



Qualitative Habitat Evaluation Index Field Sheet QHEI Score:

River Code: 95654 RM: None Stream: Des Plaines / Grant Creek
 Station ID: OP-10 Location: Grant Creek
 Date: 7-23-06 Scorer: AAV Latitude: 41.383410 Longitude: -88.22190

1] SUBSTRATE (Check ONLY Two SubstrateTYPE BOXES; Estimate % present)

TYPE	POOL RIFFLE	POOL RIFFLE	SUBSTRATE ORIGIN	SUBSTRATE QUALITY
<input type="checkbox"/> <input type="checkbox"/> -BLDR /SLBS [10] _____	<input type="checkbox"/> <input type="checkbox"/> -GRAVEL [7] _____	Check ONE (OR 2 & AVERAGE)		Check ONE (OR 2 & AVERAGE)
<input type="checkbox"/> <input type="checkbox"/> -Lg BOULD. [10] _____	<input type="checkbox"/> <input type="checkbox"/> -SAND [6] <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> -LIMESTONE [1] _____	SILT:	<input type="checkbox"/> <input type="checkbox"/> -SILT HEAVY [-2]
<input type="checkbox"/> <input type="checkbox"/> -BOULDER [9] _____	<input type="checkbox"/> <input type="checkbox"/> -BEDROCK [5] _____	<input checked="" type="checkbox"/> <input type="checkbox"/> -TILLS [1] _____		<input checked="" type="checkbox"/> <input type="checkbox"/> -SILT MODERATE [-1] Substrate
<input checked="" type="checkbox"/> <input type="checkbox"/> -COBBLE [8] <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> -DETRITUS [3] _____	<input type="checkbox"/> <input type="checkbox"/> -WETLANDS [0] _____		<input type="checkbox"/> <input type="checkbox"/> -SILT NORMAL [0]
<input type="checkbox"/> <input type="checkbox"/> -HARDPAN [4] _____	<input type="checkbox"/> <input type="checkbox"/> -ARTIFICIAL [0] _____	<input type="checkbox"/> <input type="checkbox"/> -HARDPAN [0] _____		<input type="checkbox"/> <input type="checkbox"/> -SILT FREE [1] _____
<input type="checkbox"/> <input type="checkbox"/> -MUCK [2] <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> -SILT [2] <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> -SANDSTONE [0] _____	EMBEDDED	<input type="checkbox"/> <input type="checkbox"/> -EXTENSIVE [-2] Max 20
NUMBER OF SUBSTRATE TYPES: <input type="checkbox"/> <input type="checkbox"/> 4 or More [2]		<input type="checkbox"/> <input type="checkbox"/> -RIP/RAP [0] _____	NESS:	<input checked="" type="checkbox"/> <input type="checkbox"/> -MODERATE [-1]
(High Quality Only, Score 5 or >) <input checked="" type="checkbox"/> <input type="checkbox"/> 3 or Less [0]	<input type="checkbox"/> <input type="checkbox"/> -LACUSTRINE [0] _____	<input type="checkbox"/> <input type="checkbox"/> -SHALE [-1] _____		<input type="checkbox"/> <input type="checkbox"/> -NORMAL [0]
COMMENTS: _____	<input type="checkbox"/> <input type="checkbox"/> -COAL FINES [-2] _____			<input type="checkbox"/> <input type="checkbox"/> -NONE [1]

2] INSTREAM COVER (Give each cover type a score of 0 to 3; see back for instructions)

TYPE: (Structure)	TYPE: Score All That Occur	AMOUNT: (Check ONLY One or check 2 and AVERAGE)	Channel
<u>0</u> UNDERCUT BANKS [1]	<u>1</u> POOLS > 70 cm [2]	<input type="checkbox"/> <input type="checkbox"/> - EXTENSIVE > 75% [11]	Max 20
<u>1</u> OVERHANGING VEGETATION [1]	<u>1</u> ROOTWADS [1]	<input checked="" type="checkbox"/> <input type="checkbox"/> - MODERATE 25-75% [7]	
<u>2</u> SHALLOWS (IN SLOW WATER) [1]	<u>0</u> BOULDERS [1]	<input type="checkbox"/> <input type="checkbox"/> - SPARSE 5-25% [3]	
<u>7</u> ROOTMATS [1]	<u>0</u> LOGS OR WOODY DEBRIS [1]	<input type="checkbox"/> <input type="checkbox"/> - NEARLY ABSENT < 5% [1]	
COMMENTS: _____			

3] CHANNEL MORPHOLOGY: (Check ONLY One PER Category OR check 2 and AVERAGE)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER	Channel
<input type="checkbox"/> <input type="checkbox"/> - HIGH [4]	<input type="checkbox"/> <input type="checkbox"/> - EXCELLENT [7]	<input type="checkbox"/> <input type="checkbox"/> - NONE [6]	<input type="checkbox"/> <input type="checkbox"/> - HIGH [3]	<input type="checkbox"/> <input type="checkbox"/> - SNAGGING <input type="checkbox"/> <input type="checkbox"/> - IMPOUND.	Max 20
<input type="checkbox"/> <input type="checkbox"/> - MODERATE [3]	<input type="checkbox"/> <input type="checkbox"/> - GOOD [5]	<input type="checkbox"/> <input type="checkbox"/> - RECOVERED [4]	<input checked="" type="checkbox"/> <input type="checkbox"/> - MODERATE [2]	<input type="checkbox"/> <input type="checkbox"/> - RELOCATION <input type="checkbox"/> <input type="checkbox"/> - ISLANDS	
<input checked="" type="checkbox"/> <input type="checkbox"/> - LOW [2]	<input checked="" type="checkbox"/> <input type="checkbox"/> - FAIR [3]	<input type="checkbox"/> <input type="checkbox"/> - RECOVERING [3]	<input type="checkbox"/> <input type="checkbox"/> - LOW [1]	<input type="checkbox"/> <input type="checkbox"/> - CANOPY REMOVAL <input type="checkbox"/> <input type="checkbox"/> - LEVEED	
<input type="checkbox"/> <input type="checkbox"/> - NONE [1]	<input type="checkbox"/> <input type="checkbox"/> - POOR [1]	<input type="checkbox"/> <input type="checkbox"/> - RECENT OR NO RECOVERY [1]		<input type="checkbox"/> <input type="checkbox"/> - DREDGING <input type="checkbox"/> <input type="checkbox"/> - BANK SHAPING	
COMMENTS: _____		<input checked="" type="checkbox"/> <input type="checkbox"/> - IMPOUNDED [-1]		<input type="checkbox"/> <input type="checkbox"/> - ONE SIDE CHANNEL MODIFICATIONS	

4] RIPARIAN ZONE AND BANK EROSION (check ONE box per bank or check 2 and AVERAGE per bank) River Right Looking Downstream

RIPARIAN WIDTH	FLOOD PLAIN QUALITY (PAST 100 Meter RIPARIAN)	BANK EROSION	Riparian
L R (Per Bank)	L R (Most Predominant Per Bank)	L R	L R (Per Bank)
<input checked="" type="checkbox"/> <input type="checkbox"/> - VERY WIDE > 100m [5]	<input checked="" type="checkbox"/> <input type="checkbox"/> - FOREST, SWAMP [3]	<input type="checkbox"/> <input type="checkbox"/> - CONSERVATION TILLAGE [1]	<input checked="" type="checkbox"/> <input type="checkbox"/> - NONE/LITTLE [3]
<input type="checkbox"/> <input type="checkbox"/> - WIDE > 50m [4]	<input type="checkbox"/> <input type="checkbox"/> - SHRUB OR OLD FIELD [2]	<input type="checkbox"/> <input type="checkbox"/> - URBAN OR INDUSTRIAL [0]	<input type="checkbox"/> <input type="checkbox"/> - MODERATE [2]
<input type="checkbox"/> <input type="checkbox"/> - MODERATE 10-50m [3]	<input type="checkbox"/> <input type="checkbox"/> - RESIDENTIAL, PARK, NEW FIELD [1]	<input type="checkbox"/> <input type="checkbox"/> - OPEN PASTURE, ROWCROP [0]	<input type="checkbox"/> <input type="checkbox"/> - HEAVY/SEVERE [1]
<input type="checkbox"/> <input type="checkbox"/> - NARROW 5-10 m [2]	<input type="checkbox"/> <input type="checkbox"/> - FENCED PASTURE [1]	<input type="checkbox"/> <input type="checkbox"/> - MINING/CONSTRUCTION [0]	Max 10
<input type="checkbox"/> <input type="checkbox"/> - VERY NARROW < 5 m [1]	COMMENTS: _____		
<input type="checkbox"/> <input type="checkbox"/> - NONE [0]			

5.] POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX. DEPTH (Check 1. ONLY!)	MORPHOLOGY (Check 1 or 2 & AVERAGE)	CURRENT VELOCITY POOLS & RIFFLES! (Check All That Apply)	Pool/Current
<input checked="" type="checkbox"/> <input type="checkbox"/> - > 1m [6]	<input type="checkbox"/> <input type="checkbox"/> - POOL WIDTH > RIFFLE WIDTH [2]	<input type="checkbox"/> <input type="checkbox"/> - EDDIES [1]	Max 12
<input type="checkbox"/> <input type="checkbox"/> - 0.7-1m [4]	<input type="checkbox"/> <input type="checkbox"/> - POOL WIDTH = RIFFLE WIDTH [1]	<input type="checkbox"/> <input type="checkbox"/> - FAST [1]	
<input type="checkbox"/> <input type="checkbox"/> - 0.4-0.7m [2]	<input type="checkbox"/> <input type="checkbox"/> - POOL WIDTH < RIFFLE W. [0]	<input type="checkbox"/> <input type="checkbox"/> - MODERATE [1]	
<input type="checkbox"/> <input type="checkbox"/> - 0.2- 0.4m [1]	<input checked="" type="checkbox"/> <input type="checkbox"/> - IMPOUNDED [-1]	<input checked="" type="checkbox"/> <input type="checkbox"/> - SLOW [1]	
<input type="checkbox"/> <input type="checkbox"/> - < 0.2m [POOL=0]	COMMENTS: _____	<input type="checkbox"/> <input type="checkbox"/> - NONE [-1]	

CHECK ONE OR CHECK 2 AND AVERAGE

RIFFLE DEPTH	RUN DEPTH	RIFFLE/RUN SUBSTRATE	RIFFLE/RUN EMBEDDEDNESS	Riffle/Run
<input type="checkbox"/> <input type="checkbox"/> - Best Areas > 10 cm [2]	<input type="checkbox"/> <input type="checkbox"/> - MAX > 50 [2]	<input type="checkbox"/> <input type="checkbox"/> - STABLE (e.g., Cobble, Boulder) [2]	<input type="checkbox"/> <input type="checkbox"/> - NONE [2]	Max 8
<input type="checkbox"/> <input type="checkbox"/> - Best Areas 5-10 cm [1]	<input type="checkbox"/> <input type="checkbox"/> - MAX < 50 [1]	<input type="checkbox"/> <input type="checkbox"/> - MOD. STABLE (e.g., Large Gravel) [1]	<input type="checkbox"/> <input type="checkbox"/> - LOW [1]	
<input type="checkbox"/> <input type="checkbox"/> - Best Areas < 5 cm		<input type="checkbox"/> <input type="checkbox"/> - UNSTABLE (Fine Gravel, Sand) [0]	<input type="checkbox"/> <input type="checkbox"/> - MODERATE [0]	Max 10
<input checked="" type="checkbox"/> <input type="checkbox"/> - NO RIFFLE [Metric=0]	COMMENTS: _____		<input type="checkbox"/> <input type="checkbox"/> - EXTENSIVE [-1]	

6] GRADIENT (ft/mi): _____ DRAINAGE AREA (sq.mi.): _____ %POOL: 100 %GLIDE:
 %RIFFLE: %RUN:

* Best areas must be large enough to support a population of riffle-obligate species

Exhibit 7
 208-9
 1/28/08
 Met

Is Sampling Reach Representative of the Stream (Y/N) If Not, Explain:

Lat/Long (Beg): _____
 Lat/Long (Mid): _____
 Lat/Long (End): _____
 Lat/Long (X-Loc): _____

Major Suspected Sources of Impacts (Check All That Apply):

- None
- Industrial
- WWTP
- Ag
- Livestock
- Silviculture
- Construction
- Urban Runoff
- CSOs
- Suburban Impacts
- Mining
- Channelization
- Riparian Removal
- Landfills
- Natural
- Dams
- Other Flow Alteration
- Other: _____

5

Subjective Rating (1-10)

5

Aesthetic Rating (1-10)

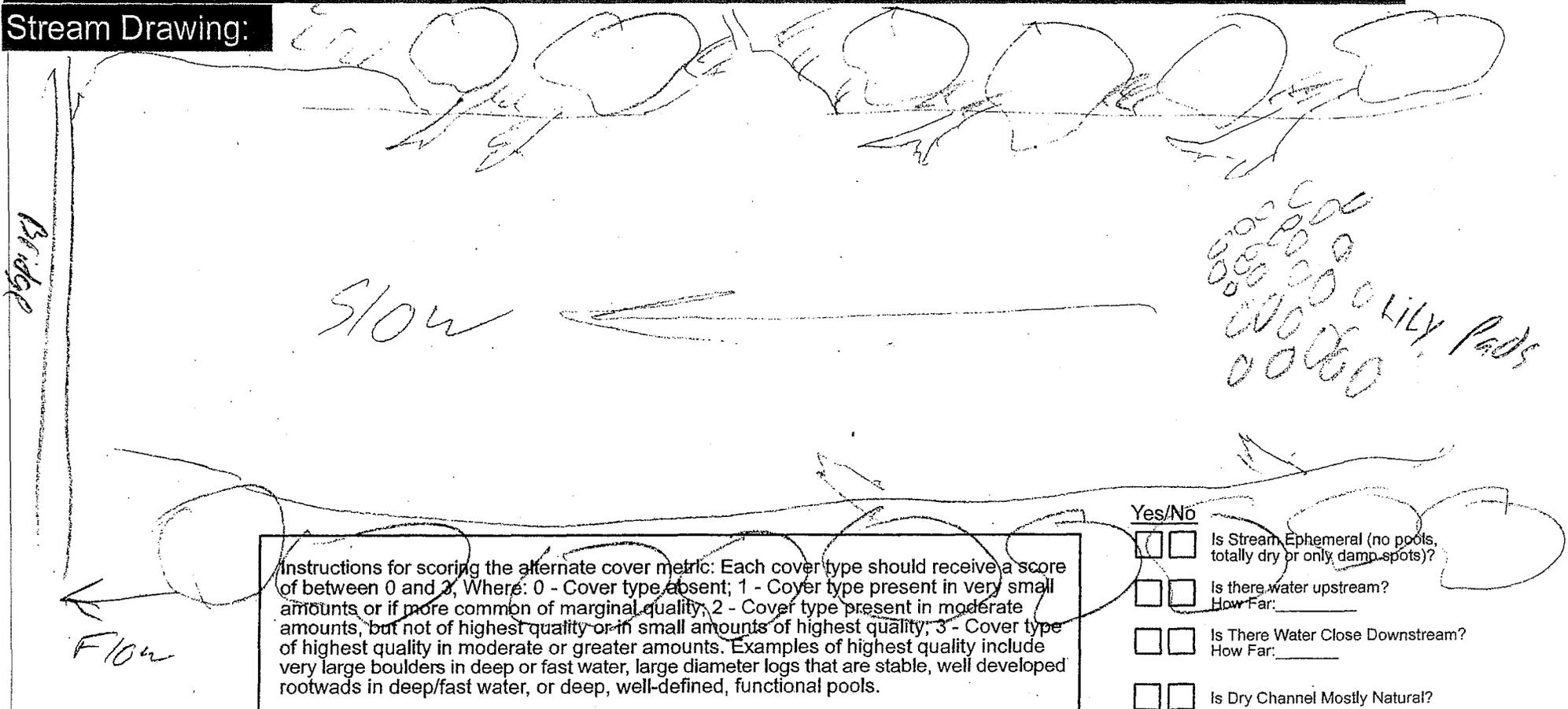
Gradient:

- Low, - Moderate, - High

Gear: A Distance: 5 km Water Clarity: 25 cm Water Stage: Normal Canopy -% Open: 100

Stream Measurements:											
Average Width	Average Depth	Maximum Depth	Av. Bankfull Width	Bankfull Depth	Mean W/D Ratio	Bankfull Max Depth	Floodprone Area	Entrench. Width	Ratio		

Stream Drawing:



Instructions for scoring the alternate cover metric: Each cover type should receive a score of between 0 and 3, Where: 0 - Cover type absent; 1 - Cover type present in very small amounts or if more common of marginal quality; 2 - Cover type present in moderate amounts, but not of highest quality or in small amounts of highest quality; 3 - Cover type of highest quality in moderate or greater amounts. Examples of highest quality include very large boulders in deep or fast water, large diameter logs that are stable, well developed rootwads in deep/fast water, or deep, well-defined, functional pools.

Yes/No

- Is Stream Ephemeral (no pools, totally dry or only damp spots)?
- Is there water upstream? How Far: _____
- Is There Water Close Downstream? How Far: _____
- Is Dry Channel Mostly Natural?



05/26/06

Qualitative Habitat Evaluation Index Field Sheet QHEI Score:

Edited 1-11-02 JAA ✓

River Code: 95-050 RM 2960 Stream: Des Plaines
Station ID: Site 93 Location: DST Lemont Rd
Date: 7-28-06 Scorer: AAT Latitude: 41.66750 Longitude: -88.644910

1] SUBSTRATE (Check ONLY Two Substrate TYPE BOXES; Estimate % present)

TYPE POOL RIFFLE POOL RIFFLE SUBSTRATE ORIGIN SUBSTRATE QUALITY
 BLDR /SLBS [10] GRAVEL [7] LIMESTONE [1] SILT: SILT HEAVY [-2] SAND [6] BEDROCK [5] TILLS [1] SILT MODERATE [-1] BOULDER [9] DETRITUS [3] WETLANDS [0] SILT NORMAL [0] COBBLE [8] ARTIFICIAL [0] HARDPAN [0] SILT FREE [1] HARDPAN [4] SILT [2] SANDSTONE [0] EMBEDDED EXTENSIVE [-2] MUCK [2] RIP/RAP [0] NESS: MODERATE [-1] NUMBER OF SUBSTRATE TYPES: 4 or More [2] LACUSTRINE [0] NORMAL [0] SHALE [-1] NONE [1] COAL FINES [-2] COMMENTS: COVER

2] INSTREAM COVER (Give each cover type a score of 0 to 3; see back for instructions)

(Structure) TYPE: Score All That Occur AMOUNT: (Check ONLY One or check 2 and AVERAGE) Cover
 UNDERCUT BANKS [1] POOLS > 70 cm [2] OXBOWS, BACKWATERS [1] EXTENSIVE > 75% [11] OVERHANGING VEGETATION [1] ROOTWADS [1] AQUATIC MACROPHYTES [1] MODERATE 25-75% [7] SHALLOWS (IN SLOW WATER) [1] BOULDERS [1] LOGS OR WOODY DEBRIS [1] SPARSE 5-25% [3] ROOTMATS [1] COMMENTS: NEARLY ABSENT < 5% [1] CHANNEL

3] CHANNEL MORPHOLOGY: (Check ONLY One PER Category OR check 2 and AVERAGE)

SINUOSITY DEVELOPMENT CHANNELIZATION STABILITY MODIFICATIONS/OTHER Channel
 HIGH [4] EXCELLENT [7] NONE [6] HIGH [3] SNAGGING IMPOUND. MODERATE [3] GOOD [5] RECOVERED [4] MODERATE [2] RELOCATION ISLANDS LOW [2] FAIR [3] RECOVERING [3] LOW [1] CANOPY REMOVAL LEVEED NONE [1] POOR [1] RECENT OR NO RECOVERY [1] DREDGING BANK SHAPING IMPOUNDED [-1] ONE SIDE CHANNEL MODIFICATIONS COMMENTS: RIPARIAN

4] RIPARIAN ZONE AND BANK EROSION (check ONE box per bank or check 2 and AVERAGE per bank) River Right Looking Downstream

RIPARIAN WIDTH FLOOD PLAIN QUALITY (PAST 100 Meter RIPARIAN) BANK EROSION Riparian
L R (Per Bank) L R (Most Predominant Per Bank) L R L R (Per Bank) VERY WIDE > 100m [5] FOREST, SWAMP [3] CONSERVATION TILLAGE [1] NONE/LITTLE [3] WIDE > 50m [4] SHRUB OR OLD FIELD [2] URBAN OR INDUSTRIAL [0] MODERATE [2] MODERATE 10-50m [3] RESIDENTIAL, PARK, NEW FIELD [1] OPEN PASTURE, ROWCROP [0] HEAVY/SEVERE [1] NARROW 5-10 m [2] FENCED PASTURE [1] MINING/CONSTRUCTION [0] VERY NARROW <5 m [1] NONE [0] COMMENTS: POOL/GLIDE

5] POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX. DEPTH MORPHOLOGY CURRENT VELOCITY (POOLS & RIFFLES!) Pool/Current
(Check 1 ONLY!) (Check 1 or 2 & AVERAGE) (Check All That Apply) >1m [6] POOL WIDTH > RIFFLE WIDTH [2] EDDIES [1] TORRENTIAL [-1] 0.7-1m [4] POOL WIDTH = RIFFLE WIDTH [1] FAST [1] INTERSTITIAL [-1] 0.4-0.7m [2] POOL WIDTH < RIFFLE W. [0] MODERATE [1] INTERMITTENT [-2] 0.2- 0.4m [1] IMPOUNDED [-1] SLOW [1] VERY FAST [1] < 0.2m [POOL=0] COMMENTS: NONE [-1] CHECK ONE OR CHECK 2 AND AVERAGE Riffle/Run

RIFFLE DEPTH RUN DEPTH RIFFLE/RUN SUBSTRATE RIFFLE/RUN EMBEDDEDNESS Riffle/Run
 Best Areas >10 cm [2] MAX > 50 [2] STABLE (e.g., Cobble, Boulder) [2] NONE [2] Best Areas 5-10 cm [1] MAX < 50 [1] MOD. STABLE (e.g., Large Gravel) [1] LOW [1] Best Areas < 5 cm UNSTABLE (Fine Gravel, Sand) [0] MODERATE [0] NO RIFFLE [Metric=0] EXTENSIVE [-1] COMMENTS: GRADIENT

6] GRADIENT (ft/mi): _____ DRAINAGE AREA (sq.mi.) : _____ %POOL: 5 %GLIDE: 95
%RIFFLE: 0 %RUN: 0

** Best areas must be large enough to support a population of riffle-obligate species

Is Sampling Reach Representative of the Stream (Y/N)

If Not, Explain:

Lat/Long (Beg): _____
 Lat/Long (Mid): _____
 Lat/Long (End): _____
 Lat/Long(X-Loc): _____

Major Suspected Sources of Impacts (Check All That Apply):

- None
- Industrial
- WWTP
- Ag
- Livestock
- Silviculture
- Construction
- Urban Runoff
- CSOs
- Suburban Impacts
- Mining
- Channelization
- Riparian Removal
- Landfills
- Natural
- Dams
- Other Flow Alteration
- Other: _____

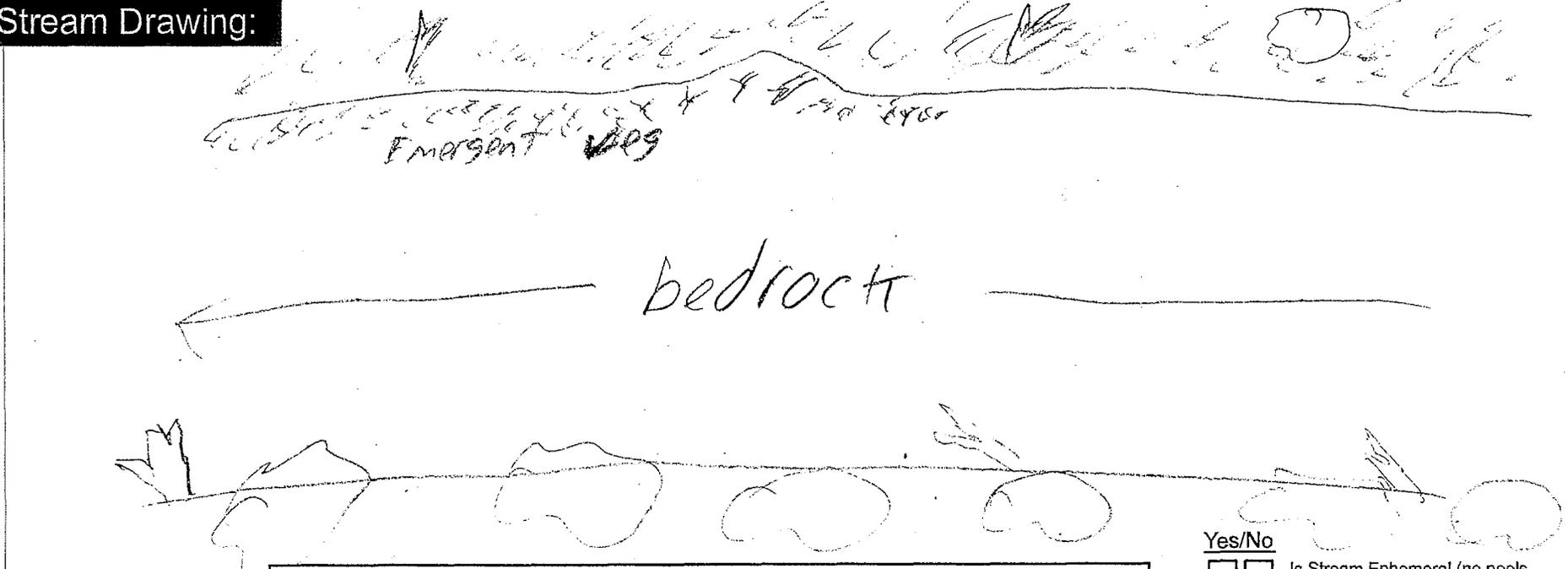
Subjective Rating (1-10) Aesthetic Rating (1-10) Gradient: - Low, - Moderate, - High

Gear: A Distance: 5 km Water Clarity: 50 cm Water Stage: normal Canopy -% Open: 100

Stream Measurements:

Average Width	Average Depth	Maximum Depth	Average Bankfull Width	Bankfull Mean Depth	W/D Ratio	Bankfull Max Depth	Floodprone Area	Entrenchment Width Ratio

Stream Drawing:



Instructions for scoring the alternate cover metric: Each cover type should receive a score of between 0 and 3, Where: 0 - Cover type absent; 1 - Cover type present in very small amounts or if more common of marginal quality; 2 - Cover type present in moderate amounts, but not of highest quality or in small amounts of highest quality; 3 - Cover type of highest quality in moderate or greater amounts. Examples of highest quality include very large boulders in deep or fast water, large diameter logs that are stable, well developed rootwads in deep/fast water, or deep, well-defined, functional pools.

- Yes/No
- Is Stream Ephemeral (no pools, totally dry or only damp spots)?
 - Is there water upstream? How Far: _____
 - Is There Water Close Downstream? How Far: _____
 - Is Dry Channel Mostly Natural?

Is Sampling Reach Representative of the Stream (Y/N) If Not, Explain:

Lat/Long (Beg):
 Lat/Long (Mid):
 Lat/Long (End):
 Lat/Long (X-Loc):

Major Suspected Sources of Impacts (Check All That Apply):

- None
- Industrial
- WWTP
- Ag
- Livestock
- Silviculture
- Construction
- Urban Runoff
- CSOs
- Suburban Impacts
- Mining
- Channelization
- Riparian Removal
- Landfills
- Natural
- Dams
- Other Flow Alteration
- Other: _____

5

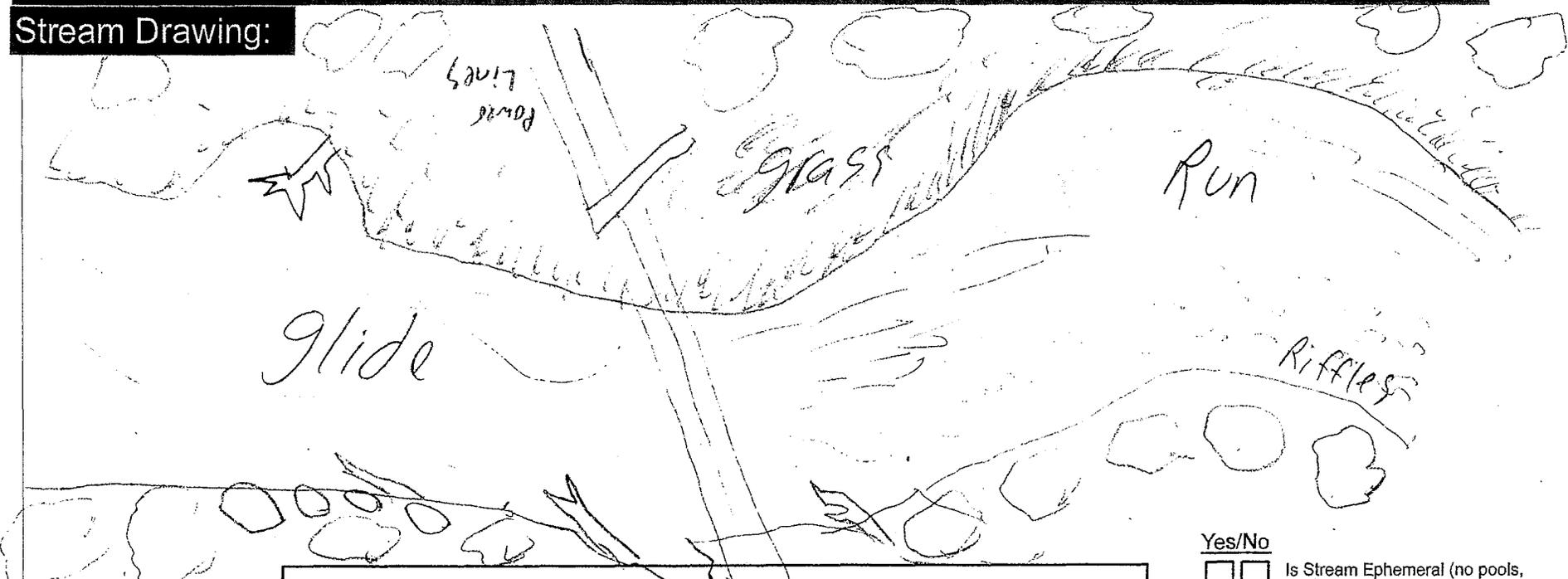
5

First Sampling Pass Gear: Distance: Water Clarity: Water Stage: Canopy -% Open
 A 5 km 95 cm normal % 100

Subjective Rating (1-10) Gradient: - Low, - Moderate, - High
 Aesthetic Rating (1-10)

Stream Measurements:									
Average Width	Average Depth	Maximum Depth	Av. Bankfull Width	Bankfull Mean Depth	W/D Ratio	Bankfull Max Depth	Floodprone Area	Entrench. Width	Ratio

Stream Drawing:



Instructions for scoring the alternate cover metric: Each cover type should receive a score of between 0 and 3, Where: 0 - Cover type absent; 1 - Cover type present in very small amounts or if more common of marginal quality; 2 - Cover type present in moderate amounts, but not of highest quality or in small amounts of highest quality; 3 - Cover type of highest quality in moderate or greater amounts. Examples of highest quality include very large boulders in deep or fast water, large diameter logs that are stable, well developed rootwads in deep/fast water, or deep, well-defined, functional pools.

Yes/No

- Is Stream Ephemeral (no pools, totally dry or only damp spots)?
- Is there water upstream? How Far: _____
- Is There Water Close Downstream? How Far: _____
- Is Dry Channel Mostly Natural?

Flow ←



95656

Qualitative Habitat Evaluation Index Field Sheet QHEI Score:

River Code: 95656 BM: 2858 Stream: Des Plaines
 Station ID: DP-05 Location: Brandon Dam Tailwater
 Date: 7-22-06 Scorer: NAV Latitude: 41.499996 Longitude: -88.106954

1] SUBSTRATE (Check ONLY Two Substrate TYPE BOXES; Estimate % present)

TYPE		POOL RIFFLE		POOL RIFFLE		SUBSTRATE ORIGIN		SUBSTRATE QUALITY	
				Check ONE (OR 2 & AVERAGE)				Check ONE (OR 2 & AVERAGE)	
<input type="checkbox"/> BLDR /SLBS [10]	<input type="checkbox"/>	<input checked="" type="checkbox"/> GRAVEL [7]	<input checked="" type="checkbox"/>	<input type="checkbox"/> LIMESTONE [1]	<input type="checkbox"/>	SILT:		<input type="checkbox"/> SILT HEAVY [-2]	Substrate <div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto;"></div> Max 20
<input type="checkbox"/> Lg BOULD. [10]	<input type="checkbox"/>	<input type="checkbox"/> SAND [6]	<input type="checkbox"/>	<input type="checkbox"/> BEDROCK [5]	<input type="checkbox"/>	<input checked="" type="checkbox"/> TILLS [1]	<input type="checkbox"/>	<input checked="" type="checkbox"/> SILT MODERATE [-1]	
<input type="checkbox"/> BOULDER [9]	<input checked="" type="checkbox"/>	<input type="checkbox"/> DETRITUS [3]	<input type="checkbox"/>	<input type="checkbox"/> WETLANDS [0]	<input type="checkbox"/>	<input type="checkbox"/> HARDPAN [0]	<input type="checkbox"/>	<input checked="" type="checkbox"/> SILT NORMAL [0]	
<input checked="" type="checkbox"/> COBBLE [8]	<input checked="" type="checkbox"/>	<input type="checkbox"/> ARTIFICIAL [0]	<input type="checkbox"/>	<input type="checkbox"/> SANDSTONE [0]	<input type="checkbox"/>	<input type="checkbox"/> RIP/RAP [0]	<input type="checkbox"/>	<input type="checkbox"/> SILT FREE [1]	
<input type="checkbox"/> HARDPAN [4]	<input checked="" type="checkbox"/>	<input type="checkbox"/> SILT [2]	<input checked="" type="checkbox"/>	<input type="checkbox"/> LACUSTRINE [0]	<input type="checkbox"/>	<input type="checkbox"/> SHALE [-1]	<input type="checkbox"/>	<input type="checkbox"/> EXTENSIVE [-2]	
<input type="checkbox"/> MUCK [2]	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/> COAL FINES [-2]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> MODERATE [-1]	
						<input checked="" type="checkbox"/> NORMAL [0]	<input type="checkbox"/>	<input type="checkbox"/> NONE [1]	

NUMBER OF SUBSTRATE TYPES: 4 or More [2] 3 or Less [0]

COMMENTS: _____

2] INSTREAM COVER (Give each cover type a score of 0 to 3; see back for instructions)

TYPE: Score All That Occur			AMOUNT: (Check ONLY One or check 2 and AVERAGE)	
<u>0</u> UNDERCUT BANKS [1]	<u>1</u> POOLS > 70 cm [2]	<u>0</u> OXBOWS, BACKWATERS [1]	<input type="checkbox"/> EXTENSIVE > 75% [11]	Cover <div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto;"></div> Max 20
<u>1</u> OVERHANGING VEGETATION [1]	<u>0</u> ROOTWADS [1]	<u>0</u> AQUATIC MACROPHYTES [1]	<input checked="" type="checkbox"/> MODERATE 25-75% [7]	
<u>1</u> SHALLOWS (IN SLOW WATER) [1]	<u>2</u> BOULDERS [1]	<u>1</u> LOGS OR WOODY DEBRIS [1]	<input checked="" type="checkbox"/> SPARSE 5-25% [3]	
<u>0</u> ROOTMATS [1]			<input type="checkbox"/> NEARLY ABSENT < 5% [1]	

COMMENTS: _____

3] CHANNEL MORPHOLOGY: (Check ONLY One PER Category OR check 2 and AVERAGE)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER	
<input type="checkbox"/> HIGH [4]	<input type="checkbox"/> EXCELLENT [7]	<input checked="" type="checkbox"/> NONE [6]	<input checked="" type="checkbox"/> HIGH [3]	<input type="checkbox"/> SNAGGING	<input type="checkbox"/> IMPOUND.
<input type="checkbox"/> MODERATE [3]	<input checked="" type="checkbox"/> GOOD [5]	<input type="checkbox"/> RECOVERED [4]	<input type="checkbox"/> MODERATE [2]	<input type="checkbox"/> RELOCATION	<input type="checkbox"/> ISLANDS
<input checked="" type="checkbox"/> LOW [2]	<input type="checkbox"/> FAIR [3]	<input type="checkbox"/> RECOVERING [3]	<input type="checkbox"/> LOW [1]	<input type="checkbox"/> CANOPY REMOVAL	<input type="checkbox"/> LEVEED
<input type="checkbox"/> NONE [1]	<input type="checkbox"/> POOR [1]	<input type="checkbox"/> RECENT OR NO RECOVERY [1]		<input type="checkbox"/> DREDGING	<input type="checkbox"/> BANK SHAPING
		<input type="checkbox"/> IMPOUNDED [-1]		<input type="checkbox"/> ONE SIDE CHANNEL MODIFICATIONS	

Channel
Max 20

COMMENTS: _____

4] RIPARIAN ZONE AND BANK EROSION (check ONE box per bank or check 2 and AVERAGE per bank) ^R River Right Looking Downstream ^L

RIPARIAN WIDTH	FLOOD PLAIN QUALITY (PAST 100 Meter RIPARIAN)	BANK EROSION
L R (Per Bank)	L R (Most Predominant Per Bank)	L R (Per Bank)
<input type="checkbox"/> VERY WIDE > 100m [5]	<input checked="" type="checkbox"/> FOREST, SWAMP [3]	<input checked="" type="checkbox"/> NONE/LITTLE [3]
<input checked="" type="checkbox"/> WIDE > 50m [4]	<input type="checkbox"/> SHRUB OR OLD FIELD [2]	<input type="checkbox"/> MODERATE [2]
<input checked="" type="checkbox"/> MODERATE 10-50m [3]	<input type="checkbox"/> RESIDENTIAL, PARK, NEW FIELD [1]	<input type="checkbox"/> HEAVY/SEVERE [1]
<input type="checkbox"/> NARROW 5-10 m [2]	<input type="checkbox"/> FENCED PASTURE [1]	<input type="checkbox"/> MINING/CONSTRUCTION [0]
<input type="checkbox"/> VERY NARROW < 5 m [1]		
<input type="checkbox"/> NONE [0]		

Riparian
Max 10

Comments: _____

5] POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX. DEPTH	MORPHOLOGY	CURRENT VELOCITY [POOLS & RIFFLES!]
(Check 1 ONLY!)	(Check 1 or 2 & AVERAGE)	(Check All That Apply)
<input checked="" type="checkbox"/> > 1m [6]	<input checked="" type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [2]	<input checked="" type="checkbox"/> EDDIES [1]
<input type="checkbox"/> 0.7-1m [4]	<input type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1]	<input type="checkbox"/> TORRENTIAL [-1]
<input type="checkbox"/> 0.4-0.7m [2]	<input type="checkbox"/> POOL WIDTH < RIFFLE W. [0]	<input checked="" type="checkbox"/> FAST [1]
<input type="checkbox"/> 0.2- 0.4m [1]	<input type="checkbox"/> IMPOUNDED [-1]	<input checked="" type="checkbox"/> MODERATE [1]
<input type="checkbox"/> < 0.2m [POOL=0]		<input checked="" type="checkbox"/> SLOW [1]
		<input type="checkbox"/> NONE [-1]

Pool/
Current
Max 12

COMMENTS: _____

CHECK ONE OR CHECK 2 AND AVERAGE

RIFFLE DEPTH	RUN DEPTH	RIFFLE/RUN SUBSTRATE	RIFFLE/RUN EMBEDDEDNESS
<input checked="" type="checkbox"/> Best Areas > 10 cm [2]	<input checked="" type="checkbox"/> MAX > 50 [2]	<input checked="" type="checkbox"/> STABLE (e.g., Cobble, Boulder) [2]	<input type="checkbox"/> NONE [2]
<input type="checkbox"/> Best Areas 5-10 cm [1]	<input type="checkbox"/> MAX < 50 [1]	<input type="checkbox"/> MOD. STABLE (e.g., Large Gravel) [1]	<input checked="" type="checkbox"/> LOW [1]
<input type="checkbox"/> Best Areas < 5 cm		<input type="checkbox"/> UNSTABLE (Fine Gravel, Sand) [0]	<input type="checkbox"/> MODERATE [0]
<input type="checkbox"/> NO RIFFLE [Metric=0]			<input type="checkbox"/> EXTENSIVE [-1]

Riffle/Run
Max 8

Gradient
Max 10

COMMENTS: _____

6] GRADIENT (ft/mi): _____ DRAINAGE AREA (sq.mi.) : _____

% POOL: 40 % GLIDE: 15
 % RIFFLE: 15 % RUN: 30

* Best areas must be large enough to support a population of riffle-obligate species

Is Sampling Reach Representative of the Stream (Y/N) If Not, Explain:

Lat/Long (Beg): _____
 Lat/Long (Mid): _____
 Lat/Long (End): _____
 Lat/Long (X-Loc): _____

- Major Suspected Sources of Impacts (Check All That Apply):
- None
 - Industrial
 - WWTP
 - Ag
 - Livestock
 - Silviculture
 - Construction
 - Urban Runoff
 - CSOs
 - Suburban Impacts
 - Mining
 - Channelization
 - Riparian Removal
 - Landfills
 - Natural
 - Dams
 - Other Flow Alteration
 - Other: _____

<div style="border: 1px solid black; width: 30px; height: 30px; margin: 0 auto; display: flex; align-items: center; justify-content: center;">4</div>	<div style="border: 1px solid black; width: 30px; height: 30px; margin: 0 auto; display: flex; align-items: center; justify-content: center;">4</div>	First Sampling Pass	Gear: <u>A</u>	Distance: <u>5 km</u>	Water Clarity: <u>50 cm</u>	Water Stage: <u>normal</u>	Canopy -% Open: <u>100</u>			
Stream Measurements:										
Subjective Rating (1-10)	Aesthetic Rating (1-10)	Average Width	Average Depth	Maximum Depth	Av. Bankfull Width	Bankfull Mean Depth	W/D Ratio	Bankfull Max Depth	Floodprone Area	Entrenchment Ratio
□ - Low, □ - Moderate, □ - High	Gradient:									

Stream Drawing:



macrophytes throughout

Instructions for scoring the alternate cover metric: Each cover type should receive a score of between 0 and 3, Where: 0 - Cover type absent; 1 - Cover type present in very small amounts or if more common of marginal quality; 2 - Cover type present in moderate amounts, but not of highest quality or in small amounts of highest quality; 3 - Cover type of highest quality in moderate or greater amounts. Examples of highest quality include very large boulders in deep or fast water, large diameter logs that are stable, well developed rootwads in deep/fast water, or deep, well-defined, functional pools.

- Yes/No
- Is Stream Ephemeral (no pools, totally dry or only damp spots)?
 - Is there water upstream? How Far: _____
 - Is There Water Close Downstream? How Far: _____
 - Is Dry Channel Mostly Natural?

← Flow



95656
 Qualitative Habitat Evaluation Index Field Sheet QHEI Score:

River Code: 95-656 RM: 2910 Stream: Des Plaines
 Station ID: SITP # 107 Location: _____
 Date: 7-28-06 Scorer: AA5 Latitude: 46.65449 Longitude: -88.06121

1] SUBSTRATE (Check ONLY Two Substrate TYPE BOXES; Estimate % present)

TYPE	POOL RIFFLE	POOL RIFFLE	SUBSTRATE ORIGIN	SUBSTRATE QUALITY
<input type="checkbox"/> BLDR /SLBS [10]	<input type="checkbox"/> GRAVEL [7]	<input checked="" type="checkbox"/> SAND [6]	Check ONE (OR 2 & AVERAGE)	Check ONE (OR 2 & AVERAGE)
<input type="checkbox"/> L-g BOULD. [10]	<input type="checkbox"/> SAND [6]	<input checked="" type="checkbox"/> BEDROCK [5]	<input checked="" type="checkbox"/> LIMESTONE [1] SILT:	<input type="checkbox"/> SILT HEAVY [-2]
<input checked="" type="checkbox"/> BOULDER [9]	<input checked="" type="checkbox"/> DETRITUS [3]	<input type="checkbox"/> TILLS [1]	<input type="checkbox"/> WETLANDS [0]	<input checked="" type="checkbox"/> SILT MODERATE [-1]
<input checked="" type="checkbox"/> COBBLE [8]	<input type="checkbox"/> ARTIFICIAL [0]	<input type="checkbox"/> HARDPAN [0]	<input type="checkbox"/> SANDSTONE [0] EMBEDDED	<input checked="" type="checkbox"/> SILT NORMAL [0]
<input type="checkbox"/> HARDPAN [4]	<input type="checkbox"/> SILT [2]	<input type="checkbox"/> RIP/RAP [0]	NESS:	<input type="checkbox"/> SILT FREE [1]
<input type="checkbox"/> MUCK [2]		<input type="checkbox"/> LACUSTRINE [0]		<input type="checkbox"/> EXTENSIVE [-2]
		<input type="checkbox"/> SHALE [-1]		<input type="checkbox"/> MODERATE [-1]
		<input type="checkbox"/> COAL FINES [-2]		<input checked="" type="checkbox"/> NORMAL [0]
				<input type="checkbox"/> NONE [1]

NUMBER OF SUBSTRATE TYPES: 4 or More [2] 3 or Less [0]

COMMENTS: _____

Substrate

 Max 20

2] INSTREAM COVER (Give each cover type a score of 0 to 3; see back for instructions)

TYPE: Score All That Occur	AMOUNT: (Check ONLY One or check 2 and AVERAGE)
<input checked="" type="checkbox"/> UNDERCUT BANKS [1]	<input type="checkbox"/> EXTENSIVE > 75% [11]
<input checked="" type="checkbox"/> OVERHANGING VEGETATION [1]	<input checked="" type="checkbox"/> MODERATE 25-75% [7]
<input checked="" type="checkbox"/> SHALLOWS (IN SLOW WATER) [1]	<input type="checkbox"/> SPARSE 5-25% [3]
<input checked="" type="checkbox"/> ROOTMATS [1]	<input type="checkbox"/> NEARLY ABSENT < 5% [1]
<input type="checkbox"/> POOLS > 70 cm [2]	
<input checked="" type="checkbox"/> ROOTWADS [1]	
<input checked="" type="checkbox"/> BOULDERS [1]	
<input checked="" type="checkbox"/> LOXBOWS, BACKWATERS [1]	
<input checked="" type="checkbox"/> AQUATIC MACROPHYTES [1]	
<input checked="" type="checkbox"/> LOGS OR WOODY DEBRIS [1]	

COMMENTS: _____

Cover

 Max 20

3] CHANNEL MORPHOLOGY: (Check ONLY One PER Category OR check 2 and AVERAGE)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER
<input type="checkbox"/> HIGH [4]	<input type="checkbox"/> EXCELLENT [7]	<input checked="" type="checkbox"/> NONE [6]	<input checked="" type="checkbox"/> HIGH [3]	<input type="checkbox"/> SNAGGING
<input checked="" type="checkbox"/> MODERATE [3]	<input checked="" type="checkbox"/> GOOD [5]	<input type="checkbox"/> RECOVERED [4]	<input type="checkbox"/> MODERATE [2]	<input type="checkbox"/> IMPOUND.
<input checked="" type="checkbox"/> LOW [2]	<input type="checkbox"/> FAIR [3]	<input type="checkbox"/> RECOVERING [3]	<input type="checkbox"/> LOW [1]	<input type="checkbox"/> RELOCATION
<input type="checkbox"/> NONE [1]	<input type="checkbox"/> POOR [1]	<input type="checkbox"/> RECENT OR NO RECOVERY [1]		<input type="checkbox"/> CANOPY REMOVAL
		<input type="checkbox"/> IMPOUNDED [-1]		<input type="checkbox"/> DREDGING
				<input type="checkbox"/> BANK SHAPING
				<input type="checkbox"/> ONE SIDE CHANNEL MODIFICATIONS

COMMENTS: _____

Channel

 Max 20

4]. RIPARIAN ZONE AND BANK EROSION (check ONE box per bank or check 2 and AVERAGE per bank) River Right Looking Downstream

RIPARIAN WIDTH	FLOOD PLAIN QUALITY (PAST 100 Meter RIPARIAN)	BANK EROSION
L R (Per Bank)	L R (Most Predominant Per Bank)	L R (Per Bank)
<input checked="" type="checkbox"/> VERY WIDE > 100m [5]	<input checked="" type="checkbox"/> FOREST, SWAMP [3]	<input checked="" type="checkbox"/> NONE/LITTLE [3]
<input type="checkbox"/> WIDE > 50m [4]	<input type="checkbox"/> SHRUB OR OLD FIELD [2]	<input type="checkbox"/> MODERATE [2]
<input type="checkbox"/> MODERATE 10-50m [3]	<input type="checkbox"/> RESIDENTIAL, PARK, NEW FIELD [1]	<input type="checkbox"/> HEAVY/SEVERE [1]
<input type="checkbox"/> NARROW 5-10 m [2]	<input type="checkbox"/> FENCED PASTURE [1]	
<input type="checkbox"/> VERY NARROW <5 m [1]		
<input type="checkbox"/> NONE [0]		

COMMENTS: _____

Riparian

 Max 10

5.] POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX. DEPTH (Check 1 ONLY!)	MORPHOLOGY (Check 1 or 2 & AVERAGE)	CURRENT VELOCITY (Check All That Apply)
<input checked="" type="checkbox"/> >1m [6]	<input checked="" type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [2]	<input type="checkbox"/> EDDIES [1]
<input checked="" type="checkbox"/> 0.7-1m [4]	<input type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1]	<input type="checkbox"/> TORRENTIAL [-1]
<input type="checkbox"/> 0.4-0.7m [2]	<input type="checkbox"/> POOL WIDTH < RIFFLE W. [0]	<input type="checkbox"/> FAST [1]
<input type="checkbox"/> 0.2- 0.4m [1]	<input type="checkbox"/> IMPOUNDED [-1]	<input checked="" type="checkbox"/> MODERATE [1]
<input type="checkbox"/> < 0.2m [POOL=0]		<input type="checkbox"/> INTERSTITIAL [-1]
		<input checked="" type="checkbox"/> INTERMITTENT [-2]
		<input checked="" type="checkbox"/> SLOW [1]
		<input type="checkbox"/> VERY FAST [1]
		<input type="checkbox"/> NONE [-1]

COMMENTS: _____

Pool/Current

 Max 12

CHECK ONE OR CHECK 2 AND AVERAGE

RIFFLE DEPTH	RUN DEPTH	RIFFLE/RUN SUBSTRATE	RIFFLE/RUN EMBEDDEDNESS
<input checked="" type="checkbox"/> Best Areas >10 cm [2]	<input checked="" type="checkbox"/> MAX > 50 [2]	<input checked="" type="checkbox"/> STABLE (e.g., Cobble, Boulder) [2]	<input type="checkbox"/> NONE [2]
<input type="checkbox"/> Best Areas 5-10 cm [1]	<input type="checkbox"/> MAX < 50 [1]	<input type="checkbox"/> MOD. STABLE (e.g., Large Gravel) [1]	<input checked="" type="checkbox"/> LOW [1]
<input type="checkbox"/> Best Areas < 5 cm		<input type="checkbox"/> UNSTABLE (Fine Gravel, Sand) [0]	<input type="checkbox"/> MODERATE [0]
<input type="checkbox"/> NO RIFFLE [Metric=0]			<input type="checkbox"/> EXTENSIVE [-1]

COMMENTS: _____

Riffle/Run

 Max 8

Gradient

 Max 10

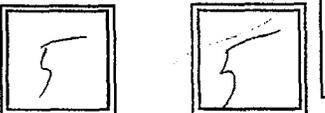
6] GRADIENT (ft/mi): _____ DRAINAGE AREA (sq.mi.) : _____
 %POOL: 65 %GLIDE: 10
 %RIFFLE: 10 %RUN: 15

* Best areas must be large enough to support a population of riffle-obligate species

Is Sampling Reach Representative of the Stream (Y/N) If Not, Explain:

Lat/Long (Beg): _____
 Lat/Long (Mid): _____
 Lat/Long (End): _____
 Lat/Long(X-Loc): _____

- Major Suspected Sources of Impacts (Check All That Apply):
- None
 - Industrial
 - WWTP
 - Ag
 - Livestock
 - Silviculture
 - Construction
 - Urban Runoff
 - CSOs
 - Suburban Impacts
 - Mining
 - Channelization
 - Riparian Removal
 - Landfills
 - Natural
 - Dams
 - Other Flow Alteration
 - Other: _____



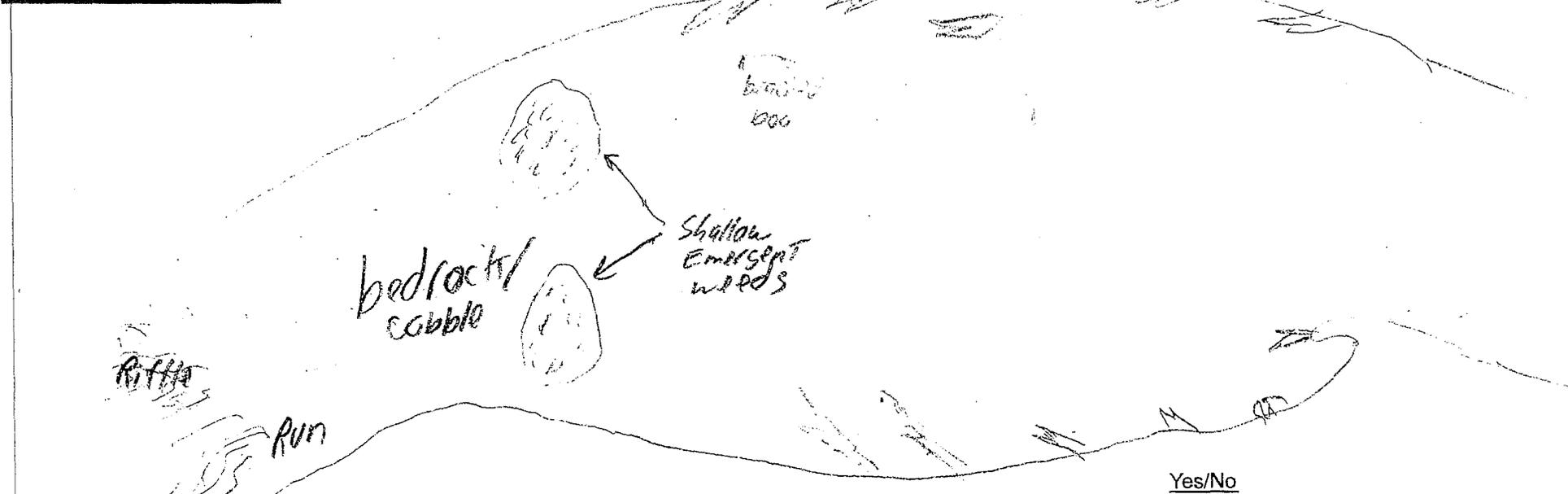
Subjective Rating (1-10) _____
 Aesthetic Rating (1-10) _____
 Gradient: - Low, - Moderate, - High

Gear: _____ Distance: _____ Water Clarity: _____ Water Stage: _____ Canopy -% Open: _____
 First Sampling Pass: A 5/10m 100% Normal 100%

Stream Measurements:

Average Width	Average Depth	Maximum Depth	Av. Bankfull Width	Bankfull Mean Depth	W/D Ratio	Bankfull Max Depth	Floodprone Area	Entrenchment Width	Entrenchment Ratio

Stream Drawing:



Instructions for scoring the alternate cover metric: Each cover type should receive a score of between 0 and 3, Where: 0 - Cover type absent; 1 - Cover type present in very small amounts or if more common of marginal quality; 2 - Cover type present in moderate amounts, but not of highest quality or in small amounts of highest quality; 3 - Cover type of highest quality in moderate or greater amounts. Examples of highest quality include very large boulders in deep or fast water, large diameter logs that are stable, well developed rootwads in deep/fast water, or deep, well-defined, functional pools.

- Yes/No
- Is Stream Ephemeral (no pools, totally dry or only damp spots)?
 - Is there water upstream? How Far: _____
 - Is There Water Close Downstream? How Far: _____
 - Is Dry Channel Mostly Natural?



Qualitative Habitat Evaluation Index Field Sheet QHEI Score:

River Code: 95-896 RM: 273.5 Stream: THOMAS RIVER Des Plaines River
 Station ID: DP-18 Location: UBT Habitat River DP-18
 Date: 7-26-06 Scorer: AAJ Latitude: 41.38731 Longitude: -88.25261

1) SUBSTRATE (Check ONLY Two Substrate TYPE BOXES; Estimate % present)

TYPE		POOL RIFFLE		POOL RIFFLE		SUBSTRATE ORIGIN		SUBSTRATE QUALITY	
						Check ONE (OR 2 & AVERAGE)		Check ONE (OR 2 & AVERAGE)	
<input type="checkbox"/> BLDR /SLBS [10]	<input type="checkbox"/>	<input checked="" type="checkbox"/> GRAVEL [7]	<input checked="" type="checkbox"/>	<input type="checkbox"/> SAND [6]	<input checked="" type="checkbox"/>	<input type="checkbox"/> LIMESTONE [1]	SILT:	<input type="checkbox"/> SILT HEAVY [-2]	Substrate <div style="border: 1px solid black; width: 40px; height: 40px; display: inline-block;"></div>
<input type="checkbox"/> Lg BOULD. [10]	<input type="checkbox"/>	<input type="checkbox"/> BEDROCK [5]	<input checked="" type="checkbox"/>	<input type="checkbox"/> TILLS [1]	<input checked="" type="checkbox"/>	<input type="checkbox"/> WETLANDS [0]		<input type="checkbox"/> SILT MODERATE [-1]	
<input type="checkbox"/> BOULDER [9]	<input checked="" type="checkbox"/>	<input type="checkbox"/> DETRITUS [3]	<input checked="" type="checkbox"/>	<input type="checkbox"/> HARDPAN [0]	<input checked="" type="checkbox"/>	<input type="checkbox"/> SANDSTONE [0]	EMBEDDED	<input type="checkbox"/> SILT NORMAL [0]	
<input type="checkbox"/> COBBLE [8]	<input checked="" type="checkbox"/>	<input type="checkbox"/> ARTIFICIAL [0]	<input type="checkbox"/>	<input type="checkbox"/> RIP/RAP [0]	<input type="checkbox"/>	<input type="checkbox"/> SHALE [-1]	NESS:	<input type="checkbox"/> SILT FREE [1]	
<input type="checkbox"/> HARDPAN [4]	<input checked="" type="checkbox"/>	<input type="checkbox"/> SILT [2]	<input checked="" type="checkbox"/>	<input type="checkbox"/> LACUSTRINE [0]	<input type="checkbox"/>	<input type="checkbox"/> COAL FINES [-2]		<input type="checkbox"/> EXTENSIVE [-2]	
<input type="checkbox"/> MUCK [2]	<input checked="" type="checkbox"/>			<input type="checkbox"/> SHALE [-1]	<input type="checkbox"/>			<input type="checkbox"/> MODERATE [-1]	
				<input type="checkbox"/> NONE [1]	<input type="checkbox"/>				

NUMBER OF SUBSTRATE TYPES: 4 or More [2] 3 or Less [0]

COMMENTS: _____

2) INSTREAM COVER (Give each cover type a score of 0 to 3; see back for instructions)

TYPE: Score All That Occur		AMOUNT: (Check ONLY One or check 2 and AVERAGE)	
<input checked="" type="checkbox"/> UNDERCUT BANKS [1]	<input type="checkbox"/> POOLS > 70 cm [2]	<input type="checkbox"/> OXBOWS, BACKWATERS [1]	<input type="checkbox"/> EXTENSIVE > 75% [11]
<input type="checkbox"/> OVERHANGING VEGETATION [1]	<input type="checkbox"/> ROOTWADS [1]	<input type="checkbox"/> AQUATIC MACROPHYTES [1]	<input checked="" type="checkbox"/> MODERATE 25-75% [7]
<input type="checkbox"/> SHALLOWS (IN SLOW WATER) [1]	<input type="checkbox"/> BOULDERS [1]	<input type="checkbox"/> LOGS OR WOODY DEBRIS [1]	<input type="checkbox"/> SPARSE 5-25% [3]
<input type="checkbox"/> ROOTMATS [1]			<input type="checkbox"/> NEARLY ABSENT < 5% [1]

COMMENTS: _____

3) CHANNEL MORPHOLOGY: (Check ONLY One PER Category OR check 2 and AVERAGE)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER
<input type="checkbox"/> HIGH [4]	<input type="checkbox"/> EXCELLENT [7]	<input type="checkbox"/> NONE [6]	<input type="checkbox"/> HIGH [3]	<input type="checkbox"/> SNAGGING
<input checked="" type="checkbox"/> MODERATE [3]	<input checked="" type="checkbox"/> GOOD [5]	<input type="checkbox"/> RECOVERED [4]	<input checked="" type="checkbox"/> MODERATE [2]	<input type="checkbox"/> RELOCATION
<input type="checkbox"/> LOW [2]	<input type="checkbox"/> FAIR [3]	<input type="checkbox"/> RECOVERING [3]	<input type="checkbox"/> LOW [1]	<input type="checkbox"/> CANOPY REMOVAL
<input type="checkbox"/> NONE [1]	<input type="checkbox"/> POOR [1]	<input type="checkbox"/> RECENT OR NO RECOVERY [1]		<input type="checkbox"/> DREDGING
		<input checked="" type="checkbox"/> IMPOUNDED [-1]		<input type="checkbox"/> BANK SHAPING
				<input type="checkbox"/> ONE SIDE CHANNEL MODIFICATIONS

COMMENTS: _____

4) RIPARIAN ZONE AND BANK EROSION (check ONE box per bank or check 2 and AVERAGE per bank) River Right Looking Downstream

RIPARIAN WIDTH	FLOOD PLAIN QUALITY (PAST 100 Meter RIPARIAN)	BANK EROSION
L R (Per Bank)	L R (Most Predominant Per Bank)	L R (Per Bank)
<input checked="" type="checkbox"/> VERY WIDE > 100m [5]	<input type="checkbox"/> FOREST, SWAMP [3]	<input checked="" type="checkbox"/> NONE/LITTLE [3]
<input type="checkbox"/> WIDE > 50m [4]	<input type="checkbox"/> SHRUB OR OLD FIELD [2]	<input type="checkbox"/> MODERATE [2]
<input type="checkbox"/> MODERATE 10-50m [3]	<input type="checkbox"/> RESIDENTIAL, PARK, NEW FIELD [1]	<input type="checkbox"/> HEAVY/SEVERE [1]
<input type="checkbox"/> NARROW 5-10 m [2]	<input type="checkbox"/> FENCED PASTURE [1]	<input type="checkbox"/> MINING/CONSTRUCTION [0]
<input type="checkbox"/> VERY NARROW < 5 m [1]		
<input type="checkbox"/> NONE [0]		

COMMENTS: _____

5) POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX. DEPTH	MORPHOLOGY	CURRENT VELOCITY (POOLS & RIFFLES)
(Check 1 ONLY!)	(Check 1 or 2 & AVERAGE)	(Check All That Apply)
<input checked="" type="checkbox"/> >1m [6]	<input type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [2]	<input type="checkbox"/> EDDIES [1]
<input type="checkbox"/> 0.7-1m [4]	<input type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1]	<input type="checkbox"/> TORRENTIAL [-1]
<input type="checkbox"/> 0.4-0.7m [2]	<input type="checkbox"/> POOL WIDTH < RIFFLE W. [0]	<input type="checkbox"/> FAST [1]
<input type="checkbox"/> 0.2-0.4m [1]	<input checked="" type="checkbox"/> IMPOUNDED [-1]	<input type="checkbox"/> MODERATE [1]
<input type="checkbox"/> < 0.2m [POOL=0]		<input checked="" type="checkbox"/> SLOW [1]
		<input type="checkbox"/> INTERSTITIAL [-1]
		<input type="checkbox"/> INTERMITTENT [-2]
		<input type="checkbox"/> VERY FAST [1]
		<input type="checkbox"/> NONE [-1]

COMMENTS: _____

CHECK ONE OR CHECK 2 AND AVERAGE

RIFFLE DEPTH	RUN DEPTH	RIFFLE/RUN SUBSTRATE	RIFFLE/RUN EMBEDDEDNESS
<input type="checkbox"/> Best Areas > 10 cm [2]	<input type="checkbox"/> MAX > 50 [2]	<input type="checkbox"/> STABLE (e.g., Cobble, Boulder) [2]	<input type="checkbox"/> NONE [2]
<input type="checkbox"/> Best Areas 5-10 cm [1]	<input type="checkbox"/> MAX < 50 [1]	<input type="checkbox"/> MOD. STABLE (e.g., Large Gravel) [1]	<input type="checkbox"/> LOW [1]
<input type="checkbox"/> Best Areas < 5 cm		<input type="checkbox"/> UNSTABLE (Fine Gravel, Sand) [0]	<input type="checkbox"/> MODERATE [0]
<input checked="" type="checkbox"/> NO RIFFLE [Metric=0]			<input type="checkbox"/> EXTENSIVE [-1]

COMMENTS: _____

6) GRADIENT (ft/mi): _____ DRAINAGE AREA (sq.mi.): _____ %POOL: 100 %GLIDE:
 %RIFFLE: %RUN:

** Best areas must be large enough to support a population of riffle-obligate species

Is Sampling Reach Representative of the Stream (Y/N)

If Not, Explain:

Lat/Long (Beg):

Lat/Long (Mid):

Lat/Long (End):

Lat/Long(X-Loc):

Major Suspected Sources of Impacts (Check All That Apply):

- None
- Industrial
- WWTP
- Ag
- Livestock
- Silviculture
- Construction
- Urban Runoff
- CSOs
- Suburban Impacts
- Mining
- Channelization
- Riparian Removal
- Landfills
- Natural
- Dams
- Other Flow Alteration
- Other: _____

4

4

First Sampling Pass: A Gear: A Distance: 5 Km Water Clarity: 75cm Water Stage: normal Canopy -% Open: 100

Subjective Rating (1-10)

Aesthetic Rating (1-10)

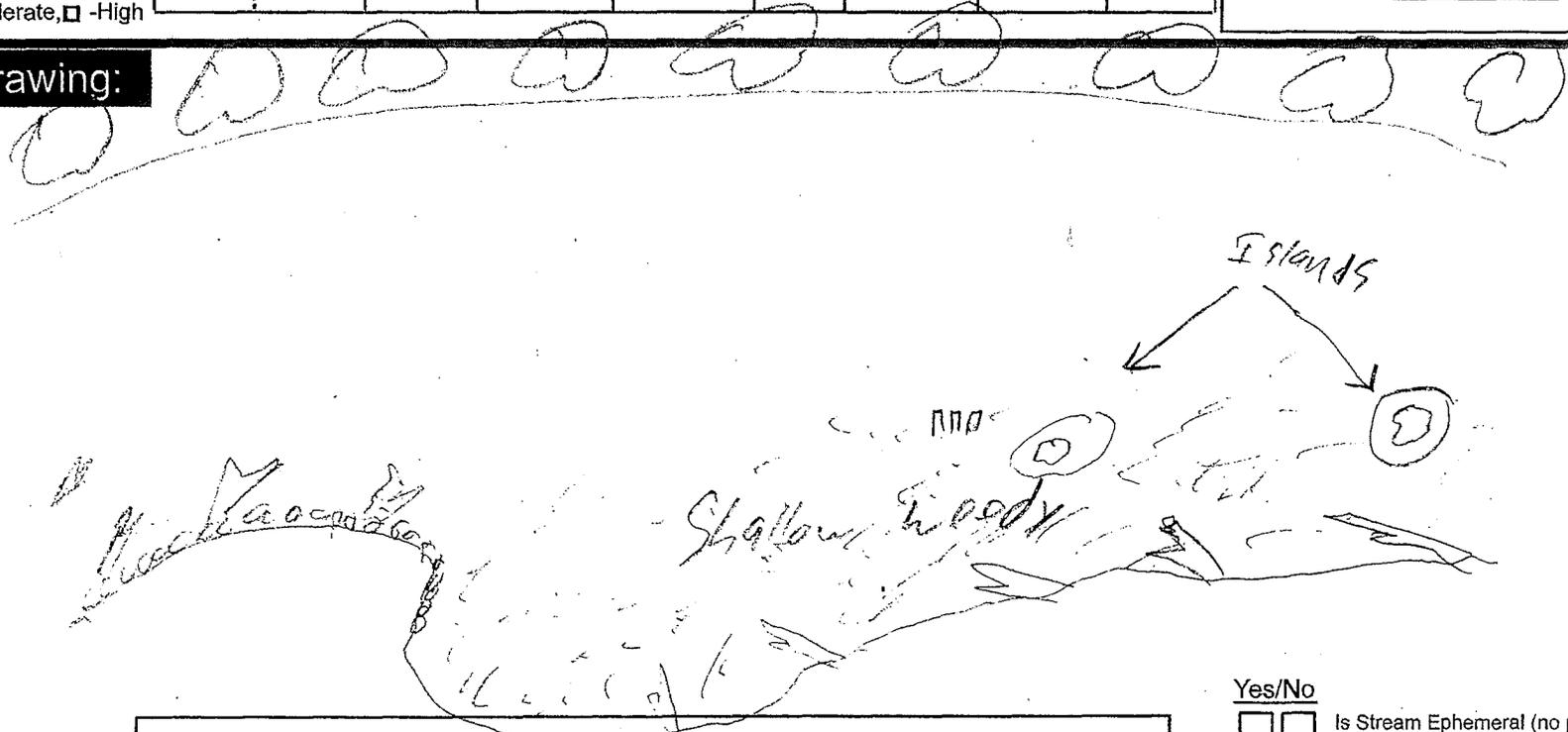
Gradient:

- Low, - Moderate, - High

Stream Measurements:

Average Width	Average Depth	Maximum Depth	Av. Bankfull Width	Bankfull Depth	Bankfull Mean W/D Ratio	Bankfull Max Depth	Floodprone Area	Entrench. Ratio

Stream Drawing:



Instructions for scoring the alternate cover metric: Each cover type should receive a score of between 0 and 3, Where: 0 - Cover type absent; 1 - Cover type present in very small amounts or if more common of marginal quality; 2 - Cover type present in moderate amounts, but not of highest quality or in small amounts of highest quality; 3 - Cover type of highest quality in moderate or greater amounts. Examples of highest quality include very large boulders in deep or fast water, large diameter logs that are stable, well developed rootwads in deep/fast water, or deep, well-defined, functional pools.

Yes/No

- Is Stream Ephemeral (no pools, totally dry or only damp spots)?
- Is there water upstream? How Far: _____
- Is There Water Close Downstream? How Far: _____
- Is Dry Channel Mostly Natural?

←
Flow

5/10/08
1-10-08
JD ✓

Qualitative Habitat Evaluation Index Field Sheet QHEI Score:

River Code: 95-656 RM: 2740 Stream: Fishers River Dog Plains
 Station ID: OP-17 Location: DS Stone fighting pier
 Date: 7-26-06 Scorer: NAW Latitude: 46 38 33 Longitude: -88.29078

1] SUBSTRATE (Check ONLY Two SubstrateTYPE BOXES; Estimate % present)

TYPE	POOL RIFFLE	POOL RIFFLE	SUBSTRATE ORIGIN	SUBSTRATE QUALITY
<input type="checkbox"/> BLDR /SLBS [10]	<input type="checkbox"/> GRAVEL [7]	<input checked="" type="checkbox"/> SAND [6]	Check ONE (OR 2 & AVERAGE)	Check ONE (OR 2 & AVERAGE)
<input type="checkbox"/> Lg BOULD. [10]	<input type="checkbox"/> BEDROCK [5]	<input checked="" type="checkbox"/> SILT [2]	<input type="checkbox"/> LIMESTONE [1]	<input type="checkbox"/> SILT HEAVY [-2]
<input checked="" type="checkbox"/> BOULDER [9]	<input type="checkbox"/> DETRITUS [3]	<input checked="" type="checkbox"/> WETLANDS [0]	<input checked="" type="checkbox"/> TILLS [1]	<input checked="" type="checkbox"/> SILT MODERATE [-1]
<input checked="" type="checkbox"/> COBBLE [8]	<input type="checkbox"/> ARTIFICIAL [0]	<input type="checkbox"/> HARDPAN [0]	<input type="checkbox"/> SANDSTONE [0]	<input type="checkbox"/> SILT NORMAL [0]
<input type="checkbox"/> HARDPAN [4]	<input checked="" type="checkbox"/> SILT [2]	<input type="checkbox"/> RIP/RAP [0]	EMBEDDED	<input type="checkbox"/> SILT FREE [1]
<input type="checkbox"/> MUCK [2]		<input type="checkbox"/> LACUSTRINE [0]	NESS:	<input type="checkbox"/> EXTENSIVE [-2]
		<input type="checkbox"/> SHALE [-1]		<input checked="" type="checkbox"/> MODERATE [-1]
		<input type="checkbox"/> COAL FINES [-2]		<input type="checkbox"/> NORMAL [0]
				<input type="checkbox"/> NONE [1]

NUMBER OF SUBSTRATE TYPES: 4 or More [2] 3 or Less [0]

COMMENTS: _____

Substrate

 Max 20

2] INSTREAM COVER (Give each cover type a score of 0 to 3; see back for instructions)

TYPE: Score All That Occur	AMOUNT: (Check ONLY One or check 2 and AVERAGE)
<input checked="" type="checkbox"/> UNDERCUT BANKS [1]	<input type="checkbox"/> EXTENSIVE > 75% [11]
<input checked="" type="checkbox"/> OVERHANGING VEGETATION [1]	<input checked="" type="checkbox"/> MODERATE 25-75% [7]
<input checked="" type="checkbox"/> SHALLOWS (IN SLOW WATER) [1]	<input type="checkbox"/> SPARSE 5-25% [3]
<input checked="" type="checkbox"/> ROOTMATS [1]	<input type="checkbox"/> NEARLY ABSENT < 5% [1]
<input type="checkbox"/> POOLS > 70 cm [2]	
<input type="checkbox"/> ROOTWADS [1]	
<input type="checkbox"/> BOULDERS [1]	
<input type="checkbox"/> OXBOWS, BACKWATERS [1]	
<input type="checkbox"/> AQUATIC MACROPHYTES [1]	
<input type="checkbox"/> LOGS OR WOODY DEBRIS [1]	

COMMENTS: _____

Cover

 Max 20

3] CHANNEL MORPHOLOGY: (Check ONLY One PER Category OR check 2 and AVERAGE)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER
<input type="checkbox"/> HIGH [4]	<input type="checkbox"/> EXCELLENT [7]	<input type="checkbox"/> NONE [6]	<input type="checkbox"/> HIGH [3]	<input type="checkbox"/> SNAGGING
<input type="checkbox"/> MODERATE [3]	<input type="checkbox"/> GOOD [5]	<input type="checkbox"/> RECOVERED [4]	<input checked="" type="checkbox"/> MODERATE [2]	<input type="checkbox"/> RELOCATION
<input checked="" type="checkbox"/> LOW [2]	<input checked="" type="checkbox"/> FAIR [3]	<input type="checkbox"/> RECOVERING [3]	<input checked="" type="checkbox"/> LOW [1]	<input type="checkbox"/> CANOPY REMOVAL
<input type="checkbox"/> NONE [1]	<input type="checkbox"/> POOR [1]	<input type="checkbox"/> RECENT OR NO RECOVERY [1]		<input type="checkbox"/> DREDGING
		<input checked="" type="checkbox"/> IMPOUNDED [-1]		<input type="checkbox"/> BANK SHAPING
				<input type="checkbox"/> ONE SIDE CHANNEL MODIFICATIONS

COMMENTS: _____

Channel

 Max 20

4] RIPARIAN ZONE AND BANK EROSION (check ONE box per bank or check 2 and AVERAGE per bank) River Right Looking Downstream

RIPARIAN WIDTH	FLOOD PLAIN QUALITY (PAST 100 Meter RIPARIAN)	BANK EROSION
L R (Per Bank)	L R (Most Predominant Per Bank)	L R (Per Bank)
<input checked="" type="checkbox"/> VERY WIDE > 100m [5]	<input type="checkbox"/> FOREST, SWAMP [3]	<input checked="" type="checkbox"/> NONE/LITTLE [3]
<input type="checkbox"/> WIDE > 50m [4]	<input type="checkbox"/> SHRUB OR OLD FIELD [2]	<input type="checkbox"/> MODERATE [2]
<input type="checkbox"/> MODERATE 10-50m [3]	<input checked="" type="checkbox"/> RESIDENTIAL, PARK, NEW FIELD [1]	<input type="checkbox"/> HEAVY/SEVERE [1]
<input type="checkbox"/> NARROW 5-10 m [2]	<input type="checkbox"/> FENCED PASTURE [1]	
<input checked="" type="checkbox"/> VERY NARROW < 5 m [1]		
<input type="checkbox"/> NONE [0]		

COMMENTS: _____

Riparian

 Max 10

5.] POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX. DEPTH (Check 1 ONLY!)	MORPHOLOGY (Check 1 or 2 & AVERAGE)	CURRENT VELOCITY POOLS & RIFFLES! (Check All That Apply)
<input checked="" type="checkbox"/> >1m [6]	<input checked="" type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [2]	<input type="checkbox"/> EDDIES [1]
<input type="checkbox"/> 0.7-1m [4]	<input type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1]	<input type="checkbox"/> TORRENTIAL [-1]
<input type="checkbox"/> 0.4-0.7m [2]	<input type="checkbox"/> POOL WIDTH < RIFFLE W. [0]	<input type="checkbox"/> FAST [1]
<input type="checkbox"/> 0.2- 0.4m [1]	<input checked="" type="checkbox"/> IMPOUNDED [-1]	<input type="checkbox"/> MODERATE [1]
<input type="checkbox"/> < 0.2m [POOL=0]		<input checked="" type="checkbox"/> SLOW [1]
		<input type="checkbox"/> INTERSTITIAL [-1]
		<input type="checkbox"/> INTERMITTENT [-2]
		<input type="checkbox"/> VERY FAST [1]
		<input type="checkbox"/> NONE [-1]

COMMENTS: _____

Pool/Current

 Max 12

CHECK ONE OR CHECK 2 AND AVERAGE

RIFFLE DEPTH	RUN DEPTH	RIFFLE/RUN SUBSTRATE	RIFFLE/RUN EMBEDDEDNESS
<input type="checkbox"/> Best Areas >10 cm [2]	<input type="checkbox"/> MAX > 50 [2]	<input type="checkbox"/> STABLE (e.g., Cobble, Boulder) [2]	<input type="checkbox"/> NONE [2]
<input type="checkbox"/> Best Areas 5-10 cm [1]	<input type="checkbox"/> MAX < 50 [1]	<input type="checkbox"/> MOD. STABLE (e.g., Large Gravel) [1]	<input type="checkbox"/> LOW [1]
<input type="checkbox"/> Best Areas < 5 cm		<input type="checkbox"/> UNSTABLE (Fine Gravel, Sand) [0]	<input type="checkbox"/> MODERATE [0]
<input checked="" type="checkbox"/> NO RIFFLE [Metric=0]			<input type="checkbox"/> EXTENSIVE [-1]

COMMENTS: _____

Riffle/Run

 Max 8

Gradient

 Max 10

6] GRADIENT (ft/mi): _____ DRAINAGE AREA (sq.mi.) : _____
 % POOL: % GLIDE:
 % RIFFLE: % RUN:

* Best areas must be large enough to support a population of riffle-obligate species

Is Sampling Reach Representative of the Stream (Y/N) If Not, Explain:

Lat/Long (Beg):
 Lat/Long (Mid):
 Lat/Long (End):
 Lat/Long (X-Loc):

- Major Suspected Sources of Impacts (Check All That Apply):
- None
 - Industrial
 - WWTP
 - Ag
 - Livestock
 - Silviculture
 - Construction
 - Urban Runoff
 - CSOs
 - Suburban Impacts
 - Mining
 - Channelization
 - Riparian Removal
 - Landfills
 - Natural
 - Dams
 - Other Flow Alteration
 - Other:

4 4

Subjective Rating (1-10) Aesthetic Rating (1-10)

Gradient: - Low, - Moderate, - High

Gear: A Distance: 5 km Water Clarity: 75% turb Water Stage: normal Canopy -% Open: 100

First Sampling Pass

Stream Measurements:

Average Width	Average Depth	Maximum Depth	Av. Bankfull Width	Bankfull Depth	Mean W/D Ratio	Bankfull Max Depth	Floodprone Area	Entrenchment Ratio

Stream Drawing:



Instructions for scoring the alternate cover metric: Each cover type should receive a score of between 0 and 3, Where: 0 - Cover type absent; 1 - Cover type present in very small amounts or if more common of marginal quality; 2 - Cover type present in moderate amounts, but not of highest quality or in small amounts of highest quality; 3 - Cover type of highest quality in moderate or greater amounts. Examples of highest quality include very large boulders in deep or fast water, large diameter logs that are stable, well developed rootwads in deep/fast water, or deep, well-defined, functional pools.

- Yes/No
- Is Stream Ephemeral (no pools, totally dry or only damp spots)?
 - Is there water upstream? How Far:
 - Is There Water Close Downstream? How Far:
 - Is Dry Channel Mostly Natural?

Qualitative Habitat Evaluation Index Field Sheet QHEI Score:

River Code: 95-050 RM: 247.8 Stream: Illinois River
 Station ID: DP-19 Location: West Marshall's Dam
 Date: 7-26-06 Scorer: AAJ Latitude: 41.31986 Longitude: -88.69300

1) SUBSTRATE (Check ONLY Two SubstrateTYPE BOXES; Estimate % present)

TYPE	POOL RIFFLE	POOL RIFFLE	SUBSTRATE ORIGIN	SUBSTRATE QUALITY
<input type="checkbox"/> BLDR /SLBS [10]	<input type="checkbox"/> GRAVEL [7]	<input checked="" type="checkbox"/> SAND [8]	Check ONE (OR 2 & AVERAGE)	Check ONE (OR 2 & AVERAGE)
<input type="checkbox"/> Lg BOULD. [10]	<input checked="" type="checkbox"/> BEDROCK [5]	<input type="checkbox"/> LIMESTONE [1]	SILT:	<input type="checkbox"/> SILT HEAVY [-2]
<input checked="" type="checkbox"/> BOULDER [9]	<input type="checkbox"/> DETRITUS [3]	<input type="checkbox"/> TILLS [1]		<input type="checkbox"/> SILT MODERATE [-1]
<input checked="" type="checkbox"/> COBBLE [8]	<input type="checkbox"/> ARTIFICIAL [0]	<input type="checkbox"/> WETLANDS [0]		<input checked="" type="checkbox"/> SILT NORMAL [0]
<input type="checkbox"/> HARDPAN [4]	<input type="checkbox"/> SILT [2]	<input type="checkbox"/> HARDPAN [0]		<input type="checkbox"/> SILT FREE [1]
<input type="checkbox"/> MUCK [2]		<input type="checkbox"/> SANDSTONE [0]	EMBEDDED	<input type="checkbox"/> EXTENSIVE [-2]
		<input type="checkbox"/> RIP/RAP [0]	NESS:	<input type="checkbox"/> MODERATE [-1]
		<input type="checkbox"/> LACUSTRINE [0]		<input checked="" type="checkbox"/> NORMAL [0]
		<input type="checkbox"/> SHALE [-1]		<input type="checkbox"/> NONE [1]
		<input type="checkbox"/> COAL FINES [-2]		

NUMBER OF SUBSTRATE TYPES: 4 or More [2] 3 or Less [0]

(High Quality Only, Score 5 or >)

2) INSTREAM COVER (Give each cover type a score of 0 to 3; see back for instructions)

TYPE: Score All That Occur	AMOUNT: (Check ONLY One or check 2 and AVERAGE)
<u>1</u> UNDERCUT BANKS [1]	<input type="checkbox"/> EXTENSIVE > 75% [11]
<u>1</u> OVERHANGING VEGETATION [1]	<input checked="" type="checkbox"/> MODERATE 25-75% [7]
<u>1</u> SHALLOWS (IN LOW WATER) [1]	<input type="checkbox"/> SPARSE 5-25% [3]
<u>1</u> ROOTMATS [1]	<input type="checkbox"/> NEARLY ABSENT < 5% [1]
<u>1</u> POOLS > 70 cm [2]	
<u>2</u> POXBOWS, BACKWATERS [1]	
<u>1</u> ROOTWADS [1]	
<u>1</u> BOULDERS [1]	
<u>1</u> AQUATIC MACROPHYTES [1]	
<u>1</u> LOGS OR WOODY DEBRIS [1]	

3) CHANNEL MORPHOLOGY: (Check ONLY One PER Category OR check 2 and AVERAGE)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER
<input type="checkbox"/> HIGH [4]	<input type="checkbox"/> EXCELLENT [7]	<input type="checkbox"/> NONE [6]	<input type="checkbox"/> HIGH [3]	<input type="checkbox"/> SNAGGING
<input checked="" type="checkbox"/> MODERATE [3]	<input checked="" type="checkbox"/> GOOD [5]	<input type="checkbox"/> RECOVERED [4]	<input checked="" type="checkbox"/> MODERATE [2]	<input type="checkbox"/> RELOCATION
<input type="checkbox"/> LOW [2]	<input type="checkbox"/> FAIR [3]	<input type="checkbox"/> RECOVERING [3]	<input type="checkbox"/> LOW [1]	<input type="checkbox"/> CANOPY REMOVAL
<input type="checkbox"/> NONE [1]	<input type="checkbox"/> POOR [1]	<input type="checkbox"/> RECENT OR NO RECOVERY [1]		<input type="checkbox"/> DREDGING
		<input checked="" type="checkbox"/> IMPOUNDED [-1]		<input type="checkbox"/> BANK SHAPING
				<input type="checkbox"/> ONE SIDE CHANNEL MODIFICATIONS

4) RIPARIAN ZONE AND BANK EROSION (check ONE box per bank or check 2 and AVERAGE per bank) River Right Looking Downstream

RIPARIAN WIDTH	FLOOD PLAIN QUALITY (PAST 100 Meter RIPARIAN)	BANK EROSION
L R (Per Bank)	L R (Most Predominant Per Bank)	L R (Per Bank)
<input checked="" type="checkbox"/> VERY WIDE > 100m [5]	<input checked="" type="checkbox"/> FOREST, SWAMP [3]	<input type="checkbox"/> CONSERVATION TILLAGE [1]
<input type="checkbox"/> WIDE > 50m [4]	<input type="checkbox"/> SHRUB OR OLD FIELD [2]	<input checked="" type="checkbox"/> URBAN OR INDUSTRIAL [0]
<input type="checkbox"/> MODERATE 10-50m [3]	<input type="checkbox"/> RESIDENTIAL, PARK, NEW FIELD [1]	<input type="checkbox"/> OPEN PASTURE, ROWCROP [0]
<input type="checkbox"/> NARROW 5-10 m [2]	<input type="checkbox"/> FENCED PASTURE [1]	<input type="checkbox"/> MINING/CONSTRUCTION [0]
<input checked="" type="checkbox"/> VERY NARROW <5 m [1]		
<input type="checkbox"/> NONE [0]		

5) POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX. DEPTH	MORPHOLOGY	CURRENT VELOCITY [POOLS & RIFFLES]
(Check 1 ONLY!)	(Check 1 or 2 & AVERAGE)	(Check All That Apply)
<input checked="" type="checkbox"/> >1m [6]	<input type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [2]	<input type="checkbox"/> EDDIES [1]
<input type="checkbox"/> 0.7-1m [4]	<input type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1]	<input type="checkbox"/> TORRENTIAL [-1]
<input type="checkbox"/> 0.4-0.7m [2]	<input type="checkbox"/> POOL WIDTH < RIFFLE W. [0]	<input type="checkbox"/> FAST [1]
<input type="checkbox"/> 0.2-0.4m [1]	<input checked="" type="checkbox"/> IMPOUNDED [-1]	<input type="checkbox"/> MODERATE [1]
<input type="checkbox"/> < 0.2m [POOL=0]		<input checked="" type="checkbox"/> SLOW [1]
		<input type="checkbox"/> INTERSTITIAL [-1]
		<input type="checkbox"/> INTERMITTENT [-2]
		<input type="checkbox"/> VERY FAST [1]
		<input type="checkbox"/> NONE [-1]

CHECK ONE OR CHECK 2 AND AVERAGE

RIFFLE DEPTH	RUN DEPTH	RIFFLE/RUN SUBSTRATE	RIFFLE/RUN EMBEDDEDNESS
<input type="checkbox"/> Best Areas >10 cm [2]	<input type="checkbox"/> MAX > 50 [2]	<input type="checkbox"/> STABLE (e.g., Cobble, Boulder) [2]	<input type="checkbox"/> NONE [2]
<input type="checkbox"/> Best Areas 5-10 cm [1]	<input type="checkbox"/> MAX < 50 [1]	<input type="checkbox"/> MOD. STABLE (e.g., Large Gravel) [1]	<input type="checkbox"/> LOW [1]
<input type="checkbox"/> Best Areas < 5 cm		<input type="checkbox"/> UNSTABLE (Fine Gravel, Sand) [0]	<input type="checkbox"/> MODERATE [0]
<input checked="" type="checkbox"/> NO RIFFLE [Metric=0]			<input type="checkbox"/> EXTENSIVE [-1]

6) GRADIENT (ft/mi): _____ DRAINAGE AREA (sq.mi.) : _____

% POOL: 100 % GLIDE:
 % RIFFLE: % RUN:

* Best areas must be large enough to support a population of riffle-obligate species

Is Sampling Reach Representative of the Stream (Y/N)

If Not, Explain:

Lat/Long (Beg):

Lat/Long (Mid):

Lat/Long (End):

Lat/Long(X-Loc):

Major Suspected Sources of Impacts (Check All That Apply):

- None
- Industrial
- WWTP
- Ag
- Livestock
- Silviculture
- Construction
- Urban Runoff
- CSOs
- Suburban Impacts
- Mining
- Channelization
- Riparian Removal
- Landfills
- Natural
- Dams
- Other Flow Alteration
- Other: _____

3

3

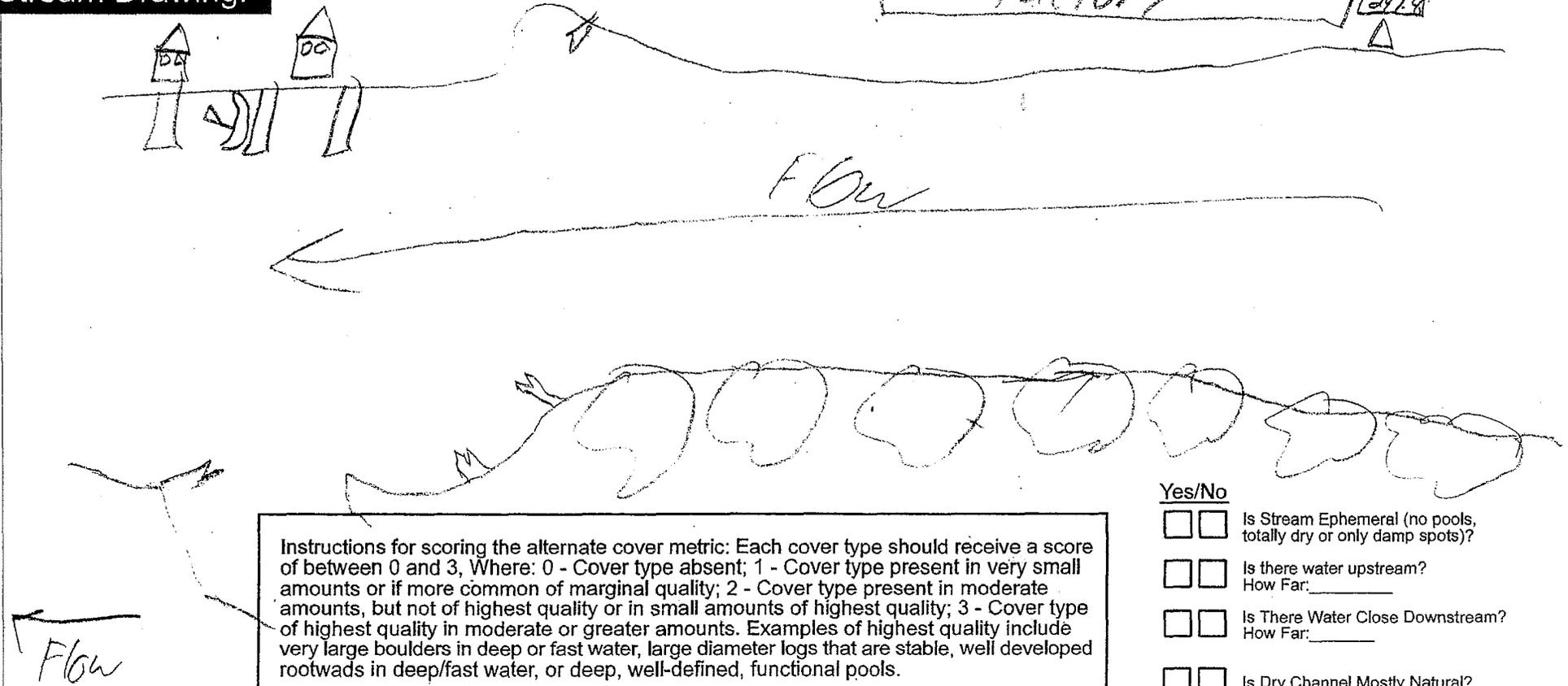
Gear: Distance: Water Clarity: Water Stage: Canopy -% Open
 First Sampling Pass A 5 ft 50cm Normal 100

Subjective Rating (1-10) Gradient: - Low, - Moderate, - High
 Aesthetic Rating (1-10)

Stream Measurements:

Average Width	Average Depth	Maximum Depth	Av. Bankfull Width	Bankfull Depth	Bankfull Mean W/D Ratio	Bankfull Max Depth	Floodprone Area	Entrench. Width	Entrench. Ratio

Stream Drawing:



Instructions for scoring the alternate cover metric: Each cover type should receive a score of between 0 and 3, Where: 0 - Cover type absent; 1 - Cover type present in very small amounts or if more common of marginal quality; 2 - Cover type present in moderate amounts, but not of highest quality or in small amounts of highest quality; 3 - Cover type of highest quality in moderate or greater amounts. Examples of highest quality include very large boulders in deep or fast water, large diameter logs that are stable, well developed rootwads in deep/fast water, or deep, well-defined, functional pools.

- Yes/No
- Is Stream Ephemeral (no pools, totally dry or only damp spots)?
 - Is there water upstream? How Far: _____
 - Is There Water Close Downstream? How Far: _____
 - Is Dry Channel Mostly Natural?

Edith 10-08 ✓

Qualitative Habitat Evaluation Index Field Sheet QHEI Score:

River Code: 95-680 RM: 242.1 Stream: Illinois River
 Station ID: DP-16 Location: UPST Grain Silo
 Date: 7-25-06 Scorer: AAJ Latitude: 41.33984 Longitude: -88.79339

1) SUBSTRATE (Check ONLY Two Substrate TYPE BOXES; Estimate % present)

TYPE	POOL RIFFLE	POOL RIFFLE	SUBSTRATE ORIGIN
<input type="checkbox"/> -BLDR /SLBS [10]	<input type="checkbox"/> -GRAVEL [7]	<input checked="" type="checkbox"/> -SAND [6]	Check ONE (OR 2 & AVERAGE)
<input type="checkbox"/> -Lg BOULD. [10]	<input checked="" type="checkbox"/> -BEDROCK [5]	<input type="checkbox"/> -LIMESTONE [1]	SILT:
<input checked="" type="checkbox"/> -BOULDER [9]	<input type="checkbox"/> -DETRITUS [3]	<input type="checkbox"/> -TILLS [1]	<input type="checkbox"/> -SILT HEAVY [-2]
<input checked="" type="checkbox"/> -COBBLE [8]	<input type="checkbox"/> -ARTIFICIAL [0]	<input type="checkbox"/> -WETLANDS [0]	<input type="checkbox"/> -SILT MODERATE [-1]
<input type="checkbox"/> -HARDPAN [4]	<input type="checkbox"/> -SILT [2]	<input type="checkbox"/> -HARDPAN [0]	<input checked="" type="checkbox"/> -SILT NORMAL [0]
<input type="checkbox"/> -MUCK [2]		<input type="checkbox"/> -SANDSTONE [0]	<input type="checkbox"/> -SILT FREE [1]
		<input type="checkbox"/> -RIP/RAP [0]	<input type="checkbox"/> -EXTENSIVE [-2]
		<input type="checkbox"/> -LACUSTRINE [0]	<input checked="" type="checkbox"/> -MODERATE [-1]
		<input type="checkbox"/> -SHALE [-1]	<input type="checkbox"/> -NORMAL [0]
		<input type="checkbox"/> -COAL FINES [-2]	<input type="checkbox"/> -NONE [1]

NUMBER OF SUBSTRATE TYPES: 4 or More [2] 3 or Less [0]

(High Quality Only, Score 5 or >)

Substrate

Max 20

2) INSTREAM COVER (Give each cover type a score of 0 to 3; see back for instructions)

TYPE: Score All That Occur	AMOUNT: (Check ONLY One or check 2 and AVERAGE)	Cover
<u>1</u> UNDERCUT BANKS [1]	<input type="checkbox"/> - EXTENSIVE > 75% [11]	<div style="border: 1px solid black; width: 40px; height: 40px; margin: 5px;"></div> Max 20
<u>0</u> OVERHANGING VEGETATION [1]	<input checked="" type="checkbox"/> - MODERATE 25-75% [7]	
<u>1</u> SHALLOWS (IN SLOW WATER) [1]	<input checked="" type="checkbox"/> - SPARSE 5-25% [3]	
<u>1</u> ROOTMATS [1]	<input type="checkbox"/> - NEARLY ABSENT < 5% [1]	
COMMENTS: _____		

3) CHANNEL MORPHOLOGY: (Check ONLY One PER Category OR check 2 and AVERAGE)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER	Channel
<input type="checkbox"/> - HIGH [4]	<input type="checkbox"/> - EXCELLENT [7]	<input type="checkbox"/> - NONE [6]	<input checked="" type="checkbox"/> - HIGH [3]	<input type="checkbox"/> - SNAGGING	<div style="border: 1px solid black; width: 40px; height: 40px; margin: 5px;"></div> Max 20
<input type="checkbox"/> - MODERATE [3]	<input checked="" type="checkbox"/> - GOOD [5]	<input type="checkbox"/> - RECOVERED [4]	<input checked="" type="checkbox"/> - MODERATE [2]	<input type="checkbox"/> - RELOCATION	
<input checked="" type="checkbox"/> - LOW [2]	<input checked="" type="checkbox"/> - FAIR [3]	<input type="checkbox"/> - RECOVERING [3]	<input type="checkbox"/> - LOW [1]	<input type="checkbox"/> - CANOPY REMOVAL	
<input type="checkbox"/> - NONE [1]	<input type="checkbox"/> - POOR [1]	<input type="checkbox"/> - RECENT OR NO RECOVERY [1]		<input type="checkbox"/> - DREDGING	
		<input checked="" type="checkbox"/> - IMPOUNDED [-1]		<input type="checkbox"/> - BANK SHAPING	

COMMENTS: _____

4) RIPARIAN ZONE AND BANK EROSION (check ONE box per bank or check 2 and AVERAGE per bank) River Right Looking Downstream

RIPARIAN WIDTH	FLOOD PLAIN QUALITY (PAST 100 Meter RIPARIAN)	BANK EROSION	Riparian
L R (Per Bank)	L R (Most Predominant Per Bank)	L R (Per Bank)	<div style="border: 1px solid black; width: 40px; height: 40px; margin: 5px;"></div> Max 10
<input checked="" type="checkbox"/> - VERY WIDE > 100m [5]	<input checked="" type="checkbox"/> - FOREST, SWAMP [3]	<input type="checkbox"/> - CONSERVATION TILLAGE [1]	
<input type="checkbox"/> - WIDE > 50m [4]	<input type="checkbox"/> - SHRUB OR OLD FIELD [2]	<input type="checkbox"/> - URBAN OR INDUSTRIAL [0]	
<input checked="" type="checkbox"/> - MODERATE 10-50m [3]	<input type="checkbox"/> - RESIDENTIAL, PARK, NEW FIELD [1]	<input checked="" type="checkbox"/> - OPEN PASTURE, ROWCROP [0]	
<input type="checkbox"/> - NARROW 5-10 m [2]	<input type="checkbox"/> - FENCED PASTURE [1]	<input type="checkbox"/> - MINING/CONSTRUCTION [0]	

COMMENTS: _____

5) POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX. DEPTH (Check 1 ONLY!)	MORPHOLOGY (Check 1 or 2 & AVERAGE)	CURRENT VELOCITY POOLS & RIFFLES! (Check All That Apply)	Pool/Current
<input checked="" type="checkbox"/> - >1m [6]	<input type="checkbox"/> - POOL WIDTH > RIFFLE WIDTH [2]	<input type="checkbox"/> - EDDIES [1]	<div style="border: 1px solid black; width: 40px; height: 40px; margin: 5px;"></div> Max 12
<input type="checkbox"/> - 0.7-1m [4]	<input type="checkbox"/> - POOL WIDTH = RIFFLE WIDTH [1]	<input type="checkbox"/> - FAST [1]	
<input type="checkbox"/> - 0.4-0.7m [2]	<input type="checkbox"/> - POOL WIDTH < RIFFLE W. [0]	<input type="checkbox"/> - MODERATE [1]	
<input type="checkbox"/> - 0.2-0.4m [1]	<input checked="" type="checkbox"/> - IMPOUNDED [-1]	<input checked="" type="checkbox"/> - SLOW [1]	
<input type="checkbox"/> - < 0.2m [POOL=0]	COMMENTS: _____	<input type="checkbox"/> - NONE [-1]	

CHECK ONE OR CHECK 2 AND AVERAGE

RIFFLE DEPTH	RUN DEPTH	RIFFLE/RUN SUBSTRATE	RIFFLE/RUN EMBEDDEDNESS	Riffle/Run
<input type="checkbox"/> - Best Areas >10 cm [2]	<input type="checkbox"/> - MAX > 50 [2]	<input type="checkbox"/> - STABLE (e.g., Cobble, Boulder) [2]	<input type="checkbox"/> - NONE [2]	<div style="border: 1px solid black; width: 40px; height: 40px; margin: 5px;"></div> Max 8
<input type="checkbox"/> - Best Areas 5-10 cm [1]	<input type="checkbox"/> - MAX < 50 [1]	<input checked="" type="checkbox"/> - MOD. STABLE (e.g., Large Gravel) [1]	<input type="checkbox"/> - LOW [1]	
<input type="checkbox"/> - Best Areas < 5 cm		<input type="checkbox"/> - UNSTABLE (Fine Gravel, Sand) [0]	<input type="checkbox"/> - MODERATE [0]	<div style="border: 1px solid black; width: 40px; height: 40px; margin: 5px;"></div> Max 10
<input checked="" type="checkbox"/> - NO RIFFLE [Metric=0]			<input type="checkbox"/> - EXTENSIVE [-1]	

COMMENTS: _____

6] GRADIENT (ft/mi): _____ DRAINAGE AREA (sq.mi.): _____

%POOL: 100	%GLIDE:
%RIFFLE: 	%RUN:

* Best areas must be large enough to support a population of riffle-obligate species

Is Sampling Reach Representative of the Stream (Y/N)

If Not, Explain:

Lat/Long (Beg):

Lat/Long (Mid):

Lat/Long (End):

Lat/Long(X-Loc):

Major Suspected Sources of Impacts (Check All That Apply):

- None
- Industrial
- WWTP
- Ag
- Livestock
- Silviculture
- Construction
- Urban Runoff
- CSOs
- Suburban Impacts
- Mining
- Channelization
- Riparian Removal
- Landfills
- Natural
- Dams
- Other Flow Alteration
- Other: _____



Subjective Rating (1-10)

Aesthetic Rating (1-10)

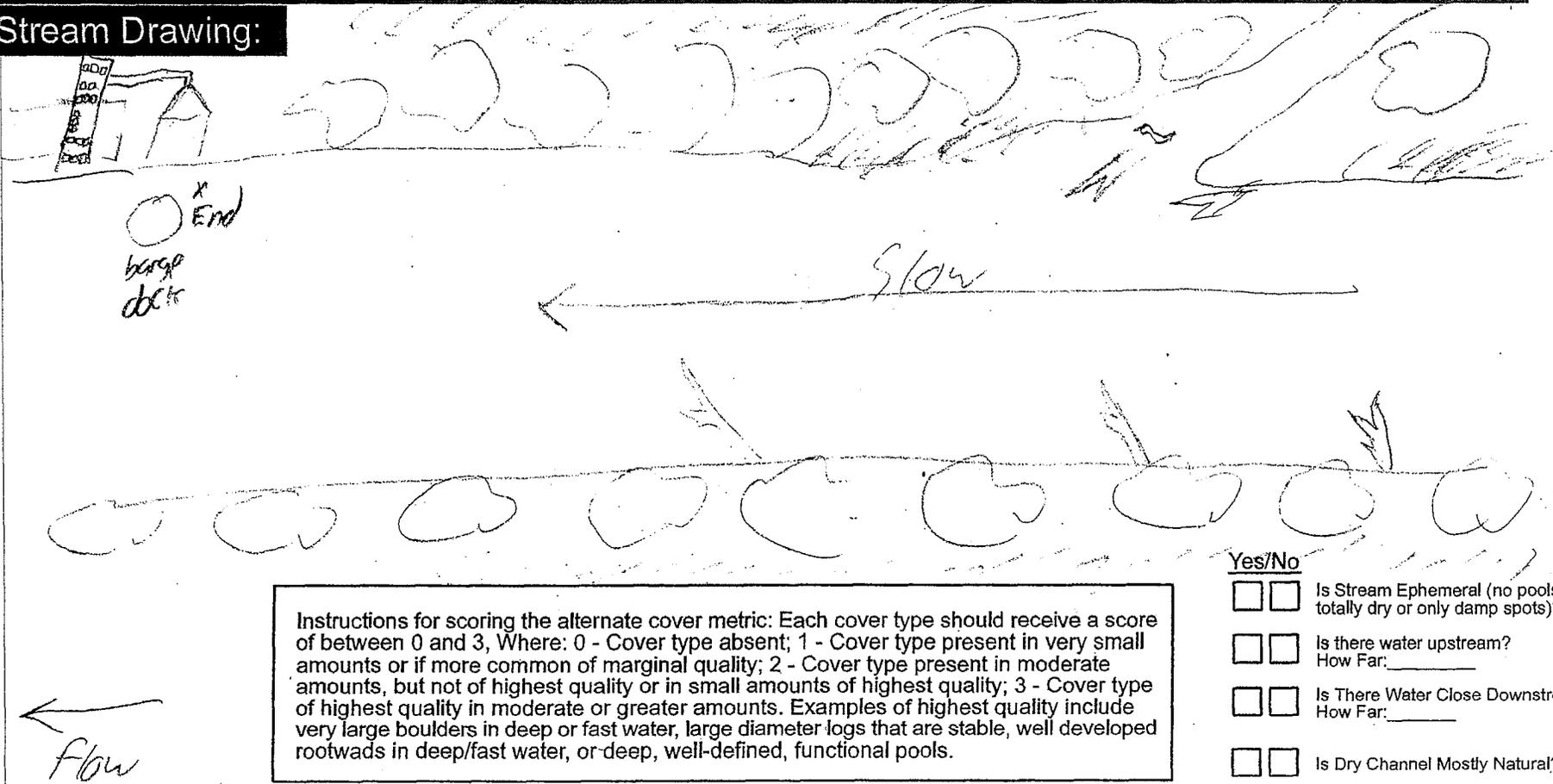
Gradient:

- Low, - Moderate, - High

Gear: A Distance: 0.5 Km Water Clarity: 50 cm Water Stage: Normal Canopy -% Open: 100

Stream Measurements:									
Average Width	Average Depth	Maximum Depth	Average Bankfull Width	Bankfull Depth	Bankfull Mean W/D Ratio	Bankfull Max Depth	Floodprone Area	Entrenchment Width	Entrenchment Ratio

Stream Drawing:



Instructions for scoring the alternate cover metric: Each cover type should receive a score of between 0 and 3, Where: 0 - Cover type absent; 1 - Cover type present in very small amounts or if more common of marginal quality; 2 - Cover type present in moderate amounts, but not of highest quality or in small amounts of highest quality; 3 - Cover type of highest quality in moderate or greater amounts. Examples of highest quality include very large boulders in deep or fast water, large diameter logs that are stable, well developed rootwads in deep/fast water, or deep, well-defined, functional pools.

Yes/No

- Is Stream Ephemeral (no pools, totally dry or only damp spots)?
- Is there water upstream? How Far: _____
- Is There Water Close Downstream? How Far: _____
- Is Dry Channel Mostly Natural?



Qualitative Habitat Evaluation Index Field Sheet QHEI Score:

River Code: 95-600 RM: 243.3 Stream: Illinois River
Station ID: DP-15 Location: DST marker 243.3
Date: 7/25/06 Scorer: AAZ Latitude: 41.31986 Longitude: -88.64300

1) SUBSTRATE (Check ONLY Two Substrate TYPE BOXES; Estimate % present)

TYPE		POOL RIFFLE		POOL RIFFLE		SUBSTRATE ORIGIN		SUBSTRATE QUALITY	
<input type="checkbox"/> <input type="checkbox"/> -BLDR /SLBS [10]	<input checked="" type="checkbox"/> <input type="checkbox"/> -GRAVEL [7]	<input type="checkbox"/> <input type="checkbox"/> -Lg BOULD. [10]	<input checked="" type="checkbox"/> <input type="checkbox"/> -SAND [6]	<input checked="" type="checkbox"/> <input type="checkbox"/> -BEDROCK [5]	<input type="checkbox"/> <input type="checkbox"/> -LIMESTONE [1]	<input type="checkbox"/> <input type="checkbox"/> -SILT:	<input type="checkbox"/> <input type="checkbox"/> -SILT HEAVY [-2]	<input type="checkbox"/> <input type="checkbox"/> -SILT MODERATE [-1]	Substrate <div style="border: 1px solid black; width: 40px; height: 40px; display: inline-block;"></div> Max 20
<input type="checkbox"/> <input type="checkbox"/> -BOULDER [9]	<input type="checkbox"/> <input type="checkbox"/> -DETRITUS [3]	<input checked="" type="checkbox"/> <input type="checkbox"/> -COBBLE [8]	<input type="checkbox"/> <input type="checkbox"/> -ARTIFICIAL [0]	<input checked="" type="checkbox"/> <input type="checkbox"/> -SILT [2]	<input type="checkbox"/> <input type="checkbox"/> -TILLS [1]	<input type="checkbox"/> <input type="checkbox"/> -WETLANDS [0]	<input checked="" type="checkbox"/> <input type="checkbox"/> -SILT NORMAL [0]	<input type="checkbox"/> <input type="checkbox"/> -SILT FREE [1]	
<input type="checkbox"/> <input type="checkbox"/> -HARDPAN [4]	<input type="checkbox"/> <input type="checkbox"/> -SILT [2]	<input type="checkbox"/> <input type="checkbox"/> -MUCK [2]	<input type="checkbox"/> <input type="checkbox"/> -SILT [2]	<input type="checkbox"/> <input type="checkbox"/> -SANDSTONE [0]	<input type="checkbox"/> <input type="checkbox"/> -RIP/RAP [0]	<input type="checkbox"/> <input type="checkbox"/> -LACUSTRINE [0]	<input type="checkbox"/> <input type="checkbox"/> -SHALE [-1]	<input type="checkbox"/> <input type="checkbox"/> -COAL FINES [-2]	
NUMBER OF SUBSTRATE TYPES: <input checked="" type="checkbox"/> 4 or More [2]		(High Quality Only, Score 5 or >)		<input type="checkbox"/> 3 or Less [0]		Check ONE (OR 2 & AVERAGE)		Check ONE (OR 2 & AVERAGE)	

COMMENTS:

2) INSTREAM COVER (Give each cover type a score of 0 to 3; see back for instructions)

TYPE: Score All That Occur		AMOUNT: (Check ONLY One or check 2 and AVERAGE)		Cover <div style="border: 1px solid black; width: 40px; height: 40px; display: inline-block;"></div> Max 20
<input checked="" type="checkbox"/> UNDERCUT BANKS [1]	<input type="checkbox"/> POOLS > 70 cm [2]	<input checked="" type="checkbox"/> OXBOWS, BACKWATERS [1]	<input type="checkbox"/> EXTENSIVE > 75% [11]	
<input checked="" type="checkbox"/> OVERHANGING VEGETATION [1]	<input type="checkbox"/> ROOTWADS [1]	<input checked="" type="checkbox"/> AQUATIC MACROPHYTES [1]	<input type="checkbox"/> MODERATE 25-75% [7]	
<input checked="" type="checkbox"/> SHALLOWS (IN SLOW WATER) [1]	<input type="checkbox"/> BOULDERS [1]	<input checked="" type="checkbox"/> LOGS OR WOODY DEBRIS [1]	<input checked="" type="checkbox"/> SPARSE 5-25% [3]	
<input checked="" type="checkbox"/> ROOTMATS [1]	COMMENTS:		<input type="checkbox"/> NEARLY ABSENT < 5% [1]	

3) CHANNEL MORPHOLOGY: (Check ONLY One PER Category OR check 2 and AVERAGE)

SINUOSITY		DEVELOPMENT		CHANNELIZATION		STABILITY		MODIFICATIONS/OTHER		Channel <div style="border: 1px solid black; width: 40px; height: 40px; display: inline-block;"></div> Max 20
<input type="checkbox"/> HIGH [4]	<input type="checkbox"/> EXCELLENT [7]	<input checked="" type="checkbox"/> NONE [6]	<input type="checkbox"/> HIGH [3]	<input type="checkbox"/> SNAGGING	<input type="checkbox"/> IMPOUND.					
<input type="checkbox"/> MODERATE [3]	<input type="checkbox"/> GOOD [5]	<input type="checkbox"/> RECOVERED [4]	<input checked="" type="checkbox"/> MODERATE [2]	<input type="checkbox"/> RELOCATION	<input type="checkbox"/> ISLANDS					
<input checked="" type="checkbox"/> LOW [2]	<input checked="" type="checkbox"/> FAIR [3]	<input type="checkbox"/> RECOVERING [3]	<input type="checkbox"/> LOW [1]	<input type="checkbox"/> CANOPY REMOVAL	<input type="checkbox"/> LEVEED					
<input type="checkbox"/> NONE [1]	<input type="checkbox"/> POOR [1]	<input type="checkbox"/> RECENT OR NO RECOVERY [1]	<input checked="" type="checkbox"/> IMPOUNDED [-1]	<input type="checkbox"/> DREDGING	<input type="checkbox"/> BANK SHAPING					
COMMENTS:				<input type="checkbox"/> ONE SIDE CHANNEL MODIFICATIONS						

4) RIPARIAN ZONE AND BANK EROSION (check ONE box per bank or check 2 and AVERAGE per bank) River Right Looking Downstream

RIPARIAN WIDTH		FLOOD PLAIN QUALITY (PAST 100 Meter RIPARIAN)		BANK EROSION		Riparian <div style="border: 1px solid black; width: 40px; height: 40px; display: inline-block;"></div> Max 10
<input type="checkbox"/> VERY WIDE > 100m [5]	<input checked="" type="checkbox"/> FOREST, SWAMP [3]	<input type="checkbox"/> CONSERVATION TILLAGE [1]	<input type="checkbox"/> NONE/LITTLE [3]			
<input checked="" type="checkbox"/> WIDE > 50m [4]	<input checked="" type="checkbox"/> SHRUB OR OLD FIELD [2]	<input checked="" type="checkbox"/> URBAN OR INDUSTRIAL [0]	<input checked="" type="checkbox"/> MODERATE [2]			
<input type="checkbox"/> MODERATE 10-50m [3]	<input type="checkbox"/> RESIDENTIAL, PARK, NEW FIELD [1]	<input type="checkbox"/> OPEN PASTURE, ROWCROP [0]	<input type="checkbox"/> HEAVY/SEVERE [1]			
<input checked="" type="checkbox"/> NARROW 5-10 m [2]	<input type="checkbox"/> FENCED PASTURE [1]	<input type="checkbox"/> MINING/CONSTRUCTION [0]				
<input type="checkbox"/> VERY NARROW < 5 m [1]	COMMENTS:					
<input type="checkbox"/> NONE [0]						

5) POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX. DEPTH		MORPHOLOGY		CURRENT VELOCITY (POOLS & RIFFLES!)		Pool/ Current <div style="border: 1px solid black; width: 40px; height: 40px; display: inline-block;"></div> Max 12
<input checked="" type="checkbox"/> > 1m [6]	<input type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [2]	<input type="checkbox"/> EDDIES [1]	<input type="checkbox"/> TORRENTIAL [-1]			
<input type="checkbox"/> 0.7-1m [4]	<input type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1]	<input type="checkbox"/> FAST [1]	<input type="checkbox"/> INTERSTITIAL [-1]			
<input type="checkbox"/> 0.4-0.7m [2]	<input type="checkbox"/> POOL WIDTH < RIFFLE W. [0]	<input type="checkbox"/> MODERATE [1]	<input type="checkbox"/> INTERMITTENT [-2]			
<input type="checkbox"/> 0.2-0.4m [1]	<input checked="" type="checkbox"/> IMPOUNDED [-1]	<input checked="" type="checkbox"/> SLOW [1]	<input type="checkbox"/> VERY FAST [1]			
<input type="checkbox"/> < 0.2m [POOL=0]	COMMENTS:		<input type="checkbox"/> NONE [-1]			

CHECK ONE OR CHECK 2 AND AVERAGE

RIFFLE DEPTH		RUN DEPTH		RIFFLE/RUN SUBSTRATE		RIFFLE/RUN EMBEDDEDNESS		Riffle/Run <div style="border: 1px solid black; width: 40px; height: 40px; display: inline-block;"></div> Max 8
<input type="checkbox"/> Best Areas > 10 cm [2]	<input type="checkbox"/> MAX > 50 [2]	<input type="checkbox"/> STABLE (e.g., Cobble, Boulder) [2]	<input type="checkbox"/> NONE [2]					
<input type="checkbox"/> Best Areas 5-10 cm [1]	<input type="checkbox"/> MAX < 50 [1]	<input type="checkbox"/> MOD. STABLE (e.g., Large Gravel) [1]	<input type="checkbox"/> LOW [1]					
<input type="checkbox"/> Best Areas < 5 cm		<input type="checkbox"/> UNSTABLE (Fine Gravel, Sand) [0]	<input type="checkbox"/> MODERATE [0]					
<input checked="" type="checkbox"/> NO RIFFLE [Metric=0]	COMMENTS:		<input type="checkbox"/> EXTENSIVE [-1]					
COMMENTS:								

6) GRADIENT (ft/mi): _____ DRAINAGE AREA (sq.mi.): _____ %POOL: 100 %GLIDE: _____
%RIFFLE: _____ %RUN: _____

* Best areas must be large enough to support a population of riffle-obligate species

Is Sampling Reach Representative of the Stream (Y/N) If Not, Explain:

Lat/Long (Beg): _____
 Lat/Long (Mid): _____
 Lat/Long (End): _____
 Lat/Long(X-Loc): _____

- Major Suspected Sources of Impacts (Check All That Apply):
- None
 - Industrial
 - WWTP
 - Ag
 - Livestock
 - Silviculture
 - Construction
 - Urban Runoff
 - CSOs
 - Suburban Impacts
 - Mining
 - Channelization
 - Riparian Removal
 - Landfills
 - Natural
 - Dams
 - Other Flow Alteration
- Other: _____

4

4

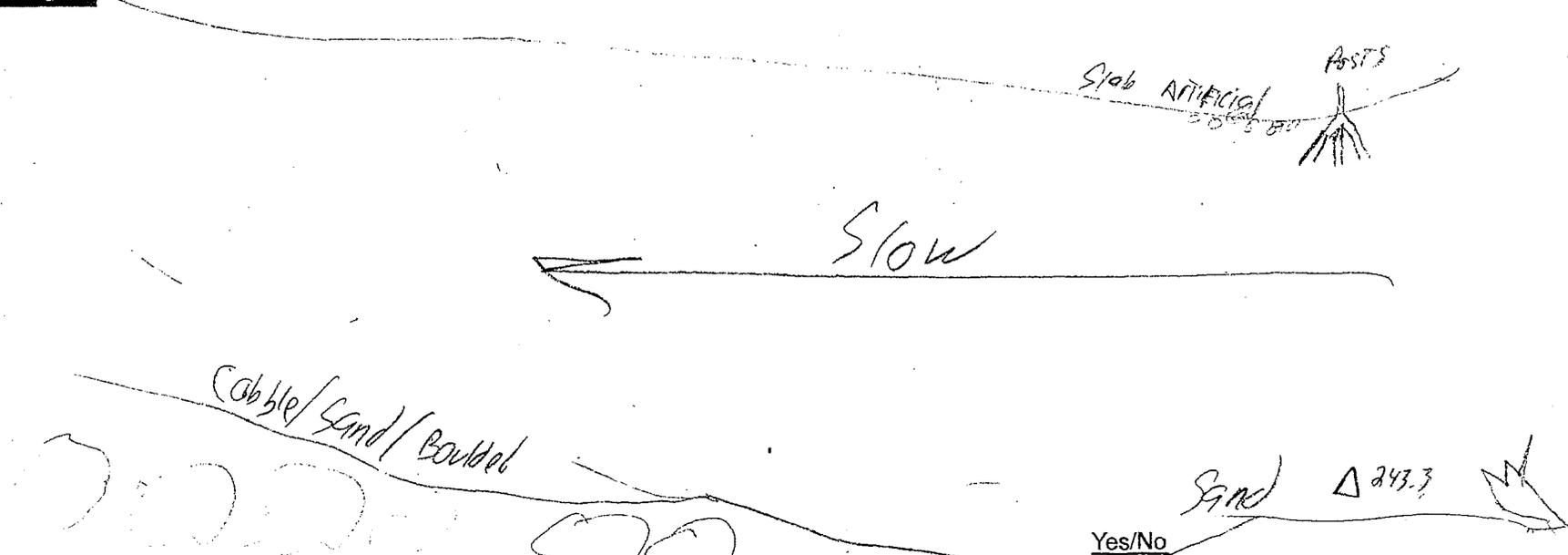
Gear: _____ Distance: _____ Water Clarity: _____ Water Stage: _____ Canopy -% Open: _____
 First Sampling Pass A 0.5 Km 50 cm Normal % 100

Subjective Rating (1-10) _____
 Aesthetic Rating (1-10) _____
 Gradient: - Low, - Moderate, - High

Stream Measurements:

Average Width	Average Depth	Maximum Depth	Av. Bankfull Width	Bankfull Depth	Mean W/D Ratio	Bankfull Max Depth	Floodprone Area	Entrench. Width	Entrench. Ratio

Stream Drawing:



Instructions for scoring the alternate cover metric: Each cover type should receive a score of between 0 and 3, Where: 0 - Cover type absent; 1 - Cover type present in very small amounts or if more common of marginal quality; 2 - Cover type present in moderate amounts, but not of highest quality or in small amounts of highest quality; 3 - Cover type of highest quality in moderate or greater amounts. Examples of highest quality include very large boulders in deep or fast water, large diameter logs that are stable, well developed rootwads in deep/fast water, or deep, well-defined, functional pools.

- Yes/No
- Is Stream Ephemeral (no pools, totally dry or only damp spots)?
 - Is there water upstream? How Far: _____
 - Is There Water Close Downstream? How Far: _____
 - Is Dry Channel Mostly Natural?

5 date 1-10-58 ✓



Qualitative Habitat Evaluation Index Field Sheet QHEI Score:

River Code: 45-050 RM: 251-4 Stream: Illinois River
 Station ID: DR-21 Location: @ Sgt Run
 Date: 7-27-06 Scorer: AAV Latitude: 31.30450 Longitude: -88.63049

1] SUBSTRATE (Check ONLY Two Substrate TYPE BOXES; Estimate % present)

TYPE	POOL RIFFLE	POOL RIFFLE	SUBSTRATE ORIGIN	SUBSTRATE QUALITY
<input type="checkbox"/> -BLDR /SLBS [10]	<input type="checkbox"/> -GRAVEL [7]	<input checked="" type="checkbox"/> -SAND [6]	Check ONE (OR 2 & AVERAGE)	Check ONE (OR 2 & AVERAGE)
<input type="checkbox"/> -Lg BOULD. [10]	<input type="checkbox"/> -BEDROCK [5]	<input type="checkbox"/> -LIMESTONE [1]	SILT:	<input type="checkbox"/> -SILT HEAVY [-2]
<input checked="" type="checkbox"/> -BOULDER [9]	<input type="checkbox"/> -DETRITUS [3]	<input checked="" type="checkbox"/> -TILLS [1]		<input type="checkbox"/> -SILT MODERATE [-1]
<input checked="" type="checkbox"/> -COBBLE [8]	<input type="checkbox"/> -ARTIFICIAL [0]	<input type="checkbox"/> -WETLANDS [0]		<input checked="" type="checkbox"/> -SILT NORMAL [0]
<input type="checkbox"/> -HARDPAN [4]	<input checked="" type="checkbox"/> -SILT [2]	<input type="checkbox"/> -HARDPAN [0]	EMBEDDED	<input type="checkbox"/> -SILT FREE [1]
<input type="checkbox"/> -MUCK [2]		<input type="checkbox"/> -SANDSTONE [0]	NESS:	<input type="checkbox"/> -EXTENSIVE [-2]
		<input type="checkbox"/> -RIP/RAP [0]		<input type="checkbox"/> -MODERATE [-1]
		<input type="checkbox"/> -LACUSTRINE [0]		<input checked="" type="checkbox"/> -NORMAL [0]
		<input type="checkbox"/> -SHALE [-1]		<input type="checkbox"/> -NONE [1]
		<input type="checkbox"/> -COAL FINES [-2]		

NUMBER OF SUBSTRATE TYPES: 4 or More [2] 3 or Less [0]

COMMENTS: _____

2] INSTREAM COVER (Give each cover type a score of 0 to 3; see back for instructions)

TYPE: Score All That Occur	AMOUNT: (Check ONLY One or check 2 and AVERAGE)
<input checked="" type="checkbox"/> UNDERCUT BANKS [1]	<input type="checkbox"/> - EXTENSIVE > 75% [11]
<input checked="" type="checkbox"/> OVERHANGING VEGETATION [1]	<input checked="" type="checkbox"/> MODERATE 25-75% [7]
<input checked="" type="checkbox"/> SHALLOWS (IN SLOW WATER) [1]	<input checked="" type="checkbox"/> SPARSE 5-25% [3]
<input checked="" type="checkbox"/> ROOTMATS [1]	<input type="checkbox"/> - NEARLY ABSENT < 5% [1]
<input type="checkbox"/> POOLS > 70 cm [2]	
<input type="checkbox"/> ROOTWADS [1]	
<input type="checkbox"/> BOULDERS [1]	
<input type="checkbox"/> OXBOWS, BACKWATERS [1]	
<input type="checkbox"/> AQUATIC MACROPHYTES [1]	
<input type="checkbox"/> LOGS OR WOODY DEBRIS [1]	

COMMENTS: _____

3] CHANNEL MORPHOLOGY: (Check ONLY One PER Category OR check 2 and AVERAGE)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER
<input type="checkbox"/> - HIGH [4]	<input type="checkbox"/> - EXCELLENT [7]	<input checked="" type="checkbox"/> - NONE [6]	<input type="checkbox"/> - HIGH [3]	<input type="checkbox"/> - SNAGGING
<input type="checkbox"/> - MODERATE [3]	<input type="checkbox"/> - GOOD [5]	<input type="checkbox"/> - RECOVERED [4]	<input checked="" type="checkbox"/> - MODERATE [2]	<input type="checkbox"/> - RELOCATION
<input checked="" type="checkbox"/> - LOW [2]	<input checked="" type="checkbox"/> - FAIR [3]	<input type="checkbox"/> - RECOVERING [3]	<input type="checkbox"/> - LOW [1]	<input type="checkbox"/> - CANOPY REMOVAL
<input type="checkbox"/> - NONE [1]	<input type="checkbox"/> - POOR [1]	<input type="checkbox"/> - RECENT OR NO RECOVERY [1]		<input type="checkbox"/> - DREDGING
		<input checked="" type="checkbox"/> - IMPOUNDED [-1]		<input type="checkbox"/> - BANK SHAPING
				<input type="checkbox"/> - ONE SIDE CHANNEL MODIFICATIONS

COMMENTS: _____

4] RIPARIAN ZONE AND BANK EROSION (check ONE box per bank or check 2 and AVERAGE per bank) River Right Looking Downstream

RIPARIAN WIDTH	FLOOD PLAIN QUALITY (PAST 100 Meter RIPARIAN)	BANK EROSION
L R (Per Bank)	L R (Most Predominant Per Bank)	L R (Per Bank)
<input checked="" type="checkbox"/> - VERY WIDE > 100m [5]	<input checked="" type="checkbox"/> - FOREST, SWAMP [3]	<input checked="" type="checkbox"/> - NONE/LITTLE [3]
<input type="checkbox"/> - WIDE > 50m [4]	<input type="checkbox"/> - SHRUB OR OLD FIELD [2]	<input type="checkbox"/> - MODERATE [2]
<input type="checkbox"/> - MODERATE 10-50m [3]	<input type="checkbox"/> - RESIDENTIAL, PARK, NEW FIELD [1]	<input checked="" type="checkbox"/> - HEAVY/SEVERE [1]
<input type="checkbox"/> - NARROW 5-10 m [2]	<input checked="" type="checkbox"/> - FENCED PASTURE [1]	<input type="checkbox"/> - MINING/CONSTRUCTION [0]
<input checked="" type="checkbox"/> - VERY NARROW < 5 m [1]		
<input checked="" type="checkbox"/> - NONE [0]		

COMMENTS: _____

5] POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX. DEPTH (Check 1 ONLY!)	MORPHOLOGY (Check 1 or 2 & AVERAGE)	CURRENT VELOCITY (POOLS & RIFFLES!) (Check All That Apply)
<input checked="" type="checkbox"/> > 1m [6]	<input type="checkbox"/> - POOL WIDTH > RIFFLE WIDTH [2]	<input type="checkbox"/> - EDDIES [1]
<input type="checkbox"/> - 0.7-1m [4]	<input type="checkbox"/> - POOL WIDTH = RIFFLE WIDTH [1]	<input type="checkbox"/> - TORRENTIAL [-1]
<input type="checkbox"/> - 0.4-0.7m [2]	<input type="checkbox"/> - POOL WIDTH < RIFFLE W. [0]	<input type="checkbox"/> - FAST [1]
<input type="checkbox"/> - 0.2- 0.4m [1]	<input checked="" type="checkbox"/> - IMPOUNDED [-1]	<input type="checkbox"/> - MODERATE [1]
<input type="checkbox"/> - < 0.2m [POOL=0]		<input checked="" type="checkbox"/> - SLOW [1]
		<input type="checkbox"/> - INTERSTITIAL [-1]
		<input type="checkbox"/> - INTERMITTENT [-2]
		<input type="checkbox"/> - VERY FAST [1]
		<input type="checkbox"/> - NONE [-1]

COMMENTS: _____

CHECK ONE OR CHECK 2 AND AVERAGE

RIFFLE DEPTH	RUN DEPTH	RIFFLE/RUN SUBSTRATE	RIFFLE/RUN EMBEDDEDNESS
<input type="checkbox"/> - Best Areas > 10 cm [2]	<input type="checkbox"/> - MAX > 50 [2]	<input type="checkbox"/> - STABLE (e.g., Cobble, Boulder) [2]	<input type="checkbox"/> - NONE [2]
<input type="checkbox"/> - Best Areas 5-10 cm [1]	<input type="checkbox"/> - MAX < 50 [1]	<input type="checkbox"/> - MOD. STABLE (e.g., Large Gravel) [1]	<input type="checkbox"/> - LOW [1]
<input type="checkbox"/> - Best Areas < 5 cm		<input type="checkbox"/> - UNSTABLE (Fine Gravel, Sand) [0]	<input type="checkbox"/> - MODERATE [0]
<input checked="" type="checkbox"/> NO RIFFLE [Metric=0]			<input type="checkbox"/> - EXTENSIVE [-1]

COMMENTS: _____

6] GRADIENT (ft/mi): _____ DRAINAGE AREA (sq.mi.) : _____

% POOL: % GLIDE: % RIFFLE: % RUN:

** Best areas must be large enough to support a population of riffle-obligate species

Is Sampling Reach Representative of the Stream (Y/N) If Not, Explain:

Lat/Long (Beg): _____
 Lat/Long (Mid): _____
 Lat/Long (End): _____
 Lat/Long (X-Loc): _____

Major Suspected Sources of Impacts (Check All That Apply):

- None
- Industrial
- WWTP
- Ag
- Livestock
- Silviculture
- Construction
- Urban Runoff
- CSOs
- Suburban Impacts
- Mining
- Channelization
- Riparian Removal
- Landfills
- Natural
- Dams
- Other Flow Alteration
- Other: _____

5

5

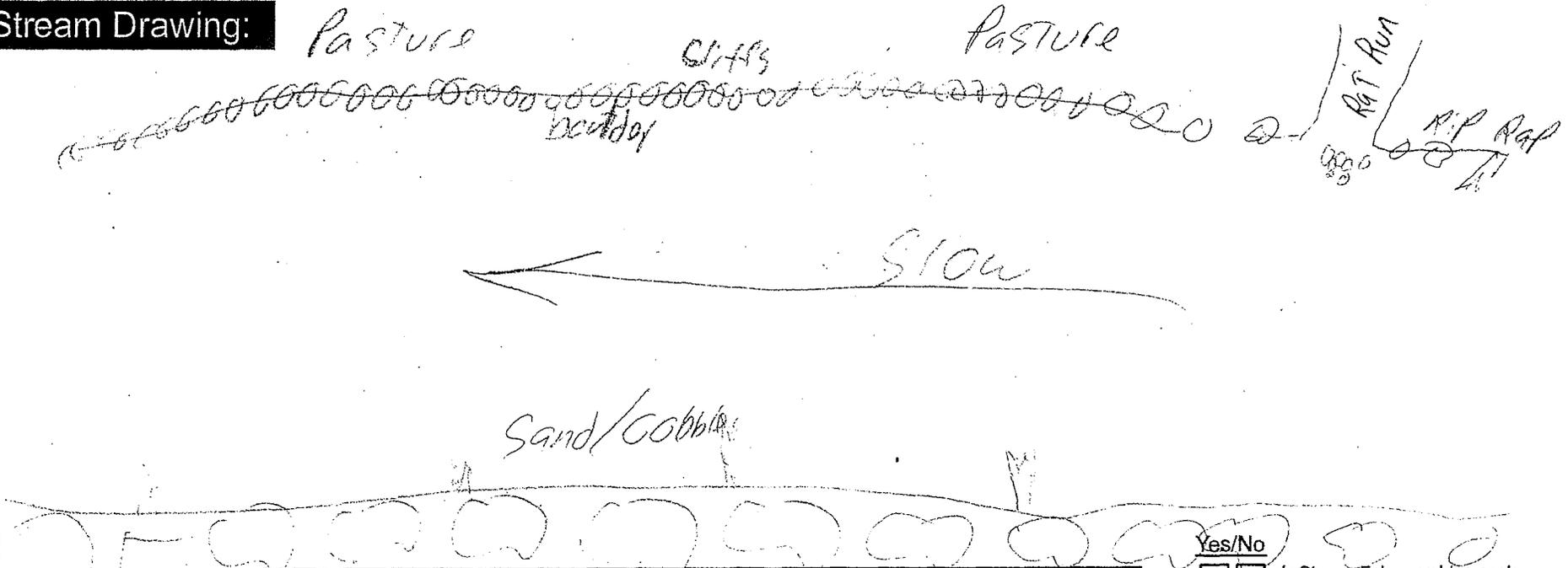
Gear: _____ Distance: 5 km Water Clarity: 60 cm Water Stage: Normal Canopy -% Open: 100

First Sampling Pass A

Subjective Rating (1-10) _____
 Aesthetic Rating (1-10) _____
 Gradient: - Low, - Moderate, - High

Stream Measurements:									
Average Width	Average Depth	Maximum Depth	Av. Bankfull Width	Bankfull Mean Depth	W/D Ratio	Bankfull Max Depth	Floodprone Area	Entrench. Width	Ratio

Stream Drawing:



Instructions for scoring the alternate cover metric: Each cover type should receive a score of between 0 and 3, Where: 0 - Cover type absent; 1 - Cover type present in very small amounts or if more common of marginal quality; 2 - Cover type present in moderate amounts, but not of highest quality or in small amounts of highest quality; 3 - Cover type of highest quality in moderate or greater amounts. Examples of highest quality include very large boulders in deep or fast water, large diameter logs that are stable, well developed rootwads in deep/fast water, or deep, well-defined, functional pools.

- Yes/No
- Is Stream Ephemeral (no pools, totally dry or only damp spots)?
 - Is there water upstream? How Far: _____
 - Is There Water Close Downstream? How Far: _____
 - Is Dry Channel Mostly Natural?

←
Flow



Qualitative Habitat Evaluation Index Field Sheet QHEI Score:

Edited - 1-10-03
JAB

River Code: 95-650 RM: 2561 Stream: Tlingit River
Station ID: 06-30 Location: _____
Date: 7-27-06 Scorer: ADJ Latitude: 41.32282 Longitude: -88.55285

1) SUBSTRATE (Check ONLY Two Substrate TYPE BOXES; Estimate % present)

TYPE	POOL RIFFLE	POOL RIFFLE	SUBSTRATE ORIGIN	SUBSTRATE QUALITY
<input type="checkbox"/> BLDR /SLBS [10]	<input type="checkbox"/> -GRAVEL [7]	<input checked="" type="checkbox"/> SAND [6]	Check ONE (OR 2 & AVERAGE)	Check ONE (OR 2 & AVERAGE)
<input type="checkbox"/> -Lg BOULD. [10]	<input type="checkbox"/> -BEDROCK [5]	<input type="checkbox"/> -LIMESTONE [1]	SILT:	<input type="checkbox"/> -SILT HEAVY [-2]
<input checked="" type="checkbox"/> BOULDER [9]	<input type="checkbox"/> -DETRITUS [3]	<input checked="" type="checkbox"/> -TILLS [1]	<input type="checkbox"/> -WETLANDS [0]	<input type="checkbox"/> -SILT MODERATE [-1]
<input checked="" type="checkbox"/> COBBLE [8]	<input type="checkbox"/> -ARTIFICIAL [0]	<input type="checkbox"/> -HARDPAN [0]	<input type="checkbox"/> -SANDSTONE [0]	<input checked="" type="checkbox"/> -SILT NORMAL [0]
<input type="checkbox"/> -HARDPAN [4]	<input type="checkbox"/> -SILT [2]	<input type="checkbox"/> -RIP/RAP [0]	EMBEDDED	<input type="checkbox"/> -SILT FREE [1]
<input type="checkbox"/> -MUCK [2]		<input type="checkbox"/> -LACUSTRINE [0]	NESS:	<input type="checkbox"/> -EXTENSIVE [-2]
		<input type="checkbox"/> -SHALE [-1]		<input type="checkbox"/> -MODERATE [-1]
		<input type="checkbox"/> -COAL FINES [-2]		<input checked="" type="checkbox"/> -NORMAL [0]
				<input type="checkbox"/> -NONE [1]

NUMBER OF SUBSTRATE TYPES: 4 or More [2] 3 or Less [0]
(High Quality Only, Score 5 or >)

COMMENTS: _____

2) INSTREAM COVER (Give each cover type a score of 0 to 3; see back for instructions)

(Structure)	TYPE: Score All That Occur	AMOUNT: (Check ONLY One or check 2 and AVERAGE)	Cover
<u>0</u> UNDERCUT BANKS [1]	<u>1</u> POOLS > 70 cm [2]	<input type="checkbox"/> - EXTENSIVE > 75% [11]	<input type="checkbox"/> Max 20
<u>1</u> OVERHANGING VEGETATION [1]	<u>1</u> ROOTWADS [1]	<input checked="" type="checkbox"/> - MODERATE 25-75% [7]	
<u>1</u> SHALLOWS (IN SLOW WATER) [1]	<u>0</u> BOULDERS [1]	<input checked="" type="checkbox"/> - SPARSE 5-25% [3]	
<u>1</u> ROOTMATS [1]		<input type="checkbox"/> - NEARLY ABSENT < 5% [1]	

COMMENTS: _____

3) CHANNEL MORPHOLOGY: (Check ONLY One PER Category OR check 2 and AVERAGE)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER	Channel
<input type="checkbox"/> - HIGH [4]	<input checked="" type="checkbox"/> - EXCELLENT [7]	<input type="checkbox"/> - NONE [6]	<input type="checkbox"/> - HIGH [3]	<input type="checkbox"/> - SNAGGING	<input type="checkbox"/> Max 20
<input checked="" type="checkbox"/> - MODERATE [3]	<input checked="" type="checkbox"/> - GOOD [5]	<input type="checkbox"/> - RECOVERED [4]	<input checked="" type="checkbox"/> - MODERATE [2]	<input type="checkbox"/> - RELOCATION	
<input checked="" type="checkbox"/> - LOW [2]	<input type="checkbox"/> - FAIR [3]	<input type="checkbox"/> - RECOVERING [3]	<input type="checkbox"/> - LOW [1]	<input type="checkbox"/> - CANOPY REMOVAL	
<input type="checkbox"/> - NONE [1]	<input type="checkbox"/> - POOR [1]	<input type="checkbox"/> - RECENT OR NO RECOVERY [1]		<input type="checkbox"/> - DREDGING	
		<input checked="" type="checkbox"/> - IMPOUNDED [-1]		<input type="checkbox"/> - LEVEED	
				<input type="checkbox"/> - BANK SHAPING	

COMMENTS: _____

4) RIPARIAN ZONE AND BANK EROSION (check ONE box per bank or check 2 and AVERAGE per bank) ^R River Right Looking Downstream ^L

RIPARIAN WIDTH	FLOOD PLAIN QUALITY (PAST 100 Meter RIPARIAN)	BANK EROSION	Riparian
L R (Per Bank)	L R (Most Predominant Per Bank)	L R (Per Bank)	<input type="checkbox"/> Max 10
<input checked="" type="checkbox"/> - VERY WIDE > 100m [5]	<input checked="" type="checkbox"/> FOREST, SWAMP [3]	<input checked="" type="checkbox"/> -NONE/LITTLE [3]	
<input type="checkbox"/> - WIDE > 50m [4]	<input type="checkbox"/> -SHRUB OR OLD FIELD [2]	<input type="checkbox"/> -MODERATE [2]	
<input checked="" type="checkbox"/> -MODERATE 10-50m [3]	<input type="checkbox"/> -RESIDENTIAL, PARK, NEW FIELD [1]	<input type="checkbox"/> -HEAVY/SEVERE [1]	
<input checked="" type="checkbox"/> -NARROW 5-10 m [2]	<input type="checkbox"/> -FENCED PASTURE [1]	<input type="checkbox"/> -MINING/CONSTRUCTION [0]	
<input type="checkbox"/> - VERY NARROW <5 m [1]			

COMMENTS: _____

5) POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX. DEPTH (Check 1 ONLY!)	MORPHOLOGY (Check 1 or 2 & AVERAGE)	CURRENT VELOCITY (Check All That Apply)	Pool/Current
<input checked="" type="checkbox"/> - >1m [6]	<input checked="" type="checkbox"/> -POOL WIDTH > RIFFLE WIDTH [2]	<input type="checkbox"/> -EDDIES [1]	<input type="checkbox"/> Max 12
<input type="checkbox"/> - 0.7-1m [4]	<input type="checkbox"/> -POOL WIDTH = RIFFLE WIDTH [1]	<input type="checkbox"/> -FAST [1]	
<input type="checkbox"/> - 0.4-0.7m [2]	<input type="checkbox"/> -POOL WIDTH < RIFFLE W. [0]	<input checked="" type="checkbox"/> -MODERATE [1]	
<input type="checkbox"/> - 0.2-0.4m [1]	<input checked="" type="checkbox"/> -IMPOUNDED [-1]	<input checked="" type="checkbox"/> -SLOW [1]	
<input type="checkbox"/> - < 0.2m [POOL=0]		<input type="checkbox"/> -TORRENTIAL [-1]	
		<input type="checkbox"/> -INTERSTITIAL [-1]	

COMMENTS: _____

CHECK ONE OR CHECK 2 AND AVERAGE

RIFFLE DEPTH	RUN DEPTH	RIFFLE/RUN SUBSTRATE	RIFFLE/RUN EMBEDDEDNESS	Riffle/Run
<input type="checkbox"/> - Best Areas >10 cm [2]	<input type="checkbox"/> - MAX > 50 [2]	<input type="checkbox"/> -STABLE (e.g., Cobble, Boulder) [2]	<input type="checkbox"/> - NONE [2]	<input type="checkbox"/> Max 8
<input type="checkbox"/> - Best Areas 5-10 cm [1]	<input type="checkbox"/> - MAX < 50 [1]	<input type="checkbox"/> -MOD. STABLE (e.g., Large Gravel) [1]	<input type="checkbox"/> - LOW [1]	
<input type="checkbox"/> - Best Areas < 5 cm		<input type="checkbox"/> -UNSTABLE (Fine Gravel, Sand) [0]	<input type="checkbox"/> - MODERATE [0]	<input type="checkbox"/> Max 10
<input checked="" type="checkbox"/> - NO RIFFLE [Metric=0]			<input type="checkbox"/> - EXTENSIVE [-1]	

COMMENTS: _____

6] GRADIENT (ft/mi): _____ DRAINAGE AREA (sq.mi.): _____

%POOL: %GLIDE:
%RIFFLE: %RUN:

* Best areas must be large enough to support a population of riffle-obligate species

Is Sampling Reach Representative of the Stream (Y/N) If Not, Explain:

Lat/Long (Beg): _____
 Lat/Long (Mid): _____
 Lat/Long (End): _____
 Lat/Long(X-Loc): _____

Major Suspected Sources of Impacts (Check All That Apply):

- None
- Industrial
- WWTP
- Ag
- Livestock
- Silviculture
- Construction
- Urban Runoff
- CSOs
- Suburban Impacts
- Mining
- Channelization
- Riparian Removal
- Landfills
- Natural
- Dams
- Other Flow Alteration
- Other: _____

4

4

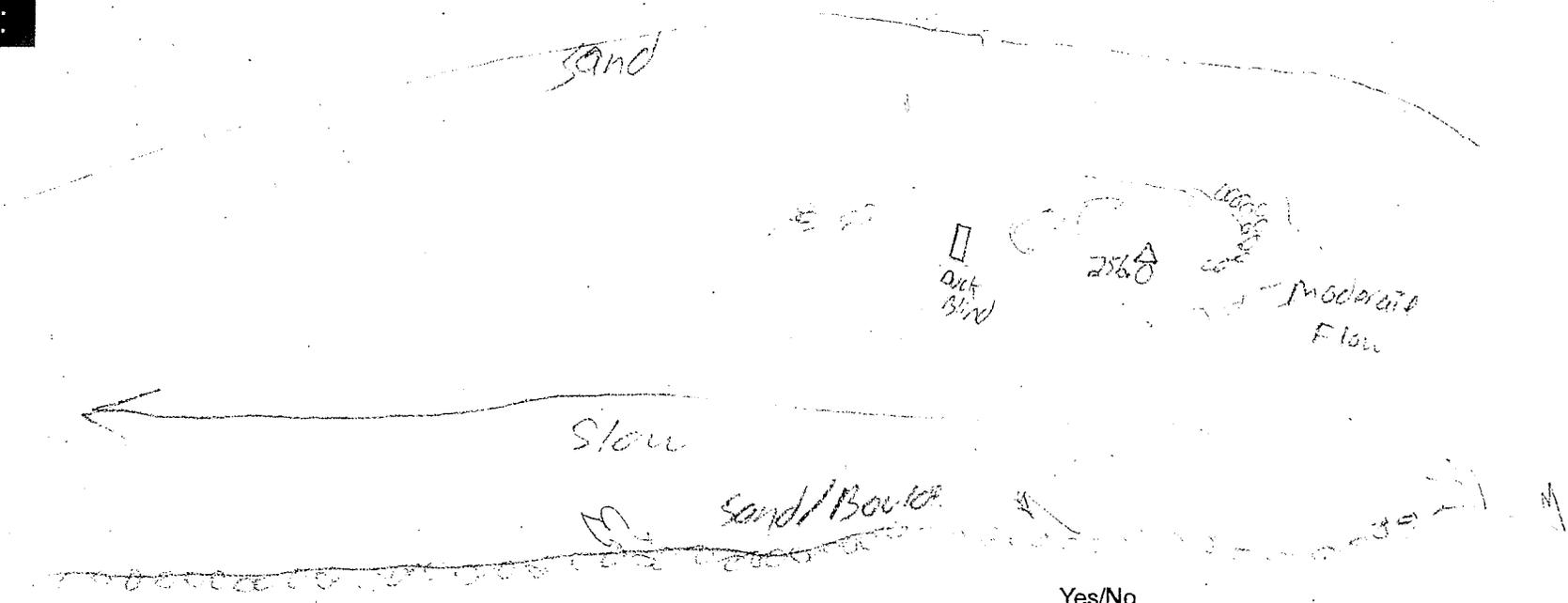
Gear: A Distance: 5 Km Water Clarity: 60 cm Water Stage: Normal Canopy -% Open: % 100

First Sampling Pass

Subjective Rating (1-10) _____
 Aesthetic Rating (1-10) _____
 Gradient: - Low, - Moderate, - High

Stream Measurements:									
Average Width	Average Depth	Maximum Depth	Av. Bankfull Width	Bankfull Mean Depth	W/D Ratio	Bankfull Max Depth	Floodprone Area	Entrench. Width	Ratio

Stream Drawing:



Instructions for scoring the alternate cover metric: Each cover type should receive a score of between 0 and 3, Where: 0 - Cover type absent; 1 - Cover type present in very small amounts or if more common of marginal quality; 2 - Cover type present in moderate amounts, but not of highest quality or in small amounts of highest quality; 3 - Cover type of highest quality in moderate or greater amounts. Examples of highest quality include very large boulders in deep or fast water, large diameter logs that are stable, well developed rootwads in deep/fast water, or deep, well-defined, functional pools.

Yes/No

- Is Stream Ephemeral (no pools, totally dry or only damp spots)?
- Is there water upstream? How Far: _____
- Is There Water Close Downstream? How Far: _____
- Is Dry Channel Mostly Natural?

← Flow



Qualitative Habitat Evaluation Index Field Sheet QHEI Score:

Field notes
11/20/06
2007

River Code: 95-600 RM: 268.0 Stream: Illinois River
Station ID: DP-10 Location: DST AVE Sable Creek
Date: 7-24-06 Scorer: AAV Latitude: 46.37904 Longitude: -88.33760

1] SUBSTRATE (Check ONLY Two Substrate TYPE BOXES; Estimate % present)

TYPE	POOL RIFFLE	POOL RIFFLE	SUBSTRATE ORIGIN	SUBSTRATE QUALITY
<input type="checkbox"/> <input type="checkbox"/> -BLDR /SLBS[10] <input type="checkbox"/> -GRAVEL [7]	<input checked="" type="checkbox"/> <input type="checkbox"/> -SAND [6]	<input checked="" type="checkbox"/> <input type="checkbox"/> -BEDROCK[5]	Check ONE (OR 2 & AVERAGE)	Check ONE (OR 2 & AVERAGE)
<input type="checkbox"/> <input type="checkbox"/> -Lg BOULD. [10]	<input type="checkbox"/> <input type="checkbox"/> -SILT [1]	<input type="checkbox"/> <input type="checkbox"/> -TILLS [1]	<input type="checkbox"/> -LIMESTONE [1]	<input type="checkbox"/> -SILT HEAVY [-2]
<input type="checkbox"/> <input type="checkbox"/> -BOULDER [9]	<input type="checkbox"/> <input type="checkbox"/> -WETLANDS[0]	<input type="checkbox"/> <input type="checkbox"/> -HARDPAN [0]	<input type="checkbox"/> -SILT MODERATE [-1]	<input type="checkbox"/> -SILT MODERATE [-1]
<input type="checkbox"/> <input type="checkbox"/> -COBBLE [8]	<input type="checkbox"/> <input type="checkbox"/> -HARDPAN [0]	<input type="checkbox"/> <input type="checkbox"/> -SANDSTONE [0]	<input type="checkbox"/> -SILT NORMAL [0]	<input type="checkbox"/> -SILT NORMAL [0]
<input type="checkbox"/> <input type="checkbox"/> -HARDPAN [4]	<input type="checkbox"/> <input type="checkbox"/> -SANDSTONE [0]	<input type="checkbox"/> <input type="checkbox"/> -RIP/RAP [0]	<input type="checkbox"/> -SILT FREE [1]	<input type="checkbox"/> -SILT FREE [1]
<input type="checkbox"/> <input type="checkbox"/> -MUCK [2]	<input type="checkbox"/> <input type="checkbox"/> -RIP/RAP [0]	<input type="checkbox"/> <input type="checkbox"/> -LACUSTRINE [0]	<input type="checkbox"/> -EXTENSIVE [-2]	<input type="checkbox"/> -EXTENSIVE [-2]
	<input type="checkbox"/> <input type="checkbox"/> -LACUSTRINE [0]	<input type="checkbox"/> <input type="checkbox"/> -SHALE [-1]	<input type="checkbox"/> -MODERATE [-1]	<input type="checkbox"/> -MODERATE [-1]
	<input type="checkbox"/> <input type="checkbox"/> -SHALE [-1]	<input type="checkbox"/> <input type="checkbox"/> -COAL FINES [-2]	<input type="checkbox"/> <input type="checkbox"/> -NORMAL [0]	<input type="checkbox"/> -NORMAL [0]
			<input type="checkbox"/> <input type="checkbox"/> -NONE [1]	<input type="checkbox"/> -NONE [1]

NUMBER OF SUBSTRATE TYPES: 4 or More [2] 3 or Less [0]

(High Quality Only, Score 5 or >) 3 or Less [0]

COMMENTS

2] INSTREAM COVER (Give each cover type a score of 0 to 3; see back for instructions)

(Structure)	TYPE: Score All That Occur	AMOUNT: (Check ONLY One or check 2 and AVERAGE)
<input checked="" type="checkbox"/> UNDERCUT BANKS [1]	<input type="checkbox"/> POOLS > 70 cm [2]	<input type="checkbox"/> - EXTENSIVE > 75% [11]
<input type="checkbox"/> OVERHANGING VEGETATION [1]	<input type="checkbox"/> ROOTWADS [1]	<input checked="" type="checkbox"/> - MODERATE 25-75% [7]
<input type="checkbox"/> SHALLOWS (IN SLOW WATER) [1]	<input type="checkbox"/> BOULDERS [1]	<input checked="" type="checkbox"/> - SPARSE 5-25% [3]
<input checked="" type="checkbox"/> ROOTMATS [1]		<input type="checkbox"/> - NEARLY ABSENT < 5%[1]

COMMENTS: OXBOWS, BACKWATERS [1]
AQUATIC MACROPHYTES [1]
LOGS OR WOODY DEBRIS [1]

3] CHANNEL MORPHOLOGY: (Check ONLY One PER Category OR check 2 and AVERAGE)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER
<input type="checkbox"/> - HIGH [4]	<input type="checkbox"/> - EXCELLENT [7]	<input type="checkbox"/> - NONE [6]	<input type="checkbox"/> - HIGH [3]	<input type="checkbox"/> - SNAGGING
<input checked="" type="checkbox"/> - MODERATE [3]	<input type="checkbox"/> - GOOD [5]	<input type="checkbox"/> - RECOVERED [4]	<input checked="" type="checkbox"/> - MODERATE [2]	<input type="checkbox"/> - RELOCATION
<input checked="" type="checkbox"/> - LOW [2]	<input checked="" type="checkbox"/> - FAIR [3]	<input type="checkbox"/> - RECOVERING [3]	<input checked="" type="checkbox"/> - LOW [1]	<input type="checkbox"/> - CANOPY REMOVAL
<input type="checkbox"/> - NONE [1]	<input type="checkbox"/> - POOR [1]	<input type="checkbox"/> - RECENT OR NO RECOVERY [1]		<input type="checkbox"/> - DREDGING
		<input checked="" type="checkbox"/> - IMPOUNDED [-1]		<input type="checkbox"/> - BANK SHAPING
				<input type="checkbox"/> - ONE SIDE CHANNEL MODIFICATIONS

COMMENTS:

4] RIPARIAN ZONE AND BANK EROSION (check ONE box per bank or check 2 and AVERAGE per bank) River Right Looking Downstream

RIPARIAN ZONE	FLOOD PLAIN QUALITY (PAST 100 Meter RIPARIAN)	BANK EROSION
L R (Per Bank)	L R (Most Predominant Per Bank)	L R (Per Bank)
<input type="checkbox"/> <input type="checkbox"/> - VERY WIDE > 100m [5]	<input checked="" type="checkbox"/> <input type="checkbox"/> - FOREST, SWAMP [3]	<input checked="" type="checkbox"/> <input type="checkbox"/> - NONE/LITTLE [3]
<input checked="" type="checkbox"/> <input type="checkbox"/> - WIDE > 50m [4]	<input type="checkbox"/> <input type="checkbox"/> - SHRUB OR OLD FIELD [2]	<input type="checkbox"/> <input type="checkbox"/> - MODERATE [2]
<input type="checkbox"/> <input type="checkbox"/> - MODERATE 10-50m [3]	<input type="checkbox"/> <input type="checkbox"/> - RESIDENTIAL, PARK, NEW FIELD [1]	<input type="checkbox"/> <input type="checkbox"/> - HEAVY/SEVERE [1]
<input type="checkbox"/> <input type="checkbox"/> - NARROW 5-10 m [2]	<input type="checkbox"/> <input type="checkbox"/> - FENCED PASTURE [1]	
<input type="checkbox"/> <input type="checkbox"/> - VERY NARROW < 5 m [1]		
<input type="checkbox"/> <input type="checkbox"/> - NONE [0]		

Comments:

5.] POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX. DEPTH	MORPHOLOGY	CURRENT VELOCITY [POOLS & RIFFLES]
(Check 1 ONLY!)	(Check 1 or 2 & AVERAGE)	(Check All That Apply)
<input checked="" type="checkbox"/> >1m [6]	<input checked="" type="checkbox"/> - POOL WIDTH > RIFFLE WIDTH [2]	<input type="checkbox"/> - EDDIES [1]
<input type="checkbox"/> - 0.7-1m [4]	<input type="checkbox"/> - POOL WIDTH = RIFFLE WIDTH [1]	<input type="checkbox"/> - TORRENTIAL [-1]
<input type="checkbox"/> - 0.4-0.7m [2]	<input type="checkbox"/> - POOL WIDTH < RIFFLE W. [0]	<input type="checkbox"/> - INTERSTITIAL [-1]
<input type="checkbox"/> - 0.2- 0.4m [1]	<input checked="" type="checkbox"/> - IMPOUNDED [-1]	<input type="checkbox"/> - INTERMITTENT [-2]
<input type="checkbox"/> - < 0.2m [POOL=0]		<input type="checkbox"/> - VERY FAST [1]
	COMMENTS:	<input type="checkbox"/> - NONE [-1]

CHECK ONE OR CHECK 2 AND AVERAGE

RIFFLE DEPTH	RUN DEPTH	RIFFLE/RUN SUBSTRATE	RIFFLE/RUN EMBEDDEDNESS
<input type="checkbox"/> - Best Areas > 10 cm [2]	<input type="checkbox"/> - MAX > 50 [2]	<input type="checkbox"/> - STABLE (e.g., Cobble, Boulder) [2]	<input type="checkbox"/> - NONE [2]
<input type="checkbox"/> - Best Areas 5-10 cm [1]	<input type="checkbox"/> - MAX < 50 [1]	<input type="checkbox"/> - MOD. STABLE (e.g., Large Gravel) [1]	<input type="checkbox"/> - LOW [1]
<input type="checkbox"/> - Best Areas < 5 cm		<input type="checkbox"/> - UNSTABLE (Fine Gravel, Sand) [0]	<input type="checkbox"/> - MODERATE [0]
<input checked="" type="checkbox"/> - NO RIFFLE [Metric=0]			<input type="checkbox"/> - EXTENSIVE [-1]

COMMENTS

6] GRADIENT (ft/mi): _____ DRAINAGE AREA (sq.mi.) : _____
%POOL: 100 %GLIDE: _____
%RIFFLE: _____ %RUN: _____

* Best areas must be large enough to support a population of riffle-obligate species

Is Sampling Reach Representative of the Stream (Y/N) If Not, Explain:

Lat/Long (Beg):
 Lat/Long (Mid):
 Lat/Long (End):
 Lat/Long(X-Loc):

Major Suspected Sources of Impacts (Check All That Apply):

- None
- Industrial
- WWTP
- Ag
- Livestock
- Silviculture
- Construction
- Urban Runoff
- CSOs
- Suburban Impacts
- Mining
- Channelization
- Riparian Removal
- Landfills
- Natural
- Dams
- Other Flow Alteration
- Other: _____

5

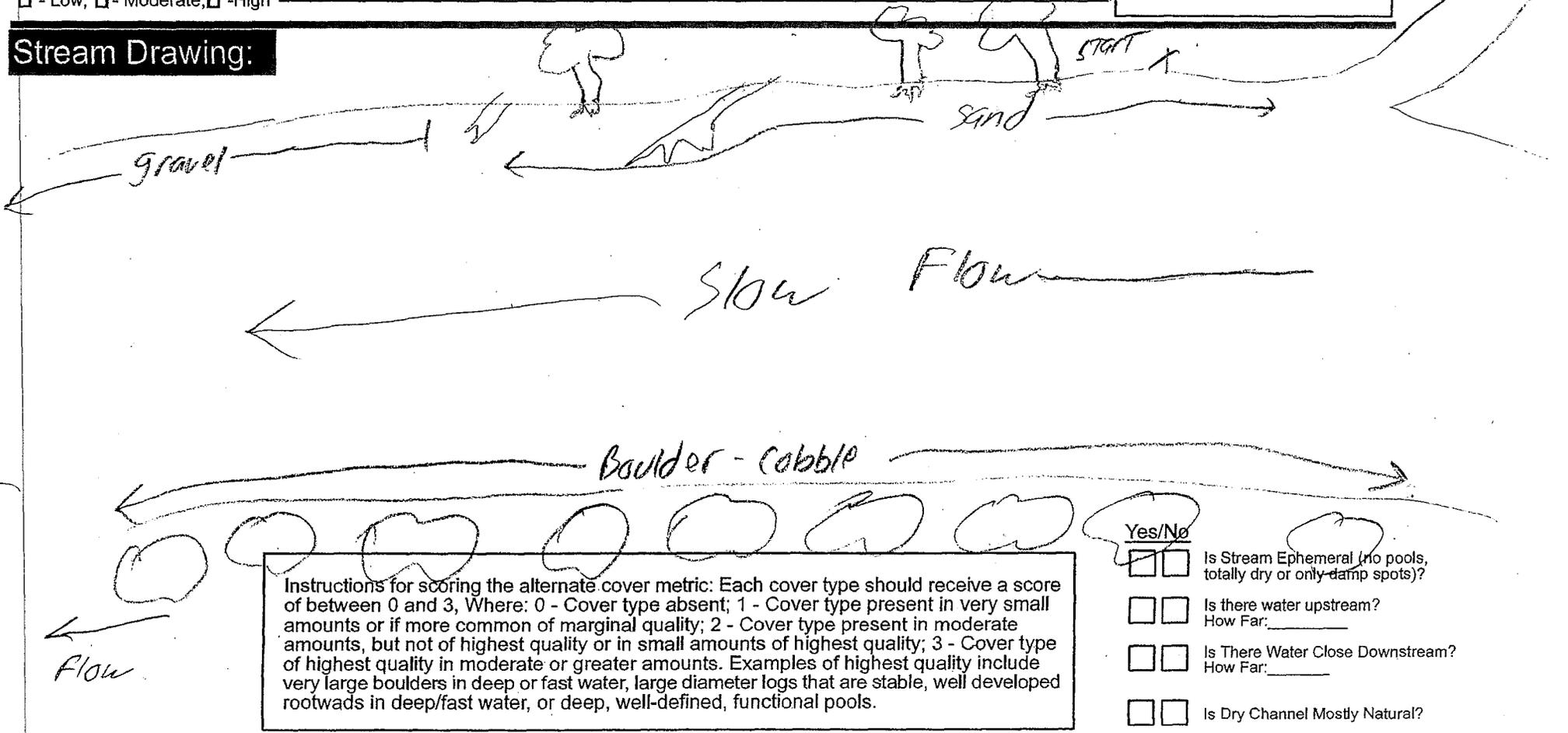
5

First Sampling Pass: A Gear: A Distance: .5 km Water Clarity: 50 cm Water Stage: normal Canopy -% Open: 100

Subjective Rating (1-10):
 Aesthetic Rating (1-10):
 Gradient: - Low, - Moderate, - High

Stream Measurements:									
Average Width	Average Depth	Maximum Depth	Av. Bankfull Width	Bankfull Mean Depth	W/D Ratio	Bankfull Max Depth	Floodprone Area	Entrench. Width	Entrench. Ratio

Stream Drawing:



Instructions for scoring the alternate cover metric: Each cover type should receive a score of between 0 and 3, Where: 0 - Cover type absent; 1 - Cover type present in very small amounts or if more common of marginal quality; 2 - Cover type present in moderate amounts, but not of highest quality or in small amounts of highest quality; 3 - Cover type of highest quality in moderate or greater amounts. Examples of highest quality include very large boulders in deep or fast water, large diameter logs that are stable, well developed rootwads in deep/fast water, or deep, well-defined, functional pools.

- Yes/No
- Is Stream Ephemeral (no pools, totally dry or only damp spots)?
 - Is there water upstream? How Far: _____
 - Is There Water Close Downstream? How Far: _____
 - Is Dry Channel Mostly Natural?



Qualitative Habitat Evaluation Index Field Sheet QHEI Score:

*Fielded
10/10/00 ✓*

River Code: 95-060 RM: 265.0 Stream: Jillias River
 Station ID: UP-13 Location: UPST mouth of Peacock Slough
 Date: 7-24-06 Scorer: NAW Latitude: 41.36120 Longitude: -88.39145

1] SUBSTRATE (Check ONLY Two Substrate TYPE BOXES; Estimate % present)

TYPE	POOL RIFFLE	POOL RIFFLE	SUBSTRATE ORIGIN	SUBSTRATE QUALITY
<input type="checkbox"/> -BLDR /SLBS [10]	<input type="checkbox"/> -GRAVEL [7]	Check ONE (OR 2 & AVERAGE)		Check ONE (OR 2 & AVERAGE)
<input type="checkbox"/> -Lg BOULD. [10]	<input checked="" type="checkbox"/> -SAND [6]	<input type="checkbox"/> -LIMESTONE [1]	SILT:	<input type="checkbox"/> -SILT HEAVY [-2]
<input type="checkbox"/> -BOULDER [9]	<input type="checkbox"/> -BEDROCK [5]	<input checked="" type="checkbox"/> -TILLS [1]		<input checked="" type="checkbox"/> -SILT MODERATE [-1]
<input checked="" type="checkbox"/> -COBBLE [8]	<input type="checkbox"/> -DETRITUS [3]	<input type="checkbox"/> -WETLANDS [0]		<input type="checkbox"/> -SILT NORMAL [0]
<input type="checkbox"/> -HARDPAN [4]	<input type="checkbox"/> -ARTIFICIAL [0]	<input type="checkbox"/> -HARDPAN [0]		<input type="checkbox"/> -SILT FREE [1]
<input type="checkbox"/> -MUCK [2]	<input checked="" type="checkbox"/> -SILT [2]	<input type="checkbox"/> -SANDSTONE [0]	EMBEDDED	<input type="checkbox"/> -EXTENSIVE [-2]
		<input type="checkbox"/> -RIP/RAP [0]	NESS:	<input checked="" type="checkbox"/> -MODERATE [-1]
		<input type="checkbox"/> -LACUSTRINE [0]		<input type="checkbox"/> -NORMAL [0]
		<input type="checkbox"/> -SHALE [-1]		<input type="checkbox"/> -NONE [1]
		<input type="checkbox"/> -COAL FINES [-2]		

NUMBER OF SUBSTRATE TYPES: 4 or More [2] 3 or Less [0]

COMMENTS: _____

Substrate

 Max 20

2] INSTREAM COVER (Give each cover type a score of 0 to 3; see back for instructions)

TYPE	SCORE	AMOUNT
UNDERCUT BANKS [1]	1	<input checked="" type="checkbox"/> - EXTENSIVE > 75% [11]
OVERHANGING VEGETATION [1]	1	<input checked="" type="checkbox"/> - MODERATE 25-75% [7]
SHALLOWS (IN SLOW WATER) [1]	1	<input checked="" type="checkbox"/> - SPARSE 5-25% [3]
ROOTMATS [1]	1	<input type="checkbox"/> - NEARLY ABSENT < 5% [1]
POOLS > 70 cm [2]	2	
ROOTWADS [1]	1	
BOULDERS [1]	1	
OXBOWS, BACKWATERS [1]	1	
AQUATIC MACROPHYTES [1]	1	
LOGS OR WOODY DEBRIS [1]	1	

COMMENTS: _____

Cover

 Max 20

3] CHANNEL MORPHOLOGY: (Check ONLY One PER Category OR check 2 and AVERAGE)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER
<input type="checkbox"/> - HIGH [4]	<input type="checkbox"/> - EXCELLENT [7]	<input checked="" type="checkbox"/> - NONE [6]	<input type="checkbox"/> - HIGH [3]	<input type="checkbox"/> - SNAGGING <input type="checkbox"/> - IMPOUND.
<input type="checkbox"/> - MODERATE [3]	<input type="checkbox"/> - GOOD [5]	<input type="checkbox"/> - RECOVERED [4]	<input checked="" type="checkbox"/> - MODERATE [2]	<input type="checkbox"/> - RELOCATION <input type="checkbox"/> - ISLANDS
<input checked="" type="checkbox"/> - LOW [2]	<input checked="" type="checkbox"/> - FAIR [3]	<input type="checkbox"/> - RECOVERING [3]	<input type="checkbox"/> - LOW [1]	<input type="checkbox"/> - CANOPY REMOVAL <input type="checkbox"/> - LEVEED
<input type="checkbox"/> - NONE [1]	<input type="checkbox"/> - POOR [1]	<input type="checkbox"/> - RECENT OR NO RECOVERY [1]		<input type="checkbox"/> - DREDGING <input type="checkbox"/> - BANK SHAPING
		<input checked="" type="checkbox"/> - IMPOUNDED [-1]		<input type="checkbox"/> - ONE SIDE CHANNEL MODIFICATIONS

COMMENTS: _____

Channel

 Max 20

4] RIPARIAN ZONE AND BANK EROSION (check ONE box per bank or check 2 and AVERAGE per bank) River Right Looking Downstream

RIPARIAN WIDTH	FLOOD PLAIN QUALITY (PAST 100 Meter RIPARIAN)	BANK EROSION
L R (Per Bank)	L B (Most Predominant Per Bank)	L R (Per Bank)
<input checked="" type="checkbox"/> - VERY WIDE > 100m [5]	<input checked="" type="checkbox"/> - FOREST, SWAMP [3]	<input type="checkbox"/> - NONE/LITTLE [3]
<input type="checkbox"/> - WIDE > 50m [4]	<input type="checkbox"/> - SHRUB OR OLD FIELD [2]	<input checked="" type="checkbox"/> - MODERATE [2]
<input checked="" type="checkbox"/> - MODERATE 10-50m [3]	<input type="checkbox"/> - RESIDENTIAL, PARK, NEW FIELD [1]	<input type="checkbox"/> - HEAVY/SEVERE [1]
<input type="checkbox"/> - NARROW 5-10 m [2]	<input type="checkbox"/> - FENCED PASTURE [1]	
<input type="checkbox"/> - VERY NARROW < 5 m [1]		
<input type="checkbox"/> - NONE [0]		

COMMENTS: _____

Riparian

 Max 10

5] POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX. DEPTH	MORPHOLOGY	CURRENT VELOCITY (POOLS & RIFFLES!)
(Check 1 ONLY!)	(Check 1 or 2 & AVERAGE)	(Check All That Apply)
<input checked="" type="checkbox"/> - > 1m [6]	<input type="checkbox"/> - POOL WIDTH > RIFFLE WIDTH [2]	<input type="checkbox"/> - EDDIES [1] <input type="checkbox"/> - TORRENTIAL [-1]
<input type="checkbox"/> - 0.7-1m [4]	<input type="checkbox"/> - POOL WIDTH = RIFFLE WIDTH [1]	<input type="checkbox"/> - FAST [1] <input type="checkbox"/> - INTERSTITIAL [-1]
<input type="checkbox"/> - 0.4-0.7m [2]	<input type="checkbox"/> - POOL WIDTH < RIFFLE W. [0]	<input type="checkbox"/> - MODERATE [1] <input type="checkbox"/> - INTERMITTENT [-2]
<input type="checkbox"/> - 0.2- 0.4m [1]	<input checked="" type="checkbox"/> - IMPOUNDED [-1]	<input checked="" type="checkbox"/> - SLOW [1] <input type="checkbox"/> - VERY FAST [1]
<input type="checkbox"/> - < 0.2m [POOL=0]	COMMENTS: _____	<input type="checkbox"/> - NONE [-1]

Pool/
Current

 Max 12

CHECK ONE OR CHECK 2 AND AVERAGE

RIFFLE DEPTH	RUN DEPTH	RIFFLE/RUN SUBSTRATE	RIFFLE/RUN EMBEDDEDNESS
<input type="checkbox"/> - Best Areas > 10 cm [2]	<input type="checkbox"/> - MAX > 50 [2]	<input type="checkbox"/> - STABLE (e.g., Cobble, Boulder) [2]	<input type="checkbox"/> - NONE [2]
<input type="checkbox"/> - Best Areas 5-10 cm [1]	<input type="checkbox"/> - MAX < 50 [1]	<input type="checkbox"/> - MOD. STABLE (e.g., Large Gravel) [1]	<input type="checkbox"/> - LOW [1]
<input type="checkbox"/> - Best Areas < 5 cm		<input type="checkbox"/> - UNSTABLE (Fine Gravel, Sand) [0]	<input type="checkbox"/> - MODERATE [0]
<input checked="" type="checkbox"/> - NO RIFFLE [Metric=0]			<input type="checkbox"/> - EXTENSIVE [-1]

COMMENTS: _____

Riffle/Run

 Max 8

Gradient

 Max 10

6] GRADIENT (ft/mi): _____ DRAINAGE AREA (sq.mi.): _____
 % POOL: % GLIDE:
 % RIFFLE: % RUN:

* Best areas must be large enough to support a population of riffle-obligate species

Is Sampling Reach Representative of the Stream (Y/N) If Not, Explain:

Lat/Long (Beg): _____
 Lat/Long (Mid): _____
 Lat/Long (End): _____
 Lat/Long (X-Loc): _____

Major Suspected Sources of Impacts (Check All That Apply):

- None
- Industrial
- WWTP
- Ag
- Livestock
- Silviculture
- Construction
- Urban Runoff
- CSOs
- Suburban Impacts
- Mining
- Channelization
- Riparian Removal
- Landfills
- Natural
- Dams
- Other Flow Alteration
- Other: _____

4

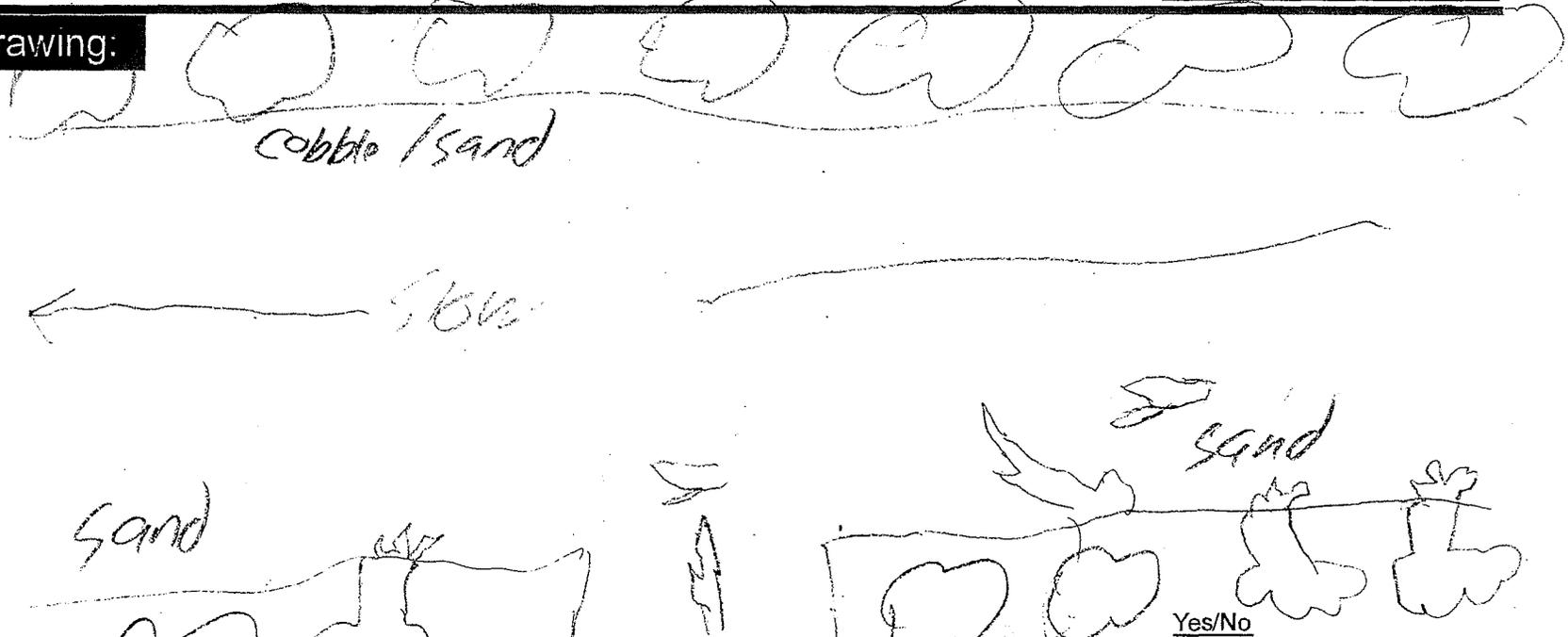
4

Gear: _____ Distance: _____ Water Clarity: _____ Water Stage: _____ Canopy -% Open: _____
 First Sampling Pass A 5 ft 50cm normal 100

Subjective Rating (1-10) _____
 Aesthetic Rating (1-10) _____
 Gradient: - Low, - Moderate, - High

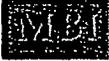
Stream Measurements:									
Average Width	Average Depth	Maximum Depth	Av. Bankfull Width	Bankfull Depth	Mean W/D Ratio	Bankfull Max Depth	Floodprone Area	Entrench. Width	Entrench. Ratio

Stream Drawing:



Instructions for scoring the alternate cover metric: Each cover type should receive a score of between 0 and 3, Where 0 - Cover type absent; 1 - Cover type present in very small amounts or if more common of marginal quality; 2 - Cover type present in moderate amounts, but not of highest quality or in small amounts of highest quality; 3 - Cover type of highest quality in moderate or greater amounts. Examples of highest quality include very large boulders in deep or fast water, large diameter logs that are stable, well developed rootwads in deep/fast water, or deep, well-defined, functional pools.

- Yes/No
- Is Stream Ephemeral (no pools, totally dry or only damp spots)?
 - Is there water upstream? How Far: _____
 - Is There Water Close Downstream? How Far: _____
 - Is Dry Channel Mostly Natural?



Qualitative Habitat Evaluation Index Field Sheet QHEI Score:

Edited 1-11-06

River Code: 95-856 RM: 276.4 Stream: Des Plaines
 Station ID: DP-09 Location: moose Island Slough
 Date: 7-23-06 Scorer: AM Latitude: 41.40897 Longitude: -88.22267

1) SUBSTRATE (Check ONLY Two Substrate TYPE BOXES; Estimate % present)

TYPE	POOL RIFFLE	POOL RIFFLE	SUBSTRATE ORIGIN	SUBSTRATE QUALITY
<input type="checkbox"/> BLDR /SLBS [10]	<input type="checkbox"/> -GRAVEL [7]	<input type="checkbox"/> -SAND [6]	Check ONE (OR 2 & AVERAGE)	Check ONE (OR 2 & AVERAGE)
<input type="checkbox"/> -Lg BOULD. [10]	<input type="checkbox"/> -BEDROCK [5]	<input checked="" type="checkbox"/> -LIMESTONE [1]	<input type="checkbox"/> -TILLS [1]	<input checked="" type="checkbox"/> -SILT HEAVY [-2]
<input checked="" type="checkbox"/> -BOULDER [9]	<input type="checkbox"/> -DETRITUS [3]	<input type="checkbox"/> -WETLANDS [0]	<input type="checkbox"/> -HARDPAN [0]	<input type="checkbox"/> -SILT MODERATE [-1]
<input type="checkbox"/> -COBBLE [8]	<input type="checkbox"/> -ARTIFICIAL [0]	<input type="checkbox"/> -SANDSTONE [0]	<input type="checkbox"/> -RIP/RAP [0]	<input type="checkbox"/> -SILT NORMAL [0]
<input checked="" type="checkbox"/> -HARDPAN [4]	<input checked="" type="checkbox"/> -SILT [2]	<input type="checkbox"/> -LACUSTRINE [0]	<input type="checkbox"/> -SHALE [-1]	<input type="checkbox"/> -SILT FREE [1]
<input checked="" type="checkbox"/> -MUCK [2]		<input type="checkbox"/> -SHALE [-1]	<input type="checkbox"/> -COAL FINES [-2]	<input checked="" type="checkbox"/> -EXTENSIVE [-2]

NUMBER OF SUBSTRATE TYPES: 4 or More [2] 3 or Less [0]

COMMENTS: _____

Substrate

 Max 20

2) INSTREAM COVER (Give each cover type a score of 0 to 3; see back for instructions)

TYPE	SCORE	TYPE	SCORE	TYPE	SCORE	AMOUNT
UNDERCUT BANKS [1]	0	POOLS > 70 cm [2]	0	OXBOWS, BACKWATERS [1]	1	<input type="checkbox"/> - EXTENSIVE > 75% [11]
OVERHANGING VEGETATION [1]	1	ROOTWADS [1]	1	AQUATIC MACROPHYTES [1]	2	<input checked="" type="checkbox"/> - MODERATE 25-75% [7]
SHALLOWS (IN SLOW WATER) [1]	1	BOULDERS [1]	1	LOGS OR WOODY DEBRIS [1]	1	<input type="checkbox"/> - SPARSE 5-25% [3]
ROOTMATS [1]	0					<input type="checkbox"/> - NEARLY ABSENT < 5% [1]

COMMENTS: _____

Cover

 Max 20

3) CHANNEL MORPHOLOGY: (Check ONLY One PER Category OR check 2 and AVERAGE)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER
<input type="checkbox"/> - HIGH [4]	<input type="checkbox"/> - EXCELLENT [7]	<input type="checkbox"/> - NONE [6]	<input type="checkbox"/> - HIGH [3]	<input type="checkbox"/> - SNAGGING
<input type="checkbox"/> - MODERATE [3]	<input type="checkbox"/> - GOOD [5]	<input type="checkbox"/> - RECOVERED [4]	<input checked="" type="checkbox"/> - MODERATE [2]	<input type="checkbox"/> - RELOCATION
<input type="checkbox"/> - LOW [2]	<input checked="" type="checkbox"/> - FAIR [3]	<input type="checkbox"/> - RECOVERING [3]	<input checked="" type="checkbox"/> - LOW [1]	<input type="checkbox"/> - CANOPY REMOVAL
<input checked="" type="checkbox"/> - NONE [1]	<input type="checkbox"/> - POOR [1]	<input type="checkbox"/> - RECENT OR NO RECOVERY [1]		<input type="checkbox"/> - DREDGING
		<input checked="" type="checkbox"/> - IMPOUNDED [-1]		<input type="checkbox"/> - BANK SHAPING
				<input type="checkbox"/> - ONE SIDE CHANNEL MODIFICATIONS

COMMENTS: _____

Channel

 Max 20

4) RIPARIAN ZONE AND BANK EROSION (check ONE box per bank or check 2 and AVERAGE per bank) River Right Looking Downstream River Left

RIPARIAN WIDTH	FLOOD PLAIN QUALITY (PAST 100 Meter RIPARIAN)	BANK EROSION
L R (Per Bank)	L R (Most Predominant Per Bank)	L R (Per Bank)
<input type="checkbox"/> - VERY WIDE > 100m [5]	<input checked="" type="checkbox"/> - FOREST, SWAMP [3]	<input checked="" type="checkbox"/> - NONE/LITTLE [3]
<input checked="" type="checkbox"/> - WIDE > 50m [4]	<input type="checkbox"/> - SHRUB OR OLD FIELD [2]	<input type="checkbox"/> - MODERATE [2]
<input type="checkbox"/> - MODERATE 10-50m [3]	<input type="checkbox"/> - RESIDENTIAL, PARK, NEW FIELD [1]	<input type="checkbox"/> - HEAVY/SEVERE [1]
<input type="checkbox"/> - NARROW 5-10 m [2]	<input type="checkbox"/> - FENCED PASTURE [1]	<input type="checkbox"/> - MINING/CONSTRUCTION [0]
<input type="checkbox"/> - VERY NARROW < 5 m [1]		
<input type="checkbox"/> - NONE [0]		

COMMENTS: _____

Riparian

 Max 10

5) POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX. DEPTH	MORPHOLOGY	CURRENT VELOCITY POOLS & RIFFLES!
(Check 1 ONLY)	(Check 1 or 2 & AVERAGE)	(Check All That Apply)
<input type="checkbox"/> - >1m [6]	<input type="checkbox"/> - POOL WIDTH > RIFFLE WIDTH [2]	<input type="checkbox"/> - EDDIES [1]
<input type="checkbox"/> - 0.7-1m [4]	<input type="checkbox"/> - POOL WIDTH = RIFFLE WIDTH [1]	<input type="checkbox"/> - TORRENTIAL [-1]
<input checked="" type="checkbox"/> - 0.4-0.7m [2]	<input type="checkbox"/> - POOL WIDTH < RIFFLE W. [0]	<input type="checkbox"/> - FAST [1]
<input type="checkbox"/> - 0.2- 0.4m [1]	<input checked="" type="checkbox"/> - IMPOUNDED [-1]	<input type="checkbox"/> - MODERATE [1]
<input type="checkbox"/> - < 0.2m [POOL=0]		<input type="checkbox"/> - SLOW [1]
		<input type="checkbox"/> - INTERMITTENT [-2]
		<input type="checkbox"/> - VERY FAST [1]
		<input checked="" type="checkbox"/> - NONE [-1]

COMMENTS: _____

Pool/Current

 Max 12

CHECK ONE OR CHECK 2 AND AVERAGE

RIFFLE DEPTH	RUN DEPTH	RIFFLE/RUN SUBSTRATE	RIFFLE/RUN EMBEDDEDNESS
<input type="checkbox"/> - Best Areas >10 cm [2]	<input type="checkbox"/> - MAX > 50 [2]	<input type="checkbox"/> - STABLE (e.g., Cobble, Boulder) [2]	<input type="checkbox"/> - NONE [2]
<input type="checkbox"/> - Best Areas 5-10 cm [1]	<input type="checkbox"/> - MAX < 50 [1]	<input checked="" type="checkbox"/> - MOD. STABLE (e.g., Large Gravel) [1]	<input type="checkbox"/> - LOW [1]
<input type="checkbox"/> - Best Areas < 5 cm		<input type="checkbox"/> - UNSTABLE (Fine Gravel, Sand) [0]	<input type="checkbox"/> - MODERATE [0]
<input checked="" type="checkbox"/> - NO RIFFLE [Metric=0]			<input type="checkbox"/> - EXTENSIVE [-1]

COMMENTS: _____

Riffle/Run

 Max 8

Gradient

 Max 10

6] GRADIENT (ft/mi): _____ DRAINAGE AREA (sq.mi.): _____
 %POOL: 100 %GLIDE:
 %RIFFLE: %RUN:

* Best areas must be large enough to support a population of riffle-obligate species

Is Sampling Reach Representative of the Stream (Y/N) If Not, Explain:

Lat/Long (Beg): _____
 Lat/Long (Mid): _____
 Lat/Long (End): _____
 Lat/Long (X-Loc): _____

Major Suspected Sources of Impacts (Check All That Apply):

- None
- Industrial
- WWTP
- Ag
- Livestock
- Silviculture
- Construction
- Urban Runoff
- CSOs
- Suburban Impacts
- Mining
- Channelization
- Riparian Removal
- Landfills
- Natural
- Dams
- Other Flow Alteration
- Other: _____

Subjective Rating (1-10) Gradient: - Low, - Moderate, - High

Aesthetic Rating (1-10)

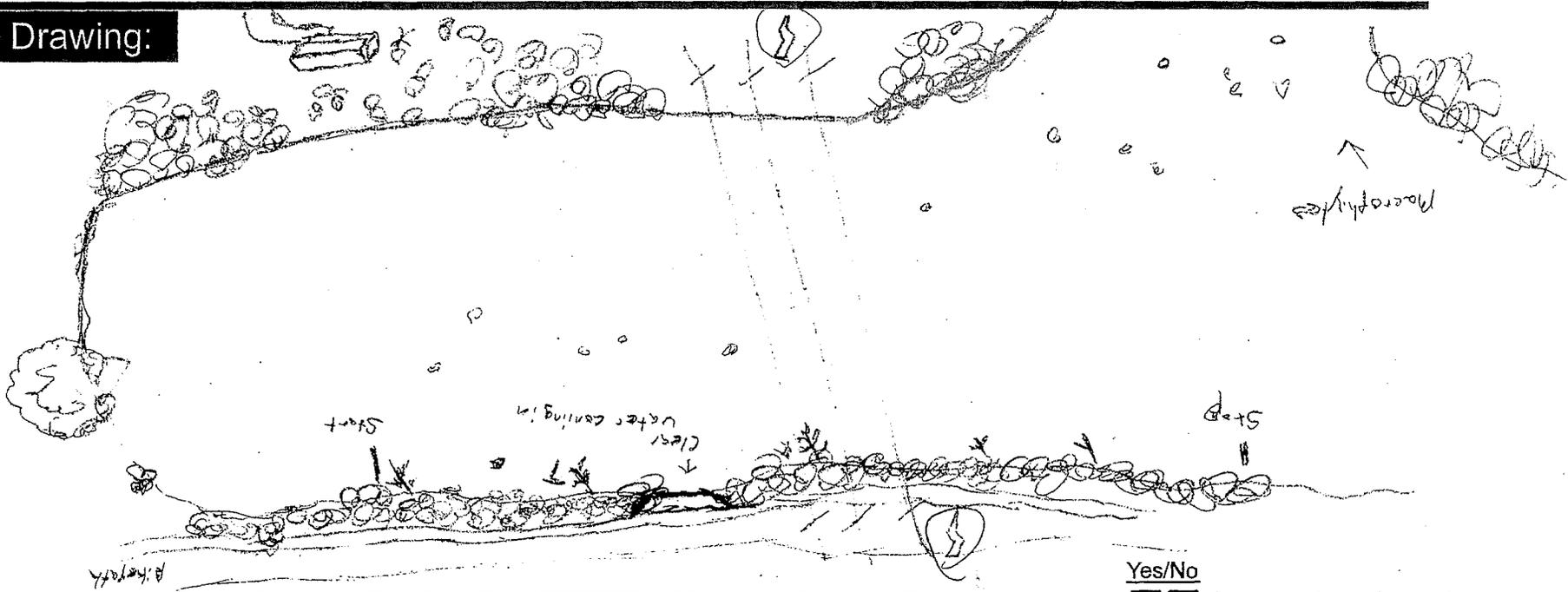
Gear: _____ Distance: _____ Water Clarity: _____ Water Stage: _____ Canopy -% Open: _____

First Sampling Pass A 0.5 km 75cm Normal 100%

Stream Measurements:

Average Width	Average Depth	Maximum Depth	Average Bankfull Width	Bankfull Mean Depth	W/D Ratio	Bankfull Max Depth	Floodprone Area	Entrenchment Ratio

Stream Drawing:



Instructions for scoring the alternate cover metric: Each cover type should receive a score of between 0 and 3, Where: 0 - Cover type absent; 1 - Cover type present in very small amounts or if more common of marginal quality; 2 - Cover type present in moderate amounts, but not of highest quality or in small amounts of highest quality; 3 - Cover type of highest quality in moderate or greater amounts. Examples of highest quality include very large boulders in deep or fast water, large diameter logs that are stable, well developed rootwads in deep/fast water, or deep, well-defined, functional pools.

Yes/No

- Is Stream Ephemeral (no pools, totally dry or only damp spots)?
- Is there water upstream? How Far: _____
- Is There Water Close Downstream? How Far: _____
- Is Dry Channel Mostly Natural?



Qualitative Habitat Evaluation Index Field Sheet QHEI Score:

River Code: 95-656 RM: 30.0 Stream: DP-02
 Station ID: DP-02 Location: OST Lockport Loc# DP-02
 Date: 7-21-06 Scorer: AAJ Latitude: 41.55982 Longitude: -88.2792

1] SUBSTRATE (Check ONLY Two Substrate TYPE BOXES; Estimate % present)

TYPE	POOL RIFFLE	POOL RIFFLE	SUBSTRATE ORIGIN	SUBSTRATE QUALITY	
<input type="checkbox"/> -BLDR /SLBS [10]	<input type="checkbox"/> -GRAVEL [7]	<input checked="" type="checkbox"/> -SILT [2]	<input checked="" type="checkbox"/> -LIMESTONE [1]	<input type="checkbox"/> -SILT HEAVY [-2]	Substrate <div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto;"></div> Max 20
<input type="checkbox"/> -Lg BOULD. [10]	<input type="checkbox"/> -SAND [6]	<input type="checkbox"/> -BEDROCK [5]	<input type="checkbox"/> -TILLS [1]	<input type="checkbox"/> -SILT MODERATE [-1]	
<input type="checkbox"/> -BOULDER [9]	<input checked="" type="checkbox"/> -DETRITUS [3]	<input type="checkbox"/> -ARTIFICIAL [0]	<input type="checkbox"/> -WETLANDS [0]	<input checked="" type="checkbox"/> -SILT NORMAL [0]	
<input checked="" type="checkbox"/> -COBBLE [8]	<input type="checkbox"/> -SILT [2]	<input type="checkbox"/> -SANDSTONE [0]	<input type="checkbox"/> -HARDPAN [0]	<input type="checkbox"/> -SILT FREE [1]	
<input type="checkbox"/> -HARDPAN [4]		<input type="checkbox"/> -RIP/RAP [0]	<input type="checkbox"/> -SANDSTONE [0] EMBEDDED	<input type="checkbox"/> -EXTENSIVE [-2]	
<input type="checkbox"/> -MUCK [2]		<input type="checkbox"/> -LACUSTRINE [0]	<input type="checkbox"/> -RIP/RAP [0] NESS:	<input type="checkbox"/> -MODERATE [-1]	
		<input type="checkbox"/> -SHALE [-1]	<input type="checkbox"/> -LACUSTRINE [0]	<input checked="" type="checkbox"/> -NORMAL [0]	
		<input type="checkbox"/> -COAL FINES [-2]	<input type="checkbox"/> -SHALE [-1]	<input type="checkbox"/> -NONE [1]	

NUMBER OF SUBSTRATE TYPES: 4 or More [2] 3 or Less [0]

COMMENTS: _____

2] INSTREAM COVER (Give each cover type a score of 0 to 3; see back for instructions)

TYPE: Score All That Occur	AMOUNT: (Check ONLY One or check 2 and AVERAGE)	
<u>0</u> UNDERCUT BANKS [1]	<input type="checkbox"/> - EXTENSIVE > 75% [11]	Channel <div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto;"></div> Max 20
<u>1</u> OVERHANGING VEGETATION [1]	<input type="checkbox"/> - MODERATE 25-75% [7]	
<u>1</u> SHALLOWS (IN SLOW WATER) [1]	<input checked="" type="checkbox"/> - SPARSE 5-25% [3]	
<u>0</u> ROOTMATS [1]	<input checked="" type="checkbox"/> - NEARLY ABSENT < 5% [1]	
COMMENTS: _____		

3] CHANNEL MORPHOLOGY: (Check ONLY One PER Category OR check 2 and AVERAGE)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER	
<input type="checkbox"/> - HIGH [4]	<input type="checkbox"/> - EXCELLENT [7]	<input type="checkbox"/> - NONE [6]	<input checked="" type="checkbox"/> - HIGH [3]	<input type="checkbox"/> - SNAGGING <input type="checkbox"/> - IMPOUND.	Channel <div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto;"></div> Max 20
<input type="checkbox"/> - MODERATE [3]	<input type="checkbox"/> - GOOD [5]	<input type="checkbox"/> - RECOVERED [4]	<input type="checkbox"/> - MODERATE [2]	<input type="checkbox"/> - RELOCATION <input type="checkbox"/> - ISLANDS	
<input type="checkbox"/> - LOW [2]	<input type="checkbox"/> - FAIR [3]	<input type="checkbox"/> - RECOVERING [3]	<input type="checkbox"/> - LOW [1]	<input type="checkbox"/> - CANOPY REMOVAL <input type="checkbox"/> - LEVEED	
<input checked="" type="checkbox"/> - NONE [1]	<input checked="" type="checkbox"/> - POOR [1]	<input type="checkbox"/> - RECENT OR NO RECOVERY [1]		<input type="checkbox"/> - DREDGING <input type="checkbox"/> - BANK SHAPING	
		<input checked="" type="checkbox"/> - IMPOUNDED [-1]		<input type="checkbox"/> - ONE SIDE CHANNEL MODIFICATIONS	

COMMENTS: _____

4]. RIPARIAN ZONE AND BANK EROSION (check ONE box per bank or check 2 and AVERAGE per bank) River Right Looking Downstream

RIPARIAN WIDTH	FLOOD PLAIN QUALITY (PAST 100 Meter RIPARIAN)	BANK EROSION	
L R (Per Bank)	L R (Most Predominant Per Bank)	L R	L R (Per Bank)
<input type="checkbox"/> - VERY WIDE > 100m [5]	<input checked="" type="checkbox"/> - FOREST, SWAMP [3]	<input type="checkbox"/> - CONSERVATION TILLAGE [1]	<input checked="" type="checkbox"/> - NONE/LITTLE [3]
<input type="checkbox"/> - WIDE > 50m [4]	<input type="checkbox"/> - SHRUB OR OLD FIELD [2]	<input checked="" type="checkbox"/> - URBAN OR INDUSTRIAL [0]	<input type="checkbox"/> - MODERATE [2]
<input type="checkbox"/> - MODERATE 10-50m [3]	<input type="checkbox"/> - RESIDENTIAL, PARK, NEW FIELD [1]	<input type="checkbox"/> - OPEN PASTURE, ROWCROP [0]	<input type="checkbox"/> - HEAVY/SEVERE [1]
<input checked="" type="checkbox"/> - NARROW 5-10 m [2]	<input type="checkbox"/> - FENCED PASTURE [1]	<input type="checkbox"/> - MINING/CONSTRUCTION [0]	
<input type="checkbox"/> - VERY NARROW <5 m [1]	Comments: _____		
<input type="checkbox"/> - NONE [0]			

5.] POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX. DEPTH (Check 1 ONLY!)	MORPHOLOGY (Check 1 or 2 & AVERAGE)	CURRENT VELOCITY (POOLS & RIFFLES!) (Check All That Apply)	
<input checked="" type="checkbox"/> - >1m [6]	<input type="checkbox"/> - POOL WIDTH > RIFFLE WIDTH [2]	<input type="checkbox"/> - EDDIES [1]	Pool/ Current <div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto;"></div> Max 12
<input type="checkbox"/> - 0.7-1m [4]	<input type="checkbox"/> - POOL WIDTH = RIFFLE WIDTH [1]	<input checked="" type="checkbox"/> - FAST [1]	
<input type="checkbox"/> - 0.4-0.7m [2]	<input type="checkbox"/> - POOL WIDTH < RIFFLE W. [0]	<input type="checkbox"/> - MODERATE [1]	
<input type="checkbox"/> - 0.2- 0.4m [1]	<input checked="" type="checkbox"/> - IMPOUNDED [-1]	<input checked="" type="checkbox"/> - SLOW [1]	
<input type="checkbox"/> - < 0.2m [POOL=0]	COMMENTS: _____	<input type="checkbox"/> - NONE [-1]	
		<input type="checkbox"/> - TORRENTIAL [-1]	

CHECK ONE OR CHECK 2 AND AVERAGE

RIFFLE DEPTH	RUN DEPTH	RIFFLE/RUN SUBSTRATE	RIFFLE/RUN EMBEDDEDNESS	
<input type="checkbox"/> - Best Areas >10 cm [2]	<input type="checkbox"/> - MAX > 50 [2]	<input type="checkbox"/> - STABLE (e.g., Cobble, Boulder) [2]	<input type="checkbox"/> - NONE [2]	Riffle/Run <div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto;"></div> Max 8
<input type="checkbox"/> - Best Areas 5-10 cm [1]	<input type="checkbox"/> - MAX < 50 [1]	<input type="checkbox"/> - MOD. STABLE (e.g., Large Gravel) [1]	<input type="checkbox"/> - LOW [1]	
<input type="checkbox"/> - Best Areas < 5 cm		<input type="checkbox"/> - UNSTABLE (Fine Gravel, Sand) [0]	<input type="checkbox"/> - MODERATE [0]	
<input checked="" type="checkbox"/> - NO RIFFLE [Metric=0]			<input type="checkbox"/> - EXTENSIVE [-1]	Gradient <div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto;"></div> Max 10

COMMENTS: _____

6] GRADIENT (ft/mi): _____ DRAINAGE AREA (sq.mi.) : _____
 % POOL: 100 % GLIDE: _____
 % RIFFLE: _____ % RUN: _____

* Best areas must be large enough to support a population of riffle-obligate species

Is Sampling Reach Representative of the Stream (Y/N) If Not, Explain:

Lat/Long (Beg): _____
 Lat/Long (Mid): _____
 Lat/Long (End): _____
 Lat/Long (X-Loc): _____

- Major Suspected Sources of Impacts (Check All That Apply):
- None
 - Industrial
 - WWTP
 - Ag
 - Livestock
 - Silviculture
 - Construction
 - Urban Runoff
 - CSOs
 - Suburban Impacts
 - Mining
 - Channelization
 - Riparian Removal
 - Landfills
 - Natural
 - Dams
 - Other Flow Alteration
 - Other: _____

2

2

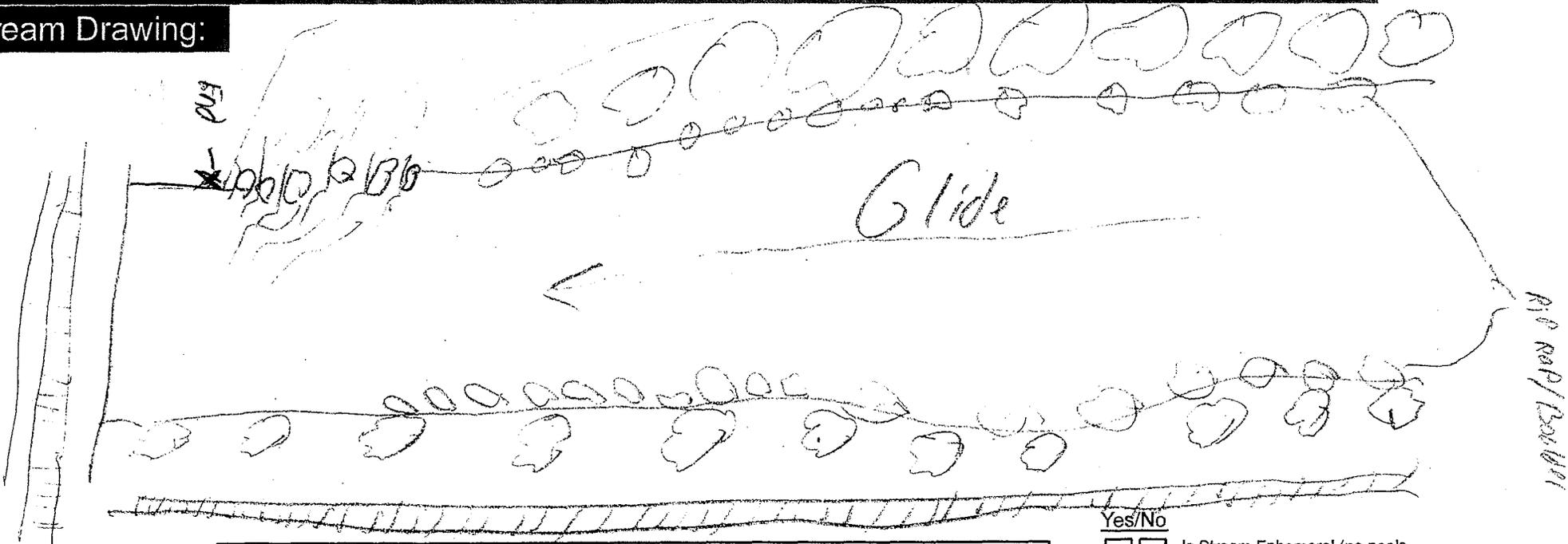
Gear: A Distance: 5 km Water Clarity: 55 cm Water Stage: normal Canopy -% Open: 100

Subjective Rating (1-10) _____
 Aesthetic Rating (1-10) _____
 Gradient: - Low, - Moderate, - High

Stream Measurements:

Average Width	Average Depth	Maximum Depth	Av. Bankfull Width	Bankfull Depth	Mean W/D Ratio	Bankfull Max Depth	Floodprone Area	Entrench. Width	Entrench. Ratio

Stream Drawing:



Instructions for scoring the alternate cover metric: Each cover type should receive a score of between 0 and 3, Where: 0 - Cover type absent; 1 - Cover type present in very small amounts or if more common of marginal quality; 2 - Cover type present in moderate amounts, but not of highest quality or in small amounts of highest quality; 3 - Cover type of highest quality in moderate or greater amounts. Examples of highest quality include very large boulders in deep or fast water, large diameter logs that are stable, well developed rootwads in deep/fast water, or deep, well-defined, functional pools.

- Yes/No
- Is Stream Ephemeral (no pools, totally dry or only damp spots)?
 - Is there water upstream? How Far: _____
 - Is There Water Close Downstream? How Far: _____
 - Is Dry Channel Mostly Natural?



95-656

Edwards
11-10-08
gms ✓

Qualitative Habitat Evaluation Index Field Sheet QHEI Score:

River Code: 95-656/RM: 0879 Stream: Dog Plains
 Station ID: 1704 Location: DST Jefferson St. Joliet, Ill
 Date: 7-1-06 Scorer: ANV Latitude: 41.521604 Longitude: -89.087073

1] SUBSTRATE (Check ONLY Two Substrate TYPE BOXES; Estimate % present)

TYPE		POOL RIFFLE		POOL RIFFLE		SUBSTRATE ORIGIN		SUBSTRATE QUALITY		
Check ONE (OR 2 & AVERAGE)		Check ONE (OR 2 & AVERAGE)		Check ONE (OR 2 & AVERAGE)		Check ONE (OR 2 & AVERAGE)		Check ONE (OR 2 & AVERAGE)		
<input type="checkbox"/> BLDR /SLBS [10]	<input type="checkbox"/> GRAVEL [7]	<input type="checkbox"/> SAND [6]	<input checked="" type="checkbox"/> LIMESTONE [1]	<input type="checkbox"/> SILT:	<input checked="" type="checkbox"/> SILT HEAVY [-2]	<input type="checkbox"/> BOULDER [9]	<input type="checkbox"/> BEDROCK [5]	<input checked="" type="checkbox"/> TILLS [1]	<input type="checkbox"/> SILT MODERATE [-1]	Substrate <input type="text"/> Max 20
<input type="checkbox"/> COBBLE [8]	<input type="checkbox"/> DETRITUS [3]	<input type="checkbox"/> HARDPAN [4]	<input type="checkbox"/> ARTIFICIAL [0]	<input type="checkbox"/> WETLANDS [0]	<input type="checkbox"/> SILT NORMAL [0]	<input type="checkbox"/> MUCK [2]	<input type="checkbox"/> SILT [2]	<input type="checkbox"/> HARDPAN [0]	<input checked="" type="checkbox"/> SILT-FREE [1]	
NUMBER OF SUBSTRATE TYPES: <input checked="" type="checkbox"/> 4 or More [2]		<input checked="" type="checkbox"/> 3 or Less [0]		<input type="checkbox"/> LACUSTRINE [0]		<input type="checkbox"/> SHALE [-1]		<input type="checkbox"/> COAL FINES [-2]		Channel <input type="text"/> Max 20
(High Quality Only, Score 5 or >)				<input type="checkbox"/> RIP/RAP [0] NESS:		<input type="checkbox"/> EXTENSIVE [-2]		<input type="checkbox"/> MODERATE [-1]		
COMMENTS:										Riparian <input type="text"/> Max 10

2] INSTREAM COVER (Give each cover type a score of 0 to 3; see back for instructions)

TYPE: Score All That Occur		AMOUNT: (Check ONLY One or check 2 and AVERAGE)	
<input checked="" type="checkbox"/> UNDERCUT BANKS [1]	<input type="checkbox"/> POOLS > 70 cm [2]	<input type="checkbox"/> OXBOWS, BACKWATERS [1]	<input type="checkbox"/> EXTENSIVE > 75% [11]
<input checked="" type="checkbox"/> OVERHANGING VEGETATION [1]	<input type="checkbox"/> ROOTWADS [1]	<input type="checkbox"/> AQUATIC MACROPHYTES [1]	<input type="checkbox"/> MODERATE 25-75% [7]
<input checked="" type="checkbox"/> SHALLOWS (IN SLOW WATER) [1]	<input type="checkbox"/> BOULDERS [1]	<input type="checkbox"/> LOGS OR WOODY DEBRIS [1]	<input type="checkbox"/> SPARSE 5-25% [3]
<input checked="" type="checkbox"/> ROOTMATS [1]	COMMENTS:		<input checked="" type="checkbox"/> NEARLY ABSENT < 5% [1]

3] CHANNEL MORPHOLOGY: (Check ONLY One PER Category OR check 2 and AVERAGE)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER
<input type="checkbox"/> HIGH [4]	<input type="checkbox"/> EXCELLENT [7]	<input type="checkbox"/> NONE [6]	<input type="checkbox"/> HIGH [3]	<input type="checkbox"/> SNAGGING
<input type="checkbox"/> MODERATE [3]	<input type="checkbox"/> GOOD [5]	<input type="checkbox"/> RECOVERED [4]	<input type="checkbox"/> MODERATE [2]	<input type="checkbox"/> RELOCATION
<input type="checkbox"/> LOW [2]	<input type="checkbox"/> FAIR [3]	<input type="checkbox"/> RECOVERING [3]	<input checked="" type="checkbox"/> LOW [1]	<input type="checkbox"/> CANOPY REMOVAL
<input checked="" type="checkbox"/> NONE [1]	<input checked="" type="checkbox"/> POOR [1]	<input type="checkbox"/> RECENT OR NO RECOVERY [1]	<input checked="" type="checkbox"/> IMPOUNDED [-1]	<input checked="" type="checkbox"/> DREDGING
		<input type="checkbox"/> IMPOUNDED [-1]		<input type="checkbox"/> BANK SHAPING
				<input type="checkbox"/> ONE SIDE CHANNEL MODIFICATIONS

4] RIPARIAN ZONE AND BANK EROSION (check ONE box per bank or check 2 and AVERAGE per bank) River Right Looking Downstream

RIPARIAN WIDTH	FLOOD PLAIN QUALITY (PAST 100 Meter RIPARIAN)	BANK EROSION
L R (Per Bank)	L R (Most Predominant Per Bank)	L R (Per Bank)
<input type="checkbox"/> VERY WIDE > 100m [5]	<input type="checkbox"/> FOREST, SWAMP [3]	<input checked="" type="checkbox"/> NONE/LITTLE [3]
<input type="checkbox"/> WIDE > 50m [4]	<input type="checkbox"/> SHRUB OR OLD FIELD [2]	<input type="checkbox"/> MODERATE [2]
<input type="checkbox"/> MODERATE 10-50m [3]	<input type="checkbox"/> RESIDENTIAL, PARK, NEW FIELD [1]	<input type="checkbox"/> HEAVY/SEVERE [1]
<input type="checkbox"/> NARROW 5-10 m [2]	<input type="checkbox"/> FENCED PASTURE [1]	
<input type="checkbox"/> VERY NARROW < 5 m [1]	Comments:	
<input checked="" type="checkbox"/> NONE [0]		

5] POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX. DEPTH	MORPHOLOGY	CURRENT VELOCITY (POOLS & RIFFLES!)
(Check 1 ONLY!)	(Check All That Apply)	(Check All That Apply)
<input checked="" type="checkbox"/> > 1m [6]	<input type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [2]	<input type="checkbox"/> EDDIES [1]
<input type="checkbox"/> 0.7-1m [4]	<input type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1]	<input type="checkbox"/> TORRENTIAL [-1]
<input type="checkbox"/> 0.4-0.7m [2]	<input type="checkbox"/> POOL WIDTH < RIFFLE W. [0]	<input type="checkbox"/> FAST [1]
<input type="checkbox"/> 0.2-0.4m [1]	<input checked="" type="checkbox"/> IMPOUNDED [-1]	<input type="checkbox"/> MODERATE [1]
<input type="checkbox"/> < 0.2m [POOL=0]	COMMENTS:	<input checked="" type="checkbox"/> SLOW [1]
		<input type="checkbox"/> INTERSTITIAL [-1]
		<input type="checkbox"/> INTERMITTENT [-2]
		<input type="checkbox"/> VERY FAST [1]
		<input type="checkbox"/> NONE [-1]

CHECK ONE OR CHECK 2 AND AVERAGE

RIFFLE DEPTH	RUN DEPTH	RIFFLE/RUN SUBSTRATE	RIFFLE/RUN EMBEDDEDNESS
<input type="checkbox"/> Best Areas > 10 cm [2]	<input type="checkbox"/> MAX > 50 [2]	<input type="checkbox"/> STABLE (e.g., Cobble, Boulder) [2]	<input type="checkbox"/> NONE [2]
<input type="checkbox"/> Best Areas 5-10 cm [1]	<input type="checkbox"/> MAX < 50 [1]	<input type="checkbox"/> MOD. STABLE (e.g., Large Gravel) [1]	<input type="checkbox"/> LOW [1]
<input type="checkbox"/> Best Areas < 5 cm		<input type="checkbox"/> UNSTABLE (Fine Gravel, Sand) [0]	<input type="checkbox"/> MODERATE [0]
<input checked="" type="checkbox"/> NO RIFFLE [Metric=0]			<input type="checkbox"/> EXTENSIVE [-1]
COMMENTS:			

6] GRADIENT (ft/mi): _____ DRAINAGE AREA (sq.mi.): _____
 %POOL: %GLIDE:
 %RIFFLE: %RUN:

* Best areas must be large enough to support a population of riffle-obligate species

Is Sampling Reach Representative of the Stream (Y/N) If Not, Explain:

Lat/Long (Beg): _____
 Lat/Long (Mid): _____
 Lat/Long (End): _____
 Lat/Long(X-Loc): _____

- Major Suspected Sources of Impacts (Check All That Apply):
- None
 - Industrial
 - WWTP
 - Ag
 - Livestock
 - Silviculture
 - Construction
 - Urban Runoff
 - CSOs
 - Suburban Impacts
 - Mining
 - Channelization
 - Riparian Removal
 - Landfills
 - Natural
 - Dams
 - Other Flow Alteration
 - Other: _____

2

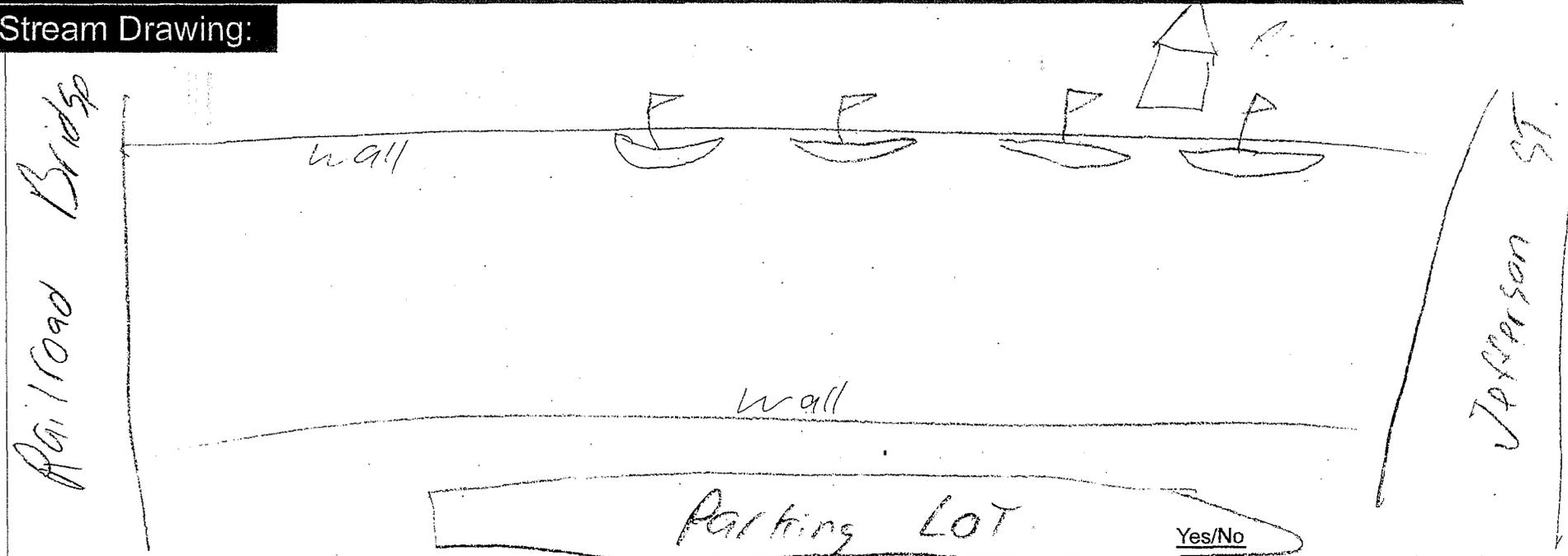
2

Gear: _____ Distance: _____ Water Clarity: _____ Water Stage: _____ Canopy -% Open: _____
 First Sampling Pass A 5km 45cm 101mg/l % 100

Subjective Rating (1-10) _____
 Aesthetic Rating (1-10) _____
 Gradient: _____
 - Low, - Moderate, - High

Stream Measurements:									
Average Width	Average Depth	Maximum Depth	Av. Bankfull Width	Bankfull Mean Depth	W/D Ratio	Bankfull Max Depth	Floodprone Area	Entrench. Width	Entrench. Ratio

Stream Drawing:



Instructions for scoring the alternate cover metric: Each cover type should receive a score of between 0 and 3, Where: 0 - Cover type absent; 1 - Cover type present in very small amounts or if more common of marginal quality; 2 - Cover type present in moderate amounts, but not of highest quality or in small amounts of highest quality; 3 - Cover type of highest quality in moderate or greater amounts. Examples of highest quality include very large boulders in deep or fast water, large diameter logs that are stable, well developed rootwads in deep/fast water, or deep, well-defined, functional pools.

- Yes/No
- Is Stream Ephemeral (no pools, totally dry or only damp spots)?
 - Is there water upstream? How Far: _____
 - Is There Water Close Downstream? How Far: _____
 - Is Dry Channel Mostly Natural?



Qualitative Habitat Evaluation Index Field Sheet QHEI Score:

Edited 1-11-04

River Code: 95-656 RM: 26.5 Stream: Des Plaines
Station ID: DP-08 Location: Moose Island (DSE Duck Lake Rd)
Date: 7-23-06 Scorer: AAJ Latitude: 46.43953 Longitude: -88.16969

1) SUBSTRATE (Check ONLY Two Substrate TYPE BOXES; Estimate % present)
TYPE POOL RIFFLE POOL/RIFFLE SUBSTRATE ORIGIN SUBSTRATE QUALITY
Check ONE (OR 2 & AVERAGE) Check ONE (OR 2 & AVERAGE)
Substrate Max 20

2) INSTREAM COVER (Give each cover type a score of 0 to 3; see back for instructions)
TYPE: Score All That Occur AMOUNT: (Check ONLY One or check 2 and AVERAGE)
Cover Max 20

3) CHANNEL MORPHOLOGY: (Check ONLY One PER Category OR check 2 and AVERAGE)
SINUOSITY DEVELOPMENT CHANNELIZATION STABILITY MODIFICATIONS/OTHER
Channel Max 20

4) RIPARIAN ZONE AND BANK EROSION (check ONE box per bank or check 2 and AVERAGE per bank)
RIPARIAN WIDTH FLOOD PLAIN QUALITY (PAST 100 Meter RIPARIAN) BANK EROSION
Riparian Max 10

5) POOL/GLIDE AND RIFFLE/RUN QUALITY
MAX. DEPTH MORPHOLOGY CURRENT VELOCITY POOLS & RIFFLES!
Pool/Current Max 12

CHECK ONE OR CHECK 2 AND AVERAGE
RIFFLE DEPTH RUN DEPTH RIFFLE/RUN SUBSTRATE RIFFLE/RUN EMBEDDEDNESS
Riffle/Run Max 10

6) GRADIENT (ft/mi): _____ DRAINAGE AREA (sq.mi.): _____
%POOL: 100 %GLIDE: _____
%RIFFLE: _____ %RUN: _____

** Best areas must be large enough to support a population of riffle-obligate species

Is Sampling Reach Representative of the Stream (Y/N) If Not, Explain:

Lat/Long (Beg):
 Lat/Long (Mid):
 Lat/Long (End):
 Lat/Long(X-Loc):

Major Suspected Sources of Impacts (Check All That Apply):

- None
- Industrial
- WWTP
- Ag
- Livestock
- Silviculture
- Construction
- Urban Runoff
- CSOs
- Suburban Impacts
- Mining
- Channelization
- Riparian Removal
- Landfills
- Natural
- Dams
- Other Flow Alteration
- Other: _____

3

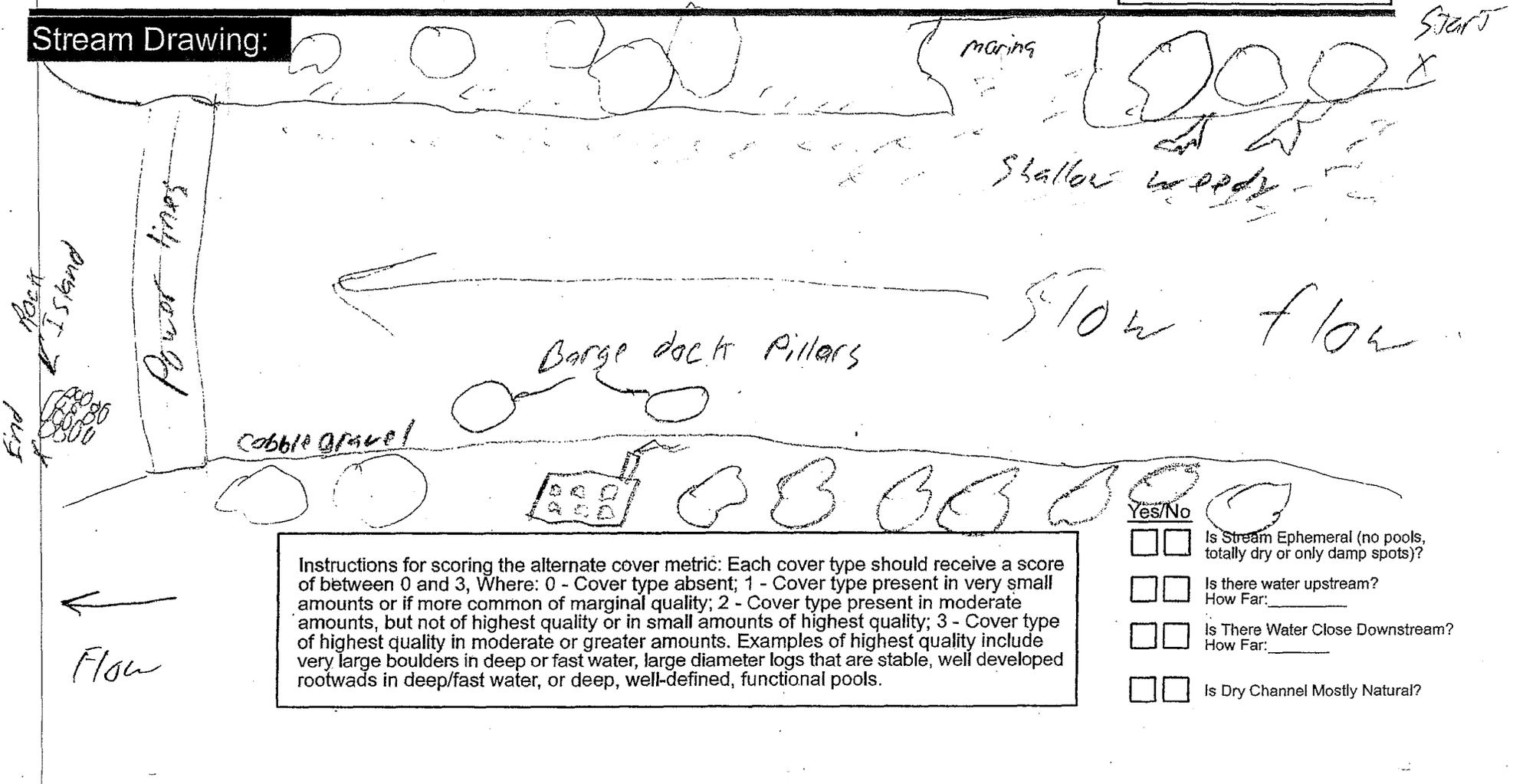
3

First Sampling Pass: Gear: A Distance: 5 km Water Clarity: 50cm Water Stage: normal Canopy -% Open: 100

Subjective Rating (1-10):
 Aesthetic Rating (1-10):
 Gradient: - Low, - Moderate, - High

Stream Measurements:									
Average Width	Average Depth	Maximum Depth	Av. Bankfull Width	Bankfull Depth	Mean W/D Ratio	Bankfull Max Depth	Floodprone Area	Entrenchment Width	Ratio

Stream Drawing:



Instructions for scoring the alternate cover metric: Each cover type should receive a score of between 0 and 3, Where: 0 - Cover type absent; 1 - Cover type present in very small amounts or if more common of marginal quality; 2 - Cover type present in moderate amounts, but not of highest quality or in small amounts of highest quality; 3 - Cover type of highest quality in moderate or greater amounts. Examples of highest quality include very large boulders in deep or fast water, large diameter logs that are stable, well developed rootwads in deep/fast water, or deep, well-defined, functional pools.

- Yes/No
- Is Stream Ephemeral (no pools, totally dry or only damp spots)?
 - Is there water upstream? How Far: _____
 - Is There Water Close Downstream? How Far: _____
 - Is Dry Channel Mostly Natural?



951634

ENTRANCE 4/4

Edwards
11/11/08
2008 ✓

Qualitative Habitat Evaluation Index Field Sheet QHEI Score:

River Code: 95-658 RM: 289.0 Stream: Ops Plains
Station ID: OP-03 Location: WST Aubrey St
Date: 7-21-06 Scorer: AAZ Latitude: 41.54044 Longitude: -88.08368

1] SUBSTRATE (Check ONLY Two Substrate TYPE BOXES; Estimate % present)

TYPE	POOL RIFFLE	POOL RIFFLE	SUBSTRATE ORIGIN	SUBSTRATE QUALITY
<input type="checkbox"/> <input type="checkbox"/> -BLDR /SLBS [10] ✓	<input type="checkbox"/> <input type="checkbox"/> -GRAVEL [7] ✓	<input type="checkbox"/> <input type="checkbox"/> -SAND [6]	Check ONE (OR 2 & AVERAGE)	Check ONE (OR 2 & AVERAGE)
<input type="checkbox"/> <input type="checkbox"/> -Lg BOULD. [10]	<input type="checkbox"/> <input type="checkbox"/> -BEDROCK [5] ✓	<input type="checkbox"/> <input type="checkbox"/> -LIMESTONE [1] SILT:	<input type="checkbox"/> <input type="checkbox"/> -TILLS [1]	<input type="checkbox"/> <input type="checkbox"/> -SILT HEAVY [-2]
<input type="checkbox"/> <input type="checkbox"/> -BOULDER [9] ✓	<input type="checkbox"/> <input type="checkbox"/> -DETRITUS [3]	<input type="checkbox"/> <input type="checkbox"/> -WETLANDS [0]	<input type="checkbox"/> <input type="checkbox"/> -HARDPAN [0]	<input checked="" type="checkbox"/> <input type="checkbox"/> -SILT MODERATE [-1]
<input type="checkbox"/> <input type="checkbox"/> -COBBLE [8] ✓	<input type="checkbox"/> <input type="checkbox"/> -ARTIFICIAL [0]	<input type="checkbox"/> <input type="checkbox"/> -SANDSTONE [0] EMBEDDED	<input type="checkbox"/> <input type="checkbox"/> -RIP/RAP [0] NESS:	<input type="checkbox"/> <input type="checkbox"/> -SILT NORMAL [0]
<input type="checkbox"/> <input type="checkbox"/> -HARDPAN [4]	<input checked="" type="checkbox"/> <input type="checkbox"/> -SILT [2] ✓	<input type="checkbox"/> <input type="checkbox"/> -LACUSTRINE [0]	<input type="checkbox"/> <input type="checkbox"/> -SHALE [-1]	<input type="checkbox"/> <input type="checkbox"/> -SILT FREE [1]
<input type="checkbox"/> <input type="checkbox"/> -MUCK [2] ✓		<input type="checkbox"/> <input type="checkbox"/> -COAL FINES [-2]		<input type="checkbox"/> <input type="checkbox"/> -EXTENSIVE [-2]

NUMBER OF SUBSTRATE TYPES: 4 or More [2] 3 or Less [0]

COMMENTS: _____

Substrate

Max 20

2] INSTREAM COVER (Give each cover type a score of 0 to 3; see back for instructions)

TYPE: Score All That Occur	AMOUNT: (Check ONLY One or check 2 and AVERAGE)
<input type="checkbox"/> <input type="checkbox"/> UNDERCUT BANKS [1]	<input type="checkbox"/> <input type="checkbox"/> POOLS > 70 cm [2]
<input type="checkbox"/> <input type="checkbox"/> OVERHANGING VEGETATION [1]	<input type="checkbox"/> <input type="checkbox"/> ROOTWADS [1]
<input type="checkbox"/> <input type="checkbox"/> SHALLOWS (IN SLOW WATER) [1]	<input type="checkbox"/> <input type="checkbox"/> BOULDERS [1]
<input type="checkbox"/> <input type="checkbox"/> ROOTMATS [1]	<input type="checkbox"/> <input type="checkbox"/> OXBOWS, BACKWATERS [1]
	<input type="checkbox"/> <input type="checkbox"/> AQUATIC MACROPHYTES [1]
	<input type="checkbox"/> <input type="checkbox"/> LOGS OR WOODY DEBRIS [1]

COMMENTS: _____

Cover

Max 20

3] CHANNEL MORPHOLOGY: (Check ONLY One PER Category OR check 2 and AVERAGE)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER
<input type="checkbox"/> <input type="checkbox"/> - HIGH [4]	<input type="checkbox"/> <input type="checkbox"/> - EXCELLENT [7]	<input type="checkbox"/> <input type="checkbox"/> - NONE [6]	<input checked="" type="checkbox"/> <input type="checkbox"/> - HIGH [3]	<input type="checkbox"/> <input type="checkbox"/> - SNAGGING
<input type="checkbox"/> <input type="checkbox"/> - MODERATE [3]	<input type="checkbox"/> <input type="checkbox"/> - GOOD [5]	<input type="checkbox"/> <input type="checkbox"/> - RECOVERED [4]	<input type="checkbox"/> <input type="checkbox"/> - MODERATE [2]	<input type="checkbox"/> <input type="checkbox"/> - IMPOUND.
<input checked="" type="checkbox"/> <input type="checkbox"/> - LOW [2]	<input checked="" type="checkbox"/> <input type="checkbox"/> - FAIR [3]	<input type="checkbox"/> <input type="checkbox"/> - RECOVERING [3]	<input type="checkbox"/> <input type="checkbox"/> - LOW [1]	<input type="checkbox"/> <input type="checkbox"/> - ISLANDS
<input type="checkbox"/> <input type="checkbox"/> - NONE [1]	<input checked="" type="checkbox"/> <input type="checkbox"/> - POOR [1]	<input type="checkbox"/> <input type="checkbox"/> - RECENT OR NO RECOVERY [1]		<input type="checkbox"/> <input type="checkbox"/> - CANOPY REMOVAL
		<input checked="" type="checkbox"/> <input type="checkbox"/> - IMPOUNDED [-1]		<input type="checkbox"/> <input type="checkbox"/> - LEVEED
				<input checked="" type="checkbox"/> <input type="checkbox"/> - DREDGING
				<input type="checkbox"/> <input type="checkbox"/> - BANK SHAPING
				<input checked="" type="checkbox"/> <input type="checkbox"/> - ONE SIDE CHANNEL MODIFICATIONS

COMMENTS: _____

Channel

Max 20

4] RIPARIAN ZONE AND BANK EROSION (check ONE box per bank or check 2 and AVERAGE per bank) River Right Looking Downstream

RIPARIAN WIDTH	FLOOD PLAIN QUALITY (PAST 100 Meter RIPARIAN)	BANK EROSION
L R (Per Bank)	L R (Most Predominant Per Bank)	L R (Per Bank)
<input type="checkbox"/> <input type="checkbox"/> - VERY WIDE > 100m [5]	<input type="checkbox"/> <input type="checkbox"/> - FOREST, SWAMP [3]	<input checked="" type="checkbox"/> <input type="checkbox"/> - NONE/LITTLE [3]
<input type="checkbox"/> <input type="checkbox"/> - WIDE > 50m [4]	<input type="checkbox"/> <input type="checkbox"/> - SHRUB OR OLD FIELD [2]	<input type="checkbox"/> <input type="checkbox"/> - MODERATE [2]
<input type="checkbox"/> <input type="checkbox"/> - MODERATE 10-50m [3]	<input type="checkbox"/> <input type="checkbox"/> - RESIDENTIAL, PARK, NEW FIELD [1]	<input type="checkbox"/> <input type="checkbox"/> - HEAVY/SEVERE [1]
<input checked="" type="checkbox"/> <input type="checkbox"/> - NARROW 5-10 m [2]	<input type="checkbox"/> <input type="checkbox"/> - FENCED PASTURE [1]	
<input type="checkbox"/> <input type="checkbox"/> - VERY NARROW <5 m [1]		
<input type="checkbox"/> <input type="checkbox"/> - NONE [0]		

Comments: _____

Riparian

Max 10

5] POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX. DEPTH	MORPHOLOGY	CURRENT VELOCITY POOLS & RIFFLES!
(Check 1 ONLY!)	(Check 1 or 2 & AVERAGE)	(Check All That Apply)
<input checked="" type="checkbox"/> <input type="checkbox"/> >1m [6]	<input type="checkbox"/> <input type="checkbox"/> - POOL WIDTH > RIFFLE WIDTH [2]	<input type="checkbox"/> <input type="checkbox"/> - EDDIES [1]
<input type="checkbox"/> <input type="checkbox"/> - 0.7-1m [4]	<input type="checkbox"/> <input type="checkbox"/> - POOL WIDTH = RIFFLE WIDTH [1]	<input type="checkbox"/> <input type="checkbox"/> - TORRENTIAL [-1]
<input type="checkbox"/> <input type="checkbox"/> - 0.4-0.7m [2]	<input type="checkbox"/> <input type="checkbox"/> - POOL WIDTH < RIFFLE W. [0]	<input type="checkbox"/> <input type="checkbox"/> - INTERSTITIAL [-1]
<input type="checkbox"/> <input type="checkbox"/> - 0.2- 0.4m [1]	<input checked="" type="checkbox"/> <input type="checkbox"/> - IMPOUNDED [-1]	<input checked="" type="checkbox"/> <input type="checkbox"/> - MODERATE [1]
<input type="checkbox"/> <input type="checkbox"/> - < 0.2m [POOL=0]		<input checked="" type="checkbox"/> <input type="checkbox"/> - SLOW [1]
		<input type="checkbox"/> <input type="checkbox"/> - VERY FAST [1]
		<input type="checkbox"/> <input type="checkbox"/> - NONE [-1]

COMMENTS: _____

Pool/Current

Max 12

CHECK ONE OR CHECK 2 AND AVERAGE

RIFFLE DEPTH	RUN DEPTH	RIFFLE/RUN SUBSTRATE	RIFFLE/RUN EMBEDDEDNESS
<input type="checkbox"/> <input type="checkbox"/> - Best Areas >10 cm [2]	<input type="checkbox"/> <input type="checkbox"/> - MAX > 50 [2]	<input type="checkbox"/> <input type="checkbox"/> - STABLE (e.g., Cobble, Boulder) [2]	<input type="checkbox"/> <input type="checkbox"/> - NONE [2]
<input type="checkbox"/> <input type="checkbox"/> - Best Areas 5-10 cm [1]	<input type="checkbox"/> <input type="checkbox"/> - MAX < 50 [1]	<input type="checkbox"/> <input type="checkbox"/> - MOD. STABLE (e.g., Large Gravel) [1]	<input type="checkbox"/> <input type="checkbox"/> - LOW [1]
<input type="checkbox"/> <input type="checkbox"/> - Best Areas < 5 cm		<input type="checkbox"/> <input type="checkbox"/> - UNSTABLE (Fine Gravel, Sand) [0]	<input type="checkbox"/> <input type="checkbox"/> - MODERATE [0]
<input checked="" type="checkbox"/> <input type="checkbox"/> - NO RIFFLE [Metric=0]			<input type="checkbox"/> <input type="checkbox"/> - EXTENSIVE [-1]

COMMENTS: _____

Riffle/Run

Max 8

Gradient

Max 10

6] GRADIENT (ft/mi): _____ DRAINAGE AREA (sq.mi.): _____

%POOL: 100 %GLIDE:

%RIFFLE: %RUN:

** Best areas must be large enough to support a population of riffle-obligate species

Is Sampling Reach Representative of the Stream (Y/N) If Not, Explain:

Lat/Long (Beg):
 Lat/Long (Mid):
 Lat/Long (End):
 Lat/Long (X-Loc):

- Major Suspected Sources of Impacts (Check All That Apply):
- None
 - Industrial
 - WWTP
 - Ag
 - Livestock
 - Silviculture
 - Construction
 - Urban Runoff
 - CSOs
 - Suburban Impacts
 - Mining
 - Channelization
 - Riparian Removal
 - Landfills
 - Natural
 - Dams
 - Other Flow Alteration
 - Other: _____

3 **3**

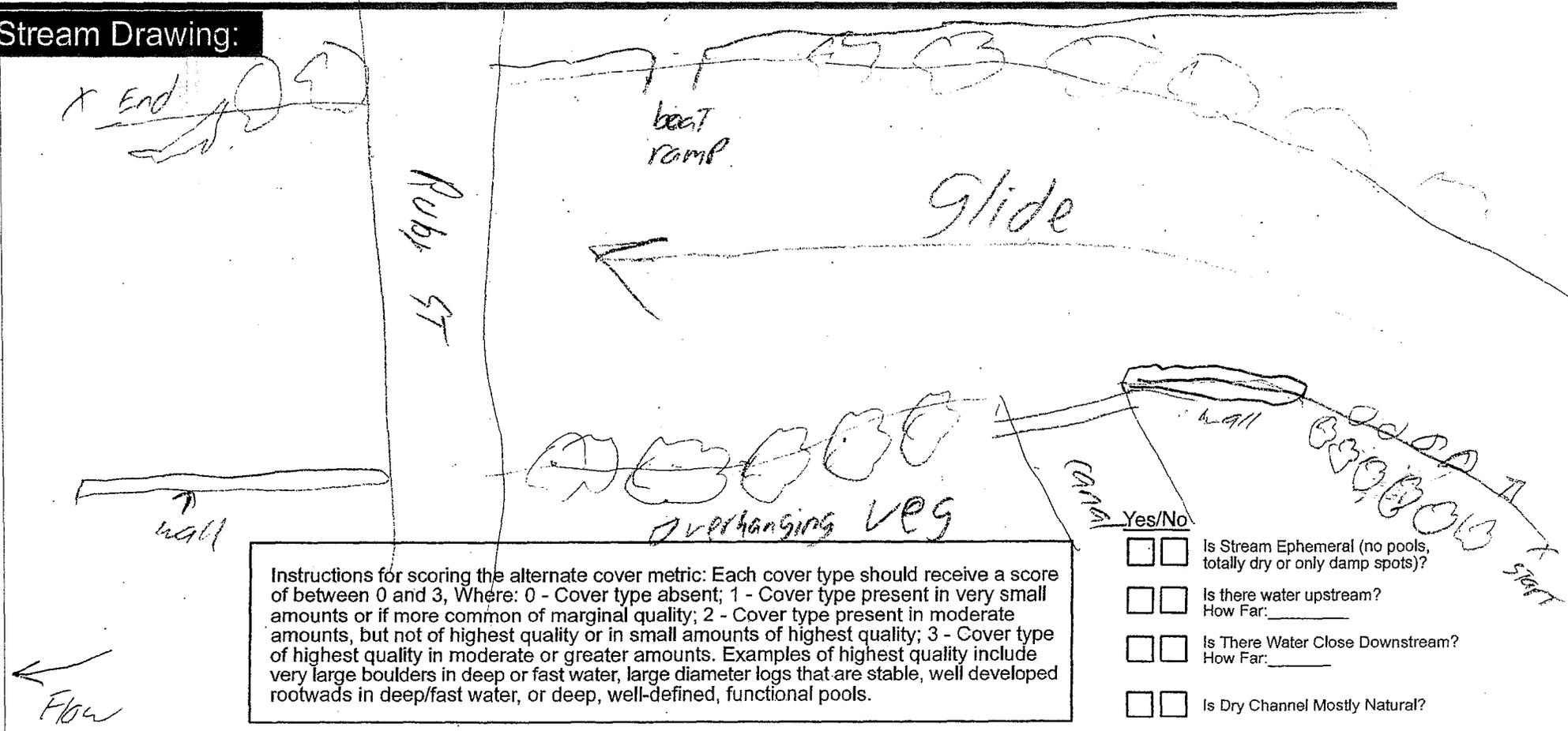
Gear: A Distance: 5 km Water Clarity: 50cm Water Stage: normal Canopy -% Open: 100

First Sampling Pass

Subjective Rating (1-10) Aesthetic Rating (1-10)
 Gradient: - Low, - Moderate, - High

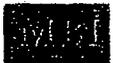
Stream Measurements:											
Average Width	Average Depth	Maximum Depth	Av. Bankfull Width	Bankfull Depth	Mean W/D Ratio	Bankfull Max Depth	Floodprone Area	Entrenchment Ratio			

Stream Drawing:



Instructions for scoring the alternate cover metric: Each cover type should receive a score of between 0 and 3, Where: 0 - Cover type absent; 1 - Cover type present in very small amounts or if more common of marginal quality; 2 - Cover type present in moderate amounts, but not of highest quality or in small amounts of highest quality; 3 - Cover type of highest quality in moderate or greater amounts. Examples of highest quality include very large boulders in deep or fast water, large diameter logs that are stable, well developed rootwads in deep/fast water, or deep, well-defined, functional pools.

- Yes/No
- Is Stream Ephemeral (no pools, totally dry or only damp spots)?
 - Is there water upstream? How Far: _____
 - Is There Water Close Downstream? How Far: _____
 - Is Dry Channel Mostly Natural?



95654

Final work

Added 1-11-02 JAA ✓

Qualitative Habitat Evaluation Index Field Sheet QHEI Score:

River Code: ~~95654~~ RM: 83.9 Stream: Des Plaines
 Station ID: DP-06 Location: Des Plaines Company
 Date: 7-22-06 Scorer: RAJ Latitude: 41.93892 Longitude: -88.13369

1) SUBSTRATE (Check ONLY Two Substrate TYPE BOXES; Estimate % present)

TYPE	POOL RIFFLE	POOL RIFFLE	SUBSTRATE ORIGIN	SUBSTRATE QUALITY
<input type="checkbox"/> -BLDR /SLBS [10]	<input type="checkbox"/> -GRAVEL [7]	<input checked="" type="checkbox"/> -SAND [8]	Check ONE (OR 2 & AVERAGE)	Check ONE (OR 2 & AVERAGE)
<input type="checkbox"/> -Lg BOULD. [10]	<input type="checkbox"/> -BEDROCK [5]	<input type="checkbox"/> -LIMESTONE [1] SILT:	<input type="checkbox"/> -TILLS [1]	<input checked="" type="checkbox"/> -SILT HEAVY [-2]
<input type="checkbox"/> -BOULDER [9]	<input type="checkbox"/> -DETRITUS [3]	<input type="checkbox"/> -WETLANDS [0]	<input type="checkbox"/> -HARDPAN [0]	<input type="checkbox"/> -SILT MODERATE [-1]
<input type="checkbox"/> -COBBLE [8]	<input type="checkbox"/> -ARTIFICIAL [0]	<input type="checkbox"/> -SANDSTONE [0] EMBEDDED	<input type="checkbox"/> -RIP/RAP [0] NESS:	<input type="checkbox"/> -SILT NORMAL [0]
<input type="checkbox"/> -HARDPAN [4]	<input checked="" type="checkbox"/> -SILT [2]	<input type="checkbox"/> -LACUSTRINE [0]	<input type="checkbox"/> -SHALE [-1]	<input type="checkbox"/> -SILT FREE [1]
<input checked="" type="checkbox"/> -MUCK [2]		<input type="checkbox"/> -SHALE [-1]	<input type="checkbox"/> -COAL FINES [-2]	<input checked="" type="checkbox"/> -EXTENSIVE [-2]
				<input checked="" type="checkbox"/> -MODERATE [-1]
				<input type="checkbox"/> -NORMAL [0]
				<input type="checkbox"/> -NONE [1]

NUMBER OF SUBSTRATE TYPES: -4 or More [2] -3 or Less [0]

COMMENTS: _____

Substrate

 Max 20

2) INSTREAM COVER (Give each cover type a score of 0 to 3; see back for instructions)

TYPE: Score All That Occur	AMOUNT: (Check ONLY One or check 2 and AVERAGE)
<input checked="" type="checkbox"/> UNDERCUT BANKS [1]	<input type="checkbox"/> - EXTENSIVE > 75% [11]
<input checked="" type="checkbox"/> OVERHANGING VEGETATION [1]	<input type="checkbox"/> - MODERATE 25-75% [7]
<input checked="" type="checkbox"/> SHALLOWS (IN SLOW WATER) [1]	<input checked="" type="checkbox"/> - SPARSE 5-25% [3]
<input checked="" type="checkbox"/> ROOTMATS [1]	<input type="checkbox"/> - NEARLY ABSENT < 5% [1]
<input checked="" type="checkbox"/> POOLS > 70 cm [2]	
<input checked="" type="checkbox"/> ROOTWADS [1]	
<input checked="" type="checkbox"/> BOULDERS [1]	
<input checked="" type="checkbox"/> OXBOWS, BACKWATERS [1]	
<input checked="" type="checkbox"/> AQUATIC MACROPHYTES [1]	
<input checked="" type="checkbox"/> LOGS OR WOODY DEBRIS [1]	

COMMENTS: _____

Cover

 Max 20

3) CHANNEL MORPHOLOGY: (Check ONLY One PER Category OR check 2 and AVERAGE)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER
<input type="checkbox"/> - HIGH [4]	<input type="checkbox"/> - EXCELLENT [7]	<input type="checkbox"/> - NONE [6]	<input type="checkbox"/> - HIGH [3]	<input type="checkbox"/> - SNAGGING
<input type="checkbox"/> - MODERATE [3]	<input type="checkbox"/> - GOOD [5]	<input type="checkbox"/> - RECOVERED [4]	<input checked="" type="checkbox"/> - MODERATE [2]	<input type="checkbox"/> - RELOCATION
<input checked="" type="checkbox"/> - LOW [2]	<input type="checkbox"/> - FAIR [3]	<input type="checkbox"/> - RECOVERING [3]	<input checked="" type="checkbox"/> - LOW [1]	<input type="checkbox"/> - CANOPY REMOVAL
<input checked="" type="checkbox"/> - NONE [1]	<input checked="" type="checkbox"/> - POOR [1]	<input type="checkbox"/> - RECENT OR NO RECOVERY [1]		<input type="checkbox"/> - DREDGING
		<input checked="" type="checkbox"/> - IMPOUNDED [-1]		<input type="checkbox"/> - BANK SHAPING
				<input type="checkbox"/> - ONE SIDE CHANNEL MODIFICATIONS

COMMENTS: _____

Channel

 Max 20

4) RIPARIAN ZONE AND BANK EROSION (check ONE box per bank or check 2 and AVERAGE per bank) River Right Looking Downstream

RIPARIAN WIDTH	FLOOD PLAIN QUALITY (PAST 100 Meter RIPARIAN)	BANK EROSION
L R (Per Bank)	L R (Most Predominant Per Bank)	L R (Per Bank)
<input type="checkbox"/> - VERY WIDE > 100m [5]	<input checked="" type="checkbox"/> - FOREST, SWAMP [3]	<input checked="" type="checkbox"/> - NONE/LITTLE [3]
<input checked="" type="checkbox"/> - WIDE > 50m [4]	<input type="checkbox"/> - SHRUB OR OLD FIELD [2]	<input type="checkbox"/> - MODERATE [2]
<input type="checkbox"/> - MODERATE 10-50m [3]	<input type="checkbox"/> - RESIDENTIAL, PARK, NEW FIELD [1]	<input type="checkbox"/> - HEAVY/SEVERE [1]
<input checked="" type="checkbox"/> - NARROW 5-10 m [2]	<input type="checkbox"/> - FENCED PASTURE [1]	<input type="checkbox"/> - MINING/CONSTRUCTION [0]
<input type="checkbox"/> - VERY NARROW < 5 m [1]		
<input type="checkbox"/> - NONE [0]		

COMMENTS: _____

Riparian

 Max 10

5) POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX. DEPTH (Check 1 ONLY!)	MORPHOLOGY (Check 1 or 2 & AVERAGE)	CURRENT VELOCITY (Check All That Apply)
<input checked="" type="checkbox"/> - >1m [6]	<input type="checkbox"/> - POOL WIDTH > RIFFLE WIDTH [2]	<input type="checkbox"/> - EDDIES [1]
<input type="checkbox"/> - 0.7-1m [4]	<input type="checkbox"/> - POOL WIDTH = RIFFLE WIDTH [1]	<input type="checkbox"/> - TORRENTIAL [-1]
<input type="checkbox"/> - 0.4-0.7m [2]	<input type="checkbox"/> - POOL WIDTH < RIFFLE W. [0]	<input type="checkbox"/> - FAST [1]
<input type="checkbox"/> - 0.2-0.4m [1]	<input checked="" type="checkbox"/> - IMPOUNDED [-1]	<input type="checkbox"/> - MODERATE [1]
<input type="checkbox"/> - < 0.2m [POOL=0]		<input checked="" type="checkbox"/> - SLOW [1]
		<input type="checkbox"/> - INTERSTITIAL [-1]
		<input type="checkbox"/> - INTERMITTENT [-2]
		<input type="checkbox"/> - VERY FAST [1]
		<input type="checkbox"/> - NONE [-1]

COMMENTS: _____

Pool/Current

 Max 12

CHECK ONE OR CHECK 2 AND AVERAGE

RIFFLE DEPTH	RUN DEPTH	RIFFLE/RUN SUBSTRATE	RIFFLE/RUN EMBEDDEDNESS
<input type="checkbox"/> - Best Areas >10 cm [2]	<input type="checkbox"/> - MAX > 50 [2]	<input type="checkbox"/> - STABLE (e.g., Cobble, Boulder) [2]	<input type="checkbox"/> - NONE [2]
<input type="checkbox"/> - Best Areas 5-10 cm [1]	<input type="checkbox"/> - MAX < 50 [1]	<input type="checkbox"/> - MOD. STABLE (e.g., Large Gravel) [1]	<input type="checkbox"/> - LOW [1]
<input type="checkbox"/> - Best Areas < 5 cm		<input type="checkbox"/> - UNSTABLE (Fine Gravel, Sand) [0]	<input type="checkbox"/> - MODERATE [0]
<input checked="" type="checkbox"/> - NO RIFFLE [Metric=0]			<input type="checkbox"/> - EXTENSIVE [-1]

COMMENTS: _____

Riffle/Run

 Max 8

Gradient

 Max 10

6) GRADIENT (ft/mi): _____ DRAINAGE AREA (sq.mi.): _____

% POOL: 100 % GLIDE:

% RIFFLE: % RUN:

** Best areas must be large enough to support a population of riffle-obligate species

Is Sampling Reach Representative of the Stream (Y/N) If Not, Explain:

Lat/Long (Beg):
 Lat/Long (Mid):
 Lat/Long (End):
 Lat/Long(X-Loc):

- Major Suspected Sources of Impacts (Check All That Apply):
- None
 - Industrial
 - WWTP
 - Ag
 - Livestock
 - Silviculture
 - Construction
 - Urban Runoff
 - CSOs
 - Suburban Impacts
 - Mining
 - Channelization
 - Riparian Removal
 - Landfills
 - Natural
 - Dams
 - Other Flow Alteration
 - Other:

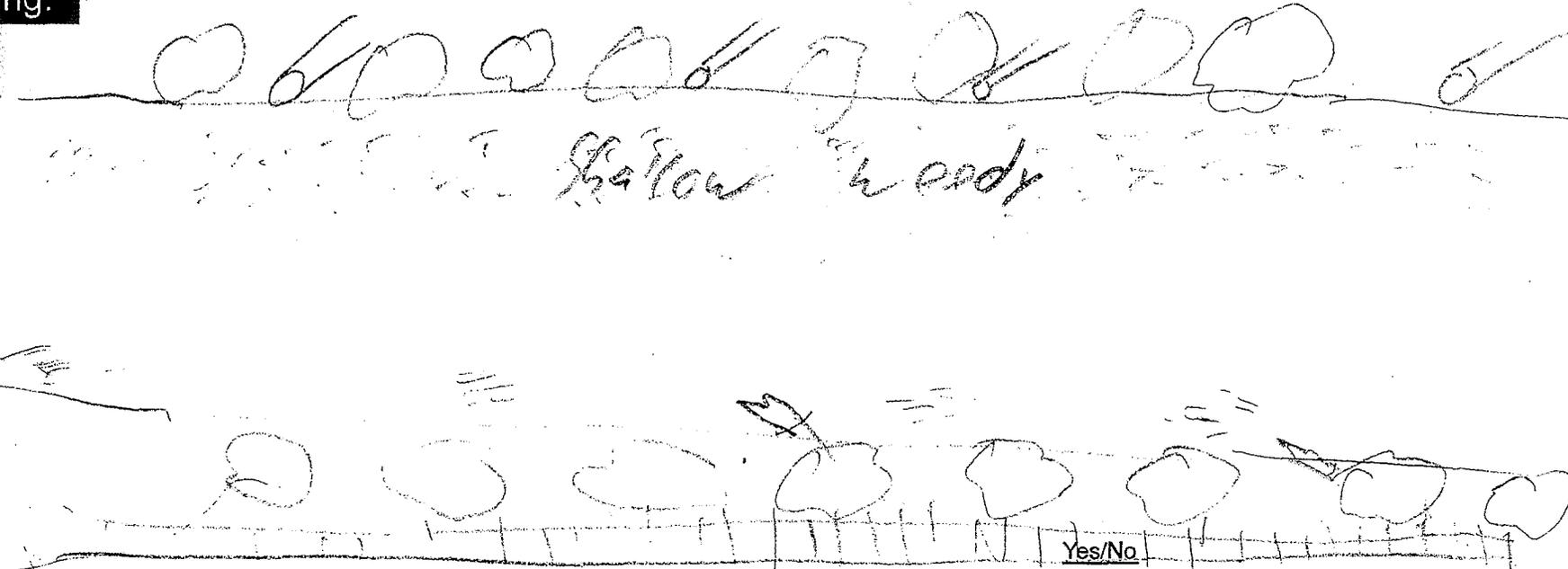
4 4
 First Sampling Pass: A Distance: 5 km Water Clarity: 60 cm Water Stage: normal Canopy -% Open: 100

Stream Measurements:

Average Width	Average Depth	Maximum Depth	Av. Bankfull Width	Bankfull Depth	Bankfull Mean W/D Ratio	Bankfull Max Depth	Floodprone Area	Entrench. Width	Entrench. Ratio

- Low, - Moderate, - High

Stream Drawing:



Instructions for scoring the alternate cover metric: Each cover type should receive a score of between 0 and 3, Where: 0 - Cover type absent; 1 - Cover type present in very small amounts or if more common of marginal quality; 2 - Cover type present in moderate amounts, but not of highest quality or in small amounts of highest quality; 3 - Cover type of highest quality in moderate or greater amounts. Examples of highest quality include very large boulders in deep or fast water, large diameter logs that are stable, well developed rootwads in deep/fast water, or deep, well-defined, functional pools.

- Yes/No
- Is Stream Ephemeral (no pools, totally dry or only damp spots)?
 - Is there water upstream? How Far:
 - Is There Water Close Downstream? How Far:
 - Is Dry Channel Mostly Natural?

← Flow

Is Sampling Reach Representative of the Stream (Y/N) If Not, Explain:

Lat/Long (Beg):
 Lat/Long (Mid):
 Lat/Long (End):
 Lat/Long (X-Loc):

Major Suspected Sources of Impacts (Check All That Apply):

- None
- Industrial
- WWTP
- Ag
- Livestock
- Silviculture
- Construction
- Urban Runoff
- CSOs
- Suburban Impacts
- Mining
- Channelization
- Riparian Removal
- Landfills
- Natural
- Dams
- Other Flow Alteration
- Other: _____

4

4

Gear: Distance: Water Clarity: Water Stage: Canopy -% Open
 First Sampling Pass A 5km 50cm Normal % 100

Subjective Rating (1-10)

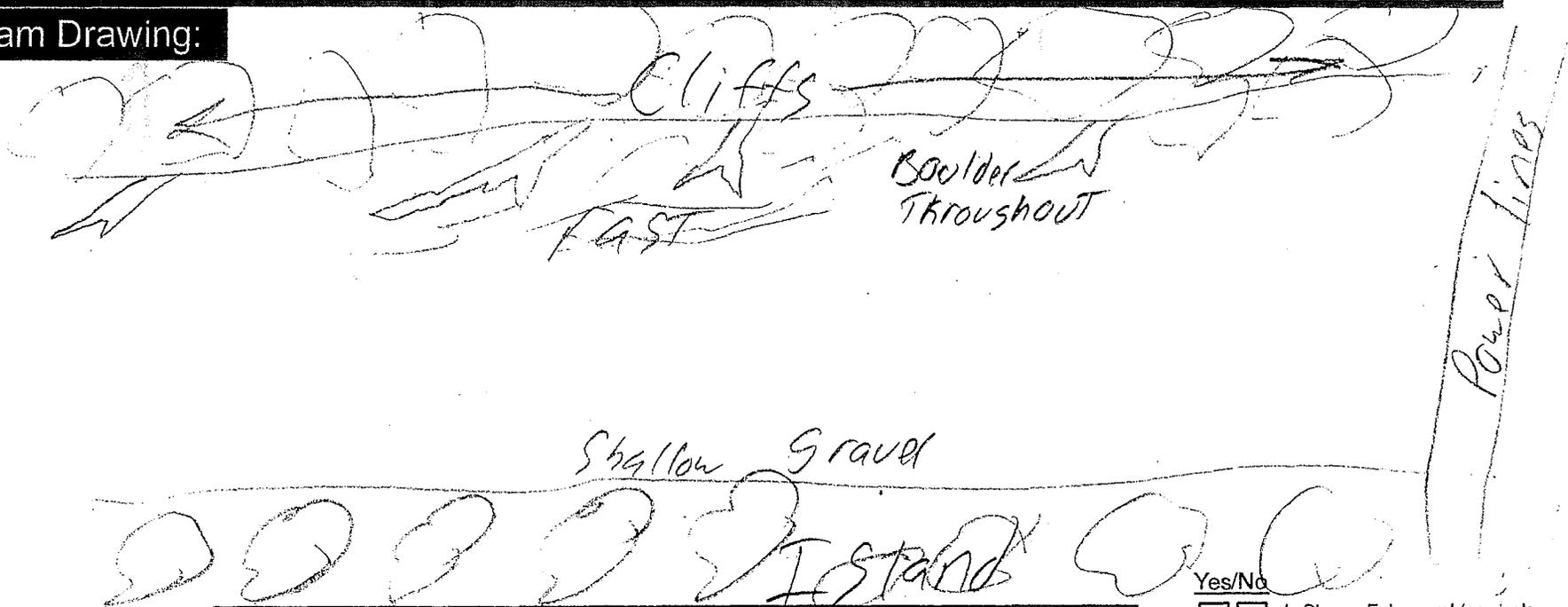
Aesthetic Rating (1-10)

Gradient:

- Low, - Moderate, - High

Stream Measurements:									
Average Width	Average Depth	Maximum Depth	Av. Bankfull Width	Bankfull Mean Depth	W/D Ratio	Bankfull Max Depth	Floodprone Area	Entrenchment Width	Entrenchment Ratio

Stream Drawing:



Instructions for scoring the alternate cover metric: Each cover type should receive a score of between 0 and 3, Where: 0 - Cover type absent; 1 - Cover type present in very small amounts or if more common of marginal quality; 2 - Cover type present in moderate amounts, but not of highest quality or in small amounts of highest quality; 3 - Cover type of highest quality in moderate or greater amounts. Examples of highest quality include very large boulders in deep or fast water, large diameter logs that are stable, well developed rootwads in deep/fast water, or deep, well-defined, functional pools.

Yes/No

- Is Stream Ephemeral (no pools, totally dry or only damp spots)?
- Is there water upstream? How Far: _____
- Is There Water Close Downstream? How Far: _____
- Is Dry Channel Mostly Natural?

Flow

Sided
1-11-08
JAW ✓

Qualitative Habitat Evaluation Index Field Sheet QHEI Score:

River Code: 95-090 RM: 271.1 Stream: Illinois River
 Station ID: DP-11 Location: OST Dresden Tailgate DP-11
 Date: 7-24-06 Scorer: ANJ Latitude: 41.39917 Longitude: -88.28506

1) SUBSTRATE (Check ONLY Two Substrate TYPE BOXES; Estimate % present)

TYPE	POOL RIFFLE	POOL RIFFLE	CHECK ONE (OR 2 & AVERAGE)	SUBSTRATE QUALITY	CHECK ONE (OR 2 & AVERAGE)
<input type="checkbox"/> BLDR /SLBS [10]	<input type="checkbox"/> GRAVEL [7]	<input checked="" type="checkbox"/> SAND [6]	<input checked="" type="checkbox"/> SILT:	<input type="checkbox"/> SILT HEAVY [-2]	Substrate <div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto;"></div> Max 20
<input type="checkbox"/> -Lg BOULD. [10]	<input type="checkbox"/> BEDROCK [5]	<input checked="" type="checkbox"/> LESTONE [1]	<input checked="" type="checkbox"/> FILLS [1]	<input type="checkbox"/> SILT MODERATE [-1]	
<input checked="" type="checkbox"/> BOULDER [9]	<input type="checkbox"/> DETRITUS [3]	<input type="checkbox"/> WETLANDS [0]	<input type="checkbox"/> -HARDPAN [0]	<input checked="" type="checkbox"/> SILT NORMAL [0]	
<input checked="" type="checkbox"/> COBBLE [8]	<input type="checkbox"/> ARTIFICIAL [0]	<input type="checkbox"/> -HARDPAN [0]	<input type="checkbox"/> SANDSTONE [0] EMBEDDED	<input type="checkbox"/> SILT FREE [1]	
<input type="checkbox"/> -HARDPAN [4]	<input type="checkbox"/> SILT [2]	<input type="checkbox"/> -SANDSTONE [0]	<input type="checkbox"/> -RIP/RAP [0] NESS:	<input type="checkbox"/> -EXTENSIVE [-2]	
<input type="checkbox"/> MUCK [2]		<input type="checkbox"/> -LACUSTRINE [0]	<input type="checkbox"/> -SHALE [-1]	<input checked="" type="checkbox"/> MODERATE [-1]	
		<input type="checkbox"/> -SHALE [-1]	<input type="checkbox"/> -COAL FINES [-2]	<input checked="" type="checkbox"/> NORMAL [0]	
				<input type="checkbox"/> -NONE [1]	

NUMBER OF SUBSTRATE TYPES: 4 or More [2] 3 or Less [0]
 (High Quality Only, Score 5 or >)

2) INSTREAM COVER (Give each cover type a score of 0 to 3; see back for instructions)

TYPE: (Structure)	TYPE: Score All That Occur	AMOUNT: (Check ONLY One or check 2 and AVERAGE)	Cover
<input checked="" type="checkbox"/> UNDERCUT BANKS [1]	<input checked="" type="checkbox"/> POOLS > 70 cm [2]	<input checked="" type="checkbox"/> - EXTENSIVE > 75% [11]	Cover <div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto;"></div> Max 20
<input checked="" type="checkbox"/> OVERHANGING VEGETATION [1]	<input checked="" type="checkbox"/> ROOTWADS [1]	<input checked="" type="checkbox"/> MODERATE 25-75% [7]	
<input checked="" type="checkbox"/> SHALLOWS (IN SLOW WATER) [1]	<input checked="" type="checkbox"/> BOULDERS [1]	<input checked="" type="checkbox"/> SPARSE 5-25% [3]	
<input checked="" type="checkbox"/> ROOTMATS [1]		<input type="checkbox"/> - NEARLY ABSENT < 5% [1]	

COMMENTS: _____

3) CHANNEL MORPHOLOGY: (Check ONLY One PER Category OR check 2 and AVERAGE)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER	Channel
<input checked="" type="checkbox"/> HIGH [4]	<input checked="" type="checkbox"/> EXCELLENT [7]	<input checked="" type="checkbox"/> NONE [6]	<input checked="" type="checkbox"/> HIGH [3]	<input type="checkbox"/> - SNAGGING	Channel <div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto;"></div> Max 20
<input checked="" type="checkbox"/> MODERATE [3]	<input checked="" type="checkbox"/> GOOD [5]	<input type="checkbox"/> - RECOVERED [4]	<input type="checkbox"/> - MODERATE [2]	<input type="checkbox"/> - IMPOUND.	
<input type="checkbox"/> - LOW [2]	<input type="checkbox"/> - FAIR [3]	<input type="checkbox"/> - RECOVERING [3]	<input type="checkbox"/> - LOW [1]	<input type="checkbox"/> - ISLANDS	
<input type="checkbox"/> - NONE [1]	<input type="checkbox"/> - POOR [1]	<input type="checkbox"/> - RECENT OR NO RECOVERY [1]		<input type="checkbox"/> - LEVEED	
		<input type="checkbox"/> - IMPOUNDED [-1]		<input type="checkbox"/> - CANOPY REMOVAL	
				<input type="checkbox"/> - DREDGING	

COMMENTS: _____

4) RIPARIAN ZONE AND BANK EROSION (check ONE box per bank or check 2 and AVERAGE per bank) River Right Looking Downstream

RIPARIAN WIDTH	FLOOD PLAIN QUALITY (PAST 100 Meter RIPARIAN)	BANK EROSION	Riparian
L R (Per Bank)	L R (Most Predominant Per Bank)	L R (Per Bank)	Riparian <div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto;"></div> Max 10
<input checked="" type="checkbox"/> VERY WIDE > 100m [5]	<input checked="" type="checkbox"/> FOREST, SWAMP [3]	<input type="checkbox"/> - CONSERVATION TILLAGE [1]	
<input type="checkbox"/> - WIDE > 50m [4]	<input type="checkbox"/> - SHRUB OR OLD FIELD [2]	<input type="checkbox"/> - URBAN OR INDUSTRIAL [0]	
<input type="checkbox"/> - MODERATE 10-50m [3]	<input type="checkbox"/> - RESIDENTIAL, PARK, NEW FIELD [1]	<input type="checkbox"/> - OPEN PASTURE, ROWCROP [0]	
<input type="checkbox"/> - NARROW 5-10 m [2]	<input type="checkbox"/> - FENCED PASTURE [1]	<input type="checkbox"/> - MINING/CONSTRUCTION [0]	
<input type="checkbox"/> - VERY NARROW < 5 m [1]			

COMMENTS: _____

5) POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX. DEPTH	MORPHOLOGY	CURRENT VELOCITY [POOLS & RIFFLES!]	Pool/Current
(Check 1 ONLY!)	(Check 1 or 2 & AVERAGE)	(Check All That Apply)	Pool/Current <div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto;"></div> Max 12
<input checked="" type="checkbox"/> > 1m [6]	<input checked="" type="checkbox"/> - POOL WIDTH > RIFFLE WIDTH [2]	<input checked="" type="checkbox"/> - EDDIES [1]	
<input type="checkbox"/> - 0.7-1m [4]	<input type="checkbox"/> - POOL WIDTH = RIFFLE WIDTH [1]	<input type="checkbox"/> - TORRENTIAL [-1]	
<input type="checkbox"/> - 0.4-0.7m [2]	<input type="checkbox"/> - POOL WIDTH < RIFFLE W. [0]	<input type="checkbox"/> - INTERSTITIAL [-1]	
<input type="checkbox"/> - 0.2-0.4m [1]	<input type="checkbox"/> - IMPOUNDED [-1]	<input type="checkbox"/> - INTERMITTENT [-2]	
<input type="checkbox"/> - < 0.2m [POOL=0]		<input checked="" type="checkbox"/> - SLOW [1]	

COMMENTS: _____

CHECK ONE OR CHECK 2 AND AVERAGE

RIFFLE DEPTH	RUN DEPTH	RIFFLE/RUN SUBSTRATE	RIFFLE/RUN EMBEDDEDNESS	Riffle/Run
<input checked="" type="checkbox"/> - Best Areas > 10 cm [2]	<input checked="" type="checkbox"/> - MAX > 50 [2]	<input checked="" type="checkbox"/> - STABLE (e.g., Cobble, Boulder) [2]	<input checked="" type="checkbox"/> - NONE [2]	Riffle/Run <div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto;"></div> Max 8
<input type="checkbox"/> - Best Areas 5-10 cm [1]	<input type="checkbox"/> - MAX < 50 [1]	<input type="checkbox"/> - MOD. STABLE (e.g., Large Gravel) [1]	<input type="checkbox"/> - LOW [1]	
<input type="checkbox"/> - Best Areas < 5 cm		<input type="checkbox"/> - UNSTABLE (Fine Gravel, Sand) [0]	<input type="checkbox"/> - MODERATE [0]	
<input type="checkbox"/> - NO RIFFLE [Metric=0]			<input type="checkbox"/> - EXTENSIVE [-1]	Gradient <div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto;"></div> Max 10
COMMENTS: _____				

6] GRADIENT (ft/mi): _____ DRAINAGE AREA (sq.mi.): _____

% POOL: 60 % GLIDE: 10
 % RIFFLE: 15 % RUN: 15

** Best areas must be large enough to support a population of riffle-obligate species

Is Sampling Reach Representative of the Stream (Y/N) If Not, Explain:

Lat/Long (Beg): _____
 Lat/Long (Mid): _____
 Lat/Long (End): _____
 Lat/Long (X-Loc): _____

- Major Suspected Sources of Impacts (Check All That Apply):
- None
 - Industrial
 - WWTP
 - Ag
 - Livestock
 - Silviculture
 - Construction
 - Urban Runoff
 - CSOs
 - Suburban Impacts
 - Mining
 - Channelization
 - Riparian Removal
 - Landfills
 - Natural
 - Dams
 - Other Flow Alteration
 - Other: _____

5

5

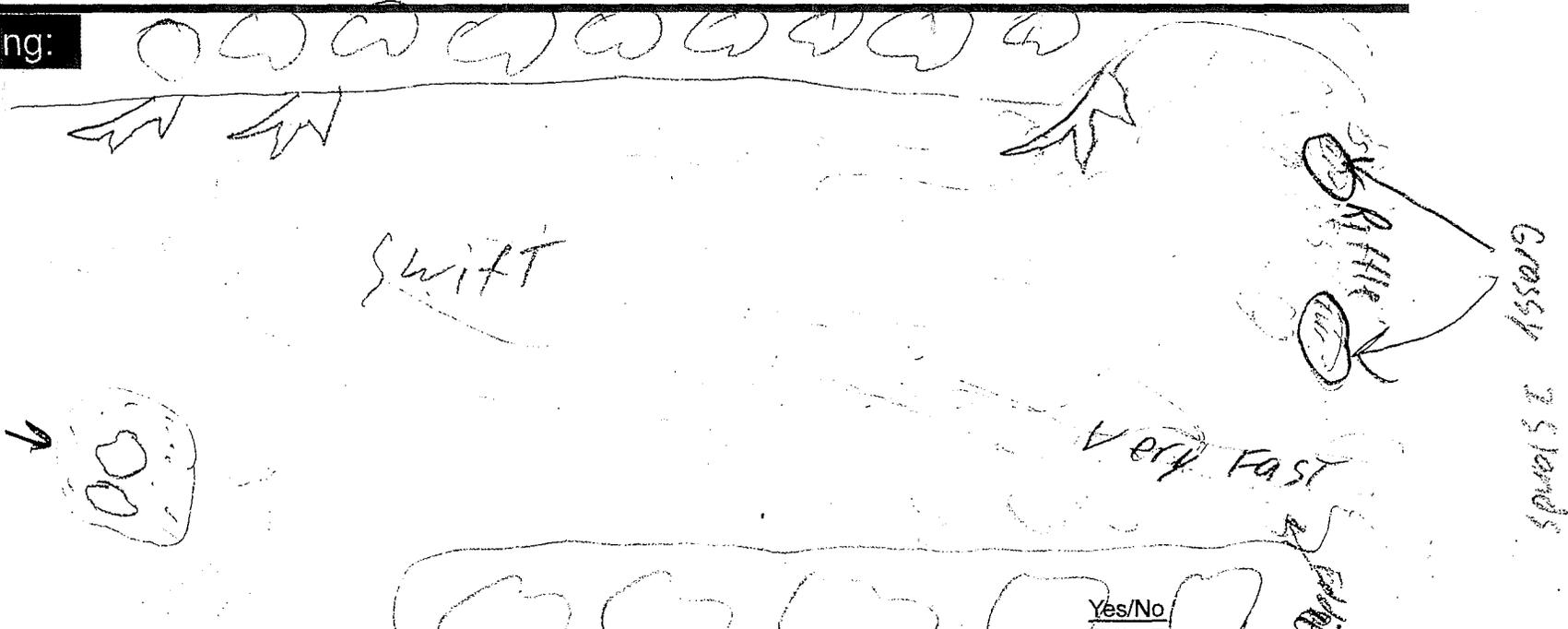
Gear: A Distance: 5 km Water Clarity: 75 cm Water Stage: normal Canopy -% Open: 100

Subjective Rating (1-10) Gradient: - Low, - Moderate, - High
 Aesthetic Rating (1-10)

Stream Measurements:

Average Width	Average Depth	Maximum Depth	Av. Bankfull Width	Bankfull Depth	Bankfull Mean W/D Ratio	Bankfull Max Depth	Floodprone Area	Entrenchment Ratio

Stream Drawing:



Instructions for scoring the alternate cover metric: Each cover type should receive a score of between 0 and 3, Where: 0 - Cover type absent; 1 - Cover type present in very small amounts or if more common of marginal quality; 2 - Cover type present in moderate amounts, but not of highest quality or in small amounts of highest quality; 3 - Cover type of highest quality in moderate or greater amounts. Examples of highest quality include very large boulders in deep or fast water, large diameter logs that are stable, well developed rootwads in deep/fast water, or deep, well-defined, functional pools.

- Yes/No
- Is Stream Ephemeral (no pools, totally dry or only damp spots)?
 - Is there water upstream? How Far: _____
 - Is There Water Close Downstream? How Far: _____
 - Is Dry Channel Mostly Natural?

NOT
Ed. Led
1-11-03
DTE ✓

Qualitative Habitat Evaluation Index Field Sheet QHEI Score:

River Code: 95-260 RM: 246.5 Stream: Jillards River
 Station ID: DP-14 Location: DST Marcellus Tailwater
 Date: 7-25-06 Scorer: AAJ Latitude: 41.31986 Longitude: -88.69300

1] SUBSTRATE (Check ONLY Two Substrate TYPE BOXES; Estimate % present)

TYPE	POOL	RIFFLE	POOL	RIFFLE	SUBSTRATE ORIGIN	SUBSTRATE QUALITY
<input type="checkbox"/> BLDR /SLBS [10]	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> GRAVEL [7]	<input checked="" type="checkbox"/>	Check ONE (OR 2 & AVERAGE)	Check ONE (OR 2 & AVERAGE)
<input type="checkbox"/> LG BOULD. [10]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> SAND [6]	<input checked="" type="checkbox"/>	<input type="checkbox"/> LIMESTONE [1] SILT:	<input type="checkbox"/> SILT HEAVY [-2]
<input type="checkbox"/> BOULDER [9]	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> BEDROCK [5]	<input type="checkbox"/>	<input checked="" type="checkbox"/> TILLS [1]	<input type="checkbox"/> SILT MODERATE [-1]
<input checked="" type="checkbox"/> COBBLE [8]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> DETRITUS [3]	<input type="checkbox"/>	<input type="checkbox"/> WETLANDS [0]	<input checked="" type="checkbox"/> SILT NORMAL [0]
<input checked="" type="checkbox"/> HARDPAN [4]	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> ARTIFICIAL [0]	<input type="checkbox"/>	<input type="checkbox"/> HARDPAN [0]	<input type="checkbox"/> SILT FREE [1]
<input type="checkbox"/> MUCK [2]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> SILT [2]	<input checked="" type="checkbox"/>	<input type="checkbox"/> SANDSTONE [0] EMBEDDED	<input type="checkbox"/> EXTENSIVE [-2]
					<input type="checkbox"/> RIP/RAP [0] NESS:	<input checked="" type="checkbox"/> MODERATE [-1]
NUMBER OF SUBSTRATE TYPES: <input checked="" type="checkbox"/> 4 or More [2]					<input type="checkbox"/> LACUSTRINE [0]	<input checked="" type="checkbox"/> NORMAL [0]
(High Quality Only, Score 5 or >)	<input type="checkbox"/> 3 or Less [0]				<input type="checkbox"/> SHALE [-1]	<input type="checkbox"/> NONE [1]
COMMENTS:					<input type="checkbox"/> COAL FINES [-2]	

Substrate

 Max 20

2] INSTREAM COVER (Give each cover type a score of 0 to 3; see back for instructions)

TYPE: Score All That Occur	AMOUNT: (Check ONLY One or check 2 and AVERAGE)
<input checked="" type="checkbox"/> UNDERCUT BANKS [1]	<input type="checkbox"/> EXTENSIVE > 75% [11]
<input checked="" type="checkbox"/> OVERHANGING VEGETATION [1]	<input type="checkbox"/> MODERATE 25-75% [7]
<input checked="" type="checkbox"/> SHALLOWS (IN SLOW WATER) [1]	<input checked="" type="checkbox"/> SPARSE 5-25% [3]
<input checked="" type="checkbox"/> ROOTMATS [1]	<input type="checkbox"/> NEARLY ABSENT < 5% [1]
<input type="checkbox"/> POOLS > 70 cm [2]	
<input checked="" type="checkbox"/> ROOTWADS [1]	
<input checked="" type="checkbox"/> BOULDERS [1]	
<input checked="" type="checkbox"/> OXBOWS, BACKWATERS [1]	
<input checked="" type="checkbox"/> AQUATIC MACROPHYTES [1]	
<input checked="" type="checkbox"/> LOGS OR WOODY DEBRIS [1]	

Cover

 Max 20

3] CHANNEL MORPHOLOGY: (Check ONLY One PER Category OR check 2 and AVERAGE)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER
<input type="checkbox"/> HIGH [4]	<input type="checkbox"/> EXCELLENT [7]	<input checked="" type="checkbox"/> NONE [6]	<input checked="" type="checkbox"/> HIGH [3]	<input type="checkbox"/> SNAGGING
<input type="checkbox"/> MODERATE [3]	<input checked="" type="checkbox"/> GOOD [5]	<input type="checkbox"/> RECOVERED [4]	<input type="checkbox"/> MODERATE [2]	<input type="checkbox"/> RELOCATION
<input checked="" type="checkbox"/> LOW [2]	<input type="checkbox"/> FAIR [3]	<input type="checkbox"/> RECOVERING [3]	<input type="checkbox"/> LOW [1]	<input type="checkbox"/> CANOPY REMOVAL
<input type="checkbox"/> NONE [1]	<input type="checkbox"/> POOR [1]	<input type="checkbox"/> RECENT OR NO RECOVERY [1]		<input type="checkbox"/> DREDGING
		<input type="checkbox"/> IMPOUNDED [-1]		<input type="checkbox"/> BANK SHAPING
				<input type="checkbox"/> ONE SIDE CHANNEL MODIFICATIONS

Channel

 Max 20

4] RIPARIAN ZONE AND BANK EROSION (check ONE box per bank or check 2 and AVERAGE per bank) River Right Looking Downstream

RIPARIAN WIDTH	FLOOD PLAIN QUALITY (PAST 100 Meter RIPARIAN)	BANK EROSION
L R (Per Bank)	L R (Most Predominant Per Bank)	L R (Per Bank)
<input checked="" type="checkbox"/> VERY WIDE > 100m [5]	<input checked="" type="checkbox"/> FOREST, SWAMP [3]	<input checked="" type="checkbox"/> NONE/LITTLE [3]
<input type="checkbox"/> WIDE > 50m [4]	<input type="checkbox"/> SHRUB OR OLD FIELD [2]	<input type="checkbox"/> MODERATE [2]
<input type="checkbox"/> MODERATE 10-50m [3]	<input type="checkbox"/> RESIDENTIAL, PARK, NEW FIELD [1]	<input type="checkbox"/> HEAVY/SEVERE [1]
<input type="checkbox"/> NARROW 5-10 m [2]	<input type="checkbox"/> FENCED PASTURE [1]	
<input type="checkbox"/> VERY NARROW < 5 m [1]		
<input type="checkbox"/> NONE [0]	Comments:	

Riparian

 Max 10

5] POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX. DEPTH (Check 1 ONLY!)	MORPHOLOGY (Check 1 or 2 & AVERAGE)	CURRENT VELOCITY (POOLS & RIFFLES!) (Check All That Apply)
<input checked="" type="checkbox"/> > 1m [6]	<input checked="" type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [2]	<input checked="" type="checkbox"/> EDDIES [1]
<input type="checkbox"/> 0.7-1m [4]	<input type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1]	<input type="checkbox"/> TORRENTIAL [-1]
<input type="checkbox"/> 0.4-0.7m [2]	<input type="checkbox"/> POOL WIDTH < RIFFLE W. [0]	<input type="checkbox"/> INTERSTITIAL [-1]
<input type="checkbox"/> 0.2- 0.4m [1]	<input type="checkbox"/> IMPOUNDED [-1]	<input type="checkbox"/> INTERMITTENT [-2]
<input type="checkbox"/> < 0.2m [POOL=0]	Comments:	<input checked="" type="checkbox"/> FAST [1]
		<input type="checkbox"/> MODERATE [1]
		<input checked="" type="checkbox"/> SLOW [1]
		<input type="checkbox"/> NONE [-1]
		<input type="checkbox"/> VERY FAST [1]

Pool/Current

 Max 12

CHECK ONE OR CHECK 2 AND AVERAGE

RIFFLE DEPTH	RUN DEPTH	RIFFLE/RUN SUBSTRATE	RIFFLE/RUN EMBEDDEDNESS
<input type="checkbox"/> Best Areas > 10 cm [2]	<input checked="" type="checkbox"/> MAX > 50 [2]	<input checked="" type="checkbox"/> STABLE (e.g., Cobble, Boulder) [2]	<input type="checkbox"/> NONE [2]
<input checked="" type="checkbox"/> Best Areas 5-10 cm [1]	<input type="checkbox"/> MAX < 50 [1]	<input checked="" type="checkbox"/> MOD. STABLE (e.g., Large Gravel) [1]	<input type="checkbox"/> LOW [1]
<input type="checkbox"/> Best Areas < 5 cm		<input type="checkbox"/> UNSTABLE (Fine Gravel, Sand) [0]	<input checked="" type="checkbox"/> MODERATE [0]
<input type="checkbox"/> NO RIFFLE [Metric=0]			<input type="checkbox"/> EXTENSIVE [-1]

Riffle/Run

 Max 8

Gradient

 Max 10

6] GRADIENT (ft/mi): _____ DRAINAGE AREA (sq.mi.): _____
 %POOL: 100 %GLIDE: 5
 %RIFFLE: 5 %RUN: 30

* Best areas must be large enough to support a population of riffle-obligate species

Is Sampling Reach Representative of the Stream (Y/N)

If Not, Explain:

Lat/Long (Beg):
 Lat/Long (Mid):
 Lat/Long (End):
 Lat/Long (X-Loc):

- Major Suspected Sources of Impacts (Check All That Apply):
- None
 - Industrial
 - WWTP
 - Ag
 - Livestock
 - Silviculture
 - Construction
 - Urban Runoff
 - CSOs
 - Suburban Impacts
 - Mining
 - Channelization
 - Riparian Removal
 - Landfills
 - Natural
 - Dams
 - Other Flow Alteration
 - Other: _____

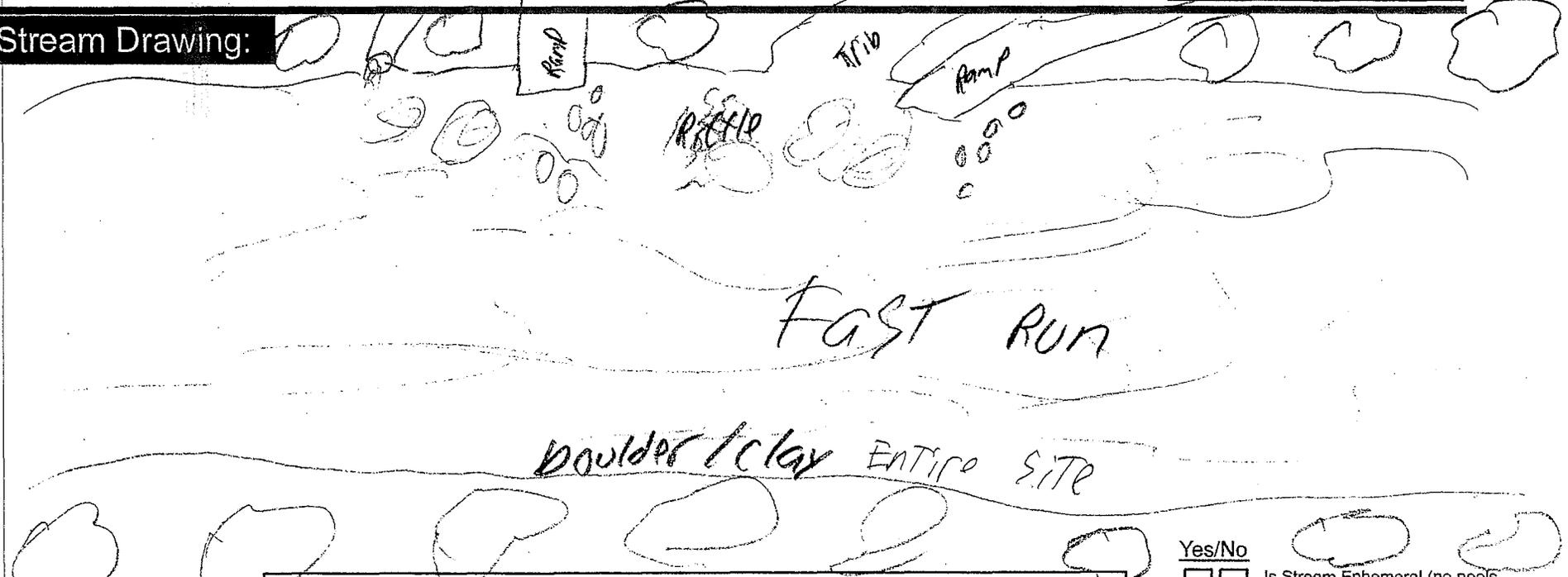
6 6

Gear: A Distance: .5 km Water Clarity: 75 cm Water Stage: Normal Canopy -% Open: 100

Subjective Rating (1-10) Aesthetic Rating (1-10)
 Gradient: - Low, - Moderate, - High

Stream Measurements:									
Average Width	Average Depth	Maximum Depth	Av. Bankfull Width	Bankfull Mean Depth	W/D Ratio	Bankfull Max Depth	Floodprone Area	Entrenchment Width	Entrenchment Ratio

Stream Drawing:



Instructions for scoring the alternate cover metric: Each cover type should receive a score of between 0 and 3, Where: 0 - Cover type absent; 1 - Cover type present in very small amounts or if more common of marginal quality; 2 - Cover type present in moderate amounts, but not of highest quality or in small amounts of highest quality; 3 - Cover type of highest quality in moderate or greater amounts. Examples of highest quality include very large boulders in deep or fast water, large diameter logs that are stable, well developed rootwads in deep/fast water, or deep, well-defined, functional pools.

- Yes/No
- Is Stream Ephemeral (no pools, totally dry or only damp spots)?
 - Is there water upstream? How Far: _____
 - Is There Water Close Downstream? How Far: _____
 - Is Dry Channel Mostly Natural?

Flow ←