

# CONSTRUCTION PLANS FOR ALTEC DESIGN ASSURANCE CITY OF ST. JOSEPH BUCHANAN COUNTY, MISSOURI



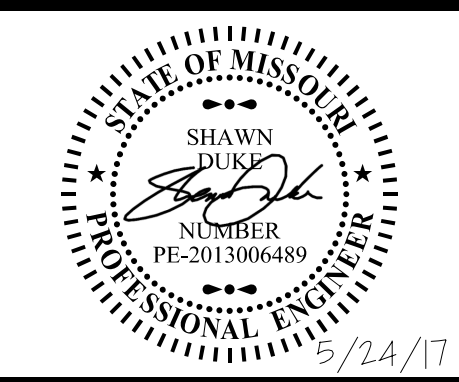
MISSOURI ONE-CALL SYSTEM, INC.

**UTILITY WARNING**

THE UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND/OR RECORDS OBTAINED. THE SURVEYOR MAKES NO GUARANTEE THAT THE UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED.

INDEX TO SHEETS

- C1.0 TITLE SHEET
- C1.1 GENERAL NOTES
- C2.0 EXISTING CONDITIONS, DEMOLITION AND REMOVALS PLAN
- C2.1 SITE AND DIMENSION PLAN
- C2.2 GRADING PLAN
- C2.3 EROSION CONTROL PLAN
- C2.4-C2.5 SPOT ELEVATION PLAN
- C2.6 UTILITY PLAN
- C2.7 STORM SEWER PLAN
- C3.0-C3.2 DETAILS



**ALTEC DESIGN ASSURANCE**  
**TITLE SHEET**

**SAINT JOSEPH, MISSOURI**

**SNYDER & ASSOCIATES**  
ENGINEERS & PLANNERS, INC.    www.snyder-associates.com

802 FRANCIS STREET  
ST. JOSEPH, MO 64501    MARYVILLE, MO 64468  
816-364-5222    660-582-8888

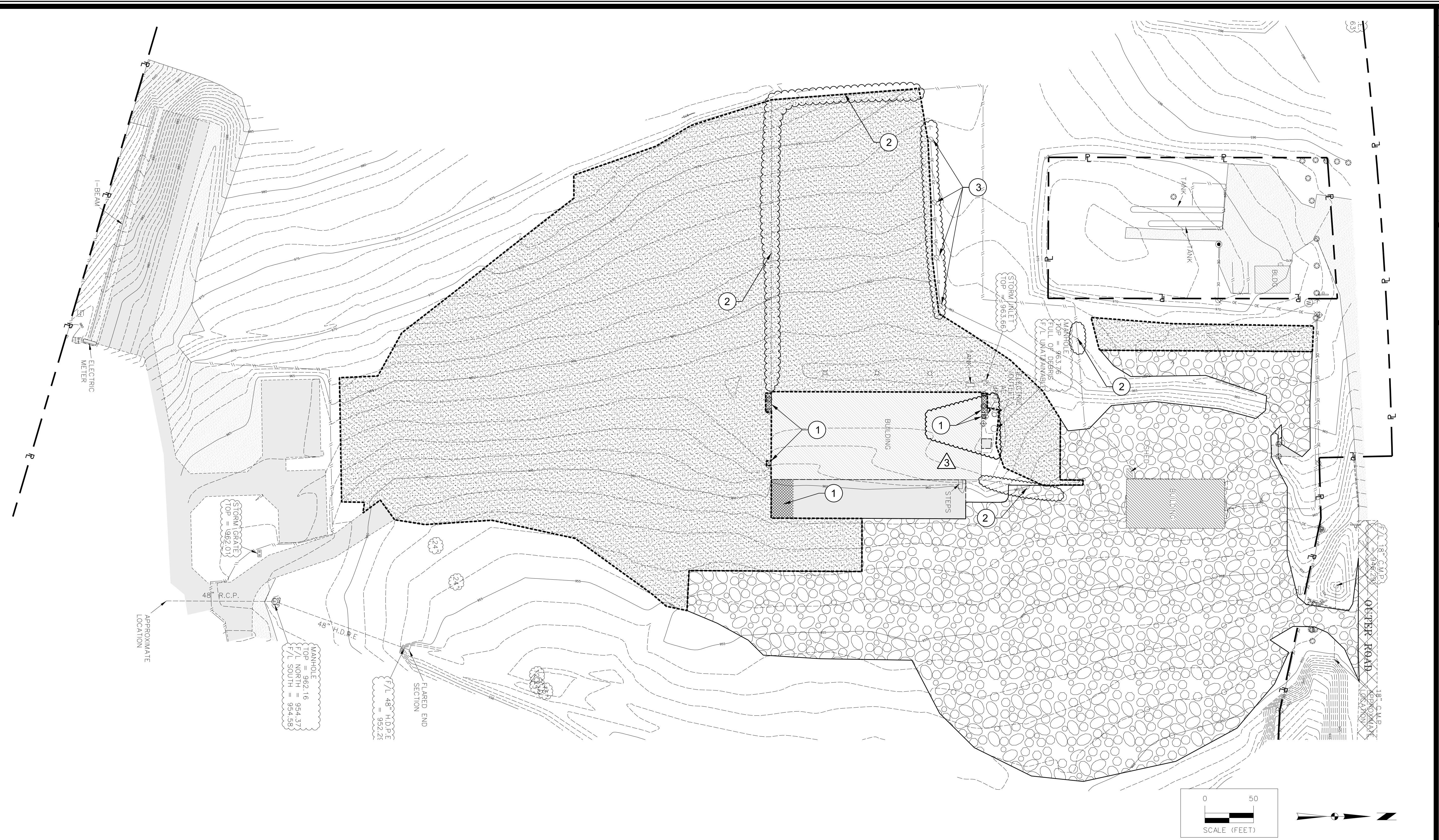


Project No: 1161183  
Sheet C1.0

MARK	REVISION	DATE	BY
Engineer: SD	Checked By: AM	Scale: 1"=	
Technician: DB	Date: 05/24	Field Bk:	Pg:
Snyder & Associates Engineers & Planners, Inc. Missouri State Certificate of Authority #200608544			Sheet <b>C1.0</b>



5/25/2017 8:46:19 AM  
 5/25/2017 8:46:19 AM  
 Snyder 1500  
 Y:\print\_drivers\Black\_Gray\_V8\BFW\unlshp\DWG.plt



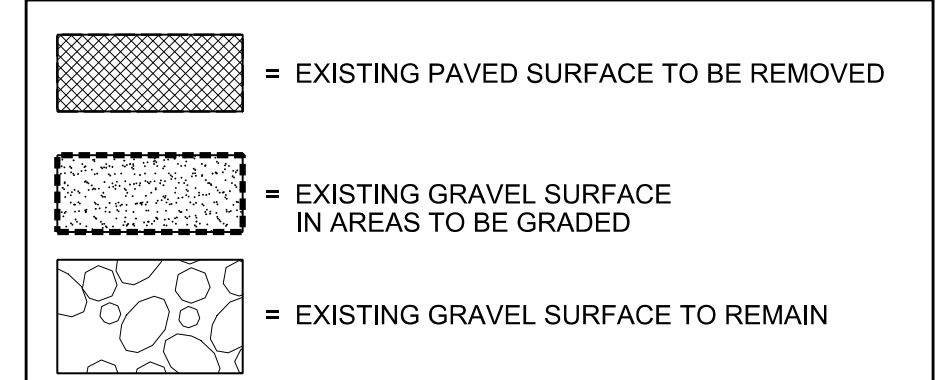
**GENERAL NOTES - EXISTING CONDITIONS & DEMOLITION PLAN**

- A. UTILITY WARNING: THE UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND/OR RECORDS OBTAINED. THE SURVEYOR MAKES NO GUARANTEE THAT THE UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEY FURTHER DOES NOT WARRANT THAT THE UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED.
- B. NOTIFY UTILITY OWNERS PRIOR TO BEGINNING ANY CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR DETERMINING EXISTENCE, EXACT LOCATION AND DEPTH OF ALL UTILITIES. AVOID DAMAGE TO UTILITIES AND SERVICES DURING CONSTRUCTION. ANY DAMAGE DUE TO THE CONTRACTOR'S CARELESSNESS SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE. COORDINATE AND COOPERATE WITH UTILITY COMPANIES DURING CONSTRUCTION.
- C. THE CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES AND FEATURES WHICH ARE TO REMAIN. DAMAGE TO EXISTING UTILITIES OR SITE IMPROVEMENTS SHALL BE REPAIRED BY THE CONTRACTOR TO THE OWNER'S SPECIFICATIONS AT THE CONTRACTOR'S EXPENSE.
- D. THE SITE CONTRACTOR SHALL BE RESPONSIBLE FOR LAYOUT VERIFICATION OF ALL SITE IMPROVEMENTS PRIOR TO CONSTRUCTION. CONTRACTOR TO CONSTRUCT ALL SITE IMPROVEMENTS AND UTILITIES IN ACCORDANCE WITH THE URBAN STANDARD SPECIFICATIONS FOR PUBLIC IMPROVEMENTS.
- E. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING AND MAINTAINING TRAFFIC CONTROL IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES 'MUTCD'. ALL PROPOSED SIGNS SHALL CONFORM TO THE 'MUTCD' MANUAL.
- F. THE CONTRACTOR SHALL LOAD AND TRANSPORT ALL MATERIALS NOT DESIRABLE TO BE INCORPORATED INTO THE PROJECT TO AN APPROVED OFF-SITE WASTE SITE.
- G. SAW-CUT AT TERMINATION TO FULL DEPTH ALL PAVEMENTS TO BE REMOVED.
- H. ALL CURB RAMPS TO MEET THE REQUIREMENTS OF AMERICANS WITH DISABILITY ACT GUIDELINES.
- I. ALL SIDEWALKS AND CROSSWALKS TO HAVE A MAXIMUM OF 2% CROSS SLOPE & RUNNING SLOPE TO BE MAXIMUM OF 5%. RUNNING SLOPE MAY EXCEED 5% IF ADJACENT STREET GRADE EXCEEDS 5%. THEN MAXIMUM RUNNING SLOPE WILL EQUAL ADJACENT STREET GRADE.

**CONSTRUCTION NOTES - DEMOLITION PLAN**

- ① EXISTING PAVED SURFACE TO BE REMOVED. REFER TO SITE PLAN FOR LIMITS OF REMOVAL.
- ② EXISTING FENCE TO BE REMOVED. REFER TO SITE PLAN FOR LIMITS OF REMOVAL.
- ③ EXISTING OVERHEAD ELECTRIC AND POWER POLES TO BE REMOVED.

**LEGEND: DEMOLITION PLAN**



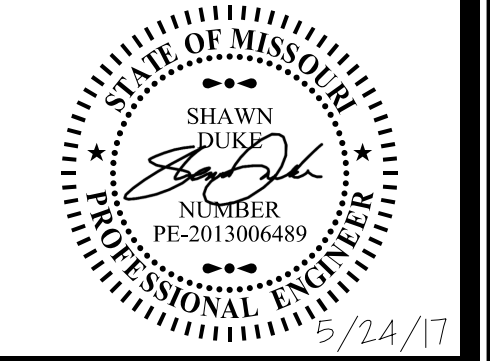
ALTEC DESIGN ASSURANCE

EXISTING CONDITIONS, DEMOLITION AND REMOVALS PLAN SAINT JOSEPH, MISSOURI

**SNYDER & ASSOCIATES**  
 ENGINEERS & PLANNERS, INC.

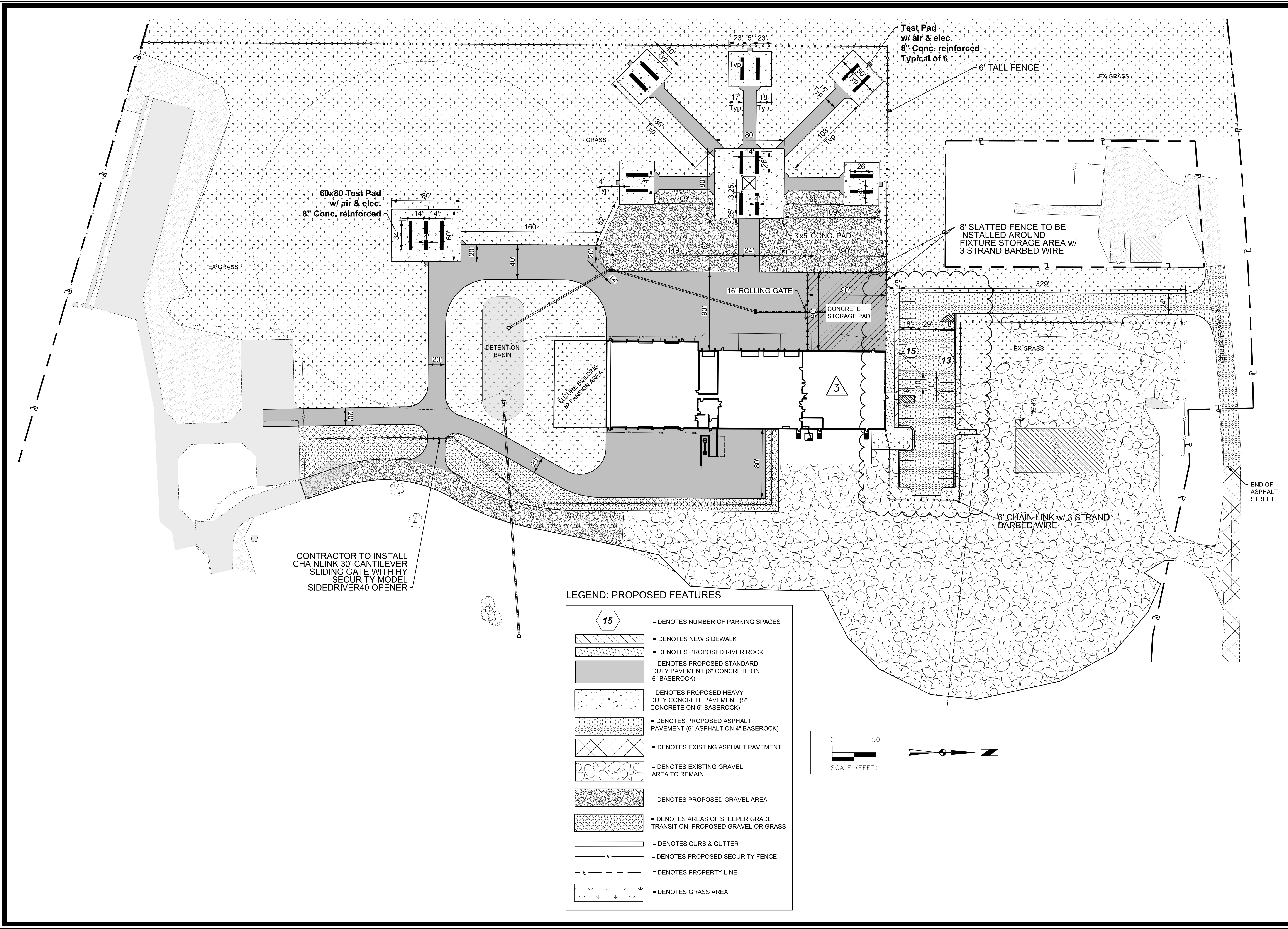
802 FRANCIS STREET  
 ST. JOSEPH, MO 64501  
 816-364-5222  
 www.snyder-associates.com

212 N. BUCHANAN  
 MARYVILLE, MO 64468  
 660-582-8888



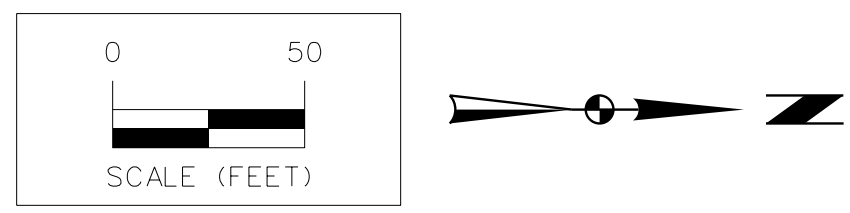
MARK	REVISIONS TO BUILDING ENTRANCE	05/24/17	SD	DATE	BY
Engineer:	SD	Checked By:	AM	Scale:	1" = 50'
Technician:	DB	Date:	05/24	Field Bk.:	
Snyder & Associates Engineers & Planners, Inc. Missouri State Certificate of Authority #200608544					
Sheet <b>C2.0</b>					

5/25/2017 8:46:24 AM 5/25/2017 8:46:24 AM 5/25/2017 8:46:24 AM



LEGEND: PROPOSED FEATURES

	= DENOTES NUMBER OF PARKING SPACES
	= DENOTES NEW SIDEWALK
	= DENOTES PROPOSED RIVER ROCK
	= DENOTES PROPOSED STANDARD DUTY PAVEMENT (6" CONCRETE ON 6" BASEROCK)
	= DENOTES PROPOSED HEAVY DUTY CONCRETE PAVEMENT (8" CONCRETE ON 6" BASEROCK)
	= DENOTES PROPOSED ASPHALT PAVEMENT (6" ASPHALT ON 4" BASEROCK)
	= DENOTES EXISTING ASPHALT PAVEMENT
	= DENOTES EXISTING GRAVEL AREA TO REMAIN
	= DENOTES PROPOSED GRAVEL AREA
	= DENOTES AREAS OF STEEPER GRADE TRANSITION. PROPOSED GRAVEL OR GRASS.
	= DENOTES CURB & GUTTER
	= DENOTES PROPOSED SECURITY FENCE
	= DENOTES PROPERTY LINE
	= DENOTES GRASS AREA



3	REVISIONS TO BUILDING ENTRANCE	05/24/17	SD
2	REVISIONS AS PER A.M.	05/08/17	SD
1	REVISIONS AS PER A.M.	04/10/17	SD
MARK	REVISION	DATE	BY
Engineer:	SD	Checked By:	AM
Technician:	DB	Date:	05/24
		Scale:	1"=50'
		Field Bk:	
		Page:	C2.1

SHAWN DUKER  
PROFESSIONAL ENGINEER  
NUMBER PE-2013066489  
9/24/17

SAINT JOSEPH, MISSOURI

802 FRANCIS STREET  
ST. JOSEPH, MO 64501  
816-364-5222

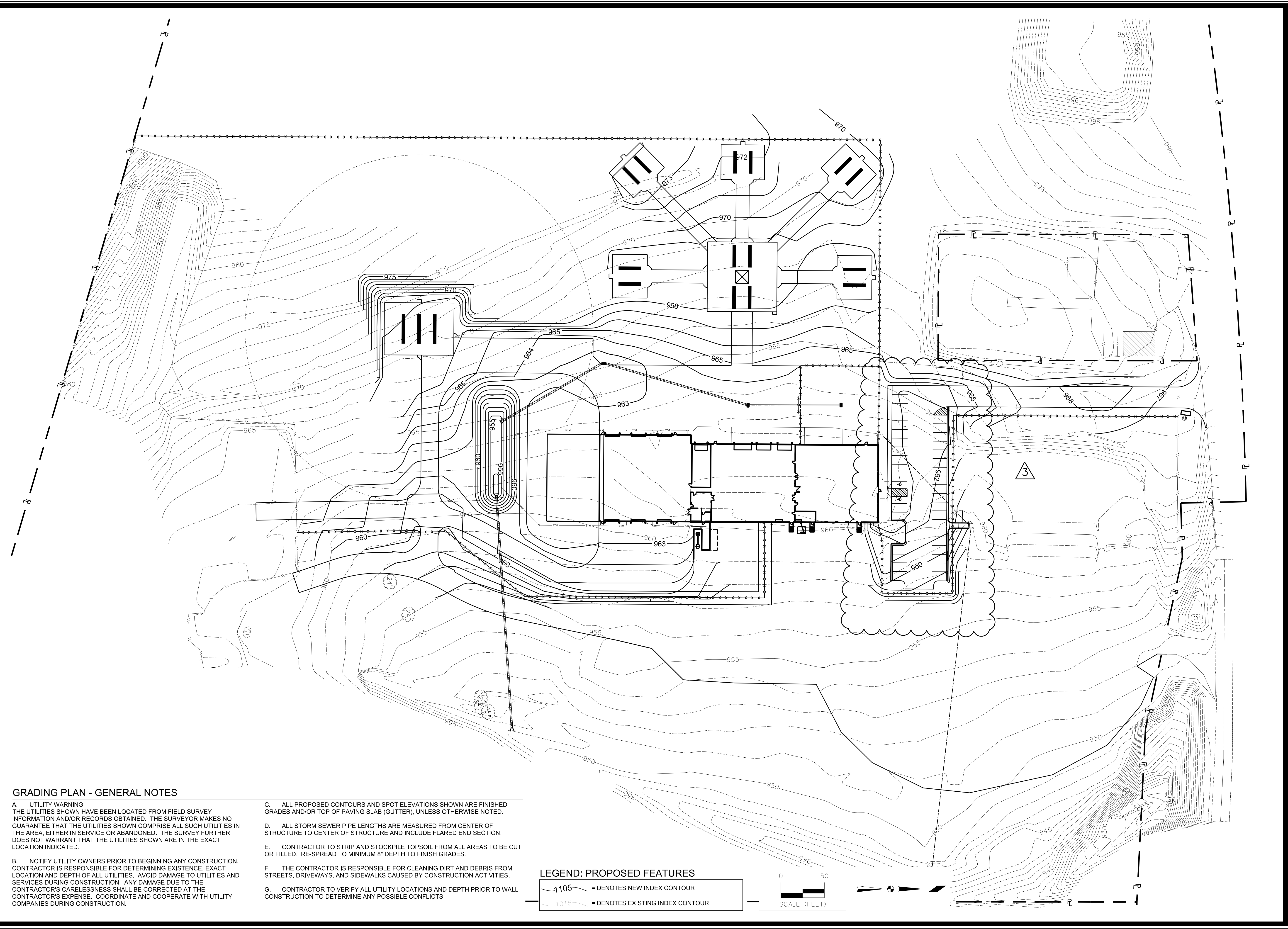
212 N. BUCHANAN  
MARYVILLE, MO 64468  
660-582-8888  
www.snyder-associates.com

ALTEC DESIGN ASSURANCE  
SITE & DIMENSION PLAN  
**SNYDER & ASSOCIATES**  
ENGINEERS & PLANNERS, INC.

**SNYDER & ASSOCIATES**

Project No: 1161183  
Sheet C2.1

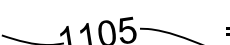

5/25/2017 8:46:27 AM Snyder 1:50 Y:\open\date.tbl \print\drivers\Black\_Gray\_VB\DW\unfiled\p1.ctb

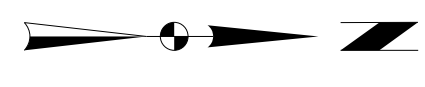
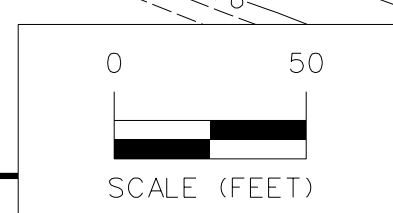


### GRADING PLAN - GENERAL NOTES

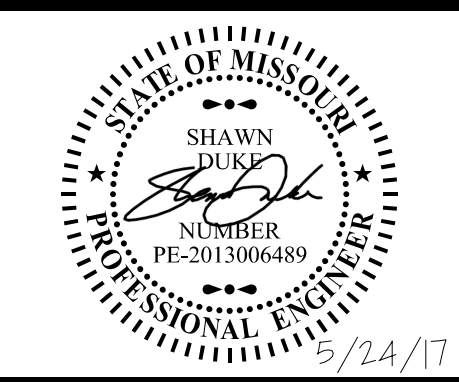
- A. UTILITY WARNING: THE UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND/OR RECORDS OBTAINED. THE SURVEYOR MAKES NO GUARANTEE THAT THE UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEY FURTHER DOES NOT WARRANT THAT THE UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED.
- B. NOTIFY UTILITY OWNERS PRIOR TO BEGINNING ANY CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR DETERMINING EXISTENCE, EXACT LOCATION AND DEPTH OF ALL UTILITIES. AVOID DAMAGE TO UTILITIES AND SERVICES DURING CONSTRUCTION. ANY DAMAGE DUE TO THE CONTRACTOR'S CARELESSNESS SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE. COORDINATE AND COOPERATE WITH UTILITY COMPANIES DURING CONSTRUCTION.
- C. ALL PROPOSED CONTOURS AND SPOT ELEVATIONS SHOWN ARE FINISHED GRADES AND/OR TOP OF PAVING SLAB (GUTTER), UNLESS OTHERWISE NOTED.
- D. ALL STORM SEWER PIPE LENGTHS ARE MEASURED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE AND INCLUDE FLARED END SECTION.
- E. CONTRACTOR TO STRIP AND STOCKPILE TOPSOIL FROM ALL AREAS TO BE CUT OR FILLED. RE-SPREAD TO MINIMUM 8" DEPTH TO FINISH GRADES.
- F. THE CONTRACTOR IS RESPONSIBLE FOR CLEANING DIRT AND DEBRIS FROM STREETS, DRIVEWAYS, AND SIDEWALKS CAUSED BY CONSTRUCTION ACTIVITIES.
- G. CONTRACTOR TO VERIFY ALL UTILITY LOCATIONS AND DEPTH PRIOR TO WALL CONSTRUCTION TO DETERMINE ANY POSSIBLE CONFLICTS.

**LEGEND: PROPOSED FEATURES**

	= DENOTES NEW INDEX CONTOUR
	= DENOTES EXISTING INDEX CONTOUR



REVISION TO BUILDING ENTRANCE	05/24/17	SD	DATE	BY
1 REVISIONS AS PER A.M	04/10/17	SD	DATE	BY
MARK	REVISION	Engineer: SD	Checked By: AM	Scale: 1"=50'
Technician: DB	Date: 05/24	Field Bk: Pg:	Snyder & Associates Engineers & Planners, Inc. Missouri State Certificate of Authority #200608544	



**ALTEC DESIGN ASSURANCE**  
**GRADING PLAN**  
**SNYDER & ASSOCIATES**  
ENGINEERS & PLANNERS, INC.  
www.snyder-associates.com

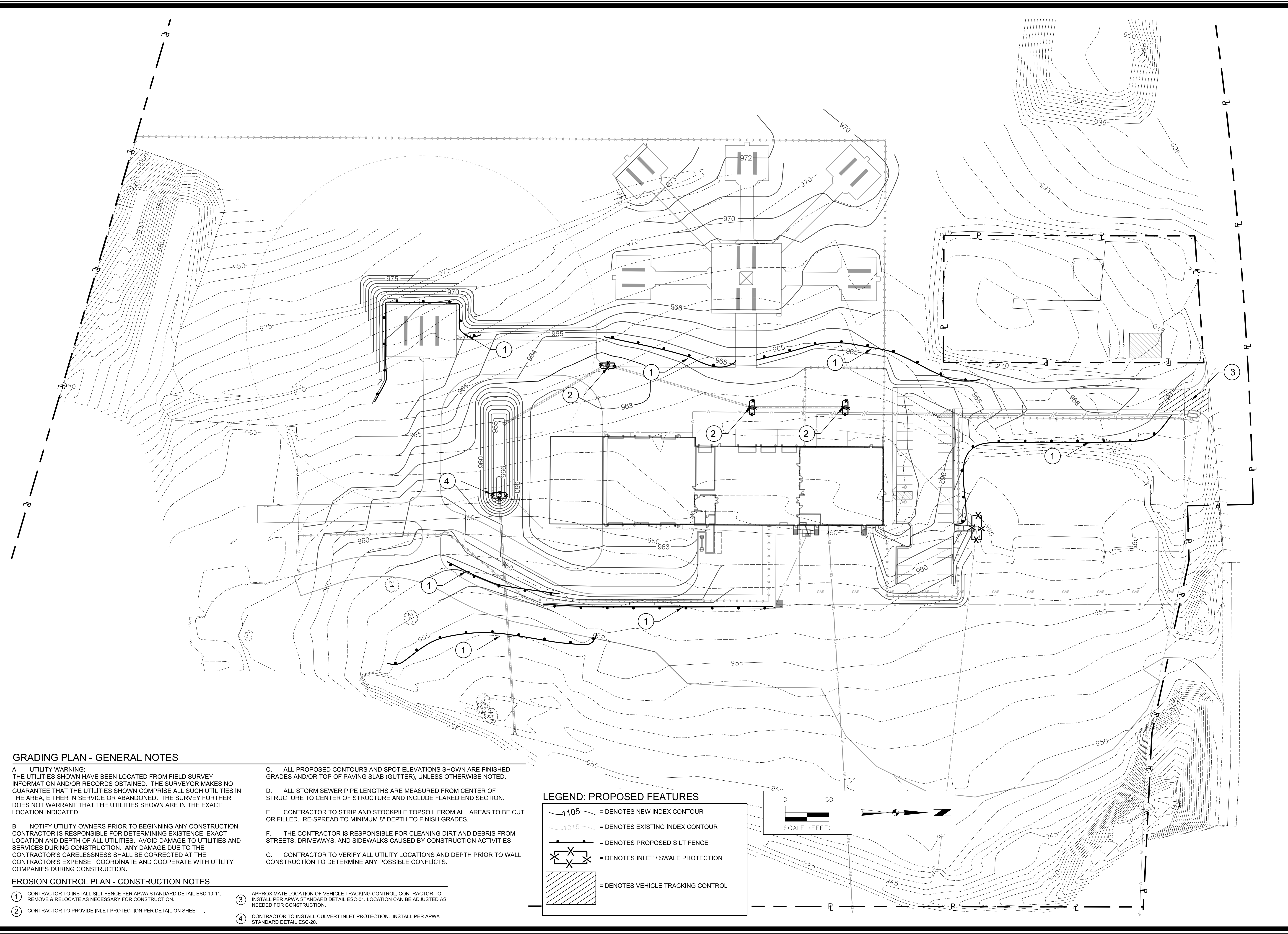
SAINT JOSEPH, MISSOURI  
802 FRANCIS STREET  
ST. JOSEPH, MO 64501  
816-364-5222

212 N. BUCHANAN  
MARYVILLE, MO 64468  
660-582-8888



Project No: 1161183  
Sheet C2.2

5/25/2017 8:46:28 AM  
 5/25/2017 8:46:28 AM  
 Y:\open\date.tbl  
 Y:\prints\drivers\Black\_Gray\_VB\B\W\un\Wsh\PDF.plt  
 5/24/17



**GRADING PLAN - GENERAL NOTES**

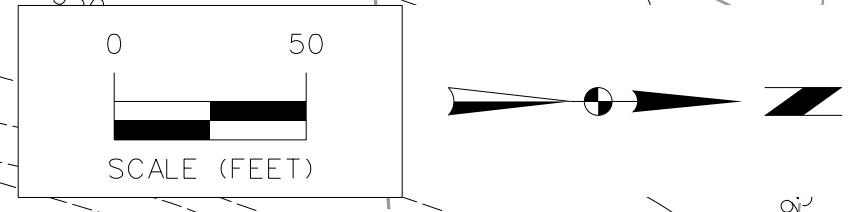
- A. UTILITY WARNING: THE UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND/OR RECORDS OBTAINED. THE SURVEYOR MAKES NO GUARANTEE THAT THE UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEY FURTHER DOES NOT WARRANT THAT THE UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED.
- B. NOTIFY UTILITY OWNERS PRIOR TO BEGINNING ANY CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR DETERMINING EXISTENCE, EXACT LOCATION AND DEPTH OF ALL UTILITIES. AVOID DAMAGE TO UTILITIES AND SERVICES DURING CONSTRUCTION. ANY DAMAGE DUE TO THE CONTRACTOR'S CARELESSNESS SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE. COORDINATE AND COOPERATE WITH UTILITY COMPANIES DURING CONSTRUCTION.
- C. ALL PROPOSED CONTOURS AND SPOT ELEVATIONS SHOWN ARE FINISHED GRADES AND/OR TOP OF PAVING SLAB (GUTTER), UNLESS OTHERWISE NOTED.
- D. ALL STORM SEWER PIPE LENGTHS ARE MEASURED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE AND INCLUDE FLARED END SECTION.
- E. CONTRACTOR TO STRIP AND STOCKPILE TOPSOIL FROM ALL AREAS TO BE CUT OR FILLED. RE-SPREAD TO MINIMUM 8" DEPTH TO FINISH GRADES.
- F. THE CONTRACTOR IS RESPONSIBLE FOR CLEANING DIRT AND DEBRIS FROM STREETS, DRIVEWAYS, AND SIDEWALKS CAUSED BY CONSTRUCTION ACTIVITIES.
- G. CONTRACTOR TO VERIFY ALL UTILITY LOCATIONS AND DEPTH PRIOR TO WALL CONSTRUCTION TO DETERMINE ANY POSSIBLE CONFLICTS.

**EROSION CONTROL PLAN - CONSTRUCTION NOTES**

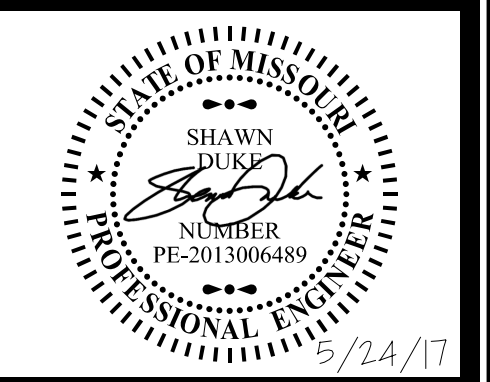
- ① CONTRACTOR TO INSTALL SILT FENCE PER APWA STANDARD DETAIL ESC 10-11. REMOVE & RELOCATE AS NECESSARY FOR CONSTRUCTION.
- ② CONTRACTOR TO PROVIDE INLET PROTECTION PER DETAIL ON SHEET .
- ③ APPROXIMATE LOCATION OF VEHICLE TRACKING CONTROL. CONTRACTOR TO INSTALL PER APWA STANDARD DETAIL ESC-01. LOCATION CAN BE ADJUSTED AS NEEDED FOR CONSTRUCTION.
- ④ CONTRACTOR TO INSTALL CULVERT INLET PROTECTION. INSTALL PER APWA STANDARD DETAIL ESC-20.

**LEGEND: PROPOSED FEATURES**

- = DENOTES NEW INDEX CONTOUR
- = DENOTES EXISTING INDEX CONTOUR
- = DENOTES PROPOSED SILT FENCE
- = DENOTES INLET / SWALE PROTECTION
- = DENOTES VEHICLE TRACKING CONTROL



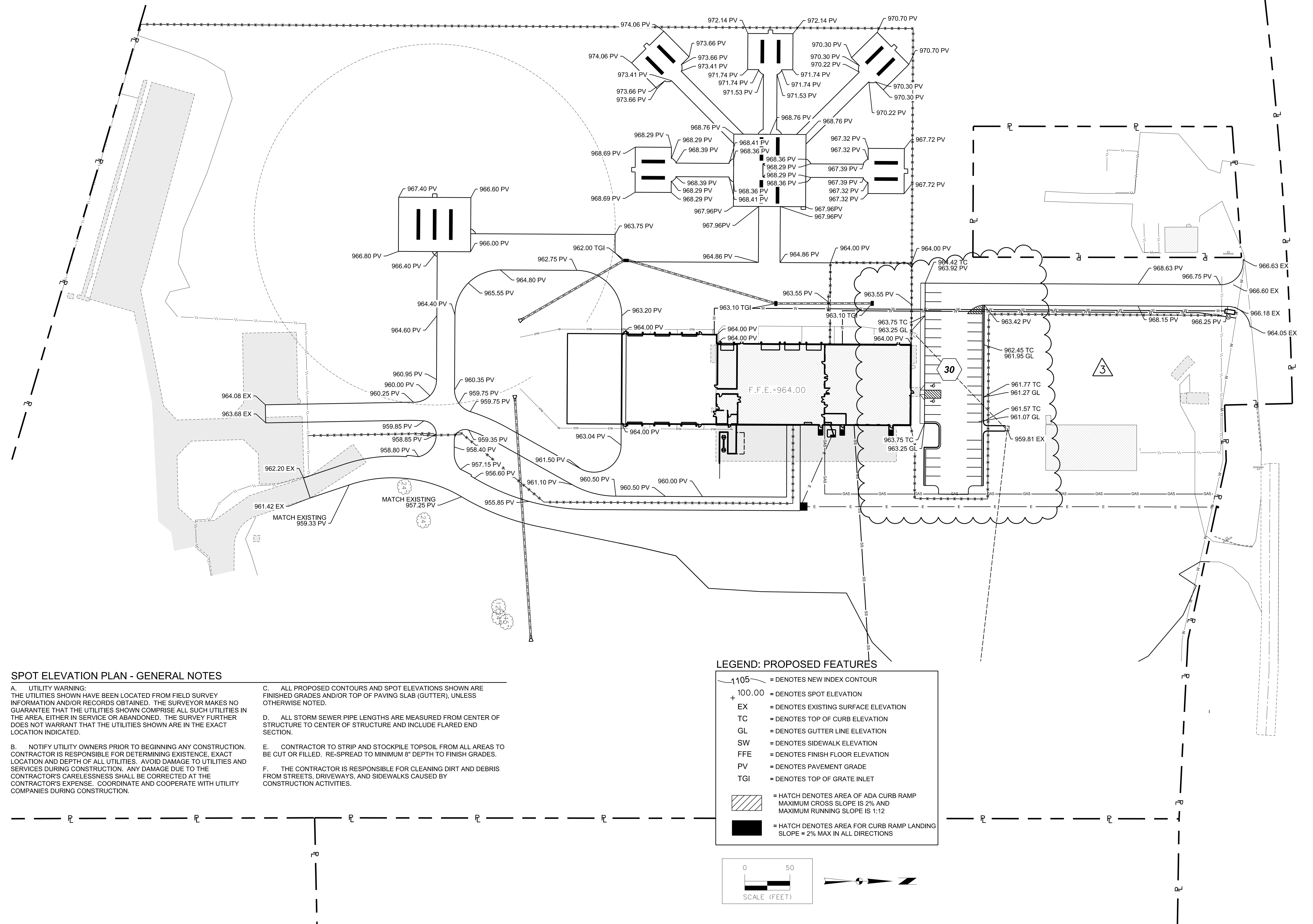
MARK	REVISION	DATE	BY
Engineer: SD	Checked By: AM	Scale: 1"=50'	
Technician: DB	Date: 05/24	Field Bk:	
Snyder & Associates Engineers & Planners, Inc. Missouri State Certificate of Authority #200608544			Sheet <b>C2.3</b>



**ALTEC DESIGN ASSURANCE**  
**EROSION CONTROL PLAN**  
**SNYDER & ASSOCIATES**  
 ENGINEERS & PLANNERS, INC.  
 www.snyder-associates.com  
 SAINT JOSEPH, MISSOURI  
 802 FRANCIS STREET  
 ST. JOSEPH, MO 64501  
 816-364-5222  
 212 N. BUCHANAN  
 MARYVILLE, MO 64468  
 660-582-8888

Project No: 1161183  
 Sheet **C2.3**

5/25/2017 8:46:30 AM  
 Y:\projects\drivers\Black\_Gray\_VB\DWG\1183\C2.4\_SpotElevPlan.dwg  
 Snyder  
 1:50

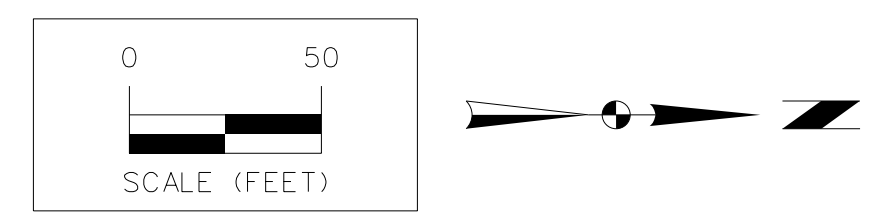


**SPOT ELEVATION PLAN - GENERAL NOTES**

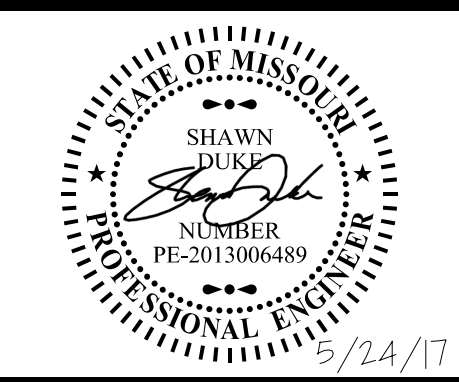
- A. UTILITY WARNING: THE UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND/OR RECORDS OBTAINED. THE SURVEYOR MAKES NO GUARANTEE THAT THE UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEY FURTHER DOES NOT WARRANT THAT THE UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED.
- B. NOTIFY UTILITY OWNERS PRIOR TO BEGINNING ANY CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR DETERMINING EXISTENCE, EXACT LOCATION AND DEPTH OF ALL UTILITIES. AVOID DAMAGE TO UTILITIES AND SERVICES DURING CONSTRUCTION. ANY DAMAGE DUE TO THE CONTRACTOR'S CARELESSNESS SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE. COORDINATE AND COOPERATE WITH UTILITY COMPANIES DURING CONSTRUCTION.
- C. ALL PROPOSED CONTOURS AND SPOT ELEVATIONS SHOWN ARE FINISHED GRADES AND/OR TOP OF PAVING SLAB (GUTTER), UNLESS OTHERWISE NOTED.
- D. ALL STORM SEWER PIPE LENGTHS ARE MEASURED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE AND INCLUDE FLARED END SECTION.
- E. CONTRACTOR TO STRIP AND STOCKPILE TOPSOIL FROM ALL AREAS TO BE CUT OR FILLED. RE-SPREAD TO MINIMUM 8" DEPTH TO FINISH GRADES.
- F. THE CONTRACTOR IS RESPONSIBLE FOR CLEANING DIRT AND DEBRIS FROM STREETS, DRIVEWAYS, AND SIDEWALKS CAUSED BY CONSTRUCTION ACTIVITIES.

**LEGEND: PROPOSED FEATURES**

- 1105- = DENOTES NEW INDEX CONTOUR
- + 100.00 = DENOTES SPOT ELEVATION
- EX = DENOTES EXISTING SURFACE ELEVATION
- TC = DENOTES TOP OF CURB ELEVATION
- GL = DENOTES GUTTER LINE ELEVATION
- SW = DENOTES SIDEWALK ELEVATION
- FFE = DENOTES FINISH FLOOR ELEVATION
- PV = DENOTES PAVEMENT GRADE
- TGI = DENOTES TOP OF GRATE INLET
- [Hatched Box] = HATCH DENOTES AREA OF ADA CURB RAMP  
 MAXIMUM CROSS SLOPE IS 2% AND  
 MAXIMUM RUNNING SLOPE IS 1:12
- [Solid Black Box] = HATCH DENOTES AREA FOR CURB RAMP LANDING  
 SLOPE = 2% MAX IN ALL DIRECTIONS



MARK	REVISIONS TO BUILDING ENTRANCE	05/24/17	SD	DATE	BY
Engineer:	SD	Checked By:	AM	Scale:	1" = 50'
Technician:	DB	Date:	05/24	Field Bk.:	Snyder & Associates Engineers & Planners, Inc. Missouri State Certificate of Authority #200608544



**ALTEC DESIGN ASSURANCE**

**SPOT ELEVATION PLAN SHEET 1**

**SNYDER & ASSOCIATES**  
 ENGINEERS & PLANNERS, INC.

SAINT JOSEPH, MISSOURI

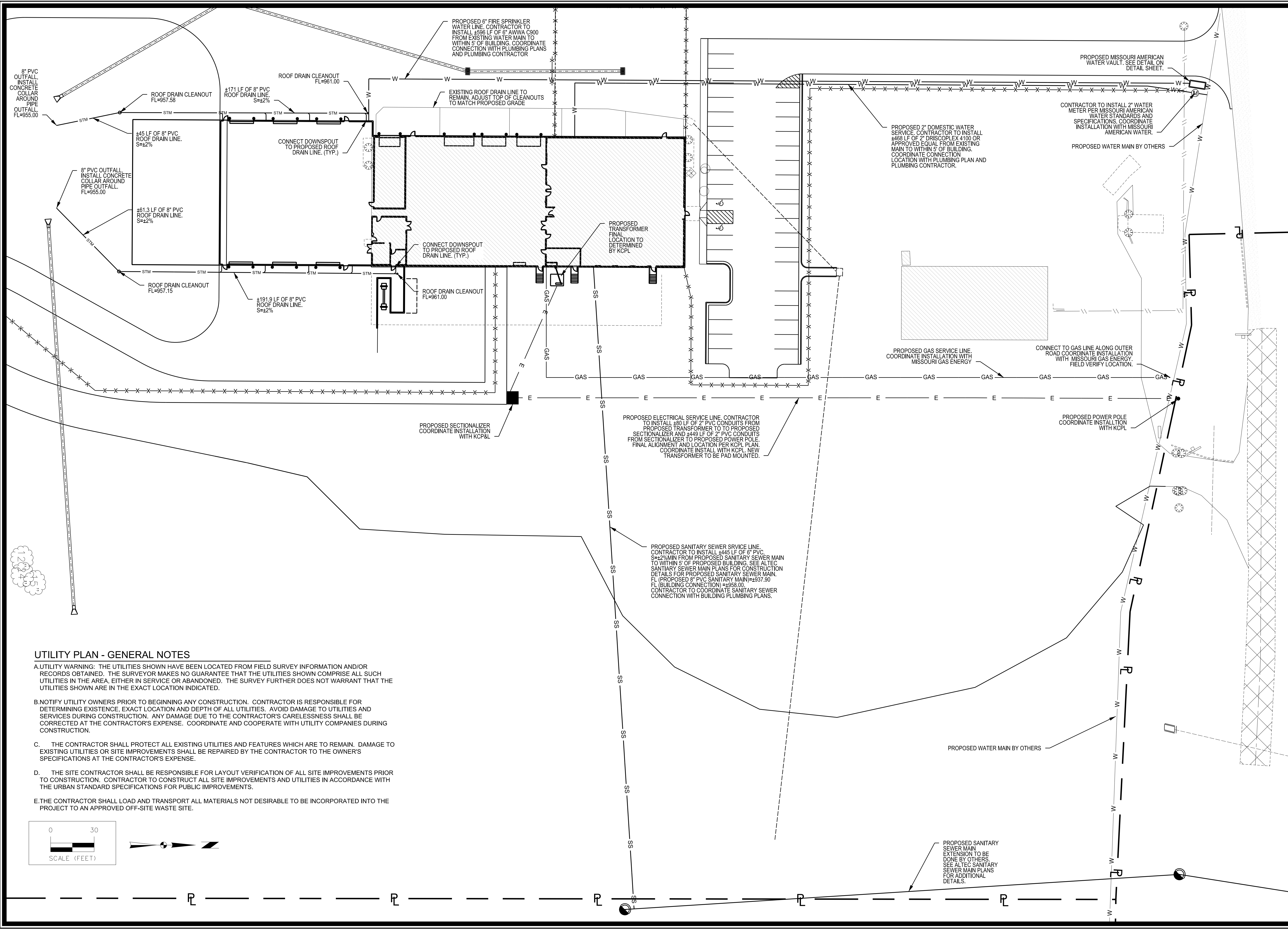
802 FRANCIS STREET  
 ST. JOSEPH, MO 64501  
 816-364-5222

212 N. BUCHANAN  
 MARYVILLE, MO 64468  
 660-582-9888

www.snyder-associates.com

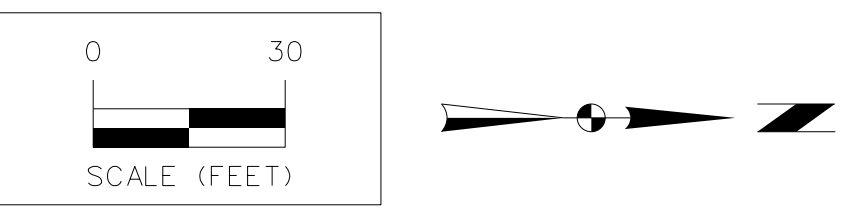


5/25/2017 8:46:51 AM  
Projects\116.1183 - Altec Design Assurance\Coord\116.1183 - C2.6 - UtilityPlan.dgn  
5/25/2017 8:46:51 AM  
Snyder  
1:30  
Y:\print\drivers\Black - Gray\BIBW\UtilityPlan.dgn



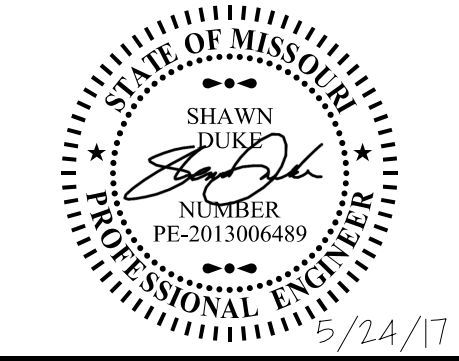
### UTILITY PLAN - GENERAL NOTES

- A. UTILITY WARNING: THE UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND/OR RECORDS OBTAINED. THE SURVEYOR MAKES NO GUARANTEE THAT THE UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEY FURTHER DOES NOT WARRANT THAT THE UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED.
- B. NOTIFY UTILITY OWNERS PRIOR TO BEGINNING ANY CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR DETERMINING EXISTENCE, EXACT LOCATION AND DEPTH OF ALL UTILITIES. AVOID DAMAGE TO UTILITIES AND SERVICES DURING CONSTRUCTION. ANY DAMAGE DUE TO THE CONTRACTOR'S CARELESSNESS SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE. COORDINATE AND COOPERATE WITH UTILITY COMPANIES DURING CONSTRUCTION.
- C. THE CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES AND FEATURES WHICH ARE TO REMAIN. DAMAGE TO EXISTING UTILITIES OR SITE IMPROVEMENTS SHALL BE REPAIRED BY THE CONTRACTOR TO THE OWNER'S SPECIFICATIONS AT THE CONTRACTOR'S EXPENSE.
- D. THE SITE CONTRACTOR SHALL BE RESPONSIBLE FOR LAYOUT VERIFICATION OF ALL SITE IMPROVEMENTS PRIOR TO CONSTRUCTION. CONTRACTOR TO CONSTRUCT ALL SITE IMPROVEMENTS AND UTILITIES IN ACCORDANCE WITH THE URBAN STANDARD SPECIFICATIONS FOR PUBLIC IMPROVEMENTS.
- E. THE CONTRACTOR SHALL LOAD AND TRANSPORT ALL MATERIALS NOT DESIRABLE TO BE INCORPORATED INTO THE PROJECT TO AN APPROVED OFF-SITE WASTE SITE.



MARK	REVISION	DATE	BY
Engineer: SD	Checked By: AM	05/24	1"= 30'
Technician: DB	Date: 05/24	Field Bk:	Pg:

Snyder & Associates Engineers & Planners, Inc.  
Missouri State Certificate of Authority #200608544



SAINT JOSEPH, MISSOURI  
212 N. BUCHANAN  
MARYVILLE, MO 64468  
660-582-9888

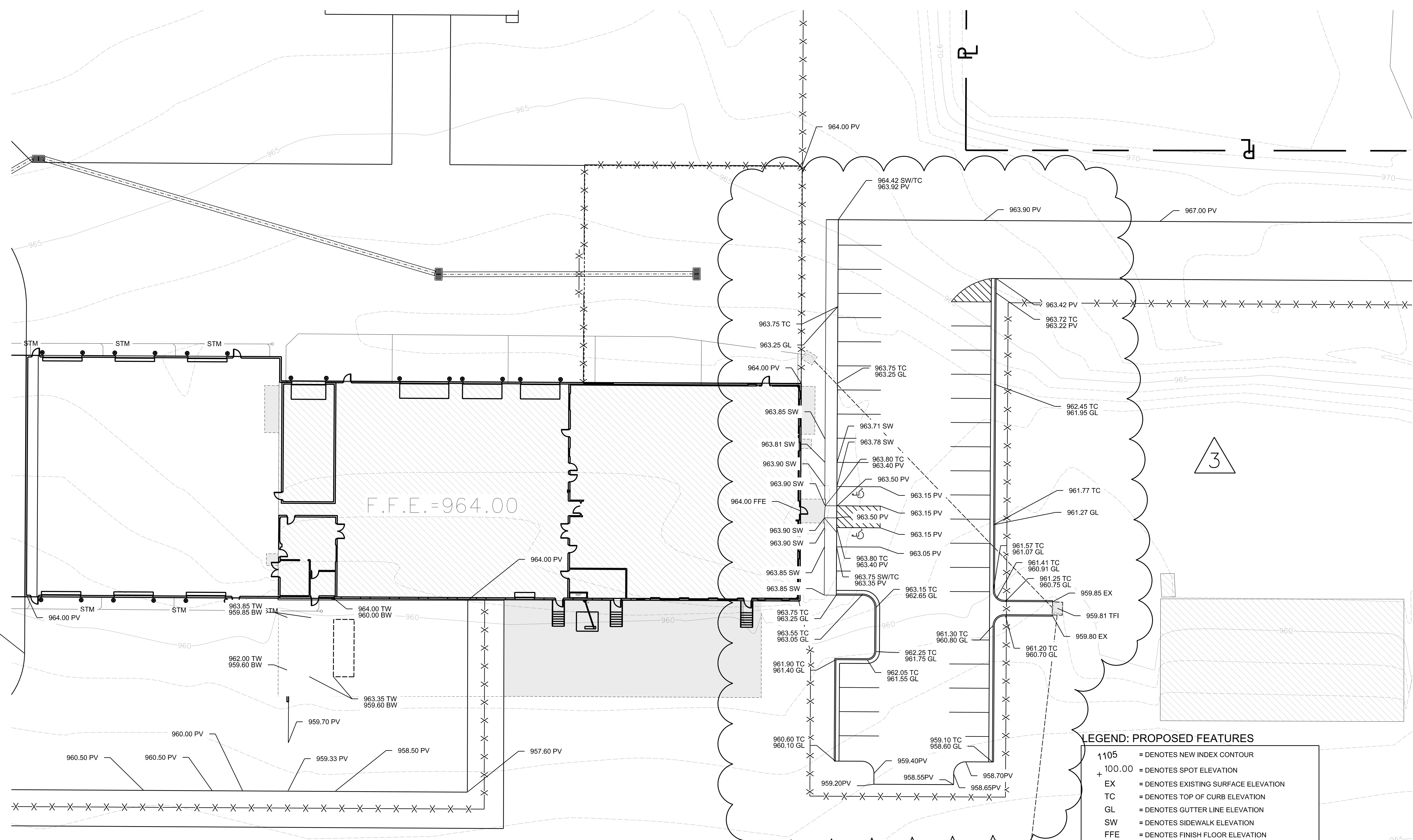
802 FRANCIS STREET  
ST. JOSEPH, MO 64501  
816-364-5222

ALTEC DESIGN ASSURANCE  
UTILITY PLAN  
**SNYDER & ASSOCIATES**  
ENGINEERS & PLANNERS, INC.  
www.snyder-associates.com





5/25/2017 8:46:52 AM  
 Y:\projects\drivers\Black\_Gray\1183\1183\_C2.5\_SpotElevPlan.dgn  
 5/25/2017 8:46:52 AM  
 Snyder  
 1:20  
 Y:\open\date.tbl  
 Y:\prints\drivers\Black\_Gray\1183\1183\_C2.5\_SpotElevPlan.pdf.plt



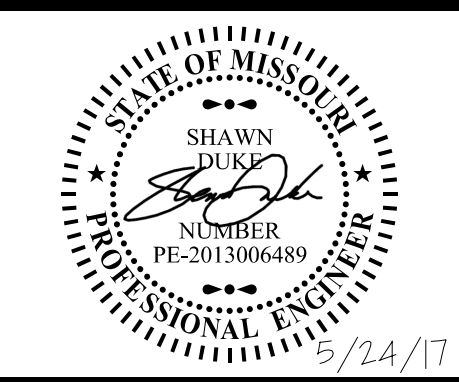
**SPOT ELEVATION PLAN - GENERAL NOTES**

- A. UTILITY WARNING:**  
 THE UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND/OR RECORDS OBTAINED. THE SURVEYOR MAKES NO GUARANTEE THAT THE UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEY FURTHER DOES NOT WARRANT THAT THE UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED.
- B. NOTIFY UTILITY OWNERS PRIOR TO BEGINNING ANY CONSTRUCTION.**  
 CONTRACTOR IS RESPONSIBLE FOR DETERMINING EXISTENCE, EXACT LOCATION AND DEPTH OF ALL UTILITIES. AVOID DAMAGE TO UTILITIES AND SERVICES DURING CONSTRUCTION. ANY DAMAGE DUE TO THE CONTRACTOR'S CARELESSNESS SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE. COORDINATE AND COOPERATE WITH UTILITY COMPANIES DURING CONSTRUCTION.
- C. ALL PROPOSED CONTOURS AND SPOT ELEVATIONS SHOWN ARE FINISHED GRADES AND/OR TOP OF PAVING SLAB (GUTTER), UNLESS OTHERWISE NOTED.**
- D. ALL STORM SEWER PIPE LENGTHS ARE MEASURED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE AND INCLUDE FLARED END SECTION.**
- E. CONTRACTOR TO STRIP AND STOCKPILE TOPSOIL FROM ALL AREAS TO BE CUT OR FILLED. RE-SPREAD TO MINIMUM 8" DEPTH TO FINISH GRADES.**
- F. THE CONTRACTOR IS RESPONSIBLE FOR CLEANING DIRT AND DEBRIS FROM STREETS, DRIVEWAYS, AND SIDEWALKS CAUSED BY CONSTRUCTION ACTIVITIES.**

**LEGEND: PROPOSED FEATURES**

- 1105 = DENOTES NEW INDEX CONTOUR
  - + 100.00 = DENOTES SPOT ELEVATION
  - EX = DENOTES EXISTING SURFACE ELEVATION
  - TC = DENOTES TOP OF CURB ELEVATION
  - GL = DENOTES GUTTER LINE ELEVATION
  - SW = DENOTES SIDEWALK ELEVATION
  - FFE = DENOTES FINISH FLOOR ELEVATION
  - PV = DENOTES PAVEMENT GRADE
  - TW = DENOTES TOP OF WALL ELEVATION
  - BW = DENOTES BOTTOM OF WALL ELEVATION
  - TFI = DENOTES TOP OF FIELD INLET
- = HATCH DENOTES AREA OF ADA CURB RAMP  
 MAXIMUM CROSS SLOPE IS 2% AND  
 MAXIMUM RUNNING SLOPE IS 1:12
  - = HATCH DENOTES AREA FOR CURB RAMP LANDING  
 SLOPE = 2% MAX IN ALL DIRECTIONS

MARK	REVISIONS TO BUILDING ENTRANCE	DATE	SD	BY
3		05/24		
Engineer:	SD	Checked By:	AM	Scale: 1"=50'
Technician:	DB	Date:	05/24	Field Bk. Pg:
Snyder & Associates Engineers & Planners, Inc.				Missouri State Certificate of Authority #200608544



**ALTEC DESIGN ASSURANCE**

**SPOT ELEVATION PLAN SHEET 2**

**SNYDER & ASSOCIATES**  
 ENGINEERS & PLANNERS, INC.

SAINT JOSEPH, MISSOURI

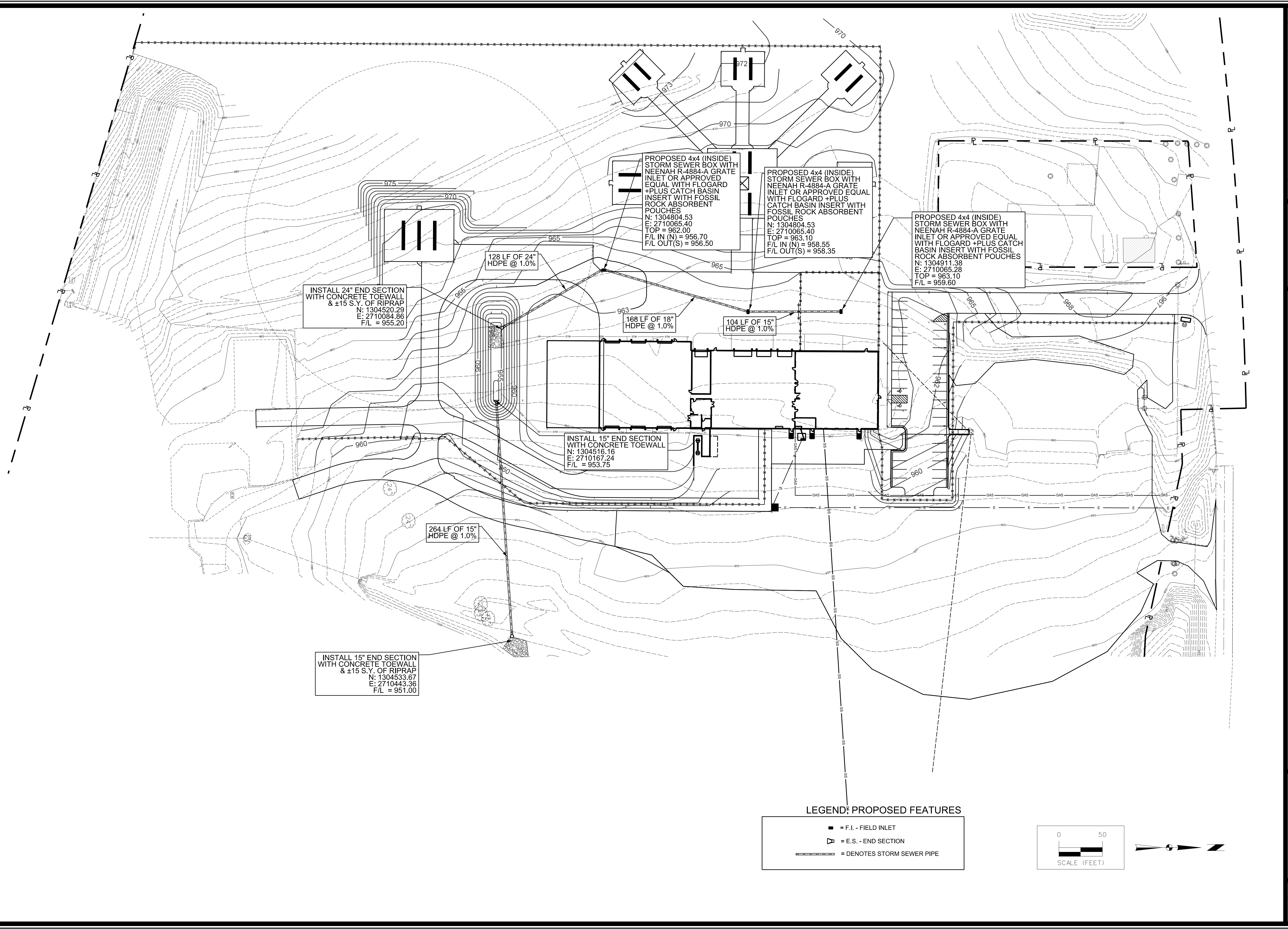
802 FRANCIS STREET  
 ST. JOSEPH, MO 64501  
 816-364-5222

212 N. BUCHANAN  
 MARYVILLE, MO 64468  
 660-582-8888

www.snyder-associates.com



5/25/2017 8:46:53 AM  
 C:\Users\j161183\Documents\Projects\1161183 - Altec Design Assurance\Coord\1161183\_C2.7\_StormSewerPlan.dgn  
 Snyder 150  
 Y:\open\date.tbl  
 Y:\prints\drivers\Black\_Gray\_VB16W\unl\shp.plt



**PROPOSED 4x4 (INSIDE) STORM SEWER BOX WITH NEENAH R-4884-A GRATE INLET OR APPROVED EQUAL WITH FLOGARD + PLUS CATCH BASIN INSERT WITH FOSSIL ROCK ABSORBENT POUCHES**  
 N: 1304804.53  
 E: 2710065.40  
 TOP = 962.00  
 F/L IN (N) = 956.70  
 F/L OUT(S) = 956.50

**PROPOSED 4x4 (INSIDE) STORM SEWER BOX WITH NEENAH R-4884-A GRATE INLET OR APPROVED EQUAL WITH FLOGARD + PLUS CATCH BASIN INSERT WITH FOSSIL ROCK ABSORBENT POUCHES**  
 N: 1304804.53  
 E: 2710065.40  
 TOP = 963.10  
 F/L IN (N) = 958.55  
 F/L OUT(S) = 958.35

**PROPOSED 4x4 (INSIDE) STORM SEWER BOX WITH NEENAH R-4884-A GRATE INLET OR APPROVED EQUAL WITH FLOGARD + PLUS CATCH BASIN INSERT WITH FOSSIL ROCK ABSORBENT POUCHES**  
 N: 1304911.38  
 E: 2710065.28  
 TOP = 963.10  
 F/L = 959.60

**INSTALL 24" END SECTION WITH CONCRETE TOEWALL & ±15 S.Y. OF RIPRAP**  
 N: 1304520.29  
 E: 2710084.86  
 F/L = 955.20

128 LF OF 24" HDPE @ 1.0%

168 LF OF 18" HDPE @ 1.0%

104 LF OF 15" HDPE @ 1.0%

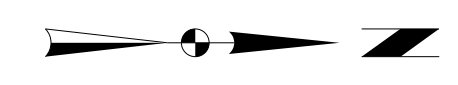
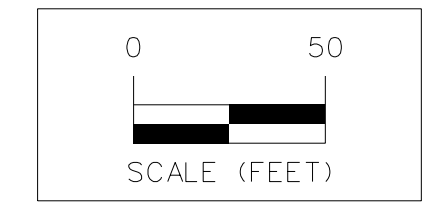
**INSTALL 15" END SECTION WITH CONCRETE TOEWALL**  
 N: 1304516.16  
 E: 2710167.24  
 F/L = 953.75

264 LF OF 15" HDPE @ 1.0%

**INSTALL 15" END SECTION WITH CONCRETE TOEWALL & ±15 S.Y. OF RIPRAP**  
 N: 1304533.67  
 E: 2710443.36  
 F/L = 951.00

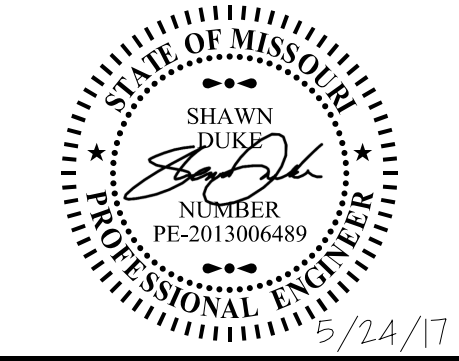
**LEGEND: PROPOSED FEATURES**

- = F.I. - FIELD INLET
- ▽ = E.S. - END SECTION
- = DENOTES STORM SEWER PIPE



MARK	REVISION	DATE	BY
Engineer:	SD	Checked By: AM	Scale: 1" = 50'
Technician:	DB	Date: 05/24	Field Bk. Pg.:

Snyder & Associates Engineers & Planners, Inc.  
 Missouri State Certificate of Authority #200608544  
**Sheet C2.7**



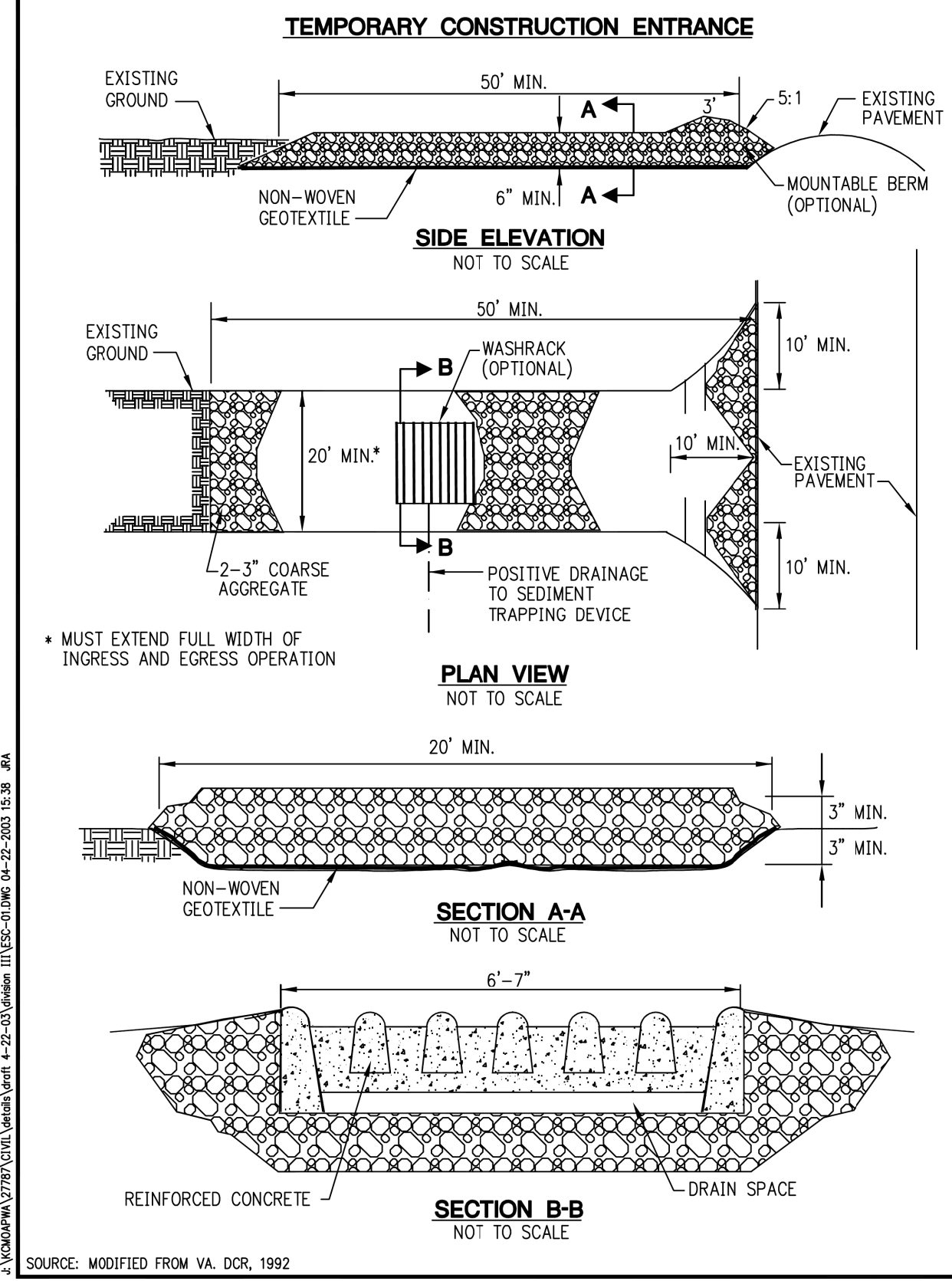
**ALTEC DESIGN ASSURANCE**  
**STORM SEWER PLAN**  
**SNYDER & ASSOCIATES**  
 ENGINEERS & PLANNERS, INC.

SAINT JOSEPH, MISSOURI  
 802 FRANCIS STREET  
 ST. JOSEPH, MO 64501  
 816-364-5222

212 N. BUCHANAN  
 MARYVILLE, MO 64468  
 660-582-8888  
 www.snyder-associates.com

**SNYDER & ASSOCIATES**  
 Project No: 1161183  
 Sheet C2.7

5/25/2017 8:46:54 AM  
 C:\2016 Projects\116.1183 - Altec Design Assurance\CD\116.1183\_C3.0\_116.1183.dwg  
 5/25/2017 8:46:54 AM  
 Y:\snyder\drivers\Black - Gray\116.1183.dwg  
 5/25/2017 8:46:54 AM



**TEMPORARY CONSTRUCTION ENTRANCE PAD NOTES:**

**A) INSTALLATION:**

1. AVOID LOCATING ON STEEP SLOPES OR AT CURVES ON PUBLIC ROADS. IF POSSIBLE, LOCATE WHERE PERMANENT ROADS WILL EVENTUALLY BE CONSTRUCTED.
2. REMOVE ALL VEGETATION AND OTHER UNSUITABLE MATERIAL FROM THE FOUNDATION AREA, GRADE, AND CROWN FOR POSITIVE DRAINAGE.
3. IF SLOPE TOWARDS THE PUBLIC ROAD EXCEEDS 2%, CONSTRUCT A 6-TO 8-INCH HIGH RIDGE WITH 3H:1V SIDE SLOPES ACROSS THE FOUNDATION APPROXIMATELY 15 FEET FROM THE EDGE OF THE PUBLIC ROAD TO DIVERT RUNOFF AWAY FROM IT.
4. INSTALL PIPE UNDER THE ENTRANCE IF NEEDED TO MAINTAIN DRAINAGE DITCHES ALONG PUBLIC ROADS.
5. PLACE STONE TO DIMENSIONS AND GRADE AS SHOWN ON PLANS. LEAVE SURFACE SMOOTH AND SLOPED FOR DRAINAGE.
6. DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE ENTRANCE TO A SEDIMENT CONTROL DEVICE.
7. IF WET CONDITIONS ARE ANTICIPATED, PLACE GEOTEXTILE FABRIC ON THE GRADED FOUNDATION TO IMPROVE STABILITY.

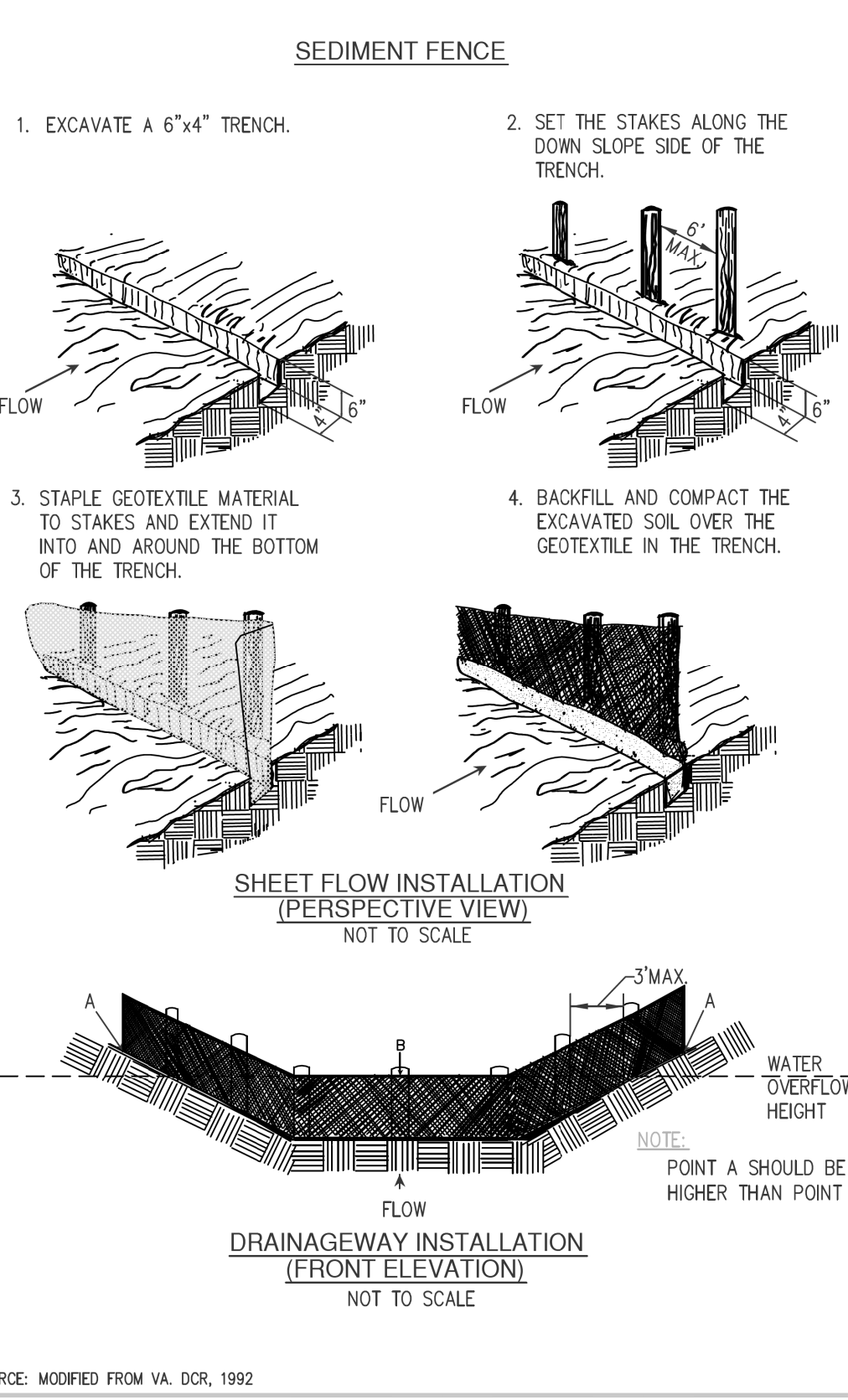
**B) TROUBLESHOOTING:**

1. CONSULT WITH A QUALIFIED DESIGN PROFESSIONAL IF ANY OF THE FOLLOWING OCCUR:
  - a. INADEQUATE RUNOFF CONTROL TO THE EXTENT THAT SEDIMENT WASHES ONTO PUBLIC ROAD - INSTALL DIVERSIONS OR OTHER RUNOFF CONTROL MEASURES.
  - b. SMALL STONE, THIN PAD, OR ABSENCE OF GEOTEXTILE FABRIC RESULTS IN RUTS AND MUDDY CONDITIONS AS STONE IS PRESSED INTO SOIL - INCREASE STONE SIZE OR PAD THICKNESS OR ADD GEOTEXTILE FABRIC.
  - c. PAD TOO SHORT FOR HEAVY CONSTRUCTION TRAFFIC - EXTEND PAD BEYOND THE MINIMUM 50-FOOT LENGTH AS NECESSARY.

**C) INSPECTION AND MAINTENANCE:**

1. INSPECT STONE PAD AND SEDIMENT DISPOSAL AREA WEEKLY AND AFTER 1/2-INCH OR GREATER STORM EVENTS.
2. RESHAPE PAD AS NEEDED FOR PROPER DRAINAGE AND RUNOFF CONTROL.
3. TOPRESS WITH CLEAN 2-AND 3-INCH STONE AS NEEDED.
4. IMMEDIATELY REMOVE MUD OR SEDIMENT TRACKED OR WASHED ONTO PUBLIC ROAD. REPAIR ANY BROKEN ROAD PAVEMENT IMMEDIATELY.
5. REMOVE ALL TEMPORARY ROAD MATERIALS FROM AREAS WHERE PERMANENT VEGETATION WILL BE ESTABLISHED.

AMERICAN PUBLIC WORKS ASSOCIATION  
**APWA** KANSAS CITY METROPOLITAN CHAPTER  
 STANDARD DRAWING NUMBER ESC-31  
 TEMPORARY CONSTRUCTION ENTRANCE



**SEDIMENT FENCE NOTES:**

**A) INSTALLATION:**

1. THE HEIGHT OF SEDIMENT FENCE SHALL BE A MINIMUM OF 16 INCHES ABOVE THE ORIGINAL GROUND SURFACE AND SHALL NOT EXCEED 34 INCHES ABOVE THE GROUND SURFACE.
2. THE FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID THE USE OF JOINTS. WHEN JOINTS ARE UNAVOIDABLE, FILTER CLOTH SHALL BE SECURELY SPLICED TOGETHER ONLY AT SUPPORT POSTS, WITH A MAX 6-INCH OVERLAP.
3. DIG A TRENCH AT LEAST 6 INCHES DEEP AND 4 INCHES WIDE ALONG THE FENCE ALIGNMENT.
4. DRIVE POSTS AT LEAST 24 INCHES INTO THE GROUND ON THE DOWNSLOPE SIDE OF THE TRENCH. SPACE POSTS A MAXIMUM OF 6 FEET APART.
5. EXTRA-STRENGTH SEDIMENT FENCE FABRIC SHALL BE USED. POSTS FOR THIS TYPE OF FABRIC SHALL BE PLACED A MAXIMUM OF 6 FEET APART. THE SEDIMENT FABRIC SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING A MINIMUM OF ONE INCH LONG, HEAVY-DUTY WIRE STAPLES OR TIE-WIRES, AND EIGHT INCHES OF THE FABRIC SHALL BE EXTENDED INTO THE TRENCH. THE FABRIC SHALL NOT BE STAPLED TO EXISTING TREES.
6. PLACE THE BOTTOM 1 FOOT OF FABRIC IN THE MINIMUM-OF-6-INCH DEEP TRENCH, LAPPING TOWARD THE UPSLOPE SIDE. BACKFILL WITH COMPACTED EARTH OR GRAVEL.
7. IF A SEDIMENT FENCE IS TO BE CONSTRUCTED ACROSS A DITCH LINE OR SWALE, IT MUST BE OF SUFFICIENT LENGTH TO ELIMINATE ENDFLOW, AND THE PLAN CONFIGURATION SHALL RESEMBLE AN ARC OR HORSESHOE, PLACED ON A CONTOUR, WITH THE ENDS ORIENTED UPSLOPE. EXTRA-STRENGTH SEDIMENT FABRIC SHALL BE USED WITH A MAXIMUM 3-FOOT SPACING OF POSTS.
8. TO REDUCE MAINTENANCE, EXCAVATE A SHALLOW SEDIMENT STORAGE AREA IN THE UPSLOPE SIDE OF THE FENCE. PROVIDE GOOD ACCESS IN AREAS OF HEAVY SEDIMENTATION FOR CLEAN OUT AND MAINTENANCE.
9. SEDIMENT FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED.

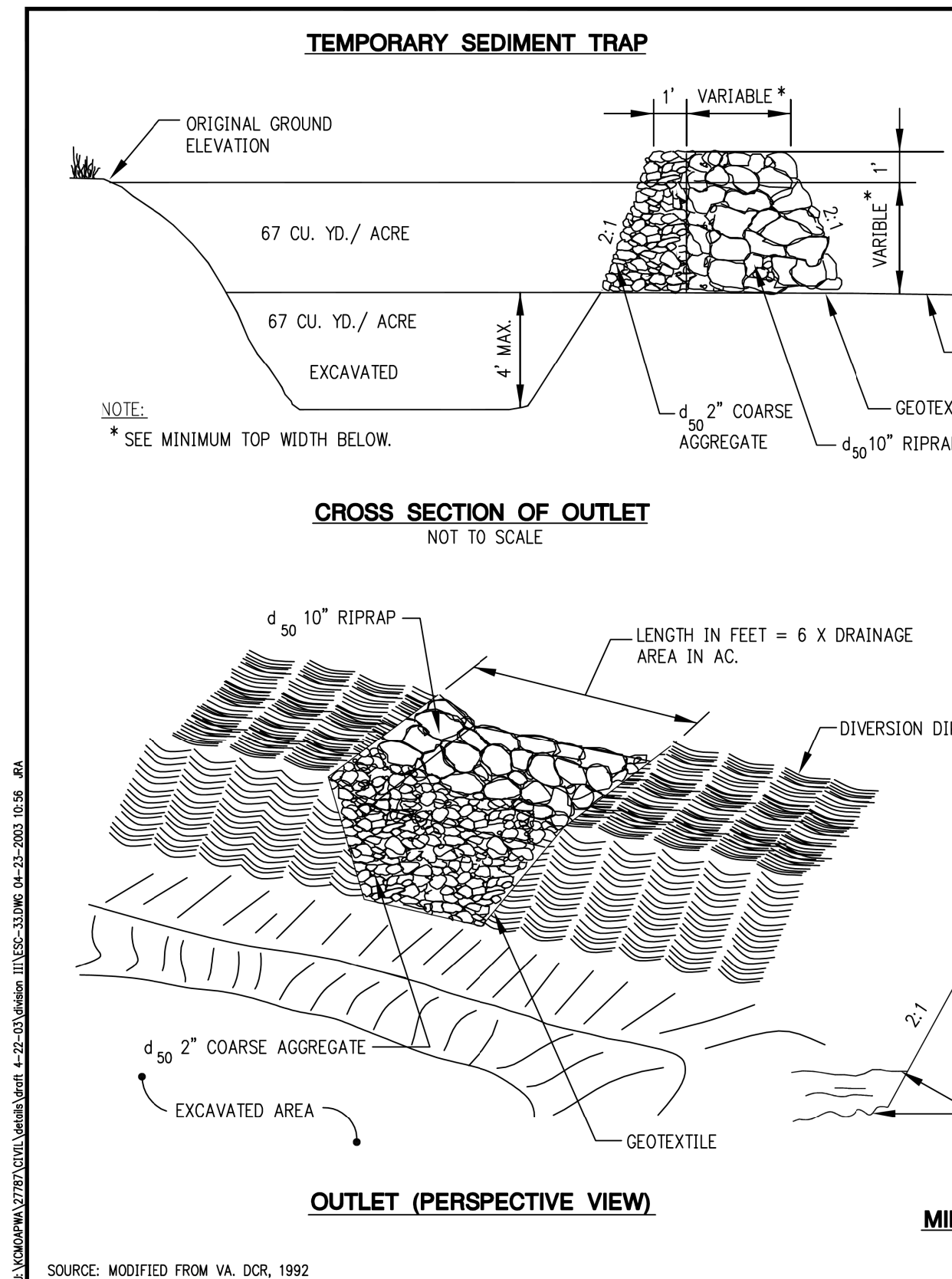
**B) TROUBLESHOOTING:**

1. DETERMINE THE EXACT LOCATION OF UNDERGROUND UTILITIES, BEFORE FENCE INSTALLATION SO UTILITIES ARE NOT DISTURBED.
2. GRADE ALIGNMENT OF FENCE AS NEEDED TO PROVIDE A BROAD, NEARLY LEVEL AREA UPSLOPE OF FENCE TO ALLOW SEDIMENT COLLECTION AREA.

**C) INSPECTION MAINTENANCE:**

1. INSPECT SEDIMENT FENCES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY.
2. SHOULD THE FABRIC OF A SEDIMENT FENCE COLLAPSE, TEAR, DECOMPOSE, OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.
3. REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE. AVOID DAMAGING OR UNDERMINING THE FENCE DURING CLEANOUT. SEDIMENT ACCUMULATION SHOULD NOT EXCEED 1/2 THE HEIGHT OF THE FENCE.
4. REMOVE ALL FENCING MATERIALS AND UNSTABLE SEDIMENT DEPOSITS, AND BRING THE AREA TO GRADE AND STABILIZE IT AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY AND COMPLETELY STABILIZED.

AMERICAN PUBLIC WORKS ASSOCIATION  
**APWA** KANSAS CITY METROPOLITAN CHAPTER  
 STANDARD DRAWING NUMBER ESC-19  
 SEDIMENT FENCE



**TEMPORARY SEDIMENT TRAP NOTES:**

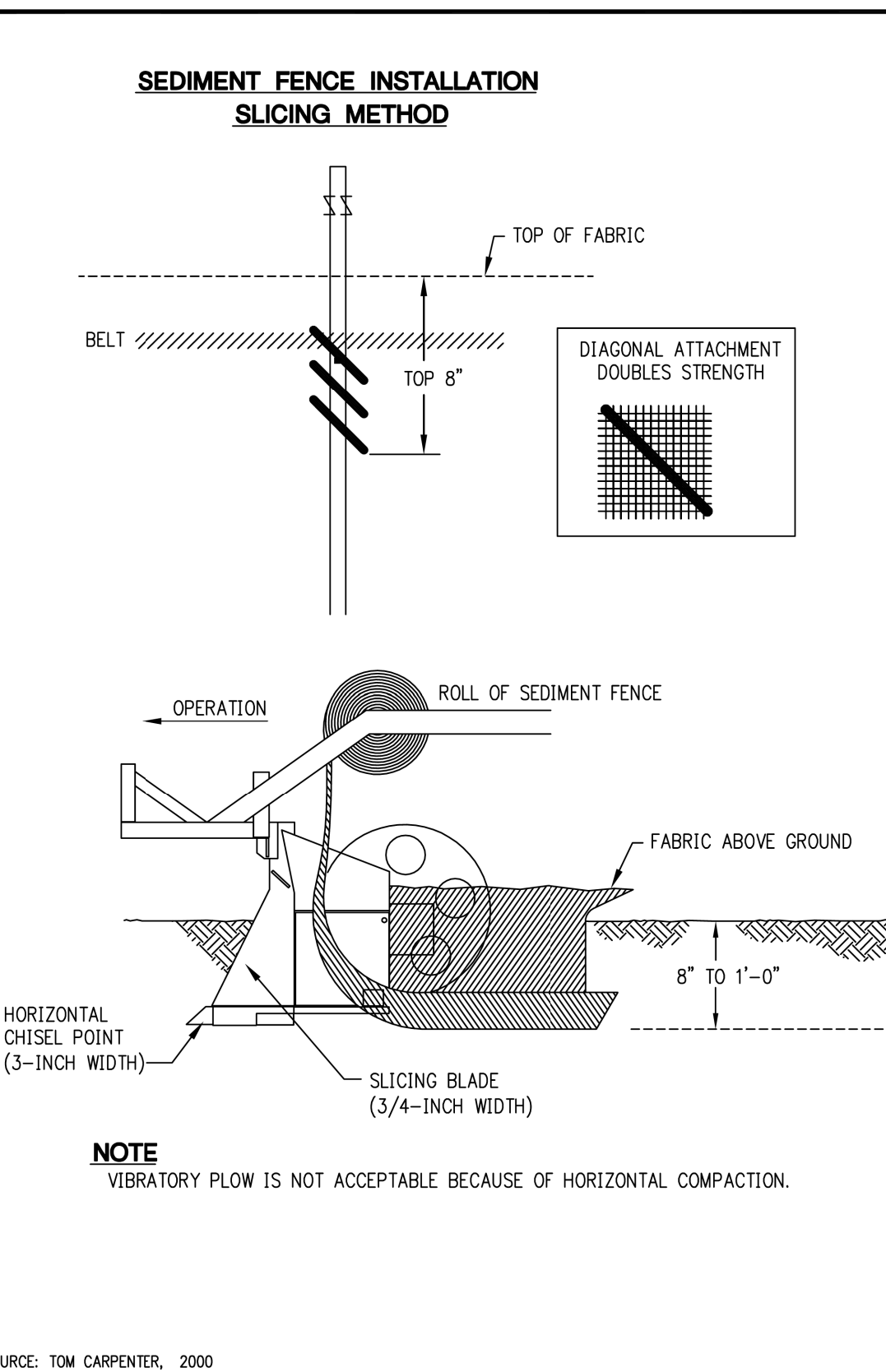
**A) CONSTRUCTION SPECIFICATIONS:**

1. THE AREA UNDER THE EMBANKMENT SHALL BE CLEARED, GRUBBED, AND STRIPPED OF ANY VEGETATION AND ROOT MAT.
2. FILL MATERIAL FOR THE EMBANKMENT SHALL BE FREE OF ROOTS OR OTHER WOODY VEGETATION, ORGANIC MATERIAL, LARGE STONES, AND OTHER OBJECTIONABLE MATERIAL. THE EMBANKMENT SHOULD BE COMPACTED IN 6-INCH LAYERS BY TRAVERSING WITH CONSTRUCTION EQUIPMENT.
3. THE EARTHEN EMBANKMENT SHALL BE SEEDED WITH TEMPORARY OR PERMANENT VEGETATION IMMEDIATELY AFTER INSTALLATION.
4. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT TO MINIMIZE EROSION AND WATER POLLUTION.
5. THE STRUCTURE SHALL BE REMOVED AND THE AREA STABILIZED WHEN THE UPSLOPE DRAINAGE AREA HAS BEEN STABILIZED.
6. ALL CUT AND FILL SLOPES SHALL BE 2H:1V OR FLATTER EXCEPT FOR EXCAVATED, WET STORAGE AREAS WHICH MAY BE AT A MAXIMUM 1H:1V GRADE.

**B) INSPECTION AND MAINTENANCE:**

1. INSPECT THE TEMPORARY SEDIMENT TRAP AFTER EACH STORM EVENT OF 1/2-INCH OR GREATER.
2. REMOVE AND PROPERLY DISPOSE OF SEDIMENT WHEN IT ACCUMULATES TO ONE-HALF THE DESIGN VOLUME AS INDICATED BY THE CLEAN-OUT STAKE.
3. PERIODICALLY CHECK THE EMBANKMENT, SPILLWAY, AND OUTLET APRON FOR EROSION DAMAGE, SETTLING SEEPAGE, OR SLUMPING ALONG THE TOE AND REPAIR IMMEDIATELY.
4. REPLACE THE SPILLWAY GRAVEL FACING IF IT BECOMES CLOGGED.
5. INSPECT VEGETATION AND RESEED IF NECESSARY.
6. REPLACE ANY DISPLACED RIPRAP SO THAT NO REPLACEMENT ROCK IS ABOVE THE DESIGN GRADE.
7. REMOVE THE TEMPORARY SEDIMENT TRAP AFTER THE DRAINAGE AREA HAS BEEN PERMANENTLY STABILIZED, INSPECTED, AND APPROVED. DO SO BY DRAINING ANY WATER, REMOVING THE SEDIMENT TO A DESIGNATED DISPOSAL AREA, AND GRADING THE SITE TO BLEND WITH THE SURROUNDING AREA; THEN STABILIZE.

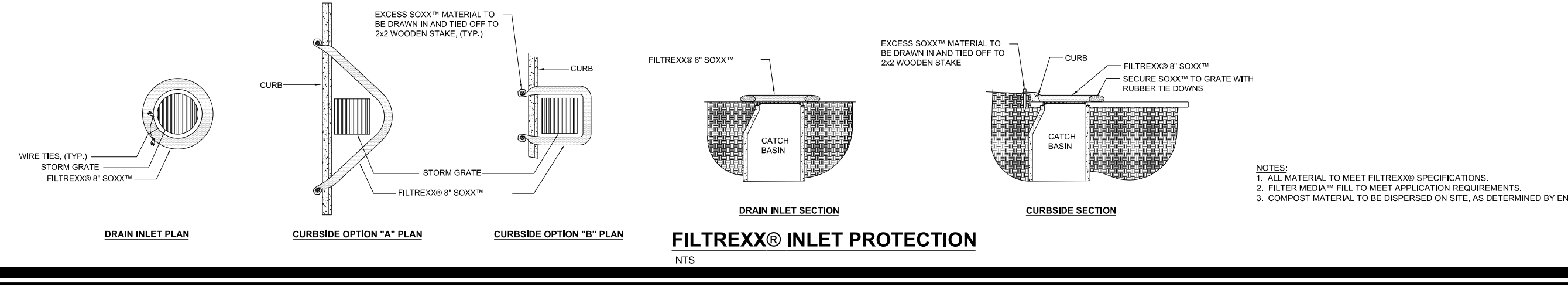
AMERICAN PUBLIC WORKS ASSOCIATION  
**APWA** KANSAS CITY METROPOLITAN CHAPTER  
 STANDARD DRAWING NUMBER ESC-33  
 TEMPORARY SEDIMENT TRAP



**SEDIMENT FENCE INSTALLATION SLICING METHOD NOTES:**

1. LIMIT PONDING HEIGHT TO 24"
2. ATTACH FABRIC TO UPSLOPE SIDE OF POST.
3. DRIVE OVER EACH SIDE OF SEDIMENT FENCE 2 TO 4 TIMES WITH DEVICE EXERTING 60 PSI OR GREATER AFTER MATERIAL IS SLICED INTO THE GROUND.
4. SPACE POSTS A MAX OF 7' ON OPEN RUNS AND 4' ON POOLING AREAS.
5. SINK POSTS AS FAR BELOW GROUND AS FABRIC ABOVE GROUND.

AMERICAN PUBLIC WORKS ASSOCIATION  
**APWA** KANSAS CITY METROPOLITAN CHAPTER  
 STANDARD DRAWING NUMBER ESC-11  
 SEDIMENT FENCE INSTALLATION SLICING METHOD



**NOTES:**

1. ALL MATERIAL TO MEET FILTRIX® SPECIFICATIONS.
2. FILTRIX MEDIA™ FILL TO MEET APPLICATION REQUIREMENTS.
3. COMPOST MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY ENGINEER.

MARK REVISION DATE BY  
 Engineer: SD Checked By: AM Scale: 1"= 1'-0"  
 Technician: DB Date: 05/24/2017 Field Bk.:  
 Project No.: 1161183  
 Sheet C3.0

STATE OF MISSOURI  
 SHAWN DUKER  
 PROFESSIONAL ENGINEER  
 NUMBER PE-313046489  
 EXPIRES 8/24/17

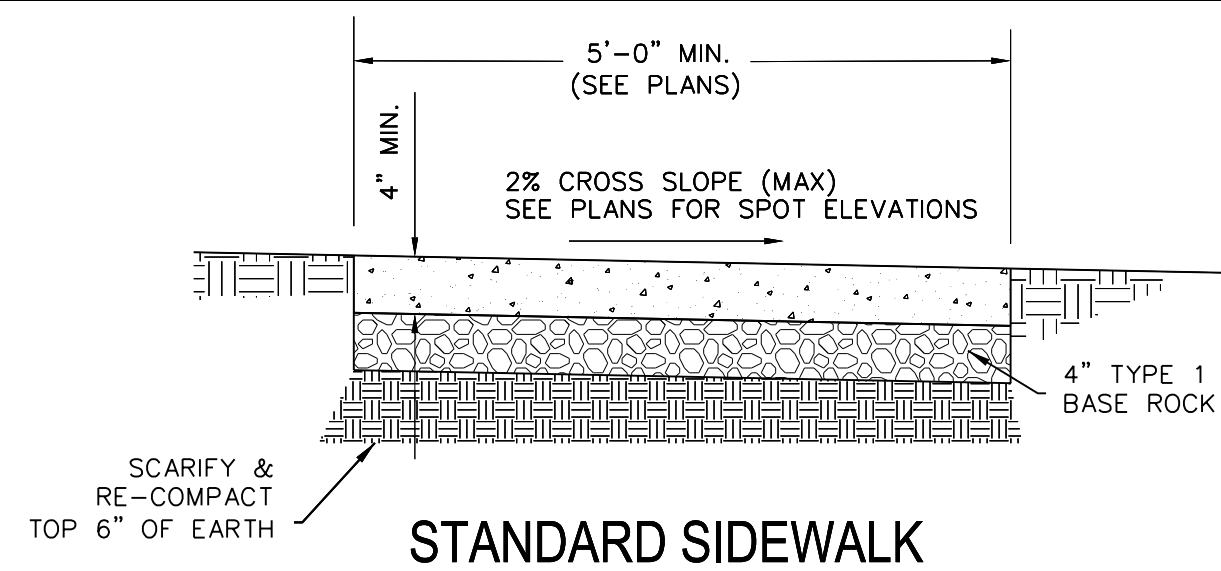
SAINT JOSEPH, MISSOURI  
 802 FRANCIS STREET  
 ST. JOSEPH, MO 64501  
 816-364-5222

ALTEC DESIGN ASSURANCE  
 DETAILS  
**SNYDER & ASSOCIATES**  
 ENGINEERS & PLANNERS, INC.  
 www.snyder-associates.com

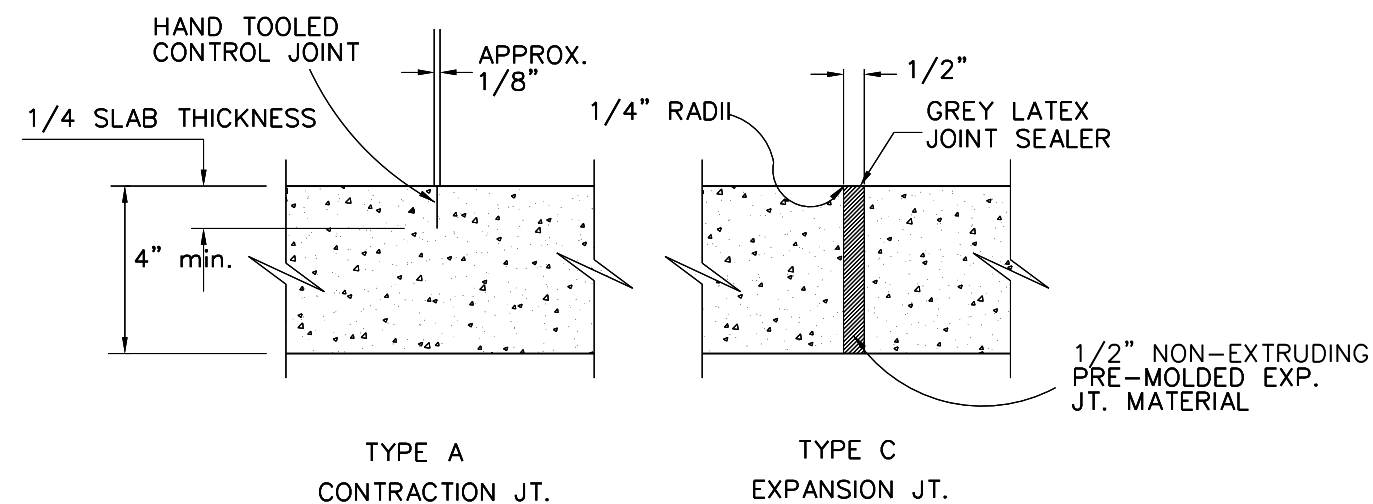
212 N. BUCHANAN  
 MARYVILLE, MO 64468  
 660-582-9888

**SNYDER & ASSOCIATES**  
 & ASSOCIATES

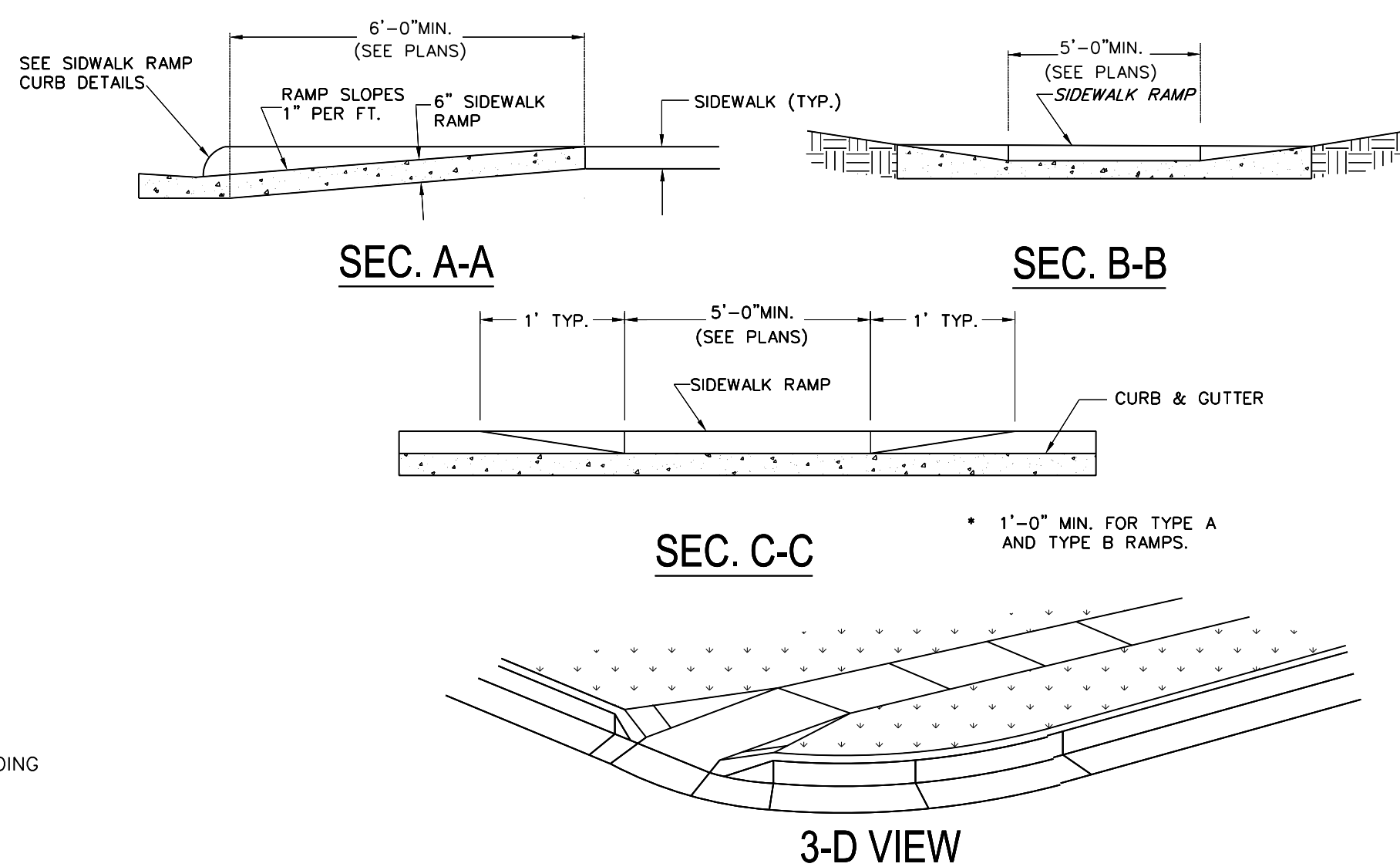
Project No.: 1161183  
 Sheet C3.0



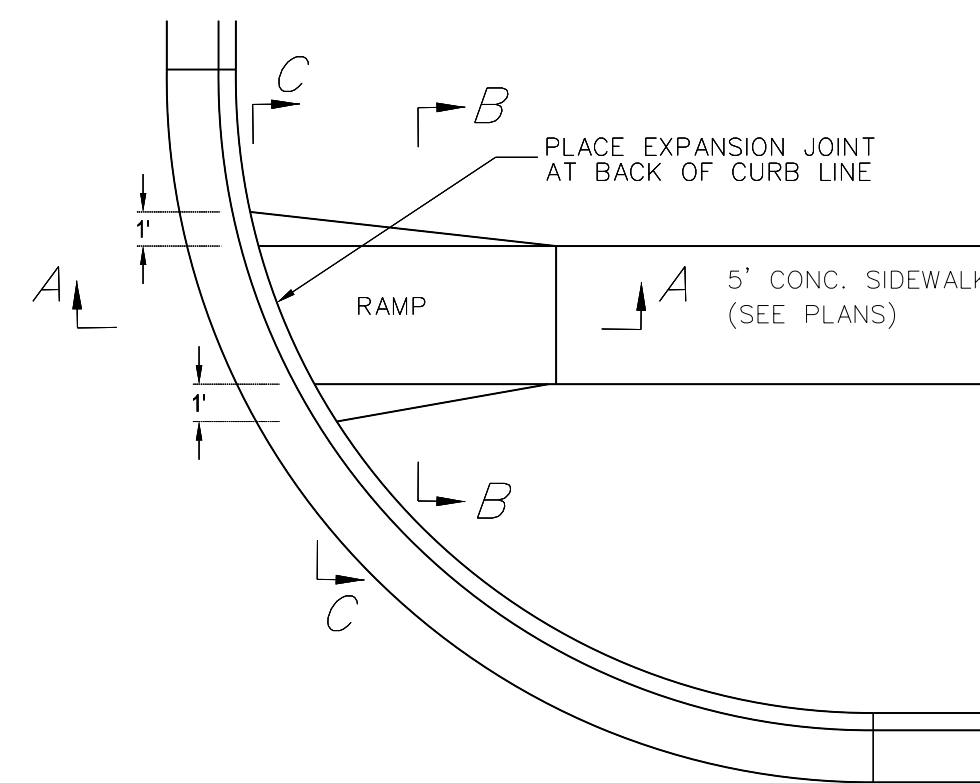
**STANDARD SIDEWALK**



**CONCRETE SIDEWALK  
CONCRETE JOINT DETAILS**



**3-D VIEW**

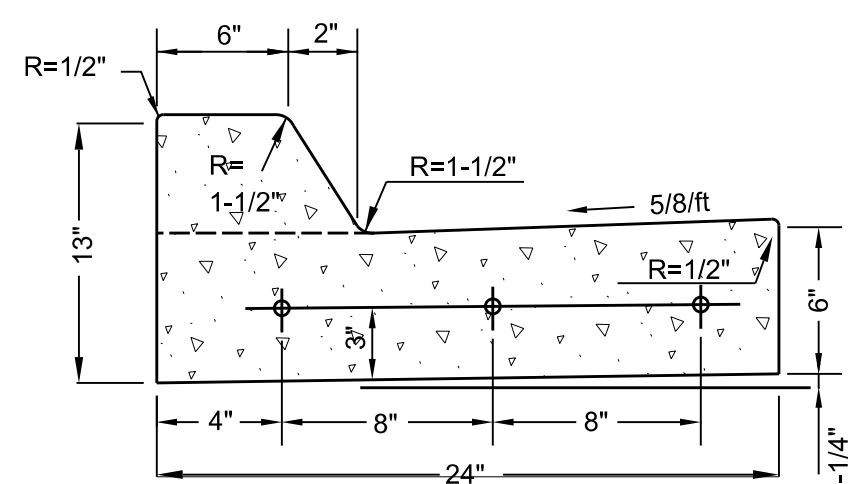


**PLAN VIEW**

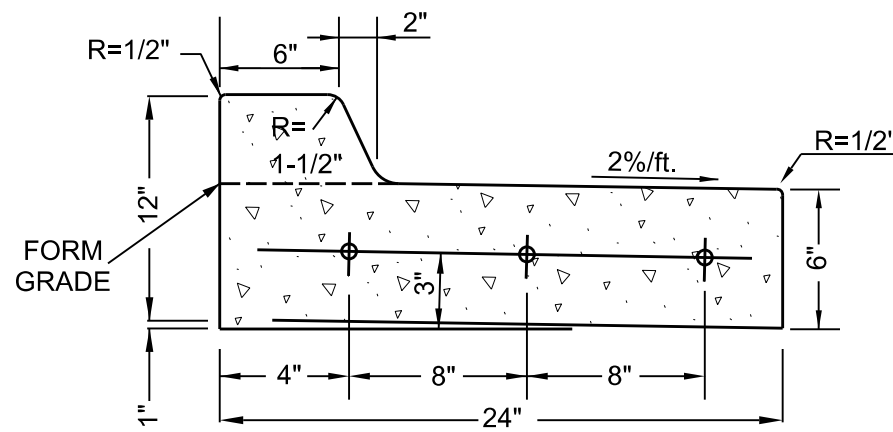
**SIDEWALK NOTES:**

- SIDEWALKS SHALL RECEIVE BROOM FINISH WITH 2" WIDE SMOOTH EDGING ON ALL TOOLED JOINTS. ALL JOINTS SHALL BE TOOLED AND ALL PANELS SHALL BE PICTURE FRAMED.
- SIDEWALK CONTRACTION JOINTS SHALL BE HAND TOOLED. THE SPACING OF THE JOINTS SHALL BE A MAXIMUM OF 5'.
- EXPANSION JOINTS SHALL BE PLACED AT RADIAL POINTS AND WHERE SIDEWALK ABUTS CONCRETE CURBS, DRIVEWAYS, STRUCTURE FOUNDATIONS.
- USE EXPANSION JOINTS WHEN SIDEWALKS OR PATIOS ABUT EXISTING STRUCTURES SUCH AS SIDEWALLS OF BUILDING OR COLUMNS.

**TYPE A SIDEWALK RAMP**



**STRAIGHT BACK CURB & GUTTER  
(TYPE CG-1 WET)**



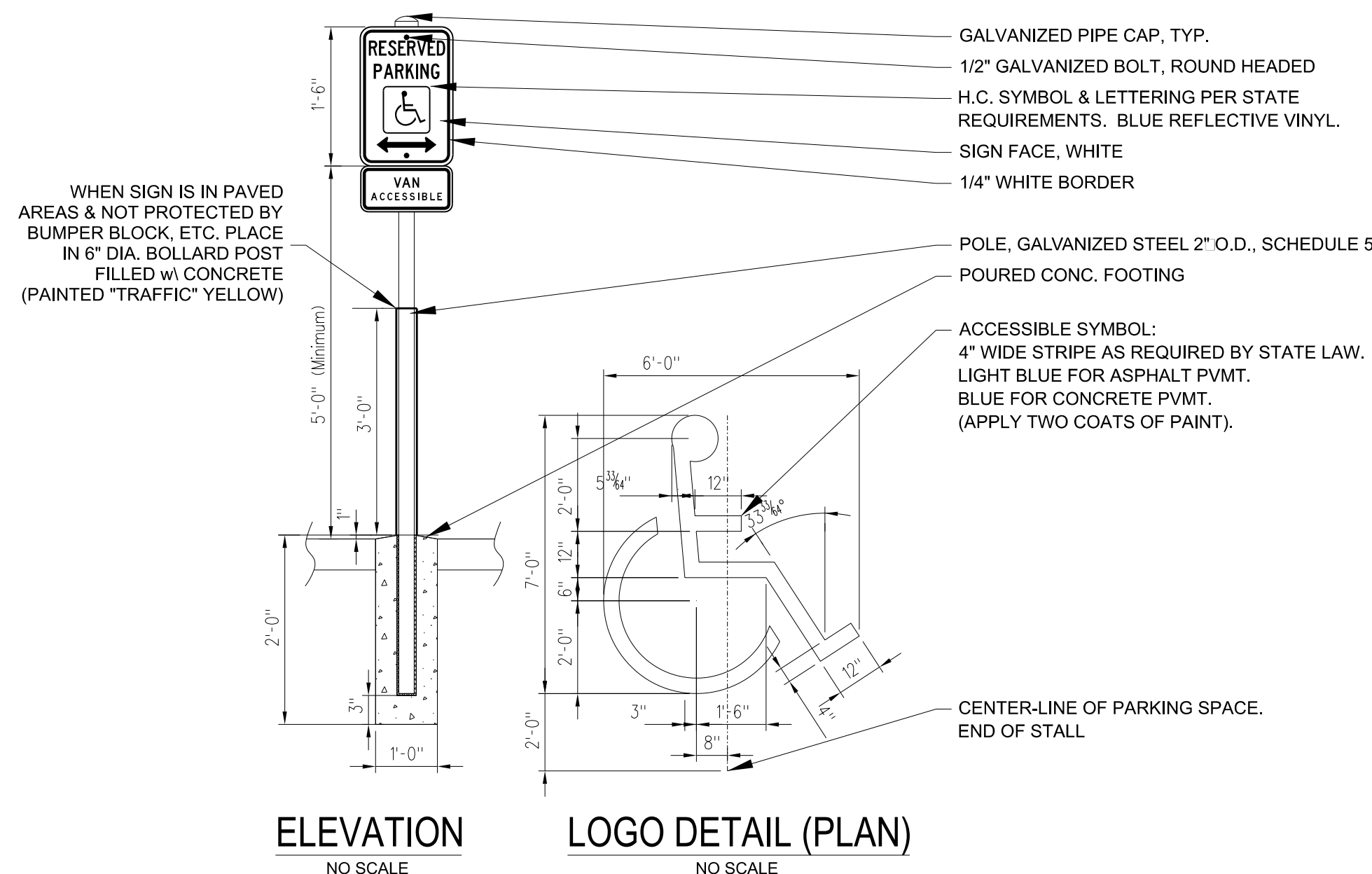
**STRAIGHT BACK DRY CURB & GUTTER  
(TYPE CG-1 DRY)**

**NOTES:**

- 3/4" ISOLATION JOINTS WITH 5/8" DIA. x 2" SMOOTH DOWELS SHALL BE PLACED AT RADIUS POINTS AND AT 150' INTERVALS. THESE DOWEL BARS SHALL BE GREASED AND WRAPPED ON ONE END WITH EXPANSION TUBES.
- 1" DEEP CONTRACTION JOINTS SHALL BE INSTALLED AT APPROXIMATELY 10' INTERVALS. THESE JOINTS SHALL PASS ACROSS THE ENTIRE CURB SECTION.
- FIX DOWEL BARS WITH BAR SUPPORTS.
- DEPTH OF CURB SHALL BE A MINIMUM OF 8" THROUGH THE HANDICAP ACCESS RAMP.
- CONCRETE SHALL CONFORM TO APWA STANDARD SPECIFICATIONS SECTION 2208.2.B
- CONCRETE STRENGTH 5000 PSI @ 28 DAY.

**CURB & GUTTER DETAILS**

NO SCALE

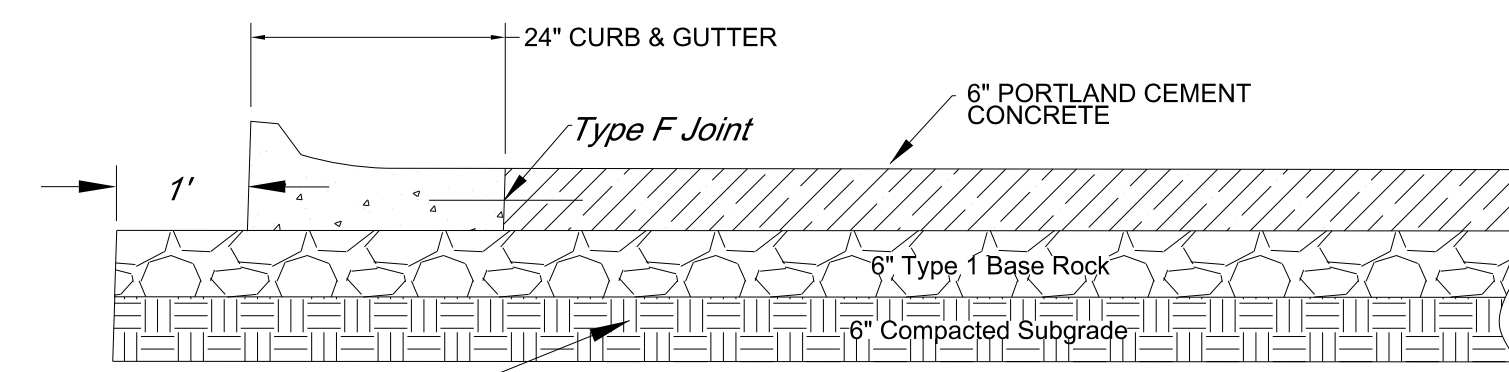


**ELEVATION**

**LOGO DETAIL (PLAN)**

**ACCESSIBLE SIGN & SYMBOL DETAILS**

NO SCALE

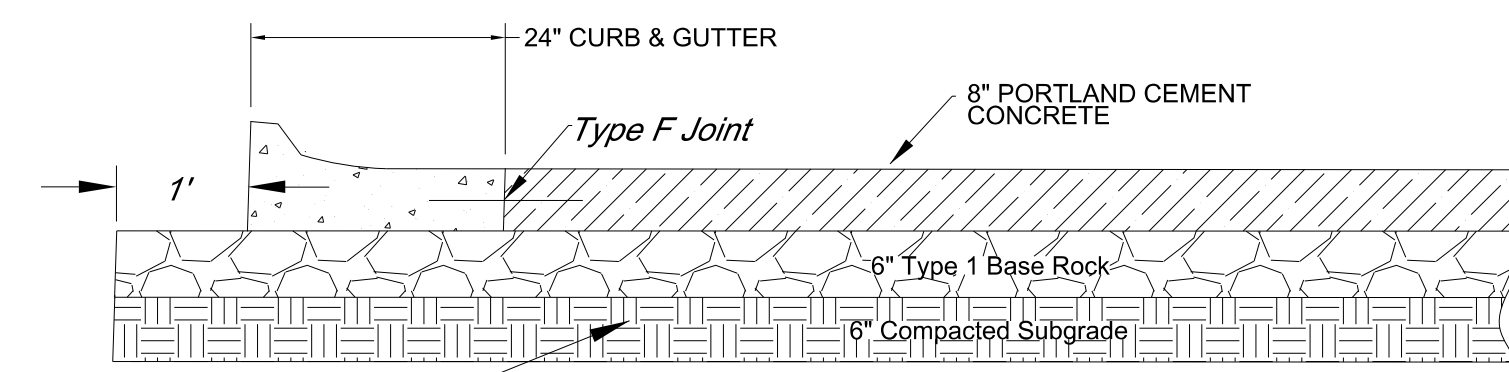


MANIPULATE & COMPACT TO ASSURE UNIFORM DENSITY. IF SUITABLE MATERIAL DOES NOT EXIST, CORE OUT & BRING IN MORE SATISFACTORY SOIL FROM ELSEWHERE ON SITE & RECOMPACT AT NO ADDITIONAL COST.

AREAS SEED, MULCH & FERTILIZE ALL DISTURBED BY CONSTRUCTION

**STANDARD DUTY CONCRETE SECTION**

NO SCALE

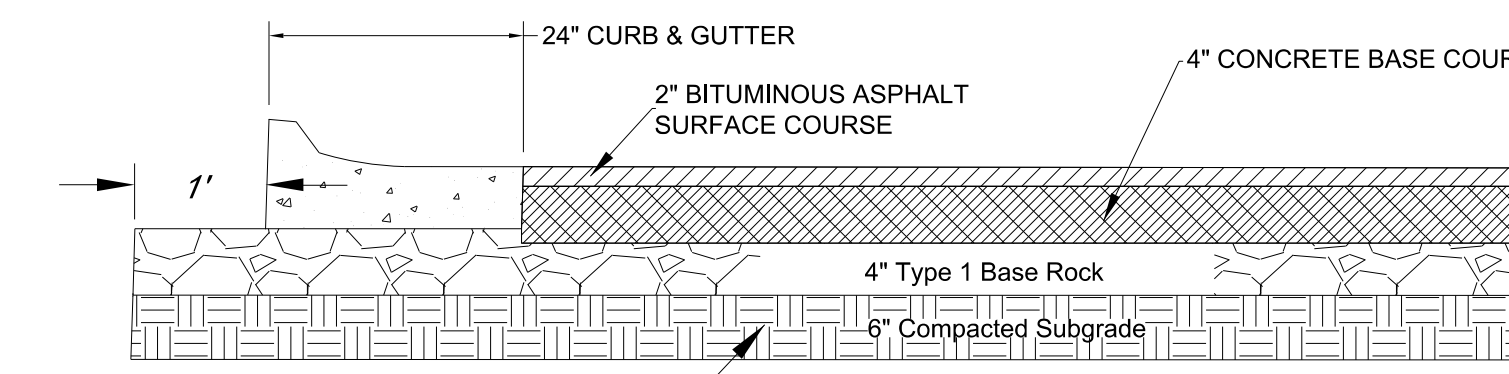


MANIPULATE & COMPACT TO ASSURE UNIFORM DENSITY. IF SUITABLE MATERIAL DOES NOT EXIST, CORE OUT & BRING IN MORE SATISFACTORY SOIL FROM ELSEWHERE ON SITE & RECOMPACT AT NO ADDITIONAL COST.

AREAS SEED, MULCH & FERTILIZE ALL DISTURBED BY CONSTRUCTION

**HEAVY DUTY CONCRETE SECTION**

NO SCALE

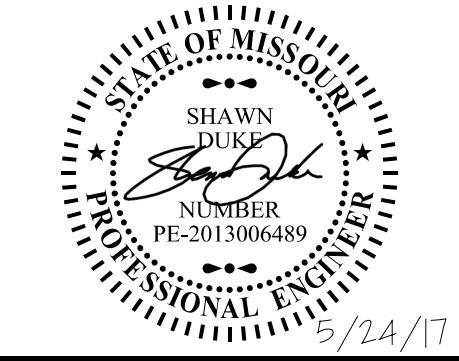


MANIPULATE & COMPACT TO ASSURE UNIFORM DENSITY. IF SUITABLE MATERIAL DOES NOT EXIST, CORE OUT & BRING IN MORE SATISFACTORY SOIL FROM ELSEWHERE ON SITE & RECOMPACT AT NO ADDITIONAL COST.

SEED, MULCH & FERTILIZE ALL DISTURBED BY CONSTRUCTION

**STANDARD DUTY ASPHALT SECTION**

NO SCALE



SAINT JOSEPH, MISSOURI  
212 N. BUCHANAN  
MARYVILLE, MO 64468  
802 FRANCIS STREET  
ST. JOSEPH, MO 64501  
816-364-5222

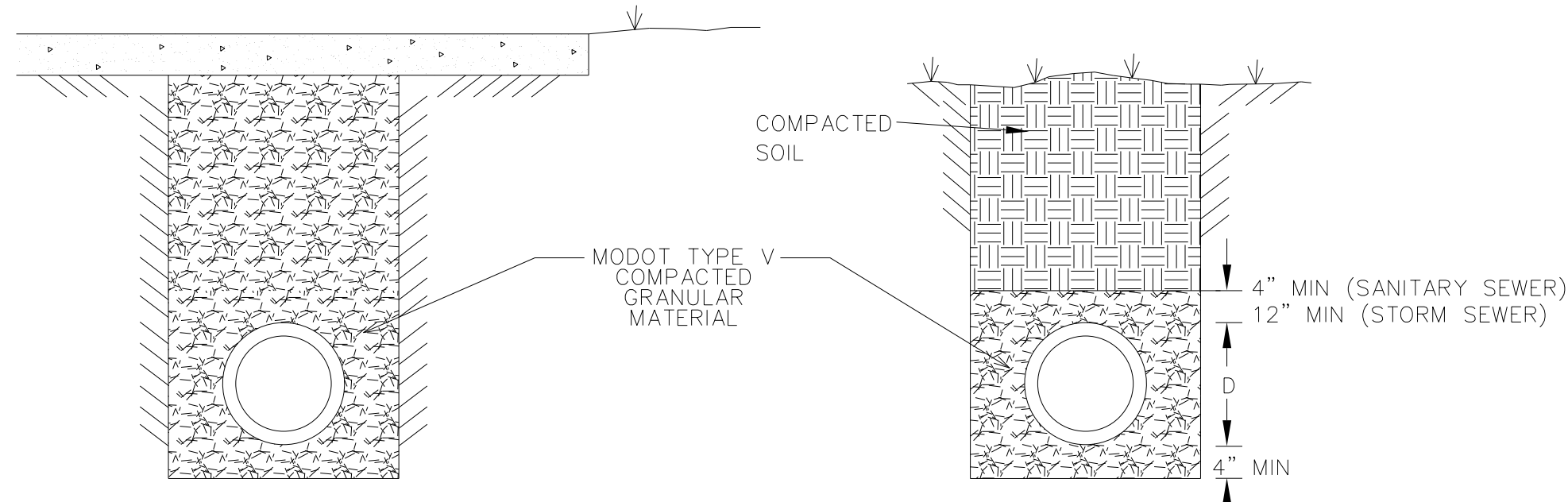
ALTEC DESIGN ASSURANCE  
DETAILS  
**SNYDER & ASSOCIATES**  
ENGINEERS & PLANNERS, INC.  
www.snyder-associates.com



Project No: 1161183  
Sheet C3.1

MARK	REVISION	DATE	BY
Engineer: SD	Checked By: AM	Scale: 1"=1'	
Technician: DB	Date: 05/24	Field Bk:	
Snyder & Associates Engineers & Planners, Inc. Missouri State Certificate of Authority #200608544			Page: C3.1

5/25/2017 5:47:41 AM  
 Snyder 1:20  
 Y:\prints\drivers\Black\_Gray\8161183\1161183\_C3.2\_Detail.dgn  
 5/25/2017 5:47:41 AM  
 Snyder 1:20  
 Y:\prints\drivers\Black\_Gray\8161183\1161183\_C3.2\_Detail.dgn

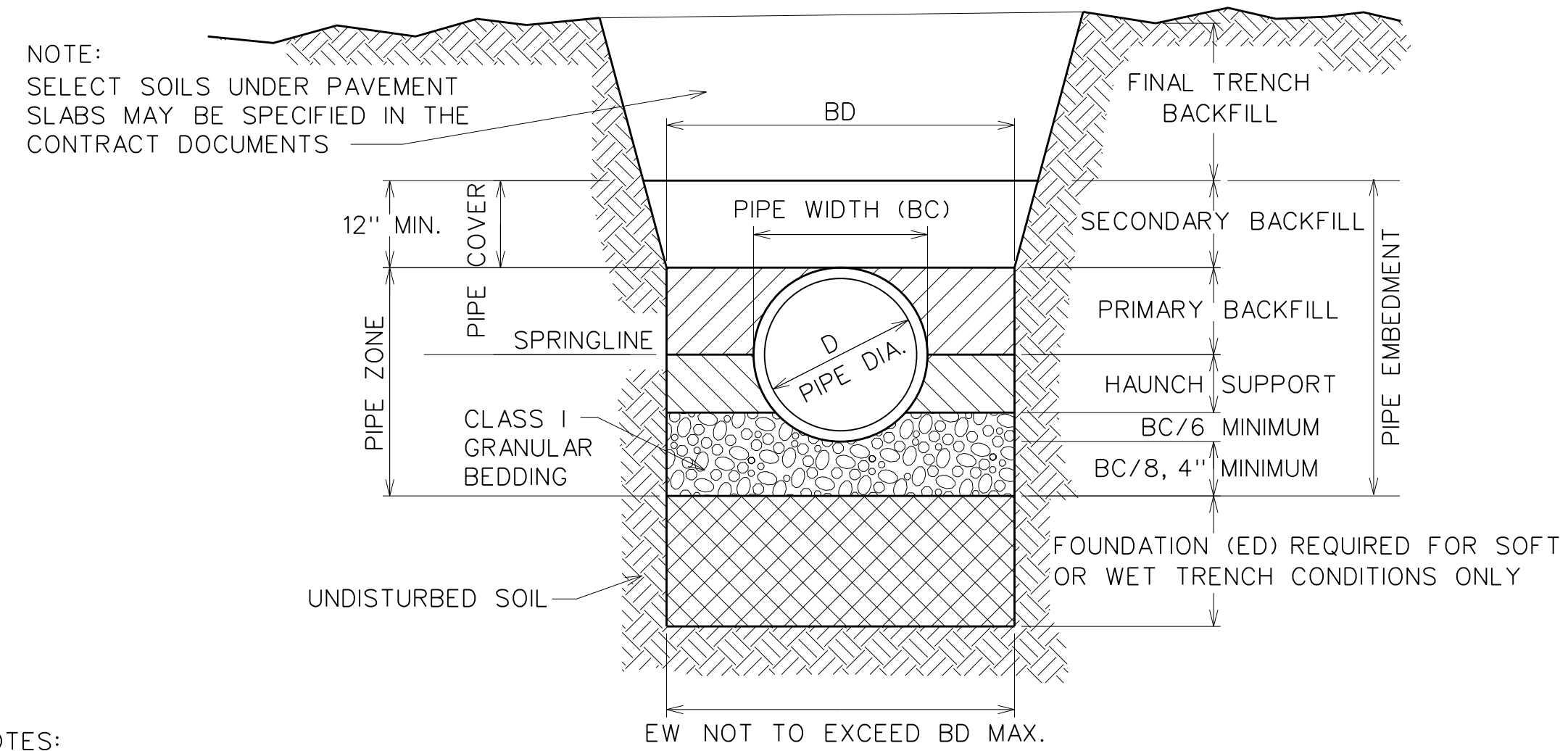


SANITARY & STORM SEWER PIPE EMBEDMENT BENEATH SIDEWALK, PAVEMENT, & FOOTINGS

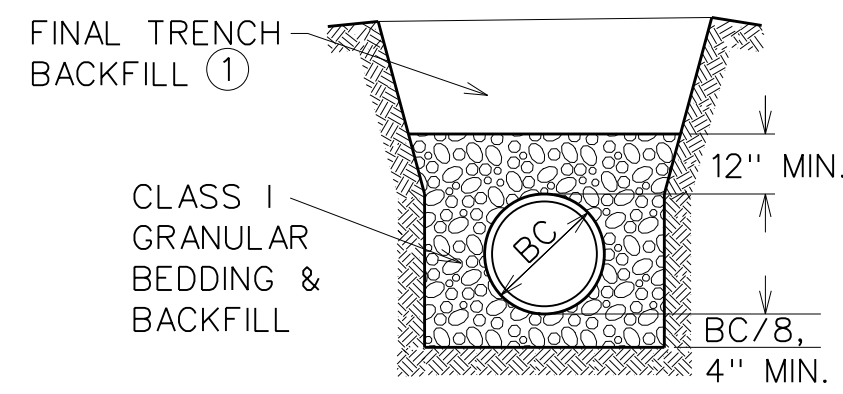
TYPICAL SANITARY & STORM SEWER PIPE EMBEDMENT DETAIL

COMPACTION REQUIREMENTS	
BACKFILL	% COMPACTION
FINAL	95%
PRIMARY OR SECONDARY	CLASS II-90% CLASS III-95% CLASS IVA-95%
HAUNCH	90%
PIPE BEDDING	90%

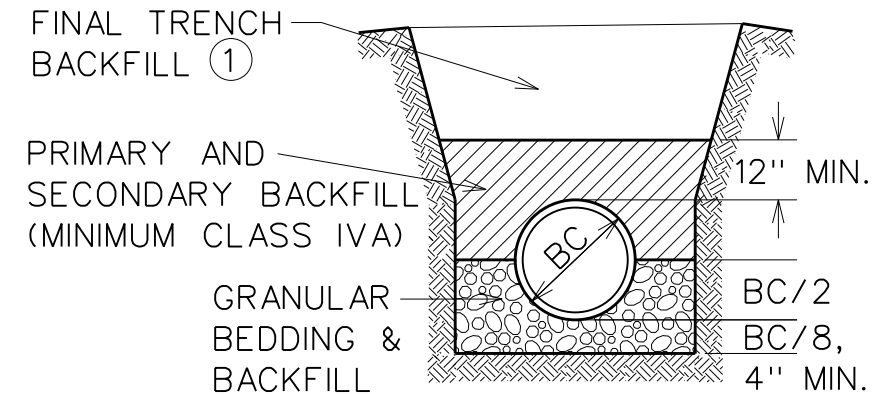
**STORM SEWER PIPE EMBEDMENT**  
NOT TO SCALE



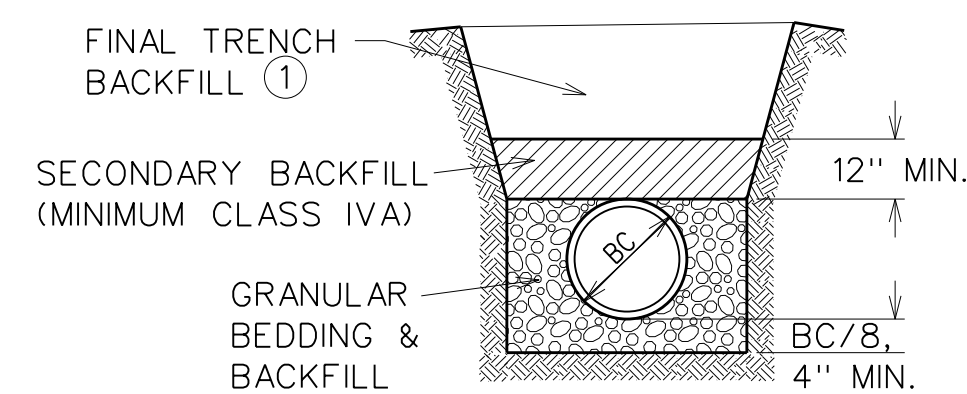
- NOTES:**
- HAND PLACED BACKFILL SHALL BE SELECTED, FINELY DIVIDED EXCAVATED MATERIAL FREE FROM DEBRIS, STONES, ORGANIC MATTER OR FROZEN LUMPS AND CAREFULLY COMPACTED.
  - CLASS I GRANULAR BEDDING: SEE SECTION 3010, 2.03.
  - A. TRENCH WIDTH (RIGID PIPE)  
MIN. WIDTH:  $BD = BC + 1.5'$   
MAX. WIDTH:  $BD = 1.25BC + 1'$  OR 54", WHICHEVER IS GREATER.  
B. TRENCH WIDTH (SEMI-RIGID AND FLEXIBLE PIPE)  
MIN. WIDTH:  $BD = 1.25BC + 1'$  OR  $BC + 1.5'$ , WHICHEVER IS GREATER.  
C. TRENCH WIDTH REQUIREMENTS MAY BE MODIFIED BY JURISDICTIONAL ENGINEER BASED UPON SITE CONDITIONS.  
 $BD =$  TRENCH WIDTH AT TOP OF PIPE.  
 $EW =$  EXCAVATION WIDTH AT BOTTOM OF TRENCH.  
DEPTH OF BEDDING MATERIAL BELOW PIPE =  $BC/8, 4"$  MINIMUM.
  - FOUNDATION ROCK (CLEAN CRUSHED STONE - 2 1/2" MATERIAL) WHEN REQUIRED SHALL BE PLACED BELOW NORMAL BEDDING. MEASUREMENT FOR FOUNDATION ROCK SHALL BE IN TONS; OVER EXCAVATION SHALL BE INCIDENTAL.
  - FOR ROCK EXCAVATION, THE TRENCH SHALL BE OVER EXCAVATED A MINIMUM OF 6" AND REFILLED WITH NORMAL BEDDING.



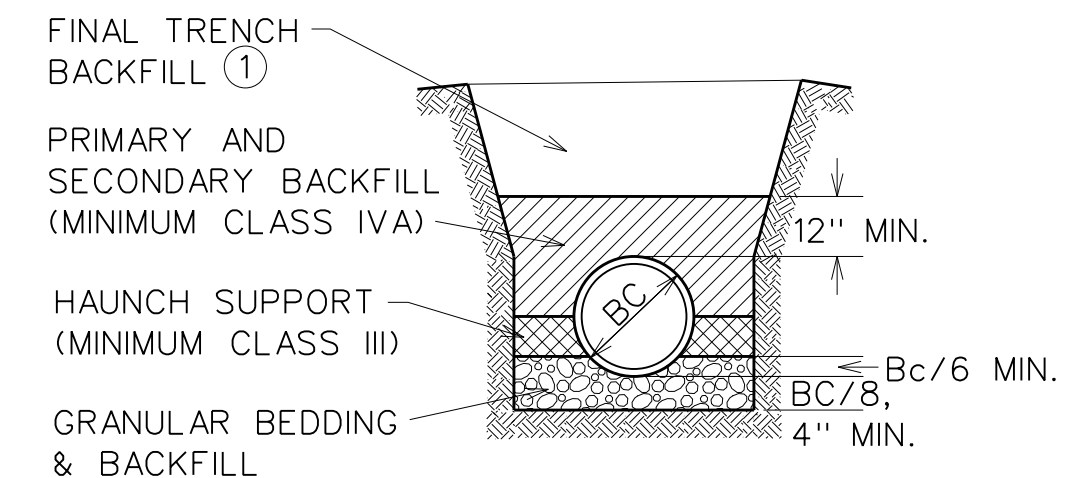
TYPE A-1 PIPE EMBEDMENT (GRANULAR EMBEDMENT 1) ABOVE TOP OF PIPE



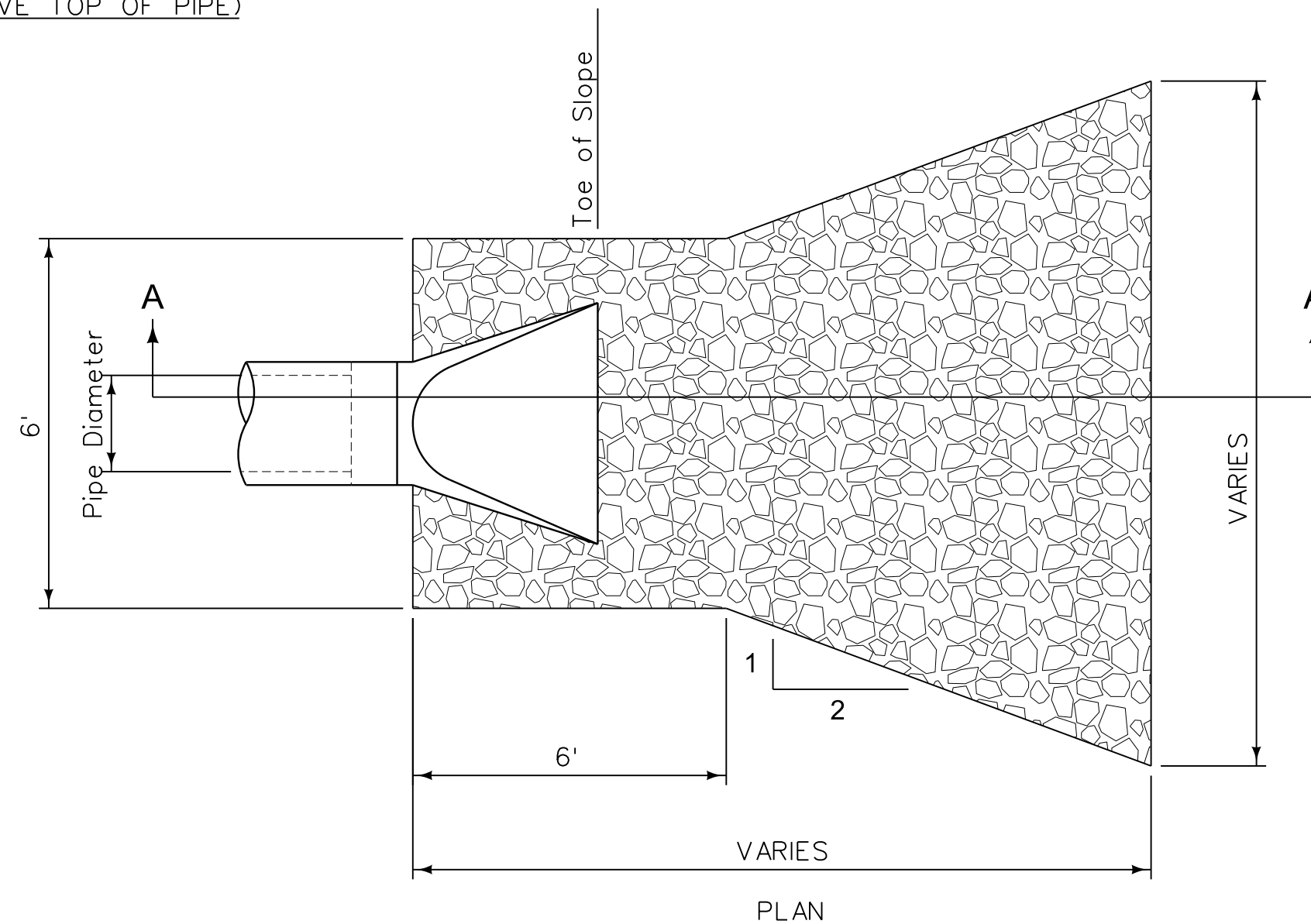
TYPE B PIPE EMBEDMENT



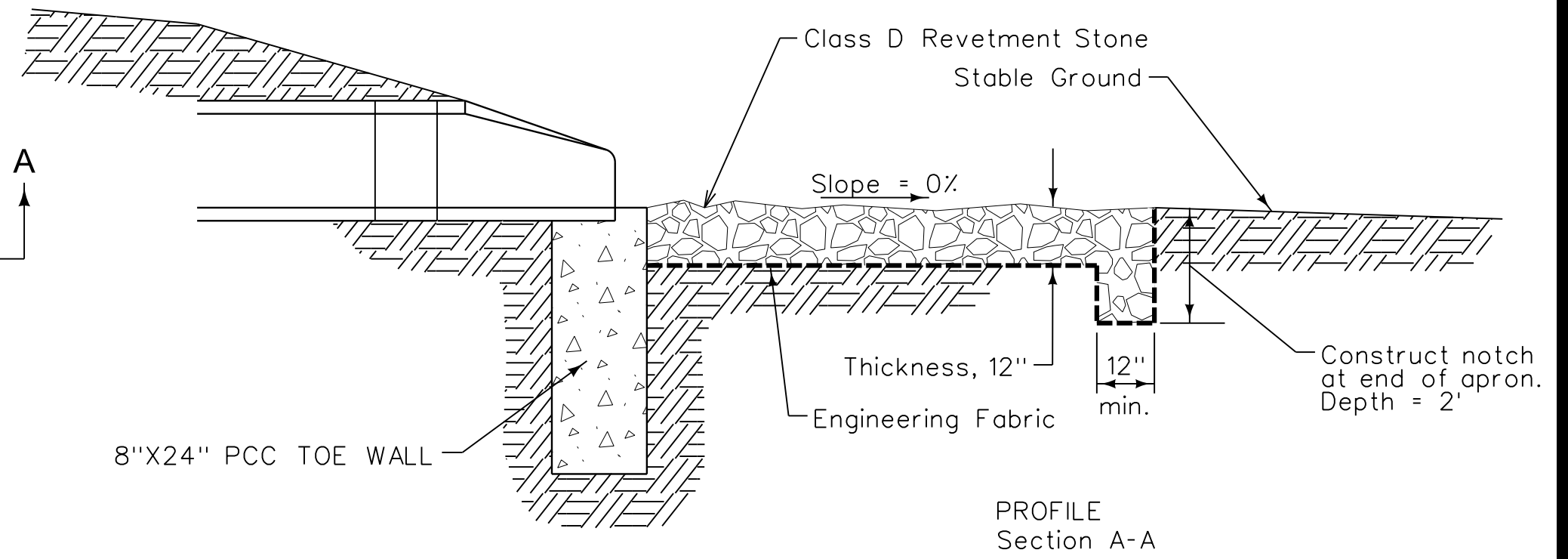
TYPE CSE PIPE EMBEDMENT (CRUSHED STONE ENCASEMENT)



TYPE C PIPE EMBEDMENT

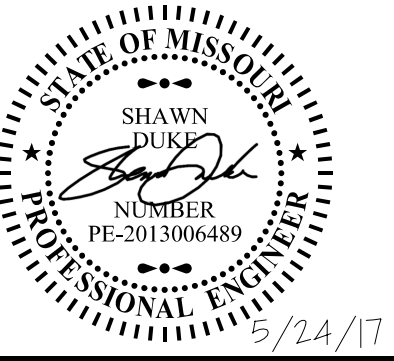


PIPE EMBEDMENT DETAIL NOT TO SCALE



END SECTION RIP RAP APRON DETAIL NOT TO SCALE

TYPE OF PIPE	MATERIAL	USE	ALLOWABLE DEPTH OF FILL ABOVE TOP OF PIPE			
			TYPE C EMBED.	TYPE B EMBED.	CSE EMBED.	TYPE A-1 EMBEDMENT
RIGID PIPE STIFFNESS >651 PSI	RCP: ASTM C 76 CLASS III; 12"-24"	STORM, GRAVITY	UP TO 8'	UP TO 10'	UP TO 10'	UP TO 10'
	RCP: ASTM C 76 CLASS III; 27"-84"	STORM, GRAVITY	UP TO 10'	UP TO 13'	UP TO 13'	UP TO 13'
	RCP: ASTM C 76 CLASS IV; 12"-24"	STORM, GRAVITY	UP TO 12'	UP TO 16'	UP TO 16'	UP TO 16'
	RCP: ASTM C 76 CLASS IV; 24"-27"	STORM, GRAVITY	UP TO 16'	UP TO 23'	UP TO 23'	UP TO 23'
	RCP: ASTM C 76 CLASS V; 12"-21"	STORM, GRAVITY	UP TO 19'	UP TO 25'	UP TO 25'	UP TO 25'
	RCP: ASTM C 76 CLASS V; 24"-84"	STORM, GRAVITY	UP TO 30'	UP TO 40'	UP TO 40'	UP TO 40'
	DUCTILE IRON; AWWA C151 (CLASS 52); 8"-54"	SANITARY, GRAVITY	UP TO 50', NO BEDDING REQUIRED			
	DUCTILE IRON; AWWA C151 (CLASS 52); 4"-64"	SANITARY, FORCE MAIN	UP TO 50', NO BEDDING REQUIRED			
	EXTRA STRENGTH, VCP; ASTM C 700 8"-10"	SANITARY, GRAVITY	UP TO 16'	UP TO 20'	UP TO 24'	UP TO 24'
	EXTRA STRENGTH, VCP; ASTM C 700 12"-21"	SANITARY, GRAVITY	UP TO 12'	UP TO 15'	UP TO 18'	UP TO 18'
SEMI-RIGID PIPE STIFFNESS 151 PSI TO 650 PSI	EXTRA STRENGTH, VCP; ASTM C 700 24"-42"	SANITARY, GRAVITY	UP TO 13'	UP TO 18'	UP TO 23'	UP TO 23'
	PVC; ASTM D 3034 (SDR 23.5); 8"-15"	SANITARY, GRAVITY			UP TO 30'	UP TO 30'
	PVC; ASTM D 2680 (TRUSS); 8"-15"	SANITARY, GRAVITY			UP TO 30'	UP TO 30'
	PVC; AWWA C900 (DR18); 4"-12"	SANITARY, FORCE MAIN, WATER	UP TO 30', NO BEDDING REQUIRED			
	PVC; AWWA C905 (DR18); 14"-24"	SANITARY, FORCE MAIN	UP TO 30', NO BEDDING REQUIRED			
	PVC; ASTM D 3034 (SDR 35 & 26); 8"-15"	SANITARY, GRAVITY				UP TO 30'
FLEXIBLE PIPE STIFFNESS 46 PSI TO 150 PSI	PVC; ASTM F 679 (T-1 WALL); 18"-27"	SANITARY, GRAVITY				UP TO 30'
	PVC; ASTM F 949 ; 8"-36"	SANITARY, GRAVITY				UP TO 30'
	PVC; ASTM F 1803 (CLOSED PROFILE); 21"-36"	SANITARY, GRAVITY				UP TO 30'
	PVC; ASTM F 949 ; 12"-36"	STORM, GRAVITY			UP TO 30'	UP TO 30'
	HDPE; AASHTO M 294	STORM, GRAVITY				UP TO 11'

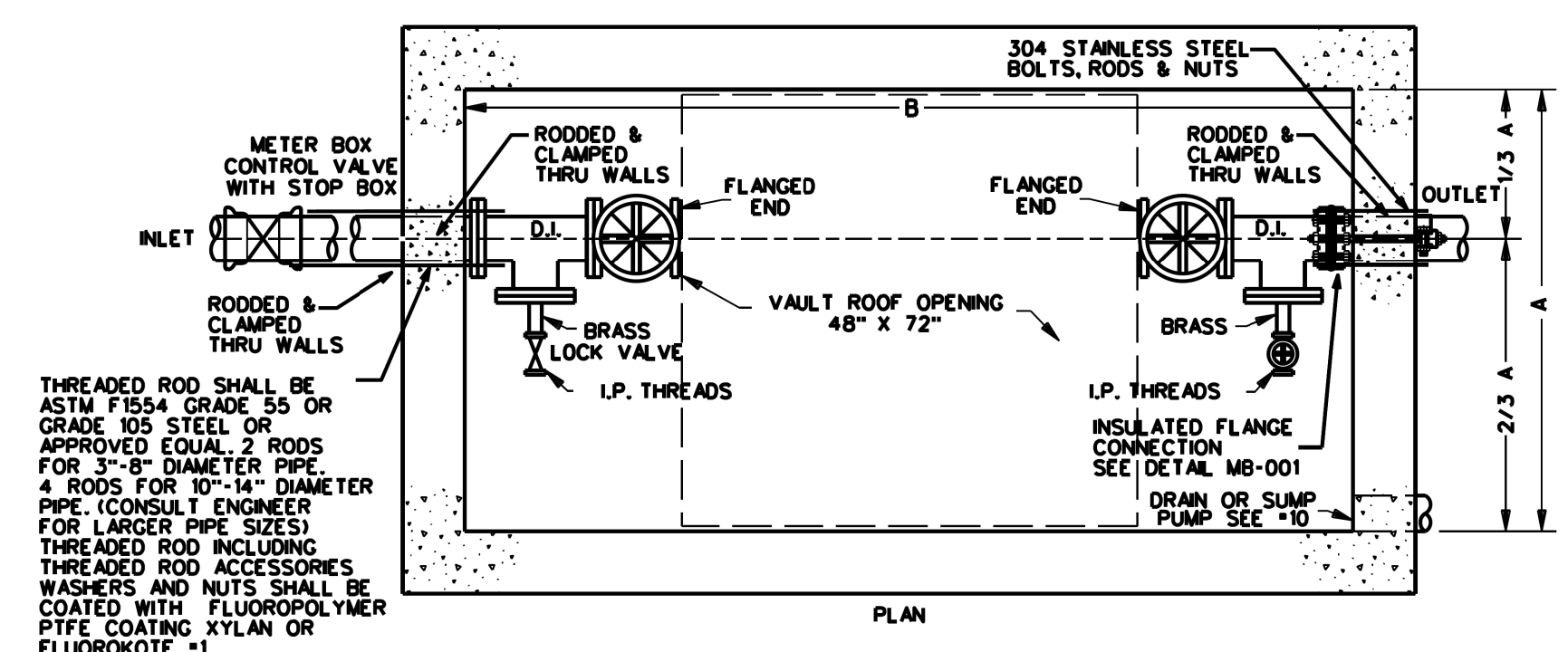


**SAINT JOSEPH, MISSOURI**  
 802 FRANCIS STREET  
 ST. JOSEPH, MO 64501  
 816-364-5222  
 212 N. BUCHANAN  
 MARYVILLE, MO 64468  
 660-582-8888  
 www.snyder-associates.com

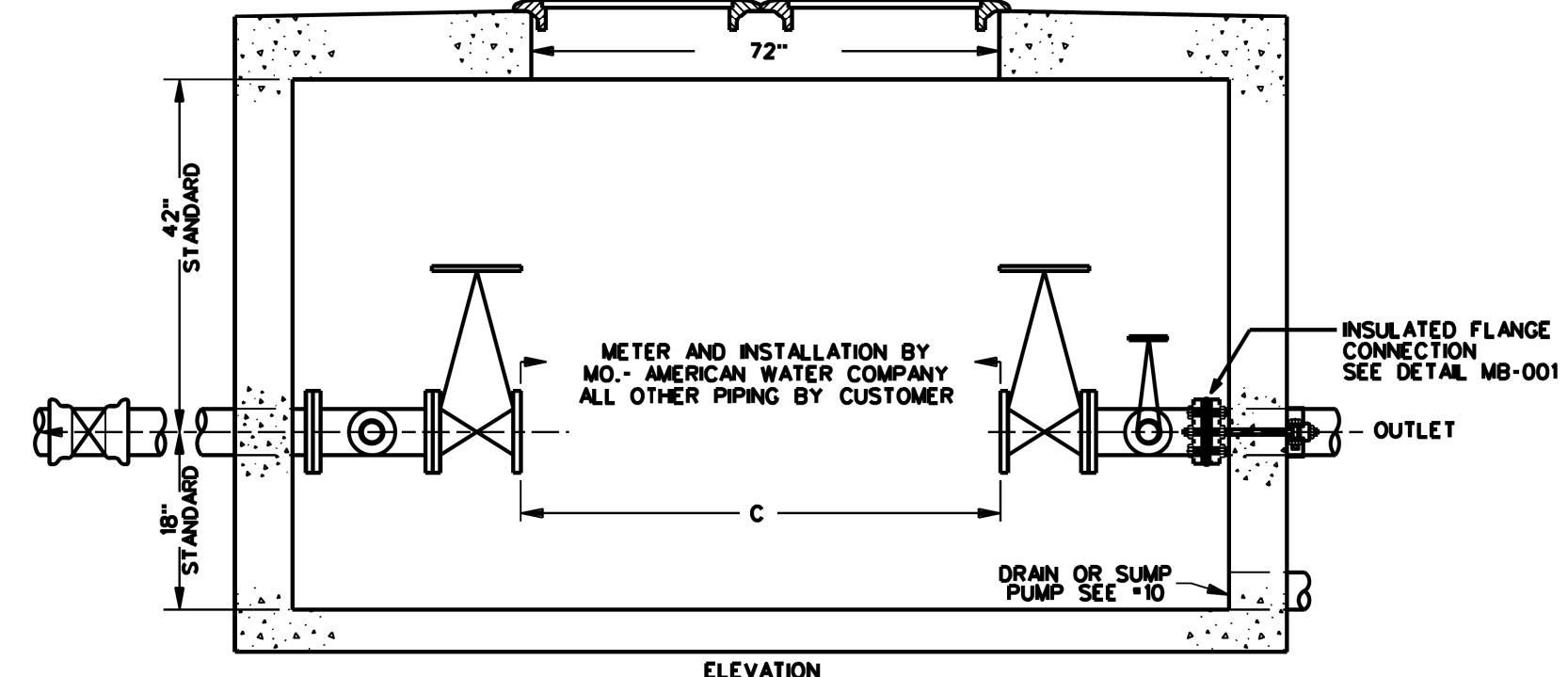
**ALTEC DESIGN ASSURANCE**  
**DETAILS**  
**SNYDER & ASSOCIATES**  
**ENGINEERS & PLANNERS, INC.**  
 www.snyder-associates.com



5/25/2017 8:47:42 AM  
 C:\Users\snnyder\Documents\Projects\1161183 - Altec Design Assurance\Coord\1161183\_C3.3\_Detail.dgn  
 Y:\open\date.tbl  
 Y:\open\drivers\Black\_Gray\_VB16W\unlashedPDF.plt  
 Snyder  
 5/25/2017 8:47:42 AM



THREADED ROD SHALL BE ASTM F1554 GRADE 55 OR GRADE 105 STEEL OR APPROVED EQUAL. 2 RODS FOR 3"-6" DIAMETER PIPE. 4 RODS FOR 10"-14" DIAMETER PIPE. (CONSULT ENGINEER FOR LARGER PIPE SIZES). THREADED ROD INCLUDING THREADED ROD ACCESSORIES, WASHERS AND NUTS SHALL BE COATED WITH FLUOROPOLYMER PIPE COATING XYLAN OR FLUOROKOTE \*1



SIZE SERVICE/BYPASS	MIN. DIM. IN.		
	IN.	A	B C
3	2	48	102 54
4	2	48	102 54
6	2	48	124 60
8	2	54	136 66

- NOTES
- LENGTH OF BOX "B" SHALL BE DISTANCE "C" PLUS DISTANCE REQUIRED TO INSTALL FITTINGS AS SHOWN.
  - VAULT WALLS TO BE OF CONCRETE.
  - VAULT ROOF TO BE OF CONCRETE WITH OPENING CENTERED OVER METER.
  - LIDS AND FRAMES OF OPENING TO BE SET IN PLACE. NOT IN CONCRETE.
  - LIDS SHALL BE MADE OF ALUMINUM AND SPRING LOADED OPENING SHALL BE 48" X 72" TO ALLOW UNRESTRICTED ACCESS. OPENING TO BE FLUSH WITH OUTLET SIDE VALVE FLANGE.

- NOTES (CONTINUED)
- VALVES ON EACH SIDE OF METER MUST HAVE FLANGED ENDS. BE IN ALIGNMENT AND BE ADEQUATELY SECURED TO WITHSTAND WATER THRUST WITH METER REMOVED.
  - DRAINAGE FACILITIES MUST BE PROVIDED OR BOX OTHERWISE KEPT FREE OF WATER. NO FRENCH DRAINS ALLOWED UNLESS APPROVED BY AUTHORIZED COMPANY REPRESENTATIVE.
  - METER BOX CONTROL VALVE TO BE LOCATED AS NEAR TO BOX AS PRACTICAL.
  - PRESSURE CLASS 350 PIPE MINIMUM. EXTENDED MIN. 6' FROM OUTLET SIDE OF METER PIT.
  - DRAIN AND SUMP PUMP NEEDS TO BE GRADED TO ALLOW WATER DRAINAGE AWAY AND OUT FROM VAULT.

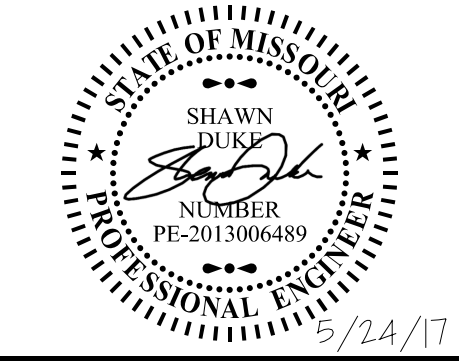
DRG. \*MB-3468DS SUBJECT TO REVISION WITHOUT NOTICE 7-01-2015

**METER BOX FOR 3"-4"-6" & 8" SERVICES**

PRINT AND READ DISCLAIMER WITH ALL MAWC DRAWINGS CAD /DISTRIB/DETAILS/METERBOX.DGN

MARK	REVISION	DATE	BY
Engineer: SD	Checked By: AM	Scale: 1"=	
Technician: DB	Date: 05/24	Field Bk:	Pg: C3.3

Snyder & Associates Engineers & Planners, Inc.  
 Missouri State Certificate of Authority #200608544



**ALTEC DESIGN ASSURANCE**  
 SAINT JOSEPH, MISSOURI  
 802 FRANCIS STREET  
 ST. JOSEPH, MO 64501  
 816-364-5222  
 www.altec-assurance.com

**SNYDER & ASSOCIATES**  
 ENGINEERS & PLANNERS, INC.  
 212 N. BUCHANAN  
 MARYVILLE, MO 64468  
 660-582-8888  
 www.snyder-associates.com

**ALTEC DESIGN ASSURANCE**  
**DETAILS**  
**SNYDER & ASSOCIATES**  
**ENGINEERS & PLANNERS, INC.**



**SNYDER & ASSOCIATES**  
 Project No: 1161183  
 Sheet C3.3