

PROJECT LOCATION

PART OF NE ¼ OF NW ¼,
SECTION 20, TOWNSHIP 118, RANGE 21,
HENNEPIN COUNTY, MINNESOTA.

LEGAL DESCRIPTION

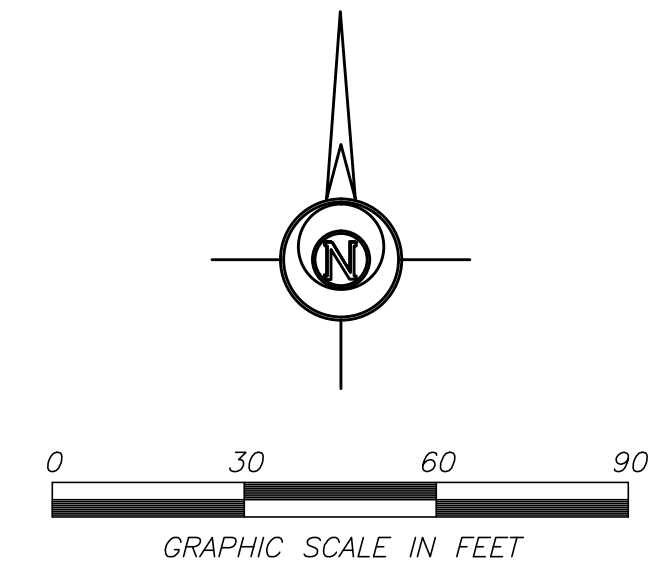
LOT 2, BLOCK 1, MOUNT CRYSTAL
ADDITION, ACCORDING TO THE PLAT
THEREOF, AND SITUATE IN
HENNEPIN COUNTY, MINNESOTA.

SITE DATA

ZONING: R-1 (Low Density Residential)
PARKING SETBACK: 5' TO R/W
LOT AREA: 357,889 SF (8.2 AC) Cross Parcel
PROPOSED PARKING: 50 Stalls

OWNER:
**CORNERSTONE
CHURCH**
3420 Nevada Ave. No.
Crystal, MN 55427

Steven Chambers
763-535-8765



Survey Data By:
Sunde Land Surveying, LLC
9001 East Bloomington Freeway,
Suite 118
Bloomington, MN 55420
952-881-2455

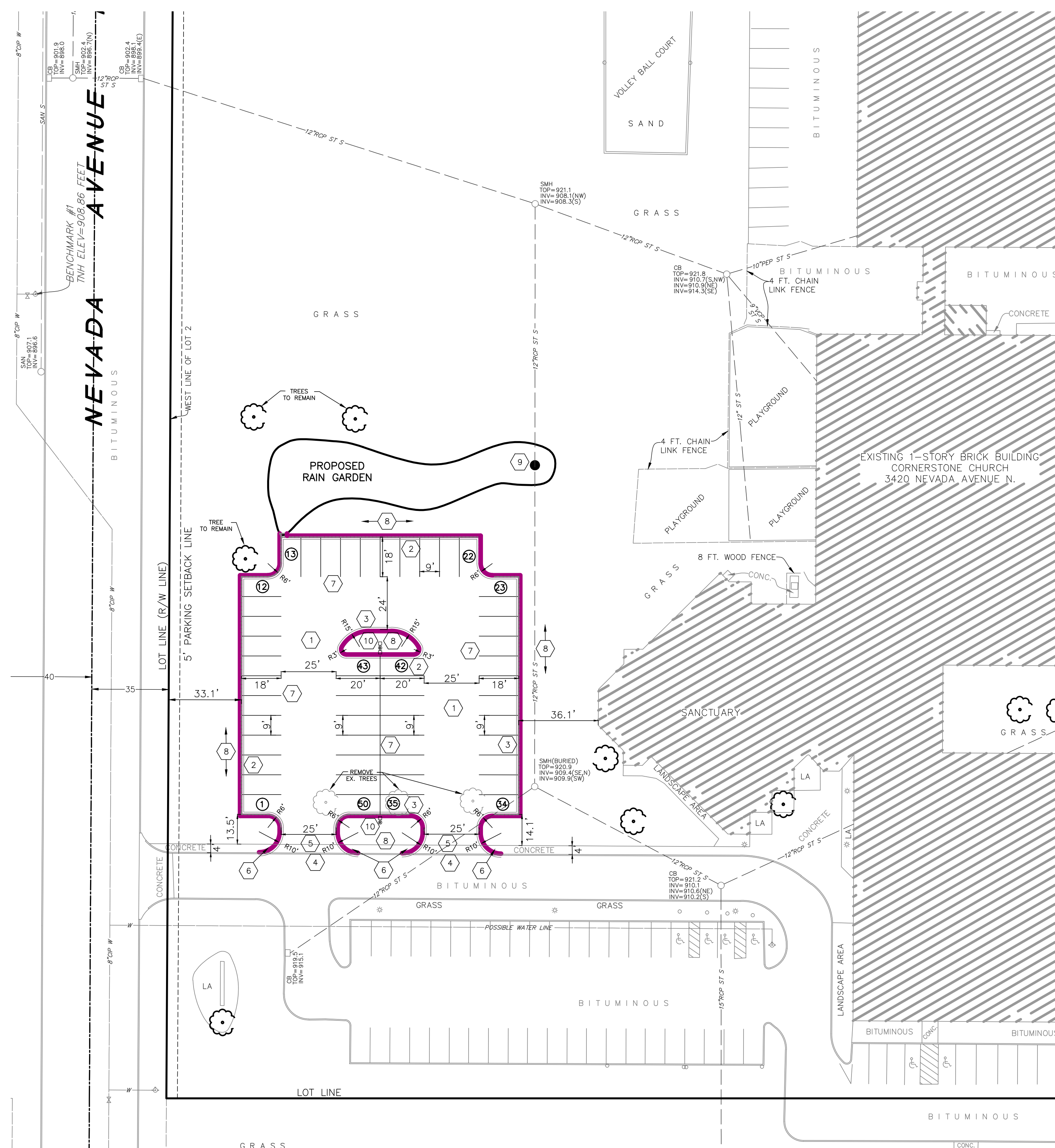
Benchmarks:
Top nut of hydrant, first hydrant
south of 35th Ave. No., west side
of Nevada Ave. No.
Elevation = 908.86 feet

Top nut of hydrant, northeast
quadrant of Valley Place and
Nevada Ave. No.
Elevation = 926.35

SITE IMPROVEMENT PROJECT

3420 NEVADA AVENUE NORTH
CRYSTAL, MINNESOTA

SITE PLAN



KEY NOTES

- | | BITUMINOUS PAVEMENT AS SPECIFIED BELOW: | ASPHALT PAVING SECTION | MnDOT SPECIFICATIONS |
|---|---|------------------------|-----------------------|
| 1 | (PARKING LOT ONLY) | LIGHT DUTY | |
| | BIT. WEAR COURSE | 1 1/2" | SPWEB240B, MnDOT 2360 |
| | BIT. BASE COURSE | 1 1/2" | SPNWB230B, MnDOT 2360 |
| | AGGREGATE BASE (CL 5) | 7 | 2211 |
- COMPACTION DENSITY BETWEEN 95% AND 100% OF THE MARSHALL DENSITY. 100% FOR AGGREGATE BASE.
SOIL ENGINEER RECOMMENDATIONS SUPERSEDE ABOVE LISTED SPECS.
- B612 (6") CONCRETE CURB & GUTTER. SEE DETAIL ON SHEET C400.
 - TIP-OUT FLOWLINE OF CURB.
 - REMOVE EXISTING CURB AND REPLACE. B612 CURB (WITH BACK REMOVED) AND MAINTAIN FLOWLINE. PROVIDE MINIMUM 4' TRANSITION TO STANDARD B612 CURB. PATCH BITUMINOUS AS NECESSARY.
 - CONCRETE SIDEWALK 4' WIDTH; 6" THICK WITH 4" CLASS 5 AGGREGATE BASE.
 - RECONSTRUCT SIDEWALK WITH HANDICAP ADA DETECTABLE WARNING TRUNCATED DOME SURFACE. SEE MNDOT STANDARD PLATE 7038A.
 - PARKING STALL STRIPING; PAINT 4" WIDE SOLID STRIPE - WHITE.
 - GREEN AREA - SEE LANDSCAPE PLAN.
 - STORM WATER MANAGEMENT RAIN GARDEN AREA WITH OVERFLOW OUTLET TO EXISTING STORM SEWER.
 - PARKING LOT LIGHT - SEE LIGHTING PLAN

SITE PLAN NOTES

- ALL DIMENSIONS SHOWN ARE TO TOP FACE OF CURB, EDGE OF SIDEWALK OR EXTERIOR OF BUILDING UNLESS OTHERWISE NOTED. SIDEWALK DIMENSIONS ARE TO BACK OF CURB.
- TACK SHALL BE USED ON BITUMINOUS EDGE PRIOR TO PATCHING. MATCH EXISTING GRADES.
- ALL CONCRETE SIDEWALKS ADJACENT TO BUILDING SHALL BE SEPARATED WITH A 1/2" EXPANSION JOINT.

INDEX OF CIVIL SITE DRAWINGS

- C1 SITE PLAN
- C2 GRADING, DRAINAGE, AND EROSION CONTROL PLAN
- C3 DETAILS

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.
Signature
Date: 09/27/11 Reg. No. 24,348
PREPARED BY:
QUALITY SITE DESIGN, LLC
Civil Engineering - Land Development
3600 Holly Lane N., Suite 100
Plymouth, Mn 55447
Phone (763) 550-9056

REVISIONS

DATE	DESCRIPTION
08/26/11	CITY REVIEW AND RAINGARDEN MODIFICATION
09/27/11	BC WATERSHED REVIEW DATED 9/20/11

HORIZONTAL SCALE
1 inch = 30 feet
(FULL SIZE SHEET 22 X 30)

VERTICAL SCALE
1 inch = feet

DATE	08/17/11
DRAWN BY	SD
DESIGNED BY	SD
CHECKED BY	SD

FILE NO. 00388

C1
Site Plan

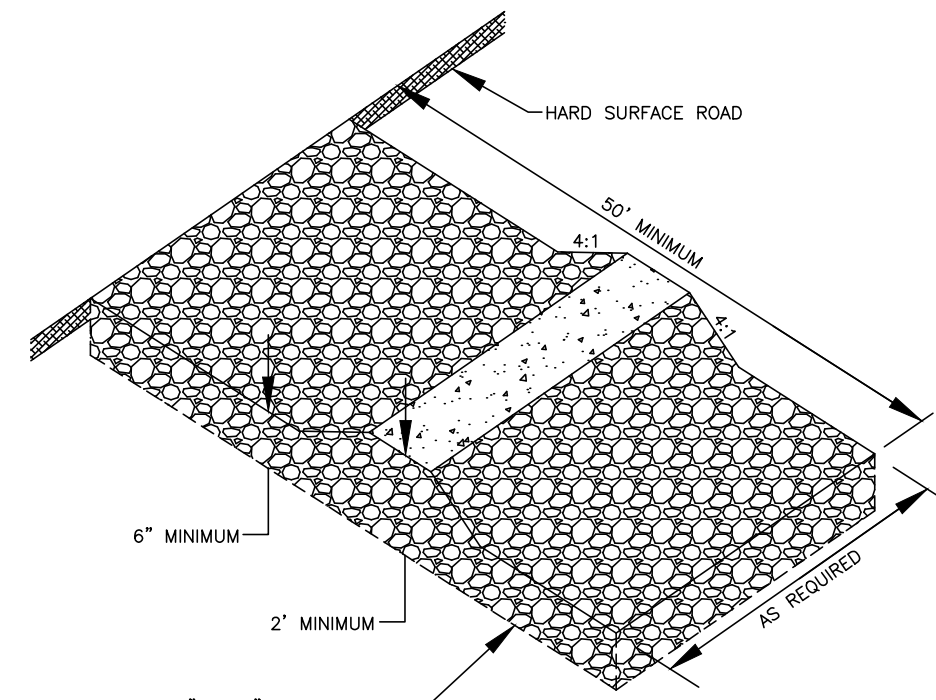
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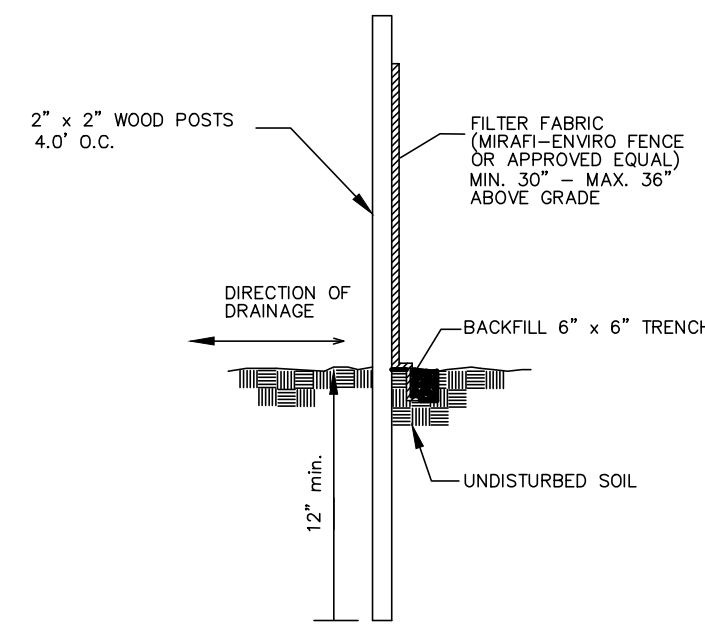
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ROCK CONSTRUCTION ENTRANCE DETAIL



- NOTES:**
- ROCK SIZE SHOULD BE 1" TO 2" IN SIZE SUCH AS MN/DOT CA-1 OR CA-2 COURSE AGGREGATE. (WASHED)
 - A GEOTEXTILE FABRIC MAY BE USED UNDER THE ROCK TO PREVENT MIGRATION OF THE UNDERLYING SOIL INTO THE STONE.

SILT FENCE DETAIL



- SILT FENCE NOTES:**
- DIG A 6"x6" TRENCH ALONG THE INTENDED FENCE LINE, OR MACHINE SLICE TO 6" DEPTH.
 - DRIVE ALL POSTS INTO THE GROUND AT THE DOWNHILL SIDE OF THE TRENCH.
 - LAY OUT SILT FENCE ON THE UPHILL SIDE ALONG THE FENCE LINE, AND BACK FILL.
 - WOOD POSTS MAY BE SPACED UP TO 4 FEET APART TO SUPPORT THE FABRIC.
 - REMOVE SILT FENCE AFTER TURF IS ESTABLISHED.

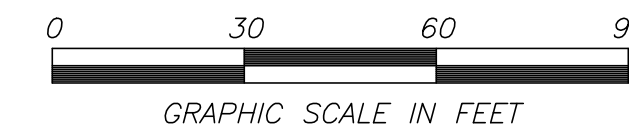
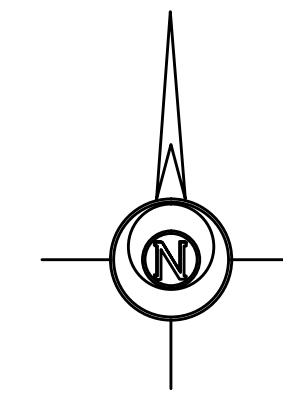
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GENERAL GRADING NOTES:

- Specifications applicable for this project: Current standard specifications for the City of Crystal; the latest Minnesota Department of Transportation Specifications for Highway Construction; and all NPDES requirements except where modified by these documents.
- OSHA requirements shall be followed for all work on this project.
- The Contractor shall notify "Gopher State One Call" 48 hours prior to any excavation (1-800-252-1166.)
- The Grading Contractor shall verify all locations and elevations of underground utilities with utility companies prior to any construction, and immediately notify the Engineer of any conflicts.
- Final Plat shall govern for easements and lot dimensions.
- Any erosion control items necessary to protect adjacent properties shall be constructed prior to the start of excavation or grading work.
- Erosion control maintenance shall be performed by the Grading Contractor, and removed as per the Contract Documents or as directed by the Owner, followed by all necessary restoration of disturbed area.
- Certification of all controlled fills within building pads or within hard surface areas shall be completed by a qualified soils engineer. Density tests shall meet the following:
Within the upper 3' of building pads, the Grading Contractor shall utilize approved soils that are within 1% of the optimum moisture content as defined by the Standard Proctor Test-ASTM: D-698 with compaction meeting 100% Standard Proctor Density and not exceeding this compaction by more than 1%. Below the upper 3', compaction shall meet 95% Standard Proctor Density, and be within 3% of the optimum moisture content.
- The Grading contractor shall provide positive drainage on the site at all times. Grading tolerances shall be 0.10' for hard surface areas. Grading tolerances for the remainder of the site shall be 0.25'.
- The Grading Contractor shall keep public streets, parking lots, and travel ways clear of soil and debris. Daily cleaning at the construction entrance shall be performed, especially at the end of each day's work.

EROSION CONTROL NOTES:

- All devices necessary to control erosion and sediment (i.e. perimeter silt fence, rock construction entrances, swales, ponds, berms, ETC.) shall be installed prior to any other construction operations.
- After completion of rough grading, exposed soils must be stabilized with temporary seed and mulch within 14 days.
- After completion of final grading, exposed soils must be permanently stabilized within 14 days. Stabilization shall consist of disc-anchored seed & mulch or sod.
- The site must be kept in a well drained condition at all times. The contractor shall be responsible for temporary ditches, or other means necessary to ensure proper drainage. Low points in roadways must be provided with a positive outflow. This work shall be incidental to the grading contract.
- Entering/exiting of the site shall occur only at rock paved streets. Sediment tracked onto streets during working hours must be reclaimed via street scraping and sweeping at the end of each working day.
- Provide a temporary vegetative cover consisting of suitable, fast-growing, dense grass-seed mix spread at 1.5 times the usual rate per acre. If temporary cover is to remain in place beyond the present growing season, two-thirds of the seed mix shall be composed of perennial grasses.
- A permanent vegetation cover consisting of sod, a suitable grass-seed mixture, or combination thereof should be specified. Seeded areas shall be either mulched or covered by fibrous blankets to protect seeds and limit erosion.

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GRADING, DRAINAGE,
AND EROSION CONTROL PLAN

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.

Date: 09/27/11 Reg. No. 24,348

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REVISIONS
08/26/11 CITY REVIEW AND RAINGARDEN MODIFICATION
09/27/11 BC WATERSHED REVIEW DATED 9/20/11

VERTICAL SCALE
1 inch = 10 feet

HORIZONTAL SCALE
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(FULL SIZE SHEET 22 x 30)

DATE 08/17/11

DRAWN BY SD

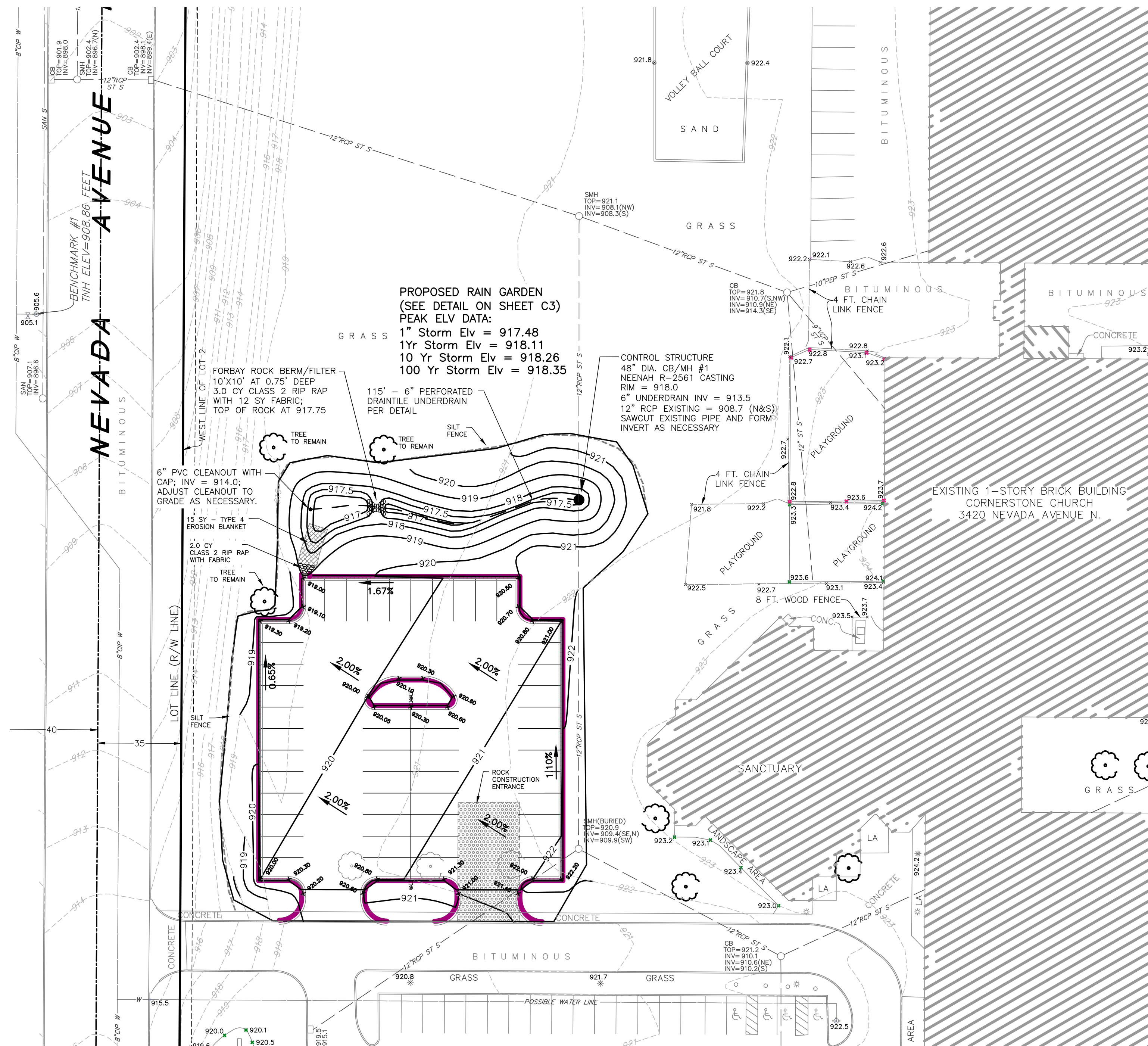
DESIGNED BY SD

CHECKED BY SD

FILE NO. 00388

C2

Grading Plan

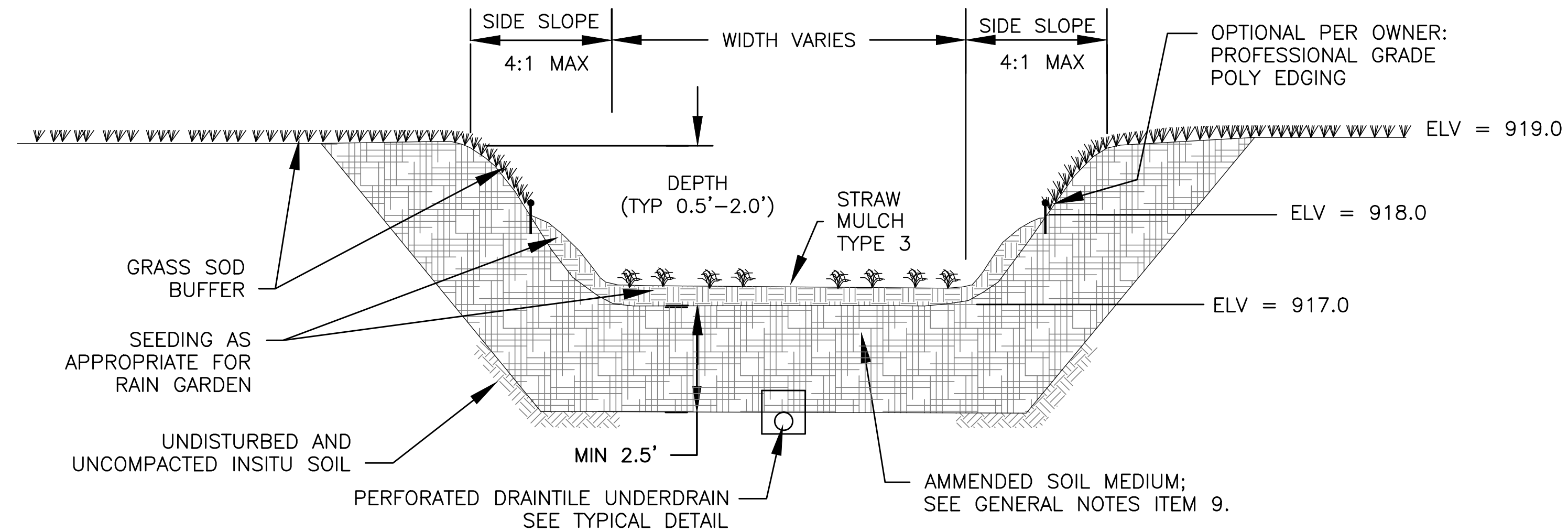


SPECIFIED RAINGARDEN SEED MIX:

SHOOTING STAR NATIVE SEEDS
 20740 County Road 33 P.O. Box 648 Spring Grove, MN 55974
 (507) 498-3944 FAX (507) 498-3953
 www.shootingstarnativeseed.com

Description: Detention Basin & Raingarden Mix
 Seeding Rate: 10 Lbs/Acre (210 Seeds/Square Foot)

Grasses		
Big Bluestem	Andropogon gerardii	8.40%
Fringed Brome	Bromus ciliatus	10.50%
Blue Joint Grass	Calamagrostis canadensis	0.70%
Canada Wild Rye	Elymus canadensis	10.50%
Virginia Wild Rye	Elymus virginicus	17.50%
Reed Manna Grass	Glyceria grandis	3.50%
Switchgrass	Panicum virgatum	10.50%
Indiangrass	Sorghastrum nutans	5.60%
Prairie Cord Grass	Spartina pectinata	2.80%
Sedges & Rushes		
Bebb's Oval Sedge	Carex bebbii	1.00%
Porcupine Sedge	Carex hystericina	1.00%
Fox Sedge	Carex stipata	2.00%
Brown Fox Sedge	Carex vulpinoidea	1.50%
Common Rush	Juncus effusus	0.50%
Green Bulrush	Scirpus atrovirens	2.00%
Woolgrass	Scirpus cyperinus	1.00%
Softstem Bulrush	Scirpus validus	1.00%
Wildflowers		
Sweet Flag	Acorus calamus	2.00%
Water Plantain	Alisma subcordatum	1.00%
Canada Anemone	Anemone canadensis	1.00%
Swamp Milkweed	Asclepias incarnata	1.60%
New England Aster	Aster novae-angliae	0.60%
Wild Senna	Cassia hebecarpa	0.40%
Joe Pye Weed	Eupatorium maculatum	0.40%
Boneset	Eupatorium perfoliatum	0.20%
Sneezeweed	Helianthus autumnale	1.00%
Ox-eye Sunflower	Heliopsis helianthoides	2.00%
Great St. John's Wort	Hypericum pyramidatum	1.00%
Southern Blue Flag Iris	Iris virginica shrevei	1.00%
Great Blue Lobelia	Lobelia siphilitica	0.40%
Mountain Mint	Pycnanthemum virginianum	1.00%
Black-eyed Susan	Rudbeckia hirta	1.60%
Sweet Black-eyed Susan	Rudbeckia subtomentosa	1.20%
Cup Plant	Silphium perfoliatum	0.40%
Prairie Dock	Silphium terebinthinaceum	0.80%
Riddell's Goldenrod	Solidago riddellii	0.40%
Purple Meadow Rue	Thalictrum dasycarpum	1.00%
Blue Vervain	Verbena hastata	1.00%



TYPICAL RAIN GARDEN BIO FILTRATION BASIN CROSS-SECTION

NOT TO SCALE

GENERAL NOTES:

- INSTALL ALL TEMPORARY EROSION CONTROL MEASURES (IN ACCORDANCE WITH MnDOT GENERAL CONDITIONS 2573) PRIOR TO THE START OF ANY CONSTRUCTION OPERATION THAT MAY CAUSE ANY SEDIMENTATION OR SILTATION AT THE SITE.
- INSTALL STORM DRAIN INLET PROTECTION TO PREVENT CLOGGING OF THE STORM SEWER AND SEDIMENT LOADS TO DOWNSTREAM STORM WATER FACILITIES OR WATERBODIES.
- IF THE STORM WATER BMP IS BEING DESIGNED TO SERVE AS A TEMPORARY SEDIMENT BASIN, GRADE THE BMP TO WITHIN 18" ABOVE THE FINAL GRADE TO PROTECT THE UNDERLYING MATERIAL FROM CLOGGING. ONCE CONSTRUCTION IN THE CONTRIBUTING DRAINAGE AREA HAS BEEN COMPLETED AND THE SITE IS STABILIZED, EXCAVATE THE INFILTRATION BASIN TO FINAL GRADE AND COMPLETE CONSTRUCTION OF THE INFILTRATION BASIN.
- GRADING OF THE INFILTRATION BASIN SHALL BE ACCOMPLISHED USING LOW-IMPACT EARTH MOVING EQUIPMENT TO PREVENT COMPACTION OF THE UNDERLYING SOILS. SMALL TRACKED DOZERS AND BOBCATS WITH RUNNER TRACKS ARE RECOMMENDED.
- EXCAVATE THE INFILTRATION BASIN TO THE SPECIFIED DEPTH (ELEVATION). ALL SUB MATERIAL BELOW THE SPECIFIED ELEVATION SHALL BE LEFT UNDISTURBED, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- GRADE TO THE DEPTH (ELEVATION) SPECIFIED IN THE CONSTRUCTION DOCUMENTS UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- IN THE EVENT THAT SEDIMENT IS INTRODUCED INTO THE BMP DURING OR IMMEDIATELY FOLLOWING EXCAVATION, THIS MATERIAL WILL NEED TO BE REMOVED FROM THE INFILTRATION BASIN PRIOR TO INITIATING THE NEXT STEP IN THE INFILTRATION BASIN CONSTRUCTION PROCESS. THIS IS ESPECIALLY IMPORTANT IF THE INFILTRATION BASIN HAS BEEN DESIGNED TO INFILTRATE STORM WATER; SEDIMENT THAT HAS BEEN WASHED INTO THE INFILTRATION BASIN DURING THE EXCAVATION PROCESS CAN SEAL THE PERMEABLE MATERIAL, SIGNIFICANTLY REDUCING THE INFILTRATION CAPACITY OF THE SOILS.
- MATERIAL EXCAVATED FROM THE INFILTRATION BASINS SHALL BE DISPOSED OFF-SITE.
- INFILTRATION BASINS SHALL BE OVER-EXCAVATED TO SPECIFIED DEPTH AND FILLED WITH A WELL BLENDED MIXTURE OF 50%-60% SEMI-COURSE WASHED SAND; 20%-30% TOP SOIL; 20%-30% MnDOT GRADE 2 COMPOST.
- INFILTRATION BASIN TO BE SEEDED WITH SPECIFIED RAINGARDEN SEED MIX OR APPROVED EQUAL. SEEDING SHALL CONFORM TO MnDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION, PLANTING SPECIFICATION 3876, 2005 EDITION.
- PORTIONS OF INFILTRATION BASINS TO BE SEEDED SHALL BE MULCHED WITH CLEAN GRAIN STRAW (MnDOT TYPE 3) AT A RATE OF 2 TONS PER ACRE.
- SEEDING AND INSTALLATION OF EROSION CONTROL BLANKET SHALL BE COMPLETED WITHIN SEVEN (7) DAYS OF FINAL GRADING.

CONSTRUCTION SEQUENCING

- CONTRACTOR SHALL PERFORM CONTINUOUS INSPECTIONS OF EROSION CONTROL PRACTICES FROM THE TIME SILT FENCE IS INSTALLED UNTIL FINAL APPROVAL OF THE INFILTRATION BASINS.
- INSTALL SILT FENCE ALONG THE PERIMETER OF THE SITE TO PREVENT SEDIMENT FROM LEAVING THE SITE DURING THE CONSTRUCTION PROCESS.
- ALL DOWNGRADIANT PERIMETER SEDIMENT-CONTROL BMPs MUST BE IN PLACE BEFORE ANY UP GRADIENT LAND-DISTURBING ACTIVITY BEGINS.
- REMOVE TOPSOIL FROM THE SITE AND PLACE IN TEMPORARY STOCKPILE LOCATION. TEMPORARY SEED THE STOCKPILE AND SURROUND WITH SILT FENCE.
- ROUGH GRADE THE SITE. IF THE INFILTRATION BASINS ARE GOING TO BE USED FOR TEMPORARY SEDIMENT CONTROL, GRADE THE INFILTRATION BASINS TO WITHIN 18" ABOVE THE FINAL GRADE TO PROTECT THE UNDERLYING SOILS FROM CLOGGING.
- CONSTRUCT THE ROADS TAKING THE LOCATION AND FUNCTION OF STORM WATER BMPs INTO CONSIDERATION.
- SEED AND MULCH DISTURBED AREAS ON SITE.
- INSTALL UNDERGROUND UTILITIES (WATER, SANITARY SEWER, ELECTRIC AND PHONES) TAKING THE LOCATIONS AND FUNCTION OF STORM WATER BMPs INTO CONSIDERATION.
- PERFORM ALL OTHER SITE IMPROVEMENTS TAKING THE LOCATION AND FUNCTION OF THE STORM WATER BMPs INTO CONSIDERATION.
- FINAL GRADE THE SITE AND FINE GRADE INFILTRATION BASIN. AFTER FINAL GRADING, THE BIORETENTION BASIN FLOOR MUST BE TILLED TO A DEPTH OF AT LEAST SIX (6) INCHES TO PROVIDE A WELL-AERATED, POROUS SURFACE TEXTURE.
- STABILIZE THE SITE BY IMPLEMENTING THE NATIVE SEEDING AND PLANTING PORTION OF THE LANDSCAPING PLAN.
- REMOVE THE SILT FENCE AFTER THE SITE IS STABILIZED PER PROJECT ENGINEER APPROVAL.

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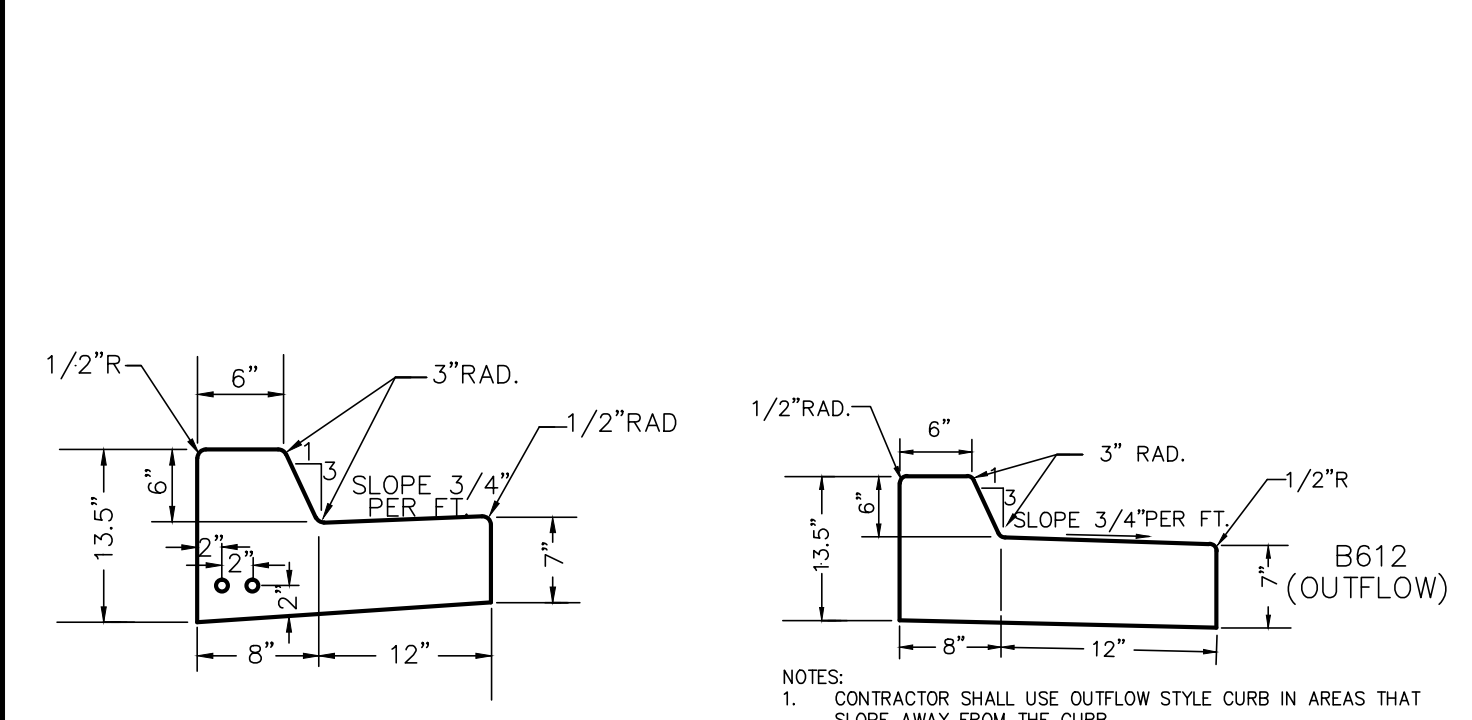
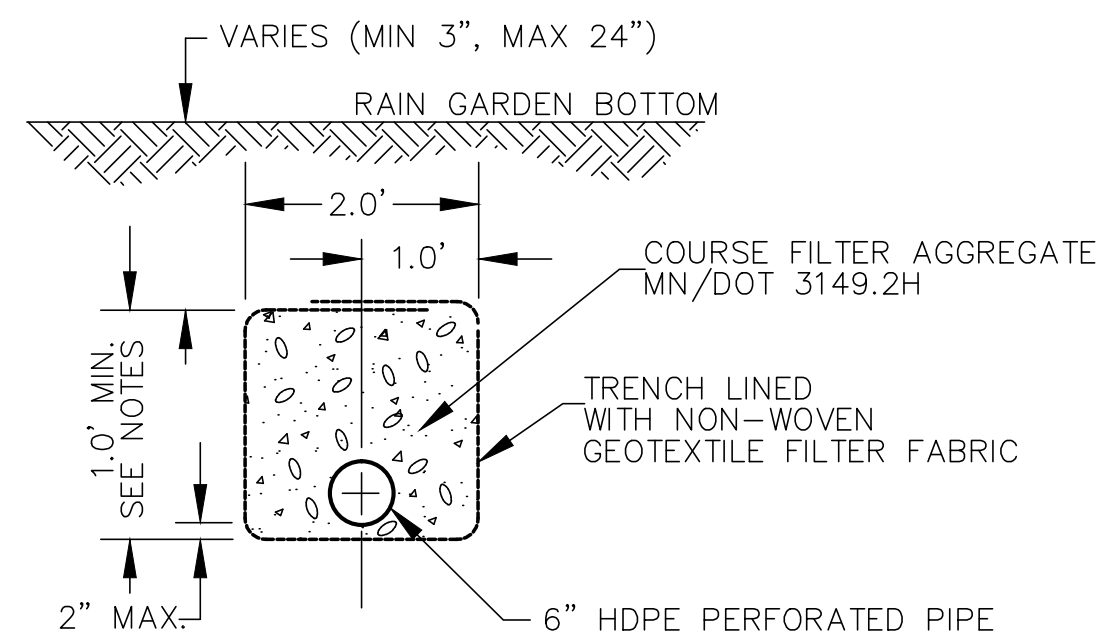
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C3
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- NOTES:**
- CONTROL JOINTS SHALL BE 7' MAXIMUM AND STABBED FRONT AND BACK.
 - AT ALL TRENCHES 2#4 REINFORCING RODS SHALL BE PLACED IN THE LOWER PORTION OF THE CURB 20 FEET IN LENGTH.
 - 2-#4 REINFORCING RODS AT CATCH BASINS NO LESS THEN 10 FEET IN LENGTH.

CONCRETE CURB AND GUTTER DETAILS

- NOTE:**
- TRENCH DEPTH TO EXTEND FROM BOTTOM OF PAVEMENT AGGREGATE BASE IN PAVEMENT AREAS.
 - TRENCH DEPT TO EXTEND FROM 6" BELOW TOP OF TOPSOIL IN GREEN AREAS.
 - CONTRACTOR AND OWNER TO CHOOSE WHICH OPTION TO INSTALL UNLESS OTHERWISE NOTED ON THE PLAN.

PERFORATED DRAINTILE UNDERDRAIN TYPICAL DETAIL