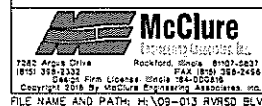


BILL OF MATERIAL - BRIDGE

Coded Pay Item No.	Item	Unit	Super	Sub.		Channel Liner	Total
				Pier	Abuts.		
20900110	Porous Granular Backfill	Cu. Yd.			100	66	166
50100100	Removal of Existing Structures	Each					1
50102400	Concrete Removal	Cu. Yd.				80	80
50300225	Concrete Structures	Cu. Yd.	25.3	138.2	61.8	70	295.3
50900805	Pedestrian Railing	Foot	134				134
50200100	Structure Excavation	Cu. Yd.		110	193		303
50800205	Reinforcement Bars, Epoxy Coated	Pound	121,550	13,186	10,143	5,591	150,470
51200958	Furnishing Metal Shell Piles, 14"x0.250"	Foot		1,820	1,800		3,620
51202305	Driving Piles	Foot		1,820	1,800		3,620
51203200	Test Pile Metal Shells	Each		1	2		3
51500100	Name Plates	Each					1
50300255	Concrete Superstructure	Cu. Yd.	444.8				444.8
50300260	Bridge Deck Grooving	Sq. Yd.	752				752
50300300	Protective Coat	Sq. Yd.	760				760
50800515	Bar Splicers	Each				294	294
52200020	Temporary Soil Retention System	Sq. Ft.				900	900

GENERAL NOTES

1. Reinforcement bars shall conform to the requirements of ASTM A706 Grade 60.
2. Reinforcement bars designated (E) shall be epoxy coated.
3. The Contractor shall drive test piles, as specified in a permanent locations as approved by the Engineer before ordering the remainder of the piles. The contractor shall drive test piles to 110% of the nominal required bearing specified in a production location.
4. Backfill shall be placed behind the abutment after the superstructure is in place and any false work is removed. See article 502.10 of the standard specifications.
5. All exposed concrete edges shall have a 3/4" X 45° chamfer, unless noted otherwise. Chamfer on vertical edges shall be continued a minimum of one foot below finished ground surface.
6. Saw cuts to the existing channel liner/wall concrete shall not be paid for separately, but shall be included with the cost of Concrete Removal.
7. All joints and waterstops called out shall not be paid for separately but shall be included with the cost of the structure.
8. Excavation and backfill at the pipe penetrations in channel liner shall not be paid for separately but shall be considered incidental to the associated storm sewer pay item.



USER NAME:	DESIGNED:	REVISED: 7/28/16 COE COMMENTS
	CHECKED:	REVISED:
PLOT SCALE: 1:1	DRAWN:	REVISED:
PLOT DATE: 3/31/2017	CHECKED:	REVISED:

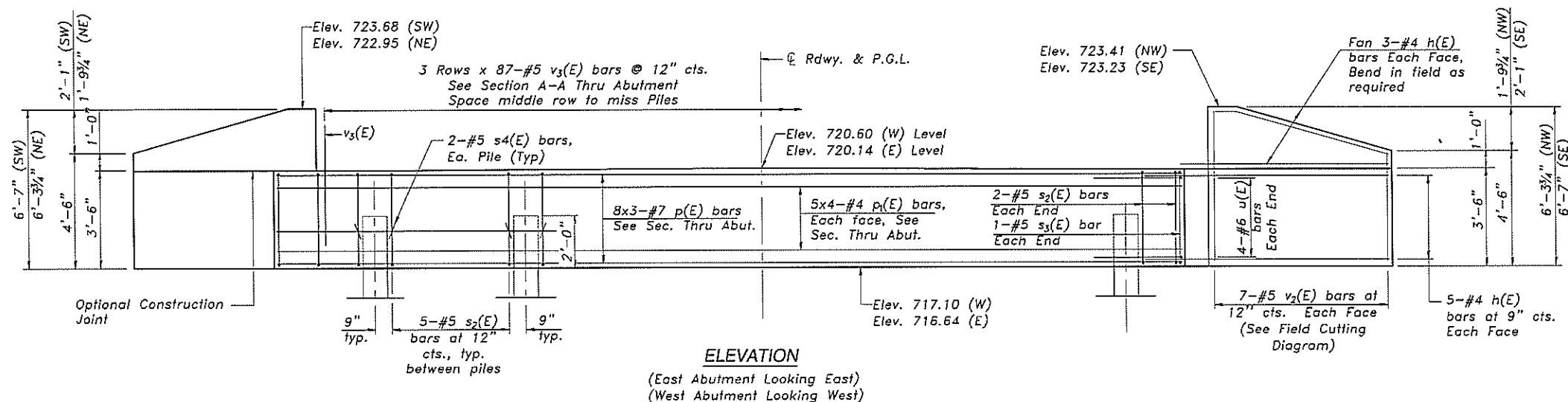
STATE OF ILLINOIS
LOVES PARK DEPARTMENT OF PUBLIC WORKS

GENERAL NOTES & BILL OF MATERIAL - BRIDGE
STRUCTURE NO. 101-6423

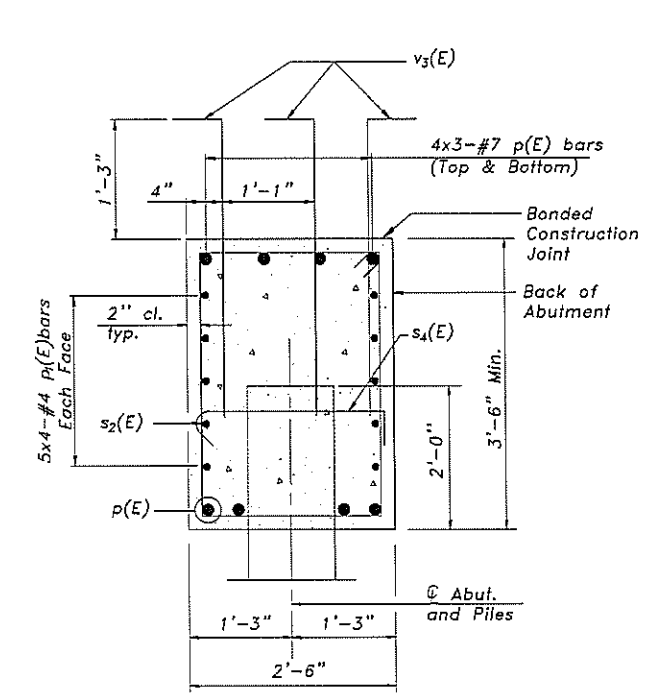
SHEET NO. 52 OF 17 SHEETS

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
525	08-00068-00-BR	WINNEBAGO	21
CITY OF LOVES PARK		CONTRACT NO. 85643	

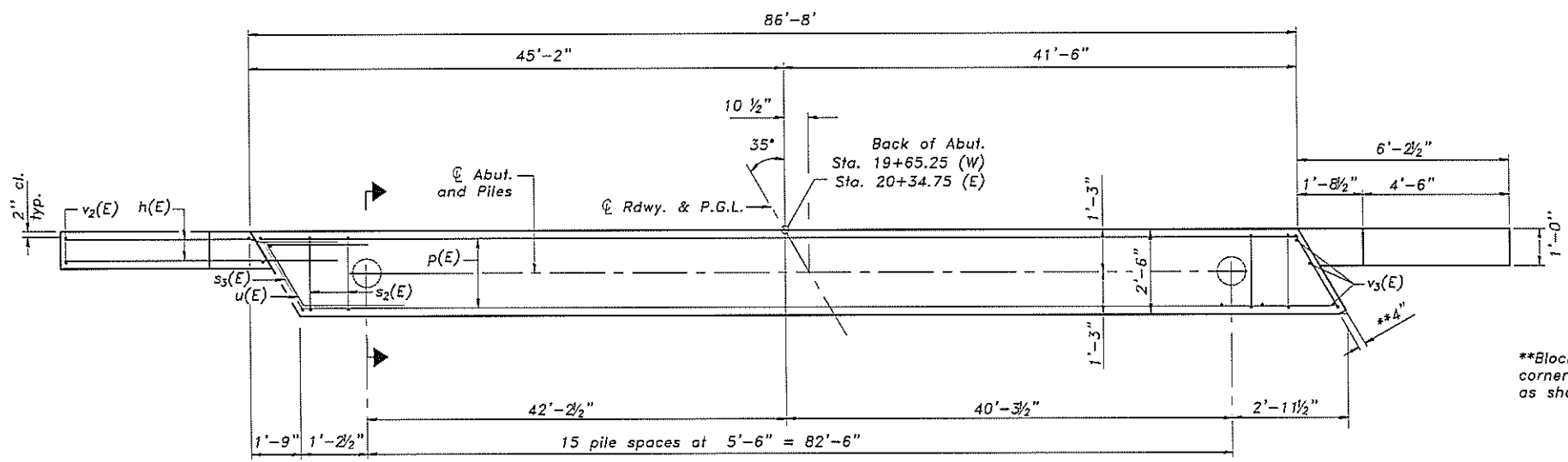
ILLINOIS | FED. AID PROJECT BRM-5098(115)



ELEVATION
(East Abutment Looking East)
(West Abutment Looking West)



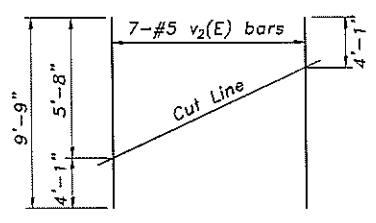
SECTION A-A THRU ABUTMENT



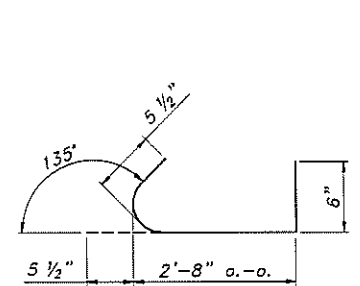
PLAN

PILE DATA:
Type: Metal Shell, 14" dia. X 0.25" Walls
Nominal Required Bearing: 165 kips
Allowable Resistance Available: 55 kips
Estimated Length: 60 ft.
No. Production Piles: 15 per Abutment
No. Test Piles: 1 per Abutment

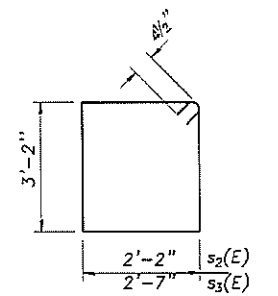
NOTES:
Test piles to be driven in a permanent location
The test piles shall be driven to 110% of the Nominal Required Bearing indicated in the pile data information
Pile verification method during construction shall use Gates Equation



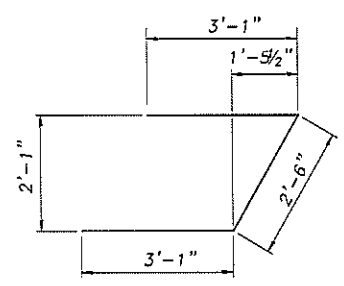
FIELD CUTTING DIAGRAM
Order v2(E) full length. Cut as shown and use remainder of bars in opposite face.



BARS s4(E)



BARS s2(E) & s3(E)



BAR u(E)

**Block out sharp corner of abutment cap as shown

NOTE:
See Pier Details sheet S11 of 16 for dimensions of v3(E) bars

MINIMUM BAR LAPS
#4 BAR = 2'-7"
#5 BAR = 3'-2"
#6 BAR = 3'-10"
#7 BAR = 4'-5"

BILL OF MATERIAL - 2 ABUT.

Bar	No.	Size	Length	Shape
h(E)	64	#4	8'-10"	—
p(E)	48	#7	31'-7"	—
p1(E)	80	#4	23'-4"	—
s2(E)	158	#5	11'-7"	□
s3(E)	4	#5	12'-3"	□
s4(E)	64	#5	3'-8"	□
u(E)	16	#6	8'-8"	—
v2(E)	28	#5	9'-9"	—
v3(E)	522	#5	5'-0"	—
Test Pile Metal Shell	Each		2	
Furnishing Metal Shell Piles, 14" x 0.250"	Foot		1800	
Driving Piles	Foot		1800	
Concrete Structures	Cu. Yd.		61.8	
Reinforcement Bars, Epoxy Coated	Pound		10,143	
Structure Excavation	Cu. Yd.		193	

For details of piles, see sheet S12 of 17.
Note: Reinforcement bars designated (E) shall be epoxy coated.

PILE DATA:

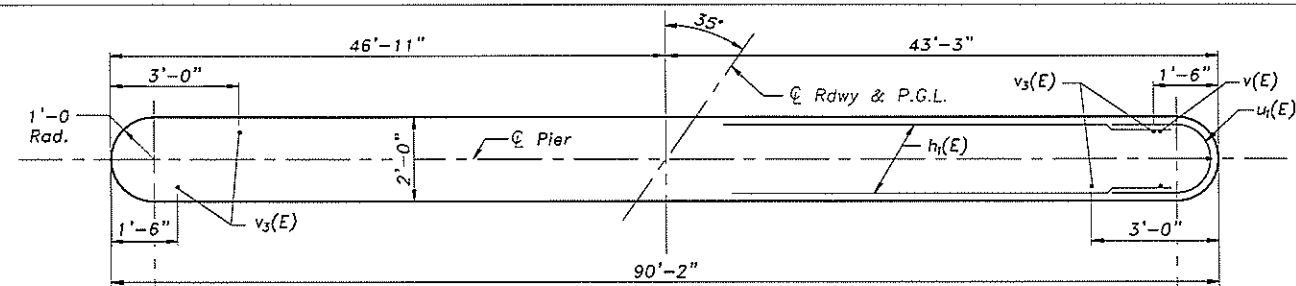
Type: Metal Shell, 14" dia. X 0.25" Walls
 Nominal Required Bearing: 165 kips
 Allowable Resistance Available: 55 kips
 Estimated Length: 52 ft.
 No. Production Piles: 35
 No. Test Piles: 1

NOTES:

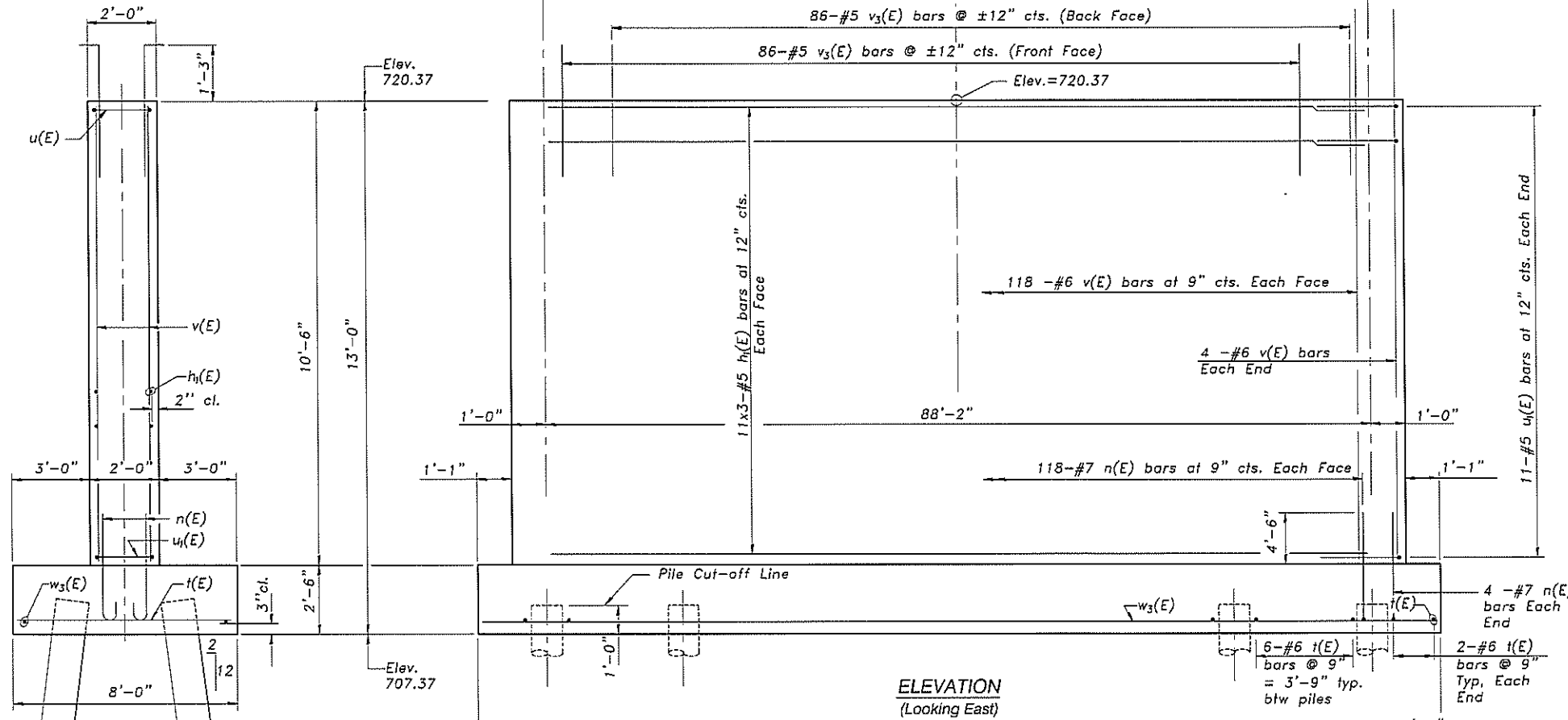
Test piles to be driven in a permanent location

The test piles shall be driven to 110% of the Nominal Required Bearing indicated in the pile data information

Pile verification method during construction shall use Gates Equation

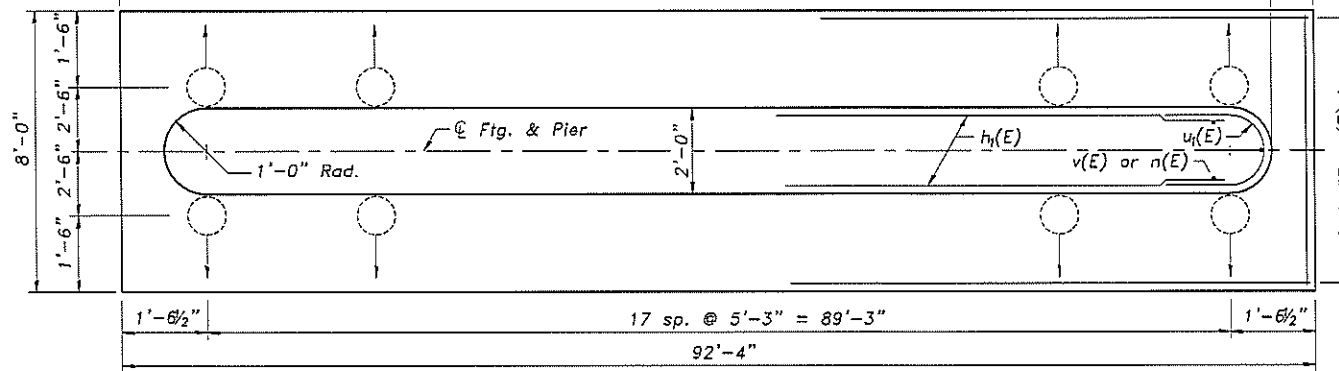


TOP PLAN

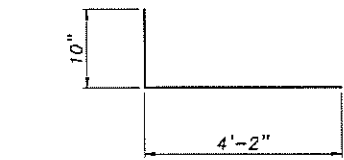


**ELEVATION
(Looking East)**

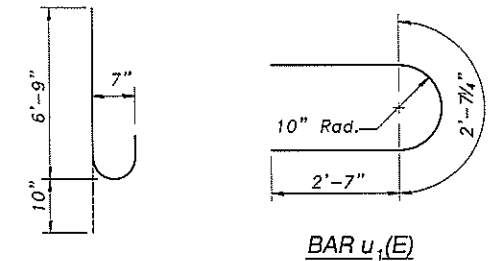
END VIEW



FOOTING PLAN



BAR v3(E)



BAR u1(E)

BAR n(E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h1(E)	66	#5	31'-6"	—
n(E)	252	#7	7'-8"	⌋
t(E)	106	#6	7'-6"	—
u1(E)	22	#5	7'-9"	⌋
v(E)	252	#6	10'-2"	—
v3(E)	172	#5	5'-0"	—
w3(E)	36	#5	25'-4"	—
Structure Excavation		Cu. Yd.	110	
Concrete Structures		Cu. Yd.	138.2	
Reinforcement Bars, Epoxy Coated		Pound	13,186	
Furnishing Metal Shell Piles, 14"x 0.250"		Foot	1820	
Driving Piles		Foot	1820	
Test Pile Metal Shell		Each	1	

For details of piles, see sheet S12 of 17.

MINIMUM BAR LAPS

- #4 BAR = 2'-7"
- #5 BAR = 3'-2"
- #6 BAR = 3'-10"
- #7 BAR = 4'-5"



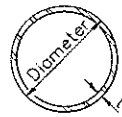
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PLOT DATE: 3/31/2017	DRAWN:	REVISED:
	CHECKED:	REVISED:

STATE OF ILLINOIS
 LOVES PARK DEPARTMENT OF PUBLIC WORKS

PIER DETAILS
 STRUCTURE NO. 101-6423

SHEET NO. S11 OF 17 SHEETS

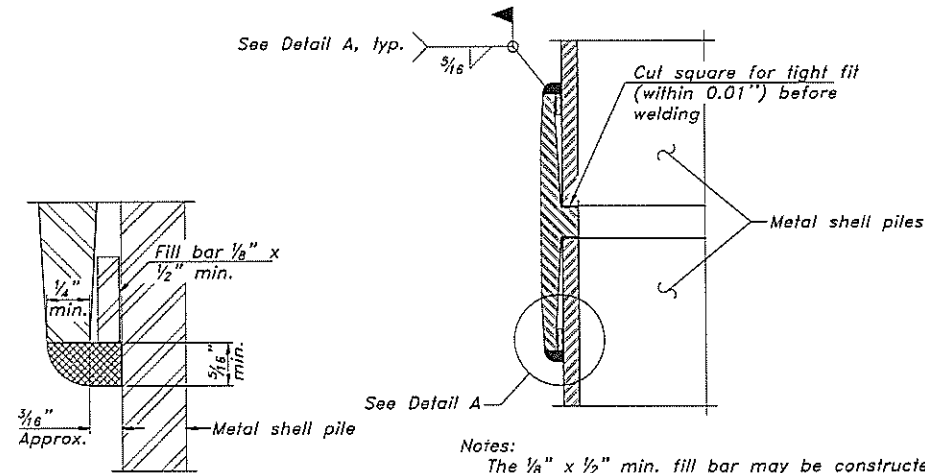
SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
525	08-00068-00-BR	WINNEBAGO	30
CITY OF LOVES PARK		CONTRACT NO. 65643	
ILLINOIS FED. AID PROJECT BRM-5099(115)			



METAL SHELL PILE TABLE

Designation and outside diameter	Wall thickness t	Weight per foot (Lbs./ft.)	Inside volume (yd. ³ /ft.)
PP12	0.179"	22.60	0.0274
PP12	0.250"	31.37	0.0267
PP14	0.250"	36.71	0.0368
PP14	0.312"	45.61	0.0361

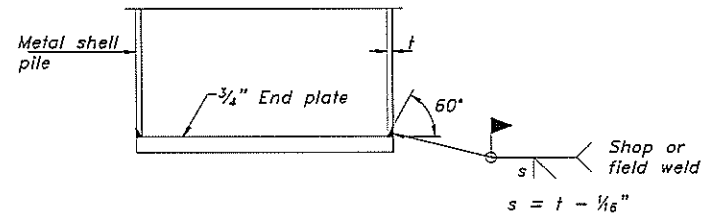
Note:
The metal shell piles shall be according to ASTM A 252 Grade 3.



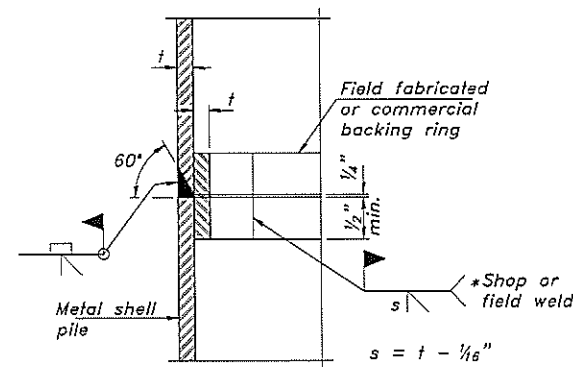
DETAIL A

Notes:
The 1/8" x 1/2" min. fill bar may be constructed of 2 bars with a 1/8" max. gap between them.
Pile segments shall be driven to solid contact with splicer before welding.

WELDED COMMERCIAL SPLICE

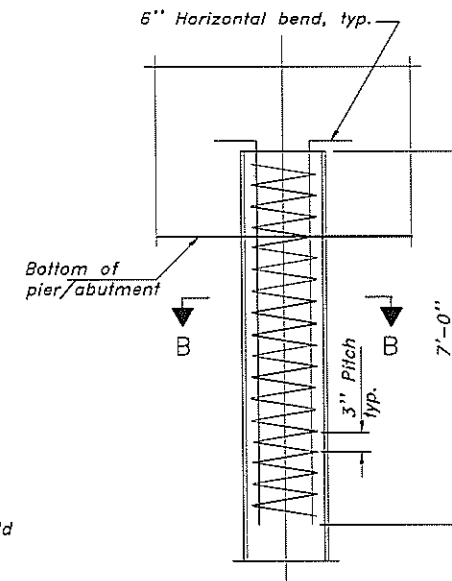


END PLATE ATTACHMENT



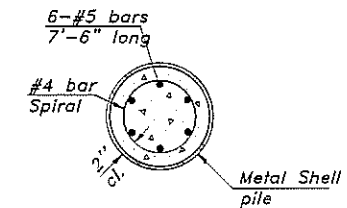
COMPLETE PENETRATION WELD SPLICE

* Field fabricated backing ring may be made from pile shell by removing segment to allow reducing circumference and vertically rejoin with partial joint penetration weld.



ELEVATION

Note:
The cost of reinforcement and concrete shall be included in the cost of Furnishing Metal Shell Piles 14"x 0.250".



SECTION B-B

METAL SHELL REINFORCEMENT AT PIER AND ABUTMENTS

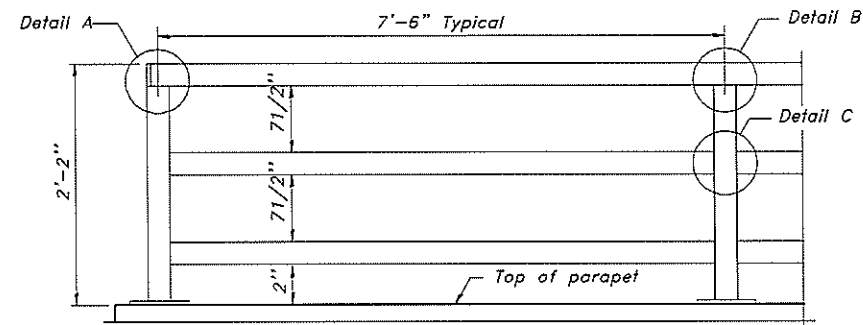
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PLOT SCALE: 1:1	CHECKED:	REVISED:
PLOT DATE: 3/31/2017	DRAWN:	REVISED:
	CHECKED:	REVISED:

STATE OF ILLINOIS
LOVES PARK DEPARTMENT OF PUBLIC WORKS

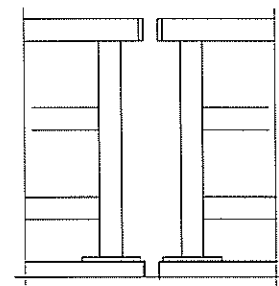
METAL SHELL PILE DETAILS
STRUCTURE NO. 101-6423

SHEET NO. 512 OF 17 SHEETS

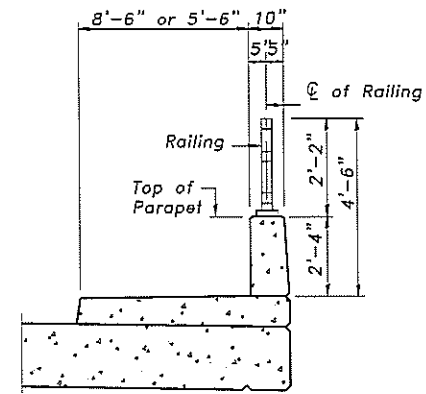
	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
525	08-00068-00-BR	WINNEBAGO	31	31
CITY OF LOVES PARK		CONTRACT NO. 65643		
ILLINOIS FED. AID PROJECT BRN-6099(115)				



PARAPET RAILING ELEVATION
(Inside Face of Element Rail)

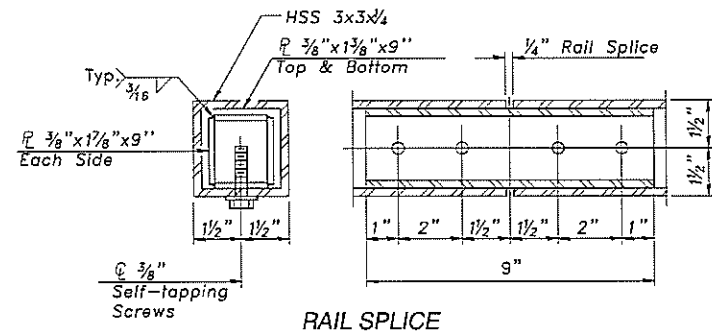


PARAPET RAILING ELEVATION AT EXPANSION JOINT

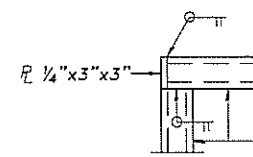


SECTION THRU SIDEWALK

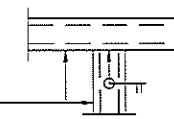
All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.



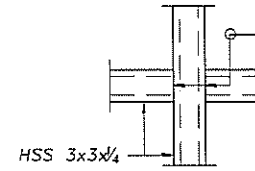
RAIL SPLICE



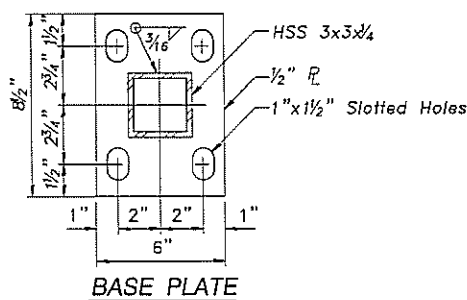
DETAIL A



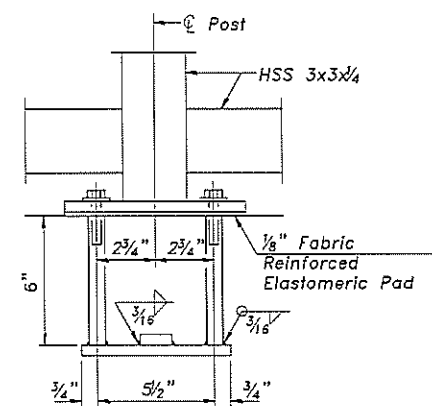
DETAIL B



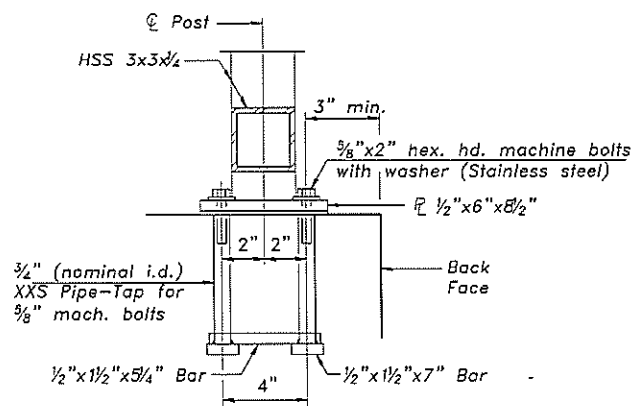
DETAIL C



BASE PLATE



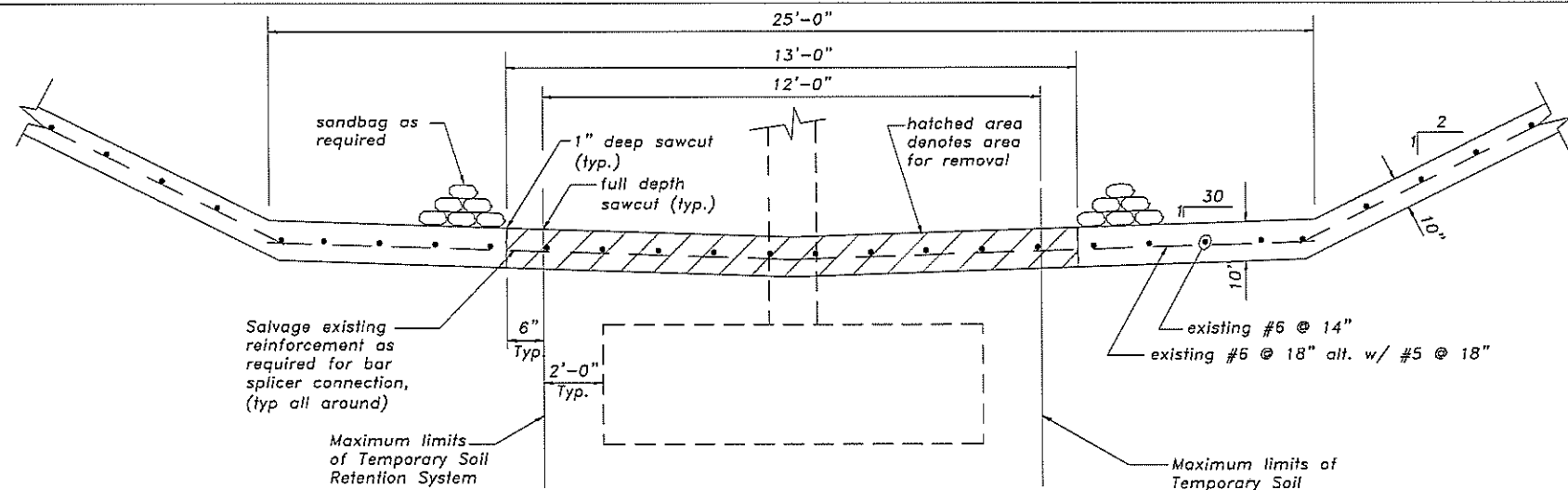
ANCHOR BOLT DETAILS



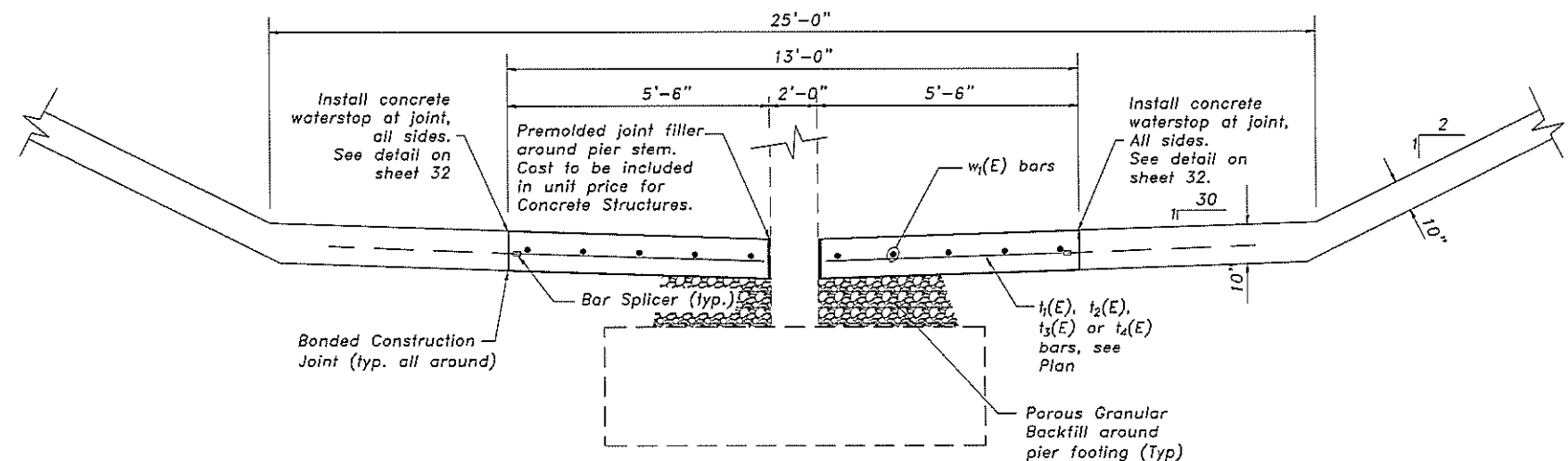
In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and setting 5/8" anchor rods according to Article 509.06 of the Standard Specifications. Embedment shall be according to the manufacturer's specifications.

BILL OF MATERIAL

Item	Unit	Quantity
Pedestrian Railing	Foot	134



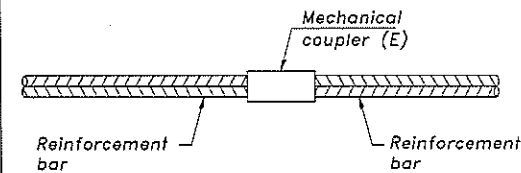
SECTION - CONCRETE REMOVAL



SECTION - CONCRETE REPLACEMENT

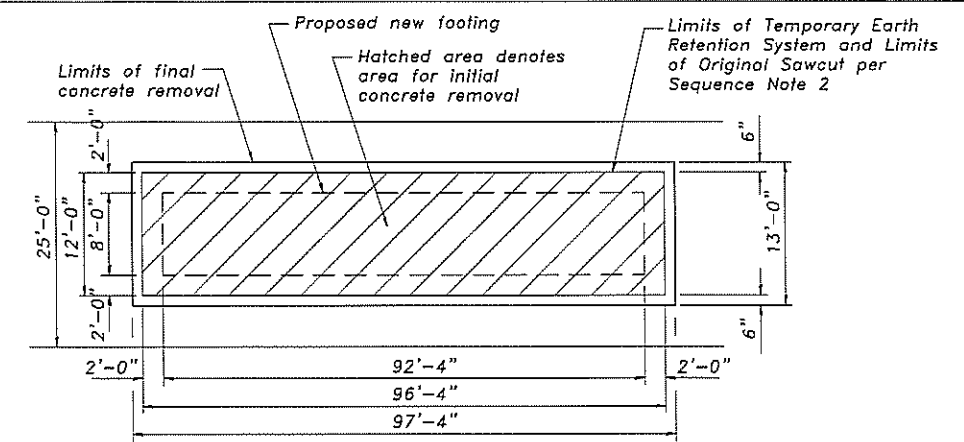
NOTES:

- Any portion of the existing concrete lined trapezoidal channel damaged during construction operations shall be repaired or replaced to its preconstruction condition, at no additional cost to the owner.
- The contractor is advised of the possibility of rapidly rising water elevations within the channel with respect to equipment and personnel working on the channel. The contractor shall make every reasonable effort to minimize the length of time that the channel liner concrete is removed; and, at no time shall the contractor cause for delay any work relating to the bridge pier and subsequent replacement of the channel liner once work in the creek channel has commenced. If at any time, after the channel liner concrete has been removed, if at any time after the channel liner concrete has been removed a rainfall event in excess of 1 inch is forecasted or a precipitation amount, duration or frequency such that the temporary sandbag rings may be overlapped, the contractor shall take the appropriate precautions necessary to protect the integrity of the exposed channel liner by placing adequately sized riprap in the area(s) of removed concrete below the normal channel bottom elevation. Adequately sized riprap is anticipated to be RR-4 or equivalent in an amount to fill an excavation approximately 13 feet wide by 97.3 feet long by variable depth depending on the progress of the construction activities at the time of the precipitation event. That volume of riprap is to be readily available at a staging area or other location acceptable to the City for immediate access for the duration of the project's construction in the channel area. The riprap should extend from the base of the excavated/exposed area to approximately the top of the adjacent concrete liner/channel bottom. In addition, to minimize backwater impacts and maintain project purpose, the temporary sandbag rings or cofferdams should be removed for any rainfall in excess of 3.2 inches. The contractor shall include the cost for all material, equipment, and labor necessary to install and remove this emergency standby procedure with the contract unit cost for concrete removal with no additional compensation allowed. Any areas of the channel that are damaged or undermined due to a significant rainfall event during construction shall be repaired in accordance with the original construction documents, at no additional cost to the owner.
- See the Flood Contingency Plan for additional procedures during and after heavy precipitation events.
- The contractor shall provide a 24 hour contact number in case of an emergency.

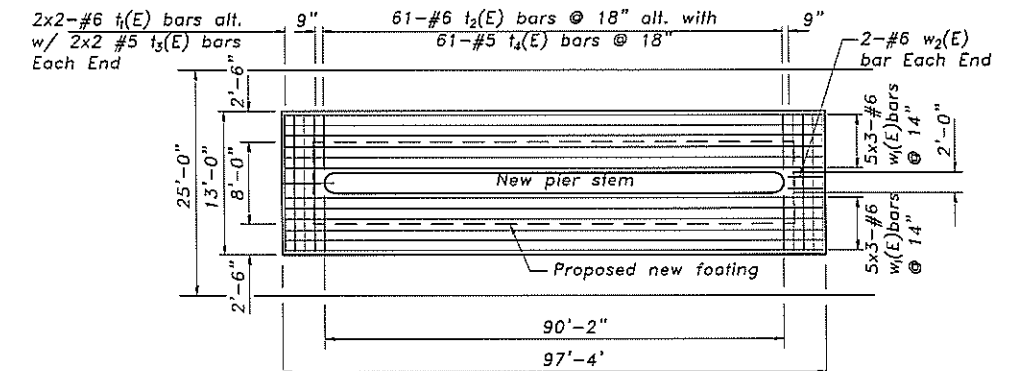


BAR SPLICER DETAIL

Location	Bar size	No. assemblies required
Channel Liner	#5	130
Channel Liner	#6	154



PLAN - CONCRETE REMOVAL



PLAN - CONCRETE REPLACEMENT

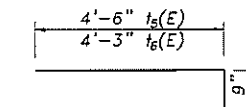
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
t2(E)	12	#4	14'-5"	—
t3(E)	8	#4	2'-8"	—
t4(E)	4	#4	6'-2"	—
t1(E)	8	#6	7'-7"	—
t2(E)	122	#6	4'-10"	—
t3(E)	8	#5	7'-4"	—
t4(E)	122	#5	4'-10"	—
t5(E)	67	#4	5'-3"	—
t6(E)	79	#4	5'-0"	—
t7(E)	67	#4	4'-6"	—
t8(E)	79	#4	4'-3"	—
v1(E)	16	#4	3'-0"	—
v4(E)	4	#6	3'-0"	—
v5(E)	9	#4	2'-6"	—
v6(E)	12	#4	1'-8"	—
v7(E)	32	#4	2'-2"	—
v8(E)	32	#4	3'-6"	—
v9(E)	5	#6	3'-0"	—
w1(E)	30	#6	34'-8"	—
w2(E)	4	#6	3'-0"	—
w3(E)	48	#4	27'-0"	—
w4(E)	16	#4	5'-8"	—
w5(E)	6	#4	5'-4"	—
w6(E)	48	#4	3'-0"	—
Bar Splicers	Each		294	
Concrete Removal	Cu. Yd.		80	
Concrete Structures	Cu. Yd.		70	
Epoxy Coated Reinforcement Bars	Pound		5,591	

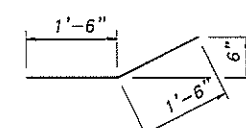
Bars indicated thus 1 x 2-#4 etc. indicates 1 line of bars with 2 lengths per line.

SUGGESTED CONSTRUCTION SEQUENCE:

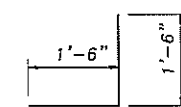
- Sandbag channel to divert water around construction area.
- Sawcut full depth and remove existing channel liner within the limits shown on the plan, (12'-0" x 96'-4" centered on the proposed pier location).
- Install Temporary Soil Retention System within the limits shown on the plan.
- Excavate within the limits of the Temporary Soil Retention System to the bottom of footing elevation.
- Construct pier as shown on the plans.
- Place porous granular backfill within the limits of the Temporary Soil Retention System.
- Provide 1" deep sawcut and remove existing channel liner concrete to 6" each side of the limits of the Temporary Soil Retention System and remove Temporary Soil Retention System, taking care not to damage newly exposed existing reinforcing steel.
- Install new reinforcement. Tie new bars to existing exposed steel.
- Cast new concrete to match existing grades and elevations. Provide 1" preformed joint filler around new pier shaft.



BAR t5(E) & t6(E)



BAR v4(E)



BAR v9(E)



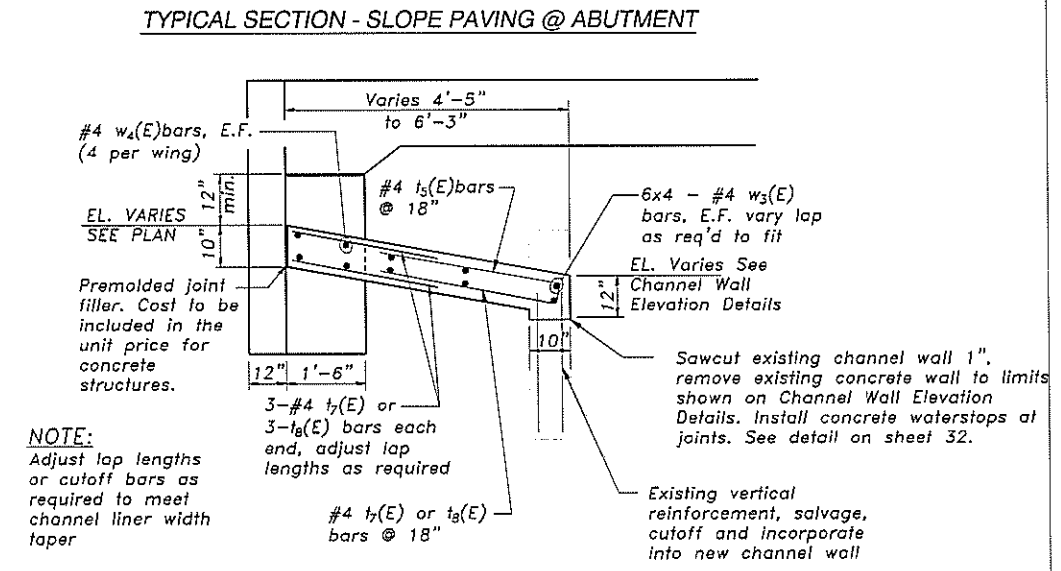
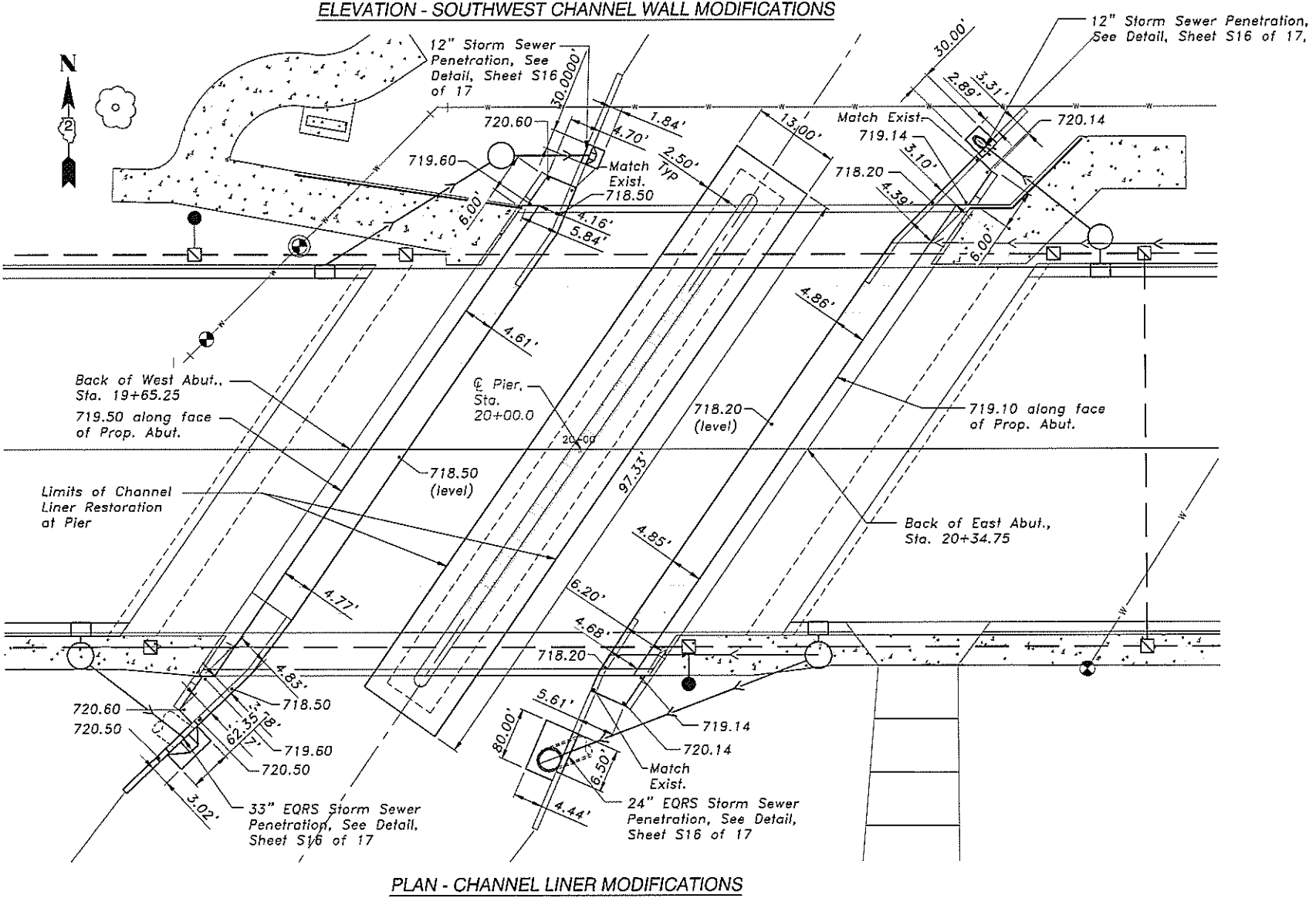
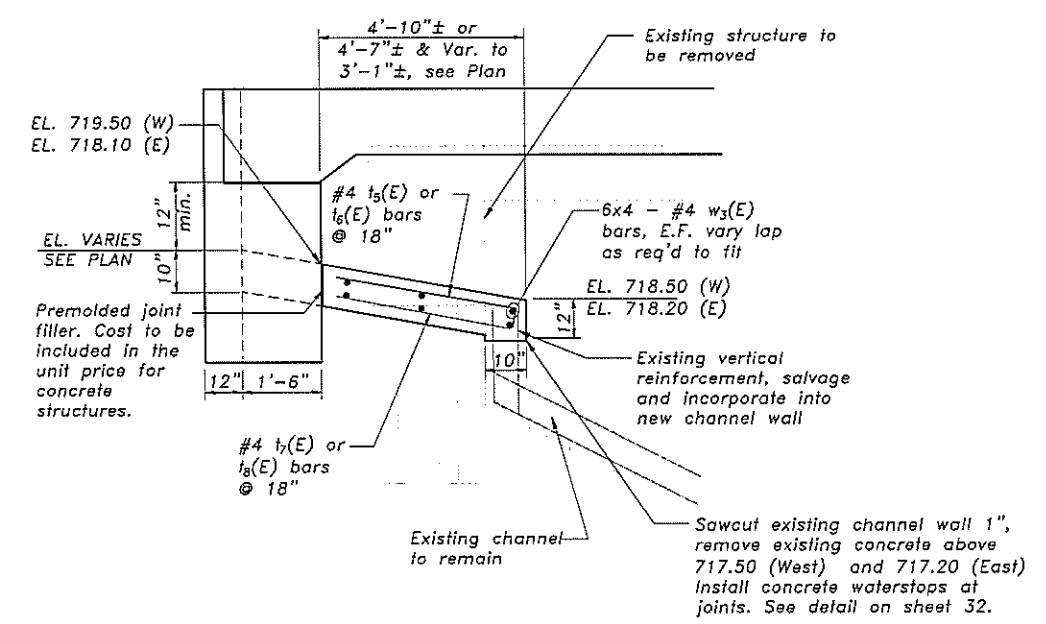
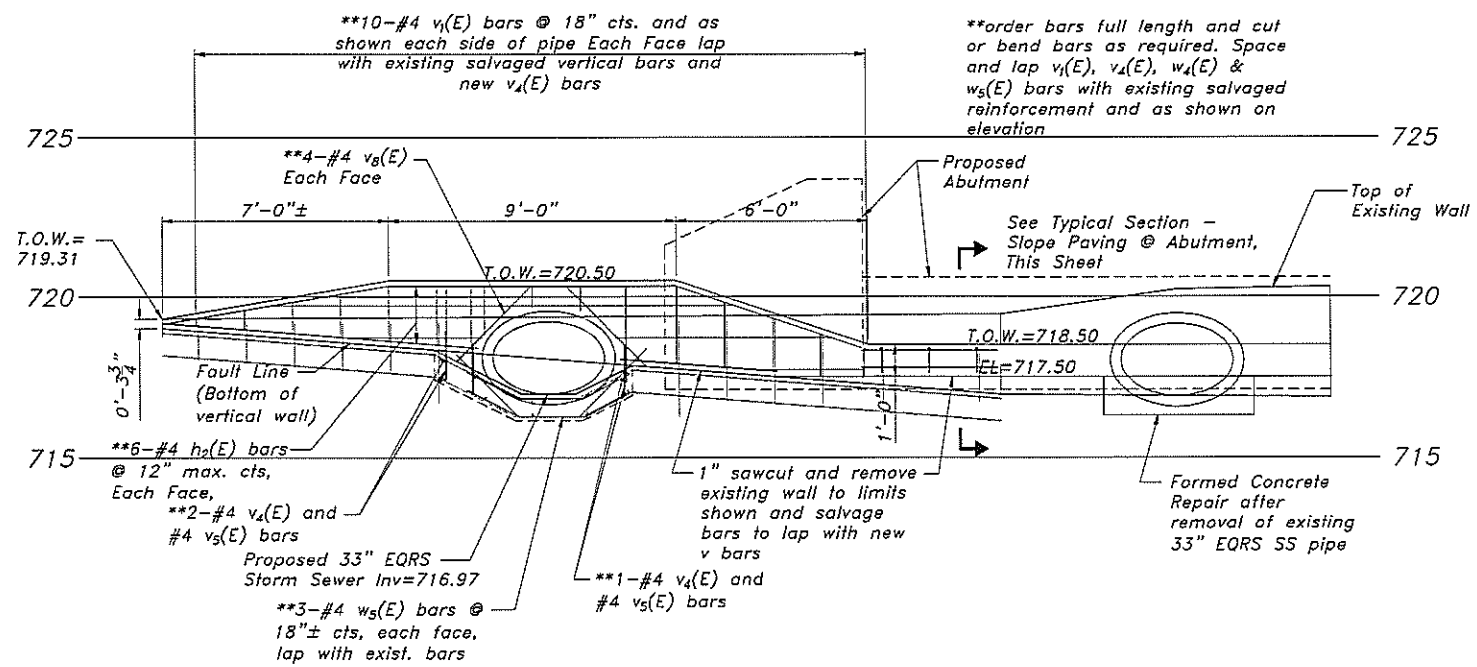
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PLOT SCALE: 1:1	CHECKED:	REVISED:
PLOT DATE: 3/31/2017	DRAWN:	REVISED:
	CHECKED:	REVISED:

STATE OF ILLINOIS
LOVES PARK DEPARTMENT OF PUBLIC WORKS

CHANNEL LINER RESTORATION - SHEET 1 OF 3
STRUCTURE NO. 101-6423

SHEET NO. S14 OF 17 SHEETS

SECTION	COUNTY	TOTAL SHEET NO.
525	08-00058-00-9R	WINNEBAGO 33
CITY OF LOVES PARK		CONTRACT NO. 65643



- STORM SEWER PIPE PENETRATIONS SUGGESTED CONSTRUCTION SEQUENCE:**
- 1) Remove existing concrete as shown to accommodate new storm sewer pipe, preserving existing reinforcement bars (4 locations).
 - 2) Cut existing reinforcement bars as required to place new storm sewer pipe.
 - 3) Place new storm sewer pipe and grout into place.
 - 4) Replace all cut bars with new steel and tie to remaining existing bars.
 - 5) Cast new concrete around new storm sewer pipe.
 - 6) Grout full existing penetrations in channel from storm sewer being abandoned.



USER NAME	DESIGNED:	REVISED: 7/28/16 COE COMMENTS
PLOT SCALE: 1-1	CHECKED:	REVISED:
PLOT DATE: 3/31/2017	DRAWN:	REVISED:
	CHECKED:	REVISED:

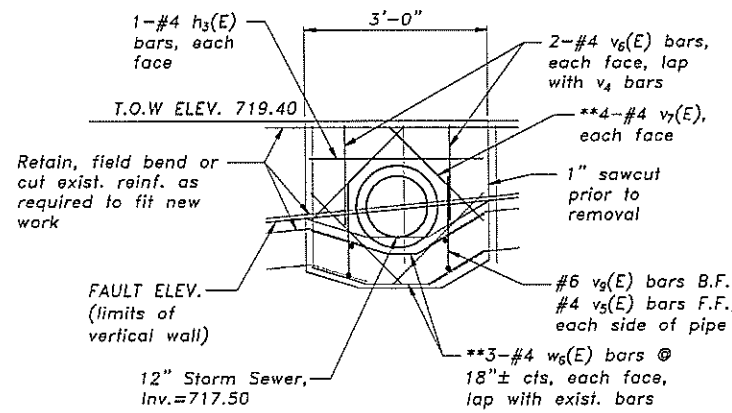
STATE OF ILLINOIS
LOVES PARK DEPARTMENT OF PUBLIC WORKS

CHANNEL LINER RESTORATION - SHEET 2 OF 3
STRUCTURE NO. 101-6423

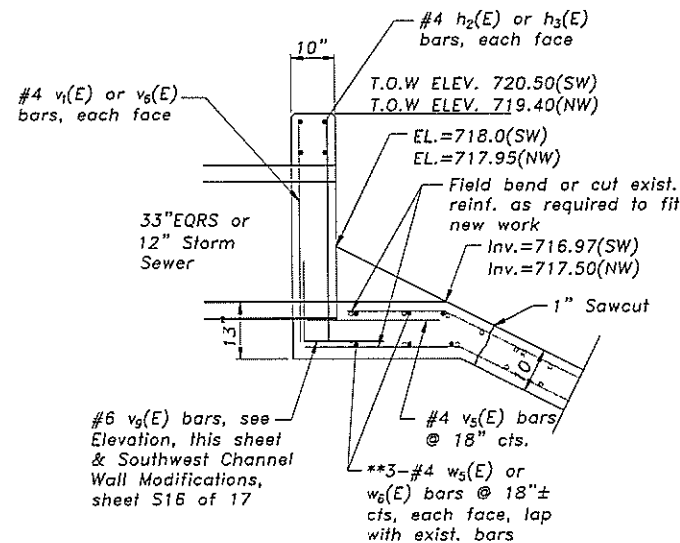
SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
525	08-0068-00-BR	WINNEBAGO	34
CITY OF LOVES PARK		CONTRACT NO. 65643	
[ILLINOIS] FED. AID PROJECT BRM-5099(115)			

SHEET NO. S15 OF 17 SHEETS

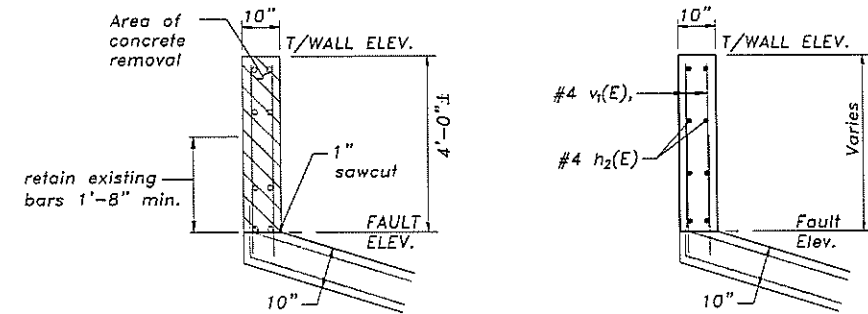
FILE NAME AND PATH: H:\05-013 RVRSD BLVD WANTZ BR REPL\DESIGN\DRAWINGS\FROM MAC09\2016.05.09\09-01.15 CHANNEL LINER 2.DWG



ELEVATION
Northwest Quadrant - See Sheet 15 of 17
for Southwest Quadrant



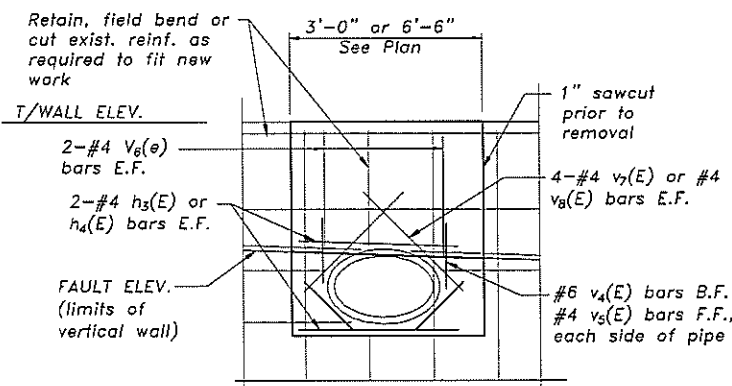
SECTION



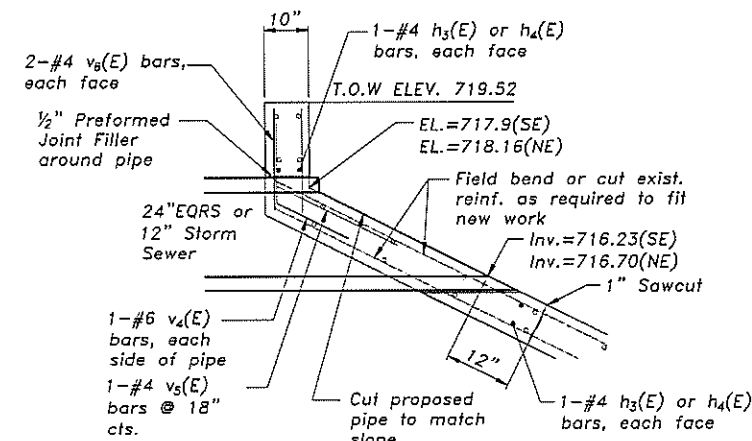
EXISTING REMOVAL **PROPOSED**

TYPICAL WALL SECTIONS
Southwest Quadrant

STORM SEWER PENETRATION DETAIL
Northwest & Southwest Quadrants

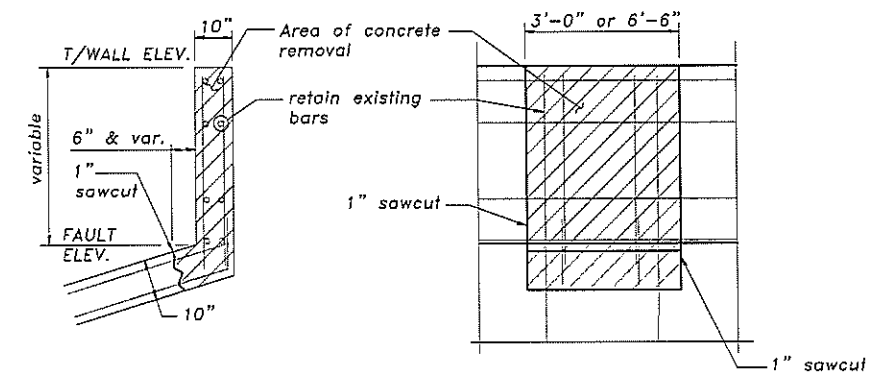


ELEVATION



SECTION

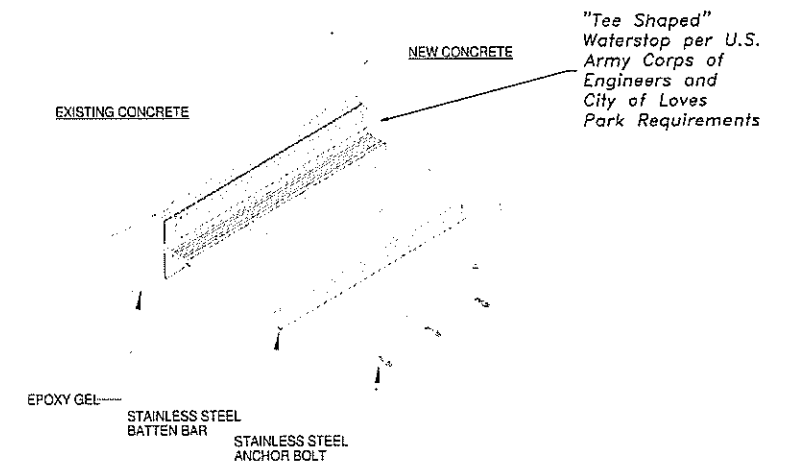
STORM SEWER PENETRATION DETAIL
Northeast & Southeast Quadrants



SECTION

ELEVATION

STORM SEWER PENETRATION CONCRETE REMOVAL



WATERSTOP DETAIL