'

STORM DRAIN STRUCTURE TABLE

STR. #	TYPE	RIM/THROAT	INV. IN	INV. OUT
A-1	WATER QUALITY DEVICE	574.50	570.45 (A-2) 570.45 (B-1)	570.45 (EX. I)
A-2	COMBINATION INLET	578.00	578.98 (A-3)	578.78 (A-1)
A-3	COMBINATION INLET	579.00	572.46 (A-4)	572.26 (A-2)
A-4	MANHOLE	579.85	573.9 (A-5)	572.99 (A-3)
A-5	AREA INLET	579.00	ROOF DRAINS 574.20	574.00 (A-4)
B-1	COMBINATION INLET	578.50	572.50 (A-5)	572.50 (A-1)
EX. I	EXISTING AREA INLET	574.88	570.34 (A-1)	570.4 (EX. I)

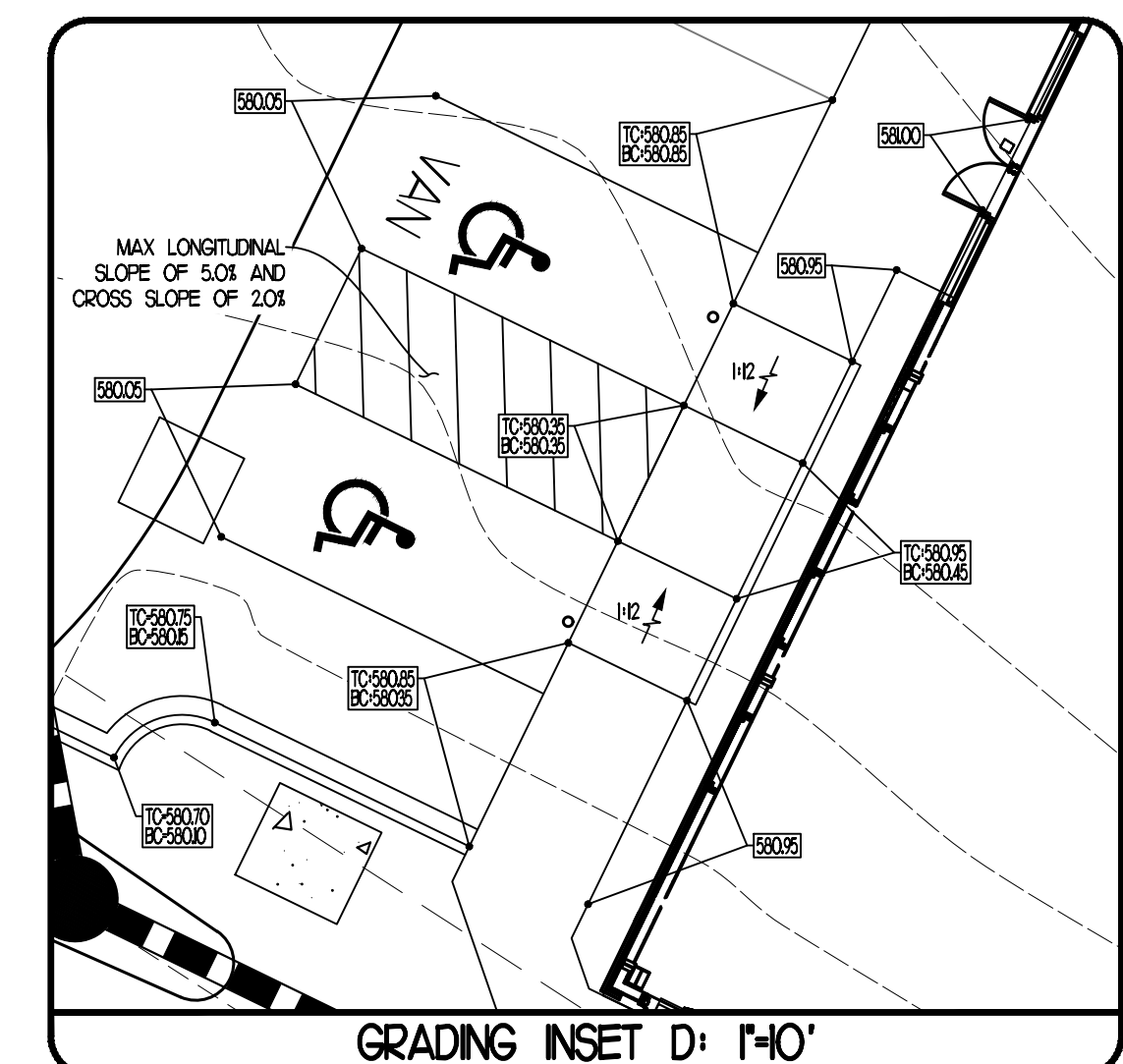
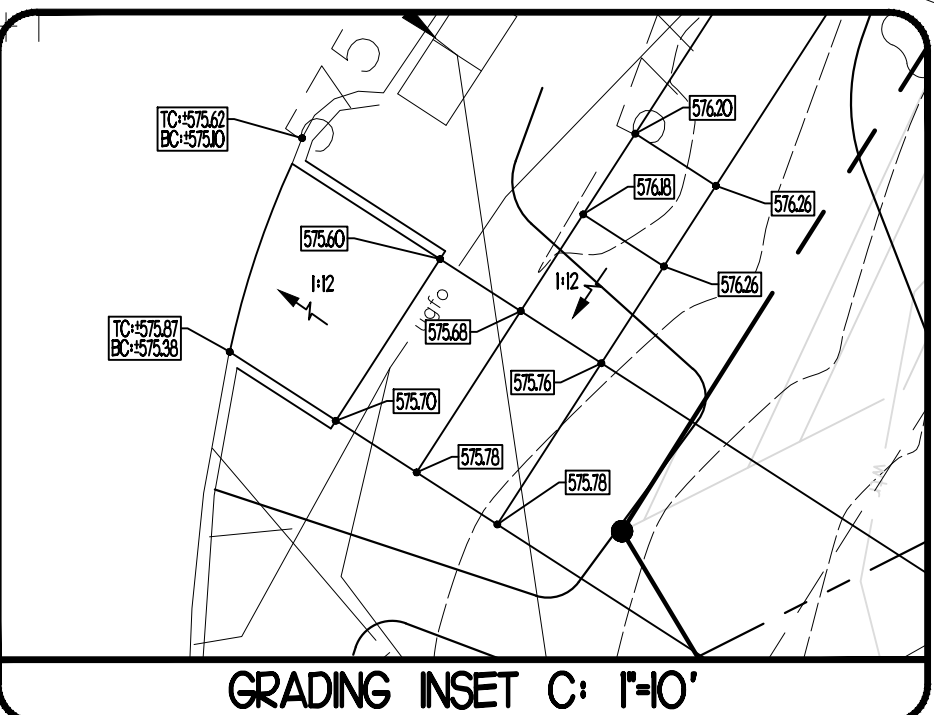
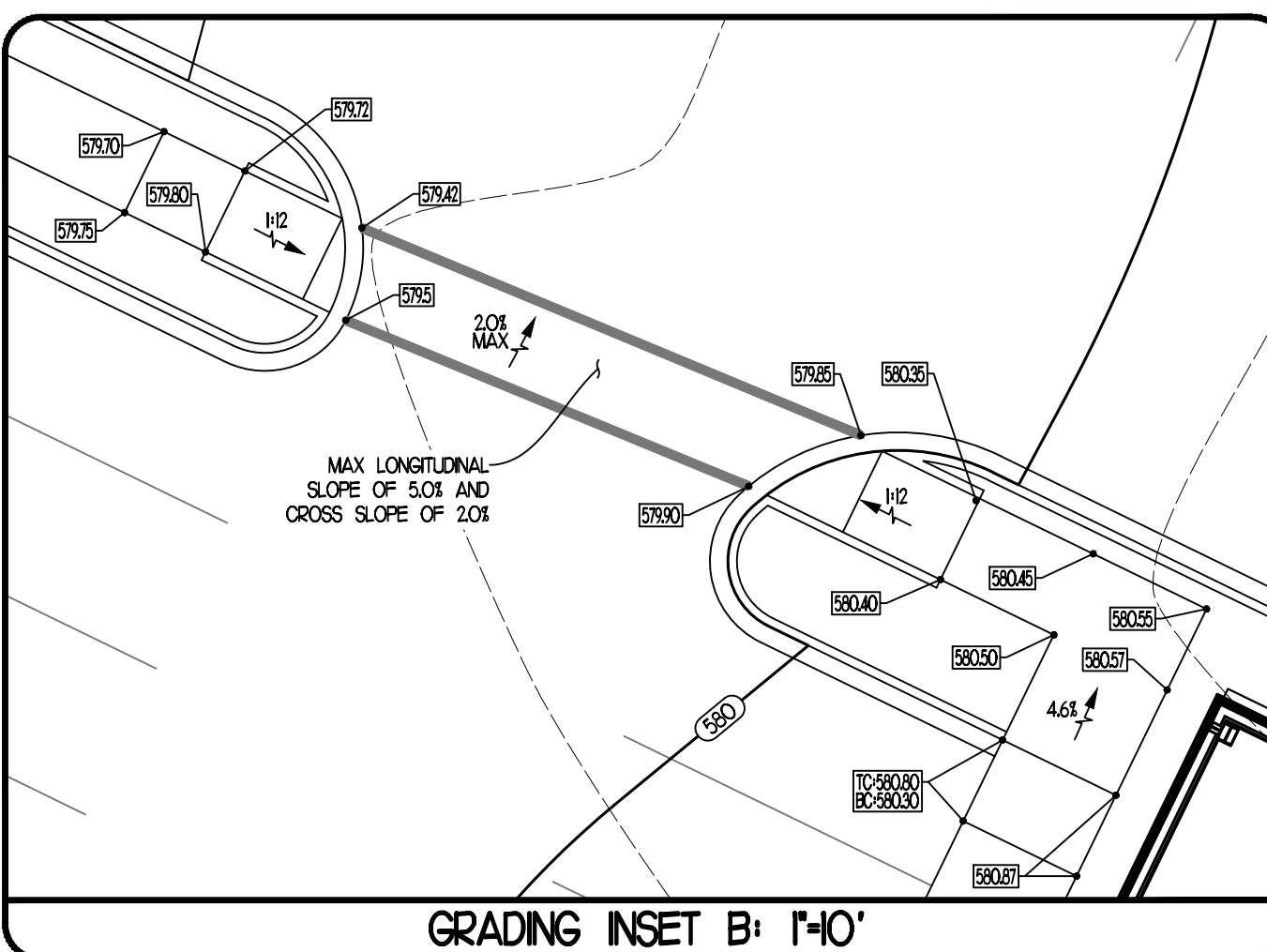
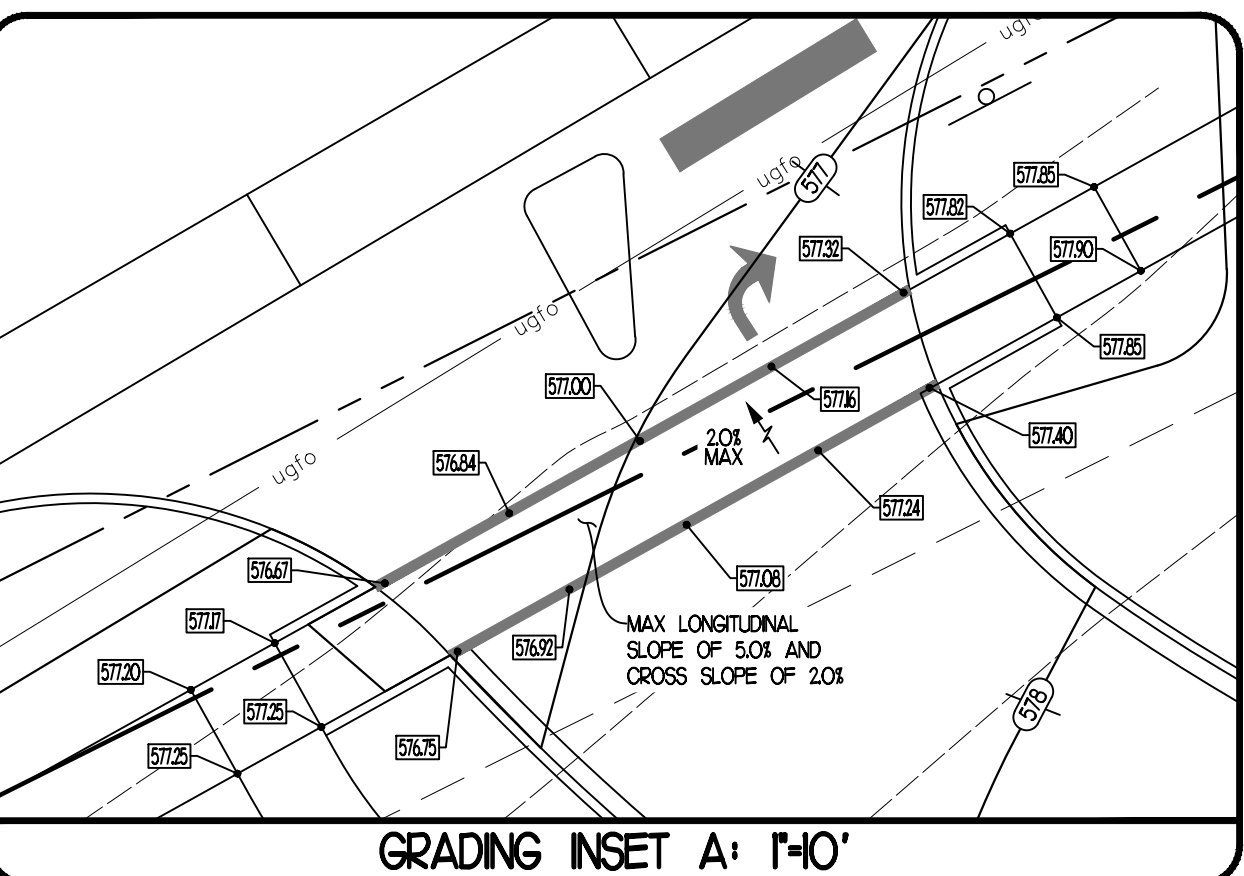
- ### GRADING AND DRAINAGE NOTES
- ALL SITE WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE PLANS PREPARED BY FRELAND & KAUFFMAN, INC. THE CURRENT REQUIREMENTS OF THE CITY OF O'FALLON APPLICABLE SECTIONS OF THE NCDOT STANDARD SPECIFICATIONS, AND ALL OTHER PERTINENT FEDERAL AND STATE LAWS.
 - ALL EXISTING STRUCTURES, FENCING, TREES, ETC. WITHIN THE CONSTRUCTION LIMITS SHALL BE REMOVED AND PROPERLY DISPOSED OF OFF-SITE, UNLESS OTHERWISE NOTED TO REMAIN. BURNING ON-SITE SHALL NOT BE ALLOWED.
 - ALL DRAINAGE STRUCTURES SHALL BE PRE-CAST AND SHALL MEET MODOT MINIMUM REQUIREMENTS.
 - ALL DRAINAGE STRUCTURES AND STORM SEWER PIPES SHALL MEET HEAVY DUTY TRAFFIC (400) LOADING AND BE INSTALLED ACCORDINGLY.
 - BEFORE EXCAVATION, ALL UNDERGROUND UTILITIES SHALL BE LOCATED IN THE FIELD BY THE PROPER AUTHORITIES. THE CONTRACTOR SHALL NOTIFY "CALL BEFORE YOU DIG" AT THE LOCATION OF ALL UTILITIES AND UNDERGROUND STRUCTURES ARE APPROXIMATE AND MAY NOT ALL BE SHOWN. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE EXISTENCE AND THE EXACT LOCATION OF ALL UTILITIES AND UNDERGROUND STRUCTURES.
 - ALL DRAINAGE STRUCTURES AND STORM SEWER PIPES SHALL MEET HEAVY DUTY TRAFFIC (400) LOADING AND BE INSTALLED ACCORDINGLY.
 - THE CONTRACTOR SHALL COMPLY AT ALL TIMES WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS, PROVISIONS, AND POLICES GOVERNING SAFETY AND HEALTH, INCLUDING THE FEDERAL CONSTRUCTION SAFETY ACT (PUBLIC LAW 94-54), FEDERAL REGISTER, CHAPTER XVII, PART 192 OF TITLE 29 REGULATIONS, OCCUPATIONAL SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION, AND SUBSEQUENT PUBLICATIONS UPDATING THESE REGULATIONS.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR EXAMINING THE AREAS AND CONDITIONS UNDER WHICH THE PROJECT IS TO BE CONSTRUCTED PRIOR TO THE SUBMISSION OF A BID. SUBMISSION OF A BID SHALL BE CONSTRUED TO MEAN THE CONTRACTOR HAS REVIEWED THE SITE AND IS FAMILIAR WITH CONDITIONS AND CONSTRAINTS OF THE SITE.
 - ALL SLOPES SHALL BE 3:1 (HORIZONTAL/VERTICAL) UNLESS NOTED OTHERWISE. NO SLOPES SHALL EXCEED 2:1 IN ANY CASE.
 - AN AS-BUILT DRAWING OF NEW UTILITY SERVICES AND STORM DRAIN LINES MUST BE PREPARED BY THE CONTRACTOR AND SUBMITTED TO THE OWNER UPON COMPLETION OF THE PROJECT.
 - ALL DISTURBED AREAS WHICH ARE NOT PAVED SHALL BE TOPSOILED, SEEDED AND MULCHED OR LANDSCAPED UNLESS OTHERWISE NOTED IN THE CONSTRUCTION DRAWINGS, SITE SPECIFICATIONS, OR INSTRUCTED BY THE OWNER.
 - CONTRACTOR SHALL REFER TO THE GEOTECHNICAL REPORT, PREPARED BY OTHERS, PRIOR TO INITIATION OF ANY EARTHWORK ACTIVITY.
 - IF ANY EXISTING STRUCTURES OR SITE FEATURES 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 GROUTED TO ASSURE CONNECTION AT STRUCTURE IS WATER TIGHT. STORM PIPE MATERIALS SHALL MEET CITY OF O'FALLON STANDARDS AND REQUIREMENTS.
 - THE CONTRACTOR SHALL ADHERE TO ALL TERMS & CONDITIONS AS OUTLINED IN THE NPDES GENERAL PERMIT FOR STORMWATER DISCHARGE ASSOCIATED WITH CONSTRUCTION ACTIVITIES.
 - CONTRACTOR SHALL ADJUST AND/OR CUT EXISTING PAVEMENT AS NECESSARY TO ASSURE A SMOOTH FIT AND CONTINUOUS GRADE.
 - CONTRACTOR SHALL ASSURE POSITIVE DRAINAGE AWAY FROM BUILDINGS FOR ALL NATURAL AND PAVED AREAS.
 - TOPOGRAPHIC INFORMATION TAKEN FROM A TOPOGRAPHIC SURVEY BY HEIDEMAN ASSOCIATES, INC. 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 STORM STRUCTURES SHALL HAVE A SMOOTH UNIFORM FLOURED MORTAR INVERT FROM INVERT IN TO INVERT OUT.
 - EXISTING STORM DRAIN PIPES IMMEDIATELY ADJACENT TO THE SITE SHALL BE INSPECTED AND CLEANED TO REMOVE ALL SILT AND DEBRIS.
 - CONTRACTOR TO PROVIDE SHOP DRAWINGS ON ALL STORM SEWER INLETS AND MANHOLES FOR REVIEW PRIOR TO ORDERING.
 - ROOF LEADERS SHALL DISCHARGE TO SPLASH BLOCKS UNLESS SPECIFICALLY NOTED OTHERWISE. RE: ARCH FOR EXACT NUMBER AND LOCATION.
 - ALL SIDEWALKS TO HAVE 2.00% MAXIMUM CROSS SLOPE AND 5.00% MAX LONGITUDINAL SLOPE.
 - SLOPES 3:1 AND STEEPER SHALL BE INSTALLED WITH AN EROSION CONTROL BLANKET (COULEX® OR APPROVED EQUAL).
 - INSURE THAT ALL SIDEWALK CURBS LESS THAN 6" HEIGHT OR LESS ARE PAINTED YELLOW.
 - PRIOR TO CERTIFICATE OF OCCUPANCY, SURVEYOR SEALED AS-BUILT DRAWINGS OF ALL WATER QUALITY BMP'S AND DETENTION SYSTEMS MUST BE PROVIDED.
 - CONTRACTOR SHALL PROVIDE EROSION CONTROL BLANKETS ON ALL SLOPES STEEPER THAN 3:1. CONTRACTOR HAS THE OPTION TO UTILIZE SOG IN LIEU OF AN EROSION CONTROL BLANKET (TYPICAL).

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SCALE	SCALE
DRAWING	13



GRADING & STORMWATER PLAN

