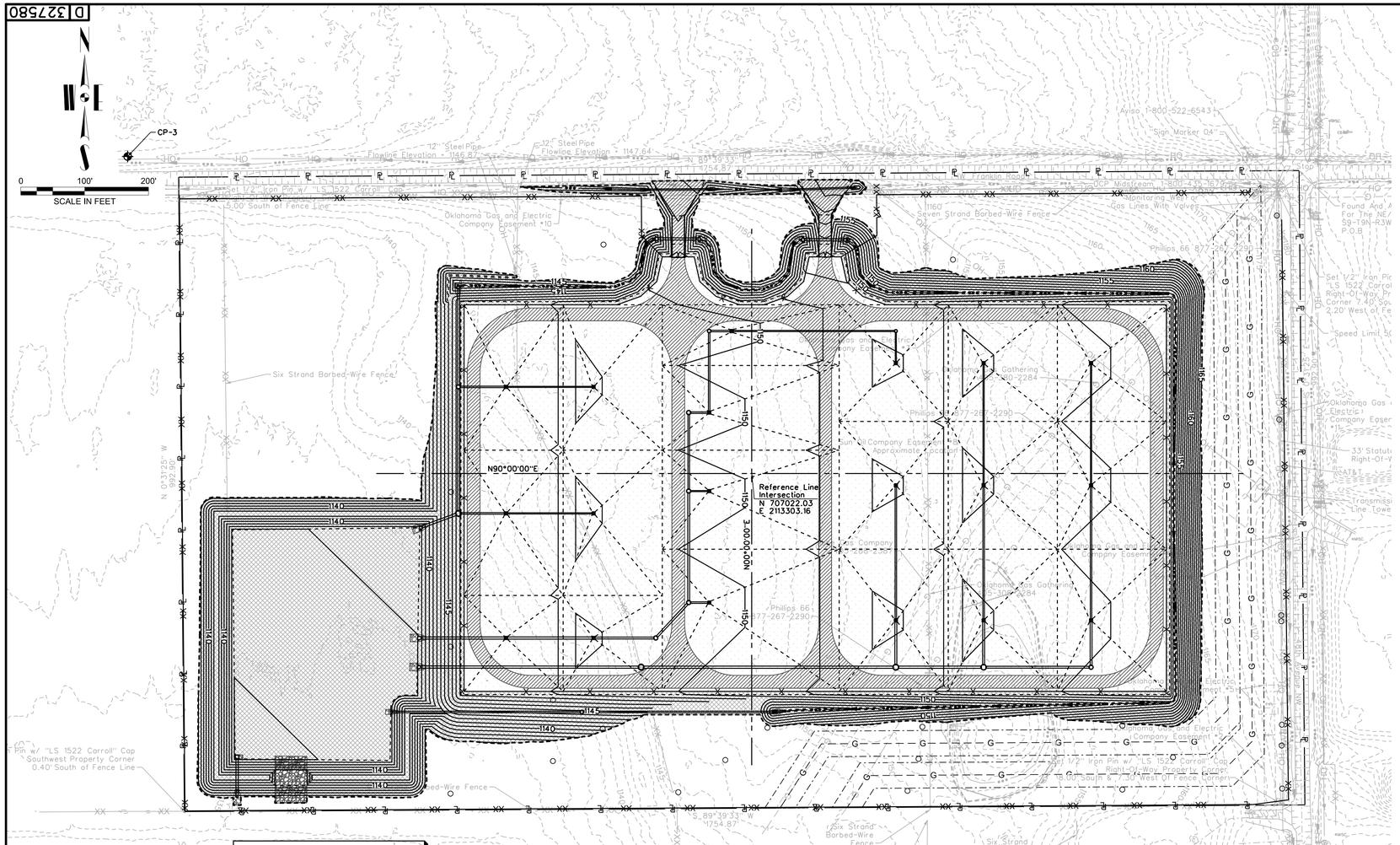
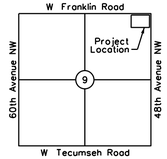
D 327580





Site Location
NE/4, Sec 9
T-9N, R-3W, I.M.
Cleveland County, Oklahoma

Construction Notes:

1. See General Note 5 for countour lines definition. FINISHED GRADE DOES NOT INCLUDE 4 INCH LAYER OF OF NO. 57 CRUSHED ROCK.
2. Difficulties obtaining a satisfactory proof-roll may occur. In lieu of overexcavation and replacement of the unstable soils, the unstable subgrade may be stabilized using ODOT Type A Crushed Rock underlain by a layer of Tensar TX7 geogrid (or equivalent). It is estimated that 9 to 12 inches of Type A crushed rock to be required in this scenario, but actual thickness shall be determined at the time of construction.

Control Point Table				
Point	Description	Northing	Easting	Elevation
1*	1/2" Iron Pin w/ "Control" Cap	707414.7170	2114683.5207	1193.789
2*	1/2" Iron Pin w/ "Control" Cap	704814.4110	2114166.7249	1153.529
3	1/2" Iron Pin w/ "Control" Cap	707518.1380	2112325.8661	1140.679

* Outside limits of drawing.

Reference Drawings:

D-327581	Demolition Plan
D-327582	Fence and Drive Plan
D-327583	Grading Plan - Sheet One
D-327584	Grading Plan - Sheet Two
D-327585	Grading Section Views - Sheet One
D-327586	Grading Section Views - Sheet Two
D-327587	Detention Basin Plan
D-327588	Driveway Plans and Profiles
D-327589	Grading & Drainage Details - Sheet One
D-327590	Grading & Drainage Details - Sheet Two
D-327591	Erosion and Sediment Control Plan
D-327592	Erosion and Sediment Control Details
D-327593	Culvert End Section Details

Abbreviations

BCY	Bank Cubic Yard
BVCE	Beginning Vertical Curve Elevation
BVCS	Beginning Vertical Curve Station
CL	Center Line
CGHDPE	Corrugated High-density Polyethylene
CCY	Compacted Cubic Yard
Const.	Construction
CY	Cubic Yard
Dia.	Diameter
E	East/Easting
Exist.	Existing
EG	Existing Grade
EL	Elevation
EVCE	End Vertical Curve Elevation
EVCS	End Vertical Curve Station
FG	Finished Grade
Galv.	Galvanized
ID	Inside Diameter
INV	Invert Elevation
K	Curve Coefficient
L	Left
LF	Linear Feet
Max.	Maximum
Min.	Minimum
N	North/Northing
OD	Outside Diameter
ODOT	Oklahoma Department of Transportation
PGL	Profile Grade Line
PVC	Polyvinyl chloride
PVI	Point of Vertical Intersection
Prop.	Proposed
R	Radius/Right
RCP	Reinforced Concrete Pipe
S	South
SF	Square Foot
STA	Station
SY	Square Yard
SWPPP	Stormwater Pollution Prevention Plan
TG	Top of Grate Elevation
Typ.	Typical
Var.	Varies
W	West

General Notes:

1. Contractor shall be responsible for all layout and all elevation control for the project.
2. All dimensions are indicated in feet (') unless noted otherwise.
3. Existing features and boundaries shown on these drawings are based on survey drawings provided by:

   Bearing Tree Land Surveying LLC
   7100 Broadway Ext.
   Oklahoma City, Oklahoma 73116
   405-605-1081

4. Coordinates shown on these drawings are NAD83 Oklahoma State Plane, South Zone (Grid) for horizontal control and NAVD88 for vertical control.
5. Proposed contours and elevations (EL) shown on the Site Work drawings represent the finished grade (FG) defined as the top of all proposed materials EXCLUDING No. 57 Crushed Rock and Sod.
6. Underground facilities, structures, and utilities have been plotted from available surveys and records; therefore, their locations must be considered approximate only. It is possible there may be others, the existence of which are presently not known or shown. It is the Contractor's responsibility to determine their existence and exact location and to avoid damage thereto. All existing utilities without elevation data shall be assumed to have an unknown elevation.
7. Contractor shall notify utility locator a minimum of 72 hours prior to any excavation activities.
8. Contractor shall notify the public works utilities department a minimum of 15 working days in advance of any necessary utility outages.
9. It shall be the responsibility of the Contractor to coordinate all necessary utility relocations with the appropriate utility company.
10. Unless noted otherwise, all existing facilities are to remain undisturbed and used in place. The Contractor shall take precautions necessary to prevent damage. The Contractor shall repair and/or replace, at his/her expense, all existing facilities damaged during construction activities. Existing facilities noted for removal shall be removed and disposed of off-site at the Contractor's expense. All excess material resulting from earthwork operations shall be disposed of at the Contractor's expense. Method of disposal of material and location shall be approved by the Owner.
11. Construction shall comply with all applicable codes per the governing municipality.
12. Contractor shall be responsible for all local permits for all construction activity including those required by the Oklahoma Department of Environmental Quality for all construction activity.
13. Contractor shall comply with all terms and conditions set forth in the National Pollutant Discharge Elimination System (NPDES) permit established for the site at all times.
14. Contractor shall be responsible for maintaining all best management practices (BMPS) of the SWPPP for the construction activities associated with this project.
15. Contractor shall confine all construction activities to within the earthwork limits or as directed by OG&E.
16. Contractor shall protect all exposed cut and fill slopes; Contractor shall install erosion control BMPS as soon as possible to protect exposed embankment from erosion during all stages of construction.

Earthwork Notes:

1. The proposed design is based on geotechnical recommendations based on the condition of the site during the time of geotechnical investigation. Contractor shall take into account the condition of the site prior to starting construction activities. Contractor shall notify owner and engineer if conditions deviate from what was described in the geotechnical report.
2. Geotechnical Report provided by Terracon. See "Subsurface Information for the OG&E Norman Hills Substation Norman, Oklahoma, Project No. 139827, January 2022" for soil boring logs.
3. Erosion control measures shall be in place prior to commencing earthwork activities and shall be maintained for the duration of construction activities in accordance with the SWPPP.
4. Contractor shall clear, grub, and strip area defined by earthwork limits to remove all vegetation, root zone soils, trees, and other unsuitable materials. Removal depths shall be determined at the time of construction by a representative of the Geotechnical Engineer.
5. After stripping the surface materials and completing required cuts for grading, but prior to placing new fill, the subgrade shall be proof-rolled to locate soft areas. A geotechnical engineer or a qualified senior technician shall observe each site to confirm that the site has been effectively stripped of unsuitable materials. They shall also monitor proof-rolling procedure to evaluate and approve the stability of the exposed subgrade materials. Proof-rolling can be performed with a rubber-tired construction vehicle weighing at least 25 tons, such as a loaded scraper or tandem-axle dump truck. If proof-rolling is not practical, the subgrade shall be evaluated by a geotechnical engineer using other methods.
6. Unstable soils identified by proof-rolling or evaluation shall be scarified, moisture conditioned and compacted, or removed and replaced full-depth with new cohesive low volume change fill. The appropriate method of improvement, if required, would depend on factors such as schedule, weather, the size of the area to be improved, and the nature of the instability. Performing site grading operations during warm, dry periods would help to reduce the amount of subgrade treatment required. After proof-rolling and improving any unstable soils, and just prior to placing fill, the top 8 inches of the subgrade should be scarified, moisture conditioned and compacted per the requirements in the compaction requirements table on this drawing.
7. Fill shall consist of material specified in the approved fill table on this drawing.
8. Provide uniform slope between indicated elevations so that all areas slope to drain and no storm water is ponded on site both during and after construction.
9. All cut and fill slopes shall be 4:1 (horizontal:vertical) unless noted otherwise on the plans.
10. All flowlines that are disturbed by construction activities shall be repaired to match flowlines prior to disturbance.
11. On the western portion of the substation site, it is estimated that native soils will experience 2 to 3 inches of time-dependent consolidation settlement in areas where 5 feet of new fill will be placed and 4 to 5 inches of time-dependent consolidation settlement in areas where 10 feet of new fill will be placed. It is estimated 90% of primary consolidation settlement will take 2 to 3 years. On-going grading maintenance will be required during this time to maintain the proposed grading design elevations.

Construction Note IFC Rev 1:
1. Post IFC drawing change update 04-13-23.

Estimated Earthwork Quantities (For Reference Only)					
Description	Quantity	Units	Description	Quantity	Units
Clearing & Grubbing	117,138	SY	Fence Removal	5,556	LF
Stripping (9" Assumed Depth)	29,284	BCY	Substation Fence w/ Line Curb (OG&E Standard A689)	3,519	LF
Over-Excavation (12" Assumed Depth) [2]	39,045	BCY	Substation Gate w/ Gate Curb (30' Wide Double Swing)	2	EACH
Geogrid (Tensar TX7 or equal)[2]	117,138	SY	Boundary Fence (OG&E Standard A688, Detail C)	5,142	LF
Crushed Rock Backfill (ODOT Type A)[2]	39,045	CCY	12' Property Gate	1	EACH
Cut	42,476	BCY	6"x12" OG&E Standard Driveway Curb	408	LF
Fill	94,346	CCY			
			Rock Check Dam	60	LF
			Temporary Silt Fence	2,378	LF
			Temporary Inlet Protection (Dandy Bag)	20	EACH
Crushed Rock (8" Depth) (ODOT Type A)	2,783	CCY	Temporary Concrete Washout	1	EACH
Crushed Rock (4" Depth) (Washed Limestone, ASTM C33 #57)	8,375	CCY	Temporary Construction Entrance	1	EACH
Rock Rubble Riprap (12" Depth) (D_{50}=5")	274	CY			
Topsoil, Fertilzer, and Sod	40,127	SY	Existing Pond Area Stripping (9" Assumed Depth)	1,338	BCY
Geotextile Fabric (Contech C-80NW) (Riprap Lining)	7,390	SF	Existing Pond Area Fill	7,730	CCY
Geotextile Fabric (Mirafi RS380i) (Driveway Lining)	8,114	SF	Topsoil, Fertilzer, and Sod (Existing pond area outside overlapped area)	2,109	SY
Soil Sterilant	75,379	SY			
Precast Drain Inlet - 3'x3'	14	EACH			
Precast Drain Inlet - 3'x3' (Type 2)	1	EACH			
Precast Drain Inlet - 4'x4'	5	EACH			
Precast Manhole - 4' Dia.	1	EACH			
Precast Manhole - 5' Dia.	2	EACH			
Precast Manhole - 6' Dia.	6	EACH			
Precast Manhole - 8' Dia.	4	EACH			
Precast Outlet Control Structure	1	EACH			
Storm Drain Pipe - 18" Dia. Corrugated HDPE w/ ODOT Class B Bedding	974	LF			
Storm Drain Pipe - 24" Dia. Corrugated HDPE w/ ODOT Class B Bedding	1,684	LF			
Storm Drain Pipe - 30" Dia. Corrugated HDPE w/ ODOT Class B Bedding	1,043	LF			
Storm Drain Pipe - 36" Dia. Corrugated HDPE w/ ODOT Class B Bedding	1,308	LF			
Storm Drain Pipe - 18" Class IV RCP w/ ODOT Class B Bedding	105	LF			
Storm Drain Pipe - 18" Class V RCP w/ ODOT Class B Bedding	98	LF			
Storm Drain Pipe - 36" Class IIIRCP w/ ODOT Class B Bedding	61	LF			
Pipe End Section - 24" Dia. Galvanized Steel w/Trash Guard)	1	EACH			
Pipe End Section - 30" Dia. Galvanized Steel w/Trash Guard)	1	EACH			
Pipe End Section - 36" Dia. Galvanized Steel w/Trash Guard)	7	EACH			
4:1 Culvert End Treatment	1	EACH			
6:1 Culvert End Treatment - ODOT Dwg. R-27	4	EACH			

Notes:
1. All estimated material quantities are in place quantities and do not indicate all materials required to complete the construction. Contractor shall be responsible for verifying all quantities and materials required to complete the breadth of the construction as indicated on the plans.
2. In lieu of overexcavation and replacement of the unstable soils, the unstable subgrade may be stabilized using ODOT Type A Crushed Rock underlain by a layer of Tensar TX7 geogrid (or equivalent). It is estimated that 9 to 12 inches of Type A crushed rock to be required in this scenario, but actual thickness shall be determined at the time of construction. For bid purposes, quantities shown are based on the assumption that the entire earthwork limits shall be overexcavated 12 inches, lined with geogrid, and backfilled with Type A Crushed Rock as described above.

Construction Note IFC Rev 1:
1. Post IFC drawing change update 04-13-23.

Approved Fill Property Requirements		
Fill Type[1]	USCS Classification	Acceptable Location for Placement
Imported or on-site low plasticity cohesive soils- LL<40 and 5<PI<15 & At least 15% passing a No. 200 Sieve	CL, CL-ML, SC	All locations and elevations
Imported or on-site medium plasticity cohesive soils- 40<LL<45 and 15<PI<30 & At least 50% passing a No. 200 Sieve	CL	All locations and elevations except beneath floor slabs and as replacement fill beneath foundations[2]
Imported or on-site cohesionless soils - At least 12% passing a No. 200 Sieve	SM	All locations and elevations except beneath floor slabs and as replacement fill beneath foundations[2]
Type "A" aggregate base meeting the requirements of Section 703.01 of ODOT Standard Specifications for Highway Construction [3]	-	Aggregate surfacing for driveways/drivepaths

1. Fill shall consist of approved materials free of organic matter and debris. Frozen material shall not be used, and fill shall not be placed on a frozen subgrade. A sample of each material type shall be submitted to the Geotechnical Engineer for evaluation prior to use on this site.
2. Recycled aggregate is not permitted.
3. Coordinate with Foundation Contractor for floor slab locations.

Fill Placement and Compaction Requirements	
Item	Description
Subgrade Scarification Depth	8 inches
Maximum Fill Lift Thickness	8 inches or less in loose thickness when heavy, self-propelled compaction equipment is used. 4 to 6 inches in loose thickness when hand-guided equipment (i.e., jumping jack or plate compactor) is used
Compaction Requirements[1]	Cohesive soil: At least 95% for fill placed from finished grade to a depth of 5 feet below finished grade. At least 100% for fill placed at a depth greater than 5 feet below finished grade. Type "A" aggregate base: At least 98%
Water Content Range[1]	Cohesive and cohesionless soils: Within 2% of its optimum value Type "A" aggregate base: Workable moisture content

1. Maximum dry density and optimum water content as determined by the standard Proctor test (ASTM D698).

TRAVIS REID LAYTON 26946 OKLAHOMA LICENSED PROFESSIONAL ENGINEER
Apr 13 2023 15:04

MICRO STATION SUBSTATION ENGINEERNG

Revision	Description	Date
1	Revised Quantities	04/13/23

RELEASED FOR CONSTRUCTION
ON 02-28-2023

BURNS McDONNELL

BURNS & McDONNELL ENG.
OK CERT. OF AUTH. NO. 421
EXP. 06-30-2024
TRAVIS REID LAYTON
OK PE NO. 26946
EXP. 07-31-2024

OKLAHOMA GAS AND ELECTRIC COMPANY

NORMAN HILLS SUBSTATION 8729-T
NORMAN, OKLAHOMA

SITE WORK
LOCATION AND SITE CONTROL PLAN

JOB NUMBER	REV	DATE	DRAWN	CHECKED	APPROVED	CONTACT
-	-	-	-	-	-	-

ENGINEER	T. Layton (BMcD)	DATE	~	CHECKED	Y. Li (BMcD)	DATE	02-28-23
DESIGNER	N. Miller (BMcD)	DATE	02-28-23	APPROVED	T. Layton (BMcD)	DATE	02-28-23
DRAWN BY	N. Miller (BMcD)	DATE	02-28-23	CONTACT	B. Montell	DATE	-

JOB NUMBER	1647809, 1648497 1648499 & 1647811		
SCALE	1" = 100'-0"	D	327580
REFERENCE	A-327499		