

WORK PLAN BREAKDOWN

WORK PLAN EXPLAINED

PHASE 1

PRELIMINARY DESIGN & COST ESTIMATES

The initial phase of this project will serve to galvanize the design team and government agency contacts in order to produce preliminary design documents and cost estimates. Designs and cost estimates will cover the irrigation pond, city water supply outfall, pump station electrical, fairway regrading and turf establishment.

Approach:

- ❑ Gather LIDAR, survey, base, and any other data that is necessary to begin preliminary design
- ❑ Using volume and surface area provided by the Irrigation Designer, begin design of irrigation pond
 - Meet with DNR and any other regulatory agencies to determine necessary permits and applicable regulations
 - Confirm with City and Irrigation designer that pond design meets all project needs
 - Have pond spoils tested for soil type and determine overall spoils quantities
- ❑ Complete preliminary designs for the following project aspects:
 - Outfall for City water supply for chlorine off-gassing and backflow prevention
 - Electrical needs for pump station (must meet all code and requirements and irrigation system demands)
 - Fairway regrading and turf establishment for Holes 2 & 9 on the Front Nine, Hole 9 on the Middle Nine, and Holes 1, 2, 5, 6, 7, 8 & 9 on the Back Nine
- ❑ Meet with Irrigation Designer to evaluate preliminary designs for constructability, compatibility with Irrigation system design, and compliance with current industry standards
- ❑ Establish preliminary cost opinions for all aspects of project (based on local labor, project labor agreement compliance and material costs)

- ❑ Gather and provide any design criteria information and visual aids related to the irrigation pond that may be necessary for permitting and/or grant applications
- ❑ Complete preliminary construction documents and specifications
- ❑ Meet with design team and City to review preliminary plans and cost estimates

Products:

- ❑ Preliminary design & cost estimates, including necessary information for permitting & grant applications
- ❑ Preliminary construction documents & specifications
- ❑ Meeting Minutes

PHASE 2

CONSTRUCTION DOCUMENTS & BIDDING

After the preliminary plan set has been presented to the City and reviewed by the design team and any required agencies, work will begin on completing the Construction Document set. Any feedback received will be incorporated into the final documents, and all necessary permits will be finalized with the proper authorizing agencies.

Approach:

- ❑ Review feedback on preliminary plans from City, DNR, Irrigation Designer, etc.
- ❑ Synthesize preliminary plans and feedback into Construction Documents for the following:
 - Irrigation Pond
 - Outfall for City water supply for chlorine off-gassing and backflow prevention
 - Electrical design and installation of pump station
 - Fairway regrading and turf establishment for Holes 2 & 9 on the Front Nine, Hole 9 on the Middle Nine, and Holes 1, 2, 5, 6, 7, 8 & 9 on the Back Nine
- ❑ Meet with Irrigation Designer to evaluate Construction Documents for final constructability, compatibility with Irrigation system design, and compliance with current industry standards
- ❑ Review Construction Documents with City staff

PHASE 2 (CONT'D)

- ❑ Complete Final Construction Document Set including the following:
 - Final plans, specifications and details
 - Bid documents and an itemized unit price bid schedule with quantities for contractor bidding
- ❑ Assist the City in pre-bid meeting(s) and the bidding process

Products:

- ❑ Final Construction Documents (Plans, Specifications and Details)
- ❑ Bid Documents
- ❑ Meeting Minutes

PHASE 3 CONSTRUCTION ADMINISTRATION

Once a Contractor has been selected and construction gets underway in late 2022, our team will assume the role of Construction Administrators, overseeing critical steps in the construction process, documenting observations, and coordinating team members, the City and reviewing agencies as required.

Approach:

- ❑ Provide periodic Construction Administration, including observation, site visit reports and coordination for the following project components:
 - Irrigation Pond
 - Outfall for City water supply
 - Pump station electric
 - Fairway regrading and turf establishment for Holes 2 & 9 on the Front Nine, Hole 9 on the Middle Nine, and Holes 1, 2, 5, 6, 7, 8 & 9 on the Back Nine
- ❑ Provide limited Construction Administration for irrigation system installation in conjunction with Irrigation Designer

PHASE 3 (CONT'D)

- ❑ Assist the DNR-led Buckingham Creek restoration project by establishing haul routes and storage locations for pond spoils
- ❑ Create a punch list for thr Contractor after completing walkthroughs to ensure the following components are being installed and/or are performing per specifications:
 - Irrigation Pond
 - Pump Station electric
 - City water outfall
 - Fairway regrading
 - Turf establishment
- ❑ Perform a final walkthrough to confirm all punch list items have been completed
- ❑ Complete as-built drawings and as-staked sheets for irrigation pond, pump station infrastructure and City water supply outfall
- ❑ Compile and provide any DNR-required documentation for the irrigation pond

Products:

- ❑ Construction observation memos from each Site Visit
- ❑ Punch List
- ❑ Final walkthrough observations/ memo
- ❑ As-built drawings/ As-staked sheets in AutoCAD and pdf formats
- ❑ DNR-required documentation for irrigatio pond

6

WORK PLAN HOURS

TASK DESCRIPTION	SAS	NCE	GANSKE	SUB	TOTAL
PHASE 1: PRELIMINARY DESIGN & COST ESTIMATES					
Site Visit, Survey Review and Utility Investigation		40			40
Pond Design	15	80			95
Storwater Management Plan & Hydrologic Report		44			44
Determine Permit Requirements - DNR Coordination Approvals	40	48			88
Soils Determination/Quantity/Local Testing Co.				40	40
Determine Electrical Needs (Sub to complete design)				40	40
Design Fairway regrading and Turf Requirements	40	29	35		104
City of Duluth Erosion Control Permit & MPCA Permit		4			4
City of Duluth Watermain Extension Plan		62			62
Coordinate with Irrigation Designer	20				20
Cost Estimates based on Labor	20				20
Preliminary Design and Cost Estimate Report	20	2			22
Preliminary Construction Design	20	25			45
PHASE 2: CONSTRUCTION DOCUMENTATION & BIDDING					
Create Irrigation Pond CDS's	5	8			13
Outfall Construction Documents for City Water Needs		26			26
Construction Plans for Fairways	50	16	30		96
Coordinate with Irrigation Designer	20				20
Create Final Construction Plans after City Review	30	4	15		49

Bid Documents and SEQ for pricing	15	35	20		70
Specifications/Details	35	41	15		91
Assist in Bidding	10				10
TASK DESCRIPTION	SAS	NCE	GANSKE	SUB	TOTAL
PHASE 3: CONSTRUCTION ADMINISTRATION					
Inspections - hourly estimated	120	98	30		248
Limited CA for Irrigation System installation	15				15
Coordination with the DNR for Pond-Buckingham Creek Work	20				20
Inspection Walkthrough	10		5		15
Punch List Follow up walkthrough	10				10
Final Walkthrough	10				10
As-Built Plans	15	8			23
Provide Documentation	5	4			9
Project Meetings in DULUTH	50	12	12		74

* ASSUMES AN ENGINEER SIGNATURE WILL NOT BE REQUIRED FOR PLAN PREPARATION.
 UTILITIES PLANS WILL BE SIGNED BY CONTRACTOR (OR CONTRACTORS ENGINEER) AT TIME OF PERMITTING.



SAS+Associate - Hours Estimate

Proposal #	20-037	Project Name	Enger Golf Proposal (RFP Number 21-AA32)
Date	11/22/2021	Client	City of Duluth

TASK DESCRIPTION	Hours Breakdown						SUBTOTAL
	SAS	NCE	Ganske	Sub			
PROJECT ELEMENTS							
Phase 1			Principal	PE	Tech		
Preliminary Design and Cost Estimates							
Site Visit, Survey Review and Utility Investigation				8	32		
Pond Design	15		8	16	56		\$ 9,865.00
Stormwater Management Plan & Hydrologic Report			4	16	24		\$ 5,000.00
Determine Permit Requirements - DNR Coordination Approvals	40		24	24			\$ 11,480.00
Soils Determination/Quantity/Local Testing Co.						\$ 25,000.00	\$ 25,000.00
Determine Electrical Needs/Sub to do Design						\$ 5,000.00	\$ 5,000.00
Design Fairway regrading and Turf Requirements	40		6	5	18	35	\$ 8,860.00
City of Duluth Erosion Control Permit & MPCA Permit				4			\$ 560.00
City of Duluth Watermain Extension Plan			2	12	48		\$ 6,120.00
Coordinate with Irrigation Designer	20						\$ 1,900.00
Cost Estimates based on Labor	20						\$ 1,900.00
Preliminary Design and Cost Estimate Report	20				2		\$ 2,070.00
Preliminary Construction Design	20			5	20		\$ 4,300.00
Phase 2							
Construction Documentation and Bidding							
Create Irrigation Pond CDS's	5			8			\$ 1,595.00
Outfall Construction for City Water Needs				4	8	14	\$ 1,940.00
Construction Plans for Fairways	50				4	12	\$ 5,690.00
Coordinate with Irrigation Designer	20						\$ 1,900.00
Create Final Construction Plans after City Review	30			4		15	\$ 4,160.00
Bid Documents and SEQ for pricing	15			15	20	20	\$ 6,225.00
Specifications/Details	35		6	15	20	15	\$ 8,955.00
Assist in Bidding	10						\$ 950.00
Phase 3							
Construction Administration							
Inspections - hourly estimated	120		4	22	72	30	\$ 22,820.00
Limited CA for Irrigation System installation	15						\$ 1,425.00
Coordination with the DNR for Pond-Buckingham Creek Work	20						\$ 1,900.00
Inspection Walkthrough	10					5	\$ 1,200.00
Punch List Follow up walkthrough	10						\$ 950.00
Final Walkthrough	10						\$ 950.00
As Built Plans	15			4	4		\$ 2,325.00
Provide Documentation	5				4		\$ 815.00
Project Meetings in DULUTH (2)	50		12	12			\$ 8,590.00
* Assumes an Engineer signature will not be required for plan preparation, utilities plans will be signed by contractor (or contractors engineer) at time of permitting.							
Task Total	595	66	174	332	146		\$ 154,445.00

TASK DESCRIPTION	Hours Breakdown - ADDITIONAL SERVICES AS REQUIRED						SUBTOTAL
	SAS	NCE	Ganske	Sub			
SITE - LANDSCAPE ARCHITECTURE ELEMENTS							
Additional On Site Visit Per Day If Requested - SAS	8						\$ 680.00
Additional On Site Visit Per Day If Requested - NCE		8					\$ 880.00
Additional On Site Visit Per Day If Requested - GANSKE					8		\$ 400.00
Task Total	8	8	0	8	0	0	\$ 1,960.00

HOURLY RATES	
SAS	\$ 95.00
NCE- Principal	\$ 180.00
NCE- PE	\$ 140.00
NCE- Tech	\$ 85.00
GANSKE	\$ 50.00

REIMBURSABLES	Qty	Cost
Copies B/W	\$ 1.00	0 \$ -
Plots B/W	\$ 5.00	0 \$ -
Plots Color	\$ 10.00	0 \$ -
Boards	\$ 15.00	0 \$ -
Mileage	\$ 0.55	0 \$ -
Total Reimbursable		\$ -

SUMMARY	
Hours Total	\$ 154,445.00
Reimbursables	\$ -

Project Total	\$ 154,445.00
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- SAS+Associates may shift tasks within the hours breakdown but will remain within estimate.