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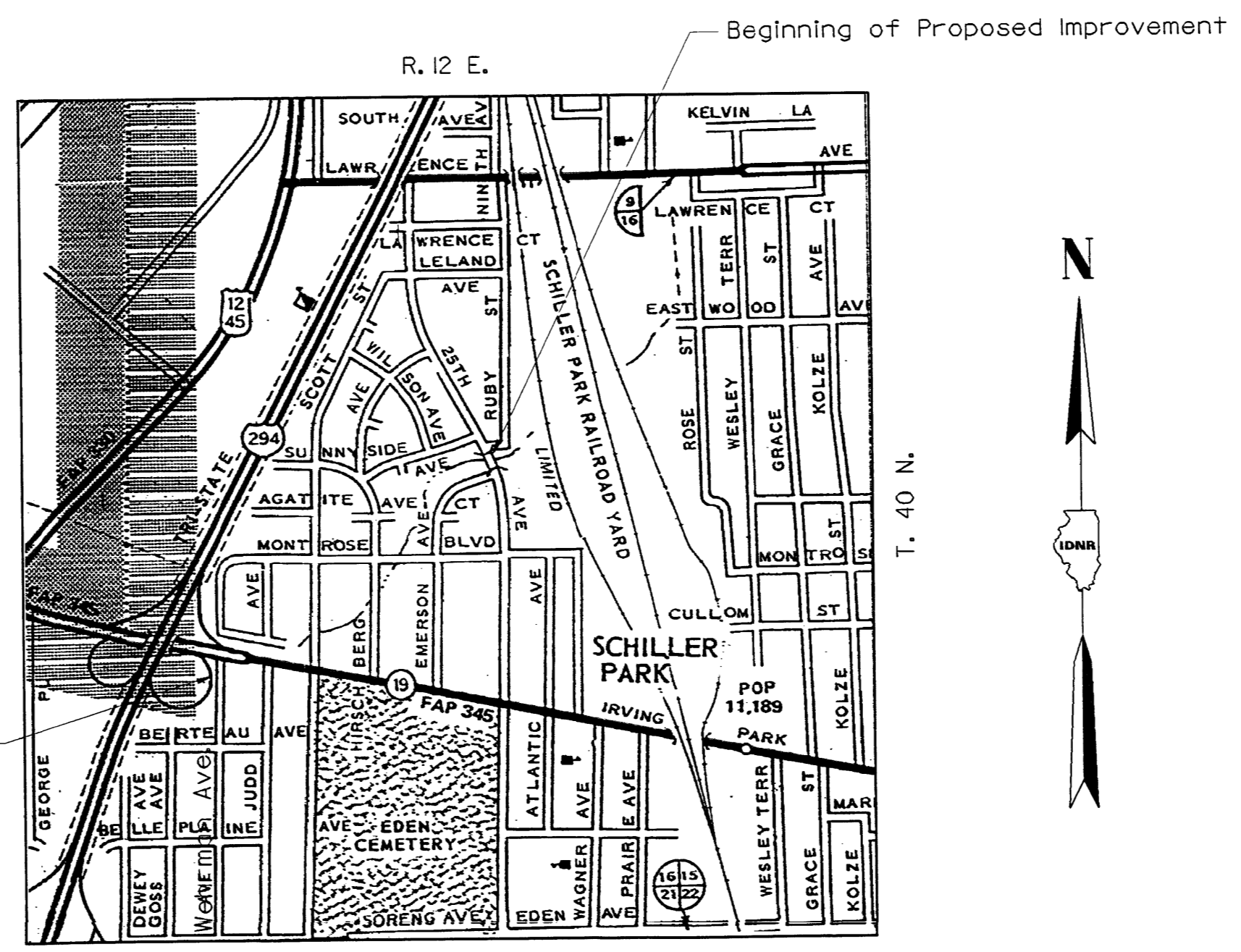
STANDARDS

- 000001 STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
- 515001 NAME PLATE FOR BRIDGES
- 542301 PRECAST REINFORCED CONCRETE FLARED END SECTION
- 542311 GRATING FOR CONCRETE FLARED END SECTION
- 542601 REINFORCED CONCRETE PIPE ELBOW
- 542606 REINFORCED CONCRETE PIPE TEE
- 602011 CATCH BASIN TYPE C
- 602406 MANHOLE TYPE A, 72" DIAMETER
- 602701 CAST IRON STEPS
- 630001 STEEL PLATE BEAM GUARDRAIL
- 604001 FRAME AND LIDS, TYPE 1
- 604036 GRATE TYPE 8
- 606001 CONCRETE CURB TYPE B AND COMBINATION CONCRETE CURB AND GUTTER
- 606301 P. C. CONCRETE ISLANDS AND MEDIANS
- 664001 CHAIN LINK FENCE
- 666001 RIGHT OF WAY MARKERS
- 701006 OFF-ROAD OPERATIONS, 2L, 2W, 15' TO 24" FROM PAVEMENT EDGE
- 701501 URBAN LANE CLOSURE, 2L, 2W, UNDIVIDED
- 702001 TRAFFIC CONTROL DEVICES
- 704001 TEMPORARY CONCRETE BARRIER
- 780001-01 TYPICAL PAVEMENT MARKINGS

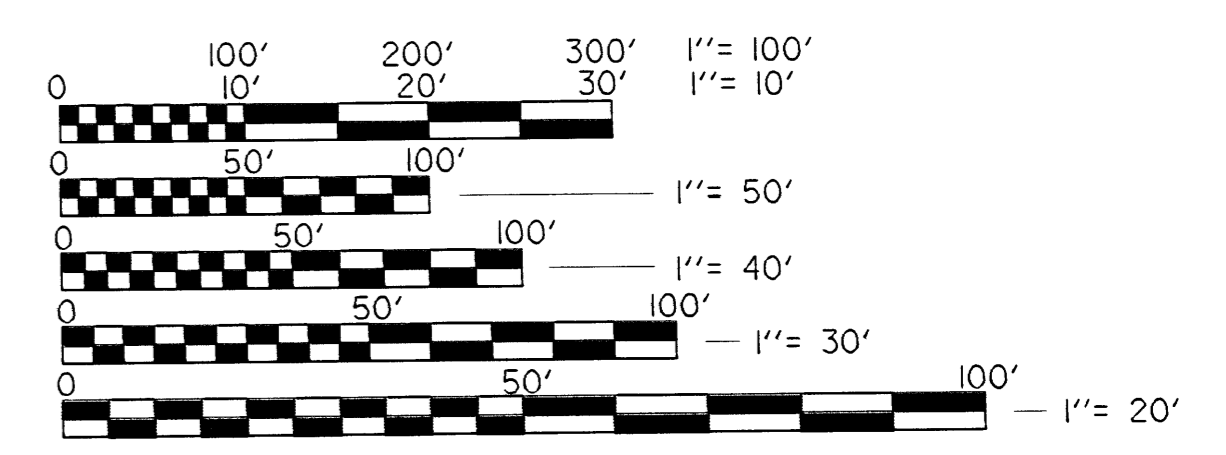
STATE OF ILLINOIS
DEPARTMENT OF NATURAL RESOURCES
OFFICE OF WATER RESOURCES
CRYSTAL CREEK FLOOD CONTROL PROJECT
PHASE IIA
VILLAGES OF
FRANKLIN PARK AND SCHILLER PARK
COOK COUNTY
FR-413
2010



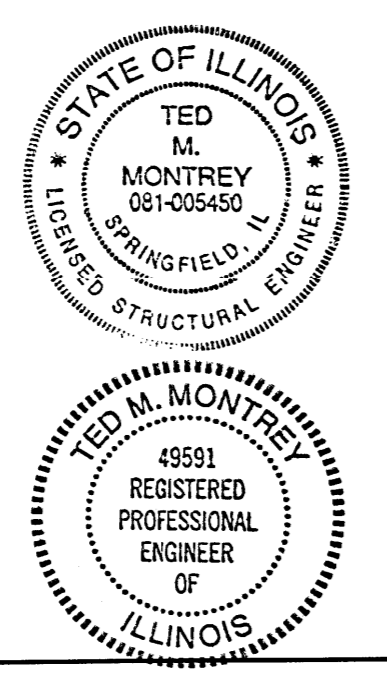
REGIONAL MAP



LOCATION MAP



FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES, REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES, IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

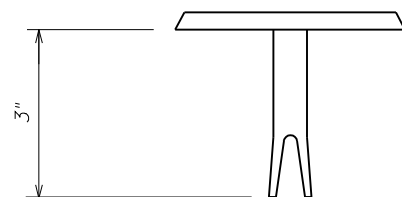
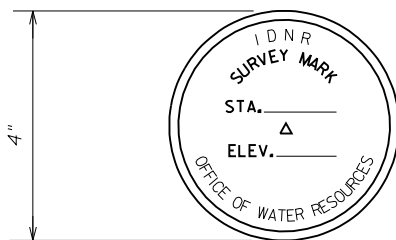


Ted M. Montrey 1/28/10
 ILLINOIS REGISTERED STRUCTURAL ENGINEER NO. 081-005450
 LICENSE EXPIRES 11-30-2010

Ted M. Montrey 1/28/10
 ILLINOIS REGISTERED PROFESSIONAL ENGINEER NO. 062-049591
 LICENSE EXPIRES 11-30-2011

SUBMITTED BY *William J. Schick* DATE 1/28/10
 MANAGER, DIVISION OF PROJECT IMPLEMENTATION

APPROVED BY *Doug R. Clark* DATE 1/28/2010
 DIRECTOR



DETAIL OF BENCH MARK

Bench Mark to be furnished by the Office of Water Resources.
See Design Plans for location.
Cost of placing shall be considered included with Concrete Box Culverts.

UTILITY REFERENCE TABLE

J.U.L.I.E.	Call 48 hours prior to construction	(800) 892-0123
Telephone	Mr. John Bachelder OSP National Support / Investigations MCI / Network Services, Inc. 2400 North Glenville Drive Richardson, Texas 75082	(972) 729-6016
	Mr. William O'Conner SBC 162 South York Road Elmhurst, Illinois 60126	(630) 941-4200
Electricity	Mr. John D. Pribich Program Manager, Public Relocation ComEd Three Lincoln Centre Fourth Floor Oakbrook Terrace, Illinois 60181-4260	(630) 437-2212
Water & Sewer	Mr. Ron Sieraski Superintendent of Public Works Village of Schiller Park 9526 West Irving Park Road Schiller Park, Illinois 60176	(847) 822-8592 (847) 671-8521
Gas	Mr. Scott Stogsdill Utility Consultant Nicor Gas 1844 Ferry Road Naperville, Illinois 60563-9600	(630) 983-8676
Cable Television	Mr. Robert L. Schuller, Jr. Right of Way Manager Comcast Cable Communications, Inc. Greater Chicago Market Affirmation 688 Industrial Drive Elmhurst, Illinois 60126	(630) 600-6316

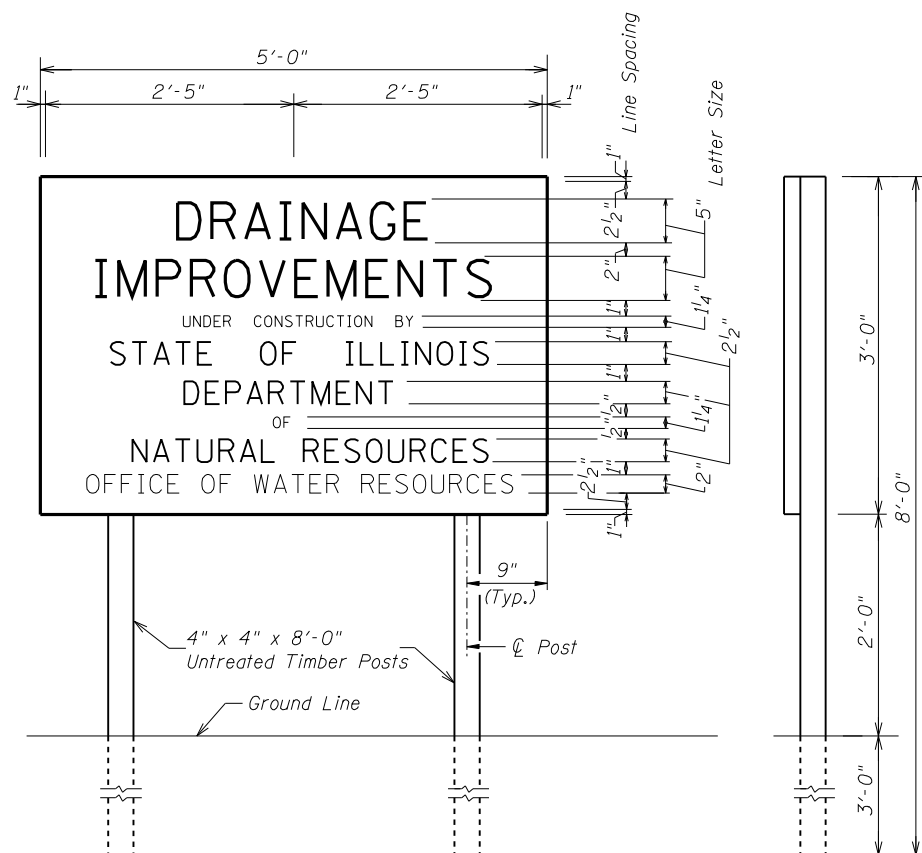
- GENERAL NOTES**
- All elevations refer to N.G.V.D. (National Geodetic Vertical Datum).
 - The Contractor shall furnish, erect, and when directed by the Engineer, completely remove two construction signs. The exact locations of the signs shall be determined by the Engineer in the field.
 - Reinforcement bars shall conform to the requirements of AASHTO M-31 or M-322 Grade 60.
 - Class SI Concrete shall be used throughout. All exposed edges of concrete shall be beveled 3/4" unless otherwise shown in the plans.
 - All lateral drainage that exists prior to construction shall be restored as shown on the plans and/or as directed by the Engineer. Unless otherwise specified, all costs of restoration shall be considered included with the Contract and no additional compensation will be allowed.
 - The Contractor is reminded to protect and restore at his expense, in accordance with Art. 107.20 of the Standard Specifications, any private or public property, including access roads, which may be damaged or destroyed due to construction operations.
 - The location, maintenance, removal, and restoration to original condition of all haul roads shall be approved by the Engineer and all cost shall be considered included in the Contract.
 - Prior to the beginning of work in the vicinity of the utilities, the Contractor shall contact the owners listed in the utility reference table and schedule work so as not to interfere with required adjustments.
 - All unsuitable material and excess excavation shall be disposed of at locations provided by the Contractor at his expense. The locations shall be inspected and approved by the Engineer.
 - All construction operations shall be contained within the easement area or work limits as indicated on the plans.
 - All open excavations are to be surrounded with a 4'-0" high construction fence during non-working hours. The fence materials are to meet the approval of the Engineer. Cost of the fence shall be considered included in the Contract.
 - All dewatering costs shall be considered included with the contract.
 - The Contractor shall notify the Villages of Franklin Park, Schiller Park, and the Township concerning the closing of streets and shall conform to all requirements so specified without additional cost to the State.
 - Plan dimensions and details relative to the existing structures have been taken from existing plans and/or past surveys and reports, and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit bid price for the work.
 - All material excavated from the bottom of the existing channel must be deposited in a self-contained area in compliance with all State statutes, regulations, and permit requirements with no discharge to public waters unless a permit has been issued by the Illinois E.P.A.
 - The Contractor shall take due care while excavating near existing structures. Any damages caused by the construction activity shall be corrected at the expense of the Contractor.
 - With the exception of those utilities designated on the plans to be adjusted by the Contractor, all existing utilities affected by the construction operations shall be adjusted by others. Utilities which do not require adjustment shall be protected and not disturbed. All costs of protection shall be incidental to the Contract, and no additional compensation will be allowed.
 - All construction joints shall be bonded unless otherwise noted.
 - Channel Excavation shall include the cost of removing and disposing of fences, existing railroad tie, limestone, and concrete walls along the channel and existing riprap and rubble. The existing riprap shall not be re-used on this project.
 - The Contractor shall submit his proposed method of maintaining channel flows, for approval by the Engineer, prior to beginning construction.

GENERAL NOTES

Signs shall be made of 3/4" plywood or oxboard, or of metal (18 ga.). The Contractor shall furnish all material and labor for constructing and erecting the signs. The signs shall be placed prior to the starting of actual construction operations at each end of the construction section or as directed by the Engineer. Before any sign is erected, it shall be approved by the Engineer as to its appearance and quality of construction. The signs shall remain in place and shall be maintained in satisfactory condition until the project is accepted by the department. The Contractor shall then remove the signs and the material will become his property.

The letters on the sign shall be black mechanical style on a white background and appropriate border lines.

Paid for as Wood Information Signs.



Designed By TMM Checked By JLF
 Drawn By JLF Checked By RLP
 O:\Dwt\Proj\Imp\Projects\Crystal Creek\JLF\General Notes and Utility References.dgn
 11:47:14 AM
 1/29/2010

SUMMARY OF QUANTITIES

CODE NO.	PAY ITEM	UNIT	QUANTITY	
			STATE	LOCAL**
20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	556	
20100210	TREE REMOVAL (OVER 15 UNITS DIAMETER)	UNIT	846	
20101400	NITROGEN FERTILIZER NUTRIENT	POUND	62	
20101500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	62	
20101600	POTASSIUM FERTILIZER NUTRIENT	POUND	62	
20300100	CHANNEL EXCAVATION	CU YD	2,339	
21101505	TOPSOIL EXCAVATION AND PLACEMENT	CU YD	527	
25000310	SEEDING, CLASS 4	ACRE	0.55	
25000340	SEEDING, CLASS 6A	ACRE	0.13	
25100125	MULCH, METHOD 3	ACRE	0.68	
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	1,49	
28000300	TEMPORARY DITCH CHECKS	EACH	11	
28000400	PERIMETER EROSION BARRIER	FOOT	3,471	
28100107	STONE RIPRAP, CLASS A4	SQ YD	867	
28100807	STONE DUMPED RIPRAP, CLASS A4	TON	324	
28200200	FILTER FABRIC	SQ YD	867	
35100500	AGGREGATE BASE COURSE, TYPE A 6"	SQ YD	14	
35501316	HOT-MIX ASPHALT BASE COURSE, 8"	SQ YD	331	
40300100	BITUMINOUS MATERIALS (PRIME COAT)	GALLON	25	
40603080	HOT-MIX ASPHALT BINDER COURSE, IL-90, N50	TON	128	
40603335	HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N50	TON	56	
42400300	PORTLAND CEMENT CONCRETE SIDEWALK 6 INCH	SQ FT	1822	377
44000100	PAVEMENT REMOVAL	SQ YD	556	
48101200	AGGREGATE SHOULDERS, TYPE B	TON	10	
*44001700	COMBINATION CONCRETE CURB AND GUTTER REMOVAL AND REPLACEMENT	FOOT	223	
*50100300	REMOVAL OF EXISTING STRUCTURES NO. 1	EACH	1	
*50100400	REMOVAL OF EXISTING STRUCTURES NO. 2	EACH	1	
*50100500	REMOVAL OF EXISTING STRUCTURES NO. 3	EACH	1	
*50100600	REMOVAL OF EXISTING STRUCTURES NO. 4	EACH	1	
*50100700	REMOVAL OF EXISTING STRUCTURES NO. 5	EACH	1	
*50100800	REMOVAL OF EXISTING STRUCTURES NO. 6	EACH	1	
*50100900	REMOVAL OF EXISTING STRUCTURES NO. 7	EACH	1	
*50101000	REMOVAL OF EXISTING STRUCTURES NO. 8	EACH	1	
*50101100	REMOVAL OF EXISTING STRUCTURES NO. 9	EACH	1	
50105220	PIPE CULVERT REMOVAL	FOOT	177	
50200100	STRUCTURE EXCAVATION	CU YD	4,543	
50300225	CONCRETE STRUCTURES	CU YD	48.8	25.8
50400205	PRECAST PRESTRESSED CONCRETE DECK BEAMS (11" DEPTH)	SQ FT	294	299
54002020	EXPANSION BOLTS 3/4 INCH	EACH	99	
50800105	REINFORCEMENT BARS	POUND	24,390	

Note: Structure No. 2, 5 and 6 to be paid for by Locals.

SUMMARY OF QUANTITIES

CODE NO.	PAY ITEM	UNIT	QUANTITY	
			STATE	LOCAL**
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	27,920	4620
50800515	BAR SPLICERS	EACH	38	
50901720	BICYCLE RAILING	FOOT	180	
51100300	SLOPE WALL 6"	SQ YD	92	
51500100	NAME PLATES	EACH	9	3
54003000	CONCRETE BOX CULVERTS	CU YD	285.5	
54021004	PRECAST CONCRETE BOX CULVERT 10' X 4' (M273)	FOOT	50.5	
54021005	PRECAST CONCRETE BOX CULVERT 10' X 5' (M273)	FOOT	229	
54248510	CONCRETE COLLAR	CU YD	5.7	
550A0050	STORM SEWERS, CLASS A, TYPE 1 12"	FOOT	6	
550A0450	STORM SEWERS, CLASS A, TYPE 2 36"	FOOT	9	
550B0340	STORM SEWERS, CLASS B, TYPE 2 12"	FOOT	1	
55100200	STORM SEWER REMOVAL 6"	FOOT	10	
55100300	STORM SEWER REMOVAL 8"	FOOT	17	
55100400	STORM SEWER REMOVAL 10"	FOOT	9	
55100700	STORM SEWER REMOVAL 15"	FOOT	7	
55101200	STORM SEWER REMOVAL 24"	FOOT	7	
55101600	STORM SEWER REMOVAL 36"	FOOT	16	
60207605	CATCH BASINS, TYPE C, TYPE 8 GRATE	EACH	1	
63000000	STEEL PLATE BEAM GUARDRAIL, TYPE A	FOOT	25	
63000025	STEEL PLATE BEAM GUARDRAIL, ATTACHED TO STRUCTURES	FOOT	100	
66400305	CHAIN LINK FENCE, 6'	FOOT	2927	141
*66410400	CHAIN LINK FENCE TO BE REMOVED AND RE-ERECTED	FOOT	740	1375
*67000500	ENGINEER'S FIELD OFFICE, TYPE B	CAL MO	24	
67100100	MOBILIZATION	L SUM	1	
*70101800	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	L SUM	1	
70400100	TEMPORARY CONCRETE BARRIER	FOOT	165	
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	140	
*X0322923	SEGMENTAL CONCRETE BLOCK WALL	SQ FT	28,659	
*X0323384	WOOD INFORMATION SIGNS	SQ FT	30	
*X0323988	TEMPORARY SOIL RETENTION SYSTEM	SQ FT	118	
*Z0007601	BUILDING REMOVAL NO. 1	L SUM	1	
*Z0030240	IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 2	EACH	1	
*Z0030340	IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE), TEST LEVEL 2	EACH	1	
*	CONSTRUCTION STAKING	L SUM	1	
*	SEEDING, MULCHING, AND FERTILIZING	ACRE	0.81	
*	TEMPORARY COFFERDAM SYSTEM	L SUM	1	
*	STONE FACE FINISH	SQ FT	270	270

* INDICATES NON-STANDARD ITEM COVERED BY SPECIAL PROVISION **LOCAL = VILLAGE OF SCHILLER PARK AND FRANKLIN PARK

Designed By TMM Checked By JJF
Drawn By JJF Checked By RLP

\$FILES
\$TIMES
\$DATES

TREE REMOVAL SCHEDULE			
STATION	OFFSET	TREE REMOVAL (6 TO 15 UNITS DIAMETER) (UNIT)	TREE REMOVAL (OVER 15 UNITS DIAMETER) (UNIT)
0+35	16' RT	12	
0+57	19' RT	14	
0+67	20' LT	10	
0+68	10' RT	6	
0+72	20' LT	10	
0+72	10' RT	8	
0+73	20' RT		20
0+75	17' LT		24
0+76	16' RT	8	
0+82	18' LT		24
1+08	12' LT		18
1+18	12' LT	15	
1+18	10' LT	15	
1+26	8' LT	15	
2+54	6' RT	8	
2+61	4' RT		16
2+62	9' RT	10	
2+67	4' RT	11	
2+75	5' RT	10	
2+76	14' LT	6	
2+86	7' RT	12	
3+61	10' LT		48
3+79	11' LT		56
4+03	9' LT		18
4+13	13' LT	15	
4+19	16' RT	12	
4+20	4' RT		25
4+61	3' RT		22
4+93	17' LT		22
4+97	16' RT	12	
5+10	13' RT		24
5+24	9' RT	11	
5+42	2' RT		36
5+54	7' LT	8	
5+77	14' RT	10	
5+88	5' RT	8	
5+96	15' RT	7	
5+99	13' LT		18
6+20	11' RT	10	
6+35	6' RT	8	
6+44	11' RT		16
6+71	11' RT		36
7+52	9' RT		16
7+61	6' RT	14	
9+91	18' RT	15	
10+22	13' RT	10	
10+38	14' LT		25
10+54	14' RT	6	
10+99	1' RT		20
11+16	7' LT		72
11+60	7' LT		44
11+97	17' LT		50
14+10	9' LT		22
14+28	7' LT	6	
14+39	5' LT	12	
15+01	7' RT		22
15+02	11' LT	12	
15+88	13' RT		24
15+95	8' LT	12	
16+05	5' LT		20
16+06	10' RT	10	
16+07	6' LT	7	
16+22	4' LT	7	
16+36	4' LT		20
16+41	11' RT	8	
16+46	4' LT		16
16+72	9' RT	8	
17+17	9' LT	6	
17+20	9' LT	7	
17+22	9' LT	8	

TREE REMOVAL SCHEDULE (cont'd.)			
STATION	OFFSET	TREE REMOVAL (6 TO 15 UNITS DIAMETER) (UNIT)	TREE REMOVAL (OVER 15 UNITS DIAMETER) (UNIT)
17+33	5' RT	6	
17+36	7' RT	8	
17+37	6' LT	8	
17+47	5' RT	8	
17+57	7' LT	12	
17+69	3' RT		36
17+78	8' LT	11	
17+81	4' LT		18
18+13	1' LT	14	
18+37	5' LT	10	
18+47	1' LT	12	
18+70	11' LT		18
18+77	11' RT	12	
19+14	10' RT	8	
19+24	13' RT	8	
19+30	13' LT	6	
19+46	14' LT	6	
28+26	10' LT	8	
TOTAL		556	846

SEEDING & EROSION CONTROL SCHEDULE							
LOCATION	SEEDING MULCHING & FERTIL.	SEEDING CLASS 4 W/ MULCH METHOD 3	SEEDING CLASS 6A W/ MULCH METHOD 3	PERIMETER EROSION BARRIER		TEMPORARY DITCH CHECKS	
	ACRE	ACRE	ACRE	FOOT		LOCATION	EACH
	LT & RT	LT & RT	LT & RT	LT	RT		
0+00 - 1+62	0.04	0.08	—	130	131	3+05	1
2+10 - 8+10	0.24	0.17	—	555	577	6+05	1
9+50 - 12+25	0.12	0.08	—	246	235	9+95	1
12+86 - 15+19	0.09	0.11	—	259	207	12+95	1
15+86 - 18+90	0.19	0.08	—	296	310	14+95	1
19+06 - 19+55	0.01	0.03	—	47	64	17+95	1
26+33 - 26+53	—	—	0.01	—	32	19+25	1
27+20 - 29+00	0.08	—	0.12	168	153	25+90	1
29+27 - 30+19	0.04	—	—	61	—	27+90	1
TOTAL	0.81	0.55	0.13	TOTAL 3,471		29+90	1
POTASSIUM FERTILIZER NUTRIENT @ 90 LBS./ACRE		50 LBS.	12 LBS.	TEMPORARY EROSION CONTROL SEEDING		T	
PHOSPHOROUS FERTILIZER NUTRIENT @ 90 LBS./ACRE		50 LBS.	12 LBS.	ACRE		O	
NITROGEN FERTILIZER NUTRIENT @ 90 LBS./ACRE		50 LBS.	12 LBS.	1.49		A	11
						L	

STONE RIPRAP, CLASS A4 & FILTER FABRIC		
LOCATION		SQ YD
LT	0+50	30
RT	0+50	44
LT & RT	7+50	104
LT & RT	10+00	94
CULVERT NO. 1		81
CULVERT NO. 2		127
CULVERT NO. 3		59
CULVERT NO. 4		241
STRUCTURE NO. 1		42
PIPE OUTFALL LOCATIONS (SEE PIPE SCHEDULE ON SHEET 17)		45
TOTAL		867

REMOVAL OF EXISTING STRUCTURES				
NO.	LOCATION	TYPE	DESCRIPTION	EACH
1	2+33	FOOTBRIDGE 35' LENGTH	PRECAST CONCRETE BRIDGE SLAB WITH CONCRETE ABUTMENTS, STEEL HANDRAIL & SIDEWALK APPROACHES. U.S. 25TH AVE.	1
2	13+09	FOOTBRIDGE 25' LENGTH	WOOD PLANK DECK, NO SIDE RAILS, 2 WOOD POST PIERS. U.S. MONTROSE AVE.	1
3	14+79	FOOTBRIDGE 27' LENGTH	CONCRETE DECK, RED BRICK PARAPETS, SIDEWALK APPROACHES. D.S. HIRSCHBERG	1
4	16+19	FOOTBRIDGE 23' LENGTH	LONGITUDINAL WOOD PLANK DECK BOARDS, TIMBER GIRDERS, WOOD SIDE RAILS AND RAIL POSTS, SIDEWALKS, U.S. HIRSCHBERG	1
5	16+75	FOOTBRIDGE 24' LENGTH	LONGITUDINAL WOOD PLANK DECK BOARDS, TIMBER GIRDERS, WOOD SIDE RAILS & RAIL POSTS WITH UNDULATING PICKETS, SIDEWALKS	1
6	17+76	FOOTBRIDGE 24' LENGTH	WOOD FOOTBRIDGE	1
7	17+94	FOOTBRIDGE 25' LENGTH	LONGITUDINAL WOOD PLANK DECK BOARDS, TIMBER GIRDERS, WOOD SIDE RAILS & RAIL POSTS. D.S. ALLEY CULVERT	1
8	15+50	CULVERT	CAST-IN-PLACE CONCRETE SLAB ON STONE ABUTMENTS	1
9	18+96	BOX CULVERT	CONCRETE BOX CULVERT WITH CONCRETE CURB	1

STORM SEWERS, CLASS A, TYPE 1 12"	
LOCATION	FOOT
SEE PIPE SCHEDULE ON SHEET 17	6

STORM SEWERS, CLASS A, TYPE 2 36"	
LOCATION	FOOT
SEE PIPE SCHEDULE ON SHEET 17	9

STORM SEWERS, CLASS B, TYPE 2 12"	
LOCATION	FOOT
SEE PIPE SCHEDULE ON SHEET 17	1

STORM SEWER REMOVAL		
SIZE	LOCATION	FOOT
6"	SEE PIPE SCHEDULE ON SHEET 17	10
8"	" " " " " "	17
10"	" " " " " "	9
15"	" " " " " "	7
24"	" " " " " "	7
36"	" " " " " "	16

CONCRETE COLLAR	
LOCATION	CU YD
SEE PIPE SCHEDULE ON SHEET 17	5.7

CHAIN LINK FENCE TO BE REMOVED AND RE-ERECTED	
LOCATION	FOOT
2+36 - 7+84 LT	532
2+36 - 7+84 RT	566
9+80 - 10+64 LT	103
9+80 - 11+50 RT	171
12+70 - 15+46 LT	277
13+10 - 13+55 RT	50
17+23 - 18+87 LT	181
17+18 - 18+87 RT	160
29+30 LT & RT	75
TOTAL	2,115

SCHEDULE OF EARTHWORK				
LOCATION	CHANNEL EXCAVATION CU YD	STRUCTURE EXCAVATION CU YD	TOPSOIL EXCAVATION AND PLACEMENT CU YD	TOPSOIL PLACEMENT (NOT PAID FOR) CU YD
0+33 - 1+50	375	494	43	17
2+31 - 7+84	802	1,851	176	175
9+80 - 12+14	342	598	46	114
12+90 - 15+13	226	628	59	39
15+87 - 18+87	440	972	80	60
19+06 - 19+55	78		37	33
27+44 - 28+80	76		86	66
TOTAL	2,339	4,543	527	504

SEGMENTAL CONCRETE BLOCK WALL	
LOCATION	SQ FT
0+33 - 1+50 LT & RT	2,775
2+31 - 7+84 LT & RT	11,735
9+80 - 12+14 LT & RT	4,488
12+90 - 15+13 LT & RT	4,081
15+87 - 18+87 LT & RT	5,580
TOTAL	28,659

CATCH BASINS, TYPE C, TYPE 8 GRATE	
LOCATION	EACH
SEE PIPE SCHEDULE ON SHEET 17	1

STONE DUMPED RIPRAP, CLASS A4	
LOCATION	TON
LT & RT 0+69 - 1+50	18
LT & RT 2+31 - 7+28	126
LT & RT 10+38 - 12+15	46
LT & RT 12+90 - 15+13	58
LT & RT 15+87 - 18+87	76
TOTAL	324

SLOPE WALL 6"	
LOCATION	SQ YD
LT 7+70	22
RT 7+70	22
LT 9+95	25
RT 9+95	23
TOTAL	92

PIPE CULVERT REMOVAL		
SIZE	LOCATION	FOOT
48"	STA. 12+52 (3 CULVERTS @ 59')	177

BUILDING REMOVAL NO. 1		
LOCATION	DESCRIPTION	L SUM
STA. 11+00 LT	GARAGE	1

CHAIN LINK FENCE, 6'	
LOCATION	FOOT
0+33 - 1+47 LT	116
0+33 - 1+47 RT	113
2+31 - 7+84 LT	541
2+31 - 7+84 RT	563
9+80 - 12+14 LT	232
9+80 - 12+14 RT	235
12+90 - 15+13 LT	244
12+90 - 15+13 RT	185
15+87 - 18+87 LT	276
15+87 - 18+87 RT	291
Structure #2	43
Structure #3	41
Structure #4	45
Structure #5	45
Structure #6	53
Structure #7	45
TOTAL	3,068

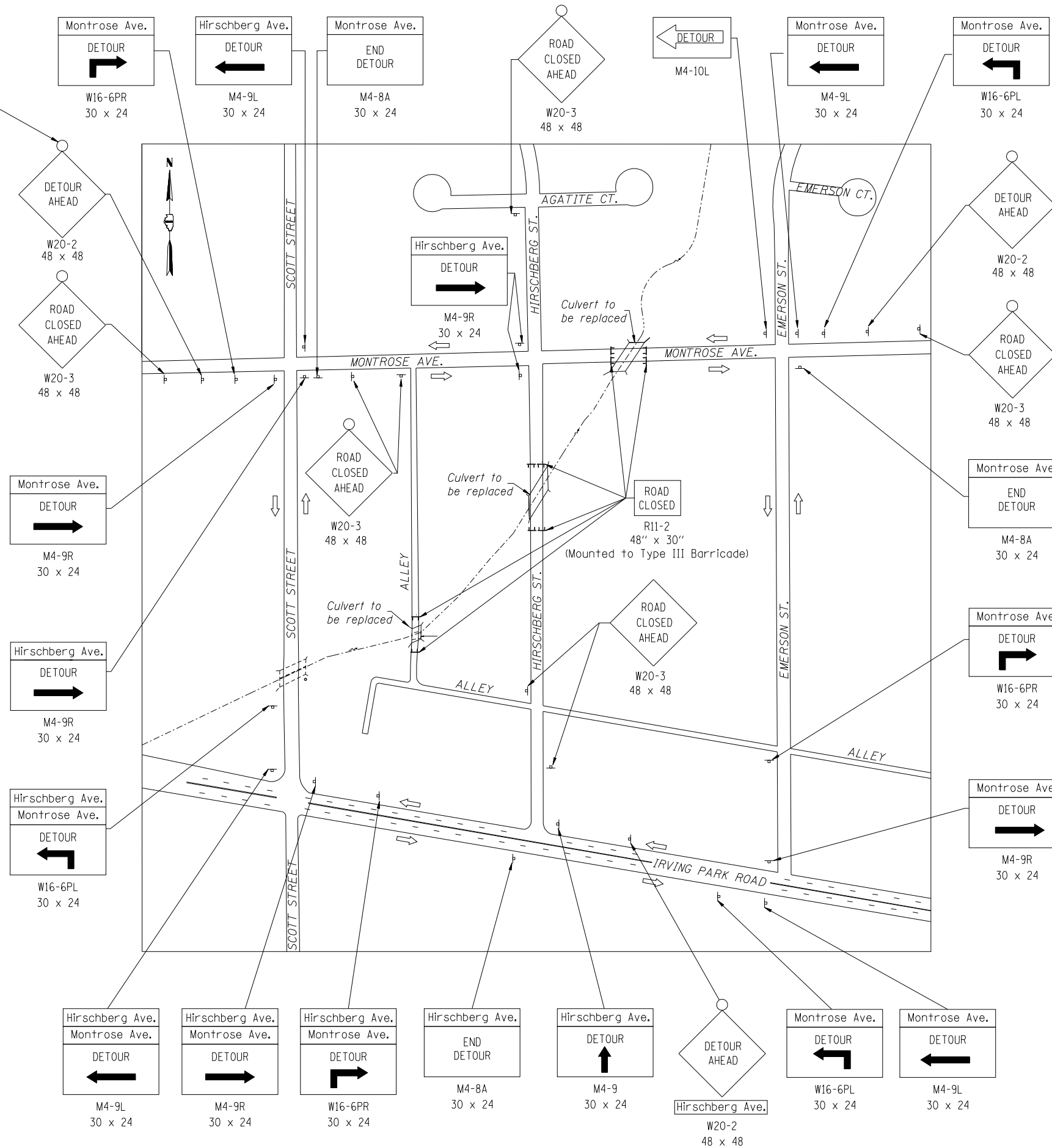
Type A monodirectional
Flashing Light (Typ.)

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1/29/2010

Designed By JUF Checked By RLP
Drawn By JUF Checked By RLP



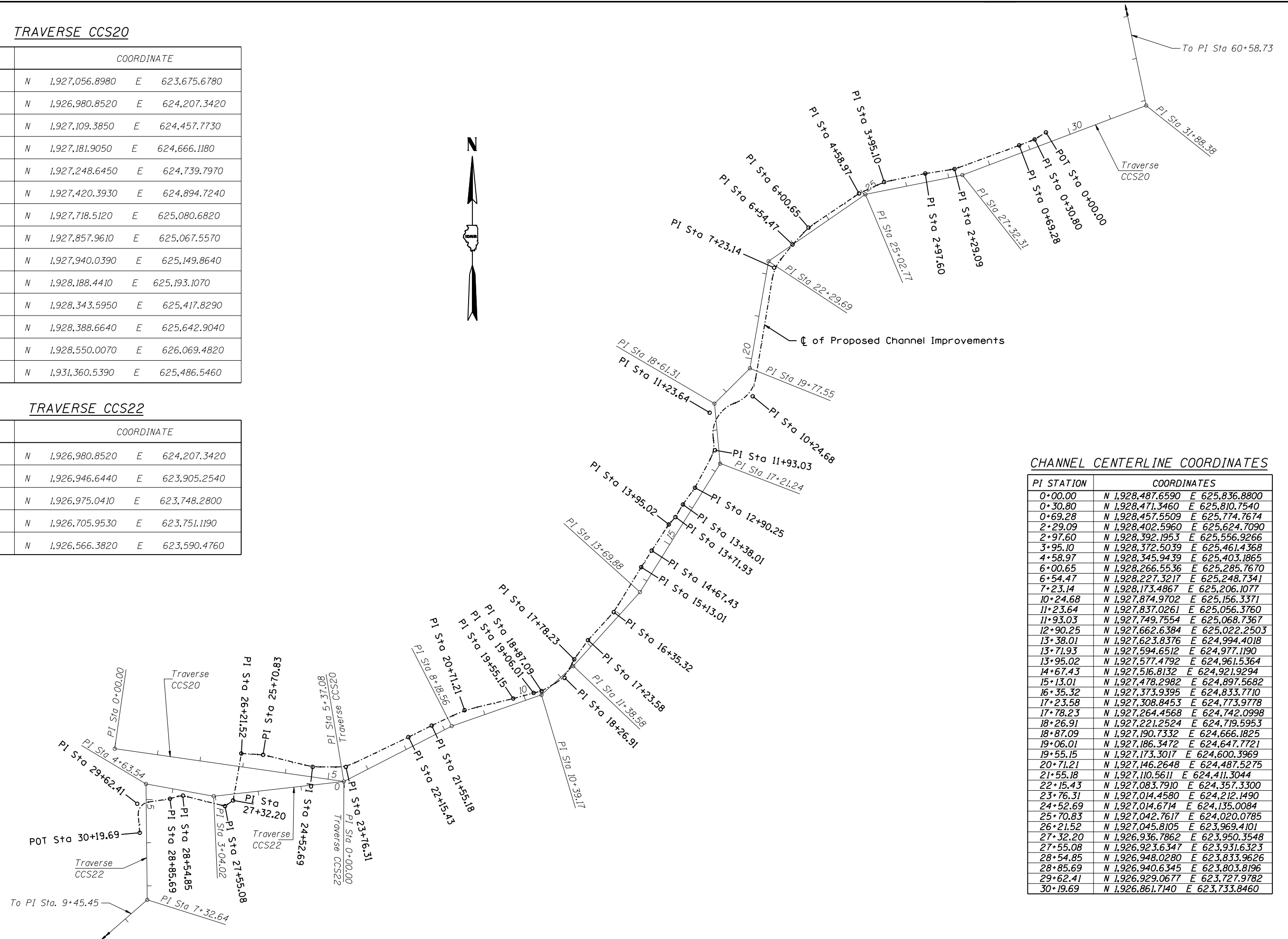
TRAFFIC CONTROL PLAN

TRAVERSE CCS20

STATION	COORDINATE		
Sta. 0+00.00	N	1,927,056.8980	E 623,675.6780
Sta. 5+37.08	N	1,926,980.8520	E 624,207.3420
Sta. 8+18.56	N	1,927,109.3850	E 624,457.7730
Sta. 10+39.17	N	1,927,181.9050	E 624,666.1180
Sta. 11+38.58	N	1,927,248.6450	E 624,739.7970
Sta. 13+69.88	N	1,927,420.3930	E 624,894.7240
Sta. 17+21.24	N	1,927,718.5120	E 625,080.6820
Sta. 18+61.31	N	1,927,857.9610	E 625,067.5570
Sta. 19+77.55	N	1,927,940.0390	E 625,149.8640
Sta. 22+29.69	N	1,928,188.4410	E 625,193.1070
Sta. 25+02.77	N	1,928,343.5950	E 625,417.8290
Sta. 27+32.31	N	1,928,388.6640	E 625,642.9040
Sta. 31+88.38	N	1,928,550.0070	E 626,069.4820
Sta. 60+58.73	N	1,931,360.5390	E 625,486.5460

TRAVERSE CCS22

STATION	COORDINATE		
Sta. 0+00.00	N	1,926,980.8520	E 624,207.3420
Sta. 3+04.02	N	1,926,946.6440	E 623,905.2540
Sta. 4+63.54	N	1,926,975.0410	E 623,748.2800
Sta. 7+32.64	N	1,926,705.9530	E 623,751.1190
Sta. 9+45.45	N	1,926,566.3820	E 623,590.4760



CHANNEL CENTERLINE COORDINATES

PI STATION	COORDINATES		
0+00.00	N	1,928,487.6590	E 625,836.8800
0+30.80	N	1,928,471.3460	E 625,810.7540
0+69.28	N	1,928,457.5509	E 625,774.7674
2+29.09	N	1,928,402.5960	E 625,624.7090
2+97.60	N	1,928,392.1953	E 625,556.9266
3+95.10	N	1,928,372.5039	E 625,461.4368
4+58.97	N	1,928,345.9439	E 625,403.1865
6+00.65	N	1,928,266.5536	E 625,285.7670
6+54.47	N	1,928,227.3217	E 625,248.7341
7+23.14	N	1,928,173.4867	E 625,206.1077
10+24.68	N	1,927,874.9702	E 625,156.3371
11+23.64	N	1,927,837.0261	E 625,056.3760
11+93.03	N	1,927,749.7554	E 625,068.7367
12+90.25	N	1,927,662.6384	E 625,022.2503
13+38.01	N	1,927,623.8376	E 624,994.4018
13+71.93	N	1,927,594.6512	E 624,977.1190
13+95.02	N	1,927,577.4792	E 624,961.5364
14+67.43	N	1,927,516.8132	E 624,921.9294
15+13.01	N	1,927,478.2982	E 624,897.5682
16+35.32	N	1,927,373.9395	E 624,833.7710
17+23.58	N	1,927,308.8453	E 624,773.9778
17+78.23	N	1,927,264.4568	E 624,742.0998
18+26.91	N	1,927,221.2524	E 624,719.5953
18+87.09	N	1,927,190.7332	E 624,666.1825
19+06.01	N	1,927,186.3472	E 624,647.7721
19+55.15	N	1,927,173.3017	E 624,600.3969
20+71.21	N	1,927,146.2648	E 624,487.5275
21+55.18	N	1,927,110.5611	E 624,411.3044
22+15.43	N	1,927,083.7910	E 624,357.3300
23+76.31	N	1,927,014.4580	E 624,212.1490
24+52.69	N	1,927,014.6714	E 624,135.0084
25+70.83	N	1,927,042.7617	E 624,020.0785
26+21.52	N	1,927,045.8105	E 623,969.4101
27+32.20	N	1,926,936.7862	E 623,950.3548
27+55.08	N	1,926,923.6347	E 623,931.6323
28+54.85	N	1,926,948.0280	E 623,833.9626
28+85.69	N	1,926,940.6345	E 623,803.8196
29+62.41	N	1,926,929.0677	E 623,727.9782
30+19.69	N	1,926,861.7140	E 623,733.8460

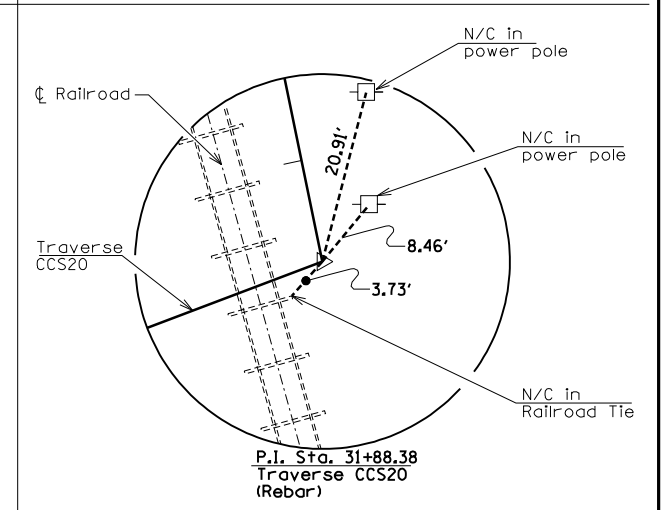
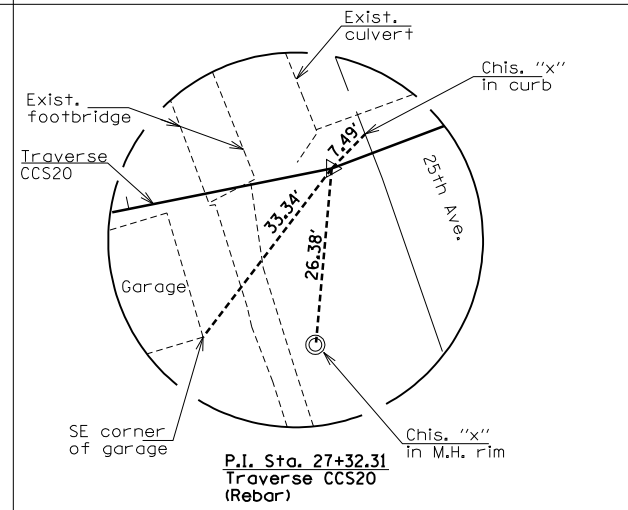
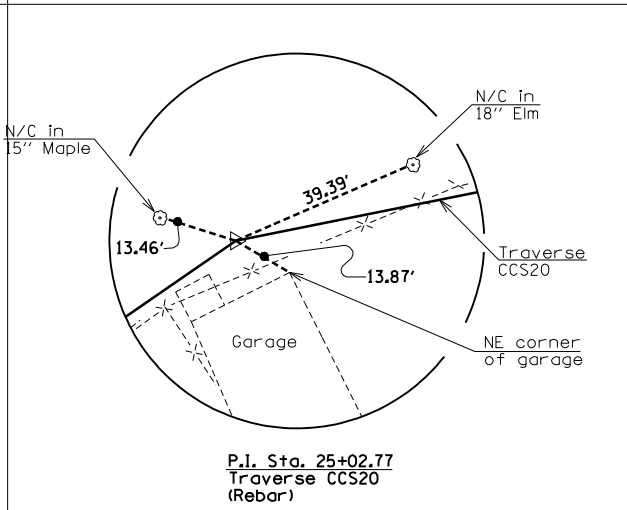
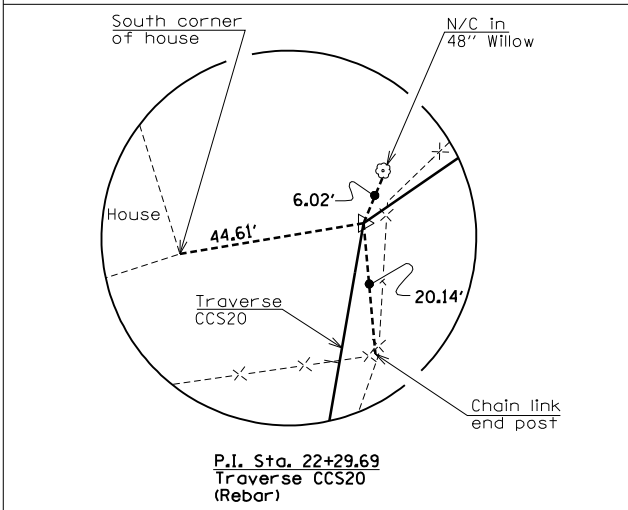
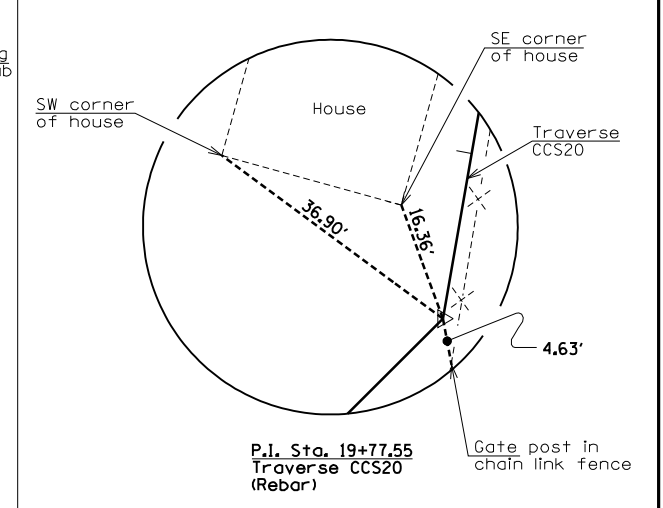
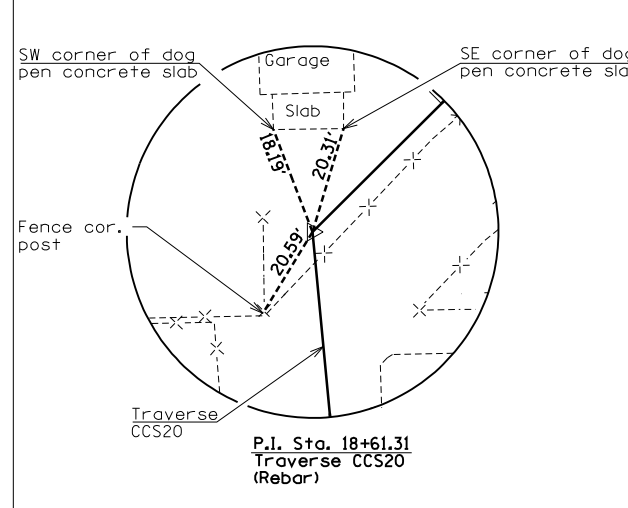
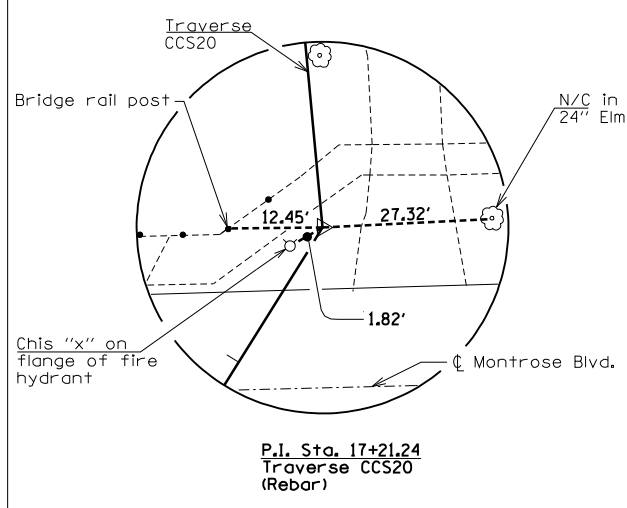
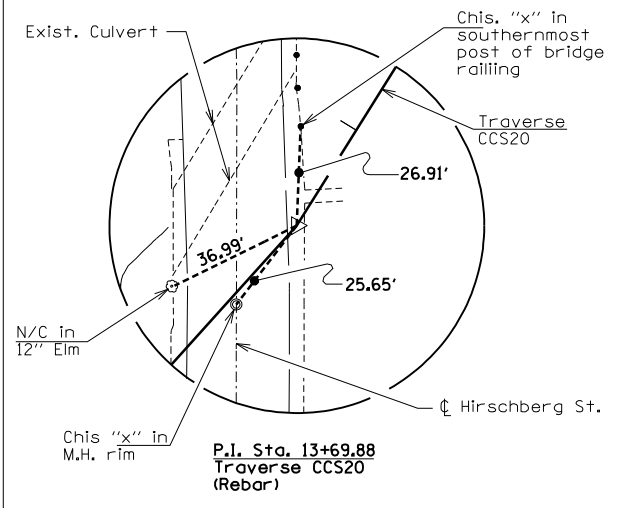
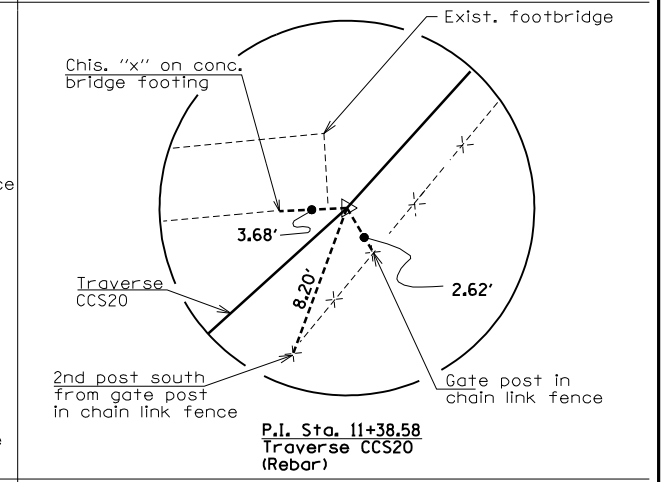
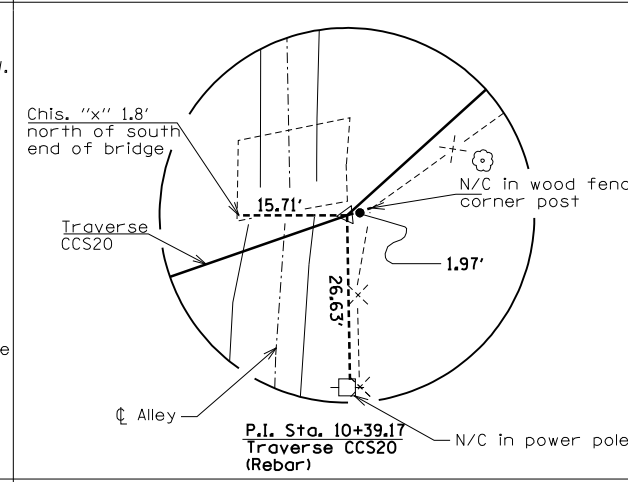
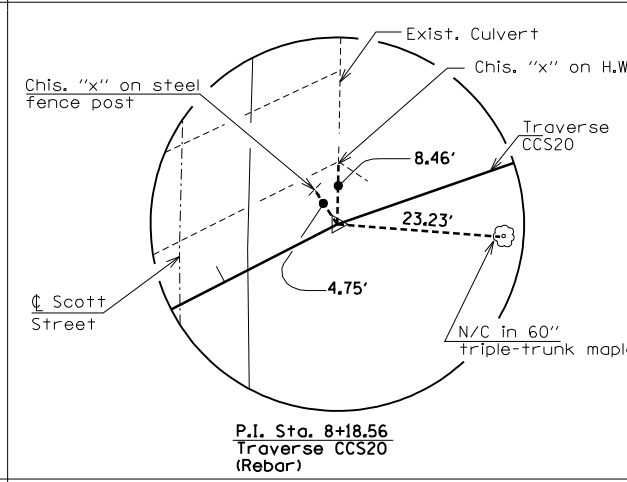
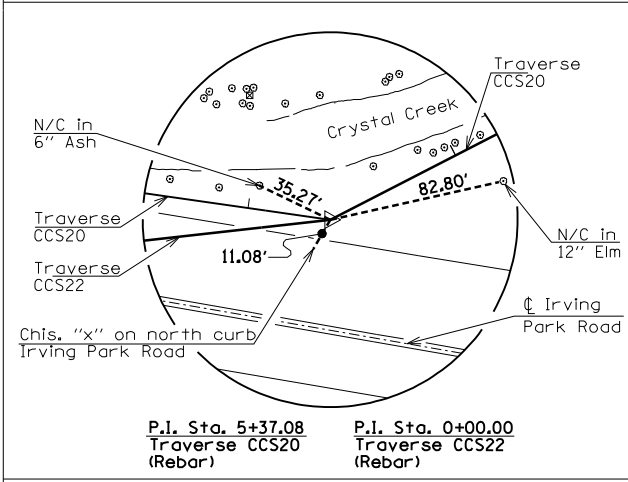
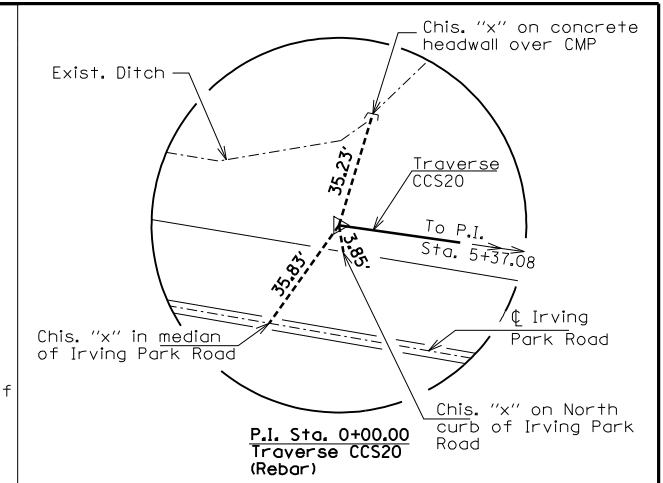
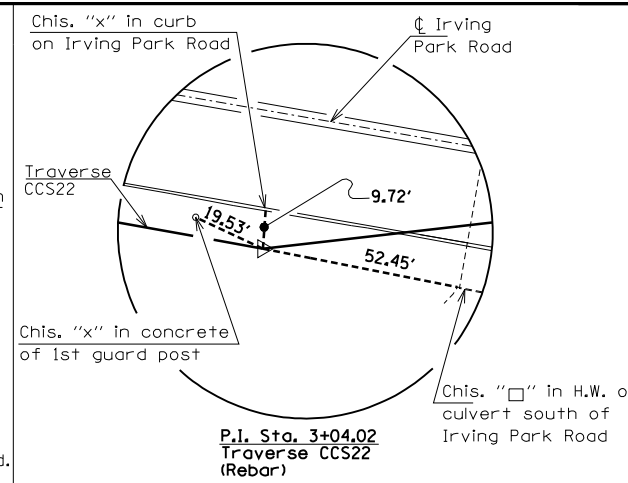
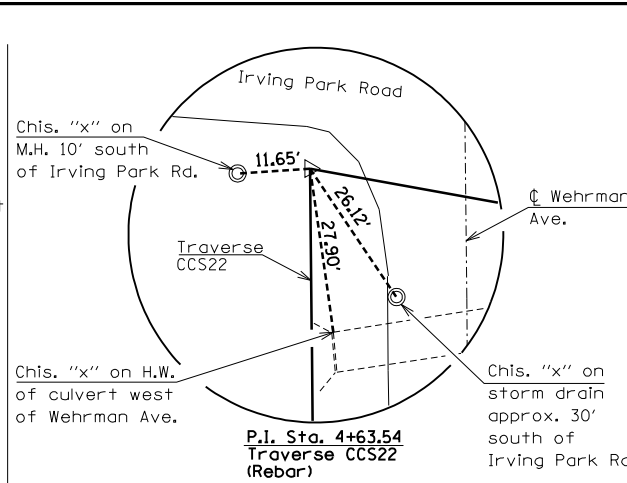
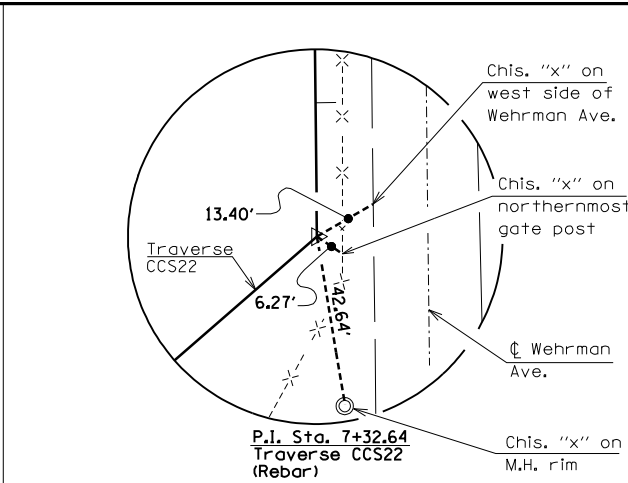
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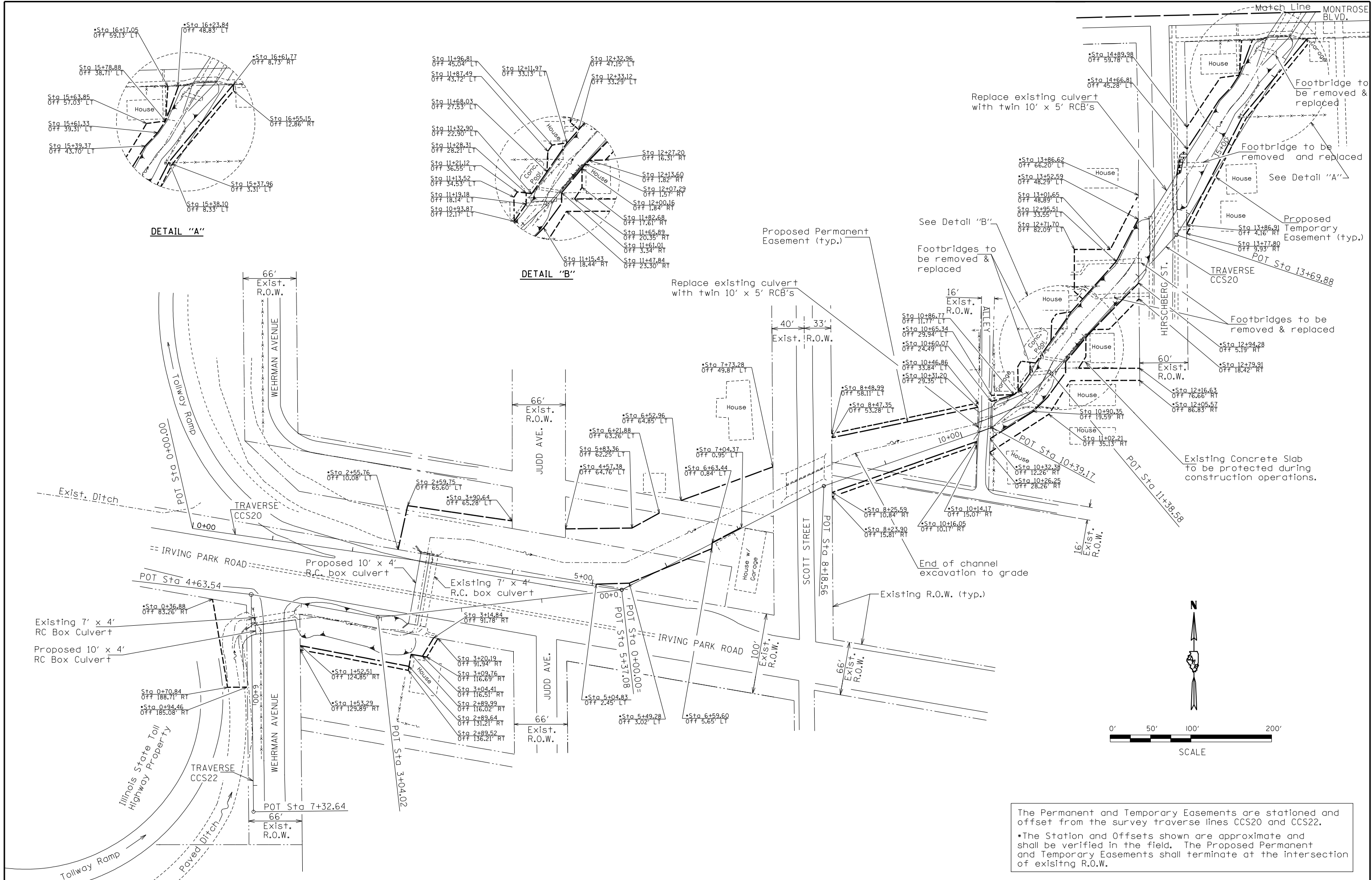
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Drawn By RLP Checked By TMM

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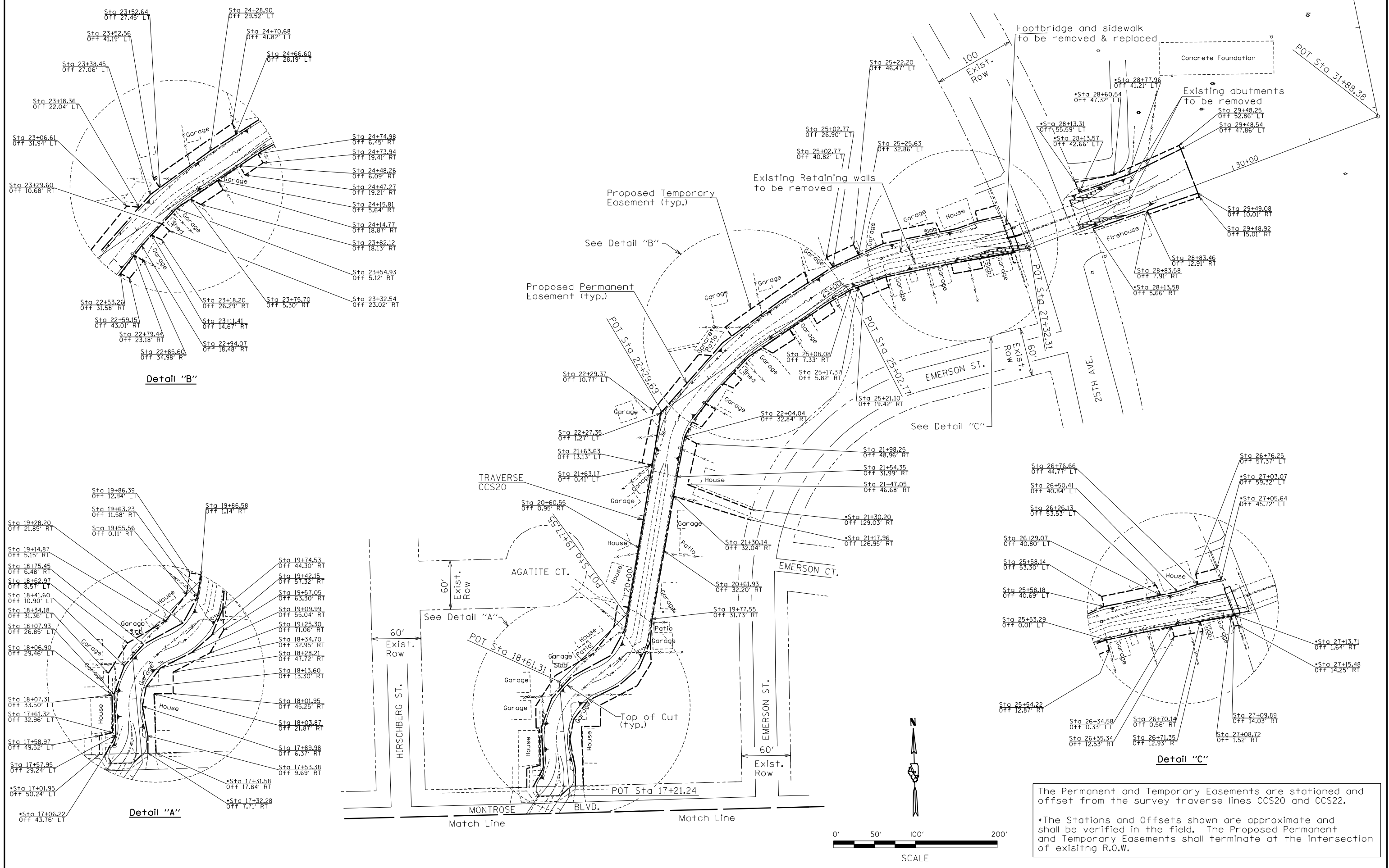
The Permanent and Temporary Easements are stationed and offset from the survey traverse lines CCS20 and CCS22.
 *The Station and Offsets shown are approximate and shall be verified in the field. The Proposed Permanent and Temporary Easements shall terminate at the intersection of existing R.O.W.

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Checked By: JUF
Drawn By: RLP
Checked By: TMM



The Permanent and Temporary Easements are stationed and offset from the survey traverse lines CCS20 and CCS22.

*The Stations and Offsets shown are approximate and shall be verified in the field. The Proposed Permanent and Temporary Easements shall terminate at the intersection of existing R.O.W.

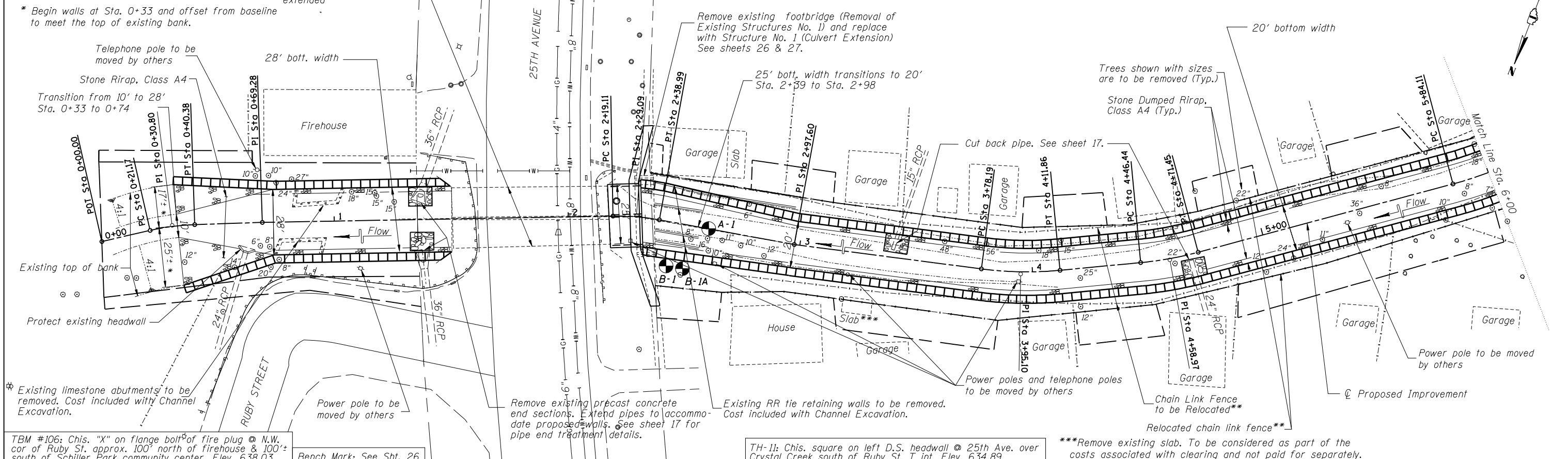
PROPOSED CURVE
PI STA. = 0+30.80
 $\Delta = 11^\circ 00' 24''$ (RT)
D = 57' 17' 45"
R = 100.00'
T = 9.63'
L = 19.21'
E = 0.46'
P.C. STA = 0+21.17
P.T. STA = 0+40.38

PROPOSED CURVE
PI STA. = 2+29.09
 $\Delta = 11^\circ 23' 25''$ (RT)
D = 57' 17' 45"
R = 100.00'
T = 9.97'
L = 19.88'
E = 0.50'
P.C. STA = 2+19.11
P.T. STA = 2+38.99

PROPOSED CURVE
PI STA. = 3+95.10
 $\Delta = 12^\circ 51' 34''$ (LT)
D = 38' 11' 50"
R = 150.00'
T = 16.90'
L = 33.67'
E = 0.95'
P.C. STA = 3+78.19
P.T. STA = 4+11.86

PROPOSED CURVE
PI STA. = 4+58.97
 $\Delta = 9^\circ 33' 09''$ (LT)
D = 38' 11' 50"
R = 150.00'
T = 12.53'
L = 25.01'
E = 0.52'
P.C. STA = 4+46.44
P.T. STA = 4+71.45

** Existing fence shall be removed as necessary to facilitate construction activities and re-erected or relocated to permanent easement lines as shown. Paid for as Chain Link Fence to be Removed and Re-erected. See Special Provisions.

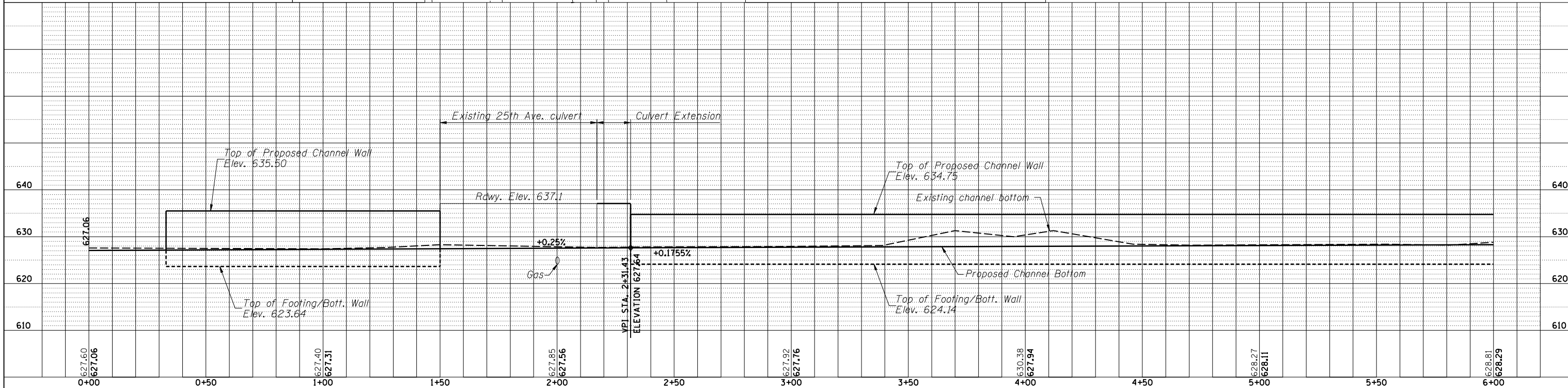


TBM #106: Chis. "X" on flange bolt of fire plug @ N.W. cor of Ruby St. approx. 100' north of firehouse & 100' south of Schiller Park community center. Elev. 638.03

Bench Mark: See Sht. 26

TH-1: Chis. square on left D.S. headwall @ 25th Ave. over Crystal Creek south of Ruby St. T int. Elev. 634.89

***Remove existing slab. To be considered as part of the costs associated with clearing and not paid for separately.



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1/29/2010

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DRAWN BY: RLP, JLF
CHECKED BY: JLF, RLP

PROPOSED CURVE
PI STA. = 6+00.65
 $\Delta = 12^\circ 35' 17''$ (LT)
D = 38' 11" 50"
R = 150.00'
T = 16.54'
L = 32.96'
E = 0.91'
P.C. STA = 5+84.11
P.T. STA = 6+17.07

PROPOSED CURVE
PI STA. = 7+23.14
 $\Delta = 28^\circ 54' 23''$ (LT)
D = 57' 17" 45"
R = 100.00'
T = 25.77'
L = 50.45'
E = 3.27'
P.C. STA = 6+97.36
P.T. STA = 7+47.82

PROPOSED CURVE
PI STA. = 10+24.68
 $\Delta = 59^\circ 44' 53''$ (RT)
D = 76' 23" 40"
R = 75.00'
T = 43.08'
L = 78.21'
E = 11.49'
P.C. STA = 9+81.60
P.T. STA = 10+59.81

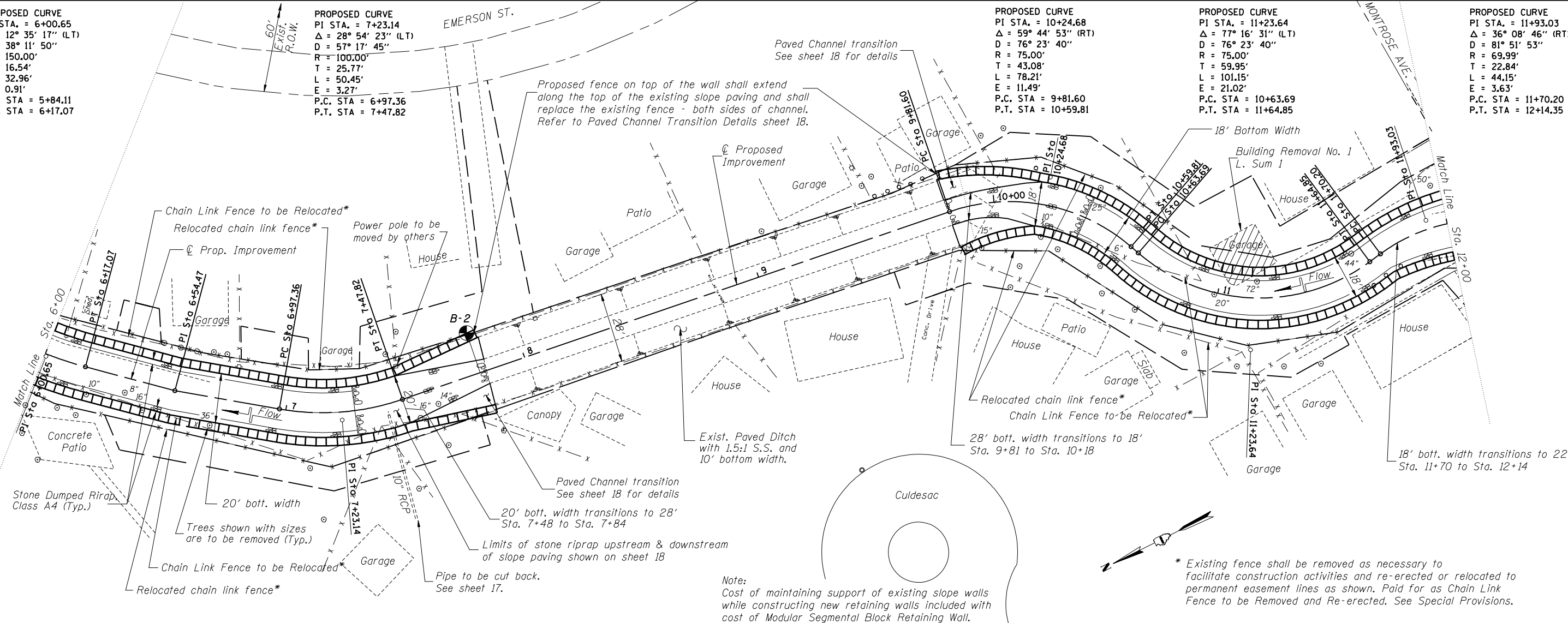
PROPOSED CURVE
PI STA. = 11+23.64
 $\Delta = 77^\circ 16' 31''$ (LT)
D = 76' 23" 40"
R = 75.00'
T = 59.95'
L = 101.15'
E = 21.02'
P.C. STA = 10+63.69
P.T. STA = 11+64.85

PROPOSED CURVE
PI STA. = 11+93.03
 $\Delta = 36^\circ 08' 46''$ (RT)
D = 81' 51" 53"
R = 69.99'
T = 22.84'
L = 44.15'
E = 3.63'
P.C. STA = 11+70.20
P.T. STA = 12+14.35

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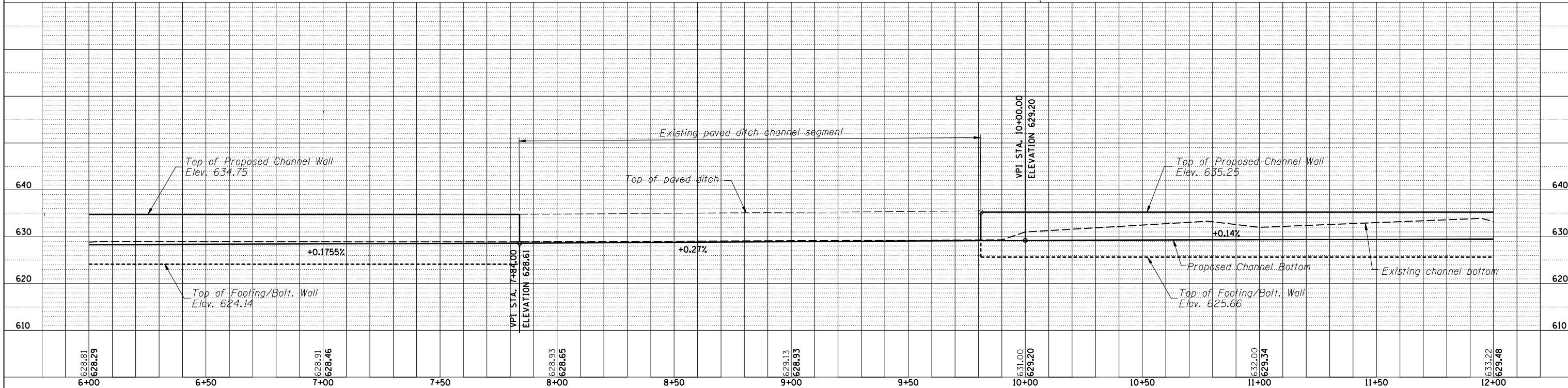
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Note:
Cost of maintaining support of existing slope walls while constructing new retaining walls included with cost of Modular Segmental Block Retaining Wall.

* Existing fence shall be removed as necessary to facilitate construction activities and re-erected or relocated to permanent easement lines as shown. Paid for as Chain Link Fence to be Removed and Re-erected. See Special Provisions.



DESIGNED BY: TMM
DRAWN BY: RLP, JLF
CHECKED BY: JLF
CHECKED BY: RLP

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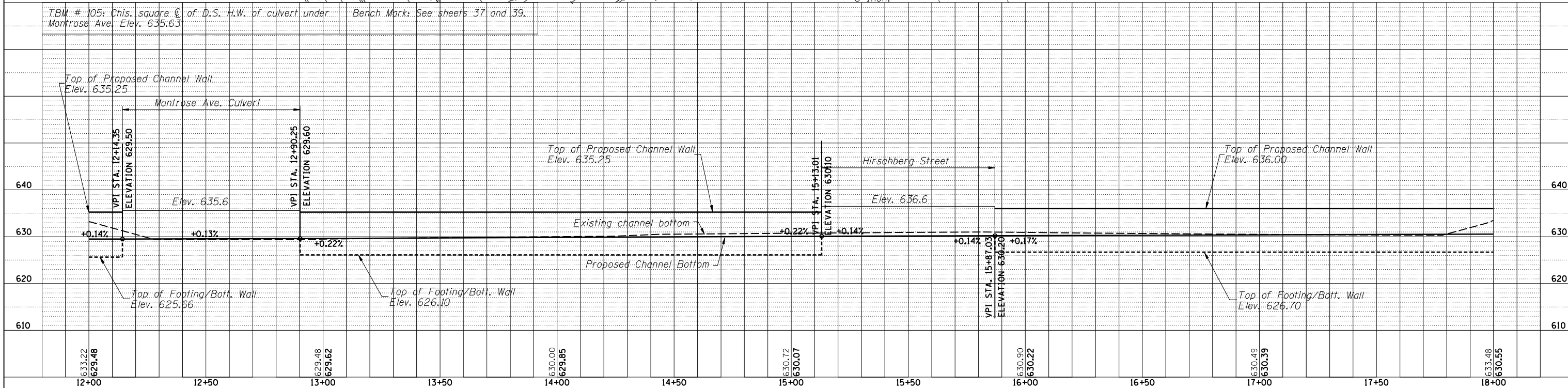
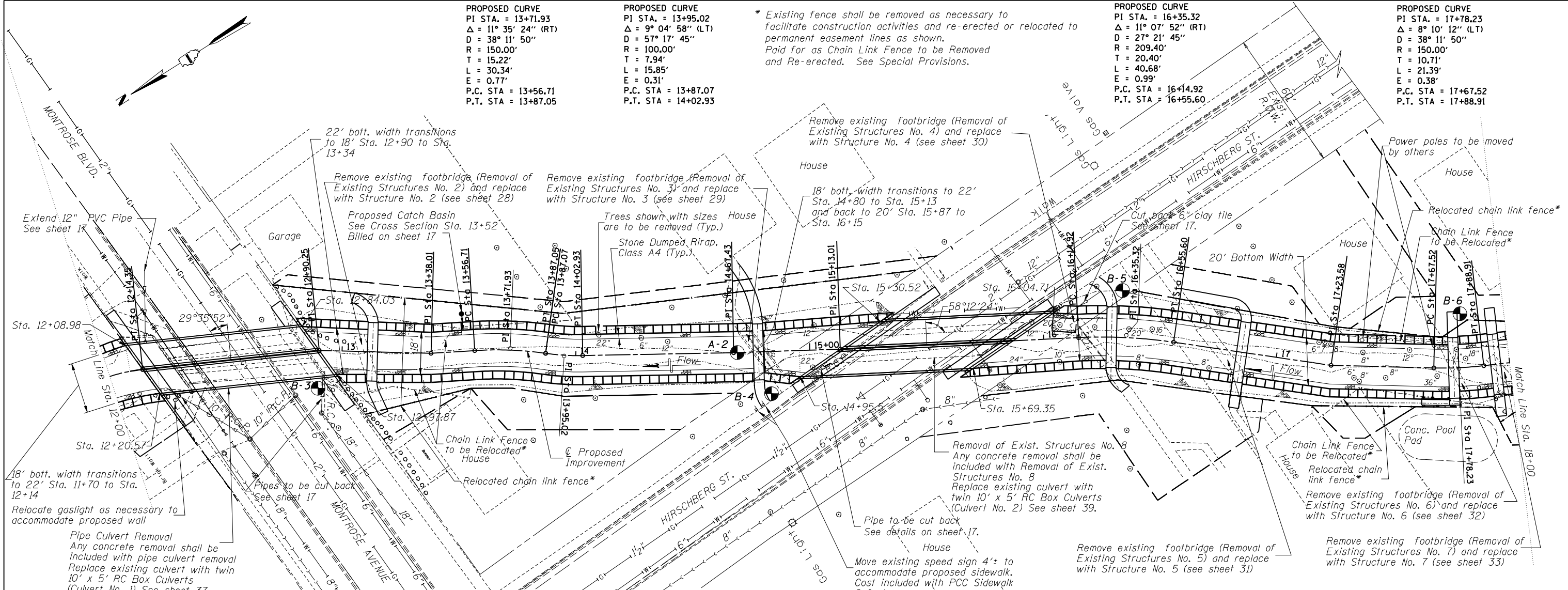
PROPOSED CURVE
PI STA. = 13+71.93
Δ = 11° 35' 24" (RT)
D = 38° 11' 50"
R = 150.00'
T = 15.22'
L = 30.34'
E = 0.77'
P.C. STA = 13+56.71
P.T. STA = 13+87.05

PROPOSED CURVE
PI STA. = 13+95.02
Δ = 9° 04' 58" (LT)
D = 57° 17' 45"
R = 100.00'
T = 7.94'
L = 15.85'
E = 0.31'
P.C. STA = 13+87.07
P.T. STA = 14+02.93

* Existing fence shall be removed as necessary to facilitate construction activities and re-erected or relocated to permanent easement lines as shown. Paid for as Chain Link Fence to be Removed and Re-erected. See Special Provisions.

PROPOSED CURVE
PI STA. = 16+35.32
Δ = 11° 07' 52" (RT)
D = 27° 21' 45"
R = 209.40'
T = 20.40'
L = 40.68'
E = 0.99'
P.C. STA = 16+14.92
P.T. STA = 16+55.60

PROPOSED CURVE
PI STA. = 17+78.23
Δ = 8° 10' 12" (LT)
D = 38° 11' 50"
R = 150.00'
T = 10.71'
L = 21.39'
E = 0.38'
P.C. STA = 17+67.52
P.T. STA = 17+88.91



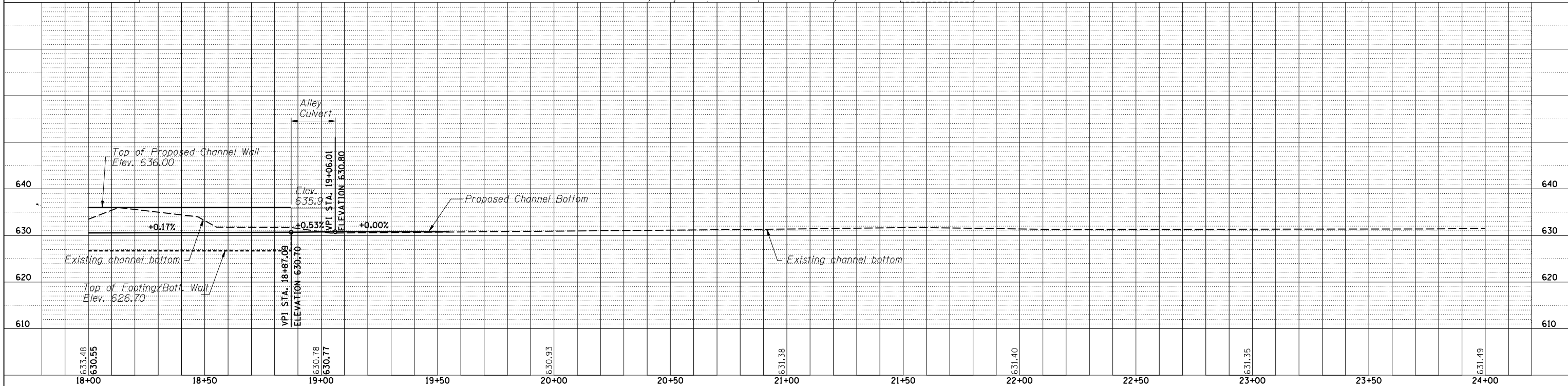
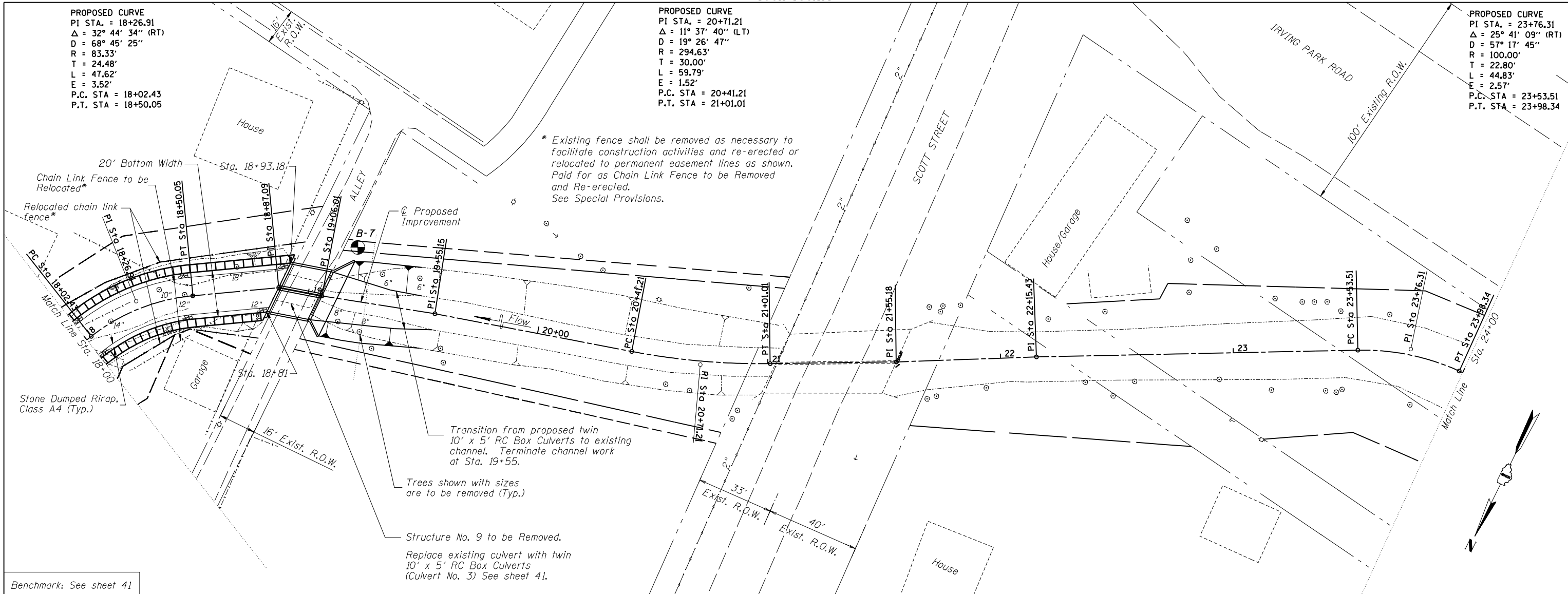
DESIGNED BY: TMM
DRAWN BY: RLP, JUF
CHECKED BY: JUF, RLP

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PROPOSED CURVE
 PI STA. = 18+26.91
 $\Delta = 32^\circ 44' 34''$ (RT)
 D = 68' 45' 25"
 R = 83.33'
 T = 24.48'
 L = 47.62'
 E = 3.52'
 P.C. STA = 18+02.43
 P.T. STA = 18+50.05

PROPOSED CURVE
 PI STA. = 20+71.21
 $\Delta = 11^\circ 37' 40''$ (LT)
 D = 19' 26' 47"
 R = 294.63'
 T = 30.00'
 L = 59.79'
 E = 1.52'
 P.C. STA = 20+41.21
 P.T. STA = 21+01.01

PROPOSED CURVE
 PI STA. = 23+76.31
 $\Delta = 25^\circ 41' 09''$ (RT)
 D = 57' 17' 45"
 R = 100.00'
 T = 22.80'
 L = 44.83'
 E = 2.57'
 P.C. STA = 23+53.51
 P.T. STA = 23+98.34



DESIGNED BY: TMM
 CHECKED BY: JUF
 DRAWN BY: RLP
 CHECKED BY: RLP

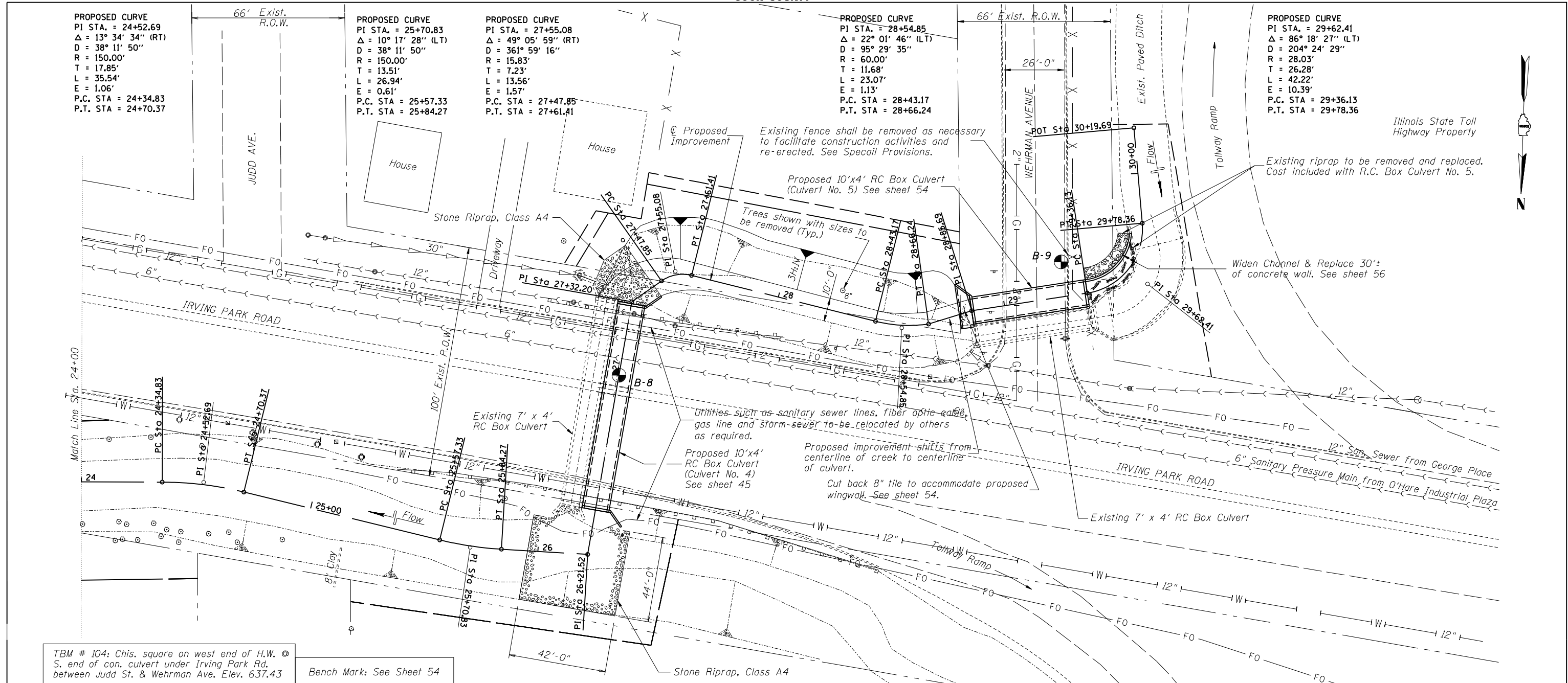
PROPOSED CURVE
PI STA. = 24+52.69
Δ = 13° 34' 34" (RT)
D = 38° 11' 50"
R = 150.00'
T = 17.85'
L = 35.54'
E = 1.06'
P.C. STA = 24+34.83
P.T. STA = 24+70.37

PROPOSED CURVE
PI STA. = 25+70.83
Δ = 10° 17' 28" (LT)
D = 38° 11' 50"
R = 150.00'
T = 13.51'
L = 26.94'
E = 0.61'
P.C. STA = 25+57.33
P.T. STA = 25+84.27

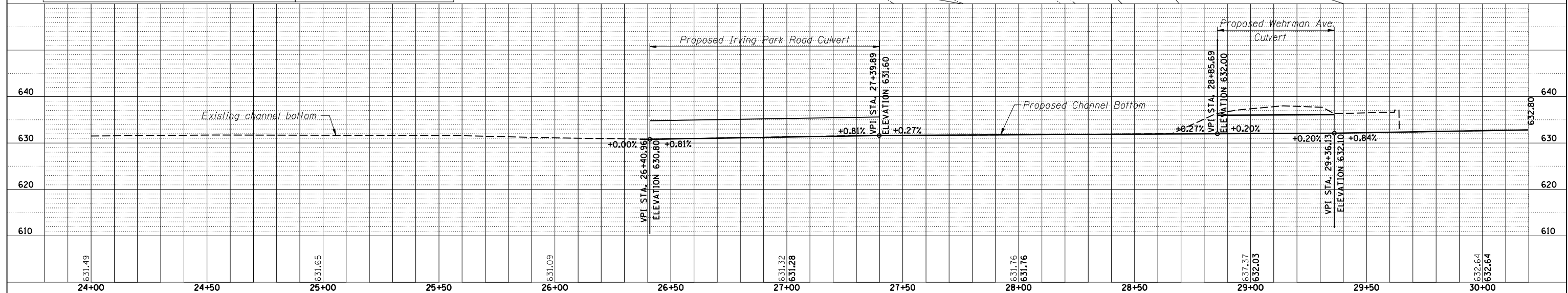
PROPOSED CURVE
PI STA. = 27+55.08
Δ = 49° 05' 59" (RT)
D = 361° 59' 16"
R = 15.83'
T = 7.23'
L = 13.56'
E = 1.57'
P.C. STA = 27+47.85
P.T. STA = 27+61.41

PROPOSED CURVE
PI STA. = 28+54.85
Δ = 22° 01' 46" (LT)
D = 95° 29' 35"
R = 60.00'
T = 11.68'
L = 23.07'
E = 1.13'
P.C. STA = 28+43.17
P.T. STA = 28+66.24

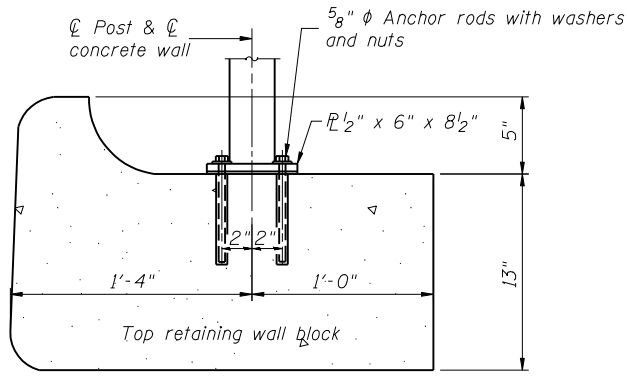
PROPOSED CURVE
PI STA. = 29+62.41
Δ = 86° 18' 27" (LT)
D = 204° 24' 29"
R = 28.03'
T = 26.28'
L = 42.22'
E = 10.39'
P.C. STA = 29+36.13
P.T. STA = 29+78.36



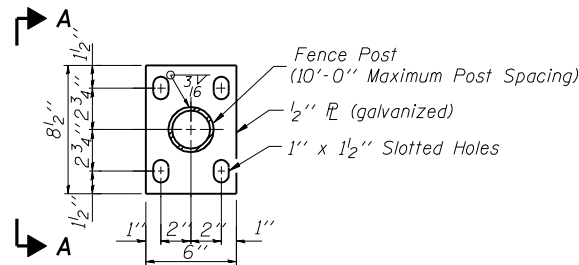
TBM # 104: Chis. square on west end of H.W. S. end of con. culvert under Irving Park Rd. between Judd St. & Wehrman Ave. Elev. 637.43
Bench Mark: See Sheet 54



DESIGNED BY: TMM
 CHECKED BY: JJF
 DRAWN BY: RLP, JJF
 CHECKED BY: RLP
 1/29/2010
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 O:\DwrProj\proj\Projects\Crystal Creek\JJF\Plan and profile 5.dgn

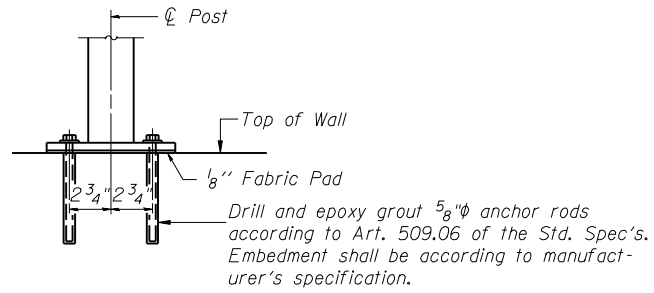


BASE PLATE - ELEVATION

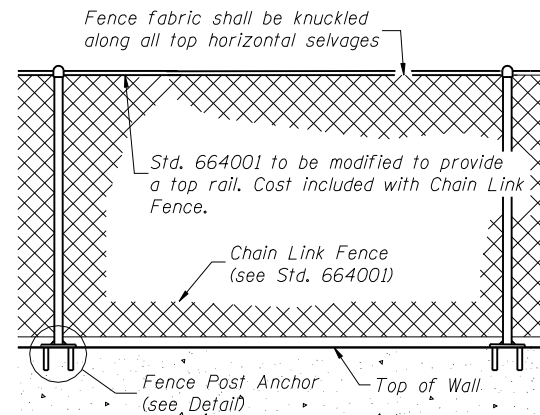


BASE PLATE - PLAN

FENCE POST ANCHORING DETAILS

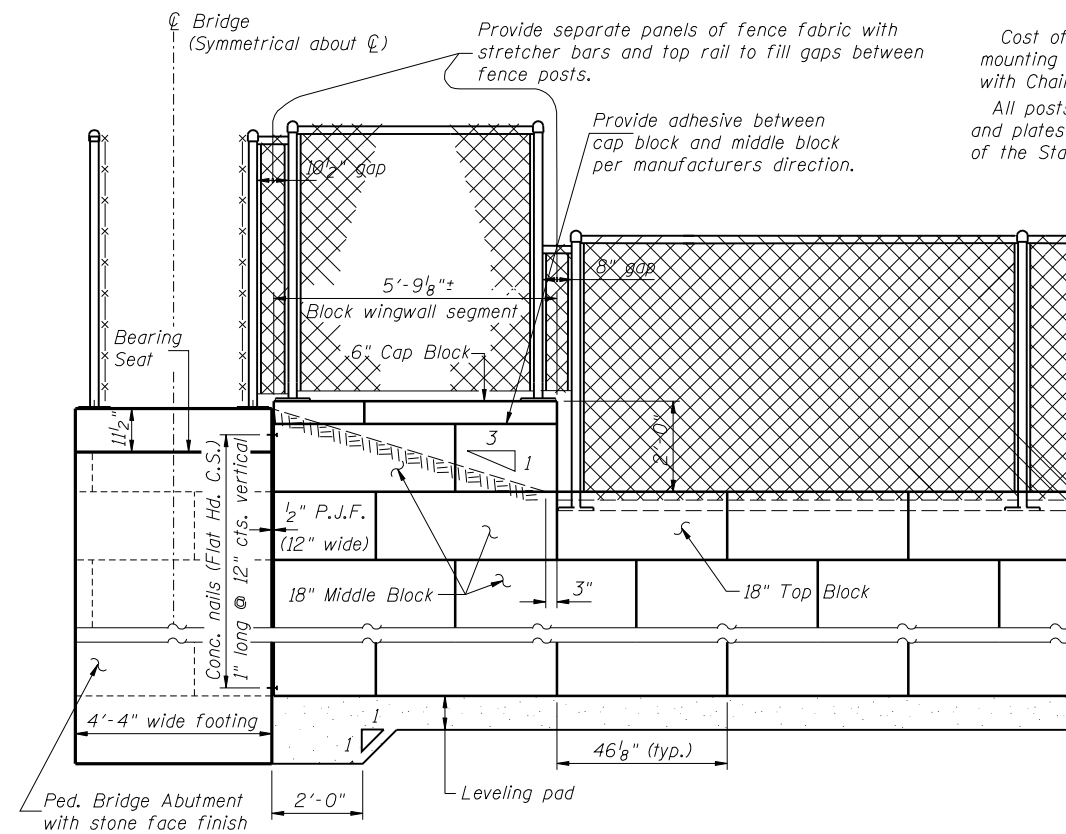


VIEW A-A



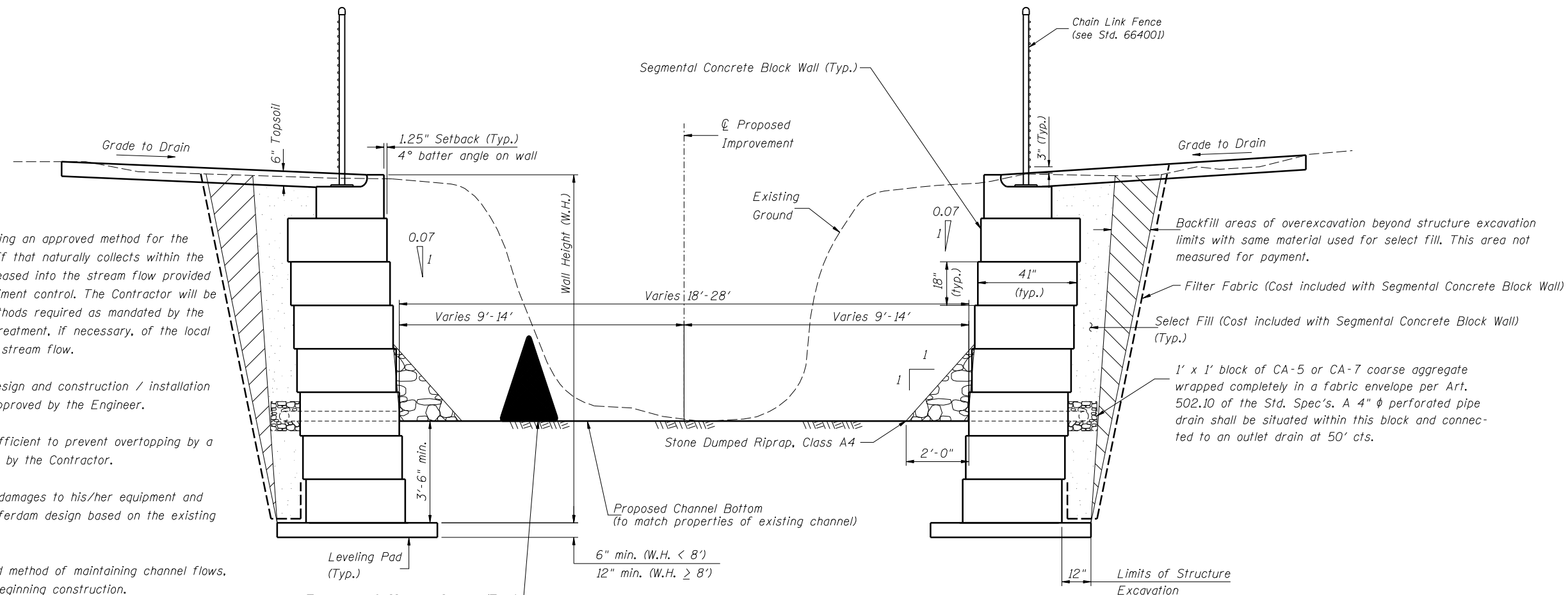
ELEVATION - CHAIN LINK FENCE

Note: Adjust spacing of posts to miss joints in block wall.



TYPICAL WALL DETAIL AT PEDESTRIAN BRIDGE ABUTMENTS

Notes
Cost of fence posts, anchor bolt assembly, and mounting hardware shall be considered included with Chain Link Fence 6'.
All posts, rails, fence elements, splices, anchor devices and plates shall be galvanized according to Art. 509.05 of the Std. Spec's.



TYPICAL SECTION THRU BLOCK WALL CHANNEL

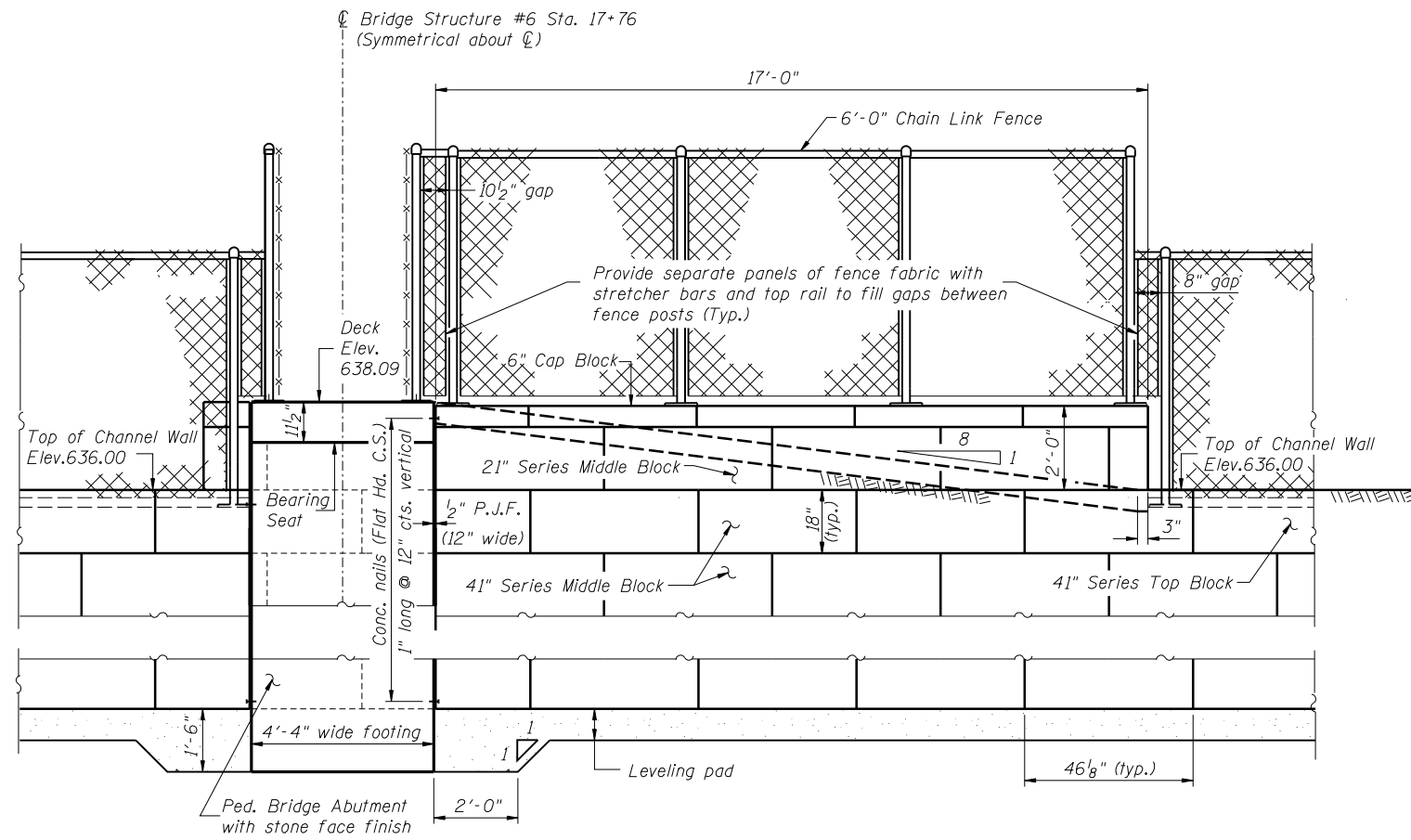
Notes:
The Contractor is responsible for providing an approved method for the detention of local storm water and runoff that naturally collects within the coffered area. This water should be released into the stream flow provided it meets all permit requirements for sediment control. The Contractor will be responsible for providing any and all methods required as mandated by the existing or an amended permit for the treatment, if necessary, of the local drainage prior to the discharge into the stream flow.

The Contractor is responsible for the design and construction / installation of the selected cofferdam system, as Approved by the Engineer.

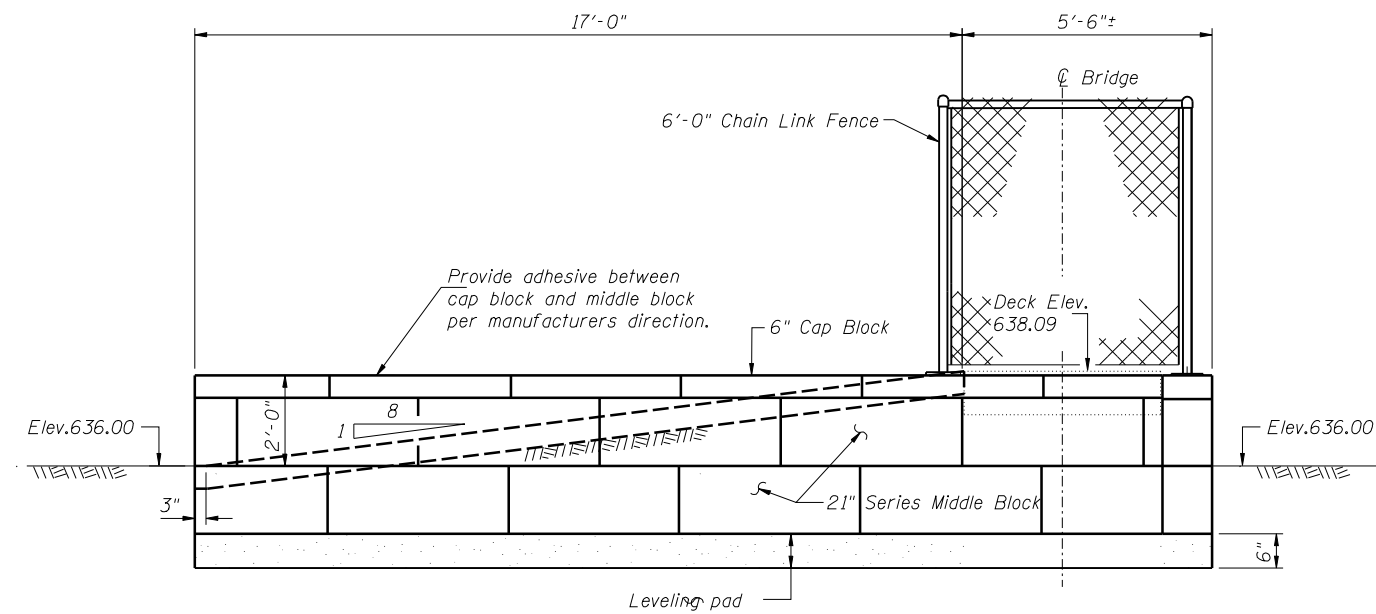
The height of the cofferdam shall be sufficient to prevent overtopping by a flood with a recurrence interval selected by the Contractor.

The Contractor shall assume all risk of damages to his/her equipment and the work caused by flooding for the cofferdam design based on the existing or an amended permit.

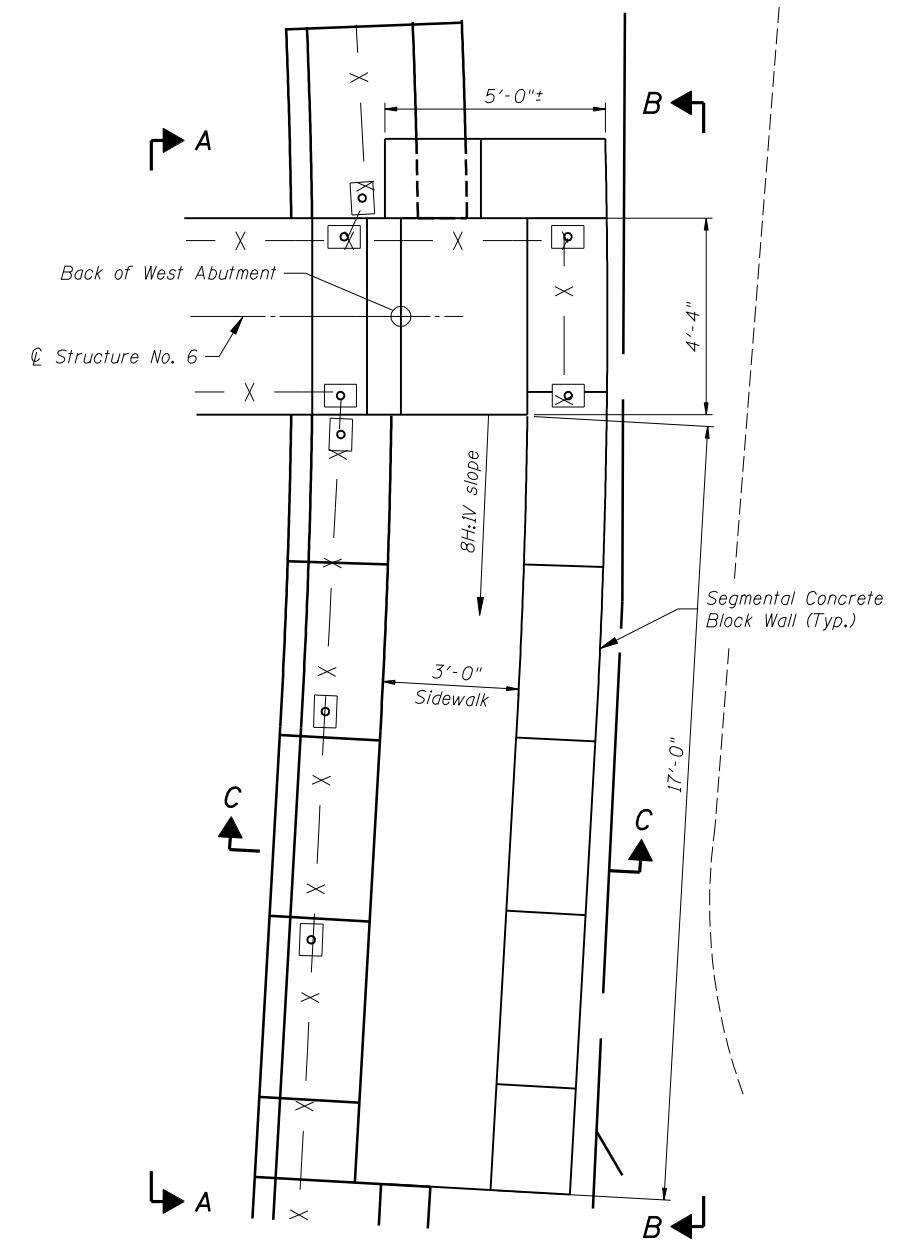
The Contractor shall submit his proposed method of maintaining channel flows, for approval by the Engineer, prior to beginning construction.



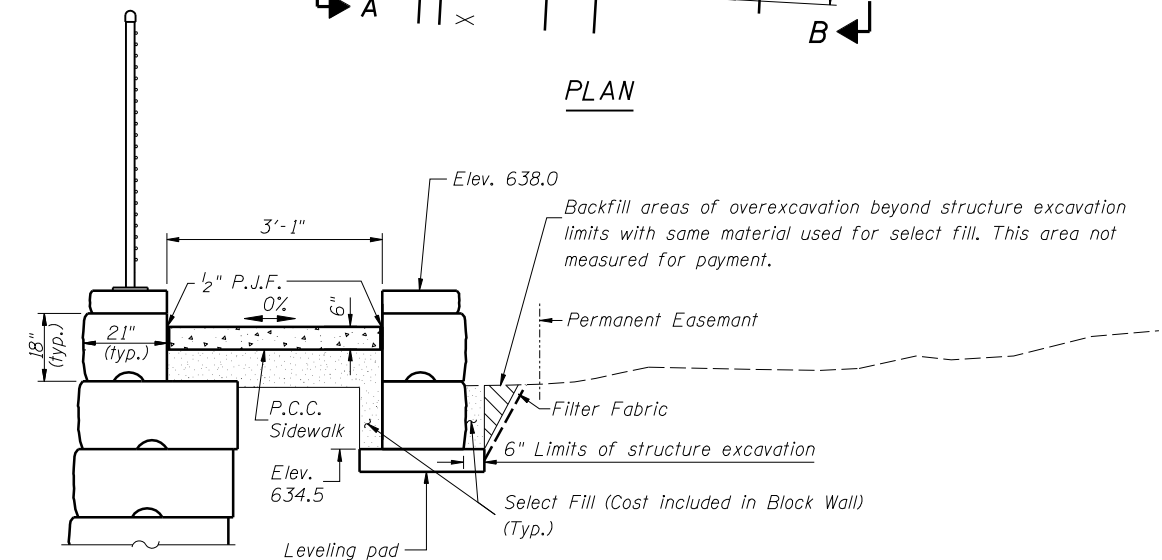
SECTION A-A



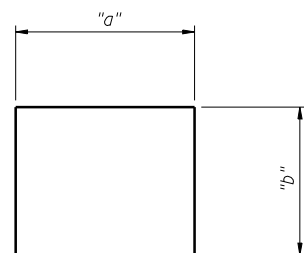
SECTION B-B



PLAN

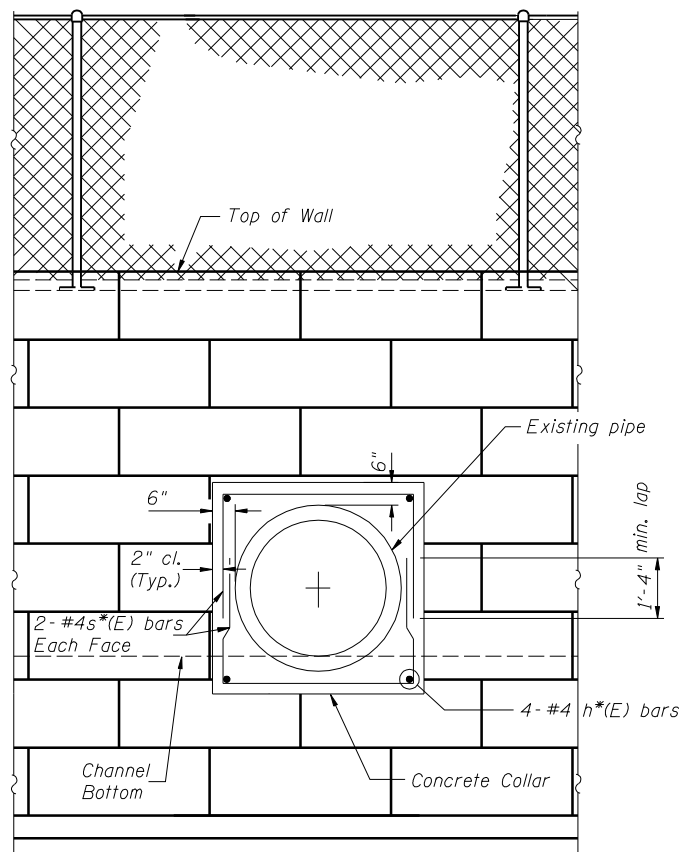


SECTION C-C



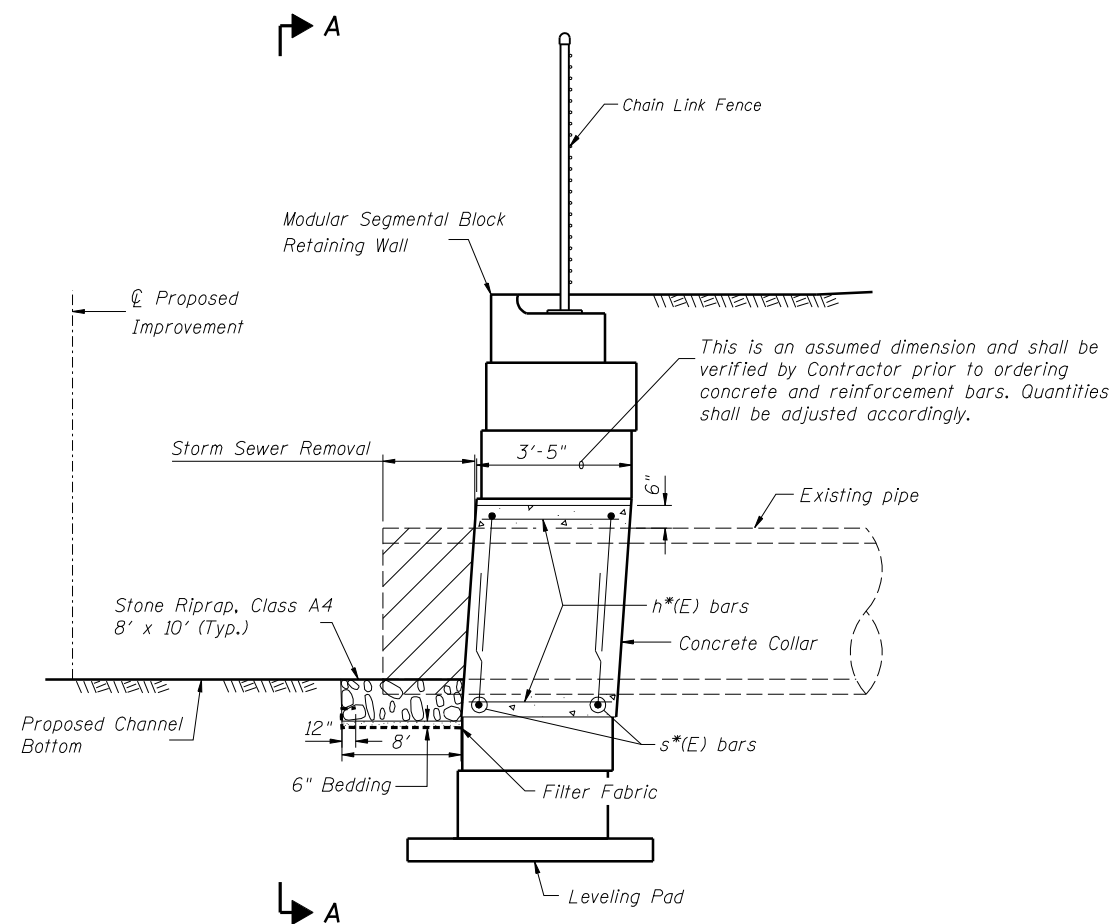
Bars s(E) thru s_(E)

Bar	"a"	"b"	Length
s(E)	1'-4"	1'-4"	4'-0"
s1(E)	1'-10"	1'-7"	5'-0"
s2(E)	2'-4"	1'-10"	6'-0"
s3(E)	3'-2"	2'-3"	7'-8"
s4(E)	4'-4"	2'-10"	10'-0"
s5(E)	2'-0"	1'-8"	5'-4"



ELEVATION A-A

* Refer to the pipe schedule below for quantities of reinforcement bars and concrete at each pipe location



TYPICAL SECTION THRU BLOCK WALL AT PIPE LOCATIONS

PIPE SCHEDULE

Location	Size & Type	Inv. Elev.	Pipe req'd.	Pipe removal	Comments	Bar	No.	Bar	No.	Weight Pounds	Concrete Collar Cu Yd	Riprap Sq Yds
1+37	Rt. 36" RCP	627.7	7'	8'	Remove precast end section**	s4(E)	4	h(E)	4	35	1.4	9
1+38	Lt. 36" RCP	627.5	2'	8'	Remove precast end section**	s4(E)	4	h(E)	4	35	1.4	9
3+41	Lt. 15" RCP	628.1		7'		s2(E)	4	h(E)	4	24	0.6	9
4+68	Rt. 24" RCP	628.8		7'		s3(E)	4	h(E)	4	29	1.0	9
7+40	Rt. 10" RCP	630.3		6'		s1(E)	4	h(E)	4	22	0.5	—
12+17	Lt. 12" PVC	Unknown	1'		Extend through culvert wall	—	—	—	—	—	—	—
12+26	Rt. 10" RCP	630.7		3'	Cut back inside culvert	—	—	—	—	—	—	—
12+92	Rt. 18" RCP	631.57		2'	Cut back inside culvert	—	—	—	—	—	—	—
13+52	Lt. 12" RCP	631.88	6'		Outlet pipe for catch basin (see sht. 22)	s5(E)	4	h(E)	4	23	0.5	—
15+06	Rt. 8" RCP	631.9		5'	Cut back inside culvert	—	—	—	—	—	—	—
16+11	Lt. 6" clay tile	630.5		10'		s(E)	4	h(E)	4	19	0.3	9
28+80	Lt. 8" clay tile	633.5		12'	Cut back to accommodate new wingwall.	—	—	—	—	—	—	—
Totals										190	5.7	45

**Paid for as Storm Sewer Removal 36"

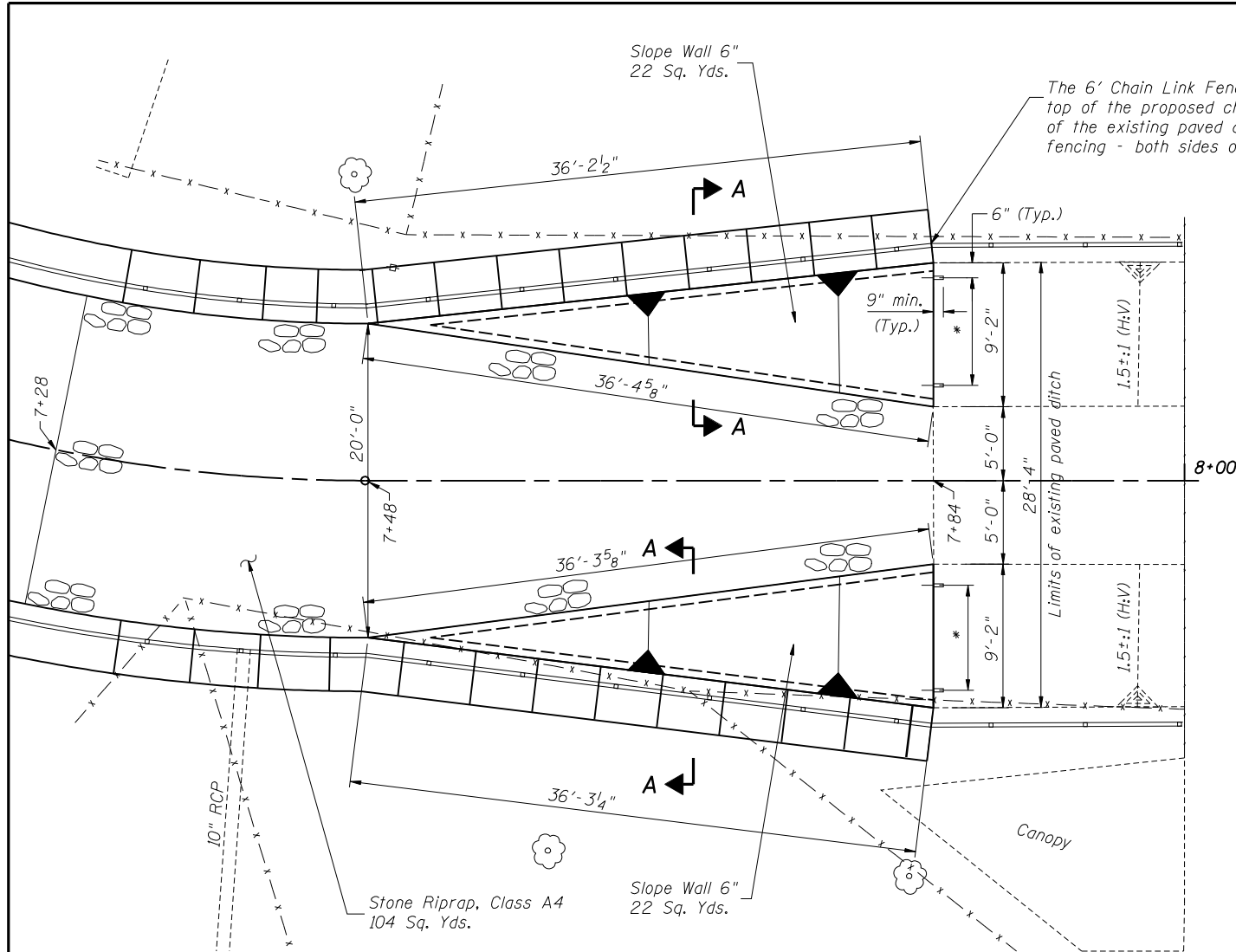
Note: Work this sheet with Schedule of Quantities and Plan & Profile sheets.

*** See Sheet 47 for details

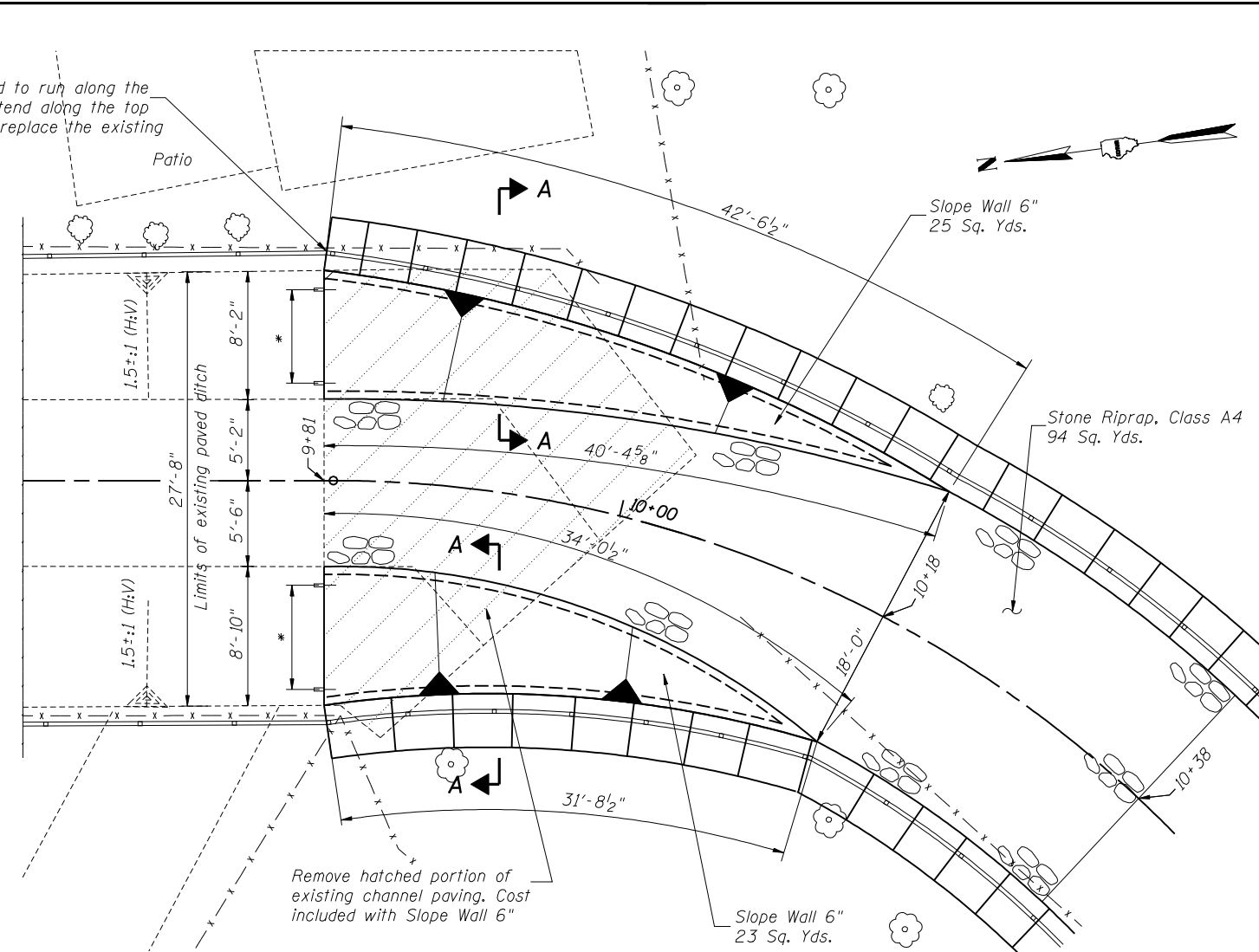
BILL OF MATERIAL

Bar	No.	Size	Length	Shape	
s(E)	4	#4	4'-0"	□	
s1(E)	4	#4	5'-0"	□	
s2(E)	4	#4	6'-0"	□	
s3(E)	4	#4	7'-8"	□	
s4(E)	8	#4	10'-0"	□	
s5(E)	4	#4	5'-4"	□	
h(E)	28	#4	3'-1"	—	
Reinforcement Bars, Epoxy Coated				Pound	190
Concrete Collar				Cu Yd	5.7
Stone Riprap, Class A4				Sq Yd	45
Filter Fabric				Sq Yd	45
Storm Sewers, Class A, Type 1 12"				Foot	6
Storm Sewers, Class A, Type 2 36"				Foot	9
Storm Sewers, Class B, Type 2 12"				Foot	1
Storm Sewer Removal 6"				Foot	10
Storm Sewer Removal 8"				Foot	17
Storm Sewer Removal 10"				Foot	9
Storm Sewer Removal 15"				Foot	7
Storm Sewer Removal 24"				Foot	7
Storm Sewer Removal 36"				Foot	16
Catch Basins, Type C, Type 8 Grate				Each	1

O:\Dwt\Proj\proj\Crystal Creek\JJA\Paved Channel Transition Details.dgn
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 Designed By TMM Checked By JUF
 Drawn By JUF Checked By RLP

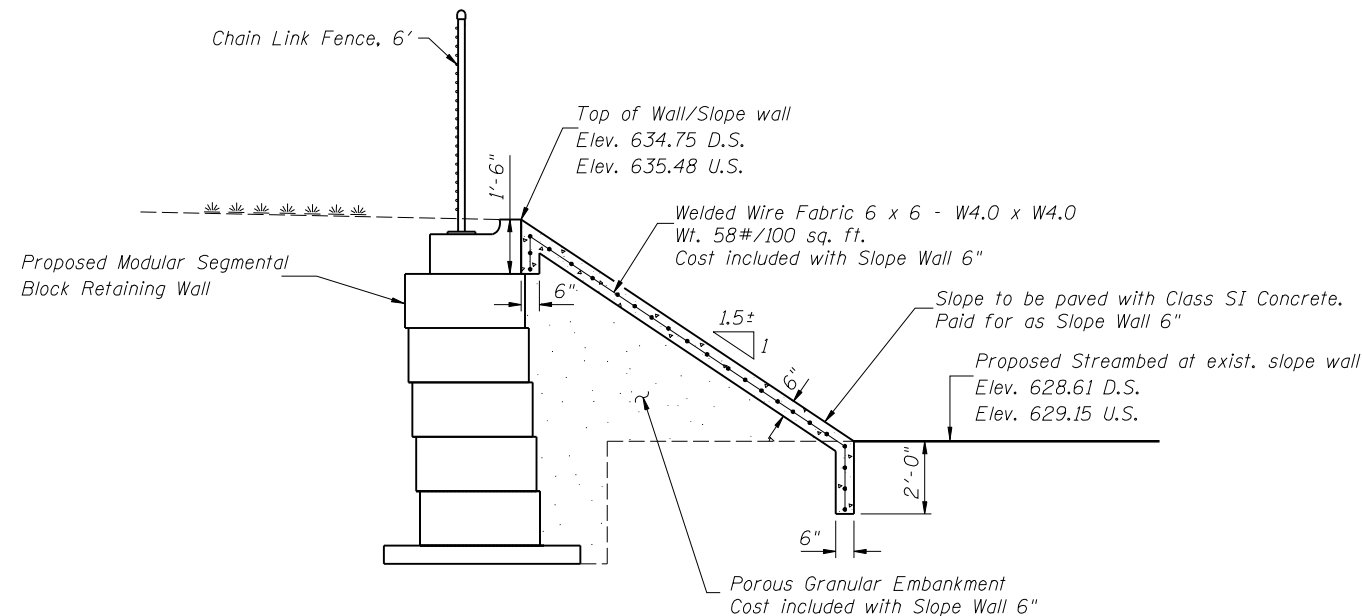


DOWNSTREAM PAVED CHANNEL TRANSITION PLAN



UPSTREAM PAVED CHANNEL TRANSITION PLAN

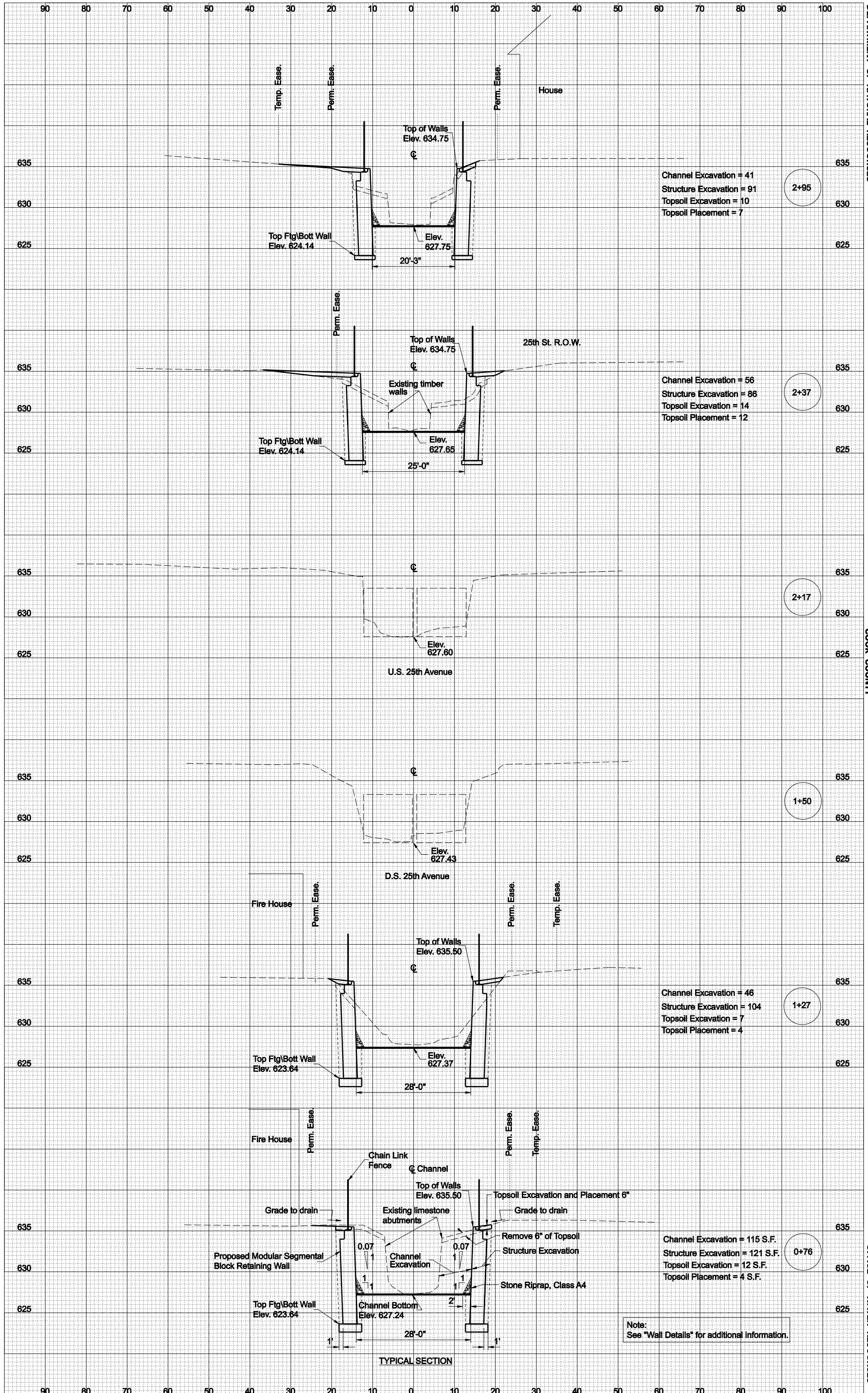
* Drill and epoxy grout #4 d(E) bars (1'-6" long) @ 2'-0" cts. into existing paved ditch per Article 584 of the IDOT Std. Spec's. Cost included with Slope Wall 6".



SECTION A-A

BILL OF MATERIAL

Slope Wall 6"	Sq Yd	92
Stone Riprap, Class A4	Sq Yd	198

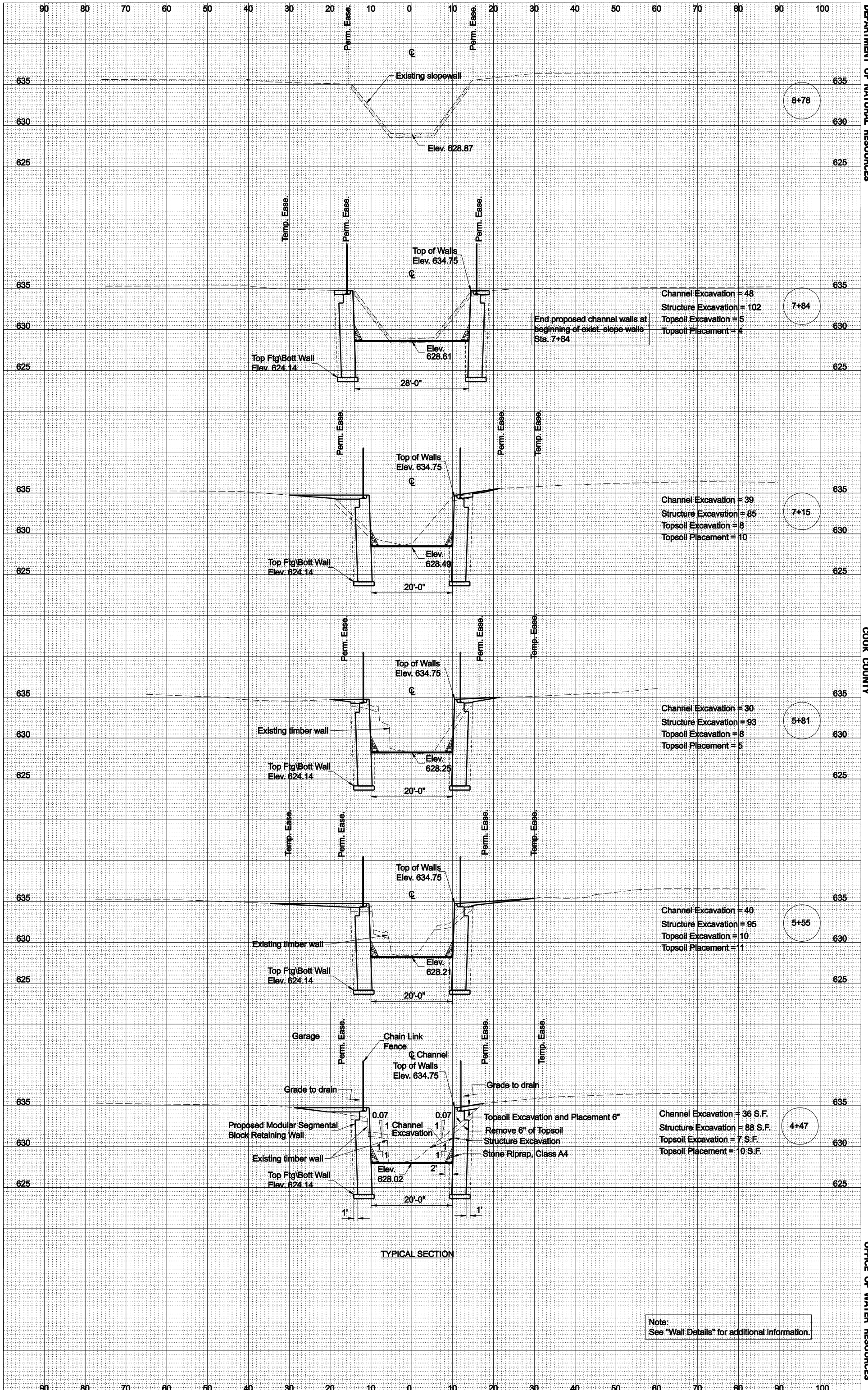


CROSS SECTIONS

FR-413

Sheet 19 of 65

Note:
 See "Wall Details" for additional information.



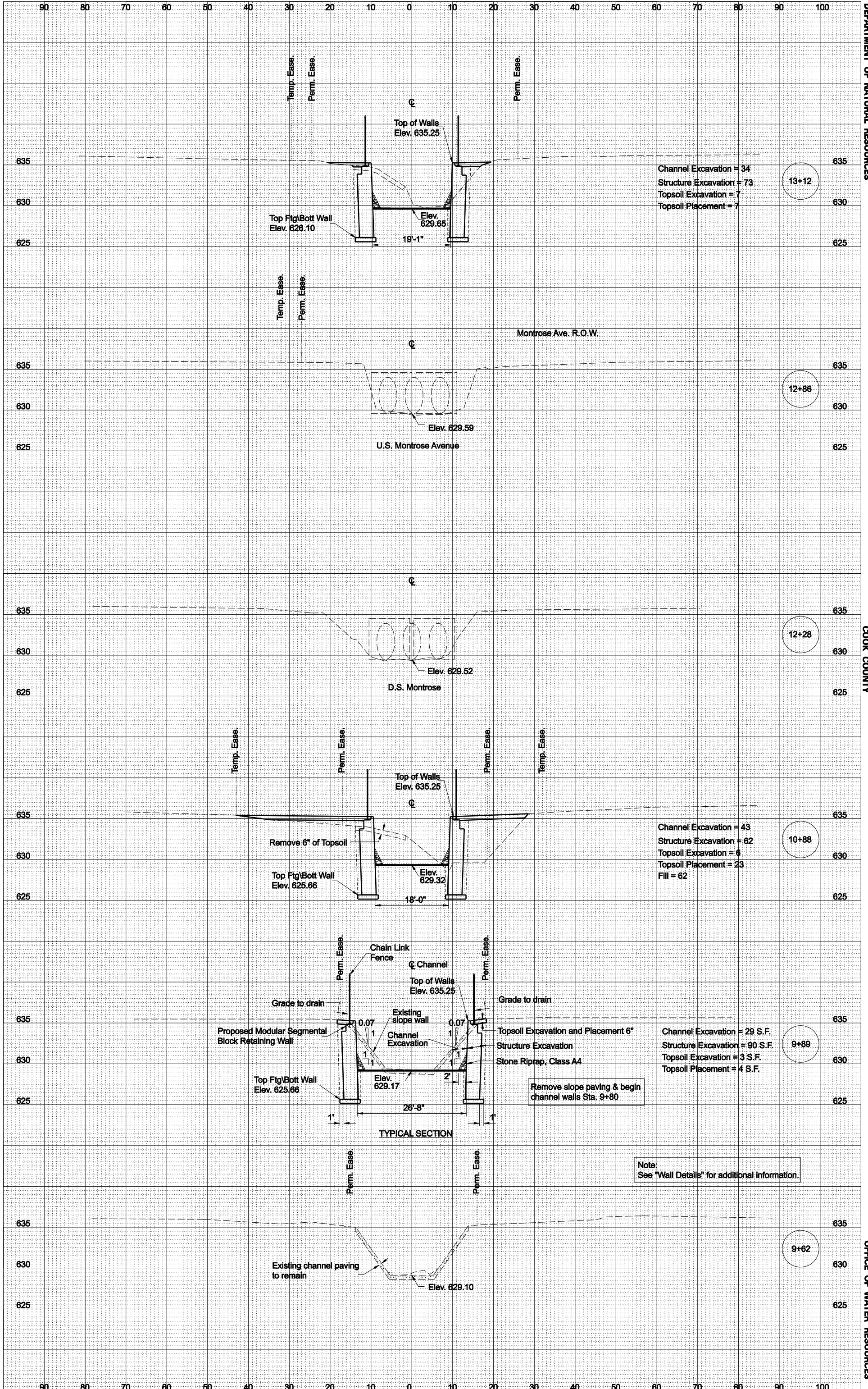
CROSS SECTIONS

FR-413

Sheet 20 of 65

TYPICAL SECTION

Note:
See "Wall Details" for additional information.



Channel Excavation = 34
 Structure Excavation = 73
 Topsoil Excavation = 7
 Topsoil Placement = 7

Channel Excavation = 43
 Structure Excavation = 62
 Topsoil Excavation = 6
 Topsoil Placement = 23
 Fill = 62

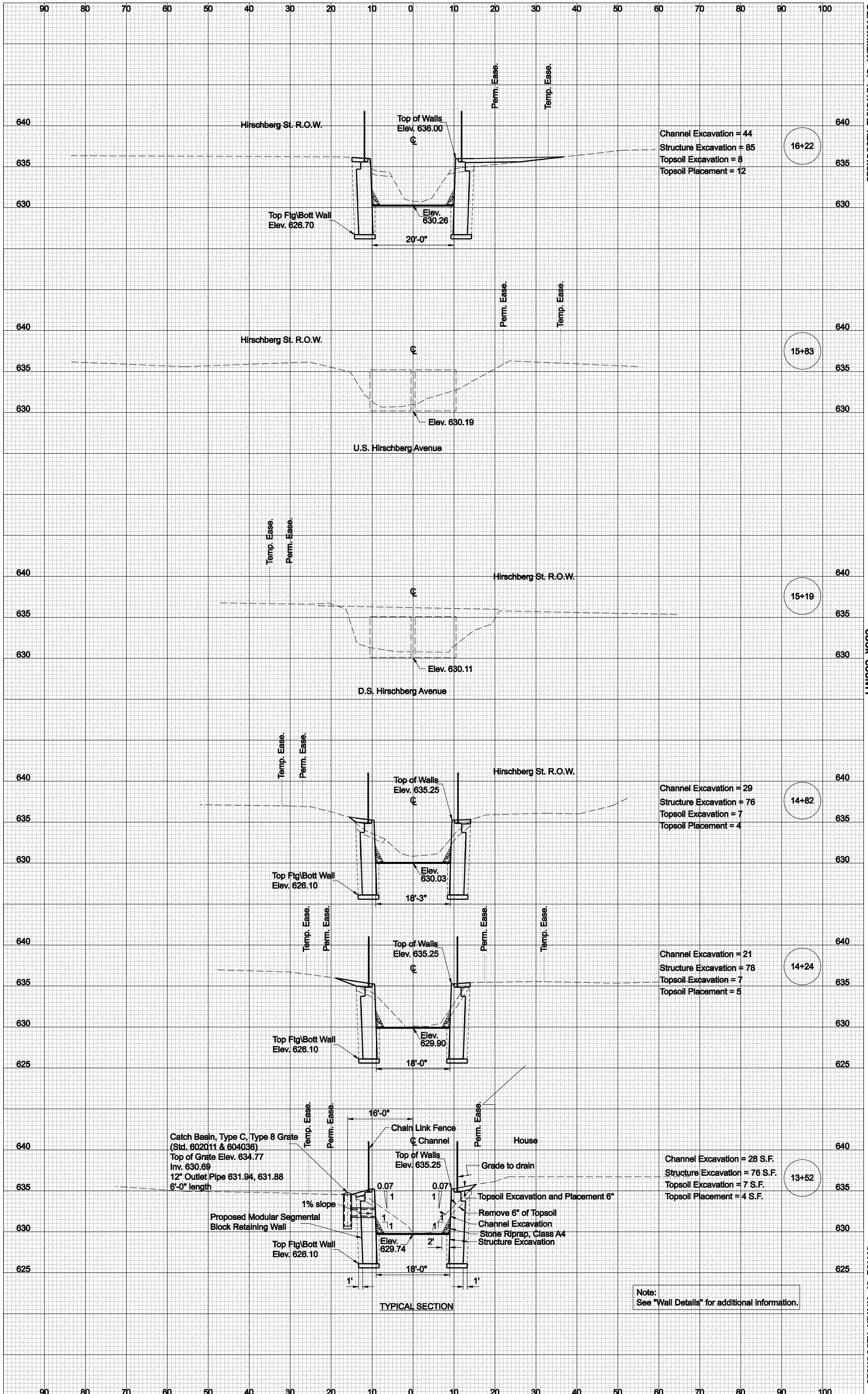
Channel Excavation = 29 S.F.
 Structure Excavation = 90 S.F.
 Topsoil Excavation = 3 S.F.
 Topsoil Placement = 4 S.F.

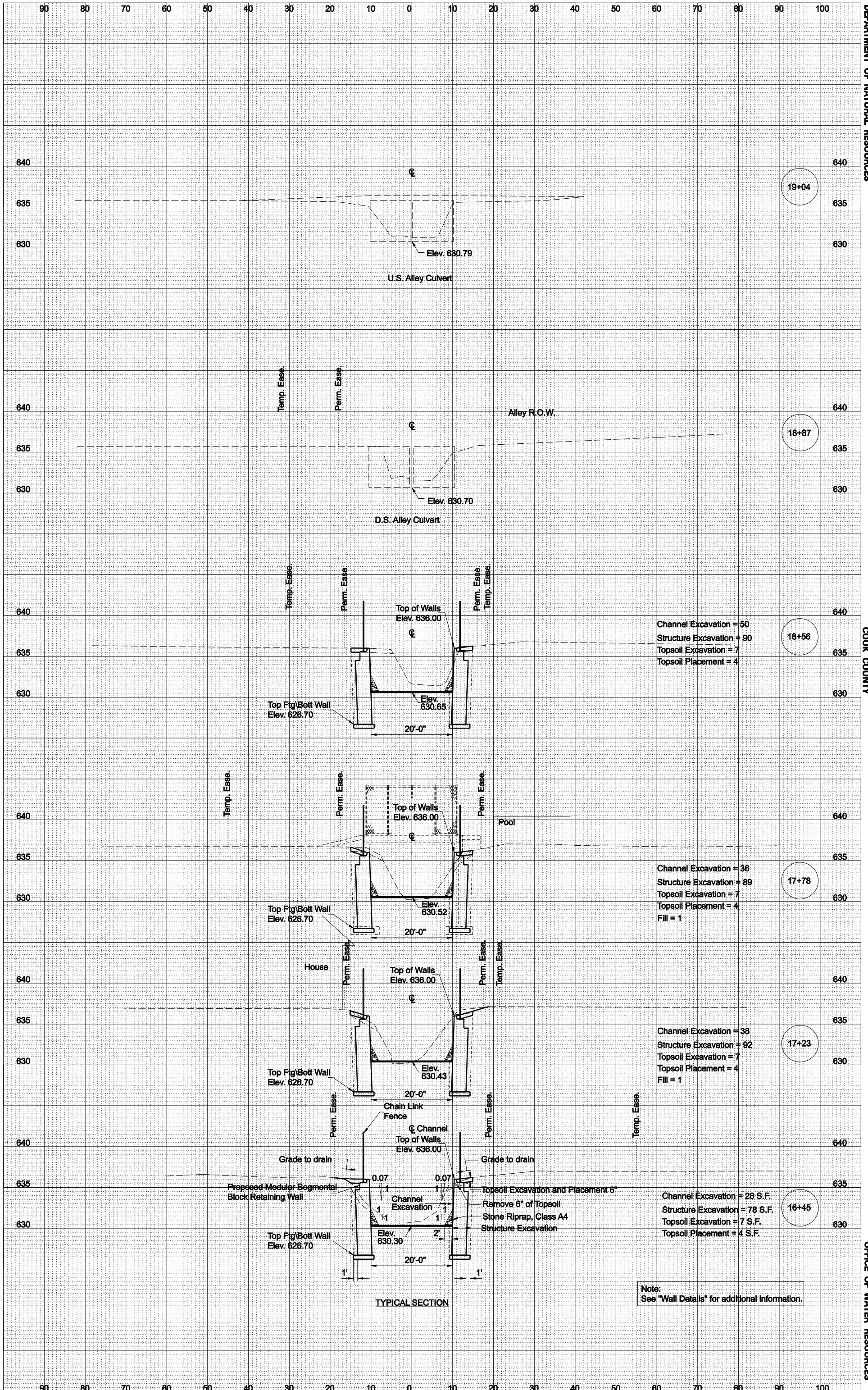
Note:
See "Wall Details" for additional information.

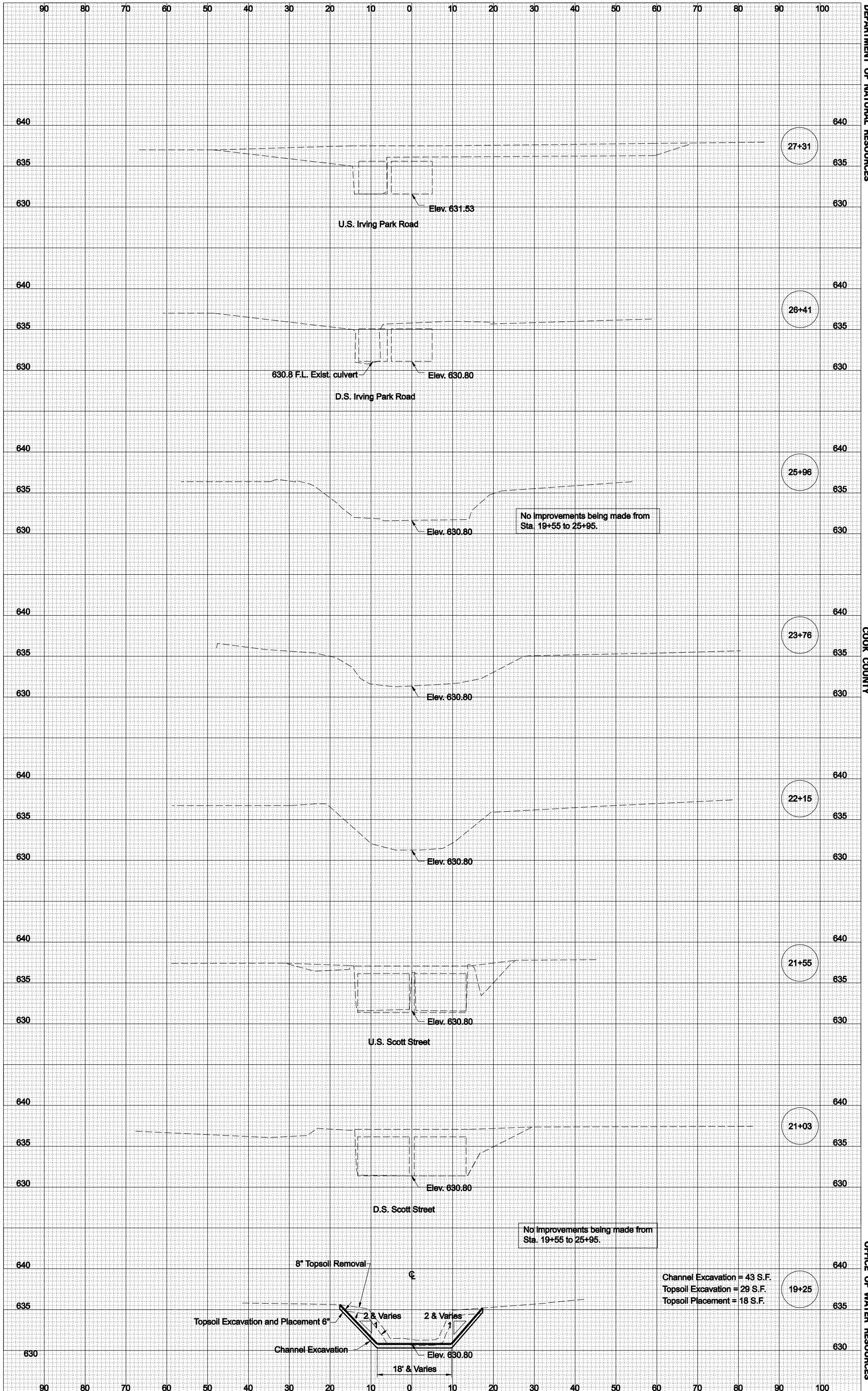
CROSS SECTIONS

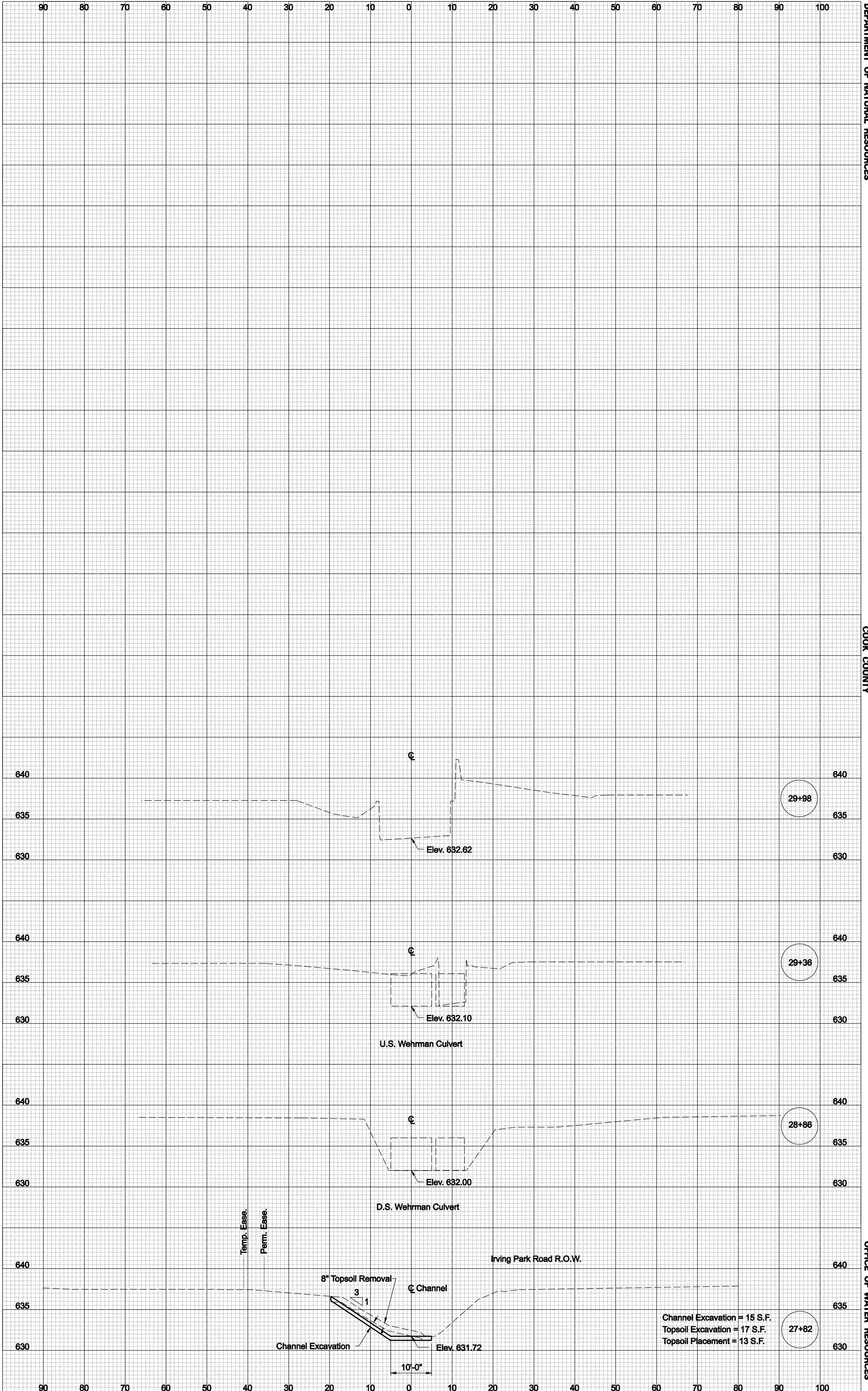
FR-413

Sheet 21 of 65









Channel Excavation = 15 S.F.
 Topsoil Excavation = 17 S.F.
 Topsoil Placement = 13 S.F.

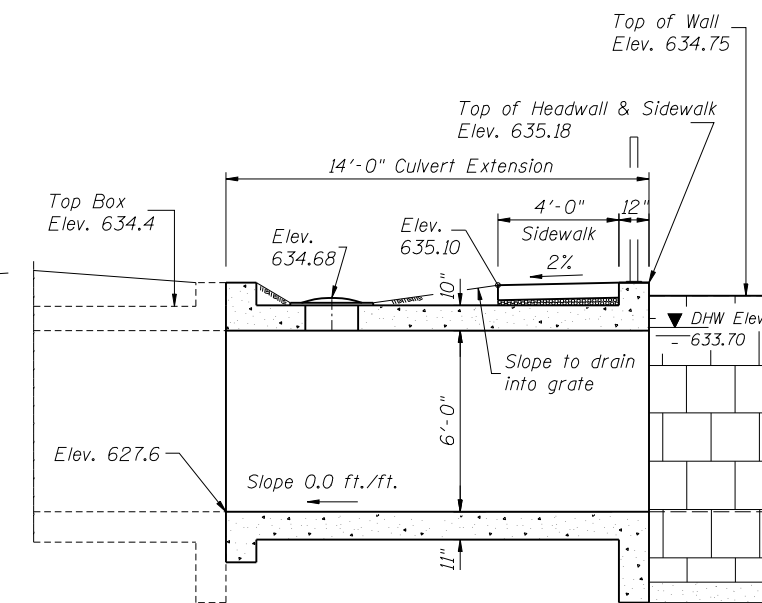
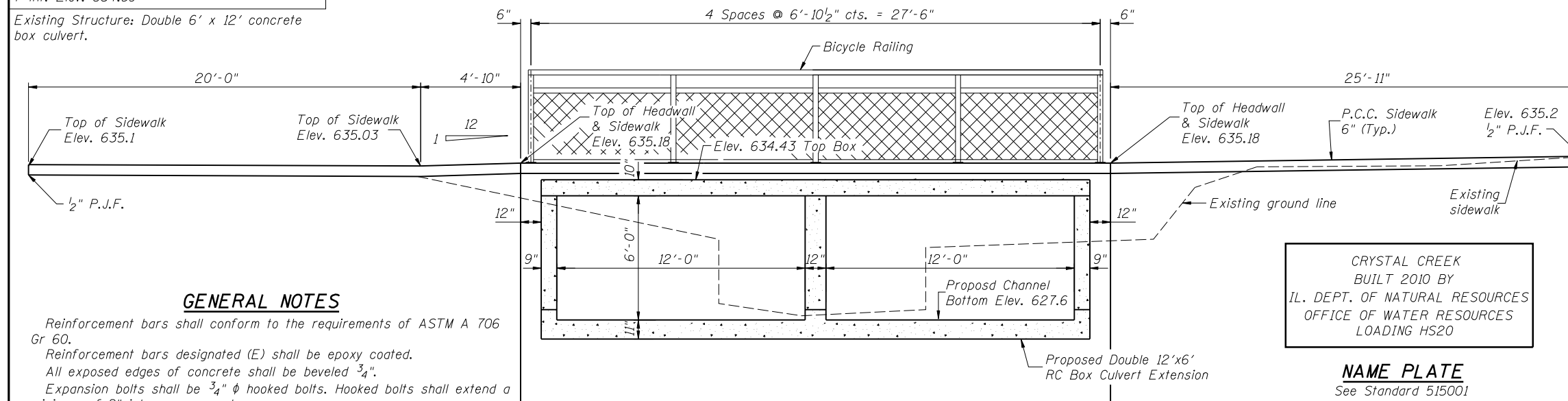
CROSS SECTIONS

FR-413

Sheet 25 of 65

TH-11: Chis. square on left D.S. headwall at 25th Ave. over Crystal Creek south of Ruby St. T int. Elev. 634.89

Existing Structure: Double 6' x 12' concrete box culvert.



GENERAL NOTES

Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60.
Reinforcement bars designated (E) shall be epoxy coated.
All exposed edges of concrete shall be beveled 3/4".
Expansion bolts shall be 3/4" ϕ hooked bolts. Hooked bolts shall extend a minimum of 9" into new concrete.
For backfilling and embankment, see Standard Specifications.
Precast alternate is not allowed.

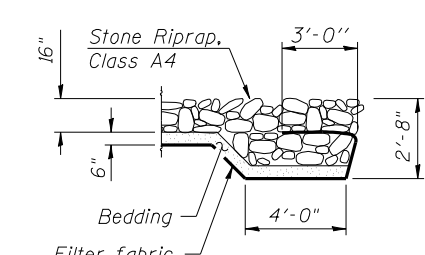
CRYSTAL CREEK
BUILT 2010 BY
IL. DEPT. OF NATURAL RESOURCES
OFFICE OF WATER RESOURCES
LOADING HS20

NAME PLATE

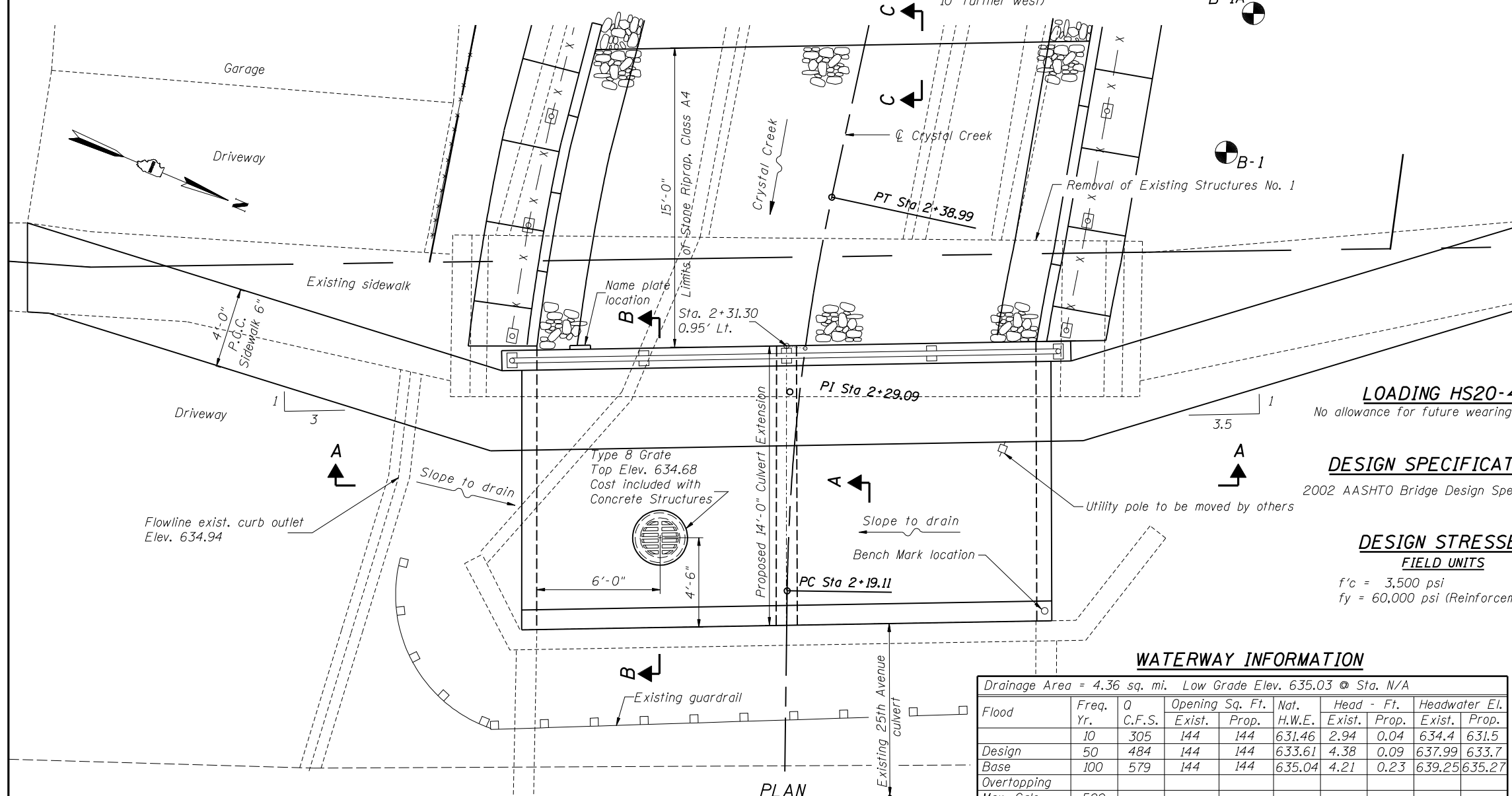
See Standard 515001
Note: Attach name plate to upstream headwall.

SECTION A-A

SECTION B-B



SECTION C-C



LOADING HS20-44

No allowance for future wearing surface.

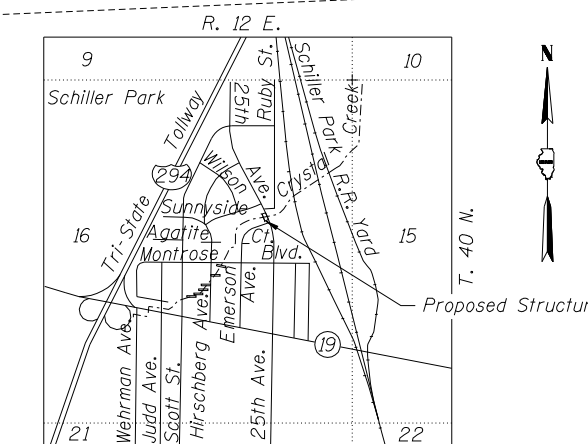
DESIGN SPECIFICATIONS

2002 AASHTO Bridge Design Specifications

DESIGN STRESSES

FIELD UNITS

$f'_c = 3,500$ psi
 $f_y = 60,000$ psi (Reinforcement)



LOCATION SKETCH

WATERWAY INFORMATION

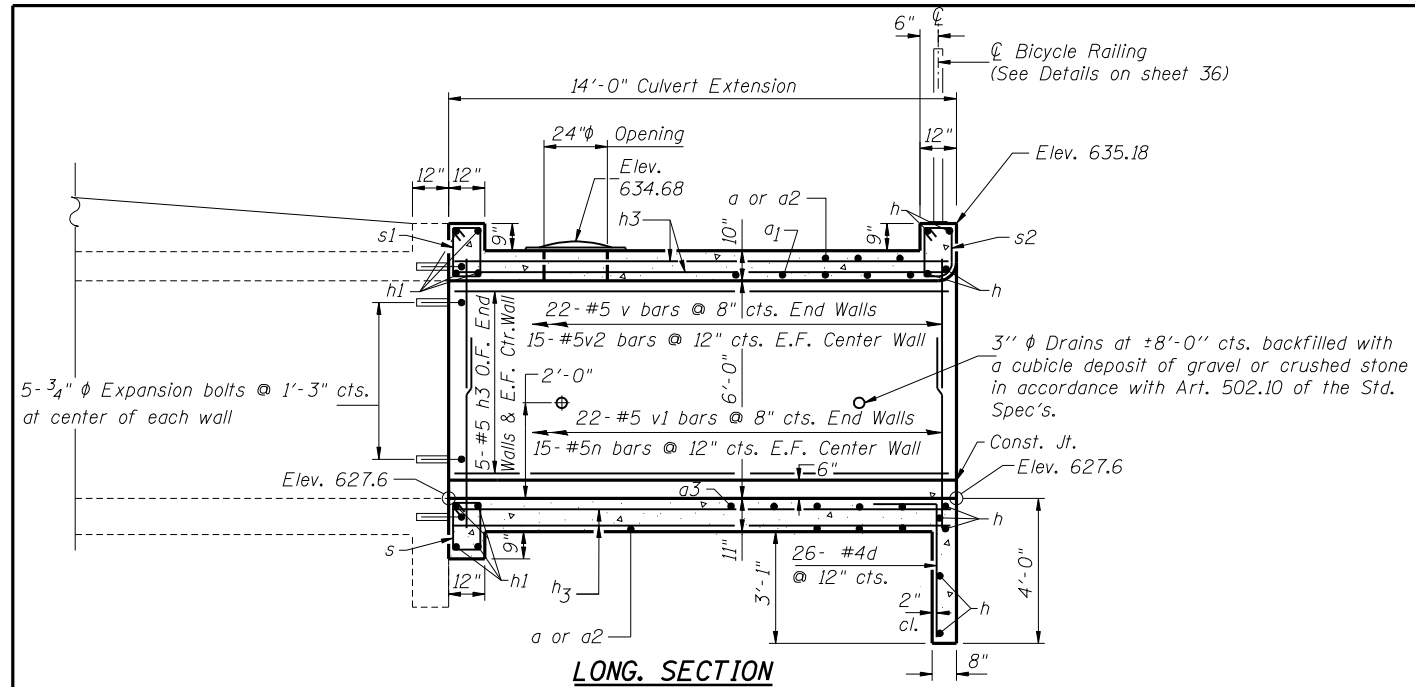
Drainage Area = 4.36 sq. mi. Low Grade Elev. 635.03 @ Sta. N/A

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.		Head - Ft.		Headwater El.	
			Exist.	Prop.	Exist.	Prop.	Exist.	Prop.	Exist.	Prop.
Design	10	305	144	144	631.46	2.94	0.04	634.4	631.5	
Base	50	484	144	144	633.61	4.38	0.09	637.99	633.7	
Overtopping	100	579	144	144	635.04	4.21	0.23	639.25	635.27	
Max. Calc.	500									

TOTAL BILL OF MATERIAL

Item	Unit	Total
Reinforcement Bars	Pound	6,120
Expansion Bolts 3/4"	Each	49
Concrete Box Culverts	Cu Yd	36.2
Portland Cement Concrete Sidewalk 6 Inch	Sq Ft	321
Name Plates	Each	1
Bicycle Railing	Foot	28
Stone Riprap, Class A4	Sq Yd	42
Filter Fabric	Sq Yd	42

Designed By TMM Checked By JUF
 Drawn By JUF Checked By RLP
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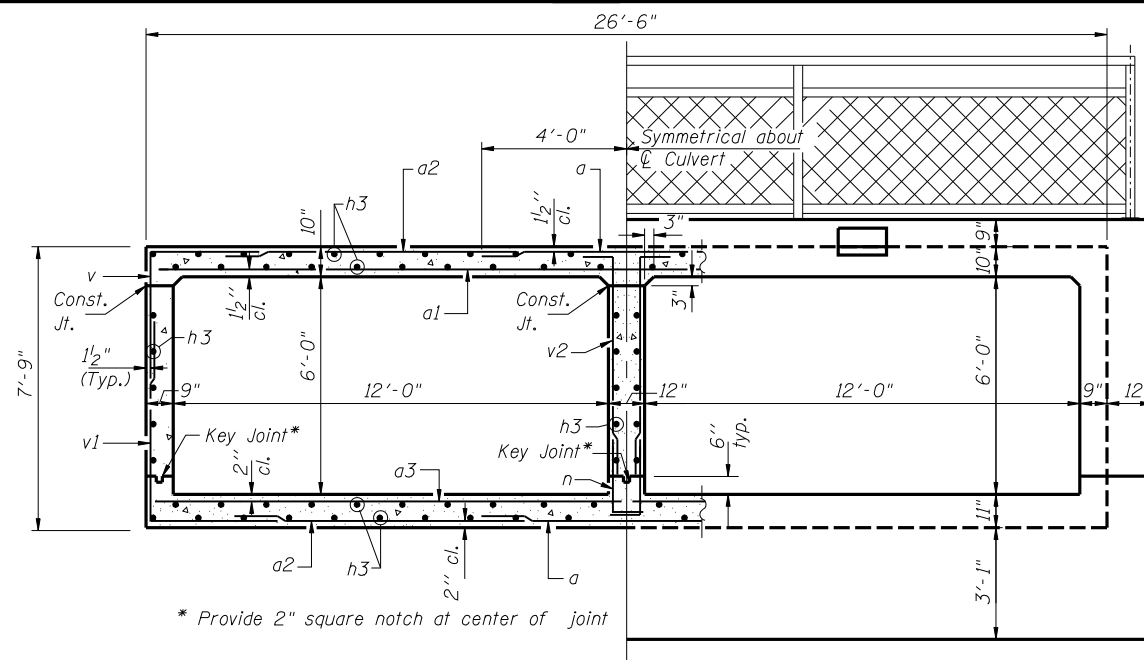


LONG SECTION

Note: Cut longitudinal and transverse reinforcement bars in top slab as necessary to clear opening by 2".

BAR v, v1, v2, d & n

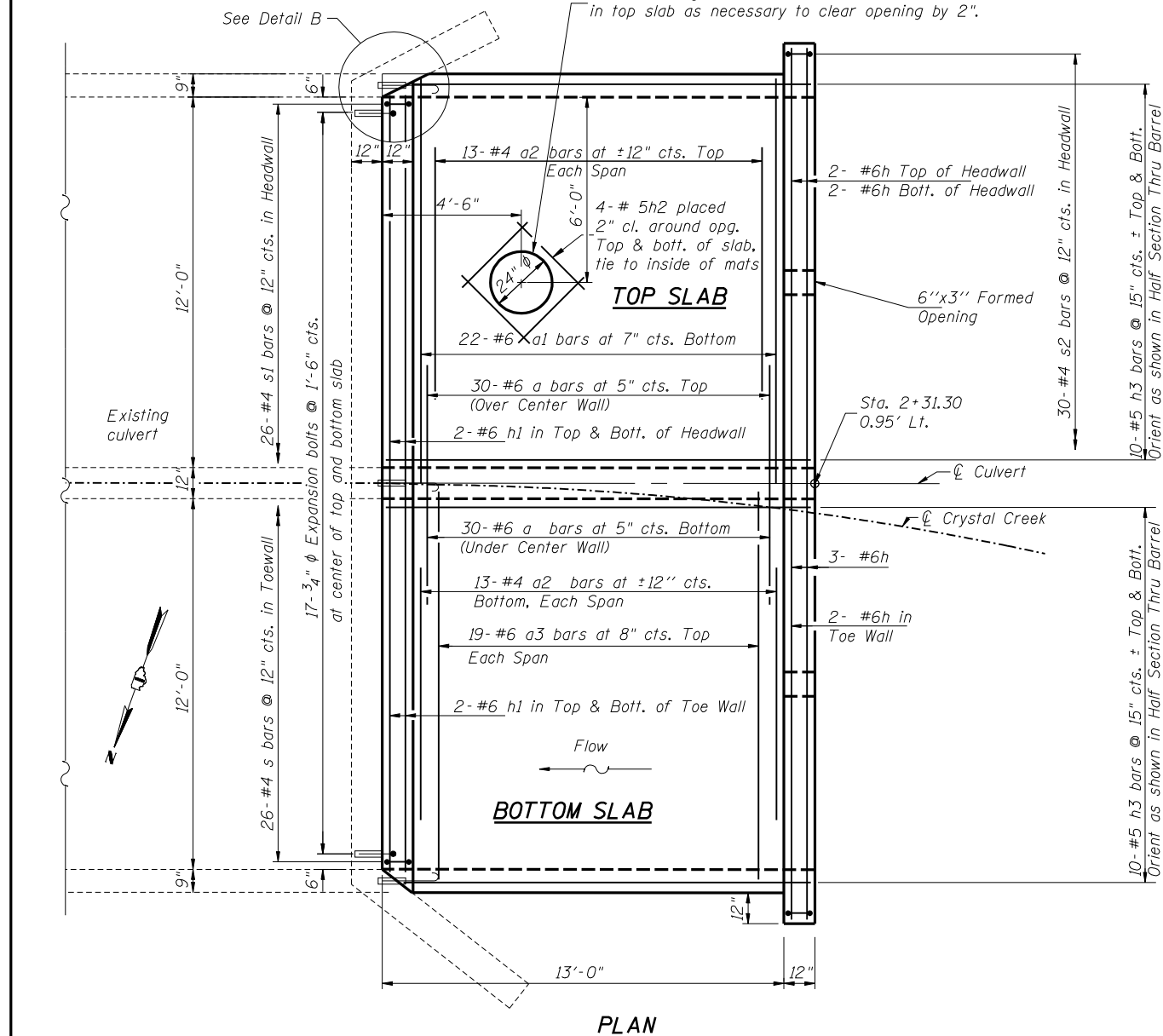
Bar	A	B
d	3'-9"	1'-9"
n	2'-0"	10"
v	3'-6"	3'-0"
v1	5'-6"	3'-6"
v2	6'-0"	10"



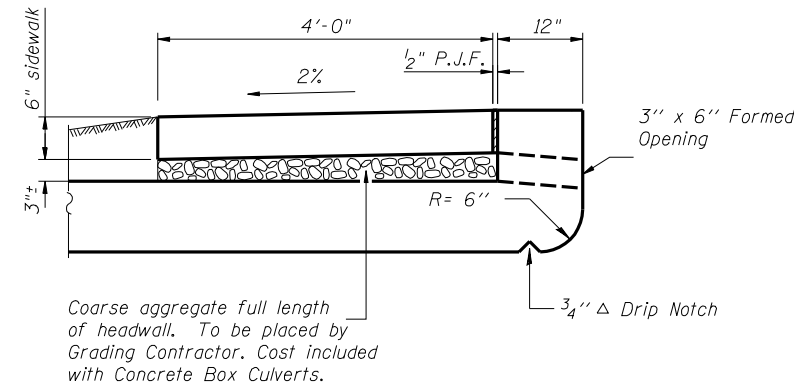
HALF SECTION THRU BARREL

HALF END ELEVATION

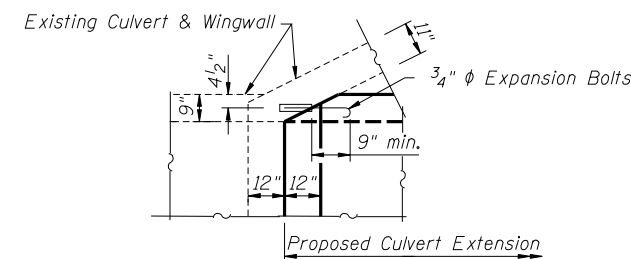
* Provide 2" square notch at center of joint



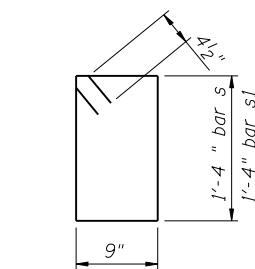
PLAN



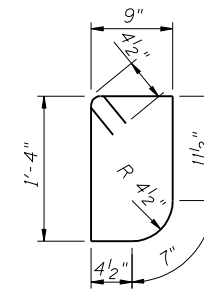
DRAIN DETAIL AT UPSTREAM END



DETAIL B



BARS s & s1



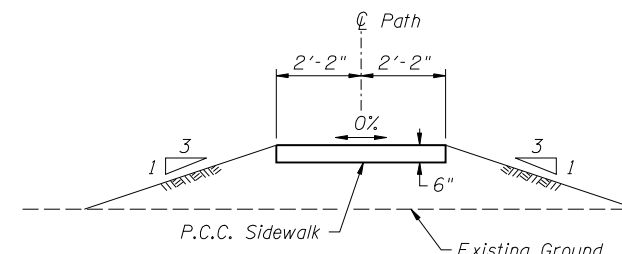
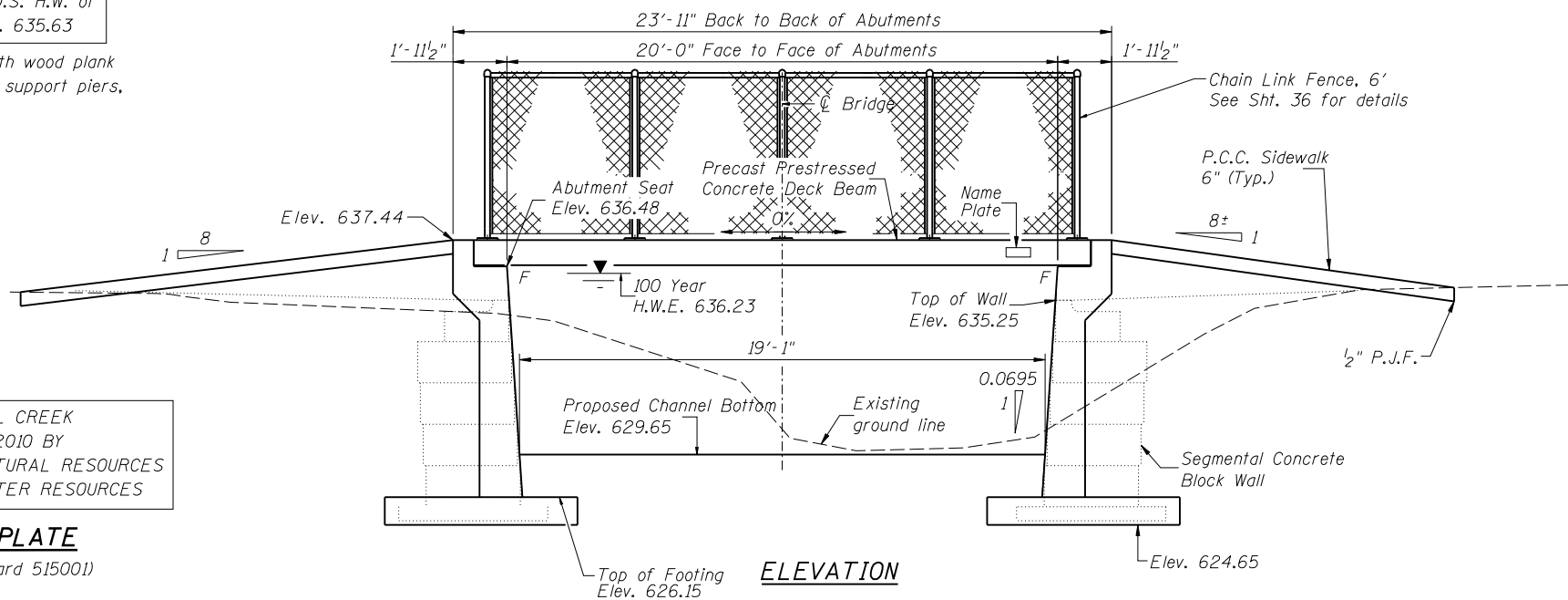
BAR s2

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a	60	#6	8'-0"	—
a1	22	#6	26'-0"	—
a2	52	#4	8'-0"	—
a3	38	#6	13'-0"	—
d	26	#4	5'-6"	└
h	9	#6	28'-3"	—
h1	8	#6	25'-2"	—
h2	8	#5	3'-0"	—
h3	100	#5	13'-9"	—
n	30	#5	2'-10"	└
s	26	#4	4'-11"	└
s1	26	#4	4'-11"	└
s2	30	#4	4'-9"	└
v	44	#5	6'-6"	└
v1	44	#5	9'-0"	└
v2	30	#5	6'-10"	└
Concrete Box Culverts			Cu. Yd.	36.2
Reinforcement Bars			Pound	6,120
Expansion Bolts 3/4"			Each	49

TBM # 105: Chis. square @ of D.S. H.W. of
culvert under Montrose Ave. Elev. 635.63

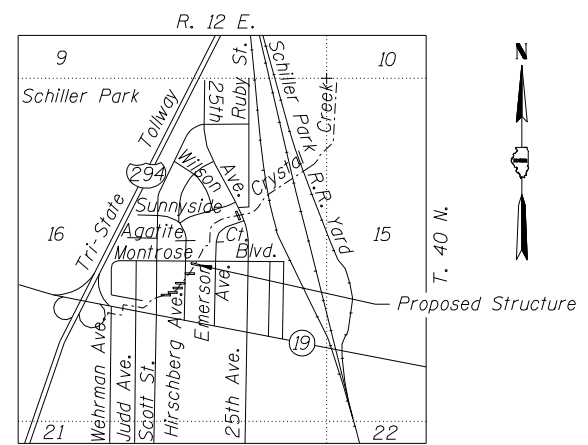
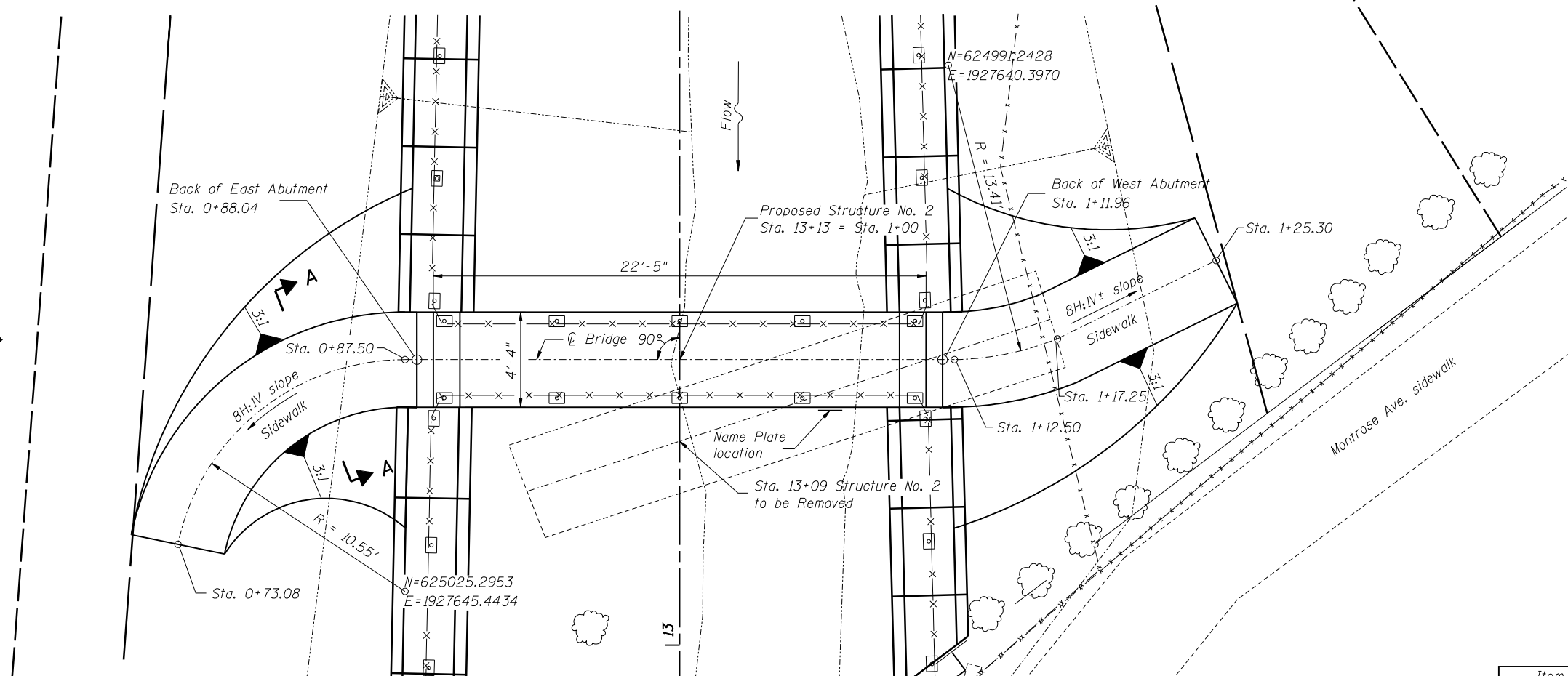
Existing Structure: Footbridge with wood plank
deck, no side rails, 2 wood post support piers,
25' length.



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NAME PLATE
(See Standard 515001)

ELEVATION



LOCATION SKETCH

DESIGN SPECIFICATIONS

2002 AASHTO Load Factor Design and
Guide Specifications for design of
Pedestrian Bridges Published by
AASHTO, August 1997

LOADING

Pedestrian Live Load = 85 psf

SEISMIC DATA

SPC = A
A = 0.05g
Site Coefficient (S) = 1.0

PLAN

DESIGN STRESSES

CAST IN PLACE CONCRETE

$f'_c = 3,500$ psi
 $f_y = 60,000$ psi (reinforcement)

PRECAST PRESTRESSED UNITS

$f'_c = 5,000$ psi
 $f''_{ci} = 4,000$ psi
 $f'_s = 270,000$ psi ($\frac{1}{2}$ " ϕ strand)
 $f''_{si} = 201,960$ psi ($\frac{1}{2}$ " ϕ strand)

TOTAL BILL OF MATERIAL

Item	Unit	Total
Precast Prestressed Concrete Deck Beams (11" Depth)	Sq Ft	97
Reinforcement Bars, Epoxy Coated	Pound	1,540
Concrete Structures	Cu Yd	8.6
Name Plates	Each	1
Stone Face Finish	Sq Ft	90
Chain Link Fence, 6'	Foot	43
Portland Cement Concrete Sidewalk 6 Inch	Sq Ft	123

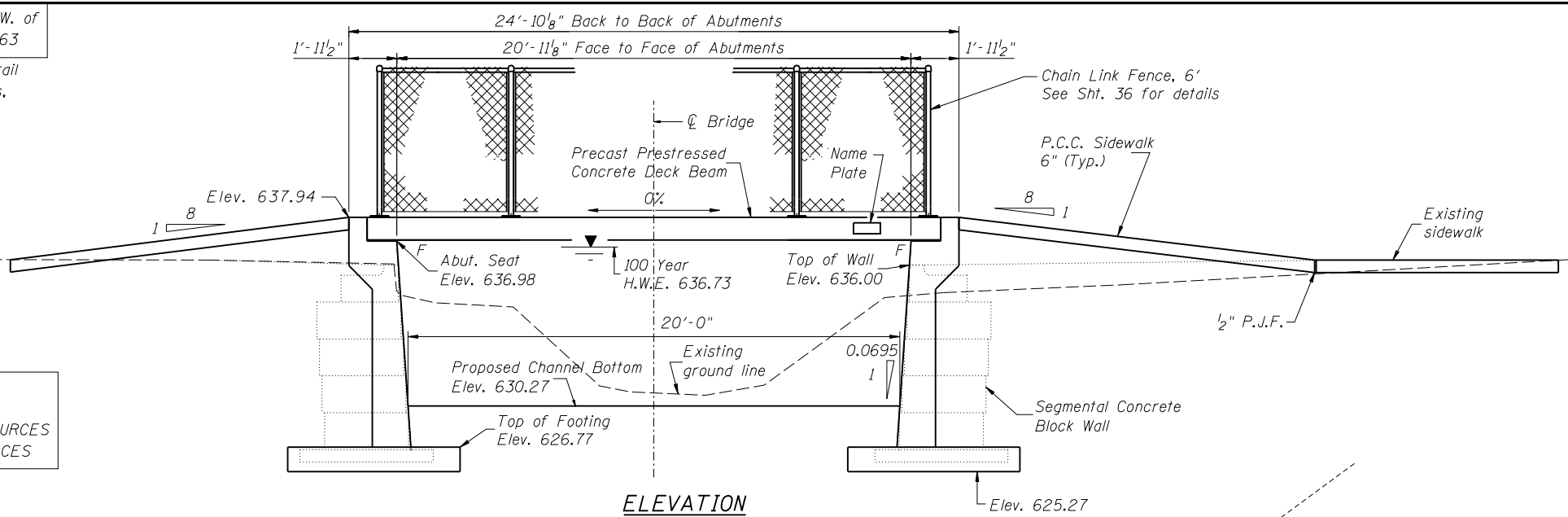
Designed By: TMM Checked By: JUF
 Drawn By: JUF Checked By: RLP
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TBM # 105: Chis. square \odot of D.S. H.W. of
culvert under Montrose Ave. Elev. 635.63

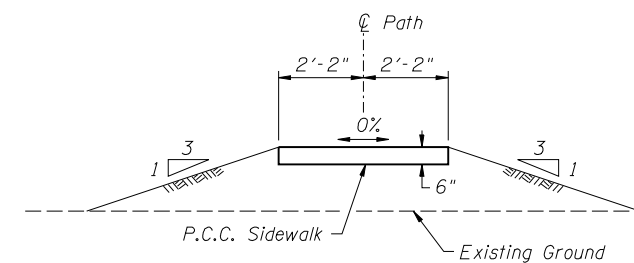
Existing Structure: Red-stained wood rail
footbridge with longitudinal deck boards,
23' length.

CRYSTAL CREEK
BUILT 2010 BY
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OFFICE OF WATER RESOURCES

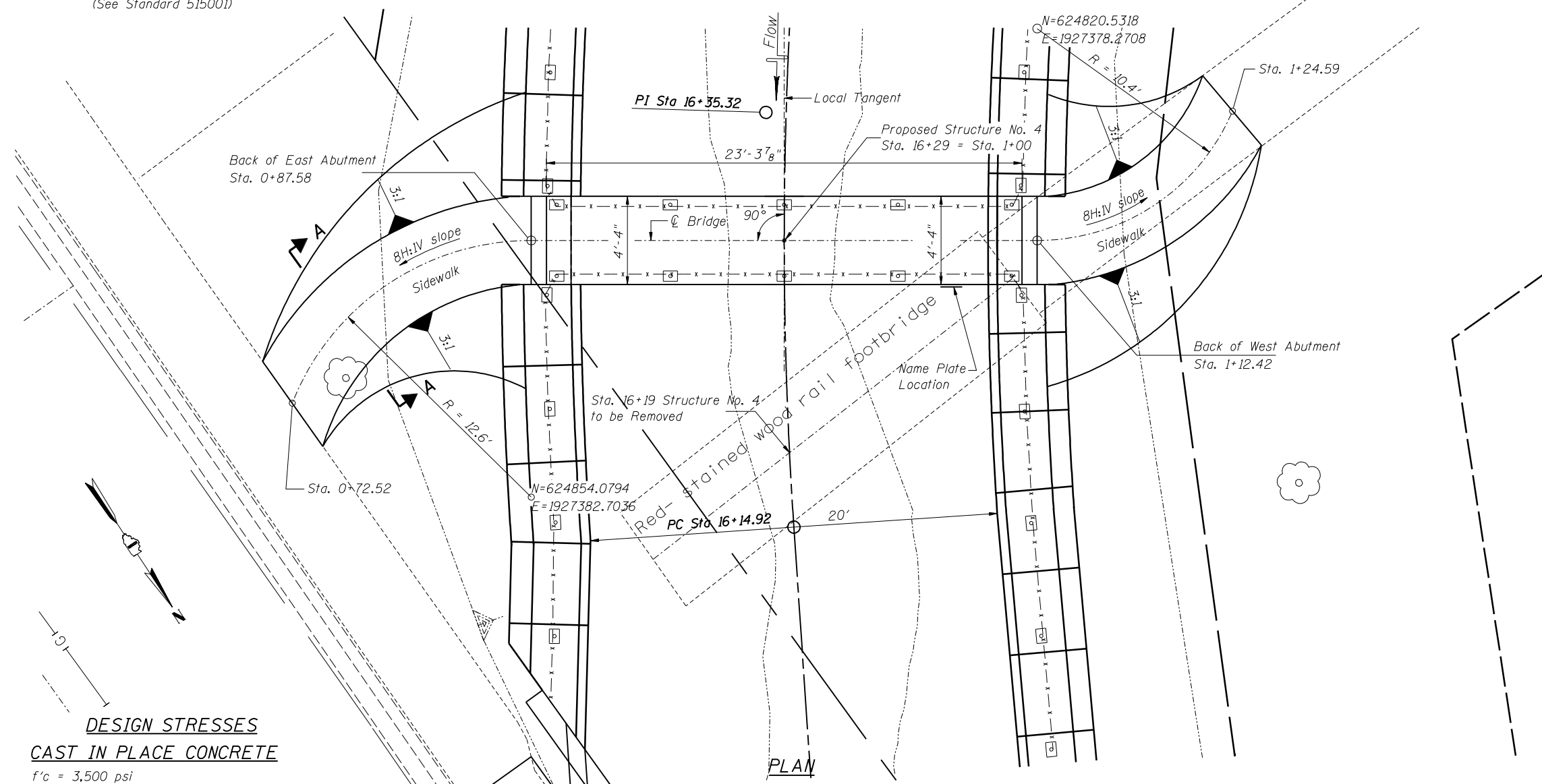
NAME PLATE
(See Standard 515001)



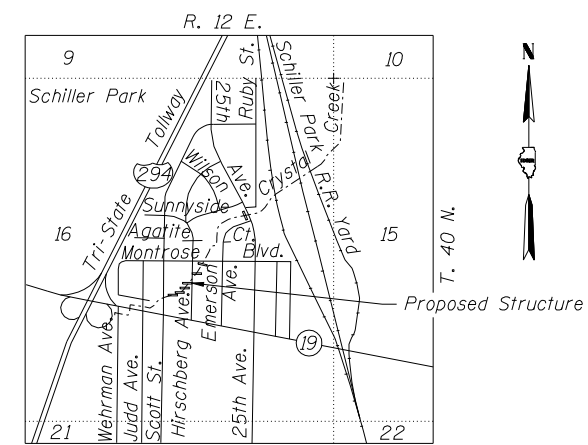
ELEVATION



SECTION A-A



PLAN



LOCATION SKETCH

TOTAL BILL OF MATERIAL

Item	Unit	Total
Precast Prestressed Concrete Deck Beams (11" depth)	Sq Ft	101
Reinforcement Bars, Epoxy Coated	Pound	1,540
Concrete Structures	Cu Yd	8.6
Stone Face Finish	Sq Ft	90
Chain Link Fence, 6'	Foot	45
Name Plates	Each	1
Portland Cement Concrete Sidewalk 6 Inch	Sq Ft	116

CAST IN PLACE CONCRETE

$f'c = 3,500$ psi
 $f_y = 60,000$ psi (reinforcement)

PRECAST PRESTRESSED UNITS

$f'c = 5,000$ psi
 $f''ci = 4,000$ psi
 $f's = 270,000$ psi ($1/2$ " ϕ strand)
 $f'si = 201,960$ psi ($1/2$ " ϕ strand)

DESIGN SPECIFICATIONS

2002 AASHTO Load Factor Design and
Guide Specifications for design of
Pedestrian Bridges Published by
AASHTO, August 1997

LOADING

Pedestrian Live Load = 85 psf

SEISMIC DATA

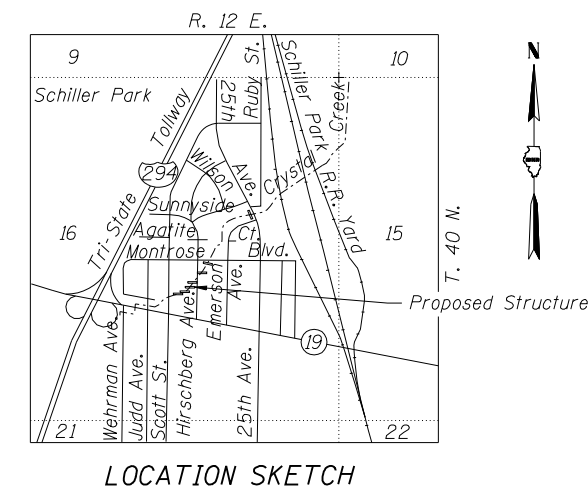
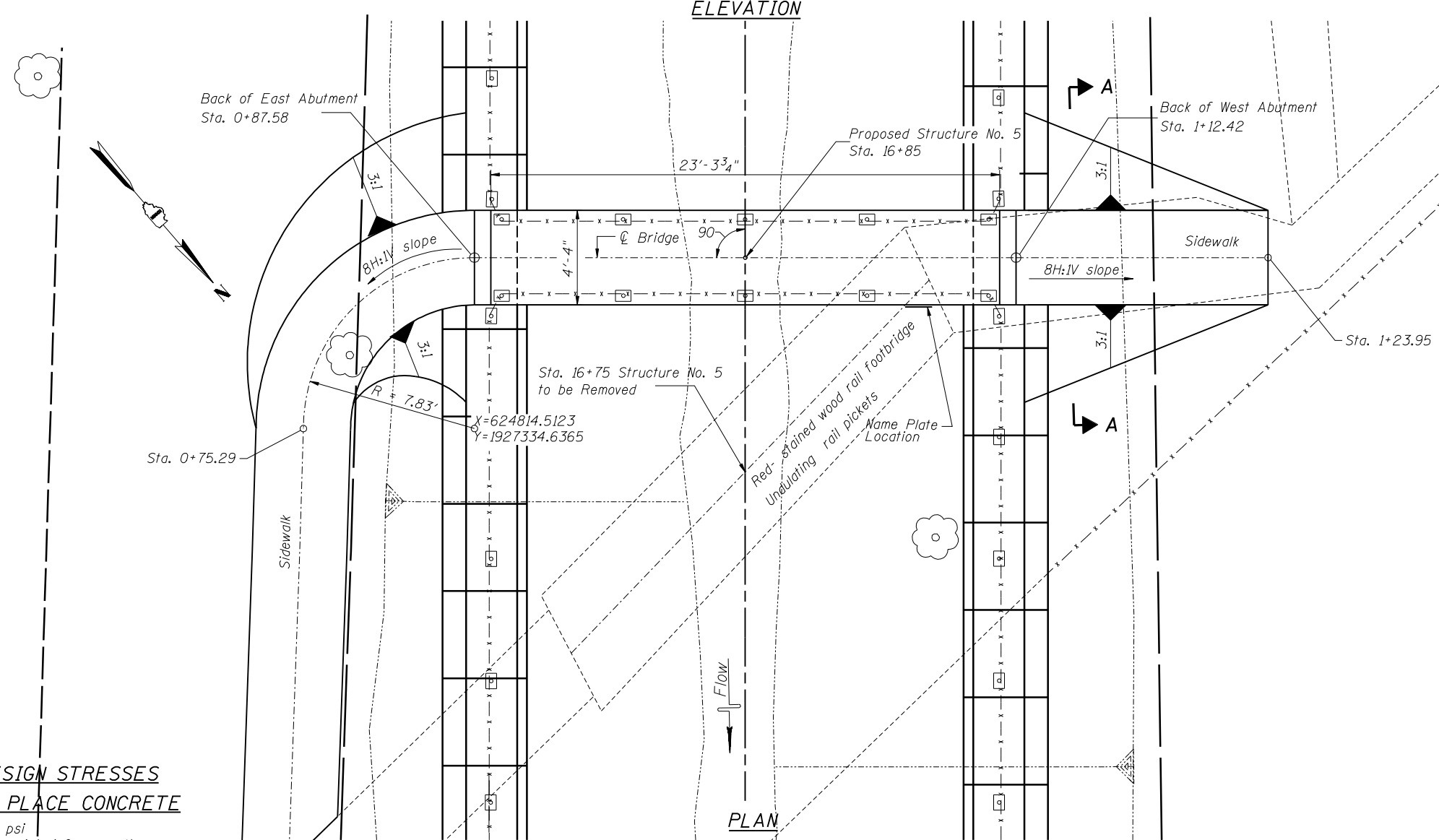
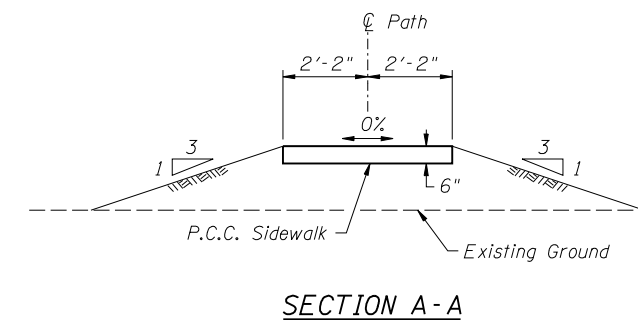
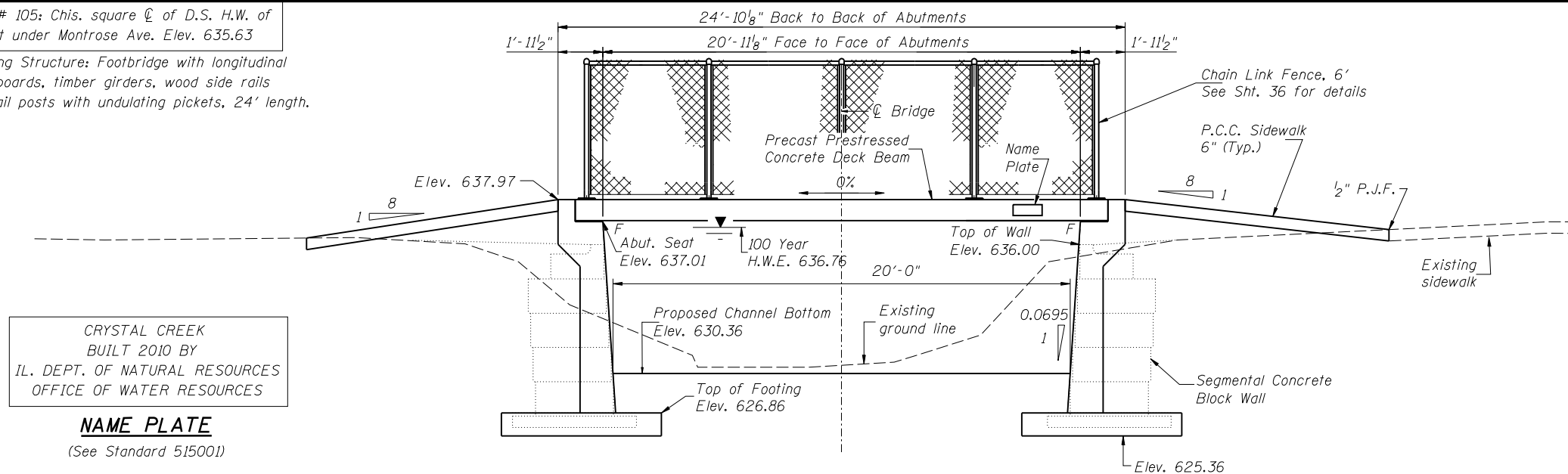
SPC = A
A = 0.05g
Site Coefficient (S) = 1.0

DESIGN STRESSES

Designed By: TMM Checked By: JUF
 Drawn By: JUF Checked By: RLP
 0:\Dwn\Proj\Imp\Projects\Crystal_Creek\JUF\Structure No 4 General Plan and Elevation.dgn
 1/29/2010 12:05:38 PM

TBM # 105: Chis. square @ of D.S. H.W. of
culvert under Montrose Ave. Elev. 635.63

Existing Structure: Footbridge with longitudinal
deck boards, timber girders, wood side rails
and rail posts with undulating pickets, 24' length.



**DESIGN STRESSES
CAST IN PLACE CONCRETE**

$f'_c = 3,500$ psi
 $f_y = 60,000$ psi (reinforcement)

PRECAST PRESTRESSED UNITS

$f'_c = 5,000$ psi
 $f'_{ci} = 4,000$ psi
 $f'_s = 270,000$ psi (1/2" ϕ strand)
 $f'_{si} = 201,960$ psi (1/2" ϕ strand)

DESIGN SPECIFICATIONS

2002 AASHTO Load Factor Design and
Guide Specifications for design of
Pedestrian Bridges Published by
AASHTO, August 1997

LOADING

Pedestrian Live Load = 85 psf

SEISMIC DATA

SPC = A
A = 0.05g
Site Coefficient (S) = 1.0

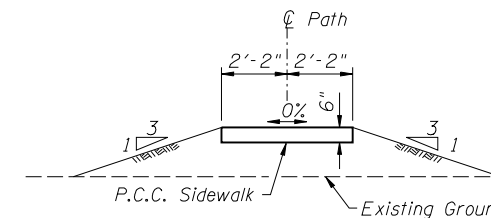
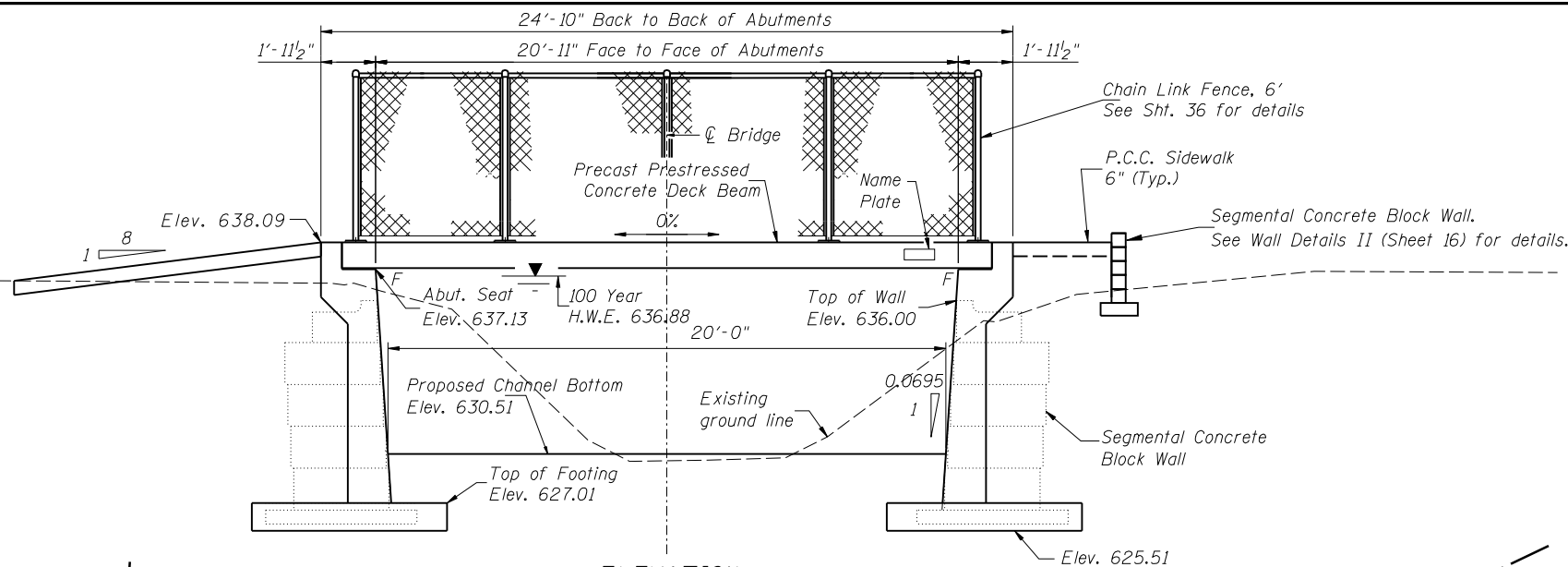
TOTAL BILL OF MATERIAL

Item	Unit	Total
Precast Prestressed Concrete Deck Beams (11" depth)	Sq Ft	101
Reinforcement Bars, Epoxy Coated	Pound	1,540
Concrete Structures	Cu Yd	8.6
Stone Face Finish	Sq Ft	90
Chain Link Fence, 6'	Foot	45
Name Plates	Each	1
Portland Cement Concrete Sidewalk 6 Inch	Sq Ft	190

Designed By TMM Checked By JUF
 Drawn By JUF Checked By RLP
 1/29/2010 12:06:20 PM
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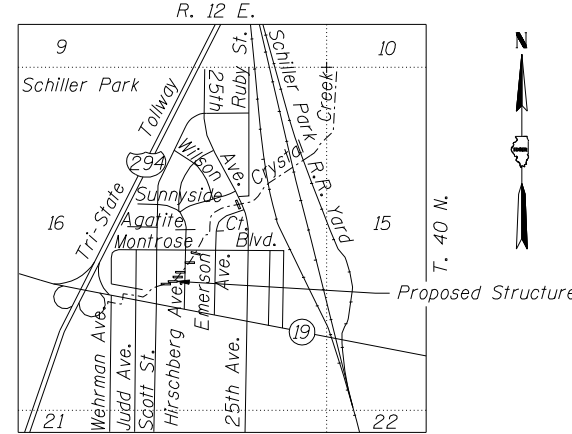
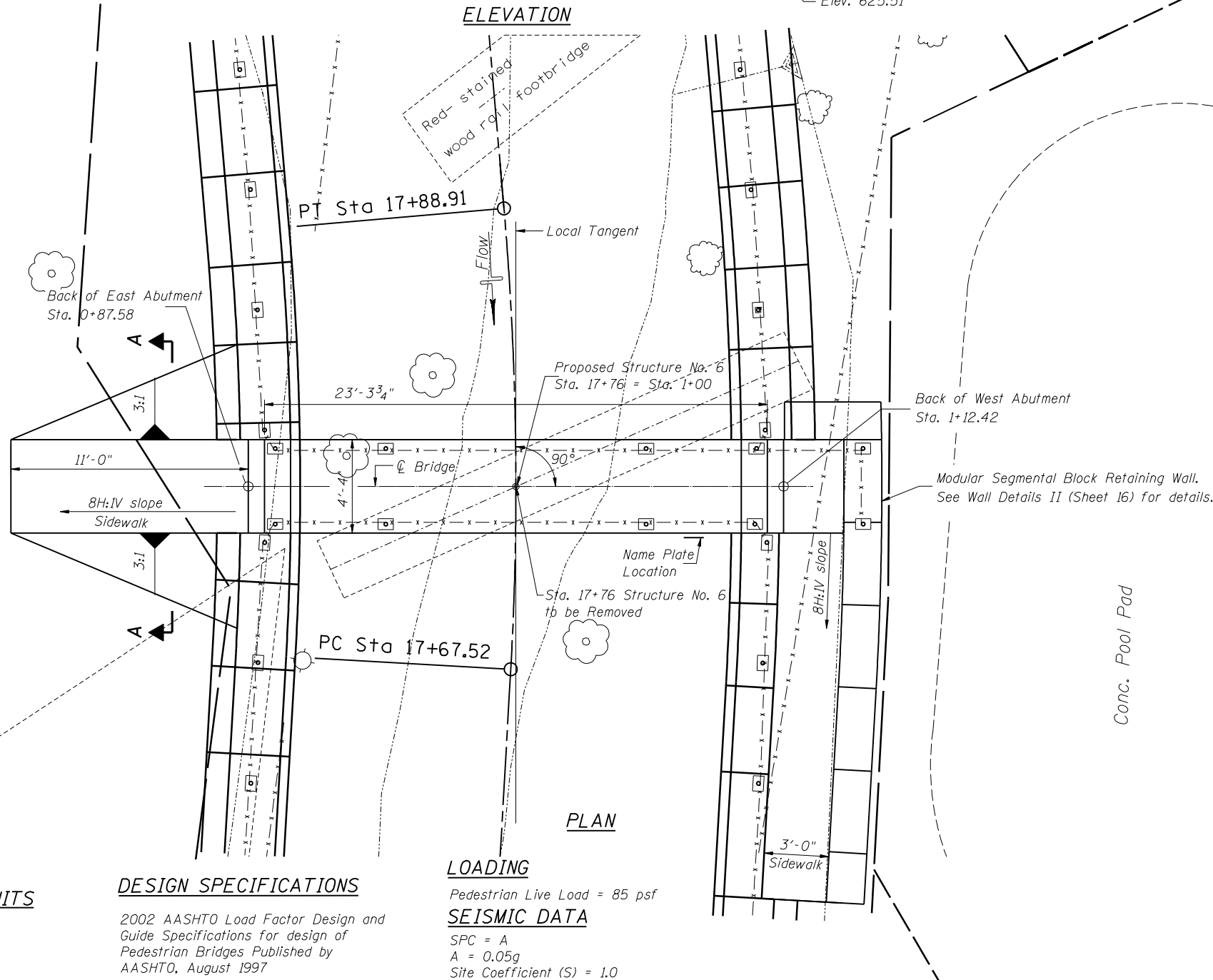
TBM # 105: Chis. square @ of D.S. H.W. of
culvert under Montrose Ave. Elev. 635.63

Existing Structure: Footbridge, 24' length.



CRYSTAL CREEK
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OFFICE OF WATER RESOURCES

NAME PLATE
(See Standard 515001)



TOTAL BILL OF MATERIAL

Item	Unit	Total
Precast Prestressed Concrete Deck Beams (11" depth)	Sq Ft	101
Reinforcement Bars, Epoxy Coated	Pound	1,540
Concrete Structures	Cu Yd	8.6
Stone Face Finish	Sq Ft	90
Chain Link Fence, 6'	Foot	53
Name Plates	Each	1
Portland Cement Concrete Sidewalk 6 Inch	Sq Ft	64

**DESIGN STRESSES
CAST IN PLACE CONCRETE**

$f'_c = 3,500$ psi
 $f_y = 60,000$ psi (reinforcement)

PRECAST PRESTRESSED UNITS

$f'_c = 5,000$ psi
 $f''_{ci} = 4,000$ psi
 $f'_s = 270,000$ psi (1/2" ϕ strand)
 $f'_{si} = 201,960$ psi (1/2" ϕ strand)

DESIGN SPECIFICATIONS

2002 AASHTO Load Factor Design and Guide Specifications for design of Pedestrian Bridges Published by AASHTO, August 1997

LOADING

Pedestrian Live Load = 85 psf

SEISMIC DATA

SPC = A
A = 0.05g
Site Coefficient (S) = 1.0

PLAN

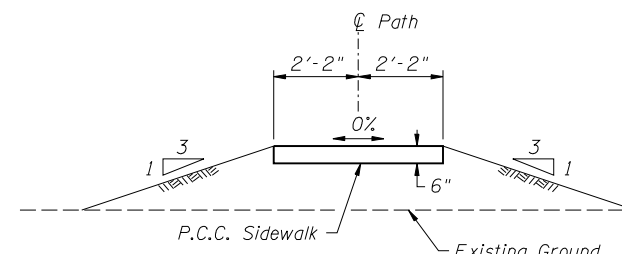
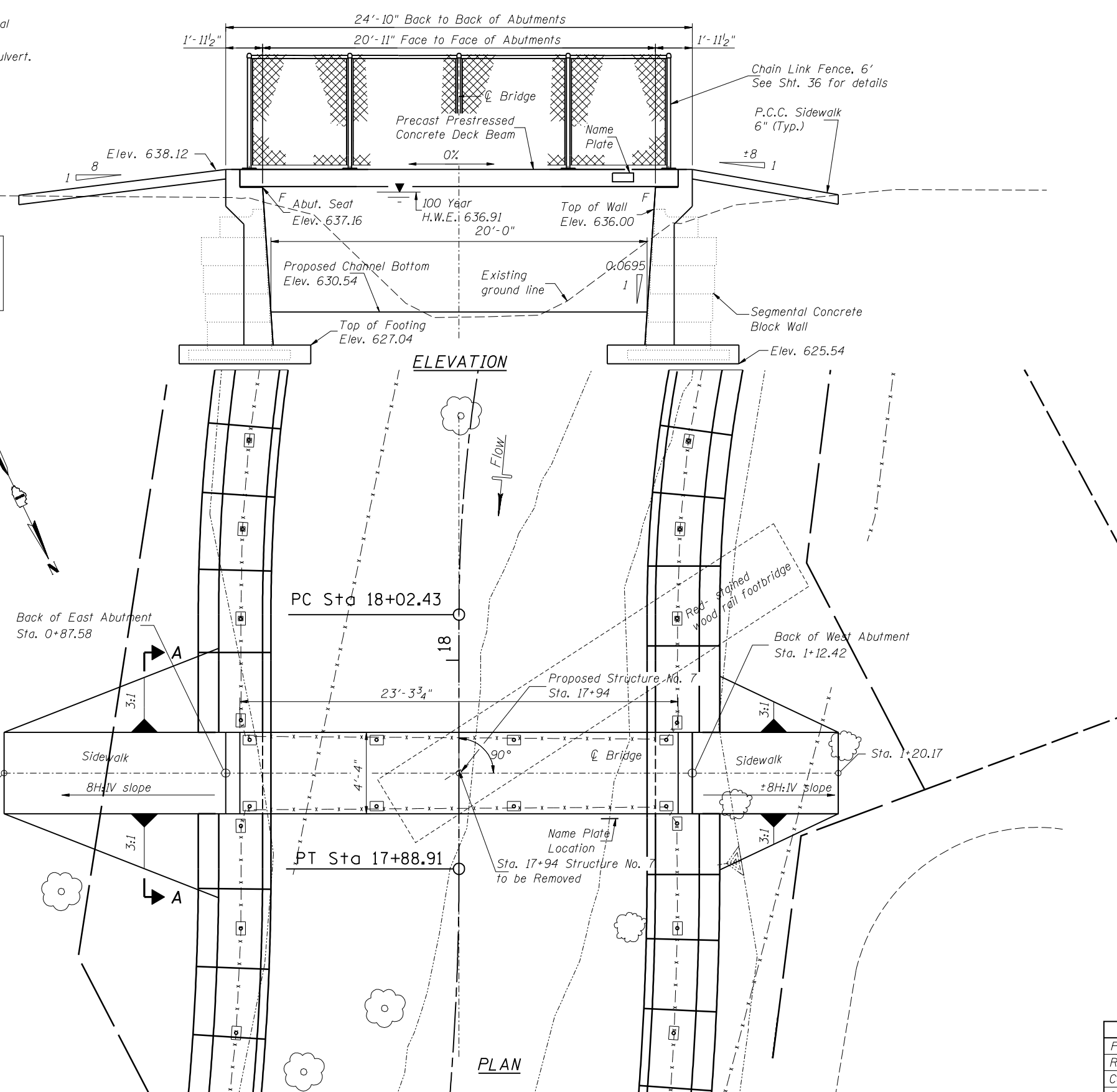
Designed By: TMM Checked By: JUF
 Drawn By: JUF Checked By: RLP
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 O:\Dwr\Proj\Imp\Projects\Crystal Creek\JUF\Structure No 6 General Plan and Elevation.dgn

TBM # 105: Chis. square \odot of D.S. H.W. of
culvert under Montrose Ave. Elev. 635.63

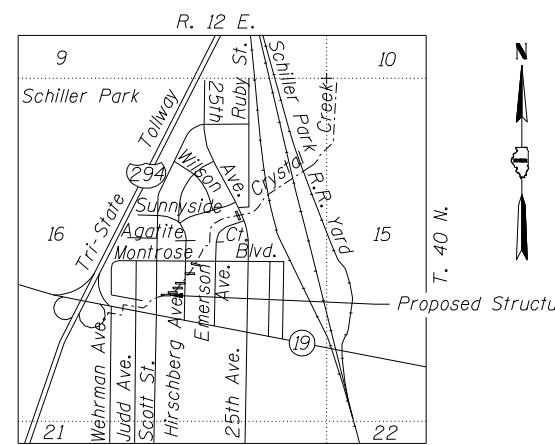
Existing Structure: Footbridge with longitudinal
wood plank deck boards, timber girders, wood
side rails & rail posts, downstream of alley culvert.
25' length.

CRYSTAL CREEK
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OFFICE OF WATER RESOURCES

NAME PLATE
(See Standard 515001)



SECTION A-A



LOCATION SKETCH

DESIGN STRESSES
CAST IN PLACE CONCRETE

$f'_c = 3,500$ psi
 $f_y = 60,000$ psi (reinforcement)

PRECAST PRESTRESSED UNITS

$f'_c = 5,000$ psi
 $f'_{ci} = 4,000$ psi
 $f'_s = 270,000$ psi ($\frac{1}{2}$ " ϕ strand)
 $f'_{si} = 201,960$ psi ($\frac{1}{2}$ " ϕ strand)

DESIGN SPECIFICATIONS

2002 AASHTO Load Factor Design and
Guide Specifications for design of
Pedestrian Bridges Published by
AASHTO, August 1997

LOADING

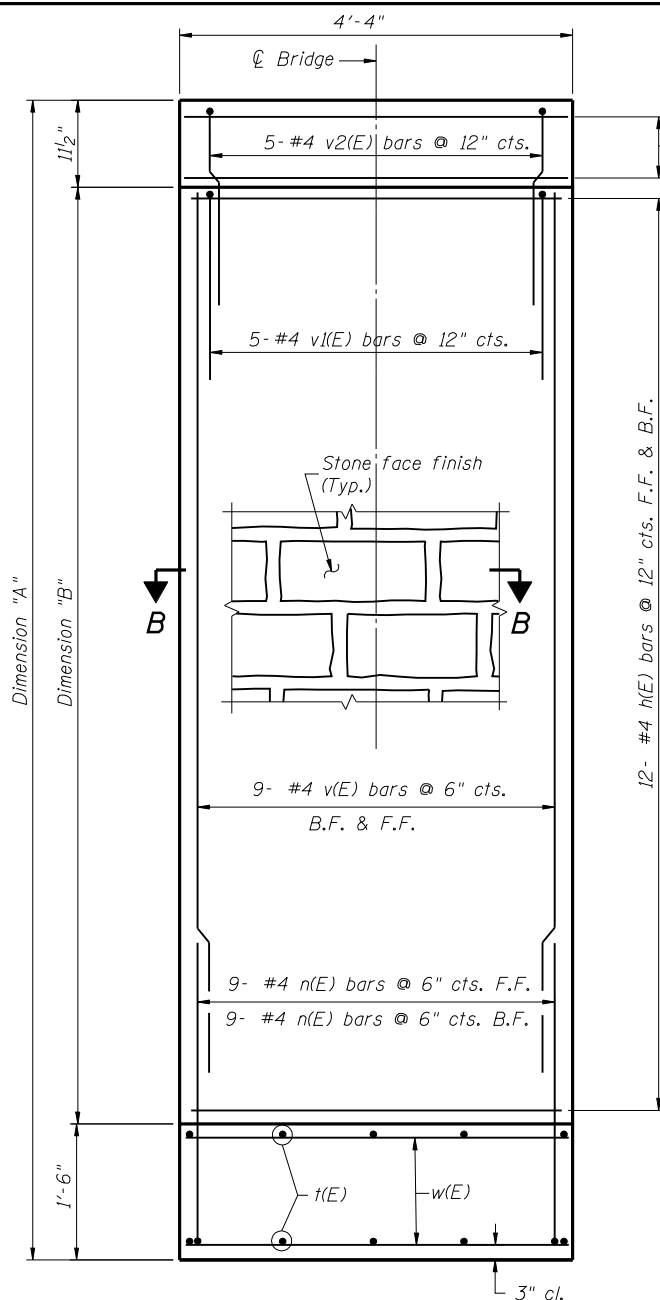
Pedestrian Live Load = 85 psf

SEISMIC DATA

SPC = A
A = 0.05g
Site Coefficient (S) = 1.0

PLAN

Designed By: TMM Checked By: JUF
 Drawn By: JUF Checked By: RLP
 1/29/2010 12:07:31 PM
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FRONT ELEVATION

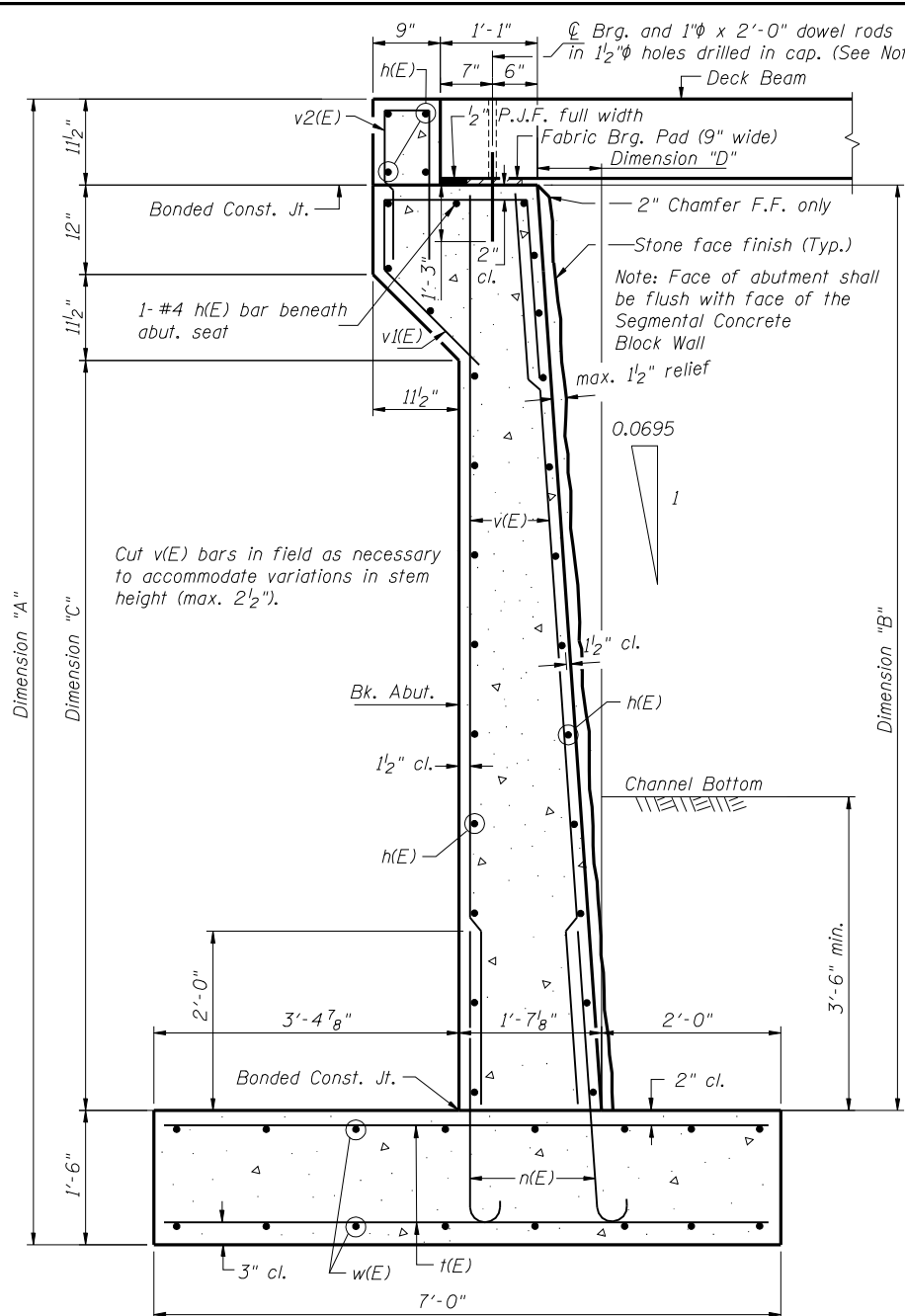
2- #4 h(E) bars @ 12" cts. F.F. & B.F.

12- #4 h(E) bars @ 12" cts. F.F. & B.F.

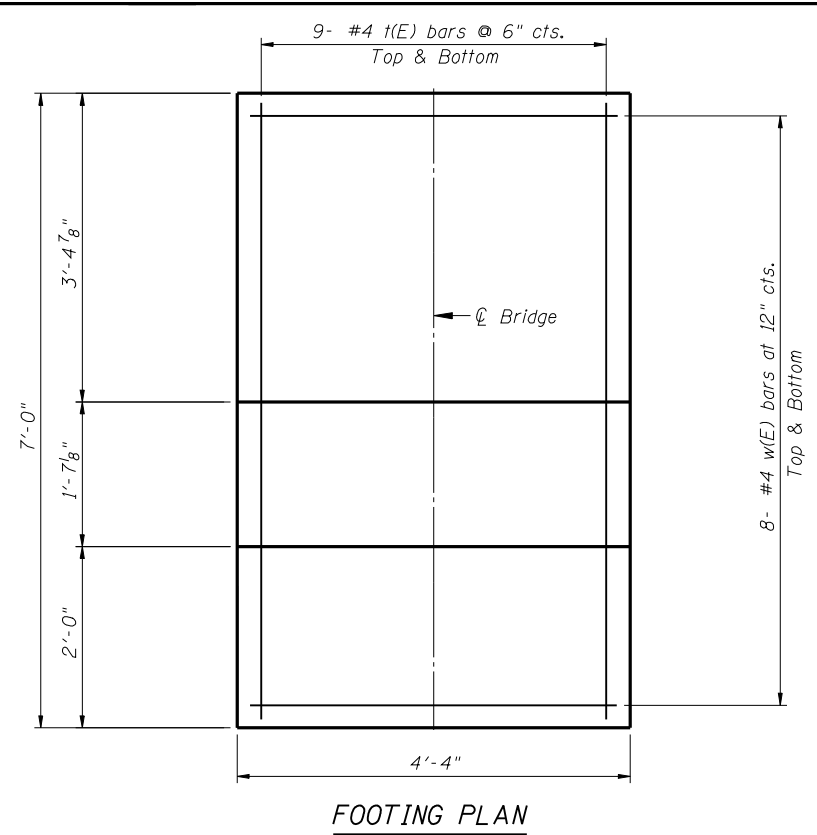
DIMENSION TABLE

Dimension	"A"	"B"	"C"	"D"
Structure #2	12'-9 1/2"	10'-4"	8'-4 1/2"	8 5/8"
Structure #3	12'-7 5/8"	10'-2 1/8"	8'-2 5/8"	8 1/2"
Structure #4	12'-8"	10'-2 1/2"	8'-3"	8 1/2"
Structure #5	12'-7 3/8"	10'-1 7/8"	8'-2 3/8"	8 1/2"
Structure #6	12'-7"	10'-1 1/2"	8'-2"	8 1/2"
Structure #7	12'-7"	10'-1 1/2"	8'-2"	8 1/2"

For specific elevations, refer to the General Plan & Elevation sheets of each structure.



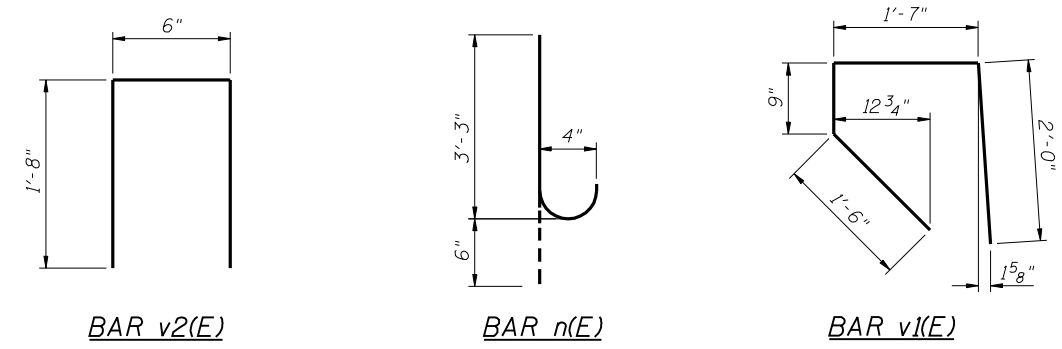
SECTION THRU ABUTMENT



FOOTING PLAN

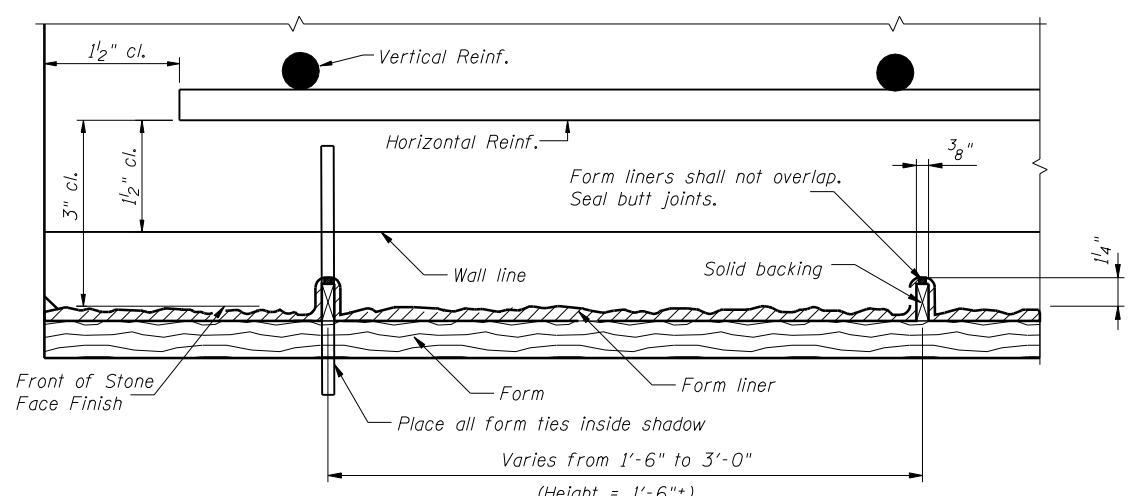
Allowable Soil Bearing Pressure, $q_{allow} = 2.0 \text{ tsf}$

F.F. = Front Face
B.F. = Back Face



NOTES

- The back wall above the bonded construction joint shall be cast against the in-place beam.
- All edges shall have a 3/4" chamfer unless noted otherwise.
- Reinforcement bars designated (E) shall be epoxy coated.
- Do not backfill behind the abutment until the P.P.C. deck beam has been erected, holes drilled in substructure, anchor dowels placed, and the dowel holes are filled with non-shrink grout to the top of beam and allowed to cure a minimum of 24 hours.
- Cost of 2'-0" long dowel bars included in the cost of "Reinforcement Bars, Epoxy Coated".



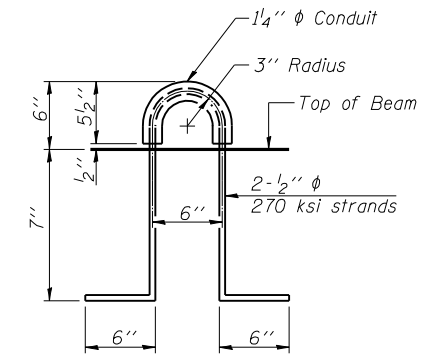
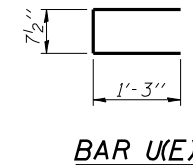
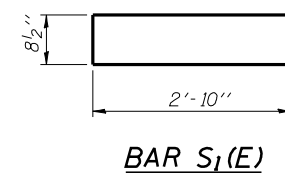
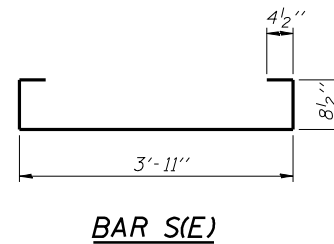
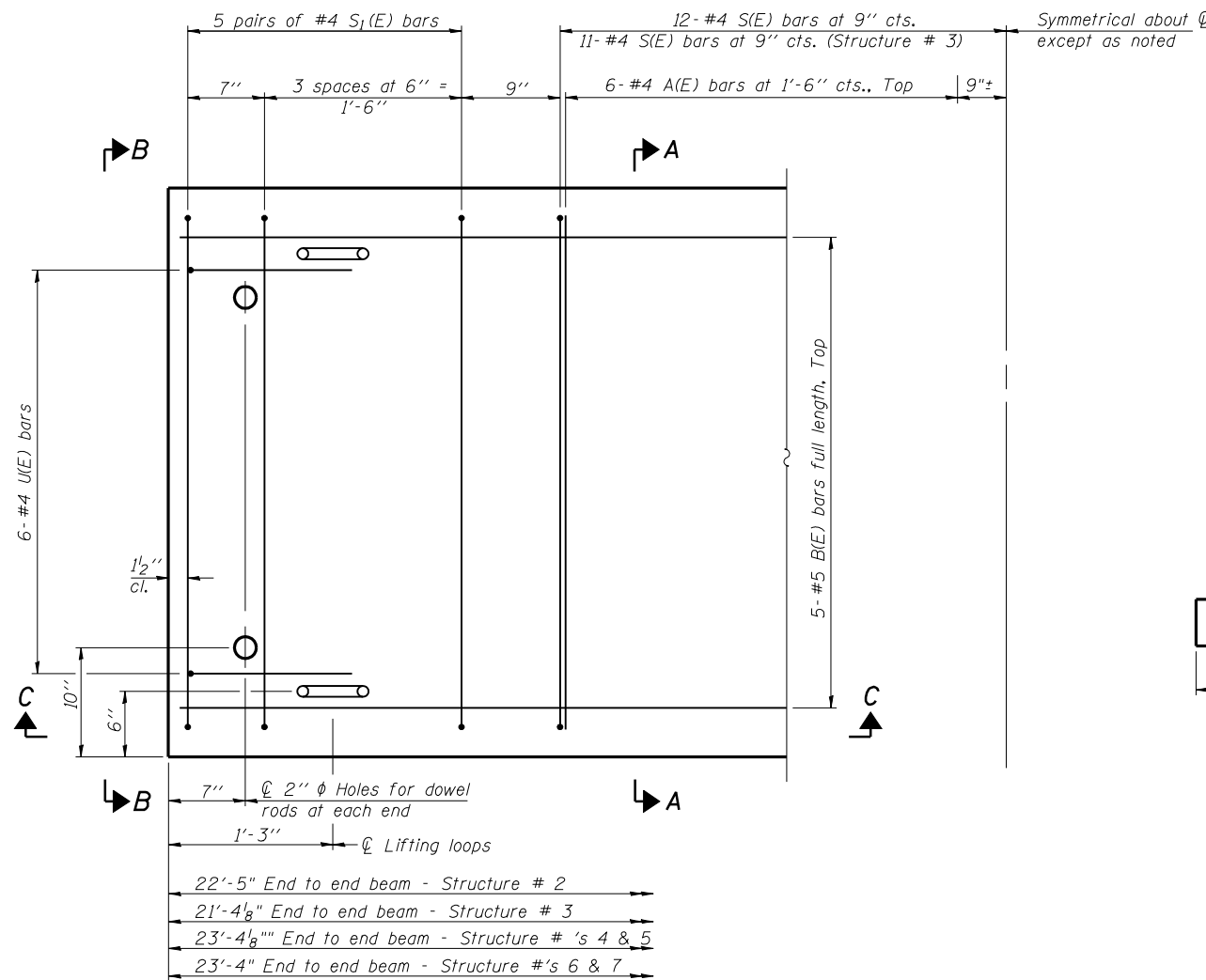
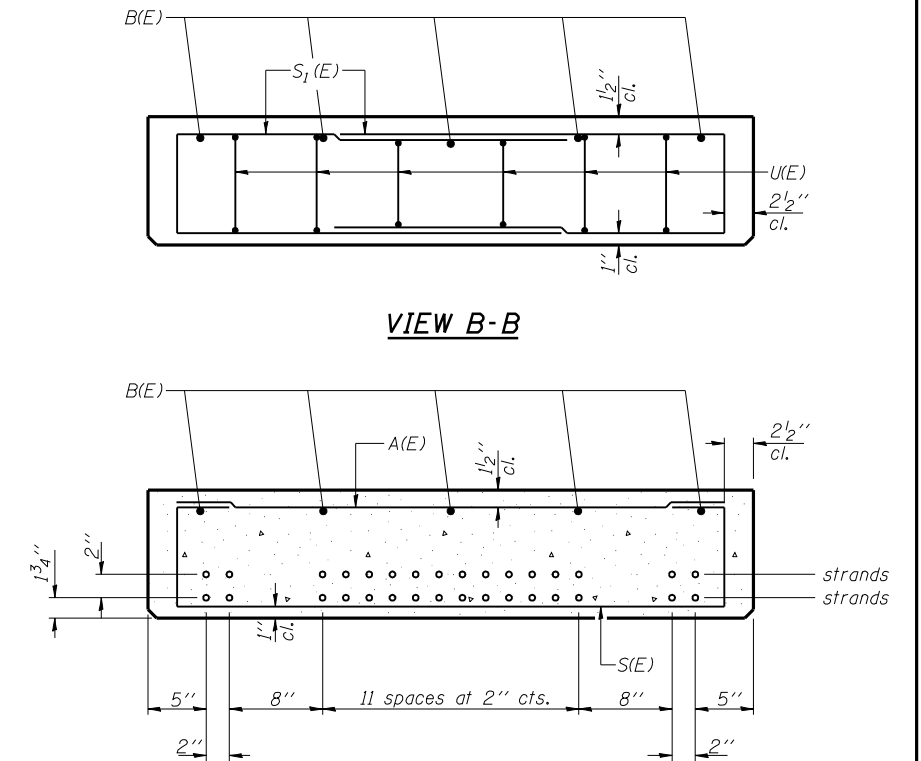
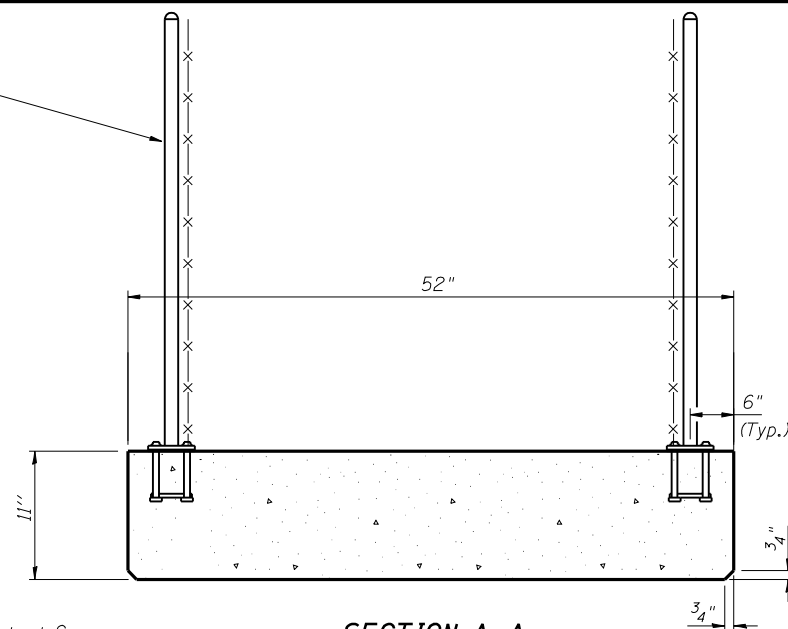
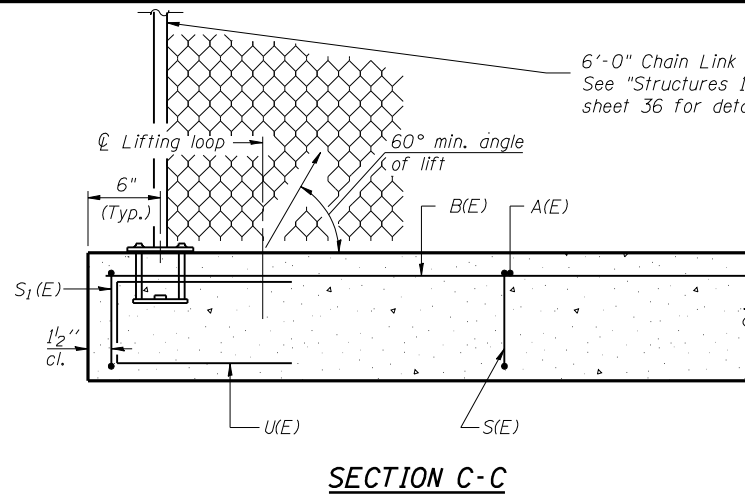
SECTION B-B

(With suggested Formwork detail)

BILL OF MATERIAL (2 Abutments)

Bar	No.	Size	Length	Shape
h(E)	58	#4	4'-1"	—
n(E)	36	#4	3'-9"	┌
t(E)	36	#4	6'-9"	—
v(E)	36	#4	10'-2"	—
v1(E)	10	#4	5'-10"	└
v2(E)	10	#4	3'-10"	└
w(E)	32	#4	4'-1"	—
Concrete Structures			Cu Yd	8.6
Reinforcement Bars, Epoxy Coated			Pound	1,540
Stone Face Finish			Sq Ft	90

Designed By: TMM Checked By: JUF
 Drawn By: JUF Checked By: RLP
 0:\Dwr\Proj\Imp\Projects\Crystal Creek\JUF\Structures 2 - 7 Abutment Details.dgn
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BAR LIST - STRUCTURE # 2
(For information only)

Bar	No.	Size	Length	Shape
A(E)	12	#4	3'-11"	—
B(E)	5	#5	22'-2"	—
S(E)	23	#4	6'-1"	U
S1(E)	20	#4	6'-5"	U
U(E)	12	#4	3'-2"	U

BAR LIST - STRUCTURE # 3
(For information only)

Bar	No.	Size	Length	Shape
A(E)	12	#4	3'-11"	—
B(E)	5	#5	21'-0"	—
S(E)	21	#4	6'-1"	U
S1(E)	20	#4	6'-5"	U
U(E)	12	#4	3'-2"	U

BAR LIST - STRUCTURE #'s 4-7
(For information only)

Bar	No.	Size	Length	Shape
A(E)	12	#4	3'-11"	—
B(E)	5	#5	23'-0"	—
S(E)	23	#4	6'-1"	U
S1(E)	20	#4	6'-5"	U
U(E)	12	#4	3'-2"	U

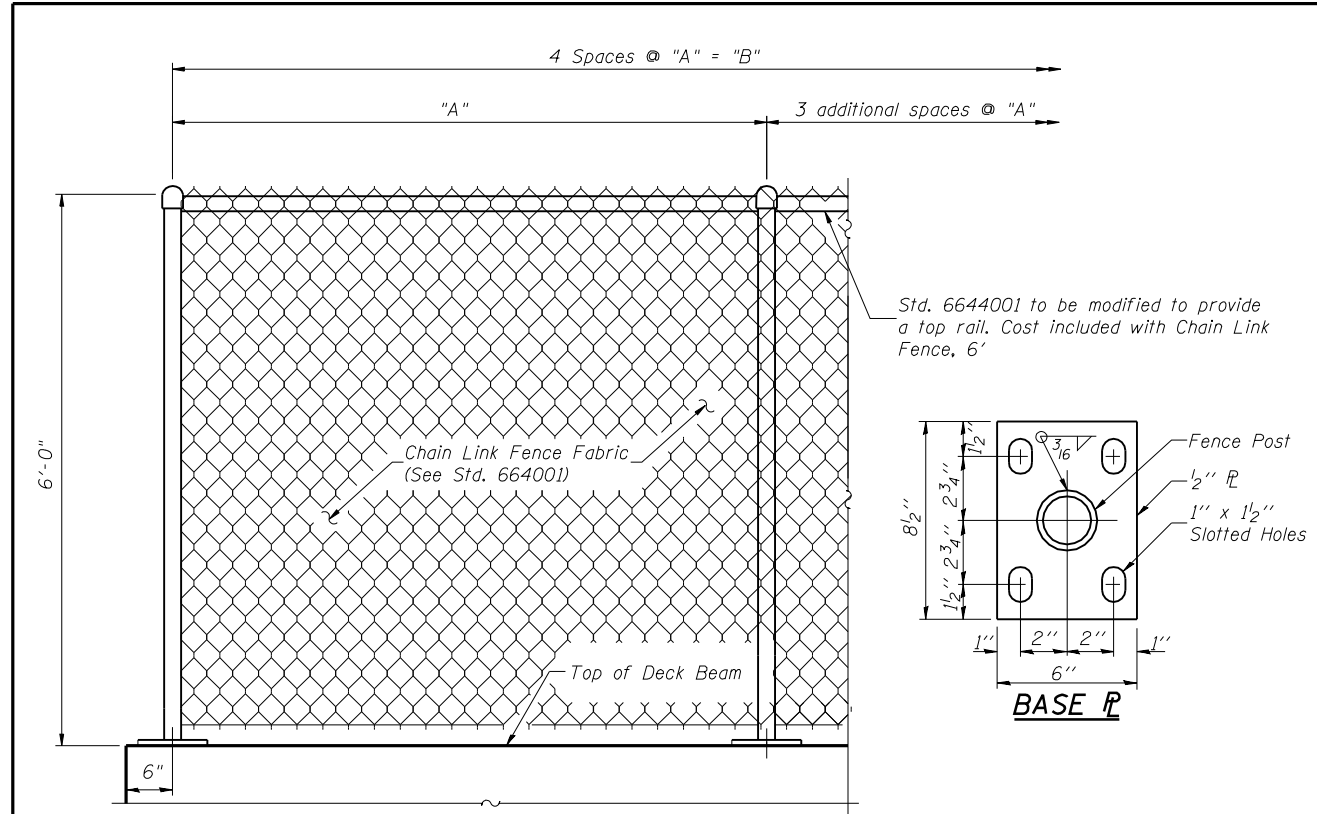
NOTES

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in. Reinforcement bars shall conform to ASTM A 706, Grade 60. (See Special Provisions). Two 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location. A minimum 2 1/2" diameter lifting pin shall be used to engage the lifting loops during handling. Corrosion Inhibitor, per Article 1020.05(b)(12) and 1021.06 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams. Compressive strength of prestressed concrete, f'c, shall be 5000 psi. Compressive strength of prestressed concrete at release, f'ci, shall be 4000 psi.

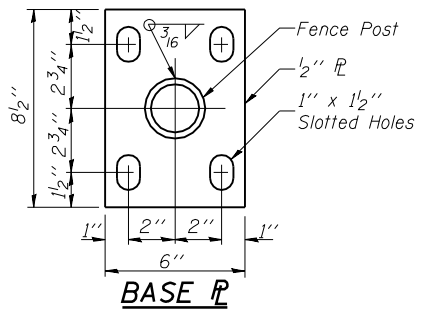
BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (11" depth)	Sq. Ft.	Structure #					
		#2	#3	#4	#5	#6	#7
		97	92	101	101	101	101

**11" X 52" PPC DECK BEAMS
STRUCTURES 2-7**

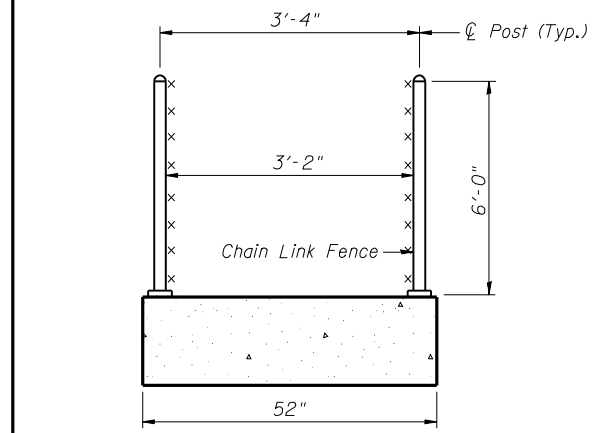


ELEVATION - CHAIN LINK FENCE

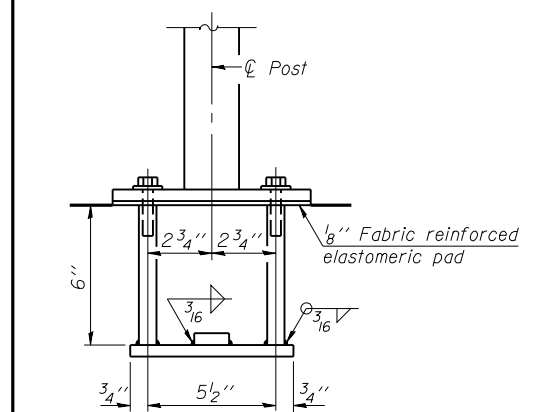


Note:
Cost of posts, anchor devices, mounting hardware, etc. included with Chain Link Fence, 6'. Billed on general plan and elevation sheet of respective structures.

Structure No.	"A"	"B"
2	5'-4 1/4"	21'-5"
3	5'-1"±	20'-4 1/8"
4	5'-7"±	22'-4 1/8"
5	5'-7"±	22'-4 1/8"
6	5'-7"	22'-4"
7	5'-7"	22'-4"

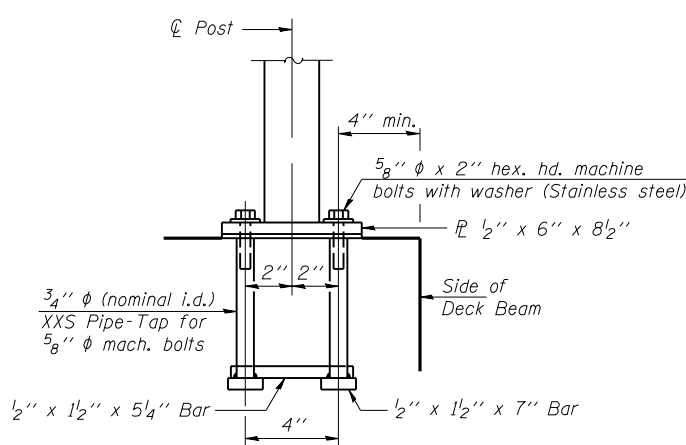


SECTION THRU DECK BEAM

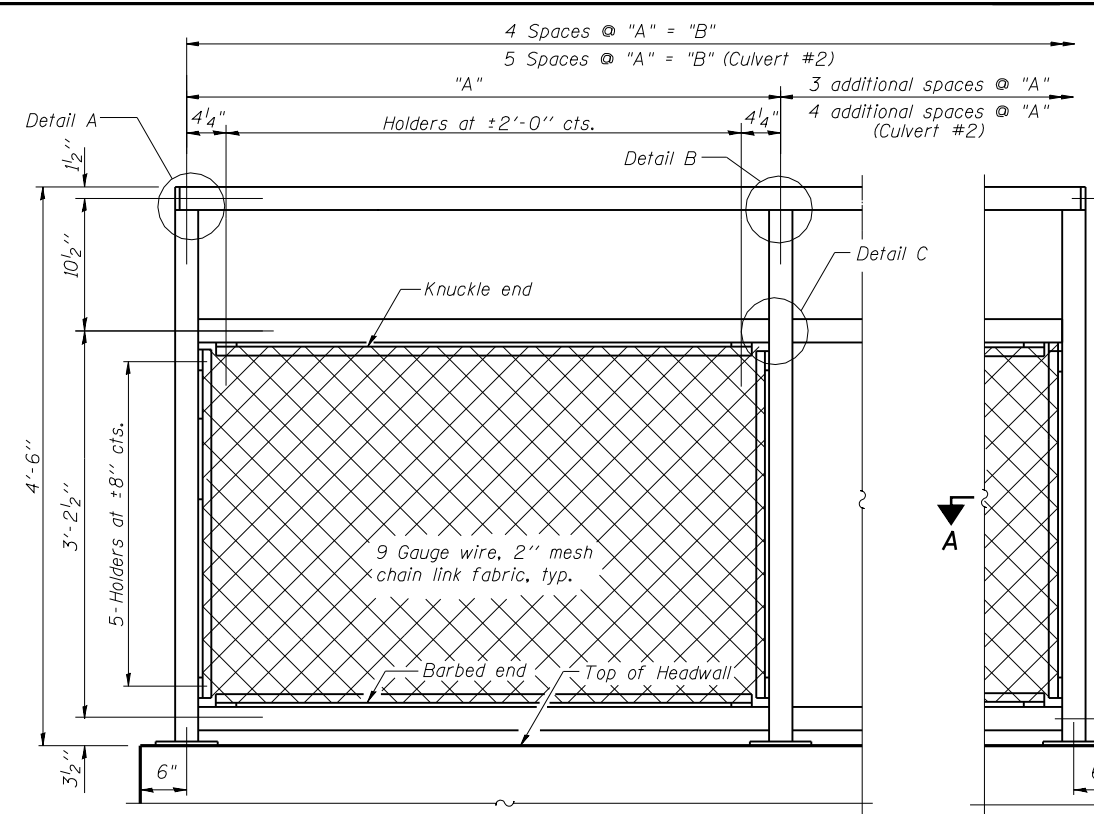


ANCHOR BOLT DETAILS

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



CHAIN LINK FENCE DETAILS



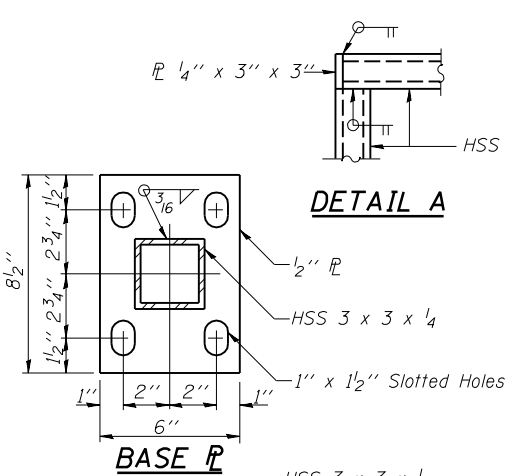
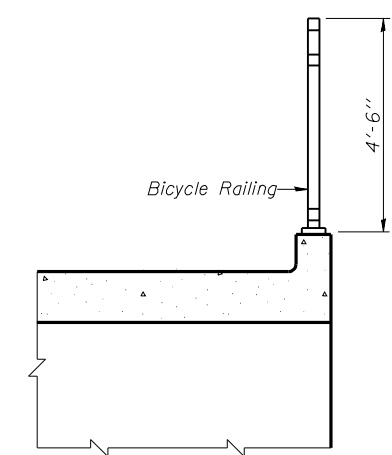
BICYCLE RAILING

BICYCLE RAILING

SECTION THRU HEADWALL

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

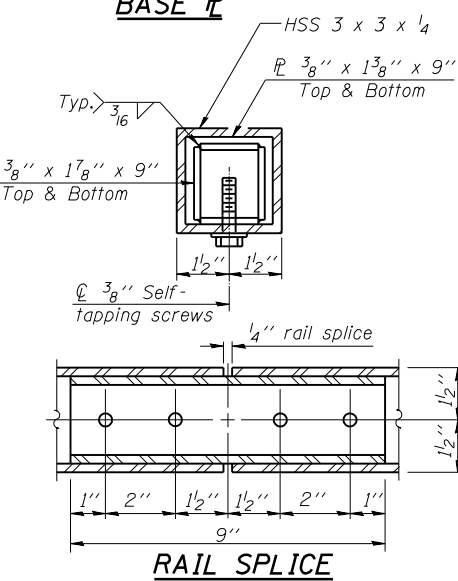
Location	"A"	"B"
Structure #1	6'-10 1/2"	27'-6"
Culvert #1	7'-0 3/8"	28'-1 1/2"
Culvert #2	9'-6 5/8"	47'-9 1/8"



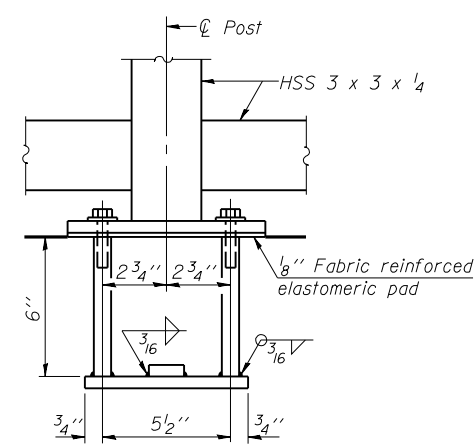
DETAIL A

DETAIL B

DETAIL C

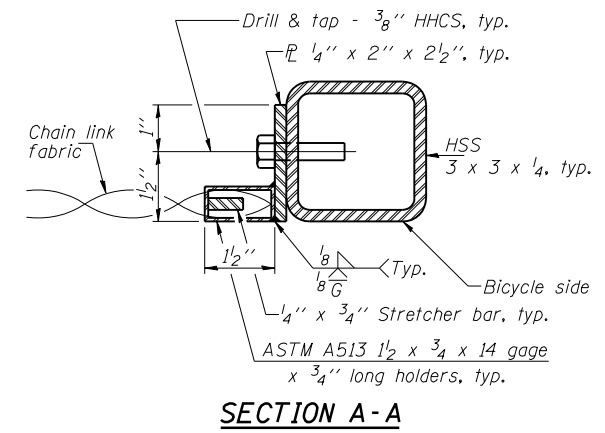


RAIL SPLICE



ANCHOR BOLT DETAILS

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

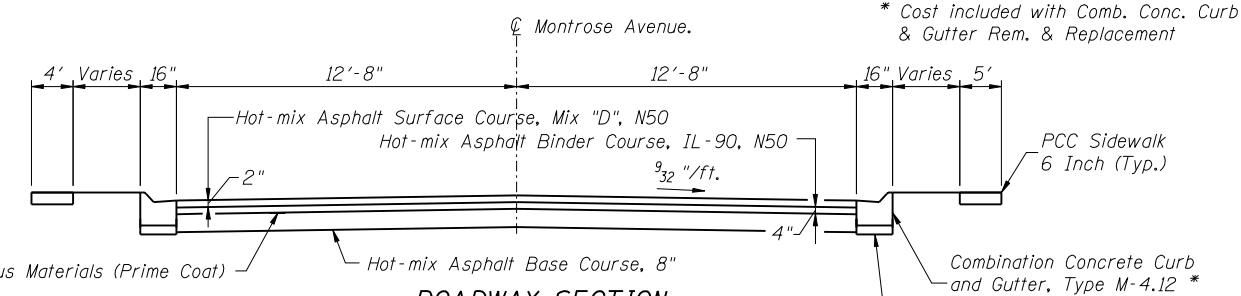
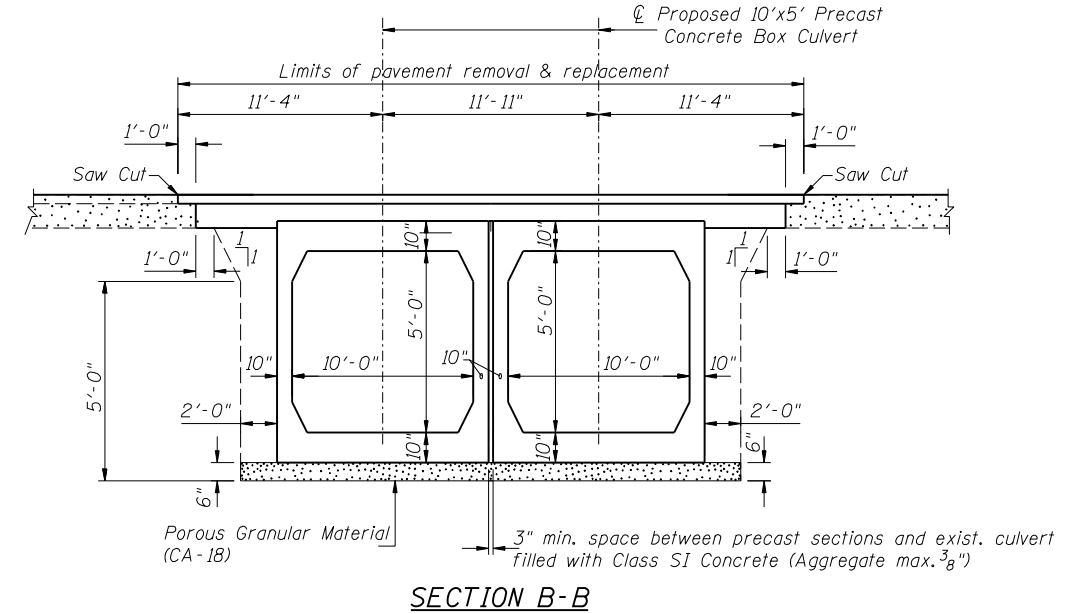
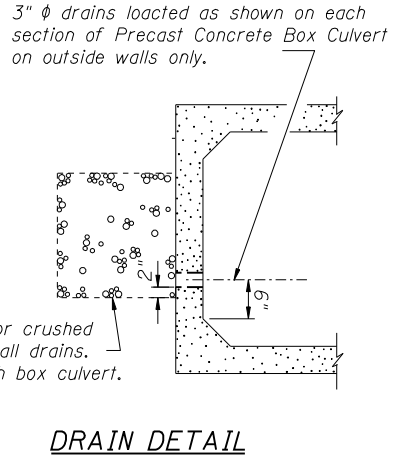
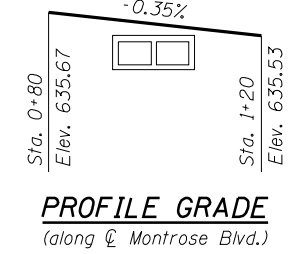
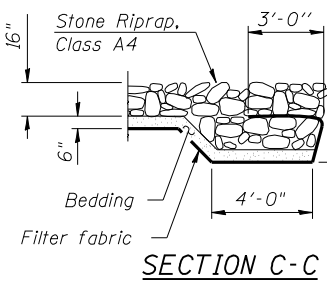
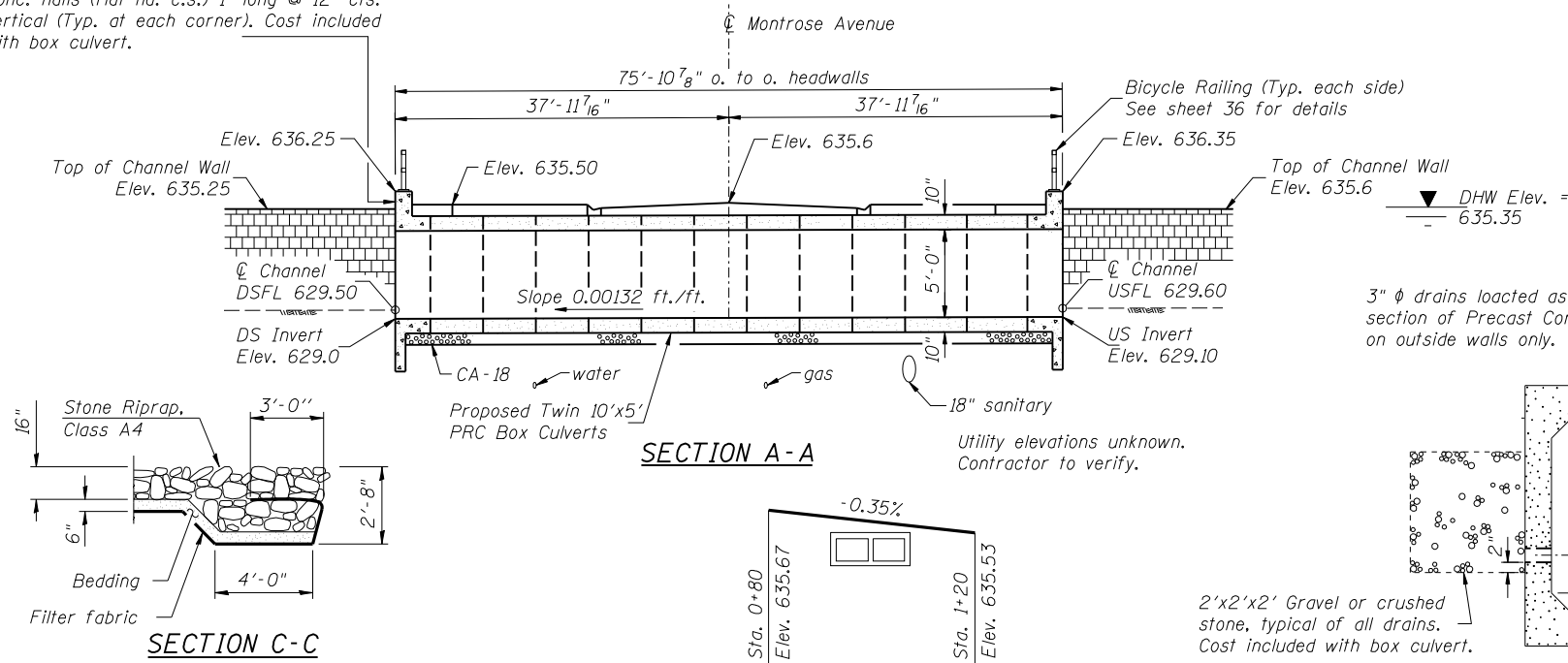


BICYCLE RAILING DETAILS

(10'-0" Maximum Post Spacing)

Designed By TMM Checked By JUF
 Drawn By JUF Checked By RLP
 1/29/2010 12:09:43 PM
 C:\Dwn\Proj\Imp\Projects\Crystal Creek\JUF\Chain Link Fence and Bicycle Railing Details.dgn

1/2" P/J (12" wide x retaining wall height)
Conc. nails (flat hd. c.s.) 1" long @ 12" cts.
vertical (Typ. at each corner). Cost included
with box culvert.



LOADING HS20-44
Allow 50#/sq. ft. for future wearing surface.

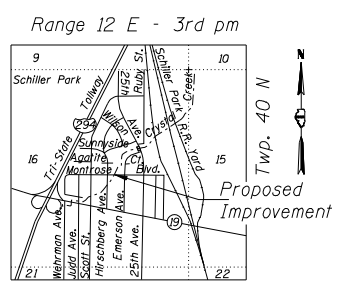
DESIGN SPECIFICATIONS
2002 AASHTO Bridge Design Specifications

DESIGN STRESSES
FIELD UNITS

f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)

PRECAST UNITS

f'c = 5,000 psi
fy = 65,000 psi (Welded Wire Fabric)
fy = 60,000 (Reinforcement)



LOCATION SKETCH

WATERWAY INFORMATION

Drainage Area = 4.24 sq. mi. Low Grade Elev. 635.53 @ Sta. 1+20

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Head - Ft.		Headwater El.	
			Exist.	Prop.	Exist.	Prop.	Exist.	Prop.
Design	10	305	45	100	633.58	2.47	0	636.05
Base	50	484	45	100	635.03	3.09	0.32	638.12
Overtopping	100	579	45	100	636.14	3.18	0.15	639.32
Max. Calc.	500							

* Cost included with Comb. Conc. Curb & Gutter Rem. & Replacement

CRYSTAL CREEK
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IL. DEPT. OF NATURAL RESOURCES
OFFICE OF WATER RESOURCES
LOADING HS20

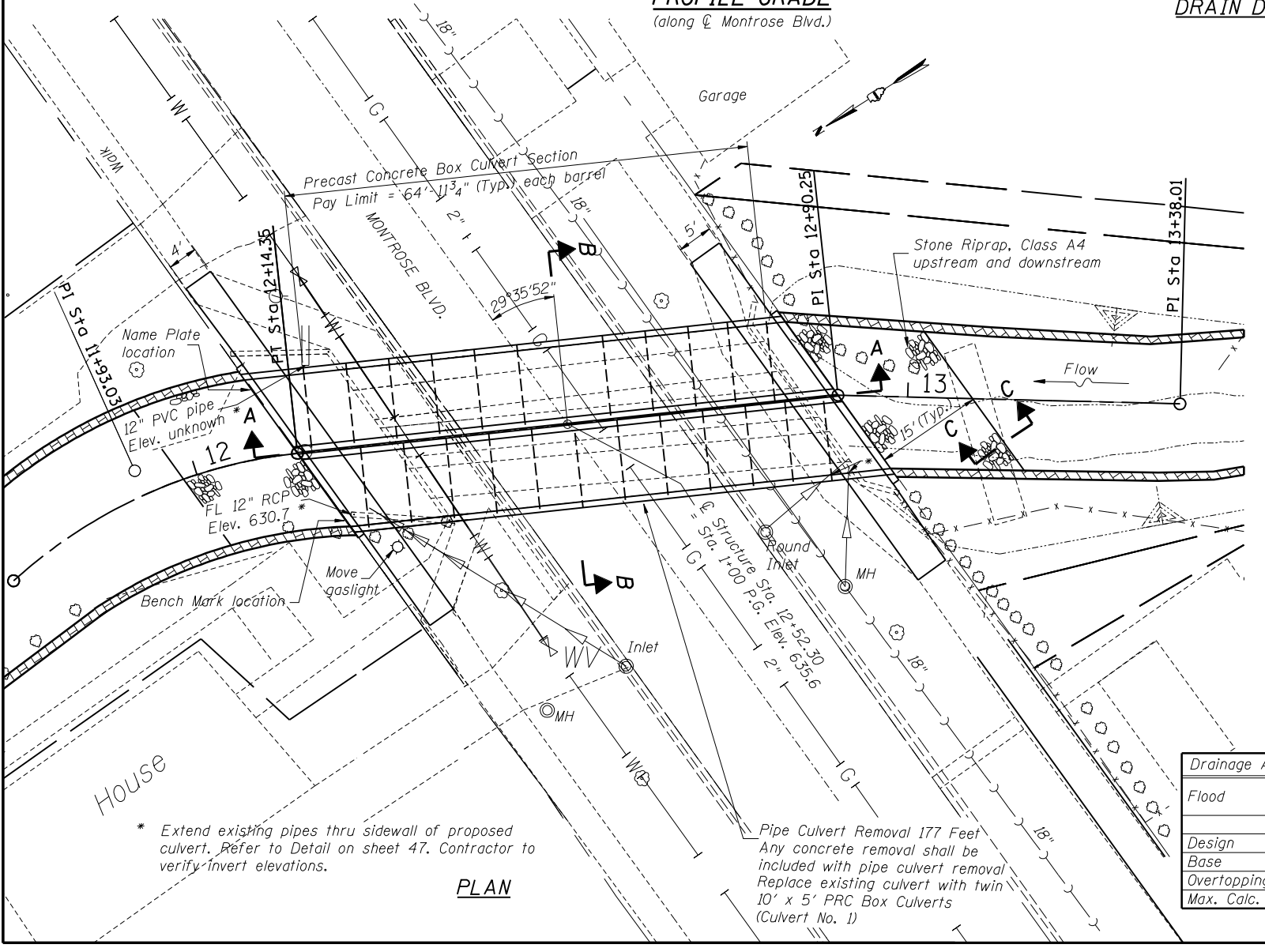
NAME PLATE
See Std. 515001
(Attach to downstream headwall)

GENERAL NOTES

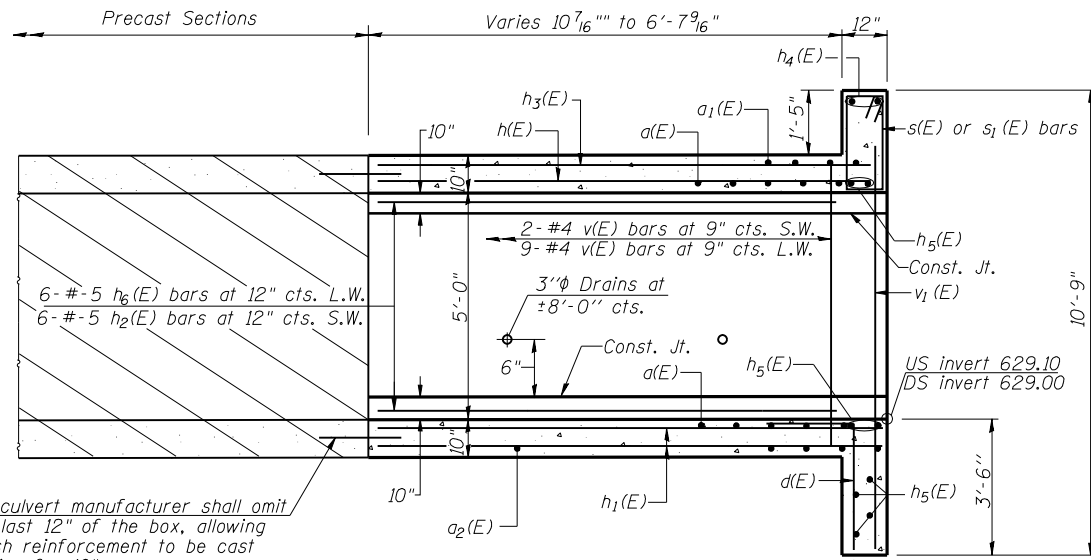
Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.
Reinforcement bars designated (E) shall be epoxy coated.
All exposed edges of concrete shall be beveled 3/4\"/>

TOTAL BILL OF MATERIAL

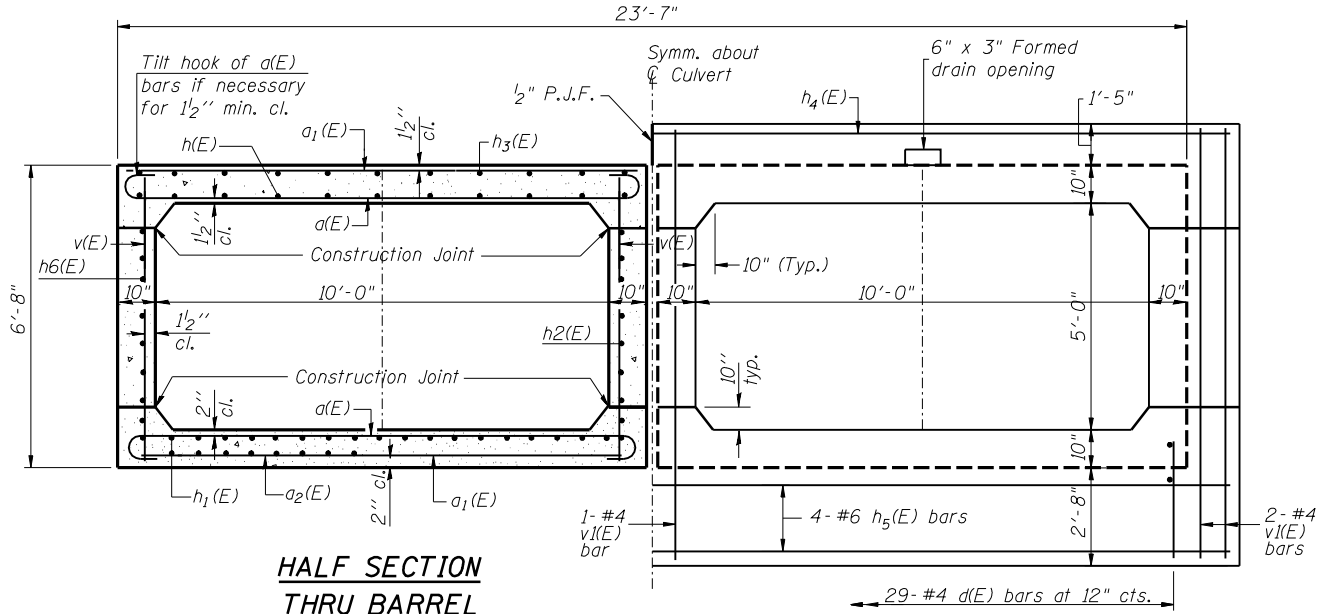
ITEM	UNIT	QTY.
Precast Concrete Box Culvert 10' x 5' (M273)	Foot	130
Concrete Box Culverts	Cu Yd	33.4
Reinforcement Bars, Epoxy Coated	Pound	4,130
Hot-mix Asphalt Base Course, 8"	Sq Yd	105
Hot-mix Asphalt Surface Course, Mix "D", N50	Ton	12
Hot-mix Asphalt Binder Course, IL-90, N50	Ton	25
Portland Cement Concrete Sidewalk 6 Inch	Sq Ft	503
Bicycle Railing	Foot	56
Stone Riprap, Class A4	Sq Yd	81
Filter Fabric	Sq Yd	81
Pavement Removal	Sq Yd	111
Combination Conc. Curb & Gutter Removal and Repl.	Foot	80
Pipe Culvert Removal	Foot	177
Bituminous Materials (Prime Coat)	Gallon	6
Name Plates	Each	1



Designed By: TMM Checked By: JUF
 Drawn By: JUF Checked By: RLP
 0:\Dwr\Proj\p\Projects\Crystal Creek\Culvert No 1 Montrose Avenue.dgn
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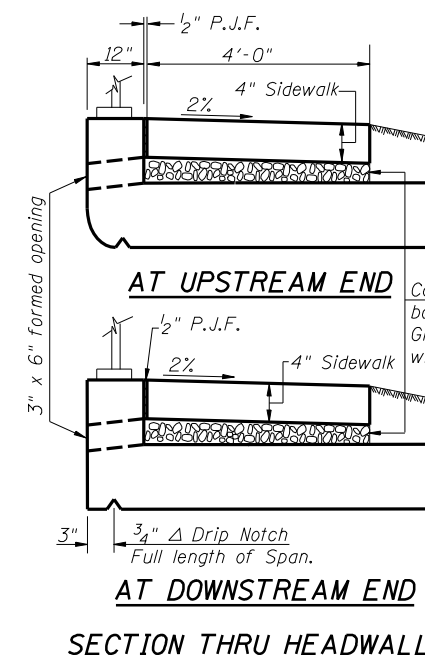


LONG SECTION
Dimensions are at right angles to ϕ Roadway

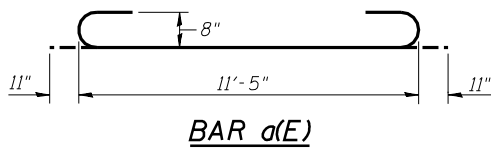


HALF SECTION THRU BARREL

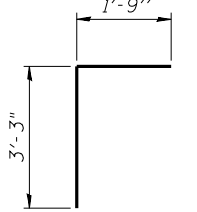
HALF END ELEVATION



SECTION THRU HEADWALL



BAR a(E)

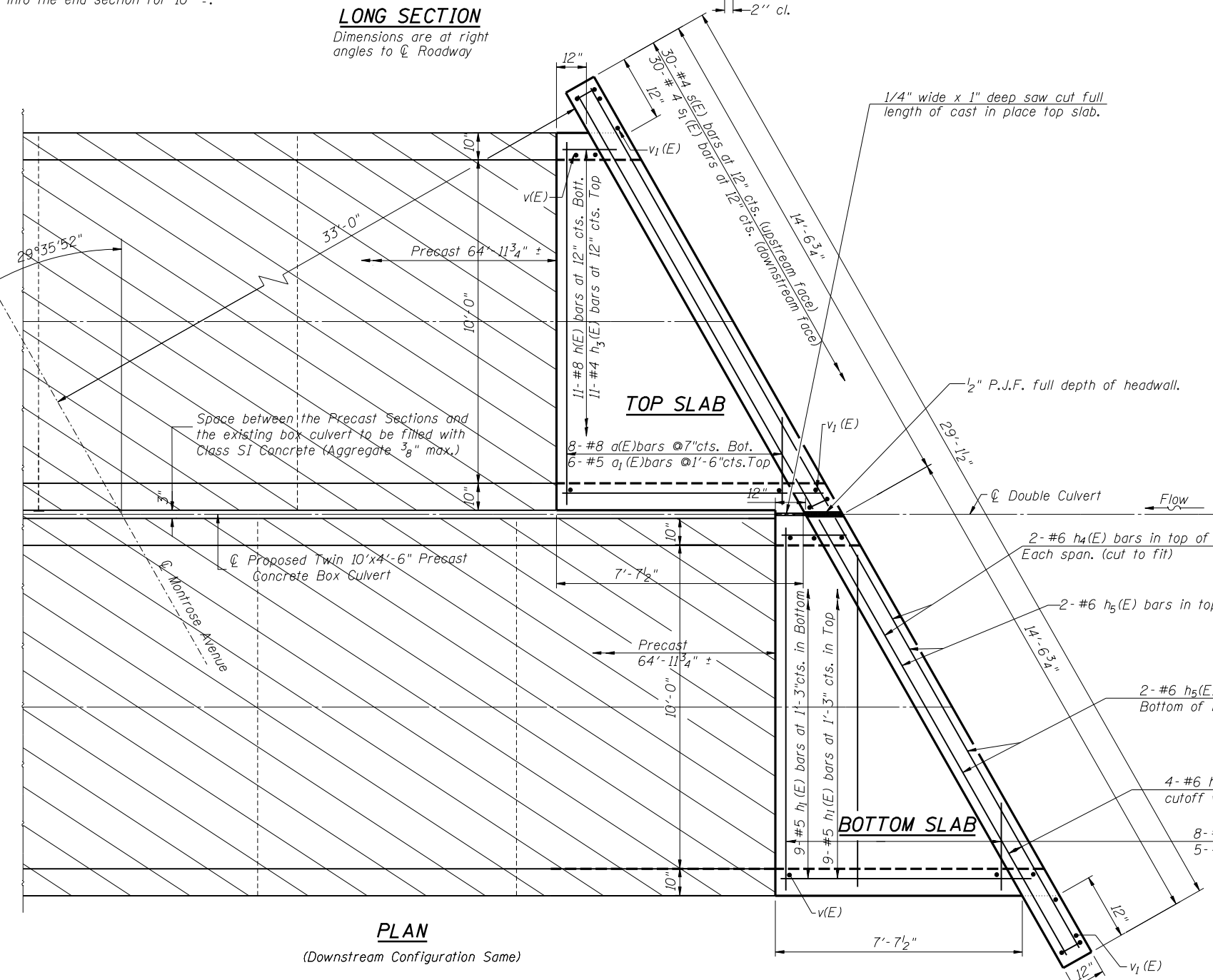


BAR d(E)

BILL OF MATERIAL

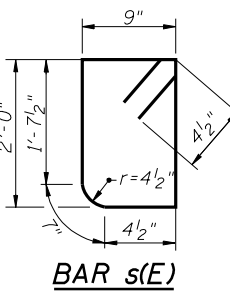
Bar	No.	Size	Length	Shape	
a(E)	32	#8	13'-3"	U	
a1(E)	12	#5	11'-5"	—	
a2(E)	10	#4	11'-5"	—	
d(E)	58	#4	5'-0"	T	
h(E)	22	#8	8'-5"	—	
h1(E)	36	#5	8'-5"	—	
h2(E)	24	#5	1'-10"	—	
h3(E)	22	#4	8'-5"	—	
h4(E)	8	#6	14'-9"	—	
h5(E)	16	#6	28'-10"	—	
h6(E)	24	#5	8'-6"	—	
v(E)	44	#4	6'-4"	—	
v1(E)	12	#4	10'-6"	—	
s(E)	30	#4	6'-1"	□	
s1(E)	30	#4	6'-3"	□	
Concrete Box Culverts				Cu. Yd.	33.4
Reinforcement Bars (Epoxy Coated)				Pound	4,130

Note: Totals reflect 2 end sections
L.W. = Long Wall
S.W. = Short Wall

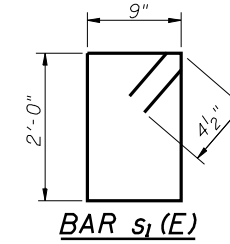


PLAN
(Downstream Configuration Same)

Cut a(E), a1(E), a2(E), h(E), h1(E) and h3(E) bars to fit skew. Use balance of bar in opposite end. Place hooks at alternating ends.



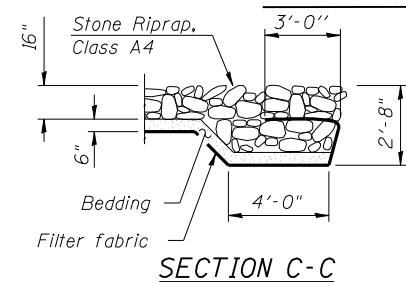
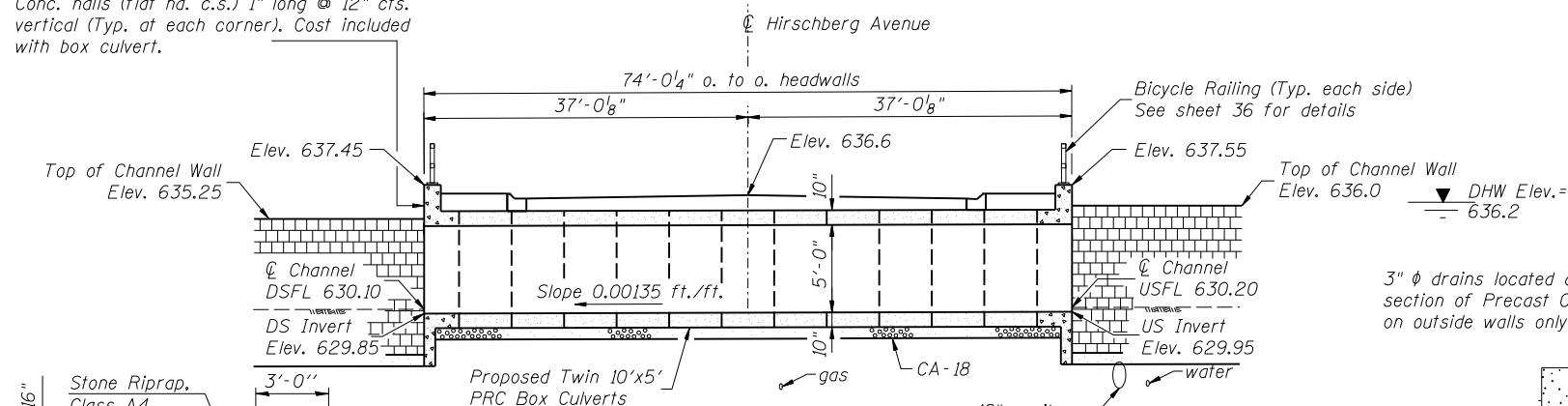
BAR s(E)



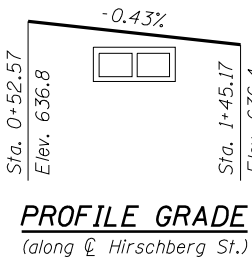
BAR s1(E)

Designed By TMM Checked By JJF
 Drawn By JJF Checked By RLP
 1/29/2010 12:11:14 PM
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1/2" PJF (12" wide x retaining wall height)
Conc. nails (flat hd. c.s.) 1" long @ 12" cts.
vertical (Typ. at each corner). Cost included
with box culvert.



SECTION A-A

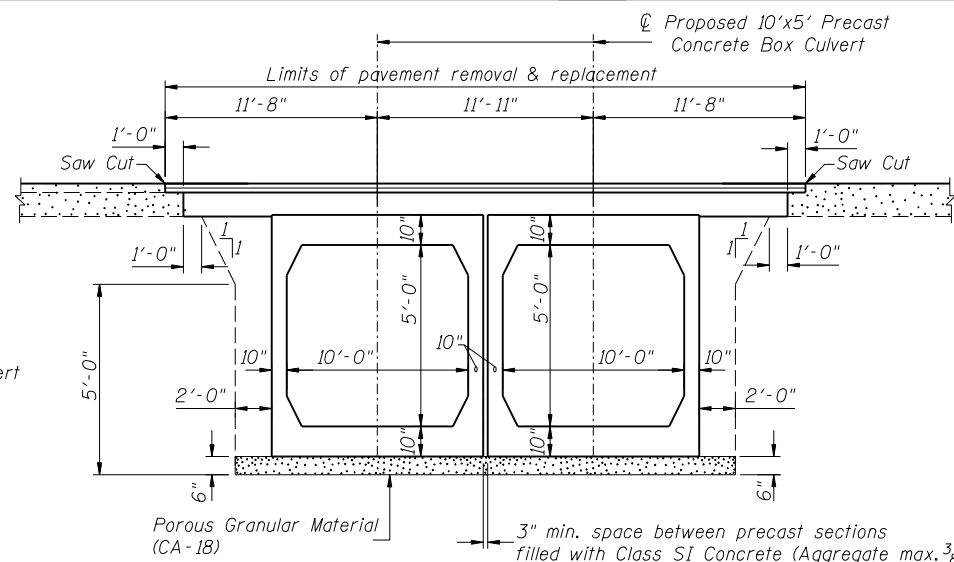


PROFILE GRADE
(along C Hirschberg St.)

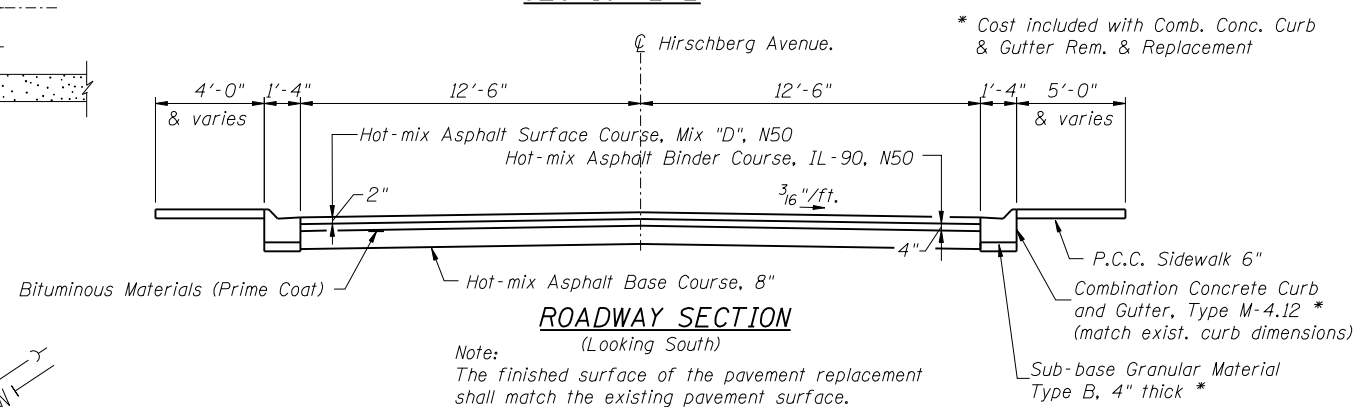
3" ϕ drains located as shown on each section of Precast Concrete Box Culvert on outside walls only.

2'x2'x2' Gravel or crushed stone, typical of all drains. Cost included with box culvert.

DRAIN DETAIL



SECTION B-B



ROADWAY SECTION
(Looking South)

Note:
The finished surface of the pavement replacement shall match the existing pavement surface.

* Cost included with Comb. Conc. Curb & Gutter Rem. & Replacement

P.C.C. Sidewalk 6"
Combination Concrete Curb and Gutter, Type M-4.12 *
(match exist. curb dimensions)
Sub-base Granular Material Type B, 4" thick *

LOADING HS20-44
Allow 50#/sq. ft. for future wearing surface.

DESIGN SPECIFICATIONS
2002 AASHTO Bridge Design Specifications

DESIGN STRESSES
FIELD UNITS

$f'_c = 3,500$ psi
 $f_y = 60,000$ psi (Reinforcement)

PRECAST UNITS

$f'_c = 5,000$ psi
 $f_y = 65,000$ psi (Welded Wire Fabric)
 $f_y = 60,000$ (Reinforcement)

CRYSTAL CREEK
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OFFICE OF WATER RESOURCES
LOADING HS20

NAME PLATE
See Std. 515001
(Attach to downstream headwall)

GENERAL NOTES

Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.
Reinforcement bars designated (E) shall be epoxy coated.
All exposed edges of concrete shall be beveled 3/4".
For backfilling and embankment, see Standard Specifications.
It shall be the responsibility of the Contractor to divert the stream flow during construction in order to keep the construction areas free of water. The method of water diversion shall be subject to the approval of the Engineer, and the cost shall be included with "Concrete Box Culverts".
This box culvert has a fill height of 0.5 feet. The Precast Concrete Box Culvert sections shall conform to the requirements of AASHTO M-273.

TOTAL BILL OF MATERIAL

ITEM	UNIT	QTY.
Precast Concrete Box Culvert 10' x 5' (M273)	Foot	99
Concrete Box Culverts	Cu Yd	72.1
Reinforcement Bars, Epoxy Coated	Pound	9,160
Hot-mix Asphalt Base Course, 8"	Sq Yd	173
Hot-mix Asphalt Surface Course, Mix "D", N50	Ton	21
Hot-mix Asphalt Binder Course, IL-90, N50	Ton	41
Portland Cement Concrete Sidewalk 6 Inch	Sq Ft	623
Bicycle Railing	Foot	96
Stone Riprap, Class A4	Sq Yd	127
Filter Fabric	Sq Yd	127
Pavement Removal	Sq Yd	183
Combination Conc. Curb and Gutter Removal and Repl.	Foot	64
Removal of Existing Structures No. 8	Foot	63
Bituminous Materials (Prime Coat)	Gallon	9
Name Plates	Each	1

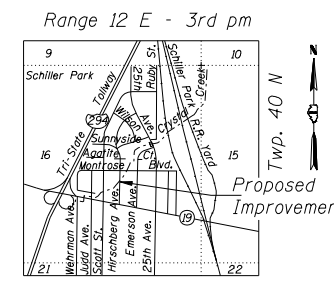
WATERWAY INFORMATION

Drainage Area = 4.24 sq. mi. Low Grade Elev. 636.4 @ Sta. 1+45.17

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.		Head - Ft.		Headwater E.L.	
			Exist.	Prop.	Exist.	Prop.	Exist.	Prop.	Exist.	Prop.
Design	10	305	67.5	100	634.22	2.28	0.07	636.5	634.29	
Base	50	484	67.5	100	635.91	2.23	0.29	638.14	636.2	
Overtopping	100	579	67.5	100	636.79	2.53	0	639.32	636.75	
Max. Calc.	500									

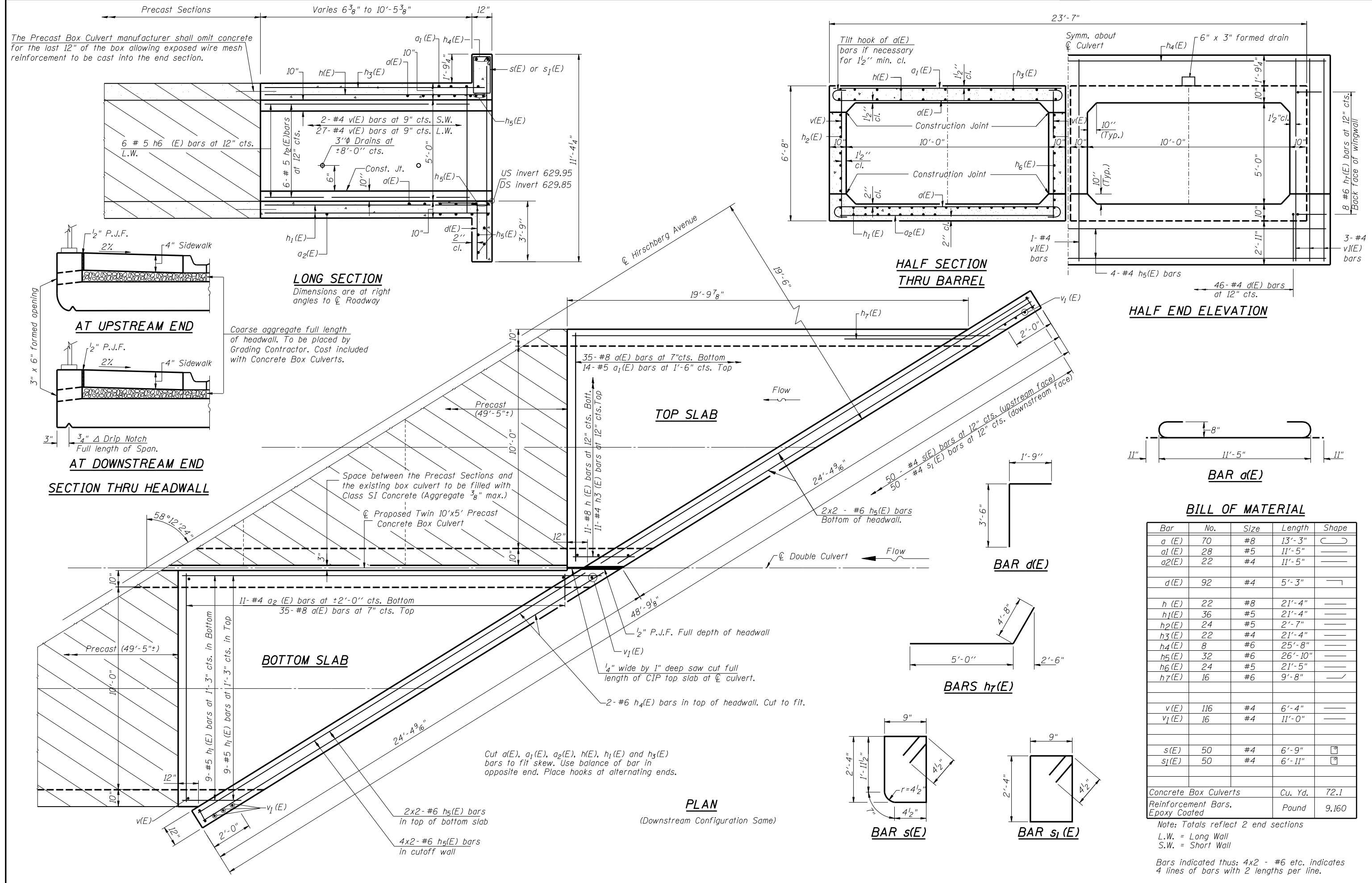
Note:
Extend existing 8" concrete pipe and 6" clay tile thru sidewall of proposed culvert. Refer to Detail on sheet 47. Contractor to verify invert elevations.

PLAN

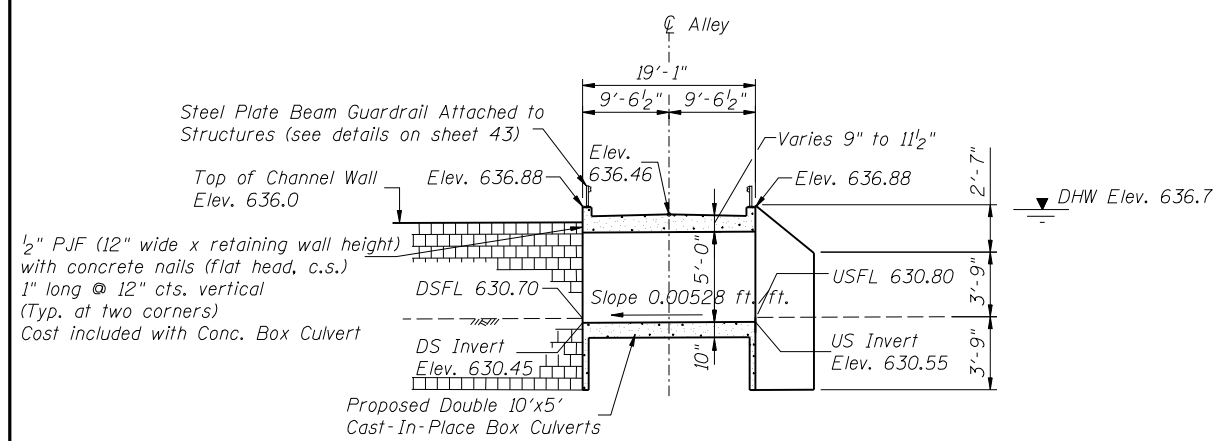


LOCATION SKETCH

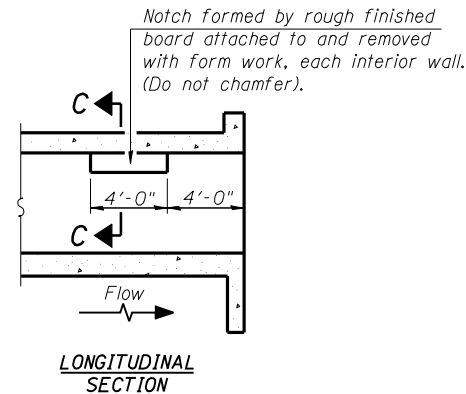
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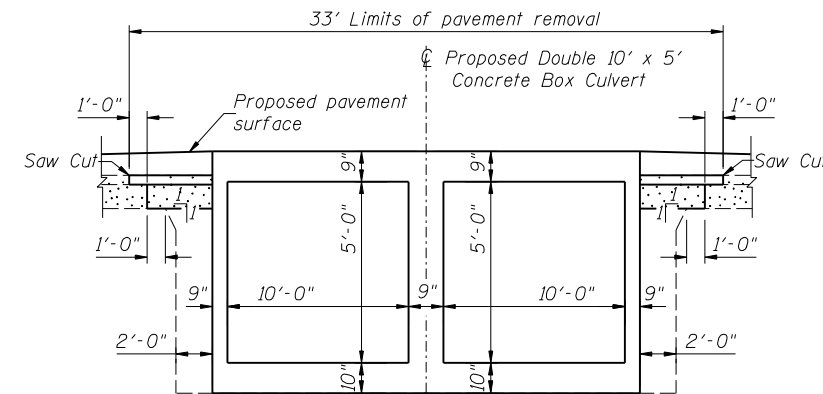
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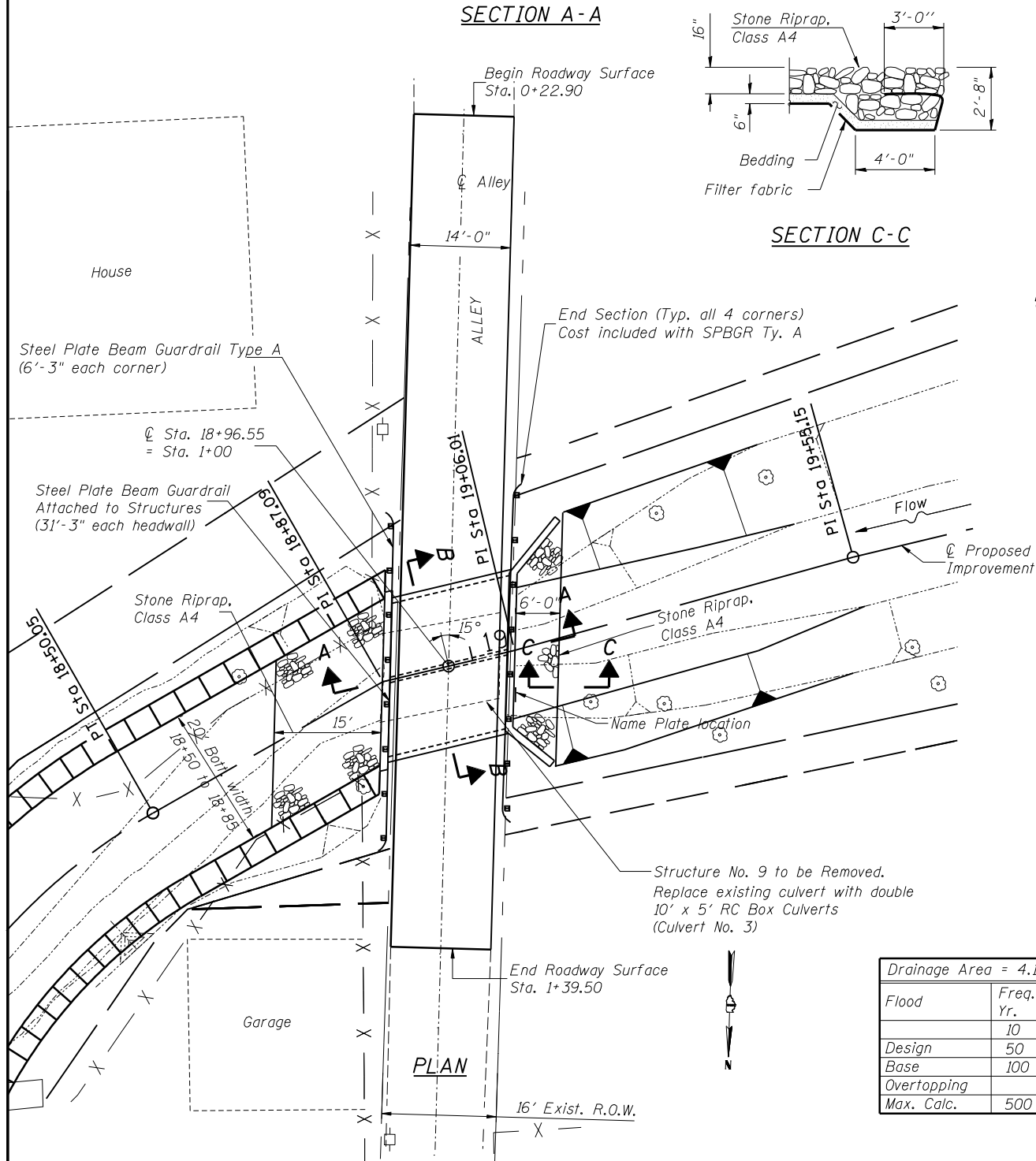
SECTION A-A



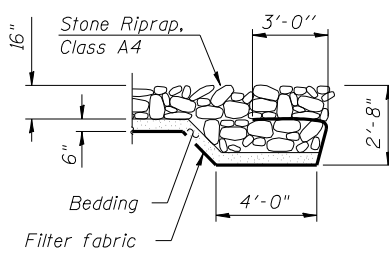
LONGITUDINAL SECTION



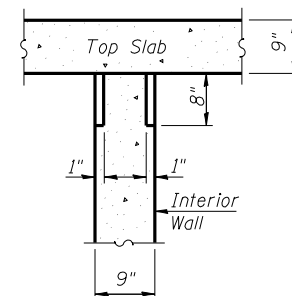
SECTION B-B



PLAN

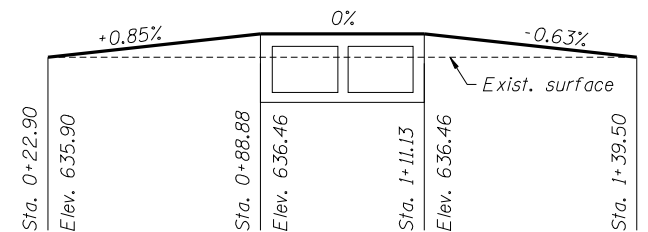


SECTION C-C

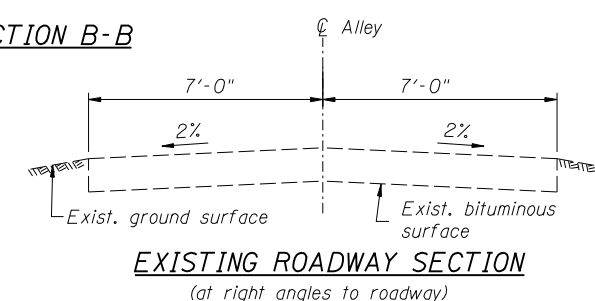


SECTION C-C

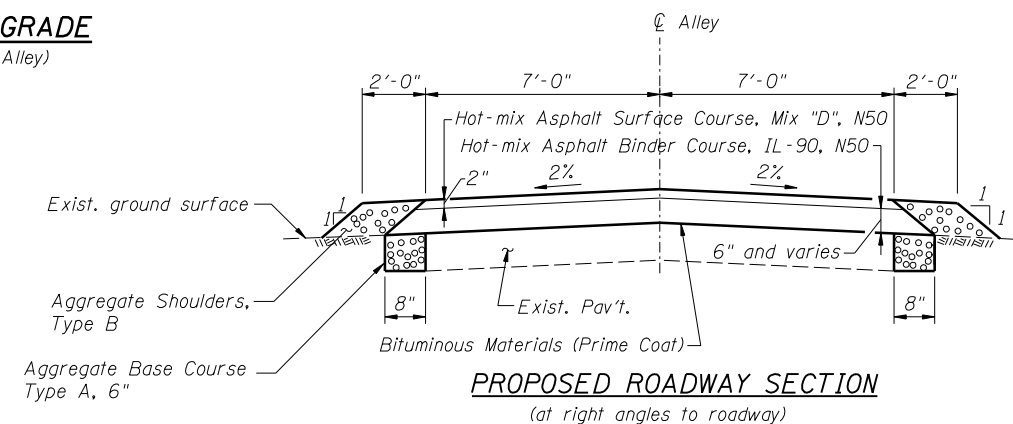
PHOEBE NESTING
SITE DETAILS
(Downstream End Only)



PROFILE GRADE
(along Centerline)



EXISTING ROADWAY SECTION
(at right angles to roadway)



PROPOSED ROADWAY SECTION
(at right angles to roadway)

GENERAL NOTES

- Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60.
- Reinforcement bars designated (E) shall be epoxy coated.
- All exposed edges of concrete shall be beveled 3/4".
- Precast alternate is not allowed.
- For backfilling and embankment, see Standard Specifications.
- Place permanent Bench Mark on downstream headwall.

- LOADING HS20-44**
Allow 50#/sq. ft. for future wearing surface.
- DESIGN SPECIFICATIONS**
2002 AASHTO Bridge Design Specifications

DESIGN STRESSES
FIELD UNITS

f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)

CRYSTAL CREEK
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OFFICE OF WATER RESOURCES
LOADING HS20

NAME PLATE

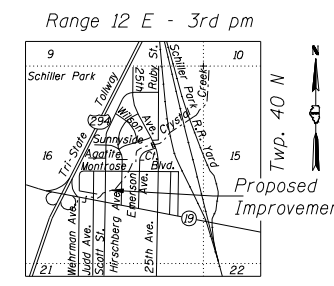
See Std. 515001

Note: Attach name plate to upstream headwall.

WATERWAY INFORMATION

Drainage Area = 4.16 sq. mi. Low Grade Elev. 635.90 @ Sta. 0+22.90

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.	Head - Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	10	305	45	108	634.84	2.38	0	637.22	634.75
Base	50	484	45	108	636.68	1.75	0.02	638.43	636.7
Overtopping	100	579	45	108	637.27	2.24	0	639.51	637.25
Max. Calc.	500								



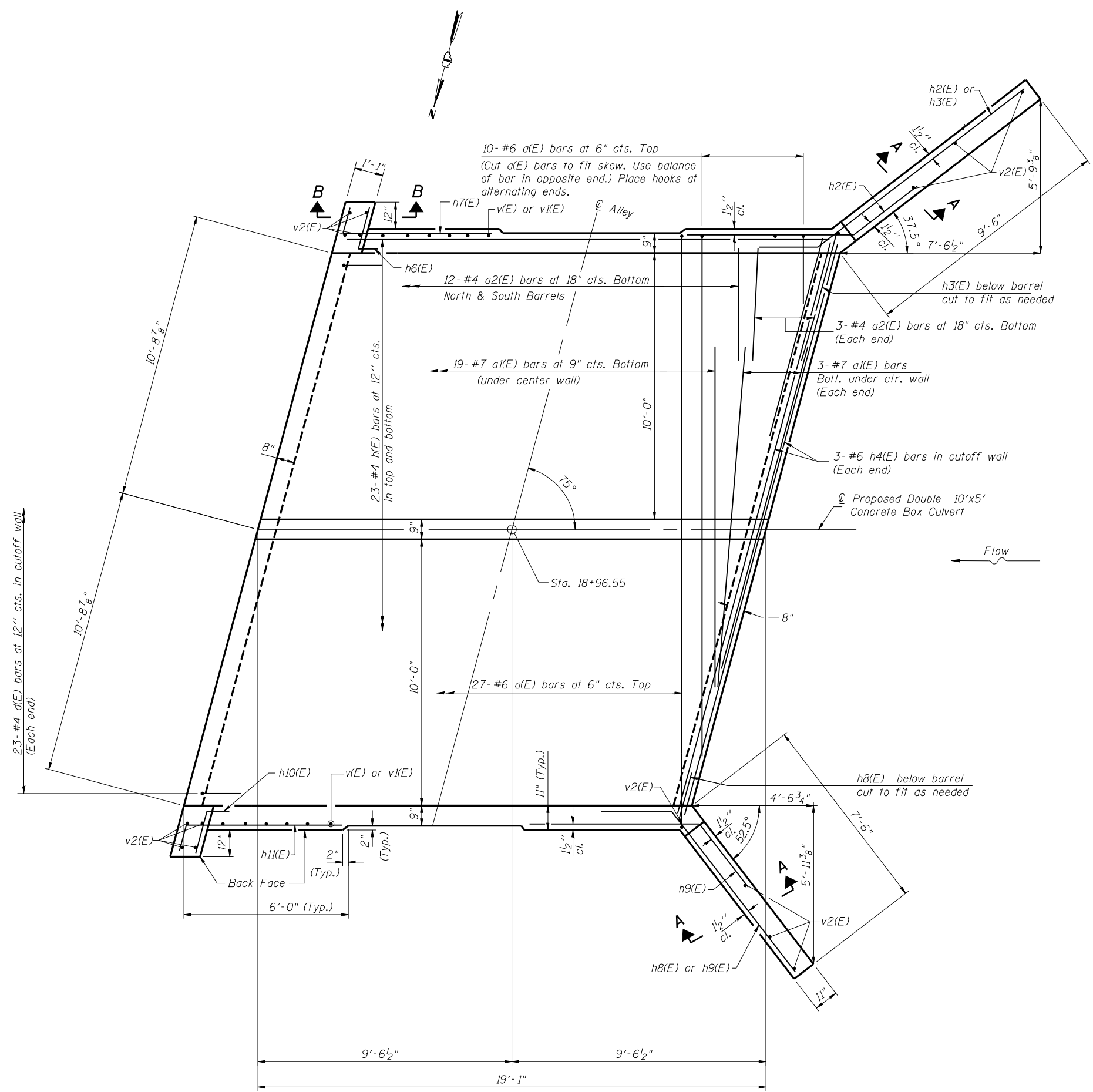
LOCATION SKETCH

TOTAL BILL OF MATERIAL

ITEM	UNIT	QTY.
Concrete Box Culvert	Cu Yd	45.2
Reinforcement Bars, Epoxy Coated	Pound	8,380
Bituminous Materials (Prime Coat)	Gal	7
Hot-mix Asphalt Surface Course, Mix "D", N50	Ton	16
Hot-mix Asphalt Binder Course, IL-90, N50	Ton	49
Aggregate Base Course, Type A 6"	Sq Yd	14
Aggregate Shoulders, Type B	Ton	10
Pavement Removal	Sq Yd	51
Removal of Existing Structures No. 9	Each	1
Name Plates	Each	1
Stone Riprap, Class A4	Sq Yd	59
Filter Fabric	Sq Yd	59
Steel Plate Beam Guardrail Attached to Structures	Foot	62.5
Steel Plate Beam Guardrail Type A	Foot	25

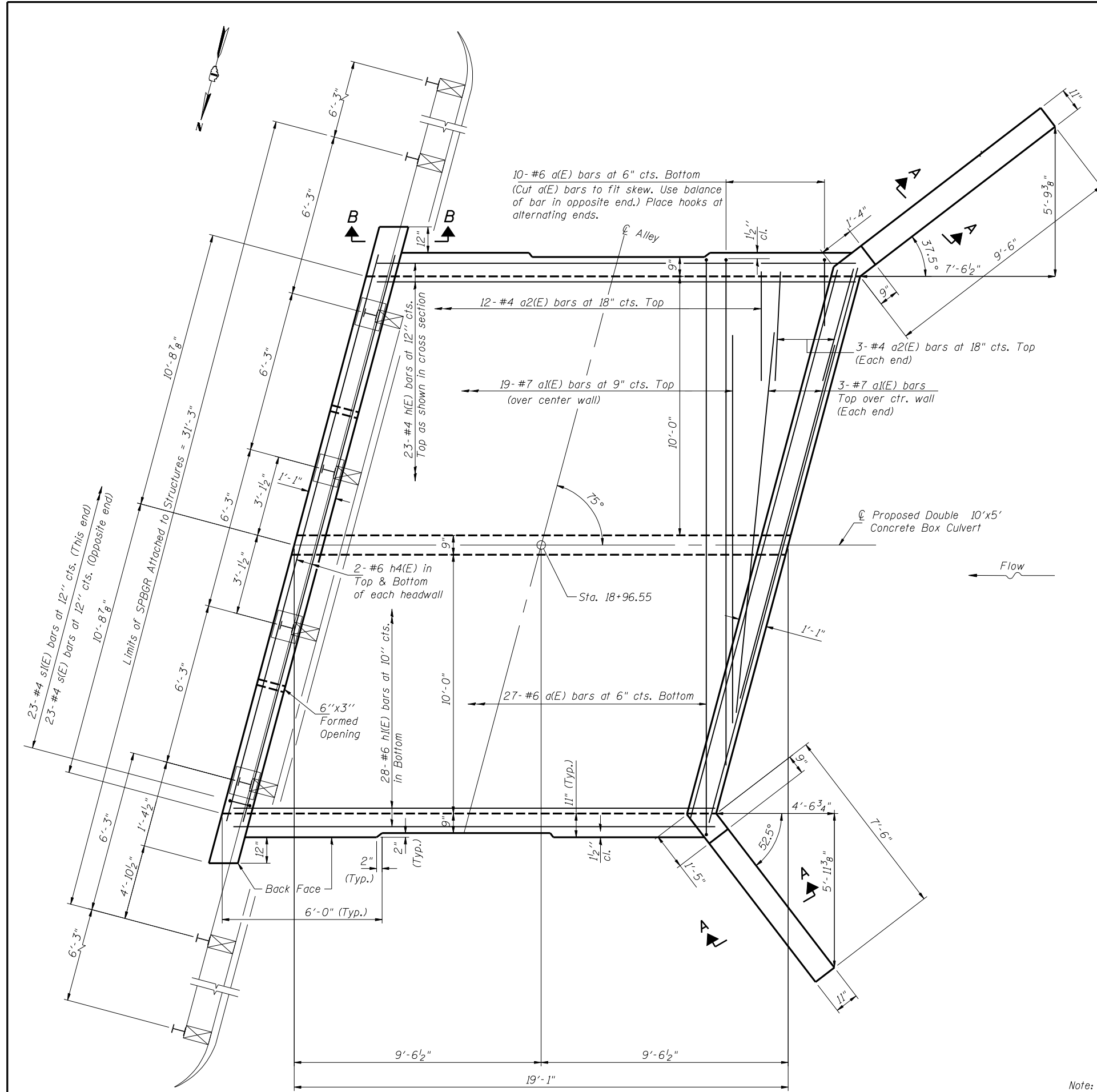
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 Drawn By JJF Checked By RLP
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 Drawn By JJF Checked By TMM
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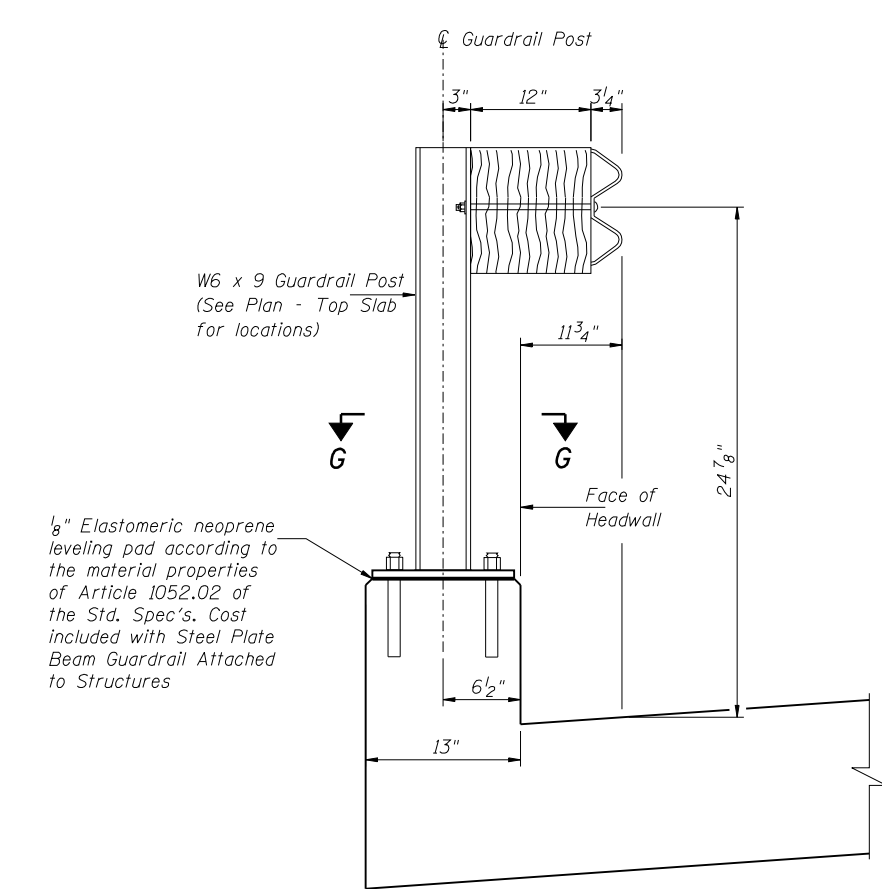


PLAN - BOTTOM SLAB

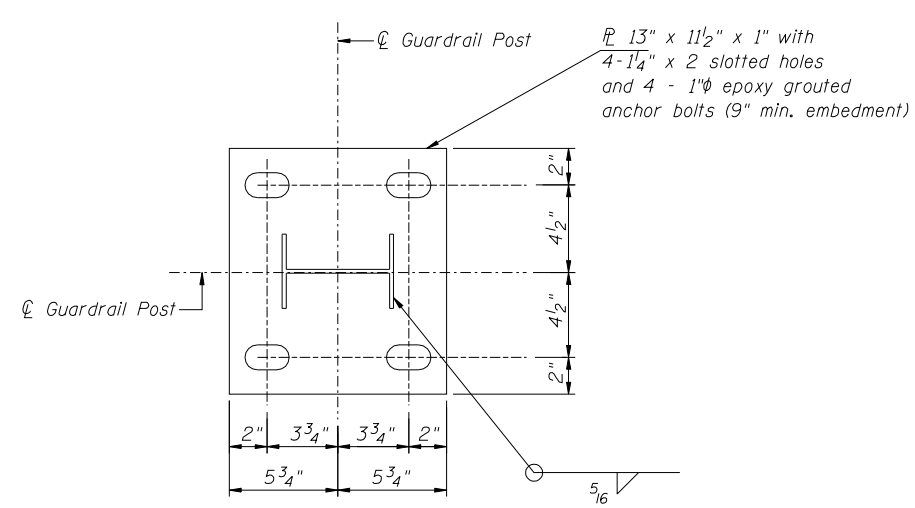
Notes:
Work this sheet with sheets 41, 43, and 44
For Section A-A and B-B see sheet 44



PLAN - TOP SLAB



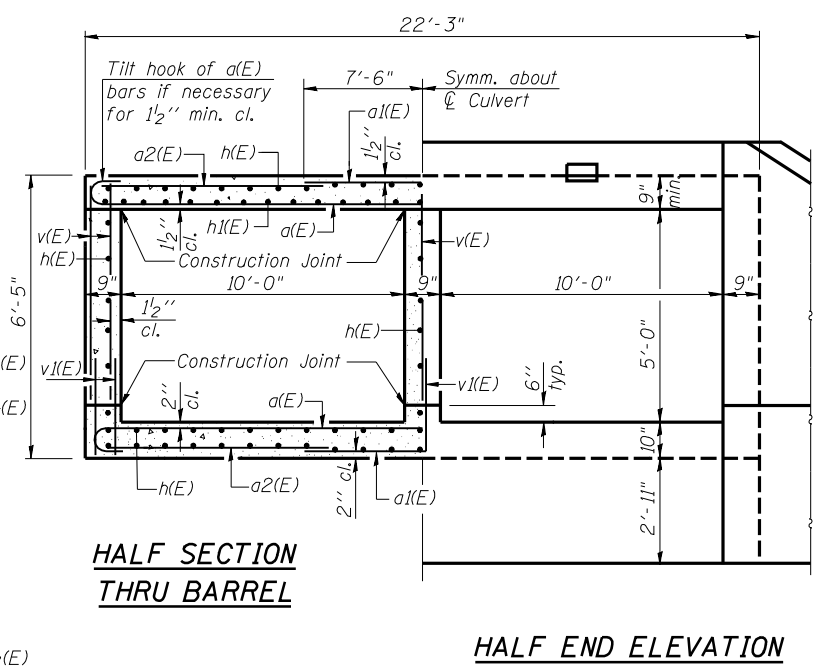
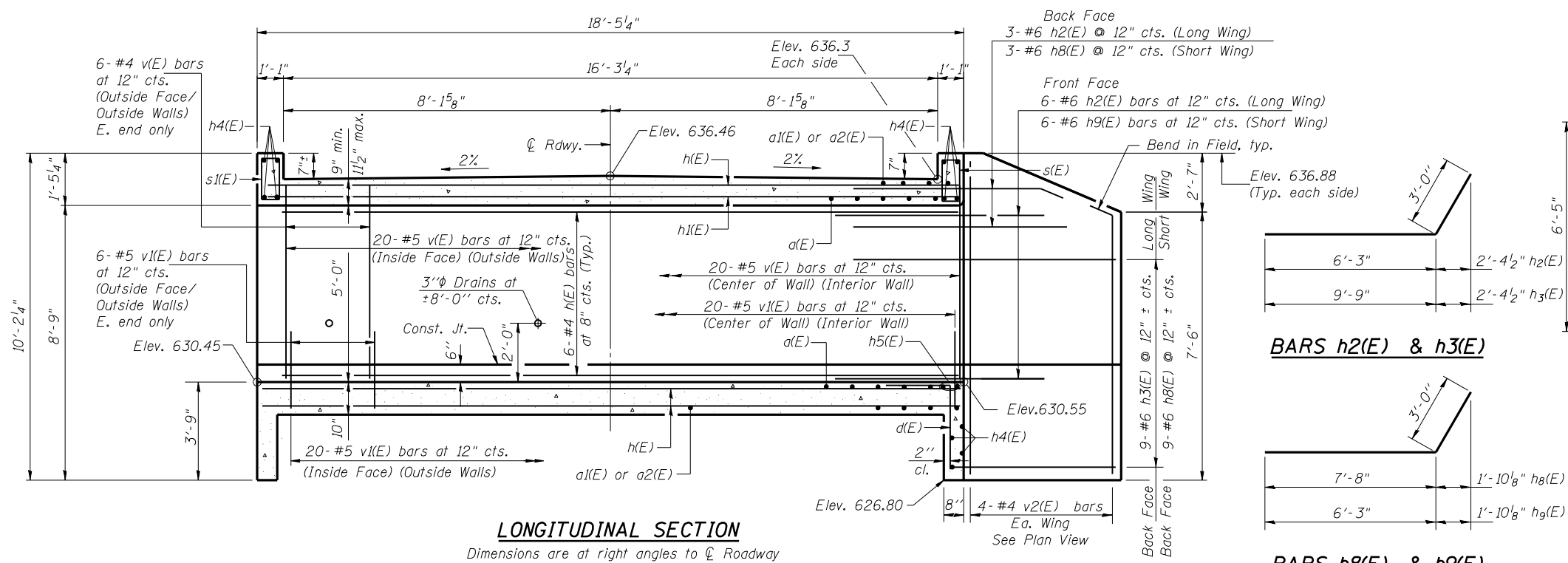
GUARDRAIL POST ANCHORAGE DETAIL
(4 posts required per headwall)



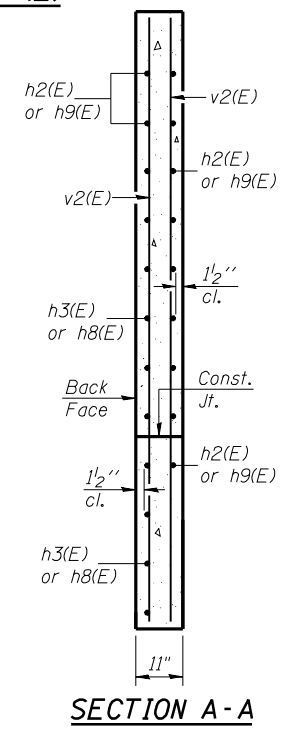
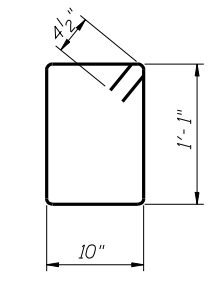
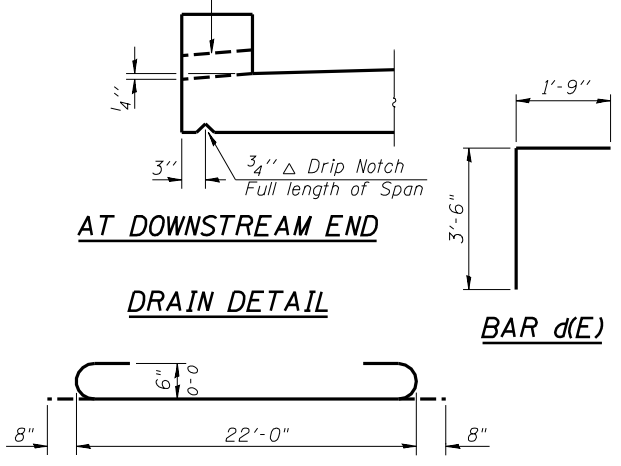
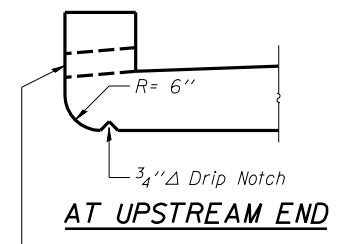
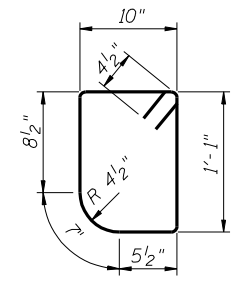
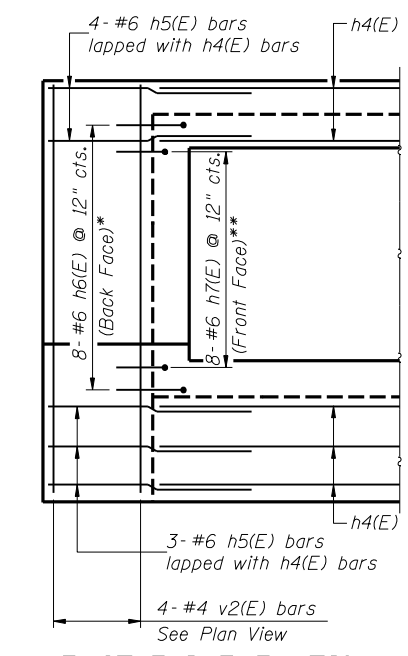
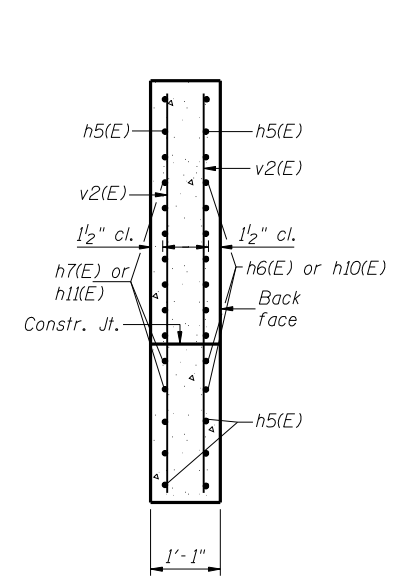
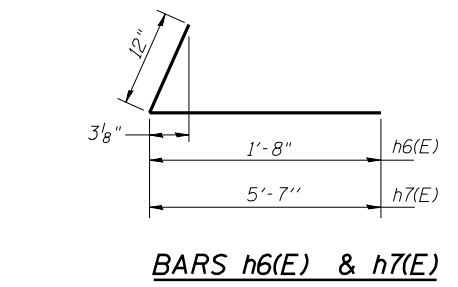
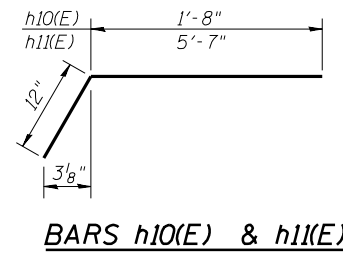
SECTION G-G

Note:
Work this sheet with sheets 41, 42, and 44

Designed By TMM Checked By RLP
Drawn By JUF Checked By TMM
1/29/2010 12:15:07 PM
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Notes:
A distance of half the length of the wingwall but not less than six feet of the barrel shall be poured monolithically with the wingwalls.



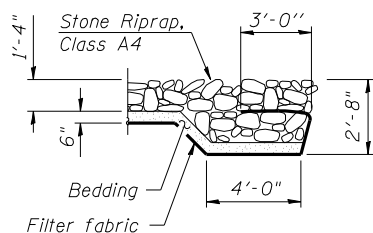
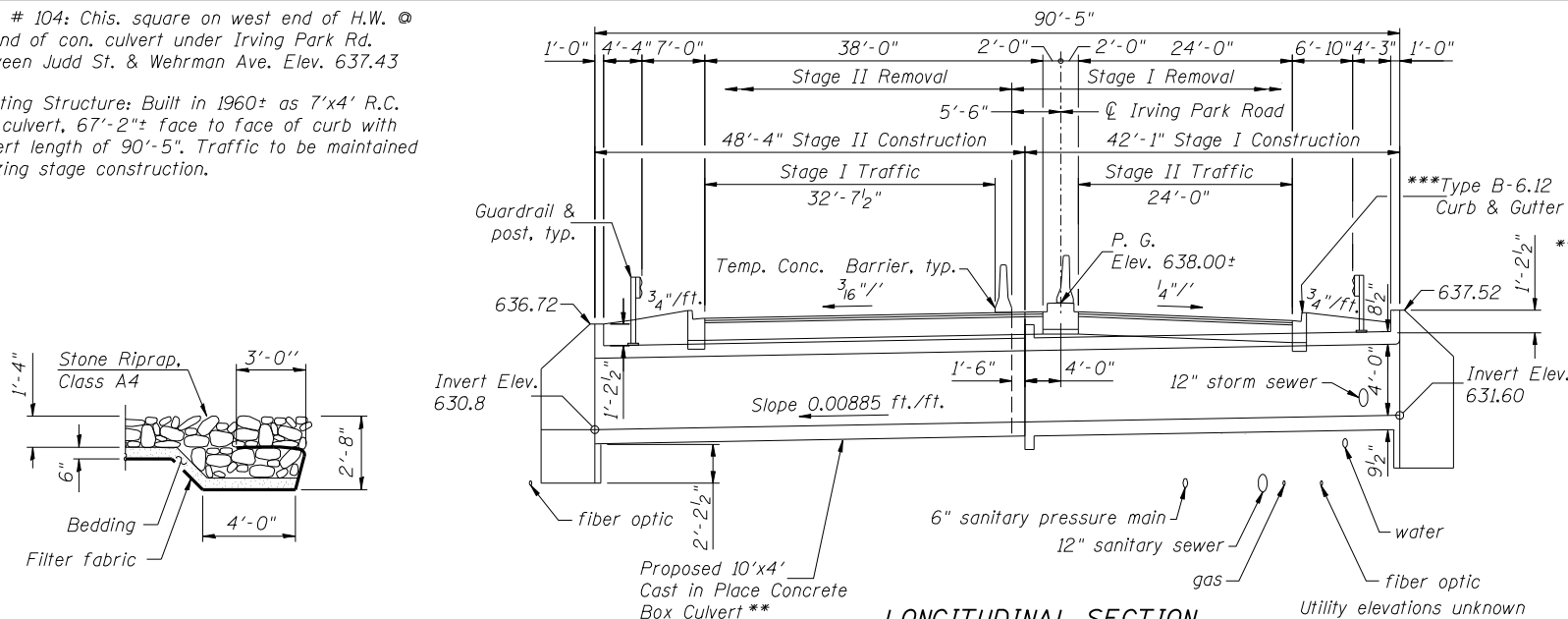
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	74	#6	23'-4"	[U-shape]
a1(E)	44	#7	15'-0"	[U-shape]
a2(E)	60	#4	6'-0"	[U-shape]
d(E)	46	#4	5'-3"	[L-shape]
h(E)	87	#4	18'-10"	[Horizontal bar]
h1(E)	28	#6	18'-10"	[Horizontal bar]
h2(E)	9	#6	9'-3"	[Horizontal bar]
h3(E)	9	#6	12'-9"	[Horizontal bar]
h4(E)	14	#6	22'-8"	[Horizontal bar]
h5(E)	14	#6	4'-0"	[Horizontal bar]
h6(E)	8	#6	2'-8"	[Horizontal bar]
h7(E)	8	#6	6'-7"	[Horizontal bar]
h8(E)	12	#6	10'-8"	[Horizontal bar]
h9(E)	6	#6	9'-3"	[Horizontal bar]
h10(E)	8	#6	2'-8"	[Horizontal bar]
h11(E)	8	#6	6'-7"	[Horizontal bar]
s(E)	23	#4	4'-5"	[Vertical bar]
s1(E)	23	#4	4'-7"	[Vertical bar]
v(E)	72	#5	5'-0"	[Vertical bar]
v1(E)	72	#5	2'-4"	[Vertical bar]
v2(E)	16	#4	9'-9"	[Vertical bar]
Concrete Box Culverts			Cu. Yd.	45.2
Reinforcement Bars, Epoxy Coated			Pound	8,380

Designed By TMM Checked By RLP
 Drawn By JUF Checked By TMM
 1/29/2010 12:16:01 PM
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TBM # 104: Chis. square on west end of H.W. @
S. end of con. culvert under Irving Park Rd.
between Judd St. & Wehrman Ave. Elev. 637.43

Existing Structure: Built in 1960± as 7'x4' R.C.
box culvert, 67'-2"± face to face of curb with
culvert length of 90'-5". Traffic to be maintained
utilizing stage construction.



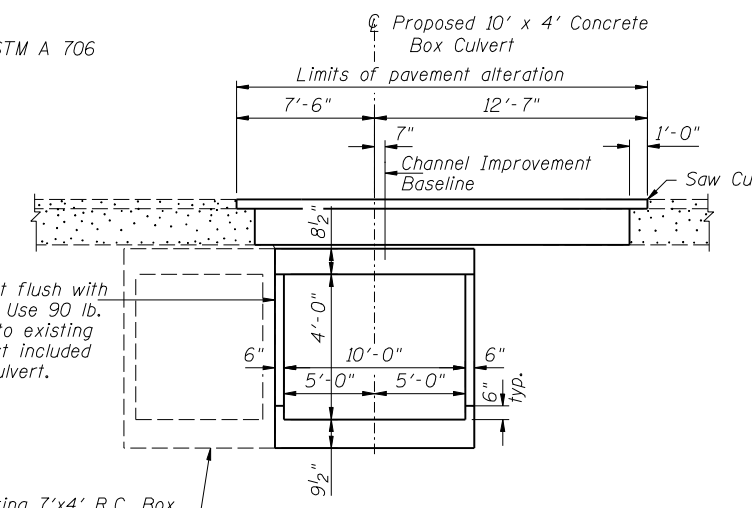
GENERAL NOTES

- Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60.
- All exposed edges of concrete shall be beveled 3/4".
- Precast alternate is not allowed.
- For backfilling and embankment, see Standard Specifications.
- Place permanent Bench Mark on downstream headwall.
- *** Cost included with Comb. Conc. Curb & Gutter Rem. & Replacement
- D.H.W. Elev. 637.22
- Exist. Water Surface Elev. 632.3

CRYSTAL CREEK
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OFFICE OF WATER RESOURCES
LOADING HS20
STRUCTURE NUMBER 016-1198

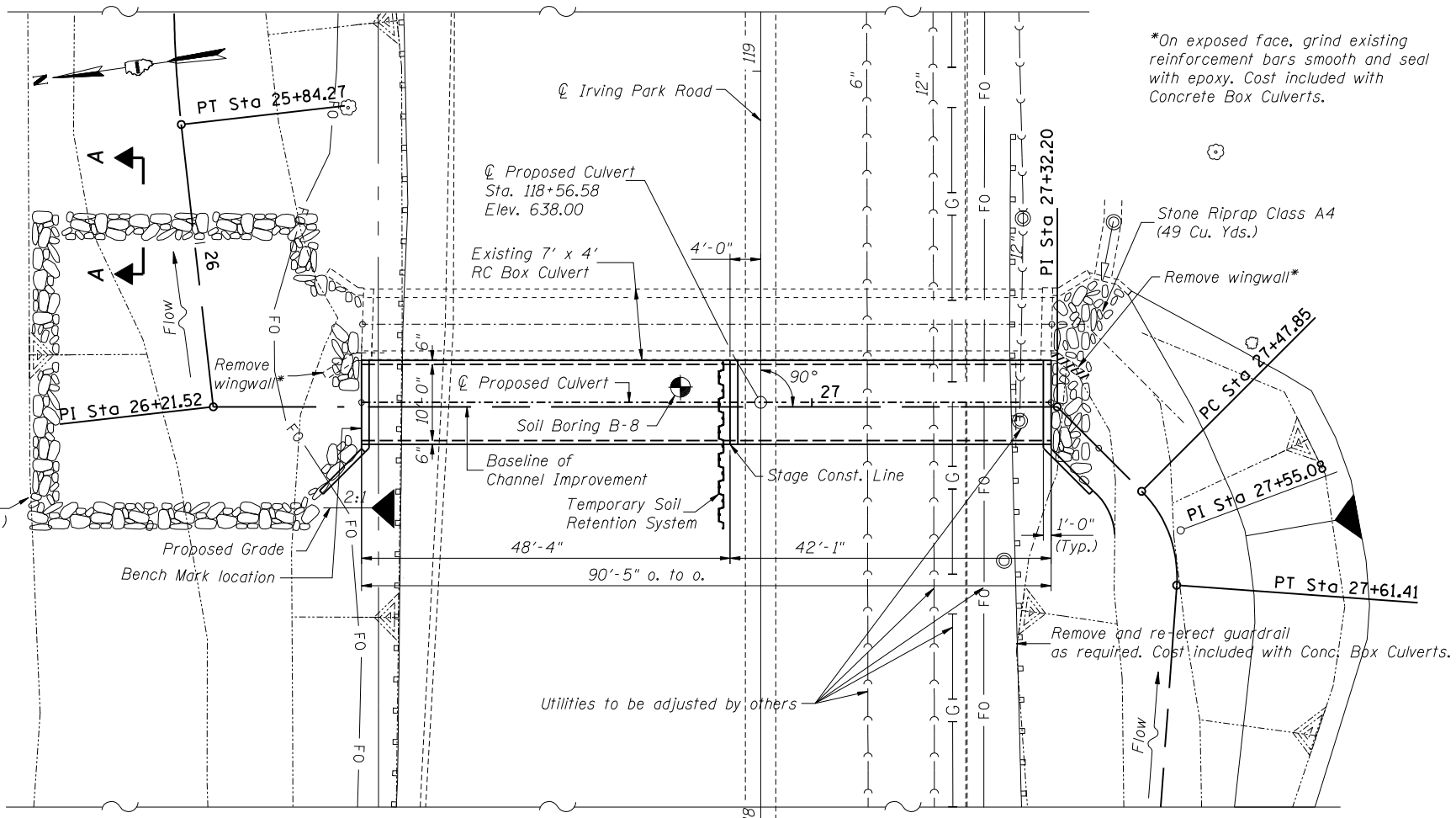
NAME PLATE

See Std. 515001
(Attach to downstream headwall)



TOTAL BILL OF MATERIAL

ITEM	UNIT	QTY.
Concrete Box Culverts	Cu Yd	98.6
Reinforcement Bars	Pound	18,270
Pavement Removal	Sq Yd	152
Combination Conc. Curb & Gutter Removal and Repl.	Foot	40
Steel Plate Beam Guardrail Attached to Structures	Foot	38
Stone Riprap, Class A4	Sq Yd	241
Filter Fabric	Sq Yd	241
Temporary Soil Retention System	Sq Ft	118
Bar Splicers	Each	38
Name Plates	Each	1



*On exposed face, grind existing reinforcement bars smooth and seal with epoxy. Cost included with Concrete Box Culverts.

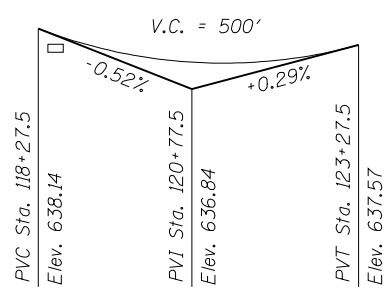
WATERWAY INFORMATION

Drainage Area = 0.94 sq. mi. Low Grade Elev. 637.35 @ Sta. 120+77.5

Flood	Freq. Yr.	Q	Opening Sq. Ft.		Nat. H.W.E.	Head - Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	10	227	28	68	635.62	1.31	0.17	636.93	635.79
Design	50	343	28	68	637.15	1.35	0.07	638.5	637.22
Base	100	402	28	68	637.57	1.98	0	639.55	637.55
Overtopping	50	343	28	68	637.15	1.35	0.07	638.5	637.22

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	Upstream	Downstream
		628.60



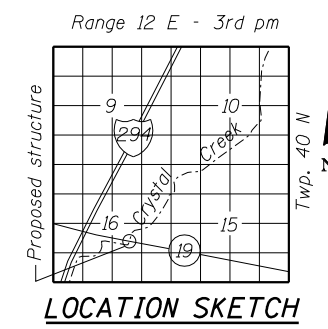
LOADING HS 20-44
Allow 50#/sq. ft. for future wearing surface.

DESIGN SPECIFICATIONS
2002 AASHTO
DESIGN STRESSES
FIELD UNITS

f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)

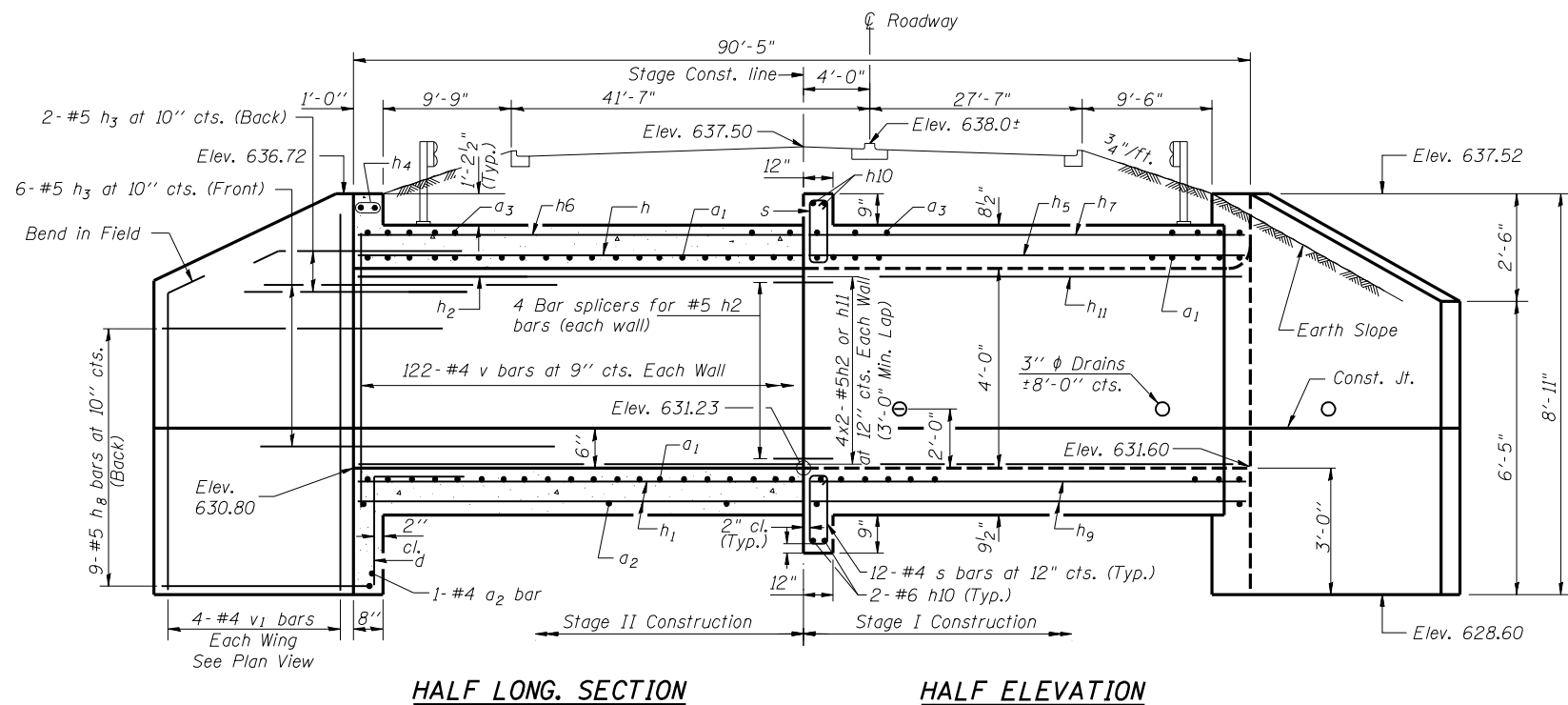
HIGHWAY CLASSIFICATION

F.A.P. Route 876 - IL Rte. 19
ADT: 38,900 (2007)
Functional Class: other principal arterial
Design Speed: 45 mph ±
ADTT 3150 Posted Speed: 35 mph



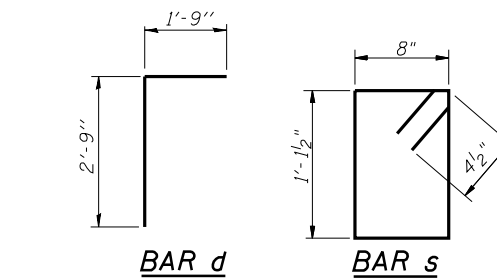
GENERAL PLAN
IL ROUTE 19 (IRVING PARK ROAD)
OVER CRYSTAL CREEK
STA. 118+56.58
COOK COUNTY
S.N. 016-1198

Designed By: TMM Checked By: JJF
 Drawn By: JJF Checked By: RLP
 0:\Dwt\Proj\Imp\Projects\Crystal Creek\JIF\Culvert No 4 Irving Park Road.dgn
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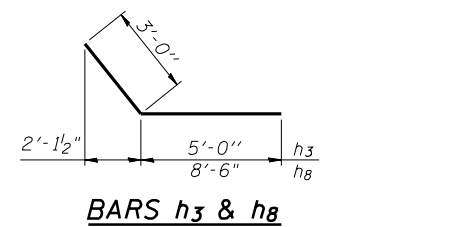
HALF LONG SECTION

HALF ELEVATION

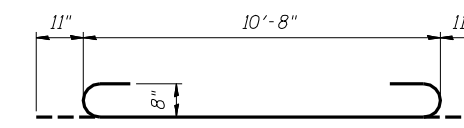


BAR d

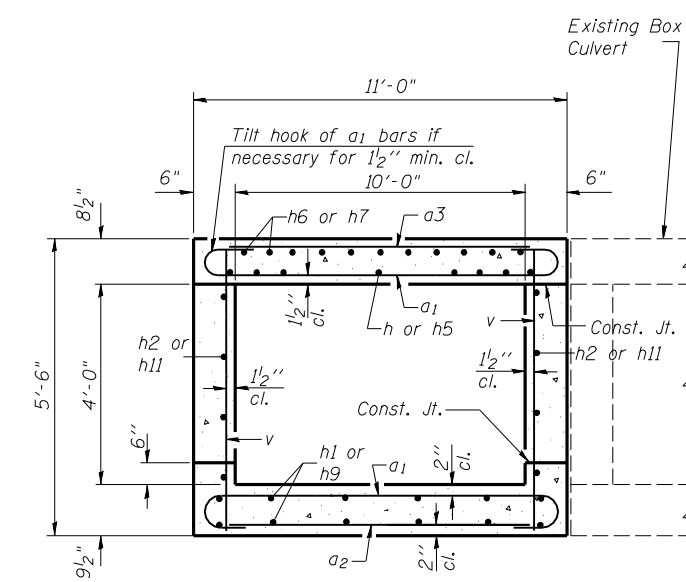
BAR s



BARS h3 & h8



BAR a1



SECTION THRU BARREL

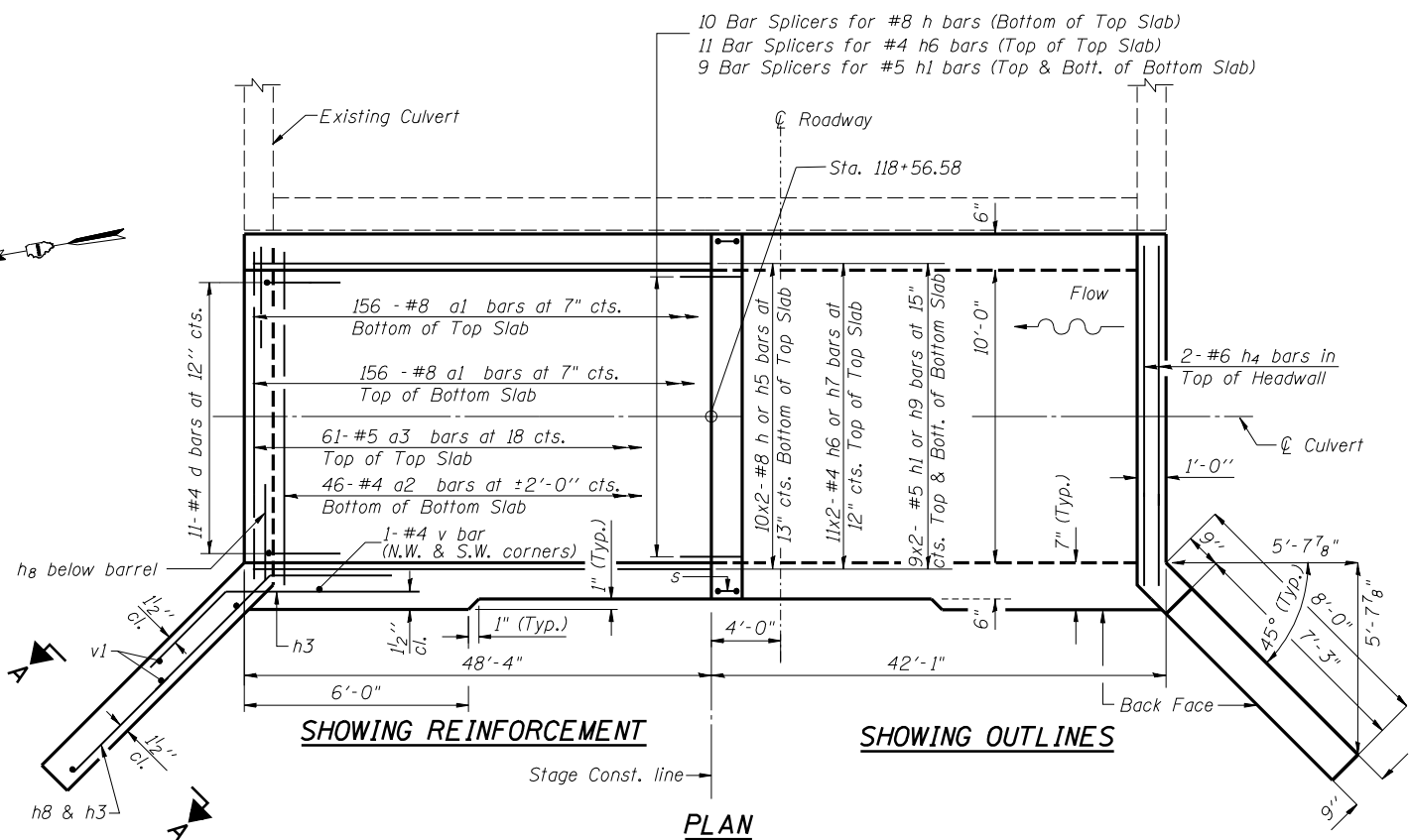
BILL OF MATERIAL

Bar	No.	Size	Length	Shape	
a1	312	#8	12'-6"	C	
a2	46	#4	10'-3"	—	
a3	61	#5	10'-8"	—	
d	22	#4	4'-6"	U	
h	20	#8	28'-4"	—	
h1	18	#5	27'-2"	—	
h2	8	#5	27'-7"	—	
h3	16	#5	8'-0"	—	
h4	4	#6	10'-6"	—	
h5	20	#8	23'-2"	—	
h6	22	#4	26'-11"	—	
h7	22	#4	22'-6"	—	
h8	18	#5	11'-6"	—	
h9	18	#5	23'-0"	—	
h10	4	#6	10'-9"	—	
h11	8	#5	23'-11"	—	
v	246	#4	5'-2"	—	
v1	8	#4	8'-8"	—	
s	24	#4	4'-4"	U	
Concrete Box Culverts				Cu. Yd.	75.1
Reinforcement Bars				Pound	17,760

MIN. BAR LAPS

#4 bars = 1'-8"
#5 bars = 2'-2" (except as noted on walls)
#8 bars = 4'-6"

DETAILS
IL ROUTE 19 (IRVING PARK ROAD)
OVER CRYSTAL CREEK
STA. 118+56.58
COOK COUNTY
S.N. 016-1198



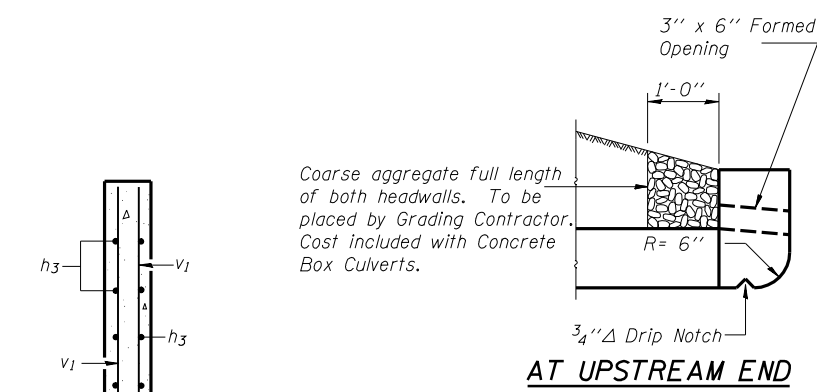
SHOWING REINFORCEMENT

SHOWING OUTLINES

PLAN

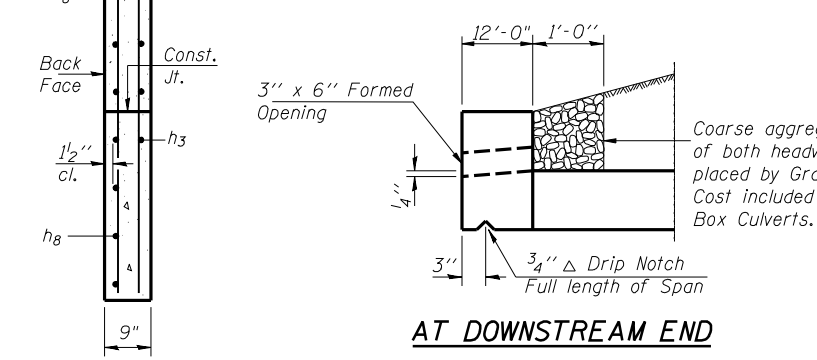
NOTES

A distance of half the length of the wingwall but not less than six feet of the barrel shall be poured monolithically with the wingwalls.
Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.
Bars indicated thus 12 x 4-#5 etc. indicates 12 lines of bars with 4 lengths per line.



AT UPSTREAM END

DRAIN DETAIL



AT DOWNSTREAM END

DRAIN DETAIL

SECTION A-A

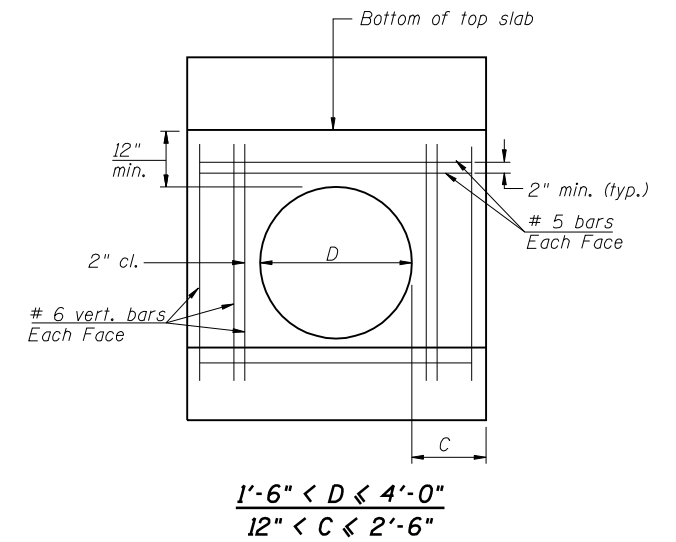
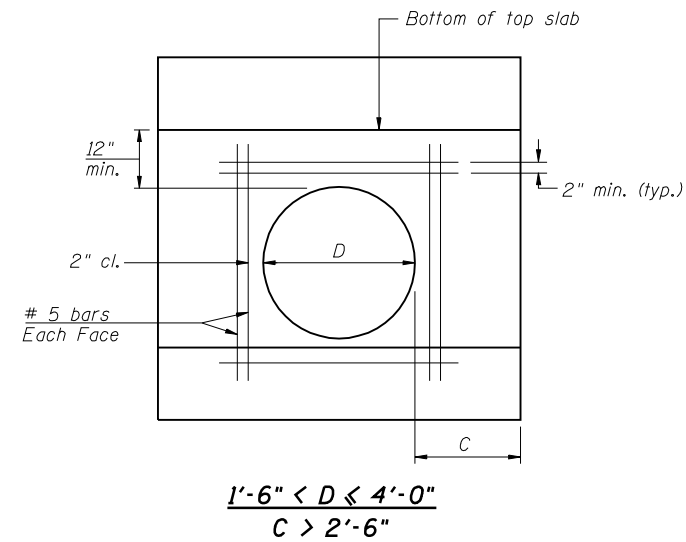
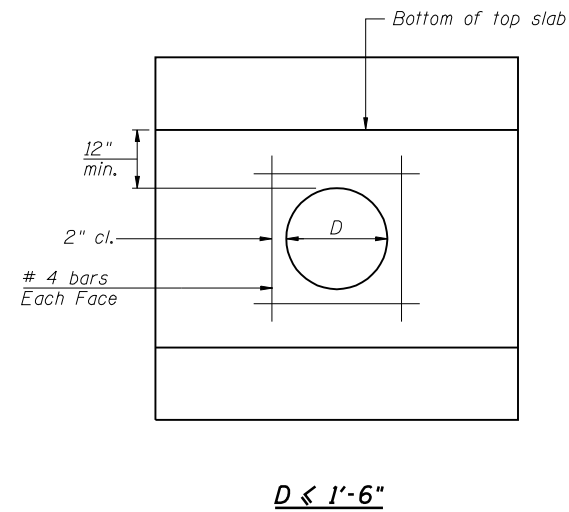
Designed By: TMM
 Checked By: JUF
 Drawn By: JUF
 Checked By: RLP
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2/1/2010

Designed By TMM Checked By JF
Drawn By JF Checked By RLP



ADDITIONAL WALL REINFORCEMENT FOR CONCRETE BOX CULVERTS WITH OPENINGS

Notes:

D = Diameter of opening. (Typically OD of pipe plus 1" to 4").

Minimum length of reinforcement bars around openings = $D + 1'-4"$.

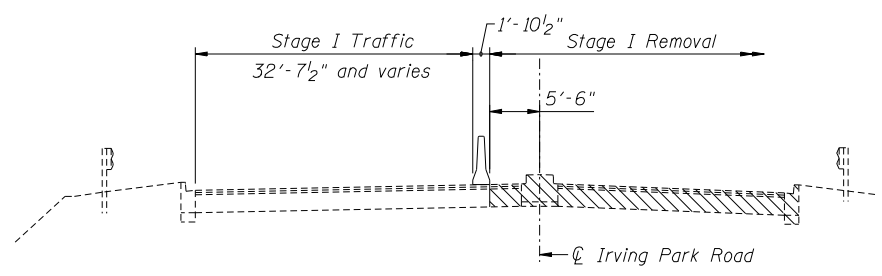
Wall openings beyond these parameters shall be submitted for review.

These details are not applicable for openings in the top slab.

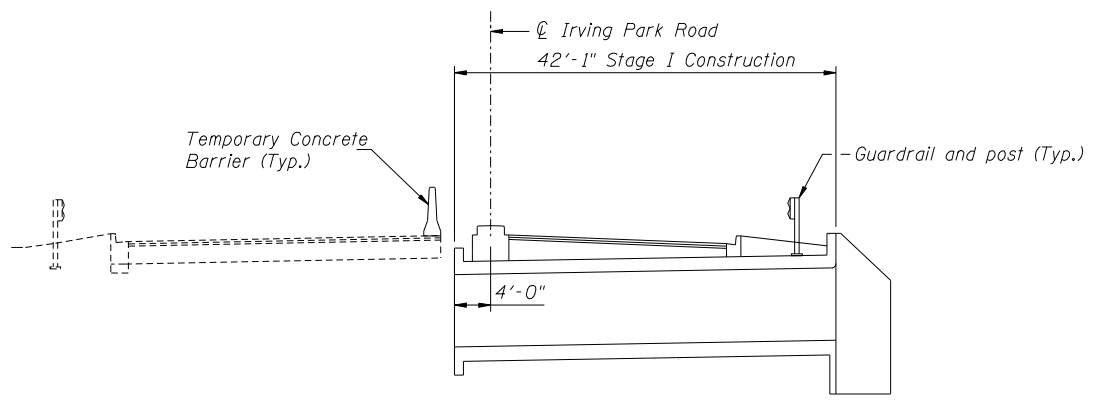
Cost of this work is included with either Concrete Box Culverts or Precast Concrete Box Culverts of the size billed.

DETAILS
IL ROUTE 19 (IRVING PARK ROAD)
OVER CRYSTAL CREEK
STA. 118+56.58
COOK COUNTY
S.N. 016-1198

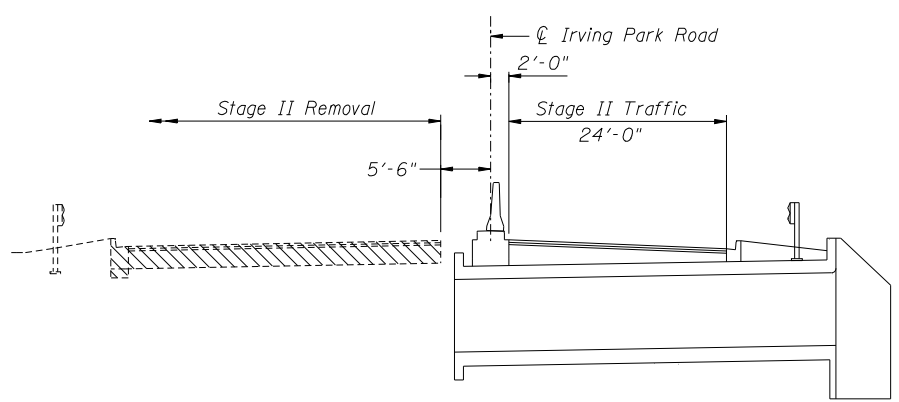
Designed By TMM Checked By RLP
 Drawn By JJF Checked By RLP
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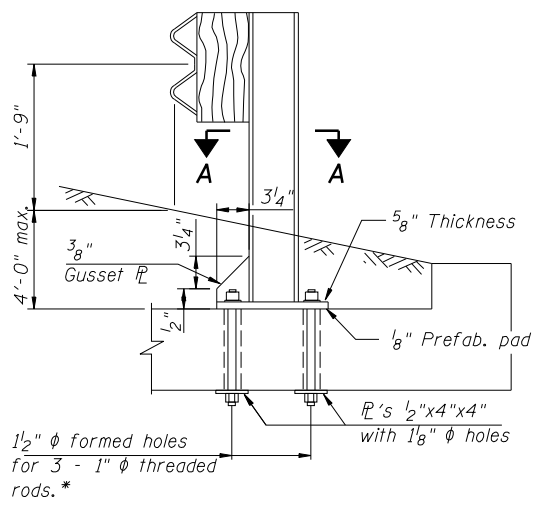
STAGE I REMOVAL
(Looking East)



STAGE I CONSTRUCTION
(Looking East)

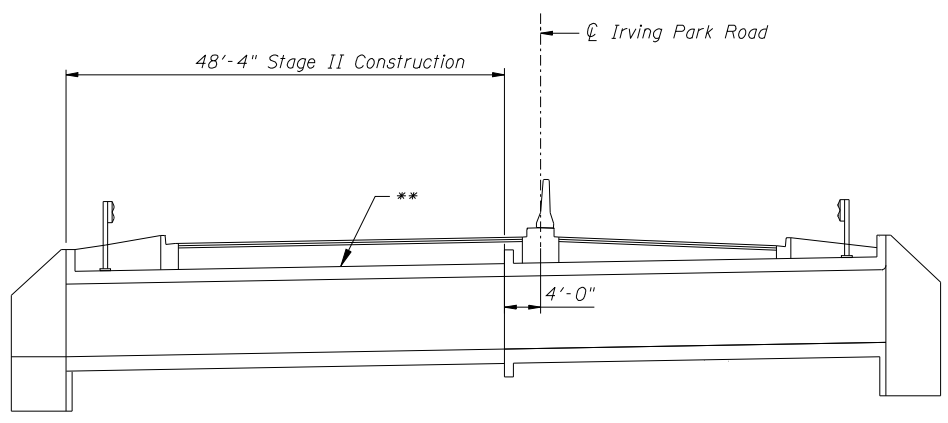


STAGE II REMOVAL
(Looking East)



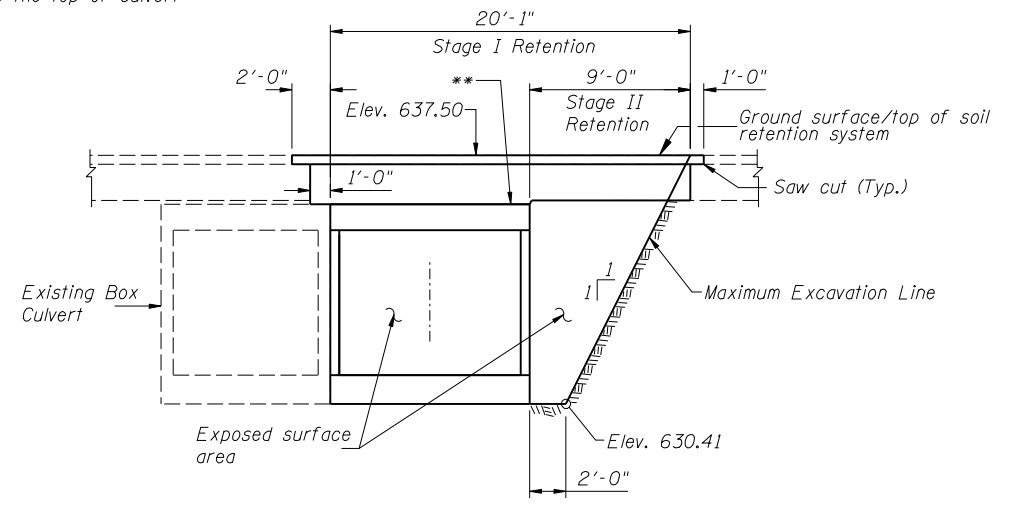
**GUARDRAIL SLAB
CONNECTION DETAIL**

* All threaded rods shall be installed with heavy hex nuts and standard washers.

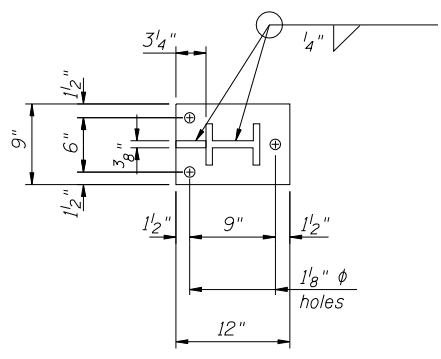


STAGE II CONSTRUCTION
(Looking East)

** In the area over the culvert, use full depth pavement (Binder IL-19 mm) to the top of culvert



TEMPORARY SOIL RETENTION SYSTEM (LIMITS)
(Looking South)



SECTION A-A

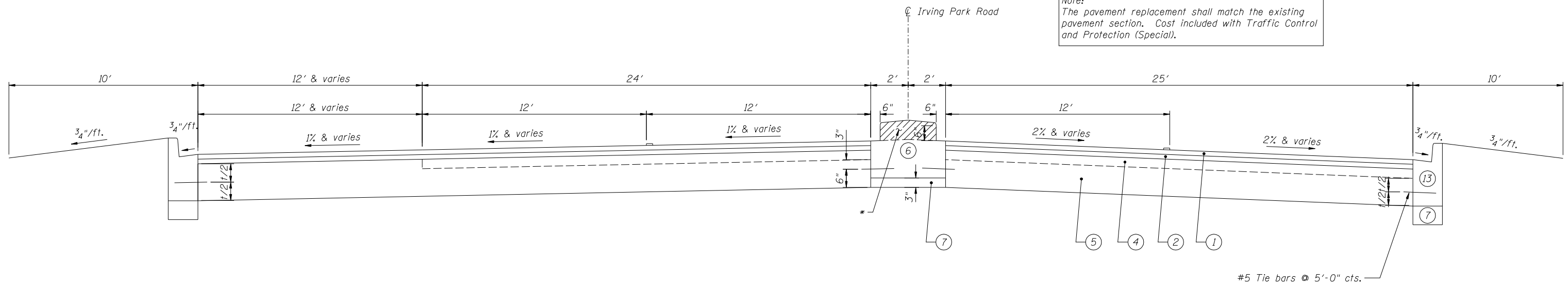
**STAGE CONSTRUCTION
IL ROUTE 19 (IRVING PARK ROAD)
OVER CRYSTAL CREEK
STA. 118+56.58
COOK COUNTY
S.N. 016-1198**

LEGEND

- ① Polymerized HMA Surface Course, Mix "F", N 90, 1³/_{4"}
- ② Polymerized HMA Leveling Binder (MM) IL-4.75, N50, 3⁴/_{4"}
- ④ Existing Bituminous Surface
- ⑤ Existing P.C.C. Pavement
- * ⑥ Concrete Median
- ⑦ Sub-Base Granular Material Type A
- ⑬ Combination Concrete Curb & Gutter, Type B-6.12

* Approximately 300 lineal feet of concrete median will need to be removed and replaced in kind to facilitate cross over of traffic. Cost included with Traffic Control and Protection (Special).

Note:
The pavement replacement shall match the existing pavement section. Cost included with Traffic Control and Protection (Special).



EXISTING TYPICAL ROADWAY SECTION
(Irving Park Road)

Hot-Mix Asphalt Mixture Requirement	
Mixture Type	Air Voids @ Ndes
Poly. HMA Surface Cse. Mix "F", N90 (IL 9.5 mm)	4% @ 90 Gyr.
Poly. HMA Leveling Binder (MM) IL 4.75 mm, N50	4% @ 50 Gyr.

Notes:

1. The unit weight used to calculate all HMA Surface Mixture quantities is 112 Lbs/Sq Yd/In
2. The "AC Type" for polymerized HMA mixes shall be "SBS/SBR PG 70 -22" and for Non-Polymerized HMA the "AC Type" shall be "PG 64 -22" unless modified by District One Special Provisions. For "Percent of RAP" see District One Special Provisions.

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Designed By TMM Checked By RLP
Drawn By JUF Checked By RLP

GENERAL NOTES FOR TRAFFIC CONTROL (Sheets 7-8)

All the Traffic Control devices shall conform to the Traffic Control Plans or the latest edition of the State of Illinois "Manual of Uniform Traffic Control Devices for Streets and Highways" and shall be in place before construction is started.

The Traffic Control Plans shall serve as a guide for safe diversion of traffic during execution of this contract. However, the contractor may improve or modify the traffic control plans for his construction needs but not at the expense of public safety or convenience. Any contractor-proposed traffic control plans shall be submitted for the written approval of the Engineer. No additional compensation will be allowed for contractor requested changes.

The exact number, location and spacing of all signs and control devices may be adjusted to fit field conditions as directed by the Engineer.










Bi-directional steady burning lights and double vertical panels shall be mounted on the temporary concrete barrier at 20 foot centers. Detail "A" illustrates a suggested mounting. Other methods of mounting may be used upon approval of the Engineer.

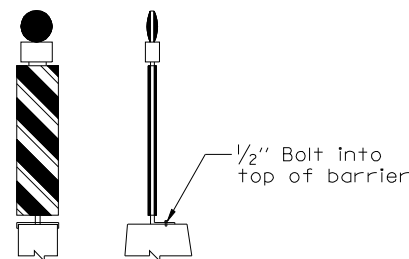
Remove existing pavement markings if in conflict with the Temporary Pavement Markings for Traffic Control and Protection Plans.

The following temporary pavement markings shall be provided at all the following locations in each of the various stages of construction:
4" White Edge Line - Each edge (yellow for inside edge)
4" Double Yellow - Between Opposing Lanes

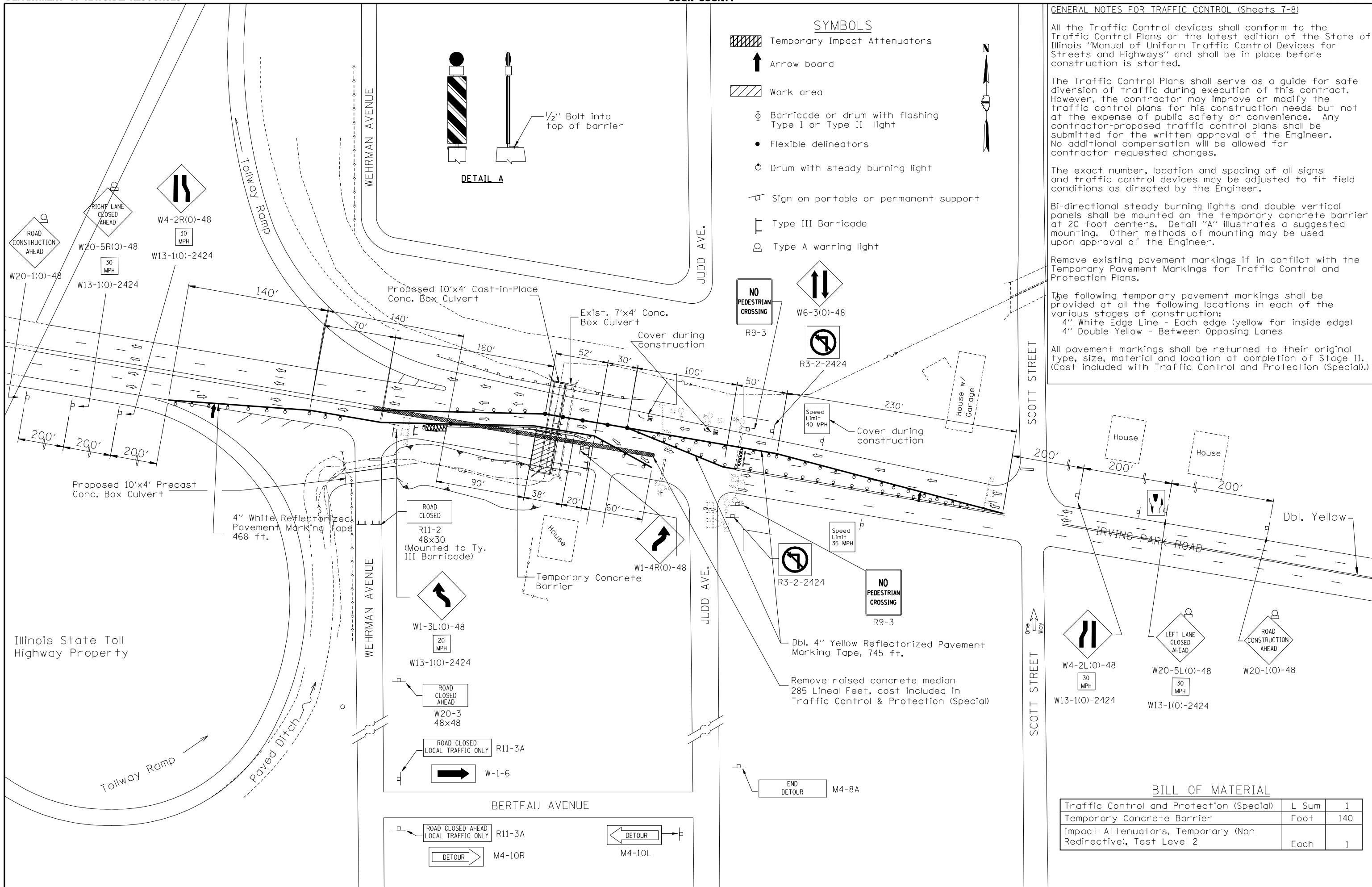
All pavement markings shall be returned to their original type, size, material and location at completion of Stage II. (Cost included with Traffic Control and Protection (Special).)

SYMBOLS

-  Temporary Impact Attenuators
-  Arrow board
-  Work area
-  Barricade or drum with flashing Type I or Type II light
-  Flexible delineators
-  Drum with steady burning light
-  Sign on portable or permanent support
-  Type III Barricade
-  Type A warning light



DETAIL A

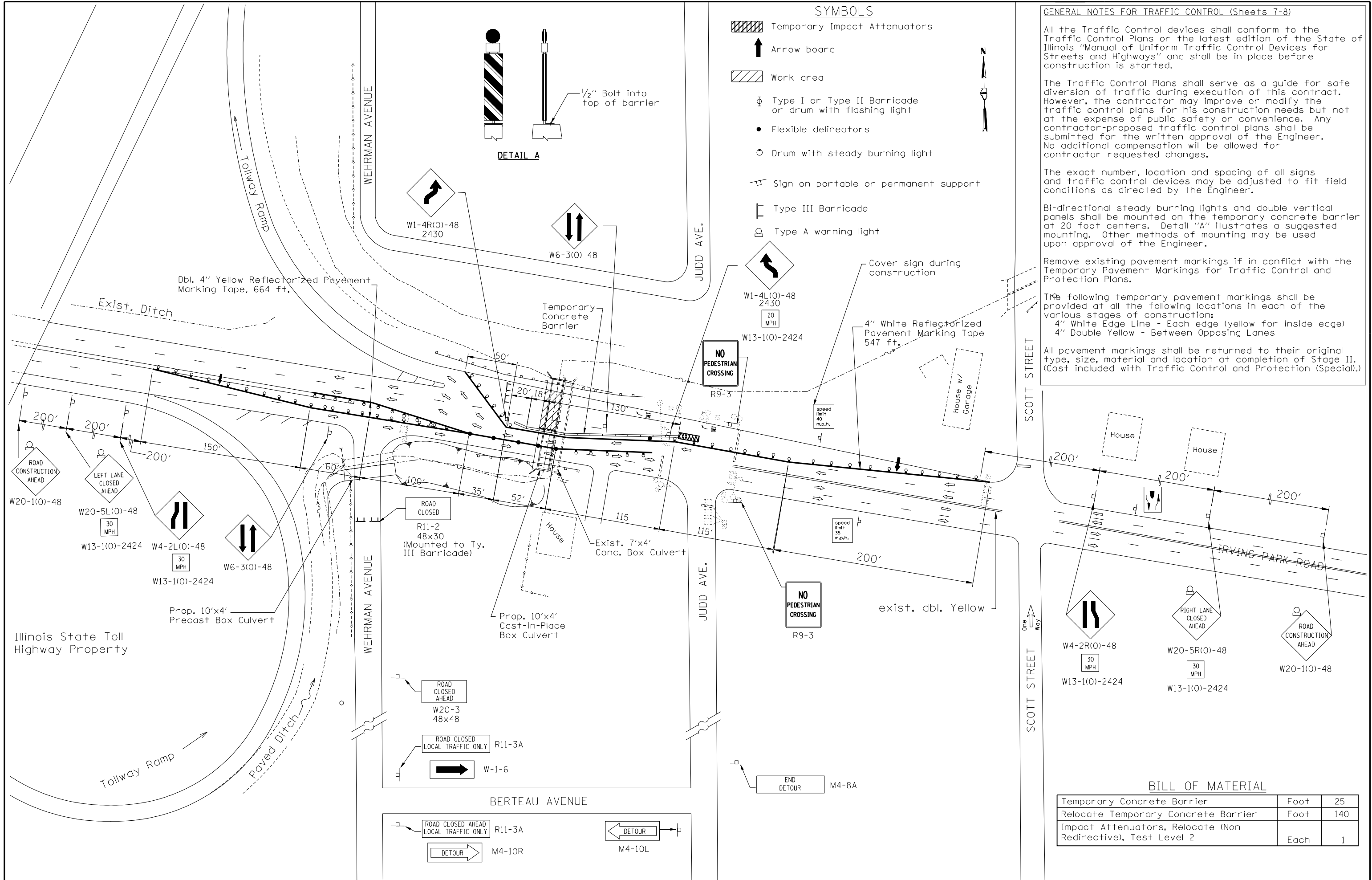


BILL OF MATERIAL

Traffic Control and Protection (Special)	L Sum	1
Temporary Concrete Barrier	Foot	140
Impact Attenuators, Temporary (Non Redirective), Test Level 2	Each	1

Designed By JUF/RLP Checked By RLP
 Drawn By JUF Checked By RLP
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 1/29/2010
 Designed By JUF/RLP Checked By RLP
 Drawn By JUF Checked By RLP



SYMBOLS

- Temporary Impact Attenuators
- Arrow board
- Work area
- Type I or Type II Barricade or drum with flashing light
- Flexible delineators
- Drum with steady burning light
- Sign on portable or permanent support
- Type III Barricade
- Type A warning light

GENERAL NOTES FOR TRAFFIC CONTROL (Sheets 7-8)

All the Traffic Control devices shall conform to the Traffic Control Plans or the latest edition of the State of Illinois "Manual of Uniform Traffic Control Devices for Streets and Highways" and shall be in place before construction is started.

The Traffic Control Plans shall serve as a guide for safe diversion of traffic during execution of this contract. However, the contractor may improve or modify the traffic control plans for his construction needs but not at the expense of public safety or convenience. Any contractor-proposed traffic control plans shall be submitted for the written approval of the Engineer. No additional compensation will be allowed for contractor requested changes.

The exact number, location and spacing of all signs and traffic control devices may be adjusted to fit field conditions as directed by the Engineer.

Bi-directional steady burning lights and double vertical panels shall be mounted on the temporary concrete barrier at 20 foot centers. Detail "A" illustrates a suggested mounting. Other methods of mounting may be used upon approval of the Engineer.

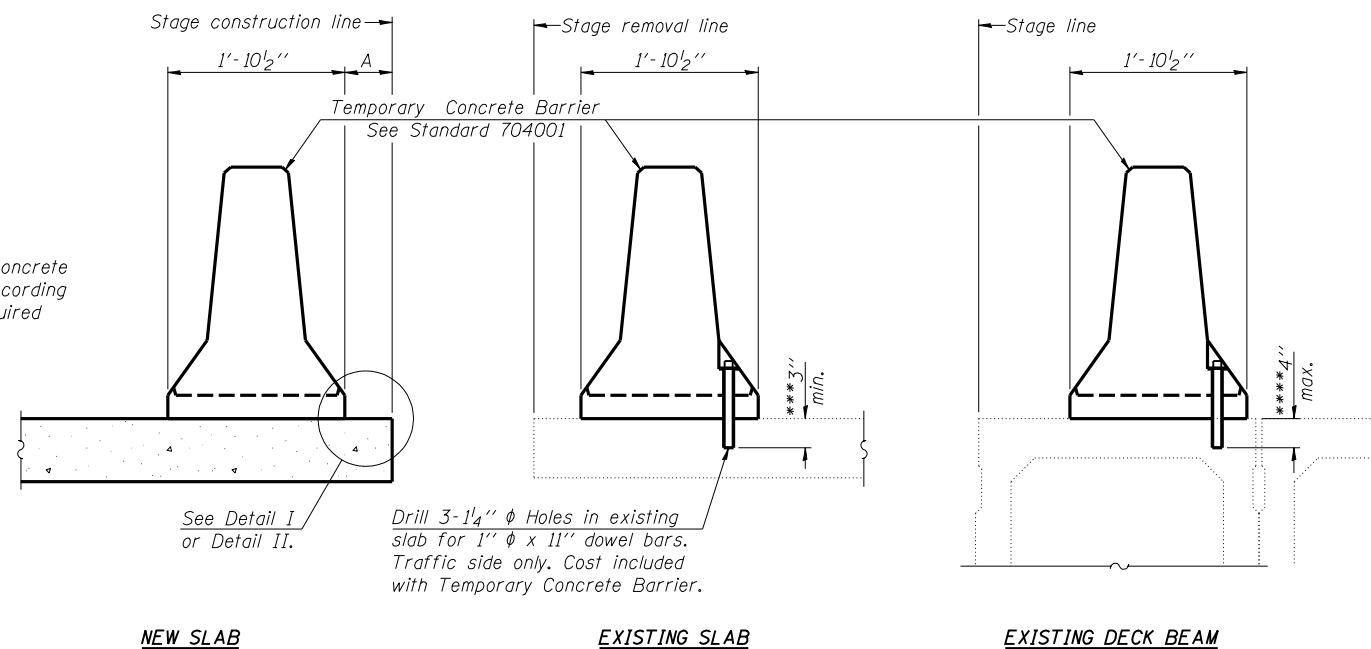
Remove existing pavement markings if in conflict with the Temporary Pavement Markings for Traffic Control and Protection Plans.

The following temporary pavement markings shall be provided at all the following locations in each of the various stages of construction:
 4" White Edge Line - Each edge (yellow for inside edge)
 4" Double Yellow - Between Opposing Lanes

All pavement markings shall be returned to their original type, size, material and location at completion of Stage II. (Cost included with Traffic Control and Protection (Special).)

BILL OF MATERIAL

Temporary Concrete Barrier	Foot	25
Relocate Temporary Concrete Barrier	Foot	140
Impact Attenuators, Relocate (Non Redirective), Test Level 2	Each	1



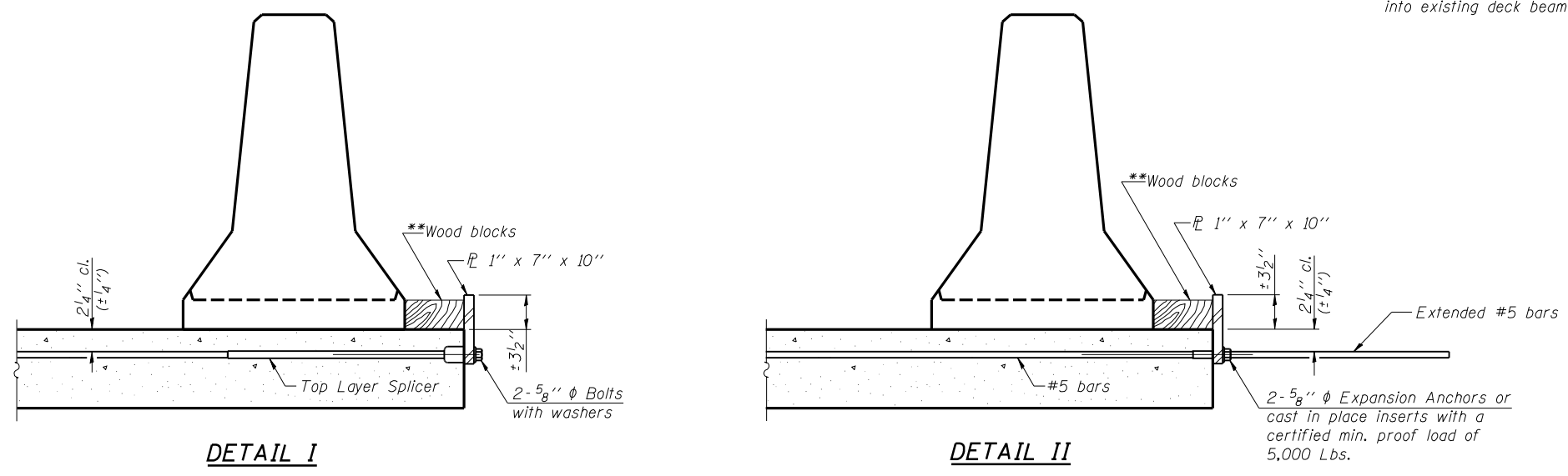
When "A" is 3'-6" or less, the temporary concrete barrier shall be anchored to the new slab according to Detail I or Detail II. No anchorage is required when "A" is greater than 3'-6".

NEW SLAB **EXISTING SLAB** **EXISTING DECK BEAM**

SECTIONS THRU SLAB OR DECK BEAM

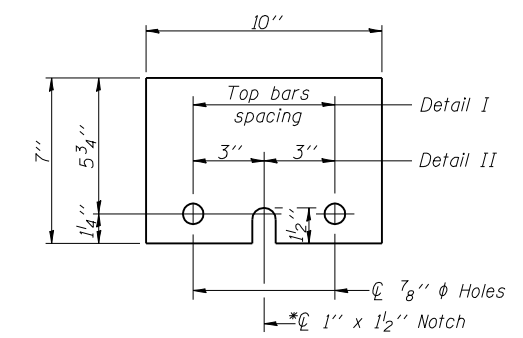
- NOTES**
- Detail I - With Bar Splicer or Couplers:
Connect one (1) 1"x7"x10" steel PL to the top layer of couplers with 2-5/8" φ bolts screwed to coupler at approximate C of each barrier panel.
 - Detail II - With Extended Reinforcement Bars:
Connect one (1) 1"x7"x10" steel PL to the concrete slab or concrete wearing surface with 2-5/8" φ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate C of each barrier panel.
- Cost of anchorage is included with Temporary Concrete Barrier. The 1" x 7" x 10" plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.

***Dimension shown is minimum required embedment into concrete. If hot-mix asphalt wearing surface is present, minimum embedment shall be in addition to wearing surface depth.
****If existing deck beam is to remain in place after stage construction, embedment shall only be into wearing surface and not into existing deck beam concrete.



DETAIL I **DETAIL II**

**Wood blocks may be omitted when required to provide minimum stage traffic lane width. When the wood blocks are omitted, the concrete barrier shall be in direct contact with the steel retainer plate.



STEEL RETAINER PL 1" x 7" x 10"
*Required only with Detail II

**TEMPORARY CONCRETE BARRIER
FOR STAGE CONSTRUCTION
IL ROUTE 19 (IRVING PARK ROAD)
OVER CRYSTAL CREEK
STA. 118+56.58
COOK COUNTY
S.N. 016-1198**

Designed By RLP Checked By TMM
 Drawn By JJF Checked By RLP
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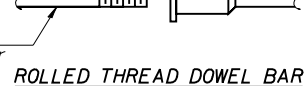
NOTES

Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.
Splicer rods shall be of minimum 60 ksi yield strength, threaded or coiled full length.
All reinforcement bars shall be lapped and tied to the splicer rods or dowel bars.
Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars.
Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

- ① Minimum Capacity = $1.25 \times f_y \times A_l$
(Tension in kips)
 - ② Minimum *Pull-out Strength = $0.66 \times f_y \times A_l$
(Tension in kips)
- Where f_y = Yield strength of lapped reinforcement bars in ksi.
 A_l = Tensile stress area of lapped reinforcement bars.
* = 28 day concrete

BAR SPLICER ASSEMBLIES			
Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Strength Requirements	
		Min. Capacity kips - tension	Min. Pull-Out Strength kips - tension
#4	1'-8"	14.7	7.9
#5	2'-0"	23.0	12.3
#6	2'-7"	33.1	17.4
#7	3'-5"	45.1	23.8
#8	4'-6"	58.9	31.3
#9	5'-9"	75.0	39.6
#10	7'-3"	95.0	50.3
#11	9'-0"	117.4	61.8

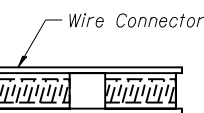
The diameter of this part is equal or larger than the diameter of bar spliced.



ROLLED THREAD DOWEL BAR



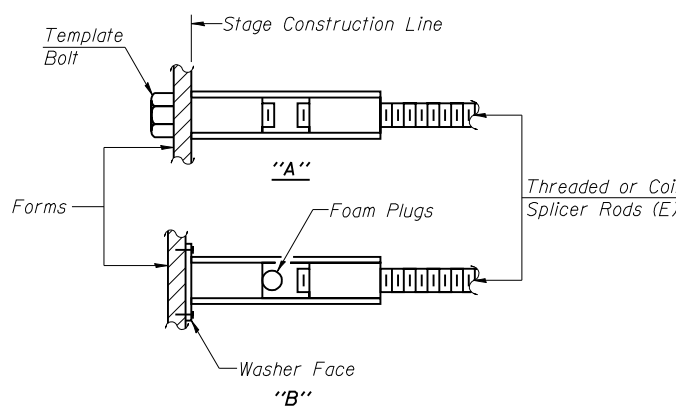
**** ONE PIECE**



WELDED SECTIONS

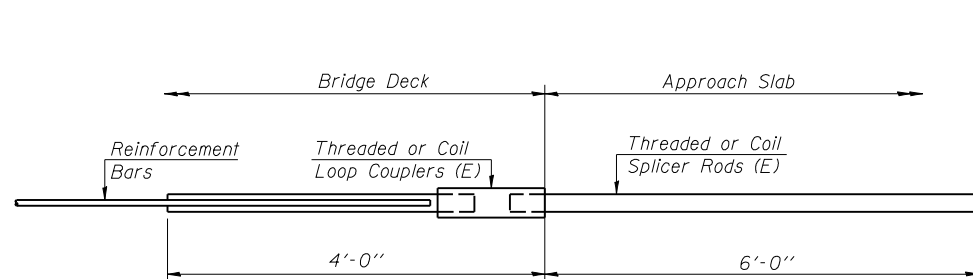
BAR SPLICER ASSEMBLY ALTERNATIVES

**Heavy Hex Nuts conforming to ASTM A 563, Grade C, D or DH may be used.

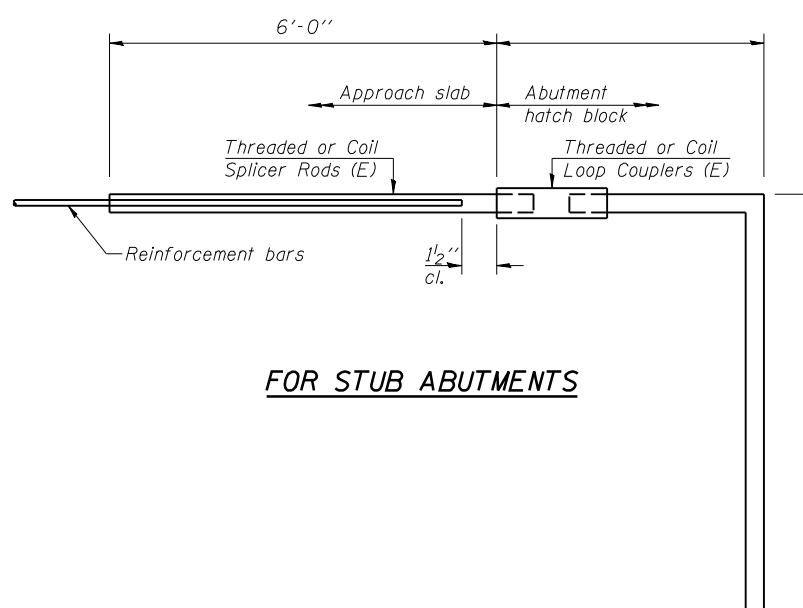


INSTALLATION AND SETTING METHODS

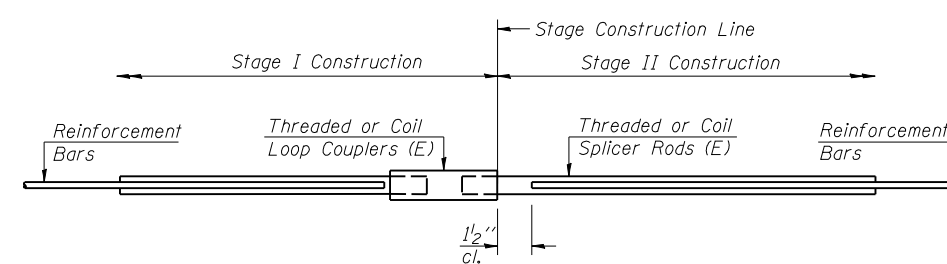
"A" :Set bar splicer assembly by means of a template bolt.
"B" :Set bar splicer assembly by nailing to wood forms or cementing to steel forms.
(E) : Indicates epoxy coating.



FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS



FOR STUB ABUTMENTS



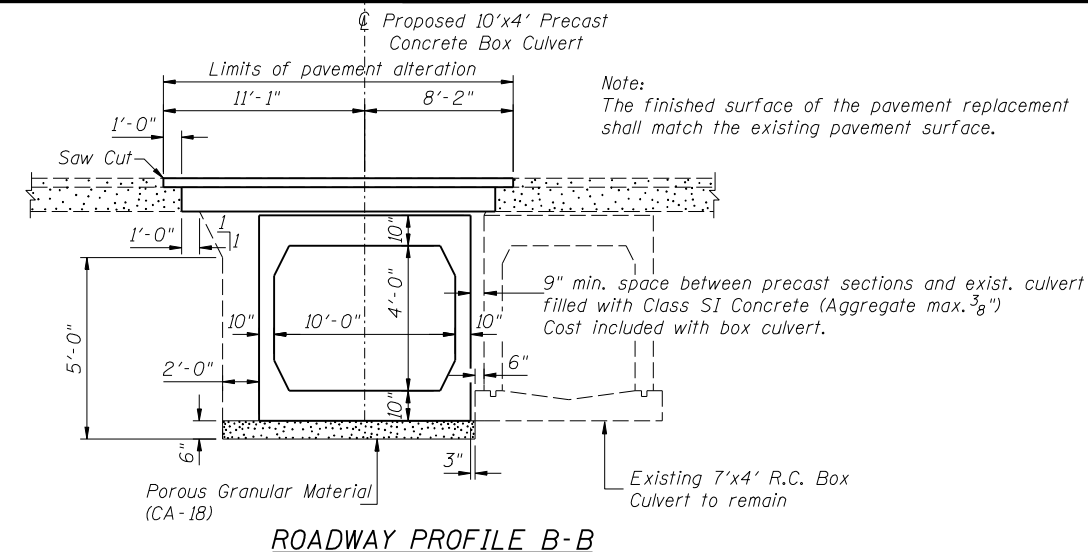
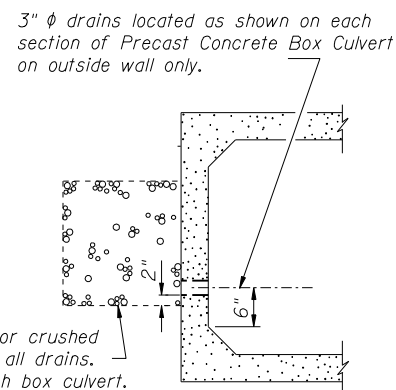
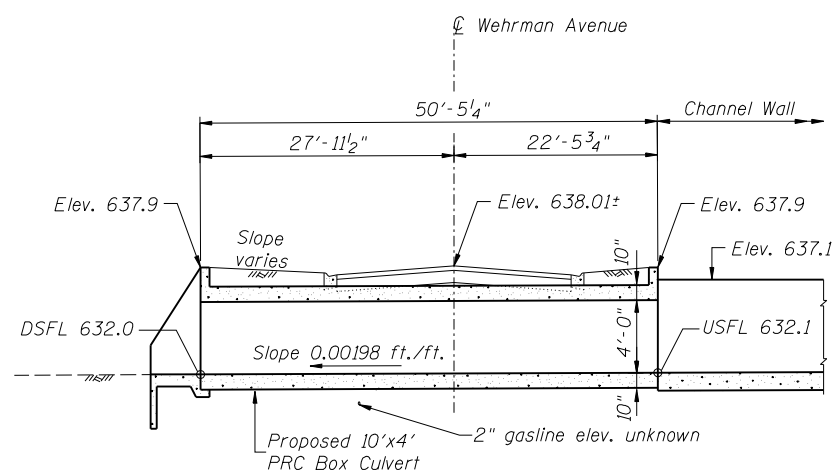
STANDARD

Bar Size	No. Assemblies Required	Location
#5	8	Walls
#8	10	Bottom of top slab
#4	11	Top of top slab
#5	9	Top & bottom of bottom slab

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 12.3 kips - tension
No. Required =

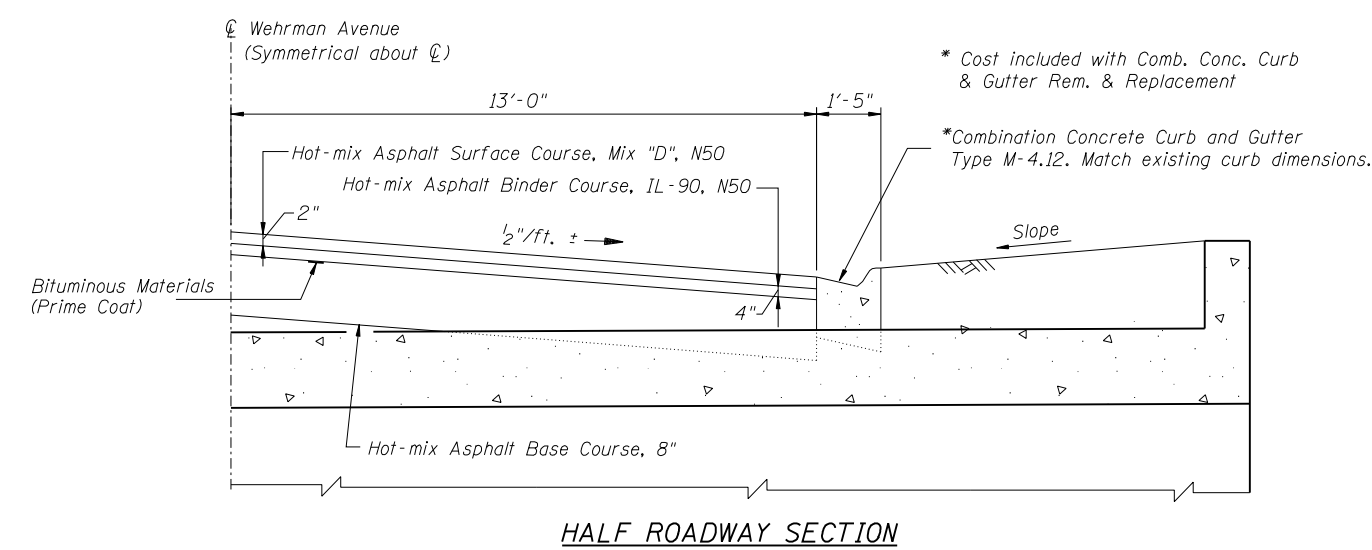
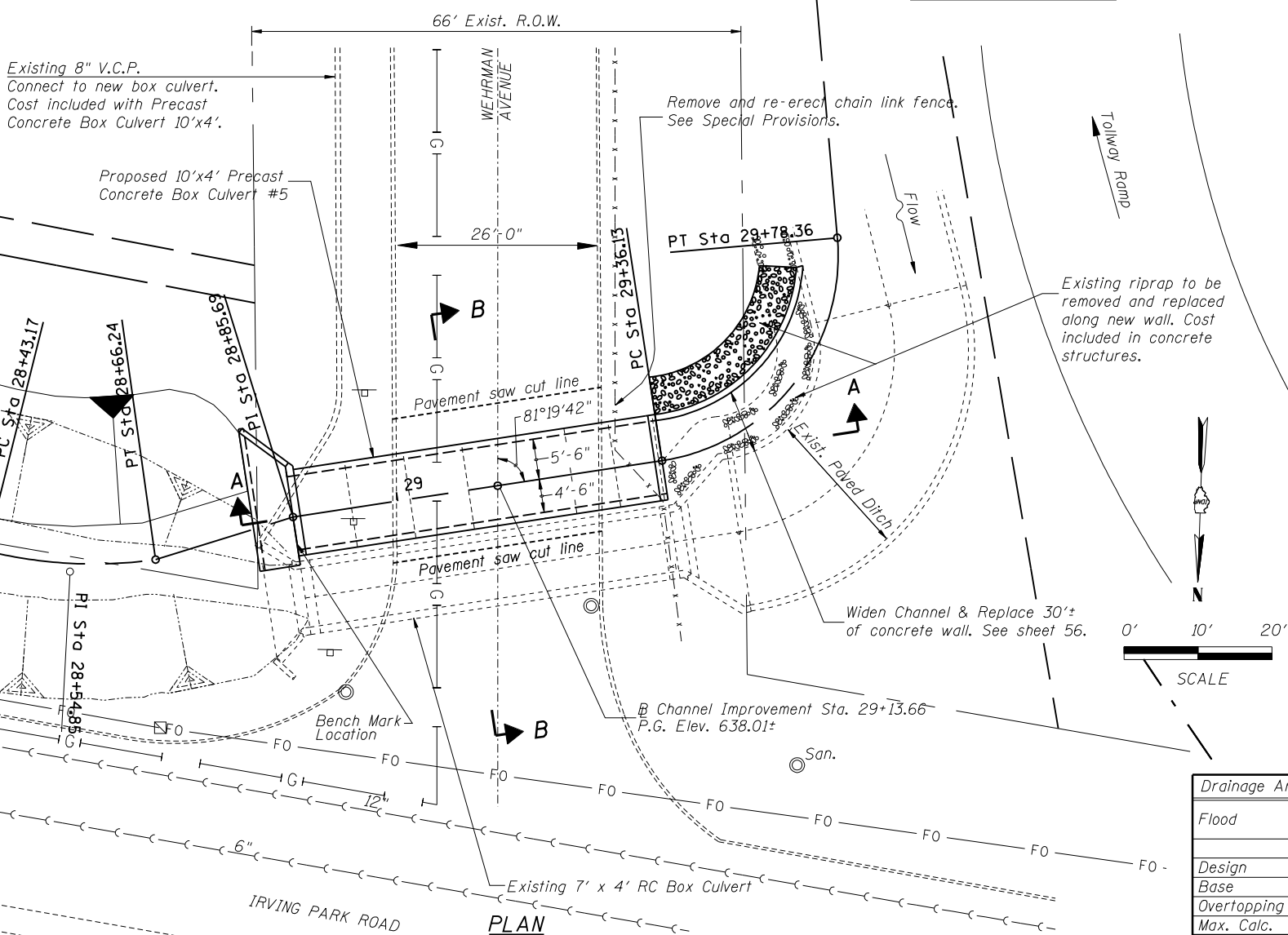
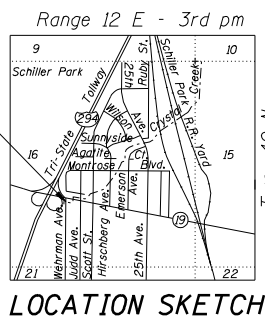
Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 12.3 kips - tension
No. Required =

**BAR SPLICER ASSEMBLY DETAILS
IL ROUTE 19 (IRVING PARK ROAD)
OVER CRYSTAL CREEK
STA. 118+56.58
COOK COUNTY
S.N. 016-1198**



CRYSTAL CREEK
BUILT 2010 BY
IL. DEPT. OF NATURAL RESOURCES
OFFICE OF WATER RESOURCES
LOADING HS20

NAME PLATE
See Std. 515001
(Attach to downstream headwall)



LOADING HS20-44
Allow 50#/sq. ft. for future wearing surface.

DESIGN SPECIFICATIONS
2002 AASHTO Bridge Design Specifications

DESIGN STRESSES
FIELD UNITS
f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)

PRECAST UNITS
f'c = 5,000 psi
fy = 65,000 psi (Welded Wire Fabric)
fy = 60,000 psi (Reinforcement)

GENERAL NOTES

Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.

Reinforcement bars designated (E) shall be epoxy coated.

All exposed edges of concrete shall be beveled 3/4".

For backfilling and embankment, see Standard Specifications.

It shall be the responsibility of the Contractor to divert the stream flow during construction in order to keep the construction areas free of water. The method of water diversion shall be subject to the approval of the Engineer, and the cost shall be included with "Concrete Box Culverts".

This box culvert has a fill height of 0.5 feet. The Precast Concrete Box Culvert sections shall conform to the requirements of AASHTO M-273.

The Contractor shall contact Mr. Dana Havranek from the Illinois Tollway permit section at 630-241-6800 ext. 3941 in order to obtain a tollway construction permit prior to commencement of any work on the Illinois tollway right-of-way or facilities.

WATERWAY INFORMATION

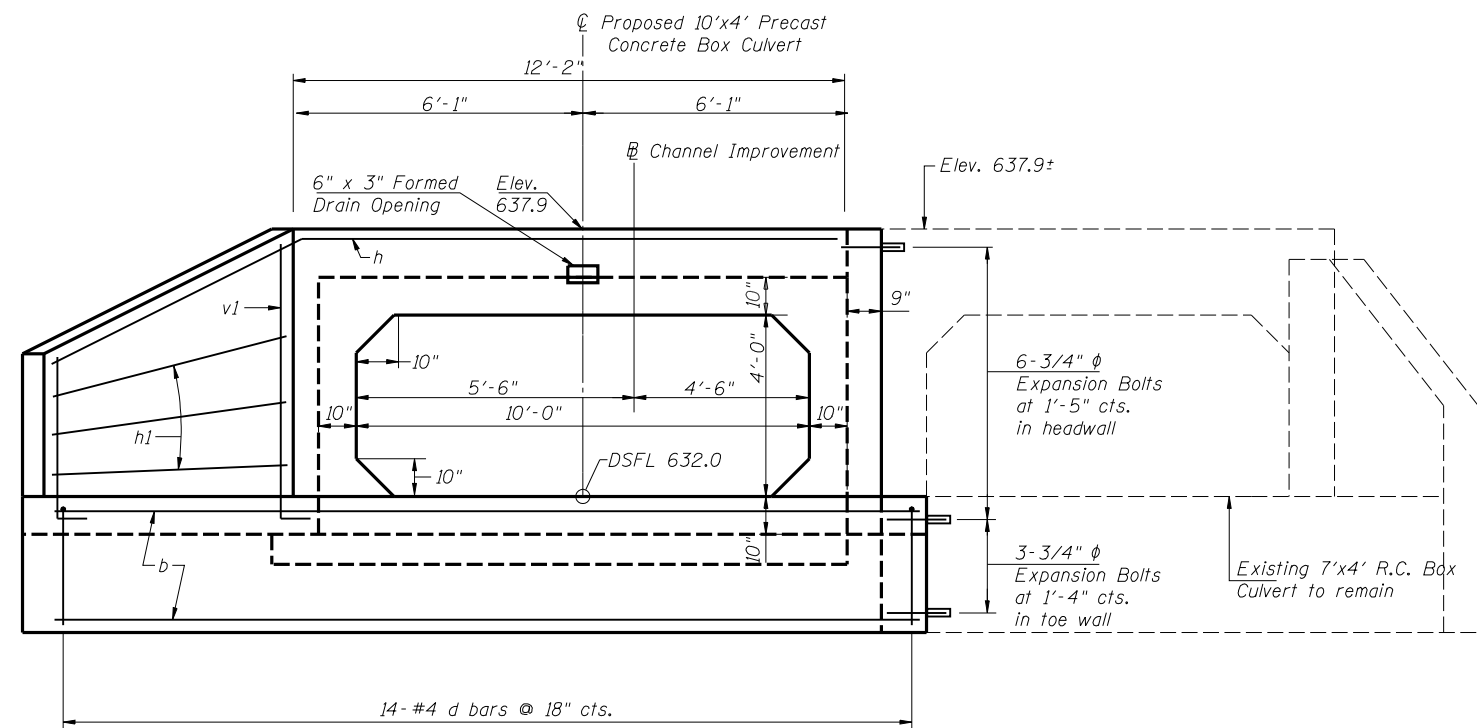
Drainage Area = 0.94 sq. mi. Low Grade Elev. 637.47 @ Sta. 638.01

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Head - Ft.		Headwater El.		
			Exist.	Prop.	H.W.E. Exist.	Prop.	Exist.	Prop.	
Design	10	227	28	68	636.12	1.97	0.11	638.09	636.23
Base	50	343	28	68	637.42	1.1	0.47	638.52	637.89
Overtopping	100	402	28	68	637.69	1.87	0.57	639.56	638.26
Max. Calc.	500								

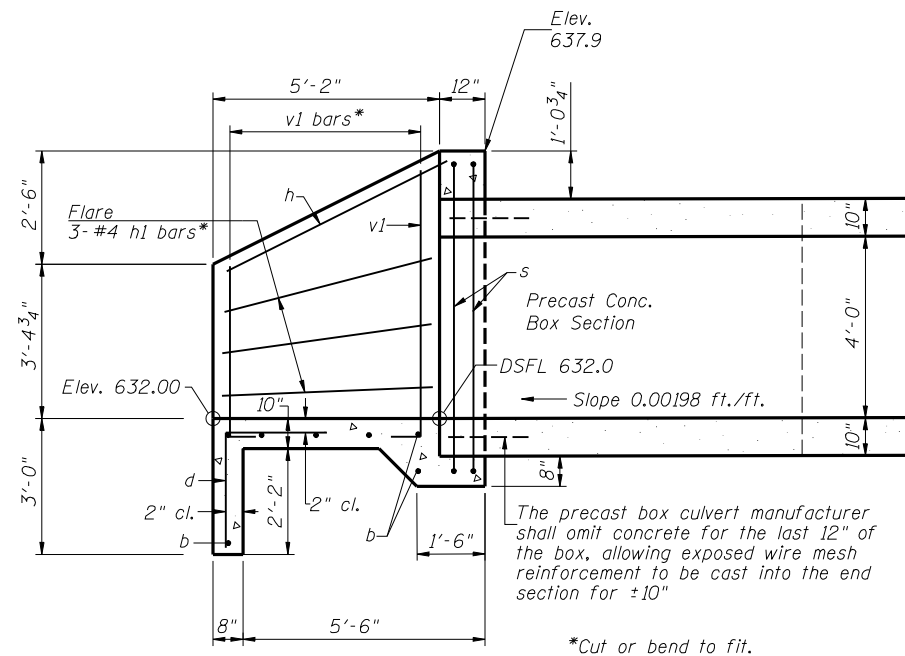
TOTAL BILL OF MATERIAL

ITEM	UNIT	QTY.
Precast Concrete Box Culvert 10' x 4' (M273)	Foot	50.5
Concrete Structures	Cu Yd	23
Reinforcement Bars, Epoxy Coated	Pound	1440
Expansion Bolts 3/4 Inch	Each	50
Hot-mix Asphalt Base Course, 8"	Sq Yd	53
Hot-mix Asphalt Surface Course, Mix "D", N50	Ton	7
Hot-mix Asphalt Binder Course, IL-90, N50	Ton	13
Pavement Removal	Sq Yd	59
Combination Conc. Curb and Gutter Removal & Repl.	Foot	39
Bituminous Materials (Prime Coat)	Gallon	3
Name Plates	Each	1

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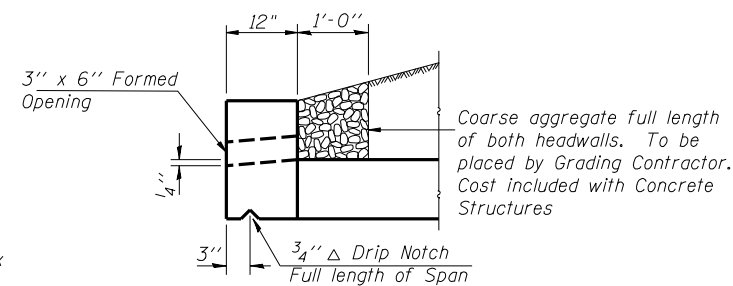


ELEVATION

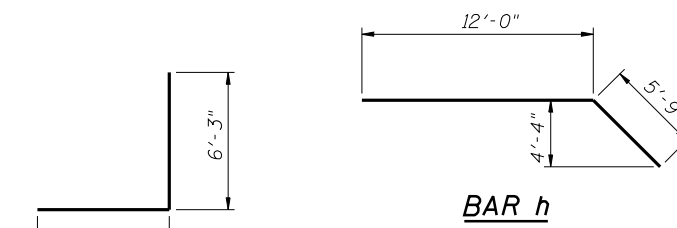


SECTION A-A

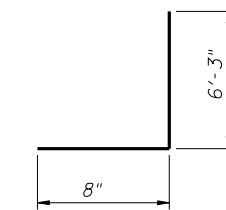
Note:
Expansion Bolts shall be 3/4" φ hooked bolts.
Hooked bolts shall extend a minimum of 9" into new concrete.



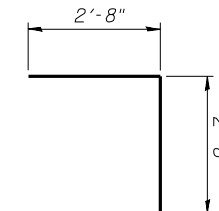
AT DOWNSTREAM END
DRAIN DETAIL



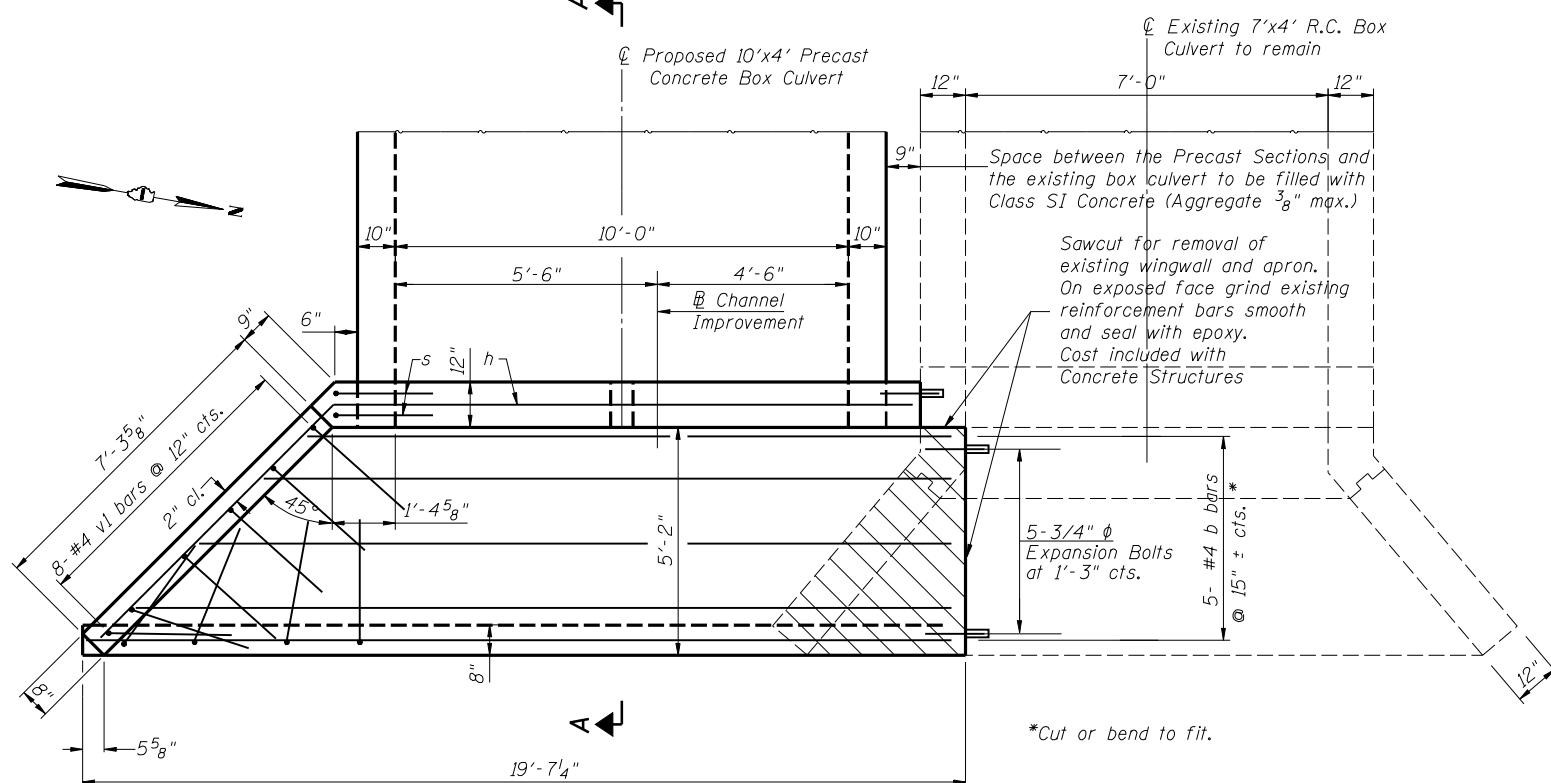
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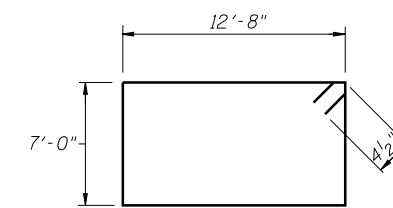
BAR v1



BAR d



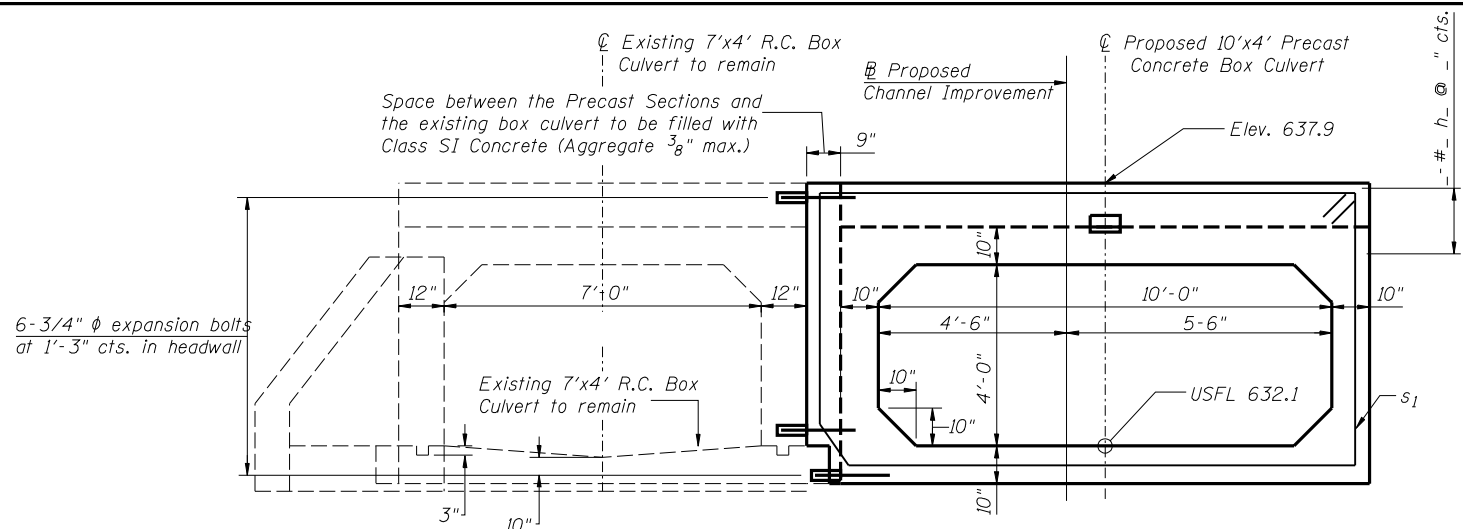
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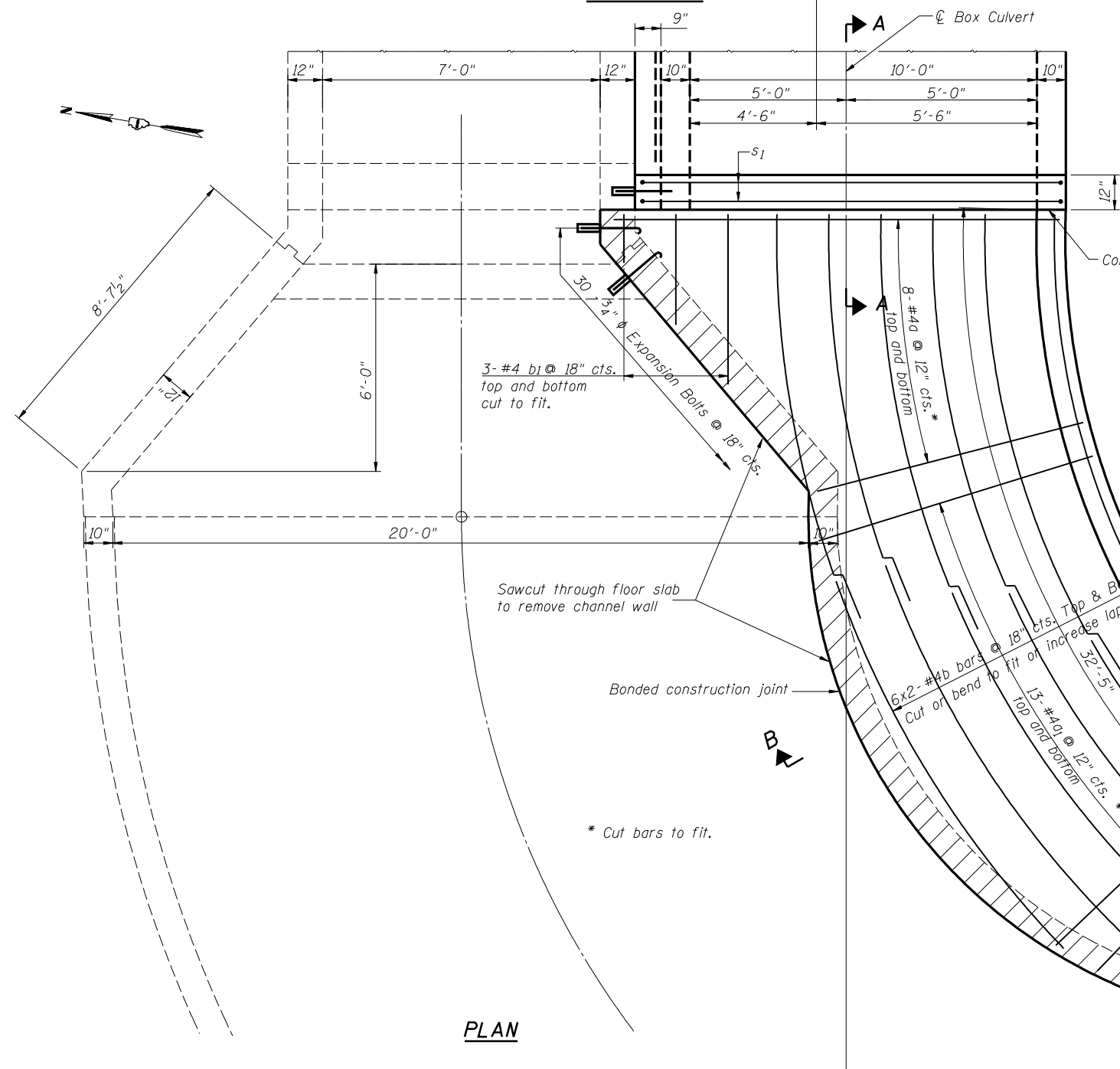
BAR s

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
b	6	#4	19'-3"	—
d	14	#4	5'-4"	┌
h	1	#4	17'-9"	—
h1	3	#4	5'-3"	—
s	2	#4	40'-1"	□
v1	8	#4	6'-11"	┌
		Expansion Bolts 3/4"	Each	14
		Concrete Structures	Cu. Yd.	6.1
		Reinforcement Bars	Pound	240

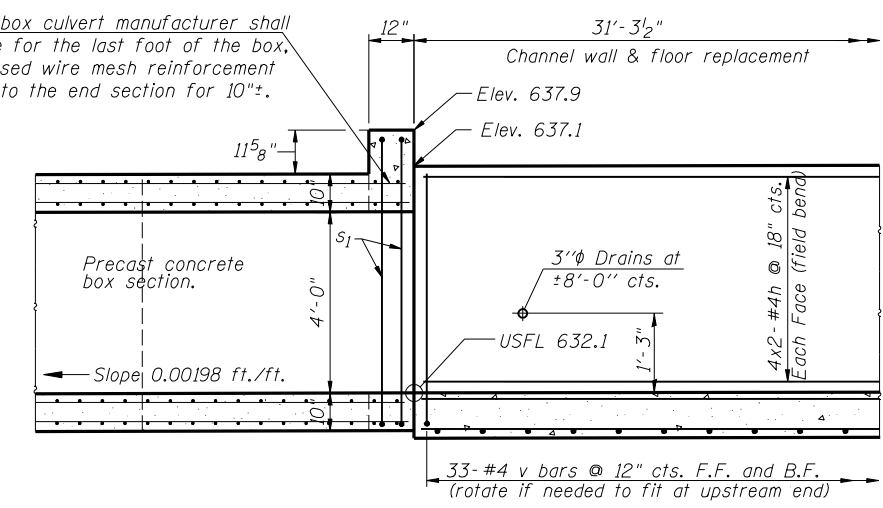


ELEVATION

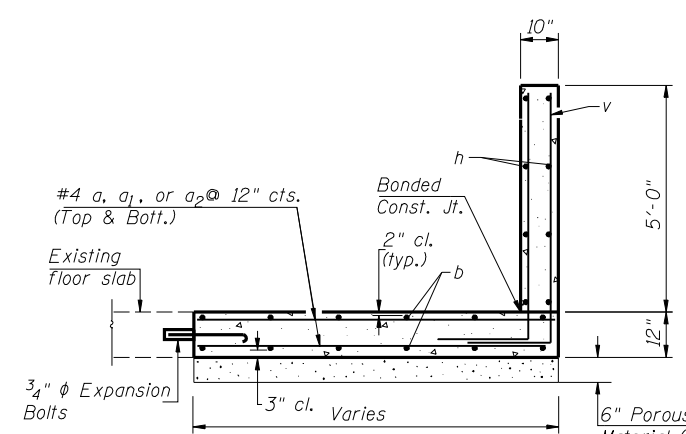


PLAN

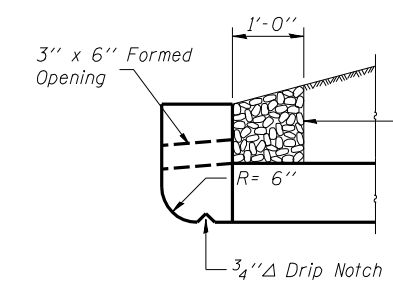
Note:
The precast box culvert manufacturer shall omit concrete for the last foot of the box, allowing exposed wire mesh reinforcement to be cast into the end section for 10"±.



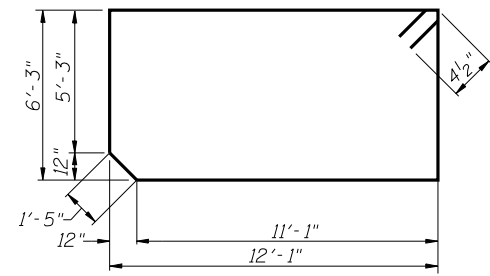
SECTION A-A



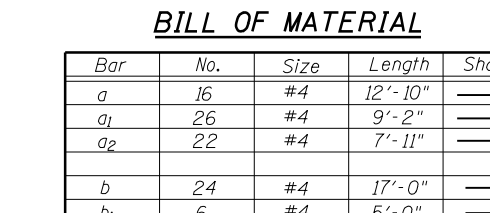
SECTION B-B



**AT UPSTREAM END
DRAIN DETAIL**



BAR v



BAR s1

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a	16	#4	12'-10"	—
a1	26	#4	9'-2"	—
a2	22	#4	7'-11"	—
b	24	#4	17'-0"	—
b1	6	#4	5'-0"	—
h	8	#4	17'-0"	—
s1	2	#4	36'-10"	□
v	66	#4	8'-0"	┌
Expansion Bolts 3/4"			Each	36
Concrete Structures			Cu. Yd.	16.9
Reinforcement Bars			Pound	1200

Bars indicated thus 4x2- #4 etc., indicates 4 lines of bars with 2 lengths per line.

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Drawn By JUF Checked By TMM

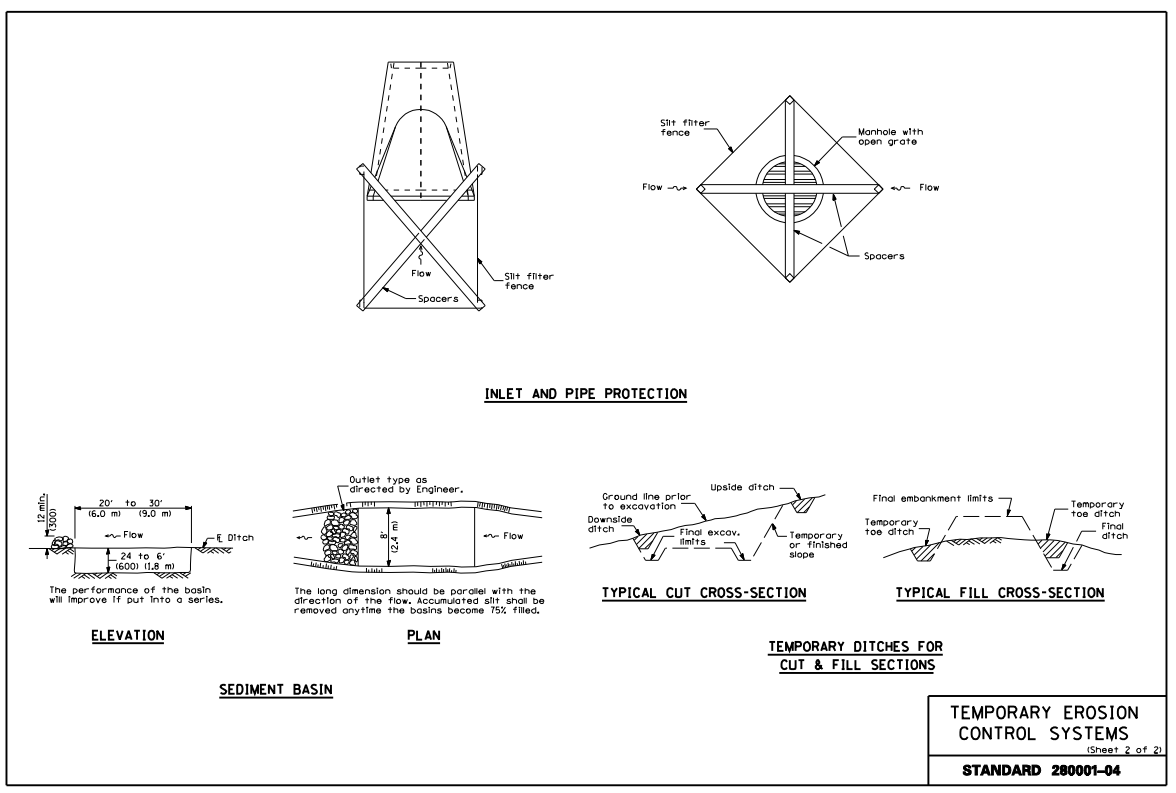
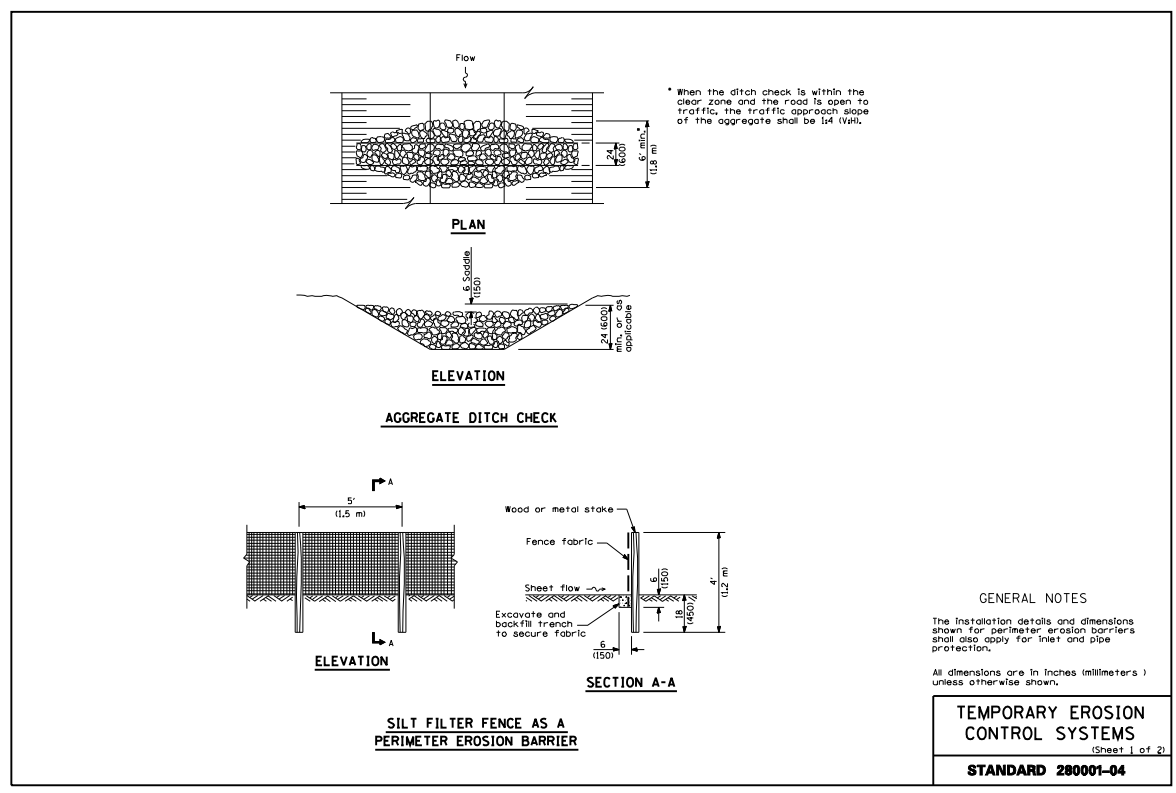
Notes:

1. All erosion control items to be furnished and maintained by the Contractor for the entire duration of the project, as directed by the Engineer.
2. Unless otherwise indicated, all vegetative and structural erosion and sediment control practices shall be constructed according to minimum standards and specifications in the Illinois Urban Manual revised February 2002 and the January 2007 IDOT Standard Specifications.
3. The North Cook County Soil and Water Conservation District (NCCSWCD) must be notified one week prior to the pre-construction conference, one week prior to the commencement of land disturbing activities and one week prior to the final inspection.
4. A copy of the approved Erosion and Sediment Control Plan shall be maintained on the site at all times.
5. Prior to commencing land-disturbing activities in areas other than indicated on these plans (including, but not limited to, additional phases of development and off site borrow or waste areas) a Supplementary Erosion Control Plan shall be submitted to the owner for review.
6. The Contractor is responsible for installation of any additional erosion control measures necessary to prevent erosion and sedimentation as determined by the NCCSWCD.
7. During any dewatering operations, water will be pumped into sediment basins or silt traps. Dewatering directly into field tiles or storm water structures is prohibited.
8. All adjacent streets must be kept clear of debris, inspected daily and cleaned when necessary.
9. All erosion control measures must be inspected weekly and after each 1/2" rain event.
10. Mulch shall be installed on all slopes and in critical areas immediately upon final grading.
11. The priority shall be given to the completion and stabilization of the disturbed areas. Work in these areas shall not be prolonged in attempt that all final grading and stabilization can take place at one time.
12. Stockpiles of soil and other materials to remain in place more than three (3) days shall be furnished with erosion and sediment control measures (I.E. perimeter erosion barrier). Stockpiles to remain in place for 21 days or more shall receive temporary seeding.
13. In areas where work is complete, permanent stabilization shall occur within 7 days of completion, and in areas where work has temporarily ceased for 21 days or more, temporary stabilization shall occur by the 14th day after work has ceased.
14. Completed slopes shall be seeded and mulched as the excavation proceeds to the extent considered desirable and practical. Permanent seeding shall be used whenever possible. Under no circumstances shall the contractor prolong final grading and shaping so that the entire project can be permanently seeded at one time.
15. The condition of the construction site for winter shutdown shall be addressed early in the fall growing season so that slopes and other bare earth areas may be stabilized with temporary and/or permanent vegetative cover for proper erosion and sediment control. All open areas that are to remain idle throughout the winter shall receive temporary erosion control measures including temporary seeding, mulching and/or erosion control blanket prior to the end of the fall growing season. The areas to be worked beyond the end of the growing season must incorporate soil stabilization measures that do not rely on vegetative cover such as erosion control blanket and heavy mulching.
16. No work shall be performed in flowing water, work in and near the critical areas should be isolated from concentrated flows or stream flow. The stream banks should be stabilized at the end of each day. Once work in this area begins, priority shall be given to the completion of the work and final stabilization of all disturbed areas.

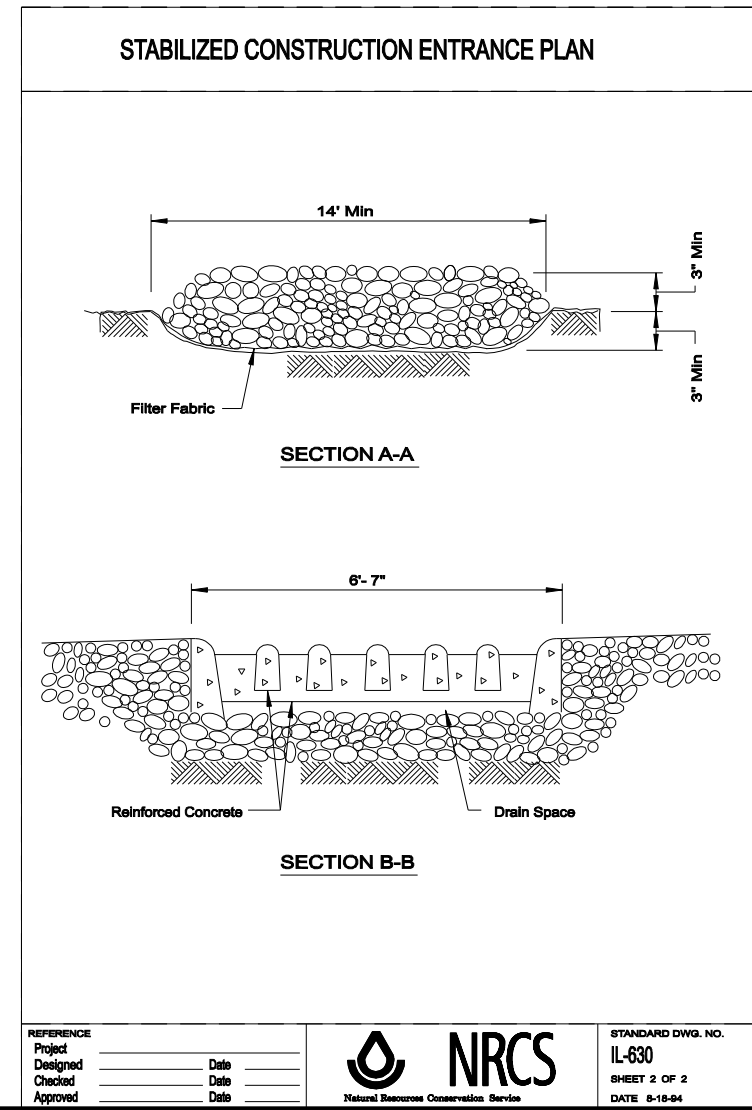
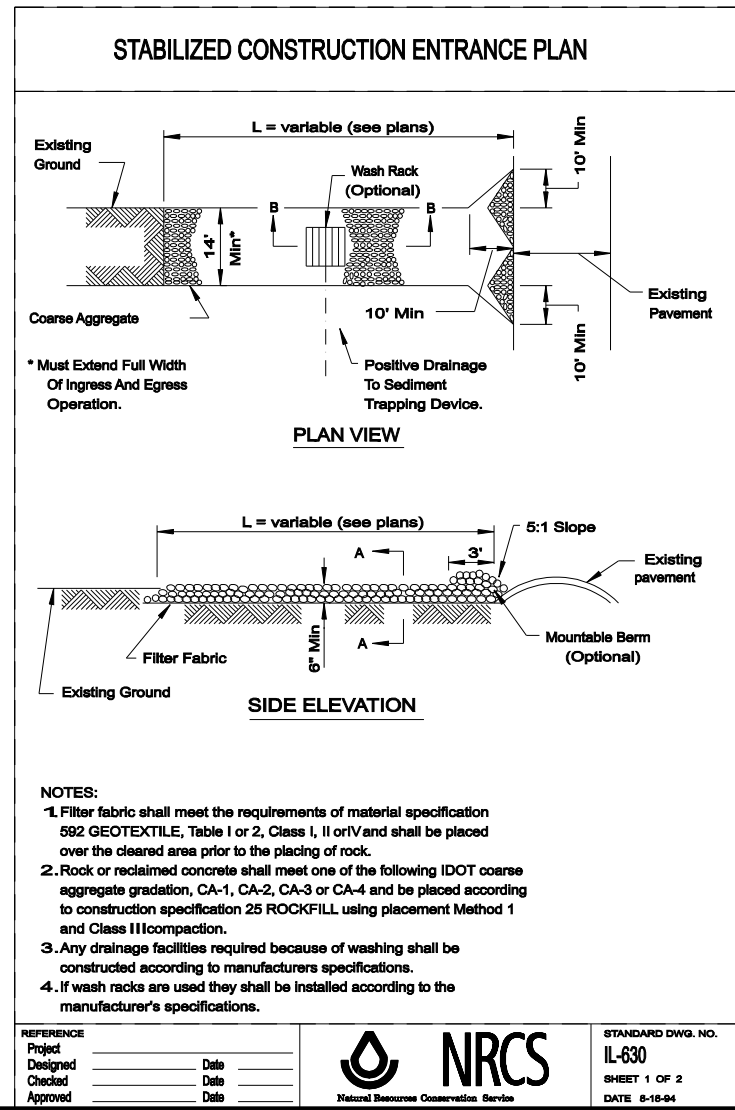
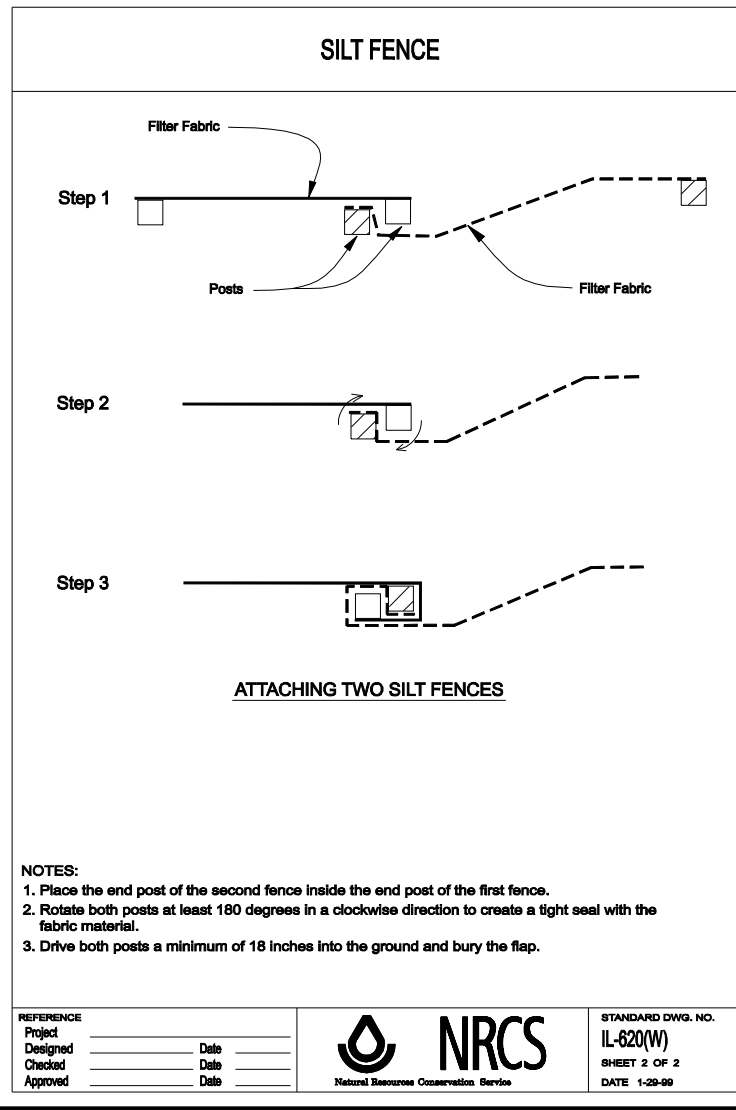
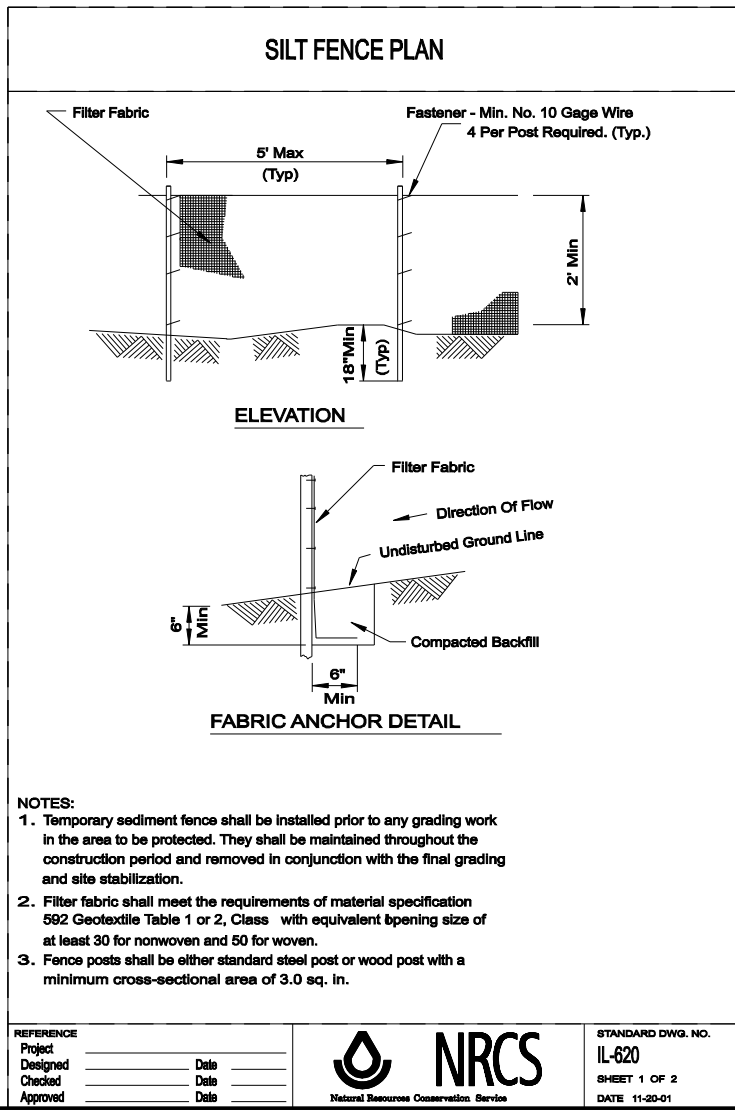
CONTRACTOR CERTIFICATION	
<p><i>"I certify under penalty of law that I understand the terms and conditions of the General National Pollutant Discharge Elimination System (NPDES) Permit (ILR10) that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this Certification."</i></p>	
GENERAL CONTRACTOR	
Signature _____	Title _____
Company _____	Date _____
SUB-CONTRACTOR Responsible for: _____	
Signature _____	Title _____
Company _____	Date _____
WITNESSED BY OWNER	
Signature _____	Title _____
Company _____	Date _____

INSPECTION AND MAINTENANCE SCHEDULE

ACTIVITY	RESPONSIBLE PARTY	DURATION
Stabilization during construction maintenance	Contractor	Weekly and after every 1/2" of rainfall
Stabilization during construction-observation	Engineer	Weekly and after every 1/2" of rainfall
Vegetation maintenance	Contractor	Completion of Contract
Vegetation and stabilization maintenance	Village of Schiller Park	Ongoing after construction completion

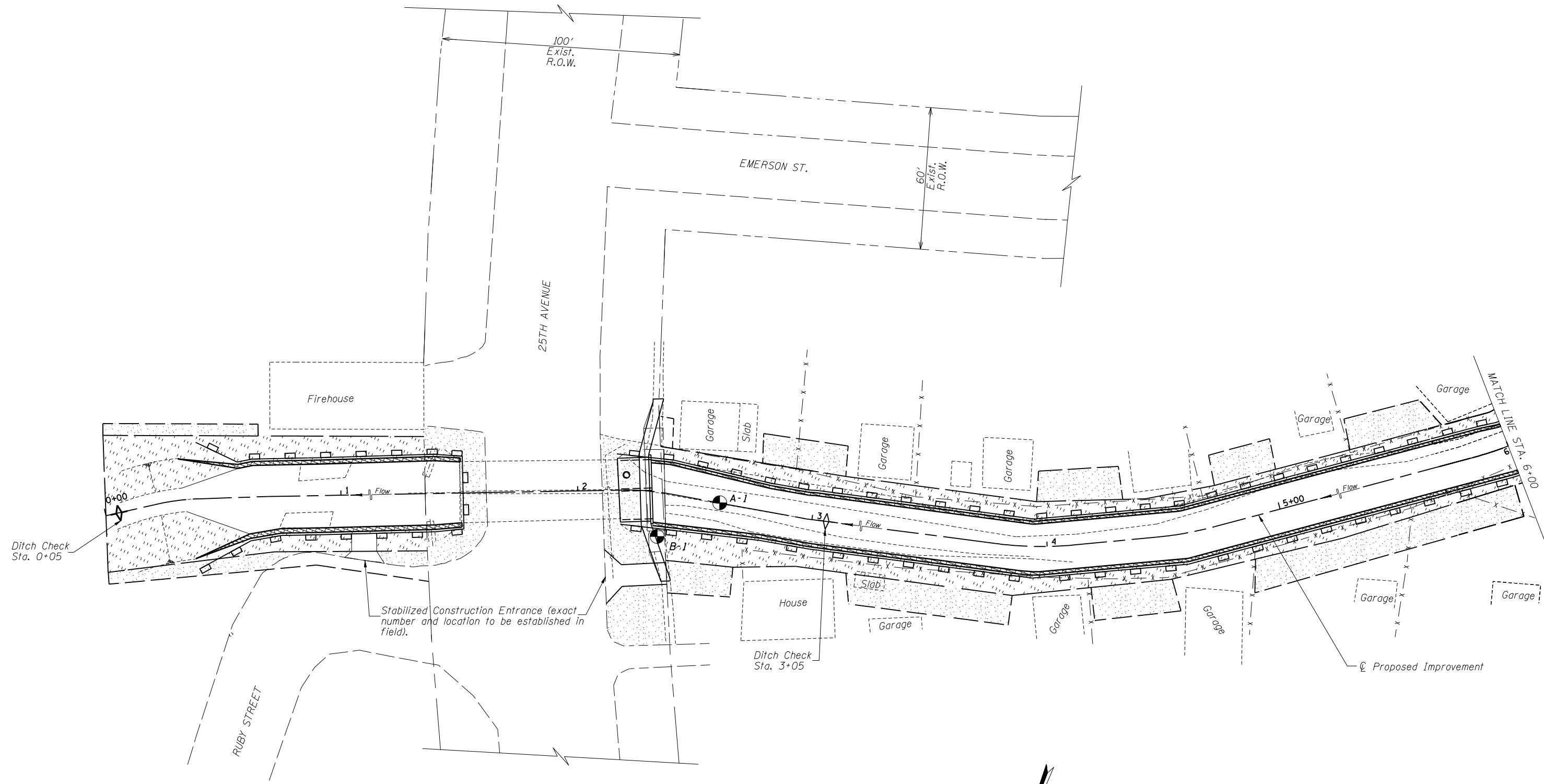


Notes:
Refer to the Illinois Urban Manual for NRCS referenced specifications:
592 Geotextile
25 Rockfill

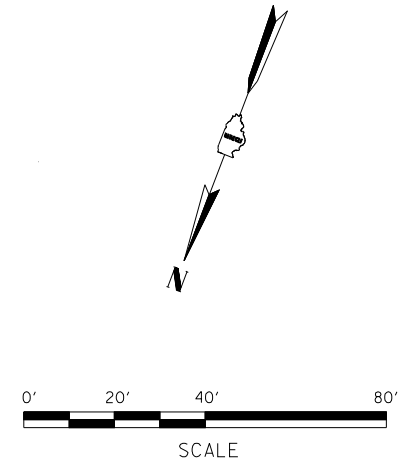


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 Drawn By: J.JF
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Note:
Location of Perimeter Erosion Barrier and Temporary Ditch Checks may need to be adjusted to meet field conditions, as directed by the Engineer.



LEGEND	
	SEEDING, MULCHING AND FERTILIZING
	SEEDING, CLASS 4 WITH MULCH METHOD 3
	TEMPORARY DITCH CHECKS
	PERIMETER EROSION BARRIER

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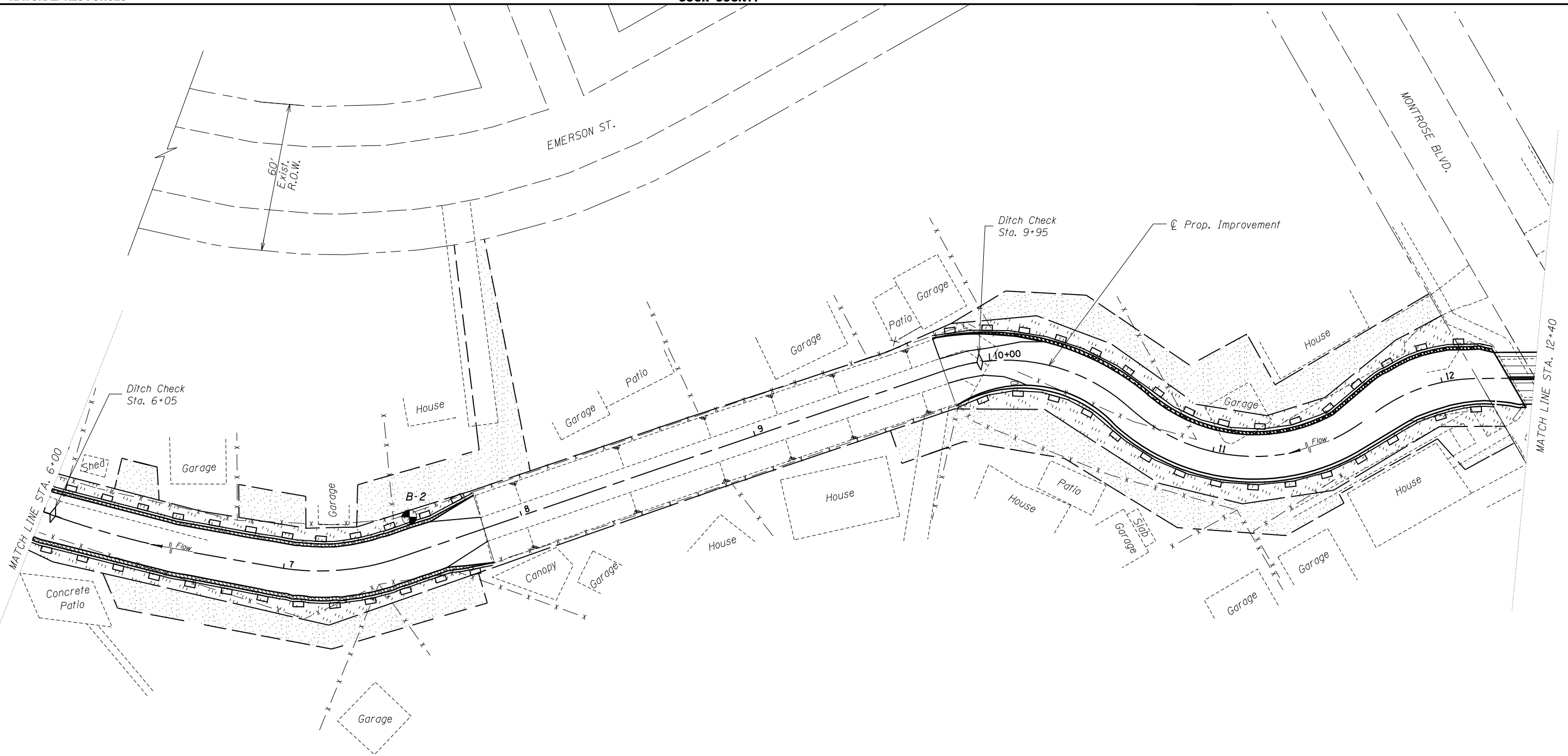
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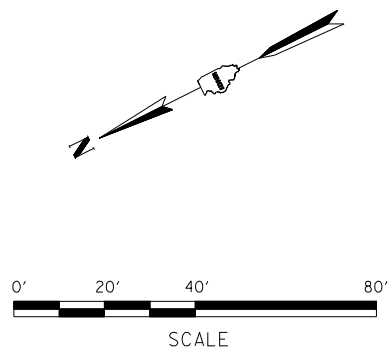
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Note:
Location of Perimeter Erosion Barrier
and Temporary Ditch Checks may need
to be adjusted to meet field conditions,
as directed by the Engineer.



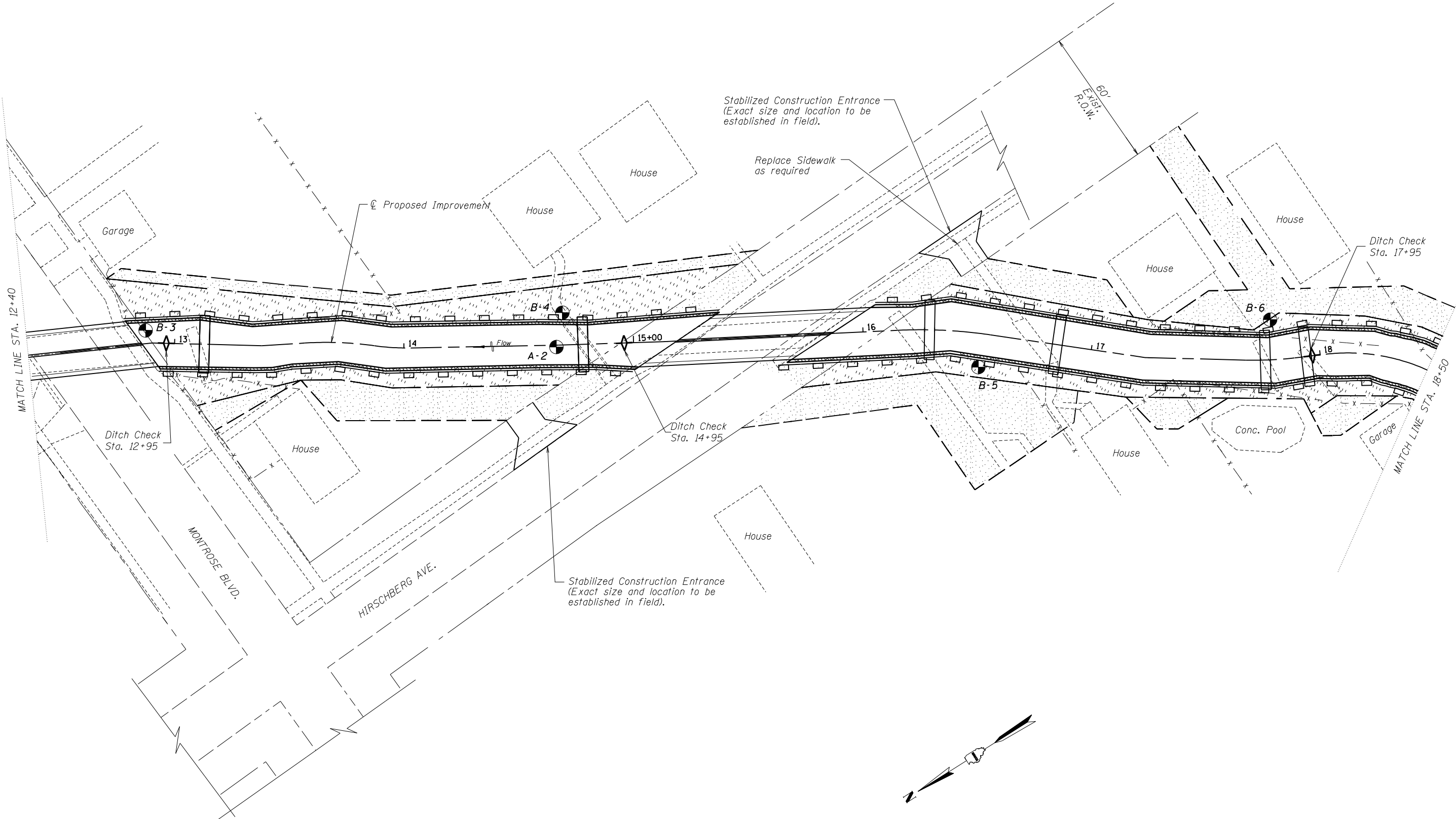
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	SEEDING, CLASS 4 WITH MULCH METHOD 3
	TEMPORARY DITCH CHECKS
	PERIMETER EROSION BARRIER

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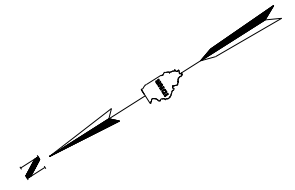
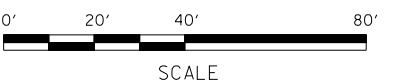
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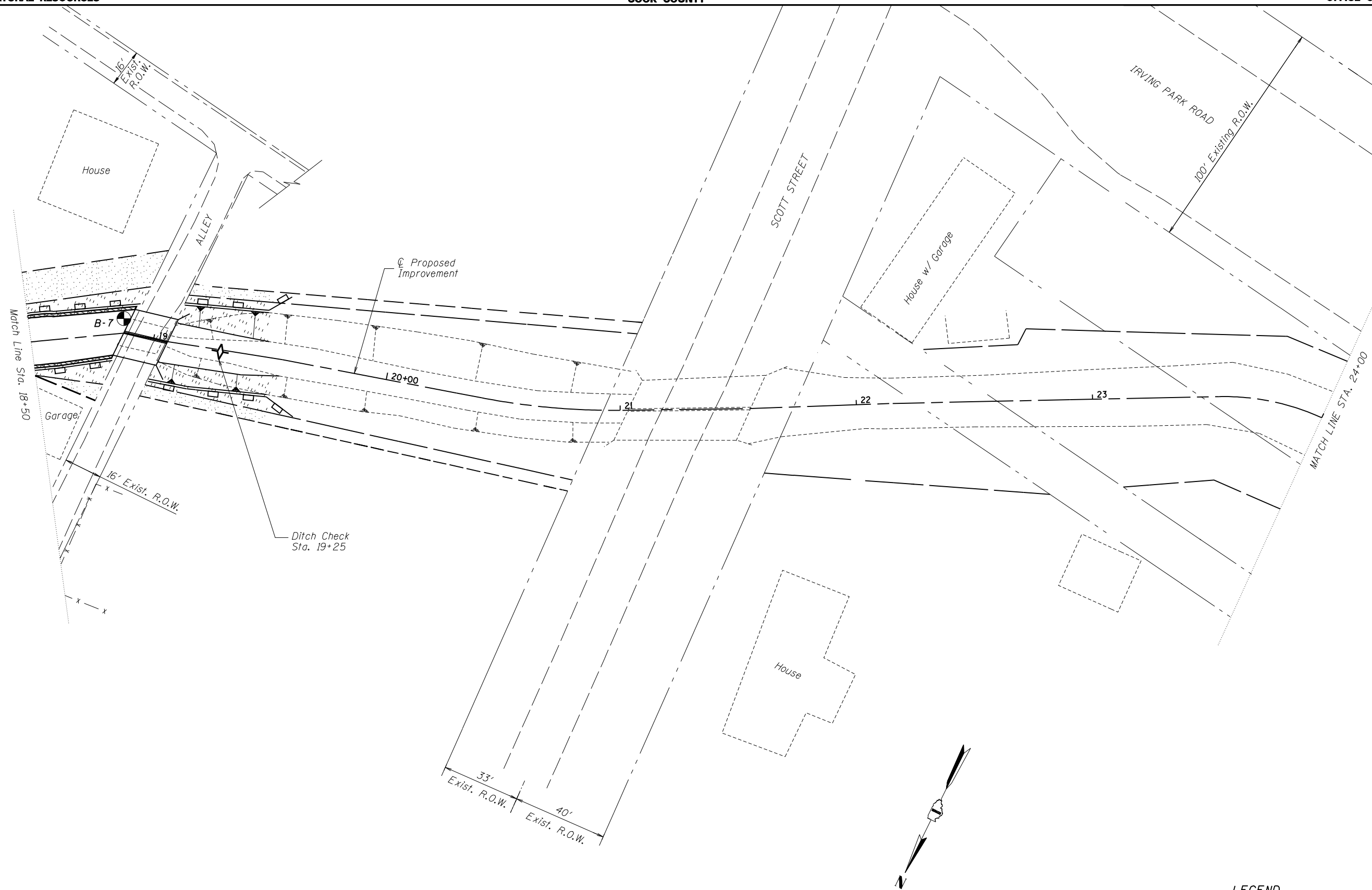


Note:
Location of Perimeter Erosion Barrier and Temporary Ditch Checks may need to be adjusted to meet field conditions, as directed by the Engineer.



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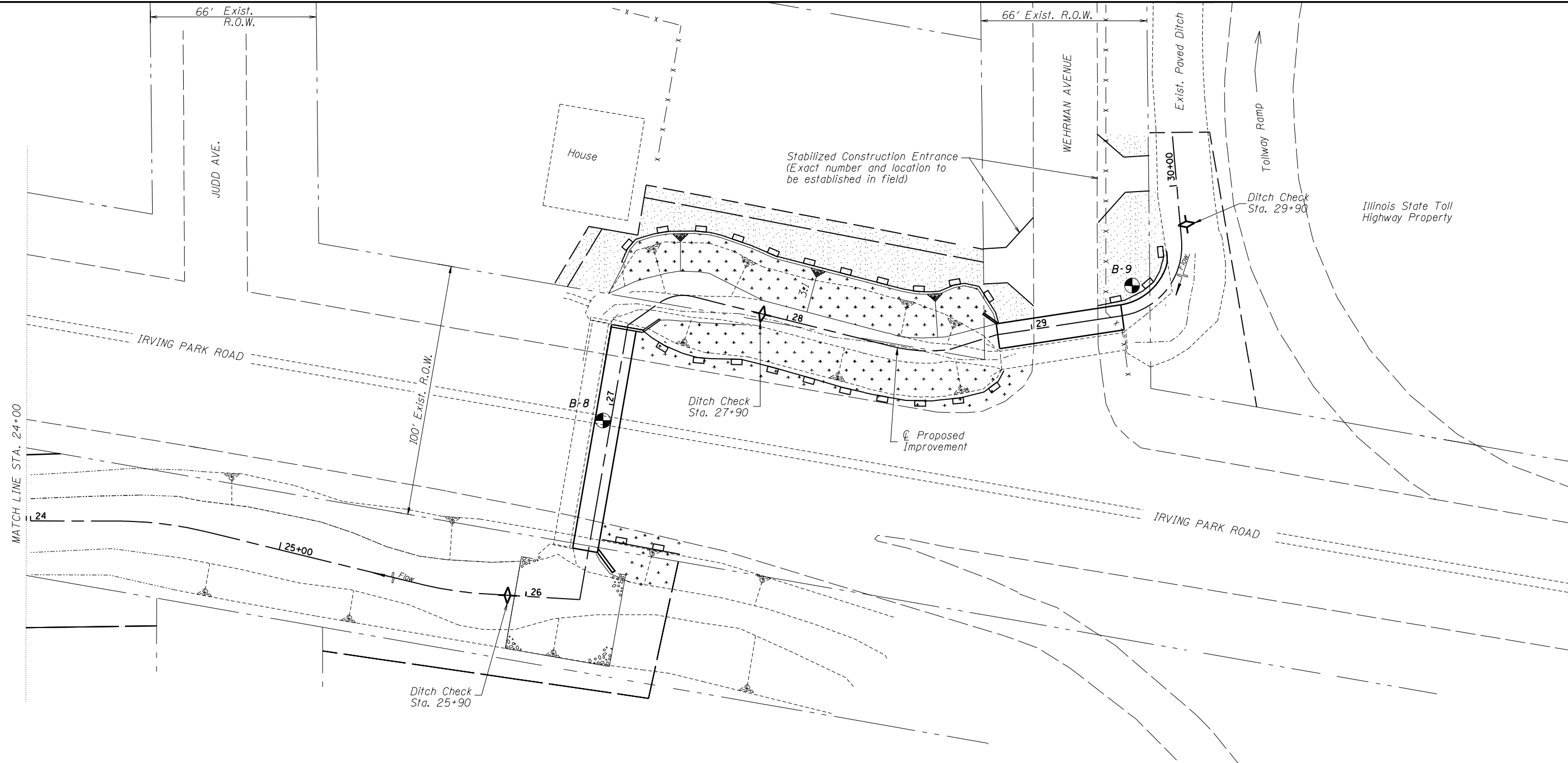
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	SEEDING, CLASS 4 WITH MULCH METHOD 3
	TEMPORARY DITCH CHECKS
	PERIMETER EROSION BARRIER



Note:
Location of Perimeter Erosion Barrier
and Temporary Ditch Checks may need
to be adjusted to meet field conditions,
as directed by the Engineer.

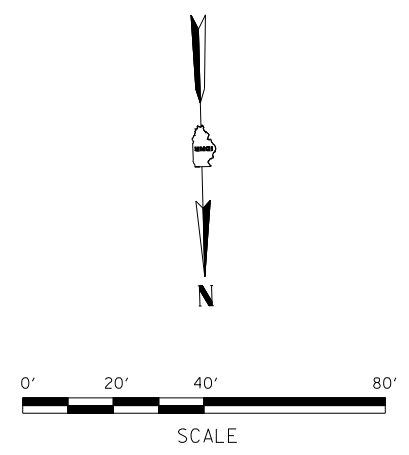
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	TEMPORARY DITCH CHECKS
	PERIMETER EROSION BARRIER

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MATCH LINE STA. 24+00

Note:
Location of Perimeter Erosion Barrier
and Temporary Ditch Checks may need
to be adjusted to meet field conditions,
as directed by the Engineer.



LEGEND

	SEEDING, CLASS 6A WITH MULCH METHOD 3
	SEEDING, MULCHING AND FERTILIZING
	TEMPORARY DITCH CHECKS
	PERIMETER EROSION BARRIER

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AECOM
JOB NO. 60100055
STRUCTURE BORING LOG
Page 1 of 1
Date 8/19/09

ROUTE _____ DESCRIPTION Crystal Creek Flood Control Project Phase IIA
SECT. _____ STRUCT. NO. _____ DRILLED BY Matthews
COUNTY Cook LOCATION Village of Schiller Park, IL

Boring No. A-1 Station 2+80 Offset 0.00ft
Surface Elev. 628.00 ft

DEPTH (ft)	DESCRIPTION	TEST	VALUE
0	Surface Water Elev.		
0	Groundwater Elev. when drilling at Completion		At Surface
0	Groundwater Elev. after		
3	Medium dense, gray, SILTY CLAY LOAM	7.5P	19.1
4			20.1
624.00	Very stiff, gray, CLAY	3.5P	12.4
622.00		3.75P	
622.00	Borehole backfilled upon completion.		

Borehole backfilled upon completion.
89 lb. Donut hammer used for Standard Penetration Tests.
WOT: Weight of Hammer

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test Stations, Depths, Offset, and Elevations are in Feet

AECOM
JOB NO. 60100055
STRUCTURE BORING LOG
Page 1 of 1
Date 8/19/09

ROUTE _____ DESCRIPTION Crystal Creek Flood Control Project Phase IIA
SECT. _____ STRUCT. NO. _____ DRILLED BY Matthews
COUNTY Cook LOCATION Village of Schiller Park, IL

Boring No. A-2 Station 14+82 Offset 0.00ft
Surface Elev. 631.00 ft

DEPTH (ft)	DESCRIPTION	TEST	VALUE
0	Surface Water Elev.		
0	Groundwater Elev. when drilling at Completion		At Surface
0	Groundwater Elev. after		
12.6	Black and gray, GRAVEL		
25.0	Medium, black, organic CLAY	0.5P	22.4
24.7		1.5P	
24.7	Stiff to very stiff, brown and gray, CLAY	1.75P	
25.3		2.25P	
25.3		2.5P	
625.00	Borehole backfilled upon completion.		

Borehole backfilled upon completion.
Casing used: 4 ft of 2 in 89 lb. Donut hammer used for Standard Penetration Tests.
WOT: Weight of Hammer

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test Stations, Depths, Offset, and Elevations are in Feet

AECOM
JOB NO. 60100055
STRUCTURE BORING LOG
Page 1 of 1
Date 8/21/09

ROUTE _____ DESCRIPTION Crystal Creek Flood Control Project Phase IIA
SECT. _____ STRUCT. NO. _____ DRILLED BY Baker
COUNTY Cook LOCATION Village of Schiller Park, IL

Boring No. B-1 Station 2+43 Offset 19.00ft
Surface Elev. 633.00 ft

DEPTH (ft)	DESCRIPTION	TEST	VALUE
0	Surface Water Elev.		
0	Groundwater Elev. when drilling at Completion		Div WD
0	Groundwater Elev. after		
4P	Hard, black, organic CLAY		22
6.75P	Very stiff to hard, dark brown, CLAY (fill)		15
7P			
3P			21.3
625.50			
625.50	Medium, black and gray, organic CLAY (buried topsoil)	5P	31.2
623.50		7.5P	
623.50	Note: Obstruction encountered - Boring offset 10.0 feet West		
623.50	Borehole backfilled upon completion.		

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test Stations, Depths, Offset, and Elevations are in Feet

AECOM
JOB NO. 60100055
STRUCTURE BORING LOG
Page 1 of 1
Date 8/21/09

ROUTE _____ DESCRIPTION Crystal Creek Flood Control Project Phase IIA
SECT. _____ STRUCT. NO. _____ DRILLED BY Baker
COUNTY Cook LOCATION Village of Schiller Park, IL

Boring No. B-1A Station 2+50 Offset 19.00ft
Surface Elev. 633.00 ft

DEPTH (ft)	DESCRIPTION	TEST	VALUE
0	Surface Water Elev.		
0	Groundwater Elev. when drilling at Completion		19.0 ft WD
0	Groundwater Elev. after		0.0
628.00	Hard, black, organic CLAY (buried topsoil)	6.25P	16.5
625.50	Stiff, brown, CLAY	1P	25.9
623.00	Gray, SILT		21.5
621.00	Stiff to very stiff, gray, CLAY (fill)		
17.5P			11.2
2P			
3.75P			14.1
4P			
611.00	Borehole backfilled upon completion.		

Borehole backfilled upon completion.
Automatic-CME hammer used for Standard Penetration Tests.

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test Stations, Depths, Offset, and Elevations are in Feet

AECOM
JOB NO. 60100055
STRUCTURE BORING LOG
Page 1 of 1
Date 8/21/09

ROUTE _____ DESCRIPTION Crystal Creek Flood Control Project Phase IIA
SECT. _____ STRUCT. NO. _____ DRILLED BY Baker
COUNTY Cook LOCATION Village of Schiller Park, IL

Boring No. B-2 Station 7+81 Offset 17.00ft
Surface Elev. 634.50 ft

DEPTH (ft)	DESCRIPTION	TEST	VALUE
0	Surface Water Elev.		
0	Groundwater Elev. when drilling at Completion		Dry WD
0	Groundwater Elev. after		
3.25P	Very stiff, brown, CLAY (fill)		28.9
3.75P			
632.00	Brown, SILT		8.8
630.00	Hard, brown, CLAY	7+P	14
626.20		7+P	16.6
626.20	Brown, SILT		16.3
624.50	Hard to very stiff, gray, CLAY (fill)	6P	20.7
6.25P			
2.5P			14.3
2.75P			
3P			16.3
3.25P			
612.50	Borehole backfilled upon completion.		

Borehole backfilled upon completion.
Automatic-CME hammer used for Standard Penetration Tests.

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test Stations, Depths, Offset, and Elevations are in Feet

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STRUCTURE BORING LOG
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Date 8/19/09

ROUTE _____ DESCRIPTION Crystal Creek Flood Control Project Phase IIA
SECT. _____ STRUCT. NO. _____ DRILLED BY Baker
COUNTY Cook LOCATION Village of Schiller Park, IL

Boring No. B-3 Station 12+88 Offset 16.00ft
Surface Elev. 635.50 ft

DEPTH (ft)	DESCRIPTION	TEST	VALUE
0	Surface Water Elev.		
0	Groundwater Elev. when drilling at Completion		4.5 ft WD
0	Groundwater Elev. after		0.0
7+P	Hard, black, organic, CLAY (topsoil)		28.8
7+P	Hard, gray, CLAY (fill)		7.2
7+P			12.2
631.00	Stiff to hard, gray, CLAY (fill)	1.25P	25
4.25P			19.8
4.5P			
3.25P			21.9
3.5P			19.7
3.5P			17.4
3.75P			
2.5P			18.4
613.50	Borehole backfilled upon completion.		

Borehole backfilled upon completion.
Automatic-CME hammer used for Standard Penetration Tests.

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test Stations, Depths, Offset, and Elevations are in Feet

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ROUTE _____ DESCRIPTION Crystal Creek Flood Control Project Phase IIA
SECT. _____ STRUCT. NO. _____ DRILLED BY Baker
COUNTY Cook LOCATION Village of Schiller Park, IL

Boring No. B-4 Station 14+83 Offset 18.00ft
Surface Elev. 638.00 ft

DEPTH (ft)	DESCRIPTION	TEST	VALUE
0	Surface Water Elev.		
0	Groundwater Elev. when drilling at Completion		15.0 ft WD
0	Groundwater Elev. after		
8.5P	Hard, brown and black, CLAY (fill)		21.1
6.75P			
7+P			16
633.00	Stiff to very stiff, gray, CLAY (fill)	4.75P	20.1
1P			28.7
1.25P			
2.25P			20.4
2.75P			
2.25P			16.1
2.5P			
1P			16.3
616.00	Borehole backfilled upon completion.		

Borehole backfilled upon completion.
Automatic-CME hammer used for Standard Penetration Tests.

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test Stations, Depths, Offset, and Elevations are in Feet

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ROUTE _____ DESCRIPTION Crystal Creek Flood Control Project Phase IIA
SECT. _____ STRUCT. NO. _____ DRILLED BY Baker
COUNTY Cook LOCATION Village of Schiller Park, IL

Boring No. B-5 Station 16+33 Offset 20.00ft
Surface Elev. 630.50 ft

DEPTH (ft)	DESCRIPTION	TEST	VALUE
0	Surface Water Elev.		
0	Groundwater Elev. when drilling at Completion		12.5 ft AB
0	Groundwater Elev. after		0.0
3	Hard, black, organic, SILTY CLAY	7+P	18.2
4			
6			
7			
5	Hard to very stiff, brown, CLAY	7+P	22.5
5.5P			18.8
6			
7			
2.75P			20.7
3P			
3.25P			21.9
2.25P			24.2
6.6			
619.90	Brown, SAND		
617.50	Gray, SILT		
14.8			
612.50	Stiff, gray, CLAY (fill)		
1.75P			19.7
608.50	Borehole backfilled upon completion.		

Borehole backfilled upon completion.
Automatic-CME hammer used for Standard Penetration Tests.

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test Stations, Depths, Offset, and Elevations are in Feet

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 Drawn By JJF Checked By TMM
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STRUCTURE BORING LOG

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ROUTE _____ DESCRIPTION Crystal Creek Flood Control Project Phase IIA
SECT. _____ STRUCT. NO. _____ DRILLED BY Baker
COUNTY Cook LOCATION Village of Schiller Park, IL

Boring No.	Station	Offset	Surface Elev.	D	B	Penetration Test	Qu	W	Surface Water Elev.	Groundwater Elev. when drilling at Completion
			ft	H	S		tsf	%		
B-8	17+30	23.00ft	637.00			7+P	23.1			14.0 ft. WD
Hard, black, organic, CLAY (topsoil)										
Hard, brown, CLAY (fill)										
Very stiff to hard, brown, CLAY										
Loose, gray, SANDY LOAM										
Very stiff, gray, CLAY (ill)										
Borehole backfilled upon completion. Automatic-CME hammer used for Standard Penetration Tests.										

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test Stations, Depths, Offset, and Elevations are in Feet

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STRUCTURE BORING LOG

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Date 8/20/09

ROUTE _____ DESCRIPTION Crystal Creek Flood Control Project Phase IIA
SECT. _____ STRUCT. NO. _____ DRILLED BY Baker
COUNTY Cook LOCATION Village of Schiller Park, IL

Boring No.	Station	Offset	Surface Elev.	D	B	Penetration Test	Qu	W	Surface Water Elev.	Groundwater Elev. when drilling at Completion
			ft	H	S		tsf	%		
B-7	19+18	23.00ft	635.00			5	5.5P	19.2		12.5 ft. AB
Hard, black, organic, CLAY, trace bricks (fill)										
Very stiff, black, organic, CLAY (topsoil)										
Stiff to very stiff, brown, CLAY										
Gray, SANDY LOAM										
Very stiff, gray, CLAY (ill)										
Borehole backfilled upon completion. Automatic-CME hammer used for Standard Penetration Tests.										

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test Stations, Depths, Offset, and Elevations are in Feet

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STRUCTURE BORING LOG

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ROUTE _____ DESCRIPTION Crystal Creek Flood Control Project Phase IIA
SECT. _____ STRUCT. NO. _____ DRILLED BY Mathews
COUNTY Cook LOCATION Village of Schiller Park, IL

Boring No.	Station	Offset	Surface Elev.	D	B	Penetration Test	Qu	W	Surface Water Elev.	Groundwater Elev. when drilling at Completion
			ft	H	S		tsf	%		
B-8	27+00	0.00ft	637.20							10.0 ft. WD
Pavement: 4" Bituminous concrete, 18" Portland cement concrete										
Stiff, black, organic CLAY (topsoil)										
Stiff to very stiff, gray, CLAY										
Very stiff, gray, SANDY CLAY (ill)										
Borehole backfilled upon completion. Automatic-CME hammer used for Standard Penetration Tests.										

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test Stations, Depths, Offset, and Elevations are in Feet

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STRUCTURE BORING LOG

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Date 8/21/09

ROUTE _____ DESCRIPTION Crystal Creek Flood Control Project Phase IIA
SECT. _____ STRUCT. NO. _____ DRILLED BY Baker
COUNTY Cook LOCATION Village of Schiller Park, IL

Boring No.	Station	Offset	Surface Elev.	D	B	Penetration Test	Qu	W	Surface Water Elev.	Groundwater Elev. when drilling at Completion
			ft	H	S		tsf	%		
B-9	29+27	15.00ft	638.00							17.0 ft. WD
Stiff to very stiff, black, organic, CLAY (topsoil)										
Stiff to very stiff, brown, CLAY (ill)										
Stiff to very stiff, gray, CLAY (ill)										
Sand seams at 15.0 feet										
Borehole backfilled upon completion. Automatic-CME hammer used for Standard Penetration Tests.										

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test Stations, Depths, Offset, and Elevations are in Feet

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