F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	1
	ILLINOIS	CONTRACT NO. 76G99		

11-21-14 LETTING ITEM 136

FOR INDEX OF SHEETS, SEE SHEET 2

FOR HIGHWAY STANDARDS, SEE SHEET 2

MICROFILMED: _____

REEL NUMBER: _____

AWARDED: _____

RESIDENT ENGINEER: _____

AS BUILT CHANGES WERE MADE ON THE FOLLOWING SHEETS:

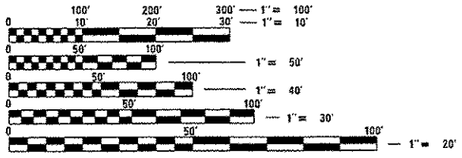
DESIGN DESIGNATION

FAI 64
INTERSTATE
ADT = 101,500 EB & WB (2011)

MISSOURI AVE
MAJOR COLLECTOR
ADT = 25 (2011)

PROJECT DESRIPTION

Project consists of rehabilitation of the Missouri Avenue Deep Well Facility and Pump Station. Work to include construction of a horizontal collector well, new well house building, force main, detention basin, rehabilitation of the existing pump station building, new surface water pumps, storm sewers, PCC parking lot, and other miscellaneous items related to the improvements.



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

J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1-800-892-0123
OR 811

PROJECT ENGINEER: PATTI LEBEAU 618-346-3179
PROJECT MANAGER: PHILLIP SAWYER 618-346-3275
SQUAD LEADER: MICHAEL PRESTON 618-346-3143

CONTRACT NO. 76G99

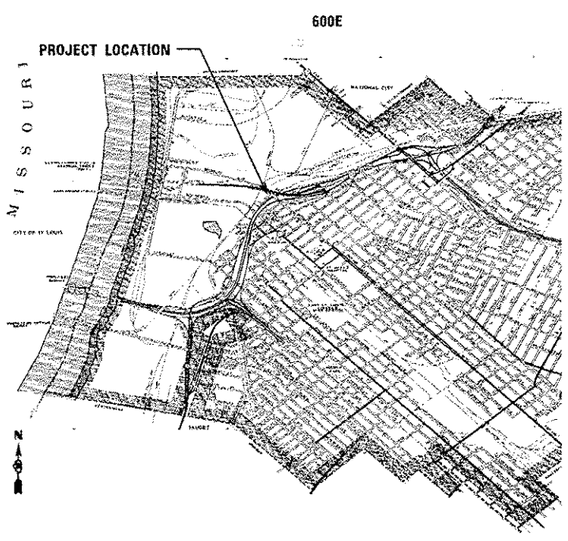
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROPOSED
HIGHWAY PLANS

F.A.I. ROUTE 55/70/64 (I-55/70/64)
SECTION 82-4T-1

MISSOURI AVENUE DEEP WELL FACILITY
WATER MANAGEMENT SYSTEM IMPROVEMENTS
ST. CLAIR COUNTY

C-98-025-14

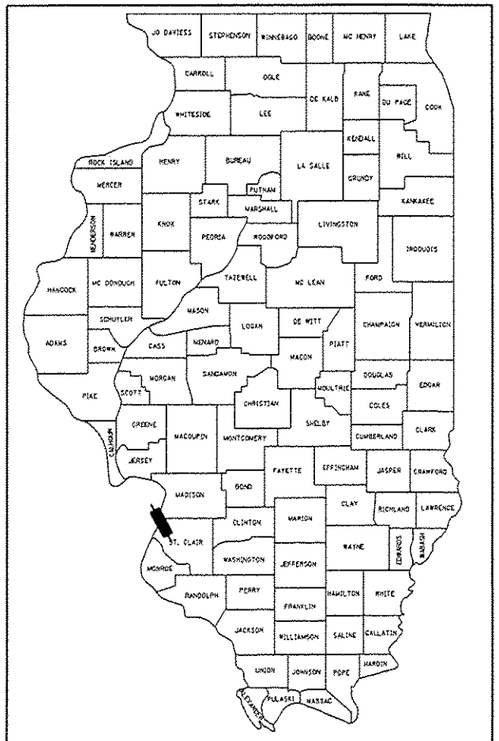


LOCATION MAP

0 1/2 1 mile

GROSS /NET LENGTH = N/A

D-98-025-14



LOCATION OF SECTION INDICATED THUS: –

DEBORAH E. NAUGHT — DATE 8/22/14
REGISTERED ARCHITECT
STATE OF ILLINOIS NO. 001-016272
LICENSE EXPIRES NOVEMBER 30, 2014
SHEETS: 67-74

ALAN D. LUKENS — DATE 8/22/14
REGISTERED STRUCTURAL ENGINEER
STATE OF ILLINOIS NO. 081-005167
LICENSE EXPIRES NOVEMBER 30, 2014
SHEETS: 75-135

STEPHEN E. HIMMELL — DATE 8/22/14
REGISTERED PROFESSIONAL ENGINEER
STATE OF ILLINOIS NO. 062-037176
LICENSE EXPIRES NOVEMBER 30, 2015
SHEETS: 138-144

JOHN J. NEYENS — DATE 8/22/14
REGISTERED PROFESSIONAL ENGINEER
STATE OF ILLINOIS NO. 062-063295
LICENSE EXPIRES NOVEMBER 30, 2015
SHEETS: 136-137, 148-185

STEVE E. BANGE — DATE 8/22/14
REGISTERED PROFESSIONAL ENGINEER
STATE OF ILLINOIS NO. 062-053338
LICENSE EXPIRES NOVEMBER 30, 2015
SHEETS: 1-42, 55-66

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED Aug 26 20 14
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER
Oct 17 20 14
ENGINEER OF DESIGN AND ENVIRONMENT
Oct 17 20 14
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

Plans prepared by:

KLINGNER & ASSOCIATES, P.C.
Engineers • Architects • Surveyors
616 North 24th Street, Quincy, IL — Ph (217)223-3670 - Fax (217)223-3803
4510 Paris Gravel Road, Hannibal, MO — Ph (573)221-0020 - Fax (573)221-0012
510 N. 4th Street, Suite 100, Burlington, IA — Ph (319)753-3600 - Fax (319)753-3605
49 North Prairie Street, Galesburg, IL — Ph (309)342-4042 - Fax (309)341-0781
Internet Address: www.klingner.com
IL DESIGN FIRM NO.: 1842738

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INDEX OF SHEETS

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424001-08	PERPENDICULAR CURB RAMPS FOR SIDEWALKS
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542006-01	MULTIPLE CONCRETE END SECTIONS FOR PIPE CULVERTS 15" (376MM) THRU 84" (2100 MM) DIAMETER
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701406-09	LANE CLOSURE, FREEWAY/EXPRESSWAY, DAY OPERATIONS ONLY
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814006-02	DOUBLE HANDHOLES
878001-10	CONCRETE FOUNDATION DETAILS
B.L.R. 10-6	PCC PAVEMENT SPECIAL (NONREINFORCED)
B.L.R. 22-7	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS

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PLOT DATE = 9/23/2014	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

INDEX OF SHEETS & HIGHWAY STANDARDS
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: NONE | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	2
		CONTRACT NO. 76099		
	ILLINOIS FED. AID PROJECT			

GENERAL NOTES

1. THE STANDARDS AND REVISION NUMBERS LISTED SHALL APPLY TO THIS PROJECT.

2. WHERE SECTION OR SUB-SECTION MONUMENTS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE REMOVED. THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL PROPERTY MARKERS AND MONUMENTS UNTIL THE OWNER, AN AUTHORIZED SURVEYOR OR AGENT HAS WITNESSED OR OTHERWISE REFERENCE THE LOCATION.

3. ILLINOIS STATE LAW REQUIRES A 48-HOUR NOTICE BE GIVEN TO UTILITY BEFORE DIGGING. FIELD MARKING OF FACILITIES MAY BE OBTAINED BY CONTACTING J.U.L.I.E. OR FOR NON-MEMBERS, THE UTILITY COMPANY DIRECTLY. AGENCIES KNOWN TO HAVE FACILITIES IN THE AREA OF THIS PROJECT ARE:

USIC LOCATING SERVICES - ST LOUIS
* AMEREN IP
* AMEREN-UE
* CITY OF EAST ST. LOUIS
* ILLINOIS AMERICAN WATER CO.
* CHARTER COMMUNICATIONS, INC
* NETWORKS, 360.
* LEVEL 3 COMMUNICATIONS, LLC
* LIGHTCORE
* MCI
* VERIZON BUSINESS
* AT&T ILLINOIS
* QWEST COMMUNICATIONS
* MCLEOD USA TELECOMMUNICATIONS, INC.
* METRO EAST SANITARY DISTRICT

MEMBERS OF J.U.L.I.E. (800) 892-0123 ARE INDICATED BY *.
NON-J.U.L.I.E. MEMBERS MUST BE NOTIFIED INDIVIDUALLY.

4. THE DEPARTMENT STRONGLY ENCOURAGES THE PRIME CONTRACTOR AND THEIR APPROVED SUB-CONTRACTORS TO HIRE MINORITY, WOMEN AND DISADVANTAGED INDIVIDUALS FROM ITS FEDERALLY FUNDED HIGHWAY CONSTRUCTION CAREERS TRAINING PROGRAM (HCCTP) TO HELP MEET WORKFORCE AND TRAINEE GOALS. THIS PROGRAM IS TRAINING MINORITIES, WOMEN AND DISADVANTAGED INDIVIDUALS IN HIGHWAY CONSTRUCTION SKILLS, E.G., MATH FOR THE TRADES, JOB READINESS, TECHNICAL SKILLS COURSEWORK (CARPENTRY, CONCRETE FLATWORK, BLUEPRINT READING, SITE PLANS, SITE WORK, TOOLS USE, ETC) AND OSHA 10 HOUR CERTIFICATION, TO PREPARE THEM FOR A CAREER IN THE HIGHWAY CONSTRUCTION TRADES. GRADUATES ARE WELL-TRAINED AND READY TO BECOME PRODUCTIVE ENTRY-LEVEL CONSTRUCTION WORKERS. CONTACT THE DISTRICT 8 EEO OFFICE AT 618-346-3360 AND/OR THE HCCTP COORDINATOR AT 618-874-6528 TO LEARN MORE ABOUT THE PROGRAM AND FOR ASSISTANCE IN MEETING WORKFORCE AND TRAINEE GOALS.

5. THE CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE HIMSELF WITH THE EXISTING CONDITIONS, SITE ACCESS, POWER SUPPLY AND OTHER ITEMS THAT AFFECT THE CONTRACT AND THE CONSTRUCTION OF THE IMPROVEMENTS.

6. PLAN DIMENSIONS AND DETAILS RELATIVE TO EXISTING STRUCTURE HAVE BEEN TAKEN FROM EXISTING PLANS AND ARE SUBJECT TO NOMINAL CONSTRUCTION VARIATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY SUCH DIMENSIONS AND DETAILS IN THE FIELD AND MAKE NECESSARY APPROVED ADJUSTMENTS PRIOR TO CONSTRUCTION OR ORDERING OF MATERIALS, SUCH VARIATIONS SHALL NOT BE CAUSE FOR ADDITIONAL COMPENSATION OR A CHANGE IN THE SCOPE OF THE WORK.

7. THE LOCATIONS OF UNDERGROUND UTILITIES AS SHOWN ON THESE PLANS HAVE BEEN OBTAINED BY FIELD SURVEYS AND SEARCHES OF AVAILABLE RECORDS. IT IS BELIEVED THAT THIS DATA IS ESSENTIALLY CORRECT, BUT THE DEPARTMENT AND OTHERS ASSOCIATED WITH THESE PLANS DO NOT GUARANTEE THEIR ACCURACY OR COMPLETENESS. THE CONTRACTOR WILL BE REQUIRED TO VERIFY THE EXACT LOCATION OF EACH FACILITY WITH THE UTILITY COMPANY WHEN THE POTENTIAL EXISTS FOR INVOLVEMENT AND SHALL TAKE DUE CARE IN ALL PHASES OF THE CONSTRUCTION TO PROTECT ANY SUCH FACILITIES WHICH MAY BE AFFECTED BY THE WORK. ANY DAMAGES TO THE UTILITIES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

8. ALL MECHANICAL AND ELECTRICAL EQUIPMENT REMOVED, EXCEPT THE SALVAGE ITEMS AS SPECIFIED IN SUBSECTION 2.1.1 OF SECTION 2B, SHALL BECOME THE PROPERTY OF CONTRACTOR. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REMOVE AND DISPOSE OF SAME. CONTRACTOR SHALL COORDINATE WITH DISTRICT 8 FOR ALL EQUIPMENT TO BE REMOVED.

9. IN GENERAL, PRIOR TO CUTTING OPENINGS IN THE EXISTING BUILDING REINFORCED CONCRETE SLABS AND WALLS, THE CONTRACTOR SHALL IDENTIFY EXACT LOCATIONS OF MAIN REINFORCING BARS (REBAR DETECTOR OR OTHER APPROVED PROCEDURE). THE CONTRACTOR SHALL RECEIVE APPROVAL FROM THE ENGINEER PRIOR TO CUTTING REINFORCED CONCRETE.

10. THE CONTRACTOR SHALL COMPLY WITH APPLICABLE OSHA REGULATIONS WHILE AT THE CONSTRUCTION SITE.

11. ALL EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED 3/4" EXCEPT AT SIDEWALKS AND CURBS WHERE ROUNDED CORNERS ARE REQUIRED.

12. CLASS SI, CONCRETE SHALL BE USED THROUGHOUT.

13. REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-31, M-42 OR M322 GRADE 60.

14. FOR BACKFILLING AND COMPACTION SEE STANDARD SPECIFICATIONS.

GENERAL NOTES (CONT)

15. STRUCTURAL DESIGN DATA:
REINFORCING STEEL fy = 60,000 psi
CONCRETE f'c = 3,500 psi 14 DAYS
STRUCTURAL STEEL fy = 36.0 ksi

MINIMUM SLAB AND STAIR LIVE LOADING = 100 psf
MINIMUM ROOF LIVE LOADING = 25 psf

16. UNLESS OTHERWISE INDICATED ALL ITEMS AND WORK SHOWN ON THESE SHEETS ARE PROPOSED NEW ITEMS AND WORK.

17. THE EXISTING PUMP STATION FACILITY SHALL REMAIN IN CONTINUOUS OPERATION DURING CONSTRUCTION. ONLY ONE PUMP MAY BE REMOVED FROM SERVICE AT A TIME. THE MINIMUM PUMPING CAPACITY OF THE EXISTING STATION MUST BE MAINTAINED AT ALL TIMES IS 68,700 gpm.

18. NOTE THAT DURING CONSTRUCTION THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE PUMPING STATION. SHORT-TERM SHUTDOWN WILL BE PERMITTED WITH SPECIFIC WRITTEN PERMISSION (SEE SPECIFICATIONS).

19. COORDINATE EXACT LOCATION OF ALL MAJOR COMPONENTS, WITH THE ENGINEER, BEFORE INSTALLATION.

20. ANY SITE AREA DISTURBED BY CONSTRUCTION SHALL BE RESTORED TO IT'S ORIGINAL CONDITION BY THE CONTRACTOR, TO THE SATISFACTION OF THE ENGINEER, AT NO ADDITIONAL COST TO THE STATE.

21. ALL SHOP DRAWINGS, MATERIAL SAMPLES ETC. MUST BE SUBMITTED AND APPROVED BY THE ENGINEER BEFORE INSTALLATION.

22. CRUSHED SLAG SHALL NOT BE USED AS AN AGGREGATE MATERIAL.

23. ALL MATERIALS THAT ARE TO BE SALVAGED SHALL BE THE PROPERTY OF THE STATE OF ILLINOIS AND DELIVERED BY THE CONTRACTOR TO:
BOWMAN AVENUE PUMP STATION
728 EXCHANGE AVE.
EAST ST. LOUIS, IL
CONTACT PETE SAWYER AT (618) 304-2082 TO SCHEDULE DELIVERY

24. THE DEPARTMENT RESERVES THE RIGHT TO NOTIFY THE CONTRACTOR TO CHANGE THE CONSTRUCTION SCHEDULE IF NEEDED TO ENSURE PROPER DEWATERING NEEDS FOR THE DEPARTMENT.

25. PRIOR TO ANY CONSTRUCTION ACTIVITY, THE CONTRACTOR SHALL VERIFY WITH THE DEPARTMENT THAT ALL RIGHT OF WAY HAS BEE AQUIRED.

RATES OF APPLICATION TABLE

AGGREGATE (SURFACE, BASE, SUBBASE, OR BACKFILL)	2.05 TON / CU YD
STONE DUMPED RIPRAP	1.50 TON / CU YD
HOT-MIX ASPHALT:	
BITUMINOUS MATERIALS (PRIME COAT)	0.05 POUND / SQ FT (on pavement)
SURFACE / BINDER (112 lbs)	0.25 POUND / SQ FT (on aggreagte)
	0.056 TON / SQ YD * IN
SEEDING:	
NITROGEN FERTILIZER NUTRIENT	
PHOSPHORUS FERTILIZER NUTRIENT	90 LBS / ACRE
POTASSIUM FERTILIZER NUTRIENT	90 LBS / ACRE
AGRICULTURAL GROUND LIMESTONE	90 LBS / ACRE
MULCH METHOD	2.0 TON / ACRE
	2.0 TON / ACRE

COMMITMENTS

IF ARCHAELOGICAL CLEARANCE HAS NOT BEEN OBTAINED FOR THE ENTIRE PROJECT. THE RESIDENT ENGINEER SHALL PROVIDE THE CONTRACTOR THOSE AREAS OF THE PROJECT WHICH HAVE BEEN CLEARED, AND IN WHICH THE CONTRACTOR MAY WORK. THE RESIDENT ENGINEER SHALL ALSO NOTIFY THE CONTRACTOR WHEN ADDITIONAL SITES BECOME AVAILABLE.

SYMBOLS AND ABBREVIATIONS

EXISTING FORCEMAIN

PROPOSED FORCEMAIN

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: NONE | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	3
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE 0040					
20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	45	45					
20100500	TREE REMOVAL, ACRES	ACRE	1.4	1.4					
20200100	EARTH EXCAVATION	CU YD	3530	3530					
20400800	FURNISHED EXCAVATION	CU YD	2120	2120					
20800150	TRENCH BACKFILL	CU YD	388	388					
21001000	GEOTECHNICAL FABRIC FOR GROUND STABILIZATION	SQ YD	914	914					
21101615	TOPSOIL FURNISH AND PLACE, 4"	SQ YD	4532	4532					
25000115	SEEDING, CLASS 1B	ACRE	0.9	0.9					
25000200	SEEDING, CLASS 2	ACRE	1.6	1.6					
25000400	NITROGEN FERTILIZER NUTRIENT	POUND	224	224					
25000500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	224	224					
25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	224	224					
25100115	MULCH, METHOD 2	ACRE	2.5	2.5					
25100630	EROSION CONTROL BLANKET	SQ YD	2346	2346					

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE 0040					
25100900	TURF REINFORCEMENT MAT	SQ YD	270	270					
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	2050	2050					
28000305	TEMPORARY DITCH CHECKS	FOOT	90	90					
28000400	PERIMETER EROSION BARRIER	FOOT	1550	1550					
28000500	INLET AND PIPE PROTECTION	EACH	3	3					
28100725	STONE DUMPED RIPRAP, CLASS B3	SQ YD	83	83					
28200200	FILTER FABRIC	SQ YD	83	83					
35101800	AGGREGATE BASE COURSE, TYPE B 6"	SQ YD	1037	1037					
40200700	AGGREGATE SURFACE COURSE, TYPE A 8"	SQ YD	190	190					
40201000	AGGREGATE FOR TEMPORARY ACCESS	TON	40	40					
42300400	PORTLAND CEMENT CONCRETE DRIVEWAY PAVEMENT, 8 INCH	SQ YD	123	123					
42400200	PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH	SQ FT	289	289					
42400800	DETECTABLE WARNINGS	SQ FT	20	20					
44000500	COMBINATION CURB AND GUTTER REMOVAL	FOOT	221	221					

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: NONE | SHEET 2 OF 10 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	5
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE 0040					
44000600	SIDEWALK REMOVAL	SQ FT	1418	1418					
44200144	PAVEMENT PATCHING, TYPE II, 12 INCH	SQ YD	21	21					
44200150	PAVEMENT PATCHING, TYPE IV, 12 INCH	SQ YD	65	65					
44201377	CLASS C PATCHES, TYPE II, 12 INCH	SQ YD	35	35					
44201383	CLASS C PATCHES, TYPE IV, 12 INCH	SQ YD	157	157					
44213200	SAW CUTS	FOOT	272	272					
50102400	CONCRETE REMOVAL	CU YD	6.9	6.9					
50105220	PIPE CULVERT REMOVAL	FOOT	191	191					
50200100	STRUCTURE EXCAVATION	CU YD	2894	2894					
50300225	CONCRETE STRUCTURES	CU YD	901	901					
50300300	PROTECTIVE COAT	SQ YD	4475	4475					
50500405	FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	2960	2960					
50800105	REINFORCEMENT BARS	POUND	195270	195270					
50800515	BAR SPLICERS	EACH	57	57					

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PLOT DATE = 9/25/2014	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: NONE | SHEET 3 OF 10 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	6
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE 0040					
51100300	SLOPE WALL 6 INCH	SQ YD	4125	4125					
51202100	FURNISHING STEEL PILES HP14X117	FOOT	960	960					
51202305	DRIVING PILES	FOOT	960	960					
51204100	TEST PILE STEEL HP14X117	EACH	1	1					
54248510	CONCRETE COLLAR	CU YD	1	1					
54260311	TRAVERSABLE PIPE GRATE	FOOT	19.3	19.3					
54261327	CONCRETE END SECTION, STANDARD 542001, 27", 1:3	EACH	1	1					
54262315	CONCRETE END SECTION, STANDARD 542006, 15", 1:3	EACH	1	1					
54262318	CONCRETE END SECTION, STANDARD 542006, 18", 1:3	EACH	3	3					
542C0223	PIPE CULVERTS, CLASS C, TYPE 1 18"	FOOT	192	192					
550A0340	STORM SEWERS, CLASS A, TYPE 2 12"	FOOT	25	25					
550A0380	STORM SEWERS, CLASS A, TYPE 2 18"	FOOT	36	36					
550A0420	STORM SEWERS, CLASS A, TYPE 2 27"	FOOT	109	109					
56104800	WATER VALVES 4"	EACH	1	1					

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PLOT DATE = 9/25/2014	DATE -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: NONE | SHEET 4 OF 10 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	7
		CONTRACT NO. 76099		
	ILLINOIS FED. AID PROJECT			

					CONSTRUCTION CODE					
					0040					
	CODE NO.	ITEM	UNIT	TOTAL QUANTITY						
	56200500	WATER SERVICE LINE 1 1/2"	FOOT	170	170					
	56201120	WATER SERVICE LINE 4"	FOOT	150	150					
	56500500	DOMESTIC METER VAULTS	EACH	1	1					
	60100060	CONCRETE HEADWALLS FOR PIPE DRAINS	EACH	2	2					
	60100905	PIPE DRAINS 4"	FOOT	93	93					
	60100925	PIPE DRAINS 8"	FOOT	190	190					
	60221100	MANHOLES, TYPE A, 5'-DIAMETER, TYPE 1 FRAME, CLOSED LID	EACH	1	1					
	60236200	INLETS, TYPE A, TYPE B GRATE	EACH	1	1					
	60600605	CONCRETE CURB, TYPE B	FOOT	171	171					
	60605000	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.24	FOOT	223	223					
	60801008	FLAP GATE 8"	EACH	1	1					
	60801018	FLAP GATE 18"	EACH	3	3					
*	63301990	REMOVE AND REERECT TRAFFIC BARRIER TERMINALS, TYPE 1	EACH	1	1					
*	66900200	NON-SPECIAL WASTE DISPOSAL	CU YD	9500	9500					

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* SPECIALTY ITEM

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: NONE | SHEET 5 OF 10 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	8
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			

	CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE 0040					
*	66900450	SPECIAL WASTE PLANS AND REPORTS	L SUM	1	1					
*	66900530	SOIL DISPOSAL ANALYSIS	EACH	3	3					
	67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	30	30					
	67100100	MOBILIZATION	L SUM	1	1					
	70100205	TRAFFIC CONTROL AND PROTECTION, STANDARD 701401	EACH	1	1					
	70100420	TRAFFIC CONTROL AND PROTECTION, STANDARD 701411	EACH	1	1					
	70103815	TRAFFIC CONTROL SURVEILLANCE	CAL DA	120	120					
	70301000	WORK ZONE PAVEMENT MARKING REMOVAL	SQ FT	1416	1416					
	70400100	TEMPORARY CONCRETE BARRIER	FOOT	554	554					
	70600260	IMPACT ATTENUATORS, TEMPORARY (FULLY REDIRECTIVE, NARROW), TEST LEVEL 3	EACH	1	1					
*	78009004	MODIFIED URETHANE PAVEMENT MARKING - LINE 4"	FOOT	1050	1050					
*	78009005	MODIFIED URETHANE PAVEMENT MARKING - LINE 5"	FOOT	488	488					
*	78100100	RAISED REFLECTIVE PAVEMENT MARKER	EACH	26	26					
*	78200410	GUARDRAIL MARKERS, TYPE A	EACH	17	17					

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* SPECIALTY ITEM

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: NONE | SHEET 6 OF 10 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	9
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			

				CONSTRUCTION CODE					
				0040					
CODE NO.	ITEM	UNIT	TOTAL QUANTITY						
* 78200520	BARRIER WALL MARKERS, TYPE B	EACH	13	13					
78300100	PAVEMENT MARKING REMOVAL	SQ FT	968	968					
78300200	RAISED REFLECTIVE PAVEMENT MARKER REMOVAL	EACH	26	26					
80300100	LOCATING UNDERGROUND CABLE	FOOT	4275	4275					
81028320	UNDERGROUND CONDUIT, PVC, 1" DIA.	FOOT	554	554					
81028350	UNDERGROUND CONDUIT, PVC, 2" DIA.	FOOT	370	370					
81028370	UNDERGROUND CONDUIT, PVC, 3" DIA.	FOOT	564	564					
81400700	HANDHOLE, PORTLAND CEMENT CONCRETE	EACH	7	7					
81400720	DOUBLE HANDHOLE, PORTLAND CEMENT CONCRETE	EACH	1	1					
87100020	FIBER OPTIC CABLE IN CONDUIT, NO. 62.5/125, MM12F SM12F	FOOT	614	614					
87800200	CONCRETE FOUNDATION, TYPE D	FOOT	7	7					
87900200	DRILL EXISTING HANDHOLE	EACH	1	1					
42000300	PORTLAND CEMENT CONCRETE PAVEMENT 8"	SQ YD	914	914					
14 Z0004002	BOLLARDS	EACH	8	8					

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: NONE | SHEET 7 OF 10 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	10
		CONTRACT NO. 76G99		

ILLINOIS FED. AID PROJECT

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE 0040					
Z0007601	BUILDING REMOVAL NO. 1	L SUM	1	1					
Z0012754	STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES)	SQ FT	7	7					
Z0013798	CONSTRUCTION LAYOUT	L SUM	1	1					
Z0018500	DRAINAGE STRUCTURES TO BE CLEANED	EACH	23	23					
Z0056700	SANITARY SEWER 4"	FOOT	108	108					
Z0068300	STEEL CASINGS 36"	FOOT	62	62					
X0301028	PUMP STATION SCADA EQUIPMENT	L SUM	1	1					
X0323160	VIDEO INSPECTION OF STORM SEWER	FOOT	2619	2619					
X0323255	DRILLED WELL	EACH	1	1					
X0323859	DOWNSPOUT CONNECTION	EACH	2	2					
X0326713	SANITARY SEWER CONNECTION	EACH	1	1					
X0326931	RECORDER WELL	EACH	1	1					
X0326934	HIGH DENSITY POLYETHYLENE PIPE 12"	FOOT	246	246					
X0327021	LOCATING DEEP WELL FORCE MAIN	EACH	7	7					

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: NONE | SHEET 8 OF 10 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	11
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE 0040					
X0335700	PUMP STATION GENERAL WORK	L SUM	1	1					
X0783300	PUMP STATION ELECTRICAL WORK	L SUM	1	1					
X0783500	PUMP STATION MECHANICAL WORK	L SUM	1	1					
X2090210	POROUS GRANULAR BACKFILL, SPECIAL	CU YD	3000	3000					
X4240430	PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH, SPECIAL	SQ FT	683	683					
X4402720	CUTTER REMOVAL (SPECIAL)	FOOT	61	61					
X6015015	REMOVE AND REPLACE CONCRETE HEADWALLS FOR PIPE UNDERDRAINS	EACH	1	1					
X6020294	MANHOLES, TYPE A, 7'-DIAMETER, TYPE 1 FRAME, CLOSED LID, RESTRICTOR PLATE	EACH	1	1					
X6022820	MANHOLES, SANITARY, 5'-DIAMETER, TYPE 1 FRAME, CLOSED LID	EACH	1	1					
X6040205	FRAMES AND LIDS, SPECIAL	EACH	19	19					
X6063000	CONCRETE GUTTER, TYPE B (SPECIAL)	FOOT	61	61					
X6640308	CHAIN LINK GATES (SPECIAL)	EACH	2	2					
X6640570	CHAIN LINK FENCE, 8' (SPECIAL)	FOOT	1333	1333					
X7010224	TRAFFIC CONTROL AND PROTECTION, STANDARD BLR 22 (SPECIAL)	L SUM	1	1					

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: | SHEET 9 OF 10 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4Y-1	ST. CLAIR	185	12
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE 0040					
X7010410	SPEED DISPLAY TRAILER	CAL MO	4	4					
X7030030	WET REFLECTIVE TEMPORARY TAPE TYPE III, 4 INCH	FOOT	4247	4247					
X6020502	CATCH BASINS, TYPE A, 5'-DIAMETER, TYPE 22 FRAME AND GRATE (SPECIAL)	EACH	2	2					
X0327799	STEEL CASING PIPE, AUGERED AND JACKED, 36"	FOOT	160	160					
X5504000	STORM SEWERS, DUCTILE IRON, TYPE 2 8"	FOOT	149	149					
X5504020	STORM SEWERS, DUCTILE IRON, TYPE 2 18"	FOOT	627	627					
X5504026	STORM SEWERS, DUCTILE IRON, TYPE 2 24"	FOOT	223	223					
X0324751	HIGH DENSITY POLYETHYLENE PIPE 18"	FOOT	92	92					
X0324757	HIGH DENSITY POLYETHYLENE PIPE 24"	FOOT	4724	4724					
X0327801	HORIZONTAL WELL	FOOT	1540	1540					

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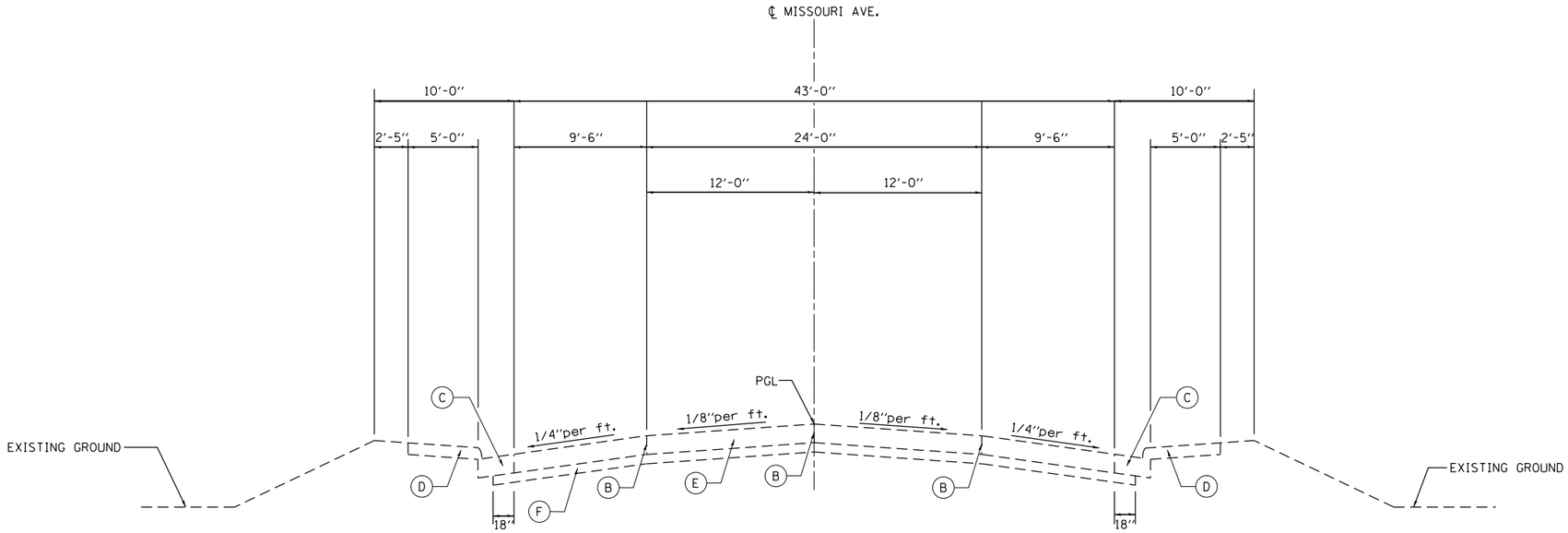
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: | SHEET 10 OF 10 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	13
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			

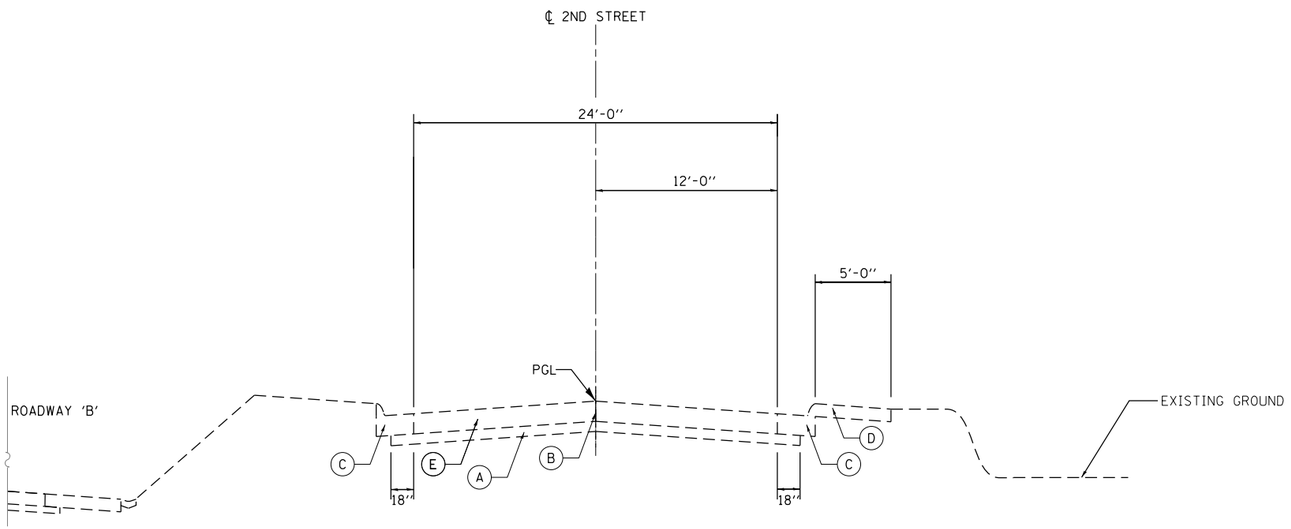


EXISTING TYPICAL SECTION

MISSOURI AVENUE (LOOKING NORTH)
FOR INFORMATION ONLY

LEGEND:

- (A) EXISTING SUB-BASE GRANULAR MATERIAL, TYPE A (4'' MIN.)
- (B) EXISTING LONGITUDINAL SAWED JOINT OR LONGITUDINAL CONSTRUCTION JOINT
- (C) EXISTING COMBINATION CONCRETE CURB & GUTTER, TYPE B-6.24
- (D) EXISTING PORTLAND CEMENT CONCRETE SIDEWALK (5'' THICK)
- (E) EXISTING PORTLAND CEMENT CONCRETE PAVEMENT (8'' THICK)
- (F) EXISTING STABILIZED SUB-BASE 4''
- (G) EXISTING STABILIZED SHOULDERS (BITUMINOUS AGGREGATE MIXTURE)
- (H) EXISTING CONCRETE GUTTER, TYPE B
- (I) EXISTING CONCRETE GUTTER, TYPE B (SPECIAL)
- (J) EXISTING CONTINUOUSLY REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT (8'' THICK)
- (K) EXISTING HMA SURFACE, DEPTH UNKNOWN



EXISTING TYPICAL SECTION

2ND STREET (LOOKING SOUTH)
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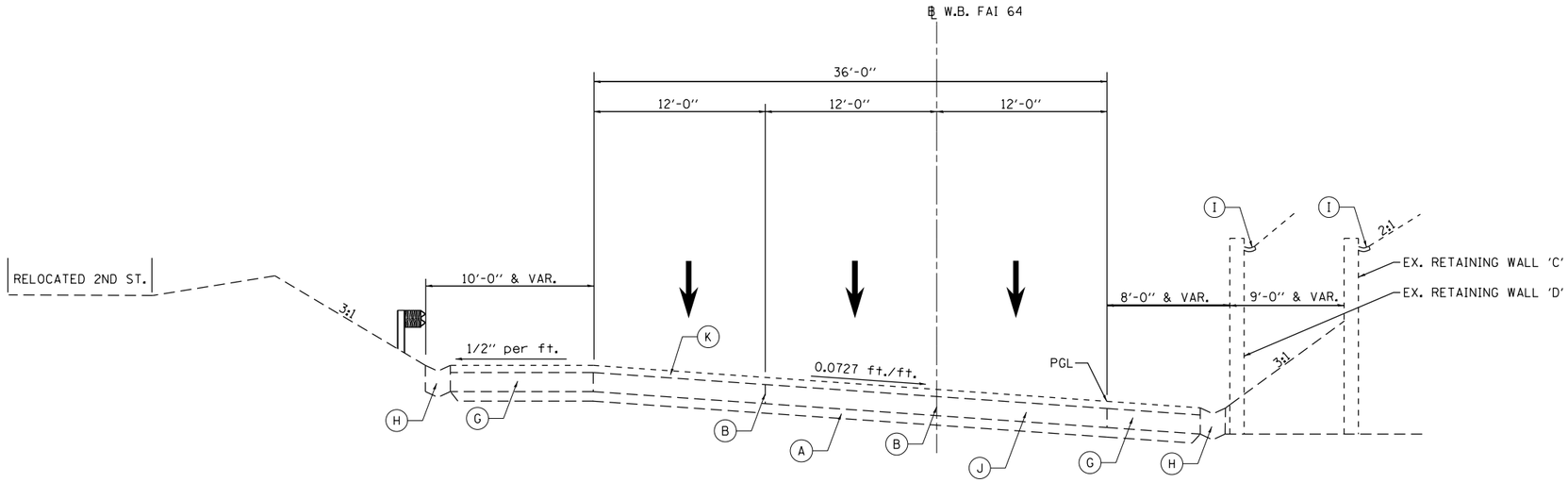
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TYPICAL SECTIONS
MISSOURI AVENUE DEEP WELL FACILITY

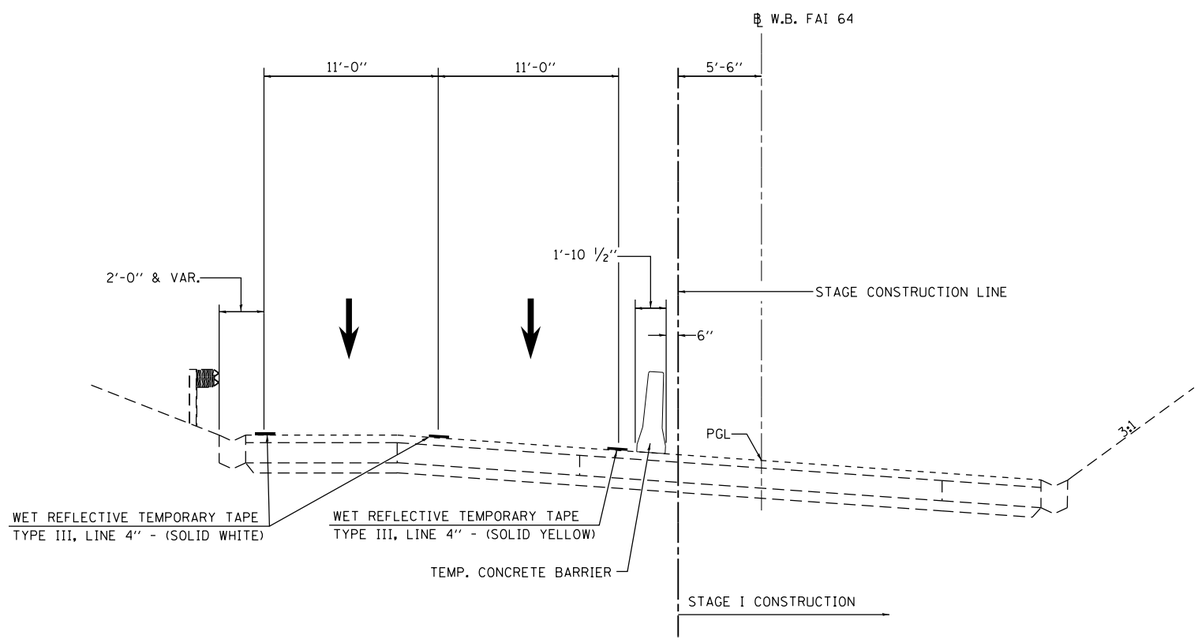
SCALE: N.T.S. | SHEET 1 OF 2 SHEETS | STA. N/A | TO STA. N/A

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	14
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			



EXISTING TYPICAL SECTION

FAI 64 WEST BOUND (LOOKING NORTHEAST)



STAGE I CONSTRUCTION

FAI 64 WEST BOUND (LOOKING NORTHEAST)

FROM STA. 121+67 TO STA. 124+67

LEGEND:

- (A) EXISTING SUB-BASE GRANULAR MATERIAL, TYPE A (4" MIN.)
- (B) EXISTING LONGITUDINAL SAWED JOINT OR LONGITUDINAL CONSTRUCTION JOINT
- (C) EXISTING COMBINATION CONCRETE CURB & GUTTER, TYPE B-6.24
- (D) EXISTING PORTLAND CEMENT CONCRETE SIDEWALK (5" THICK)
- (E) EXISTING PORTLAND CEMENT CONCRETE PAVEMENT (8" THICK)
- (F) EXISTING STABILIZED SUB-BASE 4"
- (G) EXISTING STABILIZED SHOULDERS (BITUMINOUS AGGREGATE MIXTURE)
- (H) EXISTING CONCRETE GUTTER, TYPE B
- (I) EXISTING CONCRETE GUTTER, TYPE B (SPECIAL)
- (J) EXISTING CONTINUOUSLY REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT (8" THICK)
- (K) EXISTING HMA SURFACE, DEPTH UNKNOWN

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TYPICAL SECTIONS
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: N.T.S. | SHEET 2 OF 2 SHEETS | STA. N/A | TO STA. N/A

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	15
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			

EARTHWORK SCHEDULE

	20200100			20400800
DESCRIPTION	EARTH EXCAVATION (CY)	EARTH EXCATION (REDUCED 20%) (CY)	EMBANKMENT (CY)	FURNISHED EXCAVATION (CY)
FINAL GRADE	2983	2386	6658	-
BASIN ADJUSTMENT	549	439	-	-
PARKING LOT ADJUSTMENT	-	-	(399)	-
WELL HOUSE ADJUSTMENT	-	-	(770)	-
AGGREGATE DRIVE ADJUSTMENT	-	-	(42)	-
TOPSOIL ADJUSTMENT	-	-	(504)	-
TOTAL	**3532**	**2825**	**4943**	**(2118)**
USE	**3530**			**2120**

EROSION CONTROL SCHEDULE

	25100630	25100900	28000250	28000305	28000400	28000500
LOCATION	EROSION CONTROL BLANKET (SQ YD)	TURF REINFORCEMENT MAT (SQ YD)	TEMP EROSION CONTROL SEEDING (POUND)	TEMPORARY DITCH CHECKS (FOOT)	PERIMETER EROSION BARRIER (FOOT)	INLET AND PIPE PROTECTION (EACH)
SOUTH OF BASIN	1041	180	-	-	400	-
NORTH & WEST OF BASIN	655	40	-	40	550	-
NORTH & EAST OF PARKING LOT	488	-	-	-	380	-
10+55.0 35' RT (2ND STREET)	-	-	-	-	-	-
39+95 (FORCE MAIN)	-	-	-	-	-	1
45+34 (FORCE MAIN)	-	-	-	-	-	1
ESTIMATED QUANTITY	162	50	2050	50	220	1
TOTAL	**2346**	**270**	**2050**	**90**	**1550**	**3**

SEEDING SCHEDULE

	21101615	25000200	25000400	25000500	25000600	25100115	21101615
	SEEDING, CLASS 1B (ACRE)	SEEDING, CLASS 2 (ACRE)	NITROGEN FERTILIZER NUTRIENT (POUND)	PHOSPHORUS FERTILIZER NUTRIENT (POUND)	POTASSIUM FERTILIZER NUTRIENT (POUND)	MULCH, METHOD 2 (ACRE)	TOPSOIL FURNISH AND PLACE, 4" (SQ YD)
SOUTH OF BASIN	0.37		33	33	33	0.37	1814
WEST OF BASIN	0.13		12	12	12	0.13	634
NORTH & WEST OF BASIN	0.17		15	15	15	0.17	813
NORTH & WEST OF PARKING LOT	0.13		12	12	12	0.13	648
BETWEEN WELL HOUSE& BASIN	0.13		12	12	12	0.13	623
FORCE MAIN (13+10 TO 15+30)		0.08	7	7	7	0.08	
FORCE MAIN (16+80 TO 59+25)		1.46	131	131	131	1.46	
FORCE MAIN (60+60 TO 61+17)		0.02	2	2	2	0.02	
TOTAL	**2.5**	**1.6**	**224**	**224**	**224**	**2.5**	**4532**

TREE REMOVAL SCHEDULE

	20100110	20100500
LOCATION	TREE REMOVAL (6 TO 15 UNITS) (UNIT)	TREE REMOVAL, ACRES (ACRE)
10+50 TO 14+36 RT - 2ND STREET		1.4
10+54 27' RT - 2ND STREET	9	
59+26 1' RT - 24" FORCE MAIN	36	
TOTAL:	**45**	**1.4**

GUARDRAIL REMOVAL SCHEDULE

	63301990
LOCATION	REMOVE AND REERECT TRAFFIC BARRIER TERM, TY 1 (EACH)
4+80 LT (MISSOURI AVE)	1
TOTAL:	**1**

PAVEMENT SCHEDULE

	21001000	35101800	40200700	42300400	LR420029
LOCATION	GEOTECH FABRIC FOR GROUND STABILIZATION (SQ YD)	AGGREGATE BASE COURSE, TYPE B 6" (SQ YD)	AGGREGATE SURFACE COURSE, TYPE A 8" (SQ YD)	PCC DRIVEWAY PAVEMENT, 8 INCH (SQ YD)	PORTLAND CEMENT CONCRETE PAVEMENT 8" (SPECIAL) (SQ YD)
WELL HOUSE PARKING LOT	914	914	-	-	914
BASIN ACCESS DRIVE	-	-	190	-	-
11+05.5 RT (2ND STREET)	-	123	-	123	-
TOTAL	**914**	**1037**	**190**	**123**	**914**

RIPRAP SCHEDULE

	28100725	28200200
LOCATION	STONE DUMPED RIPRAP, CLASS B3 (SQ YD)	FILTER FABRIC (SQ YD)
10+43 TO 10+68 RT (2ND STREET)	83	83
TOTAL	**83**	**83**

SLOPE WALL SCHEDULE

	51100300
LOCATION	SLOPE WALL 6 INCH (SQ YD)
DETENTION BASIN	4125
TOTAL:	**4125**

SIDEWALK SCHEDULE

	42400200	42400800	X4240430
LOCATION	PCC SIDEWALK 5 INCH (SQ FT)	DETECTABLE WARNINGS (SQ FT)	PCC SIDEWALK 5 INCH, SPECIAL (SQ FT)
4+97 TO 5+21 RT (MISSOURI AVE)	122	10	-
5+52 TO 5+82 RT (MISSOURI AVE)	167	10	-
WELLL HOUSE - WEST SIDE	-	-	458
WELLL HOUSE - SOUTH SIDE	-	-	225
TOTAL	**289**	**20**	**683**

REMOVAL & PATCHING SCHEDULE

	44000500	44201377	44200150	44201377	44201383	44213200
LOCATION	COMBINATION CURB AND GUTTER REMOVAL (FOOT)	SIDEWALK REMOVAL (SQ FT)	PAVEMENT PATCHING, TYPE IV, 12 INCH (SQ YD)	CLASS C PATCHES, TYPE II, 12 INCH (SQ YD)	CLASS C PATCHES, TYPE IV, 12 INCH (SQ YD)	SAW CUTS (FOOT)
10+27.5 TO 10+33.5 LT (2ND STREET)	6					
10+31.4 TO 12+68.0 RT (2ND STREET)		1304				
10+32.5 TO 10+38.5 RT (2ND STREET)	6					
10+70.0 TO 11+40.0 RT (2ND STREET)	70					
10+86.0 TO 10+92.0 RT (2ND STREET)				8.1		24.4
10+86.0 TO 10+92.0 LT (2ND STREET)	7			10.9		33.3
11+70.0 TO 12+30.0 RT (2ND STREET)	60				73.1	27.4
11+70.0 TO 12+30.0 LT (2ND STREET)	60				84.1	31.2
12+62.0 TO 12+68.0 RT (2ND STREET)	6			8.3		29.8
12+62.0 TO 12+68.0 LT (2ND STREET)	6			7.9		28.4
4+76.1 TO 4+88.4 RT (MISSOURI AVE)			25.0			47.8
4+76.1 TO 4+88.4 LT (MISSOURI AVE)			40.2			49.6
5+55.6 TO 5+81.9 RT (MISSOURI AVE)		114				
TOTAL	**221**	**1418**	**65**	**35**	**157**	**272**

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PLOT DATE = 9/23/2014	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SCHEDULE OF QUANTITIES
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: NONE | SHEET 1 OF 6 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	16
		CONTRACT NO. 76G99		
	ILLINOIS	FED. AID PROJECT		

FENCING SCHEDULE

LOCATION				X6640570	X6640308	
				CHAIN LINK FENCE, 8' (SPECIAL)	CHAIN LINK GATES (SPECIAL)	
STATION	OFFSET	NORTHING	EASTING	(FOOT)	(EACH)	NOTES
10+22.07	41.39' LT	14,039,962.51	2,450,943.37			
TO				21.2		
10+34.13	23.98' LT	14,039,970.48	2,450,923.75			
TO				12.1		
10+35.50	12.00' LT	14,039,979.77	2,450,916.05			
TO				-	1	24' DOUBLE GATE CENTERED ON 2ND ST.
10+40.50	12.17' RT	14,039,997.26	2,450,898.64			
TO				46.3		
10+40.50	58.46' RT	14,040,036.01	2,450,873.32			
TO				21.2		
10+61.30	54.20' RT	14,040,021.07	2,450,858.24			
TO				34.3	1	24' DOUBLE GATE CENTERED ON ENTRANCE
11+18.43	42.51' RT	14,039,980.03	2,450,816.81			
TO				15		
11+22.58	28.09' RT	14,039,965.70	2,450,821.22			
TO				295.3		
14+20.00	50.00' RT	14,039,746.76	2,450,623.05			
TO				60.4		
14+30.00	110.00' RT	14,039,786.96	2,450,577.91			
TO				131.9		
12+90.00	215.00' RT	14,039,913.95	2,450,542.38			
TO				195.6		
12+15.00	370.00' RT	14,040,095.48	2,450,469.41			
TO				113.8		
11+70.00	365.00' RT	14,040,177.87	2,450,547.97			
TO				130.9		
11+63.28	234.92' RT	14,040,092.53	2,450,647.28			
TO				116.6		
10+89.08	190.00' RT	14,040,119.56	2,450,760.70			
TO				138.6		
10+61.30	54.20' RT	14,040,021.07	2,450,858.24			
TOTAL:				**1333**	**2**	

LOCATING UNDERGROUND CABLE SCHEDULE

			80300100
			LOCATING UNDERGROUND CABLE
STATION	TO	STATION	(FOOT)
16+90	TO	21+00	410
21+00	TO	27+00	600
27+00	TO	33+00	600
33+00	TO	39+00	600
39+00	TO	45+00	600
45+00	TO	51+00	600
51+00	TO	57+00	600
57+00	TO	59+23	223
60+75	TO	61+17	42
TOTAL			**4275**

BOLLARD SCHEDULE

	Z0004002
LOCATION	BOLLARDS (EACH)
NORTHEAST CORNER OF WELL HOUSE	1
WEST OVERHEAD DOOR OF WELL HOUSE	2
EAST OVERHEAD DOOR OF WELL HOUSE	2
NORTHWEST CORNER OF WELL HOUSE	1
WELL HOUSE TRANSFORMER	2
TOTAL	**8**

ELECTRICAL SCHEDULE

	81400700	81400720	87900200	87800200	X0783300
LOCATION / DESCRIPTION	HH, PCC (EACH)	DOUBLE HH, PCC (EACH)	DRILL EXISTING HANDHOLE (EACH)	CONC FOUND, TYPE D (FOOT)	PUMP STAT ELECT WORK (L SUM)
10+39 36' LT (2ND STREET)		1			
10+68 73' RT (2ND STREET)	1				
11+29 56' RT (2ND STREET)	1				
11+65 44' RT (2ND STREET)	1				
11+65 49' RT (2ND STREET)	1				
11+67 115' RT (2ND STREET)				4.0	
11+69 160' RT (2ND STREET)				3.0	
13+25 35' LT (2ND STREET)	1				
118+40 177' RT (ROADWAY B)			1		
119+20 130' RT (ROADWAY B)	1				
4+78 36' LT (MISSOURI AVE)	1				
WELL HOUSE & EXISTING PUMP STATION					1
TOTAL	**7**	**1**	**1**	**7.0**	**1**

CULVERT REMOVAL SCHEDULE

		50105220
		PIPE CULVERT REMOVAL
LOCATION	TYPE	(FOOT)
39+47.2 (FORCE MAIN)	18" CMP	93.5
44+84.5 (FORCE MAIN)	18" CMP	97.6
TOTAL:		**191**

CULVERT SCHEDULE

	542C0223
	PIPE CULVERTS, CLASS C, TYPE 1 18"
LOCATION	(FOOT)
39+47.2 (FORCE MAIN)	94
44+84.5 (FORCE MAIN)	98
TOTAL:	**192**

BUILDING REMOVAL SCHEDULE

	Z0007601
	BUILDING REMOVAL NO. 1
LOCATION	(L SUM)
13+84 70' RT (2ND STREET)	1
TOTAL	**1**

UNDERDRAIN REMOVAL SCHEDULE

	X6015015
	REMOVE AND REPLACE CONC HDWL FOR PIPE UNDERDRAINS
STATION	(EACH)
26+83 (FORCE MAIN)	1
TOTAL	**1**

CONDUIT / WIRE SCHEDULE

	81028320	81028350	81028370	87100020
LOCATION	UNDERGROUND CONDUIT, PVC, 1" DIA. (FOOT)	UNDERGROUND CONDUIT, PVC, 2" DIA. (FOOT)	UNDERGROUND CONDUIT, PVC, 3" DIA. (FOOT)	FIBER OPTIC CABLE IN CONDUIT, NO. 62.5/125, MM12F SM12F (FOOT)
WELL HOUSE TO 10+68 73' RT (2ND STREET)	368	184		
10+68 73' RT (2ND STREET) TO 4+78 36' LT (MISSOURI AVE)	186	186		
WELL HOUSE TO 11+29 56' RT (2ND STREET)			70	75
11+29 56' RT (2ND STREET) TO 11+65 49' RT (2ND STREET)			44	49
11+65 49' RT (2ND STREET) TO 13+25 35' LT (2ND STREET)			191	196
13+25 35' LT (2ND ST) TO 119+20 130' RT (ROADWAY B)			172	177
119+20 130' RT (ROADWAY B) TO 118+40 (ROADWAY B)			87	92
119+20 130' RT (ROADWAY B) TO CONTROLLER				25
TOTAL	**554**	**370**	**564**	**614**

NOTE: PAYMENT FOR ALL OTHER CONDUIT AND WIRE FOR THE WELL HOUSE AND EXISTING PUMP STATION, INCLUDING THE NEW SERVICE SHALL BE INCLUDED IN THE PAY ITEM "PUMP STATION ELECTRICAL WORK.

FILE NAME = D:\1files\10023\Work Order 3 MO Ave Ph2\CADD Sheets\D8760099-sht-schedule.dgn

KLINGNER & ASSOCIATES, P.C.
Engineers · Architects · Surveyors

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SCHEDULE OF QUANTITIES
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: NONE | SHEET 2 OF 6 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	17
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			

DRAINAGE STRUCTURE SCHEDULE

				54260311	54261327	54262315	54262318	60801008	60801018	60236200	60221100	X6020294	
LABEL	ROADWAY	STATION	OFFSET	TRAVERSABLE PIPE GRATE (FOOT)	CONC END SECTION, STD 542001, 27", 1:3 (EACH)	CONC END SECTION, STD 542006, 15", 1:3 (EACH)	CONC END SECTION, STD 542006, 18", 1:3 (EACH)	FLAP GATE 8" (EACH)	FLAP GATE 18" (EACH)	INLETS, TY A, TY 8 GR (EACH)	MH, TY A, 5', TY 1 FR, CLSD LID (EACH)	MH, TY A, 7', TY 1 FR, CLSD LID, REST. PLATE (EACH)	CB, TY A, 5', TY 22 FR AND GR (SPL) (EACH)
A1	2ND ST	12+57.9	84.8' RT	19.3	1								
A3	2ND ST	12+65.0	62.0' RT									1	
A5	2ND ST	12+65.0	32.2' LT								1		
B2	2ND ST	12+11.8	53.1' RT				3		3				
B4	2ND ST	12+11.8	53.0' RT			1		1					
F2	2ND ST	10+55.0	35.0' RT							1			
-	I-64/55	123+85.0	17.8' RT										1
-	I-64/55	124+25.0	17.8' RT										1
TOTAL:				19	1	1	3	1	3	1	1	1	2

STORM SEWER /FORCE MAIN SCHEDULE

				20800150	550A0340	550A0420				X0326934				Z0068300
LABEL	STATION TO STATION			TRENCH BACKFIIL (CU YD)	SS, CL A, TY 2 12" (FOOT)	SS, CL A, TY 2 27" (FOOT)	SS, DI, TY 2 8" (FOOT)	SS, DI, TY 2 18" (FOOT)	SS, DI, TY 2 24" (FOOT)	HDPE 12" (FOOT)	HDPE 18" (FOOT)	HDPE 24" (FOOT)	STEEL CASING, A&J, 36" (FOOT)	STEEL CASINGS 36" (FOOT)
A2	0+76.1	TO	1+00.0	8.6		20.4								
A4	1+00.0	TO	1+94.2	71.0		88.2								
B1	5+00.0	TO	6+65.5	116.6				498.7						
B3	5+00.0	TO	6+67.3				149.1							
C4	-									48.0				
C5	-									61.0				
C7	-									137.0				
F1	10+32.2	TO	10+55.0	8.0	25.0									
-	10+03.5	TO	15+00.0	119.0				128.3			92.2	330.0		62.0
-	15+00.0	TO	21+00.0									600.0	136.0	
-	21+00.0	TO	27+00.0									600.0		
-	27+00.0	TO	33+00.0									600.0		
-	33+00.0	TO	39+00.0									600.0		
	39+00.0	TO	45+00.0									600.0		
	45+00.0	TO	51+00.0									600.0	24.0	
	51+00.0	TO	57+00.0									600.0		
-	57+00.0	TO	61+17.4						223.1			194.3		
TOTAL:				323	25	109	149	627	223	246	92	4724	160	62

FORCE MAIN LOCATING SCHEDULE

		X0327021
LABEL	STATION	LOCATING DEEP WELL FORCE MAIN (EACH)
C4	-	1
C5	-	1
C6	-	2
C7	-	1
-	14+56	1
-	16+90	1
TOTAL		7

PIPE DRAIN SCHEDULE

		60100060	60100905	60100925	X0323859
LABEL	LOCATION	CONCRETE HEADWALLS FOR PIPE DRAINS (EACH)	PIPE DRAINS 4" (FOOT)	PIPE DRAINS 8" (FOOT)	DOWNSPOUT CONNECTION (EACH)
G1	WEST WALL (N) WELL HOUSE				1
G2	NORTH SIDE WELL HOUSE			58	
G1	WEST WALL (S) WELL HOUSE			38	1
G3	11+89.8 78.9' RT (2ND STREET)	1			
G4	WELL HOUSE OVERFLOWS & SUMPS		93	94	
G5	11+90.2 68.9' RT (2ND STREET)	1			
TOTAL:		2	93	190	2

CURB AND GUTTER SCHEDULE

	60600605	60605000
LOCATION	CONCRETE CURB, TYPE B (FOOT)	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.24 (FOOT)
10+27.5 TO 10+33.5 LT (2ND STREET)		6.5
10+32.5 TO 10+38.5 RT (2ND STREET)		7.5
10+70.0 TO 11+40.0 RT (2ND STREET)		70.0
10+86.0 TO 10+92.0 LT (2ND STREET)		7.1
11+70.0 TO 12+30.0 RT (2ND STREET)		60.0
11+70.0 TO 12+30.0 LT (2ND STREET)		60.0
12+62.0 TO 12+68.0 RT (2ND STREET)		6.0
12+62.0 TO 12+68.0 LT (2ND STREET)		6.0
WELL HOUSE PARKING LOT - EAST	146.1	
WELL HOUSE PARKING LOT - SOUTH	25.2	
123+67 TO 124+81 RT (ROADWAY B)		
TOTAL	171	223

SANITARY SEWER SCHEDULE

			Z0056700	X0326713	X6022820
LABEL	STATION	OFFSET	SANITARY SEWER 4" (FOOT)	SANITARY SEWER CONNECTION (EACH)	MH, SANITARY, 5', TY 1 FR, CLOSED LID (EACH)
D1	11+85.0	6.4' LT		1	
D2			108		
D3	11+83.0	102.0' LT			1
TOTAL			108	1	1

WATER MAIN SCHEDULE

		56104800	56200500	56201120	56500500
LABEL	LOCATION	WATER VALVES 4" (EACH)	WATER SERVICE LINE 1 1/2" (FOOT)	WATER SERVICE LINE 4" (FOOT)	DOMESTIC METER VAULTS (EACH)
E2	10+75.1 32.9' RT (2ND STREET)				1
E3	WATER MAIN TO WELL HOUSE			150	
E4	WELL HOUSE TO EX. PUMP STA.		170		
E5	10+75.1 45.0' RT (2ND STREET)	1			
TOTAL:		1	170	150	1

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KLINGNER & ASSOCIATES, P.C.
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MISSOURI AVENUE DEEP WELL FACILITY

SCALE: NONE | SHEET 3 OF 6 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	18
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	ILLINOIS FED. AID PROJECT			

LOCATION	HORIZONTAL WELL (FOOT)
LATERAL 1	250
LATERAL 2	250
LATERAL 3	180
LATERAL 4	170
LATERAL 5	190
LATERAL 6	250
LATERAL 7	250
TOTAL	**1540**

RECORDER WELL SCHEDULE

		X0326931
STATION	**OFFSET**	**RECORDER WELL (EACH)**
121+93.0	26.4' RT	1
TOTAL		**1**

PROTECTIVE COAT SCHEDULE

	50300300
PAY ITEM	**PROTECTIVE COAT (SQ YD)**
PORTLAND CEMENT CONCRETE DRIVEWAY PAVEMENT, 8 INCH	123.0
PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH	32.1
SLOPE WALL 6 INCH	4125.0
CONCRETE CURB, TYPE B	15.3
COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.24	76.4
PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH, SPECIAL	75.9
CONCRETE GUTTER, TYPE B (SPECIAL)	27.0
TOTAL:	**4475**

FORCE MAIN VAULT SCHEDULE

			50300225	*50800105*	*50200100*	*X6040205*
CALL-OUT	**STATION**	**OFFSET**	**CONCRETE STRUCTURES (CU YD)**	**REINFORCEMENT BARS (POUND)**	**STRUCTURE EXCAVATION (CU YD)**	**FRAMES AND LIDS, SPECIAL (EACH)**
C1	11+36.7	-	29.6	6790	58	1
C2	11+60.9	-	37.5	8200	61	1
C3	13+65.3	-	75.9	32220	247	2
C4	13+76.0	41.8' RT	37.1	8190	79	1
C5	13+84.0	47.2' RT	37.1	8190	79	1
C6	14+12.2	30.2' RT	26.8	5520	51	1
C7	14+64.4	11.8' RT	33.1	7520	68	1
C8	17+91.1	-	22.7	5020	43	1
C9	21+22.9	-	18.7	4390	31	1
C10	25+20.0	-	20.7	4770	37	1
C11	29+29.2	-	28.5	5890	61	1
C12	33+37.8	-	28.7	5900	62	1
C13	37+17.0	-	18.4	4370	30	1
C14	41+91.5	-	18.7	4390	31	1
C15	45+68.7	-	18.7	4390	31	1
C16	49+34.2	-	18.4	4370	30	1
C17	52+88.0	-	19.6	4570	34	1
C18	57+44.4	-	20.4	4620	36	1
TOTAL:			**511**	**129310**	**1069**	**19**

STRUCTURAL STEEL SCHEDULE

	50500405
LOCATION	**FURNISHING AND ERECTING STRUCTURAL STEEL (POUND)**
PIPE BRIDGE OVER ST. CLAIR AVE.	2960
TOTAL:	**2960**

ALL STRUCTURAL STEEL FOR THE NEW WELL HOUSE BUILDING AND THE EXISTING PUMP STATION BUILDING SHALL BE INCLUDED IN THE UNIT PRICE FOR "PUMP STATION GENERAL WORK"

FILE NAME = Q:\1files\110023\Work Order 3 MO Ave Ph2\CADD Sheets\D876G99-sht-schedule.dgn

KLINGNER & ASSOCIATES, P.C.
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MISSOURI AVENUE DEEP WELL FACILITY

SCALE: NONE | SHEET 4 OF 6 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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TRAFFIC CONTROL SCHEDULE

			70100205	*70100420*	*70103815*	*70400100*	*70600260*	*78200410*	*78200520*	*X7010410*
LOCATION			**TRAFFIC CONTROL AND PROTECTION, STANDARD 701401**	**TRAFFIC CONTROL AND PROTECTION, STANDARD 701411**	**TRAFFIC CONTROL SURVEILLANCE**	**TEMPORARY CONCRETE BARRIER**	**IMPACT ATTENUATORS, TEMP (FULLY REDIRECTIVE, NARROW), TEST LVL 3**	**GUARDRAIL MARKERS, TYPE A**	**BARRIER WALL MARKERS, TYPE B**	**SPEED DISPLAY TRAILER**
WESTBOUND F.A.I. 64										
STATION	**STATION**	**OFFSET**	(EACH)	(EACH)	(CAL DA)	(FOOT)	(EACH)	(EACH)	(EACH)	(CAL MO)
118+00	142+00	N/A	1		120					
121+67	124+67	6.9' LT				300.1			13	
121+87	136+00	LT						17		
124+67	127+20	6.9' RT				253.4				
127+20	N/A	12' RT					1			
130+25	N/A	RT								4
131+87	132+47	RT		1						
TOTAL:			**1**	**1**	**120**	**554**	**1**	**17**	**13**	**4**

PAVEMENT MARKING SCHEDULE

LOCATION			WORK ZONE PAVEMENT MARKING REMOVAL	MODIFIED URETHANE PAVEMENT MARKING - LINE 4"	MODIFIED URETHANE PAVEMENT MARKING - LINE 6"	RAISED REFLECTIVE PAVEMENT MARKER	PAVEMENT MARKING REMOVAL	RAISED REFLECTIVE PAVEMENT MARKER REMOVAL	WET REFLECTIVE TEMPORARY TAPE TYPE III, 4 INCH
WESTBOUND FAI 55/64/70			70301000	78009004	78009006	78100100	78300100	78300200	X7030030
STATION	**STATION**	**O/S**	SQ FT	FOOT	FOOT	EACH	SQ FT	EACH	FOOT
119+55	129+30	24' LT	325				321.8		975
119+55	131+87	CL	410.67						1232
119+55	128+00	24' LT		845	243.8				
119+55	129+30	12' LT	325		243.8	26	487.5	26	975
119+55	128+00	CL							
121+67	124+67	LT							
121+87	126+00	LT							
123+67	124+42	13.3' RT		74.5					
123+85	N/A	N/A							
124+25	N/A	N/A							
128+00	129+30	24' LT		130.3					
129+30	142+00	CL					158.8		
131+50	131+87	RT							44.5
131+87	N/A	N/A	14.84						
131+88	142+00	RT							1020.7
131+89	142+00	RT	340.25						
TOTAL			1416	1050	488	26	968	26	4247

CONCRETE GUTTER SCHEDULE

LOCATION			CONCRETE GUTTER, TYPE B (SPECIAL)	PROTECTIVE COAT	GUTTER REMOVAL (SPECIAL)
WESTBOUND FAI 55/64/70			X6063000	50300300	X4402720
STATION	**STATION**	**O/S**	FOOT	SQ YD	FOOT
123+68	123+99.75	21' RT	31.4	13.6	31
124+12.42	124+42	21' RT	29.3	12.7	29
TOTAL			61.0	27	61

FILE NAME = D:\Utilities\180223\Work Order 3 MO Ave Ph2\CADD Sheets\QB76099-sht-schedule.dgn

LIN ENGINEERING, LTD.
Consulting Engineers
Springfield, Illinois

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DRAINAGE SCHEDULE									
LOCATION				TRENCH BACKFILL	PAVEMENT PATCHING, TYPE II, 10 INCH	STORM SEWERS, CLASS A, TYPE 2 18"	CATCH BASINS, TYPE A, 5'-DIAMETER, TYPE 22 FRAME AND GRATE (SPECIAL)	DRAINAGE STRUCTURES TO BE CLEANED	VIDEO INSPECTION OF STORM SEWER	CONCRETE COLLAR
WESTBOUND FAI 55/64/70				20800150	44200120	550A0380	XXXXXXX	Z0018500	X0323160	54248510
STATION	**O/S**	**STATION**	**O/S**	CU YD	SQ YD	FOOT	EACH	EACH	FOOT	CU YD
117+93.28	21.15' RT	117+98.90	18.08' RT						50.0	
120+98.47	21.27' RT	121+04.88	18.30' RT						6.4	
121+04.88	18.30' RT	121+04.66	1.86' LT						19.7	
121+15.01	33.38' LT	121+48.38	22.35' LT						10.9	
121+71.36	29.53' RT	121+70.86	2.73' LT						32.3	
122+53.12	38.54' LT	122+53.12	21.69' LT						17.0	
122+67.23	18.21' RT	122+67.36	2.11' LT						20.0	
123+85	14.8' RT	123+85	5.5' LT	12.0	10.4	18.0	1.0			0.4
124+00.64	19.27' RT	124+06.12	15.73' RT						5.8	
124+06.12	15.73' RT	124+06.00	1.59' LT						17.0	
124+11.55	19.31' RT	124+06.12	15.73' RT						6.3	
124+25	14.9' RT	124+25	5.5' LT	9.5	10.4	18.0	1.0			0.4
124+48.82	16.03' RT	124+48.73	1.53' LT						17.1	
124+97.30	18.35' RT	124+48.82	16.03' RT						47.2	
127+04.71	19.26' RT	124+48.82	16.03' RT						253.0	
124+85.03	32.02' LT	124+84.98	21' LT						10.8	
127+04.17	22.95' RT	127+04.71	19.26' RT						3.7	
127+02.26	32.39' LT	127+04.71	19.26' RT						51.5	
129+86.55	49.04' LT	130+00.75	34.13' LT						20.6	
130+00.12	18.60' RT	127+04.71	19.26' RT						293.3	
130+00.75	34.13' LT	130+00.12	18.60' RT						52.7	
130+06.29	21.02' RT	130+00.12	18.60' RT						6.2	
117+93.28	21.15' RT	N/A	N/A					1		
117+98.90	18.08' RT	N/A	N/A					1		
120+98.47	21.27' RT	N/A	N/A					1		
121+04.88	18.30' RT	N/A	N/A					1		
121+15.01	33.38' LT	N/A	N/A					1		
122+53.12	38.54' LT	N/A	N/A					1		
121+71.36	29.53' RT	N/A	N/A					1		
122+67.23	18.21' RT	N/A	N/A					1		
124+00.64	19.27' RT	N/A	N/A					1		
124+06.12	15.73' RT	N/A	N/A					1		
124+11.55	19.31' RT	N/A	N/A					1		
124+48.82	16.03' RT	N/A	N/A					1		
124+85.03	32.02' LT	N/A	N/A					1		
124+97.30	18.35' RT	N/A	N/A					1		
127+02.26	32.39' LT	N/A	N/A					1		
127+04.17	22.95' RT	N/A	N/A					1		
127+04.71	19.26' RT	N/A	N/A					1		
129+86.55	49.04' LT	N/A	N/A					1		
130+00.12	18.60' RT	N/A	N/A					1		
130+00.75	34.13' LT	N/A	N/A					1		
130+06.29	21.02' RT	N/A	N/A					1		
122+55	38.50' LT	N/A	N/A					1		
			TOTAL	21.5	20.8	36.0	2.0	22	941.5	0.8
			ROUNDED TOTAL	22	21	36	2	22	942 •	1

• - ADDITIONAL 1677 FEET OF VIDEO INSPECTION OF STORM SEWER FROM EXISTING DRAINAGE STRUCTURE AT STA 61+20 TO BOWMAN AVE PUMP STATION. TOTAL = 2609'

FILE NAME = O:\Utilities\110023\Work Order 3 MO Ave Ph2\CADD Sheets\D876099-sht-schedule.dgn

LIN ENGINEERING, LTD.
Consulting Engineers
Springfield, Illinois

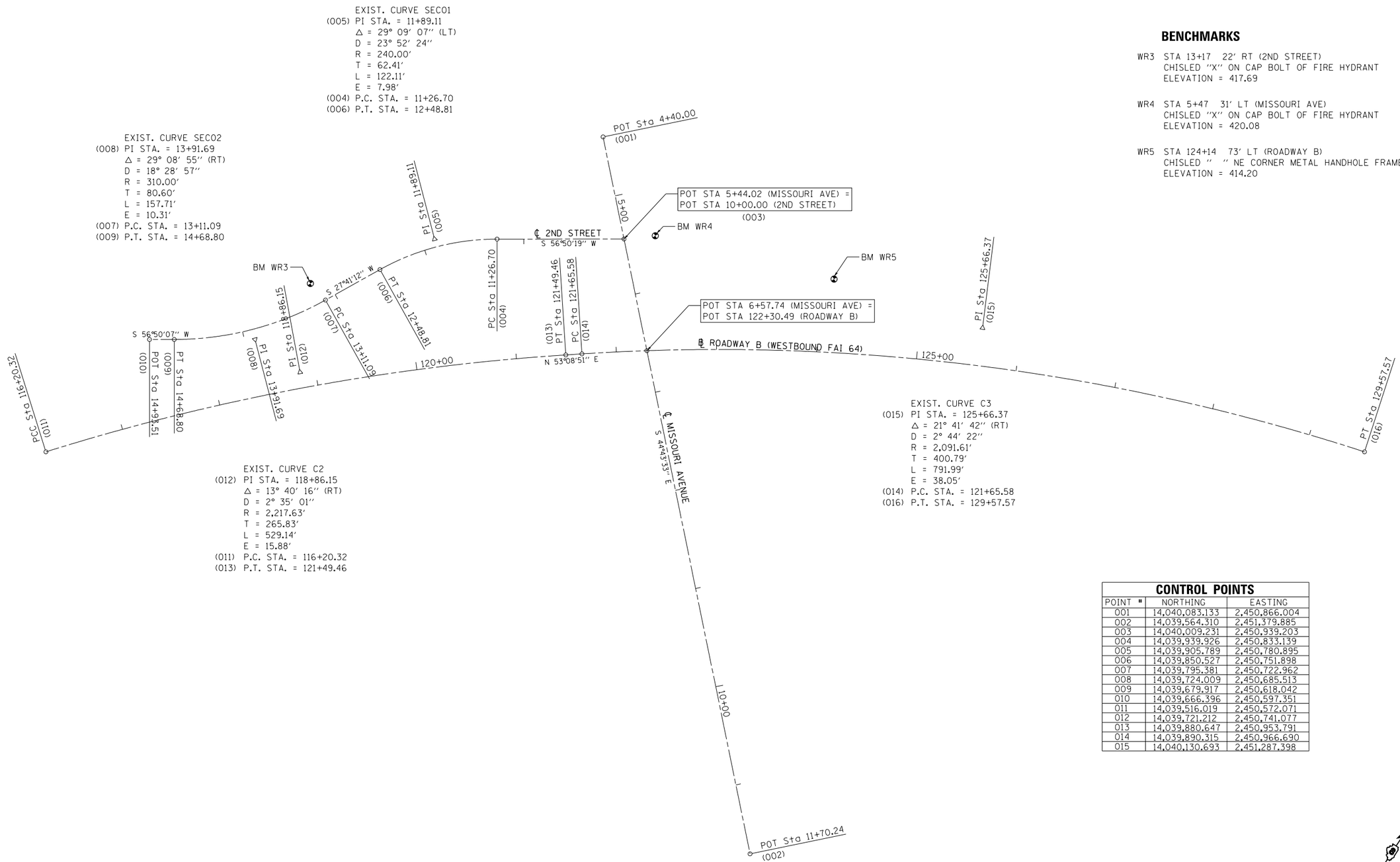
USER NAME = seb	DESIGNED - RP	REVISED -
	DRAWN - RP	REVISED -
PLOT SCALE = 40.0000 ' / in.	CHECKED - SGL	REVISED -
PLOT DATE = 8/23/2014	DATE - 7/31/2014	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SCHEDULE OF QUANTITIES
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: NONE | SHEET 6 OF 6 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	21
		CONTRACT NO. 76099		
	ILLINOIS	FED. AID PROJECT		



EXIST. CURVE C2
(012) PI STA. = 118+86.15
Δ = 13° 40′ 16″ (RT)
D = 2° 35′ 01″
R = 2,217.63′
T = 265.83′
L = 529.14′
E = 15.88′
(011) P.C. STA. = 116+20.32
(013) P.T. STA. = 121+49.46

EXIST. CURVE C3
(015) PI STA. = 125+66.37
Δ = 21° 41′ 42″ (RT)
D = 2° 44′ 22″
R = 2,091.61′
T = 400.79′
L = 791.99′
E = 38.05′
(014) P.C. STA. = 121+65.58
(016) P.T. STA. = 129+57.57

BENCHMARKS

WR3 STA 13+17 22′ RT (2ND STREET)
CHISLED "X" ON CAP BOLT OF FIRE HYDRANT
ELEVATION = 417.69

WR4 STA 5+47 31′ LT (MISSOURI AVE)
CHISLED "X" ON CAP BOLT OF FIRE HYDRANT
ELEVATION = 420.08

WR5 STA 124+14 73′ LT (ROADWAY B)
CHISLED " " NE CORNER METAL HANDHOLE FRAME
ELEVATION = 414.20

CONTROL POINTS

POINT #	NORTHING	EASTING
001	14,040,083.133	2,450,866.004
002	14,039,564.310	2,451,379.885
003	14,040,009.231	2,450,939.203
004	14,039,939.926	2,450,833.139
005	14,039,905.789	2,450,780.895
006	14,039,850.527	2,450,751.898
007	14,039,795.381	2,450,722.962
008	14,039,724.009	2,450,685.513
009	14,039,679.917	2,450,618.042
010	14,039,666.396	2,450,597.351
011	14,039,516.019	2,450,572.071
012	14,039,721.212	2,450,741.077
013	14,039,880.647	2,450,953.791
014	14,039,890.315	2,450,966.690
015	14,040,130.693	2,451,287.398

FILE NAME = Q:\1files\118023\Work Order 3 MO Ave Ph2\CADD Sheets\D876G99-alt-ATB.dgn

KLINGNER & ASSOCIATES, P.C.
Engineers • Architects • Surveyors

USER NAME = seb	DESIGNED - SEB	REVISED -
	DRAWN - BGJ	REVISED -
PLOT SCALE = 100.0000 ′ / in.	CHECKED - SRW	REVISED -
PLOT DATE = 8/21/2014	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ALIGNMENT AND BENCHMARK DATA
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: 1″=200′ | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	22
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			

PRE-STAGE:

1. ALL INSPECTION AND CLEANING WORK SHALL BE COMPLETED DURING OFF PEAK HOURS IN ACCORDANCE WITH IDOT HIGHWAY STANDARD 701406-08.
2. TEMPORARY PAVEMENT MARKINGS AND CONCRETE BARRIER SHALL BE PLACED IN ACCORDANCE WITH IDOT HIGHWAY STANDARD 701428.
3. THE TEMPORARY CONCRETE BARRIER WALL SHALL BE ANCHORED TO THE PAVEMENT ALONG THE TANGENT SECTION FROM STA. 121+67 TO STA. 124+67.

N

0 50' 100'

SCALE: 1" = 50'

RIVERPARK DRIVE

RET WALL

REC WALL

N 2ND STREET

℄ F.A.I. 64 WESTBOUND

WET REFLECTIVE TEMPORARY TAPE TYPE III, LINE 4" - (SOLID WHITE)

WET REFLECTIVE TEMPORARY TAPE TYPE III, LINE 4" - (SOLID YELLOW)

+67(SW) 19.4' LT

+67(SW) 30.4' LT

+67(SY) 8.4' LT

+55(SW) 24' LT

+55(SW) 12' LT

+55(SY) 0.0'

+67(WALL) 6.9' LT

25:1 TAPER

250' TAPER

1-WAY AMBER BARRIER WALL MARKERS AT 25' CTS.

1-WAY CRYSTAL GUARDRAIL MARKERS AT 25' CTS.

+20(SW) 30.4' LT

+20(SW) 19.4' LT

+20(SY) 8.4' LT

+20 12' RT

END WORK ZONE SPEED LIMIT

G20-1103(0)-3660
STA. 118+00

MISSOURI AVENUE

EASTBOUND FAI 55 /64 /70

MATCH LINE STA. 128+00

N 3RD STREET

LEGEND

SY - SOLID YELLOW
SW - SOLID WHITE
WALL - TEMP. CONC. BARRIER WALL

- WORK ZONE
- IMPACT ATTENUATORS, TEMPORARY (FULLY REDIRECTIVE, NARROW), TEST LEVEL 3
- TEMPORARY CONCRETE BARRIER
- SIGN
- DIRECTION INDICATOR BARRICADE WITH STEADY BURN MONODIRECTIONAL LIGHT
- TYPE II BARRICADE OR DRUM WITH STEADY BURN MONODIRECTIONAL LIGHT
- DRUM WITH STEADY BURNING MONODIRECTIONAL LIGHT
- ARROWBOARD

FILE NAME = Q:\files\110023\Work Order 3 MO Ave Ph2\CADD Sheets\D876G99-sht-stagingl.dgn

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Consulting Engineers
Springfield, Illinois

USER NAME = seb	DESIGNED - SEL	REVISED -
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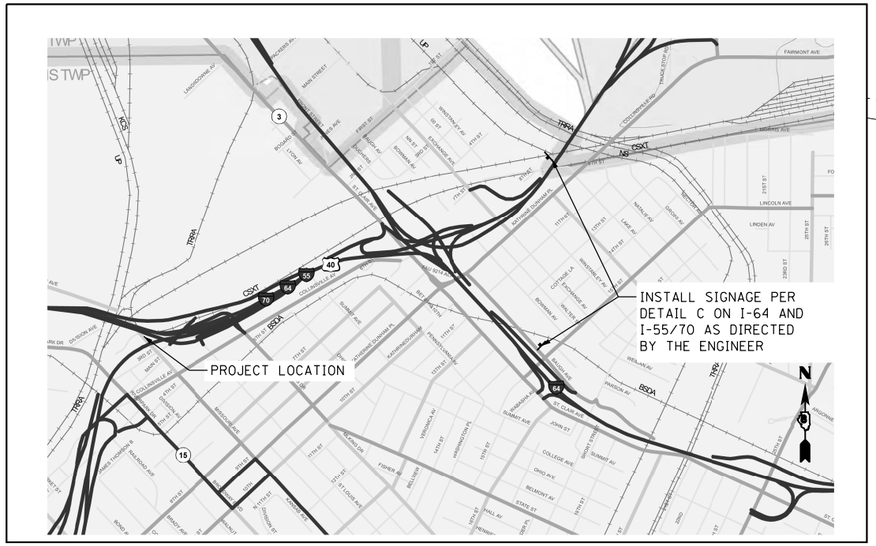
PLOT SCALE = 100.0000 ' / in.	CHECKED - SGL	REVISED -
PLOT DATE = 8/23/2014	DATE - 7/1/2014	REVISED -

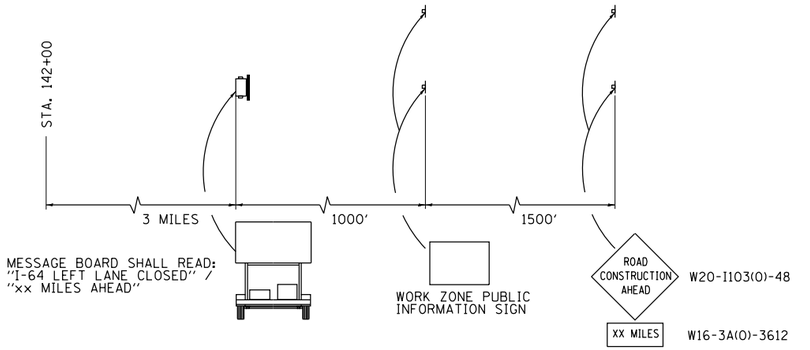
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL AND PROTECTION PLAN
MISSOURI AVENUE DEEP WELL FACILITY

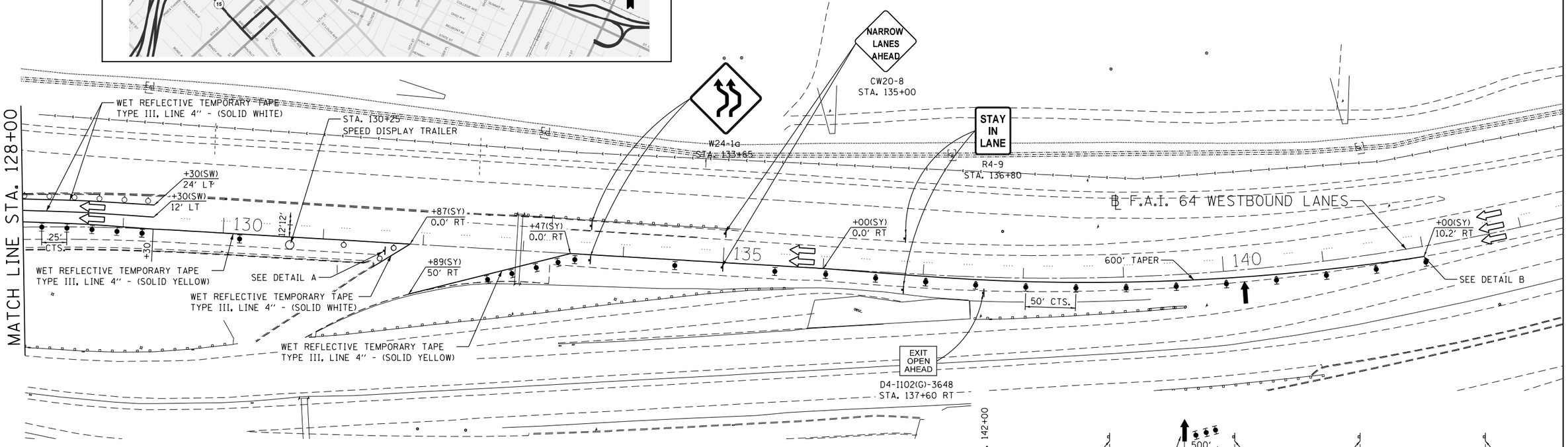
SCALE: 1" = 50' | SHEET 1 OF 3 SHEETS | STA. 113+00 TO STA. 128+00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	23
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			





DETAIL C



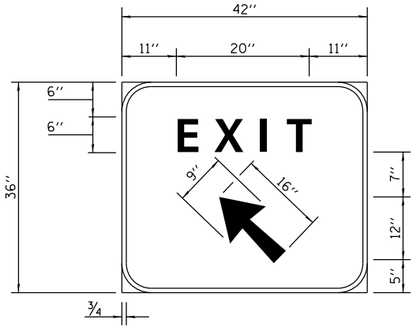
LEGEND

- WORK ZONE
- IMPACT ATTENUATORS, TEMPORARY (FULLY REDIRECTIVE, NARROW), TEST LEVEL 3
- TEMPORARY CONCRETE BARRIER
- SIGN
- DIRECTION INDICATOR BARRICADE WITH STEADY BURN MONODIRECTIONAL LIGHT
- TYPE II BARRICADE OR DRUM WITH STEADY BURN MONODIRECTIONAL LIGHT
- DRUM WITH STEADY BURNING MONODIRECTIONAL LIGHT
- ARROWBOARD

N

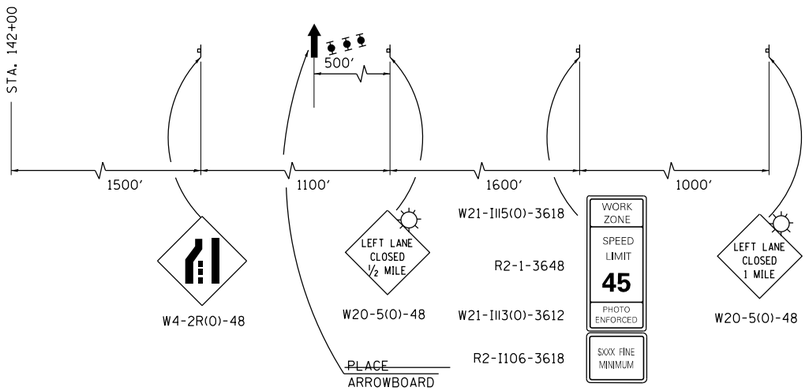
0 50' 100'

SCALE: 1" = 50'



BACKGROUND - GREEN
BORDER AND LEGEND - WHITE
"D" SIZE LETTERS
ALL DIMENSIONS SHOWN ARE IN INCHES
EXIT SIGN - SPECIAL
STA. 131+60 RT

DETAIL A



DETAIL B

LIN ENGINEERING, LTD. Consulting Engineers Springfield, Illinois	USER NAME = seb	DESIGNED - SEL	REVISED -
		DRAWN - SEL	REVISED -
	PLOT SCALE = 100.0000 ' / in.	CHECKED - SGL	REVISED -
	PLOT DATE = 8/23/2014	DATE - 7/1/2014	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL AND PROTECTION PLAN
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: 1" = 50' | SHEET 2 OF 3 SHEETS | STA. 128+00 TO STA. 143+00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	24
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			

FILE NAME = D:\Files\110223\Work Order 3 MO Ave Ph2\CADD Sheets\D876099-sht-staging2.dgn

NOTES:

LONGITUDINAL DIMENSIONS MAY BE ADJUSTED TO FIT FIELD CONDITIONS.

CONTRACTOR SHALL PROVIDE A MINIMUM OF 12' WIDE, AGGREGATE ACCESS TO 2ND STREET SOUTHWEST OF WORK ZONE AND MISSOURI AVE NORTHWEST OF WORK ZONE.

MLK Bridge Ramp

MLK Bridge Ramp

MLK Bridge Ramp

(2) TYPE 3 BARRICADES WITH STEADY BURNING LIGHTS AND R11-2 (48x48) "ROAD CLOSED"

ROAD CLOSED

WORK ZONE FOR LOCAL STREETS TRAFFIC CONTROL

Westbound I-64/55

Eastbound I-64/55

2nd Street

Missouri Ave

R3-2 (24x24) "NO RT TURN"

± 200'

W20-1 (36x36) "ROAD WORK AHEAD" WITH FLASHING LIGHT
M6-1 (21x15) "ARROW POINTING RT"

ROAD WORK AHEAD

(3) TYPE 3 BARRICADES WITH STEADY BURNING LIGHTS AND R11-2 (48x48) "ROAD CLOSED" OFFSET TO ALLOW EMERGENCY VEHICLE AND LOCAL ACCESS

ROAD CLOSED

± 200'

W20-3 (36x36) "ROAD CLOSED AHEAD" WITH FLASHING LIGHT

ROAD CLOSED AHEAD

± 200'

W20-1 (36x36) "ROAD WORK AHEAD" WITH FLASHING LIGHT
M6-1 (21x15) "ARROW POINTING LT"

ROAD WORK AHEAD

North 3rd Street

R3-2 (24x24) "NO LT TURN"

W20-1 (36x36) "ROAD WORK AHEAD" WITH FLASHING LIGHT

ROAD WORK AHEAD

N

GRAPHIC SCALE
25 0 25 50 75 100 125
FEET

FILE NAME = Q:\1files\118023\Work Order 3 MO Ave Ph2\CADD Sheets\D876G99-sht-staging-KLA.dgn

KLINGNER & ASSOCIATES, P.C.
Engineers • Architects • Surveyors

USER NAME = seb	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 8/23/2014	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL AND PROTECTION PLAN
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: 1"=50' | SHEET 3 OF 3 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	25
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			

STA. 121+15, 32' LT
EX TA CB W/ T10 F&G
CLEAN AND INSPECT
CB AND LATERAL SS

EX 72" RCCP

EX 15" RCCP
LINED W/ C.I.P.P.

90" SS T2, (RCCP CLASS II)

EXIST. REINFORCED
CONCRETE JUNCTION
CHAMBER

℄ F.A.I. 64 WESTBOUND

90" SS T2, (RCCP CLASS II)

120+00

121

EX 15" RCCP
LINED W/ C.I.P.P.

EX UNKNOWN SS

STA. 120+98.5, 21.3' RT
EX INLET W/ T10 F&G
CLEAN AND INSPECT
INLET AND SS OUTLET

STA. 121+05, 18' RT
EX TA CB, W/ SQUARE GRATE
CLEAN AND INSPECT
CB AND LATERAL SS

STA. 121+72, 32' RT
EX TA INLET W/ T10 F&G
CLEAN AND INSPECT
INLET AND LATERAL SS

122

EX 15" RCCP
LINED W/ C.I.P.P.

STA. 122+67.2, 18.2' RT
EX TA CB, W/ T9 F&G
CLEAN AND INSPECT
EX CB AND LATERAL SS

STA. 121+93.00, 26.4' RT
PR RECORDER WELL (SHEET 55)

STA. 122+55, 38.5' LT
EX TA CB W/ T9 F&G
CLEAN AND INSPECT
EX CB AND LATERAL SS

EX 15" RCCP
LINED W/ C.I.P.P.

123

EX 15" RCCP
LINED W/ C.I.P.P.

SS - TY 2 18 LF
18" RCP

STA. 123+85.00, 17.83' LT
PR TA CB, 5' Ø W/ FST
T22 F&G (SPECIAL)
RIM EL. @ ℄ = 396.03
18" OUTLET EL. = 391.86
SUMP EL. = 389.03

STA. 124+00.7, 19.2' RT
EX INLET W/ T10 F&G
CLEAN AND INSPECT
EX INLET AND SS OUTLET

STA. 124+06.0, 15.6' RT
EX MH W/ SQUARE GRATE
MH FULL OF DEBRIS
CLEAN AND INSPECT
EX MH AND SS PIPES

STA. 124+00.00, 32.2' LT
EX TA INLET W/ T10 F&G
CLEAN AND INSPECT
EX INLET AND LATERAL SS

EX 15" RCCP
LINED W/ C.I.P.P.

124

STA. 124+25.00, 17.75' RT
PR TA CB, 5' Ø W/ FST
T22 F&G (SPECIAL)
RIM EL. @ ℄ = 396.06
18" OUTLET EL. = 391.65
SUMP EL. = 388.81

STA. 124+11.5, 19.3' RT
EX INLET W/ T10 F&G
CLEAN AND INSPECT
EX INLET AND SS OUTLET

STA. 124+85.0, 31.8' LT
EX TA CB W/ T10 F&G
CLEAN AND INSPECT
EX CB AND LATERAL SS

EX 15" RCCP
LINED W/ C.I.P.P.

CONNECTION TO EX
RCP STORM SEWER

EX 24" RCCP
LINED W/ C.I.P.P.

STA. 124+50.0, 16' RT
EX TA MH, 5' Ø, W/
T1 FRAME AND CLID
CLEAN AND INSPECT
EX MH AND SS PIPES

125+00

EX 12" RCCP

SS - TY 2 18 LF
18" RCP

EX 21" RCCP

STA. 124+97.4, 18.3' RT
EX TA INLET W/ T10 F&G
CLEAN AND INSPECT
EX INLET AND LATERAL SS

I-55 /70 WESTBOUND

MISSOURI AVE.

NOTES:

1. ALL EXISTING DRAINAGE STUCTURES AND STORM SEWERS FROM STA. 118+00 TO 130+00 SHALL BE CLEANED AND INSPECTED TO ENSURE THE VIABILITY OF ALL SYSTEMS.

2. DRAINAGE STRUCTURE AND STORM SEWER PIPES THAT INCUR DAMAGES FROM CLEANING, INSPECTING, AND REPAIR SERVICES SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE.

PAVEMENT PATCHING

SCALE: 1" = 20' HORIZ

SCALE: 1" = 5' VERT

PLAN
SURVEYED
PLOTTED
ALIGNMENT CHECKED
RT. OF WAY CHECKED
CADD FILE NAME
NOTE BOOK
NO.
BY
DATE

PROFILE
SURVEYED
PLOTTED
PROFILE CHECKED
B.M. NOTED
STRUCTURE NO/ATNS CHKD
NOTE BOOK
NO.
BY
DATE

410
405
400
395
390
385
380
375
370

-3.49%

EXISTING PROFILE ALONG
℄ I-55/64/70 WESTBOUND

EXISTING LOW POINT
STA. 124+12.00
EL. = 397.63

RIM EL Ø ℄ = 396.06

+85

+25

RIM EL Ø ℄ = 396.03

+1.7

EXIST. REINFORCED CONCRETE
JUNCTION CHAMBER

EXIST. 72" SS

℄ = 384.50±

℄ = 391.86
INV. = 389.03

℄ = 391.65
INV. = 388.81

℄ = 386.45±

EXIST. TWIN SUMP STORAGE PIPES
90" SS T2. (RCCP CLASS II)

EXISTING WATER MAIN
SIZE AND DEPTH UNKNOWN

407.36 405.61 403.87 402.12 400.57 399.35 398.45 397.88 397.64 397.72 398.14 398.87

120+00 121+00 122+00 123+00 124+00 125+00

FILE NAME = Q:\Files\10023\Work Order 3 MO Ave Ph2\CADD Sheets\076G99-sht-plnprf.dgn

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Springfield, Illinois

USER NAME = seb	DESIGNED - SEL	REVISED -
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PLOT SCALE = #0.0000 ' / in.	CHECKED - SGL	REVISED -
PLOT DATE = 8/23/2014	DATE - 7/1/2014	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-55/64 PLAN AND PROFILE
MISSOURI AVENUE DEEP WELL FACILITY

· 1" = 20' | SHEET 1 OF 1 SHEETS | STA. 119+60 TO STA. 125+60

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	26
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			

A1 — STA 0+76.1 (STA 12+57.8 84.8' RT 2ND STREET)
CONC END SECTION, STD 542001, 27'', 1:3, 1 EACH
TRAVERSABLE PIPE GRATE, STD 542311, 19.3 FT (2 PIPES)
FL = 412.50

A2 — STORM SEWERS, CLASS A, TYPE 2 27'', 20.4'
USFL = 412.50 DSFL = 412.00 SLOPE = 2.4%

A3 — STA 1+00.0 (STA 12+65.0 62.0' RT 2ND STREET)
MH, TY A, 7'-Ø, TY 1 FR, CLSD LID,
RESTRICTOR PLATE, 1 EACH
TOP OF LID = 422.00
SUMP EL = 404.00

A4 — STORM SEWERS, CLASS A, TYPE 2 27'', 88.2'
USFL = 412.00 DSFL = 411.50 SLOPE = 0.6%

A5 — STA 1+94.2 (STA 12+65.0 32.2' LT 2ND STREET)
MH, TY A, 5'-Ø, TY 1 FR, CLSD LID, 1 EACH
TOP OF LID = 417.25
INV EL = 411.10

B1 — STORM SEWER, DUCTILE IRON, TYPE 2 18''
175.4' SOUTH LINE
166.2' MIDDLE LINE
157.1' NORTH LINE

B2 — STA 6+65.5 (STA 12+11.8 53.1' RT 2ND STREET)
CONCRETE END SECTION, STD 542006, 18'', 1:3, 3 EACH
FL = 419.00
FLAP GATE 18'', 3 EACH

B3 — STORM SEWER, DUCTILE IRON, TYPE 2 8'', 149.1'

B4 — STA 6+67.3 (STA 12+04.8 53.0' RT 2ND STREET)
CONCRETE END SECTION, STD 5420061, 15'', 1:3, 1 EACH
FL = 419.00
FLAP GATE 8'', 1 EACH

G1 — DOWNSPOUT CONNECTION, 2 EACH
SEE ''A'' SHEETS FOR LOCATIONS.

G2 — PIPE DRAIN 8'', 96'
CONNECT TO DOWNSPOUT CONNECTIONS
PROVIDE 2 CLEANOUTS

G3 — CONCRETE HEADWALLS FOR PIPE DRAINS, 1 EACH
FL = 417.70

G4 — PIPE DRAIN 8'', 95'
CONNECT TO WELL HOUSE OVERFLOW DRAINS.
PROVIDE 3 CLEANOUTS
PIPE DRAIN 4'', 93'
TEE INTO 8'' PIPE DRAIN FROM DOWNSPOUTS

G5 — CONCRETE HEADWALLS FOR PIPE DRAINS, 1 EACH
FL = 417.70

C1 — STA 11+36.7 FORCEMAIN VAULT
14.0' BY 11.0'
LID EL = 419.0
FLOOR EL = 410.5

C2 — STA 11+60.9 FORCEMAIN VAULT
14.0' BY 15.0'
LID EL = 419.0
FLOOR EL = 410.1

C3 — STA 13+65.3 FORCEMAIN VAULT
30.0' BY 14.0'
LID EL = 418.9
FLOOR EL = 404.9

C4 — FORCEMAIN VAULT
16.0' BY 12.0'
LID EL = 419.0
FLOOR EL = 409.5
HIGH DENSITY POLYETHYLENE PIPE 12'', 48'

C5 — FORCEMAIN VAULT
16.0' BY 12.0'
LID EL = 418.8
FLOOR EL = 409.3
HIGH DENSITY POLYETHYLENE PIPE 12'', 61'

C6 — FORCEMAIN VAULT
10.0' BY 8.0'
LID EL = 418.5
FLOOR EL = 406.0

C7 — FORCEMAIN VAULT
16.0' BY 10.0'
LID EL = 418.1
FLOOR EL = 408.6
HIGH DENSITY POLYETHYLENE PIPE 12'', 137'

D1 — STA 11+85.0 6.4' LT
SANITARY SEWER CONNECTION, 1 EACH

D2 — SANITARY SEWER 4'', 108'

D3 — STA 11+83.0 102.0' LT
MANHOLES, SANITARY, 5'-DIAMETER,
TY 1 FR, CLOSED LID, 1 EACH
TOP EL = 419.50
SUMP EL = 409.00

E1 — STA 10+75.0 14.0' RT
6'' BY 4'' PIPE TEE & VALVE
(BY OTHERS)
COORDINATE WITH WATER UTILITY

E2 — STA 10+75.1 32.9' RT
DOMESTIC METER VAULTS, 1 EACH
TOP OF LID = 418.5

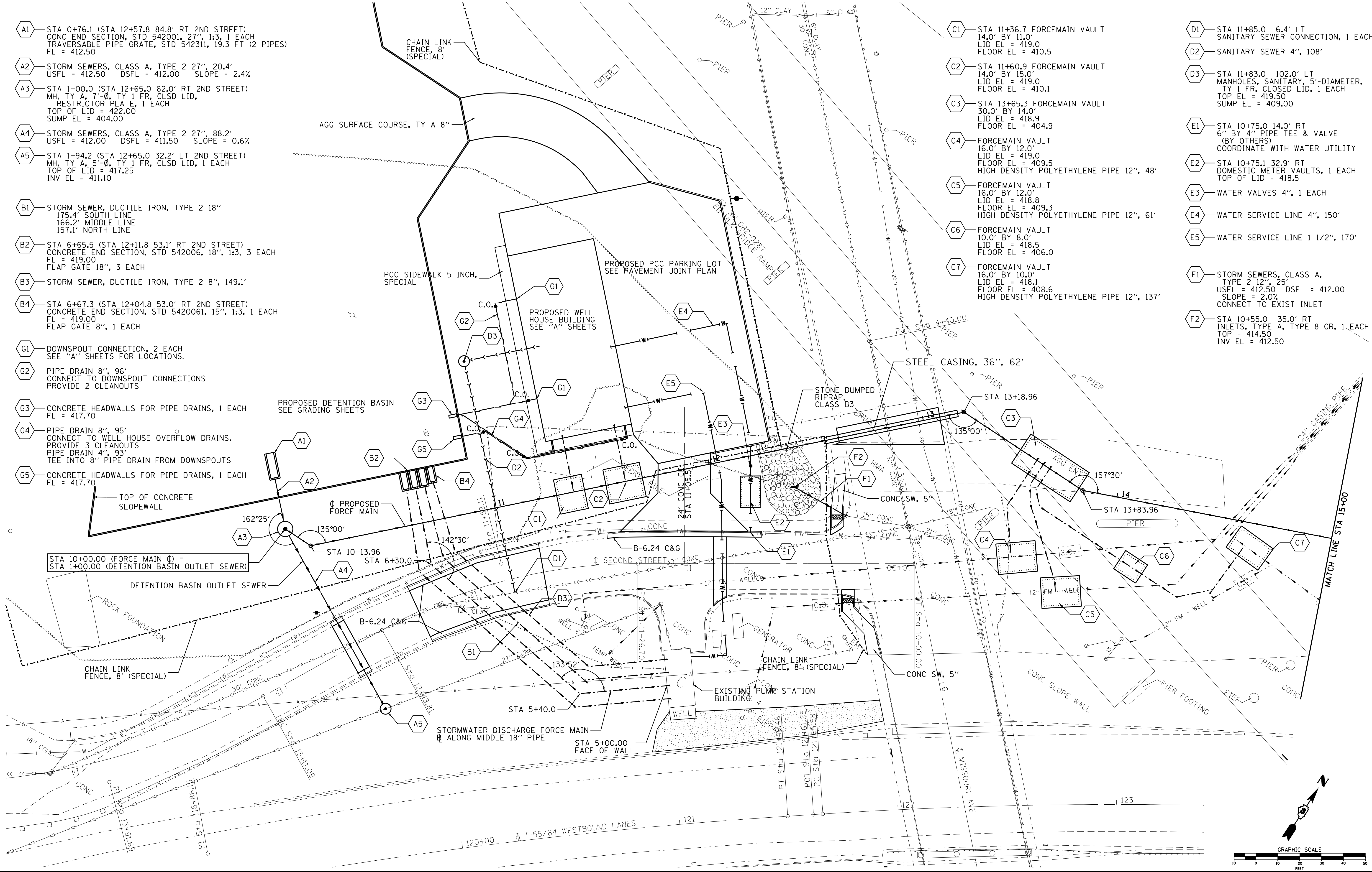
E3 — WATER VALVES 4'', 1 EACH

E4 — WATER SERVICE LINE 4'', 150'

E5 — WATER SERVICE LINE 1 1/2'', 170'

F1 — STORM SEWERS, CLASS A,
TYPE 2 12'', 25'
USFL = 412.50 DSFL = 412.00
SLOPE = 2.0%
CONNECT TO EXIST INLET

F2 — STA 10+55.0 35.0' RT
INLETS, TYPE A, TYPE 8 GR, 1 EACH
TOP = 414.50
INV EL = 412.50



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Engineers · Architects · Surveyors

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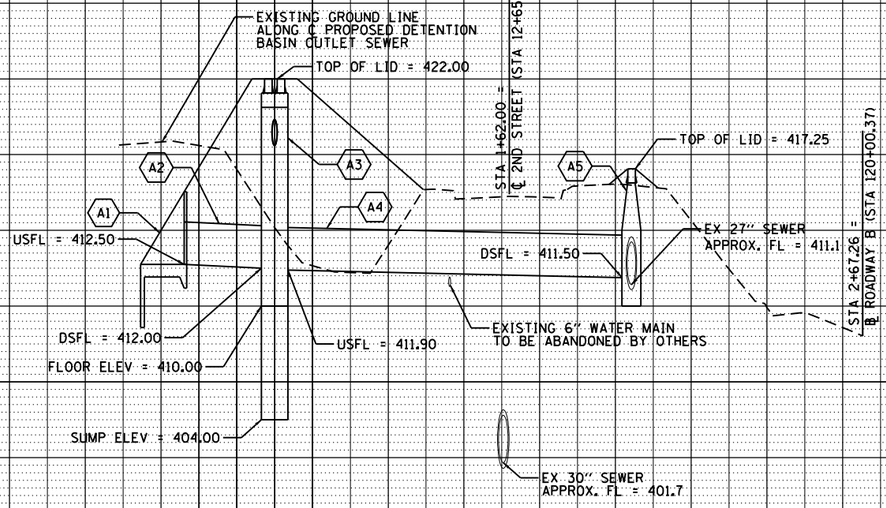
PLOT DATE = 8/23/2014	DATE -	REVISED -	

PROPOSED FORCE MAIN & UTILITY PLAN
MISSOURI AVENUE DEEP WELL FACILITY

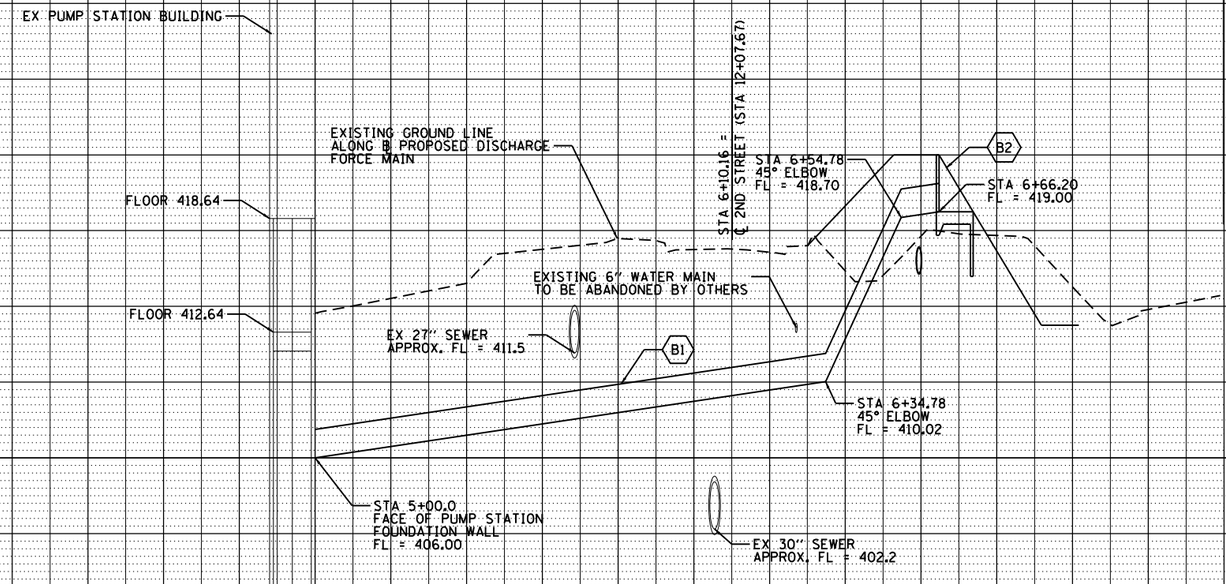
SCALE: 1''=20' | SHEET 1 OF 12 SHEETS | STA. 10+00 TO STA. 15+00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	27
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			

DETENTION BASIN OUTLET SEWER



STORMWATER DISCHARGE FORCE MAIN



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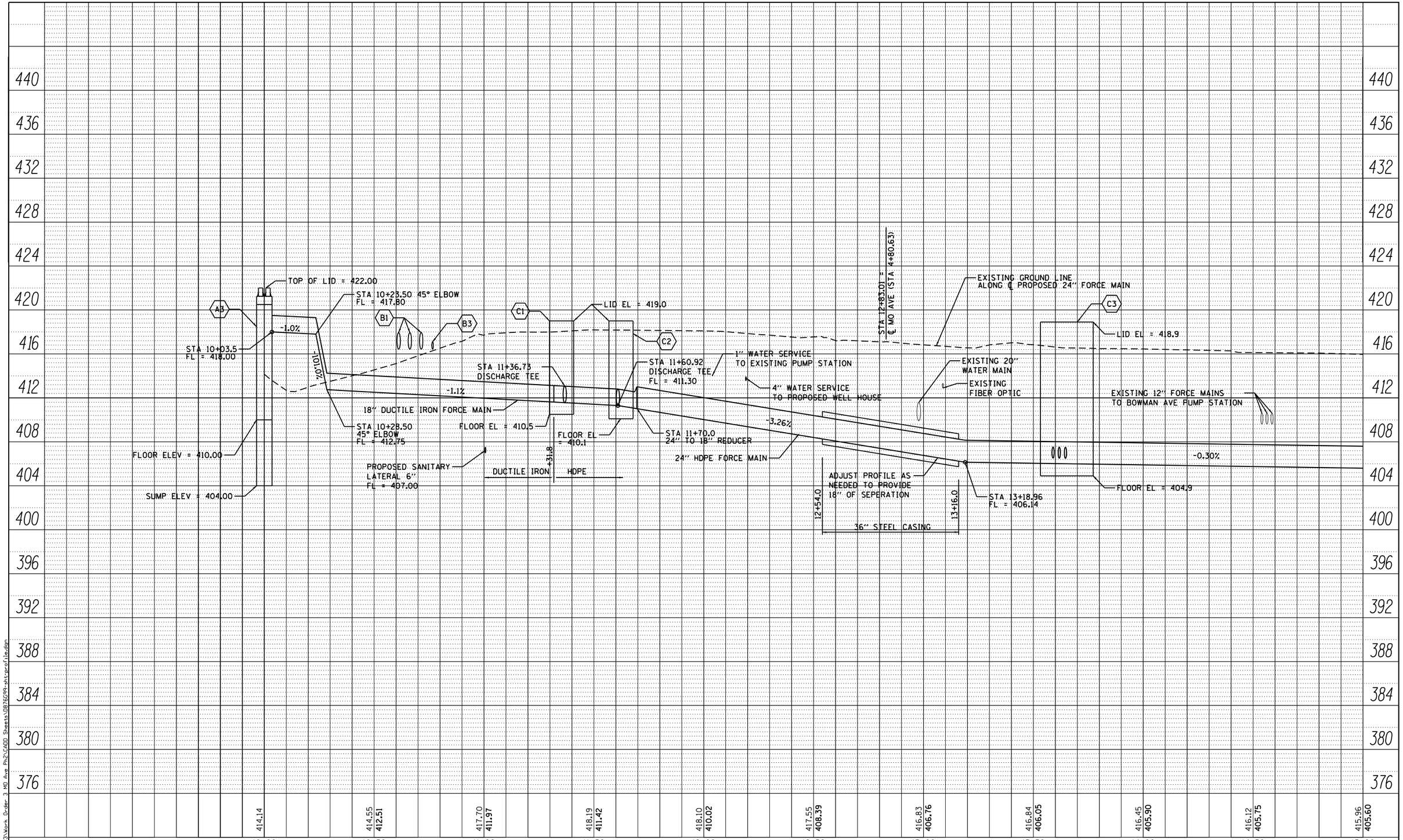
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SEWER & FORCE MAIN PROFILES
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: 1"=20 | SHEET 2 OF 12 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	28
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			



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PLOT DATE = 8/23/2014	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FORCE MAIN PROFILE
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: 1"=20' | SHEET 3 OF 12 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	29
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			

NOTE:
ALL CONSTRUCTION ACTIVITIES SHALL BE LOCATED OUTSIDE OF THE PAVED SHOULDERS OF F.A.I. 64

C8 — STA 17+91.1 FORCEMAIN VAULT
11.0' BY 8.0'
LID EL = 413.7
FLOOR EL = 403.7

STA 16+90.34
17
113°47'
18
C8
167°17'
19
20+00
STA 18+69.75
℄ PROPOSED 24" FORCE MAIN
EX ROW
MATCH LINE STA 21+00
E E E E
MLK BRIDGE EXIT RAMP
STEEL CASING PIPE, AUGERED AND JACKED, 36", 136'
135°00'
15+00
STA 15+18.96
MATCH LINE STA 15+00
12" F.M.
WELL 3
PI Sta 125+66.37
127 ℄ I-55/64 WESTBOUND LANES
128
I55/I70/I64
126
12" CONC
125+00

N

GRAPHIC SCALE
10 0 10 20 30 40 50
FEET

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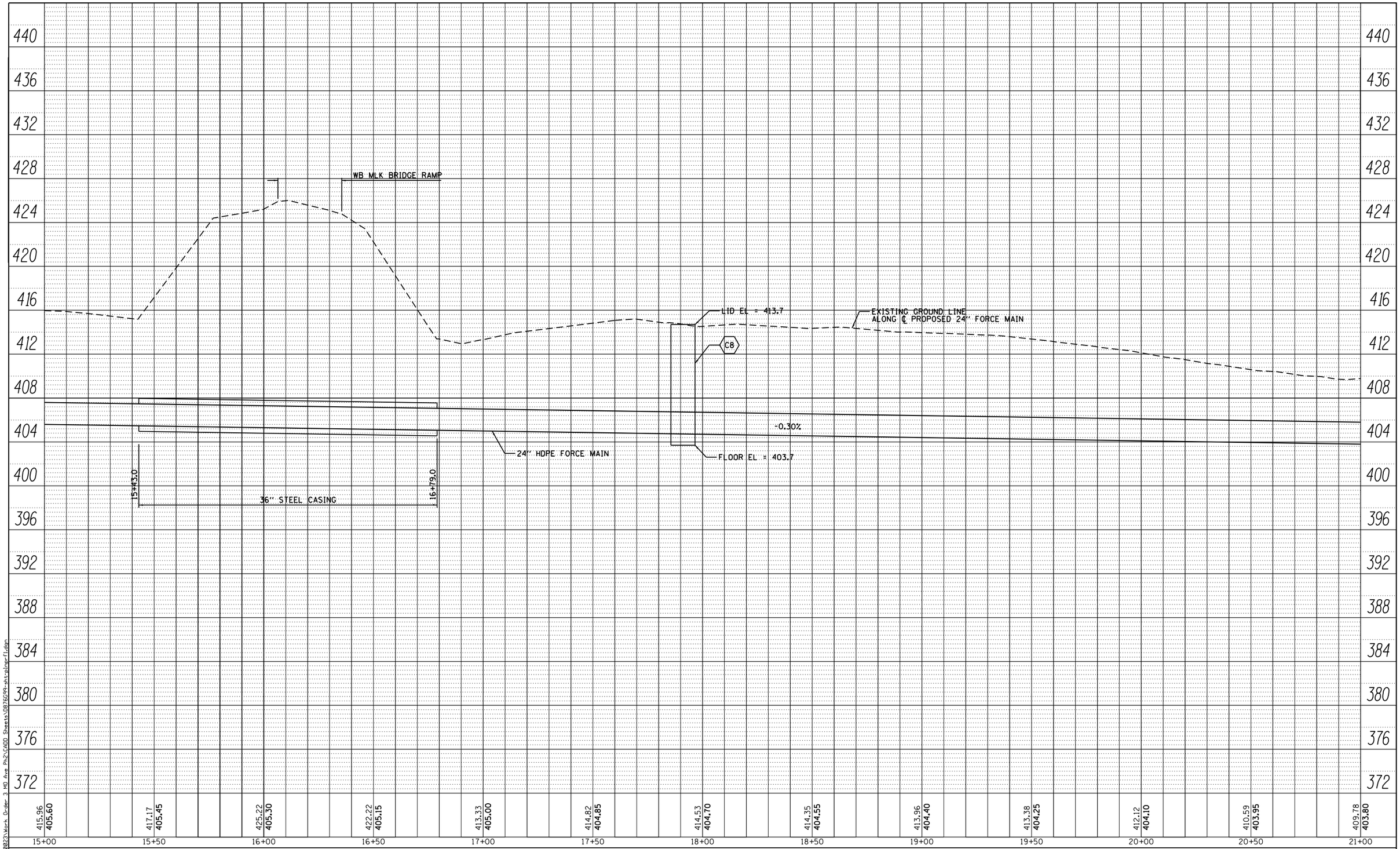
	PLOT DATE = 8/23/2014	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FORCE MAIN PLAN AND PROFILE
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: 1"=20' | SHEET 4 OF 12 SHEETS | STA. 15+00 TO STA. 21+00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	30
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			



PLAN

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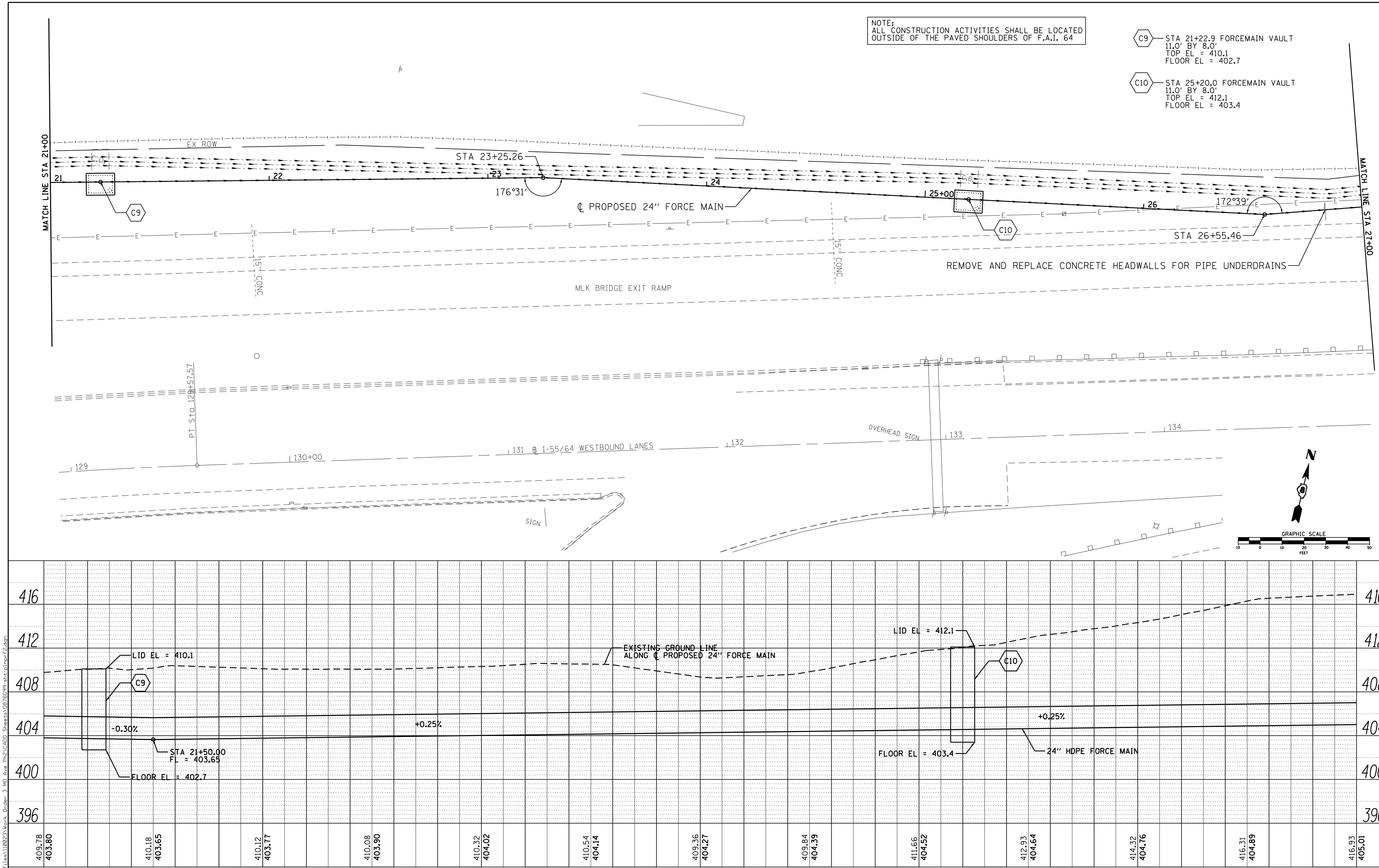
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FORCE MAIN PLAN AND PROFILE
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: | SHEET 5 OF 12 SHEETS | STA. 15+00 | TO STA. 21+00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	31
		CONTRACT NO. 76G99		
	ILLINOIS	FED. AID PROJECT		



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DATE

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FORCE MAIN PLAN AND PROFILE
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: 1"=20' | SHEET 6 OF 12 SHEETS | STA. 21+00 TO STA. 27+00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	32

CONTRACT NO. 76G99

ILLINOIS FED. AID PROJECT

NOTE:
ALL CONSTRUCTION ACTIVITIES SHALL BE LOCATED OUTSIDE OF THE PAVED SHOULDERS OF F.A.I. 64

C11 — STA 29+29.2 FORCEMAIN VAULT
11.0' BY 8.0'
TOP EL = 418.1
FLOOR EL = 404.4

BILLBOARD

EX. ROW

MATCH LINE STA 27+00

MATCH LINE STA 33+00

STA 30+55.51

177°43'

177°06'

STA 28+91.82

PROPOSED 24" FORCE MAIN

MLK BRIDGE EXIT RAMP

BIT

PC Sta 136+99.90

℄ I-55/64 WESTBOUND LANES

135+00 136 137 138 139 140+00

27 28 29 30+00 31 32

N

GRAPHIC SCALE
10 0 10 20 30 40 50
FEET

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RT. OF WAY CHECKED
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STRUCTURE NOTATNS CHKD
NOTE BOOK
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420
416
412
408
404
400

LID EL = 418.1

C11

EXISTING GROUND LINE
ALONG ℄ PROPOSED 24" FORCE MAIN

+0.25%

+0.25%

FLOOR EL = 404.4

24" HDPE FORCE MAIN

27+00	27+50	28+00	28+50	29+00	29+50	30+00	30+50	31+00	31+50	32+00	32+50	33+00
416.93 / 405.01	417.41 / 405.14	418.01 / 405.26	418.62 / 405.38	418.74 / 405.51	418.60 / 405.63	418.84 / 405.75	418.33 / 405.88	418.37 / 406.00	418.53 / 406.13	419.30 / 406.25	419.60 / 406.37	420.27 / 406.50

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PLOT DATE = 8/23/2014	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FORCE MAIN PLAN AND PROFILE
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: 1"=20' | SHEET 7 OF 12 SHEETS | STA. 27+00 | TO STA. 33+00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	33
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			

C12 — STA 33+37.8 FORCEMAIN VAULT
11.0' BY 8.0'
TOP EL = 419.2
FLOOR EL = 405.4

C13 — STA 37+17.0 FORCEMAIN VAULT
11.0' BY 8.0'
TOP EL = 413.6
FLOOR EL = 406.4

BILLBOARD

MATCH LINE STA 33+00

EX ROW

170°46'

178°44'

STA 33+10.48

STA 34+10.52

PROPOSED 24" FORCE MAIN

MLK BRIDGE EXIT RAMP

BIT

PT STA 143+38.91

OVERHEAD SIGN

℄ I-55/64 WESTBOUND LANES

STA 36+64.51

170°33'

STA 37+04.00

164°18'

STA 37+51.47

172°38'

18" CONC

STA 38+74.95

160°00'

MATCH LINE STA 39+00

N

NOTE:
ALL CONSTRUCTION ACTIVITIES SHALL BE LOCATED OUTSIDE OF THE PAVED SHOULDERS OF F.A.I. 64

GRAPHIC SCALE
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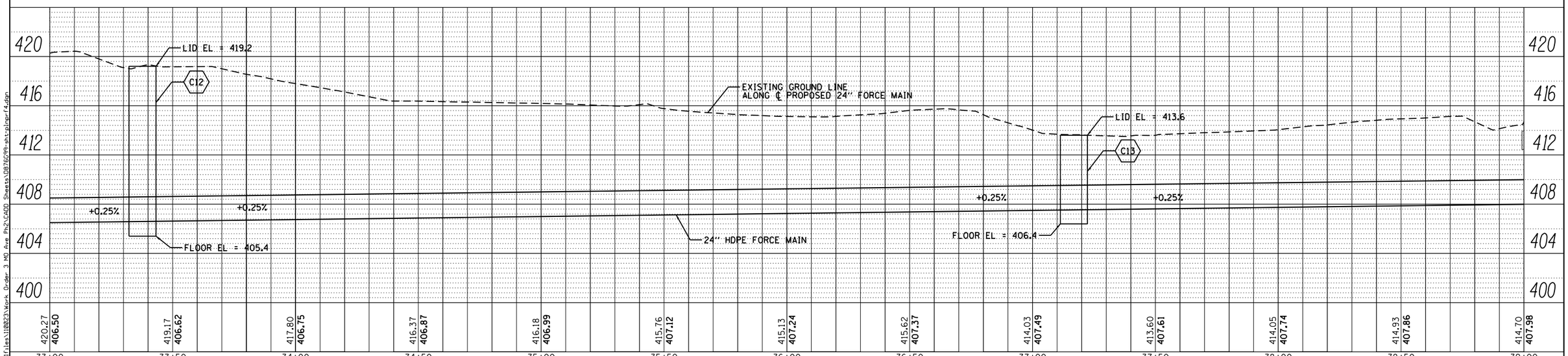

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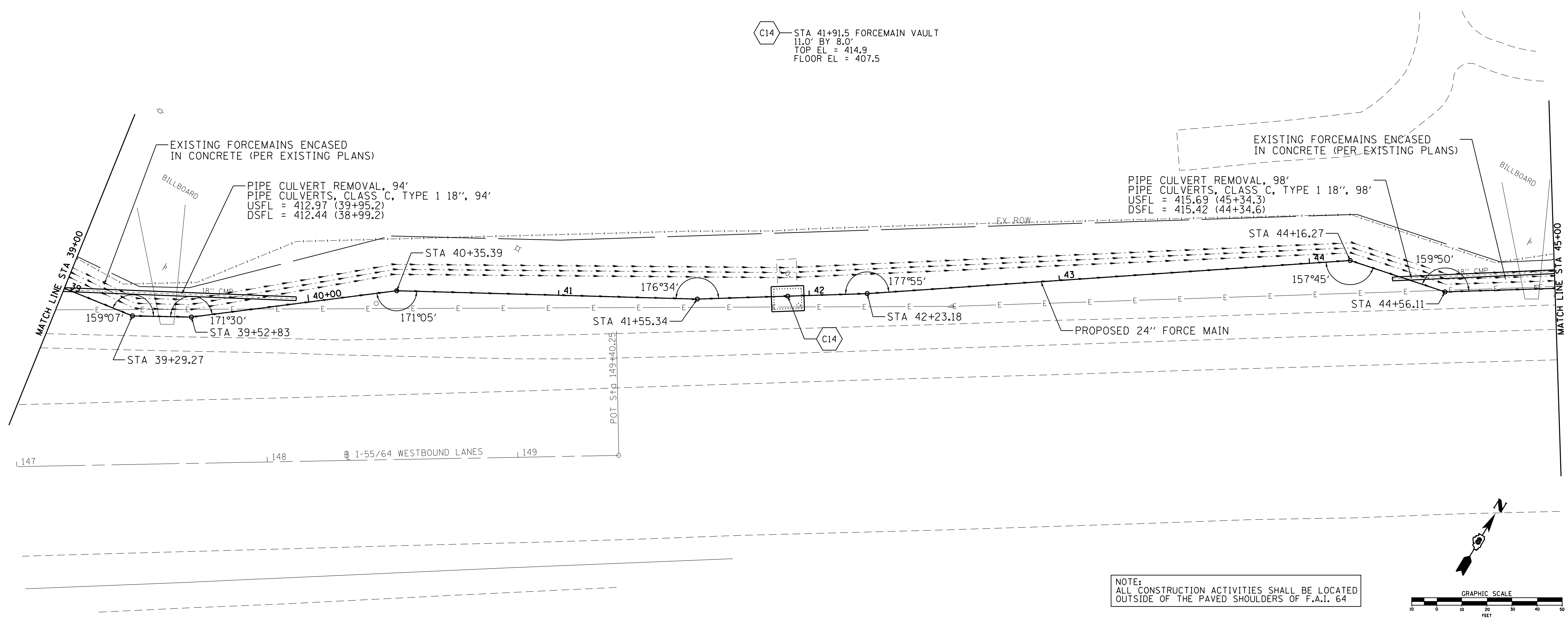
PLOT DATE = 8/23/2014	DATE -	REVISED -

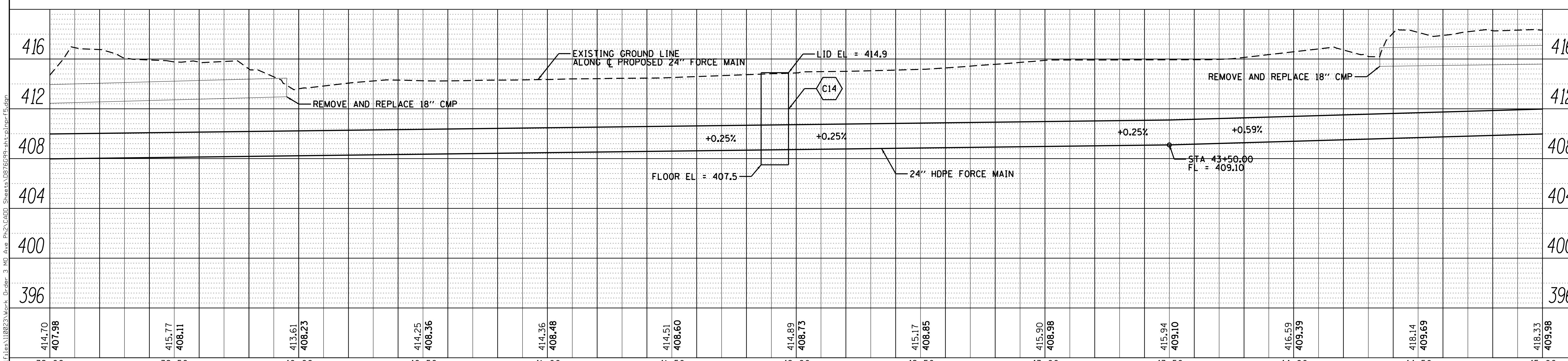
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FORCE MAIN PLAN AND PROFILE
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: 1"=20' | SHEET 8 OF 12 SHEETS | STA. 33+00 TO STA. 39+00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	34
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			





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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

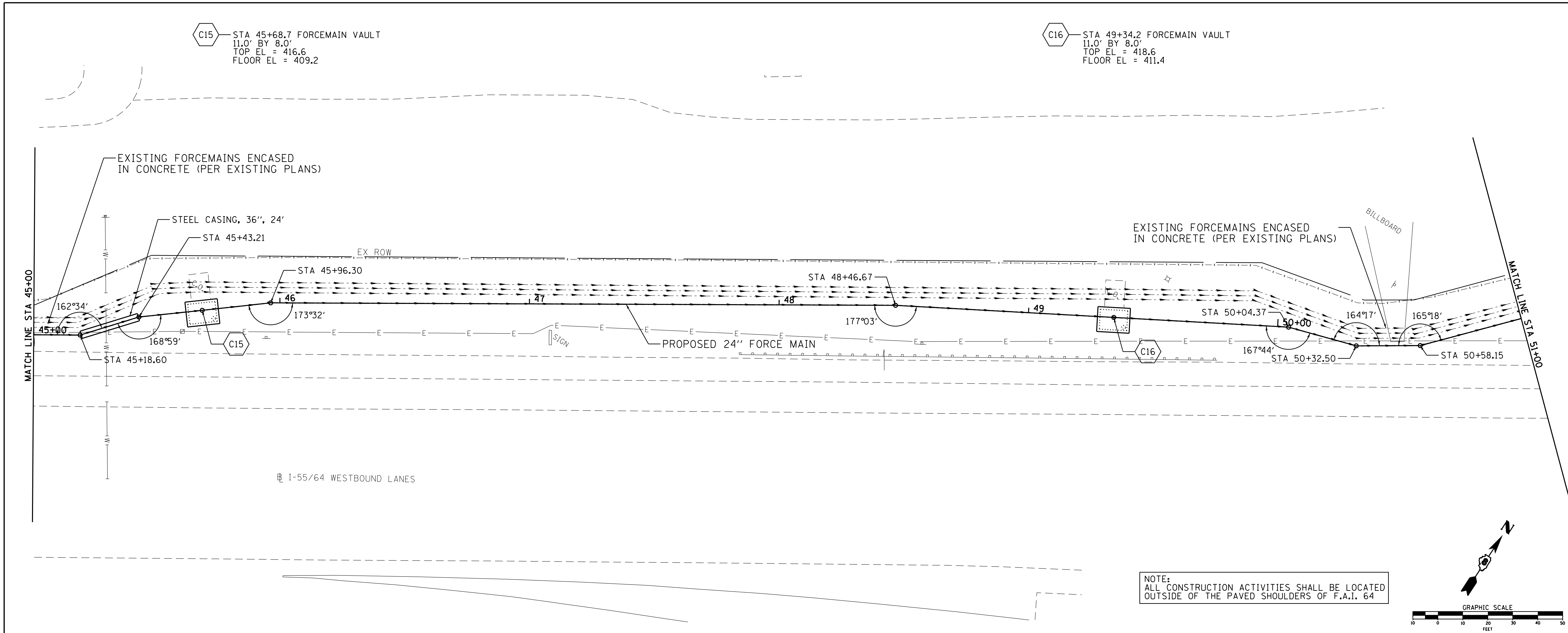
FORCE MAIN PLAN AND PROFILE
MISSOURI AVENUE DEEP WELL FACILITY

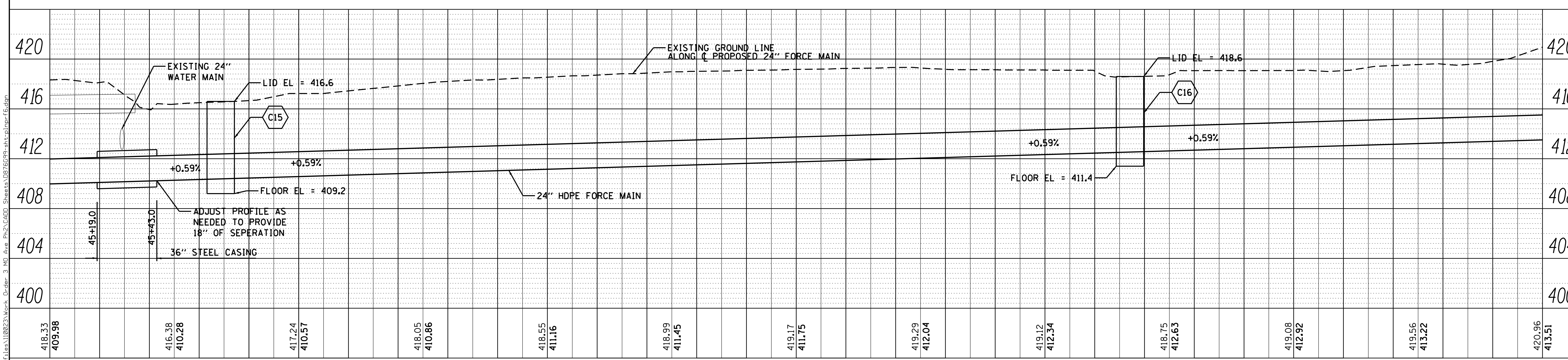
SCALE: 1''=20' | SHEET 9 OF 12 SHEETS | STA. 39+00 TO STA. 45+00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	35

CONTRACT NO. 76G99

ILLINOIS FED. AID PROJECT





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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FORCE MAIN PLAN AND PROIFILE
MISSOURI AVENUE DEEP WELL FACILITY

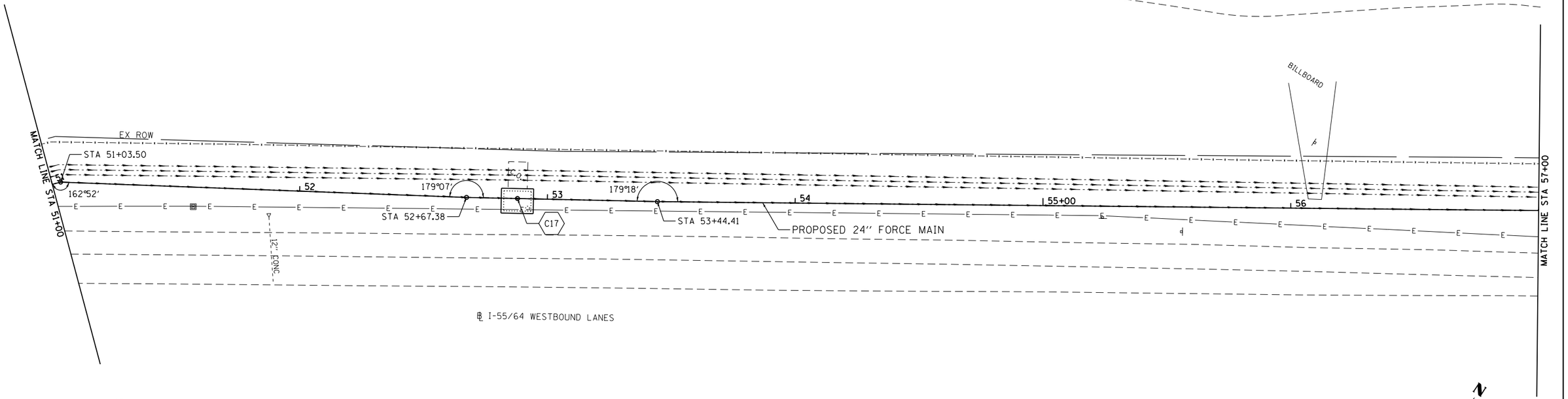
SCALE: 1''=20' | SHEET 10 OF 12 SHEETS | STA. 45+00 TO STA. 51+00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	36

CONTRACT NO. 76G99

ILLINOIS | FED. AID PROJECT

C17 — STA 52+88.0 FORCEMAIN VAULT
11.0' BY 8.0'
TOP EL = 423.0
FLOOR EL = 415.0



NOTE:
ALL CONSTRUCTION ACTIVITIES SHALL BE LOCATED OUTSIDE OF THE PAVED SHOULDERS OF F.A.I. 64

GRAPHIC SCALE
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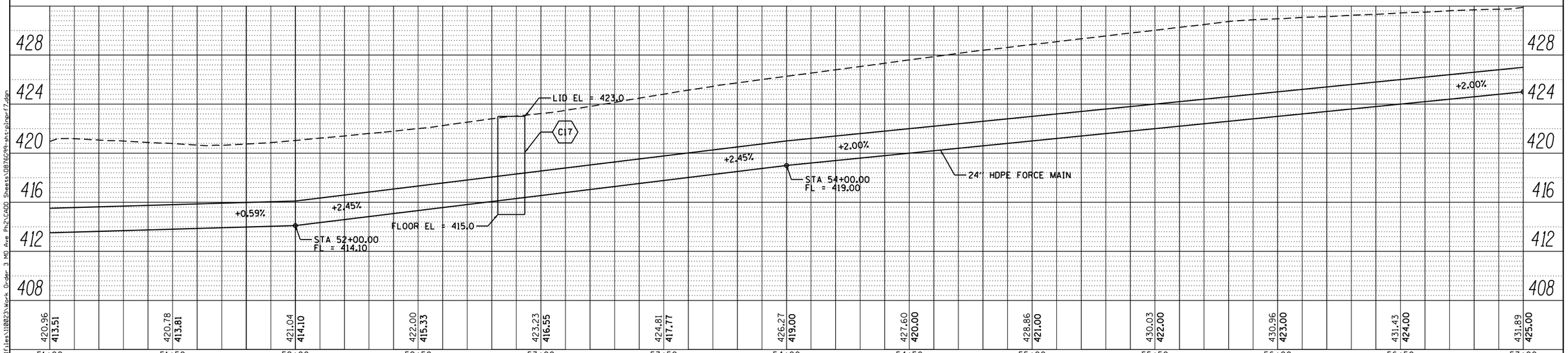
FEET



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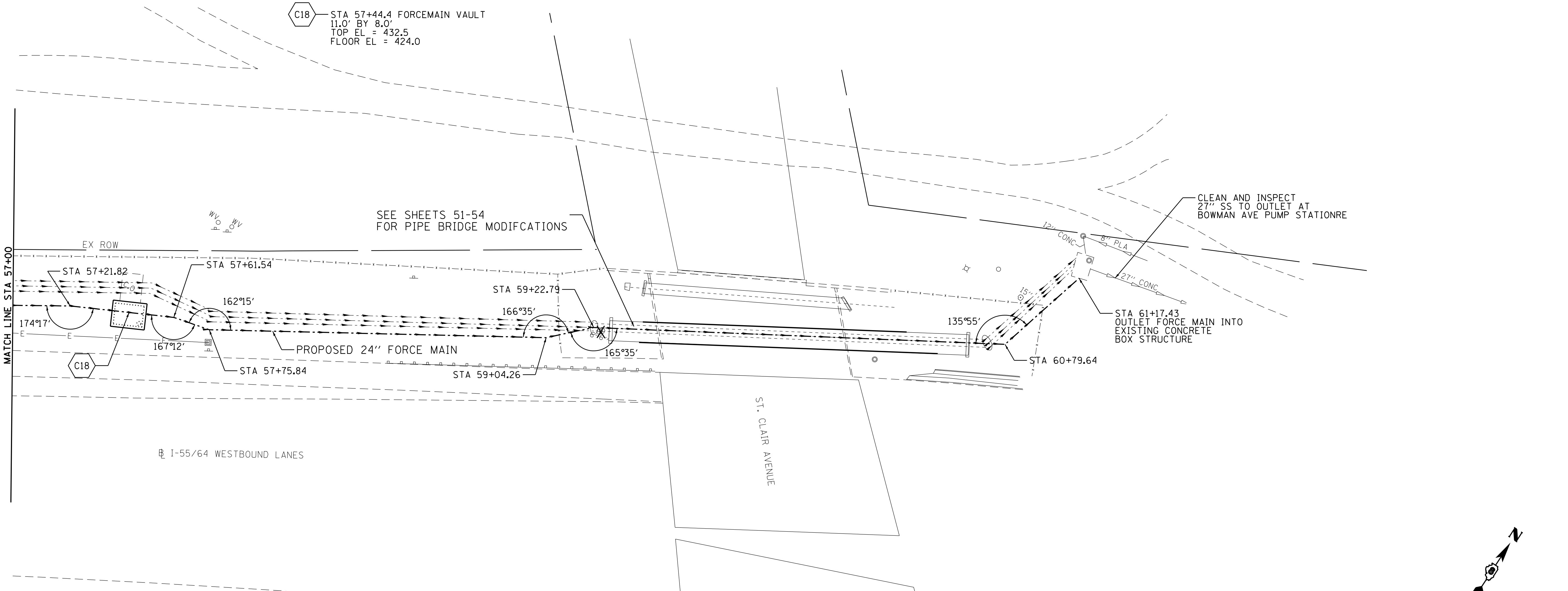
PLOT DATE = 8/23/2014	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

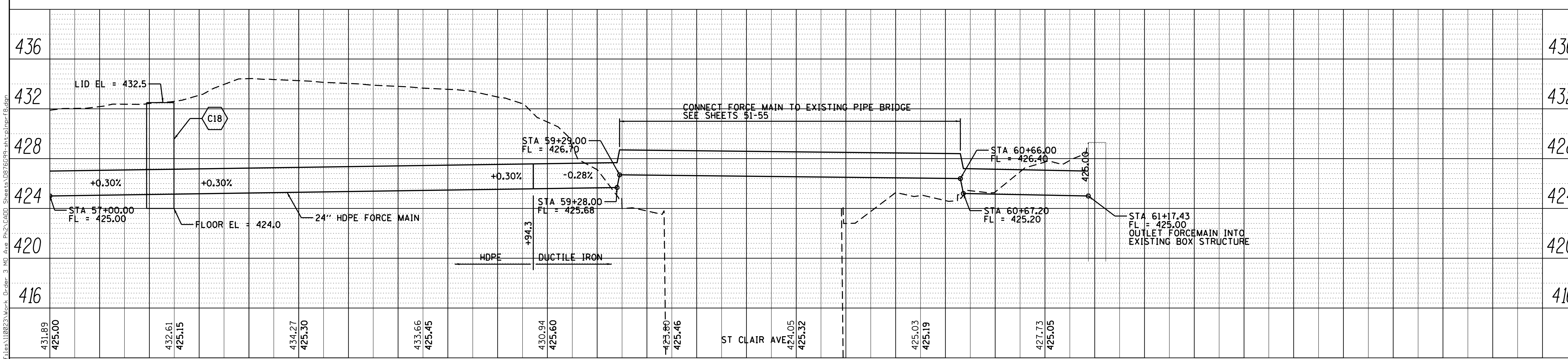
FORCE MAIN PLAN AND PROFILE
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: 1"=20' | SHEET 11 OF 12 SHEETS | STA. 51+00 | TO STA. 57+00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	37
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			



NOTE:
ALL CONSTRUCTION ACTIVITIES SHALL BE LOCATED
OUTSIDE OF THE PAVED SHOULDERS OF F.A.I. 64



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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FORCE MAIN PLAN AND PROFILE
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: 1"=20' | SHEET 12 OF 12 SHEETS | STA. 57+00 TO STA. 62+00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	38
		CONTRACT NO. 76G99		

ILLINOIS | FED. AID PROJECT

GRADING LIMITS

TREE REMOVAL AREA

PRIVATE PROPERTY

PR ROW & A/C (CONTRACT 76G99)

PR ROW (CONTRACT 76G99)

BILLBOARD

EX ROW

14+36.56
106.31' RT

14+93.51
33.63' RT

14+28.25
30.79' RT

EXISTING WATER LINE TO BE ABANDONED
COORDINATE WITH WATER UTILITY (AMERICAN WATER)

ROCK FOUNDATION

BUILDING REMOVAL 1

CURB & GUTTER REMOVAL

CURB & GUTTER REMOVAL

EXISTING 12" CLAY
SANITARY SEWER LATERAL
TO BE ABANDONED

CURB & GUTTER REMOVAL

SIDEWALK REMOVAL

CURB & GUTTER REMOVAL

CLASS C PATCHES

CLASS C PATCHES

SIDEWALK REMOVAL

REMOVE AND REERECT TRAFFIC
BARRIER TERMINALS, TYPE 1

PAVEMENT PATCHING

PIER

CONC

WELL

GENERATOR

RIPRAP

EB MLK BRIDGE RAMP

SN 082-0287

L SECOND STREET

L MISSOURI AVE

I-55/64 WESTBOUND LANES

GRAPHIC SCALE
10 0 10 20 30 40 50
FEET

N

FILE NAME = Q:\Files\110823\Work Order 3 MO Ave Ph2\CADD Sheets\D876G99-sht-remplan.dgn

KLINGNER & ASSOCIATES, P.C.
Engineers • Architects • Surveyors

USER NAME = seb	DESIGNED - SEB	REVISED -
	DRAWN - SEB	REVISED -
PLOT SCALE = 40.0000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 8/23/2014	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

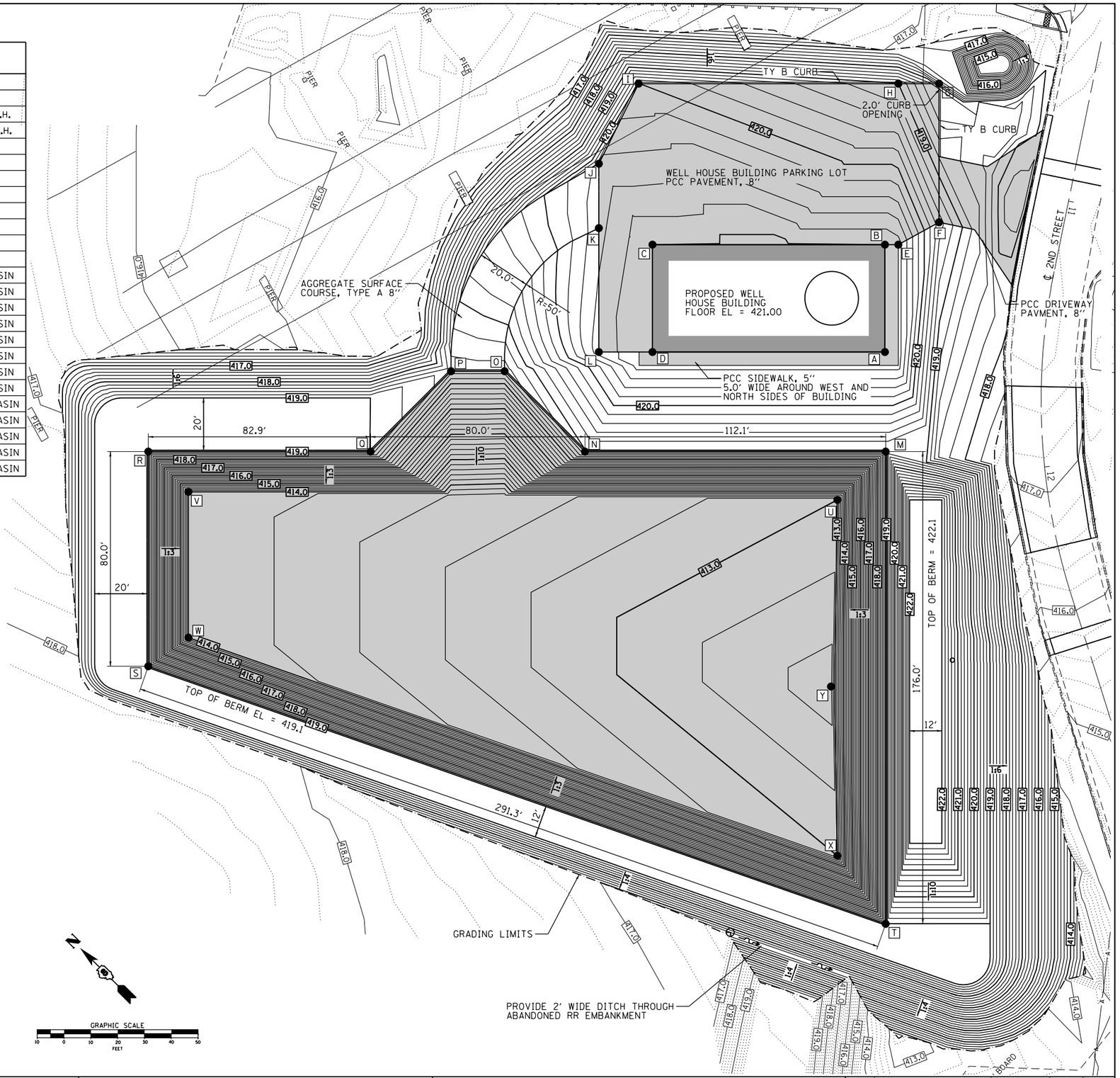
REMOVAL PLAN – WELL HOUSE SITE
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: 1"=20' | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	39
		CONTRACT NO. 76G99		
		ILLINOIS	FED. AID PROJECT	

CONTROL POINTS

POINT	NORTHING	EASTING	2ND STREET STATION	2ND STREET OFFSET	ELEVATION	DESCRIPTION
A	14,039,963.64	2,450,767.34	11+60.63	58.83' RT	420.98	SW AT SW CORNER OF W.H.
B	14,039,991.79	2,450,795.76	11+29.01	63.88' RT	420.98	SW AT SE CORNER OF W.H.
C	14,040,053.37	2,450,734.77	11+39.22	149.30' RT	420.98	P.L. PVMT AT NE CORNER OF W.H.
D	14,040,025.22	2,450,706.35	11+63.89	145.37' RT	420.98	P.L. PVMT AT NW CORNER OF W.H.
E	14,039,988.24	2,450,799.28	11+28.24	58.97' RT	420.90	SW & P.L. PVMT
F	14,039,983.32	2,450,815.86	11+17.43	45.78' RT	419.50	P.L. PVMT
G	14,040,019.69	2,450,852.58	10+66.80	56.14' RT	418.00	P.L. PVMT
H	14,040,030.46	2,450,841.91	10+69.84	71.00' RT	419.00	P.L. PVMT
I	14,040,099.26	2,450,773.76	10+89.25	165.86' RT	420.00	P.L. PVMT
J	14,040,088.81	2,450,742.13	11+21.45	174.41' RT	420.45	P.L. PVMT & AGG DRIVE
K	14,040,071.92	2,450,725.08	11+37.39	170.01' RT	420.53	P.L. PVMT & AGG DRIVE
L	14,040,039.43	2,450,692.28	11+64.45	165.35' RT	420.70	P.L. PVMT
M	14,039,937.28	2,450,741.14	11+90.51	58.60' RT	419.00	TOP OF SLOPE WALL / DET BASIN
N	14,040,016.94	2,450,662.23	11+86.32	170.56' RT	419.00	TOP OF SLOPE WALL / DET BASIN
O	14,040,059.37	2,450,662.44	11+69.20	200.25' RT	418.50	TOP OF SLOPE WALL / DET BASIN
P	14,040,073.58	2,450,648.36	11+69.46	220.25' RT	418.50	TOP OF SLOPE WALL / DET BASIN
Q	14,040,073.78	2,450,605.94	11+84.49	250.49' RT	419.00	TOP OF SLOPE WALL / DET BASIN
R	14,040,132.66	2,450,547.62	11+83.14	333.31' RT	419.00	TOP OF SLOPE WALL / DET BASIN
S	14,040,076.37	2,450,490.78	12+16.25	341.50' RT	419.00	TOP OF SLOPE WALL / DET BASIN
T	14,039,813.43	2,450,616.09	13+61.08	100.30' RT	419.00	TOP OF SLOPE WALL / DET BASIN
U	14,039,937.40	2,450,715.68	12+03.20	78.16' RT	413.00	BASE OF SLOPE WALL / DET BASIN
V	14,040,111.45	2,450,547.51	11+89.79	319.03' RT	414.00	BASE OF SLOPE WALL / DET BASIN
W	14,040,073.21	2,450,508.90	12+12.87	324.96' RT	414.00	BASE OF SLOPE WALL / DET BASIN
X	14,039,844.05	2,450,621.44	13+17.48	112.48' RT	413.00	BASE OF SLOPE WALL / DET BASIN
Y	14,039,890.15	2,450,664.56	12+54.30	95.75' RT	412.50	BASE OF SLOPE WALL / DET BASIN



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		DRAWN - SEB	REVISED -
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	PLOT DATE = 8/23/2014	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SITE GRADING PLAN
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: 1"=20' | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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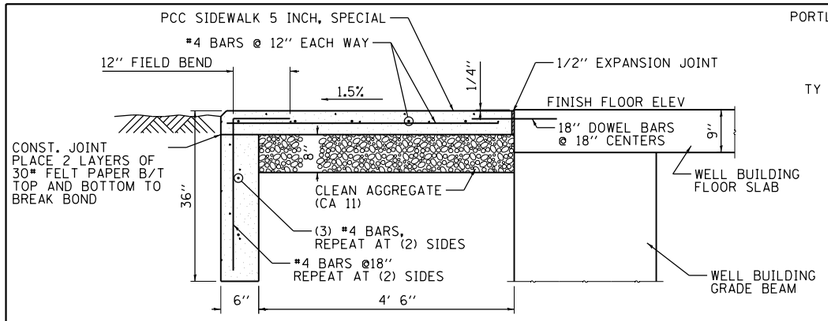
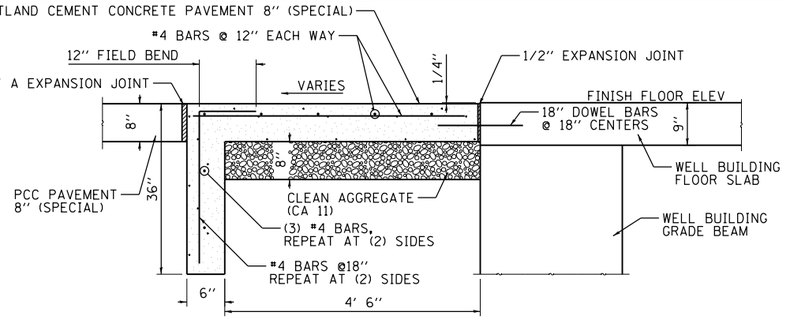
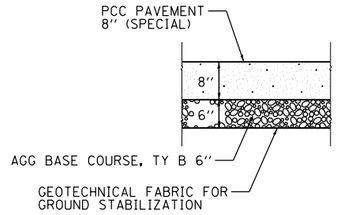
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			



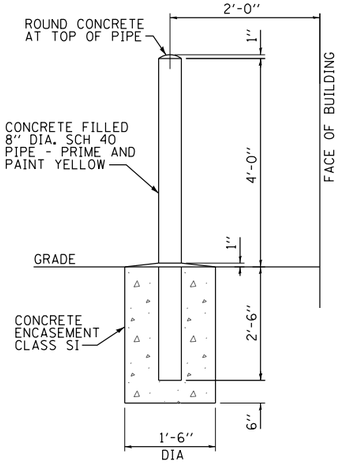
CONCRETE STOOP SECTION – SIDEWALK
NOT TO SCALE



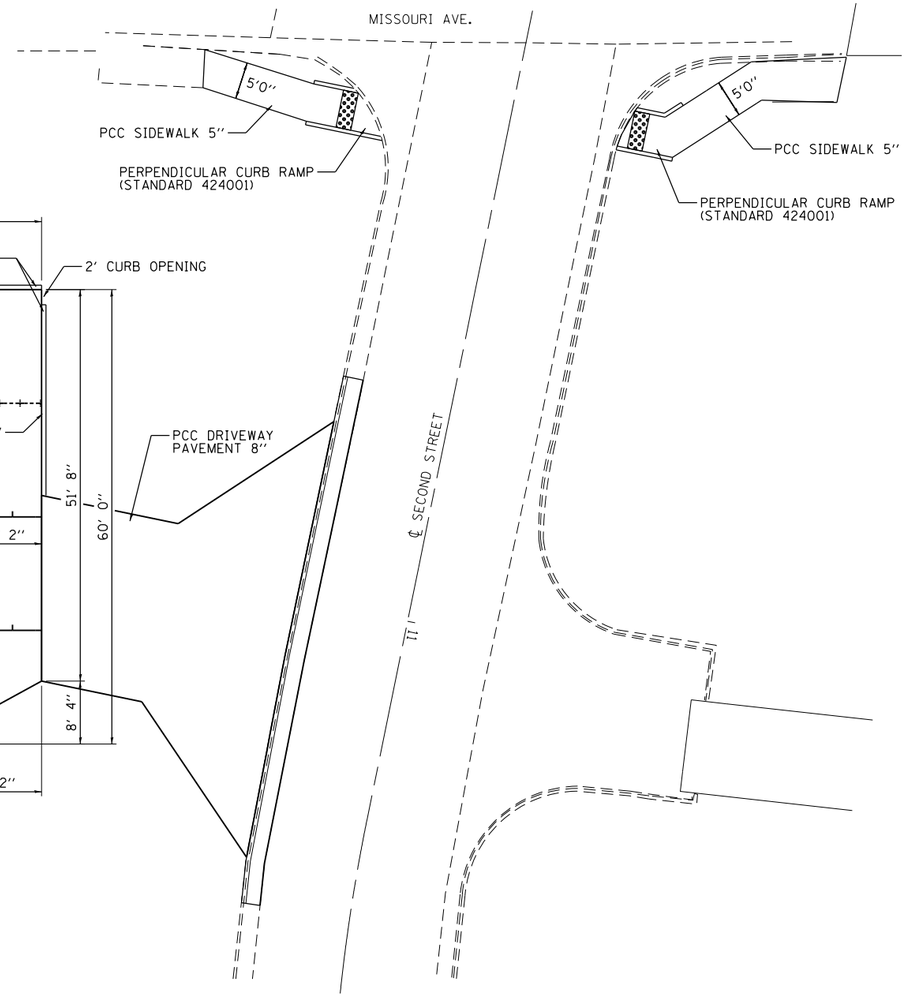


TYPICAL PAVEMENT SECTION
NOT TO SCALE

NOTE:
THE COST OF ADDITIONAL CONCRETE, REINFORCEMENT, AGGREGATE, EXCAVATION, AND FILL WILL BE INCLUDED IN THE RESPECTIVE PAY ITEM FOR "PORTLAND CEMENT CONCRETE PAVEMENT 8" (SPECIAL)" AND "PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH, SPECIAL"



BOLLARD DETAIL
NOT TO SCALE



JOINT LEGEND
SEE HIGHWAY STANDARD B.L.R. 10-6 FOR ADDITIONAL DETAILS

TYPE A EXPANSION JOINT
TYPE C TRANSVERSE JOINT
TYPE E LONGITUDINAL JOINT

N

GRAPHIC SCALE
5 0 5 10 15 20 25
FEET

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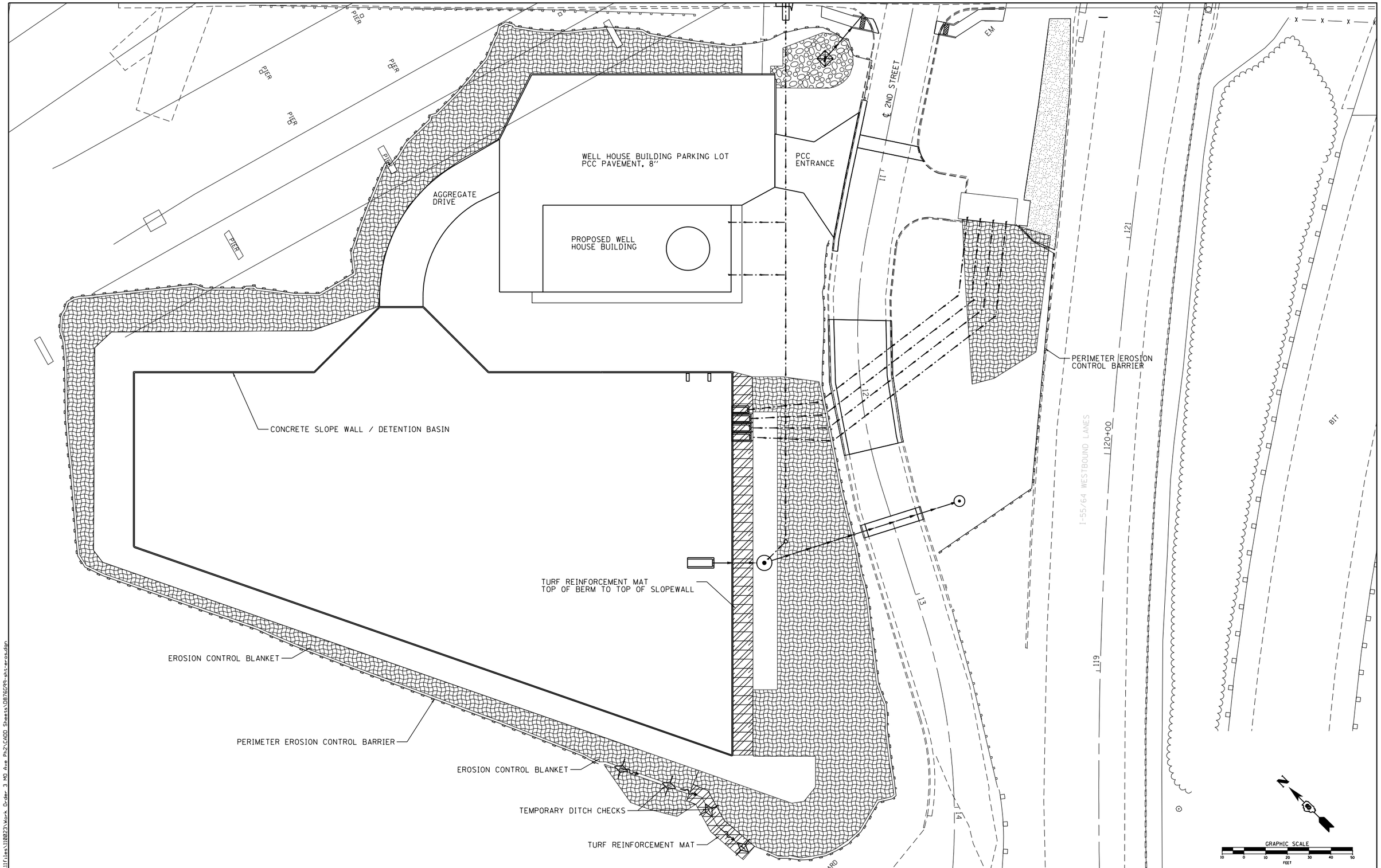
PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 8/23/2014	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PARKING LOT PAVEMENT JOINT PLAN
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: 1"=10' | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	41
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			



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Engineers • Architects • Surveyors

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PLOT SCALE = 40.0000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 8/23/2014	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EROSION AND SEDIMENT CONTROL PLAN
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: 1"=20' | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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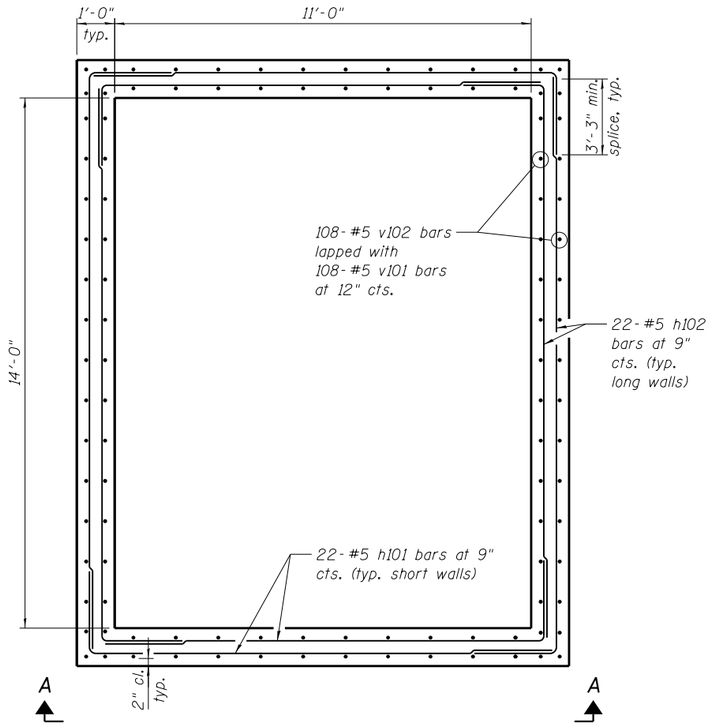
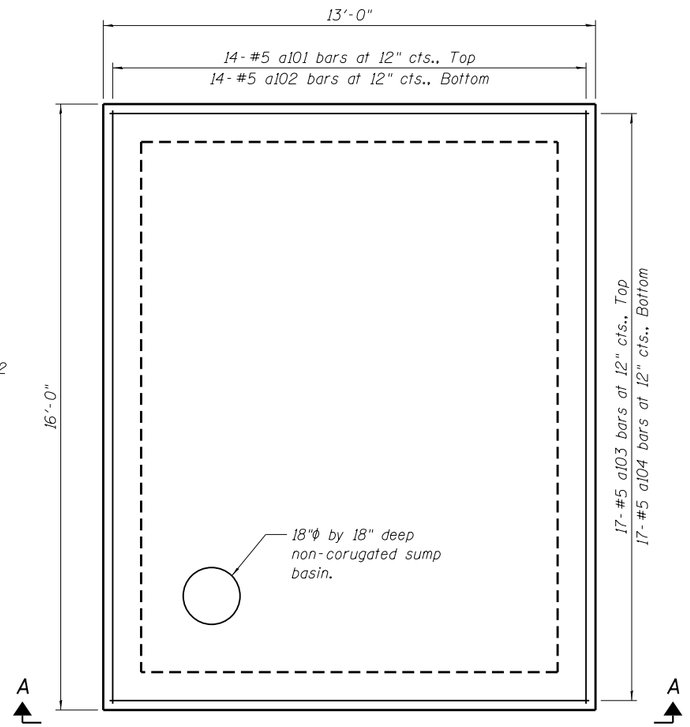
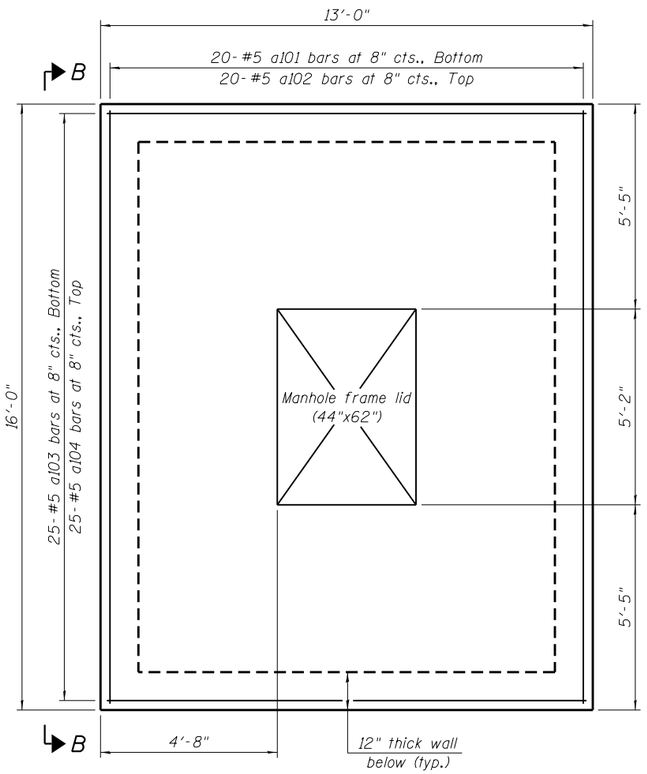
		CONTRACT NO. 76G99		
	ILLINOIS	FED. AID PROJECT		



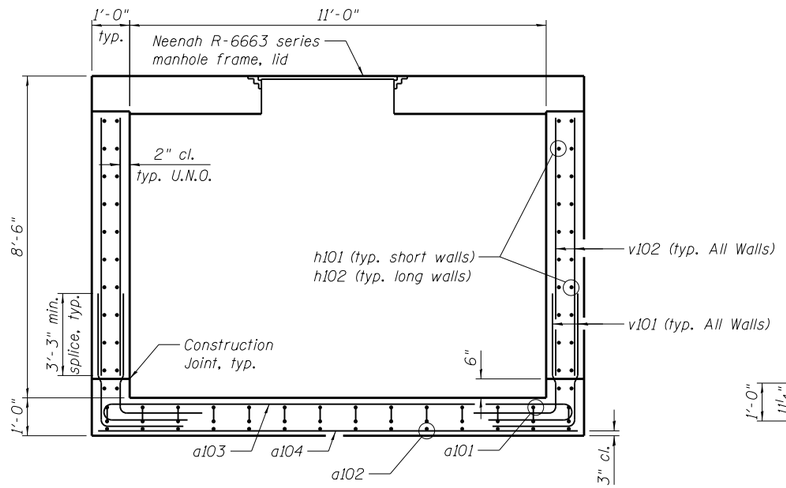
PLAN VIEW SHOWING WALL REINFORCEMENT



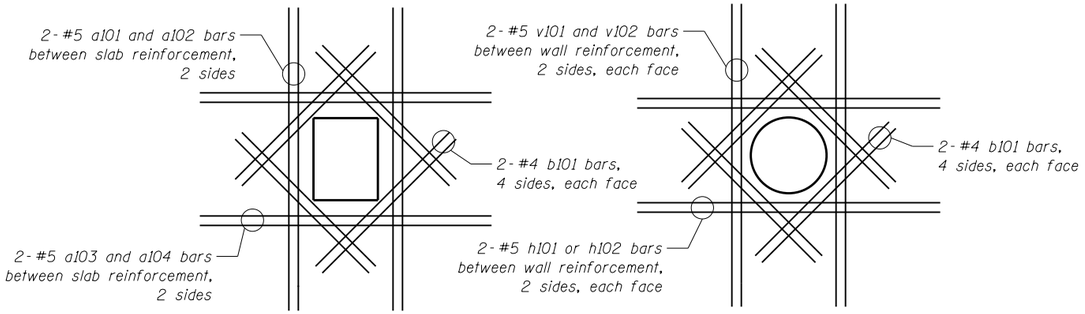
PLAN VIEW SHOWING FOOTING REINFORCEMENT



PLAN VIEW SHOWING TOP SLAB REINFORCEMENT

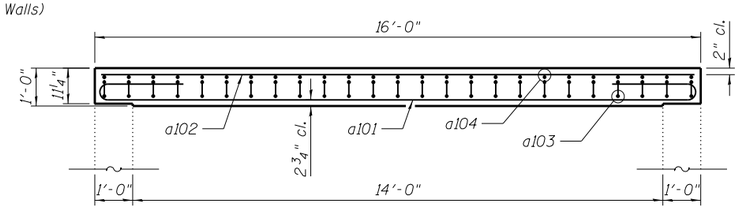


SECTION A-A



TYPICAL ADDITIONAL REINFORCEMENT AROUND MANHOLE FRAME LID

TYPICAL ADDITIONAL REINFORCEMENT AROUND PIPE PENETRATIONS



SECTION B-B

NOTES:

All reinforcement to have 2" clear cover unless noted otherwise.
Cost of sump pits included with Concrete Structures.

f'_c = 3,500 psi

f_y = 60,000 psi (Reinforcement)

U.N.O. - Unless Noted Otherwise

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	PLOT DATE = 9/23/2014	DATE - 08/22/2014	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FORCE MAIN VAULTS STRUCTURAL DETAILS – C1 14'x11'
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: | SHEET 01 OF 08 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	43
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			

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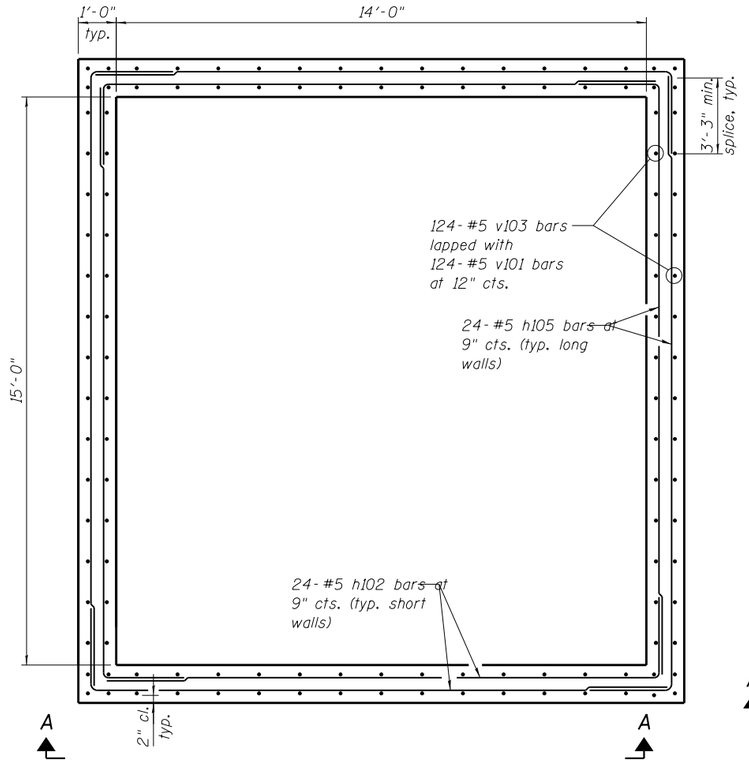
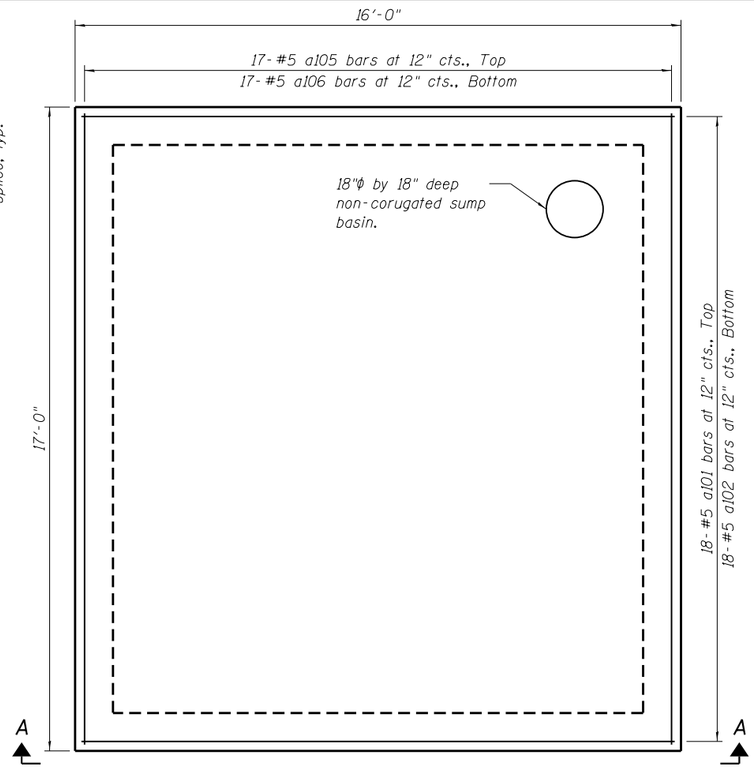
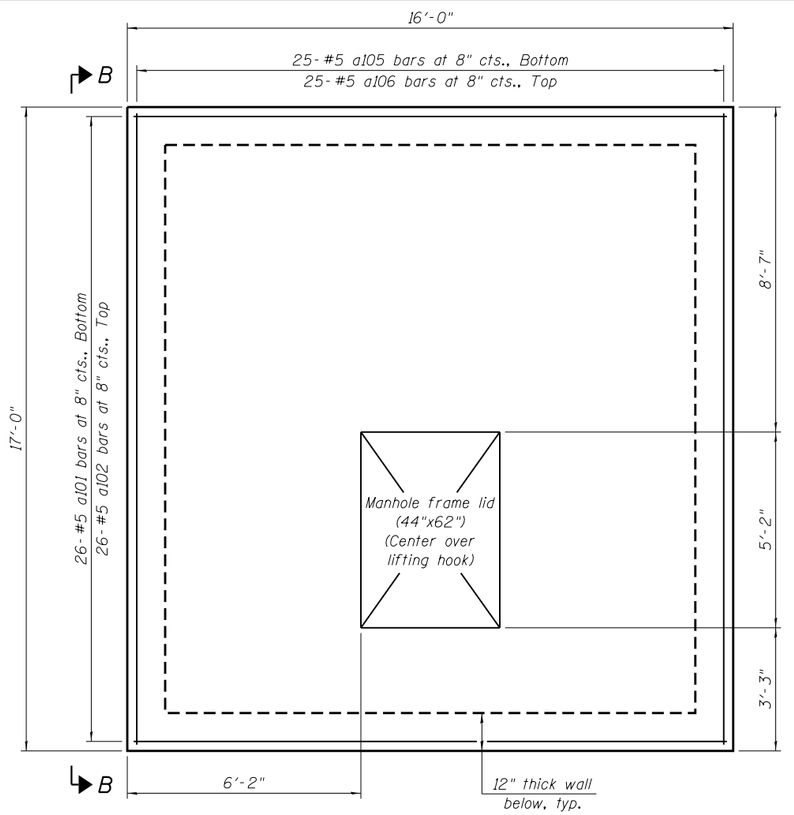


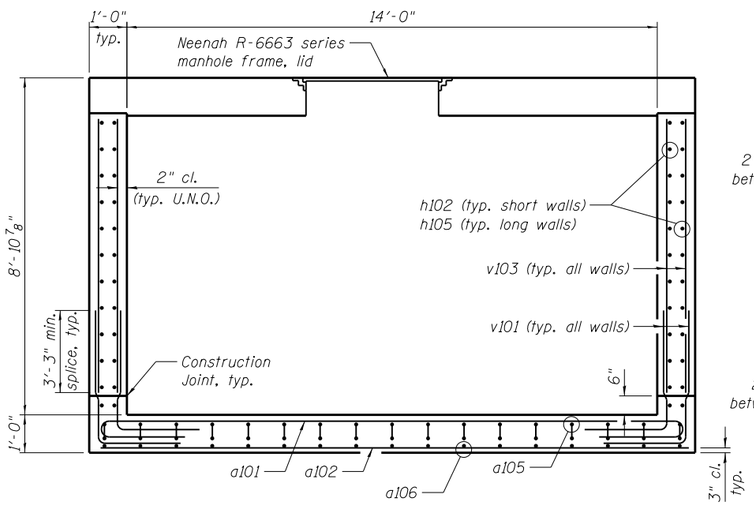
PLAN VIEW SHOWING WALL REINFORCEMENT



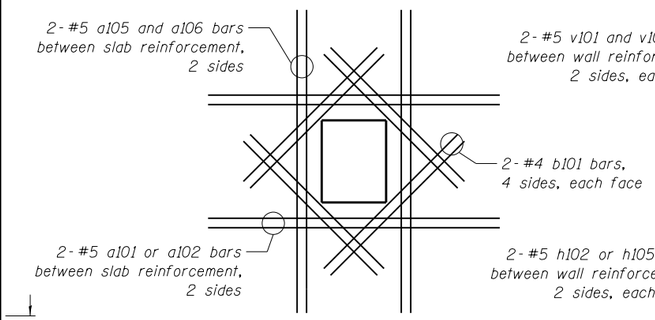
PLAN VIEW SHOWING FOOTING REINFORCEMENT



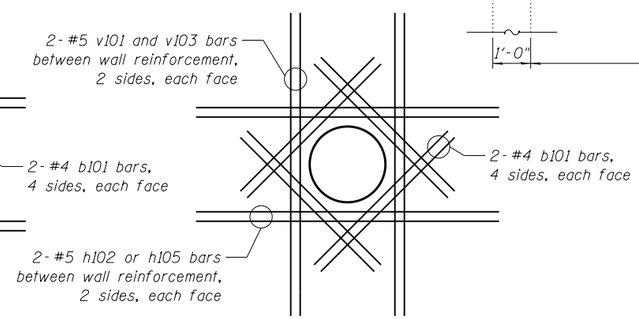
PLAN VIEW SHOWING TOP SLAB REINFORCEMENT



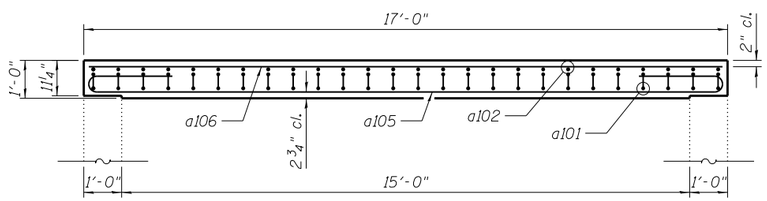
SECTION A-A



TYPICAL ADDITIONAL REINFORCEMENT AROUND MANHOLE FRAME LID



TYPICAL ADDITIONAL REINFORCEMENT AROUND PIPE PENETRATIONS



SECTION B-B

NOTES:

All reinforcement to have 2" clear cover unless noted otherwise.
Cost of sump pits included with Concrete Structures.

f'_C = 3,500 psi

f_y = 60,000 psi (Reinforcement)

U.N.O. - Unless Noted Otherwise

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		DRAWN - AJF	REVISED -		
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	PLOT DATE = 9/23/2014	DATE - 08/22/2014	REVISED -		

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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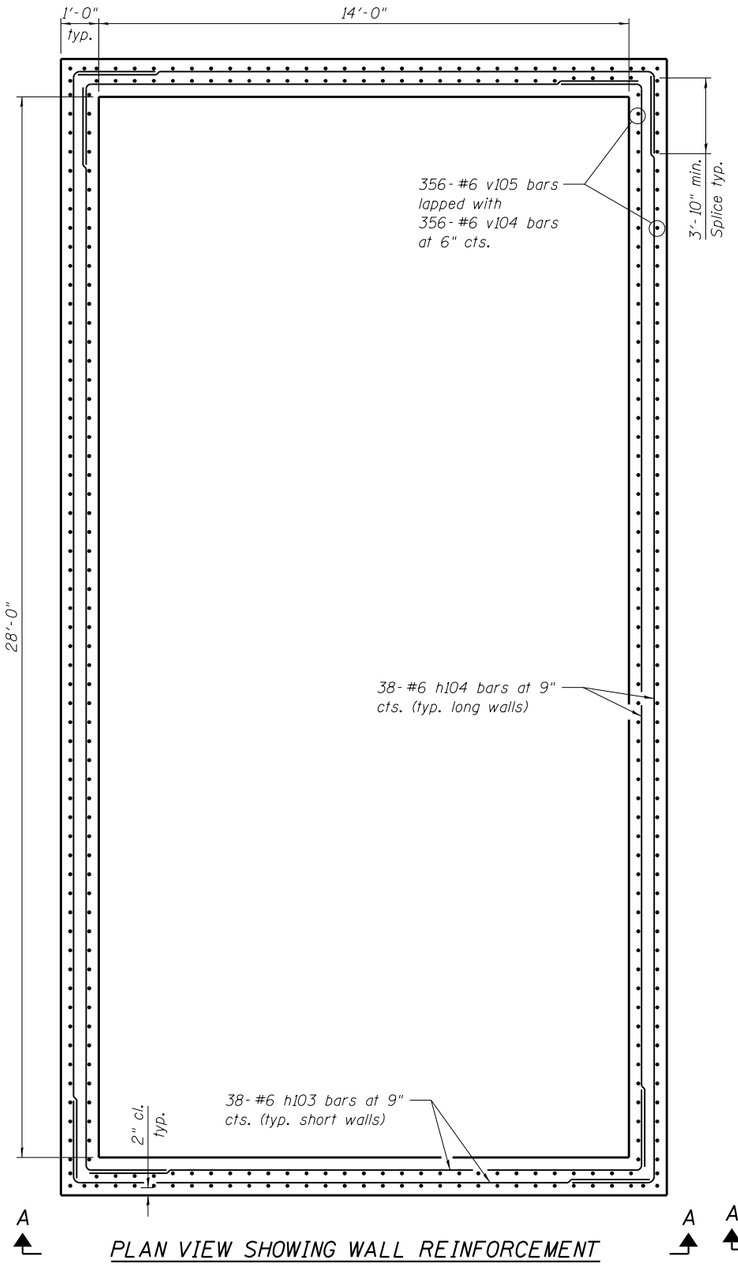
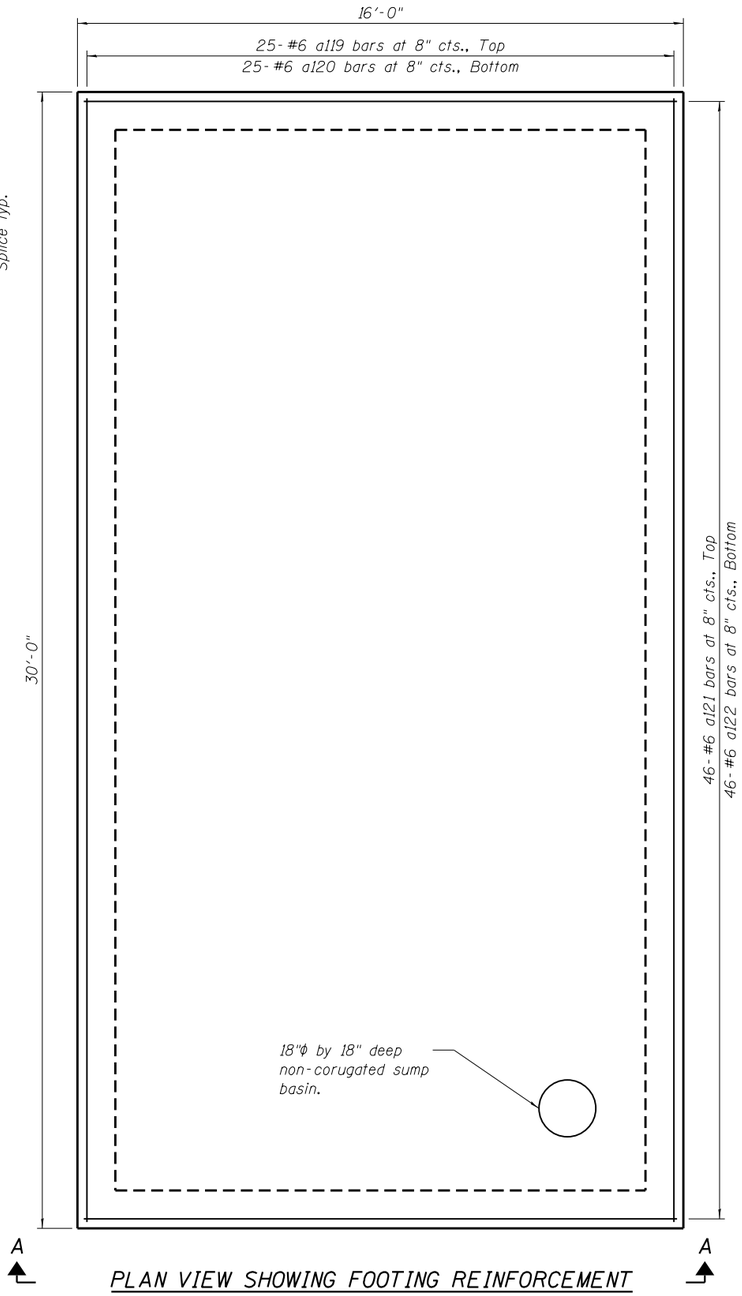
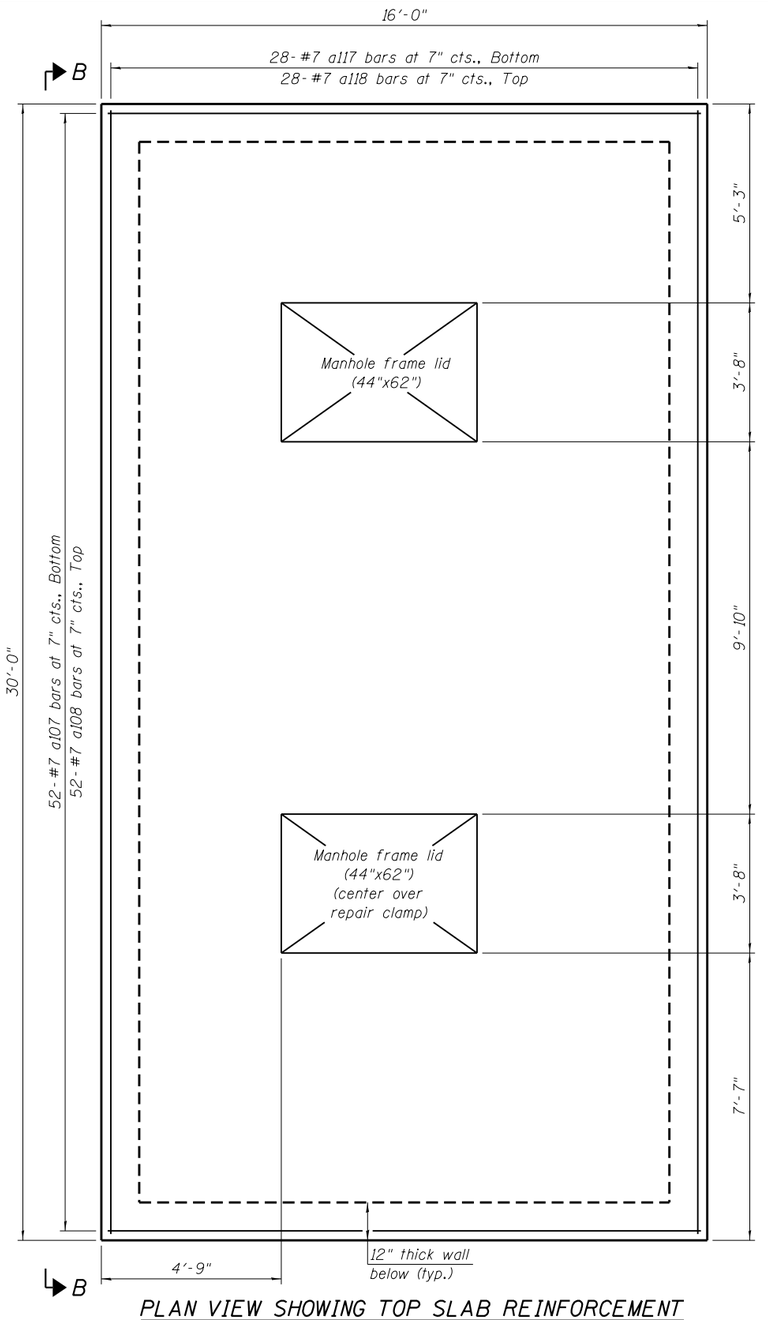
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			



PLAN VIEW SHOWING WALL REINFORCEMENT



PLAN VIEW SHOWING FOOTING REINFORCEMENT



PLAN VIEW SHOWING TOP SLAB REINFORCEMENT

NOTES:

See sheet 2 of 2 for notes on this sheet.

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FORCE MAIN VAULTS STRUCTURAL DETAILS – C3 28'x14'
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: | SHEET 03 OF 08 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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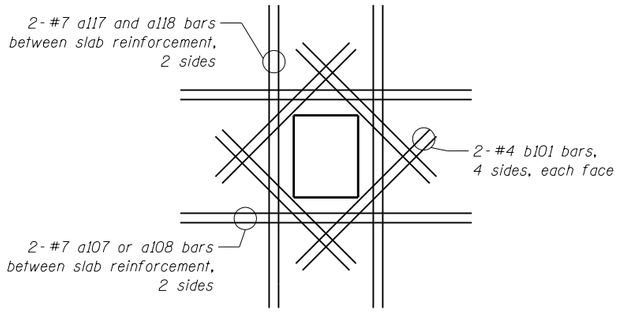
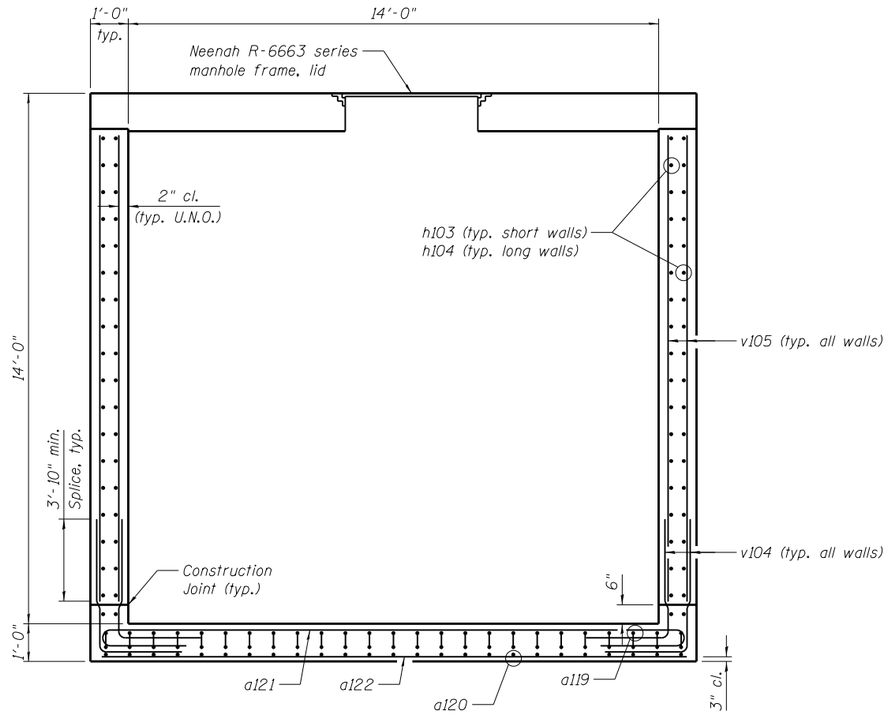
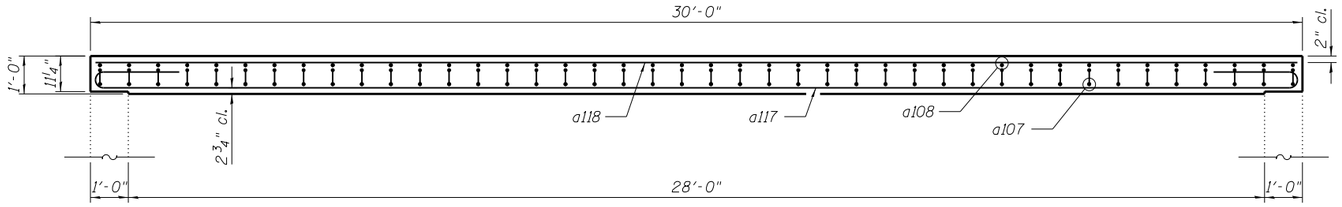
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			



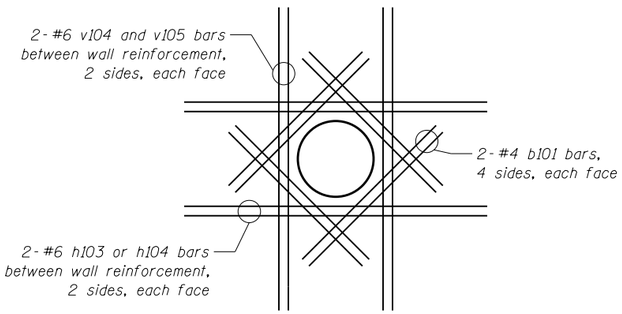
TYPICAL ADDITIONAL REINFORCEMENT AROUND MANHOLE FRAME LID



SECTION A-A



SECTION B-B



TYPICAL ADDITIONAL REINFORCEMENT AROUND PIPE PENETRATIONS

NOTES:

All reinforcement to have 2" clear cover unless noted otherwise.
Cost of sump pits included with Concrete Structures.

f'_c = 3,500 psi

f_y = 60,000 psi (Reinforcement)

U.N.O. - Unless Noted Otherwise

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Consulting Engineers
Springfield, Illinois

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PLOT DATE = 9/23/2014	DATE - 08/22/2014	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FORCE MAIN VAULTS STRUCTURAL DETAILS – C3 28'x14'
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: | SHEET 04 OF 08 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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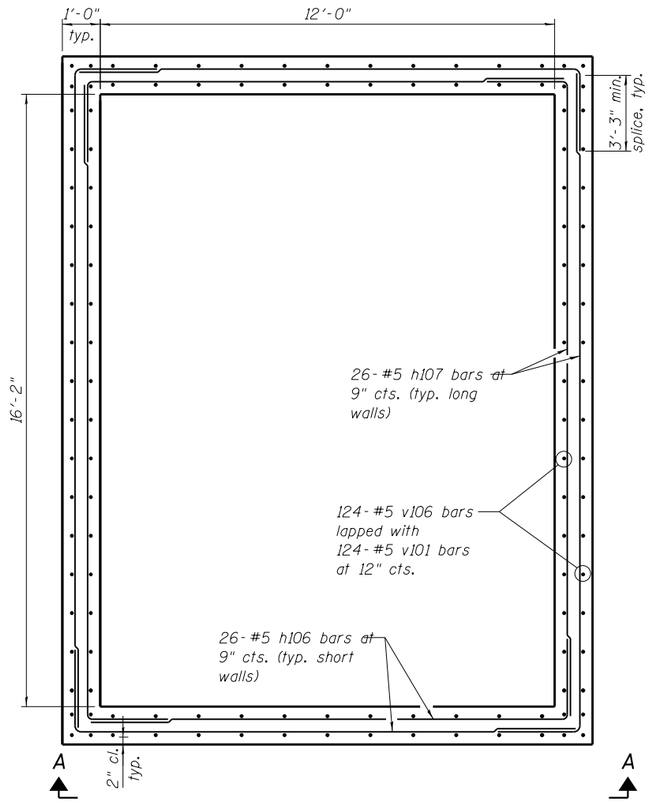
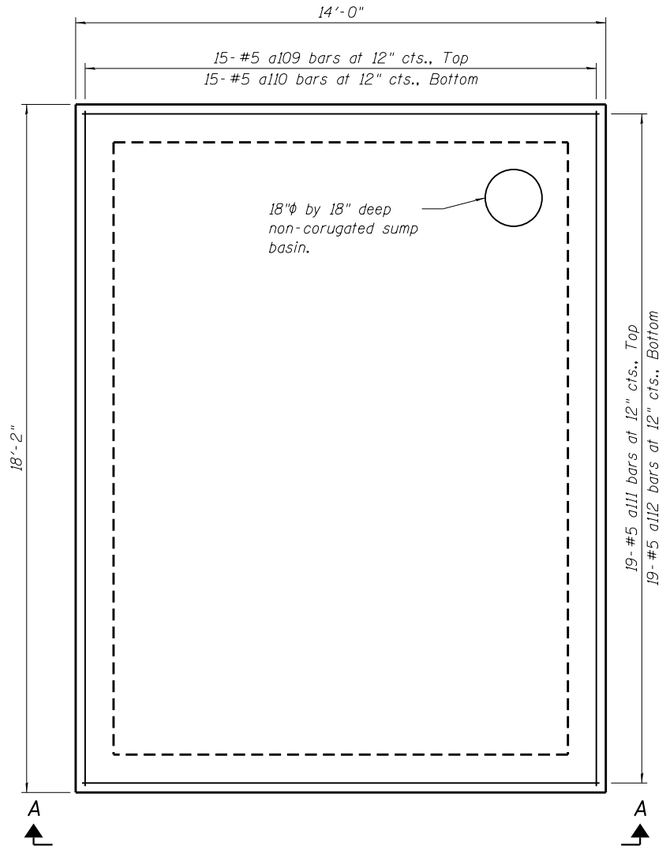
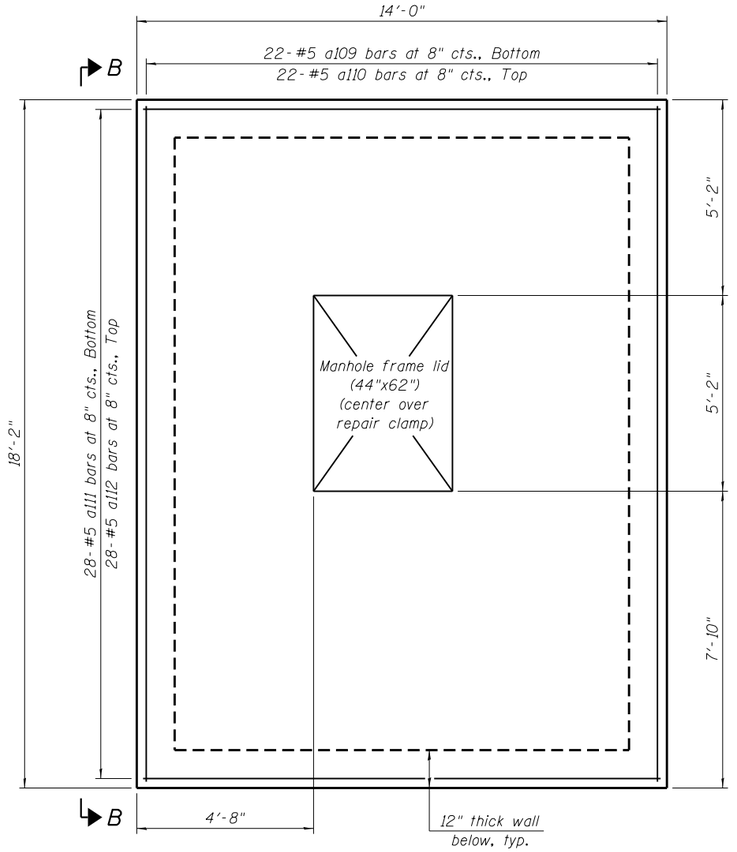
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			



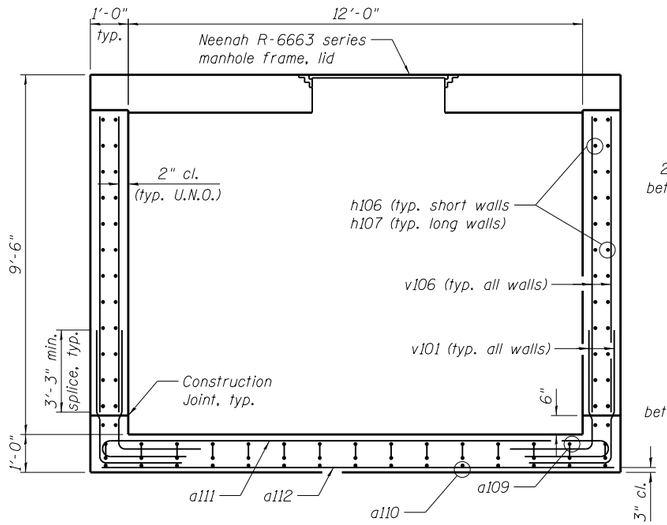
PLAN VIEW SHOWING WALL REINFORCEMENT



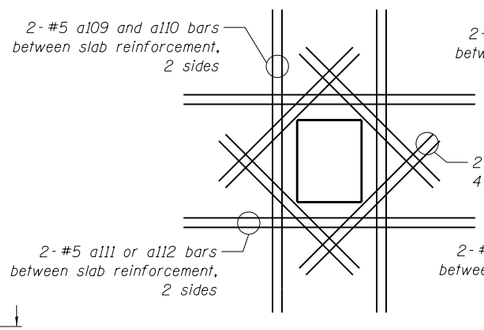
PLAN VIEW SHOWING FOOTING REINFORCEMENT



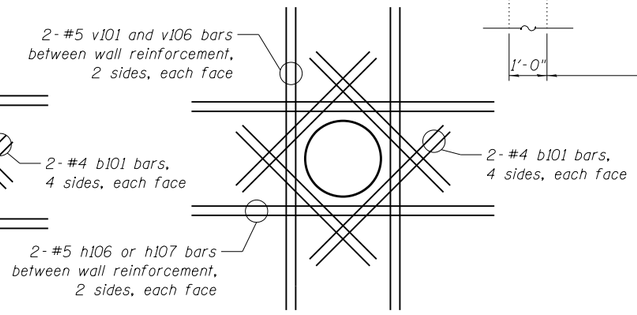
PLAN VIEW SHOWING TOP SLAB REINFORCEMENT



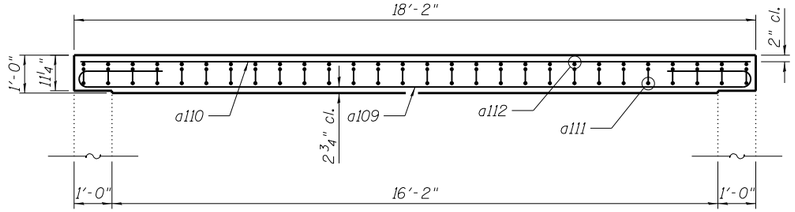
SECTION A-A



TYPICAL ADDITIONAL REINFORCEMENT AROUND MANHOLE FRAME LID



TYPICAL ADDITIONAL REINFORCEMENT AROUND PIPE PENETRATIONS



SECTION B-B

NOTES:

All reinforcement to have 2" clear cover unless noted otherwise.
Cost of sump pits included with Concrete Structures.

f'_c = 3,500 psi

f_y = 60,000 psi (Reinforcement)

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Consulting Engineers
Springfield, Illinois

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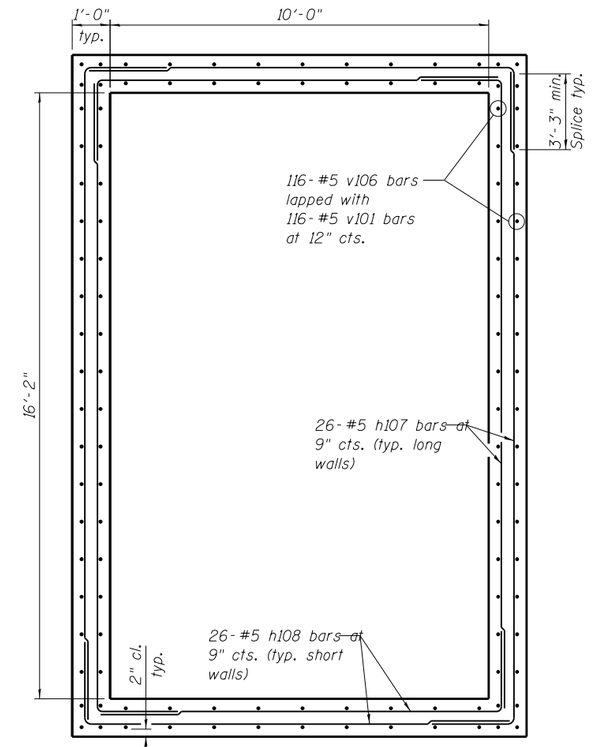
PLOT DATE = 9/23/2014	DATE - 08/22/2014	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

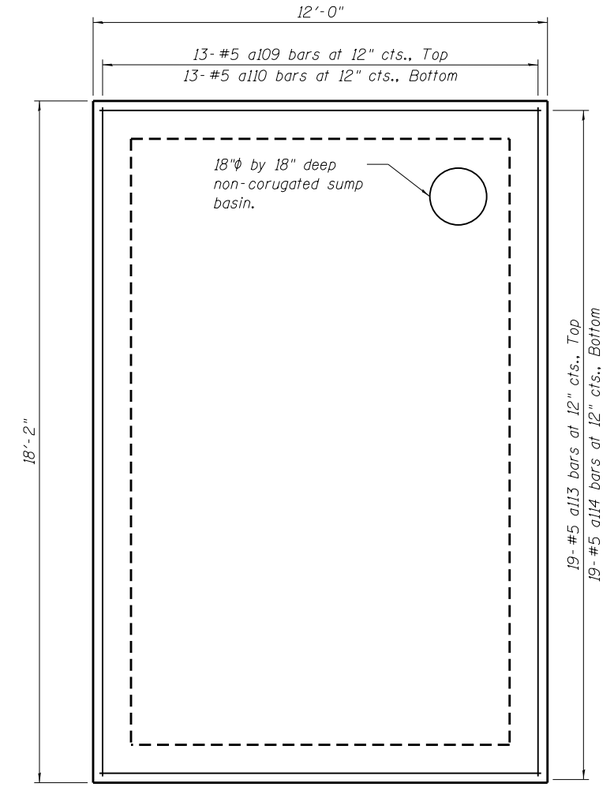
FORCE MAIN VAULTS STRUCTURAL DETAILS – C4–C5 16'–2"x12'
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: | SHEET 05 OF 08 SHEETS | STA. | TO STA.

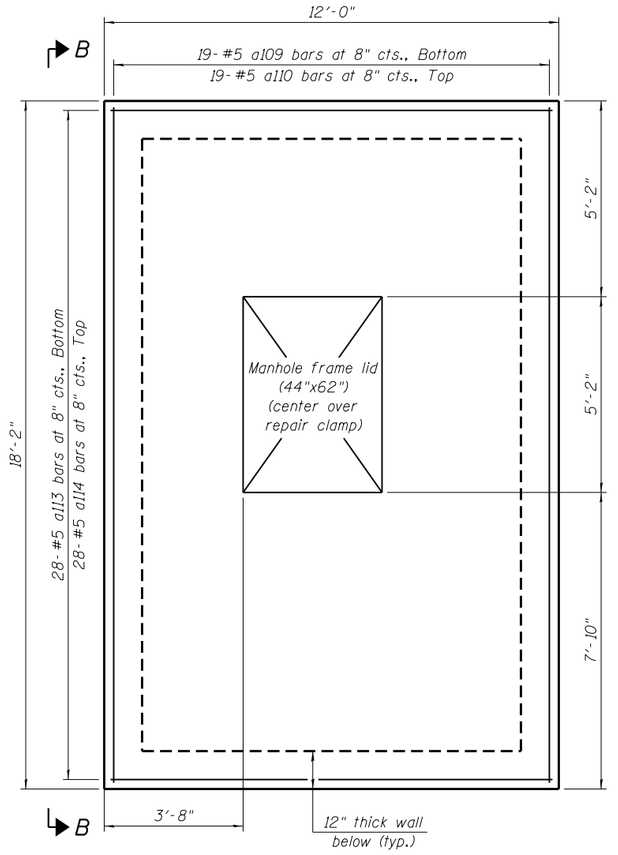
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	47
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			



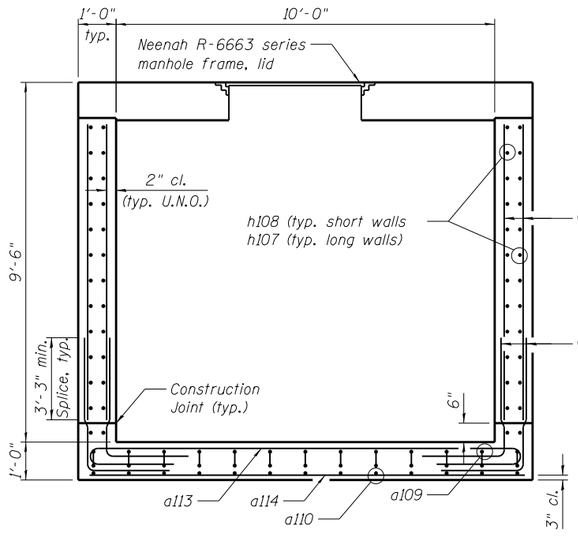
PLAN VIEW SHOWING WALL REINFORCEMENT



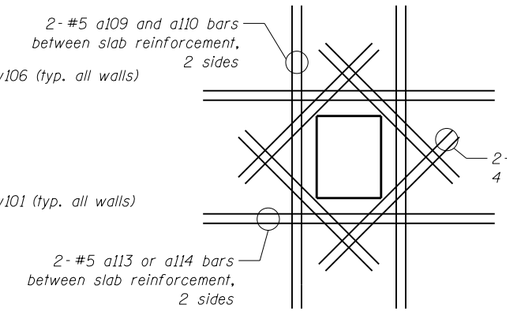
PLAN VIEW SHOWING FOOTING REINFORCEMENT



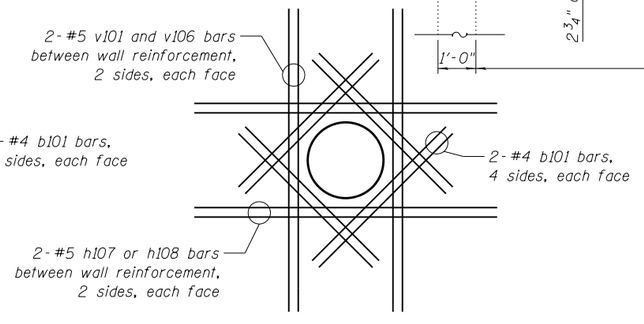
PLAN VIEW SHOWING TOP SLAB REINFORCEMENT



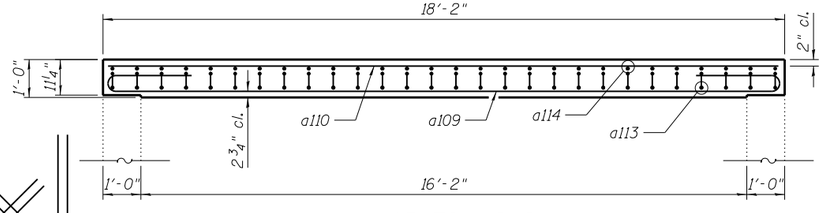
SECTION A-A



TYPICAL ADDITIONAL REINFORCEMENT AROUND MANHOLE FRAME LID



TYPICAL ADDITIONAL REINFORCEMENT AROUND PIPE PENETRATIONS



SECTION B-B

NOTES:

All reinforcement to have 2" clear cover unless noted otherwise.
Cost of sump pits included with Concrete Structures.

f'_c = 3,500 psi

f_y = 60,000 psi (Reinforcement)

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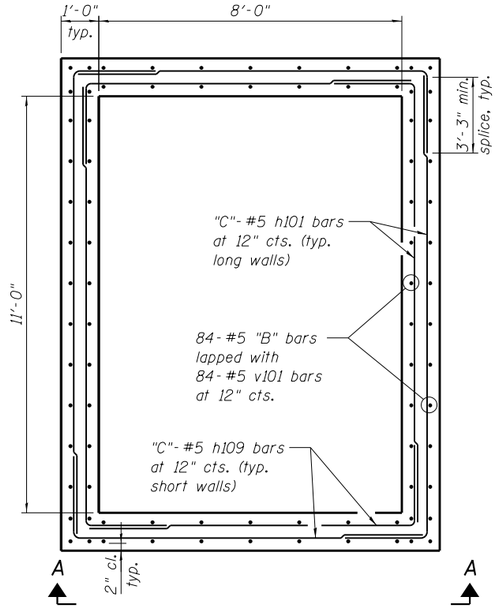
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

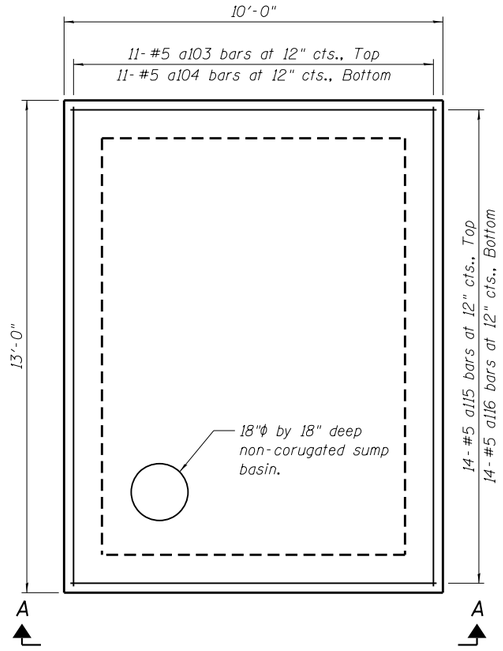
FORCE MAIN VAULTS STRUCTURAL DETAILS – C7 16'–2"x10'
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: | SHEET 06 OF 08 SHEETS | STA. | TO STA.

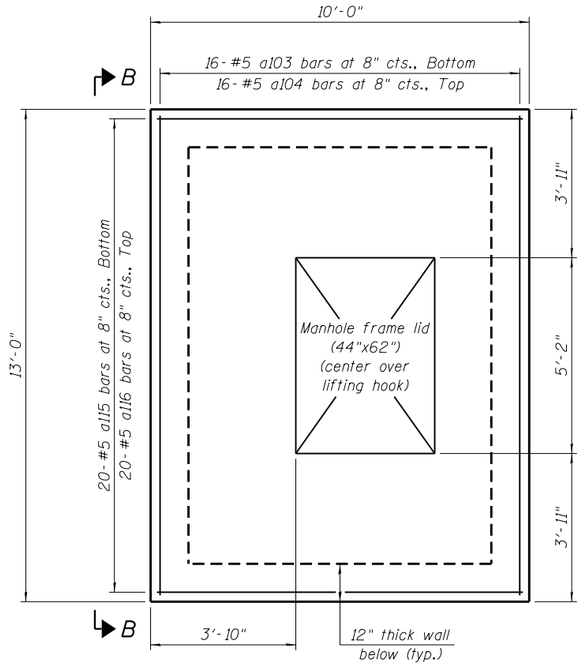
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	48
		CONTRACT NO. 76G99		
	ILLINOIS	FED. AID PROJECT		



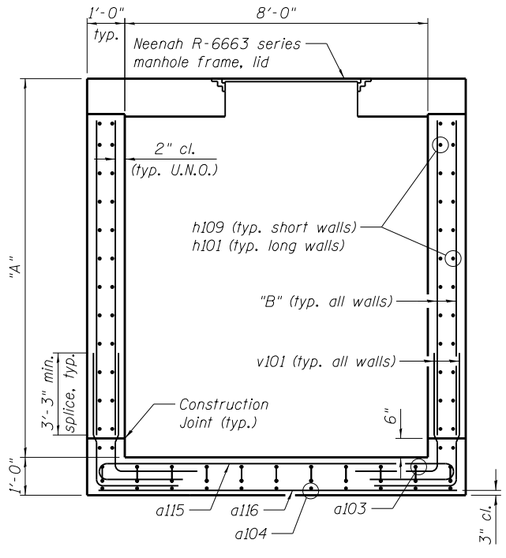
PLAN VIEW SHOWING WALL REINFORCEMENT



PLAN VIEW SHOWING FOOTING REINFORCEMENT



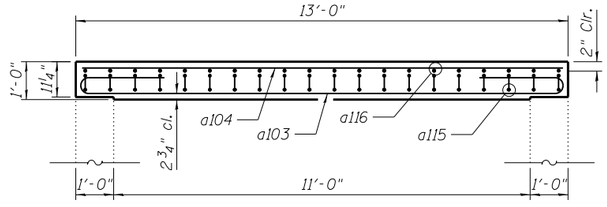
PLAN VIEW SHOWING TOP SLAB REINFORCEMENT



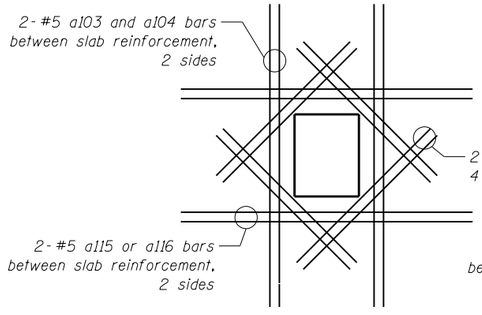
SECTION A-A

VARIABLES

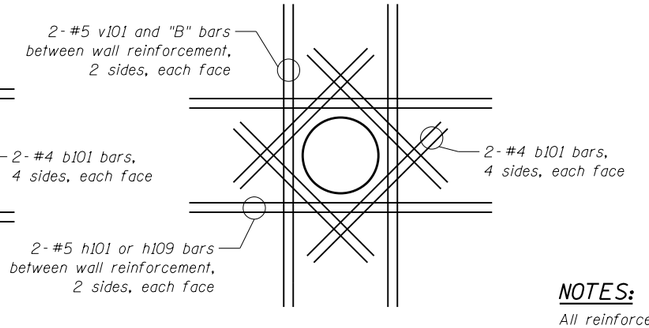
Vault	"A"	"B"	"C"
C6	12'-6"	v107	26
C8	10'-0"	v108	22
C9	7'-4 3/4"	v109	16
C10	8'-8 3/8"	v110	20
C11	13'-8 3/8"	v111	30
C12	13'-9 5/8"	v112	30
C13	7'-2 3/8"	v113	16
C14	7'-4 3/4"	v114	16
C15	7'-4 3/4"	v115	16
C16	7'-2 3/8"	v116	16
C17	8'-0"	v117	18
C18	8'-6"	v118	18



SECTION B-B



TYPICAL ADDITIONAL REINFORCEMENT AROUND MANHOLE FRAME LID



TYPICAL ADDITIONAL REINFORCEMENT AROUND PIPE PENETRATIONS

NOTES:

All reinforcement to have 2" clear cover unless noted otherwise.
Cost of sump pits included with Concrete Structures.

f'_C = 3,500 psi

f_y = 60,000 psi (Reinforcement)

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PLOT DATE = 9/23/2014	DATE - 08/22/2014	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FORCE MAIN VAULTS STRUCTURAL DETAILS – C6, C8–C18 11'x8'
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: | SHEET 07 OF 08 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	49
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			

C1 BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a_{101}	38	#5	16'-10"	
a_{102}	38	#5	15'-8"	
a_{103}	46	#5	13'-10"	
a_{104}	46	#5	12'-8"	
b_{101}	64	#4	4'-0"	
h_{101}	52	#5	15'-11"	
h_{102}	60	#5	18'-11"	
v_{101}	132	#5	7'-9"	
v_{102}	132	#5	6'-10"	
Concrete Structures		Cu. Yd.	29.6	
Reinforcement Bars		Pound	6,790	

(For bar locations see sheet 01 of 8)

C2 BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a_{101}	48	#5	16'-10"	
a_{102}	48	#5	15'-8"	
a_{105}	46	#5	17'-10"	
a_{106}	46	#5	16'-8"	
b_{101}	64	#4	4'-0"	
h_{102}	64	#5	18'-11"	
h_{105}	56	#5	19'-11"	
v_{101}	148	#5	7'-9"	
v_{103}	148	#5	7'-3"	
Concrete Structures		Cu. Yd.	37.5	
Reinforcement Bars		Pound	8,200	

(For bar locations see sheet 02 of 8)

C3 BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a_{107}	58	#7	17'-4"	
a_{108}	58	#7	15'-8"	
a_{117}	32	#7	31'-4"	
a_{118}	32	#7	29'-8"	
a_{119}	25	#6	31'-0"	
a_{120}	25	#6	29'-8"	
a_{121}	46	#6	17'-0"	
a_{122}	46	#6	15'-8"	
b_{101}	80	#4	4'-0"	
h_{103}	92	#6	19'-6"	
h_{104}	84	#6	33'-6"	
v_{104}	396	#6	8'-11"	
v_{105}	396	#6	12'-4"	
Concrete Structures		Cu. Yd.	75.9	
Reinforcement Bars		Pound	32,220	

(For bar locations see sheet 03 and 04 of 8)

C4 BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a_{109}	41	#5	19'-0"	
a_{110}	41	#5	17'-10"	
a_{111}	51	#5	14'-10"	
a_{112}	51	#5	13'-8"	
b_{101}	64	#4	4'-0"	
h_{106}	68	#5	16'-11"	
h_{107}	60	#5	21'-1"	
v_{101}	148	#5	7'-9"	
v_{106}	148	#5	7'-10"	
Concrete Structures		Cu. Yd.	37.1	
Reinforcement Bars		Pound	8,190	

(For bar locations see sheet 05 of 8)

C5 BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a_{109}	41	#5	19'-0"	
a_{110}	41	#5	17'-10"	
a_{111}	51	#5	14'-10"	
a_{112}	51	#5	13'-8"	
b_{101}	64	#4	4'-0"	
h_{106}	68	#5	16'-11"	
h_{107}	60	#5	21'-1"	
v_{101}	148	#5	7'-9"	
v_{106}	148	#5	7'-10"	
Concrete Structures		Cu. Yd.	37.1	
Reinforcement Bars		Pound	8,190	

(For bar locations see sheet 05 of 8)

C6 BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a_{103}	31	#5	13'-10"	
a_{104}	31	#5	12'-8"	
a_{115}	38	#5	10'-10"	
a_{116}	38	#5	9'-8"	
b_{101}	48	#4	4'-0"	
h_{101}	52	#5	15'-11"	
h_{109}	68	#5	12'-11"	
v_{101}	100	#5	7'-9"	
v_{107}	100	#5	10'-10"	
Concrete Structures		Cu. Yd.	26.8	
Reinforcement Bars		Pound	5,520	

(For bar locations see sheet 07 of 8)

C7 BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a_{109}	36	#5	19'-0"	
a_{110}	36	#5	17'-10"	
a_{113}	51	#5	12'-10"	
a_{114}	51	#5	11'-8"	
b_{101}	64	#4	4'-0"	
h_{107}	60	#5	21'-1"	
h_{108}	68	#5	14'-11"	
v_{101}	140	#5	7'-9"	
v_{106}	140	#5	7'-10"	
Concrete Structures		Cu. Yd.	33.1	
Reinforcement Bars		Pound	7,520	

(For bar locations see sheet 06 of 8)

C8 BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a_{103}	31	#5	13'-10"	
a_{104}	31	#5	12'-8"	
a_{115}	38	#5	10'-10"	
a_{116}	38	#5	9'-8"	
b_{101}	48	#4	4'-0"	
h_{101}	44	#5	15'-11"	
h_{109}	60	#5	12'-11"	
v_{101}	100	#5	7'-9"	
v_{108}	100	#5	8'-4"	
Concrete Structures		Cu. Yd.	22.7	
Reinforcement Bars		Pound	5,020	

(For bar locations see sheet 07 of 8)

C9 BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a_{103}	31	#5	13'-10"	
a_{104}	31	#5	12'-8"	
a_{115}	38	#5	10'-10"	
a_{116}	38	#5	9'-8"	
b_{101}	48	#4	4'-0"	
h_{101}	32	#5	15'-11"	
h_{109}	48	#5	12'-11"	
v_{101}	100	#5	7'-9"	
v_{109}	100	#5	5'-9"	
Concrete Structures		Cu. Yd.	18.7	
Reinforcement Bars		Pound	4,390	

(For bar locations see sheet 07 of 8)

C10 BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a_{103}	31	#5	13'-10"	
a_{104}	31	#5	12'-8"	
a_{115}	38	#5	10'-10"	
a_{116}	38	#5	9'-8"	
b_{101}	48	#4	4'-0"	
h_{101}	40	#5	15'-11"	
h_{109}	56	#5	12'-11"	
v_{101}	100	#5	7'-9"	
v_{110}	100	#5	7'-1"	
Concrete Structures		Cu. Yd.	20.7	
Reinforcement Bars		Pound	4,770	

(For bar locations see sheet 07 of 8)

C11 BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a_{103}	31	#5	13'-10"	
a_{104}	31	#5	12'-8"	
a_{115}	38	#5	10'-10"	
a_{116}	38	#5	9'-8"	
b_{101}	48	#4	4'-0"	
h_{101}	60	#5	15'-11"	
h_{109}	76	#5	12'-11"	
v_{101}	100	#5	7'-9"	
v_{111}	100	#5	12'-1"	
Concrete Structures		Cu. Yd.	28.5	
Reinforcement Bars		Pound	5,890	

(For bar locations see sheet 07 of 8)

C12 BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a_{103}	31	#5	13'-10"	
a_{104}	31	#5	12'-8"	
a_{115}	38	#5	10'-10"	
a_{116}	38	#5	9'-8"	
b_{101}	48	#4	4'-0"	
h_{101}	60	#5	15'-11"	
h_{109}	76	#5	12'-11"	
v_{101}	100	#5	7'-9"	
v_{112}	100	#5	12'-2"	
Concrete Structures		Cu. Yd.	28.7	
Reinforcement Bars		Pound	5,900	

(For bar locations see sheet 07 of 8)

C13 BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a_{103}	31	#5	13'-10"	
a_{104}	31	#5	12'-8"	
a_{115}	38	#5	10'-10"	
a_{116}	38	#5	9'-8"	
b_{101}	48	#4	4'-0"	
h_{101}	32	#5	15'-11"	
h_{109}	48	#5	12'-11"	
v_{101}	100	#5	7'-9"	
v_{113}	100	#5	5'-7"	
Concrete Structures		Cu. Yd.	18.4	
Reinforcement Bars		Pound	4,370	

(For bar locations see sheet 07 of 8)

C14 BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a_{103}	31	#5	13'-10"	
a_{104}	31	#5	12'-8"	
a_{115}	38	#5	10'-10"	
a_{116}	38	#5	9'-8"	
b_{101}	48	#4	4'-0"	
h_{101}	32	#5	15'-11"	
h_{109}	48	#5	12'-11"	
v_{101}	100	#5	5'-9"	
v_{114}	100	#5	5'-9"	
Concrete Structures		Cu. Yd.	18.7	
Reinforcement Bars		Pound	4,390	

(For bar locations see sheet 07 of 8)

C15 BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a_{103}	31	#5	13'-10"	
a_{104}	31	#5	12'-8"	
a_{115}	38	#5	10'-10"	
a_{116}	38	#5	9'-8"	
b_{101}	48	#4	4'-0"	
h_{101}	32	#5	15'-11"	
h_{109}	48	#5	12'-11"	
v_{101}	100	#5	7'-9"	
v_{115}	100	#5	5'-9"	
Concrete Structures		Cu. Yd.	18.7	
Reinforcement Bars		Pound	4,390	

(For bar locations see sheet 07 of 8)

C16 BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a_{103}	31	#5	13'-10"	
a_{104}	31	#5	12'-8"	
a_{115}	38	#5	10'-10"	
a_{116}	38	#5	9'-8"	
b_{101}	48	#4	4'-0"	
h_{101}	32	#5	15'-11"	
h_{109}	48	#5	12'-11"	
v_{101}	100	#5	7'-9"	
v_{116}	100	#5	5'-7"	
Concrete Structures		Cu. Yd.	18.4	
Reinforcement Bars		Pound	4,370	

(For bar locations see sheet 07 of 8)

C17 BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a_{103}	31	#5	13'-10"	
a_{104}	31	#5	12'-8"	
a_{115}	38	#5	10'-10"	
a_{116}	38	#5	9'-8"	
b_{101}	48	#4	4'-0"	
h_{101}	36	#5	15'-11"	
h_{109}	52	#5	12'-11"	
v_{101}	100	#5	7'-9"	
v_{117}	100	#5	6'-4"	
Concrete Structures		Cu. Yd.	19.6	
Reinforcement Bars		Pound	4,570	

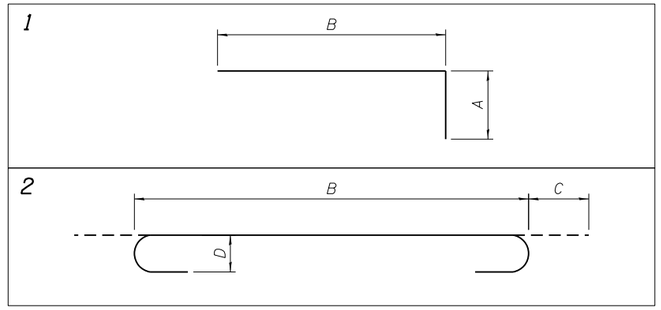
(For bar locations see sheet 07 of 8)

C18 BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a_{103}	31	#5	13'-10"	
a_{104}	31	#5	12'-8"	
a_{115}	38	#5	10'-10"	
a_{116}	38	#5	9'-8"	
b_{101}	48	#4	4'-0"	
h_{101}	36	#5	15'-11"	
h_{109}	52	#5	12'-11"	
v_{101}	100	#5	7'-9"	
v_{118}	100	#5	6'-10"	
Concrete Structures		Cu. Yd.	20.4	
Reinforcement Bars		Pound	4,620	

(For bar locations see sheet 07 of 8)

REINFORCEMENT BEND TYPES



NOTES:

All dimensions shown are out-to-out of bar.

Bar	A	B	C	D
a_{101}	-	15'-8"	7"	5"
a_{103}	-	12'-8"	7"	5"
a_{105}	-	16'-8"	7"	5"
a_{107}	-	15'-8"	10"	7"
a_{109}	-	17'-10"	7"	5"
a_{111}	-	13'-8"	7"	5"
a_{113}	-	11'-8"	7"	5"
a_{115}	-	9'-8"	7"	5"
a_{117}	-	29'-8"	10"	7"
a_{119}	-	29'-8"	8"	6"
a_{121}	-	15'-8"	8"	6"
h_{101}	12'-0"	3'-11"	-	-
h_{102}	15'-0"	3'-11"	-	-
h_{103}	15'-0"	4'-6"	-	-
h_{104}	29'-0"	4'-6"	-	-
h_{105}	16'-0"	3'-11"	-	-
h_{106}	13'-0"	3'-11"	-	-
h_{107}	17'-2"	3'-11"	-	-
h_{108}	11'-0"	3'-11"	-	-
h_{109}	9'-0"	3'-11"	-	-
v_{101}	3'-3"	4'-6"	-	-
v_{104}	5'-1"	3'-10"	-	-

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Springfield, Illinois

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PLOT DATE = 9/23/2014	DATE - 08/22/2014	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

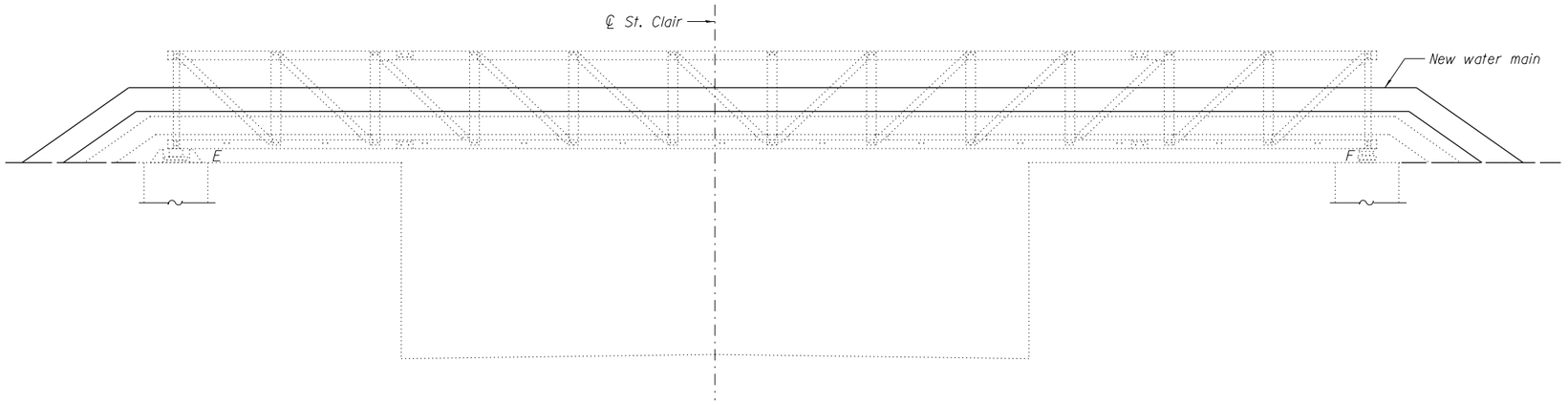
FORCE MAIN VAULTS STRUCTURAL DETAILS – REINFORCEMENT BARS
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: | SHEET 08 OF 08 SHEETS | STA. | TO STA.

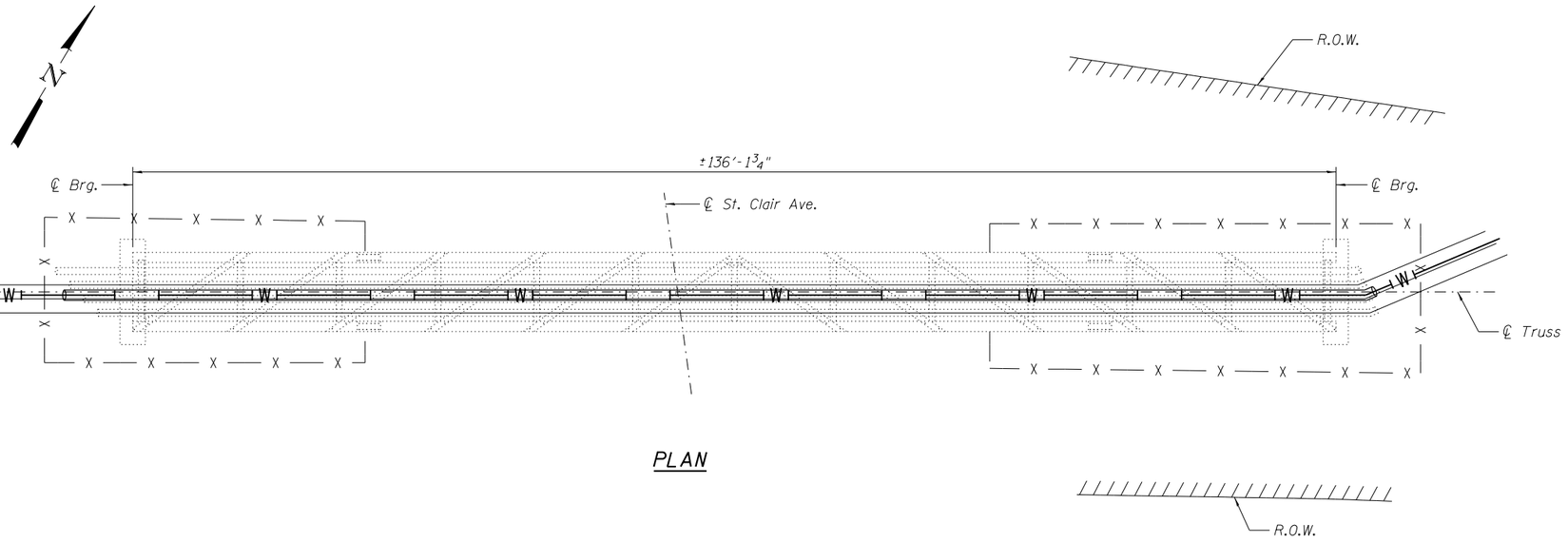
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	50
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			

Benchmark:

Existing Structure: The existing structure is a truss bridge carrying 3-12" ϕ force main crossing over St. Clair Ave. The trusses are spaced apart at 6'-6" c.c. in a square configuration. Each truss has 12 equal bays for a total distance of ±136'-1 3/4" c.c. of bearings. Pratt-type Single-Diagonal bracing system was used.



ELEVATION



PLAN

GENERAL NOTES

Fasteners shall be ASTM A325 Type 1, mechanically galvanized bolts. Bolts 3/4" in. ϕ, holes 13/16" in. ϕ, unless otherwise noted.

All new fasteners shall be high strength bolts. Holes shall be subpunched or subdrilled 11/16" dia. and reamed in the field to 13/16" dia. for 3/4" dia. bolts, unless otherwise noted. Holes shall be subpunched or subdrilled 13/16" dia. and reamed in the field to 15/16" dia. for 7/8" dia. bolts, unless otherwise noted.

No field welding is permitted except as specified in the contract documents.

Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

Existing structural steel shall only be cleaned and painted as required by the Special Provision "Cleaning and Painting Contact Surface Areas of Existing Steel Structures".

All new structural steel shall be shop painted with inorganic zinc rich primer per AASHTO M300, Type I.

The Contractor shall take precautions to safeguard the existing water main from additional truss deflections during the installation of the new force main. A detailed procedure of installation shall be submitted to the Engineer for approval prior to construction.

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Furnishing and Erecting Structural Steel	Pounds	5,910

DESIGN SPECIFICATIONS

2012 AASHTO LRFD Bridge Design Specifications, 6th Edition with 2013 Interim Revisions
2009 LRFD Guide Specifications for the Design of Pedestrian Bridges
2002 AASHTO Standard Specifications for Highway Bridges and
FHWA Seismic Retrofitting Manual for Highway Bridges 1995 for Seismic Design Criteria only.

DESIGN STRESSES

EXISTING CONSTRUCTION

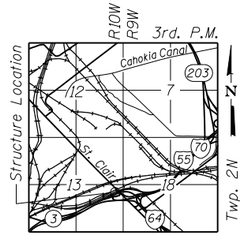
fc' = 3,500 psi
fy = 60,000 psi (Reinforcement)
fy = 36,000 (M270 Grade 36)

NEW CONSTRUCTION

fy = 36,000 psi (M270 Grade 36)

SEISMIC DATA

Seismic Performance Category (SPC) = A
Horizontal Bedrock Acceleration Coefficient = 0.085
Site Coefficient (S) = 2.0



LOCATION SKETCH

GENERAL PLAN & ELEVATION
PIPE BRIDGE OVER ST. CLAIR AVE.
MADISON COUNTY

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LIN ENGINEERING, LTD. Consulting Engineers Springfield, Illinois	USER NAME = seb	DESIGNED - RGB	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PIPE BRIDGE PLAN & DETAILS MISSOURI AVENUE DEEP WELL FACILITY
		DRAWN - AJF	REVISED -		
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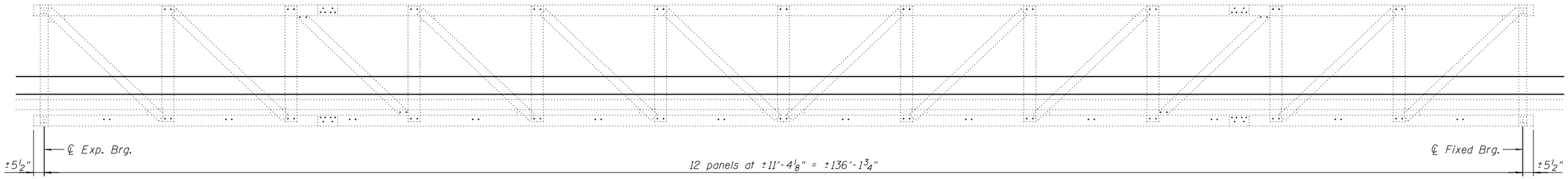
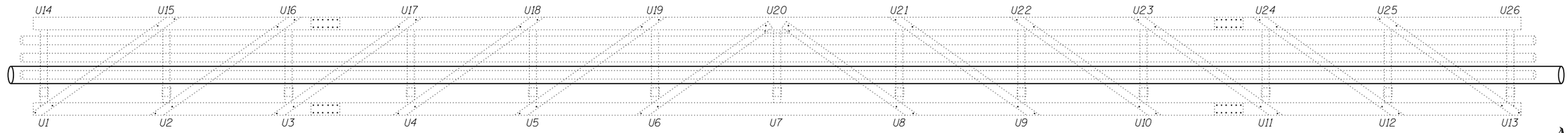
	PLOT DATE = 9/23/2014	DATE - 08/22/2014	REVISED -		SCALE: SHEET 01 OF 04 SHEETS STA. TO STA.

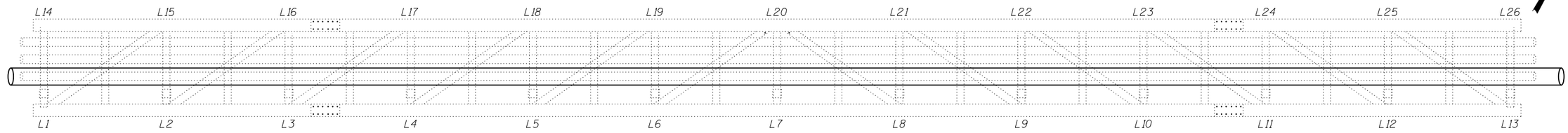
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	51
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			



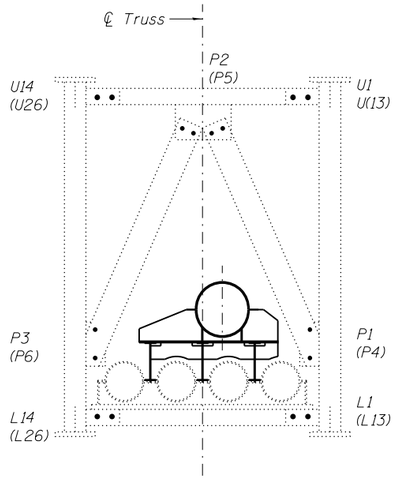
ELEVATION
(Looking North)



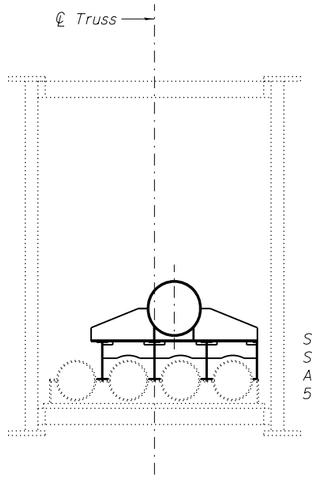
UPPER CHORD PLAN



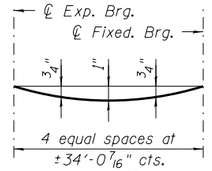
LOWER CHORD PLAN



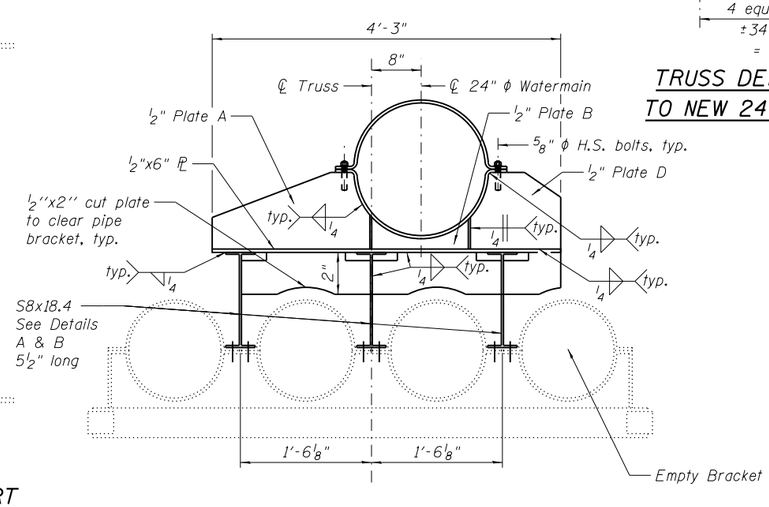
CROSS SECTION AT END PORTAL
(Looking East)
(The nodes shown in parenthesis are at fixed bearing)



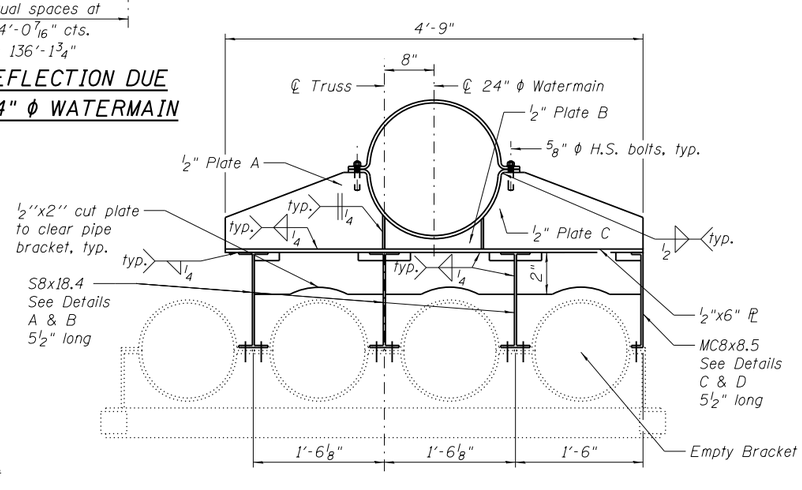
CROSS SECTION AT INTERIOR PIPE SUPPORT
(Looking East)



TRUSS DEFLECTION DUE TO NEW 24" ϕ WATERMAIN



CROSS SECTION
(Looking East)



CROSS SECTION
(Looking East)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIPE BRIDGE PLAN & DETAILS – TRUSS DETAILS
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: | SHEET 02 OF 04 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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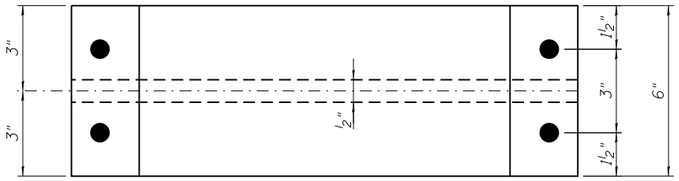
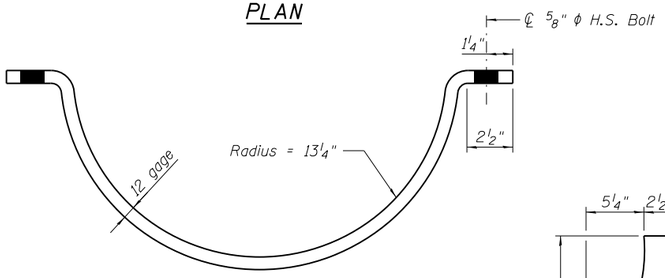
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			



PLAN



NEW PIPE SADDLE
(50 required)

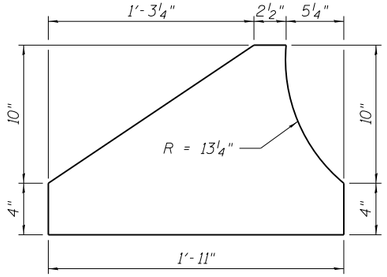


PLATE A

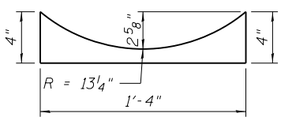


PLATE B

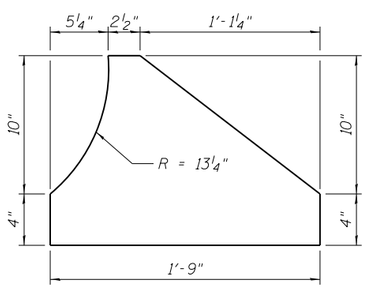


PLATE C

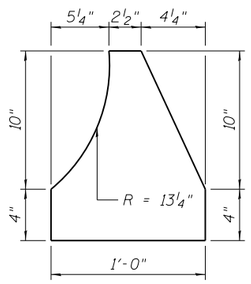
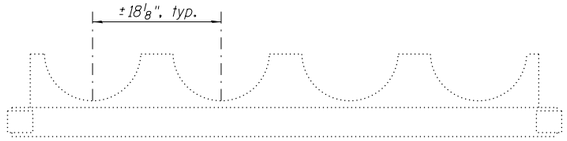
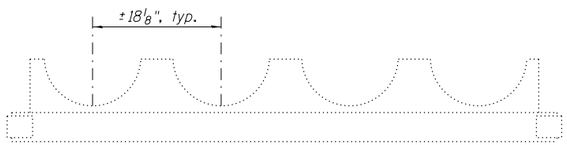


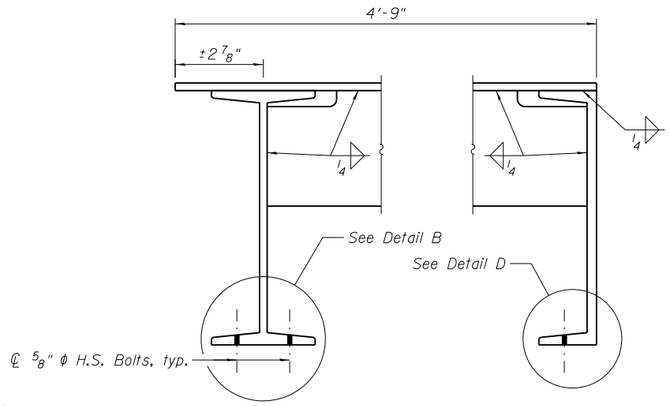
PLATE D



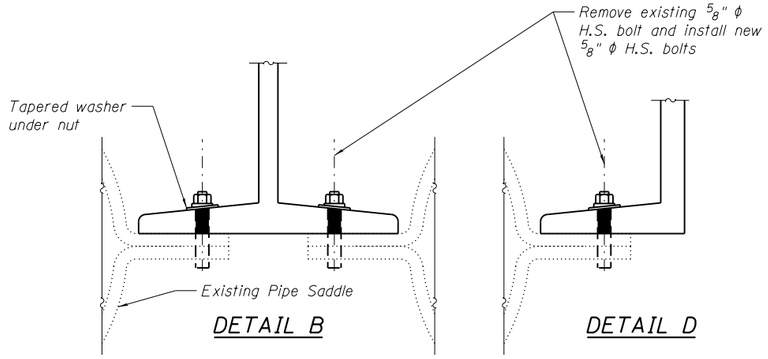
EXISTING PIPE SUPPORT @
INTERIOR BOTTOM STRUTS



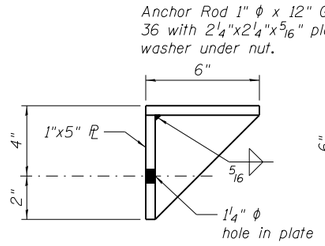
EXISTING PIPE SUPPORT @
PORTAL BOTTOM STRUTS



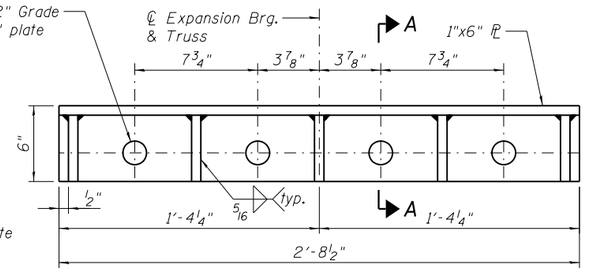
DETAIL A DETAIL C



DETAIL B DETAIL D



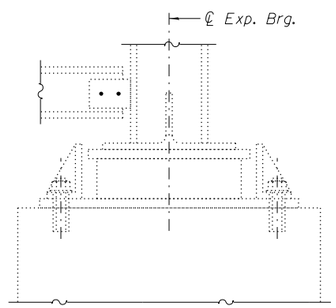
SECTION A-A



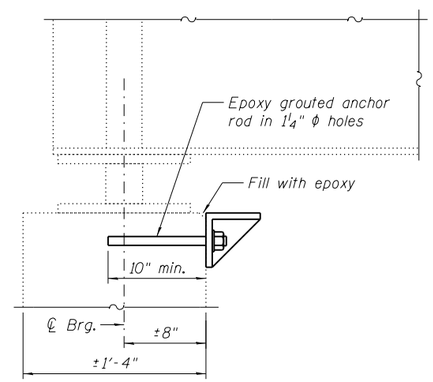
ELEVATION

BRIDGE SEAT EXTENSION ASSEMBLY
(At Expansion Bearings only)
(2 required)

Notes:
Anchor rods shall be ASTM F1554 all thread (or an Engineer approved alternate material) of the grade(s) and diameters specified. The corresponding specified grade of AASHTO M314 Anchor rods may be used.
Drilling and setting of anchor rods shall be according to article 521.06 of the Standard Specification.
The Contractor shall mark the location of existing reinforcement bars on the face of concrete. Use rebar cover-meter. The anchor rod holes shall be drilled to miss the existing reinforcement.



EXISTING EXPANSION
BEARING DETAIL



END VIEW

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		DRAWN - AJF	REVISED -		
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	PLOT DATE = 9/23/2014	DATE - 08/22/2014	REVISED -		SCALE: SHEET 03 OF 04 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	53
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			

STRESS TABLE

Members		Service I Axial	Service I Bending	Strength I Axial	Strength I Bending	Strength III Axial	Strength III Bending
Front Lower Chord							
L1	L2	-5.2	37.7	0.9	56.3	-26.4	36.9
L2	L3	22.9	34.6	47.6	51.3	-13.9	34.1
L3	L4	46.6	37.8	85.9	56.0	-0.9	37.4
L4	L5	65.7	38.7	115.7	57.1	12.7	38.7
L5	L6	80.4	39.5	137.2	58.4	26.9	39.1
L6	L7	90.0	40.7	149.4	58.9	41.0	43.3
L7	L8	90.3	40.6	149.4	58.9	42.1	43.3
L8	L9	85.1	39.6	137.9	58.5	47.0	39.4
L9	L10	74.7	39.0	117.0	57.2	51.8	39.7
L10	L11	60.1	38.2	87.8	56.1	57.3	39.1
L11	L12	40.8	35.1	50.1	51.4	63.4	36.2
L12	L13	17.1	38.5	4.0	56.4	69.9	40.2
Rear Lower Chord							
L14	L15	0.4	40.3	0.5	59.6	0.6	40.8
L15	L16	39.8	36.9	49.2	54.3	60.6	37.7
L16	L17	71.7	40.2	89.2	59.2	108.1	40.8
L17	L18	96.0	41.0	120.2	60.4	143.0	41.2
L18	L19	112.8	42.1	142.3	61.8	165.5	42.7
L19	L20	122.0	41.7	155.3	62.5	175.1	39.3
L20	L21	117.6	41.6	154.7	62.5	156.1	39.0
L21	L22	104.0	41.8	141.1	61.7	127.4	41.8
L22	L23	82.8	40.6	118.3	60.4	86.0	39.7
L23	L24	54.0	39.7	86.7	59.2	31.9	38.6
L24	L25	17.7	36.3	46.1	54.2	-34.6	36.9
L25	L26	-26.1	39.4	-3.2	59.5	-113.8	36.9
Front Upper Chord							
U1	U2	-37.7	14.8	-47.0	20.9	-56.7	15.7
U2	U3	-68.2	7.0	-85.0	10.1	-102.5	6.5
U3	U4	-91.9	7.2	-114.5	10.2	-138.0	6.8
U4	U5	-108.7	8.9	-135.5	12.5	-163.1	8.9
U5	U6	-118.9	9.4	-148.3	13.5	-178.2	9.1
U6	U7	-121.5	10.5	-151.6	13.8	-182.2	13.7
U7	U8	-121.5	10.5	-151.6	13.8	-182.2	13.7
U8	U9	-118.8	9.5	-148.3	13.5	-178.2	9.4
U9	U10	-108.7	9.1	-135.5	12.6	-163.0	9.9
U10	U11	-91.8	7.5	-114.5	10.2	-137.8	8.4
U11	U12	-68.2	7.6	-85.0	10.2	-102.3	8.8
U12	U13	-37.7	13.8	-47.0	20.8	-56.5	11.7
Rear Upper Chord							
U14	U15	-34.1	15.3	-49.5	22.1	-33.6	15.4
U15	U16	-56.8	7.7	-89.8	10.5	-37.5	8.4
U16	U17	-74.3	7.7	-121.1	10.6	-39.7	8.2
U17	U18	-86.6	9.3	-143.5	13.0	-40.2	9.5
U18	U19	-93.7	10.1	-157.1	14.0	-38.8	10.7
U19	U20	-95.5	9.6	-161.5	14.6	-35.8	7.5
U20	U21	-95.7	9.6	-161.5	14.6	-37.0	6.9
U21	U22	-94.0	9.9	-157.1	14.0	-40.0	9.8
U22	U23	-86.9	8.9	-143.5	13.0	-41.4	7.9
U23	U24	-74.6	7.2	-121.1	10.5	-41.0	6.0
U24	U25	-57.1	7.0	-89.8	10.5	-38.8	5.6
U25	U26	-34.4	16.4	-49.6	22.2	-34.9	20.2
Front Truss Vertical							
L2	U2	-20.4	0.4	-29.2	0.5	-20.6	0.5
L3	U3	-16.1	0.4	-23.1	0.5	-16.4	0.5
L4	U4	-11.6	0.3	-16.6	0.4	-11.9	0.4
L5	U5	-7.2	0.2	-10.2	0.3	-7.5	0.3
L6	U6	-2.7	0.1	-3.8	0.1	-3.0	0.3
L7	U7	-0.4	0.0	-0.5	0.0	-0.2	0.0
L8	U8	-2.6	0.1	-3.7	0.1	-2.2	0.3
L9	U9	-7.0	0.2	-10.2	0.2	-6.7	0.3
L10	U10	-11.4	0.3	-16.6	0.4	-11.1	0.3
L11	U11	-15.9	0.4	-23.0	0.5	-15.6	0.4
L12	U12	-20.2	0.4	-29.2	0.5	-19.8	0.4
Rear Truss Vertical							
L15	U15	-21.3	0.4	-30.8	0.6	-21.1	0.4
L16	U16	-16.9	0.4	-24.4	0.6	-16.6	0.3
L17	U17	-12.2	0.2	-17.6	0.4	-11.9	0.1
L18	U18	-7.5	0.2	-10.8	0.3	-7.2	0.0
L19	U19	-2.8	0.1	-4.1	0.1	-2.6	0.1
L20	U20	-0.6	0.0	-0.7	0.0	-0.7	0.0
L21	U21	-3.0	0.1	-4.1	0.1	-3.4	0.1
L22	U22	-7.7	0.2	-10.9	0.3	-8.0	0.1
L23	U23	-12.3	0.3	-17.6	0.4	-12.7	0.2
L24	U24	-17.1	0.4	-24.4	0.6	-17.4	0.4
L25	U25	-21.5	0.4	-30.9	0.6	-21.9	0.5

Members		Service I Axial	Service I Bending	Strength I Axial	Strength I Bending	Strength III Axial	Strength III Bending
Lower Chord Struts							
L1	L14	0.0	35.5	0.0	47.6	0.0	84.3
L2	L15	-2.8	54.3	0.2	81.2	-13.6	54.3
L3	L16	-2.1	54.3	0.2	81.3	-10.0	54.3
L4	L17	-1.3	54.3	0.1	81.3	-6.4	54.3
L5	L18	-0.5	54.3	0.2	81.3	-2.7	54.4
L6	L19	0.2	54.3	0.0	81.3	0.8	54.4
L7	L20	-0.8	54.3	-0.5	81.3	-2.5	54.4
L8	L21	-2.2	54.3	-0.3	81.3	-9.4	54.4
L9	L22	-2.8	54.3	-0.1	81.3	-12.9	54.4
L10	L23	-3.7	54.3	-0.2	81.3	-16.6	54.4
L11	L24	-4.4	54.3	-0.2	81.3	-20.2	54.4
L12	L25	-5.2	54.3	-0.2	81.2	-23.9	54.3
L13	L26	0.0	36.1	0.0	47.6	0.0	86.7
Upper Chord Struts							
U2	U15	-2.7	0.0	0.0	0.0	-12.5	0.0
U3	U16	-2.1	0.0	0.0	0.0	-9.9	0.0
U4	U17	-1.5	0.0	0.0	0.0	-7.3	0.1
U5	U18	-1.0	0.0	0.0	0.0	-4.8	0.1
U6	U19	-0.3	0.1	0.2	0.1	-2.1	0.2
U7	U20	0.1	0.1	0.5	0.1	-0.7	0.2
U8	U21	-0.5	0.1	0.2	0.1	-2.7	0.2
U9	U22	-1.2	0.1	0.0	0.0	-5.4	0.2
U10	U23	-1.7	0.1	0.0	0.0	-7.9	0.2
U11	U24	-2.3	0.0	0.0	0.0	-10.5	0.1
U12	U25	-2.8	0.0	0.0	0.0	-13.1	0.1
Lower Bracing Diagonals							
L1	L15	6.4	0.0	-0.4	0.0	30.7	0.0
L2	L16	4.8	0.0	-0.3	0.0	23.3	0.0
L3	L17	3.2	0.0	-0.3	0.0	16.0	0.1
L4	L18	1.7	0.0	-0.2	0.1	8.6	0.1
L5	L19	-0.1	0.0	-0.5	0.1	1.1	0.1
L6	L20	-0.9	0.0	0.6	0.1	-5.8	0.1
L8	L20	3.9	0.0	1.3	0.1	15.2	0.1
L9	L21	4.8	0.0	0.2	0.1	21.8	0.1
L10	L22	6.5	0.0	0.4	0.0	29.4	0.1
L11	L23	8.1	0.0	0.4	0.0	36.7	0.1
L12	L24	9.7	0.0	0.4	0.0	44.0	0.1
L13	L25	11.2	0.0	0.3	0.0	51.7	0.1
Upper Bracing Diagonals							
U1	U15	5.8	0.0	0.0	0.1	27.2	0.0
U2	U16	4.7	0.0	-0.1	0.0	22.1	0.0
U3	U17	3.6	0.0	0.0	0.0	17.0	0.0
U4	U18	2.5	0.0	-0.1	0.0	11.8	0.0
U5	U19	1.6	0.0	0.2	0.0	6.9	0.1
U6	U20	-0.3	0.0	-0.9	0.0	1.0	0.1
U8	U20	0.0	0.0	-0.9	0.0	2.3	0.1
U9	U21	1.9	0.0	0.2	0.0	8.2	0.1
U10	U22	2.8	0.0	-0.1	0.0	13.1	0.1
U11	U23	3.9	0.0	0.0	0.0	18.2	0.1
U12	U24	5.0	0.0	0.0	0.0	23.3	0.1
U13	U25	6.1	0.0	0.0	0.1	28.5	0.0
Front Truss Diagonals							
L2	U1	40.5	0.0	58.4	0.1	40.9	0.1
L3	U2	33.2	0.0	47.7	0.1	33.6	0.1
L4	U3	25.8	0.0	37.1	0.1	26.3	0.1
L5	U4	18.5	0.0	26.5	0.1	18.9	0.2
L6	U5	11.1	0.1	15.9	0.1	11.6	0.2
L7	U6	3.7	0.1	5.2	0.1	4.0	0.3
L7	U8	3.4	0.1	5.2	0.1	2.7	0.3
L8	U9	10.8	0.1	15.8	0.1	10.3	0.3
L9	U10	18.1	0.0	26.4	0.1	17.5	0.3
L10	U11	25.5	0.0	37.1	0.1	24.9	0.2
L11	U12	32.9	0.0	47.7	0.1	32.2	0.2
L12	U13	40.2	0.0	58.3	0.1	39.6	0.1
Rear Truss Diagonals							
L15	U14	42.5	0.1	61.6	0.0	42.0	0.1
L16	U15	34.8	0.1	50.4	0.0	34.4	0.2
L17	U16	27.1	0.1	39.3	0.0	26.6	0.2
L18	U17	19.3	0.1	28.1	0.1	18.9	0.2
L19	U18	11.6	0.1	16.9	0.1	11.1	0.3
L20	U19	3.9	0.1	5.8	0.1	3.6	0.4
L20	U21	4.2	0.2	5.8	0.1	5.0	0.4
L21	U22	11.9	0.1	17.0	0.1	12.4	0.4
L22	U23	19.7	0.1	28.2	0.1	20.3	0.4
L23	U24	27.4	0.1	39.3	0.0	28.0	0.3
L24	U25	35.1	0.1	50.5	0.0	35.8	0.3
L25	U26	42.8	0.1	61.6	0.0	43.4	0.2

Members		Service I Axial	Service I Bending	Strength I Axial	Strength I Bending	Strength III Axial	Strength III Bending
Portal at Expansion Bearing							
L1	P1	-21.2	27.9	-36.1	34.6	-7.2	67.6
P1	U1	-24.6	22.3	-35.3	20.3	-25.0	54.6
U1	P2	-3.3	13.8	-0.2	20.6	-15.2	12.2
P2	U14	0.1	14.9	-0.2	20.8	0.9	16.6
P3	U14	-25.6	4.5	-37.1	19.7	-25.2	27.9
L14	P3	-30.1	35.8	-37.9	33.6	-44.1	84.9
P1	P2	3.7	0.7	-0.9	1.0	19.5	0.6
P3	P2	-4.9	0.9	-0.9	1.3	-20.6	1.0
Portal at Fixed Bearing							
L13	P4	-20.8	28.3	-36.0	34.5	-5.6	69.6
P4	U13	-24.4	22.6	-35.2	20.3	-24.1	56.2
U13	P5	-3.5	13.8	-0.2	20.6	-15.9	12.1
P5	U26	0.1	14.9	-0.2	20.8	0.9	16.8
P6	U26	-25.8	4.6	-37.2	19.6	-26.1	29.5
L26	P6	-30.5	36.4	-38.0	33.7	-45.7	87.5
P4	P5	3.9	0.7	-0.9	1.0	20.3	4.4
P6	P5	-5.1	0.8	-0.9	1.2	-21.5	4.5

LOAD COMBINATIONS

Strength I = 1.25 DC + 1.50 DP
Strenth III = 1.00 DC + 1.00 DP + 1.40 WS
Service I = 1.0 DC + 1.00 DP + 0.30 WS

DC = Dead Load of Structural Components
DP = Dead Load of Pipe and Contents
WS = Wind Load on Structure

Notes:
In the stress table axial compression is indicated by a negative sign, axial force is in kips, and bending moment is in kip-in.

REACTIONS

LOCATION	SERVICE I KIPS	STRENGTH I KIPS	STRENGTH III KIPS
L1	24	40	8
L13	23	40	7
L14	33	42	49
L26	34	42	50

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LIN ENGINEERING,LTD.
Consulting Engineers
Springfield, Illinois

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	DRAWN - AJF	REVISED -	
PLOT SCALE = 0:2.0000 ' / in.	CHECKED - LMS	REVISED -	
PLOT DATE = 9/23/2014	DATE - 08/22/2014	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIPE BRIDGE PLAN & DETAILS – STRESS TABLES
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: | SHEET 04 OF 04 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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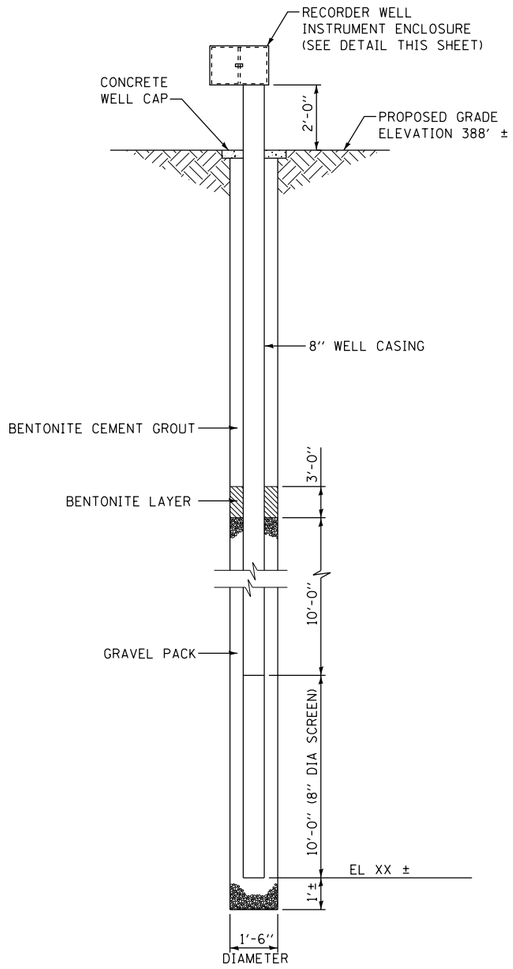
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			



RECORDER WELL NO. 1A
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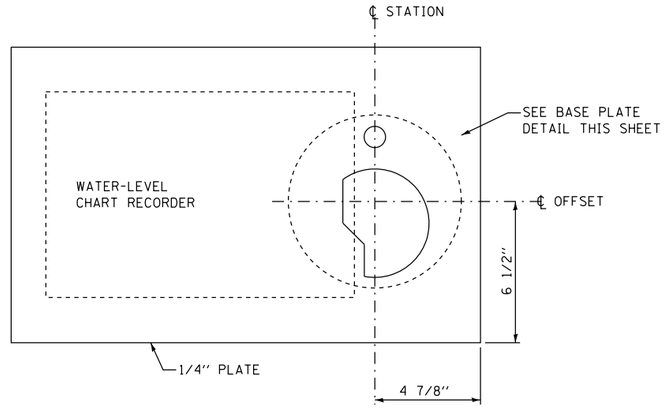
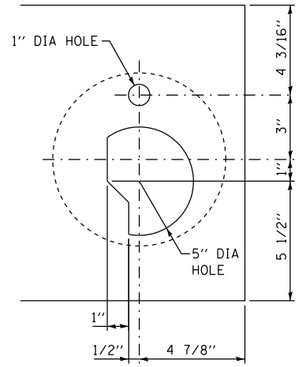


BASE PLATE PLAN
NOT TO SCALE

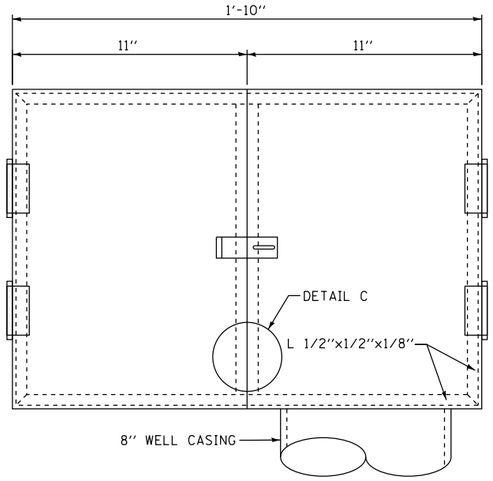


BASE PLATE DETAIL
NOT TO SCALE

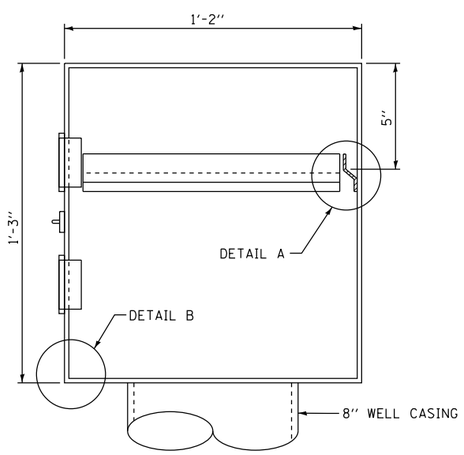
NOTES:

1. CONSTRUCT THE PROPOSED RECORDER WELLS AT THE LOCATIONS INDICATED ON THIS DRAWING. REFER TO SPECIAL PROVISIONS FOR INSTALLATION PROCEDURES.
2. BRACKET INSTALLED ON BACK AND BOTH SIDES OF ENCLOSURE.

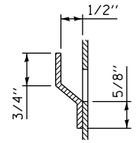
RECORDER WELL NUMBER	STATION	OFFSET
RW NO. 1	121+93.0 ROADWAY B	26.4' RT



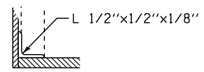
ENCLOSURE ELEVATION



ENCLOSURE SIDE VIEW



DETAIL A
NOTE 2



DETAIL B

DETAIL C

TYPICAL RECORDER WELL INSTRUMENT ENCLOSURE
NOT TO SCALE

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Engineers · Architects · Surveyors

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	DRAWN - BGJ	REVISED -
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PLOT DATE = 9/23/2014	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

RECORDER WELL DETAILS
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: NONE | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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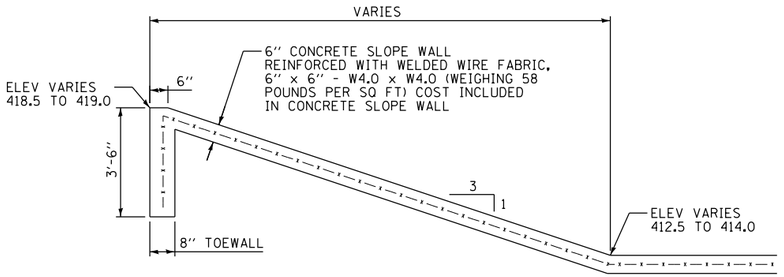
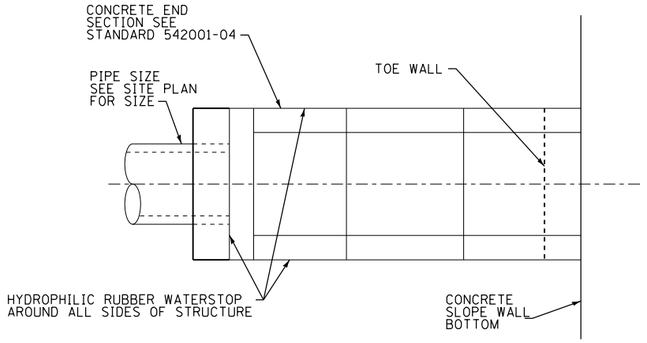
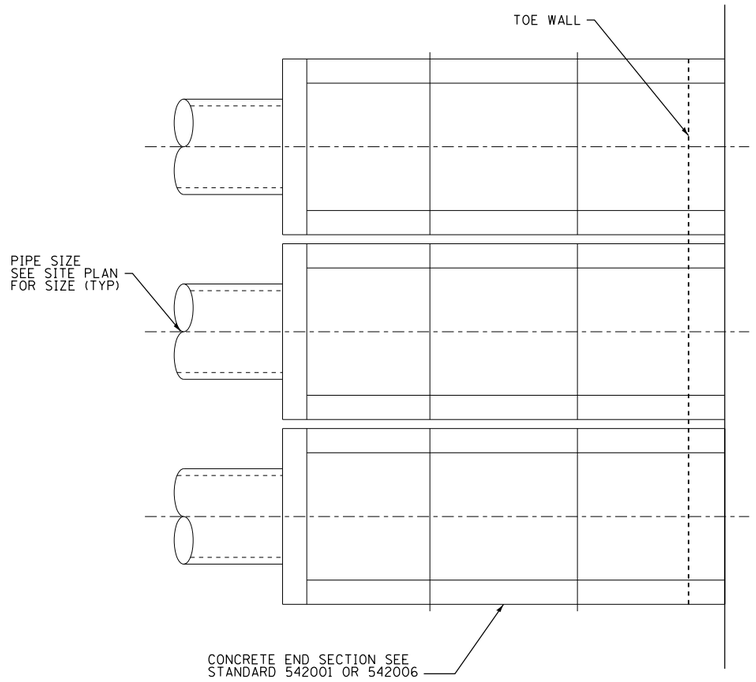
		CONTRACT NO. 76099		
	ILLINOIS	FED. AID PROJECT		



CONCRETE SLOPE WALL DETAIL – TYPICAL SECTION
NOT TO SCALE



PLAN – END SECTION AT BOTTOM OF SLOPE WALL
NOT TO SCALE



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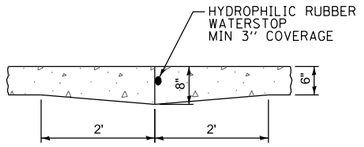
NOT TO SCALE



TYPICAL SLOPE WALL CONSTRUCTION JOINT DETAIL
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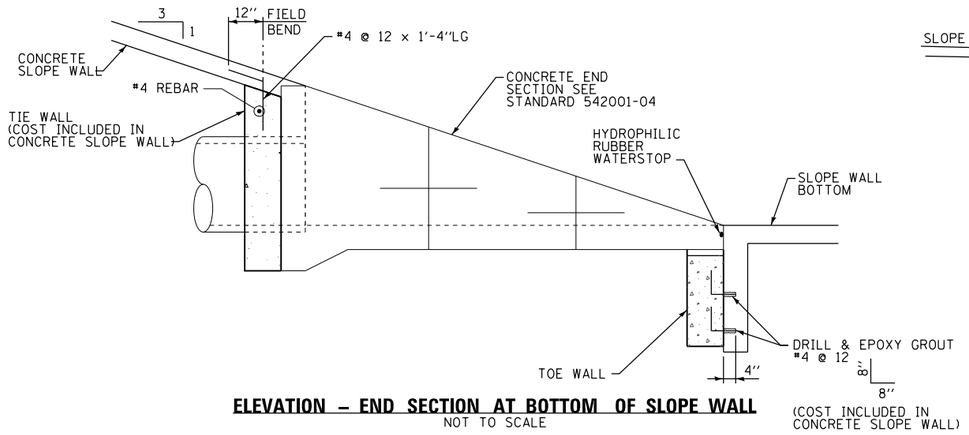
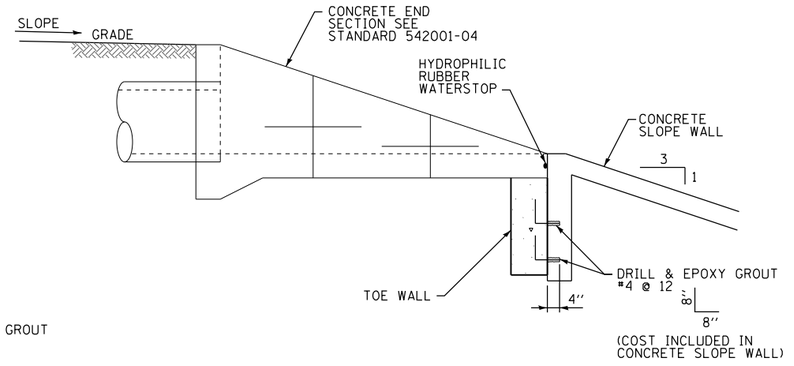


ELEVATION – END SECTION AT BOTTOM OF SLOPE WALL
NOT TO SCALE



ELEVATION – END SECTION AT TOP OF SLOPE WALL
NOT TO SCALE

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	DRAWN - BGJ	REVISED -
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PLOT DATE = 8/23/2014	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MISCELLANEOUS DETAILS – CONCRETE SLOPE WALL
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: NONE | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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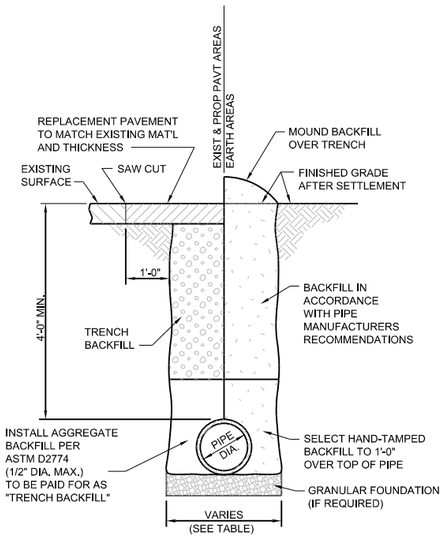
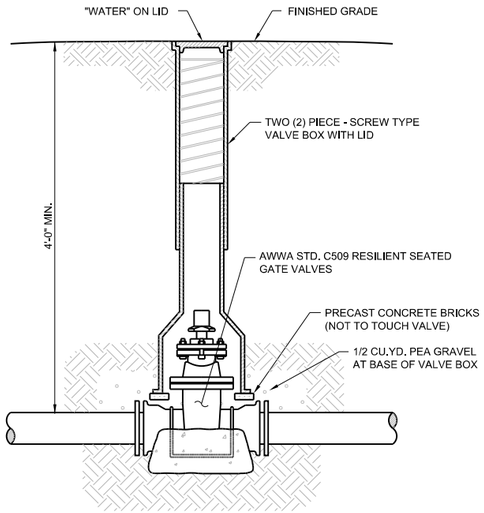
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			



TRENCH WIDTHS		
PIPE DIA.	MAXIMUM	MINIMUM
2"	26"	10"
4"	28"	12"
6"	30"	14"
8"	32"	16"
10"	34"	18"
12"	36"	20"
24"	56"	32"

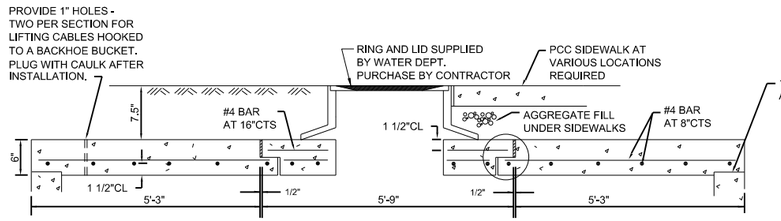
WATER PIPE INSTALLATION

N.T.S.

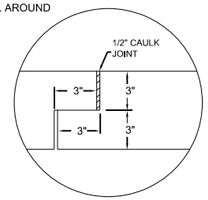


VALVE SETTING

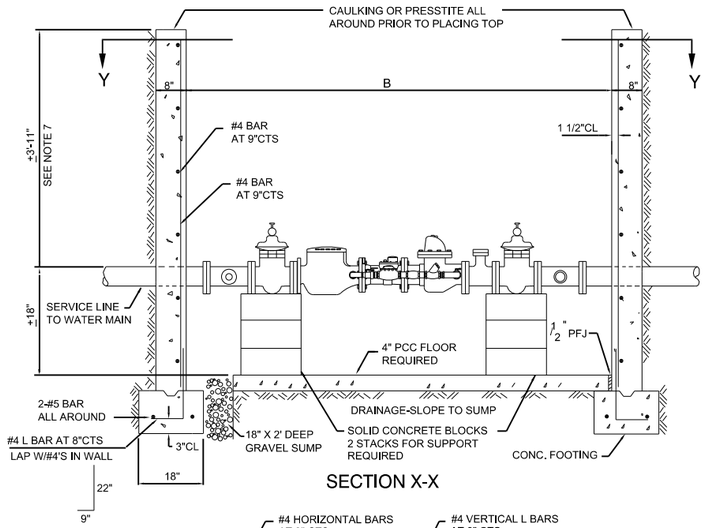
N.T.S.



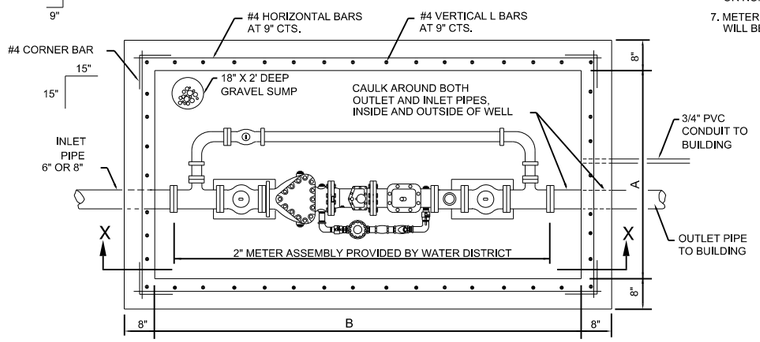
3-SECTION POURED CONCRETE LID - NON TRAFFIC AREAS ONLY



* WATER SERVICE		
SIZE	DIMENSION A	DIMENSION B
4"	8'	13'



SECTION X-X



SECTION Y-Y
PLAN VIEW

WATER METER VAULT DETAIL

N.T.S.

NOTES

1. METER ASSEMBLY AND WELL COVER TO BE PROVIDED BY AMERICAN WATER
2. PROVIDE KEYWAY IN CONCRETE FOOTING.
3. AT THE OPTION OF THE CONTRACTOR, 24" HIGH L BARS CAN BE SET WITH THE FOOTING. VERTICAL STEEL FOR WALLS CAN BE LAPPED AND TIED TO L BARS.
4. BACKFILL AROUND WELL EITHER AGGREGATE OR COMPACTED EARTH. AGGREGATE REQUIRED IN TRAFFIC AREAS.
5. COST OF FURNISHING AND PLACING REINFORCEMENT BARS INCIDENTAL.
6. DEPTH OF WELL DEPENDENT ON DEPTH OF SERVICE LINE AND ON THE TYPE OF LID USED - TRAFFIC OR NON-TRAFFIC.
7. METER ASSEMBLY & ACCESSORIES WILL BE BILLED TO THE CONTRACTOR.

FILE NAME = D:\Utilities\110223\Work Order 3 MO Ave Ph2\CADD Sheets\DB76099-sht-misc.dgn

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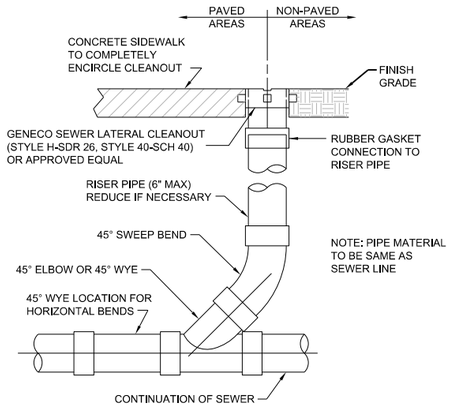
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

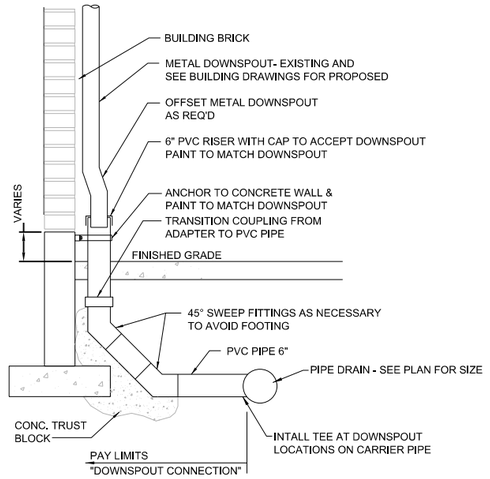
MISCELLANEOUS DETAILS – SITE DETAILS
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: NONE | SHEET 1 OF 3 SHEETS | STA. | TO STA.

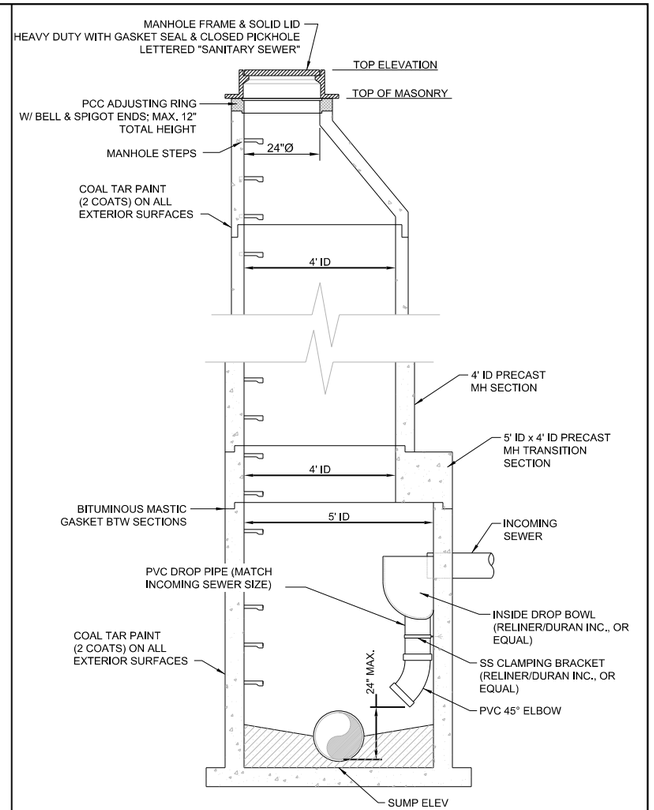
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	57
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			



PIPE DRAIN CLEANOUT DETAILS
N.T.S.

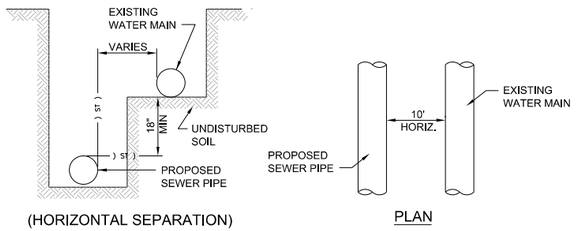


DOWNSPOUT CONNECTION DETAIL
N.T.S.



NOTE:
ALL DETAILS FOR STANDARD MH APPLY TO DROP MH EXCEPT AS NOTED ABOVE

SANITARY SEWER MANHOLE DETAIL
NTS



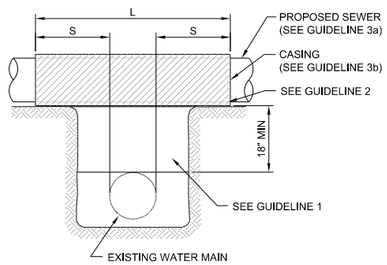
(HORIZONTAL SEPARATION)

PLAN

WHEN PROPOSED SEWER IS LOCATED LESS THAN 10 FEET FROM EXISTING WATER, DETAIL ABOVE SHALL APPLY.

WHEN PROPOSED SEWER IS LOCATED 10 FEET OR MORE FROM EXISTING WATER, NO SPECIAL CONSTRUCTION REQ'D

A - WATER AND SEWER SEPARATION REQUIREMENTS
N.T.S.



(VERTICAL SEPARATION)

GUIDELINES

1. IF SELECT GRANULAR BACKFILL EXISTS: REMOVE WITHIN WIDTH OF SEWER TRENCH & REPLACE WITH SELECT EXCAVATED MAT'L (CLASS IV) & COMPACT.

2. OMIT SELECT GRANULAR EMBEDMENT & GRANULAR BACKFILL TO (1) FOOT OVER TOP OF SEWER & USE SELECT EXCAVATED MAT'L (CLASS IV) & COMPACT THE LENGTH OF "L" FEET.

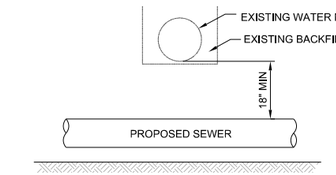
3. a. CONSTRUCT "L" FEET OF PROPOSED SEWER OF WATER MAIN MAT'L AND PRESSURE TEST, (OR):

b. USE "L" FEET OF WATER MAIN MAT'L FOR CASING OF PROPOSED SEWER & SEAL ENDS OF CASING

NOTE: "S" IS THE LENGTH NECESSARY TO PROVIDE 10 FEET OF SEPARATION AS MEASURED PERPEND. TO THE EXISTING WATER MAIN

B - WATER AND SEWER SEPARATION REQUIREMENTS
N.T.S.

WATER & SEWER SEPARATION REQUIREMENTS
N.T.S.

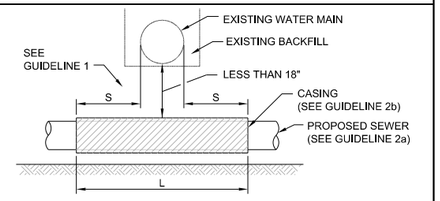


GUIDELINES

1. PROVIDE ADEQUATE SUPPORT FOR EXISTING WATER MAIN TO PREVENT DAMAGE DUE TO SETTLEMENT OF SEWER TRENCH.

(VERTICAL SEPARATION)

C - WATER AND SEWER SEPARATION REQUIREMENTS
N.T.S.



GUIDELINES

1. OMIT SELECT GRANULAR EMBEDMENT & GRANULAR WITHIN BACKFILL TO (1) FOOT OVER TOP OF SEWER & USE SELECT EXCAVATED MAT'L (CLASS IV) & COMPACT FOR "S" FT. ON EA. SIDE OF WATER MAIN

2. a. CONSTRUCT "L" FEET OF PROPOSED SEWER OF WATER MAIN MAT'L & PRESSURE TEST, (OR):

b. USE "L" FEET OF WATER MAIN MAT'L FOR CASING OF PROPOSED SEWER & SEAL ENDS OF CASING

3. PROVIDE ADEQUATE SUPPORT FOR EXISTING WATER MAIN TO PREVENT DAMAGE DUE TO SETTLEMENT OF SEWER TRENCH

NOTE: "S" IS THE LENGTH NECESSARY TO PROVIDE 10 FEET OF SEPARATION AS MEASURED PERPEND. TO THE EXISTING WATER MAIN

(VERTICAL SEPARATION)

D - WATER AND SEWER SEPARATION REQUIREMENTS
N.T.S.

KLINGNER & ASSOCIATES, P.C.
Engineers · Architects · Surveyors

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	DRAWN -	REVISED -
PLOT SCALE = 0.1667 ' / in.	CHECKED -	REVISED -
PLOT DATE = 8/23/2014	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MISCELLANEOUS DETAILS – SITE DETAILS
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: NONE | SHEET 2 OF 3 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	58
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			

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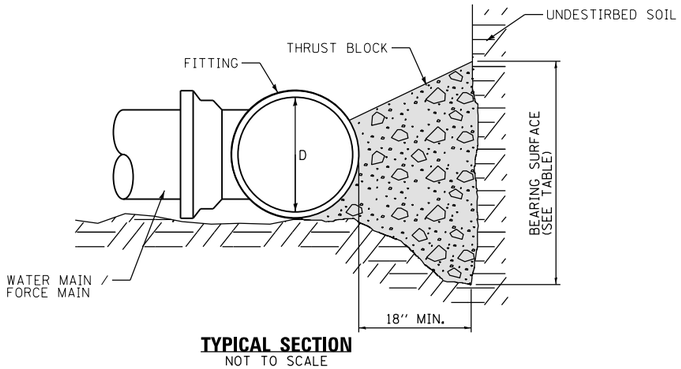
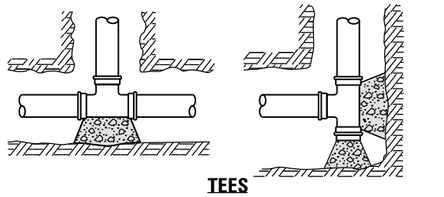
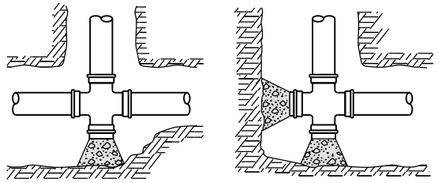


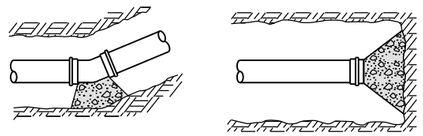
TYPICAL SECTION
NOT TO SCALE



TEES

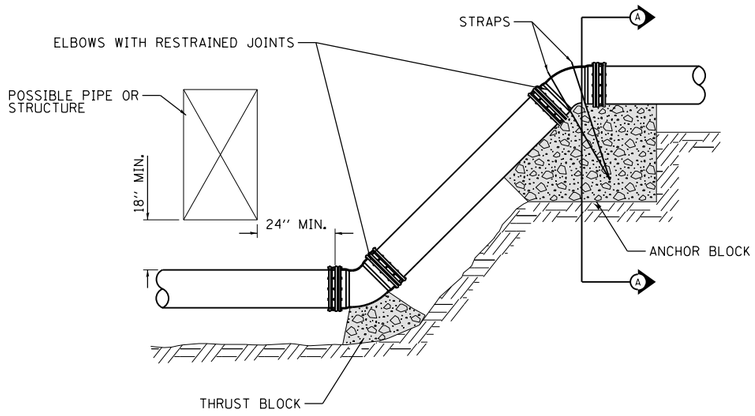


CROSSES

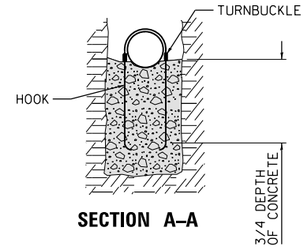


BENDS

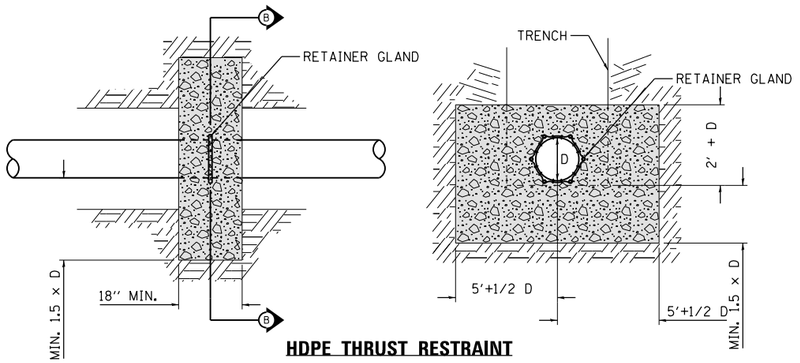
DEAD ENDS



CHANGES IN PIPE DEPTH



SECTION A–A



HDPE THRUST RESTRAINT

THRUST RESTRAINTS REQUIRED AT THE FOLLOWING LOCATIONS:

STA 12+48
STA 13+25
STA 15+10
STA 15+30
STA 16+80
STA 17+00
STA 45+08
STA 59+18
STA 60+77

DIAMETER OF PIPE, "D" INCHES	MINIMUM BEARING SURFACE (sf)				
	BENDS				TEES AND DEAD ENDS
	11 1/4°	22 1/2°	45°	90°	
4	1	1	2	4	3
6	1	2	4	8	6
8	2	4	7	14	10
10	3	6	11	21	15
12	4	8	16	29	21
14	5	11	21	39	28
16	7	14	27	50	36
18	9	17	34	63	45
20	11	21	42	78	55
24	15	31	60	111	78
30	24	47	92	171	120
36	34	67	132	244	173

MINIMUM SURFACE AREA BASED ON WATER PRESSURE OF 150 PSI AND ALLOWABLE SOIL PRESSURE OF 1,000 PSF.

EXTEND THRUST BLOCKS TO UNDISTURBED SOIL.
EXCAVATION INTO TRENCH WALL MAY BE NECESSARY.

FORM VERTICAL SURFACES OF POURED CONCRETE THRUST BLOCKS EXCEPT ON BEARING SURFACE.

ENCASE ALL FITTINGS IN POLYETHYLENE WRAP.
DO NOT ALLOW CONCRETE TO DIRECTLY CONTACT JOINTS OR FITTING BOLTS.

THRUST BLOCKS
NOT TO SCALE

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Engineers · Architects · Surveyors

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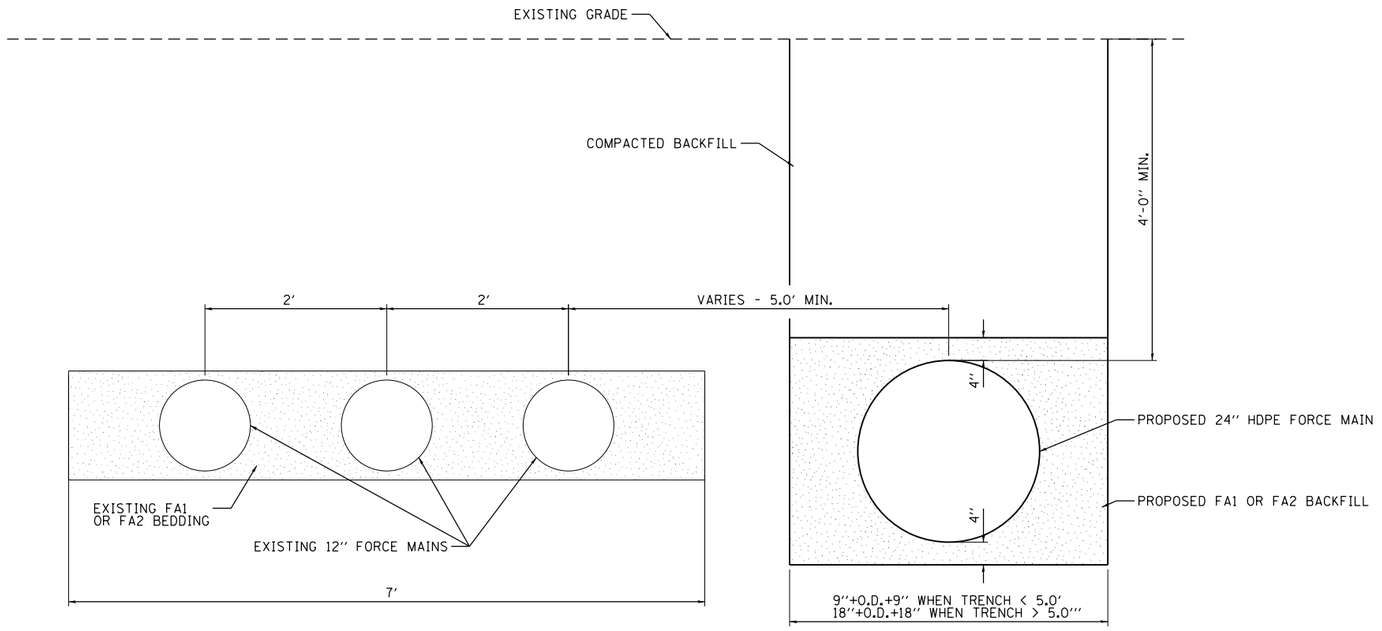
PLOT DATE = 8/23/2014	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MISCELLANEOUS DETAILS – SITE DETAILS
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: NONE | SHEET 3 OF 3 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	59
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			



TYPICAL 24" FORCE MAIN SECTION
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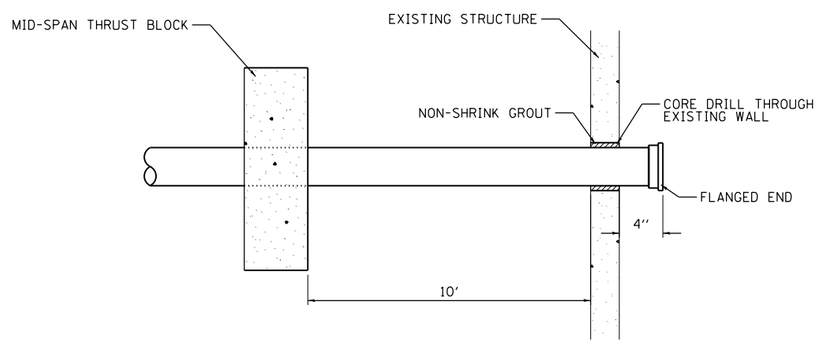
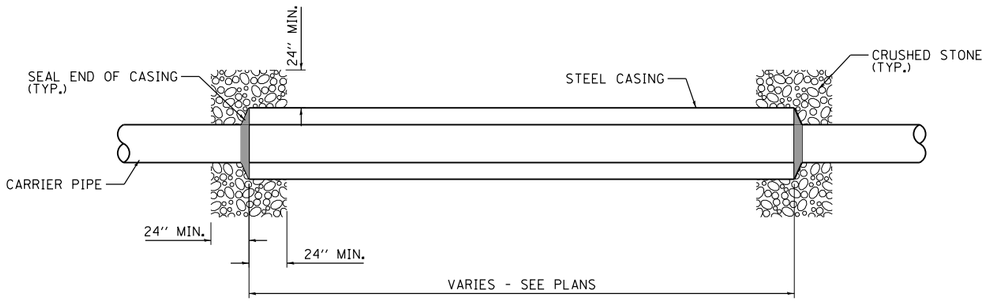


HPDE PIPE TO EXISTING STRUCTURE DETAIL
NOT TO SCALE



TYPICAL STEEL CASING DETAIL
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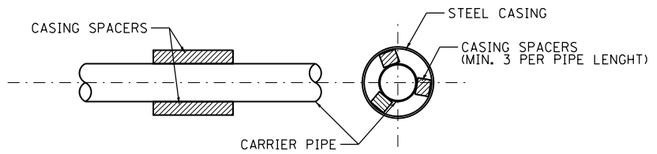

CASING SPACER DETAIL
NOT TO SCALE

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PLOT DATE = 8/23/2014	DATE -	REVISED -

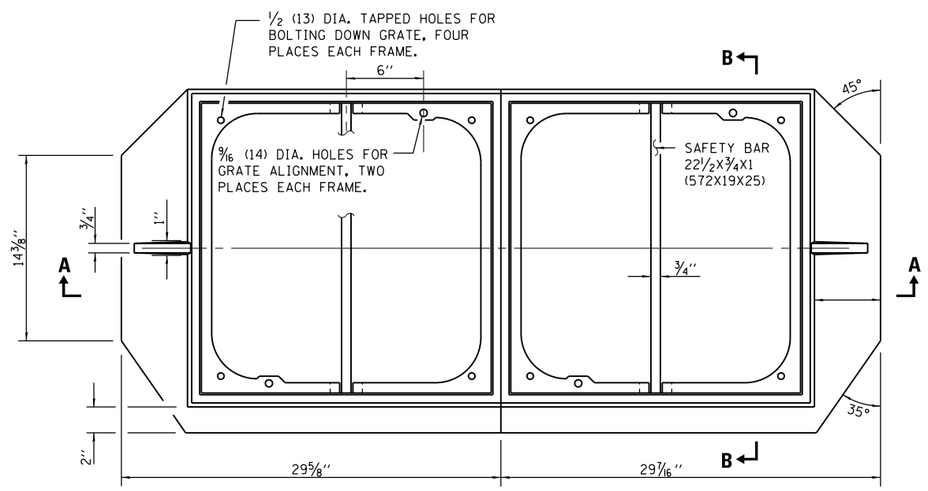
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MISCELLANEOUS DETAILS – FORCE MAIN
MISSOURI AVENUE DEEP WELL FACILITY

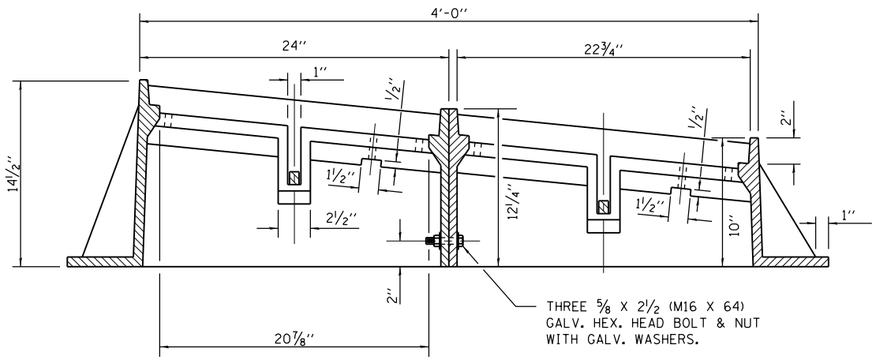
SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	60
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			

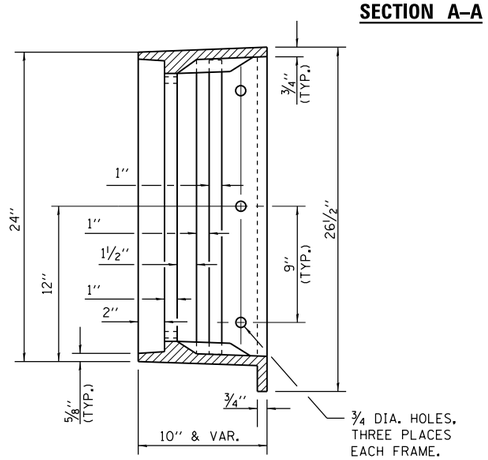
TYPE 22 FRAME AND GRATE (SPECIAL)



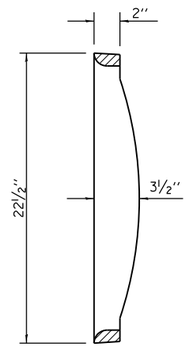
PLAN VIEW



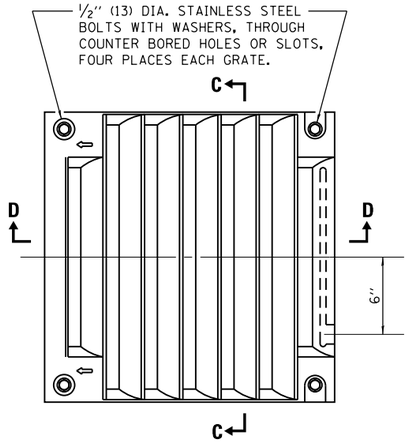
SECTION A–A



SECTION B–B

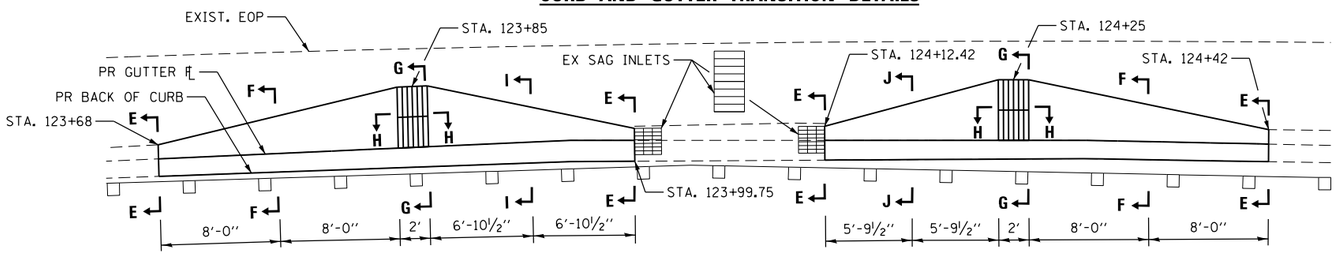


SECTION C–C

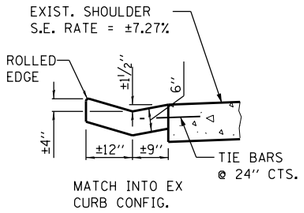


CAST GRATE

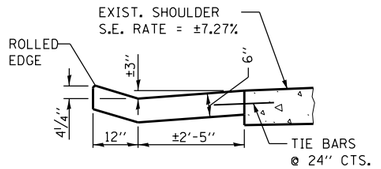
CURB AND GUTTER TRANSITION DETAILS



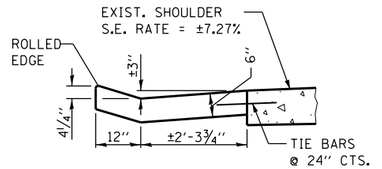
PLAN VIEW



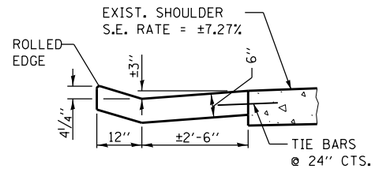
(EXISTING) SECTION E–E



SECTION F–F



SECTION I–I



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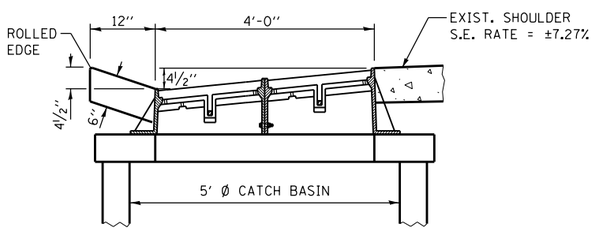
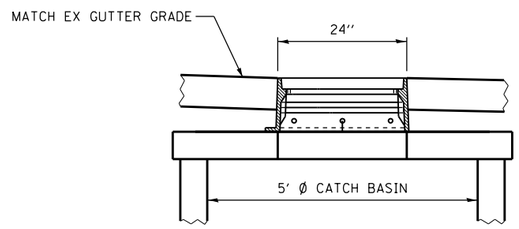


SECTION G–G



SECTION H–H

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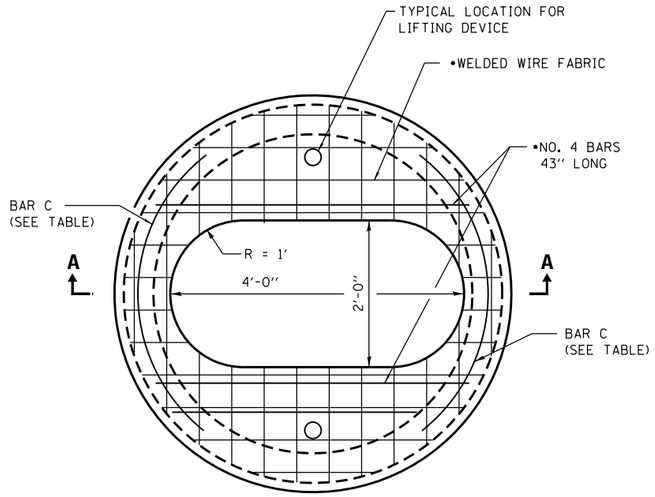
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MISCELLANEOUS DETAILS – DRAINAGE
MISSOURI AVENUE DEEP WELL FACILITY

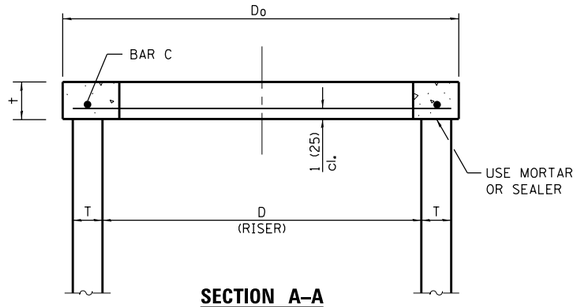
SCALE: N/A | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	61
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			

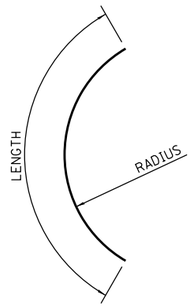
FLAT SLAB TOP DETAIL



• PRECAST CONCRETE MANUFACTURER SHOULD BE CONSULTED REGARDING THE PLACEMENT AND SIZE OF THE REINFORCEMENT.



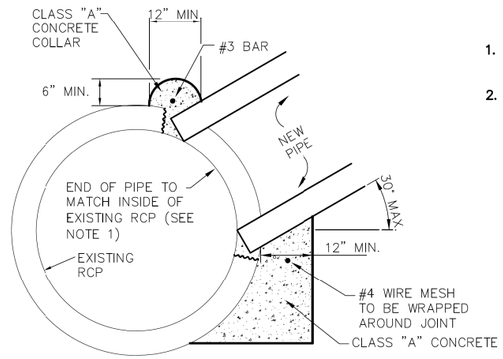
SECTION A–A



BAR C

TABLE

D	T	D_o (min.)	t	Reinforcement "A_s" W.W.F. each direction	OR Bar size	No. 4 Bar C Length	No. 4 Bar C Radius
36	See applicable Standards	D + 2T	6	0.20 sq. in./ft.	No. 4	4'-0"	19
4'-0"			6	0.35 sq. in./ft.	No. 5	4'-6"	26
5'-0"			8	0.35 sq. in./ft.	No. 5	5'-0"	32



NOTES:
1. MAXIMUM DIAMETER OF NEW PIPE EQUALS ONE HALF OF EXISTING PIPE'S DIAMETER.
2. REMOVAL OF PLUG FROM EXISTING RCP TO BE ACCOMPLISHED BY USING A MASONRY DRILL AT A SPACING EQUAL TO THE DRILL BIT DIAMETER IN A CIRCULAR PATTERN OR A MASONRY SAW IN AN OCTAGONAL PATTERN PER DETAIL.

CONNECTION TO EXISTING RCP 90" STORM SEWER

IDOT HWY STD.

602001-02 CATCH BASIN TYPE A
602701-02 MANHOLE STEPS

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MISCELLANEOUS DETAILS – DRAINAGE
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: N/A | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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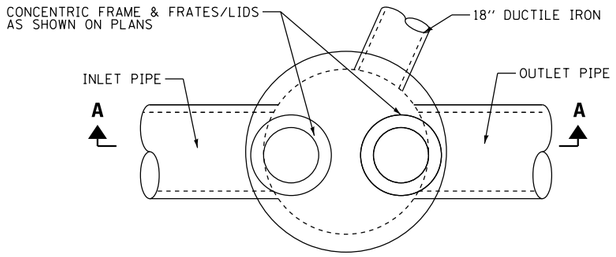
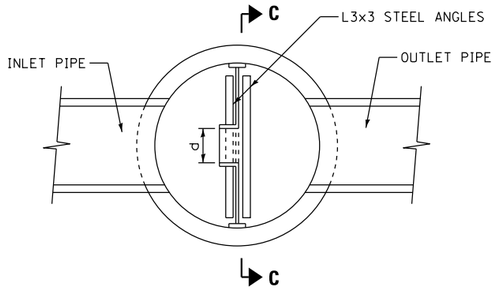
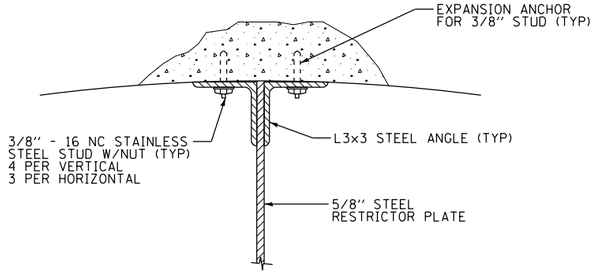
		CONTRACT NO. 76099		
	ILLINOIS	FED. AID PROJECT		



PLAN
NOT TO SCALE



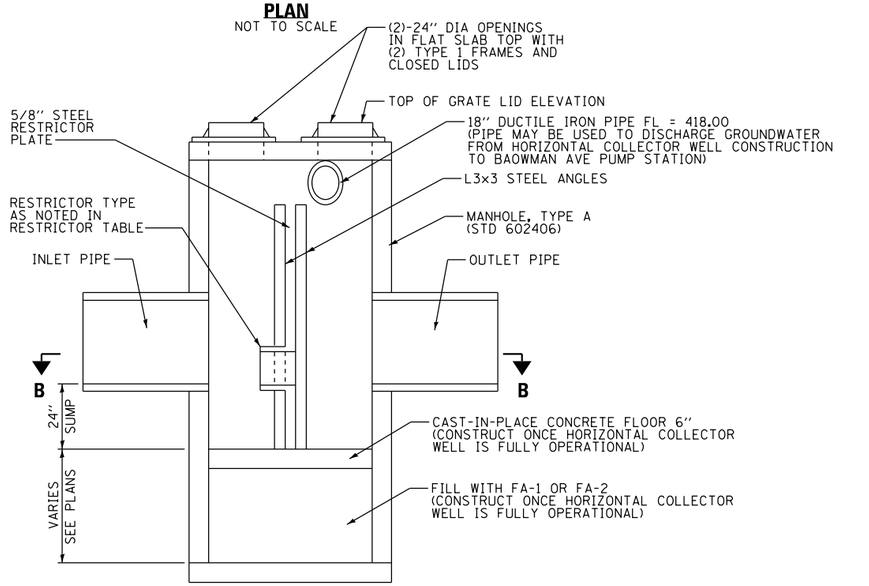
SECTION B–B
NOT TO SCALE



ANGLE FASTENER DETAIL
NOT TO SCALE

NOTES:

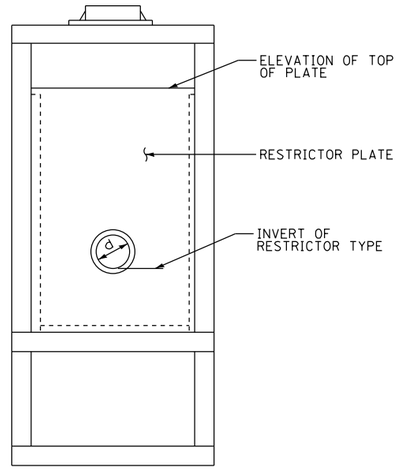
1. ALL STEEL ANGLES AND PLATES TO BE GALVANIZED AFTER FABRICATION.
2. ALL RESTRICTOR PLATES, ANGLES AND HARDWARE TO BE INCLUDED IN THE COST OF THE MANHOLE.
3. BASIS OF PAYMENT: "MANHOLES, TYPE A, 6 FT.-DIAMETER, TYPE 1 FRAME, CLOSED LID, RESTRICTOR PLATE" EACH



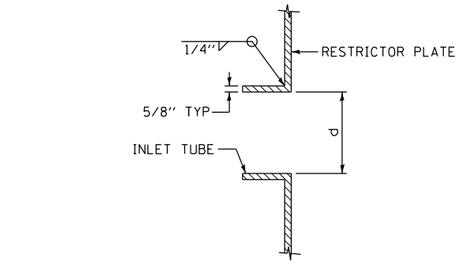
SECTION A–A
NOT TO SCALE

THE CONTRACTOR MAY USE THE 18" CAST IRON PIPE AND THE FULL DEPTH OF THE MANHOLE TO DISCHARGE GROUNDWATER FROM THE CONSTRUCTION OF THE HORIZONTAL COLLECTOR WELL TO THE BOWMAN AVENUE PUMP STATION.

ONCE THE HORIZONTAL COLLECTOR WELL IS OPERATIONAL, THE RESTRICTOR PLATE AND FALSE CONCRETE FLOOR SHALL BE CONSTRUCTED.

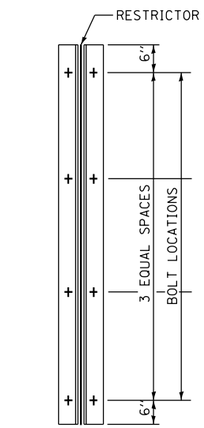


SECTION C–C
NOT TO SCALE

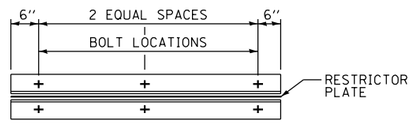


INLET TUBE DETAIL
NOT TO SCALE

CALL OUT	MANHOLE DIAMETER	FRAME AND FRATE	RESTRICTOR TYPE	INSIDE RESTRICTOR TYPE DIAMETER INCHES (d)	INVERT OF RESTRICTOR TYPE	ELEVATION OF TOP OF PLATE OVERFLOW
A3	7'	TY 1	1	12"	412.00	418.00



TYPICAL VERTICAL ANGLES LOOKING TOWARD MANHOLE WALL



TYPICAL HORIZONTAL ANGLES LOOKING TOWARD BOTTOM OF MANHOLE

TOTAL BOLTS REQUIRED: (22)

NOTE:

1. ANGLES SHOULD BE 3x3x 3/8
2. VERTICAL ANGLES SHOULD EXTEND FROM BOTTOM OF THE RESTRICTOR PLATE TO THE TOP.
3. HORIZONTAL ANGLES SHOULD EXTEND FROM ANGLE TO VERTICAL ANGLE.

RESTRICTOR TYPE					
1	2	3	4	5	6
RE-ENTRANT TUBE	SHARP EDGED	SQUARE EDGED	RE-ENTRANT TUBE	SQUARE EDGED	ROUNDED
LENGTH: 1/2 TO 1 DIA		STREAM CLEARS SIDES	LENGTH: 2-1/2 DIA	LENGTH: 2-1/2 DIA	
C=.52	C=.61	C=.61	C=.73	C=.82	C=.98

VALUES OF "C" FOR CIRCULAR AND SQUARE ORIFICES

STEEL ANGLE BOLTING DETAILS
NOT TO SCALE

FILE NAME = D:\1files\110223\Work Order 3 MO Ave Ph2\CADD Sheets\QB76099-sht-Manhole RestrictorPL.dgn

KLINGNER & ASSOCIATES, P.C.
Engineers · Architects · Surveyors

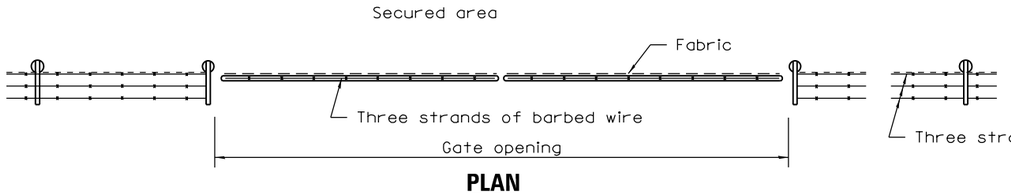
USER NAME = seb	DESIGNED - SEB	REVISED -
	DRAWN - BGJ	REVISED -
PLOT SCALE = 0.1667 ' / in.	CHECKED -	REVISED -
PLOT DATE = 8/23/2014	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

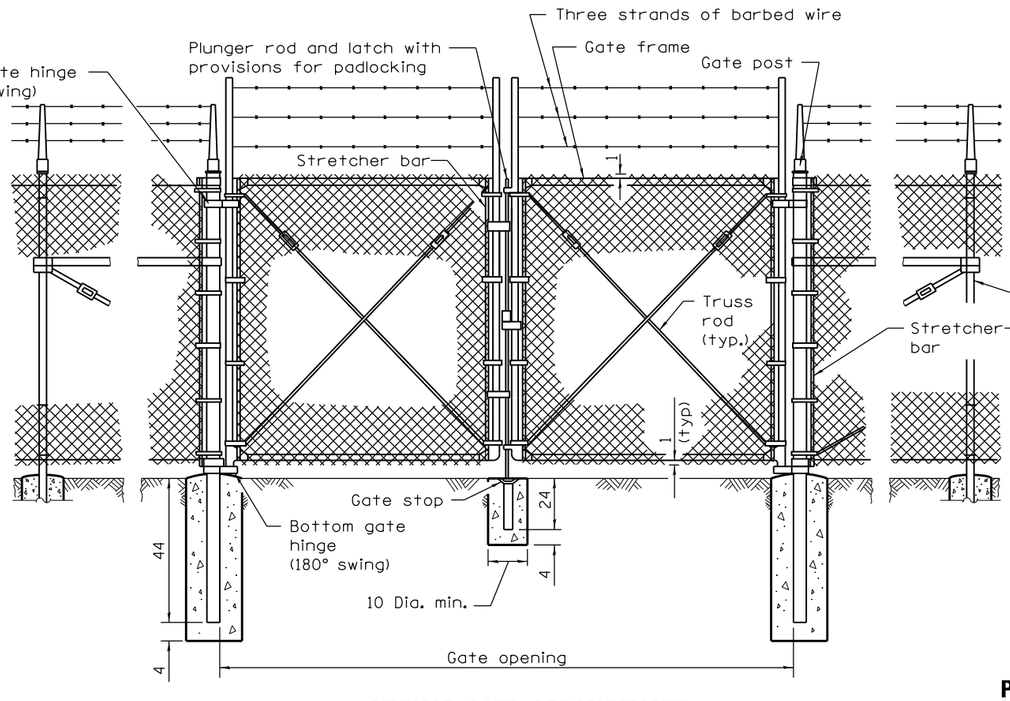
MISCELLANEOUS DETAILS – MANHOLE WITH RESTRICTOR PLATE
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: NONE | SHEET 1 OF 1 SHEETS | STA. | TO STA.

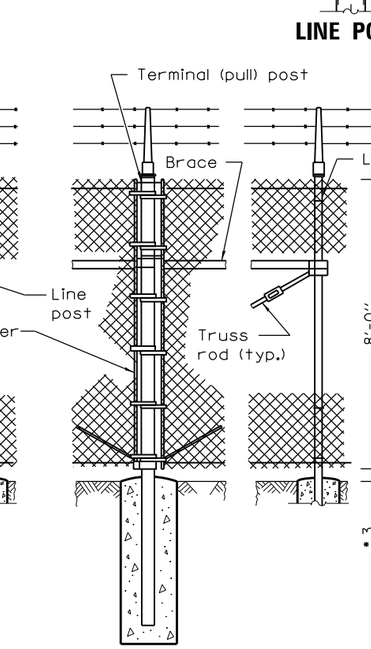
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	63
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			



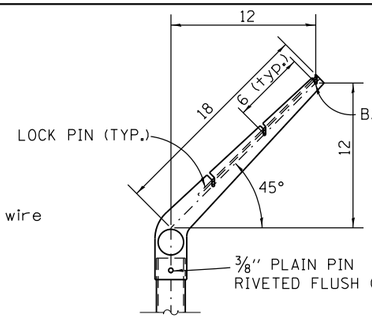
PLAN
NTS



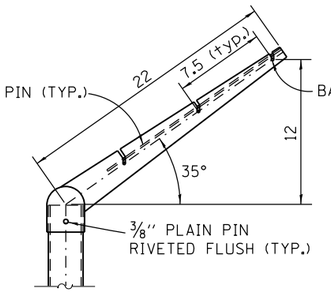
VEHICLE GATE ARRANGEMENT



PULL POST ARRANGEMENT

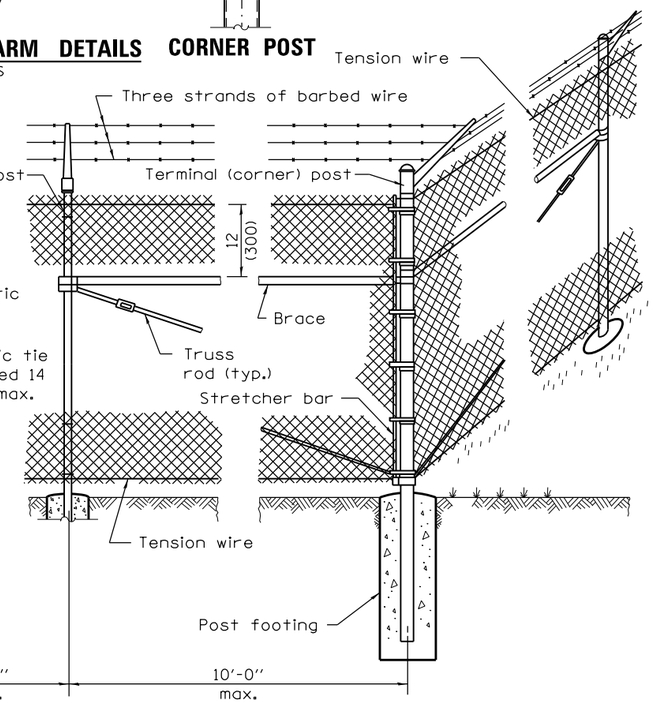


LINE POST



CORNER POST

EXTENSION ARM DETAILS
NTS

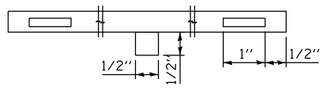


LINE POST ARRANGEMENT

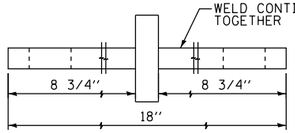
CORNER OR END POST ARRANGEMENT

ELEVATION
NTS

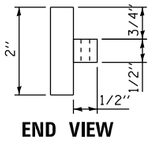
- On uneven ground this dimension may vary between 1 min. to 5 max. for a max. distance of 8'-0".



TOP VIEW

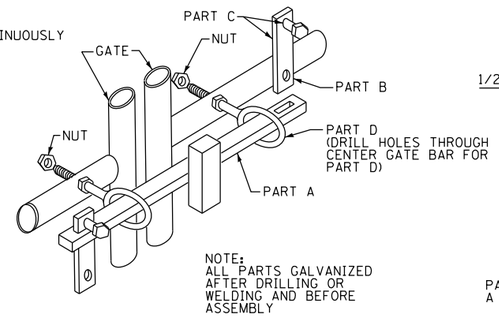


FRONT VIEW



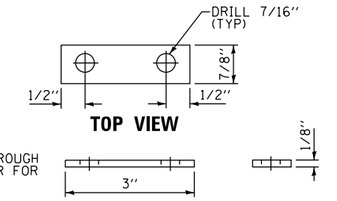
END VIEW

PART A



NOTE:
ALL PARTS GALVANIZED AFTER DRILLING OR WELDING AND BEFORE ASSEMBLY

SWING GATE LOCKING DEVICE
NTS



TOP VIEW

FRONT VIEW **END VIEW**

PART B

PART C IS FABRICATED THE SAME WITH A BOLT INTO EACH HOLE

PART C

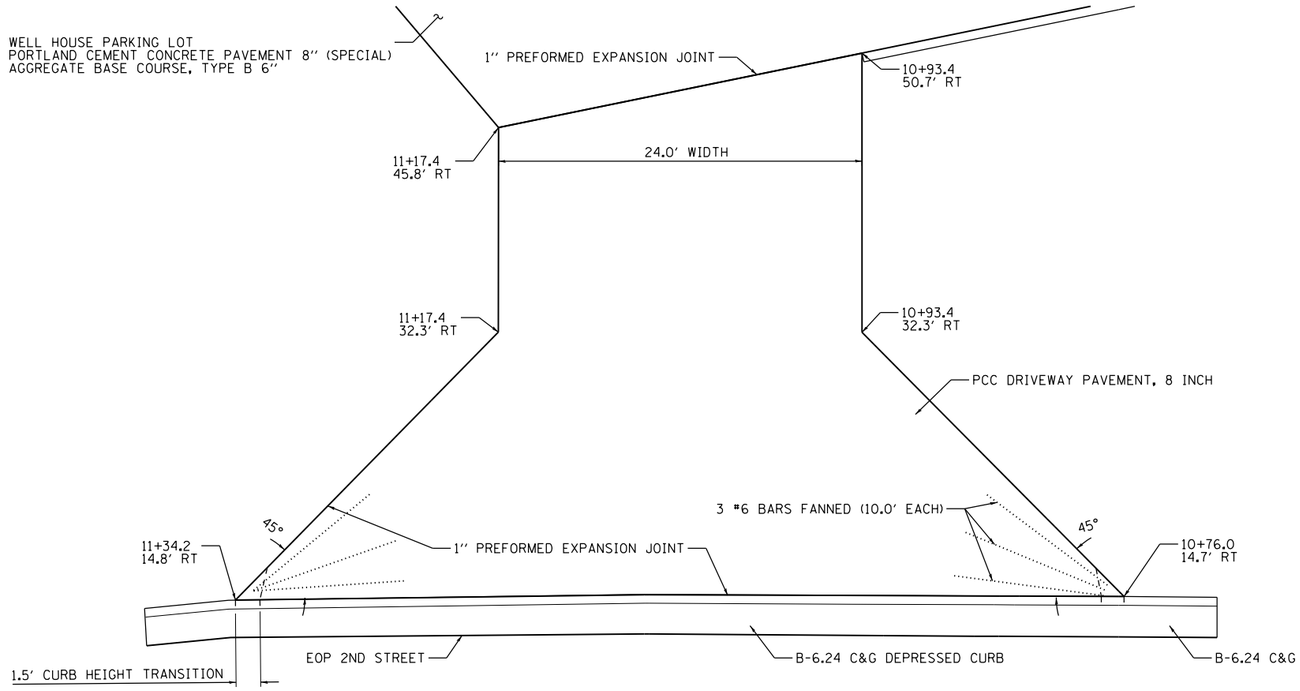
GENERAL NOTES

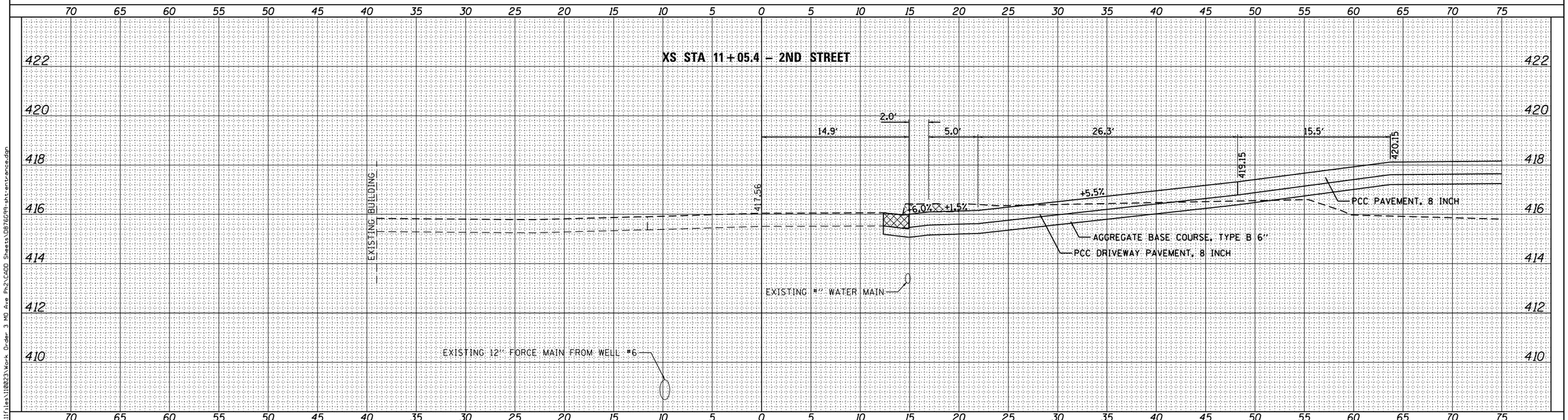
See Highway Standard 664001-02 for additional chain link fence and gate details.

All dimensions are in inches unless otherwise shown.

FILE NAME = Q:\Files\18023\Work Order 3 MO Ave Ph2\CADD Sheets\0876G99-sht-FenceDetail.dgn

KLINGNER & ASSOCIATES, P.C. Engineers · Architects · Surveyors	USER NAME = seb	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	CHAIN LINK FENCE DETAILS MISSOURI AVENUE DEEP WELL FACILITY			F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED -					64	82-4T-1	ST. CLAIR	185	64
	PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -							CONTRACT NO. 76G99		
	PLOT DATE = 8/23/2014	DATE -	REVISED -		SCALE:	SHEET OF SHEETS	STA. TO STA.			ILLINOIS FED. AID PROJECT		





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Engineers · Architects · Surveyors

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	DRAWN - SEB	REVISED -
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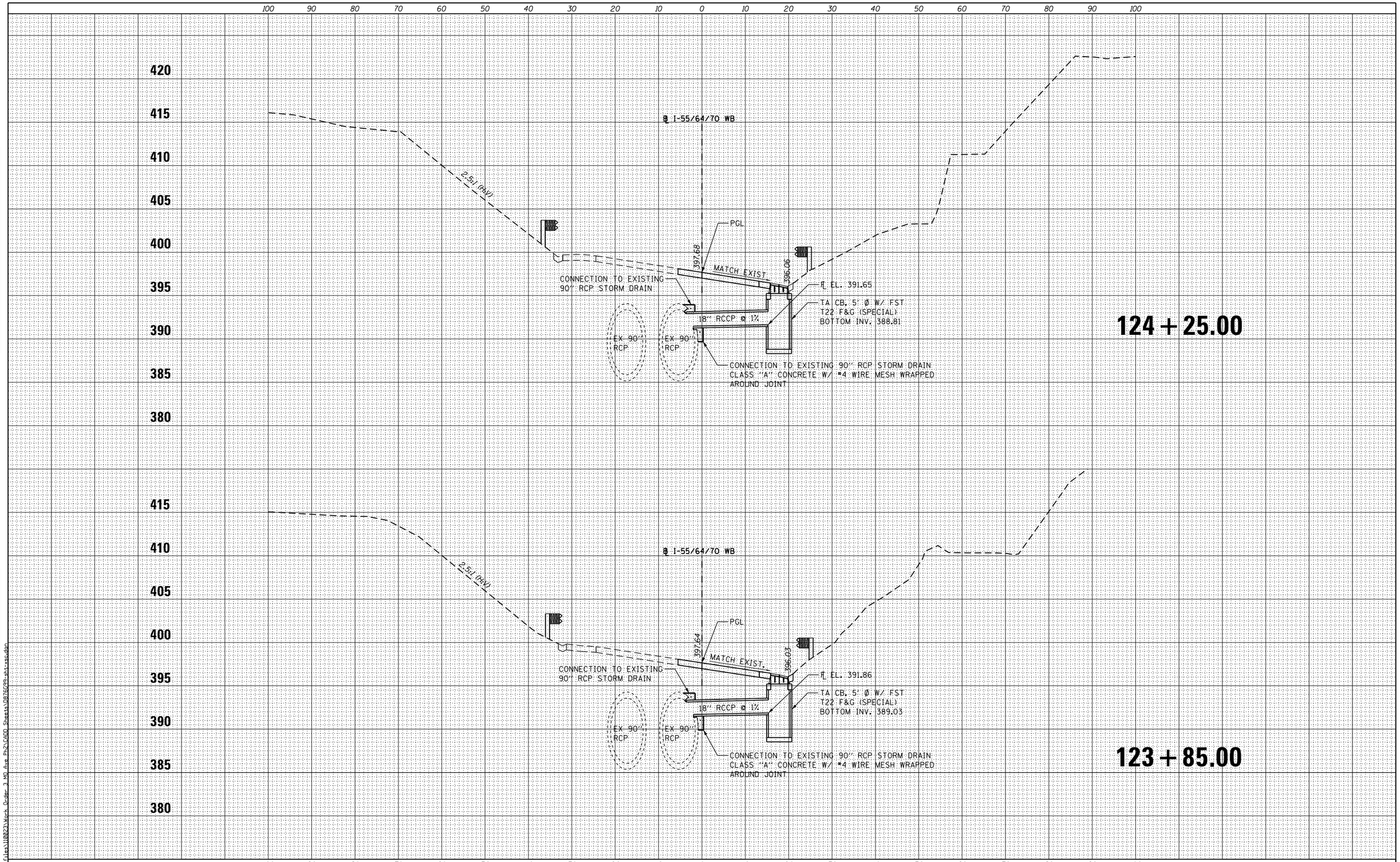
PLOT DATE = 8/23/2014	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ENTRANCE STA 11+05.4 DETAILS
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: 1"=5' | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	65
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			



FINAL SURVEY	NOTE BOOK	NO.
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

BY	DATE

ORIGINAL SURVEY	NOTE BOOK	NO.
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

BY	DATE

FILE NAME = G:\IlFiles\18023\Work Order 3 MO Ave Ph2\CADD Sheets\DB76G99-sht-xsdgn

LIN ENGINEERING, LTD.
Consulting Engineers
Springfield, Illinois

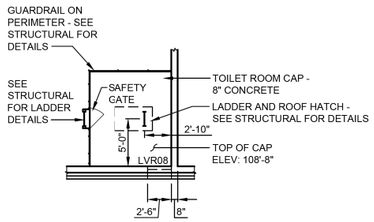
USER NAME = seb	DESIGNED - SEL	REVISED -
	DRAWN - SEL	REVISED -
PLOT SCALE = 20.0000 '/ In.	CHECKED - SGL	REVISED -
PLOT DATE = 8/23/2014	DATE - 7/1/2014	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS
MISSOURI AVENUE DEEP WELL FACILITY

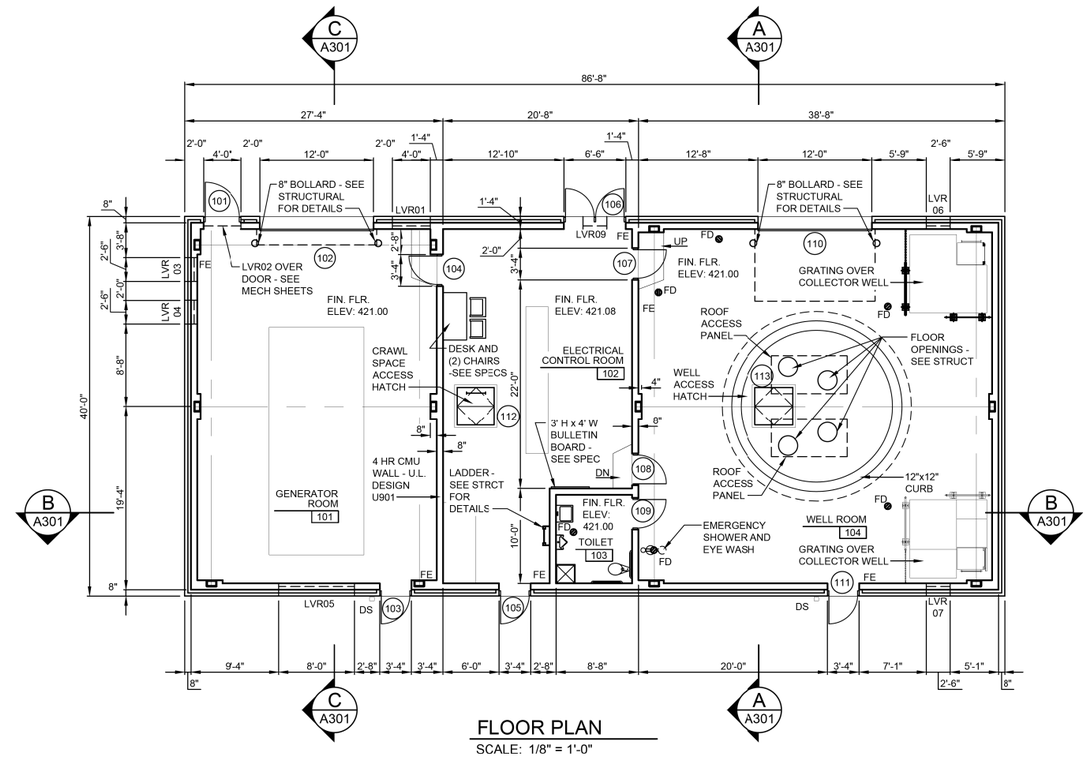
SCALE: 1"=10'(H)5'(V) | SHEET 1 OF 1 SHEETS | STA. 123+85 | TO STA. 124+25

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	66
		CONTRACT NO. 76G99		
	ILLINOIS	FED. AID PROJECT		



MEZZANINE PLAN

SCALE: 1/8" = 1'-0"



FLOOR PLAN

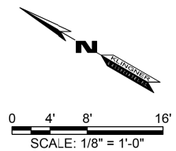
SCALE: 1/8" = 1'-0"

ABBREVIATIONS

ALUM	ALUMINUM
CMU	CONCRETE MASONRY UNIT
CONC	CONCRETE
DS	DOWN SPOUT
FD	FLOOR DRAIN
FE	FIRE EXTINGUISHER - MOUNT 3'-10" TO TOP
FRP	FIBERGLASS REINFORCED POLYMER
LVR	LOUVER - SEE MECHANICAL SHEETS FOR SCHEDULE
STL	STEEL (HOT DIP GALVANIZED)

GENERAL NOTES

1.) CONTRACTOR SHALL FIELD VERIFY ALL EXISTING SITE CONDITIONS, INCLUDING SITE ACCESS, POWER SUPPLY, AND ANY OTHER ITEMS THAT AFFECT THE CONTRACT AND THE CONSTRUCTION OF THE IMPROVEMENT.



A101

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	DRAWN - CRC	REVISED -
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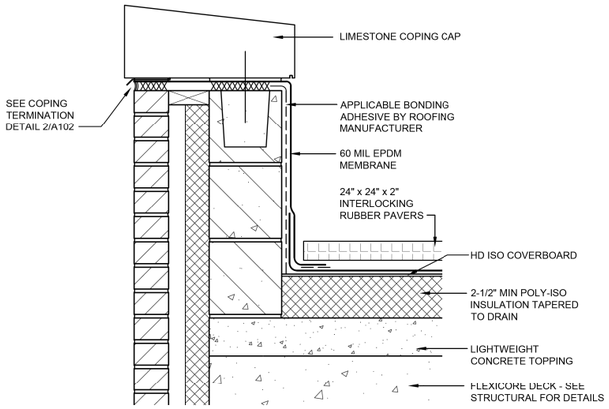
PLOT DATE = 9/24/2014	DATE - 8/22/2014	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

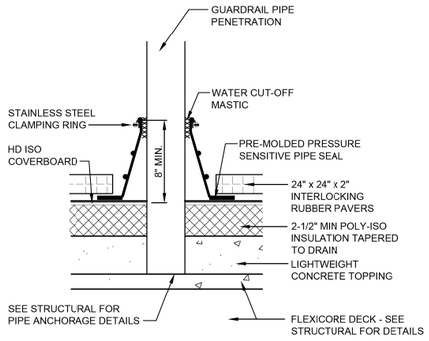
WELL HOUSE BUILDING – FLOOR PLAN
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: AS NOTED | SHEET 1 OF 8 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	67
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			



1 A102 TYPICAL PARAPET DETAIL
SCALE: 1-1/2"=1'-0"



4 A102 HANDRAIL PIPE BASE DETAIL
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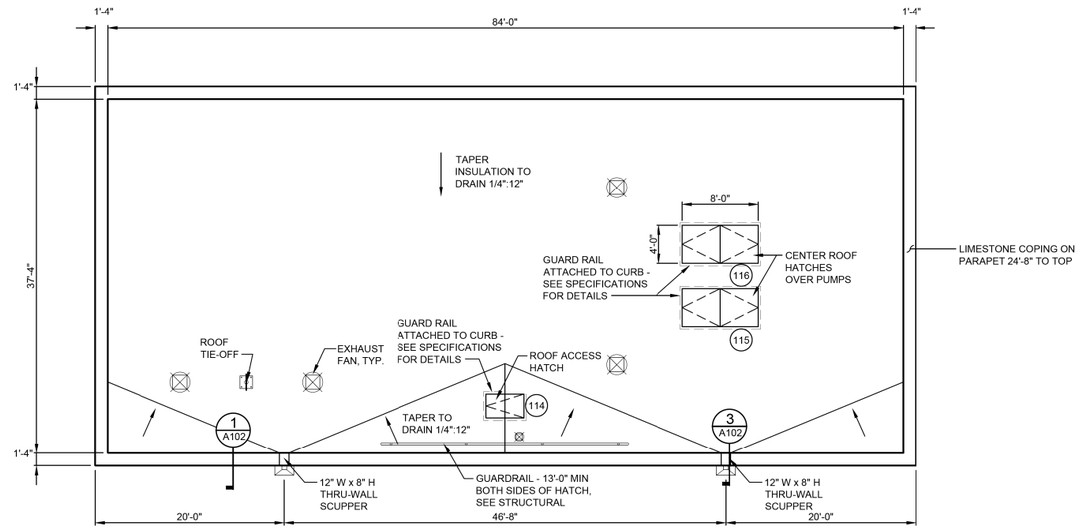
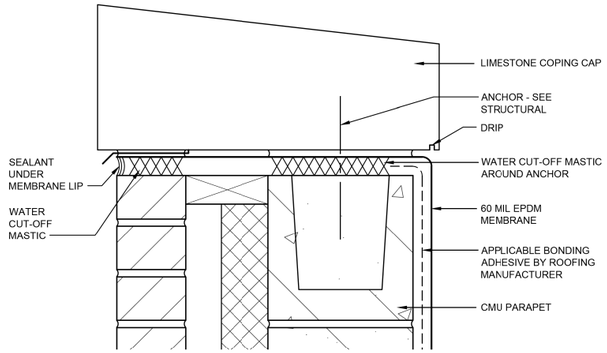
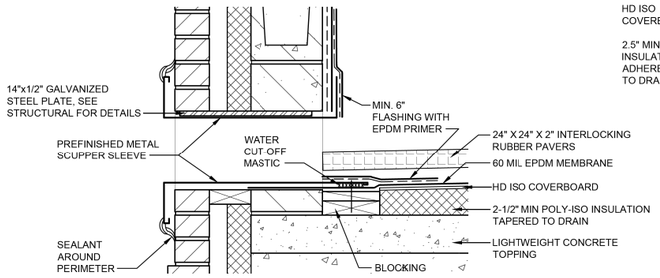


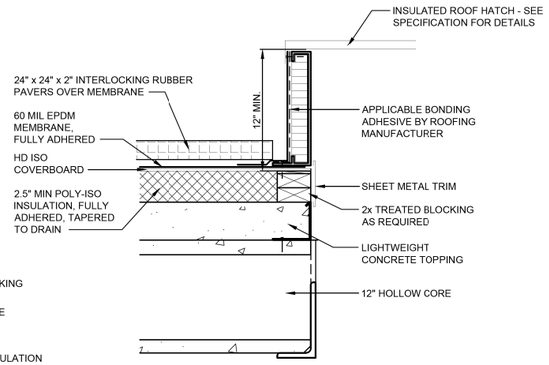
ROOF PLAN
SCALE: 1/8" = 1'-0"



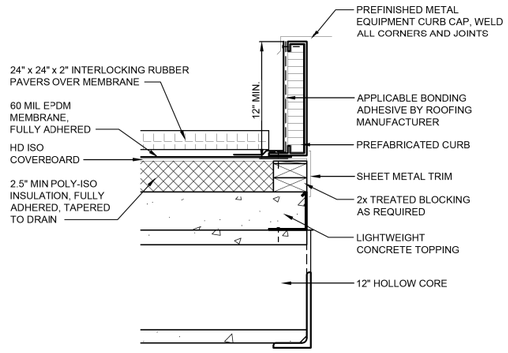
2 A102 COPING TERMINATION DETAIL
SCALE: 3"=1'-0"



3 A102 SCUPPER DETAIL
SCALE: 1-1/2"=1'-0"



5 A102 TYPICAL ROOF HATCH DETAIL
SCALE: 1-1/2"=1'-0"



6 A102 TYP EQUIPMENT CURB DETAIL
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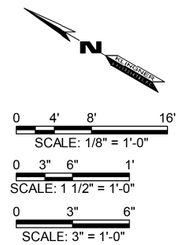

A102

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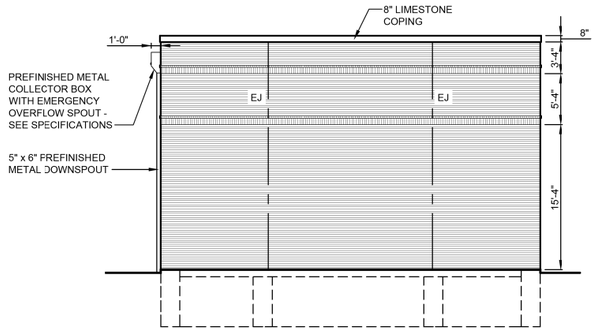
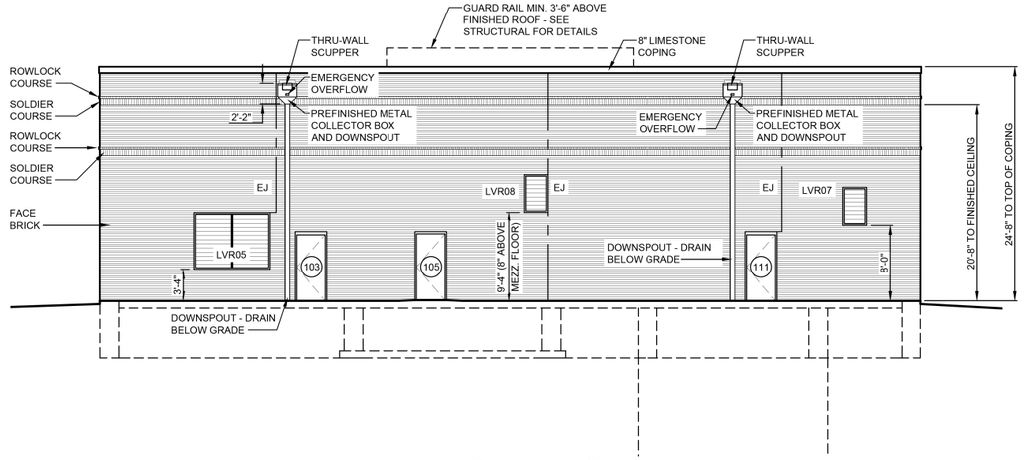
KLINGNER & ASSOCIATES, P.C. Engineers • Architects • Surveyors	USER NAME = seb	DESIGNED - DEN	REVISED - CRC - 9/24/14	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	WELL HOUSE BUILDING – ROOF PLAN AND DETAILS MISSOURI AVENUE DEEP WELL FACILITY
		DRAWN - CRC	REVISED -		
	PLOT SCALE = 40.0000 ' / in.	CHECKED - DEN	REVISED -		SCALE: AS NOTED SHEET 2 OF 8 SHEETS STA. TO STA.
	PLOT DATE = 9/24/2014	DATE - 8/22/2014	REVISED -		

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	68
		CONTRACT NO. 76G99		
	ILLINOIS	FED. AID PROJECT		



SOUTH ELEVATION
SCALE: 1/8" = 1'-0"



WEST ELEVATION
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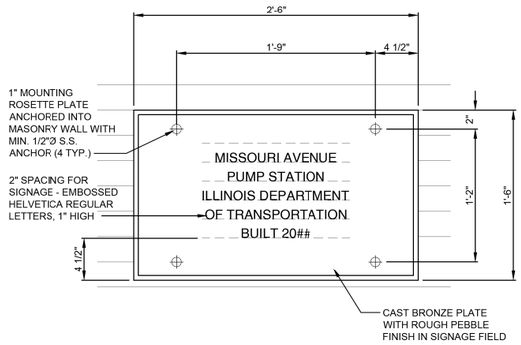
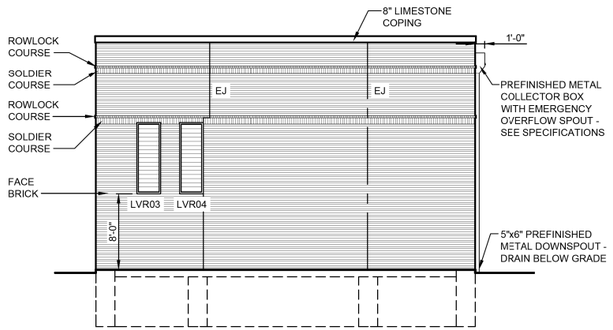
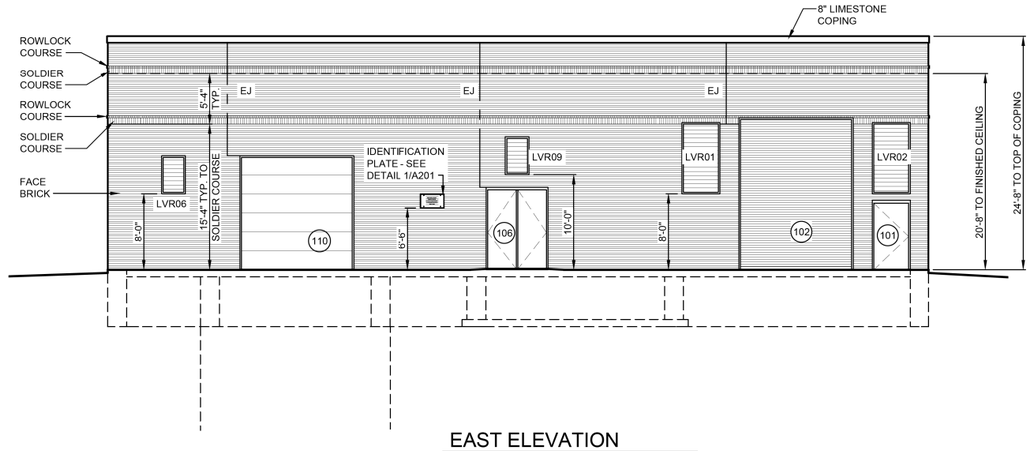


1 / A201 IDENTIFICATION PLATE
SCALE: NO SCALE



NORTH ELEVATION
SCALE: 1/8" = 1'-0"



EAST ELEVATION
SCALE: 1/8" = 1'-0"

0 4' 8' 16'
SCALE: 1/8" = 1'-0"

A201

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KLINGNER & ASSOCIATES, P.C.
Engineers · Architects · Surveyors

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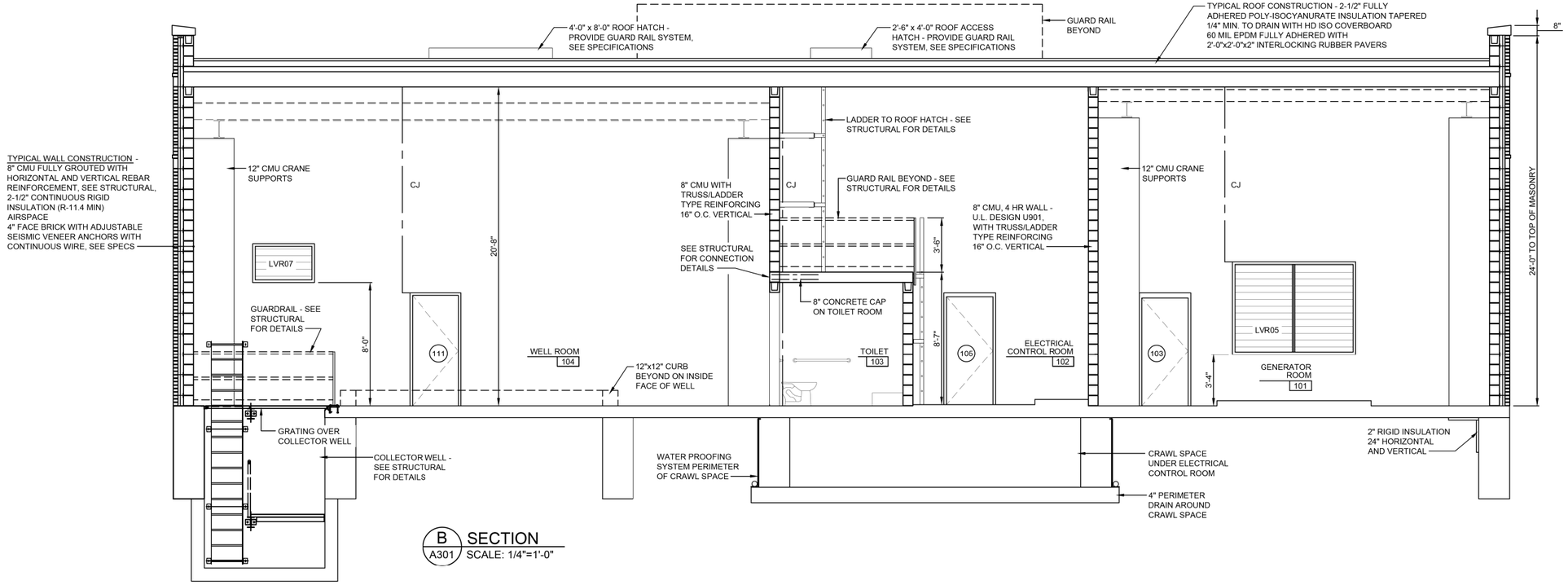
	DRAWN - CRC	REVISED -
PLOT SCALE = 40.0000 ' / in.	CHECKED - DEN	REVISED -
PLOT DATE = 9/25/2014	DATE - 8/22/2014	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

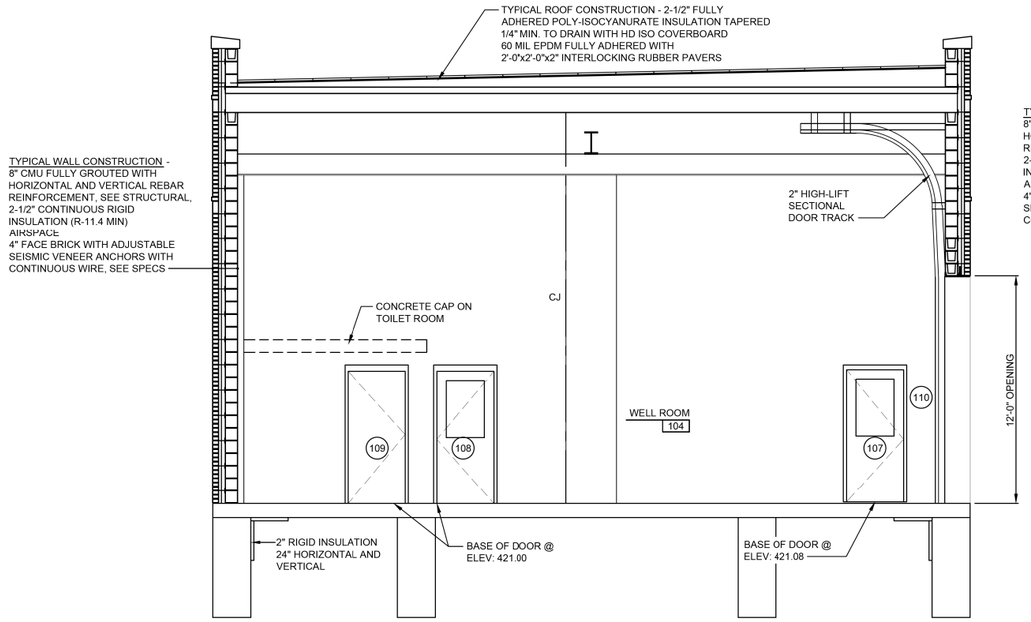
WELL HOUSE BUILDING – ELEVATIONS
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: AS NOTED | SHEET 3 OF 8 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	69
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			



B SECTION
A301 SCALE: 1/4"=1'-0"



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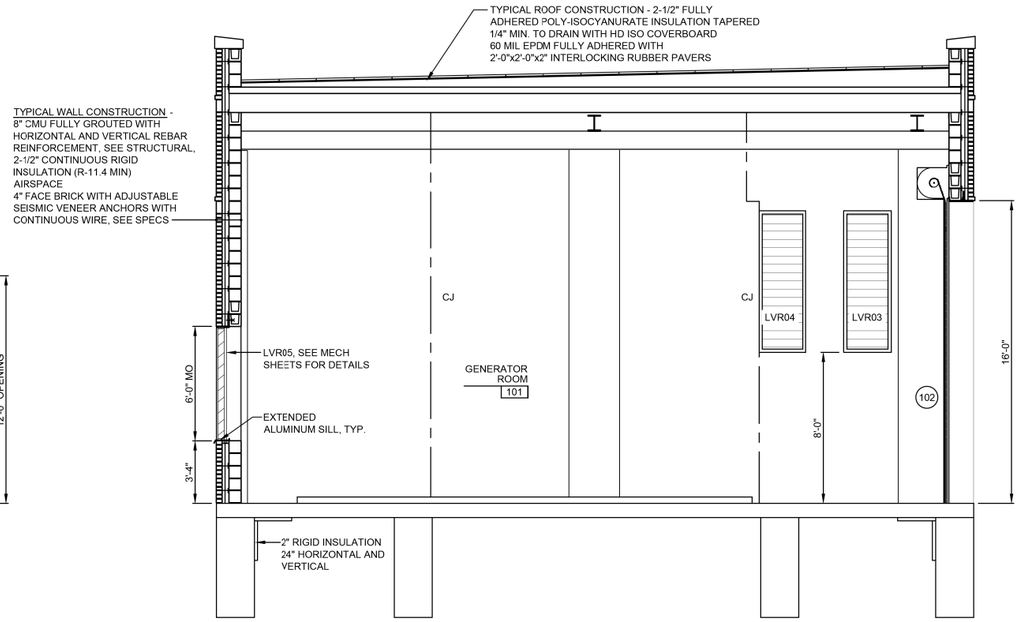
A301 SCALE: 1/4"=1'-0"



C SECTION
A301 SCALE: 1/4"=1'-0"

0 2' 4' 8'
SCALE: 1/4" = 1'-0"

A301

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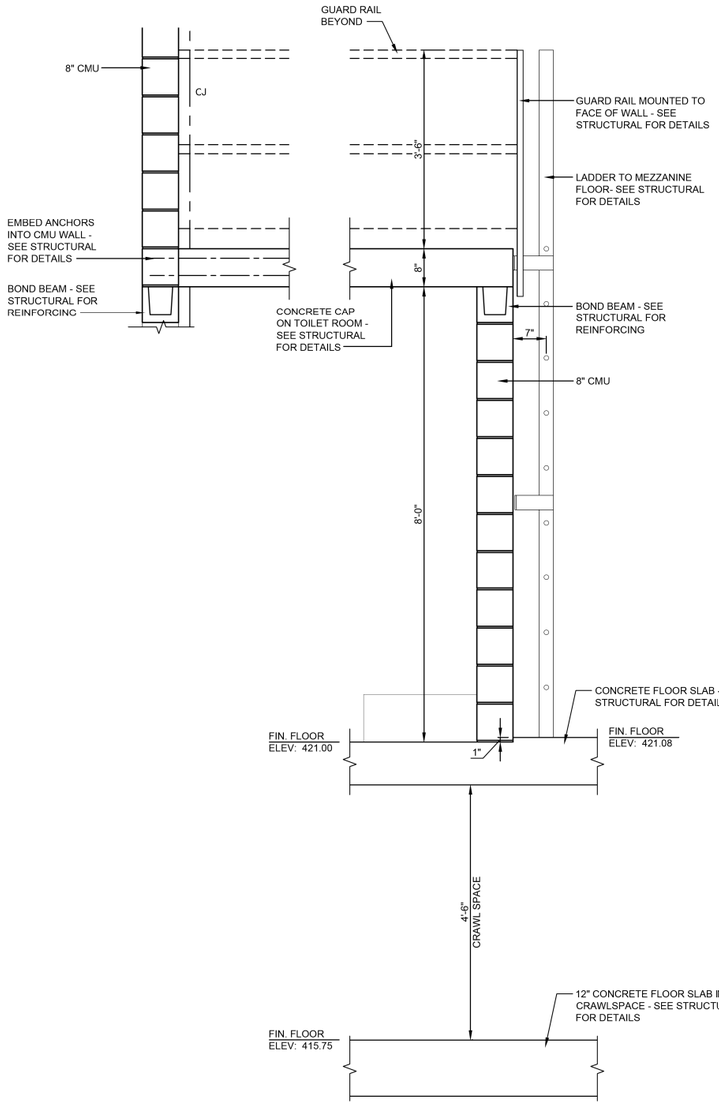
	PLOT SCALE = 40.0000 ' / in.	CHECKED - DEN	REVISED -
	PLOT DATE = 9/24/2014	DATE - 8/22/2014	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WELL HOUSE BUILDING – BUILDING SECTIONS
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: AS NOTED | SHEET 4 OF 8 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	70
		CONTRACT NO. 76G99		
	ILLINOIS	FED. AID PROJECT		



2 A302 TOILET ROOM WALL SECTION
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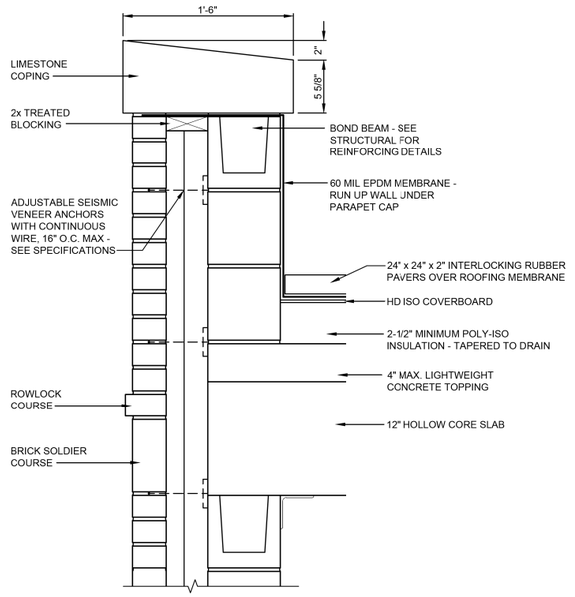

TYPICAL PARAPET DETAIL
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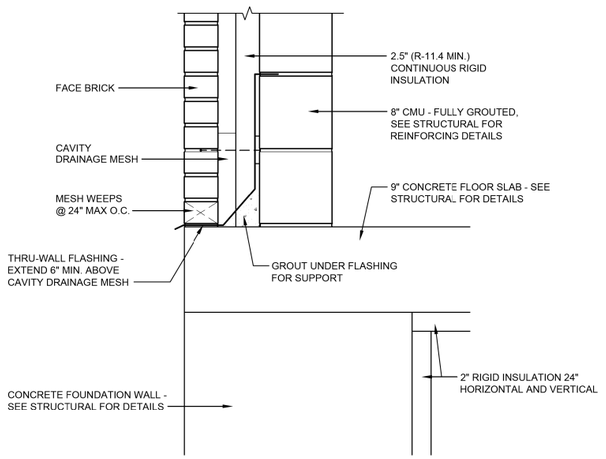

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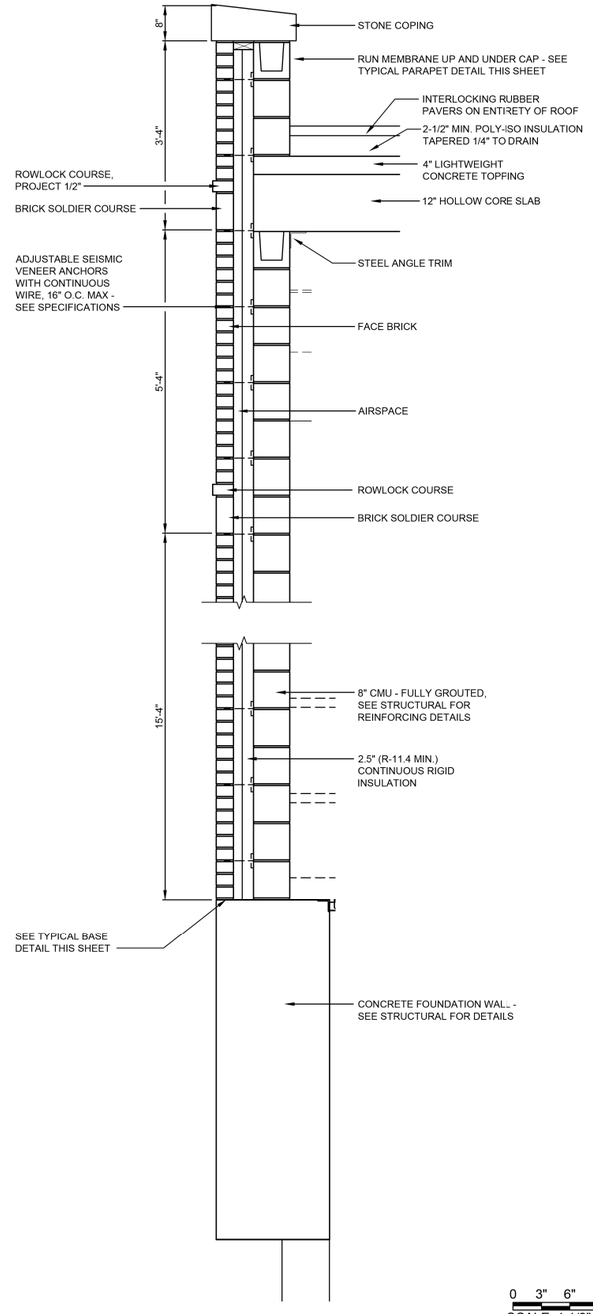

1 A302 TYP. WALL SECTION
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0 3" 6" 1'
SCALE: 1 1/2" = 1'-0"

0 1' 2'
SCALE: 3/4" = 1'-0"

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A302

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WELL HOUSE BUILDING – WALL SECTIONS AND DETAILS
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: AS NOTED | SHEET 5 OF 8 SHEETS | STA. | TO STA.

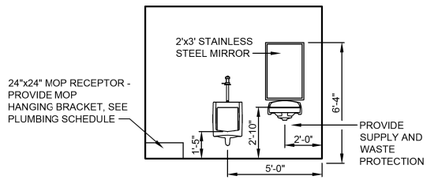
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	71
		CONTRACT NO. 76G99		
	ILLINOIS	FED. AID PROJECT		

ROOM FINISH SCHEDULE

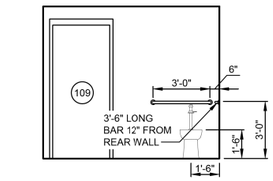
ROOM OR AREA	FLOOR		BASE	WALLS		CEILING		FINISHED CEILING HEIGHT	REMARKS
	MATL	FINISH	FINISH	MATL	FINISH	MATL	FINISH		
101 GENERATOR ROOM	CONC	EPOXY-3	NONE	CMU	EPOXY-2	CONC	EPOXY-1	20'-8"	--
102 ELECTRICAL CONTROL ROOM	CONC	EPOXY-3	NONE	CMU	EPOXY-2	CONC	EPOXY-1	20'-8"	
103 TOILET	CONC	EPOXY-3	NONE	CMU	EPOXY-2	CONC	EPOXY-1	8'-0"	CAP TOILET ROOM - SEE STRUCTURAL
104 WELL ROOM	CONC	EPOXY-3	NONE	CMU	EPOXY-2	CONC	EPOXY-1	20'-8"	

DOOR AND OPENING SCHEDULE

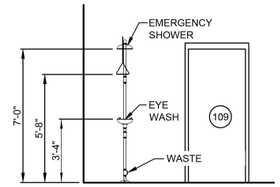
MARK	DOOR SIZE	DOOR MATL	FRAME MATL	FRAME HEAD HGHT	FRAME HEAD DETAIL	FRAME JAMB DETAIL	HDW GRP	FIRE RATING	REMARKS	MARK
101	3'-8" x 7'-0" x 1-3/4"	FRP	FRP	4"	7/A401	2/A401	1	--	LOUVER ABOVE DOOR FRAME	101
102	12'-0" W X 16'-0" H COILING	FRP	STL	---	5/A401	6/A401	---		INSULATED SLATS	102
103	3'-0" X 7'-0" X 1-3/4"	FRP	FRP	4"	1/A401	2/A401	1			103
104	3'-0" X 7'-0" X 1-3/4"	HM	HM	3"	3/A401	4/A401	3	3 HR		104
105	3'-0" X 7'-0" X 1-3/4"	FRP	FRP	3"	1/A401	2/A401	1			105
106	(2) 3'-0" x 8'-4" x 1-3/4"	FRP	FRP	3"	1/A401	2/A401	2			106
107	3'-0" X 7'-0" X 1-3/4"	FRP	FRP	3"	3/A401	4/A401	4		WITH HALF LITE, SEE ELEVATION BELOW	107
108	3'-0" X 7'-0" X 1-3/4"	FRP	FRP	4"	3/A401	4/A401	4		WITH HALF LITE, SEE ELEVATION BELOW	108
109	3'-0" X 7'-0" X 1-3/4"	FRP	FRP	4"	3/A401	4/A401	5			109
110	12'-0" W X 12'-0" H SECTIONAL	ALUM	STL	---	5/A401	6/A401	---		INSULATED SECTIONAL WITH HIGH LIFT TRACK	110
111	3'-0" X 7'-0" X 1-3/4"	FRP	FRP	4"	1/A401	2/A401	1			111
112	4'-0" X 4'-0" FLOOR ACCESS HATCH	ALUM	ALUM	---	8/A401					112
113	4'-0" X 4'-0" FLOOR ACCESS HATCH	ALUM	ALUM	---	8/A401					113
114	2'-6" X 4'-0" ROOF ACCESS HATCH	ALUM	ALUM	---	8/A401					114
115	4'-0" X 8'-0" ROOF ACCESS HATCH	ALUM	ALUM	---	5/A102					115
116	4'-0" X 8'-0" ROOF ACCESS HATCH	ALUM	ALUM	---	5/A102					116



A401 INTERIOR ELEVATION
SCALE: 1/4"=1'-0"



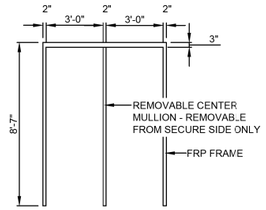
B A401 INTERIOR ELEVATION
SCALE: 1/4"=1'-0"



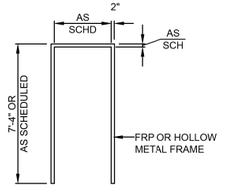
C A401 EMER. SHOWER/EYE WASH
SCALE: 1/4"=1'-0"

ABBREVIATIONS

ALUM	ALUMINUM
CONC	CONCRETE
EPOXY-1	HI-BUILD EPOXY COATING, COLOR: WHITE
EPOXY-2	HI-BUILD EPOXY COATING, COLOR: TANNERY
EPOXY-3	NON-SLIP EPOXY COATING, COLOR: LIGHT GRAY
FRP	FIBERGLASS REINFORCED POLYMER
HM	HOLLOW METAL



#106 FRAME TYPE



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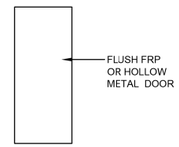

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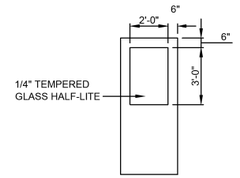

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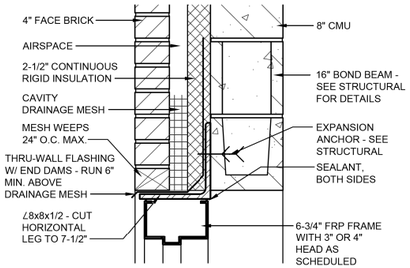
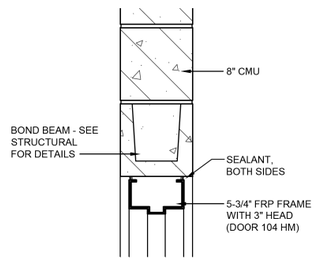
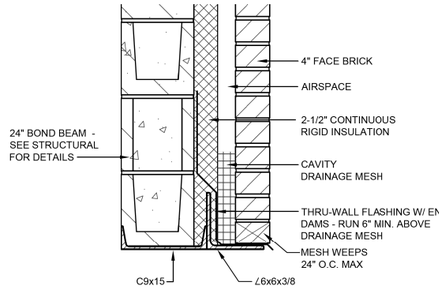


1 A401 HEAD DETAIL
SCALE: 1-1/2"=1'-0"



3 A401 HEAD DETAIL
SCALE: 1-1/2"=1'-0"



5 A401 HEAD DETAIL
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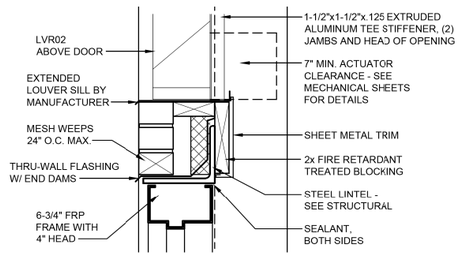
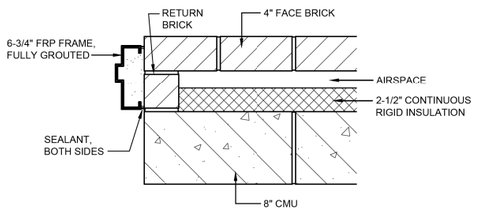


7 A401 HEAD DETAIL
SCALE: 1-1/2"=1'-0"



2 A401 JAMB DETAIL
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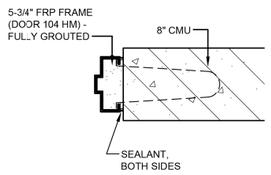

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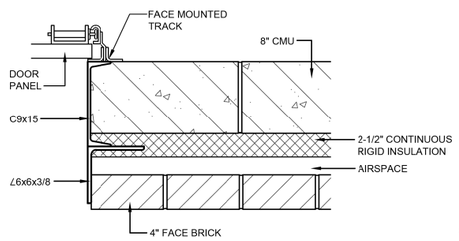

6 A401 JAMB DETAIL
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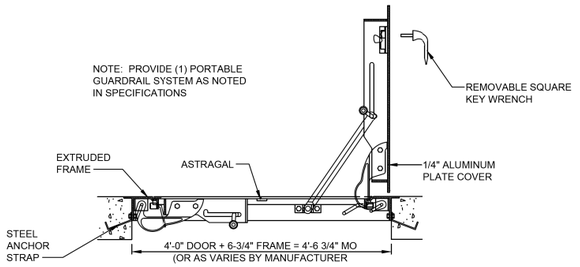

8 A401 FLOOR HATCH DETAIL
SCALE: 3/4"=1'-0"

A401

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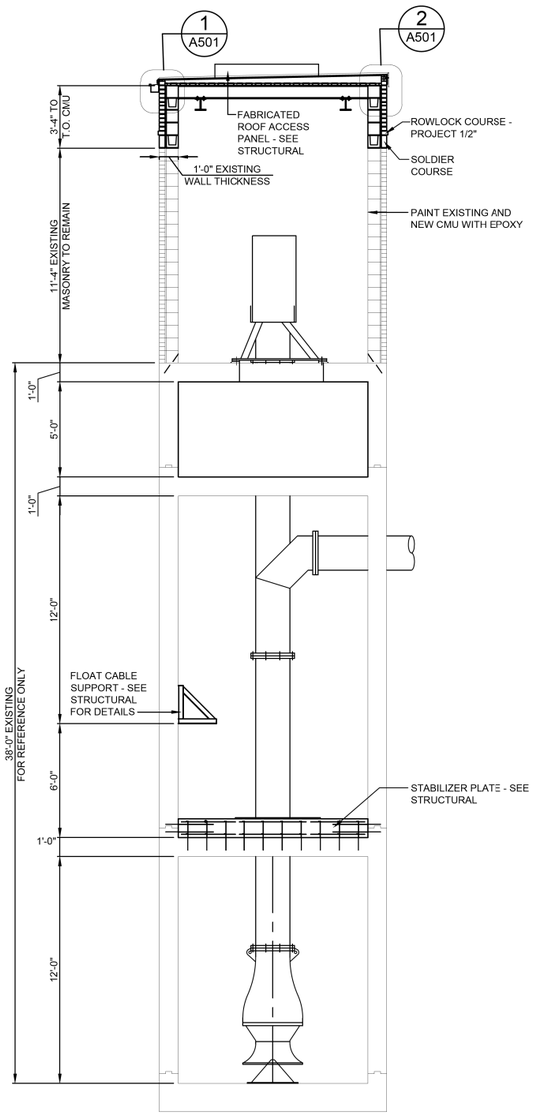
PLOT SCALE = 40.0000 ' / in.	CHECKED - DEN	REVISED -
PLOT DATE = 9/24/2014	DATE - 8/22/2014	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WELL HOUSE BUILDING – SCHEDULES AND DETAILS
MISSOURI AVENUE DEEP WELL FACILITY

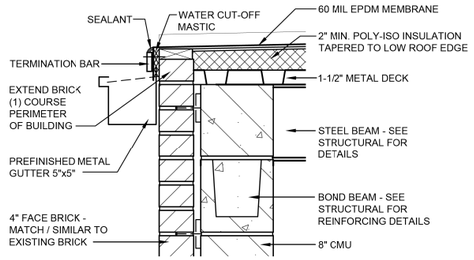
SCALE: AS NOTED | SHEET 6 OF 8 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	72
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			

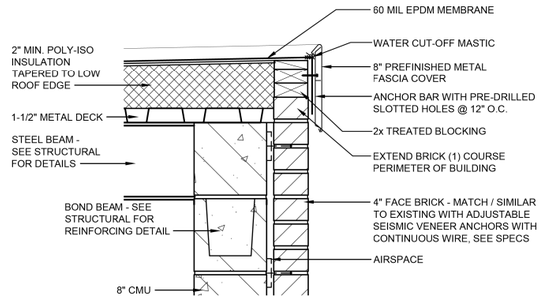


A A501 SECTION
SCALE: 1/4"=1'-0"

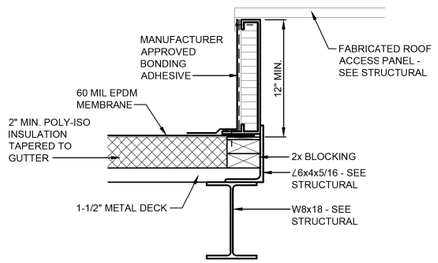
SEE STRUCTURAL SHEETS FOR DEMOLITION NOTES



1 A501 LOW EDGE DETAIL
SCALE: 1-1/2"=1'-0"



2 A501 HIGH EDGE DETAIL
SCALE: 1-1/2"=1'-0"



3 A501 HATCH CURB DETAIL
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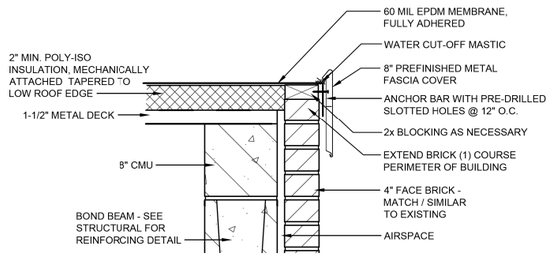

4 A501 EDGE DETAIL
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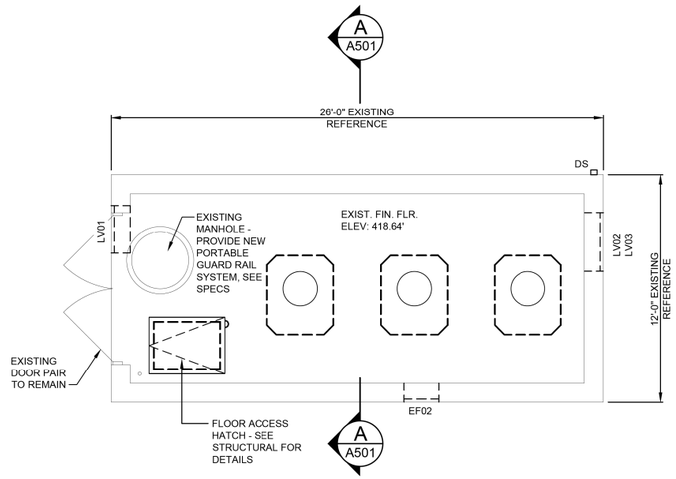
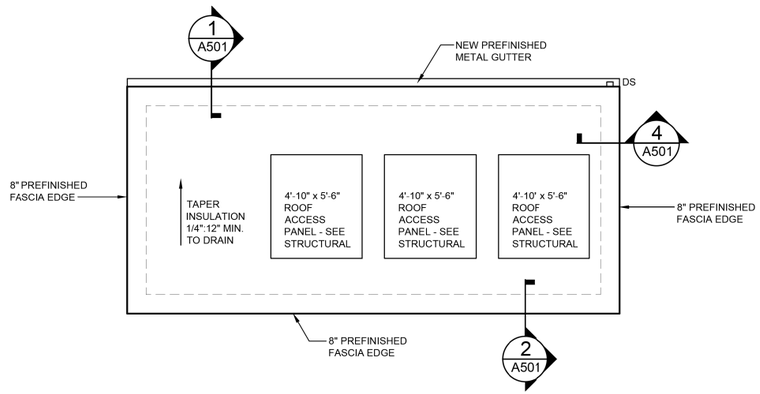


EXISTING PUMP STATION BUILDING FLOOR PLAN

SCALE: 1/4" = 1'-0"

SEE STRUCTURAL SHEETS FOR DEMOLITION NOTES



EXISTING PUMP STATION BUILDING ROOF PLAN

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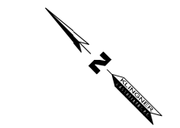

A501

KLINGNER & ASSOCIATES, P.C. Engineers · Architects · Surveyors	USER NAME = seb	DESIGNED - DEN	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXIST PUMP STATION BUILDING – PLAN AND DETAILS MISSOURI AVENUE DEEP WELL FACILITY
		DRAWN - CRC	REVISED -		
	PLOT SCALE = 40.0000 ' / in.	CHECKED - DEN	REVISED -		
	PLOT DATE = 8/23/2014	DATE - 8/22/2014	REVISED -		SCALE: AS NOTED | SHEET 7 OF 8 SHEETS | STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	73
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			

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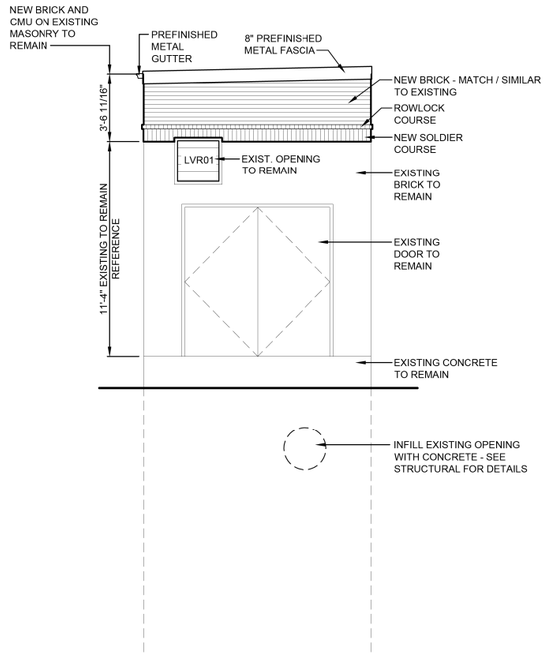
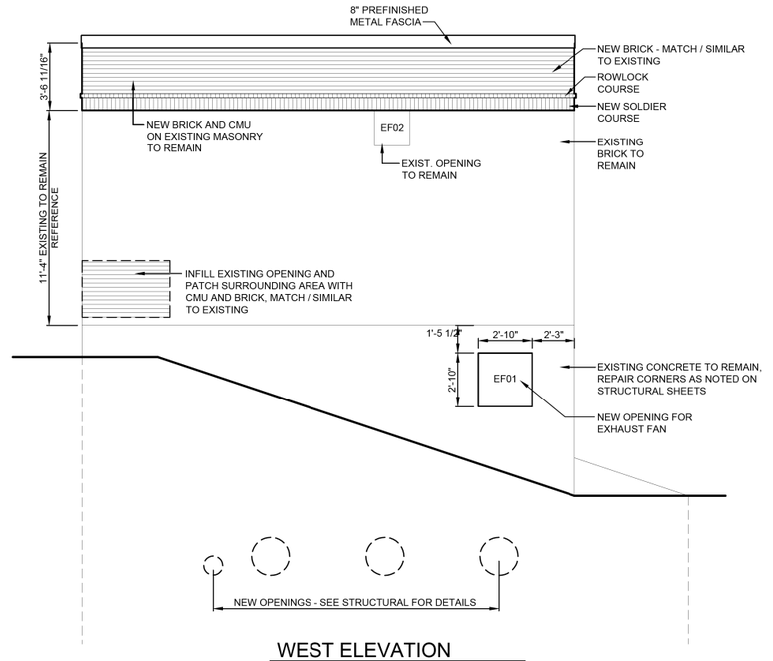


NORTH ELEVATION

SCALE: 1/4" = 1'-0"

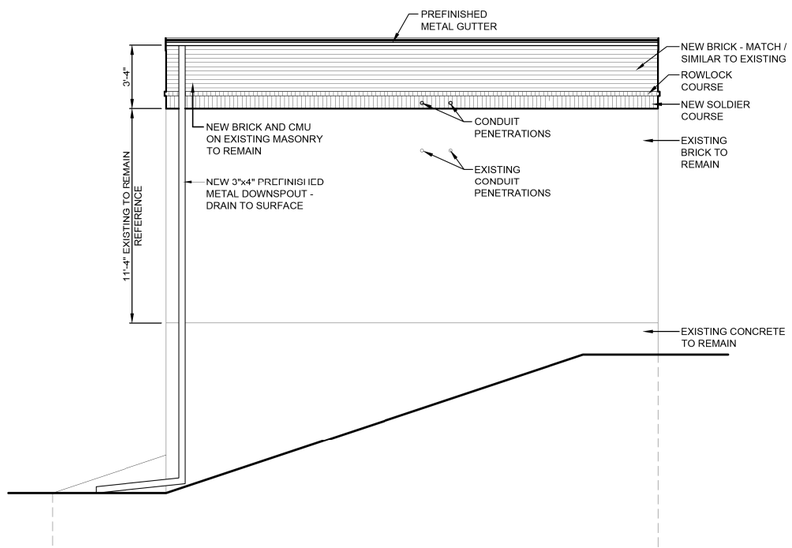
SEE STRUCTURAL SHEETS FOR DEMOLITION NOTES



WEST ELEVATION

SCALE: 1/4" = 1'-0"

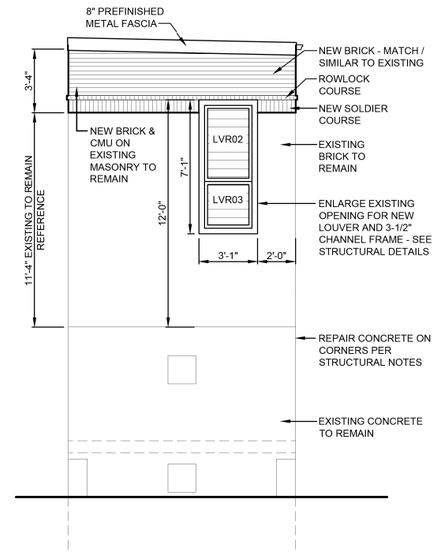
SEE STRUCTURAL SHEETS FOR DEMOLITION NOTES



EAST ELEVATION

SCALE: 1/4" = 1'-0"

SEE STRUCTURAL SHEETS FOR DEMOLITION NOTES



SOUTH ELEVATION

SCALE: 1/4" = 1'-0"

SEE STRUCTURAL SHEETS FOR DEMOLITION NOTES

0 2' 4' 8'

SCALE: 1/4" = 1'-0"

A601

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Engineers · Architects · Surveyors

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PLOT DATE = 8/23/2014	DATE - 8/22/2014	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PUMP STATION BUILDING – ELEVATIONS
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: AS NOTED | SHEET 8 OF 8 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	74
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			

DESIGN CRITERIA

1. BUILDING CODES:
   a. IBC 2012

2. DESIGN LOADS:

EXISTING PUMP STATION BUILDING

a. Roof Dead Load = 20psf
b. *Roof Live Load = 50 psf
   - Per USACE Documentation
c. Floor Dead Load = 150 psf
c. Floor Live Load = 200 psf
e. Bridge Crane Load = 2 ton
f. Pump Loads
   1) Large Pump
      a. Weight of Pump and Motor = 15,000 lbs
      b. Downthrust = 4,000 lbs
   2) Maintenance Pump
      a. Weight of Pump = 800 lbs

WELL HOUSE BUILDING

g. Roof Dead Load = 100psf
h. *Roof Live Load = 50 psf
   - Per USACE Documentation
i. Floor Dead Load = 115 psf
j. Floor Live Load = 200 psf
k. Crawl Space Live Load = 100 psf
l. Bridge Cranes
   1) (2) - 2 ton cranes
   2) 5 ton crane
m. Pump Loads
   1) Weight of Pump and Motor = 15,000 lbs per pump
   2) Downthrust = 10,000 lbs per pump
n. *Roof Snow Load
   i. Ground Snow Load, Pg = 20 psf
   ii. Thermal Factor, Ct = 1.0
   iii. Importance Factor, Is = 1.0
   iv. Flat Roof Snow Load, Ps= 20 psf
   v. Design Snow Load, Ps = 20 psf

* Design is based on most critical effect of Roof Live Load or Roof Snow Load.

o. Wind Loading - Analytical Procedure
   i. Basic Wind Speed (3 Second Gust) = 90 mph
   ii. Exposure Category C
   iii. Importance Factor, Iw = 1.0
   iv. Directional Factor, Kd = 0.85
   v. Internal Pressure Coefficient, GCPi = ±0.55 (Partially Enclosed)

p. Seismic Loading - Equivalent Lateral Force Procedure
   i. Importance Factor, Ie = 1.0
   ii. Site Class D
   iii. Sds = 0.51 (Ss = 60.0%)
   iv. Sd1 = 0.25 (S1 = 18.0%)
   v. Seismic Design Category D

GENERAL

1. The structure is designed to be self-supporting and stable after the building is fully completed. It is solely the contractor's responsibility to determine erection procedure and sequence and insure the safety of the construction personnel, public, building and its components parts, and adjacent buildings and properties. This includes the addition of whatever temporary or permanent shoring, bracing, needling, underpinning, or sheet piling, etc. that may be necessary to brace new construction, adjacent buildings, so that the structure is braced for wind, seismic, gravity, construction loads, etc. and that no horizontal or vertical settlement or any damage occure to the adjacent existing structure. Temporary supports shall be maintained in place until permanents supports and/or shoring and bracing are installed.

2. Plan dimensions and details relative to existing structure have been taken from existing plans and are subjected to nominal construction variations. It shall be the contractor's responsibility to verify such dimensions and details in the field, and make necessary approved adjustments prior to construction or ordering of materials.

3. It is the contractor's responsibility to enforce all applicable safety codes and regulations during all phases of construction.

4. The contractor shall perform all construction for the project in a manner and sequence that are based on accepted industry standards that recognize the interaction of the components that comprise the structure, without causing distress, unanticipated movements or irregular load paths as a result of the construction means and methods employed.

5. Construction loads shall not exceed design live loads. The contractor shall be responsible for all design required to support construction equipment used in constructing this project. Shoring and reshoring is the responsibility of the contractor.

6. Principal openings through the framing are shown on these drawings. The general contractor shall examine the structural and mechanical drawings for the required openings and shall verify size and location of all openings with the mechanical contractor. Providing all openings required by the mechanical, electrical, plumbing, or other trades shall be part of the general contract, whether or not shown in the structural drawings. Any deviation from the openings shown on the structural drawings shall be brought to the engineer's attention for review.

7. All contractors are required to examine the drawings and specifications carefully, visit the site and fully inform themselves as to all existing conditions and limitations, prior to agreeing to perform the work. Failure to visit the site and familiarize themselves with the existing conditions and limitations will in no way relieve the contractor from furnishing any materials or performing any work in accordance with drawings and specifications without additional cost to the owner.

8. Details labeled "Typical Details" on drawings apply to situations occurring on the project that are the same or similar to those specifically details. Such details apply whether or not details are referenced at each location. Notify engineer of clarification regarding applicability of "Typical Details".

9. Work these drawings with architectural, mechanical, and electrical drawings. Any discrepancies shall be brought to the attention of the engineer.

10. Do not scale drawings.

11. Any discrepancies between structural and architectural drawings shall be brought to the attention of the architect and structural engineer.

12. Should any of the general notes conflict with any details or instructions on plans, or in the specifications, the strictest provision shall govern.

13. The existing Pump Station Building shall remain in continuous operation during construction. Only one pump may be removed from service at a time.

14. During construction the contractor shall be responsible for maintenance of the existing Pump Station Building.

15. Coordinate exact location of all major components with the engineer, before installation.

16. All pipe sleeve openings through concrete slabs shall be formed with standard galvanized steel pipe.

17. Structural plans and details are based upon the dimensions and requirements of specific pumps and other equipment. The contractor shall verify all dimensions with the pumps and equipment provided prior to fabrication and construction. If the pumps and equipment are different than what was assumed during design, the contractor shall adjust the plans, if needed, to meet dimensional and other requirements of pumps and equipment provided. Any changes to the plans shall be approved by the Engineer and IDOT prior to fabrication and construction. The cost to update the plans is at the contractor expense and shall be included in pay items being updated.

18. No electrical conduit shall be placed above the welded wire fabric or top reinforcing of slab.

19. The placement of sleeves, outlet boxes, box-outs, anchors, etc., for the mechanical, electrical and plumbing trades is the responsibility of the trade involved; however, any box-outs not covered by typical details in structural drawings shall be submitted for approval.

CAST-IN-PLACE CONCRETE

1. Class SI Concrete shall be used throughout.

2. Concrete material and work shall be in conformance with the requirments of the Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, adopted January 1, 2012.

3. Concrete shall be discharged at the site within 1 ½ hours after water has been added to the cement and aggregates. Addition of water to the mix at the project site will not be permitted. All water must be added at the batch plant. Slump may be adjusted only through the use of additional water reducing admixtures or high range water reducing admixture.

4. Reinforcing bars shall conform to AASHTO A706, Grade 60, No tack welding of reinforcing in the field will be permitted.

5. Welded wire fabric reinforcing shall conform to AASHTO M55, plain, fabricated from as-drawn steel wire into flat sheets.

6. Wire bar supports shall be furnished for all reinforcing within slabs, inclusive of welded wire fabric. Bottom bars in slabs-on-grade may be supported by other suitable supports. Reinforcing shall be properly positioned prior to concrete placement and may not be re-positioned once concrete operations have begun.

7. Reinforcing steel shop drawings shall indicate the sequence in which layers of crossing reinforcing should be placed in order to produce the correct outermost layer as indicated on the drawings.

8. Light-weight concrete mixtures shall meet the requirements of ACI 301.

9. All hooks shown on drawings shall be standard hooks, unless otherwise noted.

10. Where continuous bars are called for, they shall run continuously around corners and be lapped at necessary splices, or hook at discontinuous ends. Lap lengths shall be given in the splice length table.

11. SPLICE LENGTHS

BarSize	Min.Lap
#3	1'-3"
#4	1'-11"
#5	2'-5"
#6	2'-11"
#7	3'-10"
#8	5'-1"
#9	6'-5"
#10	8'-1"
#11	10'-0"

*When lapping two different size bars, use the lap dimension of the larger bar

PRECAST CONCRETE

1. Precast concrete construction shall consist of the design, manufacture, transportation and erection of hollow core roof planks.
2. Design of precast members shall be in accordance with ACI 318 - Latest Edition.
3. Precast members may be conventionally reinforced and/or prestressed, consistent with the design loads, spans, handling stresses, etc. Design loads are shown on drawings.
4. Precast contractor shall furnish complete design calculations, including details of connections, bearings, fittings and anticipated cambers.
5. Precast contractor shall furnish and place any temporary shoring, bracing, etc., required for erection of precast work.
6. Precast contractor shall furnish all plates, inserts, angles, rods, etc., required to connect precast to precast or cast-in-place concrete member or structural steel members. Details placing plans shall be furnished for all items to be embedded in cast-in-place concrete.
7. Precast manufacturer shall cast in structural inserts, bolts, plates, angles, dowels, keyways and detailed in the contract drawings.
8. Erection of precast members shall include the furnishing and placing of mild steel reinforcing, wet cast or dry pack concrete at closures of connections outside of precast element.
9. In order to accommodate varying manufacturing and erection procedures, shop practices, etc, deviations from the details and members sizes shown in the contract will be considered. Such deviations will be permitted only after the engineer's approval.
10. Precast hollow core roof planks shall be designed to support the loads shown on the drawings, plus additional concentrations, such as partitions. Refer to architectural and mechanical drawings for openings required through the plank. Precaster shall lay out his planks, considering such openings, and shall furnish any headers or supports as required. Locations of field cut openings shall be coordinated with plank layout. Precaster shall grout all joints between planks.
11. Precast contractor must make provisions for anchorage requirements of all cladding and shall provide necessary hardware required to cast into columns, girders and slabs. Coordinate these requirements with architectural drawing and cladding details.

ALUMINUM

1. Aluminum grating shall be extruded I-Bar SG Series with striated top and bottom flanges to provide a skid resistance surface. The grating profile shall be 19-SG-4 with 1 3/6" bar spacing and 4" cross bar spacing. The aluminum shall be 6063-T6 or 6061-T6 alloy per ASTM B221. Attached grating to beams with stainless steel saddle clips. Provide two clips per panel per each beam crossed or angle bearing.
2. All aluminum shall have a clear anodized finish to increase corrosion resistance. Aluminum surfaces are not painted.
3. All aluminum in contact with concrete or dissimilar metals shall be coated with two coats of coal tar epoxy, approved by the engineer, unless otherwise noted.
4. Aluminum angles, channels, tees and I-beams shall be 6061-T6 alloy, extruded and comply with ASTM B308, with Minimum yield strength of 32,000 psi.

ABBREVIATIONS

&	AND	HORIZ. (H)	HORIZONTAL
A.B.	ANCHOR BOLT	H.S.B.	HIGH STRENGTH BOLT
ALT.	ALTERNATE	HT.	HEIGHT
ARCH.	ARCHITECT	I.F.	INSIDE FACE
ARCH'L.	ARCHITECTURAL	I.D.	INSIDE DIAMETER
@	AT	JST.	JOIST
B.O.F.	BOTTOM OF FOOTING	KB	KNEE BRACE
BLDG.	BUILDING	L.B.	LAG BOLT
BLK.	BLOCK	LG.	LONG
BM.	BEAM	L.L.	LIVE LOAD
B.N.	BOUNDARY NAIL	LLH	LONG LEG HORIZONTAL
B.O.	BOTTOM OF	LLV	LONG LEG VERTICAL
BTM.	BOTTOM	LONGIT.	LONGITUDINAL
BRG.	BEARING	L.P.	LOW POINT
BRDG.	BRIDGING	L.W.C.	LIGHT WEIGHT CONCRETE
BT.	BENT	MAS.	MASONRY
C.B.	CARRIAGE BOLT	MAX.	MAXIMUM
C.J.	CONSTRUCTION JOINT	MECH.	MECHANICAL
CL. (℄)	CENTERLINE	MIN.	MINIMUM
CLR.	CLEAR	N.I.C.	NOT IN CONTRACT
CMU	CONCRETE MASONRY UNIT	NO. (#)	NUMBER
COL.	COLUMN	N.T.S.	NOT TO SCALE
COLS.	COLUMNS	O.C.	ON CENTER
CONC.	CONCRETE	O.F.	OUTSIDE FACE
CONT.	CONTINUOUS	O.H.	OPPOSITE HAND
COORD.	COORDINATE	OPNG.	OPENING
CSK.	COUNTERSINK	OVHD.	OVERHEAD
CTR.	CENTER	PL (℄)	PLATE
d	PENNEY (NAILS)	PLY.	PLYWOOD
DBL.	DOUBLE	P.S.F.	POUNDS PER SQUARE FOOT
D.F.L.	DOUGLAS FIR LARCH	P.S.I.	POUNDS PER SQUARE INCH
DIA (Ø)	DIAMETER	P.T.	PRESSURE TREATED
DIAPH.	DIAPHRAGM	P.T.S	POST TENSION SLAB
D.L.	DEAD LOAD	REINF.	REINFORCING
do.	DITTO	R.O.	ROUGH OPENING
dp.	DEEP	SCH.	SCHEDULE
DWG.	DRAWING	SHT.	SHEET
DWLS.	DOWELS	SIM.	SIMILAR
EA.	EACH	SIMP.	SIMPSON CONNECTOR
EA. END	EACH END	SPC'G.	SPACING
EA. SIDE	EACH SIDE	STA.	STATION
E.B.	EXPANSION BOLT	STAGG.	STAGGERED
ELEV.	ELEVATION	STD.	STANDARD
E.F.	EACH FACE	STIFF.	STIFFENER
E.N.	EDGE NAIL	STR.	STRUCTURAL
E.W.	EACH WAY	THK.	THICK
EX.	EXISTING	THRU.	THRCUGH
EXIST.	EXISTING	T. & B.	TOP & BOTTOM
F.B.	FLAT BAR	T.N.	TOE NAIL
FDN.	FOUNDATION	T.O.	TOP OF
FIN.	FINISHED	T.O.B.	TOP OF BEAM
FLR.	FLOOR	T.O.F.	TOP OF FOOTING
F.N.	FIELD NAILING	T.O.G.	TOP OF GIRT
F.O.C.	FACE OF CONCRETE	T.O.M.	TOP OF MASONRY
F.O.M.	FACE OF MASONRY	T.O.S.	TOP OF STEEL
F.O.S.	FACE OF STUDS	T.O.W.	TOP OF WALL
FTG.	FOOTING	TRANSV.	TRANSVERSE
F.V.	FIELD VERIFY	T.SL.	TOP OF SLAB
GA.	GAUGE	TYP.	TYPICAL
GALV.	GALVANIZED	U.O.N.	UNLESS OTHERWISE NOTED
G.C.	GENERAL CONTRACTOR	VERT. (V)	VERTICAL
GLB.	GLUE-LAMINATED BEAM	W/	WITH
HDR.	HEADER	WD.	WOOD
HGR.	HANGER	W.W.F.	WELDED WIRE FABRIC

FILE NAME = Q:\1Files\110023\Work Order 3 MO Ave Ph2\CADD Sheets\DB76G99-sht-KLA Str0.dgn

S001

KLINGNER & ASSOCIATES, P.C.
Engineers • Architects • Surveyors

USER NAME = bgj	DESIGNED - RJP	REVISED -
	DRAWN - ADL	REVISED -
PLOT SCALE = 40.0000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 8/23/2014	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL NOTES
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: AS NOTED | SHEET 1 OF 2 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	75
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			

STRUCTURAL STEEL

1. Detailing, fabrication and erection shall conform to the AISC Specifications and Standard Code of Practice for the year referenced in the building code noted and the project Specifications.

2. Steel shall conform to the following grades unless otherwise noted:
   a. W Shapes - ASTM A992 Grade 50 (Fy=50 ksi)
   b. Plates, Channels, Angles and Bars - ASTM A36 (Fy=36 ksi)
   c. Pipes - ASTM A53 (Fy=35 ksi)
   e. Bolts - ASTM 325-n
   f. Washers - ASTM F436
   g. Nuts - ASTM A563
   h. Anchor Rods (Bolts) - ASTM F1554 Grade 36 (Fy=36 ksi)
   i. Welding Electrodes - E70xx
   j. Clevis - ASTM A668
   k. Turnbuckle - ASTM F1145
   l. Grout for Base Plates - Prepacked , non-metallic, no-gaseous, and non-shrink per CRD C621 and ASTM C1107 at fluid consistency (Flow Cone) of 20-30 seconds. 28 day compressive strength = 7000 psi.

3. All column base plates shall have a minimum of four (4) anchor rods.

4. Steel fabrication and erection shall follow OSHA requirements.

5. All welding shall be in accordance with the "Structural Welding Code", AWS D1.1, Latest Edition.

6. General contractor shall verify all structural beam locations, mechanical units weights and opening sizes and locations with mechanical contractor and vendor's drawings for actual mechanical unit purchased.

7. Cuts, holes, coping, etc. required for work of other trades shall be shown on the shop drawings and made in the shop. Cuts or burning of holes in the structural steel members in the field will not be permitted, unless specifically approved in each case by the engineer.

8. Splicing of structural members where not detailed on the drawings is prohibited without prior approval of the structural engineer.

9. Hot dip galvanize per ASTM A123 after fabricating the following steel members:
   a. All Structural Steel Shapes
   b. All Handrails, Posts and Plates
   c. All Ladders and Brackets
   d. All Lintels, Door Heads and Door Jambs
   e. All Bollards inside building
   f. Diamond Tread Plate
   g. Fall Protection Tie-offs
   h. Brackets

10. Mechanical Galvanizing per ASTM B695 after fabricating the following steel members:
    a. Bolts
    b. Nuts
    c. Washers
    d. Anchor Rods
    e. Threaded Rods

11. Repair galvanized surfaces according to ASTM A 780.

12. Stainless Steel Shall meet:
    a. ASTM A276 for structural shapes
    b. ASTM F593 and F594 for Bolts, Nuts, Anchors and Rods

13. Stainless Steel shall be Type 304L Stainless Steel, unless noted otherwise.

14. Hot Rolled Steel Diamond Tread Plate shall meet ASTM A786 Specifications.
    a. Minimum yield strength = 36 ksi
    b. Hot Dip Galvanized

METAL DECKING

1. Fabricated roof decks, without top-flange stiffening grooves, shall comply with "Steel Deck Institute (SDI) Specifications and Commentary for Steel Roof Decks", in SDI Publication No. 30.

2. Fabricated Noncomposite Steel Floor Deck shall comply with "Steel Deck Institute (SDI) .

3. Specifications and Commentary for Noncomposite Steel Form Deck", in SDI Publication No. 30.

4. Deck shall be galvanized steel sheets that comply with ASTM A653, Structural Steel, Grade 33, G60 Galvanized Coating.

5. Lap deck 4" minimum at splices center on support.

6. Deck manufacturer shall coordinate size and location of roof openings with architectural and mechanical drawings and suppliers.

7. No light gage framing, mechanical, electrical or other equipment shall be suspended from or attached to any metal roof deck.

8. See drawings for deck attachment patterns.

MASONRY

1. All masonry shall conform to "Building Code Requirements for Masonry Structures" (ACI 530/ASCE 5/TMS 402) and "Specifications for Masonry Structures" (ACI 530.1/ASCE 6/TMS 602) for the year referenced in the building code noted.

2. All brick and concrete masonry and construction shall comply with the recommendations of Brick Industry of Association (BIA) and the National Concrete Masonry Association (NCMA) and minimum requirement established by noted building codes.

3. Grout to fill cores shall be ASTM C476, coarse grout (3/8" maximum aggregate) with a minimum compressive strength of 3000 psi in 28 days.

4. Concrete masonry units shall be units conforming to ASTM C90, Grade N, Type I, Light Weight (density of unit = 105 pcf), min. block compressive strength = 2400 psi, specified design strength of masonry, fm'=1500.

5. ASTM C270 Type "S" mortar with a minimum compressive strength of 1800 psi shall be used for all masonry.

6. Reinforcing bars shall conform to AASHTO A706, Grade 60.

7. All cores with reinforcement shall be filled solid with grout. Place reinforcing bars before grouting. Place grout in lifts not exceeding 5 feet. Consolidate each lift by mechanical vibration. The next lift of the pour may be after initial water loss and reconsolidation of the prior lift, while it is still plastic.

8. Add an additional vertical reinforcement in center of fully grout cells at each side of openings in CMU wall and on each side of control joint, as shown on drawings.

9. Properly secure reinforcing bars to maintain the position indicated on the drawings. Bars are to be located in center of cells unless otherwise noted.

10. Mortar protrusions extending into cells or cavities to be reinforced and filled, shall be removed.

11. Lay masonry units with full mortar coverage on horizontal and vertical face shell. Bed webs in mortar in starting course of footing and in all courses of columns and pilasters, and where adjacent to cells or cavities to be reinforced of filled with grout.

12. All masonry walls shall have vertical control joints, as shown on drawings. Coordinate with locations indicated on architectural drawings. Control joints shall extend through entire wall thickness, except at continuous bond beams at the roof line the masonry shall be scored only.

13. All CMU shall be temporarily braced during construction per the governing building code for lateral loads until permanent restraints have been installed. Temporary bracing is the sole responsibility of the contractor. The contractor is responsible for all cost associated with repairs resulting from improper or insufficient bracing.

14. All lintels on the shall be hot dipped galvanized.

15. Anchor brick to concrete block with seismic masonry-veneer anchors per Section 042000 of Specifications.

16. Preformed Control-Joint Gaskets shall be made from styrene-butadiene-rubber compound, complying with ASTM D 2000, Designation M2AA-805 and designed to fit standard sash block and to maintain materal stability in masonry wall.

SPECIAL INSPECTIONS AND TESTING

1. The owner shall employ an independent special inspector and test agency to perform the required special inspections and tests per Specifications.

2. Special inspection and testing reports shall be furnished to owner, structural engineer, and contractor.

3. The special inspector shall submit a final report stating that the structural work was, to the best of the special inspector's knowledge, performed in accordance with the construction documents.

4. Special inspections shall conform to Chapter 17 of the International Building Code, IBC, 2012. Special inspections include:
   a. Steel Construction - Section 1705.2 of IBC 2012
   b. Concrete Construction - Section 1705.3 of IBC 2012
   c. Masonry Construction - Section 1705.4 of IBC 2012
   d. Soils - Section 1705.6 of IBC 2012

SAFTEY GATE:

1. Safety gates shall meet OSHA Requirments
2. The gates shall be able to be installed with no cutting, welding or drilling. The gates shall fit the handrail.
3. The gates shall have stainless steel springs that automatically close the gate after each passage.
4. The gates shall have a positive stop mechanism that provides a positive stop without handrail or handrail post contact.
5. The gates shall be A36 Carbon Steel Galvanized.

SUGGESTED SEQUENCE OF CONSTRUCTION - EXISTING PUMP STATION BUILDING:

1. Completely remove existing Flexicore Roof, 8-inch monorail, and existing CMU wall, as shown on demo drawings.
2. Sawcut 42"x30" Opening in slab at elevation 418.64, as shown on demo sheets.
3. Disconnect and remove existing Pump No. 1 (SW-P01).
4. Frame and pour 12" full height wall between Pump No. 1 (SW-P01) and Pump No. 2 (SW-P02) at elevation 412.64 (Stage 1 Construction Line). Use rapid hardening concrete.
5. Patch manhole and existing Pump 1 openings at elevation 418.64 with new concrete (do not patch areas where new openings will be added).
6. Patch existing Pump 1 openings at elevation 412.64 and 393.64 with new concrete (do not patch areas where new openings will be added).
7. Frame and pour (3) 12"x10" Reinforced Concrete Beams around Pump No. 1 (SW-P01) opening below elevation 418.64.
8. Frame and pour 28"x12" Reinforced Concrete Beam between Pump No. 1 (SW-P01) and Pump No. 2 (SW-P02) at elevation 393.64 (Stage 1 Construction Line).
9. Frame and pour Reinforced Concrete Beams around Pump No. 1 (SW-P01) opening at elevation 393.64.
10. Core openings, for New Pump No. 1, into slabs at elevation 418.64, 412.64, and 393.64 and into existing concrete wall. See demo sheets for opening sizes.
11. Seal 2'-0" square opening in new 12" full height concrete wall with steel plate.
12. Install new pump 1 (SW-P01) and all attachments and bring pump into service.
13. Repeat Steps 3 and 4 for Pump No. 2 (SW-P02).
14. Remove and salvage steel plate from new concrete wall and move plate to new wall.
15. Repeat Steps 5-12 for Pump No.2 (SW-P02).
16. Remove steel plate from new concrete wall.
17. Frame and pour 12" full height wall between Pump No. 3 (SW-P03) and Pump No. 4 (SW-P04) at elevation 412.64.
18. Disconnect and remove existing Pump No. 3 (SW-P03).
19. Patch existing Pump 3 openings at elevation 418.64, 412.64 and 393.64 with new concrete (do not patch areas where new openings will be added).
20. Frame and pour (2) 12"x10" Reinforced Concrete Beams around Pump No. 1 (SW-P01) opening below elevation 418.64.
21. Remove existing slab at elevation 393.64 and existing 12" thick concrete wall at elevation 412.64, as shown on demo plans.
22. Frame and pour Reinforced Concrete Slab (Stage 3 Construction Line) at elevation 393.64.
23. Frame and pour Reinforced Concrete beams around Pump No.3 (SW-P03) opening at elevation 393.64.
24. Core openings, for New Pump No. 3, into slabs at elevation 418.64, 412.64, and 393.64. See demo sheets for opening sizes.
25. Core openings, for New Pump No. 4, into slabs at elevation 412.64, and 393.64. See demo sheets for opening sizes.
26. Install new pumps 3 (SW-P03) and 4 (SW-P04), stilling well, and all attachments and bring pumps into service.
27. Complete remaining Stage 3 demo.
28. Complete all CMU work, handrail and grating installation, steel construction and new roof construction, as shown on plans

SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNIT	EXISITNG PUMP STATION BUILDING QUANTITY	WELL HOUSE BUILDING QUANTITY	TOTAL QUANTITY
50102400	CONCRETE REMOVAL	CU YD	6.9	-	6.9
50200100	STRUCTURE EXCAVATION	CU YD	-	1825	1825
50300225	CONCRETE STRUCTURES	CU YD	11.3	378.3	1825
50800105	REINFORCEMENT BARS	POUND	2360	63600	65960
50800515	BAR SPLICERS	EACH	-	57	57
51202100	FURNISHING STEEL PILES HP14X117	FOOT	-	960	960
51202305	DRIVING PILES	FOOT	-	960	960
51204100	TEST PILE STEEL HP14X117	EACH	-	1	1
X2090210	POROUS GRANULAR BACKFILL, SPECIAL	CU YD	-	3000	3000
Z0012754	STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES)	SQ FT	7	-	7

*** Weight of Grade 50 Steel = 14360 lbs, Grade 36 Steel = 14330 lbs and Grade A53 Steel = 1530 lbs**

KLINGNER & ASSOCIATES, P.C.
Engineers • Architects • Surveyors

USER NAME = seb	DESIGNED - RJP	REVISED - AMS - 9/25/14
	DRAWN - ADL	REVISED -
PLOT SCALE = 40.0000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 9/25/2014	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL NOTES
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: AS NOTED | SHEET 2 OF 2 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	76
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			

Project No.: 11-0023.003
Project: Missouri Avenue St. Clair County, IL
Client: IDOT
Boring No.: 1

Boring Log

Rig: CME 75
Location: East St. Louis, IL
Driller: MAS

Depth (ft.)	Symbol	Description	Qp, t.s.f.	Dry Density, P.C.F.	Depth/Elev.	Sample Number	Sample Type	Blows/ft.	Qu, T.S.F.	Standard Penetration Test blows/ft.	Water Content %
		Ground Surface			418.2						
0		Sandy Lean Clay, Silty, Yellow Brown Mottled Dark Brown and Brown, (CL)									
5		Medium, (CL)	1.00			1	SS	3		3	21.3
10		Very Soft, (CL)				2	SS	1		1	33.9
15		Clayey Sand, Light Brown, Very Loose, (SC)			403.2 15.0	3	SS	1		1	35.5
20		Fine to Medium Sand, Yellow Brown, Medium Dense, (SP)			398.2 20.0	4	SS	14		14	
25		Medium Dense, (SP)				5	SS	18		18	
30		Medium Dense, (SP)			385.7	6	SS	19		19	

Drill Method: 3 1/4" HSA/Rotary
Boring Started: 7/23/2014
Boring Completed: 7/23/2014
Tested By: MAS
Logging By: PEB

GEOTECHNICS
Soil & Material Testing

Groundwater Elev. During Drilling: ▽ 378.2
Groundwater Elev. @ Comp.: ▼ 378.2
Groundwater Elev. @ Hrs.: ▽
Boring Location: 90' SW, 27' NW

Sheet 1 of 4

Project No.: 11-0023.003
Project: Missouri Avenue St. Clair County, IL
Client: IDOT
Boring No.: 1

Boring Log

Rig: CME 75
Location: East St. Louis, IL
Driller: MAS

Depth (ft.)	Symbol	Description	Qp, t.s.f.	Dry Density, P.C.F.	Depth/Elev.	Sample Number	Sample Type	Blows/ft.	Qu, T.S.F.	Standard Penetration Test blows/ft.	Water Content %
					385.7						
35		Medium Dense, (SP)				7	SS	22		22	
40		Medium Dense, (SP) Switched to Rotary Drilling @ 40 ft.				8	SS	18		18	
45		Dense, (SP)				9	SS	45		45	
50		Sand, Fine to Medium, Trace Gravel, Yellow Brown, Dense, SP			368.2 50.0	10	SS	30		30	
55		Dense, SP				11	SS	33		33	
60		Medium Dense, SP				12	SS	16		16	
65					353.2						

Drill Method: 3 1/4" HSA/Rotary
Boring Started: 7/23/2014
Boring Completed: 7/23/2014
Tested By: MAS
Logging By: PEB

GEOTECHNICS
Soil & Material Testing

Groundwater Elev. During Drilling: ▽ 378.2
Groundwater Elev. @ Comp.: ▼ 378.2
Groundwater Elev. @ Hrs.: ▽
Boring Location: 90' SW, 27' NW

Sheet 2 of 4

BORING NO. 1

FILE NAME = D:\Files\110023\Work Order 3 MO Ave Ph2\CADD Sheets\Grade Beam Plan.dgn

KLINGNER & ASSOCIATES, P.C.
Engineers · Architects · Surveyors

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PLOT SCALE = 25.0007 ' / in.	CHECKED - RJP	REVISED -	
PLOT DATE = 8/23/2014	DATE - ADL	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WELL HOUSE BLDG – BORINGS
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: | SHEET 1 OF 2 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	77
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			

Project No.: 11-0023.003
Project: Missouri Avenue St. Clair County, IL
Client: IDOT
Boring No.: 1

Boring Log

Rig: CME 75
Location: East St. Louis, IL
Driller: MAS

Depth (ft.)	Symbol	Description	Qp, t.s.f.	Dry Density, P.C.F.	Depth/Elev.	Sample Number	Sample Type	Sample Blows/ft.	Qu, T.S.F.	Standard Penetration Test blows/ft.	Water Content %
					353.2						Wp — WI
65										10 20 30 40	10 20 30 40
70		Gray, Dense, SP				13	SS	30		30▲	
75											
80		Very Dense, SP				14	SS	117		▲117→	
85											
					330.2						
					88.0						
90		Sand, Medium to Fine, Little Gravel, (SP)				15	SS	30		30▲	
95		Dense, SP									
					320.7						

Drill Method: 3 1/4" HSA/Rotary
Boring Started: 7/23/2014
Boring Completed: 7/23/2014
Tested By: MAS
Logging By: PEB

GEOTECHNICS
Soil & Material Testing

Groundwater Elev. During Drilling: ▽ 378.2
Groundwater Elev. @ Comp.: ▼ 378.2
Groundwater Elev. @ Hrs.: ▽
Boring Location: 90' SW, 27' NW

Sheet 3 of 4

Project No.: 11-0023.003
Project: Missouri Avenue St. Clair County, IL
Client: IDOT
Boring No.: 1

Boring Log

Rig: CME 75
Location: East St. Louis, IL
Driller: MAS

Depth (ft.)	Symbol	Description	Qp, t.s.f.	Dry Density, P.C.F.	Depth/Elev.	Sample Number	Sample Type	Sample Blows/ft.	Qu, T.S.F.	Standard Penetration Test blows/ft.	Water Content %
					320.7						Wp — WI
100		Medium Dense, SP				16	SS	17		17▲	
105											
					310.2						
					108.0						
110		Gravel w/Sand, Gray, (GP)				17	SS	91		▲91→	
		Very Dense, GP									
115		Very Rough, Dense below 113 ft.									
120		w/Granite Cobbles, Very Dense, GP				18	SS	134		▲134→	
					296.2						
					122.0						
125		Rig Refusal @ 122 ft. End of Boring @ 122 ft. Boring Location: 140'± West of Intersection of Missouri Avenue and 2nd Street									
130											

Drill Method: 3 1/4" HSA/Rotary
Boring Started: 7/23/2014
Boring Completed: 7/23/2014
Tested By: MAS
Logging By: PEB

GEOTECHNICS
Soil & Material Testing

Groundwater Elev. During Drilling: ▽ 378.2
Groundwater Elev. @ Comp.: ▼ 378.2
Groundwater Elev. @ Hrs.: ▽
Boring Location: 90' SW, 27' NW

Sheet 4 of 4

BORING NO. 1

S004

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PLOT DATE = 8/23/2014	DATE - ADL	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WELL HOUSE BLDG – BORINGS
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: | SHEET 1 OF 2 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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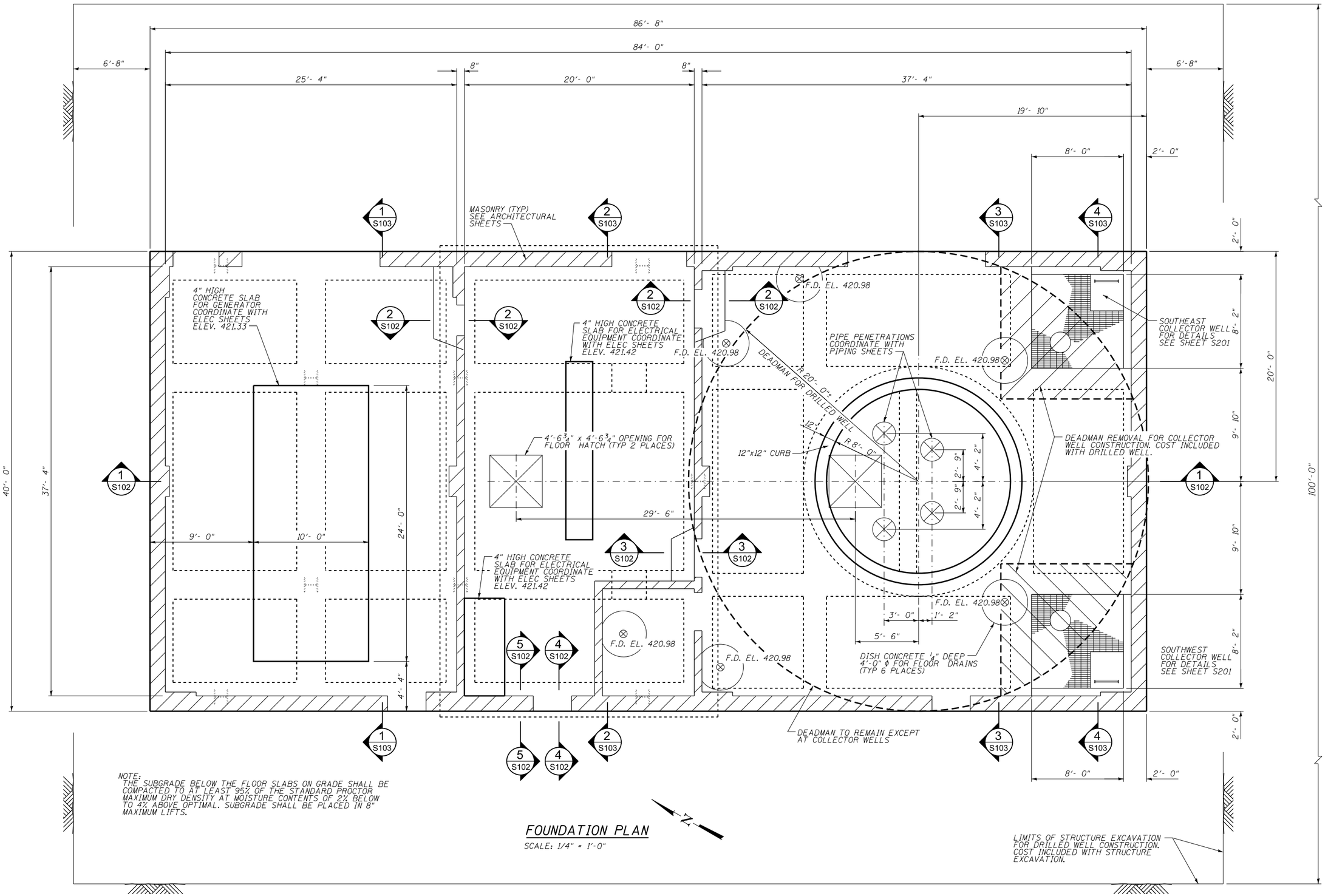
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			



FOUNDATION PLAN

SCALE: 1/4" = 1'-0"

S101

FILE NAME = Q:\Files\18023\Work Order 3 MO Ave Ph2\CADD Sheets\Grade Beam Plan.dgn

KLINGNER & ASSOCIATES, P.C. Engineers · Architects · Surveyors	USER NAME = seb	DESIGNED - RJP	REVISED -
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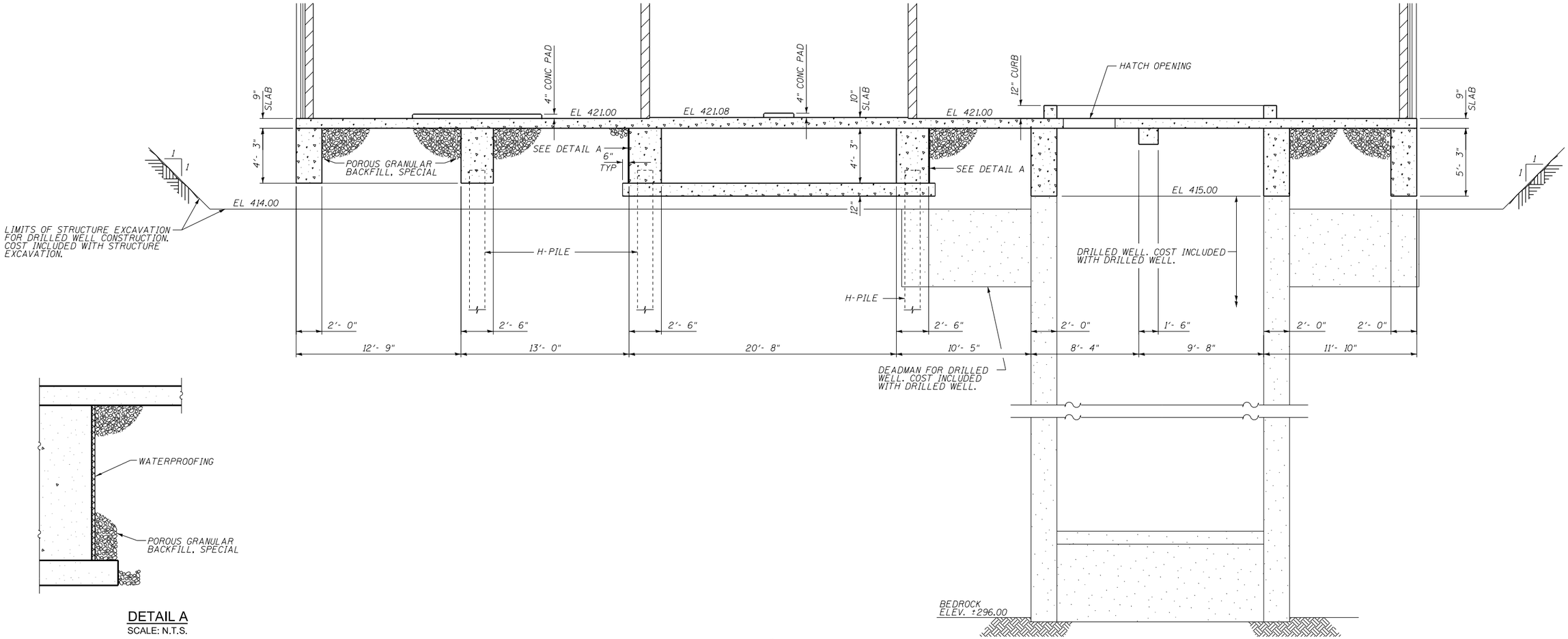
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WELL HOUSE BUILDING – FOUNDATION PLAN
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: | SHEET OF SHEETS | STA. | TO STA.

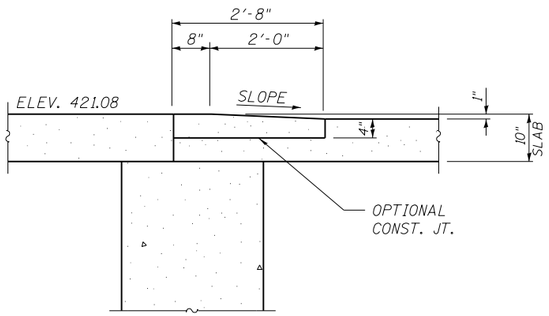
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	79
		CONTRACT NO. 76G99		
	ILLINOIS	FED. AID PROJECT		



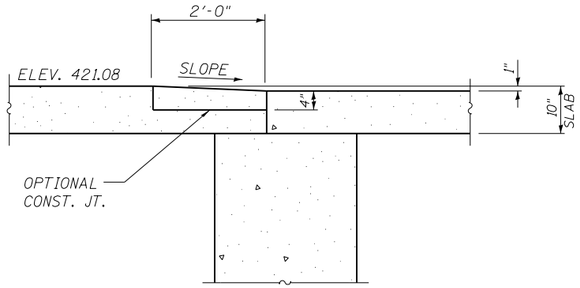
DETAIL A
SCALE: N.T.S.

NOTE:
WATERPROOF AS PER SECTION 503 OF THE STANDARD SPECIFICATIONS. COST INCLUDED WITH CONCRETE STRUCTURES.

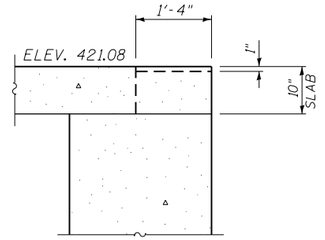
1 SECTION S102
SCALE: 1/4"=1'-0"



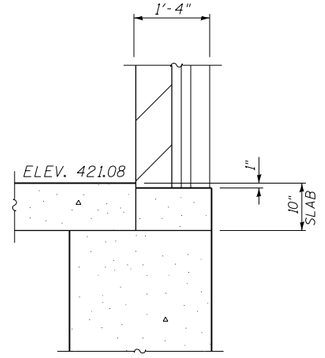
2 SECTION S102
SCALE: 3 / 4"=1'-0"



3 SECTION S102
SCALE: 3 / 4"=1'-0"



4 SECTION S102
SCALE: 3 / 4"=1'-0"



5 SECTION S102
SCALE: 3 / 4"=1'-0"

S102

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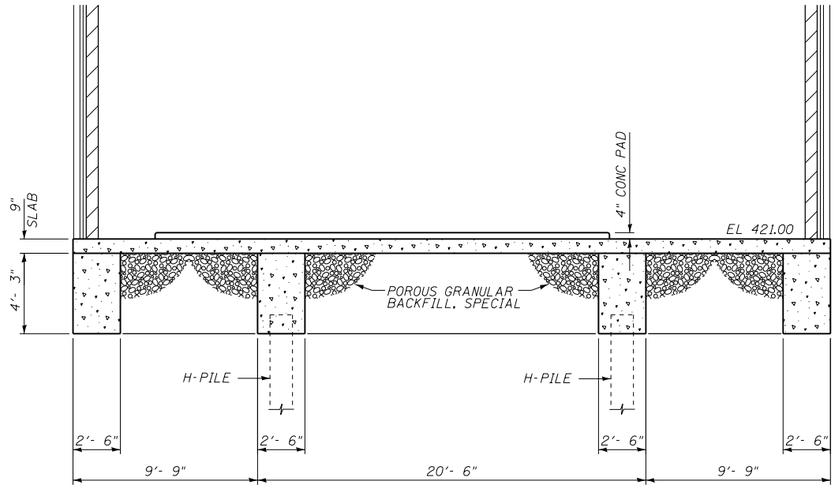
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

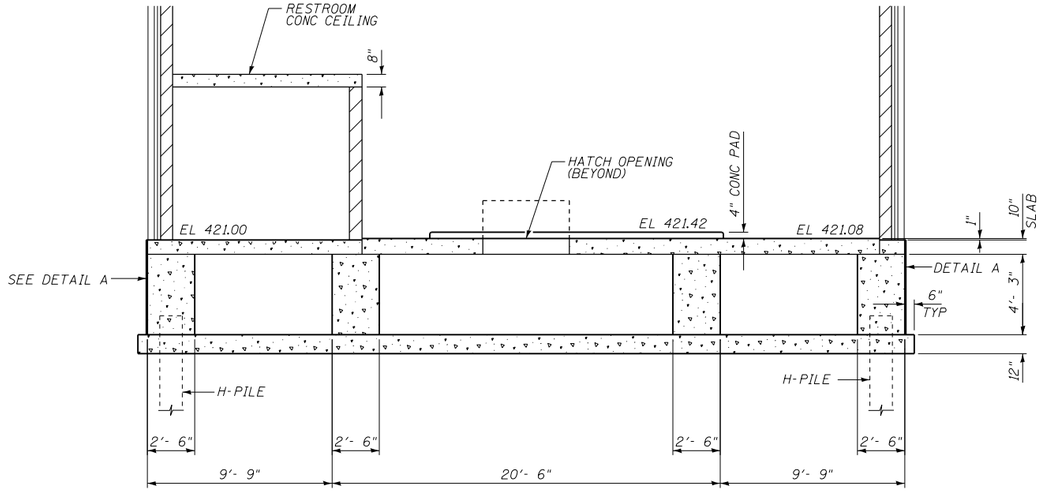
WELL HOUSE BLDG – FOUNDATION DETAILS
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: | SHEET OF SHEETS | STA. | TO STA.

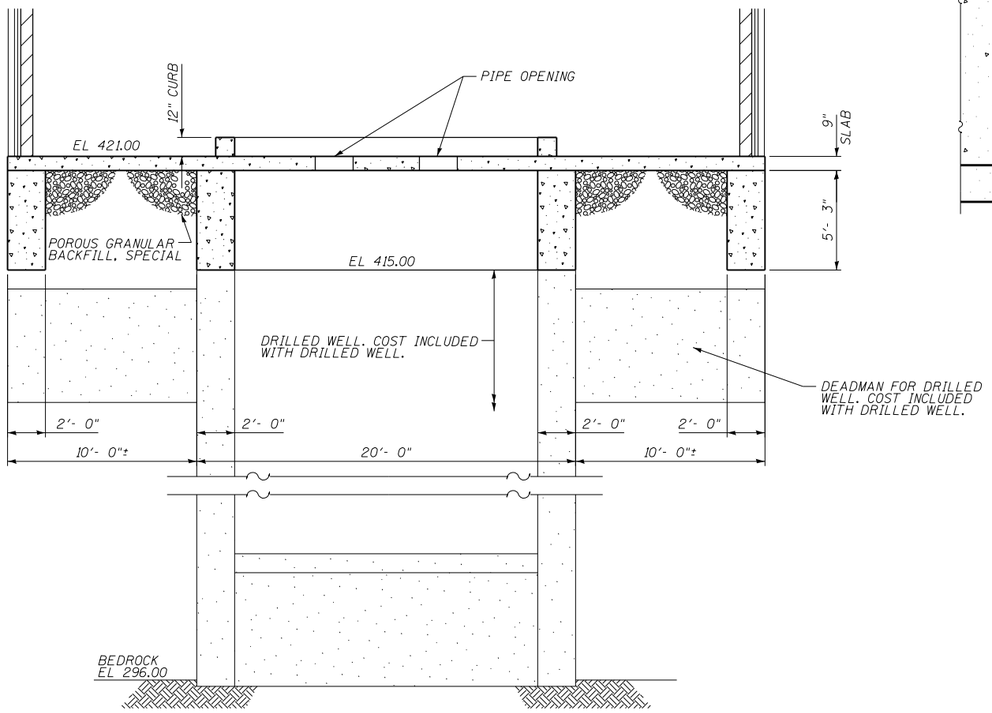
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	80
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			



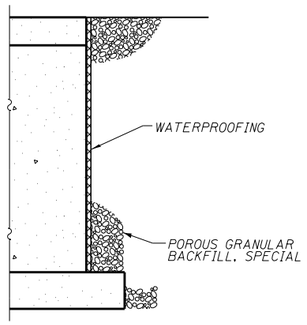
1 SECTION
S103 SCALE: 1/4"=1'-0"



2 SECTION
S103 SCALE: 1/4"=1'-0"

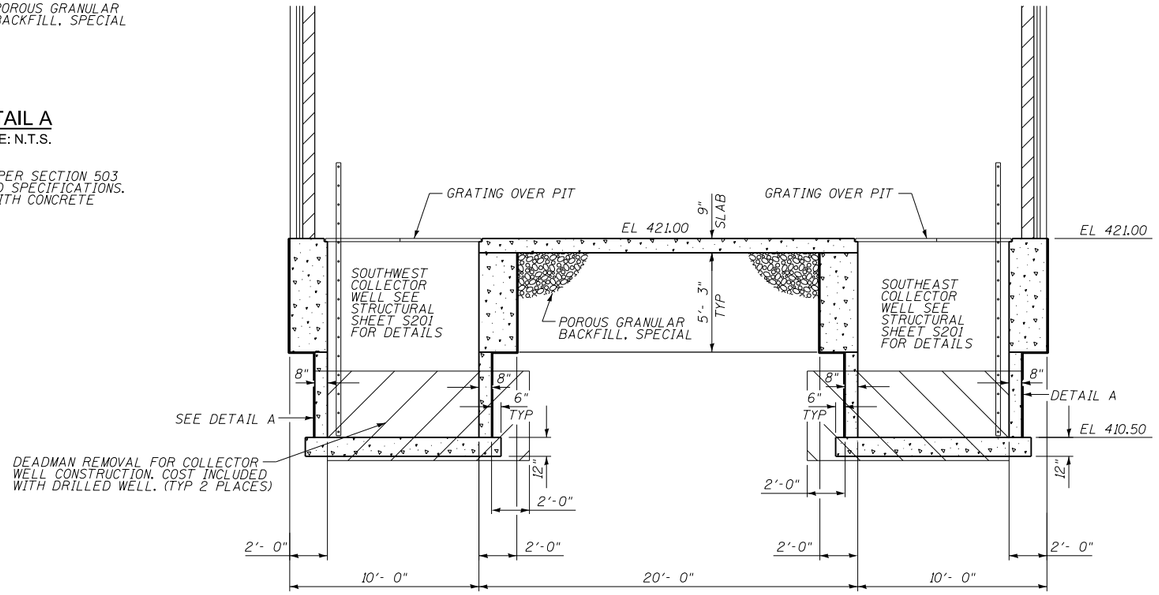


3 SECTION
S103 SCALE: 1/4"=1'-0"



DETAIL A
SCALE: N.T.S.

NOTE:
WATERPROOF AS PER SECTION 503 OF THE STANDARD SPECIFICATIONS. COST INCLUDED WITH CONCRETE STRUCTURES.



4 SECTION
S103 SCALE: 1/4"=1'-0"

S103

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KLINGNER & ASSOCIATES, P.C.
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WELL HOUSE BLDG – FOUNDATION DETAILS
MISSOURI AVENUE DEEP WELL FACILITY

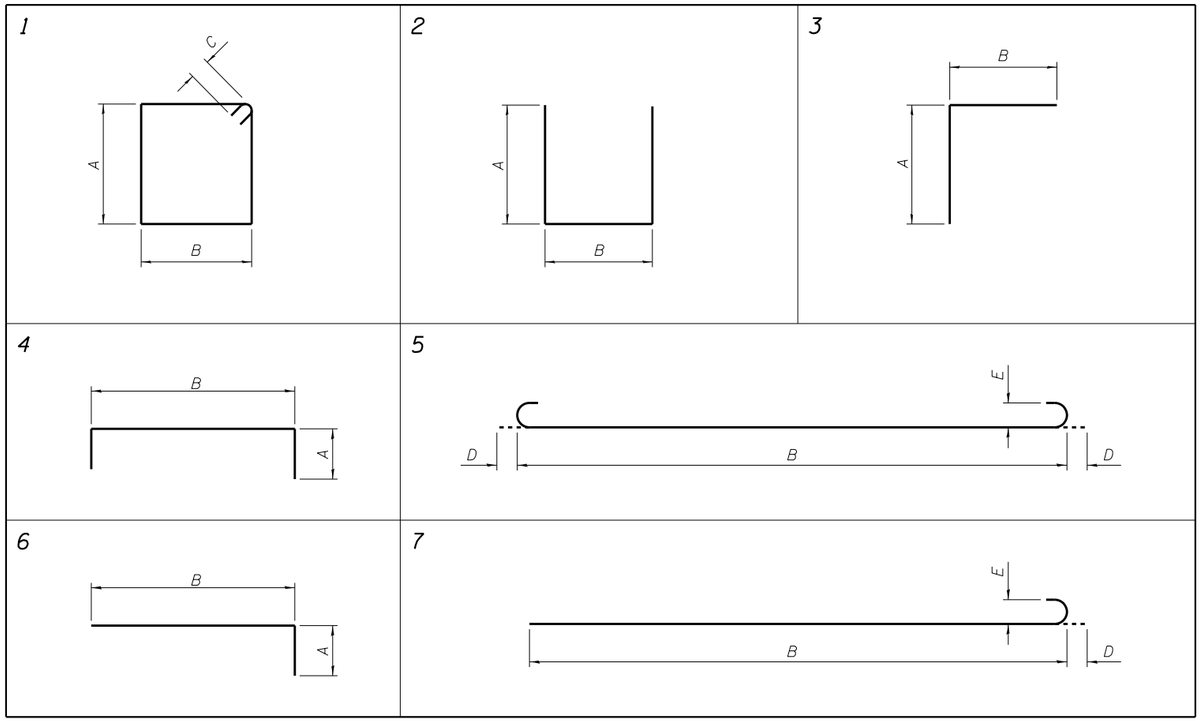
SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	81
		CONTRACT NO. 76G99		
	ILLINOIS	FED. AID PROJECT		

REINFORCEMENT BAR SCHEDULE

BAR MARK	NO.	SIZE	LENGTH	BEND TYPE	WT. LBS.	A	B	C	D	E
A1	176	#5	39'-8"		7,282					
A2	108	#5	27'-0"		3,041					
A3	114	#5	30'-3"		3,597					
A4	11	#4	23'-8"		174					
A5	25	#4	9'-8"		161					
A6	32	#5	8'-0"		267					
A7	64	#4	4'-0"		171					
A8	54	#5	40'-8"		2,290					
A9	82	#5	23'-10"		2,039					
A10	44	#5	10'-0"		459					
A11	44	#5	9'-10"		451					
A12	18	#4	9'-8"		116					
A13	22	#4	8'-4"		122					
A14	40	#4	2'-6"		67					
A15	3	#4	15'-2"		30					
A16	4	#4	8'-2"		22					
A17	9	#4	3'-2"		19					
A18	16	#4	2'-0"		21					
A19	16	#4	3'-0"		32					
A20	32	#4	2'-6"		53					
H1	80	#4	8'-11"		477					
H2	52	#5	39'-8"		2,151					
H3	72	#5	30'-3"		2,272					
H4	16	#5	27'-4"		456					
H5	64	#5	6'-0"		401					
L1	164	#6	6'-0"	3	1,478	3'-0"	3'-0"			
L2	80	#4	4'-0"	3	214	2'-0"	2'-0"			
L3	20	#4	2'-10"	3	38	10"	2'-0"			
L4	86	#4	2'-8"	3	153	8"	2'-0"			
P1	30	#8	41'-6"	5	3,324		39'-8"		11"	8"
P2	32	#8	33'-9"	7	2,884		32'-10"		11"	8"
P3	16	#8	37'-10"	5	1,616		36'-0"		11"	8"
P4	20	#9	42'-10"	4	2,913	1'-7"	39'-8"			
P5	16	#8	42'-4"	4	1,808	1'-4"	39'-8"			
P6	7	#10	43'-4"	4	1,305	1'-10"	39'-8"			
P7	3	#9	20'-6"	5	209		18'-0"		1'-3"	$11\frac{3}{4}$"
P8	20	#10	35'-10"	6	3,084	1'-10"	34'-0"			
P9	24	#9	33'-10"	6	2,761	1'-7"	32'-3"			
P10	12	#9	35'-7"		1,452					
P11	16	#8	29'-10"	6	1,274	1'-4"	28'-6"			
P12	16	#8	30'-9"		1,314					
S1	23	#5	13'-7"	1	326	4'-8"	1'-8"	$5\frac{1}{2}$"		
S2	93	#5	14'-7"	1	1,416	4'-8"	2'-2"	$5\frac{1}{2}$"		
S3	153	#5	16'-7"	1	2,646	5'-8"	2'-2"	$5\frac{1}{2}$"		
S4	201	#5	15'-7"	1	3,267	5'-8"	1'-8"	$5\frac{1}{2}$"		
S5	17	#4	6'-5"	1	73	1'-8"	1'-2"	$4\frac{1}{2}$"		
U1	76	#4	5'-10"	2	296	2'-9"	4"			
V1	152	#4	5'-10"	7	592		5'-4"		6"	4"
V2	155	#7	6'-10"		2,165					
V3	57	#8	5'-5"	7	824		4'-6"		11"	8"
Reinforcement Bars				Pound	63,600					

REINFORCEMENT BEND TYPES



NOTES:
ALL DIMENSIONS ARE OUT-TO-OUT OF BAR EXCEPT "C" AND "E" ON STANDARD 180° AND 135° HOOKS.
CHAIRS, BOLSTERS AND STANDEES ARE NOT INCLUDED IN BAR SCHEDULE AND SHALL BE INCLUDED IN THE COST OF REINFORCEMENT BARS.

S104

KLINGNER & ASSOCIATES, P.C.
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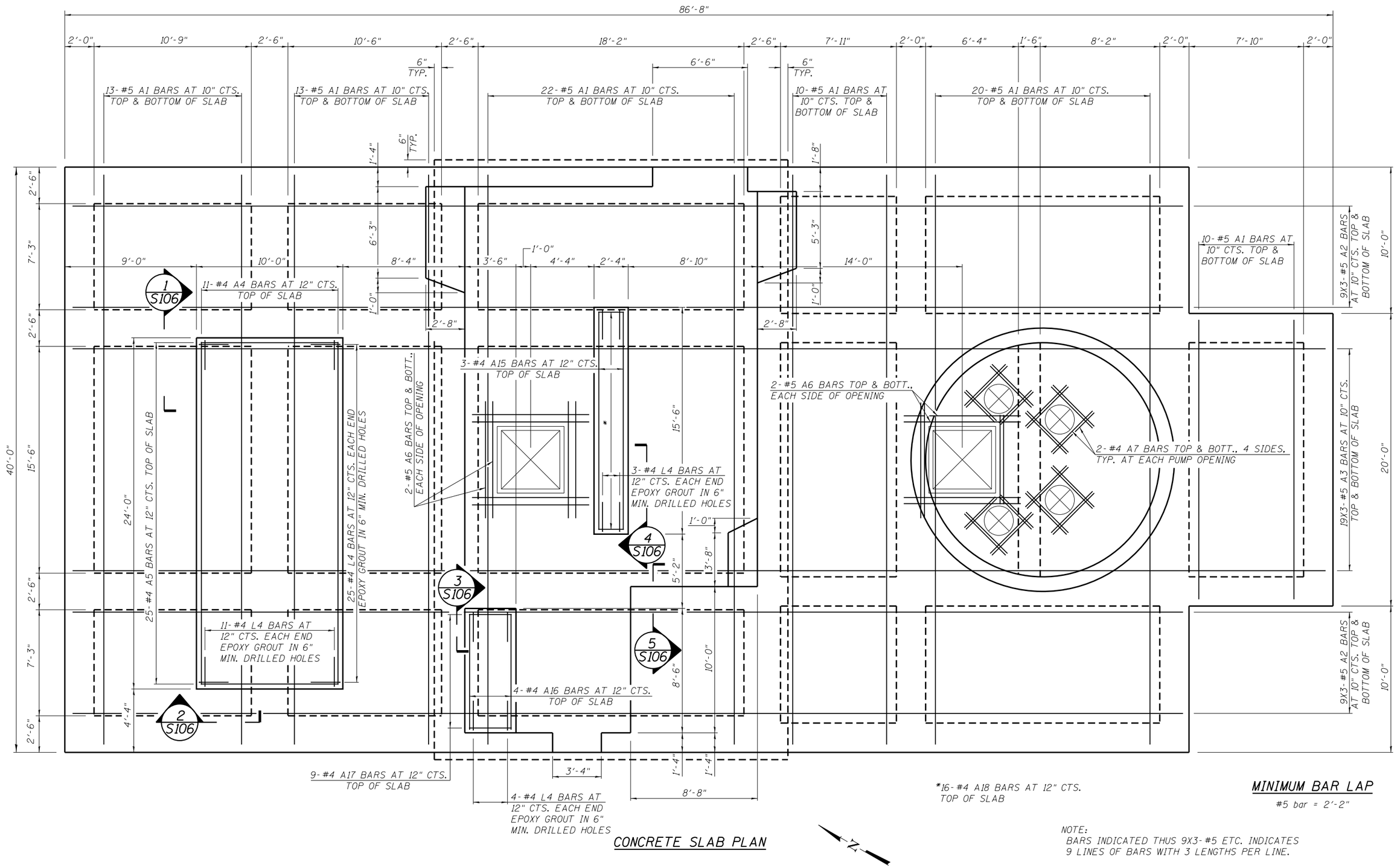
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WELL HOUSE BLDG – REINFORCEMENT BAR DETAILS
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	82
		CONTRACT NO. 76099		
	ILLINOIS	FED. AID PROJECT		



CONCRETE SLAB PLAN

NOTE:
BARS INDICATED THUS 9X3-#5 ETC. INDICATES 9 LINES OF BARS WITH 3 LENGTHS PER LINE.

S105

FILE NAME = Q:\1files\110023\Work Order 3 MO Ave Ph2\CADD Sheets\Grade Beam Plan.dgn

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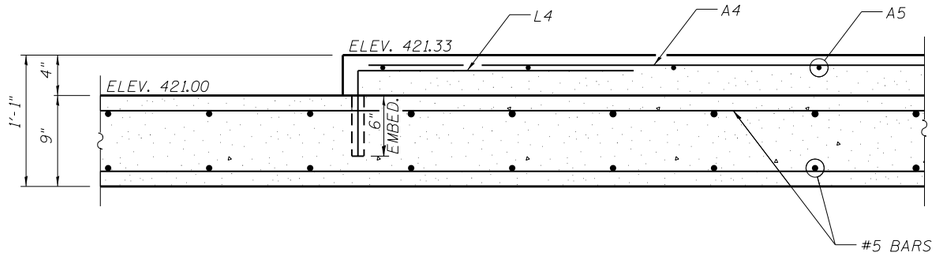
PLOT DATE = 8/23/2014	DATE - ADL	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

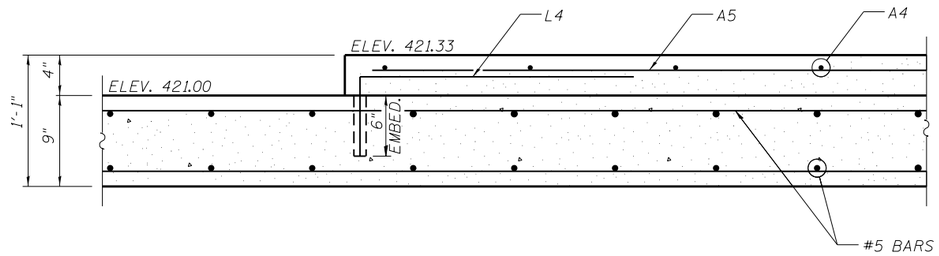
WELL HOUSE BLDG – CONCRETE SLAB PLAN
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: | SHEET OF SHEETS | STA. | TO STA.

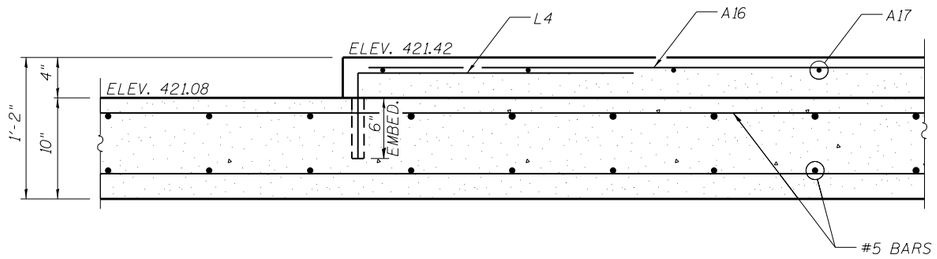
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	83
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			



SECTION 1 S106



SECTION 2 S106



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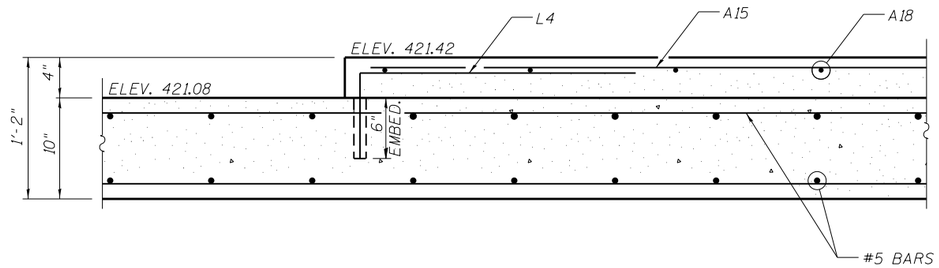
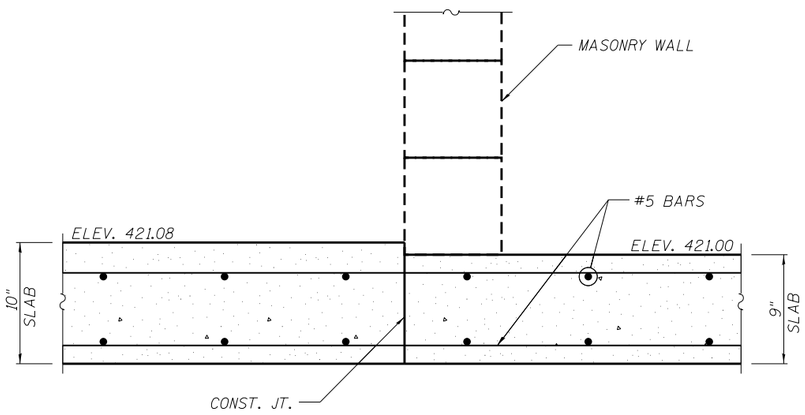


SECTION 4 S106



SECTION 5 S106

S106

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PLOT DATE = 8/23/2014	DATE - ADL	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

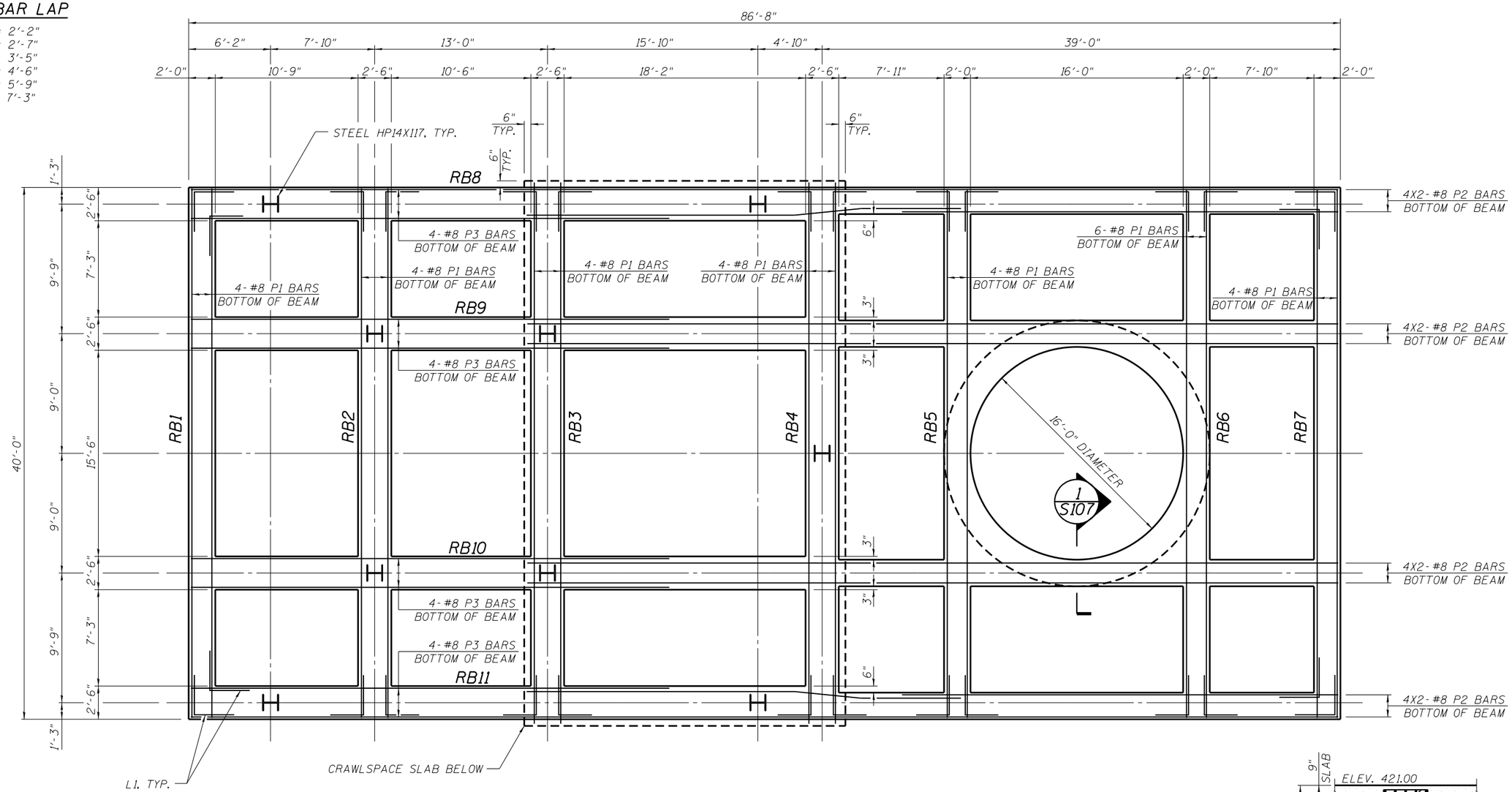
WELL HOUSE BLDG – HOUSEKEEPING PAD DETAILS
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	84
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			

MINIMUM BAR LAP

#5 bar = 2'-2"
#6 bar = 2'-7"
#7 bar = 3'-5"
#8 bar = 4'-6"
#9 bar = 5'-9"
#10 bar = 7'-3"

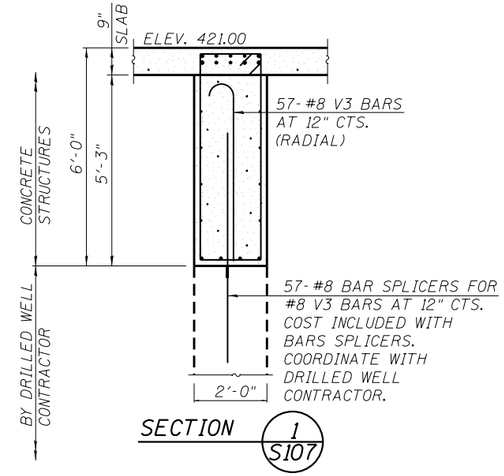


PILE DATA

TYPE: STEEL HP 14 X 117
NOMINAL REQUIRED BEARING: 929 KIPS/PILE
FACTORED RESISTANCE AVAILABLE: 510 KIPS/PILE
EST. LENGTH: 120 FEET/PILE
NO. PRODUCTION PILES: 8
NO. TEST PILES: 1

GRADE BEAM BOTTOM PLAN

NOTE:
BARS INDICATED THUS 4X2-#8 ETC. INDICATES 4 LINES OF BARS WITH 2 LENGTHS PER LINE.



S107

FILE NAME = Q:\1files\110023\Work Order 3 MO Ave Ph2\CADD Sheets\Grade Beam Plan.dgn

KLINGNER & ASSOCIATES, P.C.
Engineers · Architects · Surveyors

USER NAME = seb	DESIGNED - RJP	REVISED -	
	DRAWN - ADL	REVISED -	
PLOT SCALE = 25.0007 ' / in.	CHECKED - RJP	REVISED -	
PLOT DATE = 8/23/2014	DATE - ADL	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

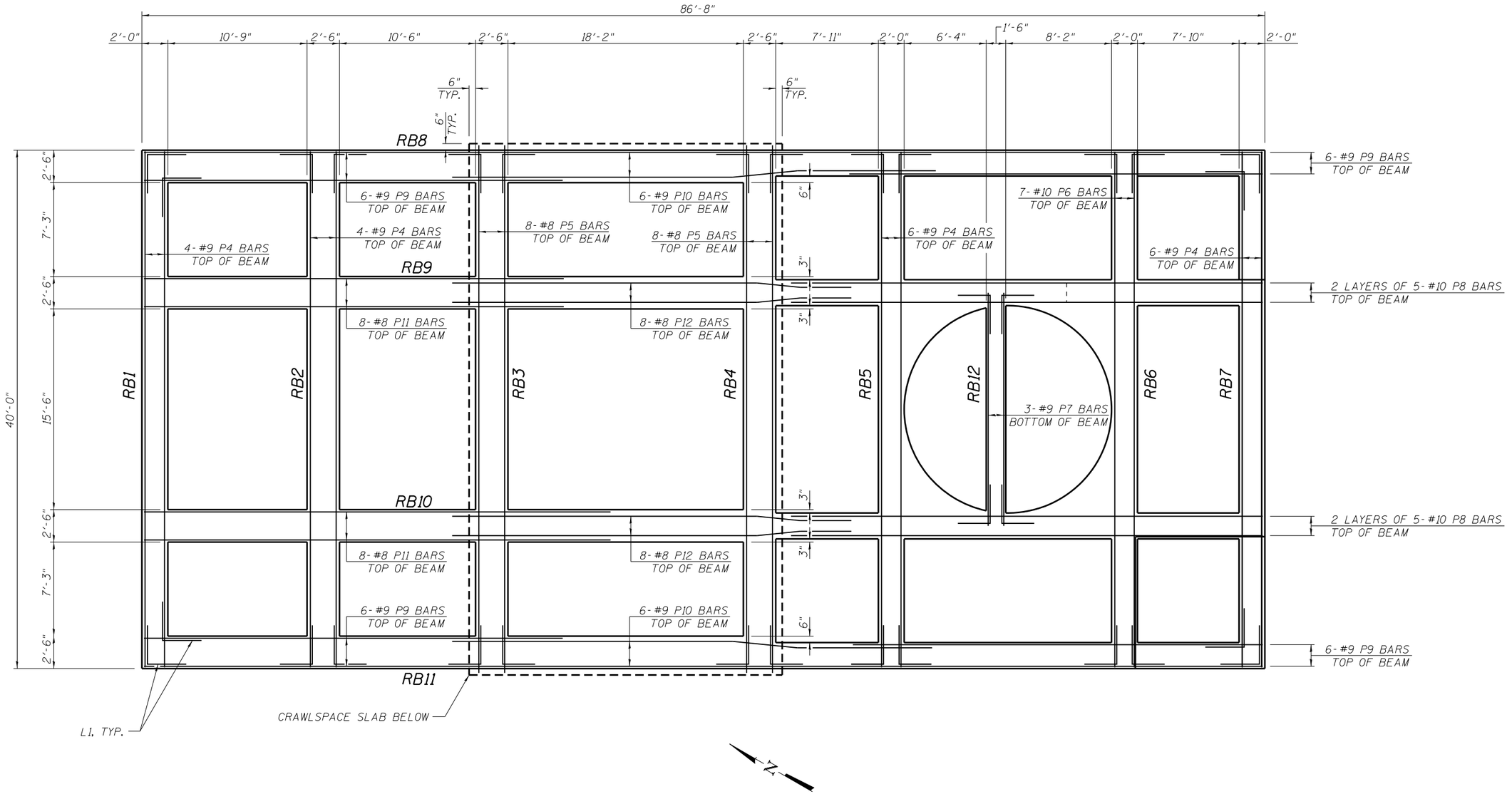
WELL HOUSE BLDG – GRADE BEAM BOTTOM PLAN
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	85
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			

MINIMUM BAR LAP

#5 bar = 2'-2"
#6 bar = 2'-7"
#7 bar = 3'-5"
#8 bar = 4'-6"
#9 bar = 5'-9"
#10 bar = 7'-3"



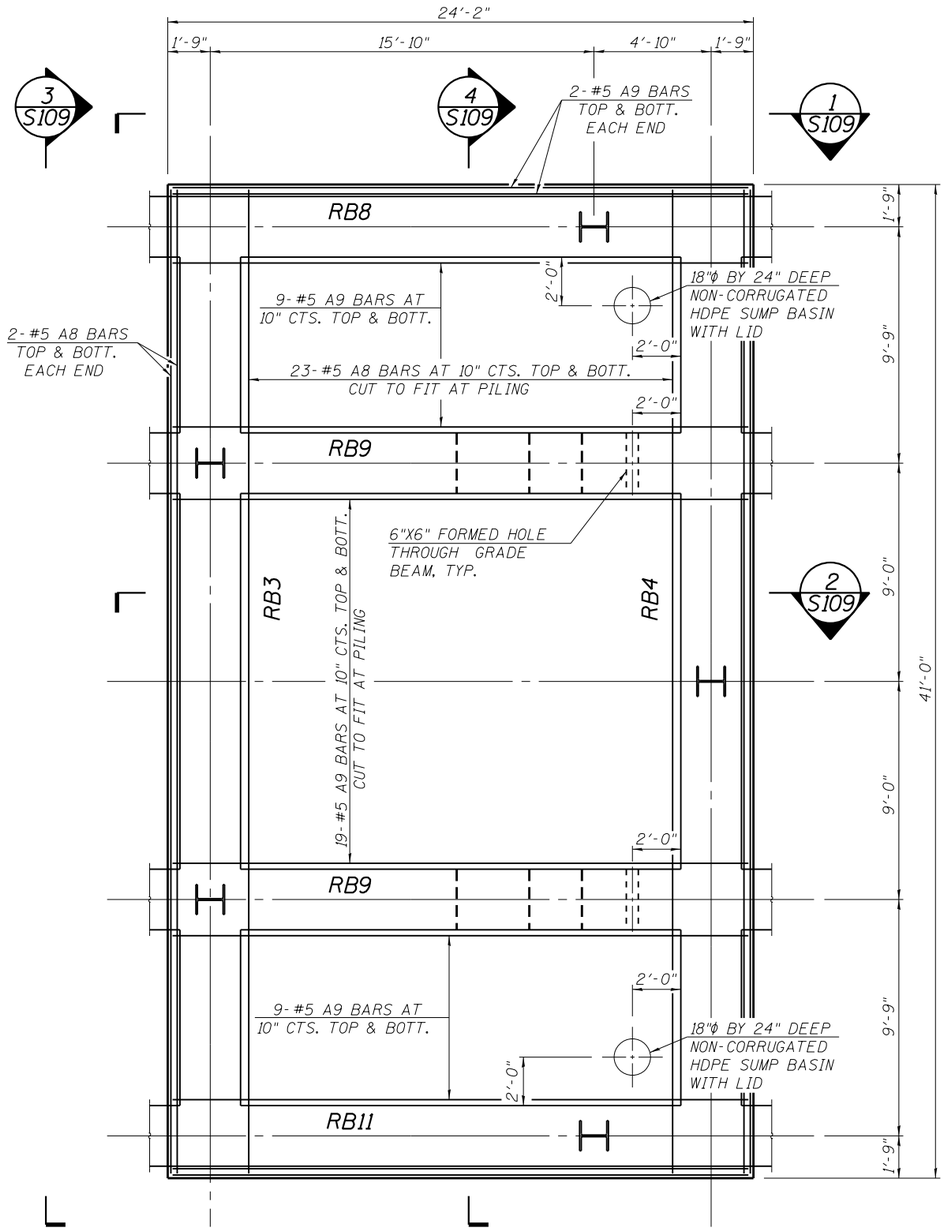
GRADE BEAM TOP PLAN

S108

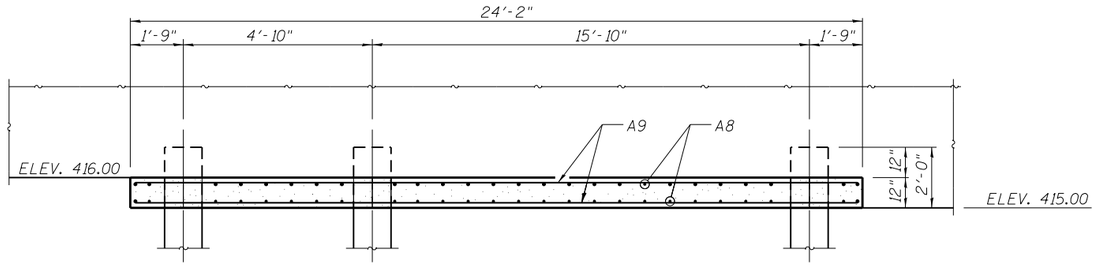
KLINGNER & ASSOCIATES, P.C. Engineers · Architects · Surveyors	USER NAME = seb	DESIGNED - RJP	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	WELL HOUSE BLDG – GRADE BEAM TOP PLAN MISSOURI AVENUE DEEP WELL FACILITY				F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN - ADL	REVISED -						64	82-4T-1	ST. CLAIR	185	86
	PLOT SCALE = 25.0007 ' / in.	CHECKED - RJP	REVISED -								CONTRACT NO. 76G99		
	PLOT DATE = 8/23/2014	DATE - ADL	REVISED -		SCALE:	SHEET OF SHEETS	STA.	TO STA.			ILLINOIS FED. AID PROJECT		

FILE NAME = D:\1files\110023\Work Order 3 MO Ave Ph2\CADD Sheets\Grade Beam Plan.dgn

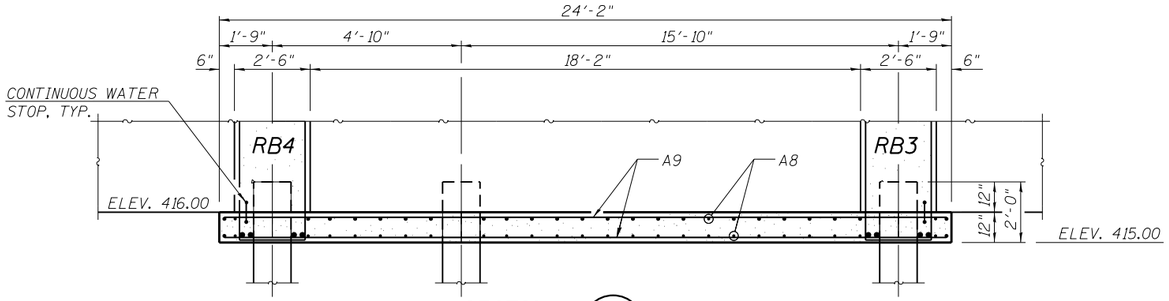
NOTES:
1. FOR REINFORCEMENT IN BEAMS, SEE BEAM DETAIL SHEETS.
2. COST OF SUMP PITS AND CONTINUOUS WATER STOPS INCLUDED WITH CONCRETE STRUCTURES.
3. COORDINATE OPENINGS IN RB3, RB4, RB8 & RB11 WITH ELECTRICAL & MECHANICAL CONTRACTOR. COST OF OPENINGS INCLUDED WITH CONCRETE STRUCTURES.



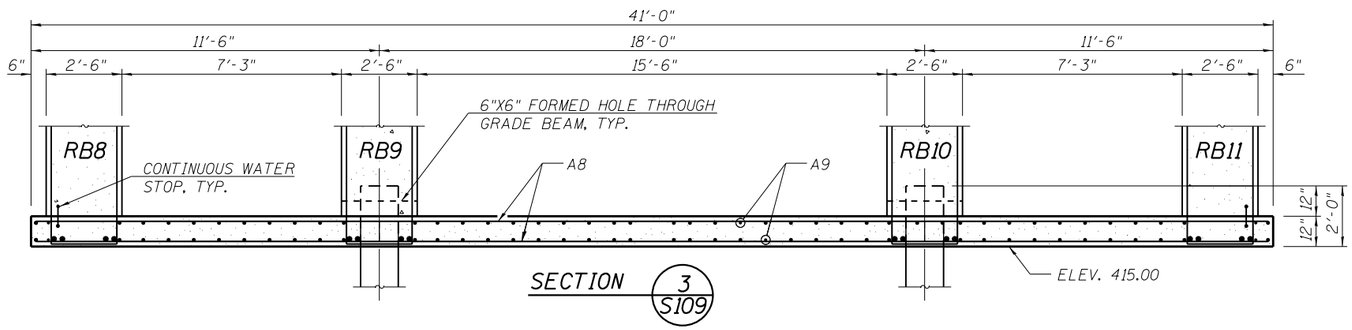
CRAWLSPACE PLAN



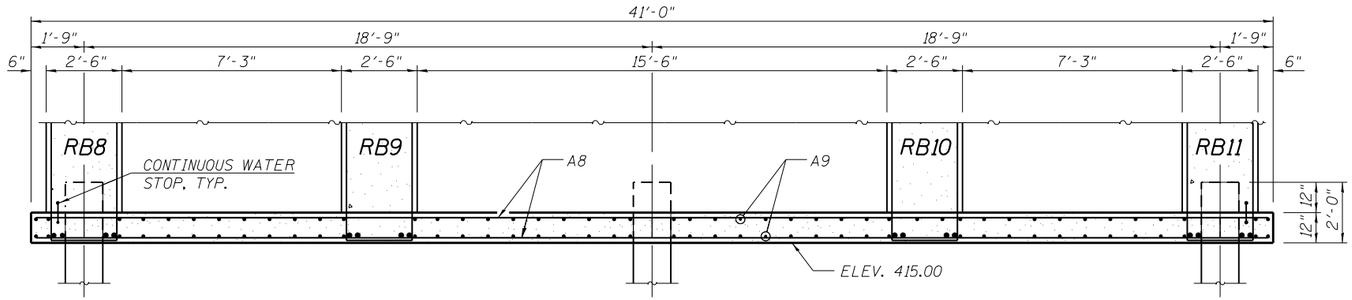
SECTION 1 S109



SECTION 2 S109



SECTION 3 S109



SECTION 4 S109

S109

FILE NAME = Q:\1files\110023\Work Order 3 MO Ave Ph2\CADD Sheets\Grade Beam Plan.dgn

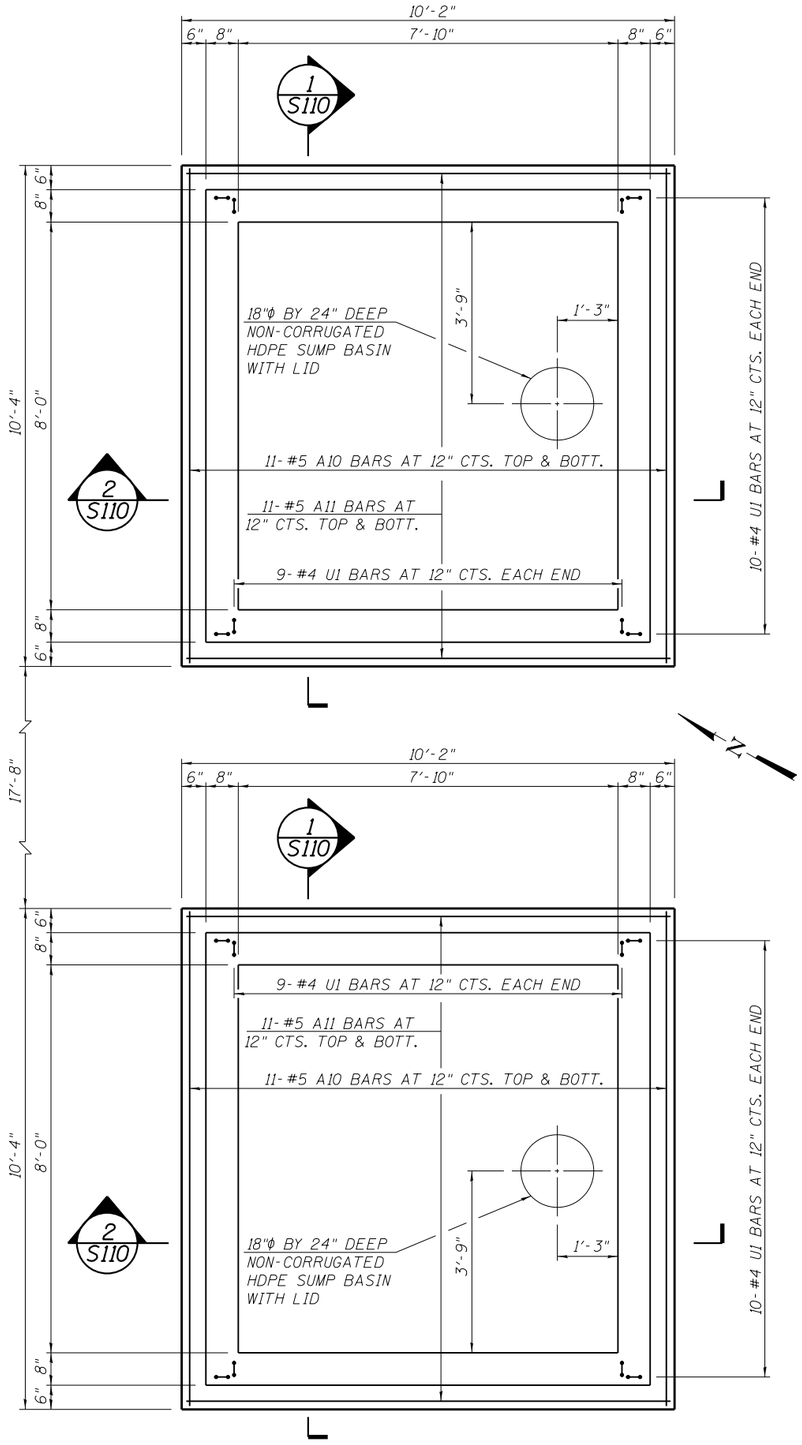
KLINGNER & ASSOCIATES, P.C. Engineers · Architects · Surveyors	USER NAME = seb	DESIGNED - RJP	REVISED -
		DRAWN - ADL	REVISED -
	PLOT SCALE = 25.0007 ' / in.	CHECKED - RJP	REVISED -
	PLOT DATE = 8/23/2014	DATE - ADL	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WELL HOUSE BLDG – CRAWLSPACE PLAN
MISSOURI AVENUE DEEP WELL FACILITY

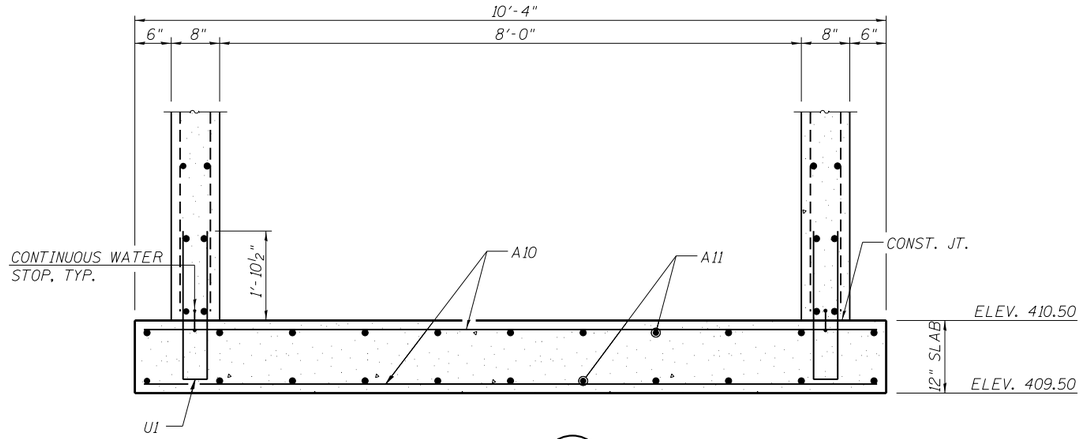
SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	87
		CONTRACT NO. 76G99		
	ILLINOIS	FED. AID PROJECT		

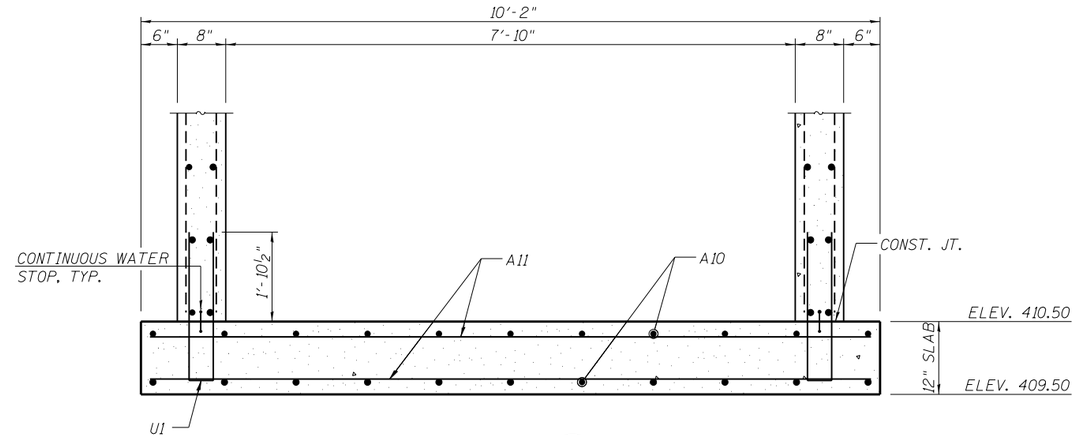


COLLECTOR WELL SLAB PLAN

NOTE:
COST OF SUMP PITS AND CONTINUOUS WATER STOPS INCLUDED WITH CONCRETE STRUCTURES.



SECTION 1 S110



SECTION 2 S110

S110

FILE NAME = D:\1files\110023\Work Order 3 MO Ave Ph2\CADD Sheets\Grade Beam Plan.dgn

KLINGNER & ASSOCIATES, P.C.
Engineers · Architects · Surveyors

USER NAME = seb	DESIGNED - RJP	REVISED -
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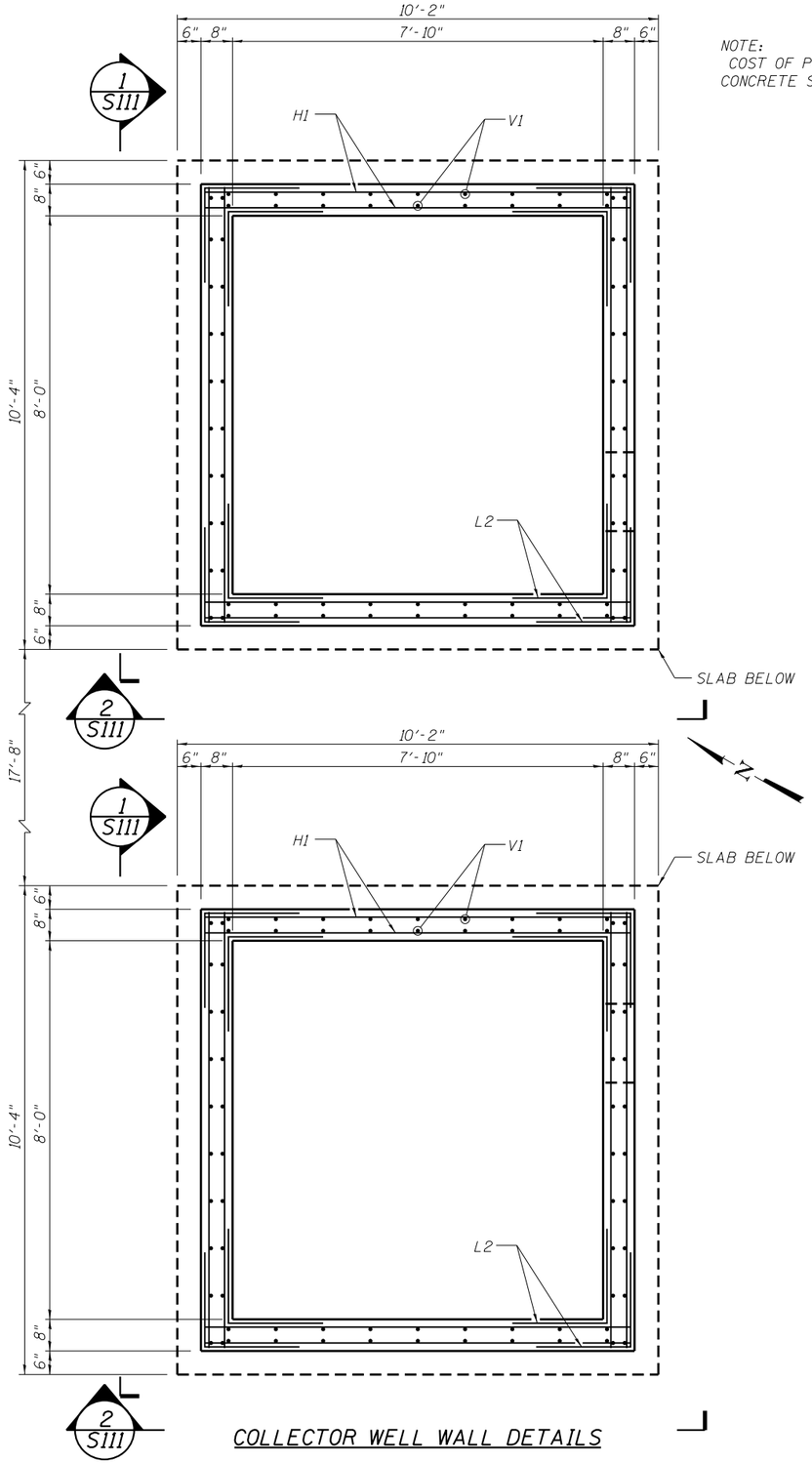
PLOT SCALE = 25.0007 ' / in.	CHECKED - RJP	REVISED -
PLOT DATE = 8/23/2014	DATE - ADL	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WELL HOUSE BLDG – COLLECTOR WELL PLAN
MISSOURI AVENUE DEEP WELL FACILITY

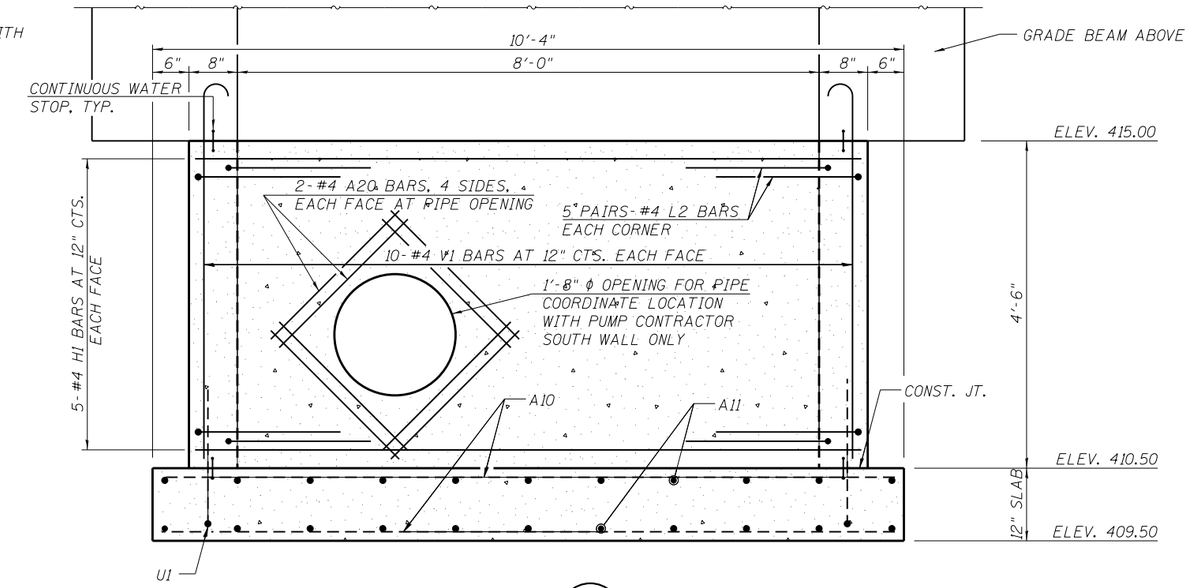
SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	88
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			

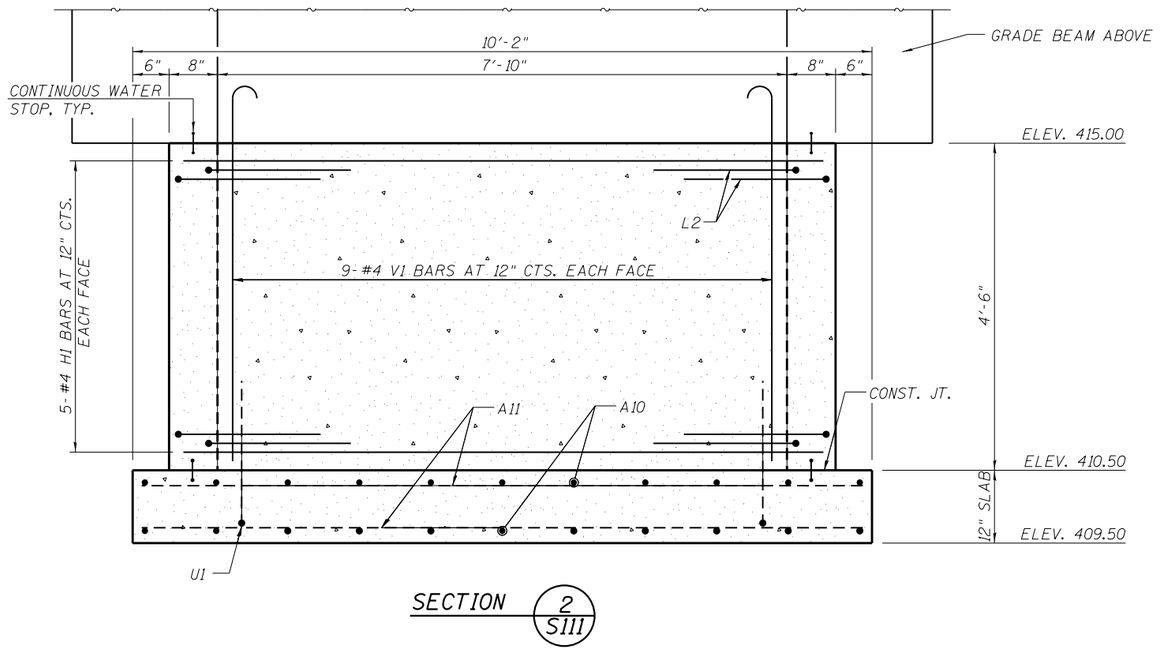


COLLECTOR WELL WALL DETAILS

NOTE:
COST OF POUR STOPS INCLUDED WITH CONCRETE STRUCTURES.



SECTION 1 S111



SECTION 2 S111

S111

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KLINGNER & ASSOCIATES, P.C.
Engineers · Architects · Surveyors

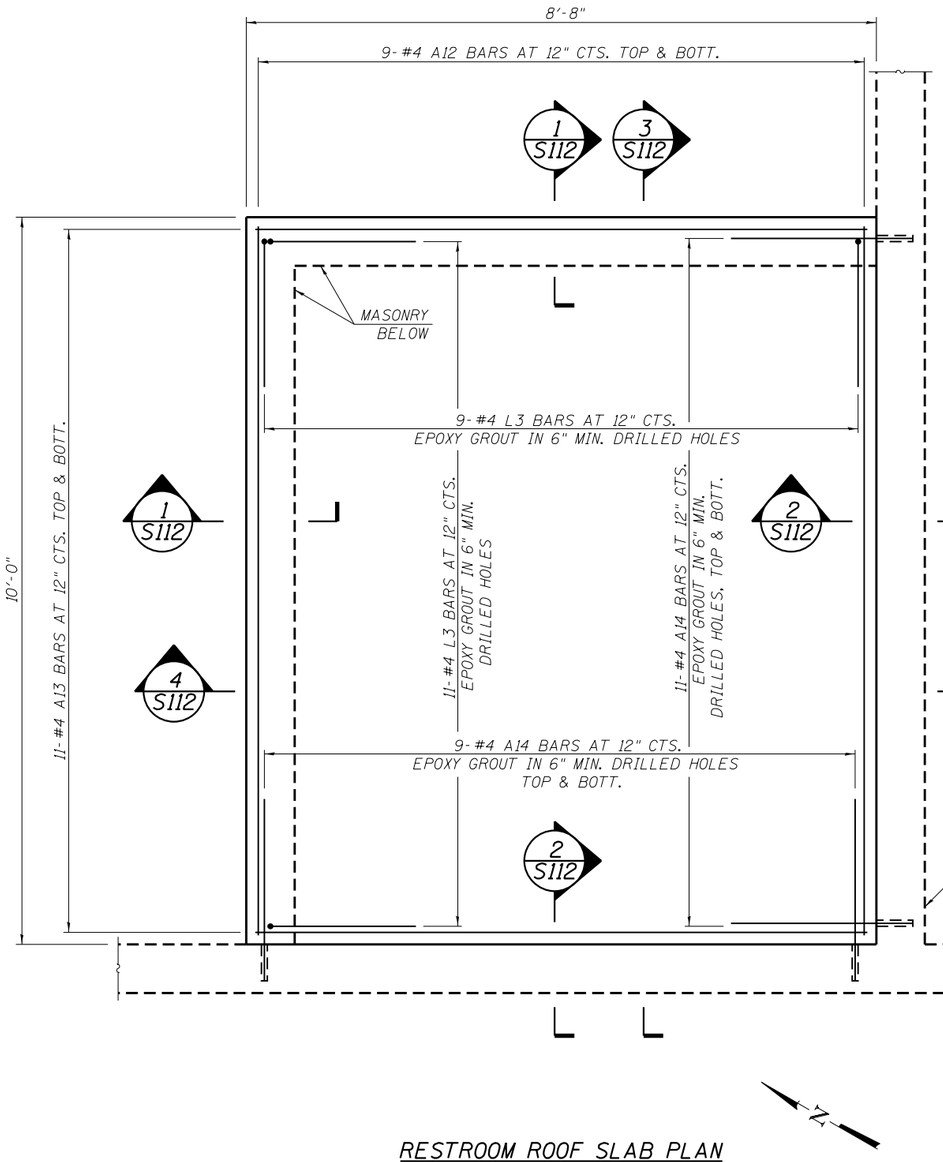
USER NAME = seb	DESIGNED - RJP	REVISED -
	DRAWN - ADL	REVISED -
PLOT SCALE = 25.0007 ' / in.	CHECKED - RJP	REVISED -
PLOT DATE = 8/23/2014	DATE - ADL	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

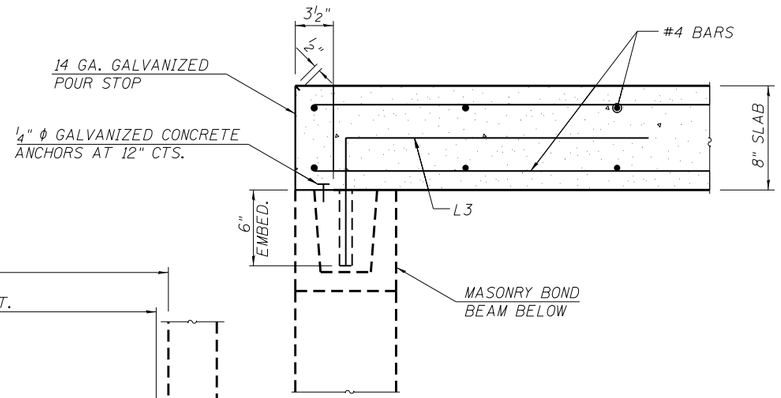
WELL HOUSE BLDG – COLLECTOR WELL WALL DETAILS
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: | SHEET OF SHEETS | STA. | TO STA.

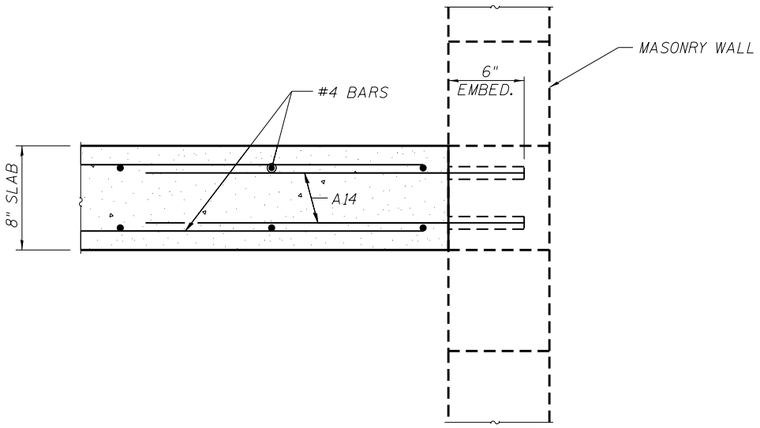
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	89
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			



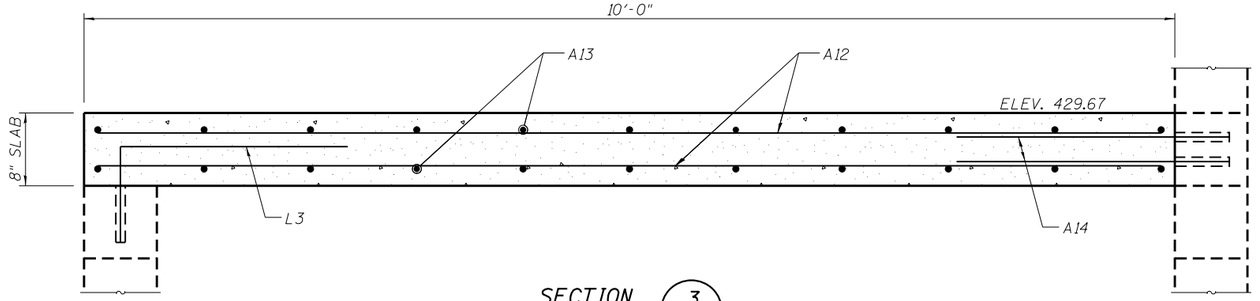
RESTROOM ROOF SLAB PLAN



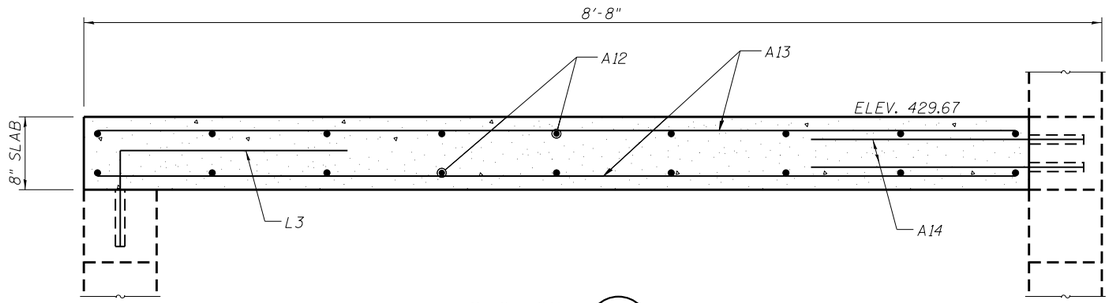
SECTION 1 S112



SECTION 2 S112



SECTION 3 S112



SECTION 4 S112

S112

FILE NAME = Q:\1files\118023\Work Order 3 MO Ave Ph2\CADD Sheets\Grade Beam Plan.dgn

KLINGNER & ASSOCIATES, P.C.
Engineers · Architects · Surveyors

USER NAME = seb	DESIGNED - RJP	REVISED -
	DRAWN - ADL	REVISED -
PLOT SCALE = 25.0007 ' / in.	CHECKED - RJP	REVISED -
PLOT DATE = 8/23/2014	DATE - ADL	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WELL HOUSE BLDG – RESTROOM ROOF SLAB PLAN
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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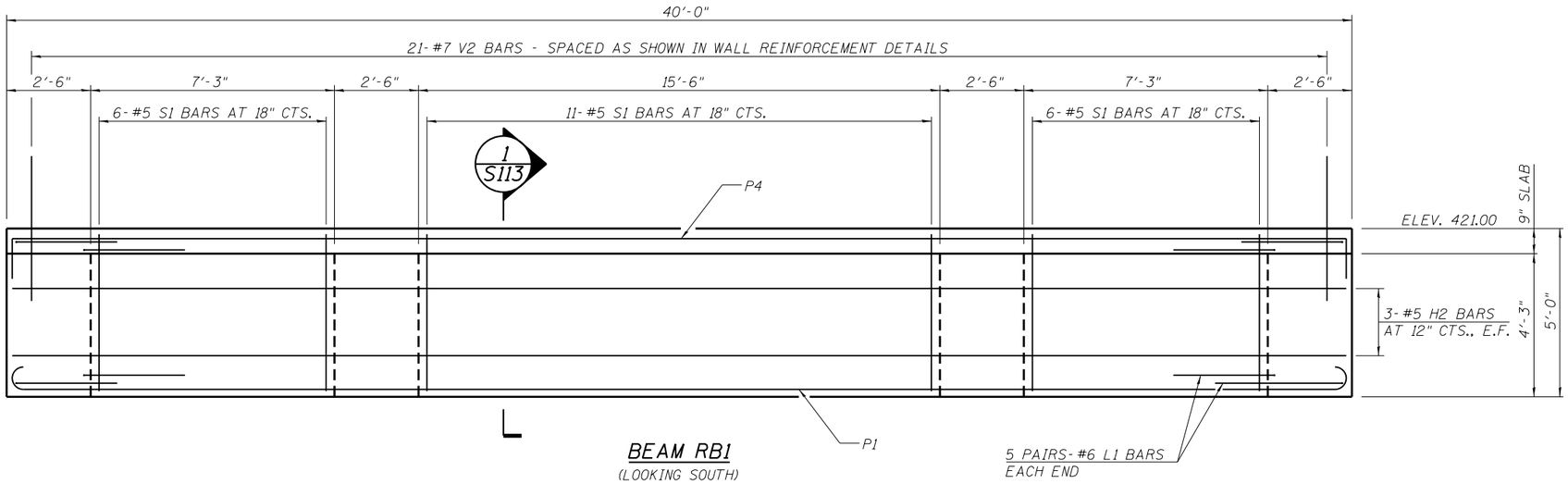
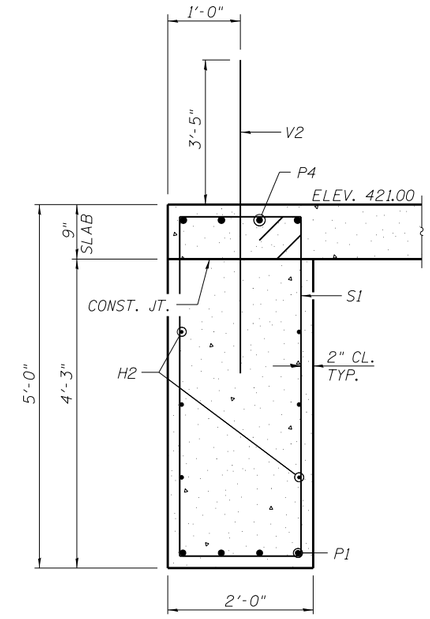
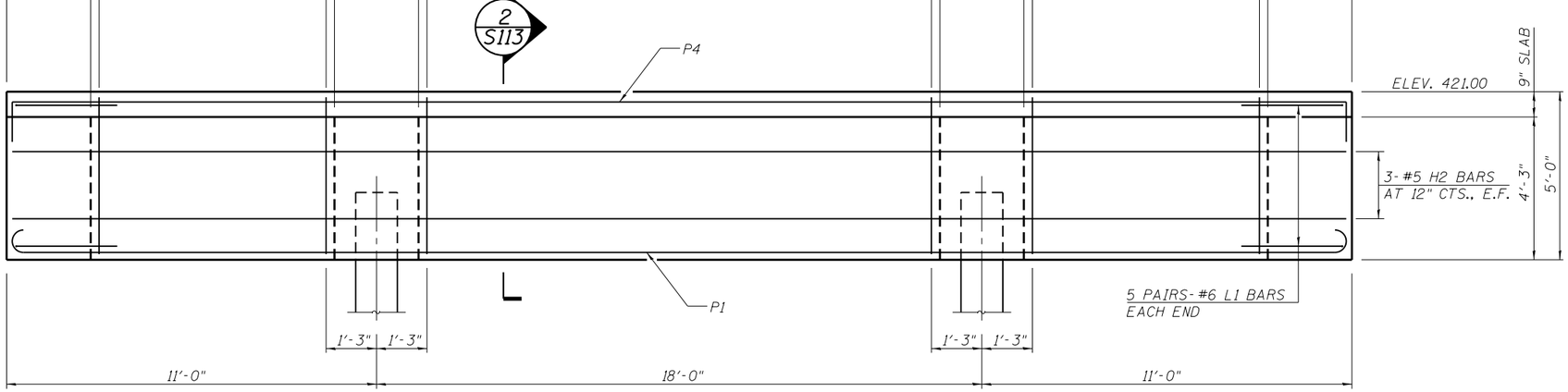
		CONTRACT NO. 76G99		
	ILLINOIS	FED. AID PROJECT		



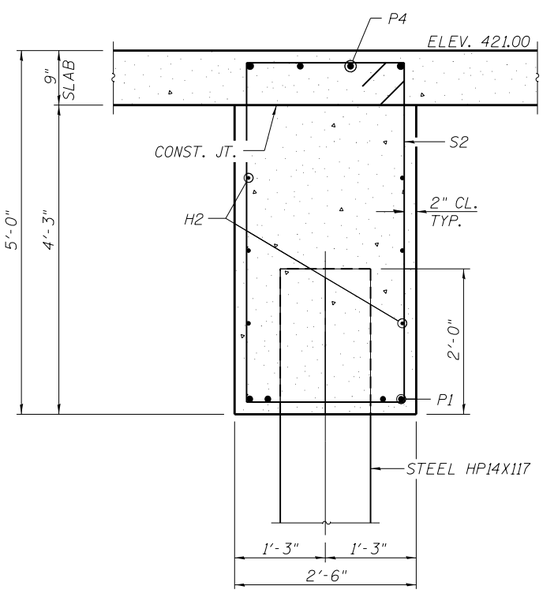
BEAM RB1
(LOOKING SOUTH)



SECTION 1 S113



BEAM RB2
(LOOKING SOUTH)



SECTION 2 S113

S113

FILE NAME = D:\Utilities\110023\Work Order 3 MO Ave Ph2\CADD Sheets\Grade Beam Plan.dgn

KLINGNER & ASSOCIATES, P.C.
Engineers · Architects · Surveyors

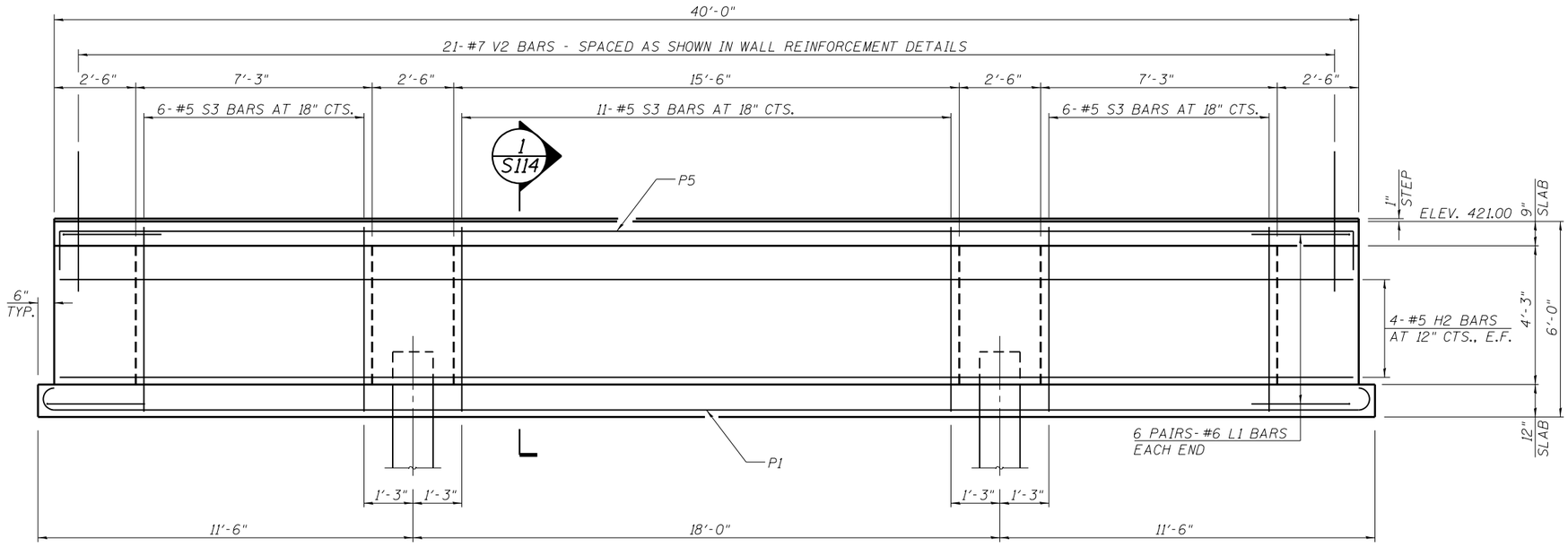
USER NAME = seb	DESIGNED - RJP	REVISED -
	DRAWN - ADL	REVISED -
PLOT SCALE = 25.0007 ' / in.	CHECKED - RJP	REVISED -
PLOT DATE = 8/23/2014	DATE - ADL	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WELL HOUSE BLDG – CONCRETE BEAM DETAILS
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	91
		CONTRACT NO. 76G99		
	ILLINOIS	FED. AID PROJECT		



BEAM RB3
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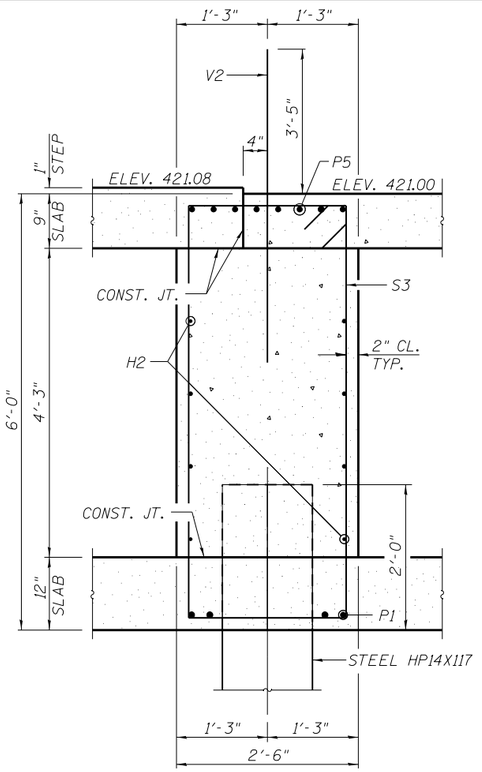
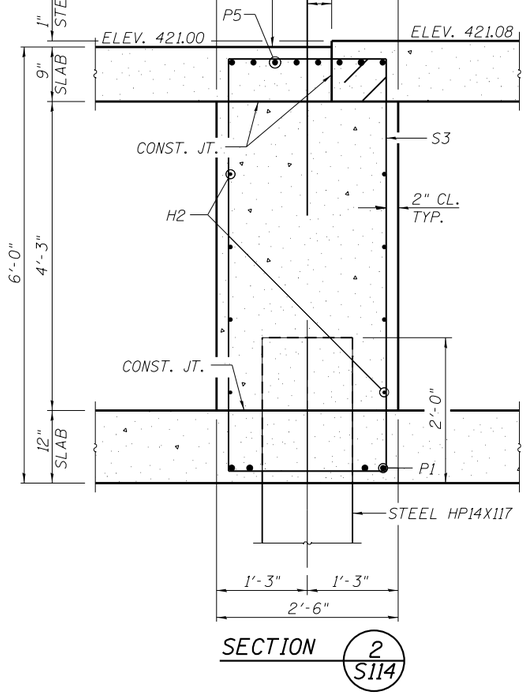


SECTION 1 S114



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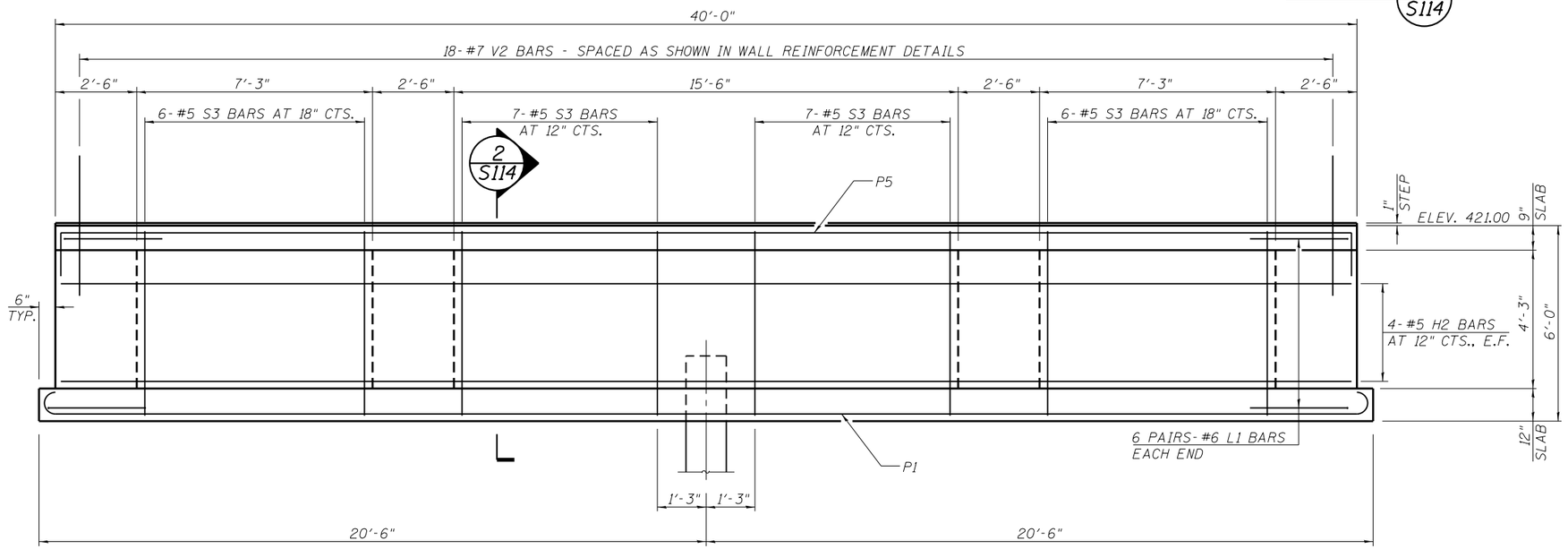

BEAM RB4
(LOOKING SOUTH)

S114

FILE NAME = D:\1files\110023\Work Order 3 MO Ave Ph2\CADD Sheets\Grade Beam Plan.dgn

KLINGNER & ASSOCIATES, P.C.
Engineers · Architects · Surveyors

USER NAME = seb	DESIGNED - RJP	REVISED -
	DRAWN - ADL	REVISED -
PLOT SCALE = 25.0007 ' / in.	CHECKED - RJP	REVISED -
PLOT DATE = 8/23/2014	DATE - ADL	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WELL HOUSE BLDG – CONCRETE BEAM DETAILS
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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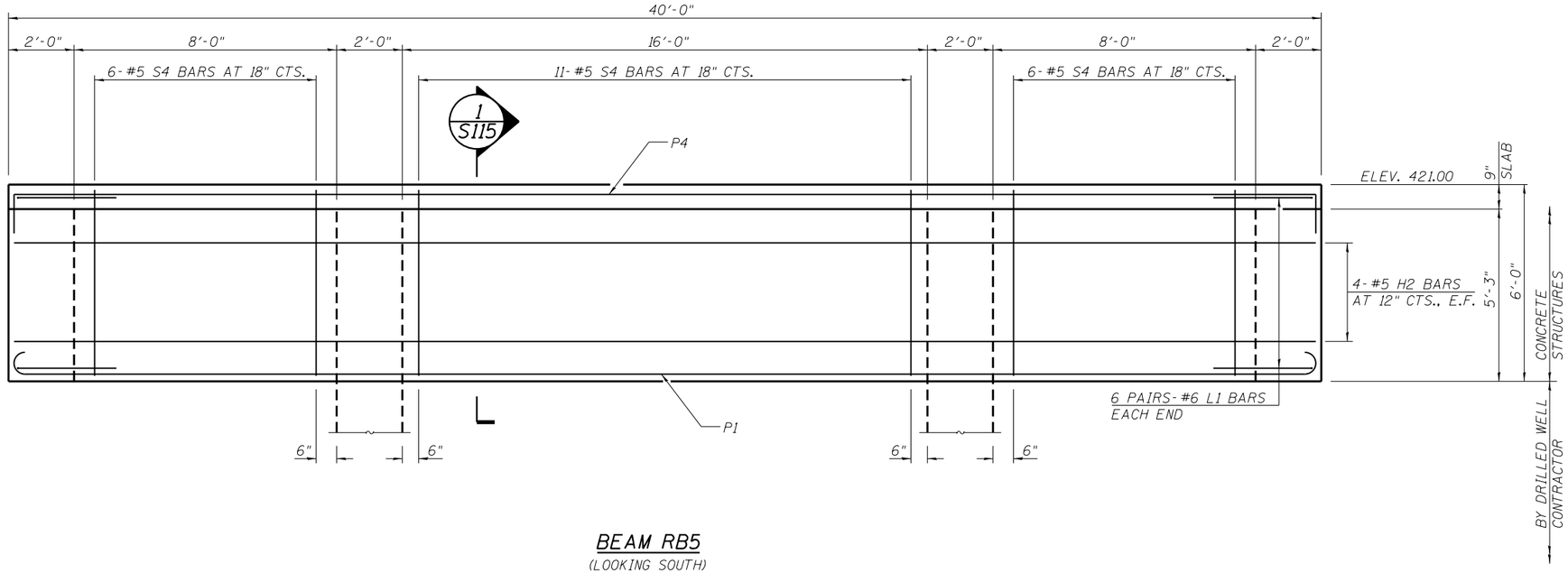
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			



BEAM RB5
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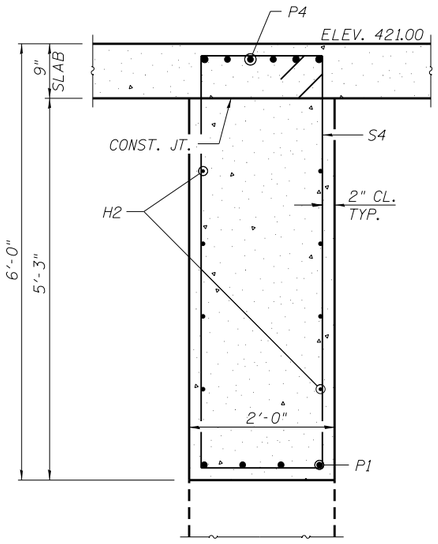
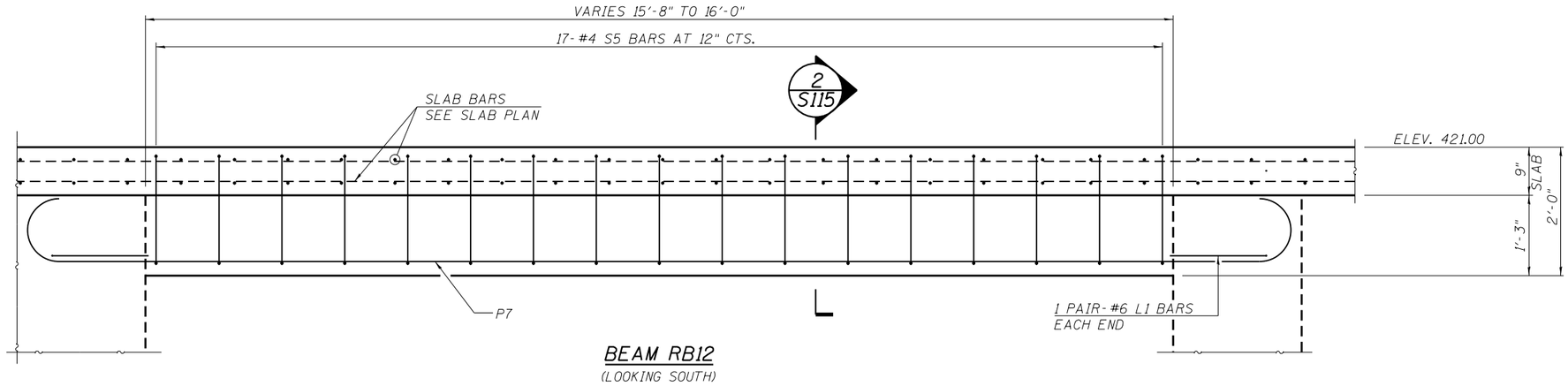


SECTION 1 S115



BEAM RB12
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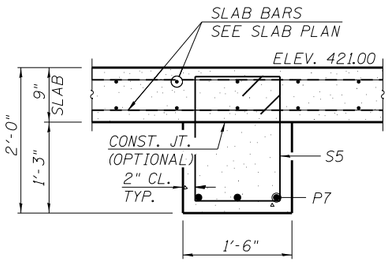


SECTION 2 S115

S115

FILE NAME = D:\Files\110023\Work Order 3 MO Ave Ph2\CADD Sheets\Grade Beam Plan.dgn

KLINGNER & ASSOCIATES, P.C.
Engineers · Architects · Surveyors

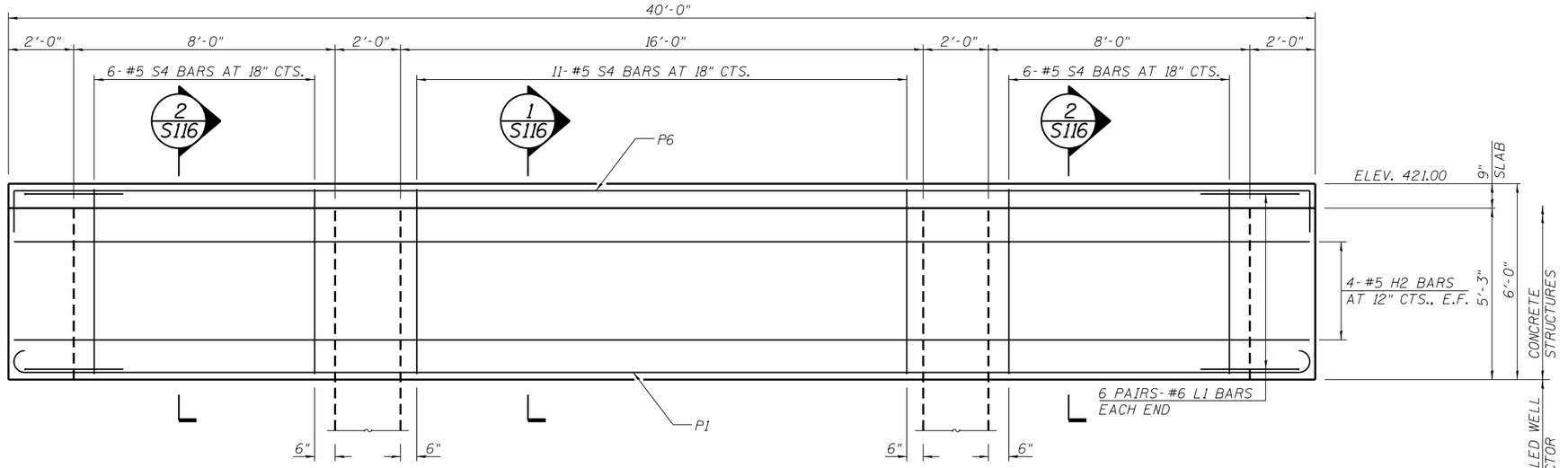
USER NAME = seb	DESIGNED - RJP	REVISED -
	DRAWN - ADL	REVISED -
PLOT SCALE = 25.0007 ' / in.	CHECKED - RJP	REVISED -
PLOT DATE = 8/23/2014	DATE - ADL	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WELL HOUSE BLDG – CONCRETE BEAM DETAILS
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	93
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			



BEAM RB6
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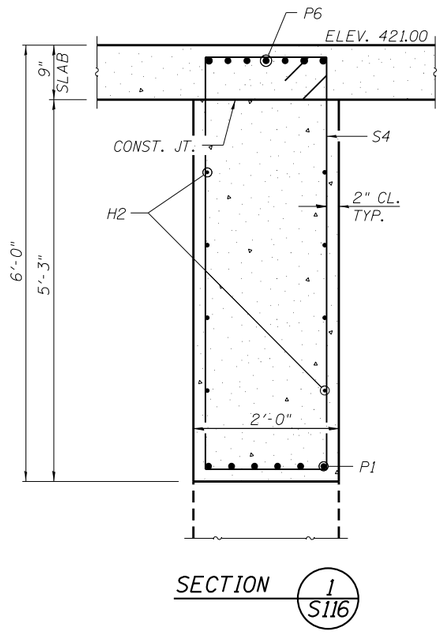
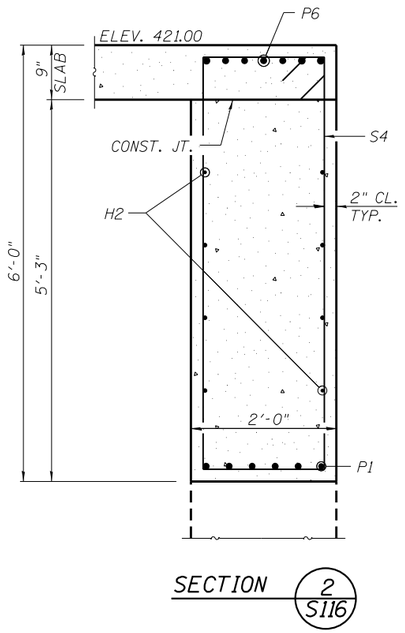


SECTION 1 S116



SECTION 2 S116

FILE NAME = D:\1files\10023\Work Order 3 MO Ave Ph2\CADD Sheets\Grade Beam Plan.dgn

KLINGNER & ASSOCIATES, P.C.
Engineers · Architects · Surveyors

USER NAME = seb	DESIGNED - RJP	REVISED -
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PLOT SCALE = 25.0007 ' / in.	CHECKED - RJP	REVISED -
PLOT DATE = 8/23/2014	DATE - ADL	REVISED -

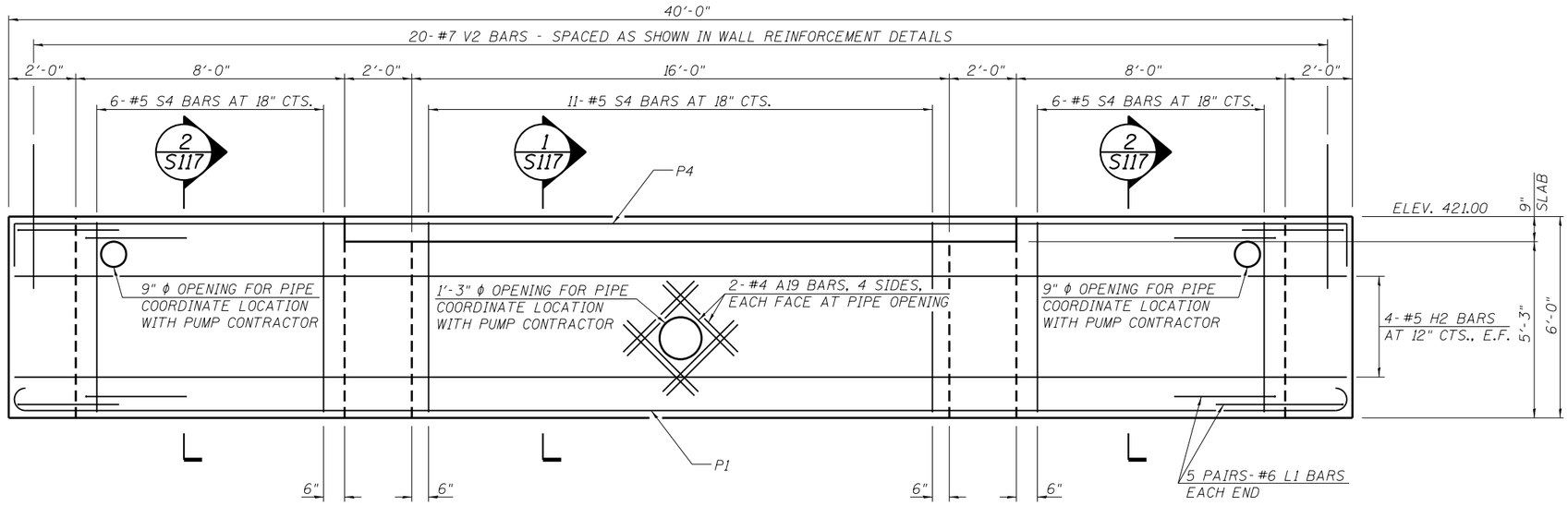
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WELL HOUSE BLDG – CONCRETE BEAM DETAILS
MISSOURI AVENUE DEEP WELL FACILITY

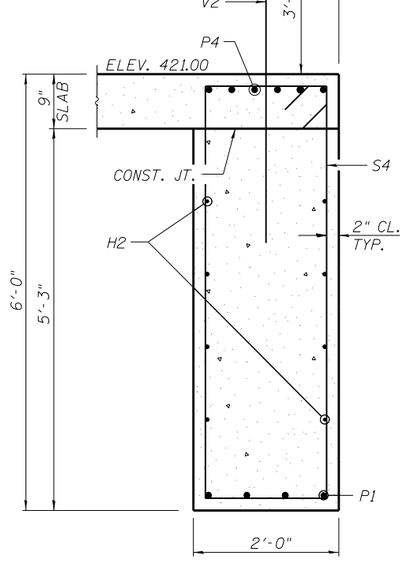
SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	94
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			

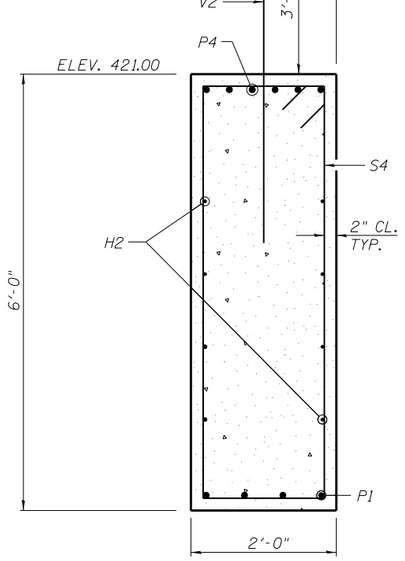
S116



BEAM RB7
(LOOKING SOUTH)



SECTION 1 S117



SECTION 2 S117

S117

FILE NAME = D:\Files\10023\Work Order 3 MO Ave Ph2\CADD Sheets\Grade Beam Plan.dgn

KLINGNER & ASSOCIATES, P.C.
Engineers · Architects · Surveyors

USER NAME = seb	DESIGNED - RJP	REVISED -
	DRAWN - ADL	REVISED -
PLOT SCALE = 25.0007 ' / in.	CHECKED - RJP	REVISED -
PLOT DATE = 8/23/2014	DATE - ADL	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

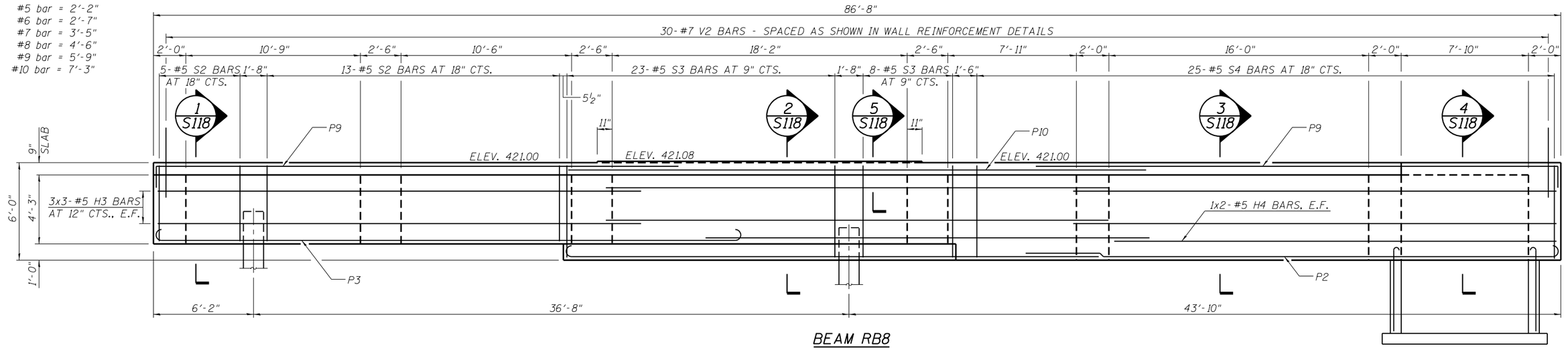
WELL HOUSE BLDG – CONCRETE BEAM DETAILS
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: | SHEET OF SHEETS | STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	95
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			

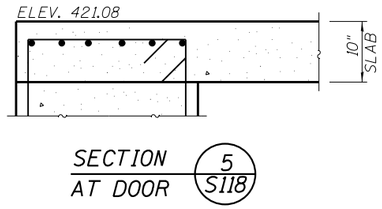
MINIMUM BAR LAP

#5 bar = 2'-2"
#6 bar = 2'-7"
#7 bar = 3'-5"
#8 bar = 4'-6"
#9 bar = 5'-9"
#10 bar = 7'-3"

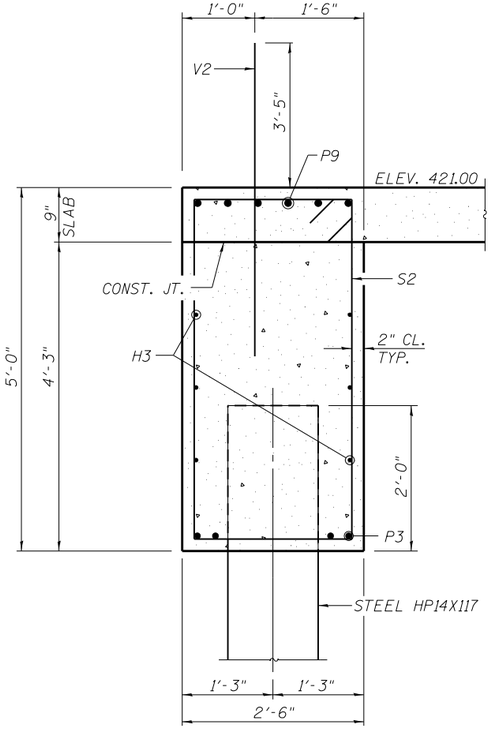


BEAM RB8
(LOOKING EAST)

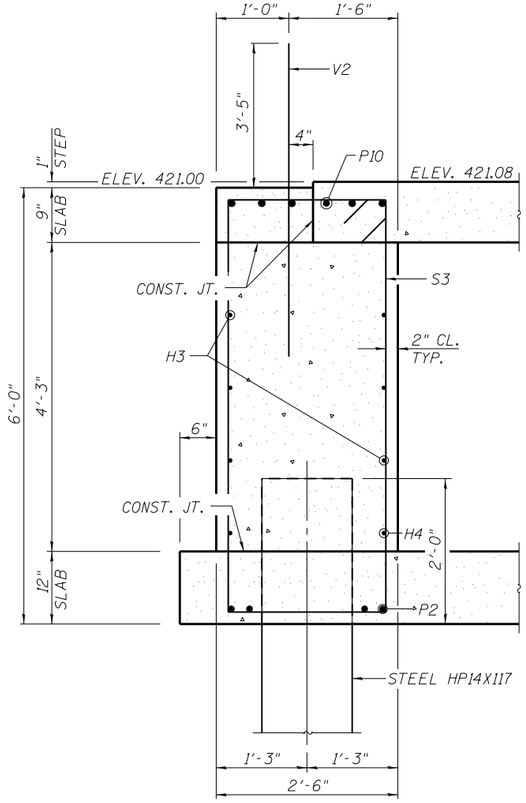
NOTE:
BARS INDICATED THUS 3X3-#5 ETC. INDICATES 3 LINES OF BARS WITH 3 LENGTHS PER LINE.



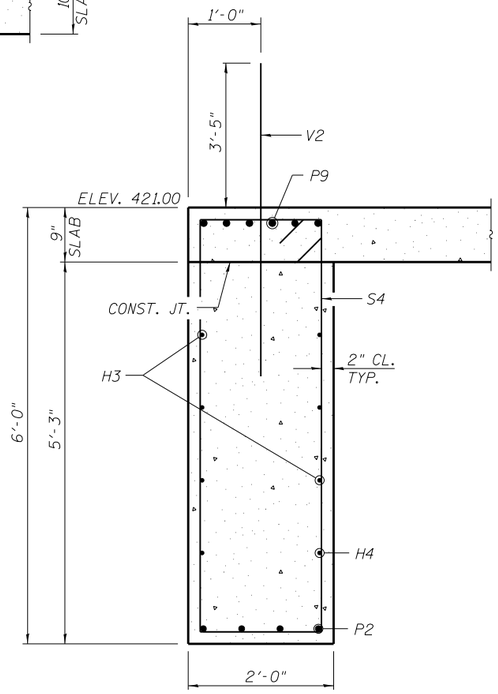
SECTION AT DOOR 5 S118



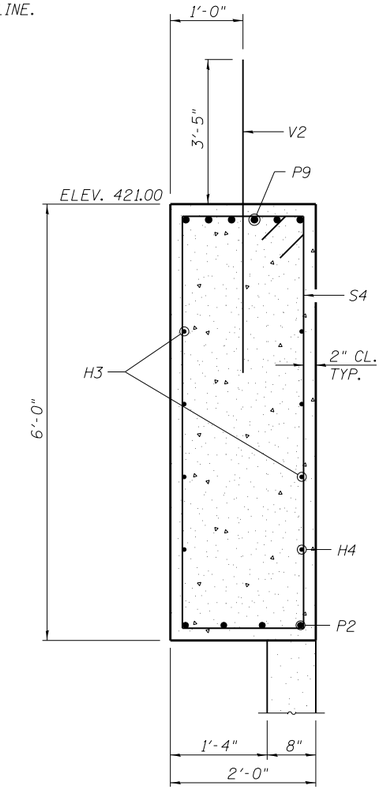
SECTION 1 S118



SECTION 2 S118



SECTION 3 S118



SECTION 4 S118

S118

FILE NAME = D:\IFiles\110023\Work Order 3 MO Ave Ph2\CADD Sheets\Grade Beam Plan.dgn

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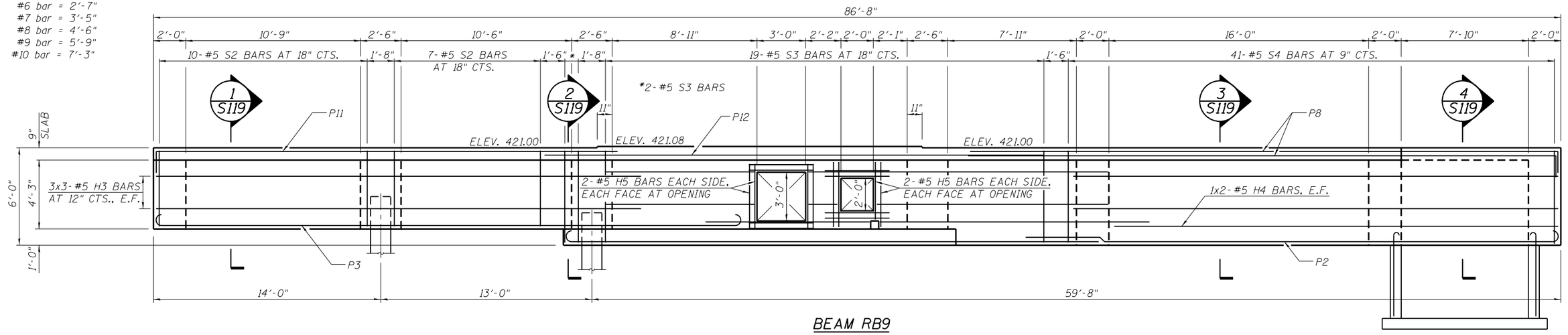
WELL HOUSE BLDG – CONCRETE BEAM DETAILS
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: | SHEET OF SHEETS | STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	96
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			

MINIMUM BAR LAP

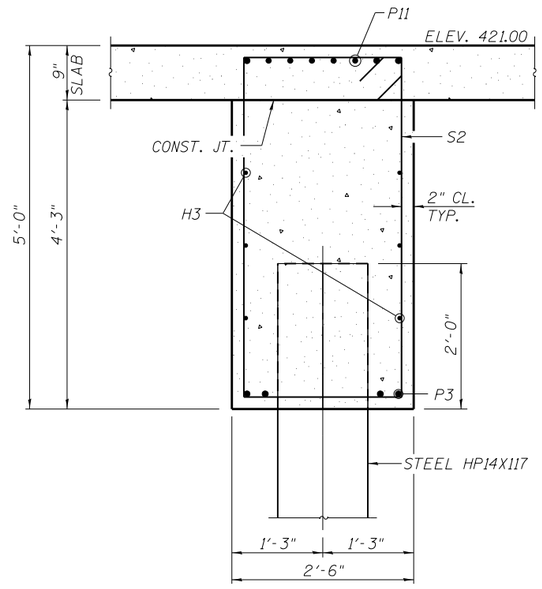
#5 bar = 2'-2"
#6 bar = 2'-7"
#7 bar = 3'-5"
#8 bar = 4'-6"
#9 bar = 5'-9"
#10 bar = 7'-3"



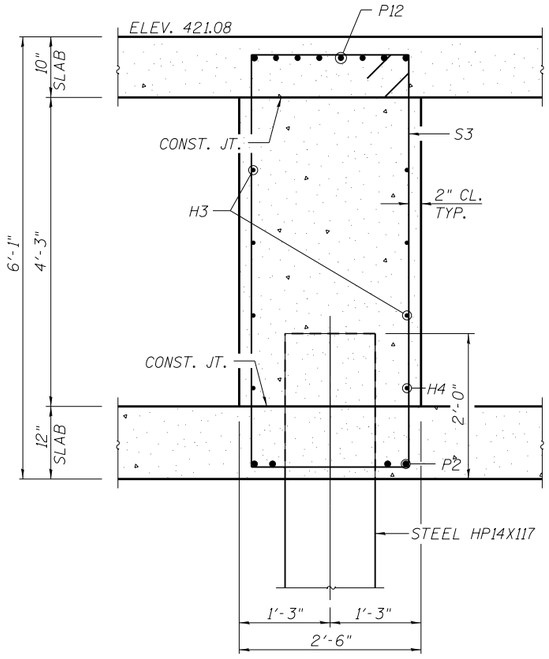
BEAM RB9

(LOOKING EAST)

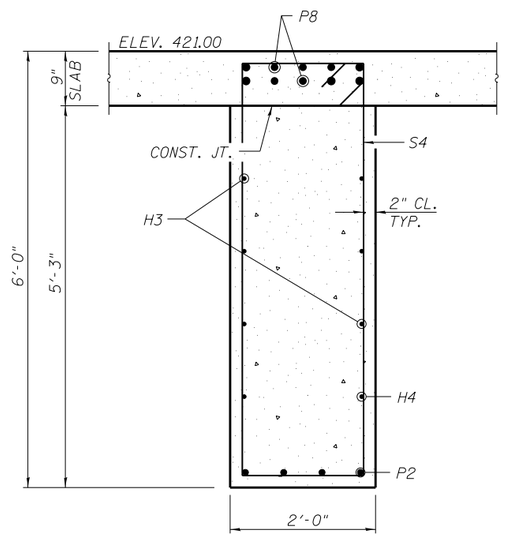
NOTE:
BARS INDICATED THUS 3X3-#5 ETC. INDICATES 3 LINES OF BARS WITH 3 LENGTHS PER LINE.



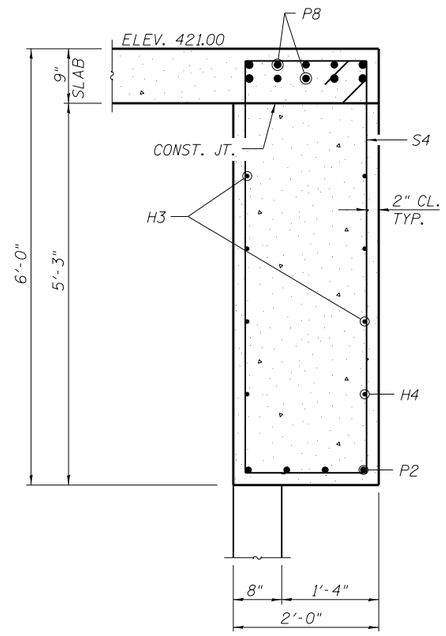
SECTION 1 / S119



SECTION 2 / S119



SECTION 3 / S119



SECTION 4 / S119

S119

FILE NAME = D:\Files\110023\Work Order 3 MO Ave Ph2\CADD Sheets\Grade Beam Plan.dgn

KLINGNER & ASSOCIATES, P.C. Engineers · Architects · Surveyors	USER NAME = seb	DESIGNED - RJP	REVISED -
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

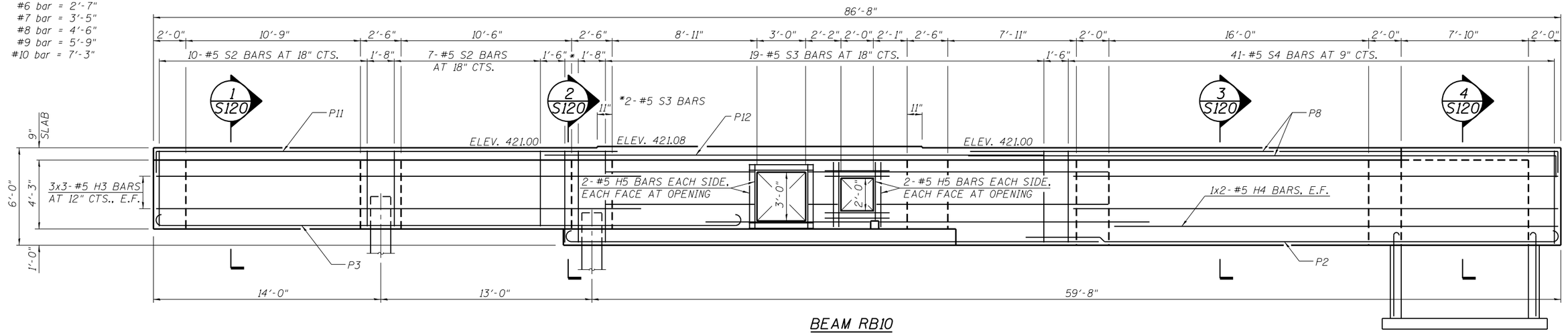
WELL HOUSE BLDG – CONCRETE BEAM DETAILS
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	97
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			

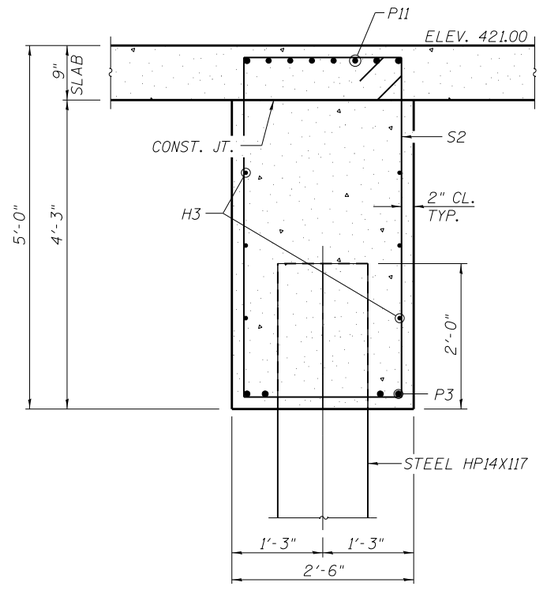
MINIMUM BAR LAP

#5 bar = 2'-2"
#6 bar = 2'-7"
#7 bar = 3'-5"
#8 bar = 4'-6"
#9 bar = 5'-9"
#10 bar = 7'-3"

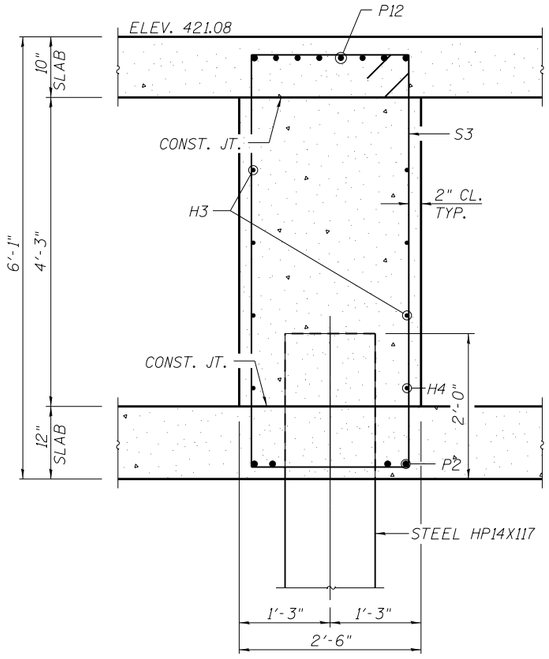


BEAM RB10
(LOOKING EAST)

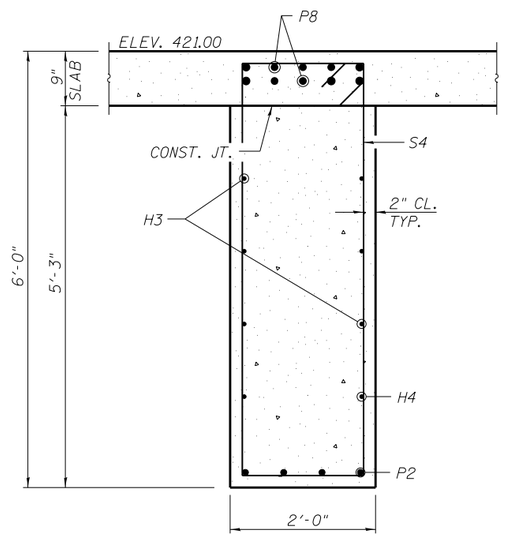
NOTE:
BARS INDICATED THUS 3X3-#5 ETC. INDICATES 3 LINES OF BARS WITH 3 LENGTHS PER LINE.



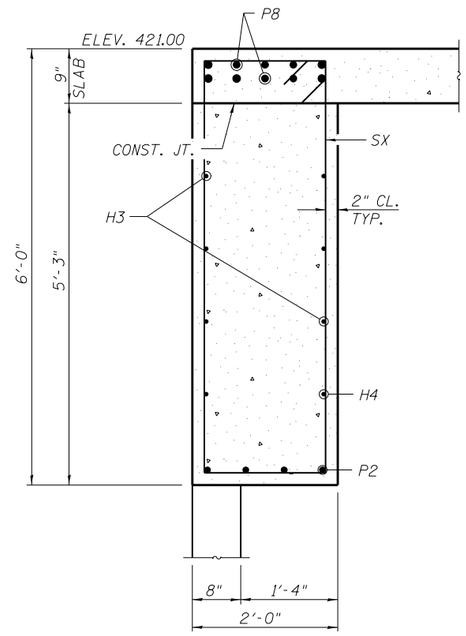
SECTION 1 S120



SECTION 2 S120



SECTION 3 S120



SECTION 4 S120

S120

FILE NAME = D:\Files\110023\Work Order 3 MO Ave Ph2\CADD Sheets\Grade Beam Plan.dgn

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Engineers · Architects · Surveyors

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STATE OF ILLINOIS
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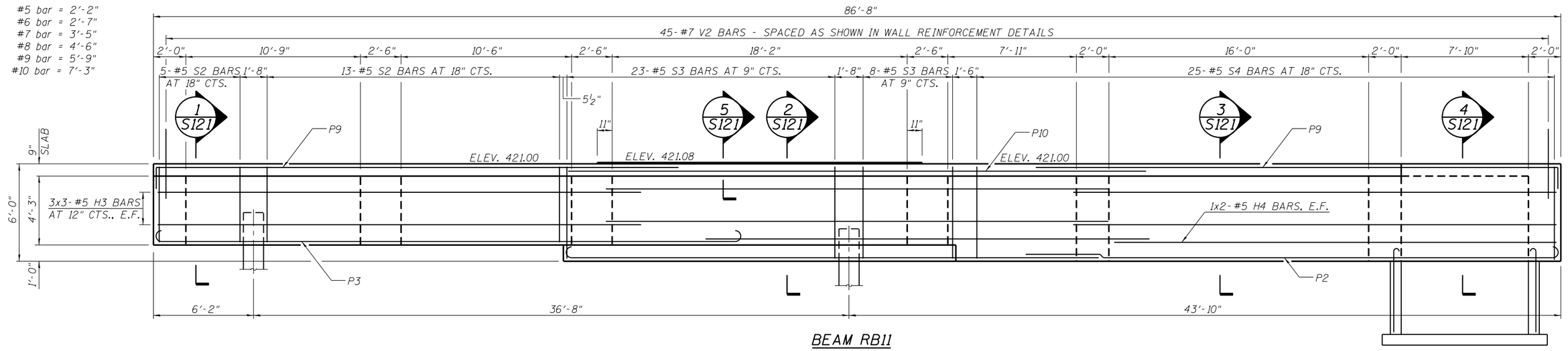
WELL HOUSE BLDG – CONCRETE BEAM DETAILS
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	98
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			

MINIMUM BAR LAP

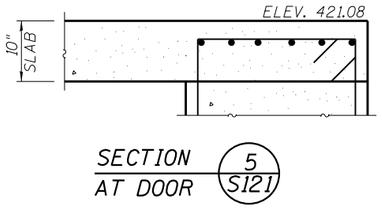
#5 bar = 2'-2"
#6 bar = 2'-7"
#7 bar = 3'-5"
#8 bar = 4'-6"
#9 bar = 5'-9"
#10 bar = 7'-3"



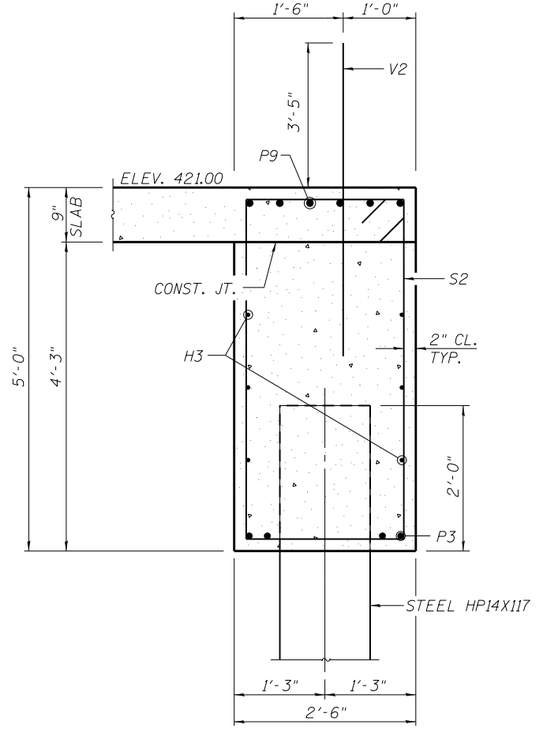
BEAM RB11

(LOOKING EAST)

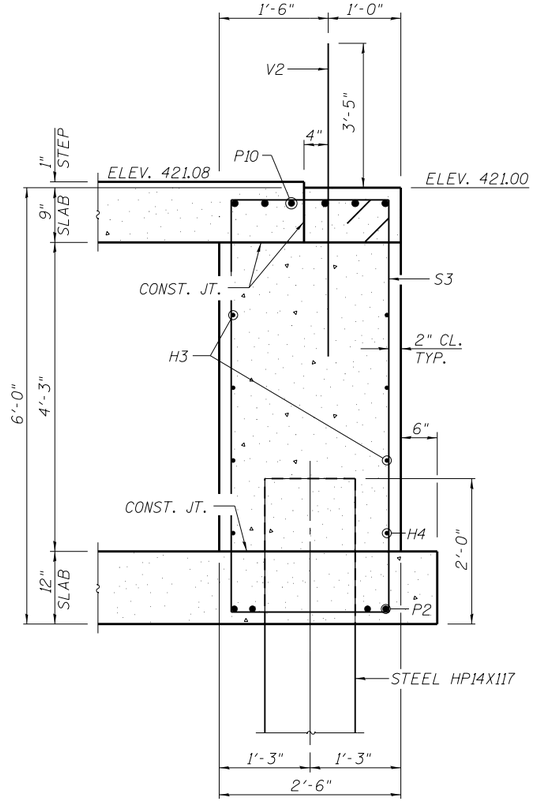
NOTE:
BARS INDICATED THUS 3X3-#5 ETC. INDICATES 3 LINES OF BARS WITH 3 LENGTHS PER LINE.



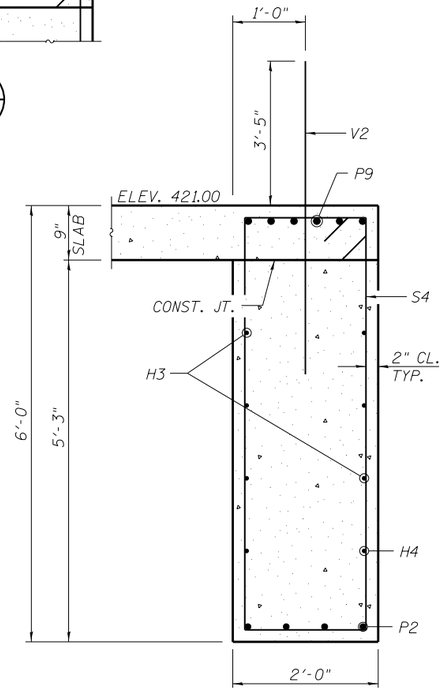
SECTION 5 / AT DOOR S121



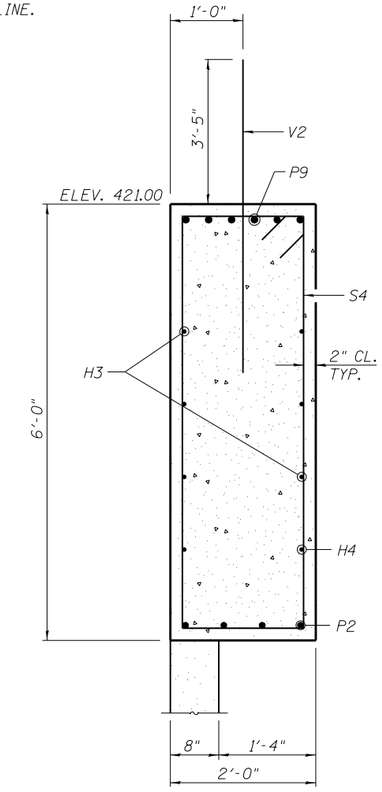
SECTION 1 / S121



SECTION 2 / S121



SECTION 3 / S121



SECTION 4 / S121

S121

FILE NAME = D:\Mfiles\110023\Work Order 3 MO Ave Ph2\CADD Sheets\Grade Beam Plan.dgn

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PLOT SCALE = 25.0007 ' / in.	CHECKED - RJP	REVISED -
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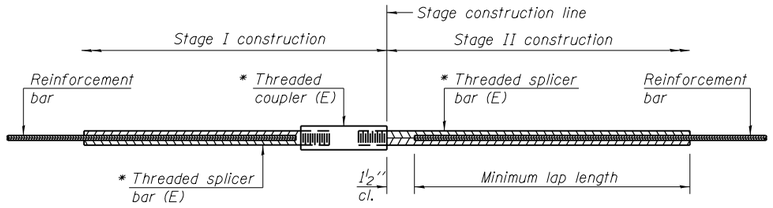
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WELL HOUSE BLDG – CONCRETE BEAM DETAILS
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	99
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			



STANDARD BAR SPLICER ASSEMBLY

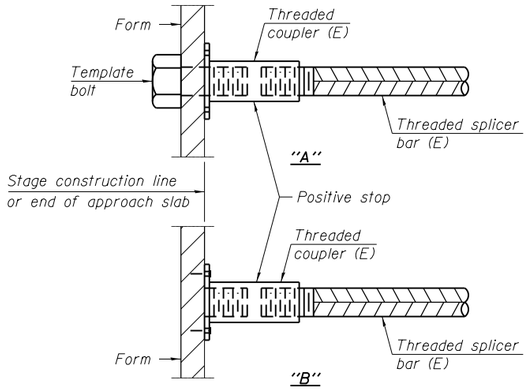
Minimum Lap Lengths						
Bar size to be spliced	Table 1	Table 2	Table 3	Table 4	Table 5	Table 6
3, 4	1'-5"	1'-11"	2'-1"	2'-4"	2'-7"	2'-11"
5	1'-9"	2'-5"	2'-7"	2'-11"	3'-3"	3'-8"
6	2'-1"	2'-11"	3'-1"	3'-6"	3'-10"	4'-5"
7	2'-9"	3'-10"	4'-2"	4'-8"	5'-2"	5'-10"
8	3'-8"	5'-1"	5'-5"	6'-2"	6'-9"	7'-8"
9	4'-7"	6'-5"	6'-10"	7'-9"	8'-7"	9'-8"

Table 1: Black bar, 0.8 Class C
Table 2: Black bar, Top bar lap, 0.8 Class C
Table 3: Epoxy bar, 0.8 Class C
Table 4: Epoxy bar, Top bar lap, 0.8 Class C
Table 5: Epoxy bar, Class C
Table 6: Epoxy bar, Top bar top, Class C

Threaded splicer bar length = min. lap length + 1½" + thread length

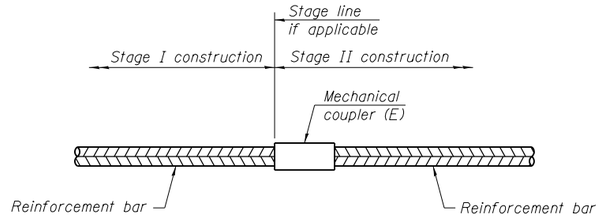
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length
Grade Beams	#8	57	Table 1



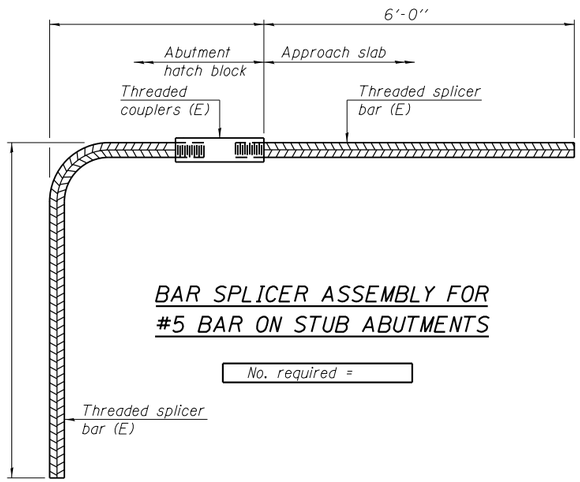
INSTALLATION AND SETTING METHODS

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



STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required



NOTES

Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.

All reinforcement shall be lapped and tied to the splicer bars.

Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.

See approved list of bar splicer assemblies and mechanical splicers for alternatives.

BSD-1 8-31-12

S122

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WELL HOUSE BLDG – BAR SPLICER DETAILS
MISSOURI AVENUE DEEP WELL FACILITY

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-4T-1	ST. CLAIR	185	100
		CONTRACT NO. 76G99		
	ILLINOIS FED. AID PROJECT			