



**UTILITIES**

LOCATE UTILITIES: SOUTH DAKOTA ONE CALL  
115 Evergreen Heights Drive  
Pittsburgh PA 15229  
(800) 781-7474

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNERS OR THEIR REPRESENTATIVES. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MAY BE OCCURRED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

- PROPOSED STORM SEWER IMPROVEMENTS:**
- ① F&I: TYPE 'B' INLET (CROSS SECTION 'C')  
TBC MID=3271.00  
INV./OUT./SW=3267.00
  - FROM #1 TO #2  
F&I: 130.0 L.F. OF 12" 12' SDR-35 PIPE  
W/ FLARED END @ -2.31% INV.=3264.00
  - ② F&I: 10 CU.YDS. OF CLASS II RIP RAP
  - ③ F&I: TYPE 'B' INLET (CROSS SECTION 'D')  
TBC MID=3271.50  
INV./OUT./SW=3267.50
  - FROM #3 TO #4  
F&I: 94.48 L.F. OF 12" 12' SDR-35 PIPE  
W/ FLARED END @ -3.70% INV.=3264.00
  - ④ F&I: 10 CU.YDS. OF CLASS II RIP RAP
  - ⑤ F&I: SMALL AREA INLET (CROSS SECTION 'E')  
RIM EL.=3265.00  
INV./OUT./SW=3262.00
  - FROM #5 TO #6  
F&I: 16.56 L.F. OF 12" SDR-35 PIPE @ -0.85%  
(INLET TO 45' BEND)
  - ⑥ F&I: 12" - 45' BEND
  - FROM #6 TO #7  
F&I: 12.87 L.F. OF 12" SDR-35 PIPE @ -0.85%  
INV.=3261.75 (45' BEND TO FLARED END)
  - ⑦ F&I: 12" FLARED END
  - ⑧ F&I: POROUS LANDSCAPE DETENTION  
860 Sq. Ft.± MIN. (SEE DETAIL)
- SEE SHEET 6 OF 11 FOR CROSS SECTION DATA

**GRADING SPECIFICATIONS**

INITIALLY, THE CONTRACTOR SHALL STRIP 6" OF TOPSOIL FROM THE AREA 149,680.50 S.F. TO BE EXCAVATED. THIS TOPSOIL SHALL BE STOCKPILED ON THE SITE. THE TOPSOIL IS APPROXIMATELY 920 CUBIC YARDS.

THE CONTRACTOR SHALL THEN PERFORM THE GRADING OPERATION. GRADING SHALL FOLLOW THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT PREPARED BY AMERICAN TECHNICAL SERVICES, INC. (ATS NO. 11-11278) DATED 8-22-11.

SOIL TYPE	MOISTURE CONTENT	% OF COMPACTION
COHESIVE	± 3% OF OPTIMUM (ASTM D698)	MIN. OF 92% (ASTM D698)
COHESIONLESS	WORKABLE	MIN. OF 95% OF (ASTM D698)

MAXIMUM DRY DENSITY AND OPTIMUM MOISTURE CONTENT SHALL BE DETERMINED BY ASTM D698.

THE EXCAVATION AND EMBANKMENT PLACEMENT MAY BE ACCOMPLISHED WITH ANY TYPE OF EQUIPMENT WHICH WILL GIVE UNIFORM SATISFACTORY RESULTS.

TESTING WILL BE PERFORMED BY THE CONTRACTOR TO VERIFY COMPACTION RESULTS.

EMBANKMENT MATERIALS SHALL BE PLACED IN HORIZONTAL LAYERS NOT EXCEEDING A LOOSE DEPTH OF EIGHT INCHES (8") AND SHALL BE COMPACTED AS SPECIFIED BEFORE THE NEXT LAYER IS PLACED.

	EXCAVATION	EMBANKMENT
TOPSOIL..... [920]		
BANK VOLUMES..... (CU.YDS)	1,276	834
SHRINKAGE (15%).....	..	125
NET (CU.YDS.).....	1,276	959

THE EXCAVATION AND EMBANKMENTS FOR THE SITE GRADING SHALL BE FINISHED TO A SMOOTH AND UNIFORM SURFACE WITHIN 0.05 FEET OF THE FINAL GRADE.

ANY GARBAGE, CONSTRUCTION DEBRIS, OR LIKE WASTE ENCOUNTERED SHALL BE REMOVED FROM THE SITE AND DISPOSED OF BY THE CONTRACTOR IN ACCORDANCE WITH CURRENT COUNTY AND/OR STATE REGULATIONS AT NO ADDITIONAL COST TO OWNER.

ALL CONSTRUCTION AND TESTING SHALL BE IN STRICT ACCORDANCE WITH THE 2007 RAPID CITY STANDARD SPECIFICATIONS AND UTILITY CONSTRUCTION CODE.

LOT 1 OF BLOCK 26  
ROBBSDALE NO. 10

LOT 2 OF BLOCK 26  
ROBBSDALE NO. 10

**SPERLICH**  
Consulting, Inc.

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Professional Engineering, Surveying, Planning

REGISTERED PROFESSIONAL ENGINEER  
STATE OF SOUTH DAKOTA  
No. 10000  
EXPIRES 12/31/2015

REVISIONS

DATE	BY	REVISIONS

LEGAL DESCRIPTION

OWNER: A PORTION OF TRACT A OF MINNESOTA ACRES 0.410, 0.587, AND 0.587, BEING THE NE 1/4, SE 1/4, AND SW 1/4 OF SECTION 26, T25N, R10W, SD 57701, BEING PART OF THE 2007 RAPID CITY STANDARD SPECIFICATIONS AND UTILITY CONSTRUCTION CODE.

**GRADING PLAN**  
LOT 1-3 OF BLOCK 26

PROJECT NUMBER **3308**

SHEET **5 / 11**