2.) BOUNDARY & TOPOGRAPHIC INFORMATION PROVIDED BY STOCK & ASSOCIATES

3.) ALL MATERIALS AND METHODS OF CONSTRUCTION TO MEET THE CURRENT STANDARDS AND SPECIFICATIONS OF THE CITY ENGINEER FOR THE CITY OF O'FALLON.

4.) ALL GRADED AREAS SHALL BE PROTECTED FROM EROSION BY EROSION CONTROL DEVICES AND/OR SEEDING AND MULCHING AS REQUIRED BY THE CITY ENGINEER FOR THE CITY OF O'FALLON.

5.) PRIOR TO BEGINNING ANY WORK ON THE SITE, THE CONTRACTOR SHALL CONTACT THE OWNER'S REPRESENTATIVE FOR SPECIFIC INSTRUCTIONS RELEVANT TO THE SEQUENCING OF WORK.

6.) ALL FILLS AND BACKFILLS SHALL BE MADE OF SELECTED EARTH MATERIALS, FREE FROM BROKEN MASONRY, ROCK, FROZEN EARTH, RUBBISH, ORGANIC MATERIAL AND DEBRIS.

7.) GRADING CONTRACTOR SHALL KEEP EXISTING ROADWAYS CLEAN OF MUD AND DEBRIS AT ALL TIMES.

8.) PROPOSED CONTOURS SHOWN ARE FINISHED ELEVATIONS ON PAVED

9.) NO GRADE SHALL EXCEED 3:1 SLOPE.

10.) GRADING AND STORM WATER PER THE CITY OF O'FALLON AND ST. CHARLES COUNTY STANDARDS.

11.) DRIVEWAYS AND ENTRANCES PER THE CITY OF O'FALLON, ST. CHARLES COUNTY, AND MISSOURI DEPT. OF TRANSPORTATION STANDARDS.

12.) FEMA MAP 29183C0430 E DATED 8/2/96 ZONE "X" AND OTHER AREAS.

13.) ALL SLOPES TO BE STABILIZED IMMEDIATELY AFTER GRADING.

14.) ALL FILLED PLACES UNDER PROPOSED STORM AND SANITARY SEWER AND/OR PAVED AREAS SHALL BE COMPACTED TO 90% OF MAXIMUM DENSITY AS DETERMINED BY THE MODIFIED AASHTO T-180 COMPACTION TEST OR 95% OF MAXIMUM DENSITY AS DETERMINED BY THE STANDARD PROCTOR TEST AASHTO T-99.

15.) ALL FILLED PLACES IN PROPOSED ROADS SHALL BE COMPACTED FROM THE BOTTOM OF THE FILL UP TO 90% MAXIMUM DENSITY AS DETERMINED BY THE MODIFIED AASHTO T-180 COMPACTION TEST OR 95% OF MAXIMUM DENSITY AS DETERMINED BY THE STANDARD PROCTOR TEST AASHTO T-99. ALL TESTS SHALL BE VERIFIED BY A SOILS ENGINEER CONCURRENT WITH GRADING AND BACKFILLING OPERATIONS.

16.) THE SEDIMENT CONTROL PLAN SHOULD BE IMPLEMENTED BEFORE GRADING BEGINS.

17.) EROSION CONTROL SHALL NOT BE LIMITED TO WHAT IS SHOWN ON THE PLAN. WHATEVER MEANS NECESSARY SHALL BE TAKEN TO PREVENT SILTATION AND EROSION FROM ENTERING NATURAL STREAMS AND ADJACENT ROADWAYS, PROPERTIES, AND DITCHES.

18.) ALL EROSION CONTROL SYSTEMS SHALL BE INSPECTED AND NECESSARY CORRECTIONS MADE WITHIN 24 HOURS OF ANY RAINSTORM RESULTING IN ONE-HALF INCH OF RAIN OR MORE.

19.) SPECIFICATIONS OF THE TREE PRESERVATION ORDINANCE WILL BE ADDRESSED W/ THE SUBMISSION OF THE SITE DEVELOPMENT PLANS WHICH WILL INCLUDE LANDSCAPING PLANS AND CALCULATIONS.

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

21.) 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 FROSION AND SILTATION INCLUDING, BUT NOT LIMITED TO, STAKED STRAW BALES AND/OR SILTATION FABRIC FENCES (POSSIBLE METHODS OF CONTROL 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

O'FALLON 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 O'FALLON AND/OR MODOT MAY AT THEIR OPTION DIRECT THE CONTRACTOR IN HIS METHODS AS DEEMED FIT TO PROTECT PROPERTY AND IMPROVEMENTS. ANY DEPOSITING OF SILTS OR MUD ON NEW OR EXISTING PAVEMENT OR 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 CITY OF O'FALLON AND/OR MODOT.

22.) NO GRADED AREAS ARE TO REMAIN BARE FOR OVER 6 MONTHS WITHOUT BEING SEEDED AND MULCHED.

AND SHALL BE USED AS THE BASIS FOR CONSTRUCTION MEANS AND 24.) ST. CHARLES COUNTY AND CITY OF O'FALLON PAVING SPECIFICATIONS

23.) THE GEOTECHNICAL REPORT PREPARED BY MIDWEST TESTING, DATED

NOVEMBER 14, 2001, IS CONSIDERED PART OF THESE SPECIFICATIONS

SHALL APPLY EXCEPT FOR THE SURFACE ASPHALT MIX. THE SURFACE ASPHALT MIX SHALL MEET MODOT SPECIFICATIONS FOR SUPERPAVE

25.) PROPOSED TRAFFIC CONTROL MAY BE MODIFIED AFTER INSTALLATION AND EVALUATION OF EFFECTIVENESS.

26.) ALL TEMPORARY AND PERMANENT TRAFFIC CONTROL SHALL BE PER MUTCD STANDARDS.

EARTHWORK NOTES

.....+ CUBIC YARD BULK CUT.....

.....+ CUBIC YARD (INCLUDES 15% SHRINKAGE) THE ENGINEER HAS CALCULATED THE ABOVE QUANTITIES OF EARTHWORK TO BE

REGARDED AS AN ESTIMATE OF THE BULK MOVEMENT OR REDISTRIBUTION OF SOILS ON THIS PROJECT. AS AN ESTIMATE, THESE QUANTITIES ARE INTENDED FOR GENERAL USE, AND THE ENGINEER ASSUMES NO LIABILITY FOR COST OVERRUNS DUE TO EXCESS EXCAVATED MATERIALS OR SHORTAGES OF

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

THE ENGINEER'S EARTHWORK ESTIMATE DOES NOT INCLUDE ANY OF THE FOLLOWING ITEMS REQUIRING EARTHWORK THAT MAY BE NECESSARY FOR COMPLETION OF THE PROJECT: MISCELLANEOUS UNDERGROUND CONDUITS, INCLUDING SEWER LINES AND WATER MAINS LESS THAN TWENTY-FOUR INCHES IN DIAMETER, STANDARD MANHOLES; PROCESS OR TRANSFER PIPING; ELECTRICAL OR TELEPHONE CONDUITS; BASES FOR LIGHT STANDARDS; BUILDING FOOTINGS AND FOUNDATIONS, STRIPPING OF TOPSOIL, ETC.

THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE ACTUAL SIZE OF THE FIELD EXCAVATIONS MADE FOR THE INSTALLATION OF UNDERGROUND STRUCTURES, AND AS SUCH, THE ACTUAL QUANTITIES OF EARTHWORK FROM SUCH ITEMS MAY VARY FROM THE ESTIMATE SHOWN ABOVE. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR COSTS INCURRED DUE TO REMOVAL OF UNSUITABLE MATERIAL FROM SITE.

THE ABOVE QUANTITIES ARE AN ESTIMATE AND SHOULD BE CONSIDERED AS SUCH. IT IS THE GRADING CONTRACTOR'S RESPONSIBILITY TO PREPARE A QUANTITY TAKEOFF AND NOTE ANY DISCREPANCIES TO THE ENGINEER.

STORM SEWER NOTES

1.) ALL CONCRETE SHALL BE REINFORCED, AND CONFORM TO A.S.T.M. DESIGNATION C76-80 CLASS III UNLESS NOTED.

2.) ALL STORM SEWER STRUCTURES WITHIN PROJECT SITE TO BE CONSTRUCTED IN ACCORDANCE WITH ST. CHARLES COUNTY HIGHWAY DEPARTMENT.

3.) TYPE "C" BEDDING IS REQUIRED FOR PIPES IN ROCK.

4.) ALL TRENCH BACKFILLS UNDER PAVEMENT WITHIN THE PUBLIC RIGHT-OF WAY SHALL BE GRANULAR BACKFILLED. 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.

5.) JETTING IS NOT A PERMITTED METHOD OF COMPACTION ON SEWER TRENCHES BACKFILL MUST BE SUITABLE SOILS & COMPACTED TO 95 % OF THE MATERIAL'S STANDARD PROCTOR MAXIMUM DRY DENSITY. (APPLIES TO TRENCHES THAT DO NOT REQUIRE GRANULAR BACKFILL)

6.) ALL CURB INLETS AND AREA INLETS TO HAVE 5/8" TRASH BAR ACROSS INLET OPENINGS.

7.) "O" RING PIPE TO BE USED ON ALL STORM SEWERS.

8.) GRANULAR BACKFILL TO BE PLACED WITH A MINIMUM OF 1'H: 1'V SLOPE FROM EDGE OF PAVEMENT.

SANITARY SEWER NOTES

1.) UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE INFORMATION AND THEREFORE LOCATION SHALL BE CONSIDERED APPROXIMATE ONLY. THE VERIFICATION OF THE LOCATION OF ALL UNDERGROUND UTILITIES, EITHER SHOWN OR NOT SHOWN ON THESE PLANS. SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE LOCATED PRIOR TO ANY GRADING OR CONSTRUCTION IMPROVEMENTS.

2.) GAS, WATER AND OTHER UNDERGROUND UTILITIES SHALL NOT CONFLICT WITH THE DEPTH OR HORIZONTAL LOCATION OF EXISTING OR PROPOSED SANITARY AND STORM SEWERS, INCLUDING HOUSE LATERALS.

3.) ALL EXISTING SITE IMPROVEMENTS DISTURBED. DAMAGED OR DESTROYED SHALL BE REPAIRED OR REPLACED TO CLOSELY MATCH PRECONSTRUCTION CONDITIONS.

4.) ALL FILL INCLUDING PLACES UNDER PROPOSED STORM AND SANITARY SEWER LINES AND PAVED AREAS INCLUDING TRENCH BACKFILLS WITHIN AND OFF THE ROAD RIGHT-OF-WAY, SHALL BE COMPACTED TO 90 PERCENT OF MAXIMUM DENSITY AS DETERMINED BY THE "MODIFIED AASHTO T-180 COMPACTION TEST (ASTM D1557)". ALL TESTS SHALL BE VERIFIED BY A SOILS ENGINEER CONCURRENT WITH GRADING AND BACKFILLING OPERATIONS. THE COMPACTED FILL SHALL BE FREE OF RUTTING AND SHALL BE NON-YIELDING AND NON PUMPING DURING PROOFROLLING AND COMPACTION.

5.) THE CONTRACTOR SHALL PREVENT ALL STORM, SURFACE WATER, MUD AND CONSTRUCTION DEBRIS FROM ENTERING THE EXISTING SANITARY SEWER

6.) ALL SANITARY SEWER FLOWLINES AND TOPS BUILT WITHOUT ELEVATIONS FURNISHED BY THE ENGINEER WILL BE THE RESPONSIBILITY OF THE SEWER

7.) EASEMENTS SHALL BE PROVIDED FOR ALL SANITARY SEWERS, STORM SEWERS AND ALL UTILITIES ON THE RECORD PLAT.

8.) ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO THE CURRENT CONSTRUCTION STANDARDS OF THE DUCKETT CREEK SANITARY DISTRICT.

9.) THE DUCKETT CREEK SANITARY DISTRICT SHALL BE NOTIFIED AT LEAST 48 HOURS PRIOR TO CONSTRUCTION FOR COORDINATION OF INSPECTION.

10.) ALL SANITARY SEWER BUILDING CONNECTIONS SHALL BE DESIGNED SO THAT THE MINIMUM VERTICAL DISTANCE FROM THE LOW POINT OF THE BASEMENT TO THE FLOWLINE OF A SANITARY SEWER AT THE CORRESPONDING BUILDING CONNECTION SHALL NOT BE LESS THAN THE DIAMETER OF THE PIPE PLUS THE VERTICAL DISTANCE OF 2-1/2 FEET.

11.) ALL SANITARY SEWER MANHOLES SHALL BE WATERPROOFED ON THE EXTERIOR IN ACCORDANCE WITH MISSOURI DEPT. OF NATURAL RESOURCES SPECIFICATION 10 CSR-8.120(7)(E).

12.) ALL PVC SANITARY SEWER PIPE SHALL CONFORM TO THE REQUIREMENTS OF ASTM D-3034 STANDARD SPECIFICATION PSM POLYVINYL CHLORIDE SEWER PIPE, SDR-35 OR EQUAL, WITH "CLEAN" 1/2 INCH TO 1 INCH GRANULAR STONE BEDDING UNIFORMLY GRADED. THIS BEDDING SHALL EXTEND FROM 4 INCHES BELOW THE PIPE TO SPRINGLINE OF PIPE. IMMEDIATE BACKFILL OVER PIPE SHALL CONSIST OF SAME SIZE "CLEAN" OR "MINUS" STONE FROM SPRINGLINE OF PIPE TO 6 INCHES ABOVE THE TOP OF PIPE.

13.) ALL PIPES SHALL HAVE POSITIVE DRAINAGE THROUGH MANHOLES. NO FLAT INVERT STRUCTURES ARE ALLOWED.

14.) ALL CREEK CROSSING SHALL BE GROUTED RIP-RAP AS DIRECTED BY DISTRICT INSPECTORS. (ALL GROUT SHALL BE HIGH SLUMP READY-MIX

15.) BRICK SHALL NOT BE USED ON SANITARY SEWER MANHOLES.

16.) EXISTING SANITARY SEWER SERVICE SHALL NOT BE INTERRUPTED.

17.) MAINTAIN ACCESS TO EXISTING RESIDENTIAL DRIVEWAYS AND STREETS. 18.) PRE-MANUFACTURED ADAPTERS SHALL BE USED AT ALL PVC TO DIP CONNECTIONS. RUBBER BOOT / MISSION-TYPE COUPLINGS WILL NOT

19.) ANY PERMITS, LICENSES, EASEMENTS, OR APPROVALS REQUIRED TO WORK ON PUBLIC OR PRIVATE PROPERTIES OR ROADWAYS ARE THE RESPONSIBILITY

20.) JETTING IS NOT A PERMITTED METHOD OF COMPACTION ON SEWER TRENCHES.

SILTATION NOTES

Installation of perimeter sediment control shall be implemented as the first step of grading and within seven (7) days of grubbing

Inspection of siltation control devices shall take place once every seven days and within 24 hours of any 0.5"/24 hour rain event. Any siltation control in need of repair shall occur

Any disturbed areas which will remain unworked for 45 days or more shall be stabilized with seeding and mulching per specifications within 7 days. If seasonal conditions prohibit seeding, mulching or matting shall be used.

4. All slopes or drainage channels, once constructed to final grade, shall be seeded and mulched per specifications within

5. Silt fences shall be installed immediately around each storm

sewer structure once final construction of each individual structure is complete. 6. All siltation control devices shall remain in place until

upslope areas have been permanently stabilized.

Siltation Control Schedule Implementation 1. Perimeter siltation control and construction entrances to be

Begin placing aggregate base in parking areas once area has reached final grade to prevent erosion.

Place silt fence around each storm sewer structure as it is

completed. 4. Immediately seed areas upon reaching final grade that are to

be permanently seeded. Temporary Access Roads and Parking Areas Specifications Temporary roads shall follow the contour of the natural

terrain to the extent possible. Slopes should not exceed 10

2. Grades should be sufficient to provide drainage, but should

3. Roadbeds shall be at least 24 feet wide

4. All cuts and fills shall be 3:1 or flatter to the extent

Drainage ditches shall be provided as needed.

The roadbed or parking surface shall be cleared of all vegetation, roots and other objectionable material.

A 10-inch course of 2" MINUS aggregate shall be applied immediately after grading or the completion of utility installation within the right-of-way. Filter fabric may be applied to the roadbed for additional stability in accordance with fabric manufacturer's specifications.

Vegetation

All roadside ditches, cuts, fills and disturbed areas adjacent to parking areas and roads shall be stabilized with appropriate temporary or permanent vegetation according to the applicable standards and specifications.

Both temporary and permanent roads and parking areas may require periodic top dressing with new gravel. Seeded areas adjacent to the roads and parking areas should be checked periodically to ensure that a vigorous stand of vegetation is maintained. Roadside ditches and other drainage structures should be checked regularly to ensure that they do not become clogged with silt or other

Straw Bale Siltation Control Specifications

Sheet Flow Applications Bales shall be placed in a single row, lengthwise on the contour, with both ends of adjacent bales tightly abutting one

All bales shall be either wire-bound or string-tied. Straw bales shall be installed so that buildings are oriented around the sides rather than along the tops and bottoms of the bales (in order to prevent deterioration of the bindings). See Detail this sheet.

The barrier shall be entrenched and backfilled. A trench shall be excavated the width of a bale and the length of the proposed barrier to a minimum depth of 4 inches. After the bales are staked and chinked, the excavated soil shall be backfilled against the barrier. Backfill soil shall conform to the ground level on the downhill and shall be built up to 4 inches against the uphill side of the barrier (See detail

4. Each bale shall be securely anchored by at least two stakes or rebars driven through the bale. The first stake in each bale shall be driven toward the previously laid bale to force the bales together. Stakes or rebars shall be driven deep enough into the ground to securely anchor the bales.

The gaps between bales shall be chinked (filled by wedging) with straw to prevent water from escaping between the bales. (Loose straw scattered over the area immediately uphill from a straw bale barrier tends to increase barrier efficiency).

6. Inspection shall be frequent and repair or replacement shall be made promptly as needed.

7. Straw bale barriers shall be removed when they have served their usefulness, but not before the upslope areas have been permanently stabilized.

Channel Flow Applications

Bales shall be placed in a single row, lengthwise, oriented perpendicular to the contour, with ends of adjacent bales tightly abutting one another.

The remaining steps for installing a straw bale barrier for sheet flow applications apply here, with the following

3. The barrier shall be extended to such a length that the bottoms of the end bales are higher in elevation than the top of the lowest middle bale (see detail) to assure that sedimentladen runoff will flow either through or over the barrier but not around it.

Maintenance Straw bale barriers shall be inspected immediately after each

rainfall and at least daily during prolonged rainfall. 2. Close attention shall be paid to the repair of damaged fence, end runs and undercutting beneath fence.

Sediment deposits should be removed after each rainfall. They must be removed when the level of deposition reaches

5. Any sediment deposits remaining in place after the straw bale barrier is no longer required shall be dressed to conform to the existing grade, prepared and seeded.

EXPLORER PIPELINE COMPANY (EPL)

The following are minimum requirements for most propose encroachments to avoid conflict with EPL's easement rights. It is not EPL's intent to convey that these are the only types of activities measures to prevent its pipeline from becoming exposed. permitted; additional specifications may be required depending upon the proposed encroachments. For a review of your individual situation, please contact the nearest EPL area office, or call the Tulsa Office collect (918) 493-5100 ext. 153.

GENERAL REQUIREMENTS FOR SURFACE ALTERATIONS

A) Many states have laws that require 48 hours notice given to the utility companies prior to beginning excavation. This may be accomplished by contacting a "One Call" system (see bottom of back page for listings). If you are unable to contact the appropriate one call system, please call the nearest FPL area office a minimum of 48 hours prior to commencing work.

B) EPL's easement restricts the placement of a structure, building, or pond within the right-of-way.

C) An authorized EPL representative must be on site during use of power excavating equipment within the right-of-way.

D) Any change in the amount of existing material (soil) on and over the

right-of-way must be approved in advance. E) Encroaching party will be responsible for any future erosion repairs due to its activities, or lack of proper erosion control measures. which result in EPL having to relocate its pipeline or take corrective

measures to prevent its pipeline from becoming exposed.

GENERAL REQUIREMENTS FOR BURIED LINE CROSSINGS

A) All buried lines crossing EPL right-of-way shall be installed 2) COMMUNICATION LINES (FIBER OPTIC, TELEPHONE, adhering to all applicable codes and requirements governing such

All buried lines crossing the right-of-way must cross on an angle that when measured between the proposed buried line and EPL right-of-way is between 90 and 45 degrees. This angle must be maintained across the entire width of the right-of-way.

separation of 24 inches between the two lines, with the same grade of depth carried across the entire right-of-way. D) All buried lines should cross under the pipeline. However, should the encroaching party be unable to comply with the 24" clearance

C) All buried lines crossing pipeline shall maintain a minimum

EPL's representative may approve special design and construction. E) No foreign appurtenances (meters, poles, drop boxes, collection

requirements due to obstructions or unfavorable soil conditions,

basins, etc.) shall be located on the right-of-way. F) A six inch wide burial warning tape shall be placed 12 to 18 inches above all non metallic lines and extend across the entire right-ofway, as a protective measure.

G) Signs shall be installed by encroaching party to locate and identify owner, type of service, and emergency phone numbers.

ENCROACHMENT SPECIFICATIONS

) EXCAVATION

E) Signs shall be placed at each edge of the right-of-way to mark the H) Encroaching party will be responsible for any future erosion repairs underground cable angle and path of crossing. The signs are to be due to its activities, or lack of proper erosion control measures, furnished by the Power Company of the encroaching party. which result in EPL having to relocate its pipeline or take corrective

4) LINE CROSSINGS (ABOVEGROUND) PARALLEL ENCROACHMENTS WITHIN EPL'S RIGHT-OF-A) Shall maintain a minimum of 25 feet of clearance above and

completely across the right-of-way. The requirements for parallel encroachments within EPL's right-of-B) Shall have no poles or appurtenances located on the right-of-way. way will be determined by EPL's encroachment Project Engineer

(918) 493-5100 ext. 153.

before commencing work. Excavating closer than 18 inches to the

pipeline or cathodic protection (C.P.) wires shall be done by hand

until the pipeline and C.P. wires are exposed and shall be done only

with the approval and in the presence of an authorized EPL

representative. After EPL's pipeline and C.P. wires have been

is returned to the ditch and shall have a plate covering all teeth to

agricultural, at depths greater than 18 inches will be handled on a

C) Any plowing or ripping of soil on the right-of-way, including

A) Shall meet all provisions GENERAL REQUIREMENTS --

B) Fiber optics shall be encased in rigid steel conduit the full width of

right-of-way except in directionally bored installations which will be

Shall meet all provisions GENERAL REQUIREMENTS -

Shall have minimum clearances between lines of 24 inches.

C) Shall be encased in steel conduit with 6" of red concrete on top of

D) In the event a power line crosses over the pipeline, the steel conduit

the conduit. Concrete may be omitted when the following minimum

clearances are obtained: 48 inches between EPL's pipeline and top

of steel conduit or, 72 inches for bored installations utilizing non-

shall be the full width of the right-of-way and centralized in a 12"

reduce the chance of gouges or punctures to the pipe.

inches of the pipeline or C.P. wires.

case by case basis.

3) POWER LINES (Buried)

TV. OTHER DATA LINES)

BURIED LINE CROSSINGS.

evaluated on a case by case basis.

BURIED LINE CROSSINGS.

minimum layer of red concrete.

A) Shall meet all provisions GENERAL REQUIREMENTS-BURIED LINE CROSSINGS. A) Plans for any excavation on the right-of-way must be approved

5) SEWER AND WATER LINES

B) Septic tanks and drain fields are not permitted within the right-of-

6) METALLIC PIPE CROSSINGS

exposed, the excavation equipment should be positioned so that from the point of operations the equipment will not reach within 18 A) At EPL's discretion all metallic pipe crossing EPL's pipeline shall have corrosion test leads installed on EPL's pineline and on the encroaching pipe at point(s) of intersection and in cases of parallel B) If a backhoe is used, the bucket should be curled under each time it

B) EPL personnel must install leads on EPL pipeline

encroachments at point(s) mutually agreeable to both companies.

7) STREETS, ROADS, DRIVEWAYS AND RAILROADS

A) Unpaved residential driveways will be allowed provided there shall be a minimum cover of 48" between the lowest point of road subgrade and top of EPL's pipeline.

B) An opportunity for EPL to make a pipe inspection must be given at least 48 hours prior to the start of any construction.

C) Provisions A. C. D. & E of the GENERAL REQUIREMENTS FOR SURFACE ALTERATIONS pertain to driveway crossings.

D) Street, road, and railroad construction require a special encroachment agreement. Plans for such crossings should be submitted a minimum of 180 calendar days prior to work commencement to allow time for project impact review by the

EPL's Engineering Department. 8) FENCES

A) Fence posts shall not be installed within 3 feet of the center of the pipeline, and the first post either side of the pipe shall be set in hand dug holes.

B) To perform normal maintenance, access through or around fences crossing the right-of-way must be provided.

REQUIREMENTS FOR SURFACE ALTERATIONS.

9) LANDSCAPING

A) Flower beds, lawns and vegetable gardens are permitted within the right-of-way, but may be damaged by routine or annual maintenance / testing, if planted directly over the pipeline. Heavy maintenance may require total clearing of the right-of-way.

C) Installer shall adhere to provisions A & C of GENERAL

B) The planting of trees or shrubbery on, or which hang over; EPL's right-of-way is prohibited unless specifically stated in right-of-way agreement or casement.

C) Provisions of GENERAL REQUIREMENTS FOR SURFACE ALTERATIONS shall apply to landscaping.

A) Open waterways smaller than 3 feet wide at the bottom are defined

10) OPEN WATERWAYS

as "ditches" and must have a minimum of 3 feet of cover from the top of the pipe to the bottom of the ditch, or the ditch must be lined using an approved EPL method and material. Larger open waterways are defined as "canals" and are considered on a case by SUITE 165 PH. (314) 432-8100

B) Anyone altering (clearing, re-grading or changing alignment) a waterway on EPL's right-of-way must obtain approval from EPL and shall meet Provisions A. C, D & E of the GENERAL REQUIREMENTS FOR SURFACE ALTERATIONS.

11) SUBSURFACE DRAINAGE TILE (NON METALLIC)

A) Shall meet provisions A, B, E, F, & H, of GENERAL REQUIREMENTS- BURIED LINE CROSSINGS.

B) A minimum clearance of 12" shall be obtained at the crossing with a constant grade the full width of EPL's right-of-way.

C) Field tiles that cross over the pipeline shall require special nonmetallic support.

12) TEMPORARY HEAVY EQUIPMENT CROSSINGS

Equipment such as construction, logging, etc., must cross the pipeline only at EP1, approved crossing locations where the cover has been checked and determined adequate to meet bearing load

B) Provisions A, C, D, & E of the GENERAL REQUIREMENTS FOR SURFACE ALTERATIONS also apply.

EPL AREA OFFICES

(These ARE NOT emergency numbers)

Greenville, Texas

Houston, Texas

(281) 860-9250

(409) 736-4250

1-800-382-5544

1-800-892-0123

Port Arthur, Texas

NOTE: These specifications are subject to change. Please contact your local EPL office prior to commencing any work on the right-of-way.

Hammond, Indiana

Wood River, Illinoi

(219) 989-8250

(618) 251-0250

Glennool, OK

Illinois

Oklahoma

(918) 291-5250

requirements.

St. Louis, MO 63114 Ph 314.429.5100 Fx 314.429.3165

1-800-344-7483 St. Louis, MO, 63045 1-800-522-6543 Ph 314.291.0814 1-800-344-8377 1-800-245-4545 (Or, for loc. S. of Palestine) 1-800-669-8444 1-800-272-3020

CALL COLLECT 1-918-493-5100

STOCK

GEORGE M. STOCK E-25116

STOCK & ASSOCIATES

NSULTING ENGINEERS, INC 425 NORTH NEW BALLAS ROAD ST. LOUIS, MO. 63141

FAX (314) 432-8171

e-mail: general@stockassoc.com

Structural Engineer

Fire Protection Engineer

Plumbing Engineer

Electrical Engineer

Mechanical Engineer

CLAYCO CONSTRUCTION COMPANY 2199 Innerbelt Business Center Dr.

TRISTAR TRISTAR BUSINESS COMMUNITIES 13397 Lakefront Drive

IN CASE OF EMERGENCY

ISSUED CITY & DUCKETT CREEK 12-28-01 2 CITY & DUCKETT CREEK 02-08-02 3 CITY & DUCKETT CREEK 03-18-02 04-18-02 07-15-02 8 | FIELD COORD. 07-23-02 FIELD COORD. 08-02-02

4 CITY COMMENTS 5 CITY COMMENTS 6 REV. CNSTRC. SEQUENCE 05-23-02 7 CITY COMMENTS

10 NEW LIGHTING PLAN

DRAWING ISSUE / REVISION

The Professional Engineer's seal affixed to this sheet indicates that the named Engineer has prepared or directed the preparation of the material shown only on this sheet. Othe drawings and documents not exhibiting this seal shall not be considered prepared by or the responsibility of the undersigned.

1-18-02

SPECIFICATION SHEET

Dwg By PKB Check By GMS tlayco de No. 1-101-031 Consult. Job No. 200-2180.2

3. Necessary repairs to barriers or replacement of silt fence approximately one—half the height of the barrier.

1. Silt Fence to be woven geotextile fabric Mirafi 100X or equal. 2. Fabric to be supported by metal tee post with spade base

fence. The excavated soil shall be backfilled against the fence. See detail this sheet.

3. Fabric shall be entrenched and backfilled. A trench shall be

Silt fences shall be used only on sheet flow conditions. 6. Silt fences shall be installed around all storm sewer

Silt fence barriers shall be inspected immediately after each

end runs and undercutting beneath bales. Necessary repairs to barriers or replacement of bales shall be

spaced on 5' centers with 6 x 6/10 x 10 gage welded wire fence. See detail this sheet.

excavated a minimum of 6 inches deep for the length of the

Silt Fence Specifications

4. Fence height shall be a minimum of 4 feet in height, with the fabric installed on the fence on the upstream side.

Maintenance

rainfall and at least daily during prolonged rainfall. Close attention shall be paid to the repair of damaged bales,

accomplished promptly. 4. Sediment deposits should be removed after each rainfall. They must be removed when the level of deposition reaches

approximately one—half the height of the barrier.

the existing grade, prepared and seeded.

5. Any sediment deposits remaining in place after the silt fence barrier is no longer required shall be dressed to conform to