

GENERAL NOTES

- ALL UTILITIES SHOWN HAVE BEEN LOCATED BY THE ENGINEER FROM AVAILABLE RECORDS. THEIR LOCATION SHOULD BE CONSIDERED APPROXIMATE. THE CONTRACTOR HAS THE RESPONSIBILITY TO NOTIFY ALL UTILITY COMPANIES PRIOR TO CONSTRUCTION, TO HAVE EXISTING UTILITIES FIELD LOCATED. THE CONTRACTOR SHALL BE ON RECORD WITH THE MISSOURI ONE CALL SYSTEM. ALL PROPOSED UTILITIES TO BE UNDERGROUND.
- ALL ELEVATIONS ARE BASED ON USGS DATUM.
- BOUNDARY AND TOPOGRAPHIC SURVEY BY MARLER SURVEYING.
- ALL ON-SITE MATERIALS AND METHODS OF CONSTRUCTION TO MEET THE CURRENT STANDARDS AND SPECIFICATIONS OF THE DIRECTOR OF PUBLIC WORKS FOR THE CITY OF OFFALLON, MO.
- ALL GRADED AREAS SHALL BE PROTECTED FROM EROSION BY EROSION CONTROL DEVICES AND/OR SEEDING AND MULCHING AS REQUIRED BY THE CITY OF OFFALLON, MO.
- PRIOR TO BEGINNING ANY WORK ON THE SITE, THE SUB-CONTRACTOR SHALL CONTACT THE GENERAL CONTRACTOR FOR SPECIFIC INSTRUCTIONS RELEVANT TO THE SEQUENCING OF WORK.
- GRADING CONTRACTOR SHALL INSTALL SILTATION CONTROL PRIOR TO STARTING THE GRADING. ADDITIONAL SILTATION CONTROL DEVICES SHALL BE INSTALLED AS DIRECTED BY THE CITY OF OFFALLON.
- ALL FILLS AND BACKFILLS SHALL BE MADE OF SELECTED EARTH MATERIALS, FREE FROM BROKEN MASONRY, ROCK, FROZEN EARTH, RUBBISH, ORGANIC MATERIAL AND DEBRIS.
- GRADING CONTRACTOR SHALL KEEP EXISTING ROADWAYS CLEAN OF MUD AND DEBRIS AT ALL TIMES.
- PROPOSED CONTOURS SHOWN ARE FINISHED ELEVATIONS ON PAVED AREAS.
- ALL GRADING & DRAINAGE TO BE IN CONFORMANCE WITH THE CITY OF OFFALLON STANDARDS.
- DRIVE ENTRANCES ARE TO BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF OFFALLON STANDARDS.
- SEEDING, SOODING, MULCHING AND PLANTINGS FOR ALL DISTURBED AREAS SHALL BE SPECIFIED ON THE LANDSCAPE PLAN.
- SIDEWALKS ALONG THE ACCESSIBLE ROUTE SHALL NOT HAVE A SLOPE EXCEEDING 1:20. SLOPES GREATER THAN 1:20 MUST BE DESIGNED AS A RAMP.
- SIDEWALKS, CURB RAMPS, RAMPS AND ACCESSIBLE PARKING SPACES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT APPROVED "AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES" (ADAAC) ALONG WITH THE REQUIRED GRADING, CONSTRUCTION MATERIALS, SPECIFICATIONS AND SIGNAGE. IF ANY CONFLICT OCCURS BETWEEN THE ADAAC GUIDELINES AND THE INFORMATION ON THE PLANS, THE ADAAC GUIDELINES SHALL TAKE PRECEDENCE AND THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER PRIOR TO ANY CONSTRUCTION.
- NO STEP ALLOWED AT ACCESSIBLE ENTRANCE DOORS.
- NO GRADE SHALL EXCEED 3:1 SLOPE.
- STORMWATER SHALL BE DISCHARGED AT ADEQUATE NATURAL DISCHARGE POINT. SINKHOLES ARE NOT ADEQUATE NATURAL DISCHARGE POINTS.
- ALL LANDSCAPED AREAS DISTURBED BY OFF-SITE WORK SHALL BE IMMEDIATELY SEEDED OR SODDED, AS DIRECTED BY OFFALLON DEPARTMENT OF PUBLIC WORKS UPON COMPLETION OF WORK IN AREA AFFECTED.
- ADEQUATE TEMPORARY OFF-STREET PARKING FOR CONSTRUCTION EMPLOYEES SHALL BE PROVIDED. PARKING ON NON-SURFACED AREAS SHALL BE PROHIBITED IN ORDER TO ELIMINATE THE CONDITION WHEREBY MUD FROM CONSTRUCTION AND EMPLOYEES' VEHICLES IS TRACKED ONTO THE PAVEMENT CAUSING HAZARDOUS ROADWAY AND DRIVEWAY CONDITIONS.
- ALL SEWER CONSTRUCTION MUST CONFORM TO THE CITY OF OFFALLON STANDARDS.

SETBACKS PER ZONING

BUILDING	PARKING
FRONT = 25'	FRONT = 25'
SIDE (NORTH) = 0'	SIDE (NORTH) = 0'
SIDE (SOUTH) = 10'	SIDE (SOUTH) = 10'
REAR = 0'	REAR = 0'

PARKING CALCULATIONS

PARKING REQUIRED	PARKING PROVIDED
5 1/2 per 1000 s.f. = 26,400 x 5.5 = 146 STALLS	1,000
9'x19' = 174 STALLS	
A.D.A. = 6 STALLS	
Total = 180 STALLS	

BICYCLE PARKING REQUIRED: 1 per 15 parking spaces required = 146/15 = 10 bicycle parking spaces

BICYCLE PARKING PROVIDED: 10 bicycle parking spaces

- ALL SIGN POST AND BACKS AND BRACKET ARMS SHALL BE PAINTED BLACK USING CARBOLINE RUSTBOND PENETRATING SEALER S6 AND CARBOLINE 133 HB PAINT (OR EQUIVALENT AS APPROVED BY CITY AND MODOT). SIGNS DESIGNATING STREET NAME SHALL BE ON THE OPPOSITE SIDE OF THE STREET FROM TRAFFIC CONTROL SIGNS.
- ALL SIGN LOCATIONS AND SIZES MUST BE APPROVED SEPARATELY THROUGH THE PLANNING DIVISION.
- LIGHTING VALUES WILL BE REVIEWED ON SITE PRIOR TO THE FINAL OCCUPANCY INSPECTION. CORRECTIONS WILL NEED TO BE MADE IF NOT IN COMPLIANCE WITH CITY STANDARDS.
- ALL PAVING TO BE IN ACCORDANCE WITH ST. CHARLES COUNTY STANDARDS AND SPECIFICATIONS EXCEPT AS MODIFIED BY THE CITY OF OFFALLON ORDINANCES.
- BRICK SHALL NOT BE USED IN THE CONSTRUCTION OF STORM SEWER STRUCTURES.
- ALL ROOFTOP MOUNTED MECHANICAL UNITS SHALL BE PAINTED TO MATCH THE COLOR OF THE ROOF

APPENDIX A

SEEDING RATES:

PERMANENT:

TALL FESCUE: 30 LBS./AC.
SMOOTH BROME: 20 LBS./AC.
COMBINED: FESCUE @ 15 LBS./AC. AND BROME @ 10 LBS./AC.

TEMPORARY:

WHEAT OR RYE: 150 LBS./AC.
OATS: 120 LBS./AC.

SEEDING PERIODS:

FESCUE OR BROME: MARCH 1 TO JUNE 1
AUGUST 1 TO OCTOBER 1

WHEAT OR RYE: MARCH 15 TO NOVEMBER 1
OATS: MARCH 15 TO SEPTEMBER 15

MULCH RATES: 100 LBS. PER 1,000 S.F. (4,356 LBS. PER ACRE)

FERTILIZER RATES: NITROGEN 30 LBS./AC.
PHOSPHATE 30 LBS./AC.
POTASSIUM 30 LBS./AC.
LIME 600 LBS./AC. ENM*

*ENM = EFFECTIVE NEUTRALIZING MATERIAL AS PER STATE EVALUATION OF QUARRIED ROCK.

SANITARY SEWER NOTES

- ALL MATERIALS AND METHODS OF CONSTRUCTION FOR SANITARY SEWERS TO MEET REQUIREMENTS OF THE CITY OF OFFALLON, MO.
- 6" AND 8" LATERALS CONSTRUCTED OF P.V.C. S.D.R.-35 THICKWALL PIPE, A.S.T.M. D-3034.
- 6" AND 8" LATERAL JOINTS TO CONFORM TO A.S.T.M. STANDARD S.D.R.-35 THICKWALL JOINT FOR P.V.C..
- ALL LATERAL SEWER CONSTRUCTION METHODS TO CONFORM TO LATEST STANDARDS AND SPECIFICATIONS OF THE CITY OF OFFALLON.
- ALL TRENCHES UNDER AREAS TO BE PAVED SHALL BE GRANULARLY FILLED WITH 3/4" CRUSHED LIMESTONE. BACKFILL SHALL BE PLACED IN ACCORDANCE WITH THE CITY OF OFFALLON STANDARDS.
- CONTRACTOR TO START LAYING PIPE AT DOWNSTREAM MANHOLE AND WORK UPSTREAM.
- CLEANOUTS SHALL BE LOCATED AT ALL HORIZONTAL AND VERTICAL CHANGES IN DIRECTION OF FLOW OF HOUSE LATERALS AND ANY SANITARY LATERAL OF 100 FEET OR LONGER.
- VERTICAL CLEARANCE BETWEEN SEWER AND WATER MAINS SHALL BE A MINIMUM OF 2'-0".
- ALL TRENCH BACKFILLS UNDER PAVEMENT WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE GRANULAR BACKFILL. TRENCH BACKFILLS UNDER PAVED AREAS, OUTSIDE OF PUBLIC RIGHT-OF-WAY SHALL BE GRANULAR BACKFILL IN LIEU OF THE EARTH BACKFILL COMPACTED TO 90 PERCENT OF THE MODIFIED AASHTO T-180 COMPACTION TEST A.S.T.M. D-1557.
- JETTING IS NOT AN ACCEPTABLE METHOD OF ACHIEVING BACKFILL COMPACTION. ALL BACKFILL MATERIAL SHALL BE MECHANICALLY COMPACTED TO AT LEAST 95 PERCENT OF THE MATERIAL'S STANDARD PROCTOR MAXIMUM DRY DENSITY.
- ADJUSTMENT OF MANHOLE TO GRADE:

If a manhole is to be raised:
Manholes may be raised using courses of brick or approved grade ring(s), provided the total adjustment of the manhole does not exceed 12-inches (including the existing ring or course of brick). For manholes which will exceed the maximum of 12-inches, the transition section of the structure shall be removed and the bottom section raised using the same material as the existing structure.

If a manhole is to be lowered:
Manholes may be lowered by removing the transition section, and lowering the existing bottom section by sawcutting the existing cast-in-place concrete, removing the required courses of brick, or removing the precast riser section as appropriate.

GRADING NOTES

- Notify the City of Ofallon Department of Public Works 48 hours prior to the commencement of grading and/or prior to the commencement of construction.
- Parking on non-surfaced areas is prohibited in order to eliminate the condition whereby mud from construction and employee vehicles is tracked onto the pavement causing hazardous roadway and driving conditions. Contractor shall keep road clear of mud and debris.
- The streets surrounding this development and any street used for construction access thereto shall be cleaned throughout the day.
- Erosion and siltation control shall be installed prior to any grading and be maintained throughout the project until acceptance of the work by the owner and/or controlling regulatory agency and adequate vegetative growth insures no further erosion of the soil.
- Additional siltation control may be required as deemed necessary by the City of Ofallon.
- Temporary siltation control measures (structural) shall be maintained until vegetative cover is established at a sufficient density to provide erosion control on the site.
- Where natural vegetation is removed during grading, vegetation shall be reestablished in such a density as to prevent erosion.
- When clearing and/or grading operations are completed or suspended for more than 30 days, all necessary precautions shall be taken to retain soil materials on site. Protective measures may be required by the Director of Public Works. Such as permanent seeding, periodic wetting, mulching, or other suitable means.
- If cut and fill operations occur during a season not favorable for immediate establishment of permanent ground cover, a fast germinating annual such as ryegrass or sudan grasses shall be utilized to retard erosion, if adequate stormwater detention and erosion control devices have not been established.
- All finished grades (areas not to be disturbed by future improvement) shall be seeded/sodded.
- All areas shall be seeded or sodded prior to occupancy permit and shall be issued except that a temporary occupancy permit may be issued by the City of Ofallon Planning Department in cases of undue hardship because of unfavorable ground conditions.
- Siltation fences shall be inspected periodically for damage and for the amount of sediment which has accumulated. Removal of sediment will be required when it reaches 1/2 the height of the siltation fence.
- All trash and debris on-site, either or from construction, must be removed and properly disposed of off-site.
- Any wells, cisterns and/or springs, which may exist on this property, should be located and sealed in a manner acceptable to the City of Ofallon and the Missouri Department of Natural Resources.
- All excavations, grading or filling shall have a finished grade not to exceed a 3:1 slope (33%), unless specifically approved otherwise.
- Storm water pipes, outlets, and channels shall be protected by silt barriers and kept free of waste and silt at all times prior to final surface stabilization and/or paving.
- No construction parking shall be permitted on Bryan Road or Mexico Road.
- No excavation shall be made so close to the property line as to endanger any adjoining property of any public or private street without supporting and protecting such public or private street or property from settling, cracking or other damage.

EARTHWORK NOTES

BULK CUT: 9,901 +/- CUBIC YARD
BULK FILL: 4,607 +/- CUBIC YARD (INCLUDES 15% FOR SHRINKAGE)
* INCLUDES 4,362 C.Y. FOR OVEREXCAVATION OF BUILDING

THE CALCULATED EARTHWORK QUANTITIES SHOULD BE REGARDED AS AN ESTIMATE OF THE BULK MOVEMENT AND/OR REDISTRIBUTION OF SOILS FOR THE SUBJECT PROPERTY. THE CALCULATED QUANTITIES ARE INTENDED FOR GENERAL USE, AND SHOULD BE USED AS A COMPARISON WITH THE QUANTITIES CALCULATED BY THE EARTHWORK SUBCONTRACTOR. THE ENGINEER ASSUMES NO LIABILITY FOR COST OVERRUNS DUE TO EXCESS EXCAVATED MATERIALS OR FILL SHORTAGES. DISCREPANCIES BETWEEN THE ENGINEER'S CALCULATED QUANTITIES AND THE EARTHWORK SUBCONTRACTOR'S ESTIMATE SHOULD BE REPORTED TO THE ENGINEER IMMEDIATELY.

THE EARTHWORK QUANTITIES ESTIMATED FOR THE SUBJECT SITE ARE BASED UPON HORIZONTAL AND VERTICAL LOCATION OF THE IMPROVEMENTS AS PROPOSED ON THE SITE ENGINEERING PLANS PREPARED BY CIVIL ENGINEERING DESIGN CONSULTANTS, INC.

THE ENGINEER'S ESTIMATE DOES NOT INCLUDE ANY OF THE FOLLOWING ITEMS PERTAINING TO EARTHWORK QUANTITIES THAT MAY BE NECESSARY FOR COMPLETION OF THE PROJECT:

- MISCELLANEOUS UNDERGROUND CONDUITS AND MANHOLES
- SEWER LINES AND WATER MAINS LESS THAN TWENTY-FOUR INCHES IN DIAMETER
- BUILDING FOOTINGS AND FOUNDATIONS
- UTILITY AND/OR LIGHT STANDARD BASES

THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE ACTUAL SIZE OF THE FIELD EXCAVATIONS MADE FOR THE INSTALLATION OF UNDERGROUND STRUCTURES, AND THEREFORE, THE ACTUAL EARTHWORK QUANTITIES MAY VARY FROM THESE ESTIMATED QUANTITIES. THE ENGINEER ALSO ASSUMES NO RESPONSIBILITY FOR COSTS INCURRED DUE TO THE REMOVAL OF UNSUITABLE MATERIAL WHICH MUST BE REMOVED FROM THE SITE.

- ASSUMPTIONS:
- IT IS ASSUMED THAT THE TOPSOIL, IF ANY, WILL BE REUSED ON-SITE WITHIN LANDSCAPING AREAS AND WILL NOT BE HAULLED OFF.
 - SUBGRADE FOR BUILDING PAD - 10"
 - SUBGRADE FOR ASPHALT PAVEMENT SECTIONS - 11"
 - SUBGRADE FOR CONCRETE PAVEMENT SECTIONS - 10" FOR TRASH LOADING AREA
 - ASSUMED 15% SHRINKAGE FACTOR

ALL FILL PLACED UNDER PROPOSED STORM AND SANITARY SEWER, PROPOSED ROADS, AND/OR PAVED AREAS SHALL BE COMPACTED TO 90% OF MAXIMUM DENSITY AS DETERMINED BY THE MODIFIED AASHTO T-99 COMPACTION TEST OR 95% OF MAXIMUM DENSITY AS DETERMINED BY THE STANDARD PROCTOR TEST AASHTO T-99. ALL FILL PLACED IN PROPOSED ROADS SHALL BE COMPACTED FROM THE BOTTOM OF THE FILL UP. ALL TESTS SHALL BE VERIFIED BY A SOILS ENGINEER CONCURRENT WITH GRADING AND BACKFILLING OPERATIONS. NOTE THAT THE MOISTURE CONTENT OF THE SOIL IN THE FILL AREAS IS TO CORRESPOND TO THE COMPACTIVE EFFORT AS DEFINED BY THE STANDARD OR MODIFIED PROCTOR TEST. OPTIMUM MOISTURE CONTENT SHALL BE DETERMINED USING THE SAME TEST THAT WAS USED FOR COMPACTION. SOIL COMPACTION CURVES SHALL BE SUBMITTED TO THE CITY OF OFFALLON PRIOR TO THE PLACEMENT OF FILL. PROOF ROLLING MAY BE REQUIRED TO VERIFY SOIL STABILITY AT THE DISCRETION OF THE CITY OF OFFALLON.

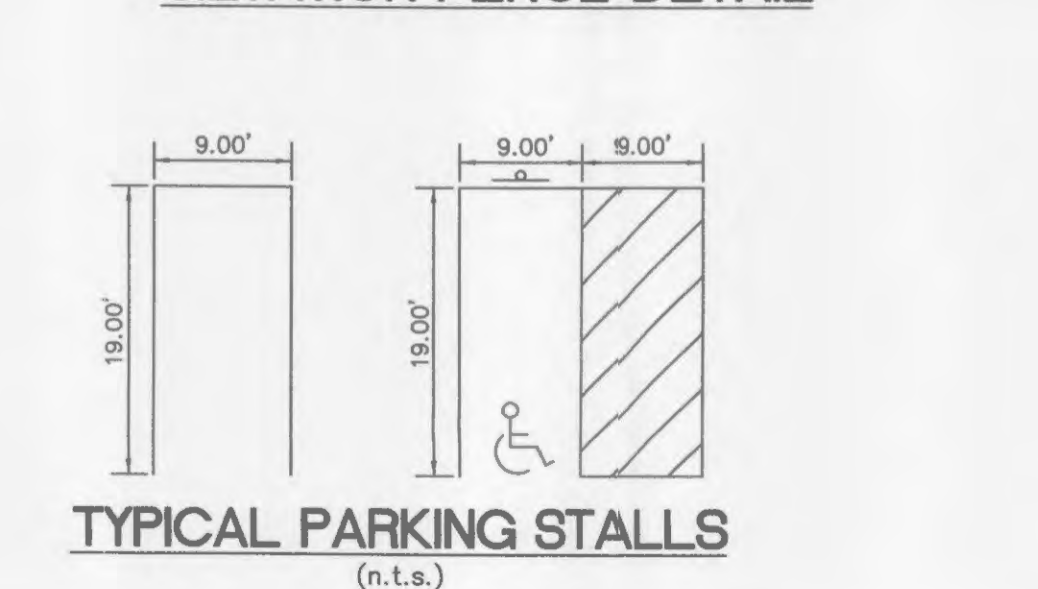
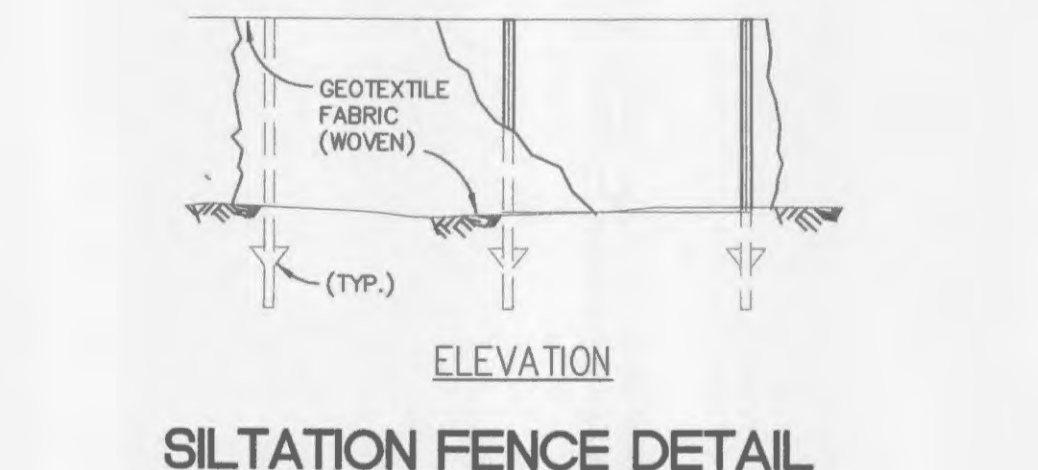
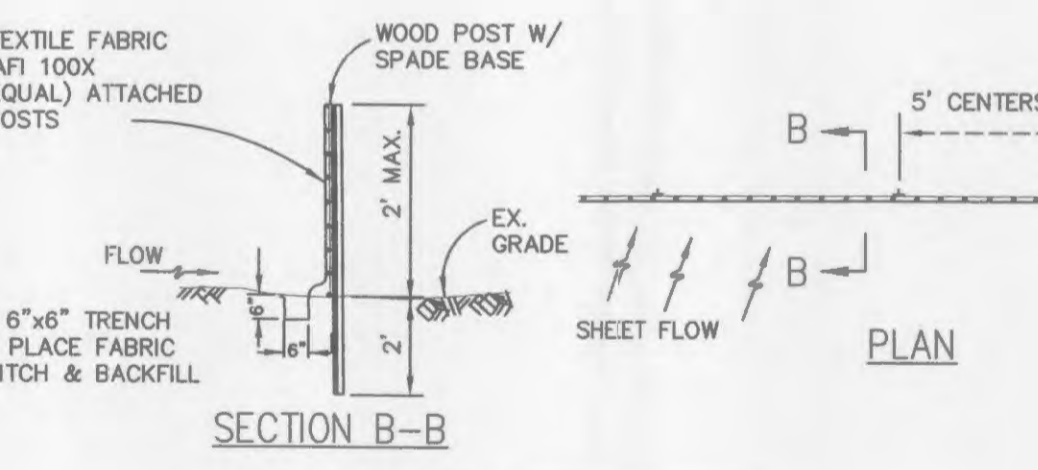
GRADED AREAS THAT ARE TO REMAIN BARE FOR OVER 2 WEEKS SHALL BE SEEDDED AND MULCHED. (DNR REQUIREMENT)

ALL EROSION CONTROL SYSTEMS ARE TO BE INSPECTED AND NECESSARY CORRECTIONS MADE WITHIN 24 HOURS OF ANY RAINFALL RESULTING IN ONE-HALF INCH OF RAIN OR MORE.

RIP RAP SHOWN AT FLARED ENDS WILL BE EVALUATED IN THE FIELD AFTER INSTALLATION FOR EFFECTIVENESS AND FIELD MODIFIED IF NECESSARY TO REDUCE EROSION ON AND OFF SITE.

THE CONTRACTOR SHALL ASSUME COMPLETE RESPONSIBILITY FOR CONTROLLING ALL SILTATION AND EROSION OF THE PROJECT AREA. THE CONTRACTOR SHALL USE WHATEVER MEANS NECESSARY TO CONTROL EROSION AND SILTATION INCLUDING, BUT NOT LIMITED TO, STAKED STRAW BALES AND/OR SILTATION FABRIC FENCES (POSSIBLE METHODS ARE DETAILED IN THE PLAN). CONTROL SHALL COMMENCE WITH GRADING AND BE MAINTAINED THROUGHOUT THE PROJECT UNTIL ACCEPTANCE OF THE WORK BY THE OWNER AND/OR THE CITY OF OFFALLON AND/OR MODOT. THE CONTRACTOR'S RESPONSIBILITIES INCLUDE ALL DESIGN AND IMPLEMENTATION AS REQUIRED TO PREVENT EROSION AND THE DEPOSITING OF SILT. THE OWNER AND/OR THE CITY OF OFFALLON AND/OR MODOT MAY AT THEIR OPTION DIRECT THE CONTRACTOR IN HIS METHODS AS DEEMED FIT TO PROTECT PROPERTY AND IMPROVEMENTS. ANY DEPOSITING OF SILT OR MUD IN NEW OR EXISTING STORM SEWERS OR SWALES SHALL BE REMOVED AFTER EACH RAIN AND AFFECTED AREAS CLEANED TO THE SATISFACTION OF THE OWNER AND/OR THE CITY OF OFFALLON AND/OR MODOT.

DEVELOPER MUST SUPPLY CITY CONSTRUCTION INSPECTORS WITH SOIL REPORTS PRIOR TO OR DURING SITE CITY TESTING.



HIGH DENSITY POLYETHYLENE (HDPE) STORM SEWER PIPE

1.0 MATERIALS

1.1 PIPE - THIS SPECIFICATION APPLIES TO HIGH DENSITY POLYETHYLENE CORRUGATED PIPE (HDPE) WITH AN INTEGRALLY FORMED SMOOTH WATERWAY, TYPE N-12 WT OR EQUAL. NOMINAL SIZES FOR WHICH THIS SPECIFICATION IS APPLICABLE ARE 12 - 48 INCH DIAMETER. 12 - 36 INCH PIPE SHALL CONFORM TO THE AASHTO M294 CLASSIFICATION TYPE S, AND 42 - 48 INCH PIPE SHALL CONFORM TO AASHTO MP6-95 CLASSIFICATION TYPE D. ALL PIPE JOINTS SHALL CONSIST OF A BELL AND SPIGOT JOINING SYSTEM WITH THE BELL COVERING TWO PIPE CORRUGATIONS AS RECOMMENDED IN AASHTO M294. O-RING TYPE GASKETS MEETING ASTM F477 WILL BE INSTALLED ON THE SPIGOT END OF THE PIPE.

1.2 TESTING - PIPE MANUFACTURED FOR THIS SPECIFICATION SHALL COMPLY WITH THE REQUIREMENTS FOR TEST METHODS, DIMENSIONS, AND MARKINGS FOUND IN AASHTO DESIGNATIONS M252 AND M294. PIPE AND FITTINGS SHALL BE MADE FROM VIRGIN PE COMPOUNDS WHICH CONFORM WITH THE REQUIREMENTS OF CELL CLASS 335420C AS DEFINED AND DESCRIBED IN ASTM D3350.

1.3 FITTINGS - FITTINGS MAY BE EITHER MOLDED OR FABRICATED AND SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M252 AND M294. THE FITTINGS SHALL NOT REDUCE OR IMPAIR THE OVERALL INTEGRITY OR FUNCTION OF THE PIPE LINE. ONLY FITTINGS SUPPLIED OR RECOMMENDED BY THE PIPE MANUFACTURER SHALL BE USED.

2.0 INSTALLATION

2.1 - INSTALLATION OF THE PIPE SPECIFIED ABOVE SHALL BE IN ACCORDANCE WITH ASTM RECOMMENDED PRACTICE D2321 AS OUTLINED HEREIN:

2.2 JOINTING - BOTH THE BELL AND SPIGOT (WITH O-RING GASKET) ENDS OF EACH PIPE SHALL BE LUBRICATED AS RECOMMENDED BY MANUFACTURER AND INSERTED TO THE HOMIN MARK ON THE SPIGOT END OF THE PIPE.

NOTE: 1. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH A FOUNDATION OF CLASS I OR II MATERIAL AS DEFINED IN ASTM D2321, "STANDARD PRACTICE FOR INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY-FLOW APPLICATIONS," LATEST EDITION; AS AN ALTERNATIVE AND AT THE DISCRETION OF THE ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A WOVEN GEOTEXTILE FABRIC.

NOTE: IN INSTANCES WHERE CLEAN ROCK IS USED AS BACKFILL, A 4" NONWOVEN FABRIC (MIRAFI 140N OR EQUAL) SHALL BE WRAPPED AROUND THE GRANULAR MATERIAL WITH AN OVERLAP EXCEEDING THE WIDTH OF THE TRENCH, TO PREVENT THE MIGRATION OF FINES.

2. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III AND INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.

UNLESS OTHERWISE SPECIFIED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100 MM) FOR 42"-24" (100-500 MM) AND 42"-48" (1050-1200 MM) CORRUGATED POLYETHYLENE PIPE (CPEP); 6" (150 MM) FOR 30"-36" (750-900 MM) CPEP.

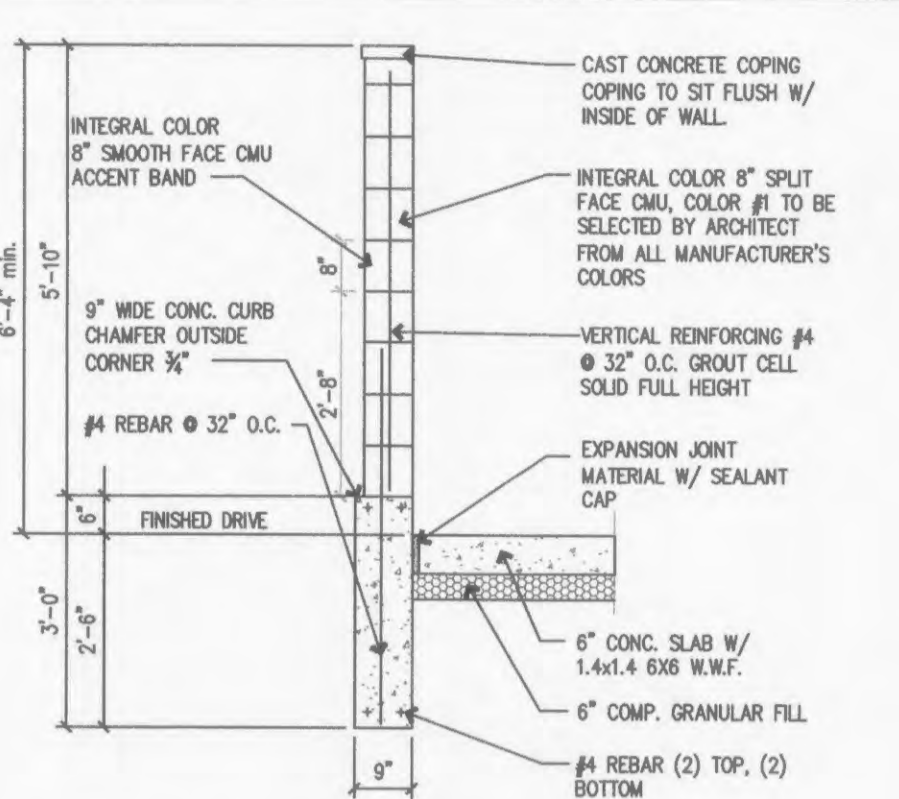
3. HAUNCHING AND INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III AND INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.

4. UNLESS OTHERWISE SPECIFIED BY THE ENGINEER, MINIMUM TRENCH WIDTHS SHALL BE AS FOLLOWS:

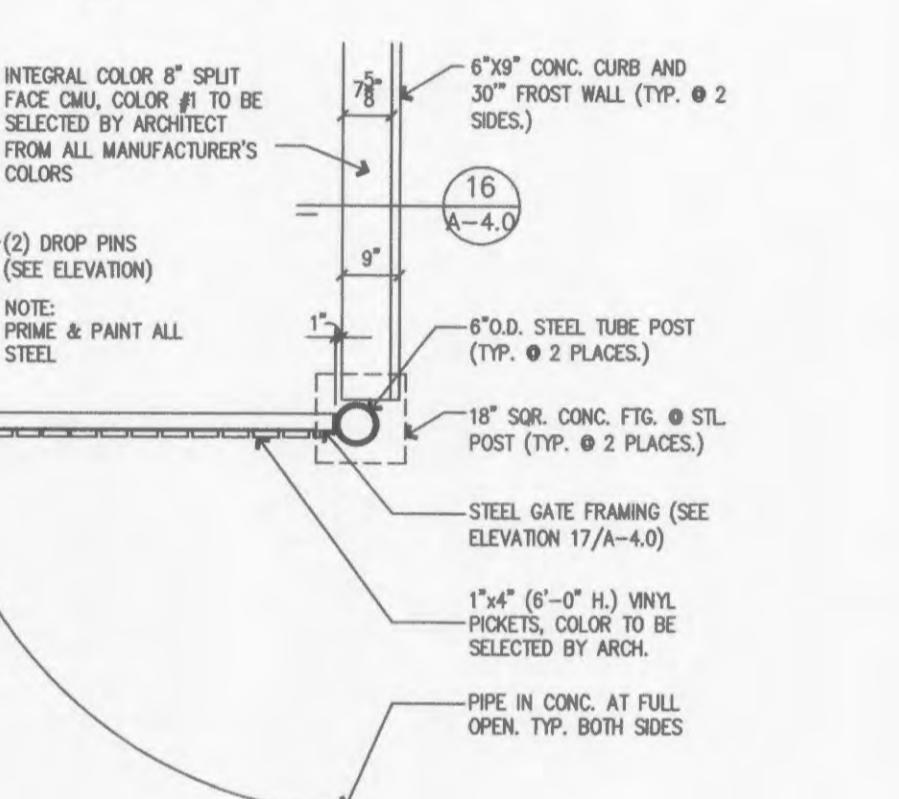
NOMINAL Ø IN. (MM)	MIN. RECOMMENDED TRENCH WIDTH IN. (MM)
4 (100)	21 (530)
6 (150)	23 (580)
8 (200)	25 (630)
10 (250)	28 (710)
12 (300)	31 (790)
15 (375)	34 (860)
18 (450)	39 (990)
24 (600)	48 (1220)
30 (750)	66 (1680)
36 (900)	78 (1980)
42 (1050)	83 (2110)
48 (1200)	89 (2260)
60 (1500)	102 (2590)

SURFACE LIVE LOADING CONDITION	MINIMUM RECOMMENDED COVER IN (MM)
H25 (FLEXIBLE PAVEMENT)	12 (300)*
H25 (RIGID PAVEMENT)	12 (300)
EBO RAILWAY	24 (610)
HEAVY CONSTRUCTION	48 (1220)

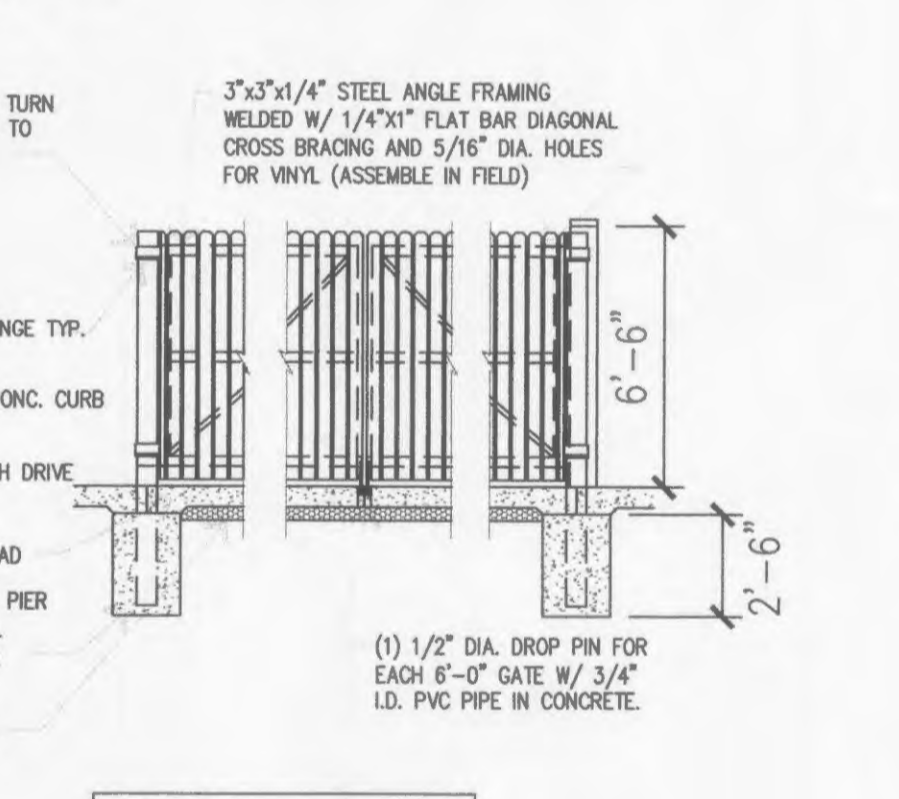
* TOP OF PIPE TO BOTTOM OF BITUMINOUS PAVEMENT SECTION



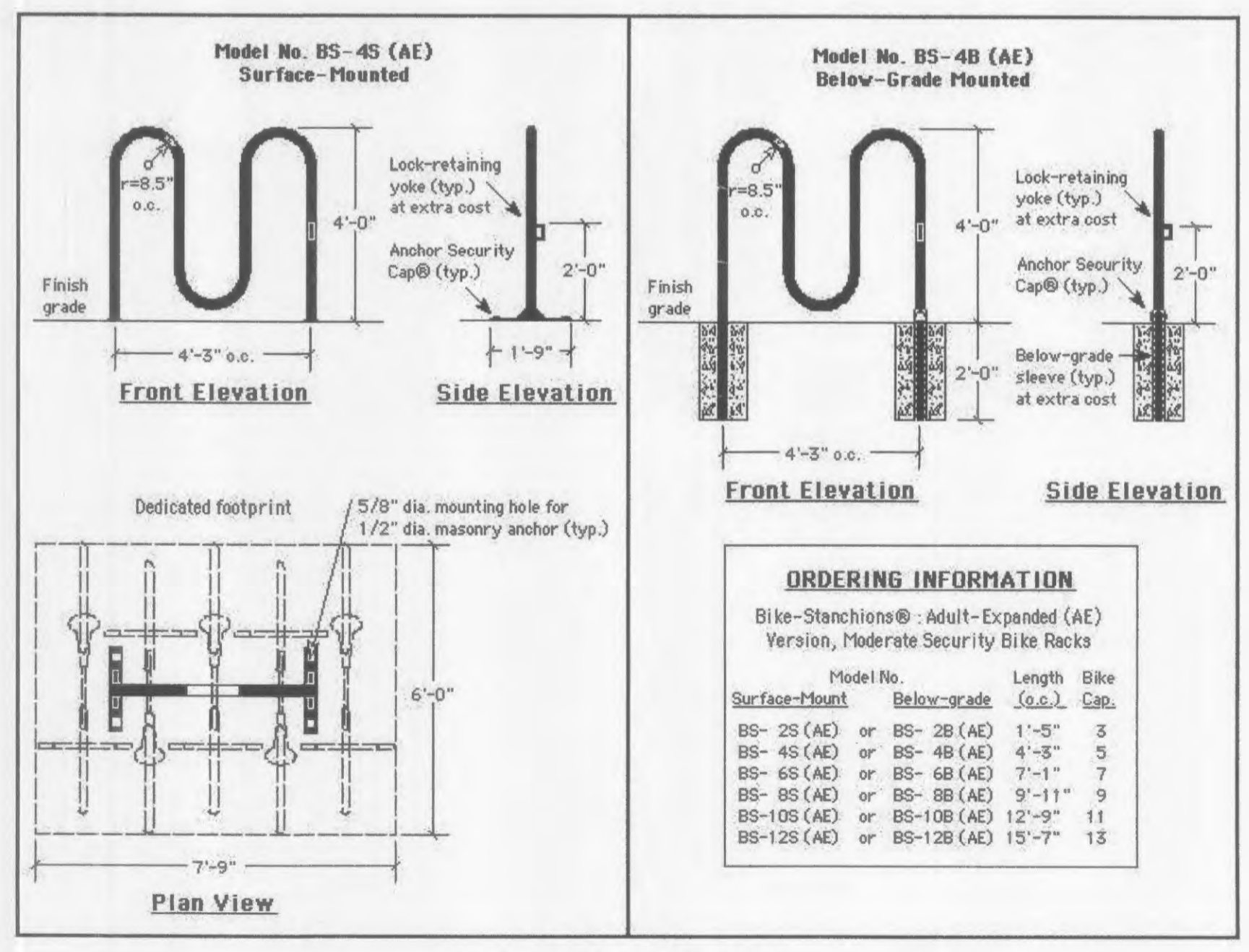
16 TYP. WALL SECT. @ TRASH ENCL.
A-4.0 1/2"=1'-0"



18 PARTIAL PLAN @ TRASH ENCLOSURE
A-4.0 1/2"=1'-0"



17 GATE ELEVATION @ TRASH ENCL.
A-4.0 1/2"=1'-0"



ORDERING INFORMATION

Bike-Stanchions® - Adult-Expanded (AE)
Version, Moderate Security Bike Racks

Surface-Mount	Below-grade	Length (o.c.)	Bike Cap.
BS-2S (AE)	BS-2B (AE)	1'-5"	3
BS-4S (AE)	BS-4B (AE)	4'-3"	3
BS-6S (AE)	BS-6B (AE)	7'-1"	7
BS-8S (AE)	BS-8B (AE)	9'-11"	9
BS-10S (AE)	BS-10B (AE)	12'-9"	11
BS-12S (AE)	BS-12B (AE)	15'-7"	13

BIKE RACK DETAIL



CIVIL ENGINEERING DESIGN CONSULTANTS, INC.
11402 BRAVOIS ROAD SUITE 100
3847 LOUISIANA BLVD
OFFICE: 63620-1144
INFO@CEDC.NET WWW.CEDC.NET

Improvement Plans
Hillmann Farm Plaza
1260 Bryan Road
Ofallon, Missouri 63366

Proj. # 0266

No.	Description	Date
Owner Review		12.01.04
Per Engineer		12.07.04
Permit / Bidding		01.10.05
Per City		03.17.05
Per City		04.11.05
Per City		04.22.05
Per City		06.01.05

SPECIFICATION SHEET

