

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
02-00325-00-BR		MCLEAN	51	1

CONTRACT NO. 87270 0352019

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STANDARDS

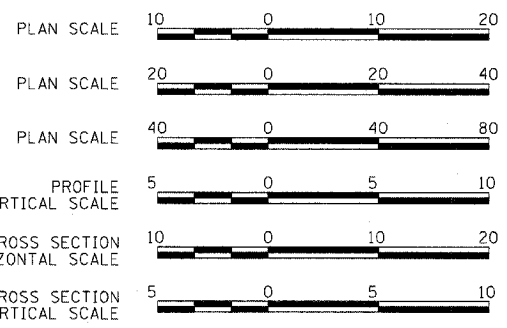
- 280001-02
- 420001-05
- 420101-02
- 420401-05
- 424001-03
- 542001
- 602301
- 604001-02
- 604006-02
- 604036-01
- 701501-03
- 702001-05
- 780001-01
- BLR21-6

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
**PLANS FOR PROPOSED
BRIDGE REPLACEMENT AND
REHABILITATION PROGRAM**

SECTION 02-00325-00-BR
PROJECT NO. BRM-5227(44)
CITY OF BLOOMINGTON
FELL AVENUE
FAU 6401
C-93-090-04



LOCATION OF SECTION INDICATED THIS: -



UTILITY NOTE

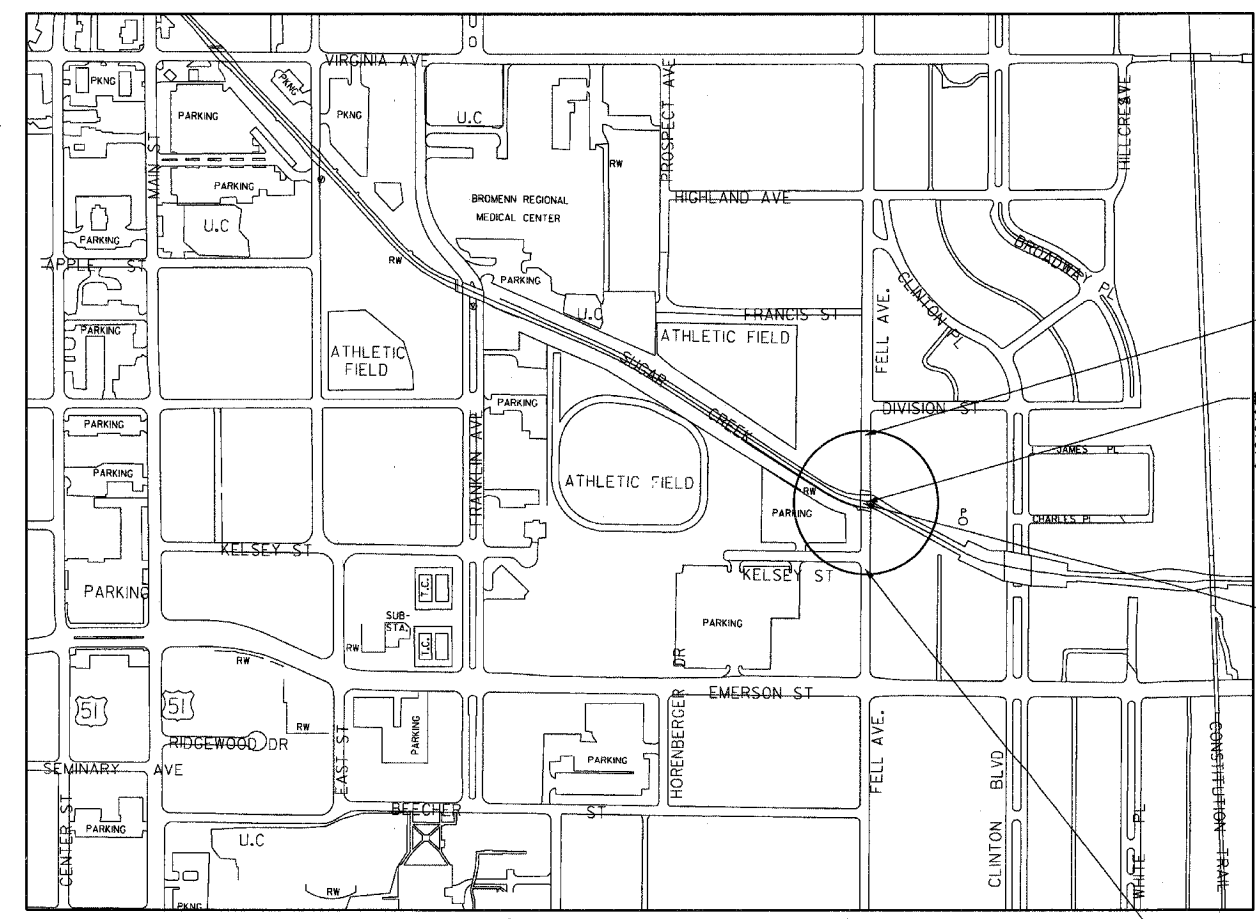
THE LOCATIONS OF THOSE BURIED AND ABOVEGROUND UTILITIES SHOWN ARE APPROXIMATE. ARE SHOWN FOR CONTRACTOR INFORMATION USE ONLY, AND ARE NOT TO BE REFERENCED FOR CONSTRUCTION PURPOSES. THE IMPLIED PRESENCE OR ABSENCE OF UTILITIES IS NOT TO BE CONSTRUED BY THE OWNER, ENGINEER, CONTRACTOR, OR SUBCONTRACTORS TO BE AN ACCURATE AND COMPLETE REPRESENTATION OF UTILITIES THAT MAY OR MAY NOT EXIST ON THE CONSTRUCTION SITE. BURIED AND ABOVEGROUND UTILITY LOCATION, IDENTIFICATION, AND MARKING ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. REROUTING, DISCONNECTION, PROTECTION, ETC. OF ANY UTILITIES MUST BE COORDINATED BETWEEN THE CONTRACTOR, UTILITY COMPANY, AND OWNER. SITE SAFETY, INCLUDING THE AVOIDANCE OF HAZARDS ASSOCIATED WITH BURIED AND ABOVEGROUND UTILITIES, REMAIN THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

TOLL FREE #

JOINT UTILITY LOCATING INFORMATION FOR EXCAVATORS
(J.U.L.I.E.) TELEPHONE NUMBER
1-800-892-0123

UTILITIES

- NORTHERN ILLINOIS GAS COMPANY
(309) 828-5002
- BLOOMINGTON & NORMAL SANITARY DISTRICT
(309) 827-4396
- AMEREN IP
(309) 827-3848
(800) 755-5000
- VERIZON (TELEPHONE)
(309) 663-3885
- INSIGHT COMMUNICATIONS
(309) 451-5138
- WATER - CITY OF BLOOMINGTON
(309) 434-2426



LOCATION MAP

APPROX. SCALE 1" = 300'
NET LENGTH OF PROJECT = 450 FT. = 0.085 MI.

END IMPROVEMENT
STA. 14+87.24

EXISTING STRUCTURE NO. 1
STRUCTURE NO. 057-6304
SINGLE SPAN CONCRETE CLOSED
SPANDREL ARCH STRUCTURE
44'-0" BK.-BK.; 29' 0.-0. DECK

PROPOSED STRUCTURE
NO. 057-6338
SPECIAL BRIDGE DESIGN CONTINUOUS
REINFORCED CONCRETE SLAB BRIDGE
3 SPANS: 25'-0", 30'-0", 25'-0"
30'-0" FC.-FC. CURB; 44'-4" O.-O. DECK
SKEW ANGLE = 15° LHF

BEGIN IMPROVEMENT
STA. 10+25.00

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED FEB 2 20 05
Charles M. Johnston
DIRECTOR OF ENGINEERING

PASSED 218 20 05
J. W. [Signature]
DISTRICT ENGINEER OF LOCAL ROADS AND STREETS

APPROVED 218 20 05
Greg [Signature]
STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

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Hanson Professional Services Inc.
1525 South Sixth Street
Springfield, Illinois 62703-2886
Offices Nationwide
REGISTRATION NO. 184-001084



SIGNATURE
2-2-05
DATE
LIC. EXP. DATE: 11-30-05

\$DATE\$
\$FILE\$

CONTRACT NO. 87270

PLANS DESIGNED IN ACCORDANCE
WITH 3R POLICY OF THE F.A.P.L.H.I.

UTILITIES

1. IN ACCORDANCE WITH STATE OF ILLINOIS STATUTE 220 ILCS 50, THE CONTRACTOR IS TO NOTIFY ALL UTILITY COMPANIES NOT MORE THAN 14 DAYS NOR LESS THAN 48 HOURS (EXCLUSION OF SATURDAYS, SUNDAYS, AND HOLIDAYS) IN ADVANCE OF THE START OF EXCAVATION OR DEMOLITION.

J.U.L.I.E. TELEPHONE NUMBER CITY OF BLOOMINGTON
1-800-892-0123 (WATER AND SANITARY SEWER)
1-309-434-2225

2. IN ADDITION TO THE REQUIREMENTS OF SECTIONS 5-5 AND 20-2.16 OF THE STANDARD SPECIFICATIONS, THE CONTRACTOR SHALL, PRIOR TO STARTING EXCAVATION, ASCERTAIN FROM ALL LOCAL UTILITIES, ESPECIALLY GAS AND WATER, THE EXACT LOCATIONS OF ALL MAINS AND BUILDING SERVICES IN HIS AREA OF OPERATIONS, WHETHER SUCH ARE INDICATED ON THE PLANS OR NOT. ANY SUCH MAINS AND SERVICES DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED. WHENEVER POSSIBLE, BUILDING OWNERS OR OCCUPANTS SHALL BE NOTIFIED IN ADVANCE IF THEIR UTILITY SERVICE IS TO BE DISCONNECTED AND NO BUILDING SHALL BE LEFT WITHOUT SERVICE OVERNIGHT.

WATER MAIN

1. THE WATER MAIN WITH APPURTENANCES SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH THE "STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS, 'FIFTH EDITION', DATED MAY 1996 AND THE CITY OF BLOOMINGTON MANUAL OF PRACTICE FOR THE DESIGN OF PUBLIC IMPROVEMENTS.

2. NO EXCAVATION FOR OR INSTALLATION OF WATER MAINS SHALL BEGIN UNTIL THE PROJECT IS "STAKED" IN THE FIELD BY THE CONTRACTOR OR HIS REPRESENTATIVE (STAKING INCLUDES PIPE LINE STAKES, PIPE GRADE STAKES, FINISHED GRADE STAKES, FITTING LOCATIONS, ETC.). REFER TO THE SPECIAL PROVISIONS FOR COMPLETE CONSTRUCTION REQUIREMENT.

3. ALL MATERIALS SHALL BE APPROVED BY THE CITY OF BLOOMINGTON PRIOR TO CONSTRUCTION. INQUIRE OF CITY OF BLOOMINGTON WATER RESOURCES MANAGER AT (309)434-2225

4. IN ADDITION TO THE REQUIREMENTS OF SECTIONS 5-5 AND 20-2.16 OF THE STANDARD SPECIFICATIONS, THE CONTRACTOR SHALL, PRIOR TO STARTING EXCAVATION, ASCERTAIN FROM ALL LOCAL UTILITIES THE EXACT LOCATION OF ALL MAINS AND BUILDING SERVICES IN HIS AREA OF OPERATIONS, WHETHER SUCH ARE INDICATED ON THE PLANS OR NOT. ANY SUCH MAINS AND SERVICES DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED. WHENEVER POSSIBLE, BUILDING OWNERS OR OCCUPANTS SHALL BE NOTIFIED IN ADVANCE IF THEIR UTILITY SERVICE IS TO BE DISCONNECTED, AND NO BUILDING SHALL BE LEFT WITHOUT SERVICE OVERNIGHT.

5. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS PRIOR TO CONSTRUCTION. THE CITY'S REPRESENTATIVE SHALL BE NOTIFIED OF ANY DISCREPANCY.

6. THE CONTRACTOR SHALL TAKE REASONABLE PRECAUTIONS TO PROTECT PUBLIC AND PRIVATE PROPERTY. IF AT ANY TIME, HE DAMAGES OR DESTROYS PUBLIC OR PRIVATE PROPERTY, THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, RESTORE SUCH PROPERTY TO A CONDITION EQUAL TO THAT EXISTING BEFORE SUCH DAMAGE.

7. ALL SECTIONS, DETAILS, AND NOTES SHOWN ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL APPLY TO SIMILAR SITUATIONS ELSEWHERE, UNLESS OTHERWISE SHOWN.

8. WATER MAINS SHALL BE DUCTILE IRON PIPE SPECIAL CLASS 52 WITH RESTRAINED JOINTS. ALL BENDS, TEES, PLUGS, VALVES AND HYDRANTS SHALL BE RESTRAINED JOINT.

9. CEMENT LINING AND TAR (SEAL) COATING SHALL BE PROVIDED FOR ALL PIPE. ALL PIPE SHALL HAVE PUSH-ON TYPE JOINT UNLESS OTHERWISE CALLED FOR.

10. WHERE RESTRAINED JOINTS ARE SPECIFIED, THEY SHALL MEET ONE OF THE FOLLOWING:

- A. U.S. PIPE: TR FLEX JOINT
- B. AMERICAN DUCTILE IRON PIPE: FLEX-RING JOINT
- C. MOWANE INC. (CLOW): TITON OR FASTITE JOINT
- D. GRIFFIN PIPE: SNAP-LOK OR BOLT-LOK JOINT
- E. STANDARD RETAINER GLANDS FROM APPROVED MANUFACTURERS.
- F. OR APPROVED EQUAL.

11. FITTINGS SHALL CONFORM TO A.N.S.I./A.W.W.A. C110/A21.10 OR A.N.S.I./A.W.W.A. C153 AND A.N.S.I./A.W.W.A. C111/A21.11 (250 PSI) RATED PRESSURE. ALL FITTINGS SHALL HAVE THE SAME LININGS AND COATINGS AS THE PIPE SUPPLIED. ALL FITTINGS (INCLUDING BUT NOT LIMITED TO BENDS, TEES, REDUCERS, AND PLUGS) SHALL BE RESTRAINED WITH RETAINER GLANDS OR A MANUFACTURED JOINT RESTRAINING SYSTEM APPROVED BY THE DIRECTOR OF ENGINEERING.

12. ALL VALVES SHALL BE RESILIENT WEDGE GATE VALVES MEETING A.W.W.A. C509.

13. VALVE BOXES SHALL BE PROVIDED AND INSTALLED. ALL VALVE BOXES SHALL HAVE NOT LESS THAN A 5/4" SHAFT. THE EXTENSIONS OF THE VALVE BOX AND SHAFT NECESSARY TO REACH THE GROUND ELEVATION SHALL BE INCLUDED. VALVE BOXES SHALL BE TYLER PIPE TWO PIECE, SCREW TYPE, 6850 SERIES WITH THE WORD "WATER" CAST ON LID OR AN APPROVED EQUAL.

14. MINIMUM COVER OVER WATERMAINS SHALL BE 48"

15. ALL TRENCHES WITHIN TWO FEET OF EXISTING PAVEMENT, DRIVEWAYS, AND SIDEWALKS SHALL BE BACKFILLED WITH SELECT GRANULAR BACKFILL. THE AREA BETWEEN EDGE-TO-EDGE OF PAVEMENT SHALL BE CAPPED WITH TEMPORARY SURFACE OVER TRENCH.

16. ALL EXCESS EARTH FROM THE TRENCHES SHALL BE DISPOSED OF BY THE CONTRACTOR OFFSITE. DISPOSING OF EXCESS EARTH SHALL BE INCIDENTAL TO THE CONSTRUCTION OF THE WATER MAIN.

SANITARY SEWER

1. ALL SANITARY SEWERS SHALL BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE SECTIONS OF THE "STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION", THEN CURRENT EDITION.

2. SANITARY SEWER PIPE SHALL BE DUCTILE IRON PIPE CLASS 150 CONFORMING TO ANSI A21.51. PIPE JOINTS SHALL BE MECHANICAL JOINT OR RUBBER RING (SLIP SEAL OR PUSH ON) JOINTS. RESTRAINED JOINTS SHALL BE USED FOR ALL PIPE CONSTRUCTED WITHIN STEEL CASING PIPE. RESTRAINED JOINTS SHALL MEET ONE OF THE MATERIALS SPECIFIED IN NOTE 10 OF THE WATER MAIN NOTES.

3. A GRANULAR CRADLE (BEDDING OR HAUNCHING) WILL BE REQUIRED FOR ALL SANITARY SEWERS AS SHOWN IN THE STANDARD DETAILS AND IN ACCORDANCE WITH SECTION 20-2.20B OF THE "STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION".

4. ALL TRENCHES UNDER ANOTHER SEWER OR WATER MAIN, OR UNDER OR WITHIN 2 FT OF EXISTING OR PROPOSED STREETS, EXISTING SIDEWALKS AND DRIVEWAYS SHALL BE BACKFILLED WITH TRENCH BACKFILL MATERIAL IN ACCORDANCE WITH SECTION 20B OF THE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION".

5. MATERIAL FOR TRENCH BACKFILL SHALL COMPLY WITH ARTICLE 1003.04 OF THE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", EXCEPT THAT THE FOLLOWING GRADUATIONS MAY BE USED IN ADDITION TO FA6: CA6, CA10, CA13 AND CA16 AND EXCEPT THAT THE MAXIMUM SIZE SHALL BE 3 INCHES AND THAT NO MATERIAL OVER 1/2 INCH SHALL BE USED BELOW 1 FOOT OVER THE TOP OF THE SEWER.

6. ALL SEWER TRENCHES UNDER STREETS, DRIVEWAYS OR SIDEWALKS SHALL BE COMPACTED BY JETTING, MECHANICAL COMPACTOR OR AS DIRECTED BY THE DIRECTOR OF ENGINEERING.

7. THE LEAKAGE TEST WILL BE BY THE LOW PRESSURE AIR METHOD. THE CONTRACTOR SHALL NOTIFY THE ENGINEER WHEN THE SEWER IS READY FOR TESTING. THE GROUND SHALL BE LEVELED AND ALL MANHOLES SHALL BE ACCESSIBLE TO THE AIR TESTING EQUIPMENT.

8. THE CONTRACTOR SHALL PLACE WOOD STUDS (2x4'S) EXTENDING FROM THE BOTTOM OF THE SEWER SERVICE TO 2 FEET ABOVE THE GROUND AT THE LOCATION WHERE EACH SEWER SERVICE TERMINATES. THESE MARKERS SHALL BE INSTALLED AT THE TIME THE SERVICES ARE CONSTRUCTED.

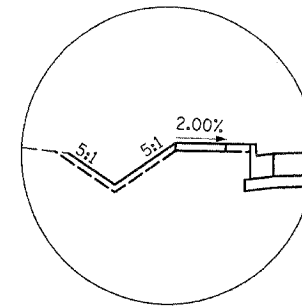
9. AT THE TIME THE CURB AND GUTTER IS POURED, THE CONTRACTOR SHALL MARK THE TOP OF THE CURB WITH A PERMANENT "S" FOR SEWER TO MARK LOCATION OF SAID SERVICES.

10. FINAL GRADE FOR ALL MANHOLE CASTINGS WILL BE DETERMINED AFTER THE CURB AND GUTTER HAS BEEN POURED AND THE SUBGRADE AND/OR BASE HAS BEEN CONSTRUCTED. FINAL ADJUSTMENT OF THE FRAME AND GRATE SHALL BE MADE IN THE FOLLOWING MANNER: AFTER THE CURB AND GUTTER HAS BEEN POURED AND THE BASE CONSTRUCTED THE FINAL ELEVATION WILL BE DETERMINED BY THE DIRECTOR OF ENGINEERING. THE FRAME AND GRATE WILL BE ADJUSTED TO THIS ELEVATION IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. ANY MATERIAL DISTURBED WHILE ADJUSTING THE FRAME AND GRATE WILL BE DISPOSED OF AND ALL FILL MADE WITH LEAN CONCRETE. A MAXIMUM OF 18 INCHES OF ADJUSTING RINGS SHALL BE ALLOWED.

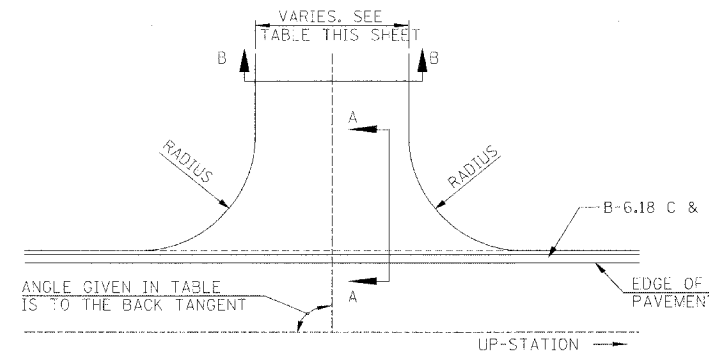
60" COMBINED SEWER

- 1. REINFORCED CONCRETE ENCASEMENT SHALL BE CONSTRUCTED PRIOR TO BEGINNING ANY OTHER CONSTRUCTION ACTIVITIES.
- 2. CONSTRUCTION EQUIPMENT WILL NOT BE ALLOWED OVER THE 60" COMBINED SEWER OUTSIDE THE LIMITS OF ENCASEMENT.

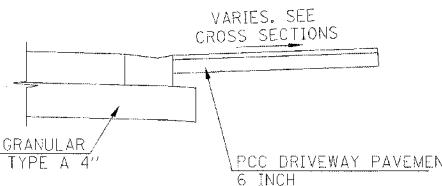
STRUCTURAL DESIGN TRAFFIC:	YEAR	2015
PV =	1729	SU = 138 MU = 98
ROAD/STREET CLASSIFICATION:	CLASS	III
PERCENT OF STRUCTURAL DESIGN TRAFFIC IN DESIGN LANE	P =	50 S = 50 M = 50
TRAFFIC FACTOR:	ACTUAL TF =	0.73
	MINIMUM TF =	0.50
SUBGRADE SUPPORT RATING:	SSR =	POOR (STA. 10+25 TO 14+60)



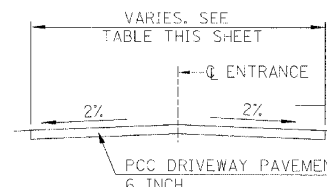
DETAIL A



ENTRANCE DETAIL

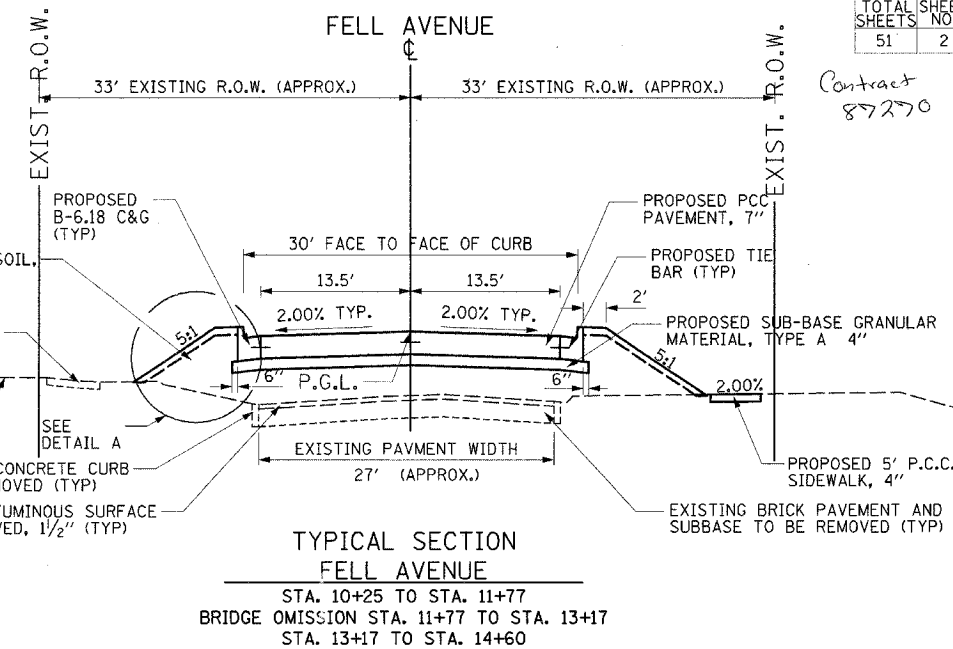


SECTION A-A



SECTION B-B

ENTRANCES			
LOCATION	ANGLE	WIDTH	RADIUS/COMMENT
10+73.32, RT	90.00°	12.0'	5' / P.E.
11+32.81, RT	90.00°	18.5'	5' / P.E.
11+99.26, LT	90.00°	12.0'	10' / C.E.
13+48.89, RT	90.00°	15.5'	5' / P.E.
13+67.66, LT	90.00°	13.0'	5' / P.E.
14+06.59, RT	90.00°	12.0'	5' / P.E.
14+66.61, LT	90.00°	22.0'	5' / P.E.



TYPICAL SECTION FELL AVENUE

STA. 10+25 TO STA. 11+77
BRIDGE OMISSION STA. 11+77 TO STA. 13+17
STA. 13+17 TO STA. 14+60

LEGEND

EXISTING	PROPOSED	DESCRIPTION
---	---	PAVEMENT, CURB AND GUTTER, SIDEWALK, DRIVEWAY, RETAINING WALL, SLOPEWALL
---	---	EDGE OF WATER
---	---	RIGHT-OF-WAY
---	---	TEMPORARY EASEMENT
---	---	PROPERTY LINE
---	---	LOT LINE
---	---	SANITARY SEWER
---	---	STORM SEWER
---	---	FORCE MAIN
---	---	WATER LINE
---	---	WATER SERVICE LINE
---	---	GAS LINE
---	---	AERIAL ELECTRIC
---	---	FIBER OPTIC
---	---	CABLE TV (AERIAL)
---	---	PERIMETER EROSION BARRIER
---	---	DECIDUOUS TREE
---	---	EVERGREEN TREE
---	---	INLET
---	---	MANHOLE
---	---	FLARED END SECTION
---	---	TELEPHONE SPLICE BOX ABOVE GROUND
---	---	STREET LIGHT
---	---	POWER POLE
---	---	LIGHT POLE
---	---	WATER VALVE
---	---	FIRE HYDRANT

GENERAL NOTES AND TYPICAL SECTION FELL AVENUE BRIDGE REPLACEMENT

DRAWN MH 10-6-03 DESIGNED MH 10-6-04
CHECKED LDK 10-25-04 CHECKED LDK 10-25-04
FILE: 03S2019 DATE: 2-2-05

TOTAL SHEET SHEETS NO. 51 2

Contract 87270

HANSON

02/03/2005 1:03 jobs\03s2019\civil\sheet\c-002-yn.dgn

87270

SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	NON-PARTICIPATING 07C			
				PARTICIPATING BRRP 80% FEDERAL 20% CITY		LOCAL BLOOMINGTON-NORMAL WATER RECLAMATION DISTRICT	
				BRIDGE X020-2A	SEWER Y060 (1)	WATER Y060 (2)	SEWER Y060 (3)
20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	78	78			
20100210	TREE REMOVAL (OVER 15 UNITS DIAMETER)	UNIT	85	85			
20101000	TEMPORARY CONSTRUCTION FENCE	FOOT	91	91			
20101400	NITROGEN FERTILIZER NUTRIENT	POUND	19	19			
20101500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	19	19			
20101600	POTASSIUM FERTILIZER NUTRIENT	POUND	19	19			
20200100	EARTH EXCAVATION	CU YD	1,330	1,330			
21101625	TOPSOIL FURNISH AND PLACE, 6"	SQ YD	1,025	1,025			
25000100	SEEDING, CLASS 1	ACRE	0.25	0.25			
25000110	SEEDING, CLASS 1A	ACRE	0.25	0.25			
25100105	MULCH, METHOD 1	ACRE	0.61	0.61			
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	36	36			
28000400	PERIMETER EROSION BARRIER	FOOT	755	755			
28000500	INLET AND PIPE PROTECTION	EACH	6	6			
31100300	SUB-BASE GRANULAR MATERIAL, TYPE A 4"	SQ YD	1,385	1,385			
40600980	BITUMINOUS SURFACE REMOVAL - BUTT JOINT	SQ YD	46	46			
42000201	PORTLAND CEMENT CONCRETE PAVEMENT 7" (JOINTED)	SQ YD	1,001	1,001			
42001300	PROTECTIVE COAT	SQ YD	1,648	1,648			
* 42001400	BRIDGE APPROACH PAVEMENT (SPECIAL)	SQ YD	206	206			
42300200	PORTLAND CEMENT CONCRETE DRIVEWAY PAVEMENT, 6 INCH	SQ YD	256	256			
42400100	PORTLAND CEMENT CONCRETE SIDEWALK 4 INCH	SQ FT	2,797	2,797			
44000100	PAVEMENT REMOVAL	SQ YD	1,325	1,247	78		
44000200	DRIVEWAY PAVEMENT REMOVAL	SQ YD	250	250			
44000300	CURB REMOVAL	FOOT	788	788			
44000600	SIDEWALK REMOVAL	SQ FT	1,284	1,284			
* 50100300	REMOVAL OF EXISTING STRUCTURES NO. 1	EACH	1	1			
* 50100400	REMOVAL OF EXISTING STRUCTURES NO. 2	EACH	1		1		
* 50104400	CONCRETE HEADWALL REMOVAL	EACH	1	1			
50200100	STRUCTURE EXCAVATION	CU YD	63	63			
50300100	FLOOR DRAINS	EACH	2	2			
50300225	CONCRETE STRUCTURES	CU YD	226	108	118		
50300255	CONCRETE SUPERSTRUCTURE	CU YD	192	192			
50300260	BRIDGE DECK GROOVING	SQ YD	264	264			
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	59,655	53,850	5,805		
* 50900805	PEDESTRIAN RAILING	FOOT	158	158			
* 51100400	SLOPE WALL, SPECIAL	SQ YD	3,214	392			2,822

SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	NON-PARTICIPATING 07C			
				PARTICIPATING BRRP 80% FEDERAL 20% CITY		LOCAL BLOOMINGTON-NORMAL WATER RECLAMATION DISTRICT	
				BRIDGE X020-2A	SEWER Y060 (1)	WATER Y060 (2)	SEWER Y060 (3)
51201000	FURNISHING METAL PILE SHELLS 12"	FOOT	975	975			
51202800	DRIVING AND FILLING SHELLS	FOOT	975	975			
51203200	TEST PILE METAL SHELLS	EACH	2	2			
51500100	NAME PLATES	EACH	1	1			
54215412	CAST-IN-PLACE REINFORCED CONCRETE END SECTIONS 12"	EACH	2	2			
54215424	CAST-IN-PLACE REINFORCED CONCRETE END SECTIONS 24"	EACH	1	1			
54215436	CAST-IN-PLACE REINFORCED CONCRETE END SECTIONS 36"	EACH	1	1			
54247170	GRATING FOR CONCRETE FLARED END SECTION, 36"	EACH	1	1			
55101200	STORM SEWER REMOVAL 24"	FOOT	16	16			
* 56103000	DUCTILE IRON WATER MAIN 6"	FOOT	85			85	
* 56103100	DUCTILE IRON WATER MAIN 8"	FOOT	428			428	
* 56400500	FIRE HYDRANTS TO BE REMOVED	EACH	1			1	
* 60218400	MANHOLES, TYPE A, 4-DIAMETER, TYPE 1 FRAME, CLOSED LID	EACH	2			2	
* 60235700	INLETS, TYPE A, TYPE 3 FRAME AND GRATE	EACH	2	2			
* 60236200	INLETS, TYPE A, TYPE 8 GRATE	EACH	3	3			
* 60248700	VALVE VAULTS, TYPE A, 4-DIAMETER, TYPE 1 FRAME, CLOSED LID	EACH	1			1	
* 60249400	VALVE BOXES 6"	EACH	4			4	
* 60249500	VALVE BOXES 8"	EACH	3			3	
* 60255500	MANHOLES TO BE ADJUSTED	EACH	1	1			
* 60257900	MANHOLES TO BE RECONSTRUCTED	EACH	2	2			
* 60260100	INLETS TO BE ADJUSTED	EACH	3	3			
* 60260400	INLETS TO BE ADJUSTED WITH NEW TYPE 1 FRAME, CLOSED LID	EACH	1	1			
60500040	REMOVING MANHOLES	EACH	1	1			
60604400	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.18	FOOT	624.5	624.5			
60801024	FLAP GATE 24"	EACH	1			1	
* 70101700	TRAFFIC CONTROL AND PROTECTION	L SUM	1	1			
78005110	EPOXY PAVEMENT MARKING - LINE 4"	FOOT	833	833			
* 550A0050	STORM SEWERS, CLASS A, TYPE 1 12"	FOOT	58	58			
* 550A0120	STORM SEWERS, CLASS A, TYPE 1 24"	FOOT	40	40			
* 550A0160	STORM SEWERS, CLASS A, TYPE 1 36"	FOOT	22	22			
* X0321430	BRIDGE APPROACH PAVEMENT CONNECTOR (PCC) SPECIAL	SQ YD	42	42			
* X0322033	STORM SEWERS, (WATER MAIN REQUIREMENTS) 12 INCH	FOOT	129	129			
* X0323172	DUCTILE IRON WATER MAIN BEND, 45 DEGREE, 8 INCHES	EACH	2			2	
* X0323181	DUCTILE IRON WATER MAIN REDUCER, 6" X 4"	EACH	1			1	
* X0323182	DUCTILE IRON WATER MAIN REDUCER, 8" X 6"	EACH	1			1	
* X0323185	DUCTILE IRON WATER MAIN TEE, 6" X 6"	EACH	1			1	

* SEE SPECIAL PROVISIONS

THESE ITEMS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF DIVISIONS II-V OF THE STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS, FIFTH EDITION, DATED MAY 1996.

SUMMARY OF QUANTITIES
FELL AVENUE
BRIDGE REPLACEMENT

DRAWN MH 10-6-03 DESIGNED MH 10-6-04
CHECKED LDK 10-25-04 CHECKED LDK 10-25-04
FILE: 03S2019 DATE: 2-2-05



SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	NON-PARTICIPATING ^{07C}			
				PARTICIPATING BRRP 80% FEDERAL 20% CITY	LOCAL		BLOOMINGTON-NORMAL WATER RECLAMATION DISTRICT
					CONSTRUCTION TYPE CODE		
				BRIDGE X020-2A	SEWER Y060 (1)	WATER Y060 (2)	SEWER Y060 (3)
* X0487800	SANITARY SEWER REMOVAL 12"	FOOT	114		114		
# * X0539200	DROP MANHOLE CONNECTION	EACH	2		2		
# * X0783300	PUMP STATION ELECTRICAL WORK	L SUM	1		1		
* X4020500	AGGREGATE SURFACE COURSE, TYPE B 6"	SQ YD	133		133		
* X4066424	BITUMINOUS CONCRETE SURFACE COURSE, SUPERPAVE, MIX "D", N50	TON	5	5			
* X5020501	UNDERWATER STRUCTURE EXCAVATION PROTECTION - LOCATION 1	EACH	2	2			
* XX000868	SELECT GRANULAR BACKFILL	CU YD	325	325			
# * XX001490	GATE VALVES, 8"	EACH	5			5	
* XX002082	SANITARY SEWER REMOVAL 24"	FOOT	16		16		
# * XX002159	WATER SERVICE INSTALLATION, 1"	EACH	8			8	
# * XX002982	GATE VALVES, 6"	EACH	4			4	
# * XX003528	DUCTILE IRON WATER MAIN FITTING - 8" PLUG	EACH	1			1	
# * XX003539	DUCTILE IRON WATER MAIN FITTINGS 8" X 6" TEE	EACH	2			2	
# * XX003799	COPPER SERVICE, TYPE K 1"	FOOT	218			218	
# * XX004377	STEAMER FIRE HYDRANTS	EACH	2			2	
* Z0013798	CONSTRUCTION LAYOUT	L SUM	1	1			
# * Z0057100	SANITARY SEWER 12"	FOOT	175		175		
# * Z0067900	STEEL CASINGS 18"	FOOT	50		50		
# * Z0067900	STEEL CASING 24"	FOOT	20		20		
△ * Z0076500	TRAINEES	hour	1,000	1,000			
# *	HYDRANT INSTALLATION	EACH	1			1	
* *	BURY EXISTING MANHOLE	EACH	1	1			
# *	SUBMERSIBLE PUMPS AND ACCESSORIES	L SUM	1		1		
# *	4" FORCE MAIN	FOOT	25		25		
# *	SAMPLING TAP	EACH	3			3	
# *	ENGINE GENERATOR SET FOR PUMP STATION	L SUM	1		1		
# *	EXCAVATION AND BACKFILL FOR STRUCTURES	L SUM	1		1		
# *	WET WELL AND VALVE VAULT STRUCTURES	L SUM	1		1		

△ Y080

* SEE SPECIAL PROVISIONS

THESE ITEMS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF DIVISIONS II-V OF THE STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS, FIFTH EDITION, DATED MAY 1996.

SUMMARY OF QUANTITIES
FELL AVENUE
BRIDGE REPLACEMENT

DRAWN MH 10-6-03 DESIGNED MH 10-6-04
CHECKED LDK 10-25-04 CHECKED LDK 10-25-04
FILE: 03S2019 DATE: 2-2-05



87270

DRAINAGE STRUCTURE SCHEDULE

LOCATION	CAST-IN-PLACE REINFORCED CONCRETE END SECTIONS 12"	CAST-IN-PLACE REINFORCED CONCRETE END SECTIONS 24"	CAST-IN-PLACE REINFORCED CONCRETE END SECTIONS 36"	INLETS, TYPE A, TYPE 3 FRAME AND GRATE	INLETS, TYPE A, TYPE 8 GRATE	FLAP GATE 24"	GRATING FOR CONCRETE FLARED END SECTION 36"	MANHOLES TO BE ADJUSTED	MANHOLES TO BE RECONSTRUCTED	INLETS TO BE ADJUSTED	INLETS TO BE ADJUSTED WITH NEW TYPE 1 FRAME, CLOSED LID
	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
STA. 10+56.77 12.60 FT RT										1	
STA. 10+84.78 13.50 FT RT				1							
STA. 11+27.16 22.39 FT LT					1						
STA. 11+50.58 21.08 FT RT					1						
STA. 11+96.80 36.30 FT RT	1										
STA. 11+99.31 20.30 FT LT									1		
STA. 11+99.32 26.93 FT LT									1		
STA. 12+03.75 29.30 FT RT	1										
STA. 12+31.25 36.26 FT LT		1									
STA. 12+34.48 38.17 FT LT						1					
STA. 12+77.14 28.54 FT LT			1				1				
STA. 13+36.32 20.50 FT RT					1						
STA. 13+80.44 13.50 FT RT				1							
STA. 14+27.75 21.82 FT LT											1
STA. 14+37.01 13.48 FT RT										1	
STA. 14+38.13 13.56 FT RT										1	
STA. 14+38.21 7.05 FT RT								1			
SUBTOTAL	2	1	1	2	3	1	1	1	2	3	1

DRAINAGE PIPE SCHEDULE

LOCATION	STORM SEWERS 36"	STORM SEWERS 24"	STORM SEWERS 12"	STORM SEWERS, (WATER MAIN REQUIREMENTS) 12"	SELECT GRANULAR BACKFILL
	FOOT	FOOT	FOOT	FOOT	CU YD
STA. 10+84.90 RT				4.0	1.0
STA. 11+50.58 RT TO STA. 11+96.80 RT				53.8	3.2
STA. 11+99.31 LT TO STA. 12+34.47 LT		40.0			14.3
STA. 12+65.38 RT TO STA. 13+36.32 RT				71.3	6.5
STA. 12+77.14 LT TO STA. 12+98.73 LT	22.4				3.9
STA. 13+80.51 RT TO STA. 14+38.13 RT			57.6		13.9
SUBTOTAL	22	40	58	129	45

EROSION CONTROL SCHEDULE

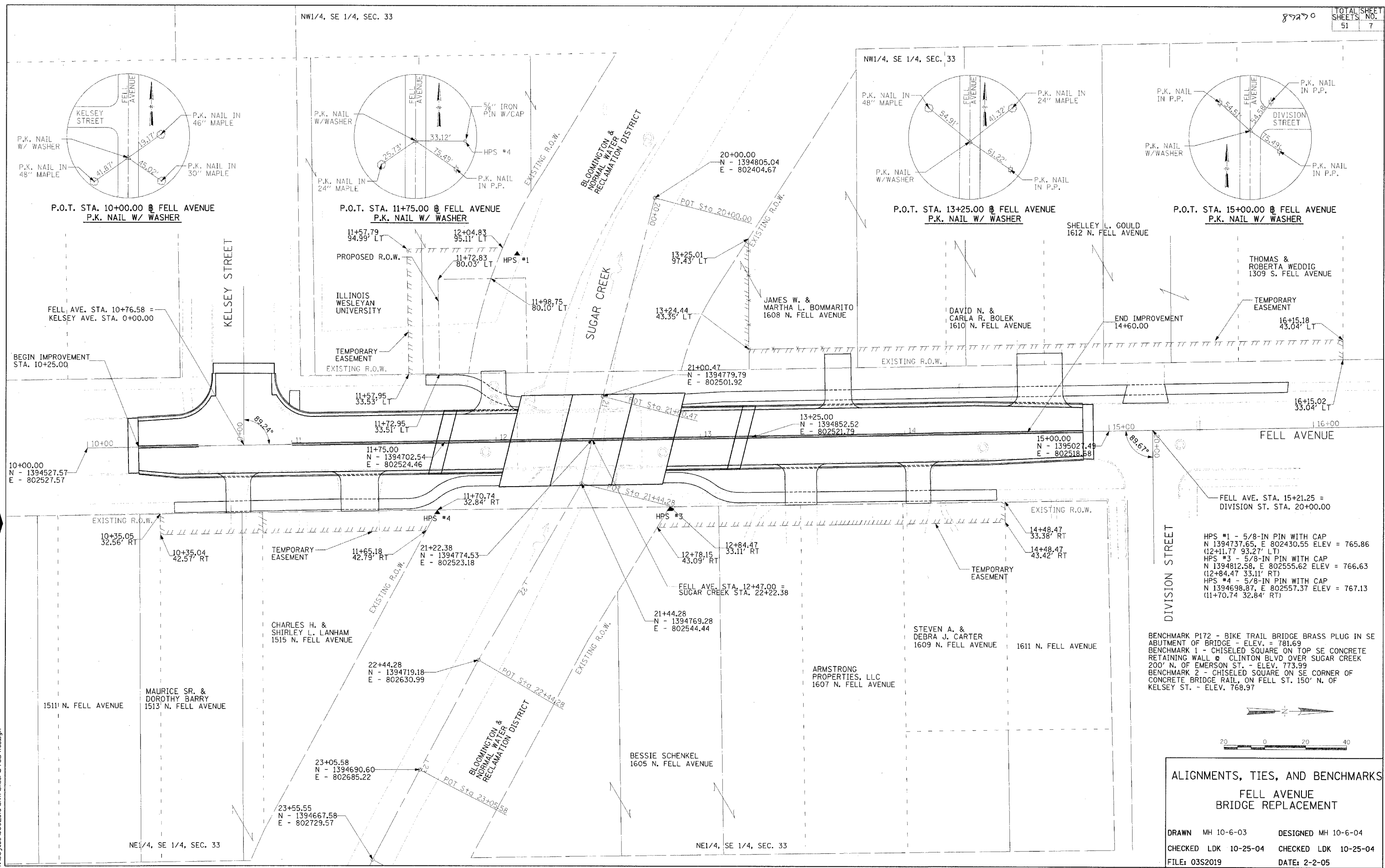
LOCATION	TEMPORARY MULCH (MULCH METHOD 1)	TEMPORARY EROSION CONTROL SEEDING	PERIMETER EROSION BARRIER	INLET AND PIPE PROTECTION
	ACRE	POUND	FOOT	EACH
FELL AVENUE				
STA. 10+25.04 LT TO STA. 10+47.77 LT	0.01	0.7		
STA. 10+25.18 RT TO STA. 10+67.34 RT	0.01	1.2		
STA. 10+51.95 LT TO STA. 10+60.44 LT	0.00	0.1		
STA. 10+79.47 RT TO STA. 11+23.01 RT	0.01	1.1		
STA. 10+92.52 LT TO STA. 10+99.06 LT	0.00	0.1		
STA. 11+04.12 LT TO STA. 11+81.26 LT	0.02	2.2		
STA. 11+27.16 22.39 FT LT				1
STA. 11+42.08 RT TO STA. 11+82.87 RT	0.01	1.0		
STA. 11+42.20 RT TO STA. 12+23.52 RT	0.03	3.3		
STA. 11+42.30 RT TO STA. 12+07.32 RT			63.5	
STA. 11+50.58 21.08 FT RT				1
STA. 11+65.87 LT TO STA. 12+31.59 LT	0.05	4.6		
STA. 11+66.14 LT TO STA. 12+37.93 LT			125.4	
STA. 11+88.97 RT TO STA. 12+03.37 RT			28.6	
STA. 12+03.75 29.30 FT RT				1
STA. 12+07.32 RT TO STA. 12+37.93 LT			121.8	
STA. 12+15.49 LT TO STA. 12+28.11 LT			49.1	
STA. 12+41.20 RT TO STA. 13+28.20 RT	0.03	3.3		
STA. 12+41.23 RT TO STA. 13+22.32 RT			81.4	
STA. 12+41.23 RT TO STA. 12+60.11 LT			85.1	
STA. 12+58.20 LT TO STA. 13+61.01 LT	0.05	4.9		
STA. 12+60.11 LT TO STA. 13+61.14 LT			101.0	
STA. 12+61.58 28.43 FT RT				1
STA. 12+66.06 RT TO STA. 12+78.17 RT			23.2	
STA. 12+73.61 29.80 FT LT				1
STA. 12+90.05 LT TO STA. 12+93.03 LT			21.8	
STA. 12+93.68 RT TO STA. 13+41.07 RT	0.01	0.9		
STA. 13+25.09 LT TO STA. 13+24.44 LT			54.2	
STA. 13+36.32 20.50 FT RT				1
STA. 13+56.51 RT TO STA. 14+00.23 RT	0.01	1.5		
STA. 13+74.52 LT TO STA. 14+55.47 LT	0.00	0.4		
STA. 14+12.23 RT TO STA. 14+59.72 RT	0.02	1.7		
STA. 14+77.64 LT TO STA. 15+09.48 LT	0.01	0.5		
STA. 15+27.49 LT TO STA. 15+88.13 LT	0.01	0.7		
SUGAR CREEK				
STA. 20+00.00 LT TO STA. 20+67.40 LT	0.00	0.5		
STA. 20+00.00 RT TO STA. 20+60.27 RT	0.01	0.7		
STA. 21+45.45 LT TO STA. 22+35.83 LT	0.01	0.8		
STA. 21+95.27 RT TO STA. 22+40.68 RT	0.01	0.7		
ADDITIONAL QUANTITY FOR NW CORNER OF BRIDGE				
	0.05	4.7		
SUBTOTAL	0.36	36	755	6

**SCHEDULES OF QUANTITIES
FELL AVENUE
BRIDGE REPLACEMENT**

DRAWN MH 10-6-03 DESIGNED MH 10-6-04
CHECKED LDK 10-25-04 CHECKED LDK 10-25-04
FILE: 03S2019 DATE: 2-2-05



87270

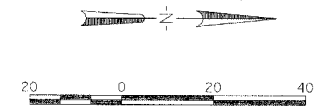


HPS #1 - 5/8-IN PIN WITH CAP
N 1394737.65, E 802430.55 ELEV = 765.86
(12+11.77 93.27' LT)

HPS #3 - 5/8-IN PIN WITH CAP
N 1394812.58, E 802555.62 ELEV = 766.63
(12+84.47 33.11' RT)

HPS #4 - 5/8-IN PIN WITH CAP
N 1394698.87, E 802557.37 ELEV = 767.13
(11+70.74 32.84' RT)

BENCHMARK P172 - BIKE TRAIL BRIDGE BRASS PLUG IN SE ABUTMENT OF BRIDGE - ELEV. = 781.69
BENCHMARK 1 - CHISELED SQUARE ON TOP SE CONCRETE RETAINING WALL @ CLINTON BLVD OVER SUGAR CREEK 200' N. OF EMERSON ST. - ELEV. 773.99
BENCHMARK 2 - CHISELED SQUARE ON SE CORNER OF CONCRETE BRIDGE RAIL, ON FELL ST. 150' N. OF KELSEY ST. - ELEV. 768.97



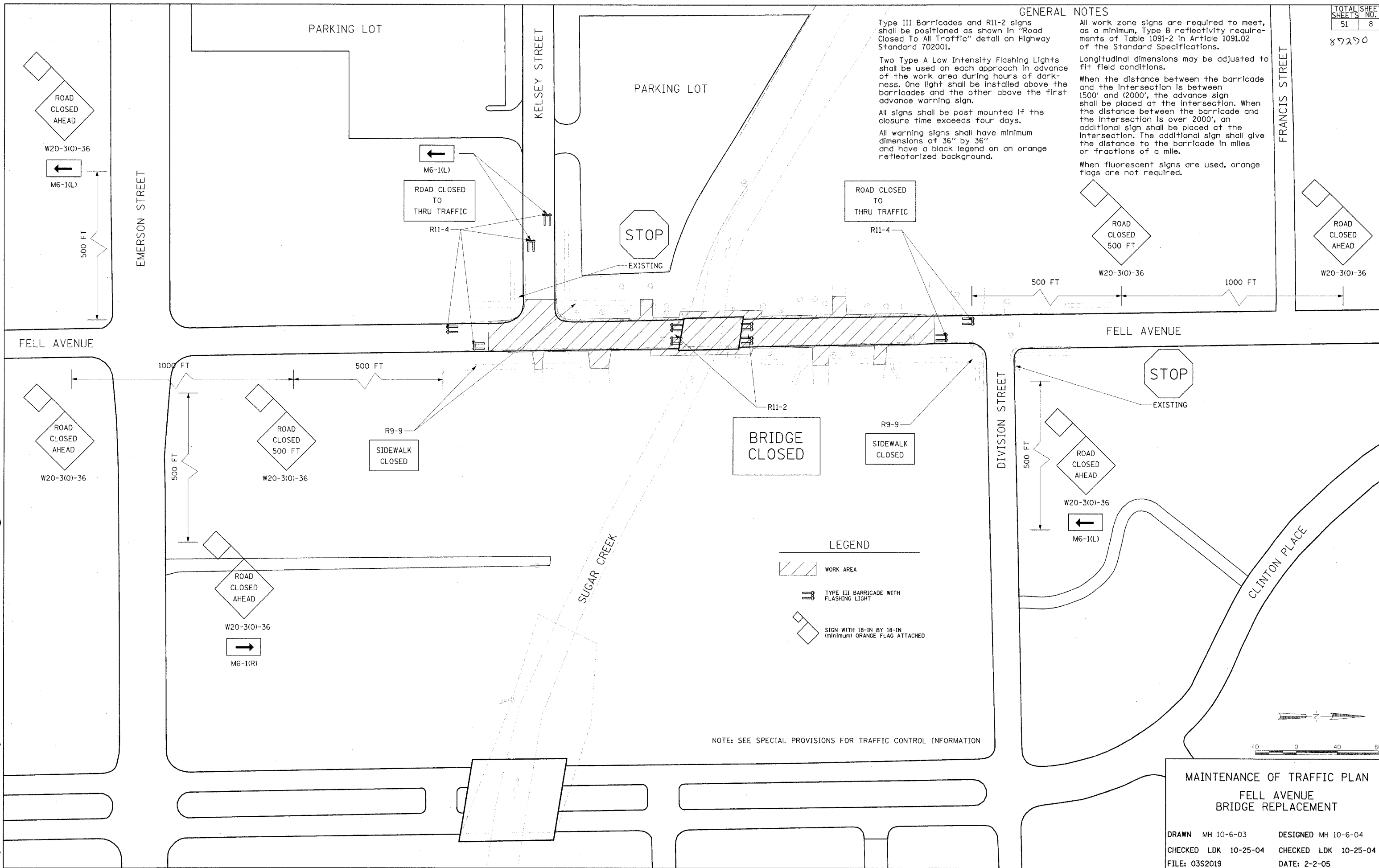
ALIGNMENTS, TIES, AND BENCHMARKS
FELL AVENUE
BRIDGE REPLACEMENT

DRAWN MH 10-6-03 DESIGNED MH 10-6-04
CHECKED LDK 10-25-04 CHECKED LDK 10-25-04
FILE: 03S2019 DATE: 2-2-05

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02/03/2005
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GENERAL NOTES

Type III Barricades and R11-2 signs shall be positioned as shown in "Road Closed To All Traffic" detail on Highway Standard 702001.

Two Type A Low Intensity Flashing Lights shall be used on each approach in advance of the work area during hours of darkness. One light shall be installed above the barricades and the other above the first advance warning sign.

All signs shall be post mounted if the closure time exceeds four days.

All warning signs shall have minimum dimensions of 36" by 36" and have a black legend on an orange reflectorized background.

All work zone signs are required to meet, as a minimum, Type B reflectivity requirements of Table 1091-2 in Article 1091.02 of the Standard Specifications.

Longitudinal dimensions may be adjusted to fit field conditions.

When the distance between the barricade and the intersection is between 1500' and 2000', the advance sign shall be placed at the intersection. When the distance between the barricade and the intersection is over 2000', an additional sign shall be placed at the intersection. The additional sign shall give the distance to the barricade in miles or fractions of a mile.

When fluorescent signs are used, orange flags are not required.

TOTAL SHEET SHEETS NO. 51 8
87270

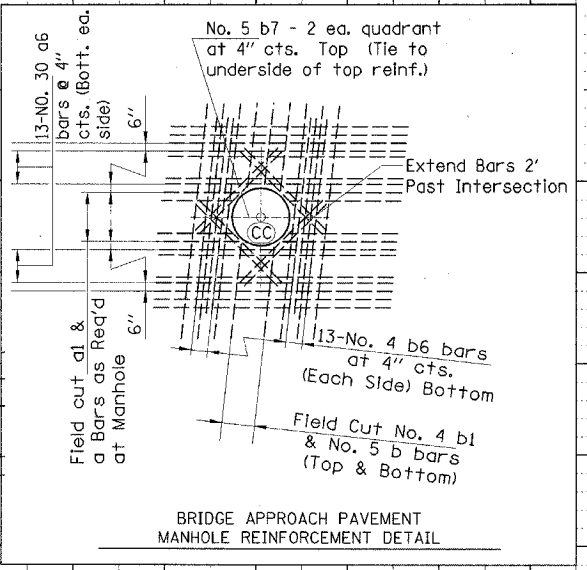
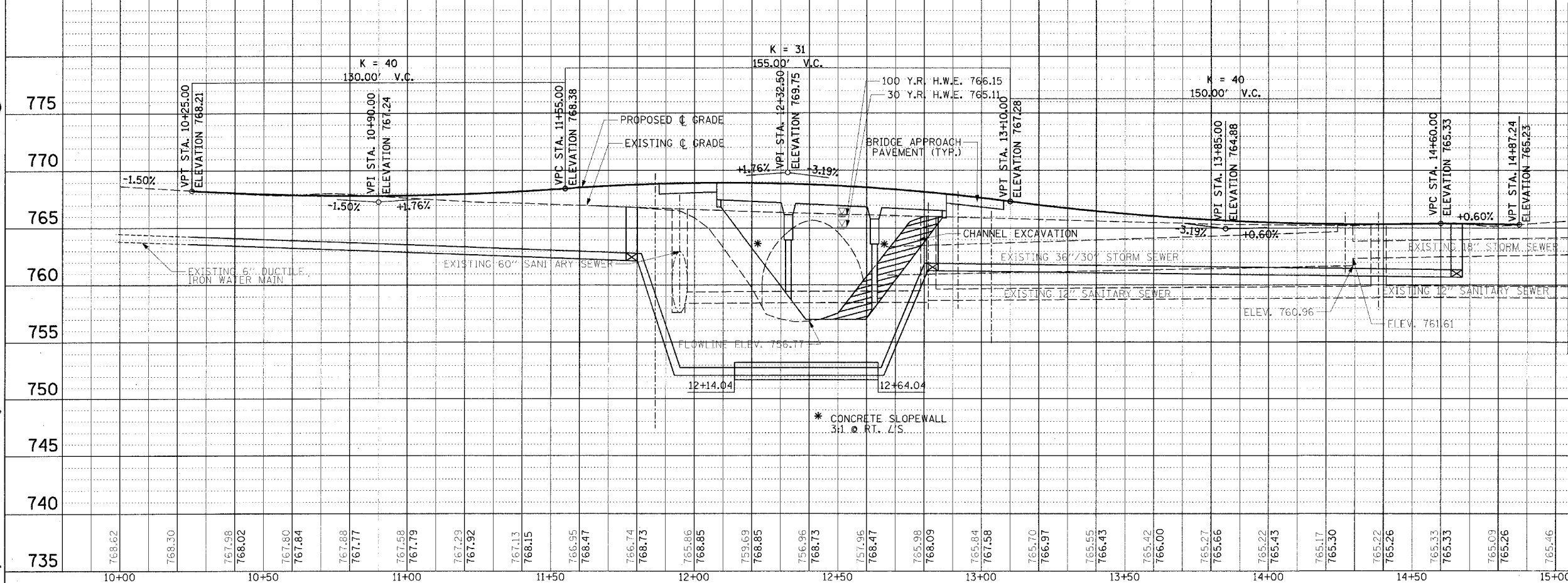
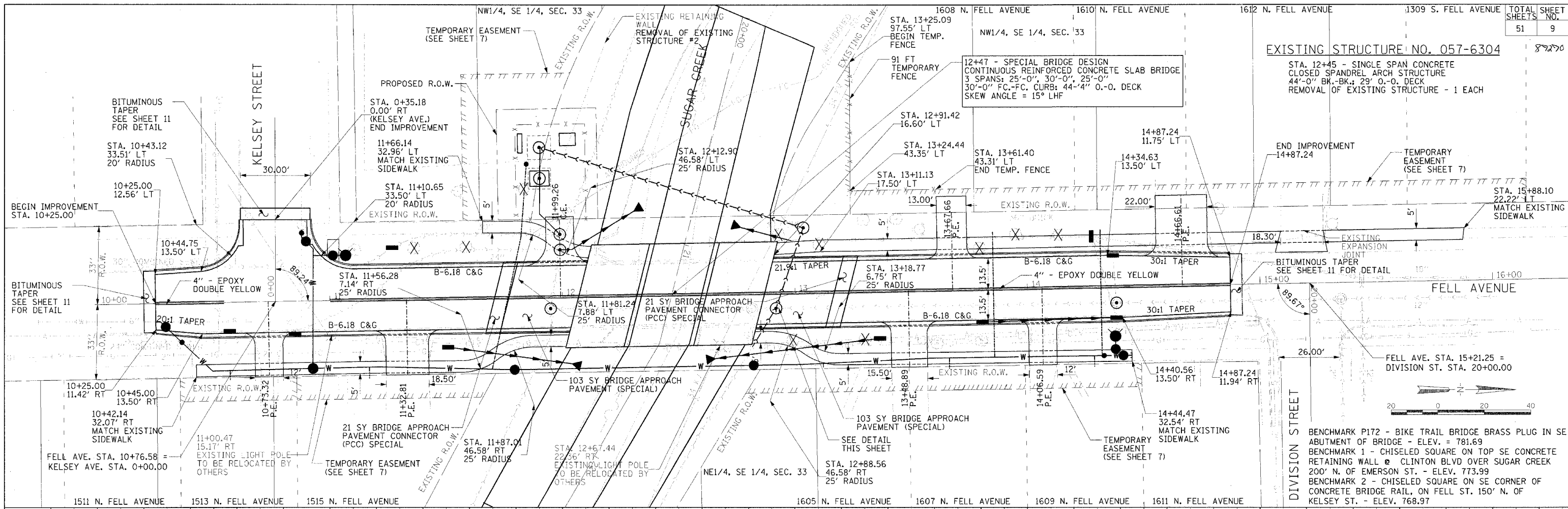
LEGEND

- WORK AREA
- TYPE III BARRICADE WITH FLASHING LIGHT
- SIGN WITH 18-IN BY 18-IN (minimum) ORANGE FLAG ATTACHED

NOTE: SEE SPECIAL PROVISIONS FOR TRAFFIC CONTROL INFORMATION

**MAINTENANCE OF TRAFFIC PLAN
FELL AVENUE
BRIDGE REPLACEMENT**

DRAWN MH 10-6-03 DESIGNED MH 10-6-04
 CHECKED LDK 10-25-04 CHECKED LDK 10-25-04
 FILE: 03S2019 DATE: 2-2-05



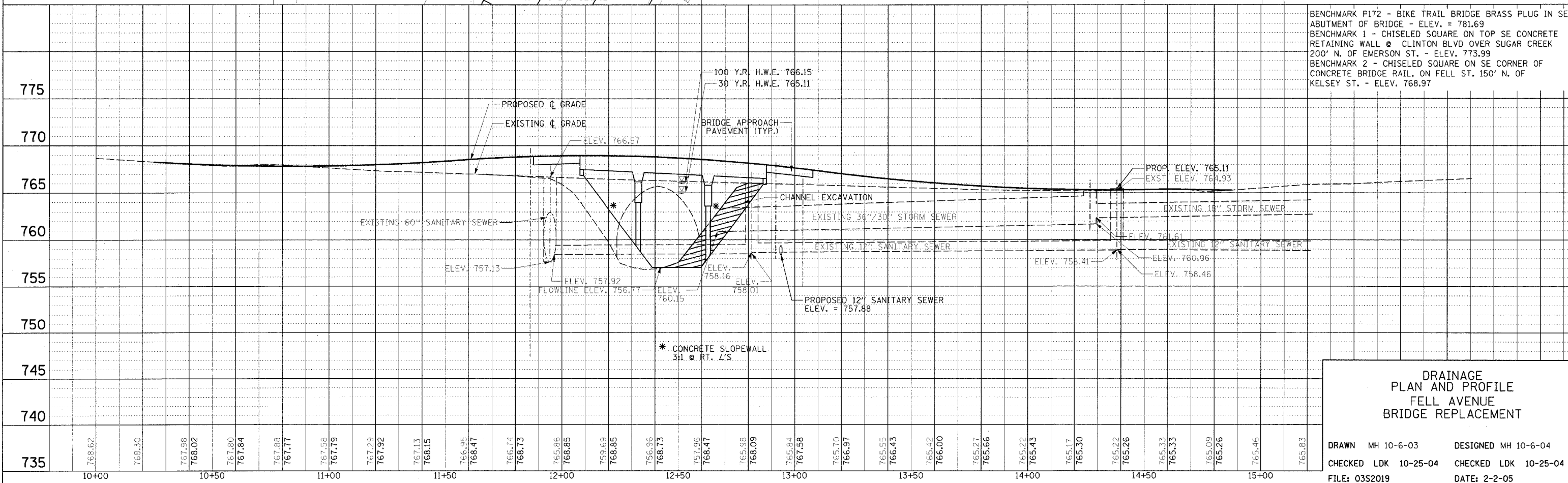
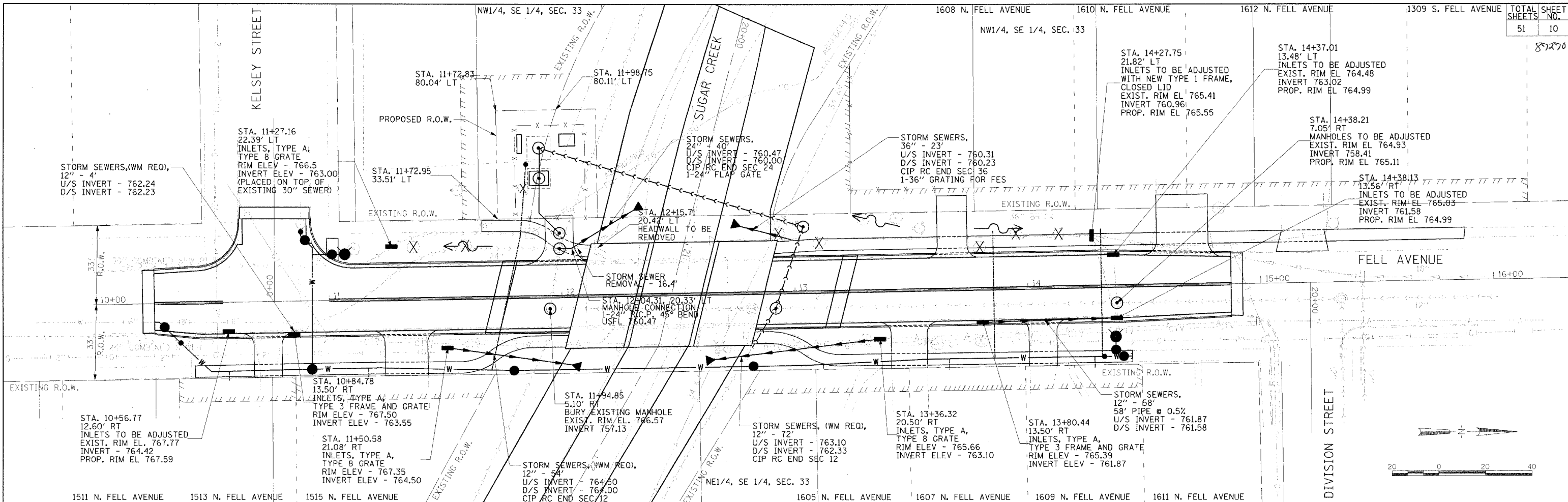
**ROADWAY PLAN AND PROFILE
 FELL AVENUE
 BRIDGE REPLACEMENT**

DRAWN MH 10-6-03 DESIGNED MH 10-6-04
 CHECKED LDK 10-25-04 CHECKED LDK 10-25-04
 FILE: 03S2019 DATE: 2-2-05

02/03/2005
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TOTAL SHEETS	NO.
51	9

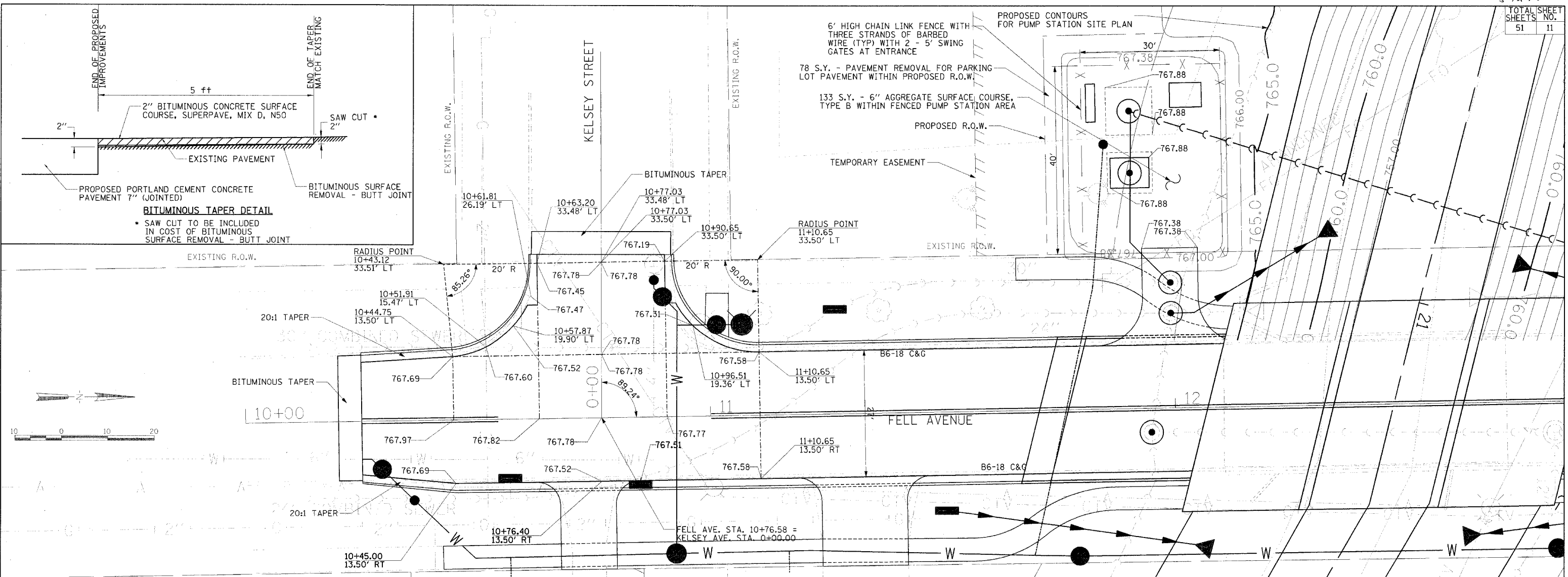
87270



**DRAINAGE
PLAN AND PROFILE
FELL AVENUE
BRIDGE REPLACEMENT**

DRAWN MH 10-6-03 DESIGNED MH 10-6-04
 CHECKED LDK 10-25-04 CHECKED LDK 10-25-04
 FILE: 03S2019 DATE: 2-2-05

02/03/2005
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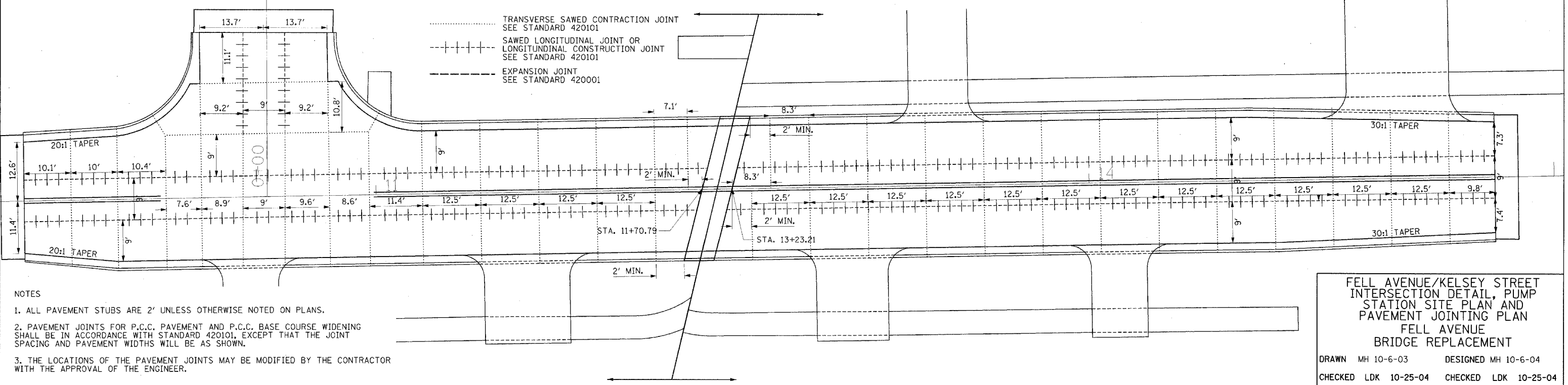
BITUMINOUS TAPER DETAIL

• SAW CUT TO BE INCLUDED IN COST OF BITUMINOUS SURFACE REMOVAL - BUTT JOINT

----- TRANSVERSE SAWED CONTRACTION JOINT
SEE STANDARD 420101

- - - - - SAWED LONGITUDINAL JOINT OR LONGITUDINAL CONSTRUCTION JOINT
SEE STANDARD 420101

- - - - - EXPANSION JOINT
SEE STANDARD 420001



- NOTES**
1. ALL PAVEMENT STUBS ARE 2' UNLESS OTHERWISE NOTED ON PLANS.
 2. PAVEMENT JOINTS FOR P.C.C. PAVEMENT AND P.C.C. BASE COURSE WIDENING SHALL BE IN ACCORDANCE WITH STANDARD 420101, EXCEPT THAT THE JOINT SPACING AND PAVEMENT WIDTHS WILL BE AS SHOWN.
 3. THE LOCATIONS OF THE PAVEMENT JOINTS MAY BE MODIFIED BY THE CONTRACTOR WITH THE APPROVAL OF THE ENGINEER.

FELL AVENUE/KELSEY STREET INTERSECTION DETAIL, PUMP STATION SITE PLAN AND PAVEMENT JOINTING PLAN
FELL AVENUE
BRIDGE REPLACEMENT

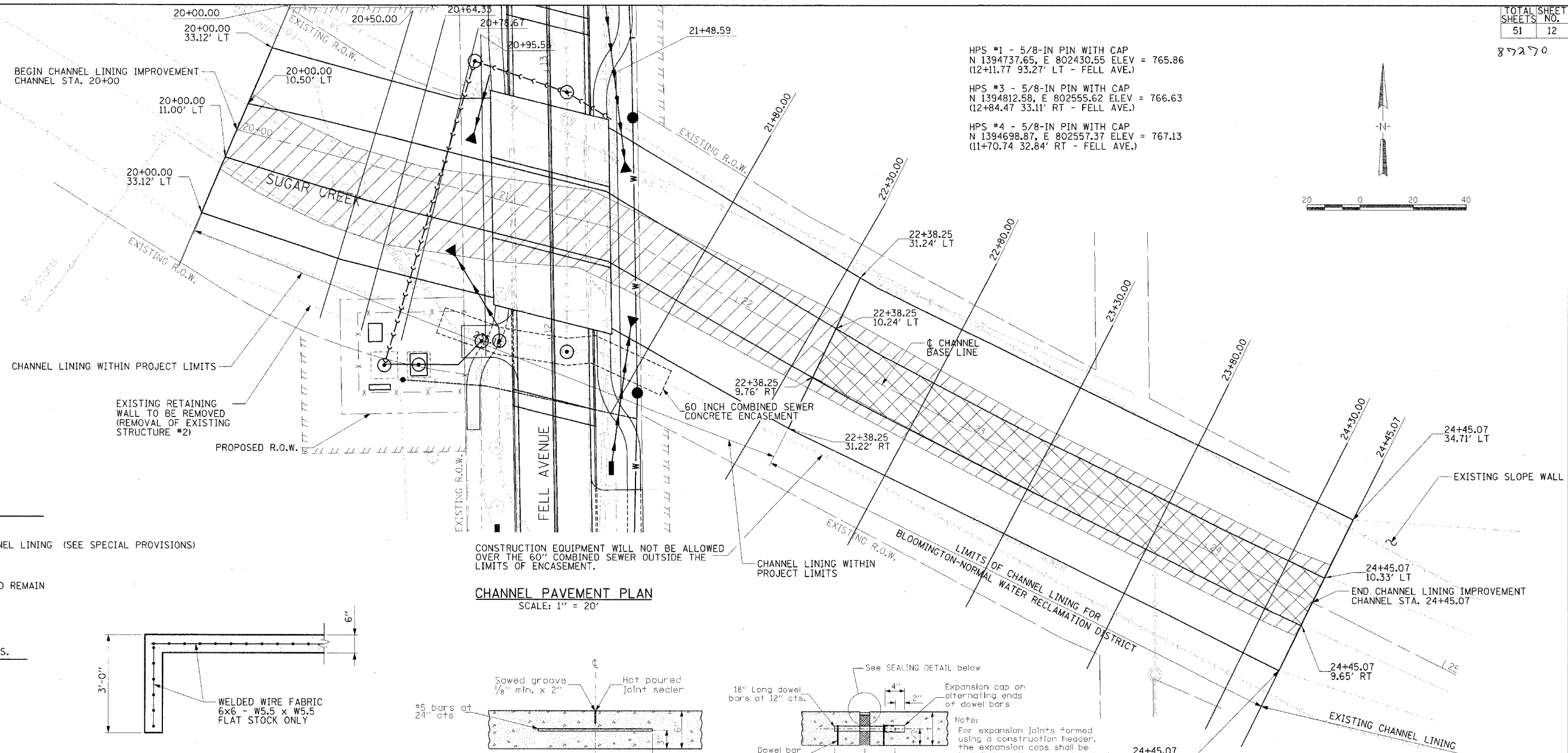
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CHECKED LDK 10-25-04 CHECKED LDK 10-25-04
FILE: 03S2019 DATE: 2-2-05



02/03/2005
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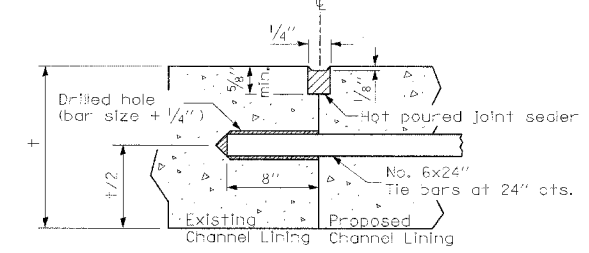
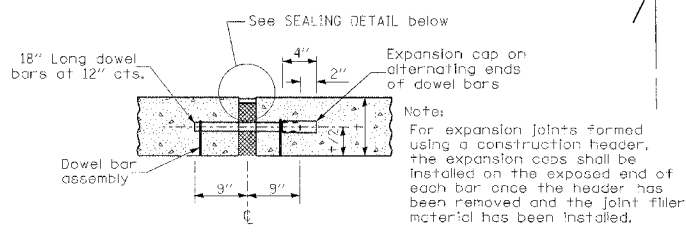
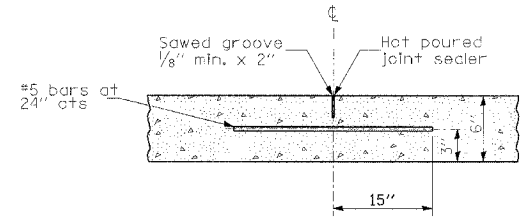
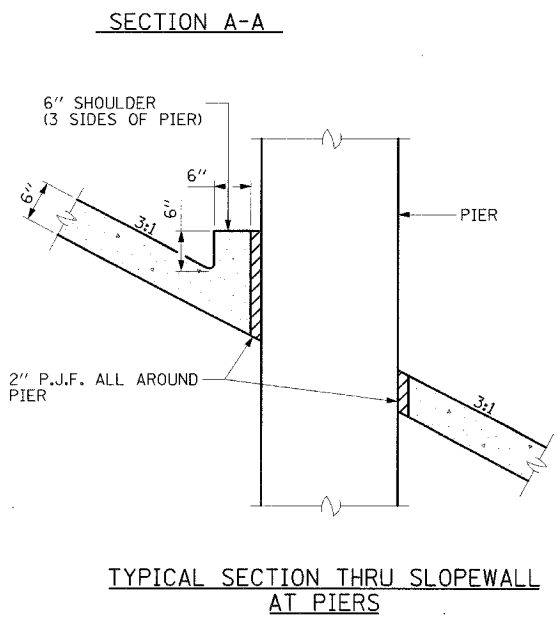
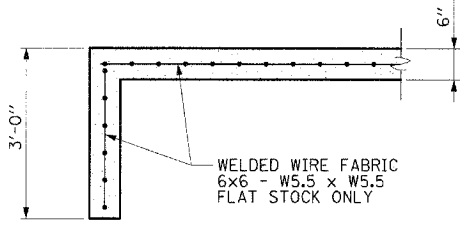
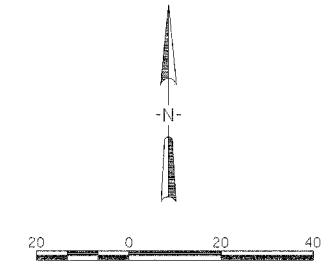
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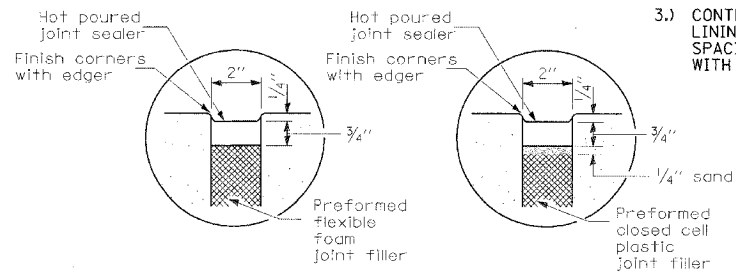
HPS #1 - 5/8-IN PIN WITH CAP
N 1394737.65, E 802430.55 ELEV = 765.86
(12+11.77 93.27' LT - FELL AVE.)

HPS #3 - 5/8-IN PIN WITH CAP
N 1394812.58, E 802555.62 ELEV = 766.63
(12+84.47 33.11' RT - FELL AVE.)

HPS #4 - 5/8-IN PIN WITH CAP
N 1394698.87, E 802557.37 ELEV = 767.13
(11+70.74 32.84' RT - FELL AVE.)



*NO. 6 BARS SHALL BE EPOXY GROUTED PER SECTION 584 OF THE STANDARD SPECIFICATIONS. THE COST OF THE CONSTRUCTION JOINT IS INCLUDED WITH SLOPEWALL SPECIAL.

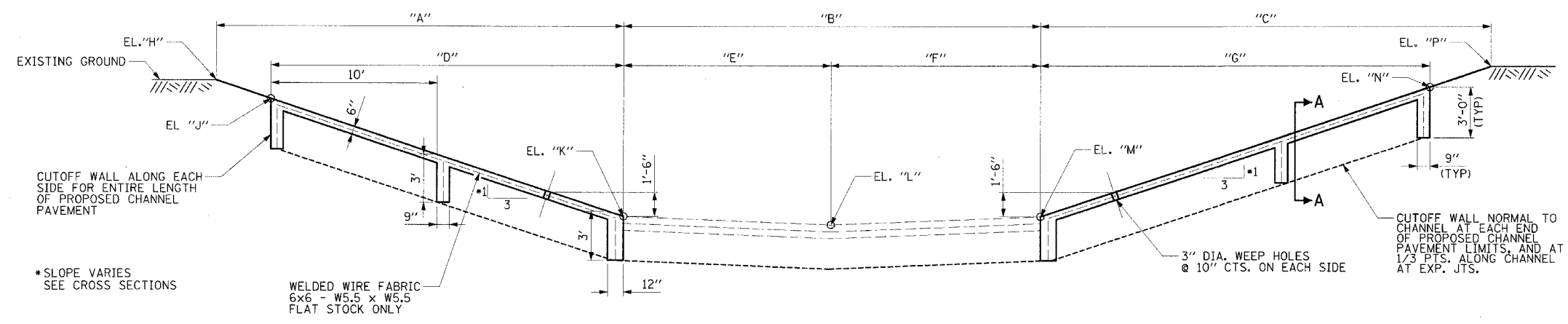


CHANNEL LINING PLAN
FELL AVENUE
BRIDGE REPLACEMENT

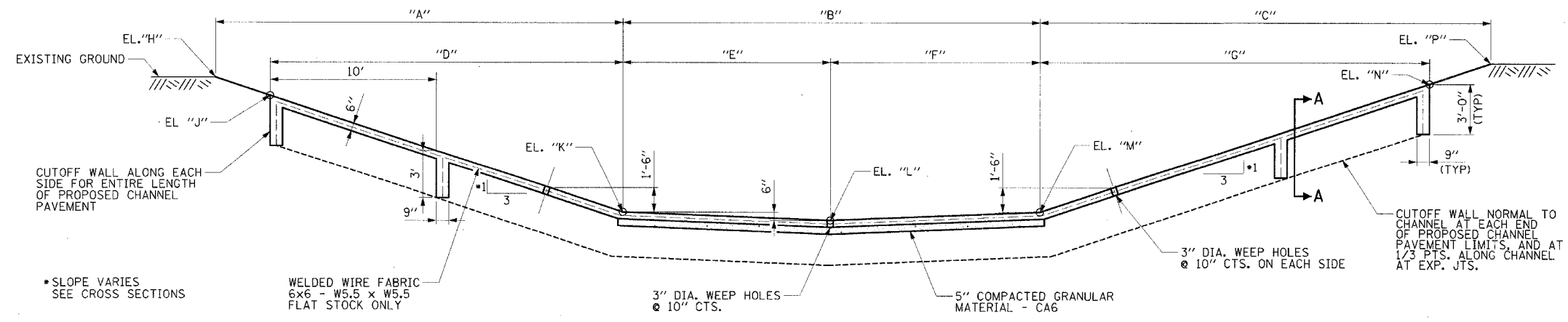
DRAWN RSJ 10-22-04 DESIGNED MH 10-5-04
CHECKED LDK 10-25-04 CHECKED LDK 10-25-04
FILE: 03S2019 DATE: 2-2-05

TABLE - CHANNEL PAVEMENT DIMENSIONS & ELEVATIONS

CHANNEL STATION	DIMENSIONS							ELEVATIONS						
	A	B	C	D	E	F	G	H	J	K	L	M	N	P
20+00.00	24.8	20.0'	25.0'	23.4'	10.0'	10.0'	23.5'	765.00	764.52	756.72	756.22	756.72	764.56	765.05
20+50.00	25.1'	24.2'	31.3'	22.3'	11.9'	12.3'	23.2'	765.17	764.23	756.80	756.30	756.80	764.53	764.72
20+64.33	24.5'	24.9'	28.6'	21.1'	12.4'	12.5'	23.3'	764.96	763.83	756.80	756.30	756.80	764.56	764.98
20+78.67	25.4'	25.0'	28.4'	20.5'	12.5'	12.5'	23.5'	765.28	763.66	756.81	756.31	756.81	764.66	764.89
20+95.56	25.8'	25.9'	41.7'	23.2'	12.9'	12.9'	23.2	765.52	764.65	756.93	756.43	756.93	764.65	766.16
21+48.59	25.7'	25.8'	32.8'	21.9'	12.9'	12.9'	21.9'	765.93	764.65	757.35	756.85	757.35	764.65	766.37
21+80.00	24.7'	21.5'	26.2'	20.9'	10.7'	10.7'	21.1'	765.72	764.45	757.48	756.98	757.48	764.51	766.21
22+30.00	25.1'	20.0'	28.7'	22.2'	9.1'	10.9'	20.3'	765.62	764.70	757.67	NA	757.66	764.59	767.46
22+80.00	NA	20.0'	NA	22.6'	9.8'	10.2'	19.7'	NA	765.45	757.87	NA	757.83	766.05	NA
23+30.00	NA	20.0'	NA	23.5'	10.0'	9.9'	19.1'	NA	766.64	758.07	NA	758.00	766.37	NA
23+80.00	NA	19.8'	NA	23.7'	9.9'	9.9'	19.3'	NA	767.60	758.19	NA	758.13	766.97	NA
24+30.00	NA	19.9'	NA	24.3'	10.1'	9.8'	18.8'	NA	768.61	758.36	NA	758.26	766.91	NA
24+45.07	NA	20.0'	NA	24.3'	10.3'	9.7'	18.8'	NA	767.74	758.38	NA	758.27	767.75	NA



TYPICAL CHANNEL PAVEMENT SECTION WITHIN BLOOMINGTON-NORMAL WATER RECLAMATION DISTRICT SECTION
(LOOKING UPSTREAM)
STA. 22+38.25 TO STA. 22+45.07



TYPICAL CHANNEL PAVEMENT SECTION WITHIN PROJECT LIMITS
(LOOKING UPSTREAM)
STA. 20+00.00 TO STA. 22+38.25

NOTE:
SEE CHANNEL LINING PLAN SHEET
FOR CHANNEL LAYOUT.

CHANNEL LINING DETAIL
FELL AVENUE
BRIDGE REPLACEMENT

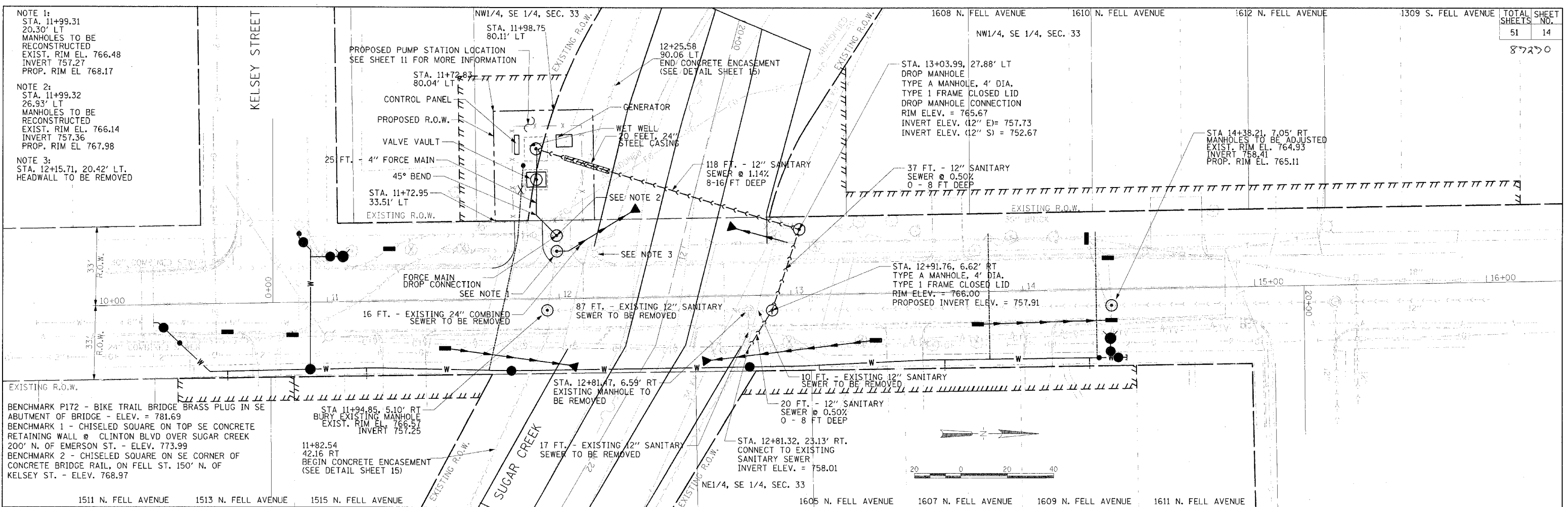
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 CHECKED LDK 10-25-04 CHECKED LDK 10-25-04
 FILE: 03S2019 DATE: 2-2-05



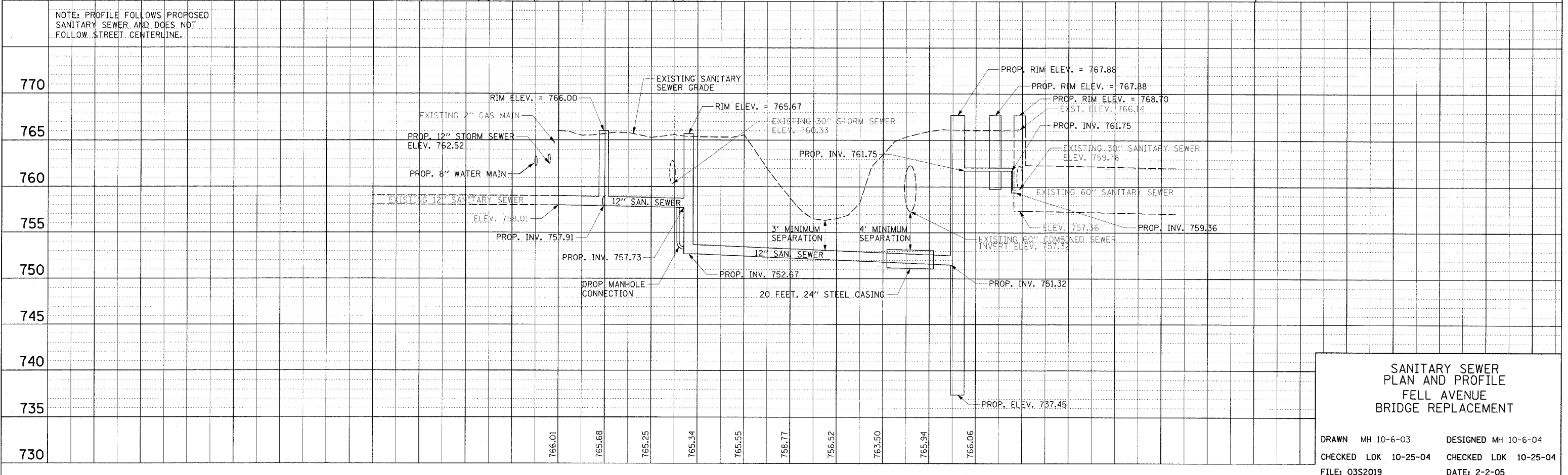
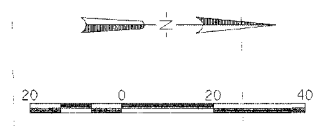
NOTE 1:
STA. 11+99.31
20.30' LT
MANHOLES TO BE RECONSTRUCTED
EXIST. RIM EL. 766.48
INVERT 757.27
PROP. RIM EL 768.17

NOTE 2:
STA. 11+99.32
26.93' LT
MANHOLES TO BE RECONSTRUCTED
EXIST. RIM EL. 766.14
INVERT 757.36
PROP. RIM EL 767.98

NOTE 3:
STA. 12+15.71, 20.42' LT.
HEADWALL TO BE REMOVED



BENCHMARK P172 - BIKE TRAIL BRIDGE BRASS PLUG IN SE ABUTMENT OF BRIDGE - ELEV. = 781.69
BENCHMARK 1 - CHISELED SQUARE ON TOP SE CONCRETE RETAINING WALL @ CLINTON BLVD OVER SUGAR CREEK 200' N. OF EMERSON ST. - ELEV. 773.99
BENCHMARK 2 - CHISELED SQUARE ON SE CORNER OF CONCRETE BRIDGE RAIL, ON FELL ST. 150' N. OF KELSEY ST. - ELEV. 768.97

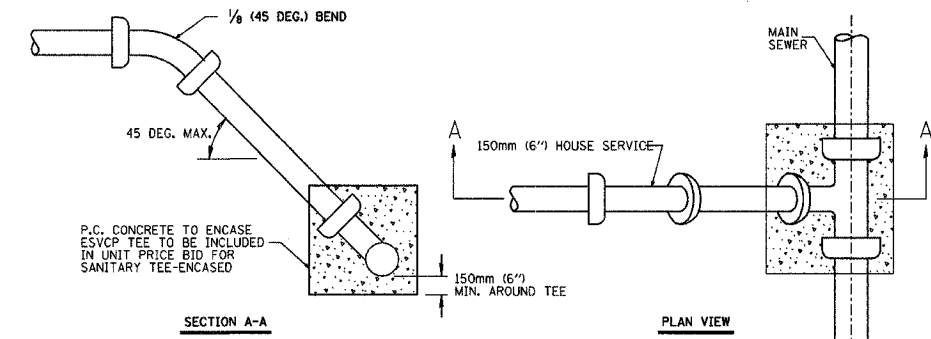
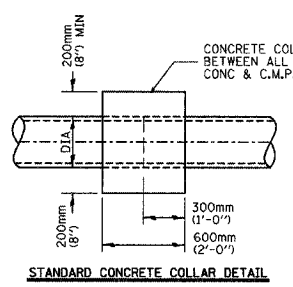
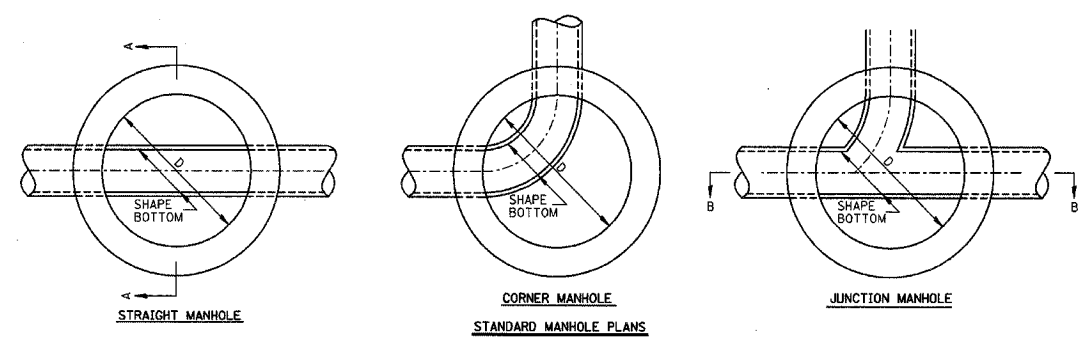


**SANITARY SEWER
PLAN AND PROFILE
FELL AVENUE
BRIDGE REPLACEMENT**

DRAWN MH 10-6-03 DESIGNED MH 10-6-04
CHECKED LDK 10-25-04 CHECKED LDK 10-25-04
FILE: 03S2019 DATE: 2-2-05



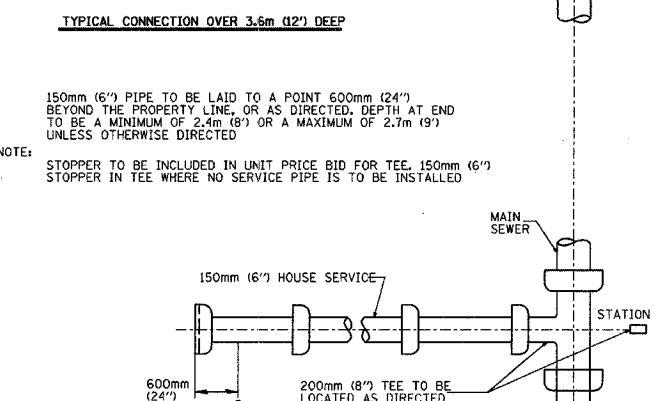
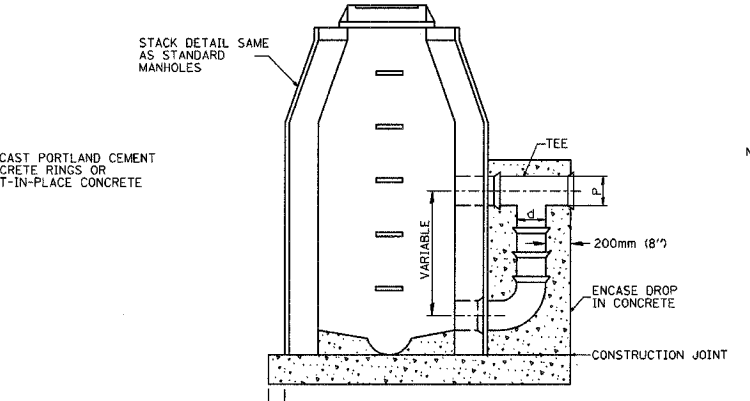
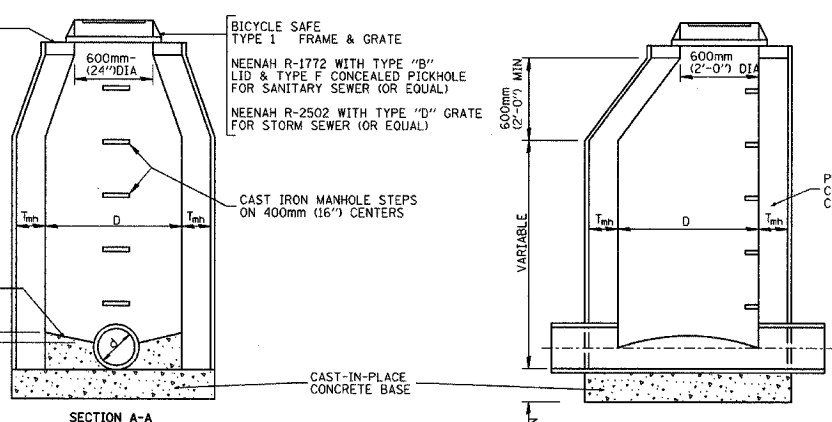
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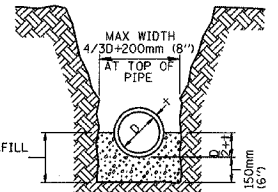
FINAL ADJUSTMENT TO BE MADE WITH PRECAST ADJUSTING RINGS OR WITH BRICKS LAID RADIALY & MORTARED
ADJUSTMENT RANGE: 100mm (4") MIN 400mm (16") MAX
MASTIC IS NOT PERMITTED ON ADJUSTING RINGS

DIA OF SEWER	DIA OF MANHOLE	PRECAST T _{min}
THRU 760mm (30")	1.2m (4')	100mm (4")
THRU 1.2m (48")	1.5m (5')	125mm (5")
1.3m (54")	1.8m (6')	150mm (6")

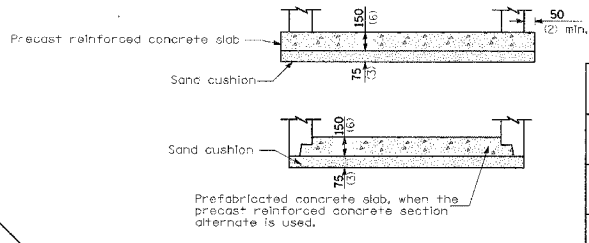
CAST-IN-PLACE MANHOLES SHALL BE A MINIMUM OF T_{min} = 150mm (6") THICK
TROWELED SURFACE



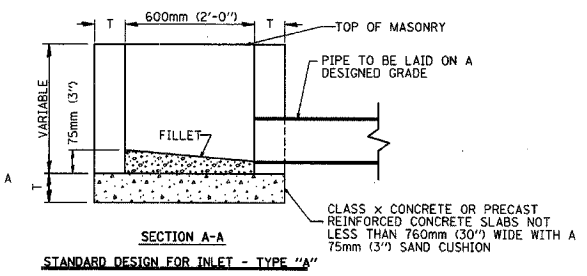
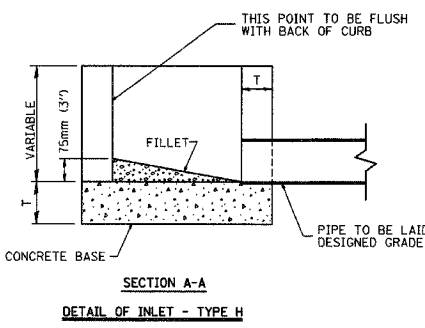
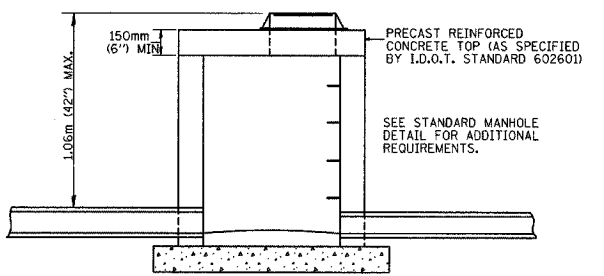
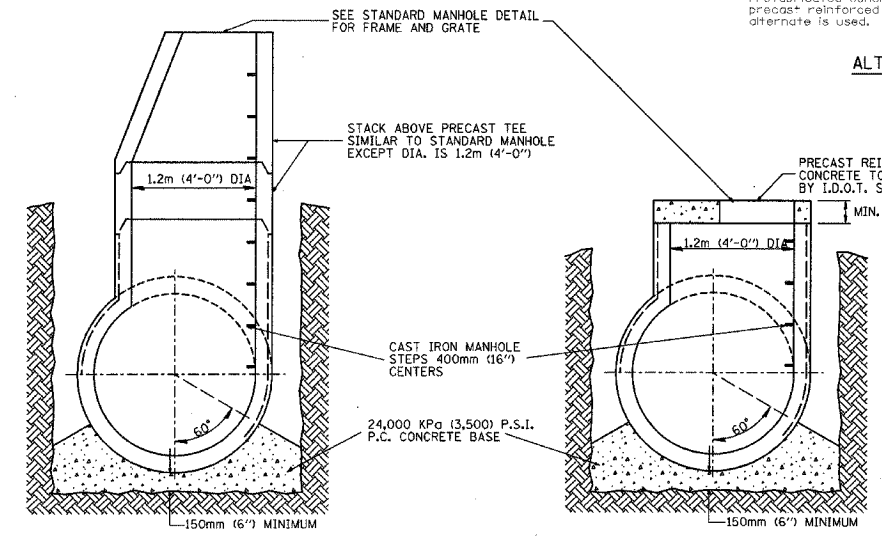
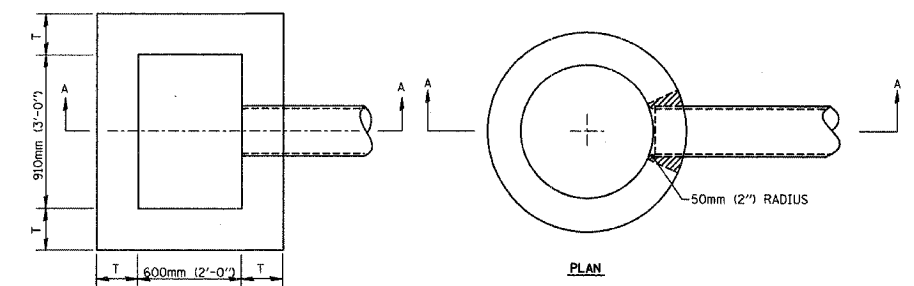
NOTE: 150mm (6") PIPE TO BE LAID TO A POINT 600mm (24") BEYOND THE PROPERTY LINE, OR AS DIRECTED. DEPTH AT END TO BE A MINIMUM OF 2.4m (8") OR A MAXIMUM OF 2.7m (9") UNLESS OTHERWISE DIRECTED
STOPPER TO BE INCLUDED IN UNIT PRICE BID FOR TEE. 150mm (6") STOPPER IN TEE WHERE NO SERVICE PIPE IS TO BE INSTALLED



NOTE (1): Pipe Bedding (granular cradle) shall extend to virgin ground when sewer is constructed in fill areas.



BICYCLE SAFE FRAME AND GRATE	
TYPE 3	NEENAH R-3010 WITHOUT BARS IN FRONT OF CURB BOX WITH TYPE A GRATE & 38mm (1-1/2") VERTICAL RADIUS
TYPE 3L	NEENAH R-3010 WITHOUT BARS IN FRONT OF CURB BOX WITH TYPE L GRATE & 38mm (1-1/2") VERTICAL RADIUS
TYPE 50	NEENAH R-3067 WITHOUT BARS IN FRONT OF CURB BOX WITH TYPE C GRATE & 50mm (2") VERTICAL RADIUS
TYPE 50L	NEENAH R-3067 WITHOUT BARS IN FRONT OF CURB BOX WITH TYPE L GRATE & 50mm (2") VERTICAL RADIUS
DITCH GRATE	NEENAH R-4342



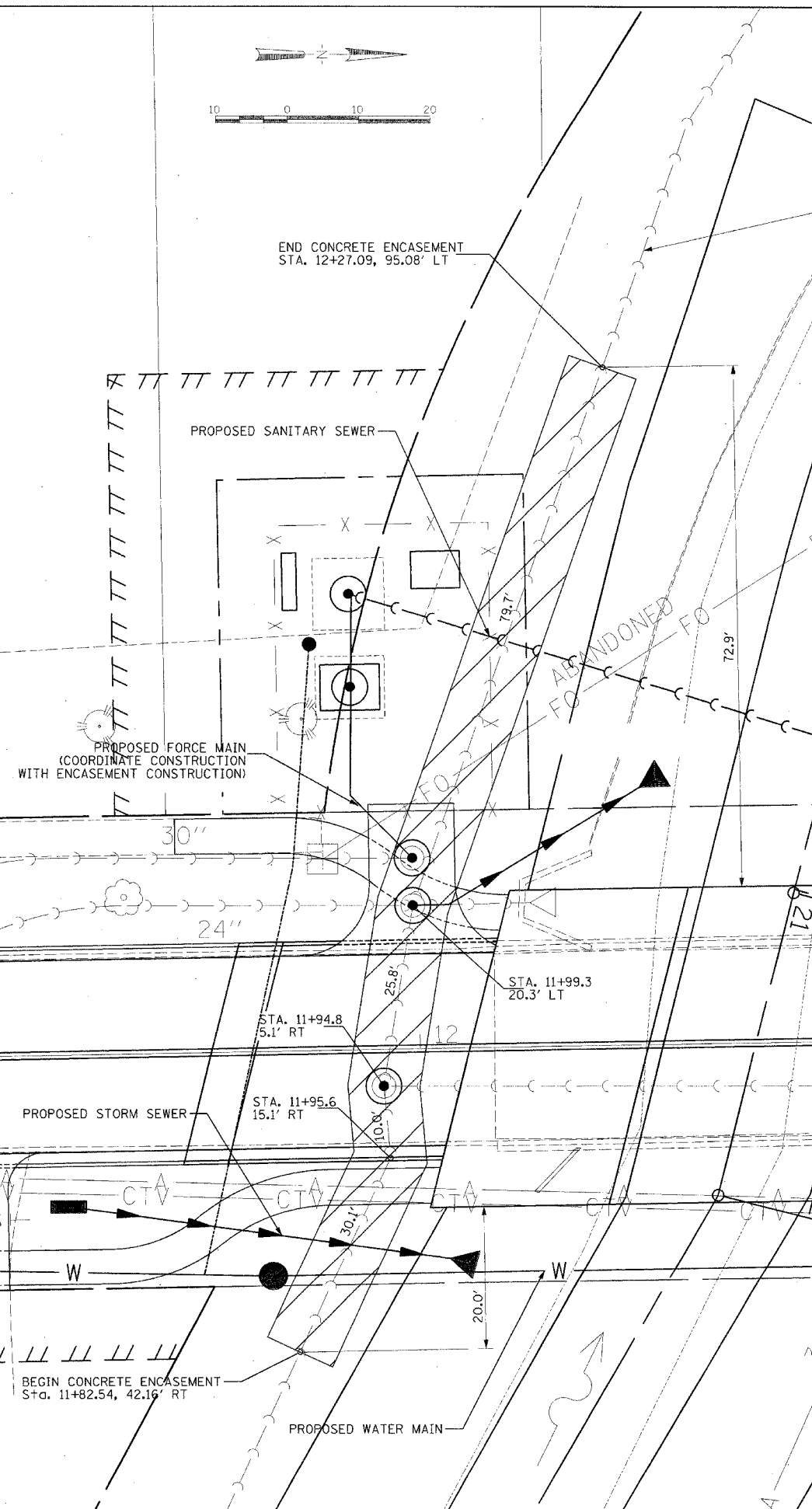
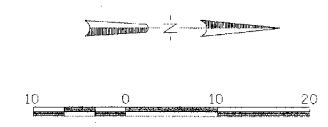
MATERIALS PERMITTED FOR INLETS	T MINIMUM
PRECAST REINFORCED CONCRETE SECTIONS	75mm (3")
CAST-IN-PLACE CONCRETE	150mm (6")

BRICKS AND MORTAR SHALL BE USED ONLY FOR ADJUSTMENTS

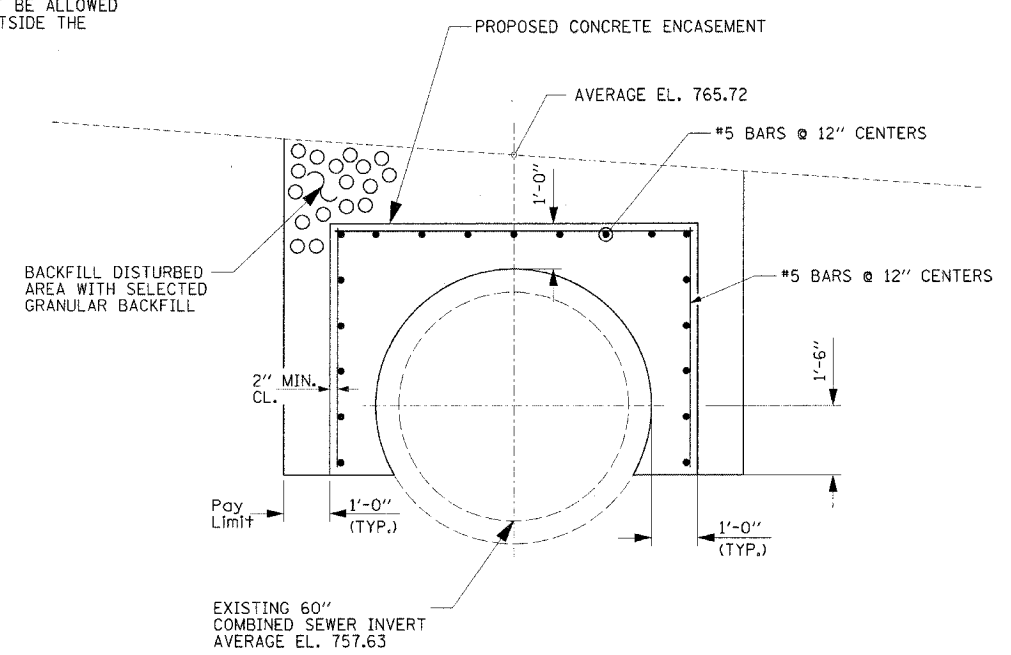
STORM/SANITARY SEWER DESIGN DETAILS
FELL AVENUE BRIDGE REPLACEMENT

DRAWN MH 10-6-03 DESIGNED MH 10-6-04
CHECKED LDK 10-25-04 CHECKED LDK 10-25-04
FILE: 03S2019 DATE: 2-2-05





CONSTRUCTION EQUIPMENT WILL NOT BE ALLOWED OVER THE 60" COMBINED SEWER OUTSIDE THE LIMITS OF ENCASEMENT.



CONCRETE ENCASEMENT DETAIL

NOTES

CONSTRUCTION OF THE REINFORCED CONCRETE ENCASEMENT SHALL BE COMPLETED PRIOR TO BEGINNING ANY OTHER CONSTRUCTION ACTIVITIES. SEE SPECIAL PROVISION "60 INCH COMBINED SEWER ENCASEMENT".

REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS OF "AASHTO" M31, M42 OR M53 GRADE 60.

ALL REINFORCEMENT BARS SHALL BE EPOXY COATED.

ALL CONSTRUCTION JOINTS SHALL BE BONDED.

THE CONTRACTOR SHALL FIELD VERIFY STATIONS AND OFFSETS SHOWN FOR THE EXISTING 60" COMBINED SEWER AND MAKE NECESSARY ADJUSTMENTS PRIOR TO CONSTRUCTION.

MIN. BAR LAP

#5 BAR = 2'-3"

DESIGN STRESSES

f'c = 3500 psi
fy = 60,000 psi (Reinforcement)

*ESTIMATED BILL OF MATERIAL

ITEM	UNIT	QUANTITY
REINFORCEMENT BARS, EPOXY COATED	LBS.	5805
CONCRETE STRUCTURES	CU. YD.	117.5
SELECTED GRANULAR BACKFILL	CU. YD.	140

*QUANTITIES PROVIDED HAVE BEEN ESTIMATED. QUANTITIES WILL VARY BASED ON ACTUAL FIELD CONDITIONS AND THE CONTRACTOR'S APPROVED INSTALLATION PLAN (SEE SPECIAL PROVISIONS). PAYMENT FOR QUANTITIES SHALL BE PER SECTION 109.03 OF THE STANDARD SPECIFICATIONS.

60 INCH COMBINED SEWER ENCASEMENT DETAIL
FELL AVENUE
BRIDGE REPLACEMENT

DRAWN MH 10-6-03 DESIGNED
CHECKED LDK 10-25-04 CHECKED LDK 10-25-04
FILE: 03S2019 DATE: 2-2-05

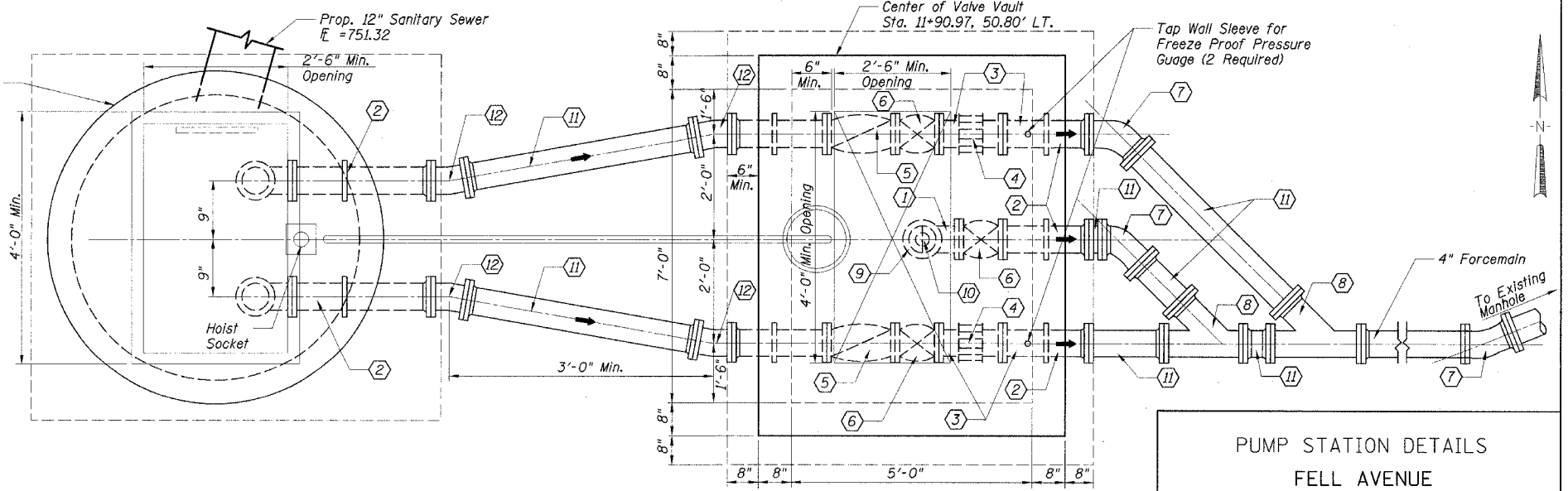
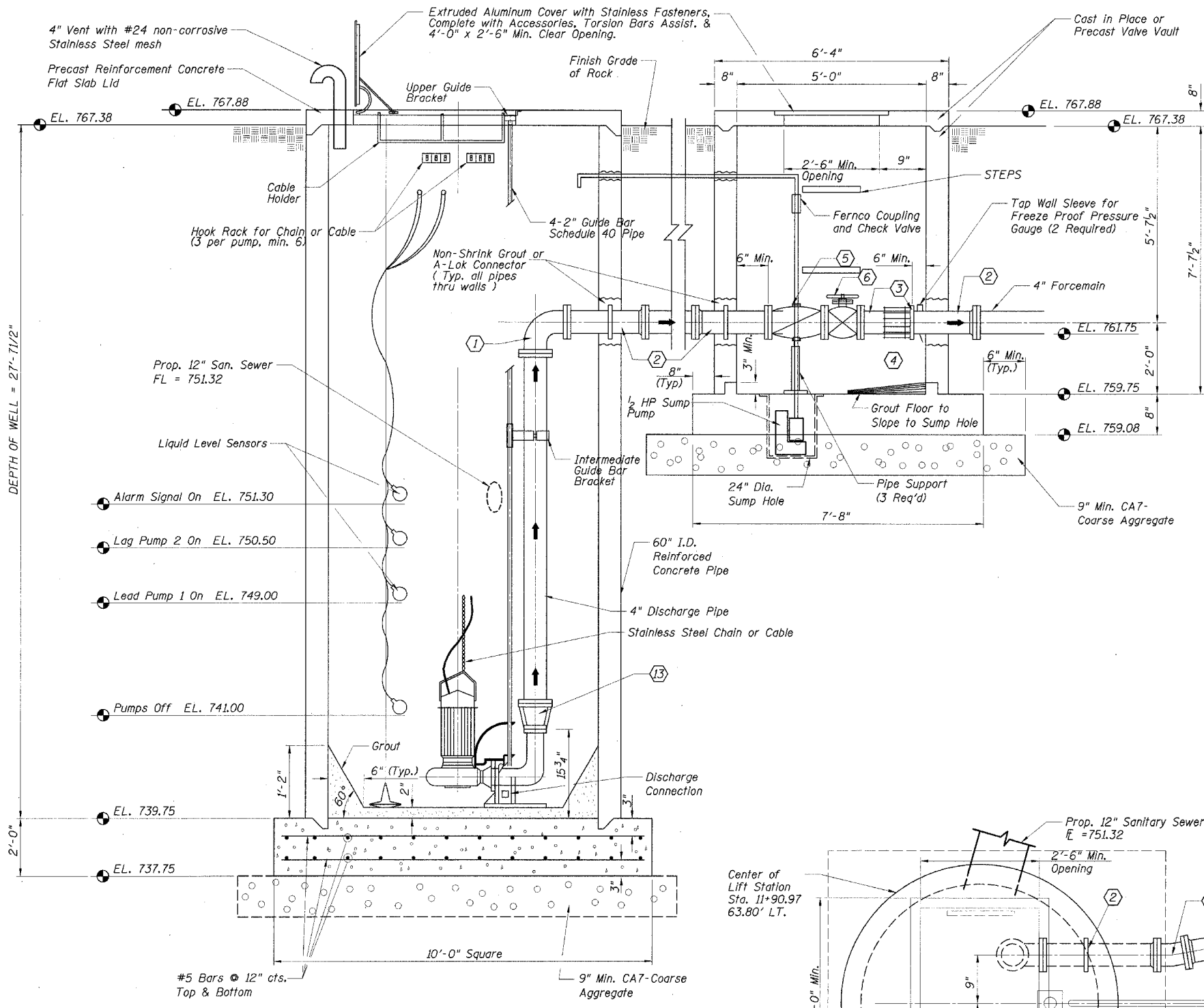
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GENERAL NOTES

- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL DIMENSIONS FOR THE PROPOSED LIFT STATION, INCLUDING THE VALVE VAULT, WITH THE MANUFACTURERS SHOP DRAWINGS PRIOR TO BEGINNING CONSTRUCTION.
- THE PUMPS FOR THE LIFT STATION SHALL BE FLYGT MODEL CP-3085 (X), IMPELLER NO. 436, 200 V. 3Ø OR APPROVED EQUAL.
- THE CONTRACTOR SHALL SUBMIT FOUR COPIES OF DRAWINGS FOR ALL COMPONENTS OF THE PROPOSED LIFT STATION TO THE CITY ENGINEER FOR APPROVAL 30 DAYS PRIOR TO CONSTRUCTION.
- THE LIFT STATION SHALL BE FURNISHED COMPLETE AS SHOWN INCLUDING THE SERVICE POLE, WEATHERHEAD, METER BASE, DISCONNECT SWITCH, PUMP STATION, PUMPS, CONTROL PANEL, VALVE VAULT, AND ALL COMPONENTS NECESSARY FOR A COMPLETE AND OPERATIONAL LIFT STATION. THIS WORK SHALL BE PAID FOR UNDER ITEM LIFT STATION-COMplete-LUMP SUM.
- ALL COMPONENTS OF THE LIFT STATION SHALL BE SUPPLIED WITH A ONE YEAR GUARANTY FROM THE MANUFACTURER.
- ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN CONFORMANCE WITH NFPA70 (NEC MOST CURRENT ISSUE), THE RESPECTIVE EQUIPMENT MANUFACTURER'S DIRECTIONS AND ALL OTHER APPLICABLE CODES, LAWS, ORDINANCES AND REQUIREMENTS IN FORCE. ANY INSTALLATIONS WHICH VOID THE U.L. LISTINGS (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE SHALL NOT BE PERMITTED.
- ALL ELECTRICAL EQUIPMENT INSTALLED IN THE WET WELL SHALL BE SUITABLE FOR USE IN CLASS I, DIV. 1, GROUP D HAZARDOUS LOCATION AND SHALL CONFORM TO THE APPLICABLE SECTIONS OF NEC ARTICLES 500, 501, & 504 AS WELL AS ALL LOCAL CODES, ORDINANCES AND REQUIREMENTS.
- ALL ELECTRICAL EQUIPMENT INSTALLED IN THE VALVE VAULT SHALL BE SUITABLE FOR USE IN CLASS I, DIVISION 2, GROUP D HAZARDOUS LOCATION AND SHALL CONFORM TO THE APPLICABLE SECTIONS OF NEC ARTICLES 500, 501, & 504 AS WELL AS ALL LOCAL CODES, ORDINANCES, AND REQUIREMENTS.
- CONTRACTOR SHALL COORDINATE INSTALLATION OF ELECTRICAL EQUIPMENT, AND WORK WITH RESPECT TO PLUMBING, MECHANICAL, CONCRETE, EXCAVATION AND ALL OTHER WORK. COORDINATE THE INSTALLATION OF CONDUITS INTO THE WET WELL. USE NON-SHRINK GROUT AS REQUIRED TO SEAL CONDUIT PENETRATIONS.

PIPING NOMENCLATURE

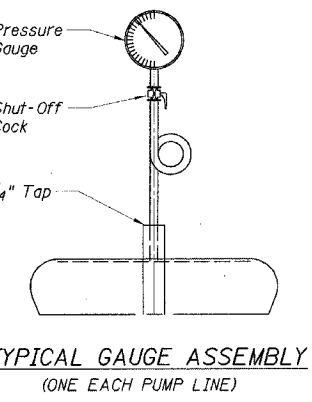
- | | |
|--|---|
| ① 4" - 90 Deg. Bend Fig. x Fig. | ⑧ 4" Wye Mj. x Mj. x Mj. |
| ② 4" Wall Sleeve Mj. x Fig. or A-Lok Connector w/4" pipe | ⑨ 4" Fig. x 3" NPT Companion Flange |
| ③ 4" Spool Fig. x Pe. | ⑩ 3" NPT x 3" Male Pump Hose Connection (Quick Connection Coupling) |
| ④ 4" Coupler (Dresser) | ⑪ 4" Spacer Pe. x Pe. |
| ⑤ 4" Check Valve | ⑫ 4" - 22½ Deg. Bend Mj. x Mj. |
| ⑥ 4" Gate Valve w/Handwheel | ⑬ 4" x 3" Reducer |
| ⑦ 4" - 45 Deg Bend Mj. x Mj. | |



ELEVATION
NO SCALE

PUMP STATION REQUIREMENTS

CAPACITY GPM = 147
TOTAL HEAD - FEET = 22.8
NUMBER OF PUMPS = 2
HORSEPOWER = 3.0
R.P.M. = 1710
VOLTS = 200 v. 3Ø
HERTZ = 60
DISCONNECT SWITCH = (AS PER PUMP MANUFACTURER)



PUMP STATION DETAILS
FELL AVENUE
BRIDGE REPLACEMENT

DRAWN KET 08-16-04 DESIGNED MH 10-6-04
CHECKED LDK 10-25-04 CHECKED LDK 10-25-04
FILE: 03S2019 DATE: 2-2-05



02/03/2005
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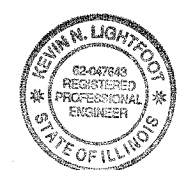
GENERAL LEGEND

SCHEMATIC LEGEND

PLAN	ONE-LINE
SINGLE POLE SWITCH	SURGE PROTECTOR/TVSS DEVICE
TWO POLE SWITCH	ELECTRIC UTILITY SERVICE METER AND BASE
THREE WAY SWITCH	CAPACITOR
FOUR WAY SWITCH	TRANSFORMER
FRACTIONAL H.P. MANUAL STARTER	CABLE TERMINAL OR LUGS
WEATHERPROOF SWITCH	GENERATOR
MOMENTARY CONTACT SINGLE POLE DOUBLE THROW SWITCH	COMBINATION CIRCUIT BREAKER/STARTER WITH OVERLOAD PROTECTION. # = NEMA SIZE NO.
SIMPLEX RECEPTACLE	GROUND - GROUND ROD, CHASSIS, BUS, OR AT EARTH POTENTIAL
EXPLOSION PROOF SIMPLEX RECEPTACLE	MOTOR
DUPLEX RECEPTACLE	EXPLOSION PROOF MOTOR
WEATHERPROOF DUPLEX RECEPTACLE	MOTOR, # = HORSEPOWER
DUPLEX RECEPTACLE W/GROUND FAULT INTERRUPTOR	CIRCUIT BREAKER
QUADRUPLEX RECEPTACLE	ADJUSTABLE MOTOR CIRCUIT PROTECTOR TYPE BREAKER
SPECIAL PURPOSE OUTLET (IDENTIFIED ON PLANS)	THERMAL-MAGNETIC CIRCUIT BREAKER
PLUG	FUSE
JUNCTION BOX (LINE GOES TO BOX)	DISCONNECT SWITCH
EXPLOSION PROOF JUNCTION BOX (LINE GOES TO BOX)	FUSIBLE DISCONNECT SWITCH
GROUND ROD	THERMAL OVERLOAD PROTECTION
DISCONNECT SWITCH, # = AMPERAGE RATING.	EXPLOSION PROOF CONDUIT SEAL-OFF FITTING
POWER POLE OR RISER POLE	TRANSFER SWITCH
LIGHT FIXTURE, # = TYPE	JUNCTION BOX WITH SPLICE
EXPLOSION PROOF LIGHT FIXTURE # = TYPE	GROUND BUS OR LUG
CONDUIT (EXPOSED)	NEUTRAL BUS
CONDUIT (CONCEALED OR BURIED)	PANELBOARD WITH MAIN BREAKER
OVERHEAD ELECTRIC	PANELBOARD WITH MAIN MAIN LUGS
NEUTRAL	
HOT	
LIGHTING PANEL	
POWER PANEL	
PANEL OR ENCLOSURE	

- NOTES
- 1.) CONDUIT TO BE SIZED PER NEC, MINIMUM 3/4", EXCEPT WHERE NOTED OTHERWISE.
 - 2.) CONDUCTORS TO BE SIZED PER NEC, MINIMUM #12 AWG EXCEPT WHERE NOTED OTHERWISE.
 - 3.) ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN CONFORMANCE WITH NFPA70 (NEC MOST CURRENT ISSUE), THE RESPECTIVE EQUIPMENT MANUFACTURER'S DIRECTIONS AND ALL OTHER APPLICABLE LOCAL CODES, LAWS, ORDINANCES AND REQUIREMENTS IN FORCE. ANY INSTALLATIONS WHICH VOID THE U.L. LISTINGS (OR THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE SHALL NOT BE PERMITTED.
 - 4.) METAL CONDUIT IN DIRECT CONTACT WITH THE EARTH SHALL BE PVC COATED OR SHALL RECEIVE TAR OR ASPHALT BASED COATINGS, APPLIED FOR CORROSION PROTECTION. APPLY COATINGS PER MANUFACTURER'S DIRECTIONS AND RECOMMENDATIONS FOR THE APPLICATION. SEE SPECIFICATIONS.
 - 5.) ALL ENCLOSURES RATED NEMA 4, 4X SHALL HAVE WATERTIGHT HUBS AT CONDUIT ENTRANCES U.L. LISTED NEMA 4, 4X FOR THE RESPECTIVE ENCLOSURE, TO MAINTAIN THE NEMA 4, 4X RATING.

NORMALLY OPEN (N.O.) CONTACT.	THERMAL SWITCHES
NORMALLY CLOSED (N.C.) CONTACT.	FLOW SWITCHES
STARTER COIL. # = STARTER NUMBER	LIMIT SWITCHES
OVERLOAD RELAY CONTACT	PROXIMITY SWITCHES
CONTROL RELAY. # = CONTROL RELAY NUMBER	HUMIDISTATS
TIME DELAY RELAY. # - DEVICE NUMBER. ** - TIME SETTING.	CONNECTOR, DISCONNECTING DEVICE
INTRINSICALLY SAFE RELAY	TIME CLOCK
CLOSED SWITCH WITH TIME DELAY OPENING	PHOTOCELL
OPEN SWITCH WITH TIME DELAY CLOSING	TERMINAL BLOCK, # = TERMINAL NUMBER
CLOSED SWITCH WITH TIME DELAY CLOSING	DEVICE TERMINAL, # = DEVICE TERMINAL NUMBER
OPEN SWITCH WITH TIME DELAY OPENING	RUN TIME METER, HOUR METER
PERCENTAGE TIMER. # = PERCENTAGE TIMER NUMBER	SWITCH, CLOSED
PILOT LIGHT. (P)=LETTER DENOTING COLOR, E.G. R=RED, G=GREEN, A=AMBER	SWITCH, OPENED
PUSH-TO-TEST PILOT LIGHT. (P)=LETTER DENOTING COLOR, E.G. R=RED, G=GREEN, A=AMBER	PROPOSED INTERNAL PANEL WIRING OR DEVICES
HORN	PROPOSED FIELD WIRING OR DEVICES
SOLENOID VALVE. # = SOLENOID VALVE NUMBER	GROUND - CHASSIS, BUS OR AT EARTH POTENTIAL
3-POSITION SELECTOR SWITCH (H-O-A SHOWN)	
2-POSITION SELECTOR SWITCH	
N.C. (STOP)	PRESSURE SWITCHES
N.O. (START)	LEVEL SWITCHES
ILLUMINATED PUSH/PULL, 3 POSITION PUSHBUTTON.	

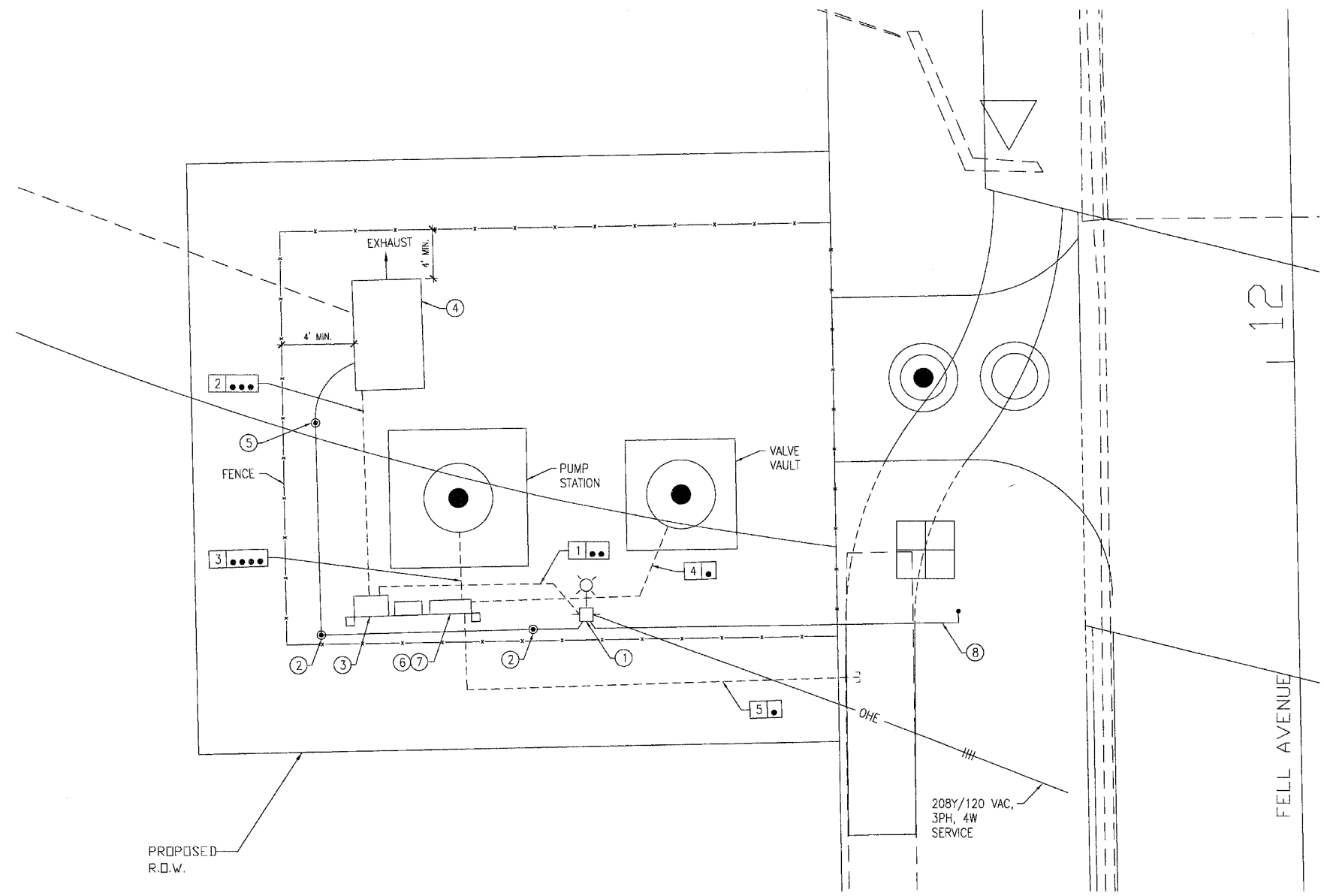


Kevin N. Lightfoot
 DATE: FEB. 2, 2005
 EXPIRES: NOV. 30, 2005

ELECTRICAL SYMBOLS & LEGEND
 FELL AVENUE
 BRIDGE REPLACEMENT

DRAWN MV 10/07/2004 DESIGNED KNL 10/07/2004
 CHECKED KNL 10/09/2004 CHECKED XXX
 FILE: 03S2019 DATE: 2-2-05





N
PUMP STATION ELECTRICAL PLAN
 SCALE 1" = 5'-0"
 5 0 5 10

THE LOCATION, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ON THE PLANS IS NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES OF HIS OPERATIONAL PLANS AND SHALL OBTAIN FROM THE RESPECTIVE UTILITY COMPANIES DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULE OF THE COMPANIES FOR REMOVAL OR ADJUSTMENT WHERE REQUIRED. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY OF JURISDICTION. THE ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT.

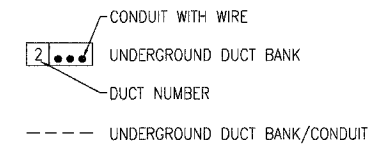
CALL J.U.L.I.E. FOR UTILITY INFORMATION
 1-800-892-0123

DUCT BANK LEGEND

- 1 3 #2 XHHW, 1 #2 XHHW NEUTRAL, 1 #6 GND IN 2" PVC COATED GRSC FROM SERVICE BREAKER TO AUTO TRANSFER SWITCH. 1 #12 THWN, 1 #12 THWN NEUTRAL, 1 #12 GND IN 3/4" PVC COATED GRSC FROM PANELBOARD TO POLE LIGHT.
- 2 3 #2 XHHW, 1 #2 XHHW NEUTRAL, 1 #6 GND IN 2" PVC COATED GRSC FROM ENGINE GENERATOR SET BREAKER TO AUTO TRANSFER SWITCH. 12 #14 THWN, 1 #14 GND (CONTROL & ALARM WIRING) IN 3/4" PVC COATED GRSC FROM ENGINE GENERATOR SET TO AUTO TRANSFER SWITCH. 3 #10 THWN, 3 #10 THWN NEUTRAL, 1 #10 GND (BLOCK HEATER, BATTERY CHARGER, & GENERATOR SET CONVENIENCE RECEPT BRANCH CKTS) IN 3/4" PVC COATED GRSC FROM PANELBOARD TO ENGINE GENERATOR SET.
- 3 4-2" PVC COATED RIGID ALUMINUM OR PVC COATED GRSC FROM PUMP CONTROL PANEL TO PUMP STATION WET WELL. CONDUIT INSTALLATION SHALL CONFORM TO NEC 501.15(A)(4) "CLASS I, DIVISION 1 BOUNDARY".
- 4 1 #10 THWN, 1 #10 THWN NEUTRAL, 1 #10 GND IN 3/4" PVC COATED GRSC FROM PANELBOARD TO SUMP PUMP IN VALVE VAULT. PROVIDE EXPLOSION PROOF CONDUIT SEAL (FIRST FITTING) WHERE CONDUIT ENTERS THE VALVE VAULT.
- 5 2" PVC COATED GRSC FOR TELEPHONE SERVICE TO PUMP CONTROL PANEL. COORDINATE CONDUIT ROUTING WITH THE SERVING TELEPHONE CO.

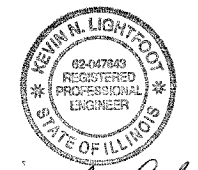
SHEET LEGEND

- 1 UTILITY SERVICE RISER POLE WITH UTILITY METER, SERVICE BREAKER/DISCONNECT, & 400W M.H. POLE LIGHT.
- 2 3/4" DIA x 10'L UL LISTED COPPERCLAD GND ROD. MIN BURY 24" BELOW GRADE. BOND GROUND RODS TOGETHER WITH #6 BARE STRANDED COPPER TO FORM A GROUND FIELD, MIN. BURY 30" BELOW GRADE. SPACE GROUND RODS 12' TO 15' APART. CONNECTIONS TO GND RODS SHALL BE EXOTHERMIC WELD. SEE ELECTRICAL ONE LINE DIAGRAM FOR ADDITIONAL INFORMATION.
- 3 AUTO TRANSFER SWITCH & CIRCUIT BREAKER PANELBOARD WITH SUPPORT STRUCTURE.
- 4 ENGINE GENERATOR SET, SEE SPECS. MAINTAIN 4' (MIN.) CLEAR WORKING SPACE ON EACH FACE/SIDE OF THE ENGINE GENERATOR SET.
- 5 3/4" DIA. x 10'L UL LISTED COPPERCLAD GND ROD. MIN. BURY 24" BELOW GRADE. BOND TO ENGINE GENERATOR SET FRAME AND BASE MOUNTED FUEL TANK WITH #6 AWG BARE STRANDED COPPER CONDUCTOR. CONNECT TO GND ROD WITH EXOTHERMIC WELD. BOND TO FUEL TANK & ENGINE FRAME WITH UL LISTED COMPRESSION TYPE GROUND LUGS, BOLTED TO THE FUEL TANK & ENGINE FRAME. PROVIDE 1" SCHED 40 PVC SLEEVE COORDINATED INTO GENERATOR SLAB FOR PROTECTION OF GND ELECTRODE CONDUCTOR. BOND GROUND ROD TO GND FIELD WITH #6 AWG BARE STRANDED COPPER CONDUCTOR, MIN. BURY 30" BELOW GRADE.
- 6 PUMP CONTROL PANEL IN NEMA 4X STAINLESS STEEL ENCL. SEE SPECS & DETAILS HEREIN.
- 7 PROVIDE TELEPHONE NETWORK INTERFACE MODULE AT PUMP CONTROL PANEL.
- 8 #6 BARE STRANDED COPPER GROUNDING ELECTRODE CONDUCTOR FROM WATER SERVICE PIPE (LINE SIDE OF SHUT-OFF VALVE) TO SERVICE DISCONNECT GROUND BUS. CONNECT TO WATER PIPE WITH UL LISTED PIPE CLAMP SUITABLE FOR DIRECT BURIAL IN EARTH & SIZED FOR THE RESPECTIVE PIPE & GROUND WIRE.



NOTES

1. CONTRACTOR SHALL COORDINATE ELECTRIC SERVICE & TELEPHONE SERVICE WITH THE RESPECTIVE UTILITY COMPANIES & THE OWNER'S REPRESENTATIVE.
2. CONDUIT SHALL BE BURIED 36" BELOW GRADE, WHERE SUBJECT TO VEHICULAR TRAFFIC, AND 24" BELOW GRADE AT AREAS NOT SUBJECT TO VEHICULAR TRAFFIC.
3. THE SERVING TELEPHONE COMPANY IS
 VERIZON NORTH, INC.
 1312 EAST EMPIRE
 BLOOMINGTON, IL. 61701
 ATTN. MR. MIKE HOPE
 PHONE: 309-663-3156
4. COORDINATE ELECTRICAL WORK WITH PUMP STATION INSTALLATION, EXCAVATION WORK, WATER SERVICE, PIPING, & OTHER TRADES.



Kevin N. Lightfoot
 DATE: FEB. 2, 2005
 EXPIRES: NOV. 30, 2005

PUMP STATION ELECTRICAL PLAN			
FELL AVENUE			
BRIDGE REPLACEMENT			
DRAWN	MW 10/07/2004	DESIGNED	KNL 10/07/2004
CHECKED	KNL 10/09/2004	CHECKED	CAH
FILE:	03S2019	DATE:	2-2-05



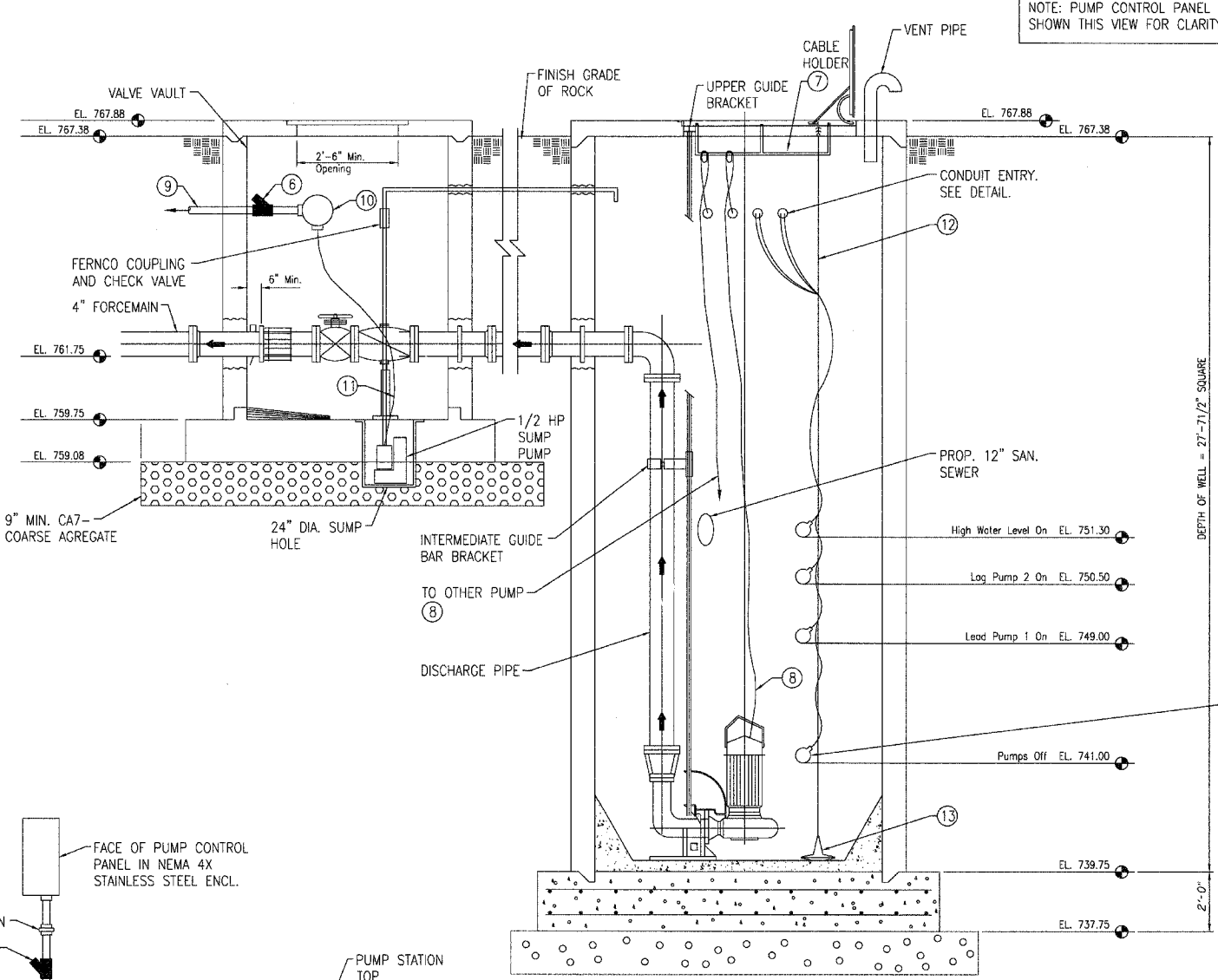
GENERAL NOTES:

1. ALL ELECTRICAL EQUIPMENT INSTALLED IN THE WET WELL SHALL BE SUITABLE FOR USE IN CLASS I, DIV. 1, GROUP D HAZARDOUS LOCATION AND SHALL CONFORM TO THE APPLICABLE SECTIONS OF NEC ARTICLES 500, 501, & 504 AS WELL AS ALL LOCAL CODES, ORDINANCES AND REQUIREMENTS.
2. ALL ELECTRICAL EQUIPMENT INSTALLED IN THE VALVE VAULT SHALL BE SUITABLE FOR USE IN CLASS I, DIVISION 2, GROUP D HAZARDOUS LOCATION AND SHALL CONFORM TO THE APPLICABLE SECTIONS OF NEC ARTICLES 500, 501, & 504 AS WELL AS ALL LOCAL CODES, ORDINANCES, AND REQUIREMENTS.
3. CONTRACTOR SHALL COORDINATE INSTALLATION OF ELECTRICAL EQUIPMENT, AND WORK WITH RESPECT TO PLUMBING, MECHANICAL, CONCRETE, EXCAVATION AND ALL OTHER WORK. COORDINATE THE INSTALLATION OF CONDUITS INTO THE WET WELL. USE NON-SHRINK GROUT AS REQUIRED TO SEAL CONDUIT PENETRATIONS.
4. ALL CONDUIT TERMINATIONS & OPENINGS IN ENCLOSURES SHALL BE SEALED WITH DUCT SEAL OR EQUAL.
5. ALL MERCURY SWITCH LIQUID LEVEL FLOATS SHALL HAVE AN FM LISTED OR UL LISTED INTRINSICALLY SAFE BARRIER (SWITCHING AMPLIFIER) SUPPLIED FOR EACH. INTRINSICALLY SAFE WIRING SHALL HAVE LIGHT BLUE COLORED INSULATION AND KEPT PHYSICALLY ISOLATED FROM OTHER CONDUCTORS. INTRINSICALLY SAFE WIRING AND EQUIPMENT SHALL BE INSTALLED PER ANSI/ISA RP12.6, UL 698A, AND NEC 504. CONDUITS WITH INTRINSICALLY SAFE WIRING SHALL TERMINATE IN THE CONTROL PANEL AT THE INTRINSICALLY SAFE WIRING SECTION.
6. METAL CONDUIT IN DIRECT CONTACT WITH EARTH OR CONCRETE SHALL BE PVC COATED FOR CORROSION PROTECTION.
7. ALL CONDUIT ENTRANCES INTO THE TRANSFER SWITCH, PANELBOARD, PUMP CONTROL PANEL AND ANY OTHER NEMA 4 ENCLOSURES SHALL HAVE WATER TIGHT THREADED HUBS, UL LISTED NEMA 4, 4X FOR RESPECTIVE ENCLOSURE.
8. ALL BUSHINGS, HUBS, & FITTINGS BETWEEN CONDUITS OF DISSIMILAR METALS AND/OR BETWEEN CONDUITS AND ENCLOSURES OF A DISSIMILAR METAL SHALL BE SUITABLE FOR SUCH APPLICATIONS TO ELIMINATE THE POSSIBILITY OF GALVANIC ACTION.

SHEET LEGEND:

- ① (RESERVED)
- ② (RESERVED)
- ③ (RESERVED)
- ④ 2 MULTI-CONDUCTOR FLOAT CABLES (WITH MAXIMUM DIAMETER OF 5/8") IN 2" PVC COATED RIGID ALUMINUM OR PVC COATED GRSC. CONDUIT SHALL BE SIZED FOR 25% MAXIMUM FILL TO CONFORM TO EXPLOSION PROOF CONDUIT SEAL REQUIREMENTS. ADJUST (ENLARGE) AS REQUIRED.
- ⑤ SUBMERSIBLE PUMP MOTOR CABLE IN 2" PVC COATED RIGID ALUMINUM OR PVC COATED GRSC. CONDUIT SHALL BE SIZES FOR 25% MAXIMUM FILL TO CONFORM TO EXPLOSION PROOF CONDUIT SEAL REQUIREMENTS. ADJUST (ENLARGE) AS REQUIRED.
- ⑥ EXPLOSION PROOF CONDUIT SEAL SUITABLE FOR CLASS I, DIVISION 1, GROUP D HAZARDOUS LOCATION, CROUSE HINDS EYS, APPLETON EYS, ESU, EY, KILLARK ENY, EY EYS OR Q-2 GEDNEY EYA, EY, OR EZS SERIES, REQUIRED FOR ALL CONDUITS ENTERING OR LEAVING THE WET WELL OR VALVE VAULT INSTALLED IN CONFORMANCE WITH NEC 501 & MANUFACTURER'S DIRECTIONS. NOTE CONDUIT SEALS SHALL BE SIZED AS REQUIRED FOR THE RESPECTIVE CABLE FILL. CABLE FILL SHALL NOT EXCEED 25% FOR CONDUIT SEAL APPLICATION. CONDUIT SEALS SHALL BE THE FIRST FITTING AFTER THE CONDUIT LEAVES THE WET WELL AND EMERGES FROM GRADE & THE FIRST FITTING AFTER CONDUIT ENTERS THE VALVE VAULT.
- ⑦ HEAVY DUTY STAINLESS STEEL CABLE RACK ADEQUATELY SIZED FOR THE RESPECTIVE PUMP & FLOAT CABLES OR HEAVY DUTY NYLON SADDLE RACKS (CABLE HANGAR WITH 3" THROAT OPENING), UNDERGROUND DEVICES CAT. NO. 3SR1N. MOUNT AT IMMEDIATELY INSIDE ACCESS HATCH WITH STAINLESS STEEL STRUT SUPPORT & STAINLESS STEEL HARDWARE. PROVIDE SUFFICIENT RACKS FOR EACH PUMP CABLE & FLOAT CABLES. EACH PUMP MOTOR SHALL HAVE 10' MINIMUM SLACK CABLE TO ALLOW FOR FUTURE REMOVAL AND REINSTALLATION. LOOP SLACK CABLES AROUND SADDLE RACK AND SECURE WITH CABLE TIES.
- ⑧ SUBMERSIBLE PUMP CABLE BY PUMP MANUFACTURER. VERIFY EACH PUMP MOTOR HAS A MINIMUM OF 10 FEET OF SLACK CABLE. (2 TYP.)
- ⑨ 1 #10 THWN, 1 #10 THWN NEUTRAL, 1 #10 GND IN 3/4" PVC COATED GRSC FROM PANELBOARD TO VALVE VAULT. NOTE CONDUIT ENTRY LOCATION SHOWN FOR CLARITY. ADJUST POINT OF ENTRY AS APPLICABLE.
- ⑩ NEMA 7 & NEMA 4 CAST ALUMINUM JUNCTION BOX, WITH THREADED SCREW ON COVER & GASKETING TO MAKE WATER-TIGHT.
- ⑪ SUMP PUMP CABLE. PROVIDE CORD GRIP CONNECTOR FOR CABLE AT J-BOX.
- ⑫ STAINLESS STEEL CABLE/WEIGHT SUSPENSION MOUNTING KIT FOR FLOATS AS MANUFACTURED BY US FILTER CONTROL SYSTEMS/CONSOLIDATED ELECTRIC. ALL HARDWARE & MOUNTING ACCESSORIES SHALL BE STAINLESS STEEL.
- ⑬ 20 TO 25 POUND PLASTIC COATED CAST IRON WEIGHT FOR USE WITH CABLE/WEIGHT SUSPENSION MOUNTING KIT.

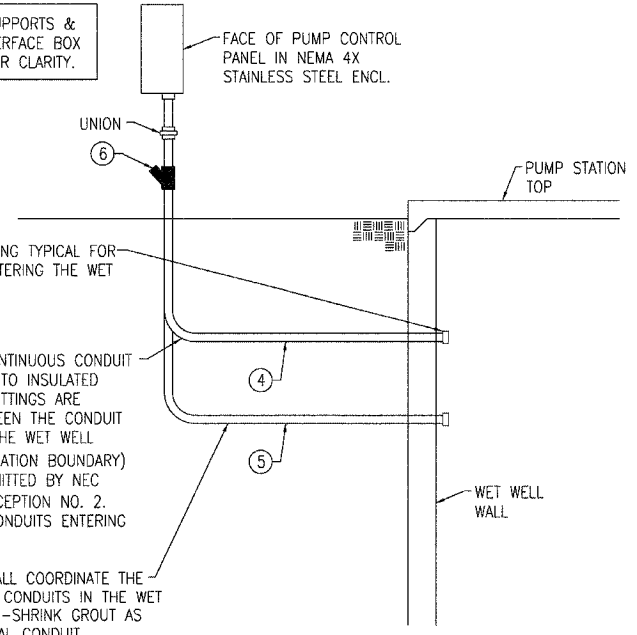
NOTE: PUMP CONTROL PANEL NOT SHOWN THIS VIEW FOR CLARITY.



STAINLESS STEEL MERCURY SWITCH LIQUID LEVEL CONTROL FLOAT WITH FLOAT TO CABLE STAINLESS STEEL CLAMP KIT (TYP.). 3 NORMALLY OPEN TYPE & 1 NORMALLY CLOSED TYPE FOR THE HIGH WATER LEVEL ALARM FLOAT. FLOAT CABLES SHALL BE CONTINUOUS FROM THE RESPECTIVE FLOAT SWITCH TO THE PUMP CONTROL PANEL. NO SPLICES SHALL BE PERMITTED.

VERIFY FLOAT SWITCH ELEVATIONS AND CABLE HANGER LOCATIONS WITH ENGINEER & PUMP MFR REPRESENTATIVE. SPACE FLOATS TO MINIMIZE POTENTIAL TANGLING PROBLEMS.

NOTE: CONTROL PANEL SUPPORTS & TELEPHONE NETWORK INTERFACE BOX NOT SHOWN THIS VIEW FOR CLARITY.



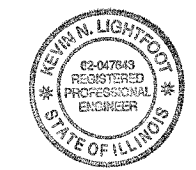
INSULATED BUSHING TYPICAL FOR ALL CONDUIT ENTERING THE WET WELL

SWEEP BEND CONTINUOUS CONDUIT FROM SEAL OFF TO INSULATED BUSHING. NO FITTINGS ARE PERMITTED BETWEEN THE CONDUIT SEAL OFF AND THE WET WELL (HAZARDOUS LOCATION BOUNDARY) EXCEPT AS PERMITTED BY NEC 501.15(A)(4) EXCEPTION NO. 2. TYP. FOR ALL CONDUITS ENTERING THE WET WELL.

CONTRACTOR SHALL COORDINATE THE INSTALLATION OF CONDUITS IN THE WET WELL. USE NON-SHRINK GROUT AS REQUIRED TO SEAL CONDUIT PENETRATIONS. INCLUDE PVC COATING ON CONDUIT FOR CORROSION PROTECTION. TYP. ALL CONDUIT ENTERING OR LEAVING THE WET WELL.

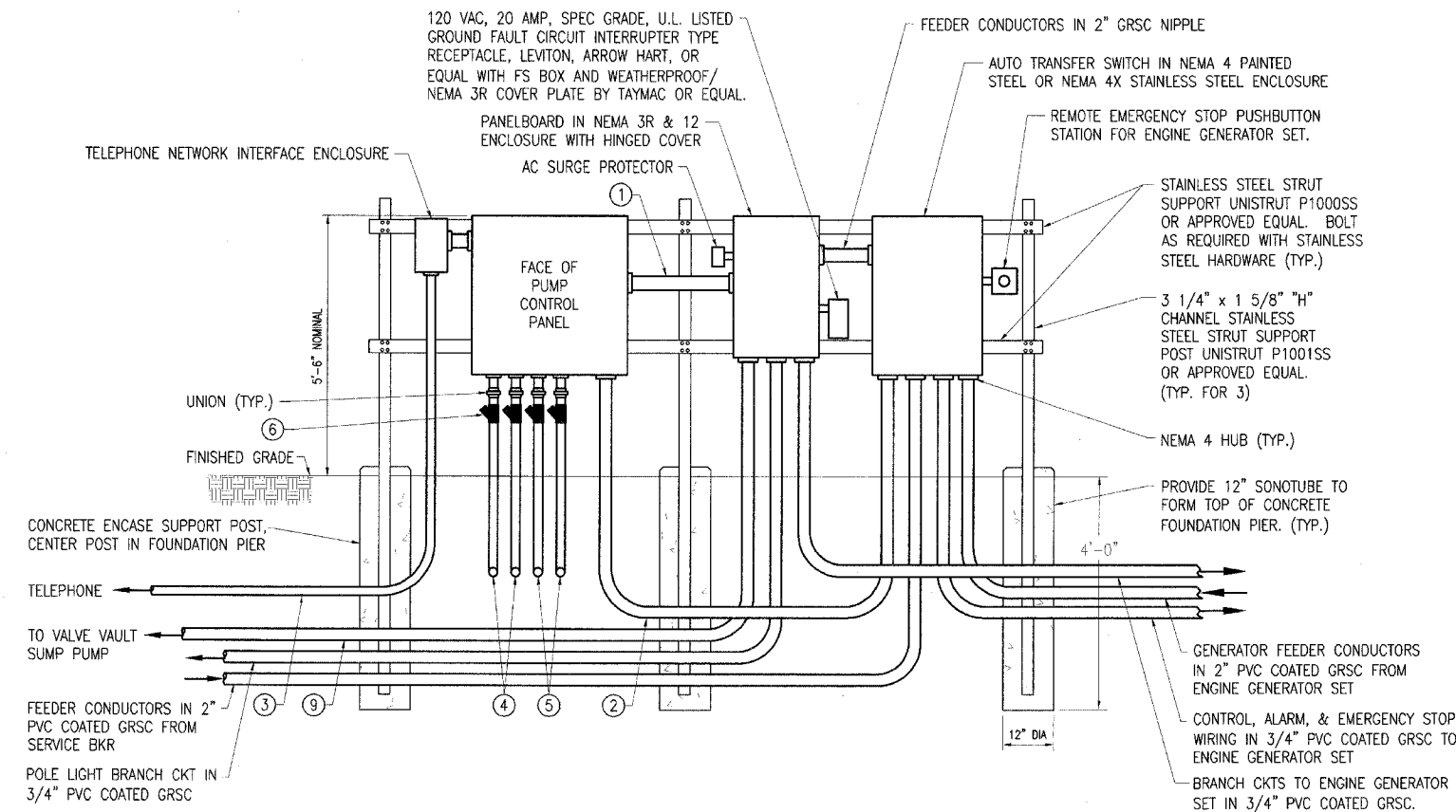
ELECTRICAL ELEVATION NOT TO SCALE

CONDUIT ENTRANCE TO PUMP STATION NOT TO SCALE



Kevin N. Lightfoot
DATE: FEB. 2, 2005
EXPIRES: NOV. 30, 2005

PUMP STATION ELECTRICAL DETAILS			
FELL AVENUE BRIDGE REPLACEMENT			
DRAWN	MV 10/07/2004	DESIGNED	KNL 10/07/2004
CHECKED	KNL 10/09/2004	CHECKED	XXX
FILE:	03S2019	DATE:	2-2-05



- SHEET LEGEND:**
- ① 3 #6 THWN, 1 #6 NEUTRAL, 1 #8 GND IN 1" GRSC FROM PANELBOARD TO PUMP CONTROL PANEL.
 - ② 4 #14 THWN, 1 #14 GND, 4 #14 THWN SPARE (UTILITY POWER FAILURE & ENGINE GENERATOR FAILURE ALARM WIRING) IN 3/4" PVC COATED GRSC FROM AUTO TRANSFER SWITCH TO PUMP CONTROL PANEL.
 - ③ 2" PVC COATED GRSC FOR TELEPHONE CABLE SERVICE. VERIFY CONDUIT SIZE WITH SERVING TELEPHONE CO, AND ADJUST (REDUCE OR ENLARGE) AS APPLICABLE.
 - ④ 2 MULTI-CONDUCTOR FLOAT CABLES (WITH MAXIMUM DIAMETER OF 5/8") IN 2" PVC COATED RIGID ALUMINUM OR PVC COATED GRSC. CONDUIT SHALL BE SIZED FOR 25% MAXIMUM FILL TO CONFORM TO EXPLOSION PROOF CONDUIT SEAL REQUIREMENTS. ADJUST (ENLARGE) AS REQUIRED.
 - ⑤ SUBMERSIBLE PUMP MOTOR CABLE IN 2" PVC COATED RIGID ALUMINUM OR PVC COATED GRSC. CONDUIT SHALL BE SIZED FOR 25% MAXIMUM FILL TO CONFORM TO EXPLOSION PROOF CONDUIT SEAL REQUIREMENTS. ADJUST (ENLARGE) AS REQUIRED.
 - ⑥ EXPLOSION PROOF CONDUIT SEAL SUITABLE FOR CLASS I, DIVISION 1, GROUP D HAZARDOUS LOCATION, CROUSE HINDS EYS, APPLETON EYS, ESU, EY, KILLARK ENY, EY EYS OR O-Z GEDNEY EYA, EY, OR EYS SERIES, REQUIRED FOR ALL CONDUITS ENTERING OR LEAVING THE WET WELL OR VALVE VAULT INSTALLED IN CONFORMANCE WITH NEC 501 & MANUFACTURER'S DIRECTIONS. NOTE CONDUIT SEALS SHALL BE SIZED AS REQUIRED FOR THE RESPECTIVE CABLE FILL. CABLE FILL SHALL NOT EXCEED 25% FOR CONDUIT SEAL APPLICATION. CONDUIT SEALS SHALL BE THE FIRST FITTING AFTER THE CONDUIT LEAVES THE WET WELL AND EMERGES FROM GRADE & THE FIRST FITTING AFTER CONDUIT ENTERS THE VALVE VAULT.
 - ⑦ (RESERVED)
 - ⑧ (RESERVED)
 - ⑨ 1 #10 THWN, 1 #10 THWN NEUTRAL, 1 #10 GND IN 3/4" PVC COATED GRSC FROM PANELBOARD TO VALVE VAULT.
 - ⑩ (RESERVED)
 - ⑪ (RESERVED)

NOTES:

1. PROVIDE NEMA 4 HUBS AT ALL CONDUIT ENTRIES TO AUTO XFER SWITCH, PANELBOARD, AND PUMP CONTROL PANEL.
2. SEE ELECTRICAL ONE-LINE DIAGRAM FOR INFO ON FEEDER CONDUCTOR & CONDUIT SIZES & TYPES.

**TRANSFER SWITCH, PANELBOARD,
& PUMP CONTROL PANEL ELEVATION**
NOT TO SCALE

LEGEND PLATE SCHEDULE

DEVICE	LEGEND PLATE LABELING	LETTER HEIGHT/COLOR
SERVICE BREAKER	SERVICE DISCONNECT 208Y/120 VAC, 3 PH, 4 W	1/4" BLACK LETTERING ON A WHITE BACKGROUND
SERVICE BREAKER	NOTE GENERATOR NEUTRAL IS ALSO BONDED TO GROUND AT SERVICE DISCONNECT	1/4" BLACK LETTERING ON A WHITE BACKGROUND
GENERATOR BREAKER	GENERATOR BREAKER 208Y/120 VAC, 3 PH, 4 W	1/4" BLACK LETTERING ON A YELLOW BACKGROUND
GENERATOR BREAKER	NOTE GENERATOR NEUTRAL IS BONDED TO GROUND AT SERVICE DISCONNECT	1/4" BLACK LETTERING ON A YELLOW BACKGROUND
REMOTE LOCATED EMERGENCY STOP STATION FOR ENGINE GENERATOR SET	ENGINE GENERATOR EMERGENCY STOP PUSH TO STOP PULL TO RESET	1/4" WHITE LETTERING ON A RED BACKGROUND
AUTOMATIC TRANSFER SWITCH	AUTO TRANSFER SWITCH 208/120 VAC, 3 PH, 4 W NORMAL SOURCE FED FROM SERVICE DISCONNECT STANDBY SOURCE FED FROM GENERATOR BREAKER	1/4" WHITE LETTERING ON A RED BACKGROUND
PANELBOARD	FELL AVE PUMP STATION PANELBOARD 208Y/120 VAC, 3 PH, 4 W	1/4" WHITE LETTERING ON A RED BACKGROUND
PUMP CONTROL PANEL ENCLOSURE	FELL AVE PUMP STATION CONTROL PANEL 208/120 VAC, 3 PH, 4 W	1/4" WHITE LETTERING ON A RED BACKGROUND

NOTES:

1. LEGEND PLATES SHALL BE WEATHERPROOF, ABRASION RESISTANT, PHENOLIC ENGRAVED MATERIAL. LETTERING SHALL BE SIZED AS NOTED ABOVE. SECURE LEGGED PLATES TO EQUIPMENT WITH MACHINE SCREWS AND/OR RIVETS. CONTRACTOR SHALL FIELD VERIFY THAT THE RESPECTIVE LETTERING HEIGHT AND LEGENDS WILL FIT ON THE RESPECTIVE EQUIPMENT AND ADJUST LETTERING HEIGHT WHERE APPLICABLE. SEE SPECIFICATIONS FOR THE PUMP CONTROL PANEL FOR ADDITIONAL LEGEND PLATES REQUIRED FOR THAT PANEL.
2. FURNISH & INSTALL A WEATHERPROOF WARNING LABEL FOR EACH METER SOCKET, SERVICE DISCONNECT, TRANSFER SWITCH, PANELBOARD & CONTROL PANEL TO WARN PERSONS OF POTENTIAL ELECTRIC ARC FLASH HAZARDS, PER THE REQUIREMENTS OF NEC 110.16 "FLASH PROTECTION". LABELS SHALL BE HAZARD COMMUNICATION SYSTEMS, LLC (190 OLD MILFORD RD., P.O. BOX 1174, MILFORD, PA 18337 PHONE: 1-887-748-0244) PART NO. H6010-9VWHBJ OR APPROVED EQUAL.

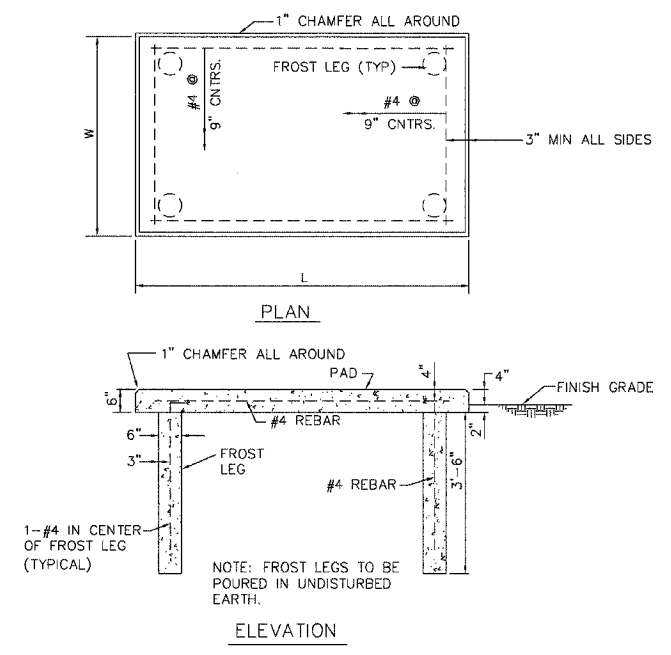


Kevin M. Lightfoot
DATE: FEB. 2, 2005
EXPIRES: NOV. 30, 2005

**ELECTRICAL DETAILS II
FELL AVENUE
BRIDGE REPLACEMENT**

DRAWN: MV 10/07/2004 DESIGNED: KNL 10/07/2004
CHECKED: KNL 10/09/2004 CHECKED: XXX
FILE: 03S2019 DATE: 2-2-05





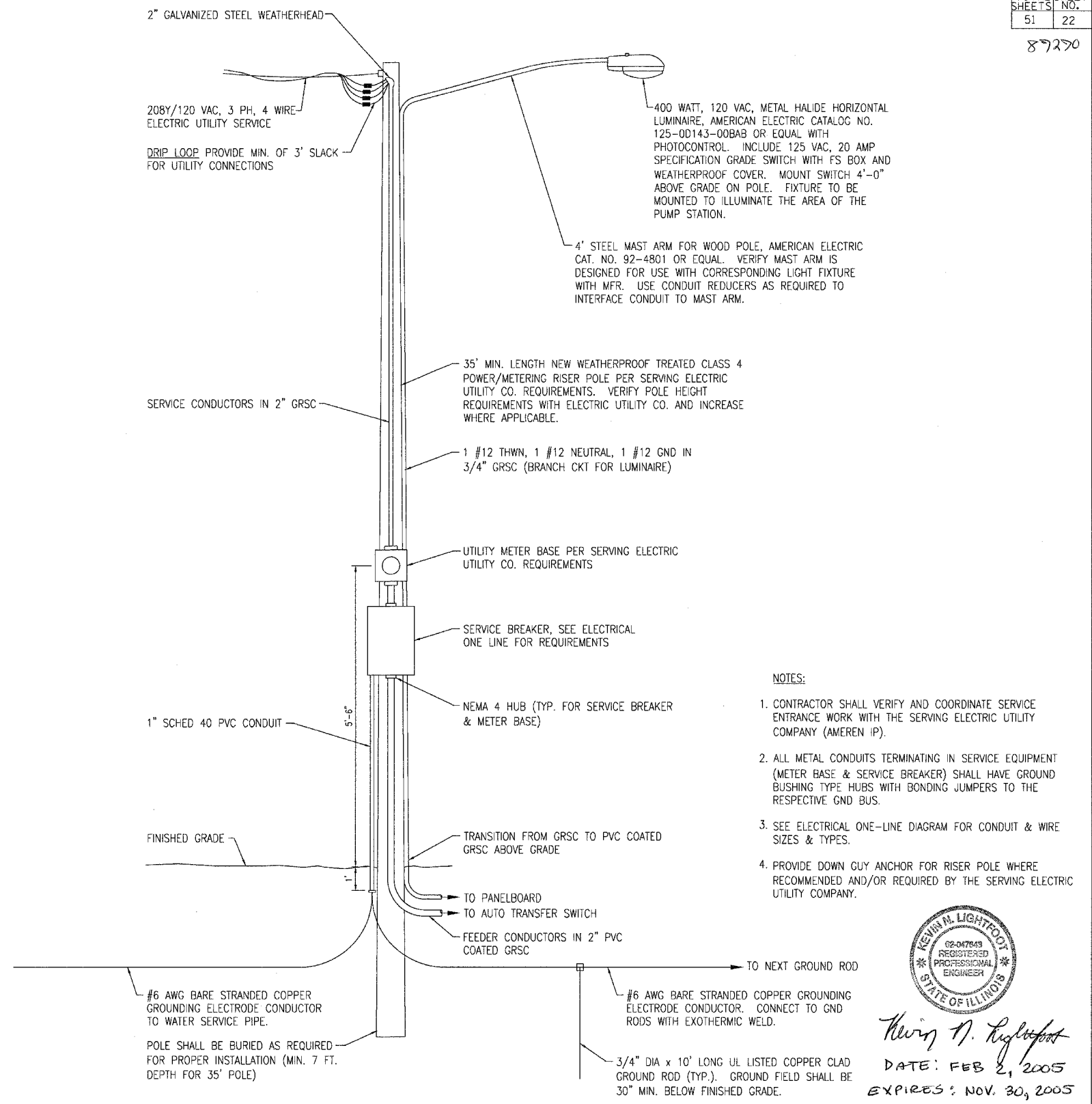
- NOTES:**
- PAD MOUNTING BOLTS BY CONTRACTOR ACCORDING TO MANUFACTURERS RECOMMENDATIONS FOR ITS ENCLOSURE, HOUSING, OR BASE MOUNTED FUEL TANK.
 - MINIMUM CONCRETE COVERAGE OVER REBAR TO BE 3" UNLESS OTHERWISE NOTED.
 - PAD SHALL HAVE A 1" MINIMUM PERIMETER AROUND THE GENERATOR SET BASE.
 - CONTRACTOR SHALL COORDINATE THE INSTALLATION OF SLEEVES FOR CONDUITS IN THE PAD AS REQUIRED.

GENERATOR SET PAD DETAIL
N.T.S.

PUMP STATION PANELBOARD SCHEDULE							
CKT #	DUTY	SIZE		SIZE	DUTY	CKT #	
1	AC SURGE PROTECTOR	30A,3P		100,3P	MAIN BREAKER	2	
3		---		---			4
5		---		---			6
7	PUMP CONTROL PANEL	60A,3P		20A,1P	GFCI RECEIPT		8
9		---		15A,1P	POLE LIGHT		10
11		---		20A,1P	ENGINE BLOCK HEATER		12
13	VALVE VAULT SUMP PUMP	20A,1P		20A,1P	BATTERY CHARGER		14
15	BLANK			20A,1P	GENERATOR CONV. RECEIPT		16
17	BLANK			15A,1P	SPARE		18
19	BLANK			20A,1P	SPARE		20
21	BLANK			30A,1P	SPARE		22
23	BLANK				BLANK		24

100 AMP, 208/120 VAC, 3 PHASE, 4 WIRE, 24 CIRCUIT PANELBOARD WITH 100 AMP, 3 POLE MAIN BREAKER RATED 10,000 AIC AT 240 VAC, IN A NEMA 3R & 12 ENCLOSURE WITH HINGED COVER. INCLUDE SEPARATE EQUIPMENT GROUND BARS. PANELBOARD SHALL BE SQUARE D CLASS 1630 CAT. NO. NQ00424M100CU WITH MH26WP ENCLOSURE, OR APPROVED EQUAL.

- NOTES:**
- INCLUDE UL LISTED PER UL 1449 AC SURGE PROTECTOR SUITABLE FOR 208/120 VAC, 3 PH, 4W PLUS GROUND SYSTEM, WITH SURGE CURRENT RATING OF 40 KA, 8x20 MICROSECOND WAVE, PER MODE, AND STATUS INDICATION LIGHTS, JOSLYN MODEL, 1455-21, OR APPROVED EQUAL. MAINTAIN LEADS AS SHORT & AS STRAIGHT AS POSSIBLE.
 - INCLUDE WEATHERPROOF PHENOLIC ENGRAVED LEGEND PLATES LABELED "FELL AVE. PUMP STATION PANELBOARD" AND "208/120 VAC, 3 PHASE, 4 WIRE".
 - VERIFY CIRCUIT BREAKERS ARE PROPERLY SIZED IN CONFORMANCE WITH THE RESPECTIVE EQUIPMENT MANUFACTURER'S RECOMMENDATIONS & NEC. ADJUST CIRCUIT BREAKER SIZES WHERE APPLICABLE FOR RESPECTIVE EQUIPMENT FURNISHED.
 - ALL FEEDER/BRANCH CIRCUIT BREAKERS SHALL BE BOLT-ON TYPE WITH 10,000 AIC (MIN.) AT 120/240 VAC (FOR 1 POLE & 2 POLE BKRS) & WITH 10,000 AIC AT 240 VAC FOR 3 POLE BKRS
 - ALL METAL CONDUIT TERMINATION IN THE PANELBOARD SHALL HAVE FITTINGS UL LISTED SUITABLE FOR GROUNDING.
 - FURNISH AND INSTALL A 120 VAC, 20 AMP, U.L. LISTED SPEC GRADE GFCI RECEIPT. WITH CAST ALUMINUM FS BOX AND WEATHERPROOF (NEMA 3R) COVER AT PANELBOARD. BRANCH CIRCUIT SHALL BE 1 #12 THWN, 1 #12 NEUTRAL, 1 #12 GND IN 3/4" GRSC NIPPLE. WP COVER SHALL BE TAYMAC CAT. # 20550 OR EQUAL.



- NOTES:**
- CONTRACTOR SHALL VERIFY AND COORDINATE SERVICE ENTRANCE WORK WITH THE SERVING ELECTRIC UTILITY COMPANY (AMEREN IP).
 - ALL METAL CONDUITS TERMINATING IN SERVICE EQUIPMENT (METER BASE & SERVICE BREAKER) SHALL HAVE GROUND BUSHING TYPE HUBS WITH BONDING JUMPERS TO THE RESPECTIVE GND BUS.
 - SEE ELECTRICAL ONE-LINE DIAGRAM FOR CONDUIT & WIRE SIZES & TYPES.
 - PROVIDE DOWN GUY ANCHOR FOR RISER POLE WHERE RECOMMENDED AND/OR REQUIRED BY THE SERVING ELECTRIC UTILITY COMPANY.



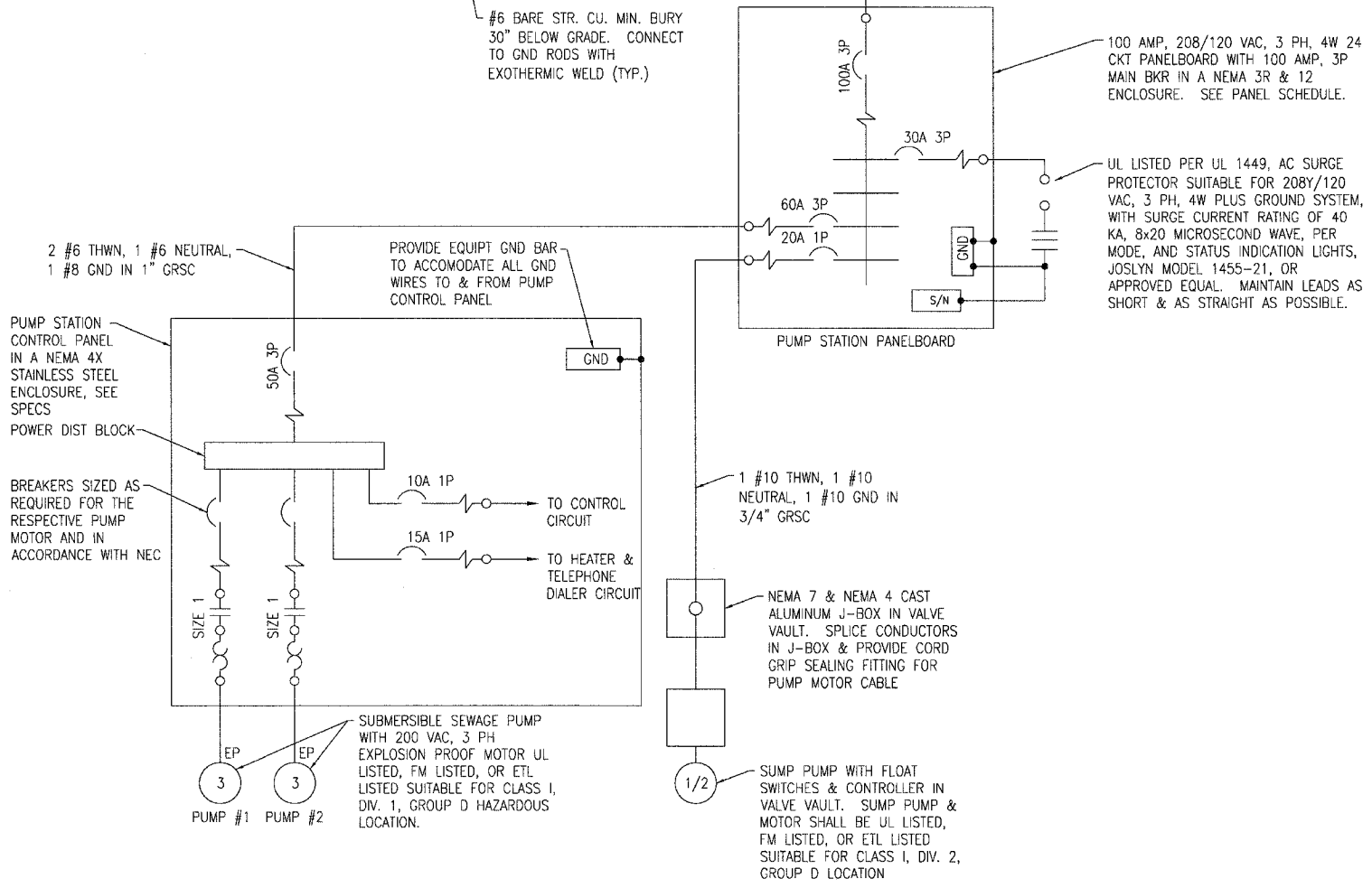
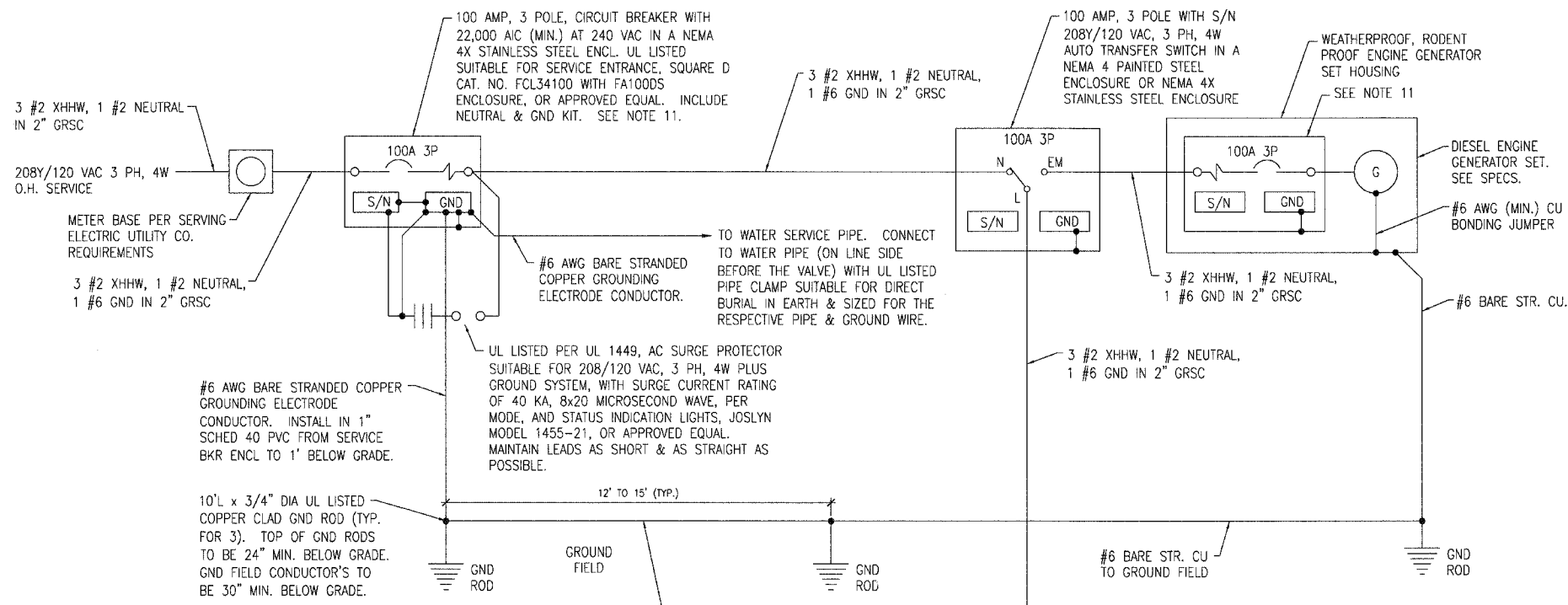
Kevin M. Lightfoot
DATE: FEB 2, 2005
EXPIRES: NOV. 30, 2005

SERVICE RISER POLE DETAIL
NOT TO SCALE

ELECTRICAL DETAILS III
FELL AVENUE
BRIDGE REPLACEMENT

DRAWN MV 10/07/2004 DESIGNED KNL 10/07/2004
CHECKED KNL 10/09/2004 CHECKED xxx
FILE: 03S2019 DATE: 2-2-05





- NOTES**
- ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN CONFORMANCE WITH NFPA 70 (NEC MOST CURRENT ISSUE IN FORCE), THE RESPECTIVE EQUIPMENT MANUFACTURER'S DIRECTIONS AND ALL OTHER APPLICABLE LOCAL CODES, LAWS, ORDINANCES AND REQUIREMENTS IN FORCE. ANY INSTALLATIONS WHICH VOID THE U.L. LISTING (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE SHALL NOT BE PERMITTED.
 - COORDINATE ELECTRIC SERVICE WORK WITH THE SERVING ELECTRIC UTILITY COMPANY, AMEREN IP, ATTN MR. MARTY BEHRENS, P.E. REGIONAL ENGINEERING SUPERVISOR 501 EAST LAFAYETTE STREET BLOOMINGTON, IL. 61701 PHONE 309-823-9271 FAX 309-829-9499
 - INCLUDE WEATHER PROOF ENGRAVED PHENOLIC LEGEND PLATE FOR SERVICE BREAKER LABELED "SERVICE DISCONNECT 208Y/120 VAC, 3 PH, 4W", AND A SEPARATE LEGEND PLATE LABELED "NOTE GENERATOR NEUTRAL IS ALSO BONDED TO GROUND AT SERVICE BREAKER".
 - SEE PANELBOARD SCHEDULE FOR ADDITIONAL REQUIREMENTS ON THE PANELBOARD.
 - PUMP MOTOR SIZES MAY VARY DEPENDING UPON MANUFACTURER. PUMP MOTOR STARTERS SHALL BE SIZED FOR THE RESPECTIVE PUMP MOTOR FURNISHED AND SHALL BE NEMA SIZE 1 MINIMUM. VERIFY REQUIREMENTS WITH THE RESPECTIVE PUMP MOTOR MFR.
 - INCLUDE LEGEND PLATE ON PANELBOARD LABELED "WARNING POTENTIAL ELECTRIC ARC FLASH HAZARD" PER THE REQUIREMENTS OF NEC 110.16.
 - BATTERY, BATTERY CHARGER, AND ALL GEN. SET CONTROL AND INDICATOR PANELS SHALL BE INSTALLED INSIDE THE ENGINE GENERATOR SET WEATHER PROTECTIVE HOUSING. INCLUDE 120 VAC, 20 AMP GFCI CONVENIENCE RECEPT. WITH FS BOX TO BE INSTALLED IN THE GEN SET HOUSING.
 - ALL METAL CONDUITS ENTERING SERVICE ENTRANCE EQUIPMENT AND/OR THE XFER SWITCH, SHALL BE GROUNDED USING GROUNDING BUSHINGS/ GROUNDING HUBS WITH GROUND CONDUCTOR FROM BUSHING TO RESPECTIVE ENCLOSURE GROUND BUS.
 - METAL CONDUIT IN DIRECT CONTACT WITH EARTH OR CONCRETE SHALL BE PVC COATED GRSC. METAL CONDUIT ENTERING THE SEWAGE PUMP STATION WET WELL SHALL BE PVC COATED GRSC OR PVC COATED RIGID ALUMINUM.
 - PROVIDE NEMA 4 HUBS FOR ALL CONDUITS ENTERING ENCLOSURES THAT ARE RATED NEMA 4 OR NEMA 4X TO MAINTAIN THE NEMA 4, 4X RATING OF THE ENCLOSURE. PROVIDE NEMA 4 HUBS FOR ALL CONDUITS ENTERING THE PANELBOARD ENCLOSURE.
 - SERVICE BREAKER AND GENERATOR BREAKER SHALL BE SELECTED & COORDINATED TO MAINTAIN THE WITHSTAND AND CLOSING RATING OF THE RESPECTIVE AUTO TRANSFER SWITCH. GENERATOR BREAKER SHALL ALSO BE SIZED PER THE ENGINE GENERATOR SET REPRESENTATIVE'S/MFR'S RECOMMENDATION FOR THE RESPECTIVE SET FURNISHED. AUTO TRANSFER SWITCH SHALL HAVE A 14,000 AMP (MINIMUM) WITHSTAND & CLOSING RATING WHEN USED WITH SPECIFIED BREAKERS LISTED BY THE AUTO TRANSFER SWITCH MFR. PROVIDE THIS INFORMATION WITH THE SHOP DRAWING SUBMITTAL.

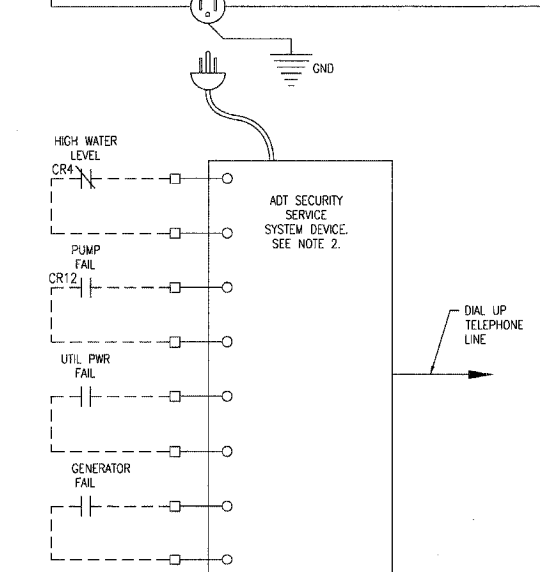
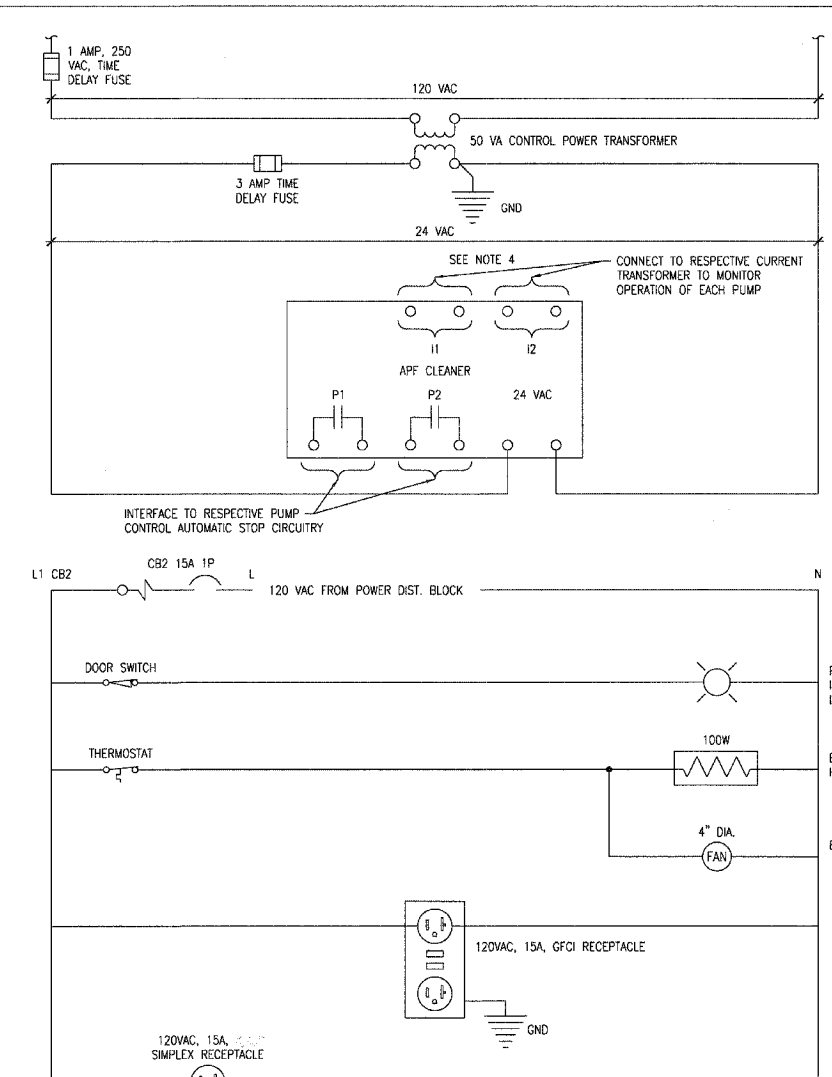
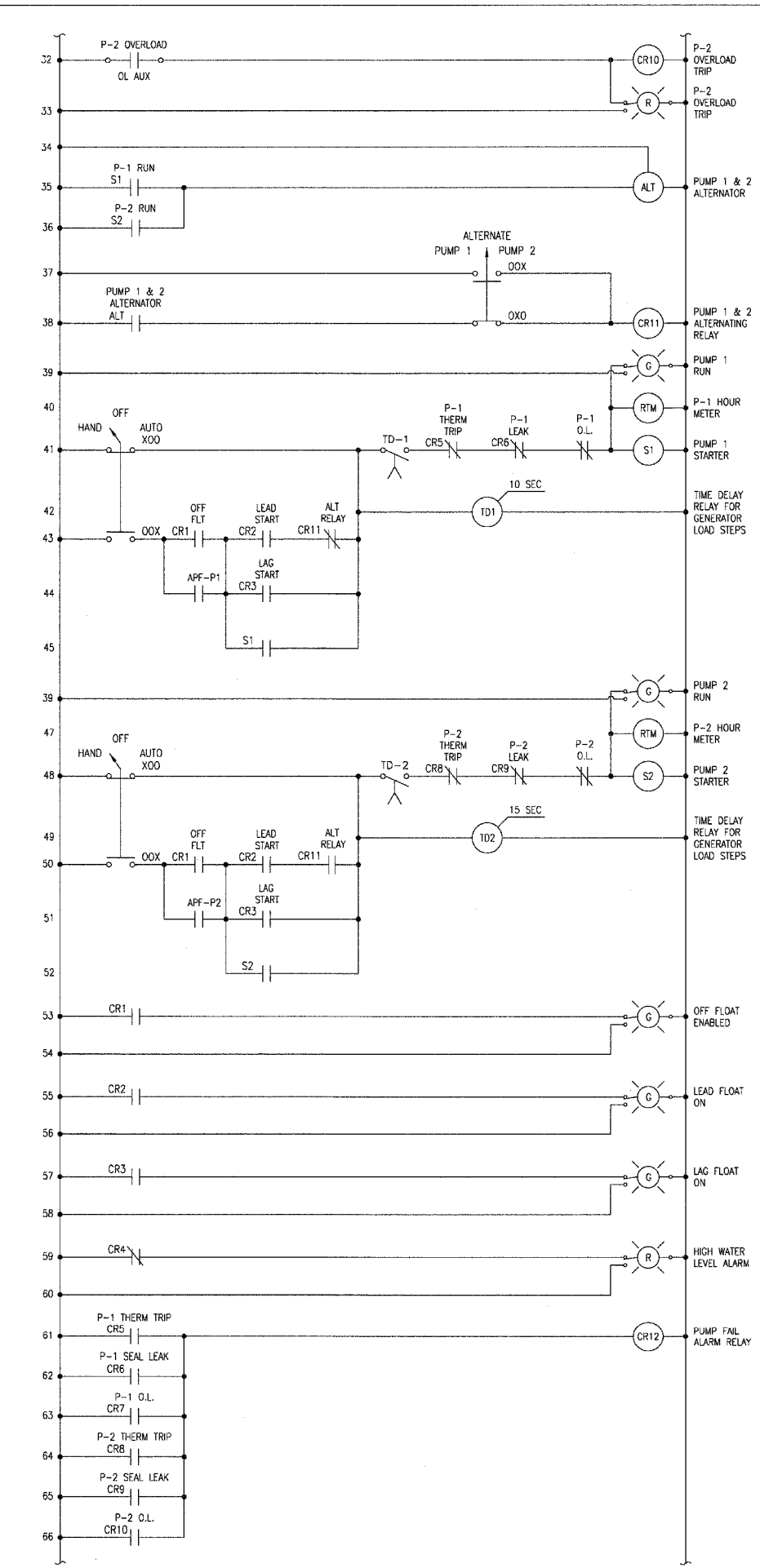
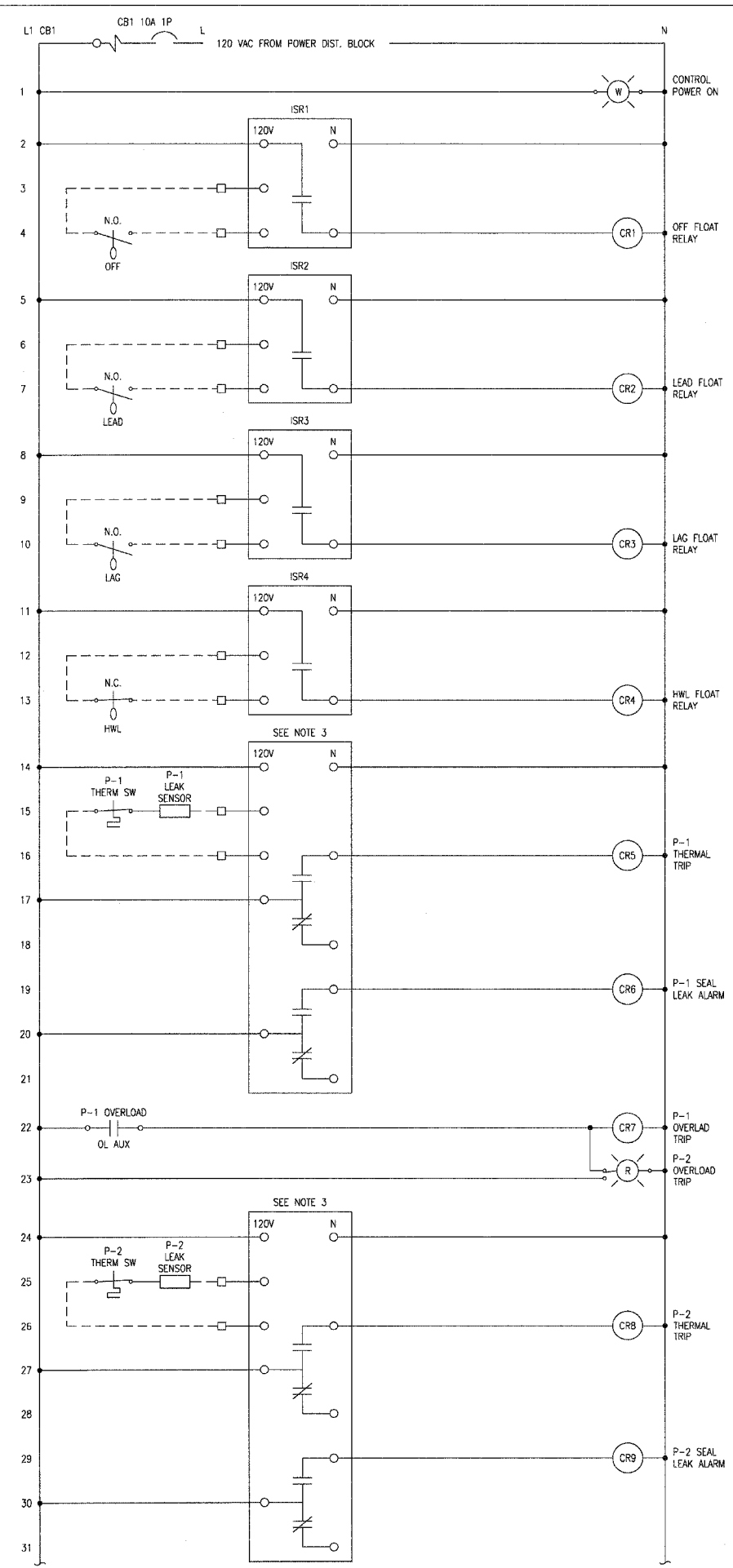


Kevin N. Lightfoot
DATE: FEB. 2, 2005
EXPIRES: NOV. 30, 2005

PUMP STATION ELECTRICAL ONE-LINE
FELL AVENUE
BRIDGE REPLACEMENT

DRAWN MV 10/07/2004 DESIGNED KNL 10/07/2004
CHECKED KNL 10/09/2004 CHECKED XXX
FILE: 03S2019 DATE: 2-2-05





- NOTES:
- ALL PILOT LIGHTS, EXCEPT THE CONTROL POWER ON LIGHT, SHALL BE PUSH-TO-TEST LED TYPE PILOT LIGHTS.
 - PROVIDE SPACE IN CONTROL PANEL TO ACCOMMODATE THE ALARM MONITORING SYSTEM REQUIRED BY THE CITY OF BLOOMINGTON, IL. CONTACT ADT SECURITY SERVICES, 2016 N. KNOXVILLE, PEORIA, IL 61603, ATTN. MR DAVE SMITH PHONE 800-832-4733 TO COORDINATE REQUIREMENTS.
 - PROVIDE SEAL LEAK AND OVERTEMP MONITORING RELAY PER THE RESPECTIVE PUMP MFR'S REQUIREMENTS & RECOMMENDATIONS. THE RELAY SHOWN IS BASED ON AN ITT FLYGT CORP MINI-CAS 120 FOR USE WITH FLYGT SUBMERSIBLE PUMPS.
 - PROVIDE AUTOMATIC PUMP SUMP CLEANING SYSTEM PER THE RESPECTIVE PUMP MFR'S REQUIREMENTS & RECOMMENDATIONS. THE DEVICE SHOWN IS BASED ON AN ITT FLYGT CORP. APF-CLEANER 840348. INCLUDE CURRENT TRANSFORMERS SIZED FOR THE RESPECTIVE PUMP MOTORS. VERIFY WIRING REQUIREMENTS WITH MFR.
 - ALL CONTROL PANEL WIRING SHALL BE SIZED AS REQUIRED PER NEC, MINIMUM 14 AWG COPPER.
 - GROUND WIRES REQUIRED BUT NOT SHOWN FOR CLARITY.
 - PUMP CONTROL PANEL SHALL BE MANUFACTURED BY A CURRENT UL 508 LISTED INDUSTRIAL CONTROL PANEL BUILDER.



Kevin M. Lightfoot
DATE: FEB, 23, 2005
EXPIRES: NOV, 30, 2005

PUMP CONTROL SCHEMATIC
FELL AVENUE
BRIDGE REPLACEMENT

DRAWN MV 10/07/2004 DESIGNED KNL 10/07/2004
CHECKED KNL 10/09/2004 CHECKED XXX
FILE: 03S2019 DATE: 2-2-05

\$DATE\$
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BENCHMARK P172 - BIKE TRAIL BRIDGE BRASS PLUG IN SE ABUTMENT OF BRIDGE - ELEV. = 781.69
 BENCHMARK 1 - CHISELED SQUARE ON TOP SE CONCRETE RETAINING WALL @ CLINTON BLVD OVER SUGAR CREEK 200' N. OF EMERSON ST. - ELEV. 773.99
 BENCHMARK 2 - CHISELED SQUARE ON SE CORNER OF CONCRETE BRIDGE RAIL, ON FELL ST. 150' N. OF KELSEY ST. - ELEV. 768.97

NW1/4, SE 1/4, SEC. 33

1608 N. FELL AVENUE

1610 N. FELL AVENUE

1612 N. FELL AVENUE

1309 S. FELL AVENUE

TOTAL SHEET NO. 51 25

WATER SERVICE LOCATIONS

MAIN CONNECTION		CURB BOX		TYPE K COPPER PIPE LENGTH, FT
STA 10+56.57, 29.70' RT	STA 10+56.57, 34.00' RT	STA 10+56.57, 34.00' RT	STA 10+56.57, 34.00' RT	
STA 11+16.46, 29.30' RT	STA 11+16.46, 34.00' RT	STA 11+16.46, 34.00' RT	STA 11+16.46, 34.00' RT	5
STA 11+69.33, 31.00' RT	STA 11+85.37, 56.86' LT	STA 11+85.37, 56.86' LT	STA 11+85.37, 56.86' LT	90
STA 13+11.73, 31.00' RT	STA 13+11.73, 33.00' RT	STA 13+11.73, 33.00' RT	STA 13+11.73, 33.00' RT	2
STA 13+65.90, 29.60' RT	STA 13+65.90, 34.00' RT	STA 13+65.90, 34.00' RT	STA 13+65.90, 34.00' RT	4
STA 13+85.37, 29.70' RT	STA 13+85.37, 24.50' LT	STA 13+85.37, 24.50' LT	STA 13+85.37, 24.50' LT	54
STA 14+28.34, 29.90' RT	STA 14+28.35, 34.50' RT	STA 14+28.35, 34.50' RT	STA 14+28.35, 34.50' RT	5
STA 14+31.61, 29.90' RT	STA 14+31.61, 24.50' LT	STA 14+31.61, 24.50' LT	STA 14+31.61, 24.50' LT	54

87270

STA. 10+88.30, 29.59' LT. WATERMAIN CONNECTION 6" x 4" REDUCER
 STA. 10+88.27, 29.36' LT. 1" SAMPLING TAP
 STA. 10+88.24, 28.01' LT. 6"-45° BEND
 62 FT. - 6" DUCTILE IRON WATERMAIN

STA. 10+90.06, 25.70' LT. 6" GATE VALVE AND VALVE BOX
 STA. 10+93.15, 22.50' LT. 6"-45° BEND
 STA. 10+93.10, 19.50' LT. 8" x 6" x 6" TEE
 14 FT. - 6" DUCTILE IRON WATERMAIN
 6" GATE VALVE & VALVE BOX
 STEAMER HYDRANT
 ELEV. = 766.84
 EXISTING R.O.W.

STA. 10+27.00, 8.06' RT. 8"-45° BEND
 GATE VALVE W/VALVE BOX
 STA. 10+25.00, 8.03' RT. WATERMAIN CONNECTION 8" x 6" REDUCER

EXISTING FIRE HYDRANT TO BE REMOVED

50 FT. - 18" STEEL CASING PIPE
 MINIMUM WALL THICKNESS 3/16"

9 FT. - 6" DUCTILE IRON WATERMAIN

STA. 10+36.07, 17.00' RT. 1" SAMPLING TAP
 EXISTING R.O.W.
 STA. 10+49.00, 29.75' RT. 45° BEND

STA. 12+14.04

STA. 12+64.04

428 FT. - 8" DUCTILE IRON WATERMAIN

STA. 14+37.50, 29.90' RT. 8" x 8" x 6" TEE
 8" GATE VALVE AND VALVE BOX
 6" GATE VALVE AND VALVE BOX
 STEAMER HYDRANT ELEV - 765.86
 8" PLUG

STA. 10+92.23, 29.44 RT. 8" x 8" x 6" TEE
 6" GATE VALVE AND VALVE BOX

STA. 11+78.98, 31.41' RT. 8" GATE VALVE AND VALVE VAULT

STA. 12+81.73, 31.32' RT. 8" GATE VALVE AND VALVE BOX

STA. 14+32.50, 29.88' RT. 1" SAMPLING TAP

NE1/4, SE 1/4, SEC. 33

1511 N. FELL AVENUE

1513 N. FELL AVENUE

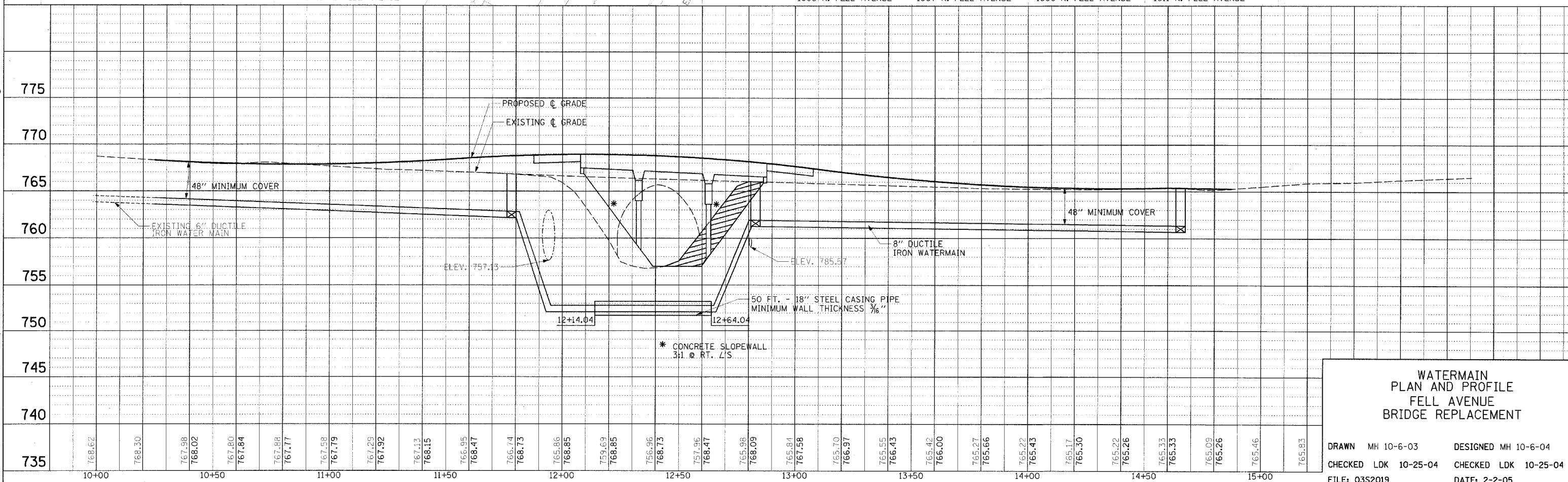
1515 N. FELL AVENUE

1605 N. FELL AVENUE

1607 N. FELL AVENUE

1609 N. FELL AVENUE

1611 N. FELL AVENUE



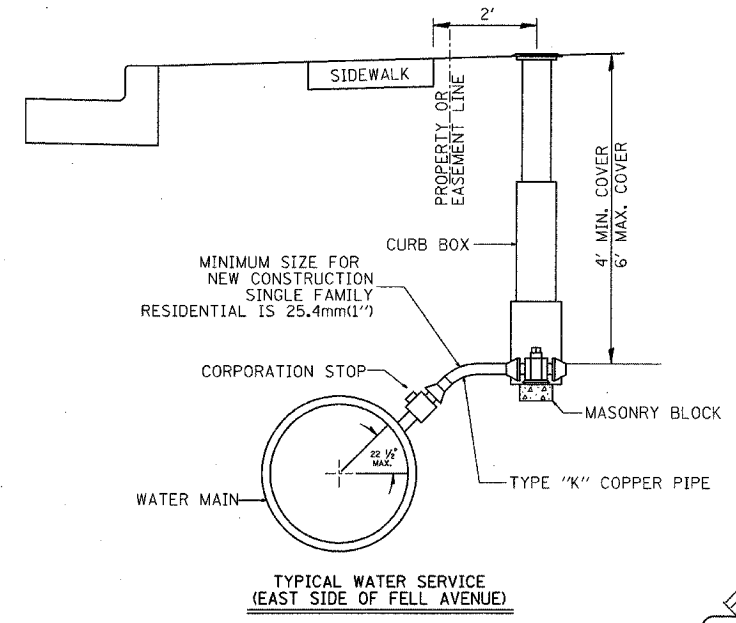
**WATERMAIN
 PLAN AND PROFILE
 FELL AVENUE
 BRIDGE REPLACEMENT**

DRAWN MH 10-6-03 DESIGNED MH 10-6-04
 CHECKED LDK 10-25-04 CHECKED LDK 10-25-04
 FILE: 03S2019 DATE: 2-2-05

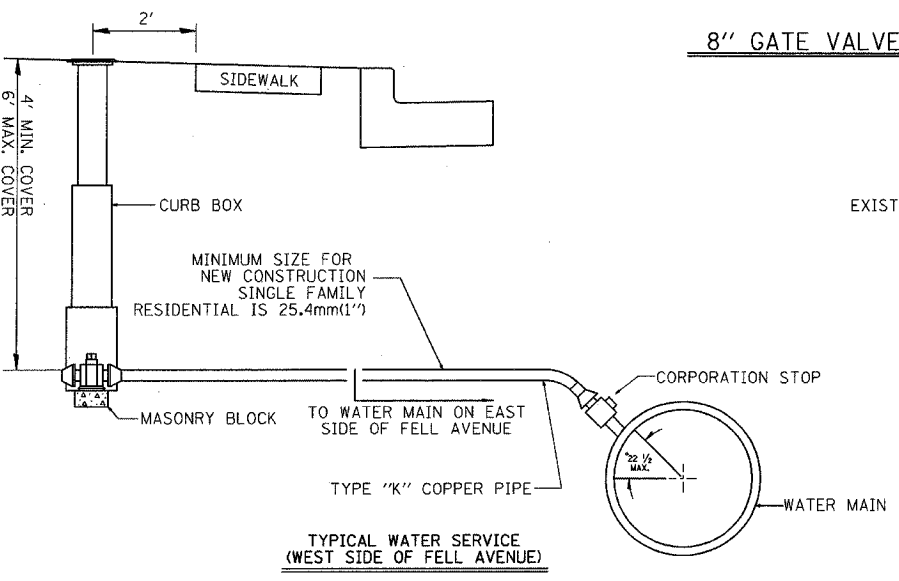
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SERVICE SIZE	CORP. STOP	CURB STOP	CURB BOX
19mm - 25mm (3/4" - 1")	MUELLER H-15000	MUELLER H-15200 OR A.Y. MCDONALD 4713	MUELLER H-10314 OR A.Y. MCDONALD 5601
30mm (1 1/4")	MUELLER H-15000	MUELLER H-15200 OR A.Y. MCDONALD 6100	A.Y. MCDONALD 5603
35mm - 50mm (1 1/2" - 2")	FORD, MUELLER, OR A.Y. MCDONALD BALL VALVE	FORD, MUELLER, OR A.Y. MCDONALD BALL VALVE	A.Y. MCDONALD 5603

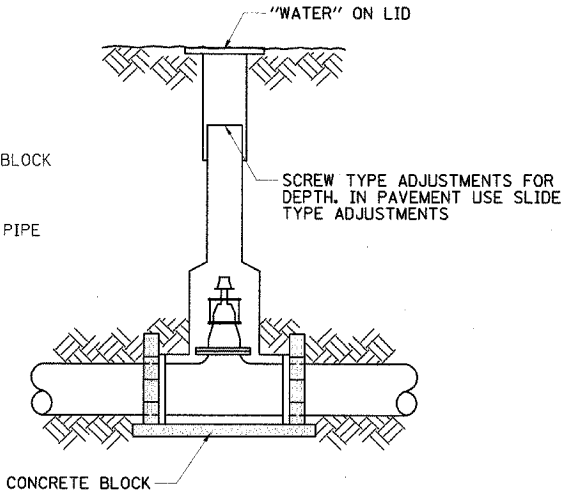
• OR APPROVED EQUAL



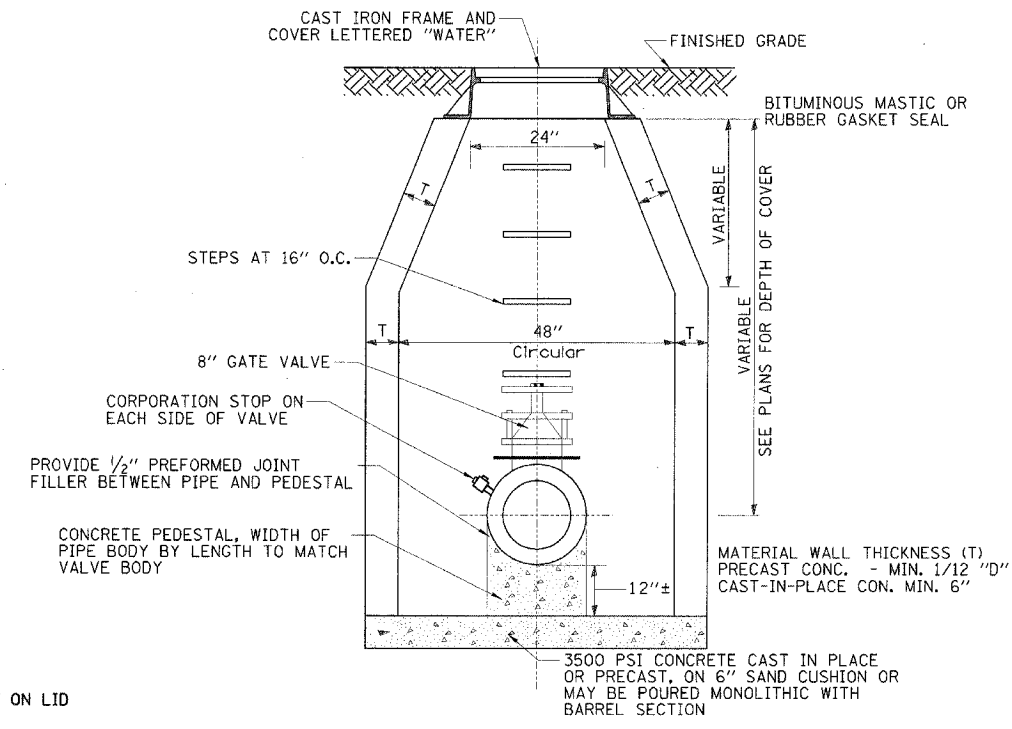
TYPICAL WATER SERVICE (EAST SIDE OF FELL AVENUE)



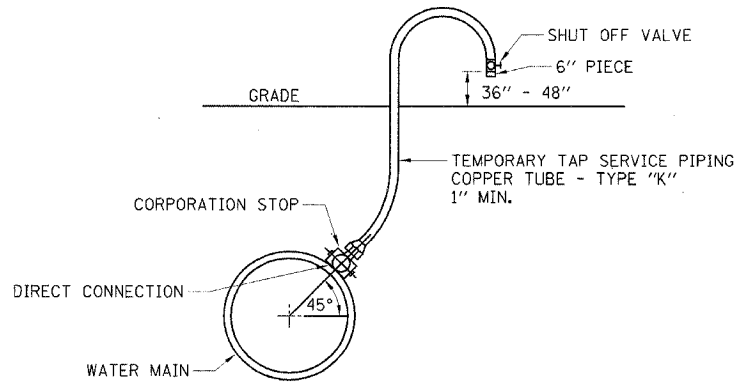
TYPICAL WATER SERVICE (WEST SIDE OF FELL AVENUE)



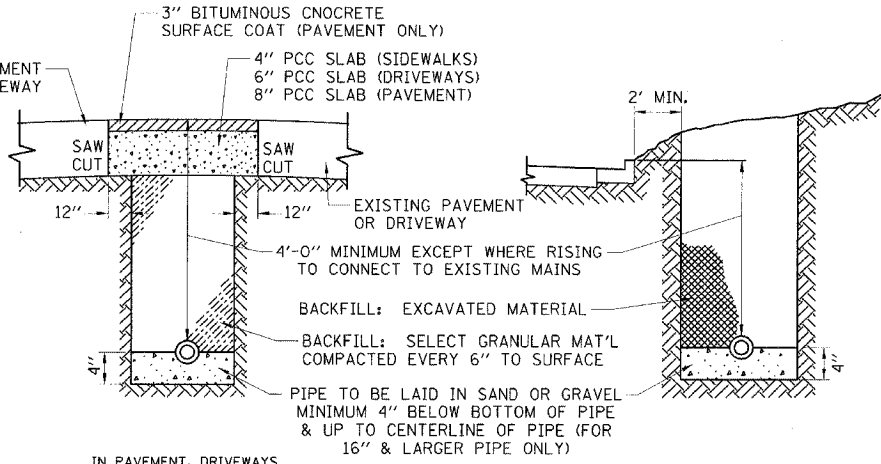
8" GATE VALVE AND VALVE BOX



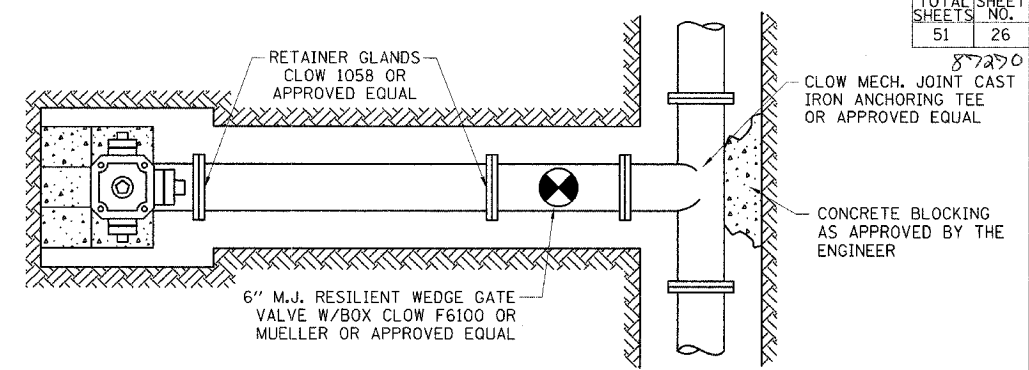
8" GATE VALVE AND VALVE VAULT



SAMPLING & CHLORINATION SERVICE PIPING TAP

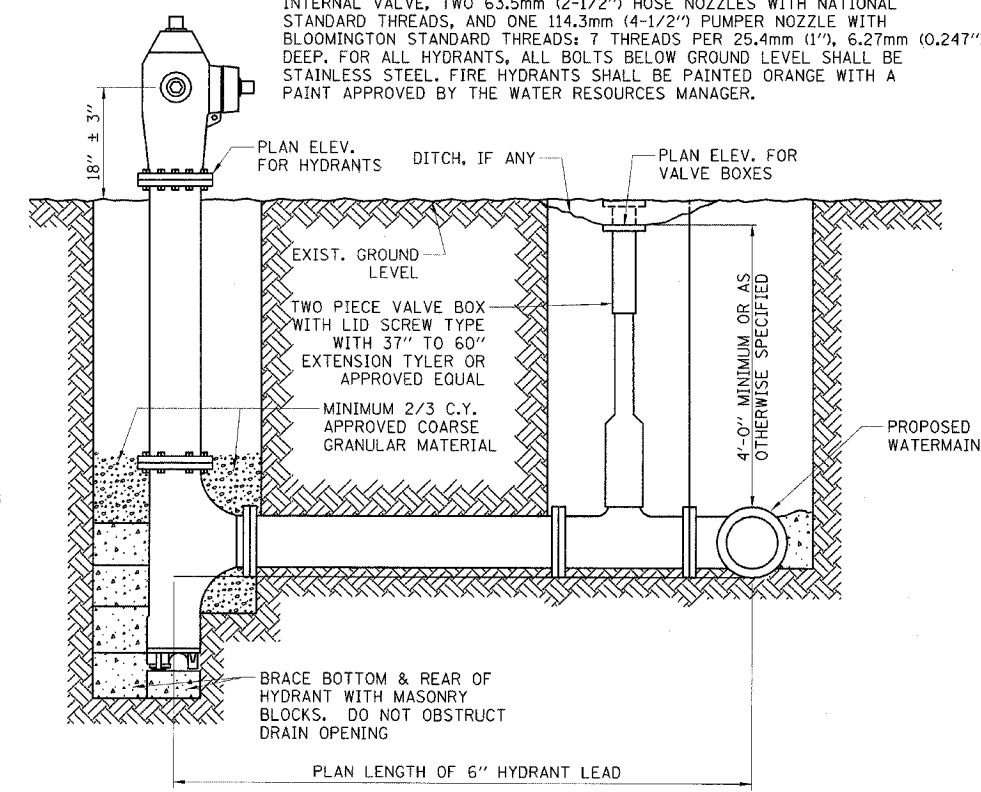


PIPE COVER DETAILS

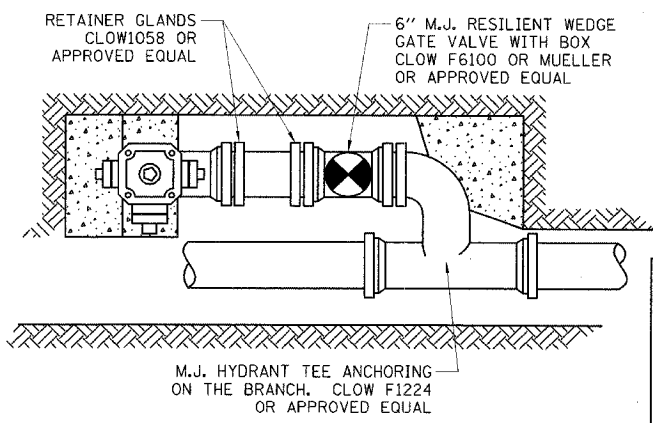


TYPICAL HYDRANT INSTALLATION PLAN

FIRE HYDRANTS SHALL BE: WATEROUS PACER, CLOW F-2500, MUELLER MODERN CENTURION, KENNEDY GUARDIAN. A STANDARD HYDRANT SHALL HAVE A MINIMUM 114.3mm (4-1/2") INTERNAL VALVE AND TWO 63.5mm (2-1/2") HOSE NOZZLES WITH NATIONAL STANDARD THREADS. A STEAMER HYDRANT SHALL HAVE A MINIMUM 133.4mm (5-1/4") INTERNAL VALVE, TWO 63.5mm (2-1/2") HOSE NOZZLES WITH NATIONAL STANDARD THREADS, AND ONE 114.3mm (4-1/2") PUMPER NOZZLE WITH BLOOMINGTON STANDARD THREADS: 7 THREADS PER 25.4mm (1"), 6.27mm (0.247") DEEP. FOR ALL HYDRANTS, ALL BOLTS BELOW GROUND LEVEL SHALL BE STAINLESS STEEL. FIRE HYDRANTS SHALL BE PAINTED ORANGE WITH A PAINT APPROVED BY THE WATER RESOURCES MANAGER.



TYPICAL HYDRANT INSTALLATION SECTION



PARALLEL MOUNT HYDRANT INSTALLATION

NOTE: ALL WATER MAIN BENDS SHALL BE MADE WITH RESTRAINED JOINT PIPE

WATER MAIN DETAILS
FELL AVENUE
BRIDGE REPLACEMENT

DRAWN BJB 12-03-04 DESIGNED LDK 12-01-04
CHECKED LDK 10-25-04 CHECKED LDK 10-25-04
FILE: 03S2019 DATE: 2-2-05



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NW1/4, SE 1/4, SEC. 33

NW1/4, SE 1/4, SEC. 33

NOTES:
ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH SECTION 280 OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION

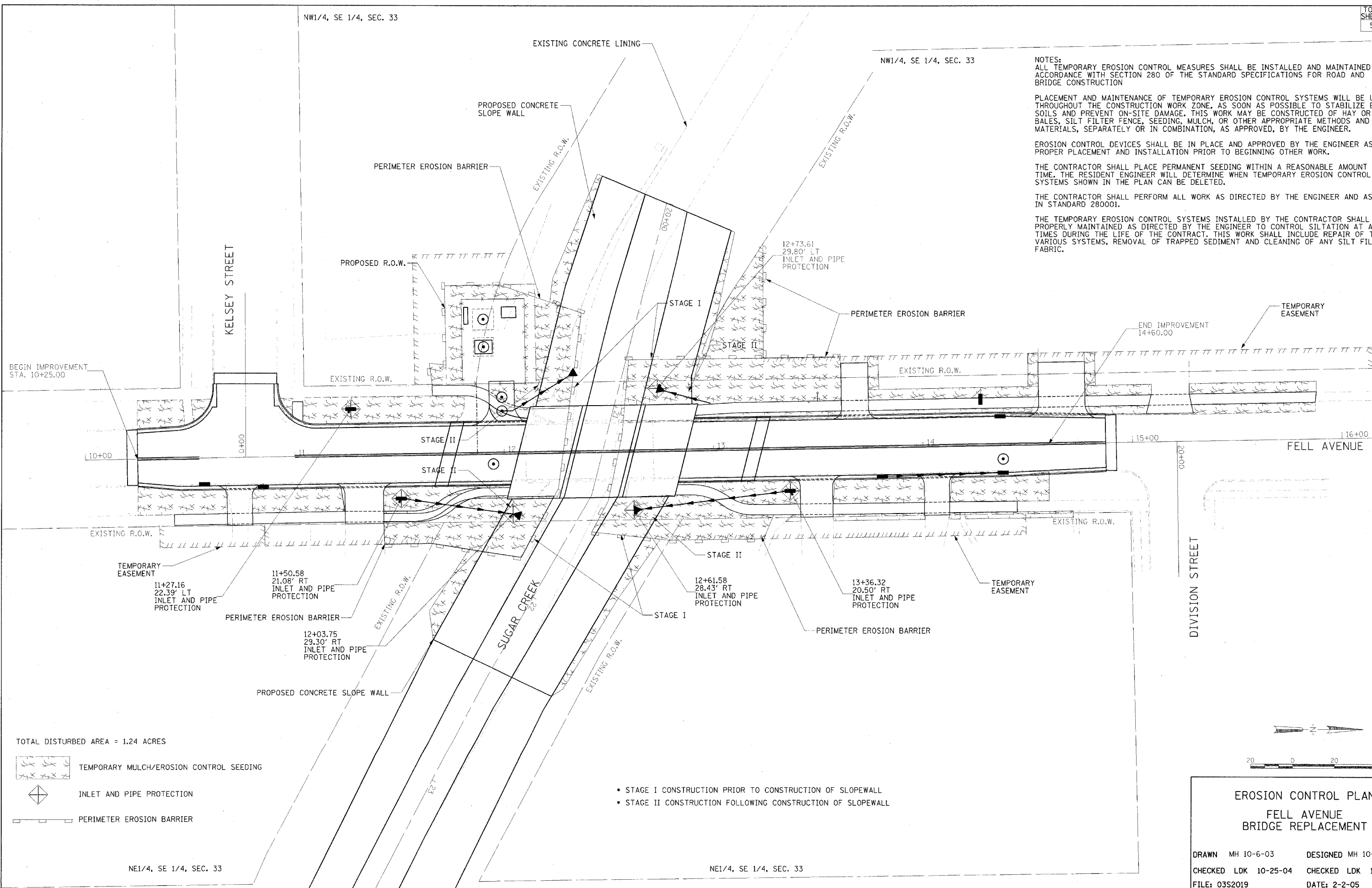
PLACEMENT AND MAINTENANCE OF TEMPORARY EROSION CONTROL SYSTEMS WILL BE UTILIZED THROUGHOUT THE CONSTRUCTION WORK ZONE, AS SOON AS POSSIBLE TO STABILIZE EXPOSED SOILS AND PREVENT ON-SITE DAMAGE. THIS WORK MAY BE CONSTRUCTED OF HAY OR STRAW BALES, SILT FILTER FENCE, SEEDING, MULCH, OR OTHER APPROPRIATE METHODS AND MATERIALS, SEPARATELY OR IN COMBINATION, AS APPROVED, BY THE ENGINEER.

EROSION CONTROL DEVICES SHALL BE IN PLACE AND APPROVED BY THE ENGINEER AS TO PROPER PLACEMENT AND INSTALLATION PRIOR TO BEGINNING OTHER WORK.

THE CONTRACTOR SHALL PLACE PERMANENT SEEDING WITHIN A REASONABLE AMOUNT OF TIME. THE RESIDENT ENGINEER WILL DETERMINE WHEN TEMPORARY EROSION CONTROL SYSTEMS SHOWN IN THE PLAN CAN BE DELETED.

THE CONTRACTOR SHALL PERFORM ALL WORK AS DIRECTED BY THE ENGINEER AND AS SHOWN IN STANDARD 280001.

THE TEMPORARY EROSION CONTROL SYSTEMS INSTALLED BY THE CONTRACTOR SHALL BE PROPERLY MAINTAINED AS DIRECTED BY THE ENGINEER TO CONTROL SILTATION AT ALL TIMES DURING THE LIFE OF THE CONTRACT. THIS WORK SHALL INCLUDE REPAIR OF THE VARIOUS SYSTEMS, REMOVAL OF TRAPPED SEDIMENT AND CLEANING OF ANY SILT FILTER FABRIC.



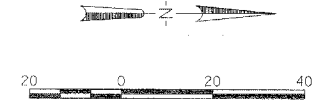
BEGIN IMPROVEMENT STA. 10+25.00

END IMPROVEMENT 14+60.00

TOTAL DISTURBED AREA = 1.24 ACRES

- TEMPORARY MULCH/EROSION CONTROL SEEDING
- INLET AND PIPE PROTECTION
- PERIMETER EROSION BARRIER

- STAGE I CONSTRUCTION PRIOR TO CONSTRUCTION OF SLOPEWALL
- STAGE II CONSTRUCTION FOLLOWING CONSTRUCTION OF SLOPEWALL



EROSION CONTROL PLAN
FELL AVENUE
BRIDGE REPLACEMENT

DRAWN MH 10-6-03	DESIGNED MH 10-6-04
CHECKED LDK 10-25-04	CHECKED LDK 10-25-04
FILE: 03S2019	DATE: 2-2-05

NE1/4, SE 1/4, SEC. 33

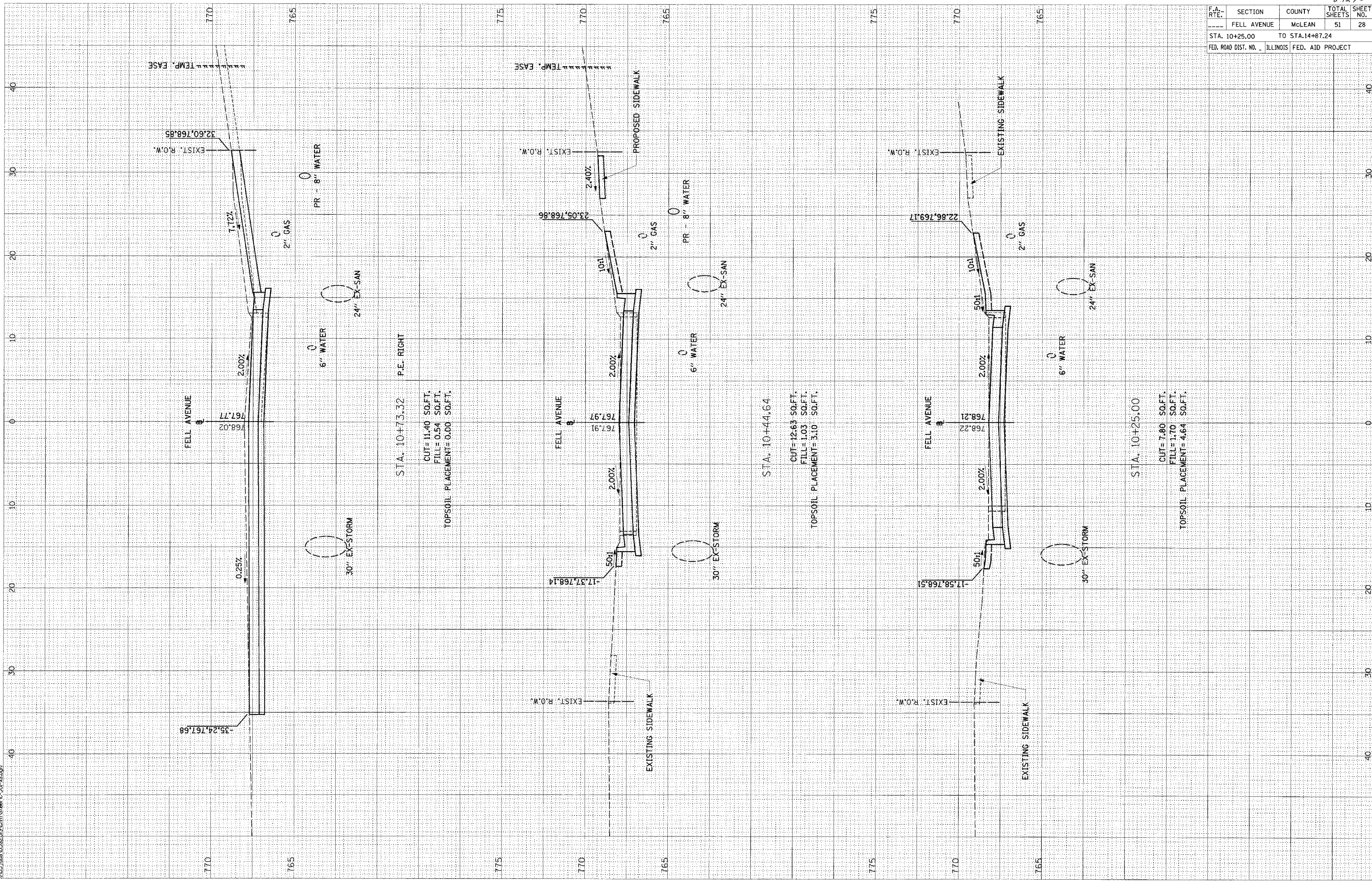
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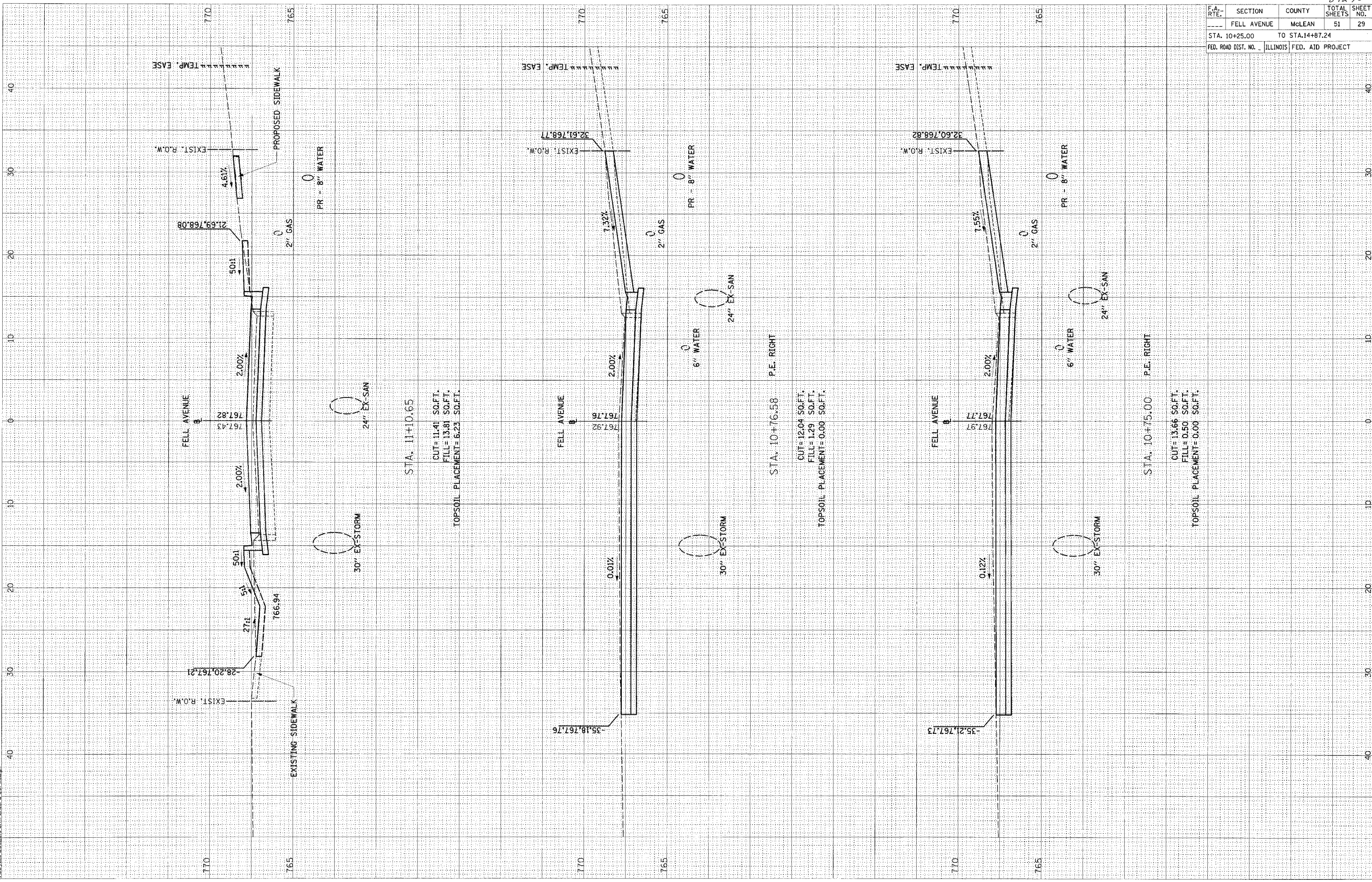


F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
---	FELL AVENUE	MCLEAN	51	28
STA. 10+25.00		TO STA. 14+87.24		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

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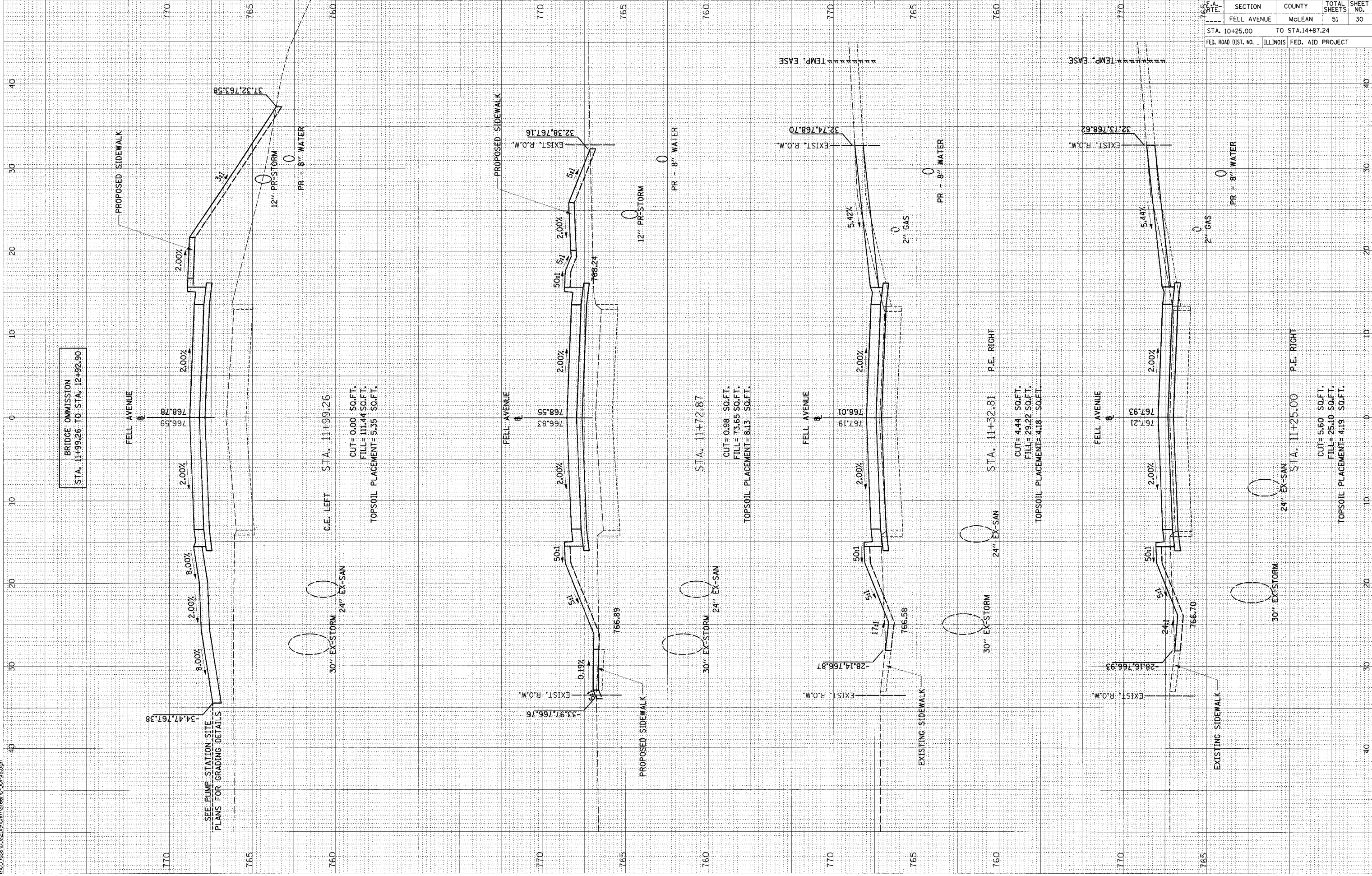


F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	FELL AVENUE	MCLEAN	51	29
STA. 10+25.00		TO STA. 14+87.24		
FED. ROAD DIST. NO. ILLINOIS		FED. AID PROJECT		

87270



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SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FELL AVENUE	McLEAN	51	30

STA. 10+25.00 TO STA. 14+87.24
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT

87280

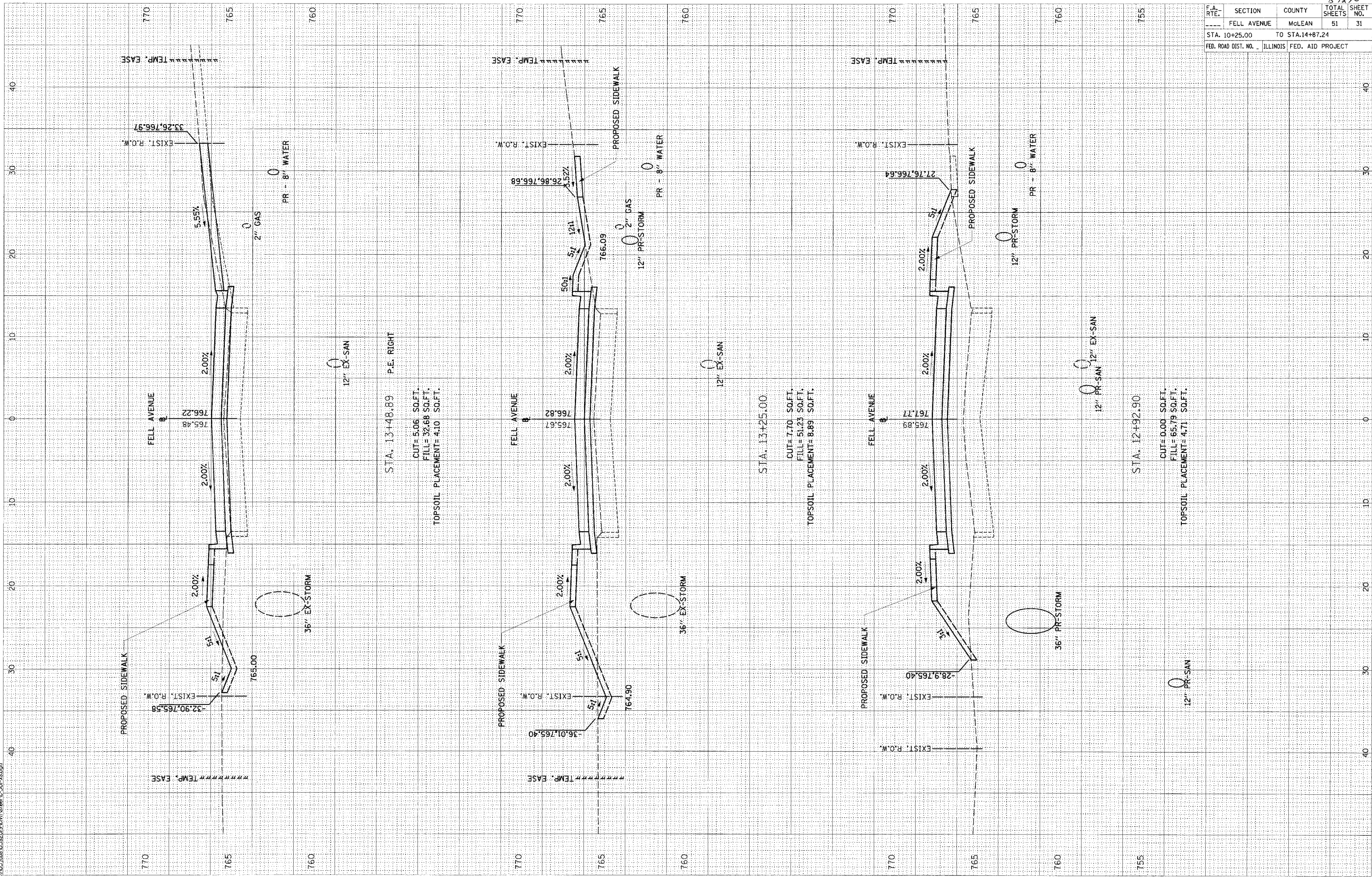
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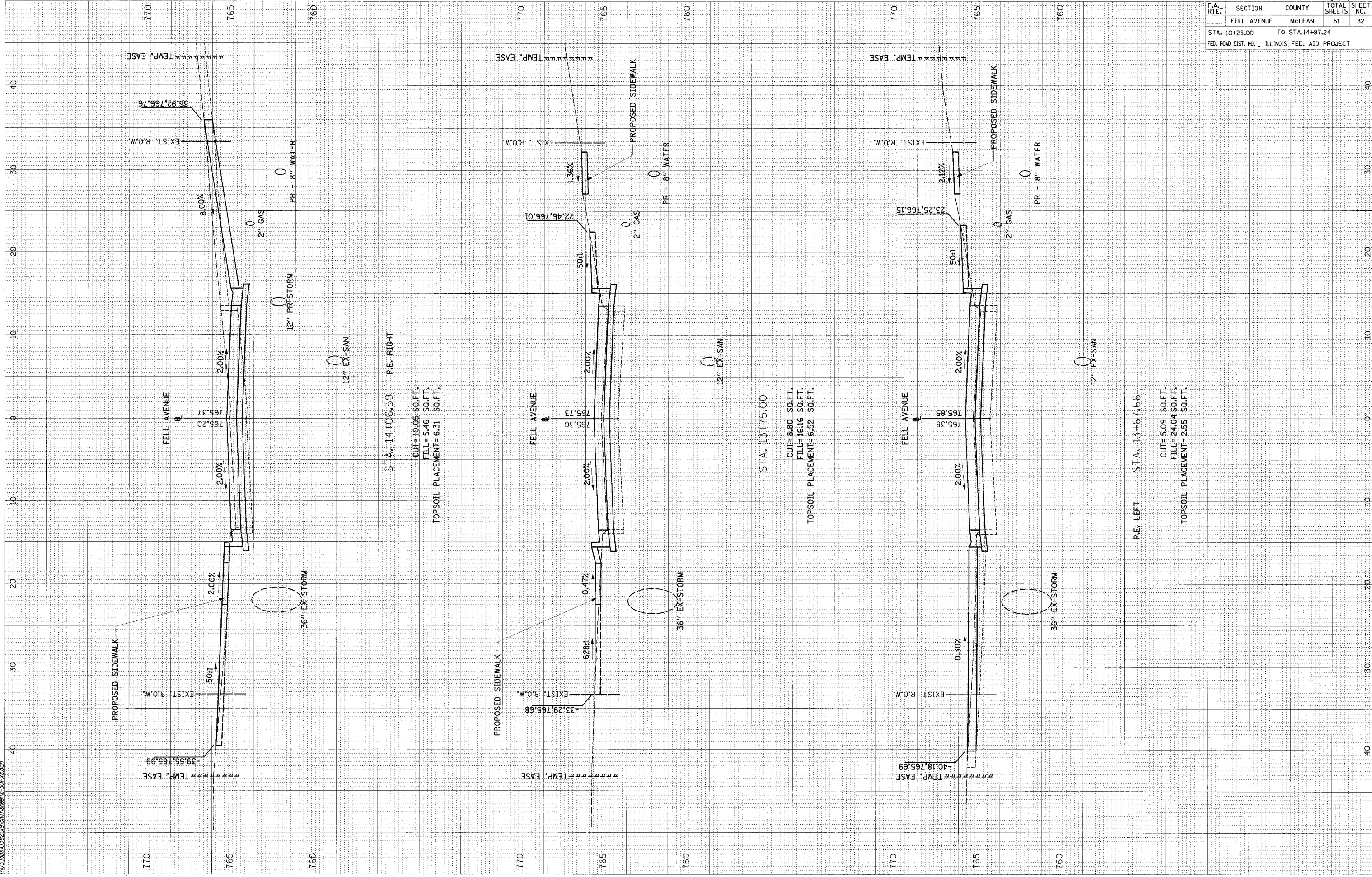
87270

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FELL AVENUE		MCLEAN	51	31
STA. 10+25.00 TO STA.14+87.24				
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		





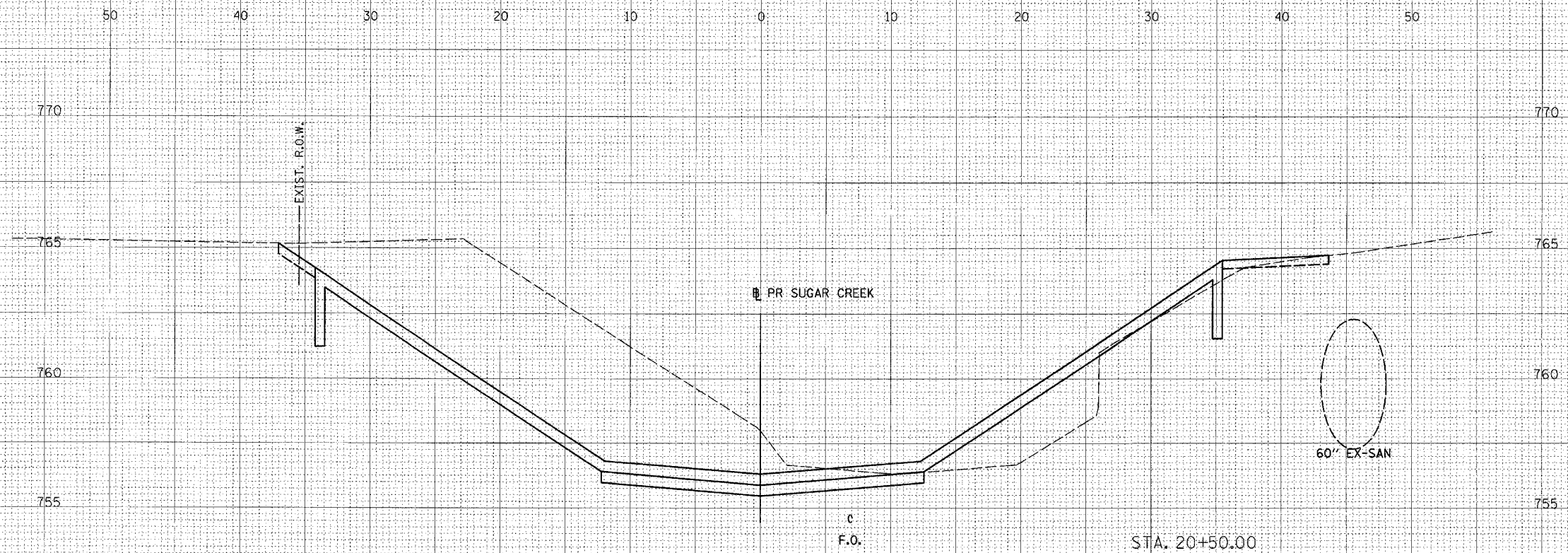
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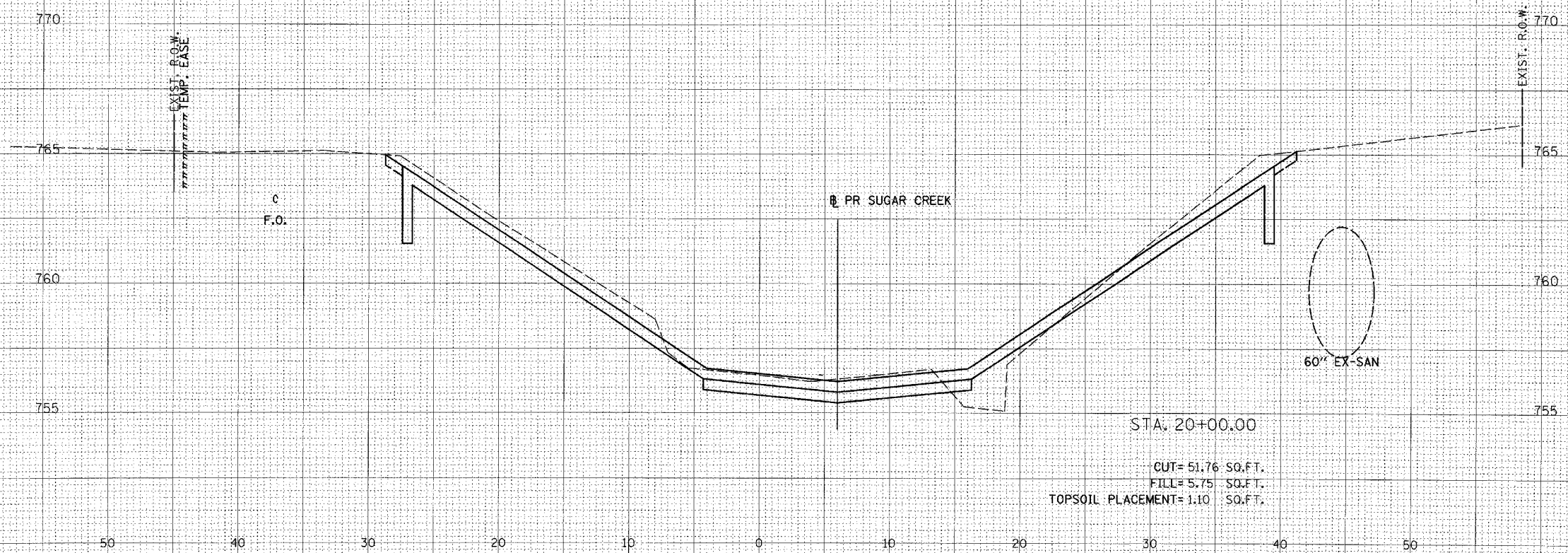
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
---	FELL AVENUE	McLEAN	51	32
STA. 10+25.00		TO STA. 14+87.24		
FED. ROAD DIST. NO. _ ILLINOIS		FED. AID PROJECT		

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
---	FELL AVENUE	MCLEAN	51	34
STA. 10+25.00		TO STA. 14+87.24		
FED. ROAD DIST. NO. .		ILLINOIS	FED. AID PROJECT	

87270



STA. 20+50.00
 CUT= 167.66 SQ.FT.
 FILL= 22.05 SQ.FT.
 TOPSOIL PLACEMENT= 3.85 SQ.FT.



STA. 20+00.00
 CUT= 51.76 SQ.FT.
 FILL= 5.75 SQ.FT.
 TOPSOIL PLACEMENT= 1.10 SQ.FT.

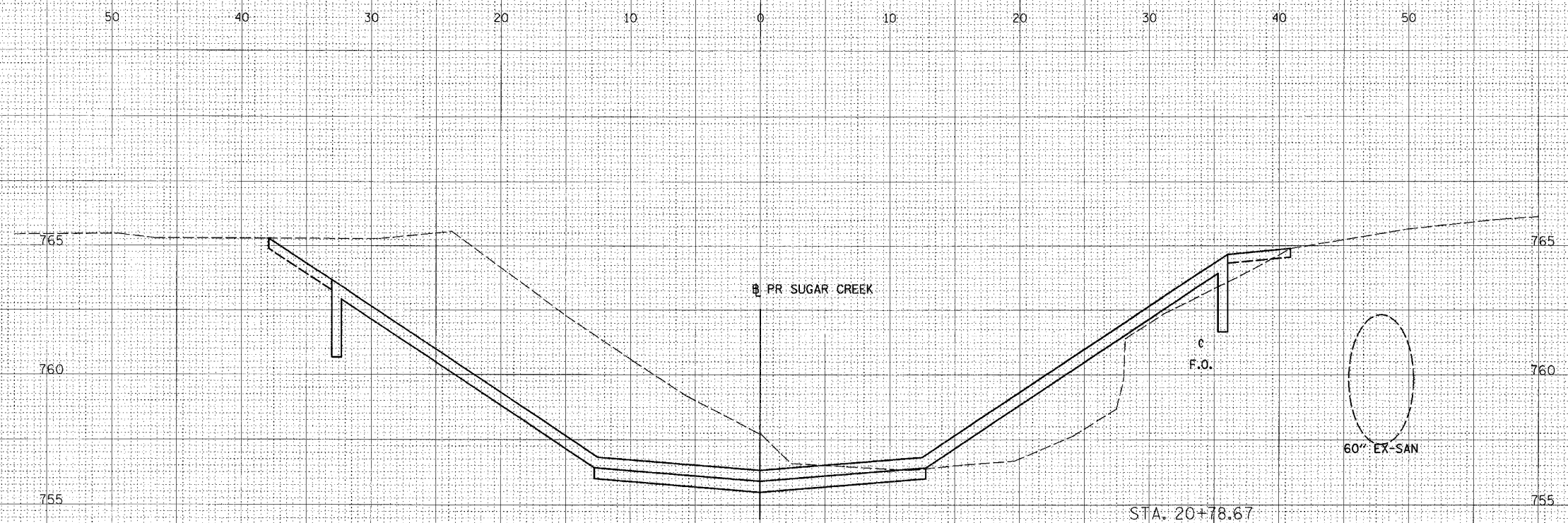


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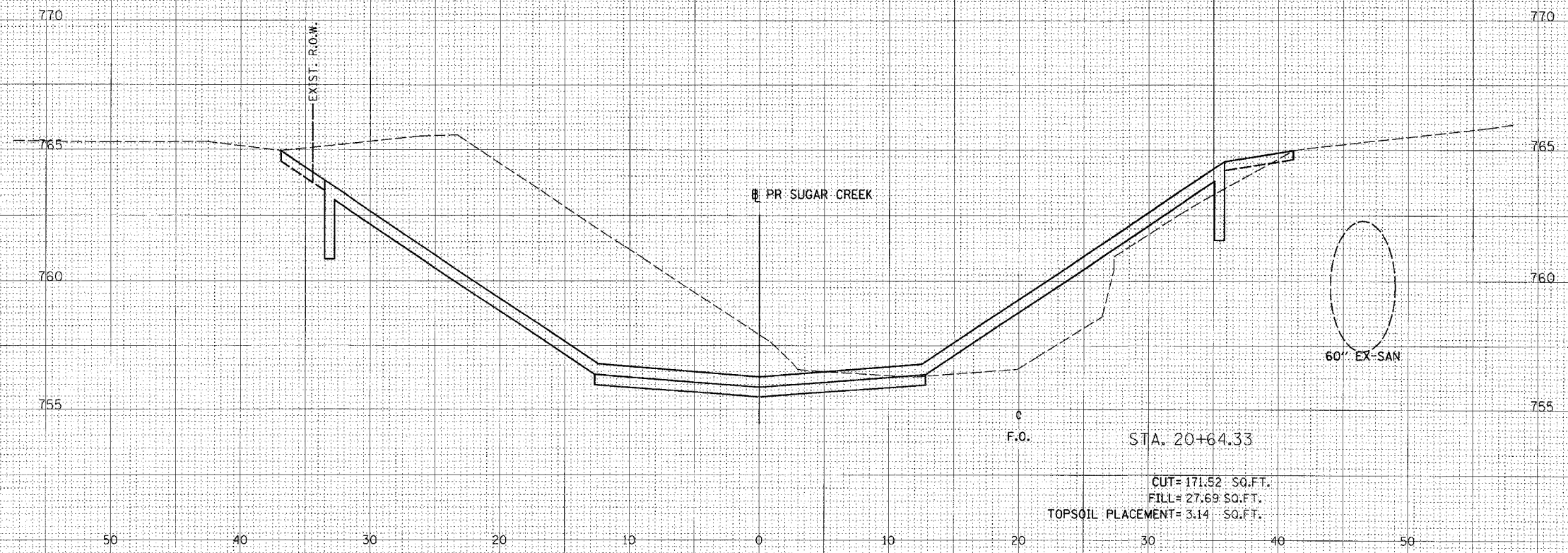
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F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
---	FELL AVENUE	McLEAN	51	35
STA. 10+25.00		TO STA. 14+87.24		
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

87290



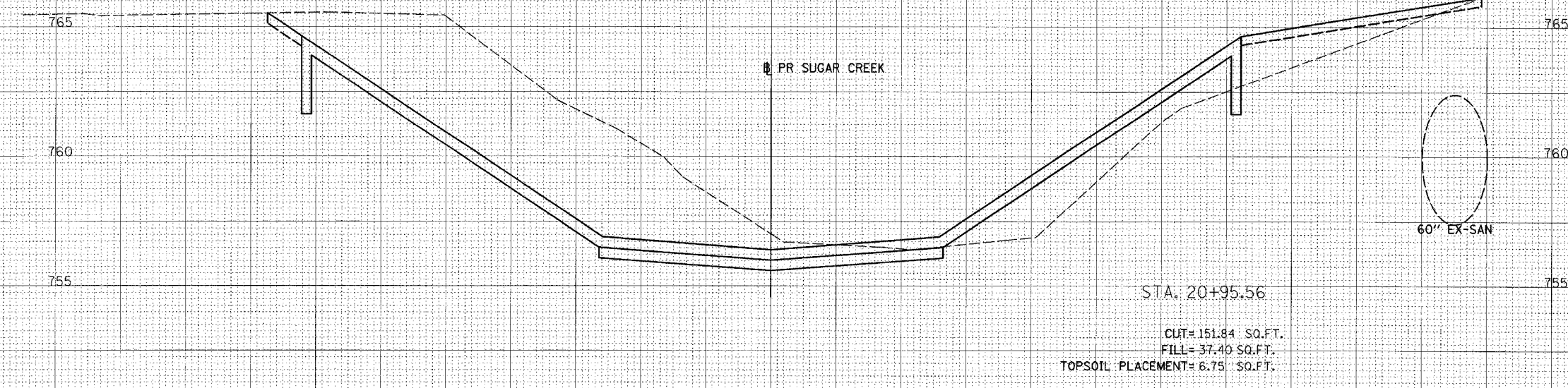
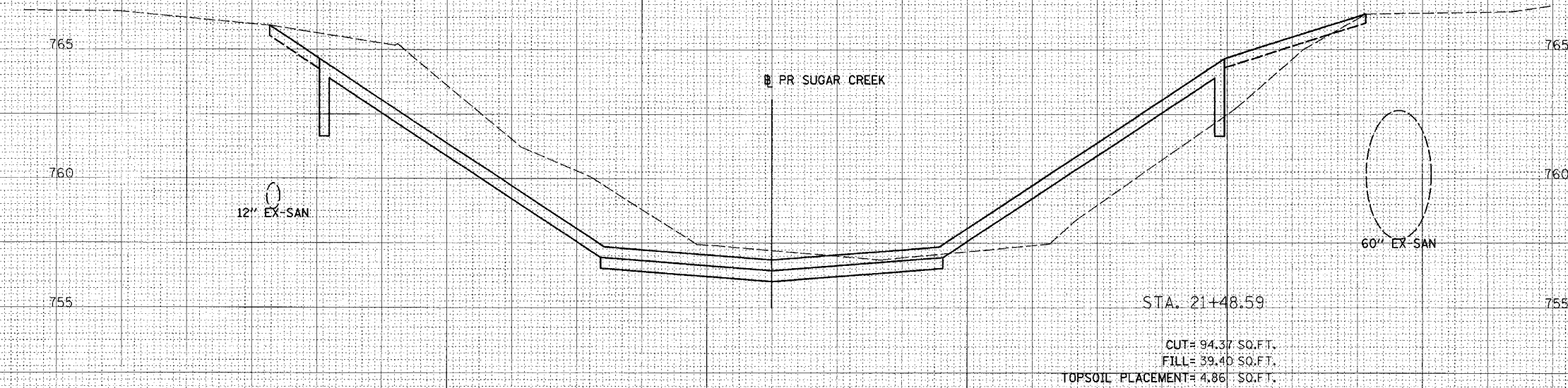
STA. 20+78.67
 CUT= 160.84 SQ.FT.
 FILL= 30.28 SQ.FT.
 TOPSOIL PLACEMENT= 3.57 SQ.FT.



STA. 20+64.33
 CUT= 171.52 SQ.FT.
 FILL= 27.69 SQ.FT.
 TOPSOIL PLACEMENT= 3.14 SQ.FT.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	FELL AVENUE	MCLEAN	51	36
STA. 10+25.00 TO STA. 14+87.24				
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

87270



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F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
---	FELL AVENUE	McLEAN	51	37
STA. 10+25.00 TO STA.14+87.24				
FED. ROAD DIST. NO. ILLINOIS			FED. AID PROJECT	

50 40 30 20 10 0 10 20 30 40 50

770 765 760

770 765 760

EXIST. R.O.W.

EXIST. R.O.W.

PR SUGAR CREEK

12" EX-SAN

60" EX-SAN

STA. 22+30.00

CUT= 79.11 SQ.FT.
FILL= 16.75 SQ.FT.
TOPSOIL PLACEMENT= 4.53 SQ.FT.

770 765 760

770 765 760

EXIST. R.O.W.

EXIST. R.O.W.

PR SUGAR CREEK

12" EX-SAN

60" EX-SAN

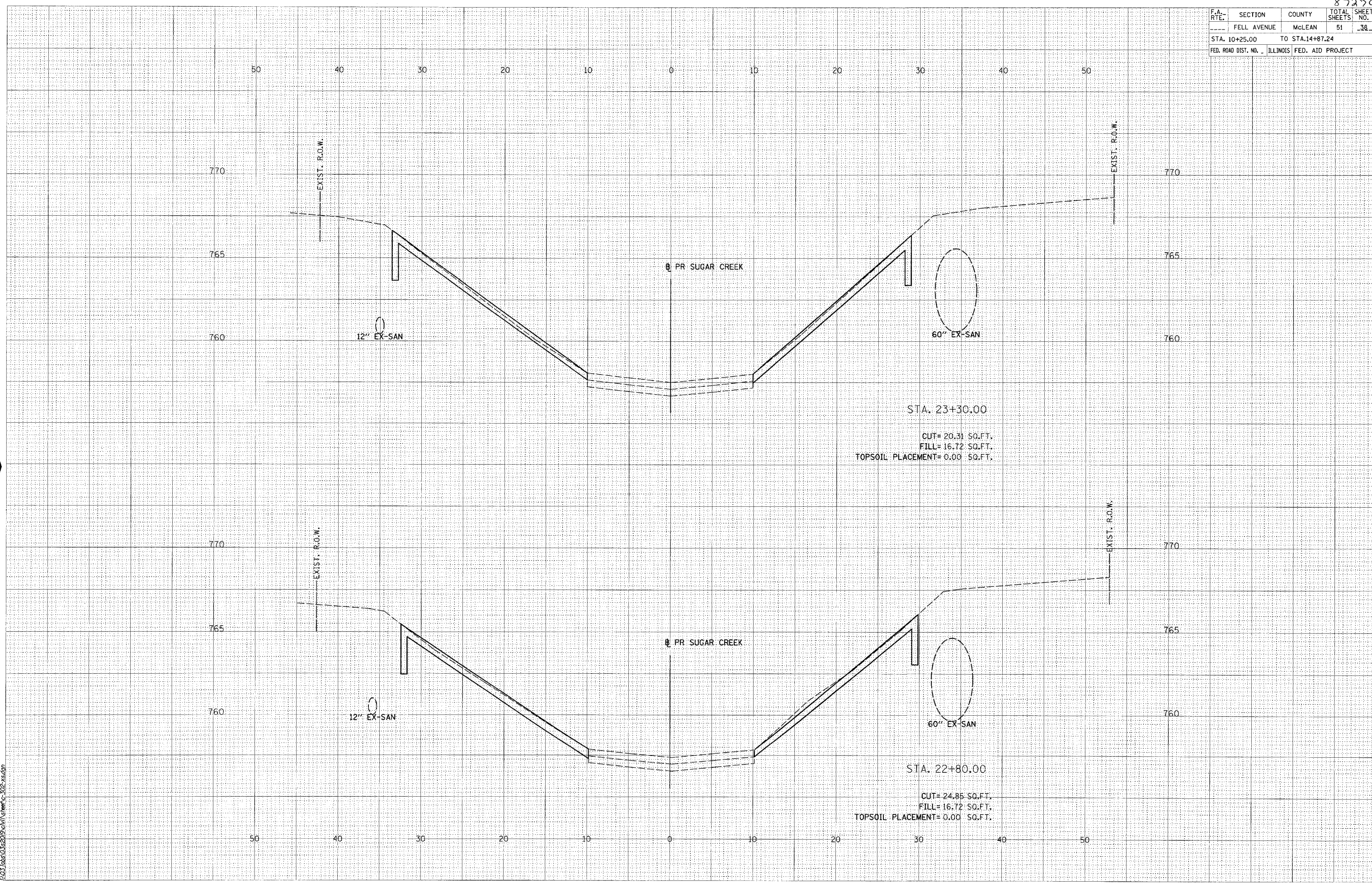
STA. 21+80.00

CUT= 47.68 SQ.FT.
FILL= 1.45 SQ.FT.
TOPSOIL PLACEMENT= 3.56 SQ.FT.

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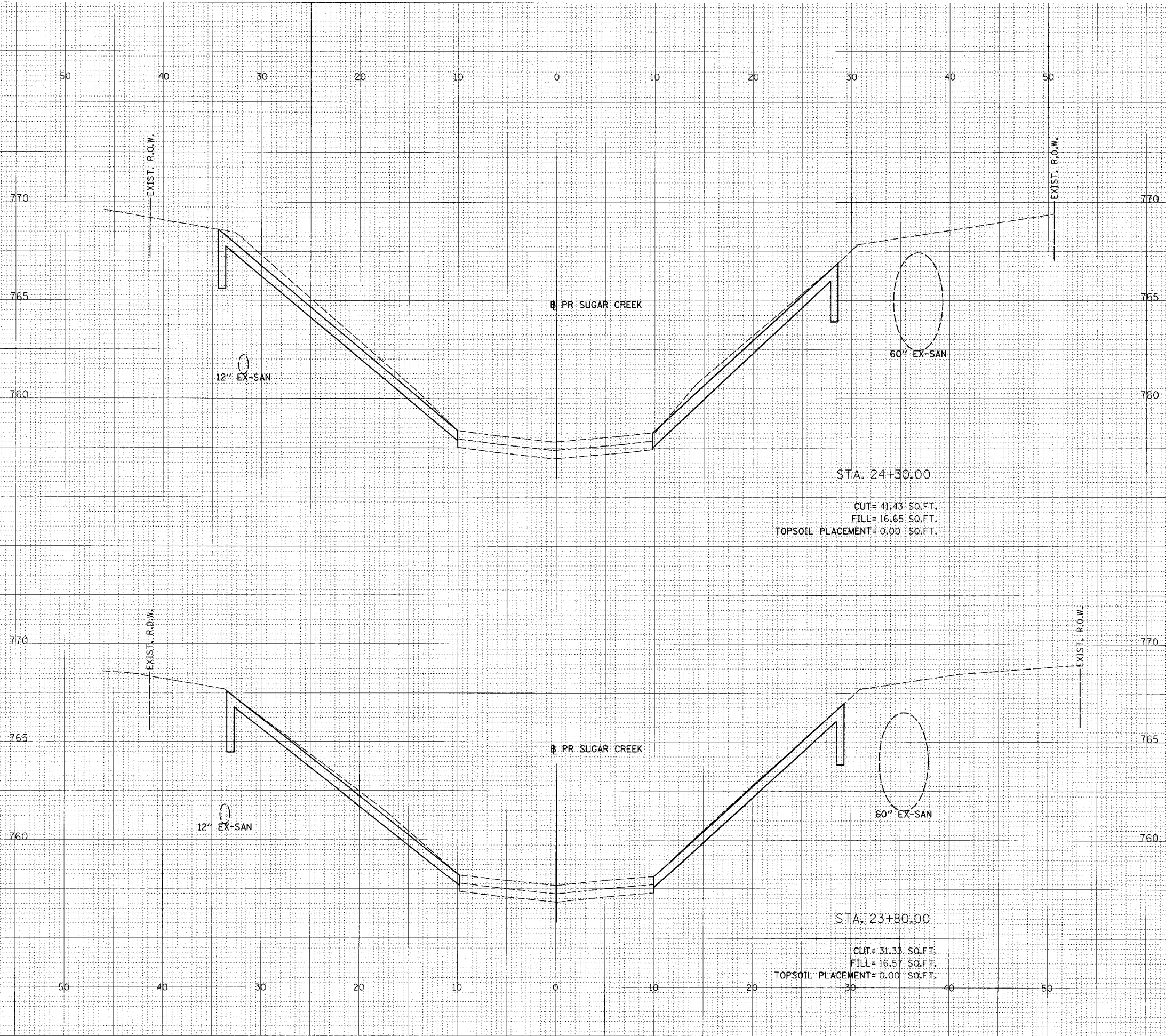
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	FELL AVENUE	McLEAN	51	38
STA. 10+25.00		TO STA. 14+87.24		
FED. ROAD DIST. NO. _		ILLINOIS	FED. AID PROJECT	



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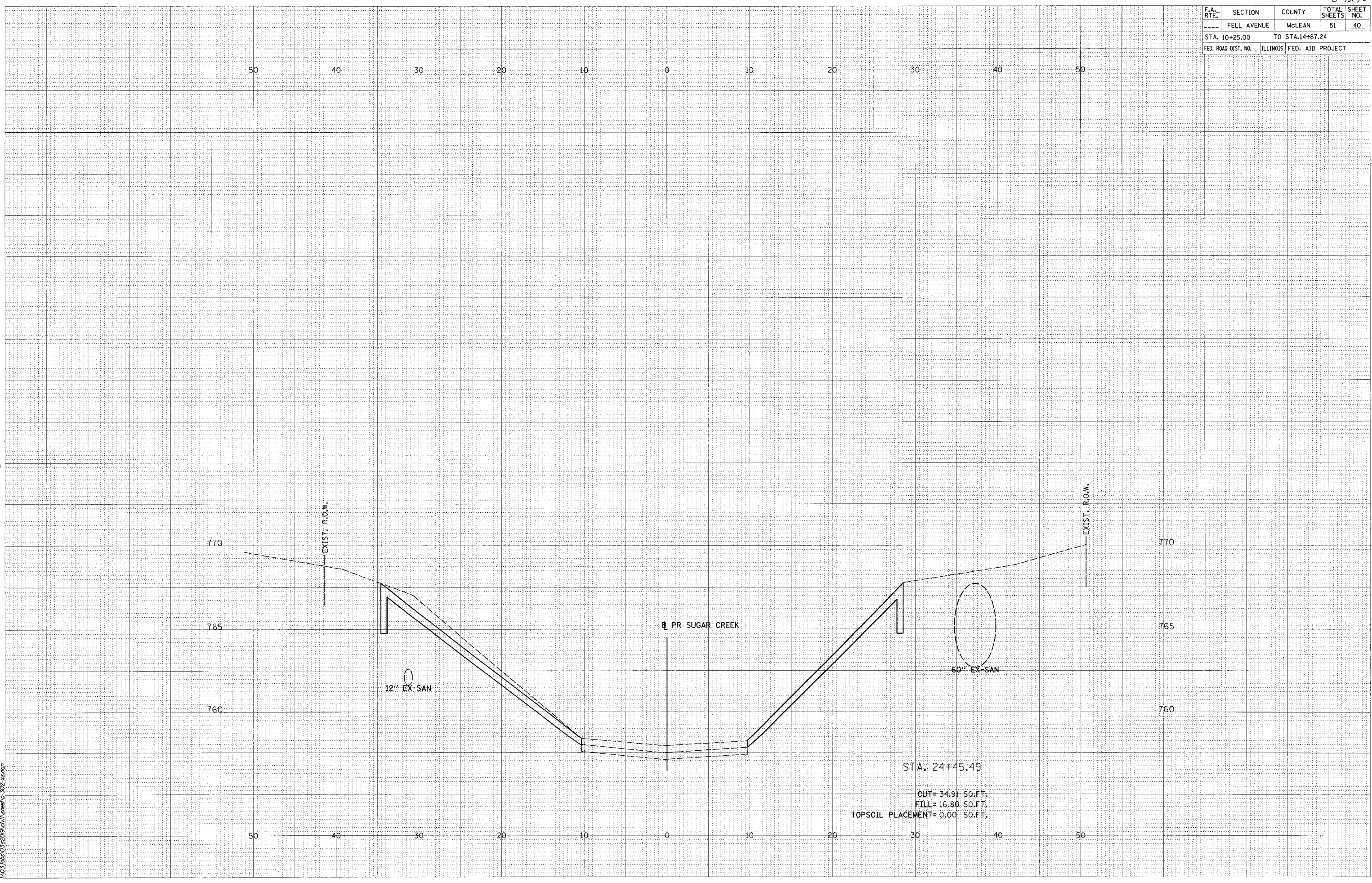
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F.A. - RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
---	FELL AVENUE	McLEAN	51	39
STA. 10+25.00		TO STA. 14+87.24		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



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F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
---	FELL AVENUE	McLEAN	51	40
STA. 10+25.00		TO STA. 14+87.24		
FED. ROAD DIST. NO. ILLINOIS		FED. AID PROJECT		



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STA. 24+45.49
 CUT= 34.91 SQ.FT.
 FILL= 16.80 SQ.FT.
 TOPSOIL PLACEMENT= 0.00 SQ.FT.

F.A. DIST.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6401	02-00325-00-BR	McLEAN	51	41
STA. TO STA.				
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

BENCH MARK : Chiseled "□" on SE corner of concrete bridge rail, on Fell St. 150' N. of Kelsey St. - Elev. 768.97

EXISTING STRUCTURE : No. 057-6304 - Single span concrete closed spandrel arch structure, 44'-0" bk. - bk.; 29'-0" c.-c. deck. To be removed by Contractor. No Salvage.

GENERAL NOTES

Reinforcement bars shall conform to the requirements of AASHTO M 31 or M 322 Grade 60.
 The Contractor shall make allowance for the deflection of forms, shrinkage and settlement of falsework, in addition to allowance for dead load deflection.
 The Contractor shall drive one metal shell test pile in a permanent location at both the South Abutment and at Pier 2 as directed by the Engineer before ordering the remainder of piles.
 For Pavement Removal and Channel Excavation between existing and new abutments, see Roadway Plans.
 Holes shall be precored for the metal shell piles which are to be driven at the abutment locations. Holes shall be drilled at proper locations through the embankment to elevation 756.00 and the piles shall be driven through these holes. If oversized holes are drilled, the void outside the pipe shall be filled with dry loose sand. The cost of complying with these requirements will not be paid for separately but shall be considered as included in the unit price for the pay items involved.
 The formwork for the deck shall be removed before placing the approach pavement.
 All construction joints shall be bonded.

DESIGN SPECIFICATIONS

2002 AASHTO Specifications

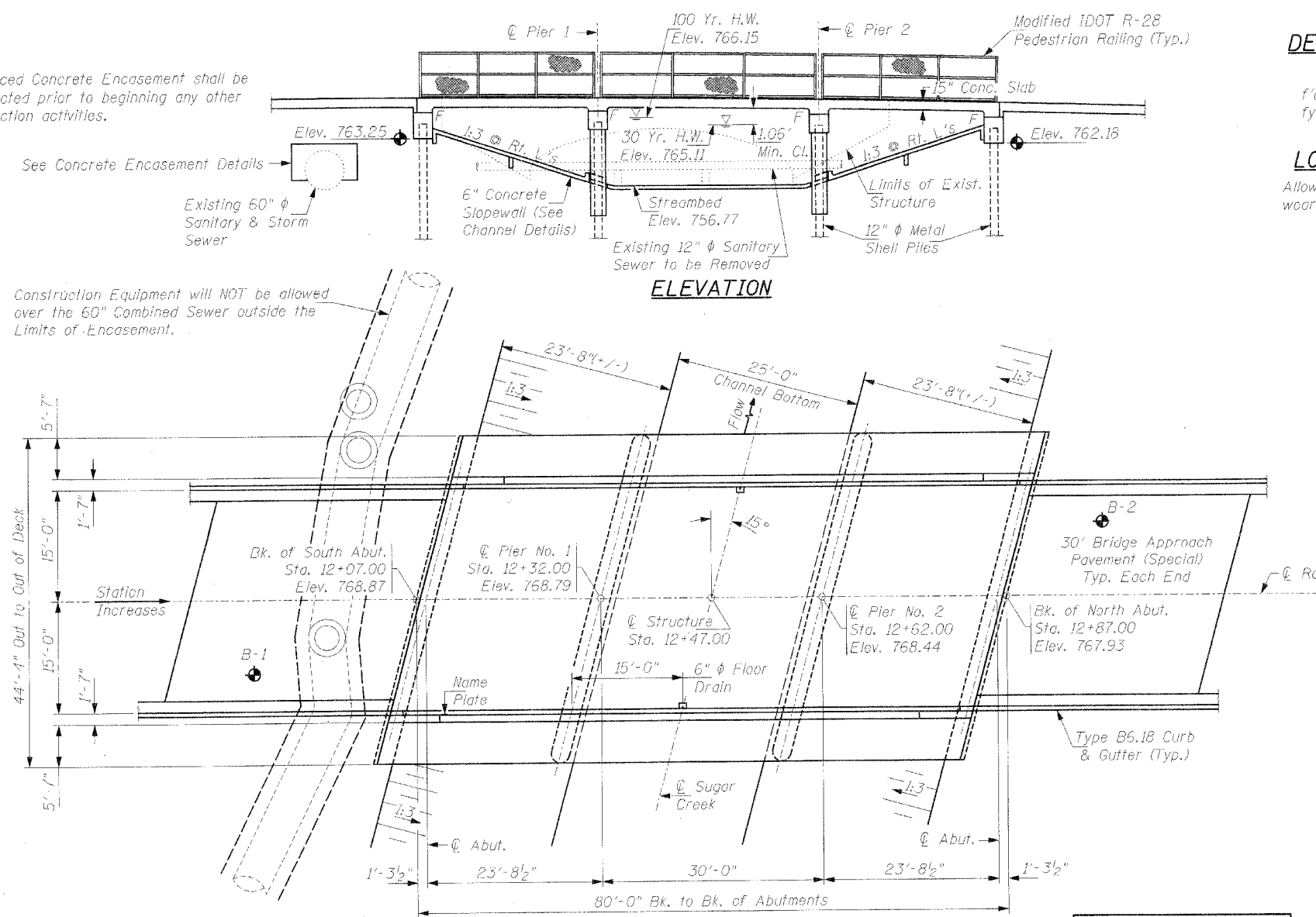
DESIGN STRESSES

FIELD UNITS
 f'c = 3,500 psi
 fy = 60,000 psi (Reinf.)

LOADING HS20-44

Allow 50 lb./sq. ft. for future wearing surface.

NOTE:
 Reinforced Concrete Encasement shall be constructed prior to beginning any other construction activities.



TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Removal of Existing Structure No. 1	Each			1
Concrete Structures	Cu. Yd.		108.0	108.0
Concrete Superstructure	Cu. Yd.	191.6		191.6
Reinforcement Bars, Epoxy Coated	Pound	42630	11220	53850
Furnishing Metal Pile Shells 12"	Foot		975	975
Driving and Filling Shells	Foot		975	975
Test Pile Metal Shells	Each		2	2
Name Plates	Each	1		1
Pedestrian Railing	Foot	158		158
Protective Coat	Sq. Yd.	474		474
Floor Drains	Each	2		2
Structure Excavation	Cu. Yd.		63	63
Bridge Deck Grooving	Sq. Yd.	264		264
Underwater Structure Excavation Protection	Each		2	2

I CERTIFY THAT TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF, THIS BRIDGE DESIGN IS STRUCTURALLY ADEQUATE FOR THE DESIGN LOADING SHOWN ON THE PLANS. THE DESIGN IS AN ECONOMICAL ONE FOR THE STYLE OF STRUCTURE AND COMPLIES WITH THE REQUIREMENTS OF THE CURRENT "AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES."



Gerald B. Rotherham
 LICENSED STRUCTURAL ENGINEER

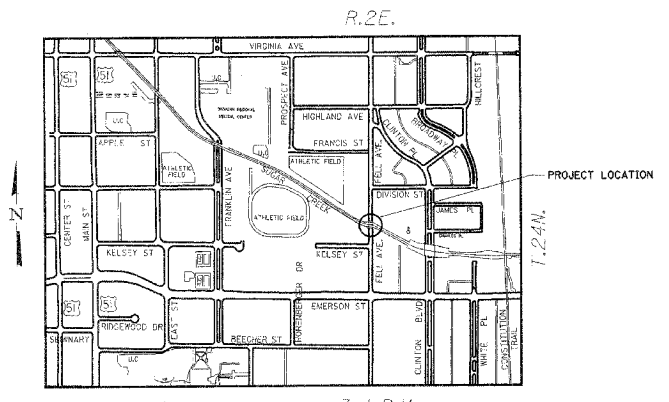
Feb 11, 2006
 DATE
 LIC. EXP. DATE: *11/20/2006*

SUGAR CREEK
 BUILT BY
 CITY OF BLOOMINGTON
 SEC. 02-00325-00-BR
 STA. 12+47.00
 STR. NO. 057-6338
 LOADING HS20
NAME PLATE
 See Std. 515001

WATERWAY INFORMATION

Drainage Area = 9.75 Sq. Mi. Low Grade Elev. 767.59 @ Sta. 13+00

Flood	Freq. Yr.	Q		Nat. Head - Ft.	Headwater El.	
		C.F.S.	Opening Sq. Ft.		Exist. Prop.	Exist. Prop.
Design	30	1,560	219 314	765.11	1.54 0.39	766.65 765.50
Base	100	2,270	219 392	766.15	1.54 0.28	767.69 766.43
Overtopping						
Max. Calc.	500	3,420	219 418	766.48	1.85 0.25	768.33 766.73



LOCATION SKETCH

GENERAL PLAN

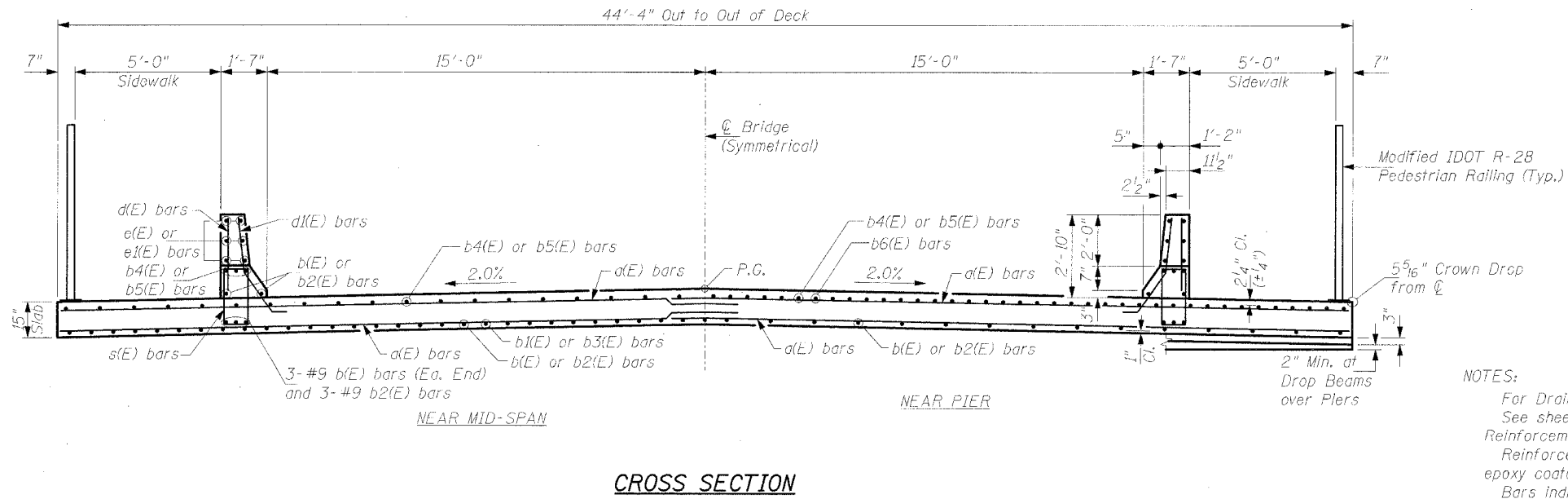
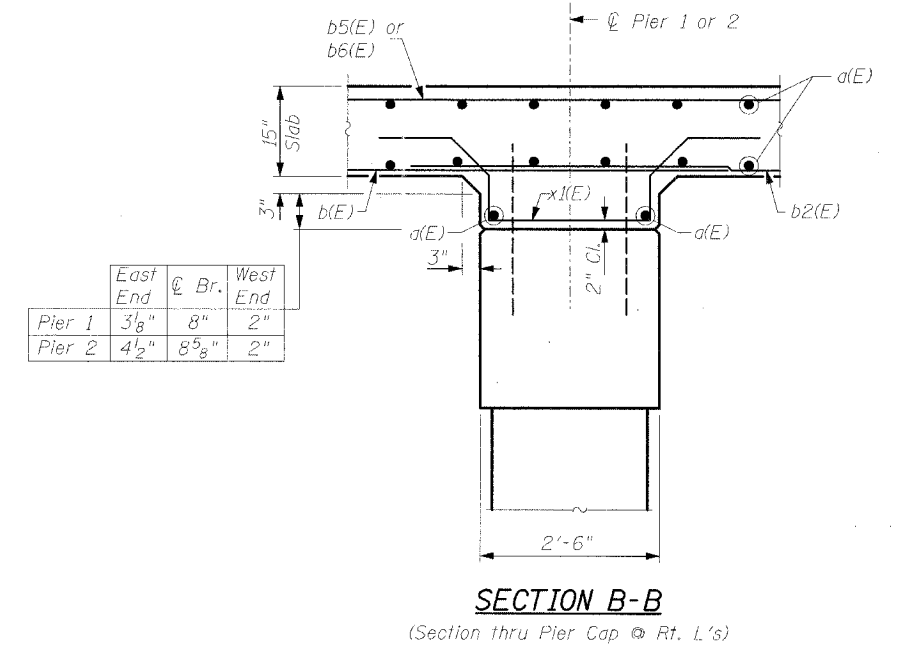
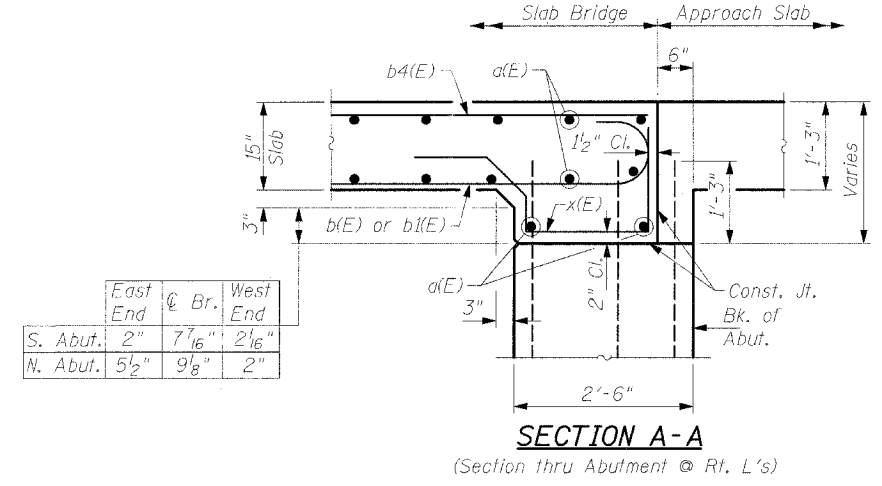
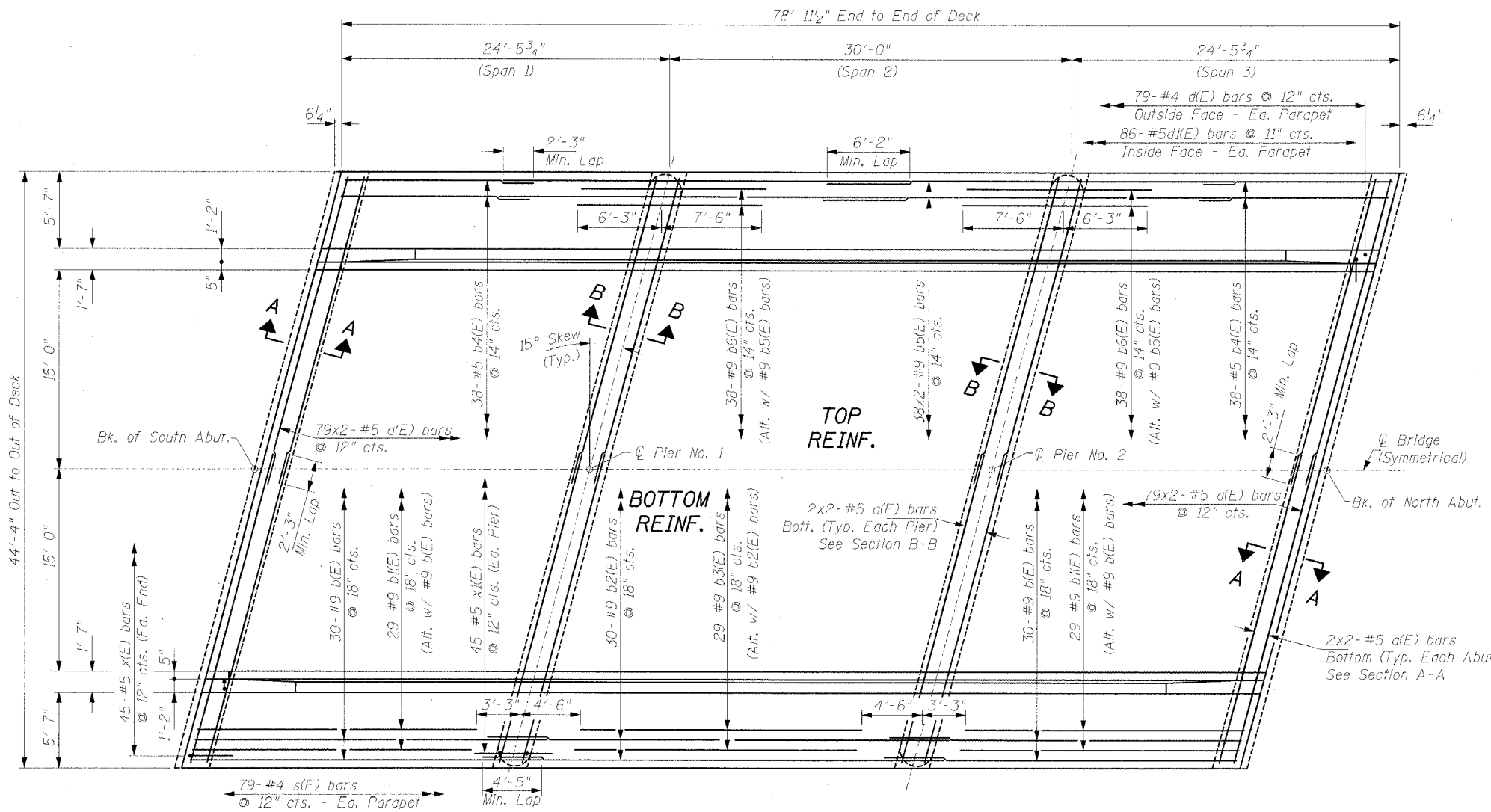
FELL AVENUE over SUGAR CREEK
 FAU ROUTE 6401 SECTION 02-00325-00-BR
 BLOOMINGTON, ILLINOIS McLEAN COUNTY
 STATION 12+47.00
 STRUCTURE NO. 057-6338

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JOB NO.
0352019
DATE
01/21/05

02/11/2005
 740310050352019 Strach, Steven
 DWS 02/26/04
 DAB 01/17/05
 GBR 01/17/05



NOTES:

For Drain locations see sheet 1 of 11.
See sheet 3 of 11 for Superstructure Details, Parapet Reinforcement and Bill of Material.
Reinforcement bars designated (E) shall be epoxy coated.
Bars indicated thus: 38x2-#9 etc. indicates 38 lines of bars with 2 lengths per line.
Space reinforcement bars to clear drains.

SUPERSTRUCTURE

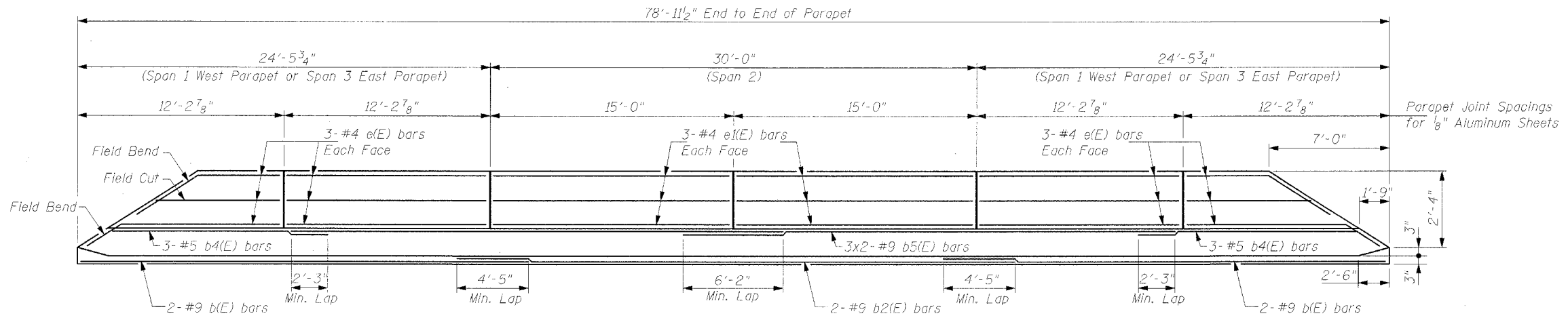
FELL AVENUE over SUGAR CREEK
FAU ROUTE 6401 SECTION 02-00325-00-BR
BLOOMINGTON, ILLINOIS McLEAN COUNTY
STATION 12+47.00
STRUCTURE NO. 057-6338

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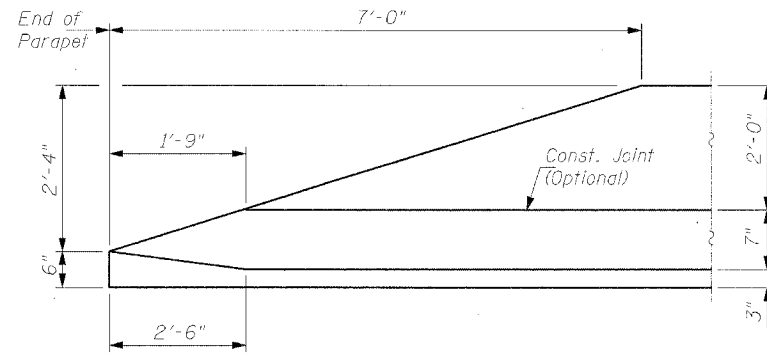
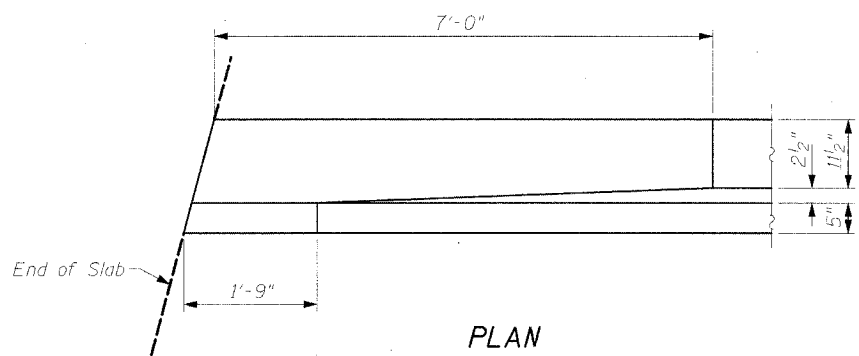
HANSON

JOB NO. 03S2019
DATE 01/21/05

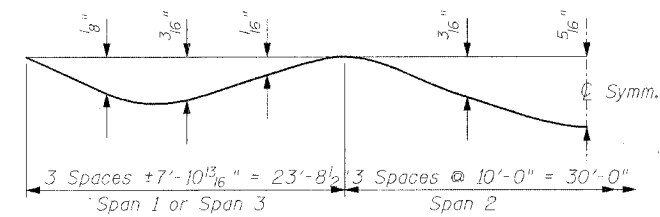
02/07/05
 07/14/05
 01/21/05
 01/21/05



INSIDE ELEVATION OF PARAPET



END OF PARAPET DETAIL



DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete only.)

SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape	
d(E)	332	#5	24'-0"	—	
b(E)	68	#9	27'-10"	—	
b1(E)	58	#9	22'-4"	—	
b2(E)	34	#9	34'-6"	—	
b3(E)	29	#9	21'-0"	—	
b4(E)	88	#5	14'-6"	—	
b5(E)	88	#9	30'-4"	—	
b6(E)	76	#9	13'-9"	—	
d(E)	158	#4	2'-8"	—	
d1(E)	172	#5	4'-5"	—	
e(E)	48	#4	11'-11"	—	
e1(E)	24	#4	14'-8"	—	
s(E)	158	#4	5'-11"	—	
x(E)	90	#5	5'-3"	—	
x1(E)	90	#5	6'-11"	—	
Reinforcement Bars, Epoxy Coated				Pound	42,630
Concrete Superstructure				Cu. Yds.	191.6

Reinforcement bars designated (E) shall be epoxy coated.

Bars indicated thus 3x2- #9 etc. indicates 3 lines of bars with 2 lengths per line.

See Sheet 1 of 11 for locations of floor drains.

SUPERSTRUCTURE DETAILS

FELL AVENUE over SUGAR CREEK
 FAU ROUTE 6401 SECTION 02-00325-00-BR
 BLOOMINGTON, ILLINOIS McLEAN COUNTY
 STATION 12+47.00
 STRUCTURE NO. 057-6338

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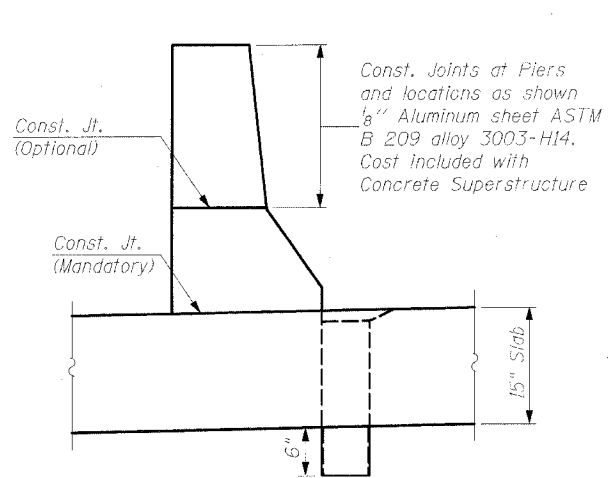


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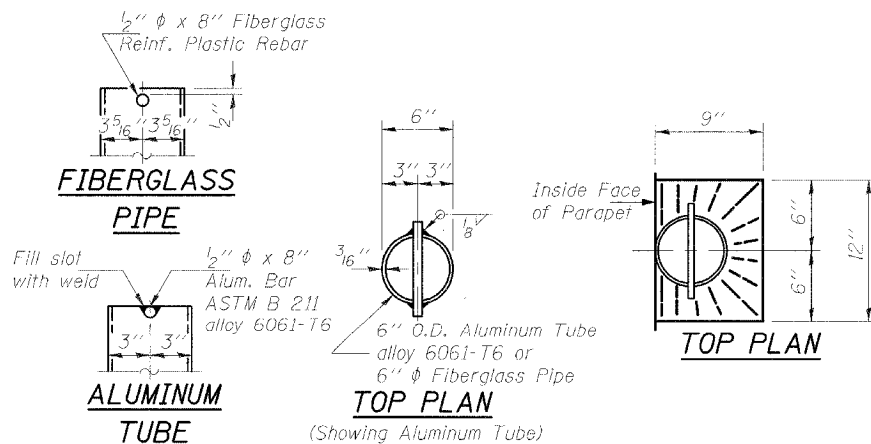
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DATE

01/21/05



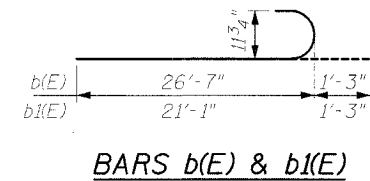
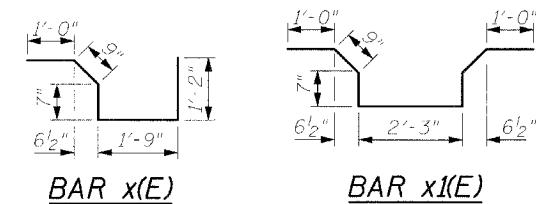
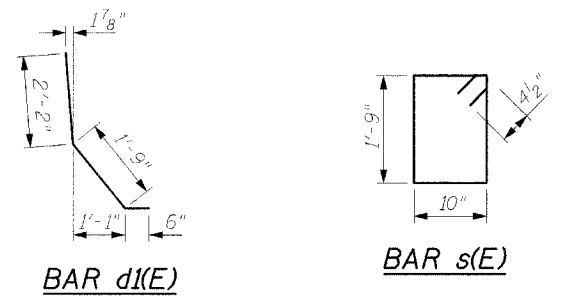
PARAPET JOINT DETAILS

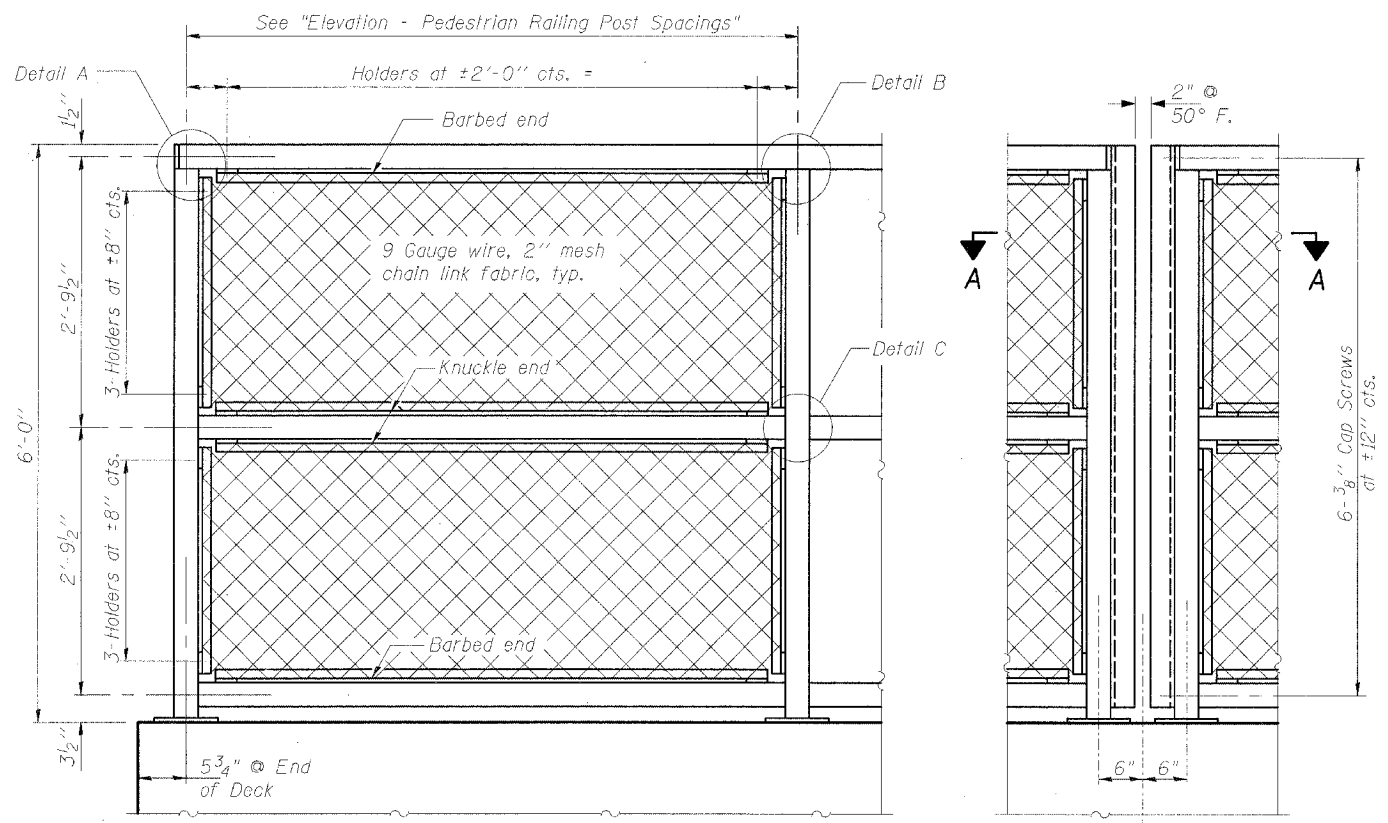


FLOOR DRAIN DETAILS

Notes:

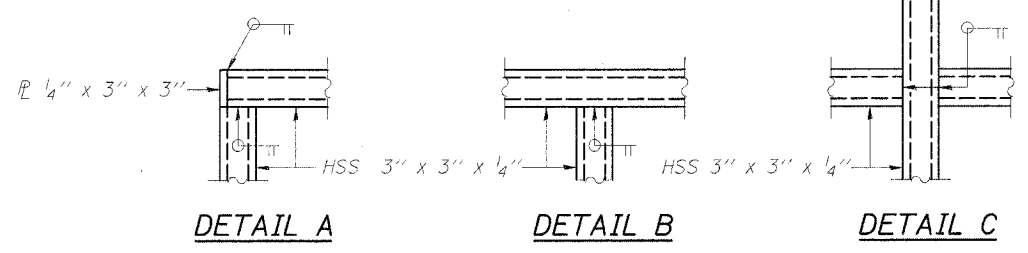
The exterior surfaces of the floor drains shall be coated or pigmented by the manufacturer with a color that matches the concrete.
 Fiberglass pipe shall conform to ASTM D 2996, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum.





ELEVATION
(Inside Face)

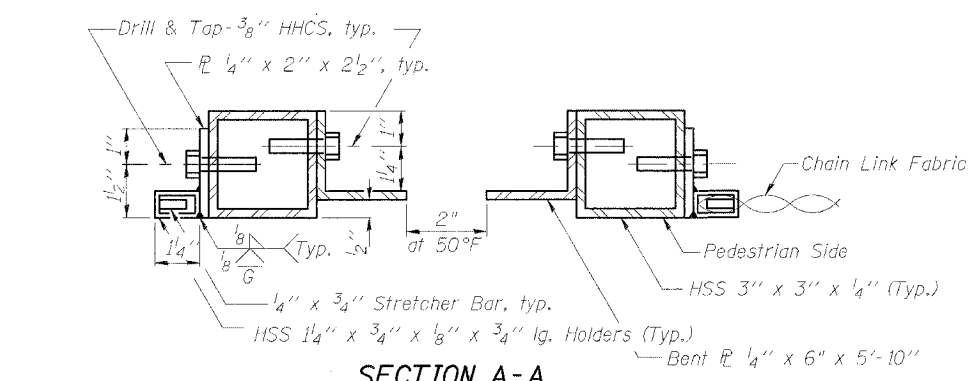
ELEVATION
(At Piers)



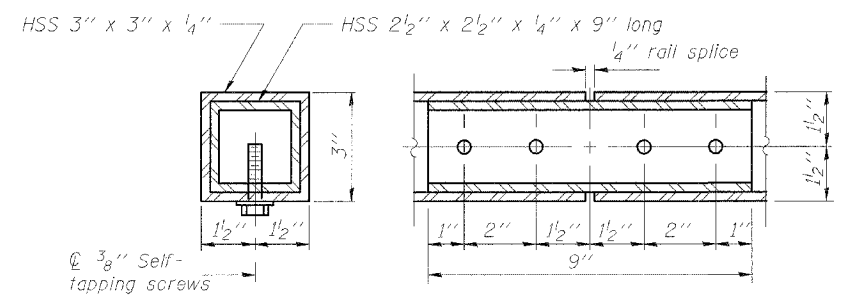
DETAIL A

DETAIL B

DETAIL C



SECTION A-A



RAIL SPLICE

NOTES

Railing shall be according to Section 509 of the Standard Specifications, except as noted, and will be paid for at the Contract Unit Price per foot for Pedestrian Railing.

The 9 gauge fabric ties shall be according to Article 1006.27(d) of the Standard Specifications.

Installation of the chain link fabric shall be according to Section 664 of the Standard Specifications.

Hollow structural sections shall conform to the requirements of ASTM designation A 500, Grade B, structural steel tubing.

All other steel shapes and plates shall conform to the requirements of AASHTO M 270 Grade 36.

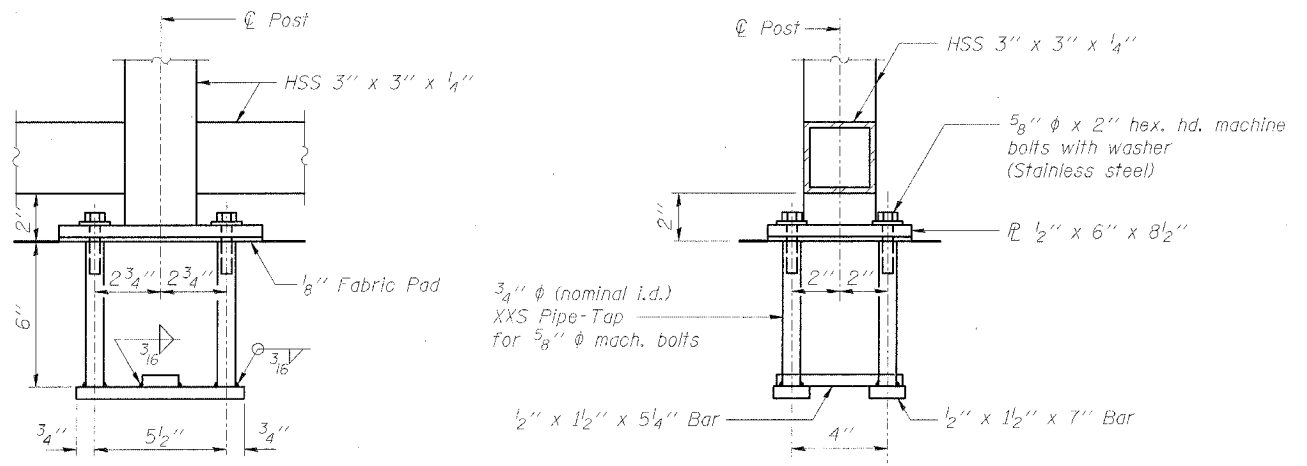
The chain link fabric shall be placed along Pedestrian Side as shown on Section A-A.

Stretcher bars shall be used at all four sides of each panel. Space reinforcement to miss anchor rods.

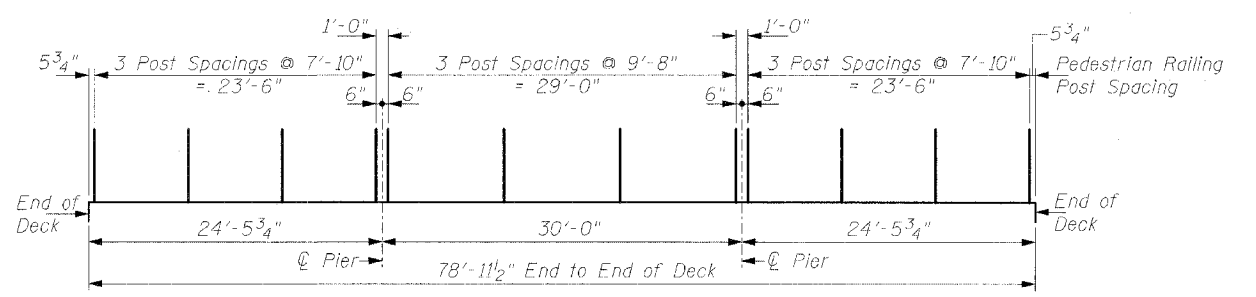
All posts, railing, splices, anchor devices, and bent plates shall be galvanized after shop fabrication according to AASHTO M 111 and ASTM A 385. All bolts, nuts, washers, and anchor rods shall be galvanized according to AASHTO M 232 except stainless steel bolts as noted.

Vent holes for galvanizing shall be placed in the posts and rails at locations that will not allow the accumulation of moisture in the members.

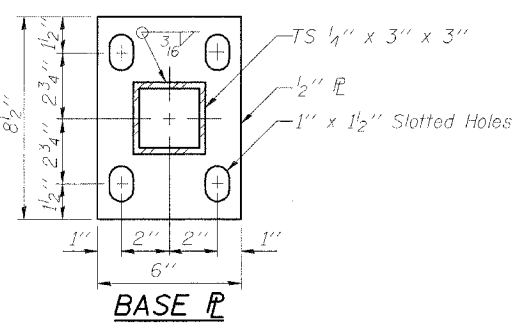
The chain link fabric shall conform to the requirements of Article 1006.27(a)(1), b or c of the Standard Specifications.



ANCHOR BOLT DETAILS



ELEVATION - PEDESTRIAN RAILING POST SPACINGS



BASE PL

BILL OF MATERIAL

Item	Unit	Quantity
Pedestrian Railing	Foot	156

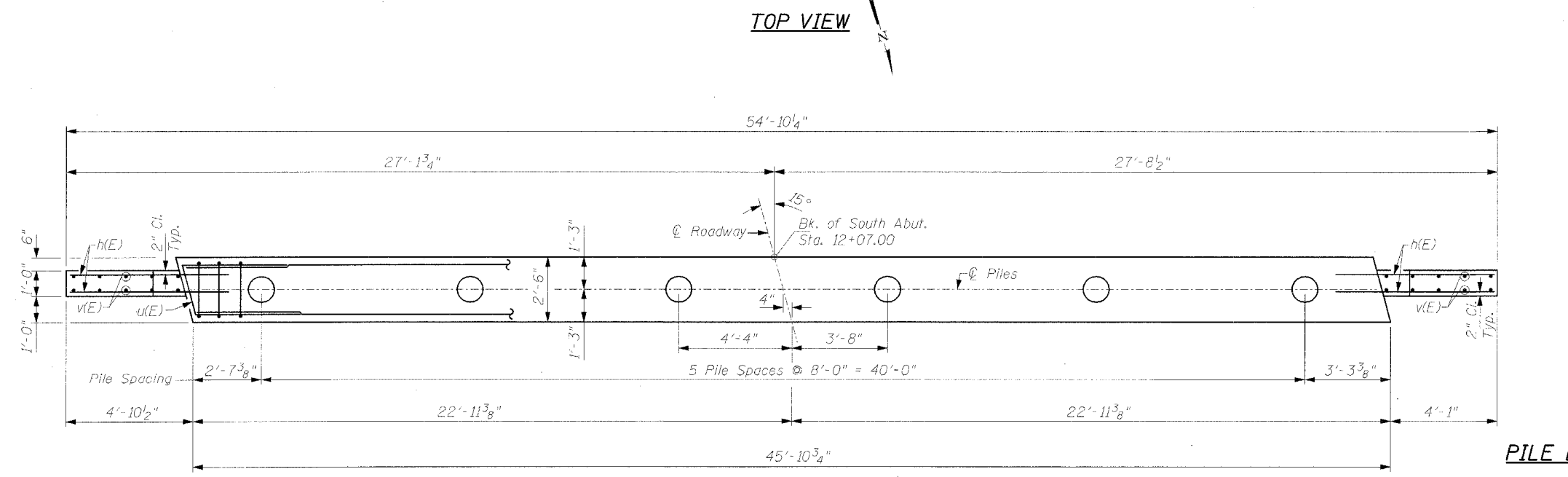
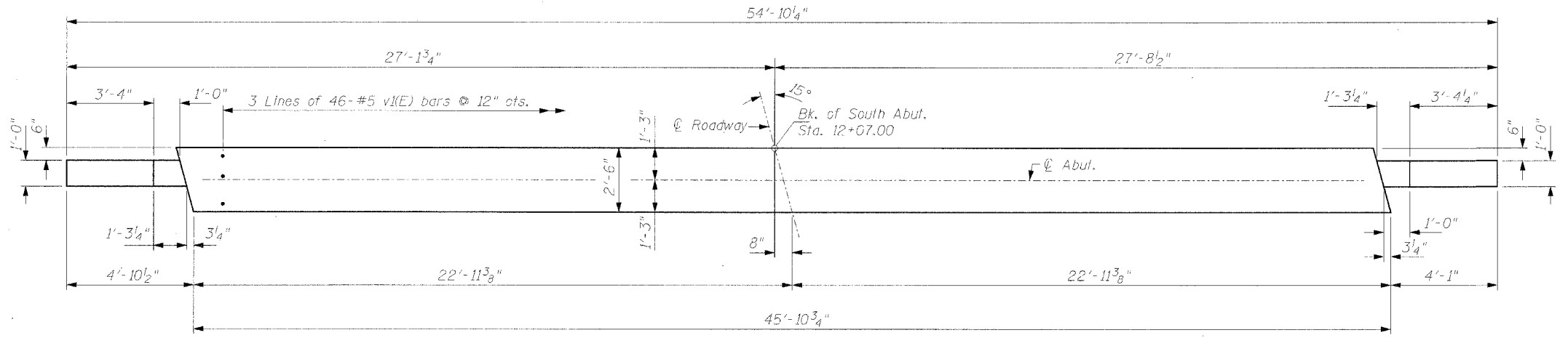
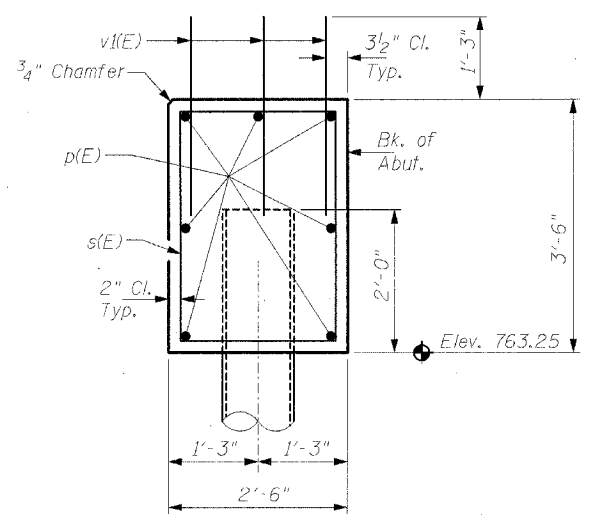
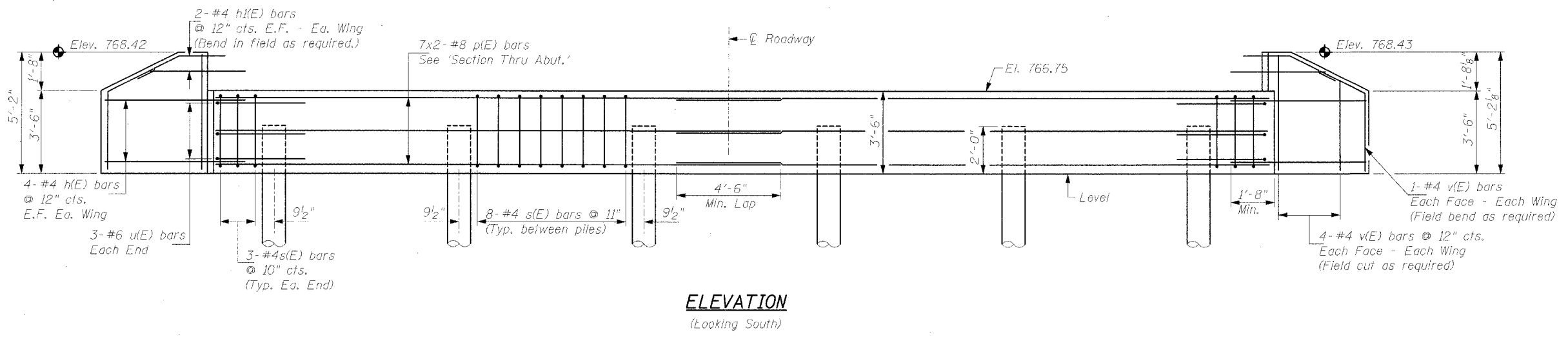
PEDESTRIAN RAILING

FELL AVENUE over SUGAR CREEK
FAU ROUTE 6401 SECTION 02-00325-00-BR
BLOOMINGTON, ILLINOIS McLEAN COUNTY
STATION 12+47.00
STRUCTURE NO. 057-6338

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JOB NO.
03S2019
DATE
01/21/05



PILE DATA

Type: Concrete Piles (Metal Pile Shell) 12" Dia.
 Capacity: 45 Tons
 Est. Length: 38 Ft.
 Number Required: 6 (Includes one test pile)

SECTION THRU ABUTMENT
 (© Rt. L's)

SOUTH ABUTMENT BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	16	#4	6'-1"	—
h(E)	8	#4	6'-4"	—
p(E)	14	#8	25'-1"	—
s(E)	46	#4	11'-5"	□
u(E)	6	#6	10'-1"	□
v(E)	20	#4	4'-10"	—
v(E)	138	#5	2'-6"	—
Concrete Structures		Cu. Yds.	16.0	
Reinforcement Bars, Epoxy Coated		Lbs.	1,900	
Furnishing Metal Pile Shells, 12" φ		Foot	190	
Driving and Filling Shells		Foot	190	
Test Pile Metal Shells		Each	1	

Reinforcement bars designated (E) shall be epoxy coated.
 Bars indicated thus 7x2-#9 etc. indicates 7 lines of bars with 2 lengths per line.

SOUTH ABUTMENT

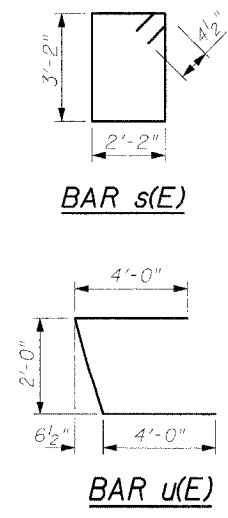
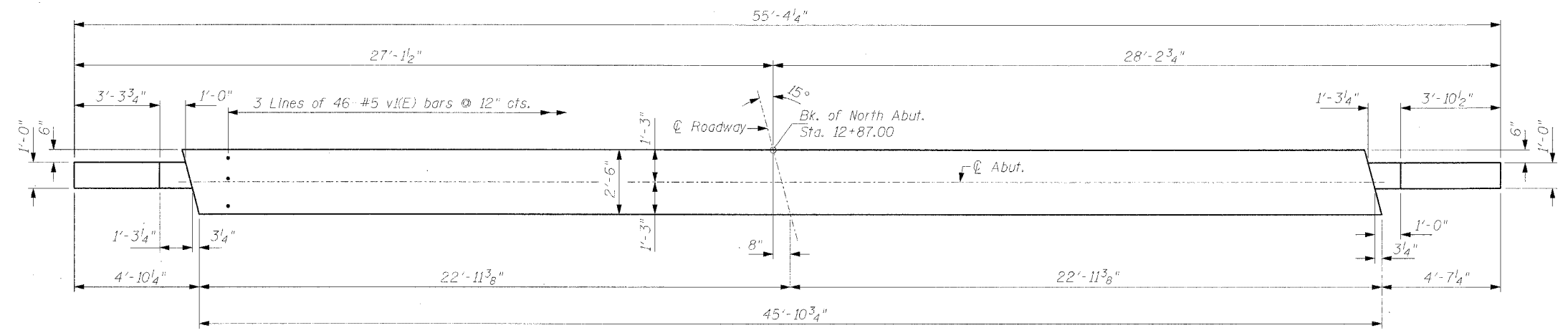
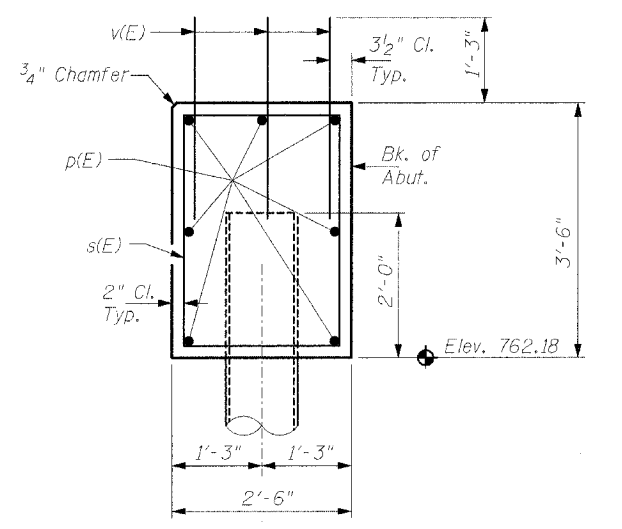
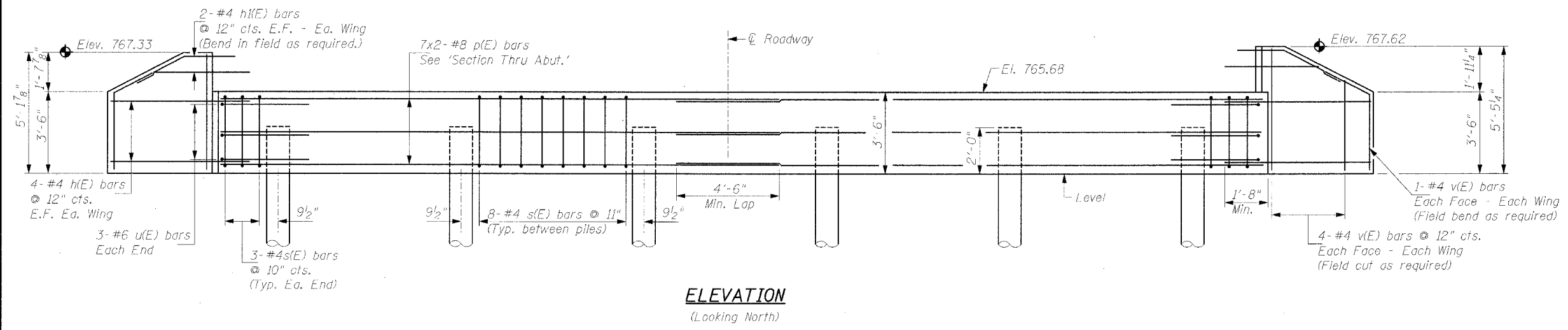
FELL AVENUE over SUGAR CREEK
 FAU ROUTE 6401 SECTION 02-00325-00-BR
 BLOOMINGTON, ILLINOIS McLEAN COUNTY
 STATION 12+47.00
 STRUCTURE NO. 057-6338

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JOB NO. 03S2019
 DATE 01/21/05

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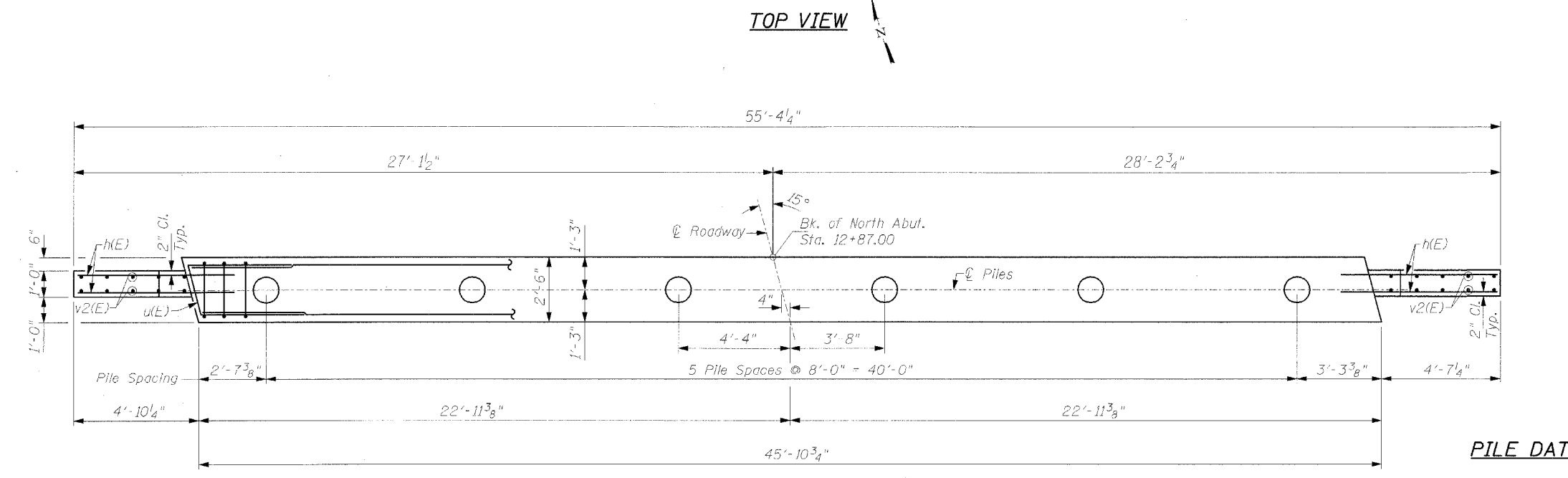


SECTION THRU ABUTMENT
(@ Rt. L's)

**NORTH ABUTMENT
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h(E)	16	#4	6'-1"	—
h(E)	8	#4	6'-4"	—
p(E)	14	#8	25'-1"	—
s(E)	46	#4	11'-5"	□
u(E)	6	#6	10'-1"	┌
v(E)	20	#4	4'-10"	—
v(E)	138	#5	2'-6"	—
Concrete Structures		Cu. Yds.	16.2	
Reinforcement Bars, Epoxy Coated		Lbs.	1,900	
Furnishing Metal Pile Shells, 12" φ		Foot	222	
Driving and Filling Shells		Foot	222	

Reinforcement bars designated (E) shall be epoxy coated.
Bars indicated thus 7x2-#9 etc. indicates 7 lines of bars with 2 lengths per line.



PILE DATA

Type: Concrete Piles
(Metal Pile Shell) 12" Dia.
Capacity: 45 Tons
Est. Length: 37 Ft.
Number Required: 6

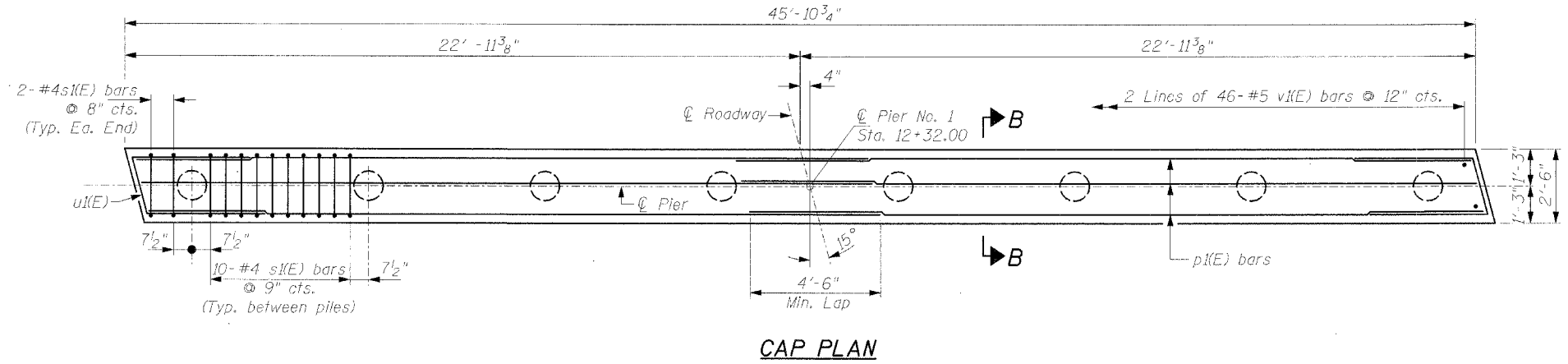
NORTH ABUTMENT

FELL AVENUE over SUGAR CREEK
FAU ROUTE 6401 SECTION 02-00325-00-BR
BLOOMINGTON, ILLINOIS McLEAN COUNTY
STATION 12+47.00
STRUCTURE NO. 057-6338

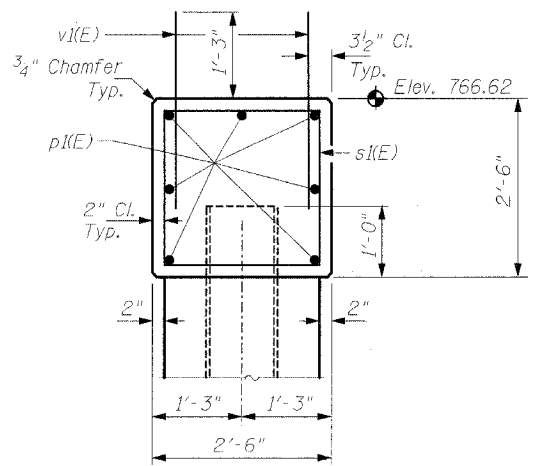
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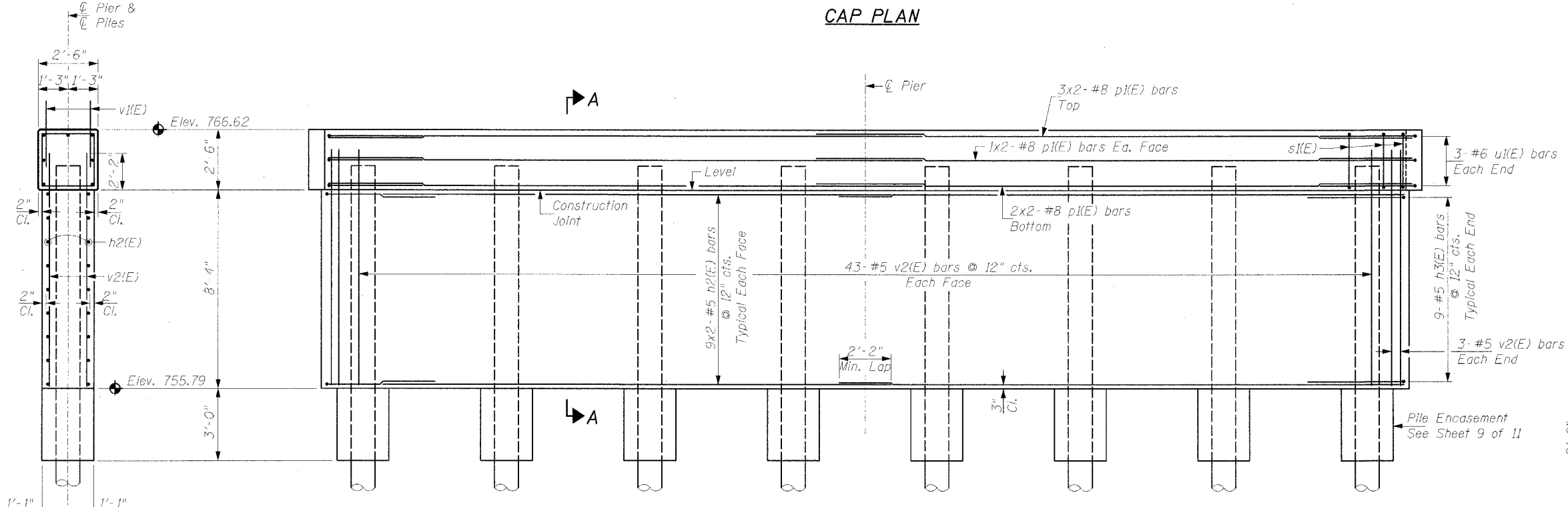
JOB NO.
03S2019
DATE
01/21/05



CAP PLAN

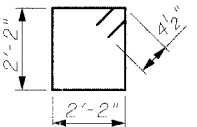


SECTION B-B
(@ Rt. L's)

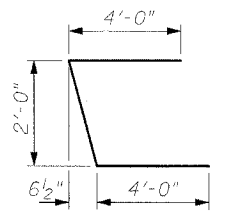


ELEVATION
(Looking South)

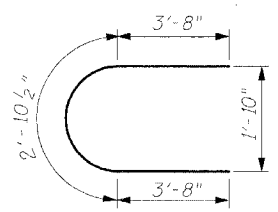
SECTION A-A
(@ Rt. L's)



BAR s(E)



BAR u(E)



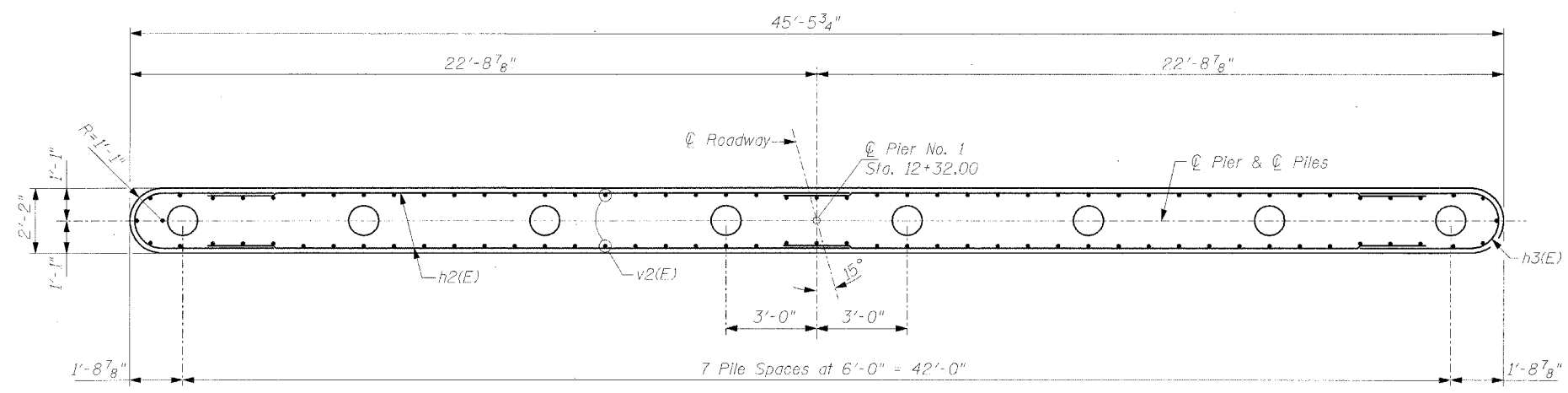
BAR h3(E)

**PIER 1
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h2(E)	36	#5	21'-4"	—
h3(E)	18	#5	10'-2 1/2"	U
p(E)	14	#8	25'-1"	—
s(E)	74	#4	9'-5"	□
u(E)	6	#6	10'-1"	U
v(E)	92	#5	2'-6"	—
v2(E)	92	#5	10'-5"	—

Concrete Structures	Cu. Yds.	38.6
Reinforcement Bars, Epoxy Coated	Lbs.	3,730
Furnishing Metal Pile Shells, 12" φ	Foot	304
Driving and Filling Shells	Foot	304

Reinforcement bars designated (E) shall be epoxy coated.
Bars indicated thus 3x2-#8 etc. indicates 3 lines of bars with 2 lengths per line.



ENCASEMENT PLAN

PILE DATA

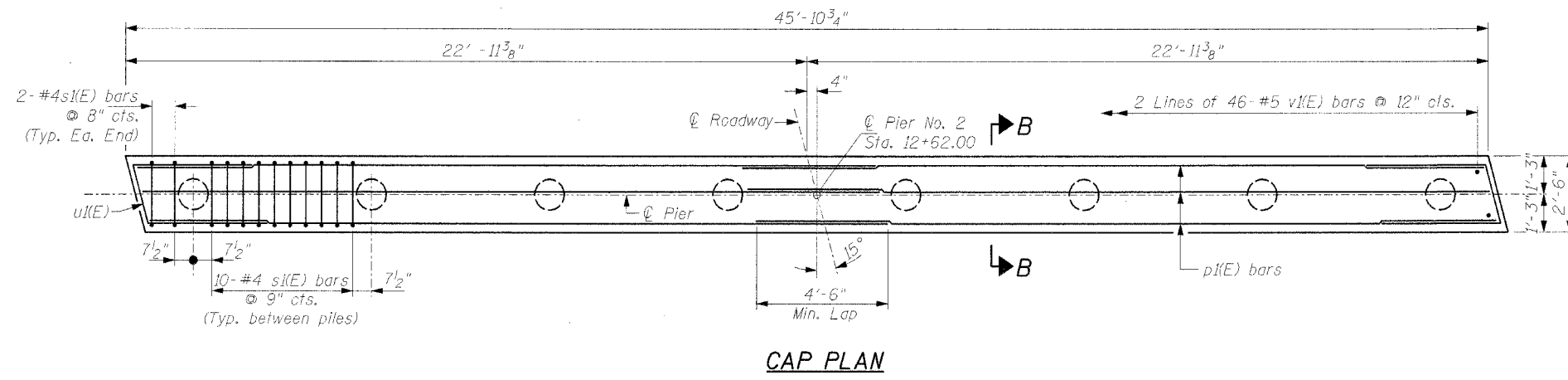
Type: Concrete Piles
(Metal Pile Shell) 12" Dia.
Capacity: 45 Tons
Est. Length: 38 Ft.
Number Required: 8

Pier 1
FELL AVENUE over SUGAR CREEK
FAU ROUTE 6401 SECTION 02-00325-00-BF
BLOOMINGTON, ILLINOIS McLEAN COUNTY
STATION 12+47.00
STRUCTURE NO. 057-6338

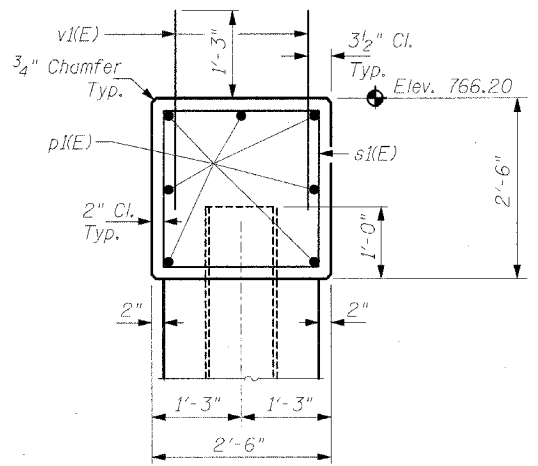
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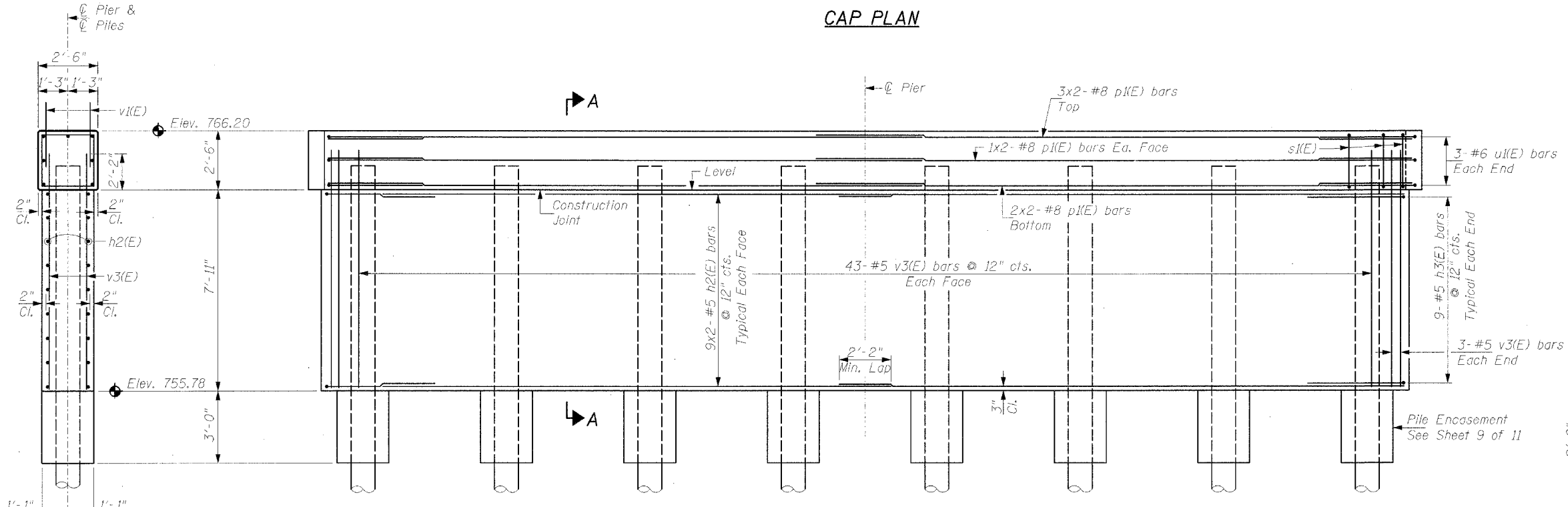
JOB NO. 03S2019
DATE 01/21/05



CAP PLAN

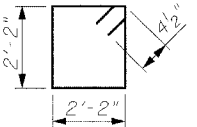


SECTION B-B
(@ Rt. L's)

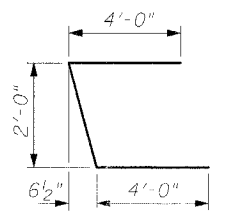


ELEVATION
(Looking South)

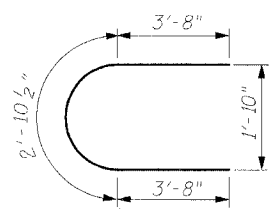
SECTION A-A
(@ Rt. L's)



BAR s(E)



BAR u(E)

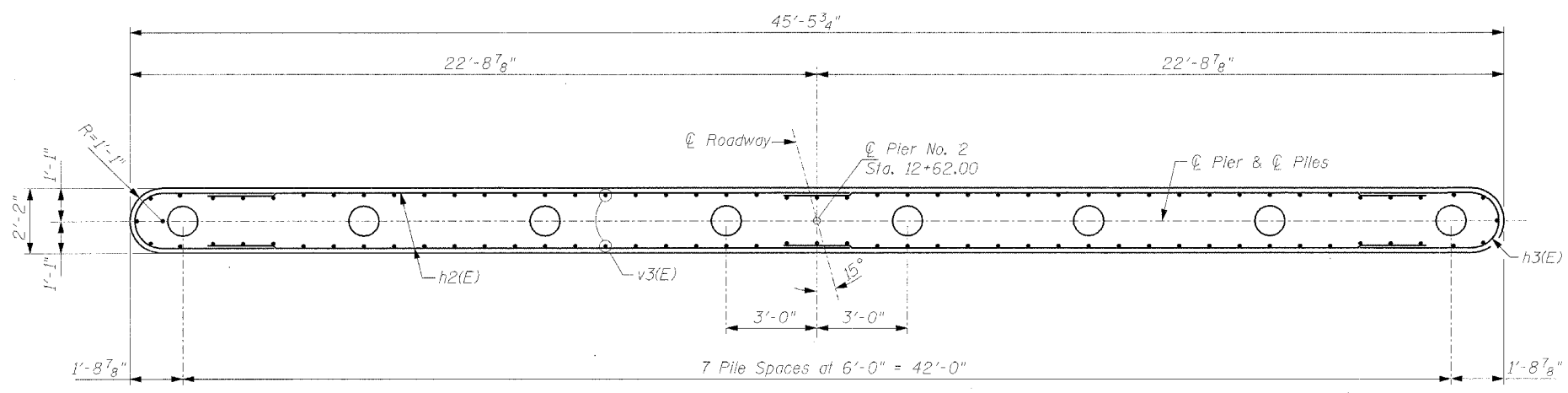


BAR h3(E)

PIER 2
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h2(E)	36	#5	21'-4"	—
h3(E)	18	#5	10'-2 1/2"	U
p(E)	14	#8	25'-1"	—
s(E)	74	#4	9'-5"	□
u(E)	6	#6	10'-1"	U
v(E)	92	#5	2'-6"	—
v3(E)	92	#5	10'-0"	—
Concrete Structures		Cu. Yds.	37.2	
Reinforcement Bars, Epoxy Coated		Lbs.	3,690	
Furnishing Metal Pile Shells, 12" φ		Foot	259	
Driving and Filling Shells		Foot	259	
Test Pile Metal Shells		Each	1	

Reinforcement bars designated (E) shall be epoxy coated.
Bars indicated thus 3x2-#8 etc. indicates 3 lines of bars with 2 lengths per line.



ENCASEMENT PLAN

PILE DATA

Type: Concrete Piles
(Metal Pile Shell) 12" Dia.
Capacity: 45 Tons
Est. Length: 37 Ft.
Number Required: 8 (Includes one test pile)

Pier 2

FELL AVENUE over SUGAR CREEK
FAU ROUTE 6401 SECTION 02-00325-00-BR
BLOOMINGTON, ILLINOIS McLEAN COUNTY
STATION 12+47.00
STRUCTURE NO. 057-6338

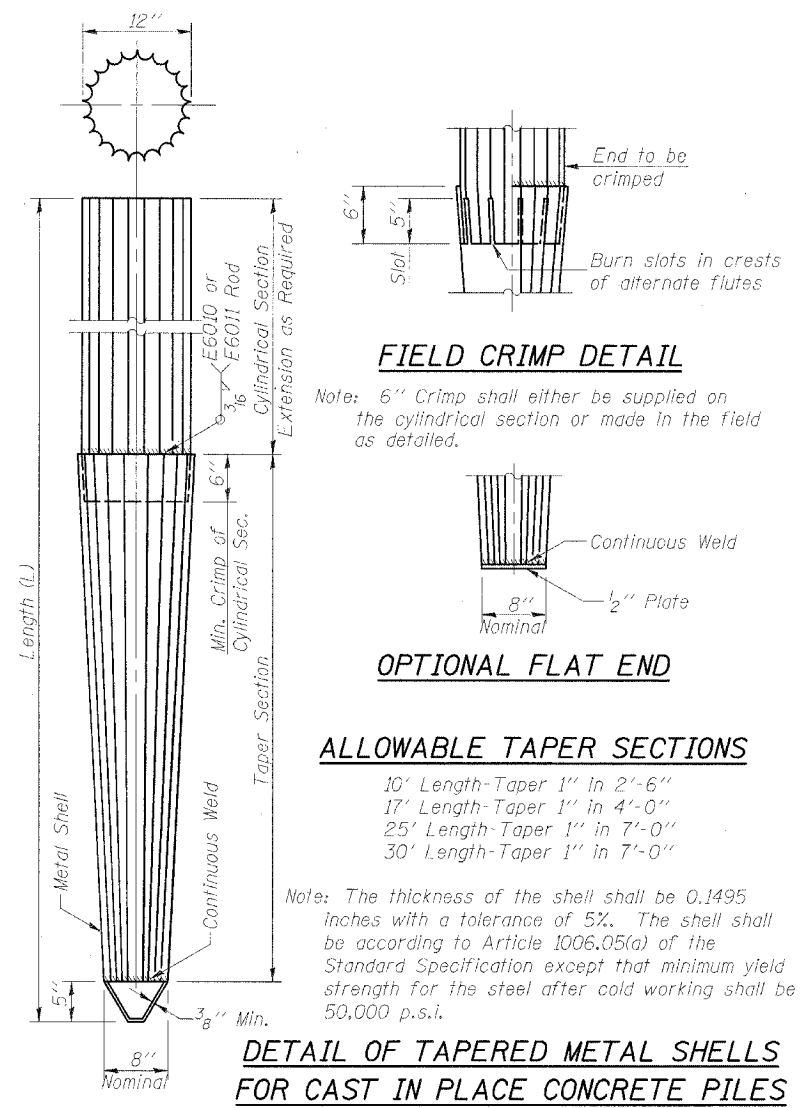
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HANSON

JOB NO.
03S2019
DATE
01/21/05

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
02-00325-00-BR	McLEAN	51	49
STA.	TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT	

Sheet 9 of 11 87270

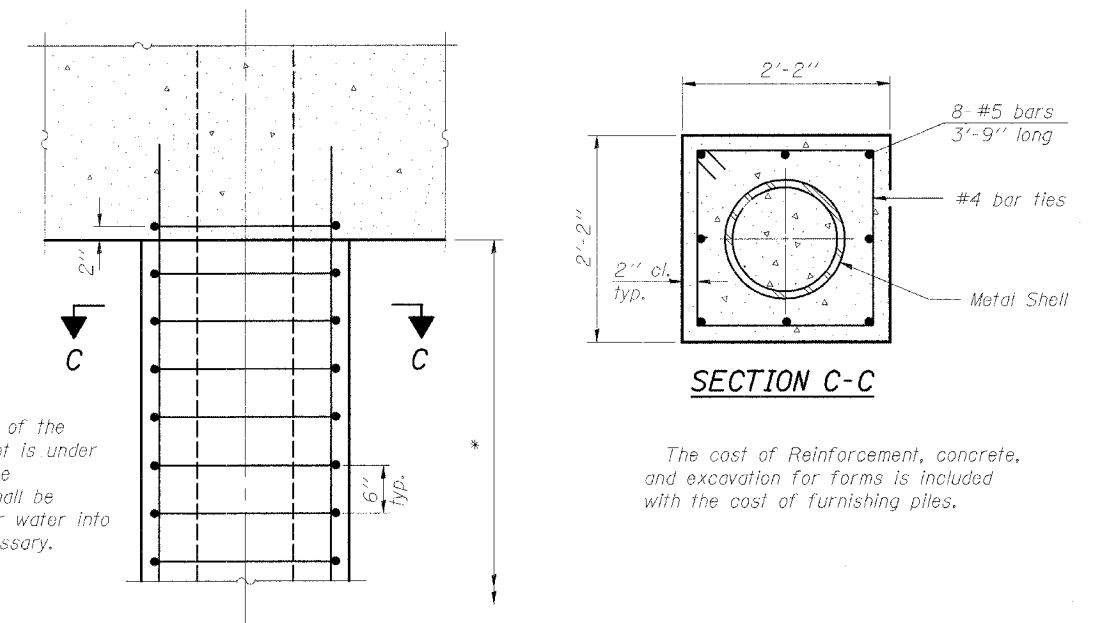


ALLOWABLE TAPER SECTIONS

- 10' Length-Taper 1" in 2'-6"
- 17' Length-Taper 1" in 4'-0"
- 25' Length-Taper 1" in 7'-0"
- 30' Length-Taper 1" in 7'-0"

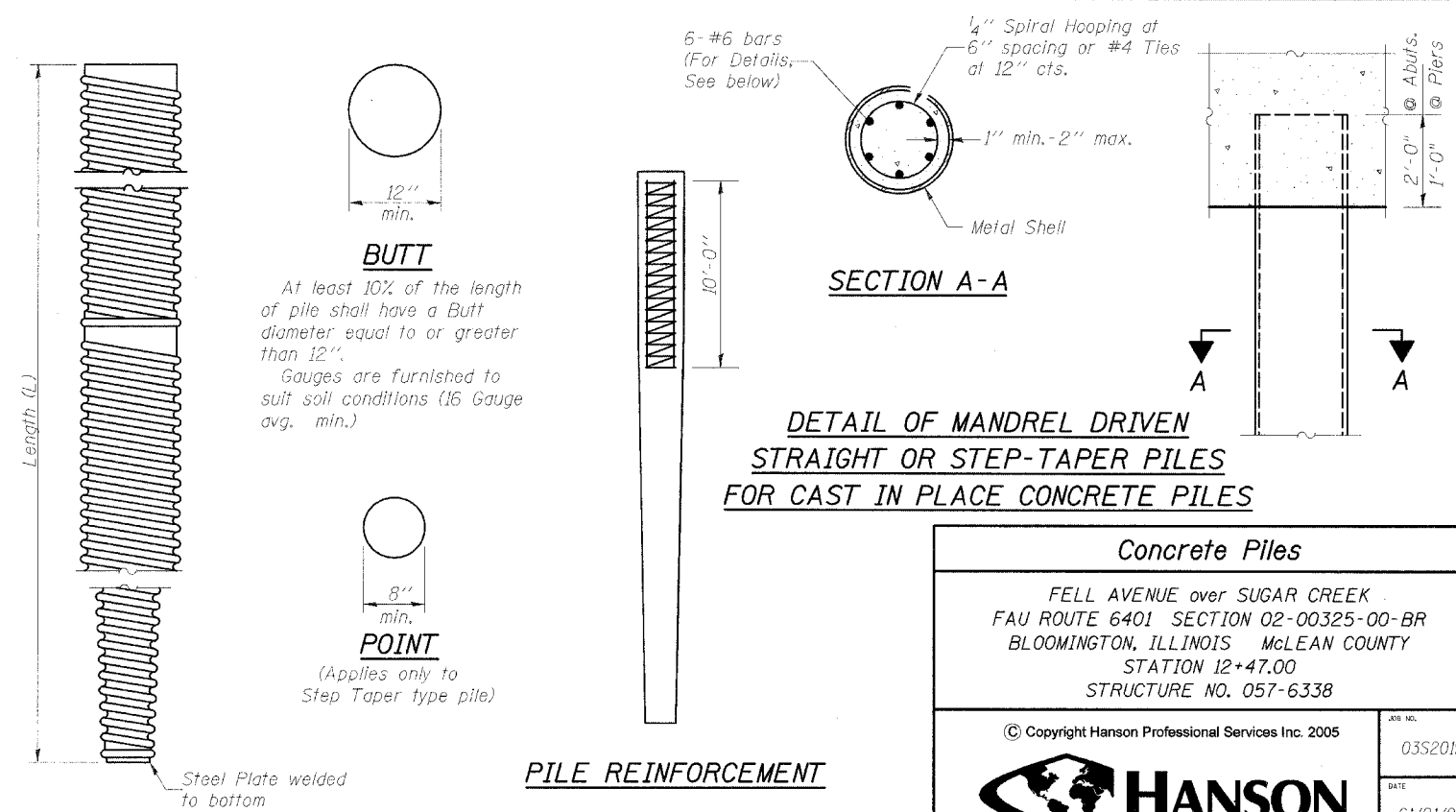
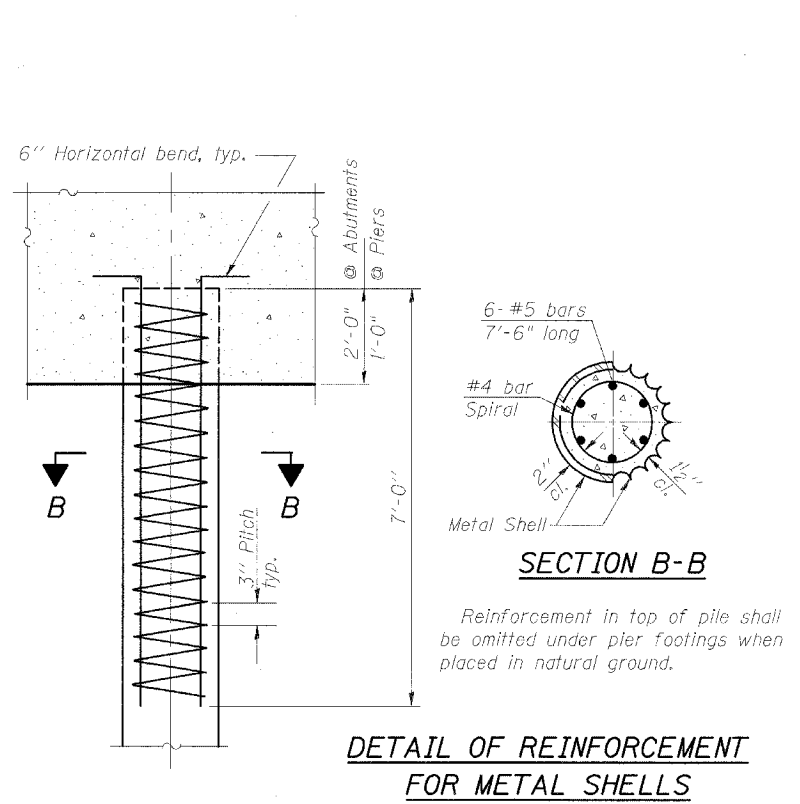
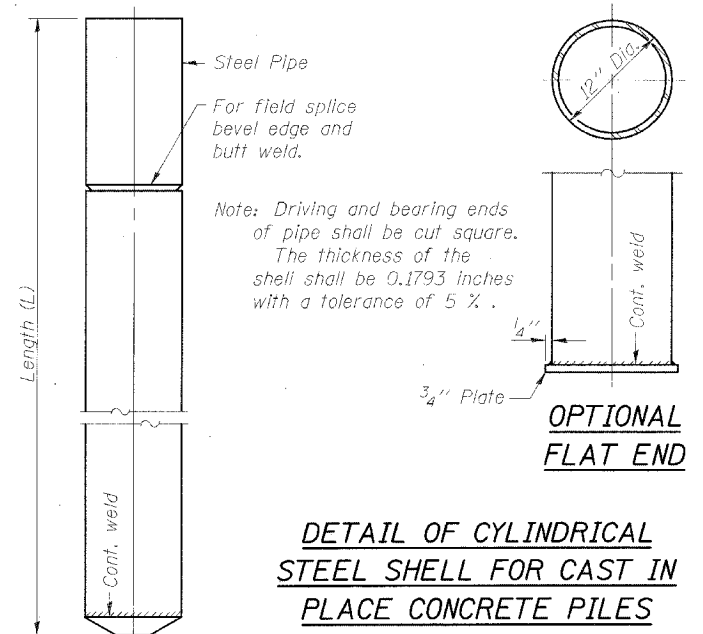
Note: The thickness of the shell shall be 0.1495 inches with a tolerance of 5%. The shell shall be according to Article 1006.05(a) of the Standard Specification except that minimum yield strength for the steel after cold working shall be 50,000 p.s.i.

DETAIL OF TAPERED METAL SHELLS FOR CAST IN PLACE CONCRETE PILES



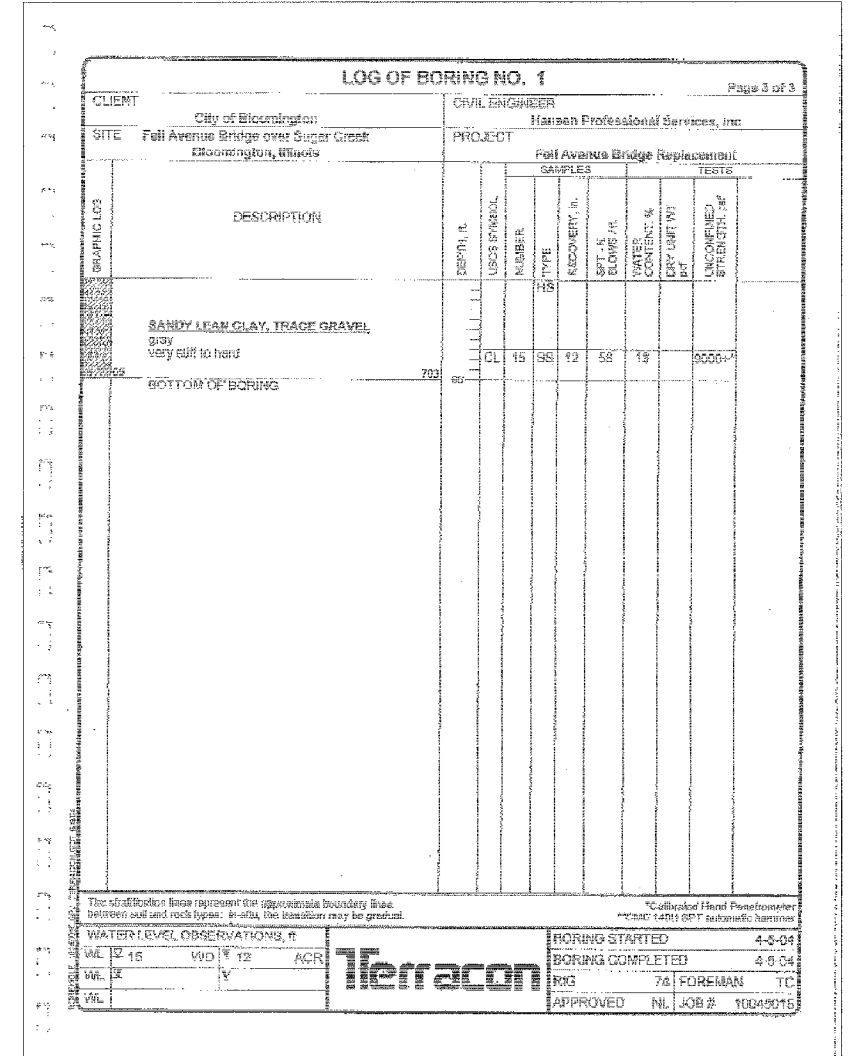
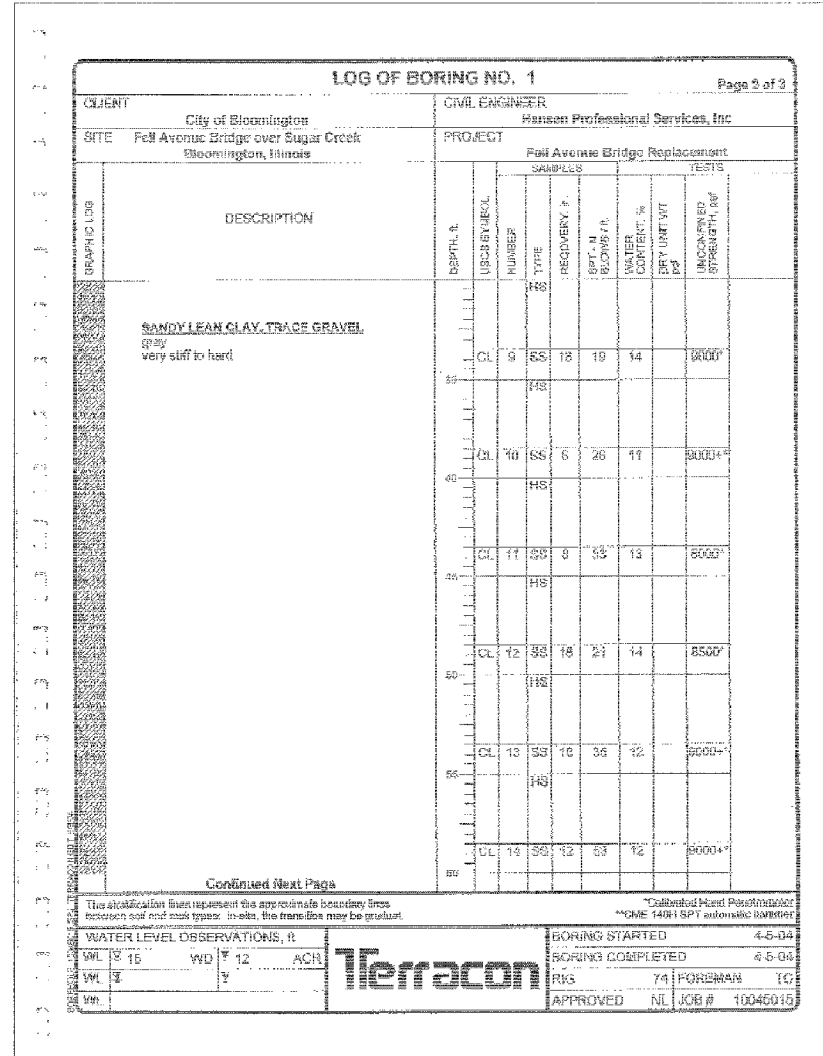
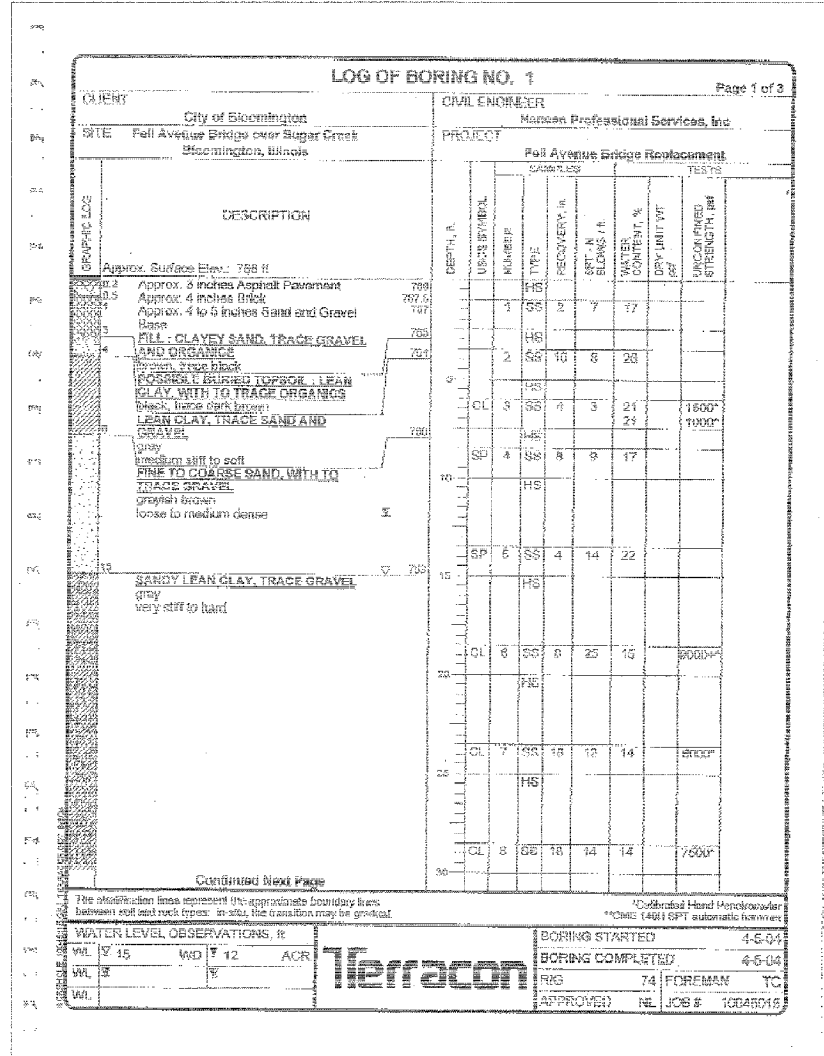
DETAIL OF PROTECTION FOR METAL SHELLS AT PIERS

The cost of Reinforcement, concrete, and excavation for forms is included with the cost of furnishing piles.



Concrete Piles
 FELL AVENUE over SUGAR CREEK
 FAU ROUTE 6401 SECTION 02-00325-00-BR
 BLOOMINGTON, ILLINOIS McLEAN COUNTY
 STATION 12+47.00
 STRUCTURE NO. 057-6338

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Boring No. 1

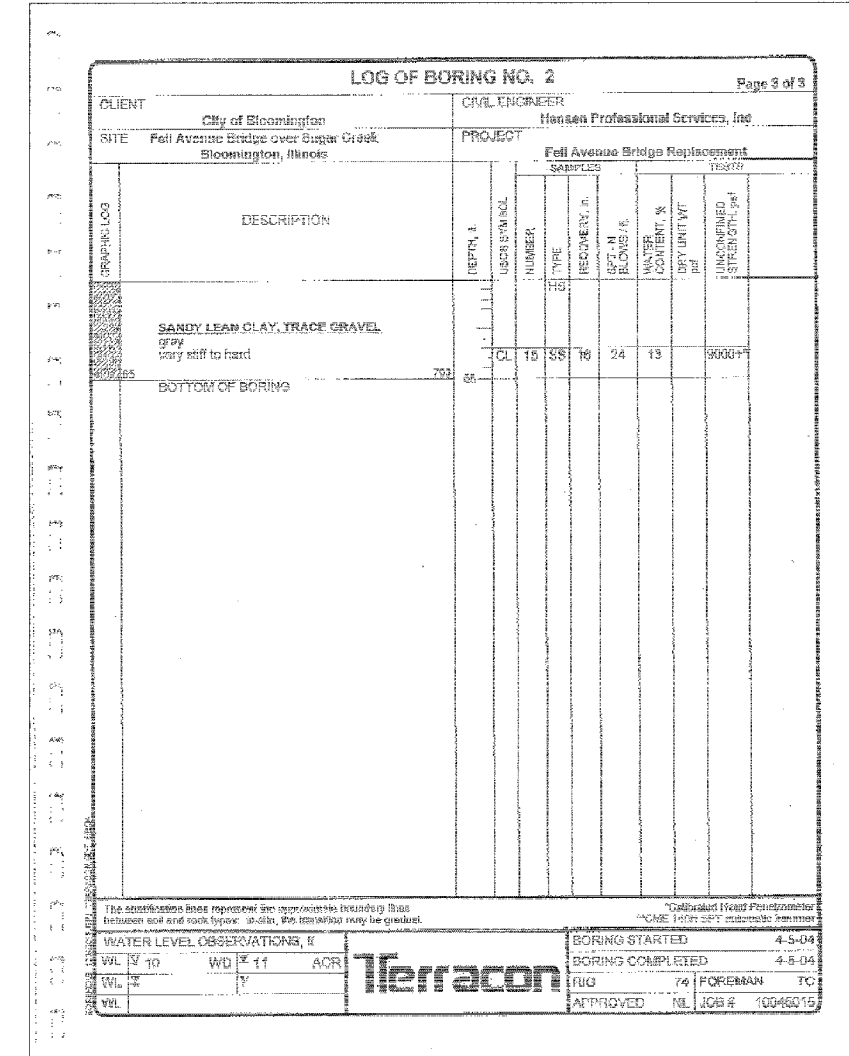
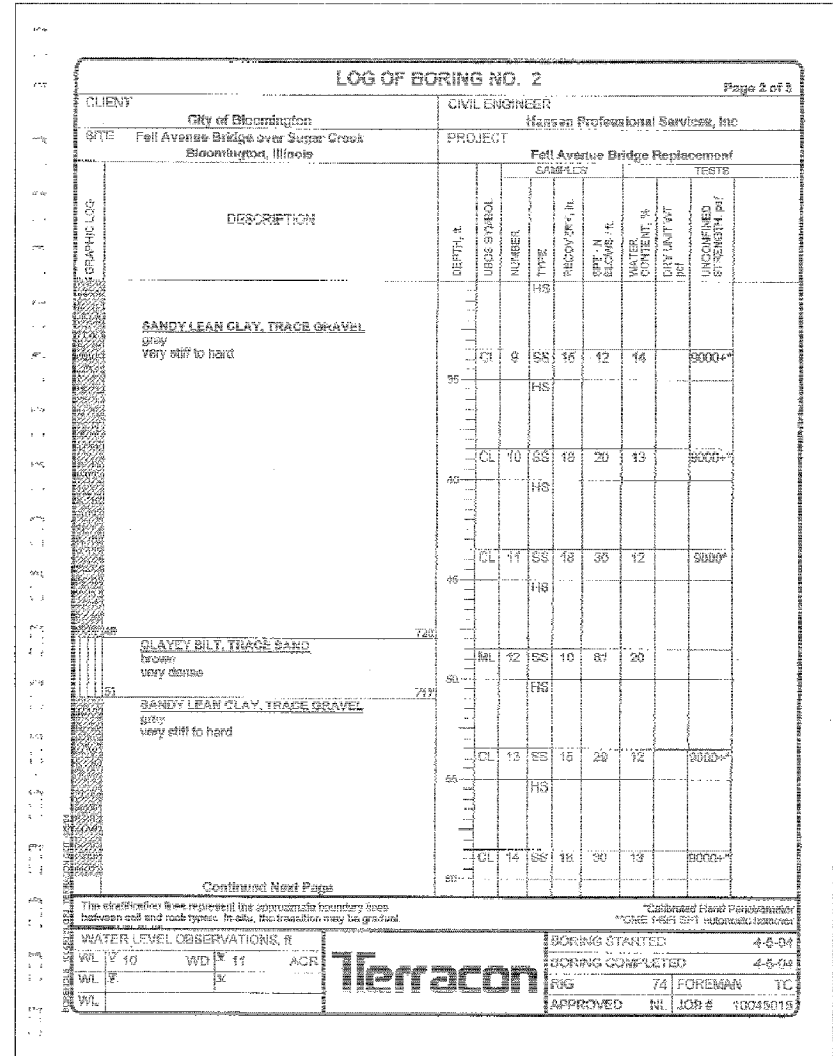
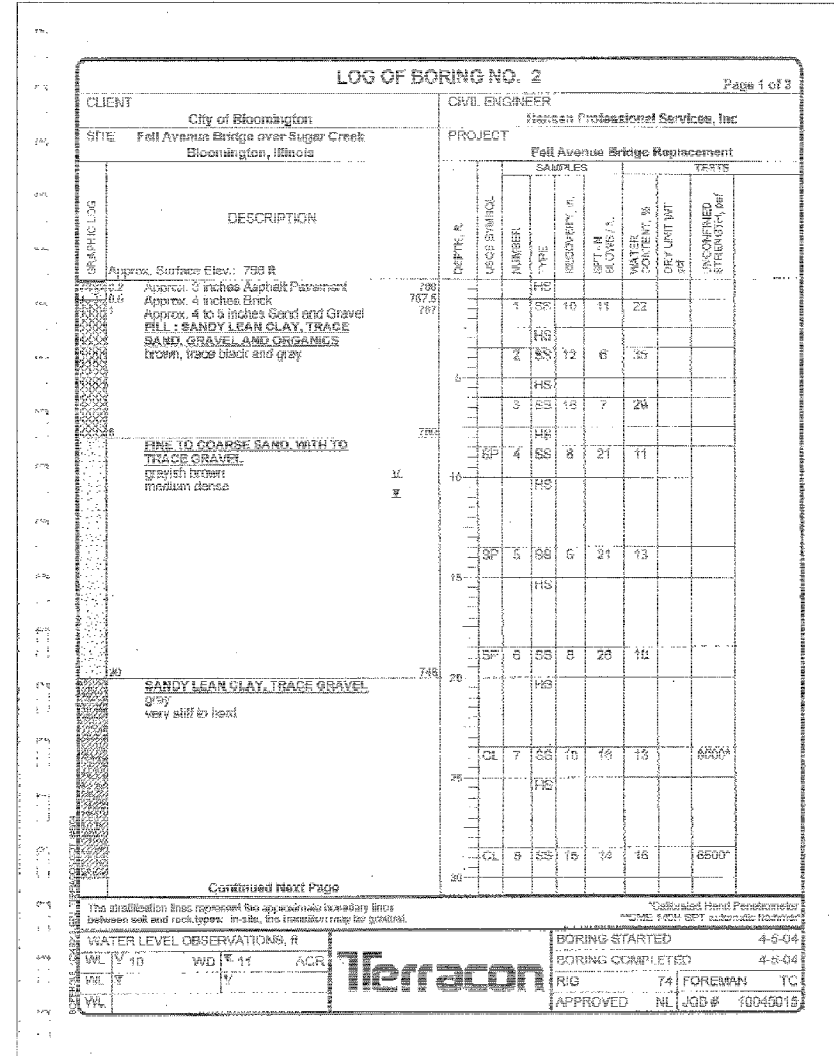
FELL AVENUE over SUGAR CREEK
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Boring No. 2

FELL AVENUE over SUGAR CREEK
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