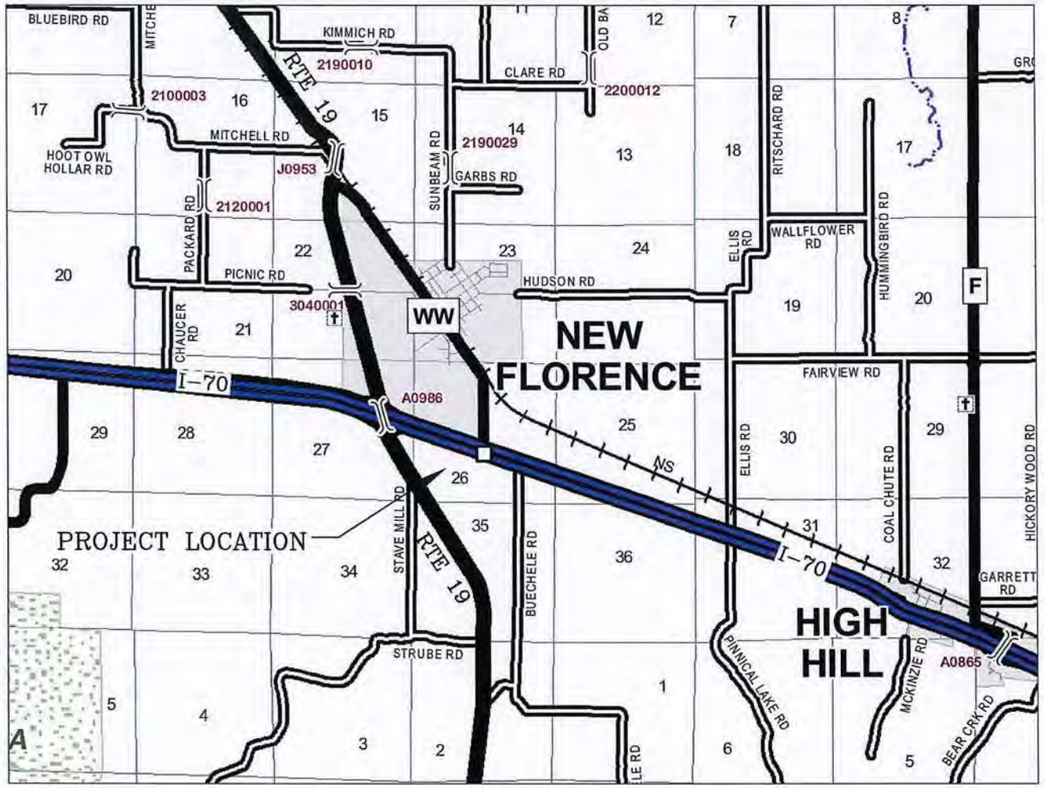
MISSOURI DEPARTMENT OF TRANSPORTATION
MAINTENANCE FACILITY
NEW FLORENCE, MISSOURI

T48N, R5W, SECTION 26



PROJECT VICINITY MAP

GENERAL NOTES

1. THE CONSTRUCTION COVERED BY THESE PLANS SHALL CONFORM TO ALL APPLICABLE STANDARDS AND SPECIFICATIONS OF THE LOCAL, STATE AND FEDERAL REQUIREMENTS.
2. ALL EXISTING UTILITIES INDICATED ON THE DRAWINGS ARE ACCORDING TO THE BEST INFORMATION AVAILABLE TO THE ENGINEER; HOWEVER, ALL UTILITIES ACTUALLY EXISTING MAY NOT BE SHOWN. UTILITIES DAMAGED THROUGH THE NEGLIGENCE OF THE CONTRACTOR TO OBTAIN THE LOCATION OF SAME SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT HIS EXPENSE.
3. THE CONTRACTOR SHALL THOROUGHLY REVIEW AND BECOME FAMILIAR WITH THE SPECIFICATIONS AND SPECIAL CONDITIONS OF THE CONTRACT DOCUMENTS, PRIOR TO BEGINNING CONSTRUCTION ON THIS PROJECT.
4. PRIOR TO COMMENCEMENT OF WORK, THE CONTRACTOR SHALL NOTIFY ALL THOSE COMPANIES WHICH HAVE UTILITIES IN THE NEAR VICINITY OF THE CONSTRUCTION.
5. CONSTRUCTION OF THE IMPROVEMENTS SHOWN OR IMPLIED BY THIS SET OF DRAWINGS SHALL NOT BE INITIATED OR ANY PART THEREOF UNDERTAKEN UNTIL ALL REQUIRED AND PROPERLY EXECUTED BONDS AND PERMIT FEES ARE RECEIVED AND APPROVED BY THE OWNER/INSTALLER.
6. THE CONTRACTOR SHALL HAVE ONE (1) SIGNED COPY OF THE PLANS AND ONE (1) COPY OF THE APPROPRIATE CONSTRUCTION SPECIFICATIONS AND PROJECT MANUAL AT THE JOB SITE AT ALL TIMES.
7. LINEAL FOOT MEASUREMENTS SHOWN ON THE PLANS ARE HORIZONTAL MEASUREMENTS, NOT SLOPE MEASUREMENTS.
8. RELOCATION OF ANY WATER LINE, SEWER LINE OR SERVICE LINE THEREOF REQUIRED FOR THE CONSTRUCTION OF THIS PROJECT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
9. SILTATION AND EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO THE DISTURBANCE OF THE GROUND.
10. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING BERMS, SILT FENCES, STRAW BALES, OR OTHER MEANS TO PREVENT EROSION FROM REACHING THE PUBLIC RIGHT-OF-WAY. IN THE EVENT THE PREVENTION MEASURES ARE NOT EFFECTIVE, THE CONTRACTOR SHALL REMOVE ANY DEBRIS AND EROSION AND RESTORE THE RIGHT-OF-WAY TO ORIGINAL OR BETTER CONDITION.
11. CLEARING AND GRUBBING OPERATIONS AND DISPOSAL OF ALL DEBRIS SHALL BE PERFORMED IN ACCORDANCE WITH ALL LOCAL CODES AND ORDINANCES.
12. ALL WASTE MATERIAL RESULTING FROM THE PROJECT SHALL BE DISPOSED OF OFF-SITE.
13. BY USE OF THESE PLANS, THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL AREAS THAT THEY OR THEIR SUBCONTRACTORS DISTURB, BOTH WITHIN AND BEYOND THE PROJECT LIMITS. THESE AREAS SHALL BE RESTORED, SEEDED AND MULCHED TO A STATE THAT IS EQUAL TO OR BETTER THAN THE PRIOR CONDITION. THE CONTRACTOR SHALL BEAR THE RELATED EXPENSES, UNLESS DENOTED OTHERWISE WITHIN THE CONTRACT DOCUMENTS.
14. ALL EXISTING FENCES REMOVED DURING CONSTRUCTION SHALL BE REPLACED AT THE SAME LOCATION AFTER CONSTRUCTION IS COMPLETE. MATERIALS AND CONSTRUCTION OF NEW FENCES SHALL MATCH THE EXISTING FENCES.
15. SEED AND MULCH ALL AREAS DISTURBED BY CONSTRUCTION. ALL EXISTING GRAVEL AREAS DISTURBED BY CONSTRUCTION SHALL BE RESURFACED WITH 4 INCHES MINIMUM ROAD AGGREGATE MATERIAL WHEN CONSTRUCTION IS COMPLETE.
16. PRIOR TO ORDERING PRECAST STRUCTURES, SHOP DRAWINGS SHALL BE SUBMITTED TO THE DESIGN ENGINEER FOR APPROVAL.
17. ALL EXCAVATION SHALL BE UNCLASSIFIED. NO SEPARATE PAYMENT WILL BE MADE FOR ROCK EXCAVATION.
18. SUBGRADE SOIL FOR ALL CONCRETE STRUCTURES, REGARDLESS OF THE TYPE OR LOCATION, SHALL BE FIRM, DENSE AND THOROUGHLY COMPACTED AND CONSOLIDATED; SHALL BE FREE FROM MUCK AND MUD; AND SHALL BE SUFFICIENTLY STABLE TO REMAIN FIRM AND INTACT UNDER THE FEET OF THE WORKMEN OR MACHINERY ENGAGED IN SUBGRADE SURFACING, LAYING REINFORCING STEEL, AND DEPOSITING CONCRETE THEREON. IN ALL CASES WHERE SUBSOIL IS MUCKY OR WORKS INTO MUD OR MUCK DURING SUCH OPERATION, A SEAL COURSE OF EITHER CONCRETE OR ROCK SHALL BE PLACED BELOW SUBGRADE TO PROVIDE A FIRM BASE FOR WORKING AND FOR PLACING STRUCTURES.
19. PROPERTY PINS DISTURBED DURING CONSTRUCTION SHALL BE RESTORED BY A LICENSED SURVEYOR AT CONTRACTOR EXPENSE.
20. AT PLACES WHERE THE EXCAVATION INTERSECTS WITH EXISTING GAS LINES, THE CONTRACTOR SHALL NOTIFY THE OWNER SO THE GAS LINE CAN BE INSPECTED BEFORE BACK FILLING. THE TRENCH BACKFILL SHALL BE HAND COMPACTED FOR THREE FEET IN EITHER DIRECTION TO AN ELEVATION OF 1 FOOT ABOVE THE GAS LINE. BACK FILL WITH SELECT EXCAVATED MATERIAL.
21. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE SAFETY OF THE CONSTRUCTION WORKERS AND THE PUBLIC. THE GENERAL CONTRACTOR(S) AND SUBCONTRACTOR(S) ARE REQUIRED TO COMPLY WITH OSHA SAFETY RULES AS APPLICABLE TO THE SAFETY OF PERSONNEL, PROTECTION OF PROPERTY, AND WEARING OF PROTECTIVE EQUIPMENT. ALL WORKERS SHALL HAVE COMPLETED THE 10 HOUR OSHA SAFETY COURSE.
22. DIMENSIONS SHOWN FOR EQUIPMENT ARE APPROXIMATE AND MAY VARY DEPENDING ON MANUFACTURER SELECTED. CONTRACTOR SHALL VERIFY ALL DIMENSIONS WITH EQUIPMENT MANUFACTURER PRIOR TO CONSTRUCTION OF THE RELATED STRUCTURE.
23. NOTE THAT NO REPORTS OF EXPLORATIONS OR TESTS OF SUBSURFACE CONDITIONS AT THE SITE (E.G. GEOTECHNICAL REPORTS), OR DRAWINGS OF PHYSICAL CONDITIONS RELATING TO EXISTING SURFACE OR SUBSURFACE STRUCTURES AT THE SITE, ARE KNOWN TO OWNER.

LEGEND

IB_E	= EXIST IRON BAR
IBPC_E	= EXIST. IRON BAR W/ PLASTI
FPST	= FENCE POST
FO	= FIBER OPTIC MARKER
FH	= FIRE HYDRANT
G	= GAS MARKER
GTPST	= GATE POST
GA	= GUY ANCHOR
H&V	= CONTROL POINT
LP	= LIGHT POLE
MS	= METAL SIGN
PP	= POWER POLE
RW	= R/W MARKER
SSMH	= SANITARY SEWER MANHOLE
STMH	= STORM MANHOLE
	= STUMP
TEP	= TELEPHONE PEDESTAL
TBM	= TEMP BENCHMARK
	= TREE

EXIST SEWER LINE	SAN
EXIST MAJOR CONTOUR	
EXIST MINOR CONTOUR	
EXIST FLOW LINE	
TREE LINE	
EXIST BUILDING	
EXIST EASMENT	
EXIST EDGE OF ASPHALT	
EXIST EDGE OF GRAVEL	
EXIST GRAVEL SHOULDER	
EXIST CHAINLINK FENCE	
EXIST OVERHEAD POWER	
EXIST STORM PIPE	
EXIST PROPERTY LINE	
EXIST SEWER PIPE	
EXIST GAS LINE	G
EXIST POWER	P
EXIST TELEPHONE LINE	T
EXIST WATER LINE	W
EXIST EDGE OF WATER	
PROPOSED SEWER LINE	
PERMANENT EASEMENT	
TEMPORARY EASEMENT	

BENCHMARK

TBM1:
STEPPED NAILS IN POWER POLE ON SOUTH SIDE OF SOUTH OUTER ROAD, APPROX. STATION 10+00. ELEVATION = 852.87

TBM2:
CHISELED SQUARE ON CURB ON SOUTH SIDE OF SOUTH OUTER ROAD, APPROX. STATION 16+00. ELEVATION = 866.00

TELEPHONE /TV
CENTURYLINK
AT&T
NEW FLORENCE TELEPHONE
CHARTER COMMUNICATIONS

WATER
CITY OF NEW FLORENCE
1-573-835-2106

ELECTRIC
AMEREN MISSOURI ELECTRIC

SEWER
CITY OF NEW FLORENCE
1-573-835-2106

INDEX

MISSOURI ONE CALL SYSTEM, INC. 1-800-344-7483 STOP-CALL BEFORE YOU DIG!

STATE OF MISSOURI
PHILIP RYAN WILSON
NUMBER PE-2008019618
PROFESSIONAL ENGINEER
3/25/16

NO.	DATE	REVISIONS	BY	APP'D
1				
2				
3				
4				
5				

Designed By: PRW
Drawn By: JDC
Checked By: PRW
Issue Date: _____

SHAFER, KLINE & WARREN
107 Butler Street
Macon, MO 63552-1628
660.385-6441 FAX: 660.385-6614
SURVEYING | ENGINEERING | CONSTRUCTION

MODOT MAINTENANCE FACILITY
NEW FLORENCE, MISSOURI

COVER SHEET

160050-010
SHEET NO.
G1

L:\140027-020_CAD\CIVIL\160050-010 COVER.DWG
LAYOUT: 1 | BY: JCARTER | DATE: 2/25/2016
XREF DWG1: NONE | XREF DWG2: NONE
XREF DWG3: NONE | XREF DWG4: NONE

CONNECT TO EXISTING MANHOLE 1 AT STA. 0+00.00

40' PERMANENT EASEMENT

CONSTRUCT MANHOLE 2 AT STA. 0+73.04

REMOVE EXISTING LAMP HOLE AND ABANDON LINE

60' TEMPORARY EASEMENT

CONSTRUCT MANHOLE 3 AT STA. 2+50.07

30' PERMANENT EASEMENT

40' TEMPORARY EASEMENT

CONSTRUCT 8" PVC SEWER LINE 10' FROM R/W LINE

EDGE OF YARD

BLDG

CONSTRUCT MANHOLE 4 AT STA. 5+67.09

PLACE MARKER SIGN, AS SHOWN IN DETAIL IN APPENDIX A OF SPECIFICATIONS, EXCEPT REVISE "WATER MAIN" TO "SEWER MAIN" AND ELIMINATE "48" DEPTH"

GRAVEL DRIVE

HWY I-70

290 L.F. OF 16" STEEL CASING STA. 5+90 TO 8+80

15" CMP

DRIVE

S. OUTER RD

PLACE MARKER SIGN, AS SHOWN IN DETAIL IN APPENDIX A OF SPECIFICATIONS, EXCEPT REVISE "WATER MAIN" TO "SEWER MAIN" AND ELIMINATE "48" DEPTH"

CONSTRUCT MANHOLE 5 AT STA. 8+91.70

ADDITIONAL TEMPORARY EASEMENT FOR BORE

CONSTRUCT 8" PVC SEWER LINE 20' FROM R/W LINE

BUILDING (APPROXIMATE LOCATION)

30' PERMANENT EASEMENT

CONSTRUCT MANHOLE 6 AT STA. 12+75.00

40' TEMPORARY EASEMENT

T.B.M. STEPPED NAILS IN POWER POLE ELEV. = 852.87

T.B.M. CHISELED SQUARE ON CURB ELEV. = 866.00

PLACE MARKER SIGN, AS SHOWN IN DETAIL IN APPENDIX A OF SPECIFICATIONS, EXCEPT ELIMINATE "48" DEPTH"

CONSTRUCT MANHOLE 7 AT STA. 15+91.79

INSTALL 6" X 6" X 8", 6" GATE VALVE AND 10' OF 6" PVC TO WEST AND 6" X 45° AND 6" X 11.25° ELBOWS, AND THRUST BLOCK TO EAST

CONSTRUCT MANHOLE 8 AT STA. 16+86.80 73' FROM R/W LINE

INSTALL 6" X 22.5° AND 6" X 11.25° ELBOWS AND THRUST BLOCK

93' TEMPORARY EASEMENT

THE WATER LINE AND SEWER LINE SHALL NOT BE CONSTRUCTED UNDER THE BILLBOARD FOOTPRINT

83' PERMANENT EASEMENT

CONSTRUCT MANHOLE 9 AT STA. 17+78.82 73' FROM R/W LINE

INSTALL 6" X 45° ELBOW AND THRUST BLOCK

CONSTRUCT MANHOLE 10 AT STA. 18+80.47

CONSTRUCT 6" PVC WATER LINE

MATCH LINE SEE SHEET C2

12" CMP

18" CMP

280 L.F. OF 16" STEEL CASING STA. 0+60 TO 3+40

CONSTRUCT 8" PVC WATER LINE

INSTALL 6" X 45° ELBOW AND THRUST BLOCK

PLACE MARKER SIGN, AS SHOWN IN DETAIL IN APPENDIX A OF SPECIFICATIONS, EXCEPT ELIMINATE "48" DEPTH"

PHONE VAULT

INSTALL 6" X 45° AND 6" X 11.25° ELBOWS, 8" X 6" REDUCER AND THRUST BLOCK

INSTALL 6" X 45° ELBOW AND THRUST BLOCK

25' x 30' PERMANENT EASEMENT

CONNECT TO EXISTING 6" GATE VALVE, SEE DETAIL ABOVE

25' x 50' TEMPORARY EASEMENT

20' x 50' TEMPORARY EASEMENT

EXISTING GRAVEL DRIVEWAY

BOONESLICK RD

GRAVEL DRIVE

NORTH

100 50 0 100

EXISTING WATER LINE

EXISTING HYDRANT

EXISTING VALVES

CONNECT AT EXISTING VALVE

INSTALL 6" X 45° ELBOW AND THRUST BLOCK

INSTALL 6" X 45° AND 6" X 11.25° ELBOWS, 8" X 6" REDUCER AND THRUST BLOCK

PLACE MARKER SIGN, AS SHOWN IN DETAIL IN APPENDIX A OF SPECIFICATIONS, EXCEPT ELIMINATE "48" DEPTH"

CONNECTION DETAIL

NOTES:

1. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN AND COMPLY WITH A LAND DISTURBANCE PERMIT ISSUED BY THE STATE OF MISSOURI.
2. ALL 8" WATER LINE (STA. 0+00 TO STA. 3+47) SHALL BE RESTRAINED JOINT PVC. 6" WATER LINE FROM STA. 3+47 TO STA. 6+00 SHALL BE RESTRAINED JOINT PVC.
3. ALL WATER LINE FITTINGS SHALL BE WRAPPED IN POLYETHYLENE ENCASEMENT TUBING BEFORE THRUST BLOCKS ARE POURED.

STATE OF MISSOURI
PHILIP RYAN WILSON
NUMBER PE-2008019618
PROFESSIONAL ENGINEER
4/14/16

NO.	DATE	REVISIONS	BY	APP'D
1				
2				
3				
4				
5				

Designed By: PRW
Drawn By: JDC
Checked By: PRW
Issue Date:

SHAFER, KLINE & WARREN
107 Butler Street
Macon, MO 63552-1628
660.385-6441 FAX: 660.385-6614
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MODOT MAINTENANCE FACILITY
NEW FLORENCE, MISSOURI

SITE PLAN

160050-010

SHEET NO.
C1

L:\140027-020_CAD\CIVIL\160050-010 SITE.DWG
LAYOUT: 1 | BY: JCARTER | DATE: 4/12/2016
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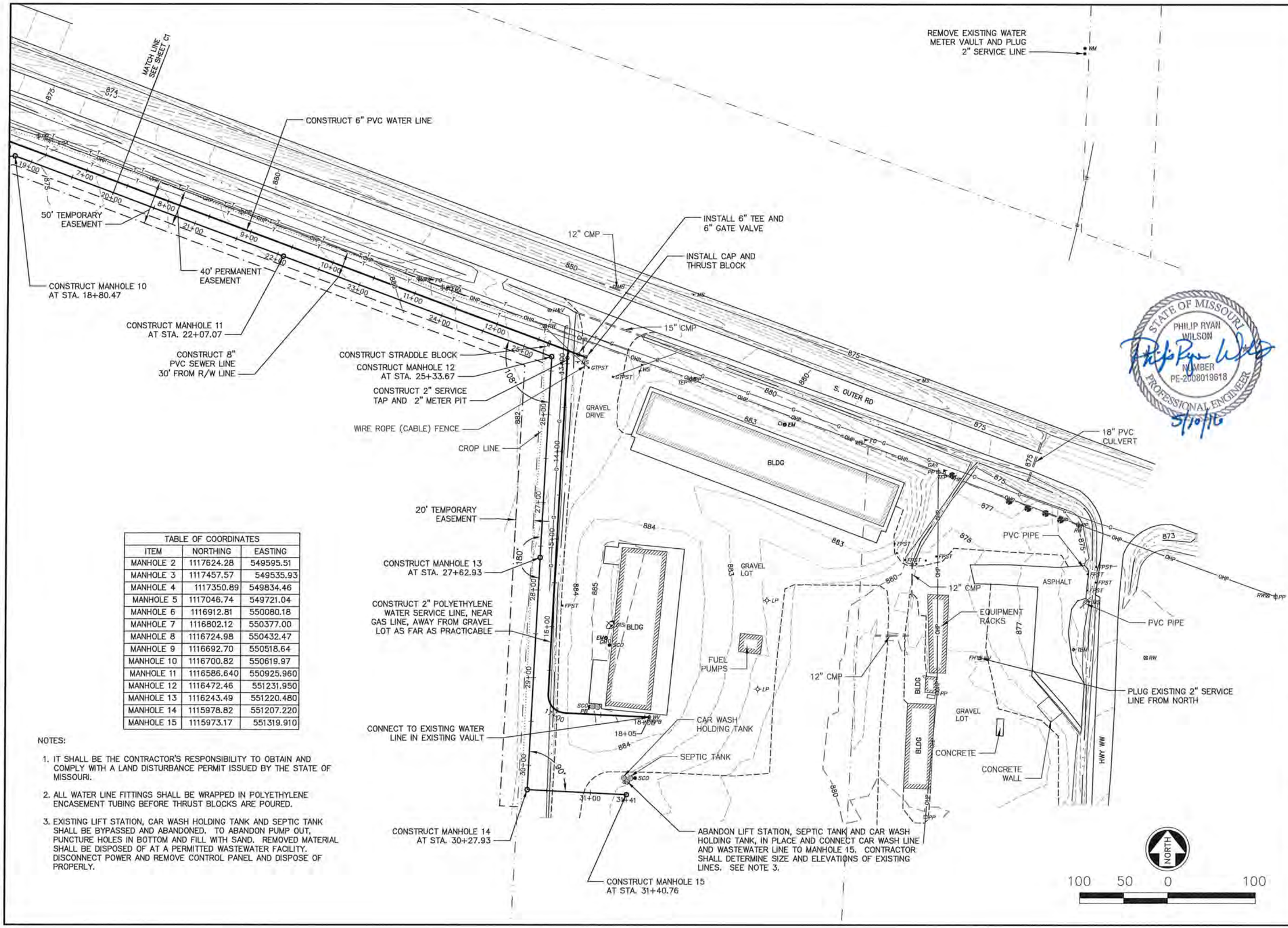

TABLE OF COORDINATES		
ITEM	NORTHING	EASTING
MANHOLE 2	1117624.28	549595.51
MANHOLE 3	1117457.57	549535.93
MANHOLE 4	1117350.89	549834.46
MANHOLE 5	1117046.74	549721.04
MANHOLE 6	1116912.81	550080.18
MANHOLE 7	1116802.12	550377.00
MANHOLE 8	1116724.98	550432.47
MANHOLE 9	1116692.70	550518.64
MANHOLE 10	1116700.82	550619.97
MANHOLE 11	1116586.640	550925.960
MANHOLE 12	1116472.46	551231.950
MANHOLE 13	1116243.49	551220.480
MANHOLE 14	1115978.82	551207.220
MANHOLE 15	1115973.17	551319.910

NOTES:

1. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN AND COMPLY WITH A LAND DISTURBANCE PERMIT ISSUED BY THE STATE OF MISSOURI.
2. ALL WATER LINE FITTINGS SHALL BE WRAPPED IN POLYETHYLENE ENCASEMENT TUBING BEFORE THRUST BLOCKS ARE POURED.
3. EXISTING LIFT STATION, CAR WASH HOLDING TANK AND SEPTIC TANK SHALL BE BYPASSED AND ABANDONED. TO ABANDON PUMP OUT, PUNCTURE HOLES IN BOTTOM AND FILL WITH SAND. REMOVED MATERIAL SHALL BE DISPOSED OF AT A PERMITTED WASTEWATER FACILITY. DISCONNECT POWER AND REMOVE CONTROL PANEL AND DISPOSE OF PROPERLY.

STATE OF MISSOURI
PHILIP RYAN WILSON
NUMBER PE-2008019618
PROFESSIONAL ENGINEER
5/10/16

NO.	DATE	REVISIONS	BY	APPD
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4				
5				

Designed By: PRW
Drawn By: JDC
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Issue Date:

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MODOT MAINTENANCE FACILITY
NEW FLORENCE, MISSOURI

SITE PLAN

160050-010
SHEET NO.
C2

L:\160050-010_CAD\CIVIL\160050-010 SITE.DWG
LAYOUT: 2 | DATE: 5/10/2016
BY: JCARTER
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LAYOUT: 3 | BY: DCUNNINGHAM | DATE: 3/24/2016
XREF DWG1: 140027 BASE.dwg | XREF DWG2: 140027 SITE DESIGN.dwg
XREF DWG3: NONE | XREF DWG4: NONE

NO.	DATE	REVISIONS	BY	APP'D
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3				
4				
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MISSOURI CERTIFICATE OF AUTHORITY: 000143

Designed By: PRW
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Issue Date: _____

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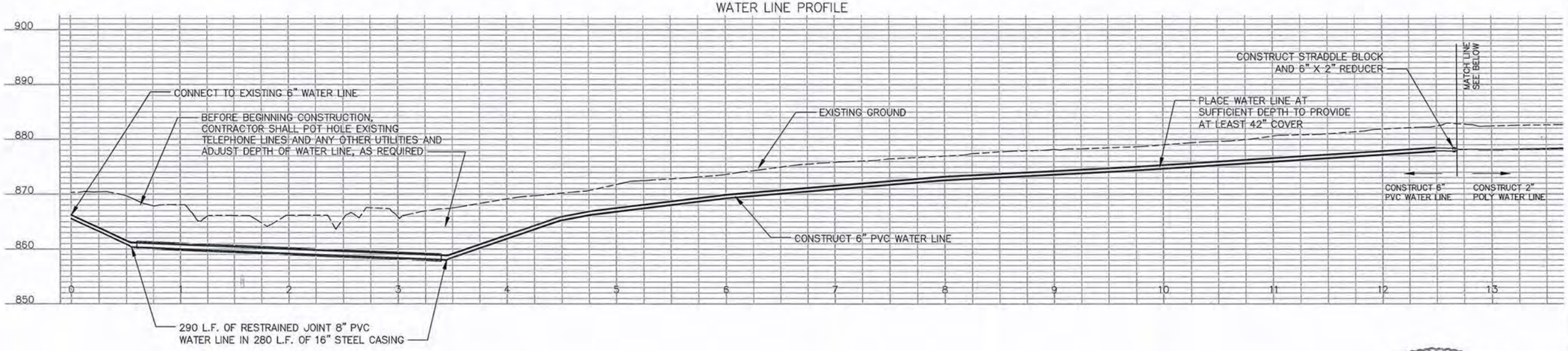
STATE OF MISSOURI
PHILIP RYAN WILSON
NUMBER PE-2008019618
PROFESSIONAL ENGINEER
3/25/16

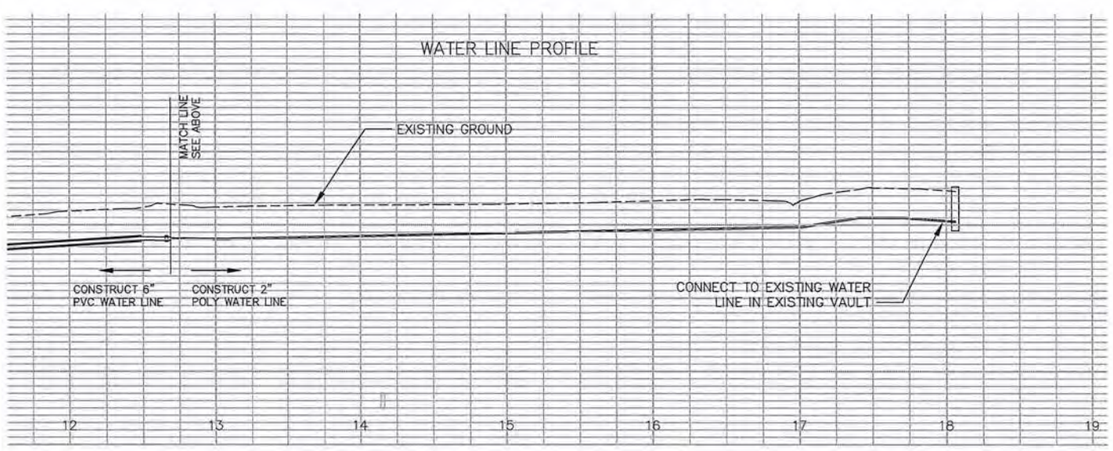
MODOT MAINTENANCE FACILITY
NEW FLORENCE, MISSOURI

PROFILES

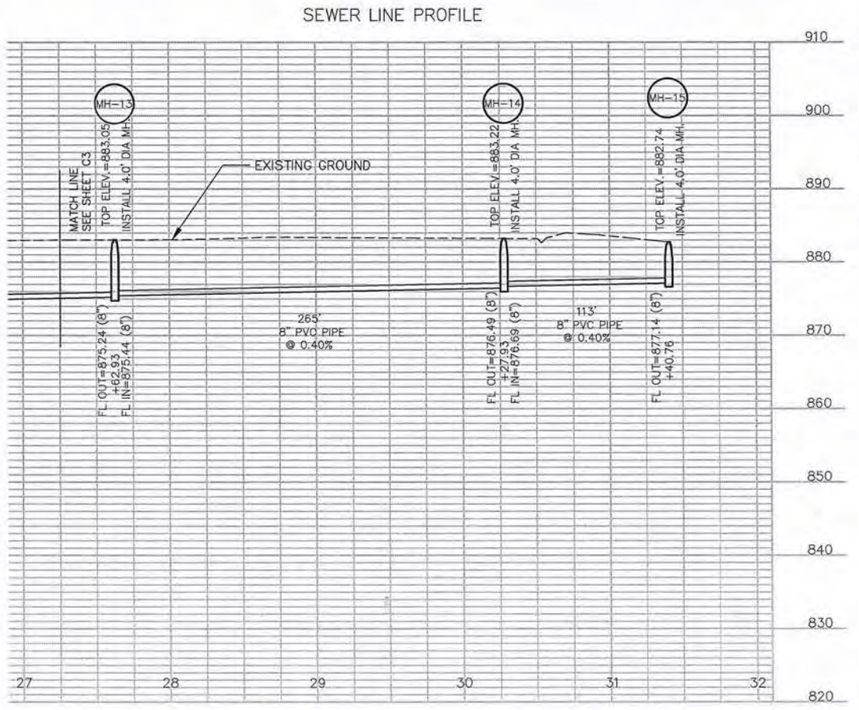
160050-010

SHEET NO.
C3





1. INSTALL TRACER WIRE WITH WATER LINE AND SERVICE LINE AS SHOWN IN STANDARD DETAILS.
2. COIL TRACER WIRE IN VALVE BOX OF EXISTING VALVE AT STA. 0+00.
3. COIL TRACER WIRE IN METER PIT FOR WATER LINE AND SERVICE LINE.



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NEW FLORENCE, MISSOURI

PROFILES

160050-010

SHEET NO.
C4

L:\140027-020_CAD\CIVIL\160050-010 SITE.DWG
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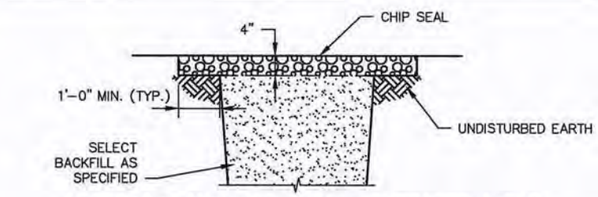
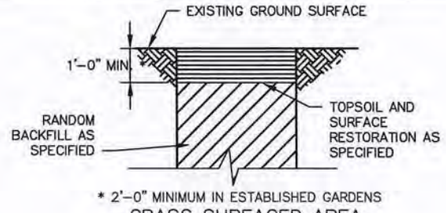
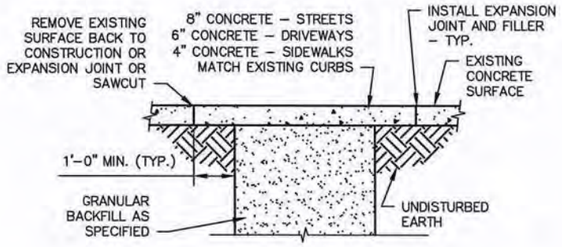


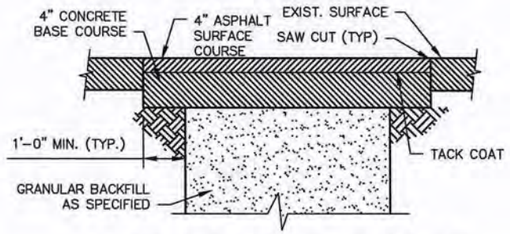
AGGREGATE AND CHIP & SEAL SURFACED AREAS



GRASS SURFACED AREA



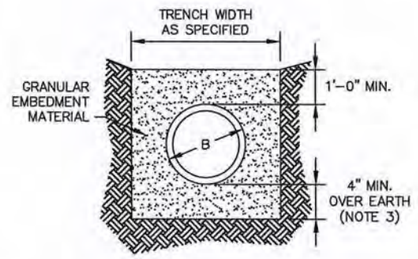
CONCRETE PAVEMENT SURFACED AREA



ASPHALT PAVEMENT SURFACED AREA

SEWER TRENCH RESTORATION DETAILS

NOT TO SCALE



NOTES:

1. REFER TO THE PROJECT MANUAL FOR TRENCH WIDTH, COMPACTION REQUIREMENTS, AND EMBEDMENT CLASS SCHEDULE.
2. GRANULAR BACKFILL MATERIAL SHALL BE USED IN PLACE OF SELECT BACKFILL MATERIAL BENEATH STRUCTURES AND PAVED AREAS.
3. DIMENSION OVER ROCK SHALL BE B/4, 6" MIN.

SEWER PIPE EMBEDMENT DETAILS

NOT TO SCALE

STATE OF MISSOURI
PHILIP RYAN WILSON
NUMBER PE-2008019618
PROFESSIONAL ENGINEER
3/25/16

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MISSOURI CERTIFICATE OF AUTHORITY: 000143

Designed By: PRW
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SHAFER, KLINE & WARREN
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SURVEYING | ENGINEERING | CONSTRUCTION

MODOT MAINTENANCE FACILITY
NEW FLORENCE, MISSOURI

SEWER DETAILS

160050-010

SHEET NO.
C5

L:\140027-020_CAD\CIVIL\160050-010 DETAILS.DWG
LAYOUT: 1 | BY: JCARTER | DATE: 3/24/2016
XREF DWG1: NONE | XREF DWG2: NONE
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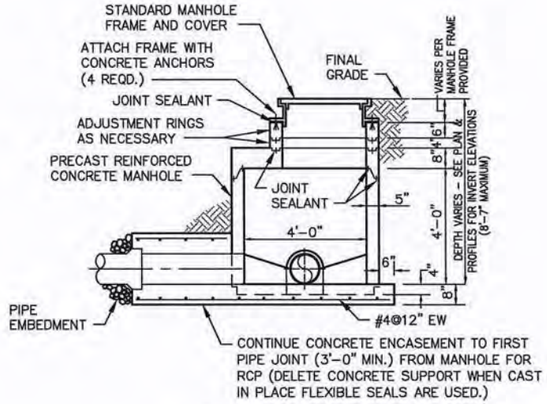
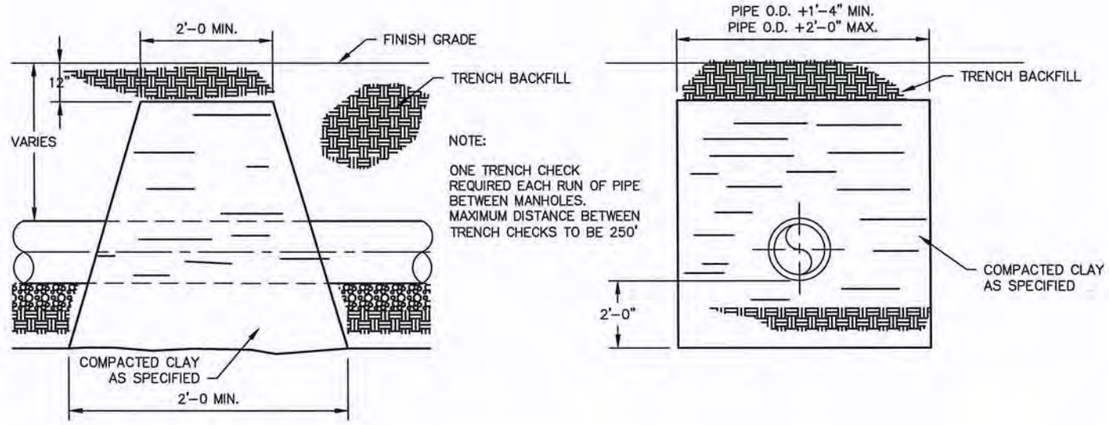


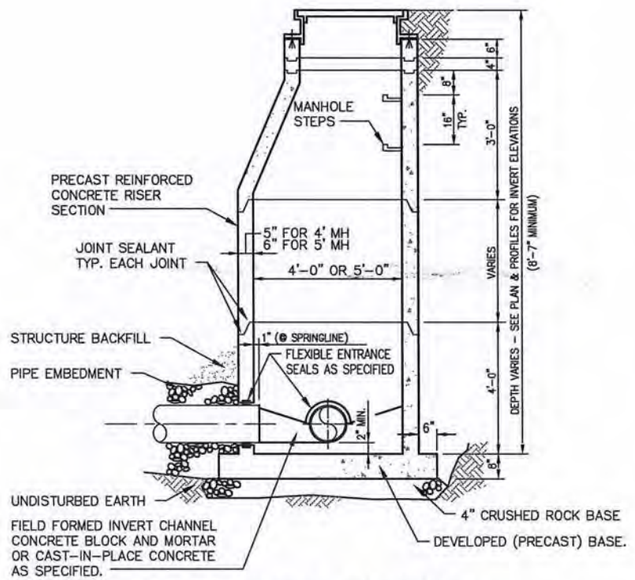
4'-0" DIAMETER SHALLOW MANHOLE

NOT TO SCALE



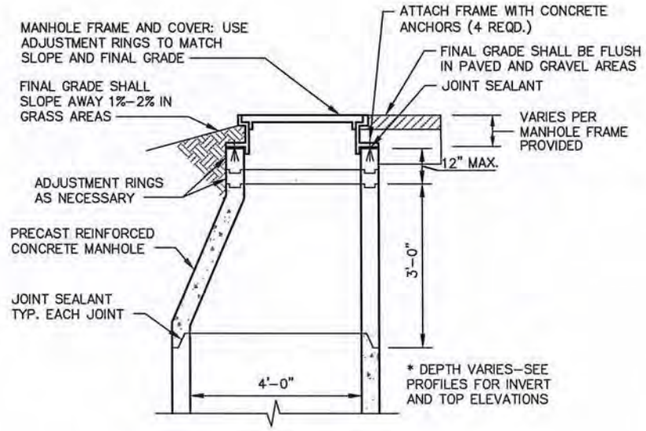
TRENCH CHECK

NOT TO SCALE



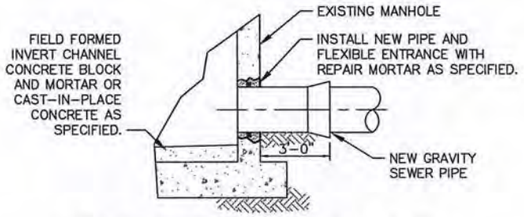
STANDARD MANHOLE

NOT TO SCALE



STANDARD MANHOLE TOP

NOT TO SCALE



CONNECTION AT EXISTING MANHOLE DETAIL

NOT TO SCALE

STATE OF MISSOURI
PHILIP RYAN WILSON
NUMBER PE-2008019618
PROFESSIONAL ENGINEER
3/25/16

NO.	DATE	REVISIONS	BY	APP'D
1				
2				
3				
4				
5				

MISSOURI CERTIFICATE OF AUTHORITY: 000143

Designed By: PRW
Drawn By: JDC
Checked By: PRW
Issue Date: ____

SHAFER, KLINE & WARREN
107 Butler Street
Macon, MO 63552-1628
660.385-6441 FAX: 660.385-6614
SURVEYING | ENGINEERING | CONSTRUCTION

MODOT MAINTENANCE FACILITY
NEW FLORENCE, MISSOURI

SEWER DETAILS

160050-010

SHEET NO.
C6

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LAYOUT: 2 | BY: DCUNNINGHAM | DATE: 3/24/2016
XREF DWG1: NONE | XREF DWG2: NONE
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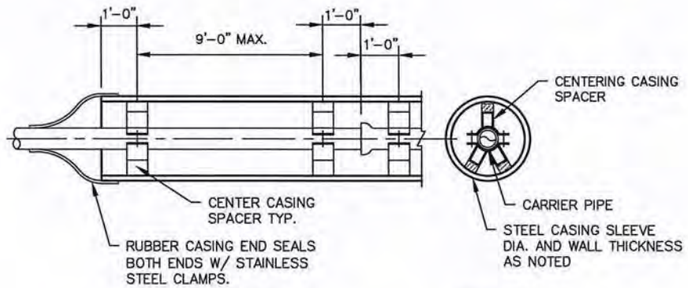


PROFILE SECTION

BORE AND CASING

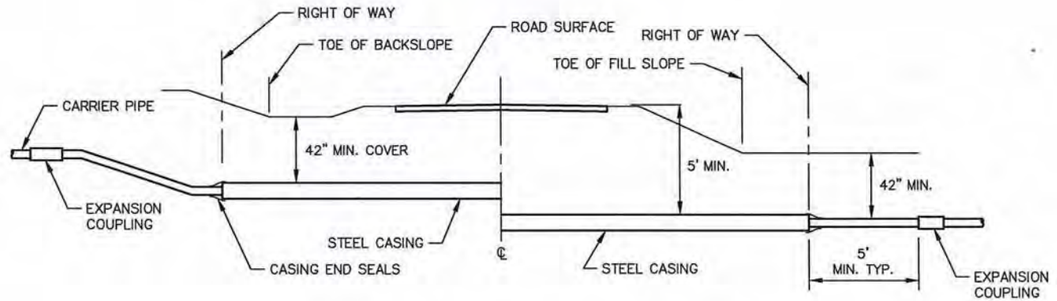
NOT TO SCALE

CASING DETAIL NOTES

1. STEEL CASINGS FOR BORED OR JACKED CONSTRUCTION SHALL BE STEEL PIPE CONFORMING TO ASTM A-139 WITH A MINIMUM DIAMETER AS INDICATED ON THE SITE PLAN. MINIMUM YIELD STRENGTH SHALL BE 35,000 P.S.I.
2. MINIMUM WALL THICKNESS FOR STEEL CASING SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS.
3. STEEL SHALL BE GRADE B UNDER RAILROADS AND GRADE A UNDER ALL OTHER SURFACES. INSTALLATION UNDER RAILROADS SHALL BE BY DRY BORE AND JACK. WET BORE IS NOT PERMITTED.
4. CASING SPACERS SHALL BE USED WITH ALL CASING. CASING SPACERS SHALL HAVE A MINIMUM OF 3 RUNNERS AND SHALL HOLD THE CARRIER PIPE IN THE CENTER OF THE CASING.
5. CASING ENDS SHALL BE SEALED WITH SYNTHETIC RUBBER, WRAP-AROUND END SEALS WITH STAINLESS STEEL BANDS.

NOTES:

1. CASING SHALL EXTEND 5'-0" BEYOND RIGHT-OF-WAY UNLESS OTHERWISE SHOWN ON PLAN SHEETS.
2. CASING MATERIAL SHALL BE AS SHOWN ON PLAN AND PROFILE SHEETS. SEE CASING SPACER DETAIL FOR WALL THICKNESS AND SIZES.
3. INSTALL CASING SPACERS AND END SEALS BASED ON CARRIER AND CASING SIZES. SEE BORE AND CASING DETAIL.
4. CARRIER PIPE SHALL HAVE RESTRAINED JOINTS. CARRIER PIPE SHALL EXTEND A MINIMUM OF 5'-0" BEYOND EACH END OF CASING.
5. THE MODOT UTILITY ACCOMMODATION POLICY AND THE HIGHWAY PERMIT AGREEMENT SHALL BE FOLLOWED AND WILL SUPERSEDE CONTRACT PLANS AND SPECIFICATIONS.
6. ALL MODOT ROAD CROSSINGS SHALL BE BORED.



CUT SECTION FILL SECTION

MODOT ROAD CROSSING

NOT TO SCALE

STATE OF MISSOURI
PHILIP RYAN WILSON
NUMBER PE-2008019618
PROFESSIONAL ENGINEER
Philip Ryan Wilson
3/25/16

NO.	DATE	REVISIONS	BY	APP'D
1				
2				
3				
4				
5				

Designed By: PRW
Drawn By: JDC
Checked By: PRW
Issue Date: _____

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MODOT MAINTENANCE FACILITY
NEW FLORENCE, MISSOURI

CROSSING DETAILS

160050-010

SHEET NO.
C7

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LAYOUT: 3 | BY: DCUNNINGHAM | DATE: 3/24/2016
XREF DWG1: NONE | XREF DWG2: NONE
XREF DWG3: NONE | XREF DWG4: NONE

GENERAL EROSION CONTROL NOTES:

1. THE CONTRACTOR SHALL OBTAIN AN APPROPRIATE LAND DISTURBANCE PERMIT FROM MDNR.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING A STORM WATER POLLUTION PREVENTION PLAN (PPP) AT THE TIME THE PROJECT BREAKS GROUND. A COPY OF THE PPP SHALL BE AVAILABLE ON SITE AT ALL TIMES. THE PLAN SHOULD FOLLOW CLOSELY TO THE E.P.A. GUIDANCE DOCUMENT, STORM WATER MANAGEMENT FOR CONSTRUCTION ACTIVITIES – DEVELOPING POLLUTION PREVENTION PLANS AND BEST MANAGEMENT PRACTICES, U.S. E.P.A., OFFICE OF WATER, EPA 832-R-92-005 (SEPTEMBER 1992).
3. THE EROSION CONTROL FEATURES, NOTES AND SPECIFICATIONS IN THE PPP SHALL REPRESENT THE MINIMUM REQUIREMENTS ACCEPTABLE. LOCATIONS SHALL BE CONSIDERED TYPICAL AND MAY VARY ACCORDING TO CONTRACTORS STAGING AND LIMITS OF CONSTRUCTION. THE CONTRACTOR SHALL ADJUST, MODIFY AND ADD TO THE PLAN AS NECESSARY TO CONTROL EROSION, SILTATION AND POLLUTION.
4. IT SHALL BE EACH CONTRACTOR'S RESPONSIBILITY TO CONTROL EROSION AND PREVENT POLLUTION FOR ALL WORK WHICH THEY ARE DIRECTLY INVOLVED.
5. EROSION CONTROL DEVICES ALONG THE DOWN SLOPE SIDE OF THE PROJECT SHALL BE IN PLACE PRIOR TO THE COMMENCEMENT OF ANY GRADING WORK.
6. WHEN POSSIBLE, WITHOUT ADVERSELY AFFECTING CONSTRUCTION OPERATIONS, THE CONTRACTOR SHALL: MINIMIZE THE AMOUNT OF SURFACE AREA WHICH IS EXPOSED AT ONE TIME, LEAVE GRADED AREAS WITH A ROUGH TEXTURE, CONSTRUCT TEMPORARY TERRACES DURING GRADING OPERATIONS, AND LIMIT UNNECESSARY VEHICLE TRAFFIC IN GRADED AREAS.
7. THE SPILLAGE OF DEBRIS, INCLUDING THE TRACKING OF SOIL, OUTSIDE OF THE CONSTRUCTION LIMITS SHALL BE AVOIDED. THEREFORE THE CONTRACTOR SHALL PROVIDE STABILIZED DRIVES AT ALL ACCESS LOCATIONS AS NECESSARY AND SHALL REMOVE PROMPTLY ANY MATERIAL WHICH FINDS ITS WAY INTO THE PUBLIC RIGHT-OF WAY.
8. STRAW BALE DIKES OR SILT FENCES SHALL BE PLACED ON A CONTOUR ELEVATION ALONG THE DOWNHILL SIDE AND FOR THE FULL EXTENT OF THE DISTURBED AREAS WITHIN THE CONSTRUCTION LIMITS. THE LAST FIVE FEET ON EACH END OF RUN OF SILT FENCE/STRAW BALE DIKE SHALL BE PLACED FACING UPHILL AT 90 DEGREES TO THE CONTOUR LINE.
9. THE CONTRACTOR SHALL PREVENT SILT FROM ENTERING DRAINAGE CULVERTS. STRAW BALE DIKES/SILT FENCE PLACED AROUND ALL STORM SEWER INLETS EXCEPT DURING CONSTRUCTION OPERATIONS WHICH REQUIRE THEIR REMOVAL IS ONE METHOD OF MEETING THE ABOVE REQUIREMENT.
10. EACH CONTRACTOR SHALL INSPECT THEIR EROSION CONTROL DEVICES EVERY 7 DAYS OR WITHIN 24 HOURS OF A STORM OF 0.5 INCHES OR MORE IN DEPTH. THE CONTRACTOR SHALL REPAIR DAMAGE, CLEAN OUT SILT AND ADD ADDITIONAL CONTROL DEVICES AS NEEDED AS SOON AS PRACTICABLE AFTER INSPECTION. DEFICIENCIES MUST BE CORRECTED WITHIN 7 DAYS OF INSPECTION.
11. ALL AREAS UPON REACHING FINAL GRADE SHALL BE BROUGHT TO FINAL PLAN CONDITION (PAVED, MULCHED AND SEEDED, SODDED, OR OTHER) AS SOON AS POSSIBLE. EROSION CONTROL DEVICES SHALL REMAIN IN PLACE UNTIL ALL SOIL DISTURBING ACTIVITIES ARE COMPLETE AND A UNIFORM PERENNIAL COVER WITH A DENSITY OF 70 % (MINIMUM) FOR UNPAVED AREAS IS ESTABLISHED.
12. WHERE GRADED AREAS DRAIN ONTO PAVED AREAS, SILT FENCE/STRAW BALE DIKE SHALL BE PLACED AT THE BACK OF CURB TO PREVENT SILT FROM ENTERING THE PAVED AREAS. WHEN THESE EROSION CONTROL DEVICES ARE NOT PLACED ON THE CONTOUR, THEN THEY SHALL HAVE INSTALLED AT 50' INTERVALS A 5' LENGTH PLACED AT 90 DEGREES TO THE MAIN LENGTH.

EROSION CONTROL NOTES

SILT FENCE NOTES:

A) INSTALLATION

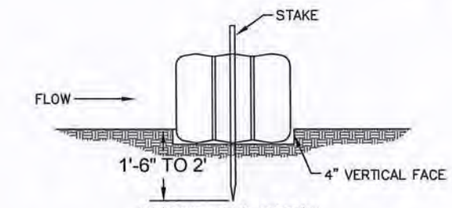
1. THE HEIGHT OF SILT FENCE SHALL BE A MINIMUM OF 16 INCHES ABOVE THE ORIGINAL GROUND SURFACE AND SHALL NOT EXCEED 34 INCHES ABOVE THE GROUND SURFACE.
2. THE FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO LENGTH OF THE BARRIER TO AVOID THE USE OF JOINTS. WHEN JOINTS ARE UNAVOIDABLE, FILTER CLOTH 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 TRENCH 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. POST 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 SILT 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 SILT FABRIC SHALL BE USED WITH A MAXIMUM 3-FOOT SPACING OF POSTS.
8. TO REDUCE MAINTENANCE, EXCAVATE A SHALLOW SILT STORAGE AREA IN THE UPSLOPE SIDE OF THE FENCE. PROVIDE GOOD ACCESS IN AREA OF HEAVY SILTATION FOR CLEAN OUT AND MAINTENANCE.
9. SILT FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED.

B) TROUBLESHOOTING:

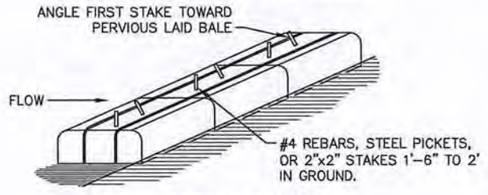
1. DETERMINE THE EXACT LOCATION OF UNDERGROUND UTILITIES, BEFORE FENCE INSTALLATION SO UTILITIES ARE NOT DISTURBED.
2. GRADE ALIGNMENT OF FENCE NEEDED TO PROVIDE A BROAD, NEARLY LEVEL AREA UPSTREAM OF FENCE TO ALLOW SILT COLLECTION AREA.

C) INSPECTION MAINTENANCE:

1. INSPECT SILT FENCES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY.
2. SHOULD THE FABRIC OF A SILT FENCE COLLAPSE, TEAR, DECOMPOSE, OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.
3. REMOVE SILT 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. SILT ACCUMULATION SHOULD NOT EXCEED 1/2 THE HEIGHT OF THE FENCE.
4. REMOVE ALL FENCING MATERIALS AND UNSTABLE SILT DEPOSITS, AND BRING THE AREA TO GRADE AND STABILIZE IT AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY AND COMPLETELY STABILIZED.



EMBEDDING DETAIL

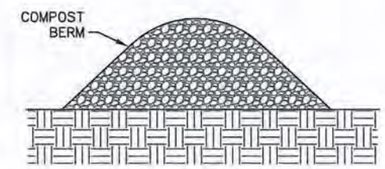


ANCHORING DETAIL

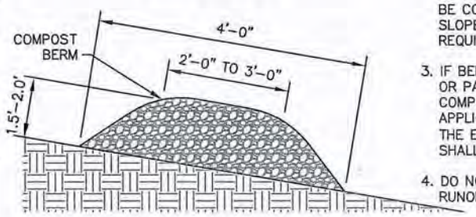
1. BALES SHALL BE PLACED IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
2. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF 4".
3. BALES SHALL BE SECURELY ANCHORED IN PLACE BY STAKES OR REBAR DRIVEN THROUGH THE BALES. THE FIRST STAKE IN EACH BALE SHALL BE ANGLED TOWARD PREVIOUSLY LAID BALE TO FORCE BALES TOGETHER.
4. INSPECTION SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY
5. BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE BY THE OWNER.

STRAW BALE DIKE

NOT TO SCALE



CROSS SECTION



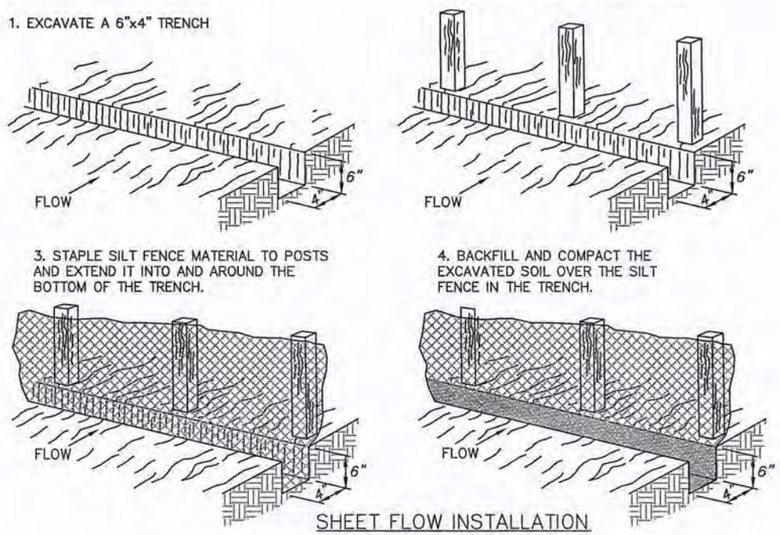
DETAIL

COMPOST BERM MULCH NOTES:
GENERAL NOTE:

1. THE SILT CONTROL BERM SHALL BE PLACED UNCOMPACTED IN A WINDROW AT LOCATIONS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
2. PARALLEL TO THE BASE OF THE SLOPE, OR AROUND THE PERIMETER OF OTHER AFFECTED AREAS, CONSTRUCT A 1 TO 1.5 FOOT HIGH BY 2.5 TO 3 FOOT HIGH TRAPEZOIDAL BERM THAT IS APPROXIMATELY 2 TO 3 FOOT WIDE AT THE TOP AND A MINIMUM OF 4 FEET WIDE AT THE BASE. IN EXTREME CONDITIONS, OR WHERE SPECIFIED BY THE ENGINEER, A SECOND BERM SHALL BE CONSTRUCTED AT THE TOP OF THE SLOPE. ENGINEER SHALL SPECIFY BERM REQUIREMENTS.
3. IF BERM IS TO BE LEFT AS A PERMANENT OR PART OF THE NATURAL LANDSCAPE, THE COMPOST BERM MAY BE SEEDED DURING APPLICATION FOR PERMANENT VEGETATION. THE ENGINEER/LANDSCAPE ARCHITECT SHALL SPECIFY SEED REQUIREMENTS.
4. DO NOT USE COMPOST BERMS IN ANY RUNOFF CHANNELS.

COMPOST BERM

NOT TO SCALE



SHEET FLOW INSTALLATION
(PERSPECTIVE VIEW)

SILT FENCE DETAIL

NOT TO SCALE

NO.	DATE	REVISIONS	BY	APPD
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Designed By: PRW
Drawn By: JDC
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EROSION CONTOL DETAILS

160050-010

SHEET NO.
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L:\140027-020_CAD\CIVIL\160050-010 EROSION DETAILS.DWG
LAYOUT: 1 | BY: JCARTER | DATE: 3/24/2016
XREF DWG1: NONE | XREF DWG2: NONE
XREF DWG3: NONE | XREF DWG4: NONE