

ESTIMATED QUANTITIES:

- 1) 4" PERFORATED DRAIN TILE WITH SOCK AND BEDDING MATERIAL = 519 L.F.
- 2) 4" DRAIN TILE CLEANOUTS = 16 EACH
- 3) 12" PERFORATED DRAIN TILE = 145 L.F.
- 4) 27" DIA. CB, WITH GRATE = 1 EACH
- 5) 12" RISER PIPE = 1 EACH
- 6) HYDROSEEDING (200LBS. PER ACRE LOW GROW FESCUE, 20LBS. PER ACRE OATS) = 18,750 S.F.
- 7) TYPE 2S, SINGLE SIDED STRAW EROSION CONTROL BLANKET = 1,900 SQ. YDS.
- 8) RISER PIPE INLET PROTECTION = 16 EACH
- 9) CATCH BASIN INLET PROTECTION = 1 EACH
- 10) 8" MNDOT SPEC BIO LOG = 285 L.F.
- 11) 3/4" CLEAN DRAIN ROCK FOR PLACEMENT OF DRAIN TILE = 125 TON
- 12) TYPE 3, NON-WOVEN FABRIC TO BE PLACE AROUND DRAIN TILE SYSTEM(S) = 530 SQ. YDS.
- 13) CLEAN FILL MATERIAL = 2,260 CU. YDS. (L.V.)
- 14) TOPSOIL = 250 CU. YDS. (L.V.)

Temporary Driveway

EXISTING DRAINAGE AREAS

51,815		
DRAINAGE AREA (SQ. FT.)	PAVED/BUILDING AREA (SQ. FT.)	OPEN SPACE AREA (SQ. FT.)
98,870	47,055	

PROPOSED DRAINAGE AREAS

49,665		
DRAINAGE AREA (SQ. FT.)	PAVED/BUILDING AREA (SQ. FT.)	OPEN SPACE AREA (SQ. FT.)
98,870	48,855	

SWPPP SEQUENCING

- 1) NO MPCA PERMIT REQUIRED < 1 ACRE DISTURBANCE.
- 2) MOVE EXISTING DEBRIS PILE AWAY FROM AREA OF PIPE INSTALLATION. REMOVE ALL ORGANIC MATERIAL PRIOR TO PLACEMENT OF ADDITIONAL FILL.
- 3) INSTALL DRAIN TILE PIPING WITH STAND PIPES AS DESCRIBED. SCARIFY EXISTING SOIL PRIOR TO PLACEMENT OF FABRIC, TILE AND DRAIN ROCK.
- 4) ALL DRAIN TILE STAND PIPES SHALL BE COVERED WITH CAT. 3 NON WOVEN FABRIC UNTIL SITE IS STABILIZED. THE LOW AREA MAY REQUIRE DEWATERING IF INUNDATED DURING CONSTRUCTION.
- 5) COMPLETE FILLING OPERATION AND SEEDING.
- 6) SEEDING SHALL BE COMPLETED WITH IN 24 HOURS OF FINAL PLACEMENT OF TOPSOIL.
- 7) SITE SHALL BE SEEDDED AND BLANKETED WITH TYPE 2S STRAW BLANKET.

SIMPLIFIED METHOD

Rainfall Volume Calculation

	Drainage Area (Sq. Ft.)	Net Rainfall (Inches)	Volume of Water (Cu. Ft.)
Impervious Area	48,855	18	85,140
Turfed Area	50,015	10	41,678
Water Area		18	
Total	98,870		126,818

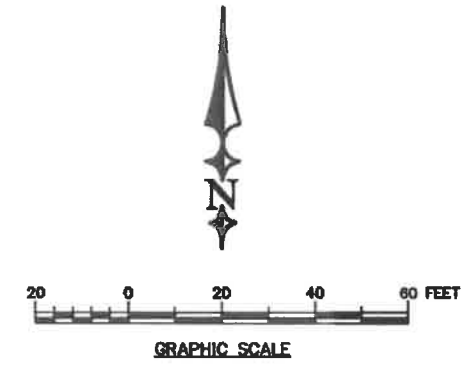
Pond Volume Calculation

Elevation	Area (Sq. Ft.)	Volume (Cu. Ft.)	Stage Storage Volume (Cu. Ft.)
1033	50		
1034	308	358	358
1035	844	1,150	1,508
1036	1,508	2,382	3,858
1037	2,287	3,785	7,653
1038	3,180	5,487	13,120
1039	5,206	8,389	21,508
1040	7,919	13,125	34,631
1041	11,210	19,129	53,760
1042	14,145	25,355	79,115
1044	32,183	48,308	125,423

Flood Elevation 1,043.20

GRADING AND EROSION CONTROL REQUIREMENTS:

- 1) ALL CONSTRUCTION AS CALLED FOR ON THESE CONTRACT DOCUMENTS SHALL BE PERFORMED IN ACCORDANCE WITH ALL OSHA REQUIREMENTS.
- 2) MINIMIZE ACTIVITY OF HEAVY MACHINERY IN BOTTOM OF PONDING AREA AND DRAIN TILE BEDDING AREA.
- 3) SPOT ELEVATIONS/CONTOURS SHOWN AS FINISHED GRADE ELEVATIONS.
- 4) PRIOR TO ON SITE EXCAVATION OR DEMOLITION WORK, INSTALL EROSION CONTROL MEASURES IN LOCATIONS SHOWN OR AS DIRECTED BY THE ENGINEER OR CITY STAFF.
- 5) EROSION CONTROL MEASURES SHOWN ON THE EROSION CONTROL PLAN ARE THE ABSOLUTE MINIMUM. THE CONTRACTOR SHALL INSTALL SEDIMENT TRAPS OR BASINS AND BIO LOG AS DEEMED NECESSARY TO CONTROL EROSION.
- 6) GRADING OPERATIONS SHALL BE CONDUCTED IN A MANNER TO MINIMIZE THE POTENTIAL FOR SITE EROSION. SEDIMENT CONTROL PRACTICES MUST BE ESTABLISHED PRIOR TO THE START OF ANY UP GRADIENT LAND DISTURBING ACTIVITIES.
- 7) PROVIDE 6" OF NATIVE TOPSOIL IN GREEN AREAS.
- 8) ALL EXPOSED SOIL AREAS MUST BE STABILIZED AS SOON AS POSSIBLE TO LIMIT SOIL EROSION BUT IN NO CASE LATER THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED.
- 9) IF SEDIMENT ESCAPES THE CONSTRUCTION SITE, OFF-SITE ACCUMULATIONS OF SEDIMENT MUST BE REMOVED IN A MANNER AND AT A FREQUENCY SUFFICIENT TO MINIMIZE OFF-SITE IMPACTS.
- 10) TEMPORARY SOIL STOCKPILES MUST HAVE SILT FENCE OR OTHER EFFECTIVE SEDIMENT CONTROLS, AND CANNOT BE PLACED IN SURFACE WATERS, INCLUDING STORMWATER CONVEYANCES SUCH AS SWALES AND DITCHES UNLESS THERE IS A BYPASS IN PLACE FOR THE STORMWATER.
- 11) SLOPES 3:1 AND GREATER SHALL BE STABILIZED WITH EROSION CONTROL BLANKET OR AS DEPICTED ON PLANS.
- 12) MAINTAIN AND REPAIR EROSION CONTROL MEASURES (INCLUDING REMOVAL OF ACCUMULATED SILT) UNTIL VEGETATION IS ESTABLISHED. CONTRACTOR TO INSPECT AND DOCUMENT EROSION CONTROL DAILY AND AFTER ANY RAIN EVENT. ALL SEDIMENT CONTROL FEATURES MUST BE REPAIRED WHEN THE SEDIMENT REACHES 1/3 THE HEIGHT OF THE STRUCTURE, OR REPLACED WITHIN 24 HOURS OF DISCOVERY. EROSION CONTROL STRUCTURES FOUND DAMAGED MUST BE REPAIRED OR REPLACED WITHIN 24 HOURS UPON DISCOVERY. REMOVAL OF EROSION CONTROL STRUCTURES REQUIRED AFTER SITE IS STABILIZED (AT DIRECTION OF ENGINEER).
- 13) ALL EXISTING CITY STREETS SHALL BE SWEEP AS NEEDED AND AS REQUESTED BY ENGINEER OR CITY STAFF.
- 14) REFER TO GEOTECHNICAL REPORT FOR ADDITIONAL REQUIREMENTS.
- 15) AFTER GRADING OPERATIONS ARE COMPLETED, LANDSCAPE CONTRACTOR SHALL UNCOMPACT ALL GREEN AREAS PRIOR TO SEEDING AND LANDSCAPING.
- 16) PERMANENT RESTORATION IN LAWN AREAS SHALL BE SEED/BLANKET.
- 17) POSITIVE DRAINAGE OF MINIMUM 2% SLOPE SHALL BE ACHIEVED AWAY FROM PROPOSED BUILDING.



LEGEND:

- EXISTING PARCEL BOUNDARY
- - - - - 930 - - - - - EXISTING 2-FT CONTOUR
- 930 ----- PROPOSED 2-FT CONTOUR
- EXISTING/PROPOSED DRAINAGE ARROW
- PROPOSED DRAIN TILE

KEYED NOTES:

- 1) INSTALL TYPE 2S SINGLE SIDED EROSION CONTROL MAT OVER ENTIRE DISTURBED AREA. AFTER SITE IS SEEDDED. ALL SEED AND BLANKET SHALL BE IN PLACE 24 HOURS MAX AFTER FINAL TOPSOIL IS PLACED.
- 2) INSTALL 8" MNDOT SPEC. BIO LOG OVER EROSION BLANKET.
- 3) INSTALL 4" PERFORATED DRAIN TILE WITH CLEANOUTS AT EACH END. INSTALL AFTER REMOVING ALL EXISTING VEGETATION AND ORGANIC MATERIAL/TOPSOIL.
- 4) INSTALL 8" PERFORATED DRAIN TILE WITH RISER PIPE AS INDICATED. INSTALL AFTER REMOVING ALL EXISTING VEGETATION AND ORGANIC MATERIAL/TOPSOIL.
- 5) REMOVE EXISTING TREE
- 6) FUTURE AMENITIES, NOT PROPOSED AT THIS TIME. HARD SURFACE IS ACCOUNTED FOR WITH POND DESIGN.

NOTES:

- 1) NO MPCA PERMIT REQUIRED < 1 ACRE DISTURBANCE = 18,750 S.F.
- 2) NO STOCKPILING OF LOOSE ORGANIC MATERIAL ON SITE.

DRAWING PHASE:

OWNER REVIEW
AGENCY REVIEW
BID DOCUMENT
FOR CONSTRUCTION
AS-BUILT DOCUMENT

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DAILY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

T. A. ERICKSON, PE
40418
LICENSE NO.
04/19/2017
DATE:

WOODBURY LUTHERAN GRANT LOCATION

CONSTRUCTION PLAN
9050 60th Street North
Stillwater, MN 55082

NO.	REVISION	DESCRIPTION	DATE

© 2017, T. Erickson, LLC - EricksonCivil - All Rights Reserved

DRAWING PHASE:

OWNER REVIEW
AGENCY REVIEW
BID DOCUMENT
FOR CONSTRUCTION
AS-BUILT DOCUMENT

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINN.

T. O. A. ERICKSON, PE
 40418
 LICENSE NO.
 04/19/2017
 DATE:

WOODBURY LUTHERAN GRANT LOCATION

CONSTRUCTION PLAN
 9050 60th Street North
 Stillwater, MN 55082

ESTIMATED QUANTITIES:

- 4" PERFORATED DRAIN TILE WITH SOCK AND BEDDING MATERIAL = 519 L.F.
- 4" DRAIN TILE CLEANOUTS = 18 EACH
- 12" PERFORATED DRAIN TILE = 145 L.F.
- 27" DIA. CB, WITH GRATE = 1 EACH
- 12" RISER PIPE = 1 EACH
- HYDROSEEDING (200LBS. PER ACRE LOW GROW FESCUE, 20LBS. PER ACRE OATS) = 16,750 S.F.
- TYPE 2S, SINGLE SIDED STRAW EROSION CONTROL BLANKET = 1,900 SQ. YDS.
- RISER PIPE INLET PROTECTION = 18 EACH
- CATCH BASIN INLET PROTECTION = 1 EACH
- 9" MNDOT SPEC BIO LOG = 285 L.F.
- 3/4" CLEAN DRAIN ROCK FOR PLACEMENT OF DRAIN TILE = 125 TON
- TYPE 3, NON-WOVEN FABRIC TO BE PLACED AROUND DRAIN TILE SYSTEM(S) = 530 SQ. YDS.
- CLEAN FILL MATERIAL = 2,260 CU. YDS. (L.V.)
- TOPSOIL = 250 CU. YDS. (L.V.)

Temporary Driveway

EXISTING DRAINAGE AREAS

51,815		
DRAINAGE AREA (SQ. FT.)	PAVED/BUILDING AREA (SQ. FT.)	OPEN SPACE AREA (SQ. FT.)
98,870	47,055	

PROPOSED DRAINAGE AREAS

49,685		
DRAINAGE AREA (SQ. FT.)	PAVED/BUILDING AREA (SQ. FT.)	OPEN SPACE AREA (SQ. FT.)
88,870	48,855	

SWPPP SEQUENCING

- NO MPCA PERMIT REQUIRED < 1 ACRE DISTURBANCE.
- MOVE EXISTING DEBRIS PILE AWAY FROM AREA OF PIPE INSTALLATION. REMOVE ALL ORGANIC MATERIAL PRIOR TO PLACEMENT OF ADDITIONAL FILL.
- INSTALL DRAIN TILE PIPING WITH STAND PIPES AS DESCRIBED. SCARIFY EXISTING SOIL PRIOR TO PLACEMENT OF FABRIC, TILE AND DRAIN ROCK.
- ALL DRAIN TILE STAND PIPES SHALL BE COVERED WITH CAT. 3 NON WOVEN FABRIC UNTIL SITE IS STABILIZED. THE LOW AREA MAY REQUIRE DEWATERING IF INUNDATED DURING CONSTRUCTION.
- COMPLETE FILLING OPERATION AND SEEDING.
- SEEDING SHALL BE COMPLETED WITH IN 24 HOURS OF FINAL PLACEMENT OF TOPSOIL.
- SITE SHALL BE SEEDDED AND BLANKETED WITH TYPE 2S STRAW BLANKET.

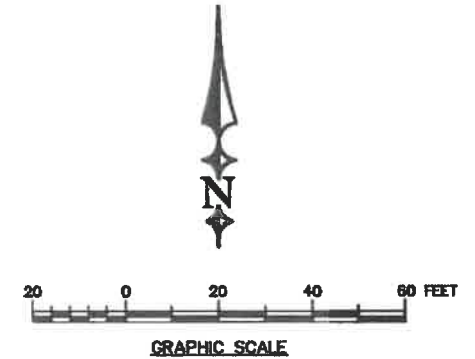
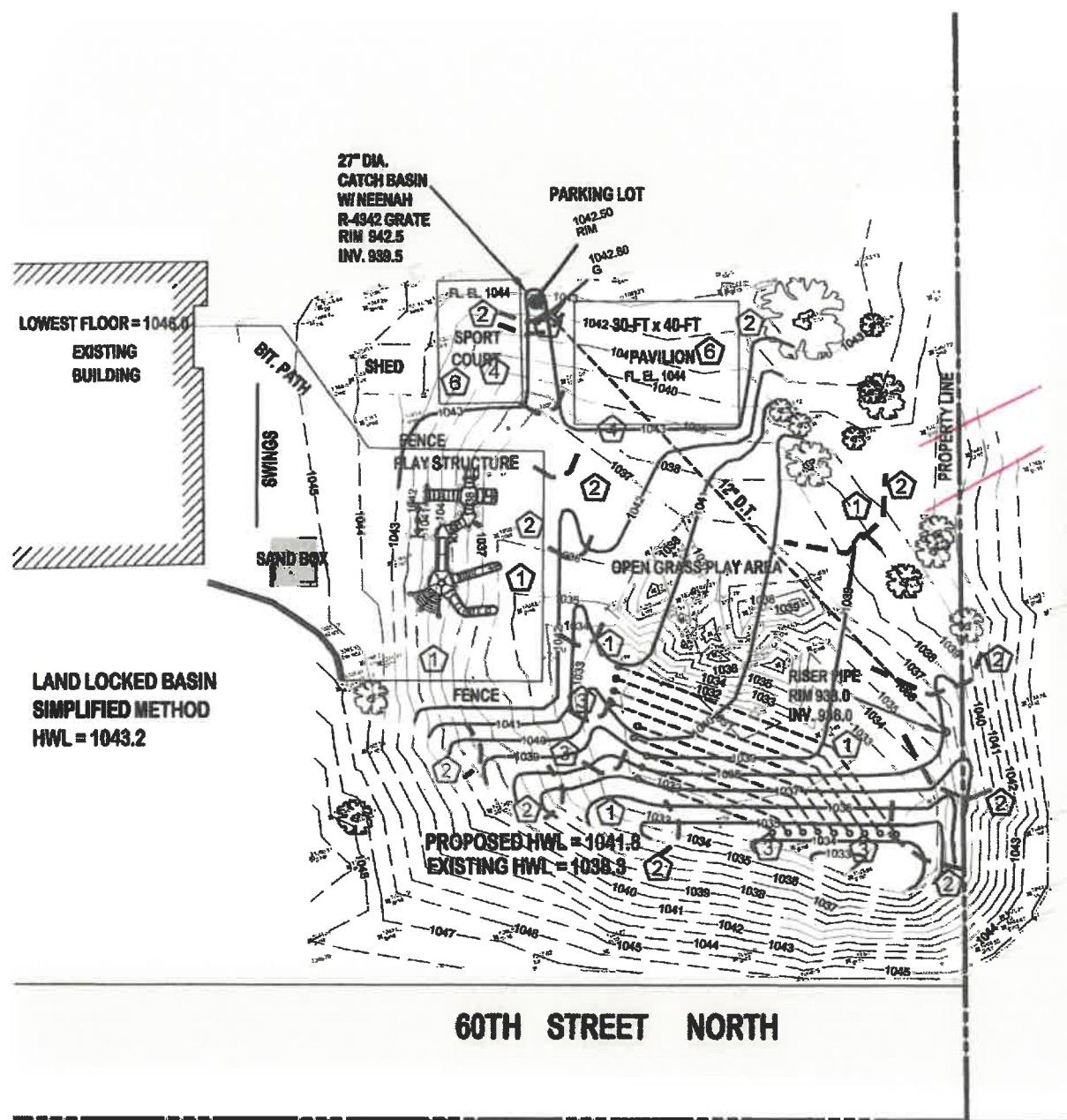
SIMPLIFIED METHOD

Rainfall Volume Calculation

	Drainage Area (Sq. Ft.)	Net Rainfall (Inches)	Volume of Water (Cu. Ft.)
Impervious Area	48,855	18	85,140
Turfed Area	50,015	10	41,679
Water Area		18	
Total	98,870		106,819

Pond Volume Calculation

Elevation	Area (Sq. Ft.)	Volume (Cu. Ft.)	Stage Storage Volume (Cu. Ft.)
1033	50		
1034	308	358	358
1035	844	1,150	1,506
1036	1,508	2,352	3,058
1037	2,287	3,785	7,853
1038	3,180	5,467	13,120
1039	5,208	8,388	21,508
1040	7,919	13,125	34,631
1041	11,210	19,129	53,760
1042	14,145	25,355	79,115
1044	32,168	48,308	125,423
			Flood Elevation 1,043.20



LEGEND:

- EXISTING PARCEL BOUNDARY
- - - 930 EXISTING 2-FT CONTOUR
- 930 PROPOSED 2-FT CONTOUR
- EXISTING/PROPOSED DRAINAGE ARROW
- PROPOSED DRAIN TILE

KEYED NOTES:

- INSTALL TYPE 2S SINGLE SIDED EROSION CONTROL MAT OVER ENTIRE DISTURBED AREA. AFTER SITE IS SEEDDED. ALL SEED AND BLANKET SHALL BE IN PLACE 24 HOURS MAX AFTER FINAL TOPSOIL IS PLACED.
- INSTALL 9" MNDOT SPEC. BIO LOG OVER EROSION BLANKET.
- INSTALL 4" PERFORATED DRAIN TILE WITH CLEANOUTS AT EACH END. INSTALL AFTER REMOVING ALL EXISTING VEGETATION AND ORGANIC MATERIAL/TOPSOIL.
- INSTALL 6" PERFORATED DRAIN TILE WITH RISER PIPE AS INDICATED. INSTALL AFTER REMOVING ALL EXISTING VEGETATION AND ORGANIC MATERIAL/TOPSOIL.
- REMOVE EXISTING TREE
- FUTURE AMENITIES, NOT PROPOSED AT THIS TIME. HARD SURFACE IS ACCOUNTED FOR WITH POND DESIGN.

NOTES:

- NO MPCA PERMIT REQUIRED < 1 ACRE DISTURBANCE. = 16,750 S.F.
- NO STOCKPILING OF LOOSE ORGANIC MATERIAL ON SITE.

GRADING AND EROSION CONTROL REQUIREMENTS:

- ALL CONSTRUCTION AS CALLED FOR ON THESE CONTRACT DOCUMENTS SHALL BE PERFORMED IN ACCORDANCE WITH ALL OSHA REQUIREMENTS.
- MINIMIZE ACTIVITY OF HEAVY MACHINERY IN BOTTOM OF PONDING AREA AND DRAIN TILE BEDDING AREA.
- SPOT ELEVATIONS/CONTOURS SHOWN AS FINISHED GRADE ELEVATIONS.
- PRIOR TO ON SITE EXCAVATION OR DEMOLITION WORK, INSTALL EROSION CONTROL MEASURES IN LOCATIONS SHOWN OR AS DIRECTED BY THE ENGINEER OR CITY STAFF.
- EROSION CONTROL MEASURES SHOWN ON THE EROSION CONTROL PLAN ARE THE ABSOLUTE MINIMUM. THE CONTRACTOR SHALL INSTALL SEDIMENT TRAPS OR BASINS AND BIO LOG AS DEEMED NECESSARY TO CONTROL EROSION.
- GRADING OPERATIONS SHALL BE CONDUCTED IN A MANNER TO MINIMIZE THE POTENTIAL FOR SITE EROSION. SEDIMENT CONTROL PRACTICES MUST BE ESTABLISHED PRIOR TO THE START OF ANY UP GRADIENT LAND DISTURBING ACTIVITIES
- PROVIDE 1" OF NATIVE TOPSOIL IN GREEN AREAS.
- ALL EXPOSED SOIL AREAS MUST BE STABILIZED AS SOON AS POSSIBLE TO LIMIT SOIL EROSION BUT IN NO CASE LATER THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED.
- IF SEDIMENT ESCAPES THE CONSTRUCTION SITE, OFF-SITE ACCUMULATIONS OF SEDIMENT MUST BE REMOVED IN A MANNER AND AT A FREQUENCY SUFFICIENT TO MINIMIZE OFF-SITE IMPACTS.
- TEMPORARY SOIL STOCKPILES MUST HAVE SILT FENCE OR OTHER EFFECTIVE SEDIMENT CONTROLS, AND CANNOT BE PLACED IN SURFACE WATERS, INCLUDING STORMWATER CONVEYANCES SUCH AS SWALES AND DITCHES UNLESS THERE IS A BYPASS IN PLACE FOR THE STORMWATER.
- SLOPES 3:1 AND GREATER SHALL BE STABILIZED WITH EROSION CONTROL BLANKET OR AS DEPICTED ON PLANS.
- MAINTAIN AND REPAIR EROSION CONTROL MEASURES (INCLUDING REMOVAL OF ACCUMULATED SILT) UNTIL VEGETATION IS ESTABLISHED. CONTRACTOR TO INSPECT AND DOCUMENT EROSION CONTROL DAILY AND AFTER ANY RAIN EVENT. ALL SEDIMENT CONTROL FEATURES MUST BE REPAIRED WHEN THE SEDIMENT REACHES 1/2 THE HEIGHT OF THE STRUCTURE, OR REPLACED WITHIN 24 HOURS OF DISCOVERY. EROSION CONTROL STRUCTURES FOUND DAMAGED MUST BE REPAIRED OR REPLACED WITHIN 24 HOURS UPON DISCOVERY. REMOVAL OF EROSION CONTROL STRUCTURES REQUIRED AFTER SITE IS STABILIZED (AT DIRECTION OF ENGINEER).
- ALL EXISTING CITY STREETS SHALL BE SWEEP AS NEEDED AND AS REQUESTED BY ENGINEER OR CITY STAFF.
- REFER TO GEOTECHNICAL REPORT FOR ADDITIONAL REQUIREMENTS.
- AFTER GRADING OPERATIONS ARE COMPLETED, LANDSCAPE CONTRACTOR SHALL UNCOMPACT ALL GREEN AREAS PRIOR TO SEEDING AND LANDSCAPING.
- PERMANENT RESTORATION IN LAWN AREAS SHALL BE SEED/BLANKET.
- POSITIVE DRAINAGE OF MINIMUM 2% SLOPE SHALL BE ACHIEVED AWAY FROM PROPOSED BUILDING.

REVISION

NO.	DATE	DESCRIPTION