ADDENDUM No. 1

Date March 8, 2012

City of Austin

Project Name Dunlap 345 kV Substation

C.I.P. No. 7477.01

This Addendum forms a part of Contract and clarifies, corrects or modifies original Bid Documents, dated February 20, 2012. Acknowledge receipt of this addendum in space provided on bid form. Failure to do so may subject bidder to disqualification.

A. Project Manual Revisions:

Section 01050 is deleted and replaced with the attached section. Note underlined text for changes.

Standard Specifications 201s and 236s are deleted and replaced with the attached sections. Note underlined text for changes.

B. Drawing Revisions:

Revised drawings are included on the attached CD in PDF form. Explanation of changes is as follows:

Sheet 7 of 12

Note added about traffic bollards. Traffic bollards are required within substation fence area only.

Sheet 8 of 12

Note added about traffic bollards. Traffic bollards are required within substation fence area only.

Sheet 9 of 12

- Deleted the two gravel details and replace with new details
- Deleted Notes 9 and 10
- Minor changes in grading along the north and west property line.

This addendum consists of 13 pages including this page and one CD with one PDF drawing.

Approved by OWNER

Approved by ENGINEER/ARCHITECT

STATE OF TEXAS
W. SCOTT BAYER
90075
LICENSED
PROFESSIONAL ENGINEER
3/8/12

END

Item No. 201S
Subgrade Preparation

201S.1 Description

This item shall govern scarifying; blading and rolling the subgrade to obtain a uniform texture and provide as nearly as practicable a uniform density for the top 6 – 12 inches (12" for load bearing surfaces) of the subgrade. No non-load bearing subgrade areas within the substation fence shall be rolled or compacted to maintain porous properties of subgrade.

This specification is applicable for projects or work involving either inch-pound or SI units. Within the text and accompanying tables, the inch-pound units are given preference followed by SI units shown within parentheses.

201S.2 Submittals

The submittal requirements of this specification item may include:

A. A plan identifying classification and characteristics (P.I., optimum moisture-density, etc.) of insitu subgrade soils, as well as the source, classification and characteristics of any proposed borrow material,
B. Type and size of equipment proposed to produce the required compaction, and
C. Compaction (moisture-density, etc) test results for in-situ subgrade soils and/or borrow materials.

201S.3 Construction Methods

Prior to initiation of subgrade preparation activities, all operations involving Standard Specification Item No. 101S," Preparing Right of Way" and/or Standard Specification Item No. 102S, "Clearing and Grubbing" shall be completed. The surface of the subgrade shall be scarified and shaped in conformity with the typical sections and the lines and grades indicated on the Drawings; by the removal of existing material or addition of approved material as established by the Engineer or designated representative. Any deviation in the subgrade cross section which exceeds 1/2 inch in a length of 10 feet (12 mm in a length of 3 meters), measured longitudinally, shall be corrected by loosening, adding or removing material, and then reshaping and compacting by sprinkling and rolling. However, no compaction or rolling that changes the porous properties of the subgrade shall be allowed in non-load bearing areas within the substation fence.

All unsuitable material shall be removed and replaced with approved material. All foundations, walls or other objectionable material shall be removed in accordance with Standard Specification Item No. 104S, "Removing Portland Cement Concrete" to a minimum depth of 18 inches (450 mm) under all structures and 12 inches (300 mm) under areas to be vegetated. All holes, ruts and depressions shall be filled with approved material and compacted by approved methods.

The subgrade shall be prepared sufficiently in advance to insure satisfactory prosecution of the Work. The Contractor will be required to set blue tops for the subgrade on the centerline, at the quarter points and along the curb lines or edge of pavement at maximum intervals of 50 feet (15 meters). The subgrade shall be tested by proof rolling in conformity with Standard Specification Item No. 236S, "Proof Rolling" prior to placement of the first course of base material. Any unstable or spongy subgrade areas identified by proof rolling shall be corrected either by additional re-working, drying and compaction, or by removal and replacement of unsuitable materials. When specifically directed by the Engineer or designated representative, the Contractor shall re-work the subgrade* as follows:

A. Remove the unstable subgrade to the full depth of the unstable insitu material or to a minimum depth of 6 inches (12 inches for load bearing areas), whichever is greater;
B. Spread the material over a sufficient area to allow reworking of the excavated material;
C. Disc, scarify or otherwise breakup the excavated material and allow to dry (Note: If approved by the Engineer or designated representative, the addition of lime or other additive may be used to aid in the drying process or to stabilize the unstable material);
D. Fill the excavated area with the re-worked material and compact to specified densities except non-load bearing subgrade shall not be rolled or compacted; and
E. Proof roll the re-worked area.

* The Rework process will not be allowed for unstable organic subgrade soils. These type soils will be permanently removed and replaced with materials approved by the Engineer or designated representative.

All suitable material removed in accordance with Standard Specification Item No, 111S, "Excavation", may be utilized in the subgrade with the approval of the Engineer or designated representative. All other material required for completion of the Subgrade, including those defined in accordance with Specification Item No. 130S, "Borrow", shall also be subject to approval by the Engineer or designated representative.

It is the intent of this specification to provide the required density and moisture control for the subgrade based on the plasticity characteristics of the approved materials. The subgrade materials shall be sprinkled as required and compacted to the extent necessary to provide the density specified below, unless otherwise indicated on the Drawings. The Plasticity Index (P.I.) will be established in accordance with TxDOT Test Methods Tex-104-E, Tex-105-E and Tex-106-E. The density determination will be made in accordance with TxDOT Test Method Tex-114-E and field density measurements will be made in accordance with TxDOT Test Method Tex-115-E.

Description	Density, Percent	Moisture
Non-swelling Soils (P.I. less than 20)	Not less than 95	
Swelling Soils (P.I. between 20 and 35)	Not less than 95 nor more than 102	Not less than optimum

Swelling Soils (P.I. greater than 35)	Not less than 95 nor more than 100	Not less than optimum

Subgrade materials on which planting or turf will be established shall be compacted to a minimum of 85 percent of the density as determined in accordance with TxDOT Test Method Tex-114-E. Field tests for density in accordance with TxDOT Test Method Tex-115-E will be made as soon as possible after compaction operations are completed. If the material fails to meet the density specified, it shall be reworked as necessary to obtain the density required.

Prior to placement of any base materials, the in-place density and moisture content of the top 6 inches (12 inches for load bearing areas) of compacted subgrade shall be checked. If the tests indicate that the relative density and moisture do not meet the limits specified in the table above, the subgrade shall be reworked as necessary to obtain the specified compaction and moisture content. All initial testing will be paid for by the City of Austin. All retesting shall be paid for by the Contractor.

201S.4 Measurement

All acceptable subgrade preparation when included in the contract as a separate pay item, will be measured by the square yard (square meter: 1 square meter equals 1.196 Square yards). The measured area includes the entire width of the roadway for the entire length as indicated on the Drawings.

201S.5 Payment

The work and materials presented herein will generally not be paid for directly, but shall be included in the unit price bid for the item of construction in which this item is used when specified as a separate pay item in the contract bid form, subgrade preparation shall be measured as specified above and paid for at the contract unit bid price for "Subgrade Preparation". The bid price shall include full compensation for all work herein specified, including the furnishing of all materials, equipment, tools and labor and incidentals necessary to complete the work.

Payment, when included as a contract pay item, will be made under:

Pay Item No. 201S: Subgrade Preparation Per Square Yard.

End

SPECIFIC CROSS REFERENCE MATERIALS

Specification Item 201S, "SUBGRADE PREPARATION"

City of Austin Standard Specification Items

Designation	Description
Item No. 101S	Preparing Right of Way
Item No. 102S	Clearing and Grubbing
Item No. 104S	Removing Portland Cement Concrete
Item No. 110S	Street Excavation
Item No. 111S	Excavation
Item No. 130S	Borrow
Item No. 236S	Proof Rolling

Texas Department of Transportation: Manual of Testing Procedures

Designation	Description
Tex-103-E	Determination of Moisture Content of Soil Materials
Tex-104-E	Determination of Liquid Limit of Soils
Tex-105-E	Determination of Plastic limit of Soils
Tex-106-E	Method of Calculating the Plasticity Index of Soils
Tex-114-E	Laboratory Compaction Characteristics & Moisture Density Relationship of Subgrade & Embankment Soil
Tex-115-E	Field Method for Determination of In-Place Density of Soils & Base Materials

RELATED CROSS REFERENCE MATERIALS

City of Austin Standard Specifications

Designation	Description
Item No.132S	Embankment

Texas Department of Transportation: Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges

Designation	Description
Item No. 100	Preparing Right of Way
Item No. 110	Excavation
Item No. 112	Subgrade Widening
Item No. 132	Embankment
Item No. 150	Blading
Item No. 158	Specialized Excavation Work
Item No. 204	Sprinkling
Item No. 210	Rolling (Flat Wheel)
Item No. 211	Rolling (Tamping)
Item No. 213	Rolling (Pneumatic Tire)

Texas Department of Transportation: Manual of Testing Procedures

Designation	Description
Tex-103-E	Determination of Moisture Content of Soil Materials

Item No. 236S
Proof Rolling

236S.1 Description

This item shall govern furnishing and operating heavy pneumatic tired compaction equipment for locating unstable areas of embankment, subgrade and flexible base courses. Proof rolling that changes the porous properties of the subgrade is not allowed in non-load bearing areas within the substation fence.

This specification is applicable for projects or work involving either inch-pound or SI units. Within the text, the inch-pound units are given preference followed by SI units shown within parentheses.

236S.2 Submittals

The submittal requirements of this specification item may include:

A. A plan describing the condition of each roller proposed for the work, as well as the type of traction (self propelled or drawn), Type of roller, size, weight, tire pressure (if appropriate) and configuration of each individual roller, and

B. The operating speed proposed for each individual roller.

236S.3 Equipment

A. Standard Proof Roller:

The proof rolling equipment shall have a loading platform or body suitable for ballast loading that is supported on a minimum of two (2) axles with not more than two (2) pneumatic tired wheels per axle. All wheels shall be arranged so that they will carry approximately equal loads when operating on uneven surfaces. Pneumatic proof rolling equipment with multiple pivotal axles and more than two tires along the front or rear axle axis shall have articulating axle supports to equally distribute the load to all tires over uneven surfaces.

The proof roller unit, under working conditions, shall have a minimum contact width of 7-1/2 feet (2.3 meters) and shall be so designed that the gross roller weight may be varied uniformly from 25 tons to 50 tons (23 megagrams to 45 megagrams) by ballast loading. The tires shall be capable of operating under various loads with variable air pressures up to 145 psi (up to 1000 kiloPascals). The tires shall be smooth tread and shall impart a minimum ground contact pressure of 75 pounds per square inch (520 kiloPascals). Tires shall be practically full of liquid (i.e. when liquid will flow from the valve stem of a fully inflated tire with the stem in the uppermost position). The operating load and tire pressure shall be within the range of the manufacturer's chart as directed by the Engineer or designated representative.

The proof roller shall be drawn by a power train of adequate tractive effort or may be of a self-propelled type. The proof rolling equipment shall be equipped with a reverse mode transmission or be capable of turning 180 degrees in the street width. When a separate power train is used to draw the proof roller, the power train weight shall not be considered in the weight of the proof roller. The power train shall be rubber-tired when rolling subgrade and base materials. A cleated or track-type power train may be used on earth and rock embankments.

B. Alternate Equipment:

With the written approval of the Engineer or designated representative, the Contractor may utilize alternate equipment on embankment courses, subgrade and base courses subject to the requirements of the standard proof roller except with respect to minimum contact width, axle/tire arrangement and tire tread.

Alternate equipment for stability testing of embankments shall be restricted to equipment that can be shown to impart a stress distribution on the embankment structure equivalent to or greater than the stress induced by the concentrated weight of a standard proof roller.

C. Equipment Submittals:

All standard proof rollers and proposed alternate equipment must be approved by the Engineer or designated representative prior to their use. The Contractor shall furnish the Engineer or designated representative with charts or tabulations showing the contact areas and contact pressures for the full range of tire inflation pressures and for the full range of loadings for the particular tires furnished.

Alternate equipment submittals for proof rolling of embankments shall be signed and sealed by a registered Professional Engineer licensed in the State of Texas.

236S.4 Construction Methods

A. General:

Within the ranges set forth in Section 236S.3, the load and tire inflation pressures shall be adjusted as directed by the Engineer or designated representative. It is proposed to use a contact pressure corresponding as nearly as practical to the maximum supporting value of the earthwork or base. The entirety of prepared surfaces to be tested by this method shall be proof rolled by a minimum of two passes of the proof roller tires. Each succeeding trip of the proof roller shall be offset by not greater than one tire width.

When alternate equipment is proposed and only one axle meets minimum requirements, only the qualifying axle shall be used to proof roll. If the operation of the proof roller shows an area to be unstable, the substandard area shall be brought to satisfactory stability and uniformity by additional curing, compaction, or by removal and replacement of unsuitable materials. The re-worked area shall then be proof rolled.

Proof rollers shall be operated at speeds between 2 and 6 miles per hour (3 and 10 kilometers per hour) or as directed by the Engineer or designated representative.

Acceptable limits of elastic and plastic deformation of prepared subgrade courses shall be established by proof rolling Test Sections of representative soil conditions, previously tested and approved for density and moisture requirements of the governing subgrade and earth embankment items. Proof rolling of first course base over a plastic subgrade may be waived by the Engineer or designated representative if it is determined that the prepared first course base will be damaged by the proof roller.

B. Roadway Construction:

The subgrade and all lifts of base material shall be proof rolled in new roadway construction and in the reconstruction of existing streets. Proof rolling of the curb course base shall be substituted for proof rolling of final course base at the direction of the Engineer or

designated representative. Proof rolling may be waived by the Engineer or designated representative where construction is limited to turn lanes, street widening less than 7-1/2 feet (2.3 meters) in width, or where the site is otherwise congested.

C. Trenches:

Trenches shall be proof rolled where no limitations to the operation of the proof roller exist as may be determined by the Engineer subject to the provisions hereunder.

All trenches shall be proof rolled in new roadways or in existing roadways under reconstruction. Trenches shall be proof rolled at the street subgrade elevation by longitudinal and perpendicular passes of the roller as may be dictated by the width of the trench.

Proof rolling of trenches in existing paved streets shall be limited to pavement cross-sections capable of sustaining the weight of the proof rolling equipment without imparting damage to the remaining pavement structure as determined by the Engineer. Trenches less than 4 feet (1.2 meters) in width shall be exempted of all proof rolling requirements. Only the final course base shall be proof rolled in trenches 4 feet (1.2 meters) or wider but narrower than the proof roller contact width. The subgrade, the first course and the final course base shall be proof rolled in trenches 7-1/2 feet (2.3 meters) or wider.

D. Embankment Construction:

All embankment courses shall be proof rolled, unless otherwise directed by the Engineer or designated representative.

If required by the Engineer or designated representative, stability testing of embankments constructed to the finished cross-section and elevation or to interim elevations shall either be conducted with a standard proof roller or alternate equipment, which can be proven to impart a horizontal and vertical pressure distributions equivalent to or greater than those induced by a standard proof roller.

236S.5 Measurement and Payment

No direct payment will be made for the materials, equipment or labor required by this item, but shall be included in the unit price bid for the item of construction in which this item is used.

End

RELATED CROSS REFERENCE MATERIALS
Specification Item 236S, "Proof Rolling"

City of Austin Contract Documents

Designation	Description
Section 00700	General Conditions

City of Austin Standard Specifications

Designation	Description
Item No. 101S	Preparing Right of Way
Item No. 102S	Clearing and Grubbing
Item No. 110S	Street Excavation
Item No. 111S	Excavation
Item No. 130S	Borrow

Item No. 132S Embankment

RELATED CROSS REFERENCE MATERIALS-Continued
Specification 236S, "Proof Rolling"

City of Austin Standard Specifications

Designation	Description
Item No. 201S	Subgrade Preparation
Item No. 202S	Hydrated Lime and Lime Slurry
Item No. 203S	Lime Treatment for Materials in Place
Item No. 204S	Portland Cement Treatment For Materials in Place
Item No. 206S	Asphalt Stabilized Base (Plant Mix)
Item No. 210S	Flexible Base
Item No. 230S	Rolling (Flat Wheel)
Item No. 232S	Rolling (Pneumatic Tire)
Item No. 234S	Rolling (Tamping)
Item No. 301S	Asphalts, Oils and Emulsions
Item No. 306S	Prime Coat
Item No. 307S	Tack Coat
Item No. 310S	Emulsified Asphalt Treatment
Item No. 320S	Two Course Surface Treatment
Item No. 340S	Hot Mix Asphaltic Concrete Pavement
Item No. 402S	Controlled Low Strength Material
Item No. 403S	Concrete for Structures

City of Austin Standard Details

Designation	Description
No. 1000S-10	Local Street Sections
No. 1000S-11(1)	Residential and City of Austin Neighborhood Collector Street Sections
No. 1000S-11(2)	Industrial and Commercial Collector Street Sections
No. 1000S-12(1)	Primary Collector Street Sections
No. 1000S-12(2)	Primary Arterial Street Sections
No. 1000S-13(1)	Minor Arterial Street Sections (4 Lanes)
No.1000S-13 (2)	Minor Arterial Street Sections- (4 Lanes divided)
No. 1000S-14	Major Arterial Street Sections

Texas Department of Transportation: Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges

Designation	Description
Item No. 100	Preparing Right of Way
Item No. 110	Excavation
Item No. 112	Subgrade Widening
Item No. 132	Embankment
Item No. 150	Blading
Item No. 158	Specialized Excavation Work
Item No. 204	Sprinkling
Item No. 210	Rolling (Flat Wheel)
Item No. 211	Rolling (Tamping)
Item No. 213	Rolling (Pneumatic Tire)
Item No. 264	Lime and Lime Slurry
Item No. 300	Asphalts, Oils and Emulsions
Item No. 301	Asphalt Anti-stripping Agents
Item No. 310	Prime Coat (Cutback Asphaltic Materials)
Item No. 314	Emulsified Asphalt Treatment

Item No. 316	Surface Treatments
Item No. 345	Asphalt Stabilized Base (Plant Mixed)

RELATED CROSS REFERENCE MATERIALS-Continued
Specification 236S, "Proof Rolling"

Texas Department of Transportation: Manual of Testing Procedures

Designation	Description
Tex-101-E	Surveying and Sampling Soils for Highways
Tex-103-E	Determination of Moisture Content of Soil Materials
Tex-104-E	Determination of Liquid Limit of Soils
Tex-105-E	Determination of Plastic limit of Soils
Tex-106-E	Method of Calculating the Plasticity Index of Soils
Tex-114-E	Laboratory Compaction Characteristics & Moisture Density Relationship of Subgrade & Embankment Soil
Tex-115-E	Field Method for Determination of In-Place Density of Soils & Base Materials
Tex-117-E	Triaxial Compression Tests for Disturbed Soil and Base Materials
Tex-120-E	Soil Cement Testing
Tex-121-E	Soil Lime Testing
Tex-126-E	Molding, Testing and Evaluation of Bituminous Black Base Materials
Tex-207-F	Determination of Density of Compacted Bituminous Mixtures
Tex-210-F	Determination of Asphalt Content of Bituminous Mixtures
Tex-600-J	Sampling and Testing of Hydrated Lime, Quicklime & Commercial Lime Slurry

1. CONTRACTOR shall perform all layout work to transfer all controls for grades, lines, levels and measurements from a minimum of two reference points provided by OWNER. All survey work will be performed under the direct supervision of a Texas Registered Professional Land Surveyor (RPLS).

2. OWNER will not stake for construction and will not be on site for survey layout activities, except to perform quality control checks.

3. CONTRACTOR shall be required to set elevation hubs (blue tops) for subgrade and base course on centerline, at quarter points and curb lines or edge of pavement/road/driveway at intervals not exceeding 50 feet.

4. The construction plans will include horizontal and vertical control points. References to approved COA benchmarks used in establishing controls on the drawings will be provided by the OWNER. In addition, on building projects and/or projects not built within an existing public ROW, a boundary survey will be supplied together with a legal description of the property and all easements where Work will take place.

5. CONTRACTOR shall submit construction staking layout sheets sealed by a Professional Engineer or Registered Professional Land Surveyor registered in the State of Texas. CONTRACTOR shall use a qualification based selection process consistent with the Professional Services Procurement Act, Chapter 2254.004 of the Texas Government Code, when securing the services of a Professional Engineer or Registered Professional Land Surveyor. It is a violation of State Law to solicit bids for the services of a Professional Engineer of Registered Professional Land Surveyor.

   5.1 Any discrepancies found with the construction documents' dimensional layout will be corrected. CONTRACTOR shall assure that the Owner's Representative and E/A are notified so that the appropriate actions are taken to correct the Contract drawings.

   5.2 All Work shall be done to the lines, grades and elevations indicated on the drawings. Information concerning basic horizontal and vertical control points will be provided by the OWNER. These points shall be used as the datum basis under this Contract.

   5.3 All work to transfer all controls for grades, lines, levels, layout and measurements shall be performed under the supervision of a Texas Registered Professional Land Surveyor, provided by the CONTRACTOR. Such work shall conform to the standards for construction staking in the most recent edition of the Texas Society of Professional Surveyors Manual of Practice for Land Surveying, Category 5, Sections 1-12 inclusive.

   5.4 The offset centerline stakes will be set at angle points and at points of curvature at no greater than fifty (50) foot intervals along straight sections and twenty-five (25) foot intervals along curve section. References to lines and grades as established by the CONTRACTOR's surveyor shall be in reference to these stake lines. The CONTRACTOR is required to provide a sealed statement from his RPLS that the controls and staking are correct and the site layout has been done by their professional staff.

5.5 The CONTRACTOR shall place grade stakes and submit construction staking layout sheets. The CONTRACTOR shall allow a minimum of ten (10) days after submission to the Owner's Representative for review of construction staking layout sheets. Construction staking layout sheets shall include, at a minimum, the information contained in the form included at the end of this section. No Work shall be performed without Owner's Representative review and return to CONTRACTOR of construction staking layout sheets. The Owner's Representative, E/A and the CONTRACTOR shall review the survey controls on the ground.

5.6 Prior to any excavation, the CONTRACTOR shall establish the elevation to top of ground at offset stakes at the distance deemed appropriate by the CONTRACTOR to preclude disturbance of offset stakes during construction.

5.7 The CONTRACTOR shall furnish, without charge, experienced personnel and such calibrated survey equipment, tools, stakes, and other materials that the Owner's Representative may require in establishing or checking control points, or in checking survey, layout, and measurement work performed by the CONTRACTOR.

5.8 The CONTRACTOR shall keep the Owner's Representative informed in a reasonable time in advance of the times and places at which he wishes to do work, so that any checking deemed necessary by the OWNER may be done with minimum inconvenience to the E/A and minimum delay to the CONTRACTOR. Surveying will be coordinated between the Owner's Representative and CONTRACTOR in a manner convenient to both.

5.9 During layout, CONTRACTOR shall field verify the elevation and alignment of all tie-in points to existing infrastructure. This work shall be performed sufficiently in advance of construction so that any conflicts may be resolved without delay. Any work done without being properly located may be ordered removed and replaced at the CONTRACTOR's expense.

5.10 The CONTRACTOR shall carefully preserve all monuments, benchmarks, reference points, and stakes. In case of the destruction thereof, the CONTRACTOR shall bear the cost of replacement and shall be responsible for any mistake or loss of time that may be caused. Permanent monuments or benchmarks, which must be removed or disturbed, shall be protected until properly referenced for relocation. The CONTRACTOR shall furnish materials and assistance for the proper replacement of such monuments or benchmarks.

5.11 The CONTRACTOR shall satisfy himself before commencing work as to the meaning and correctness of all survey control stakes, marks, etc., and no claim will be entertained by the OWNER for or on account of any alleged inaccuracies, unless the CONTRACTOR notifies the OWNER in writing before commencing the affected Work.

6. As needed for necessary documentation of the work progress, the CONTRACTOR shall maintain and/or protect offset or survey staking for the duration of the project. Any re-staking required to meet this requirement shall be done at the CONTRACTOR'S expense.

7. Upon completion of construction, or at intervals specified in the Contract, CONTRACTOR shall provide a record survey of the work in progress or completed. This information will be submitted to the Owner's Representative and shall be supplied electronically and on a separate full size plan sheet to be transmitted to the E/A for evaluation and merging into the Record Drawings.

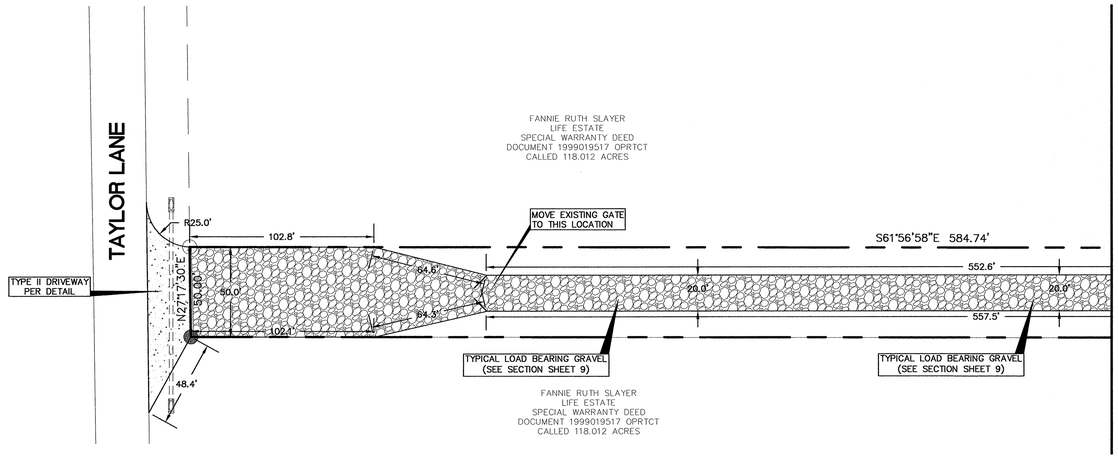
8. 3D GPS Modeling and Machine Control may be used in lieu of conventional staking for mass and finish grading. A Professional Engineer will be required to establish the Model, establish the Control, and issue stamped statement of accuracy of both. A Professional Engineer or Registered Professional Land Surveyor will be required to issue a stamped statement certifying that the final site grading is correct when complete

End See attached "Construction Staking Layout Sheet"

CONSTRUCTION STAKING LAYOUT SHEET

Project Name: _____ Date: _____
C.I.P. ID#: _____ Instrument No.: _____
Person Recording: _____ Weather Conditions: _____
Crew Members: _____
General Purpose & Scope of Survey: _____

STATION	B.S.	H.I.	F.S.	LEVEL LOOP ELEVATION	ROD READING	HUB ELEVATION AT STATION	(TARGET) (eg., pipe invert) ELEVATION	C - CUT OR F - FILL	% GRADE	NOTES: INDICATE WHETHER CENTERLINE HUB OR _____ FT. OFFSET HUB



APPENDIX Q-1
NET SITE AREA
GILLELAND CREEK AND COLORADO RIVER WATERSHEDS

Total gross site area =	20.672 Acres	
Site Deductions:		
Critical water quality zone (CWQZ) =	0.000 Acres	
Water quality transition zone (WQTZ) =	1.605 Acres	
Wastwater irrigation areas =	0.000 Acres	
Deduction subtotal =	1.605 Acres	
Upland area (Gross area minus total deductions) =	19.067 Acres	
Net Site Area Calculations:		
Area of Uplands with Slopes 0-15%	18.887 x 100% =	18.887 Acres
Area of Uplands with Slopes 15-25%	0.160 x 40% =	0.064 Acres
Area of Uplands with Slopes 25-35%	0.020 x 20% =	0.004 Acres
Net Site Area (subtotal) =	18.955 Acres	

APPENDIX Q-2
IMPERVIOUS COVER
GILLELAND CREEK AND COLORADO RIVER WATERSHEDS

Allowable Impervious Cover		
Impervious cover allowed at 30% x WQTZ =	0.481 Acres	
Impervious cover allowed at 65% x NSA =	12.321 Acres	
Deductions for perimeter roadway =	0.000 Acres	
Total impervious cover 557,663 S.F. =	12.802 Acres	
ALLOWABLE IMPERVIOUS COVER BREAKDOWN BY SLOPE CATEGORY		
Total acreage 15-25% = 0.160 Acres x 10% =	0.016 Acres	
PROPOSED TOTAL IMPERVIOUS COVER		
Impervious cover in WQTZ = 0.000 Acres =	0.0 %	
Impervious cover in Uplands Zone = 3.268 Acres =	17.2 %	
Total proposed impervious cover = 3.268 Acres		

PROPOSED IMPERVIOUS COVER ON SLOPES

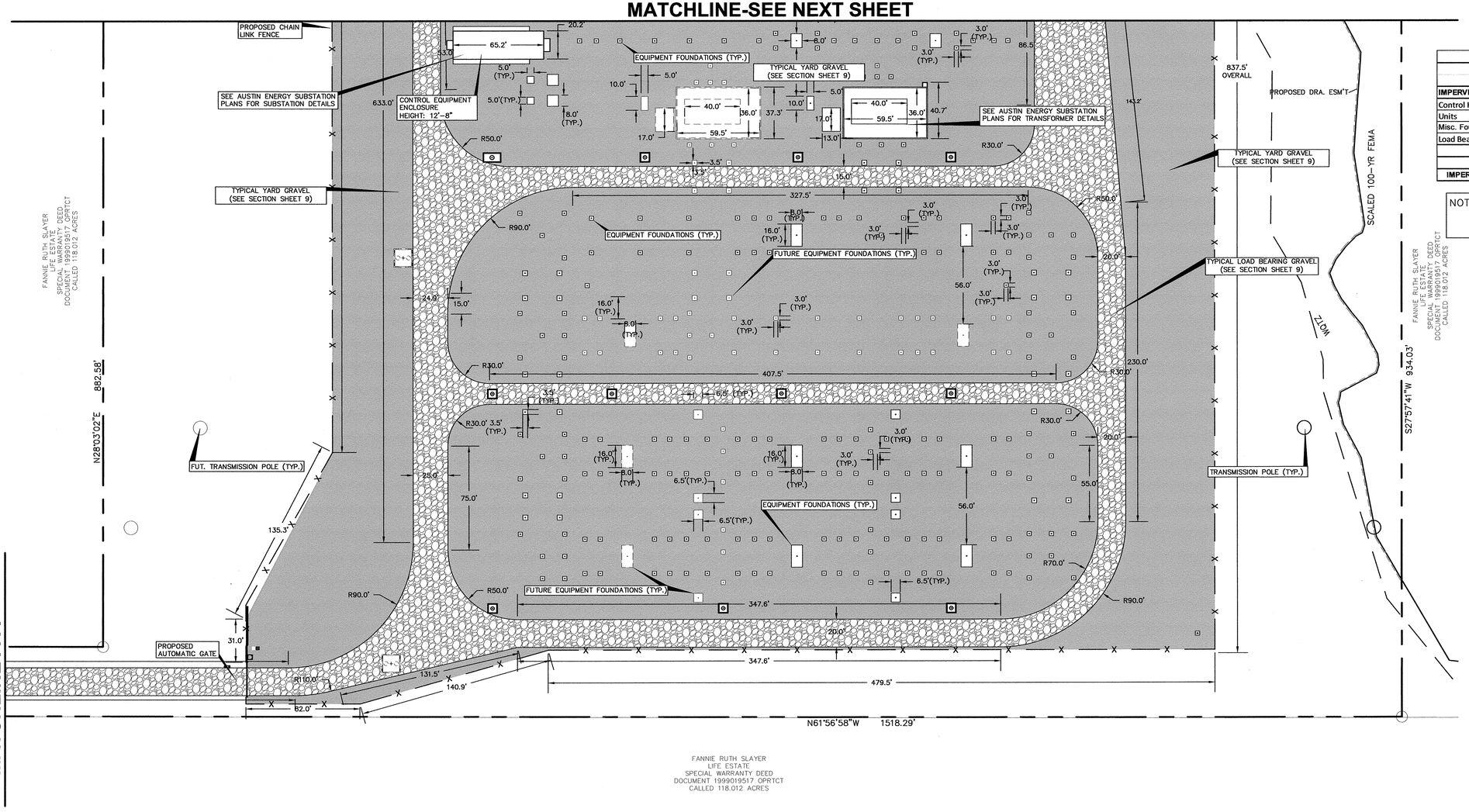
SLOPE CATEGORIES	ACRES	IMPERVIOUS COVER BUILDING/ AND OTHER IMPERVIOUS COVER AC.	% OF CATEGORY	DRIVEWAYS ROADWAYS AC
0-15%	18.887	0.47	17.3%	2.8
15-25%	0.160	0.002	1.0%	0.000
25-35%	0.020	0.000	0.0%	0.000
Over 35%	0.000	0.000	0.0%	0.000
Total Site Area	19.067			

0 20 40 80
1" = 40'

LEGEND

- PROPERTY LINE
- CITY OF AUSTIN ALUMINUM CAPPED ROD SET
- 1/2" IRON ROD FOUND
- YARD GRAVEL
- GRAVEL DRIVEWAY
- PROPOSED TYPE II DRIVEWAY
- EQUIPMENT FOUNDATIONS (TYP.)
- FUTURE EQUIPMENT FOUNDATIONS (TYP.)
- TRANSMISSION POLES (TYP.)
- FUTURE TRANSMISSION POLES (TYP.)

MATCHLINE-SEE NEXT SHEET



PARKING TABLE			
Use	Area	Required Spaces	Provided Spaces
LOCAL UTILITY COMPANY (AUSTIN ENERGY SUBSTATION)	N/A	0	0
Total Parking:	**N/A**	**0**	**0**

SITE CALCULATIONS			
	PROPOSED	FUTURE	PRO &FUT
	20.67 AC.	20.67 AC.	20.67AC.
IMPERVIOUS COVER			
Control House	1760 SF	0.00 SF	1760 SF
Units	2283 SF	7719 SF	10002 SF
Misc. Foundation Pads	4717 SF	3888 SF	8605 SF
Load Bearing Gravel	121982 SF	0 SF	121982 SF
TOTAL (SF)	130742 SF	11607 SF	142349 SF
IMPERVIOUS COVER	14.52 %	1.29 %	15.81 %

NOTES: INSTALL FLEXIBLE BOLLARDS ALONG LOAD BEARING GRAVEL EDGE EVERY 100'. BOLLARDS SHALL BE EQUAL TO SPEED BUMPS AND HUMPS MODEL #3XC3160, IN YELLOW

SOURCE OF TOPOGRAPHY: ON THE GROUND SURVEY PERFORMED BY AUSTIN ENERGY SURVEY DEPARTMENT.

NOTE:

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE APPROXIMATE. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE LOCATION OF UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR IS TOTALLY RESPONSIBLE FOR COORDINATING THE LOCATION, AND PRESERVATION OF EXISTING DRY UTILITIES (ELECTRIC, TELEPHONE, CABLE, ETC.).

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REVIEWED BY:

FOR PLANNING AND DEVELOPMENT REVIEW DEPARTMENT

SITE ADDRESS: 8413 TAYLOR LANE

LEGAL DESCRIPTION: 20.67 ACRES OUT OF JAMES GILLELAND SURVEY NO. 13 ABS. 12

FOR CITY USE ONLY:

CITY OF AUSTIN CASE NO. SP-2011-0296D

Stanley Consultants INC.
6836 Austin Center Blvd. Suite 350 Austin, Tx. 78731
Texas Board of Professional Engineers Registered Firm No. 174
www.stanleyconsultants.com

STATE OF TEXAS
CHRISTINE A. POTTS
99351
REGISTERED PROFESSIONAL ENGINEER
3/1/12

DUNLAP SUBSTATION
SITE PLAN 'A'

AUSTIN ENERGY
721 BARTON SPRINGS ROAD
AUSTIN, TEXAS 78704

Project No.: 20886.25.00
SHEET 7 OF 12

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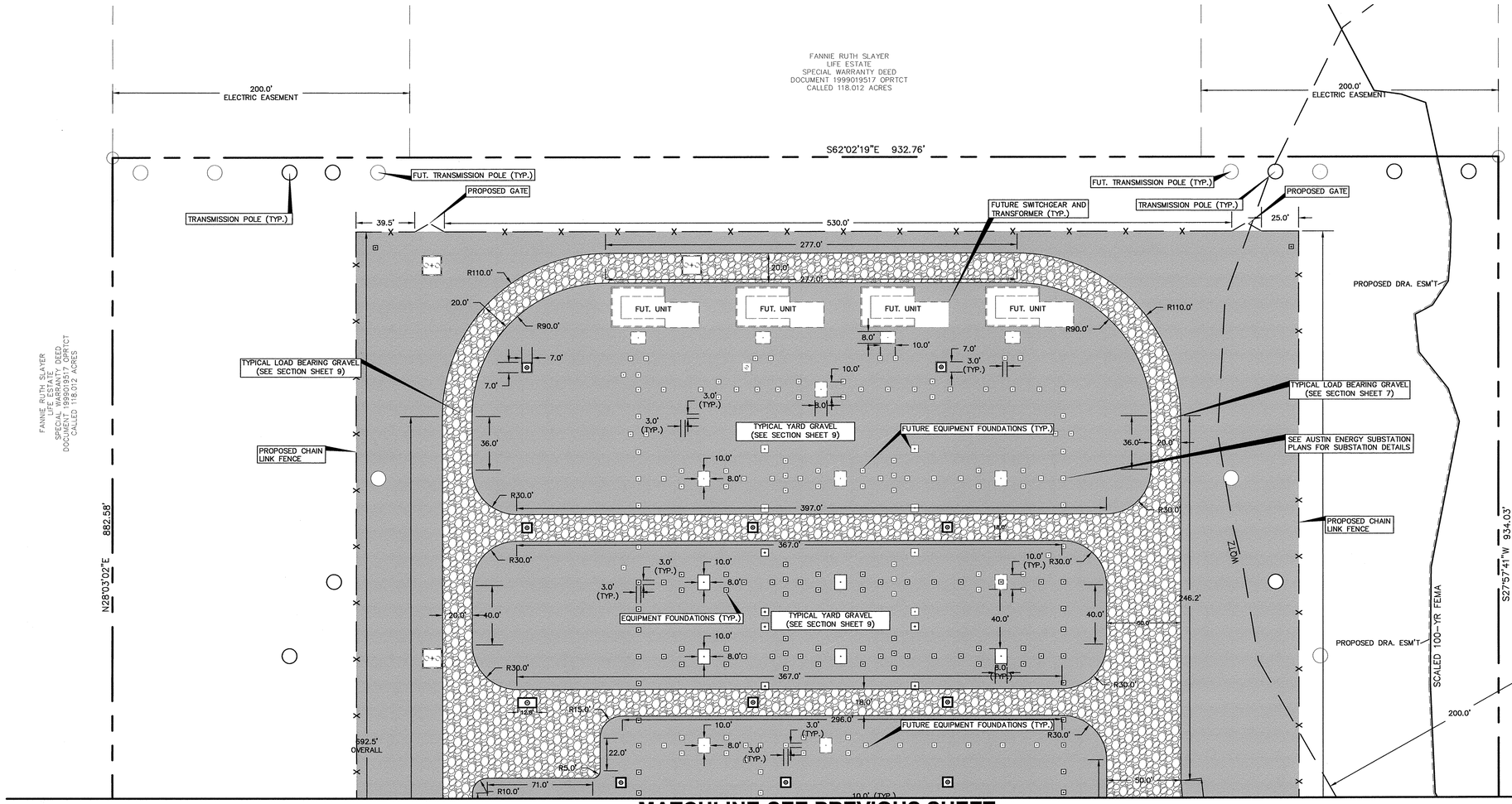

MATCHLINE-SEE PREVIOUS SHEET

0 20 40 80
1" = 40'

LEGEND

- PROPERTY LINE
- CITY OF AUSTIN ALUMINUM CAPPED ROD SET
- 1/2" IRON ROD FOUND
- YARD GRAVEL
- GRAVEL DRIVEWAY
- PROPOSED TYPE II DRIVEWAY
- EQUIPMENT FOUNDATIONS (TYP.)
- FUTURE EQUIPMENT FOUNDATIONS (TYP.)
- TRANSMISSION POLES (TYP.)
- FUTURE TRANSMISSION POLES (TYP.)

PARKING TABLE			
Use	Area	Required Spaces	Provided Spaces
LOCAL UTILITY COMPANY (AUSTIN ENERGY SUBSTATION)	N/A	0	0
Total Parking:	**N/A**	**0**	**0**

SITE CALCULATIONS			
	PROPOSED	**FUTURE**	**PRO &FUT**
	20.67 AC.	20.67 AC.	20.67AC.
IMPERVIOUS COVER			
Control House	1760 SF	0.00 SF	1760 SF
Units	2283 SF	7719 SF	10002 SF
Misc. Foundation Pads	4717 SF	3888 SF	8605 SF
Load Bearing Gravel	121982 SF	0 SF	121982 SF
TOTAL (SF)	130742 SF	11607 SF	142349 SF
IMPERVIOUS COVER	14.52 %	1.29 %	15.81 %

NOTES: INSTALL FLEXIBLE BOLLARDS ALONG LOAD BEARING GRAVEL EDGE EVERY 100'. BOLLARDS SHALL BE EQUAL TO SPEED BUMPS AND HUMPS MODEL #3XC3160, IN YELLOW

SOURCE OF TOPOGRAPHY: ON THE GROUND SURVEY PERFORMED BY AUSTIN ENERGY SURVEY DEPARTMENT.

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REVIEWED BY:

FOR PLANNING AND DEVELOPMENT REVIEW DEPARTMENT

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STATE OF TEXAS
CHRISTINE A. POTTS
99351
REGISTERED PROFESSIONAL ENGINEER
9/7/12

DUNLAP SUBSTATION

SITE PLAN 'B'

AUSTIN ENERGY
721 BARTON SPRINGS ROAD
AUSTIN, TEXAS 78704

Project No.: 20886.25.00

SHEET 8 OF 12

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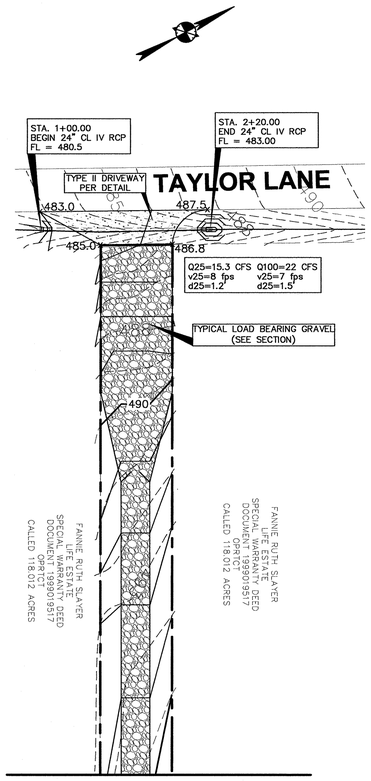

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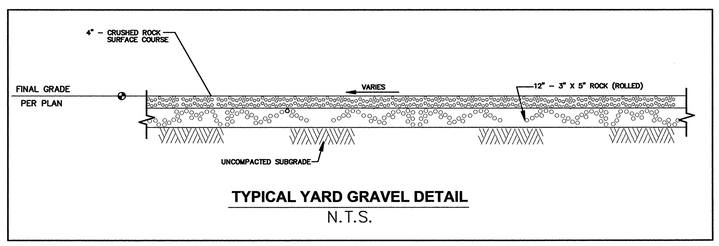
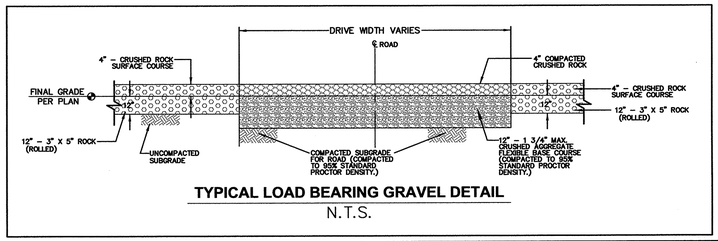
MATCHLINE-THIS SHEET



TYPICAL YARD GRAVEL DETAIL
N.T.S.



TYPICAL LOAD BEARING GRAVEL DETAIL
N.T.S.

0 25 50 100
1" = 50'

LEGEND

- PROPERTY LINE
- PROPOSED TYPE II DRIVEWAY
- YARD GRAVEL
- GRAVEL DRIVEWAY
- PROPOSED FENCE
- 689 EXISTING CONTOUR
- 701 PROPOSED CONTOUR

NOTES:

1. GRADES BASED ON TOPO BY AUSTIN ENERGY.
2. SLOPE ACROSS THE PROPERTY SHALL BE NO MORE THAN 2% AT ANY GIVEN POINT.
3. MANHOLE LIDS SHALL BE 6" ABOVE FINAL GRADE. THIS WILL PLACE THE LIDS ~2" ABOVE THE SURFACE ROCK.
4. ALL CONSTRUCTION AND WORKMANSHIP SHALL CONFORM TO CITY OF AUSTIN STANDARD SPECIFICATIONS.
5. WHERE POSSIBLE, NATURAL VEGETATION SHALL BE MAINTAINED OUTSIDE OF SUBSTATION FENCE FOR SILT CONTROL.
6. THE CONTRACTOR SHALL KEEP THE PUBLIC RIGHT-OF-WAY CLEAN. TRACKING OF MUD AND DEBRIS FROM THE SITE WILL NOT BE ALLOWED.
7. THE CONTRACTOR SHALL VERIFY EXISTING UTILITY LOCATIONS AND SHALL AVOID DAMAGE TO UTILITIES. IF CONFLICTS WITH EXISTING UTILITIES ARISE DURING CONSTRUCTION THE CONTRACTOR SHALL NOTIFY THE OWNER AND ANY REQUIRED CHANGES SHALL BE APPROVED BY THE OWNER PRIOR TO COMMENCEMENT OF RELATED CONSTRUCTION ON THE PROJECT.
8. ADEQUATE BARRIERS BETWEEN ALL VEHICULAR USE AREAS AND ADJACENT LANDSCAPE AREAS, SUCH AS A 6" CONCRETE CURB ARE REQUIRED. IF A STANDARD 6" CURB AND GUTTER ARE NOT PROVIDED FOR ALL VEHICULAR USE AREAS AND ADJACENT LANDSCAPE AREAS, COMPLY WITH ECM, SECTION 2.4.7, "PROTECTION OF LANDSCAPE AREAS".

SOURCE OF TOPOGRAPHY: ON THE GROUND SURVEY PERFORMED BY AUSTIN ENERGY SURVEY DEPARTMENT.

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DUNLAP SUBSTATION

GRADING PLAN

AUSTIN ENERGY
721 BARTON SPRINGS ROAD
AUSTIN, TEXAS 78704

Project No.: 20886.25.00

SHEET 9 OF 12