

OFFICE ADDITION & RENOVATIONS

for VSM Abrasives Corporation

PART OF THE NORTHWEST 1/4 OF SECTION 27, TOWNSHIP 47 NORTH, RANGE 3 EAST, AS PER DEED RECORDED IN DEED BOOK 862 PAGE 511 AND DEED BOOK 1657 PAGE 885, EXCEPTING THEREFROM THAT PORTION CONVEYED TO THE CITY OF OFALLON MISSOURI BY SPECIAL WARRANTY DEED RECORDED IN DEED BOOK 3645 PAGE 57 OF THE ST. CHARLES COUNTY LAND RECORDS OFFICE IN ST. CHARLES COUNTY, MISSOURI



LOCATION MAP
N.T.S.

PROPERTY DATA

OWNER = VSM ABRASIVES CORPORATION
ADDRESS = 1012 E. WABASH STREET
 OFALLON, MO 63366
PARCEL ID = 2-0056-0027-00-0009.1100000
SITE AREA = 17.23± ACRES OR 750,891± S.F.
ZONING = "I-1" LIGHT INDUSTRIAL
FIRE DISTRICT = OFALLON FIRE DISTRICT
SCHOOL DISTRICT = FORT ZUMWALT
SEWER DISTRICT = CITY OF OFALLON
WATER SHED = BELLEAU CREEK WATERSHED
FEMA MAP = PANEL NUMBER 29183C0241G, 290316 JAN. 20, 2016
ELECTRIC COMPANY = AMEREN UE
GAS COMPANY = CLEUDE GAS COMPANY
PHONE COMPANY = AT&T
WATER DISTRICT = CITY OF OFALLON

UTILITY CONTACTS

SANITARY SEWER = CITY OF OFALLON WATER & SEWER
 100 N. MAIN ST.
 OFALLON, MO. 63366
 636-379-7626
 CONTACT: MIKE PRATT

STORM SEWER = STORM SEWER
 CITY OF OFALLON
 100 N. MAIN ST.
 OFALLON, MO. 63366
 636-379-7626
 CONTACT: MIKE PRATT

WATER DISTRICT = CITY OF OFALLON WATER & SEWER
 100 N. MAIN ST.
 OFALLON, MO. 63366
 636-379-7626
 CONTACT: MIKE PRATT

FIRE DISTRICT = OFALLON FIRE PROTECTION DISTRICT
 111 LAURA K DRIVE
 OFALLON, MO 63366
 ATTN: FIRE CHIEF THOMAS VINEYARD
 PH. 636-272-3493

ELECTRIC SERVICE = AMEREN UE - Boone Tralls Division
 200 N. CALLAHAN ROAD
 WENTZVILLE, MO. 63385
 DANIEL GRESSMANN
 PH. (636) 639-8336
 CELL (636) 357-2978
 FAX (636) 639-8256
 EMAIL: DGressmann@Ameren.com

GAS SERVICE = SPIRE
 1999 TRADE CENTER DRIVE
 ST. PETERS, MO 63376
 MARK DEMLING
 PH. (314) 575-9090

PHONE SERVICE = TELEPHONE
 CENTURY TEL
 1151 CENTURY TEL DR.
 WENTZVILLE, MO. 63385
 636-352-7281

BENCHMARK

NAVD 88 using the Trimble R6 utilizing the MODOT Network.

SITE BENCHMARK

Elev. 514.13' - "L" cut on corner of concrete pad as shown on this survey.

LAND DESCRIPTION

PARCEL 1:
 A TRACT OF LAND BEING PART OF THE NORTHWEST 1/4 OF SECTION 27, TOWNSHIP 47 NORTH, RANGE 3 EAST, ST. CHARLES COUNTY, MISSOURI, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS: COMMENCING AT AN OLD IRON PIPE MARKING THE COMMON CORNER OF SECTIONS 21, 22, 28, AND 27, SAID OLD IRON PIPE ALSO BEING IN THE CENTERLINE OF WABASH AVENUE (40' WIDE - ASSUMED); THENCE DUE SOUTH ALONG THE COMMON LINE BETWEEN SECTIONS 27 AND 28, 20.00 FEET TO AN IRON PIPE IN THE SOUTHERN RIGHT OF WAY LINE OF WABASH AVENUE; SAID IRON PIPE MARKS THE TRUE POINT OF BEGINNING OF THE TRACT HEREIN DESCRIBED; THENCE SOUTH 89° 16' 54" EAST ALONG SAID RIGHT OF WAY LINE 750.00 FEET TO AN IRON PIPE; THENCE LEAVING SAID RIGHT OF WAY LINE DUE SOUTH 1045.00 FEET TO AN IRON PIPE; THENCE NORTH 89° 16' 54" WEST 750.00 FEET TO AN IRON PIPE IN THE COMMON LINE BETWEEN SECTIONS 27 AND 28; THENCE DUE NORTH ALONG SAID SECTION LINE 1045.00 FEET TO THE POINT OF BEGINNING, AS SURVEYED BY PICKETT, RAY AND SILVER, INC.; EXCEPTING THEREFROM A CERTAIN PARCEL OF LAND CONTAINING 5 ACRES THAT WAS CONVEYED TO VSM ABRASIVES CORPORATION IN GENERAL WARRANTY DEED DATED MARCH 23, 1978 AND RECORDED MARCH 30, 1978 IN BOOK 794, PAGE 1449 OF THE ST. CHARLES COUNTY RECORDS; ALSO EXCEPTING THEREFROM THAT PORT CONVEYED TO THE CITY OF OFALLON, MISSOURI, BY SPECIAL WARRANTY DEED RECORDED SEPTEMBER 17, 2003 IN BOOK 3645, PAGE 57 OF THE ST. CHARLES COUNTY, MISSOURI, RECORDS.

PARCEL 2:
 A TRACT OF LAND BEING PART OF THE NORTHWEST 1/4 OF SECTION 27, IN TOWNSHIP 47 NORTH, RANGE 3 EAST, ST. CHARLES COUNTY, MISSOURI, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS: COMMENCING AT AN OLD IRON PIPE MARKING THE COMMON CORNER OF SECTIONS 21, 22, 28 AND 27 SAID OLD IRON PIPE ALSO BEING IN THE CENTERLINE OF WABASH AVENUE (40' WIDE ASSUMED); THENCE DUE SOUTH ALONG THE COMMON LINE BETWEEN SECTIONS 27 AND 28, 20.00 FEET TO AN IRON PIPE IN THE SOUTHERN RIGHT OF WAY LINE OF WABASH AVENUE; SAID IRON PIPE MARKS THE TRUE POINT OF BEGINNING OF THE TRACT HEREIN DESCRIBED; THENCE SOUTH 89 DEGREES 16' 54" EAST ALONG RIGHT OF WAY LINE 330.00 FEET TO AN IRON PIPE; THENCE LEAVING SAID RIGHT OF WAY LINE DUE SOUTH 660.00 FEET TO AN IRON PIPE; THENCE NORTH 89 DEGREES 16' 54" WEST 330.00 FEET TO AN IRON PIPE IN THE COMMON LINE BETWEEN SECTIONS 27 AND 28; THENCE DUE NORTH ALONG SAID SECTION LINE 660.00 FEET TO THE POINT OF BEGINNING AS SURVEYED BY PICKETT RAY AND SILVER, INC.

FLOOD ZONE NOTES

By graphic plotting only, this property lies within unshaded zone X (areas determined to be outside the 0.2% annual chance floodplain) according to the Flood Insurance Rate Map Panel Number 29183C0241G, (St. Charles County, Missouri) which bears an effective of January 20, 2018.

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LP-1	LIGHTING PLAN

APPROVED

Jeannie Greenlee 09/23/2019

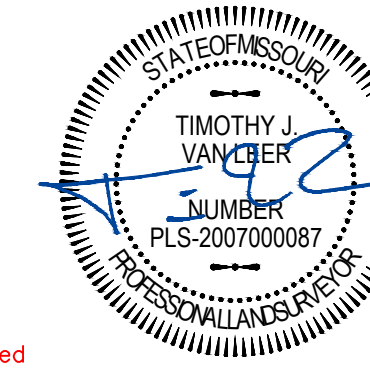
CONSTRUCTION WORK HOURS

* CITY OF OFALLON CONSTRUCTION WORK HOURS PER CITY ORDINANCE 3429 AS SHOWN IN SECTION 500.420 OF THE MUNICIPAL CODE OF THE CITY OF OFALLON ARE AS FOLLOWS:

OCTOBER 1 THROUGH MAY 31
 7:00 A.M. TO 7:00 P.M. MONDAY THROUGH SUNDAY
 JUNE 1 THROUGH SEPTEMBER 30
 6:00 A.M. TO 8:00 P.M. MONDAY THROUGH FRIDAY
 7:00 A.M. TO 8:00 P.M. SATURDAY AND SUNDAY

AS-BUILT MEASUREMENTS

The as-built location of the storm sewer, building additions, lights, curb and sidewalk on this site have been measured and are shown on this set of Final Measurement plans.



Timothy J. Van Leer
 #2007000087
 State of Missouri
 Professional Land Surveyor
 For SC Engineering LLC
 DBA Cochran LS 2007004529 D
 PROJECT NO. SC19-951

Signed: P.L.S./P.E. (Seal placed over signature)

9/16/19 Date

Disclaimer:
 The professional whose signature and personal seal appears above assumes responsibility only for the as-built final measurement plans and therefore disclaims (pursuant to Section 327.411 RSMo) other items on these plans, specifications, estimates, reports, or other documents or instruments not sealed by the undersigned professional relating to or intended to be used for any part or parts of the project to which these plans refer.

NOTE:
 CIVIL ENGINEERING DESIGN CONSULTANTS, 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, METHODS & MATERIALS ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. CIVIL ENGINEERING DESIGN CONSULTANTS, 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.

UTILITY NOTE:
 UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS, RECORDS AND INFORMATION, AND, THEREFORE DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, NON-EXISTENCE, SIZE, TYPE, NUMBER, OR LOCATION OF THESE FACILITIES, STRUCTURES AND UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES, EITHER SHOWN OR NOT SHOWN ON THESE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES SHOWN OR NOT SHOWN ON THESE PLANS. THE UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES SHALL BE LOCATED IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION OR CONSTRUCTION OF IMPROVEMENTS. THESE PROVISIONS SHALL IN NO WAY ABSOLVE ANY PARTY FROM COMPLYING WITH THE UNDERGROUND FACILITY SAFETY AND DAMAGE PREVENTION ACT, CHAPTER 319 RSMo.

NOTES TO CONTRACTOR:
 1. CONTRACTOR/SUBCONTRACTOR SHALL INVESTIGATE, ASCERTAIN AND CONFORM TO ANY AND ALL PERMIT REQUIREMENTS OF THE (ANY) VARIOUS AFFECTED UTILITY COMPANIES AND/OR REGULATORY AGENCIES WITH REGARDS TO MAKING CONNECTIONS TO, OR CROSSINGS OF THEIR FACILITIES, WORKING WITHIN THEIR RIGHT-OF-WAY OR EASEMENTS; INSPECTIONS AND ASSOCIATED MONETARY CHARGES; AND/OR SPECIAL BACKFILL REQUIREMENTS. SUCH INVESTIGATION TO INCLUDE BUT NOT LIMITED TO THE MAKING OF NECESSARY APPLICATIONS AND PAYMENTS OF ALL REQUIRED FEES.
 2. UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS, RECORDS AND INFORMATION, AND, THEREFORE DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, NON-EXISTENCE, SIZE, TYPE, NUMBER, OR LOCATION OF THESE FACILITIES, STRUCTURES AND UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES, EITHER SHOWN OR NOT SHOWN ON THESE PLANS. THE UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES SHALL BE LOCATED IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION OR CONSTRUCTION OF IMPROVEMENTS. THESE PROVISIONS SHALL IN NO WAY ABSOLVE ANY PARTY FROM COMPLYING WITH THE UNDERGROUND FACILITY SAFETY AND DAMAGE PREVENTION ACT, CHAPTER 319 RSMo.
 3. THE LOCATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS OR PROFILES ARE APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR/SUBCONTRACTOR TO VERIFY THE FIELD LOCATIONS, ANTICIPATED CLEARANCES AND THE EXISTENCE OF THE UTILITIES AS SHOWN HEREON, AS PART OF THE INVESTIGATIONS IN THE PARAGRAPH ABOVE.
 4. THE DEMOLITION PLAN IS FOR ILLUSTRATION OF THE GENERAL DEMOLITION ANTICIPATED FOR THIS PARTICULAR SITE. THE DEMOLITION PLAN DOES NOT REPRESENT ALL CONDITIONS THAT MAY BE ENCOUNTERED DURING DEMOLITION/CONSTRUCTION. THE CONTRACTOR SHALL MAKE HIMSELF THOROUGHLY FAMILIAR WITH THE SITE AND THE DEMOLITION/CONSTRUCTION REQUIREMENTS PRIOR TO BIDDING. THE INTENT OF THE DEMOLITION IS TO PROVIDE A CLEAN, STABLE SITE, READY FOR CONSTRUCTION OF THE PROJECT IN CONFORMANCE WITH THE CONSTRUCTION MEANS. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR CONDITIONS THAT ARE IN KEEPING WITH THIS INTENT.
 5. CITY APPROVAL OF ANY CONSTRUCTION SITE PLANS DOES NOT MEAN THAT ANY BUILDING CAN BE CONSTRUCTED ON THE LOTS WITHOUT MEETING THE BUILDING SETBACKS AS REQUIRED BY THE ZONING CODE.
 6. ALL INSTALLATIONS AND CONSTRUCTION SHALL CONFORM TO THE APPROVED ENGINEERING DRAWINGS. HOWEVER, IF THE DEVELOPER CHOOSES TO MAKE MINOR MODIFICATIONS IN DESIGN AND/OR SPECIFICATIONS DURING CONSTRUCTION, THEY SHALL MAKE SUCH CHANGES AT THEIR OWN RISK, WITHOUT ANY ASSURANCE THAT THE CITY ENGINEER WILL APPROVE THE COMPLETED INSTALLATION OR CONSTRUCTION.
 7. IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER TO NOTIFY THE CITY ENGINEER OF ANY CHANGES FROM THE APPROVED DRAWINGS. THE DEVELOPER MAY BE REQUIRED TO CORRECT THE INSTALLED IMPROVEMENT SO AS TO CONFORM TO THE APPROVED ENGINEERING DRAWINGS. THE DEVELOPER MAY REQUEST A LETTER FROM THE CONSTRUCTION INSPECTION DIVISION REGARDING ANY FIELD CHANGES APPROVED BY THE CITY INSPECTOR.
 8. LIGHTING VALUES WILL BE REVIEWED ON SITE PRIOR TO THE FINAL OCCUPANCY INSPECTION.

NOTE:

The underground utilities have been plotted from available sources and their locations must be considered approximate only. The verification of the actual locations of all underground utilities, either shown or not shown on this drawing, shall be the responsibility of the contractor and shall be located prior to grading or construction of improvements.

MISSOURI ONE CALL TICKET NUMBER 182052830

The utilities contacted by Missouri One Call were Ameren Missouri Electric, CTCLC - CenturyLink, Charter Communications, City of Ofallon Water & Sewer and Spire No. East.



PLANNING & DEVELOPMENT DIVISION NUMBER - 18-008860
 PLANS APPROVED OCTOBER 4, 2018



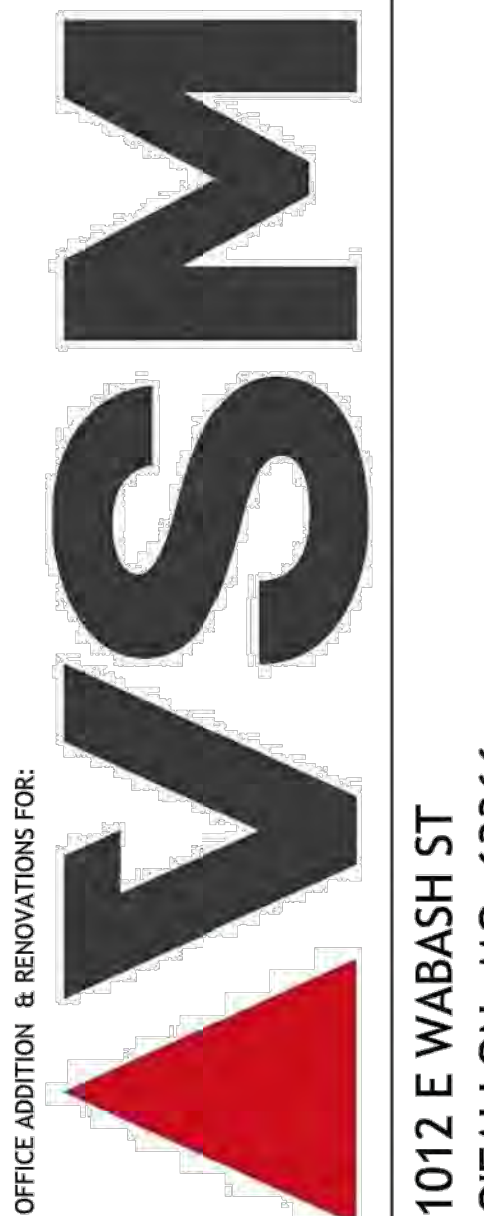
ARCHITECT:
 Mitchell and Hagebeck Architects, Inc.
 D.B.A. M+H Architects
 2150 Schuetz Road, Suite 200
 St. Louis, Missouri 63146
 314-878-3500
 www.mha.us.com
 Corporate License No.: 000614

CONSULTANTS:

Civil:
 Civil Engineering Design Consultants, Inc.
 10820 Sunset Office Drive, Suite 200
 St. Louis, MO 63127
 314-729-1400
 Corporate License No.: 2003004674

Structural:
 SSC Engineering, Inc.
 18207 Edison Ave.
 St. Louis, MO 63005
 636-530-7770
 Corporate License No.: 001244

MEP:
 (Design - Build)



OFFICE ADDITION & RENOVATIONS FOR:

PAUL K. BOYER, P.E. E-28258
 CIVIL ENGINEER
 CEDC LICENSE NO.: 2003004674

DESCRIPTION:
 PROGRESS SET 8-31-18
 PERMIT SET 10-5-18
 ADDENDUM A 10-19-18
 ADDENDUM B 11-27-18

Issue Date: 10-5-18

Job Number: 1823

Drawn By: PKB

Checked By: PKB

Drawing Title:

Title Sheet

C1

LEGEND

EXISTING CONTOURS	----	433	----
PROPOSED CONTOURS	----	433	----
EXISTING STORM SEWER	==	□	==
PROPOSED STORM SEWER	==	■	==
EXISTING SANITARY SEWER	----	○	----
PROPOSED SANITARY SEWER	----	●	----
RIGHT-OF-WAY	----	----	----
EASEMENT	----	----	----
CENTERLINE	----	----	----
EXISTING TREE	⊕	433.28	
EXISTING SPOT ELEVATION	x	433.28	
PROPOSED SPOT ELEVATION	x	433.28	
SWALE	----	----	----
TO BE REMOVED	T.B.R.		
TO BE REMOVED & RELOCATED	T.B.R. & R.		
TO BE USED IN PLACE	U.I.P.		
ADJUST TO GRADE	A.T.G.		
BACK OF CURB	B.C.		
FACE OF CURB	F.C.		
WATER MAIN	----	W	----
GAS MAIN	----	G	----
UNDERGROUND TELEPHONE	----	T	----
OVERHEAD WIRE	----	DHE	----
UNDERGROUND ELECTRIC	----	E	----
SILTATION CONTROL	----	X	----
FIRE HYDRANT	⊕		
POWER POLE	⊕		
WATER VALVE	⊕		
LIGHT STANDARD	⊕		

ABBREVIATIONS

N	NORTH
S	SOUTH
E	EAST
W	WEST
CONC	CONCRETE
ASPH	ASPHALT
PB	PLAT BOOK
DB	DEED BOOK
PG	PAGE
SF	SQUARE FEET
AC	ACRES
ELEV	ELEVATION
FF	FINISH FLOOR
FL	FLOWLINE
PVC	POLYVINYL CHLORIDE PIPE
RCP	REINFORCED CONCRETE PIPE
STM	STORM
SAN	SANITARY
(S)	SAVE
(R)	REMOVE
(T.B.R.)	TO BE REMOVED
(T.B.R.&R.)	TO BE REMOVED AND REPLACED
H.G.	HYDRAULIC GRADE

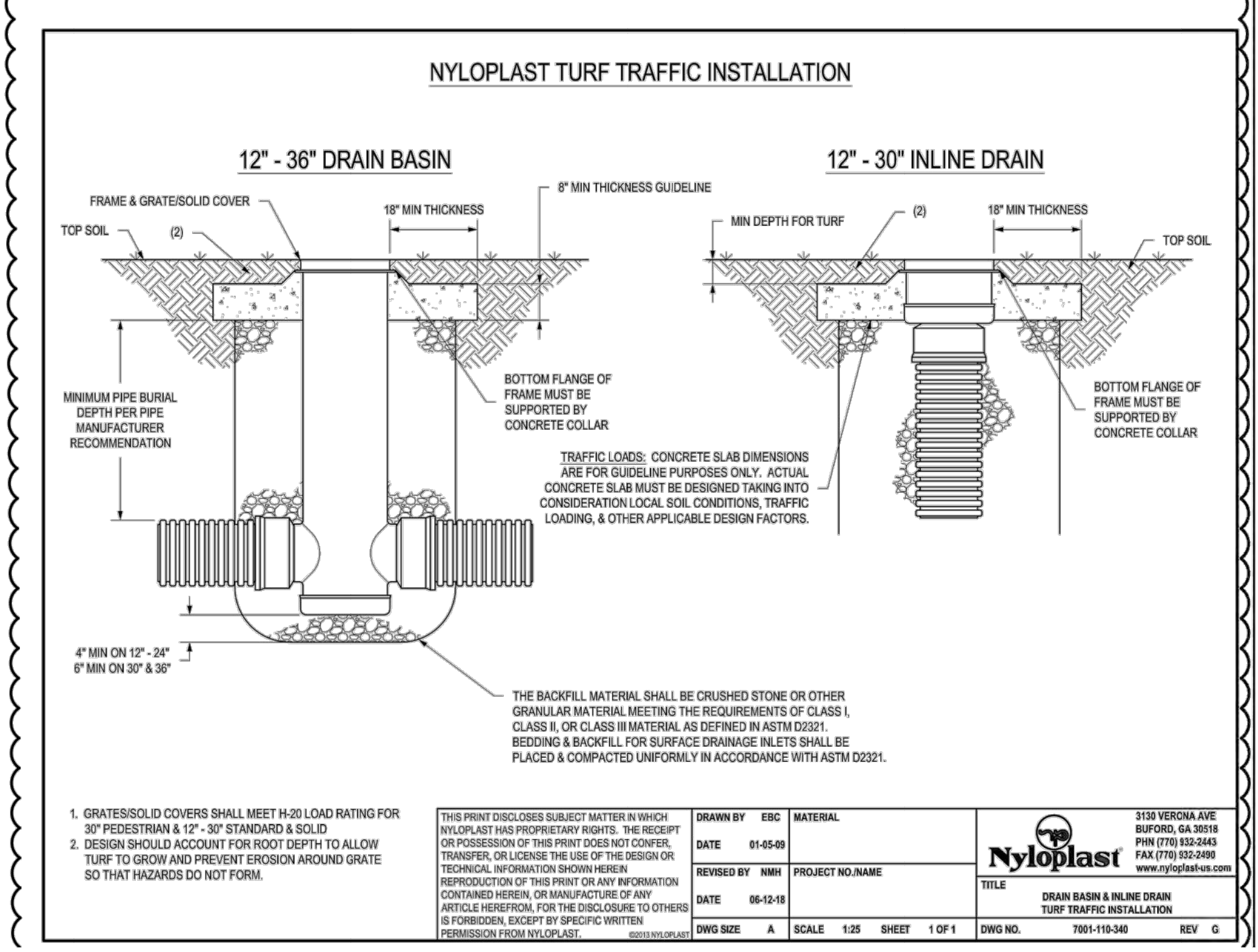
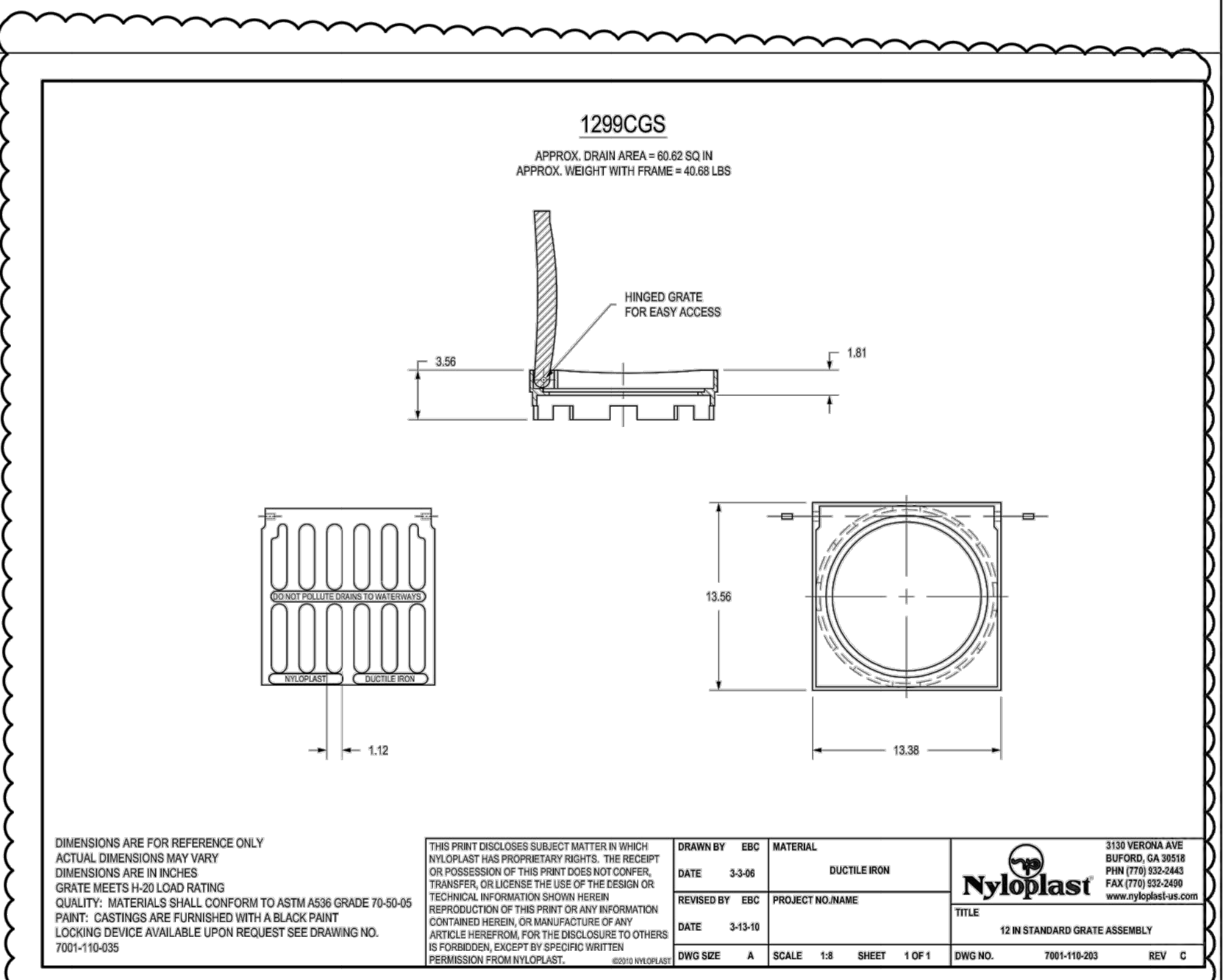
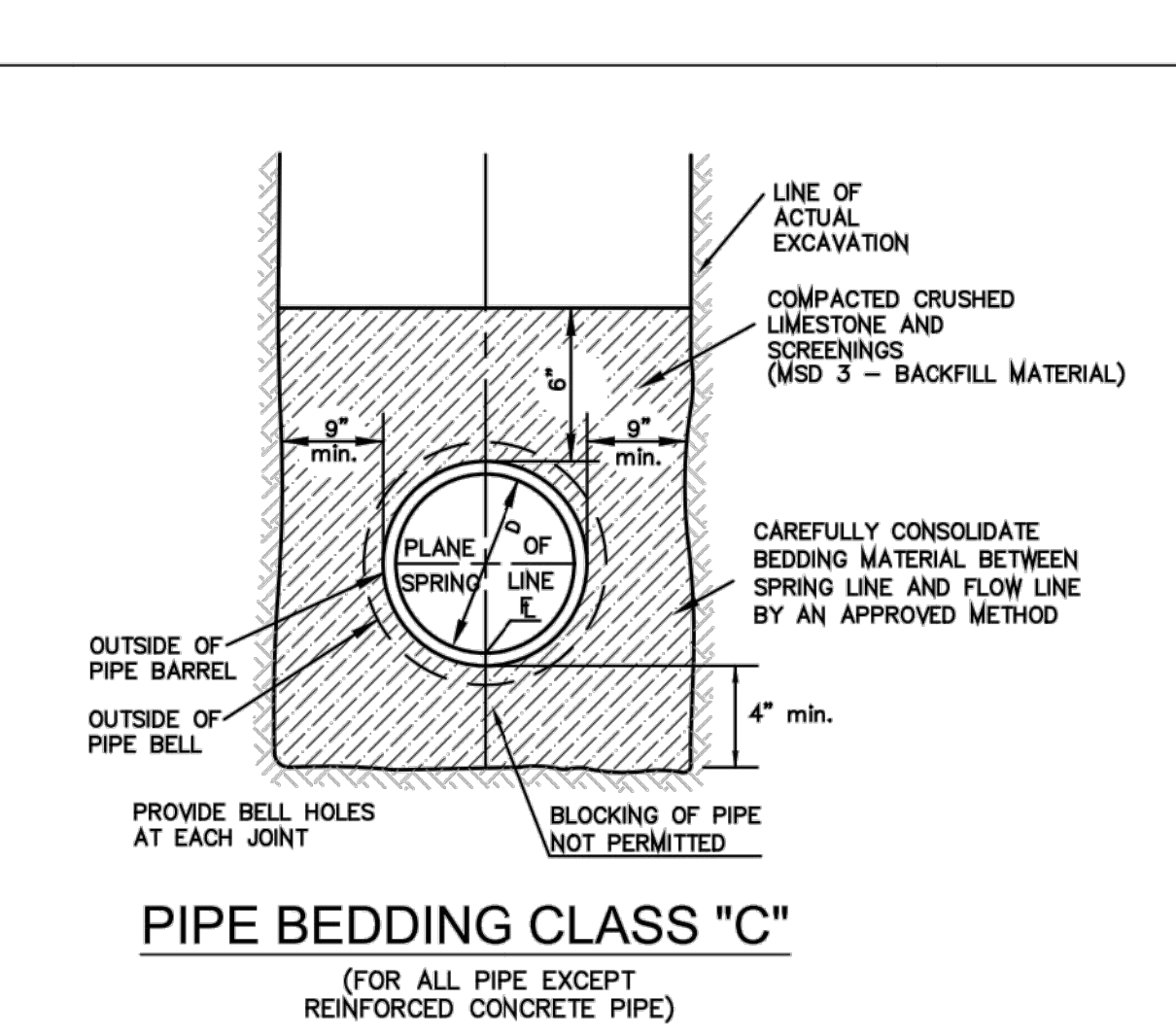
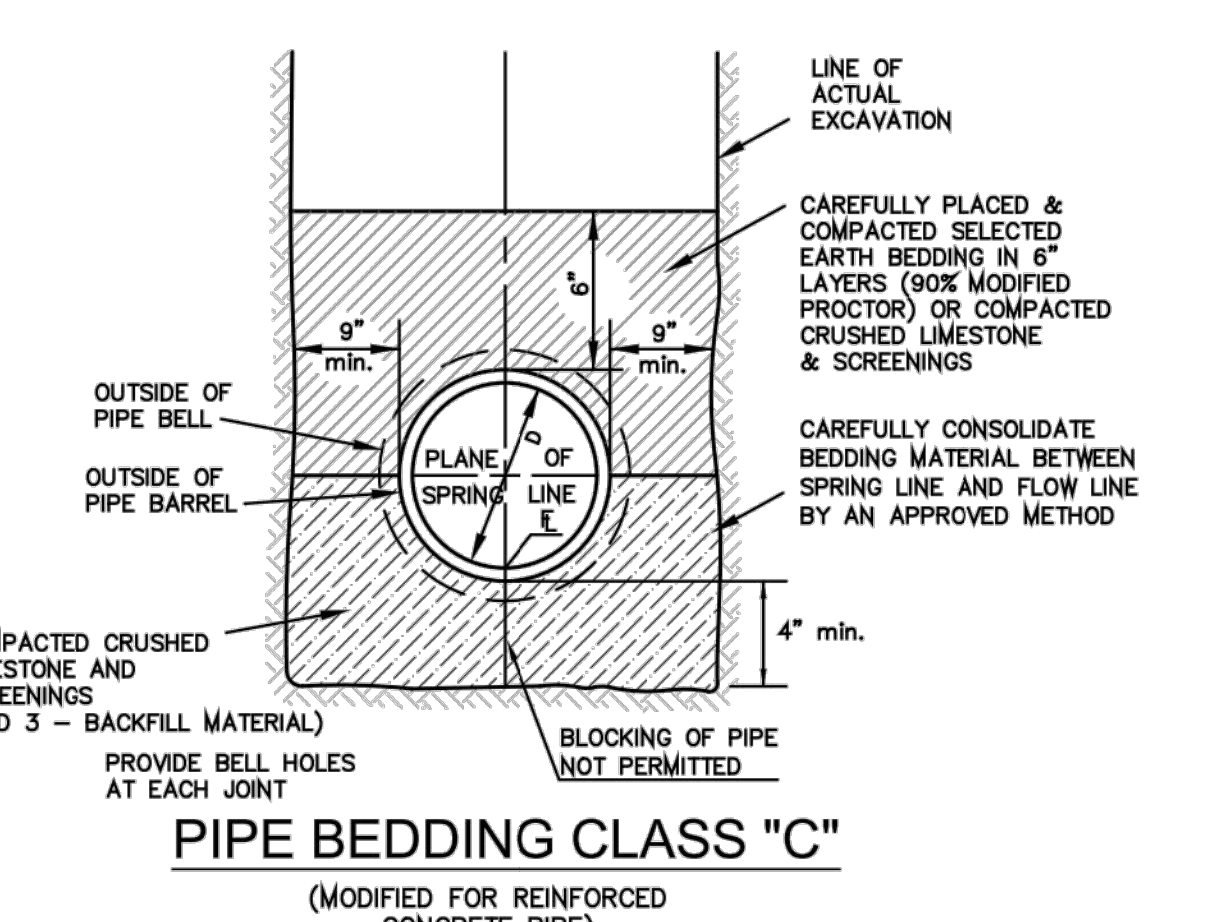
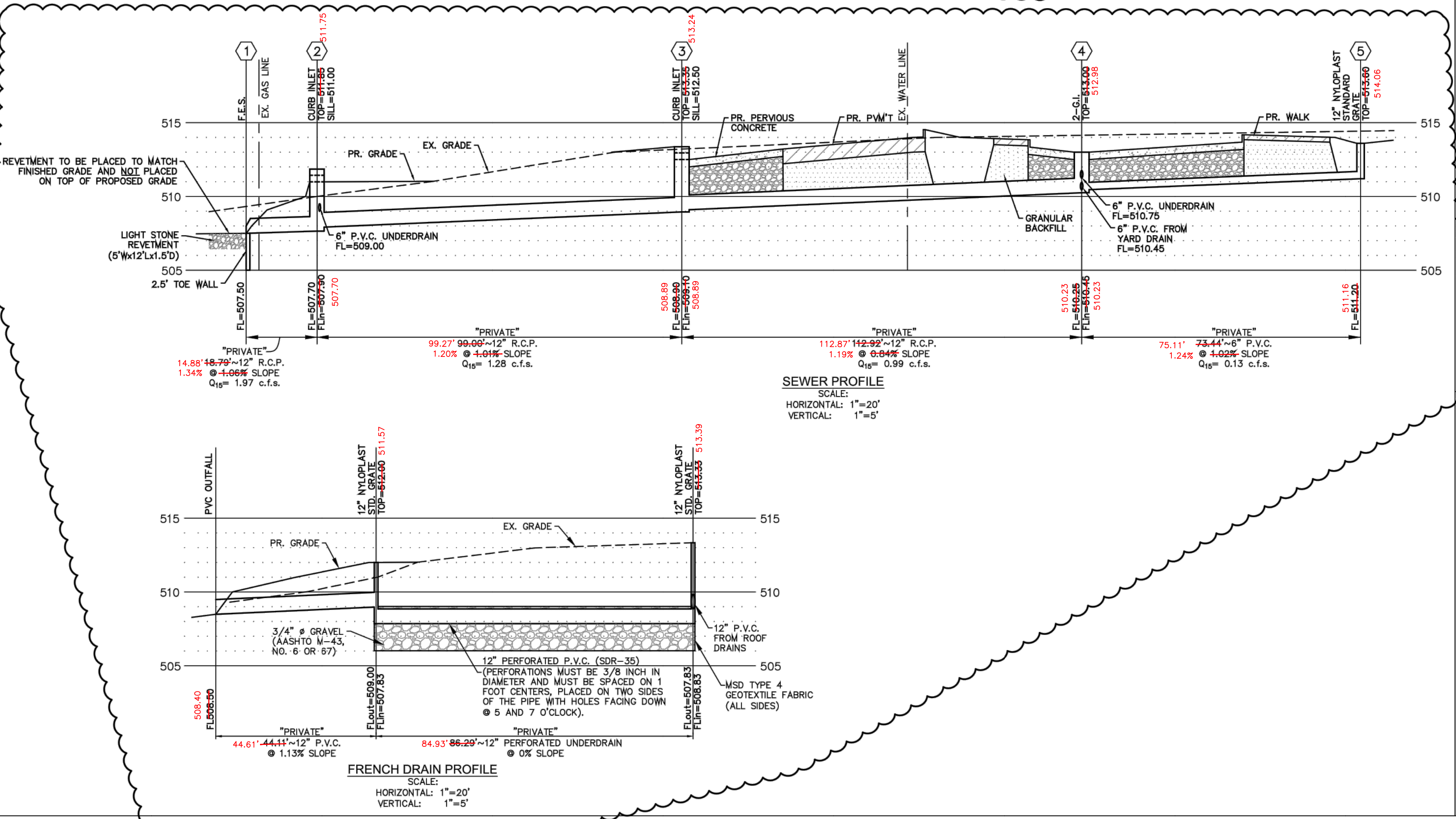
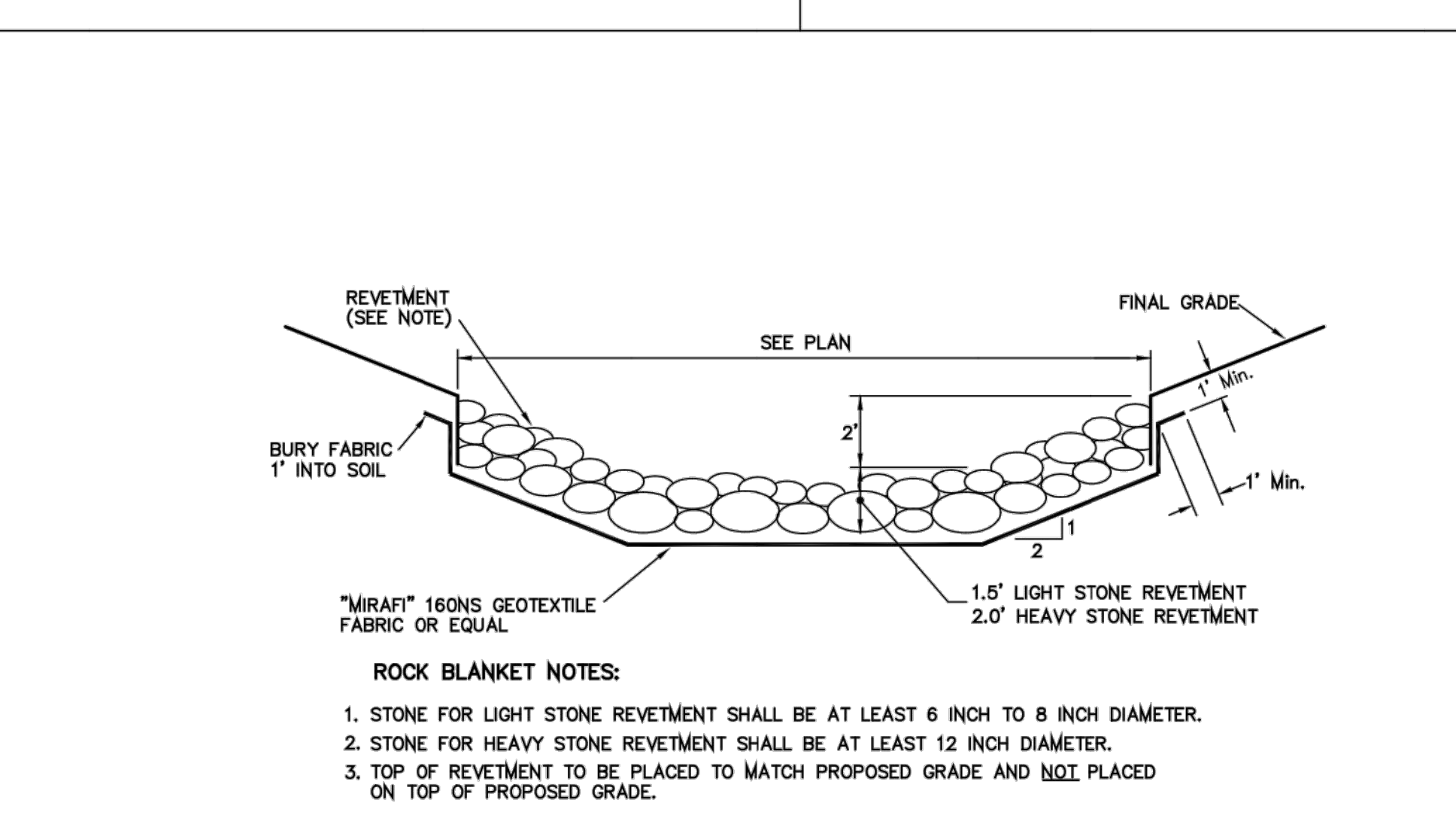
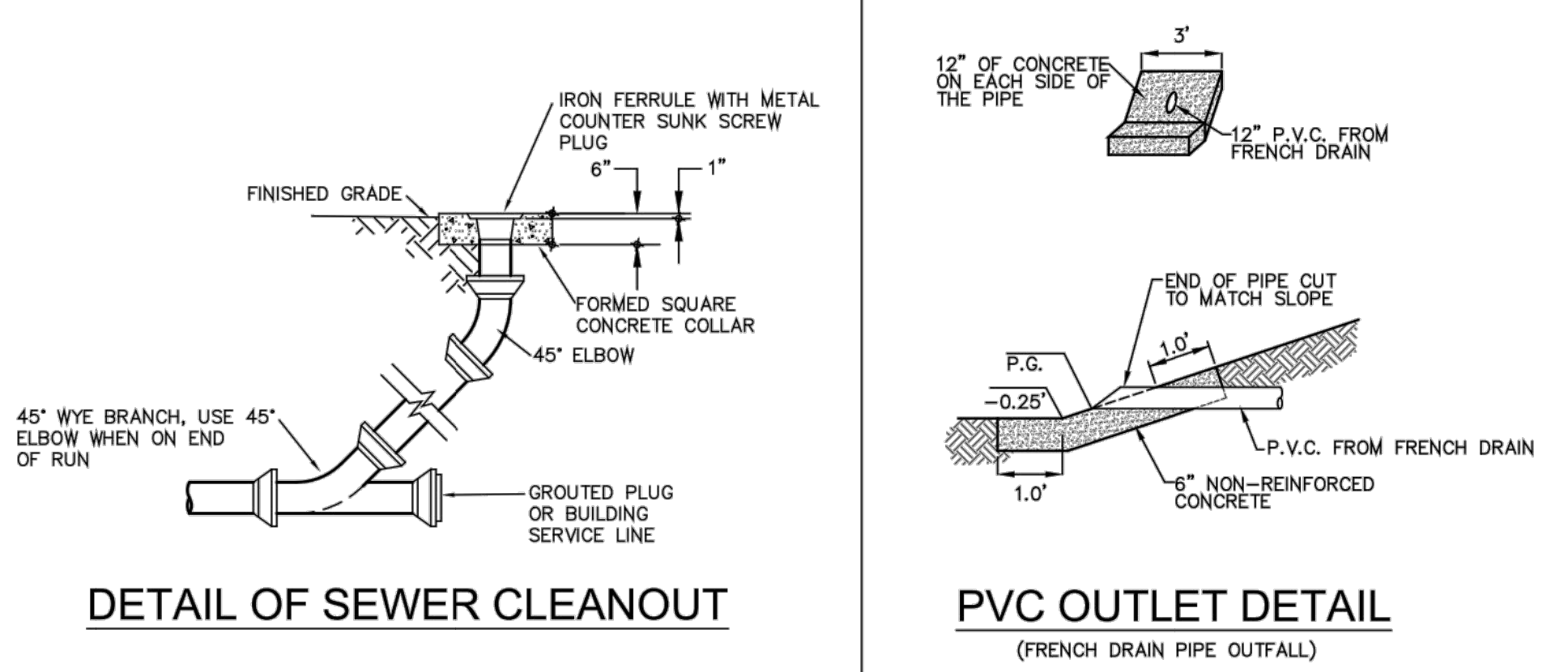
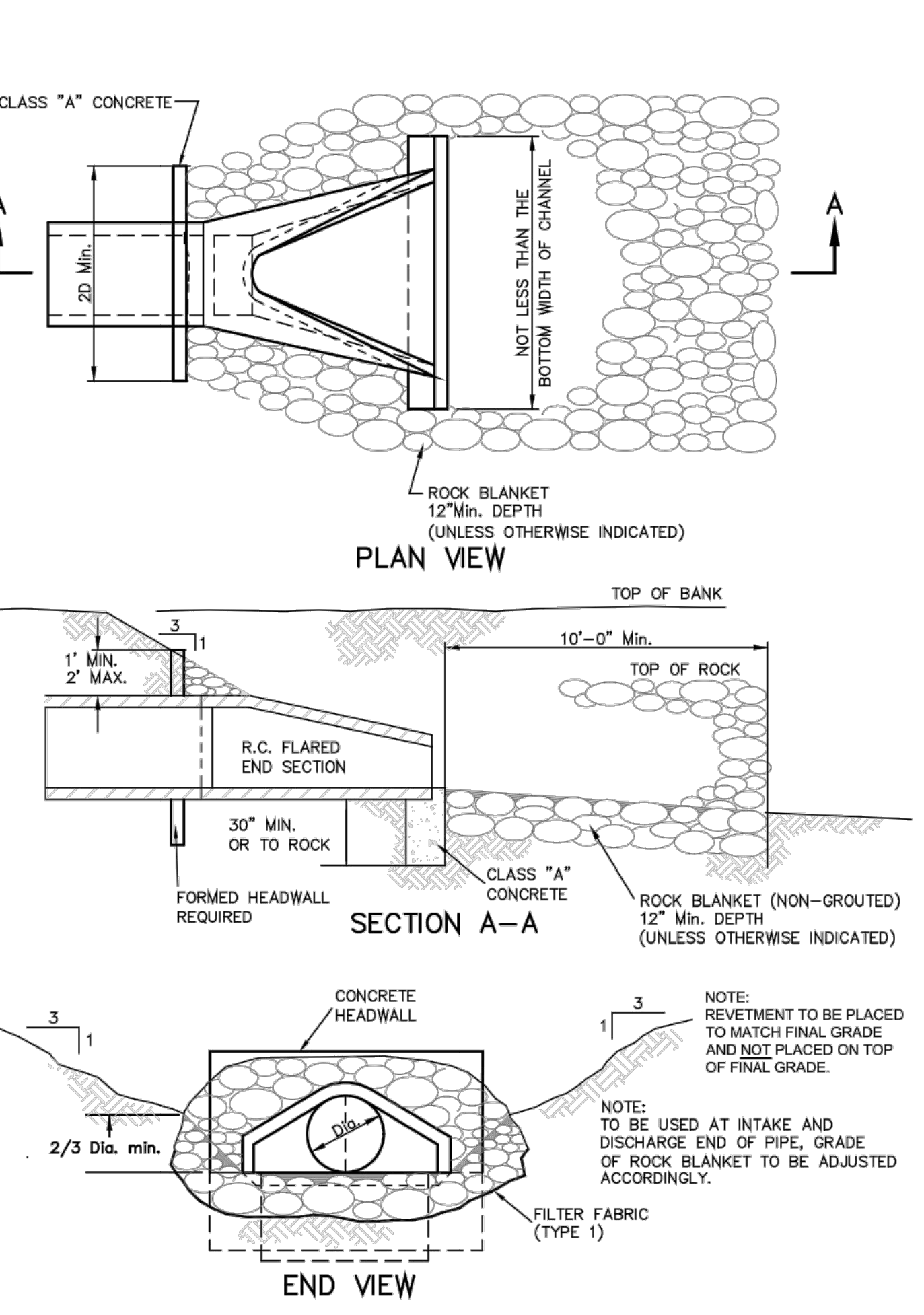
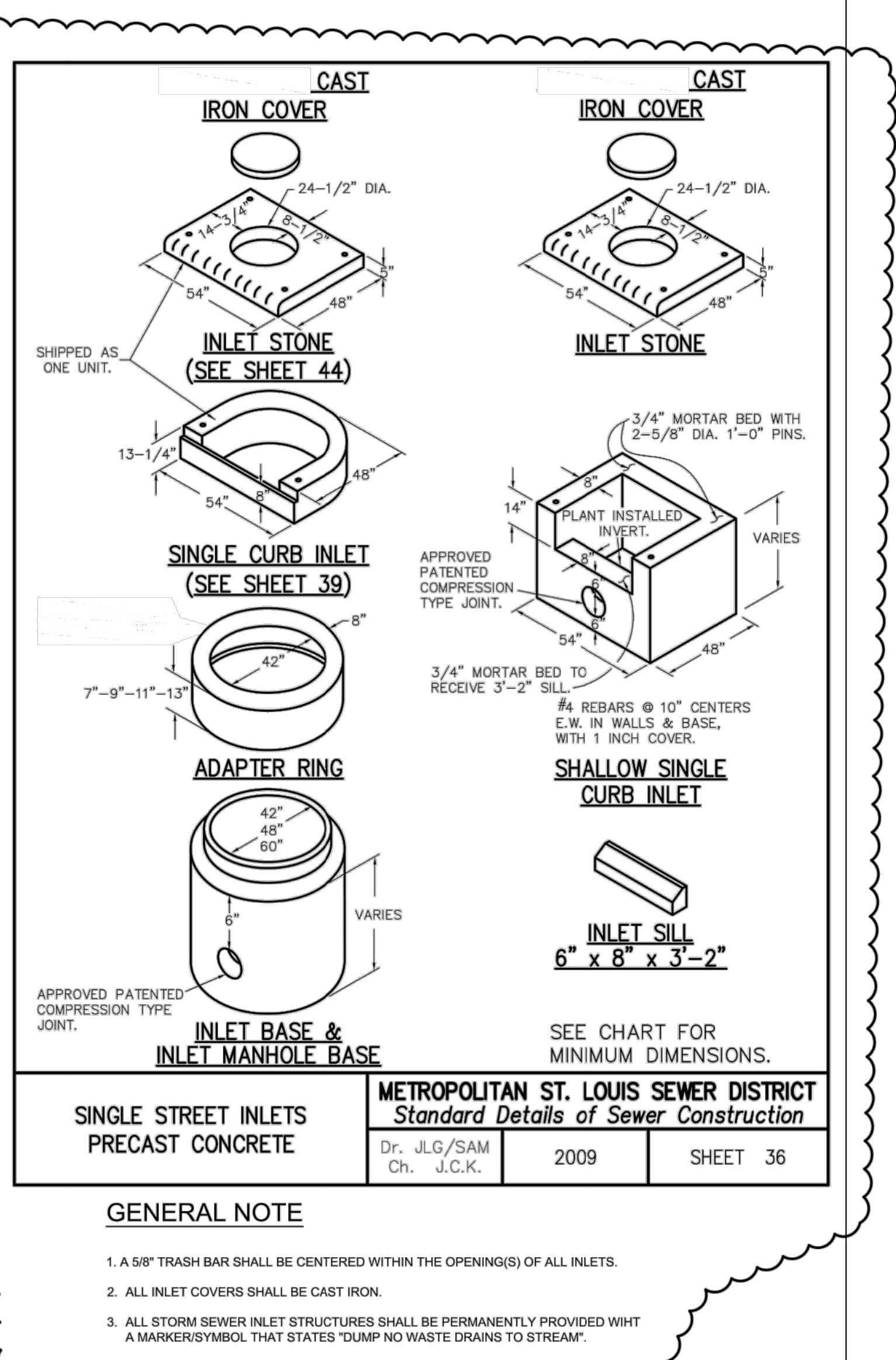
PROPERTY OWNER:
 VSM ABRASIVES CORPORATION
 1012 E. WABASH STREET
 OFALLON, MO 63366
 PH. (636) 272-7432

PREPARED FOR:
 M+H Architects

2150 Schuetz Road, Suite 200
 St. Louis, MO 63146
 314-878-3500
 314-218-2927 direct
 314-878-3900 fax

PREPARED BY:

CEDC 10820 Sunset Office Drive
 Suite 200
 St. Louis, Missouri 63127
CIVIL ENGINEERING 314.729.1400
DESIGN CONSULTANTS Fax: 314.729.1404
 www.cedc.net



15 YR HYDRAULIC CALCULATION SHEET (SEE DRAINAGE AREA PLAN FOR P.I. AND Q (inflow) FOR EACH STRUCTURE)

Project name: FSM Absecon
Project number: 1823
Project Location: OFallon, MO
Date: 9/26/2018

Structure Number	LINE	FLOW LINE ELEVATIONS	Length (ft)	Flowline Grade (ft)	Pipe Size (in.)	Fall Flow Cap. (cfs)	Head Losses						Hydraulic Elevations				Structure Number							
							Total (ft)	Friction (ft)	Bend (ft)	Velocity (ft/s)	Q ₁ (cfs)	Q ₂ (cfs)	Q ₃ (cfs)	Q ₄ (cfs)	Q ₅ (cfs)	Q ₆ (cfs)		Q ₇ (cfs)	Q ₈ (cfs)	Q ₉ (cfs)				
Deck Grate	Deck Grate	End of Pipe	508.34	507.42	156.57	0.0059	8	0.93	0.75	2.15	0.00	0.07	0.05	0.013	0.60	0.00	0.00	509.01	508.69	508.09	509.01	509.84	0.83	Deck Grate
5	5	4	511.20	510.45	75.33	0.0100	6	0.56	0.13	0.66	0.00	0.01	0.00	0.013	0.04	0.01	0.00	511.70	511.32	511.28	511.71	513.60	1.89	5
4	4	3	510.25	509.10	112.92	0.0102	12	3.61	0.99	1.36	0.02	0.02	0.03	0.09	0.03	0.00	0.03	511.25	510.19	510.10	511.28	513.00	1.72	4
3	3	2	508.90	507.90	99.00	0.0101	12	3.59	1.28	1.63	0.50	0.04	0.05	0.013	0.13	0.03	0.01	509.90	509.03	508.90	509.94	512.50	2.56	3
2	2	1	507.70	507.50	18.79	0.0106	12	3.69	1.97	2.51	0.45	0.19	0.19	0.013	0.06	0.09	0.02	508.70	508.56	508.50	508.81	511.00	2.19	2

FORMULAS:
MEAN FULL FLOW VELOCITY: $V = Q_{avg} / A_{flow}$
FRICTION LOSS (ft): $H_f = 2.47 n^2 (V^{1.48}) / R^{4.75}$
VELOCITY HEAD: $V_h = V^2 / 2g$
JUNCTION LOSSES (JUNC): $H_{junc} = Q_{in} V_{in} / \sum Q_{out} V_{out}$
BEND LOSSES (BEND): $H_{bend} = (V^2 / 2g) \times \text{ANGLE COEFFICIENT}$

Notes:
1. IF MORE THAN ONE INCOMING LINE, CALCULATE EACH BEND LOSS AND ADD TOGETHER.
2. NO STRUCTURE LOSSES TO BE CALCULATED AT A DROP.
3. IF $Q_{in} > Q_{out}$, NO JUNCTION LOSSES TO BE CALCULATED.

Note:
Stormwater design is based on the Rational Method per City of Ofallon Government Code Chapter 405, Article V
Runoff Factors
1.87 c.f.s./acre for pervious areas
3.85 c.f.s./acre for impervious areas

NOTE: AS-BUILT ELEMENTS ARE SHOWN AND NOTED IN RED ABOVE.

