

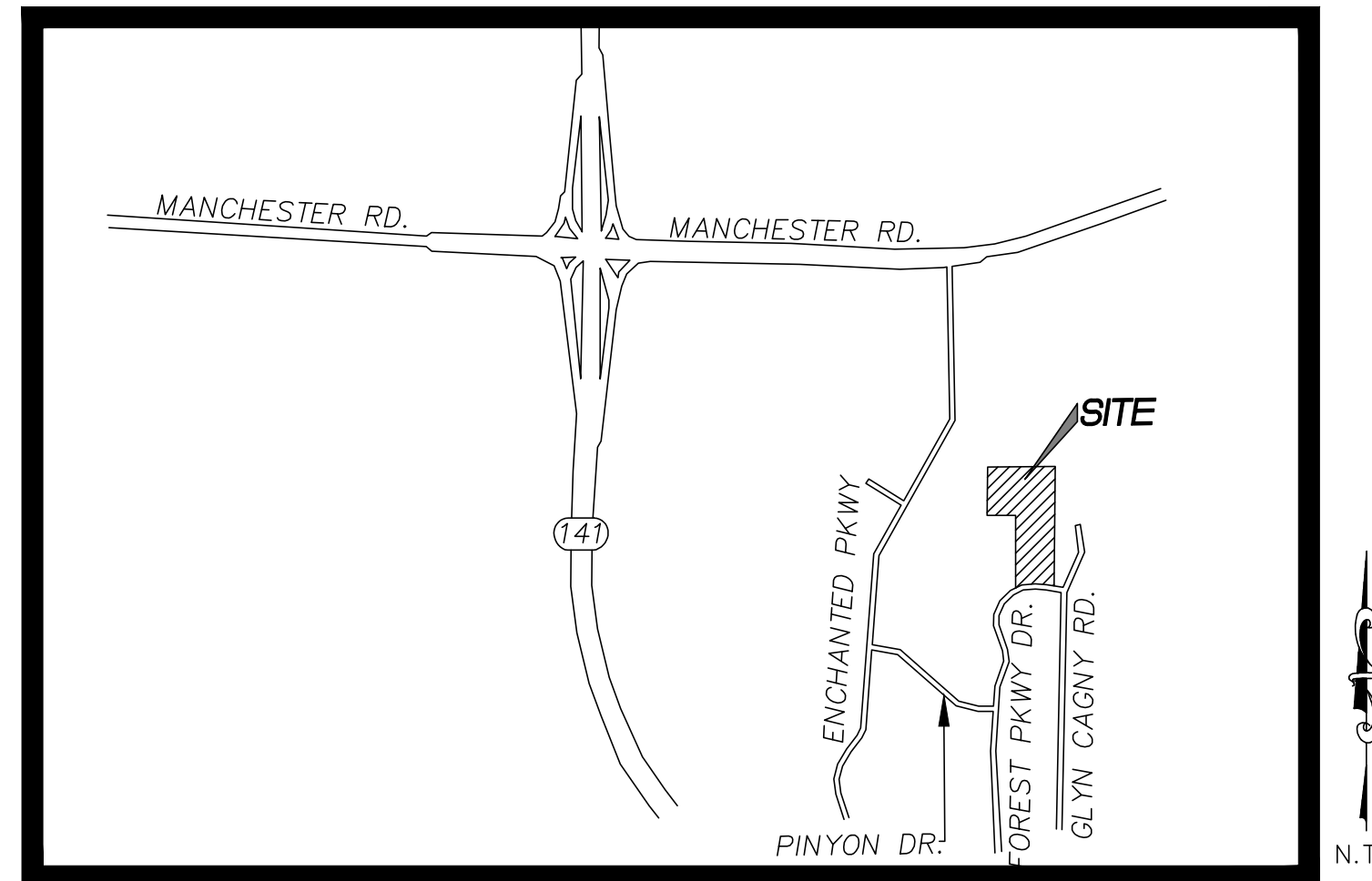
GENERAL NOTES:

- THE UTILITIES SHOWN HEREIN WERE PLOTTED FROM AVAILABLE INFORMATION AND DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, NON-EXISTENCE, SIZE, TYPE, OR LOCATION OF THESE OR OTHER UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR 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.
- BOUNDARY AND TOPOGRAPHIC SURVEY PROVIDED BY ALTEA, LLC.
- ALL MATERIALS AND METHODS OF CONSTRUCTION TO MEET THE CURRENT STANDARDS AND SPECIFICATIONS OF CITY OF MANCHESTER.
- ALL PROPOSED IMPROVEMENTS SHALL BE CONSTRUCTED TO CITY OF MANCHESTER STANDARDS.
- ALL GRADED AREAS SHALL BE PROTECTED FROM EROSION BY EROSION CONTROL DEVICES AND/OR SEEDING AND MULCHING AS REQUIRED BY ST. LOUIS COUNTY & MISSOURI DNR.
- PRIOR TO BEGINNING ANY WORK ON THE SITE, THE DEVELOPER SHALL HAVE A PRECONSTRUCTION CONFERENCE WITH THE CITY OF MANCHESTER PRIOR TO ANY CLEARING, GRADING, OR INSTALLATION OF IMPROVEMENTS.
- GRADING CONTRACTOR SHALL INSTALL SILTATION CONTROL PRIOR TO STARTING THE GRADING. ADDITIONAL SILTATION CONTROL DEVICES SHALL BE INSTALLED PER CITY OF MANCHESTER STANDARDS.
- ALL FILLS AND BACKFILLS SHALL BE MADE OF SELECTED EARTH MATERIALS, FREE FROM BROKEN MASONRY, ROCK, FROZEN EARTH, RUBBISH, ORGANIC MATERIAL AND DEBRIS.
- GRADING CONTRACTOR SHALL KEEP EXISTING ROADWAYS CLEAN OF MUD AND DEBRIS AT ALL TIMES.
- PROPOSED CONTOURS SHOWN ARE FINISHED ELEVATIONS ON PAVED AREAS.
- NO GRADE SHALL EXCEED 3:1 SLOPE. UNLESS JUSTIFIED BY A GEOTECHNICAL REPORT, WHICH HAS BEEN ACCEPTED/APPROVED BY CITY OF MANCHESTER.
- A GRADING PERMIT IS REQUIRED PRIOR TO ANY GRADING ON THE SITE. NO CHANGE IN WATERSHEDS SHALL BE PERMITTED.
- INTERIM STORMWATER DRAINAGE CONTROL IN THE FORM OF SILTATION CONTROL MEASURES ARE REQUIRED.
- THE DEVELOPER IS REQUIRED TO PROVIDE ADEQUATE STORMWATER SYSTEMS IN ACCORDANCE WITH CITY OF MANCHESTER STANDARDS.
- ALL STORMWATER SHALL BE DISCHARGED AT AN ADEQUATE NATURAL DISCHARGE POINT. SINKHOLES ARE NOT ADEQUATE DISCHARGE POINTS.
- 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.
- THE DEVELOPER 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 DEVELOPER'S RESPONSIBILITY. THE DEVELOPER SHOULD ALSO BE AWARE OF EXTENSIVE DELAYS IN UTILITY COMPANY RELOCATION AND ADJUSTMENTS. SUCH DELAYS WILL NOT CONSTITUTE A CAUSE TO OCCUPANCY PRIOR TO COMPLETION OF ROAD IMPROVEMENTS.
- 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. PROJECT WILL BE STOPPED IF STREETS ARE NOT CLEANED IMMEDIATELY.
- FOREST PARKWAY DR. SHALL BE KEPT OPEN TO TRAFFIC DURING ALL PHASES OF CONSTRUCTION OF IMPROVEMENTS IN THE RIGHT-OF-WAY. NO DRIVING LANES SHALL BE CLOSED WITHOUT PRIOR WRITTEN PERMISSION FROM CITY OF MANCHESTER.
- THE CONTRACTOR SHALL FURNISH, MAINTAIN, AND REMOVE TRAFFIC CONTROL DEVICES FOR THE PURPOSE OF REGULATING, WARNING, AND DIRECTING TRAFFIC DURING ALL PHASES OF CONSTRUCTION. ALL FLAGMEN, BARRICADES, WARNING SIGNS, ETC. SHALL CONFORM TO THE MANUAL FOR UNIFORM TRAFFIC CONTROL DEVICES.
- ANY LAND DISTURBANCE ACTIVITY INVOLVING ONE ACRE OR MORE OF LAND IS A MAJOR LAND DISTURBANCE (MLD) AND A LAND DISTURBANCE PERMIT FOR THE MLD MUST BE OBTAINED FROM THE DEPARTMENT OF PUBLIC WORKS. ANY LAND DISTURBANCE ACTIVITY INVOLVING LESS THAN ONE ACRE OF LAND IS AN ORDINARY LAND DISTURBANCE AND THE APPROPRIATE PERMIT MUST BE OBTAINED FROM THE DEPARTMENT OF PUBLIC WORKS.

FAMILY PARTNERS IMPROVEMENT PLANS - PHASE ONE

351, 353, 357, 359, 361, 363, 365, 369, 371, 375, 377 FOREST SUMMIT COURT AND COMMON GROUND OF VILLA PINES

LOTS 1 THRU 10 AND COMMON GROUND OF VILLA PINES
PLAT BOOK: 356 PAGE: 250
ST. LOUIS COUNTY MISSOURI



LOCATION MAP

SITE DATA:

LOCATOR NUMBERS/ADDRESSES:

230520893, 377 FOREST SUMMIT CT
 230520903, 375 FOREST SUMMIT CT
 230520912, 371 FOREST SUMMIT CT
 230520921, 369 FOREST SUMMIT CT
 230520930, 365 FOREST SUMMIT CT
 230520949, 363 FOREST SUMMIT CT
 230520958, 359 FOREST SUMMIT CT
 230520967, 357 FOREST SUMMIT CT
 230520976, 353 FOREST SUMMIT CT
 230520985, 351 FOREST SUMMIT CT
 230520994, 361 FOREST SUMMIT CT

TOTAL SITE AREA: 150,718 S.F. OR 3.46 AC.
 PHASE ONE AREA: 47,288 S.F. OR 1.08 AC.

EXISTING ZONING: C-1 COMMERCIAL & R-1 RESIDENTIAL WITH PRD OVERLAY

PROPOSED ZONING: - PRD

SITE BENCHMARK: CUT SQUARE WITH CROSS ON CONC CURB.
 ELEVATION: 565.68

BUILDING SETBACKS: FRONT: 25'
 REAR: 20'
 SIDE: 10'

PROPERTY OWNER:

SCOTT & NANCY MANUAL
 1007 CARMEN ROAD
 BALLWIN, MISSOURI 63021
 D.B. 20646, P.G. 2275

GREEN SPACE CALCULATIONS (PHASE ONE)

EXISTING:

BUILDINGS 0.0 S.F.
 ASPH. PVMT. 0.0 S.F.
 CONC. PVMT. 0.0 S.F.
 GRASS/LAWN 0.62 ACRE
 CONCRETE PVMT. 8343 S.F. (0.19 AC.)

PERCENT GREEN SPACE
 % = LAWN/GRASS/TOTAL AREA x 100 = 100.0%
 GREEN SPACE = 71,733 S.F./150,718 S.F. = 47.6%

FLOOR AREA RATIO:

BUILDING AREA: 10,382 S.F. EACH BUILDING
 3 BUILDINGS: 31,146 S.F. TOTAL
 LOT AREA: 150,718 S.F.

FLOOR AREA RATIO: 31,146 S.F./150,718 S.F. = 20.67%

PROPOSED PARKING:

PHASE 1:
 SABRINA HOUSE: 7 SPACES INCLUDING 1 H.C. SPACE

TOTAL PHASE ONE = 7 SPACES (1 H.C. SPACE)

DENSITY:

PHASE ONE: 12 PERSONS/0.75 AC = 16 PERSONS / AC

LEGEND

- FOUND MONUMENTATION
- CLEAN OUT
- EM ELECTRIC METER
- ← GUY WIRE
- UP UTILITY POLE
- TB TELEPHONE BOX/PEDESTAL SIGN
- MB MAILBOX
- BENCHMARK
- OE— OVERHEAD ELECTRIC
- FO— FIBER OPTIC LINE
- BURIED TELEPHONE
- BUSH
- SIZE DECIDUOUS TREE
- GAS VALVE
- SANITARY SEWER
- STORM SEWER
- GAS LINE
- WATER LINE
- 580— EXISTING CONTOURS
- 600— PROPOSED CONTOURS

ABBREVIATIONS

- N/F NOW OR FORMERLY
- W WIDE
- DB. DEED BOOK
- PB. PLAT BOOK
- PG. PAGE
- CONC. CONCRETE
- SAN. SANITARY
- MH MANHOLE
- R RADIUS
- L LENGTH
- D DELTA
- TBR TO BE REMOVED
- TBR&R TO BE REMOVED & REPLACED
- UIP TO BE USED IN PLACE
- D.S. ROOF DOWNSPOUT
- w/ WITH
- EX./EXIST. EXISTING
- E.O.P. EDGE OF PAVEMENT
- FM FORCE MAIN

SERVICE DISTRICTS:

- FIRE: WEST COUNTY EMS & FIRE PROTECTION DISTRICT STATION 1
223 HENRY AVE
MANCHESTER, MO 63011
636.227.9350
- AMBULANCE: WEST COUNTY EMS & FIRE PROTECTION DISTRICT STATION 1
223 HENRY AVE
MANCHESTER, MO 63011
636.227.9350
- SCHOOL: PARKWAY SCHOOL DISTRICT
455 N. WOODS MILL ROAD
CHESTERFIELD, MO 63017
314.415.8100
- SEWER: METROPOLITAN ST. LOUIS SEWER DISTRICT
2350 MARKET STREET
ST. LOUIS, MO 63103
314.768.6260
- WATER: MISSOURI AMERICAN WATER
727 CRAIG ROAD
ST. LOUIS, MO 63141
866.430.0820
- GAS: LACLEDE GAS COMPANY
700 MARKET STREET
ST. LOUIS, MISSOURI 63101
636.621.6960
- ELECTRIC: AMEREN UE
1901 CHOUTEAU AVE.
ST. LOUIS, MISSOURI 63103
800.552.7583
- TELEPHONE: AT&T
800.288.2020
- POST OFFICE: U.S. POST OFFICE
15455 MANCHESTER RD
BALLWIN, MISSOURI 63011
636.227.5783
- CABLE TV: CHARTER COMMUNICATIONS
6524 MANCHESTER AVE.
ST. LOUIS, MISSOURI 63139
855.757.7328

DRAWING INDEX

C1	TITLE SHEET
C2	EXISTING PLAN
C3.1	OVERALL SITE PLAN
C3.2	PHASE ONE SITE PLAN
C4	PHASE ONE GRADING PLAN
C5	DETENTION BASIN DETAILS
C6.1-C6.2	DRAINAGE AREA MAPS
C7.1-C7.2	PROFILES
C8.1-C8.3	SITE DETAILS
C9.1-C9.3	SWPPP DETAILS



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**MSD BASE MAP - XXXX
 MSD P#: 19MSD-00XXX
 TITLE SHEET**

Revisions

Date 7/24/19

ISSUE FOR BID

OWNER/DEVELOPER:

SEAL:

DATE: DAVID L. VOIVARY E-26647

CIVIL ENGINEER

CERTIFICATE OF AUTHORITY 0975

OFFICE: (636) 797-4425

CELL: (314) 982-5038

10785 BUSINESS 21, SUITE A

HILLSBORO, MISSOURI 63090

VonArx Engineering

FAMILY PARTNERS

IMPROVEMENT PLANS - PHASE 1

MANCHESTER, MO 63021

ST. LOUIS COUNTY

ISSUE DATE

7/24/2019

SCALE

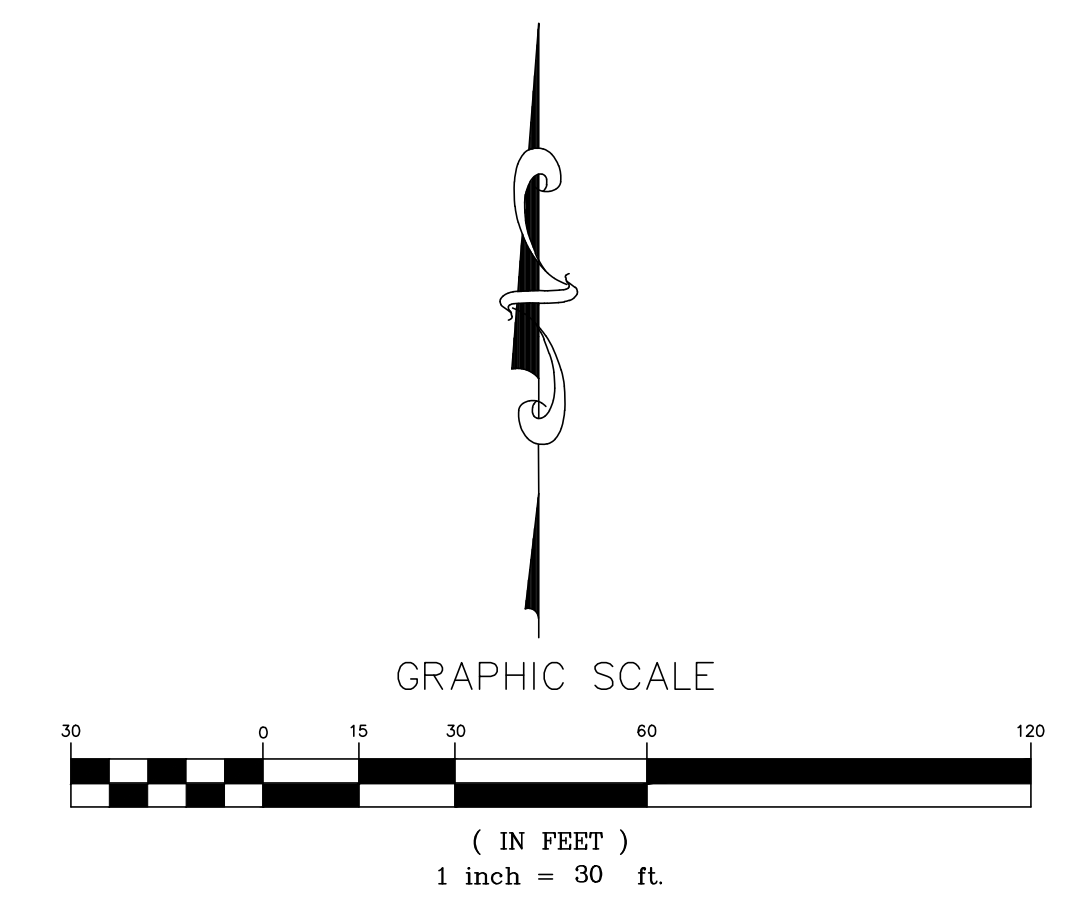
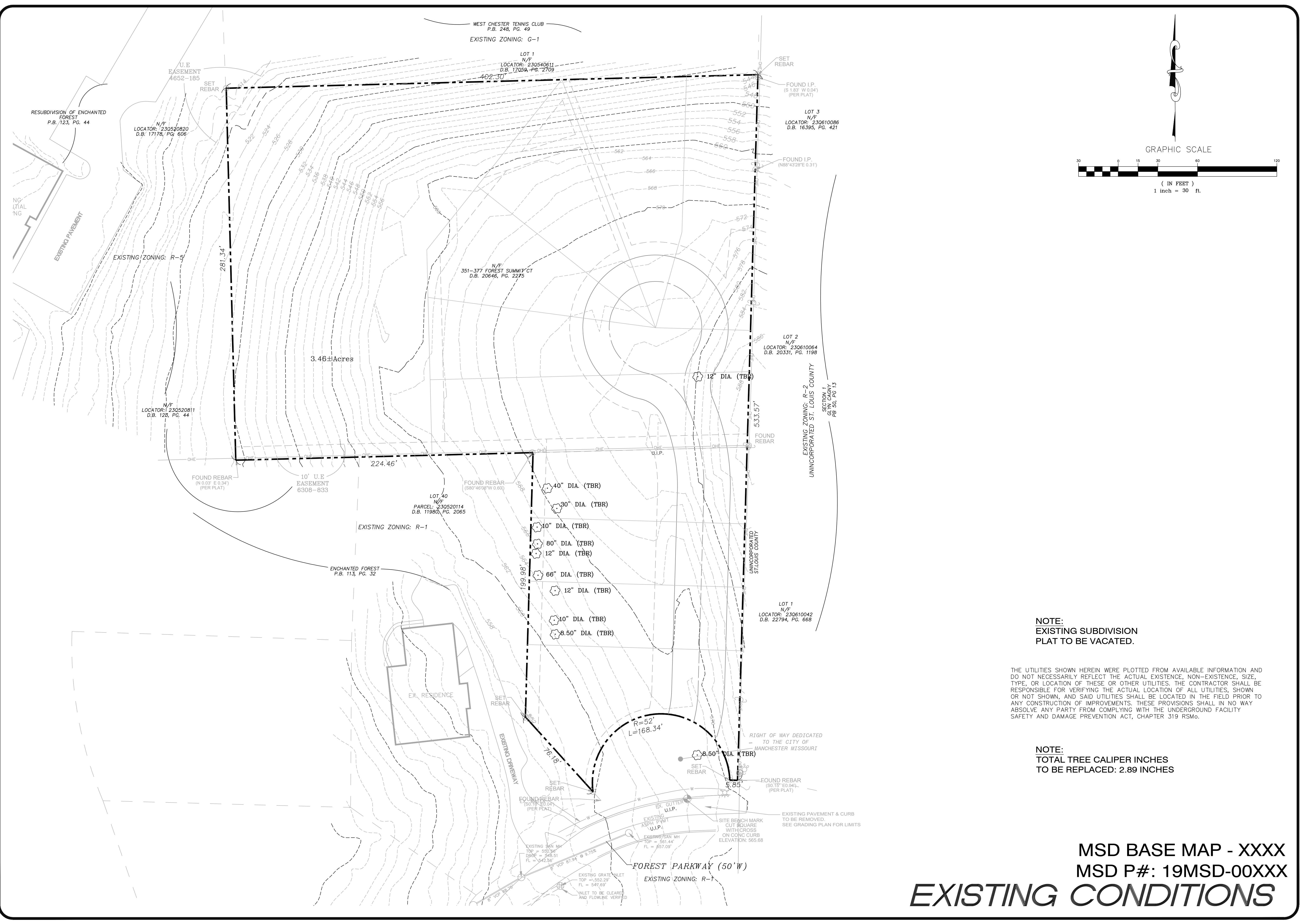
NONE

Job Number

15145

Sheet Number

C1



NOTE:
EXISTING SUBDIVISION
PLAT TO BE VACATED.

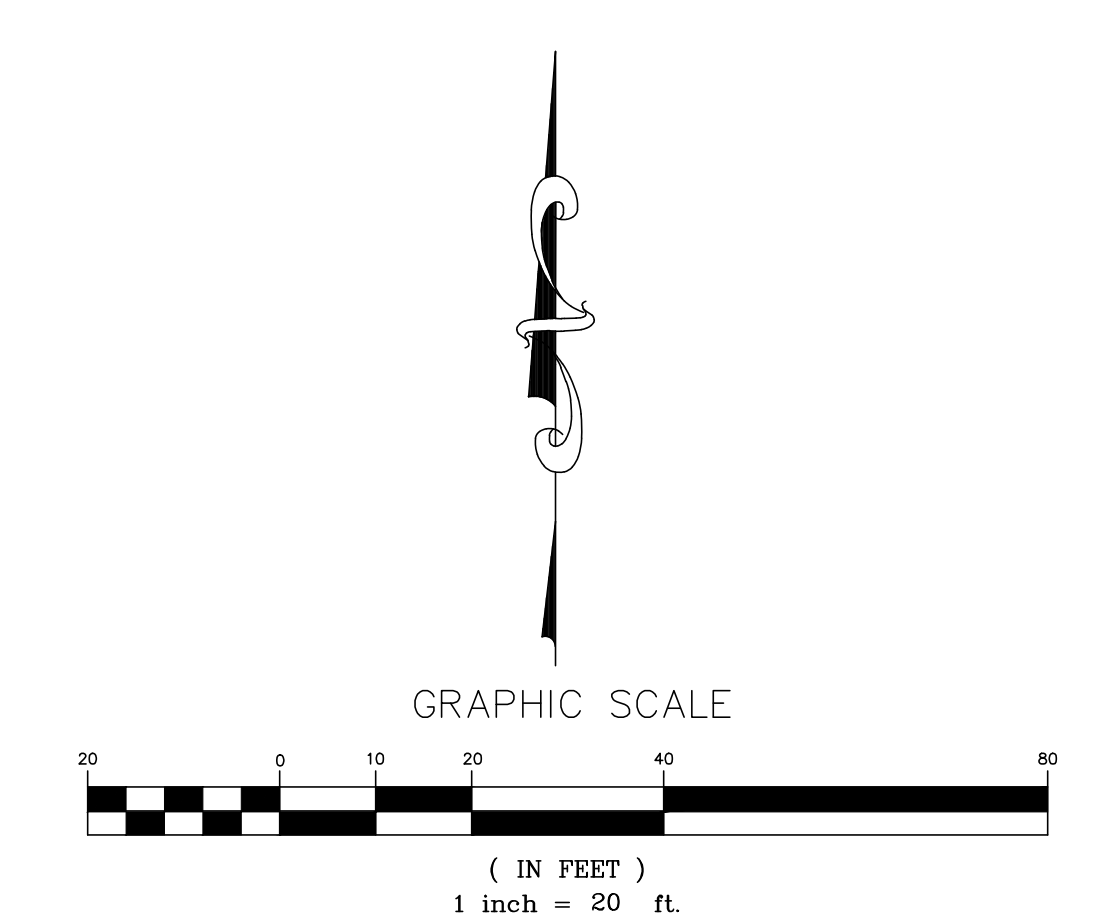
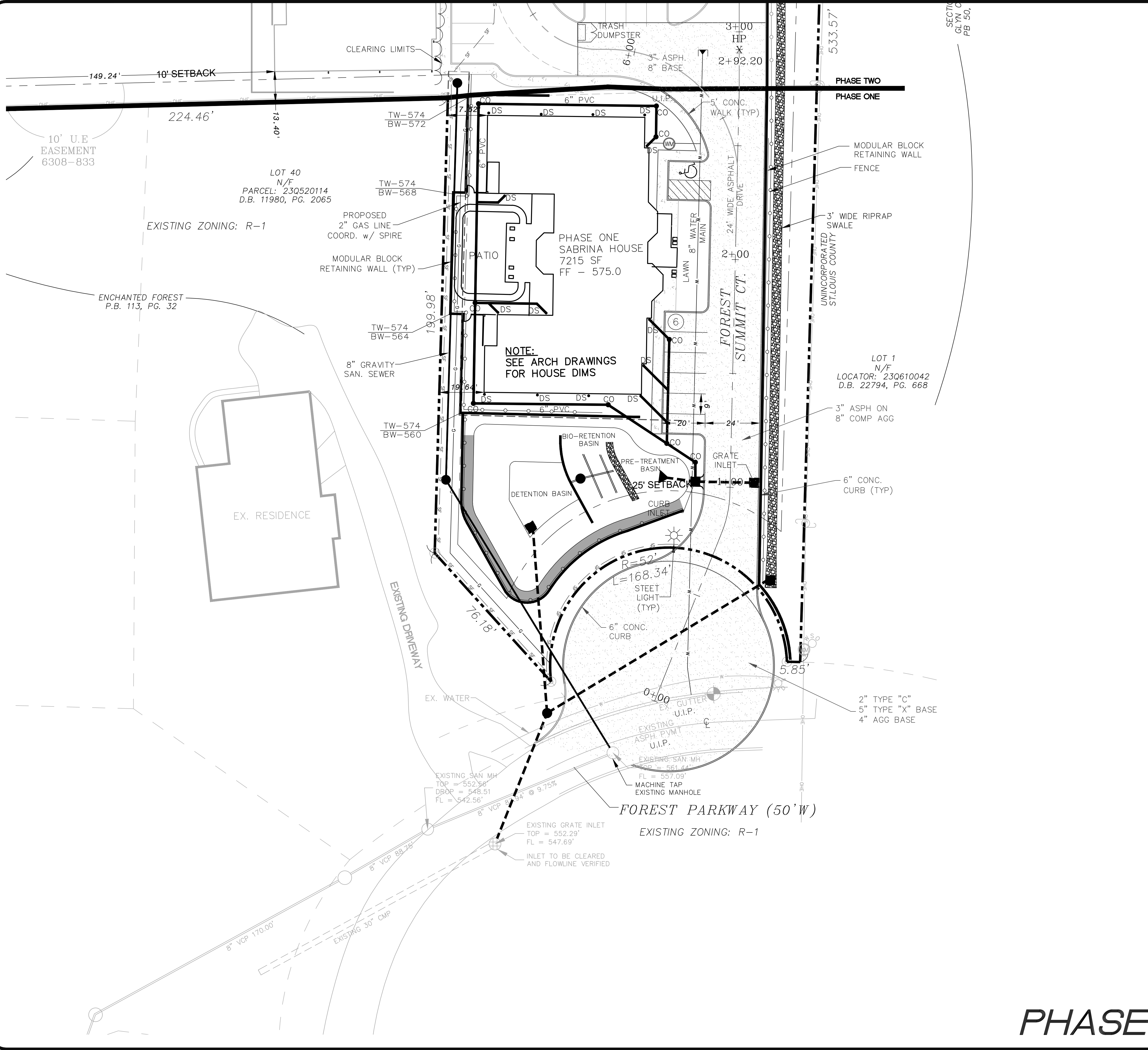
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NOTE:
TOTAL TREE CALIPER INCHES
TO BE REPLACED: 2.89 INCHES

MSD BASE MAP - XXXX
MSD P#: 19MSD-00XXX

EXISTING CONDITIONS

Revisions	ISSUE FOR BID
Date	7/24/19
OWNER/DEVELOPER	FAMILY PARTNERS LLC 12880 MANCHESTER ROAD ST. LOUIS, MO 63131 (314) 863-9912
SEAL	DATE: DAVID L. VONARY E-26647
CIVIL ENGINEER	VonArx Engineering OFFICE: (636) 797-5425 10785 BUSINESS 21, SUITE A HILLSBORO, MISSOURI 63505 CELL: (314) 922-5038 CERTIFICATE OF AUTHORITY: 0975
FAMILY PARTNERS IMPROVEMENT PLANS - PHASE 1 MANCHESTER, MO 63021 ST. LOUIS COUNTY	
ISSUE DATE	7/24/2019
SCALE	1" = 30'
Job Number	15145
Sheet Number	C2

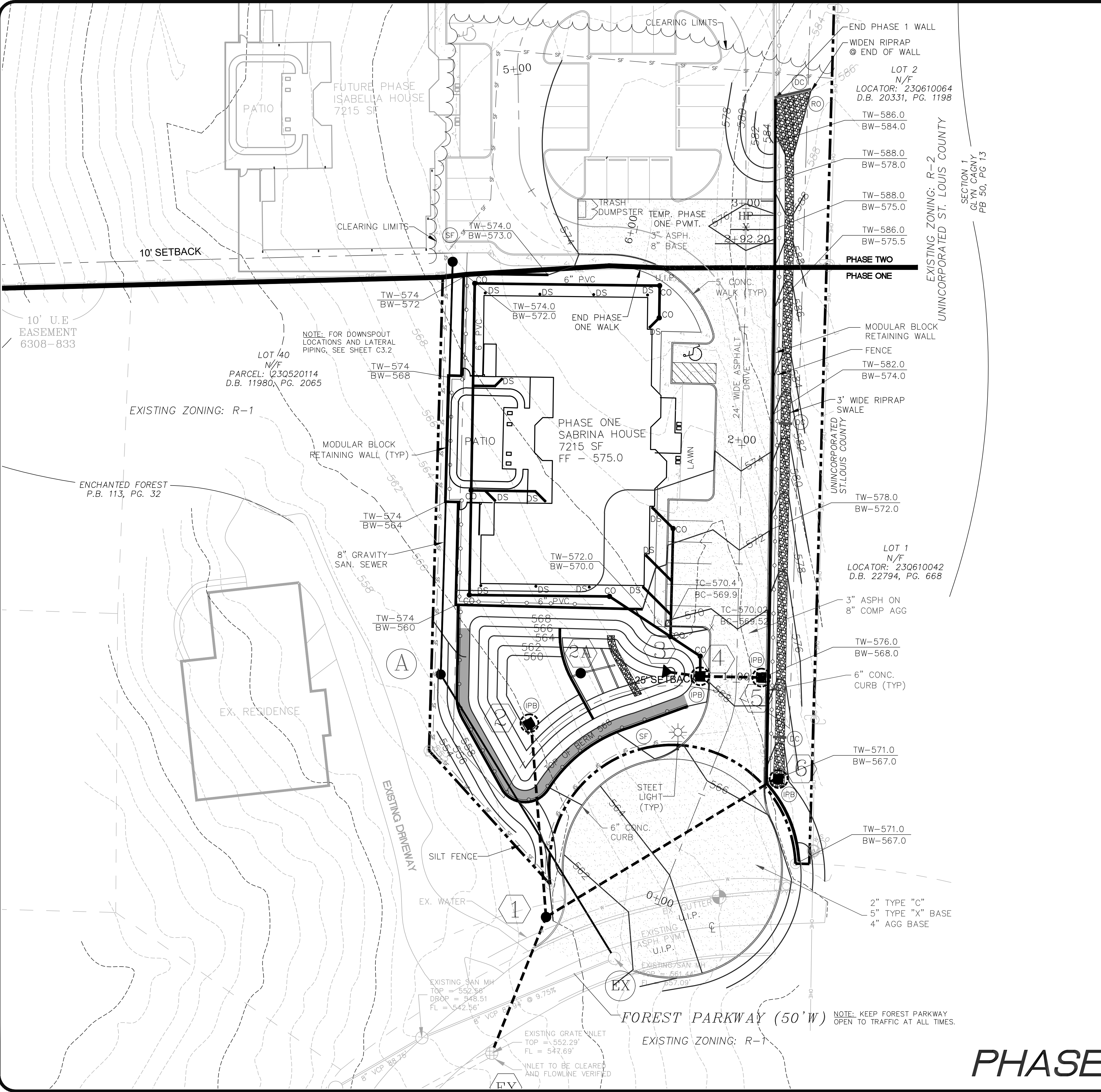


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NOTE:
 TW-XXX: TOP OF WALL ELEVATION
 BW-XXX: BOTTOM OF WALL ELEVATION

MSD BASE MAP - XXXX
 MSD P#: 19MSD-00XXX
PHASE ONE SITE PLAN

Revisions	Issue For Bid
Date	7/24/19
OWNER/DEVELOPER	FAMILY PARTNERS LLC 12880 MANCHESTER ROAD ST. LOUIS, MO 63131 (314) 863-9912
SEAL	DATE: DAVID L. VONARY E-26647
CIVIL ENGINEER	VonArx Engineering 10785 BUSINESS 21, SUITE A HILLSBORO, MISSOURI 63095 OFFICE: (636) 797-6425 CELL: (314) 922-5038 CERTIFICATE OF AUTHORITY: 0975
FAMILY PARTNERS IMPROVEMENT PLANS - PHASE 1 MANCHESTER, MO 63021 ST. LOUIS COUNTY	
ISSUE DATE	7/24/2019
SCALE	1" = 30'
Job Number	15145
Sheet Number	C3.2



EROSION CONTROL LEGEND

DISTURBED AREA SUMMARY:
TOTAL DISTURBED AREA = XXXX± ACRES

- (SC) STABILIZED CONSTRUCTION ACCESS (SEE STL 806-46.01) - TEMPORARY BMP
- (WS) CONSTRUCTION WASHDOWN STATION (SEE STL 806-46.00) - TEMPORARY BMP
- (SF) SILT FENCE (SEE 806-70)
- (RO) ROCK OUTLET (SEE STL 806-55.10) - PERMANENT BMP
- (GB) GRAVEL BAGS (SEE STL 806-55.17) - TEMPORARY BMP
- (IPB) INLET PROTECTION BARRIER (SEE STL 806-45.02) - TEMPORARY BMP
- (SD) SOD/SEED (see LANDSCAPE PLANS) - PERMANENT BMP
- (SB) SEDIMENT BASIN (see STL 806-40.01) - TEMPORARY BMP
- (SN) PUBLIC NOTIFICATION SIGN (SEE STL PG. 411.42) - TEMPORARY BMP
- (DC) DITCH CHECK

SUMMARY OF SWPPP QUANTITIES

ITEM #	ITEM	UNIT	QUANTITY	BMP TYPE
1	CONST. ENTRANCE	Ea	1	TEMPORARY BMP
2	WASHDOWN STATION	Ea	1	TEMPORARY BMP
3	CHECK DAM	Ea	1	TEMPORARY BMP
4	MULCH BERM BOUNDARY	LF	0	TEMPORARY BMP
5	ROCK OUTLET	Ea	2	TEMPORARY BMP
6	GRAVEL BAGS (INLETS)	Ea	0	TEMPORARY BMP
7	INLET PROTECTION	Ea	6	TEMPORARY BMP
8	SEED/MULCH	SY	4084	PERMANENT BMP
9	SOD	SY	0	PERMANENT BMP

NOTES -
 1. REMOVE TEMPORARY BMP ONCE UP-SLOPE AREA IS PERMANENTLY STABILIZED.
 2. POTENTIAL SOURCES OF POLLUTION, WASTE AND CONSTRUCTION MATERIALS ON SITE AND APPLICABLE BMP (SHOWN IN PARENTHESIS):
 - SITE LITTER (TRASH RECEPTACLES w/ LIDS)
 - SANITARY WASTE (CONST. SITE RECEPTACLE ADJACENT TO CONST. TRAILER).

EARROWORK NOTES:

BULK CUT	1153 C.Y.	THE MATERIALS NEEDED FOR PHASE ONE GRADING WILL BE BORROWED FROM PHASE TWO.
ADJUSTED CUT (FOR PAVEMENT).....	1614 C.Y.	
BULK FILL	3022 C.Y.	
ADJUSTED FILL (+ 15% SHRINKAGE).....	3555 C.Y.	
TOTAL.....	1941 C.Y. IMPORT	

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 FILL.

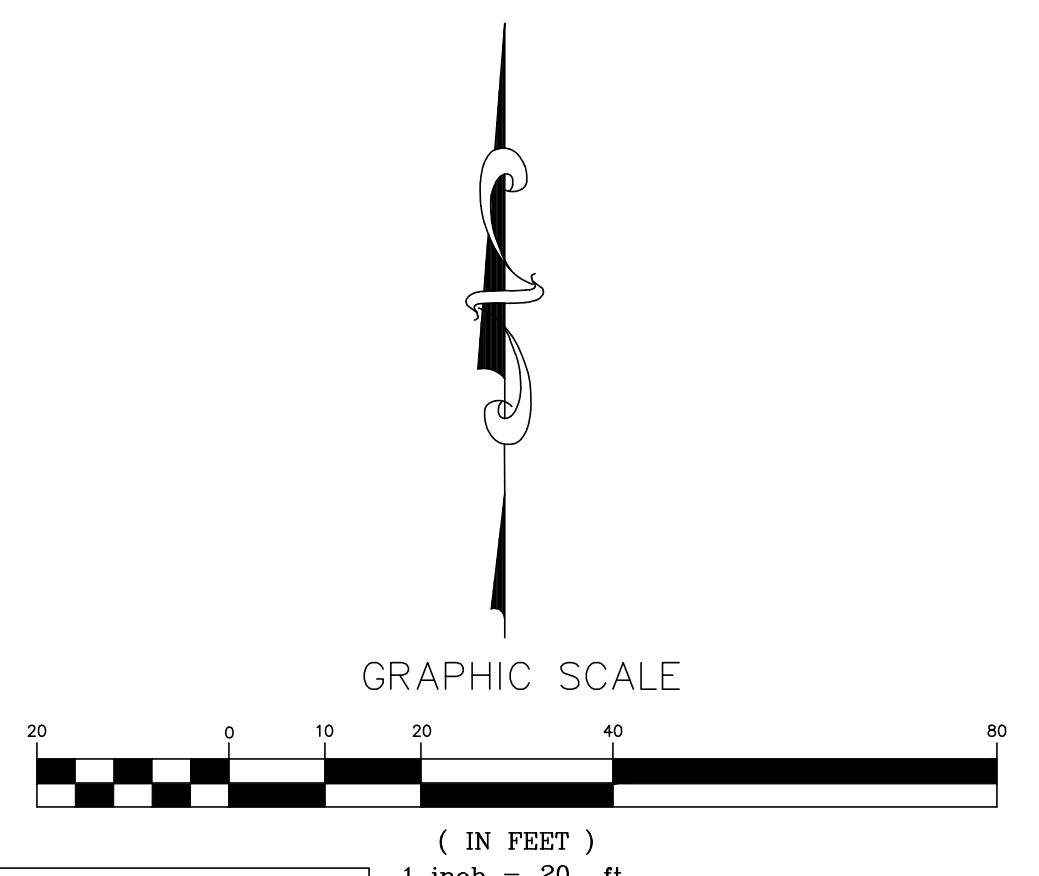
THE QUANTITIES ESTIMATED FOR EACH OF THE IMPROVEMENT ITEMS LISTED ABOVE ARE BASED UPON THE HORIZONTAL AND VERTICAL LOCATION OF THE IMPROVEMENTS AS PROPOSED ON THE SITE ENGINEERING PLANS PREPARED VONARX ENGINEERING.

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 24" IN DIAMETER, STANDARD MANHOLES, PROCESS OR TRANSFER PIPING; ELECTRICAL OR CONDUIT MANHOLES OR TELEPHONE CONDUITS; BASES FOR LIGHT STANDARDS; BUILDING FOOTINGS AND FOUNDATIONS, ETC.

THE ENGINEER ASSUMES NO RESPONSIBILITY OF THE ACTUAL SIZE OF THE FIELD EXCAVATIONS MADE FOR THE INSTALLATION OF THE 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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Revisions

Date	Issue For Bid
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OWNER/DEVELOPER:
FAMILY PARTNERS LLC
 12880 MANCHESTER ROAD
 ST. LOUIS, MO 63131
 (314) 863-9912

SEAL: _____
 DATE: _____
 CIVIL ENGINEER: DAVID L. VONARX E-26647

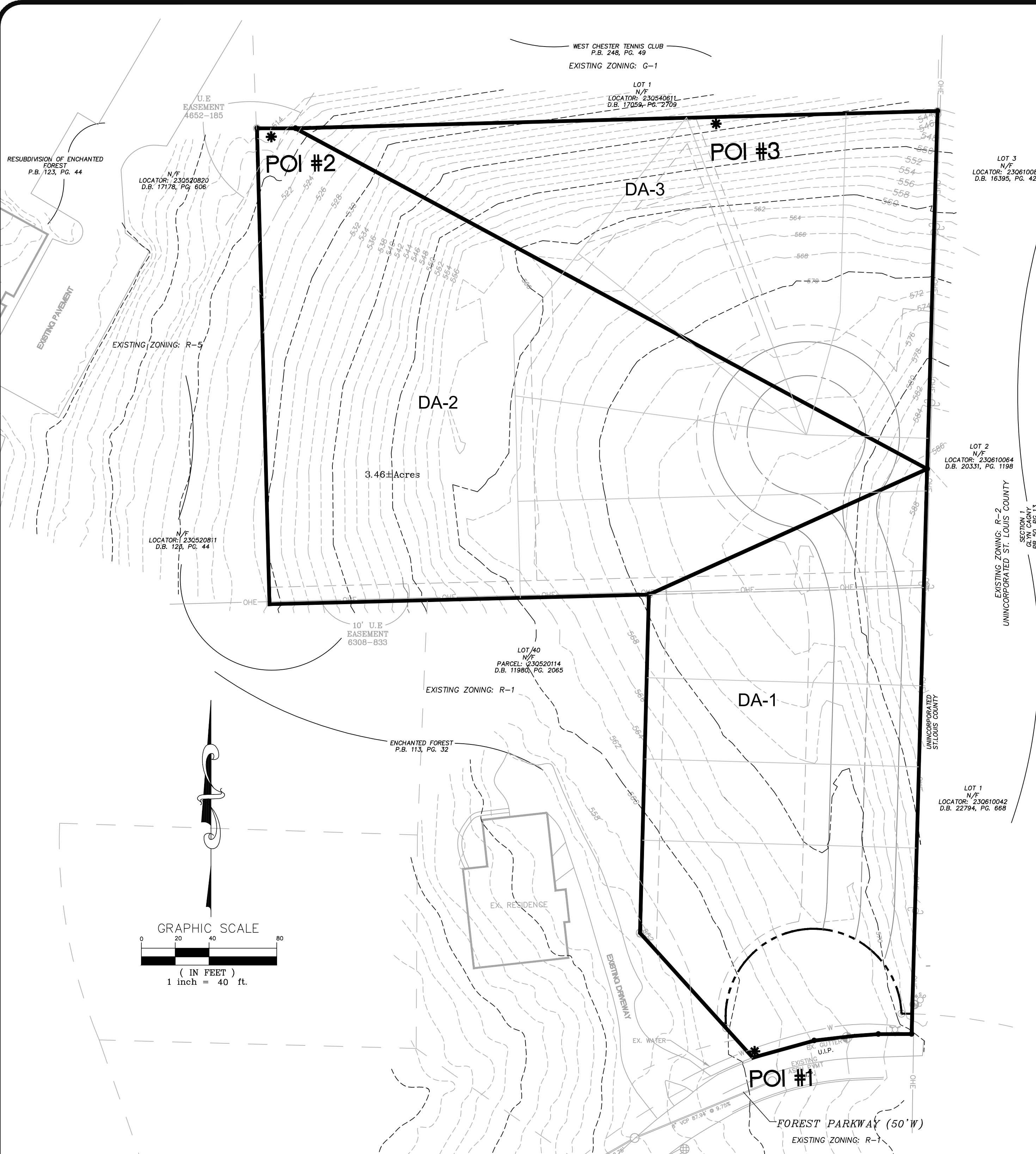
VonArx Engineering
 OFFICE: (636) 797-6425
 10785 BUSINESS 21, SUITE A
 HILLSBORO, MISSOURI 63095
 CELL: (314) 922-5038
 CERTIFICATE OF AUTHORITY: 0975

FAMILY PARTNERS
IMPROVEMENT PLANS - PHASE 1
MANCHESTER, MO 63021
ST. LOUIS COUNTY

ISSUE DATE
7/24/2019
 SCALE
1" = 30'
 Job Number
15145
 Sheet Number
C4

MSD BASE MAP - XXXX
 MSD P#: 19MSD-00XXX
PHASE ONE GRADING PLAN

FOREST PARKWAY (50' W) NOTE: KEEP FOREST PARKWAY OPEN TO TRAFFIC AT ALL TIMES.
 EXISTING ZONING: R-1



PRE-DEVELOPED DRAINAGE AREA MAP
SCALE: 1"=40'

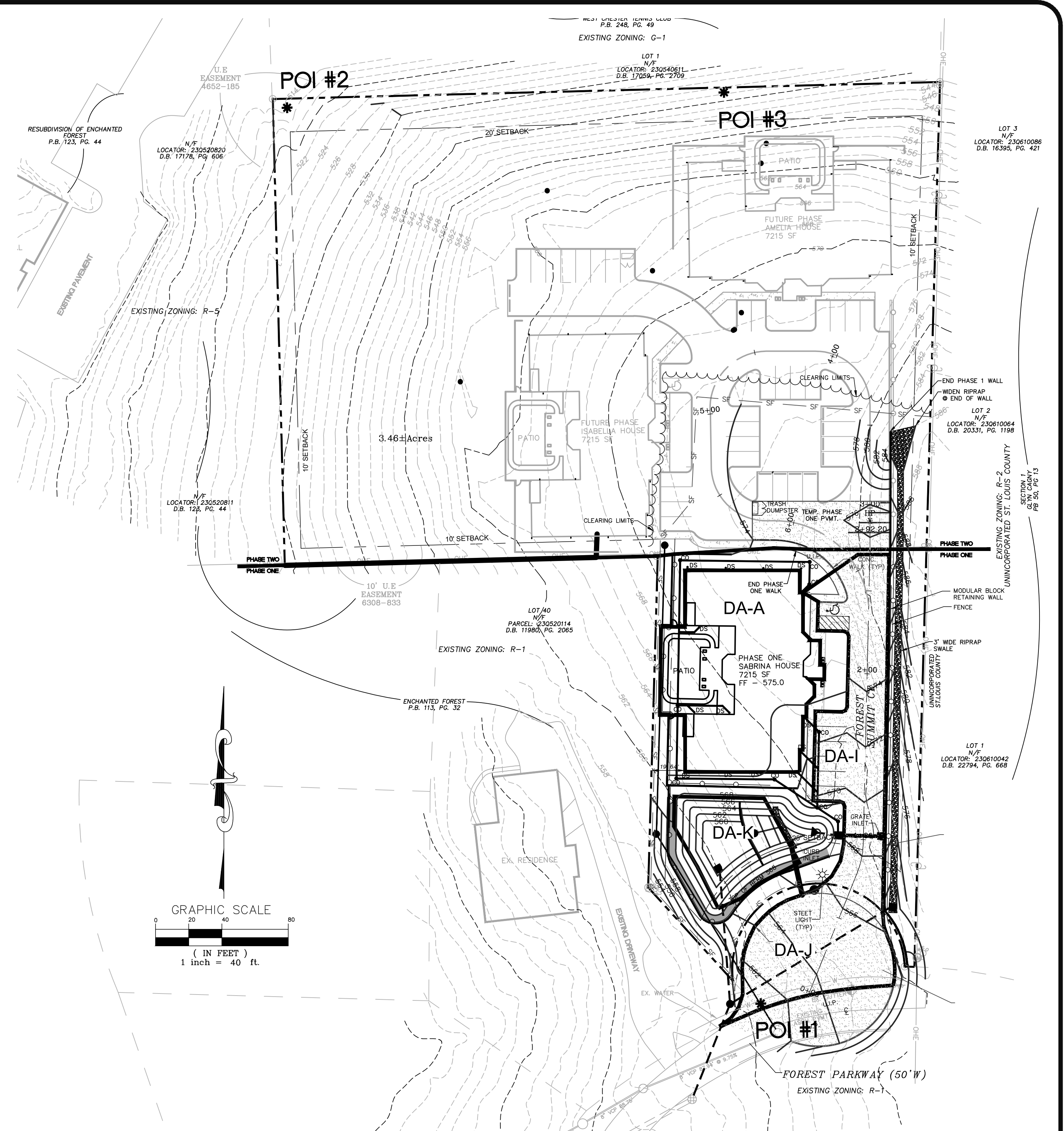
NOTE: POI = POINT OF INTEREST

PRE-DEVELOPED DRAINAGE AREA MAP			
DA	PI(CFS/AC)	AREA (AC)	Q (CFS)
1	1.70	1.08	1.84
2	1.70	1.49	2.53
3	1.70	0.92	1.56
TOTAL Q =			5.93

DIFFERENTIAL RUNOFF CALCULATIONS

ENTIRE SITE
 Q PRE = 1.84 CFS
 Q POST = 2.34 CFS
 Q DIFF = 2.10 cfs - 5.93 cfs
 Q DIFF = -3.83 cfs
 THEREFORE STORM WATER DETENTION IS REQUIRED

POI #1
 Q PRE = 1.84 CFS
 Q POST = 2.34 CFS
 Q DIFF = 2.34 CFS - 1.84 CFS
 Q DIFF = 0.50 CFS



DEVELOPED DRAINAGE AREA MAP
SCALE: 1"=40'

NOTE: POI = POINT OF INTEREST

15 YR - 20 MIN. P.I.

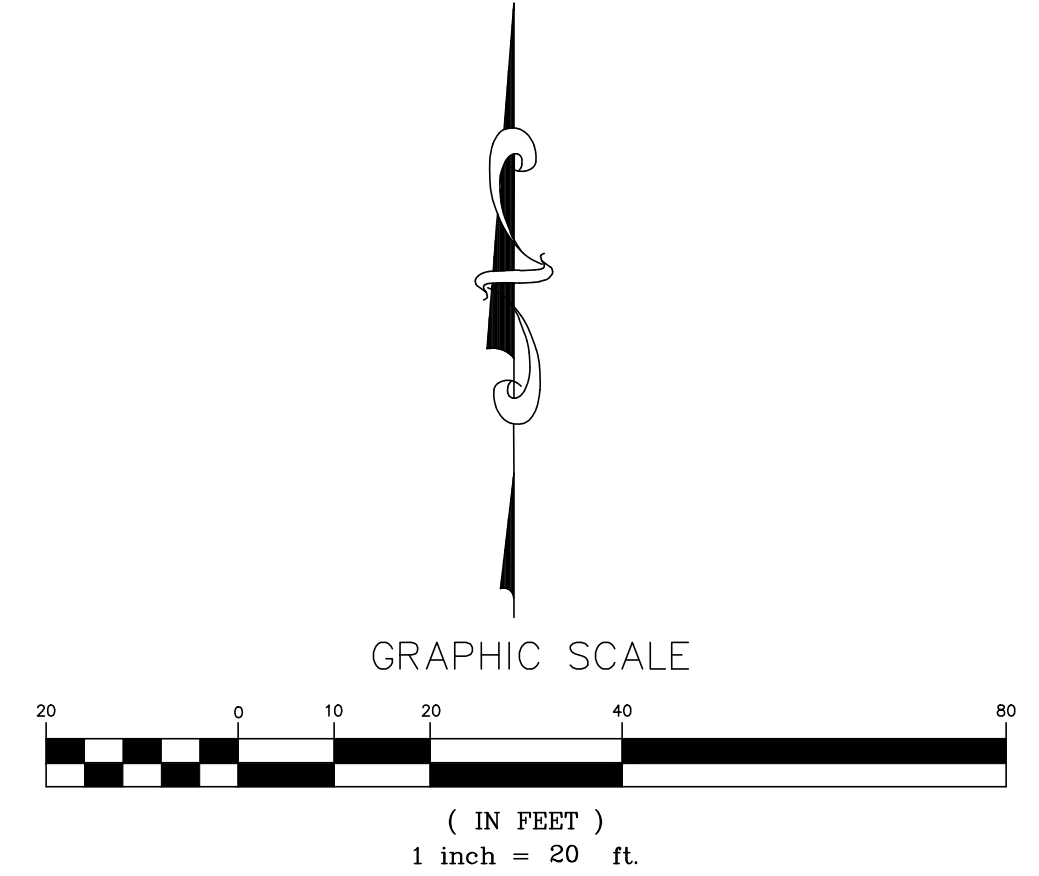
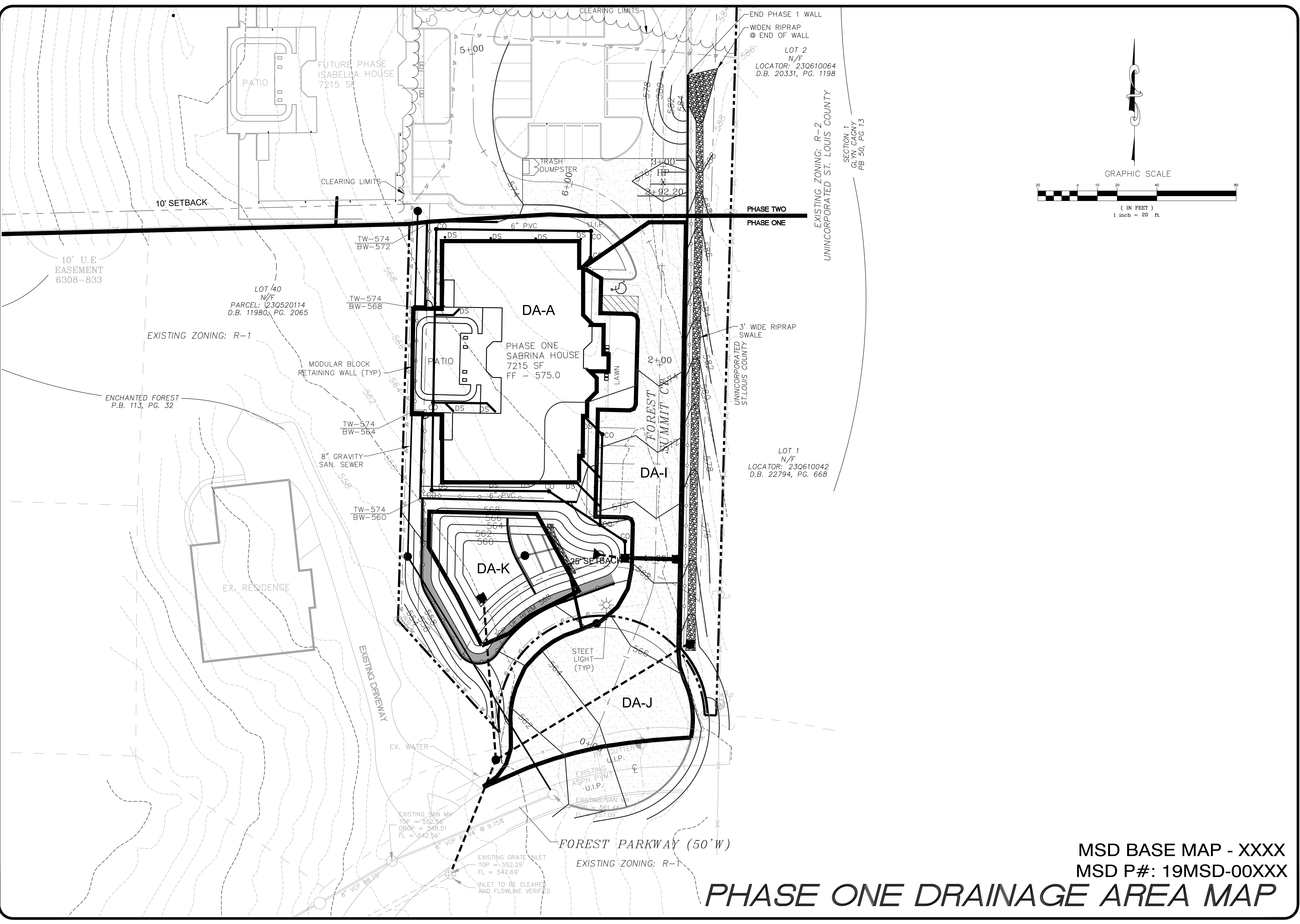
5% IMPERVIOUS P.I. = 1.70 CFS/AC
 40% IMPERVIOUS P.I. = 2.40 CFS/AC.
 PAVEMENT P.I. = 3.54 CFS/AC.
 PIPED ROOF P.I. = 4.20 CFS/AC.

POST-DEVELOPED DRAINAGE AREAS			
DA	PI (CFS/AC)	AREA (AC)	Q (CFS)
A	4.20	0.24	1.01
B	4.20	0.24	1.01
C	4.20	0.24	1.01
D	3.54	0.11	0.39
E	3.54	0.14	0.49
F	3.54	0.12	0.42
G	3.54	0.19	0.67
H	1.70	0.08	0.14
I	3.54	0.13	0.46
J	3.54	0.14	0.50
K	1.70	0.08	0.13
L	1.70	2.49	4.23
TOTAL Q =			2.10 cfs

MSD BASE MAP - XXXX
 MSD P#: 19MSD-00XXX

DRAINAGE AREA MAPS

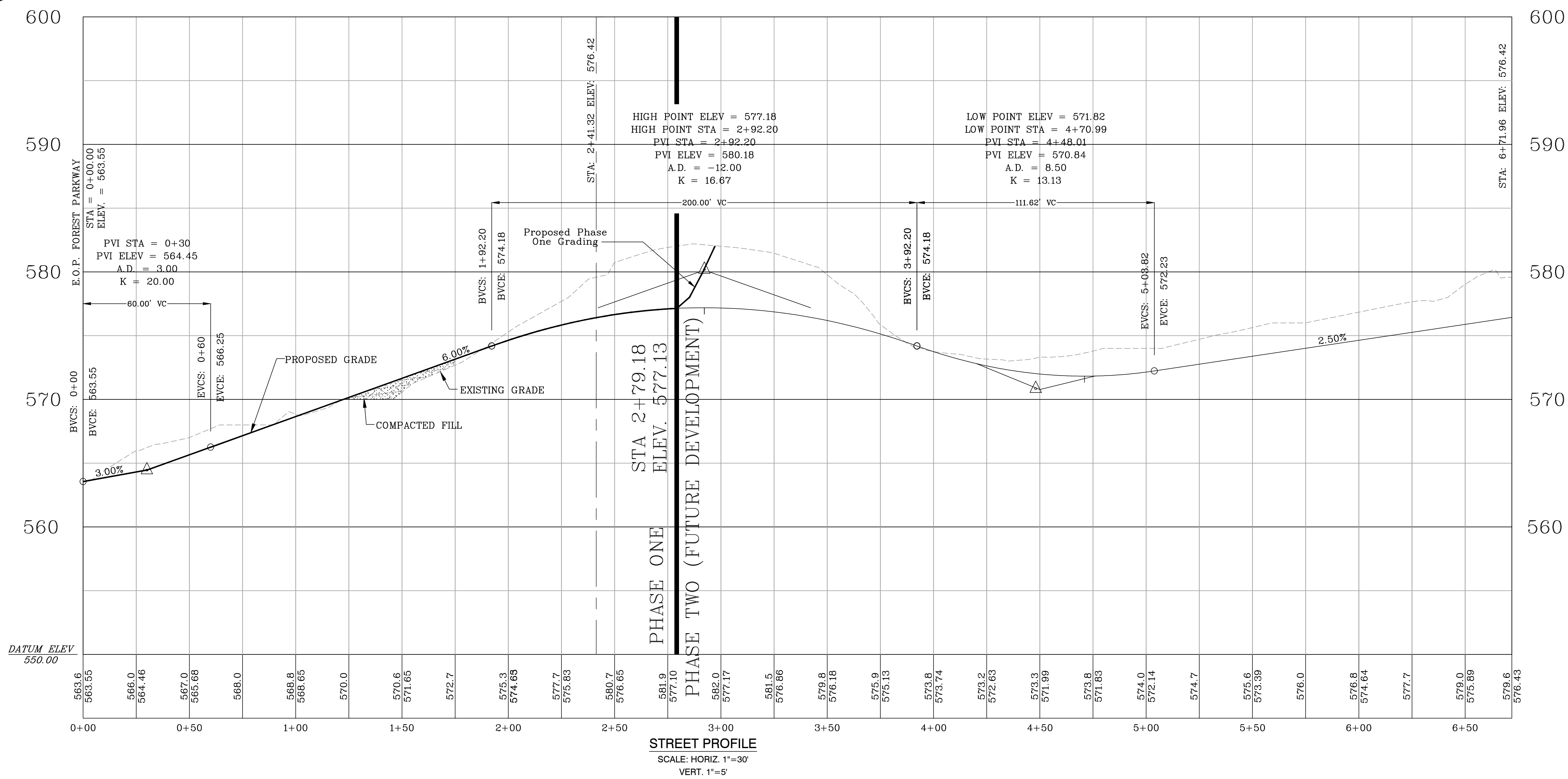
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FAMILY PARTNERS IMPROVEMENT PLANS - PHASE 1 MANCHESTER, MO 63021 ST. LOUIS COUNTY	
ISSUE DATE 7/24/2019	
SCALE 1" = 40'	
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Sheet Number C6.1	



MSD BASE MAP - XXXX
MSD P#: 19MSD-00XXX

PHASE ONE DRAINAGE AREA MAP

<small>Revisions</small> <small>ISSUE FOR BID</small>	<small>Date</small> 7/24/19	FAMILY PARTNERS LLC 12880 MANCHESTER ROAD ST. LOUIS, MO 63131 (314) 863-9912
<small>OWNER/DEVELOPER</small>	<small>SEAL</small>	<small>DATE</small> DAVID L. VONARY E-26647
<small>CIVIL ENGINEER</small>		
FAMILY PARTNERS IMPROVEMENT PLANS - PHASE 1 MANCHESTER, MO 63021 ST. LOUIS COUNTY		
<small>ISSUE DATE</small> 7/24/2019		
<small>SCALE</small> 1" = 30'		
<small>Job Number</small> 15145		
<small>Sheet Number</small> C6.2		



MSD BASE MAP - XXXX
 MSD P#: 19MSD-00XXX
PROFILES

Revisions
ISSUE FOR BID

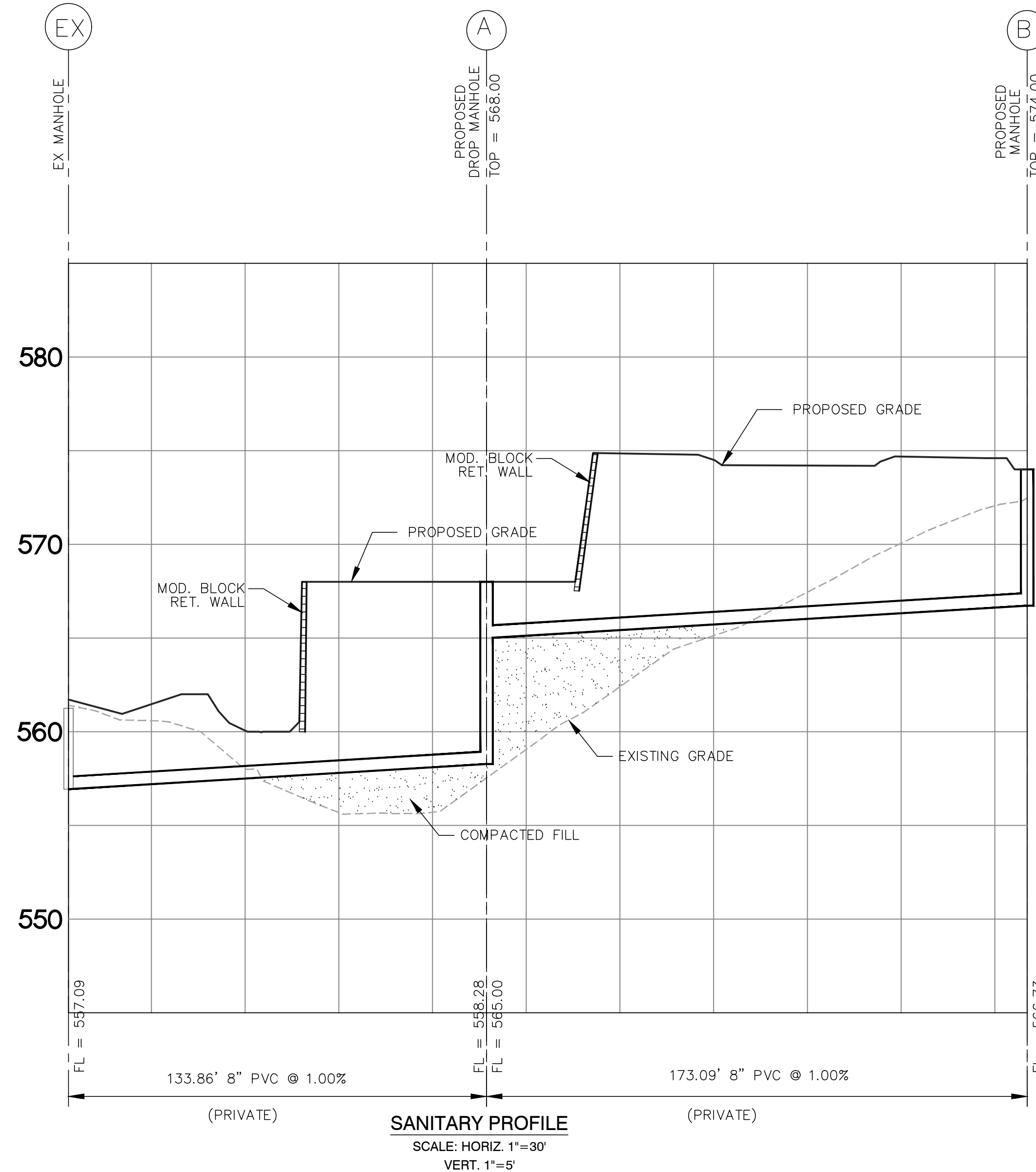
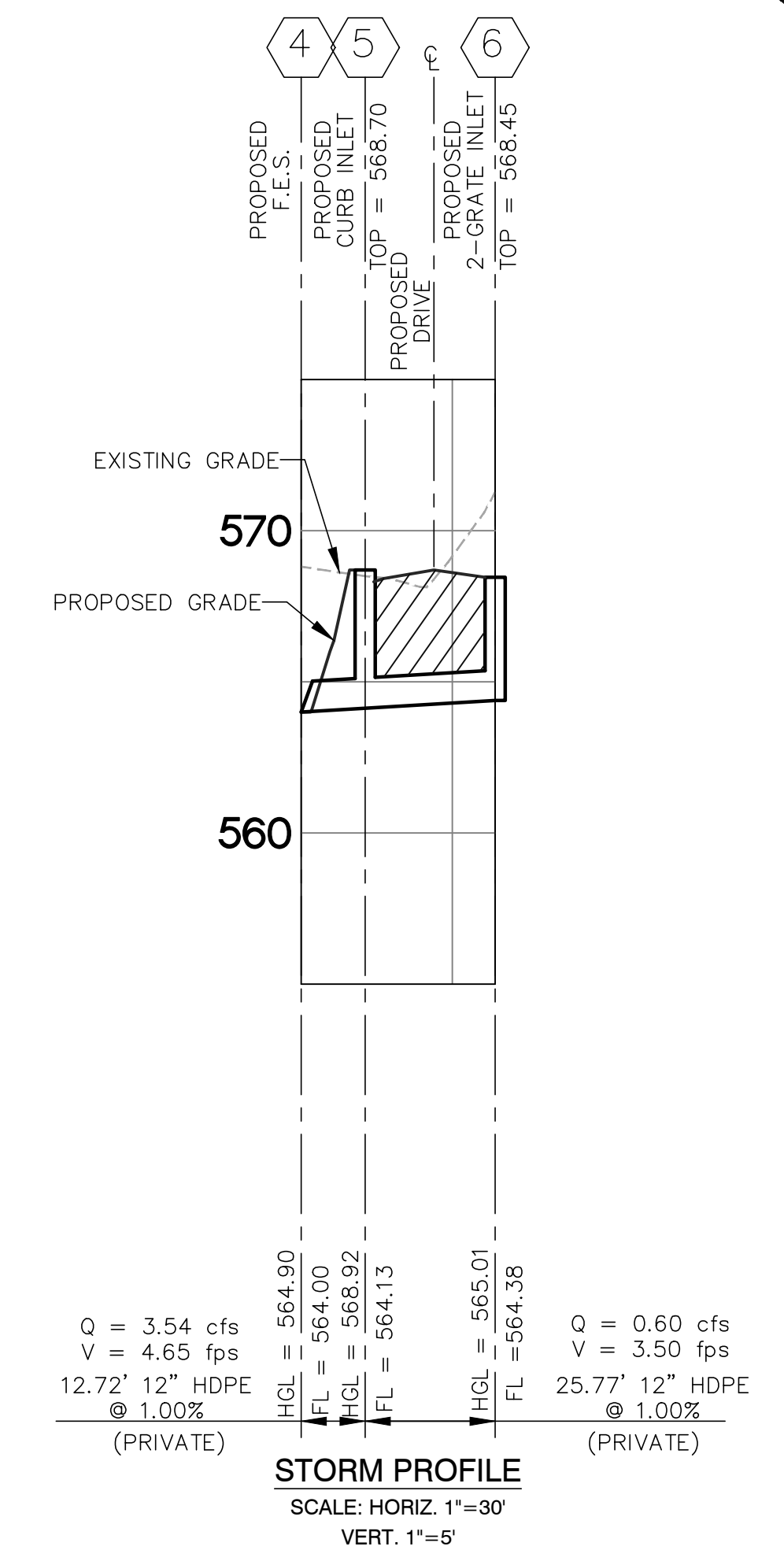
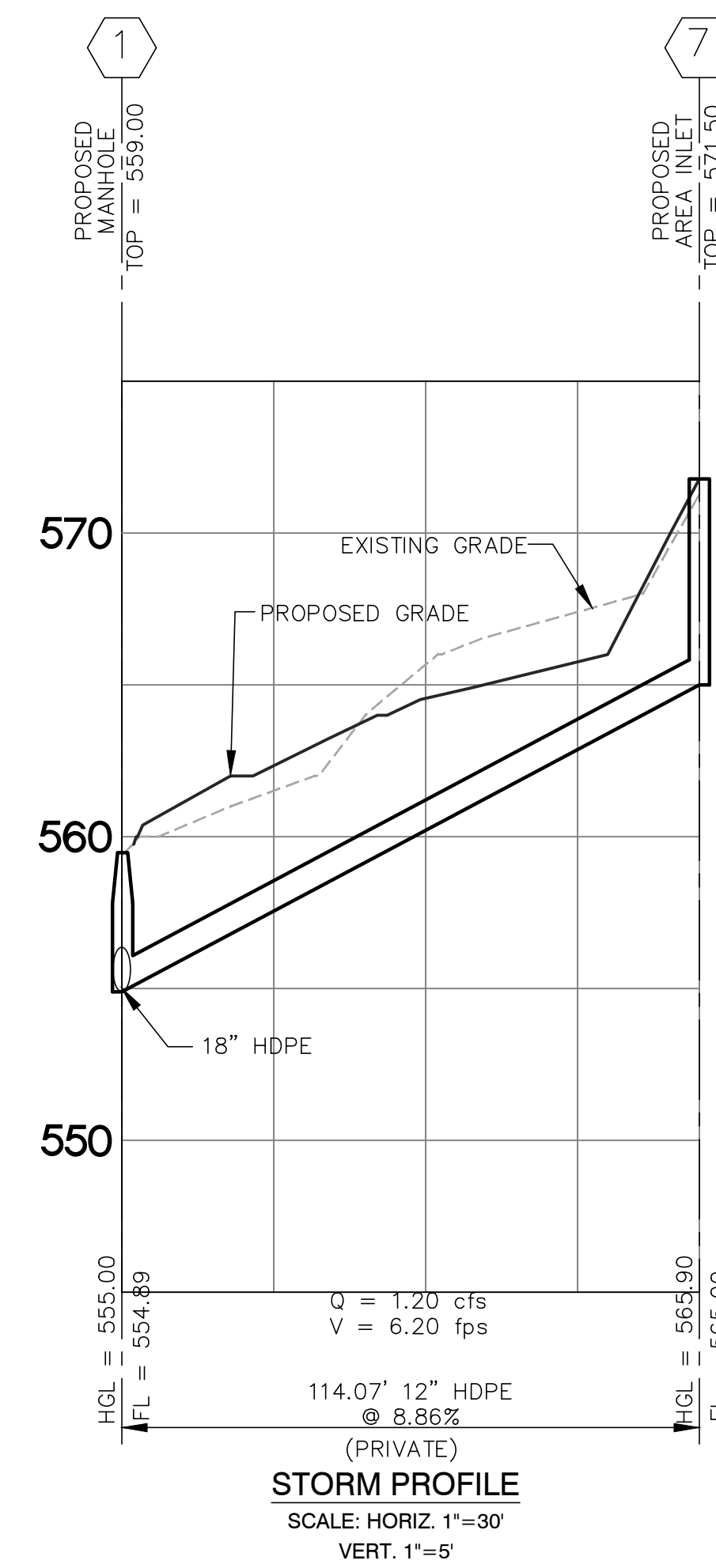
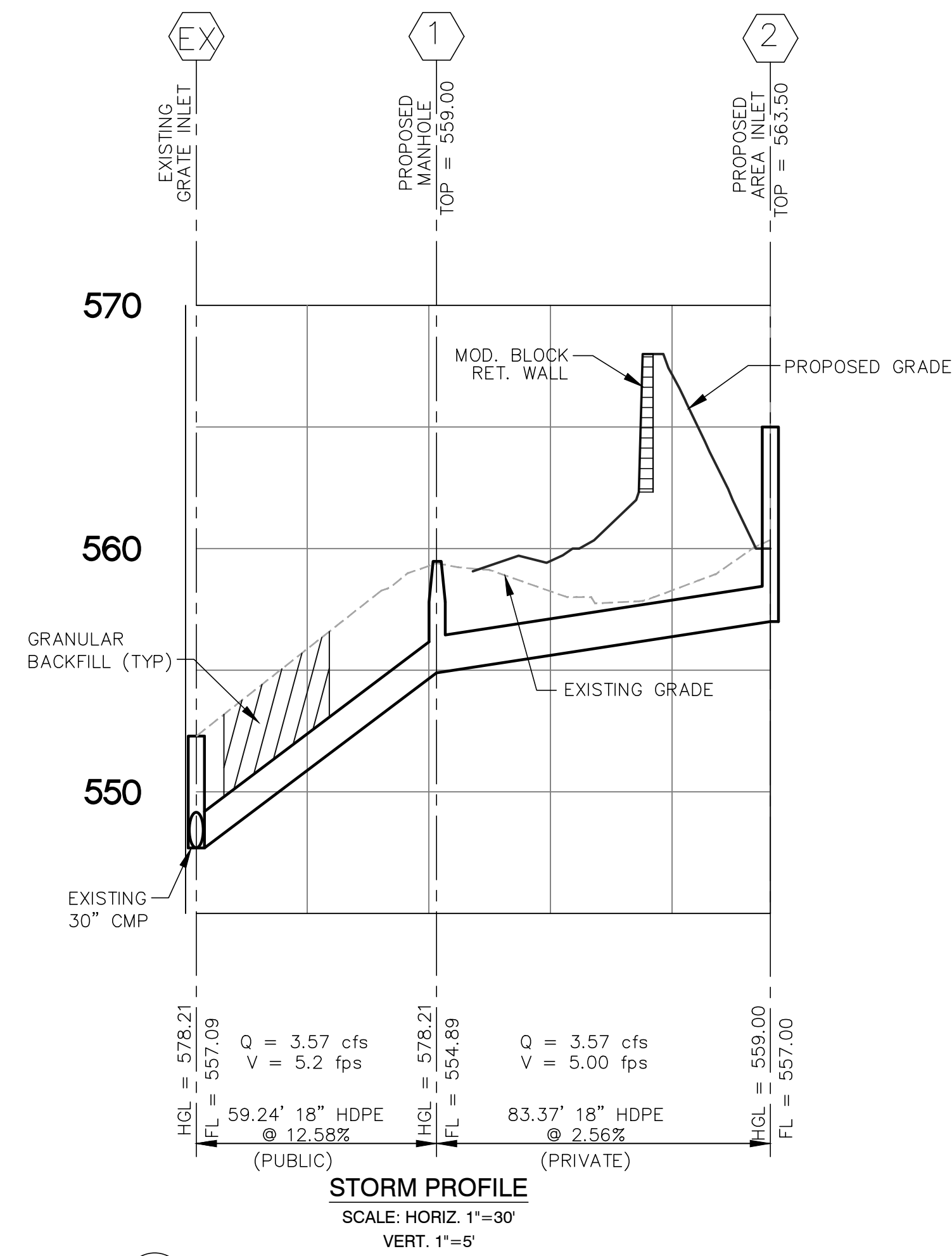
OWNER/DEVELOPER:
FAMILY PARTNERS LLC
 12880 MANCHESTER ROAD
 ST. LOUIS, MO 63131
 (314) 863-9912

SEAL:
 DATE:
 DAVID L. VONARY, E-26647

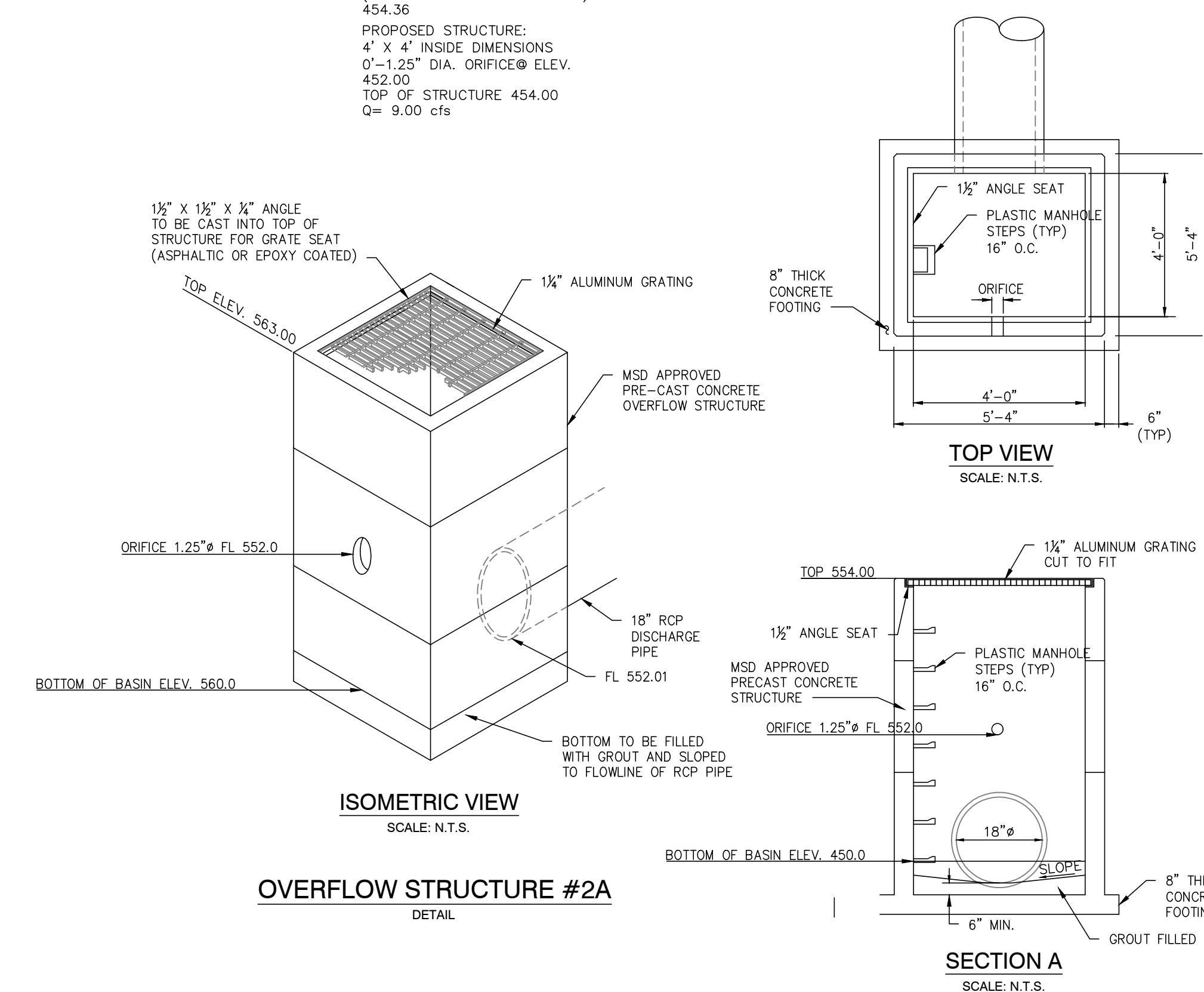
Von Arx Engineering
 CIVIL ENGINEER
 10785 BUSINESS 21, SUITE A
 HILLSBORO, MISSOURI 63095
 OFFICE: (636) 797-6426
 CELL: (314) 922-5038
 CERTIFICATE OF AUTHORITY: 0975

FAMILY PARTNERS
 IMPROVEMENT PLANS - PHASE 1
 MANCHESTER, MO 63021
 ST. LOUIS COUNTY

ISSUE DATE 7/24/2019
SCALE 1" = 30'
Job Number 15145
Sheet Number C7.1

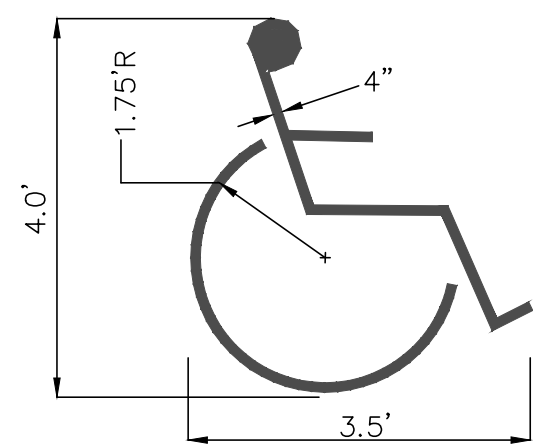


DETENTION BASIN
15 YEAR HIGHWATER ELEVATION
(ASSUMED LOW FLOW BLOCKED)
454.36
PROPOSED STRUCTURE:
4' x 4' INSIDE DIMENSIONS
0'-1.25' DIA. ORIFICE @ ELEV.
452.00
TOP OF STRUCTURE 454.00
Q= 9.00 cfs

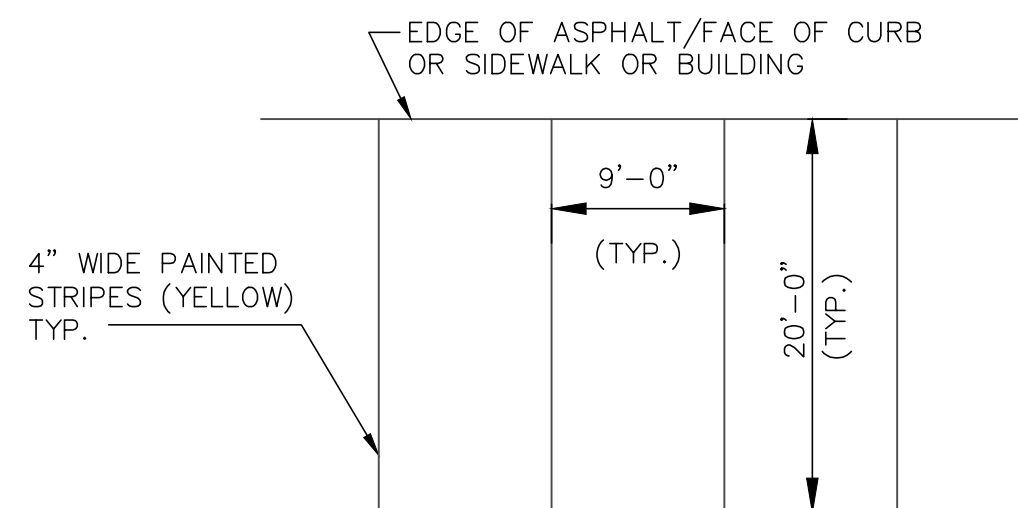


MSD BASE MAP - XXXX
MSD P#: 19MSD-00XXX
PROFILES

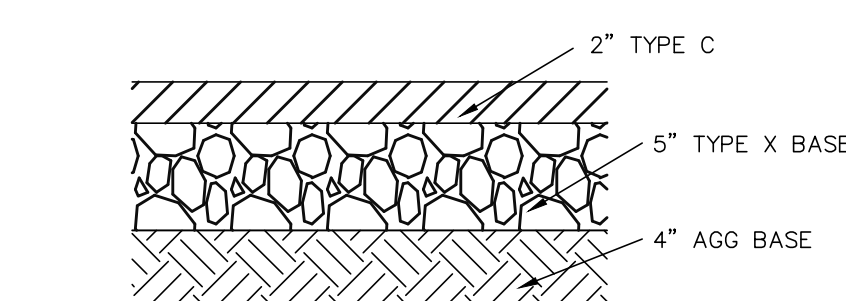
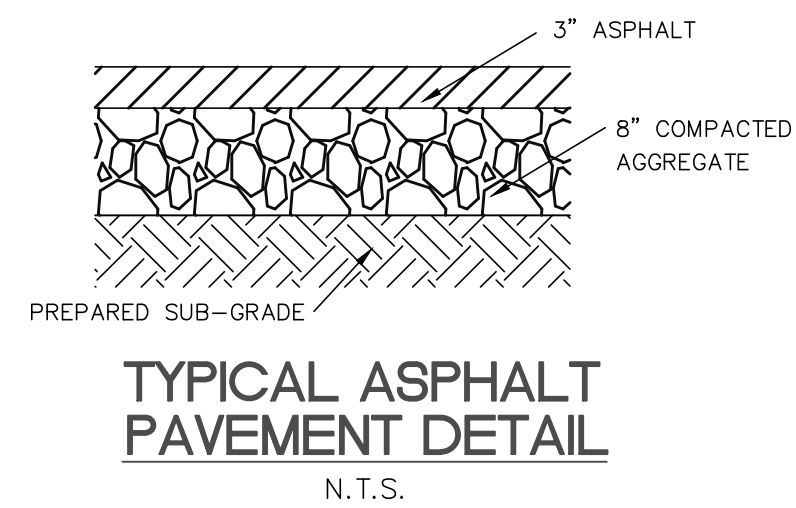
Revisions	ISSUE FOR BID
Date	7/24/19
OWNER/DEVELOPER	FAMILY PARTNERS LLC 12880 MANCHESTER ROAD ST. LOUIS, MO 63131 (314) 863-9912
SEAL	DATE: DAVID L. VONARX E-26647
CIVIL ENGINEER	VonArx Engineering 10785 BUSINESS 21, SUITE A HILLSBORO, MISSOURI 63090 OFFICE: (636) 797-5425 CELL: (314) 922-5038 CERTIFICATE OF AUTHORITY: 0075
FAMILY PARTNERS IMPROVEMENT PLANS - PHASE 1 MANCHESTER, MO 63021 ST. LOUIS COUNTY	
ISSUE DATE	7/24/2019
SCALE	1" = 30'
Job Number	15145
Sheet Number	C7.2



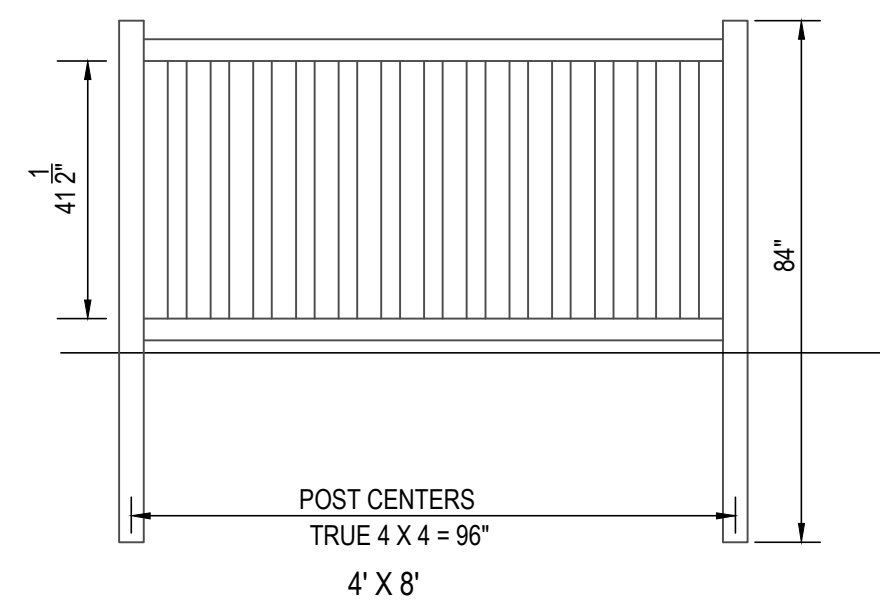
HANDICAP SYMBOL DETAIL
N.T.S.



PARKING SPACE STRIPING
N.T.S.

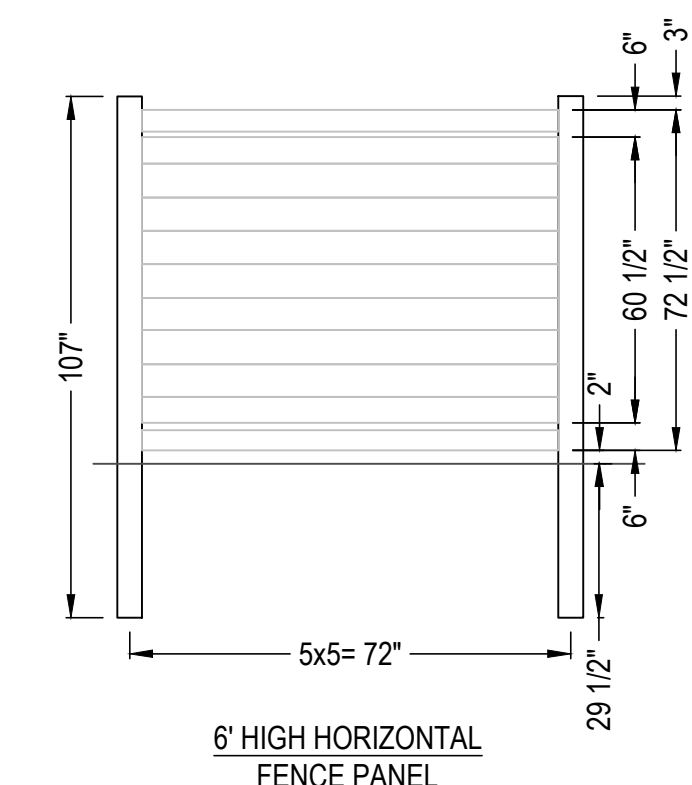


TYPICAL CUL-DE-SAC ASPHALT PAVEMENT DETAIL
N.T.S.



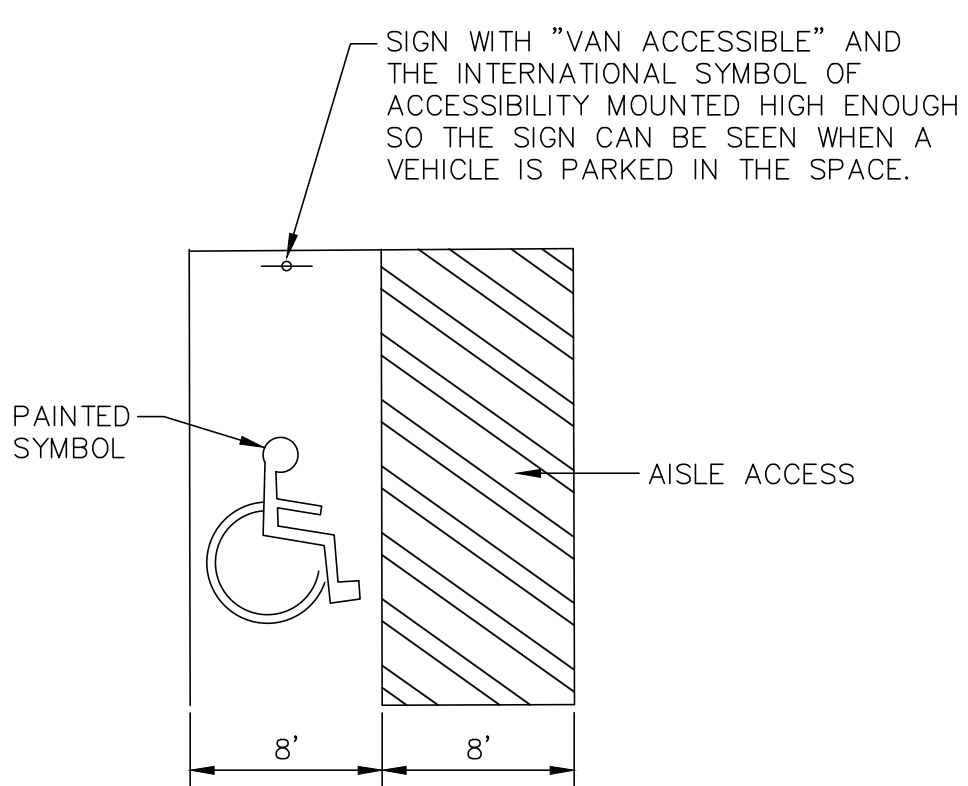
- NOTES:**
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
 2. DO NOT SCALE DRAWING.
 3. THIS DRAWING IS INTENDED FOR USE BY ARCHITECTS, ENGINEERS, CONTRACTORS, CONSULTANTS AND DESIGN PROFESSIONALS FOR PLANNING PURPOSES ONLY. THIS DRAWING MAY NOT BE USED FOR CONSTRUCTION.
 4. ALL INFORMATION CONTAINED HEREIN WAS CURRENT AT THE TIME OF DEVELOPMENT BUT MUST BE REVIEWED AND APPROVED BY THE PRODUCT MANUFACTURER TO BE CONSIDERED ACCURATE.
 5. CONTRACTOR'S NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info AND ENTER REFERENCE NUMBER 15145-Family Partners-Forest Summit
 6. COLOR OF FENCE: WHITE Court_Phase One

CONTEMPORARY FENCING
(BUFFTECH) BARON VINYL FENCING

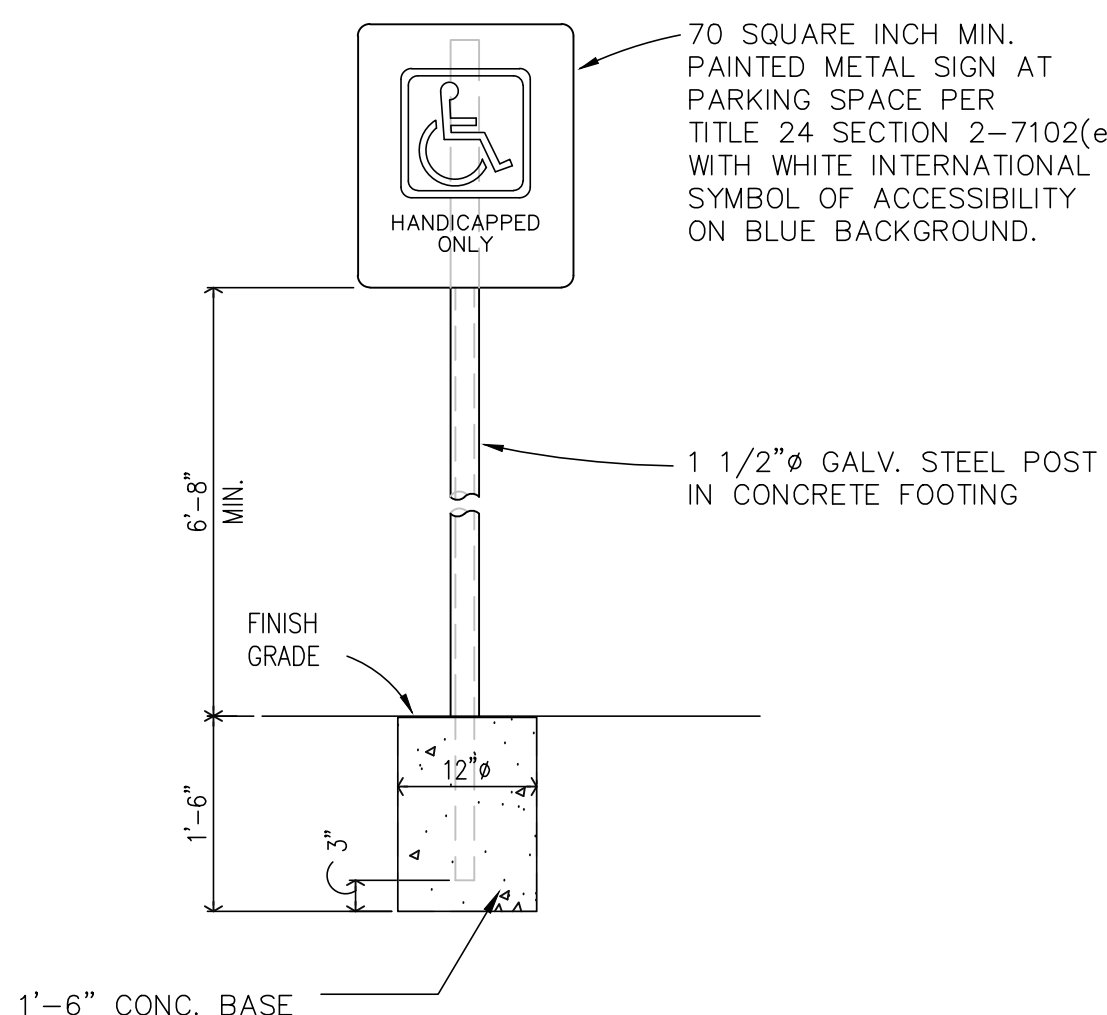


- NOTES:**
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 5. CONTRACTOR'S NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info AND ENTER REFERENCE NUMBER 15145-Family Partners-Forest Summit Court_Phase One .
 6. COLOR OF FENCE: WHITE

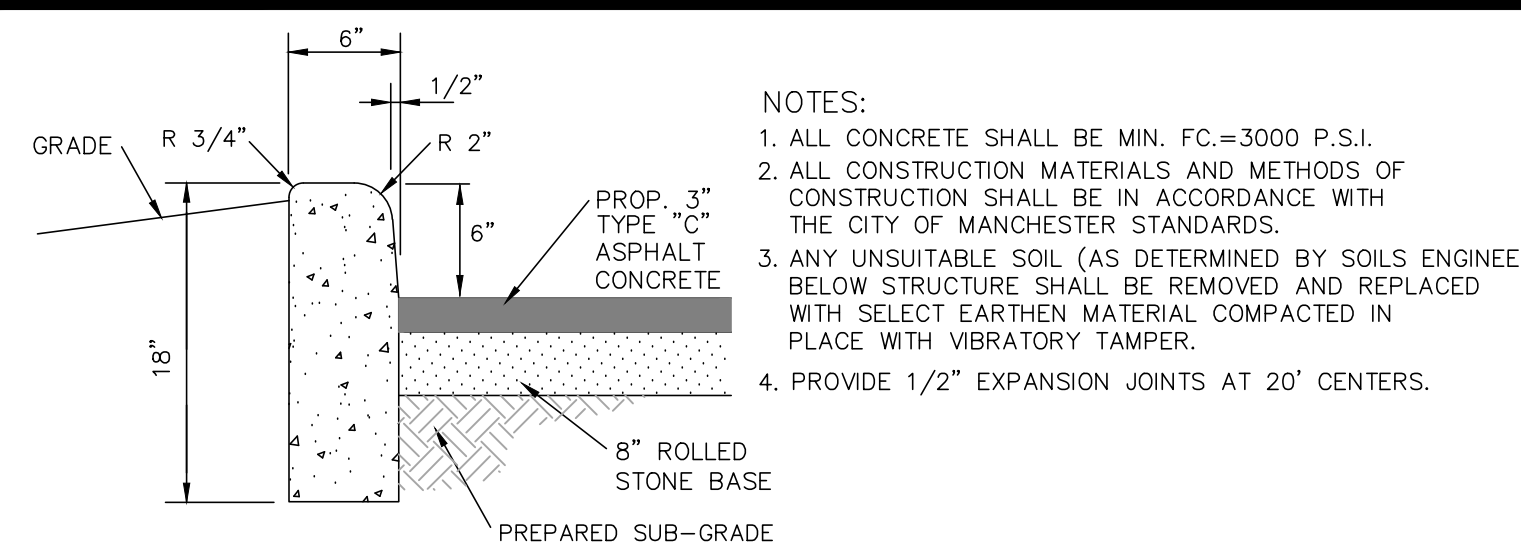
VINYL PRIVACY FENCING
BROOKLINE VINYL FENCING - 6 FT. HEIGHT



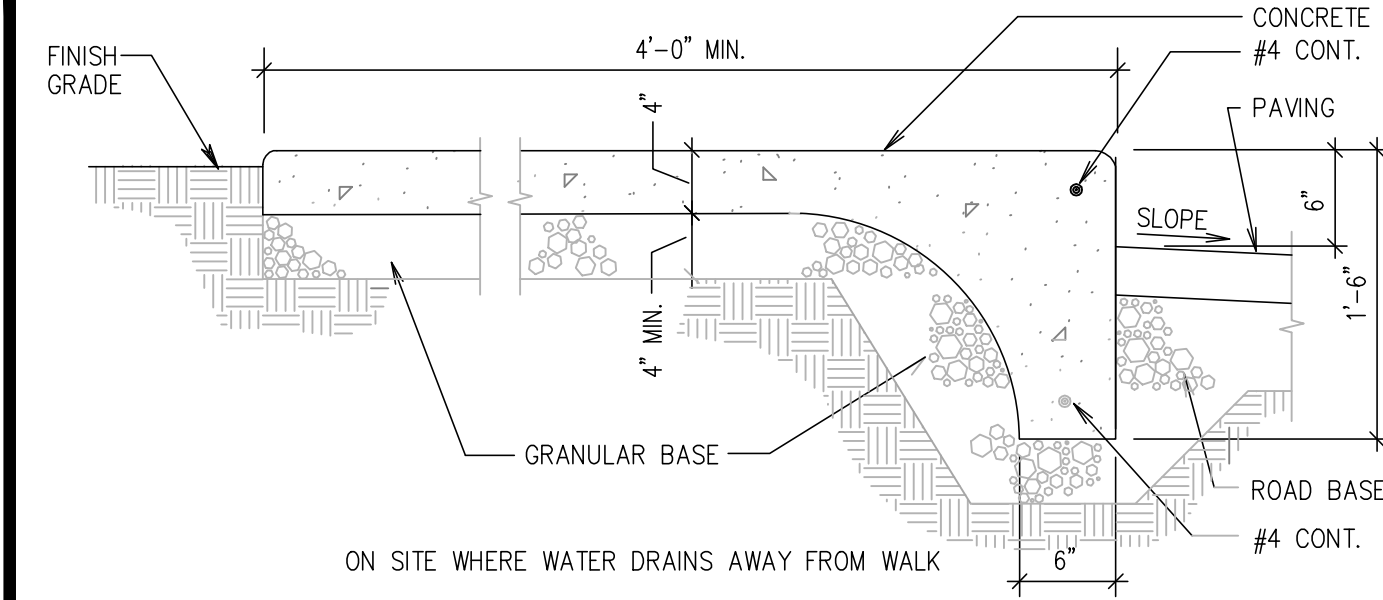
HANDICAP PARKING SPACE DETAIL
N.T.S.



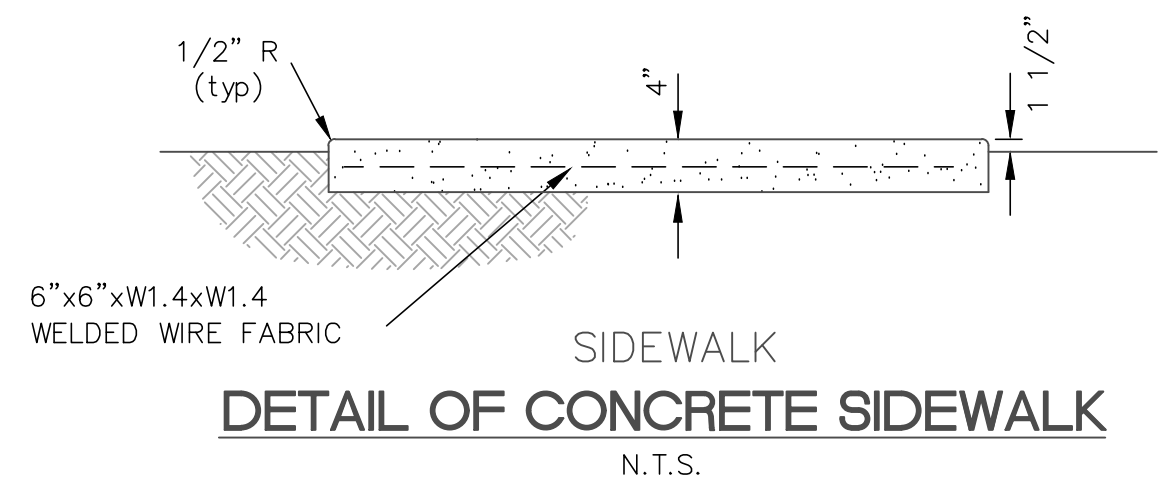
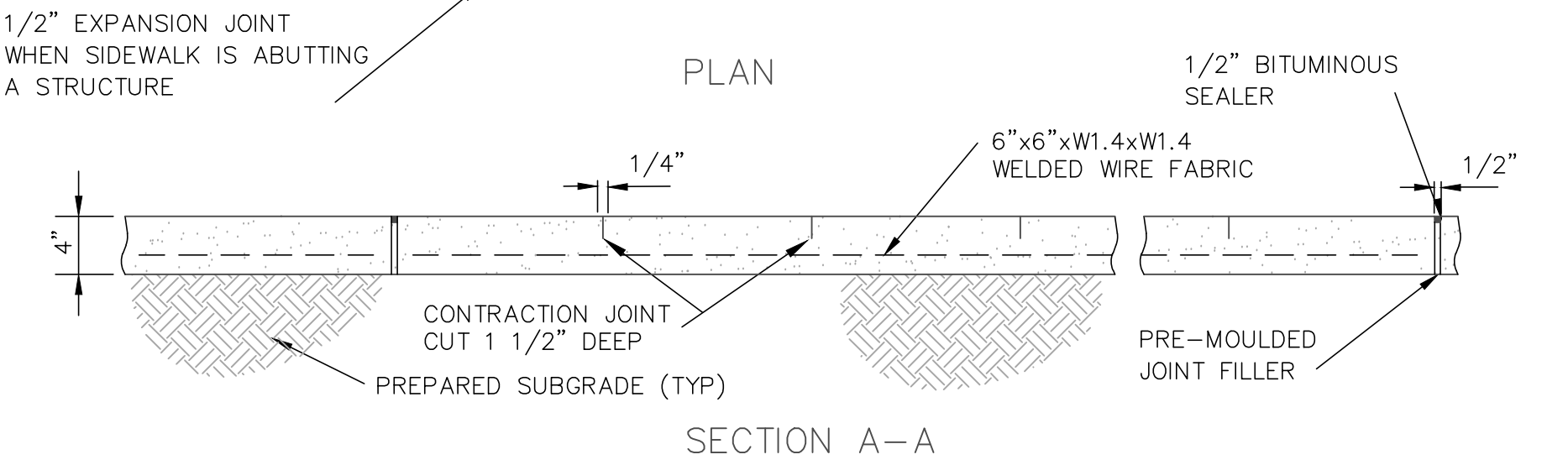
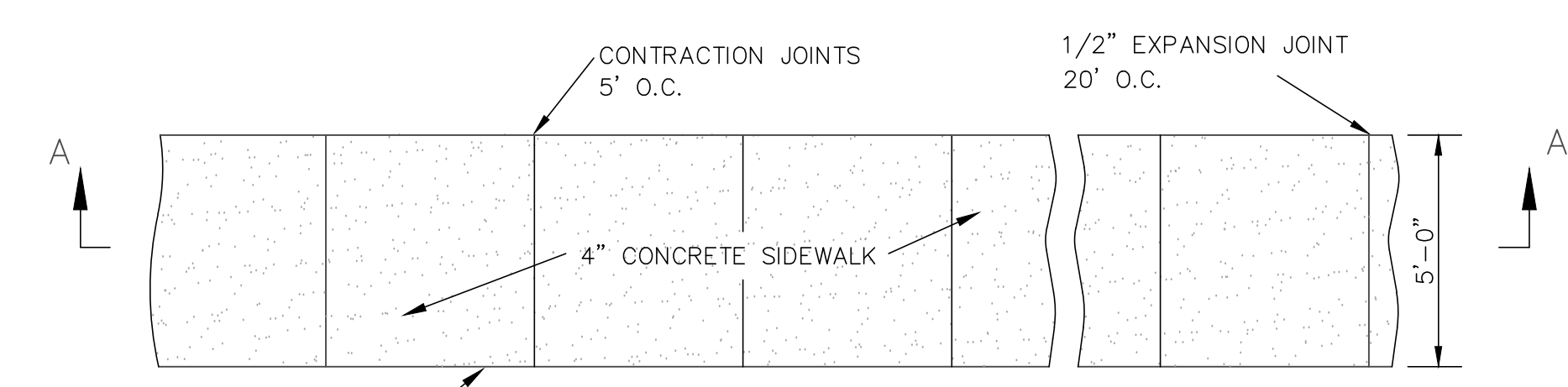
"HANDICAPPED PARKING" SIGN
N.T.S.



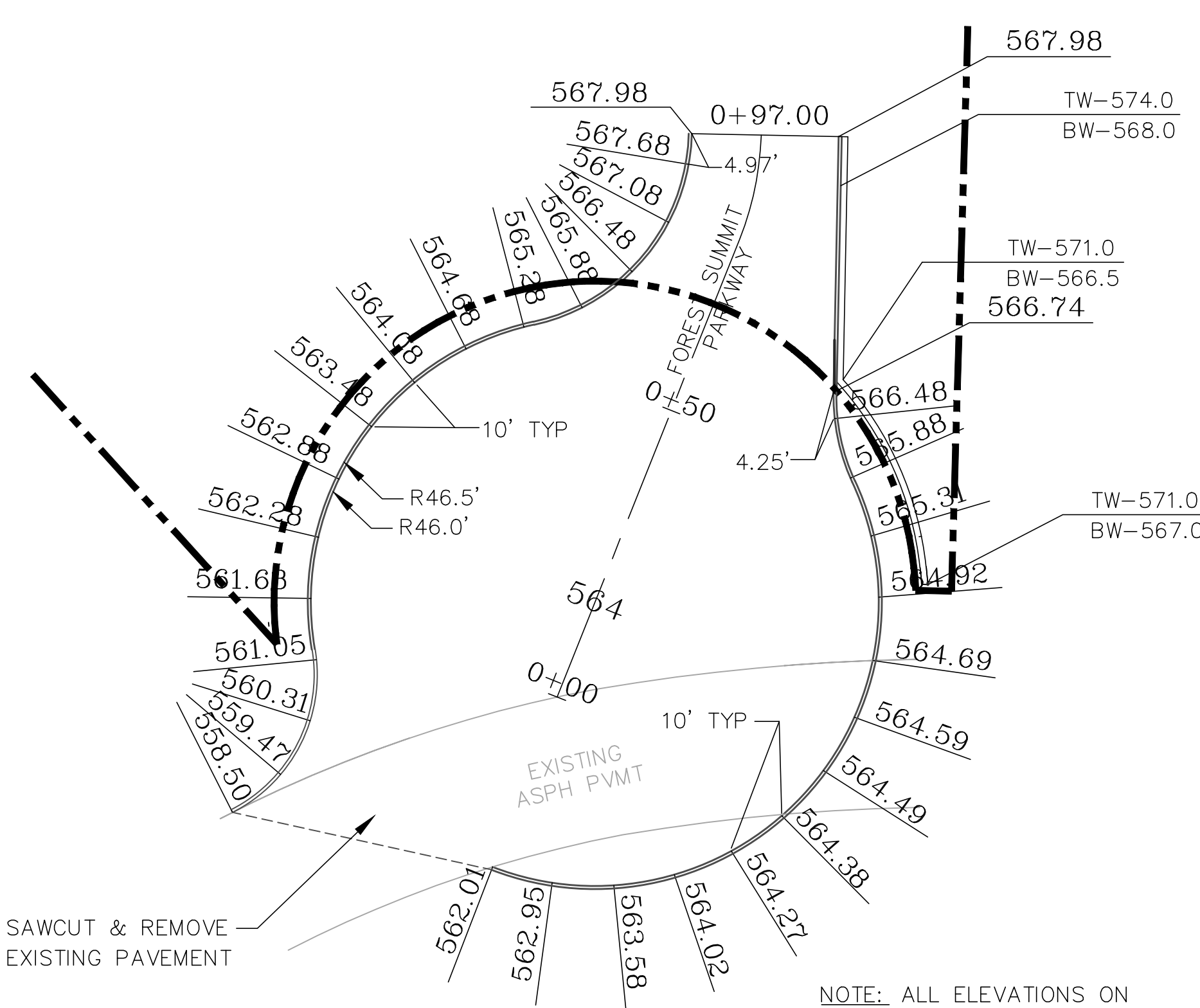
18" BARRIER CURB AND PAVEMENT DETAIL
N.T.S.



INTEGRAL WALK AND CURB DETAIL
N.T.S.

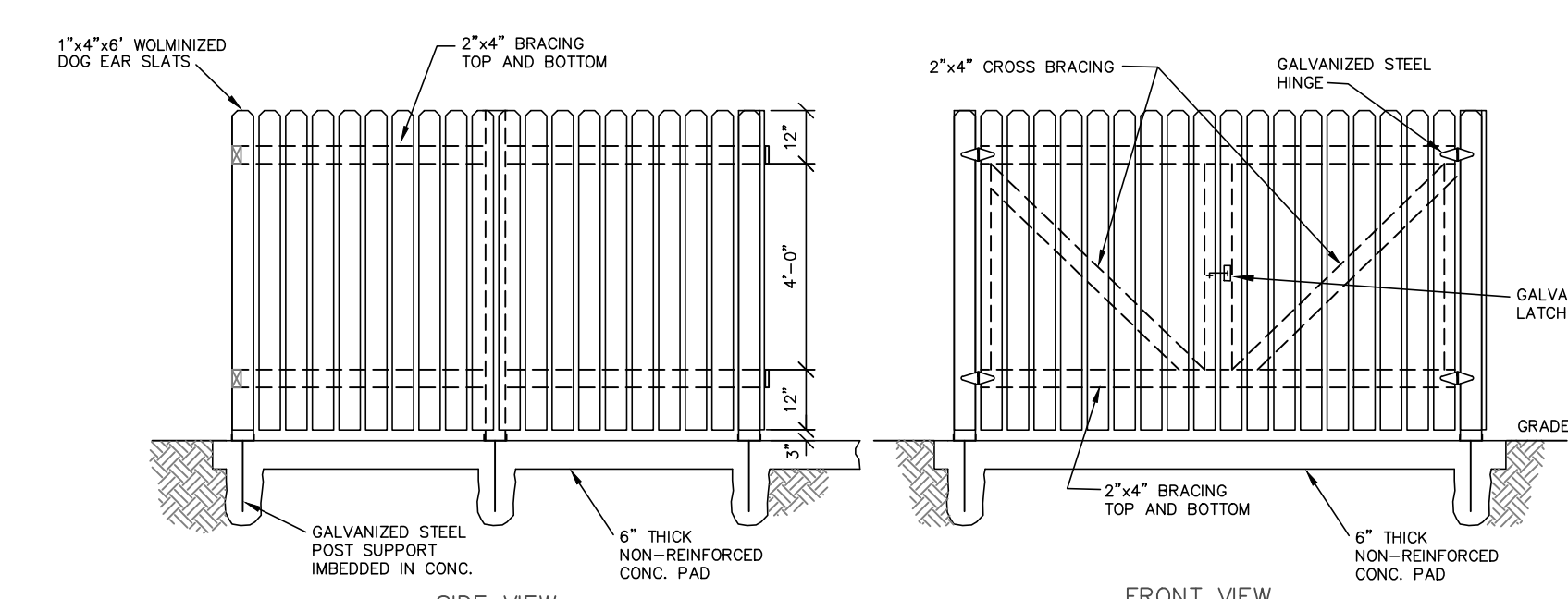
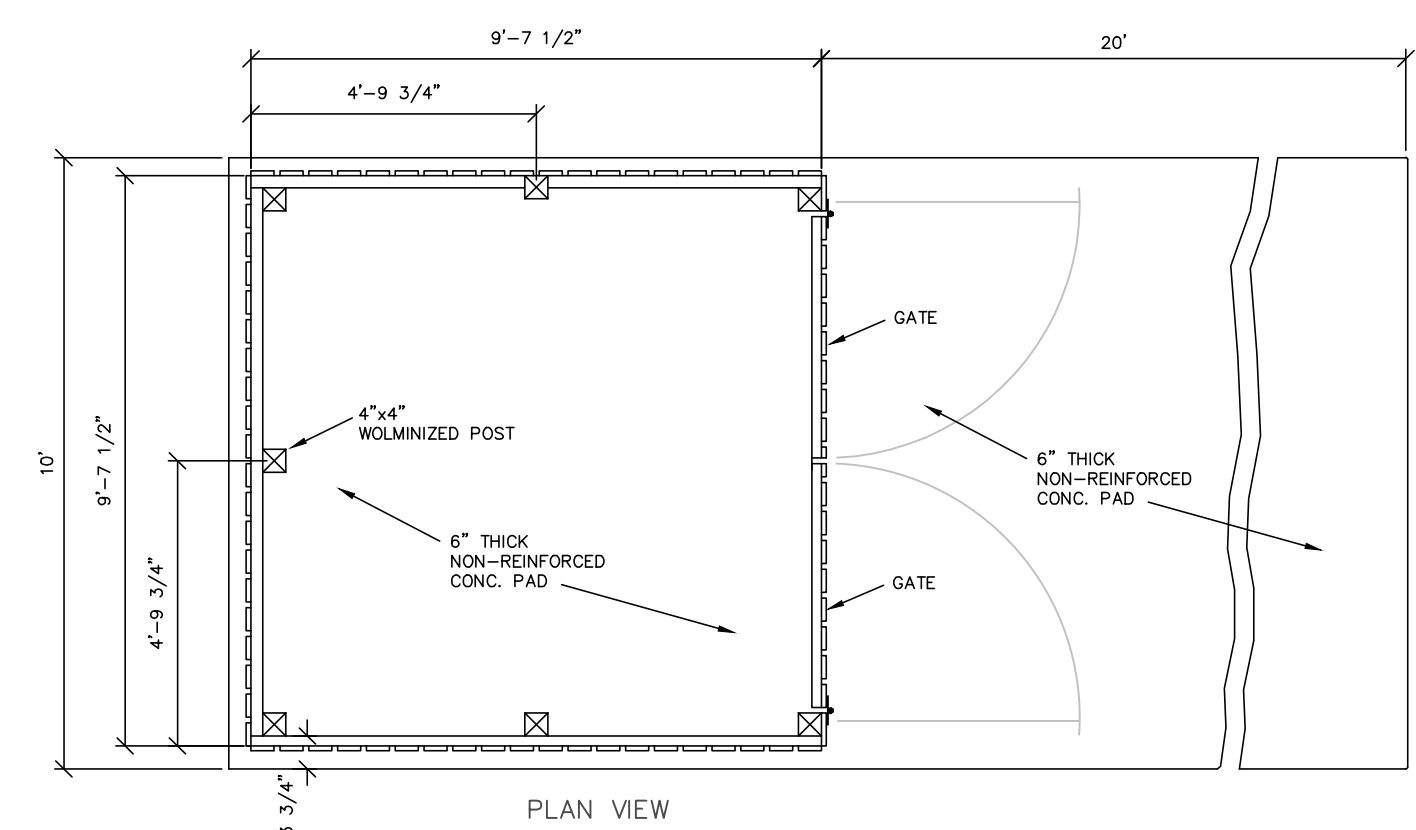


DETAIL OF CONCRETE SIDEWALK
N.T.S.



ROUNDING DETAIL
N.T.S.

NOTE: ALL ELEVATIONS ON CUL-DE-SAC ARE SHOWN AT THE GUTTER LINE



DUMPSTER ENCLOSURE
N.T.S.

MSD BASE MAP - XXXX
MSD P#: 19MSD-00XXX
DETAILS

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Date	7/24/19

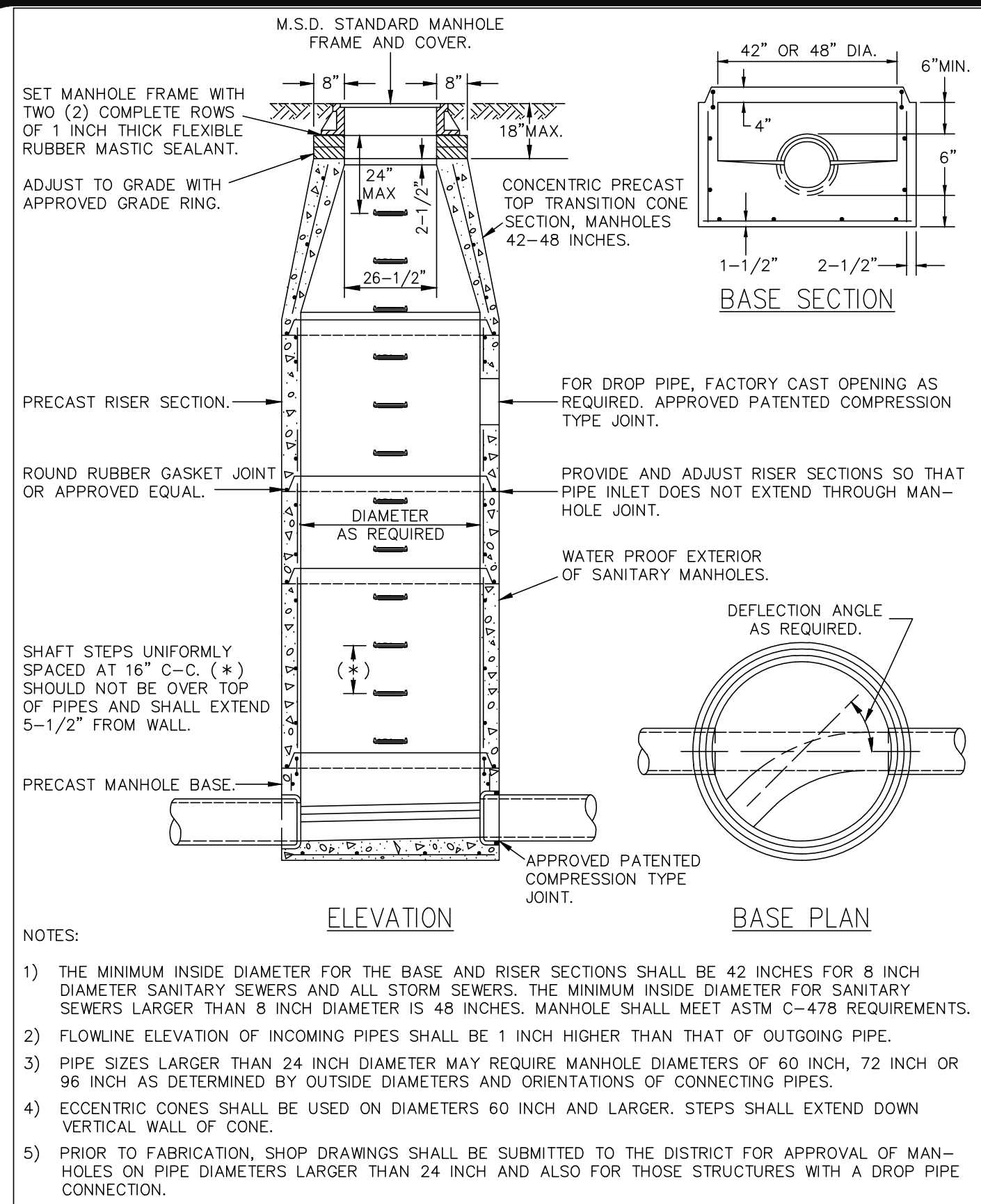
FAMILY PARTNERS LLC
12880 MANCHESTER ROAD
ST. LOUIS, MO 63131
(314) 863-9912

OWNER/DEVELOPER
SEAL
DATE: DAVID L. VONARY, E-26647

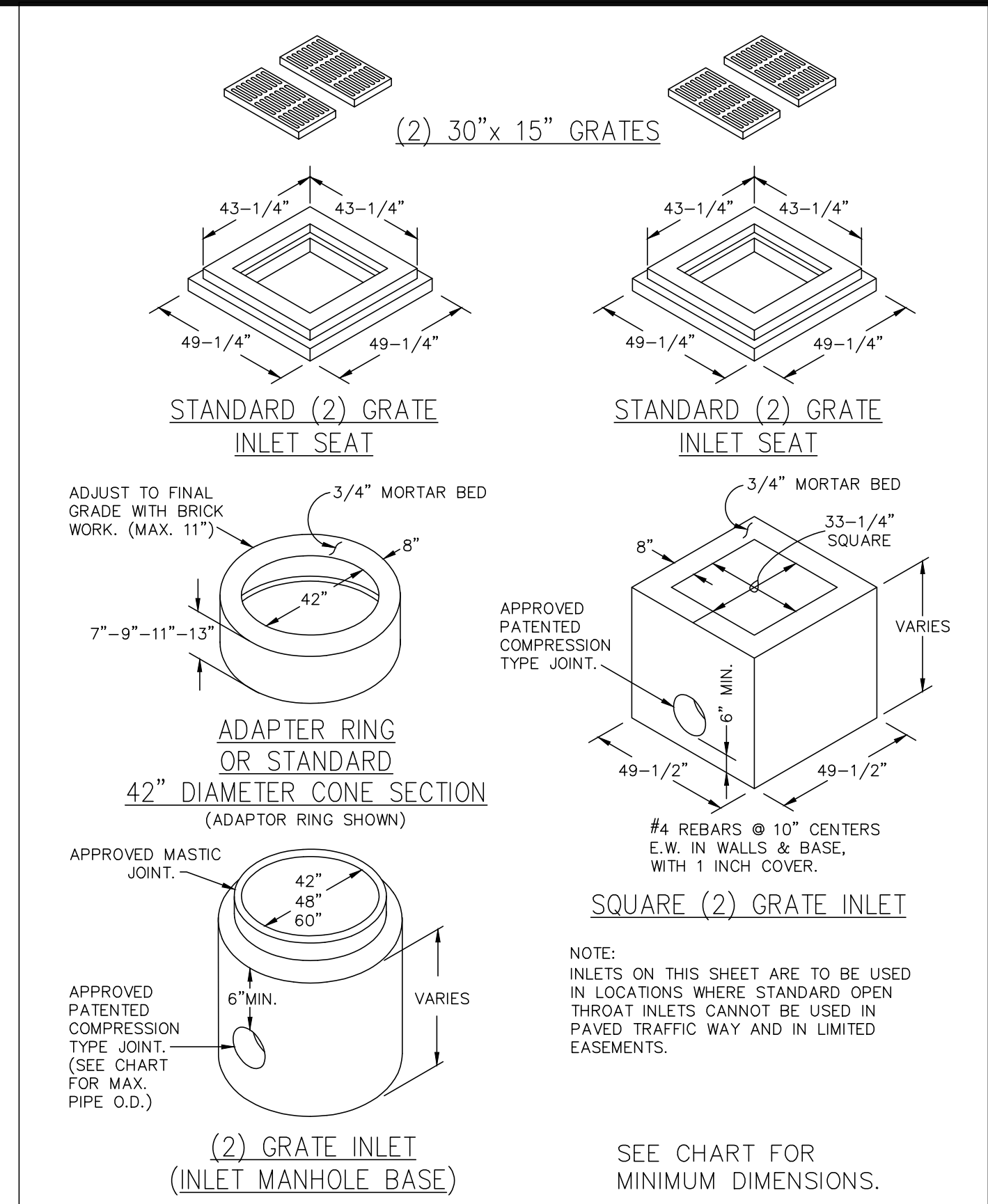
VonArx Engineering
CIVIL ENGINEER
OFFICE: (636) 797-6425
10785 BUSINESS 21, SUITE A
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CERTIFICATE OF AUTHORITY: 0975

FAMILY PARTNERS
IMPROVEMENT PLANS - PHASE 1
MANCHESTER, MO 63021
ST. LOUIS COUNTY

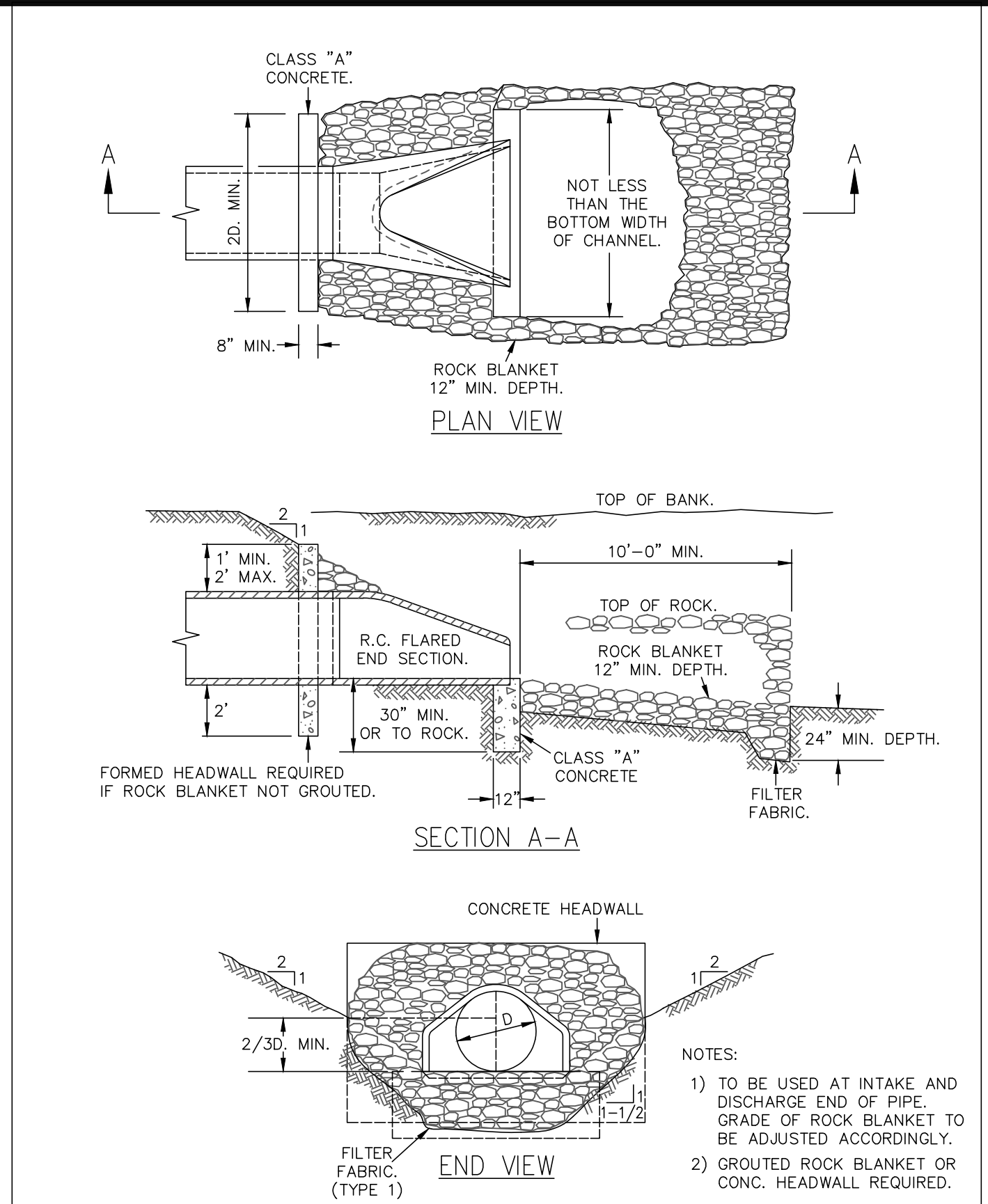
ISSUE DATE
7/24/2019
SCALE
AS NOTED
Job Number
15145
Sheet Number
C8.1



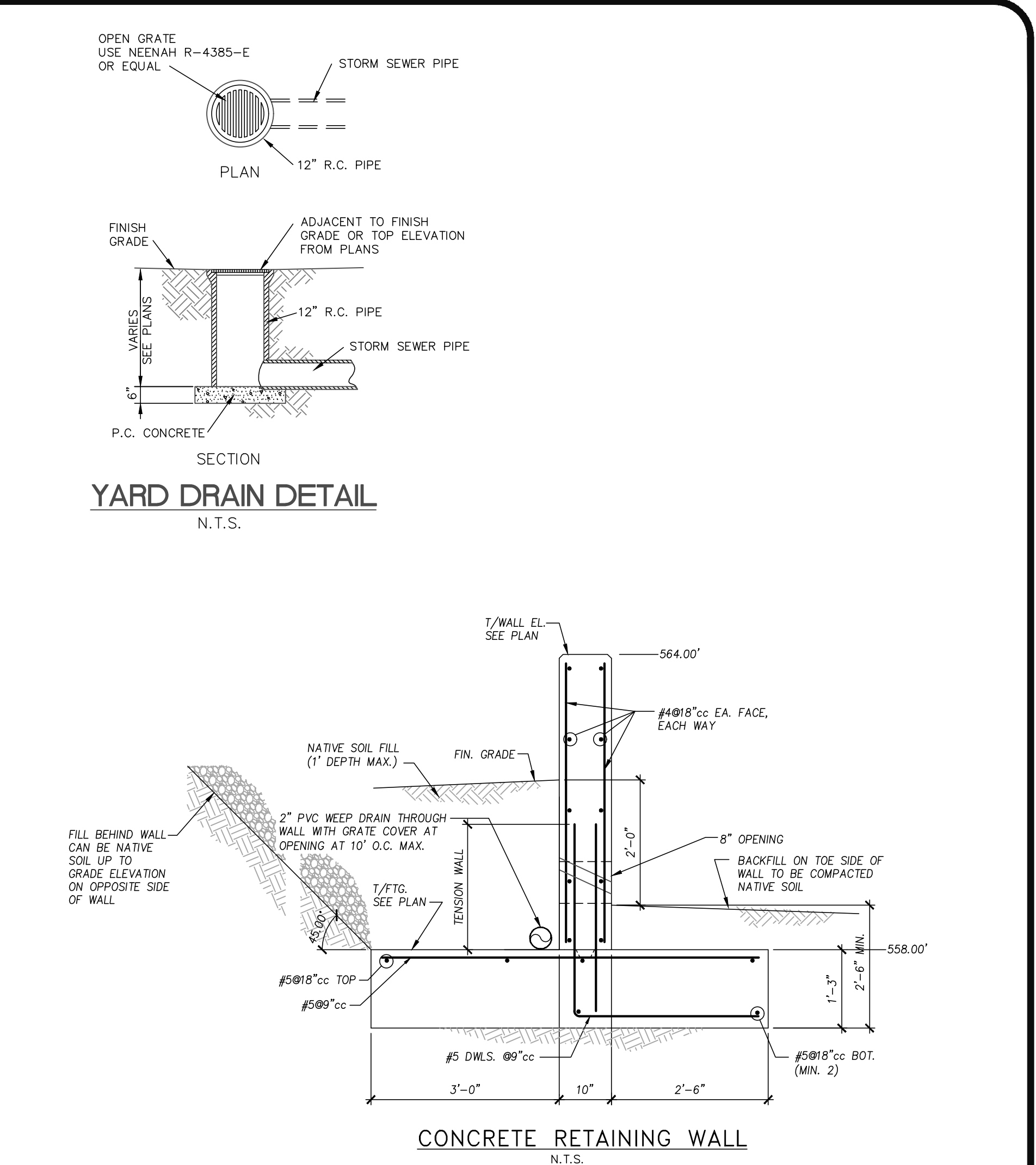
PRECAST CONCRETE MANHOLE	METROPOLITAN ST. LOUIS SEWER DISTRICT <i>Standard Details of Sewer Construction</i>		
	Dr. WSH/SAM Ch. J.C.K.	2009	SHEET 21 (REV)



2 GRATE INLETS PRECAST CONCRETE	METROPOLITAN ST. LOUIS SEWER DISTRICT <i>Standard Details of Sewer Construction</i>		
	Dr. JLG/SAM Ch. J.C.K.	2009	SHEET 35



FLARED END SECTION	METROPOLITAN ST. LOUIS SEWER DISTRICT <i>Standard Details of Sewer Construction</i>		
	Dr. WSH/SAM Ch. J.C.K.	2009	SHEET 61



CONCRETE RETAINING WALL	METROPOLITAN ST. LOUIS SEWER DISTRICT <i>Standard Details of Sewer Construction</i>		
	Dr. WSH/SAM Ch. J.C.K.	2009	SHEET 61

MSD BASE MAP - XXXX
MSD P#: 19MSD-00XXX
DETAILS

Revisions	ISSUE FOR BID
Date	7/24/19

FAMILY PARTNERS LLC
12880 MANCHESTER ROAD
ST. LOUIS, MO 63131
(314) 863-9912

OWNER/DEVELOPER:
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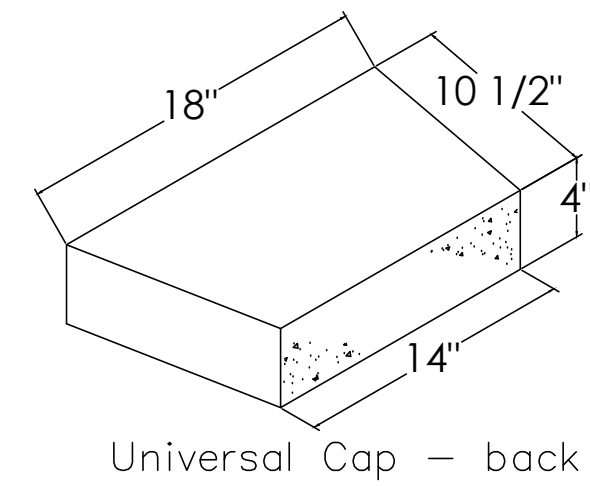
VonArx Engineering
OFFICE: (636) 797-6425
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FAMILY PARTNERS
IMPROVEMENT PLANS - PHASE 1
MANCHESTER, MO 63021
ST. LOUIS COUNTY

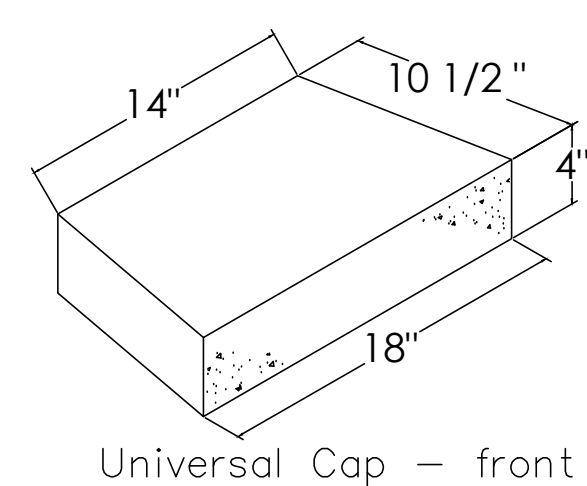
ISSUE DATE	7/24/2019
SCALE	AS NOTED
Job Number	15145
Sheet Number	C8.2

Rockwood Typical Details Classic 8

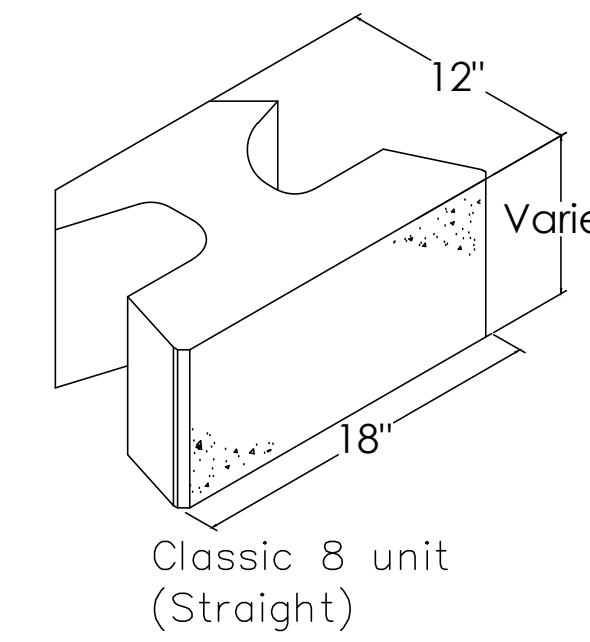
(Dimensions may vary by region)



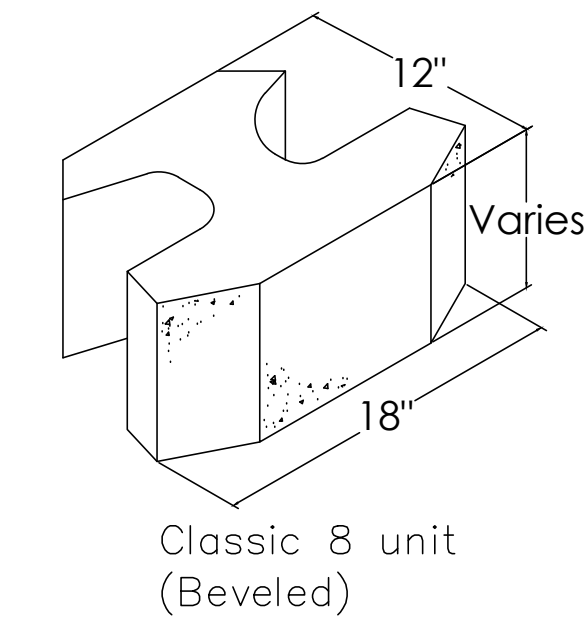
Universal Cap - back



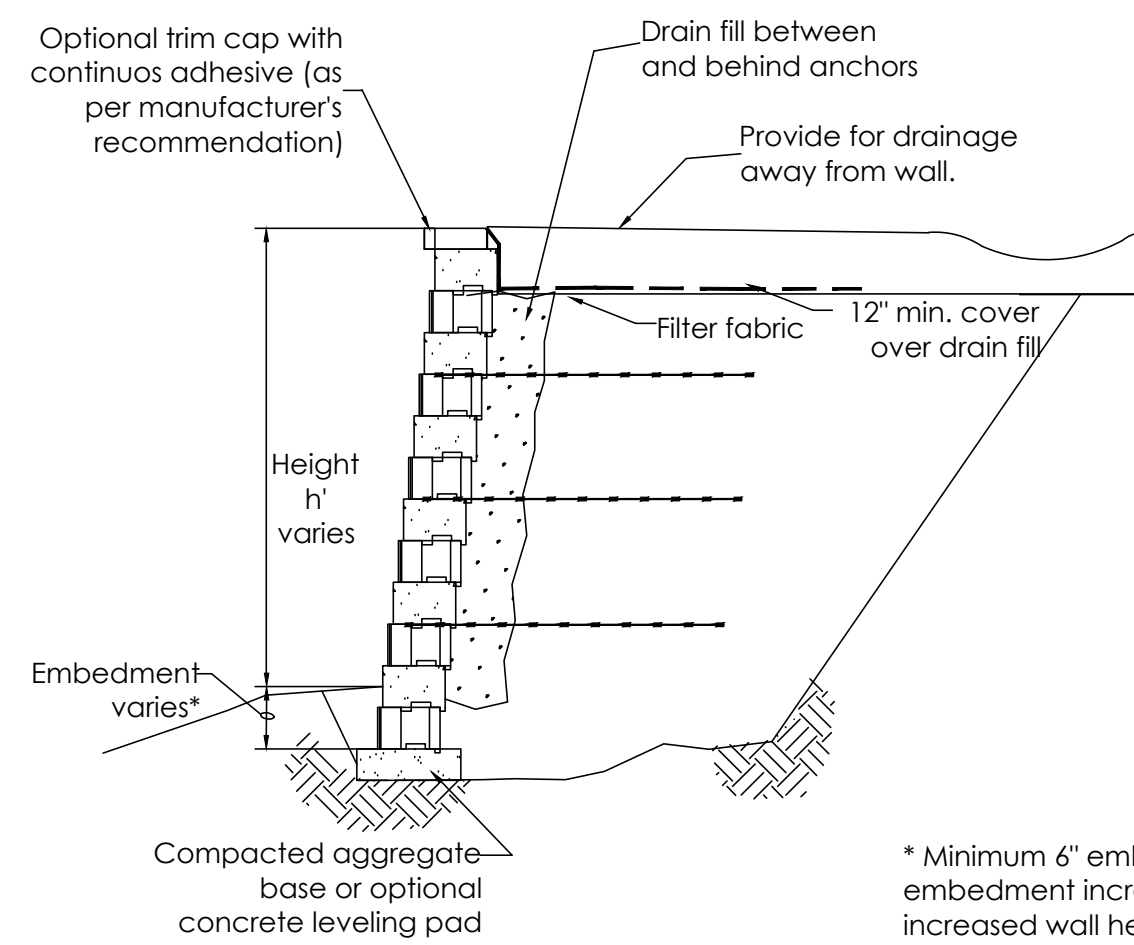
Universal Cap - front



Classic 8 unit
(Straight)

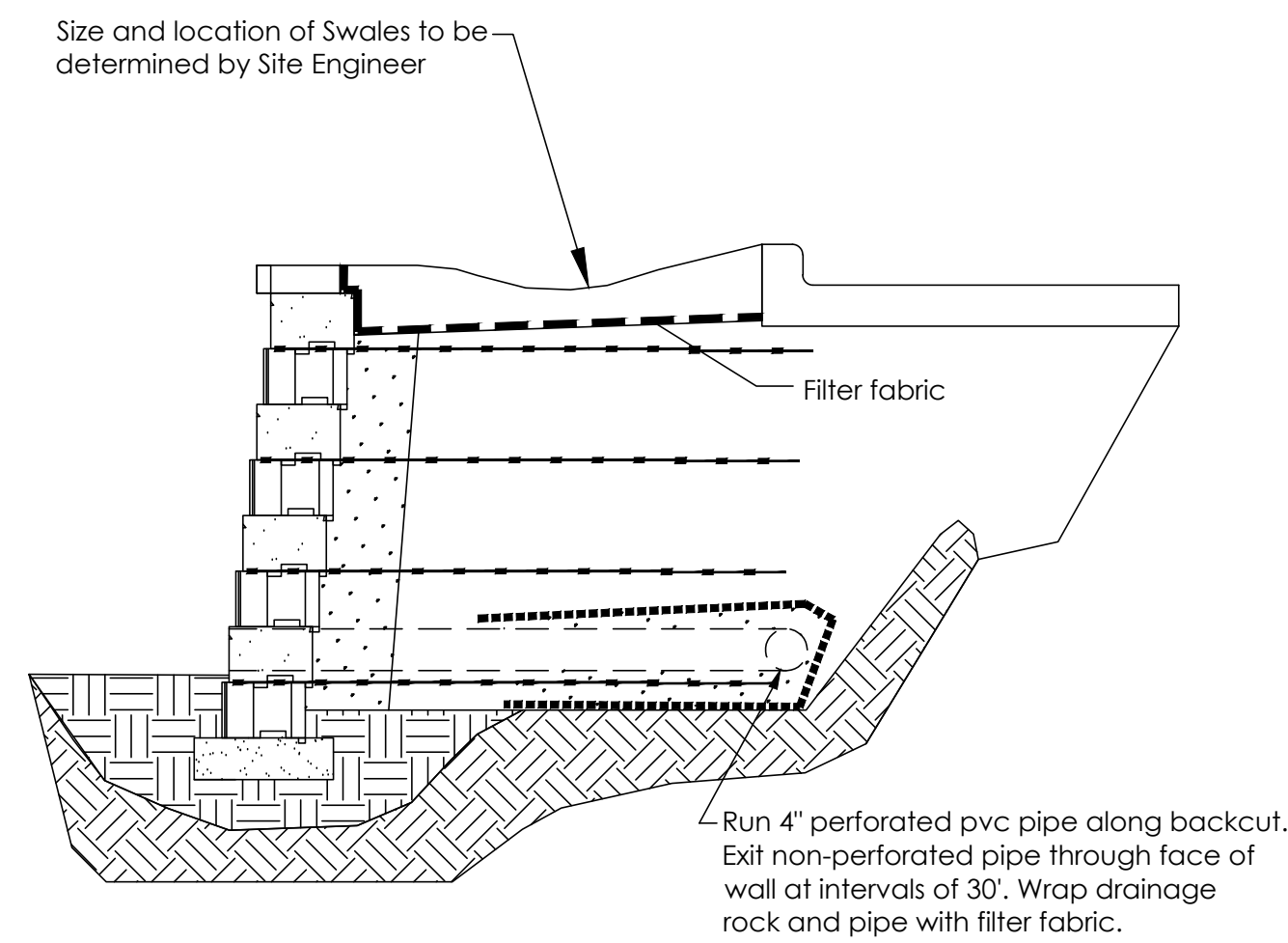


Classic 8 unit
(Beveled)

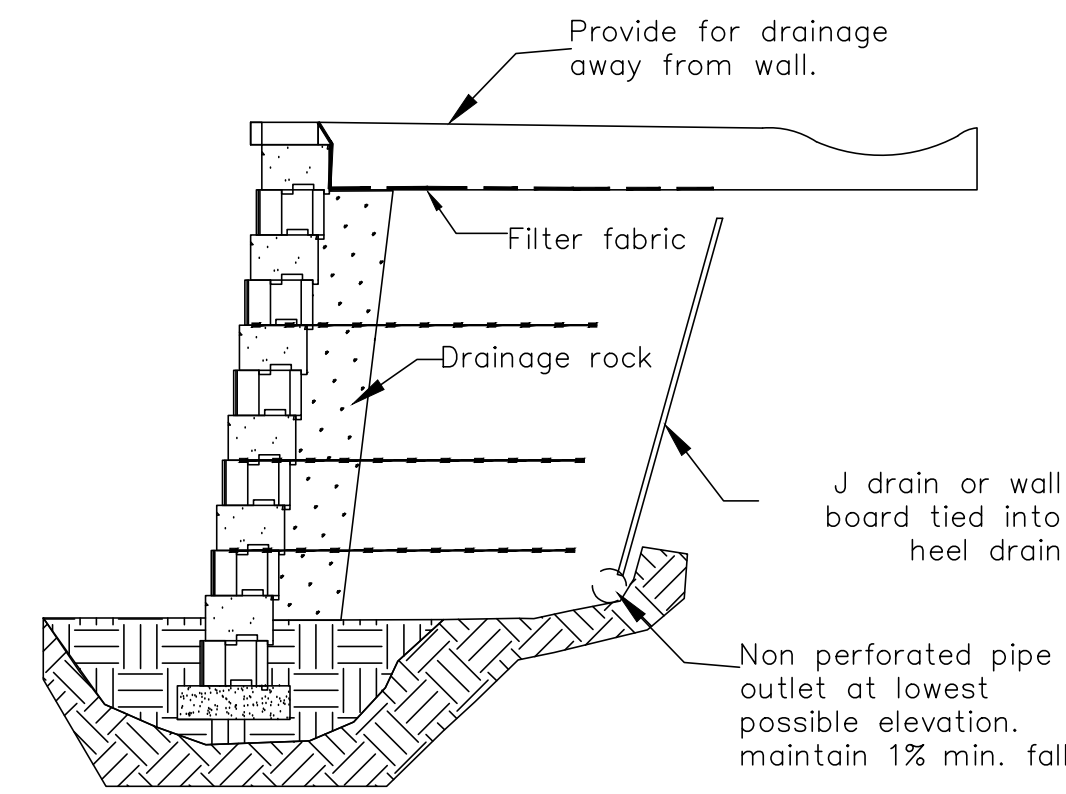


Typical Cross Section

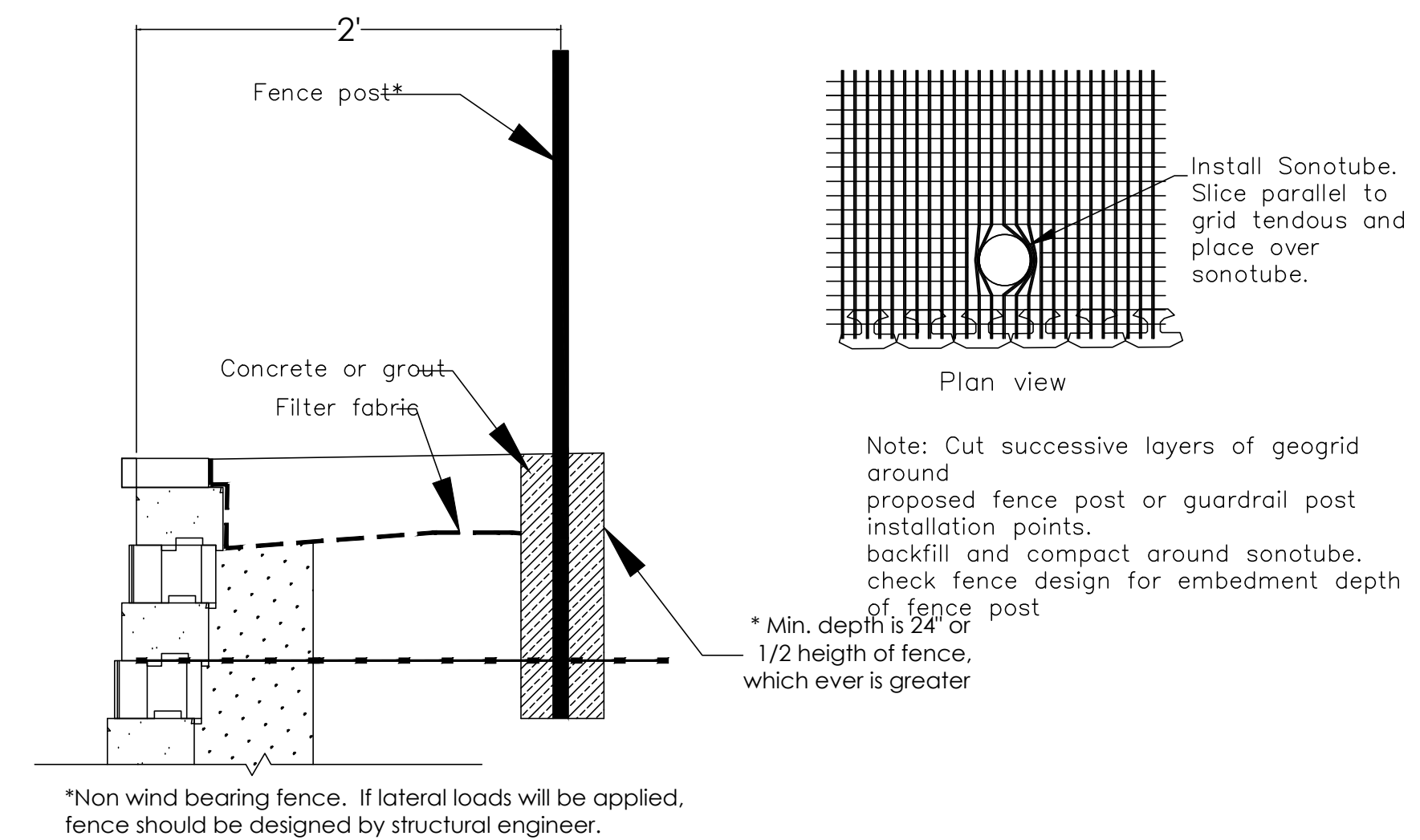
* Minimum 6" embedment. embedment increases with increased wall heights, sloping fills in front and behind wall or poor foundation soils. contact local engineer for guidance.



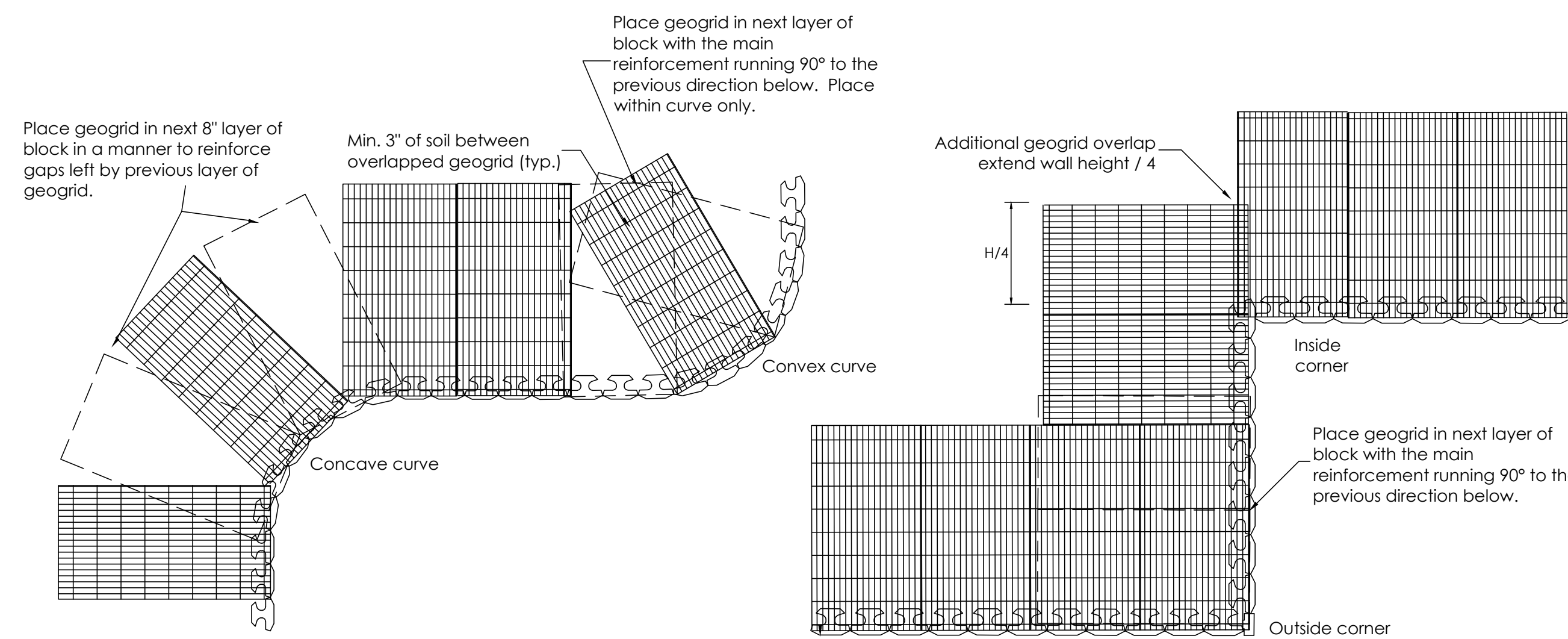
Typical Heel Drain Option
(Seepage / potential seepage)



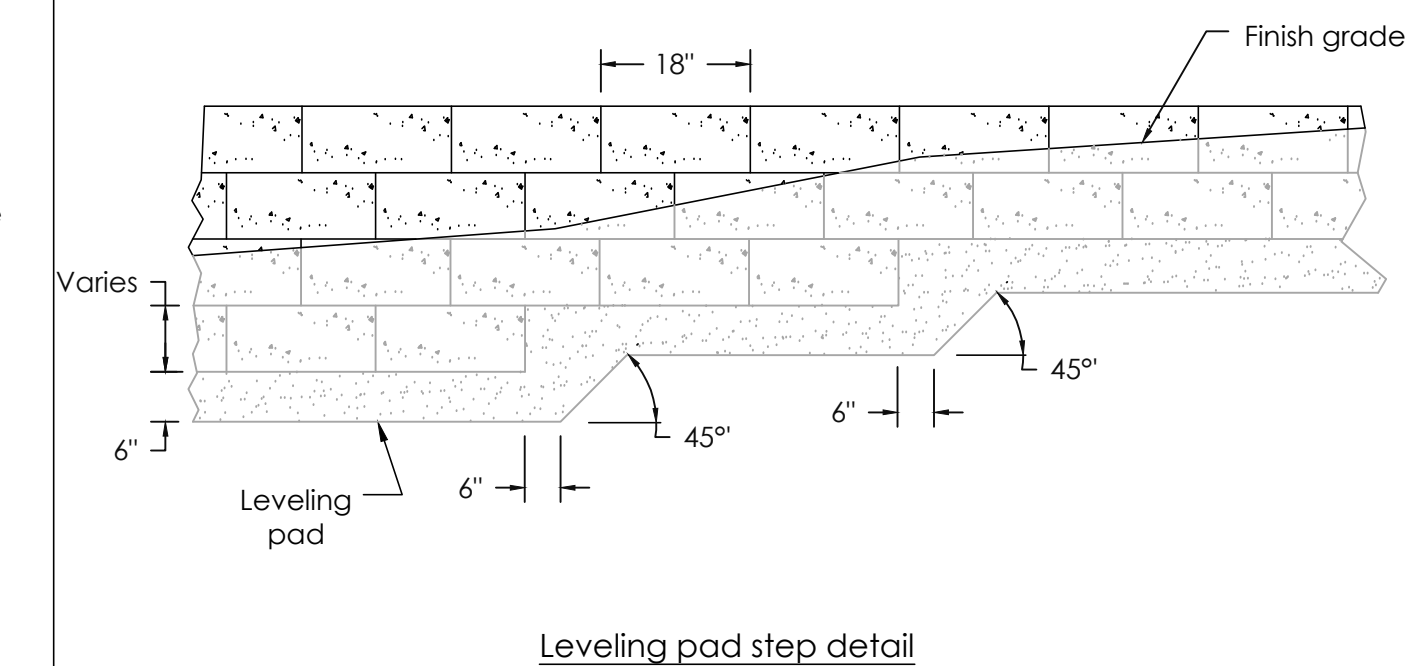
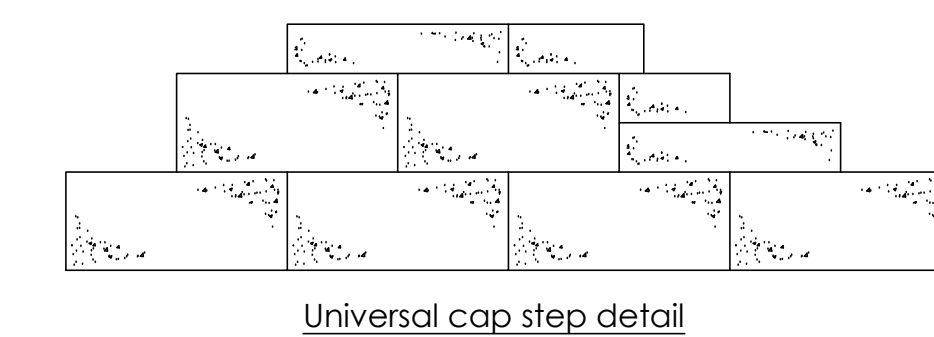
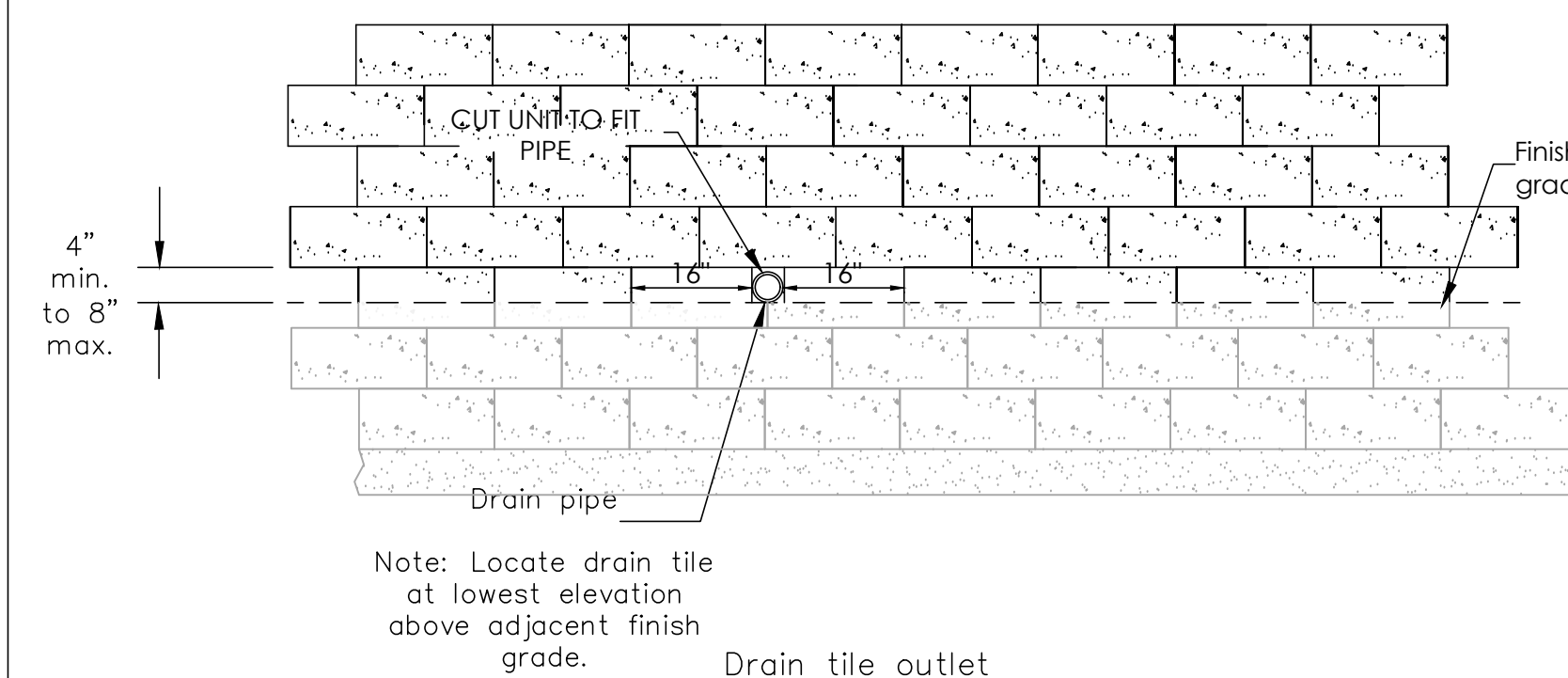
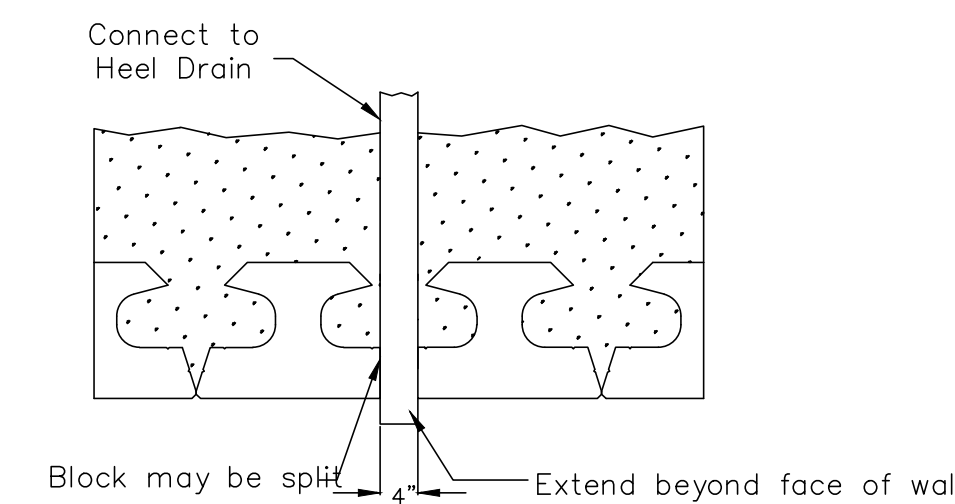
Typical J Drain/Wall Board Option
(Seepage / potential seepage)



Fence Post Near Wall



Geogrid Placement

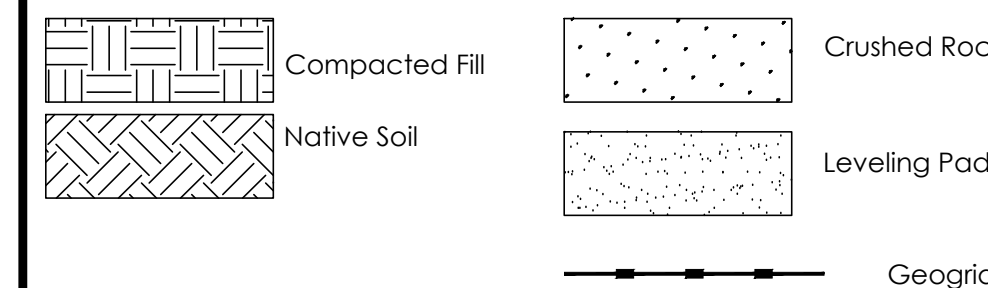


Leveling pad step detail

NOTE: RETAINING WALL DETAILS FOR BIDDING PURPOSES. CONTRACTOR IS REQUIRED TO PROVIDE STRUCTURAL RETAINING WALL DESIGN FOR REVIEW AND PERMIT OF JEFFERSON COUNTY.

Drawing Description:
Classic 8 Typical
Details

Legend



MSD BASE MAP - XXXX
MSD P#: 19MSD-00XXX

RETAINING WALL DETAILS

FAMILY PARTNERS
IMPROVEMENT PLANS - PHASE 1
MANCHESTER, MO 63021
ST. LOUIS COUNTY

ISSUE DATE
7/24/2019

SCALE
NONE

Job Number
15145

Sheet Number

C8.3

OWNER/DEVELOPER:
FAMILY PARTNERS LLC
12880 MANCHESTER ROAD
ST. LOUIS, MO 63131
(314) 863-9912

DATE:
DAVID L. VONARX, E-26647

CIVIL ENGINEER
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