LEGEND

EXISTING TREE

EXISTING STORM SEWER

EXISTING STORM MANHOLE

EXISTING GATE VALVE

EXISTING SPRINKLER HEAD

EXISTING WATER HANDHOLE

EXISTING CONTOUR

EXISTING IRRIGATION LINE PER AS-BUILT

SILT FENCE

TEMP CONSTRUCTION FENCE

NEW CONTOUR

NEW MINOR (0.1 FT) CONTOUR

NEW SPOT ELEVATION

DRAINAGE DIRECTION & SLOPE

6" PERFORATED DRAINTILE

EXPANSION JOINT

DRAINAGE DIRECTION

CLEAN OUT

STORM WATER POLLUTION PREVENTION PLAN NOTES:

1. GRADING CONTRACTOR SHALL VERIFY LOCATIONS AND ELEVATIONS OF ALL UNDERGROUND UTILITIES WITH THE RESPECTIVE UTILITY COMPANIES PRIOR TO CONSTRUCTION.
2. ALL EROSION CONTROL MEASURES CALLED FOR ON THESE PLANS AND SPECIFICATIONS, WHICH MAY INCLUDE SILT FENCE, SEDIMENTATION BASINS OR TEMPORARY SEDIMENT TRAPS, SHALL BE CONSTRUCTED AND SERVICEABLE IN THE FOLLOWING ORDER:
   A. ROCK CONSTRUCTION ENTRANCES A MINIMUM OF 50 FEET.
   B. SILT FENCE.
   C. TEMPORARY CULVERTS.
   D. TEMPORARY SEDIMENTATION BASINS AND OUTFALL FACILITIES.
   E. STORM WATER POND CONSTRUCTION.
   F. COMMON EXCAVATION AND EMBANKMENT (GRADING)
   G. SEED AND MULCH OR SOD.
   H. BIO-ROLL BARRIERS IN FINISHED GRADED AREAS.
   I. INLET AND OUTLET FACILITIES SUBSEQUENT TO STORM SEWER WORK.
3. GRADING CONTRACTOR SHALL PROVIDE AND MAINTAIN ALL EROSION CONTROL MEASURES IN ACCORDANCE WITH CITY AND NPDES PHASE II PERMITTING REQUIREMENTS AS WELL AS EROSION CONTROL MEASURES AS MAY BE SHOWN ON THESE PLANS OR SPECIFICATIONS. GRADING CONTRACTOR SHALL IMPLEMENT ANY ADDITIONAL EROSION CONTROL MEASURES AS MAY BE REQUIRED TO PROTECT ADJACENT PROPERTY.
4. ALL EROSION CONTROL FACILITIES SHALL BE MAINTAINED BY THE CONTRACTOR DURING GRADING OPERATIONS. ANY TEMPORARY FACILITIES WHICH ARE TO BE REMOVED AS CALLED FOR ON THESE PLANS AND SPECIFICATIONS SHALL BE REMOVED BY THE GRADING CONTRACTOR WHEN DIRECTED BY THE ENGINEER. THE GRADING CONTRACTOR SHALL THEN RESTORE THE SUBSEQUENTLY DISTURBED AREA IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS.
5. THE GRADING CONTRACTOR SHALL SCHEDULE THE SOILS ENGINEER SO THAT CERTIFICATION OF ALL CONTROLLED FILLS WILL BE FURNISHED TO THE OWNER DURING AND UPON COMPLETION OF THE PROJECT.
6. ALL DISTURBED AREAS, EXCEPT AREAS TO BE PAVED AND/OR SPECIFICALLY DESIGNED BY A LANDSCAPE PLAN, SHALL BE COVERED WITH A MINIMUM 4" OF TOP SOIL. ALL DISTURBED AREAS SHALL BE SEEDED & MULCHED AT THE PRESCRIBED RATES WITHIN 72 HOURS OF FINAL GRADING UNLESS OTHERWISE NOTED.

SEED MIX:	MNDOT NO. 50B	50#/ACRE
MULCH	TYPE 1	2 TONS/ACRE (DISK ANCHORED)
FERTILIZER:	150#/ACRE	RATE OF APPLICATION 20-10-10

ALL EXPOSED SOIL AREAS WITH A CONTINUOUS POSITIVE SLOPE WITHIN 200 LINEAL FEET OF ANY SURFACE WATER, MUST HAVE TEMPORARY EROSION PROTECTION OR PERMANENT COVER FOR THE EXPOSED SOIL AREAS YEAR ROUND, ACCORDING TO THE FOLLOWING TABLE OF SLOPES AND TIME FRAMES.

TYPE OF SLOPE	TIME (Maximum time an area can remain open when the area is not actively being worked)
STEEPER THAN 3:1	14 DAYS
10:1 TO 3:1	14 DAYS
FLATTER THAN 10:1	14 DAYS

7. THE EXISTING TOPOGRAPHY AND CONTOUR ELEVATIONS SHOWN ON THE PLAN WERE TAKEN FROM A PLAN FURNISHED BY OWNER.
8. CONTRACTORS GRADING AND EROSION CONTROL OPERATIONS SHALL TAKE PLACE WITHIN THE CONSTRUCTION LIMITS.
9. IT IS REQUIRED THAT SOILS TRACKED FROM THE SITE BY MOTOR VEHICLES BE CLEANED DAILY FROM PAVED ROADWAY SURFACES THROUGHOUT THE DURATION OF CONSTRUCTION.
10. PROVIDE TEMPORARY SEDIMENTATION BASINS AS DIRECTED BY THE ENGINEER.
11. ALL REQUIREMENTS OF THE LOCAL WATERSHED DISTRICT SHALL BE SATISFIED PER THE APPROVED PERMIT.
12. ALL EROSION & SEDIMENT CONTROL MEASURES SHOWN ON THIS PLAN AND IMPLEMENTED IN THE FIELD AS DIRECTED BY THE ENGINEER SHALL CONFORM TO THE MPCA'S "PROTECTING WATER QUALITY IN URBAN AREAS: BEST MANAGEMENT PRACTICES FOR MINNESOTA".
13. DEWATERING AND/OR BASIN DRAINING DISCHARGE SHALL BE DIRECTED TO SEDIMENTATION BASINS WHEREVER POSSIBLE. ALL DISCHARGE POINTS SHALL BE ADEQUATELY PROTECTED FORM EROSION & SCOUR THROUGH USE OF APPROVED ENERGY DISSIPATION DEVICES.
14. ALL SOLID WASTE/ CONSTRUCTION DEBRIS SHALL BE DISPOSED OF IN ACCORDANCE WITH MPCA REQUIREMENTS. HAZARDOUS MATERIALS SHALL BE STORED/ DISPOSED OF IN COMPLIANCE WITH MPCA REGULATIONS
15. CONTRACTOR SHALL USE RAPID STABILIZATON METHODS PER MnDOT 2573 AS NEEDED DURING THE COURSE OF THE WORK TO MAINTAIN CONFORMANCE WITH THE CITY AND NPDES II PERMIT REQUIREMENTS. THIS WORK SHALL CONSIST OF OPERATIONS NECESSARY TO RAPIDLY STABILIZE SMALL CRITICAL AREAS, TO PREVENT OFF SITE SEDIMENTATION AND/OR TO COMPLY WITH PERMIT REQUIREMENTS. THE WORK MAY BE PREFORMED AT ANY TIME DURING THE CONTRACT AND DURING NORMAL WORKING HOURS. THIS WORK WILL BE CONDUCTED ON SMALL AREAS THAT MAY OR MAY NOT BE ACCESSIBLE WITH NORMAL EQUIPMENT. THIS WORK SHALL BE DONE IN ACCORDANCE WITH THE APPLICABLE MnDOT STANDARD SPECIFICATIONS,THE DETAILS SHOWN IN THE PLANS, AND THE FOLLOWING:

   THERE ARE FIVE STABILIZATION METHODS APPROVED FOR THESE OPERATIONS. THESE METHODS MAY BE CONDUCTED INDEPENDENTLY OR IN COMBINATION.
   METHOD #1: APPLY TYPE 1 MULCH AND DISC ANCHOR
   METHOD #2: APPLY TYPE 1 MULCH AND TACK WITH TYPE 5 HYDRAULIC SOIL STABILIZER
   METHOD #3: HYDROSPREAD SEED,FERTILIZER AND TYPE 6 HYDRAULIC SOIL STABILIZER
   METHOD #4: HAND INSTALL SEED, FERTILIZER AND EROSION CONTROL BLANKET CATEGORY 3
   METHOD #5: PLACE GEOTEXTILE AND RIP RAP CLASS II IN VARIOUS CONFIGURATIONS

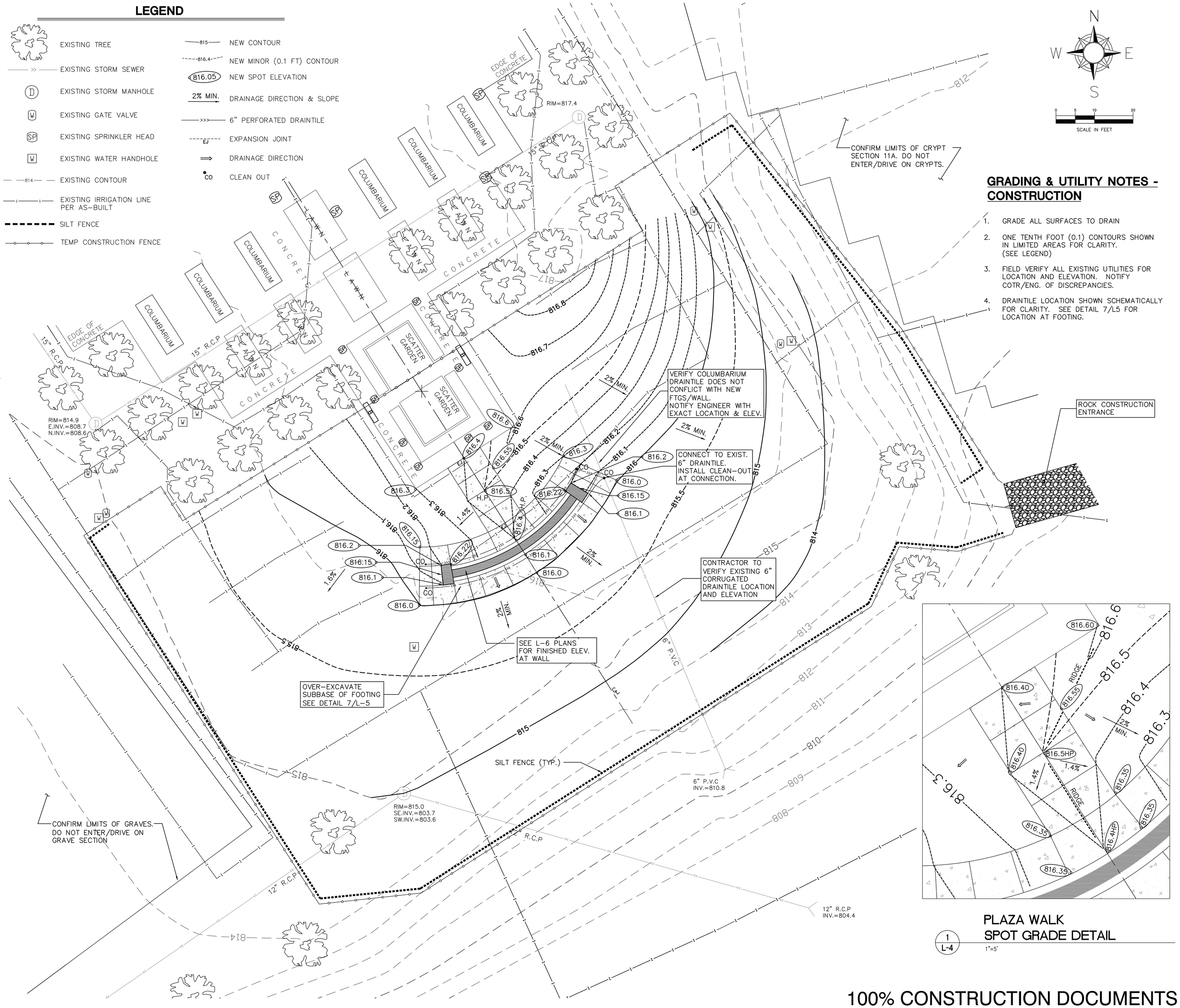
   THESE EFFORTS WILL BE INCIDENTAL TO THE PROJECT.
16. CHANGE OF COVERAGE: FOR STORM WATER DISCHARGES FROM CONSTRUCTION PROJECTS WHERE THE OWNER OR OPERATOR CHANGES, (E.G.,AN ORIGINAL DEVELOPER SELLS PORTIONS OF THE PROPERTY TO VARIOUS BUILDERS) THE NEW OWNER OR OPERATOR MUST SUBMIT A SUBDIVISION REGISTRATION WITHIN 7 DAYS OF ASSUMING OPERATIONAL CONTROL OF THE SITE, COMMENCING WORK ON THEIR PORTION OF THE SITE , OR OF THE LEGAL TRANSFER, SALE OR CLOSING ON THE PROPERTY.
17. INDIVIDUAL SITE BUILDERS SHALL BE RESPONSIBLE FOR PROVIDING ANY AND ALL NECESSARY EROSION CONTROL MEASURES AS MAY BE REQUIRED. REQUIRED ECM'S SHALL CONSIST OF BUT NOT BE LIMITED TO THE FOLLOWING:
   A. STAKED FIBER LOG ROLLS AT BACK OF ALL CURB EXCEPT AT CONSTRUCTION/DRIVEWAY ENTRANCE.
   B. SILT FENCE ON ALL DOWN GRADIENT SLOPES FROM CONSTRUCTION AREA. SILT FENCE SHALL HAVE THE BOTTOM DUG IN WITH SOIL FIRMLY COMPACTED.
   C. ROCK CONSTRUCTION ENTRANCE HAVING 1" TO 2" CLEAR ROCK OVER GEOTEXTILE FABRIC.
   D. STREET CLEANING AS MAY BE REQUIRED SHOULD VEHICLE TRACKING OCCUR.

   INDIVIDUAL SITE BUILDERS ARE REQUIRED TO MAINTAIN ECM'S UNTIL SUCH TIME AS INDIVIDUAL YARDS/VEGETATION ARE ESTABLISHED.
18. CONTRACTOR SHALL PROVIDE A TEMPORARY SEDIMENTATION BASIN ON SITE FOR CONSTRUCTION WASH OUT USE. TEMPORARY BASIN SHALL BE LOCATED AS TO PROVIDE EASY ACCESS FOR CONSTRUCTION VEHICLES AND CONCRETE TRUCKS AS NECESSARY.
19. INLET SEDIMENTATION CONTROL IS TO BE PROVIDED TO ALL STORM SEWER CATCH BASINS THROUGHOUT CONSTRUCTION. MEASURES APPLIED SHALL COMPLY WITH BEST MANAGEMENT PRACTICES FOR MINNESOTA AND APPLICATIONS OF NPDES PHASE II AS APPROPRIATE FOR PHASE OF CONSTRUCTION.

STORM WATER POLLUTION PREVENTION PLAN SCHEDULE OF INSTALLATION & MAINTENANCE

ITEM	INSTALLATION	INSPECTION & MAINTENANCE	REMOVAL
SILT FENCE	PRIOR TO COMMENCEMENT OF EARTHWORK OPERATIONS.	INSPECT & MAINT. AFTER EACH RUN-OFF EVENT. REMOVE SEDIMENTS AS REQUIRED.	AFTER TRIBUTARY DRAINAGE AREA IS RESTORED.
ROCK CONST. ENTRANCE	PRIOR TO COMMENCEMENT OF EARTHWORK OPERATIONS.	INSPECT REGULARLY. MAINTAIN AS NEEDED.	PRIOR TO PAVING.
OUTLET SKIMMER STRUCTURE	AFTER POND GRADING IS COMPLETED.	INSPECT REGULARLY. MAINTAIN AS NEEDED.	PERMANENT.
RIP-RAP & FILTER	UPON COMPLETION OF POND GRADING, CONC. SWALE CONST. AND OUTLET INSTALLATION.	INSPECT & MAINTAIN AT LEAST ANNUALLY AND AFTER HEAVY RAINFALL EVENTS.	PERMANENT.
DETENTION POND	DURING EARTHWORK OPERATIONS.	INSPECT & MAINTAIN AFTER HEAVY RAINFALL EVENTS. REMOVE SEDIMENTS AS NEEDED.	PERMANENT.
SEED & MULCH	AFTER FINAL GRADING OPERATIONS.	INSPECT & MAINTAIN AFTER HEAVY RAINS. REPLACE WASH-OUT AREAS IMMEDIATELY.	NO REMOVAL NECESSARY.
INLET PROTECTION	UPON INLET CONSTRUCTION	WHEN 1/3 CAPACITY OF BMP IS REACHED	AFTER TRIBUTARY AREAS ARE FULLY RESTORED

NOTE: CONTRACTOR IS RESPONSIBLE FOR INSTALLATION, MAINTENANCE AND REMOVAL OF ALL APPLICABLE EROSION & SEDIMENT CONTROL ITEMS.



GRADING & UTILITY NOTES - CONSTRUCTION

1. GRADE ALL SURFACES TO DRAIN
2. ONE TENTH FOOT (0.1) CONTOURS SHOWN IN LIMITED AREAS FOR CLARITY. (SEE LEGEND)
3. FIELD VERIFY ALL EXISTING UTILITIES FOR LOCATION AND ELEVATION. NOTIFY COTR/ENG. OF DISCREPANCIES.
4. DRAINTILE LOCATION SHOWN SCHEMATICALLY FOR CLARITY. SEE DETAIL 7/L5 FOR LOCATION AT FOOTING.

1 L-4 PLAZA WALK SPOT GRADE DETAIL
1"=5'

100% CONSTRUCTION DOCUMENTS

Revisions	Date

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: MICHAEL B. BRANDVOLD, P.E.
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DATE MARCH 15, 2011 LICENSE # 41258

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NATIONAL CEMETERY ADMINISTRATION

Drawing Title: GRADING & UTILITY PLAN	Project Title: FORT SNELLING NATIONAL CEMETERY MEMORIAL MARKER WALL		Date: 3-15-2011
			Project No.
Approved: Director, Office of Construction Management	Building Number	Checked / Drawn	DRAWING NO. L-4
Approved: Director, Project Management Service	Location: 7601 34th AVENUE, SOUTH MINNEAPOLIS, MINNESOTA		Dwg. 7 OF 20