Town of Nags Head

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PROJECT NAME:

GIS STORMWATER UTILITY FIELD DATA COLLECTION & MAPPING PROJECT

TOWN OF NAGS HEAD
c/o CLIFF OGBURN, TOWN MANAGER
NAGS HEAD, NORTH CAROLINA

ADVERTISEMENT FOR STATEMENT OF QUALIFICATIONS

The Town of Nags Head is seeking qualified firms/individuals to be considered for supporting professional services for the performance of field data collection and inventory mapping of a portion of the Town's existing storm water infrastructure. The selected firms/individuals shall be knowledgeable in all areas of field data collection, stormwater infrastructure and open channel inventory projects, quality assurance/control programs, geographic information system (GIS) database design and development, improvement projects in a coastal environment. Qualifications shall be submitted in the form of a Statement of Qualifications (SOQ) and shall be received no later than **2:00 PM ON TUESDAY OCTOBER 25, 2016, VIA ELECTRONIC SUBMISSION TO DAVID.RYAN@NAGSHEADNC.GOV.** Submission parameters and guidelines, standards for performance of basic services, content and format requirements, conditions for submission of qualifications, qualification ranking criteria, general contractual conditions and region of interest are described in the Request for Statement of Qualifications.

The Issuing Office for the Bidding Documents is: **TOWN OF NAGS HEAD DEPARTMENT OF PUBLIC WORKS, 2200 LARK AVE, NAGS HEAD, NC, 27959, (P) 252.441.1122. THE POINT OF CONTACT FOR THIS PROJECT IS DAVID RYAN, PE, TOWN ENGINEER FOR THE TOWN OF NAGS HEAD, email address DAVID.RYAN@NAGSHEADNC.GOV.** Prospective Offerors may examine printed copies of the Bidding Documents at the Issuing Office on Mondays through Fridays between the hours of **8:30 am and 3:30 pm** and may obtain printed copies of the Bidding Documents from the Issuing Office as described above.

Electronic copies, as "zipped" portable document format (PDF) files, of the Bidding Documents shall be made available for download from the Town of Nags Head Website at www.nagsheadnc.gov; Town Departments/Administration/Town Clerk/Bid Notices/Public Notices at no charge. Bidders are encouraged to obtain the project information via this method.

All Consultants submitting bids shall be qualified to perform the described professional services and may be required to provide evidence satisfactory to the Town of Nags Head, in its sole judgment, of qualifications and experience sufficient for the successful accomplishment of a project of this nature and size within the time requirements set forth in the Request for Qualifications.

Owner reserves the right to reject any or all submissions, including without limitation the rights to reject any or all nonconforming, nonresponsive, unbalanced, or conditional submissions, and to reject the submission of any Consultant if Owner believes that it would not be in the best interest of Owner to make an award to that Consultant. After determination of the Successful Proposer based on this comparative process and on the responsiveness, responsibility, and other factors, the award may be made to said Successful Proposer on its Qualifications for which Owner determines funds will be available at the time of award and in the interest of the Town of Nags Head.

Owner also reserves the right to waive informalities or minor defects and to reject any or all bids and the right to amend the solicitation schedule as necessary.

This the 28th day of September, 2016.

+ + END OF ADVERTISEMENT FOR BIDS + +

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REQUEST FOR STATEMENT OF QUALIFICATIONS

FOR

FY 2016-2017

GIS STORMWATER UTILITY FIELD DATA COLLECTION & MAPPING PROJECT

OVERVIEW

The Town of Nags Head is seeking qualified firms/individuals to be considered for supporting professional services for the performance of field data collection and inventory mapping of a portion of the existing storm water infrastructure. The purpose of this document is to solicit qualifications from interested firm(s). The Town intends to enter into a contract with one or more firm(s), in the opinion of the Town, which are determined to be the most qualified to perform such work.

BACKGROUND & OBJECTIVE

The Town of Nags Head is located on Bodie Island east of Roanoke Island in Dare County, North Carolina. The 6.7 square mile Town is bounded by the Roanoke Sound to the west, Atlantic Ocean to the east, Town of Kill Devil Hills to the north, and Cape Hatteras National Seashore to the South.

The existing stormwater drainage system for the Town relies heavily on five (5) ocean outfalls maintained by the North Carolina Department of Transportation (NCDOT). Four of the outfalls are located within Town limits and the fifth is located immediately south of the Town boundary. The outfalls were originally constructed to provide drainage for ocean overwash events when the storm surge from the ocean overtops the dunes. As development has occurred, additional stormwater drainage systems were connected to the outfalls. In most instances the outfall pipes were not designed to convey flows from the drainage systems that are currently tied to the outfalls. In addition to the NCDOT outfalls, twelve (12) outfalls were identified along the western portion of the Town draining either to the Roanoke Sound or to the marsh areas west of South Nags Head.

In 2006 the Town contracted with WK Dickson to develop a Stormwater Management Plan that would include an inventory of significant drainage structures, a capital improvement plan with projects to mitigate flooding and improve water quality, and a review of the Town's existing stormwater ordinances. Although a majority of the significant drainage features were collected as part of this effort, a portion of the stormwater inventory within the northern end of the Town remains incomplete.

In order to complete the existing inventory, the Town is pursuing field location and mapping services of the incomplete portion(s) of the stormwater utility system to be used for the Town's asset management program and to assist in the update of the Master Stormwater Management Plan.

The objective is to field locate, inventory and map the existing significant drainage structures in the northern section of Town encompassing approximately 0.90 sq. miles in area, (see Attachment A). Field data collection, database structure and subsequent mapping shall be compatible with ESRI ArcMap v 10.2.

Upon execution of a contract, the selected firm(s) will be provided a task order for a specific Region of Interest (ROI) within which they will collect the significant drainage structure. The selected firm(s) will assist the Town in the developing the method/approach for field data collection and prioritization of structures within the ROI's. We anticipate the database architecture will follow the existing storm water feature and attribute database previously prepared by WK Dickson, (see Attachment B).

Our goal is to produce a multi- tiered master plan to serve as a foundation for a proactive and comprehensive stormwater management within the Town, with the completion of the stormwater inventory to serve as the initial phase of this process.

PROPOSAL PARAMATERS AND GUIDELINES

The general timeline for this project will be initiated with this Request for Qualifications with the general timeline as follows;

Contract Awarded:	November 2016
Field Data Collection Completed:	February 2017
Inventory/Database Integration & Mapping Completed:	March 2017

The selected firms/individuals shall be knowledgeable in all areas of field data collection, stormwater infrastructure and open channel inventory projects, quality assurance/control programs, geographic information system (GIS) database design and development, improvement projects in a coastal environment. Qualifications shall be submitted in the form of a Statement of Qualifications (SOQ).

The Statement of Qualification process will establish the terms and conditions governing the selection of firms/individuals to provide land surveying services. All statements shall be in the specified format in the Submittal Requirements section below.

Those firms that have experience and expertise in stormwater management master planning, project management, infrastructure inventory and GIS/database development projects are encouraged to highlight these capabilities in the RFQ. Multiple consulting capabilities and a wide range of stormwater management expertise will be needed for this project. The Town reserves the right to extend to extend the scope of work beyond the initial phase as described hereon.

PROPOSAL PARAMATERS AND GUIDELINES

A. **Submission Requirements.** All submissions must be presented in accordance with the requirements, format, and guidelines described in this Request for Qualifications (RFQ) document.

B. **Submission Deadline.** Interested entities must submit (1) electronic file (PDF) copy no later than **2:00 p.m., Tuesday, October 25, 2016.**

Submittals should be addressed and forwarded to:

David Ryan, P.E. Town Engineer
Town of Nags Head
P.O. Box 99 Nags Head, NC 27959
(252) 441-6221
Email: david.ryan@nagsheadnc.gov

C. **Interpretation and Addenda.** All questions, requests for interpretation, and comments shall be prepared in writing and submitted to David Ryan, PE (david.ryan@nagsheadnc.gov) via email by October 21, 2016. Question and clarification responses will be sent to all parties having submitted questions. All responses will be binding. If a respondent has no questions please state so via email so that responses will be forwarded. Oral and other interpretations will be without legal effect.

STANDARDS FOR PERFORMANCE OF BASIC SERVICES

A. Storm Water Conveyance System Mapping. Contractor shall map all conveyance system components which includes, but is not limited to: manholes, junction boxes, catch basins, inlets, headwalls, pipes, culverts, channels, etc. Incorporation into GIS – All maps developed as a part of this project shall be formatted (metadata) as described by the Town and mapping data shall be compatible with Nags Head GIS system for incorporation into Town GIS system.

Generally, the appropriate information to be recorded for each structure / component shall include:
- Type of structure/component
- Size of structure/component
- Material type of structure/component
- Type of outlet device and headwalls
- Current maintenance condition
- Digital photograph

Attachment B, Storm Water Feature and Attribute Database Project Work Plan Supplement is provided for reference.

B. Field acquisition of data shall comply at a minimum with the following:

All coordinates shall conform to the North Carolina State Plane Coordinate system referenced to the North American Datum (NAD) 83, the North American Vertical Datum (NAVD) 88 for vertical control, and the National Geodetic Survey (NGS) model. All measurements must be recorded in US survey feet (Northing and Easting) and shall include identification of horizontal location, X and Y Coordinates, to within 1.0 feet accuracy and vertical location of each portion of a structure within 1.0 feet accuracy (Z coordinates).

Contractor is allowed to utilize GPS and/or conventional surveying techniques. Construction record drawings or aerial photos may be available to the Contractor for assistance in feature identification.

Work to be performed will be authorized by the Town of Nags Head specific to the applicable project, and shall be invoiced accordingly. The contract will not guarantee the amount of work, if any, available under the contract.

CONTENT AND FORMAT REQUIREMENTS

Respondent's submissions must include the following core components, in order to be considered responsive to this solicitation:

- Introductory letter including confirmation of willingness to execute and meet all of the requirements as described hereon.
- Firms general background and experience with government organizations or related entities
- Names, qualifications and expertise of individuals who will be assigned the responsibility of working directly with the Town.
- Project management
- Approach or methodology to accomplish objectives
- Certification Form

CONDITIONS FOR SUBMISSION OF QUALIFICATIONS

All submissions in response to this request must meet the following conditions to be considered:

- Breakdown the proposal by the steps of work necessary
- Proposals must be received by the date and time specified; late proposals will be disqualified.
- In order to be considered for selection, applicants must submit a complete proposal. Incomplete proposals may not be considered.

Proposals must include an RFQ introductory letter clearly stating the name of the applicant, address and telephone number of the applicant representative.

The funding award for these services and project shall be made at the sole discretion of the Town Manager and/or Town of Nags Head Board of Commissioners. The Town of Nags Head is under no obligation to select any presented proposals. The Town of Nags Head reserves the right to request additional information from all applicants. In the selection of the top respondent, the Town of Nags Head reserves the right to engage in an interview process to obtain additional information that will be used during the selection process. The Town reserves the right to reject any and all proposals submitted, and to negotiate portions thereof.

The Town reserves the right to waive any informality and to reject any and all proposals submitted, and to negotiate portions thereof.

There is no expressed or implied obligation for the Town of Nags Head to reimburse responding firms for any expense incurred in preparing or responding in any informality or reject all proposals submitted.

All offerors responses to the RFQ shall remain valid for a period of not less than ninety (90) calendar days from the due date of this RFQ.

Submission of a proposal indicates acceptance by the proposer of the terms, conditions and requirements described in this RFQ unless clearly and specifically noted in the submittal.

All offerors responses to the RFQ shall remain valid for a period of not less than ninety (90) calendar days from the due date of this RFQ.

Submission of a proposal indicates acceptance by the proposer of the terms, conditions and requirements described in this RFQ unless clearly and specifically noted in the submittal.

Offerors may propose services that are provided by others, but any services proposed must meet all of the requirements of this RFQ. If the successful offeror's proposal includes services provided by others, the vendor will be required to act as the prime vendor for all such items and must assume full responsibility for the procurement, delivery and quality of such services. The successful offeror will be considered the sole point of contact with regard to all stipulations, including payment of all charges and the meeting of all requirements of this RFQ.

It is the policy of the Town of Nags Head to facilitate the establishment, preservation, and strengthening of historically underutilized businesses, (i.e. small businesses and businesses owned by women and minorities), and to encourage their participation in the Town's procurement activities. Toward that end, the Town encourages these firms to compete and encourages non-minority firms to provide for the participation of small businesses and businesses owned by women and minorities through subcontracting, partnerships, joint ventures, and other contractual opportunities. The Town's participation goal for Historically Underutilized Businesses is 10%.All offerors are requested to include a statement in its response to this RFQ to describe any planned use of such businesses in fulfilling this contract.

Proposals should be prepared simply and economically, providing a straightforward, concise delineation of the capabilities of their offering.

APPLICATION RANKING CRITERIA

All submissions shall be initially reviewed to determine if they are responsive to the submission requirements. Those not meeting the minimum requirements set forth herein will be deemed non-responsive, and will not be subject to further review.

The responsive submissions shall be evaluated and ranked in accordance with the following criteria;

Quality of response to the Request for Qualifications (10%)

Approach and methodology to how consultant will meet the Town's objectives for the project (25%)

Consultant's capabilities: Technical and field capabilities to perform the specified work within this RFQ (20%)

Consultant Team: Proven capacity and qualifications in working with government agencies, and direct experience with the coastal environment and municipal projects (25%)

Schedule: Individual/Firm's current workload, timeliness and proven ability to complete projects within completed date (20%)

Demonstrated capability of the firm(s) to perform all of the work elements, review of comparable work and references, timely mobilization of staff and equipment, schedule for completion of services will be considered. The selected firm(s) will be notified immediately following the proposal submission deadline.

The selection team may consist of the Town Engineer, Deputy Town Manager, and the Facilities Maintenance Supervisor. The team will evaluate the RFQ's based on the aforementioned items and corresponding percentages. The Town may elect to schedule an interview / presentation / discussion with the top (3) consulting firms. The Town intends to then select one (1) firm for initial scope of work for the project.

GENERAL CONTRACTUAL CONDITIONS

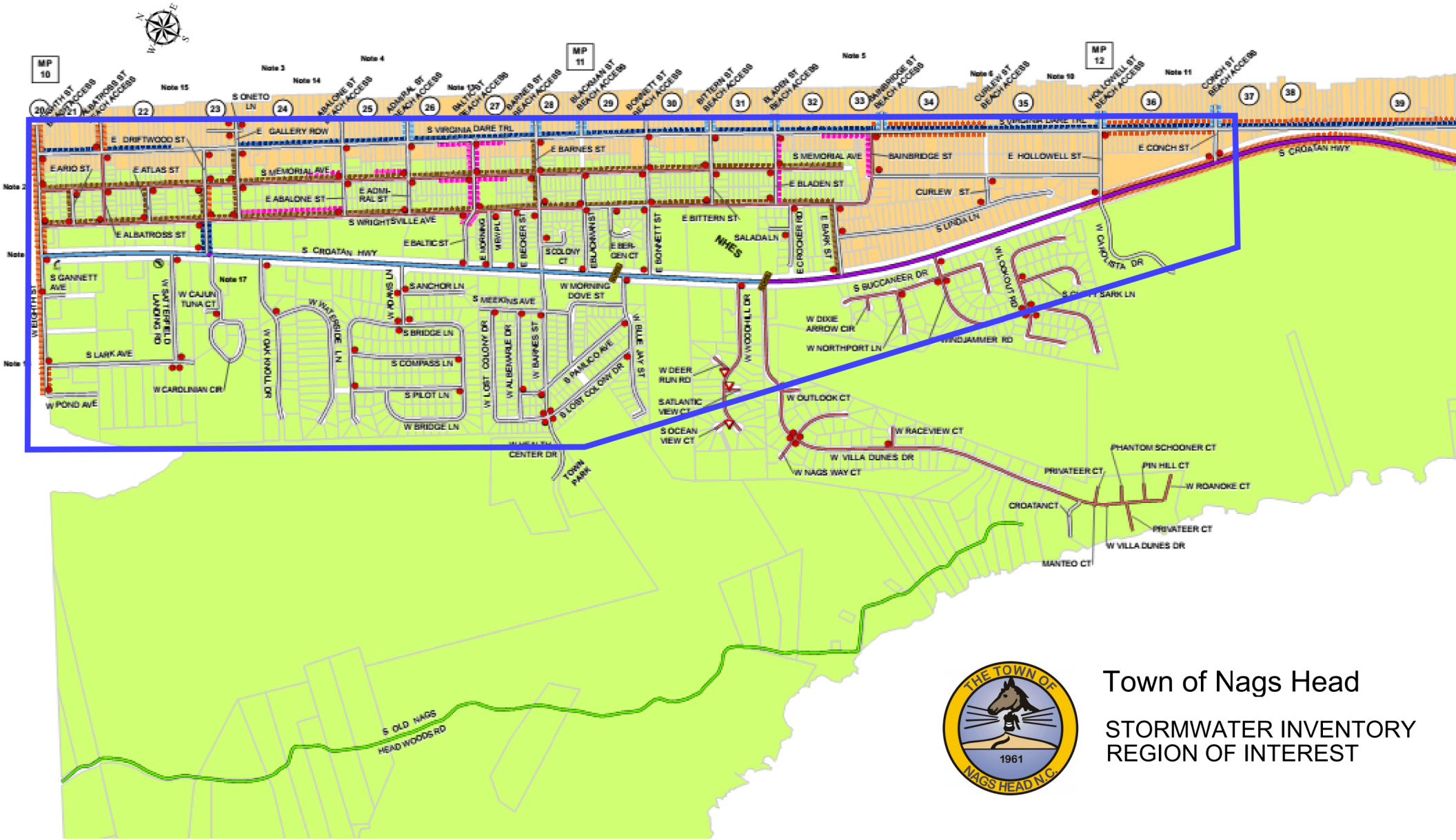
The selected firm shall certify that it has no knowledge of any circumstances which will cause a conflict of interest in providing professional services; and that no contingent fees have been paid for soliciting or securing this contract.

Each firm or individual submitting a response shall include a certification that it does not discriminate on any basis prohibited by applicable Federal or State law in employment or provision of services.

The selected firm(s) shall at its own cost and expense maintain General Liability and Worker's Compensation Insurance as required by the State of North Carolina covering each of the persons employed by it in the operation of this contract and keep the insurance in force during the term of this contract.

Attachment A

Storm Water Inventory Region of Interest



Town of Nags Head

STORMWATER INVENTORY REGION OF INTEREST

Attachment B

Storm Water Feature and Attribute Database

Town of Nags Head, North Carolina

Storm Water Feature and Attribute Database
Project Work Plan Supplement

Introduction

Conceptually, this database has been formatted around two basic types of features; box structures and end sections. Box structures, such as catch basins, have intakes that are typically set at the surface level and outlets that are underground within the box. End sections, such as head walls, are set the surface level and can be either inlets or outlets depending on the flow of water. There are multiple classifications of each; all of which are point features.

Many of the feature attributes are menu options in which a pick-list is available. Some are text entries and others are text entries. Some attributes are “required” entries, which will not allow you to store the point without properly entering the data. Others are deemed “normal” entries because the requested information may vary or may not be relevant. All text entries should be made using capital letters.

Common Attributes

Regardless of the feature type or classification, there are several series of attributes that are common to all. For instance, every structure will have a unique identification number and attributes relating to its location. Each structure will have attributes that summarize its overall condition. Condition attributes are subject to their appearance at the time of inventory. They will change seasonally, unless there is significant damage to the structure. Each structure will also have attributes that specify the routing of pipes coming and going.

The following sections identify and illustrate the features and attributes within the database. For the sake of redundancy in defining each attribute by feature, they will be illustrated by common attributes then by feature specific attributes.

Location Related Attributes

Unique_ID, text, 6, required
This is the unique identification number. It is user-defined by the following format:
Crew Name + Workzone + 4 digit number (chronological)
Example: The first structure located in Workzone 1 by Crew A: A10001

Street_Num, text, 5, normal
What is the street number (house address)?
If the structure is on a road or parcel without a house address, then skip this one.

Street_Nam, text, 50, required
What is the street name?

Street_Des, menu, required
What is the street designation?

St, default	Rd
Dr	Ave
Pkwy	Blvd
Ct	Ln
Pl	Cir
Way	Terr
Pt	Ferry
Hwy	Other

Street_Dir, menu, normal
What is the street direction?
If the street direction is not on the street sign, then skip this one.

N	S
E	W
NE	NW
SE	SW
None	

Condition Related Attributes

Prcnt_Obst, menu, required
What is the percent of obstruction, if obstructions are present?

0%, default	25%
50%	75%
100%	

Type_Obst, menu, required
What is the type of obstruction, if obstructions are present?

None, default	Sediment
Debris/Natural	Debris/Trash
Gravel	Asphalt
Other	

Data Collection Related Attributes

Photo_Disc, text, 5, required
Which photo disc contains the photo?
A photo disc is simply a folder that holds all the photos pertaining to 1 days work.
The naming convention for a photo disc is user-defined in the following format:
Crew Name + the number of days on the job
Examples: the photo disc for Crew A on the first day is: A1
the photo disc for Crew A on the second day is: A2

Photo_Num, text, 6, required
What is the photo number?
This is a user-defined number that begins at 1 each day.

Comment, text, 100, normal
This attribute is meant for anything deemed noteworthy by the user.
**anytime in a menu item attribute that the value of "Other" is selected, the user should define what "other" is referring to with a comment.*
***this field should also be used to document pipe information if there are more than 4 incoming pipes or more than 2 outgoing pipes.*

Pipe Related Attributes

These fields are critical to the hydrologic development of the storm water network connectivity within the GIS deliverable. Attributes asking "In_From" or "Out_To" are asking for the unique identification number of the structure that a pipe is coming from or going to. An outgoing pipe is the pipe that channels the water out of a structure. An incoming pipe is a pipe that channels water into a structure.

Within the feature attributes of box structures there are fields for up to 4 incoming pipes and 2 outgoing pipes along with attributes asking for the depth, size and type of each. Depths are measured from the control point to the inside bottom of the pipe (this determines the invert elevation for calculating pipe slopes and rate of flow). Every box structure will have an outgoing pipe. Some will have both incoming and outgoing pipes. An end section has a pipe that is either incoming or outgoing, never both.

In1_From, text, 6, normal
What is the unique identification number of the structure it is coming from?

In1_Dpth, text, 5, normal
What is the depth of the pipe from the control point?

In1_Size, menu, normal
What is the size of the pipe (in inches)?

None, default	4
6	8
10	12
15	18
21	24
30	36
42	48
54	60
66	72
Other	Unknown

In1_Type, menu, normal
What type of pipe is it?

None, default	RCP
CMP	BCCMP
CPE	PVC
Clay	DIP
Other	Unknown

* There are fields for up to four incoming pipes for box structures; they are all configured as the first listed above. Incoming pipes are not configured as "required" entries because

many structures do not have incoming pipes. For those that do not have incoming pipes, leave all the default settings and proceed to the outgoing pipe attributes.

Out1_To, text, 6, required
What is the unique identification number of the structure it is going to?

Out1_Dpth, text, 5, required
What is the depth of the pipe from the control point?

Out1_Size, menu, required
What is the size of the pipe (in inches)?

4	6
8	10
12	15
18	21
24	30
36	42
48	54
60	66
72	Other
Unknown	

Out1_Type, menu, required
What type of pipe is it?

RCP	CMP
BCCMP	CPE
PVC	Clay
DIP	Other
Unknown	

* There are fields for two outgoing pipes for box structures; the second is configured as the first listed above. However, the second outgoing pipe is not configured as a “required” entry because most structures have only one outgoing pipe. For those that do not have two outgoing pipes, leave all the default settings for the second pipe.

Structure specific attributes are illustrated on the following pages.

Feature Name: **Curb Inlet**
Short Name: C_I
Feature Type: Point

Control: Front, top center of the lid over the intake throat

Structure Specific Attributes:

Num_Inlets, text, 1, required entry
How many inlets does it have?

Inlet_ X, text, 5, required entry
What is the X dimension of the inlet?

Inlet_ Y, text, 5, required entry
What is the Y dimension of the inlet?

Box_Mat, menu, required entry
What is the interior box material?

Brick	Conc Block
Pre Cast, default	Metal
Stone	Rubble Masonry
Wood	Polyethyelene
Other	

Box_Shape, menu, required entry
What is the shape of the interior box?
This answer will influence the next three attributes.

Circular, default	Box
Other	

Box_Diam, text, 5, normal
If the box is circular, what is the diameter?
If it is not circular, then leave the default as 0.

Box_Lngth, text, 5, normal
If the box is rectangular, what is the Length dimension?
If it is not rectangular, then leave the default as 0.

Box_Wdth, text, 5, normal
If the box is rectangular, what is the Width dimension?
If it is not rectangular, then leave the default as 0.

Box_Dpth, text, 5, required entry
What is the depth of the box?
This should be the same as the depth of the outgoing pipe.

Steps, menu, required entry, required entry
Does the structure contain steps for maintenance entry?

Yes, default	No

Sur_Mat, menu, required entry

What is the surface material around the structure?

Asphalt, default	Concrete
Gravel	Grass
Dirt	Rip Rap
Brick	Sand
Other	

Control Point
For Curb Inlets

Feature Name: **Catch Basin**
Short Name: C_B
Feature Type: Point

Control: Top center of the hood

Structure Specific Attributes:

Num_Inlets, text, 1, required entry
How many inlets does it have?

Inlet_ X, text, 5, required entry
What is the X dimension of the inlet?

Inlet_ Y, text, 5, required entry
What is the Y dimension of the inlet?

Num_Grates, text, 1, required entry
How many grates does the structure have?

Grate_L, text, 5, required entry
What is the Length of the grate?

Grate_W, text, 5, required entry
What is the Width of the grate?

Box_Mat, menu, required entry
What is the interior box material?

Brick	Conc Block
Pre Cast, default	Metal
Stone	Rubble Masonry
Wood	Polyethyelene
Other	

Box_Shape, menu, required entry
What is the shape of the interior box?
This answer will influence the next three attributes.

Circular, default	Box
Other	

Box_Diam, text, 5, normal
If the box is circular, what is the diameter?
If it is not circular, then leave the default as 0.

Box_Lngth, text, 5, normal
If the box is rectangular, what is the Length dimension?
If it is not rectangular, then leave the default as 0.

Box_Wdth, text, 5, normal
If the box is rectangular, what is the Width dimension?
If it is not rectangular, then leave the default as 0.

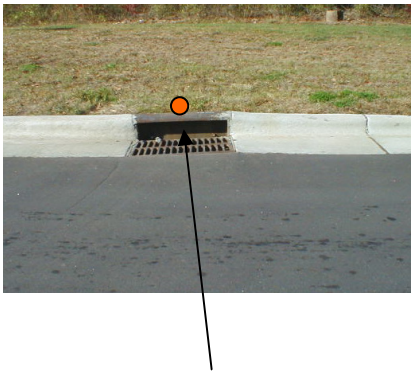
Box_Dpth, text, 5, required entry
What is the depth of the box?
This should be the same as the depth of the outgoing pipe.

Steps, menu, required entry, required entry
Does the structure contain steps for maintenance entry?

Yes, default	No

Sur_Mat, menu, required entry
What is the surface material around the structure?

Asphalt, default	Concrete
Gravel	Grass
Dirt	Rip Rap
Brick	Sand
Other	



Control Point
For Catch Basins

Feature Name: **Drop Inlet**
Short Name: D_I
Feature Type: Point

Control: Top center of the grate

Structure Specific Attributes:

Num_Grates, text, 1, required entry
How many grates does the structure have?

Grate_L, text, 5, required entry
What is the Length of the grate?

Grate_W, text, 5, required entry
What is the Width of the grate?

Box_Mat, menu, required entry
What is the interior box material?

Brick	Conc Block
Pre Cast, default	Metal
Stone	Rubble Masonry
Wood	Polyethyelene
Other	

Box_Shape, menu, required entry
What is the shape of the interior box?
This answer will influence the next three attributes.

Circular, default	Box
Other	

Box_Diam, text, 5, normal
If the box is circular, what is the diameter?
If it is not circular, then leave the default as 0.

Box_Lngth, text, 5, normal
If the box is rectangular, what is the Length dimension?
If it is not rectangular, then leave the default as 0.

Box_Wdth, text, 5, normal
If the box is rectangular, what is the Width dimension?
If it is not rectangular, then leave the default as 0.

Box_Dpth, text, 5, required entry
What is the depth of the box?
This should be the same as the depth of the outgoing pipe.

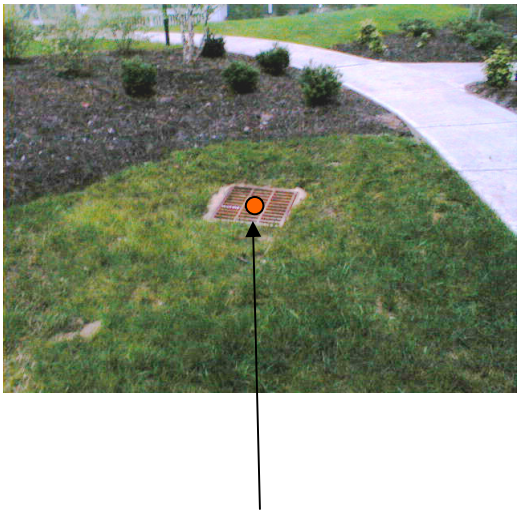
Steps, menu, required entry, required entry
Does the structure contain steps for maintenance entry?

Yes, default	No

Sur_Mat, menu, required entry

What is the surface material around the structure?

Asphalt, default	Concrete
Gravel	Grass
Dirt	Rip Rap
Brick	Sand
Other	



Control Point
For Drop Inlets

Feature Name: **Slab Inlet**
Short Name: S_I
Feature Type: Point

Control: Top center of the structure, grate or manhole cover

Structure Specific Attributes:

Manhole, menu, required entry
Does it have a manhole?

Yes, default	No

Num_Inlets, 1, required entry
How many inlets does it have?

Inlet_ X, text, 5, required entry
What is the X dimension of the inlet?

Inlet_ Y, text, 5, required entry
What is the Y dimension of the inlet?

Num_Grates, text, 1, required entry
How many grates does the structure have?

Grate_L, text, 5, required entry
What is the Length of the grate?

Grate_W, text, 5, required entry
What is the Width of the grate?

Box_Mat, menu, required entry
What is the interior box material?

Brick	Conc Block
Pre Cast, default	Metal
Stone	Rubble Masonry
Wood	Polyethyelene
Other	

Box_Shape, menu, required entry
What is the shape of the interior box?
This answer will influence the next three attributes.

Circular, default	Box
Other	

Box_Diam, text, 5, normal
If the box is circular, what is the diameter?
If it is not circular, then leave the default as 0.

Box_Lngth, text, 5, normal
If the box is rectangular, what is the Length dimension?
If it is not rectangular, then leave the default as 0.

Box_Wdth, text, 5, normal
If the box is rectangular, what is the Width dimension?
If it is not rectangular, then leave the default as 0.

Box_Dpth, text, 5, required entry
What is the depth of the box?
This should be the same as the depth of the outgoing pipe.

Steps, menu, required entry, required entry
Does the structure contain steps for maintenance entry?

Yes, default	No

Sur_Mat, menu, required entry
What is the surface material around the structure?

Asphalt, default	Concrete
Gravel	Grass
Dirt	Rip Rap
Brick	Sand
Other	

Control Point
For Slab Inlets

Feature Name: **Junction Box**
Short Name: J_B
Feature Type: Point

Control: Top center of the structure or manhole cover

Structure Specific Attributes:

Manhole, menu, required entry
Does it have a manhole?

Yes, default	No

Box_Mat, menu, required entry
What is the interior box material?

Brick	Conc Block
Pre Cast, default	Metal
Stone	Rubble Masonry
Wood	Polyethyelene
Other	

Box_Shape, menu, required entry
What is the shape of the interior box?
This answer will influence the next three attributes.

Circular, default	Box
Other	

Box_Diam, text, 5, normal
If the box is circular, what is the diameter?
If it is not circular, then leave the default as 0.

Box_Lngth, text, 5, normal
If the box is rectangular, what is the Length dimension?
If it is not rectangular, then leave the default as 0.

Box_Wdth, text, 5, normal
If the box is rectangular, what is the Width dimension?
If it is not rectangular, then leave the default as 0.

Box_Dpth, text, 5, required entry
What is the depth of the box?
This should be the same as the depth of the outgoing pipe.

Steps, menu, required entry, required entry
Does the structure contain steps for maintenance entry?

Yes, default	No

Sur_Mat, menu, required entry

What is the surface material around the structure?

Asphalt, default	Concrete
Gravel	Grass
Dirt	Rip Rap
Brick	Sand
Other	

Control Point
For Junction Boxes

Feature Name: **Irregular Inlet**
Short Name: IR_IN
Feature Type: Point

Control: Top center of the structure, grate or manhole cover

Structure Specific Attributes:

Str Desc, text, 100, normal
Give a brief structure description.
Why is it irregular or non-standard? Is it form-fitted or homemade?

Manhole, menu, required entry
Does it have a manhole?

Yes, default	No

Num_Inlets, text, 1, required entry
How many inlets does it have?

Inlet_ X, text, 5, required entry
What is the X dimension of the inlet?

Inlet_ Y, text, 5, required entry
What is the Y dimension of the inlet?

Num_Grates, text, 5, required entry
How many grates does the structure have?

Grate_L, text, 2, 0.00, 10.00, 3.00, required entry
What is the Length of the grate?

Grate_W, text, 2, 0.00, 10.00, 2.00, required entry
What is the Width of the grate?

Box_Mat, menu, required entry
What is the interior box material?

Brick	Conc Block
Pre Cast, default	Metal
Stone	Rubble Masonry
Wood	Polyethyelene
Other	

Box_Shape, menu, required entry
What is the shape of the interior box?
This answer will influence the next three attributes.

Circular, default	Box
Other	

Box_Diam, text, 5, normal
If the box is circular, what is the diameter?
If it is not circular, then leave the default as 0.

Box_Lngth, text, 5, normal
If the box is rectangular, what is the Length dimension?
If it is not rectangular, then leave the default as 0.

Box_Wdth, text, 5, normal
If the box is rectangular, what is the Width dimension?
If it is not rectangular, then leave the default as 0.

Box_Dpth, text, 5, required entry
What is the depth of the box?
This should be the same as the depth of the outgoing pipe.

Steps, menu, required entry, required entry
Does the structure contain steps for maintenance entry?

Yes, default	No

Sur_Mat, menu, required entry
What is the surface material around the structure?

Asphalt, default	Concrete
Gravel	Grass
Dirt	Rip Rap
Brick	Sand
Other	

Feature Name: **Pipe End**
Short Name: P_E
Feature Type: Point

Control: Top center of the end of the pipe

Structure Specific Attributes:

PE_Type, menu, required entry
What type of pipe end is it? Concrete pipes are either bell or socket.
The bell is usually the intake; the socket is usually the outfall.
Metal pipes are usually cut.

Cut, default	Bell
Socket	Mitered

Sur_Mat, menu, required entry
What is the surface material around the pipe end?

Asphalt, default	Concrete
Gravel	Grass
Dirt	Rip Rap
Brick	Sand
Other	

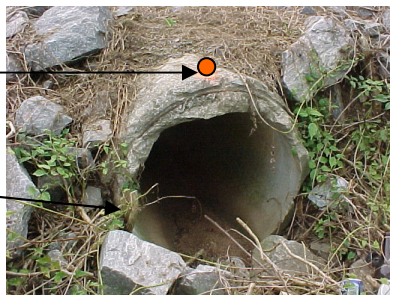
Flow, menu, required entry
From the perspective of the structure, which way does the water flow?
Typically, the flow for a bell is incoming; the flow for a socket is outgoing.
This will be the opposite of the pipes connectivity with other structures.

Incoming	Outgoing

Pipe End – Bell

Pipe End – Socket

Pipe End – Socket



Control Point
For Pipe Ends

Surface Material – Rip Rap

Feature Name: **Flared End Section**
Short Name: F_E_S
Feature Type: Point

Control: Top center of the flared end section

Structure Specific Attributes:

FES_Mat, menu, required entry
What is the material of the flared end section?

Concrete, default	Metal
Polyethylene	Other

Flare_L, text, 5, required entry
What is the Length of the flare?
This is a measurement from the top edge to the bottom end.

Flare_W, text, 5, required entry
What is the Width of the flare?
This is a measurement from the bottom left edge to the bottom right edge.

Num_Barrel, text, 2, required entry
How many barrels (pipes) does the flared end contain?

Barrel_Shp, menu, required entry
What is the shape of the barrel (pipe)?

Circular, default	Ellipse
Box	Arch

Barrel_X, text, 5, normal
If it is not circular, what is the X dimension?
If it is circular, then leave the default as 0.

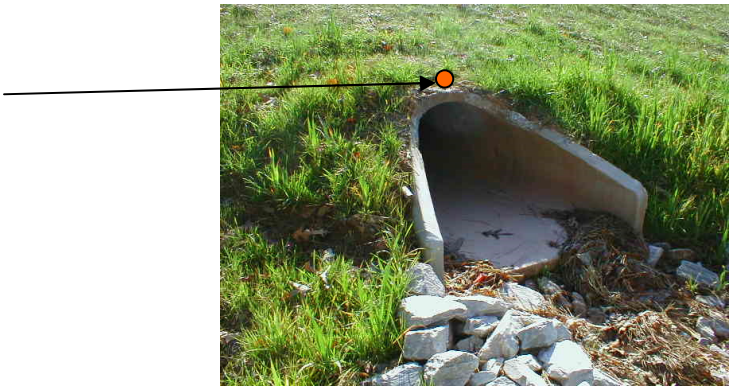
Barrel_Y, text, 5, normal
If it is not circular, what is the Y dimension?
If it is circular, then leave the default as 0.

Sur_Mat, menu, required entry
What is the surface material around the flared end section?

Asphalt, default	Concrete
Gravel	Grass
Dirt	Rip Rap
Brick	Sand
Other	

Flow, menu, required entry
From the perspective of the structure, which way does the water flow?
This will be the opposite of the pipes connectivity with other structures.
Incoming Outgoing

Control Point
For Flared End Sections



The blue line illustrates the
Length of the flare.

The red line illustrates the
Width of the flare.

Feature Name: **Head Wall**
Short Name: H_W
Feature Type: Point

Control: Top center of the head wall

Structure Specific Attributes:

Hdwl_Mat, menu, required entry
What is the material of the head wall?

Concrete, default	Brick
Stone	Rubble Masonry
Wood	Pre Cast
Other	

Num_Barrel, text, 0, 1, 10, 1, required entry
How many barrels (pipes) does the flared end contain?

Barrel_Shp, menu, required entry
What is the shape of the barrel (pipe)?

Circular, default	Ellipse
Box	Arch

Barrel_X, text, 5, normal
If it is not circular, what is the X dimension?
If it is circular, then leave the default as 0.

Barrel_Y, text, 5, normal
If it is not circular, what is the Y dimension?
If it is circular, then leave the default as 0.

Wings, menu, required entry
Does the headwall have wing walls?

Yes, default	No

Wing_Angle, menu, normal
If it does have wing walls, what is the angle?
If not, leave the default as 0.

0, default	30
45	60
90	

Mitered, menu, normal
If it does have wing walls, are they mitered?
If not, leave the default as No.

Yes	No, default

Sur_Mat, menu, required entry
What is the surface material around the head wall?

Asphalt, default	Concrete
Gravel	Grass
Dirt	Rip Rap
Brick	Sand
Other	

Flow, menu, required entry
From the perspective of the structure, which way does the water flow?
This will be the opposite of the pipes connectivity with other structures.

Incoming	Outgoing

Control Point
For Head Walls

This is a headwall with one barrel, no wing walls and a surface material of rip rap

Wing wall attributes:

Mitered – notice they extend Downward from the head wall. This one is a “Yes “answer. (illustrated in red)

A “No” answer would mean that they are level with the Top of the headwall

Wing Angle – notice the angle of the wings as they extend from the head wall; this one is 45 degrees (illustrated in blue)

Feature Name: **Underground Pipe Junction**
Short Name: UG_PJ
Feature Type: Point

Control: None

Structure Specific Attributes: None

An underground pipe junction is a feature that exists underground with no structural access. Within our storm water database, this feature is recorded for the purposes of structure connectivity and attribute continuity. This feature has no attributes other that location information and pipe routing information.

Example 1:
Given a catch basin with an outgoing 18" RCP that is headed due north. You proceed north to find the outfall. When you get there, you find that it is an 18" CMP. Somewhere, along the way, the pipe material has changed (it could be that the property owner had the outfall extended further down his property to keep the flow away from his house). Regardless, since the pipe material is different from structure to structure, we will record a feature to illustrate the change.

Example 2:
On the east you may find a drop inlet with an outgoing pipe to the west. On the south you may find a catch basin with an outgoing pipe to the north. On the west you may find a headwall with an outgoing pipe to the east. You fully expect to find a junction box (or other box feature) at the intersection of these outgoing pipes. When you get there, you find nothing. After exploring further north you have even found a headwall, which is the eventual outfall for this network. Somewhere, back upstream is an underground intersection for the pipes obviously feeding this outfall.

To establish an underground pipe junction, look at the topography between the structures. You may be able discern where it lies. If you have only 2 structures, pick a spot on line that is about half way between them. If you have several structures, look at the directions of the outgoing pipes and "triangulate" the intersection.

Photos for Underground Pipe Junctions:
Take a photo of your paint can or shovel exactly where you recorded the GPS position.

Try to get objects in the background to further illustrate its expected location.

Feature Name: **Difficult Access**
Short Name: DA
Feature Type: Point

Control: Varies by structure type.

Structure Specific Attributes:

Str Type, menu, required entry
What type of structure is it?

CB, default	DI
DI	JB
CI	IRR_IN
PE	SI
FES	HWDL

Acc Prob, menu, required entry
What is the specific access problem to resolve?

Traffic	Paved Over
Con Space	Priv Prop
No Str Acc	Buried
Lid Frozen	Heavy Veg
Destroyed	Debris
Submerged	Other

Remedy, menu, required entry
What is the suggested remedy?

CS Permit	Road Crew
Backhoe	Permission
2 Crew Mem	Maint Crew
No Remedy	Other

Attachment C

Certification Form

CERTIFICATION FORM

THIS PAGE MUST BE COMPLETED AND INCLUDED WITH THE SUBMITTAL CERTIFICATION

The undersigned hereby certifies, on behalf of the Respondent named in this Certification (the "Respondent"), that the information provided in this RFQ submittal to ISSUER is accurate and complete, and I am duly authorized to submit same. I hereby certify that the Respondent has reviewed this RFQ in its entirety and accepts its terms and conditions.

_____

(Name of Respondent)

_____

(Signature of Authorized Representative

_____

(Typed Name of Authorized Representative)

_____

(Title)

_____

(Date)