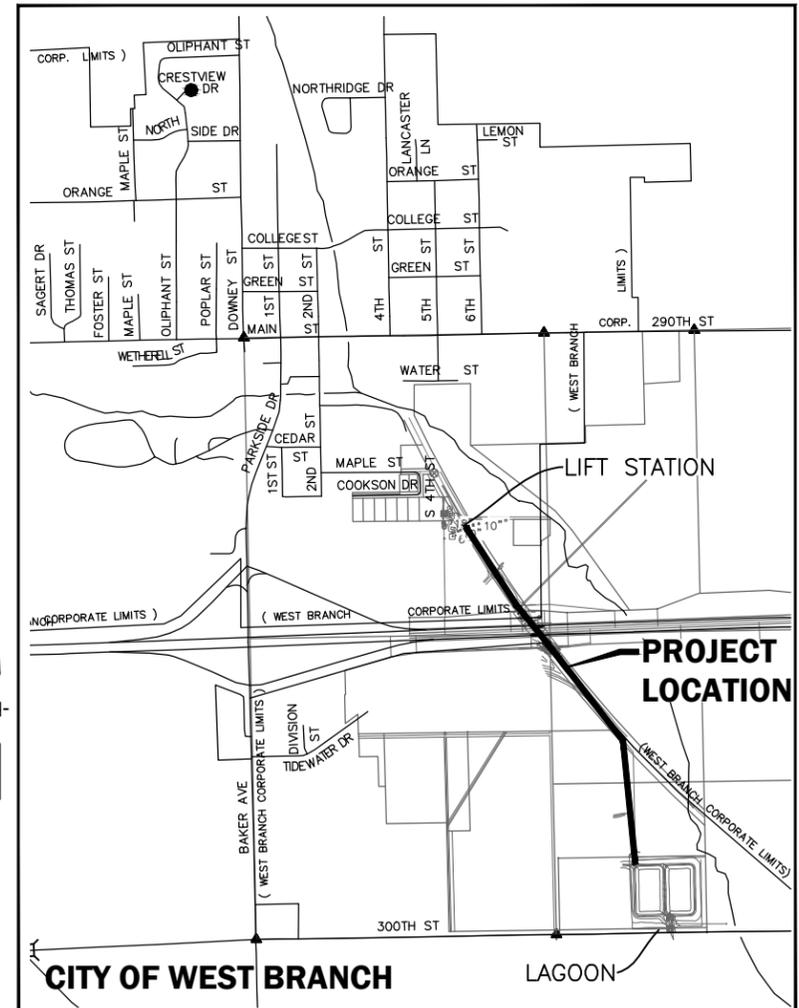


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# PLANS FOR LIFT STATION AND FORCE MAIN WEST BRANCH, IOWA



VICINITY MAP  
NOT TO SCALE

### GENERAL LEGEND

	SURVEY LINE & STATION INDICATOR		12" CMP CULVERT; SIZE AND TYPE
	CONCRETE SURFACE		FLARED END SECTION
	ASPHALT SURFACE		RAILROAD
	CONCRETE W/ ASPHALT OVERLAY		MAILBOX
	LOW GRADE ASPHALT SURFACE		FENCE (MISC.)
	GRANULAR SURFACE		SECURITY FENCE
	DIRT SURFACE		WOOD FENCE
	BRICK SURFACE		SILT FENCE
	SURFACING REMOVAL/REPLACEMENT		CHAIN LINK FENCE
	EARTH SECTION		PROPERTY LINE
	NEW SEWER/MANHOLE		PROPERTY PIN
	NEW SEWER/INTAKE		SECTION CORNER
	NEW WATER MAIN		PLAT BOUNDARY
	NEW FORCE MAIN		BUILDING
	NEW HYDRANT		ELEVATION MARKER
	NEW WATER VALVE		CENTERLINE
	EXISTING SANITARY SEWER AND SIZE		DIA. DIAMETER
	EXISTING STORM SEWER AND SIZE		ELEV. ELEVATION
	EXISTING WATER MAIN AND SIZE		PVC POLYVINYLCHLORIDE PIPE
	EXISTING FORCE MAIN AND SIZE		CI CAST IRON PIPE
	GAS MAIN AND SIZE		DI DUCTILE IRON PIPE
	UNDERGROUND POWER LINE		CMP CORRUGATED METAL PIPE
	OVERHEAD POWER LINE		VCP VITRIFIED CLAY PIPE
	UNDERGROUND TELEPHONE LINE		RCP REINFORCED CONCRETE PIPE
	CABLE TELEVISION LINE		RCAP REINFORCED CONCRETE ARCH PIPE
	FIBER OPTICS		RCPP LINED REINFORCED CONCRETE PIPE
	TOP OF EMBANKMENT		LCPP LINED CONCRETE PRESSURE PIPE
	TOE OF EMBANKMENT		STA STATION
	DRAINAGE COURSE		LA LINE AHEAD
	SANITARY MANHOLE		LB LINE BACK
	STORM WATER MANHOLE		BM-2 BENCH MARK AND NUMBER
	ELECTRIC MANHOLE		ROW RIGHT-OF-WAY
	TELEPHONE MANHOLE		PI POINT OF INTERSECTION
	WATER MANHOLE		POT POINT ON TANGENT
	CURB INTAKE		LF LINEAR FEET
	AREA OR BEEHIVE INTAKE		TH TACKED HUB
	EXISTING HYDRANT		SB-2 SOIL BORING AND NUMBER
	EXISTING WATER VALVE		PVC POINT OF VERTICAL CURVATURE
	GAS VALVE		PVT POINT OF VERTICAL TANGENCY
	UTILITY POLE		VC VERTICAL CURVE
	GUY ANCHOR		PC POINT OF CURVATURE
	STREET LIGHT		PT POINT OF TANGENCY
	SIGN		MO MIDDLE ORDINATE
	TELEPHONE CABLE JUNCTION BOX		DWG DRAWING
	TRAFFIC SIGNALS		CP-1 CONTROL POINT AND NUMBER
	PEDESTRIAN CONTROL LIGHT		(TYP.) TYPICAL
	RAILROAD CONTROL LIGHT		HPG HIGH PRESSURE GAS
	RAILROAD SIGN		IPG INTERMEDIATE PRESSURE GAS
	UTILITY ACCESS COVER		INV INVERT
	PARKING METER		E.W., E.F. EACH WAY, EACH FACE
	TREE		E.W. EACH WAY
	EVERGREEN		@ AT
	STUMP		③ DRAWING NUMBER
	BUSH, SHRUB OR HEDGE		

NOTE: THIS IS A GENERAL LEGEND. ITEMS MAY OR MAY NOT APPEAR ON DRAWINGS.

### DRAWING INDEX

NO.	DRAWING TITLE
1	INDEX AND TITLE SHEET
2	OVERALL PLAN
3	STAGING AND GRADING SITE PLAN
4	LIFT STATION SITE PLAN
5-12	FORCE MAIN - PLAN AND PROFILE
13	LIFT STATION #1 - REMOVALS
14-15	LIFT STATION #1 - IMPROVEMENTS
16-17	LIFT STATION #2 - IMPROVEMENTS
18	LAGOON SITE PLAN
19	INTERCELL OVERFLOW - PLAN
20	INTERCELL OVERFLOW - SECTIONS
21	CONTROL BUILDING & INTERCEPT DETAILS
22	LAGOON STRUCTURE DETAILS
23-25	STANDARD DETAILS
E0	ELECTRICAL COVER SHEET
E1	SITE PLAN - ELECTRICAL
E2	ELECTRICAL DETAILS
E3	ONE-LINE DIAGRAMS & DETAILS
ED1	SITE PLAN - ELECTRICAL DEMOLITION

- ### GENERAL NOTES
- ALL ELEVATIONS ARE STATE PLANE SOUTH.
  - REMOVE AND REPLACE ALL STREET SIGNS AS DIRECTED BY ENGINEER. COST IS INCIDENTAL TO CONSTRUCTION.
  - SHAPE ALL DITCHES TO DRAIN AFTER CONSTRUCTION.
  - CONFIRM LOCATION AND DEPTH OF ALL EXISTING UNDERGROUND UTILITIES AS REQUIRED TO ELIMINATE CONFLICTS PRIOR TO CONSTRUCTION. ALLOW UTILITY PERSONNEL TO RELOCATE UTILITIES WHERE CONFLICTS OCCUR.
  - DO NOT INTERRUPT EXISTING UTILITIES OR INDIVIDUAL SERVICES UNLESS DIRECTED BY ENGINEER.
  - LOCATIONS OF CONSTRUCTION LIMIT LINES SHOWN ON PLANS ARE APPROXIMATE. LOCATE CONSTRUCTION LIMITS IN FIELD. CONFINE ALL CONSTRUCTION OPERATIONS, INCLUDING ACCESS TO WORK, TO CONSTRUCTION LIMITS.
  - SET MANHOLE COVERS FLUSH WITH PROPOSED GRADES UNLESS OTHERWISE NOTED.
  - STATIONING IS ALONG CENTER LINE OF FORCE MAIN, UNLESS OTHERWISE NOTED.
  - PROTECT UTILITY POLES, LINES AND APPURTENANCES NOT SHOWN FOR RELOCATION.
  - RESET ALL PROPERTY PINS DISTURBED BY CONSTRUCTION; PINS RESET BY REGISTERED LAND SURVEYOR; COST IS INCIDENTAL TO CONSTRUCTION.
  - PROTECT ALL SURFACING, NOT INDICATED BY SHADING FOR REMOVAL AND REPLACEMENT FROM DAMAGE DURING CONSTRUCTION.

### PROTECTION OF VEGETATION

TREES AND OTHER VEGETATION WHICH MAY BE REMOVED ARE MARKED WITH AN "X" OVER THE APPROPRIATE SYMBOL. FOR EXAMPLE INDICATES THE REMOVAL OF A 12" TREE. REPLACEMENT, BY CONTRACTOR, OF THESE ITEMS IS NOT REQUIRED. TUNNEL, INSTALL TIGHT SHEETING, HAND EXCAVATE OR EMPLOY OTHER MEANS APPROVED BY ENGINEER TO PROTECT EXPOSED PORTIONS AND ROOT SYSTEMS OF TREES AND OTHER VEGETATION NOT SCHEDULED FOR REMOVAL. IF TREES AND OTHER VEGETATION NOT SCHEDULED FOR REMOVAL ARE DAMAGED DURING CONSTRUCTION, REPLACE IN KIND AND SIZE AT NO COST TO CITY OR PROPERTY OWNER.

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

SIGNATURE: \_\_\_\_\_  
NAME: Lee D. VanOndorp, P.E.  
DATE: 11-16-2012  
MY LICENSE RENEWAL DATE IS DECEMBER 31, 2012  
PAGES COVERED BY THIS SEAL: Division E

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I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

SIGNATURE: \_\_\_\_\_  
NAME: David R. Schechinger  
DATE: 11-16-2012  
MY LICENSE RENEWAL DATE IS DECEMBER 31, 2012  
PAGES COVERED BY THIS SEAL: ALL

**1-800-292-8989**  
www.iowaonecall.com

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**VEENSTRA & KIMM, INC.**

LIFT STATION AND FORCE MAIN  
CITY OF WEST BRANCH

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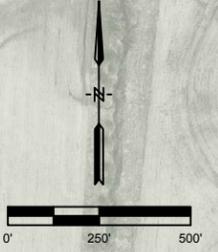
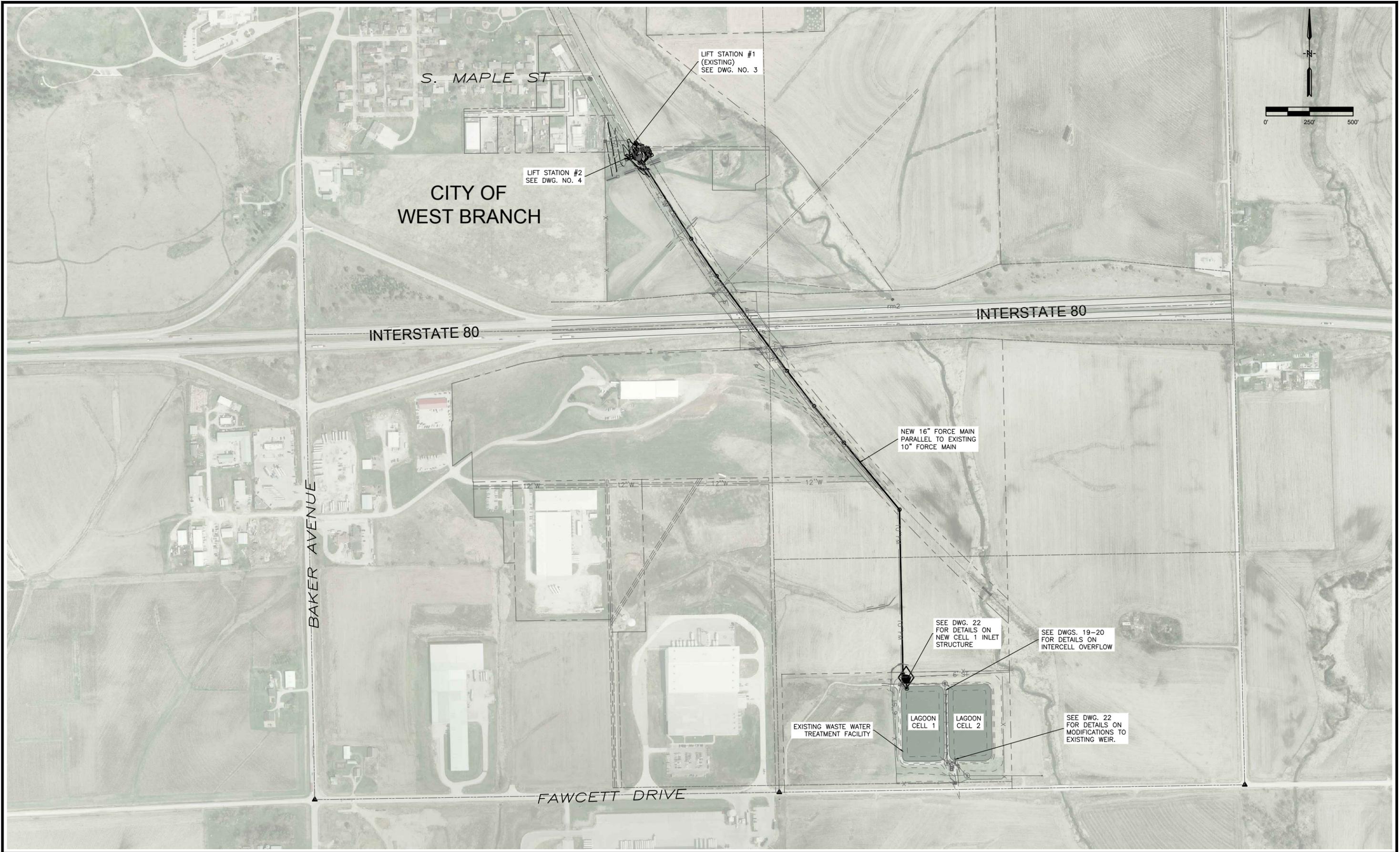
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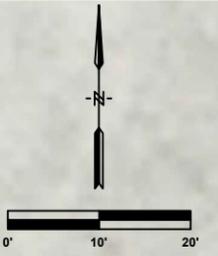
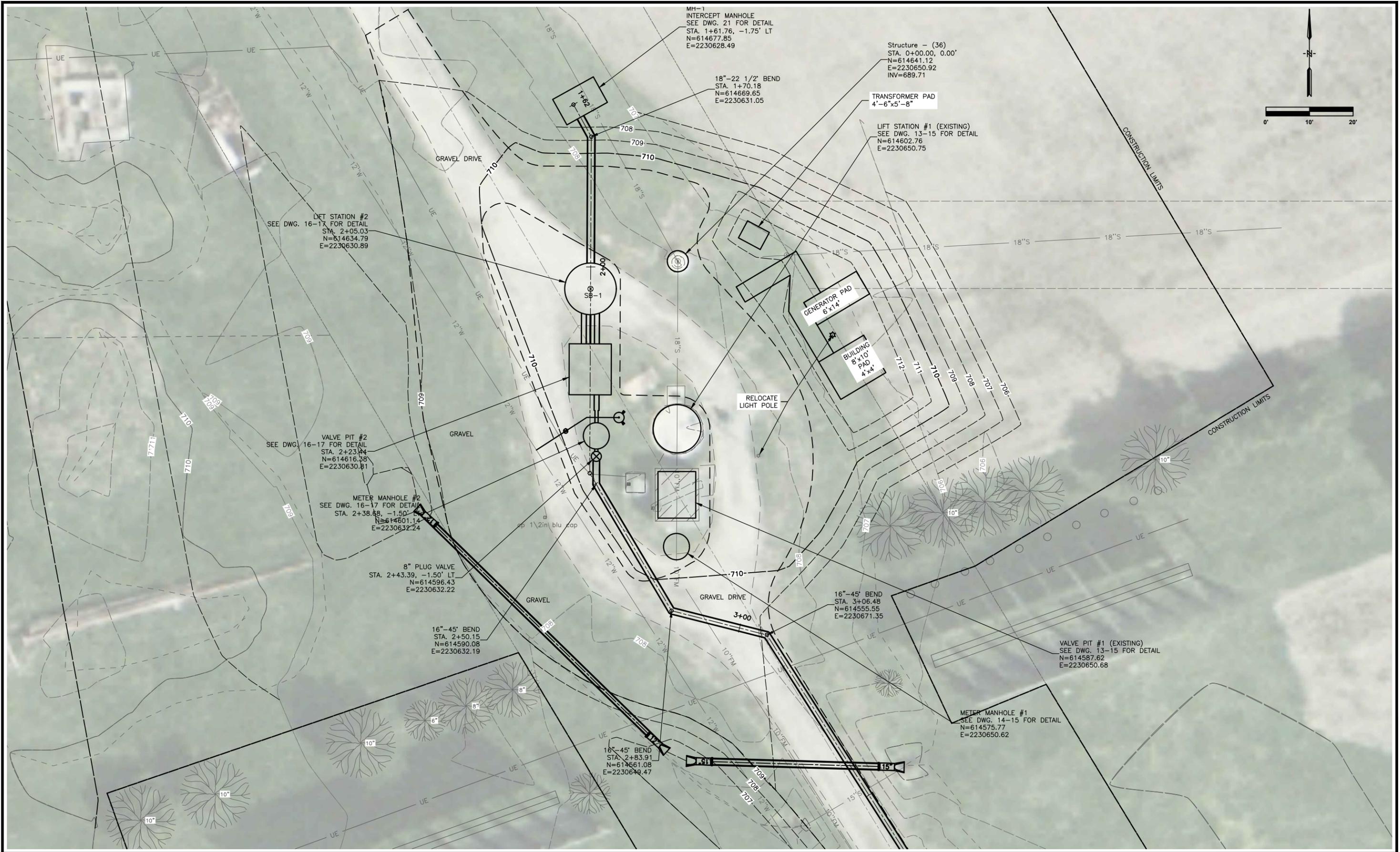
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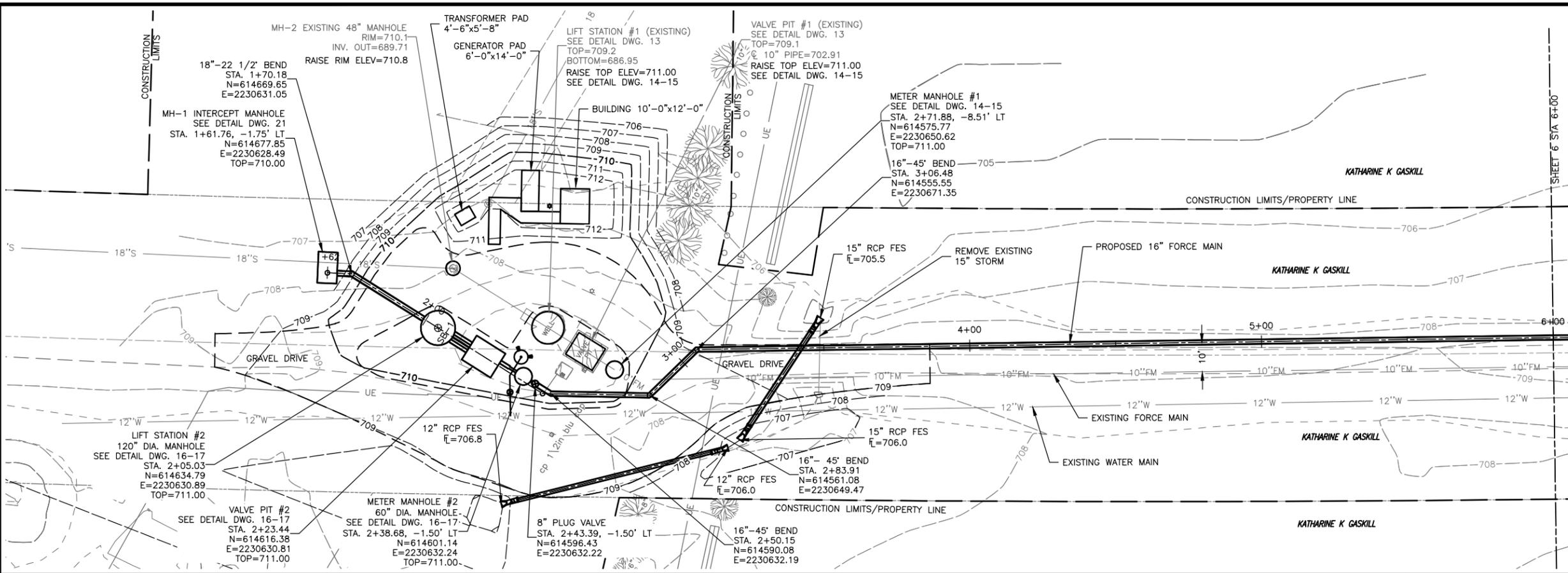
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**LIFT STATION SITE PLAN**

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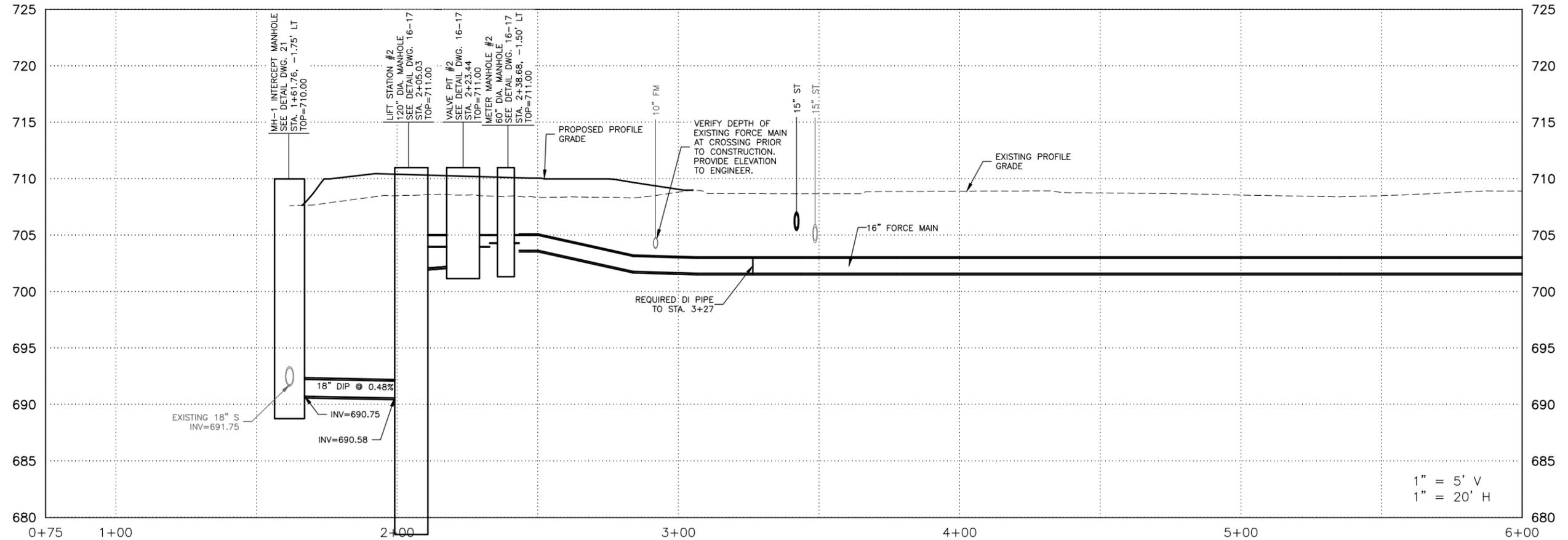
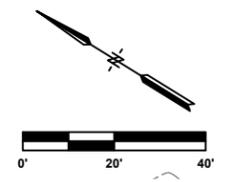
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**NOTES:**

1. CONTRACTOR TO LOCATE EXISTING UNDERGROUND ELECTRICAL LINES SERVING BILLBOARDS PRIOR TO EXCAVATING. PROTECT LINES TO MAINTAIN SERVICE TO BILLBOARDS. CONTRACTOR WILL BE HELD RESPONSIBLE FOR LOST REVENUES TO BILLBOARD OWNER IF ELECTRICAL LINES ARE DAMAGED.
2. CONTRACTOR IS REQUIRED TO PROVIDE AND MAINTAIN TEMPORARY ACCESS THROUGHOUT PROJECT ADEQUATE TO ALLOW SERVICE VEHICLES TO PASS FROM NORTH SIDE OF LIFT STATION TO SOUTH SIDE OF LIFT STATION TO ACCESS BILLBOARDS.
3. TILE LINES ARE PRESENT ALONG ROUTE IF TILE LINES ARE ENCOUNTERED, MARK ENDS ON BOTH SIDE OF TRENCH. LEAVE TRENCH OPEN UNTIL REPAIR CAN BE INSPECTED AND PHOTOGRAPHED BY ENGINEER. REPAIR AS SPECIFIED.
4. FORCE MAIN ROUTE FOLLOWS OLD RAILROAD CORRIDOR. BACKFILL TRENCH AND COMPACT AS SPECIFIED. REPLACE GRANULAR SURFACING WITH NEW MATERIAL 12" WIDE 6" THICK.
5. SEED ALL NON AGRICULTURAL AREAS DISTURBED BY CONSTRUCTION NORTH OF STA. 4+00 WITH URBAN MIX AND SOUTH OF STA. 4+00 WITH RURAL MIX.
6. CONTRACTOR SHALL PARK ALL CONSTRUCTION EQUIPMENT AND STOCKPILE MATERIALS IN STAGING AREA NORTHWEST OF LIFT STATION AT END OF EACH DAY WHEN WORKING NORTH OF INTERSTATE I-80.
7. ALL FORCE MAIN FROM STA. 4+00 TO STA. 37+12 MUST BE INSTALLED PRIOR TO APRIL 1, 2013. IN AGRICULTURAL AREAS SEGREGATE TOP 18" OF SOIL. BACKFILL TRENCH AND REPLACE TOP 18" OF SOIL. DO NOT OVER COMPACT OR USE AS A HAUL ROAD. IF MATERIAL BECOMES COMPACTED, DISC AS NECESSARY.



1" = 5' V  
1" = 20' H

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CITY OF WEST BRANCH**

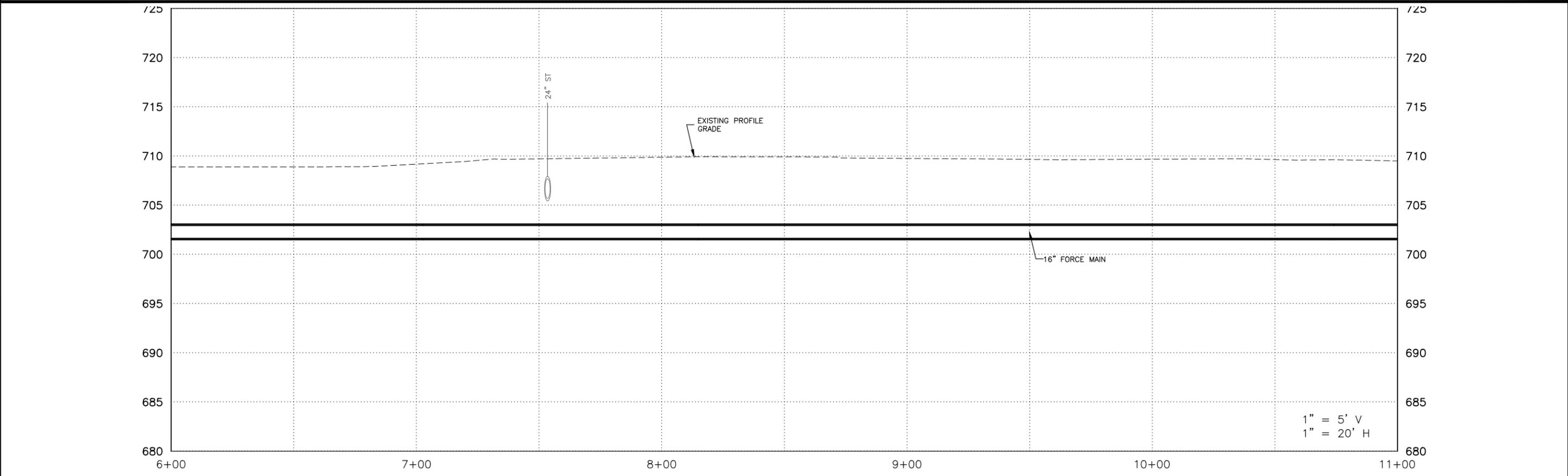
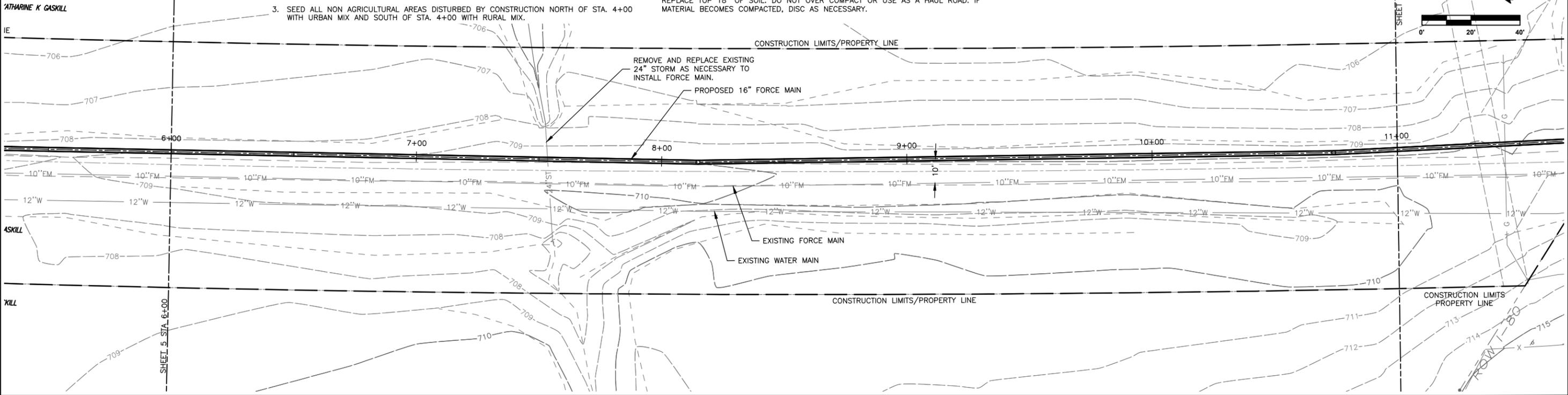
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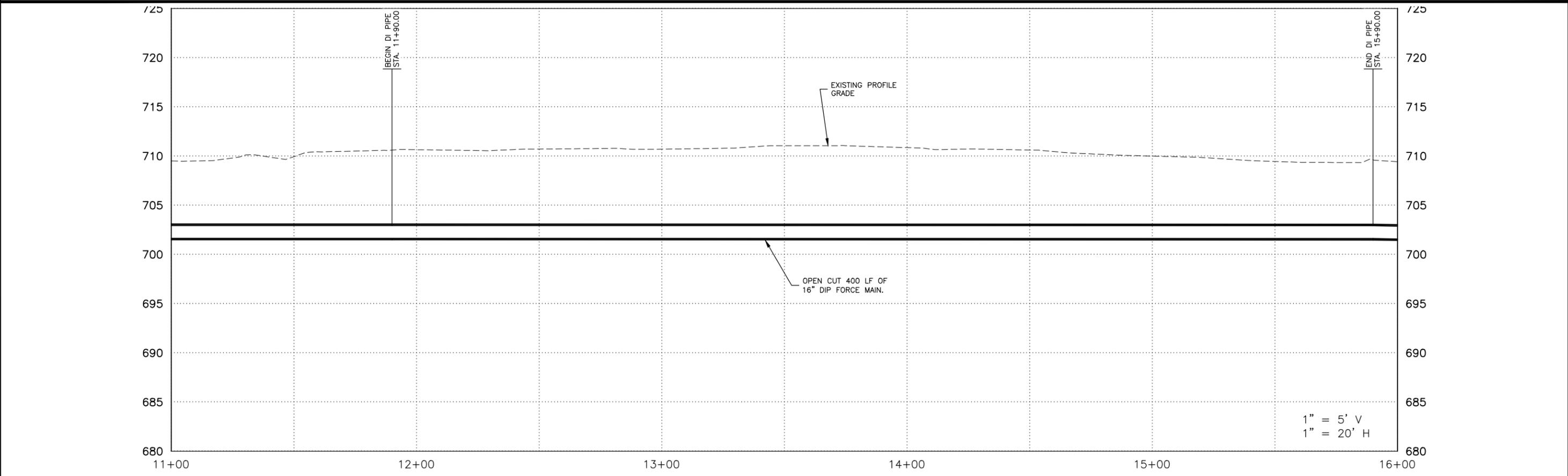
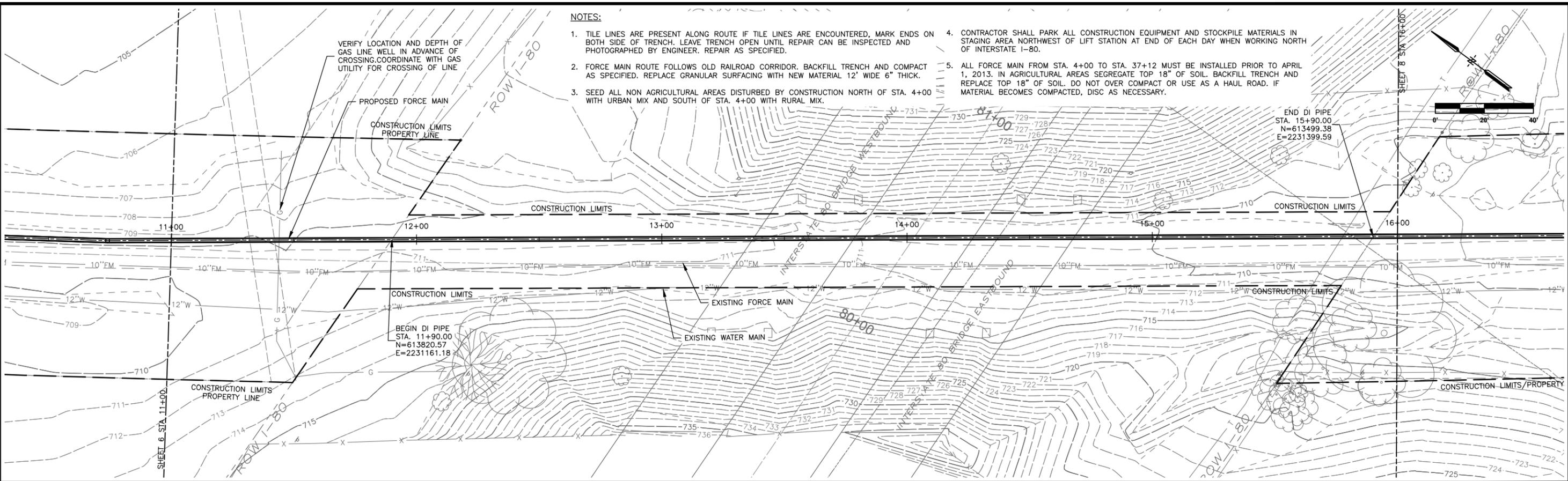
**FORCE MAIN  
PLAN AND PROFILE**

DWG. NO.
6
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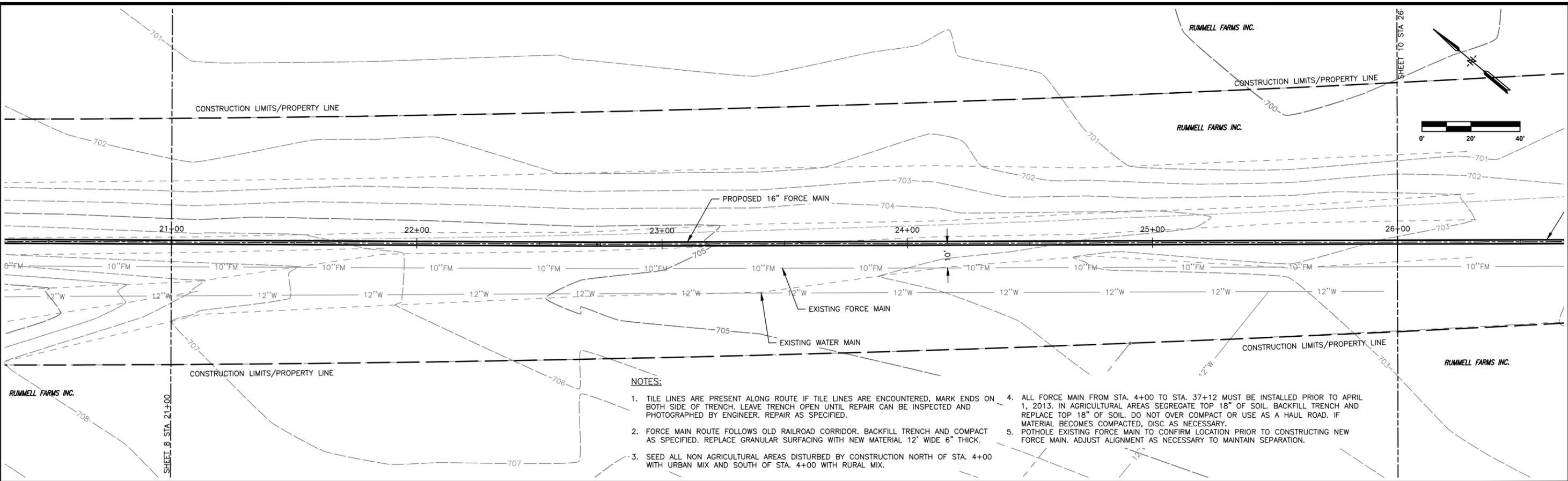
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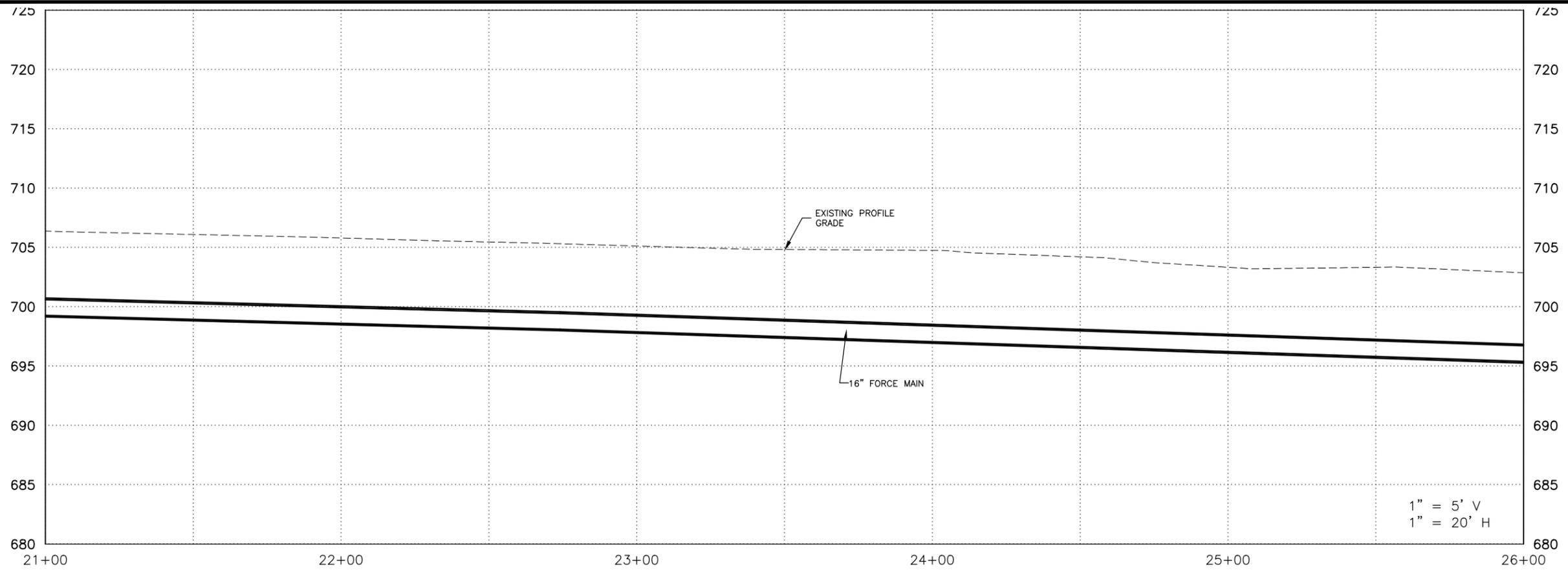


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5. POT HOLE EXISTING FORCE MAIN TO CONFIRM LOCATION PRIOR TO CONSTRUCTING NEW FORCE MAIN. ADJUST ALIGNMENT AS NECESSARY TO MAINTAIN SEPARATION.



1" = 5' V  
1" = 20' H

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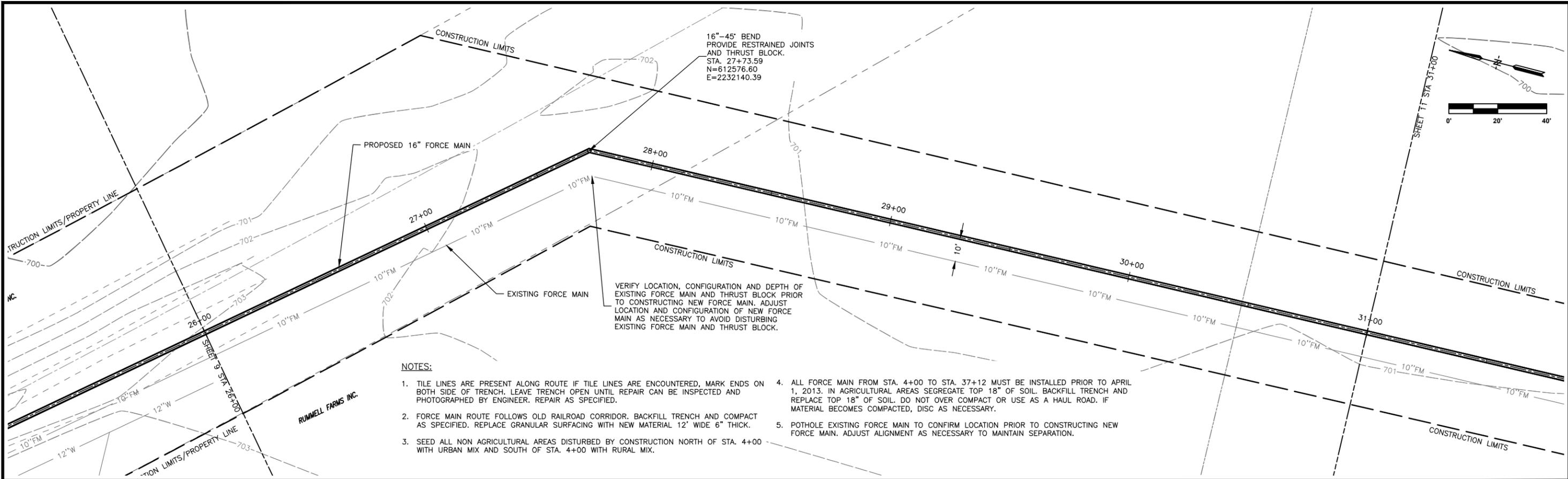
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**FORCE MAIN  
PLAN AND PROFILE**

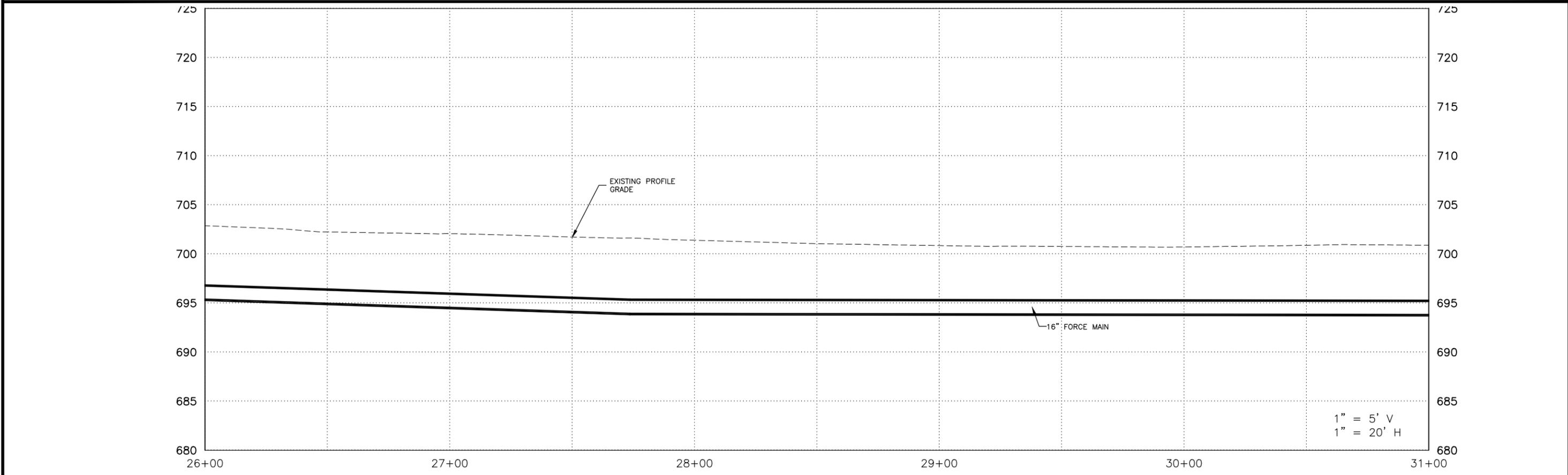
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**FORCE MAIN  
PLAN AND PROFILE**

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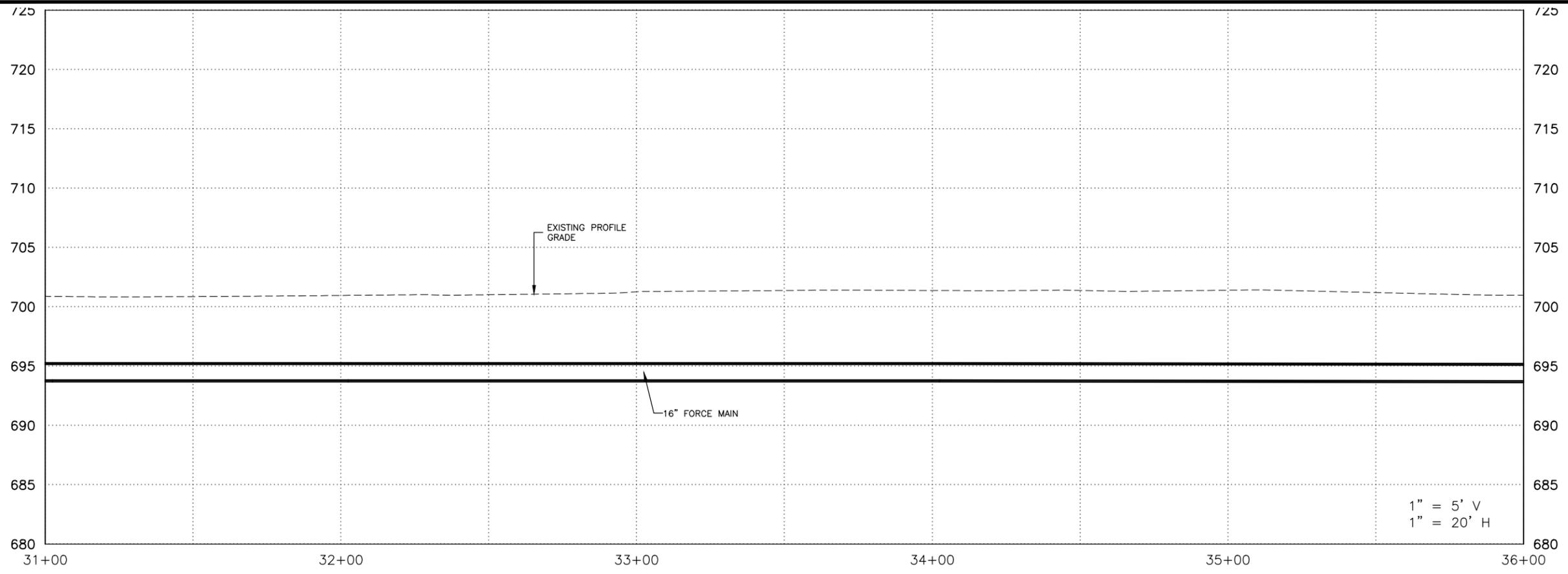
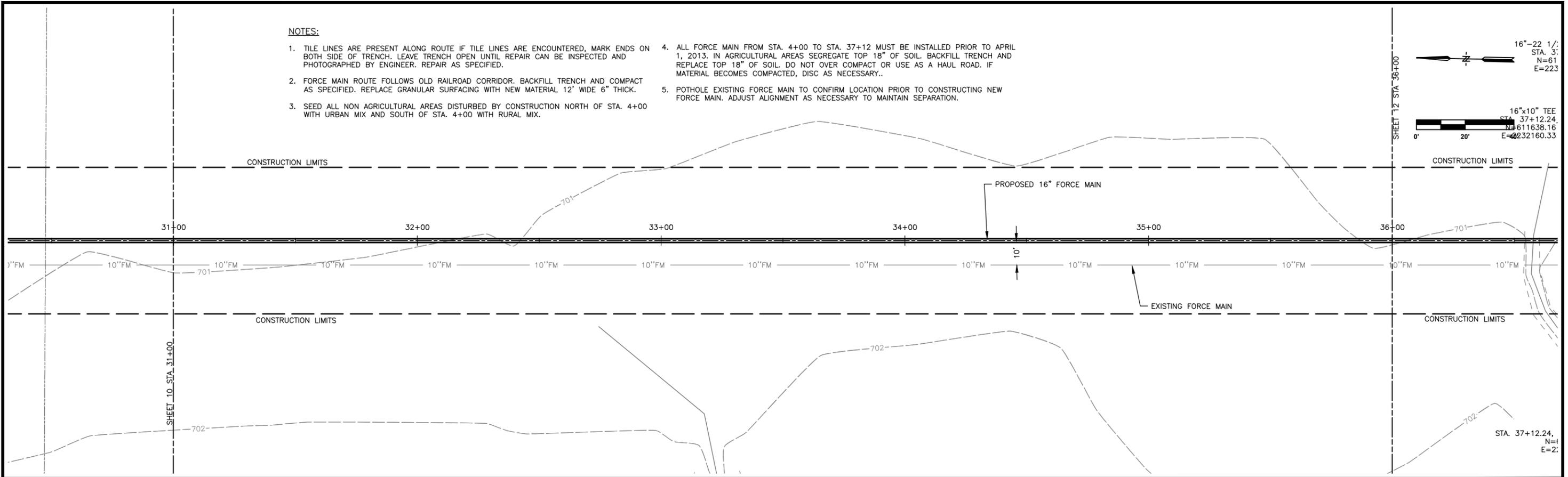
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5. POT HOLE EXISTING FORCE MAIN TO CONFIRM LOCATION PRIOR TO CONSTRUCTING NEW FORCE MAIN. ADJUST ALIGNMENT AS NECESSARY TO MAINTAIN SEPARATION.

16"-22 1/2" TEE  
STA. 37+12.24  
N=61  
E=223

16"x10" TEE  
STA. 37+12.24  
N=611638.16  
E=2232160.33



1" = 5' V  
1" = 20' H

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FILE PATH: Z:\WEST BRANCH 36845 LIFT STATION & MAIN (SDRAWINGS)\\_PRODUCTION DRAWINGS\5 PLAN AND PROFILE

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		CHECKED	DRS
		APPROVED	DRS
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		ISSUED FOR	REVIEW

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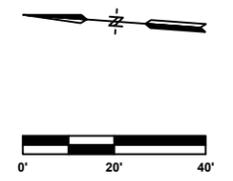
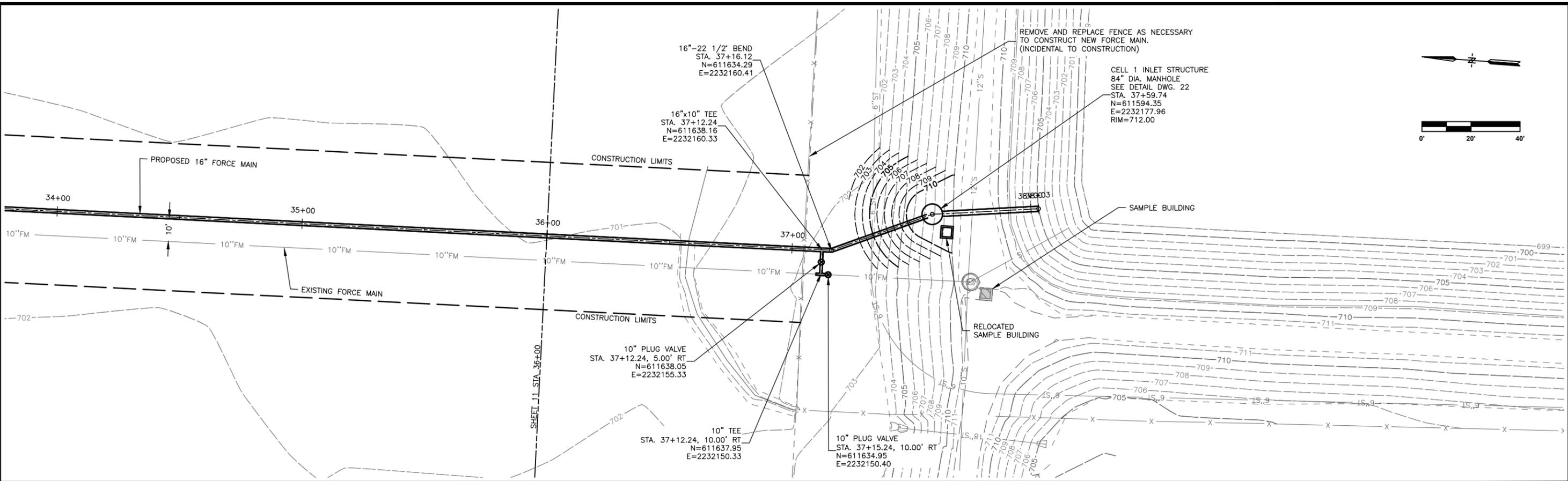
LIFT STATION AND FORCE MAIN  
CITY OF WEST BRANCH

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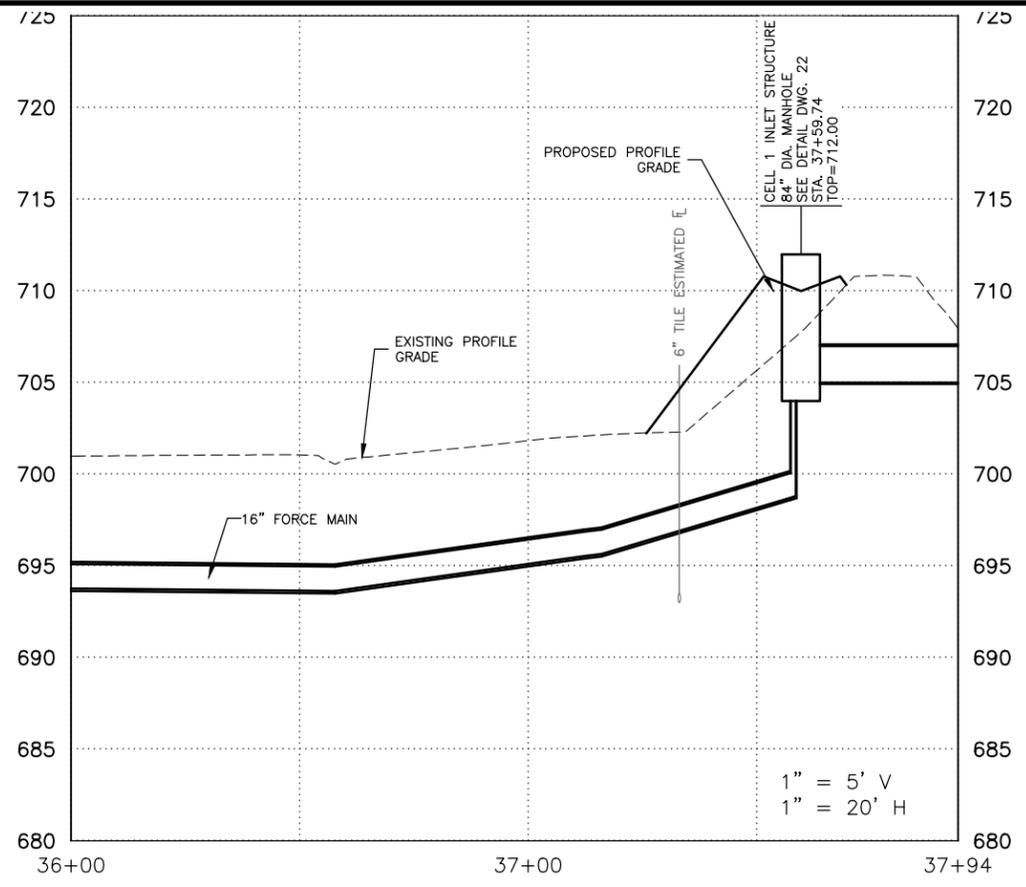
**FORCE MAIN  
PLAN AND PROFILE**

DWG. NO.
11
PROJECT 36845

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**NOTES:**

1. TILE LINES ARE PRESENT ALONG ROUTE IF TILE LINES ARE ENCOUNTERED, MARK ENDS ON BOTH SIDE OF TRENCH. LEAVE TRENCH OPEN UNTIL REPAIR CAN BE INSPECTED AND PHOTOGRAPHED BY ENGINEER. REPAIR AS SPECIFIED.
2. FORCE MAIN ROUTE FOLLOWS OLD RAILROAD CORRIDOR. BACKFILL TRENCH AND COMPACT AS SPECIFIED. REPLACE GRANULAR SURFACING WITH NEW MATERIAL 12' WIDE 6" THICK.
3. SEED ALL NON AGRICULTURAL AREAS DISTURBED BY CONSTRUCTION NORTH OF STA. 4+00 WITH URBAN MIX AND SOUTH OF STA. 4+00 WITH RURAL MIX.
4. ALL FORCE MAIN FROM STA. 4+00 TO STA. 37+12 MUST BE INSTALLED PRIOR TO APRIL 1, 2013. IN AGRICULTURAL AREAS SEGREGATE TOP 18" OF SOIL. BACKFILL TRENCH AND REPLACE TOP 18" OF SOIL. DO NOT OVER COMPACT OR USE AS A HAUL ROAD. IF MATERIAL BECOMES COMPACTED, DISC AS NECESSARY..
5. POT HOLE EXISTING FORCE MAIN TO CONFIRM LOCATION PRIOR TO CONSTRUCTING NEW FORCE MAIN. ADJUST ALIGNMENT AS NECESSARY TO MAINTAIN SEPARATION.

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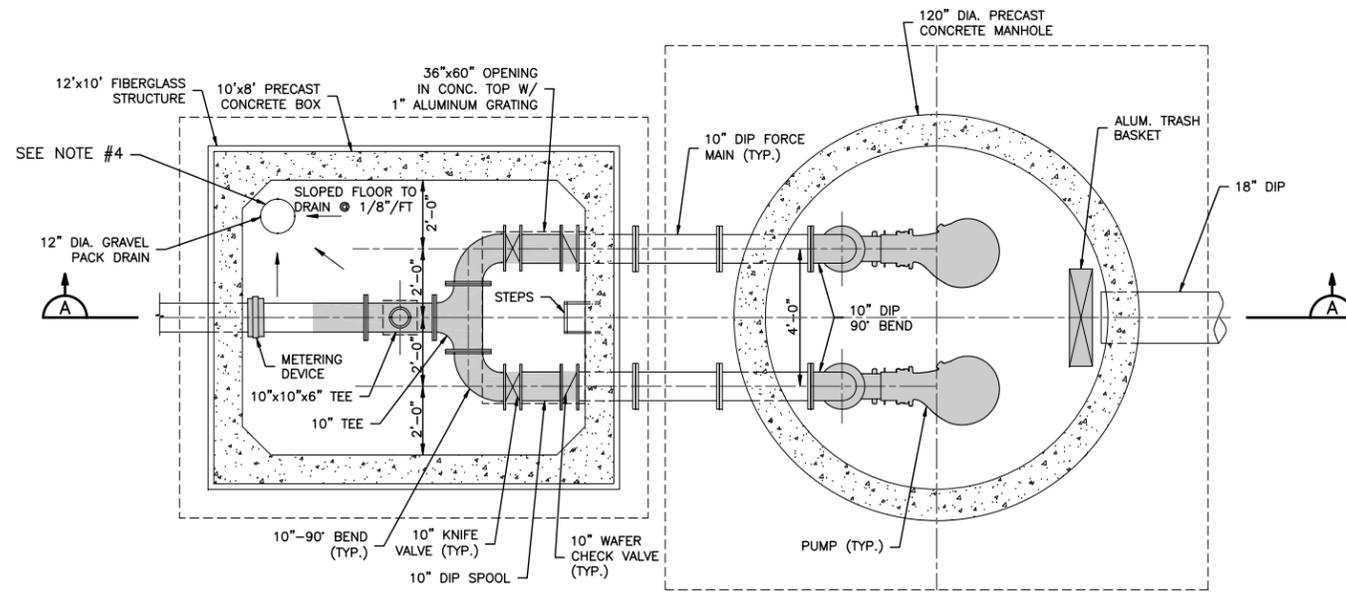
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<b>FORCE MAIN PLAN AND PROFILE</b>	<b>DWG. NO.</b>  12
PROJECT	36845

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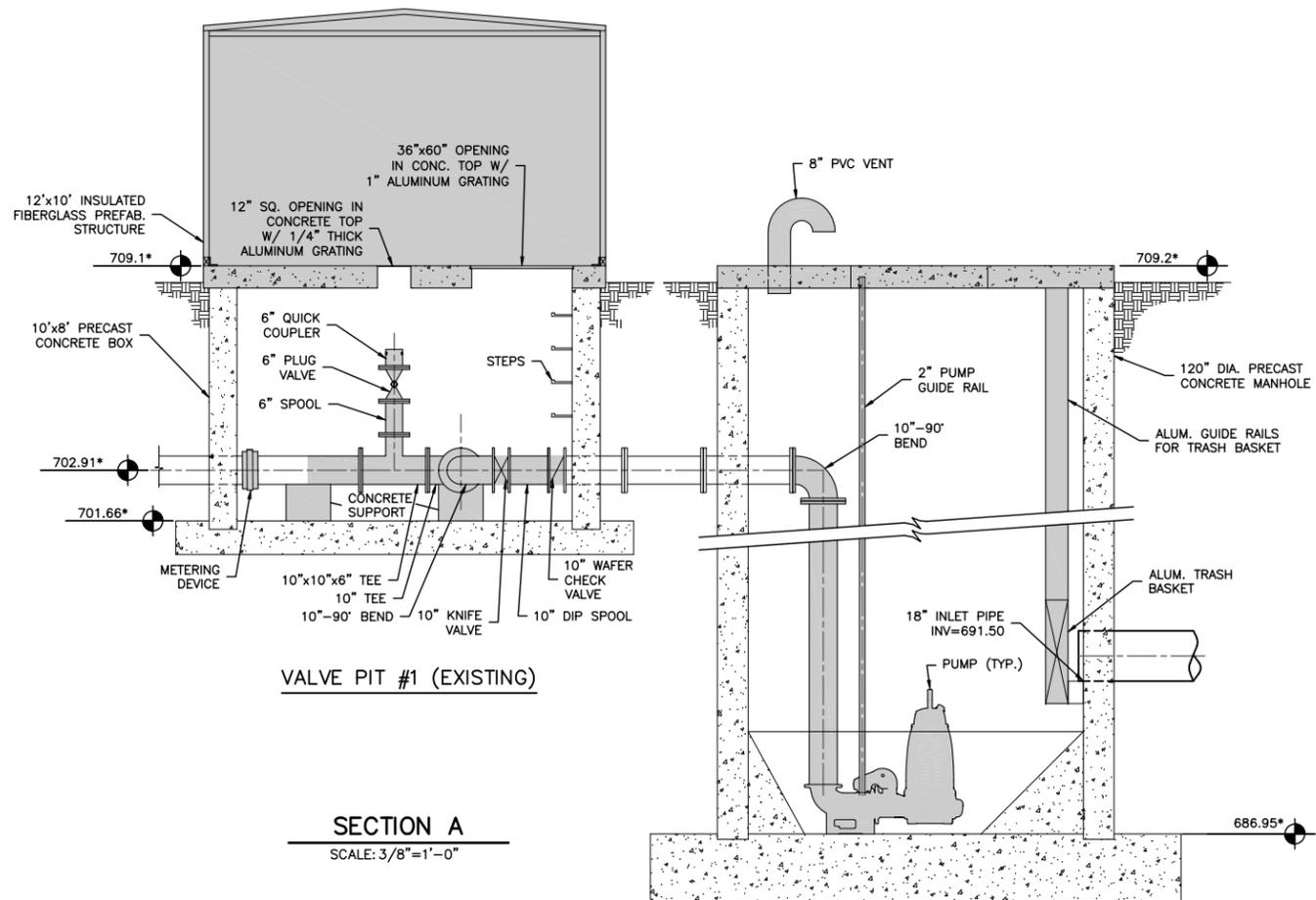
VALVE PIT #1 (EXISTING)      LIFT STATION #1 (EXISTING)

**SUBGRADE PLAN**

SCALE: 3/8"=1'-0"

**REMOVAL NOTES:**

1. REMOVE EXISTING PUMPS, BASE ELBOWS, GUIDE RAILS AND BRACKETS.
2. REMOVE CONTENTS OF FIBERGLASS STRUCTURE. DISCONNECT ALL ELECTRICAL SERVICES AND PROPERLY ABANDON WIRING AND CONDUIT.
3. REMOVE ALUMINUM GRATING FROM TOP OF VALVE PIT.
4. FILL EXISTING SUMP PIT WITH GROUT.



VALVE PIT #1 (EXISTING)

**SECTION A**

SCALE: 3/8"=1'-0"

LIFT STATION #1 (EXISTING)

**NOTES:**

1. \*—ELEVATION BASED ON AVAILABLE INFORMATION. FIELD VERIFY PRIOR TO CONSTRUCTION.

DATE	REVISIONS	SCALE	AS NOTED	VERIFY SCALE
		DRAWN	ALG	BAR IS ONE INCH ON ORIGINAL DRAWING.
		CHECKED	DRS	0 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.
		APPROVED	DRS	
		DATE	11-16-12	
		ISSUED FOR	REVIEW	

DATE	REVISIONS	SCALE	AS NOTED	VERIFY SCALE
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LIFT STATION AND FORCE MAIN  
CITY OF WEST BRANCH

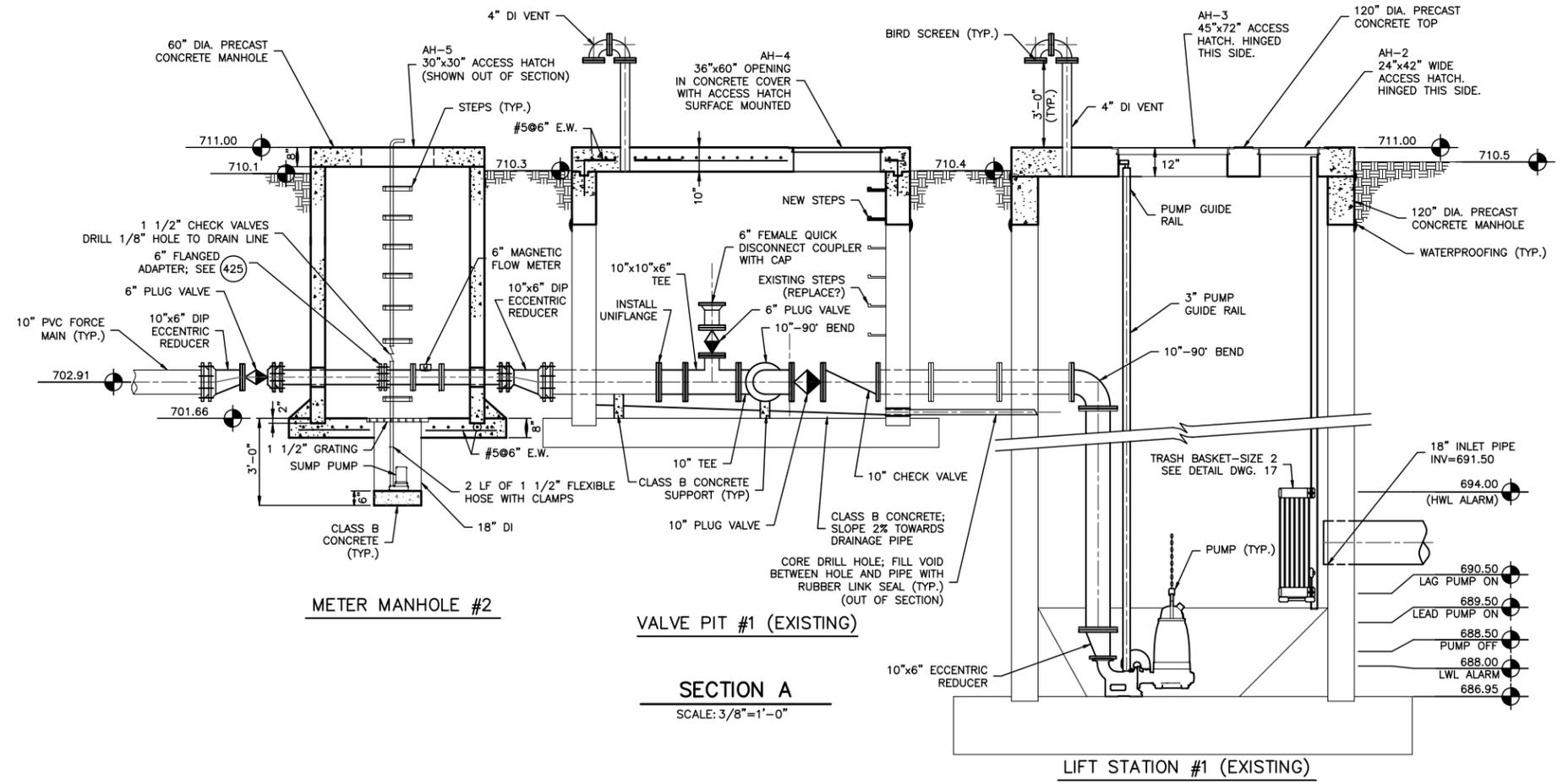
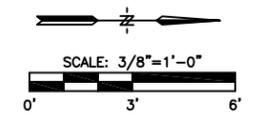
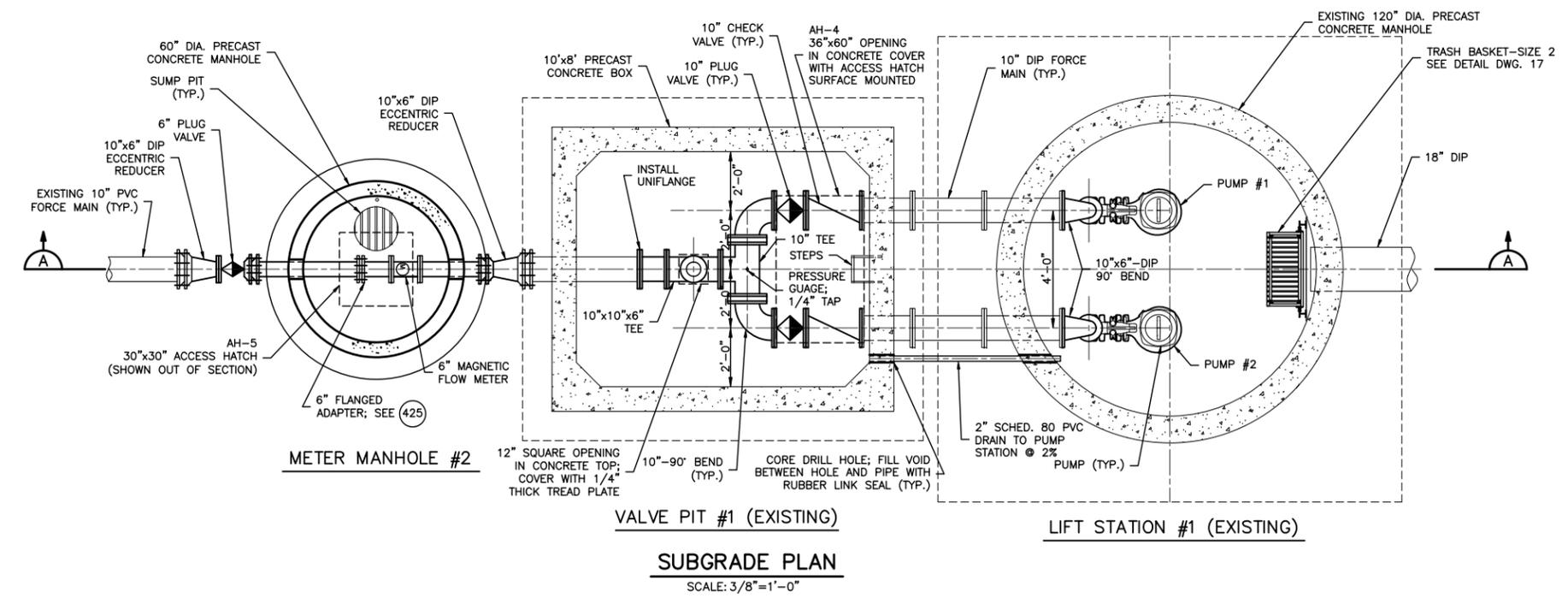
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LIFT STATION #1 - REMOVALS

DWG. NO.
13
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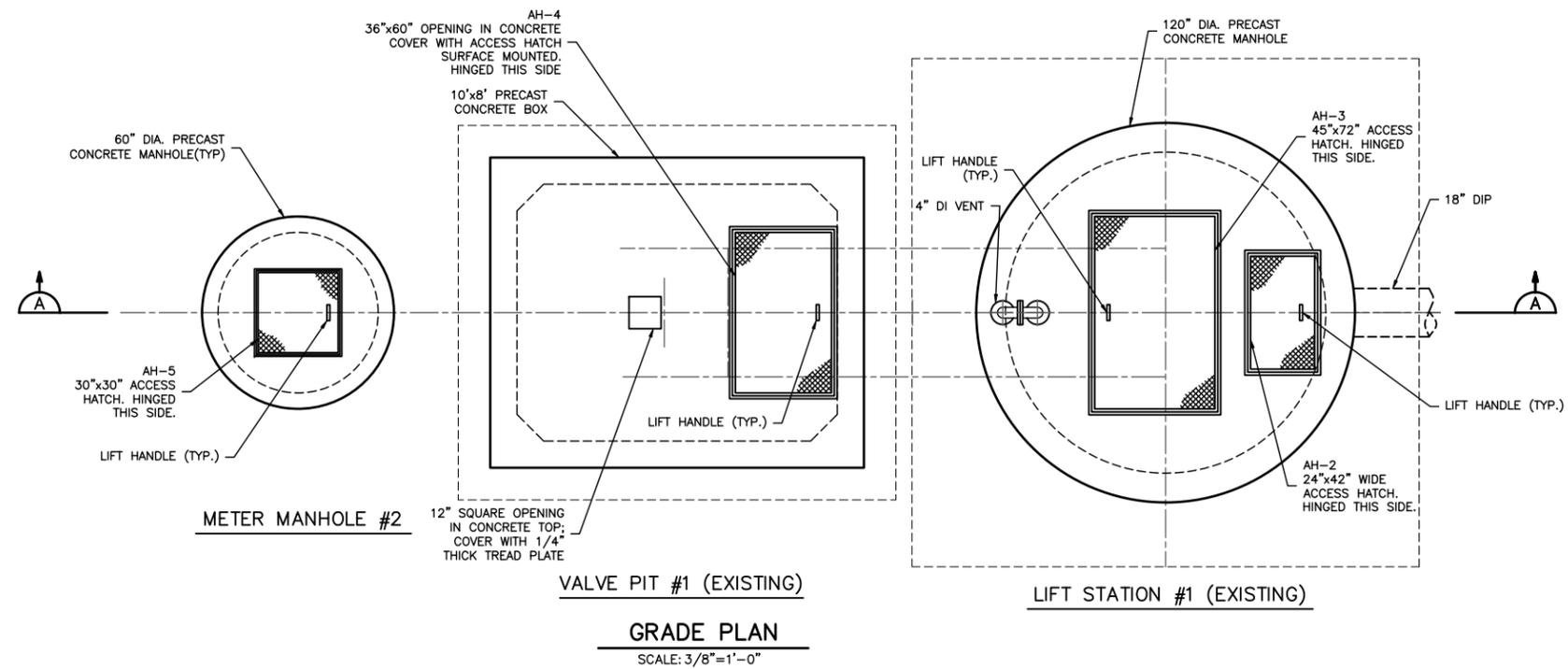
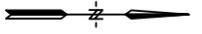


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**LIFT STATION #1 - IMPROVEMENTS**

DWG. NO.
14
PROJECT 36845



METER MANHOLE #2

VALVE PIT #1 (EXISTING)

LIFT STATION #1 (EXISTING)

GRADE PLAN  
SCALE: 3/8"=1'-0"

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		APPROVED	DRS
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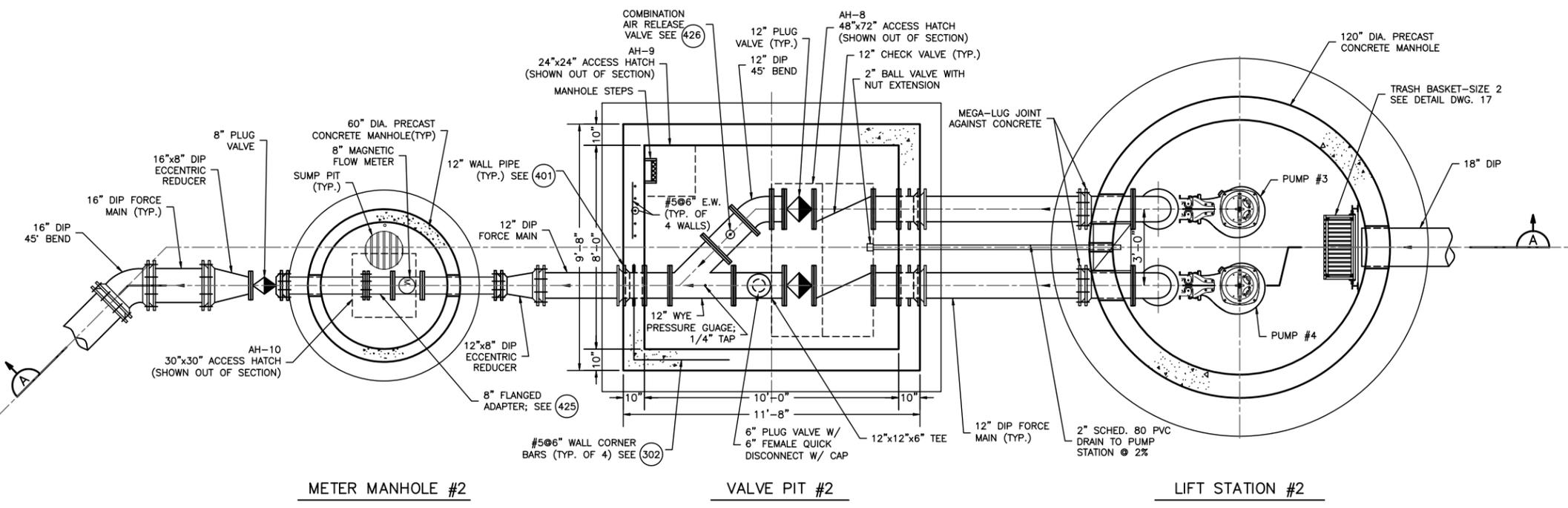
LIFT STATION #1 - IMPROVEMENTS

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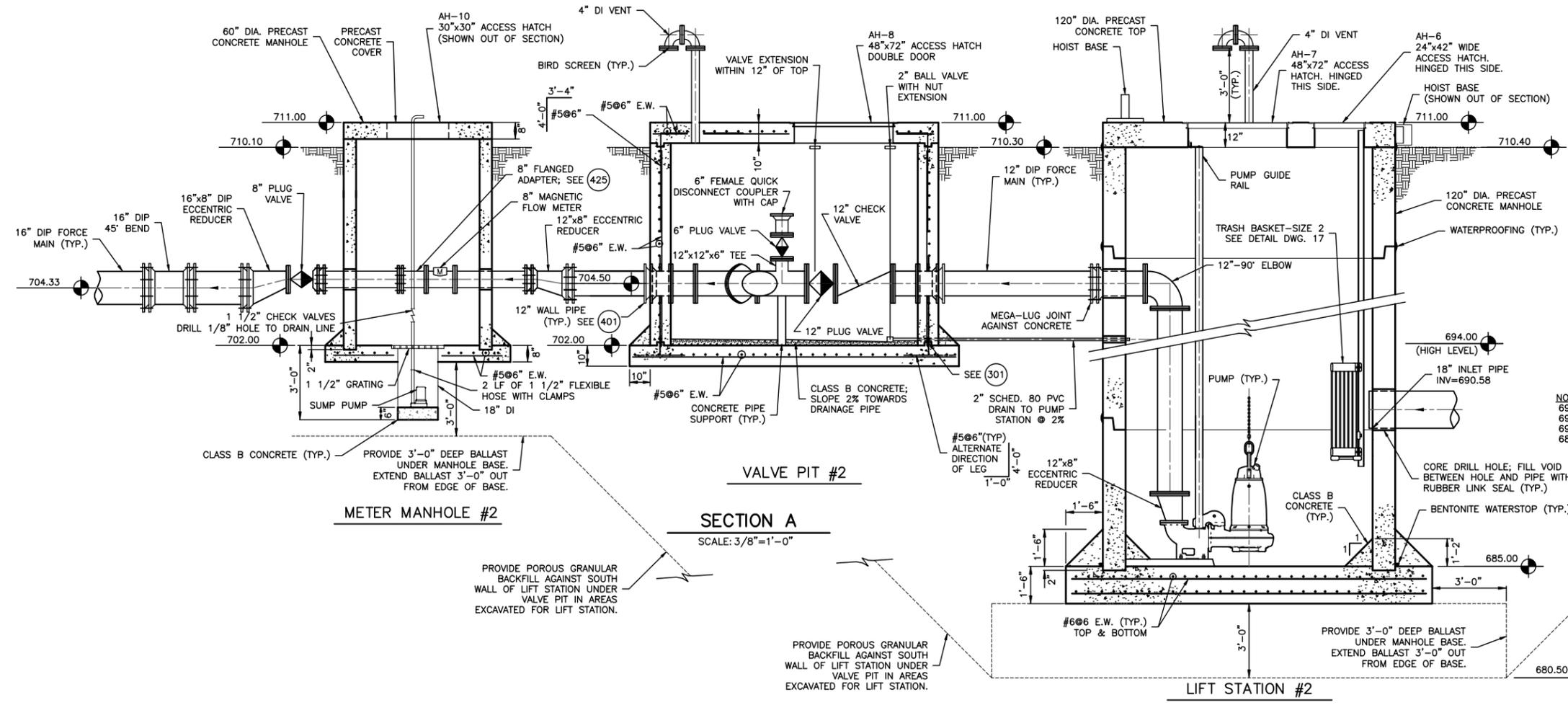
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**SUBGRADE PLAN**  
SCALE: 3/8"=1'-0"



**SECTION A**  
SCALE: 3/8"=1'-0"

DATE	REVISIONS	SCALE	AS NOTED
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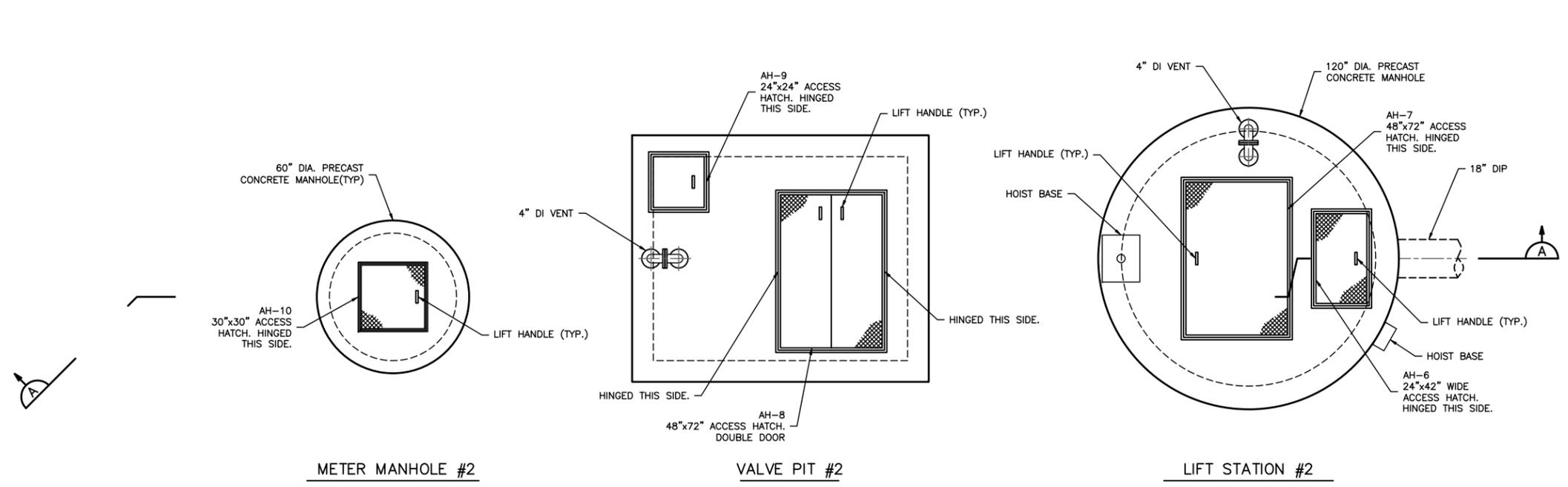


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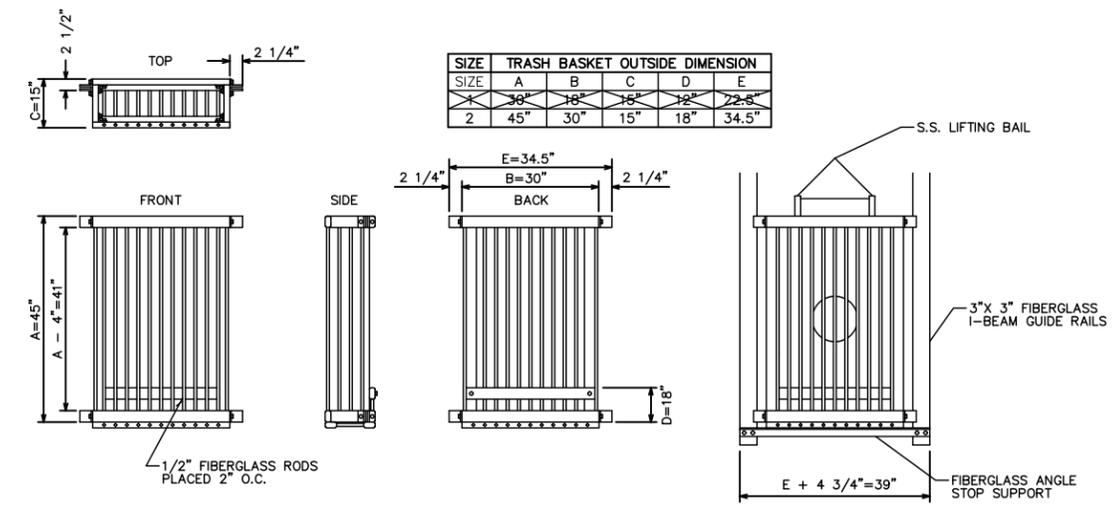
**LIFT STATION #2 - IMPROVEMENTS**

DWG. NO.
16
PROJECT 36845



**NOTES:**  
 1. INSTALL DRAINS THROUGH SIDE OF STRUCTURE FOR ACCESS HATCH FRAMES FOR METER AND VALVE MANHOLES.

**GRADE PLAN**  
 SCALE: 3/8"=1'-0"



**TRASH BASKET DETAIL**  
 NOT TO SCALE

NOTE: CONTRACTOR MAY SUBMIT ALTERNATE DESIGN FOR ALUMINUM BASKET AND STAINLESS STEEL GUIDE RAILS. SUBMITTAL IS SUBJECT TO REVIEW AND APPROVAL OF ENGINEER.

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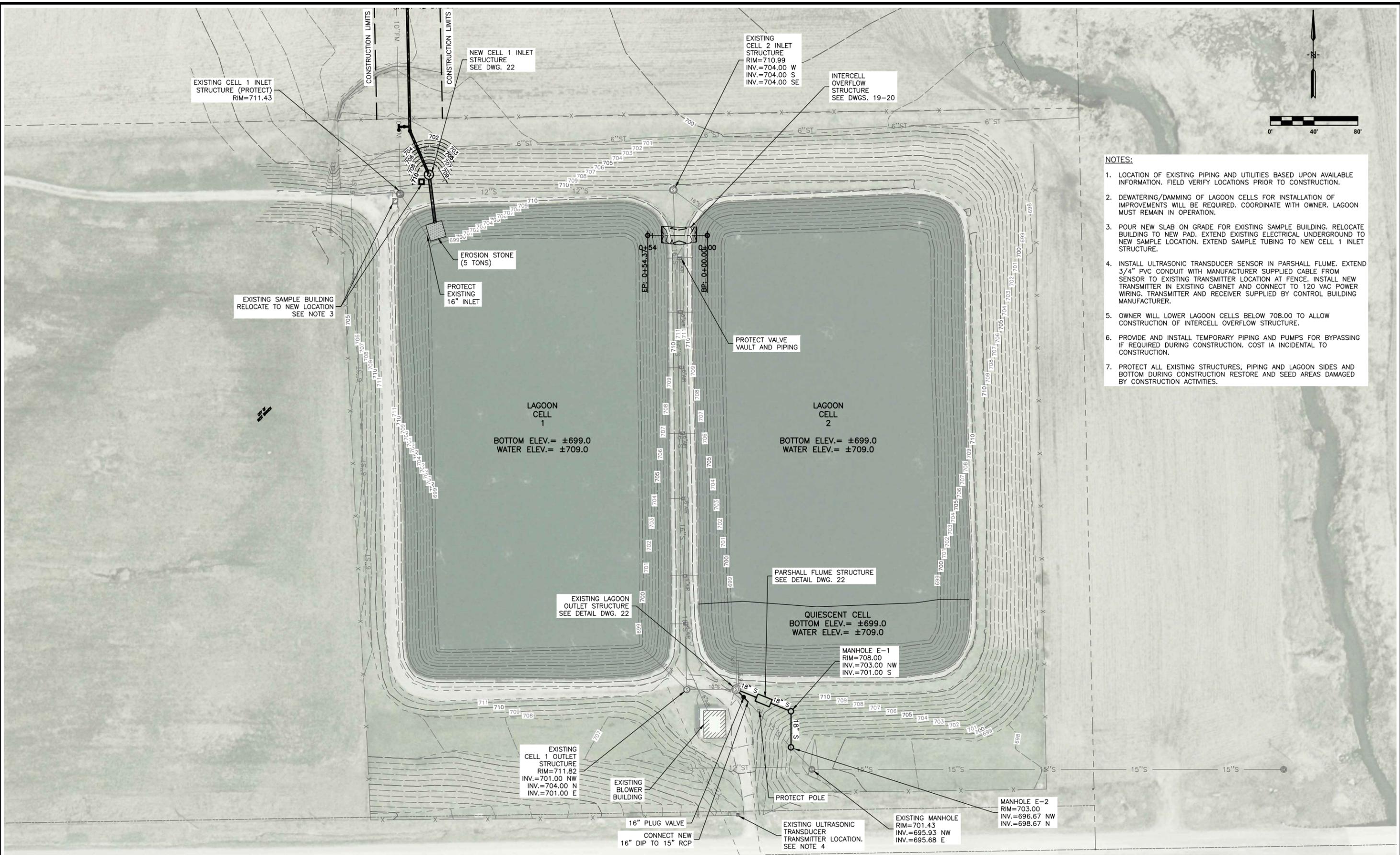
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LIFT STATION #2 - IMPROVEMENTS

DATE	DWG. NO.
	17
PROJECT	36845

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- NOTES:**
1. LOCATION OF EXISTING PIPING AND UTILITIES BASED UPON AVAILABLE INFORMATION. FIELD VERIFY LOCATIONS PRIOR TO CONSTRUCTION.
  2. DEWATERING/DAMMING OF LAGOON CELLS FOR INSTALLATION OF IMPROVEMENTS WILL BE REQUIRED. COORDINATE WITH OWNER. LAGOON MUST REMAIN IN OPERATION.
  3. POUR NEW SLAB ON GRADE FOR EXISTING SAMPLE BUILDING. RELOCATE BUILDING TO NEW PAD. EXTEND EXISTING ELECTRICAL UNDERGROUND TO NEW SAMPLE LOCATION. EXTEND SAMPLE TUBING TO NEW CELL 1 INLET STRUCTURE.
  4. INSTALL ULTRASONIC TRANSDUCER SENSOR IN PARSHALL FLUME. EXTEND 3/4" PVC CONDUIT WITH MANUFACTURER SUPPLIED CABLE FROM SENSOR TO EXISTING TRANSMITTER LOCATION AT FENCE. INSTALL NEW TRANSMITTER IN EXISTING CABINET AND CONNECT TO 120 VAC POWER WIRING. TRANSMITTER AND RECEIVER SUPPLIED BY CONTROL BUILDING MANUFACTURER.
  5. OWNER WILL LOWER LAGOON CELLS BELOW 708.00 TO ALLOW CONSTRUCTION OF INTERCELL OVERFLOW STRUCTURE.
  6. PROVIDE AND INSTALL TEMPORARY PIPING AND PUMPS FOR BYPASSING IF REQUIRED DURING CONSTRUCTION. COST IA INCIDENTAL TO CONSTRUCTION.
  7. PROTECT ALL EXISTING STRUCTURES, PIPING AND LAGOON SIDES AND BOTTOM DURING CONSTRUCTION RESTORE AND SEED AREAS DAMAGED BY CONSTRUCTION ACTIVITIES.

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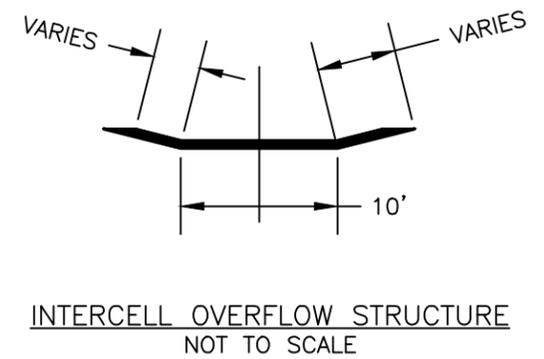
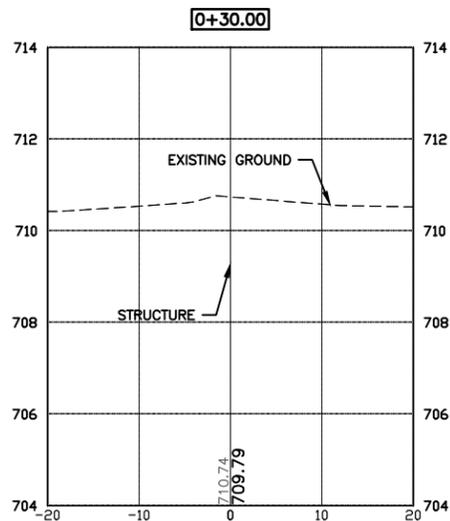
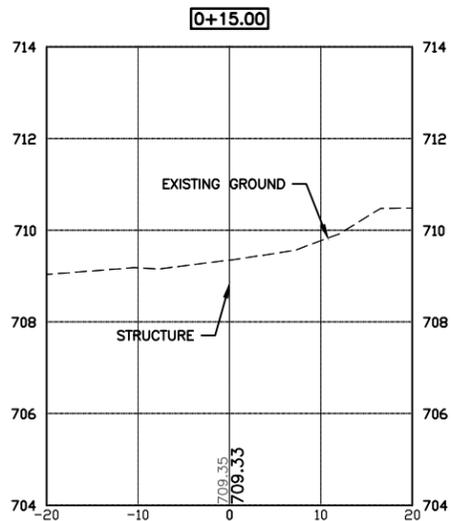
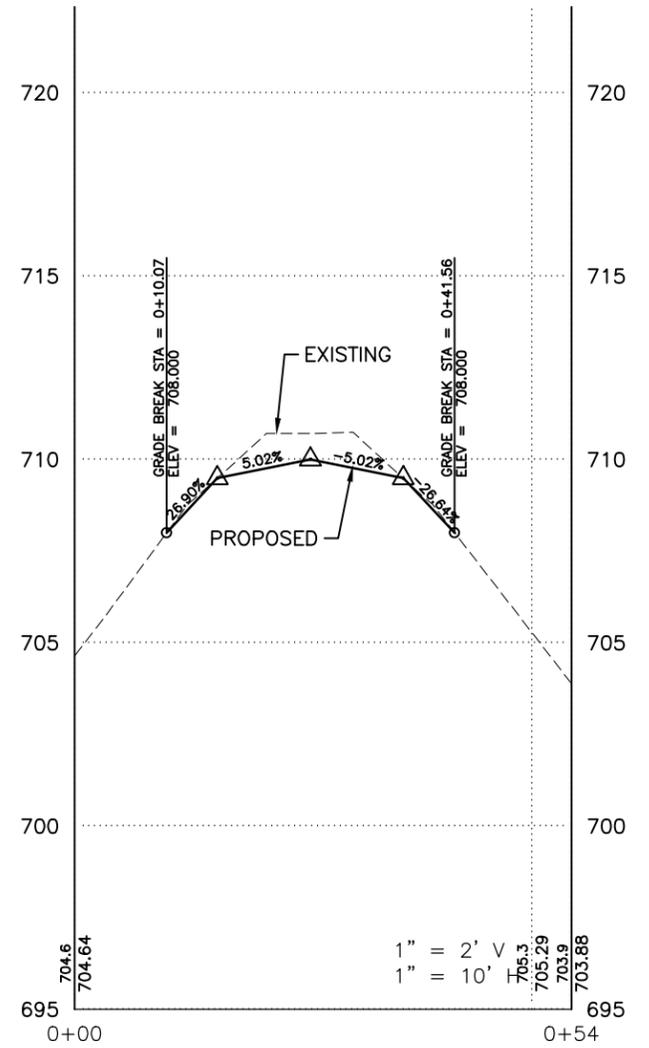
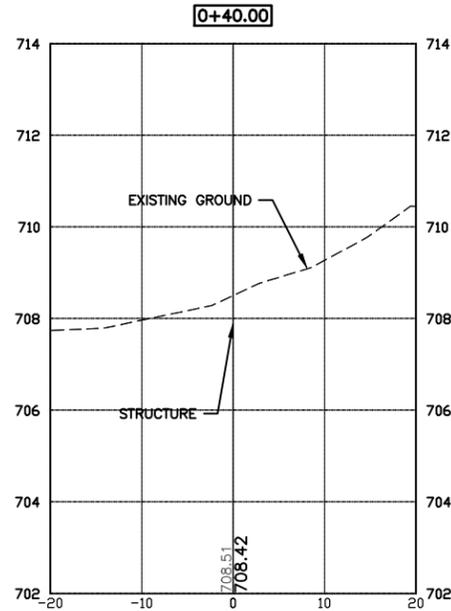
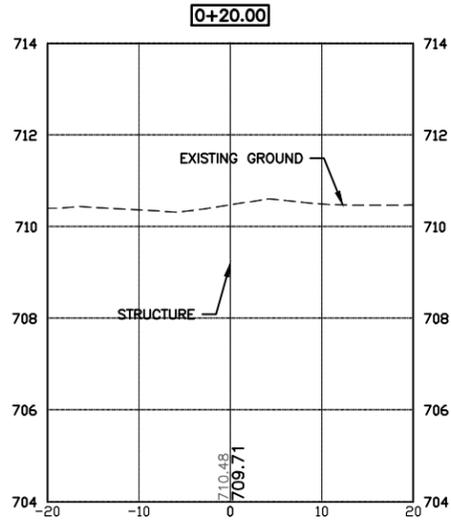


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<b>LAGOON SITE PLAN</b>		<b>DWG. NO.</b> 18
PROJECT		36845





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LIFT STATION  
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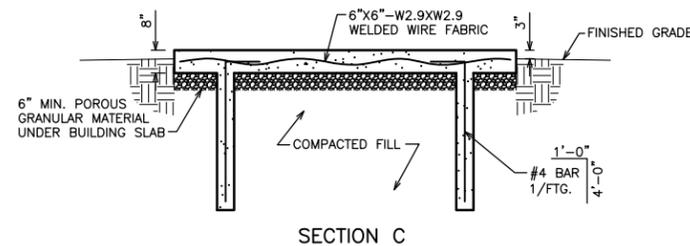
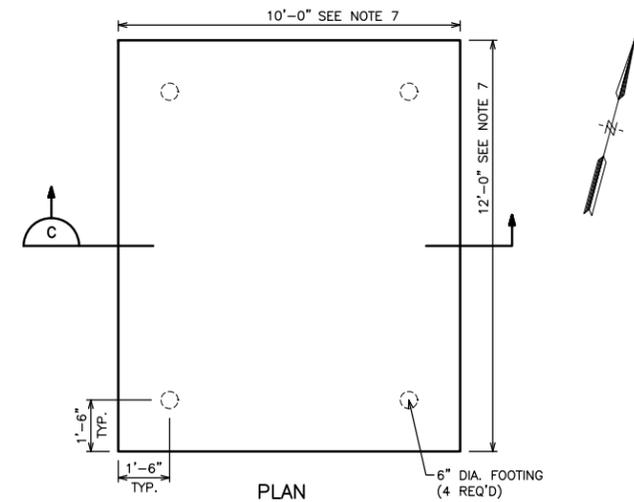
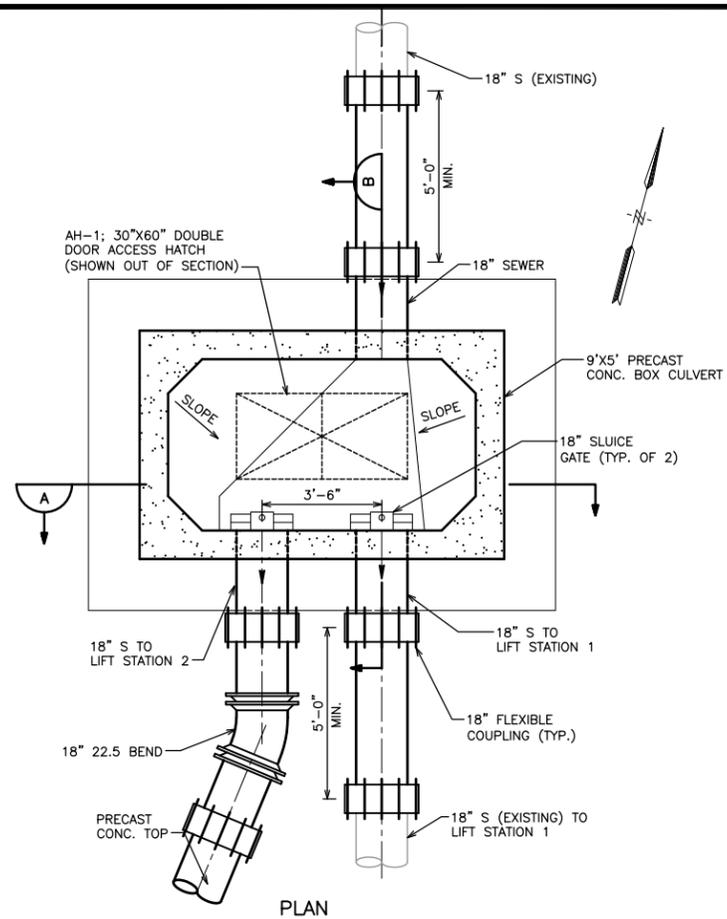
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SECTIONS  
INTERCELL OVERFLOW STRUCTURE  
WASTEWATER TREATMENT FACILITY

DWG. NO.
20
PROJECT 36845

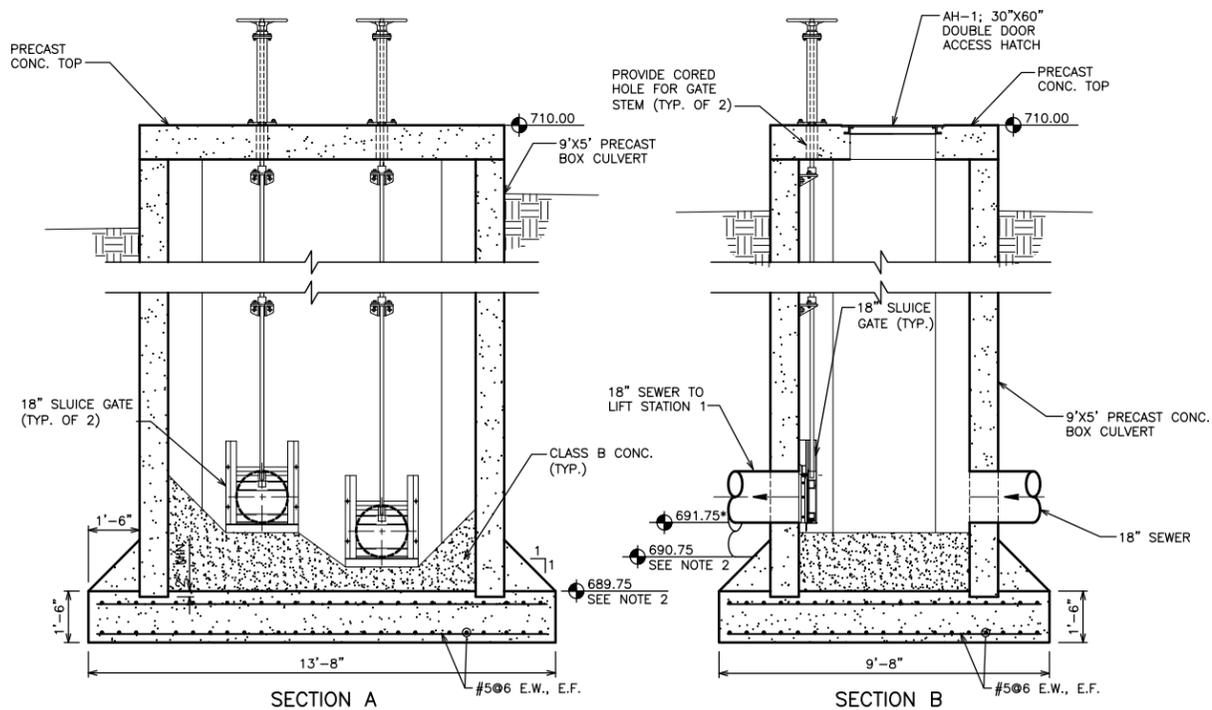
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CONTROL BUILDING PAD

SCALE: 3/8"=1'-0"

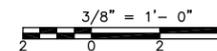


INTERCEPT MANHOLE

SCALE: 3/8"=1'-0"

NOTES:

1. \* - ELEVATION BASED UPON AVAILABLE INFORMATION. FIELD VERIFY PRIOR TO CONSTRUCTION.
2. ELEVATIONS SHOWN ARE RELATIVE TO ELEVATION OF EXISTING 18" S. NEW 18" TO LIFT STATION 2 MUST BE CONSTRUCTED 1'-0" BELOW EXISTING 18" S. BASE MUST BE CONSTRUCTED MIN. 1'-6" BELOW EXISTING 18" S. ADJUSTMENTS MAY BE MADE AFTER FIELD VERIFICATION OF 18" S ELEVATION.
3. FILL BOTTOM OF MANHOLE BELOW GATE FRAMES WITH CLASS B CONCRETE AS SHOWN. KEEP GATE FRAMES AND ANCHORS ACCESSIBLE AFTER GROUTING.
4. PROVIDE FLEXIBLE COUPLING WITHIN 2'-0" OF WALL AT ALL PIPE CONNECTIONS TO INTERCEPT STRUCTURE.
5. INTERCEPT MANHOLE CONSTRUCTION WILL REQUIRE CONSTRUCTION OF TEMPORARY BYPASS PIPING TO KEEP EXISTING 18" SEWER IN SERVICE. COST OF BYPASS LINE CONSTRUCTION INCLUDING 18" PIPE AND FITTINGS INCIDENTAL TO CONSTRUCTION. REMOVE BYPASS LINE AFTER INTERCEPT MANHOLE IS COMPLETE.
6. PROVIDE 3'-0" DEEP BALLAST UNDER MANHOLE BASE. EXTEND BALLAST 3'-0" OUT FROM EDGE OF BASE.
7. DIMENSIONS OF PAD MAY VARY SLIGHTLY BASED UPON BUILDING SUPPLIED. FOLLOW MANUFACTURER'S RECOMMENDATIONS ON BUILDING ATTACHMENT METHODS. ANCHORING BUILDING TO SLAB IS INCIDENTAL TO COST OF BUILDING. FINAL SIZE TO BE DETERMINED DURING SHOP DRAWING REVIEW. PAD DIMENSIONS INCLUDE 4'-0" ON WEST END FOR WALKWAY.
8. SETTLEMENT OF FILL IN CONTROL BUILDING AREA MUST HAVE CEASED PRIOR TO PLACEMENT OF CONTROL BUILDING PAD. REFER TO GEOTECHNICAL REPORT IN APPENDIX A OF SPECIFICATIONS FOR MORE DETAIL.



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CONTROL BUILDING & INTERCEPT DETAILS

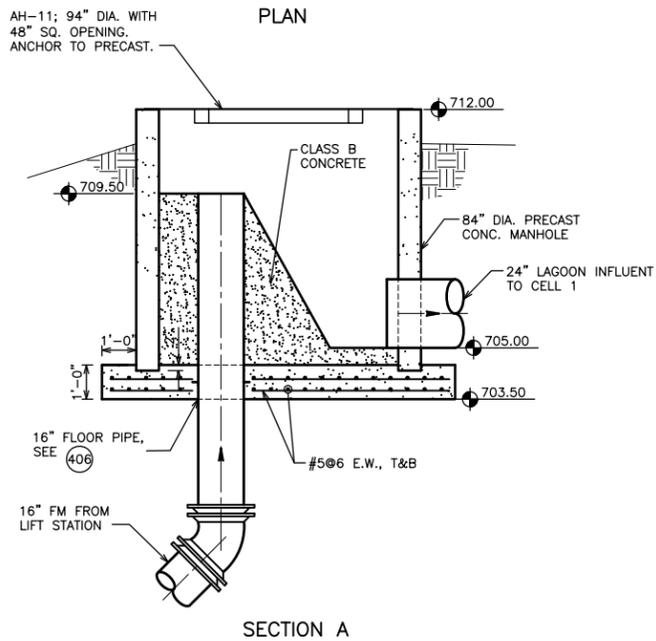
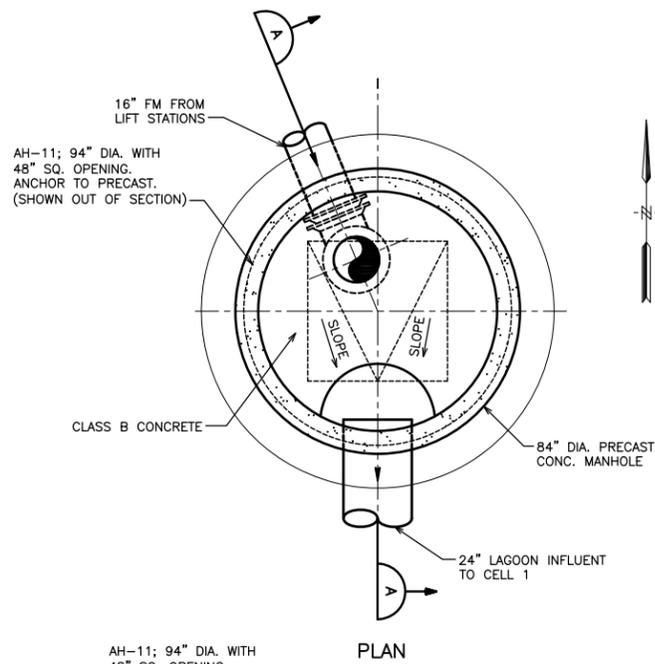
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21

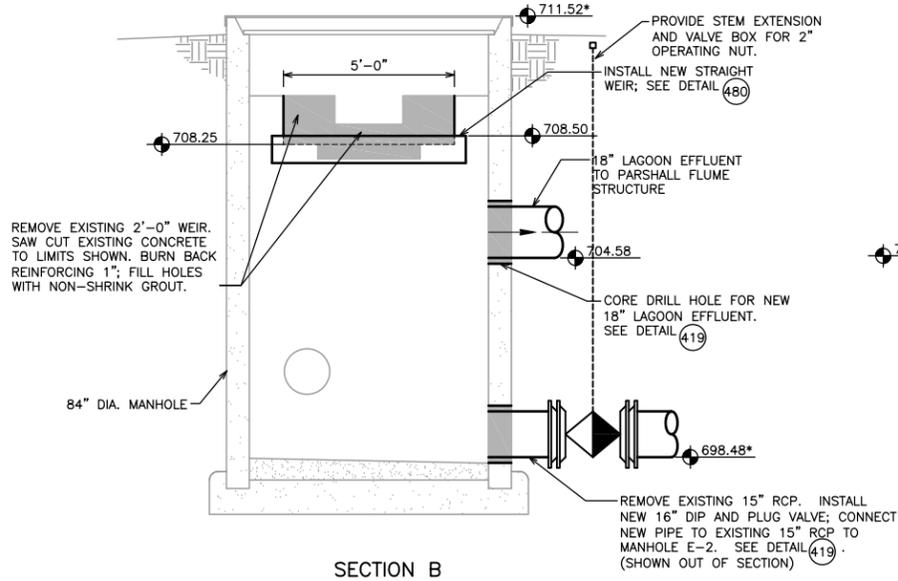
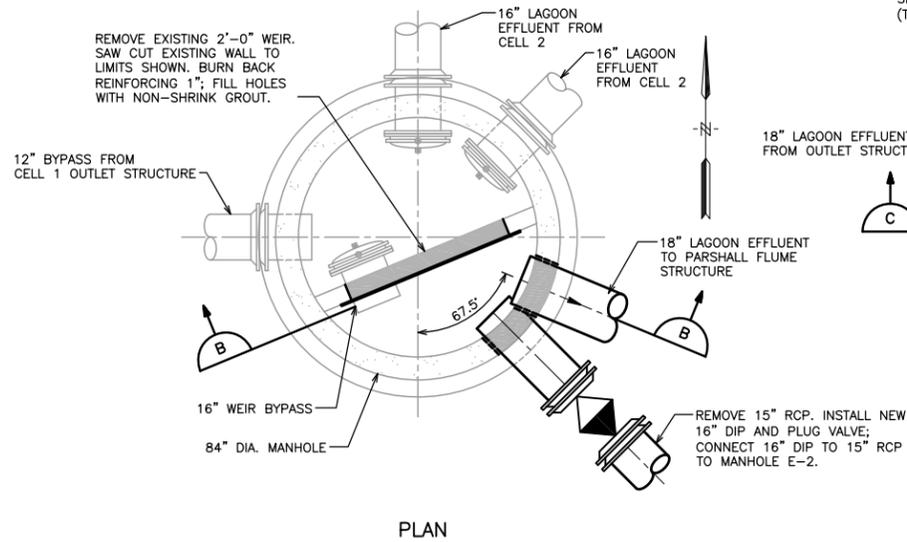
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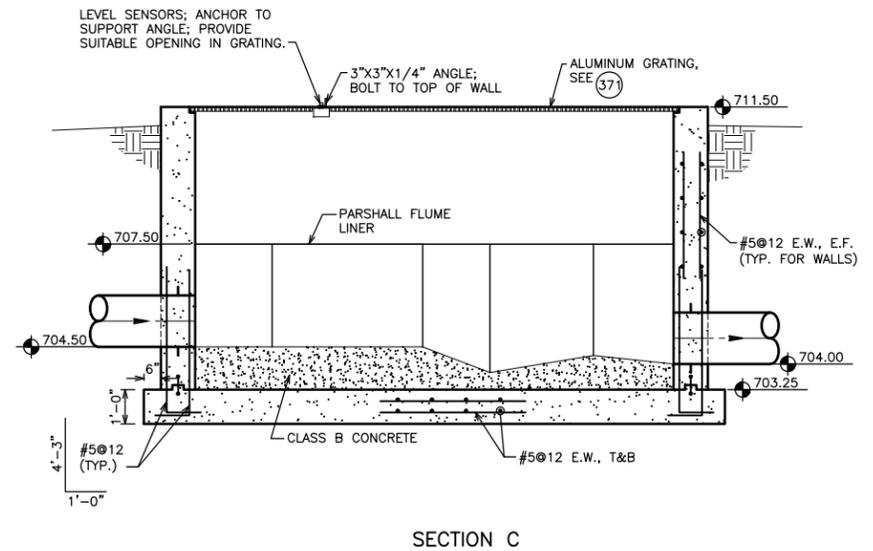
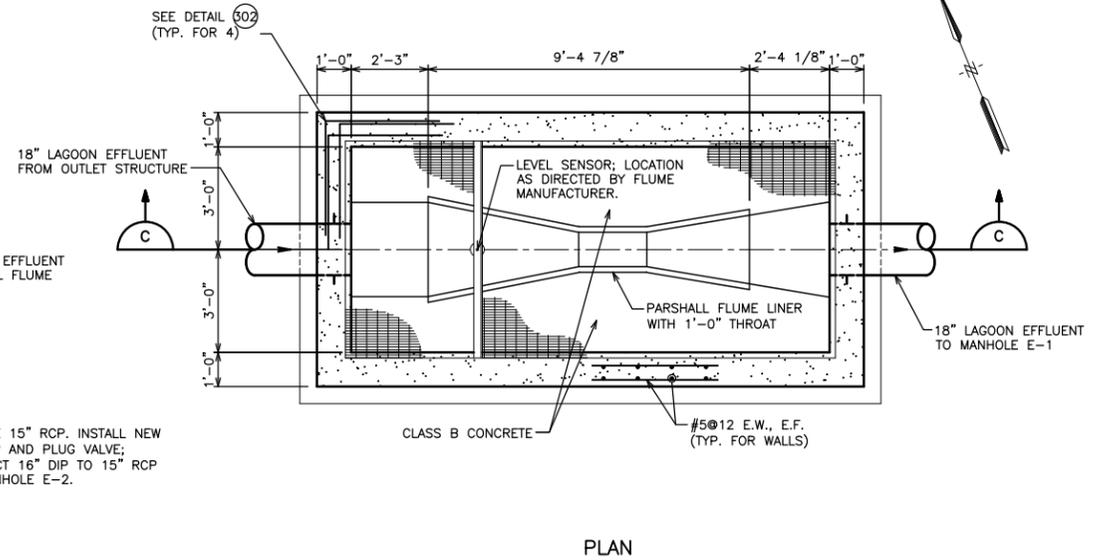
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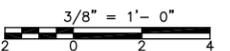
**NEW CELL 1 INLET STRUCTURE**  
SCALE: 3/8"=1'-0"



**LAGOON OUTLET STRUCTURE**  
SCALE: 3/8"=1'-0"



**PARSHALL FLUME STRUCTURE**  
SCALE: 3/8"=1'-0"



DATE	REVISIONS	SCALE	AS NOTED
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		CHECKED	EKL
		APPROVED	DRS
		DATE	11-16-12
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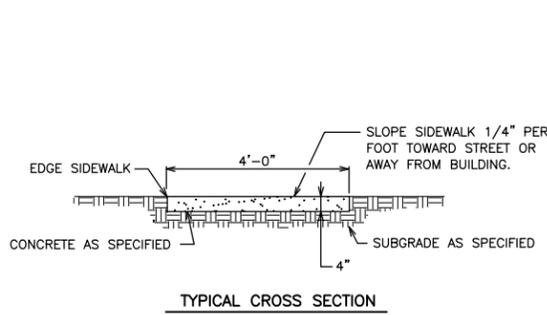
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LAGOON STRUCTURE DETAILS

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22
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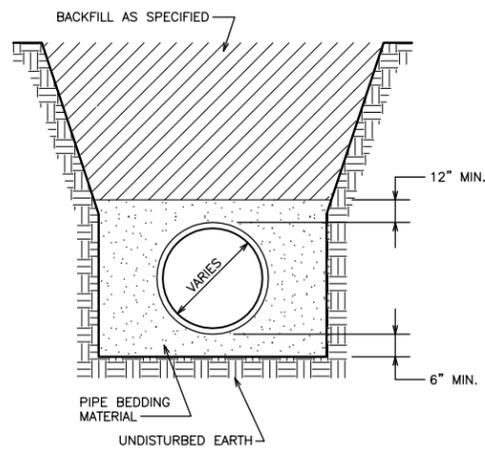
FILE PATH: Z:\WEST BRANCH 36845 LIFT STATION & MAIN DSDRAWINGS\MEPDETAILS



**NOTES:**  
1. IF LONGITUDINAL DIMENSION OF SIDEWALK IS NOT IN EQUAL MULTIPLES, EQUALLY SPACE THE WEAKENED PLANE JOINTS.

**SIDEWALK DETAILS**

102A

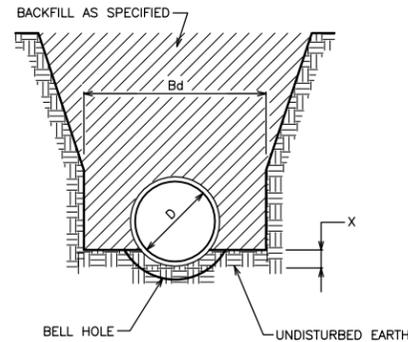


**NOTES:**  
1. EXCAVATED MATERIAL FOR BACKFILL, WHEN SPECIFIED: FINELY DIVIDED MATERIAL FREE FROM DEBRIS, STONES, ORGANIC MATTER OR FROZEN LUMPS.

**STANDARD PVC PIPE BEDDING**

NO SCALE

124



**NOTES:**  
1. EXCAVATED MATERIAL FOR BACKFILL, WHEN SPECIFIED: FINELY DIVIDED MATERIAL FREE FROM DEBRIS, STONES, ORGANIC MATTER OR FROZEN LUMPS.  
2. Bd = STANDARD TRENCH WIDTH AT TOP OF PIPE.  
3. X = MINIMUM DEPTH OF DEPRESSION FOR PIPE BARREL; HAND SHAPE BELL HOLES BELOW "X" DIMENSION.  
4. SEE SPECIFICATIONS FOR LIMITATIONS ON USE OF THIS TYPE OF BEDDING.

**HAND SHAPED TRENCH BOTTOM FOR IRON PIPE**

NOT TO SCALE

126

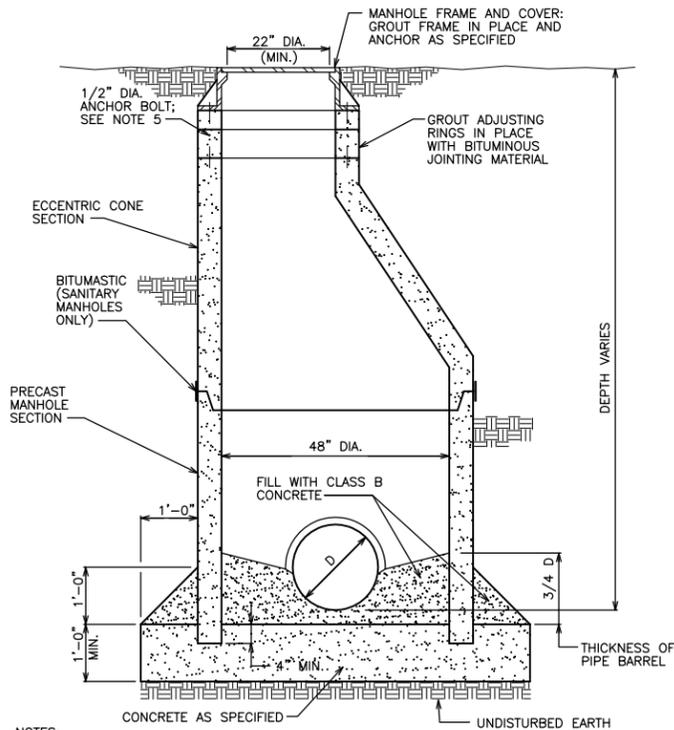
D (INCHES)	Bd (FEET & INCHES)	X (INCHES)
4	2-0	1
6	2-0	1
8	2-3	1
10	2-3	1 1/2
12	2-3	1 1/2
16	2-9	2
18	3-0	2 1/2
20	3-3	2 1/2
24	3-6	3
30	4-3	4
36	4-9	4 1/2

**FOUNDATION NOTES**

- CENTER FOOTINGS UNDER WALL, UNLESS OTHERWISE SHOWN.
- PLACE FOOTINGS ON NATURAL UNDISTURBED EARTH, FREE DRAINING FILL OR STRUCTURAL FILL.
- PLACE FILL SIMULTANEOUSLY ON BOTH SIDES OF FREE-STANDING STRUCTURES.
- PLACE FILL AGAINST FOUNDATION WALLS ENCLOSING INTERIOR SPACES ONLY AFTER CONSTRUCTION IS IN PLACE TO BRACE TOP OF WALL.
- TO MINIMIZE LATERAL FORCES AGAINST STRUCTURE DUE TO WEDGING ACTION OF SOIL, BEGIN COMPACTION OF EACH LAYER AT STRUCTURE WALL.

**CONCRETE NOTES**

- REINFORCING CONTINUOUS AROUND ALL CORNERS UNLESS OTHERWISE SHOWN.
- MINIMUM LAP SPLICES ARE AS FOLLOWS: 32" FOR #4 BAR; 40" FOR #5 BAR; 48" FOR #6 BAR; 70" FOR #7 BAR; 80" FOR #8 BAR.
- CONCRETE COVER FOR REINFORCING; 2" FOR BARS LARGER THAN #5 AND 1 1/2" FOR #5 BARS OR SMALLER EXCEPT AS FOLLOWS:  
3" WHEN CONCRETE IS DEPOSITED AGAINST GROUND, 3/4" FOR WALLS AND SLABS NOT EXPOSED TO GROUND OR WEATHER UNLESS OTHERWISE SHOWN.
- KEYWAY DIMENSIONS; DEPTH 1 5/8" WIDTH X 1/3 OF THICKNESS OF MEMBER, UNLESS OTHERWISE SHOWN.
- KEY AND DOWEL CONCRETE WALLS TO FOOTING W/ DOWELS OF SAME SIZE AND SPACING AS VERTICAL WALL REINFORCING AND EXTEND TO WITHIN 3" OF BOTTOM OF FOOTING, TERMINATE W/ ACI STD. 90° HOOK, UNLESS OTHERWISE SHOWN.
- REINFORCE IN ACCORDANCE WITH "THE MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES, ACI-315", UNLESS OTHERWISE SHOWN.
- PLACE DOWELS BEFORE PLACING CONCRETE.
- DO NOT WELD OR FIELD BEND REINFORCING BARS, EXCEPT AS APPROVED BY ENGINEER.
- PROVIDE WATERSTOP IN CONSTRUCTION JOINTS IN:  
A. WALLS AND SLABS SEPARATING A DRY INTERIOR FROM EARTH OR LIQUID.  
B. EXTERIOR WALLS OF LIQUID HOLDING TANKS FROM 1 FT. ABOVE THE MAXIMUM LIQUID ELEVATION TO 2 FT. BELOW FINISHED GRADE.  
C. LOCATIONS SHOWN ON THE DRAWINGS.
- POUR BEAMS AND SLABS MONOLITHICALLY, SO THAT NO HORIZONTAL CONSTRUCTION JOINTS ARE PROVIDED EXCEPT AS OTHERWISE INDICATED ON DRAWINGS.
- PITCH ALL FLOORS TO FLOOR DRAINS & GUTTERS, MIN. 1/8"/FT. UNLESS NOTED OTHERWISE, MAINTAIN FLOOR SLAB THICKNESS AT MINIMUM INDICATED.
- CHAMFER EXPOSED EDGES OF CONCRETE 3/4" UNLESS OTHERWISE INDICATED.
- DO NOT FIELD CUT PRESTRESSING STRANDS IN PRECAST PRESTRESSED CONCRETE MEMBERS WITHOUT WRITTEN APPROVAL OF FABRICATOR AND ENGINEER.

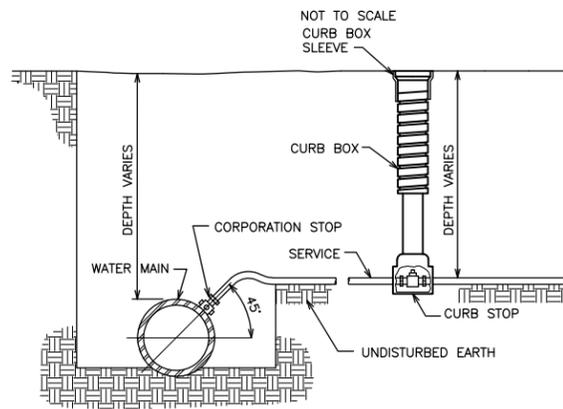


**NOTES:**  
1. PROVIDE MANHOLE STEPS IF SPECIFIED.  
2. SET MANHOLE COVER FLUSH WITH GROUND UNLESS SHOWN OR SPECIFIED OTHERWISE.  
3. PROVIDE JOINT IN ALL PIPES WITHIN 2' OF MANHOLE WALL OR FLEXIBLE GASKET IN MANHOLE WALL.  
4. IF JOINTS ARE PROVIDED FOR SANITARY SEWERS OR MANHOLE IS USED FOR STORM SEWER, GROUT PIPE IN BLOCKOUT WITH NON-SHRINK GROUT.  
5. ANCHOR BOLTS NOT REQUIRED ON STORM SEWER MANHOLES  
6. MAXIMUM D = 27".

**STANDARD ECCENTRIC MANHOLE**

NOT TO SCALE

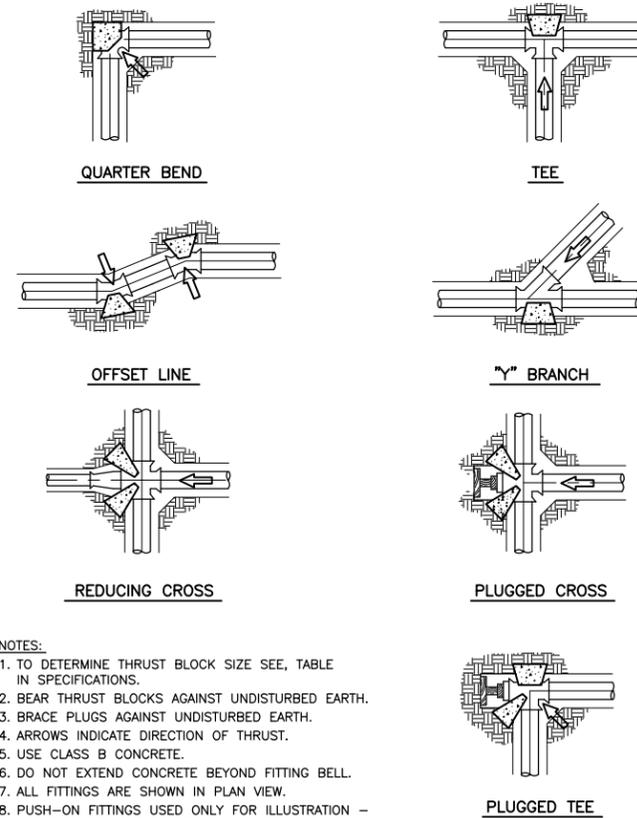
131



**SERVICE CONNECTION**

NOT TO SCALE

172

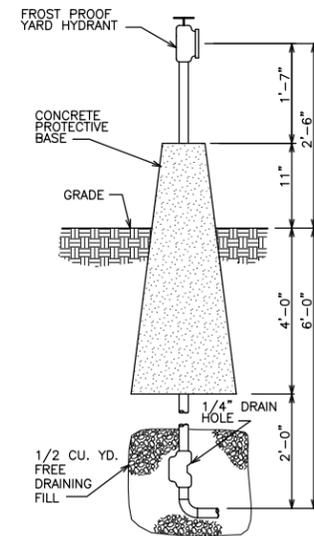


**NOTES:**  
1. TO DETERMINE THRUST BLOCK SIZE SEE TABLE IN SPECIFICATIONS.  
2. BEAR THRUST BLOCKS AGAINST UNDISTURBED EARTH.  
3. BRACE PLUGS AGAINST UNDISTURBED EARTH.  
4. ARROWS INDICATE DIRECTION OF THRUST.  
5. USE CLASS B CONCRETE.  
6. DO NOT EXTEND CONCRETE BEYOND FITTING BELL.  
7. ALL FITTINGS ARE SHOWN IN PLAN VIEW.  
8. PUSH-ON FITTINGS USED ONLY FOR ILLUSTRATION - USE FITTINGS AS SPECIFIED.

**THRUST BLOCK DETAILS**

NOT TO SCALE

175



**FROST PROOF YARD HYDRANT**

NO SCALE

181

DATE	REVISIONS	SCALE	AS NOTED
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		CHECKED	EKL
		APPROVED	DRS
		DATE	11-16-12
		ISSUED FOR	REVIEW

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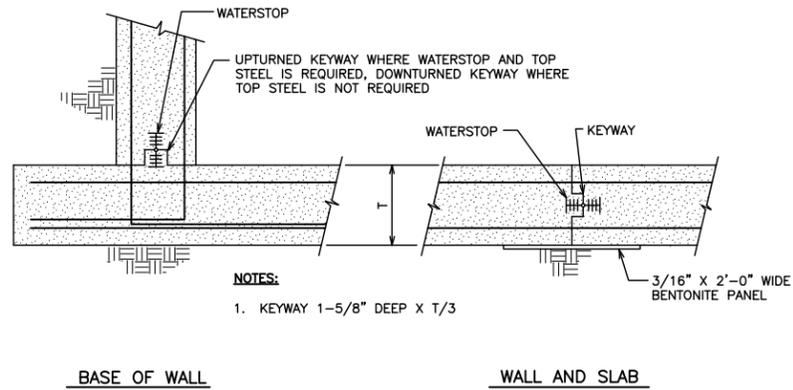
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STANDARD DETAILS

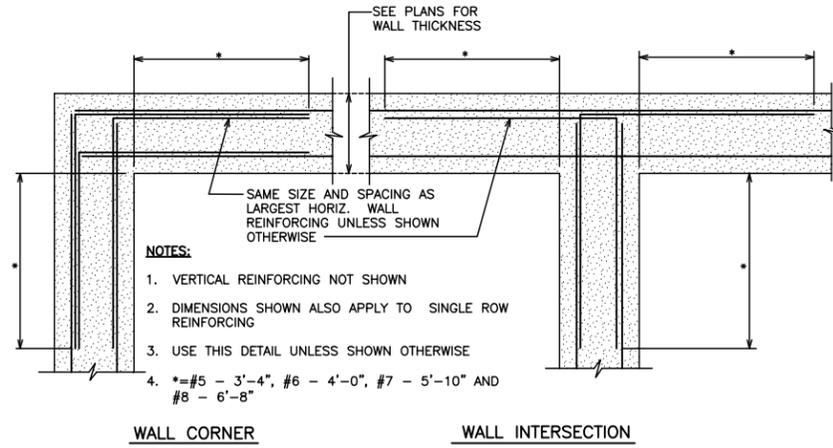
DWG. NO.
23
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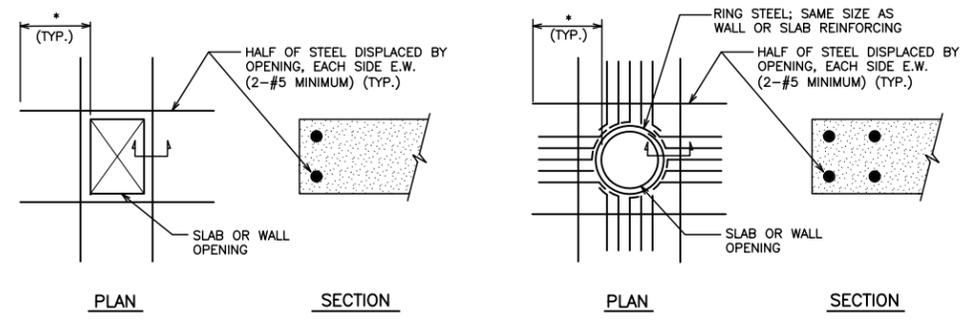
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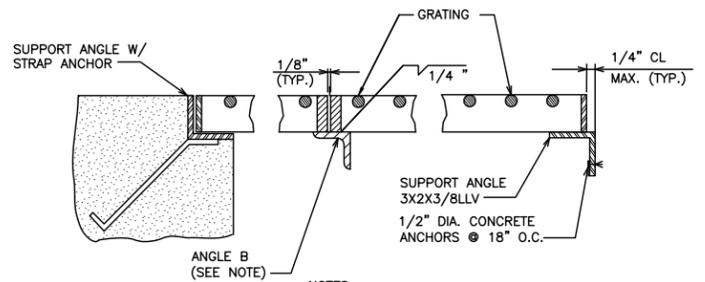
**301**  
SUBGRADE CONSTRUCTION JOINT DETAIL  
NO SCALE



**302**  
REINFORCING DETAIL  
NO SCALE

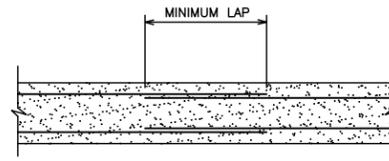


**306**  
CONCRETE OPENING DETAIL  
NO SCALE

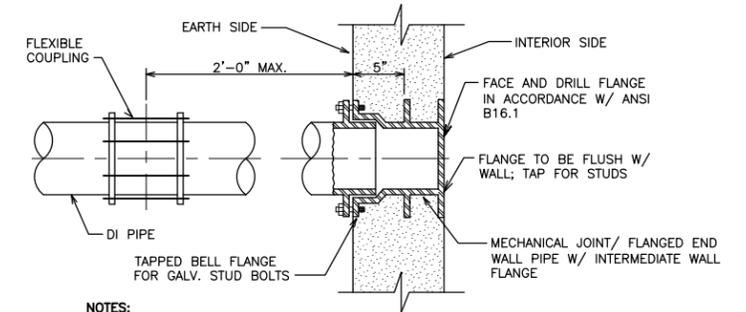


**371**  
GRATING SUPPORT DETAIL  
NO SCALE

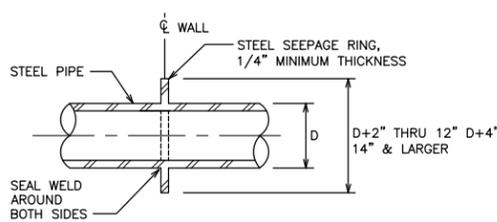
BAR SIZE	MINIMUM LAP
#5	40"
#6	48"
#7	70"
#8	80"



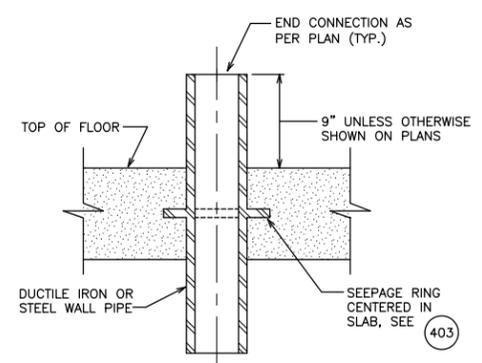
**399**  
TYPICAL LAP SPLICE DETAIL  
NO SCALE



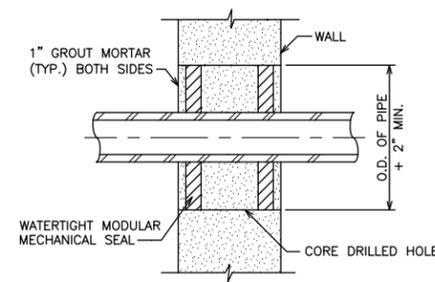
**401**  
WALL PIPE  
NO SCALE



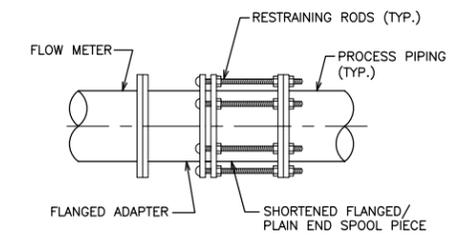
**403**  
SEEPAGE RING  
NO SCALE



**406**  
FLOOR PIPE  
NO SCALE



**419**  
EXISTING CONCRETE WALL PENETRATION  
NO SCALE



**425**  
FLANGED ADAPTER  
NO SCALE

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		CHECKED	EKL
		APPROVED	DRS
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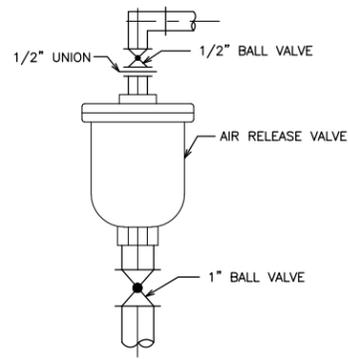


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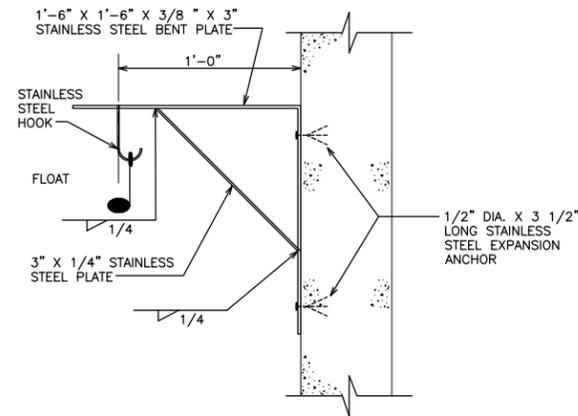
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24  
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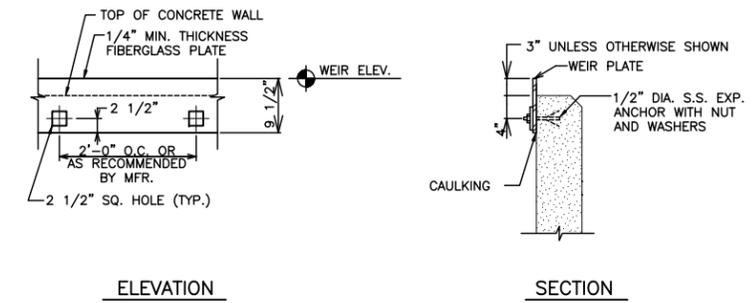
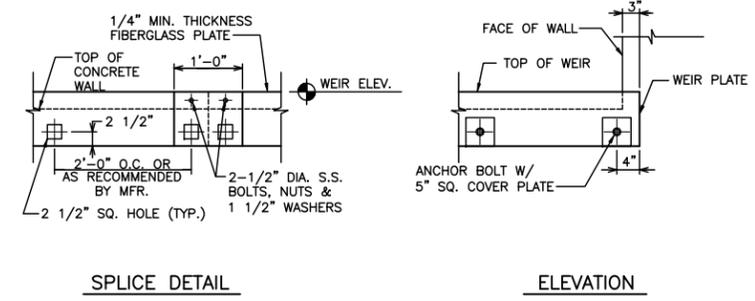
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**AIR RELEASE VALVE ASSEMBLY DETAIL**  
NO SCALE **426**



**FLOAT DETAIL**  
NOT TO SCALE **431**



**STRAIGHT EDGE WEIR**

**WEIR DETAILS**  
SCALE: 3/4"=1'-0" **480**

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DATE	REVISIONS	SCALE	AS NOTED
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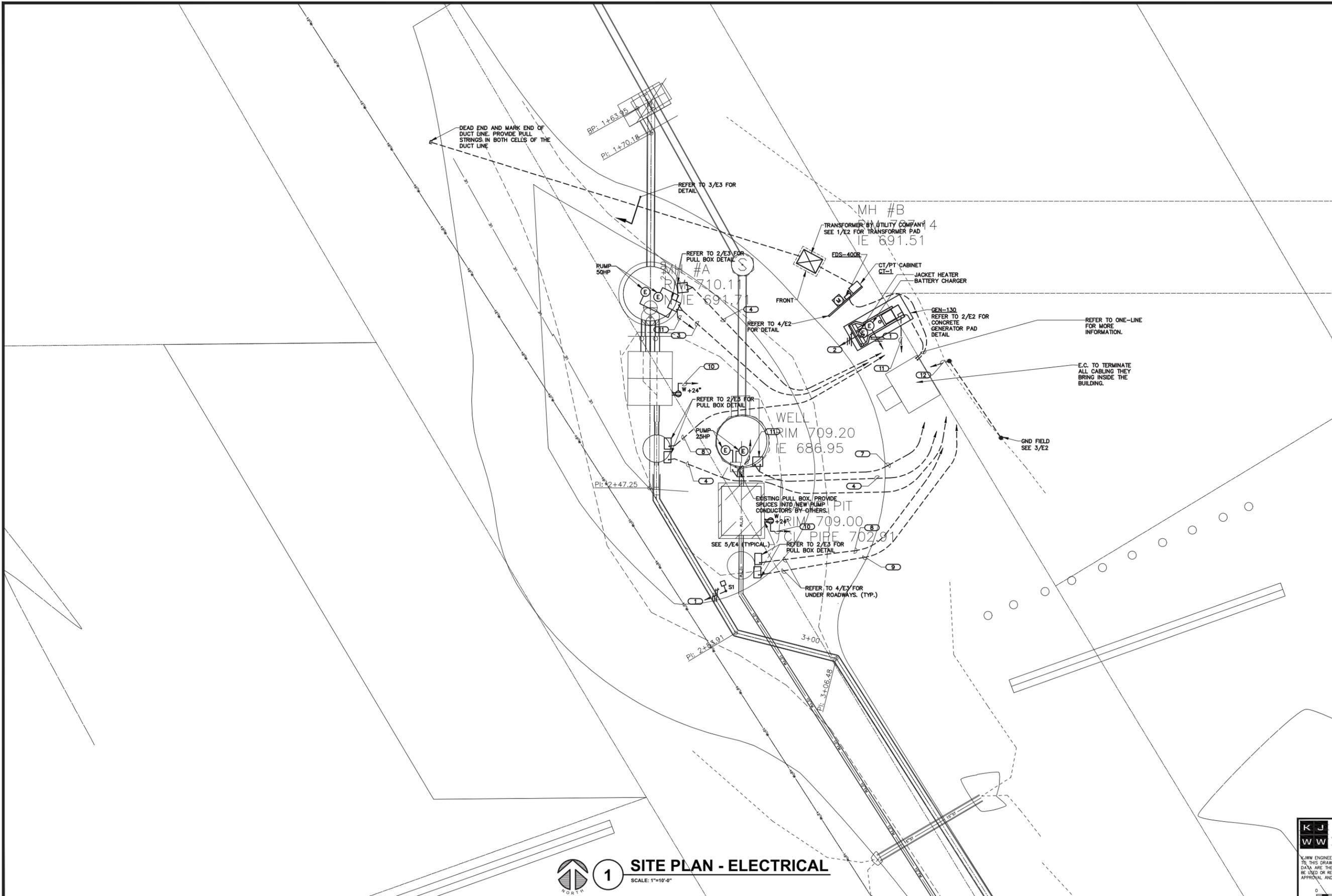
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	PROJECT 36845



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- KEYNOTES**
- 2#12 & 1#12 GND IN 3/4" C. TO 1P-20A C.B. IN CONTROL ROOM PANEL, SEE CONTROL ROOM DRAWING FOR LOCATION.
  - 2#12 & 1#12 GND IN 3/4" C. TO 2P-20A C.B. IN CONTROL ROOM PANEL.
  - (2) 1 1/4" C. EACH WITH 3#2 & 1#6 GND TO VFDS LOCATED IN NEW CONTROL HOUSE. CONCRETE ENCASE CONDUITS UNDER ROADWAY.
  - (2) 1" C. (1) 1" C. WITH 4#14 & 1#14 GND TO CONTROL DIGITAL TERMINALS IN CONTROLS CABINET LOCATED IN NEW CONTROL HOUSE AND (1) 1" C. WITH 1-2/C#16 TWISTED SHIELDED CABLE TO ANALOG TERMINALS LOCATED IN CONTROLS CABINET LOCATED IN NEW CONTROL HOUSE.
  - 4#14 & 1#14 GND IN 1" C. TO DIGITAL TERMINALS IN CONTROLS CABINET LOCATED IN NEW CONTROLS HOUSE.
  - 14#14 & 1#14 GND IN 1" C. TO DIGITAL TERMINALS IN CONTROL CABINET LOCATED IN NEW CONTROLS HOUSE.
  - (2) 1" C. EACH WITH 3#6 & 1#10 GND TO VFDS LOCATED IN NEW CONTROL HOUSE. CONCRETE ENCASE CONDUITS UNDER ROADWAYS.
  - 2#10 & 1#10 GND IN 1" C. TO 1P/20A CIRCUIT BREAKER IN NEW 120/208V PANEL LOCATED IN CONTROL HOUSE. CONCRETE ENCASE CONDUITS UNDER ROADWAYS.
  - (2) 1" C. (1) WITH 2#14 & 1#14 GND TO DIGITAL TERMINALS IN CONTROL CABINET IN NEW CONTROL HOUSE AND THE OTHER 1" C. WITH 1-2/C#16 TWISTED SHIELDED CABLE TO ANALOG TERMINALS IN CONTROL CABINET IN NEW CONTROL HOUSE. CONCRETE ENCASE CONDUITS UNDER ROADWAYS.
  - PROVIDE 2#10 & 1#6 GND IN 3/4" C. TO 1P-20A C.B. IN CONTROL ROOM PANEL. SEE CONTROL ROOM DRAWING FOR LOCATION.
  - PROVIDE 4#14 & 1#14 GND IN 1" C. CONDUIT BACK TO MOTOR CONTROL PANEL LOCATED IN CONTROL HOUSE.
  - PROVIDE 1#2GND IN 1" C. TO ATS LOCATED IN CONTROL HOUSE.

**1 SITE PLAN - ELECTRICAL**  
SCALE: 1"=10'-0"

DATE	REVISIONS	SCALE	VERIFY SCALE
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**SITE PLAN - ELECTRICAL**

**K J W W ENGINEERING CONSULTANTS**

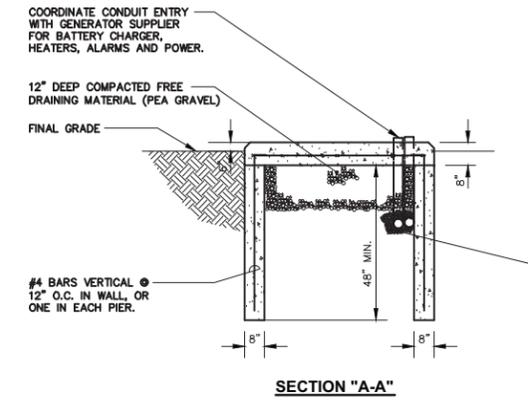
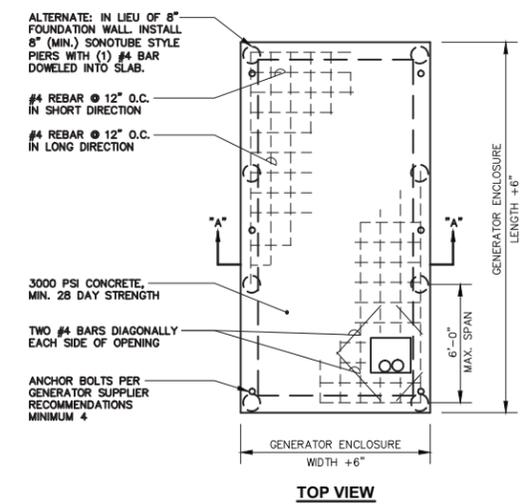
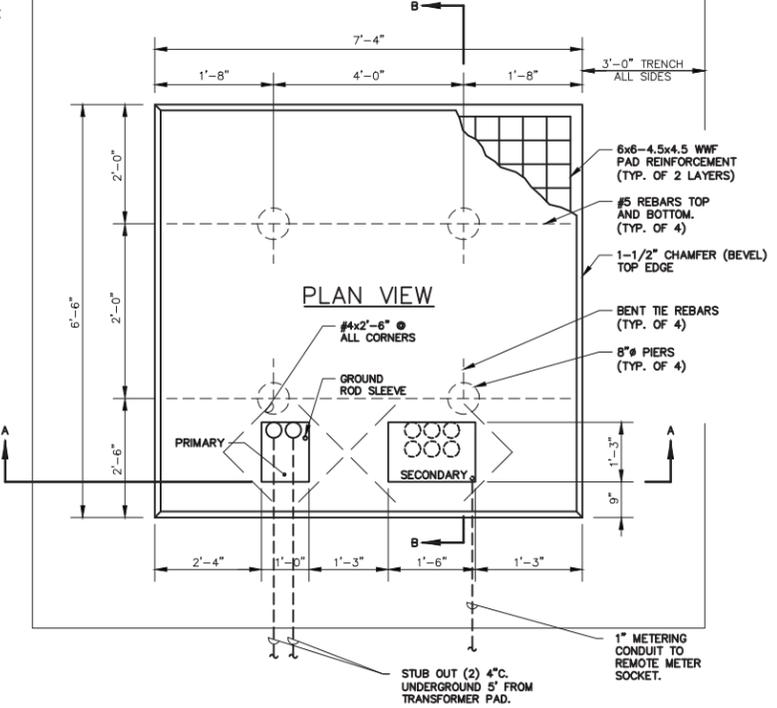
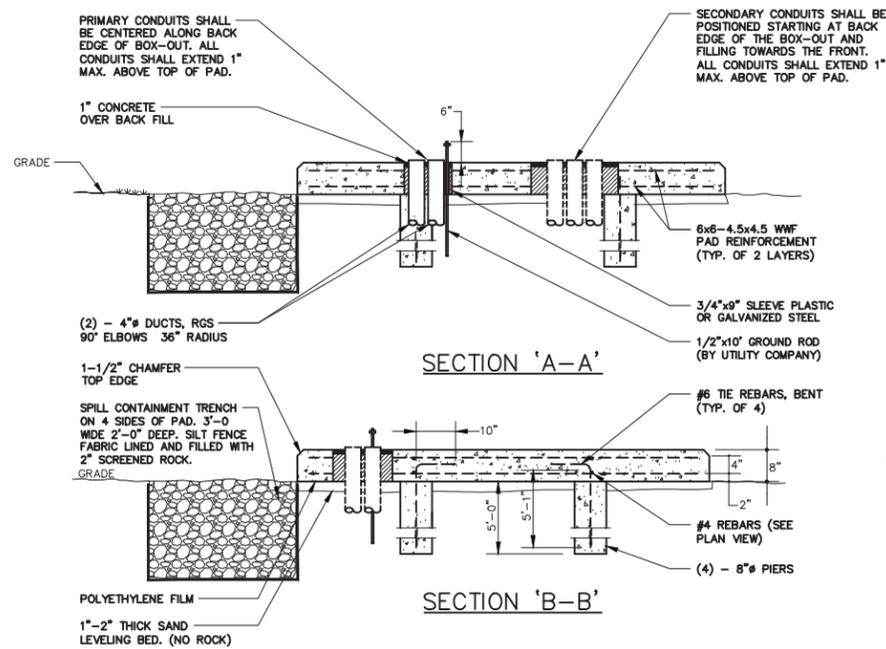
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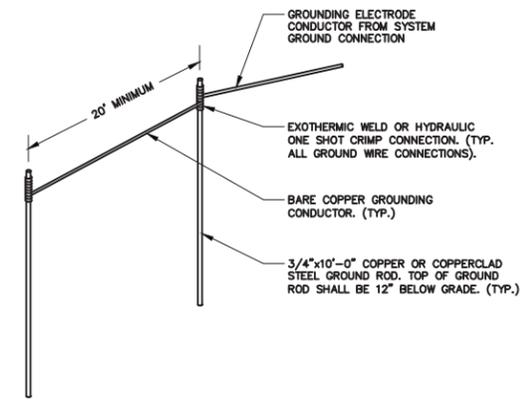
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PROJECT	36845

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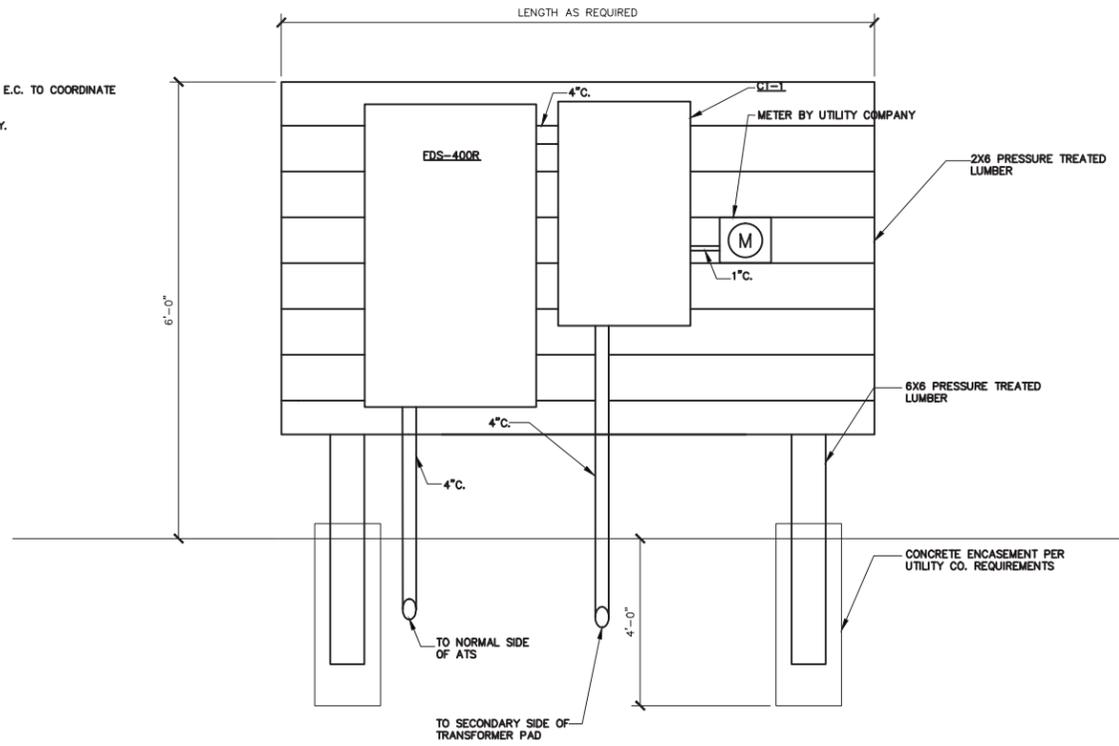


**1 TRANSFORMER PAD DETAIL 225-500 KVA**

- NO SCALE
- NOTES:
1. CONCRETE:  $f_c \geq 3500$  PSI AT 28 DAYS.
  2. REINFORCING STEEL: ASTM A 615-60.
  3. 6x6-4.5x4.5 WELDED WIRE FABRIC (WWF): ASTM A 185.
  4. SOIL:  $\geq 95$  PERCENT PROCTOR DENSITY OR 55 PSI PBV.
  5. GENERAL CONTRACTOR TO PROVIDE TRANSFORMER PAD AS SHOWN. E.C. TO COORDINATE CONDUIT ROUGH-IN WITH G.C.
  6. VERIFY FINAL REQUIREMENTS AND DIMENSIONS WITH UTILITY COMPANY.



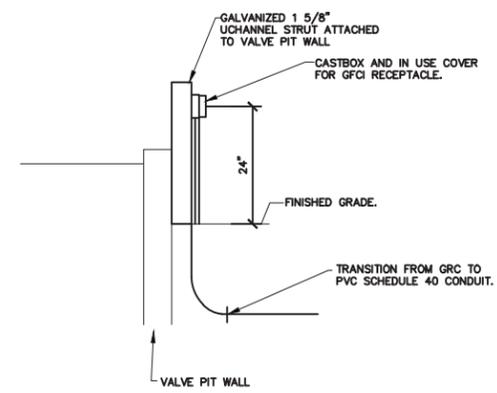
**3 GROUND GRID DETAIL**



**4 SERVICE ELEVATION VIEW**

**2 GENERATOR PAD DETAIL**

- NO SCALE
- NOTES:
1. COORDINATE PAD DIMENSIONS WITH GENERATOR SUPPLIER PRIOR TO START OF CONSTRUCTION.



**5 PIT RECEPCTACLE**

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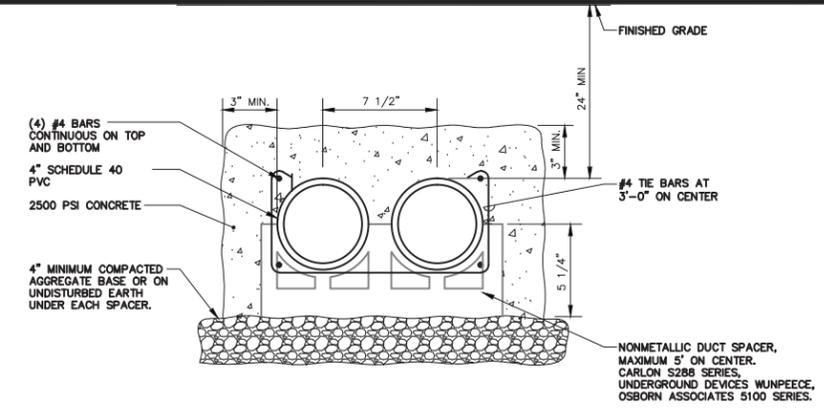
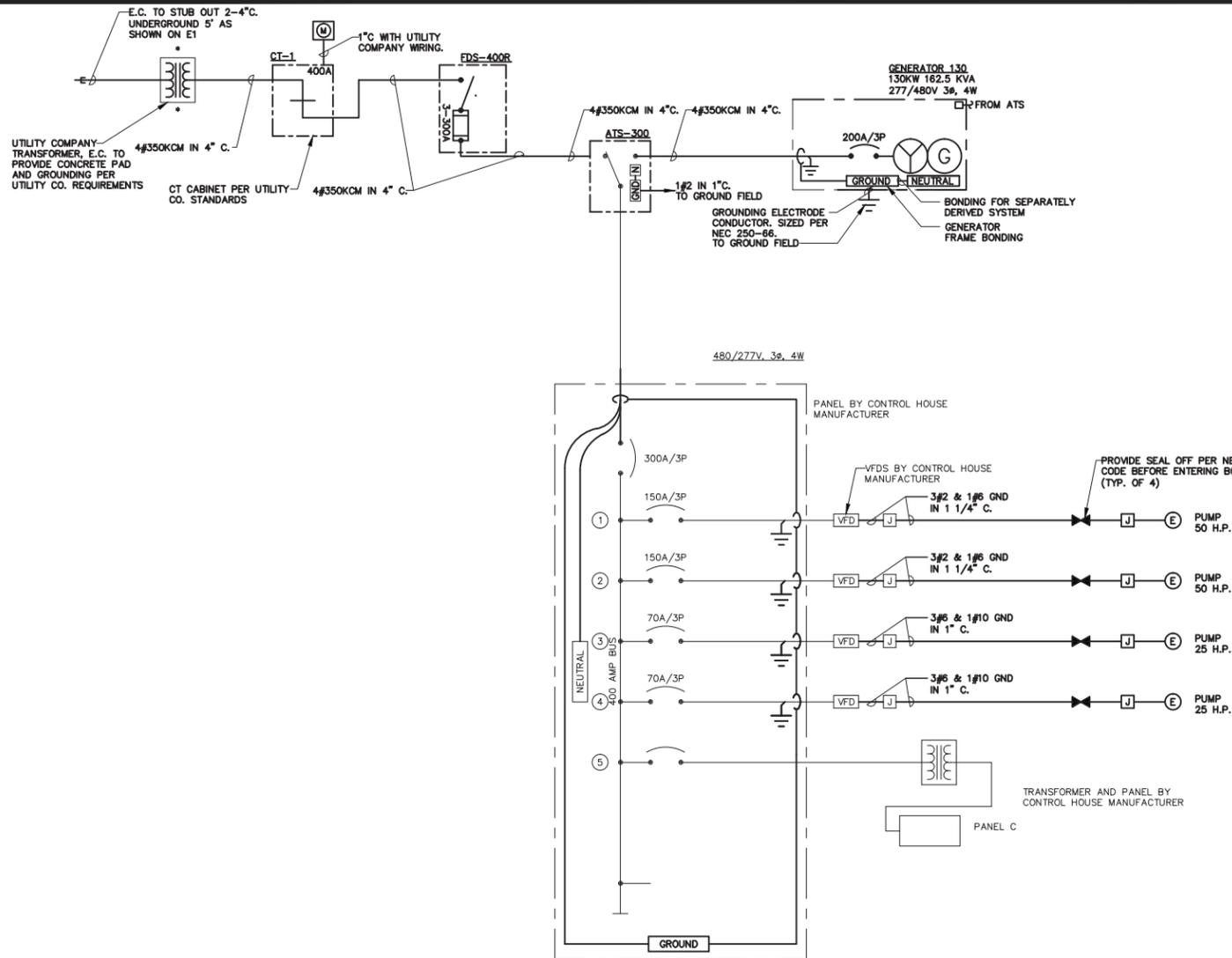
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ELECTRICAL DETAILS		DWG. NO. <b>E2</b>
		PROJECT 36845

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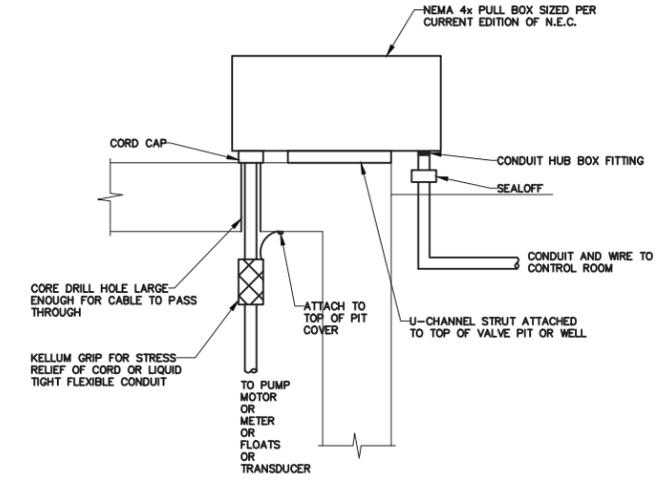
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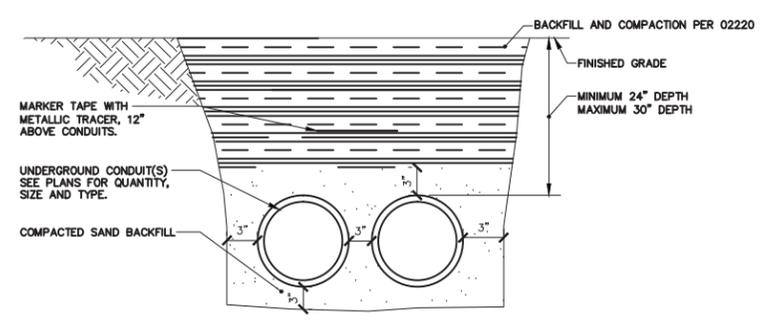


**3 DUCT BANK DETAIL**

- NOTES:
- INSTALL 2000 lb TENSILE STRENGTH BRAIDED POLYPROPYLENE PULL CORD IN ALL CONDUITS.
  - TRENCHING AND BACKFILL ACCORDING TO SPECIFICATIONS.
  - MINIMUM OF 4'-0" CLEAR BETWEEN ADJACENT DUCTBANKS.



**2 WELL ELECTRICAL ENTRANCE**



**5 UNDERGROUND CONDUIT DETAIL**

- NOTES:
- INSTALL 200 lb TENSILE STRENGTH PULL ROPE IN ALL EMPTY CONDUITS.
  - TRENCHING AND BACKFILL ACCORDING TO SPECIFICATION SECTION 02220.

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		CHECKED	###
		APPROVED	###
		DATE	02-20-12
		ISSUED FOR	REVIEW

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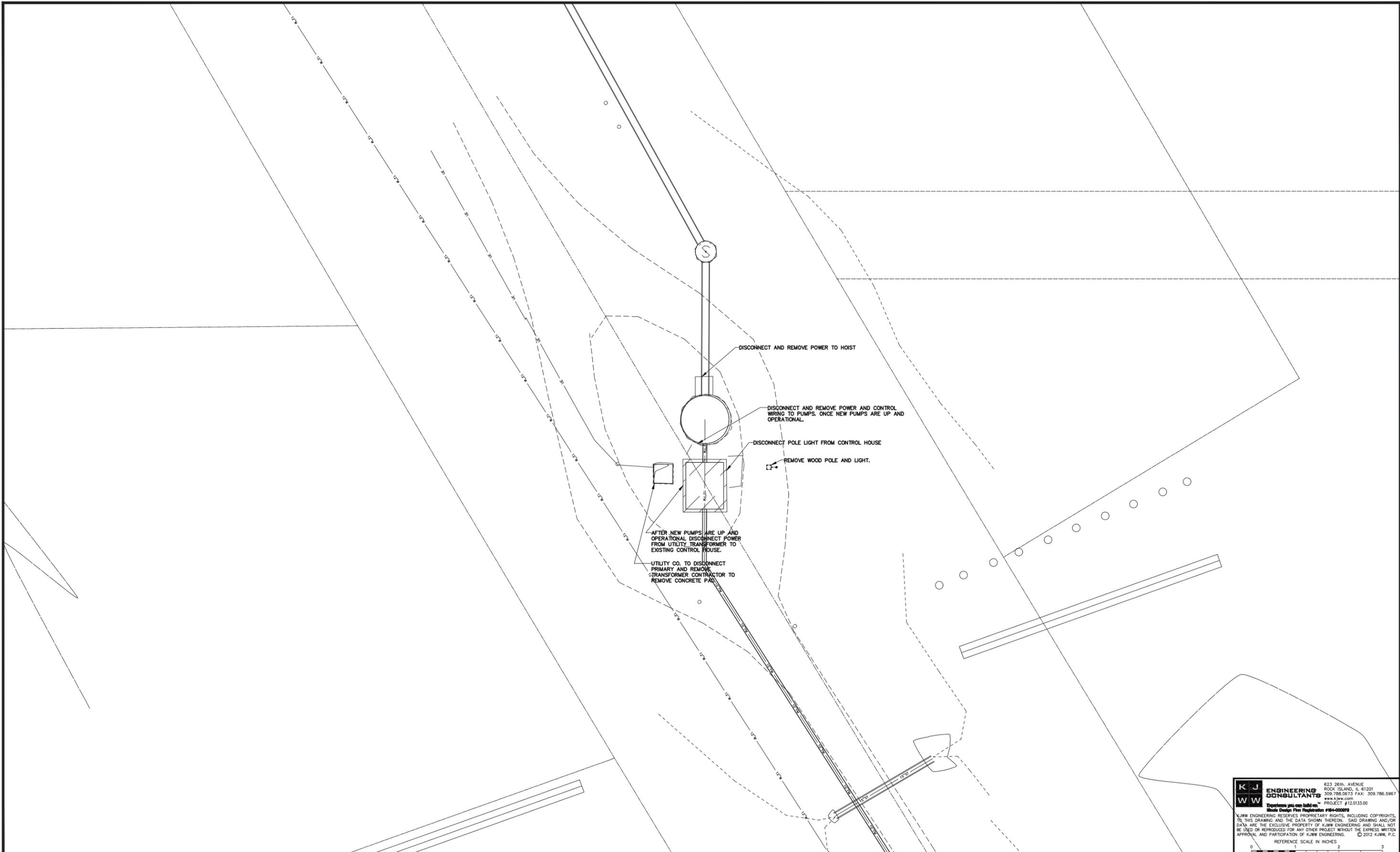


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ONE-LINE DIAGRAM & ELECTRICAL DETAILS

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PROJECT	36845



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REFERENCE SCALE IN INCHES  
 0 1 2 3

DATE	REVISIONS	SCALE	1"=10'-0"
		DRAWN	###
		CHECKED	###
		APPROVED	###
		DATE	02-20-12
		ISSUED FOR	REVIEW

**VERIFY SCALE**  
 BAR IS ONE INCH ON ORIGINAL DRAWING.  
 0 1"  
 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.



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 CITY OF WEST BRANCH

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SITE PLAN - ELECTRICAL DEMO

DATE	REVISIONS	SCALE	1"=10'-0"
		DRAWN	###
		CHECKED	###
		APPROVED	###
		DATE	02-20-12
		ISSUED FOR	REVIEW

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PROJECT 36845