

WIDENING OF BR. NO. 95884 - HANSON BLVD. OVER COON CREEK IN THE CITY OF COON RAPIDS

FED. PROJ. NO.

DESIGN DATA

1996 (AND CURRENT INTERIM) A.A.S.H.T.O. DESIGN SPECIFICATIONS
 LOAD FACTOR DESIGN METHOD
 DESIGN LOADING HS25 LIVE LOAD
 MAXIMUM ALLOWABLE DESIGN STRESSES:
 REINFORCED CONCRETE:
 f'c = 4000 PSI N=8
 Fy = 60000 PSI (REINFORCEMENT)

DESIGN SPEED OVER = 40 M.P.H.
 DESIGN SPEED UNDER = N/A

PROJECTED ADT FOR YEAR 2022 = 46900

SHEET INDEX

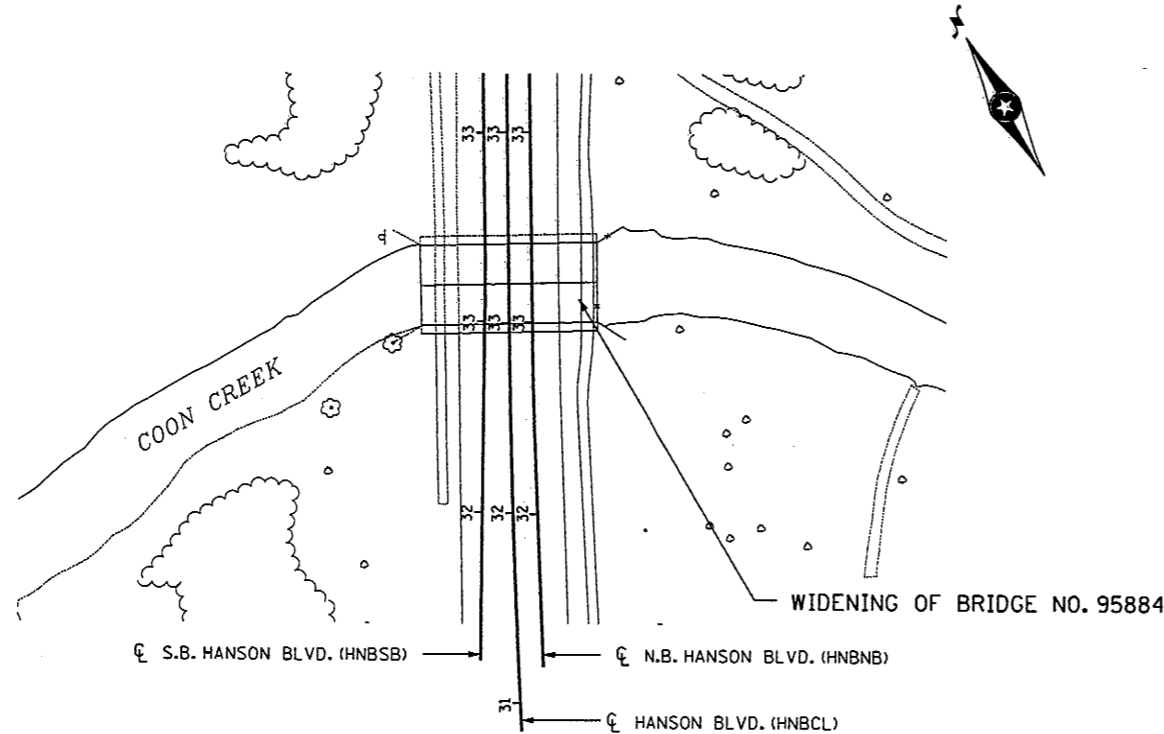
NO.	TITLE
B1	TITLE SHEET
B2	GENERAL ELEVATION & TYP. DECK SECTION
B3	REMOVAL & RECONSTRUCTION DETAILS
B4	FOOTING DETAILS
B5	MISC. DETAILS & CONSTRUCTION NOTES
B6	5' WIRE FENCE (DESIGN W-1)
B7	BRIDGE SURVEY
B8	BRIDGE SURVEY - PLAN & PROFILE

NOTE:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND INSTALLATION OF THE PRECAST CONCRETE WALL, PRECAST RETAINING WALL PANELS AND THE PRECAST REINFORCED CONCRETE ARCH, 40x10.

THE DESIGN AND INSTALLATION SHALL BE IN COMPLIANCE WITH MN/DOT TECHNICAL MEMORANDUM NO. 05-19-B-04, THE MN/DOT LRFD BRIDGE DESIGN MANUAL AND THE CURRENT EDITION OF THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES.

THE CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF THE EXISTING BRIDGE PRIOR TO CONSTRUCTION.



CONSTRUCTION NOTES

THE 2005 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

THE FIRST TWO DIGITS OF EACH BAR MARK INDICATE THE BAR SIZE, WHICH APPROXIMATES THE DIAMETER OF THE BAR IN MILLIMETERS (mm).

BAR MARKED WITH THE SUFFIX "E" SHALL BE EPOXY COATED IN ACCORDANCE WITH SPEC. 3301.

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS UTILITY QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA".

WHILE THE UTILITIES SHOWN IN THIS PLAN ARE INTENDED TO BE COMPLETE AND CORRECT, PLEASE REFER TO THE FINAL GRADING PLAN UTILITIES AND TABULATION SHEETS FOR ADDITIONAL UTILITY INFORMATION.

① SEE SHEET B3 FOR STRUCTURE REMOVAL DETAILS

② PAY ITEMS AND QUANTITIES FOR THE COON CREEK BRIDGE WIDENING ARE SHOWN ON THIS SHEET FOR INFORMATION ONLY. PAY ITEMS AND QUANTITIES DEPICTED ON SHEET B1 ARE INCLUDED IN THE PROJECT SCHEDULE OF ESTIMATED QUANTITIES ON SHEETS 3-8.

URS Thresher Square
 700 South Third Street
 Minneapolis, MN 55415

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

SIGNED: *Mark Maves*

PRINTED NAME: MARK MAVES

DATE: JANUARY 8, 2007 REG. NO.: 20496

MINNESOTA DEPARTMENT OF TRANSPORTATION

WIDENING OF BRIDGE NO. 95884 TITLE SHEET

HANSON BOULEVARD OVER COON CREEK IN THE CITY OF COON RAPIDS

WIDEN EXISTING PRECAST REINFORCED CONCRETE ARCH STRUCTURE

SPAN IDENTIFICATION NO. 112

SEC 15 T 31 N R 24 W

CITY OF COON RAPIDS ANOKA COUNTY

DATED: 1/9/07

APPROVED: *Kevin Western*
 FOR STATE BRIDGE ENGINEER

DES: DM DRW: DM
 CHK: MKM CHK: LHC **95884**

SHEET NO. B1 OF B8 SHEETS

SCHEDULE OF QUANTITIES FOR WIDENING OF BRIDGE NO. 95884 ②

ITEM NO.	2401	2401	2401	2401	2401	2401	2411	2411	2433	2451	2451	2501	2511	2511	2557			
ITEM	STRUCTURAL CONCRETE (1A43)	STRUCTURAL CONCRETE (3Y43)	FOUNDATION PREPARATION	REINFORCEMENT BARS (EPOXY COATED)	REINFORCEMENT BARS	STRUCTURE EXCAVATION	PRECAST CONCRETE WALL	PRECAST RETAINING WALL	STRUCTURE REMOVALS ①	GRANULAR BACKFILL (MOD) CV	GRANULAR BEDDING (CV)	PRECAST REINFORCED CONCRETE ARCH 40'x10'	RANDOM RIPRAP CLASS IV	GRANULAR FILTER	WIRE FENCE DESIGN W-1			
UNIT	CU. YD.	CU. YD.	LUMP SUM	POUND	POUND	LUMP SUM	SG. YD.	SG. YD.	LUMP SUM	CU. YD.	CU. YD.	LIN. FT.	CU. YD.	CU. YD.	LIN. FT.			
QUANTITY	43 (P)	7 (P)	1	790 (P)	3280 (P)	1	30	50	1	30	153	12	45	15	78			

JOB NO.

STATE PROJECT NO. 02-611-29

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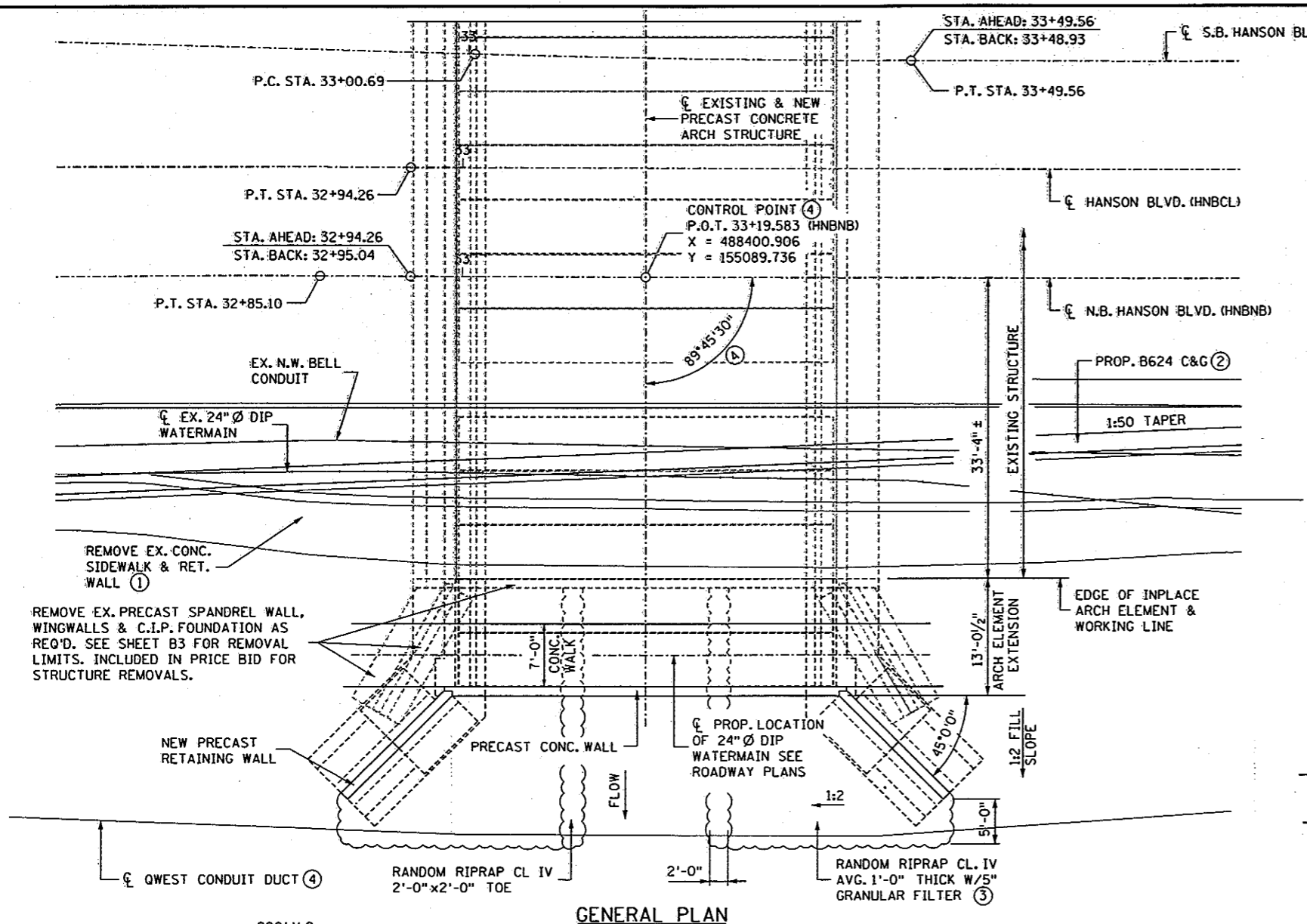
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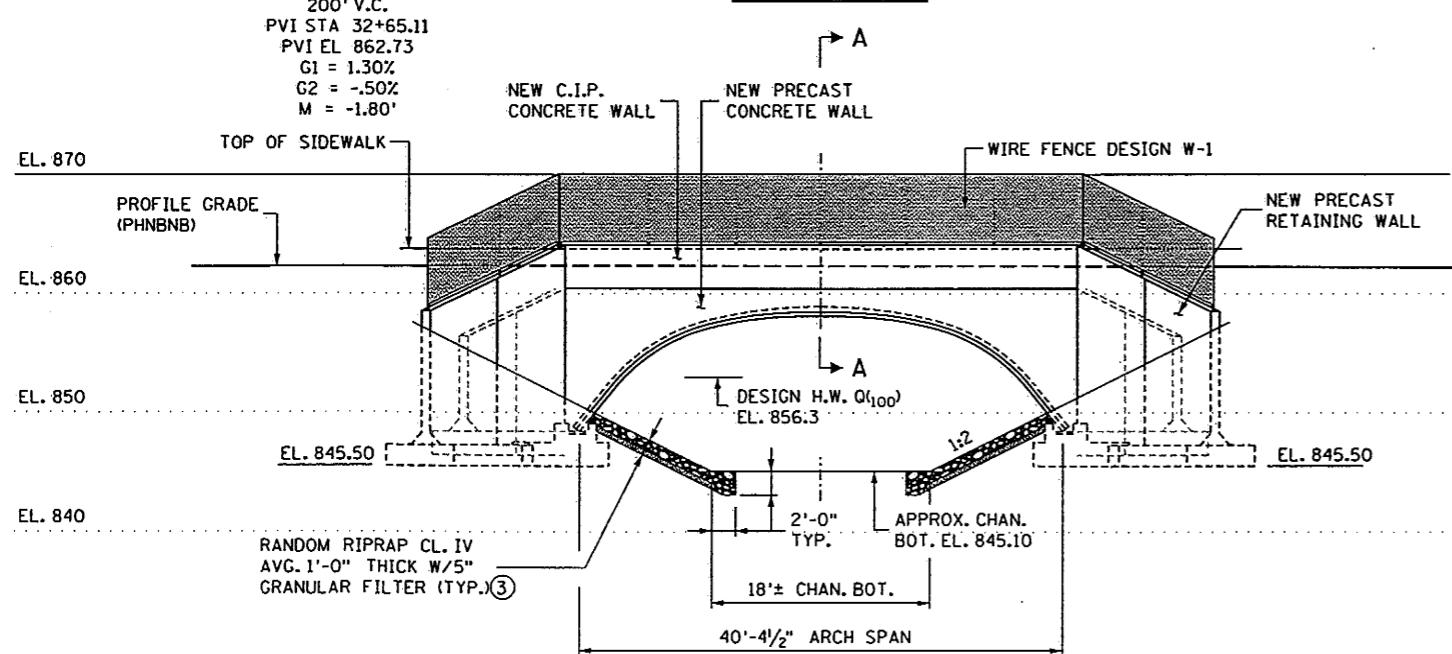
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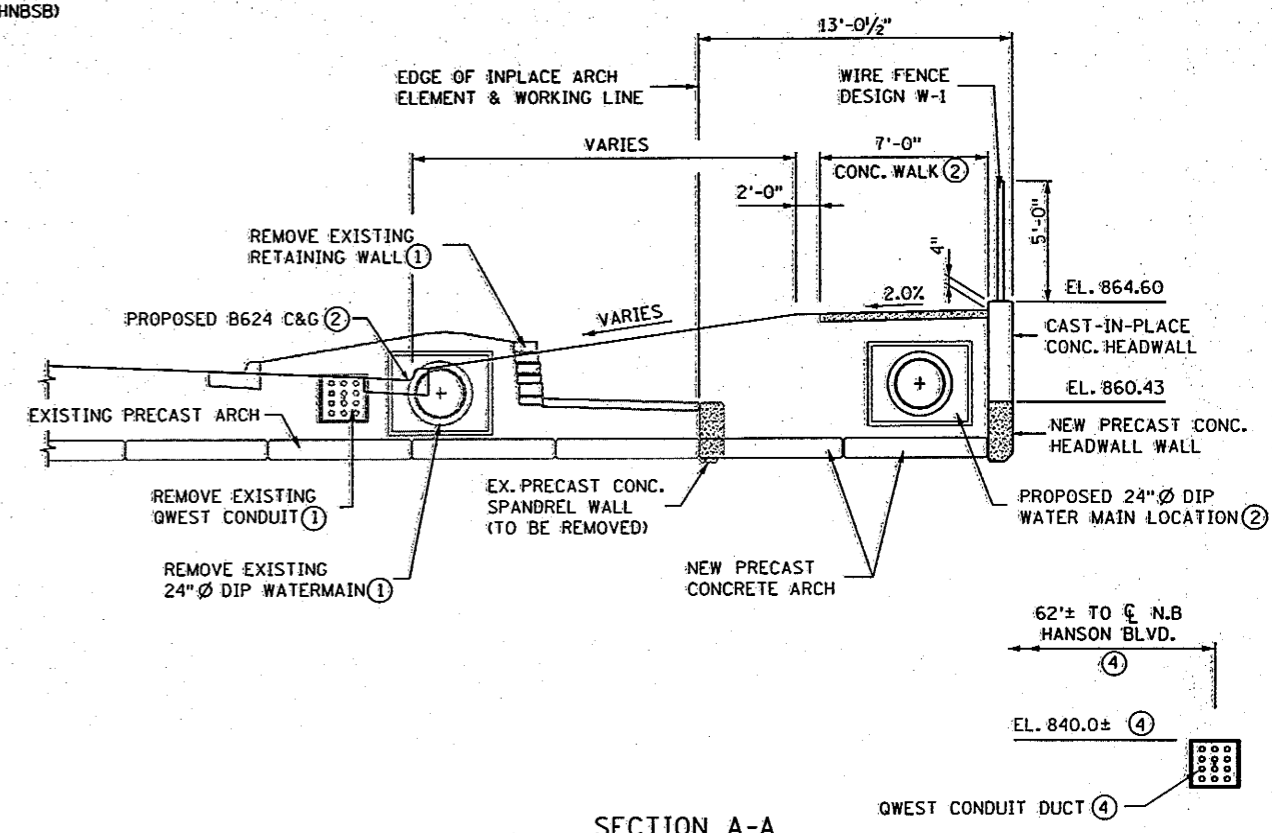
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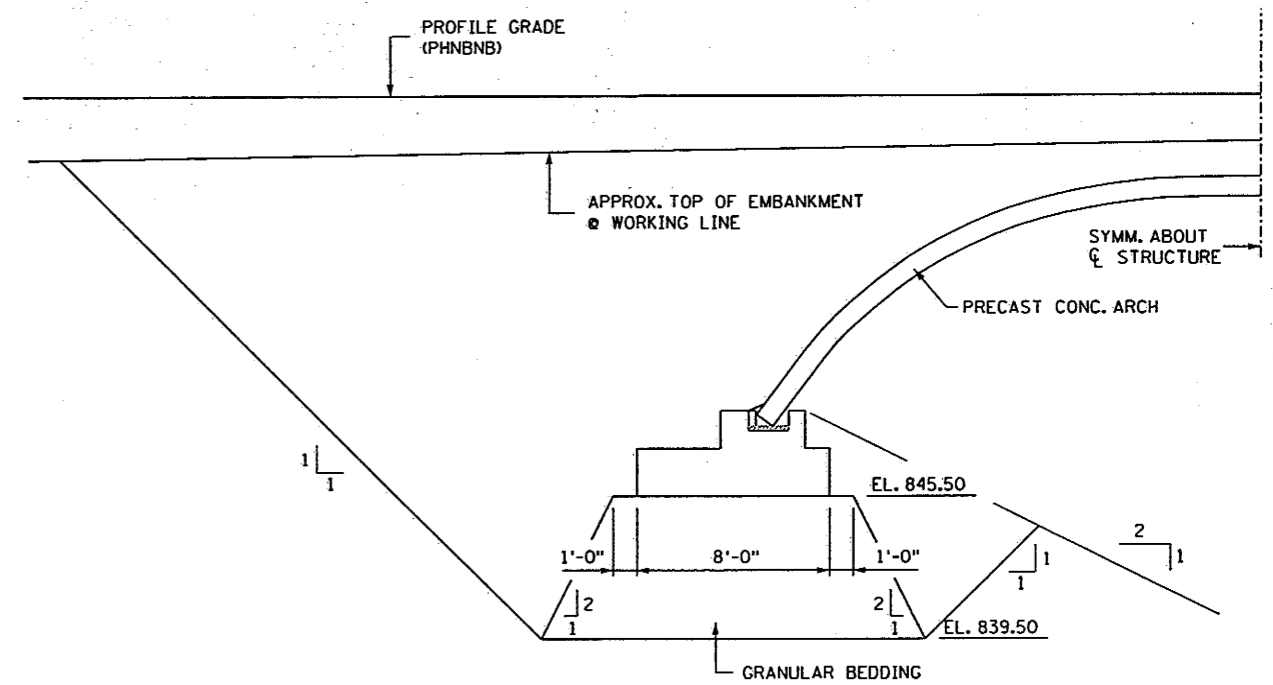
GENERAL PLAN



ELEVATION



SECTION A-A

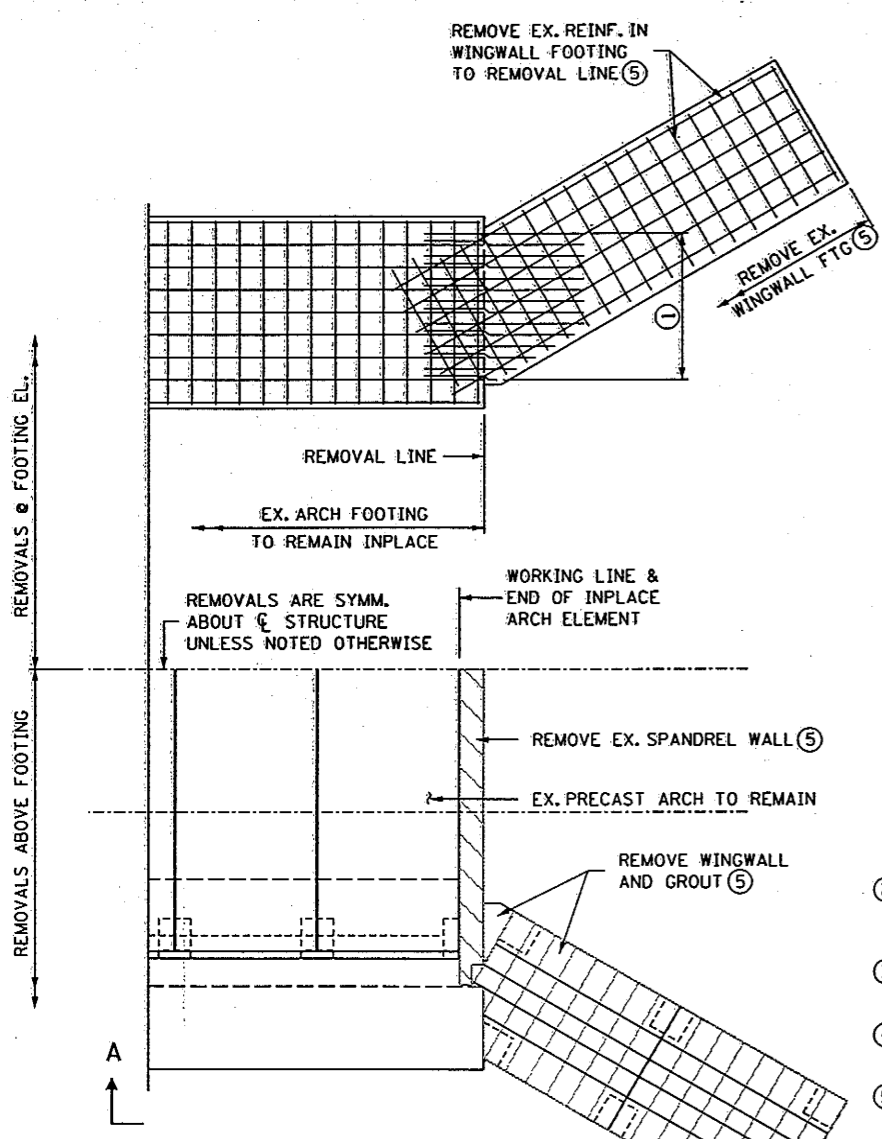


STRUCTURE EXCAVATION DETAILS

- ① REMOVALS BY OTHERS, SEE ROADWAY PLANS
- ② BY OTHERS, SEE ROADWAY PLANS
- ③ LIMITS OF RANDOM RIPRAP AS SHOWN ARE APPROXIMATE ONLY. EXACT LIMITS SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.
- ④ CONTRACTOR SHALL FIELD VERIFY

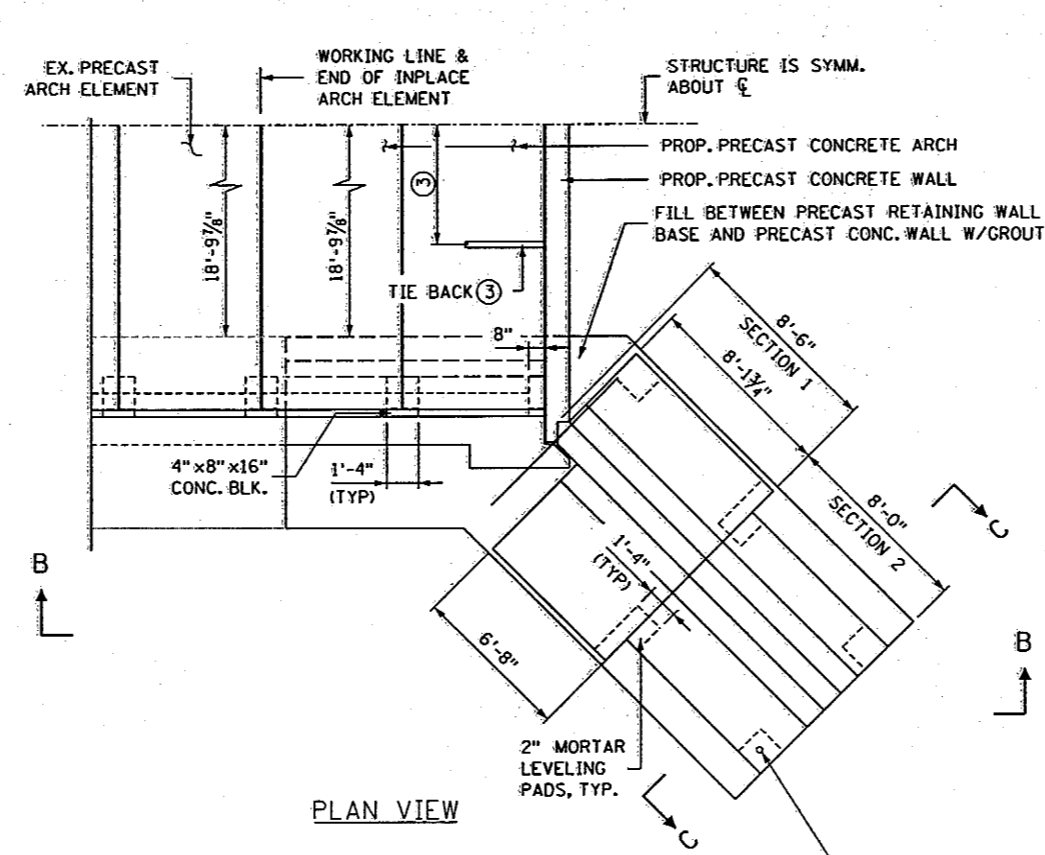
URS <small>Thresher Square 700 South Third Street Minneapolis, MN 55415</small>	SIGNATURE <i>Mark Maves</i>	TITLE: GENERAL PLAN, ELEVATION & SECTIONS	DES: LHC	DR: DM	APPROVED:	BRIDGE NO. 95884
	PRINTED NAME: MARK MAVES		CHK: MKM	CHK: LHC		
	DATE: JANUARY 8, 2007	REG. NO. 20496	S.P. 02-611-29			

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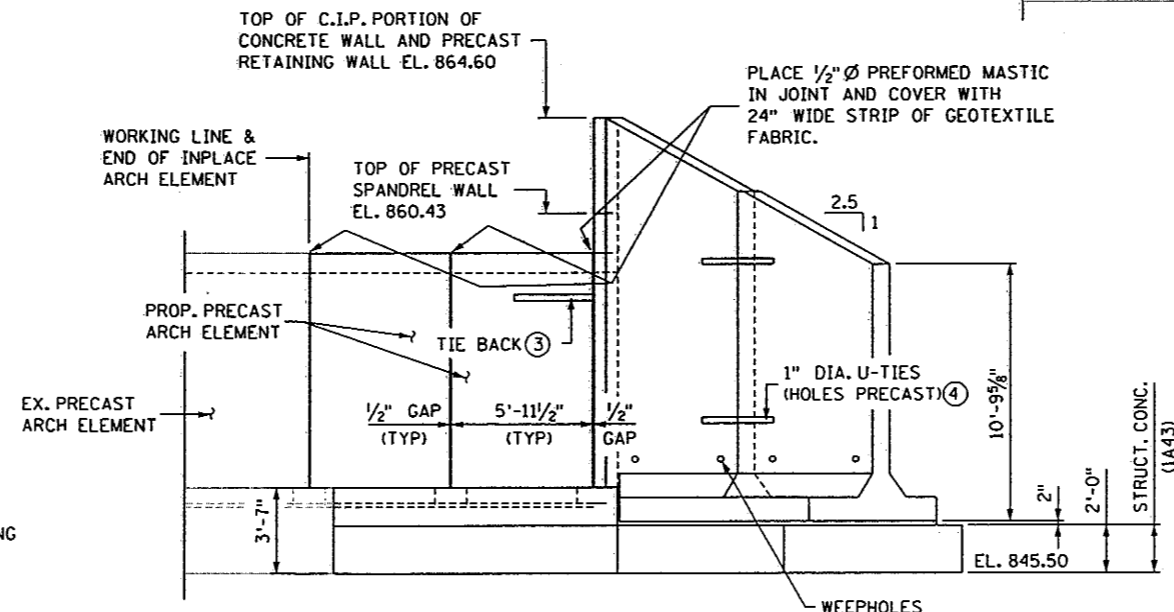
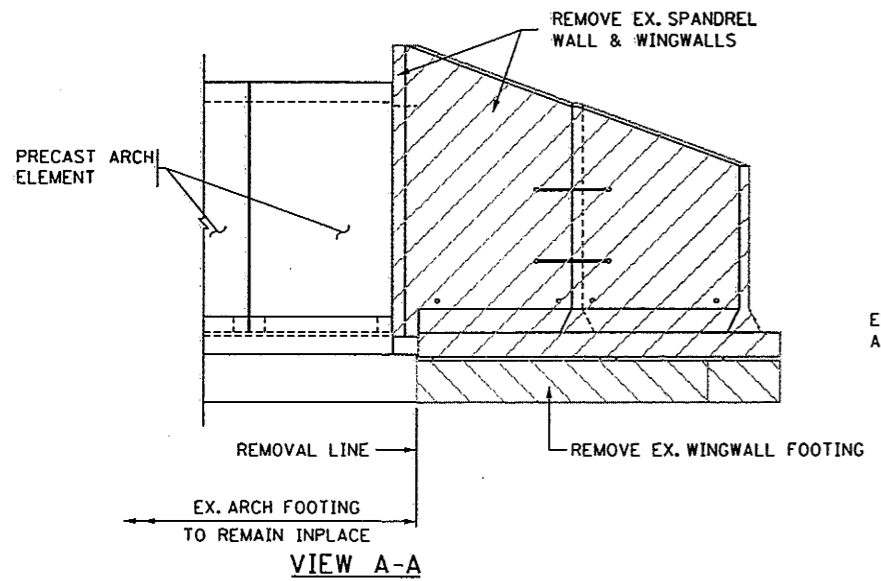
PLAN VIEW

- ① CAREFULLY REMOVE CONCRETE AROUND REINFORCEMENT. BARS SHALL BE CLEANED AND STRAIGHTENED AS REQUIRED. BARS SHALL BE TIED INTO NEW FOOTING.

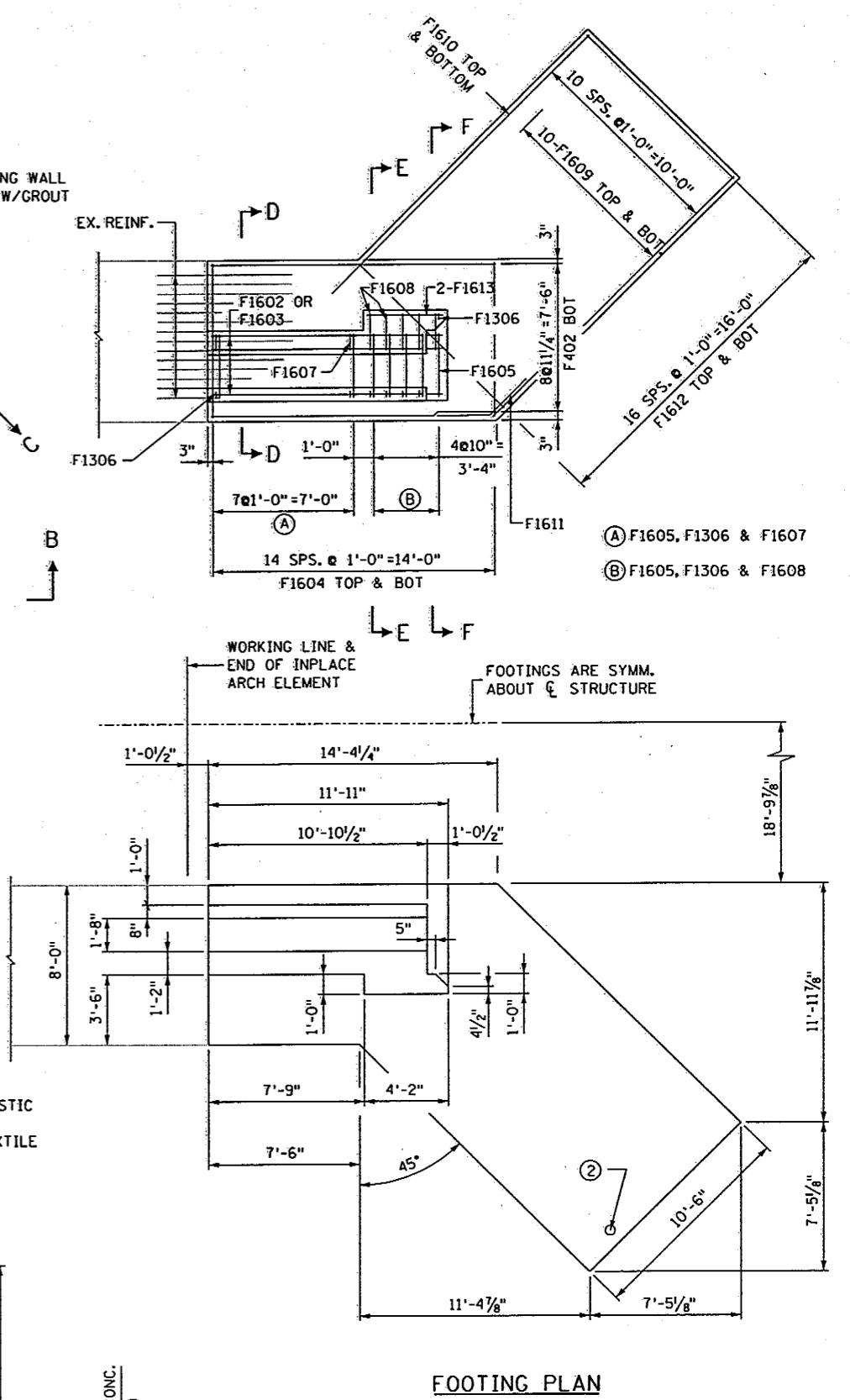


PLAN VIEW

- ② 6" \varnothing HOLES IN C.I.P. FOOTING, LOCATION DETERMINED BY PRECAST SUPPLIER. CONTRACTOR SHALL COORDINATE HOLE LOCATION WITH PRECAST SHOP DRAWINGS.
 - ③ TIEBACK LOCATION AND QUANTITY TO BE DETERMINED BY PRECAST SUPPLIER.
 - ④ U-TIES LOCATION AND QUANTITY TO BE DETERMINED BY PRECAST SUPPLIER.
 - ⑤ INCLUDED IN PRICE BID 2433 STRUCTURE REMOVALS.
- 4" \varnothing PRECAST HOLES FOR 1" \varnothing ROD. PLACE ROD IN HOLES AND GROUT. LOCATION OF HOLES SHALL BE DETERMINED BY PRECAST SUPPLIER. 1" \varnothing RODS SUPPLIED BY PRECASTER.



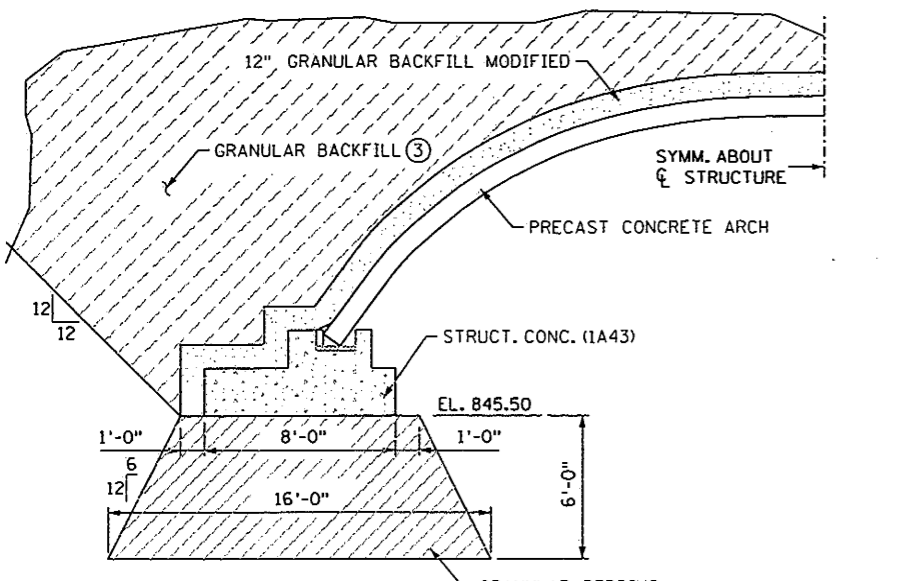
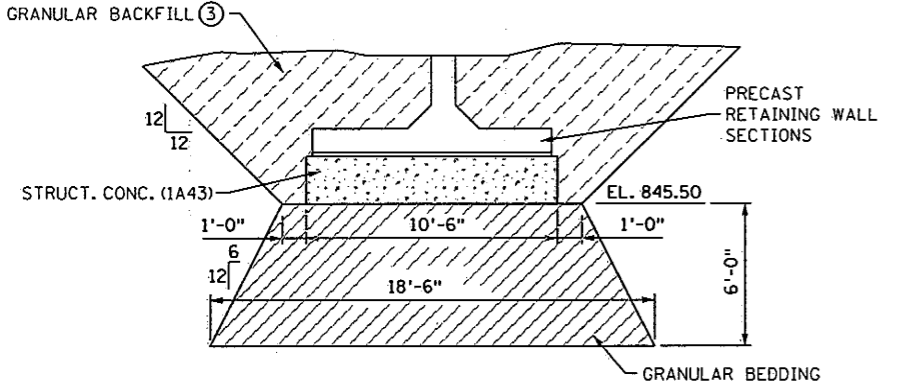
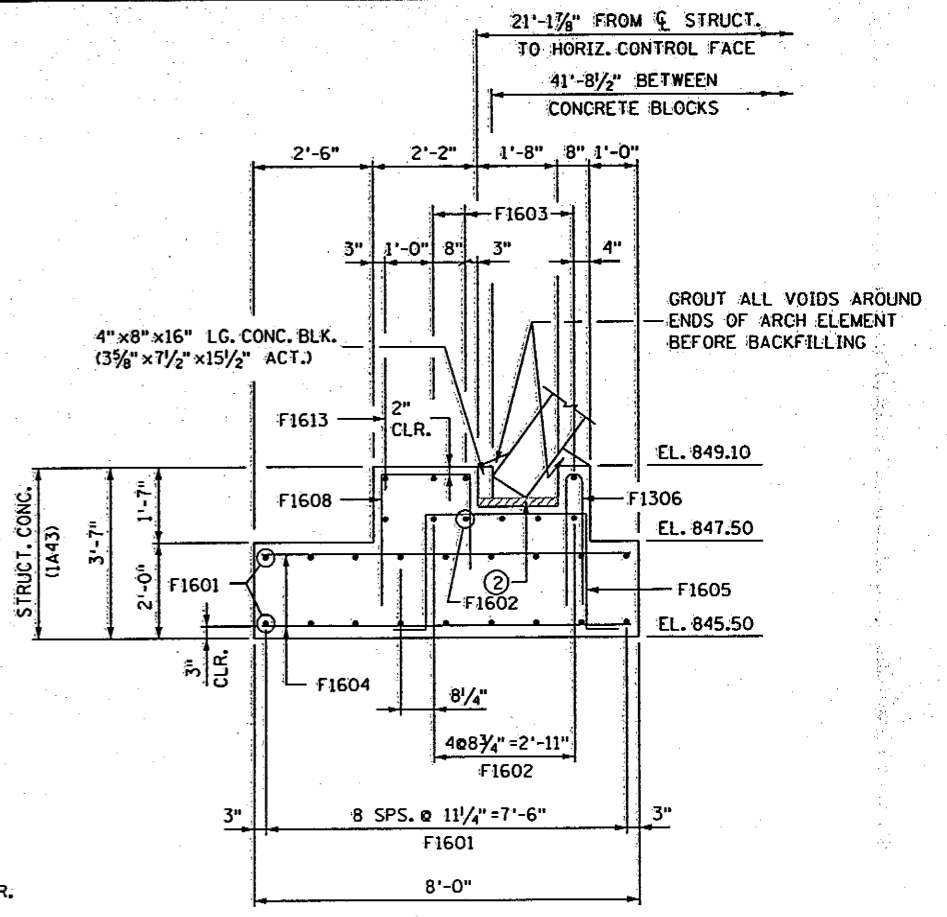
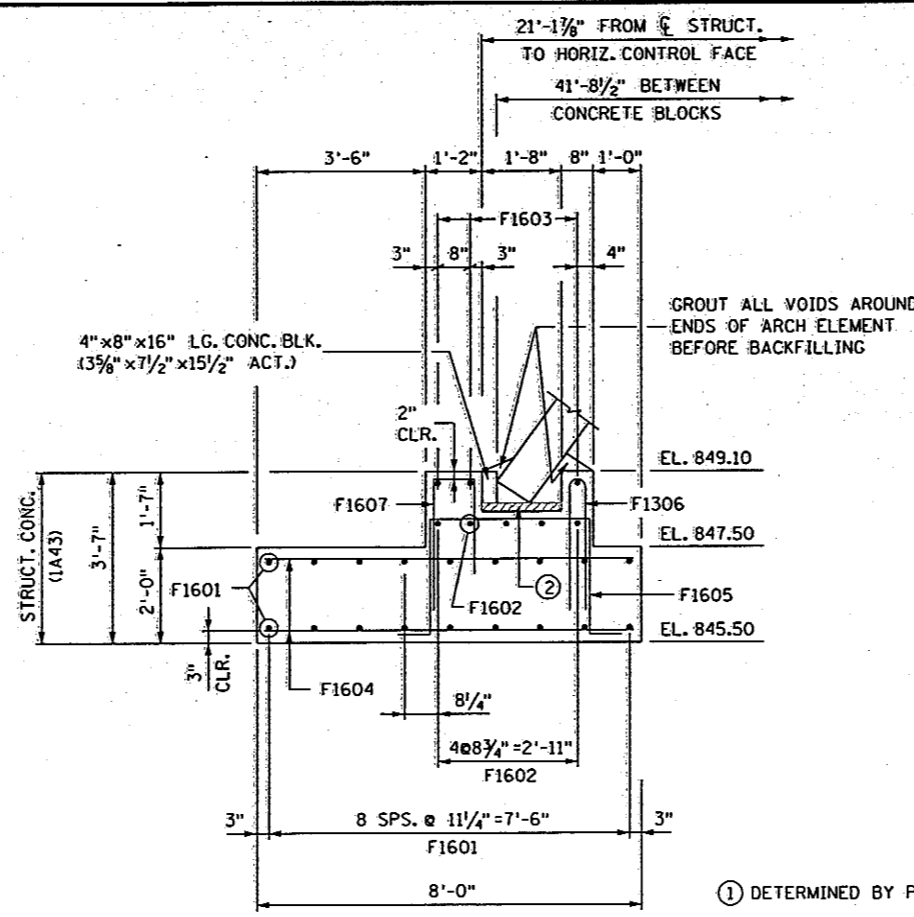
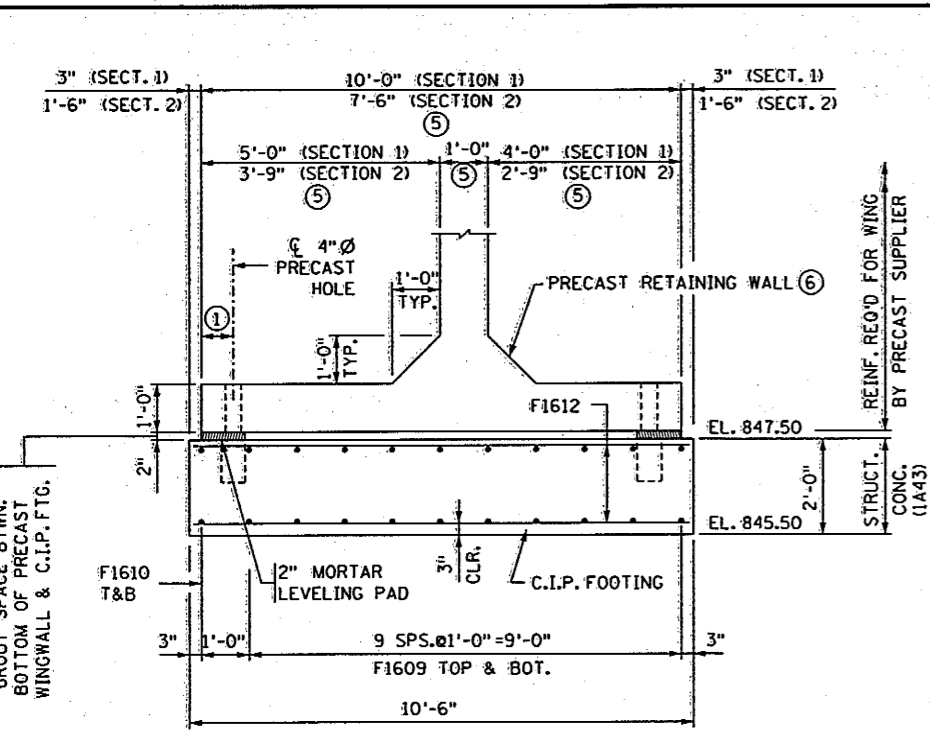
VIEW B-B



NOTE:
SEE SHEET B3 FOR VIEW C-C, SECTIONS D-D, E-E & F-F. S.P. 02-611-29

<p>Thresher Square 700 South Third Street Minneapolis, MN 55415</p>	SIGNATURE: <i>Mark Maves</i>	TITLE: REMOVAL AND RECONSTRUCTION DETAILS	DES: DM	DR: DM	APPROVED:	BRIDGE NO. 95884
	PRINTED NAME: MARK MAVES	DATE: JANUARY 8, 2007	REG. NO. 20496	CHK: MKM	CHK: LHC	

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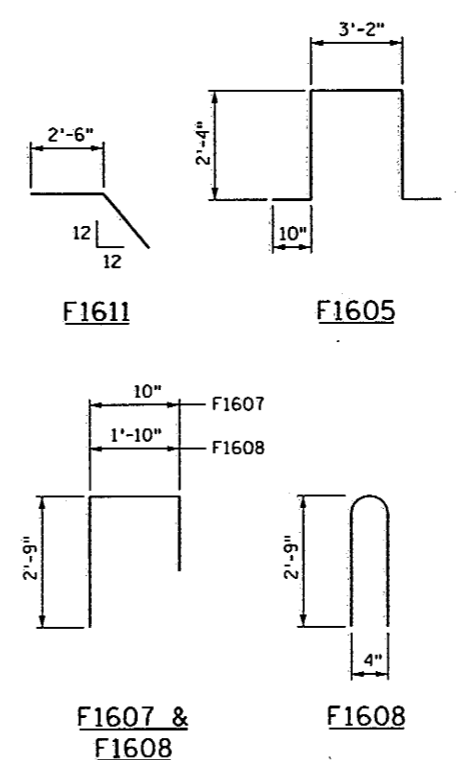
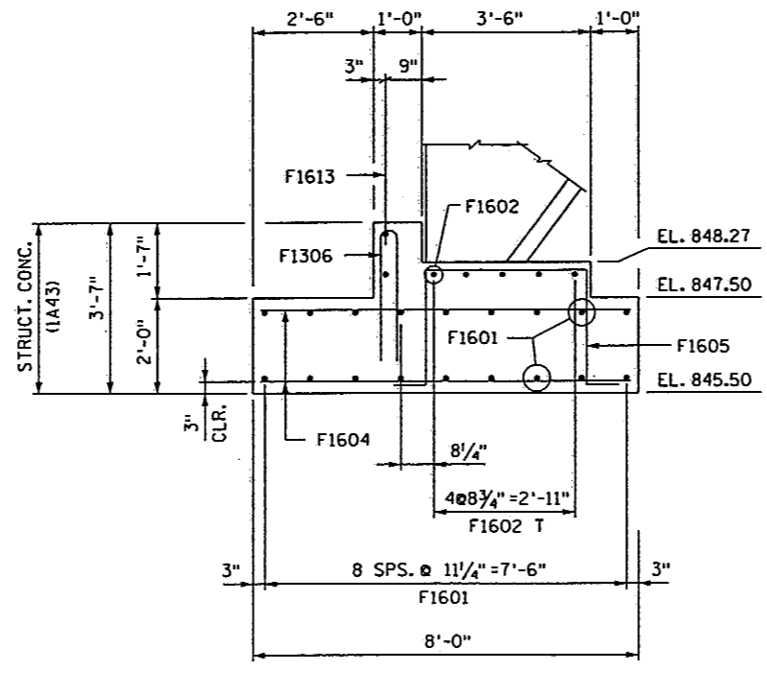


- ① DETERMINED BY PRECAST SUPPLIER.
- ② 2" MORTAR LEVELING PAD TOP OF PAD EL. 848.44
- ③ INCLUDED IN ROADWAY PORTION OF CONTRACT
- ⑤ VERIFY DIMENSIONS WITH PRECAST SUPPLIER. WIDEN C.I.P. FOOTING AS REQUIRED.
- ⑥ REINFORCEMENT AS REQUIRED BY PRECAST SUPPLIER DESIGN.

BILL OF REINFORCEMENT ARCH FOOTINGS				
BAR	NO.	LENGTH	SHAPE	LOCATION
F1601	36	14'-2"	—	ELEMENT FOOTING - LONG.
F1602	10	11'-6"	—	ELEMENT FOOTING - LONG.
F1603	6	10'-6"	—	ELEMENT FOOTING - LONG.
F1604	60	7'-6"	—	ELEMENT FOOTING - TRANSV.
F1605	26	9'-6"	⌋	ELEMENT FOOTING - TIE
F1306	28	5'-0"	⌋	ELEMENT FOOTING - TIE
F1607	16	5'-7"	⌋	ELEMENT FOOTING - TIE
F1608	10	6'-7"	⌋	ELEMENT FOOTING - TIE
F1609	40	16'-8"	—	WINGWALL FOOTING
F1610	4	18'-1"	—	WINGWALL FOOTING
F1611	4	5'-0"	—	WINGWALL FOOTING
F1612	68	10'-2"	—	WINGWALL FOOTING
F1613	4	3'-9"	—	ELEMENT FOOTING - LONG.

SUMMARY OF QUANTITIES - ARCH FOOTINGS		
ITEM	UNIT	QTY.
STRUCTURAL CONCRETE (1A43)	CU. YD.	43
REINFORCEMENT BARS	POUND	3280
GRANULAR BEDDING	CU. YD.	153
GRANULAR BACKFILL MODIFIED	CU. YD.	30
STRUCTURE EXCAVATION	L. SUM	1

④ APPROXIMATE QUANTITY 387 CU. YDS FOR INFORMATIONAL PURPOSES ONLY.



CONSTRUCTION NOTES

ALL STRUCTURAL STEEL TO BE 3306 & GALVANIZED AFTER FABRICATION AS PER SPEC. 3394.

BOLTS, NUTS & WASHERS TO BE GALVANIZED PER SPEC. 3392.

PROVISIONS FOR MOVING THE ARCH ELEMENT SECTIONS, PRECAST CONC. WALL & WINGWALLS WILL BE THE CONTRACTORS RESPONSIBILITY.

PLACE 1/2" Ø PREFORMED MASTIC IN JOINTS EXCEPT AT SPANDREL WALL BRACKETS, COVER WITH 24" WIDE GEOTEXTILE FABRIC AT ALL ARCH JOINTS. PLACE GEOTEXTILE FABRIC JUST PRIOR TO BACKFILLING. SEE SPEC. 2501.3C3.

LAYING LENGTHS FOR CONCRETE ARCH ELEMENTS SHALL BE 6'-0" WHICH INCLUDES 1/2" GAP BETWEEN ARCH SECTIONS.

TO AVOID EXCESSIVE VIBRATION IN ARCH, THE FOLLOWING PRACTICE MUST BE FOLLOWED DURING COMPACTION OPERATIONS:

- 1) ECCENTRIC ROTATING WEIGHTS OF VIBRATING ROLLERS SHALL ROTATE AT LEAST 20 REVOLUTIONS PER SECOND.
- 2) VIBRATING ROLLERS SHALL NOT BE STARTED OR STOPPED WITHIN 6 FEET OF THE STRUCTURE.

EXCAVATE AND STOCKPILE SUITABLE TOP SOILS AND ALL OTHER ORGANIC SOILS ENCOUNTERED BELOW PROPOSED EMBANKMENT WIDENINGS PER MNDOT SPEC. 2105.2C, FOR FUTURE USE AS SLOPE DRESSING.

NO FILL SHALL BE DUMPED WITHIN 3 FEET OF PRECAST ELEMENTS.

CONSTRUCTION EQUIPMENT HEAVIER THAN 30 TONS TOTAL WEIGHT ARE NOT TO BE ALLOWED TO CROSS OVER OR BE OPERATED ADJACENT TO PRECAST ELEMENTS UNTIL A MINIMUM OF ONE FOOT OF COVER HAS BEEN PLACED AND COMPACTED.

DEWATER AS NECESSARY BELOW BOTTOM OF FOOTINGS SO EXCAVATING, BACKFILL, COMPACTION AND CONCRETE WORK IS COMPLETED BELOW WATERLINE.

CHANNEL EXCAVATION WILL BE CONSIDERED INCIDENTAL.

ALL GRANULAR BEDDING UNDER FOOTINGS SHALL MEET OR EXCEED MNDOT SPEC. 3149.2F GRANULAR BEDDING. PLACEMENT OF THIS GRANULAR BEDDING SHALL FOLLOW MNDOT SPEC. 2451.3D AND COMPACTION SHALL BE NO LESS THAN 100% MAXIMUM DENSITY AS PER MNDOT SPEC. 2105.3F1. STRUCTURAL EXCAVATION, CLASS E, SHALL EXTEND UNDER ARCH AND CONCRETE HEADWALL ONLY.

ALL GRANULAR BACKFILL ON BOTH SIDES OF THE CURVED ELEMENT FROM THE OUTER EDGE OF THE FOOTING ON A 45° SLOPE TO THE TOP OF THE CURVED ELEMENT SHALL BE COMPACTED TO NOT LESS THAN 95% MAXIMUM DENSITY PER MNDOT SPEC. 2105.3F1 (AASHTO T-99). GRANULAR BACKFILL SHALL MEET OR EXCEED MNDOT SPEC. 3149.2 FOR GRANULAR BACKFILL. ALL MATERIAL SHALL BE PLACED IN 8 INCH COMPACTED LIFTS UNLESS THE CONTRACTOR CAN SHOW HE CAN OBTAIN 95% DENSITY WITH GREATER LIFTS. MNDOT SPEC. 2451.3C AND 2451.3D SHALL APPLY. THE BACKFILL MATERIAL ON BOTH SIDES OF THE STRUCTURE IS TO BE PLACED SO THAT THE DIFFERENCE IN ELEVATION ON ONE SIDE IS NEVER GREATER THAN 2 FEET HIGHER THAN THE OTHER SIDE.

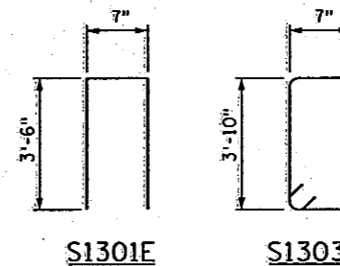
HAND COMPACTION EQUIPMENT IS REQUIRED IN THE AREA WITHIN 1 FOOT OF THE CURVED ELEMENTS AND WITHIN 1 FOOT ADJACENT TO THE CONCRETE HEADWALL AND WINGWALLS. ALL BACKFILL SHALL BE GRANULAR BACKFILL AS PER MNDOT SPEC. 3149.2D MODIFIED TO A MAXIMUM OF 1" STONE IN THE MATERIAL. COMPACTION TO 95% DENSITY OS REQUIRED PER MNDOT SPEC. 2105.3F1 (AASHTO T-99).

TIE RODS SHALL BE GALVANIZED AS PER SPEC. 3392 OR POWER WASHED AND DIPPED IN AN APPROVED ZINC RICH EPOXY PRIME PAINT AFTER FABRICATION. THE LIST FOR APPROVED PAINT COATING OF CONCRETE PIPE TIES IS LOCATED ELECTRONICALLY AT <http://www.mrr.dot.state.mn.us/pickmaterialsengineeringsection/> PICK MATERIALS ENGINEERING SECTION, PICK APPROVED PRODUCTS LIST. STEEL SHALL CONFORM TO SPEC. 3306 OR EQUAL.

TIES TO BE USED ONLY TO HOLD PRECAST CONCRETE WINGWALLS TOGETHER, NOT FOR PULLING SECTIONS TIGHT.

CONCRETE WALL BRACKET ASSEMBLIES, U-TIES FOR WINGWALL AND ANY REQUIRED HARDWARE (DETERMINED BY THE PRECAST SUPPLIER) FOR JOINING THE INPLACE ARCH ELEMENT TO THE PROPOSED ARCH ELEMENTS SHALL BE FURNISHED BY THE PRECAST SUPPLIER. INCLUDED IN PRICE BID FOR OTHER ITEMS.

- 2) 4'-2" TALL C.I.P. CONCRETE WALL EXTENSION STRUCTURAL CONC. (3Y43).
- 3) RUSTICATION SHALL BE AS SHOWN ON DETAIL BELOW AND CONSIDERED INCIDENTAL.
- 4) PRECAST CONCRETE SUPPLIER SHALL CAST BARS S1301E AND S1302E INTO PRECAST CONC. HEADWALL. REMAINING REINFORCEMENT IN PRECAST SECTIONS SHALL BE REQUIRED BY PRECAST SUPPLIER DESIGN.
- 6) REINFORCEMENT AS REQUIRED BY PRECAST SUPPLIER DESIGN.



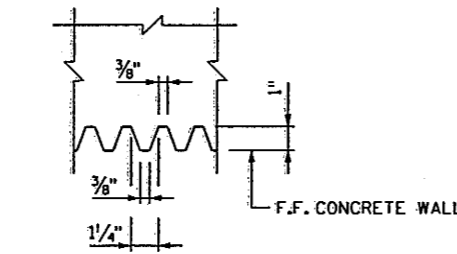
BILL OF REINFORCEMENT CONCRETE HEADWALL

BAR	NO.	LENGTH	SHAPE	LOCATION
S1301E	43	7'-7"	U	CONCRETE WALL DOWEL
S1302E	2	5'-6"	—	CONCRETE WALL DOWEL
S1303E	43	9'-7"	U	CONCRETE WALL TIE
S1304E	4	42'-5"	—	CONCRETE WALL HORIZ.
S1305E	4	44'-1"	—	CONCRETE WALL HORIZ.

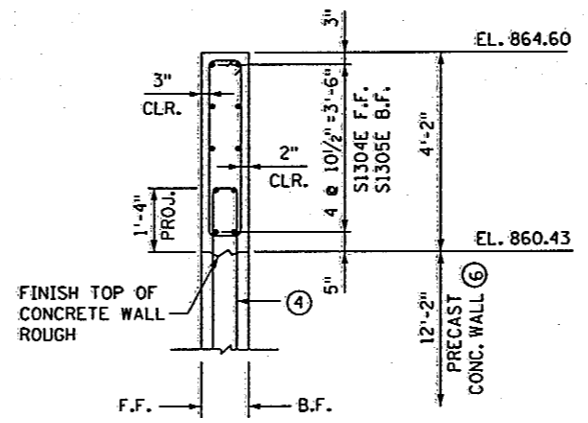
SUMMARY OF QUANTITIES - ARCH STRUCTURE

ITEM	UNIT	QTY.
STRUCTURAL CONCRETE (3Y43)	CU. YD.	7
REINFORCEMENT BARS (EPOXY COATED)	POUND	790
PRECAST CONCRETE WALL	SQ. YD.	30
PRECAST REINF. CONC. ARCH 40'x10'	LIN. FT.	12
PRECAST RETAINING WALL	SQ. YD.	50
1/2" Ø MASTIC	LIN. FT.	150
GEOTEXTILE FABRIC, 24" WIDE	LIN. FT.	150
WIRE FENCE, DESIGN W-1	LIN. FT.	78

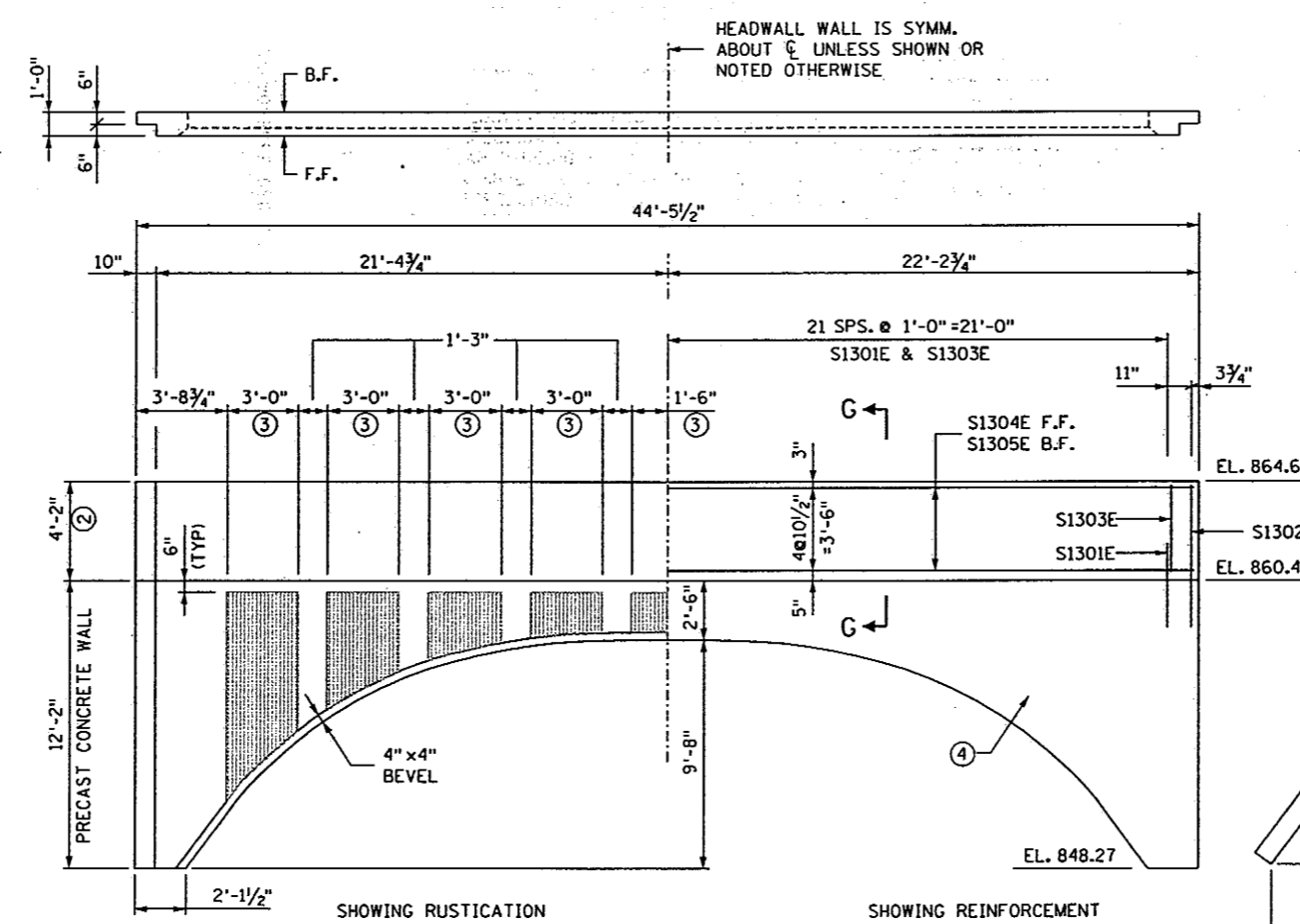
① INCLUDED IN PRICE BID FOR OTHER ITEMS.



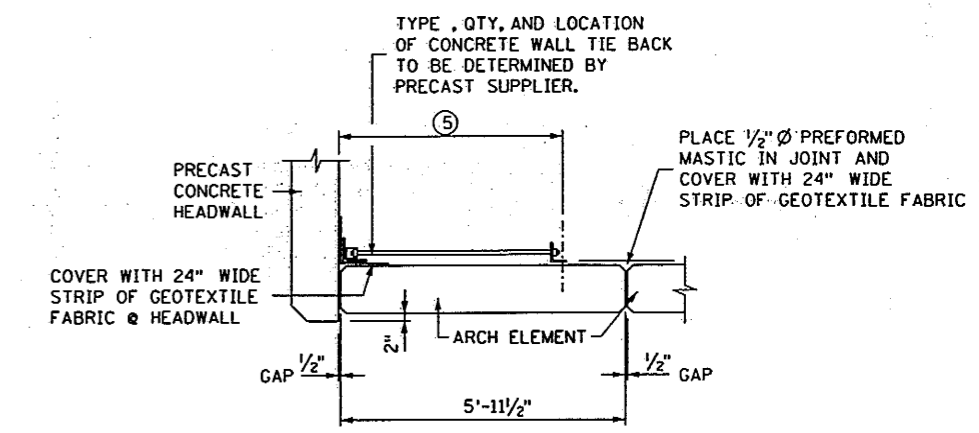
RUSTICATION DETAIL



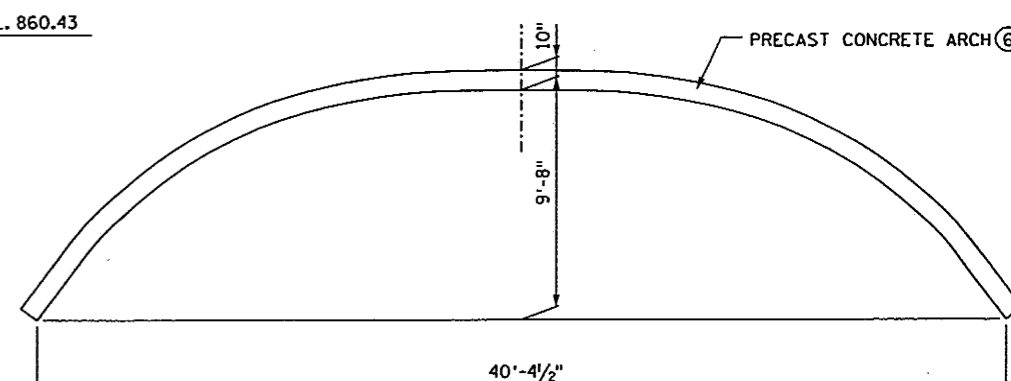
SECTION G-G



PRECAST CONCRETE WALL
INCLUDED IN PRICE BID FOR PRECAST CONCRETE WALL



SECTION THRU ARCH ELEMENT AT CONCRETE WALL



PRECAST CONCRETE ARCH ELEMENT
INCLUDED IN PRICE BID FOR PRECAST REINF. CONC. ARCH 40'x10'

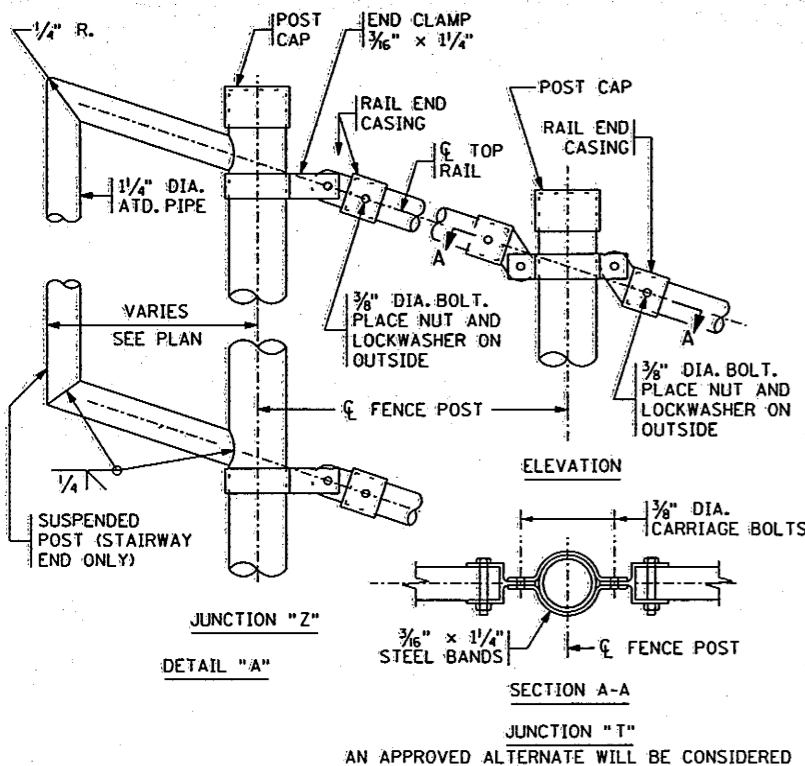
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<p>Threshar Square 700 South Third Street Minneapolis, MN 55415</p>	SIGNATURE: <i>Mark Maves</i> PRINTED NAME: MARK MAVES DATE: JANUARY 8, 2007 REG. NO. 20496	TITLE: MISC. DETAILS & CONSTRUCTION NOTES	DES: DM DR: DM CHK: MKM CHK: LHC	APPROVED:	BRIDGE NO. 95884
	SHEET NO. B5 OF B8 SHEETS			S.P. 02-611-29	

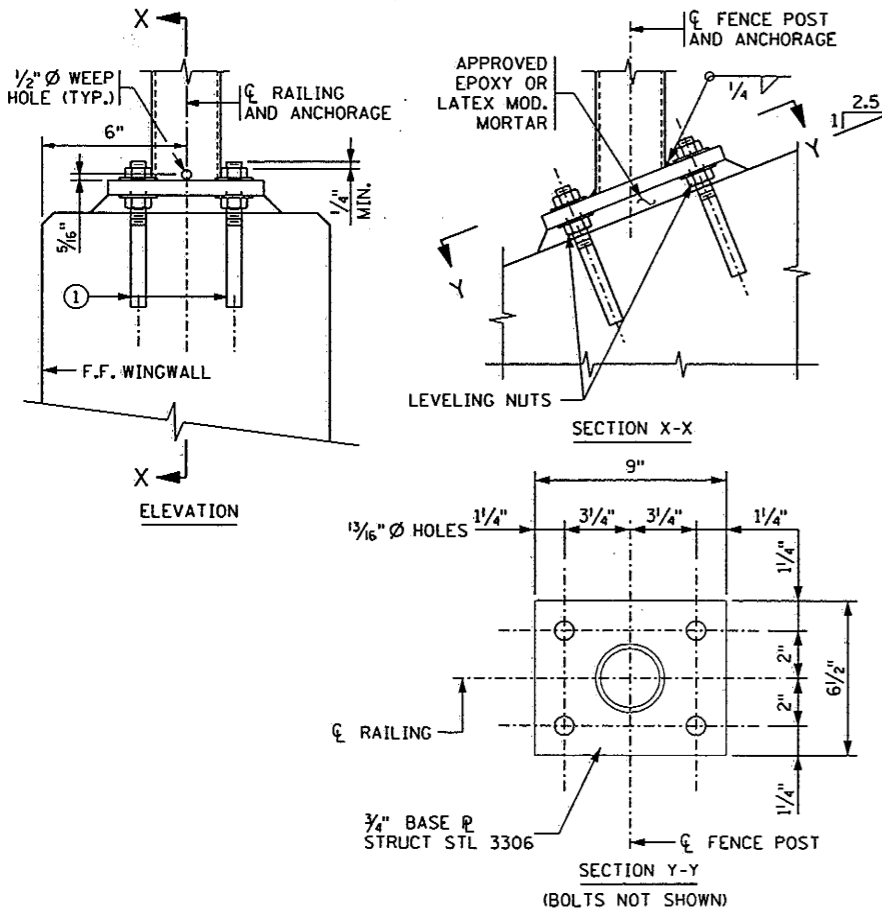
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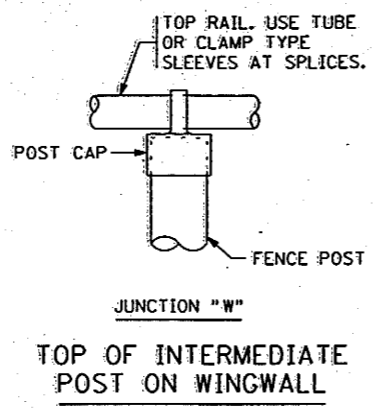
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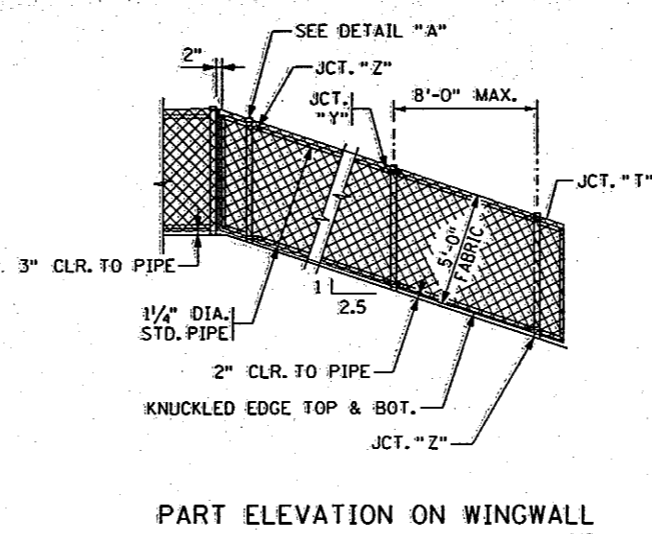
POST CONNECTIONS ON WINGWALL



PIPE ANCHORAGE FOR FENCE POSTS-TYPE 1



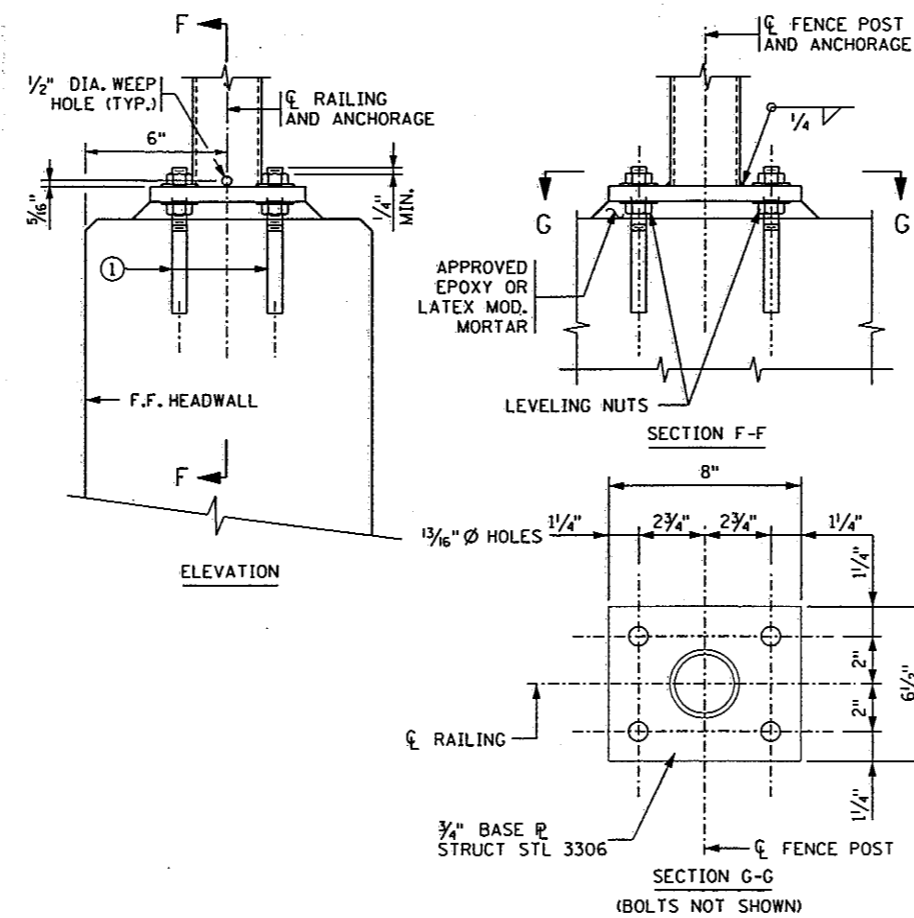
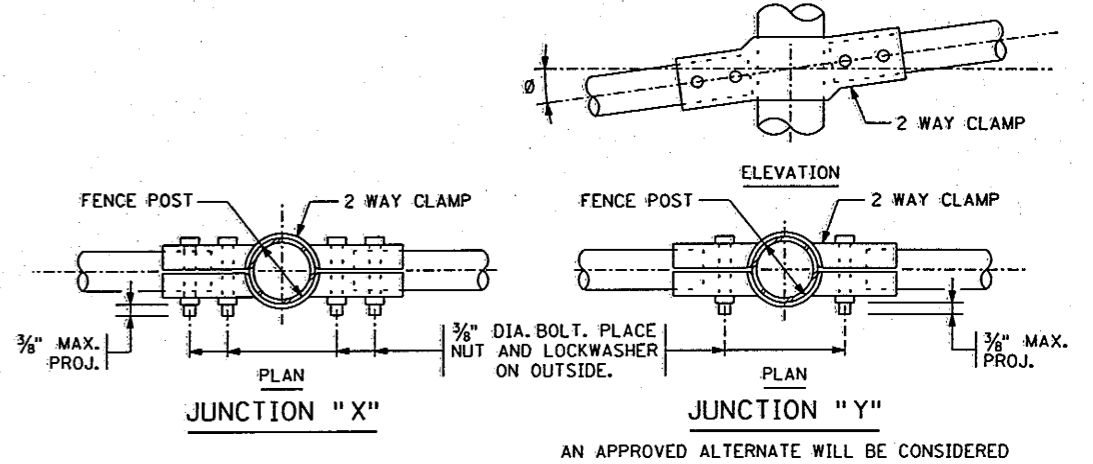
TOP OF INTERMEDIATE POST ON WINGWALL



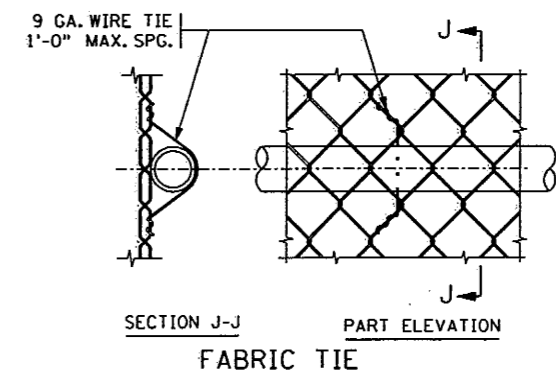
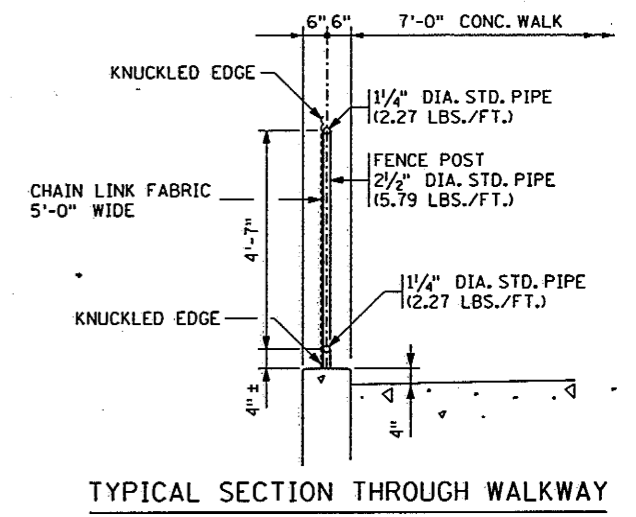
2 WAY CLAMP BENDING TABLE	
GRADE OF FENCE	θ
0° TO 2°	0°
2° TO 6°	4°
6° TO 10°	8°
20° TO 24°	22°

GENERAL NOTES

- LENGTH OF "WIRE FENCE, DESIGN W-1" FOR PAYMENT SHALL BE MEASURED BETWEEN THE CENTERS OF THE END RAILPOSTS.
- MAXIMUM SPACING FOR 2 1/2" STANDARD PIPE POSTS IS 8 FT.
- ALL PIPE DIAMETERS ARE NOMINAL.
- FENCE POSTS SHALL BE SET VERTICAL. PACK SPACE BETWEEN BASE PLATE AND CONCRETE WITH APPROVED MORTAR AFTER NUTS HAVE BEEN ADJUSTED AND TIGHTENED.
- GALVANIZE ALL STRUCTURAL SHAPES PER MNDOT SPEC. 3394 AFTER FABRICATION.
- ① 5/8" DIA. CHEMICAL ANCHOR RODS, MNDOT SPEC. 3385, TYPE A, WITH 3" THREADS, 2 NUTS AND 2 CUT WASHERS PER ROD. MINIMUM ULTIMATE BOND STRENGTH SHALL BE 20,000 POUNDS, WITH A MINIMUM 5" EMBEDMENT LENGTH. SEE SPECIAL PROVISIONS.



BOLT ANCHORAGE FOR FENCE POSTS-TYPE 2



FABRIC TIE

S.P. 02-611-29

FIG. 5-397.202

REVISION: 04-23-2003

APPROVED: NOVEMBER 26, 1985

Donald J. Manning
STATE BRIDGE ENGINEER

CERTIFIED BY *Mark Maves* JAN. 8, 2007
LICENSED PROFESSIONAL ENGINEER DATE

NAME: MARK MAVES LIC. NO. 20496

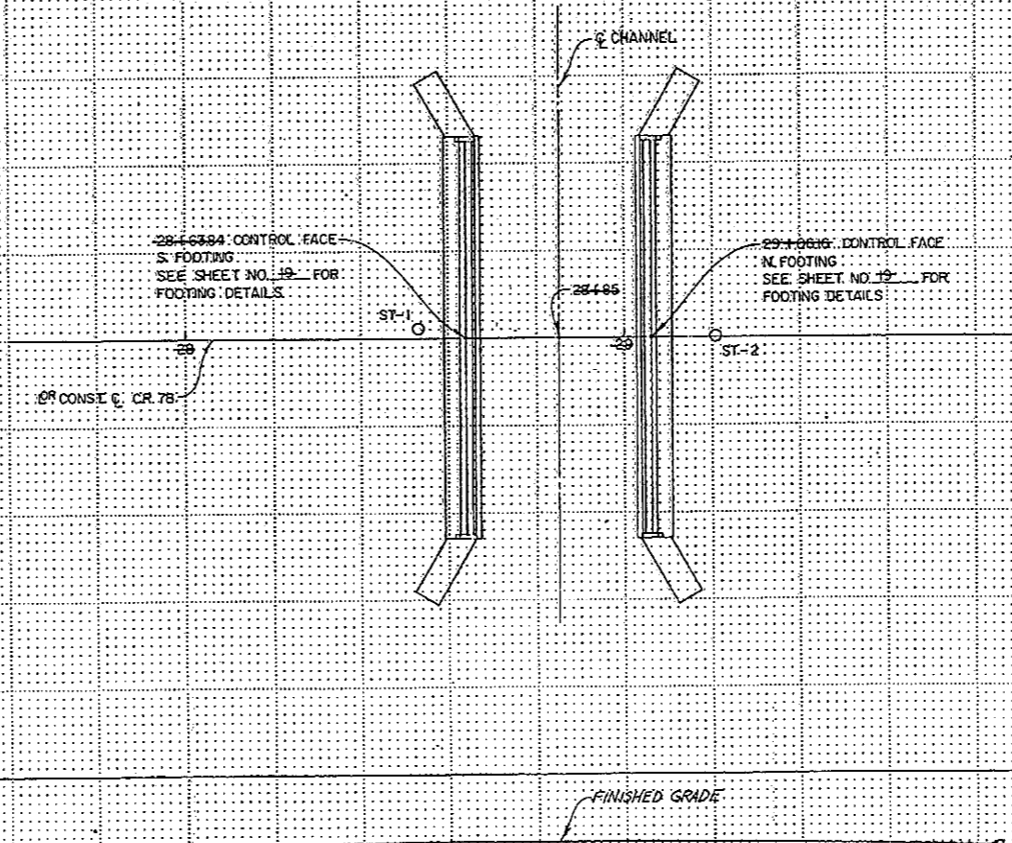
5 FT. WIRE FENCE (DESIGN W-1) FOR PEDESTRIAN BRIDGES

DES: MNDOT/DM DR: DM
CHK: MKM CHK: LHC

APPROVED: MODIFIED

SHEET NO. B6 OF B8 SHEETS

BRIDGE NO. 95884



ELEV. 860
ELEV. 850
ELEV. 840
ELEV. 830
ELEV. 820
ELEV. 810
ELEV. 800
ELEV. 790
ELEV. 780

FILL, SILTY SAND, FINE-GRAINED, DARK BROWN, MOIST
SAND, FINE TO MEDIUM-GRAINED, WITH A TRACE OF FINE TO MEDIUM GRAVEL, BROWN, MOIST TO WATERBEARING, MEDIUM DENSE TO LOOSE, (COARSE ALLUVIUM)
SILTY SAND, SLIGHTLY PLASTIC, VERY FINE-GRAINED, WITH SEAMS OF SAND, BROWN TO GRAYISH BROWN, WATERBEARING, LOOSE TO MEDIUM DENSE (COARSE ALLUVIUM)
SILTY SAND, SLIGHTLY PLASTIC, FINE-GRAINED, GRAYISH BROWN, WATERBEARING, LOOSE TO MEDIUM DENSE (COARSE ALLUVIUM)
SAND, SLIGHTLY SILTY, FINE TO MEDIUM-GRAINED WITH A TRACE OF FINE TO MEDIUM GRAVEL, BROWN, WATERBEARING, MEDIUM DENSE (COARSE ALLUVIUM)
SAND, SLIGHTLY SILTY, FINE TO MEDIUM-GRAINED, WITH A TRACE OF FINE TO MEDIUM GRAVEL, BROWN, WATERBEARING, DENSE (COARSE ALLUVIUM)

SAND, FINE TO MEDIUM-GRAINED, WITH SOME FINE TO MEDIUM GRAVEL, BROWN, MOIST TO WET, LOOSE (COARSE ALLUVIUM)
SILTY SAND, SLIGHTLY PLASTIC, FINE-GRAINED, WITH A TRACE OF FINE TO MEDIUM GRAVEL, GRAYISH BROWN, WATERBEARING, VERY LOOSE TO LOOSE (COARSE ALLUVIUM)
SAND, SLIGHTLY SILTY, FINE TO MEDIUM-GRAINED WITH A TRACE OF FINE TO MEDIUM GRAVEL, BROWN TO GRAYISH BROWN, WATERBEARING, MEDIUM DENSE, (COARSE ALLUVIUM)
SILTY SAND, SLIGHTLY PLASTIC, FINE-GRAINED, GRAYISH BROWN, WATERBEARING, MEDIUM DENSE (COARSE ALLUVIUM)
SILTY SAND, SLIGHTLY PLASTIC, FINE-GRAINED, GRAYISH BROWN, WATERBEARING, LOOSE (COARSE ALLUVIUM)
SAND, SLIGHTLY SILTY, FINE TO MEDIUM-GRAINED WITH A TRACE OF FINE TO MEDIUM-GRAINED GRAVEL, BROWN, WATERBEARING, VERY LOOSE TO DENSE (COARSE ALLUVIUM)
SAND, SLIGHTLY SILTY, FINE TO MEDIUM-GRAINED, WITH A TRACE OF FINE TO MEDIUM GRAVEL, BROWN, WATERBEARING, DENSE TO VERY DENSE, (COARSE ALLUVIUM)

NOTE: WATER LEVEL DOWN 13 1/2' WITH 10' OF HOLLOW STEM AUGER IN THE GROUND.
WATER LEVEL DOWN 10' 1/2 HOUR AFTER COMPLETION OF BORING.

BORINGS SHOWN [] TAKEN WITH STD. 140 LB. HAMMER, 30 INCH DROP, 2 INCH O.D. SAMPLER

NOTE: WATER LEVEL DOWN 9' WITH 10' OF HOLLOW STEM AUGER IN THE GROUND.
WATER LEVEL NOT ENCOUNTERED TO CAVEIN DEPTH 1/2', 1/2 HOUR AFTER COMPLETION OF BORING.

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN

For the design of the structure foundation, to obtain relative data concerning the character of material in and upon which the foundation might be built, borings and/or soundings were made at points approximately as indicated on this drawing with the log of such exploration data as interpreted for such design purpose as shown. The explorations were made by ordinary and conventional methods, and care deemed adequate for such purpose. However, since it is a matter of common knowledge that the exact character of any material and its reaction is difficult to determine from such subsurface exploration and that the kind and character of material at the site where the foundations are built may vary substantially from that indicated by the log they are made available to the bidders simply for what they are worth, without any warranty, expressed or implied that the material to be encountered in building the foundation will conform therewith. If the log is used by the contractor in making his bid, it is hereby expressly stipulated that the Highway Department accepts no responsibility for said use.

TRUNK HIGHWAY NO. STATE OF MINNESOTA DEPARTMENT OF HIGHWAYS

BRIDGE NO.

BRIDGE SURVEY PLAN AND PROFILE

SEE SHEET NO. FOR ADDITIONAL INFORMATION

State Proj. No. CP 82-09-78 Sheet No. 24 of 24 Sheets

NOTE: SURVEY SHEET IS REPRODUCED FROM ORIGINAL BRIDGE PLAN SET DATED 3/4/83

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Bridge Survey Sheet (Sheet 2 of 2)