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**STANDARDS**

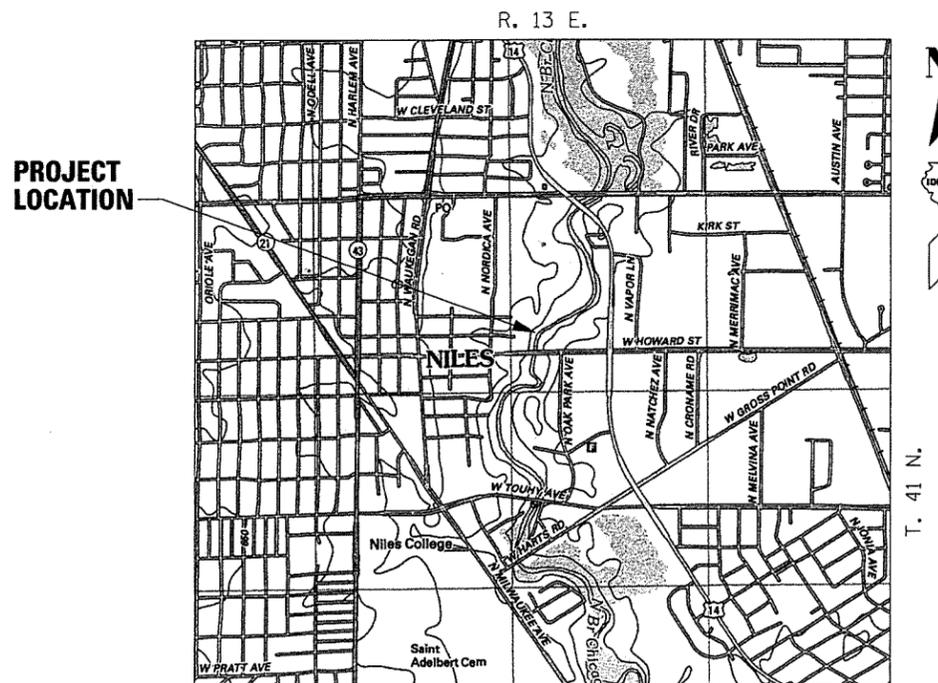
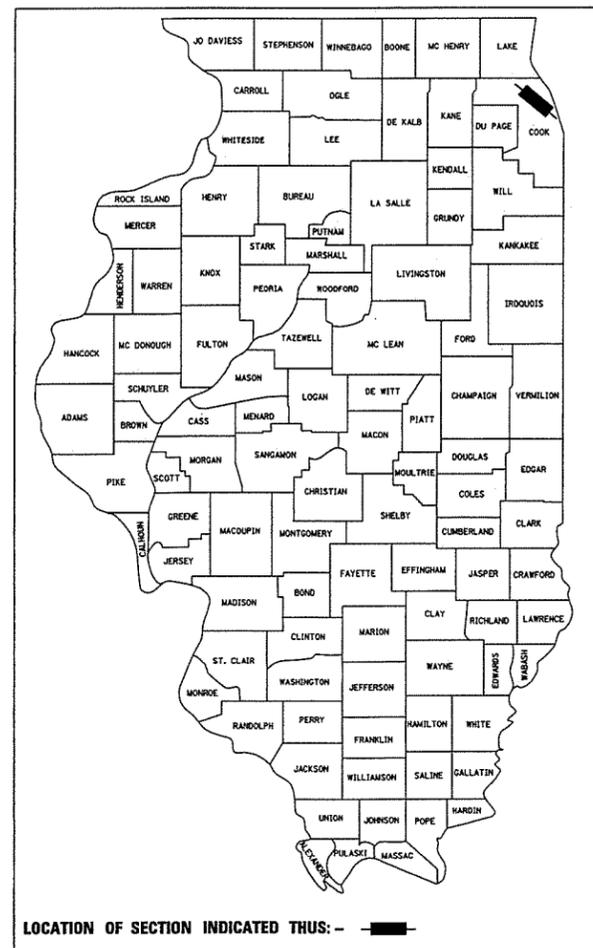
- 280001 TEMPORARY EROSION CONTROL SYSTEMS
- 602001 CATCH BASIN TYPE A-MODIFIED
- 602016 CATCH BASIN TYPE D
- 602402 PRECAST MANHOLE TYPE A 5' (1.52 m) DIAMETER-MODIFIED
- 602601 PRECAST REINFORCED CONCRETE FLAT SLAB TOP
- 602701 MANHOLE STEPS
- 604001 FRAME AND LIDS TYPE 1
- 664001 CHAIN LINK FENCE

**STATE OF ILLINOIS**  
**DEPARTMENT OF NATURAL RESOURCES**  
**OFFICE OF WATER RESOURCES**

**TAM O'SHANTER GOLF COURSE**  
**PUMP STATION MODIFICATION**

**NILES, ILLINOIS**  
**COOK COUNTY**

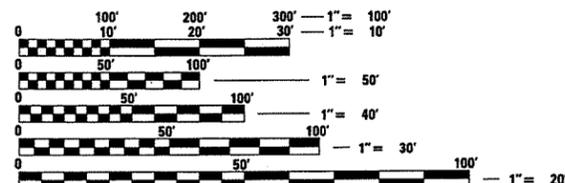
**FR - 442**  
**2018**



**LOCATION MAP**



**Michael Baker**  
**INTERNATIONAL**



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.



*Tatiana H. Pappas* 7/26/18

ILLINOIS REGISTERED PROFESSIONAL ENGINEER NO. 062-065558  
 LICENSE EXPIRES 11-30-19



*Dennis F. Morgan* 7/26/18

ILLINOIS REGISTERED STRUCTURAL ENGINEER NO. 081-006506  
 LICENSE EXPIRES 11-30-18

SUBMITTED BY: *Paul Adelman* DATE: Aug. 16, 2018  
 MANAGER, DIVISION OF CAPITAL PROGRAMS

APPROVED BY: *Jan A. Walter* DATE: 8-16-18  
 DIRECTOR, OFFICE OF WATER RESOURCES

PAY ITEM NO.	SUMMARY OF QUANTITIES PAY ITEM DESCRIPTION	UNIT	QUANTITY
20101000	TEMPORARY FENCE	FOOT	311
20101100	TREE TRUNK PROTECTION	EACH	7
21001000	GEOTECHNICAL FABRIC FOR GROUND STABILIZATION	SQ YD	3
21101505	TOPSOIL EXCAVATION AND PLACEMENT	CU YD	62
21101615	TOPSOIL FURNISH AND PLACE, 4"	SQ YD	60
25000400	NITROGEN FERTILIZER NUTRIENT	POUND	11.7
25000500	PHOSPHOROUS FERTILIZER NUTRIENT	POUND	11.7
25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	11.7
25100630	EROSION CONTROL BLANKET	SQ YD	614
28000400	PERIMETER EROSION BARRIER	FOOT	268
28100211	STONE RIPRAP CLASS A6	TON	133
28200200	FILTER FABRIC	SQ YD	73
42000100	PORTLAND CEMENT CONCRETE PAVEMENT 6"	SQ YD	3
50200300	COFFERDAM EXCAVATION	CU YD	6
550B0660	STORM SEWERS, CLASS B, TYPE 3 15"	FOOT	6
55100700	STORM SEWER REMOVAL 15"	FOOT	37
55106035	STORM SEWER INSTALLATION 15"	FOOT	37
60500040	REMOVING MANHOLES	EACH	2
60500060	REMOVING INLETS	EACH	1
67000500	ENGINEERS FIELD OFFICE TYPE B	CAL MO	7
67100100	MOBILIZATION	L SUM	1
NR502016	TEMPORARY COFFERDAM SYSTEM	L SUM	1
NR602001	CATCH BASINS, TYPE A, 5' DIAMETER WITH SPECIAL FLAT SLAB TOP AND 5' SQUARE FLOOR DOOR	EACH	1
NR602002	CATCH BASINS, TYPE D, 3' DIAMETER, TYPE 1 FRAME, BALLAST SCREEN, CLOSED LID	EACH	1
NR602003	MANHOLES, TYPE A, 5'-DIAMETER (SPECIAL)	EACH	1
NR664005	CHAIN LINK FENCE, 8' TO BE REMOVED AND RE-ERECTED	FOOT	71
NR664006	CHAIN LINK GATE, 6'X3' SINGLE TO BE REMOVED AND RE-ERECTED	EACH	1
NR720001	WOOD INFORMATION SIGNS	EACH	1
X0426200	DEWATERING	L SUM	1
X2500900	SEEDING, CLASS 1 (SPECIAL)	ACRE	0.13
X5012502	CONCRETE REMOVAL	CU YD	0.5
Z0047700	PUMP STATION	EACH	1
Z0064600	SELECTIVE CLEARING	ACRE	0.01

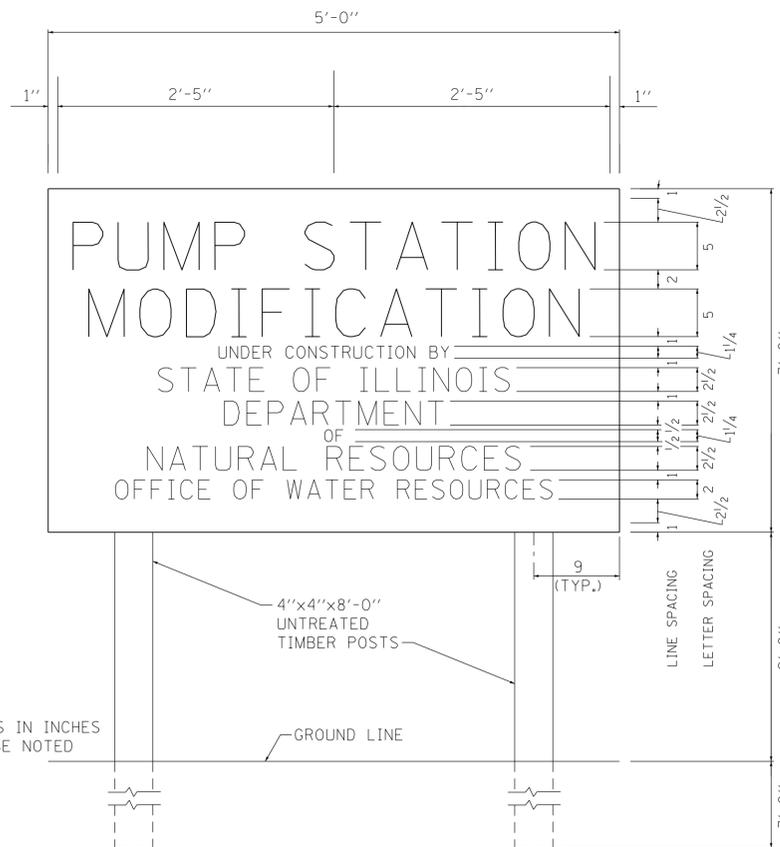
\* INDICATES NON-STANDARD ITEM COVERED BY SPECIAL PROVISIONS

UTILITY REFERENCE TABLE

J.U.L.I.E.	CALL 48 HOURS PRIOR TO CONSTRUCTION	(800) 892-0123
VILLAGE OF NILES	MARY ANDERSON, DIRECTOR OF PUBLIC SERVICES 6849 WEST TOUHY AVENUE NILES, ILLINOIS, 60714	(847) 588-7900
NILES PARK DISTRICT	JIM STONEBERG, SUPERINTENDENT OF GOLF COURSE MAINTENANCE 6780 WEST HOWARD STREET NILES, ILLINOIS 60714	(847) 965-3311

GENERAL NOTES

1. THE CONTRACTOR SHALL CALL J.U.L.I.E. (800-892-0123) FOR THE LOCATION OF EXISTING UTILITIES 48 HOURS PRIOR TO BEGINNING CONSTRUCTION.
2. ALL CONSTRUCTION OPERATIONS SHALL BE CONTAINED WITHIN THE PROPERTY LINES OR WORK LIMITS AS INDICATED ON THE PLANS AND AS DIRECTED AND APPROVED BY THE ENGINEER. IT SHALL BE THE FULL RESPONSIBILITY OF THE CONTRACTOR TO SECURE ALL RIGHTS OF INGRESS AND EGRESS TO SAID RIGHT-OF-WAY INCLUDING THE SATISFACTORY PROTECTION AND RESTORATION OF ANY PRIVATE OR PUBLIC PROPERTY, INCLUDING ACCESS ROADS AS REQUIRED IN ARTICLE 107.20 AND 107.23 OF THE STANDARD SPECIFICATIONS. COST OF RESTORATION IS INCIDENTAL TO THE CONTRACT.
3. ALL ELEVATIONS REFER TO NORTHERN GEODETIC VERTICAL DATUM OF 1929 (NGVD29). THE HORIZONTAL COORDINATE SYSTEM REFERENCES NAD 1983 WITH 1986 ADJUSTMENT.
4. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH THE VILLAGE OF NILES AND THE NILES PARK DISTRICT SUPERINTENDENT OF GOLF COURSE MAINTENANCE THROUGH THE ENGINEER.
5. EXISTING UTILITIES ARE SHOWN ON THE PLANS ACCORDING TO INFORMATION OBTAINED FROM UTILITY COMPANIES, MUNICIPALITIES, AND SURVEYS. IN ACCORDANCE WITH ARTICLES 105.07 AND 107.31 OF THE IDOT STANDARD SPECIFICATIONS, THE CONTRACTOR SHALL BE FAMILIARIZED WITH THE LOCATION OF ALL UTILITIES AND STRUCTURES THAT MAY BE FOUND IN THE VICINITY OF THE CONSTRUCTION. THE CONTRACTOR WILL ALSO ASSUME RESPONSIBILITY FOR ALL UTILITIES WHETHER SHOWN OR NOT, AND MUST REALIZE THAT THE ACTUAL LOCATIONS AND/OR ELEVATIONS OF THE UTILITIES MAY BE DIFFERENT THAN INDICATED.
6. MECHANIZED SELECTIVE CLEARING OF VEGETATION IN THE UTILITY CORRIDOR SHALL BE CONDUCTED NO MORE THAN SEVEN (7) CALENDAR DAYS PRECEDING INSTALLATION OF THE UTILITY LINE IN THAT SEGMENT OF THE CORRIDOR. VEGETATION SHALL NOT BE CLEARED ALONG THE ENTIRE CORRIDOR PRIOR TO INSTALLATION OF THE UTILITY LINE.
7. THE CONTRACTOR SHALL FURNISH, ERECT, AND WHEN DIRECTED BY THE ENGINEER, COMPLETELY REMOVE ONE PROJECT SIGN. THE LOCATION OF THE SIGN SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.
8. ALL LATERAL DRAINAGE THAT EXISTS PRIOR TO CONSTRUCTION SHALL BE RESTORED AS SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER. UNLESS OTHERWISE SPECIFIED, ALL COSTS OF RESTORATION SHALL BE CONSIDERED INCLUDED IN THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
9. PLAN DIMENSIONS AND DETAILS RELATIVE TO EXISTING STRUCTURES 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 OF ADDITIONAL COMPENSATION OR TIME EXTENSION FOR A CHANGE IN THE SCOPE OF WORK, HOWEVER, THE CONTRACTOR WILL BE PAID FOR THE QUANTITY ACTUALLY FURNISHED AT THE UNIT PRICE BID FOR THE WORK.
10. ALL EXCESS EXCAVATION AND UNSUITABLE MATERIALS SHALL BE DISPOSED OF AT A LOCATION PROVIDED BY THE CONTRACTOR AT THEIR OWN EXPENSE AND AT LOCATIONS INSPECTED AND APPROVED BY THE ENGINEER.
11. THE CONTRACTOR SHALL TAKE CARE WHILE EXCAVATING NEAR EXISTING STRUCTURES. ANY DAMAGES CAUSED BY THE CONSTRUCTION ACTIVITY SHALL BE CORRECTED AT THE EXPENSE OF THE CONTRACTOR. ALL BRACING, SHORING, EARTH RETENTION, AND SUPPORT OF UTILITIES IS THE CONTRACTOR'S RESPONSIBILITY AND IS TO BE CONDUCTED AT THE CONTRACTOR'S EXPENSE.
12. THE CONTRACTOR SHALL PROVIDE ADEQUATE TRAFFIC CONTROL AT THE HOWARD STREET ACCESS POINT INCLUDING, BUT NOT LIMITED TO, TEMPORARY SIGNAGE AND/OR FLAGGER. COST OF TRAFFIC CONTROL IS INCIDENTAL TO THE CONTRACT.



NOTE: DIMENSIONS IN INCHES UNLESS OTHERWISE NOTED

PROJECT SIGN

SIGN NOTES

1. SIGNS SHALL BE MADE OF 3/4" PLYWOOD OR OXBOARD, OR OF METAL (18 GA.). THE CONTRACTOR SHALL FURNISH ALL MATERIAL AND LABOR FOR CONSTRUCTING AND ERECTING THE SIGNS. THE SIGNS SHALL BE PLACED PRIOR TO THE STARTING OF ACTUAL CONSTRUCTION OPERATIONS AT EACH END OF THE CONSTRUCTION SECTION OR AS DIRECTED BY THE ENGINEER. BEFORE ANY SIGN IS ERECTED, IT SHALL BE APPROVED BY THE ENGINEER AS TO ITS APPEARANCE AND QUALITY OF CONSTRUCTION. THE SIGNS SHALL REMAIN IN PLACE AND SHALL BE MAINTAINED IN SATISFACTORY CONDITION UNTIL THE PROJECT IS ACCEPTED BY THE DEPARTMENT. THE CONTRACTOR SHALL THEN REMOVE THE SIGNS AND THE MATERIAL WILL BECOME HIS PROPERTY.
2. THE LETTERS ON THE SIGN SHALL BE BLACK MECHANICAL STYLE ON A WHITE BACKGROUND AND APPROPRIATE BORDER LINES.
3. PAID FOR AS WOOD INFORMATION SIGNS.

FILE NAME: H:\142537\_IDNR\_Test\13.0\_Deliverables\Pump\COOD\_Sheets\2018-07-26\02\_SDP & Gen\_Notes.dwg

**Michael Baker INTERNATIONAL**

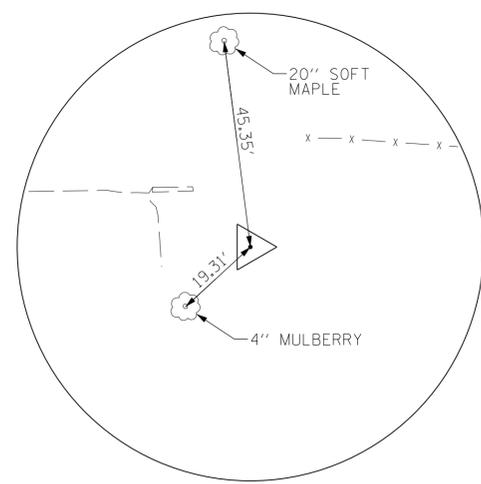
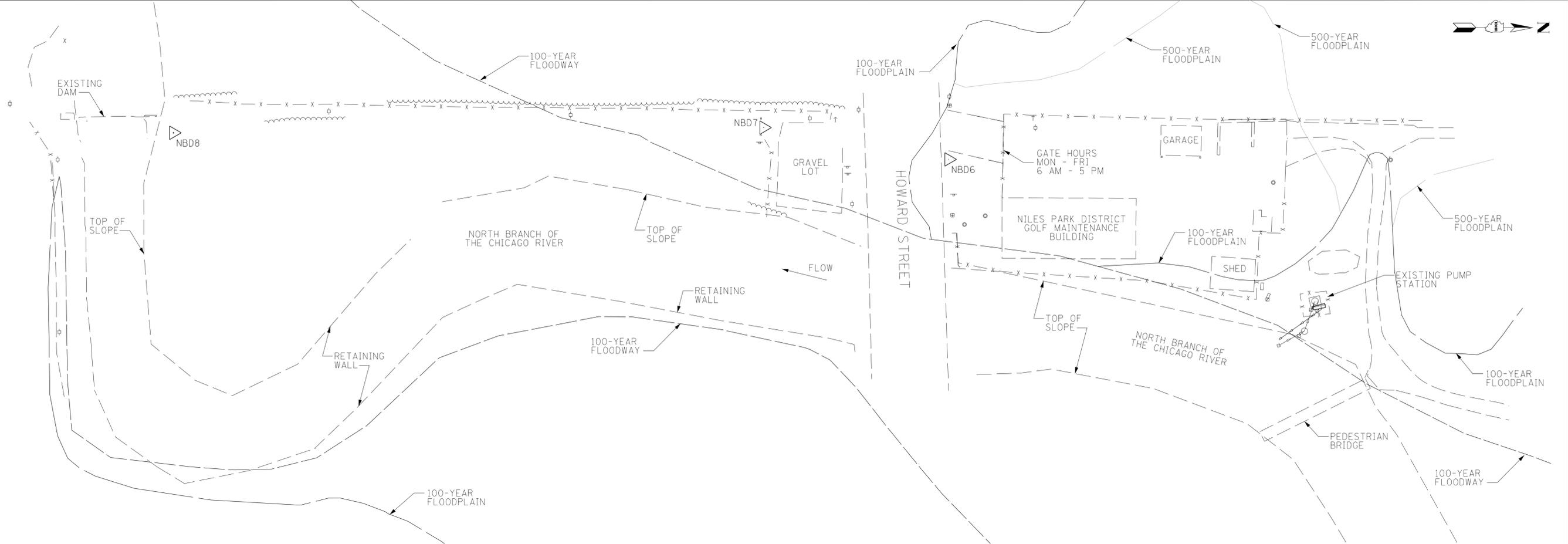
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PLOT SCALE : 1,000 ' / in.	DRAWN - YS	REVISED -
PLOT DATE : 8/15/2018	CHECKED - AMC	REVISED -
	DATE - 07/26/2018	REVISED -

**TAM O'SHANTER GOLF COURSE  
PUMP STATION MODIFICATION  
COOK COUNTY**

**STATE OF ILLINOIS  
DEPARTMENT OF NATURAL RESOURCES  
OFFICE OF WATER RESOURCES**

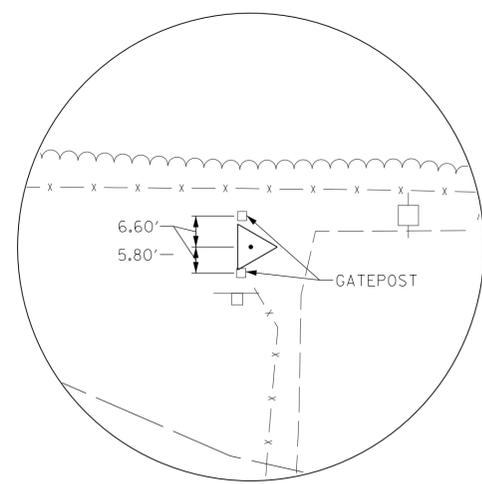
**SUMMARY OF QUANTITIES  
AND GENERAL NOTES**

SCALE: N/A SHEET NO. 2 OF 31 SHEETS



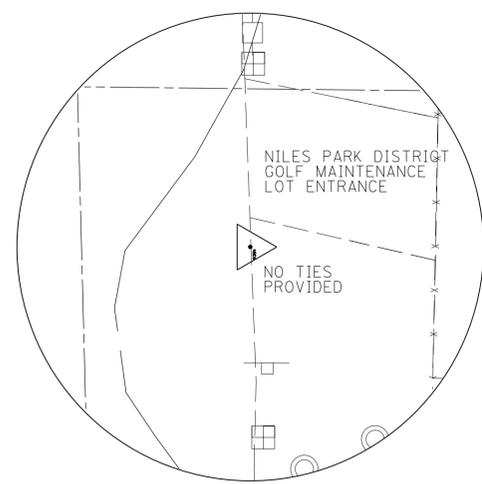
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 E=1130195.42  
 ELEVATION=608.55



CONTROL POINT NBD7

REBAR  
 N=1949903.02  
 E=1130191.49  
 ELEVATION=613.88



CONTROL POINT NBD6

REBAR  
 N=1950041.02  
 E=1130215.20  
 ELEVATION=617.69

LEGEND

- ⊠ EXISTING POWER POLE
- ⊙ EXISTING MANHOLE
- ⊠ EXISTING JUNCTION BOX
- ⊠ EXISTING HANDHOLE
- ← EXISTING GUY WIRE
- ⊙ ⊙ EXISTING TREE
- EXISTING BOLLARD
- ⇒ CONSTRUCTION ACCESS ROUTE
- x - x - EXISTING FENCE
- ~~~~~ VEGETATION/TIMBER LINE
- - - - WETLAND DELINEATION
- EXISTING STORM SEWER
- PROPOSED STORM SEWER
- x - x - PROPOSED FENCE



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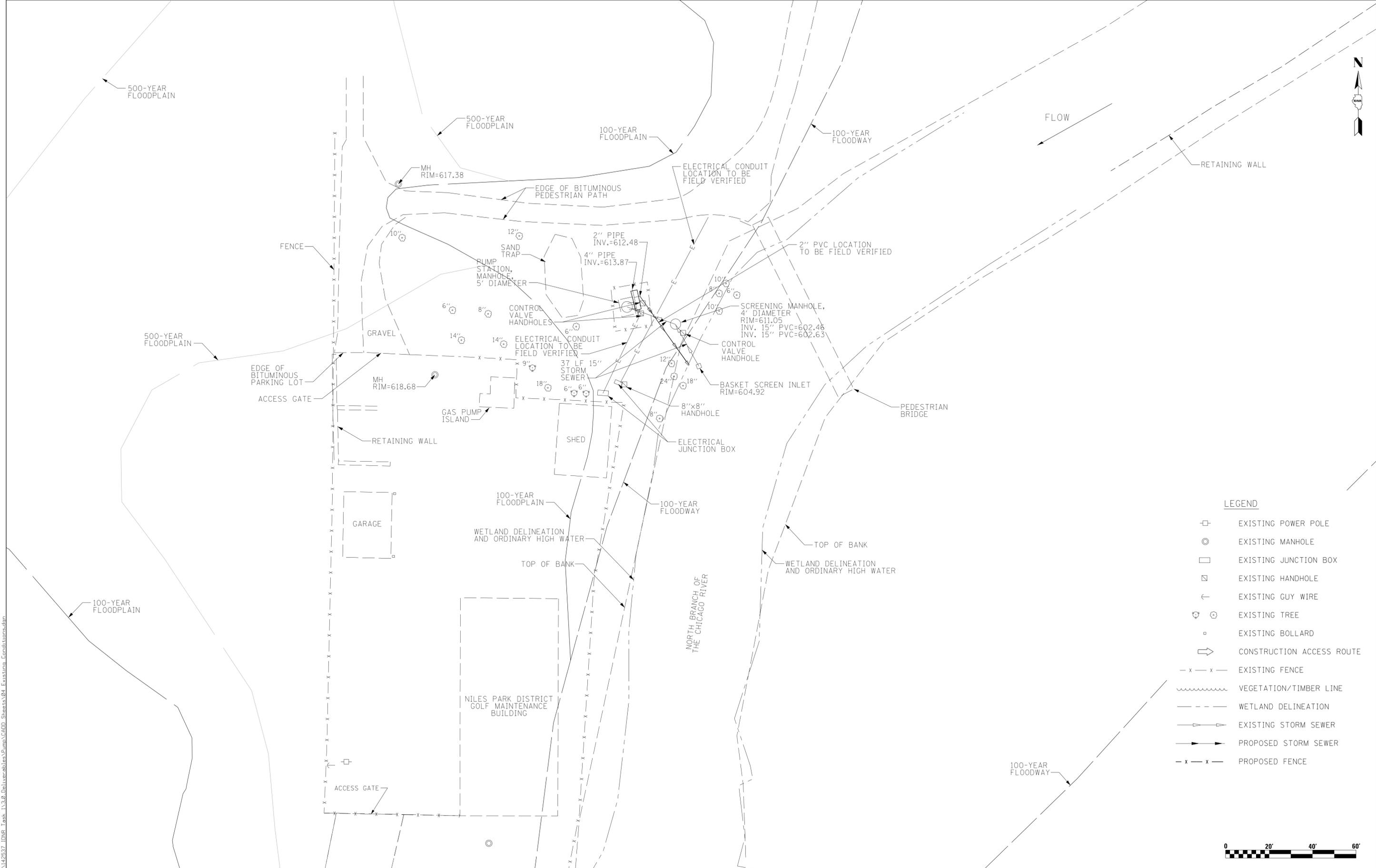
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	DATE - 07/26/2018	REVISED -

**TAM O'SHANTER GOLF COURSE  
 PUMP STATION MODIFICATION  
 COOK COUNTY**

**STATE OF ILLINOIS  
 DEPARTMENT OF NATURAL RESOURCES  
 OFFICE OF WATER RESOURCES**

**SURVEY TIES**  
 SCALE: 1"=40' SHEET NO. 3 OF 31 SHEETS

FILE NAME: H:\12537 IDNR - Test - 13.9. Delivarables\Pump\CADD\_Sheets\04\_Existing\_Conditions.dwg



**LEGEND**

- EXISTING POWER POLE
- EXISTING MANHOLE
- EXISTING JUNCTION BOX
- EXISTING HANDHOLE
- EXISTING GUY WIRE
- EXISTING TREE
- EXISTING BOLLARD
- CONSTRUCTION ACCESS ROUTE
- EXISTING FENCE
- VEGETATION/TIMBER LINE
- WETLAND DELINEATION
- EXISTING STORM SEWER
- PROPOSED STORM SEWER
- PROPOSED FENCE



**Michael Baker INTERNATIONAL**

USER NAME : Megha,Parameswarath	DESIGNED - AMC	REVISED -
	DRAWN - YS	REVISED -
PLOT SCALE : 20.002' / in.	CHECKED - AMC	REVISED -
PLOT DATE : 7/26/2018	DATE - 07/26/2018	REVISED -

**TAM O'SHANTER GOLF COURSE  
PUMP STATION MODIFICATION  
COOK COUNTY**

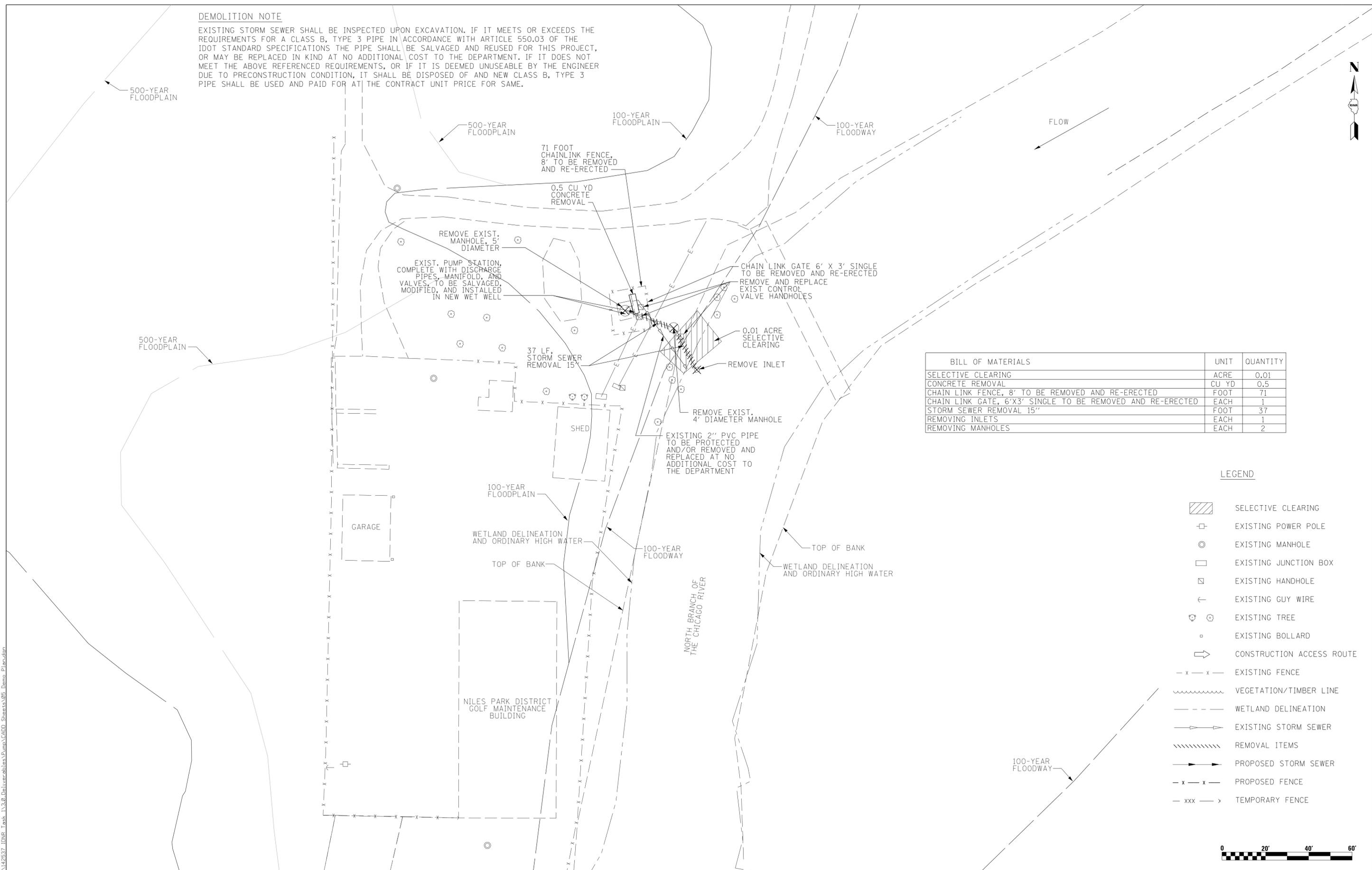
**STATE OF ILLINOIS  
DEPARTMENT OF NATURAL RESOURCES  
OFFICE OF WATER RESOURCES**

**EXISTING CONDITIONS**

SCALE: 1"=20' SHEET NO. 4 OF 31 SHEETS

**DEMOLITION NOTE**

EXISTING STORM SEWER SHALL BE INSPECTED UPON EXCAVATION. IF IT MEETS OR EXCEEDS THE REQUIREMENTS FOR A CLASS B, TYPE 3 PIPE IN ACCORDANCE WITH ARTICLE 550.03 OF THE IDOT STANDARD SPECIFICATIONS THE PIPE SHALL BE SALVAGED AND REUSED FOR THIS PROJECT, OR MAY BE REPLACED IN KIND AT NO ADDITIONAL COST TO THE DEPARTMENT. IF IT DOES NOT MEET THE ABOVE REFERENCED REQUIREMENTS, OR IF IT IS DEEMED UNUSEABLE BY THE ENGINEER DUE TO PRECONSTRUCTION CONDITION, IT SHALL BE DISPOSED OF AND NEW CLASS B, TYPE 3 PIPE SHALL BE USED AND PAID FOR AT THE CONTRACT UNIT PRICE FOR SAME.



BILL OF MATERIALS		
	UNIT	QUANTITY
SELECTIVE CLEARING	ACRE	0.01
CONCRETE REMOVAL	CU YD	0.5
CHAIN LINK FENCE, 8' TO BE REMOVED AND RE-ERECTED	FOOT	71
CHAIN LINK GATE, 6'X3' SINGLE TO BE REMOVED AND RE-ERECTED	EACH	1
STORM SEWER REMOVAL 15"	FOOT	37
REMOVING INLETS	EACH	1
REMOVING MANHOLES	EACH	2

**LEGEND**

- SELECTIVE CLEARING
- EXISTING POWER POLE
- EXISTING MANHOLE
- EXISTING JUNCTION BOX
- EXISTING HANDHOLE
- EXISTING GUY WIRE
- EXISTING TREE
- EXISTING BOLLARD
- CONSTRUCTION ACCESS ROUTE
- EXISTING FENCE
- VEGETATION/TIMBER LINE
- WETLAND DELINEATION
- EXISTING STORM SEWER
- REMOVAL ITEMS
- PROPOSED STORM SEWER
- PROPOSED FENCE
- TEMPORARY FENCE



FILE NAME: H:\12537 IDNR - Test\1330 Delivarables\pump\CCDD\_Sheets\05 Demo Plan.dgn

**Michael Baker INTERNATIONAL**

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	DRAWN - YS	REVISED -
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PLOT DATE : 7/26/2018	DATE - 07/26/2018	REVISED -

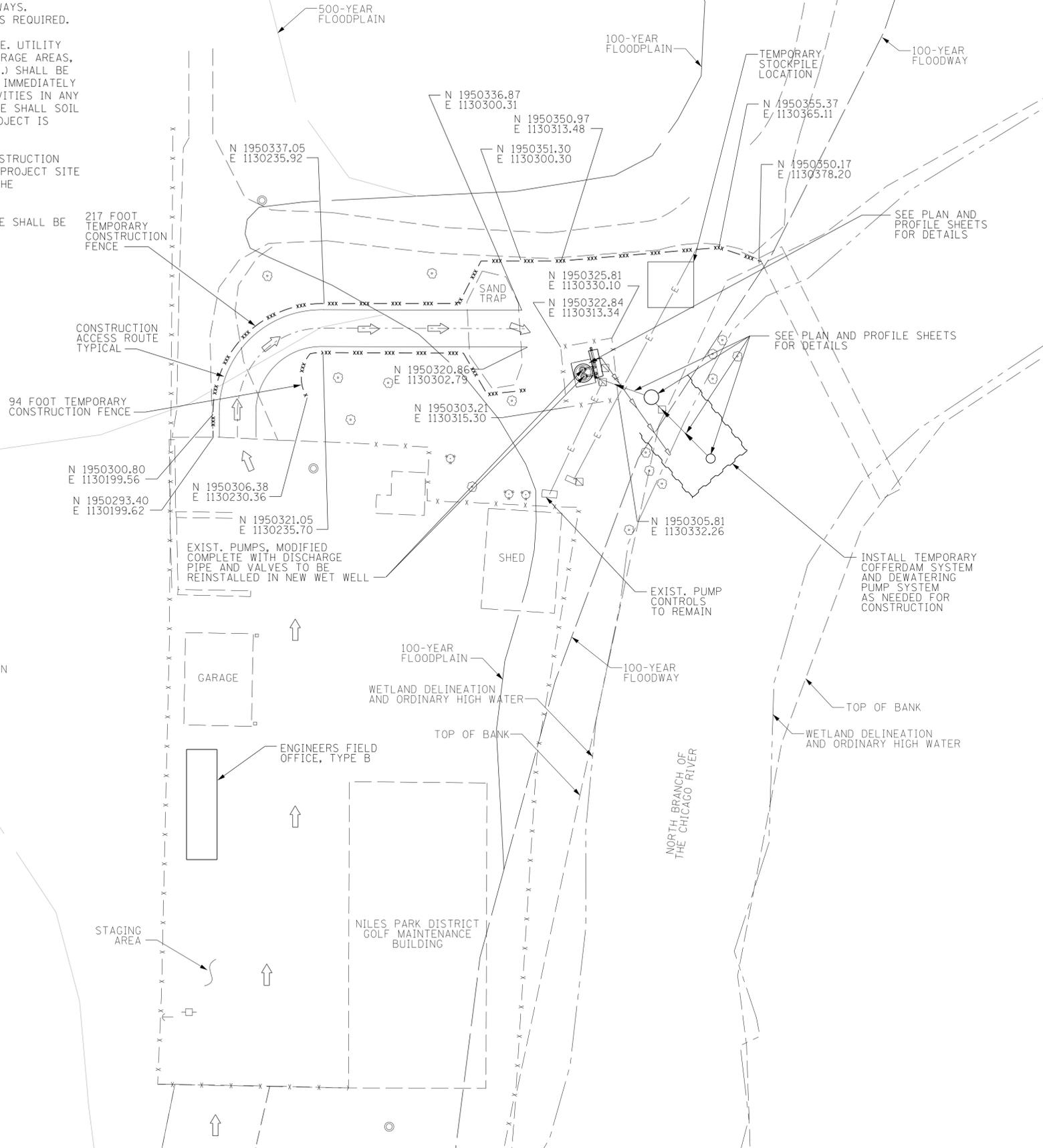
**TAM O'SHANTER GOLF COURSE  
PUMP STATION MODIFICATION  
COOK COUNTY**

**STATE OF ILLINOIS  
DEPARTMENT OF NATURAL RESOURCES  
OFFICE OF WATER RESOURCES**

**DEMOLITION PLAN**  
SCALE: 1"=20' SHEET NO. 5 OF 31 SHEETS

**SITE PLAN NOTES**

1. MATERIAL RESULTING FROM TRENCH EXCAVATION SHALL NOT BE TEMPORARILY SIDECAST IN WATERWAYS. REVEGETATION OF ALL DISTURBED AREAS IS REQUIRED.
2. ALL DISTURBED AREAS OF THE PROJECT (I.E. UTILITY CORRIDOR, CONSTRUCTION ACCESS AND STORAGE AREAS, DISTURBED SLOPES AND STREAMBANKS, ETC.) SHALL BE STABILIZED (E.G., BLANKETED AND SEEDED) IMMEDIATELY UPON COMPLETION OF CONSTRUCTION ACTIVITIES IN ANY ONE SEGMENT OF THE PROJECT. IN NO CASE SHALL SOIL STABILIZATION BE DELAYED UNTIL THE PROJECT IS COMPLETED.
3. ALL MATERIALS USED FOR TEMPORARY CONSTRUCTION ACTIVITIES SHALL BE REMOVED FROM THE PROJECT SITE IMMEDIATELY FOLLOWING COMPLETION OF THE CONSTRUCTION ACTIVITY.
4. LOCATION OF THE ENGINEER'S FIELD OFFICE SHALL BE COORDINATED WITH THE ENGINEER.



BILL OF MATERIALS	UNIT	QUANTITY
TEMPORARY COFFERDAM SYSTEM	L SUM	1
DEWATERING	L SUM	1
PUMP STATION	EACH	1
TEMPORARY FENCE	FOOT	311
ENGINEERS FIELD OFFICE TYPE B	CAL MO	7
MOBILIZATION	L SUM	1
WOOD INFORMATION SIGNS	EACH	1

**LEGEND**

- ⊠ EXISTING POWER POLE
- ⊙ EXISTING MANHOLE
- ⊠ EXISTING JUNCTION BOX
- ⊠ EXISTING HANDHOLE
- ← EXISTING GUY WIRE
- ⊙ ⊕ EXISTING TREE
- EXISTING BOLLARD
- ⇒ CONSTRUCTION ACCESS ROUTE
- x - x - EXISTING FENCE
- ~~~~~ VEGETATION/TIMBER LINE
- - - - WETLAND DELINEATION
- - - - EXISTING STORM SEWER
- ~~~~~ COFFERDAM
- - - - PROPOSED STORM SEWER
- x - x - PROPOSED FENCE
- xxx - xxx - TEMPORARY FENCE



FILE NAME: #FILE#

**Michael Baker INTERNATIONAL**

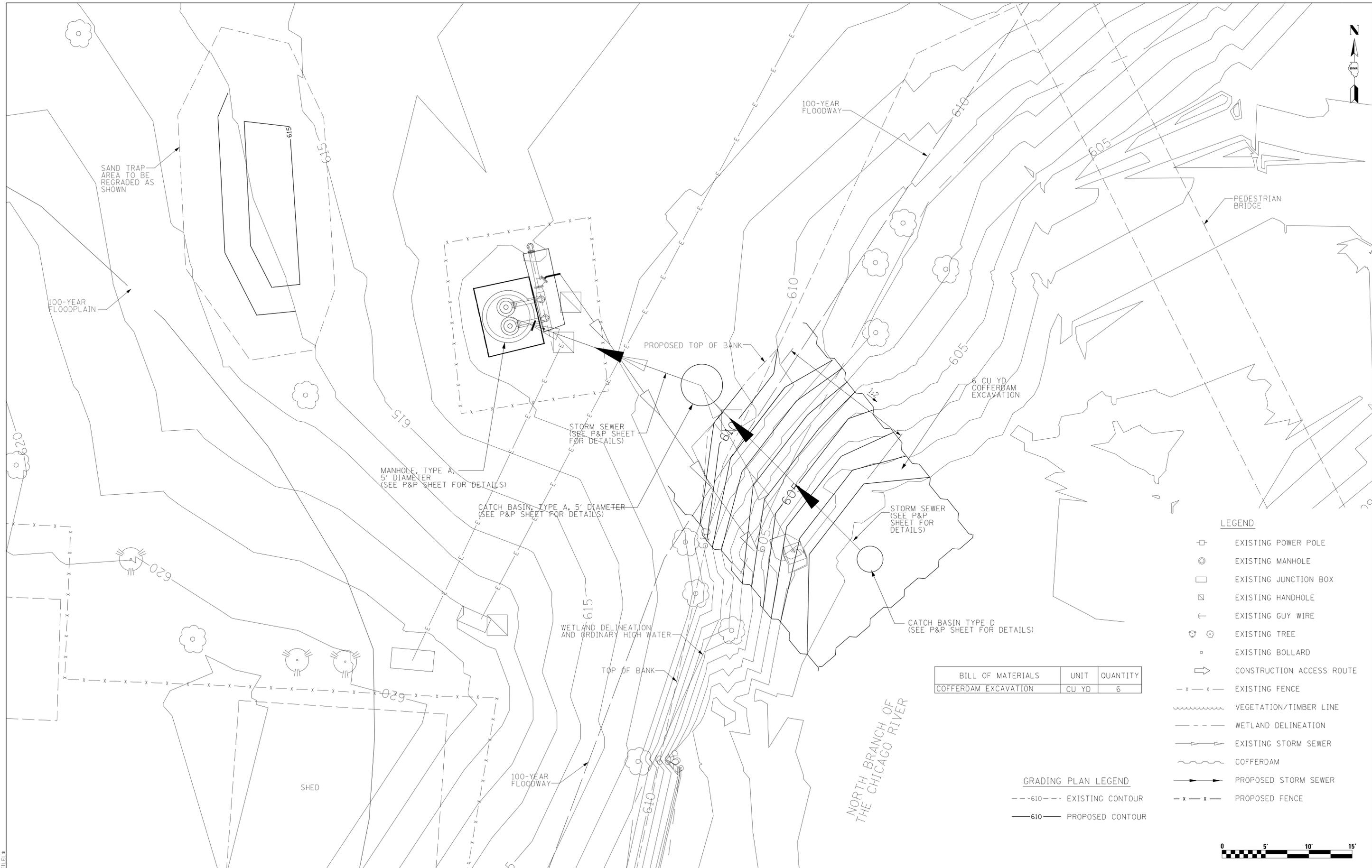
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	DATE: - 07/26/2018	REVISED: -

**TAM O'SHANTER GOLF COURSE  
PUMP STATION MODIFICATION  
COOK COUNTY**

**STATE OF ILLINOIS  
DEPARTMENT OF NATURAL RESOURCES  
OFFICE OF WATER RESOURCES**

**SITE PLAN**  
SCALE: 1"=20' SHEET NO. 6 OF 31 SHEETS





**LEGEND**

- ⊠ EXISTING POWER POLE
- ⊙ EXISTING MANHOLE
- EXISTING JUNCTION BOX
- ⊞ EXISTING HANDHOLE
- ← EXISTING GUY WIRE
- ⊕ ⊖ EXISTING TREE
- EXISTING BOLLARD
- ➔ CONSTRUCTION ACCESS ROUTE
- x - x - EXISTING FENCE
- ~~~~~ VEGETATION/TIMBER LINE
- - - - - WETLAND DELINEATION
- ➔ EXISTING STORM SEWER
- ~~~~~ COFFERDAM
- ➔ PROPOSED STORM SEWER
- x - x - PROPOSED FENCE

BILL OF MATERIALS	UNIT	QUANTITY
COFFERDAM EXCAVATION	CU YD	6

**GRADING PLAN LEGEND**

- - - 610 - - - EXISTING CONTOUR
- 610 — PROPOSED CONTOUR



**Michael Baker INTERNATIONAL**

USER NAME : *USER*	DESIGNED - AMC	REVISED -
PLOT SCALE : *SCALE*	DRAWN - YS	REVISED -
PLOT DATE : *DATE*	CHECKED - AMC	REVISED -
	DATE - 07/26/2018	REVISED -

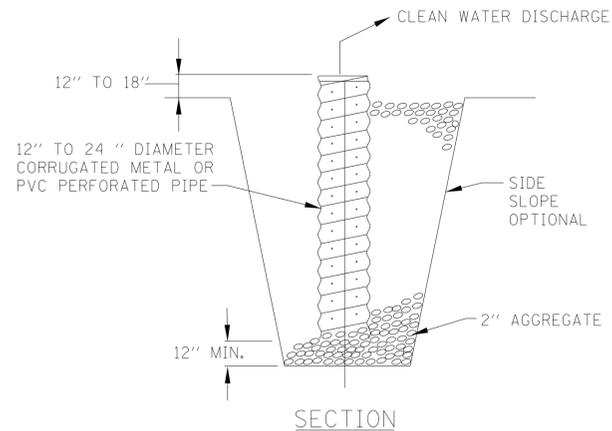
**TAM O'SHANTER GOLF COURSE  
PUMP STATION MODIFICATION  
COOK COUNTY**

**STATE OF ILLINOIS  
DEPARTMENT OF NATURAL RESOURCES  
OFFICE OF WATER RESOURCES**

**GRADING PLAN**  
SCALE: 1"=5' SHEET NO. 8 OF 31 SHEETS

FILE NAME : #FILE#



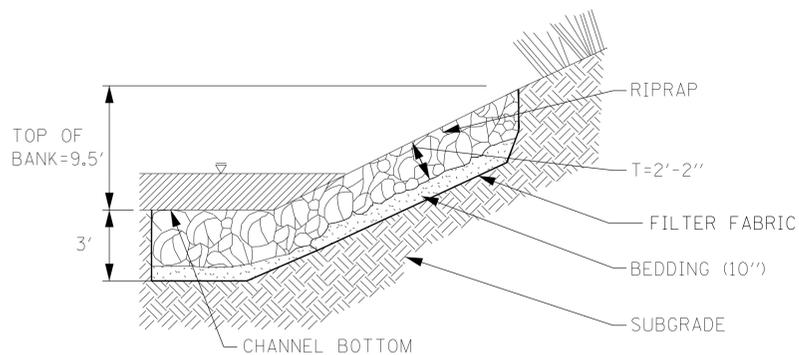


**NOTES:**

1. THE STANDPIPE WILL BE CONSTRUCTED BY PERFORATING A 12"-24" DIAMETER CORRUGATED METAL OR PVC PIPE.
2. A BASE OF 2" DIAMETER AGGREGATE WILL BE PLACED IN THE PIT TO A MINIMUM DEPTH OF 12". AFTER INSTALLING THE STANDPIPE, THE PIT SURROUNDING THE STANDPIPE WILL THEN BE BACKFILLED WITH 2" AGGREGATE UP TO THE LID OF THE PIT.
3. THE STANDPIPE WILL EXTEND 12" TO 18" ABOVE THE LIP OF THE PIT.
4. IF DISCHARGE WILL BE PUMPED DIRECTLY TO A STORM DRAINAGE SYSTEM, THE STANDPIPE WILL BE WRAPPED WITH FILTER FABRIC BEFORE INSTALLATION.
5. IF DESIRED, 1/4"-1/2" HARDWARE CLOTH MAY BE PLACED AROUND THE STANDPIPE PRIOR TO ATTACHING THE FILTER FABRIC. THIS WILL INCREASE THE RATE OF WATER SEEPAGE INTO THE PIPE.

**SUMP PIT PLAN**

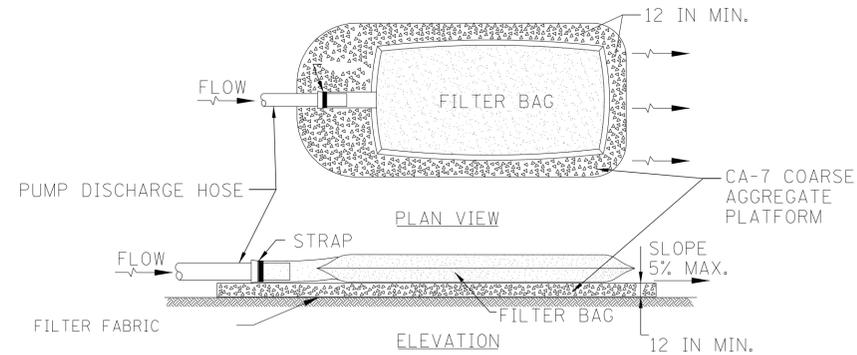
(DEWATERING OPTION, FOR INFORMATION ONLY)



**AGGREGATE TABLE**

RIPRAP	STONE BEDDING
RR6	10-IN CL A2

**RIPRAP DETAIL**



**CONSTRUCTION SPECIFICATIONS**

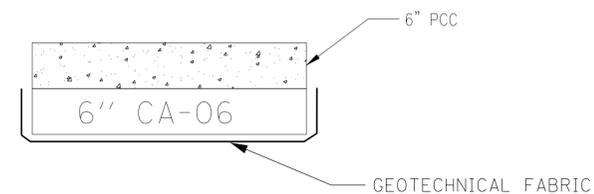
1. TIGHTLY SEAL SLEEVE AROUND THE PUMP DISCHARGE HOSE WITH A STRAP OR SIMILAR DEVICE.
2. PLACE FILTER BAG ON SUITABLE BASE (E.G., CA-7 COARSE AGGREGATE ON TOP OF FILTER FABRIC) LOCATED ON A LEVEL OR 5% MAXIMUM SLOPING SURFACE. DISCHARGE TO A STABILIZED AREA. EXTEND BASE A MINIMUM OF 12 INCHES FROM EDGES OF BAG.
3. CONTROL PUMPING RATE TO PREVENT EXCESSIVE PRESSURE WITHIN THE FILTER BAG IN ACCORDANCE WITH THE MANUFACTURER RECOMMENDATIONS. AS THE BAG FILLS WITH SEDIMENT, REDUCE PUMPING RATE.
4. REMOVE AND PROPERLY DISPOSE OF FILTER BAG UPON COMPLETION OF PUMPING OPERATIONS. REPLACE THE BAG WHEN THE CONTAINED SILT REDUCES THE BAG'S FLOW TO APPROXIMATELY 50% OF THE INITIAL DISCHARGE, OR WHEN DIRECTED BY THE INSPECTOR-IN-CHARGE. DISPOSE OF SILT IN ACCORDANCE WITH ARTICLE 202.03 OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION. RESTORE THE SURFACE AREA BENEATH THE BAG TO ORIGINAL CONDITION UPON REMOVAL OF THE DEVICE.
5. USE NONWOVEN GEOTEXTILE WITH DOUBLE STITCHED SEAMS USING HIGH STRENGTH THREAD. SIZE SLEEVE TO ACCOMMODATE A MAXIMUM 4 INCH DIAMETER PUMP DISCHARGE HOSE. THE BAG MUST BE MANUFACTURED FROM A NONWOVEN GEOTEXTILE THAT MEETS OR EXCEEDS MINIMUM AVERAGE ROLL VALUES (MARV) FOR THE FOLLOWING:

TENSILE STRENGTH	250 LB	ASTM D-4632
ELONGATION	20%	ASTM D-4632
TRAPEZOIDAL TEAR STRENGTH	115 LB	ASTM D-4533
PUNCTURE (CBR)	900	ASTM D-6241
ULTRAVIOLET LIGHT	70%	ASTM D-4355
APPARENT OPENING SIZE	#40/2	ASTM D-4751
PERCENT OPEN AREA	1%	CWO-02215-86
PERMITIVITY	4 GAL/MIN/SF	ASTM D-4491
TENSILE STRENGTH	200 LB	ASTM D-4632
ELONGATION	>50%	ASTM D-4632
PUNCTURE (CBR)	475	ASTM D-6241
ULTRAVIOLET LIGHT	70%	ASTM D-4355
APPARENT OPENING SIZE	#100/2	ASTM D-4751
PERMITIVITY	110 GAL/MIN/SF	ASTM D-4491

6. REPLACE FILTER BAG IF BAG CLOGS OR HAS RIPS, TEARS, OR PUNCTURES. DURING OPERATION KEEP CONNECTION BETWEEN PUMP HOSE AND FILTER BAG WATER TIGHT. REPLACE BEDDING IF IT BECOMES DISPLACED.

**FILTER BAG**

(DEWATERING OPTION, FOR INFORMATION ONLY)

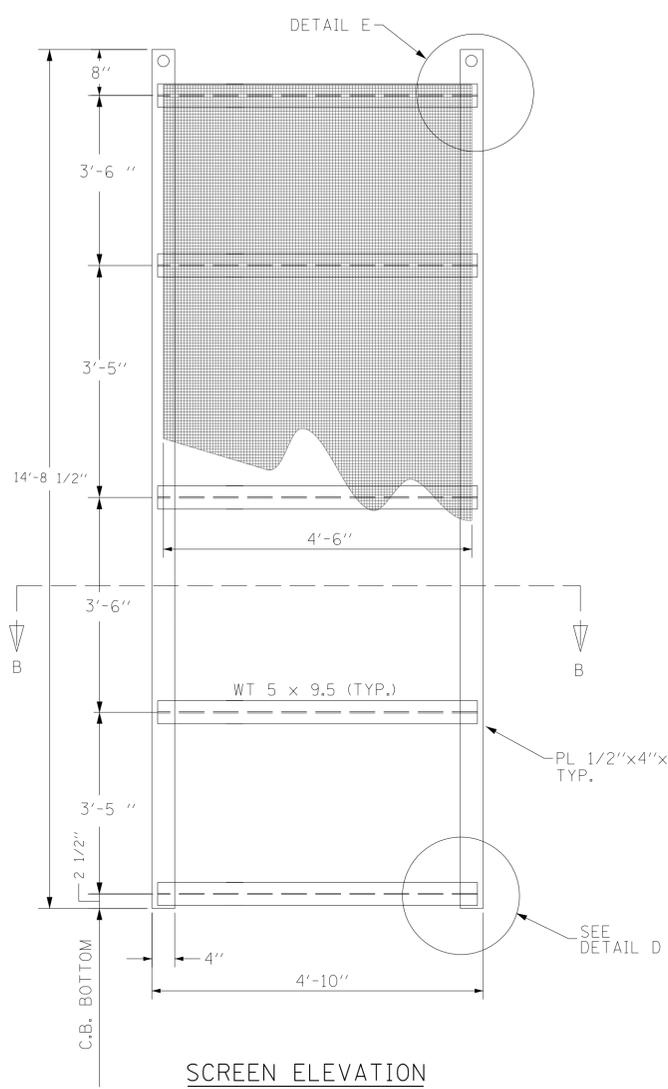


**PORTLAND CEMENT CONCRETE 6"**

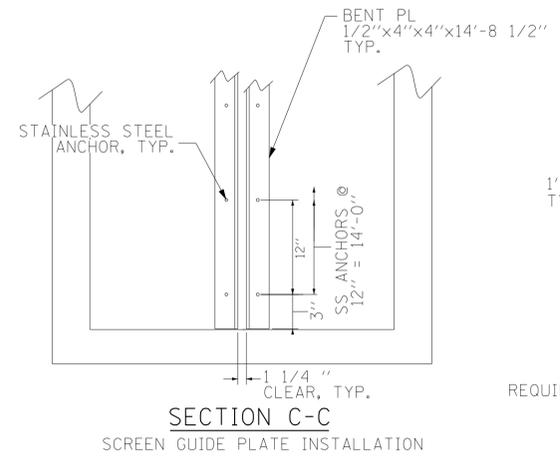
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PLOT SCALE : 1,000' / in.	DRAWN - YS	REVISED -
PLOT DATE : 7/26/2018	CHECKED - AMC	REVISED -
	DATE - 07/26/2018	REVISED -

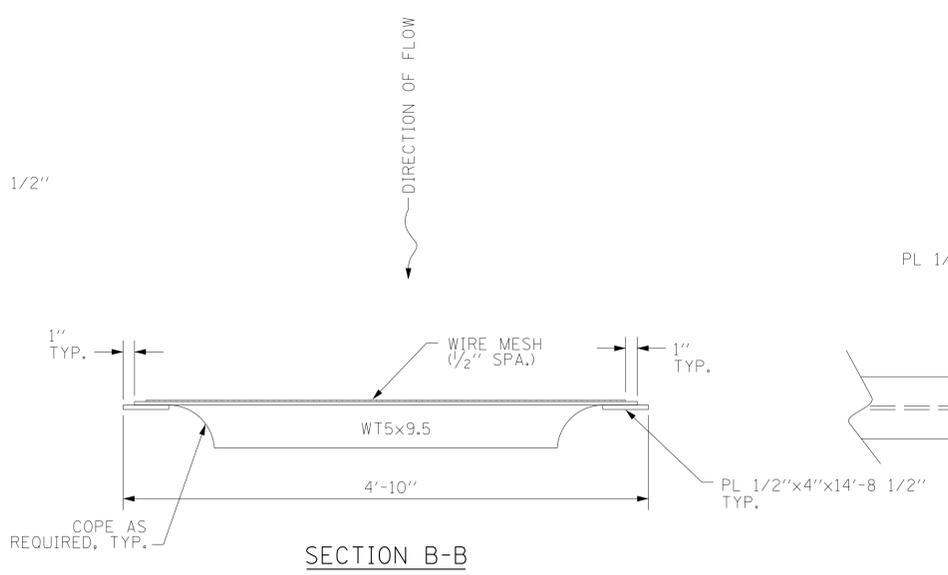
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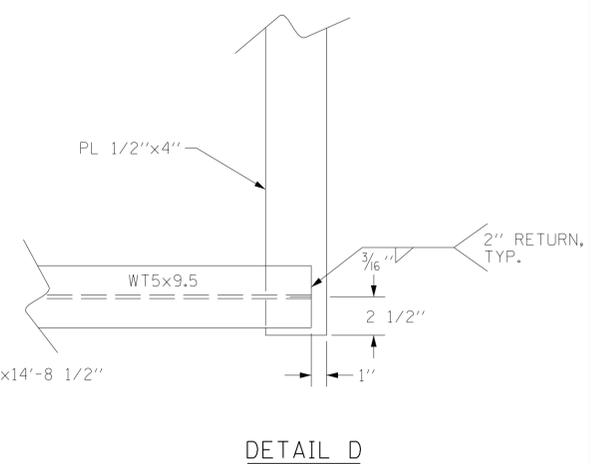
**SCREEN ELEVATION**



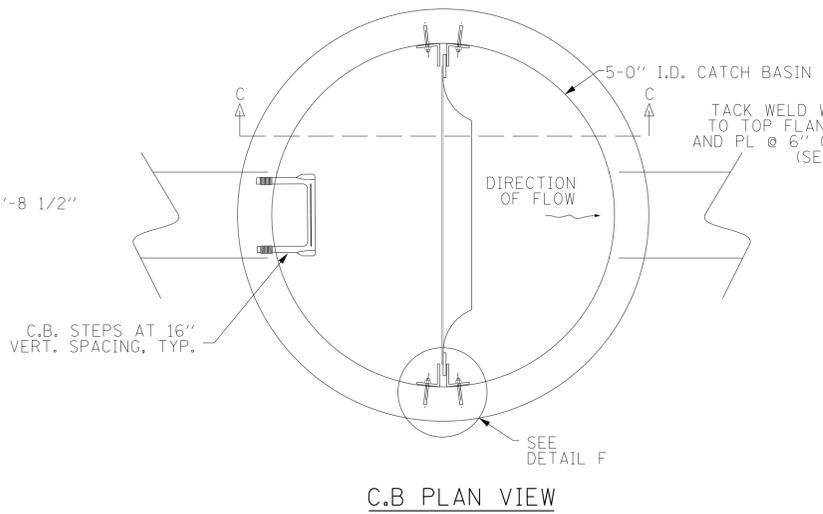
**SECTION C-C  
SCREEN GUIDE PLATE INSTALLATION**



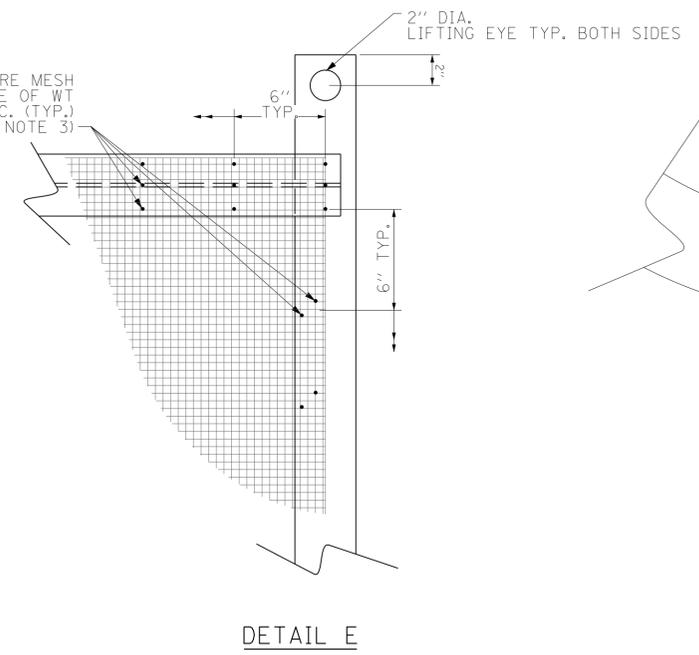
**SECTION B-B**



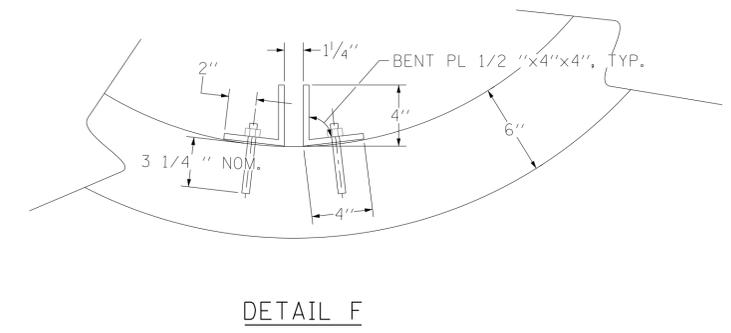
**DETAIL D**



**C.B. PLAN VIEW**



**DETAIL E**

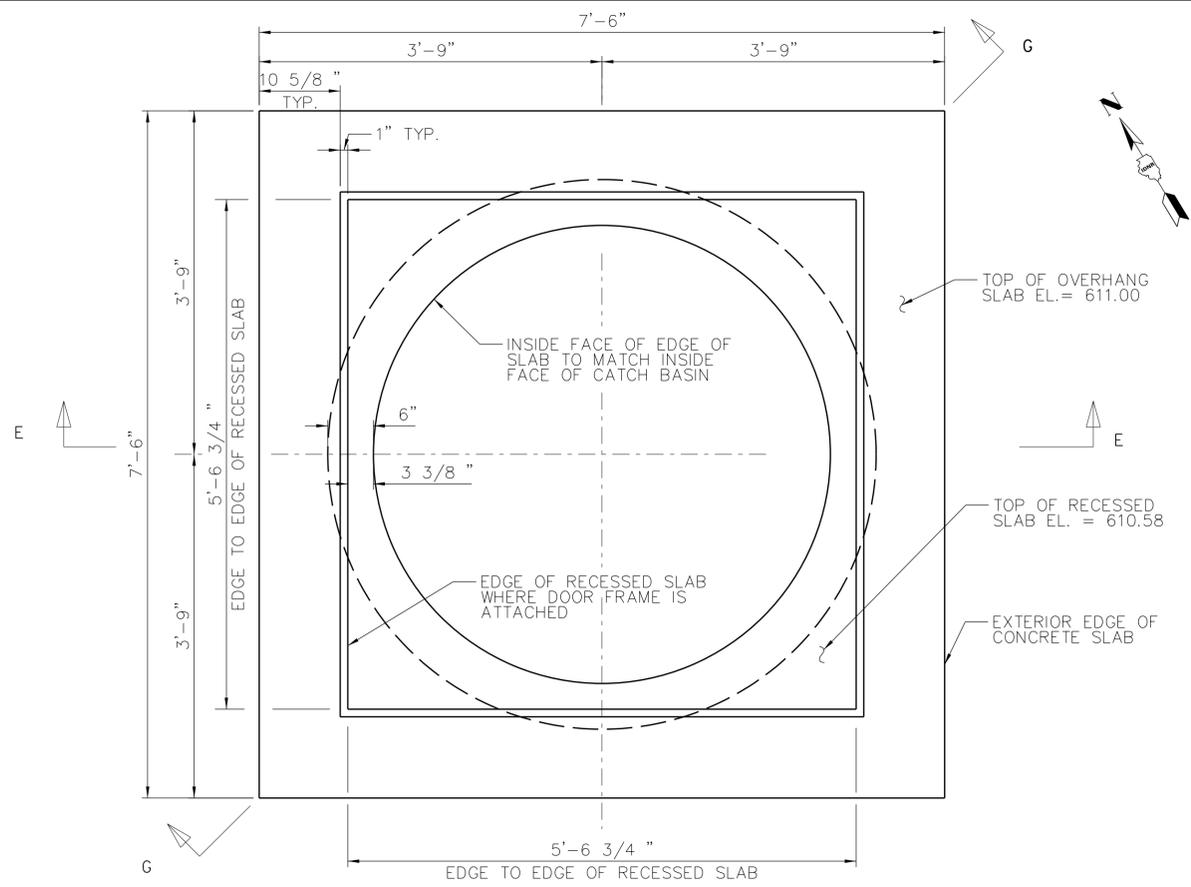


**DETAIL F**

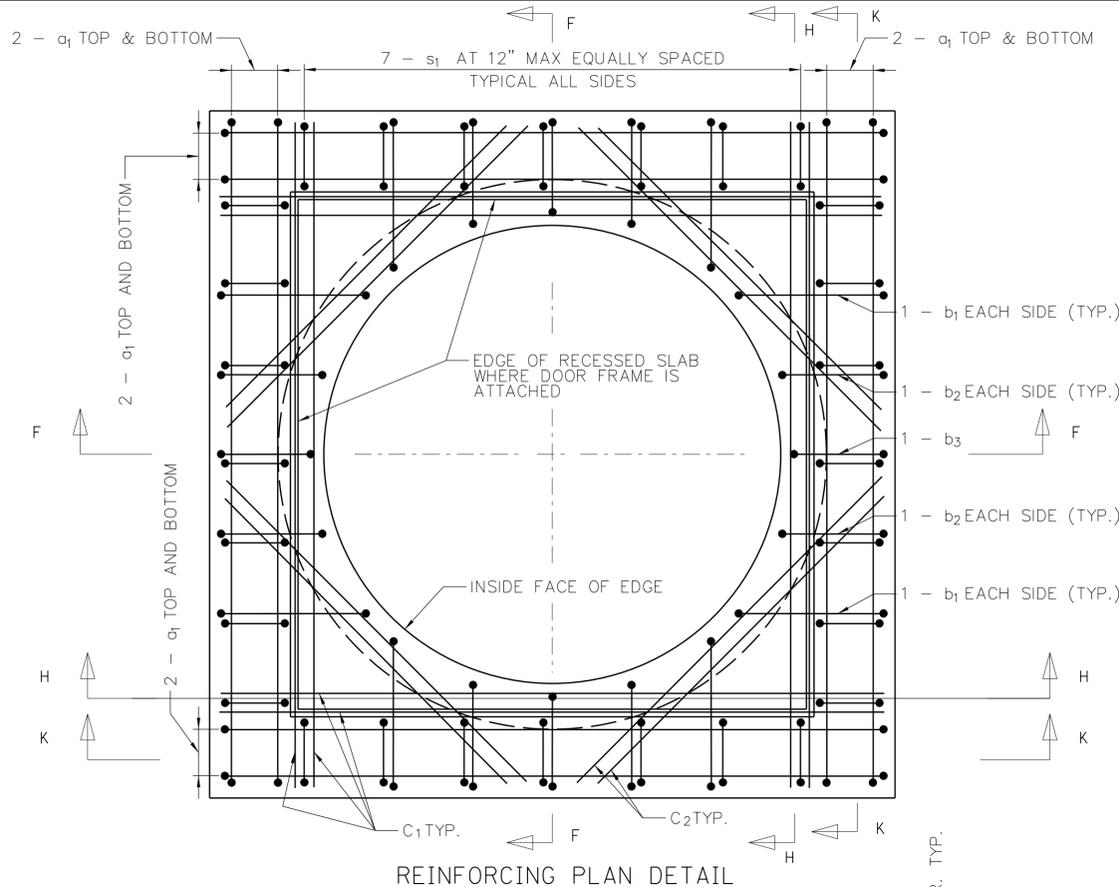
**NOTE:**  
BEND PLATE AS REQUIRED TO PROVIDE ADEQUATE CLEARANCE FOR THE SCREEN.

- NOTES:**
1. ALL STEEL IS 36 KSI STAINLESS STEEL (SS).
  2. ALL ANCHORS ARE SIMPSON STRONG-TIE 1/2" DIA. SS STRONG-BOLT 2; NOMINAL EMBEDMENT = 3 1/4" (OR EQUIVALENT).
  3. WIRE MESH IS 1/2" SQUARE OPENING, 0.08" WIRE DIAMETER, SQUARE WEAVE STAINLESS STEEL MESH.
  4. SCREEN SHALL BE WELDED TO THE FRAME BY THE BEST STANDARD PRACTICE (AS DETERMINED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER). BASIC ATTACHMENT DETAILS ARE SHOWN ON THE PLAN SHEETS.
  5. WELDING SHALL BE IN ACCORDANCE WITH THE AMERICAN WELDING SOCIETY (AWS) "STRUCTURAL WELDING CODE - ANSI/AWS D1.1/D1.1M" LATEST EDITION.
  6. STEPS SHALL HAVE A CLEAR PATH TO ACCESS OPENING, COORDINATE DOOR OPENING AND LOCATION STEPS.

**CATCH BASIN SCREEN**



SLAB PLAN

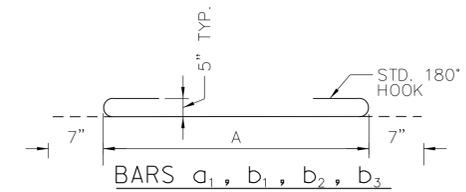


REINFORCING PLAN DETAIL

**DESIGN DATA:**  
 2014 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 7TH ED.  
 LIVE LOAD: 150 PSF  
 MATERIAL DESIGN PROPERTIES: REINFORCED CONCRETE  $f_c = 4$  KSI  
 REINFORCEMENT  $f_y = 60$  KSI

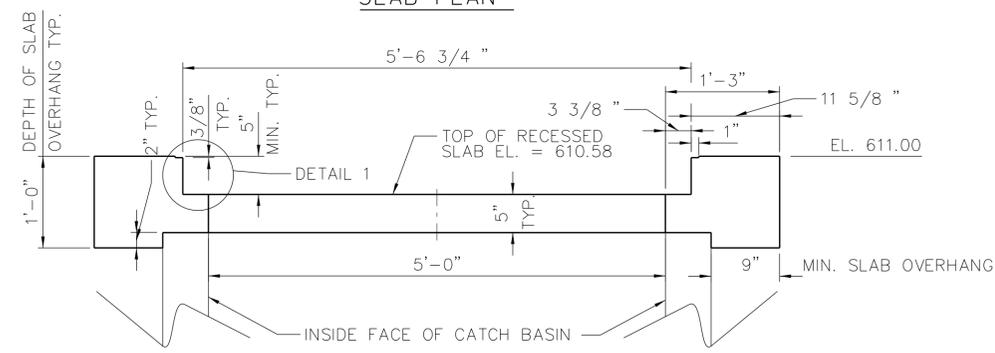
BILL OF BARS

BAR	NO.	SIZE	LENGTH	SHAPE
a <sub>1</sub>	16	#5	8'-4"	
b <sub>1</sub>	8	#5	2'-10"	
b <sub>2</sub>	8	#5	2'-3"	
b <sub>3</sub>	4	#5	2'-1"	
c <sub>1</sub>	8	#5	7'-2"	
c <sub>2</sub>	8	#5	4'-6"	
s <sub>1</sub>	28	#5	2'-2"	

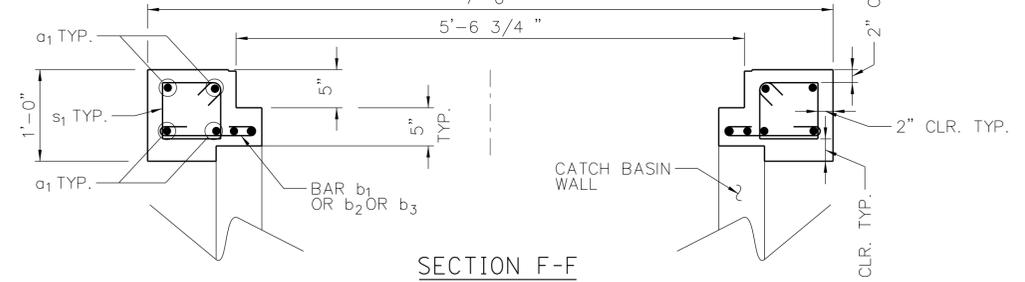


DETAIL 1

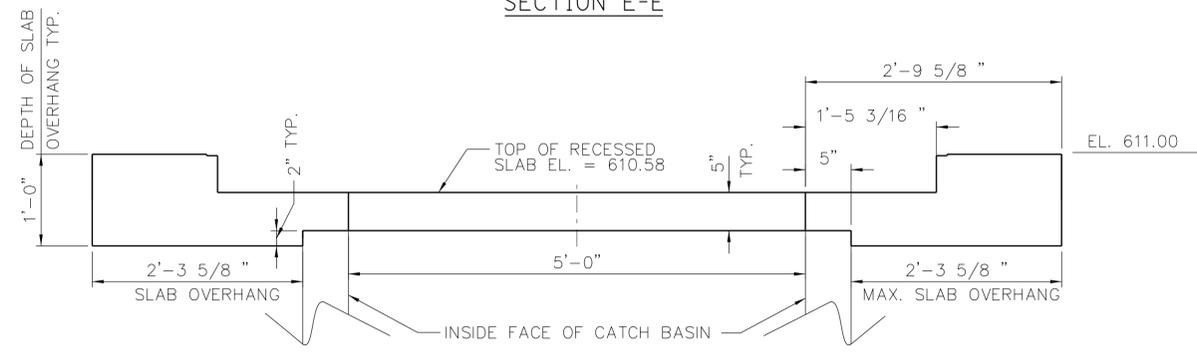
BAR	A
a <sub>1</sub>	86"
b <sub>1</sub>	20"
b <sub>2</sub>	13"
b <sub>3</sub>	11"



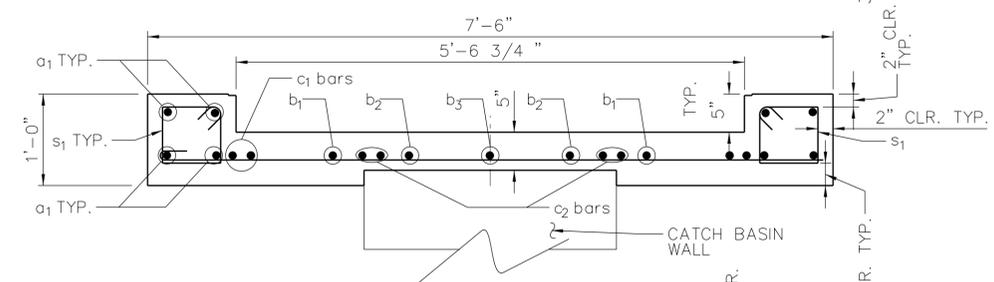
SECTION E-E



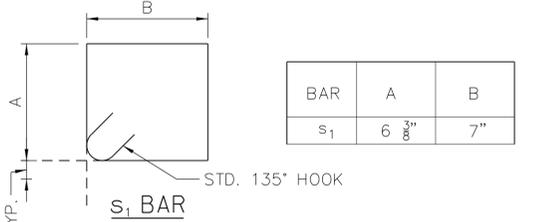
SECTION F-F



SECTION G-G

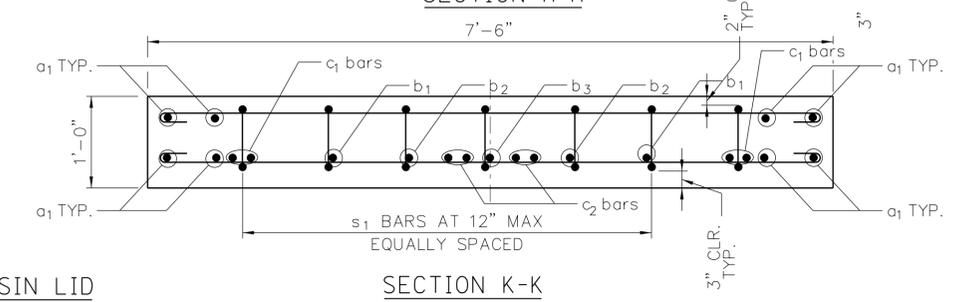


SECTION H-H



DETAIL 2

BAR	A	B
s <sub>1</sub>	6 3/8"	7"



SECTION K-K

CONCRETE SLAB SUPPORTING CATCH BASIN LID

FILE NAME: H:\142537\_IDMR\_Team\13.0\_Deliverables\Pump\SCDD\_Sheets\12\_Catch Basin Lid Details.dwg

**Michael Baker INTERNATIONAL**

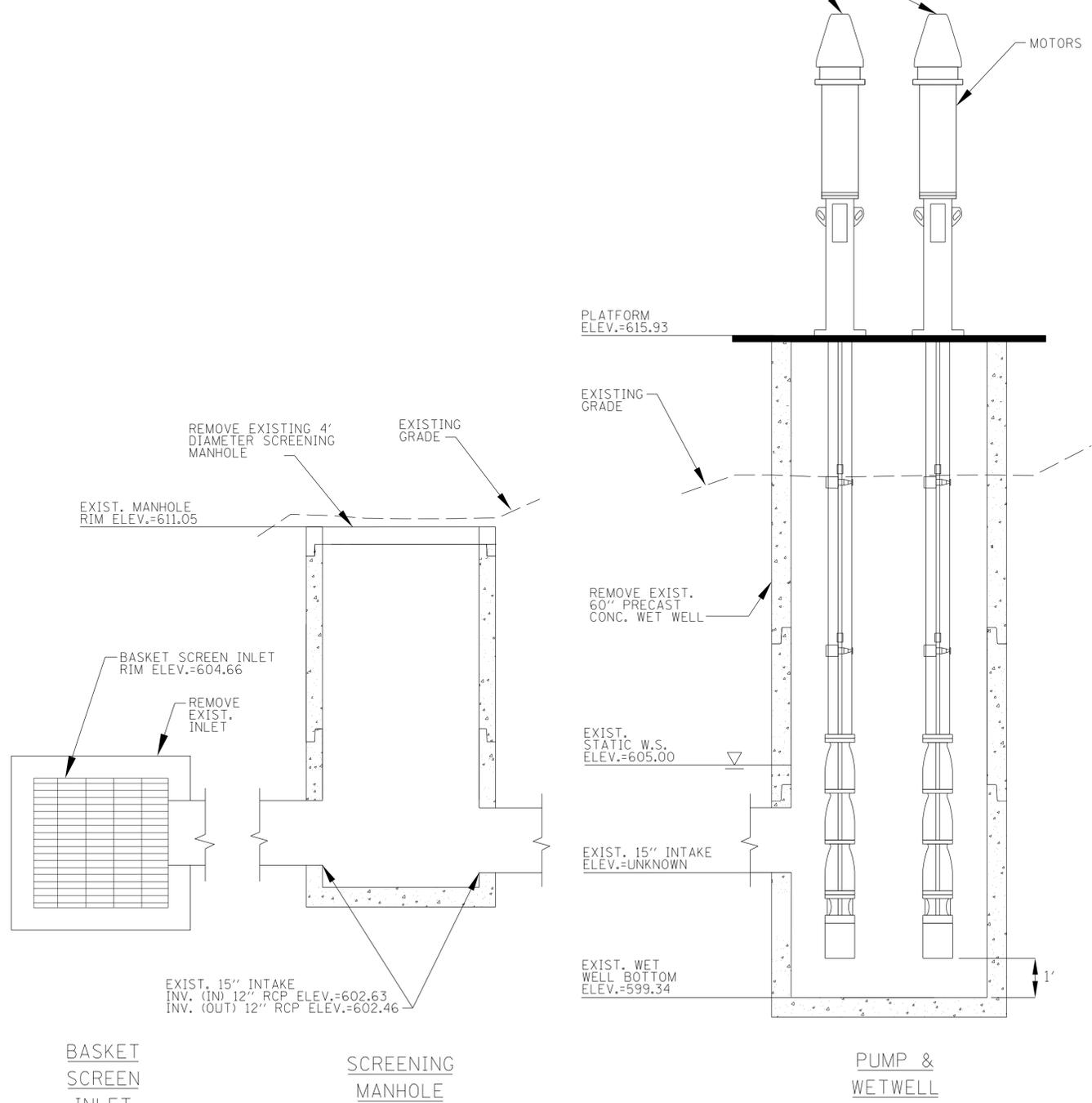
USER NAME: Megha.Pameswarath	DESIGNED: MA	REVISED:
PLOT SCALE: 1:1000' / in.	DRAWN: EEM	REVISED:
PLOT DATE: 7/26/2018	CHECKED: MA	REVISED:
	DATE: 07/26/2018	REVISED:

**TAM O'SHANTER GOLF COURSE  
 PUMP STATION MODIFICATION  
 COOK COUNTY**

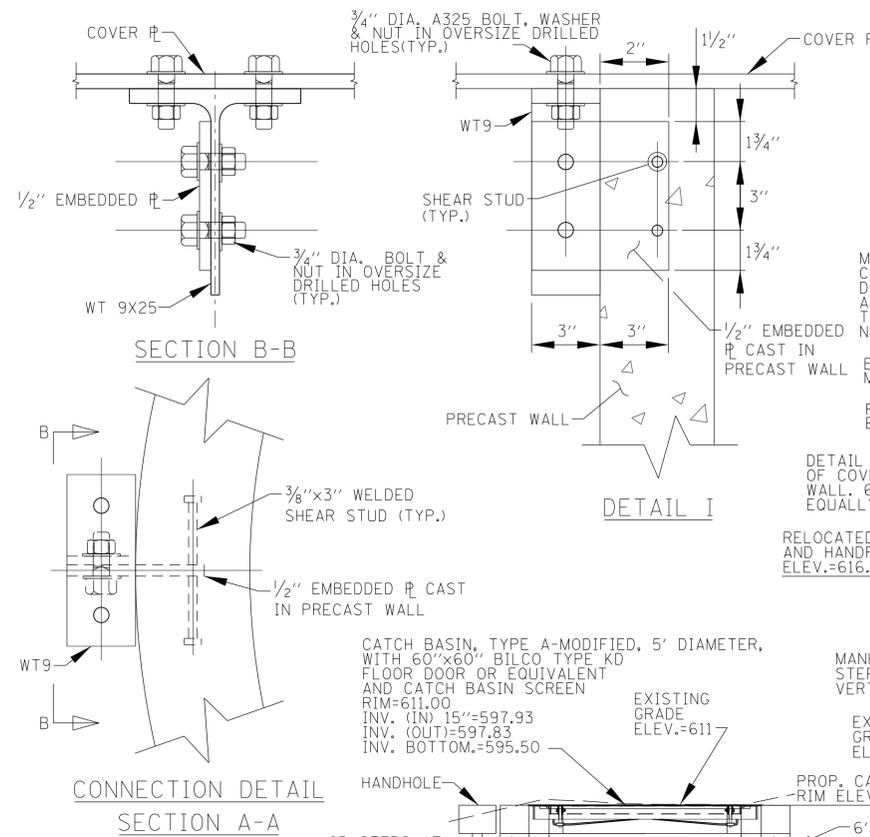
**STATE OF ILLINOIS  
 DEPARTMENT OF NATURAL RESOURCES  
 OFFICE OF WATER RESOURCES**

**CATCH BASIN LID DETAILS**  
 SCALE: N.T.S. SHEET NO. 12 OF 31 SHEETS

EXISTING PUMPS, COMPLETE WITH DISCHARGE PIPE AND VALVES TO BE SALVAGED, MODIFIED TO PROVIDE LENGTHENED SHAFTING AND INSTALLED IN NEW WET WELL



EXISTING PUMP SYSTEM

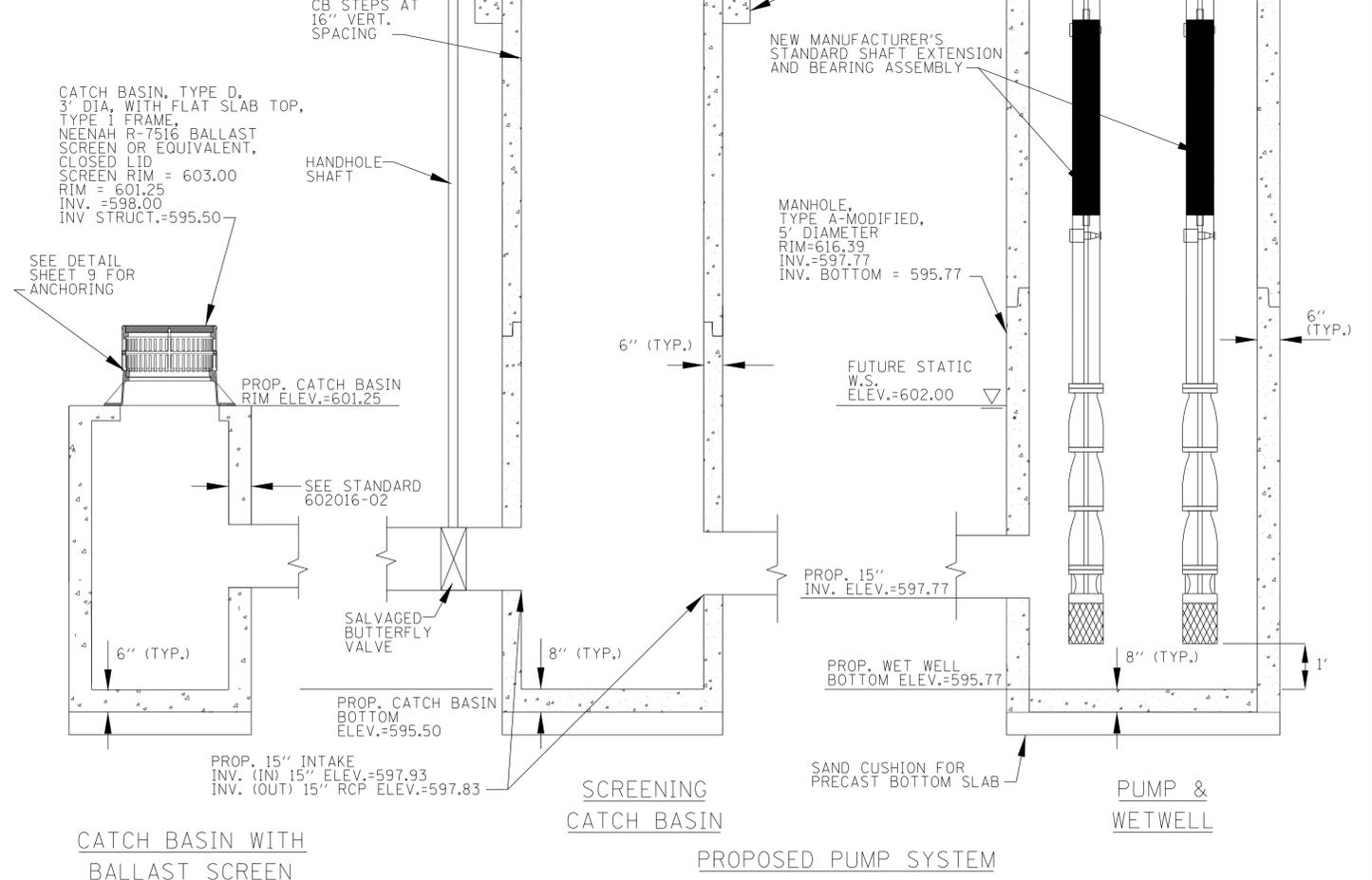


ALL BOLTS SHALL BE HIGH STRENGTH 3/4" IN DIA. A325 TYPE 1, MECHANICALLY GALVANIZED IN ACCORDANCE WITH AASHTO M298 (ASTM B695) CLASS 50, OVERSIZE HOLES FOR 3/4" DIA. BOLT SHOULD BE 9/16" DIA. UNLESS NOTED OTHERWISE.

NUTS SHALL CONFORM TO THE STANDARD SPECIFICATION FOR CARBON AND ALLOY STEEL NUTS, ASTM A563, GRADE DH OR DH3.

WASHERS SHALL CONFORM TO THE STANDARD SPECIFICATION FOR HARDENED STEEL WASHERS AASHTO M293 (ASTM F436)

ALL STRUCTURAL STEEL ANGLES, PLATES ETC. SHALL BE PAINTED ACCORDING TO THE SECTION 506 OF STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION.



CATCH BASIN WITH BALLAST SCREEN

PROPOSED PUMP SYSTEM

FILE NAME: H:\142537 IDNR Test\13.0 Delivarables\Pump\SCDD\_Sheets\2018-07-26\13 Pump Details.dwg

**Michael Baker INTERNATIONAL**

USER NAME = Megha,Parameswarath	DESIGNED - AMC	REVISED -
PLOT SCALE = 1,000' / in.	DRAWN - YS	REVISED -
PLOT DATE = 7/30/2018	CHECKED - THP	REVISED -
	DATE - 07/26/2018	REVISED -

**TAM O'SHANTER GOLF COURSE  
PUMP STATION MODIFICATION  
COOK COUNTY**

**STATE OF ILLINOIS  
DEPARTMENT OF NATURAL RESOURCES  
OFFICE OF WATER RESOURCES**

**PUMP SYSTEM DETAILS**  
SCALE: N.T.S. SHEET NO. 13 OF 31 SHEETS



SEE NOTE 4 (TYP.)

SEE NOTE 5

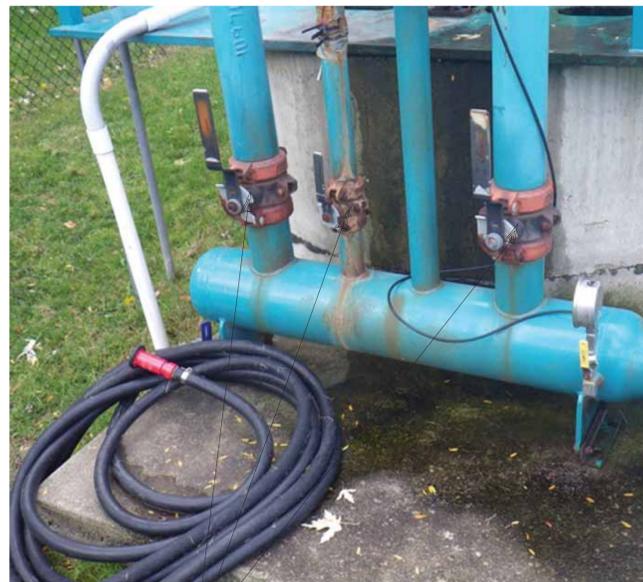
SEE NOTE 3

SEE NOTE 5

SEE NOTE 11

SEE NOTE 9 (TYP.)

SEE NOTE 2  
INSTALL NEW  
BUTTERFLY VALVE



REPLACE VALVES



SEE NOTE 4 (TYP.)

SEE NOTE 1

DISCONNECT, SALVAGE, STORE  
HEADER AND  
FLOWMETER  
ASSEMBLY

SEE NOTE 6

**NOTES:**

1. DISCONNECT AND SALVAGE SERVICE PIPING.
2. DISCONNECT AND SALVAGE DISCHARGE HEAD PIPING.
3. DISCONNECT AND SALVAGE PIPING FROM SHAFT COLUMNS.
4. DISCONNECT AND SALVAGE ALL ELECTRICAL COMPONENTS ACCORDING TO SPECS.
5. REMOVE RAILING AND TOP PLATE, AND SALVAGE.
6. DISCONNECT FROM CONCRETE PAD.
7. REMOVE PUMP COLUMN AND SHAFT AS SHOWN ON PUMP DETAIL SHEET AND SALVAGE.
8. PROTECT ALL PIPES AND ELECTRICAL COMPONENTS. REPLACE LEAKING VALVES.
9. REPLACE BOLTS AS NECESSARY.
10. SEE EXISTING SYSTEM PLAN SHEETS FOR DETAILED AS BUILT INFORMATION.
11. RAISE ELECTRICAL BOX ABOVE 618.56

12. CONTRACTOR SHALL PROVIDE NEW 304 SS NUTS AND BOLTS, AND GASKETS FOR ALL FLANGES DISSASSEMBLED.
13. ALL ELECTRICAL COMPONENTS BELOW ELEVATION 618.56 SHALL BE WATERPROOF AND CORROSION RESISTANT.
14. UPON COMPLETION OF THE PUMP STATION MODIFICATIONS, THE CONTRACTOR SHALL PROVIDE TESTING (SEE PARAMETERS IN SPECS) TO ASSURE THE PUMP STATIONS OPERATIONS FOR ACCEPTANCE AND APPROVAL BY OWNER.

FILE NAME: H:\142537\_IDNR\_Test\13.0\_Deliverables\Pump\CADD\_Sheets\14\_Pump\_Photos.dwg

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INTERNATIONAL**

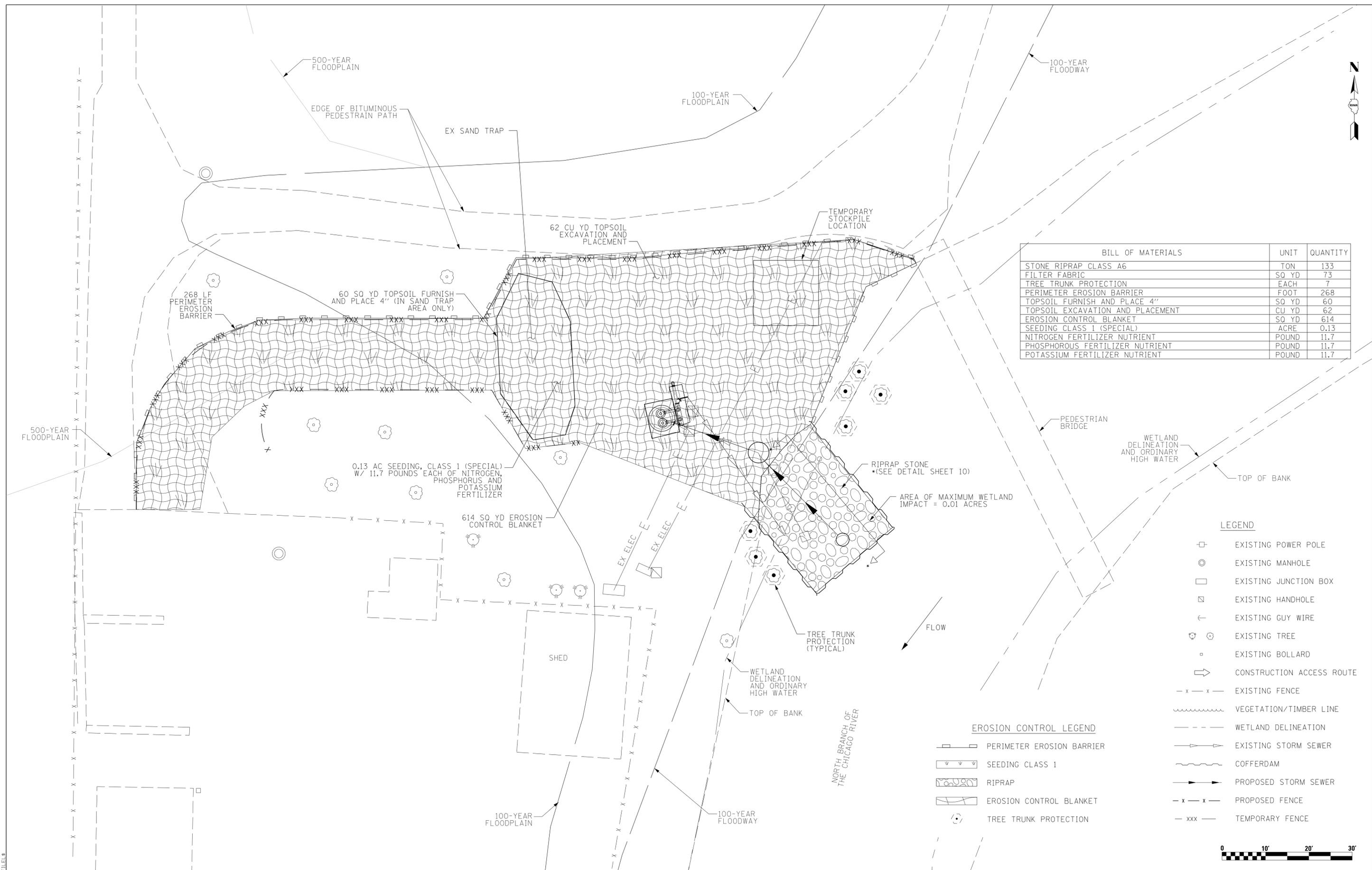
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PLOT SCALE = 1,000' / in.	DRAWN - YS	REVISED -
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	DATE - 07/26/2018	REVISED -

**TAM O'SHANTER GOLF COURSE  
PUMP STATION MODIFICATION  
COOK COUNTY**

**STATE OF ILLINOIS  
DEPARTMENT OF NATURAL RESOURCES  
OFFICE OF WATER RESOURCES**

**EXISTING PUMP  
STATION PHOTOS**

SCALE: N.T.S. SHEET NO. 14 OF 31 SHEETS



BILL OF MATERIALS	UNIT	QUANTITY
STONE RIPRAP CLASS A6	TON	133
FILTER FABRIC	SQ YD	73
TREE TRUNK PROTECTION	EACH	7
PERIMETER EROSION BARRIER	FOOT	268
TOPSOIL FURNISH AND PLACE 4"	SQ YD	60
TOPSOIL EXCAVATION AND PLACEMENT	CU YD	62
EROSION CONTROL BLANKET	SQ YD	614
SEEDING CLASS 1 (SPECIAL)	ACRE	0.13
NITROGEN FERTILIZER NUTRIENT	POUND	11.7
PHOSPHOROUS FERTILIZER NUTRIENT	POUND	11.7
POTASSIUM FERTILIZER NUTRIENT	POUND	11.7

**LEGEND**

- EXISTING POWER POLE
- EXISTING MANHOLE
- EXISTING JUNCTION BOX
- EXISTING HANDHOLE
- EXISTING GUY WIRE
- EXISTING TREE
- EXISTING BOLLARD
- CONSTRUCTION ACCESS ROUTE
- EXISTING FENCE
- VEGETATION/TIMBER LINE
- WETLAND DELINEATION
- EXISTING STORM SEWER
- COFFERDAM
- PROPOSED STORM SEWER
- PROPOSED FENCE
- TEMPORARY FENCE

**EROSION CONTROL LEGEND**

- PERIMETER EROSION BARRIER
- SEEDING CLASS 1
- RIPRAP
- EROSION CONTROL BLANKET
- TREE TRUNK PROTECTION



**Michael Baker INTERNATIONAL**

USER NAME : *\$USER*	DESIGNED - AMC	REVISED -
PLOT SCALE : *\$SCALE*	DRAWN - YS	REVISED -
PLOT DATE : *\$DATE*	CHECKED - AMC	REVISED -
	DATE - 07/26/2018	REVISED -

**TAM O'SHANTER GOLF COURSE  
PUMP STATION MODIFICATION  
COOK COUNTY**

**STATE OF ILLINOIS  
DEPARTMENT OF NATURAL RESOURCES  
OFFICE OF WATER RESOURCES**

**EROSION CONTROL PLAN**  
SCALE: 1"=10' SHEET NO. 15 OF 31 SHEETS

FILE NAME: \*\$FILEL\$\*

EROSION CONTROL NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING AN APPROVED METHOD FOR THE DETENTION OF LOCAL STORMWATER AND RUNOFF THAT NATURALLY COLLECTS WITHIN THE COFFERED AREA. THIS WATER SHALL BE RELEASED INTO THE STREAM FLOW PROVIDING IT MEETS ALL PERMIT REQUIREMENTS FOR SEDIMENT CONTROL. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY AND ALL METHODS REQUIRED AS MANDATED BY THE EXISTING OR AN AMENDED PERMIT FOR THE TREATMENT, IF NECESSARY, OF THE LOCAL DRAINAGE PRIOR TO THE DISCHARGE INTO THE STREAM FLOW.
2. THE PORTION OF THE SIDE SLOPE THAT IS ABOVE THE OBSERVED WATER ELEVATION SHALL BE STABILIZED AS SPECIFIED IN THE PLANS PRIOR TO ACCEPTING FLOWS. THE SUBSTRATE AND TOE OF SLOPE THAT HAS BEEN DISTURBED DUE TO CONSTRUCTION ACTIVITIES SHALL BE RESTORED TO PROPOSED OR PRE-CONSTRUCTION CONDITIONS AND FULLY STABILIZED PRIOR TO ACCEPTING FLOWS.
3. WATER PUMPED WHICH IS OTHERWISE DISCHARGED FROM THE SITE DURING CONSTRUCTION DEWATERING SHALL BE FILTERED AND A MEANS PROVIDED TO REDUCE EROSION.
4. UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED ACCORDING TO THE MINIMUM GUIDELINES AND RECOMMENDATIONS OF THE ILLINOIS URBAN MANUAL, LATEST REVISION.
5. ALL STORM SEWERS THAT ARE, OR WILL BE, FUNCTIONING DURING CONSTRUCTION SHALL BE PROTECTED BY AN APPROPRIATE SEDIMENT CONTROL MEASURE.
6. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED, OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED.
7. ALL TEMPORARY AND PERMANENT EROSION CONTROL MEASURES MUST BE MAINTAINED AND REPAIRED AS REQUIRED.
8. SOIL STOCKPILES SHALL NOT BE LOCATED IN A FLOOD PRONE AREA OR A DESIGNATED BUFFER PROTECTING WATER OF THE UNITED STATES OR ISOLATED WATERS.
9. IT IS THE RESPONSIBILITY OF THE ENGINEER AND CONTRACTOR TO INFORM ALL SUB-CONTRACTORS WHO MAY PERFORM WORK ON THIS PROJECT OF THE REQUIREMENTS IN IMPLEMENTING AND MAINTAINING THESE EROSION CONTROL PLANS.
10. THE EROSION CONTROL MEASURES INDICATED ON THE PLANS ARE THE MINIMUM REQUIREMENTS. ADDITIONAL MEASURES MAY BE REQUIRED, AS DIRECTED BY THE ENGINEER.
11. SOIL EROSION AND SEDIMENT CONTROL SHALL BE INSPECTED AND MAINTAINED AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND/OR WITHIN 24 HOURS OF THE END OF A STORM EVENT THAT IS 0.5 INCHES OR GREATER OR EQUIVALENT SNOWFALL. THE CONTRACTOR SHALL PERFORM VISUAL INSPECTIONS CONTINUOUSLY FOR DEWATERING/DIVERSIONS/BYPASS AND AT LEAST DAILY WHEN WORKING IN AND NEAR THE RIVER.
12. THE CONTRACTOR SHALL NOT TRACK OR SPILL DIRT CLUMPS ONTO ADJACENT ROADWAYS OR DRIVEWAYS. AT A MINIMUM, THE CONTRACTOR SHALL PERFORM STREET SWEEPING AT THE END OF EACH DAY'S OPERATION, OR COORDINATE WITH THE VILLAGE OF NILES TO CLEAN. ADDITIONAL STREET CLEANING SHALL BE DONE AS DIRECTED BY THE ENGINEER.
13. SEED MIX SHALL BE AS FOLLOWS: 120 LB/ACRE KY BLUEGRASS, 80 LB/ACRE PERENNIAL RYEGRASS.

COFFERDAM NOTES

1. NO SEPARATE PAYMENT WILL BE MADE FOR THIS REFERENCED WORK AND SHALL BE CONSIDERED INCIDENTAL TO TEMPORARY COFFERDAM SYSTEM
2. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION/INSTALLATION OF THE SELECTED TEMPORARY COFFERDAM SYSTEM, AS APPROVED BY THE ENGINEER.
3. WORK IN THE WATERWAY SHOULD BE TIMED TO TAKE PLACE DURING LOW OR NO-FLOW CONDITIONS. LOW FLOW CONDITIONS ARE AT OR BELOW THE NORMAL WATER ELEVATION.
4. THE DIVERSION OR BYPASS FLOW SHALL BE DESIGNED BY CONTRACTOR TO SAFELY CONVEY THE 2-YR PEAK FLOW, AT A MINIMUM. THE COFFERDAM SHALL BE DESIGNED TO OVERTOP FOR ANY EVENTS GREATER THAN THE 2-YR PEAK ELEVATION UNLESS HIGHER PEAK FLOWS ARE BEING BYPASSED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SAFELY CONVEY FLOWS TO PREVENT DAMAGE TO OFF-SITE PROPERTIES.
5. THE CONTRACTOR SHALL ASSUME ALL RISK OF DAMAGES TO THEIR EQUIPMENT AND THE WORK CAUSED BY FLOODING FOR THE COFFERDAM DESIGN BASED ON THE EXISTING OR AMENDED PERMIT.
6. WATER SHALL BE ISOLATED FROM THE IN-STREAM WORK AREA USING A COFFERDAM CONSTRUCTED OF NON-ERODIBLE MATERIALS (STEEL SHEETS, AQUA BARRIERS, RIP RAP AND GEOTEXTILE LINER, ETC.). EARTHEN COFFERDAMS ARE NOT PERMISSIBLE.
7. THE COFFERDAM MUST BE CONSTRUCTED FROM THE UPLAND AREA AND NO EQUIPMENT MAY ENTER THE WATERWAY AT ANY TIME. IF THE INSTALLATION OF THE COFFERDAM CANNOT BE COMPLETED FROM SHORE AND ACCESS IS NEEDED TO REACH THE AREA TO BE COFFERED, OTHER MEASURES, SUCH AS THE CONSTRUCTION OF A CAUSEWAY, WILL BE NECESSARY TO ENSURE THAT EQUIPMENT DOES NOT ENTER THE WATER. ONCE THE COFFERDAM IS IN PLACE AND THE ISOLATED AREA IS DEWATERED, EQUIPMENT MAY ENTER THE COFFERED AREA TO PERFORM THE REQUIRED WORK.
8. IF BYPASS PUMPING IS NECESSARY, THE INTAKE HOSE SHALL BE PLACED ON A STABLE SURFACE OF FLOATED TO PREVENT SEDIMENT FROM ENTERING THE HOSE. THE BYPASS DISCHARGE SHALL BE PLACED ON A NON-ERODIBLE, ENERGY DISSIPATING SURFACE PRIOR TO REJOINING THE STREAM FLOW AND SHALL NOT CAUSE EROSION.
9. DURING DEWATERING OF THE COFFERED WORK AREA, ALL SEDIMENT-LADEN WATER MUST BE FILTERED TO REMOVE SEDIMENT. POSSIBLE OPTIONS FOR SEDIMENT REMOVAL INCLUDE BAFFLE SYSTEMS, ANIONIC POLYMERS SYSTEMS, DEWATERING BAGS, OR OTHER APPROPRIATE METHODS. WATER SHALL HAVE SEDIMENT REMOVED PRIOR TO BEING RE-INTRODUCED TO THE DOWNSTREAM WATERWAY. A STABILIZED CONVEYANCE FROM THE DEWATERING DEVICE TO THE WATERWAY MUST BE IDENTIFIED IN THE PLAN.
10. IF DEWATERING THE CONSTRUCTION AREA IS NECESSARY, THE CONTRACTOR SHALL FILTER ALL WATER BY USING FILTER BAGS, AND INLINE FILTER SUMP PIT, OR APPROVED MEASURE. WATER MUST HAVE SEDIMENT REMOVED AT A MINIMUM TO THE BASELINE TURBIDITY OF THE EXISTING UNDISTURBED WATERCOURSE BEFORE BEING ALLOWED TO DISCHARGE TO THE CREEK/STREAM/WETLAND/RIVER.
11. THE CONTRACTOR SHALL SUBMIT THE PROPOSED METHOD OF MAINTAINING CHANNEL FLOWS, FOR APPROVAL BY THE ENGINEER, PRIOR TO THE BEGINNING OF CONSTRUCTION.

FILE NAME: H:\142537 IDNR - Test\13.0 Deliverables\Plan\COOD\_Sheets\16 Erosion Control Notes.dgn

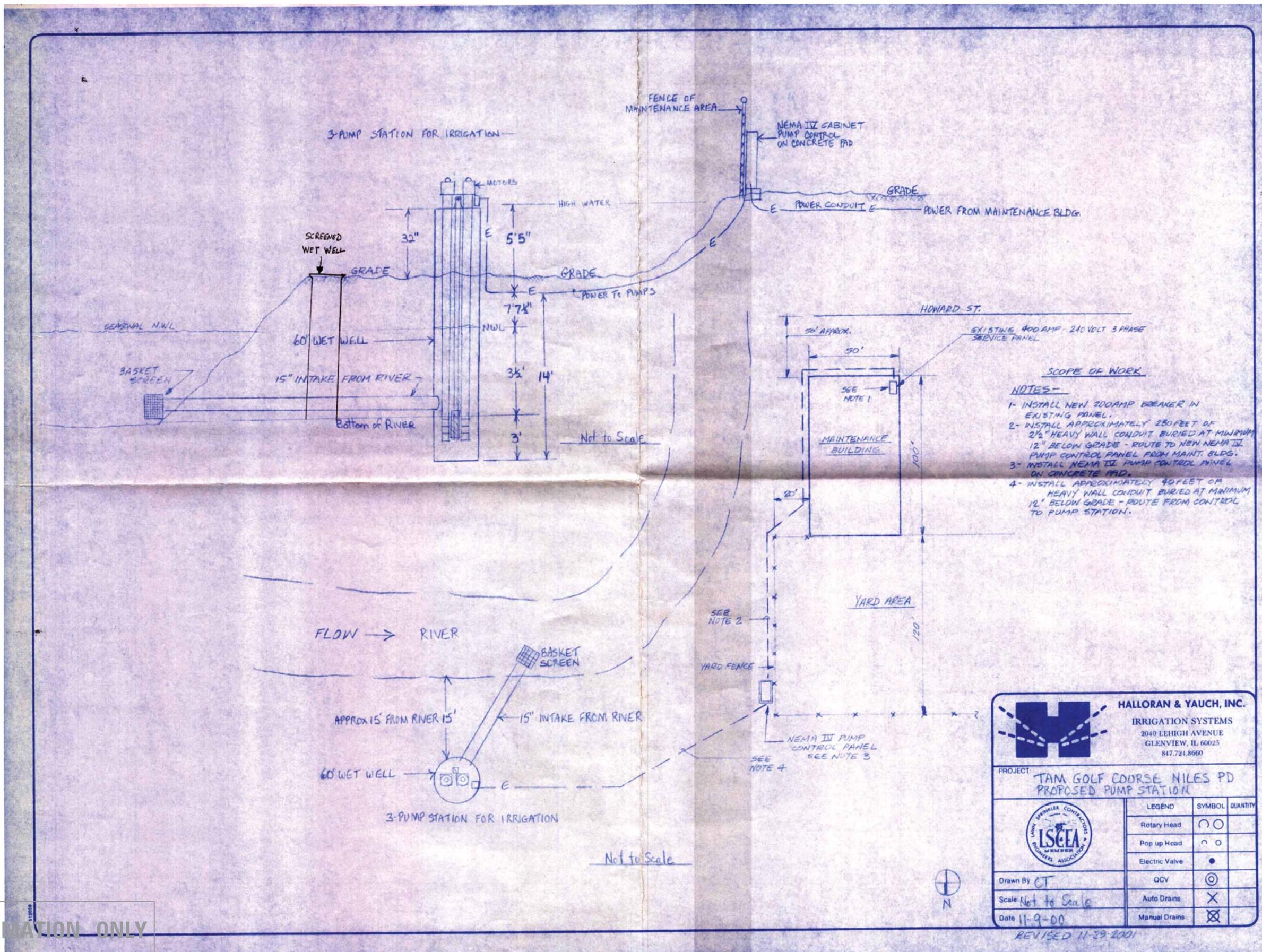
**Michael Baker**  
**INTERNATIONAL**

USER NAME : Megha.Parameswarajah	DESIGNED - AMC	REVISED -
	DRAWN - YS	REVISED -
PLOT SCALE : 20.000' / 1" =	CHECKED - AMC	REVISED -
PLOT DATE : 7/26/2018	DATE - 07/26/2018	REVISED -

**TAM O'SHANTER GOLF COURSE  
PUMP STATION MODIFICATION  
COOK COUNTY**

**STATE OF ILLINOIS  
DEPARTMENT OF NATURAL RESOURCES  
OFFICE OF WATER RESOURCES**

**EROSION CONTROL NOTES**



- SCOPE OF WORK**
- NOTES-**
- 1- INSTALL NEW 200AMP BREAKER IN EXISTING PANEL.
  - 2- INSTALL APPROXIMATELY 280 FEET OF 2 1/2\"/>

**HALLORAN & YAUCH, INC.**  
 IRRIGATION SYSTEMS  
 2040 LEHIGH AVENUE  
 GLENVIEW, IL 60025  
 847.724.8660

PROJECT: TAM GOLF COURSE NILES PD PROPOSED PUMP STATION

LEGEND	SYMBOL	QUANTITY
Rotary Head	⊖	
Pop up Head	⊖	
Electric Valve	•	
QCV	⊙	
Auto Drains	×	
Manual Drains	⊗	

Drawn By: CT  
 Scale: Not to Scale  
 Date: 11-9-00  
 REVISED 11-29-2001

FOR INFORMATION ONLY

**Michael Baker INTERNATIONAL**

USER NAME: Megha, Parameswarath	DESIGNED: - AMC	REVISED: -
PLOT SCALE: 1,000' / in.	DRAWN: - YS	REVISED: -
PLOT DATE: 7/26/2018	CHECKED: - AMC	REVISED: -
	DATE: - 07/26/2018	REVISED: -

**TAM O'SHANTER GOLF COURSE PUMP STATION MODIFICATION COOK COUNTY**

**STATE OF ILLINOIS DEPARTMENT OF NATURAL RESOURCES OFFICE OF WATER RESOURCES**

**DESIGN PLAN FOR EXISTING SYSTEM**  
 SCALE: N.T.S. SHEET NO. 17 OF 31 SHEETS

FILE NAME: H:\142537 IDNR Task 13.8 Deliverables\Pump\CADD\_Sheets\17 Plans For Existing System.dwg

**FLOWTRONEX**

**Vertical Turbine Pump Buildup**

Date: 12/13/01 Rev: 1 By: John Tucker  
 Job Name: Tam Golf Course  
 Job #: 10970 Serial #: 1C970-1.2  
 Shop #: C.O.#:

**Section A**  
 Motor: New Style Newman  
 Motor SN:  
 HP: 30 RPM: 1800 Starting: XL  
 Oil Cap: Grease Gal. Ship:  
 CD: 25.84 BD: 10 SRC: 1 NRR: NO  
 Volts/Phase: 230-3 $\phi$  Freq: 60Hz  
 Headshaft: 1 X 33.875  
 Gib Key: 1/4 x 1-3/4  
 Motor Base Bolts: (4) 3/8 X 1-1/2

**Section B**  
 Discharge Head: 410F-V D PB: 1 X 4.5  
 Slinger Ring: 1  
 Pump Base Bolts: (4) 1 X 3-1/2  
 W/ Nuts & Washers

**Section C**  
 Top Shaft: 1 X 75  
 Top Column: 4 X 53.5 FLG: 1 HD: X  
 Inter-Shaft: 1 X 7.2 Pieces: 1  
 Inter-Shaft: N/A Pieces: 0  
 Inter-Column: 4 X 71.5 Pieces: 1  
 Inter-Column: N/A Pieces: 0

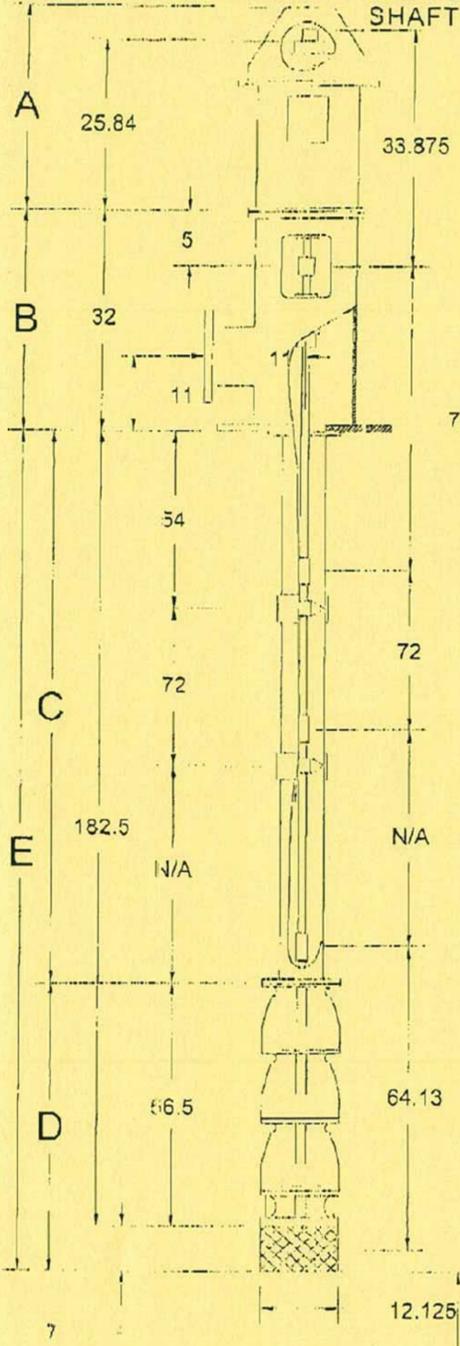
All Columns Threaded and Coupled  
 Spider Bearings: No: 1 Size: 4 X 1  
 Hanger-Flange: Goulds

**Section D**  
 Bowl Assy: IDP 10ELM-4" Stages: 6  
 Trim: 7.42 O.D.  
 GPM 325 TDH: 275 PSI: 119  
 Bowl Shaft Thread 1 X 1.5 X 64 13  
 Basket Strainer 7 x 12.125 Cone:

**Section E**  
 Length From Base to Bottom of Strainer  
 15 Ft. 9 In.

**Misc. Specifications**  
 PM Pump is 3 Hp Build 2 Like Pumps  
 Motors to Have Space Heaters

All Flowtronex-PSI Vertical Turbine Pumps are assembled with the following materials unless otherwise noted:  
 Standard - wall - 8 TPI - butt thread column pipe  
 416SS - 10 TPI - shelling and couplings on a 6-inch stickup  
 Bronze spider bearings with rubber inserts  
 Grade 5 plated bolts  
 Stainless Steel basket strainers



6" MIN.  
 12" RECOMMENDED  
 TO BOTTOM OF WET WELL

**FOR INFORMATION ONLY**

FILE NAME: H:\142537 IDNR Task\13.0\Deliverables\Pump\CADD\_Sheets\18\_Plans For Existing System.dwg

**Michael Baker INTERNATIONAL**

USER NAME: Megha.Panamaswarath  
 PLOT SCALE: 1:1000 1/4" = 1'-0"  
 PLOT DATE: 7/26/2018

DESIGNED - AMC  
 DRAWN - YS  
 CHECKED - AMC  
 DATE - 07/26/2018

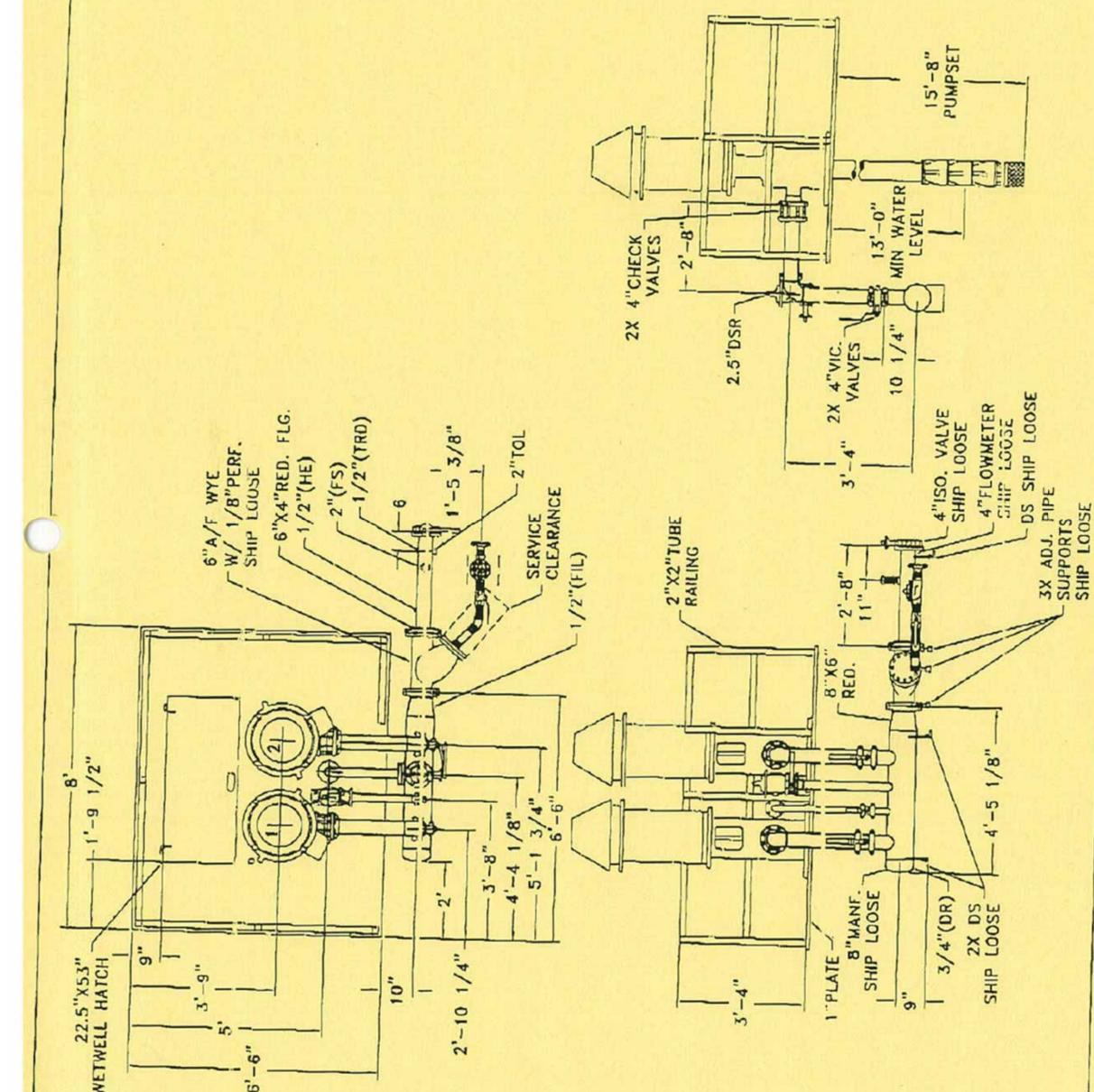
REVISED -  
 REVISED -  
 REVISED -  
 REVISED -

**TAM O'SHANTER GOLF COURSE  
 PUMP STATION MODIFICATION  
 COOK COUNTY**

**STATE OF ILLINOIS  
 DEPARTMENT OF NATURAL RESOURCES  
 OFFICE OF WATER RESOURCES**

**DESIGN PLANS FOR  
 EXISTING SYSTEM (1,2 OF 5)**

SCALE: N.T.S. SHEET NO. 18 OF 31 SHEETS



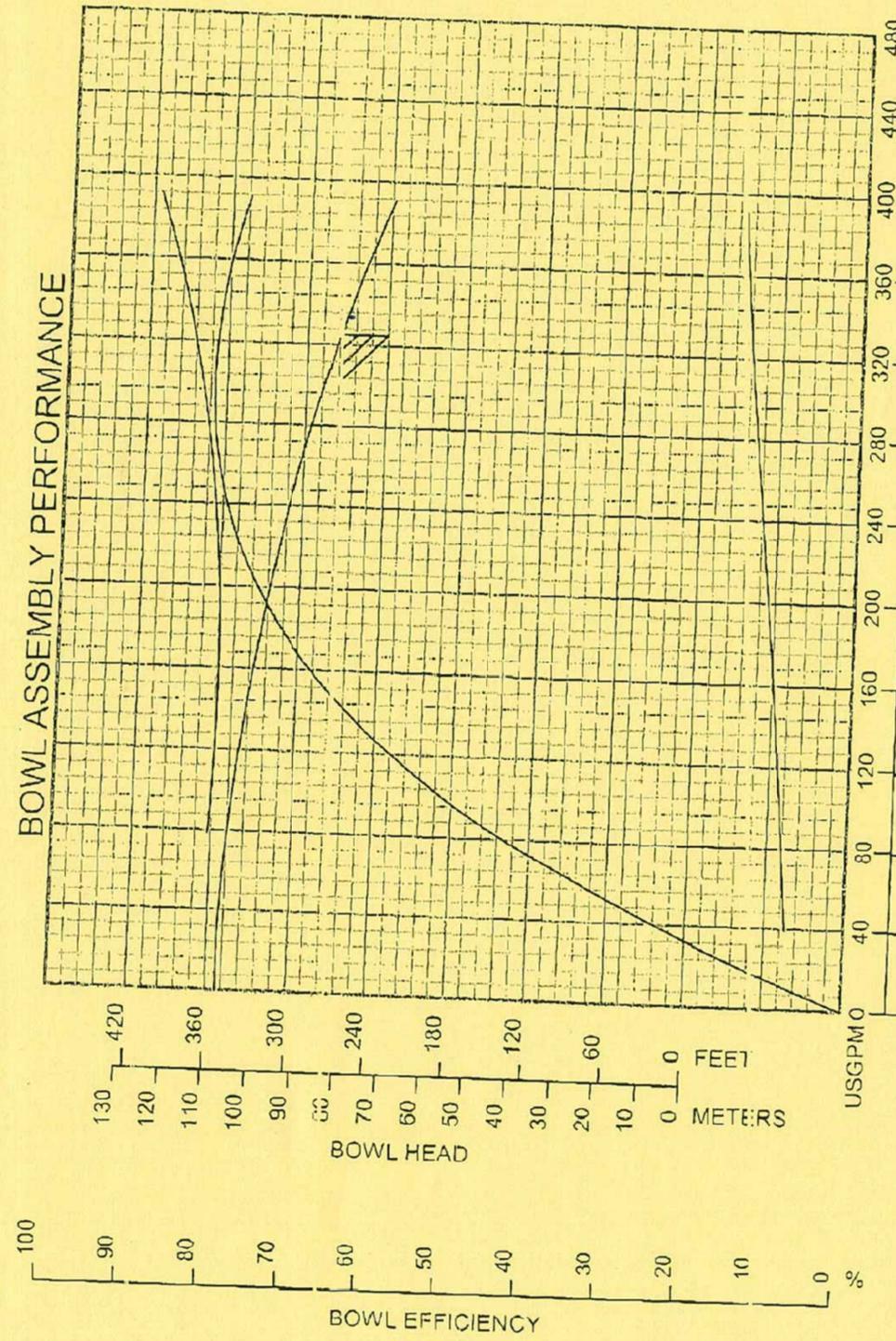
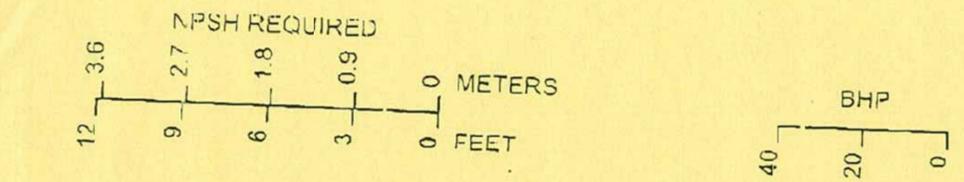
2 OF 3

**FLOWTRONEX-PSI**  
 10061 HWY 101, DALLAS, TEXAS 75220, USA 1-800-527-0528

DATE: 11/19/01  
 DRAWN BY: EMILY BEHRNE  
 CHECKED BY: TAM CC  
 PROJECT NO: M10970 R2

NO.	DESCRIPTION	DATE	BY
1	ISSUED FOR QUOTE (02/11/01)		
2	AS BUILT		
3			
4			
5			
6			
7			

TAM CC  
 DATE: 11/19/01  
 DRAWN BY: EMILY BEHRNE  
 CHECKED BY: TAM CC  
 PROJECT NO: M10970 R2



**Ingersoll-Dresser Pumps**

Customer : Tam Golf Course  
 Project : J-10970  
 Service :  
 Date : 19 Nov 2001  
 Impeller : Enclosed

Pump : 10ELM  
 Stages : 6  
 Bowl Mat. : C/LINED  
 Imp. Mat. : BRONZE  
 Shaft Mat. : 416SS

Flow (USGPM) : 325.0 SG : 1.00  
 Head (FEET) : 275 RPM : 1750

CAUTION: THE PUMP IS NOT TO BE USED FOR TEST PURPOSES UNLESS THE PUMP IS CLEARLY MARKED WITH A TEMPORARY "TEST COVER" OR "TEST" IN THE APPROPRIATE PUMP REGISTRATION AREA. THE USE OF SUCH PUMPS FOR TEST PURPOSES WITHOUT THE "TEST COVER" OR "TEST" MARKING IS PROHIBITED.

FILE NAME: H:\142537\_IDNR\_Test\13.0\_Deliverables\Pump\CADD\_Sheets\19\_Plans\_For\_Existing\_System.mxd

**Michael Baker INTERNATIONAL**

USER NAME : Megha.Paranamwarajah	DESIGNED : - AMC	REVISED : -
PLOT SCALE : 1,000' / 1" =	DRAWN : - YS	REVISED : -
PLOT DATE : 7/26/2018	CHECKED : - AMC	REVISED : -
	DATE : - 07/26/2018	REVISED : -

**TAM O'SHANTER GOLF COURSE  
 PUMP STATION MODIFICATION  
 COOK COUNTY**

**STATE OF ILLINOIS  
 DEPARTMENT OF NATURAL RESOURCES  
 OFFICE OF WATER RESOURCES**

**DESIGN PLANS FOR  
 EXISTING SYSTEM (3,4 OF 5)**  
 SCALE: N.T.S. SHEET NO. 19 OF 31 SHEETS

### Submersible Pump Buildup

Date: ##### By: John Tucker Job No.: 10970  
 Rev: Job Name: TAM GC

Pump Data		Operating Data		Motor Data	
Mfr.:	Grundfos	GPM:	31	Mfr.:	Grundfos
Model:	25S30	Disch Press:	110	Volts:	230
Stages:	15	Fixed Loss:	0.00	Phase:	3
		VFD Loss:	0.00	Hertz:	60
		Lift Feet:	0.00	Hp:	3
		Pump TDH:	254	RPM:	3600
				Dia.:	3.80
				Length (C):	1 8.60
				Startng.:	XL

Trim: N/A  
 Bowl Dia: 3.50  
 Bowl Length (B): 1 8.20  
 Shaft Dia: N/A  
 Col. Pipe Dia: 2  
 Head Size: 2  
 Shroud Dia: N/A  
 Shroud Length:  
 Shroud Matl: PVC  
 OAL: 15 9.00  
 Probe Length: 13 1.00  
 Min. FPS: 0.50  
 Min. GPM:

Pump Nos.: PMP  
 Serial Nos.: 10970 - PMP

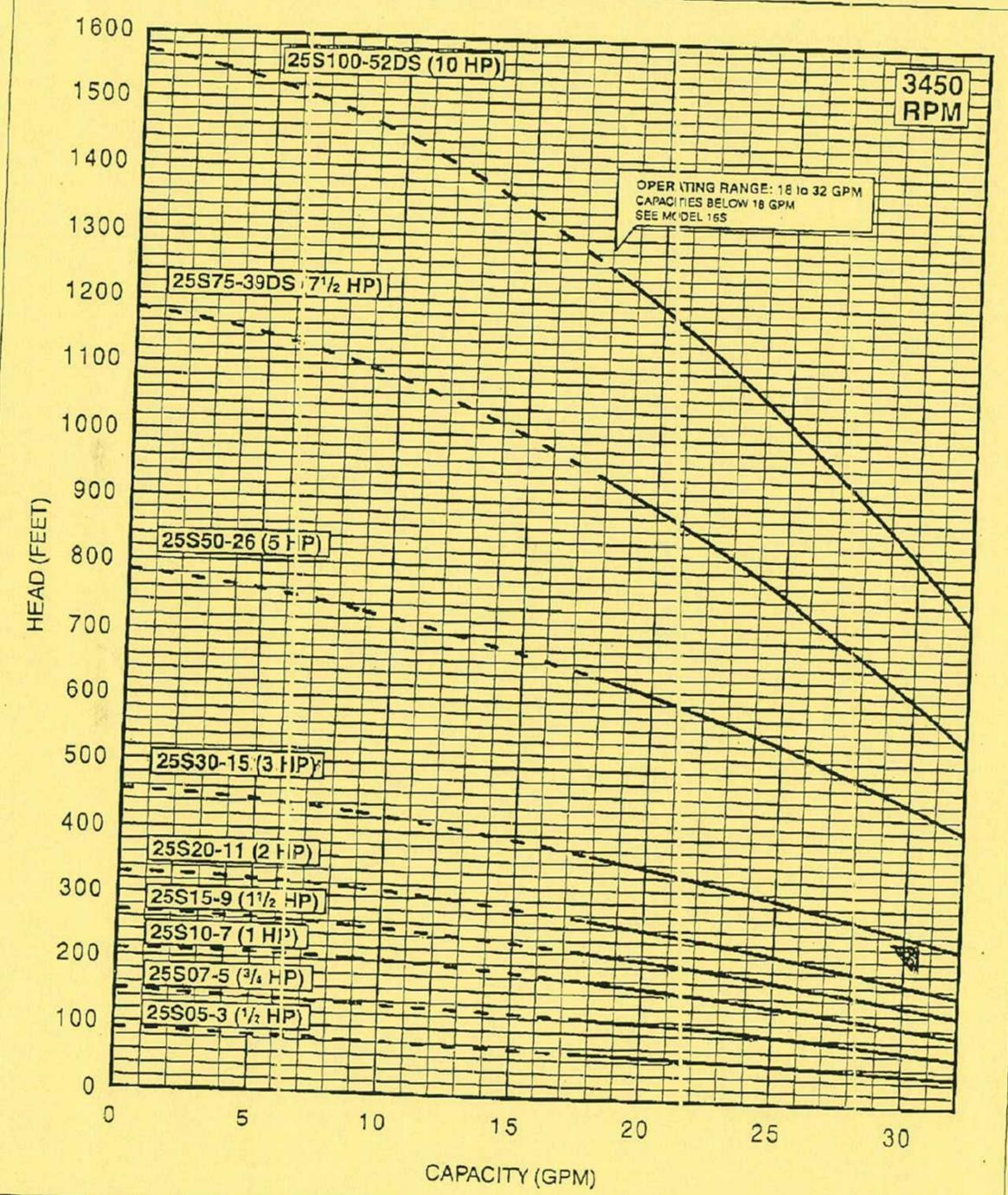
**For Shop Use**

Motor Ser. No.: \_\_\_\_\_  
 Pump Ser. No.: \_\_\_\_\_  
 Volts/Phase/Hz: \_\_\_\_\_  
 RPM: \_\_\_\_\_  
 kW: \_\_\_\_\_  
 FLA: \_\_\_\_\_  
 SF & SF Amps: \_\_\_\_\_  
 kVA Code: \_\_\_\_\_  
 Min. Flow Rate: \_\_\_\_\_  
 Special Notes: \_\_\_\_\_

**FOR INFORMATION ONLY**

# Performance Curves **25 GPM** **Model 25S**

FLOW RANGE: 18 -32 GPM      OUTLET SIZE: 1 1/2" NPT      NOMINAL DIA. 4"



SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.  
 4" MOTOR STANDARD, 5-5 HP/3450 RPM  
 6" MOTOR STANDARD, 7.5-10HP/3450 RPM.  
 Alternate motor sizes available.

Performance conforms to ISO 2548 Annex P  
 @ 2 ft. min. submergence.

**FOR INFORMATION ONLY**

1097 = GPM

FILE NAME: H:\142537 IDNR Task\13.0 Deliverables\Pump\CADD\_Sheets\20 Plans for Existing System.dgn

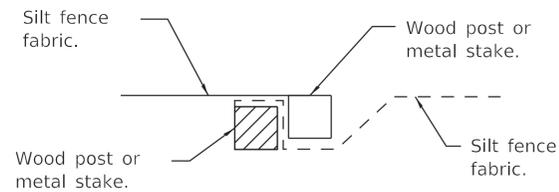
**Michael Baker INTERNATIONAL**

USER NAME: Megha,Parameswarajah	DESIGNED: - AMC	REVISED: -
PLOT SCALE: 1,000' / 1" in.	DRAWN: - YS	REVISED: -
PLOT DATE: 7/26/2018	CHECKED: - AMC	REVISED: -
	DATE: - 07/26/2018	REVISED: -

**TAM O'SHANTER GOLF COURSE  
 PUMP STATION MODIFICATION  
 COOK COUNTY**

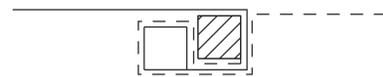
**STATE OF ILLINOIS  
 DEPARTMENT OF NATURAL RESOURCES  
 OFFICE OF WATER RESOURCES**

**DESIGN PLANS FOR  
 EXISTING SYSTEM (5 OF 5)**  
 SCALE: N.T.S.      SHEET NO. 20 OF 31 SHEETS



Place end-post (stake) of first silt fence adjacent to end-post (stake) of second silt fence with fabric positioned as shown.

**STEP 1**

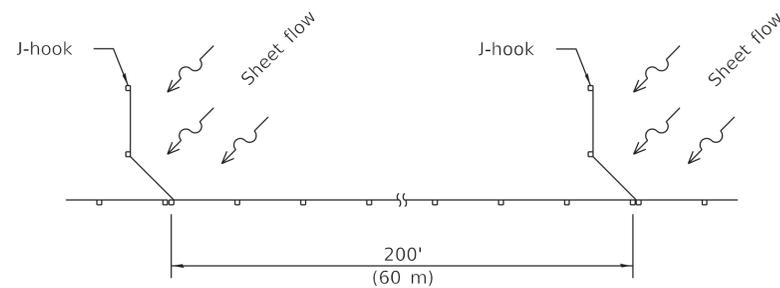


Rotate posts (stakes) together 180° clockwise and drive both posts (stakes) 18 (450) into ground.

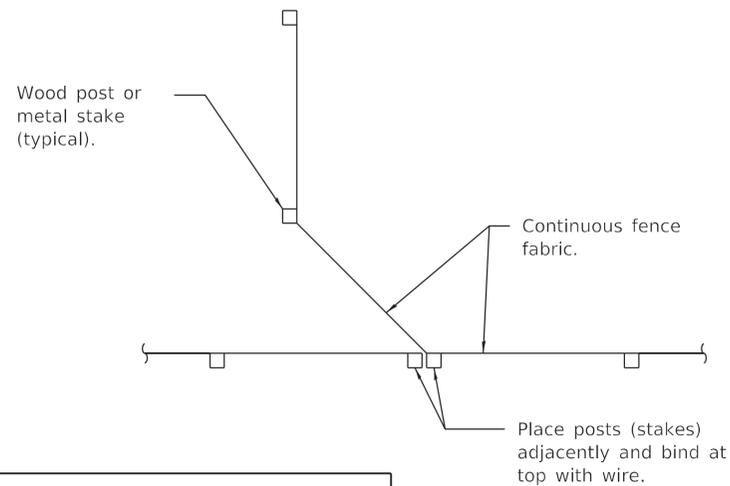
**STEP 2**

**ATTACHING TWO SILT FILTER FENCES**

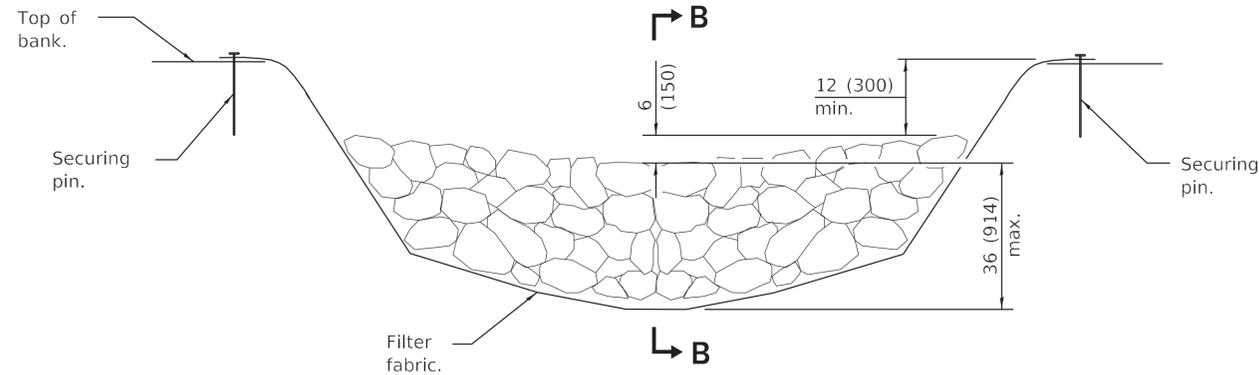
(Not applicable for J-hooks)



**SILT FILTER J-HOOK PLACEMENT**

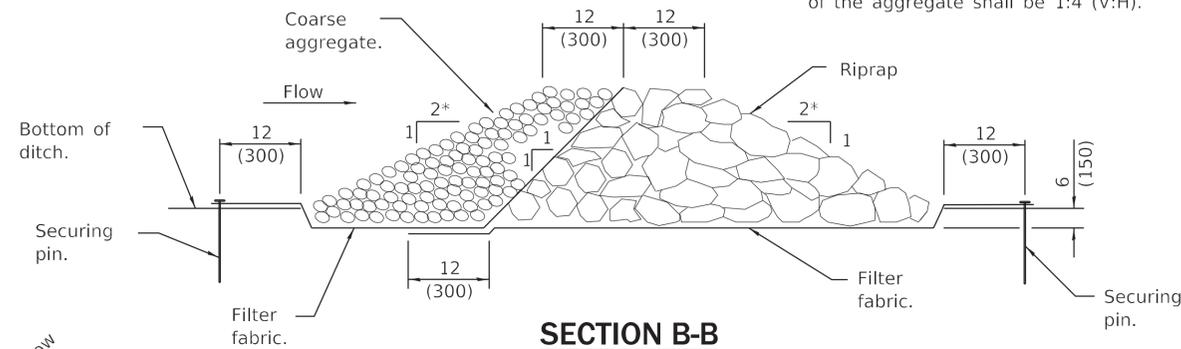


**J-HOOK**



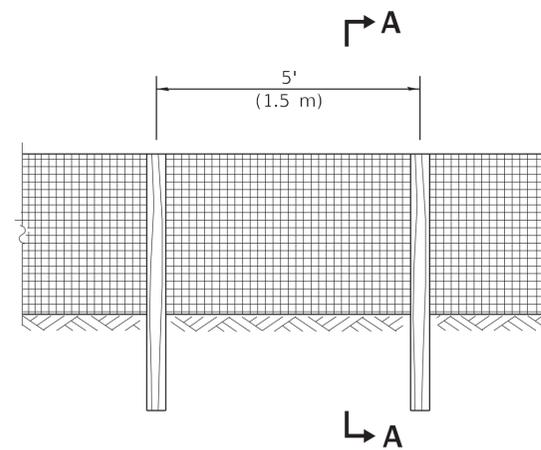
**ELEVATION**

\* When the ditch check is within the clear zone and the road is open to traffic, the traffic approach slope of the aggregate shall be 1:4 (V:H).

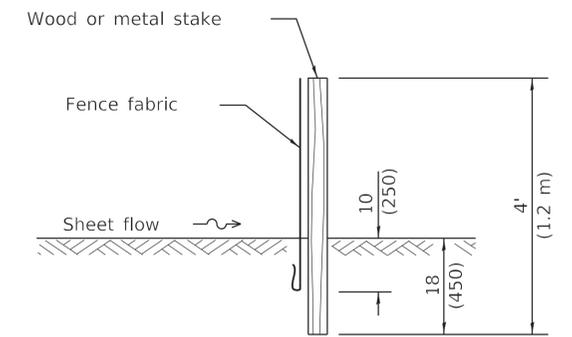


**SECTION B-B**

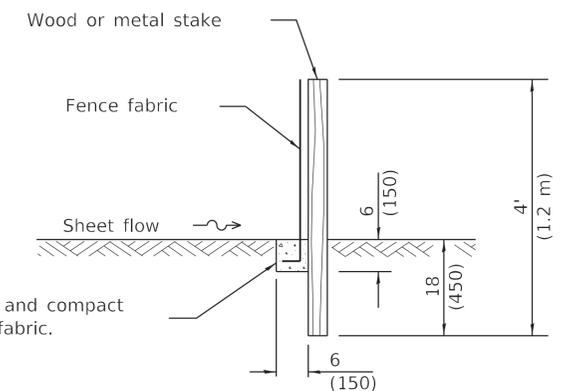
**AGGREGATE DITCH CHECK**



**SILT FILTER FENCE AS A PERIMETER EROSION BARRIER**



**SLICE METHOD**



**TRENCH METHOD**

**SECTION A-A**

Excavate, backfill and compact trench to secure fabric.

**GENERAL NOTES**

The installation details and dimensions shown for perimeter erosion barriers shall also apply for inlet and pipe protection.

All dimensions are in inches (millimeters) unless otherwise shown.

Illinois Department of Transportation

PASSED January 1, 2013  
*Michael Brand*  
 ENGINEER OF POLICY AND PROCEDURES

APPROVED January 1, 2013  
*[Signature]*  
 ENGINEER OF DESIGN AND ENVIRONMENT

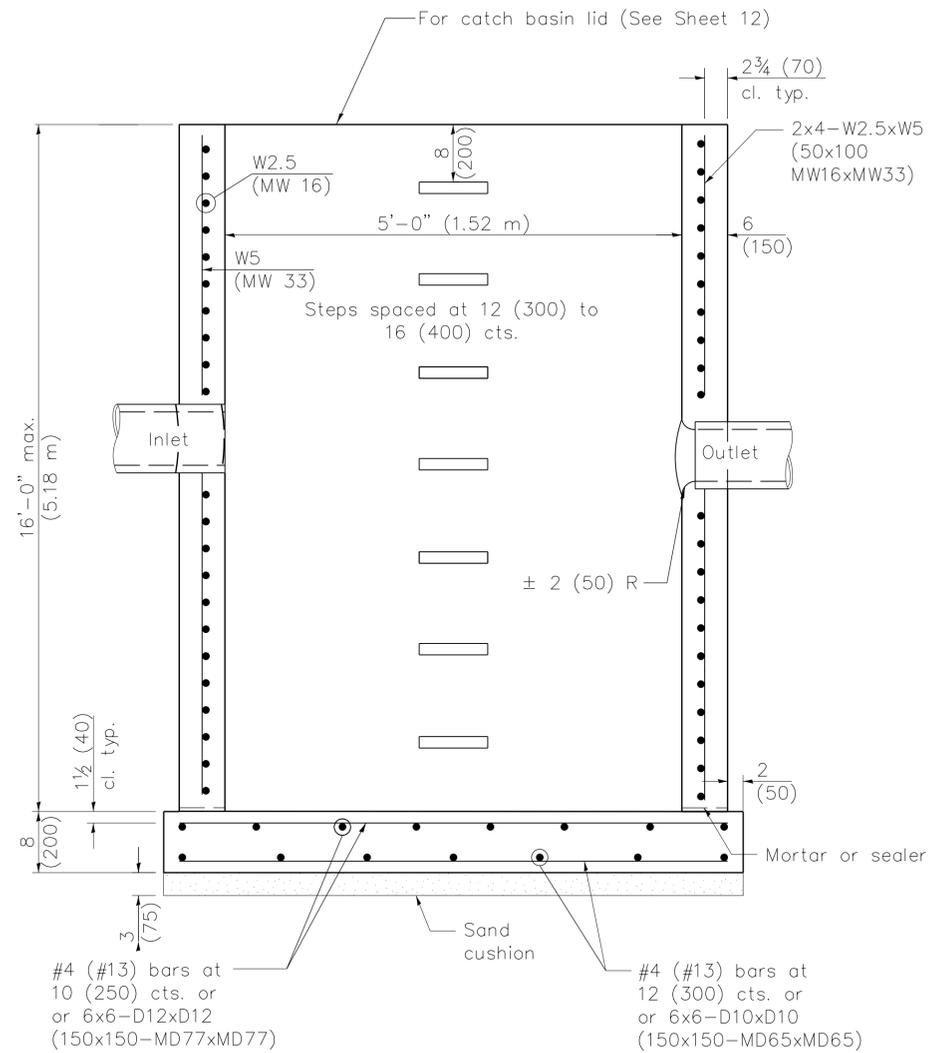
ISSUED 1-1-97

DATE	REVISIONS
1-1-13	Corrected notation for flowline (f <sub>l</sub> ) on SEDIMENT BASIN ELEVATION.
1-1-12	Omitted hay/straw perimeter barrier. Added SLICE METHOD to SECTION A-A.

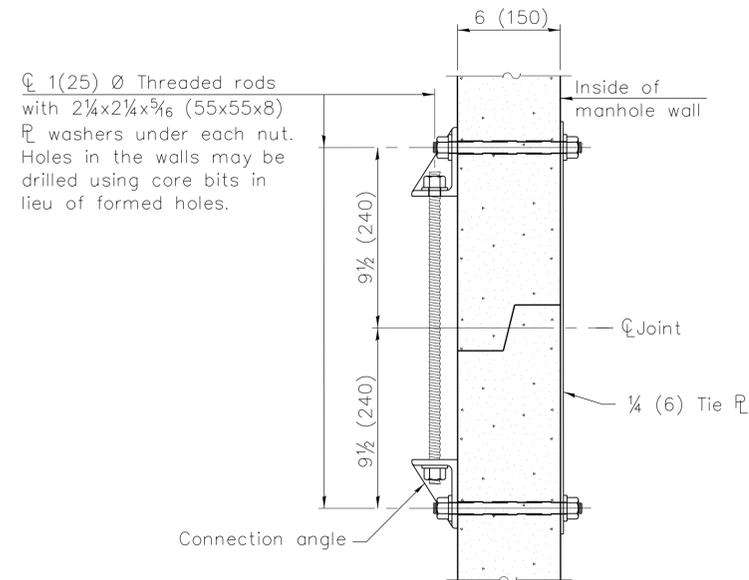
**TEMPORARY EROSION CONTROL SYSTEMS**

(Sheet 1 of 2)

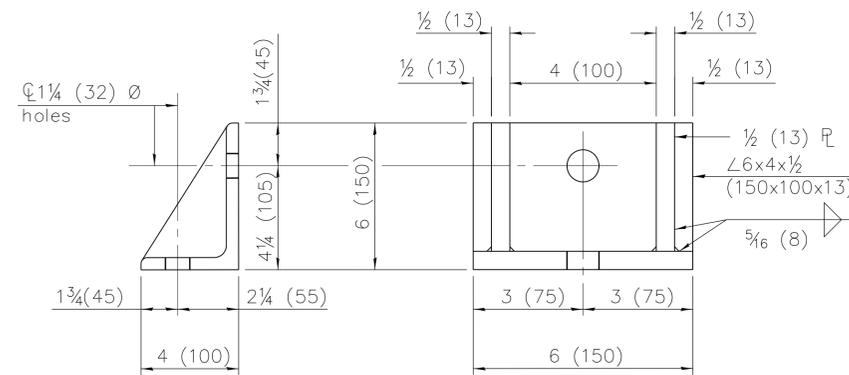
**STANDARD 280001-07**



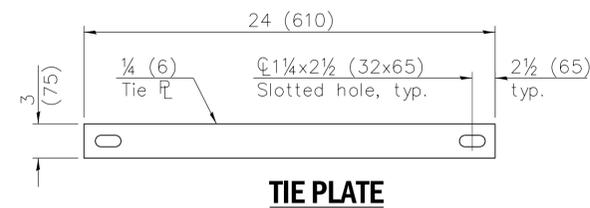
**ELEVATION**  
(Standard Outlet)



**JOINT SPLICE**



**CONNECTION ANGLE**



**TIE PLATE**

**GENERAL NOTES**

Bottom slabs shall be reinforced with a minimum of 0.20 sq. in./ft (420 sq. mm/m) in both directions with a maximum spacing of 12 (300).

Bottom slabs may be connected to the riser as determined by the fabricator.

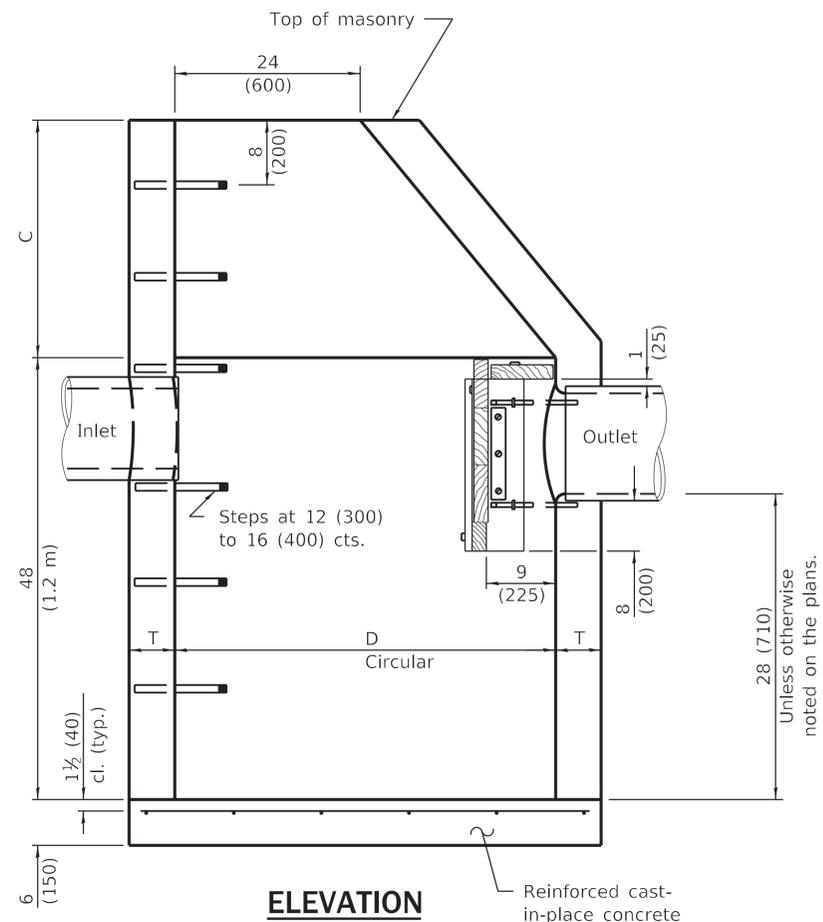
See Sheet 12 for flat slab top.

See Standard 602701 for details of steps.

All dimensions are in inches (millimeters) unless otherwise shown.

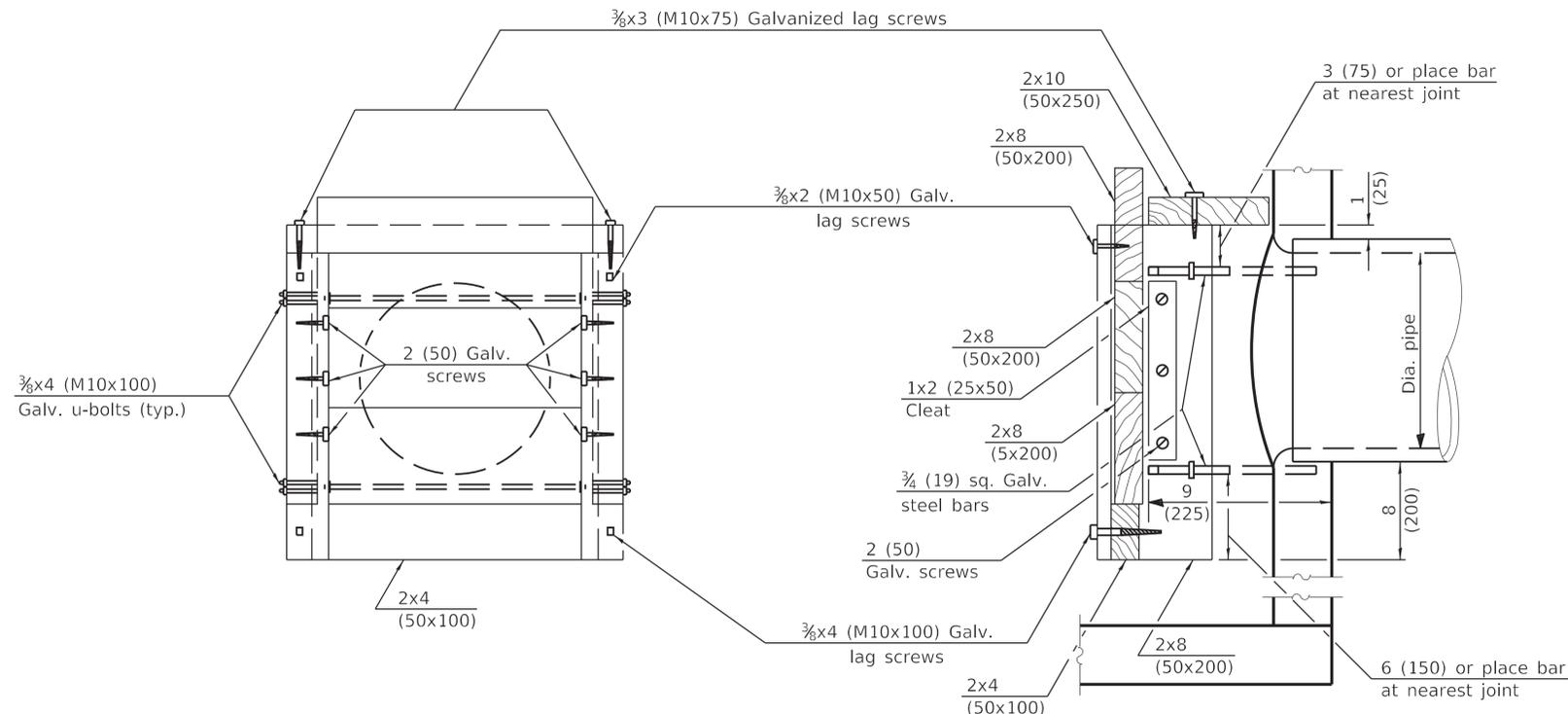
**CATCH BASIN  
TYPE A-MODIFIED**

**STANDARD 602001-02**



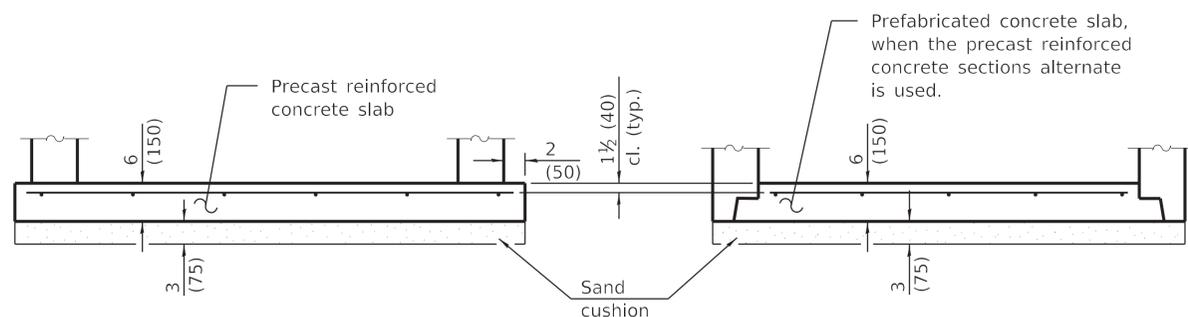
**ELEVATION**

Reinforced cast-in-place concrete

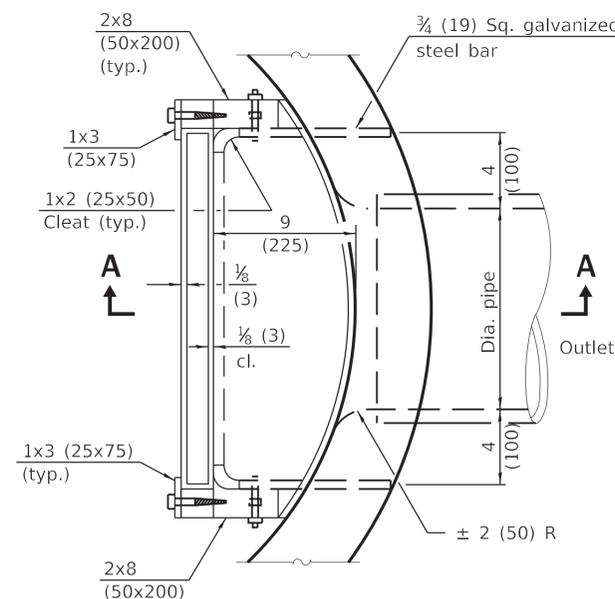


**ELEVATION**

**SECTION A-A**



**ALTERNATE BOTTOM SLAB**



**PLAN**

**GENERAL NOTES**

Bottom slabs shall be reinforced with a minimum of 0.20 sq. in./ft. (420 sq. mm/m) in both directions with a maximum spacing of 12 (300).

Bottom slabs may be connected to the riser as determined by the fabricator; however, only a single row of reinforcement around the perimeter may be utilized.

See Standard 602701 for details of steps.

See Standard 602601 for optional precast reinforced concrete flat slab top.

All dimensions are in inches (millimeters) unless otherwise shown.

ALTERNATE MATERIALS FOR WALLS	D	C*	T (min.)
Concrete Masonry Unit	36 (900) 4'-0" (1.20 m)	15 (380) 30 (760)	5 (125) 5 (125)
Brick Masonry	36 (900) 4'-0" (1.20 m)	15 (380) 30 (760)	8 (200) 8 (200)
Precast Reinforced Concrete Section	36 (900) 4'-0" (1.20 m)	15 (380) 30 (760)	3 (75) 4 (100)
Cast-in-Place Concrete	36 (900) 4'-0" (1.20 m)	15 (380) 30 (760)	6 (150) 6 (150)

\* For precast reinforced concrete sections, dimension "C" may vary from the dimension given to plus 6 (150).

DATE	REVISIONS
1-1-11	Detailed reinforcement in slabs. Revised general notes.
1-1-09	Switched units to English (metric).

**CATCH BASIN  
TYPE D**

**STANDARD 602016-02**

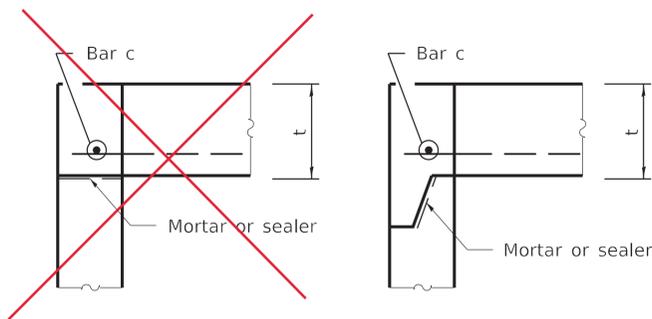
Illinois Department of Transportation

PASSED January 1, 2011  
*Michael Brand*  
 ENGINEER OF POLICY AND PROCEDURES

APPROVED January 1, 2011  
*[Signature]*  
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

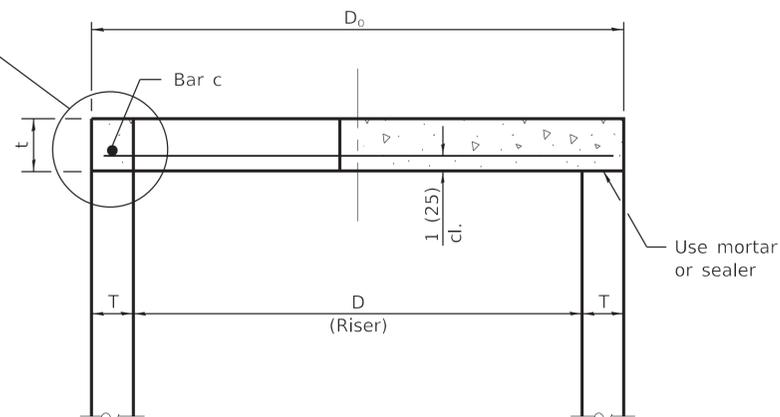




**TOP SLAB JOINT CONFIGURATIONS  
FOR D = 36 (900) AND D = 4'-0" (1.22 m)**

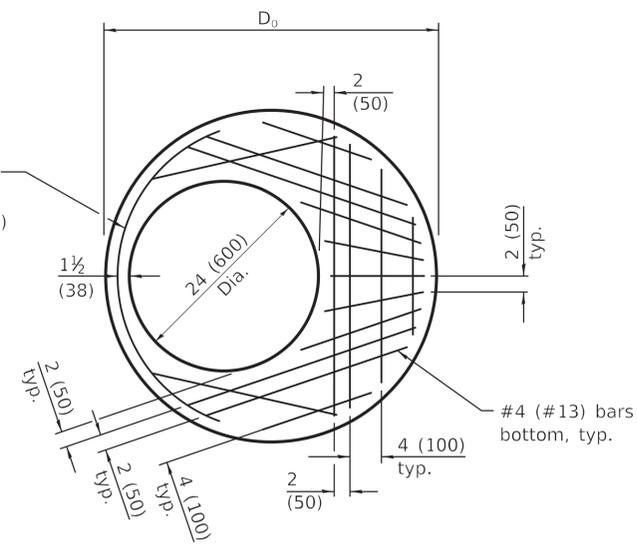
(Shown at access hole)

See Top Slab Joint Configurations for D=36 (900) and D=4'-0" (1.22 m)



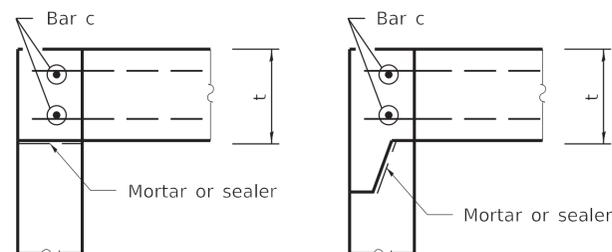
**TOP SECTION THRU INLET OR CATCH BASIN  
FOR D = 36 (900) AND D = 4'-0" (1.22 m)**

Bar c #4 (#13), 4'-0" (1.22 m) length, 19 1/2 (495) radius bottom



**PLAN FOR D = 36 (900)**

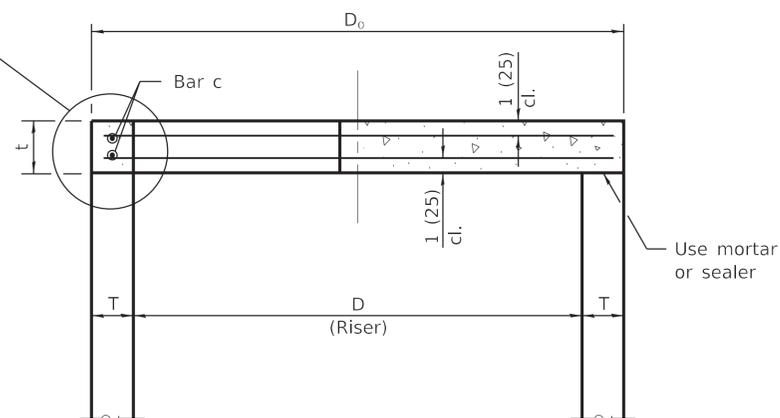
(Showing Layout of Reinforcement Bars)



**TOP SLAB JOINT CONFIGURATIONS  
D = 5'-0" (1.52 m)**

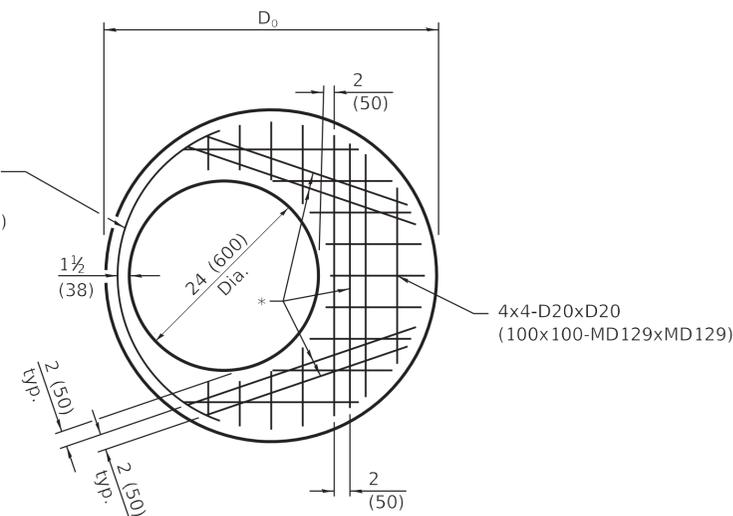
(Shown at access hole)

See Top Slab Joint Configurations for D=5'-0" (1.52 m)



**TOP SECTION THRU CATCH BASIN  
FOR D = 5'-0" (1.52 m)**

Bar c #4 (#13), 4'-0" (1.22 m) length, 19 1/2 (495) radius bottom



**PLAN FOR D = 36 (900)**

(Showing Layout of Welded Wire Reinforcement)

\* #4 (#13) bars bottom. Bundle first bar with WWR bar closest to the opening.

**TABLE**

D	T	D <sub>0</sub> (min.)	t
36 (900)	See applicable Standards	D + 2T	6 (150)
4'-0" (1.2 m)			6 (150)
5'-0" (1.5 m)			8 (200)

**GENERAL NOTES**

The flat slab top may be used in lieu of the tapered tops shown on Standards 602001, 602016, or 602306 at the option of the Contractor or when field conditions prohibit the use of tapered tops.

Lifting holes shall be located in the sections as per the manufacturer's recommendations and grouted prior to backfilling.

All dimensions are in inches (millimeters) unless otherwise shown.

DATE	REVISIONS
1-1-18	Revised for compliance with LRFD.
4-1-16	Changed terminology to 'welded wire reinforcement'.

**PRECAST REINFORCED  
CONCRETE FLAT SLAB TOP**

(Sheet 1 of 2)

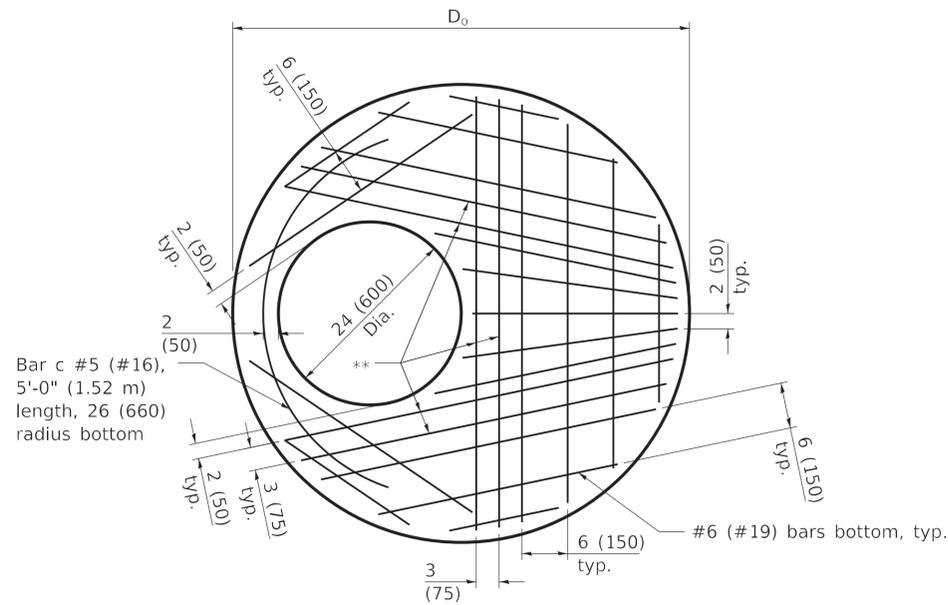
**STANDARD 602601-05**

Illinois Department of Transportation

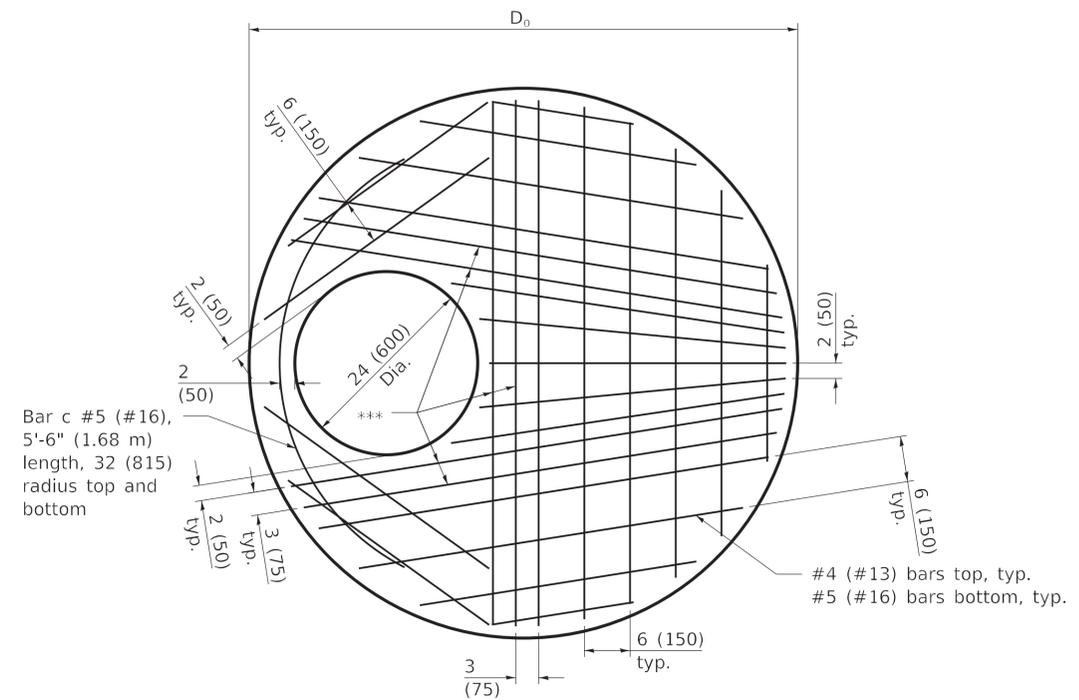
PASSED January 1, 2018  
*Michael Brand*  
 ENGINEER OF POLICY AND PROCEDURES

APPROVED January 1, 2018  
*Marcus M. Adams*  
 ENGINEER OF DESIGN AND ENVIRONMENT

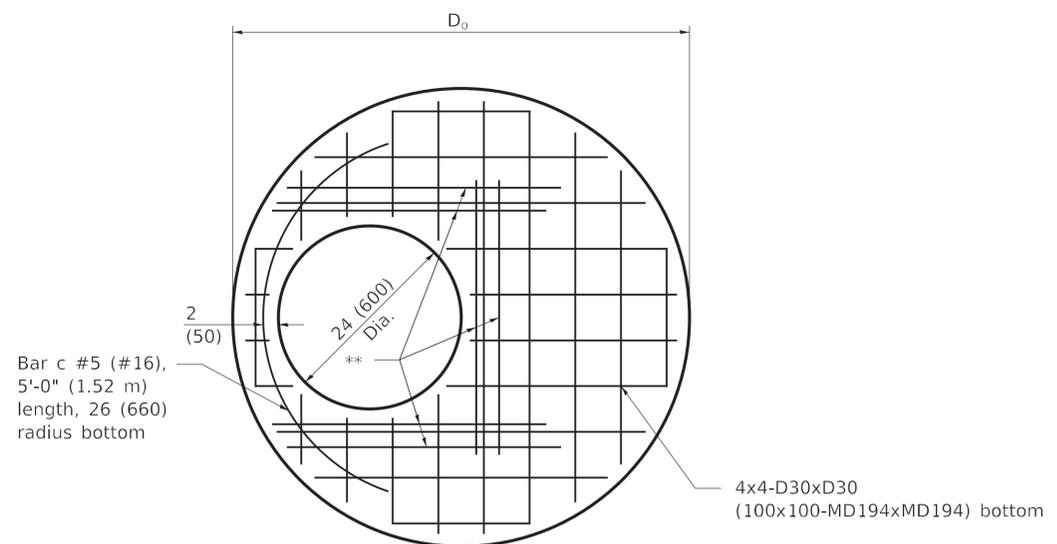
ISSUED 1-1-97



**PLAN FOR D = 4'-0" (1.22 m)**  
(Showing Layout of Reinforcement Bars)

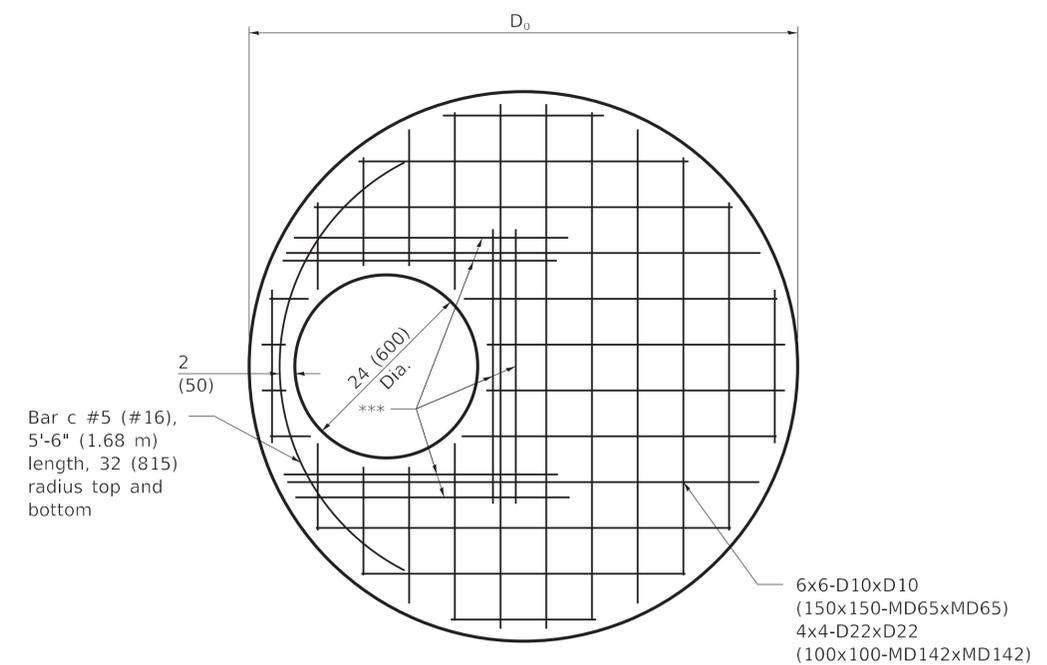


**PLAN FOR D = 5'-0" (1.52 m)**  
(Showing Layout of Reinforcement Bars)



**PLAN FOR D = 4'-0" (1.22 m)**  
(Showing Layout of Welded Wire Reinforcement)

\*\* #5 (#16) bars bottom. For WWR, bundle first bar with WWR bar closest to the opening.



**PLAN FOR D = 5'-0" (1.52 m)**  
(Showing Layout of Welded Wire Reinforcement)

\*\*\* #5 (#16) bars top and bottom. For WWR, bundle first bar with WWR bar closest to the opening.

Illinois Department of Transportation

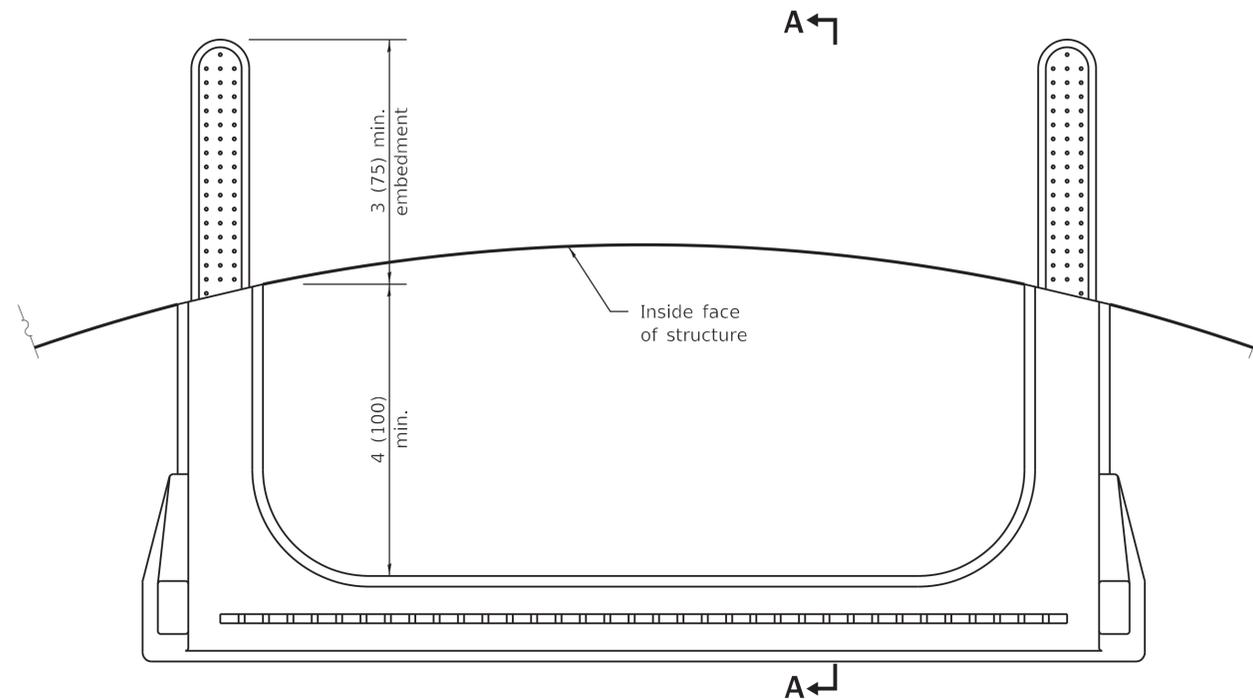
PASSED January 1, 2018  
*Michael Beard*  
ENGINEER OF POLICY AND PROCEDURES

APPROVED January 1, 2018  
*Marcus M. Adams*  
ENGINEER OF DESIGN AND ENVIRONMENT

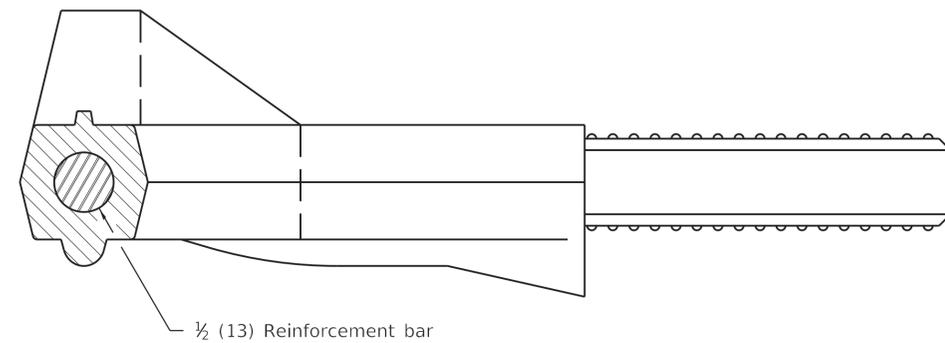
ISSUED 1-1-97

**PRECAST REINFORCED  
CONCRETE FLAT SLAB TOP**  
(Sheet 2 of 2)

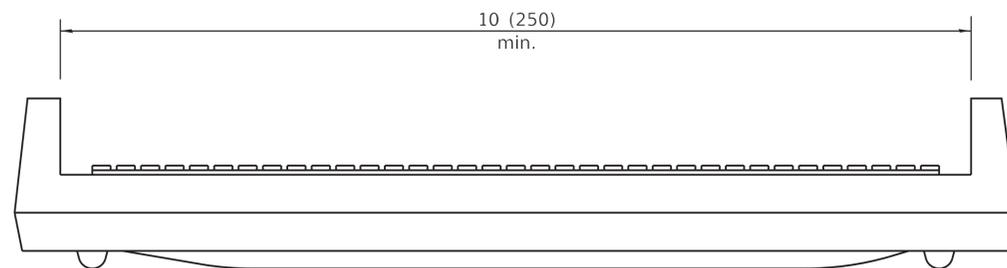
**STANDARD 602601-05**



**PLAN VIEW**



**SECTION A-A**

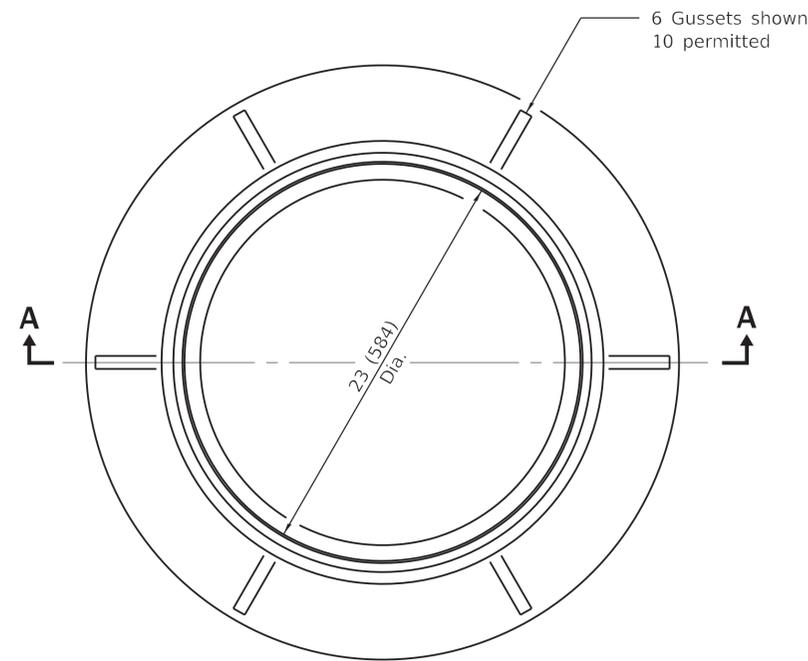


**ELEVATION VIEW**

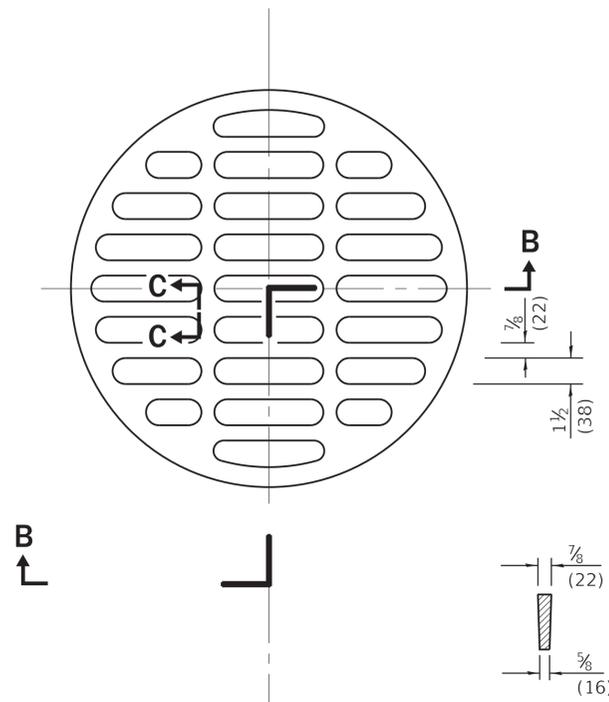
Illinois Department of Transportation  
PASSED January 1, 2009  
ENGINEER OF POLICY AND PROCEDURES  
APPROVED January 1, 2009  
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

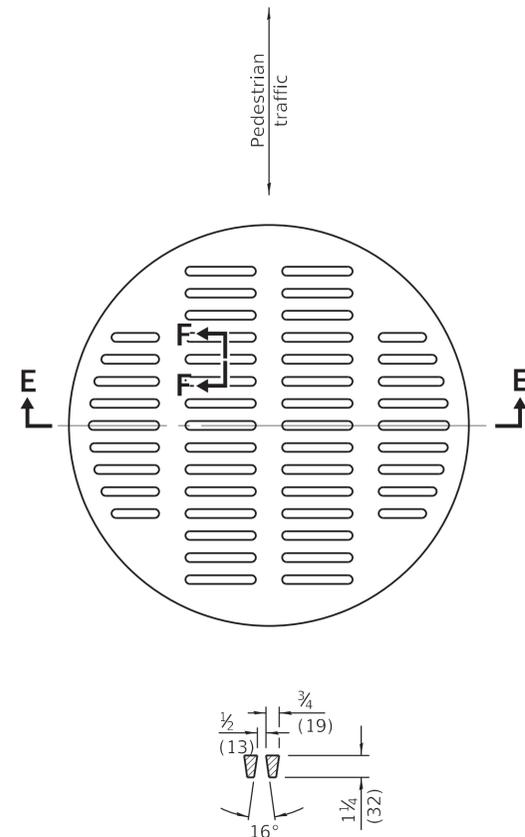
**MANHOLE STEPS**  
(Sheet 2 of 2)  
**STANDARD 602701-02**



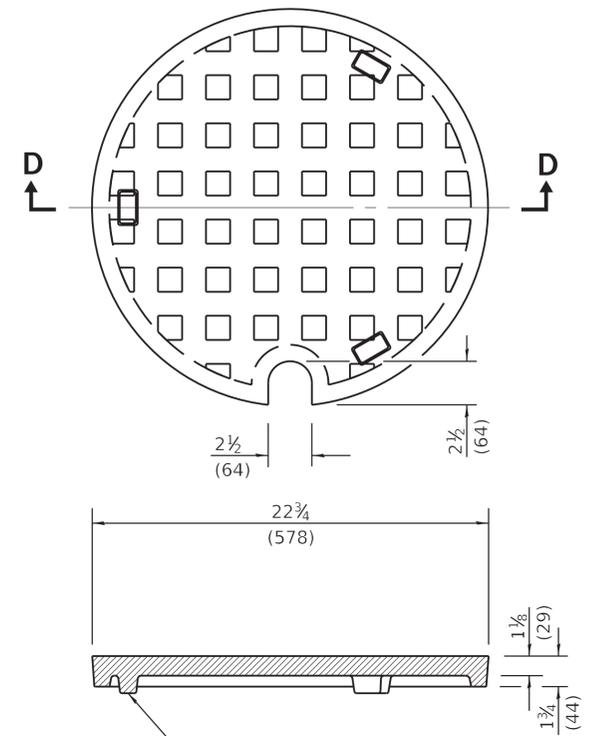
**CAST FRAME**



**SECTION C-C**

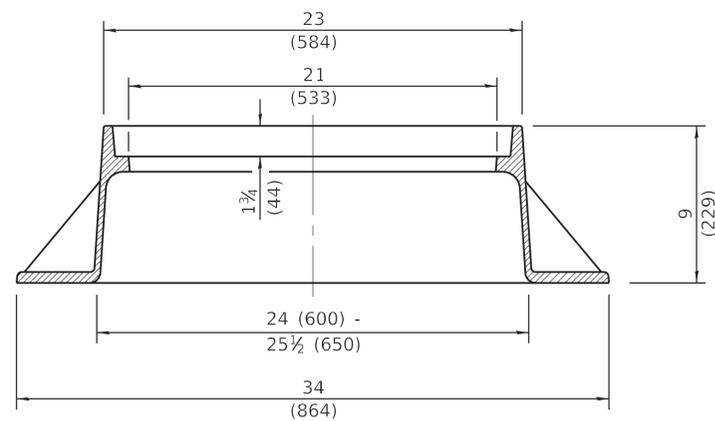


**SECTION F-F**

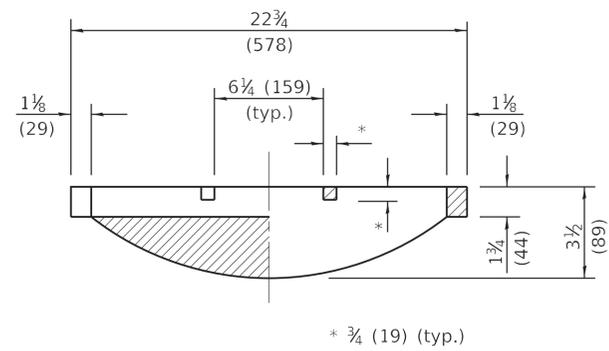


**SECTION D-D**

**CAST CLOSED LID**  
Gray Iron Lid

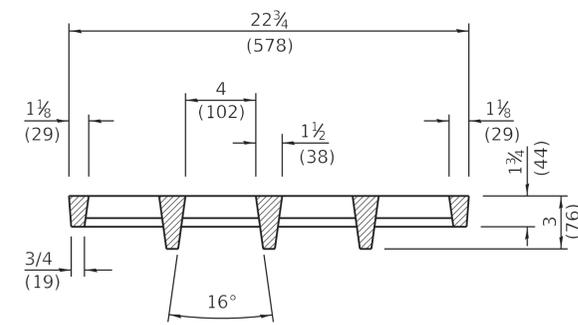


**SECTION A-A**  
Gray Iron



**SECTION B-B**

**CAST OPEN LID**



**SECTION E-E**

**ADA COMPLIANT  
CAST OPEN LID**

All dimensions are in inches (millimeters)  
unless otherwise shown.

Illinois Department of Transportation

PASSED January 1, 2015  
*Michael Brand*  
ENGINEER OF POLICY AND PROCEDURES

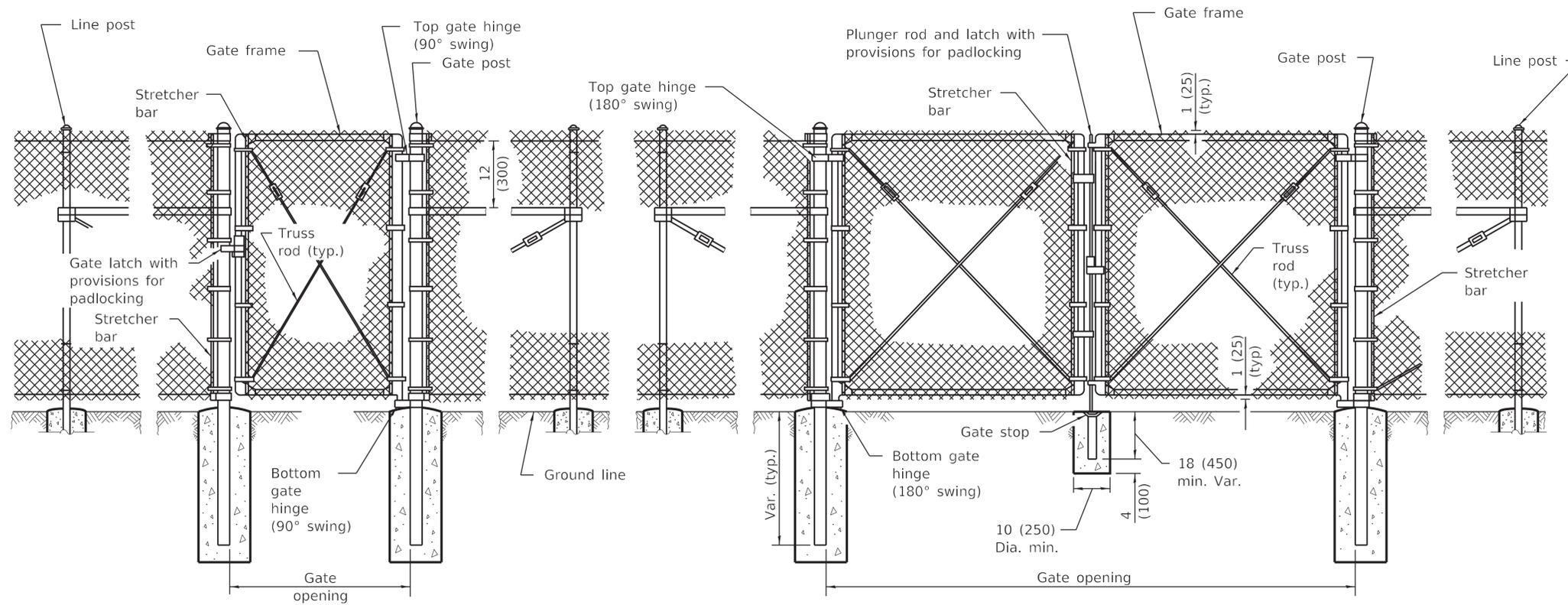
APPROVED January 1, 2015  
*[Signature]*  
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-15 46-1-1

DATE	REVISIONS
1-1-15	Revised dimensioning of frame. Added ADA compliant open lid.
1-1-09	Switched units to English (metric).

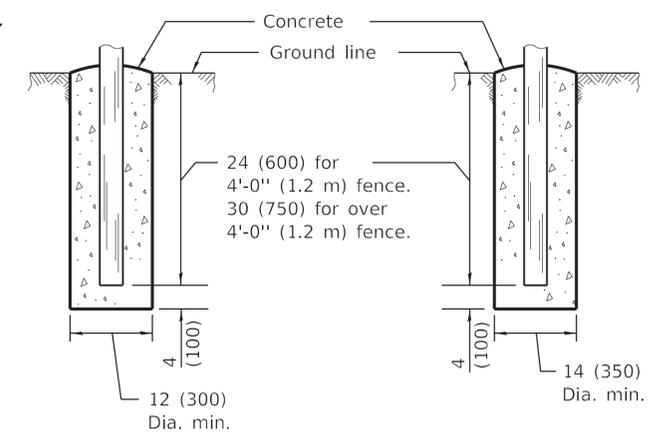
**FRAME AND LIDS  
TYPE 1**

**STANDARD 604001-04**



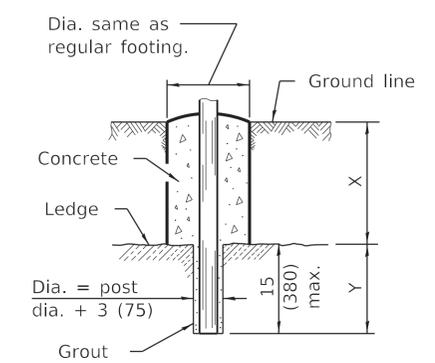
**PEDESTRIAN GATE ARRANGEMENT**

**VEHICLE GATE ARRANGEMENT**

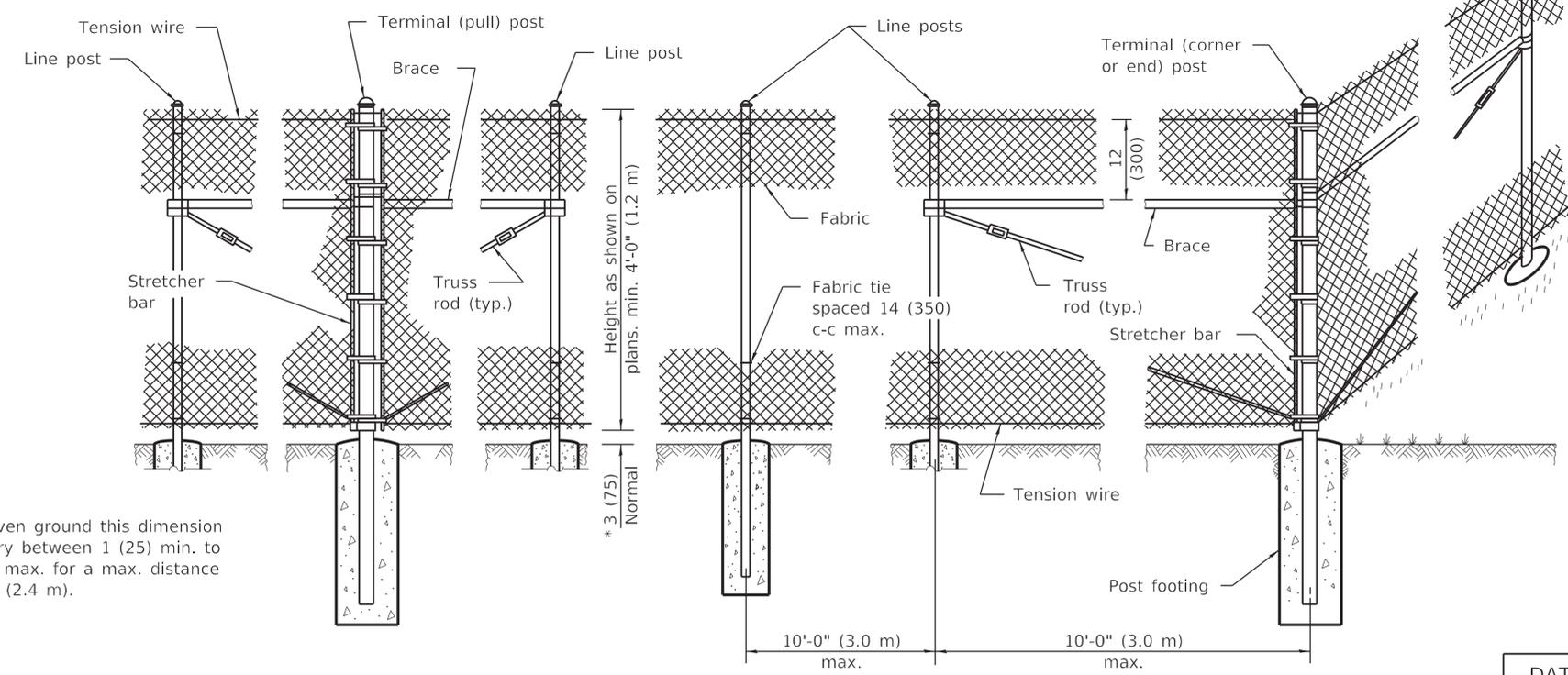


**FOOTING FOR LINE POST**

**FOOTING FOR GATE & TERMINAL POST**



**FOOTING FOR POST IN ROCK LEDGE**



**PULL POST ARRANGEMENT**

**LINE POST ARRANGEMENT**

**CORNER OR END POST ARRANGEMENT**

\* On uneven ground this dimension may vary between 1 (25) min. to 5 (125) max. for a max. distance of 8'-0" (2.4 m).

**GENERAL NOTES**  
 Pull posts shall be placed at locations determined by the Engineer. They shall be placed at 660' (200 m) intervals between posts to which the ends of the fabric are clamped or midway between such posts when the distance is less than 1320' (400 m) and greater than 660' (200 m).  
 X + Y shall not exceed 24 (600), 30 (750), or 36 (900), as applicable. When X is 0 - 9 (0 - 225), 15 (380), or 21 (525), then Y = 15 (375) and the post shall be shortened as required. When X exceeds 9 (225), 15 (380), or 21 (525), then Y shall be decreased correspondingly.

All dimensions are in inches (millimeters) unless otherwise shown.

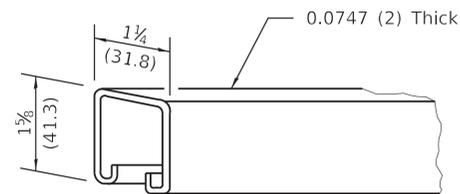
Illinois Department of Transportation  
 PASSED January 1, 2009  
 ENGINEER OF POLICY AND PROCEDURES  
 APPROVED January 1, 2009  
 ENGINEER OF DESIGN AND ENVIRONMENT

DATE	REVISIONS
1-1-09	Switched units to English (metric).
1-1-99	Rev. "pans" to "plans" in LINE POST ARRANGEMENT.

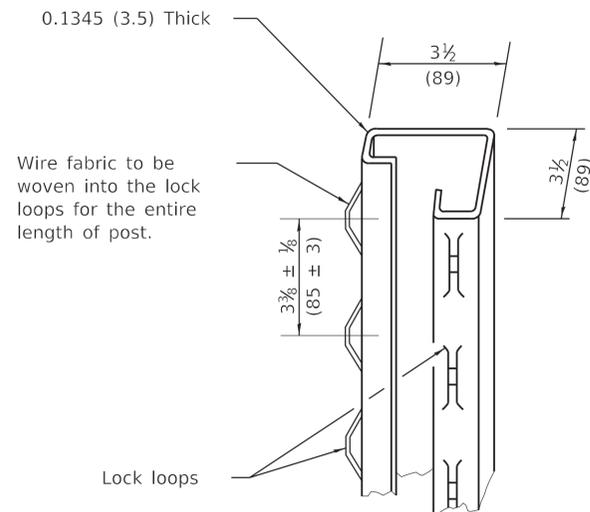
**CHAIN LINK FENCE**

(Sheet 1 of 3)

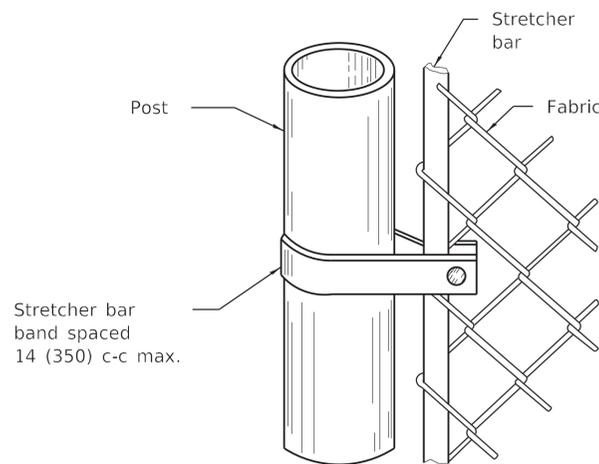
**STANDARD 664001-02**



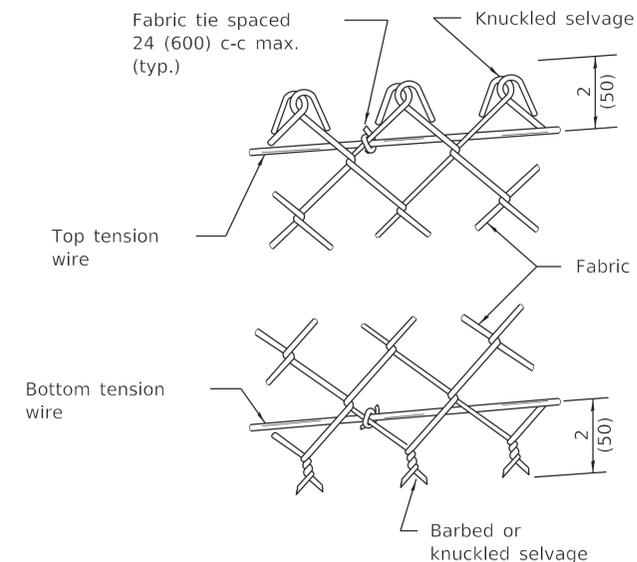
**ROLL FORMED SECTION OF BRACE**



**ROLL FORMED SECTION OF TERMINAL & GATE POST**



**METHOD OF FASTENING STRETCHER BAR TO POST**



**METHOD OF TYING FABRIC TO TENSION WIRES**

LINE POST	
Section	lbs./ft. (kg/m)
Pipe Type A 1.90 (48.3) O.D.	2.72 (4.05)
Pipe Type B 1.90 (48.3) O.D.	2.28 (3.39)
Pipe Type C 1.90 (48.3) O.D.	2.26 (3.36)
H 1.875x1.625 (47.6x41.3)	2.72 (4.05)
□	1.60 (2.38)
I	2.30 (3.42)

TERMINAL POST	
Section	lbs./ft. (kg/m)
Pipe Type A 2.375 (60.3) O.D.	3.65 (5.43)
Pipe Type B 2.375 (60.3) O.D.	3.11 (4.63)
Pipe Type C 2.375 (60.3) O.D.	3.09 (4.60)
Roll Formed 3 1/2 x 3 1/2 (89.0 x 89.0)	See detail
Sq. Tubing 2 1/2 x 2 1/2 (63.5 x 63.5)	4.32 (6.43)

HORIZONTAL BRACES	
Section	lbs./ft. (kg/m)
Pipe Type A 1.66 (42.2) O.D.	2.27 (3.38)
Pipe Type B 1.66 (42.2) O.D.	1.83 (2.72)
Pipe Type C 1.66 (42.2) O.D.	1.82 (2.71)
H 1.31x1.5 (33.3x38.1)	2.25 (3.35)
Roll Formed 1 3/8 x 1 1/4 (41.3 x 31.8)	See detail

GATE FRAMES	
Section	lbs./ft. (kg/m)
Pipe Type A 1.66 (42.2) O.D.	2.27 (3.38)
Pipe Type B 1.66 (42.2) O.D.	1.83 (2.72)
Pipe Type C 1.66 (42.2) O.D.	1.82 (2.71)

GATE POSTS *							
Gate Opening * ft. (m)		Pipe Type A		Sq. Tubing		Pipe Type B	
		Size (O.D.)	lbs./ft. (kg/m)	Size	lbs./ft. (kg/m)	Size (O.D.)	kg/m (lbs./ft.)
Single	Double						
Up to 4 (1.2)	Up to 8 (2.5)	2.375 (60.3)	3.65 (5.43)	2 1/2 (63.5)	4.32 (6.43)	2.375 (60.3)	3.11 (4.63)
Over 4 (1.2) to 8 (2.5)	Over 8 (2.5) to 16 (5.0)	2.875 (73.0)	5.79 (8.62)	3 (76.2)	5.78 (8.60)	2.875 (73.0)	4.64 (6.91)
Over 8 (2.5) to 12 (3.6)	Over 16 (5.0) to 24 (7.4)	3.5 (89.0)	7.58 (11.28)	3 (76.2)	8.80 (13.10)	3.5 (89)	5.707 (8.49)

\* The 3 1/2 x 3 1/2 (89.0 x 89.0) roll formed section as detailed may be used as gate posts for single gate up to 6' (1.8 m) and double gate up to 12' (3.6 m).

Illinois Department of Transportation

PASSED January 1, 2009

ENGINEER OF POLICY AND PROCEDURES

APPROVED January 1, 2009

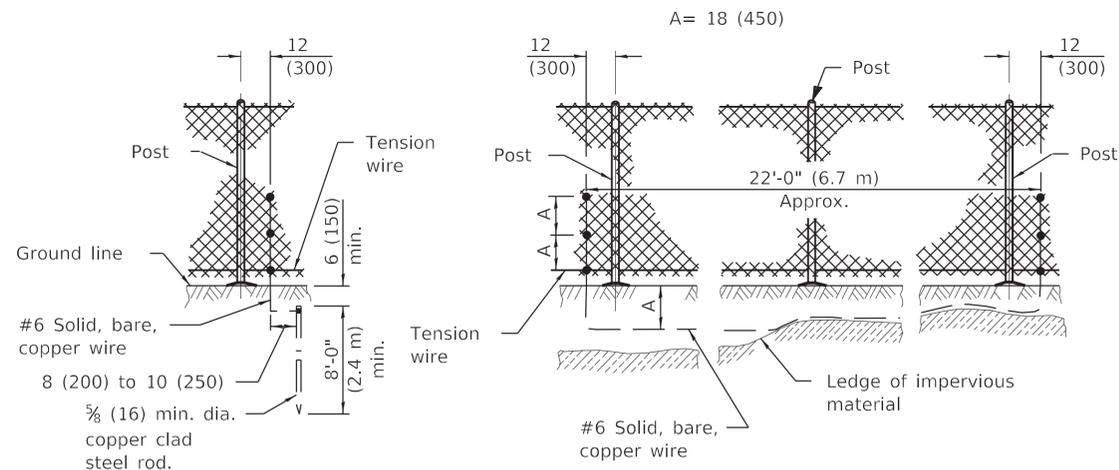
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

**CHAIN LINK FENCE**

(Sheet 2 of 3)

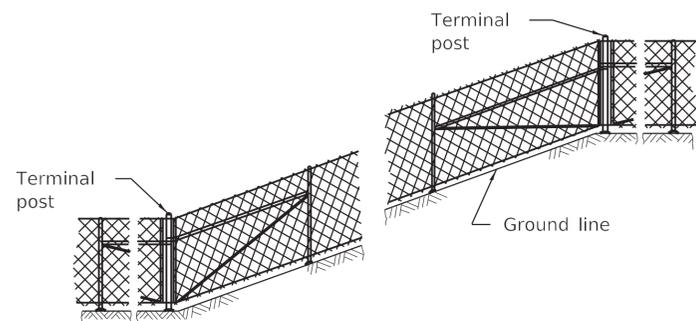
**STANDARD 664001-02**



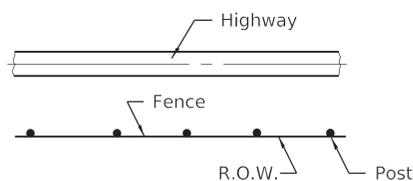
**STANDARD GROUND**

**COUNTERPOISE GROUND  
(ALTERNATE)**

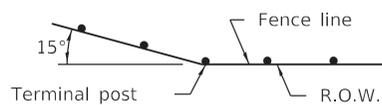
**PROTECTIVE ELECTRICAL GROUNDS**



**INSTALLATION ON SLOPES**



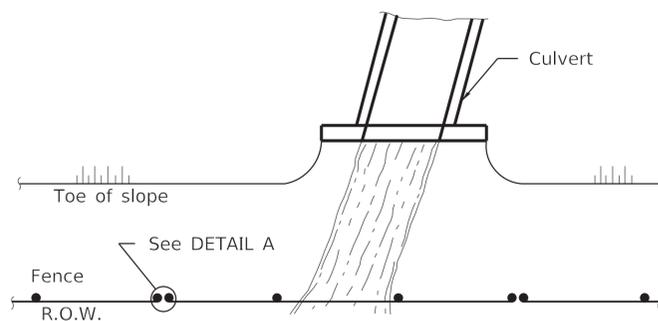
**PLAN**



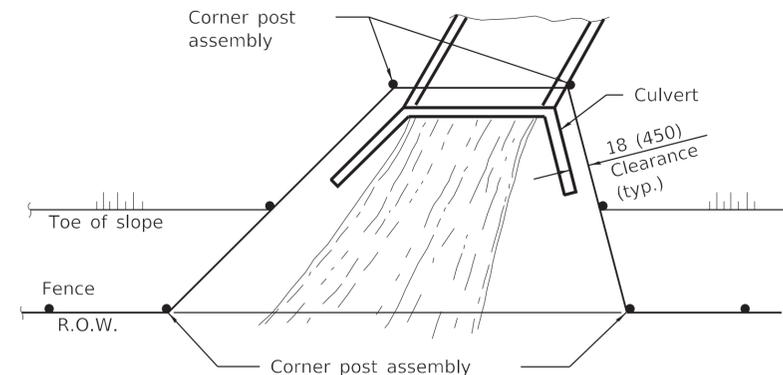
When fence line has a change in direction of 15° or more, a terminal post shall be placed as shown above.

Where angle is less than 15° and existing conditions require a terminal post, they shall be placed as directed by the Engineer.

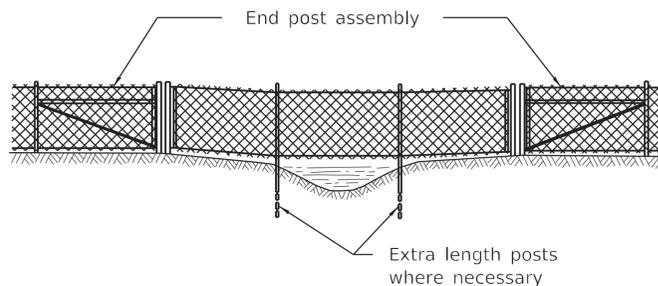
**INSTALLATION AT CORNERS**



**PLAN  
AT STREAM CROSSING**

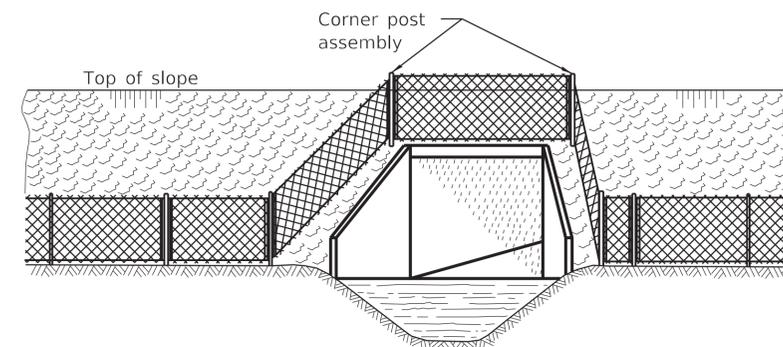


**PLAN  
AT HEADWALL**



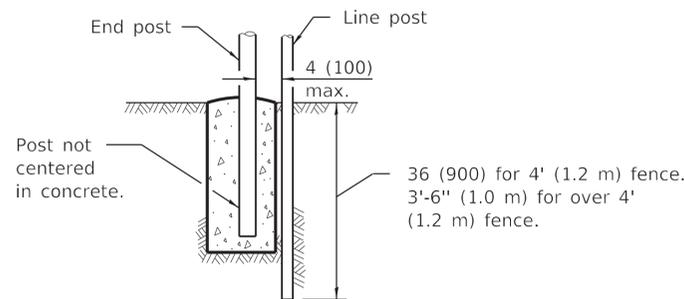
**ELEVATION  
INSTALLATION OVER STREAM**

The chain link fabric shall be replaced by barbed wire strands at 12 (300) maximum centers between the double posts shown on DETAIL A when shown on the plans.



**ELEVATION  
INSTALLATION AROUND HEADWALL**

When the width of the culvert makes it necessary to anchor a post to the top of the culvert, a cast iron shoe or other device approved by the Engineer shall be used.



**DETAIL A**

Illinois Department of Transportation

PASSED January 1, 2009

ENGINEER OF POLICY AND PROCEDURES

APPROVED January 1, 2009

ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

**CHAIN LINK FENCE**

(Sheet 3 of 3)

**STANDARD 664001-02**