



North Dakota Department of Transportation

Grant Levi, P.E.
Director

Jack Dalrymple
Governor

November 4, 2015

Todd Sando
North Dakota State Water commission
900 East Boulevard Avenue, Dept. 770
Bismarck, ND 58505-0850

PROJECT: SIM-8-094(087)352 - PCN 20687
LEVEE CONSTRUCTION
CASS COUNTY

The North Dakota Department of Transportation is requesting a Modification to a Water Resource Permit to construct a levee in order to protect an existing lift station located within the existing NDDOT I-94 right of way near 5th St South in Fargo.

Attached is an application form and plan sheets for the proposed levee.

If you have any questions concerning this permit request, please contact Steve Kessler at (701) 328-3736.

MARK S. GAYDOS, P.E.
DIRECTOR, ENVIRONMENTAL & TRANSPORTATION SERVICES DIVISION

19:msg:sek
Enclosures



APPLICATION/NOTIFICATION TO CONSTRUCT OR MODIFY A DAM, DIKE, RING DIKE OR OTHER WATER RESOURCE FACILITY

Office of the State Engineer
900 East Boulevard -- Bismarck, ND 58505-0850
SFN 51695 (11/03)

SWC USE ONLY

I, the undersigned, do hereby submit the following information to the Office of the State Engineer for determination and use as a filing of information required under North Dakota Century Code §61-04-02 or as an application to construct or modify a facility under North Dakota Century Code §61-16.1-38.

(SWC USE ONLY) No. _____

A. GENERAL INFORMATION:

- (1) This Application/Notification must include a map from an actual survey, aerial photo or topographic map. The size of the map shall be 8½ by 11 inches. The map shall have a north arrow and approximate scale. If, in the opinion of the State Engineer, the map does not contain information to properly evaluate the project, it will be returned.
- (2) The proposed facility is a:

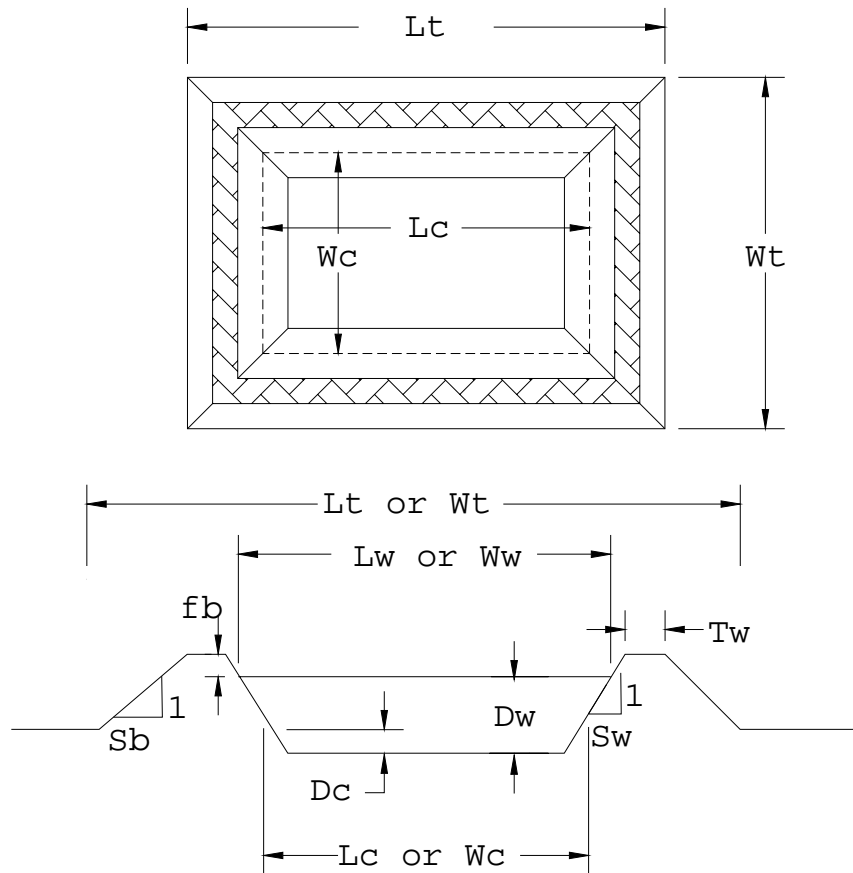
<input type="checkbox"/> Dam (Complete Sections A, C & F)	<input type="checkbox"/> Pond, Lagoon, or Dugout (Complete Sections A, B & F)
<input type="checkbox"/> Dike (Complete Sections A, D & F)	<input type="checkbox"/> Diversion Ditch (Complete Sections A, B & F)
<input type="checkbox"/> Ring Dike (Complete Sections A, D & F)	<input type="checkbox"/> Other (Complete Sections A, B & F)
<input type="checkbox"/> Wetland Restoration (Complete Sections A, C, E & F)	
- (3) Is this Application/Notification for modification of an existing structure? Yes No
If so, what year was existing structure constructed? _____ By whom? _____
- (4) Project will be located in the _____ Water Resource District
- (5) Legal description to the nearest forty-acre tract: _____ ¼ _____ ¼ Section _____ Township _____ Range _____
(Optional) Latitude _____ Longitude _____
- (6) Waterway on which project will be located: _____
- (7) A tributary to: _____
- (8) Will the project, including any area inundated as a result of the project, be located entirely on land owned by the applicant?
 Yes No If any portion of the project will be constructed on land not owned in fee title by the applicant, written authorization to construct the project must be obtained from the landowner of record and a copy of the authorization provided to this office. If the project will impound water on land not owned in fee title by the applicant, a flowage easement must be obtained by the applicant and a copy of the easement provided to this office. If any portion of the project will be constructed within the right-of-way of a section line, roadway, or railroad, or if the project will impound water within the right-of-way of a section line, roadway, or railroad, written authorization to do so must be obtained from the appropriate authority and a copy provided to this office.
- (9) Project sponsor (Water Resource District/City/US Fish & Wildlife Service, etc.) if applicable _____
- (10) Contractor, if known _____
- (11) Anticipated construction start date _____ Completion date _____
- (12) Who will be responsible for the operation and maintenance of this project? _____

B. POND, LAGOON, DUGOUT, DIVERSION DITCH, OR OTHER WATER RESOURCE FACILITY:

- (1) Design Data:

<p>a. Pond, Lagoon, or Dugout (complete below and diagram next page for each pond or cell, photocopy if necessary)</p> <p>1. Surface area: top of structure _____ acres service level _____ acres</p> <p>2. Storage: top of structure _____ acre-feet service level _____ acre-feet</p> <p>3. Maximum depth of water _____ feet</p> <p>4. Maximum embankment height _____ feet</p>	<p>b. Diversion Ditch</p> <p>1. Length _____ feet</p> <p>2. Bottom width _____ feet</p> <p>3. Side slopes _____ feet</p> <p>4. Maximum cut _____ feet</p> <p>5. Gradient _____ foot/foot</p>
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- (2) Description of project, if not a Pond, Lagoon, Dugout, or Diversion Ditch: _____

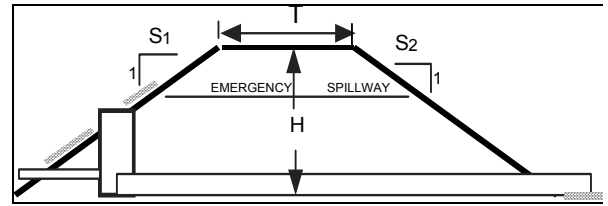
B. OTHER WATER RESOURCE FACILITY (continued):



DESCRIPTION	ABBREVIATION	DIMENSION (feet)
Total length of pond (includes banks)	L_t	
Total width of pond (includes banks)	W_t	
Length of water surface at full service level	L_w	
Width of water surface at full service level	W_w	
Length of cut into the soil surface	L_c	
Width of cut into the soil surface	W_c	
Depth of cut into soil surface	D_c	
Depth of water in the pond at the full service level	D_w	
Freeboard (the distance between the full service level and the top of the structure that is used to manage wave action, usually 2-3 feet)	fb	
Top width of embankment surrounding the pond	T_w	
Outside bank sideslope ratio (usually 4:1, which is 4 horizontal feet for every 1 foot of rise)	S_b	
Inside bank sideslope ratio (will vary between 4:1 and 6:1, depending on the soil type)	S_w	

C. DAMS

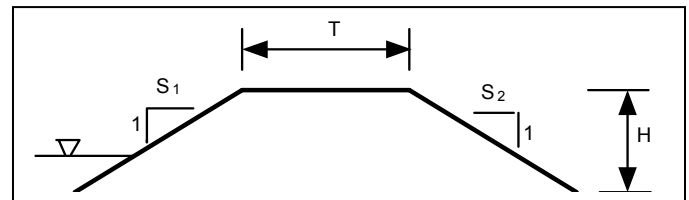
- (1) Drainage area above dam _____ square miles or _____ acres
- (2) Purpose: _____
- (3) Geometric description of dam:
- Maximum height (H) _____ feet, elevation _____ feet msl
 - Top width (T) _____ feet
 - Side slopes: upstream (S1) _____:1
downstream (S2) _____:1
 - Type of embankment protection _____
 - Emergency spillway: type _____
If earthen: width _____ ft, side slopes _____:1, level section length _____ ft
Dimensions if other than earthen _____
 - Principal spillway:
Outlet pipe: type _____ diameter _____ length _____ ft
Riser: type _____ diameter _____
Control gate: type _____ dimensions _____
 - Drawdown Pipe: type _____ diameter _____
- (4) Distance to nearest downstream occupied dwelling(s) _____



	ELEVATION (feet) Indicate datum: <input type="checkbox"/> local <input type="checkbox"/> NGVD 29 <input type="checkbox"/> NAVD 88	RESERVOIR SURFACE AREA (acres)	RESERVOIR CAPACITY (acre-feet)
Top of Dam			
Emergency Spillway			
Principal Spillway			
Drawdown Pipe			
Streambed at Dam			

D. DIKE

- (1) Is this application/notification for the construction of a ring dike? Yes No
If so, will the ring dike tie into existing? dike roadway high ground other _____
- (2) Purpose: _____
- (3) Area of land to be protected by dike _____ acres
- (4) Description of Dike:
- Dike length _____ feet
 - Dike design:
 - Top width (T) _____ feet
 - Side slopes: interior (S1) _____:1
exterior (S2) _____:1
 - Maximum height (H) _____ feet, elevation _____ feet msl
Minimum height (H) _____ feet, elevation _____ feet msl
 - Embankment erosion protection: _____
- (5) Will the dike flood or adversely affect adjacent, upstream or downstream land? Yes No
If yes, attach flowage easements. Easements must include a description of provisions, and names and signatures of grantors.



E. WETLAND RESTORATION

- (1) The proposed wetlands are: Temporary Permanent
- (2) Drainage area above dam _____ square miles or _____ acres
- (3) Is this project mitigation for another project? Yes No
If yes, please describe: _____
- (4) Describe the proposed operation plan for the wetland: _____

	OVERFLOW ELEVATION (feet) Indicate datum: <input type="checkbox"/> local <input type="checkbox"/> NGVD 29 <input type="checkbox"/> NAVD 88	CAPACITY (acre-feet)	SURFACE AREA (acres)
Existing			
Natural			
Proposed			
Top of Structure			

F. ADDITIONAL INFORMATION, AFFIDAVIT OF DESIGN ENGINEER, AND SIGNATURE

(1) Additional information and comments: _____

(2) A complete set of plans and specifications prepared by a professional engineer registered in the State of North Dakota must be submitted with and made part of this Application/Notification if the proposed structure will be capable of retaining, obstructing, or diverting more than 50 acre-feet of water, or if the structure is a medium or high hazard dam, as determined by the State Engineer, capable of retaining more than 25 acre-feet of water. Low hazard dams, as determined by the State Engineer, less than 10 feet in height are exempt from the requirement for professional engineering services. If plans and specifications are required, the following affidavit must be completed:

I, _____ (name), _____ (PE license number), a Professional Engineer registered in the State of North Dakota, designed and/or personally supervised the design of the project as described in this application and on any attached sheets, and construction will be inspected in accordance with North Dakota Administrative Code §89-08-03-01. Date: _____

(3) The filing of this Application/Notification in no way relieves the applicant or landowner from any responsibility or liability resulting from the construction, operation or failure of the project.

Land Owner (Print): NDDOT
 Address: 608 E Boulevard Avenue
 Bismarck, ND 58505
 Phone: 701-328-4417
 Signature: *WES Golder* Date: 11/5/15

Sponsoring Agency: (Same as above)
 Address: _____

 Phone: _____
 Signature: _____ Date: _____

JOB #
NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION

STATE	PROJECT NO.	PCN	SECTION NO.	SHEET NO.
ND	SIM-8-094(087)352	20687	1	1

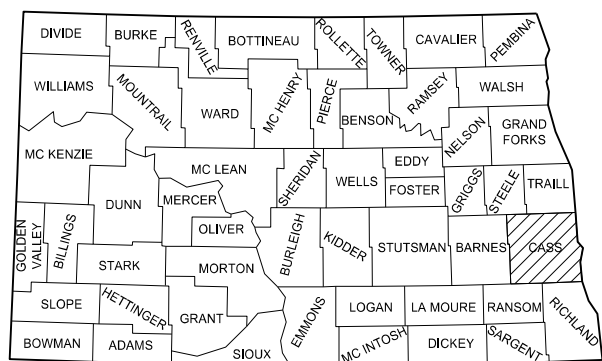
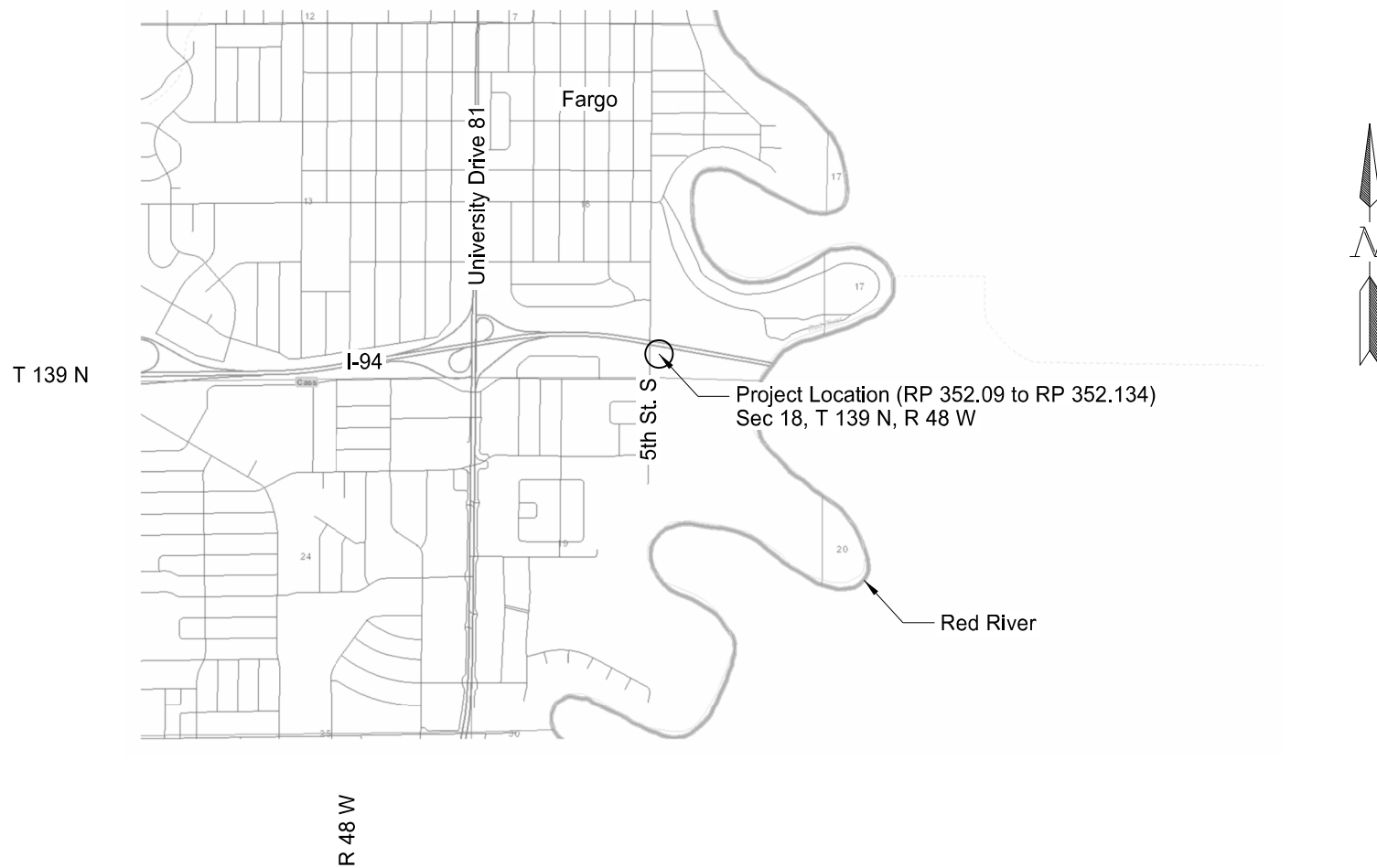
SIM-8-094(087)352

Cass County
 I-94 and 5th St Fargo
 Levee Construction

GOVERNING SPECIFICATIONS:

2014 Standard Specifications adopted by the North Dakota Department of Transportation and the Supplemental Specifications effective on the date the project is advertised.

PROJECT NUMBER \ DESCRIPTION	NET MILES	GROSS MILES
SIM-8-094(087)352	N/A	N/A



STATE COUNTY MAP

DESIGNERS

APPROVED DATE _____

OFFICE OF PROJECT DEVELOPMENT
 ND DEPARTMENT OF TRANSPORTATION

I hereby certify that the attached plans were prepared by me or under my direct supervision and that I am a duly registered professional engineer under the laws of the state of ND.

APPROVED DATE _____

NDDOT DESIGN DIVISION

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PRELIMINARY

TABLE OF CONTENTS

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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PLAN SECTIONS

Section	Page(s)	Description
1	1	Title Sheet
2	1	Table of Contents
4	1	Scope of Work
6	1	Notes
6	2	Environmental Commitments
8	1	Quantities
11	1	Data Tables
20	1 - 7	General Details
30	1	Typical Sections
70	1	Contours
75	1	Wetland Impacts
76	1	Temporary Erosion Control
77	1	Permanent Erosion Control
82	1	Survey Data Layouts
100	1	Work Zone Traffic Control
140	1 - 2	Lighting
200	1 - 2	Cross Sections

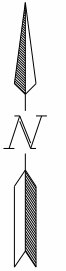
LIST OF STANDARD DRAWINGS

Number	Description
D-101-1, 2, 3	NDDOT Abbreviations
D-101-10	NDDOT Utility Company and Organization Abbreviations
D-101-20, 21	Line Styles
D-101-30, 31, 32	Symbols
D-260-1	Erosion and Siltation Controls - Silt Fence
D-261-1	Erosion Control - Fiber Roll Placement Details
D-704-9	Construction Sign Details - Terminal and Guide Signs
D-704-11	Construction Sign Details - Warning Signs
D-722-3	Inlet - Mountable Curb
D-724-1	Waterworks
D-770-1	Concrete Foundations (Traffic Signals & Highway Lighting)
D-770-2	Feed Points (Roadway Lighting)

SPECIAL PROVISIONS

Number	Description
SP 238(14)	Pumping Equipment

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Scope of Work

I-94 Lift Station

NOTES

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203-010 SHRINKAGE: 25 percent additional volume is included for shrinkage in earth embankment.

704-P01 TRAFFIC CONTROL DEVICES: The traffic control devices list was developed using the layouts shown in the plans and the following layouts shown on the Standard Drawings:

D-704-24 Type HH

714-P01 DRAINAGE: If the existing drainage facilities become inoperable before the new drainage system is functioning, the contractor shall provide sufficient temporary pumping and drainage facilities to keep the roadway drained to the satisfaction of the engineer. The cost for maintaining the drainage shall be included in the price bid for other items.

722-P01 ADJUST MANHOLE: The existing manhole at Station 11+14 – 117.6' Rt. shall be adjusted as shown in the plans.

The existing manhole cover shall be removed and rings shall be adjusted such that a new inlet grate (Mountable – Type A type) shall be installed over the manhole and match the grate elevation as shown in the plans.

All costs for labor, equipment and materials required to modify the manhole as described above and as shown in the plans, including adjusting rings and installing an inlet grate, shall be included in the price bid for the item "ADJUST MANHOLE."

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PRELIMINARY

ENVIRONMENTAL COMMITMENTS

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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ENVIRONMENTAL COMMITMENTS (EC): The North Dakota Department of Transportation has made environmental commitments to secure approval of this project. The environmental commitments are as follows:

EC-1: Unavoidable permanent impacts will be mitigated onsite, adjacent to the project, or at a NDDOT approved mitigation site or bank in accordance with the mitigation guidance^{2,3}.

ACTION REQUIRED /TAKEN: 0.03 acres of permanent USACE impacts to jurisdictional waters and 0 acres of permanent impacts to EO11990 wetlands will require mitigation. 0.01 acres of temporary impacts will result from construction. Temporary impact areas will be graded to preconstruction contours.

Wetland Impact Table																			
Wetland Number	Location	Cowardin Class.	Wetland Type	Wetland Size (acres)	Wetland Feature	USACE Jurisdictional Wetlands ¹	Wetland Impacts (acres)		USFWS Easement Impacts (acres)		Wetland Mitigation								
							Temp.	Perm.	Temp.	Perm.	Mitigation Required			Bank		Onsite			
											EO 11990	USACE	USFWS	Location	acres	Mitigation Location; Ratio	acres	Constructed Site #	Constructed size (acres)
1	Sec.18, T139N, R48W	PEMCx	Ditch	0.09	Artificial	Yes	0.01	0.02	-	-	N	N	N	-	-	-	-	-	-
Totals				0.09			0.01	0.03	0	0				0			0		0

¹ A wetland Jurisdictional Determination was issued by the USACE on x/xx/xxxx; NWO-xxxx-xxxx-BIS.

² All impacts to natural wetlands (natural/jurisdictional and natural/non-jurisdictional), regardless of size, as well as impacts greater than 0.10 acre to artificial/jurisdictional wetlands require mitigation.

³ All artificial/non-jurisdictional, deep water (impacts greater than 6.6 feet), Other Waters less than 300 linear feet (determined by the USACE on a case by case), and temporary impacts do not require mitigation.

Summary Impact Table			
Total Permanent Impact Summary		Temporary Impacts and additional information	
Wetland Type	Total (Acres)	Wetland Type	Total (Acres/Lf)
Natural/JD	0.00	Temporary JD	0.01
Natural/Non-JD	0.00	Non-JD Temporary	0.00
Artificial/JD	0.03	Permanent JD > 0.10	0.00
Artificial/Non-JD	0.00	Permanent OW	0.00
Total	0.03	Temporary OW	0.00

ESTIMATE OF QUANTITIES

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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SPEC CODE	ITEM DESCRIPTION	UNIT	MAINLINE	TOTAL
-----	-----	-----	-----	-----
103	0100 CONTRACT BOND	L SUM	1	1
203	0101 COMMON EXCAVATION-TYPE A	CY	8	8
203	0109 TOPSOIL	CY	88	88
203	0140 BORROW-EXCAVATION	CY	206	206
251	0200 SEEDING CLASS II	ACRE	0.14	0.14
251	2000 TEMPORARY COVER CROP	ACRE	0.14	0.14
253	0101 STRAW MULCH	ACRE	0.28	0.28
255	0201 TRM TYPE 1	SY	16	16
260	0200 SILT FENCE SUPPORTED	LF	14	14
261	0112 FIBER ROLLS 12IN	LF	149	149
602	1130 CLASS AE-3 CONCRETE	CY	9	9
612	0115 REINFORCING STEEL-GRADE 60	LBS	728	728
702	0100 MOBILIZATION	L SUM	1	1
704	1000 TRAFFIC CONTROL SIGNS	UNIT	498	498
704	1060 DELINEATOR DRUMS	EA	13	13
722	6200 ADJUST MANHOLE	EA	1	1
724	1138 PIPE DUCTILE IRON 6IN	LF	96	96
724	1143 PIPE DUCTILE IRON 10IN	LF	92	92
770	4525 REVISE LIGHTING SYSTEM	EA	1	1
920	0100 PUMPING EQUIPMENT	L SUM	1	1

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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Common Excavation Type A (Pay Item)	Embankment*	Borrow Excavation (Pay Item)	Topsoil (Pay Item)	Topsoil Placed	Topsoil Excess (To be Spread Evenly)
CY	CY	CY	CY	CY	CY
I	J	K=J-I	L	M	N= L-M
8	214	206	88	85	3

* 25% volume was added to embankment volumes to allow for shrinkage.

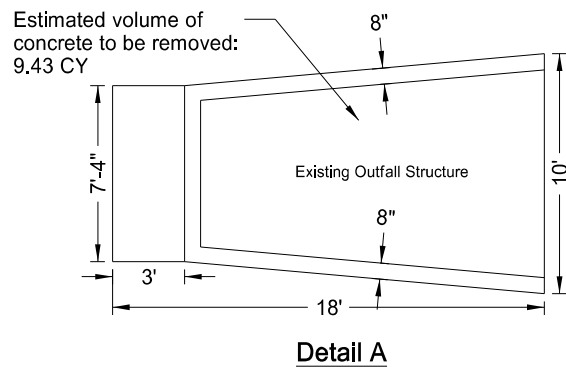
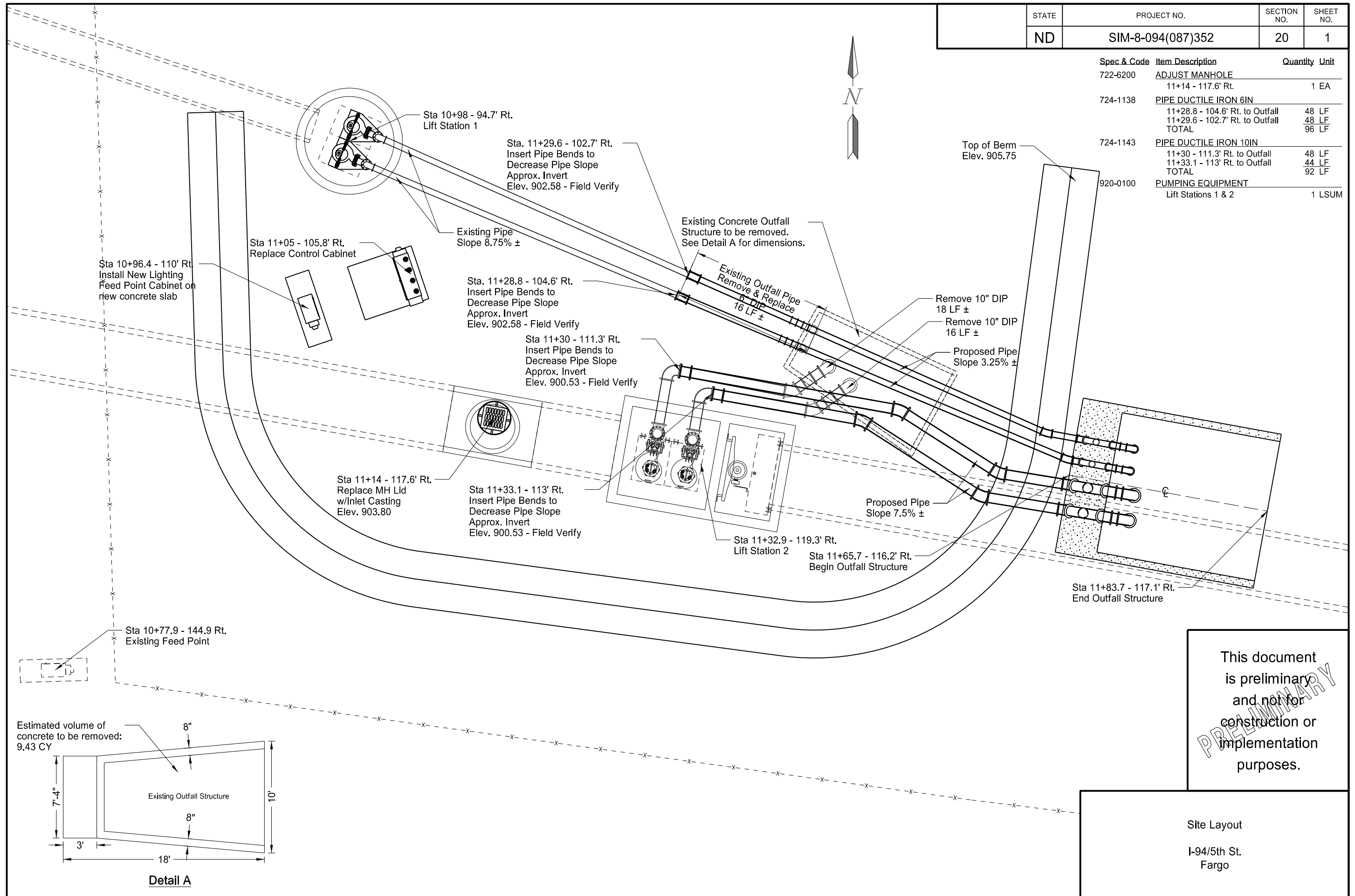
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Earthwork Summary

I-94 Lift Station

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SIM-8-094(087)352	20	1

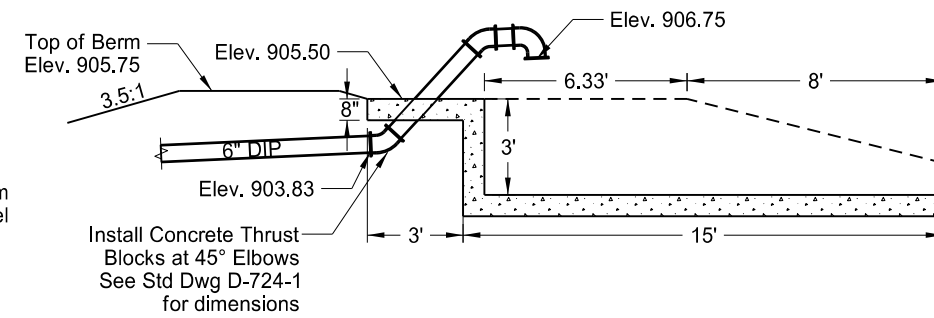
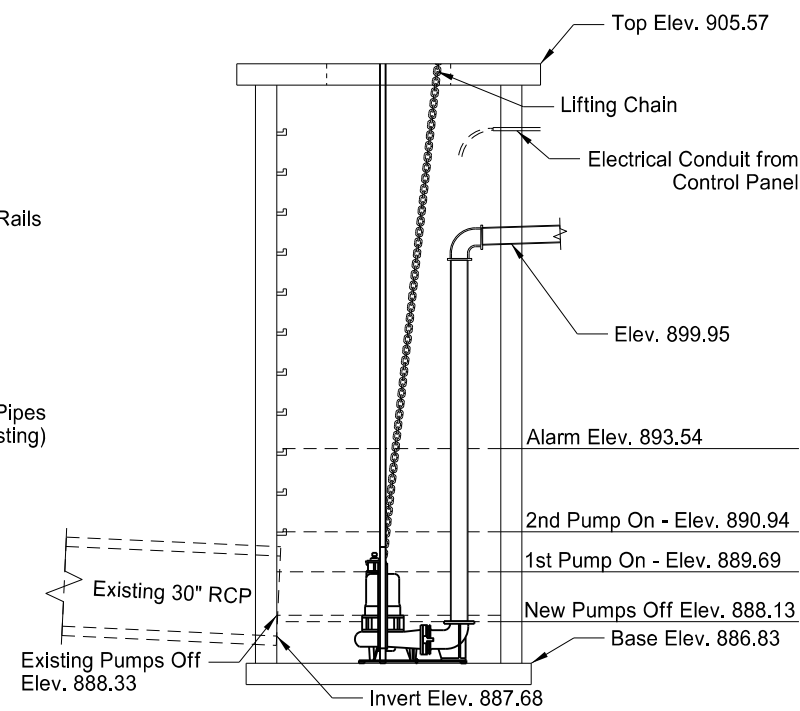
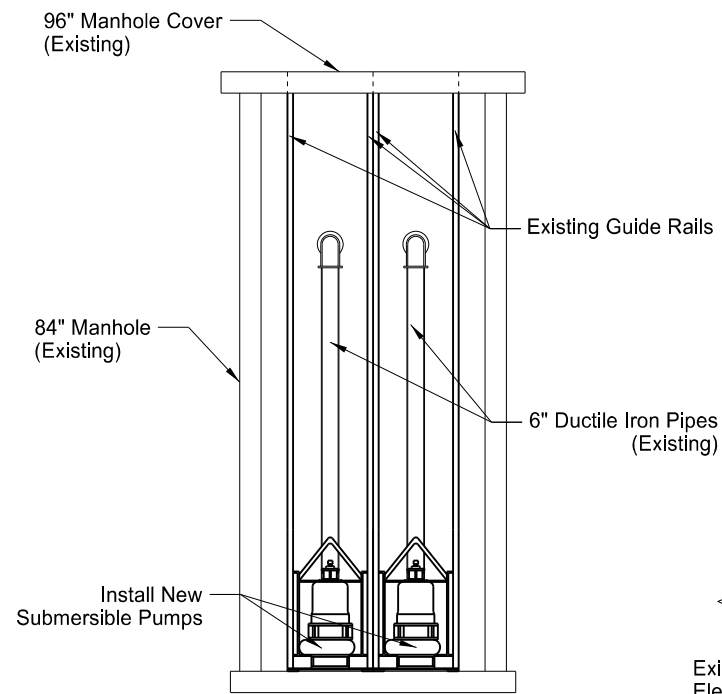
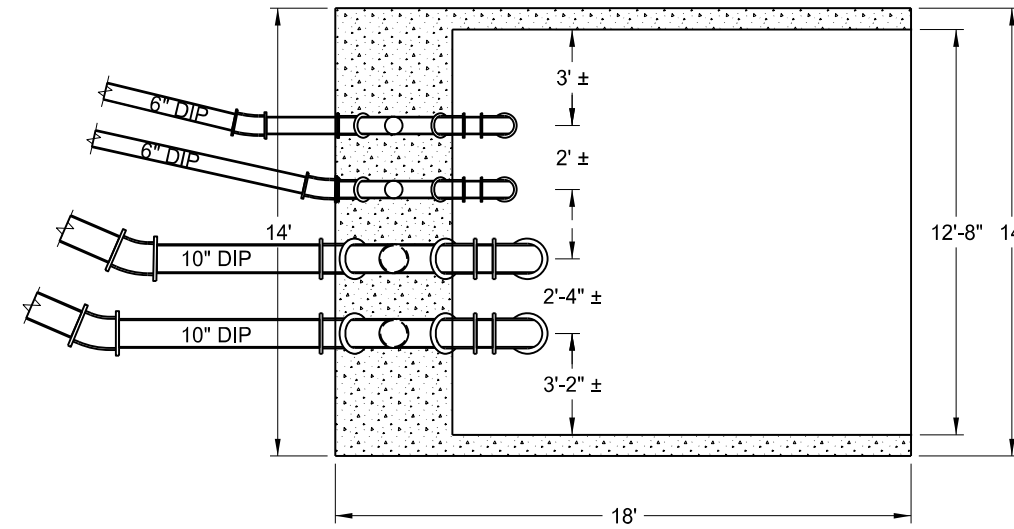
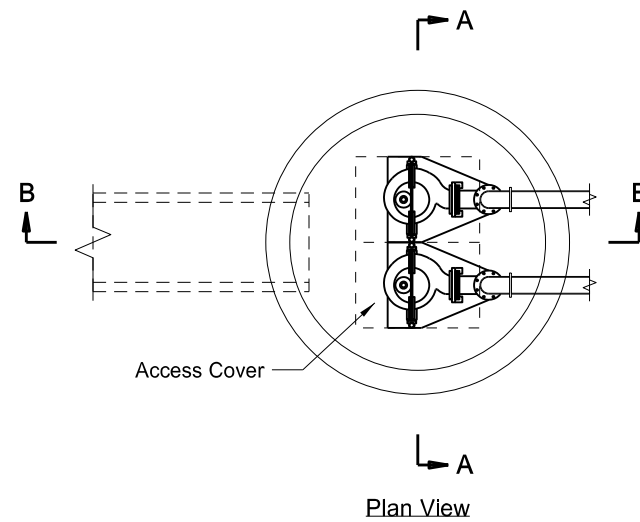
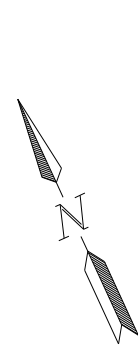
Spec & Code	Item Description	Quantity	Unit
722-6200	ADJUST MANHOLE 11+14 - 117.6' Rt.	1	EA
724-1138	PIPE DUCTILE IRON 6IN 11+28.8 - 104.6' Rt. to Outfall 11+29.6 - 102.7' Rt. to Outfall TOTAL	48 48 96	LF LF LF
724-1143	PIPE DUCTILE IRON 10IN 11+30 - 111.3' Rt. to Outfall 11+33.1 - 113' Rt. to Outfall TOTAL	48 44 92	LF LF LF
920-0100	PUMPING EQUIPMENT Lift Stations 1 & 2	1	LSUM



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Site Layout
I-94/5th St.
Fargo

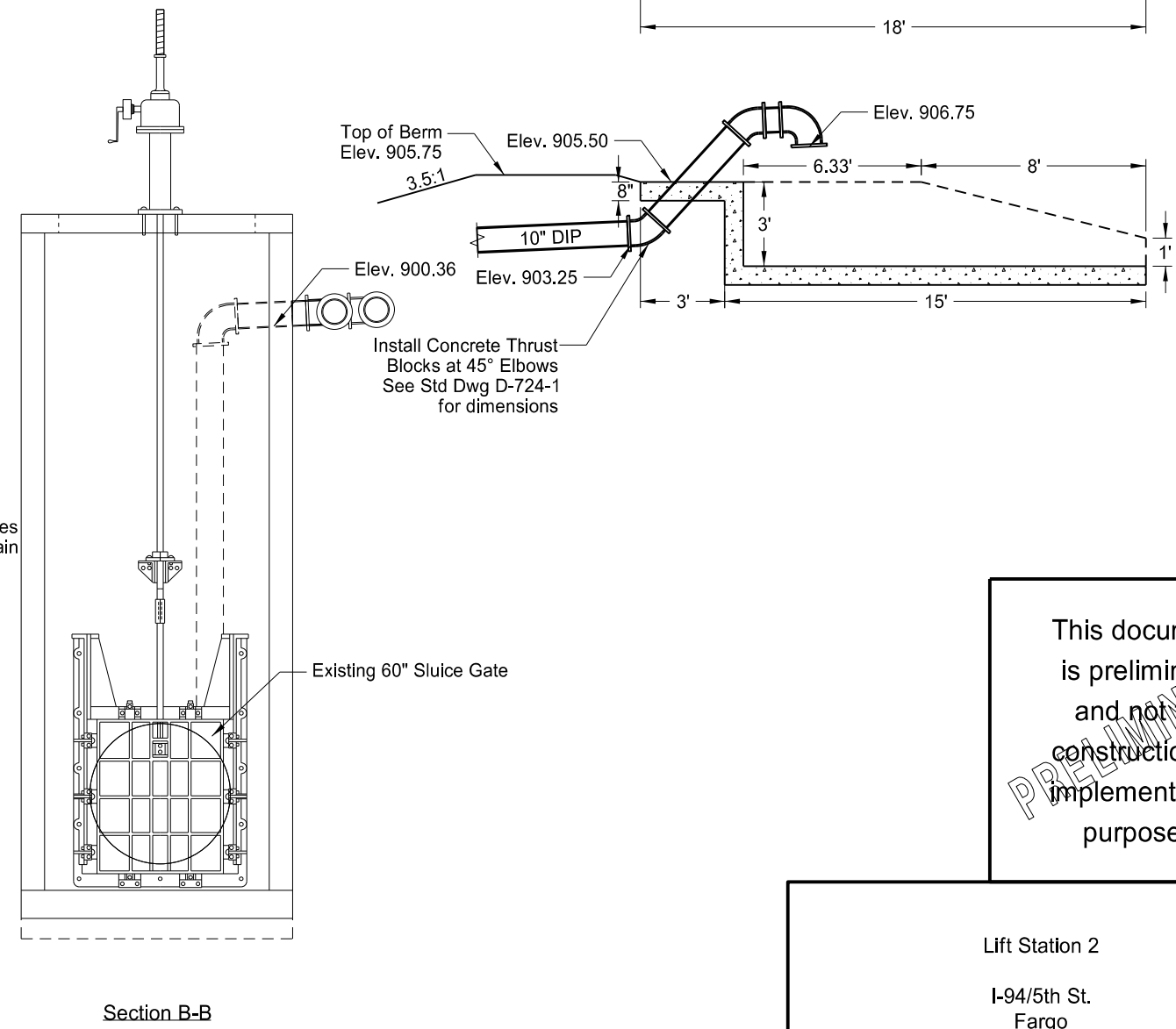
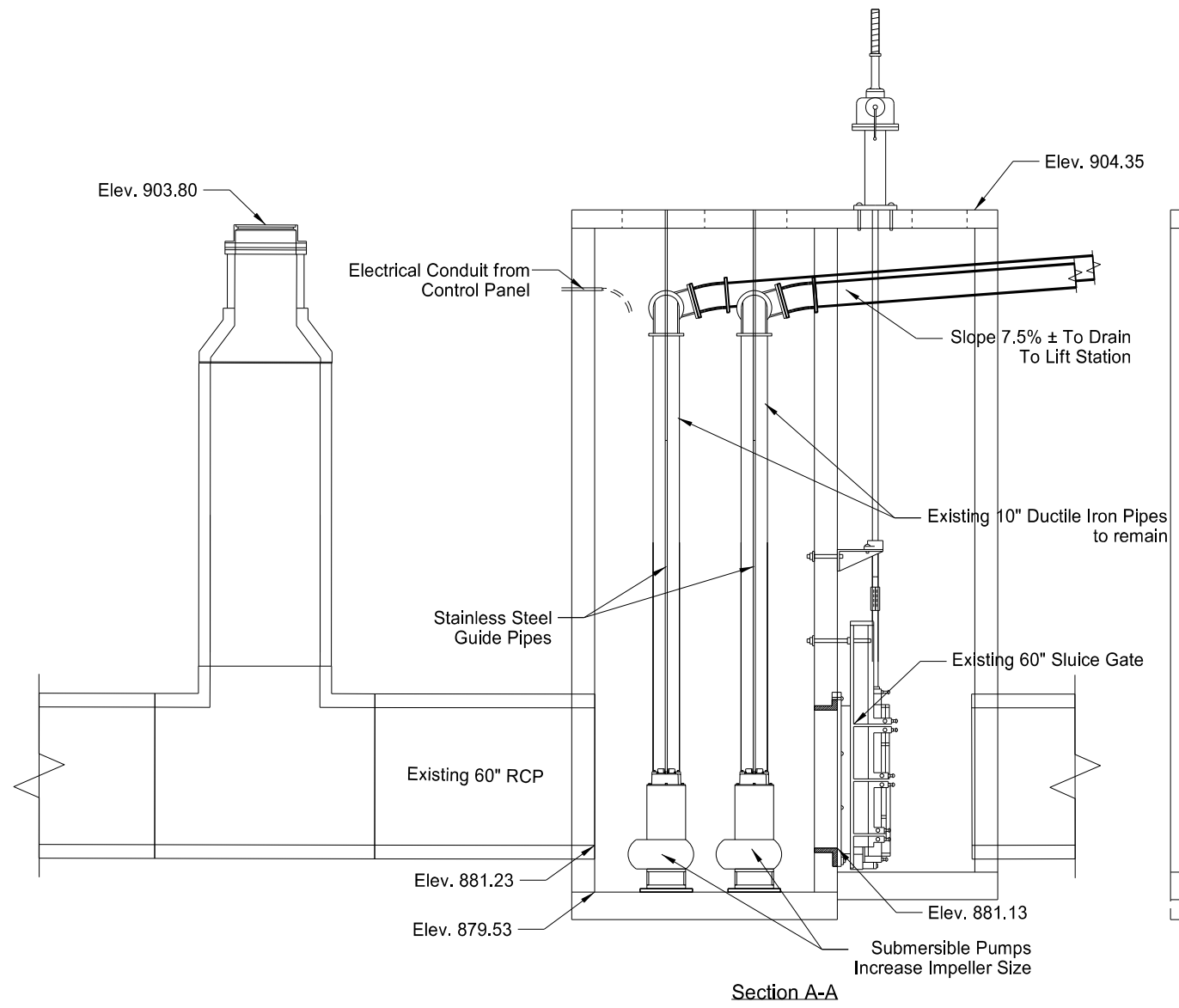
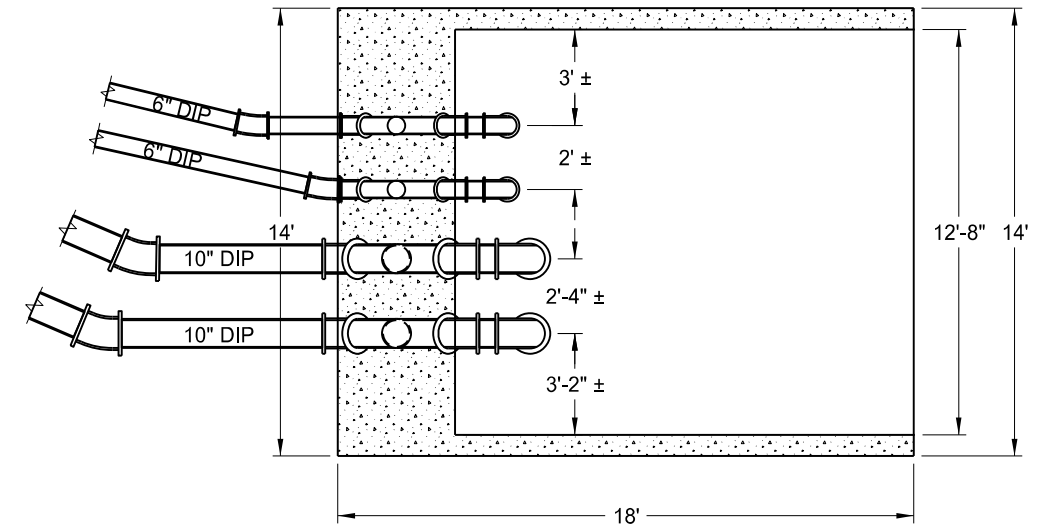
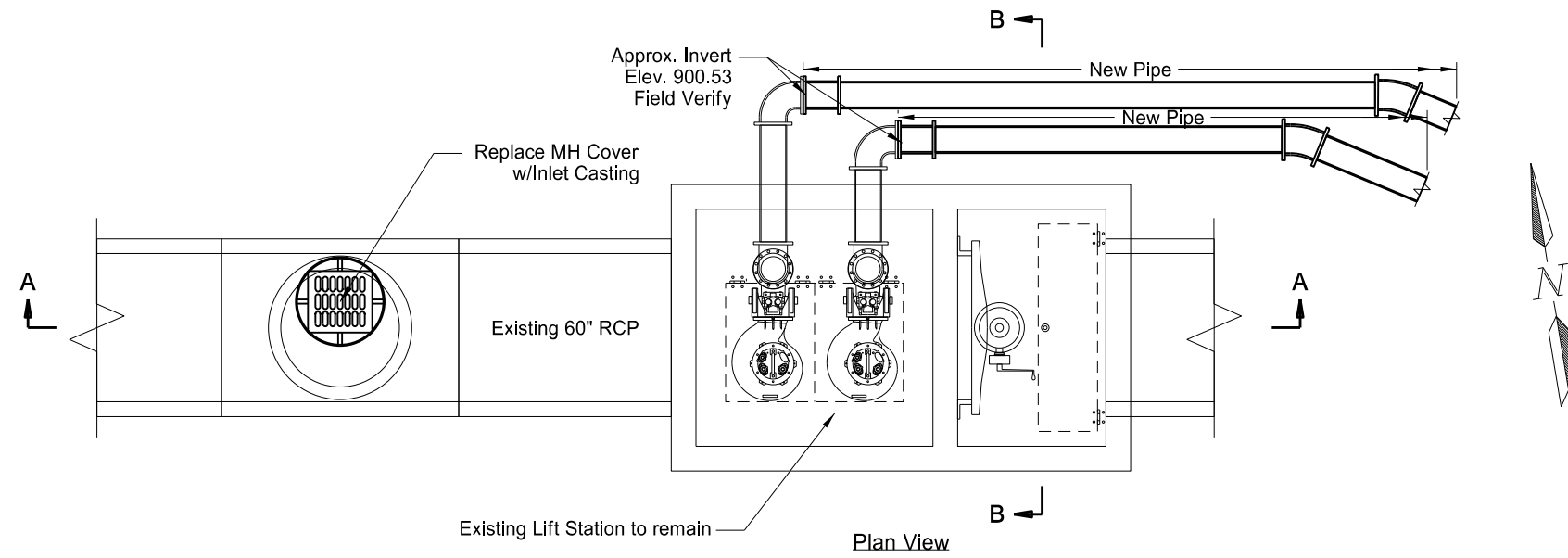
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Lift Station 1
I-94/5th St.
Fargo

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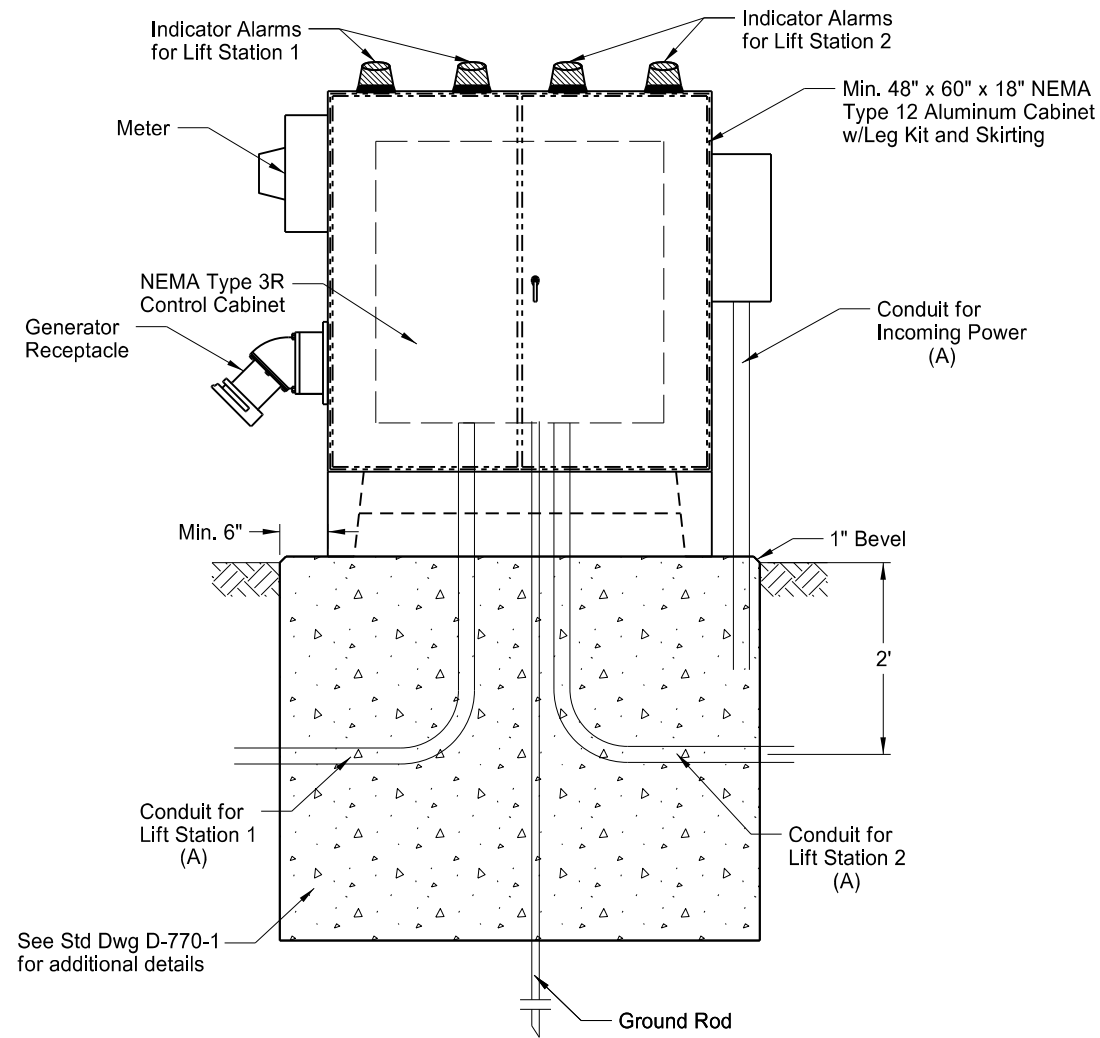


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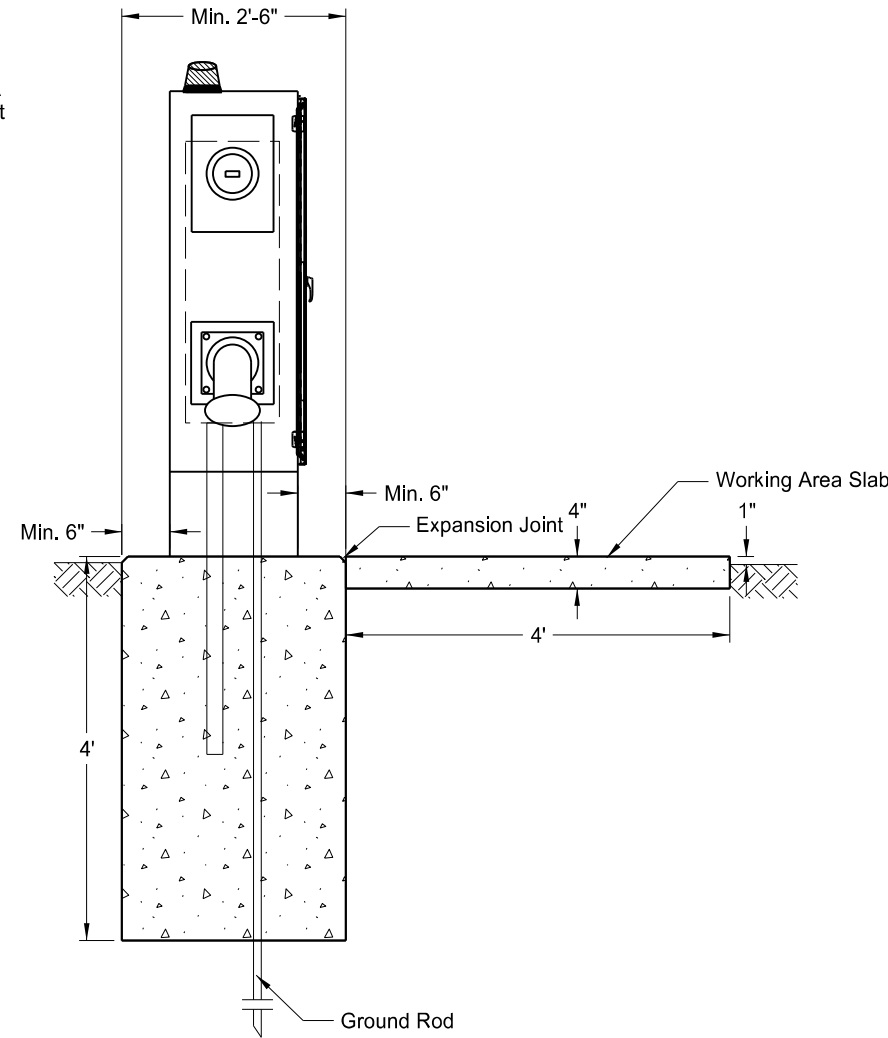
Lift Station 2
I-94/5th St.
Fargo

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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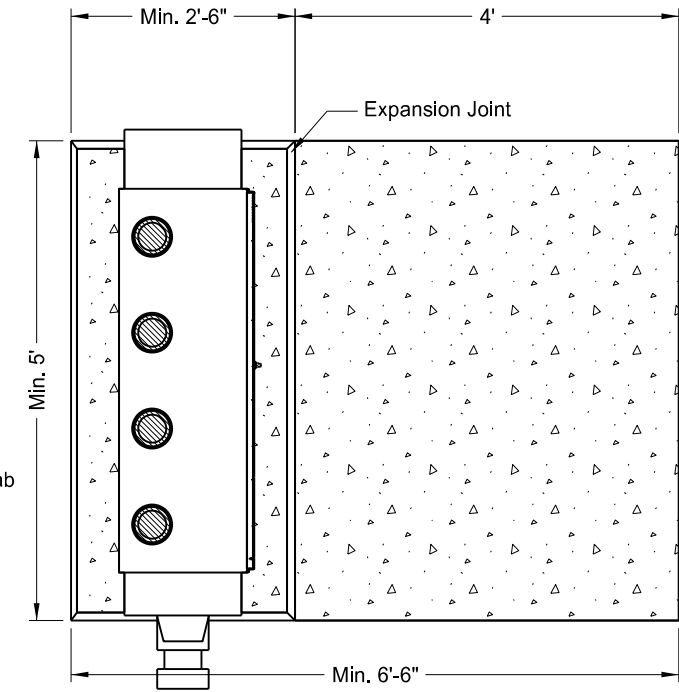
CONTROL CABINET



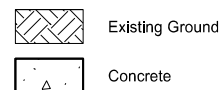
Elevation View



Side View



Plan View



NOTES

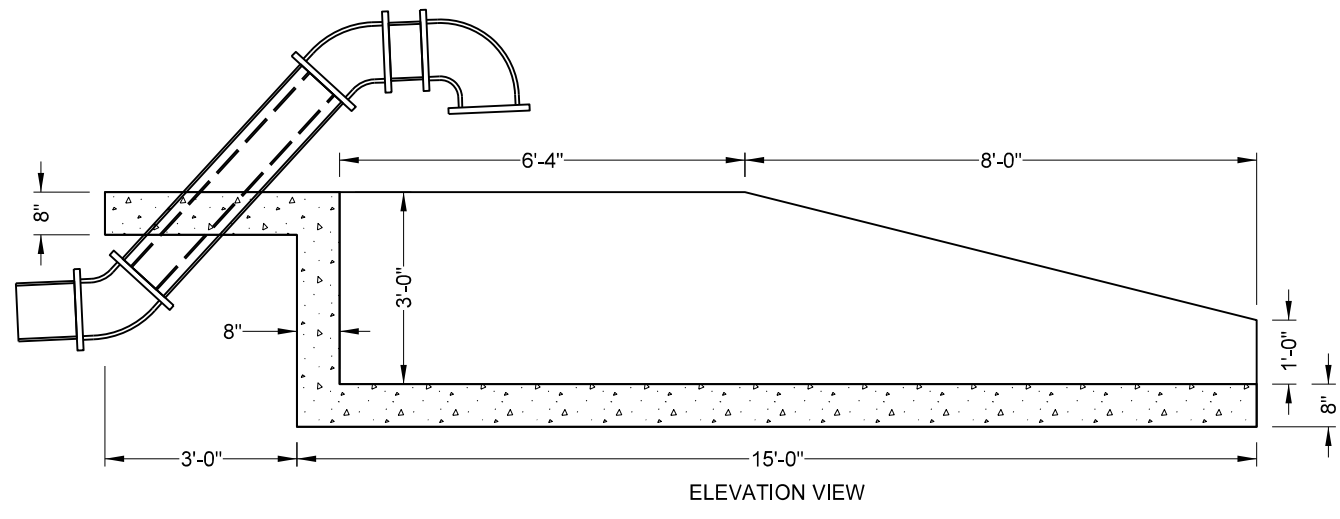
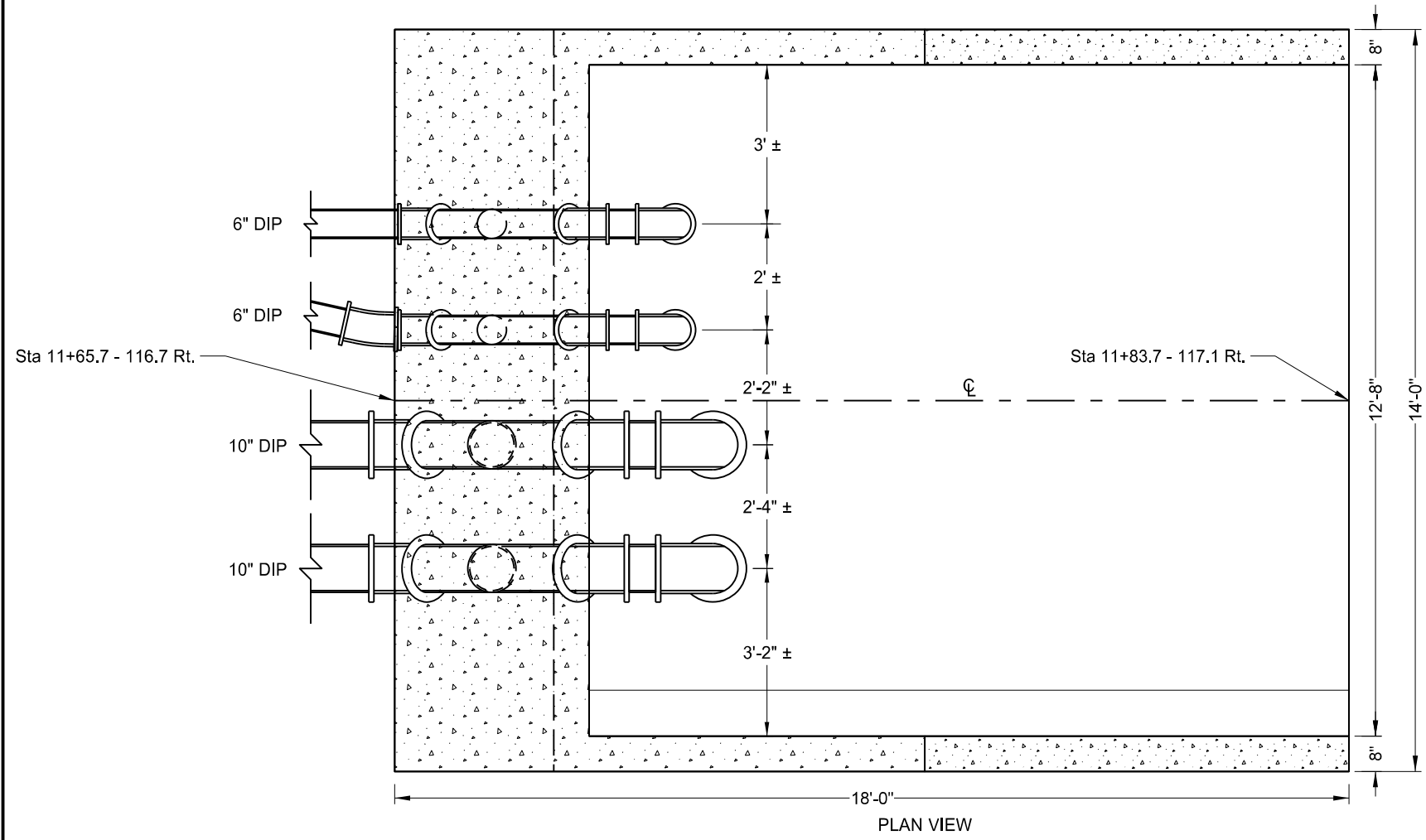
- (A) Conduit sizes to be determined by Contractor to comply with the National Electric Code.

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Control Cabinet
Sta 11+05 - 105.8' Rt.

I-94/5th St.
Fargo

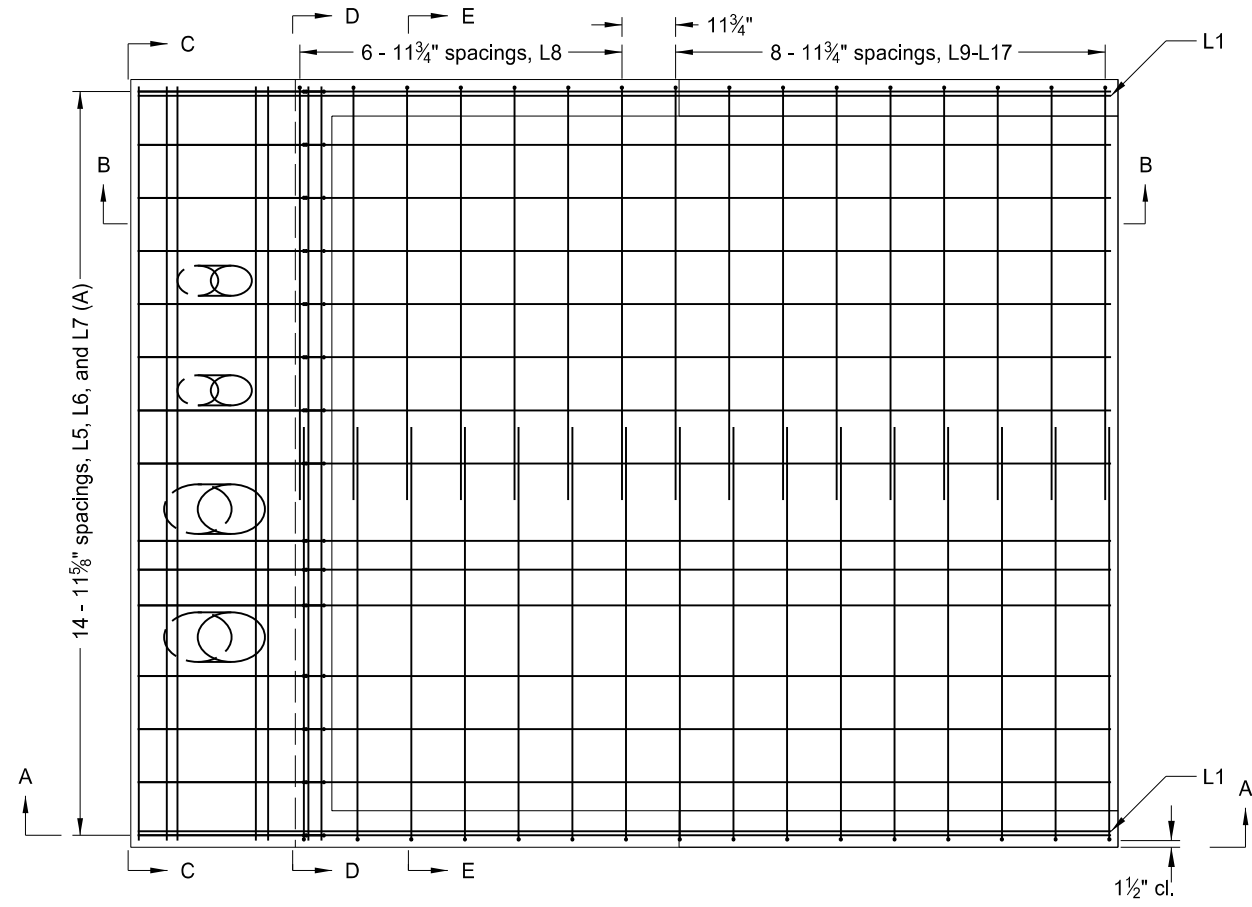
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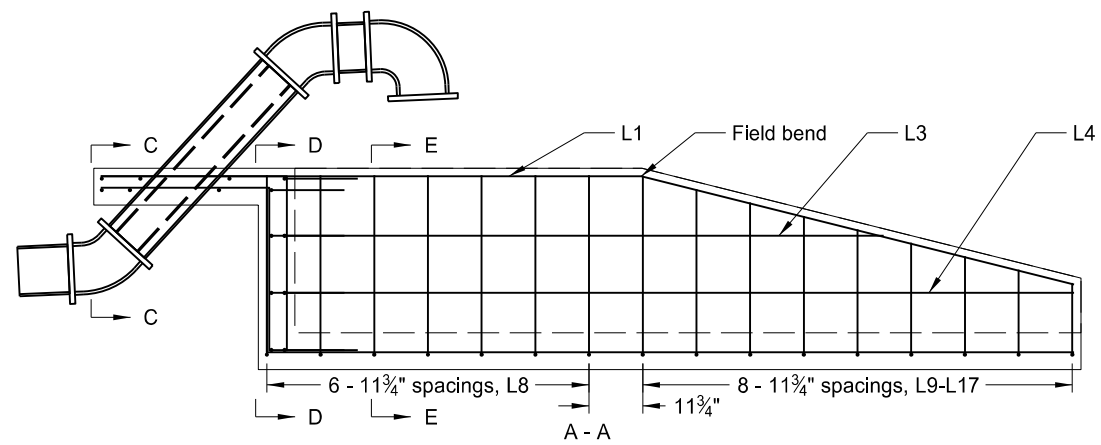
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Outfall Structure
I-94/5th St.
Fargo, ND

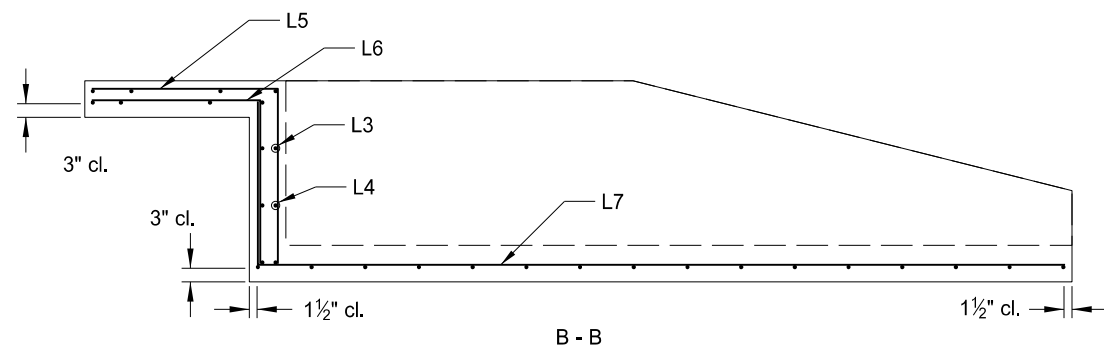
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ND	SIM-8-094(087)352	20	6



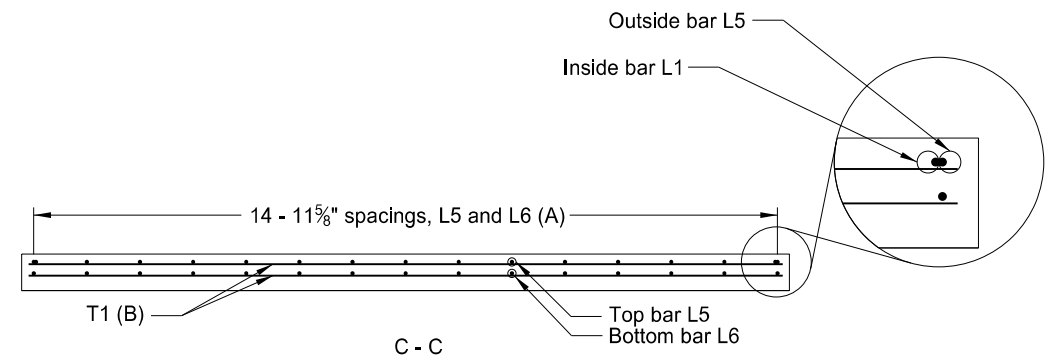
PLAN VIEW SHOWING REINFORCEMENT



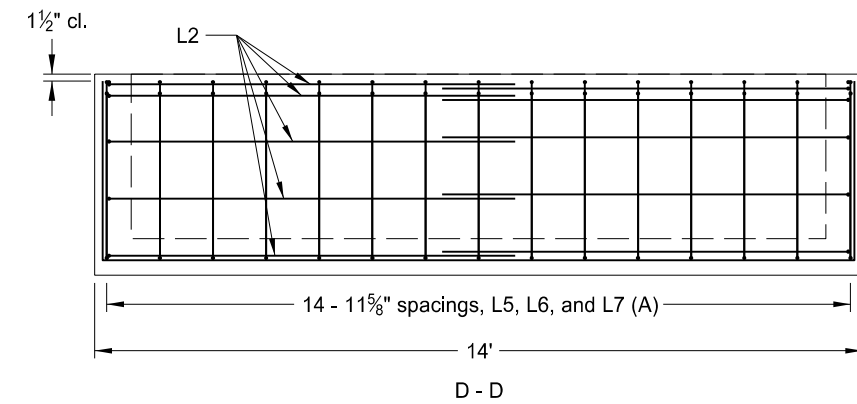
A - A



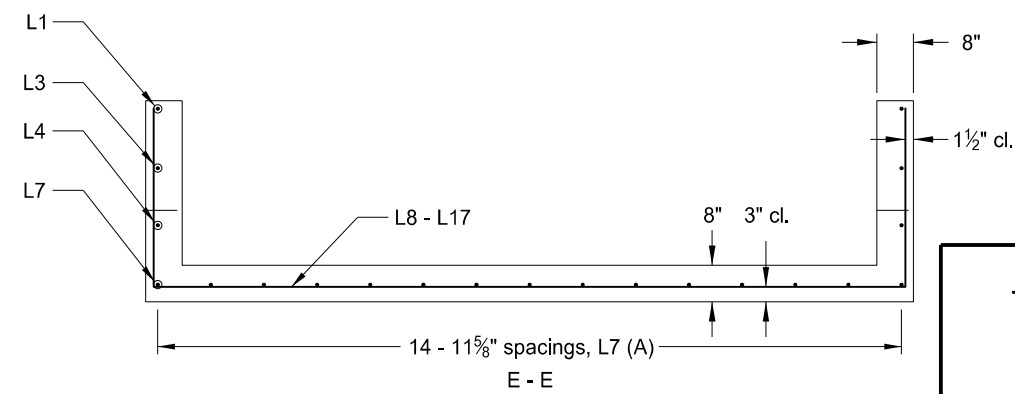
B - B



C - C



D - D



E - E

(A) Ductile iron discharge pipe locations are approximate. Adjust discharge pipe and/or L5, L6, and L7 bars to provide 1 1/2" clearance between the pipes and reinforcing.

(B) Ductile iron discharge pipe locations are approximate. Adjust discharge pipe and/or T1 bars to provide 1 1/2" clearance between the pipes and reinforcing.

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Outfall Structure
I-94/5th St.
 Fargo, ND

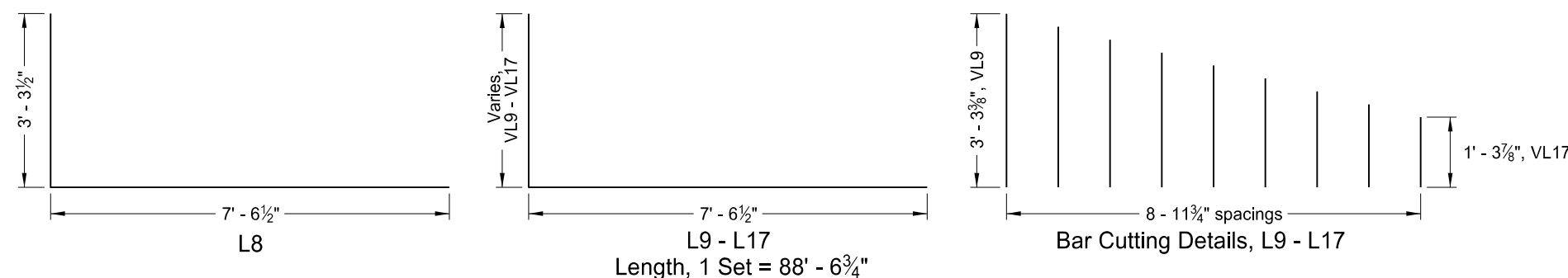
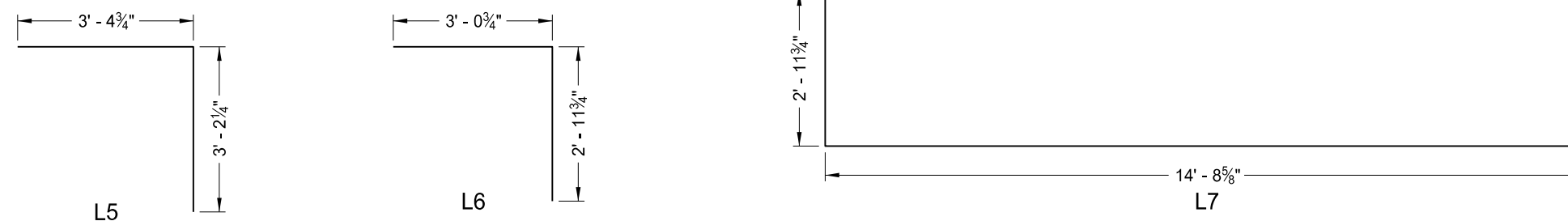
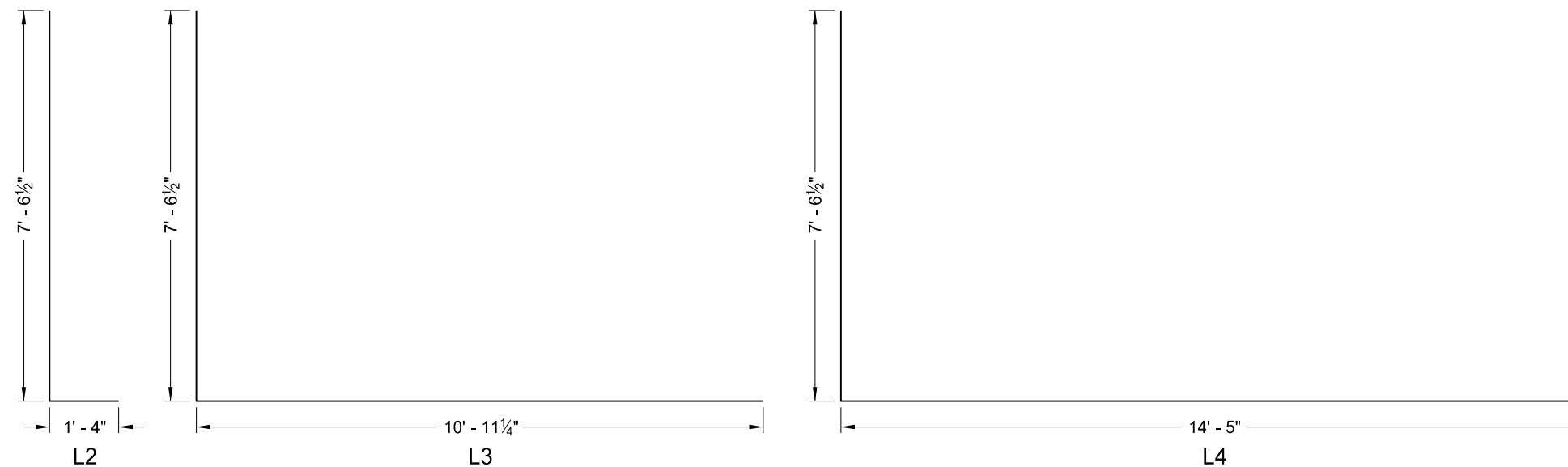
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SIM-8-094(087)352	20	7

Spec & Code	Item Description	Quantity	Unit
612-0115	REINFORCING STEEL-GRADE 60		
	11+74.7 - 116.9' Rt.	728	LBS
602-1130	CLASS AE-3 CONCRETE		
	11+74.7 - 116.9' Rt.	9	CY

BAR LIST				
MARK	SIZE	NO.	LENGTH	SHAPE
L1	4	2	18' - 0"	STRAIGHT
L2	4	12	8' - 10½"	BENT
L3	4	2	18' - 5¾"	BENT
L4	4	2	21' - 11½"	BENT
L5	4	15	6' - 7"	BENT
L6	4	15	6' - 0½"	BENT
L7	4	15	17' - 8¾"	BENT
L8	4	14	10' - 10"	BENT
L9 - L17	4	2 SETS	88' - 7⅛"	BENT
T1	4	6	13' - 9"	STRAIGHT

Construction notes:

1. Dimensions of bent bars are given out to out. The length of bent bars listed is the sum of the detailing dimensions.
2. Reinforcing steel shall be grade 60, and concrete shall be Class AE-3.
3. Longitudinal reinforcing shall be lap spliced 15" minimum.
4. Surface finish "C" shall be required for all exposed surfaces.

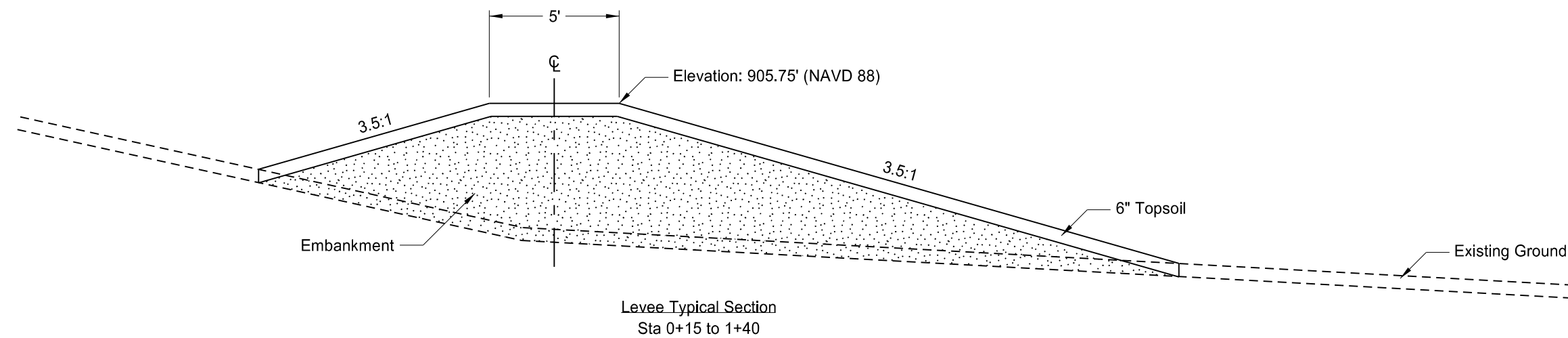


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Reinforcement Detail

I-94/5th St.
 Fargo, ND

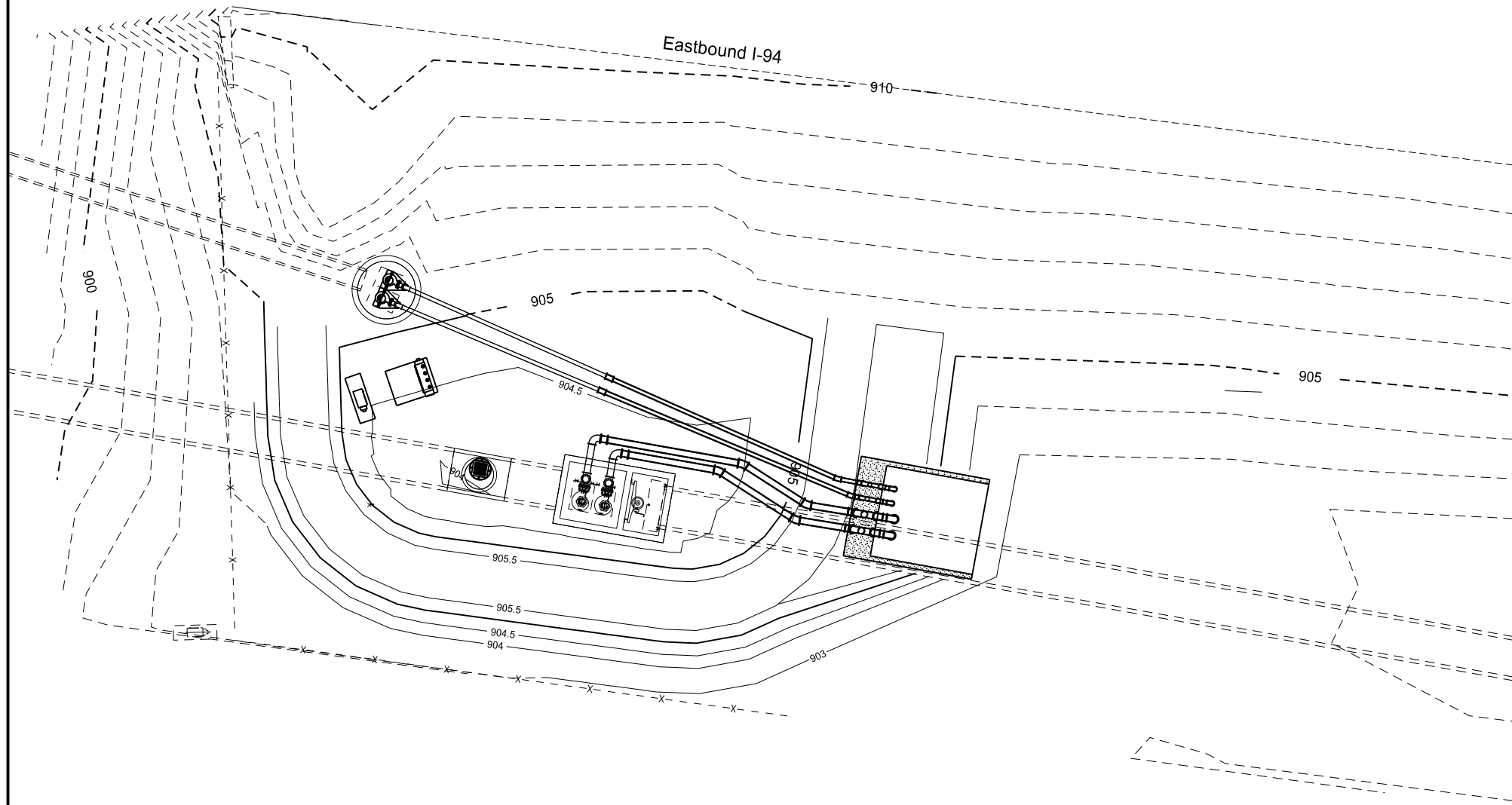
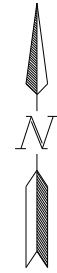
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SIM-8-094(087)352	30	1



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Proposed Typical Sections
I-94 Lift Station

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SIM-8-094(087)352	70	1

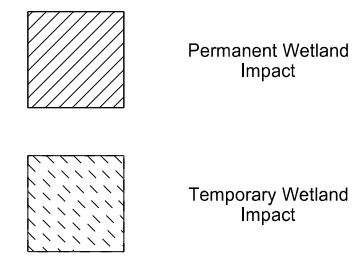
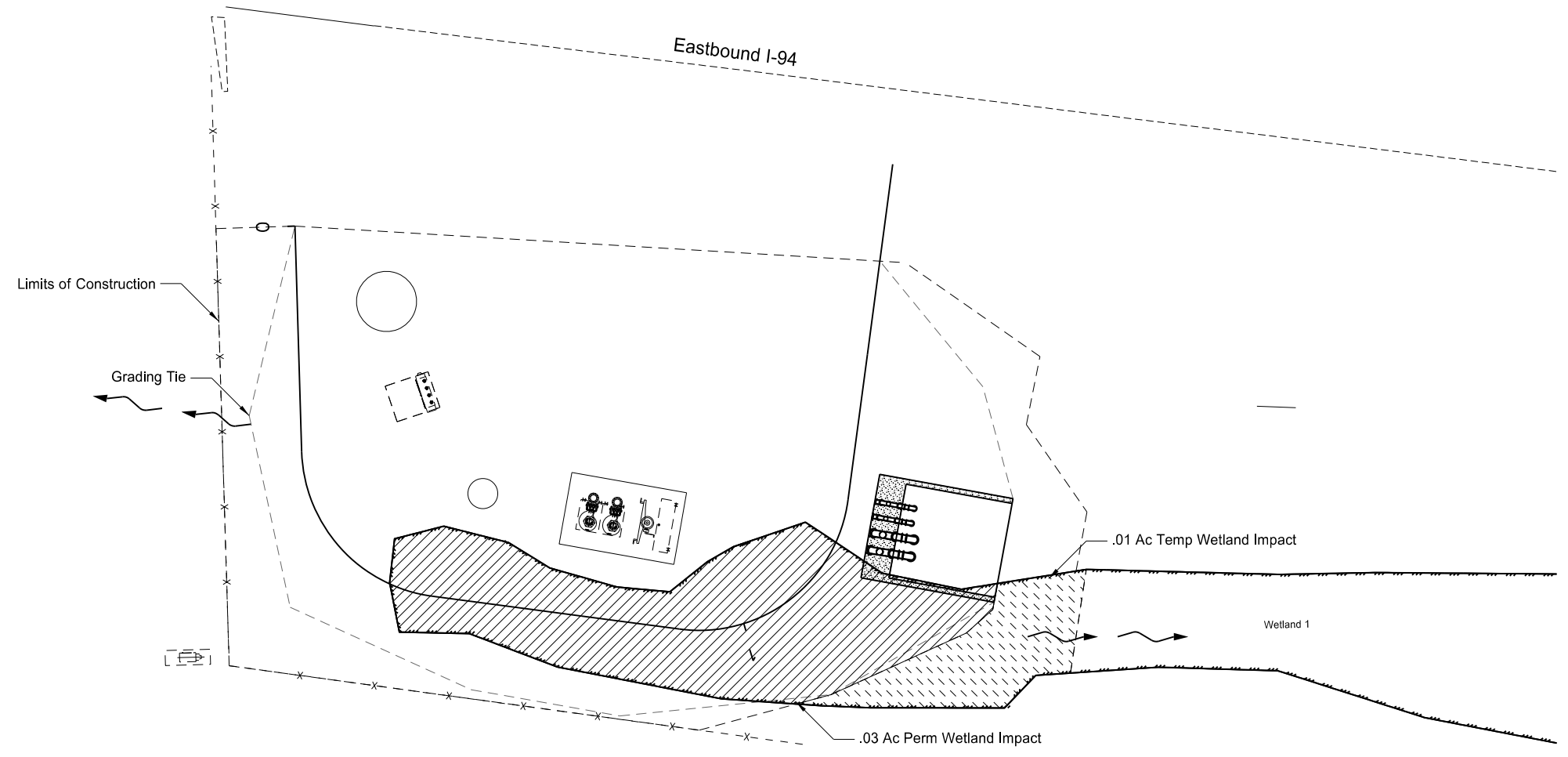
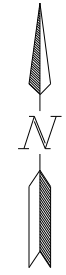


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Contour Layout

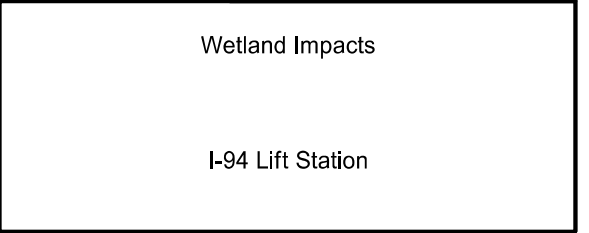
I-94 Lift Station

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SIM-8-094(087)352	75	1



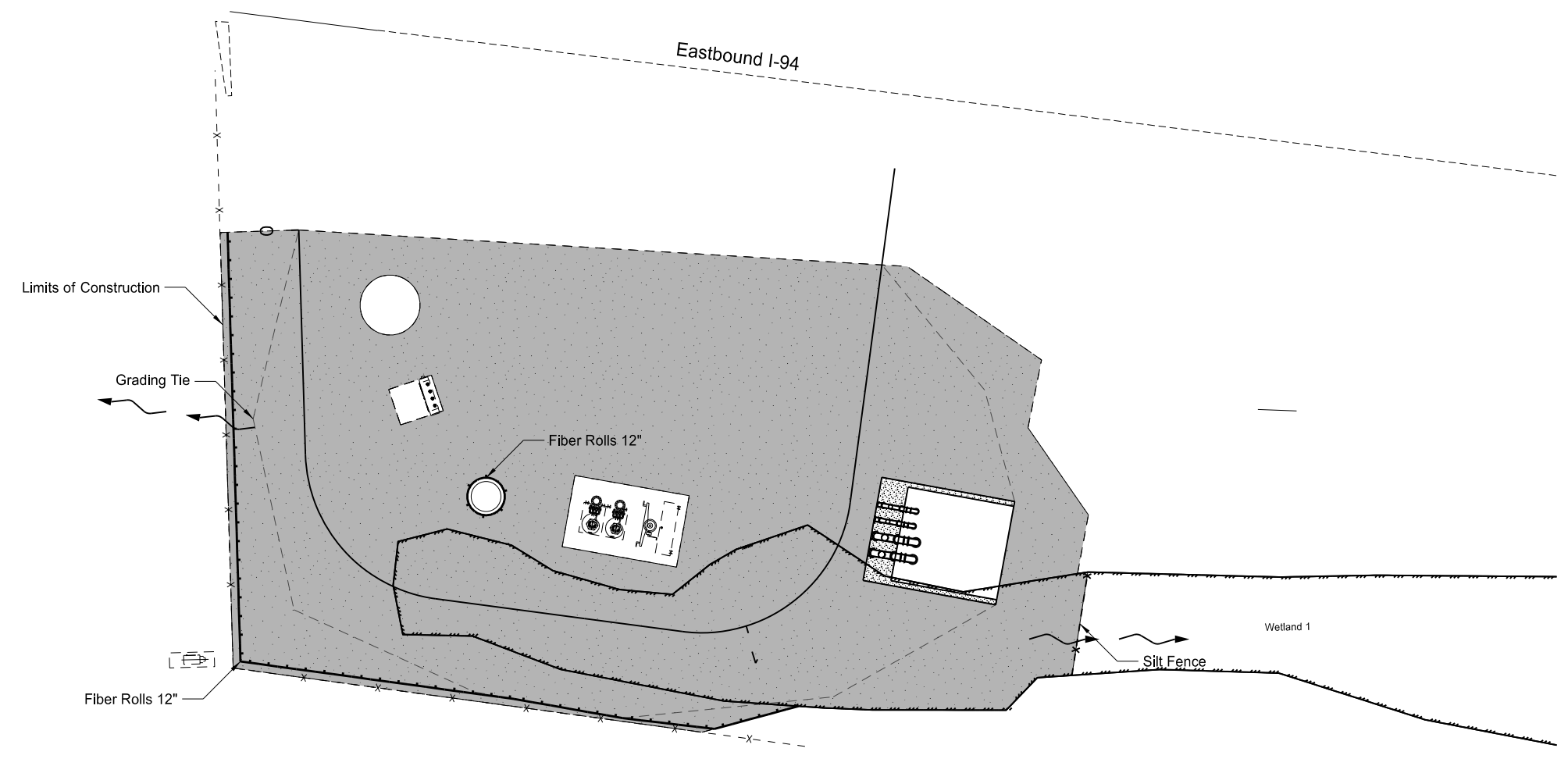
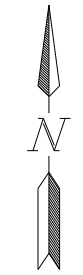
This document is preliminary and not for construction or implementation purposes.

T: 139 R: 48 Sec 18



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SIM-8-094(087)352	76	1

Spec	Code	Description	Quantity
251	2000	Temporary Cover Crop	0.14 ACRE
253	101	Straw Mulch	0.14 ACRE
260	200	Silt Fence Supported	14 LF
261	112	Fiber Rolls 12IN	149 LF

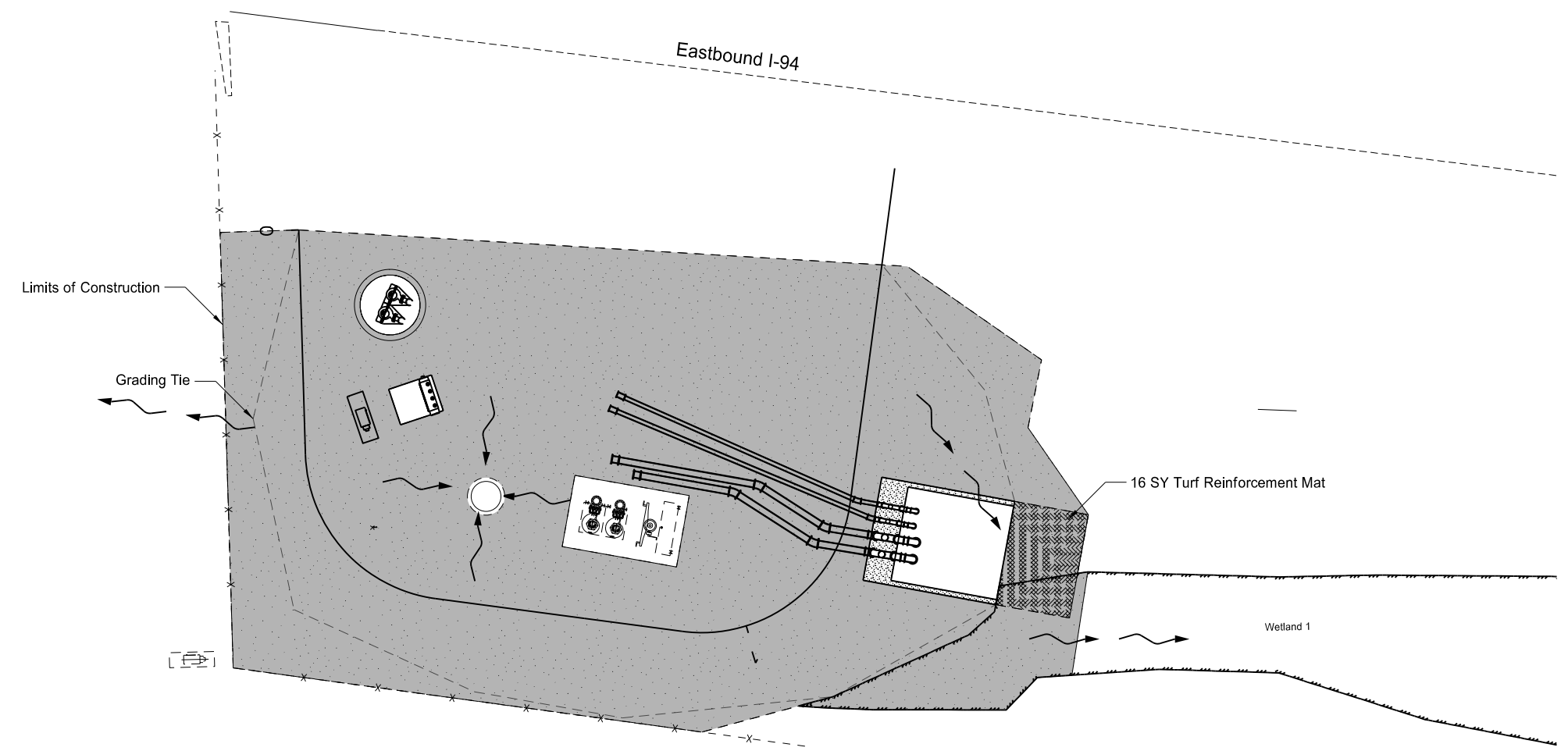


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Temporary Erosion Control
I-94 Lift Station

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SIM-8-094(087)352	77	1

Spec	Code	Description	Quantity
251	200	Seeding Class II	0.14 ACRE
253	101	Straw Mulch	0.14 ACRE
255	201	Turf Reinforcement Mat	16 SY



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Permanent Erosion Control

I-94 Lift Station

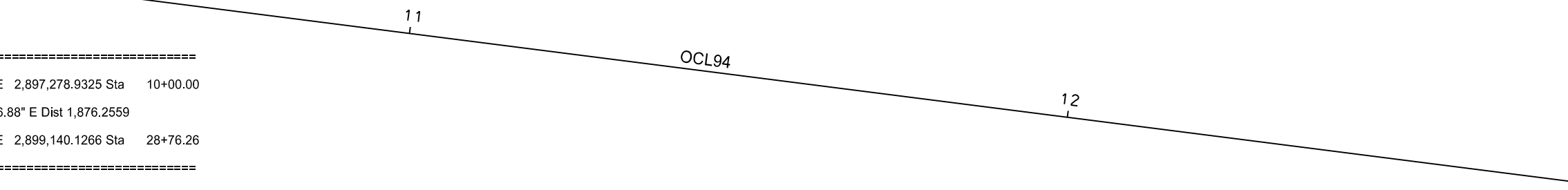
10

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SIM-8-094(087)352	82	1

Beginning chain OCL94 description

=====
 Point 8004 N 453,034.1587 E 2,897,278.9325 Sta 10+00.00
 Course from 8004 to 8005 S 82° 44' 06.88" E Dist 1,876.2559
 Point 8005 N 452,796.8979 E 2,899,140.1266 Sta 28+76.26
 =====

Ending chain OCL94 description



Beginning chain PR LEV description

=====
 Point 8000 N 452,937.8774 E 2,897,352.0166 Sta 0+00.00
 Course from 8000 to PC PR LEV-1 S 1° 44' 32.79" E Dist 30.0000

Curve Data

 Curve PR LEV-1
 P.I. Station 0+46.99 N 452,890.9138 E 2,897,353.4453
 Delta = 80° 40' 48.54" (LT)
 Degree = 286° 28' 44.03"
 Tangent = 16.9853
 Length = 28.1627
 Radius = 20.0000
 External = 6.2393
 Long Chord = 25.8929
 Mid. Ord. = 4.7557
 P.C. Station 0+30.00 N 452,907.8912 E 2,897,352.9288
 P.T. Station 0+58.16 N 452,888.6740 E 2,897,370.2823
 C.C. N 452,908.4994 E 2,897,372.9196
 Back = S 1° 44' 32.79" E
 Ahead = S 82° 25' 21.34" E
 Chord Bear = S 42° 04' 57.07" E

Course from PT PR LEV-1 to PC PR LEV-2 S 82° 25' 21.34" E Dist 33.1665

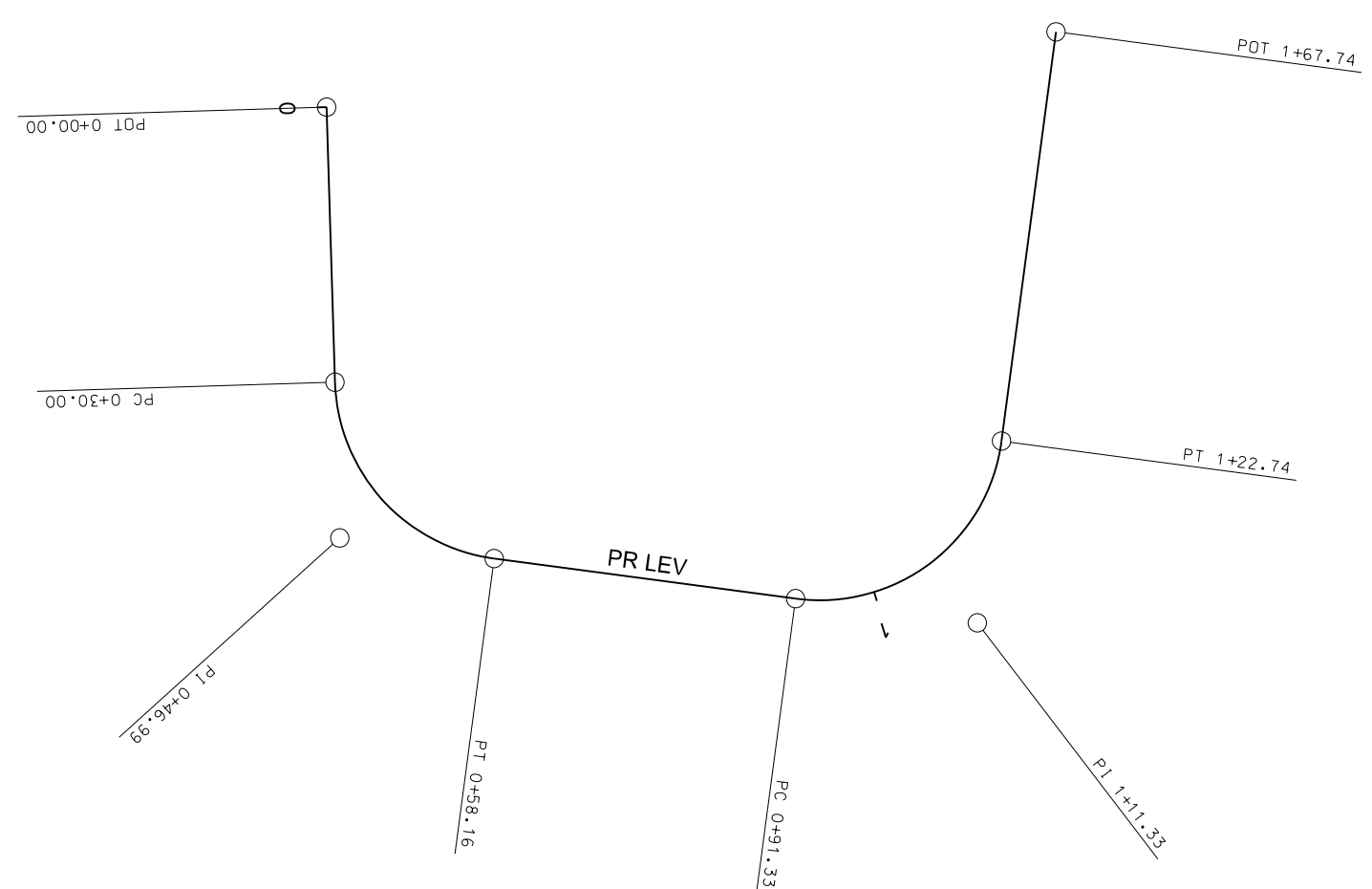
Curve Data

 Curve PR LEV-2
 P.I. Station 1+11.33 N 452,881.6635 E 2,897,422.9817
 Delta = 89° 59' 31.23" (LT)
 Degree = 286° 28' 44.03"
 Tangent = 19.9972
 Length = 31.4131
 Radius = 20.0000
 External = 8.2823
 Long Chord = 28.2823
 Mid. Ord. = 5.8569
 P.C. Station 0+91.33 N 452,884.3005 E 2,897,403.1591
 P.T. Station 1+22.74 N 452,901.4858 E 2,897,425.6214
 C.C. N 452,904.1258 E 2,897,405.7965
 Back = S 82° 25' 21.34" E
 Ahead = N 7° 35' 07.43" E
 Chord Bear = N 52° 34' 53.05" E

Course from PT PR LEV-2 to 8001 N 7° 35' 07.43" E Dist 45.0000

Point 8001 N 452,946.0920 E 2,897,431.5616 Sta 1+67.74

Ending chain PR LEV description



This document is preliminary and not for construction or implementation purposes.

Survey Data Layouts
 I-94 Lift Station

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SIM-8-094(087)352	100	1

SIGN NUMBER	SIGN SIZE	DESCRIPTION	AMOUNT REQUIRED	UNITS PER AMOUNT	UNITS SUB TOTAL
D3-36	36"x6"	STREET NAME SIGN (Sign and installation only)		6	
G20-1-60	60"x24"	ROAD WORK NEXT ___ MILES		34	
G20-1b-60	60"x24"	WORK IN PROGRESS/ NO WORK IN PROGRESS (Sign and installation only)		26	
G20-2-48	48"x24"	END ROAD WORK	2	19	38
G20-4-36	36"x18"	PILOT CAR FOLLOW ME (Mounted to back of pilot car)		18	
G20-10-108	108"x48"	CONTRACTOR SIGN		64	
G20-50a-72	72"x36"	ROAD WORK NEXT ___ MILES RT & LT ARROWS		37	
G20-52a-72	72"x24"	ROAD WORK NEXT ___ MILES RT or LT ARROW		30	
G20-55-96	96"x48"	SPEED LIMIT ENFORCED - MINIMUM FEE \$80 WHEN WORKERS PRESENT		59	
M1-1-36	36"x36"	INTERSTATE ROUTE MARKER (Post and installation only)		10	
M1-4-24	24"x24"	U.S. ROUTE MARKER (Post and installation only)		10	
M1-5-24	24"x24"	STATE ROUTE MARKER (Post and installation only)		10	
M3-1-24	24"x12"	NORTH (Mounted on route marker post)		7	
M3-2-24	24"x12"	EAST (Mounted on route marker post)		7	
M3-3-24	24"x12"	SOUTH (Mounted on route marker post)		7	
M3-4-24	24"x12"	WEST (Mounted on route marker post)		7	
M4-8-24	24"x12"	DETOUR (Mounted on route marker post)		7	
M4-9-30	30"x24"	DETOUR ARROW RIGHT or LEFT/AHD AND RT or LT		15	
M4-10-48	48"x18"	DETOUR ARROW RIGHT or LEFT		23	
M5-1-21	21"x15"	ARROW AHD AND RT or LT (Mounted on route marker post)		7	
M5-2-21	21"x15"	ARROW AHD UP & RT or LT (Mounted on route marker post)		7	
M6-1-21	21"x15"	ARROW RT or LT (Mounted on route marker post)		7	
M6-2-21	21"x15"	ARROW UP & RT or LT (Mounted on route marker post)		7	
M6-3-21	21"x15"	ARROW AHD (Mounted on route marker post)		7	
R1-1-48	48"x48"	STOP		32	
R1-1a-18	18"x18"	STOP and SLOW PADDLE Back to Back		5	
R1-2-60	60"x60"	YIELD		29	
R2-1-48	48"x60"	SPEED LIMIT ___	4	39	156
R2-1a-24	24"x18"	MINIMUM FEE \$80 (Mounted on Speed Limit post)		10	
R3-7-48	48"x48"	LEFT or RIGHT LANE MUST TURN LEFT or RIGHT		35	
R4-1-48	48"x60"	DO NOT PASS		39	
R4-7-48	48"x60"	KEEP RIGHT SYMBOL		39	
R5-1-48	48"x48"	DO NOT ENTER		35	
R6-1-36	36"x12"	ONE WAY RIGHT or LEFT		13	
R7-1-12	12"x18"	NO PARKING		11	
R10-6-24	24"x36"	STOP HERE ON RED		16	
R11-2-48	48"x30"	ROAD CLOSED		28	
R11-2a-48	48"x30"	STREET CLOSED		28	
R11-3a-60	60"x30"	ROAD CLOSED ___ MILES AHEAD LOCAL TRAFFIC ONLY		31	
R11-3c-60	60"x30"	STREET CLOSED ___ MILES AHEAD LOCAL TRAFFIC ONLY		31	
R11-4a-60	60"x30"	STREET CLOSED TO THRU TRAFFIC		31	
W1-3-48	48"x48"	RIGHT or LEFT SHARP REVERSE CURVE ARROW		35	
W1-4-48	48"x48"	RIGHT or LEFT REVERSE CURVE ARROW		35	
W1-4b-48	48"x48"	DOUBLE RIGHT or LEFT REVERSE CURVE ARROW		35	
W1-6-48	48"x24"	LARGE ARROW		26	
W3-1-48	48"x48"	STOP AHEAD SYMBOL		35	
W3-3-48	48"x48"	SIGNAL AHEAD SYMBOL		35	
W3-4-48	48"x48"	BE PREPARED TO STOP		35	
W3-5-48	48"x48"	SPEED REDUCTION AHEAD	2	35	70
W4-2-48	48"x48"	RIGHT or LEFT LANE TRANSITION SYMBOL		35	
W5-1-48	48"x48"	ROAD NARROWS		35	
W5-8-48	48"x48"	THRU TRAFFIC RIGHT LANE		35	
W5-9-48	48"x48"	ROAD WORK TRAFFIC ONLY DOWN & LT or RT ARROW		35	
W6-3-48	48"x48"	TWO WAY TRAFFIC SYMBOL		35	
W8-1-48	48"x48"	BUMP		35	
W8-3-48	48"x48"	PAVEMENT ENDS		35	
W8-7-48	48"x48"	LOOSE GRAVEL		35	
W8-9a-48	48"x48"	SHOULDER DROP-OFF		35	
W8-11-48	48"x48"	UNEVEN LANES		35	
W8-12-48	48"x48"	NO CENTER STRIPE		35	
W8-53-48	48"x48"	TRUCKS ENTERING HIGHWAY		35	
W8-54-48	48"x48"	TRUCKS ENTERING AHEAD or ___ FT.		35	
W8-55-48	48"x48"	TRUCKS CROSSING AHEAD or ___ FT.		35	
W8-56-48	48"x48"	TRUCKS EXITING HIGHWAY		35	
W9-3a-48	48"x48"	CENTER LANE CLOSED SYMBOL		35	
W12-2-48	48"x48"	LOW CLEARANCE SYMBOL		35	
W13-1-24	24"x24"	___ MPH ADVISORY SPEED PLATE (Mounted on warning sign post)		11	
W13-4-48	48"x60"	RAMP ARROW		39	
W14-3-48	48"x36"	NO PASSING ZONE		23	
W20-1-48	48"x48"	ROAD WORK AHEAD or ___ FT or ___ MILE	2	35	70
W20-2-48	48"x48"	DETOUR AHEAD or ___ FT		35	
W20-3-48	48"x48"	ROAD or STREET CLOSED AHEAD or ___ FT.		35	
W20-4-48	48"x48"	ONE LANE ROAD AHEAD or ___ FT.		35	
W20-5-48	48"x48"	RIGHT or LEFT LANE CLOSED AHEAD or ___ FT.		35	
W20-7a-48	48"x48"	FLAGGING SYMBOL		35	
W20-7k-24	24"x18"	___ FEET (Mounted on warning sign post)		10	
W20-8-48	48"x48"	STREET CLOSED		35	
W20-51-48	48"x48"	EQUIPMENT WORKING		35	
W20-52-54	54"x12"	NEXT ___ MILES (Mounted on warning sign post)	2	12	24
W21-1a-48	48"x48"	WORKERS SYMBOL		35	
W21-2-48	48"x48"	FRESH OIL		35	
W21-3-48	48"x48"	ROAD MACHINERY AHEAD or ___ FT		35	

SIGN NUMBER	SIGN SIZE	DESCRIPTION	AMOUNT REQUIRED	UNITS PER AMOUNT	UNITS SUB TOTAL
W21-5-48	48"x48"	SHOULDER WORK		35	
W21-5a-48	48"x48"	RIGHT or LEFT SHOULDER CLOSED	2	35	70
W21-5b-48	48"x48"	RIGHT or LEFT SHOULDER CLOSED AHEAD or ___ FT.	2	35	70
W21-6a-48	48"x48"	SURVEY CREW AHEAD		35	
W21-50-48	48"x48"	BRIDGE PAINTING AHEAD or ___ FT.		35	
W21-51-48	48"x48"	MATERIAL ON ROADWAY		35	
W22-8-48	48"x48"	FRESH OIL LOOSE ROCK		35	
	24"x24"	TAKE TURNS (6" D letters) (Mounted on stop sign post)		11	

SPECIAL SIGNS					

SPEC & CODE	DESCRIPTION	TOTAL UNITS
704-1000	TRAFFIC CONTROL SIGNS	498

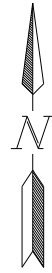
SPEC & CODE	DESCRIPTION	UNIT	QUANTITY
704-0100	FLAGGING	MHR	
704-1041	ATTENUATION DEVICE-TYPE B-55	EACH	
704-1043	ATTENUATION DEVICE-TYPE B-65	EACH	
704-1044	ATTENUATION DEVICE-TYPE B-70	EACH	
704-1050	TYPE I BARRICADES	EACH	
704-1051	TYPE II BARRICADES	EACH	
704-1052	TYPE III BARRICADES	EACH	
704-1060	DELINEATOR DRUMS	EACH	13
704-1065	TRAFFIC CONES	EACH	
704-1067	TUBULAR MARKERS	EACH	
704-1070	DELINEATOR	EACH	
704-1072	FLEXIBLE DELINEATORS	EACH	
704-1081	VERTICAL PANELS - BACK TO BACK	EACH	
704-1085	SEQUENCING ARROW PANEL - TYPE A	EACH	
704-1086	SEQUENCING ARROW PANEL - TYPE B	EACH	
704-1087	SEQUENCING ARROW PANEL - TYPE C	EACH	
704-1088	SEQUENCING ARROW PANEL - TYPE C - CROSSOVER	EACH	
704-1095	TYPE B FLASHERS	EACH	
704-1500	OBLITERATION OF PVMT MK	SF	
704-3501	PORTABLE PRECAST CONCRETE MED BARRIER	LF	
704-3510	PRECAST CONCRETE MED BARRIER - STATE FURNISHED	EACH	
762-0200	RAISED PAVEMENT MARKERS	EACH	
762-0420	SHORT TERM 4IN LINE - TYPE R	LF	
762-0430	SHORT TERM 4IN LINE - TYPE NR	LF	
772-2110	FLASHING BEACON - POST MOUNTED	EACH	

NOTE:
If additional signs are required, units will be calculated using the formula from Section III-19.06 of the Design Manual.
<http://www.dot.nd.gov/>

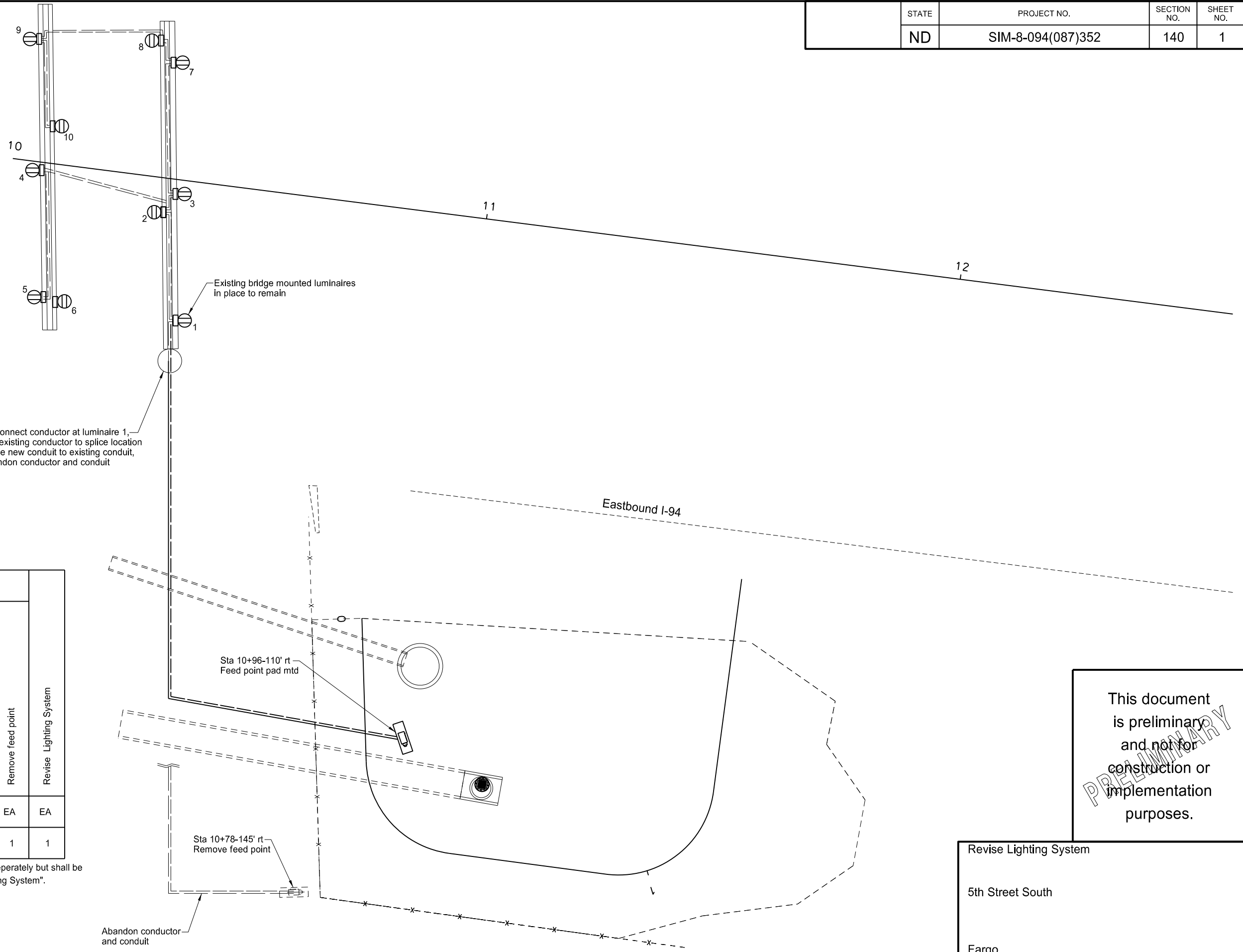
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Traffic Control Devices List

I-94 Lift Station



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SIM-8-094(087)352	140	1



Disconnect conductor at luminaire 1, pull existing conductor to splice location splice new conduit to existing conduit, abandon conductor and conduit

Sta 10+96-110' rt
Feed point pad mtd

Sta 10+78-145' rt
Remove feed point

Abandon conductor and conduit

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implementation
purposes.

Lighting Quantities (A)					
2 in Diameter Rigid Conduit	Underground Conductor No. 8 RHW	Feed Point - Type I - Pad Mounted	Concrete Foundation - Feed Point - Type B	Remove feed point	Revise Lighting System
LF	LF	EA	EA	EA	EA
115	445	1	1	1	1

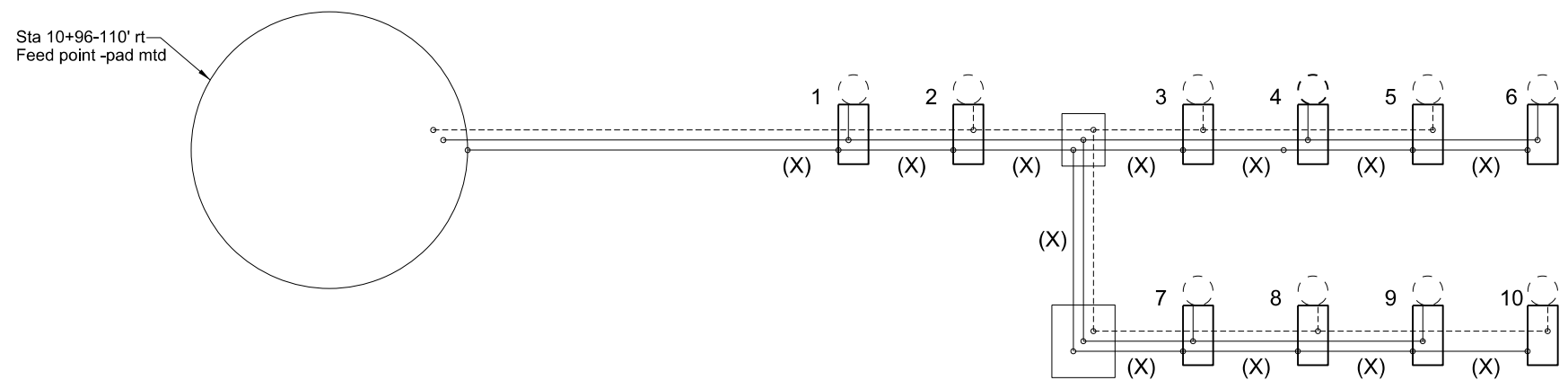
(A) These items shall not be bid separately but shall be included in the item "Revise Lighting System".

Revise Lighting System

5th Street South

Fargo

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SIM-8-094(087)352	140	2



LEGEND

-----	Phase Conductor		Existing High Pressure Sodium Vapor Luminaire 120v x 240v operated on 120v
=====	Phase Conductor		Existing Splice Box
-----	Ground Conductor		Existing Junction Box
(X)	3 No 8 RHW	5	Light Standard number

This document is preliminary and not for construction or implementation purposes.

Revise Lighting System
Lighting Schematic
5th Street South
Fargo

Proposed Levee

STATE

PROJECT NO.

SECTION NO.

SHEET NO.

ND

SIM-8-094(087)352

200

1

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

910

905

910

905

910

905

910

905

910

905

910

905

910

905

910

905

910

905

910

905

905.75

905.75

905.75

905.75

905.75

905.75

1+05.00

0+85.00

0+65.00

0+45.00

0+25.00

904.4
OS 19.4' Lt

904.6
OS 6.5' Lt

904.3
OS 8.7' Lt
904.6
OS 6.5' Lt

904.0
OS 11.8' Lt
904.6
OS 6.5' Lt

904.1
OS 17.3' Lt
904.6
OS 6.5' Lt

904.3
OS 24.7' Lt
904.6
OS 6.5' Lt

+25.00 to 1+05.00

Proposed Levee

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SIM-8-094(087)352	200	2

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

