



CITY OF DULUTH

REQUEST FOR PROPOSALS FOR

**2026 BEST MANAGEMENT PRACTICE
INSPECTION AND MODERNIZATION**

RFP NUMBER 25-849

ISSUED 11/18/2025

PROPOSALS DUE Wednesday, 12/17/2025

SUBMIT TO

**CITY OF DULUTH
ATTN: PURCHASING DIVISION
CITY HALL, ROOM 120
411 WEST 1ST STREET
DULUTH, MN 55802**

PART I - GENERAL INFORMATION

I-1. Introduction and Project Summary. The City is seeking proposals for engineering services for 2026 BMP Inspection and Modernization. The project includes the inspection, testing, and determination of the need for cleaning, repair, and modernization of existing storm water BMP's, throughout the City. Additional detail is provided in **Part IV** of this RFP.

I-2. Calendar of Events. The City will make every effort to adhere to the following schedule:

Activity	Date
Deadline to submit Questions via email to purchasing@duluthmn.gov	12/10/2025
Answers to questions will be posted to the City website no later than this date.	12/12/2025
Proposals must be received in the Purchasing Office by 3:00 PM on this date.	12/17/2025

I-3. Questions & Answers. Any questions regarding this RFP must be submitted by e-mail to the Purchasing Office at purchasing@duluthmn.gov **no later than** the date indicated on the Calendar of Events. Answers to the questions will be posted as an Addendum to the RFP.

I-4. Addenda to the RFP. If the City deems it necessary to revise any part of this RFP before the proposal response date, the City will post an addendum to its website <http://www.duluthmn.gov/purchasing/bids-request-for-proposals/>. Although an e-mail notification will be sent, it is the Bidder's responsibility to periodically check the website for any new information. Any addenda issued must be acknowledged on the Proposal Sheet attached as Appendix A.

I-5. Rejection of Proposals. The City reserves the right, in its sole and complete discretion, to reject any and all proposals or cancel the request for proposals, at any time prior to the time a contract is fully executed, when it is in its best interests. The City is not liable for any costs the Bidder incurs in preparation and submission of its proposal, in participating in the RFP process or in anticipation of award of the contract.

I-6. Small Diverse Business Information. The City encourages participation by minority, women, and veteran-owned businesses as prime contractors, and encourages all prime contractors to make a significant commitment to use minority, women, veteran-owned and other disadvantaged business entities as subcontractors and suppliers. A list of certified Disadvantaged Business Enterprises is maintained by the Minnesota Unified Certification Program at <http://mnuccp.metc.state.mn.us/>.

I-7. Agreement. The awarded proposer will be required to sign the agreement attached as Appendix B. Questions about the agreement should be submitted to purchasing@duluthmn.gov by the question deadline in the schedule above.

I-8. Award. The agreement award amount will be based on the time and materials submitted in the proposal, but will be a lump-sum, not-to-exceed agreement.

I-9. Term of Contract. The term of the contract will begin once the contract is fully executed and is anticipated to end by October 15, 2026. The selected Bidder shall not start the performance of any work nor shall the City be liable to pay the selected Bidder for any service or work performed or expenses incurred before the contract is executed.

I-10. Mandatory Disclosures. By submitting a proposal, each Bidder understands, represents, and acknowledges that:

- A. Their proposal has been developed by the Bidder independently and has been submitted without collusion with and without agreement, understanding, or planned common course of action with any other vendor or suppliers of materials, supplies, equipment, or services described in the Request for Proposals, designed to limit independent bidding or competition, and that the contents of the proposal have not been communicated by the Bidder or its employees or agents to any person not an employee or agent of the Bidder.
- B. There is no conflict of interest. A conflict of interest exists if a Bidder has any interest that would actually conflict, or has the appearance of conflicting, in any manner or degree with the performance of work on the project. If there are potential conflicts, identify the municipalities, developers, and other public or private entities with whom your company is currently, or have been, employed and which may be affected.
- C. It is not currently under suspension or debarment by the State of Minnesota, any other state or the federal government.
- D. The company is either organized under Minnesota law or has a Certificate of Authority from the Minnesota Secretary of State to do business in Minnesota, in accordance with the requirements in M.S. 303.03.

I-11. Notification of Selection. Bidders whose proposals are not selected will be notified in writing.

PART II - PROPOSAL REQUIREMENTS

II-1. Proposal Submission. To be considered, hard copies of proposals must arrive at the City on or before the time and date specified in the RFP Calendar of Events. The City will not accept proposals via email or facsimile transmission. The City reserves the right to reject or to deduct evaluation points for late proposals.

Proposals must be signed by an authorized official. If the official signs the Proposal Cover Sheet attached as Appendix A, this requirement will be met. Proposals must remain valid for 60 days or until a contract is fully executed. Terms of the awarded proposal as stated must be valid for the project length of time.

Please submit (3) paper copies of the Technical Submittal and (1) paper copies of the Cost Submittal. The Cost Submittal should be in a separate sealed envelope.

All materials submitted in response to this RFP will become property of the City and will become public record after the evaluation process is completed and an award decision made.

II-2. Proposal Content.

The submitted proposal shall include:

1. Proposal cover sheet, attached to this RFP as Appendix A
2. Consultant title sheet (1 page)
3. Cover letter (1 page)
4. Project narrative, capacity, and experience completing similar projects (2 pages max)
5. Work plan including timeline for task completion (2 pages max)
6. Complete budget by task with hours (1 page max)
7. Include Staff resumes and past similar project summaries as an attachment (10 pages max)
8. Cost Submittal (in separate sealed envelope)

PART III - CRITERIA FOR SELECTION

The proposals will be reviewed by City Staff. The intent of the selection process is to review proposals and make an award based upon qualifications as described therein. A 100-point scale will be used to create the final evaluation recommendations. The factors and weighting on which proposals will be judged are:

Qualifications of the Bidder and Personnel	25%
Prior experience with similar work	25%
Work Plan	30%
Cost	20%

PART IV – PROJECT DETAIL

Proper maintenance of the City owned stormwater basins is an important part of the operation of a functional stormwater treatment and conveyance system. The City has identified 11 BMP's that need to be assessed to determine maintenance needs.

At a minimum include the following tasks for this project as described below:

Task 1 – Project Management:

This task includes all the meetings and coordination with the City. At a minimum, provide monthly progress meetings and (1) meeting after the Draft Report. Provide agendas and meeting minutes for each meeting.

Task 2 – Records Review:

Review the City provided record drawings, engineering calculations, and Operation and Maintenance recommendations, if provided. Determine the original design intent, goals, and function of each BMP and if the BMP was constructed in general conformance to the plan set.

Task 3 – BMP Inspection:

Inspect each BMP to determine the need for maintenance and to determine the overall function of the BMP. Inspections shall be performed or directed by an individual certified to perform the work of inspection of stormwater treatment BMP's.

Task 3a – BMP Inspection:

Use City SOP and Inspection Form to inspect each BMP to determine the need for maintenance. Take photos to document the condition of each BMP. See Appendix B for the City SOP and Inspection Form.

Task 3b – Topographic Survey:

Perform topographic survey of each BMP to determine the elevation of:

1. Top and toes of berms
2. BMP bottom
3. All outlets to the BMP, including emergency overflow
4. All inlets to the BMP

Task 3c – Testing:

Test pond to determine if the sediment is contaminated and to assess pond functionality. Test sediment to MPCA sediment testing guidance, as described in [“Managing Stormwater Sediment Best Management Practices Guidance”](#) MPCA, December 2024.

Task 4 – BMP Modeling:

Develop up to three models, in HydroCAD, for each BMP as follows:

1. Designed Model:
 - a. If a HydroCAD model is provided by the City, review model and revise as required to model the original design of the project.
 - b. If a HydroCAD model is not provided by the City, use record drawings to develop a “Designed Model”.
2. Existing: Revise the Designed Model to reflect the existing condition of the BMP.
3. Proposed: Model any BMP that has been identified as being able to be retrofitted, to show proposed improvement to the BMP.

Task 5 – Recommendations and Cost Estimate:

Recommend what, if any, maintenance is needed for each BMP. Determine if the BMP can be retrofitted to improve stormwater treatment, rate reduction, maintenance access, and

pretreatment. Estimate the costs for maintenance or retrofitting each BMP. If no maintenance or retrofitting is recommended, estimate the amount of time before the BMP is nonfunctional and the next time the BMP should be inspected.

Task 6 – Report:

Summarize inspection results, recommendations, model results, and cost estimates in a report.

Schedule:

The project will need to be completed with the following schedule:

- Winter 2026: Records Review, Designed BMP Modeling.
- Spring 2026 (After snow melt – June 15): BMP Inspection, Topographic Survey, and Field Testing.
- Summer 2026: Laboratory Testing, BMP Modeling, Recommendation and Cost Estimating, and Preliminary Report.
- On or before September 15: Final Report.

BMP Inspection List:

UDI	NEAR BY ADDRESS	NAME ON RECORD DRAWING	Record Drawing	Storm Report	HydroCAD Model
WS0650031	5005 BURNING TREE RD	RETENTION BASIN	YES	NO	NO
WS0680006	1419 MAPLE GROVE RD	FIRE STATION POND	YES	NO	NO
WS0990001	2808 SNOWY OWL CIR	EAST POND	YES	NO	NO
WS0990002	5304 BROADWING DR	CENTRAL POND	YES	NO	NO
WS0990003	5226 BOREAL CIR	WEST POND	YES	NO	NO
WS1020001	3012 BALD EAGLE TRL	POND	YES	NO	NO
WS1530001	1953 MIDDLE LN	POND 1	YES	YES	YES
WS1530002	1906 MIDDLE LN	POND 2	YES	YES	YES
WS0660006	700 SWAN LAKE RD	POND 1 AND POND 2	YES	YES	YES
WS0660001	502 N HUGO AVE	POND 3	YES	YES	YES
WS0660002	410 N HUGO AVE	EXISTING POND	YES	NO	NO


**APPENDIX A - PROPOSAL COVER SHEET
CITY OF DULUTH
RFP# 25-99849**

Bidder Information:	
Bidder Name	
Mailing Address	
Contact Person	
Contact Person's Phone Number	
Contact Person's E-Mail Address	
Federal ID Number	
Authorized Signature	
Name & Title of Authorized Signer	
Email of Authorized Signer	

ACKNOWLEDGMENT OF ADDENDA

ADDENDUM #	INITIAL/DATE
ADDENDUM #	INITIAL/DATE
ADDENDUM #	INITIAL/DATE
ADDENDUM #	INITIAL/DATE
ADDENDUM #	INITIAL/DATE

APPENDIX B – INSPECTION FORMS

Subject: SOP Pond Inspection		SECTION
	Public Works and Utilities Department Engineering and Utility Operations Divisions	
	Effective date: 08/25/2022	Approved by
	Supersedes: all previous	Written by C. Kleist Updated by R. Granlund

PURPOSE: The storm sewer system is designed to convey only natural rainwater runoff and snowmelt. Duluth’s storm sewer system utilizes ponds where appropriate for water quality, volume reduction, and rate control. This procedure is intended to be a guideline to follow, but since all ponds are unique, inspector discretion and decision making is critical to the success of the pond inspection program. This guidance was created in conjunction with most recent MPCA Guidance for Managing Stormwater Sediment Best Management Practices, found here: <https://www.pca.state.mn.us/sites/default/files/wq-strm4-16.pdf>

Each pond shall be inspected at least once per 5-year permit cycle. However, after an extraordinarily heavy rain (or if staff deems necessary) additional inspections should be performed.

RESPONSIBLE PARTY: The Public Works Director or his/her designee is responsible for insuring compliance with the procedure and validating that appropriate records and documentation are in place.


PROCEDURE:

1. Inventory:

- a. The Stormwater Program Coordinator shall produce and update a list of City-owned stormwater ponds. This list shall be kept in the EAM Workorder System and maintenance/inspection shall be tracked for each ponds unique identification, or UDI. The Stormwater Program Coordinator should contact MNDOT, St Louis County, and nearby MS4s to assess if they have ponds in close proximity to City of Duluth ponds and determine if inspections should be coordinated or combined. The City of Duluth shall only inspect and maintain ponds that serve City of Duluth drainage infrastructure, have a City easement for access and maintenance or have a certified agreement that maintenance is the responsibility of the City of Duluth.

2. Inspection:

- a. At least once each 5-year permit cycle, trained staff shall inspect each City-owned pond. The inspection should consist of utilizing the inspection checklist in EAM Workorder System, and should generally follow MPCA guidance for pond inspections. Care and attention to safety must be taken while inspection ponds with deep water and loose sediment. Additionally, pond inspections shall not be completed on frozen pond surfaces unless it is verified that ice is at least 6” thick or greater in areas deeper than 1 ft of water.

Subject: SOP Pond Inspection		SECTION
	Public Works and Utilities Department	
	Engineering and Utility Operations Divisions	
	Effective date: 08/25/2022	Approved by
Supersedes: all previous	Written by C. Kleist	
	Updated by R. Granlund	

3. Corrective Action

- a. If debris/sediment/vegetation has accumulated to the point where the pond needs maintenance, (as a general rule – over 25% full) a work order should be created in Infor EAM and City staff responsible for maintenance shall performed as quickly as feasible. If maintenance is determined to be prohibitively time consuming or requires equipment beyond the scope of ability of Utility Operations, a contractor may be secured to complete pond maintenance and dredging.
- b. If evidence of an illicit discharge is noted, the IDDE response procedure shall be utilized.

4. Sediment Disposal and Testing

- a. If maintenance is determined to be necessary, sediment testing shall be initiated prior to pond maintenance. Testing shall generally follow the guidelines set forth by MPCA in this document. <https://www.pca.state.mn.us/sites/default/files/wg-strm4-16.pdf>
 - i. Prior to pond testing, staff shall contact Pace Analytical for the necessary sampling vials and chain of custody for the 17 PAH's, RCRA metals and Copper to be analyzed.
 - ii. Ponds less that one acre shall have a sample taken via hand auger of the depth of accumulated sediment in two locations. One at the inlet and one at the outlet unless other delta or island conditions exist. The sample shall then be homogenized and a representative shall be placed into a sample jar provided by Pace Analytical, Duluth.
 - 1. Ponds greater than one acre shall have a sample taken in each acre.
 - iii. GPS coordinates or street ties shall be taken of sample locations and recorded.
 - iv. Samples shall be kept on ice and cool until they can be delivered to Pace Analytical for testing.
 - v. If all CPAHs come back as non-detect, and metals are below the accepted MPCA thresholds, sediment may be used as unregulated fill. This fill will generally be placed at the City Utility Operations clean fill site.
 - vi. If CPAHS or other contaminated come back above MPCA accepted thresholds, the fill shall be disposed of at Veit Vonco V Industrial Waste Landfill. An additional sample will be taken at each pond location via the same procedures to test for BTEX compounds by requirement of Veit Vonco V landfill.
 - vii. Pond sediments containing a large amount of solid waste shall be screened of solid waste prior to disposal. If screening is cost prohibitive, pond sediments may be disposed of at Veit Vonco V Landfill.
 - viii. Sampling results and sediment disposal locations shall be recorded in EAM.



Pond Testing Flow Chart

Follow testing guidance in this document and analyze for chemicals noted in MPCA Guidance

Non-Detect on all Chemical Analysis

CPAHs detected, metals are above limits

PAHs are detected and metals are below limits

Large amount of Solid Waste?

Yes

Greater than 1000 tons?

Yes

No

Screen Material

Sediment

Screenings

No

Test sample locations again for BTEX compounds

Unregulated Fill

Veit Vonco V Industrial Waste Landfill



POND INSPECTION FORM

DATE: _____
 INSPECTOR: _____
 POND GIS ASSET #: _____
 STREAM NAME: _____ N/A
 RAIN LAST 72HRS: **DRY / LIGHT / MOD / HEAVY**
 PICTURES TAKEN: Yes / No

NEED GPS OF POND Yes / No
 REQUESTED Yes / No
 DATE ENTERED INTO EAM _____
 DATE ENTERED INTO GIS _____

OVERALL CONDITION RATING (1-5) _____
 OVERALL MAINTENANCE NEED (1-3) _____

IMMEDIATE WORK NEEDED: YES / NO
CLEANING REPAIRS
 NOTIFIED: UTILITY OPS / ENGINEERING
 EAM: _____
 DATE: _____

- 1 - GOOD CONDITION - NO ISSUES
 - 2 - FAIR CONDITION - MONITOR
 - 3 - MINOR REPAIRS NEEDED AS NOTED
 - 4 - NEEDS REPAIRS - FUNCTIONING
 - 5 - NEEDS IMMEDIATE REPAIRS - FAILED
-
- 1 - NONE - FUNCTIONING - < 25% FULL SEDIMENT
 - 2 - MAINTENANCE NEEDED - 25-50% FULL SEDIMENT
 - 3 - URGENTLY NEEDED - 50-100% FULL SEDIMENT

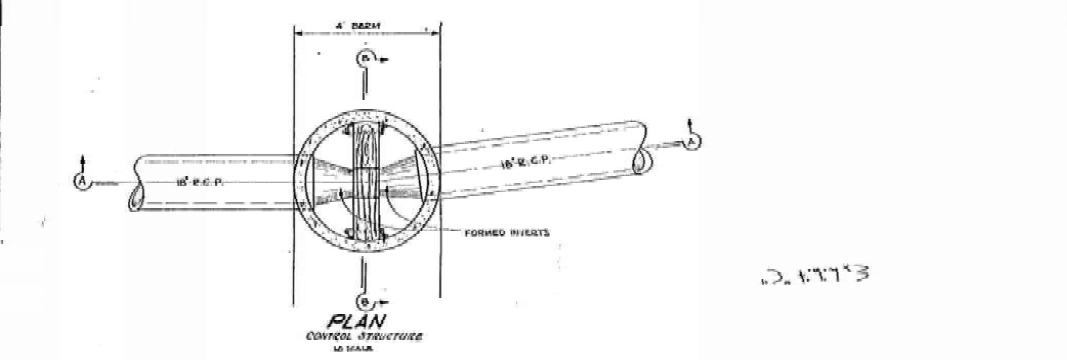
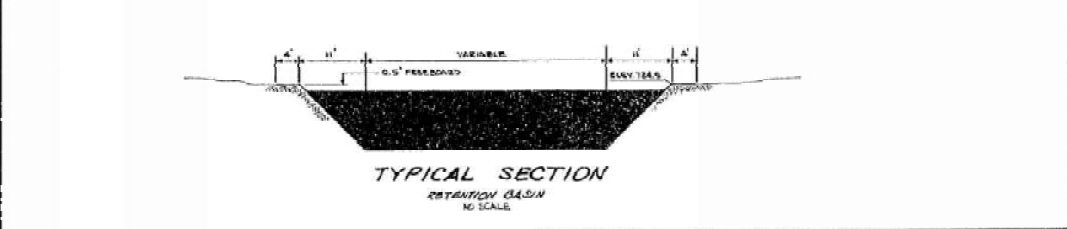
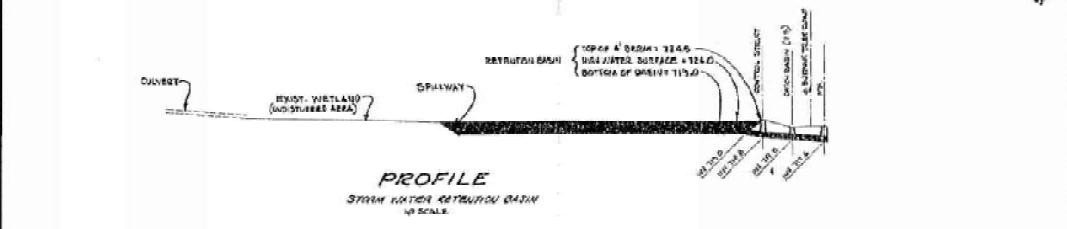
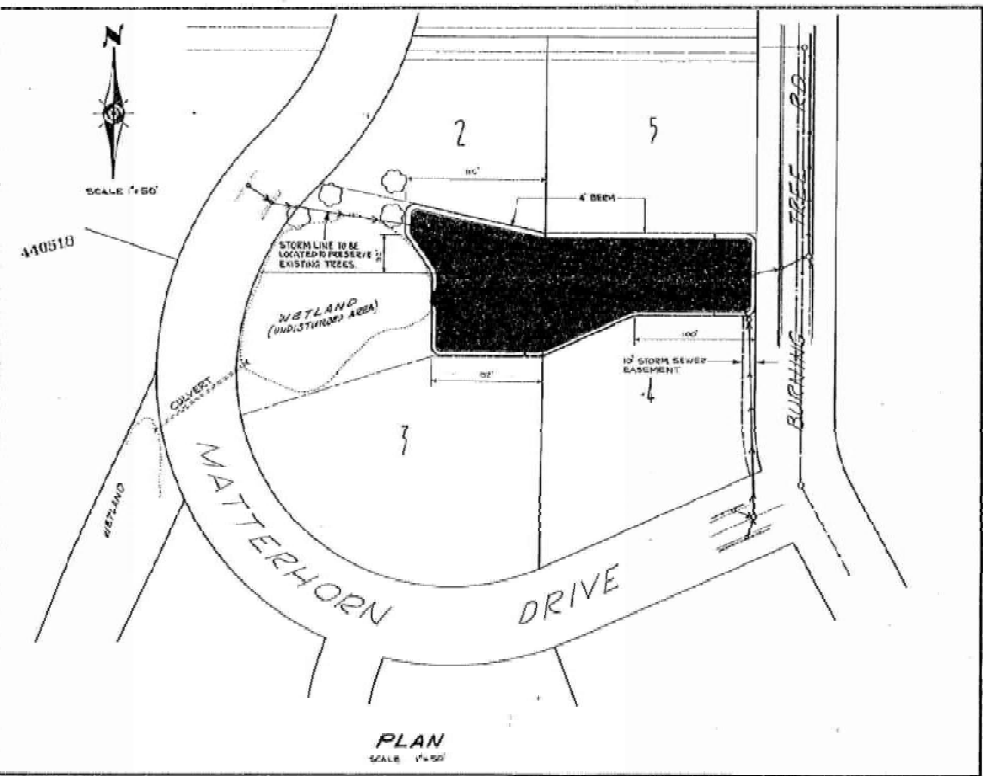
POND CHARACTERISTICS	(CIRCLE ALL THAT APPLY)	NOTES
POND TYPE	Wet Pond / Dry Swale / Bio-Filtration Basin / Other	
ILLCIT DISCHARGE	Yes / No	
INLET CONDITION	Good / Dislodged / Plugged / Damaged / Erosion / Other	
PRE-TREATMENT BASIN CONDITION	Good / Full / Damaged / Eroded / Other	
INSPECTION PORT / RISER CONDITIONS	Good / Damaged / Buried / Other / NA	
WEIR / TRASH RACK CONDITION	Good / Dislodged / Plugged / Damaged / Other	
OUTLET CONDITION	Good / Dislodged / Plugged / Damaged / Erosion / Other	
OUTFALL CONDITION	Good / Dislodged / Plugged / Damaged / Erosion / Other	
OUTFALL CHANNEL CONDITION	Stabilized / Eroded / Channelized / Other	
EMERGENCY OVERFLOW CONDITION	Good / Brushy / Eroded / Damaged / Animal Burrows / Other	
EMBANKMENT CONDITION	Good / Eroding / Seeping / Sinkholes / Sliding / Bulging / Animal Burrows / Cracking / Other	
PRINCIPLE SPILLWAY CONDITION	Good / Brushy / Eroded / Damaged / Animal Burrows / Other	
LINER CONDITION	Good / Perforated / Damaged / NA	
BASIN VEGETATION	Grass / Weeds / Brush / Cat-tails / Trees / Other	
EMBANKMENT VEGETATION	Grass / Weeds / Brush / Trees / Rock / Other	
SPECIAL INVASIVES	Phragmites / Knotweed / Wild Parsnip / NONE	
> 50% INVASIVE PLANTS	Yes / No	
VEGETATION DENSITY	Good / Sparse / Over-run / Other	
LOCATION	Water Depth / Sediment Depth	
INLET	/	
OUTLET	/	
MIDDLE	/	
TOE OF INSIDE ENBANKMENT	/	
PRE-TREATMENT	/	
OVERALL AVERAGE	/	
SEDIMENT CHARACTERISTICS	Good / Plugged / Deformed / Standing Water	
SEDIMENT TYPE	Sand / Gravel / Organic / Silt / Vegetation / Other	
SAMPLES TAKEN?	YES / NO	
SIGNIFICANT TRASH PRESENT?	YES / NO	
SAMPLE 1 TIES		
SAMPLE 2 TIES		
SAMPLE 3 TIES		
GENERAL POND INSPECTION COMMENTS	NOTES	

APPENDIX C – BMP MAPS AND RECORD DRAWINGS

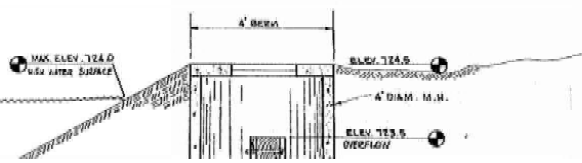
WS0650031 - BURNING TREE - RETENTION BASIN

440548

440515

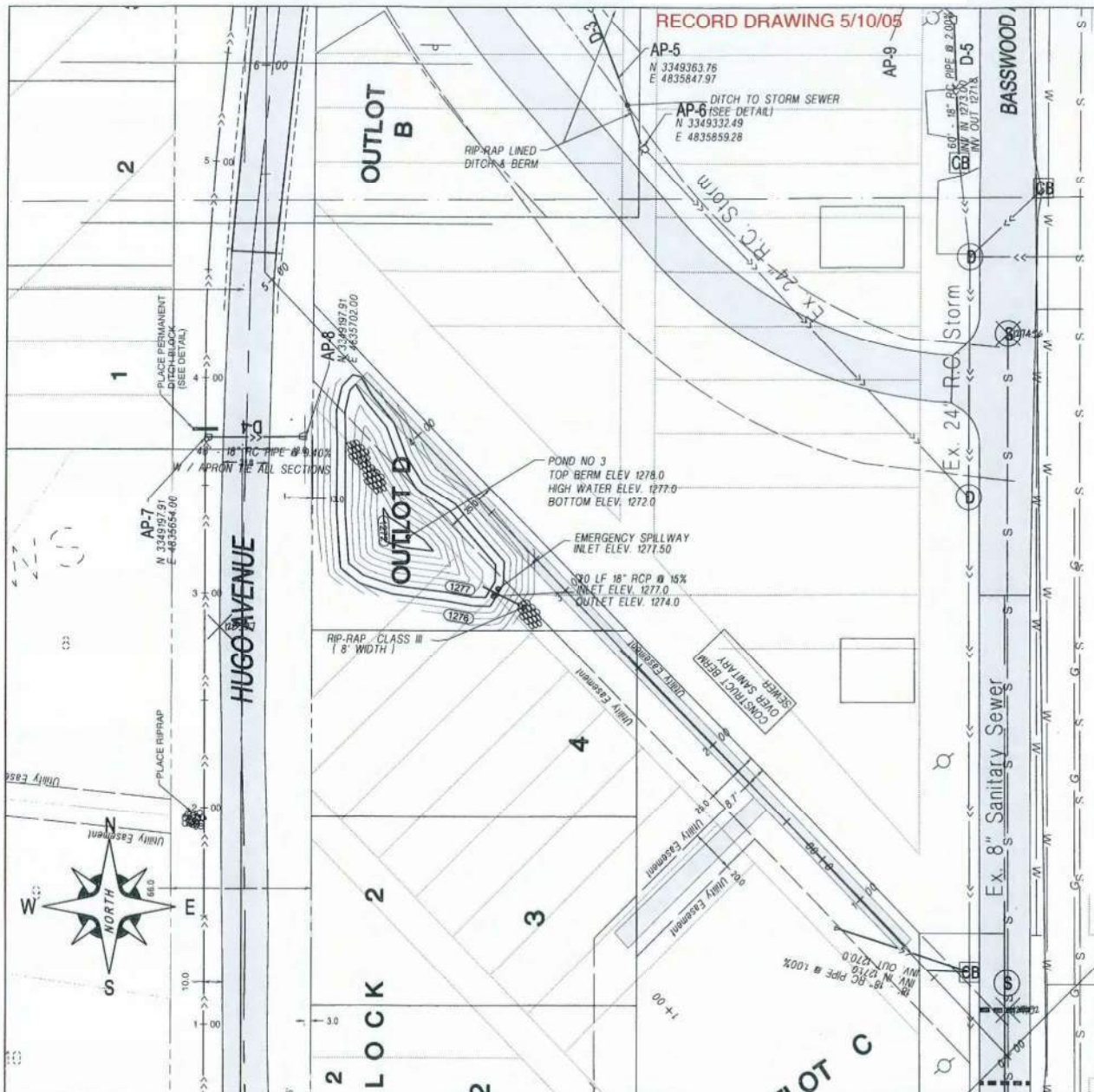


J. 1113



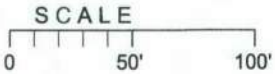


WS066001 - HUGO - POND 3



EROSION CONTROL NOTES rev 03/07/03 2125Z

1. MnDOT Std. Spec. 1803.5, Erosion Control, shall apply. Along with the Zenith Terrace, Contractor will be co-permittee for the MPCA NPDES stormwater construction permit for this project - Contractors signature on permit is required upon receiving Letter of Intent (LOI). Submit Initial Erosion Control (EC) schedule at PreCon. Submit EC schedule alterations/adjustments weekly thereafter for Engineers approval. Site Work shall be scheduled to minimize exposure to erosion.
2. The Contractor is responsible for erosion and sediment control on this project. Contractor shall place or otherwise construct erosion control and sediment containment devices to prevent the runoff, tracking or loss of sediment from disturbed areas of the project site. Exposed areas shall drain to protected basins or silt fence.
4. Sediment and erosion control devices shall be functional before site is disturbed.
5. Total disturbed area is 5.0 acres. Beginning impervious is 0 acres. New impervious is 0.75 acres. Total change in impervious is 15%
6. Receiving water ultimately is BREWERY CREEK
7. The surface of stripped areas shall be permanently or temporarily protected from soil erosion if not worked within 7 days. Use pinned erosion control blanket (over seed/fertilizer) or approved equal.
8. The following controls will be implemented at the construction site:
 - A. EROSION AND SEDIMENT CONTROLS
 - * Erosion control blankets shall be used on all slopes 3:1 or steeper and over 5 feet high and to a 10 foot width in all ditch bottoms.
 - * Permanent vegetation will be established after topsoil is respread.
 - * Silt fences shall be used to prevent sediment from discharging from site.
 - * Triangular ditch checks, or approved equal, to be used to reduce velocities and reduce erosion in ditches.
 - * Storm inlets and outlet aprons shall be protected with sediment containment devices.
 - * Stabilized construction entrance shall be used to reduce sediment tracking.
9. All slopes and ditches shall be stabilized prior to opening new culverts into existing drainage ways.
10. If any stockpile is to remain in place for more than 3 days, sediment and erosion control devices shall be used.
11. Water pumped or otherwise discharged from the site during construction dewatering shall be directed toward sediment containment or filtering device.
12. The contractor shall take all possible precautions to prevent appreciable soil tracking onto roadways. Soil, mud or debris washed, tracked or deposited onto paved surfaces shall be removed prior to the end of each work day.
13. Stabilized construction entrance(s) shall be removed and area restored after grading is complete.
14. The Contractor shall maintain the sediment and erosion control measures until the site is stabilized. IAW MnDot 1803.5 contractor QC program shall ensure all erosion and sediment control devices shall be routinely inspected and logged including after each rain event. All nonfunctional devices shall be repaired or replaced or cleaned with no additional compensation made therefor.
15. Where not otherwise specified; MnDot Method 4 shall be used when Rapid Stabilization is needed. Use erosion control blanket (ECB) Cat 3 (N. American Green S150 or approved equal). It shall include fertilizer(10-10-20) @ 8lb. per 100SY and seed (Mix60B) @ 2lb. per 100SY, done IAW MnDot 2575.3. The ECB shall be pinned with 6-8 inch long staples every 18 inches along the perimeter and throughout interior. Payment allowed shall be \$3.00 per sq yard. (Ref. MnDot Tech Memo No. 02-15-ENV-04)



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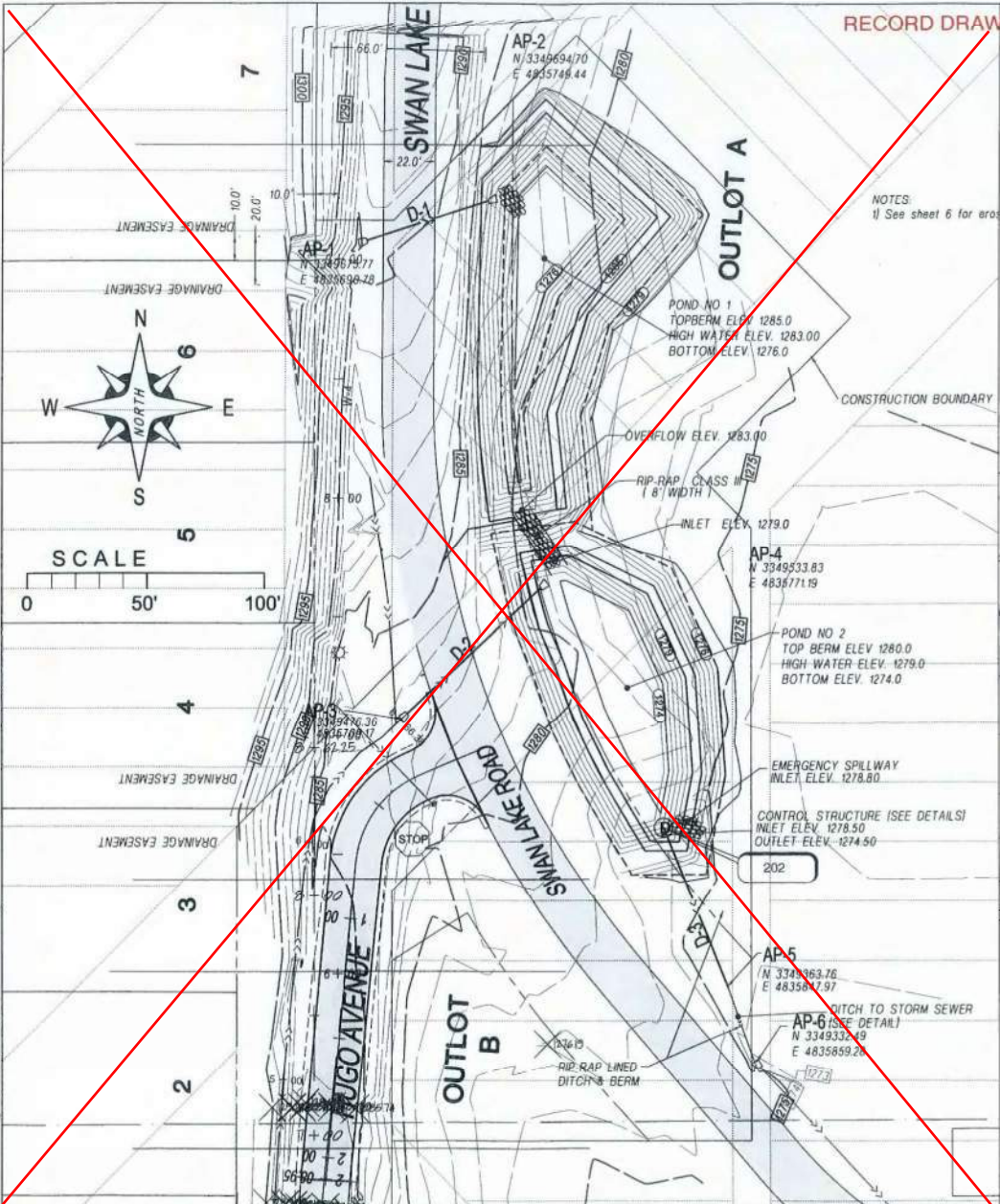
ANDREWS DIVISION PLAN - POND 3 - STORM SEWER		City of Duluth Proj. No. 0387SN SHEET 26 OF 27 DATE Dec. 2003
SIGNATURE: DAVID SALD PRINTED NAME: DAVID SALD DATE: 10/23/03 REVISION:	NO. DATE REVISION BY	SALO ENGINEERING, INC. ENGINEERS SURVEYORS PLANNERS 13 East First Street, Duluth, Minnesota 55812 218/727-4744

WS0660002 - HUGO - EXISTING POND

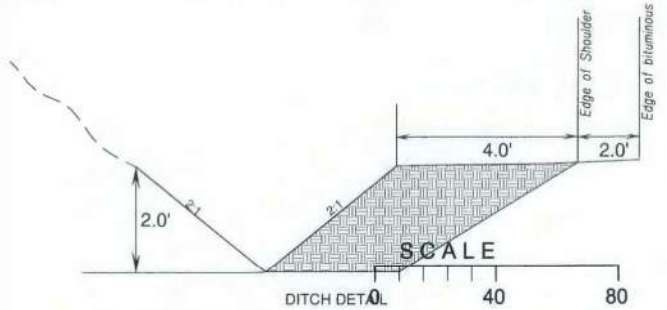


WS066002 - HUGO - EXISTING POND

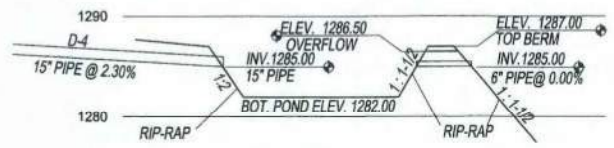
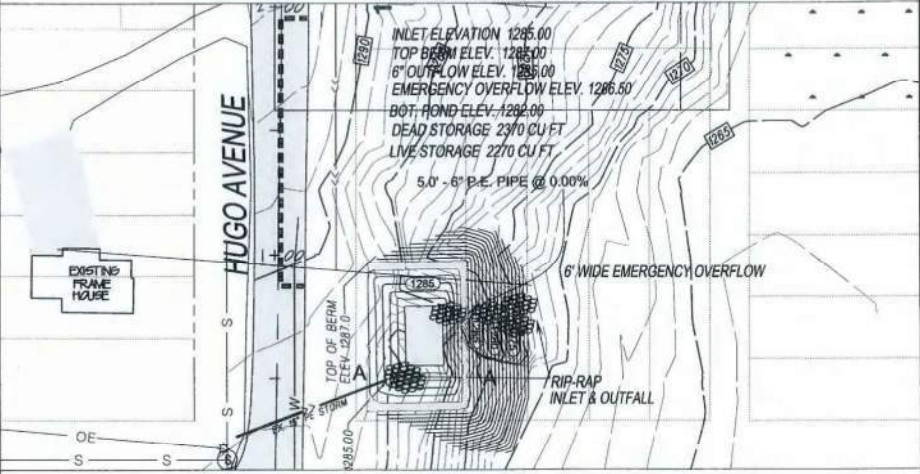
RECORD DRAWING 5/10/05



NOTES:
1) See sheet 6 for area



GRADE DITCH TO EXISTING STORM SEWER
DITCH TO BE LINED WITH CLASS III RIP-RAP



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I HEREBY CERTIFY THAT THIS PLAN HAS BEEN 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.

DAVID SALD
PRINTED NAME

DATE
19553

NO. DATE REVISION BY

ANDREWS DIVISION
POND 1, POND 2, POND REHABILITATION

NO.	DATE	REVISION	BY

Sheet 25 of 27

City of Duluth Proj. No. 0387SN

ENGINEERS SURVEYORS PLANNERS
SALO ENGINEERING, INC.
18 East First Street Duluth, Minnesota 55812

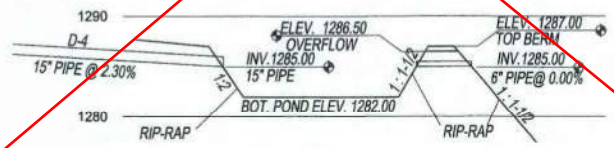
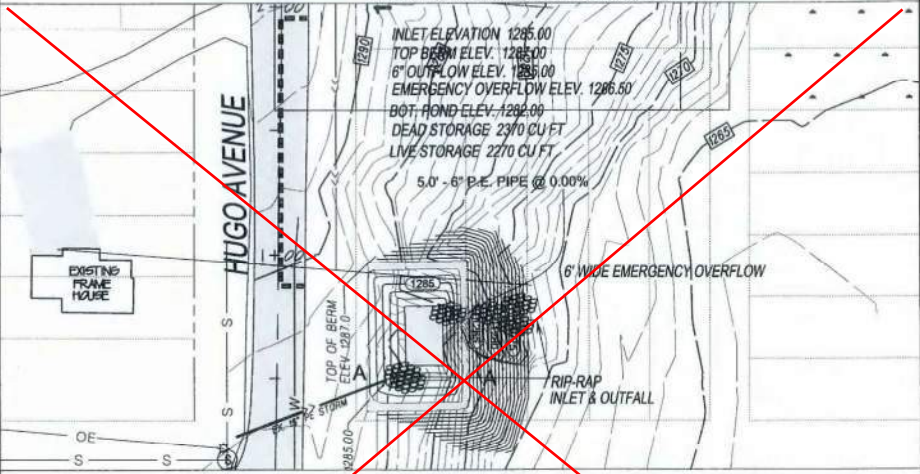
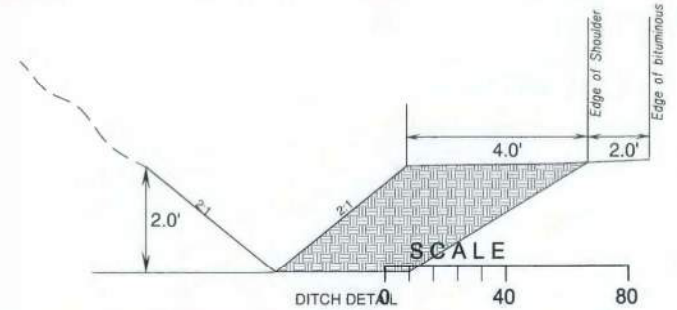
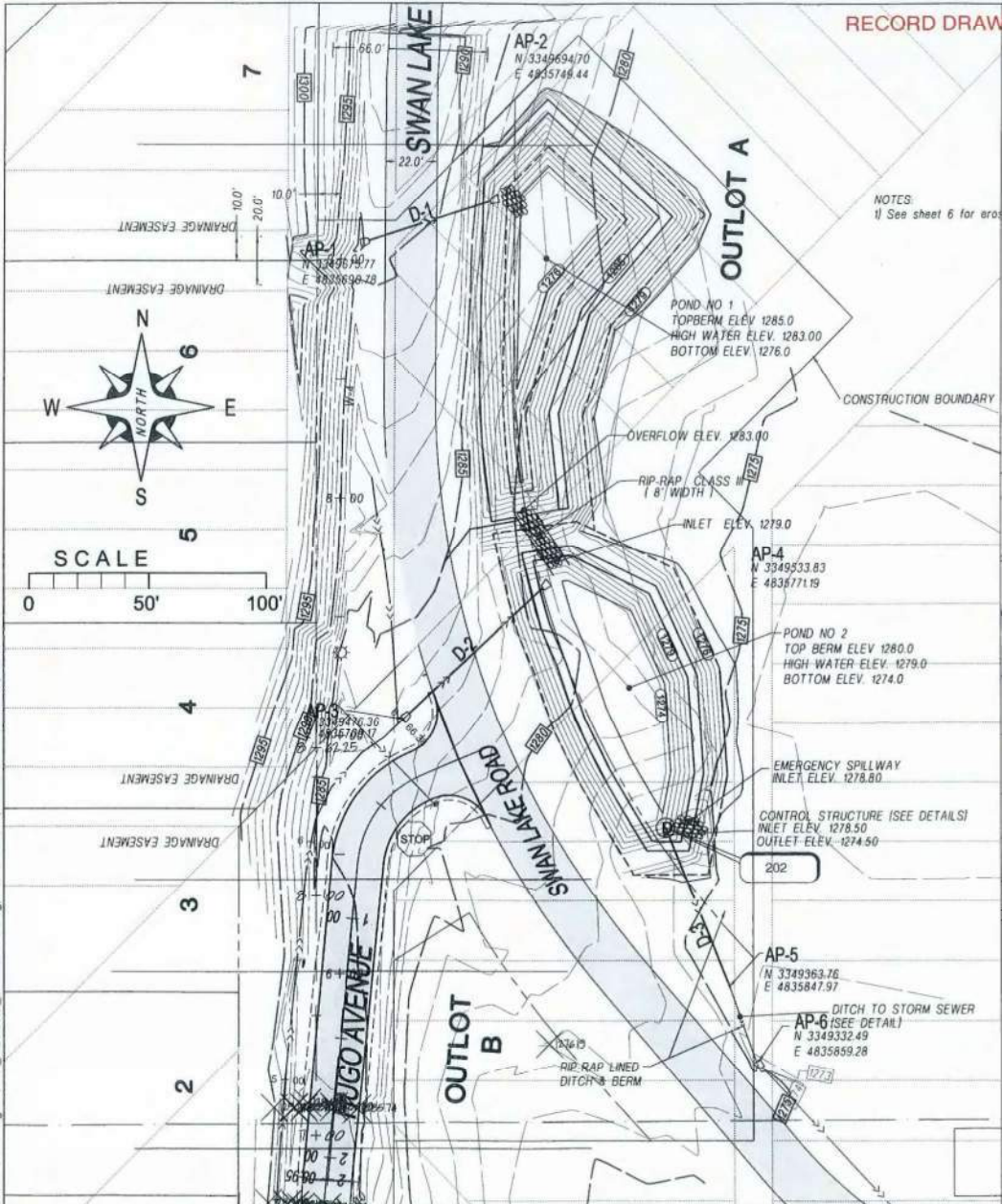
DATE: Dec. 2003

WS0660008 - HUGO - POND 1 AND POND 2



WS0660008 - HUGO - POND 1 AND POND 2

RECORD DRAWING 5/10/05



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I HEREBY CERTIFY THAT THIS PLAN 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.

DAVID SALO
PRINTED NAME

DATE
19553

NO. DATE REVISION BY

ANDREWS DIVISION
POND 1, POND 2, POND REHABILITATION

NO.	DATE	REVISION	BY

Sheet 25 of 27

City of Duluth Proj. No. 0387SN

ENGINEERS SURVEYORS PLANNERS
SALO ENGINEERING, INC.
18 East First Street Duluth, Minnesota 55812-1896

DATE: Dec. 2003

WS0680006 - MNDOT - FIRE STATION POND



1517 MAPLE GROVE RD

1419 MAPLE GROVE RD

1401 MAPLE GROVE RD

24 INCH REINFORCED CONCRETE, 58'

ST0680026

1360

UNKNOWN, UNKNOWN, 67'

24 INCH REINFORCED CONCRETE, 53'

Maple Grove Road

ST0650102

21 INCH REINFORCED CONCRETE, 95'

ST06650101

18 INCH REINFORCED CONCRETE, 257'

1510 MAPLE GROVE RD

12 INCH, DUAL WALL HIGH-DENSITY POLYETHYLENE, 73'

12 INCH UNKNOWN, 35'

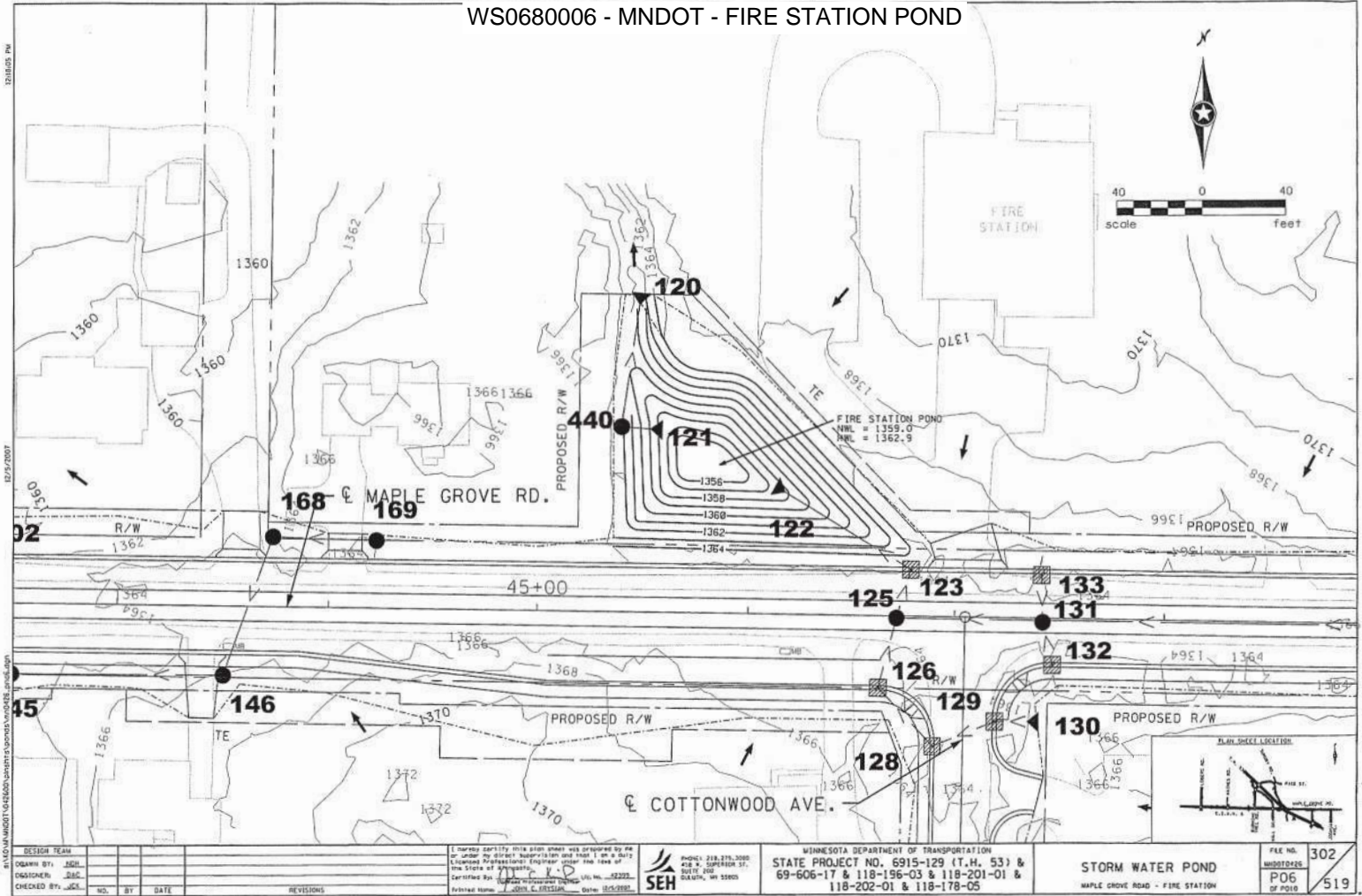
12 INCH UNKNOWN, 44'

Cottonwood Ave
12 INCH UNKNOWN, 34'

12 INCH, DUAL WALL HIGH-DENSITY POLYETHYLENE, 39'

1408 MAPLE GROVE RD

WS0680006 - MNDOT - FIRE STATION POND



DESIGN TEAM			
DESIGNED BY:	JSD		
DRAWN BY:	JSD		
CHECKED BY:	JSD		
NO.	BY	DATE	REVISIONS

DESIGN TEAM			
DESIGNED BY:	JSD		
DRAWN BY:	JSD		
CHECKED BY:	JSD		
NO.	BY	DATE	REVISIONS

I hereby certify this plan sheet 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.
 License No. 52292
 Printed Name: JOHN C. FRISSAN Date: 05/2005
SEH

PHONE: 218.275.2000
 418 N. LINCOLN ST.
 SUITE 200
 DULUTH, MN 55805

MINNESOTA DEPARTMENT OF TRANSPORTATION
 STATE PROJECT NO. 6915-129 (T.H. 53) &
 69-606-17 & 118-196-03 & 118-201-01 &
 118-202-01 & 118-178-05

STORM WATER POND
 MAPLE GROVE ROAD - FIRE STATION

FILE NO.	302
SHEET NO.	PO6
OF PAGES	519

WS0990001 - HAWKS RIDGE ESTATES - EAST POND



WS0990002 - HAWKS RIDGE ESTATES - CENTRAL POND



NOTE
 TEMPORARY EROSION CONTROL SHALL BE RAPID STABILIZATION, METHOD 4 AS DIRECTED BY THE ENGINEER.

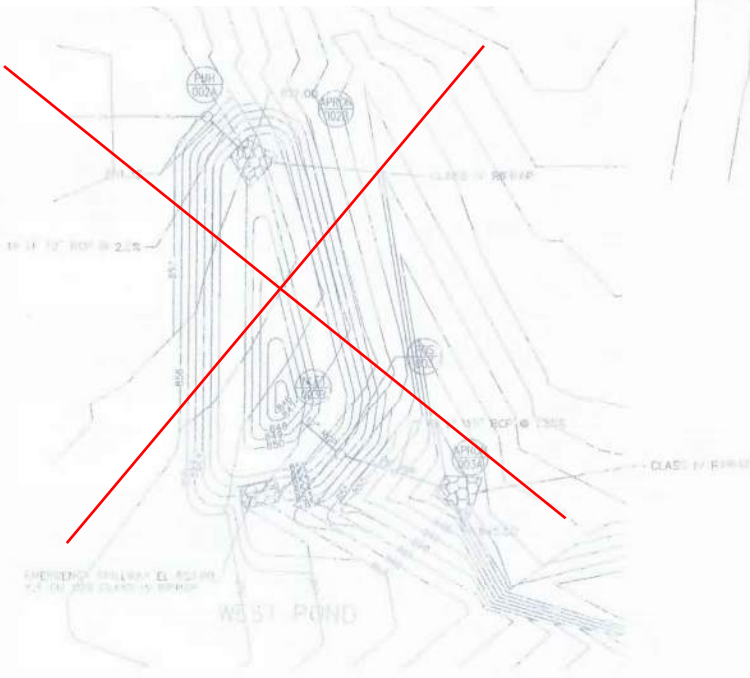
FINAL STABILIZATION WILL INCLUDE SEED MIXTURE 350, FERTILIZER, MULCH TYPE 3 AND EROSION CONTROL BLANKET CATEGORY 3 AS SPECIFIED AND AS DIRECTED BY THE ENGINEER. SEE STATEMENT OF ESTIMATED QUANTITIES NOTES FOR APPLICATION RATES.

EXCAVATION OF STORM WATER PONDS SHALL BE PAID FOR UNDER COMMON EXCAVATION - SEE SPECIAL PROVISIONS. COMMON EXCAVATION VOLUMES FOR STORM WATER PONDS ARE APPROXIMATELY:

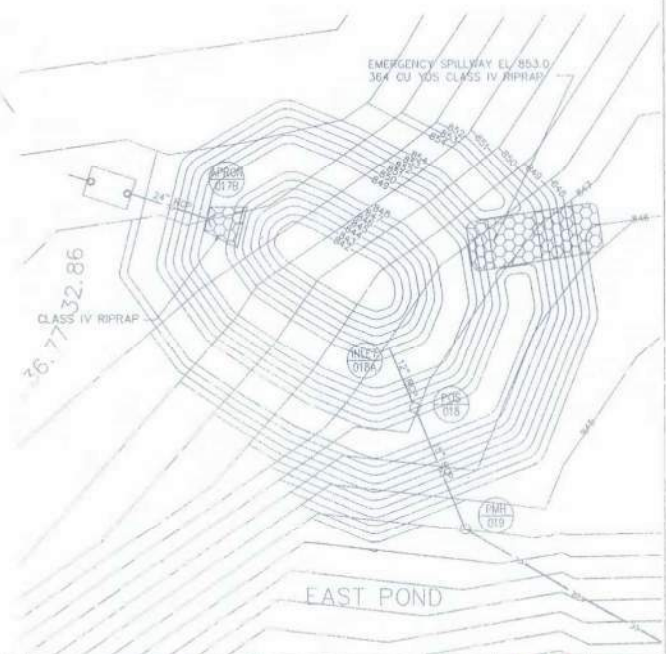
WEST POND - 650 CY
 CENTRAL POND - 660 CY
 EAST POND - 1,375 CY

ACCESS ROADS TO BE BUILT TO AND AROUND STORM WATER PONDS AS SHOWN AND AS DIRECTED BY THE ENGINEER. ACCESS ROADS SHALL BE 8\"/>

WS0990003 - HAWKS RIDGE ESTATES - WEST POND



WS0990001 - HAWKS RIDGE ESTATES - EAST POND



SEE STORM LEAD PROFILE SHEETS 5-8 FOR RECORD DRAWING INFORMATION.

RECORD DRAWING
 12/05

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: JAC	1			
DESIGNED BY: JAC	2			
CHECKED BY: JAC	3			

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Signature: MICHAEL S. SURGAL
 Printed Name: MICHAEL S. SURGAL
 Reg. No. 41971



CITY OF DULUTH
CITY PROJECT #0395TR
HAWK RIDGE ESTATES

DETENTION PONDS

FILE NO. 8819V000A.02
 DATE 08/09/04
9
52

WS0990002 - HAWKS RIDGE ESTATES - CENTRAL POND



2910 N 52ND AVE E

52ND AVE E

2918 N 52ND AVE E

18 INCH REINFORCED CONCRETE, 188'

4 INCH, POLYVINYL CHLORIDE, 202'

4 INCH, POLYVINYL CHLORIDE, 318'

2820 N 52ND AVE E

52ND AVE E

5201 BOREAL CIR

5225 BOREAL CIR

880

870

860

860

850

4 INCH POLYVINYL CHLORIDE, 228'

4 INCH POLYVINYL CHLORIDE, 219'

4 INCH POLYVINYL CHLORIDE, 151'

12 INCH REINFORCED CONCRETE, 161'

4 INCH POLYVINYL CHLORIDE, 172'

24 INCH REINFORCED CONCRETE, 51'

UNKNOWN, UNKNOWN

UNKNOWN, POLYVINYL CHLORIDE, 56'

5308 BROADWING DR

5304 BROADWING DR

2831 SNOWY OWL CIR

2827 SNOWY OWL CIR

2823 SNOWY OWL CIR

2819 SNOWY OWL CIR

2809 SNOWY OWL CIR

2805 SNOWY OWL CIR

2801 SNOWY OWL CIR

2802 SNOWY OWL CIR

2808 SNOWY OWL CIR

4 INCH, POLYVINYL CHLORIDE, 188'

4 INCH, POLYVINYL CHLORIDE, 177'

4 INCH, POLYVINYL CHLORIDE, 177'

4 INCH, POLYVINYL CHLORIDE, 114'

21 INCH, REINFORCED CONCRETE, 116'

4 INCH, POLYVINYL CHLORIDE, 114'

SNOWY OWL CIR

WS0990002 - HAWKS RIDGE ESTATES - CENTRAL POND



NOTE
 TEMPORARY EROSION CONTROL SHALL BE RAPID STABILIZATION, METHOD 4 AS DIRECTED BY THE ENGINEER.

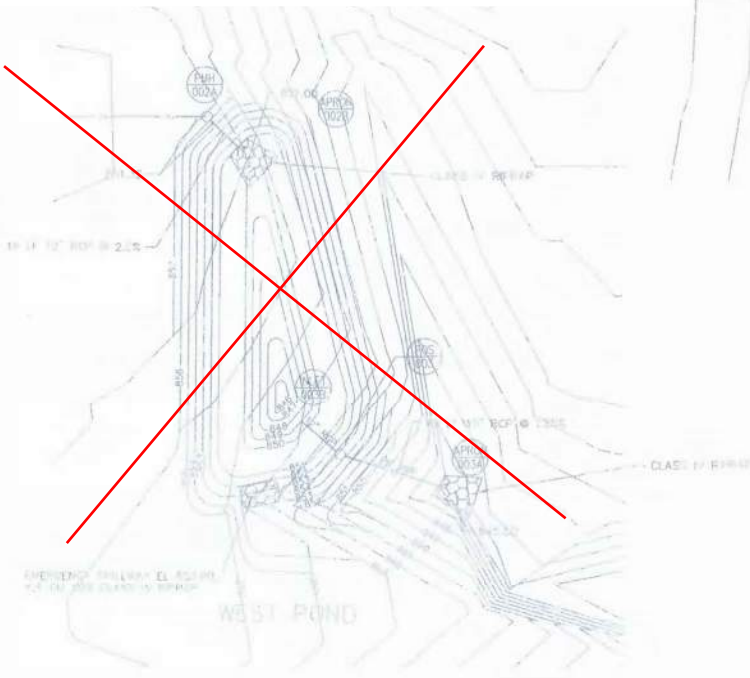
FINAL STABILIZATION WILL INCLUDE SEED MIXTURE 350, FERTILIZER, MULCH TYPE 3 AND EROSION CONTROL BLANKET CATEGORY 3 AS SPECIFIED AND AS DIRECTED BY THE ENGINEER. SEE STATEMENT OF ESTIMATED QUANTITIES NOTES FOR APPLICATION RATES.

EXCAVATION OF STORM WATER PONDS SHALL BE PAID FOR UNDER COMMON EXCAVATION - SEE SPECIAL PROVISIONS. COMMON EXCAVATION VOLUMES FOR STORM WATER PONDS ARE APPROXIMATELY:

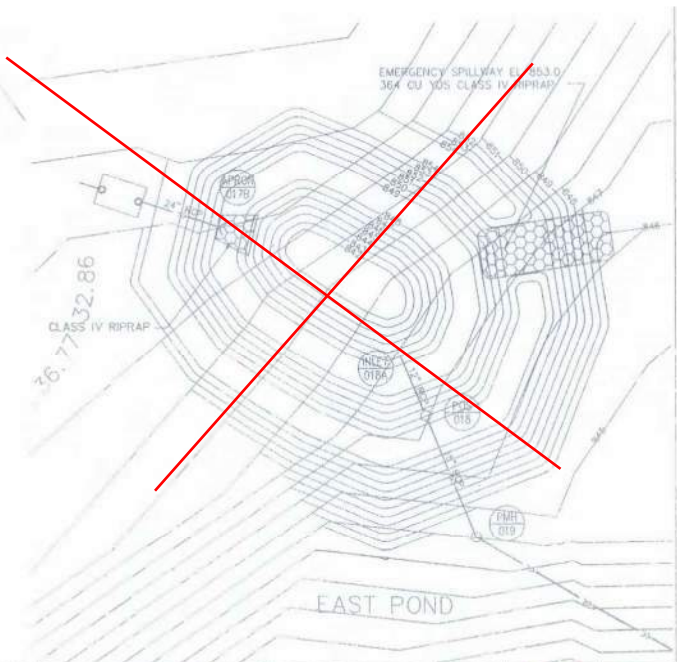
WEST POND - 650 CY
 CENTRAL POND - 660 CY
 EAST POND - 1,375 CY

ACCESS ROADS TO BE BUILT TO AND AROUND STORM WATER PONDS AS SHOWN AND AS DIRECTED BY THE ENGINEER. ACCESS ROADS SHALL BE 8\"/>

WS0990003 - HAWKS RIDGE ESTATES - WEST POND



WS0990001 - HAWKS RIDGE ESTATES - EAST POND



SEE STORM LEAD PROFILE SHEETS 5-8 FOR RECORD DRAWING INFORMATION.

RECORD DRAWING
 12/05

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DRAWN BY: JAC	1			
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CHECKED BY: JAC	3			

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Signature: _____ Date: _____
 Printed Name: MICHAEL S. SURGAL Reg. No. 41971



CITY OF DULUTH
 CITY PROJECT #0395TR
 HAWK RIDGE ESTATES

DETENTION PONDS

FILE NO. 8819V000A.02
 DATE 08/09/04
 9
 52

WS0990003 - HAWKS RIDGE ESTATES - WEST POND



WS0990002 - HAWKS RIDGE ESTATES - CENTRAL POND



NOTE
 TEMPORARY EROSION CONTROL SHALL BE RAPID STABILIZATION,
 METHOD 4 AS DIRECTED BY THE ENGINEER.

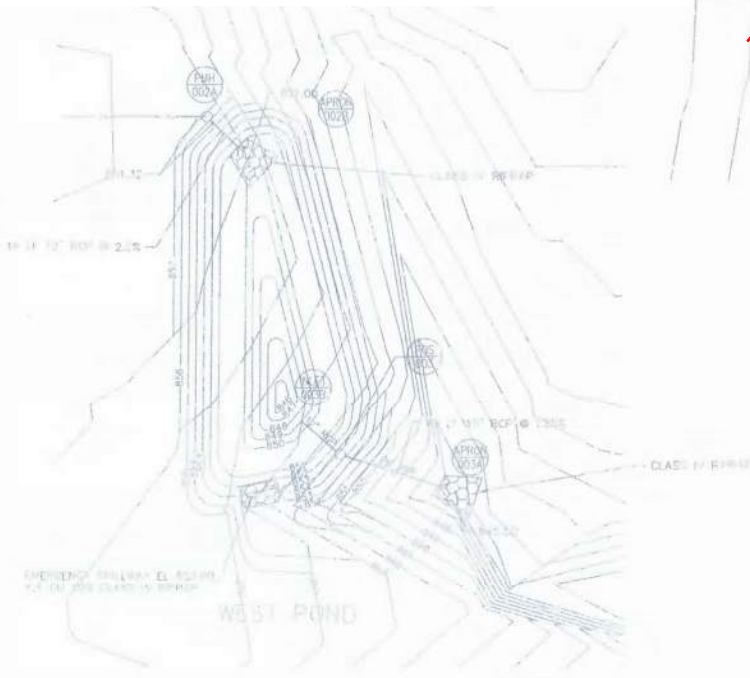
FINAL STABILIZATION WILL INCLUDE SEED MIXTURE 350, FERTILIZER,
 MULCH TYPE 3 AND EROSION CONTROL BLANKET CATEGORY 3 AS
 SPECIFIED AND AS DIRECTED BY THE ENGINEER. SEE STATEMENT
 OF ESTIMATED QUANTITIES NOTES FOR APPLICATION RATES.

EXCAVATION OF STORM WATER PONDS SHALL BE PAID FOR UNDER
 COMMON EXCAVATION - SEE SPECIAL PROVISIONS. COMMON
 EXCAVATION VOLUMES FOR STORM WATER PONDS ARE APPROXIMATELY:

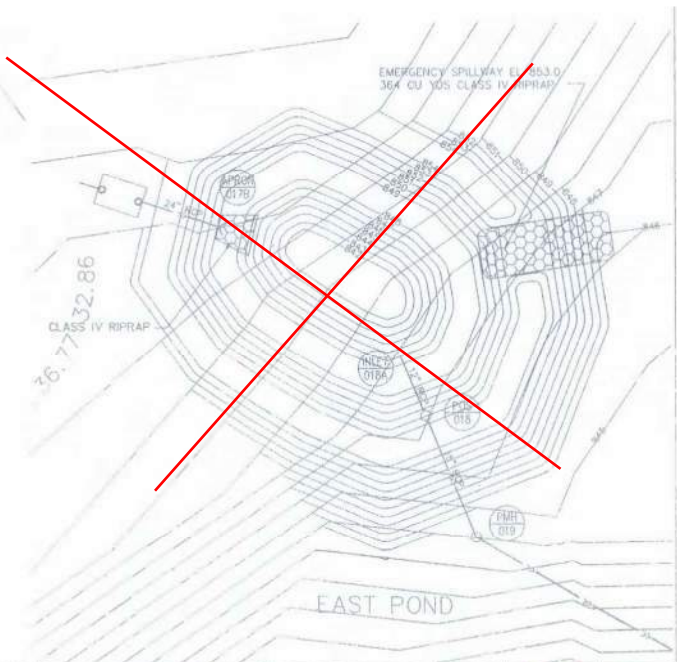
WEST POND - 650 CY
 CENTRAL POND - 660 CY
 EAST POND - 1,375 CY

ACCESS ROADS TO BE BUILT
 TO AND AROUND STORM WATER PONDS AS SHOWN AND AS
 DIRECTED BY THE ENGINEER. ACCESS ROADS SHALL BE 8"
 CLASS 5 AGGREGATE BASE.

WS0990003 - HAWKS RIDGE ESTATES - WEST POND



WS0990001 - HAWKS RIDGE ESTATES - EAST POND



SEE STORM LEAD PROFILE SHEETS 5-8
 FOR RECORD DRAWING INFORMATION.

RECORD DRAWING
 12/05

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DESIGNED BY: JAC	2			
CHECKED BY: JAC	3			

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 THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER
 THE LAWS OF THE STATE OF MINNESOTA

Signature: MICHAEL S. SORUG
 Title: P.E.
 Reg. No. 41971



CITY OF DULUTH
 CITY PROJECT #0395TR
 HAWK RIDGE ESTATES

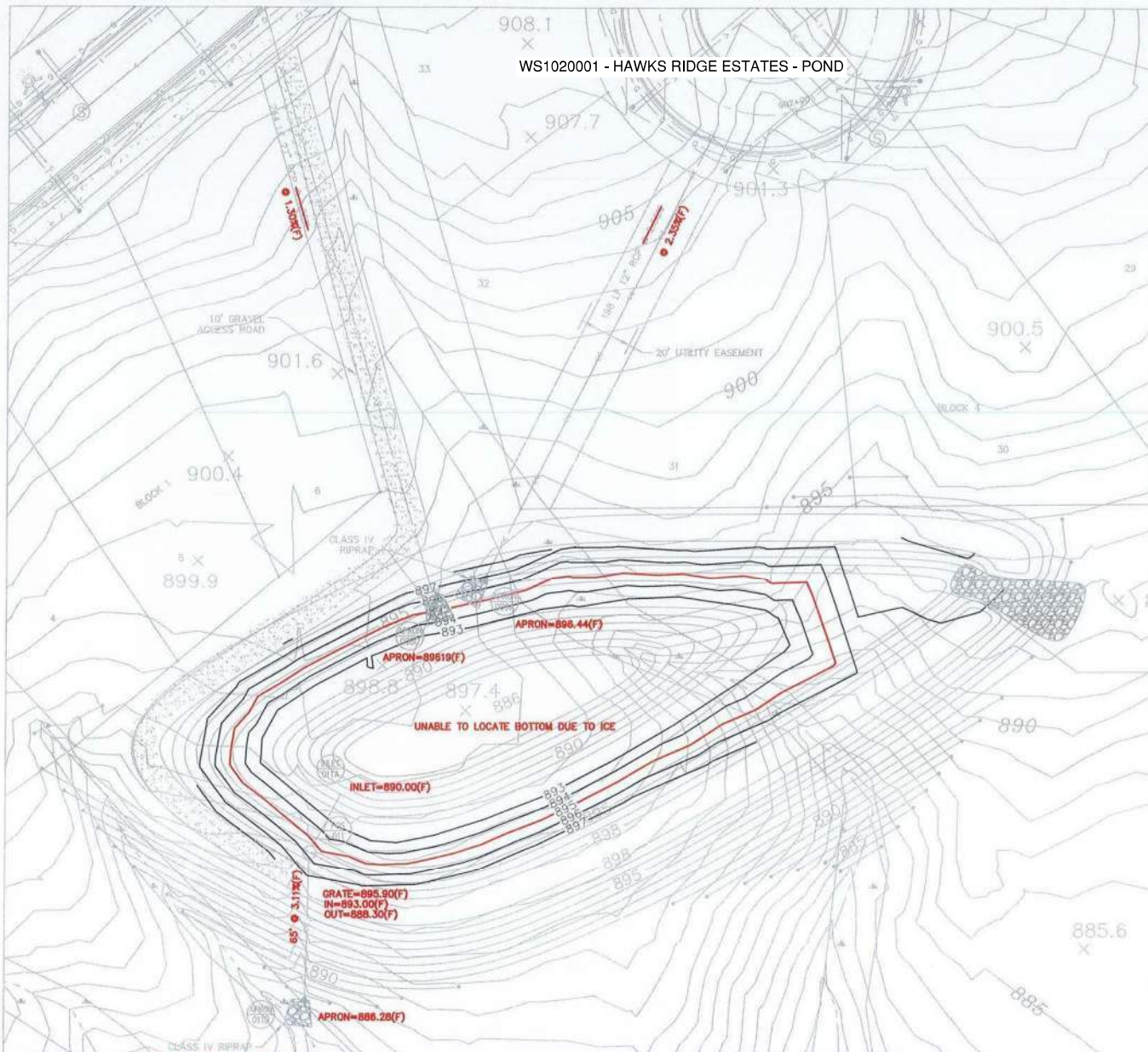
DETENTION PONDS

FILE NO. 03/19/04/01
 9
 DATE 08/09/04
 52

WS1020001 - HAWKS RIDGE ESTATES - POND



WS1020001 - HAWKS RIDGE ESTATES - POND



NOTE:
 TEMPORARY EROSION CONTROL SHALL BE RAPID STABILIZATION, METHOD 4 AS DIRECTED BY THE ENGINEER.
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 EXCAVATION OF STORM WATER PONDS SHALL BE PAID FOR UNDER COMMON EXCAVATION - SEE SPECIAL PROVISIONS COMMON EXCAVATION VOLUMES FOR STORM WATER PONDS ARE APPROXIMATELY:
 3610.63 C.Y.
 ACCESS ROADS TO BE BUILT TO AND AROUND STORM WATER PONDS AS SHOWN AND AS DIRECTED BY THE ENGINEER. ACCESS ROADS SHALL BE 8" CLASS 5 AGGREGATE BASE.

Prismoidal Volume Results Pond Excavation

Original Surface Model:	EPOND
Final Surface Model:	FPOND
Cut Compaction Factor:	0.00 %
Fill Compaction Factor:	0.00 %
Raw Cut Volume:	3610.63 cu yd
Compacted Cut Volume:	0.00 cu yd
Total Cut Volume:	3610.63 cu yd
Raw Fill Volume:	3461.76 cu yd
Compacted Fill Volume:	0.00 cu yd
Total Fill Volume:	3461.76 cu yd

STRUCTURE NUMBER	STRUCTURE TYPE	NORTHING (X)	EASTING (Y)	MH/CD DESIGN	NEW MH ELEV. FEET	INVERT OUT ELEV. FEET
00BC	APRON	3367685.89	3367685.69	APRON		897.00
009A	APRON	3367690.28	4985522.58	APRON		897.00
011*	POB	3367805.23	4985485.82	48" POND SKIMMER	895.75	888.00
011A	APRON	3367825.72	4985474.90	APRON		893.00
011B	APRON	3367542.11	4985456.47	APRON		897.00

*SEE DETAIL ON SHEET 11 OF THIS PLAN
 ALSO SEE SHEET 5

EMERGENCY SPILLWAY EL 897.0
 30 YDS CLASS IV RIPRAP

NOTE:
 RIPRAP AND FABRIC SHALL BE HAND PLACED AND GO ALL THE WAY DOWN THE SLOPE AS DIRECTED BY THE ENGINEER

- 4" TOPSOIL
 TYPE 200 SEED MIX
 FERTILIZER
 CLASS 3 EROSION CONTROL BLANKET
- 4" TOPSOIL
 TYPE 350 SEED MIX
 FERTILIZER
 CLASS 3 EROSION CONTROL BLANKET

RECORD DRAWINGS
 12/07

SEE SHEET 5 FOR STORM SEWER AS BUILT

DESIGN TEAM	1	JM	12/07	RECORD DRAWINGS
DRAWN BY:	SD			
DESIGNER:	AM			
CHECKED BY:	JM			
	NO.	BY	DATE	REVISIONS

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 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: JAMON J. HEHL Date: 12/06
 Printed Name: JAMON J. HEHL Reg. No. 41926

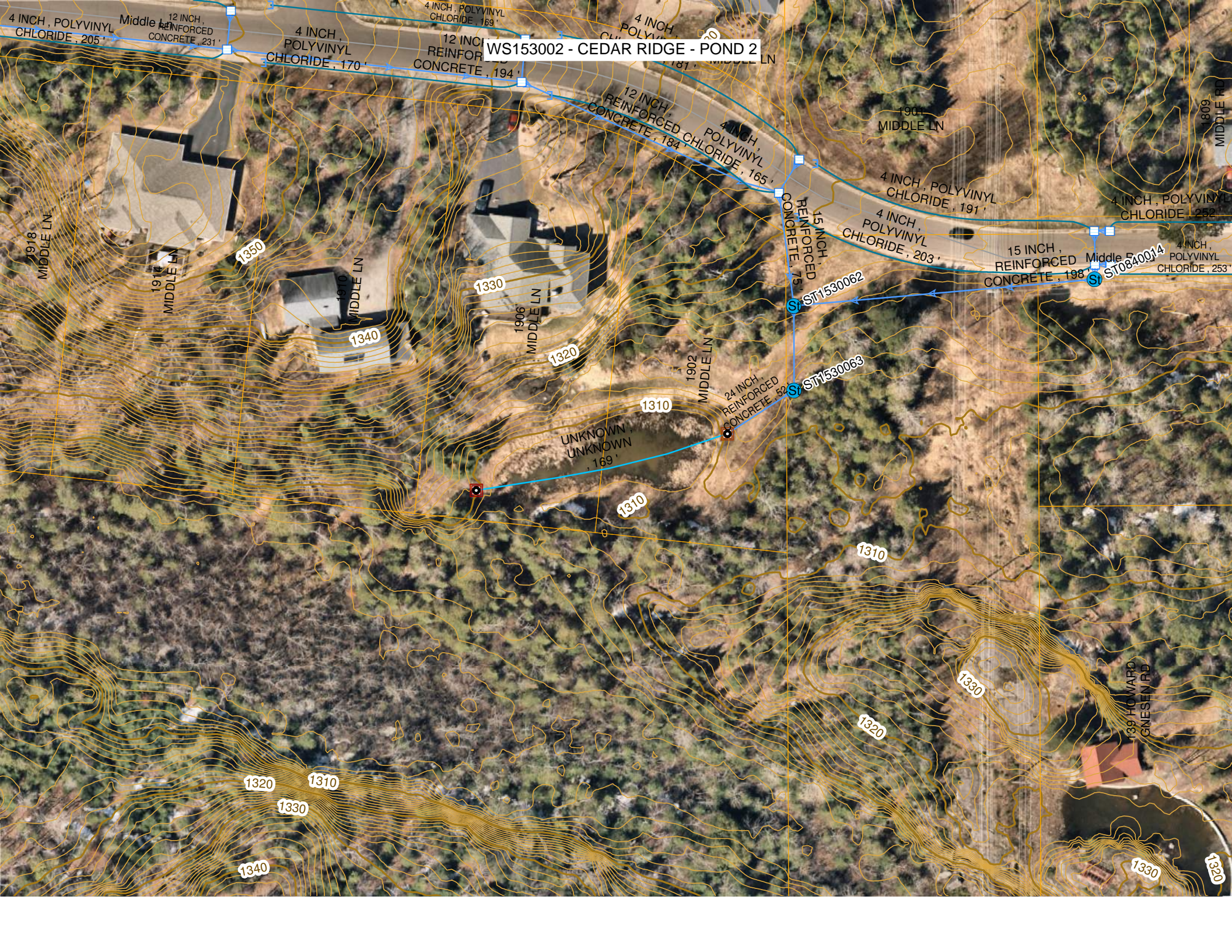


CITY OF DULUTH
 CITY PROJECT 0605TR
 HAWK RIDGE ESTATES PHASE II

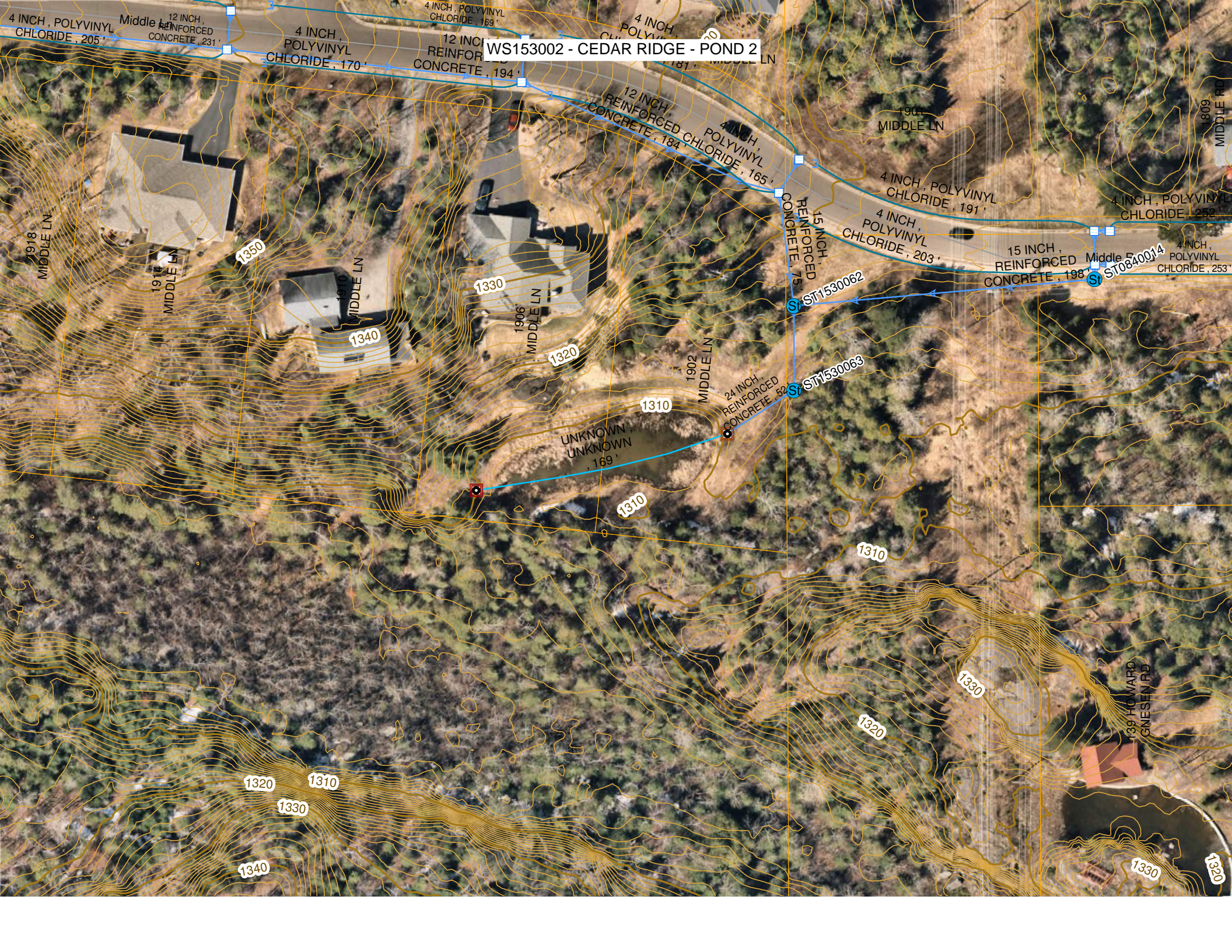
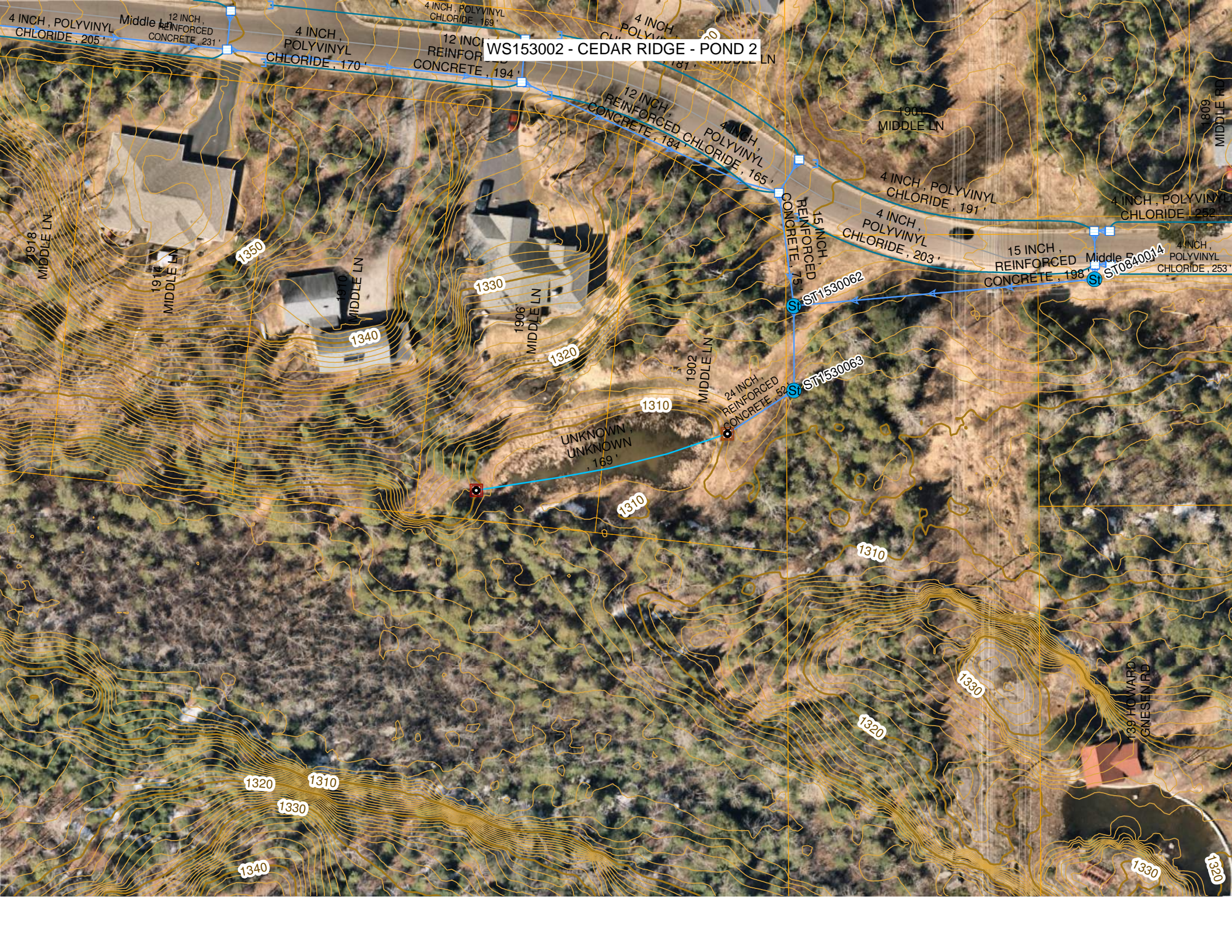
PONDS

FILE NO. ACR05A0304.00	6
DATE 08/15/06	46



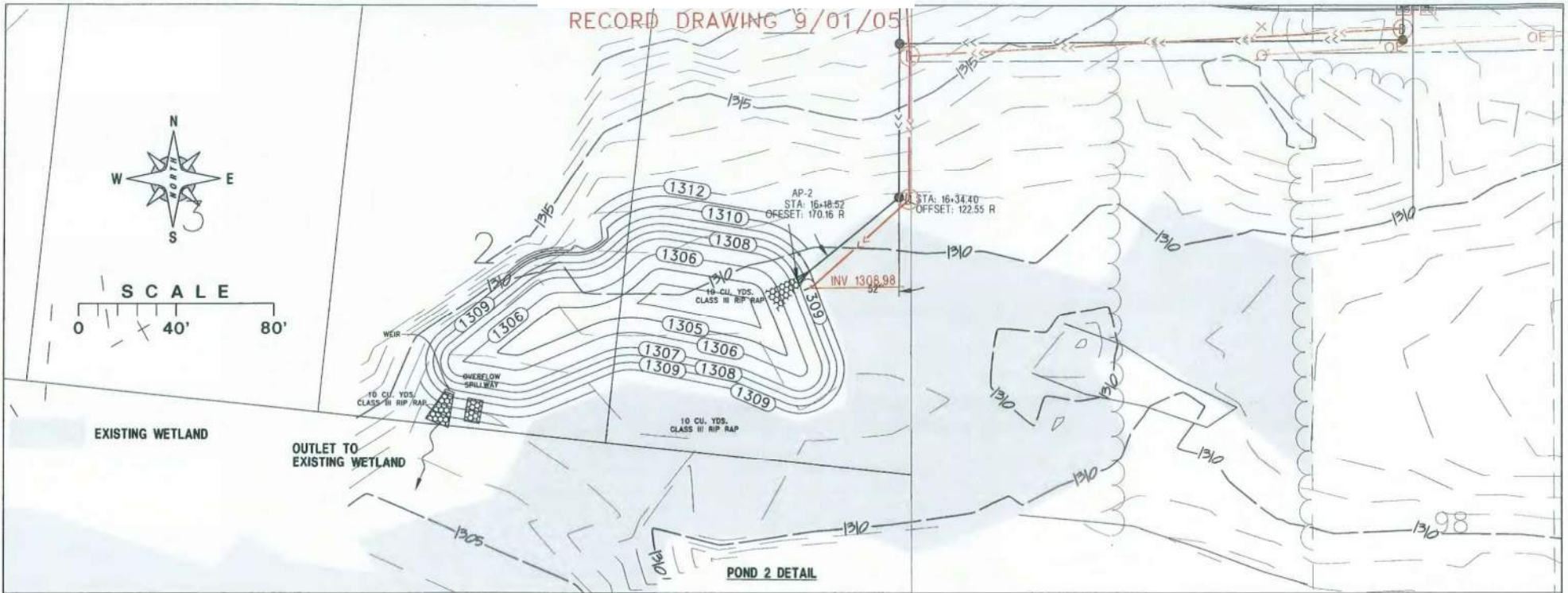


WS153002 - CEDAR RIDGE - POND 2

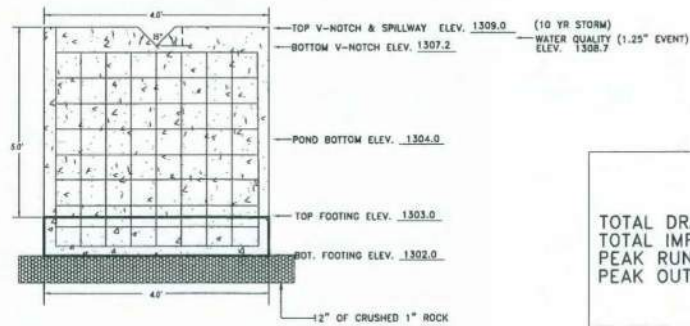
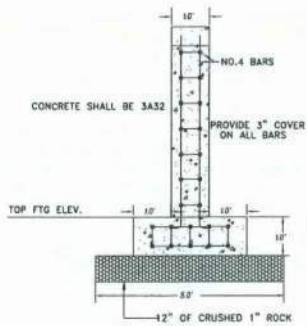
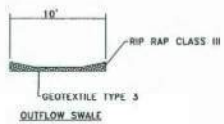


WS153002 - CEDAR RIDGE - POND 2

RECORD DRAWING 9/01/05



POND 2 DETAIL



V-NOTCH WEIR
NO SCALE

POND 2 DATA	
TOTAL DRAINAGE AREA TO POND 2	= 2.21 ACRES
TOTAL IMPERVIOUS AREA	= 1.28 ACRES
PEAK RUNOFF FROM SITE (10 YR EVENT)	= 7.95 CFS
PEAK OUTLET FROM POND	= 0.91 CFS

- POND 2 NOTES**
1. AFTER CONSTRUCTION, POND WILL BE OWNED AND MAINTAINED BY THE HOME OWNERS ASSOCIATION.
 2. OUTLET FLOWS FROM POND 2 DISCHARGE ONTO UNDISTURBED GROUND AND ULTIMATELY FLOW INTO AN EXISTING WETLAND LOCATED 50 FEET SOUTH.
 3. POND 2 WILL BE CONSTRUCTED INITIALLY TO SERVE AS A TEMPORARY SEDIMENT BASIN. FOLLOWING THE SITE GRADING AND TURF ESTABLISHMENT, THE POND WILL BE CLEANED AND SEEDED.

1	12/21/05	1			
2	DAVE	2			
3	60920	3			
4		4			
5		5			
6		6			

**CEDAR RIDGE ESTATES
POND DETAILS - POND 2**

4					
5					
6					
7					
8					

Sheet 44 of 69 Sheets

City of Duluth Proj. No. 0392TR

SALO ENGINEERING, INC.
ENGINEERS - SURVEYORS - PLANNERS
13 East First Street - Duluth, Minnesota 55802 - 218/721-4700

I HEREBY CERTIFY THAT THIS PLAN 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 MINNESOTA.

DAVID G. BOLF
REGISTERED PROFESSIONAL ENGINEER

JOB NO. ED22 DATE August 2004