KDWPT PHASE 1: PUMP STATION DELIVERY LINE

NEOSHO WILDLIFE AREA - NORTH UNIT

ST. PAUL, KANSAS

September 16

SHEET INDEX	
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3B	EXISTING CONDITIONS - BERM A
4	PUMPING LINE PLAN & PROFILE I
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6	PUMPING LINE PLAN & PROFILE III
7	PUMPING LINE PLAN & PROFILE IV
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10	PUMPING LINE DETAILS
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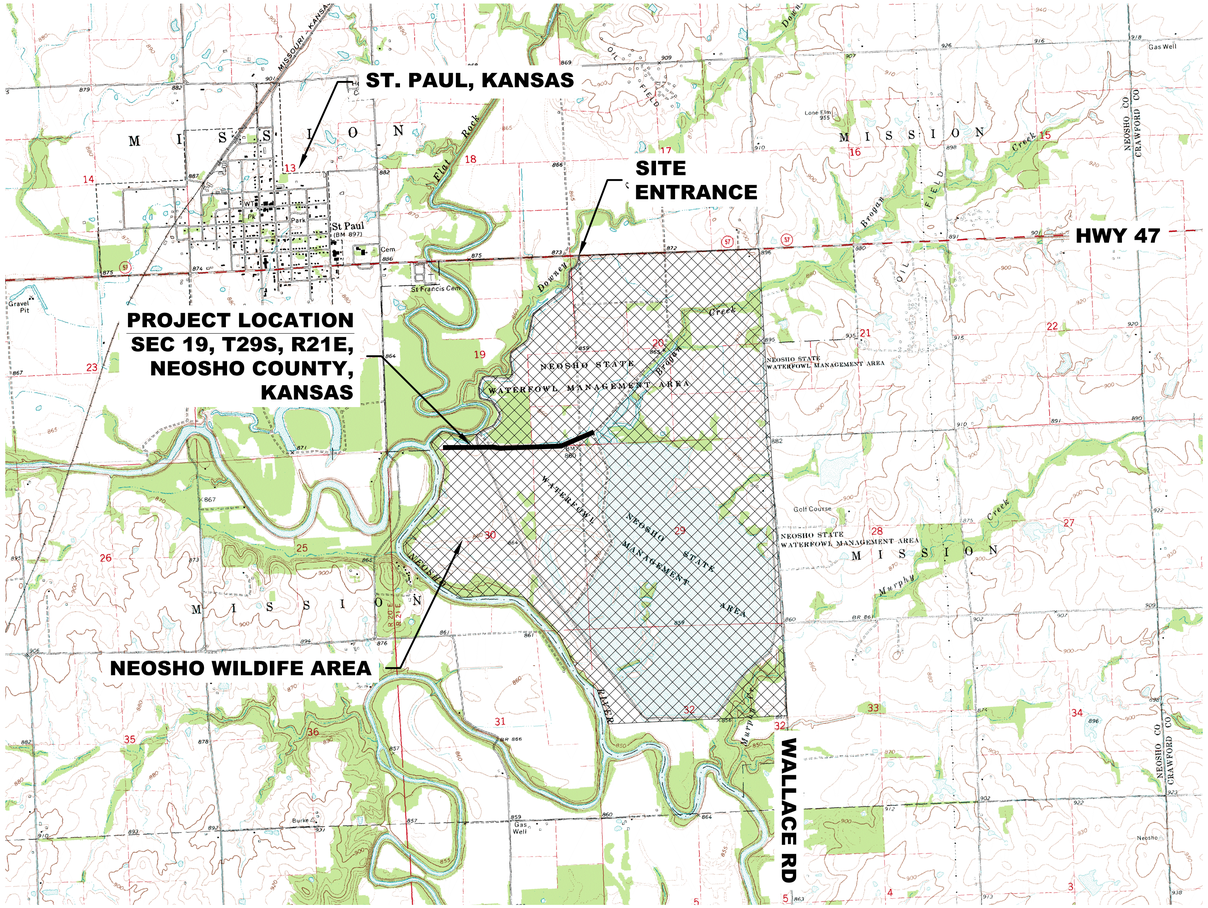
GENERAL NOTES

1. The means of the work and the safety of the Contractor's employees are solely the responsibility of the Contractor. The Contractor has a contractual obligation to comply with all applicable laws and regulations including those of OSHA. At no time will either the Owner or the Owner's representative take responsibility for either the means of the work or the safety of the Contractor's employees.
2. Trees and shrubs within the construction area shall be cleared and grubbed as required to complete construction. All trees to be removed shall be properly disposed of.
3. All project waste including any trees, rubble from miscellaneous structures, excess excavation, etc. shall be properly disposed of by the Contractor. Any disposal sites shall be approved by the Engineer as to suitability, appearance and site location.
4. Construction activities are to be limited to the immediate work sites. A staging and storage area will be made available for the Contractor's use.
5. No soil borings have been performed for this project other than those located near the Neosho River Pump Station. The Contractor shall bear all costs, and responsibility for any soils investigations deemed necessary for the preparation of the bid or the execution of the work.



PROJECT LOCATION MAP

SCALE: 1" = 2,000'

HORIZONTAL/VERTICAL CONTROL

CONTROL POINT/ BENCHMARK ID	NORTHING	EASTING	ELEVATION	DESCRIPTION
50	1638238.403	2285955.681	865.977	1/2" BAR
51	1638314.260	2285870.213	866.824	PK NAIL
52	1617795.150	2292024.917	859.702	1/2" BAR
53	1608826.318	2292335.520	853.141	1/2" BAR
54	1607258.199	2292401.447	849.391	1/2" BAR
55	1633628.674	2283163.412	873.935	1/2" BAR
56	1631684.084	2283818.785	864.487	1/2" BAR
57	1629830.782	2284634.203	864.248	1/2" BAR
58	1628589.088	2285554.720	863.934	1/2" BAR
59	1625647.972	2287739.171	863.888	1/2" BAR
60	1625723.371	2289808.946	864.393	1/2" BAR
61	1628306.613	2291497.945	863.520	1/2" BAR

PROJECT NO 15134
DATE APRIL 2016
DRAWN BY TS, JB
CHECKED BY CC
REVISION

Schwab Eaton
CIVIL ENGINEERS | LAND SURVEYORS | LANDSCAPE ARCHITECTS
1125 GARDEN WAY | MANHATTAN, KANSAS | P. 785.539.4887

Kansas Department of Wildlife, Parks and Tourism

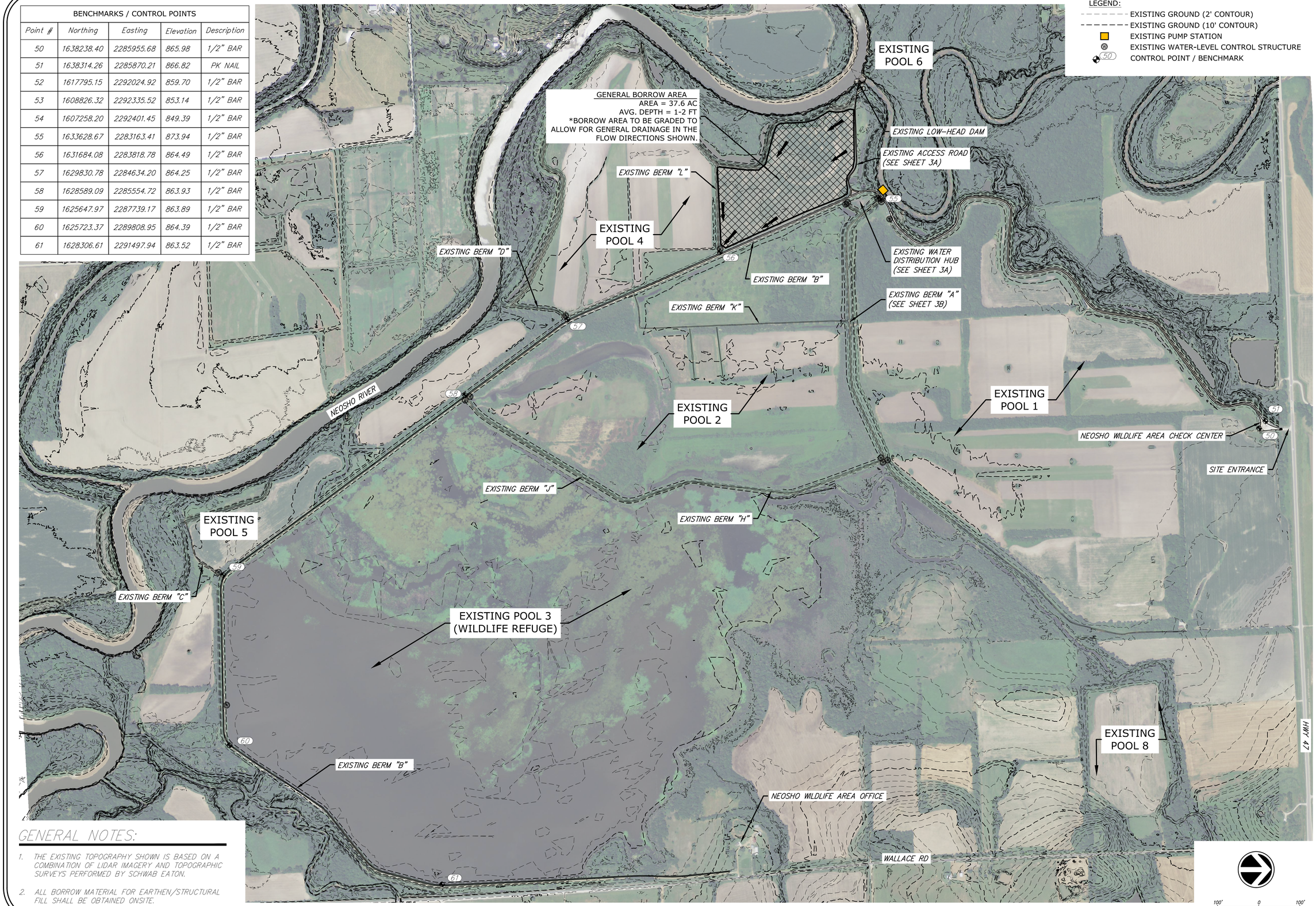
JARED W. BROOKS LICENSED 24778 9-20-16 KANSAS PROFESSIONAL ENGINEER

NEOSHO WILDLIFE AREA - NORTH UNIT
NEOSHO WILDLIFE AREA, ST. PAUL, KANSAS
Kansas Department of Wildlife, Parks and Tourism
Operations Headquarters
512 SE 25th Avenue Pratt, Kansas 67124

SHEET
1
COVER SHEET

ORIGINAL CONTRACT DOCUMENTS

BENCHMARKS / CONTROL POINTS				
Point #	Northing	Easting	Elevation	Description
50	1638238.40	2285955.68	865.98	1/2" BAR
51	1638314.26	2285870.21	866.82	PK NAIL
52	1617795.15	2292024.92	859.70	1/2" BAR
53	1608826.32	2292335.52	853.14	1/2" BAR
54	1607258.20	2292401.45	849.39	1/2" BAR
55	1633628.67	2283163.41	873.94	1/2" BAR
56	1631684.08	2283818.78	864.49	1/2" BAR
57	1629830.78	2284634.20	864.25	1/2" BAR
58	1628589.09	2285554.72	863.93	1/2" BAR
59	1625647.97	2287739.17	863.89	1/2" BAR
60	1625723.37	2289808.95	864.39	1/2" BAR
61	1628306.61	2291497.94	863.52	1/2" BAR



GENERAL NOTES:

1. THE EXISTING TOPOGRAPHY SHOWN IS BASED ON A COMBINATION OF LIDAR IMAGERY AND TOPOGRAPHIC SURVEYS PERFORMED BY SCHWAB EATON.
2. ALL BORROW MATERIAL FOR EARTHEN/STRUCTURAL FILL SHALL BE OBTAINED ONSITE.

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SHEET
2
SITE MAP

ORIGINAL CONTRACT DOCUMENTS

GENERAL NOTES:

1. THE EXISTING TOPOGRAPHY SHOWN IS BASED ON A COMBINATION OF LIDAR IMAGERY AND TOPOGRAPHIC SURVEYS PERFORMED BY SCHWAB EATON.
2. ALL BORROW MATERIAL FOR EARTHEN/STRUCTURAL FILL SHALL BE OBTAINED ONSITE. SEE SHEET 2 FOR LOCATION OF GENERAL BORROW AREA.

PROJECT NO	15194
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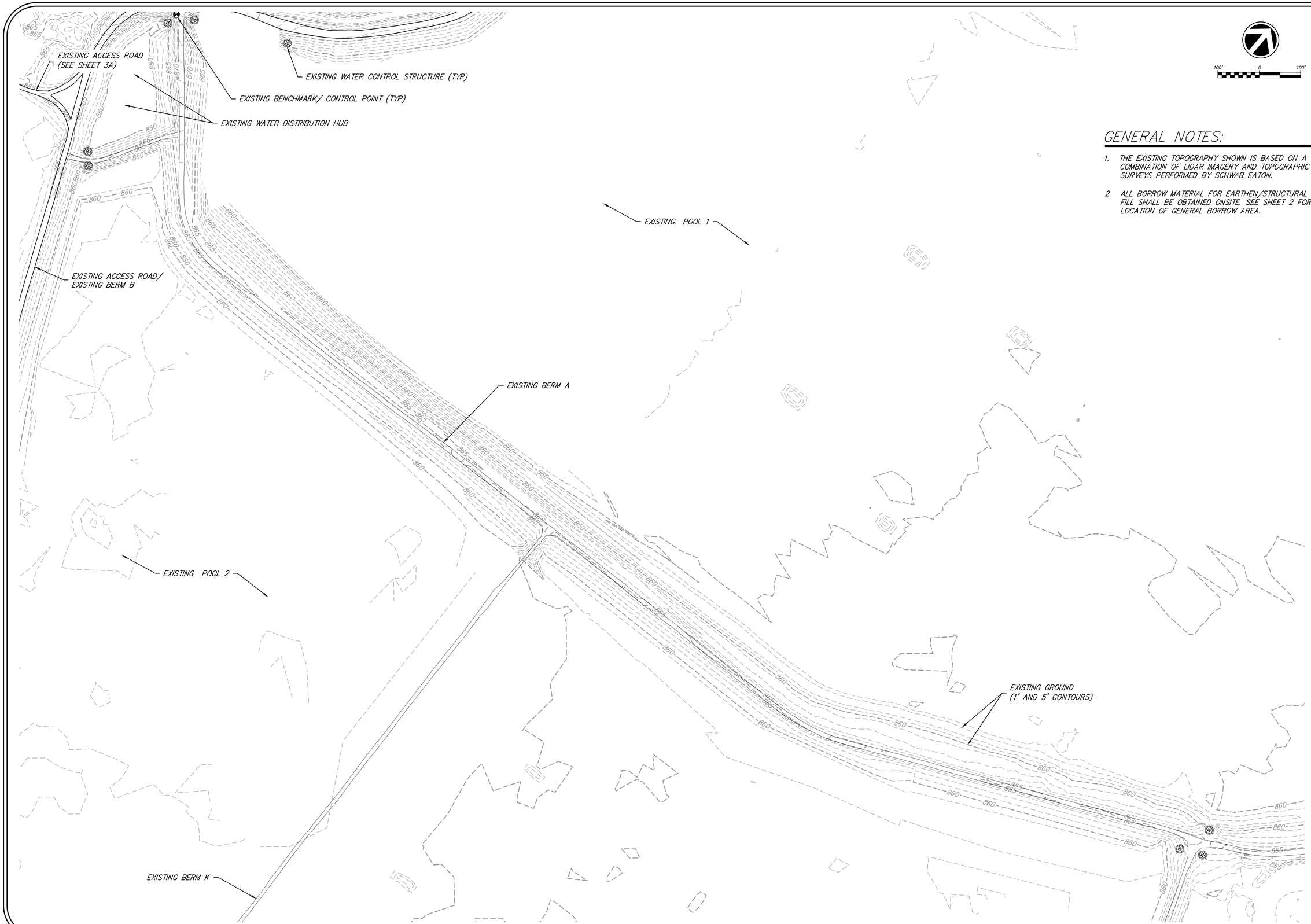
SHEET
3A
EXISTING CONDITIONS - ACCESS ROAD

ORIGINAL CONTRACT DOCUMENTS



GENERAL NOTES:

1. THE EXISTING TOPOGRAPHY SHOWN IS BASED ON A COMBINATION OF LIDAR IMAGERY AND TOPOGRAPHIC SURVEYS PERFORMED BY SCHWAB EATON.
2. ALL BORROW MATERIAL FOR EARTHEN/STRUCTURAL FILL SHALL BE OBTAINED ONSITE. SEE SHEET 2 FOR LOCATION OF GENERAL BORROW AREA.

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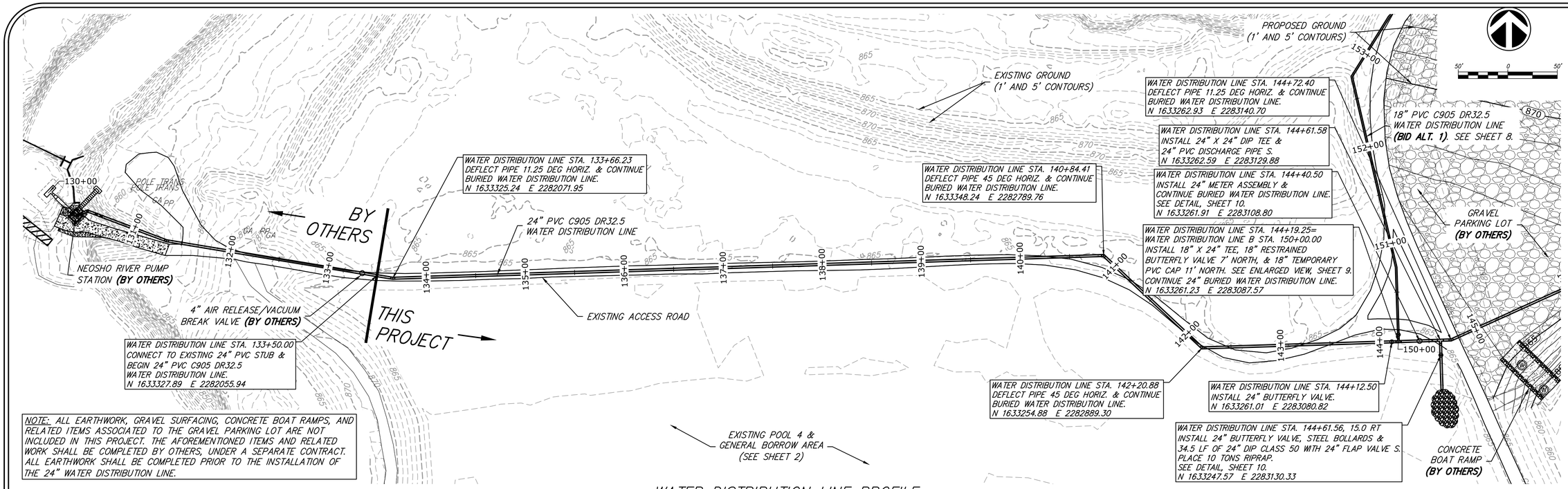
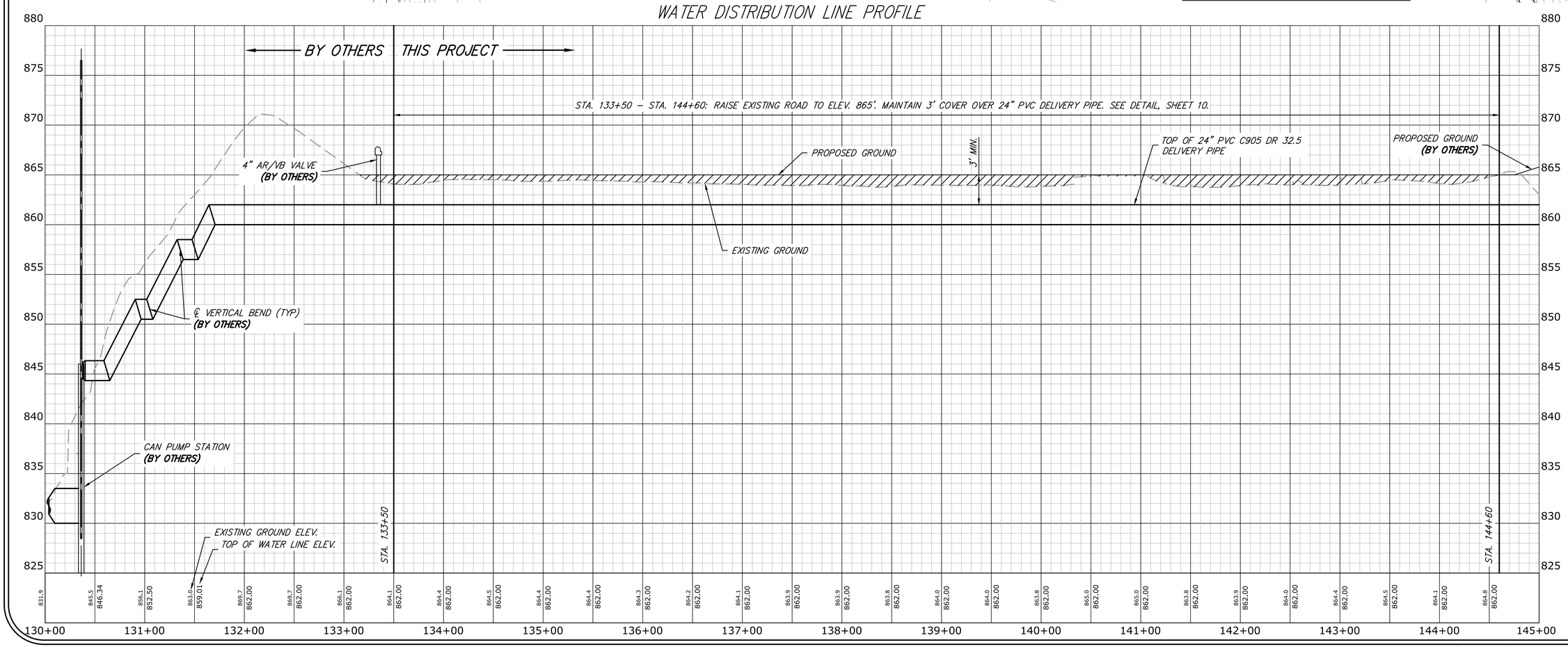
SHEET
3B
EXISTING CONDITIONS - BERM A

ORIGINAL CONTRACT DOCUMENTS



WATER DISTRIBUTION LINE PROFILE



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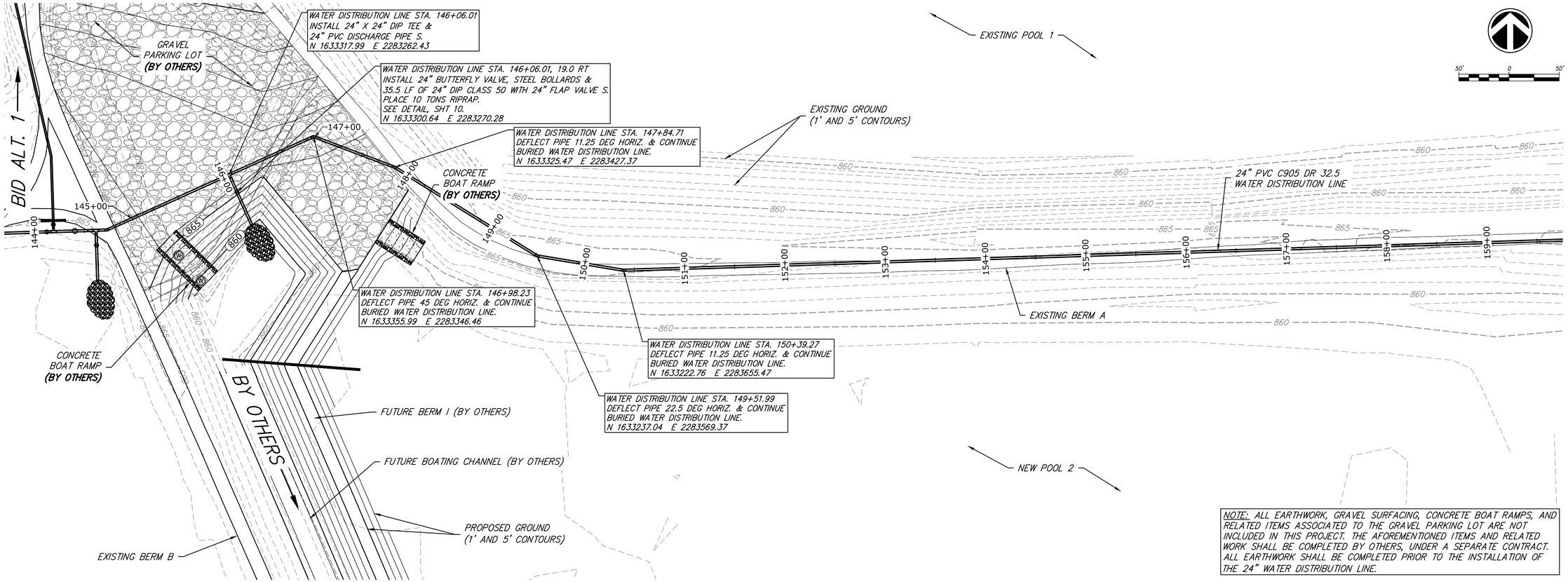
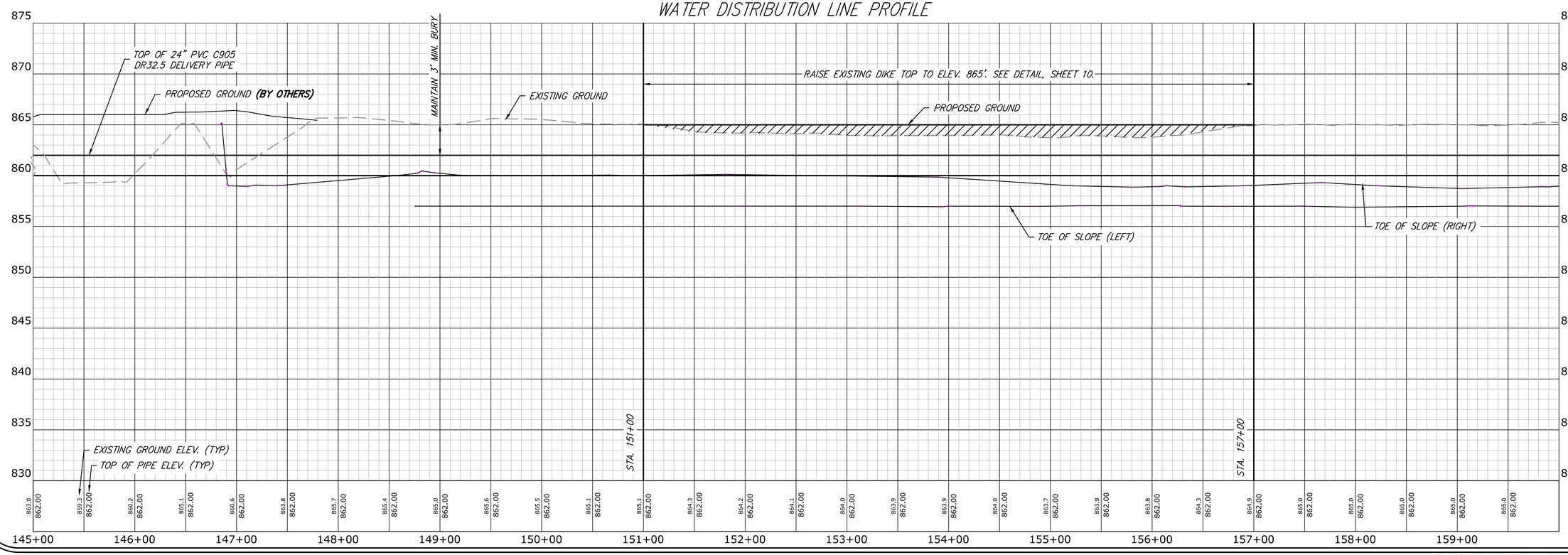
SHEET
4
PUMPING LINE
PLAN & PROFILE I

ORIGINAL CONTRACT DOCUMENTS



NOTE: ALL EARTHWORK, GRAVEL SURFACING, CONCRETE BOAT RAMPS, AND RELATED ITEMS ASSOCIATED TO THE GRAVEL PARKING LOT ARE NOT INCLUDED IN THIS PROJECT. THE AFOREMENTIONED ITEMS AND RELATED WORK SHALL BE COMPLETED BY OTHERS, UNDER A SEPARATE CONTRACT. ALL EARTHWORK SHALL BE COMPLETED PRIOR TO THE INSTALLATION OF THE 24" WATER DISTRIBUTION LINE.

WATER DISTRIBUTION LINE PROFILE



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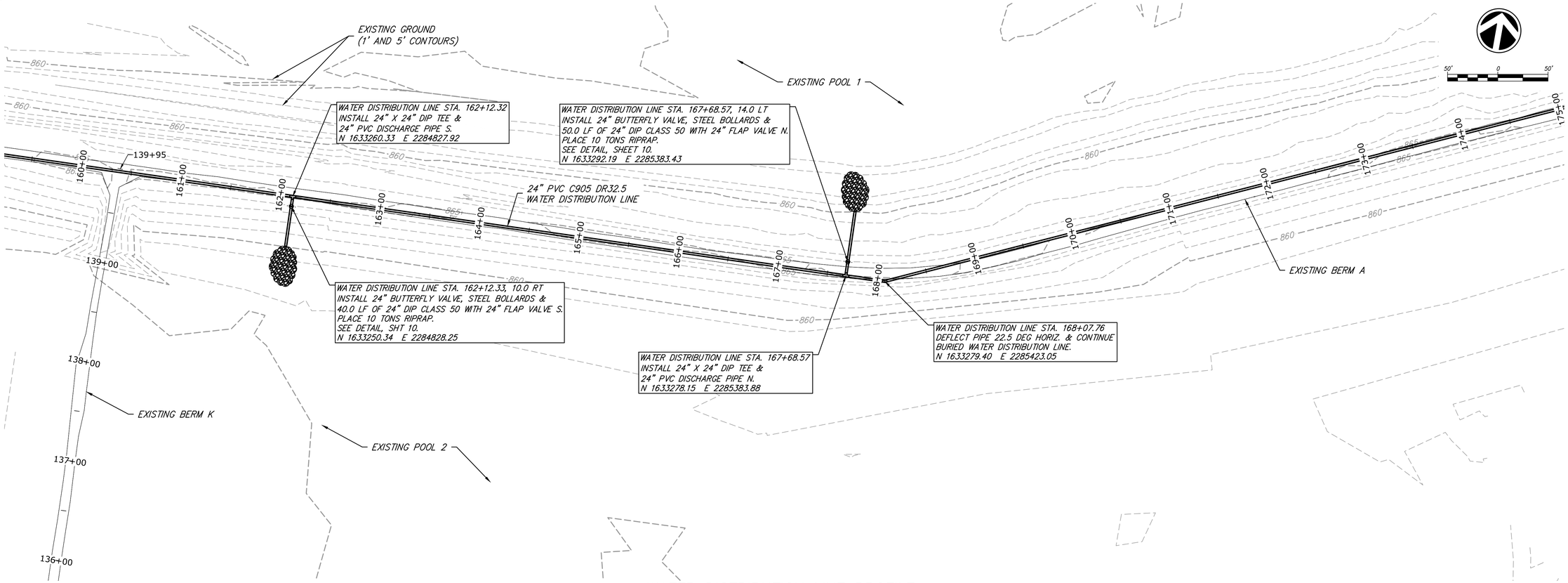
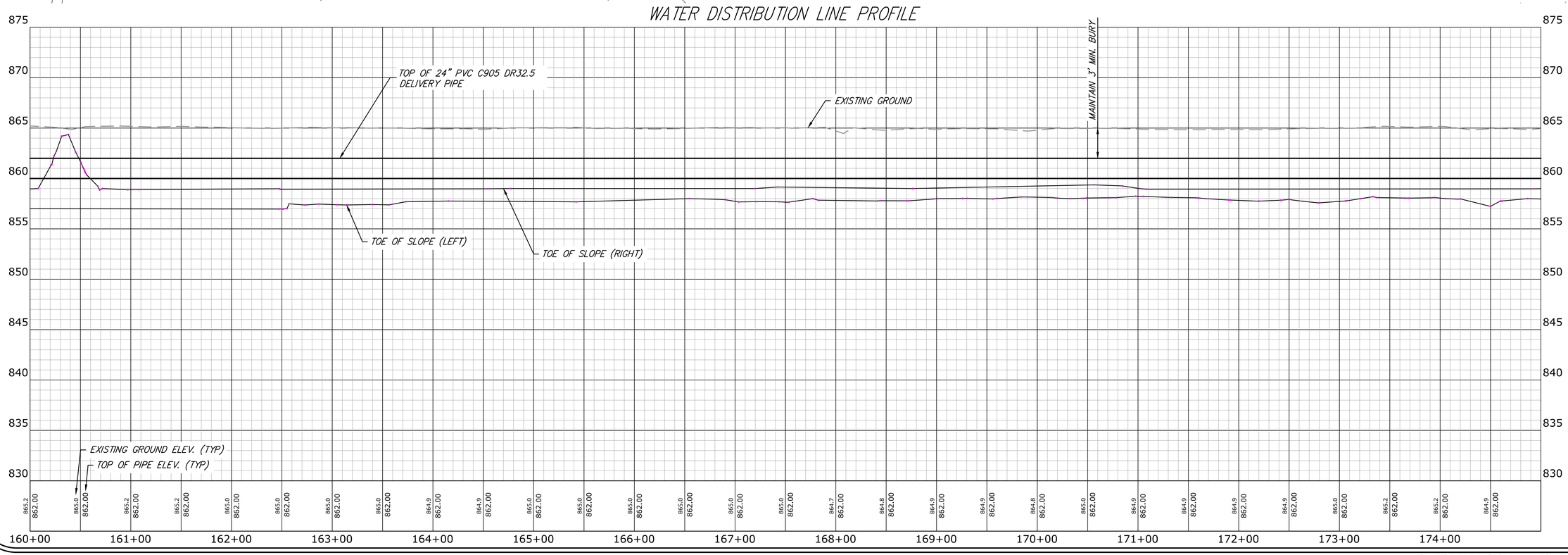
SHEET 5
PUMPING LINE PLAN & PROFILE II

ORIGINAL CONTRACT DOCUMENTS



WATER DISTRIBUTION LINE PROFILE



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JARED W. BROOKS
LICENSED
24778
KANSAS
PROFESSIONAL ENGINEER
9-20-16

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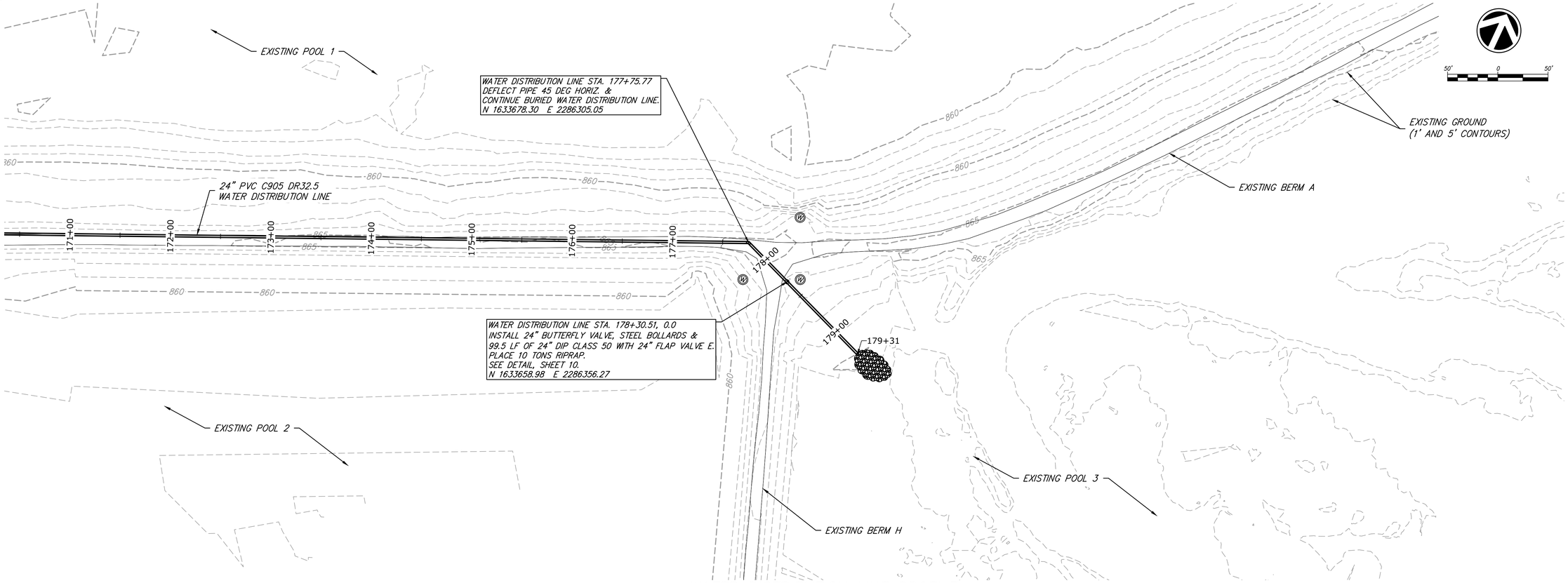
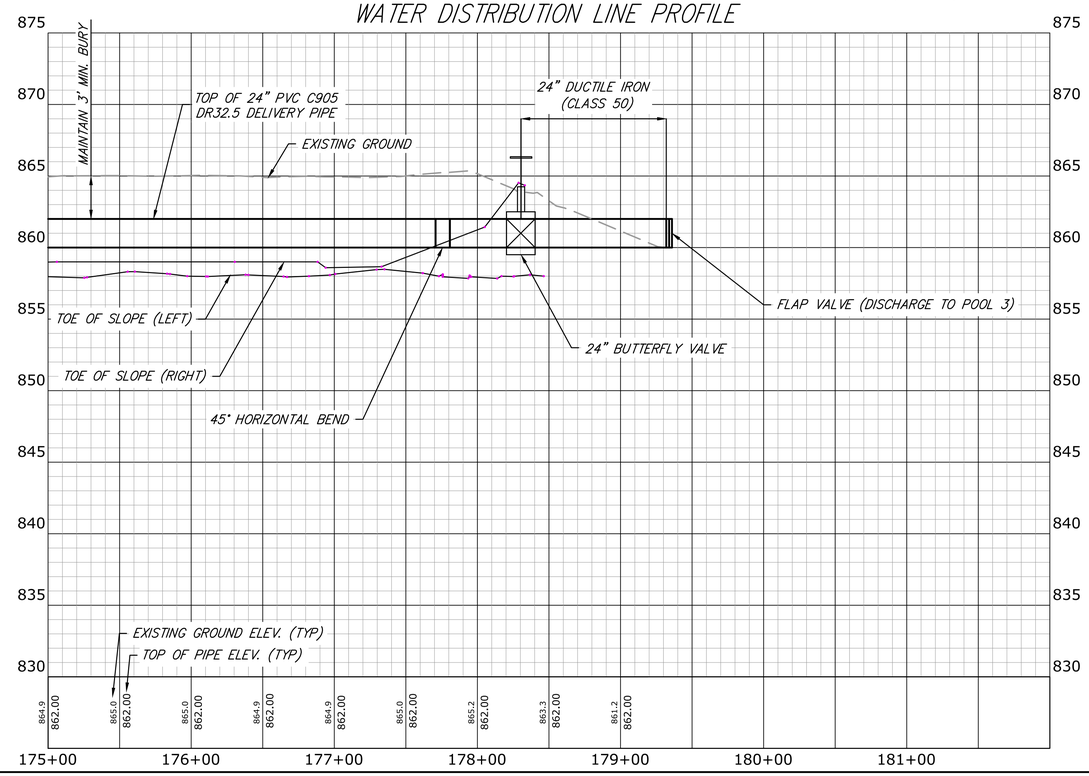
SHEET
6
PUMPING LINE
PLAN & PROFILE III

ORIGINAL CONTRACT DOCUMENTS



WATER DISTRIBUTION LINE PROFILE



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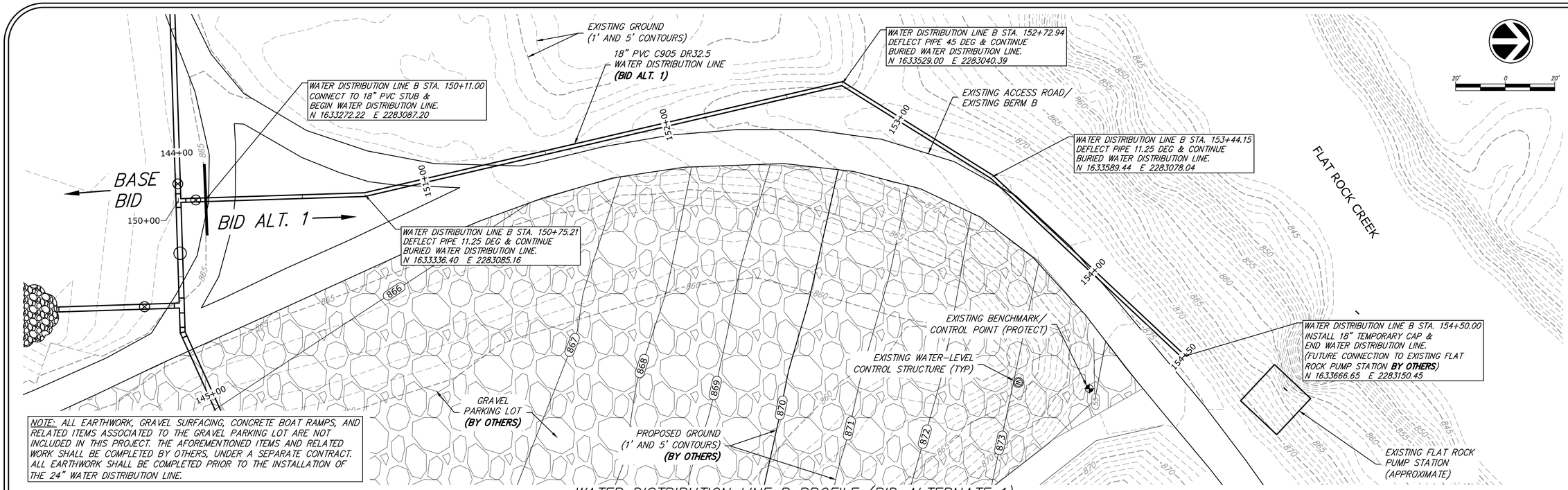
SHEET
7
PUMPING LINE
PLAN & PROFILE IV

ORIGINAL CONTRACT DOCUMENTS



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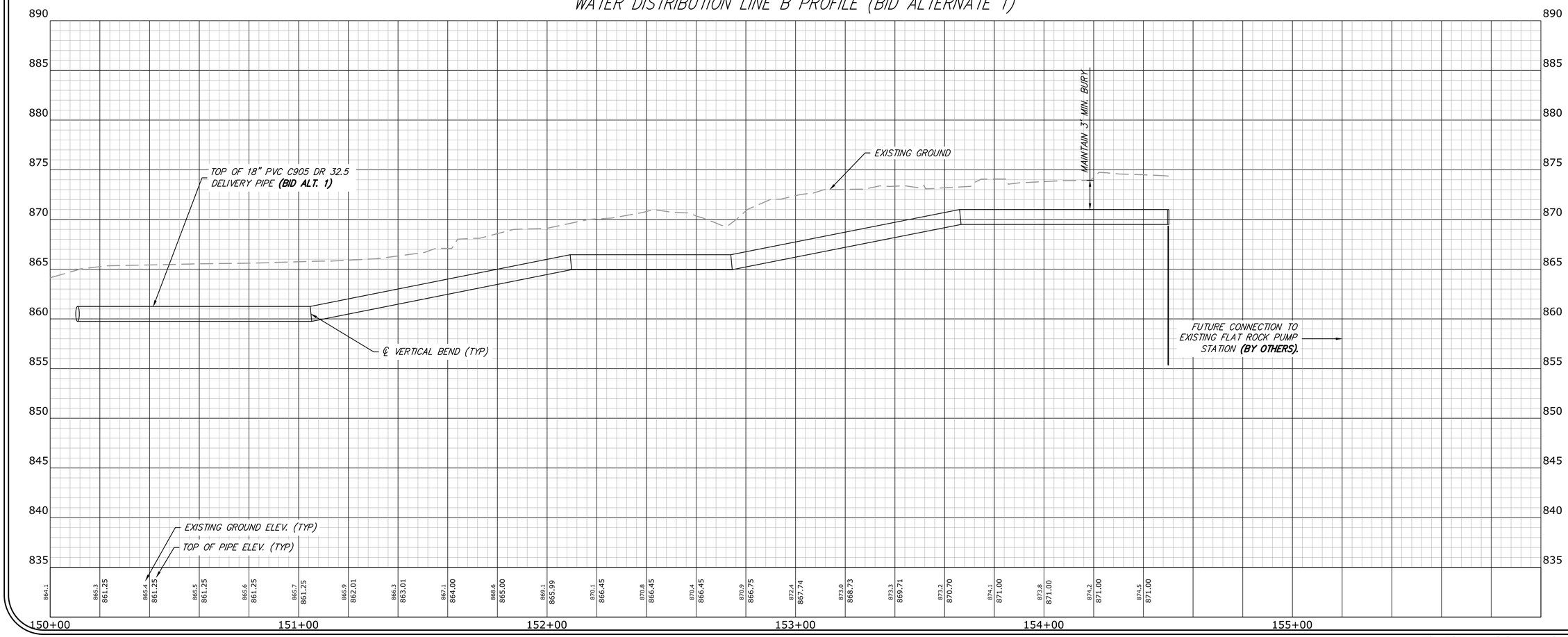
WATER DISTRIBUTION LINE B PROFILE (BID ALTERNATE 1)



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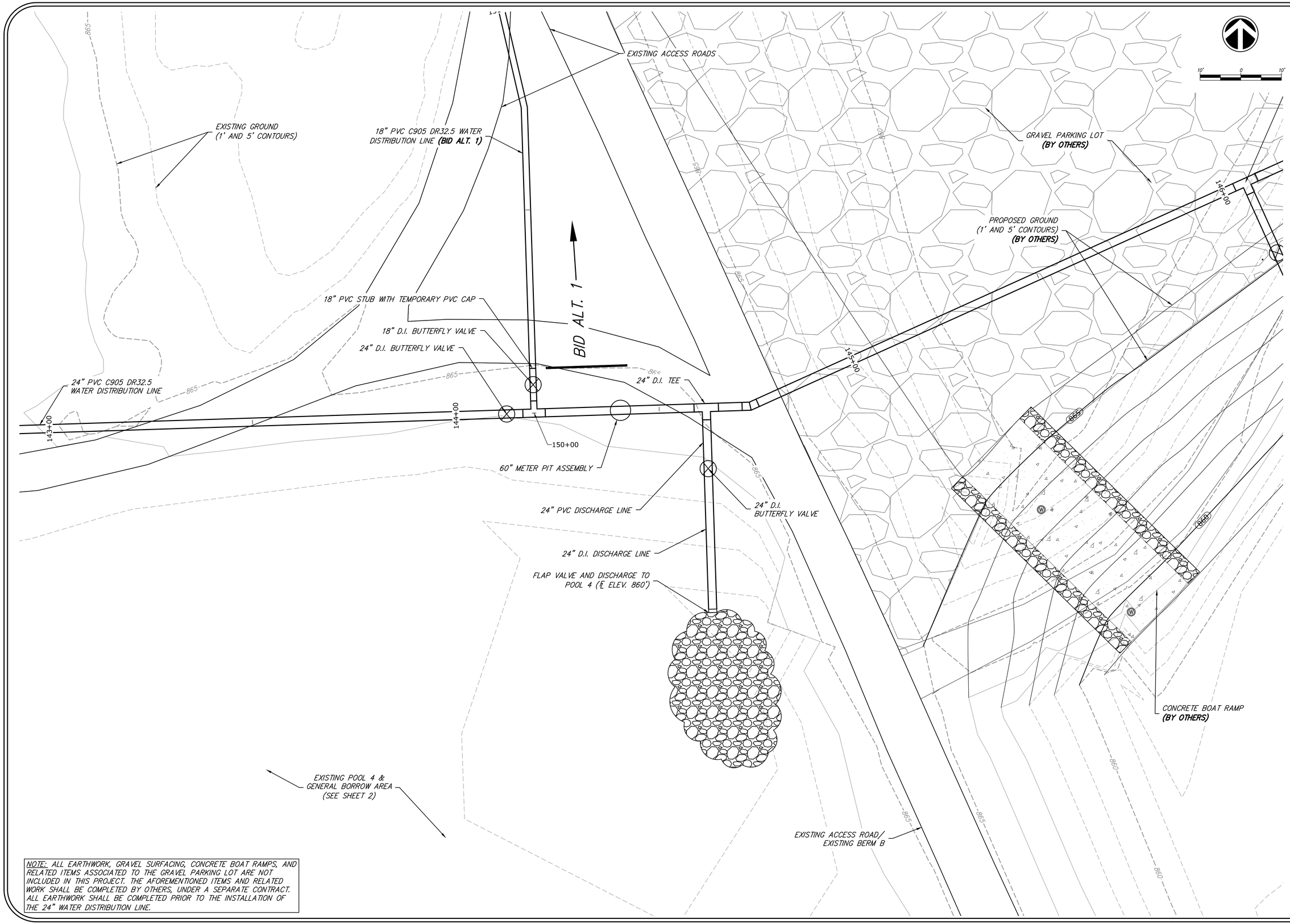
SHEET
8
PUMPING LINE B PLAN & PROFILE

ORIGINAL CONTRACT DOCUMENTS



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1125 GARDEN WAY | MANHATTAN, KANSAS | P. 785.539.4687

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9-20-16

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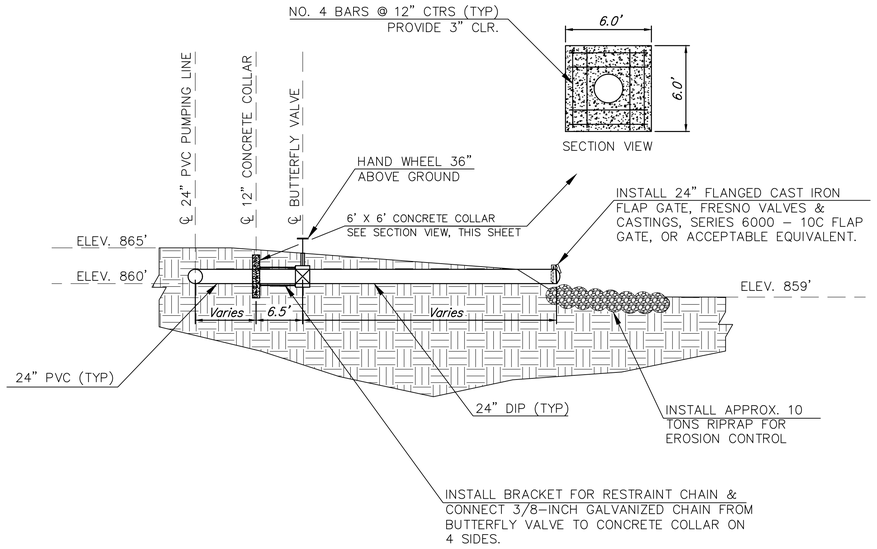
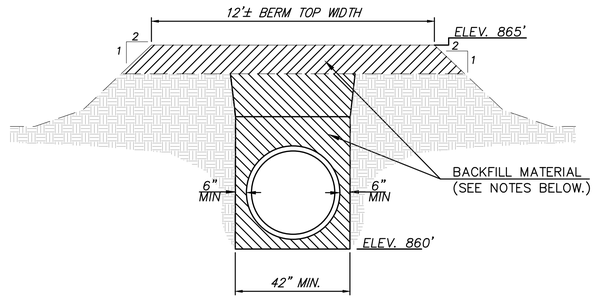
SHEET
9
PUMPING LINES
(ENLARGED VIEW)

ORIGINAL CONTRACT DOCUMENTS



DISCHARGE DETAIL (TYP)

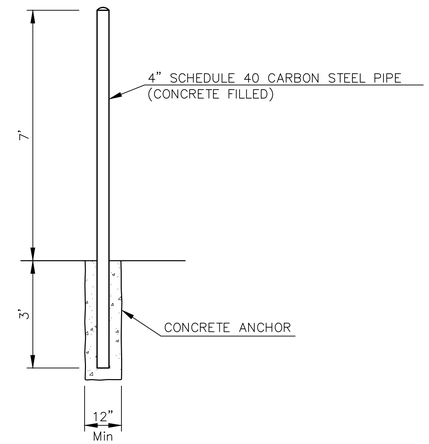
NOT TO SCALE



NOTES:
1. ADD 1'± OF FILL MATERIAL TO EXISTING BERM TO MAINTAIN ELEVATION 865.0' (AS NECESSARY).
2. COMPACT FILL TO MR-90 (SHEEP'S FOOTS WALK OUT).
3. CARE SHALL BE EXERCISED TO AVOID DIRECT WHEEL LOADING OF CONSTRUCTION EQUIPMENT OVER THE 24" PVC PIPE.
4. TRENCH SPOIL MAY BE USED AS BACKFILL MATERIAL, HOWEVER THE MATERIAL MUST BE FRIABLE AND FREE OF LARGE CLODS OR ROCKS.
5. INSTALL PIPE BEDDING AS NEEDED AND SHAPE TRENCH FLOOR TO CONFORM TO PIPE SECTION.

TRENCH BACKFILL AND EMBEDMENT (EXISTING BERM A)

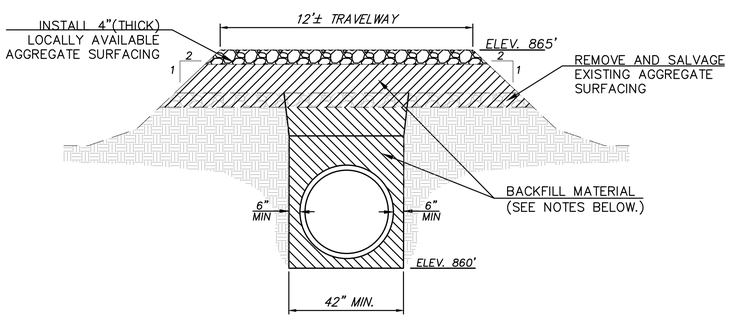
NOT TO SCALE



BOLLARD DETAIL

NOT TO SCALE

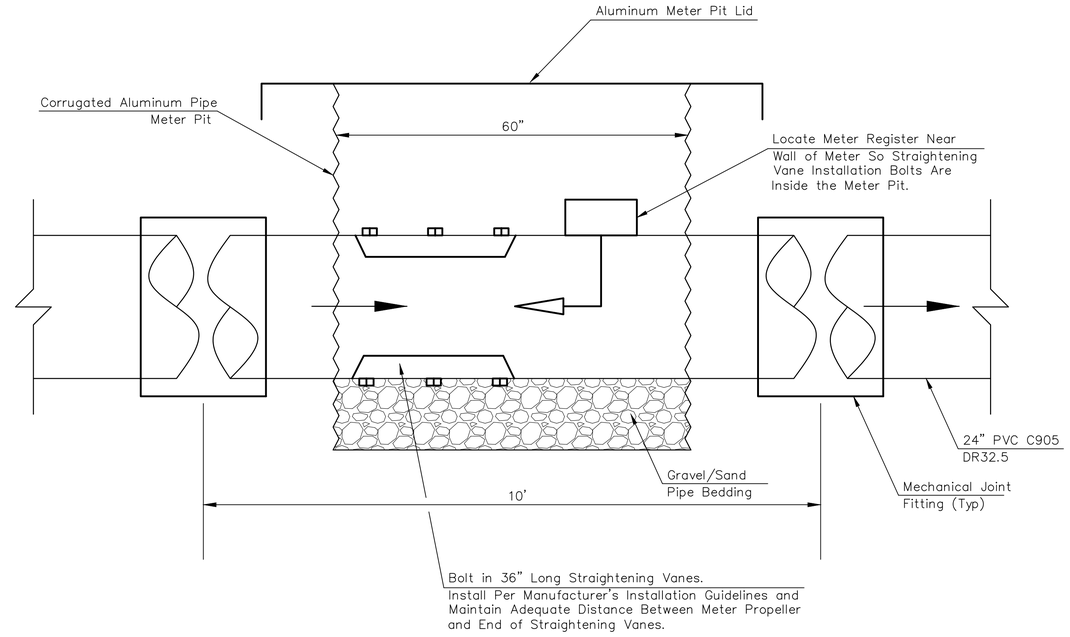
NOTES:
1. 2 BOLLARDS REQUIRED AT EACH BUTTERFLY VALVE LOCATION.
2. INSTALL BOLLARDS 4' PERPENDICULAR FROM CENTERLINE OF DISCHARGE LINE EACH WAY.



NOTES:
1. ADD 1'± OF FILL MATERIAL TO EXISTING ROAD TO MAINTAIN ELEVATION TO 865.0' (AS NECESSARY).
2. COMPACT FILL TO MR-90 (SHEEP'S FOOTS WALK OUT).
3. CARE SHALL BE EXERCISED TO AVOID DIRECT WHEEL LOADING OF CONSTRUCTION EQUIPMENT OVER THE 24" PVC PIPE.
4. TRENCH SPOIL MAY BE USED AS BACKFILL MATERIAL AND ROADWAY FILL, HOWEVER THE MATERIAL MUST BE FRIABLE AND FREE OF LARGE CLODS OR ROCKS.
5. INSTALL PIPE BEDDING AS NEEDED AND SHAPE TRENCH FLOOR TO CONFORM TO PIPE SECTION.

TRENCH BACKFILL AND EMBEDMENT - GRAVEL SURFACING (EXISTING ACCESS ROAD)

NOT TO SCALE



WATER METER ASSEMBLY DETAIL

NOT TO SCALE

PROJECT NO 15.134
DATE APRIL 2016
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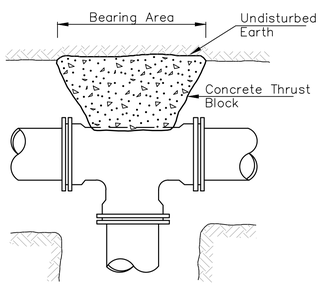
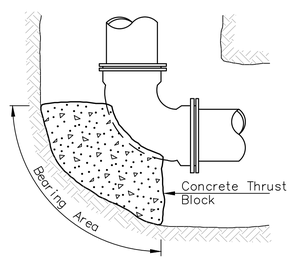
SHEET
10
PUMPING LINE DETAILS

ORIGINAL CONTRACT DOCUMENTS



STANDARD TEE



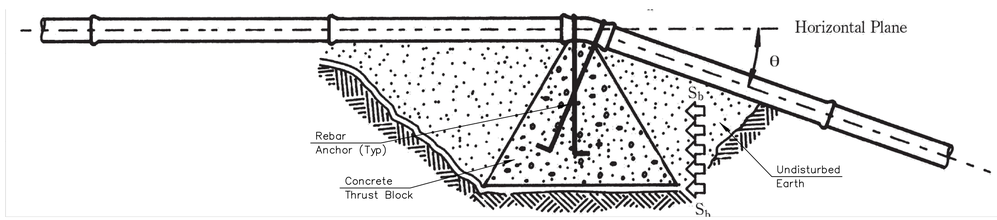
TYPICAL BEND

HORIZONTAL THRUST BLOCK BEARING AREA					
PIPE SIZE	90° BEND	45° BEND	22½ °BEND	11¼ °BEND	TEE
18"	16.25 S.F.	8.75 S.F.	4.50 S.F.	2.25 S.F.	11.50 S.F.
24"	28.75 S.F.	15.50 S.F.	8.00 S.F.	4.00 S.F.	20.50 S.F.

Blocking of tees is to be placed opposite the branch & area is based on branch size. All material, labor, and equipment required to construct concrete thrust blocks shall be considered subsidiary to other items of work.

HORIZONTAL CONCRETE THRUST BLOCK DETAIL

NOT TO SCALE



VERTICAL CHANGE ANCHORS								
PIPE SIZE	90° BEND		45° BEND		22½ BEND		11¼° BEND	
	CONCRETE	NO.	CONCRETE	NO.	CONCRETE	NO.	CONCRETE	NO.
	C.Y.	BAR	C.Y.	BAR	C.Y.	BAR	C.Y.	BAR
18"	4.0	4	3.0	4	1.5	4	1.0	4
24"	7.0	4	5.0	4	2.5	4	1.5	4

THE CONCRETE AND STEEL REQUIRED FOR ALL FITTINGS NOT LISTED SHALL BE THE SAME AMOUNT AS REQUIRED FOR THE 22 1/2° BENDS,CONCRETE AND STEEL ARE SUBSIDIARY TO OTHER ITEMS OF WORK. THE SPACING FOR MULTIPLE REBAR ANCHORS SHALL BE 2"C.C.

VERTICAL CONCRETE THRUST BLOCK DETAIL

NOT TO SCALE

PROJECT NO 15184
DATE APRIL 2016
DRAWN BY TS, JB
CHECKED BY CC
REVISION

Schwab Eaton
CIVIL ENGINEERS | LAND SURVEYORS | LANDSCAPE ARCHITECTS
1125 GARDEN WAY | MANHATTAN, KANSAS | P. 785.539.4887

Kansas Department of Wildlife, Parks and Tourism

JARED W. BROOKS LICENSED 24778 9-20-16 KANSAS PROFESSIONAL ENGINEER

NEOSHO WILDLIFE AREA - NORTH UNIT
NEOSHO WILDLIFE AREA, ST. PAUL, KANSAS
Kansas Department of Wildlife, Parks and Tourism
Operations Headquarters
512 SE 25th Avenue Pratt, Kansas 67124

SHEET
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THRUST BLOCK DETAILS

ORIGINAL CONTRACT DOCUMENTS