

Final Report

Agricultural Targeted Runoff Management &
 Notice of Discharge Grant Programs

NOTICE: This document is required under s. 281.65, Wis. Stats., and chs. NR 153 and 154, Wis. Adm. Code. A final project report must be submitted as part of the final reimbursement request. Personally identifiable information contained in this form will be used for determining reimbursement eligibility in the Targeted Runoff Management and Notice of Discharge Grant Programs and will not be used for any other purpose.

INSTRUCTIONS: Send the completed, electronic copy of this form and all attachments to the Department of Natural Resources (DNR) Region Nonpoint Source Coordinator. Please read all instructions prior to completion.

Grant Type		
Select Grant Type Small Scale Non Total Maximum Daily Load (TMDL)		
Project Name & Location		
Project Name Luchterhand Dairy Project		
Grant Number TRC-BR09-10000-15A		Governmental Unit Name Clark County
County Clark	Watershed Name O'Neill & Cunningham Creeks	12-Digit HUC 070400070902
Project Contact Name Sheri Denowski		Phone Number (715) 743-5102
		E-mail Address sheri.denowski@co.clark.wi.us
<input type="checkbox"/> For a project with multiple site locations, an aerial photo map is attached with each site location labeled.		

Site Location - 1							
Name of Cost-Share Recipient Glen and Virginia Luchterhand					Animal Units 473	Nearest Receiving Waterbody North Branch O'Neill Creek Trib.	
Township 25	Range 01	E / W W	Section 31	Quarter SE	Quarter/Quarter NW	Latitude 44.6055	Longitude -90.5489
Compliance Requirements - 1							
Chs. NR 151 or 243 Wis. Adm. Code Notice Type NR 151		Notice letter attached <input checked="" type="checkbox"/>	Compliance achieved? If no, explain in site information <input checked="" type="radio"/> Yes <input type="radio"/> No			Compliance determination letter attached <input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/> Attached is a copy of the written statement the County provided to the landowner and cost-share recipient of the landowner's obligation to maintain compliance with performance standards & prohibitions on cropland and livestock facilities addressed by the cost-share agreement. Compliance at these sites must be maintained in perpetuity regardless of future cost sharing. The County has also placed a copy of this written statement in the County files.							

Summary of Results - 1							
Best Management Practice Installed	Quantity	Unit of Measure	Performance Standard/Prohibition Addressed	Total Installation Cost	Load Reduction		
					Phosphorus lbs/yr	Nitrogen lbs/yr	Sediment Tons/yr
Manure Storage Systems	1	No.	Code(s) 9,10,12,7,4,3	\$296,950.00	375	-	-
Milking Center Waste Control Systems	1	No.	Code(s) 8,12	\$17,500.00	290	365	-
Manure Storage System Closure	1	No.	Code(s) 5,6	\$27,800.00	-	-	-
Waste Transfer Systems	1	No.	Code(s) 8,12	\$19,550.00	-	-	-
Waterway Systems	2	Acres	Code(s) 8,12	\$3,080.00	-	-	-
Critical Area Stabilization	2	Acres	Code(s) 1,8	\$3,000.00	-	-	-
Diversions	780	Feet	Code(s) 8	\$2,340.00	68	-	-

Site Location Attachment - 1

Check the box if the required information for the site is attached:

<input checked="" type="checkbox"/> Photos of pre-and post-implementation of BMP(s)	<input checked="" type="checkbox"/> Load reduction modeling documents
<input checked="" type="checkbox"/> Aerial photo map of site with BMPs labeled	<input type="checkbox"/> Water quality monitoring results/summary, if applicable

Site Information - 1

Narrative space will expand to fit
 Although not all nutrient load reductions from the installed practices were quantifiable, nutrient runoff was reduced from this farmstead, and the objectives for this project were accomplished with the following:

- 1) The old earthen storage was abandoned according to NRCS Standard 360 (Waste Storage Closure) eliminating discharges into the nearby wetland and stream area.
- 2) A new concrete vertical walled waste storage facility was constructed with sufficient storage capacity to eliminate winter spreading. This eliminates surface and groundwater pollution previously caused by winter application of manure and by leakage from the old waste storage facility.
- 3) Milk house wastewater is directed to the new waste storage facility.
- 4) Areas surrounding the new waste storage facility and buildings are shaped and vegetated (Grassed Waterway, Diversion, Critical Area Planting) in a manner that eliminates erosion of sediments and nutrients from the farmstead to the nearby riparian area.

DNR may use this site as a success story to meet state and federal reporting needs.

Additional Project Information and/or Comments

Narrative space will expand to fit

Grantee Certification

A responsible government official (authorized signatory) must authorize and date the final report form prior to submittal to DNR. I certify that, to the best of my knowledge, the project is complete and the information contained in this final report and attachments are correct and true.

Name of Authorized Government Official	Title of Authorized Government Official	Date
James Arch	County Conservationist	08/25/2016

For DNR Use Only

Received complete reports with all attachments Practices implemented were consistent with the grant agreement

Comments about this project:
 Quantifiable Phosphorus reductions calculated utilizing SNAP Plus = 733 pounds of P / annually. Nitrate reductions from capturing milk house waste discharges were estimated at 365 pounds annually utilizing MWPS Worksheet.

Name of Region Nonpoint Source Coordinator	Date
Terence M. Kafka	09/19/2016

Send the Final Report and attachments to the Community Financial Assistance Grants Manager and to the Runoff Management Grant Coordinator. Keep a printed copy for the Region file.

NEW FACILITY – BEFORE PHOTOS:



Looking east to west at area of proposed manure storage facility site



Looking South to North at proposed manure storage facility site towards wetland and unnamed creek

NEW FACILITY – AFTER PHOTOS – 2015:



Looking east to west at new waste storage facility



Looking south to north at new waste storage facility

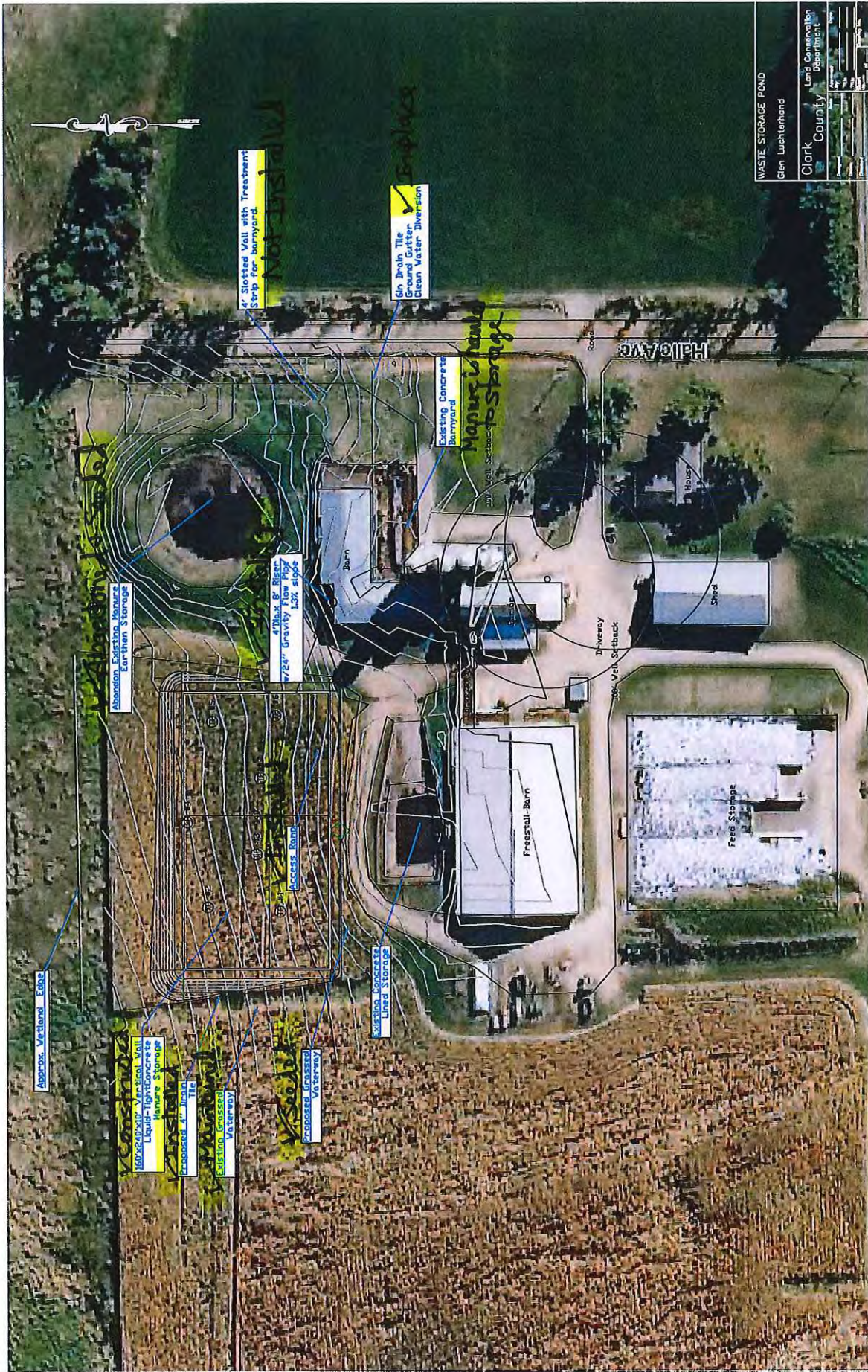
Glen Luchterhand – TRM – Waste Storage Facility & Waste Storage Closure – 2015/2016

CLOSURE – BEFORE PHOTO:



CLOSURE – AFTER PHOTOS (3) – 2016:





Clark County Land Conservation Department

Construction Plan

Practice: Waste Storage Facility (313), Waste Transfer System (634), Manure Storage Closure(360)
 Landowner: Glen Luchterhand
 Address: N5141 Halle Ave. Neillsville, WI 54456
 Landowner Phone Number: (715) 743-4033 County: Clark
 Township: York Sec. 31, T 25 N, R 1 W
 Field Office: Clark County Land Conservation Department Telephone Number: (715)743-5102

Digger's Hotline

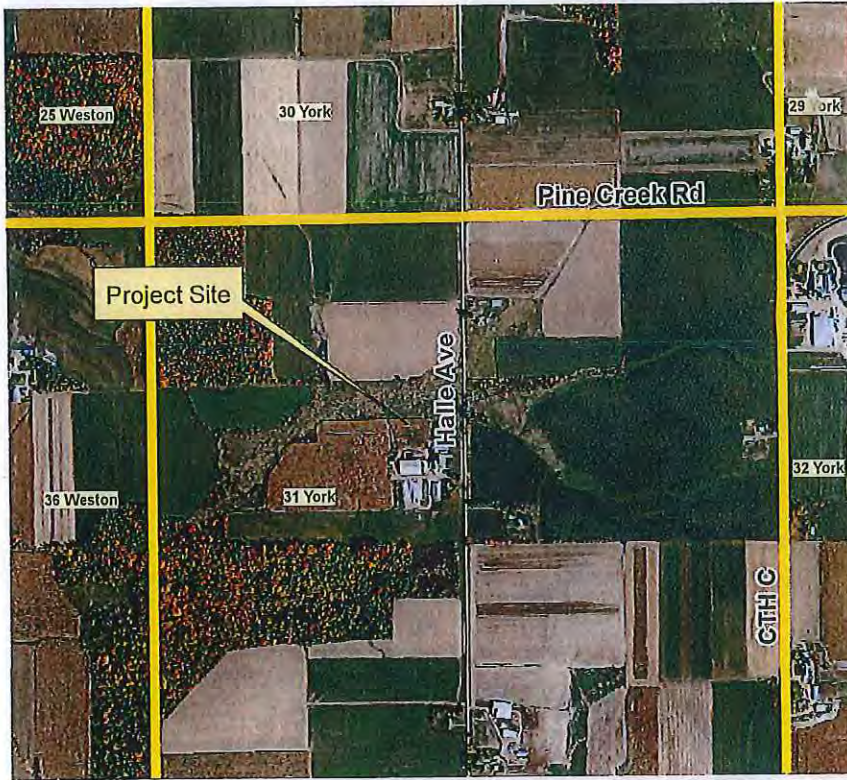
Call 3 Work Days
Before You Dig

Nationwide
811

Toll Free
1-800-242-8511

TDD
1-800-542-2289

Website:
www.diggershotline.com



As-Built
1/7/16 by
PSS



Closure As built
documentation by
SGD 7/2/16
Location Map

1 inch = 1,469 feet

Notice to Landowners and Excavators

Any Representation made by the Clark County LCD, as to the approximate location or nonexistence of above or underground hazards does not relieve the owner of the property or the excavator that is hired to complete construction, from notifying Diggers Hotline of the pending construction. You will be liable for damages resulting from construction activities.
 Call Diggers Hotline! Ticket Number: _____

Construction Drawing and Specification Acceptance

I have reviewed and understand the construction plans and specifications and agree to complete the work accordingly. Failure to meet these plans and specifications may jeopardize any continued Clark County LCD technical assistance or program cost sharing applied for. I understand that it is my responsibility to secure all necessary permits and licenses, and to complete the work in accordance with all local, state, and federal laws. Modification of these construction plans or specifications must be approved by the LCD before installation. I assume all responsibility for negotiations and contract agreements with the construction contractors.

Landowner's Signature: Glen Luchterhand Date: 6-4-15
 Designed By: L. Hart Date: 5/2015
 Checked By: [Signature] Date: 06/2015
 Approved By: [Signature] Date: 05/2015
 Contractor's Signature: _____ Date: _____

The installation practices comply with applicable NRCS technical standards and specifications. The "red-lined construction plans (as-built drawings) reflect changes made during construction.

Construction Approved By: [Signature] Date: 1/7/2016
 Job Approval Class: IV

360 - III (vol. 85,000cuft),
 313 - IV (wall ht. 10') IV (vol. 262,410cuft),
 634 - III (length 115') I (manhole)

Sheet: 1 of 26

313 and 634 only
(360 not completed yet)

* Pipe penetration added for drag-line equipment. N 15' from NE corner invert 10" off ground. 2 knife valves used for safety. Penetration completed same as others.



Date: 3/20
 Designed: L. HART
 Drawn: _____
 Checked: _____
 Approved: _____

PLAN VIEW

OWNER: Glen Luchterhand
 COUNTY: CLARK

GRAPHIC SCALE

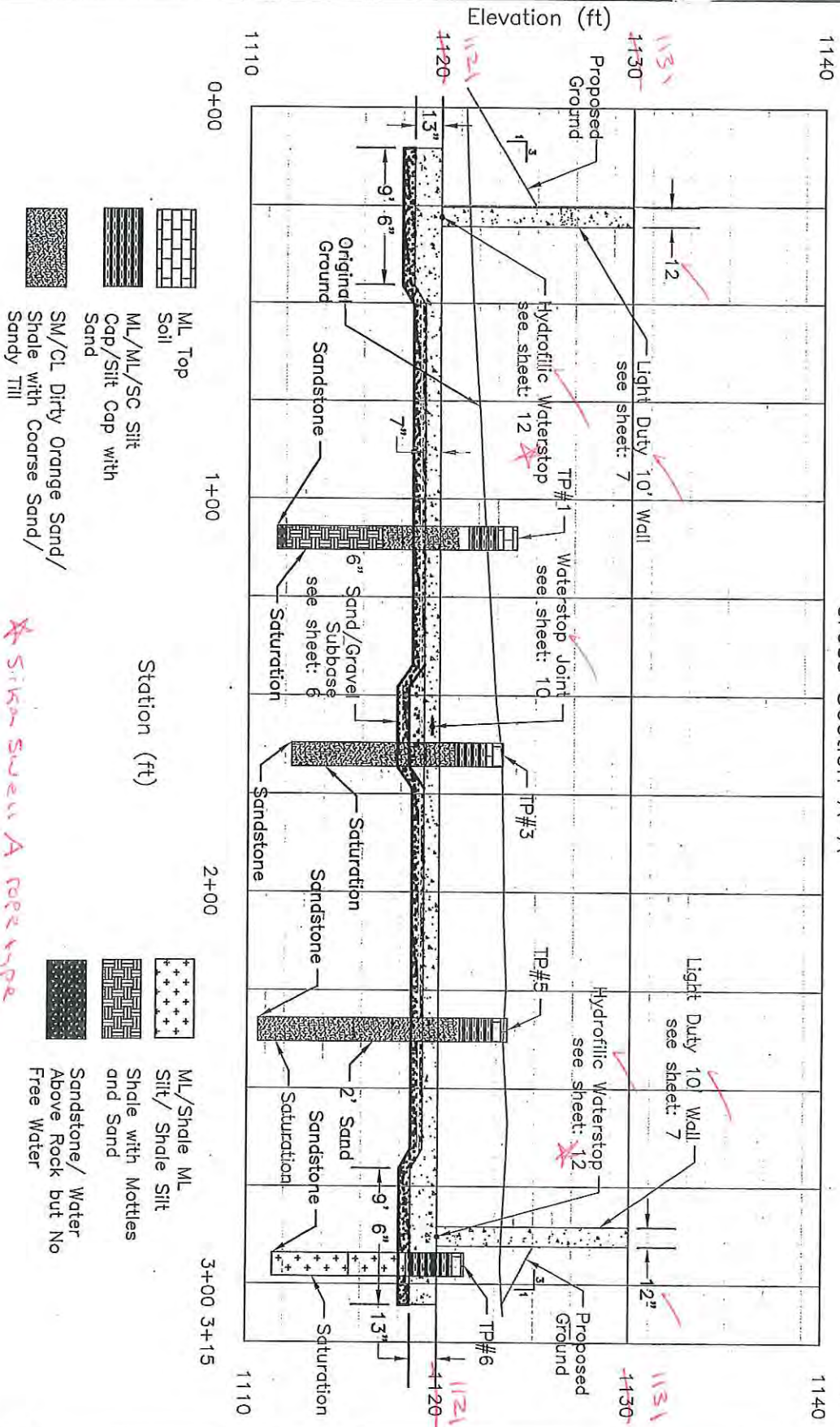


(IN FEET)
 1 inch = 40 ft.

United States Department of Agriculture
USDA
 Natural Resources Conservation Service

File Name: WI-006
 Date: 08/14
 Sheet 2 of 26

Cross Section A-A



** Sika Sewer A core type hydrophilic sealant used around entire perimeter.*



United States Department of Agriculture

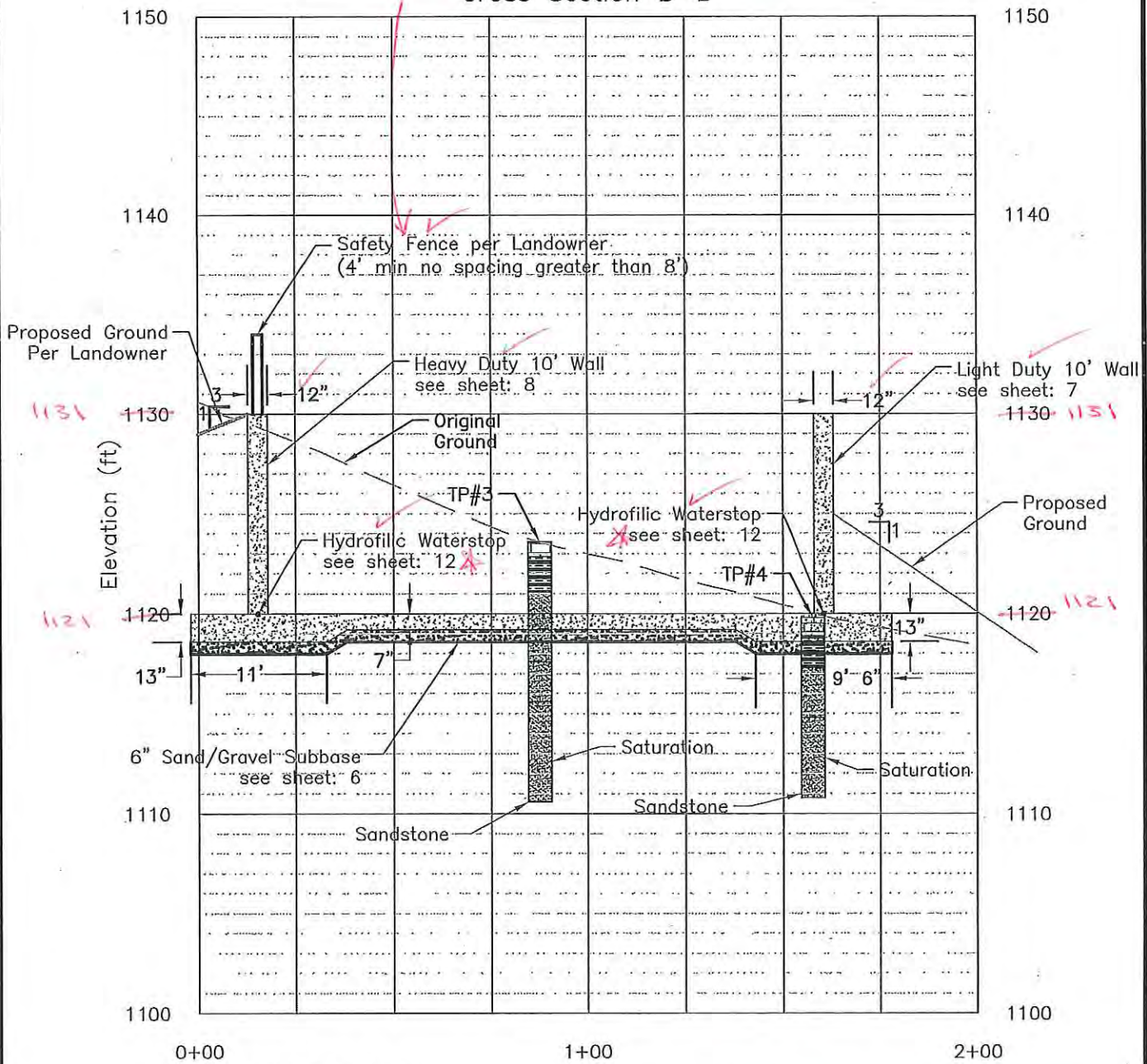
Natural Resources Conservation Service

Cross Section A-A
 CLIENT: Glen Luchterhand
 COUNTY: CLARK

Designed L. HART
 Drawn _____
 Checked _____
 Approved _____

Date 3/2015
 File Name WI-007
 Date 08/14
 Sheet 3 of 26

4x4 posts placed in wall brackets with wire paneling attached to posts.
 Cross Section B-B



- Station (ft)
-  ML Top Soil
 -  ML/ML/CL Silt Cap/Silt Cap with Sand
 -  SM/CL Dirty Orange Sand/Shale with Coarse Sand/Sandy Till

** SikaSwell A rope type hydrophilic sealant used around entire perimeter.*



United States Department of Agriculture

Natural Resources Conservation Service

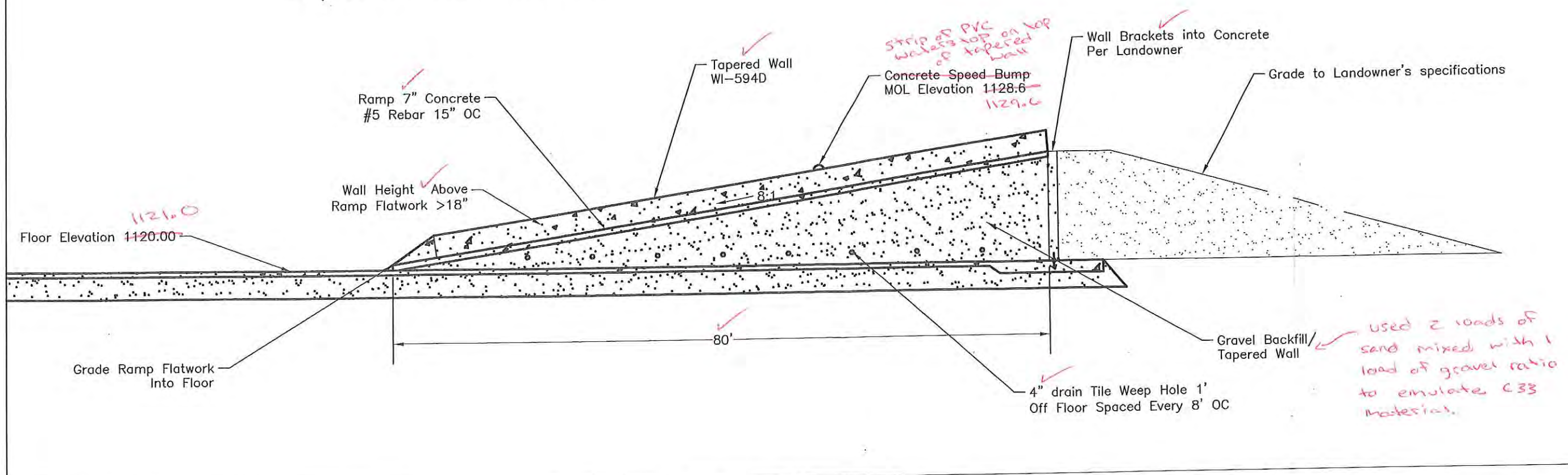
Cross Section B-B

CLIENT: Glen Luchterhand
 COUNTY: CLARK

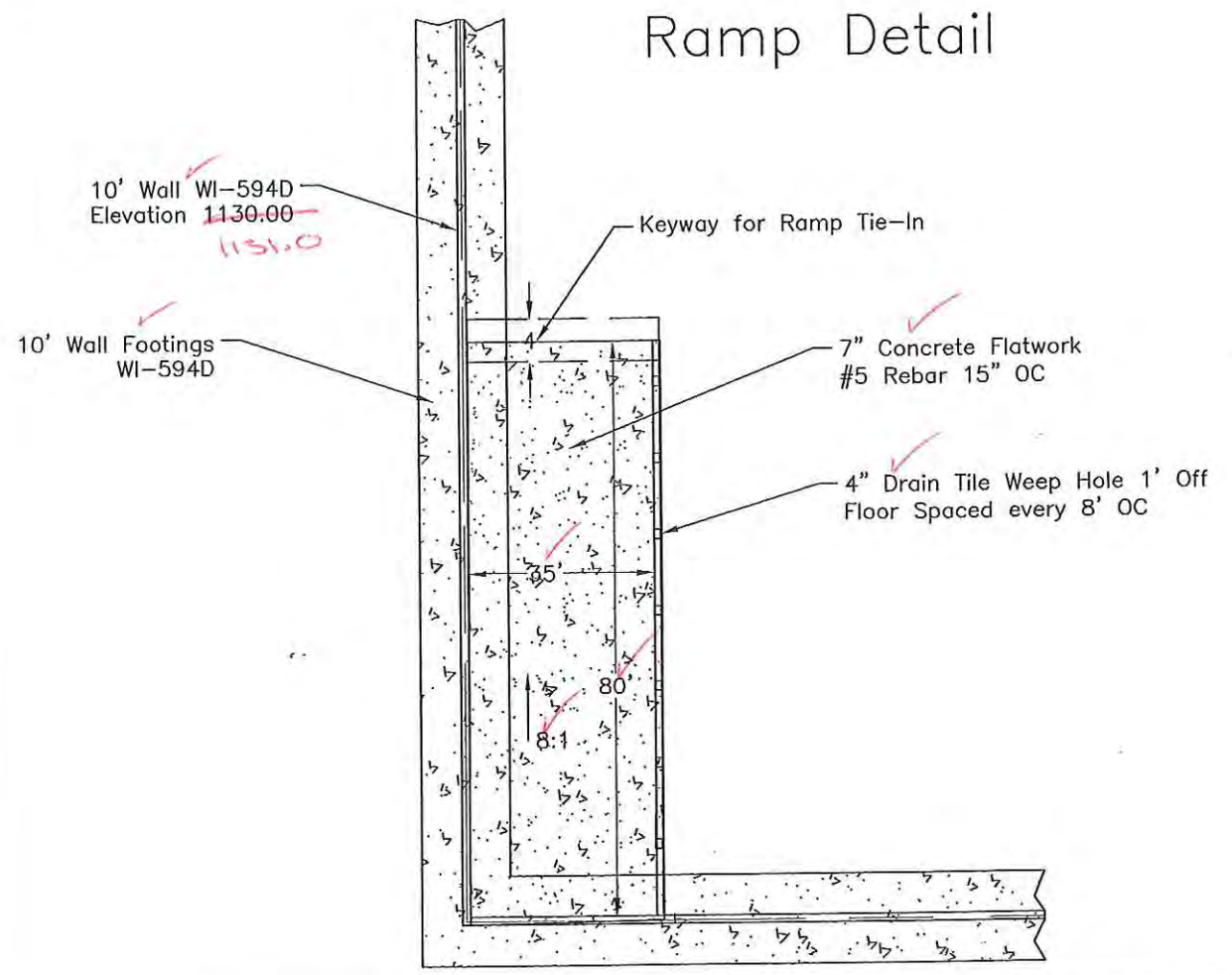
Date 3/2015
 Designed L. HART
 Drawn _____
 Checked _____
 Approved _____

File Name WI-002
 Date 08/14
 Sheet: 4 of 26

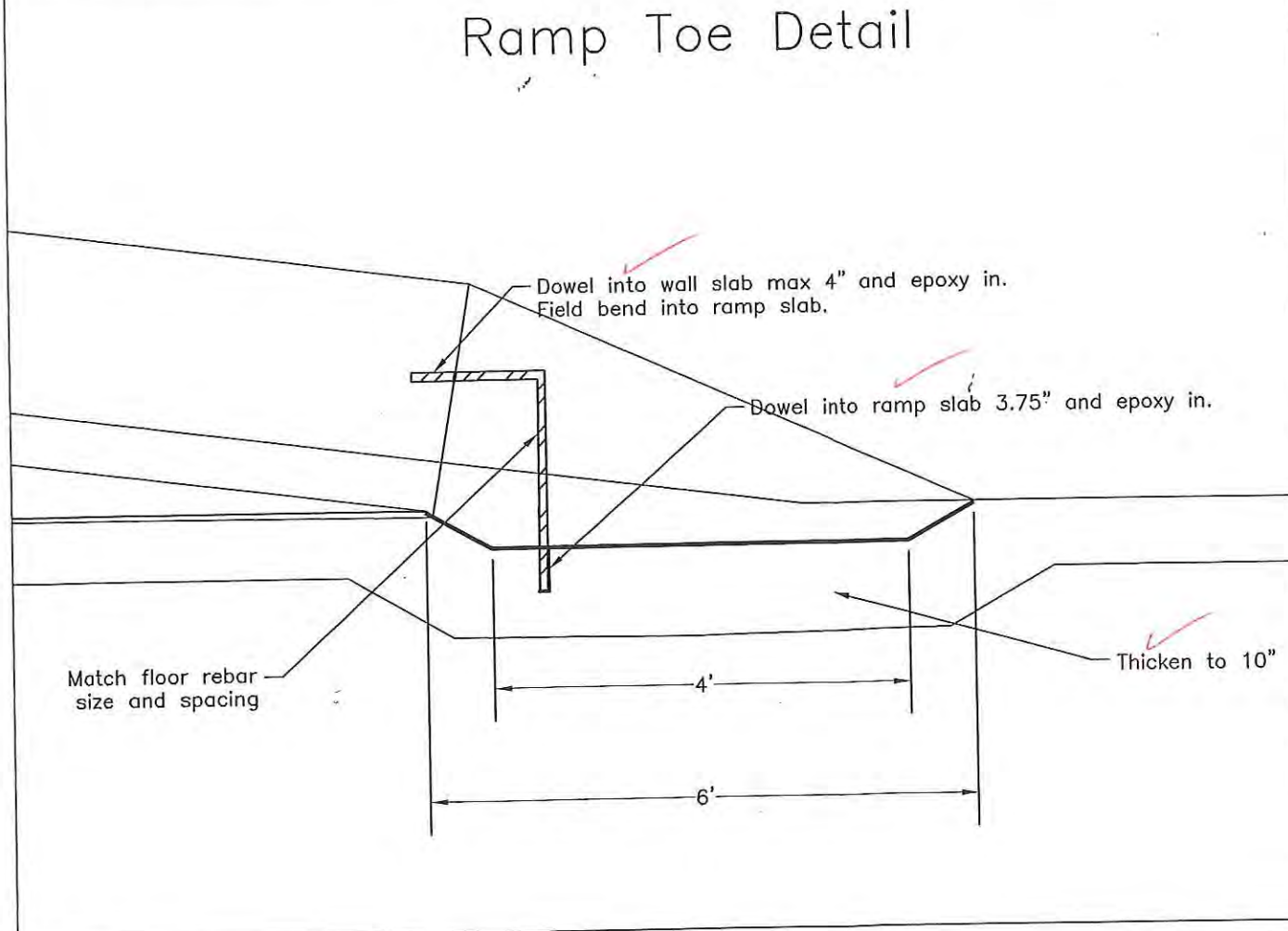
Tapered Wall Cross Section



Ramp Detail



Ramp Toe Detail



Date	3/20
Designed	L. HART
Drawn	
Checked	
Approved	

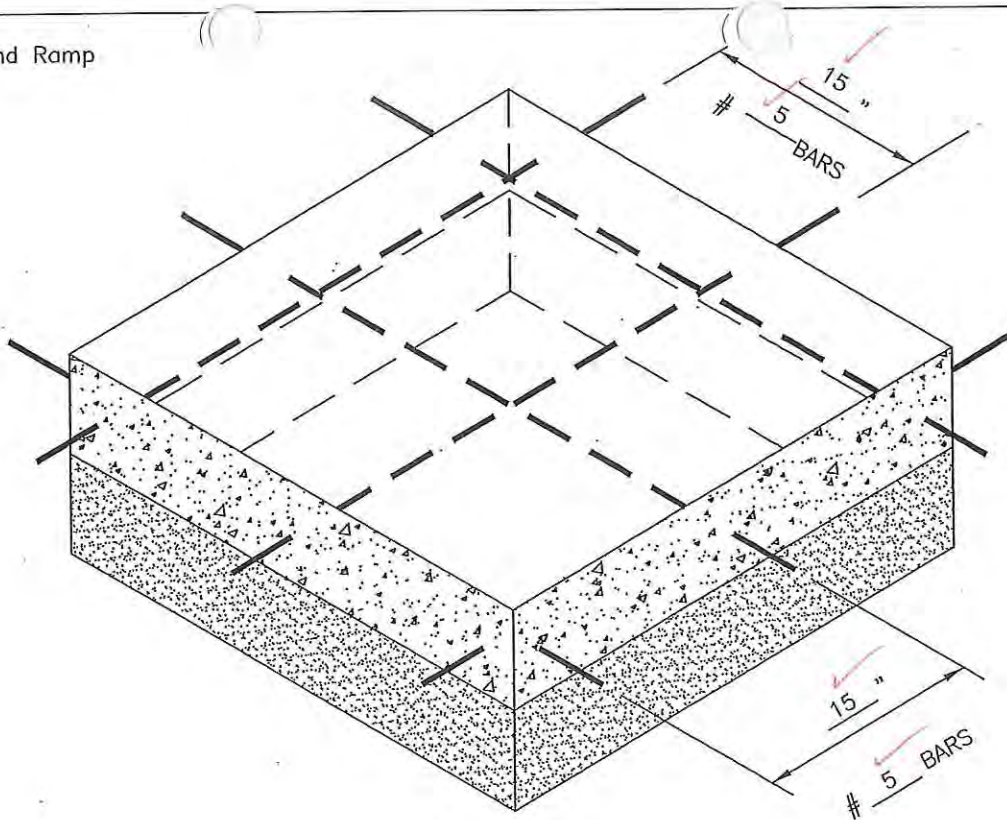
Ramp Detail

OWNER: Glen Luchterhand
 COUNTY: CLARK

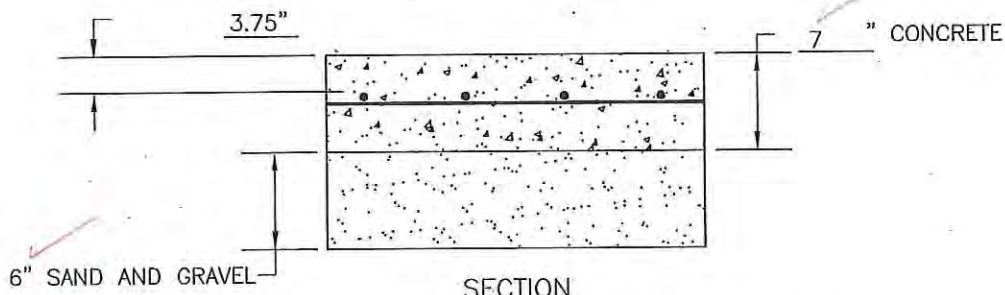


File Name	WI-006
Date	08/14
Sheet	5 of 26

Pit Floor and Ramp



ISOMETRIC VIEW



SECTION

QUANTITY ESTIMATES

CONCRETE WCS #4 _____ 771 CU. YDS.
 (WISCONSIN CONSTRUCTION SPECIFICATION)
 STEEL _____ 71,402 LBS.
 SAND/GRAVEL _____ 1,237 CU. YDS.

*Done per plan
 but quantities
 not verified*

NOTES:

1. SEE SHEET _____ OF _____ FOR JOINT DETAILS.

GRADE 40 STEEL
 3500 psi 28-DAY CONCRETE STRENGTH

BAR SIZE	SPLICE LENGTH
3	12"
4	12"
5	13"
6	16"

CIRCLE TABLE
 THAT APPLIES

GRADE 60 STEEL
 3500 psi 28-DAY CONCRETE STRENGTH

BAR SIZE	SPLICE LENGTH
3	12"
4	16"
5	20"
6	24"



United States
 Department of
 Agriculture

Natural Resources
 Conservation Service

CONCRETE SLAB REINFORCEMENT
 DEFORMED STEEL

CLIENT: Glen Luchterhand
 COUNTY: Clark

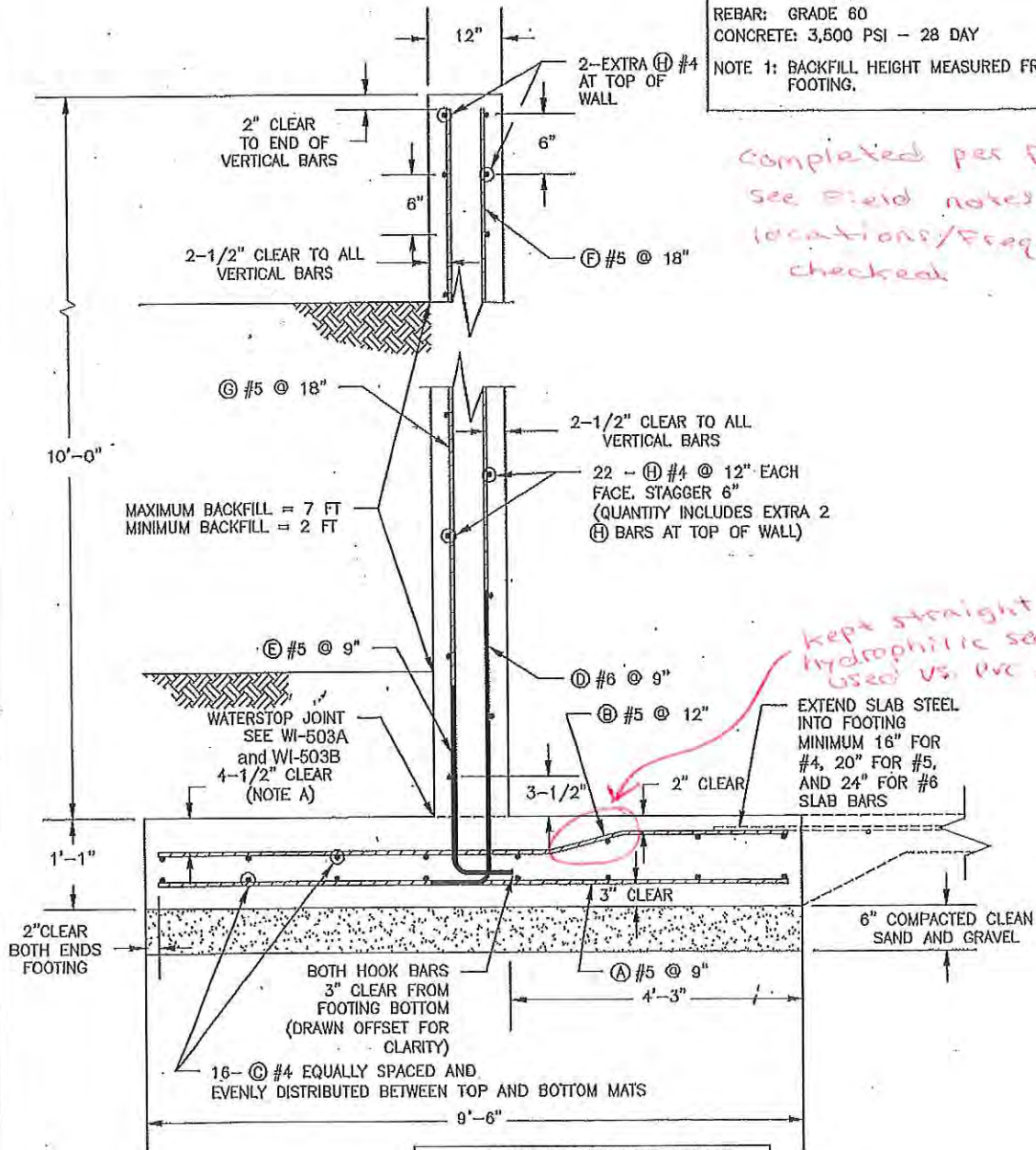
Designed L. Hart Date 2/2015
 Drawn _____
 Checked _____
 Approved _____

File Name WI-565
 Date 06/14

Light Duty Wall

CONDITIONS OF USE

BACKFILL: 2 TO 7 FT (NOTE 1)
 0 TO 100% FINES
 MACHINERY LOADING CONDITIONS ALLOWED: (SEE WI-592)
 • NON STRUCTURAL SLAB ADJACENT TO WALL(B)
 • SOIL (C)
 REBAR: GRADE 60
 CONCRETE: 3,500 PSI - 28 DAY
 NOTE 1: BACKFILL HEIGHT MEASURED FROM TOP OF FOOTING.



MATERIAL SPECIFICATIONS.

CONCRETE & REBAR: WI CONST SPEC 4
 SAND AND GRAVEL: WI CONST SPEC 204
 --- EXCAVATION OF WALL AREA
 --- BORROW SITE
 --- IMPORTED MATERIALS

NOTES:

A. IF USING EXPANSIVE WATERSTOP AT WALL/FOOTING JOINT, UPPER MAT OF REBAR (MARK-B BARS) IN FOOTING MAY MAINTAIN 2" CLEAR FROM FOOTING TOP THROUGHOUT (STRAIGHT BARS)

WI-594B PAGE 1 OF 3



10 FOOT TEE WALL

CLIENT: Glen Luchterhand
 COUNTY: Clark

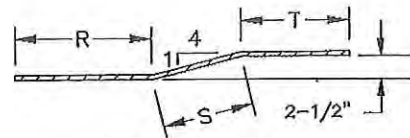
Date 3/2015
 Designed L. Hart
 Drawn _____
 Checked _____
 Approved _____

Drawing Name WI-594B
 Date 5/2014
 Sheet 7 of 26

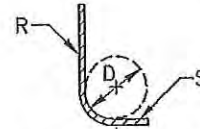
STEEL SCHEDULE (GRADE 60)

Light Duty Wall

MARK	QUAN	SIZE	TYPE	R	S	T	LENGTH	TOTAL LENGTH
A	652	5	STR	—	—	—	9'-2"	5,979
B	489	5	19	6'-4"	0'-10"	2'-0"	9'-2"	4,484
C	16	4	STR	—	—	—	—	7,824
D	652	6	2	4'-6"	1'-0"	—	5'-6"	3,586
E	652	5	2	3'-2"	0'-10"	—	4'-0"	2,608
F	326	5	STR	—	—	—	9'-10"	3,205
G	326	5	STR	—	—	—	9'-10"	3,205
H	22	4	STR	—	—	—	—	10,758
J*		4	2	2'-0"	2'-0"	—	4'-0"	
K*		4	2	2'-6"	2'-6"	—	5'-0"	
# --- BARS TOTAL LENGTH								
# --- BARS TOTAL LENGTH								
AND K # --- BARS TOTAL LENGTH								



TYPE 19 BAR



TYPE 2 BAR

Splice Length not Included

Done per plan but quantities not verified contractor used to purchase so should be close.

* MARK \odot BARS FOR CORNER DETAILS.

STEEL DETAILS

BAR SIZE	BEND DIAMETER (D) INCHES	SPLICE LENGTH INCHES (MIN.)
#4-HORIZ. WALL	3	21
#4-ALL OTHER	3	16
#5	3-3/4	20
#6	4-1/2	24

SLIDING RESTRAINT

WALLS ARE INTENDED FOR AG WASTE STORAGE FACILITIES (WSF) WITH AN OPPOSING WALL AND SIMILAR BACKFILL DEPTHS ON ALL SIDES FOR SLIDING RESTRAINT. OTHER CONDITIONS REQUIRE SLIDING RESTRAINT TO BE ANALYZED (USING A COEFFICIENT OF FRICTION BETWEEN CONCRETE AND SOIL OF 0.5 OR LESS).

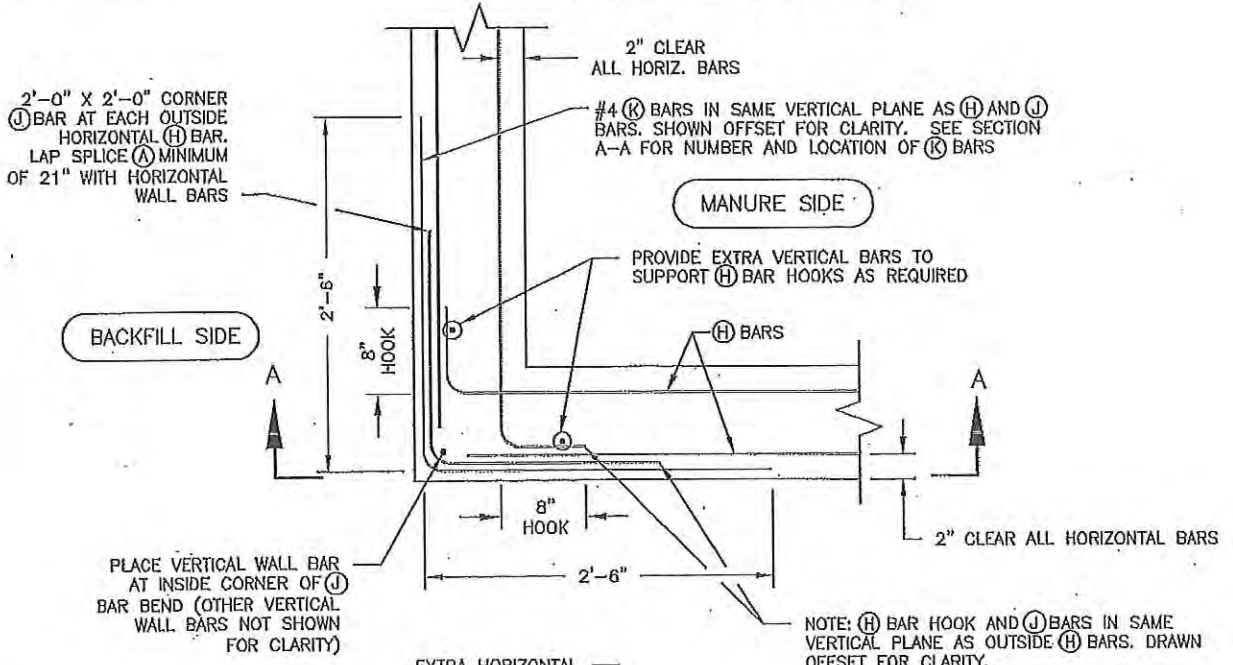
DESIGN VALUES

EARTH BACKFILL: 85 PSF/FT, EQUIVALENT FLUID PRESSURE 110 PCF (SOIL WEIGHT) AND 0 TO 100% FINES
 MANURE: 72 PSF/FT, EQUIVALENT FLUID PRESSURE
 MACHINERY LOADING: 170 PSF EQUIV. FLUID PRESSURE REPRESENTING MACHINERY LOAD ON SOIL (2-5000LB WHEEL LOADS 4 FEET APART)
 ULTIMATE STRENGTH DESIGN (ACI 318-11)
 CONCRETE STRENGTH: 3,500 PSI
 REBAR: GRADE 60
 COEFF. FRICTION (SOIL/CONCRETE) = 0.5
 MINIMUM SLIDING FACTOR OF SAFETY = 1.5
 WALL SLIDING RESTRAINT REQUIRED
 MINIMUM OVERTURNING FACTOR OF SAFETY = 2.0 MIN.
 FOOTING REACTION RESULTANT IN MIDDLE ONE-THIRD
 ALLOWABLE SUBGRADE BEARING CAPACITY = 1500 PSF
 VERTICAL WALL LOAD FOR SLABS BEARING ON WALLS OR PUSH-OFFS = 1000 LBS./FT.
 NOT DESIGNED TO SUPPORT BUILDINGS OR ROOFS

Light Duty Wall

L-CORNER BAR SCHEMATIC

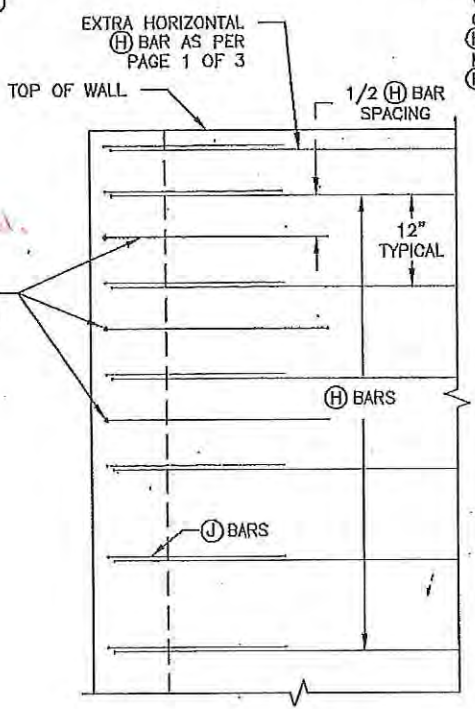
PLAN VIEW - NOT TO SCALE



PLACE VERTICAL WALL BAR AT INSIDE CORNER OF (J) BAR BEND (OTHER VERTICAL WALL BARS NOT SHOWN FOR CLARITY)

NOTE: (H) BAR HOOK AND (J) BARS IN SAME VERTICAL PLANE AS OUTSIDE (H) BARS. DRAWN OFFSET FOR CLARITY. (H) BAR HOOK MAY BE SEPARATE BAR WITH MINIMUM 21" LAP SPLICE WITH HORIZONTAL (H) BARS.

Completed per plan, see field books notes for locations checked.



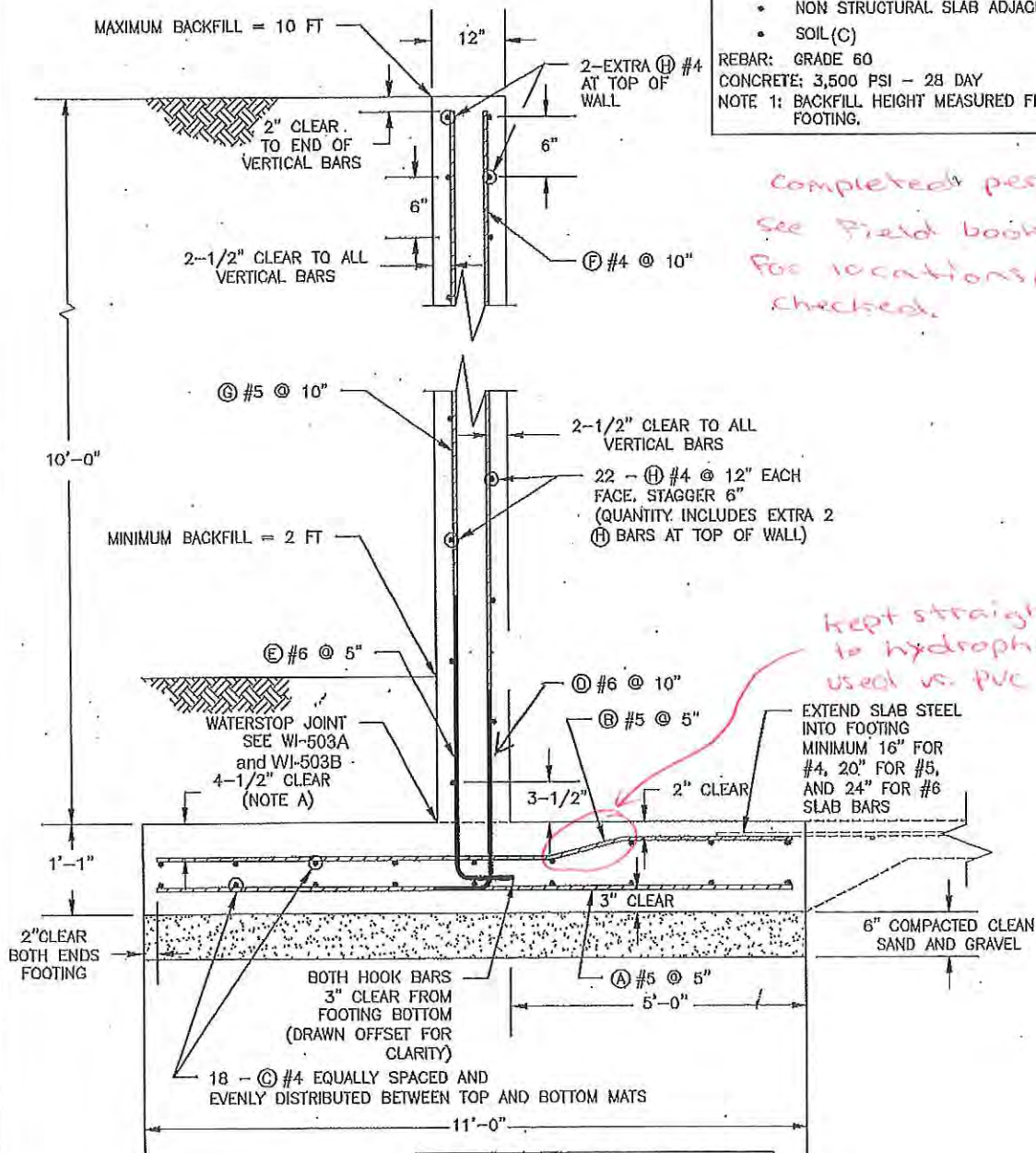
SECTION A-A
(NOT TO SCALE)
OUTSIDE HORIZONTAL BARS
(VERTICAL BARS AND INSIDE HORIZONTAL BARS NOT SHOWN FOR CLARITY)

1. NO VERTICAL WALL JOINT WITHIN 5' OF CORNER.
2. SEE WALL SECTION FOR EXACT LOCATION OF H BARS AND VERTICAL WALL STEEL.
3. CONTRACTOR MAY EXTEND HORIZ. WALL (H) BAR WITH 2'-0" 90° HOOKS IN LIEU OF PROVIDING ADDED (J) CORNER BARS.

Heavy Duty Wall

CONDITIONS OF USE

BACKFILL: 2 TO 10 FT (NOTE 1)
 0 TO 100% FINES
 MACHINERY LOADING CONDITIONS ALLOWED: (SEE WI-592)
 • STRUCTURAL SLAB OR PUSH-OFF BEARING ON WALL(A)
 • NON STRUCTURAL SLAB ADJACENT TO WALL(B)
 • SOIL(C)
 REBAR: GRADE 60
 CONCRETE: 3,500 PSI - 28 DAY
 NOTE 1: BACKFILL HEIGHT MEASURED FROM TOP OF FOOTING.



*Completed per plan,
 see field book notes
 for locations/frequencies
 checked.*

*Kept straight due
 to hydrophilic sealant
 used vs. PVC waterstop*

MATERIAL SPECIFICATIONS

CONCRETE & REBAR: WI CONST SPEC 4
 SAND AND GRAVEL: WI CONST SPEC 204
 — EXCAVATION OF WALL AREA
 — BORROW SITE
 — IMPORTED MATERIALS

NOTES:

A. IF USING EXPANSIVE WATERSTOP AT WALL/FOOTING JOINT, UPPER MAT OF REBAR (MARK-B BARS) IN FOOTING MAY MAINTAIN 2" CLEAR FROM FOOTING TOP THROUGHOUT (STRAIGHT BARS)



10 FOOT TEE WALL

CLIENT: Glen Luchterhand
 COUNTY: Clark

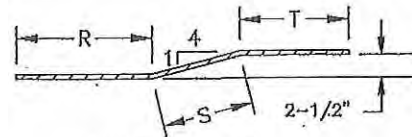
Designed L. Hart Date 3/2015
 Drawn _____
 Checked _____
 Approved _____

Drawing Name
 WI-594D
 Date
 5/2014
 Sheet 8 of 26

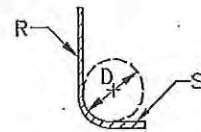
STEEL SCHEDULE (GRADE 60)

Heavy Duty Wall

MARK	QUAN	SIZE	TYPE	R	S	T	LENGTH	TOTAL LENGTH
A	836	5	STR	—	—	—	10'-8"	8,920
B	836	5	19	7'-10"	0'-10"	2'-0"	10'-8"	8,920
C	18	4	STR	—	—	—		6,318
D	423	6	2	—	—	—	5'-0"	2,115
E	836	6	2	5'-0"	1'-0"	—	6'-0"	5,016
F	423	4	STR	—	—	—	9'-10"	3,879
G	423	5	STR	—	—	—	9'-10"	3,879
H	22	4	STR	—	—	—	20'	7,722
J*		4	2	2'-0"	2'-0"	—	4'-0"	
K*		4	2	5'-0"	5'-0"	—	10'-0"	
# BARS TOTAL LENGTH								
# BARS TOTAL LENGTH								
AND K # BARS TOTAL LENGTH								



TYPE 19 BAR



TYPE 2-BAR

Splice Length not Included

Done per plan but quantities not verified, contractor used to purchase materials so should be close.

* MARK ⓐ BARS FOR CORNER DETAILS.

STEEL DETAILS

BAR SIZE	BEND DIAMETER (D) INCHES	SPLICE LENGTH INCHES (MIN.)
#4-HORIZ. WALL	3	21
#4-ALL OTHER	3	16
#5	3-3/4	20
#6	4-1/2	24

SLIDING RESTRAINT

WALLS ARE INTENDED FOR AG WASTE STORAGE FACILITIES (WSF) WITH AN OPPOSING WALL AND SIMILAR BACKFILL DEPTHS ON ALL SIDES FOR SLIDING RESTRAINT. OTHER CONDITIONS REQUIRE SLIDING RESTRAINT TO BE ANALYZED (USING A COEFFICIENT OF FRICTION BETWEEN CONCRETE AND SOIL OF 0.5 OR LESS).

DESIGN VALUES

EARTH BACKFILL: 85 PSF/FT, EQUIVALENT FLUID PRESSURE
 110 PCF (SOIL WEIGHT) AND 0 TO 100% FINES
 MANURE: 72 PSF/FT, EQUIVALENT FLUID PRESSURE
 MACHINERY LOADING: 170 PSF EQUIV. FLUID PRESSURE
 REPRESENTING MACHINERY LOAD ON SOIL (2-5000LB WHEEL LOADS 4 FEET APART)
 ULTIMATE STRENGTH DESIGN (ACI 318-11)
 CONCRETE STRENGTH: 3,500 PSI
 REBAR: GRADE 60
 COEFF. FRICTION (SOIL/CONCRETE) = 0.5
 MINIMUM SLIDING FACTOR OF SAFETY = 1.5
 WALL SLIDING RESTRAINT REQUIRED
 MINIMUM OVERTURNING FACTOR OF SAFETY = 2.0 MIN.
 FOOTING REACTION RESULTANT IN MIDDLE ONE-THIRD
 ALLOWABLE SUBGRADE BEARING CAPACITY = 1500 PSF
 VERTICAL WALL LOAD FOR SLABS BEARING ON WALLS OR
 PUSH-OFFS = 1000 LBS./FT.
 NOT DESIGNED TO SUPPORT BUILDINGS OR ROOFS

Heavy Duty Wall

L-CORNER BAR SCHEMATIC

PLAN VIEW - NOT TO SCALE

2'-0" X 2'-0" CORNER
 (J) BAR AT EACH OUTSIDE
 HORIZONTAL (H) BAR.
 LAP SPLICE (A) MINIMUM
 OF 21" WITH HORIZONTAL
 WALL BARS

BACKFILL SIDE

MANURE SIDE

PLACE VERTICAL WALL BAR
 AT INSIDE CORNER OF (J)
 BAR BEND (OTHER VERTICAL
 WALL BARS NOT SHOWN
 FOR CLARITY)

EXTRA HORIZONTAL
 (H) BAR AS PER
 PAGE 1 OF 3

TOP OF WALL

2" CLEAR
 ALL HORIZ. BARS

#4 (K) BARS IN SAME VERTICAL PLANE AS (H) AND (J)
 BARS. SHOWN OFFSET FOR CLARITY. SEE SECTION
 A-A FOR NUMBER AND LOCATION OF (K) BARS

PROVIDE EXTRA VERTICAL BARS TO
 SUPPORT (H) BAR HOOKS AS REQUIRED

5'-0"
 8" HOOK

(H) BARS

8" HOOK

2" CLEAR ALL HORIZONTAL BARS

NOTE: (H) BAR HOOK AND (J) BARS IN SAME
 VERTICAL PLANE AS OUTSIDE (H) BARS. DRAWN
 OFFSET FOR CLARITY.
 (H) BAR HOOK MAY BE SEPARATE BAR WITH
 MINIMUM 21" LAP SPLICE WITH HORIZONTAL
 (H) BARS.

13-#4 (K) BARS-PLACE
 AS SHOWN, EVENLY
 DISTRIBUTED BETWEEN
 (H) BARS

*Completed
 per plan, see
 Field book notes
 for areas checked*

12" TYPICAL



SECTION A-A

(NOT TO SCALE)
 OUTSIDE HORIZONTAL BARS
 (VERTICAL BARS AND INSIDE HORIZONTAL
 BARS NOT SHOWN FOR CLARITY)

(J) BARS

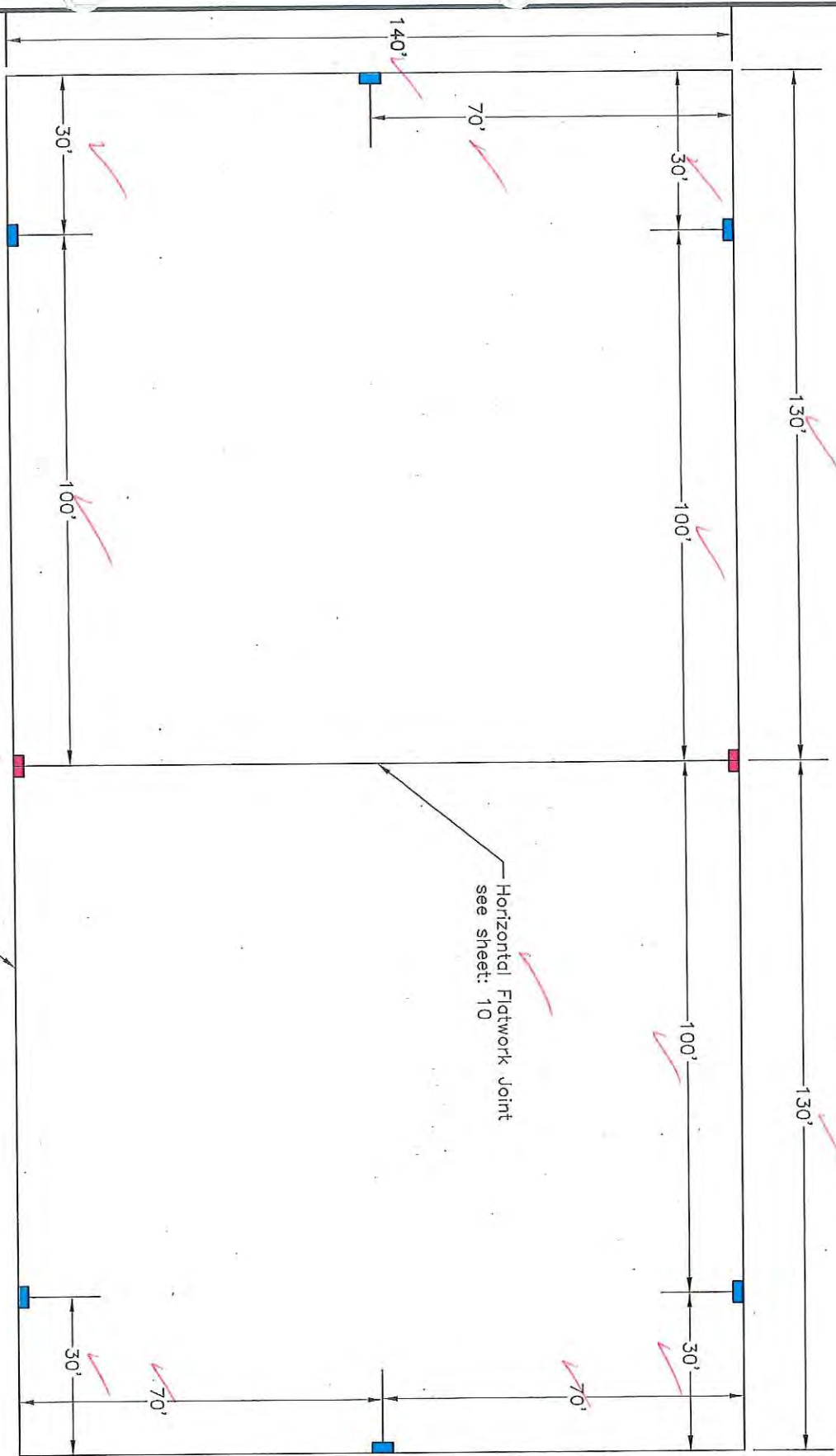
(H) BARS

1. NO VERTICAL WALL JOINT WITHIN 5' OF CORNER.
2. SEE WALL SECTION FOR EXACT LOCATION OF H. BARS AND VERTICAL WALL STEEL.
3. CONTRACTOR MAY EXTEND HORIZ. WALL (H) BAR WITH 2'-0" 90° HOOKS IN LIEU OF PROVIDING ADDED (J) CORNER BARS.

-  Vertical EII see sheet: 11
-  Vertical Wall Joint
Embedded 4" into Footing
(10'4" piece of waterstop)

Hydrophilic Waterstop Around Perimeter at Base of Wall

All joint types and locations completed per plan.



Waterstop

CLIENT: Glen Luchterhand

COUNTY: CLARK

Date 3/2015

Designed L. Hart

Drawn _____

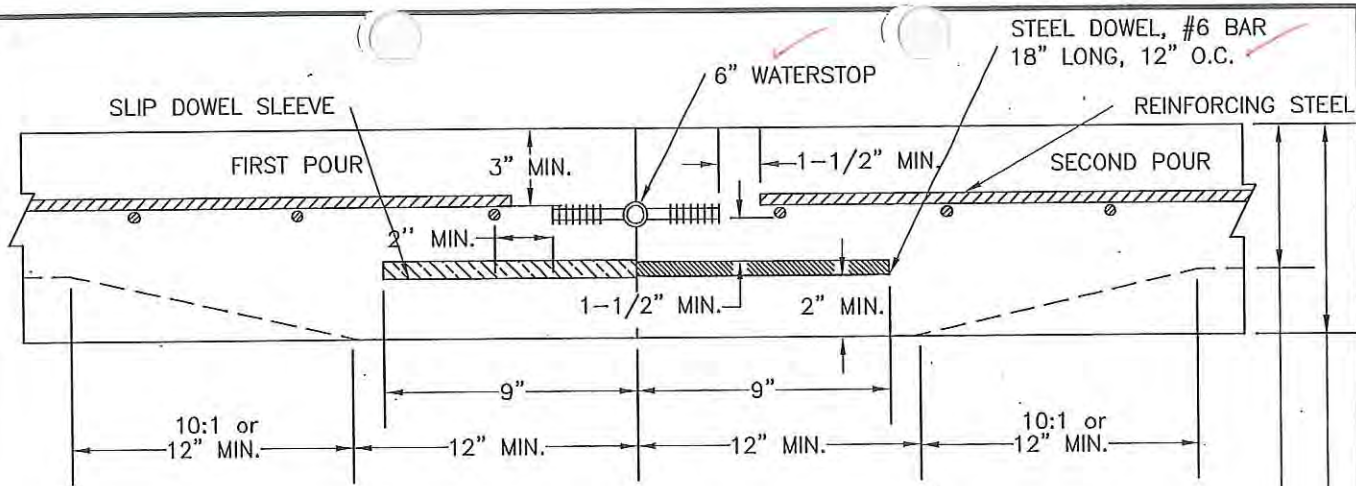
Checked _____

Approved _____

File Name WI-007

Date 08/14

Sheet 9 of 26



NOTE: THE SLAB OR WALL THICKNESS AT THE JOINT MUST BE GREATER THAN OR EQUAL TO 8".

SLAB THICKNESS = 7"
 SLAB THICKNESS AT JOINT = "
 OR
 WALL THICKNESS = 12"

CROSS SECTION OF WALL OR SLAB AT WATERSTOP JOINT

QUANTITIES

6" WATERSTOP	-----	223	LIN.FT.	STEEL DOWELS	-----	140	EACH
				DOWEL SLEEVES	-----	140	EACH

CONSTRUCTION NOTES:

1. FACTORY CORNERS AND TRANSITIONS SHALL BE USED, LEAVING ONLY STRAIGHT BUTT JOINT SPLICES FOR FIELD WELDING.
2. SEE DWG WI-506, SHEET ____, FOR FACTORY TRANSITIONS NEEDED.
3. SEE JOINT PLAN, SHEET ____, FOR LOCATIONS OF JOINTS.

INSTALLATION:

- A. POSITION THE WATERSTOP AND DOWEL AS SHOWN IN THE DRAWING.
- B. SECURE THE WATERSTOP ALONG ITS LENGTH AT THE CENTER BULB AND SUFFICIENTLY AT THE WEB TO HOLD IT IN PLACE.
- C. FOLLOW THE MANUFACTURERS RECOMMENDATIONS TO INSTALL THE DOWEL AND SLEEVE.
- D. PLACE CONCRETE WITHOUT DISPLACING THE WATERSTOP.
- E. THOROUGHLY VIBRATE CONCRETE AROUND THE WATERSTOP TO PREVENT VOIDS.
- F. AFTER THE FIRST POUR, CLEAN THE UNEMBEDDED WATERSTOP WEB TO INSURE FULL CONTACT WITH THE SECOND POUR OF CONCRETE.
- G. INSTALLATION METHODS SHALL BE IN STRICT COMPLIANCE WITH THE MANUFACTURER'S REQUIREMENTS.

This joint used for all wall joints as well as the center floor joints for walls. PVC placed to inside of wall with the dowel on outside as appropriate.

SEE REVERSE SIDE FOR ADDITIONAL INFORMATION



United States Department of Agriculture

Natural Resources Conservation Service

6" EMBEDDED WATERSTOP WITH STEEL DOWELS FOR WALLS AND SLABS

CLIENT: _____
 COUNTY: Clark

Designed L. Hart
 Date 2/2015
 Drawn _____
 Checked _____
 Approved _____

File Name WI-505D
 Date 07/14
 Sheet 10 of 26

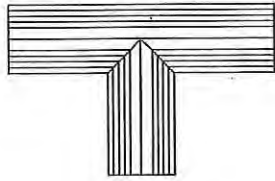
SPECIFICATIONS:

- A. WORK CONSISTS OF PROVIDING FLEXIBLE WATERSTOPS, EMBEDDED IN CONCRETE, TO SPAN CONTROL AND/OR CONSTRUCTION JOINTS.
- B. WATERSTOP MUST FORM A CONTINUOUS SEAL THROUGHOUT THE STRUCTURE.
- C. WATERSTOP IS TO BE MANUFACTURED PVC, THERMOPLASTIC ELASTOMERIC RUBBER, (TPE), OR POLYETHYLENE P.E. MATERIAL WITH A MINIMUM WEB THICKNESS OF 3/16".
- D. WATERSTOP IS TO BE FREE OF DIRT, OIL, AND DEFECTS.
- E. REINFORCING STEEL SHALL NOT PASS THROUGH CONTROL JOINTS.

*Greenstreak No. 705
of Southern Metals
& Plastics
approved
Waterstop used*

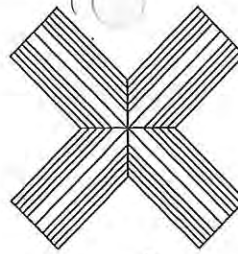
SPLICE FABRICATION:

- A. PROVIDE FACTORY FABRICATED WATERSTOP CORNERS AND TRANSITIONS LEAVING ONLY STRAIGHT BUTT JOINT SPLICES FOR FIELD FABRICATION, UNLESS SPECIFICALLY APPROVED IN WRITING BY THE MANUFACTURER AND PERFORMED IN ACCORDANCE WITH THEIR SPECIFICATIONS.
- B. USE ONLY A SPLICING IRON SPECIFICALLY RECOMMENDED BY THE MANUFACTURER FOR HEAT FUSED WELDING OF ALL SPLICES.
- C. WELDS ARE TO EXHIBIT A CONTINUOUS BEAD OF EXCESS MELTED MATERIAL, FREE OF DEFECTS.
- D. SPLICES ARE TO BE HEAT WELDED WITH THE CENTER BULB AND RIBS ALIGNED.
- E. ADHESIVES, SOLVENTS, LAP JOINTS, AND EDGE WELDING ARE NOT ACCEPTABLE.
- F. EMBEDDED WATERSTOPS MAY NOT BE WELDED OR JOINED TO OTHER WATERSTOPS OF DIFFERENT SIZE, CONFIGURATION, OR MATERIAL.



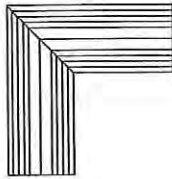
FLAT TEE

NUMBER: None



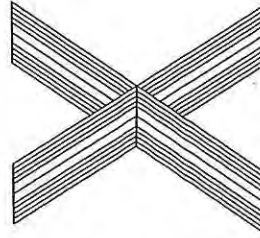
FLAT CROSS

NUMBER: None



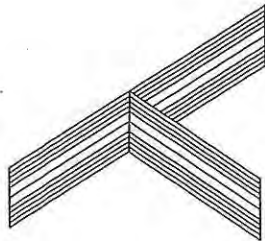
FLAT ELL

NUMBER: None



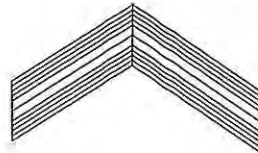
VERTICAL CROSS

NUMBER: None



VERTICAL TEE

NUMBER: None



VERTICAL ELL

NUMBER: 2 ✓

NOTES:

1. SEE SHEET ____ FOR OTHER TYPES OF FACTORY INTERSECTIONS REQUIRED.
2. PROVIDE FACTORY WELDED WATERSTOP INTERSECTIONS AS SHOWN.
3. WATERSTOP IS TO BE MANUFACTURED PVC, TPE, OR PE, WITH A MINIMUM WEB THICKNESS OF 3/16".
4. EMBEDDED WATERSTOPS MAY NOT BE WELDED OR JOINED TO OTHER WATERSTOPS OF DIFFERENT SIZE, CONFIGURATION, OR MATERIAL.

Greenstreak No. 705 approved waterstop used.



United States Department of Agriculture

Natural Resources Conservation Service

6" EMBEDDED WATERSTOP FACTORY INTERSECTIONS

CLIENT: Glen Luchterhand

COUNTY: Clark

Designed L. Hart Date 2/2015

Drawn _____

Checked _____

Approved _____

File Name WI-506

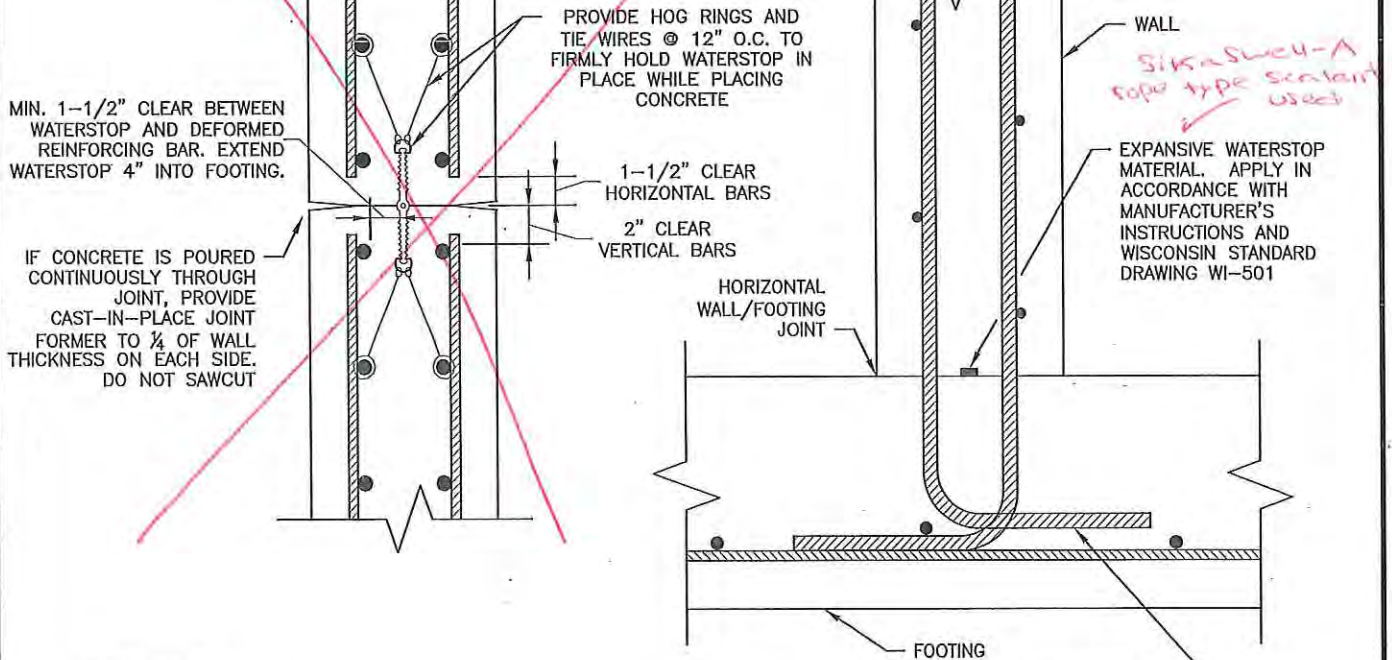
Date 07/14

Sheet 11 of 26

PLAN VIEW
NOT TO SCALE

Not used for any joints. See Sheet 10

CROSS SECTION
NOT TO SCALE



QUANTITIES

6" MECHANICAL WATERSTOP	_____	83	LIN.FT.
EXPANSIVE WATERSTOP	_____	800	LIN.FT.

BOTH HOOK BARS
3" CLEAR FROM FOOTING
BOTTOM (DRAWN OFFSET
FOR CLARITY)

CONSTRUCTION NOTES:

1. FACTORY CORNERS AND TRANSITIONS SHALL BE USED, LEAVING ONLY STRAIGHT BUTT JOINT SPLICES FOR FIELD WELDING OF EMBEDDED WATERSTOP.
2. SEE DWG WI-506, SHEET ____, FOR FACTORY TRANSITIONS NEEDED.
3. SEE JOINT PLAN, SHEET ____, FOR LOCATIONS OF JOINTS.
4. PROVIDE PVC WATERSTOP WITH FACTORY INSTALLED HOG RINGS OR GROMMETS IF THE OPTION IS AVAILABLE FROM THE WATERSTOP MANUFACTURER.

WATERSTOP INSTALLATION:

1. WATERSTOP MATERIALS AND INSTALLATION—SEE WISCONSIN NRCS CONSTRUCTION SPECIFICATION 4 - "CONCRETE".
2. INSTALL WATERSTOP IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
3. REINFORCING STEEL SHALL NOT PASS THROUGH VERTICAL WALL CONTROL JOINTS.
4. USE ONLY SPlicing IRON SPECIFICALLY RECOMMENDED BY THE MANUFACTURER FOR HEAT FUSED WELDING OF ALL EMBEDDED WATERSTOP SPLICES.
5. CENTER THE WATERSTOP ON THE JOINT.
6. SECURE THE EMBEDDED WATERSTOP ALONG ITS LENGTH AT THE CENTER OF THE BULB.
7. PLACE CONCRETE WITHOUT DISPLACING THE WATERSTOP.
8. THOROUGHLY VIBRATE THE CONCRETE AROUND THE WATERSTOP TO PREVENT VOIDS.
9. VERTICAL WALL JOINTS: CONCRETE MAY BE PLACED THROUGH JOINT AS SHOWN IF A JOINT FORMER IS INSTALLED.
10. IF THE WALL CONCRETE IS PLACED IN 2 SEPARATE POURS, CLEAN THE UNEMBEDDED WATERSTOP WEB AFTER THE FIRST POUR TO INSURE FULL CONTACT WITH THE SECOND POUR OF CONCRETE.

Hydrophilic sealant was packed down w/ primer and nails per manu. recommendations. cure time was achieved.



JOINT DETAILS FOR WASTE IMPOUNDMENT STRUCTURES WITH FIXED-BASE WALLS (TEE OR "L" WALL): EXPANSIVE WATERSTOP
 CLIENT: Glen Luchterhand
 COUNTY: Clark

Date
 Designed L. Hart 5/2015
 Drawn _____
 Checked _____
 Approved _____

Drawing No. WI-503B
 Date 06/14
 Sheet 12 of 26

USE OF EXPANSIVE WATERSTOP MATERIALS IN WASTE MANAGEMENT PRACTICES

MATERIAL

EXPANSIVE WATERSTOPS SHALL CONSIST OF PREFORMED STRIPS OR MASTIC (CAULK) MADE OF HYDROPHILIC MATERIALS THAT EXPAND WHEN SUBJECTED TO MOISTURE OR THE MATERIAL BEING STORED. THEY SHALL NOT CONTAIN BENTONITE.

THE CONTRACTOR SHALL PROVIDE THE SPECIFICATIONS FOR THE MATERIAL TO BE USED FOR APPROVAL SEVEN (7) DAYS PRIOR TO USE. THE SPECIFICATIONS SHALL INCLUDE THE APPLICABILITY OF THE MATERIAL FOR THE USE INTENDED.

CONSTRUCTION NOTES

1. THE CONTRACTOR SHALL PROVIDE A COPY OF THE MANUFACTURER'S INSTALLATION INSTRUCTIONS/SPECIFICATIONS FOR APPROVAL SEVEN (7) DAYS PRIOR TO USE.
2. EXPANSIVE WATERSTOP SHALL BE PLACED AT THE LOCATIONS SHOWN ON THE DRAWINGS.
3. THE EXPANSIVE WATERSTOP SHALL BE INSTALLED IN STRICT COMPLIANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND INSTRUCTIONS, INCLUDING BUT NOT LIMITED TO:
 - A. CLEANING OF SURFACES
 - B. SURFACE PREPARATION
 - C. APPLICATION OF ADHESIVES (AND CURING) OR MECHANICAL FASTENING
 - D. APPLICATION OF EXPANSIVE WATERSTOP
 - E. CURING OF EXPANSIVE WATERSTOP
4. REQUIRED ADHESIVE OR OTHER FORMS OF MECHANICAL FASTENING TO EXISTING CONCRETE SHALL FOLLOW THE MANUFACTURER'S INSTRUCTIONS.
5. ADHESIVE FOR PREFORMED EXPANSIVE WATERSTOP AND THE MASTIC FOR CAULK TYPE EXPANSIVE WATERSTOP SHALL BE ALLOWED TO CURE FOR THE DURATION AS INDICATED BY THE MANUFACTURER PRIOR TO PLACING CONCRETE OVER THE WATERSTOP. THE REQUIRED CURING TIME WILL BE TEMPERATURE DEPENDENT.
6. MASTIC (CAULK) SHALL BE PLACED TO THE BEAD SIZE AS RECOMMENDED BY THE MANUFACTURER BASED ON THE AMOUNT OF CONCRETE COVER PROVIDED.
7. THE EXPANSIVE WATERSTOP SHALL NOT BE ALLOWED TO BECOME WET PRIOR TO PLACING CONCRETE OVER THE WATERSTOP. MATERIAL THAT HAS EXPANDED PRIOR TO CONCRETE PLACEMENT SHALL BE REMOVED AND REPLACED FOLLOWING ALL OF THE INITIAL INSTALLATION REQUIREMENTS.

Sika-swell A rope type hydrophilic sealant used on wall perimeter joint sealant was secured w/ primer and nails per manufacturer's recommendations. Cure time was achieved.

Leakmaster LV-1 was used on pipe penetrations along with rubber expanding rings.



United States
Department of
Agriculture

Natural Resources
Conservation Service

USE OF EXPANSIVE WATERSTOP MATERIALS

CLIENT: Glen Luchterhand

COUNTY: CLARK

Designed L. HART Date 3/2015

Drawn _____

Checked _____

Approved _____

File Name

WI-501

Date

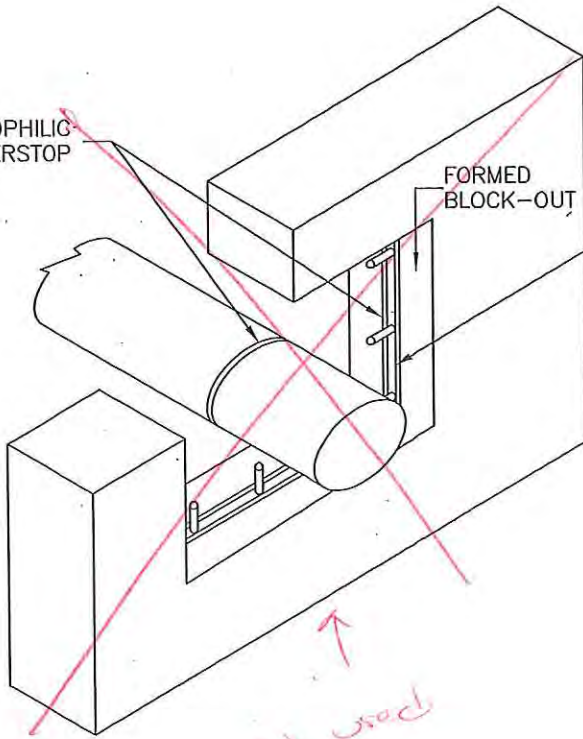
07/14

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HYDROPHILIC WATERSTOP

FORMED BLOCK-OUT

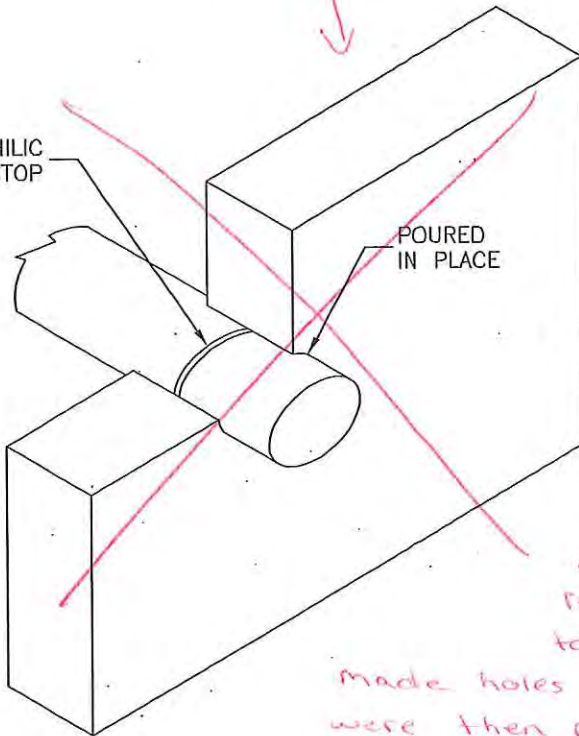
REINFORCING STEEL DOWELS ____" MIN.
____ @ ____" OC AROUND OPENING



Not used

HYDROPHILIC WATERSTOP

POURED IN PLACE



CONSTRUCTION NOTES

1. THESE JOINT DRAWINGS ARE TO BE ADAPTED TO A SPECIFIC STRUCTURE OR SYSTEM. FOR THE JOINT LOCATION PLAN SEE SHEET _____.
2. WATERSTOP DIMENSIONS SHALL BE BASED ON MANUFACTURER'S REQUIREMENTS FOR MINIMUM COVER.
3. THE WATERSTOP SHALL BE APPLIED TO EVEN SURFACES, FREE OF DIRT, OIL, OR LAITANCE.
4. THE WATERSTOP MUST BE BONDED TO THE CONCRETE AND/OR PIPE PRIOR TO PLACEMENT OF ADJOINING CONCRETE.
5. THE MANUFACTURER'S INSTALLATION INSTRUCTIONS SHALL BE FOLLOWED FOR WATERSTOP SPLICING AND ADDITIONAL INSTALLATION REQUIREMENTS.
6. SEE WI-501 FOR FURTHER DETAILS
7. MAXIMUM PIPE SIZE 24" DIAMETER.
8. REINFORCING STEEL REMOVED BY THE PENETRATION MUST BE REPLACED. SEE SHEET _____.

As approved by me, black rubber boots were used similar to ones used in manholes. Crew made holes in forms to match boots, boots were then placed in hole w/ Leakmaster LV-1 between boots and concrete then expander ring engaged. Pipe clamps used to seal boots to the pipe.



United States
Department of
Agriculture

Natural Resources
Conservation Service

LIQUID TIGHT PIPE PENETRATIONS

CLIENT: Glen Luchterhand

COUNTY: Clark

Designed L. Hart Date 2/2015

Drawn _____

Checked _____

Approved _____

File Name
WI-509

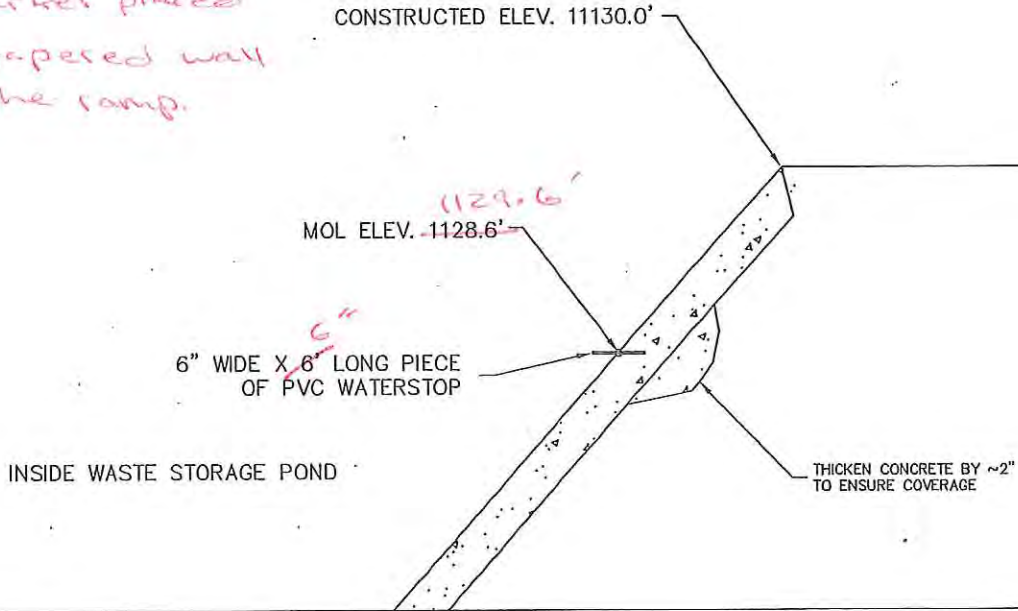
Date
08/14

Sheet 14 of 26

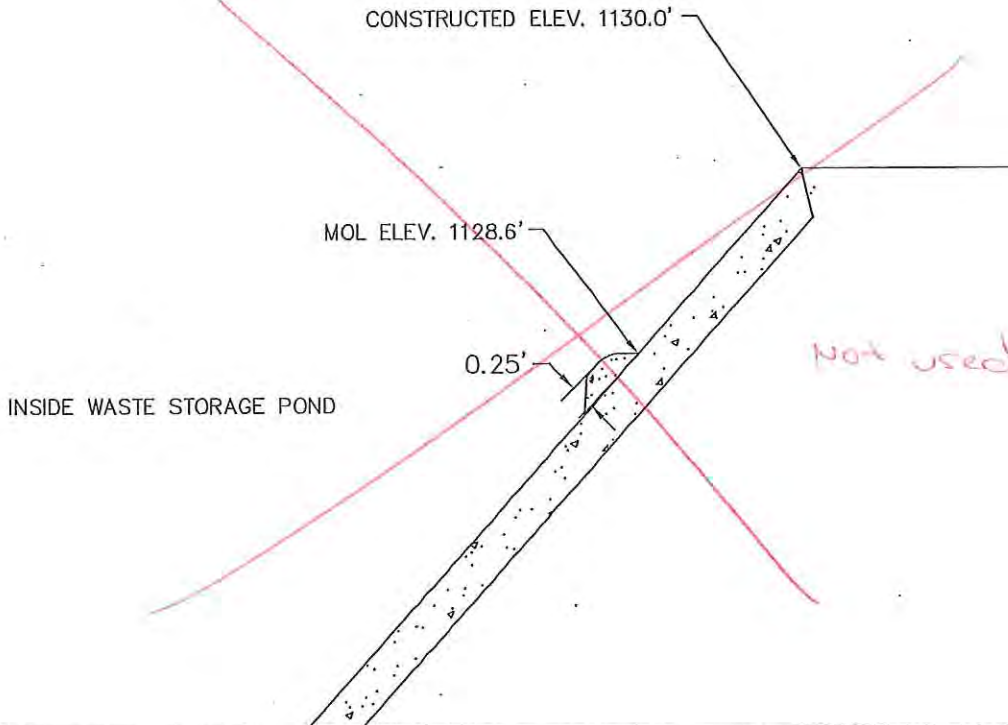
6" PVC WATERSTOP STRIP

- NOTES: 1. MOL MARKER SHOULD BE LOCATED ON ALL 4' PIT SIDESLOPES
 2. EXACT MARKER LOCATIONS TO BE DETERMINED BY LANDOWNER
 3. OTHER OPTIONS AVAILABLE SUBJECT TO TECHNICIAN APPROVAL

1 Marker placed on tapered wall by the ramp.



4" CONCRETE BENCH

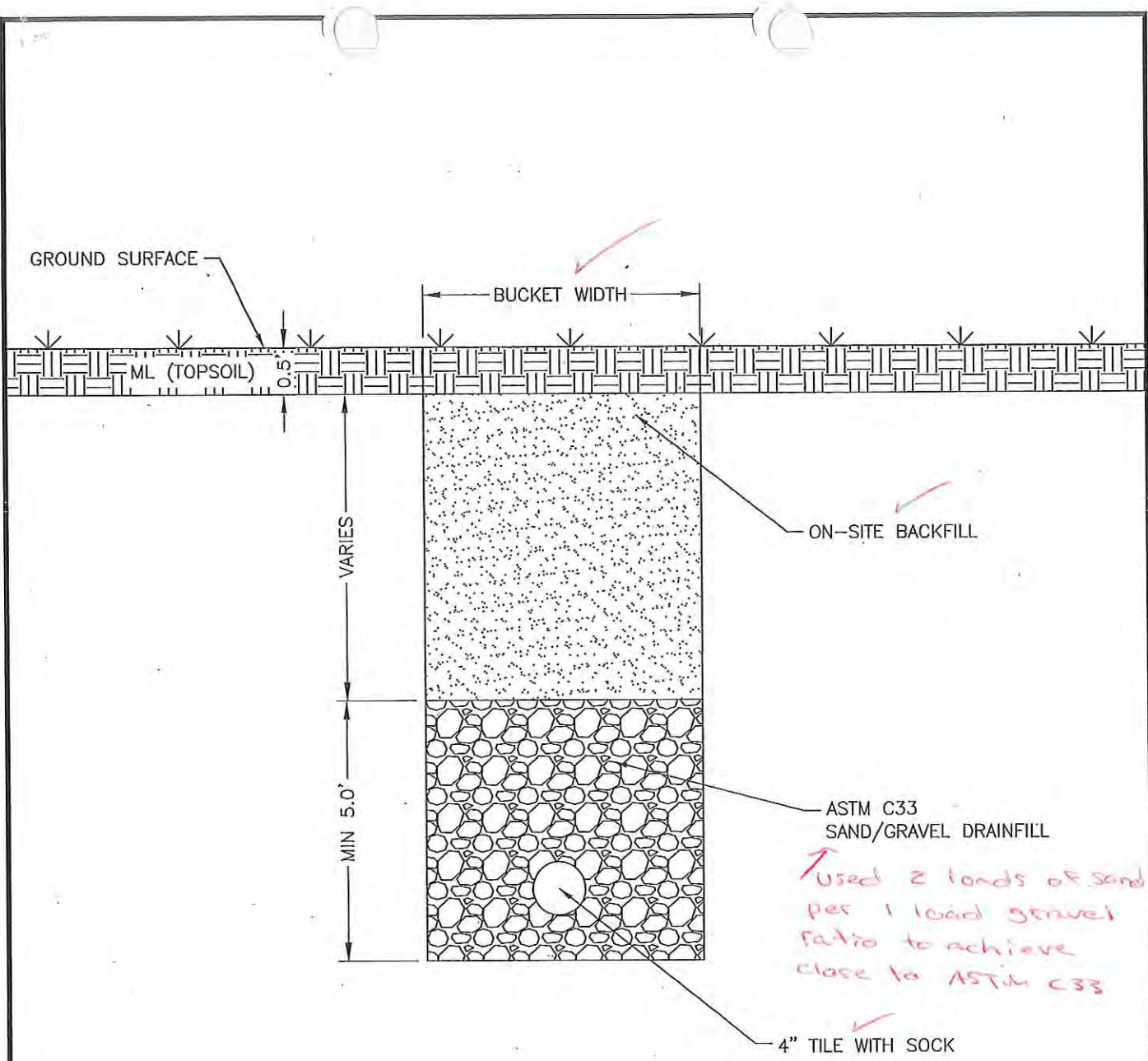


MAXIMUM OPERATING LEVEL (MOL) DETAILS

CLIENT: Glen Luchterhand
 COUNTY: Clark

Designed _____ Date _____
 Drawn _____
 Checked _____
 Approved _____

Drawing Name: WI-011
 Date: 4/2009
 Sheet 15 of 26



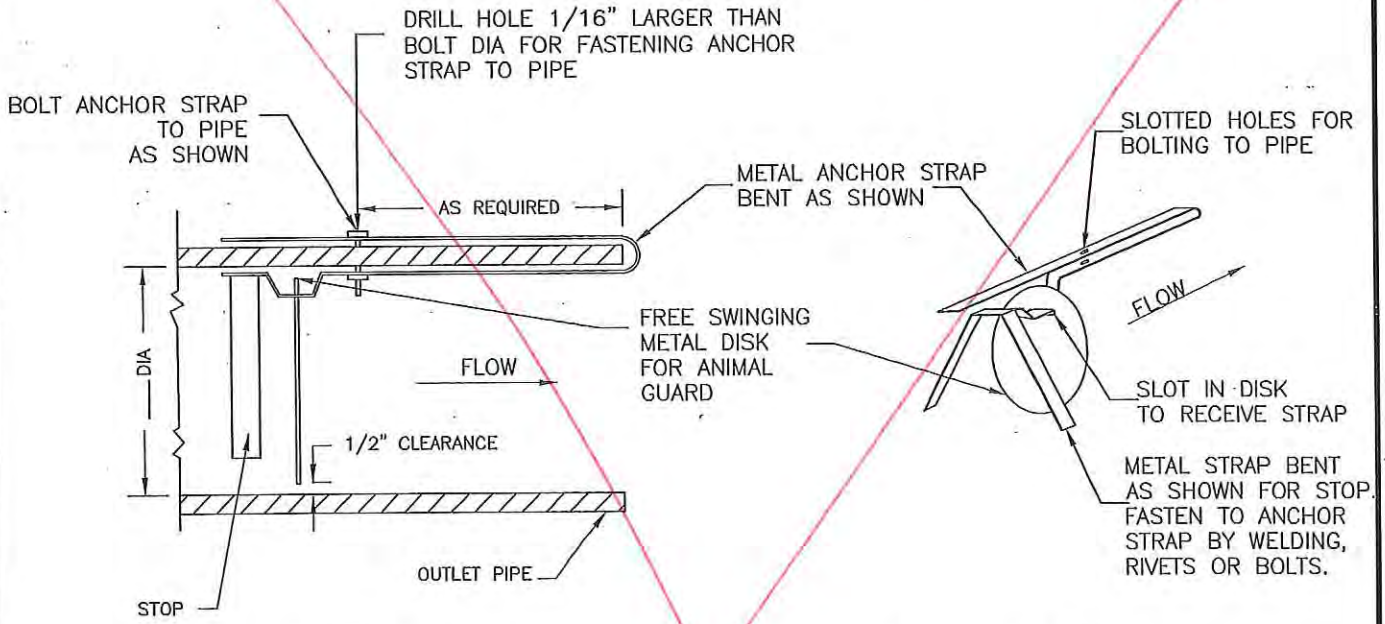
Could see seeps in sidehill, drain fill brought up high enough per contractor to catch all seeps.

- NOTES:**
1. GREATER THAN 5' OF DRAINFILL MATERIAL MAY BE NEEDED TO CATCH ALL WATER SEEPS ENCOUNTERED IN THE TRENCH. TECHNICIAN TO BE NOTIFIED OF TILE CONSTRUCTION TO VERIFY PROPER DEPTH OF DRAINFILL MATERIALS.
 2. DRAINFILL MATERIALS SHALL BE SAND, GRAVEL, CRUSHED STONE, OR MIXTURES THEREOF. THE MATERIAL SHALL BE CLEAN, HARD DURABLE PARTICLES FREE FROM ORGANIC MATTER OR OTHER SUBSTANCES THAT WOULD INTERFERE WITH FREE-DRAINING PROPERTIES.
 3. THE GRADATION SHALL MEET ASTM C33.
 4. ONCE TILE WITH BACKFILL IS PAST THE NORTHWEST CORNER OF THE PIT NO DRAINFILL IS NEEDED. EXACT LOCATION OF TRANSITION FROM TILE WITH DRAINFILL TO NO DRAINFILL WILL BE DETERMINED BY TECHNICIAN IN THE FIELD.

Used 2 loads of sand per 1 load gravel ratio to achieve close to ASTM C33

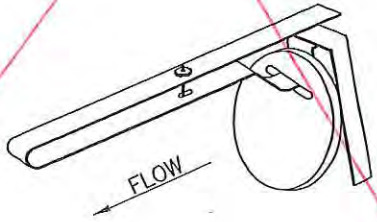
NOTE: ANIMAL GUARD SHALL BE FABRICATED OF MATERIAL THAT RESISTS CORROSION AND IS COMPATIBLE WITH THE OUTLET PIPE.

Not used

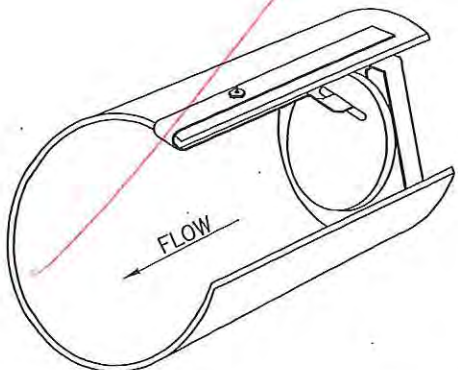


SECTION

PERSPECTIVE VIEW FROM BACK



PERSPECTIVE VIEWS FROM OUTLET END OF PIPE



SEE REVERSE SIDE FOR ADDITIONAL INFORMATION



United States Department of Agriculture

ANIMAL GUARDS FOR TILE OUTLETS

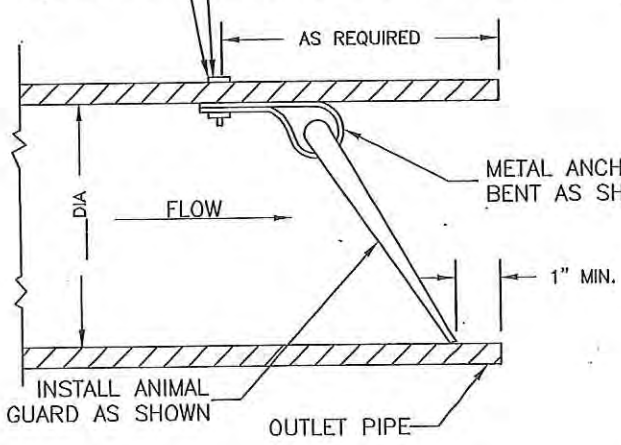
CLIENT: Glen Luchterhand
 COUNTY: CLARK

Date 3/2015
 Designed L. HART
 Drawn _____
 Checked _____
 Approved _____

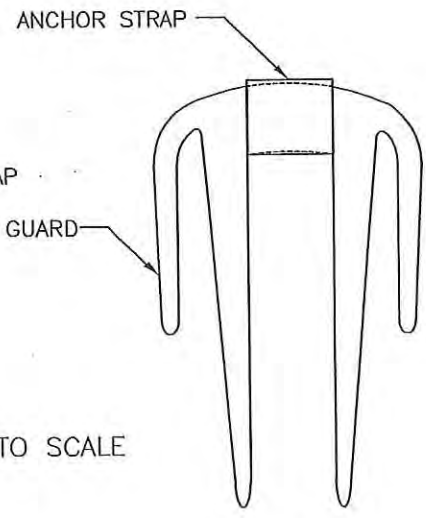
File Name WI-602
 Date 07/14
 Sheet 17 of 26

This style used on tile outlet pipe.

BOLT ANCHOR STRAP TO PIPE AS SHOWN
DRILL HOLE IN PIPE 1/16" LARGER THAN BOLT DIA. FOR FASTENING ANCHOR STRAP TO PIPE.



SECTION ON CENTERLINE



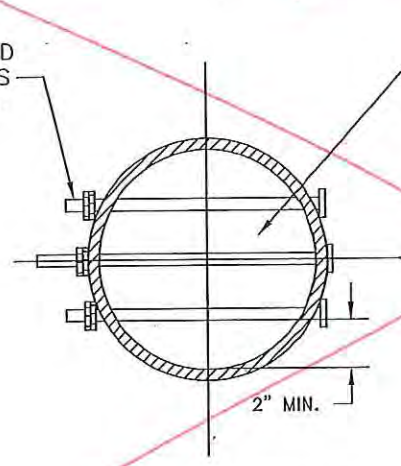
NOT TO SCALE

END VIEW

NOTE: ANIMAL GUARD SHALL BE FABRICATED OF MATERIAL THAT RESISTS CORROSION AND IS COMPATIBLE WITH THE OUTLET PIPE.

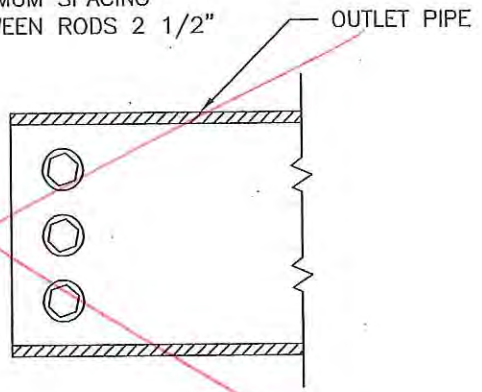
Not used

USE 3/8" THREADED ROD, WITH WASHERS AND DOUBLE NUTS ON EACH END.



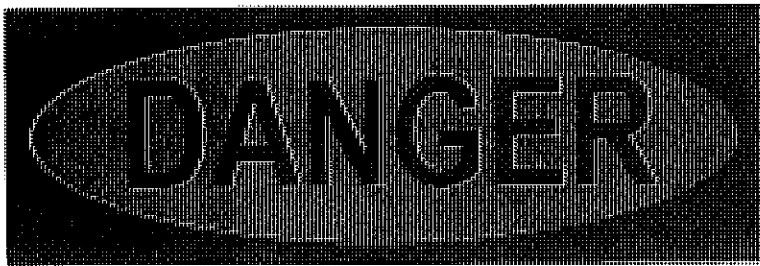
END ELEVATION

MAXIMUM SPACING BETWEEN RODS 2 1/2"

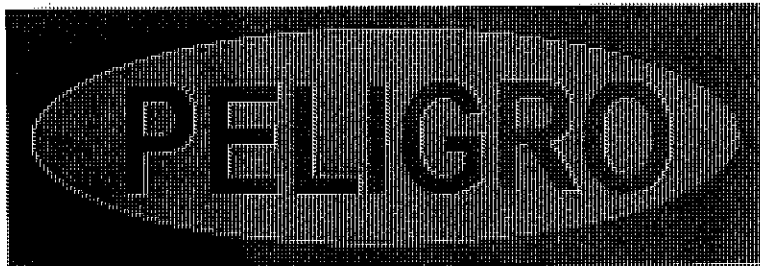


SIDE ELEVATION
Not to Scale

NOTE: OTHER OPTIONS FOR SECURING THE RODS IN PLACE INCLUDE COTTER PINS, OR SIMPLY BENDING THE RODS AT RIGHT ANGLE TO THE PIPE. SMOOTH ROD WOULD BE ACCEPTABLE IF THESE METHODS ARE USED.



**LIQUID
MANURE
STORAGE**



**ALMACENAJE
DE ESTIÉRCOL
LÍQUIDO**

THIS IS ONLY AN EXAMPLE OF THE TYPE OF SIGN THAT MUST BE POSTED AROUND THE FACILITY. OTHER COMMERCIALY AVAILABLE SIGNS MAY BE USED.



United States
Department of
Agriculture

Natural Resources
Conservation Service

**MANURE STORAGE PIT
WARNING SIGNS**

CLIENT: Glen Luchterhand

COUNTY: Clark

Designed L. HART Date 3/2015

Drawn _____

Checked _____

Approved _____

File Name
WI-596A

Date
07/14

Sheet 18 of 26



THIS IS ONLY AN EXAMPLE OF THE TYPE OF SIGN THAT MUST BE POSTED AROUND THE FACILITY. OTHER COMMERCIALY AVAILABLE SIGNS MAY BE USED.



United States
Department of
Agriculture

Natural Resources
Conservation Service

**CONFINED SPACE
WARNING SIGN**

CLIENT: Glen Luchterhand
COUNTY: CLARK

Date
Designed L. HART 3/2015
Drawn _____
Checked _____
Approved _____

File Name	WI-597A
Date	07/14
Sheet 19 of 26	

SEEDING DATES

CENTRAL

As Built

TIME PERIOD	DATES			TYPE OF SEEDING
Spring	April 15	through	June 1	Permanent
Summer	June 2	through	see WI-710ss pg 2	Temporary *
Late Summer	August 1	through	August 21	Permanent
Fall	August 22	through	see WI-710ss pg 2	Temporary *
Late Fall	November 1	through	Snow Cover	Dormant
Winter	Snow Cover	through	April 14	Not Allowed

MATERIALS

If no soil test is available, apply a minimum of 150 pounds of 20-10-10 fertilizer per acre. This is equivalent to 30 pounds nitrogen (N), 15 pounds phosphate (P205), and 15 pounds potash (K2O) per acre. Apply two tons of 80-89 lime or equivalent.

* Seed a temporary cover crop of Oats at 64 #/ac (2 bu/ac)
 A permanent seeding shall be completed during the next acceptable time period following a temporary seeding.

MINIMUM PURE LIVE SEED (PLS) 1 RATE PER ACRE AND TOTAL POUNDS OF SEED NEEDED

SEEDING MIX (DESIGN)	12	LOCATION: ACRES:	
			2.50
SPECIES	RATE	POUNDS	
Kentucky Bluegrass	4.0	10.0	
Creeping Red Fescue	3.0	7.5	
** Oats	64.0	160.0	

SEEDING MIX (AS-BUILT)	LOCATION ACRES	
	<i>2.5</i>	<i>2.5 Acres</i>
SPECIES	RATE	POUNDS
<i>Kentucky bluegrass</i>		<i>18.0</i>
<i>Creeping red fescue</i>		<i>11.0</i>
<i>Oats</i>		<i>190</i>

1 PLS = (% Germination x % Purity)

ADDITIONAL SEED PERCENTAGE: *50%*

** Companion Crop

Mulching Required *Yes - straw + erosion control blanket*

Seed mixture shall meet all requirements of the WI weed laws.

Species identified as restricted or prohibited by law shall not be planted.

Certified seed shall be used, and the seeding rates will be based on pure live seed.

For dormant seedings, increase the seeds per square foot by 15%.

for channel area @ west

SEEDBED PREPARATION

Seedbed preparation shall immediately follow construction activities.

Prepare a fine, firm seedbed to a minimum depth of three inches. A seedbed is considered firm when a footprint penetrates 1/4 to 1/2 inch deep.

SEEDING

Inoculate legumes with the specific inoculum for the species in accordance with the manufacturer's recommendations. When using a hydroseeder, five times the recommended rate of inoculant shall be added to the hydroseeder. Inoculant shall not be mixed with liquid fertilizer.

Seed may be broadcast or drilled as appropriate to the site.

Seed, fertilize, and lime as soon as possible after construction.

Seeding perpendicular to direction of flow is required to limit erosion.



United States Department of Agriculture

Natural Resources Conservation Service

INTRODUCED SPECIES SEEDING ESTABLISHMENT

CLIENT: Glen Luchterhand

COUNTY: CLARK

Designed L. HART Date 3/2015

Drawn _____

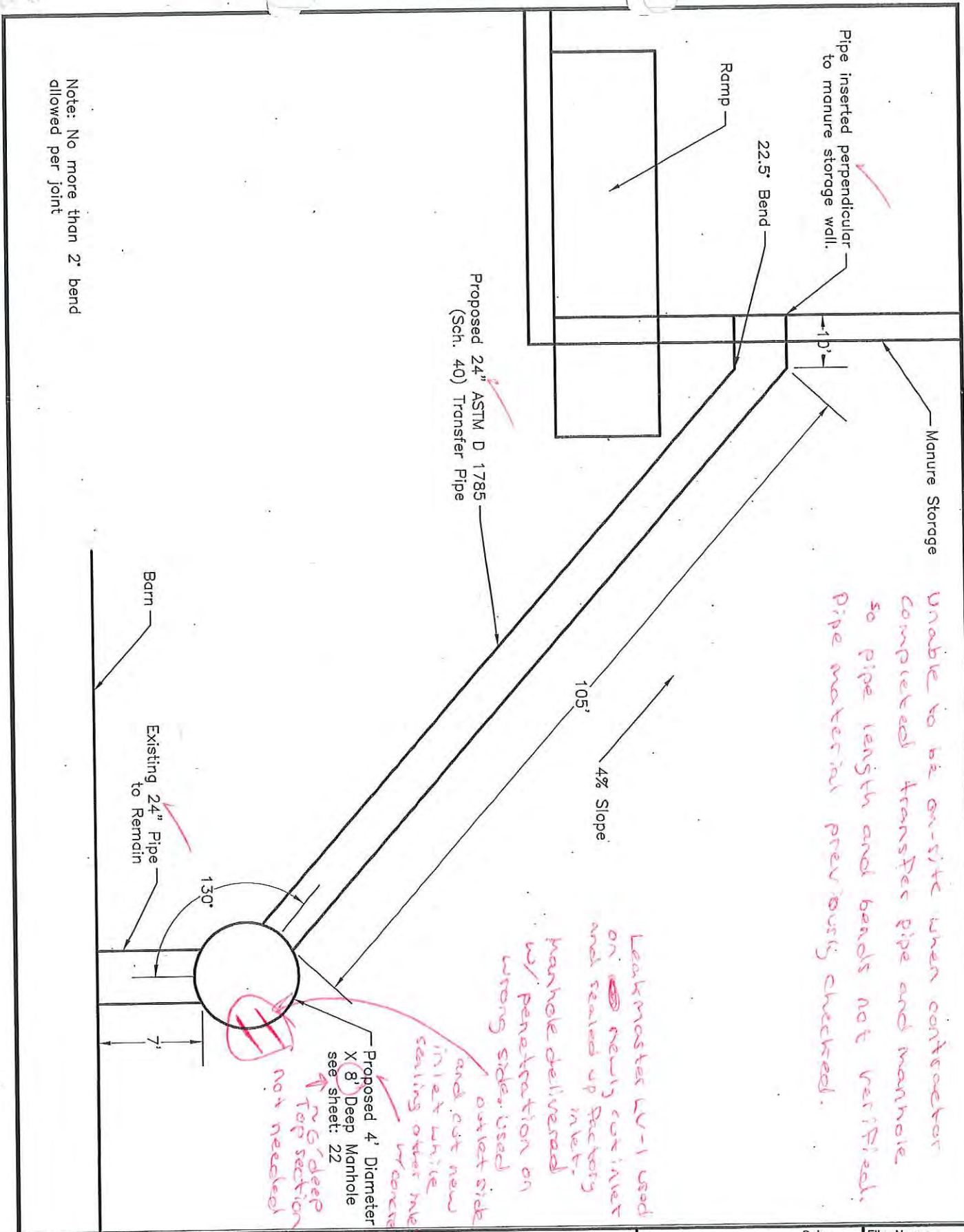
Checked _____

Approved _____

File Name WI-710

Date 08/14

Sheet 20 of 26



Unable to be on-site when contractor completed transfer pipe and manhole. 50 pipe length and bands not verified. Pipe material previously checked.

Leakmaster LV-1 used on newly cut inlet and sealed up factory inlet. Manhole delivered w/ penetration on wrong sides. Used outlet side and put new inlet while sealing other inlet w/ concrete.

Proposed 4' Diameter X 8' Deep Manhole see sheet: 22
 2' 6" deep Top section
 not needed

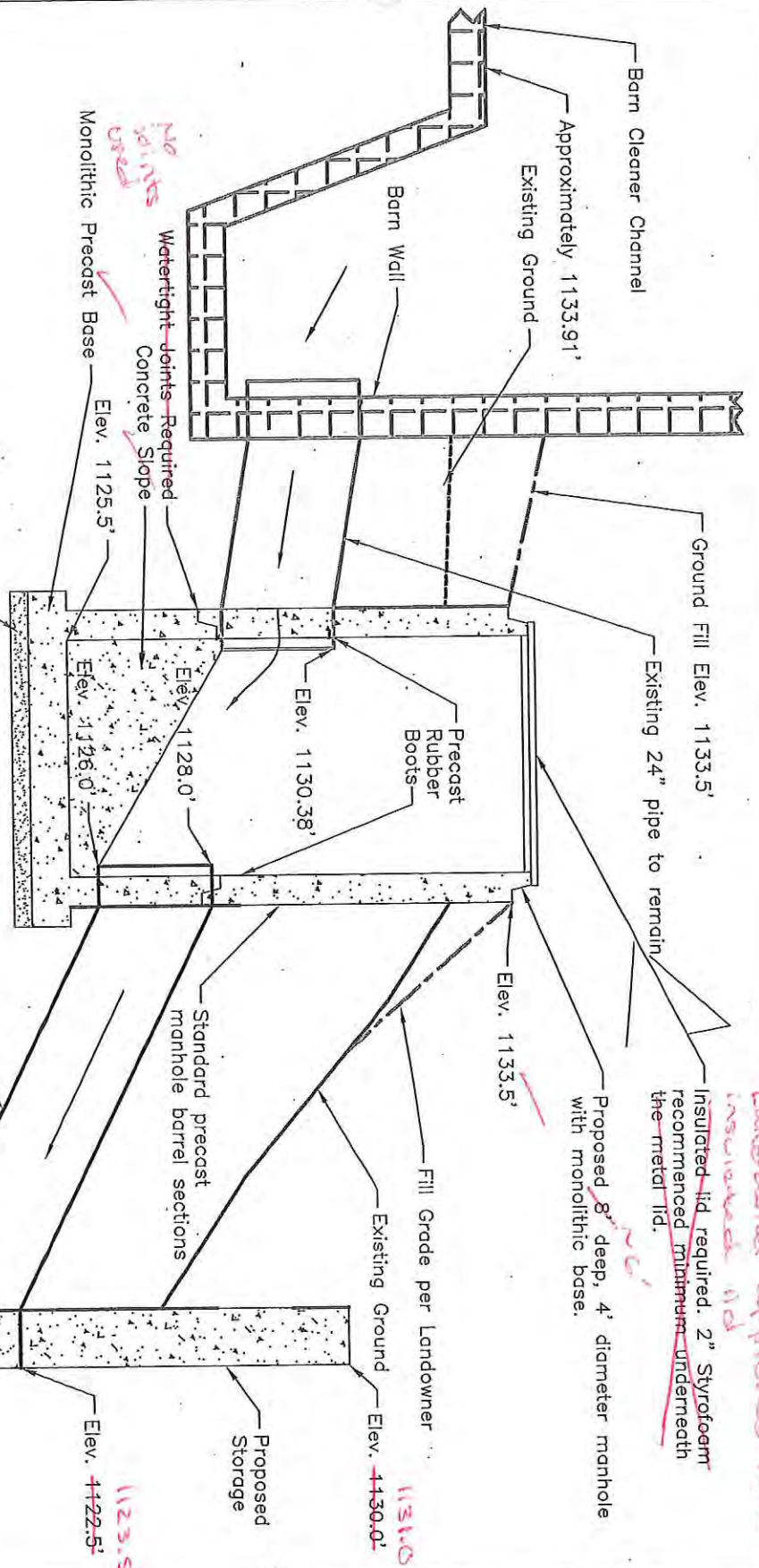
Note: No more than 2' bend allowed per joint

<p>United States Department of Agriculture</p> <p>Natural Resources Conservation Service</p>	<h3>Transfer Plan View</h3>		Date: 3/2015	File Name: WI-007
	CLIENT: Glen Luchterhand	COUNTY: CLARK	Designed: L. HART	Date: 08/14
			Drawn: _____	Sheet 21 of 26
			Checked: _____	
			Approved: _____	

1. PRECAST MANHOLE SECTIONS MUST MEET ASTM C478.
2. THE BASE SECTION SHALL HAVE THE RISER WALL AND BASE SLAB CAST MONOLITHICALLY AS A SINGLE UNIT.
3. THE MANHOLE IS A CONFINED SPACE. FOLLOW ASABE EP470 MANURE STORAGE SAFETY FOR ANY PLANNED ENTRY.
4. ALL PIPES MUST MEET WI STANDARD 634.
5. PLACE RIGID STYROFOAM INSULATION OVER THE PIPE WHENEVER THERE IS LESS THAN 4' OF COVER. 2.5 INCHES OF STYROFOAM REPLACES APPROXIMATELY ONE FOOT OF SOIL.
6. CAULK OR GROUT AT PIPE OPENINGS TO ENSURE LIQUID TIGHTNESS. AN A-LOC PIPE CONNECTOR IS AN ACCEPTABLE ALTERNATIVE TO GROUTING IN THE PIPE.

CONSTRUCTION NOTES:

6" sand below base
Proposed 24" diam. ASTM D 1785 (Sch. 40) Transfer Pipe



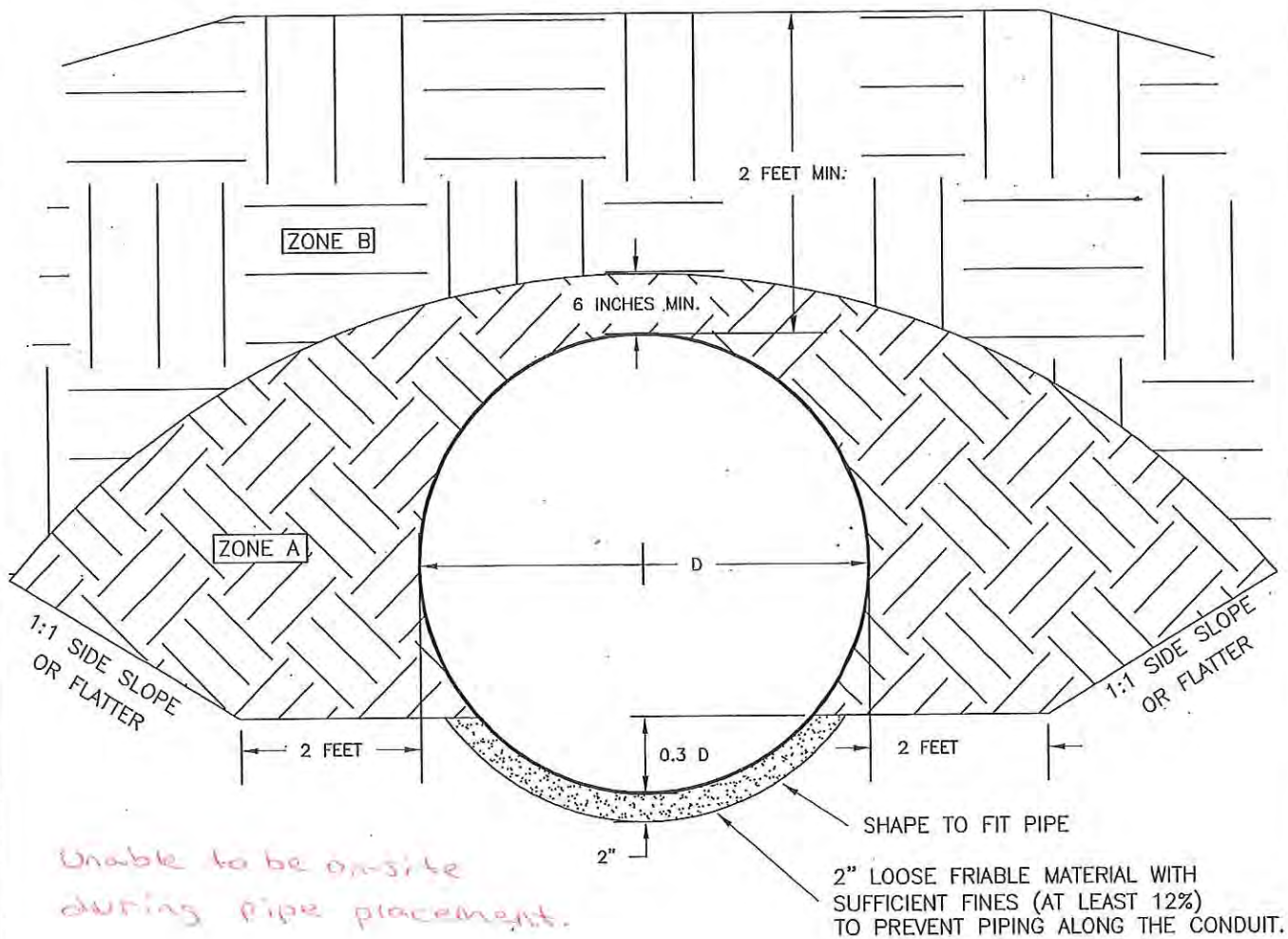
United States Department of Agriculture

Transfer Cross Section

CLIENT: Glen Luchterhand
COUNTY: CLARK

Designed L. HART Date 3/2015
Drawn _____
Checked _____
Approved _____

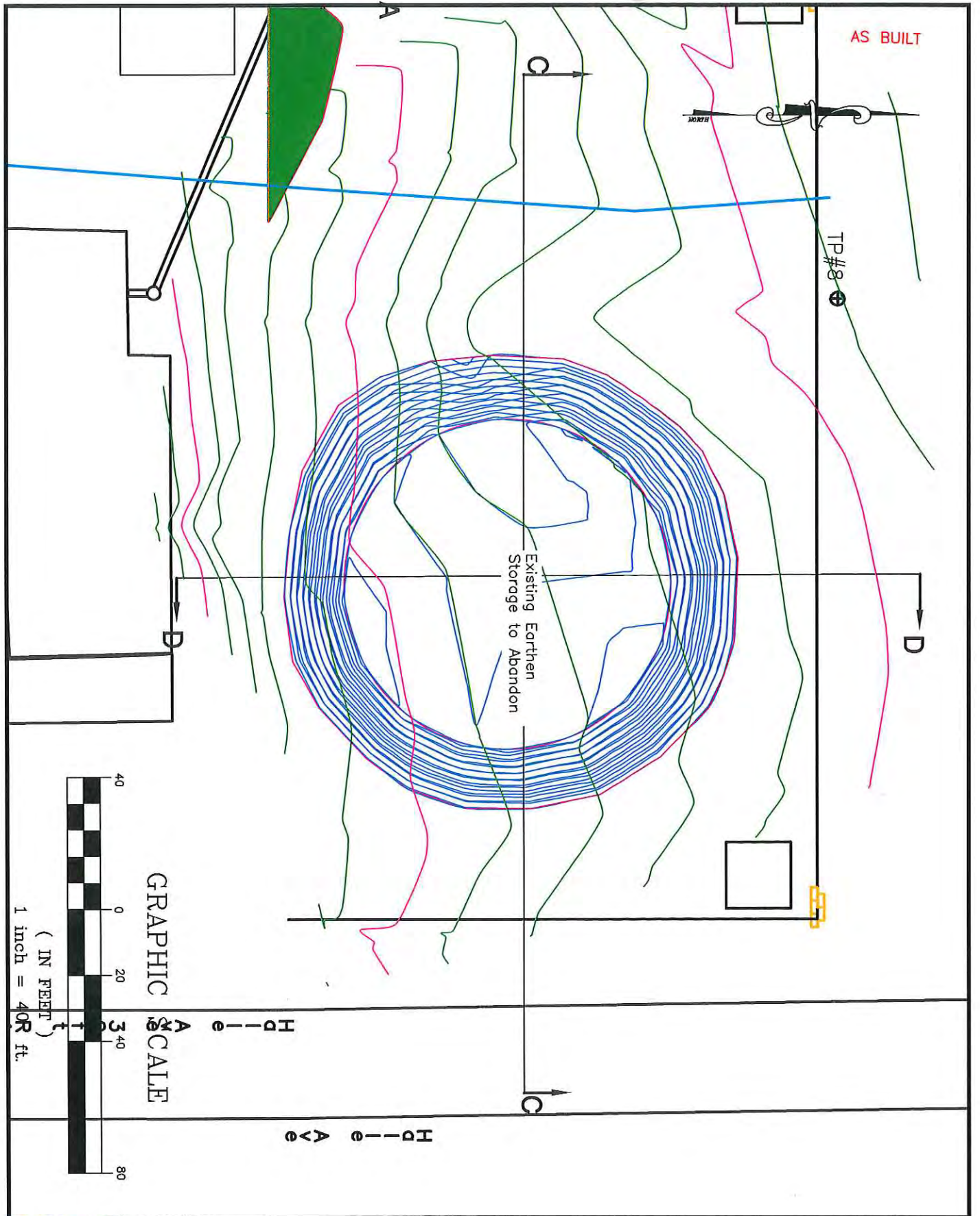
File Name	WI-007
Date	08/14
Sheet	22 of 26



NOTES:

1. PRIOR TO COMPACTING THE BACKFILL AROUND THE PIPE, PRECAUTIONS SHOULD BE TAKEN TO WEIGHT THE PIPE TO PREVENT RAISING IT ABOVE THE DESIRED GRADE.
2. HAND COMPACTING OR MANUALLY DIRECTED POWER EQUIPMENT COMPACTION IS REQUIRED WITHIN AREAS A & B. (MINIMUM WIDTH OF $D + 4$ FEET AND 2 FEET ABOVE THE CROWN OF THE PIPE)
3. BACKFILL MATERIAL SHALL CONSIST OF CLAY OR SILTS SUCH AS CH, MH, CL.
 ZONE A BACKFILL SHALL BE FREE OF STONES AND ROCKS GREATER THAN 1 INCH IN DIAMETER AND EARTH CLODS GREATER THAN 2 INCHES IN DIAMETER.
 ZONE B MINIMUM HEIGHT IS 2 FEET ABOVE THE TOP OF THE PIPE. USE A SILTY OR A CLAYEY BACKFILL FREE OF STONES AND ROCKS GREATER THAN 3 INCHES IN DIAMETER.
4. COMPACT ZONE A AND B FILL IN 4" LAYERS AT OPTIMUM MOISTURE CONTENT (OR SLIGHTLY HIGHER).

<p>United States Department of Agriculture</p> <p>Natural Resources Conservation Service</p>	<p>PIPE BEDDING DETAILS</p> <p>EARTH BEDDED</p>		<p>Designed <u>L. HART</u> Date <u>3/2015</u></p>	<p>File Name <u>WI-210A</u></p>
	<p>CLIENT: <u>Glen Luchterhand</u></p>	<p>Drawn _____</p>	<p>Checked _____</p>	<p>Date <u>07/14</u></p>
	<p>COUNTY: <u>CLARK</u></p>	<p>Approved _____</p>	<p>Sheet 23 of 26</p>	



**PLAN VIEW
Storage Closure**

CLIENT: Glen Luchterhand

COUNTY: CLARK

Designed L. HART Date 3/2015

Drawn _____

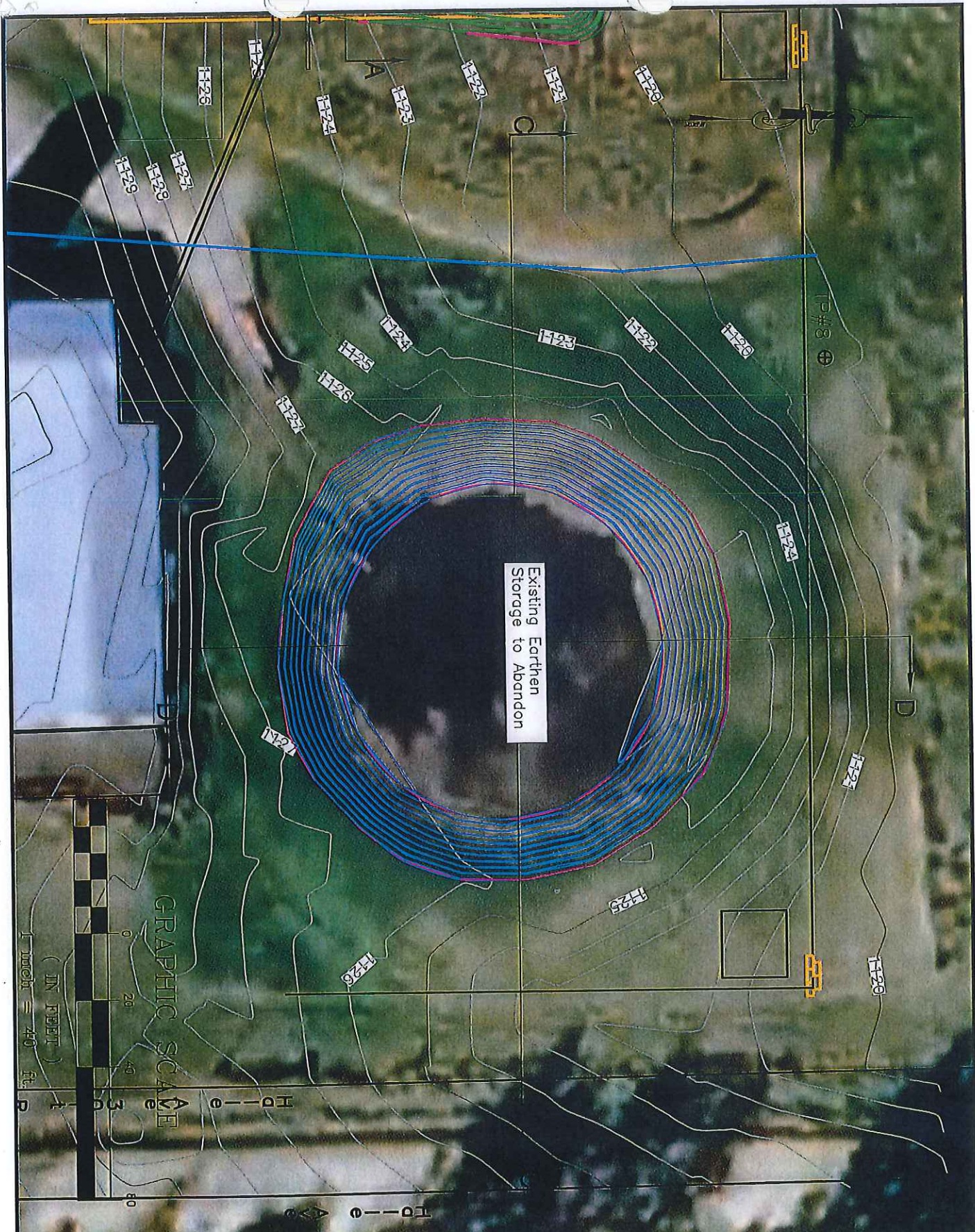
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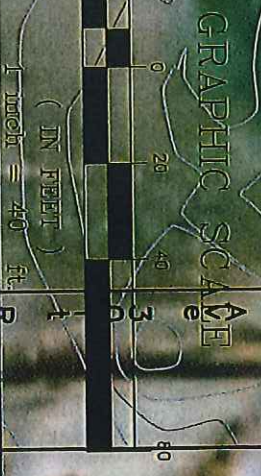
File Name WI-007

Date 08/14

Sheet 24 of 26



Existing Earthen
Storage to Abandon



USDA
United States
Department of
Agriculture

Natural Resources
Conservation Service

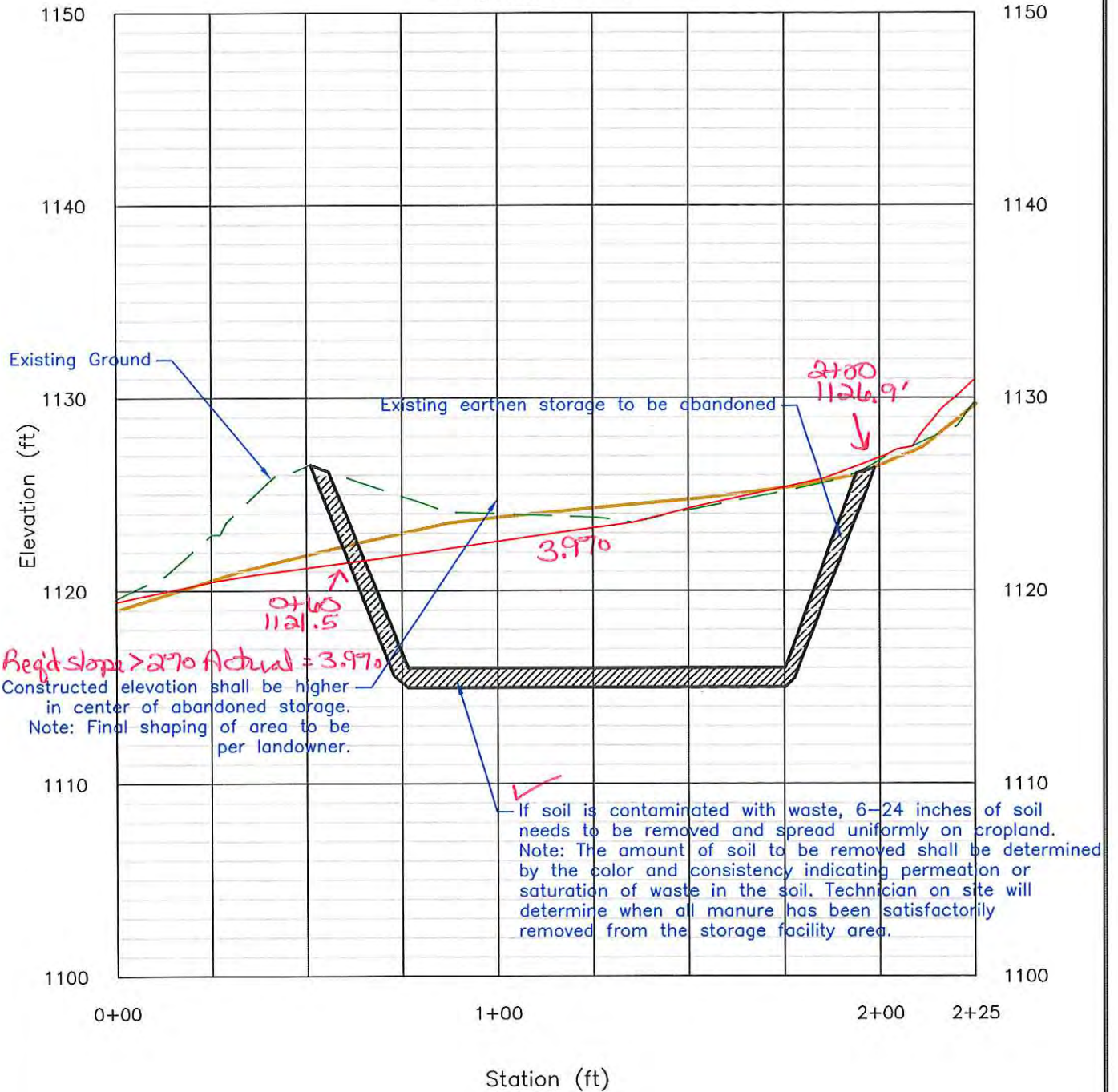
**PLAN VIEW
Storage Closure**

CLIENT: Glen Luchterhand
COUNTY: CLARK

Designed L. HART Date 3/2015
Drawn _____
Checked _____
Approved _____

File Name WI-007
Date 08/14
Sheet 24 of 26

Alignment D-D



Req'd slope > 2.70 Actual = 3.97%
 Constructed elevation shall be higher
 in center of abandoned storage.
 Note: Final shaping of area to be
 per landowner.

If soil is contaminated with waste, 6-24 inches of soil
 needs to be removed and spread uniformly on cropland.
 Note: The amount of soil to be removed shall be determined
 by the color and consistency indicating permeation or
 saturation of waste in the soil. Technician on site will
 determine when all manure has been satisfactorily
 removed from the storage facility area.

Note: Storage bottom elevations are
 approximate based on landowner's
 estimate.



United States
 Department of
 Agriculture

Natural Resources
 Conservation Service

Cross Section D-D

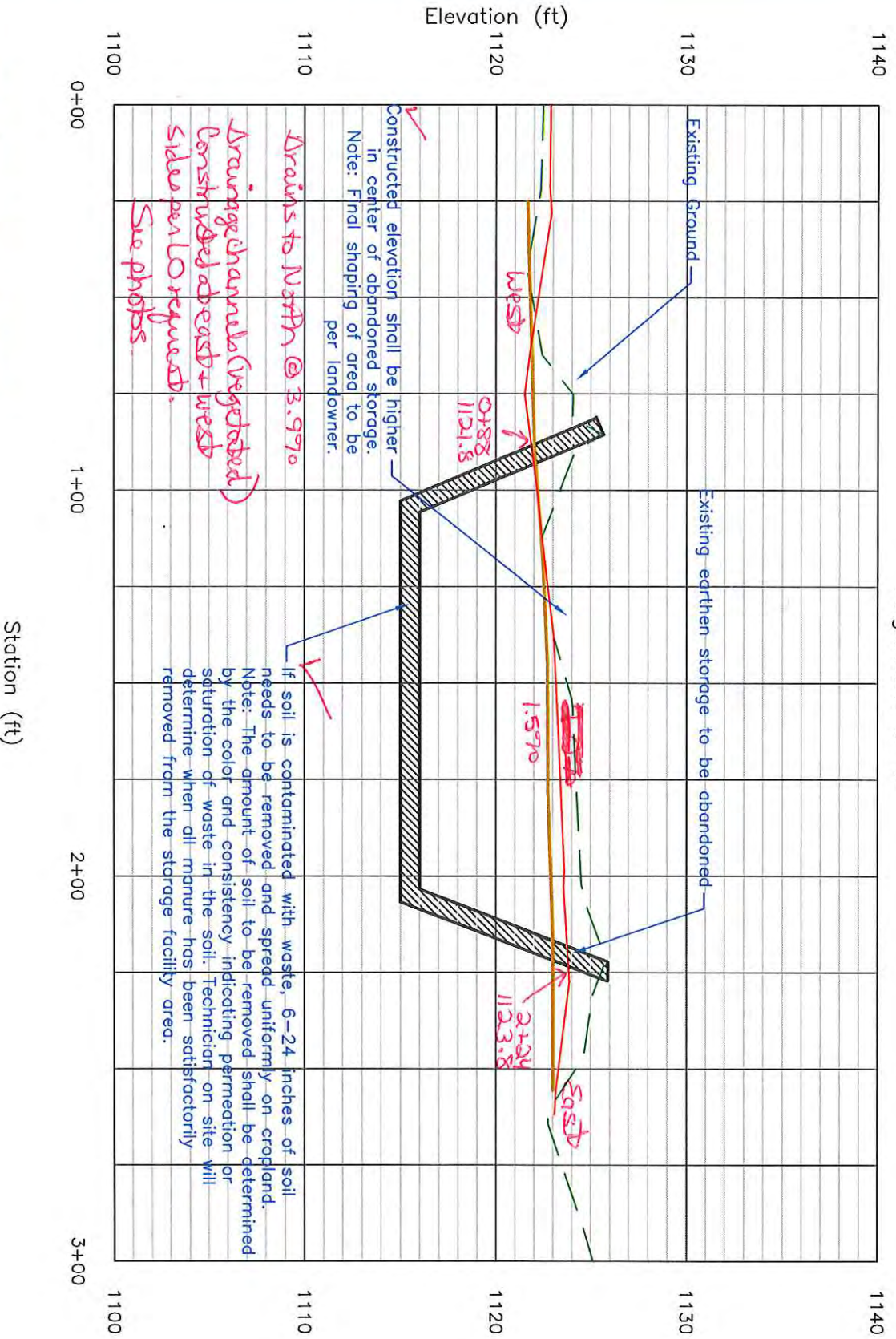
CLIENT: Glen Luchterhand
 COUNTY: CLARK

Designed L. HART Date 3/2015
 Drawn _____
 Checked _____
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File Name WI-002
 Date 08/14
 Sheet 25 of 26

AS BUILT

Alignment C-C



Note: Storage bottom elevations are approximate based on landowner's estimate.



United States Department of Agriculture

Natural Resources Conservation Service

Cross Section C-C

CLIENT: Glen Luchterhand

COUNTY: CLARK

Designed L. HART Date 3/2015
 Drawn _____
 Checked _____
 Approved _____

File Name WI-007
 Date 08/14

Clark County Land Conservation Department

August 24, 2016



Glen and Virginia Luchterhand
N5141 Halle Ave
Neillsville, WI 54456

RE: NR151 Compliance Achieved for Luchterhand Dairy Project Funded Targeted Runoff Management Grant TRC-BR09-10000-15A, Cost-Share Agreement #2015-05-TRM

Mr. and Mrs. Luchterhand:

This letter is to acknowledge that you have successfully implemented soil and water conservation best management practices according to cost-share agreement #2015-05-TRM. This cost-share agreement was funded by a Targeted Runoff Management Grant (TRC-BR09-10000-15A) provided by the Department of Natural Resources (DNR). A copy of the cost-share agreement is included in this mailing. By installing the practices listed on this cost share agreement your farm has now achieved compliance with the following NR151 agricultural performance standards and prohibitions described in the table below. The Clark County Land Conservation Department has additional information on file that identifies the exact locations of the livestock facility and croplands where compliance has been achieved, including all of the land that is required to be in your annual nutrient management plan submittal to the Clark County Land Conservation Department.

Name and Citation of Performance Standard and Prohibition	Legal Description of Parcel Where Compliance Was Achieved
NR 151.02 Sheet, rill and wind erosion	PIN 066.0666.000 in SE1/4, NW1/4 Sec. 31 , T25N, R1W, Clark County
NR 151.03 Tillage setback	PIN 066.0666.000 in SE1/4, NW1/4 Sec. 31 , T25N, R1W, Clark County
NR 151.04 Phosphorus index	PIN 066.0666.000 in SE1/4, NW1/4 Sec. 31 , T25N, R1W, Clark County
NR 151.05(2) New manure storage construction	PIN 066.0666.000 in SE1/4, NW1/4 Sec. 31 , T25N, R1W, Clark County
NR 151.055 Process Wastewater Handling	PIN 066.0666.000 in SE1/4, NW1/4 Sec. 31 , T25N, R1W, Clark County
NR 151.07 Nutrient management	PIN 066.0666.000 in SE1/4, NW1/4 Sec. 31 , T25N, R1W, Clark County
NR 151.08(2) No manure storage overflow	PIN 066.0666.000 in SE1/4, NW1/4 Sec. 31 , T25N, R1W, Clark County
NR 151.08(3) No unconfined manure piles	PIN 066.0666.000 in SE1/4, NW1/4 Sec. 31 , T25N, R1W, Clark County
NR 151.08(5) No unlimited access by livestock	PIN 066.0666.000 in SE1/4, NW1/4 Sec. 31 , T25N, R1W, Clark County

In accordance with Ch. NR 151, Wis. Adm. Code, any cropland or livestock facility that is brought into compliance with Wisconsin's agricultural performance standards and/or prohibitions must remain in compliance regardless of whether cost-sharing is provided to the current landowner or a different owner/operator in the future. Since the above parcel and other parcels in your farm's ownership have been determined to be in compliance with the NR151 agricultural performance standards and prohibitions listed above, it is important that you and any future landowners and/or operators maintain compliance with them.

The Land Conservation Committee would like to commend you for your concern about the environment and thank you for your efforts to preserve clean and abundant soil and water for current and future generations.

If you have any further questions, please contact me at 715-743-5102.

Thank you for your cooperation.

Sincerely:

James Arch, CCA
County Conservationist
Clark County Land Conservation Department

Cc: Terry Kafka, DNR Regional Coordinator (e-copy only)

Clark County Land Conservation Department



Matt Zoschke, County Conservationist
Cody Overgard, Engineer Technician II
Rick Ingli, Conservation Technician
Daisy Gerdes, Program Assistant II

April 4, 2014

RE: Notice of Noncompliance with NR151 and Animal Manure Management Ordinance

Mr. Luchterhand:

Currently, your existing manure management strategy has been determined to not be in compliance with NR151 and the local Animal Manure Management Ordinance. This includes the following NR151 agricultural performance standards:

1. Phosphorus Index (NR151.03)
2. Manure storage facilities- leaking (NR151.05(4))
3. Process wastewater handling (NR151.055)
4. Clean water diversions (NR151.06)
5. Prevention of overflow from manure storage facility (NR151.08(2))
6. Prevention of direct runoff from feedlot or stored manure into waters of the state (NR151.08(4))

In the past, the Clark County Land Conservation Department (LCD) has worked with the Wisconsin Department of Natural Resources (DNR) and/or the Wisconsin Department of Agriculture, Trade, and Consumer Protection (DATCP) to identify, if and when a Notice of Intent or a Notice of Discharge could be issued under NR243 or NR151.

If needed, the LCD will cooperatively work with DNR and/or DATCP to identify any potential sources of cost-share funding before supporting the DNR's decision to issue a notice. This amount of cost-share may or may not be at the 70% level, depending upon the funding source and your need for financial assistance. As listed in NR 151.09, s.281.16(3)(e) and sec. 12-359 of the local Animal Manure Management Ordinance, a landowner may not be required to comply with a performance standard or prohibition, unless a qualified offer of cost-share is made as specified in NR151 and ATCP-50.

If necessary, the LCD, with support from the DNR and/or DATCP, will require you to install the practices identified in the grant application to achieve compliance with the agricultural performance standards. However, you will only be required to comply if and when a suitable funding source becomes available from DNR and/or DATCP.

Cost-sharing is not be required to comply with conditions of the local Animal Manure Management Ordinance permit, such as the annual nutrient management plan requirement, operation and maintenance of the manure storage or maintaining compliance with the manure management prohibitions.

If you have questions, please call me at 715-743-5102.

Sincerely:

Matt Zoschke, CCA
County Conservationist
Clark County Land Conservation Department

2014 Land Conservation Committee
Chairman Frederick Garbisch
Supervisor Duane Boon
Supervisor Rick Opelt
FSA Representative James Erickson
Citizen-at-Large Donald Koerner

Clark County Land Conservation
517 Court Street, Room 102
Neillsville, WI 54456-1982
Telephone (715) 743-5102
Fax (715) 743-5154
matt.zoschke@co.clark.wi.us