

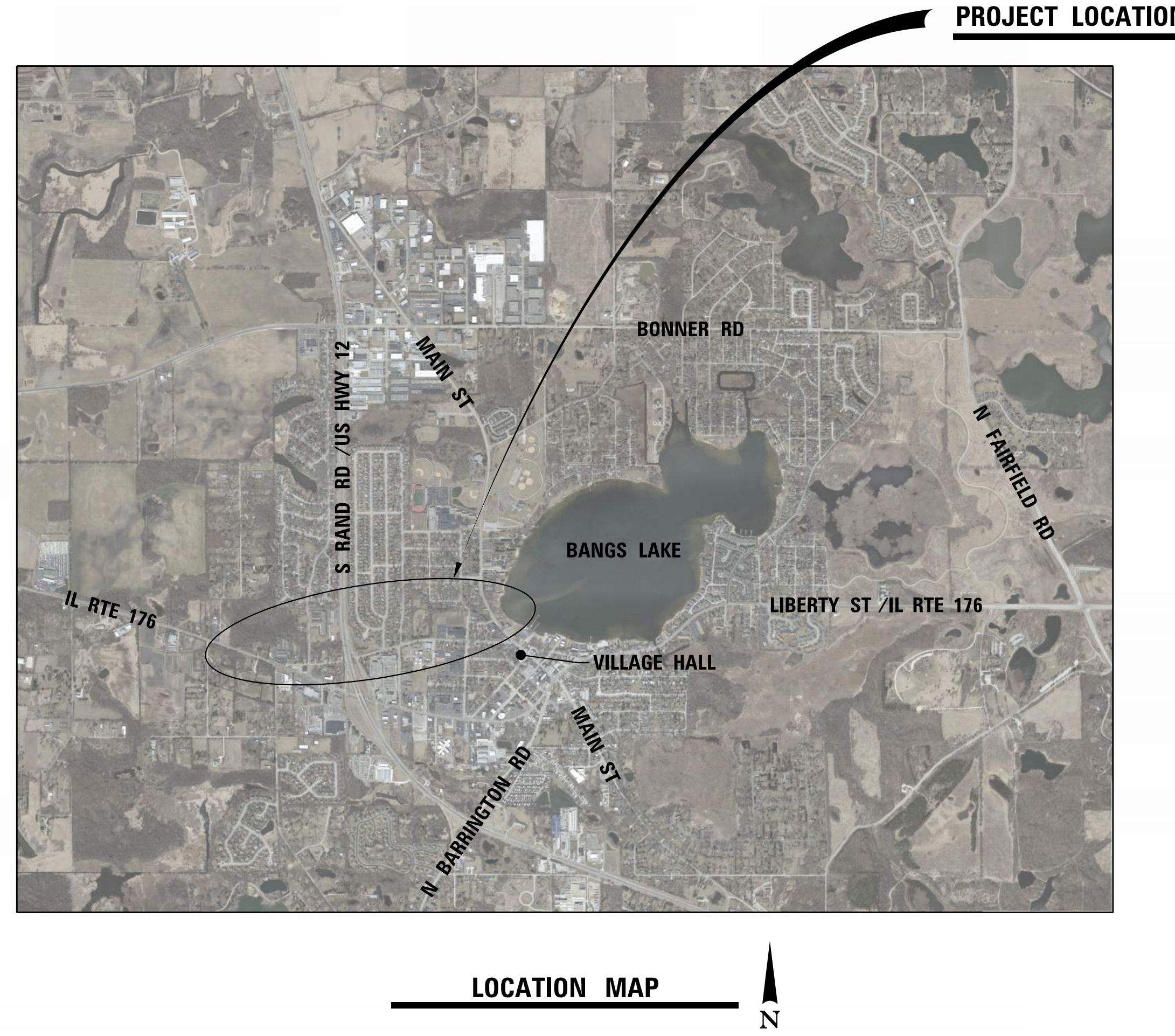
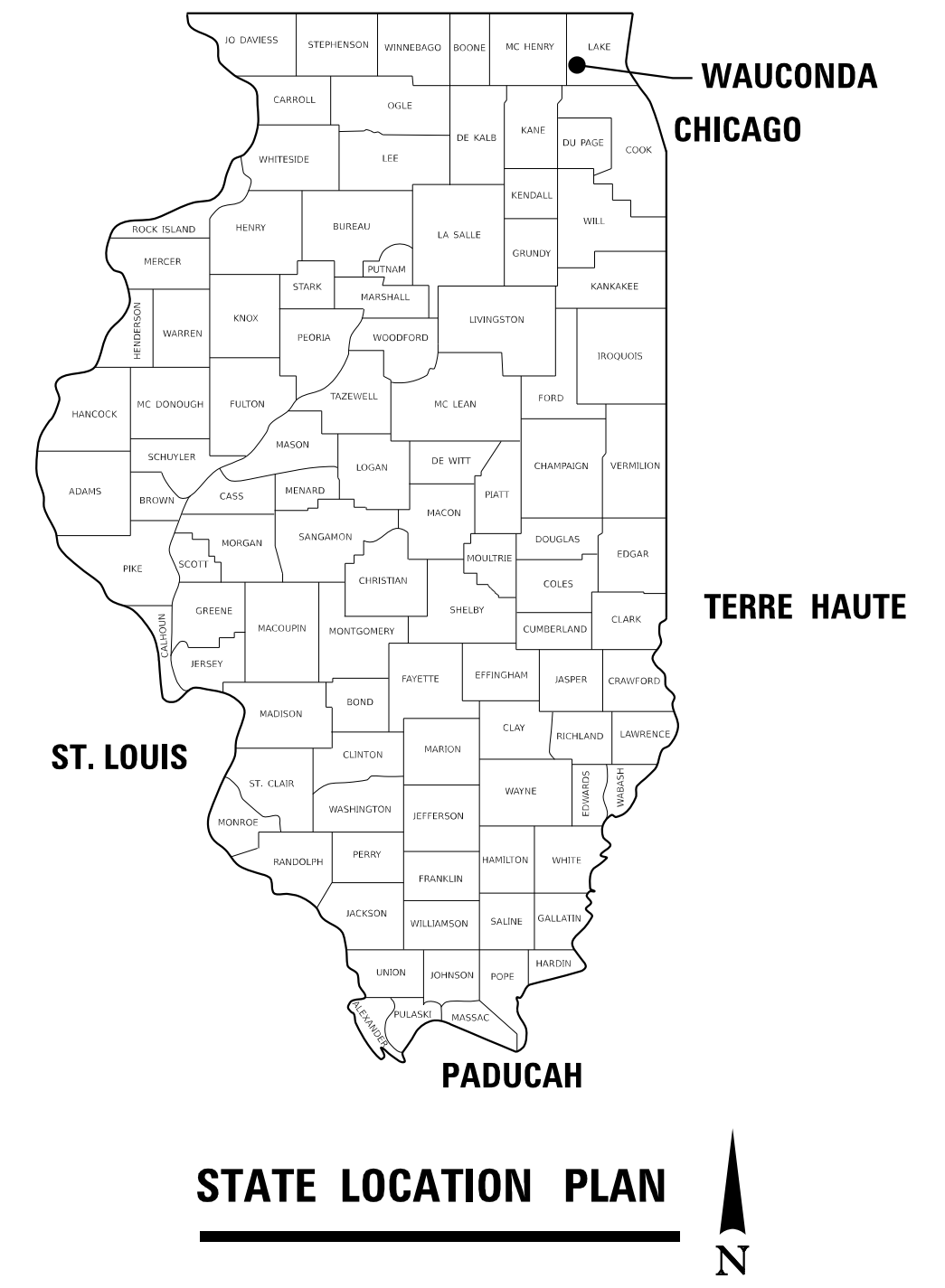
# **PROJECT:** **BANGS LAKE OUTFALL IMPROVEMENTS**

**OWNER:**  
**VILLAGE OF WAUCONDA**  
**101 N MAIN STREET**  
**WAUCONDA, IL 60084**


**ENGINEER:**  
**HMG ENGINEERS, INC.**  
**975 CAMPUS DRIVE**  
**MUNDELEIN, ILLINOIS 60060**  
**IL PROF DESIGN FIRM NO. 184-000899**  
**PH: (847) 362-5959**

**INDEX OF SHEETS**

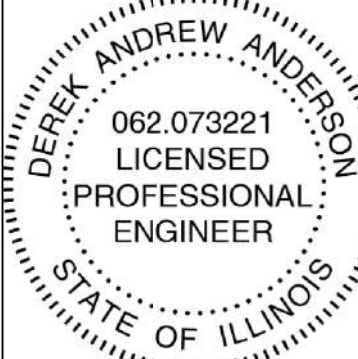
- 1 COVER SHEET
- 2 GENERAL NOTES
- 3 GENERAL PLAN
- 4-5 SUMMARY OF QUANTITIES
- 6-13 EXISTING AND DEMOLITION PLAN
- 14-20 PROPOSED PLAN
- 21-26 RESTORATION AND SESC PLAN
- 27 BLOCK RETAINING WALL PROFILE AT MAIN STREET
- 28 BLOCK RETAINING WALL PROFILE AT SLOCUM LAKE ROAD
- 29 BLOCK RETAINING WALL AND ORNAMENTAL FENCE CONSTRUCTION DETAILS
- 30 BANGS LAKE INTAKE STRUCTURES 1 AND 2 - CONSTRUCTION DETAILS
- 31 BANGS LAKE INTAKE ELECTRICAL DETAILS
- 32 BANGS LAKE INTAKE GATE DETAILS
- 33 SANITARY SEWER ADJUSTMENTS AT WAUCONDA M.S.
- 34 STEEL SHEET PILING RETAINING WALL PLAN AND CONSTRUCTION DETAILS AT SLOCUM LAKE ROAD
- 35 CULVERT REPLACEMENT PLAN, PROFILE, AND CONSTRUCTION DETAILS AT LARKDALE ROW
- 36 DEMOLITION, SESC, PROPOSED PLAN AND PROFILE AT P.W. BUILDING (ADDITIVE ALTERNATE A)
- 37 TYPICAL STREAM CROSS SECTIONS
- 38 STREAMBANK STABILIZATION CONSTRUCTION DETAILS
- 39 CONSTRUCTION DETAILS - STORM AND SANITARY SEWER
- 40 CONSTRUCTION DETAILS
- 41 SESC CONSTRUCTION DETAILS
- 42 SESC NOTES AND DETAILS



**FOR BIDDING**

  
**DEREK A. ANDERSON, P.E.**  
 LICENSED PROFESSIONAL ENGINEER IN ILLINOIS  
 LICENSE 062-073221  
 EXPIRES: NOVEMBER 30, 2025

DATE: **11/05/2024**



REVISIONS	DATE	BY	CHKD	APP'D	DATE	BY	CHKD	APP'D	DATE
<b>COVER SHEET</b>									
<b>BANGS LAKE OUTFALL IMPROVEMENTS WAUCONDA, IL</b>									
<b>HMG ENGINEERS, INC.</b> 975 CAMPUS DRIVE MUNDELEIN, ILLINOIS 60060 WWW.HMGENGINEERS.COM									
									
<b>SHEET</b> <b>1</b>									
JOB NO. 8537									

8537-Bangs Lake Outfall Improvements\_Plan\_Sheets.dgn 01-Cover\_Sheet 7/26/2016 12:15:28 PM



REVISED	DATE	BY

**GENERAL PLAN**

**BANGS LAKE OUTFALL IMPROVEMENTS  
WAUCONDA, IL**

HMG ENGINEERS, INC.  
975 CAMPUS DRIVE  
MUNDELEIN, ILLINOIS 60060  
WWW.HMGENGINEERS.COM  
(847) 362-5959

<b>HMG ENGINEERS</b>	
SURVEY	PK, DAA
DESIGN	CSB, DAA
DRAWN	CSB, DAA, JRM
CHECKED	CSB, DAA
DATE	SEPTEMBER 2024
<b>SHEET</b>	
<b>3</b>	
JOB NO.	8537

**LARKDALE ROW TO IL RTE 176 (CENTRAL)**  
EXISTING AND DEMOLITION - SHEET 12

**LARKDALE ROW TO IL RTE 176 (EAST)**  
EXISTING AND DEMOLITION - SHEET 11  
PROPOSED IMPROVEMENTS - SHEET 19

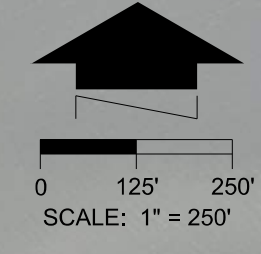
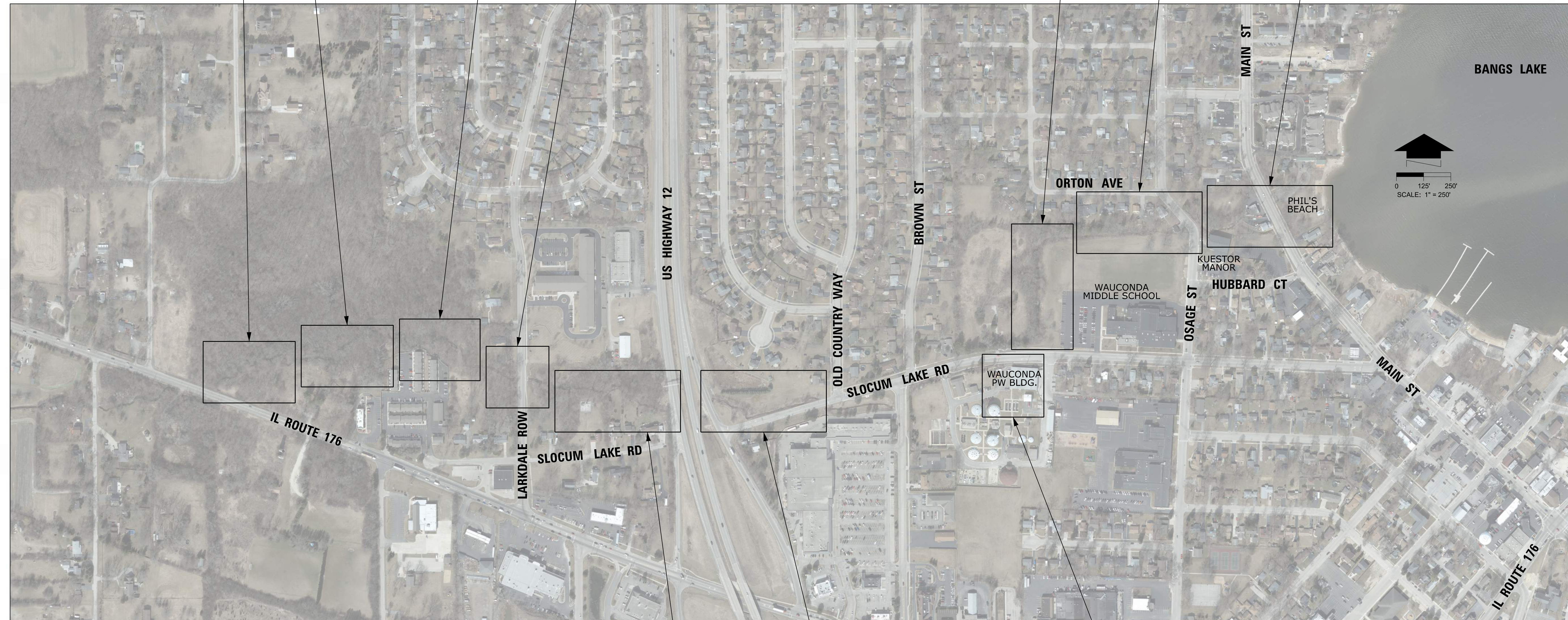
**WAUCONDA M.S. TO SLOCUM LAKE ROAD**  
EXISTING AND DEMOLITION - SHEET 8  
PROPOSED IMPROVEMENTS - SHEET 16  
SESC AND RESTORATION - SHEET 23

**OSAGE STREET TO WAUCONDA M.S.**  
EXISTING AND DEMOLITION - SHEET 7  
PROPOSED IMPROVEMENTS - SHEET 15  
SESC AND RESTORATION - SHEET 22

**BANGS LAKE TO KUESTOR MANOR**  
EXISTING AND DEMOLITION - SHEET 6  
PROPOSED IMPROVEMENTS - SHEET 14  
SESC AND RESTORATION - SHEET 21

**LARKDALE ROW TO IL RTE 176 (WEST)**  
EXISTING AND DEMOLITION - SHEET 13  
PROPOSED IMPROVEMENTS - SHEET 20  
SESC AND RESTORATION - SHEET 26

**LARKDALE ROW**  
EXISTING AND DEMOLITION - SHEET 11  
PROPOSED IMPROVEMENTS - SHEET 35  
SESC AND RESTORATION - SHEET 26



**VILLAGE OF WAUCONDA PUBLIC WORKS BLDG.**  
ADDITIVE ALTERNATE A - SHEET 36

**SLOCUM LAKE ROAD TO US HWY 12**  
EXISTING AND DEMOLITION - SHEET 9  
PROPOSED IMPROVEMENTS - SHEET 17  
SESC AND RESTORATION - SHEET 24

**US HWY 12 TO LARKDALE ROW**  
EXISTING AND DEMOLITION - SHEET 10  
PROPOSED IMPROVEMENTS - SHEET 18  
SESC AND RESTORATION - SHEET 25

**SCHEDULE OF QUANTITIES**

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY
1	Storm Sewers, Rubber Gasket, Class A, Type 1, 12"	LF	137
2	Storm Sewers, Rubber Gasket, Class A, Type 2, 12"	LF	98
3	Storm Sewers, Rubber Gasket, Class A, Type 2, 18"	LF	9
4	Storm Sewers, Rubber Gasket, Class A, Type 1, 27"	LF	14
5	Storm Sewers, Rubber Gasket, Class A, Type 2, 30"	LF	14
6	Storm Sewers, Rubber Gasket, Class A, Type 1, 36"	LF	37
7	Storm Sewers, Class A, Type 1, 29"x45" Elliptical RCP	LF	200
8	Storm Sewers, Class A, Type 1, 34"x53" Elliptical RCP	LF	140
9	Precast Concrete Box Culverts, 5' x 5'	LF	68
10	Precast Concrete Box Culverts, 12' x 3'	LF	56
11	Storm Inlet, Type A, 2' Diameter, Type 1 Frame and Grate	Each	4
12	Storm Inlet, Type A, 2' Diameter, Type 8 Grate	Each	2
13	Storm Inlet, Type A, 2' Diameter, Type 11 Frame and Grate	Each	3
14	Storm Manhole, Type A, 5' Diameter, Type 3 Frame and Grate	Each	1
15	Storm Manhole, Type A, 5' Diameter, Type 11 Frame and Grate	Each	1
16	Storm Manhole, Type A, 4' Diameter, Type 1 Frame and Grate	Each	1
17	Storm Manhole, Type A, 7' Diameter, Type 11 Frame and Grate	Each	1
18	Catch Basin, Type A, 4' Diameter, Type 37 Frame and Grate	Each	1
19	Inlets to be Adjusted	Each	1
20	Concrete Box Culvert End Section, 5' x 5'	Each	1
21	Precast Concrete Box Culvert End Section, 12' x 3'	Each	2
22	Modifications to Wingwall at Larkdale Row	LS	1
23	Modifications to Headwall at Osage Street	LS	1
24	Bangs Lake Intake Structure 1	LS	1
25	Bangs Lake Intake Structure 2	LS	1
26	Scada and Electrical Improvements at Intake Structure 1	LS	1
27	Precast Flared End Section Removed, Salvaged and Reinstalled	Each	2
28	Precast Flared End Section, 12"	Each	1
29	Precast Flared End Section, 34"x53"	Each	1
30	Remove and Replace 15" RCP Storm Sewer at Gravity Wall (1 stick)	LF	8
31	6" Ductile Iron Pipe at Gravity Wall with Check Valve	LS	1
32	Undercut/Stabilization Stone	CY	50
33	Trench Backfill	CY	375
34	CLSM Trench Backfill	CY	5
35	CLSM Abandonment of Culverts at Main Street	CY	70
36	Porous Granular Backfill	CY	40
37	Select Backfill	CY	50
38	Sidewalk Removal	SF	2,400
39	Concrete Sidewalk, 5"	SF	2,400
40	Aggregate Path, 8' Wide	SY	980
41	Concrete Curb and Gutter Removal	LF	342
42	Combination Concrete Curb and Gutter, B6.24	LF	200
43	Combination Concrete Curb and Gutter, B6.12	LF	142
44	Milling of Existing Roadway, 3"	SY	360
45	Roadway Pavement Removal	SY	456
46	HMA Leveling Binder, N50, Mix D, 1"	TONS	35
47	HMA Surface Course, N50, Mix D, 2"	SY	816
48	HMA Binder Course, IL-19.0, N50, 3"	SY	286
49	Class D Base Patches, Type IV, 6"	SY	170
50	Water Main in Steel Casing, 12"	LF	20

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY
51	Ductile Iron Water Main, 6"	LF	35
52	Water Main Removal, 6"	LF	50
53	Insertion Valve, 6"	Each	1
54	Water Service Installation for 321 Main Street	LS	1
55	Abandonment of Service Tap for 321 Main Street	LS	1
56	Bypass Pumping of Sanitary Sewers	LS	1
57	Sanitary Sewer Removal, 12"	LF	65
58	Sanitary Sewer Removal, 15" Clay	LF	36
59	Ductile Iron Class 52 Sanitary Sewer, 12"	LF	46
60	Ductile Iron Class 52 Sanitary Sewer, 15"	LF	36
61	Sanitary Sewer in Steel Casing, 20"	LF	20
62	Sanitary Drop Manhole, 4' Diameter	Each	1
63	Sanitary Manhole Modifications	Each	1
64	Sanitary Manhole Adjustment Including External Chimney Seal	Each	2
65	Ornamental Fence, 6'	LF	50
66	Ornamental Fence Mounted to Block Wall, 4'	LF	340
67	Ornamental Fence Mounted to Block Wall, 2'	LF	96
68	Block Retaining Wall With Capstone	SF	3,497
69	Flood Control Wall With Capstone	SF	523
70	Steel Sheet Piling Retaining Wall with Cap	LF	225.50
71	Stream Grading and Shaping	LF	1,260
72	Earth Excavation at Stream	CY	145
73	Earth Excavation at Rip Rap Stabilization	CY	212
74	Earth Excavation at Aggregate Path	CY	220
75	Earth Excavation for Site Grading	CY	75
76	Biotechnical Riprap Stabilization	LF	181
77	Biotechnical Riprap Stabilization with Grading	LF	547
78	Rock Riffle	Each	6
79	Initial Channel Backfill, Riprap (RR4)	LF	297
80	Secondary Channel Backfill, Native Bed Material	LS	1
81	Structural Streambank Stabilization	SY	275
82	Filter Fabric at Riprap	SY	275
83	Filter Fabric at Aggregate Path	SY	980
84	Filter Fabric at Sheet Pile Wall	SY	130
85	Steel Plate Beam Guardrail, Type A, 6' Steel Posts	LF	317
86	Traffic Barrier Terminal, Type 1 (Special) Tangent	Each	3
87	Traffic Barrier Terminal, Type 2	Each	3
88	Storm Sewer Removal, 12" RCP	LF	69
89	Storm Sewer Removal, 15" RCP	LF	8
90	Storm Sewer Removal, 18" RCP	LF	5
91	Storm Sewer Removal, 27" RCP	LF	8
92	Storm Sewer Removal, 30" RCP	LF	34
93	Storm Sewer Removal, 36" CPP	LF	55
94	Storm Sewer Removal, 29"x45" Elliptical RCP	LF	202
95	Storm Sewer Removal, 34"x49" Arch CMP	LF	111
96	Storm Sewer Removal, 64"x43" Arch CMP	LF	124
97	Remove Inlet, 2' Diameter	Each	4
98	Remove Manhole, 4' Diameter	Each	1
99	Remove Manhole, 5' Diameter	Each	1
100	Remove 18" Flared End Section and Toe Block	Each	1

REVISIONS
DATE
BY
FILE

**SUMMARY OF QUANTITIES**

**BANGS LAKE OUTFALL IMPROVEMENTS  
WAUCONDA, IL**

**HMG ENGINEERS, INC.**  
975 CAMPUS DRIVE  
MUNDELEIN, ILLINOIS 60060  
WWW.HMGENGINEERS.COM  
(847) 362-5959

**HMG ENGINEERS**

SURVEY	PK, DAA
DESIGN	CSR, DAA
DRAWN	CSR, DAA, JRM
CHECKED	CSR, DAA
DATE	SEPTEMBER 2024

**SHEET**  
**4**

JOB NO. 8537

**SCHEDULE OF QUANTITIES**

<u>ITEM NO.</u>	<u>ITEM DESCRIPTION</u>	<u>UNIT</u>	<u>QUANTITY</u>
101	Remove 27" Flared End Section and Toe Block	Each	1
102	Remove Frame and Grate	Each	2
103	Remove Concrete End Section	Each	1
104	Tree Removal (6 to 15 Units Diameter)	Unit	480
105	Tree Removal (Over 15 Units Diameter)	Unit	264
106	Clearing, Acres (Less than 6 Units Diameter)	Acre	1.25
107	Beaver Dam Removal and Disposal	Each	2
108	Remove Split Rail Fence	LF	191
109	Remove Chain Link Fence	LF	82
110	Remove Ornamental Fence	LF	98
111	Remove Guardrail	LF	468
112	Remove Concrete Spillway at Culvert Outfall	SF	415
113	Remove Timber Retaining Wall	LS	1
114	Remove Outlet Control Structure at Phil's Beach	LS	1
115	Remove Concrete Headwall, Wingwalls and Junction Chamber at Main Street	Each	2
116	Removal of Wooden Bridge and Supports at Kuester Manor	LS	1
117	Temporary Construction Fencing	LF	1,150
118	Temporary Relocation of Raft and Trailer at Phil's Beach	LS	1
119	Special Waste Disposal	CY	50
120	Hazardous Waste Disposal	CY	50
121	Seeding, IDOT Class 1	SY	8,100
122	Seeding, IDOT Class 4A	SY	2,850
123	Seeding, IDOT Class 4B	SY	400
124	Interseeding, IDOT Class 4A	SY	1,325
125	Sodding	SY	1,250
126	Mulch	SY	520
127	Sand	CY	35
128	Thermoplastic Pavement Marking - Line, 4"	LF	400
129	Erosion Control Blanket	SY	11,150
130	Topsoil Furnish and Place, Variable Depth	SY	11,150
131	Site Grading and Shaping	LS	1
132	Soil Erosion and Sedimentation Control	LS	1
133	Dust and Mud Control	LS	1
134	Dewatering	LS	1
135	Traffic and Pedestrian Control	LS	1
136	Mobilization	LS	1
137	Pre-Construction Video Documentation	LS	1
138	Project Maintenance and Monitoring (Bangs Lake to Larkdale Row)	Year	3

<u>ITEM NO.</u>	<u>ITEM DESCRIPTION</u>	<u>UNIT</u>	<u>QUANTITY</u>
Bid Alternate A			
A1	Storm Sewers, Rubber Gasket, Class A, Type 2, 12"	LF	3
A2	Storm Sewers, Rubber Gasket, Class A, Type 2, 18"	LF	18
A3	Storm Sewers, Rubber Gasket, Class A, Type 2, 48"	LF	236
A4	Storm Manhole, Type A, 8' Diameter, Type 1 Frame and Grate	Each	2
A5	Storm Manhole, Type A, 9' Diameter, Type 1 Frame and Grate	Each	1
A6	Trench Backfill	CY	365
A7	Manhole to be Reconstructed at Slocum Lake Road	Each	1
A8	Manhole to be Reconstructed at WWTP	Each	1
A9	CLSM Abandonment of Storm Sewer at Public Works Building	CY	56
A10	Sidewalk Removal	SF	100
A11	Concrete Sidewalk, 5"	SF	100
A12	Concrete Curb and Gutter Removal	LF	159
A13	Combination Concrete Curb and Gutter, B6.12	LF	159
A14	Roadway Pavement Removal	SY	344
A15	HMA Surface Course, N50, Mix D, 2"	SY	344
A16	HMA Binder Course, IL-19.0, N50, 3"	SY	344
A17	Storm Sewer Removal, 42"	LF	11
A18	Storm Sewer Removal, 60"	LF	27

<u>ITEM NO.</u>	<u>ITEM DESCRIPTION</u>	<u>UNIT</u>	<u>QUANTITY</u>
Bid Alternate B			
B1	Tree Removal (Larkdale Row to IL Route 176)	Acre	1.40
B2	Project Maintenance and Monitoring (Larkdale Row to IL Route 176)	Year	3

REVISIONS
DATE
BY
FILE

**SUMMARY OF QUANTITIES**

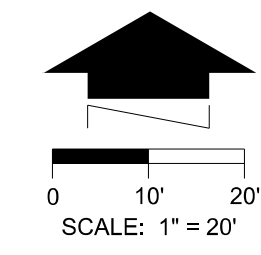
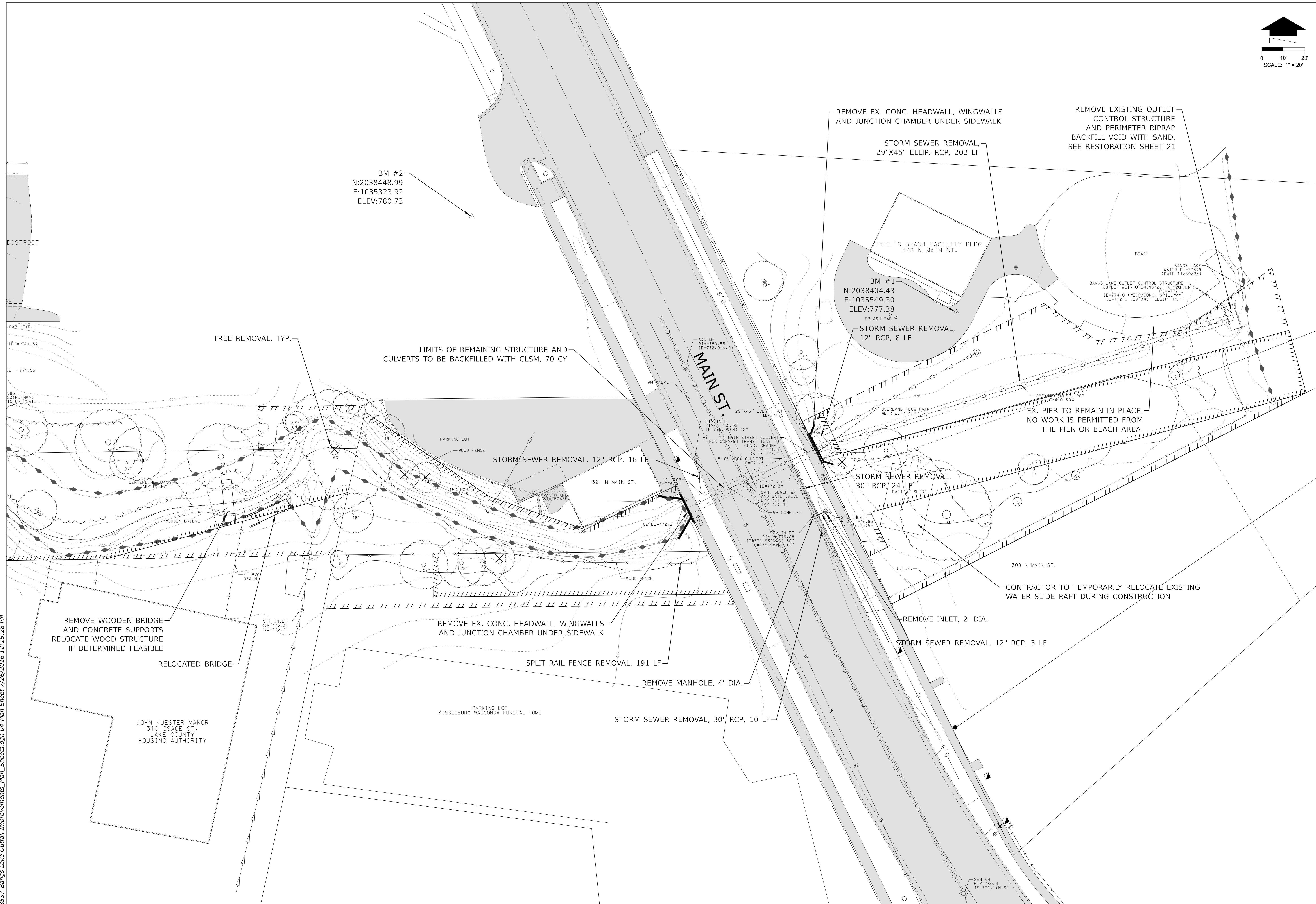
**BANGS LAKE OUTFALL IMPROVEMENTS  
WAUCONDA, IL**

**HMG ENGINEERS, INC.**  
975 CAMPUS DRIVE  
MUNDELEIN, ILLINOIS 60060  
WWW.HMGENGINEERS.COM  
(847) 362-5959

<b>HMG</b> ENGINEERS	
SURVEY	PK, DAA
DESIGN	CSB, DAA
DRAWN	CSB, DAA, JRM
CHECKED	CSB, DAA
DATE	SEPTEMBER 2024

**SHEET**  
**5**

8537-Bangs Lake Outfall Improvements\_Plan\_Sheets.dgn 04-Plan\_Sheet 7/26/2016 12:15:28 PM



REVISIONS	DATE	BY

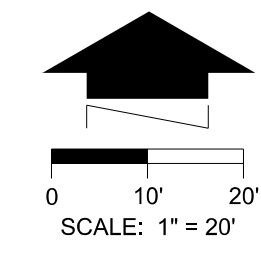
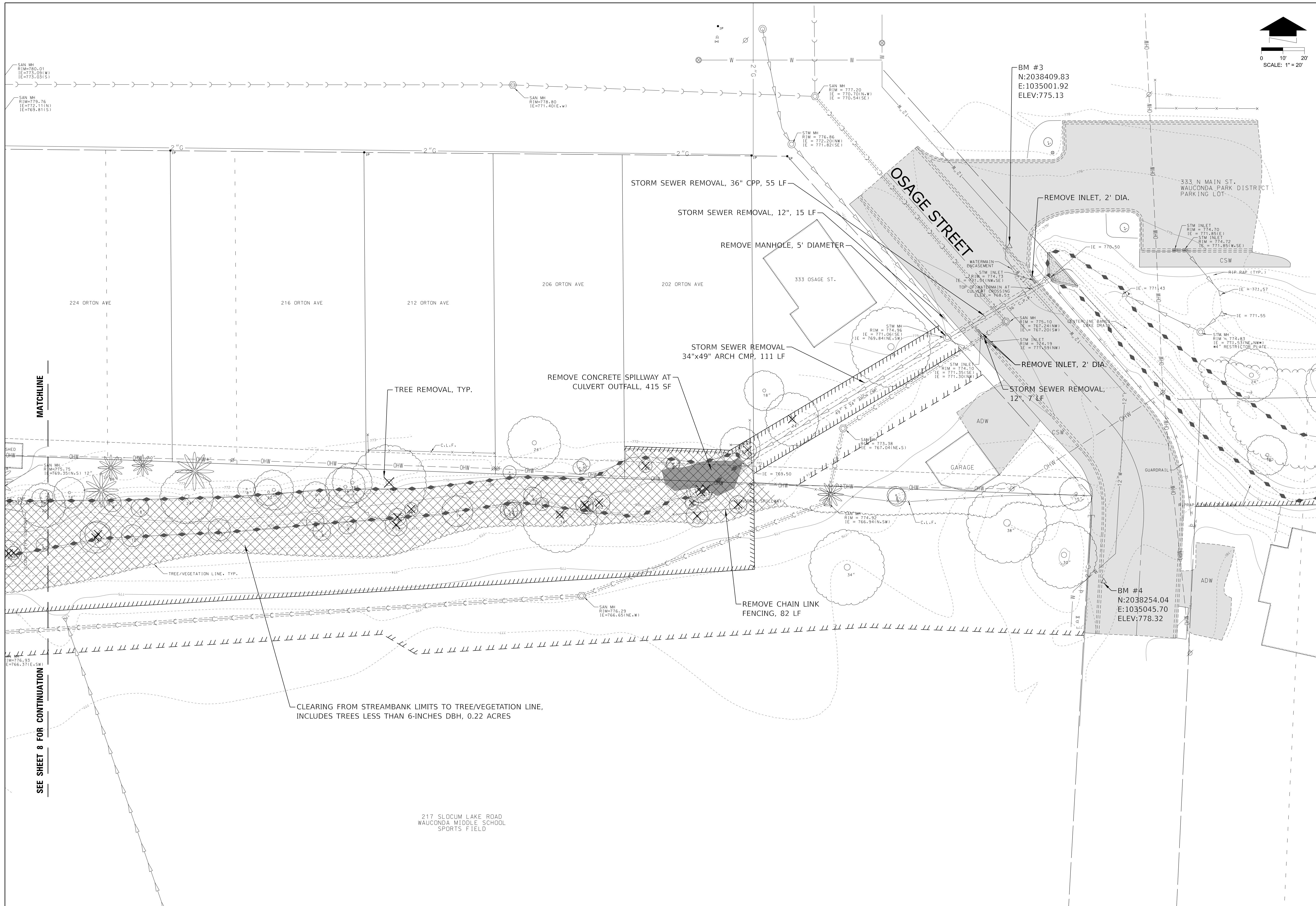
**EXISTING AND DEMOLITION PLAN**  
**BANGS LAKE TO KUESTER MANOR**

**BANGS LAKE OUTFALL IMPROVEMENTS**  
**WAUCONDA, IL**

**HMG ENGINEERS, INC.**  
**975 CAMPUS DRIVE**  
**MUNDELEIN, ILLINOIS 60060**  
[WWW.HMGENGINEERS.COM](http://WWW.HMGENGINEERS.COM)

(847) 362-5959

<b>HMG</b> ENGINEERS	
SURVEY	PK, DAA
DESIGN	CSR, DAA
DRAWN	CSR, DAA, JRM
CHECKED	CSR, DAA
DATE	SEPTEMBER 2024
<b>SHEET</b>	
<b>6</b>	
JOB NO.	8537



REVISIONS	DATE	BY

**EXISTING AND DEMOLITION PLAN  
OSAGE STREET TO WAUCONDA M.S.**

**BANGS LAKE OUTFALL IMPROVEMENTS  
WAUCONDA, IL**

**HMG ENGINEERS, INC.**  
975 CAMPUS DRIVE  
MUNDELEIN, ILLINOIS 60060  
WWW.HMGENGINEERS.COM

(847) 362-5959

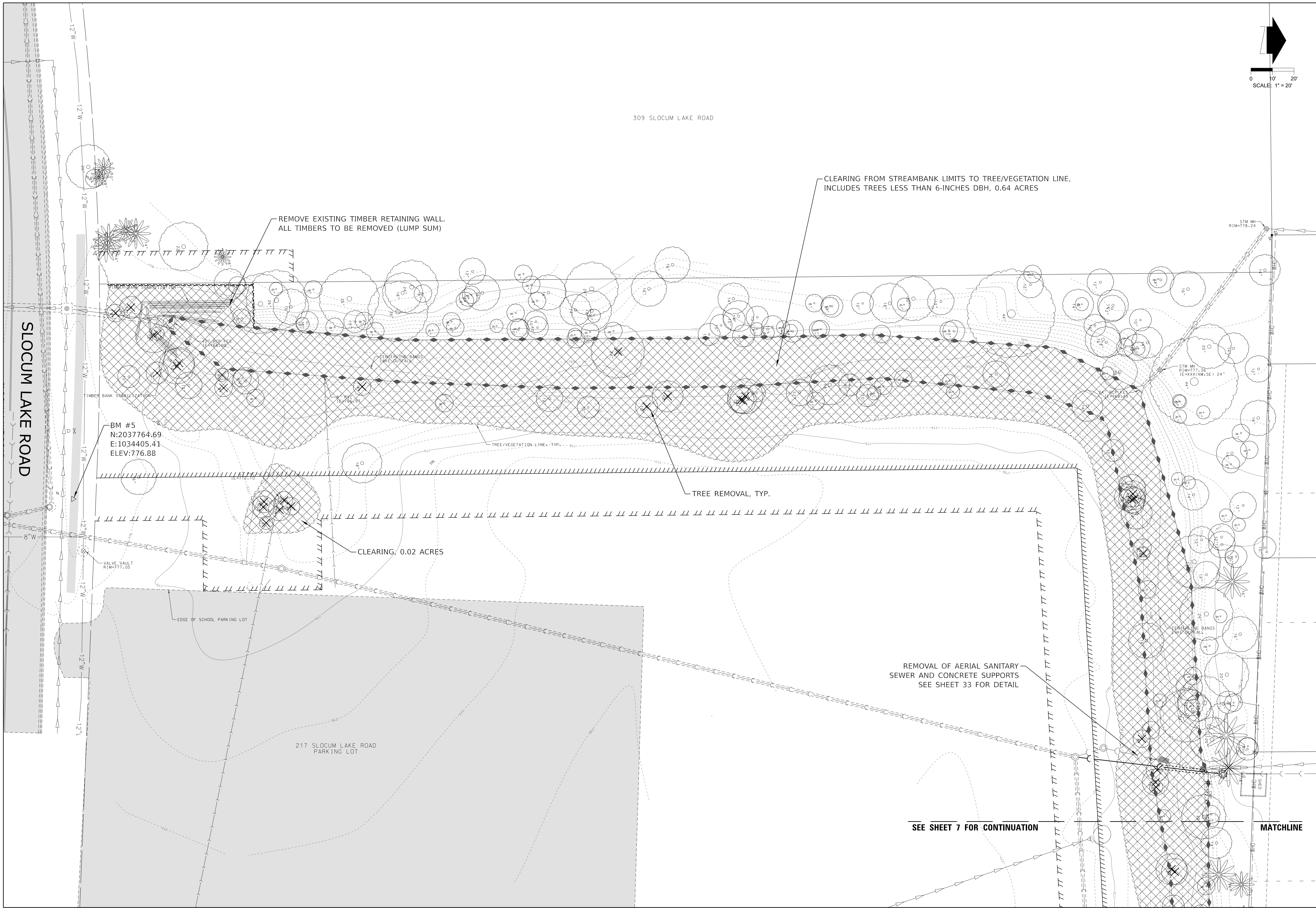
<b>HMG</b> ENGINEERS
SURVEY PK, DAA
DESIGN CSR, DAA
DRAWN CSR, DAA, JRM
CHECKED CSR, DAA
DATE SEPTEMBER 2024
<b>SHEET</b>
<b>7</b>
JOB NO. 8537

217 SLOCLUM LAKE ROAD  
WAUCONDA MIDDLE SCHOOL  
SPORTS FIELD

MATCHLINE

SEE SHEET 8 FOR CONTINUATION

CLEARING FROM STREAMBANK LIMITS TO TREE/VEGETATION LINE,  
INCLUDES TREES LESS THAN 6-INCHES DBH, 0.22 ACRES



309 SLOCUM LAKE ROAD

SLOCUM LAKE ROAD

217 SLOCUM LAKE ROAD  
PARKING LOT

BM #5  
N:2037764.69  
E:1034405.41  
ELEV:776.88

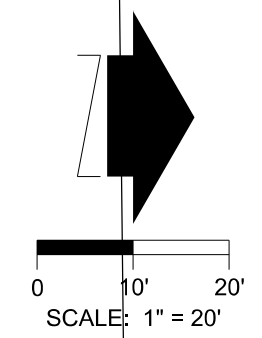
REMOVE EXISTING TIMBER RETAINING WALL.  
ALL TIMBERS TO BE REMOVED (LUMP SUM)

CLEARING FROM STREAMBANK LIMITS TO TREE/VEGETATION LINE.  
INCLUDES TREES LESS THAN 6-INCHES DBH, 0.64 ACRES

TREE REMOVAL, TYP.

CLEARING, 0.02 ACRES

REMOVAL OF AERIAL SANITARY  
SEWER AND CONCRETE SUPPORTS  
SEE SHEET 33 FOR DETAIL

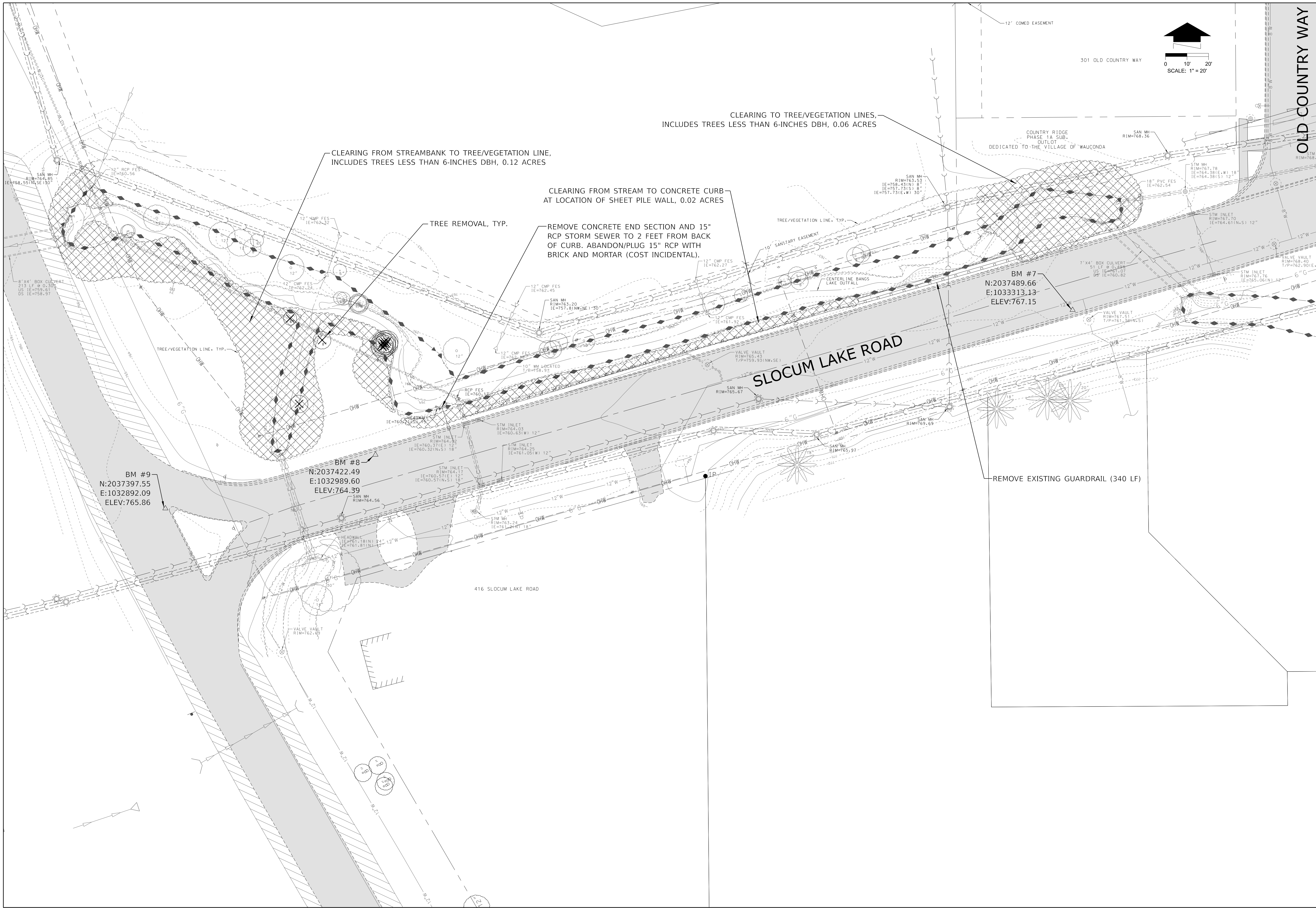


SEE SHEET 7 FOR CONTINUATION

MATCHLINE

REVISIONS	DATE	BY
<b>EXISTING AND DEMOLITION PLAN</b>		
<b>WAUCONDA M.S. TO SLOCUM LAKE ROAD</b>		
<b>BANGS LAKE OUTFALL IMPROVEMENTS</b>		
<b>WAUCONDA, IL</b>		
<b>HMG ENGINEERS, INC.</b>		
975 CAMPUS DRIVE		
MUNDELEIN, ILLINOIS 60060		
WWW.HMGENGINEERS.COM		
(847) 362-5959		
<b>HMG ENGINEERS</b>		
SURVEY	PK, DAA	
DESIGN	CSR, DAA	
DRAWN	CSR, DAA, JRM	
CHECKED	CSR, DAA	
DATE	SEPTEMBER 2024	
<b>SHEET</b>		
<b>8</b>		
JOB NO.	8537	





CLEARING TO TREE/VEGETATION LINES,  
INCLUDES TREES LESS THAN 6-INCHES DBH, 0.06 ACRES

CLEARING FROM STREAMBANK TO TREE/VEGETATION LINE,  
INCLUDES TREES LESS THAN 6-INCHES DBH, 0.12 ACRES

CLEARING FROM STREAM TO CONCRETE CURB  
AT LOCATION OF SHEET PILE WALL, 0.02 ACRES

TREE REMOVAL, TYP.

REMOVE CONCRETE END SECTION AND 15"  
RCP STORM SEWER TO 2 FEET FROM BACK  
OF CURB. ABANDON/PLUG 15" RCP WITH  
BRICK AND MORTAR (COST INCIDENTAL).

REMOVE EXISTING GUARDRAIL (340 LF)

BM #9  
N:2037397.55  
E:1032892.09  
ELEV:765.86

BM #8  
N:2037422.49  
E:1032989.60  
ELEV:764.39

BM #7  
N:2037489.66  
E:1033313.13  
ELEV:767.15

REVISIONS	DATE	BY

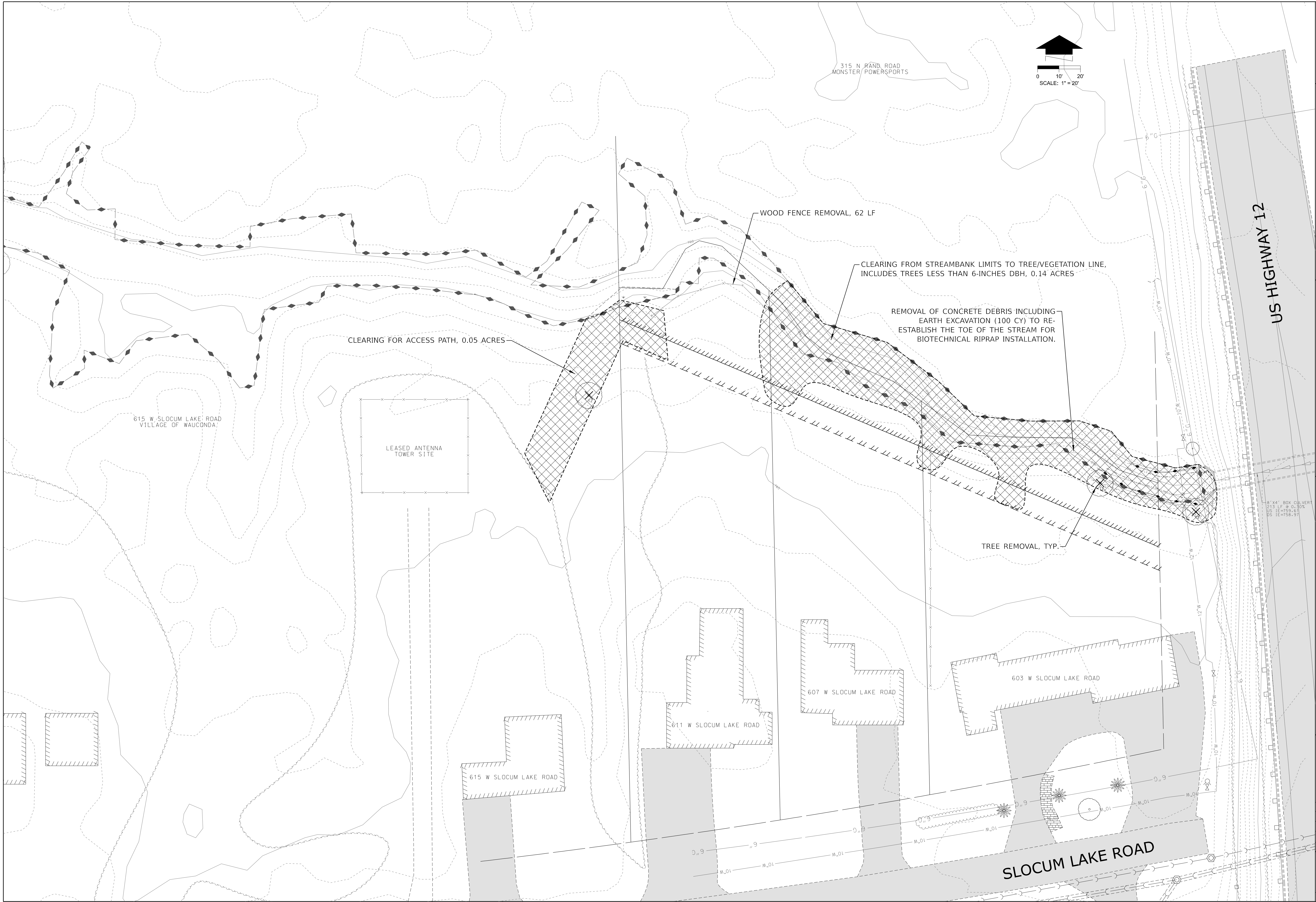
**EXISTING AND DEMOLITION PLAN  
SLOCUM LAKE ROAD TO US HWY 12**

**BANGS LAKE OUTFALL IMPROVEMENTS  
WAUCONDA, IL**

HMG ENGINEERS, INC.  
975 CAMPUS DRIVE  
MUNDELEIN, ILLINOIS 60060  
WWW.HMGENGINEERS.COM

(847) 362-5959

<b>HMG</b> ENGINEERS
SURVEY PK, DAA
DESIGN CSR, DAA
DRAWN CSR, DAA, JRM
CHECKED CSR, DAA
DATE SEPTEMBER 2024
<b>SHEET</b>
<b>9</b>
JOB NO. 8537



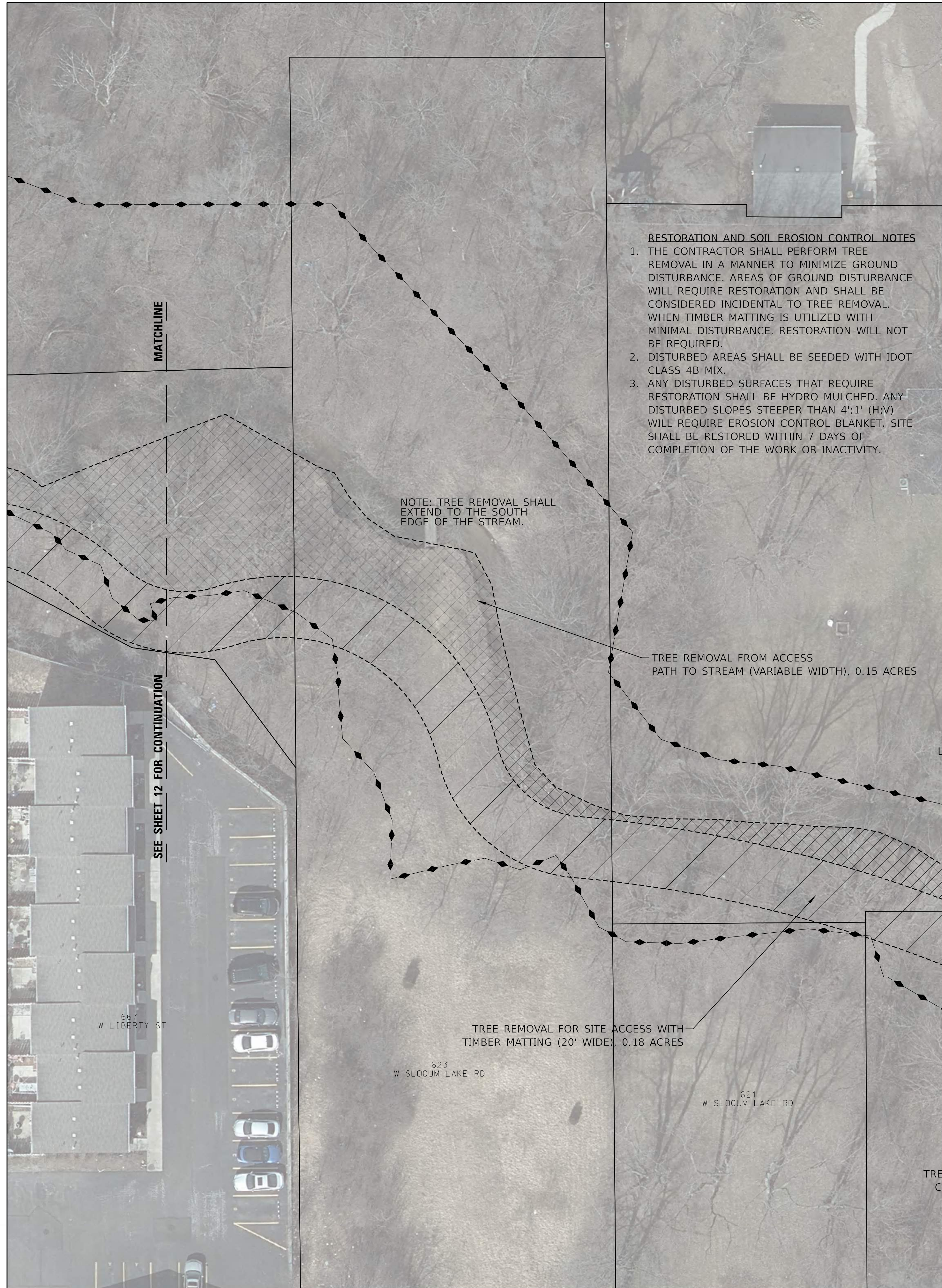
REVISIONS	DATE	BY

**EXISTING AND DEMOLITION PLAN**  
**US HWY 12 TO LARKDALE ROW**

**BANGS LAKE OUTFALL IMPROVEMENTS**  
**WAUCONDA, IL**

**HMG ENGINEERS, INC.**  
**975 CAMPUS DRIVE**  
**MUNDELEIN, ILLINOIS 60060**  
 WWW.HMGENGINEERS.COM  
 (847) 362-5959

<b>HMG</b> ENGINEERS	SURVEY	PK, DAA
	DESIGN	CSR, DAA
	DRAWN	CSR, DAA, JRM
	CHECKED	CSR, DAA
	DATE	SEPTEMBER 2024
	<b>SHEET</b>	<b>10</b>
JOB NO.	8537	



- RESTORATION AND SOIL EROSION CONTROL NOTES**
1. THE CONTRACTOR SHALL PERFORM TREE REMOVAL IN A MANNER TO MINIMIZE GROUND DISTURBANCE. AREAS OF GROUND DISTURBANCE WILL REQUIRE RESTORATION AND SHALL BE CONSIDERED INCIDENTAL TO TREE REMOVAL. WHEN TIMBER MATTING IS UTILIZED WITH MINIMAL DISTURBANCE, RESTORATION WILL NOT BE REQUIRED.
  2. DISTURBED AREAS SHALL BE SEEDED WITH IDOT CLASS 4B MIX.
  3. ANY DISTURBED SURFACES THAT REQUIRE RESTORATION SHALL BE HYDRO MULCHED. ANY DISTURBED SLOPES STEEPER THAN 4:1 (H:V) WILL REQUIRE EROSION CONTROL BLANKET. SITE SHALL BE RESTORED WITHIN 7 DAYS OF COMPLETION OF THE WORK OR INACTIVITY.

NOTE: TREE REMOVAL SHALL EXTEND TO THE SOUTH EDGE OF THE STREAM.

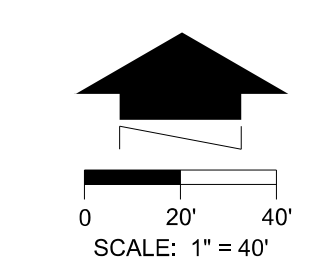
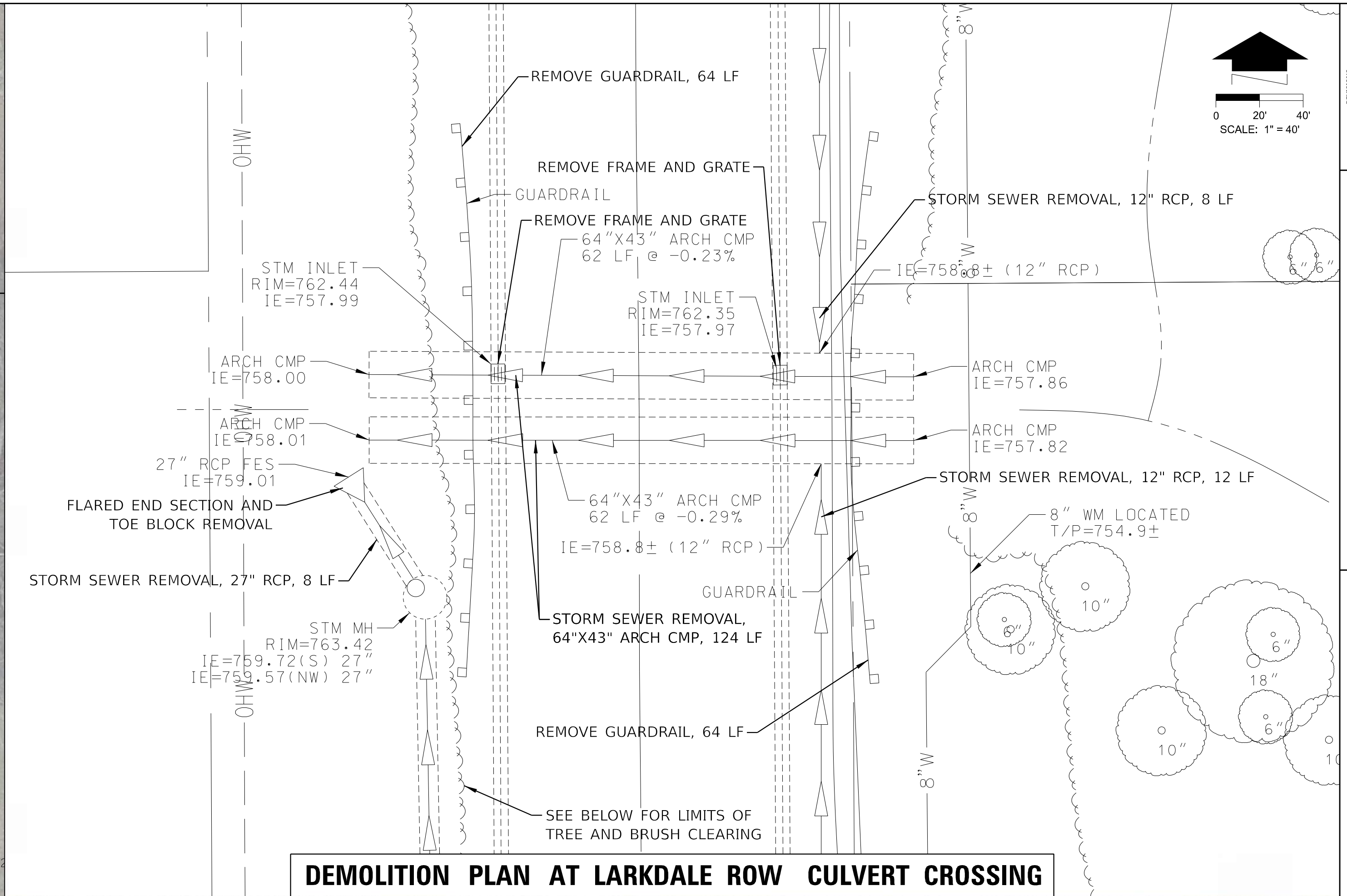
TREE REMOVAL FROM ACCESS PATH TO STREAM (VARIABLE WIDTH), 0.15 ACRES

TREE REMOVAL FOR SITE ACCESS WITH TIMBER MATTING (20' WIDE), 0.18 ACRES

TREE REMOVAL FOR SITE ACCESS AND CULVERT REPLACEMENT, 0.03 ACRES

225 LARKDALE ROW

**DEMOLITION PLAN AT LARKDALE ROW CULVERT CROSSING**



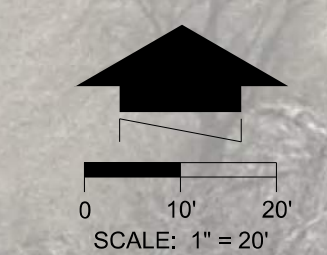
REVISIONS
DATE
BY
FILE

**EXISTING AND DEMOLITION PLAN  
LARKDALE ROW TO IL RTE 176 (EAST)**

**BANGS LAKE OUTFALL IMPROVEMENTS  
WAUCONDA, IL**

**HMG ENGINEERS, INC.**  
975 CAMPUS DRIVE  
MUNDELEIN, ILLINOIS 60060  
WWW.HMGENGINEERS.COM

PROJECT NO.	8537
DATE	SEPTEMBER 2024
CHECKED	CSR, DAA
DRAWN	CSR, DAA, JRM
DESIGN	CSR, DAA
SURVEY	PK, DAA
<b>SHEET</b>	<b>11</b>
<b>PHONE</b>	<b>(847) 362-5959</b>



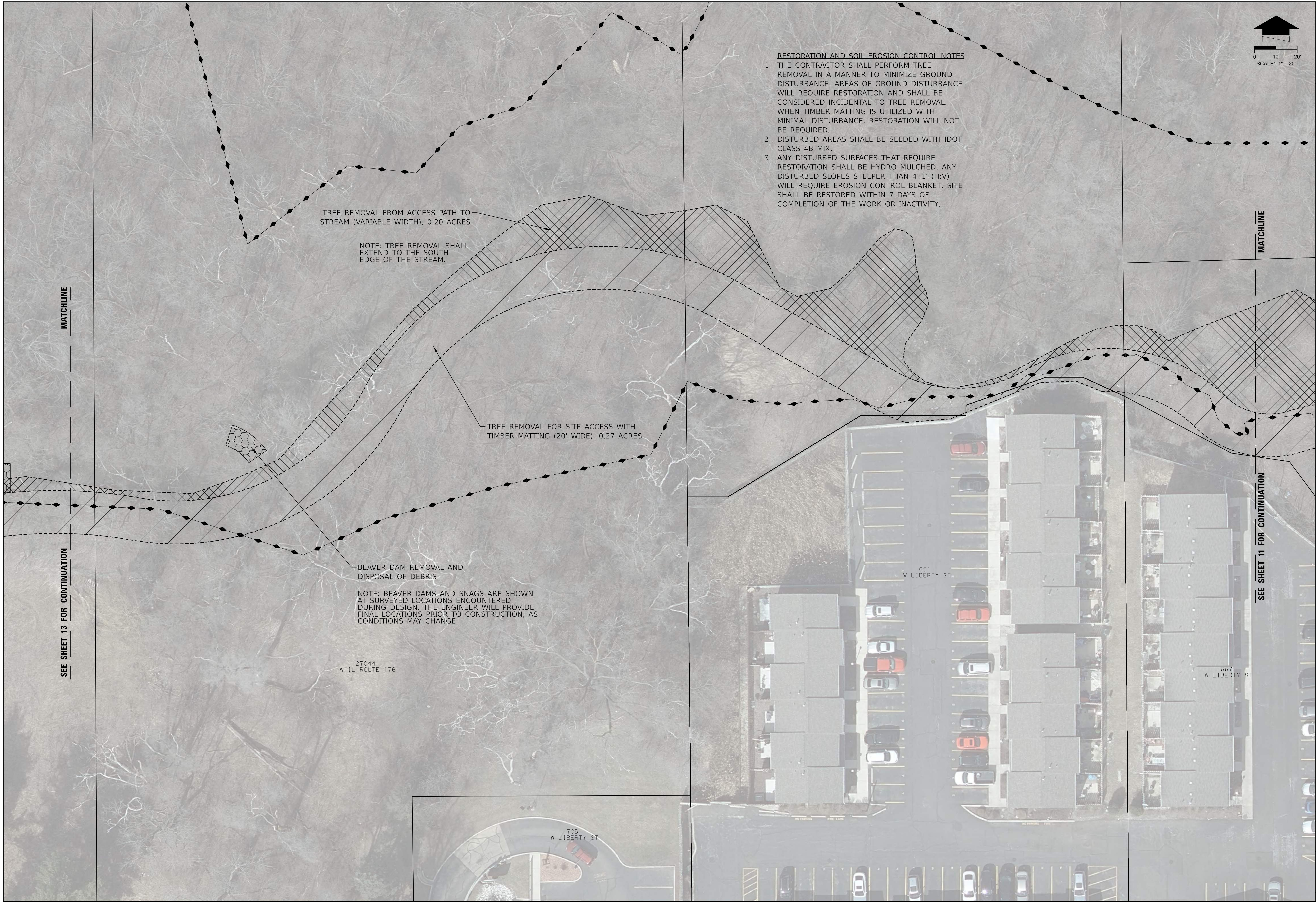
**LARKDALE ROW**

BM #10  
N:2037560.28  
E:1031981.70  
ELEV:763.04

BM #11  
N:2037733.87  
E:1031954.62  
ELEV:763.30

MATCHLINE

SEE SHEET 12 FOR CONTINUATION



**RESTORATION AND SOIL EROSION CONTROL NOTES**

1. THE CONTRACTOR SHALL PERFORM TREE REMOVAL IN A MANNER TO MINIMIZE GROUND DISTURBANCE. AREAS OF GROUND DISTURBANCE WILL REQUIRE RESTORATION AND SHALL BE CONSIDERED INCIDENTAL TO TREE REMOVAL. WHEN TIMBER MATTING IS UTILIZED WITH MINIMAL DISTURBANCE, RESTORATION WILL NOT BE REQUIRED.
2. DISTURBED AREAS SHALL BE SEEDED WITH IDOT CLASS 4B MIX.
3. ANY DISTURBED SURFACES THAT REQUIRE RESTORATION SHALL BE HYDRO MULCHED. ANY DISTURBED SLOPES STEEPER THAN 4':1' (H:V) WILL REQUIRE EROSION CONTROL BLANKET. SITE SHALL BE RESTORED WITHIN 7 DAYS OF COMPLETION OF THE WORK OR INACTIVITY.

TREE REMOVAL FROM ACCESS PATH TO STREAM (VARIABLE WIDTH), 0.20 ACRES

NOTE: TREE REMOVAL SHALL EXTEND TO THE SOUTH EDGE OF THE STREAM.

TREE REMOVAL FOR SITE ACCESS WITH TIMBER MATTING (20' WIDE), 0.27 ACRES

BEAVER DAM REMOVAL AND DISPOSAL OF DEBRIS

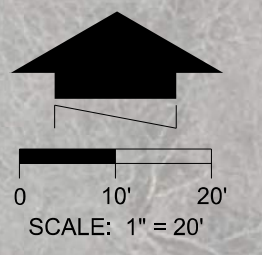
NOTE: BEAVER DAMS AND SNAGS ARE SHOWN AT SURVEYED LOCATIONS ENCOUNTERED DURING DESIGN. THE ENGINEER WILL PROVIDE FINAL LOCATIONS PRIOR TO CONSTRUCTION, AS CONDITIONS MAY CHANGE.

27044  
W IL ROUTE 176

705  
W LIBERTY ST

651  
W LIBERTY ST

667  
W LIBERTY ST



MATCHLINE

SEE SHEET 13 FOR CONTINUATION

MATCHLINE

SEE SHEET 11 FOR CONTINUATION

REVISIONS	DATE	BY

**EXISTING AND DEMOLITION PLAN**  
**LARKDALE ROW TO IL RTE 176 (CENTRAL)**

**BANGS LAKE OUTFALL IMPROVEMENTS**  
**WAUCONDA, IL**

**HMG ENGINEERS, INC.**  
**975 CAMPUS DRIVE**  
**MUNDELEIN, ILLINOIS 60060**  
[WWW.HMGENGINEERS.COM](http://WWW.HMGENGINEERS.COM)

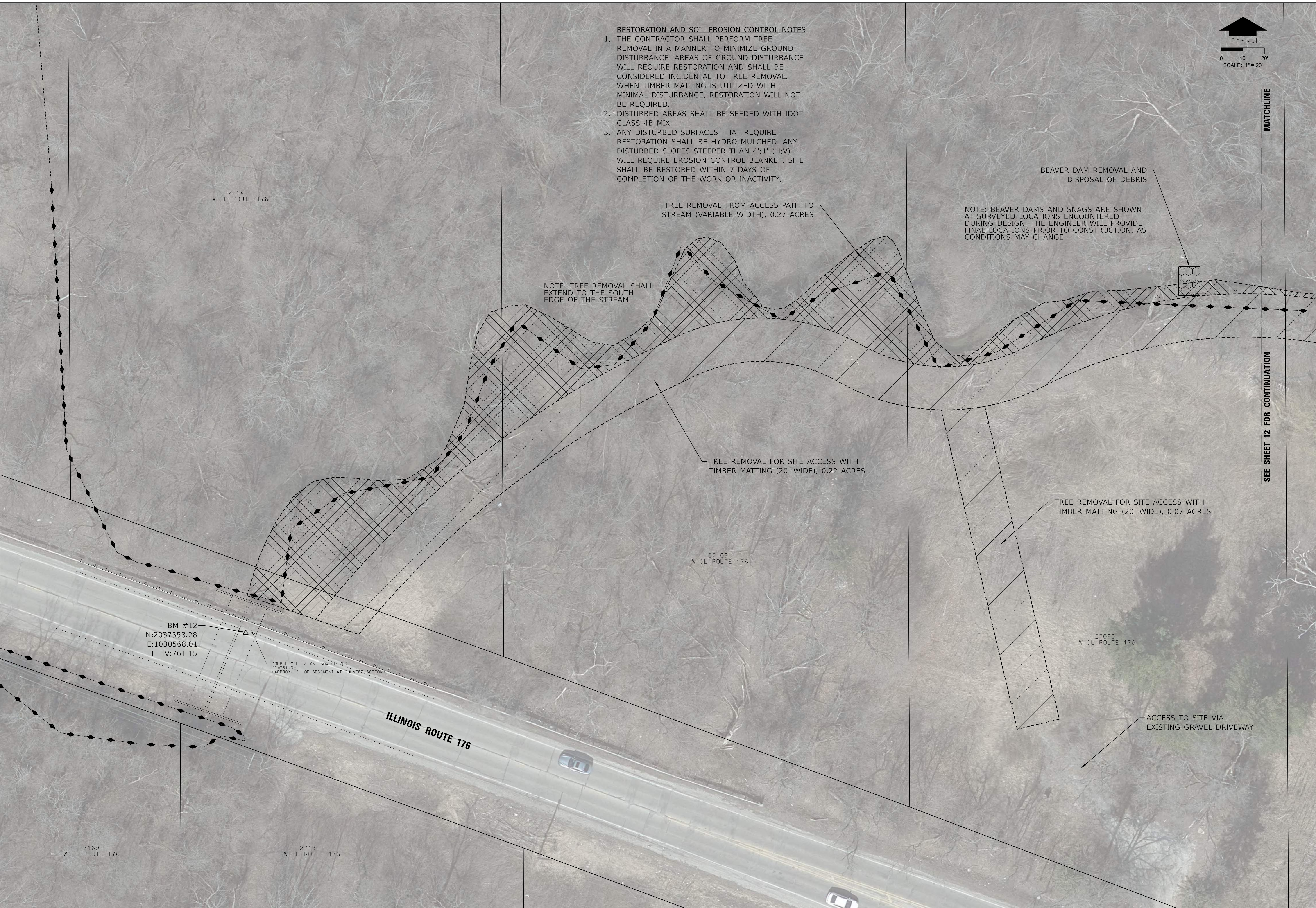
(847) 362-5959

**HMG**  
ENGINEERS

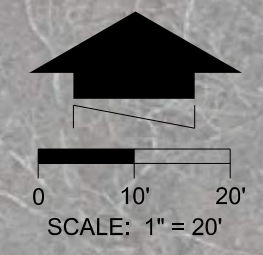
SURVEY	PK, DAA
DESIGN	CSR, DAA
DRAWN	CSR, DAA, JRM
CHECKED	CSR, DAA
DATE	SEPTEMBER 2024

**SHEET**  
**12**

JOB NO. 8537



- RESTORATION AND SOIL EROSION CONTROL NOTES**
1. THE CONTRACTOR SHALL PERFORM TREE REMOVAL IN A MANNER TO MINIMIZE GROUND DISTURBANCE. AREAS OF GROUND DISTURBANCE WILL REQUIRE RESTORATION AND SHALL BE CONSIDERED INCIDENTAL TO TREE REMOVAL. WHEN TIMBER MATTING IS UTILIZED WITH MINIMAL DISTURBANCE, RESTORATION WILL NOT BE REQUIRED.
  2. DISTURBED AREAS SHALL BE SEEDED WITH IDOT CLASS 4B MIX.
  3. ANY DISTURBED SURFACES THAT REQUIRE RESTORATION SHALL BE HYDRO MULCHED. ANY DISTURBED SLOPES STEEPER THAN 4:1' (H:V) WILL REQUIRE EROSION CONTROL BLANKET. SITE SHALL BE RESTORED WITHIN 7 DAYS OF COMPLETION OF THE WORK OR INACTIVITY.



NOTE: TREE REMOVAL SHALL EXTEND TO THE SOUTH EDGE OF THE STREAM.

NOTE: BEAVER DAMS AND SNAGS ARE SHOWN AT SURVEYED LOCATIONS ENCOUNTERED DURING DESIGN. THE ENGINEER WILL PROVIDE FINAL LOCATIONS PRIOR TO CONSTRUCTION, AS CONDITIONS MAY CHANGE.

BM #12  
N:2037558.28  
E:1030568.01  
ELEV:761.15

DOUBLE CELL 8' X 5' BOX CULVERT  
12:15:15  
(APPROX. 2' OF SEDIMENT AT CULVERT BOTTOM)

ILLINOIS ROUTE 176

MATCHLINE

SEE SHEET 12 FOR CONTINUATION

REVISIONS	DATE	BY

**EXISTING AND DEMOLITION PLAN**  
**LARKDALE ROW TO IL RTE 176 (WEST)**

**BANGS LAKE OUTFALL IMPROVEMENTS**  
**WAUCONDA, IL**

**HMG ENGINEERS, INC.**  
**975 CAMPUS DRIVE**  
**MUNDELEIN, ILLINOIS 60060**  
[WWW.HMGENGINEERS.COM](http://WWW.HMGENGINEERS.COM)

(847) 362-5959

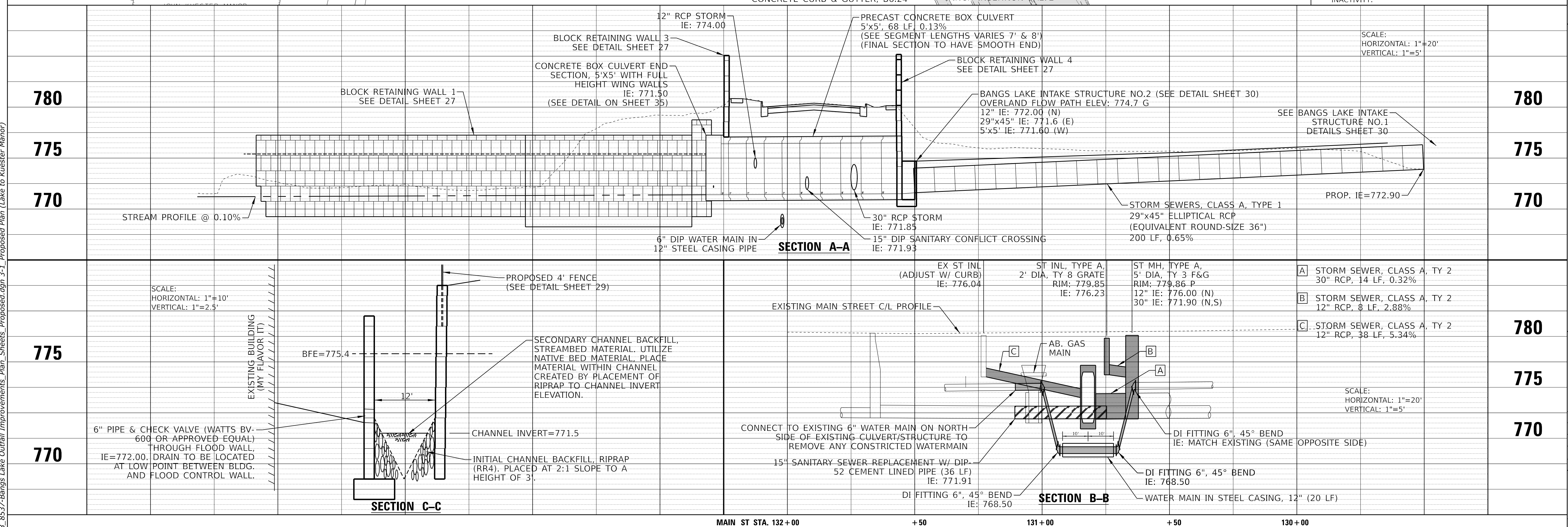
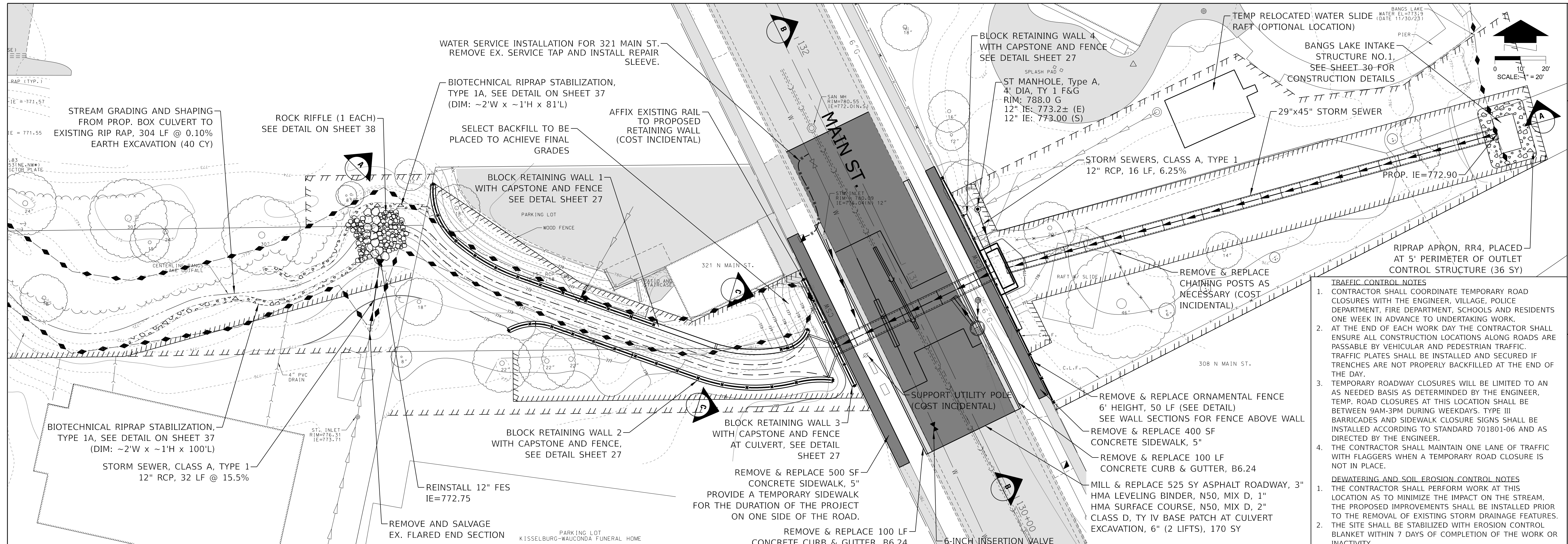
**HMG**  
ENGINEERS

SURVEY	PK, DAA
DESIGN	CSR, DAA
DRAWN	CSR, DAA, JRM
CHECKED	CSR, DAA
DATE	SEPTEMBER 2024

**SHEET**  
**13**

JOB NO. 8537

3\_8537-Bangs Lake Outfall Improvements\_Plan\_Sheets\_Proposed.dgn 3-1\_Proposed Plan (Lake to Kuester Manor)



- TRAFFIC CONTROL NOTES**
- CONTRACTOR SHALL COORDINATE TEMPORARY ROAD CLOSURES WITH THE ENGINEER, VILLAGE, POLICE DEPARTMENT, FIRE DEPARTMENT, SCHOOLS AND RESIDENTS ONE WEEK IN ADVANCE TO UNDERTAKING WORK.
  - AT THE END OF EACH WORK DAY THE CONTRACTOR SHALL ENSURE ALL CONSTRUCTION LOCATIONS ALONG ROADS ARE PASSABLE BY VEHICULAR AND PEDESTRIAN TRAFFIC. TRAFFIC PLATES SHALL BE INSTALLED AND SECURED IF TRENCHES ARE NOT PROPERLY BACKFILLED AT THE END OF THE DAY.
  - TEMPORARY ROADWAY CLOSURES WILL BE LIMITED TO AN AS NEEDED BASIS AS DETERMINED BY THE ENGINEER. TEMP. ROAD CLOSURES AT THIS LOCATION SHALL BE BETWEEN 9AM-3PM DURING WEEKDAYS. TYPE III BARRICADES AND SIDEWALK CLOSURE SIGNS SHALL BE INSTALLED ACCORDING TO STANDARD 701801-06 AND AS DIRECTED BY THE ENGINEER.
  - THE CONTRACTOR SHALL MAINTAIN ONE LANE OF TRAFFIC WITH FLAGGERS WHEN A TEMPORARY ROAD CLOSURE IS NOT IN PLACE.
- DEWATERING AND SOIL EROSION CONTROL NOTES**
- THE CONTRACTOR SHALL PERFORM WORK AT THIS LOCATION AS TO MINIMIZE THE IMPACT ON THE STREAM. THE PROPOSED IMPROVEMENTS SHALL BE INSTALLED PRIOR TO THE REMOVAL OF EXISTING STORM DRAINAGE FEATURES.
  - THE SITE SHALL BE STABILIZED WITH EROSION CONTROL BLANKET WITHIN 7 DAYS OF COMPLETION OF THE WORK OR INACTIVITY.

REVISIONS	DATE	BY

**PROPOSED PLAN**  
**BANGS LAKE TO KUESTER MANOR**

**BANGS LAKE OUTFALL IMPROVEMENTS**  
**WAUCONDA, IL**

**HMG ENGINEERS, INC.**  
975 CAMPUS DRIVE  
MUNDELEIN, ILLINOIS 60060  
WWW.HMGENGINEERS.COM

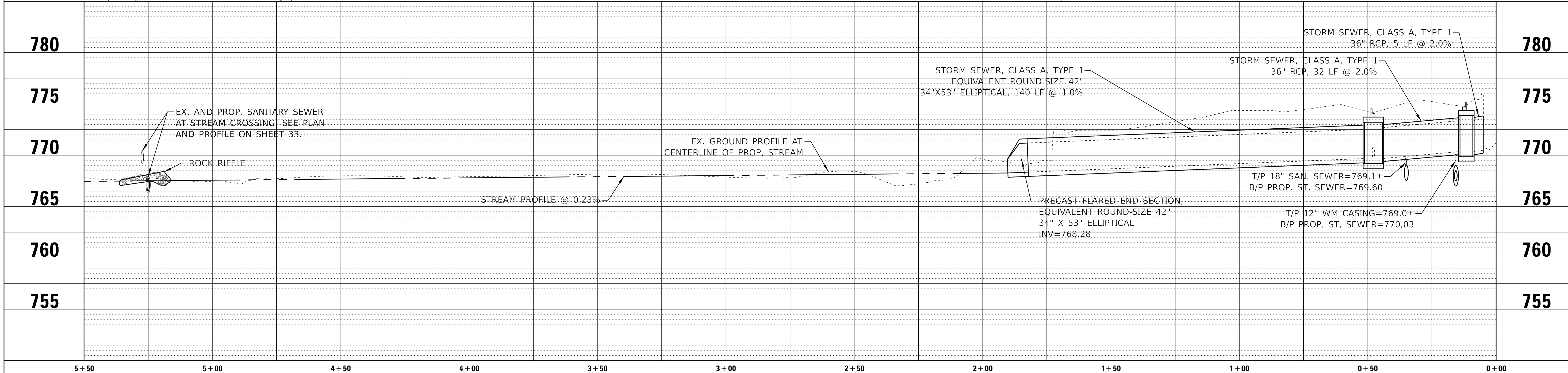
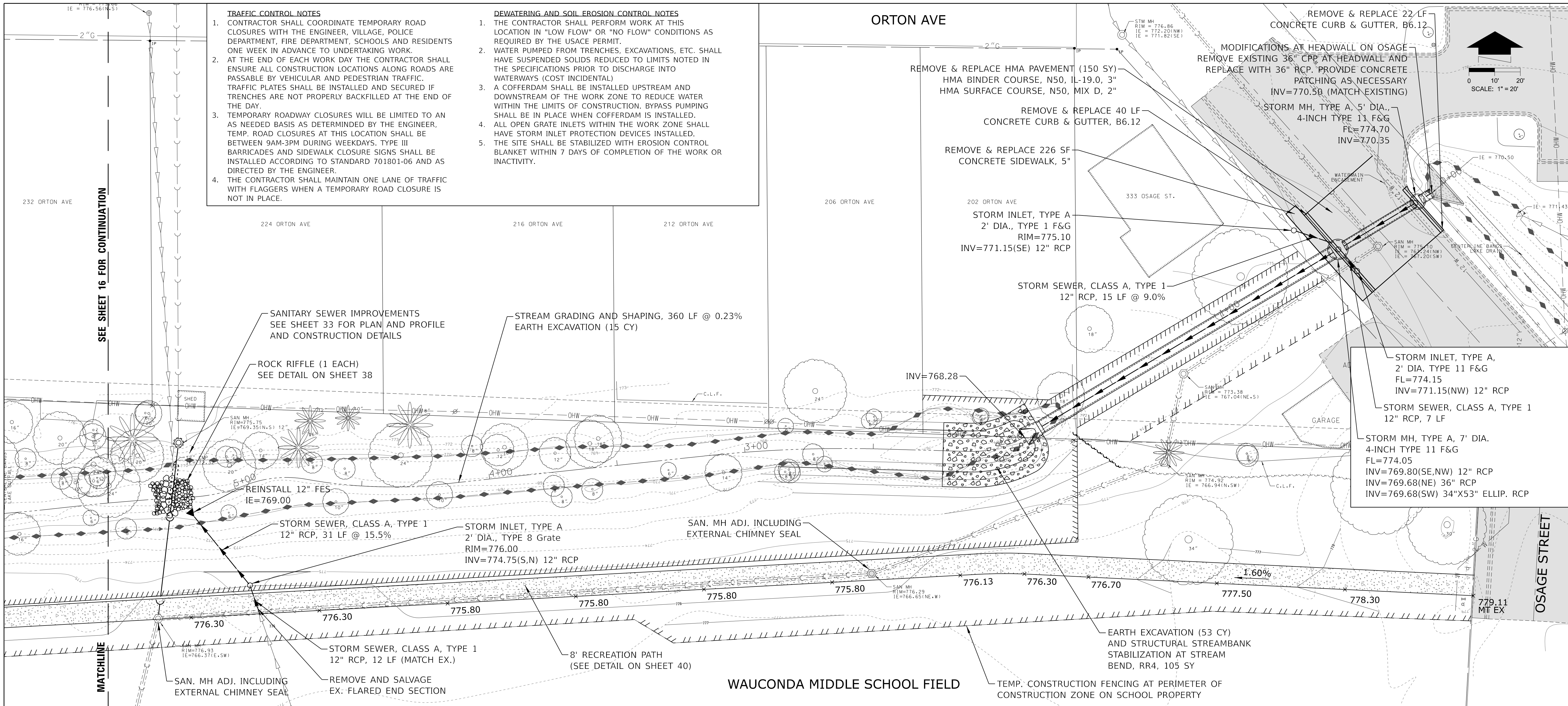
(847) 362-5959

**HMG ENGINEERS**

SURVEY	PK, DAA
DESIGN	CSB, DAA
DRAWN	CSB, DAA, JRM
CHECKED	CSB, DAA
DATE	SEPTEMBER 2024

**SHEET**  
**14**

JOB NO. 8537



**PROPOSED PLAN OSAGE STREET TO WAUCONDA M.S.**

**BANGS LAKE OUTFALL IMPROVEMENTS WAUCONDA, IL**

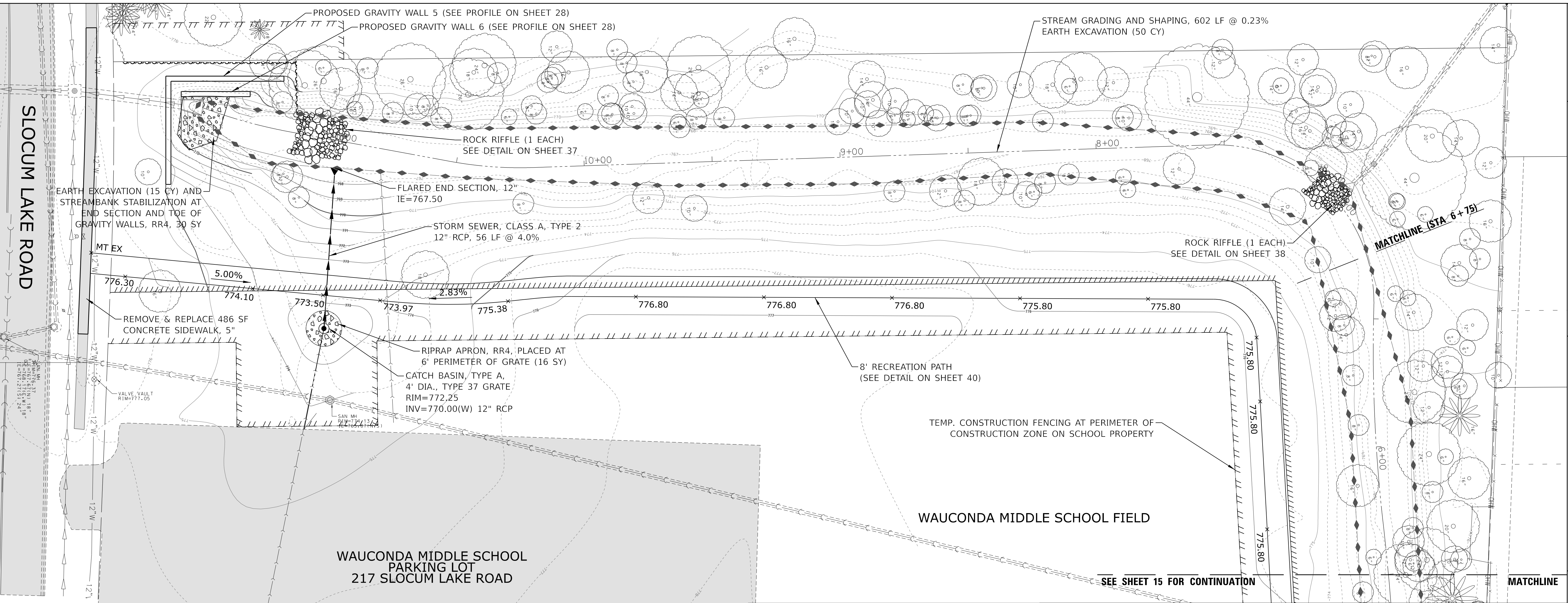
**HMG ENGINEERS, INC.**  
 975 CAMPUS DRIVE  
 MUNDELEIN, ILLINOIS 60060  
 WWW.HMGENGINEERS.COM  
 (847) 362-5959

**HMG ENGINEERS**

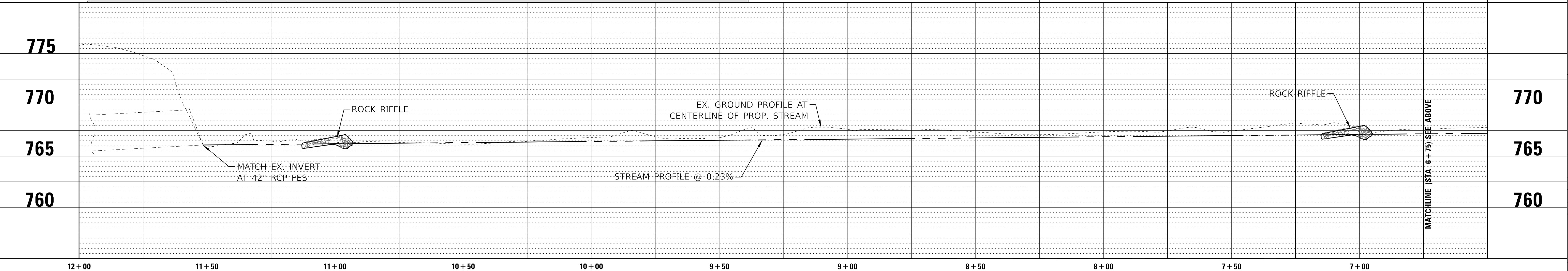
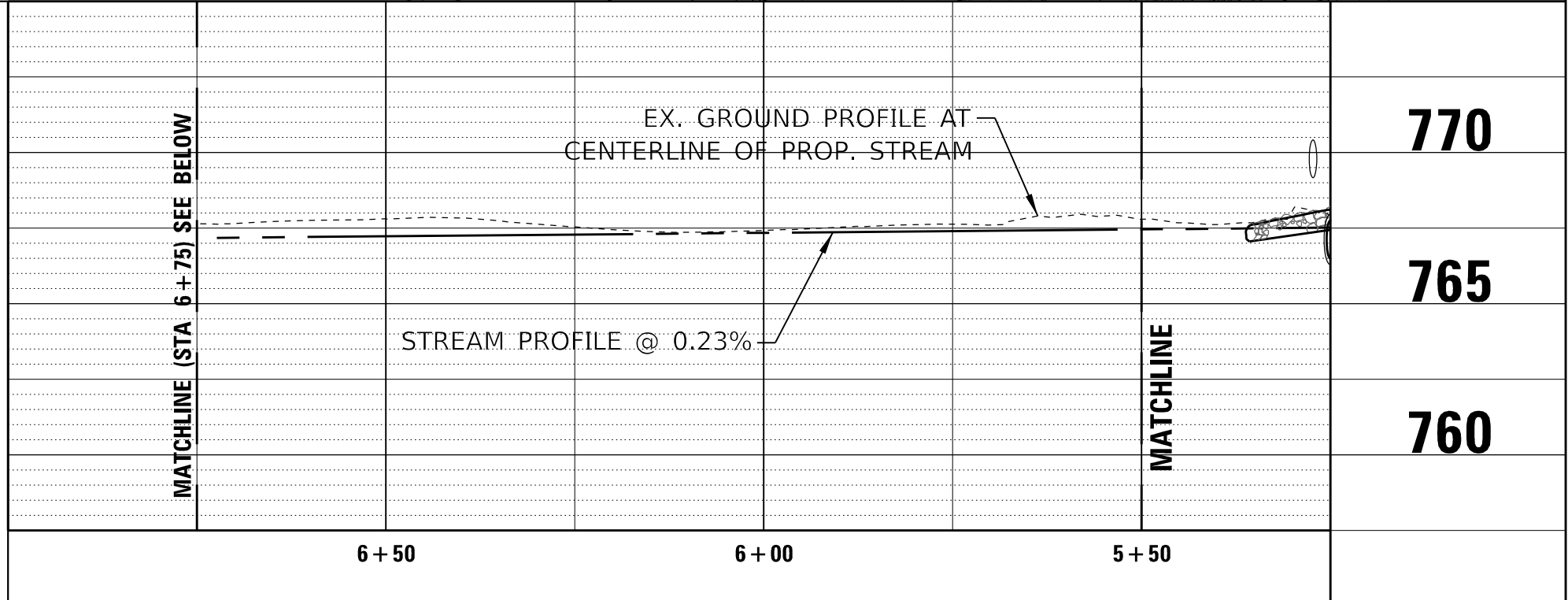
SURVEY	PK, DAA
DESIGN	CSR, DAA
DRAWN	CSR, DAA, JRM
CHECKED	CSR, DAA
DATE	SEPTEMBER 2024

**SHEET 15**

3\_8537-Bangs Lake Outfall Improvements\_Plan\_Sheets\_Proposed.dgn 3-3\_Proposed Plan (School District West)



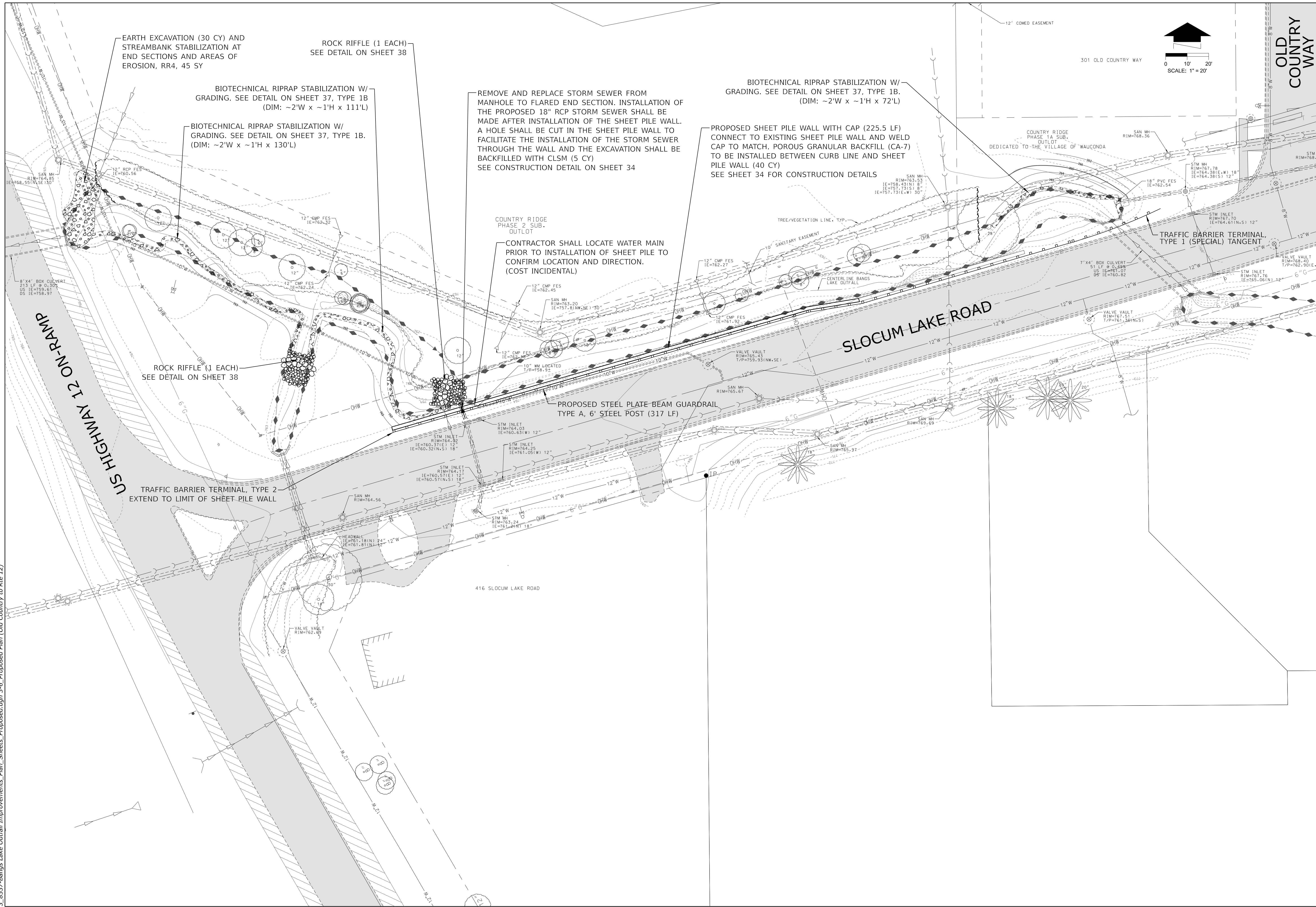
- DEWATERING AND SOIL EROSION CONTROL NOTES**
1. THE CONTRACTOR SHALL PERFORM WORK AT THIS LOCATION IN "LOW FLOW" OR "NO FLOW" CONDITIONS AS REQUIRED BY THE USACE PERMIT.
  2. WATER PUMPED FROM TRENCHES, EXCAVATIONS, ETC. SHALL HAVE SUSPENDED SOLIDS REDUCED TO LIMITS NOTED IN THE SPECIFICATIONS PRIOR TO DISCHARGE INTO WATERWAYS (COST INCIDENTAL)
  3. A COFFERDAM SHALL BE INSTALLED UPSTREAM AND DOWNSTREAM OF THE WORK ZONE TO REDUCE WATER WITHIN THE LIMITS OF CONSTRUCTION. BYPASS PUMPING SHALL BE IN PLACE WHEN COFFERDAM IS INSTALLED.
  4. ALL OPEN GRATE INLETS WITHIN THE WORK ZONE SHALL HAVE STORM INLET PROTECTION DEVICES INSTALLED.
  5. THE SITE SHALL BE STABILIZED WITH EROSION CONTROL BLANKET WITHIN 7 DAYS OF COMPLETION OF THE WORK OR INACTIVITY.



REVISIONS		PROPOSED PLAN		WAUCONDA M.S. TO SLOCUM LAKE RD
		BANGS LAKE OUTFALL IMPROVEMENTS		WAUCONDA, IL
		HMG ENGINEERS, INC.		WWW.HMGENGINEERS.COM
		975 CAMPUS DRIVE		MUNDELEIN, ILLINOIS 60060
		SURVEY		PK, DAA
		DESIGN		CSR, DAA
		DRAWN		CSR, DAA, JRM
		CHECKED		CSR, DAA
		DATE		SEPTEMBER 2024
		<b>SHEET</b>		
		16		
				(847) 362-5959
				JOB NO. 8537



3\_8537-Bangs Lake Outfall Improvements\_Plan\_Sheets\_Proposed.dgn 3-6\_Proposed Plan (Old Country to Rte 12)



EARTH EXCAVATION (30 CY) AND STREAMBANK STABILIZATION AT END SECTIONS AND AREAS OF EROSION, RR4, 45 SY

ROCK RIFFLE (1 EACH) SEE DETAIL ON SHEET 38

BIOTECHNICAL RIPRAP STABILIZATION W/ GRADING. SEE DETAIL ON SHEET 37, TYPE 1B (DIM: ~2'W x ~1'H x 111'L)

BIOTECHNICAL RIPRAP STABILIZATION W/ GRADING. SEE DETAIL ON SHEET 37, TYPE 1B. (DIM: ~2'W x ~1'H x 130'L)

REMOVE AND REPLACE STORM SEWER FROM MANHOLE TO FLARED END SECTION. INSTALLATION OF THE PROPOSED 18" RCP STORM SEWER SHALL BE MADE AFTER INSTALLATION OF THE SHEET PILE WALL. A HOLE SHALL BE CUT IN THE SHEET PILE WALL TO FACILITATE THE INSTALLATION OF THE STORM SEWER THROUGH THE WALL AND THE EXCAVATION SHALL BE BACKFILLED WITH CLSM (5 CY) SEE CONSTRUCTION DETAIL ON SHEET 34

BIOTECHNICAL RIPRAP STABILIZATION W/ GRADING. SEE DETAIL ON SHEET 37, TYPE 1B. (DIM: ~2'W x ~1'H x 72'L)

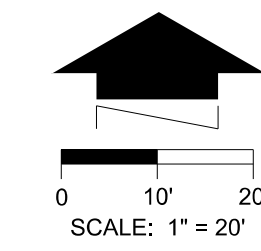
PROPOSED SHEET PILE WALL WITH CAP (225.5 LF) CONNECT TO EXISTING SHEET PILE WALL AND WELD CAP TO MATCH. POROUS GRANULAR BACKFILL (CA-7) TO BE INSTALLED BETWEEN CURB LINE AND SHEET PILE WALL (40 CY) SEE SHEET 34 FOR CONSTRUCTION DETAILS

COUNTRY RIDGE PHASE 2 SUB. OUTLOT  
CONTRACTOR SHALL LOCATE WATER MAIN PRIOR TO INSTALLATION OF SHEET PILE TO CONFIRM LOCATION AND DIRECTION. (COST INCIDENTAL)

ROCK RIFFLE (1 EACH) SEE DETAIL ON SHEET 38

PROPOSED STEEL PLATE-BEAM GUARDRAIL TYPE A, 6' STEEL POST (317 LF)

TRAFFIC BARRIER TERMINAL, TYPE 2 EXTEND TO LIMIT OF SHEET PILE WALL



REVISIONS
DATE
BY
CHK
APP

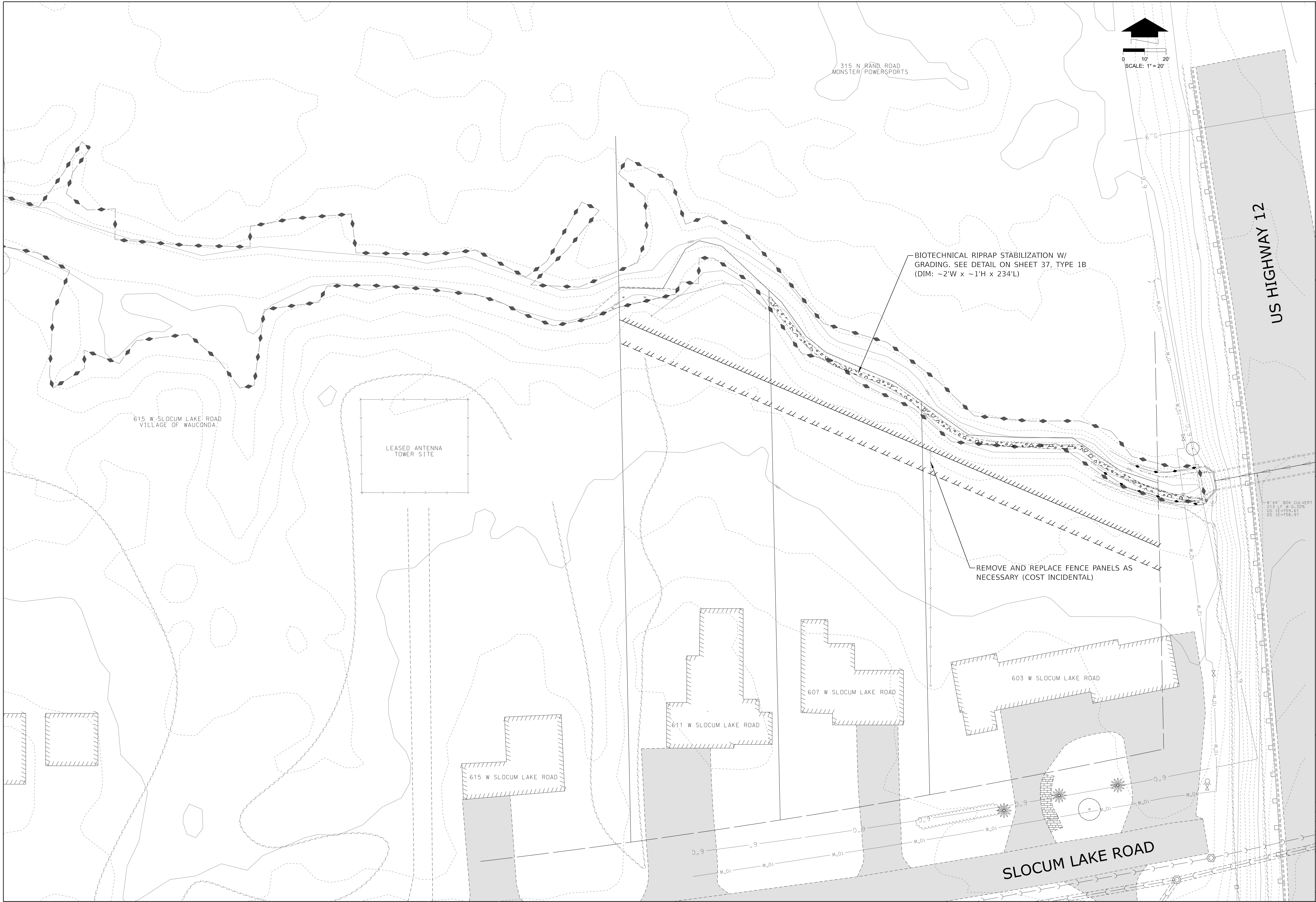
PROPOSED PLAN  
SLOCUM LAKE ROAD TO US HWY 12

BANGS LAKE OUTFALL IMPROVEMENTS  
WAUCONDA, IL

HMG ENGINEERS, INC.  
975 CAMPUS DRIVE  
MUNDELEIN, ILLINOIS 60060  
WWW.HMGENGINEERS.COM

(847) 362-5959

<b>HMG</b> ENGINEERS	
SURVEY	PK, DAA
DESIGN	CSR, DAA
DRAWN	CSR, DAA, JRM
CHECKED	CSR, DAA
DATE	SEPTEMBER 2024
<b>SHEET</b>	
17	
JOB NO.	8537



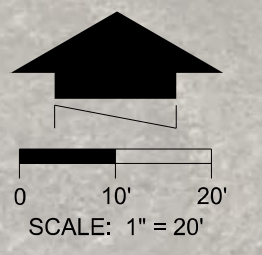
REVISIONS	DATE	BY

**PROPOSED PLAN**  
**US HWY 12 TO LARKDALE ROW**

**BANGS LAKE OUTFALL IMPROVEMENTS**  
**WAUCONDA, IL**

**HMG ENGINEERS, INC.**  
**975 CAMPUS DRIVE**  
**MUNDELEIN, ILLINOIS 60060**  
 WWW.HMGENGINEERS.COM  
 (847) 362-5959

<b>HMG</b> ENGINEERS	SURVEY	PK, DAA
	DESIGN	CSR, DAA
	DRAWN	CSR, DAA, JRM
	CHECKED	CSR, DAA
	DATE	SEPTEMBER 2024
	<b>SHEET</b>	<b>18</b>
JOB NO.		8537



REVISIONS	DATE	BY

**PROPOSED PLAN**  
**LARKDALE ROW TO IL RTE 176 (EAST)**

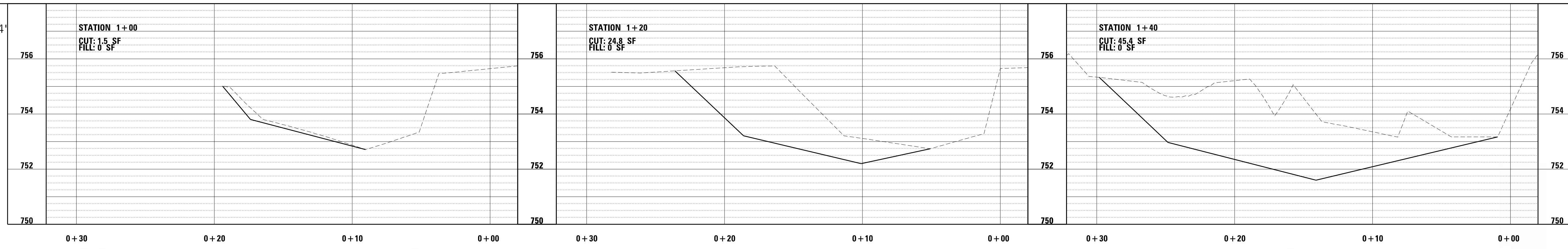
**BANGS LAKE OUTFALL IMPROVEMENTS**  
**WAUCONDA, IL**

**HMG ENGINEERS, INC.**  
**975 CAMPUS DRIVE**  
**MUNDELEIN, ILLINOIS 60060**  
[WWW.HMGENGINEERS.COM](http://WWW.HMGENGINEERS.COM)

(847) 362-5959

<b>HMG</b> ENGINEERS
SURVEY PK, DAA
DESIGN CSR, DAA
DRAWN CSR, DAA, JRM
CHECKED CSR, DAA
DATE SEPTEMBER 2024
<b>SHEET</b>
<b>19</b>
JOB NO. 8537

SCALE  
HORIZONTAL: 1"=4'  
VERTICAL: 1"=2'



REVISIONS	DATE	BY

**PROPOSED PLAN**  
**LARKDALE ROW TO IL RTE 176 (WEST)**

**BANGS LAKE OUTFALL IMPROVEMENTS**  
**WAUCONDA, IL**

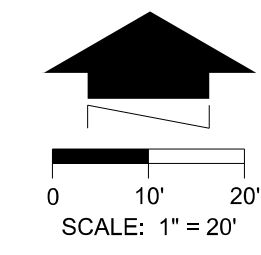
**HMG ENGINEERS, INC.**  
**975 CAMPUS DRIVE**  
**MUNDELEIN, ILLINOIS 60060**  
[WWW.HMGENGINEERS.COM](http://WWW.HMGENGINEERS.COM)

(847) 362-5959

<b>HMG</b> ENGINEERS
SURVEY: PK, DAA
DESIGN: CSR, DAA
DRAWN: CSR, DAA, JRM
CHECKED: CSR, DAA
DATE: SEPTEMBER 2024

**SHEET**  
**20**

JOB NO. 8537



REVISIONS	
NO.	DATE

**RESTORATION AND SESC PLAN  
BANGS LAKE TO KUESTER MANOR**

**BANGS LAKE OUTFALL IMPROVEMENTS  
WAUCONDA, IL**

**HMG ENGINEERS, INC.**  
975 CAMPUS DRIVE  
MUNDELEIN, ILLINOIS 60060  
WWW.HMGENGINEERS.COM

(847) 362-5959

<b>HMG</b>	ENGINEERS
SURVEY	PK, DAA
DESIGN	CSR, DAA
DRAWN	CSR, DAA, JRM
CHECKED	CSR, DAA
DATE	SEPTEMBER 2024

**SHEET  
21**

JOB NO. 8537

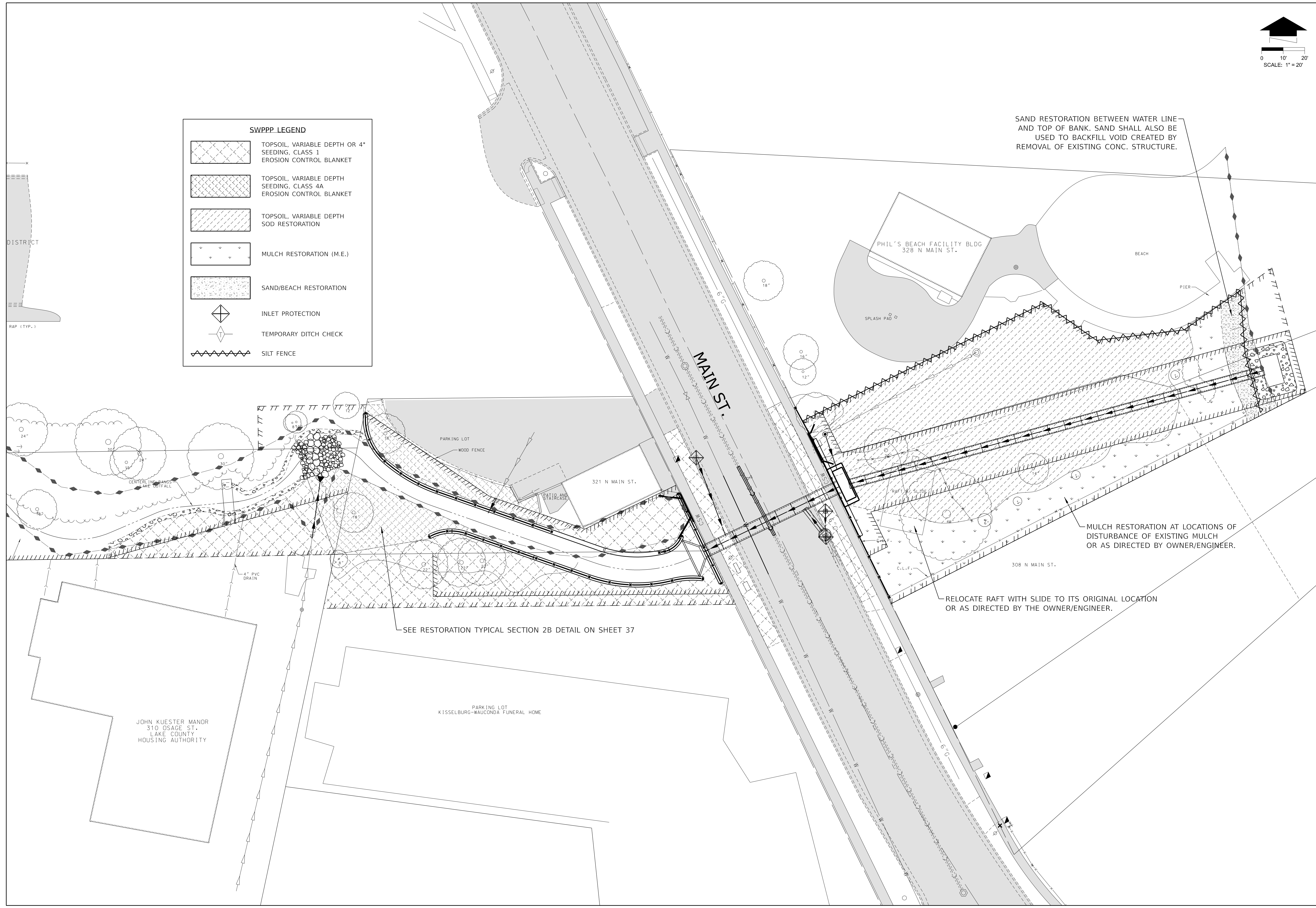
SWPPP LEGEND	
	TOPSOIL, VARIABLE DEPTH OR 4" SEEDING, CLASS 1 EROSION CONTROL BLANKET
	TOPSOIL, VARIABLE DEPTH SEEDING, CLASS 4A EROSION CONTROL BLANKET
	TOPSOIL, VARIABLE DEPTH SOD RESTORATION
	MULCH RESTORATION (M.E.)
	SAND/BEACH RESTORATION
	INLET PROTECTION
	TEMPORARY DITCH CHECK
	SILT FENCE

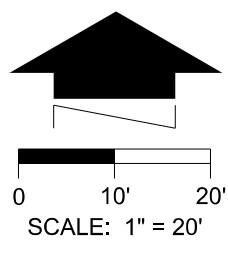
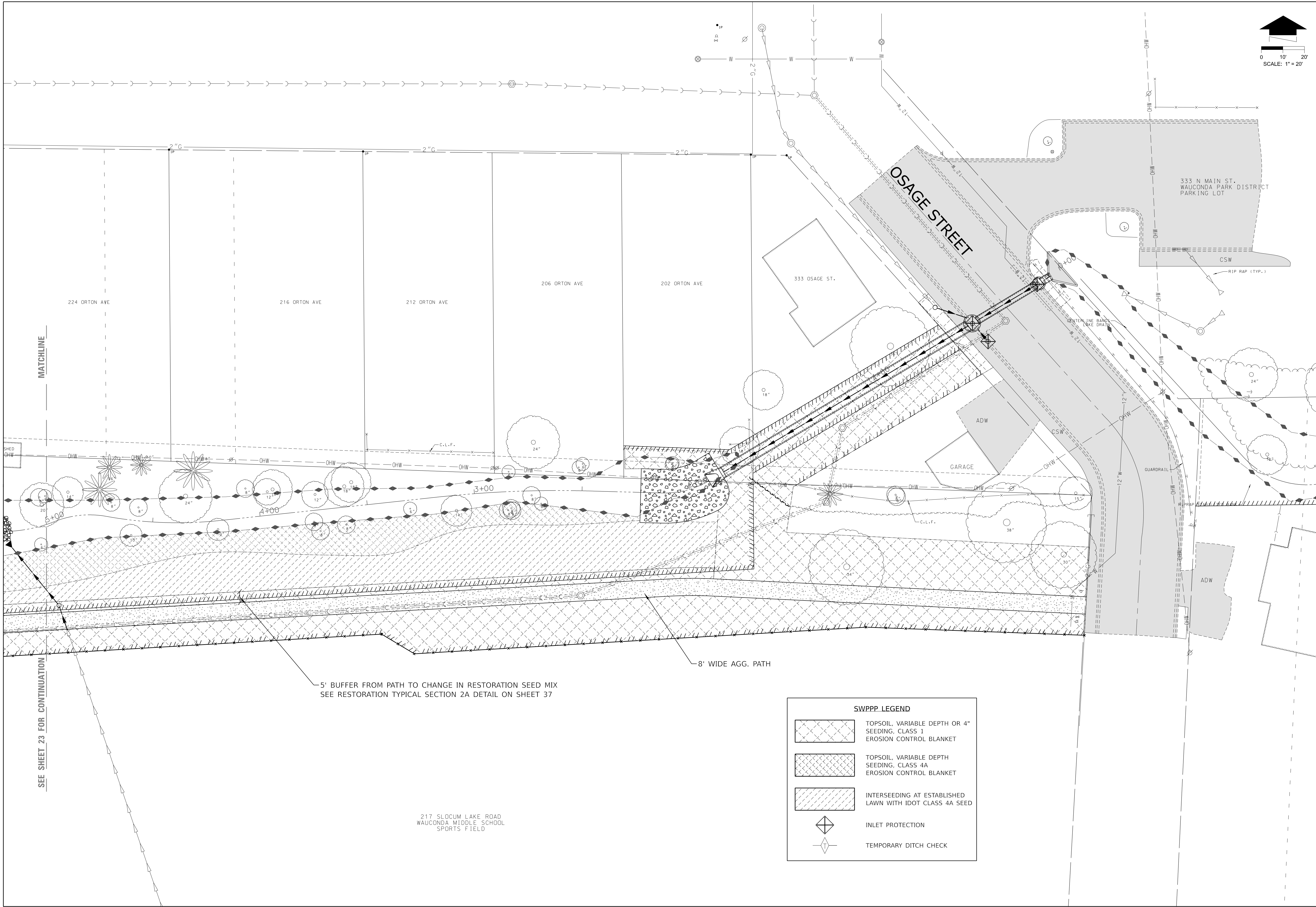
SAND RESTORATION BETWEEN WATER LINE AND TOP OF BANK. SAND SHALL ALSO BE USED TO BACKFILL VOID CREATED BY REMOVAL OF EXISTING CONC. STRUCTURE.

MULCH RESTORATION AT LOCATIONS OF DISTURBANCE OF EXISTING MULCH OR AS DIRECTED BY OWNER/ENGINEER.

RELOCATE RAFT WITH SLIDE TO ITS ORIGINAL LOCATION OR AS DIRECTED BY THE OWNER/ENGINEER.

SEE RESTORATION TYPICAL SECTION 2B DETAIL ON SHEET 37





REVISIONS	DATE	BY

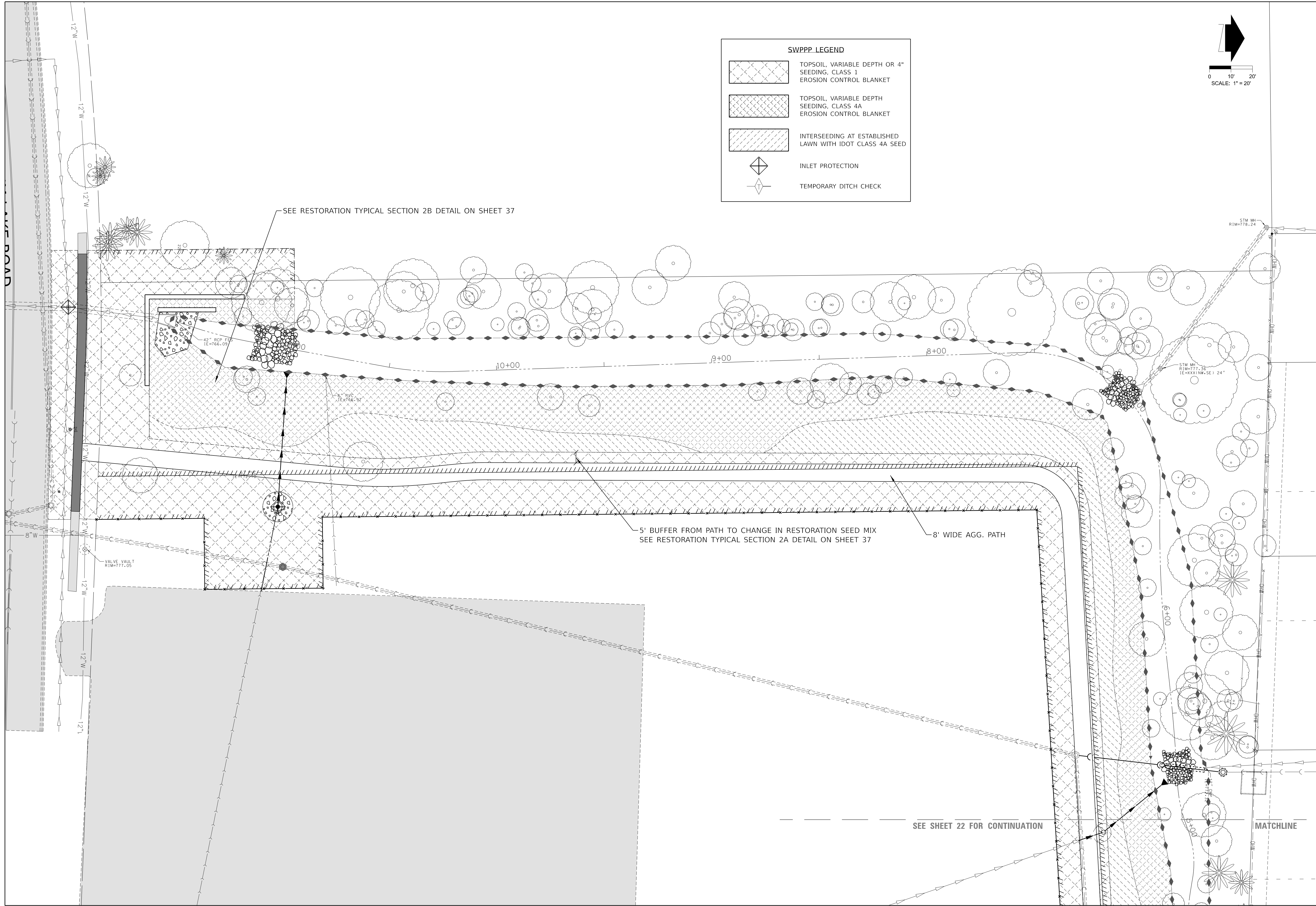
**RESTORATION AND SESC PLAN  
OSAGE STREET TO WAUCONDA M.S.**

**BANGS LAKE OUTFALL IMPROVEMENTS  
WAUCONDA, IL**

**HMG ENGINEERS, INC.**  
975 CAMPUS DRIVE  
MUNDELEIN, ILLINOIS 60060  
WWW.HMGENGINEERS.COM

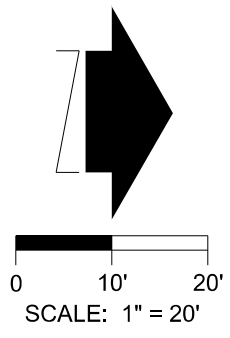
(847) 362-5959

<b>HMG</b> ENGINEERS
SURVEY PK, DAA
DESIGN CSR, DAA
DRAWN CSR, DAA, JRM
CHECKED CSR, DAA
DATE SEPTEMBER 2024
<b>SHEET</b>
<b>22</b>
JOB NO. 8537



**SWPPP LEGEND**

	TOPSOIL, VARIABLE DEPTH OR 4" SEEDING, CLASS 1 EROSION CONTROL BLANKET
	TOPSOIL, VARIABLE DEPTH SEEDING, CLASS 4A EROSION CONTROL BLANKET
	INTERSEEDING AT ESTABLISHED LAWN WITH IDOT CLASS 4A SEED
	INLET PROTECTION
	TEMPORARY DITCH CHECK



SEE RESTORATION TYPICAL SECTION 2B DETAIL ON SHEET 37

5' BUFFER FROM PATH TO CHANGE IN RESTORATION SEED MIX  
SEE RESTORATION TYPICAL SECTION 2A DETAIL ON SHEET 37

8' WIDE AGG. PATH

SEE SHEET 22 FOR CONTINUATION

MATCHLINE

REVISIONS	DATE	BY

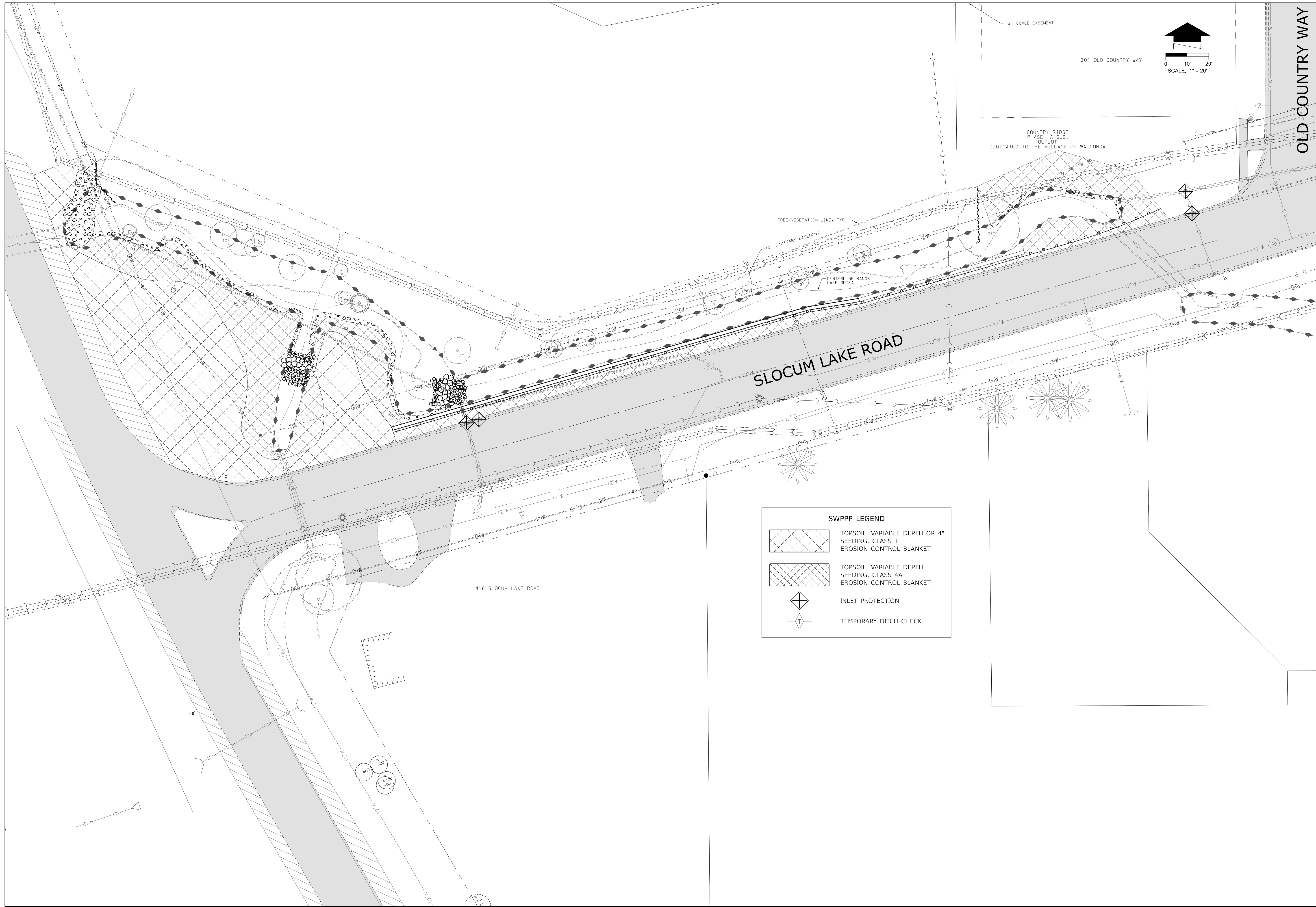
**RESTORATION AND SESC PLAN  
WAUCONDA M.S. TO SLOCUM LAKE ROAD**

**BANGS LAKE OUTFALL IMPROVEMENTS  
WAUCONDA, IL**

**HMG ENGINEERS, INC.**  
975 CAMPUS DRIVE  
MUNDELEIN, ILLINOIS 60060  
WWW.HMGENGINEERS.COM

(847) 362-5959

<b>HMG</b> ENGINEERS
SURVEY PK, DAA
DESIGN CSR, DAA
DRAWN CSR, DAA, JRM
CHECKED CSR, DAA
DATE SEPTEMBER 2024
<b>SHEET</b>
<b>23</b>
JOB NO. 8537



REVISIONS	DATE	BY

**RESTORATION AND SESC PLAN  
SLOCUM LAKE ROAD TO US HWY 12**

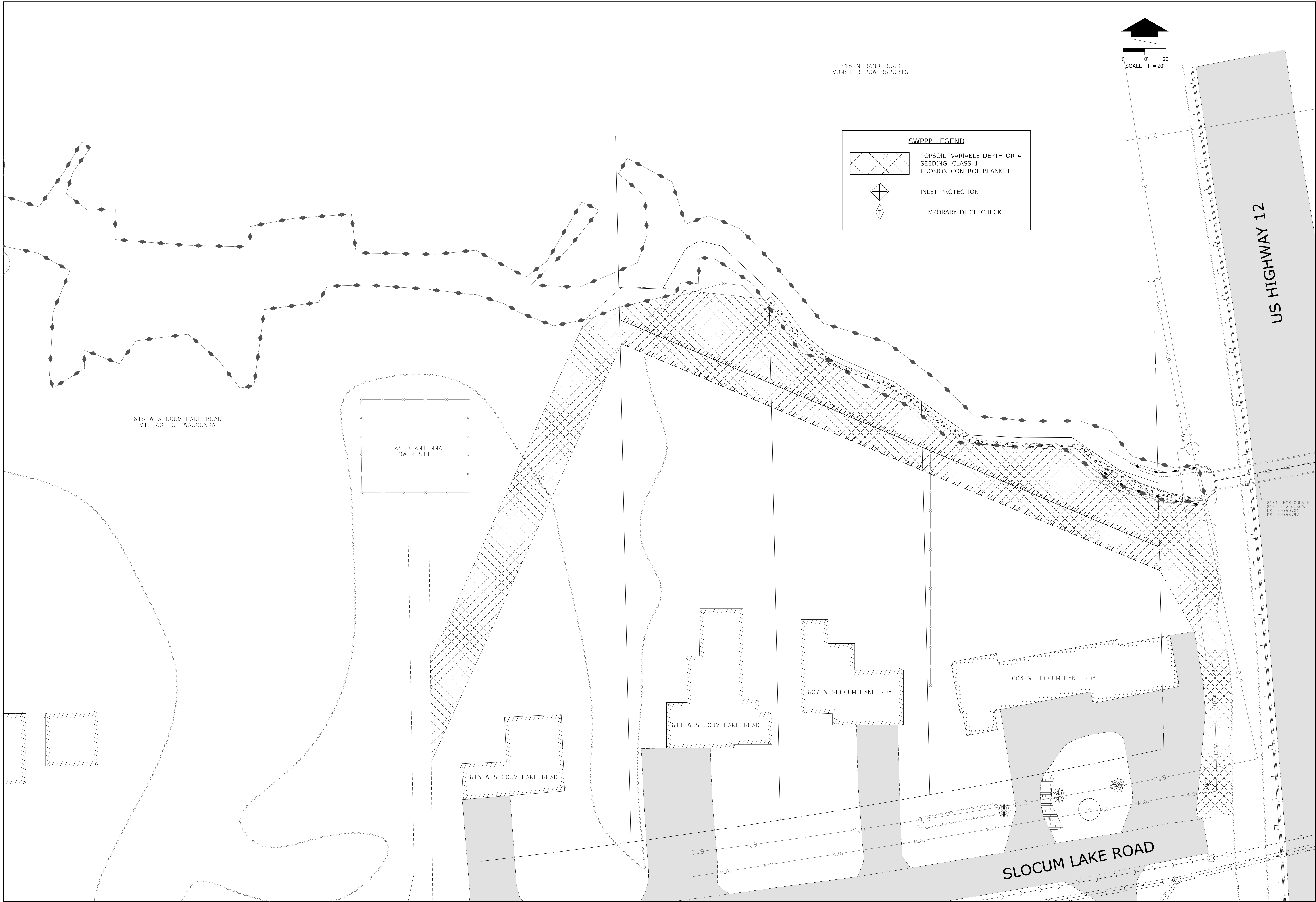
**BANGS LAKE OUTFALL IMPROVEMENTS  
WAUCONDA, IL**

**HMG ENGINEERS, INC.**  
975 CAMPUS DRIVE  
MUNDELEIN, ILLINOIS 60060  
WWW.HMGENGINEERS.COM

(847) 362-5959

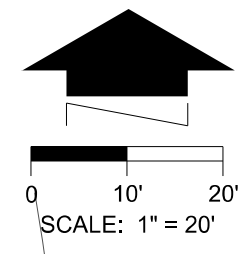
<b>HMG</b> ENGINEERS
SURVEY PK, DAA
DESIGN CSR, DAA
DRAWN CSR, DAA, JRM
CHECKED CSR, DAA
DATE SEPTEMBER 2024
<b>SHEET</b>
<b>24</b>
JOB NO. 8537





**SWPPP LEGEND**

- TOPSOIL, VARIABLE DEPTH OR 4" SEEDING, CLASS 1 EROSION CONTROL BLANKET
- INLET PROTECTION
- TEMPORARY DITCH CHECK



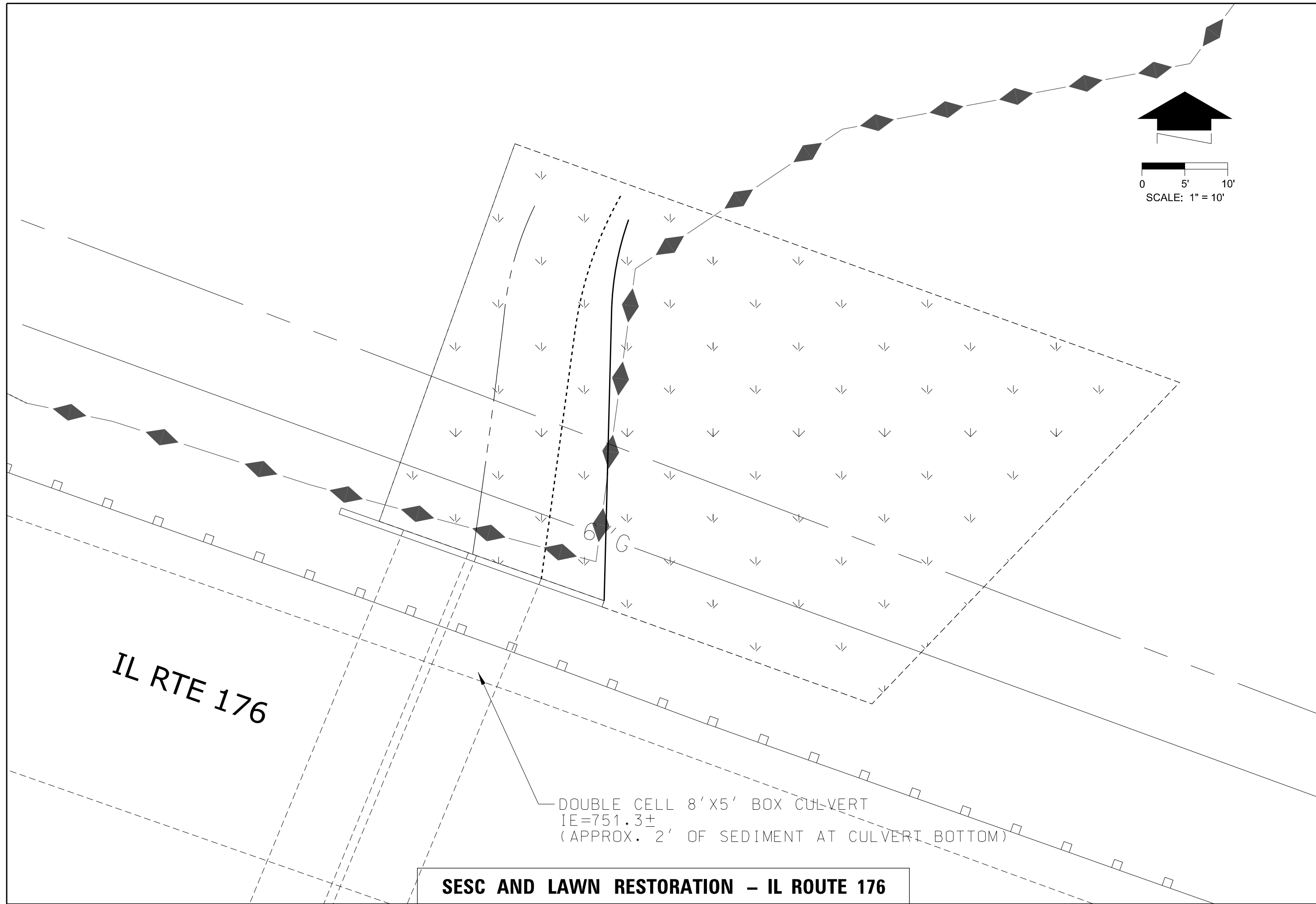
REVISIONS	DATE	BY

**RESTORATION AND SESC PLAN  
US HWY 12 TO LARKDALE ROW**

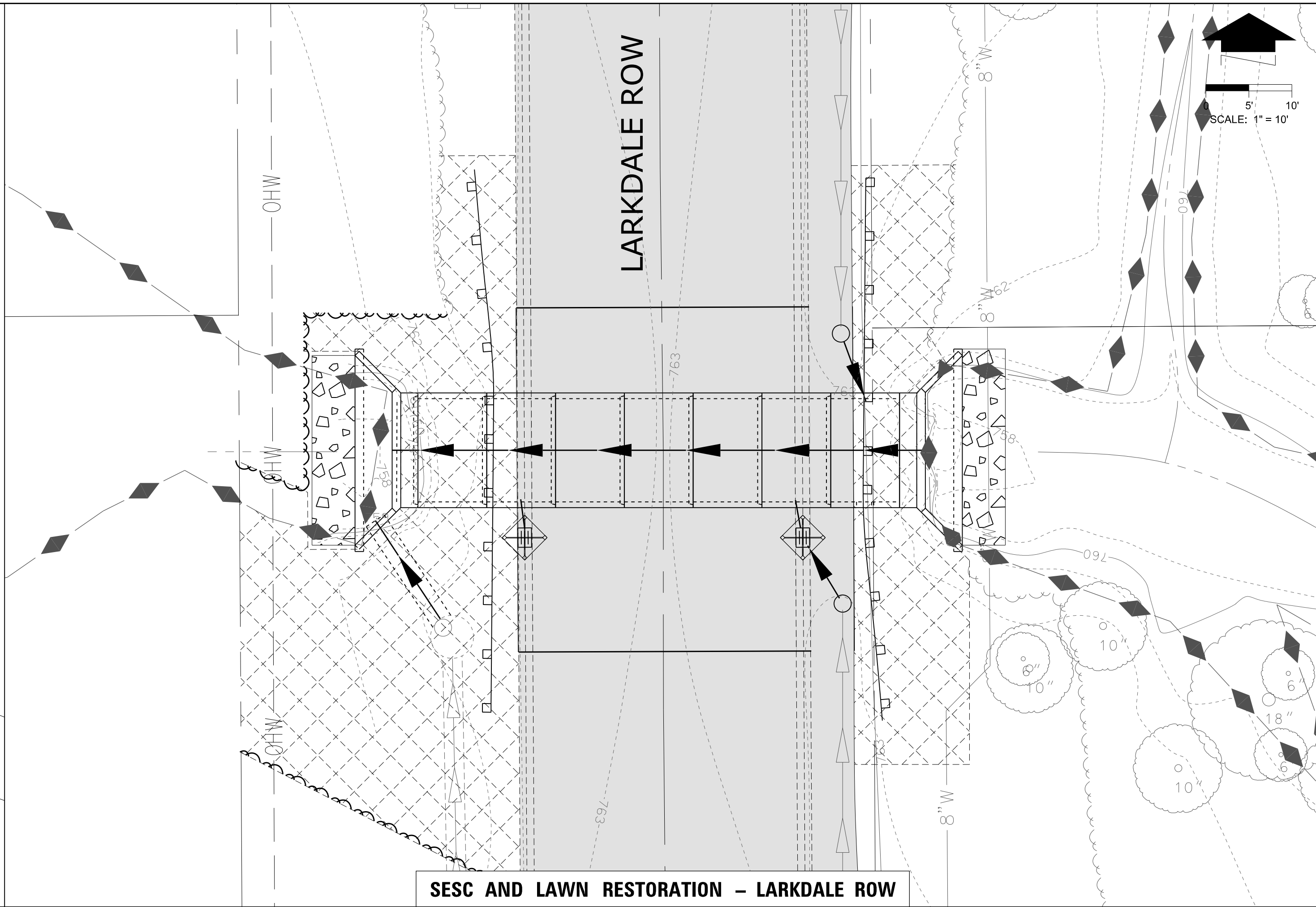
**BANGS LAKE OUTFALL IMPROVEMENTS  
WAUCONDA, IL**

**HMG ENGINEERS, INC.**  
975 CAMPUS DRIVE  
MUNDELEIN, ILLINOIS 60060  
WWW.HMGENGINEERS.COM  
(847) 362-5959

<b>HMG ENGINEERS</b>
SURVEY PK, DAA
DESIGN CSR, DAA
DRAWN CSR, DAA, JRM
CHECKED CSR, DAA
DATE SEPTEMBER 2024
<b>SHEET 25</b>
JOB NO. 8537



**SESC AND LAWN RESTORATION – IL ROUTE 176**



**SESC AND LAWN RESTORATION – LARKDALE ROW**

SWPPP LEGEND	
	TOPSOIL, VARIABLE DEPTH OR 4" SEEDING, CLASS 1 EROSION CONTROL BLANKET
	SEEDING, CLASS 4B MODIFIED
	INLET PROTECTION
	TEMPORARY DITCH CHECK

REVISIONS	DATE	BY

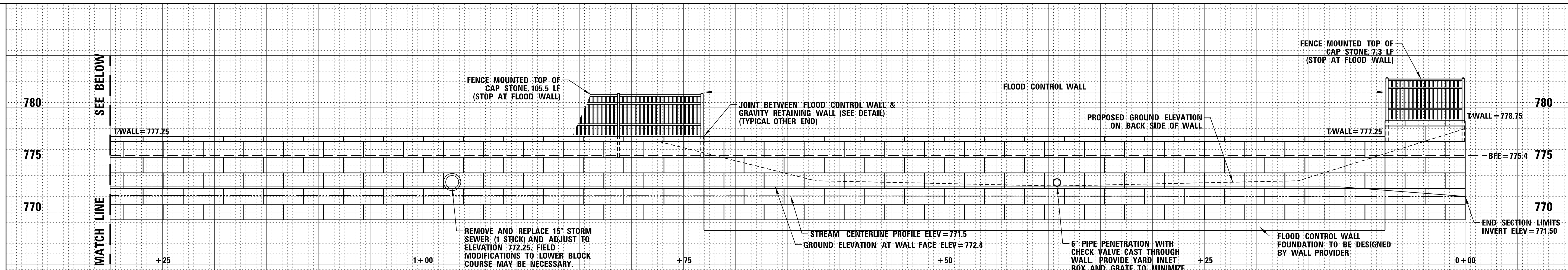
**RESTORATION AND SESC PLAN  
LARKDALE ROW AND IL RTE 176**

**BANGS LAKE OUTFALL IMPROVEMENTS  
WAUCONDA, IL**

**HMG ENGINEERS, INC.**  
975 CAMPUS DRIVE  
MUNDELEIN, ILLINOIS 60060  
WWW.HMGENGINEERS.COM  
(847) 362-5959

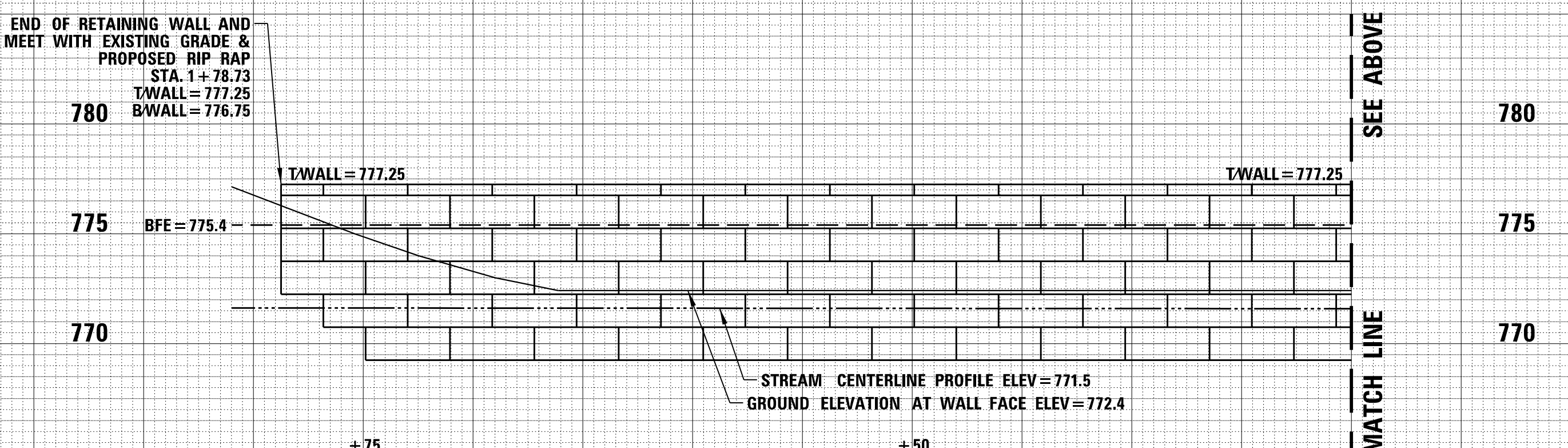
SURVEY	PK, DAA
DESIGN	CSB, DAA
DRAWN	CSB, DAA, JRM
CHECKED	CSB, DAA
DATE	SEPTEMBER 2024

**SHEET  
26**

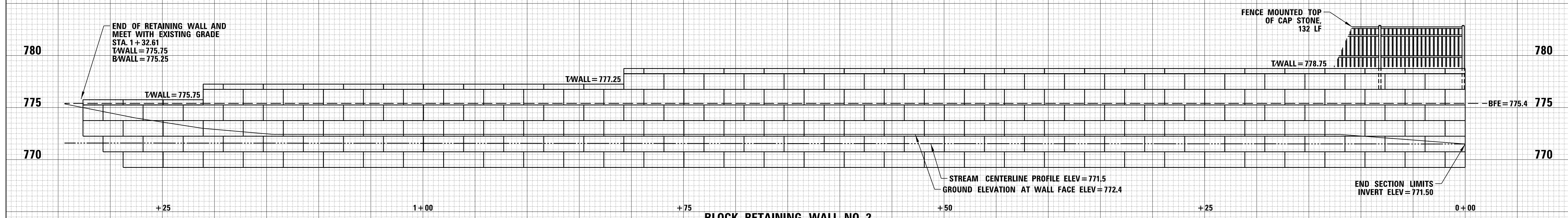


**BLOCK RETAINING WALL NO. 1**  
(MY FLAVOR IT)

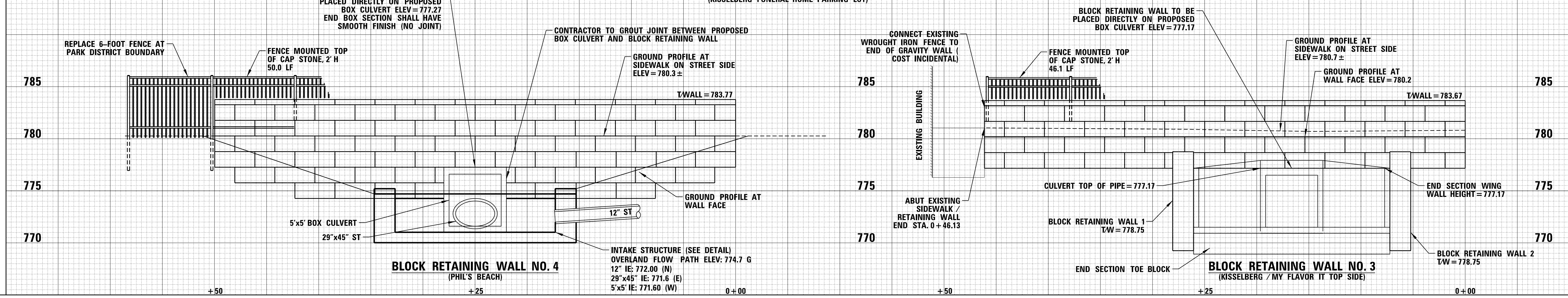
- NOTES:**
- RETAINING WALL SHALL BE A COMBINATION OF RED-ROCK GRAVITY RETAINING WALL AND FLOOD CONTROL WALL. (THE FLOOD CONTROL WALL IS SHOWN WITHIN BLOCK RETAINING WALL NO. 1.)
  - THE PROVIDED DESIGN IS PRELIMINARY WITH PRIOR REVIEW FROM THE SUPPLIER. A FORMAL SHOP DRAWING WILL BE REQUIRED WITH A STRUCTURAL ENGINEERING STAMP AFFIXED. THE BOTTOM BLOCK COURSE LIMITS AND DEPTH SHALL BE DETERMINED DURING THE SUPPLIER FINAL DESIGN.
  - FENCE CONFIGURATION WILL BE AS FOLLOWS:
    - WALL NO. 1, NO. 2 & NO. 3 - TOP MOUNTED OVER ENTIRE LENGTH. FENCE SHALL BE JERITH-ECHOLON II, MAJESTIC STYLE, BLACK COATING, 3-RAIL, 4' TALL, ALUMINUM FENCE. EXCEPTION IS OVER FLOOD CONTROL WALL WHERE NO FENCE WILL BE INSTALLED.
    - WALL NO. 4 - A PERIMETER FENCE WILL BE REPLACED AS PART OF THE PROJECT FOR THE PHIL'S BEACH PROPERTY. THE FENCE SHALL EXTEND THROUGH THE GRAVITY RETAINING (TOP MOUNTED) WITH THE VERTICAL ALIGNMENT OF THE ADJACENT FENCE. FENCE SHALL BE JERITH-ECHOLON II, MAJESTIC STYLE, BLACK COATING, 3-RAIL, 6' AND 2' TALL, ALUMINUM FENCE. AS DETAILED ON SHEET 29 AND BELOW.
  - ALL WALLS SHALL HAVE A CAPSTONE PROVIDED (AS SHOWN).
  - HYDROGROUT SHALL BE PLACED AT ALL INTERFACES BETWEEN BLOCK RETAINING WALL AND CONCRETE PIPE / STRUCTURES TO PREVENT SOIL MIGRATION (COST INCIDENTAL).
  - ALL EXPOSED WALL SURFACES SHALL HAVE A LEDGESTONE FINISHED FACE.



**BLOCK RETAINING WALL NO. 1**  
(MY FLAVOR IT)



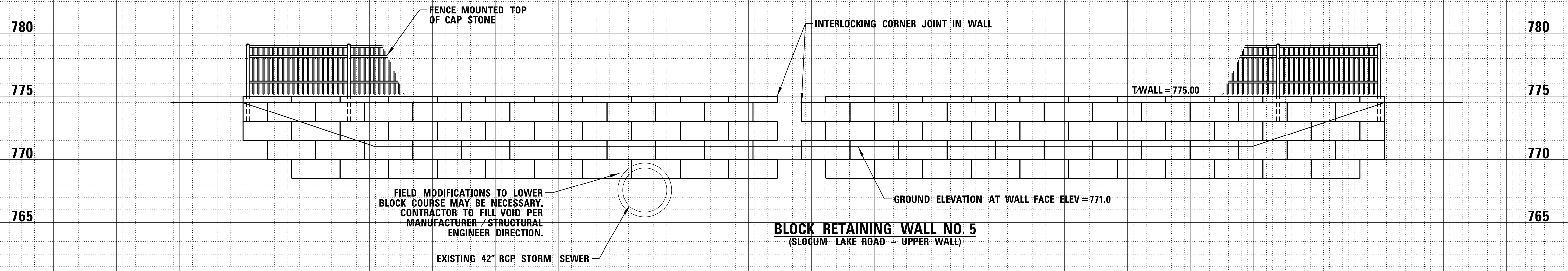
**BLOCK RETAINING WALL NO. 2**  
(KISSELBERG FUNERAL HOME PARKING LOT)



**BLOCK RETAINING WALL NO. 4**  
(PHIL'S BEACH)

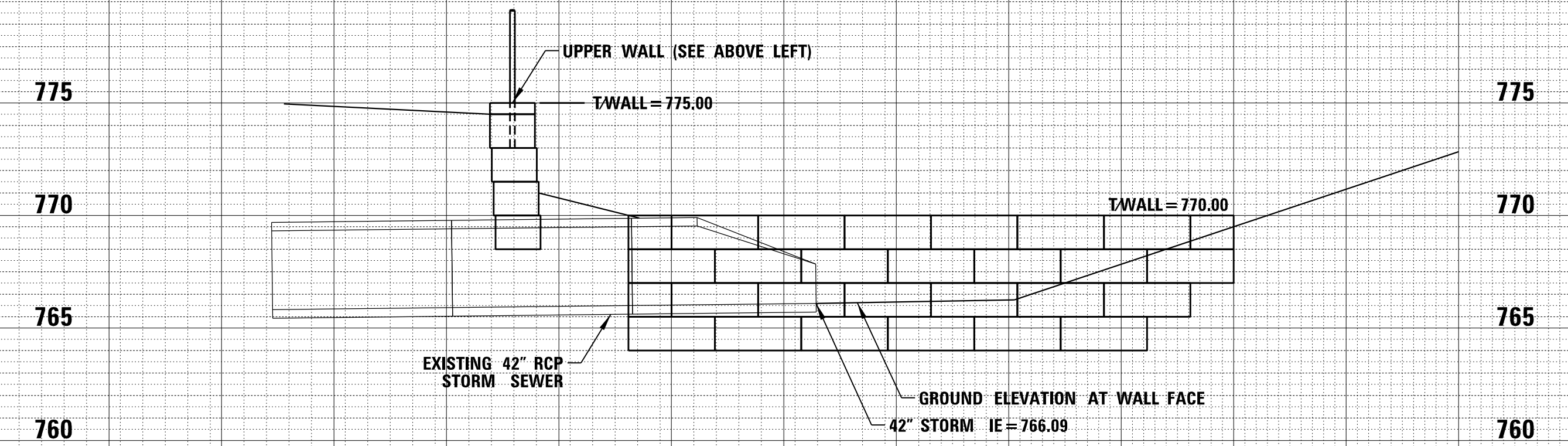
**BLOCK RETAINING WALL NO. 3**  
(KISSELBERG / MY FLAVOR IT TOP SIDE)

S:\037\Bans Lake Outfall Improvements\Rev. Sheet\Detail.dwg 27 - Retaining Wall Profile Details (Main Street)



**BLOCK RETAINING WALL NO. 5**  
(SLOCUM LAKE ROAD - UPPER WALL)

- NOTES:**
1. THE PROVIDED DESIGN IS PRELIMINARY WITH PRIOR REVIEW FROM THE SUPPLIER. A FORMAL SHOP DRAWING WILL BE REQUIRED WITH A STRUCTURAL ENGINEERING STAMP AFFIXED. THE BOTTOM BLOCK COURSE LIMITS AND DEPTH SHALL BE DETERMINED DURING THE SUPPLIER FINAL DESIGN.
  2. FENCE CONFIGURATION WILL BE AS FOLLOWS:
    - A. WALL NO. 5 - TOP MOUNTED OVER ENTIRE LENGTH. FENCE SHALL BE JERITH-ECHELON II, MAJESTIC STYLE, BLACK COATING, 3-RAIL, 4' TALL, ALUMINUM FENCE.
    - B. WALL NO. 6 - NO FENCE
  3. ALL WALLS SHALL HAVE A CAPSTONE PROVIDED, EXCEPT WALL 6.
  4. HYDROGROUT SHALL BE PLACED AT ALL INTERFACES BETWEEN BLOCK RETAINING WALL AND CONCRETE PIPE / STRUCTURES TO PREVENT SOIL MIGRATION (COST INCIDENTAL).
  5. ALL EXPOSED WALL SURFACES SHALL HAVE A LEDGESTONE FINISHED FACE.



**BLOCK RETAINING WALL NO. 6**  
(SLOCUM LAKE ROAD - LOWER WALL)

REVISIONS	DATE	BY

**BLOCK RETAINING WALL PROFILES**  
**AT SLOCUM LAKE ROAD**

**BANGS LAKE OUTFALL IMPROVEMENTS**  
**WAUCONDA, IL**

**HMG ENGINEERS, INC.**  
975 CAMPUS DRIVE  
MUNDELEIN, ILLINOIS 60060  
WWW.HMGENGINEERS.COM

(847) 362-5959

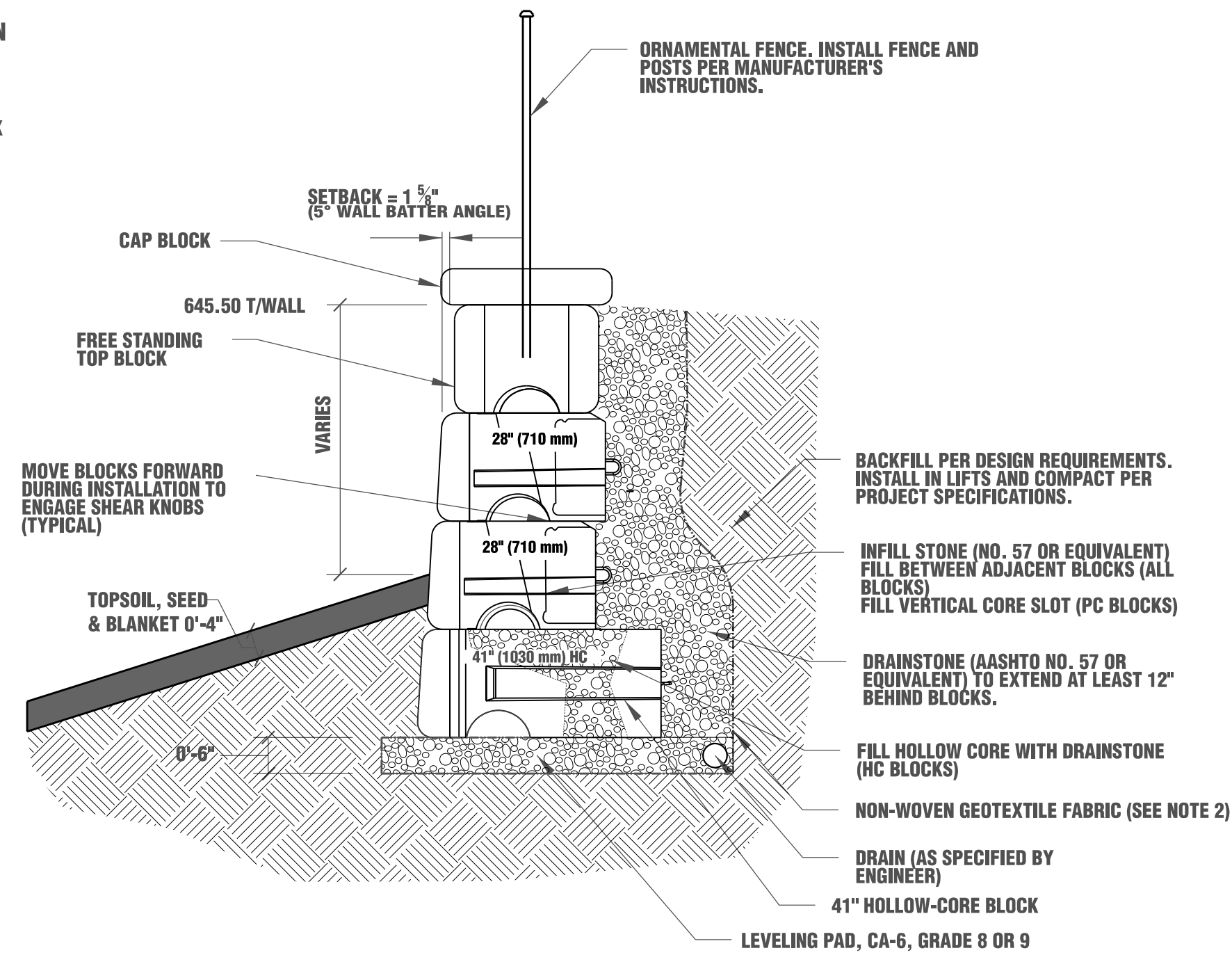


SURVEY	PK, DAA
DESIGN	CSR, DAA
DRAWN	CSR, DAA, JRM
CHECKED	CSR, DAA
DATE	SEPTEMBER 2024

**SHEET**  
**28**

**4 BLOCK HIGH SECTION BY RED-ROCK "LEDGESTONE" PATTERN**

- (1) CAP BLOCK
- (1) FREE STANDING BLOCK
- (2) 28" (710 MM) BLOCKS
- (1) 41" (1030 MM) HC BLOCK

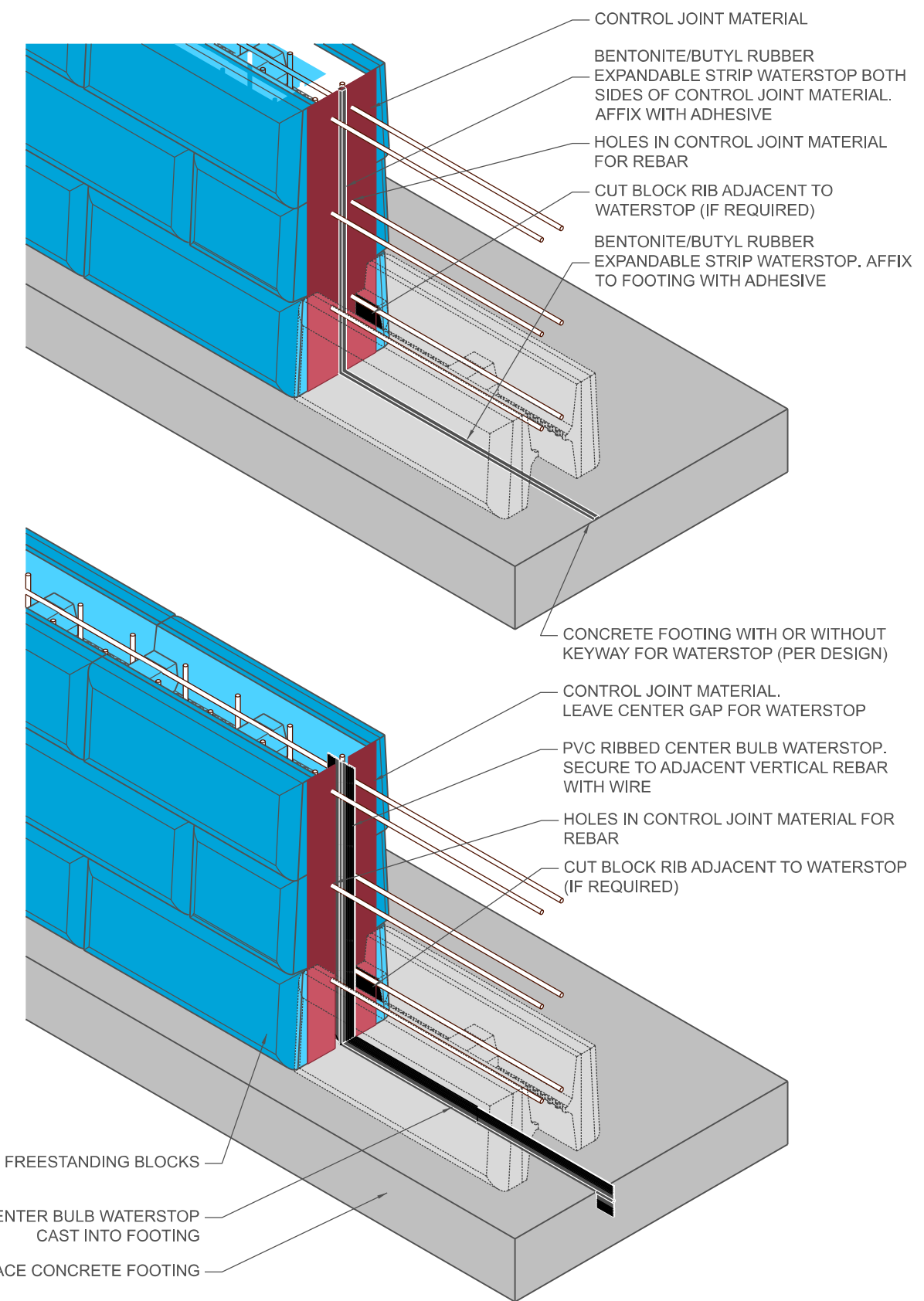


**NOTES:**

1. A TYPICAL 4 BLOCK TALL SECTION IS SHOWN FOR REFERENCE ONLY. DETAILS AND BLOCK SIZE CALLOUT SHALL BE PROVIDED BY THE SUPPLIER DURING THE BIDDING PROCESS.
2. THE GEOTEXTILE FABRIC SHALL BE WRAPPED UNDER THE LEVELING PAD STONE AND PINNED IN PLACE BY THE BOTTOM BLOCK OF THE RETAINING WALL.

**TYPICAL SEGMENTAL BLOCK RETAINING WALL**

N.T.S.



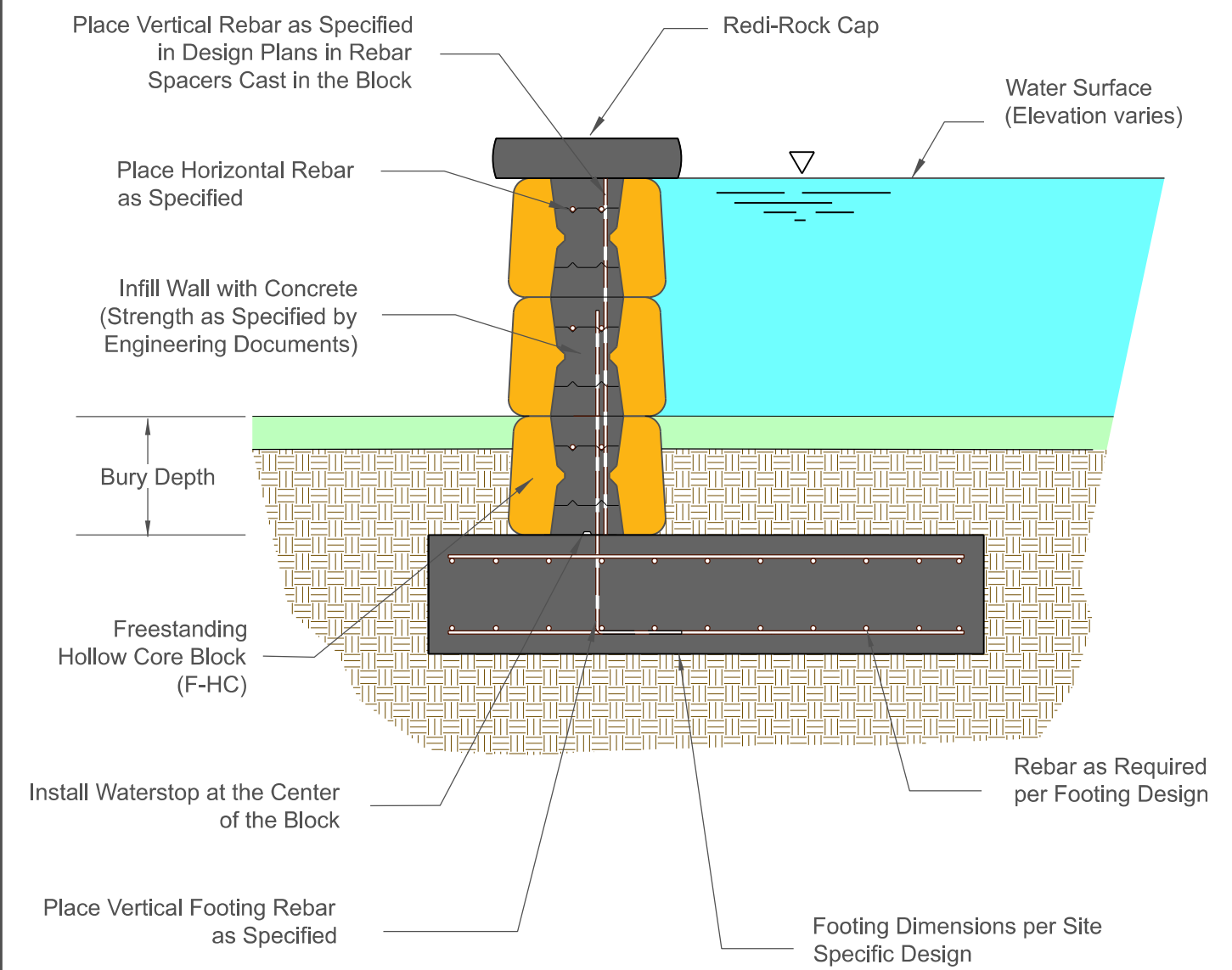
DRAWN BY: N. LINDWALL  
 APPROVED BY: J. JOHNSON  
 DATE: 12/20/17  
 SHEET: 1 of 1

**F-HC FREESTANDING BLOCK WATERSTOP OPTIONS**

FILE: F-HC Waterstop Options 122017.dwg



**CONCEPTUAL FLOOD CONTROL WALL**



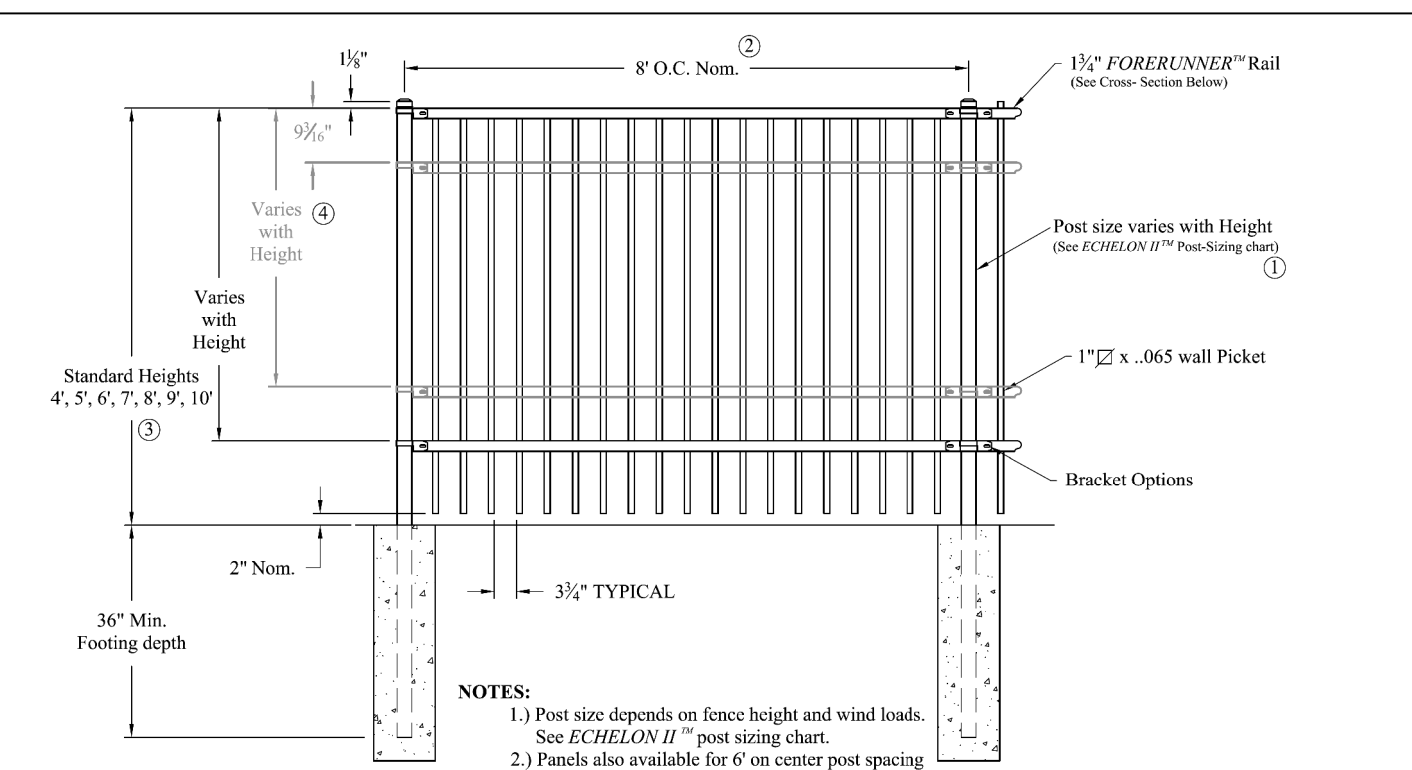
NOTE: Degree of water tightness depends on many factors. Slight seepage through joints can be expected using standard construction practices. See www.Redi-Rock.com for more information on flood control walls including detailed notes from full scale demonstration project testing.

This drawing is for reference only. Determination of the suitability and/or manner of use of any details contained in this document is the sole responsibility of the design engineer of record. Final project designs, including all construction details, shall be prepared by a licensed professional engineer using the actual conditions of the proposed site. Final wall design must address both internal and external drainage and all modes of wall stability.

DRAWN BY: D. Cerminaro  
 APPROVED BY: J. Johnson  
 DATE: 20 December 2017  
 SHEET: 1 of 2

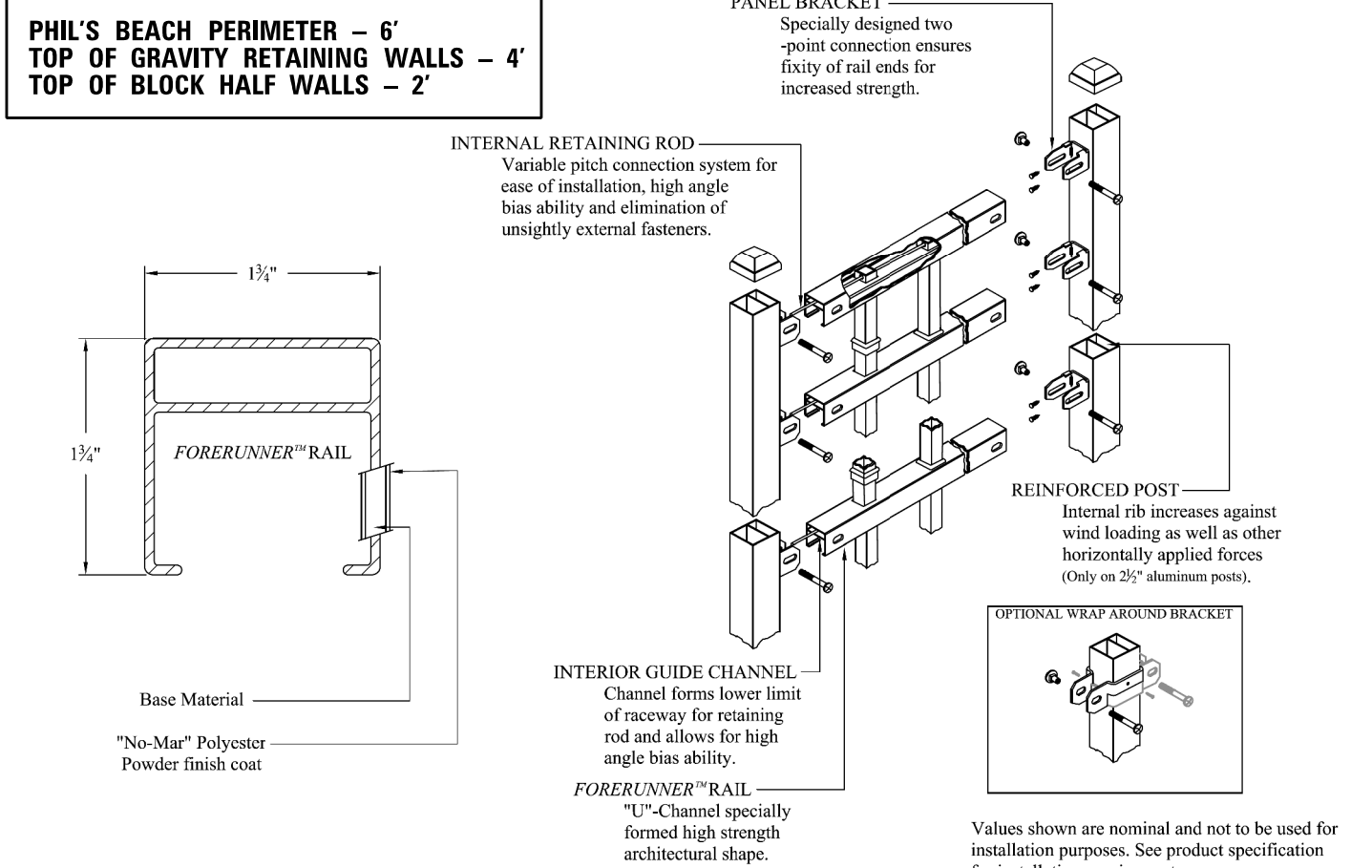
**Conceptual Flood Control Wall Section**

FILE: F-HC Conceptual Flood Control Wall Section 122017.dwg



**NOTES:**

- 1.) Post size depends on fence height and wind loads. See ECHELON II post sizing chart.
- 2.) Panels also available for 6' on center post spacing.
- 3.) Additional heights available on request. Some heights need require a third and/or fourth rail.
- 4.) Third and Fourth rail optional.



**INDUSTRIAL STRENGTH ALUMINUM**

ECHELON II MAJESTIC 2/3/4-RAIL  
 DR: NJB SH: 1 of 1 SCALE: DO NOT SCALE  
 CK: BS Date: 2-07-12 REV: e



REVISIONS	DATE	BY

**BLOCK RETAINING WALL AND ORNAMENTAL FENCING CONSTRUCTION DETAILS**

**BANGS LAKE OUTFALL IMPROVEMENTS WAUCONDA, IL**

HMG ENGINEERS, INC.  
 975 CAMPUS DRIVE  
 MUNDELEIN, ILLINOIS 60060  
 WWW.HMGENGINEERS.COM

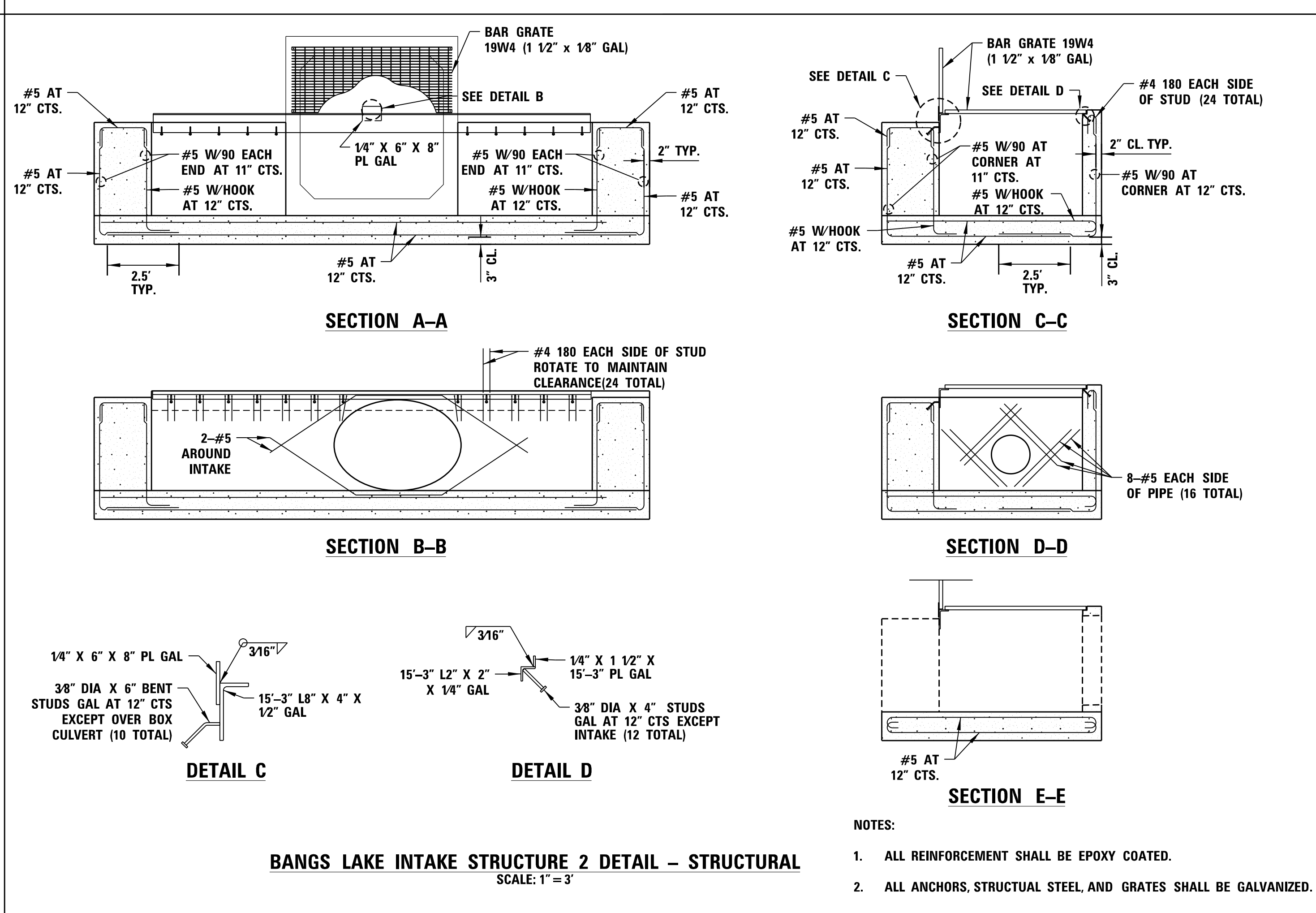
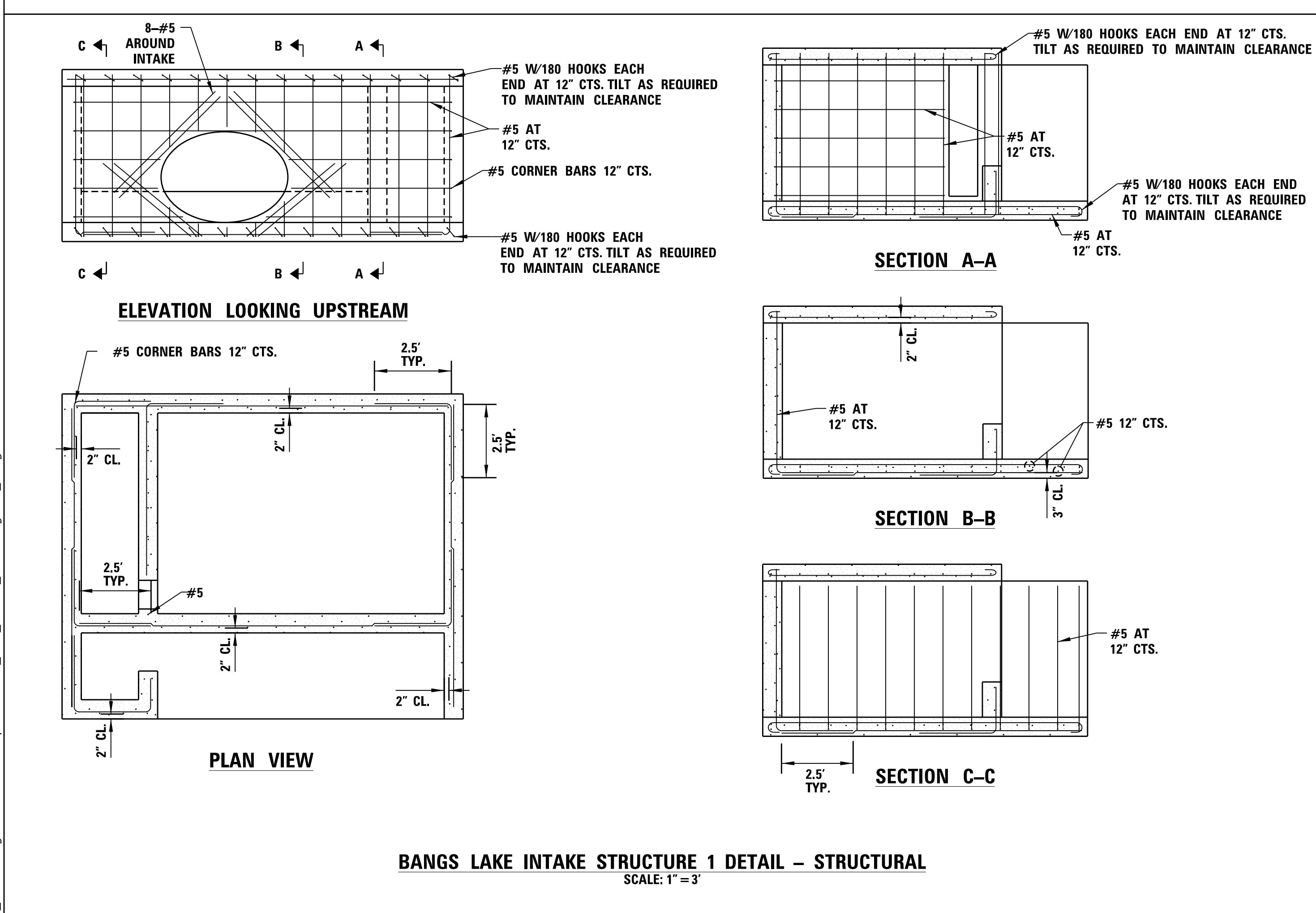
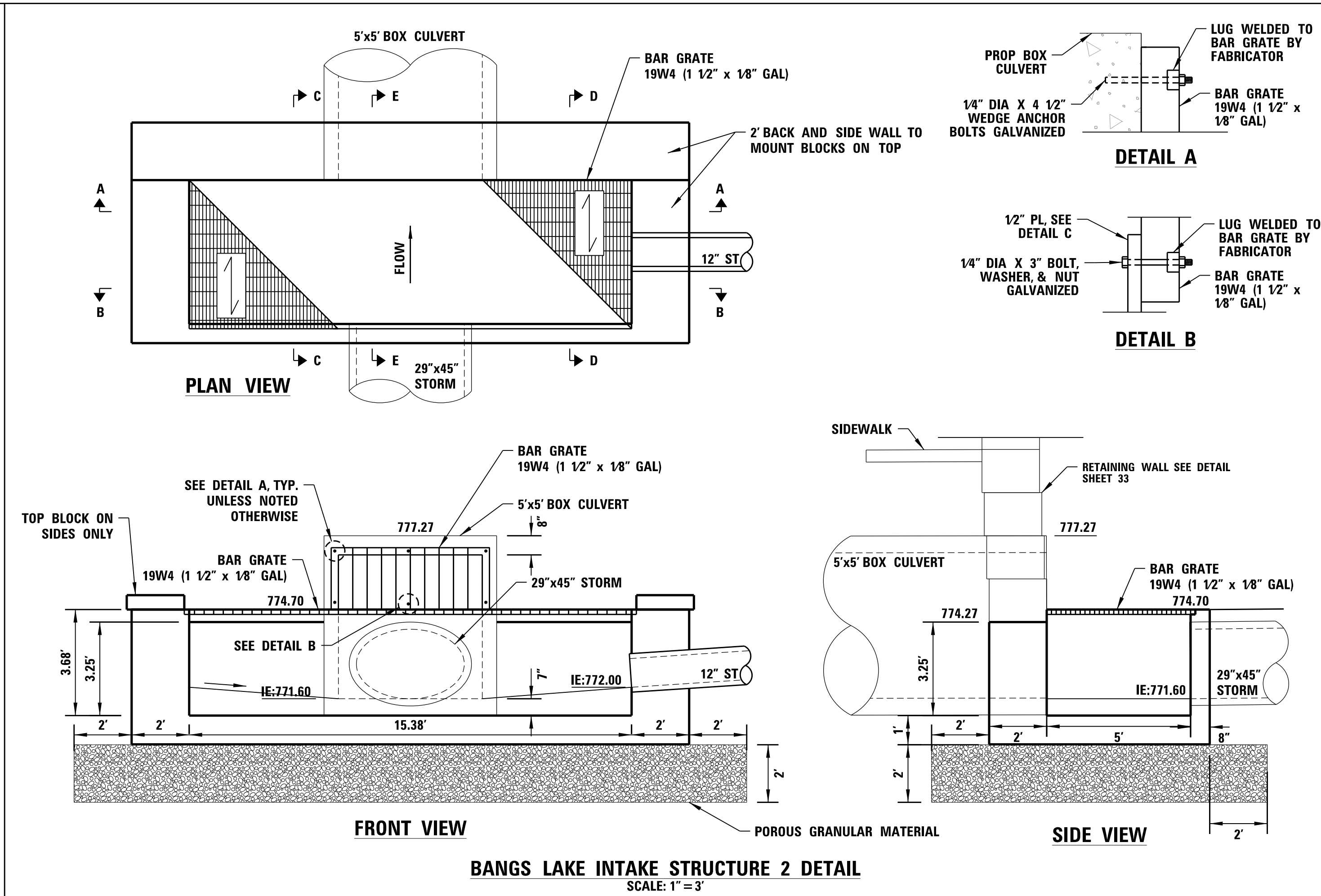
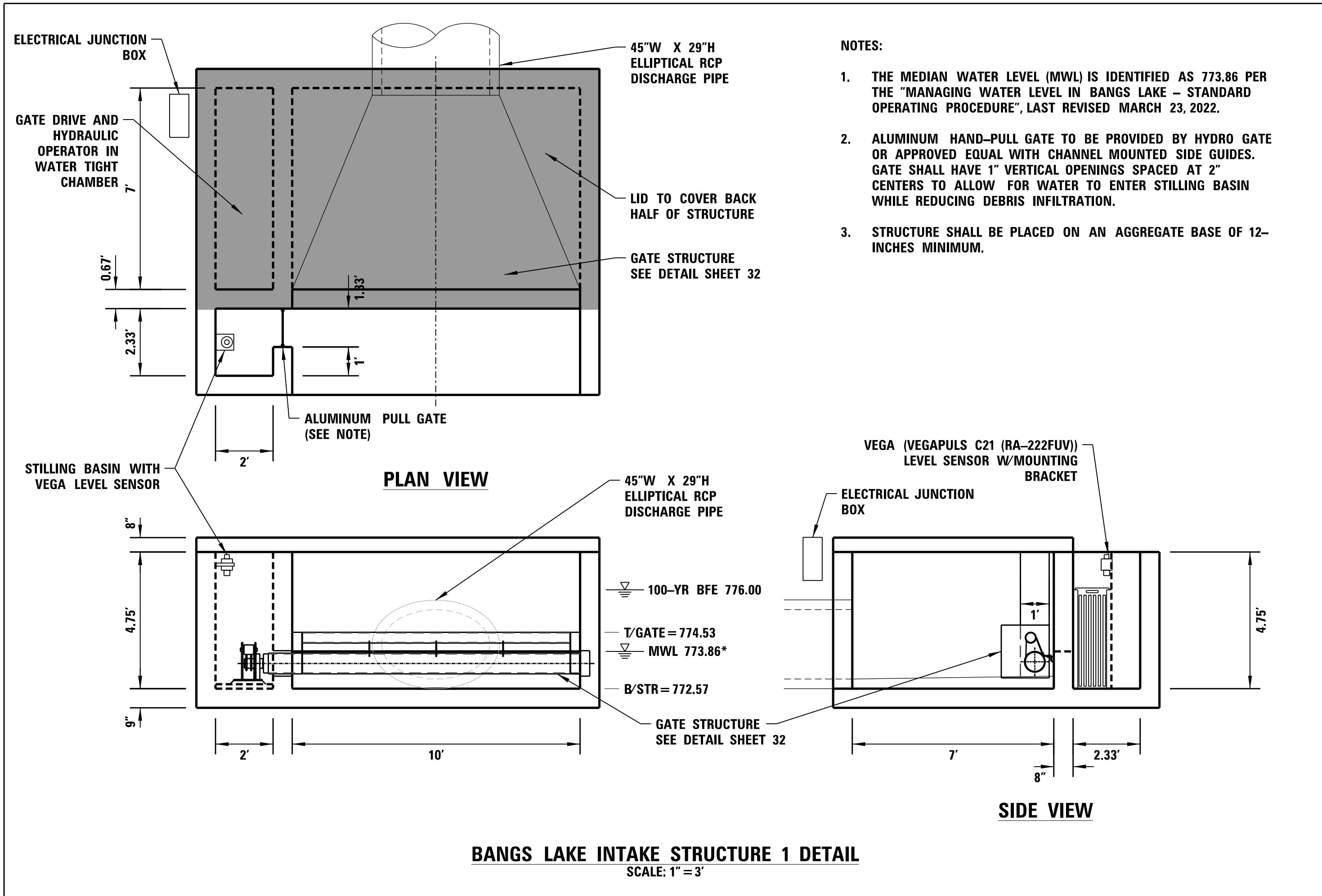
(847) 362-5959



SURVEY	PK, DAA
DESIGN	CSB, DAA
DRAWN	CSB, DAA, JRM
CHECKED	CSB, DAA
DATE	SEPTEMBER 2024

**SHEET**  
 29

5\_8537-Bangs Lake Outfall Improvements\_Plan\_Sheets\_Details.dgn\_29\_Retaining Wall Details



- NOTES:**
1. ALL REINFORCEMENT SHALL BE EPOXY COATED.
  2. ALL ANCHORS, STRUCTURAL STEEL, AND GRATES SHALL BE GALVANIZED.

5\_8537-Bangs Lake Outfall Improvements\_Plan\_Sheets\_Details.dgn\_30\_Bangs Lake Intake Structures Details

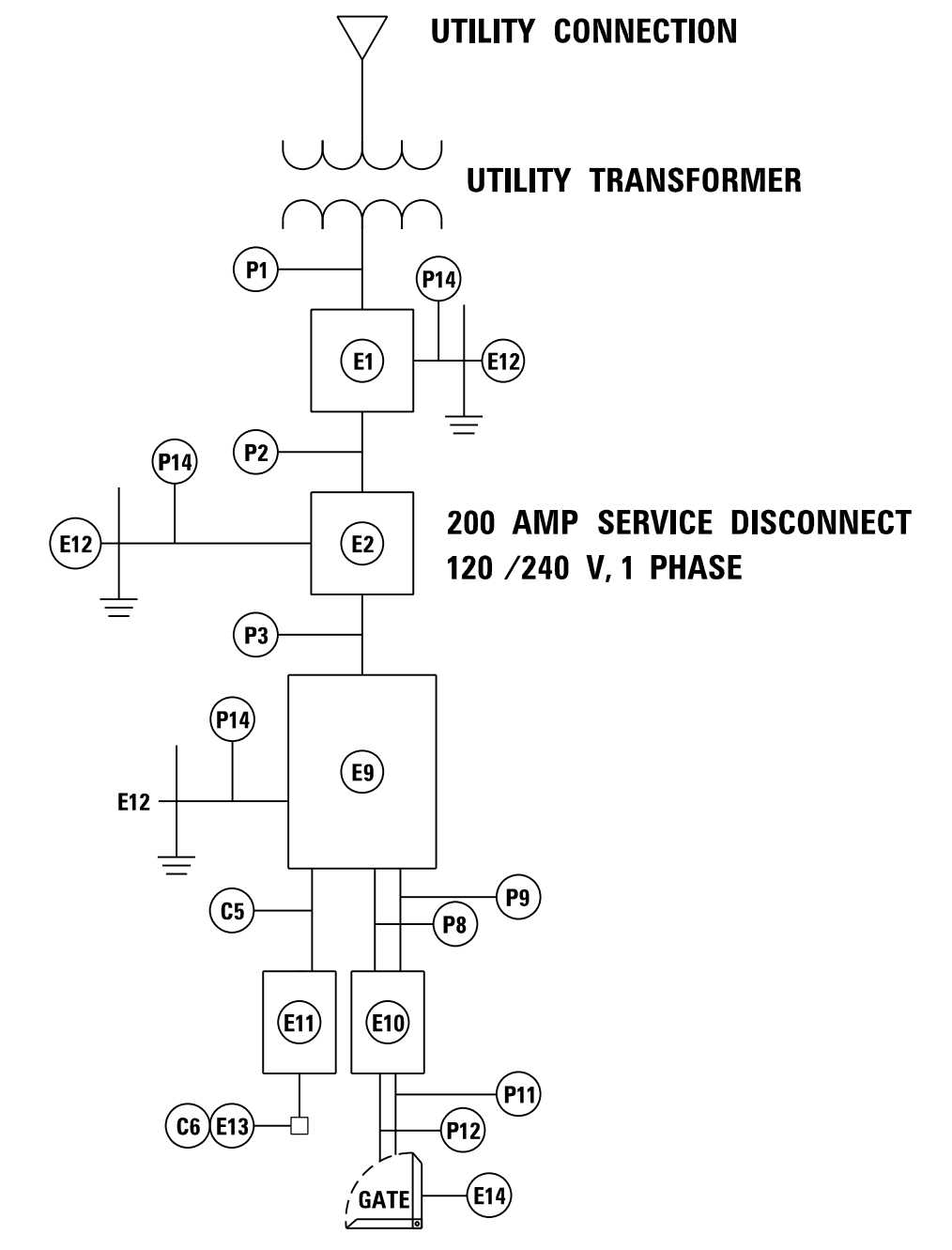
REVISIONS	DATE	BY	CHKD
<b>BANGS LAKE INTAKE STRUCTURES 1 &amp; 2</b>			
<b>CONSTRUCTION DETAILS</b>			
<b>BANGS LAKE OUTFALL IMPROVEMENTS</b>			
<b>WAUCONDA, IL</b>			
<b>HMG ENGINEERS, INC.</b>			
975 CAMPUS DRIVE			
MUNDELEIN, ILLINOIS 60060			
WWW.HMGENGINEERS.COM			
(847) 362-5959			
<b>HMG ENGINEERS</b>			
SURVEY	PK, DAA	DATE	
DESIGN	KBC, CSR, DAA		
DRAWN	CSR, DAA, JRM		
CHECKED	CSR, DAA		
DATE	SEPTEMBER 2024		
<b>SHEET</b>			
<b>30</b>			
JOB NO.			



BANGS LAKE OUTFALL DISTRIBUTION PANEL SCHEDULE									
PANEL SCHEDULE	BUS AMPS: MAIN: VOLTAGE: PHASE:	200 200 AMP 120 / 240 1 PHASE, 3 WIRE	CKT. BKR.		CKT. BKR.		LOAD DESCRIPTION		
			AMPS	POLES	CKT. NO.	CKT. NO.		AMPS	POLES
PROP GATE CONTROL PANEL			20	1	1	2	20	1	SCADA EQUIPMENT
VEGA RADAR SENSOR			20	1	3	4	20	1	ENCLOSURE LIGHT/HEATER
SPARE			20	1	5	6	20	1	SPARE
SPARE			20	1	7	8	20	1	SPARE
SPD			20	2	9	10	20	1	SPARE
SPD			20	2	11	12	20	1	SPARE

- EQUIPMENT**
- E1. PROPOSED UTILITY METER
  - E2. PROPOSED 200 AMP SERVICE DISCONNECT
  - E9. NEW NEMA 4X STAINLESS STEEL CONTROL / SCADA PANEL
  - E10. NEW NEMA 4X JUNCTION BOX WITH LOCAL DISCONNECTS SUPPLIED BY GATE MANUFACTURER
  - E11. NEW NEMA 4X JUNCTION BOX
  - E12. GROUND ROD
  - E13. VEGA RADAR LEVEL SENSOR
  - E14. STEEL-FAB CREST GATE & REXA ACTUATOR

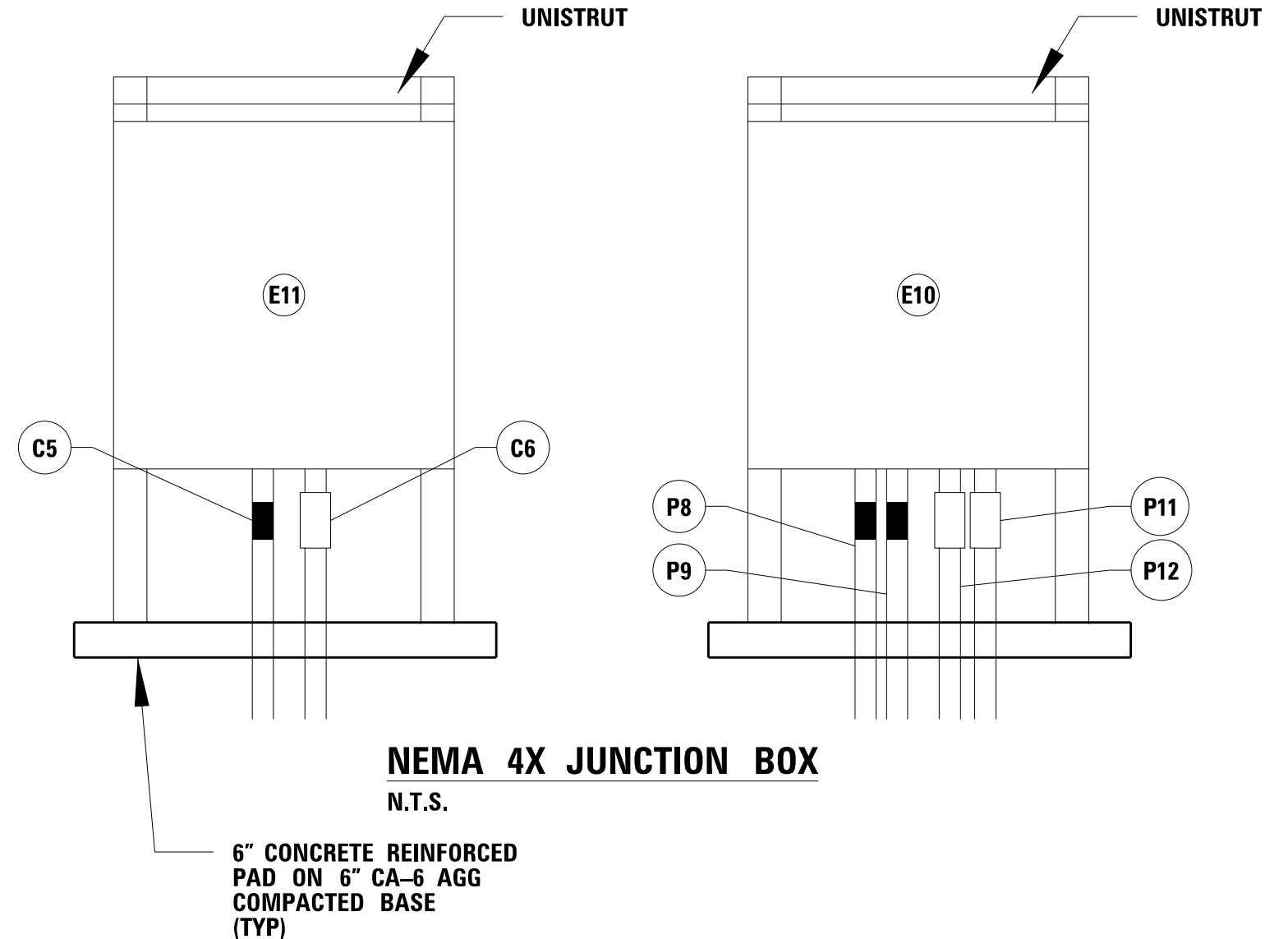
- CONDUITS**
- P1. 4 - 3/0 AWG THWN IN 3" GRS CONDUIT WITH EXPANSION COUPLING (EXISTING)
  - P2. 4 - 3/0 AWG THWN IN 3" GRS CONDUIT WITH EXPANSION COUPLING (EXISTING)
  - P3. 4 - 3/0 AWG THWN IN 3" GRS CONDUIT WITH EXPANSION COUPLING (EXISTING)
  - P8. MANUFACTURER FEEDBACK CABLE IN 2" GRS CONDUIT WITH EXPANSION COUPLING
  - P9. MANUFACTURER ACTUATOR/STEPPER CABLE IN 2" GRS CONDUIT WITH EXPANSION COUPLING
  - P11. 2" GRS CONDUIT WITH GATE ACTUATOR/STEPPER CORD
  - P12. 2" GRS CONDUIT WITH MANUFACTURER FEEDBACK CABLE
  - P14. #4 GRND IN 3/4" CONDUIT
  - C5. 1" GRS CONDUIT WITH RADAR SENSOR, 3C #16 SHIELDED, 12 #14 THWN
  - C6. 1" GRS CONDUIT WITH RADAR SENSOR



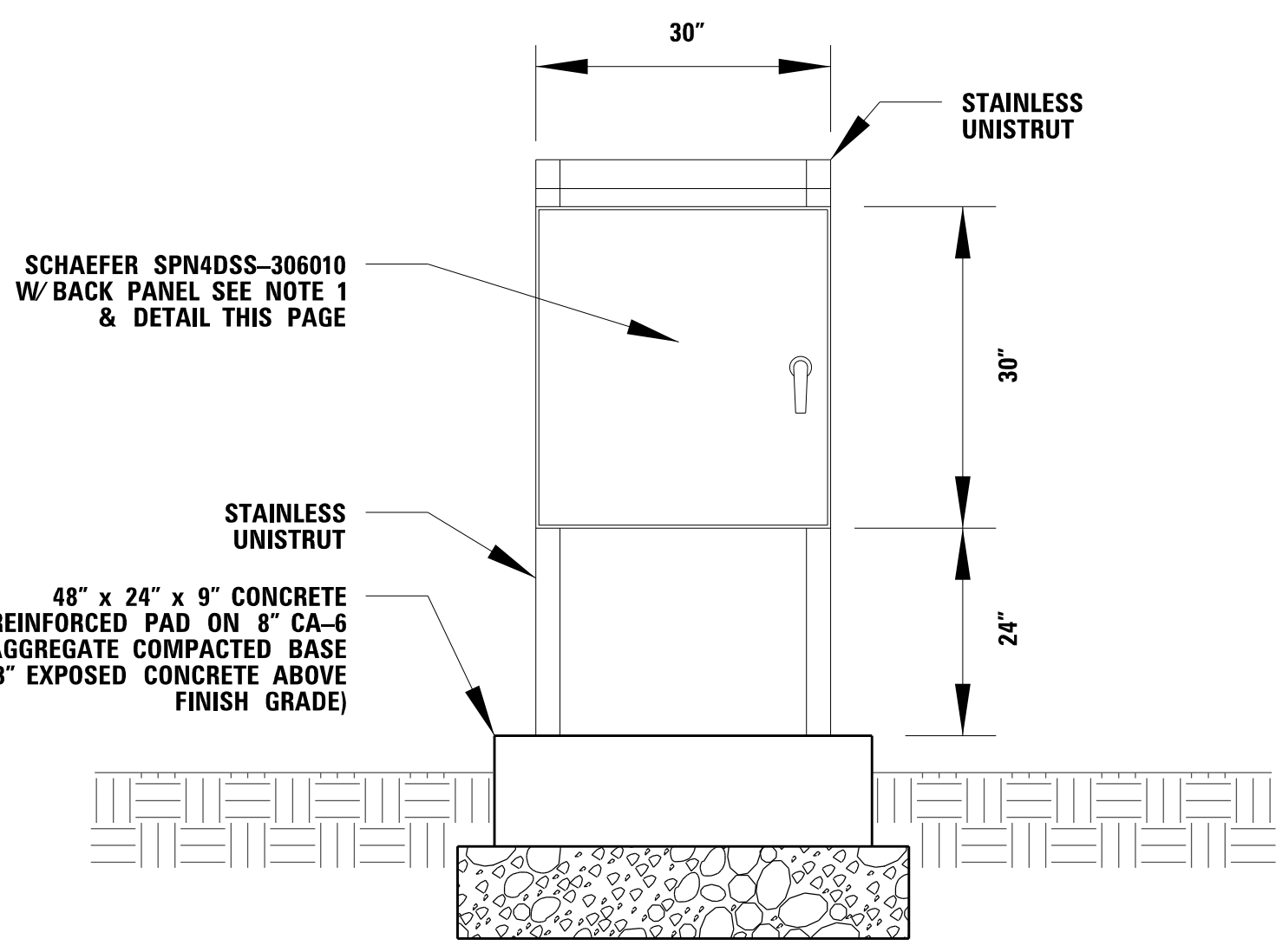
- NOTES**
- THE BANGS LAKE INTAKE STRUCTURE CONTRACTOR AND CONCENTRIC WILL BE RESPONSIBLE FOR ALL INTEGRATION WORK OF THE NEW SCADA SYSTEM AND NEW RADIO EQUIPMENT. THE CONTRACTOR SHALL COORDINATE THIS WORK WITH CONCENTRIC AND INCLUDE THIS WORK IN THEIR BID. NEW SCADA SYSTEM SHALL MATCH EXISTING FEATURES & SCREENS. CONTRACTOR SHALL CONTACT JIM GRAMHOFFER (815-444-4447) (JGRAMHOFFER@GOCONCENTRIC.COM) TO OBTAIN A PROPOSAL FOR SCADA WORK / SERVICES AND INCLUDE THIS COST AND SCOPE IN THEIR BID. ALL ELECTRICAL EQUIPMENT INSTALLATION SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS AS DETERMINED BY THE AUTHORITY HAVING JURISDICTION.
  - THE ELECTRIC SERVICE SHALL BE INSTALLED AS 120 / 240 V, 1 PHASE, 200 AMP.
  - THE GATE CONTROL ENCLOSURE SHALL BE INSTALLED NEAR THE PROPOSED WALL 4 ADJACENT TO MAIN STREET.
  - THE CONCRETE PAD SHALL BE FURNISHED WITH A GROUND ROD, AND ALSO A CONCRETE-ENCASED ELECTRODE IN ACCORDANCE WITH NEC ARTICLE 250.52(A)(3), EITHER METHOD.
  - THE NEW SCADA EQUIPMENT AND NEW RADIO EQUIPMENT TO BE PROVIDED BY CONCENTRIC AND INSTALLED BY CONTRACTOR IN THE CONTROL PANEL.

**PROPOSED ELECTRICAL ONE-LINE DIAGRAM**

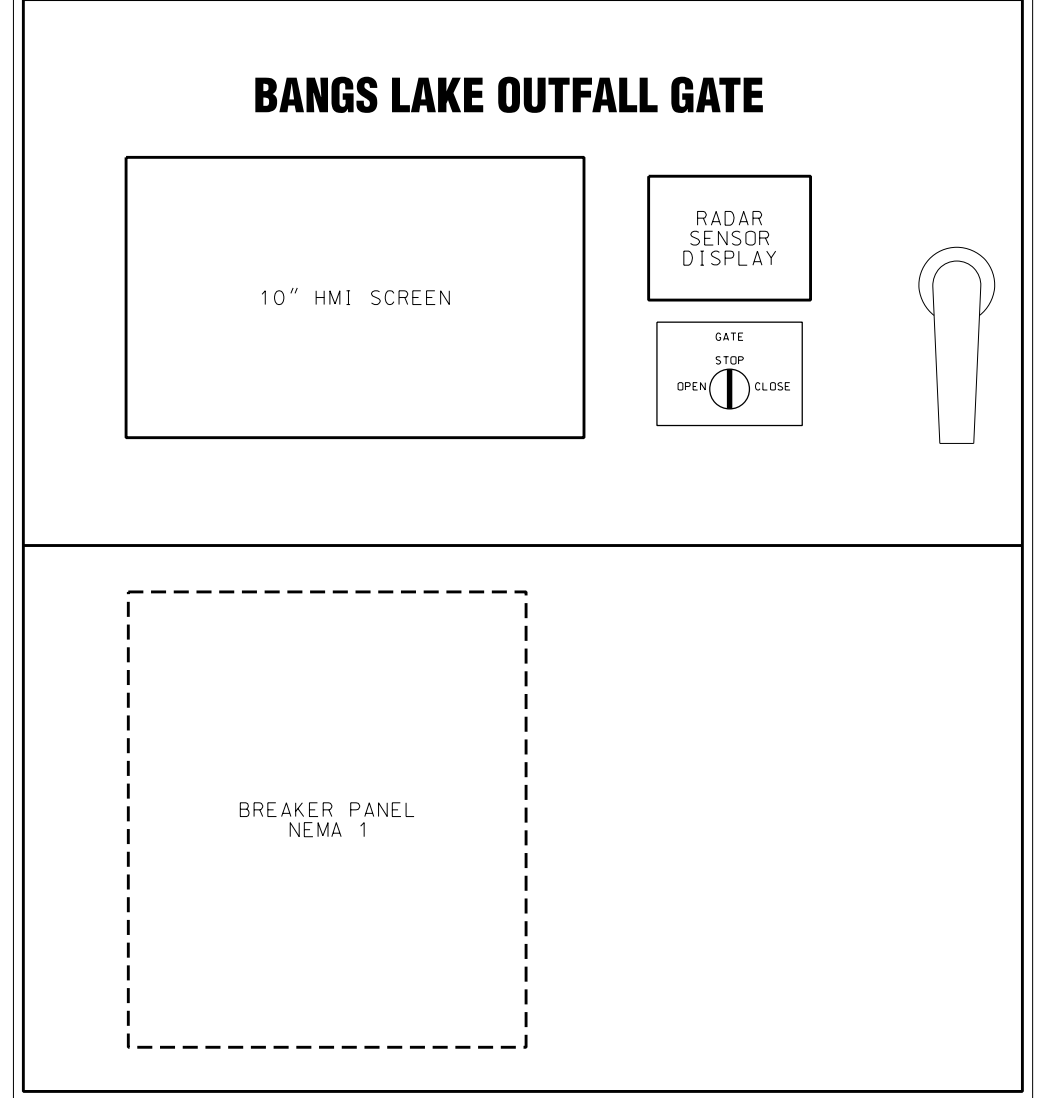
- CONTROL PANEL NOTES:**
- THE CONTROL PANEL BUILDER SHALL SIZE ALL INTERNAL WIRING PER NEC, UNLESS OTHERWISE NOTED.
  - THE CONTROL PANEL SHALL BE UL-508 AND UL-913 LISTED AND LABELED.
  - ALL TERMINATIONS AT ALL EQUIPMENT SHALL BE MADE FINGER SAFE.
  - ELECTRICAL SYSTEMS AND COMPONENTS INSTALLED IN AND EXTENDING FROM THE WETWELL SHALL COMPLY WITH NEC REQUIREMENTS FOR CLASS 1, DIVISION 1 GROUP D LOCATIONS.
  - ALL EQUIPMENT SHALL BE NEMA RATED AND SIZED PER NEC REQUIREMENTS.
  - SEE ELECTRICAL SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS AND DETAILS.
  - CONTRACTOR SHALL SUBMIT COMPLETE SHOP DRAWINGS OF THE PUMP CONTROL PANEL INCLUDING ALL ELECTRICAL DIAGRAMS AND LIST OF COMPONENTS. A COMPLETE ELECTRICAL DIAGRAM SHALL BE PROVIDED IN THE CONTROL CABINET.



**NEMA 4X JUNCTION BOX**  
N.T.S.



**COMBINATION CONTROL & GATE POWER PANEL**  
N.T.S.



**CONTROL & POWER PANEL ENLARGED LAYOUT**  
N.T.S.

5\_8537-Bangs Lake Outfall Improvements\_Plan\_Sheets\_Details.dgn 31\_Bangs Lake Electrical Details

REVISIONS	
NO.	DATE
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	

BANGS LAKE INTAKE  
GATE EQUIPMENT DETAILS

BANGS LAKE OUTFALL IMPROVEMENTS  
WAUCONDA, IL

HMG ENGINEERS, INC.  
975 CAMPUS DRIVE  
MUNDELEIN, ILLINOIS 60060  
WWW.HMGENGINEERS.COM

(847) 362-5959

**HMG**  
ENGINEERS

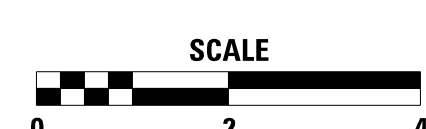
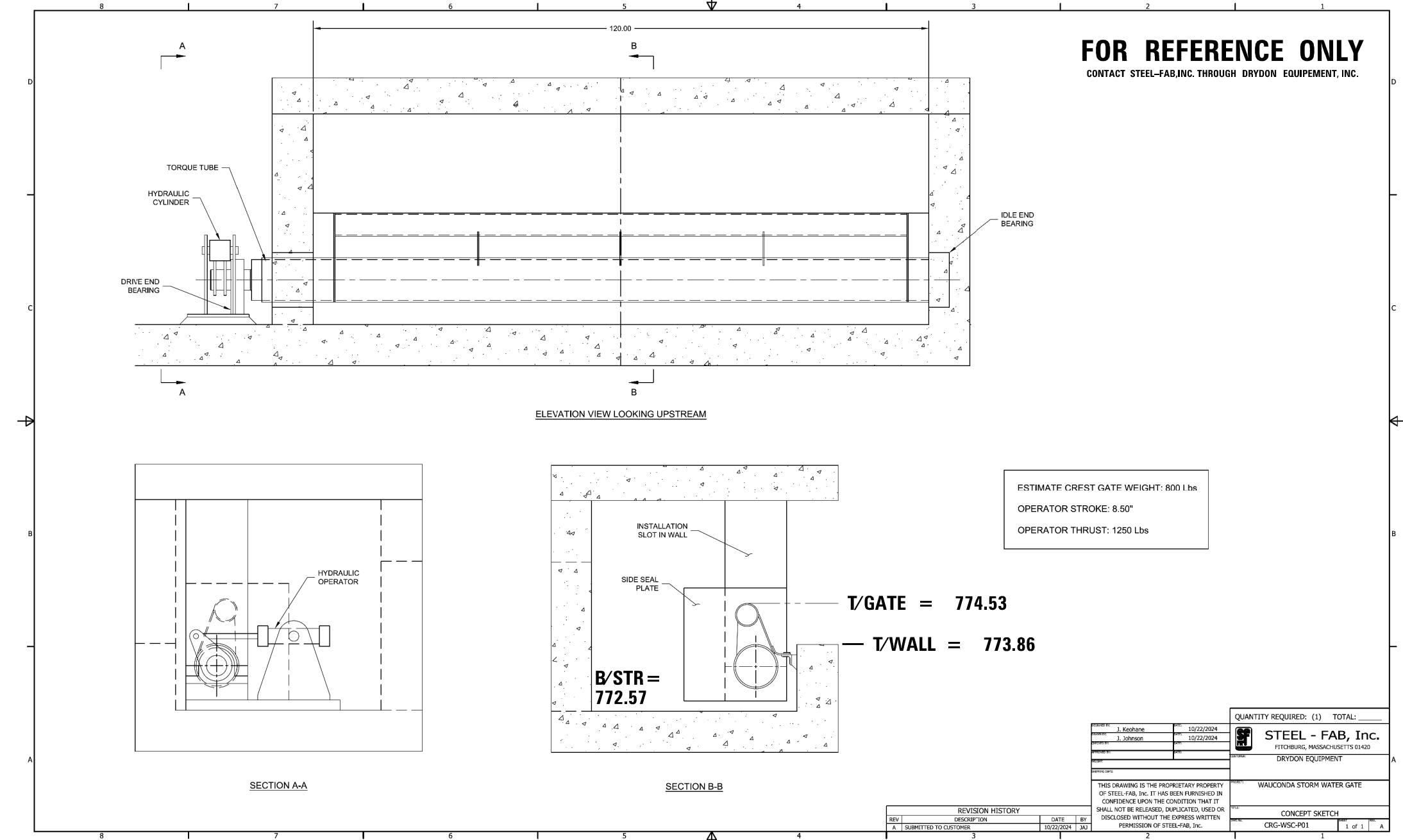
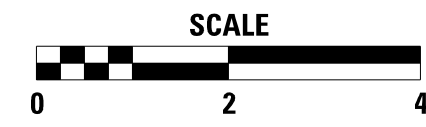
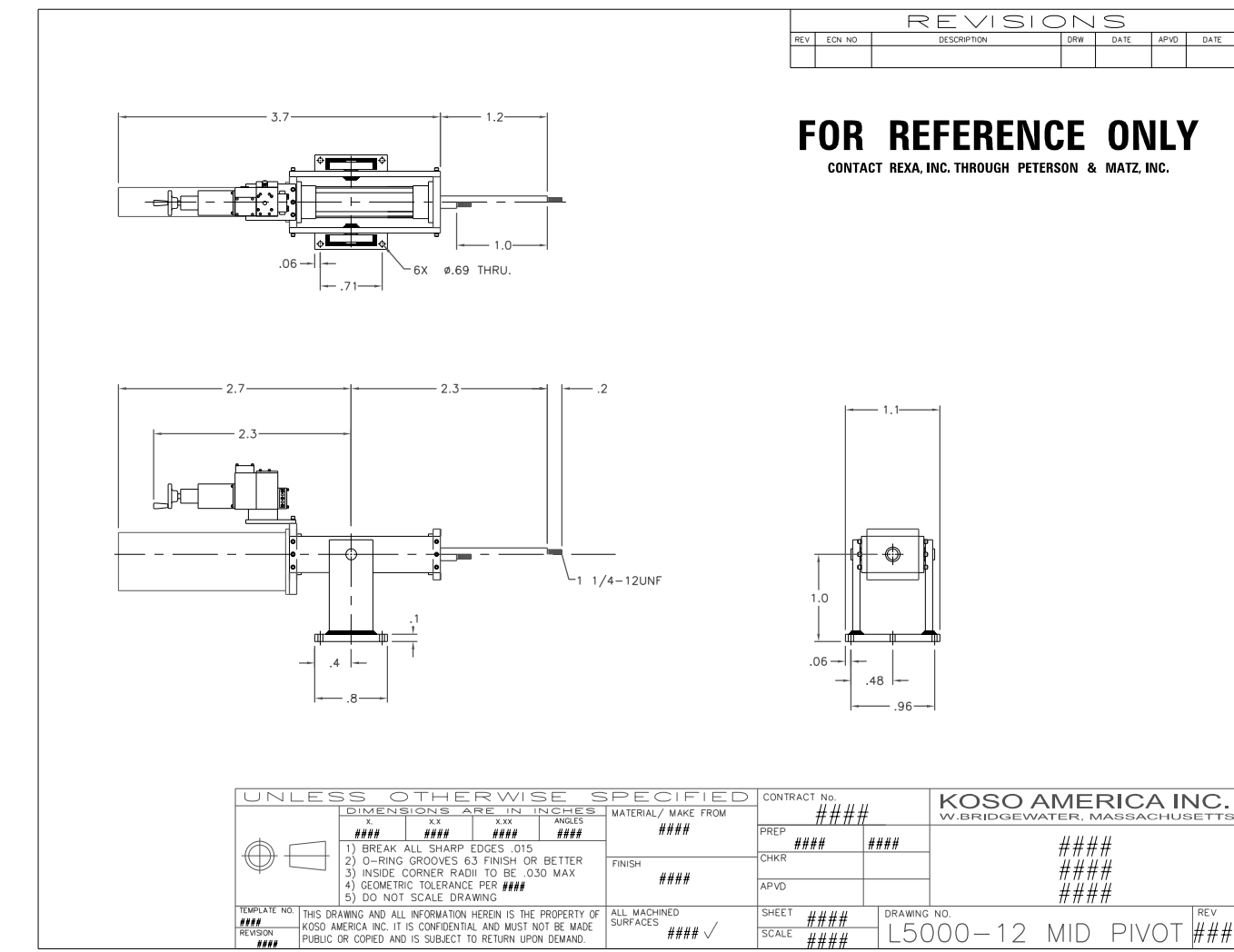
SURVEY PK, DAA  
DESIGN CSR, DAA  
DRAWN CSR, DAA, JRM  
CHECKED CSR, DAA

DATE SEPTEMBER 2024

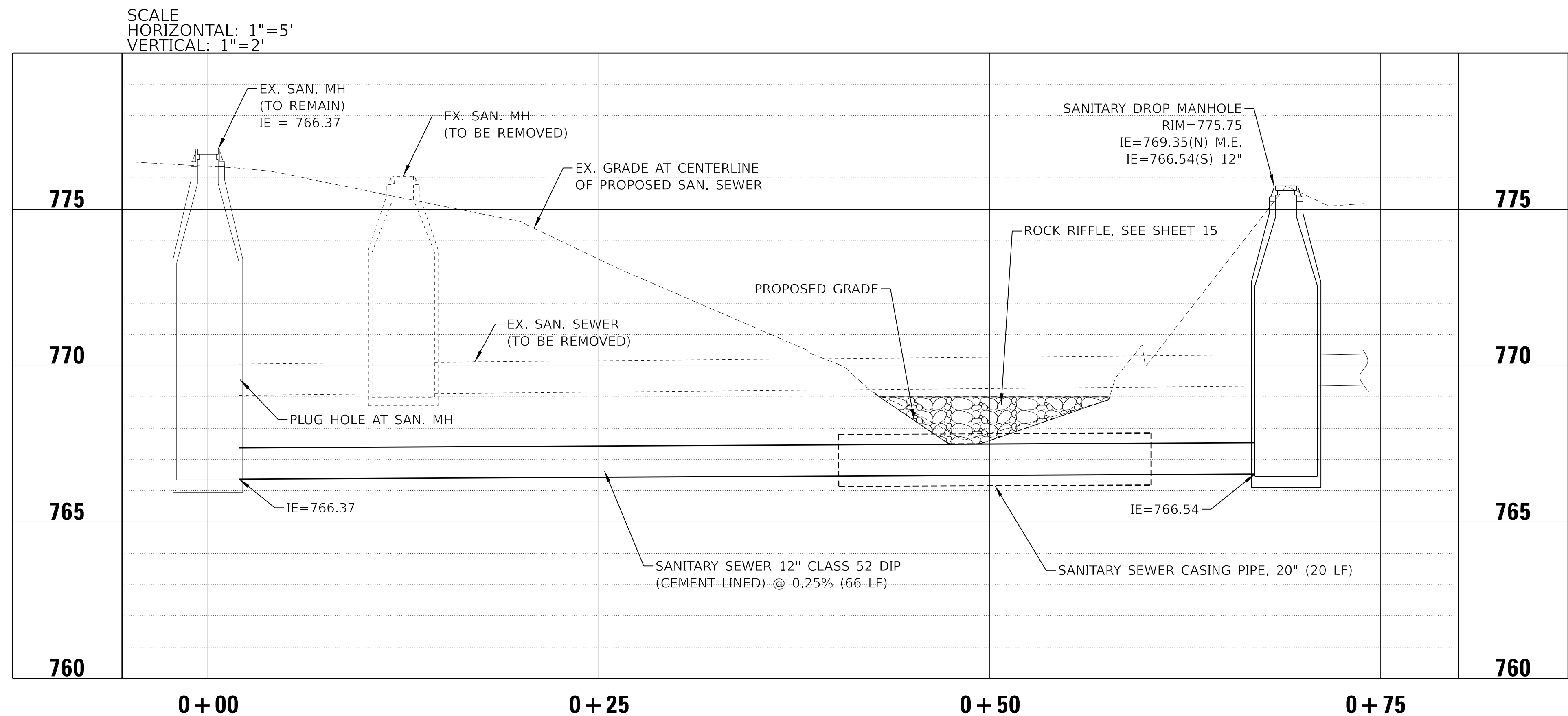
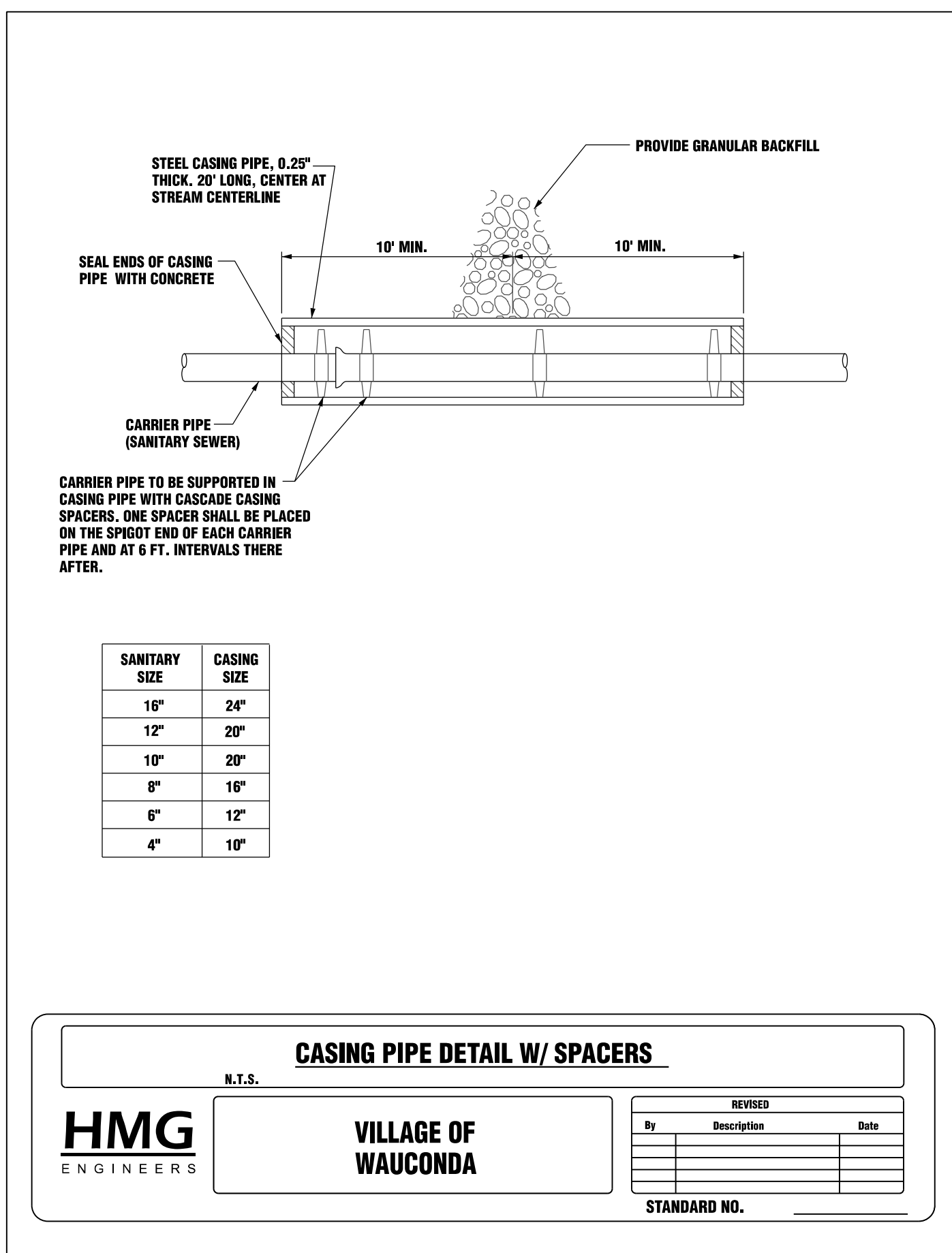
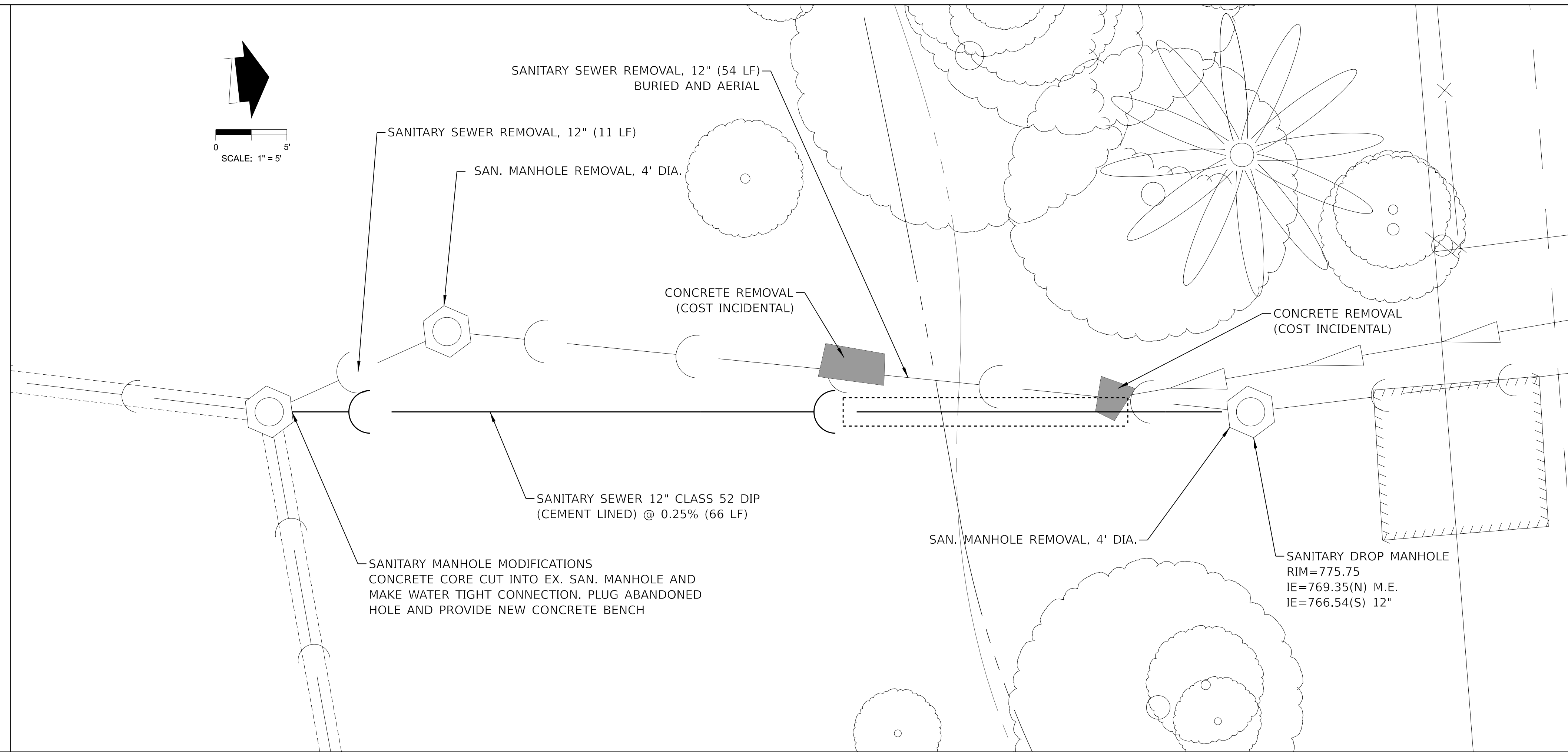
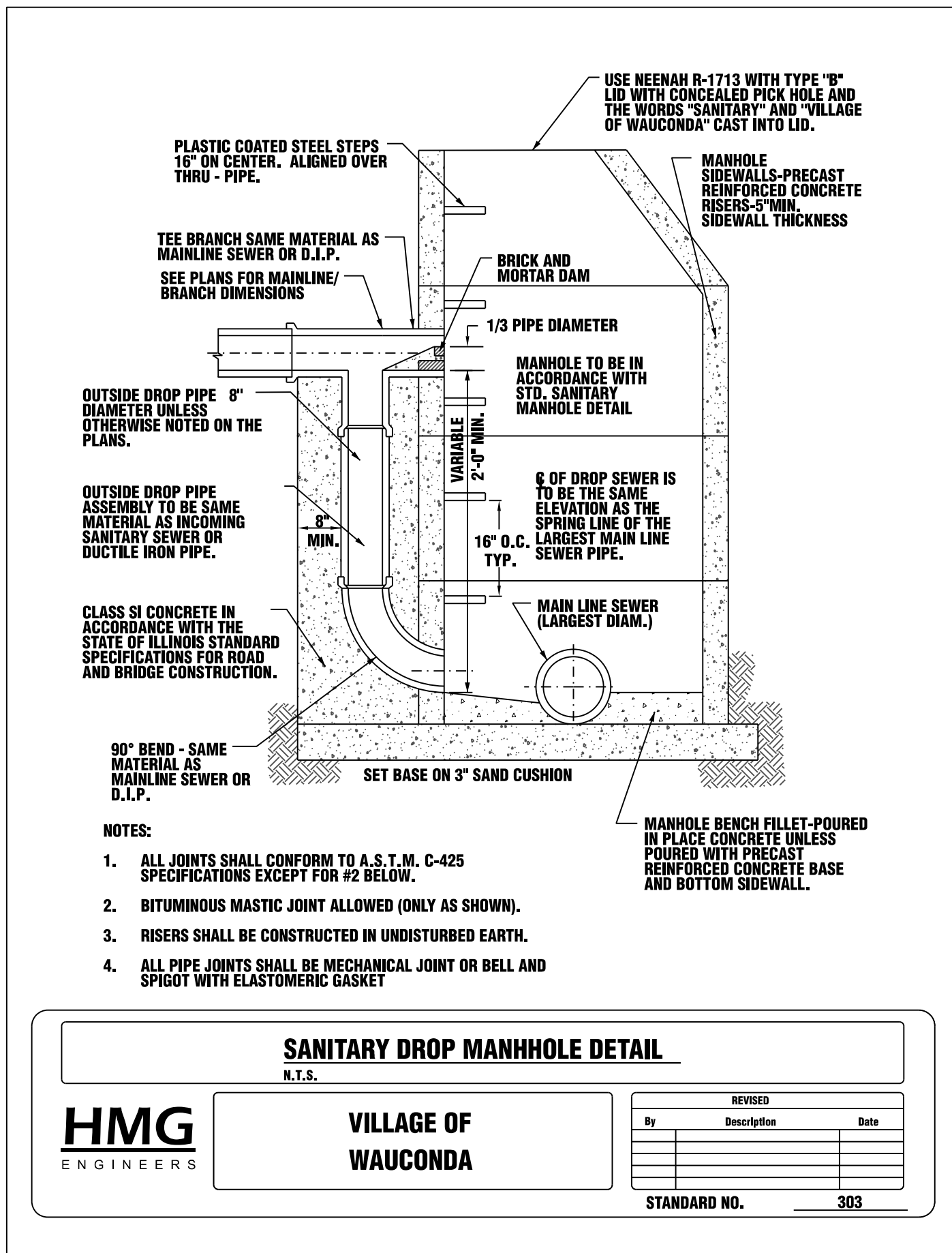
SHEET

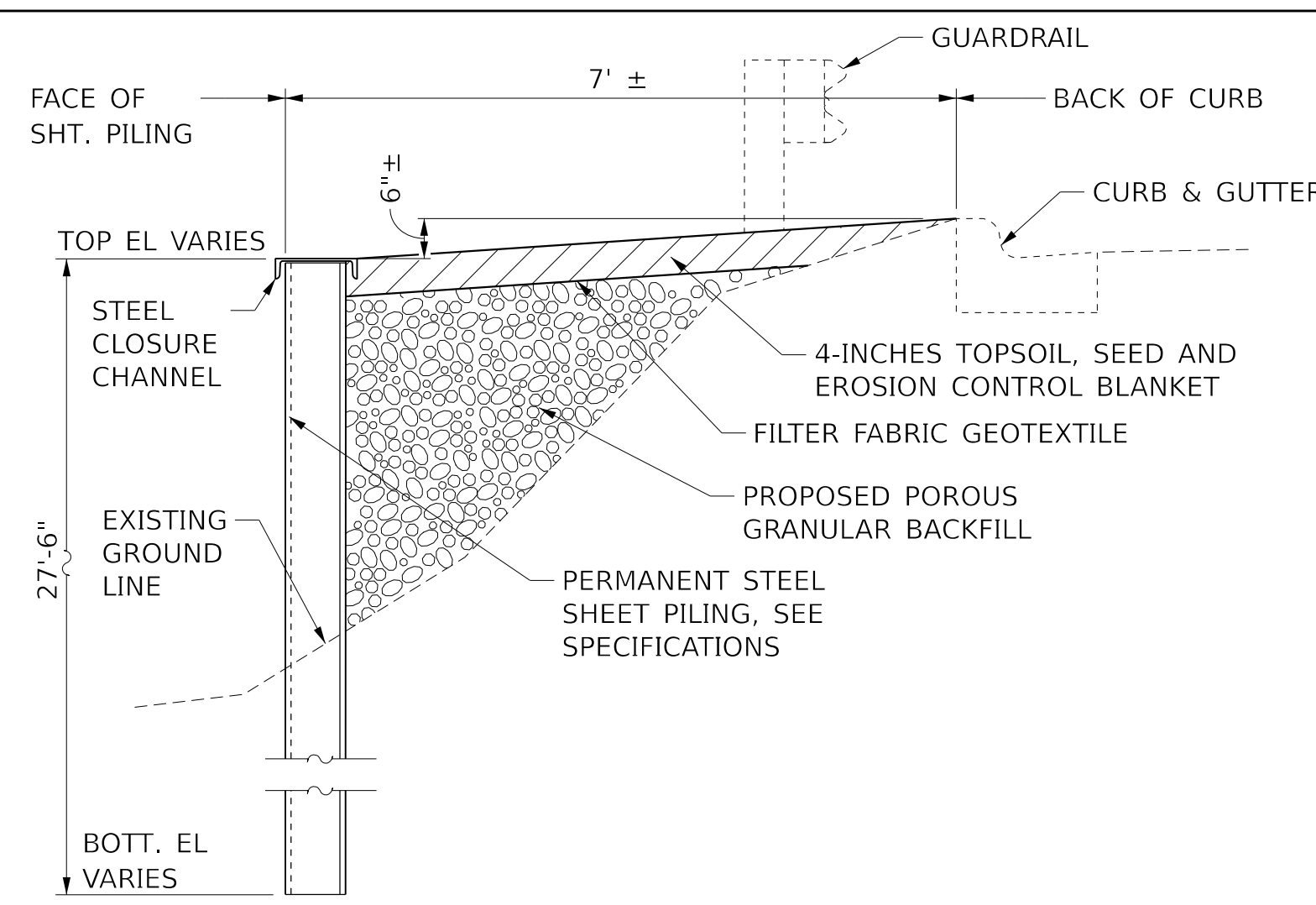
32

JOB NO. 8537

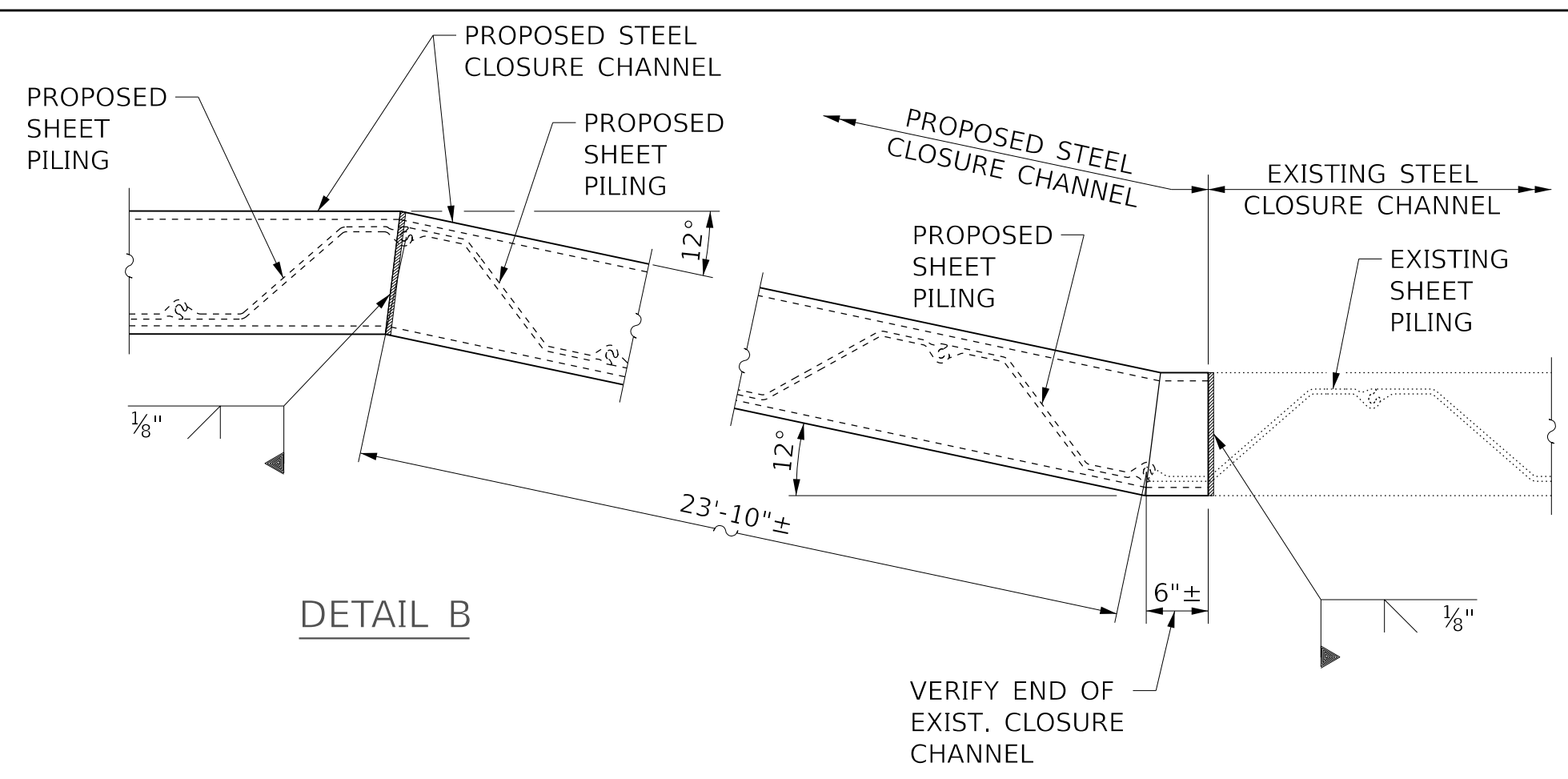






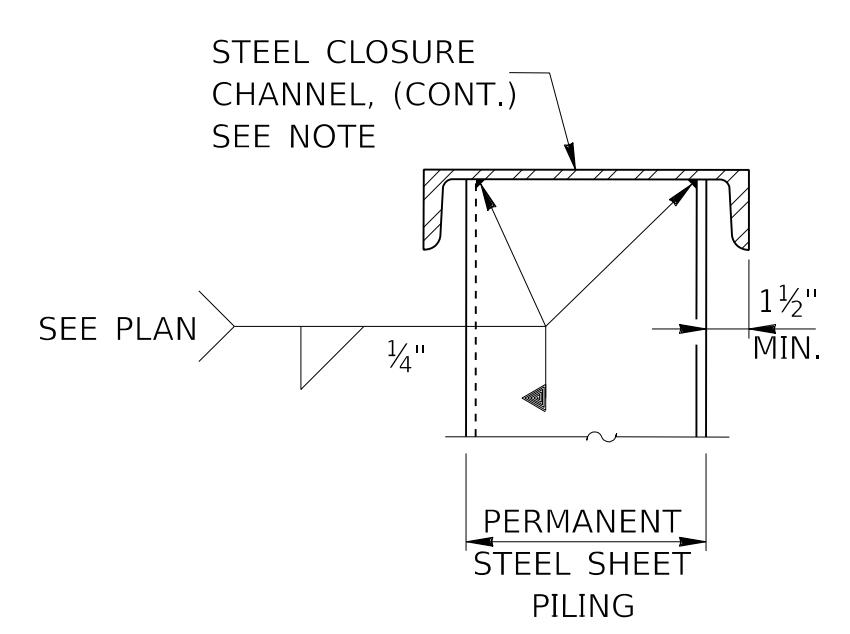


TYPICAL SECTION THRU SHEET PILING RETAINING WALL

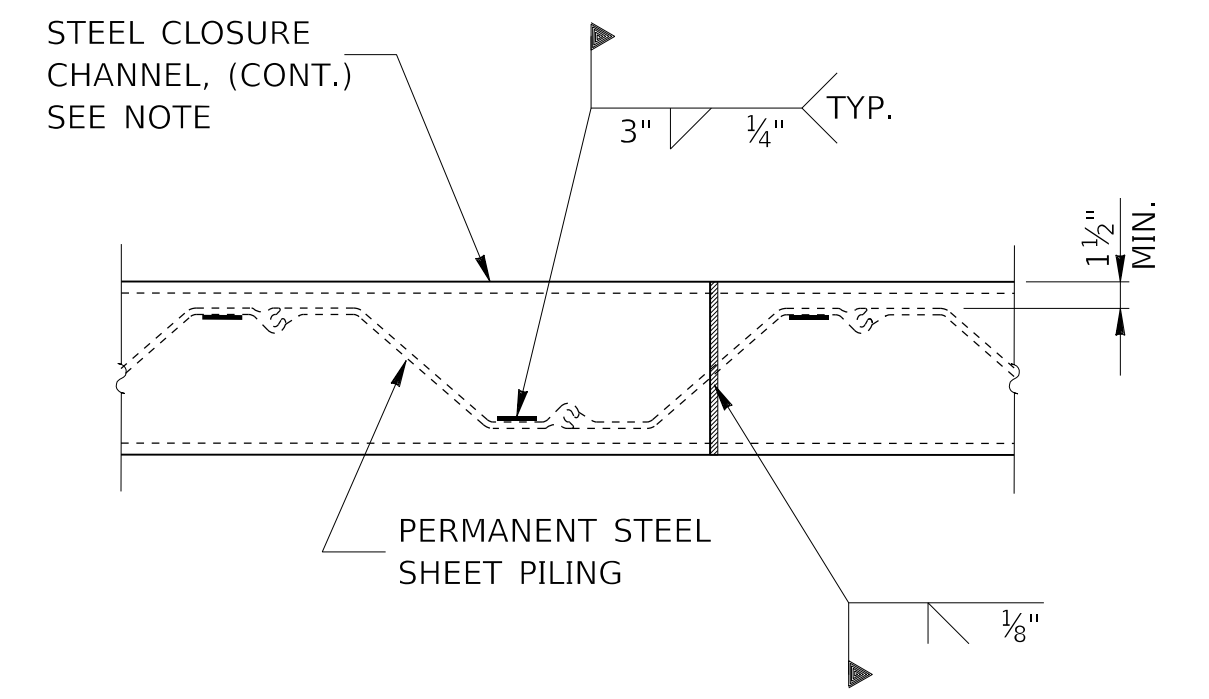


DETAIL B

DETAIL A

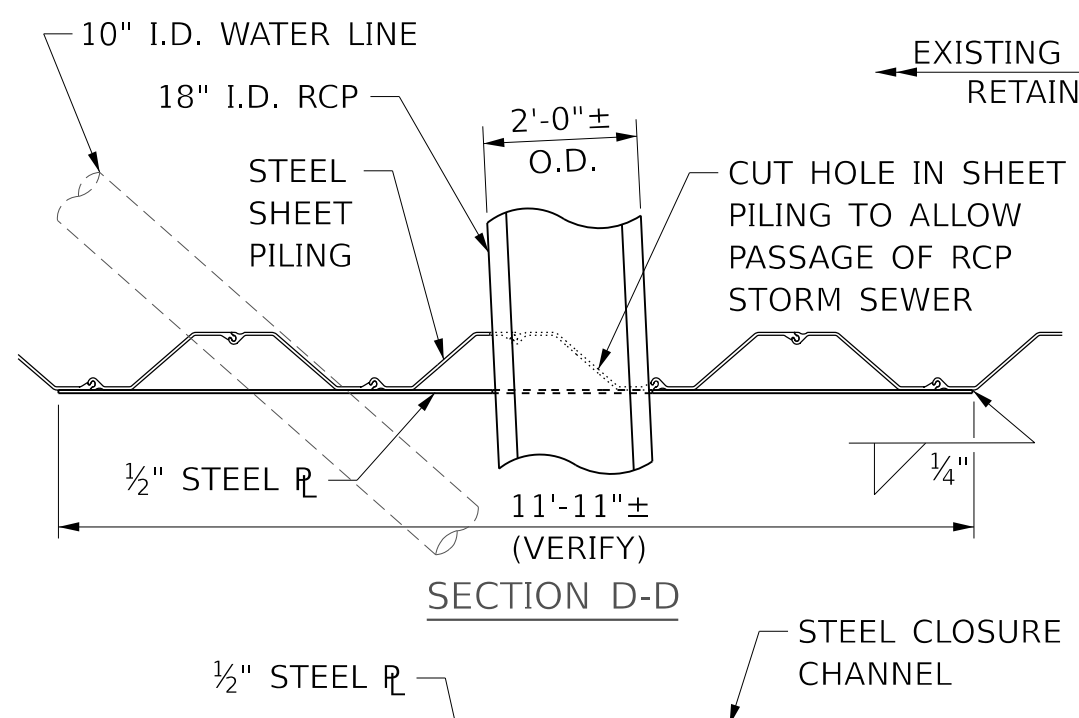


TYPICAL SECTION AT TOP OF SHEET PILING

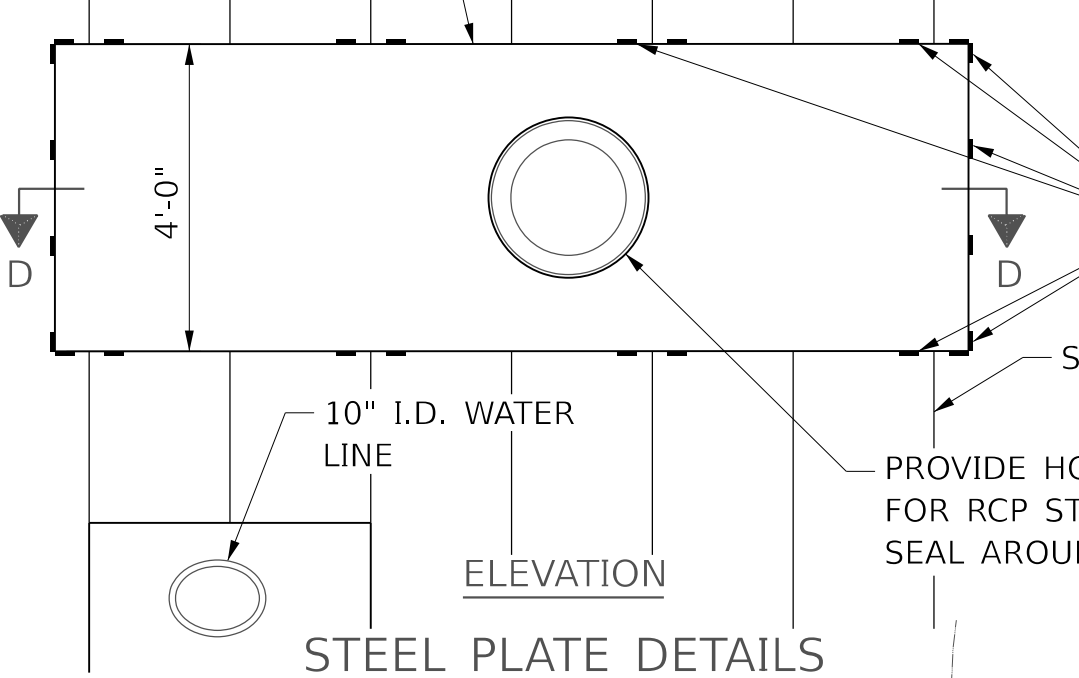


TYPICAL PLAN AT TOP OF SHEET PILING

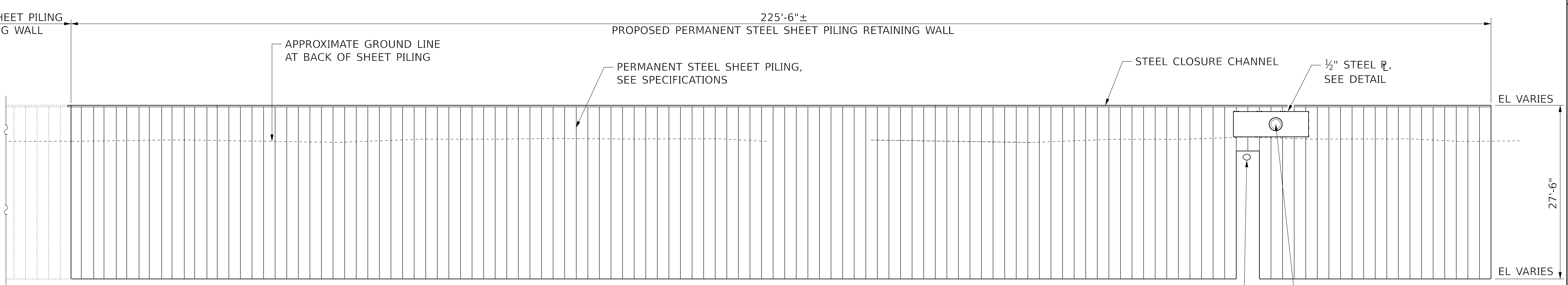
NOTE:  
STEEL CLOSURE CHANNEL SIZE TO BE DETERMINED BASED ON CHOSEN SECTION OF PERMANENT STEEL SHEET PILING. DETAILS SHALL BE SUBMITTED WITH SHOP DRAWINGS.



SECTION D-D

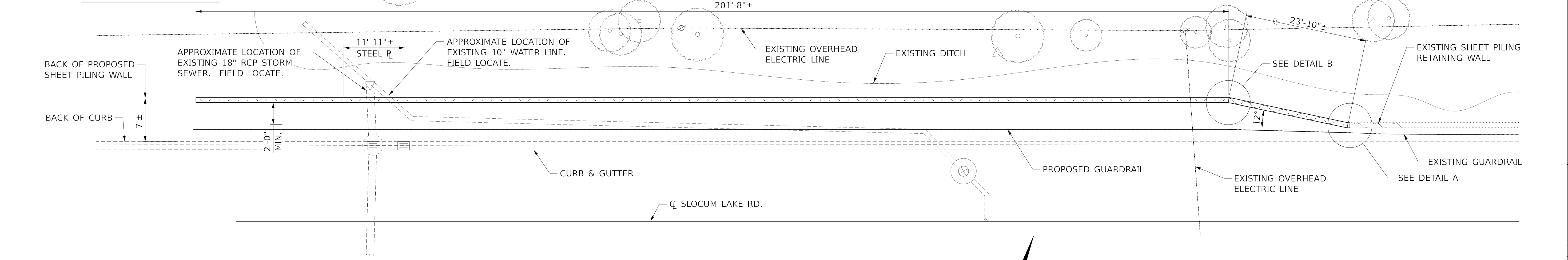


STEEL PLATE DETAILS

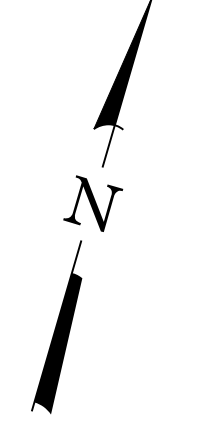


SHEET PILING RETAINING WALL ELEVATION

NOTE:  
CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE INTEGRITY OF THE EXISTING WATER LINE AND STORM SEWER THAT RUN THROUGH THE SHEET PILING WALL.



SHEET PILING RETAINING WALL PLAN



DESIGN SPECIFICATIONS

2014 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS w/2015 INTERIMS

DESIGN STRESSES

Fy = 50,000 psi

PILING DATA

Sreq = 30.2 in<sup>3</sup>/ft.

REVISIONS	DATE	BY	CHKD

STEEL SHEET PILING RETAINING WALL  
PLAN AND CONSTRUCTION DETAILS  
AT SLOCUM LAKE ROAD

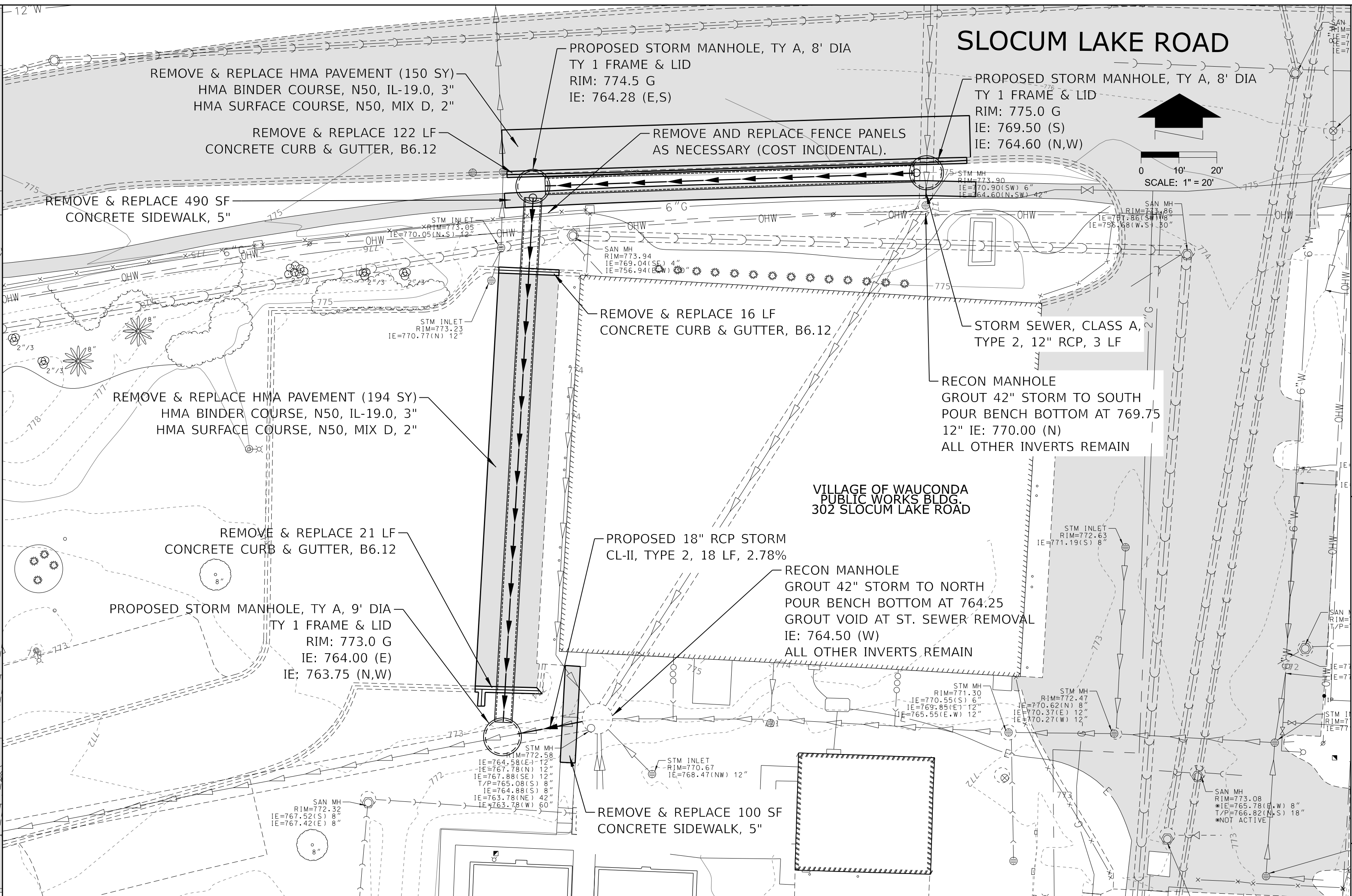
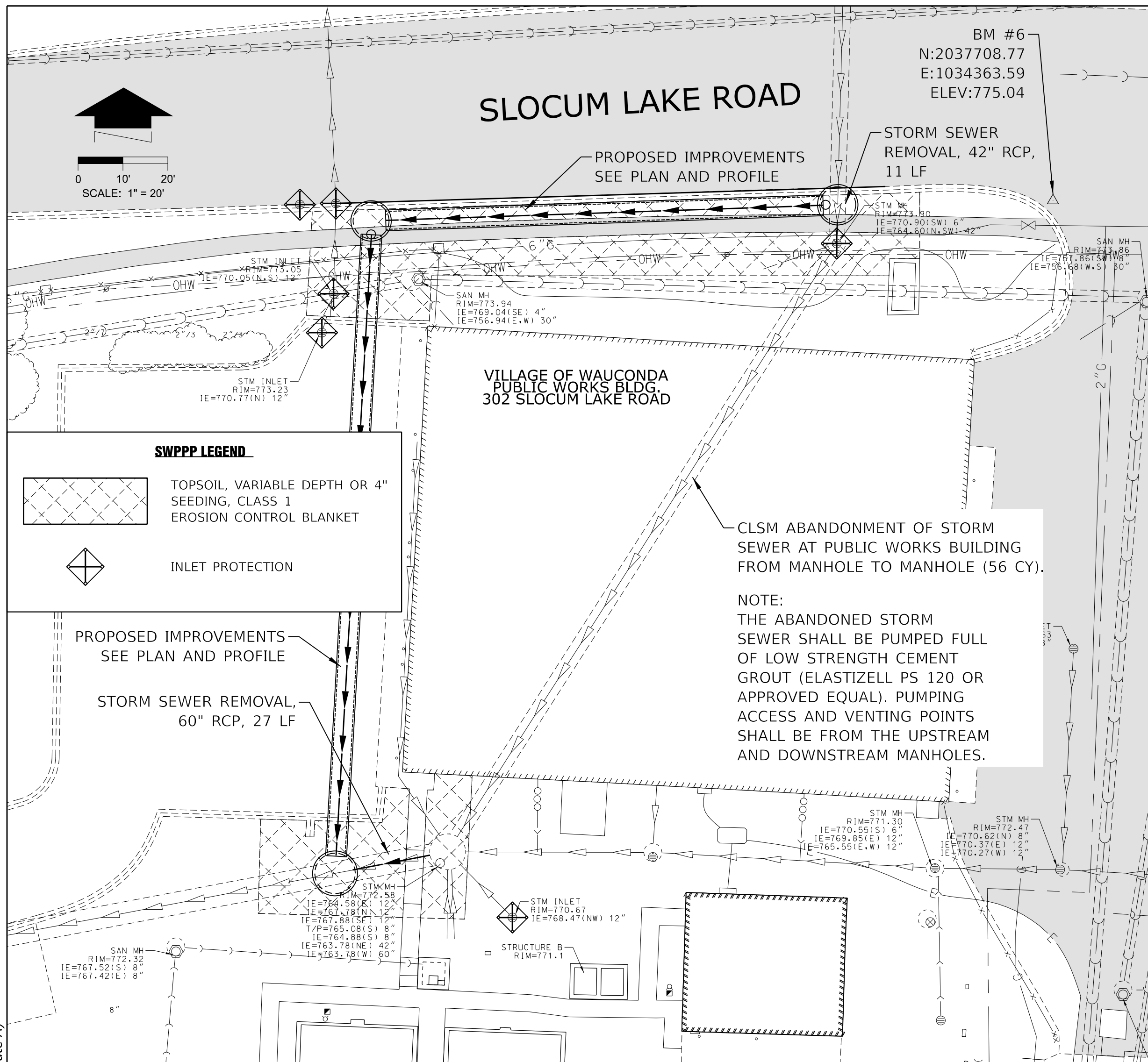
BANGS LAKE OUTFALL IMPROVEMENTS  
WAUCONDA, IL

HMG ENGINEERS, INC.  
975 CAMPUS DRIVE  
MUNDELEIN, ILLINOIS 60060  
WWW.HMGENGINEERS.COM

(847) 362-5959

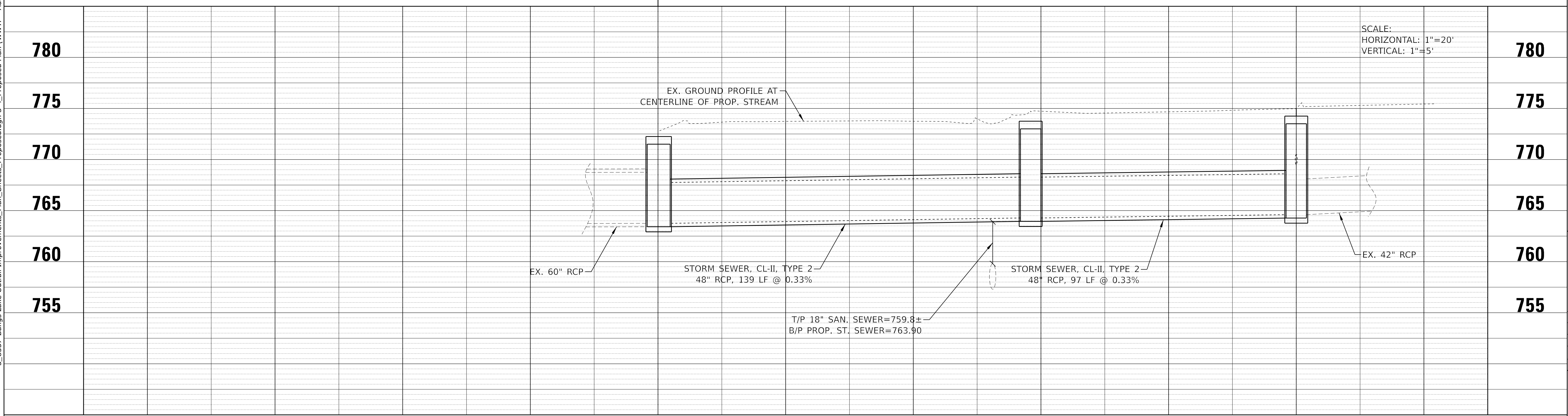
SURVEY	PK, DAA
DESIGN	CSB, DAA
DRAWN	CSB, DAA, JHM
CHECKED	CSB, DAA
DATE	SEPTEMBER 2024
<b>SHEET</b>	
34	
JOB NO.	8537





**DEMOLITION AND SESC PLAN AT PUBLIC WORKS BUILDING**

**PLAN AND PROFILE AT PUBLIC WORKS BUILDING**



SCALE:  
HORIZONTAL: 1"=20'  
VERTICAL: 1"=5'

EX. GROUND PROFILE AT  
CENTERLINE OF PROP. STREAM

EX. 60" RCP

STORM SEWER, CL-II, TYPE 2  
48" RCP, 139 LF @ 0.33%

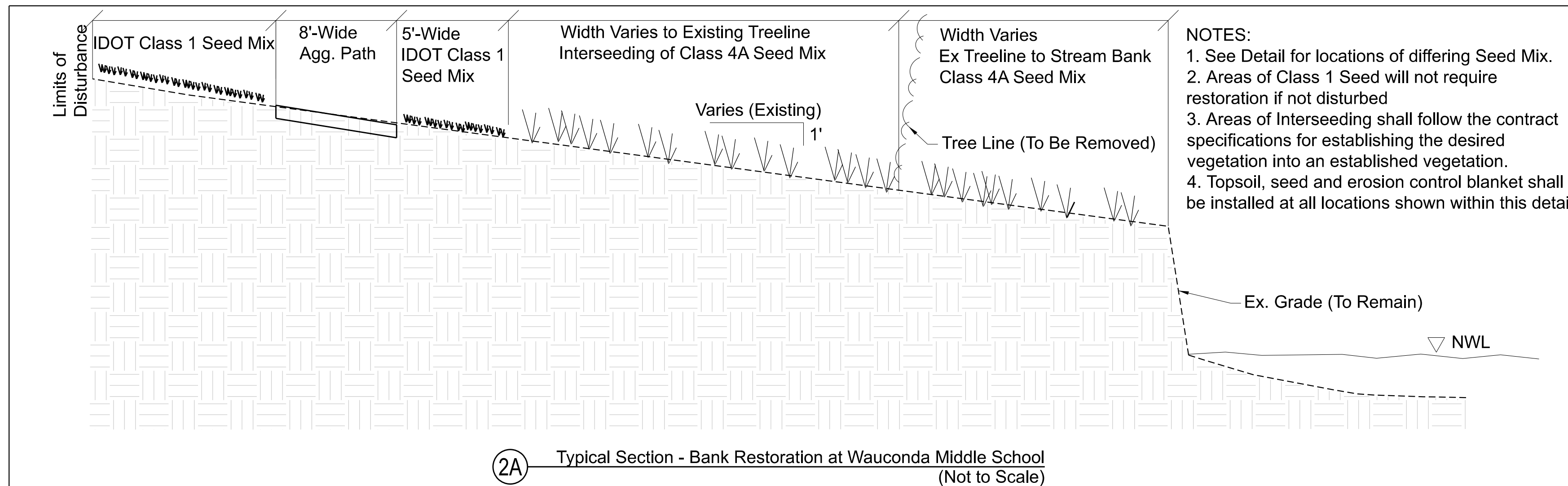
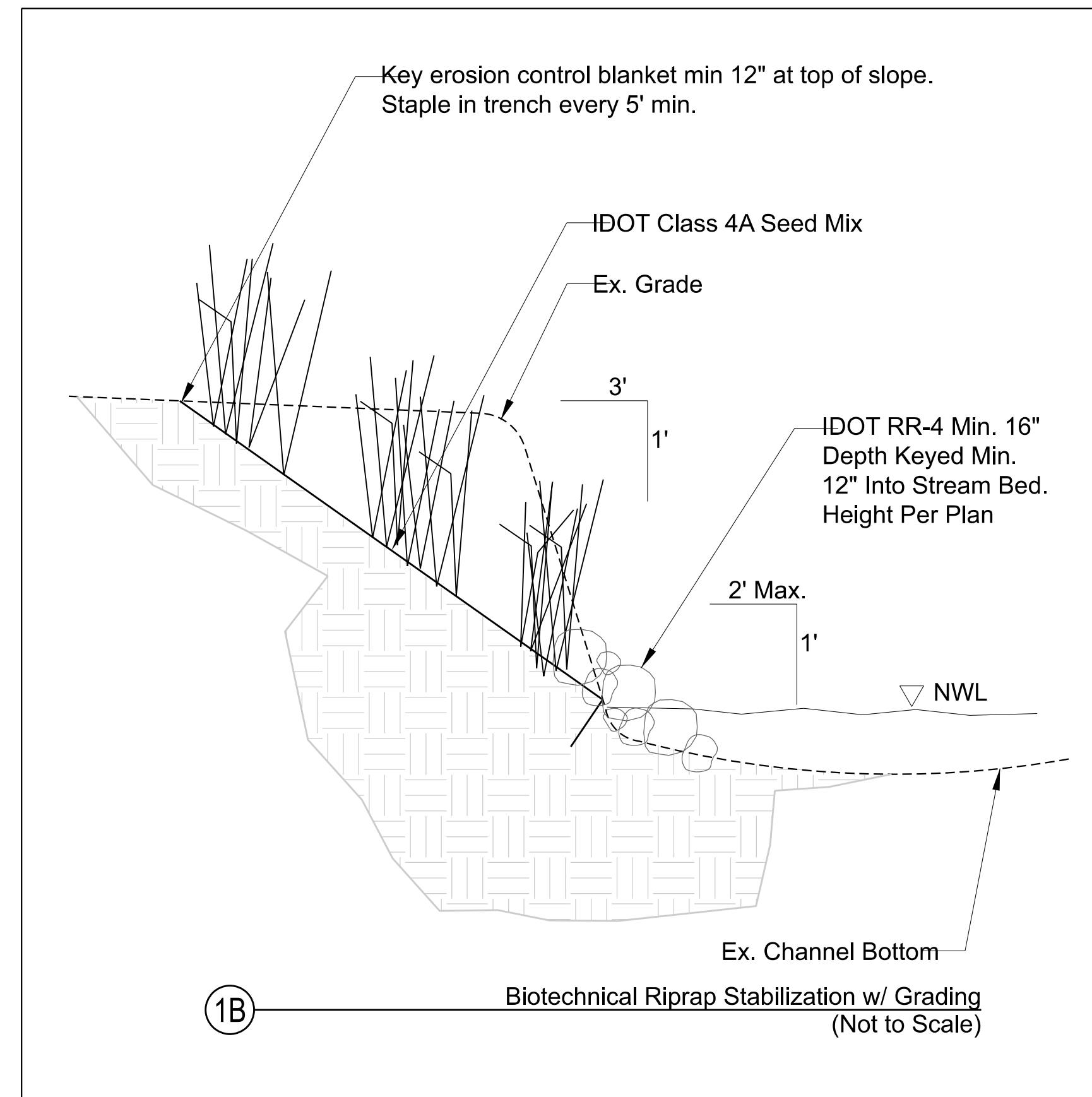
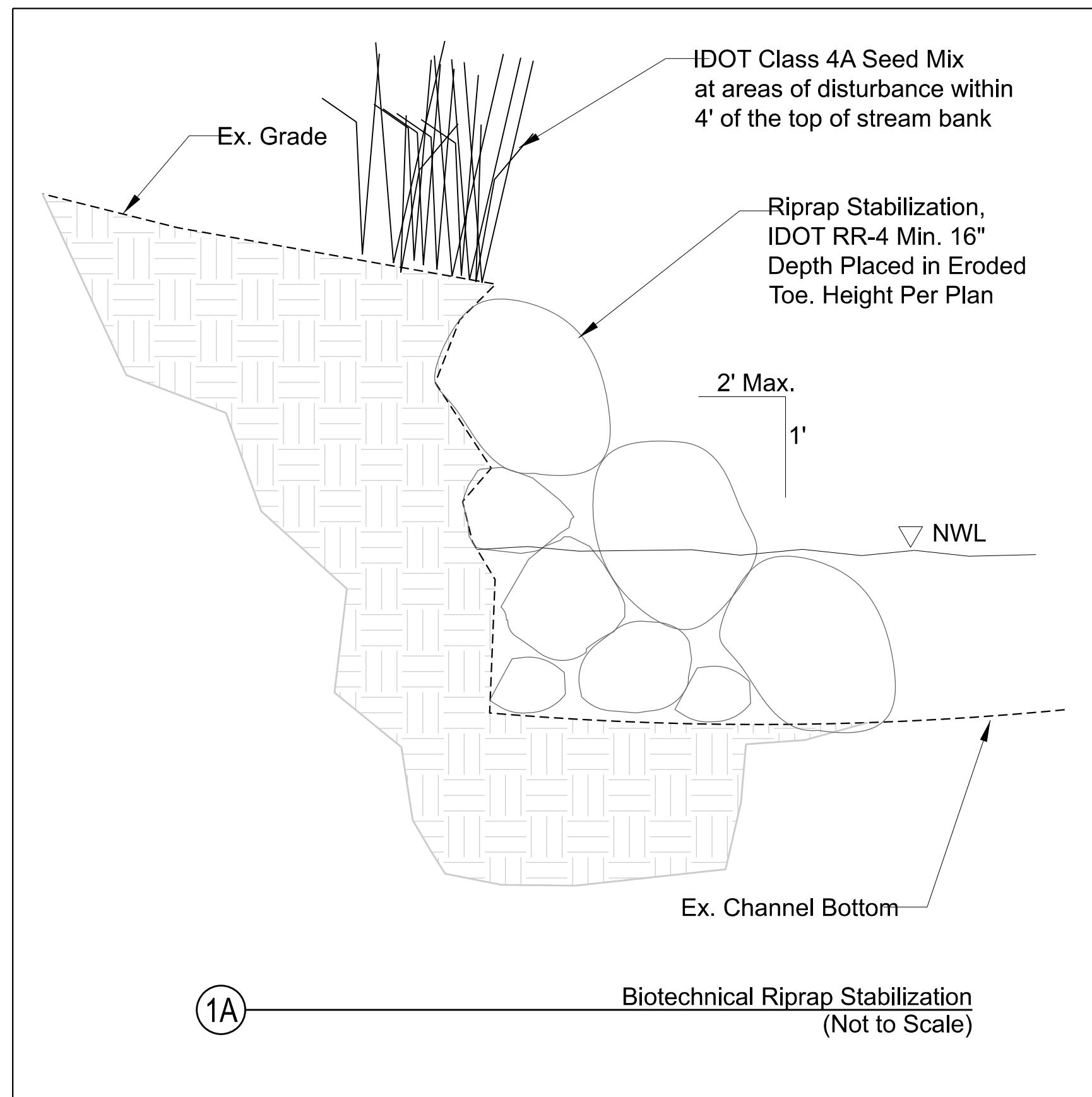
STORM SEWER, CL-II, TYPE 2  
48" RCP, 97 LF @ 0.33%

EX. 42" RCP

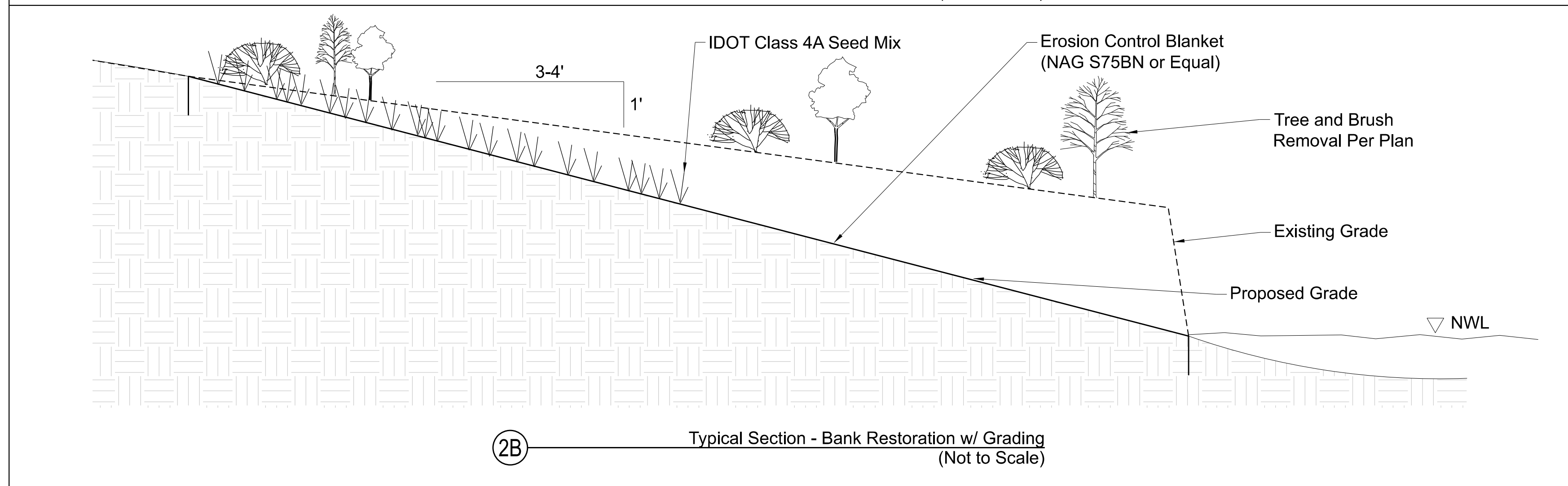
T/P 18" SAN. SEWER=759.8±  
B/P PROP. ST. SEWER=763.90

3\_8537-Bangs Lake Outfall Improvements\_Plan\_Sheets\_Proposed.dgn 3-4\_Proposed Plan (WWTP - Additive Alternate A)

 SCALE: 1" = 20'	 SCALE: 1" = 20'	<b>DEMOLITION, SESC, PROPOSED PLAN AND PROFILE AT P.W. BUILDING (ADDITIVE ALTERNATE A)</b>
<b>BANGS LAKE OUTFALL IMPROVEMENTS WAUCONDA, IL</b>		
<b>HMG ENGINEERS, INC.</b> 975 CAMPUS DRIVE MUNDELEIN, ILLINOIS 60060 WWW.HMGENGINEERS.COM (847) 362-5959		
<b>HMG</b> ENGINEERS	SURVEY PK, DAA DESIGN CSR, DAA DRAWN CSR, DAA, JRM CHECKED CSR, DAA DATE SEPTEMBER 2024	<b>SHEET</b> <b>36</b>



- NOTES:
1. See Detail for locations of differing Seed Mix.
  2. Areas of Class 1 Seed will not require restoration if not disturbed
  3. Areas of Interseeding shall follow the contract specifications for establishing the desired vegetation into an established vegetation.
  4. Topsoil, seed and erosion control blanket shall be installed at all locations shown within this detail.



REVISIONS	DATE	BY

TYPICAL STREAM CROSS SECTIONS

BANGS LAKE OUTFALL IMPROVEMENTS  
WAUCONDA, IL

HMG ENGINEERS, INC.  
975 CAMPUS DRIVE  
MUNDELEIN, ILLINOIS 60060  
WWW.HMGENGINEERS.COM

(847) 362-5959

SURVEY	PK, DAA
DESIGN	CSR, DAA
DRAWN	CSR, DAA, JRM
CHECKED	CSR, DAA
DATE	SEPTEMBER 2024

**PLAN**

Key  
FLOW  
4:1  
Slope 10:1  
6'-10"  
4'  
Pipe Outlet with FES  
Rock Riprap

**NOTES:**

1. Rock gradation shall meet IDOT requirement for GRAD. NO. 4 riprap, quality designation "A", or as designated by engineer.
2. Use largest individual stones From available material as shown for the emergent boulders and crest stone.
3. Riffle slope shall be 20:1 or flatter where fish passage is required.

**NOT TO SCALE**

Designed	M. DUNNIES	Date	10/7/13
Drawn		Checked	
Approved			

STREAM BANK STABILIZATION  
ROCK RIFFLE DETAILS

NRCS  
Natural Resources Conservation Service  
United States Department of Agriculture

File No. IL-ENG-165  
Drawing No. 1 of 2  
Page 1 of 2  
Sheet of

**SECTION B-B**

Key Depth = 1.5Ft.  
Back Fill  
Original Stream Bottom  
Back Fill  
6" On-Site Soil Material  
"V" Shaped Crest Control EI 0-6" Above Ex. Channel  
1.5  
1.5  
16" Min  
6'-10"  
Pipe Outlet with FES  
Stream Bottom Approximate Width

**SECTION A-A**

Crest 0-6" Above Ex. Channel  
Existing Stream Bed  
Pipe Outlet with FES  
Emergent Boulders  
Existing Stream Bed  
16"  
15'-20"  
h<sub>4</sub> Depth Of Bedkey Equals D<sub>100</sub> (Or Largest Rock)

**SECTION C-C**

1.5  
6'-10"  
Stream Bottom Approximate Width

Designed	M. DUNNIES	Date	10/7/13
Drawn		Checked	
Approved			

STREAM BANK STABILIZATION  
ROCK RIFFLE DETAILS

NRCS  
Natural Resources Conservation Service  
United States Department of Agriculture

File No. IL-ENG-165  
Drawing No. 2 of 2  
Page 2 of 2  
Sheet of

3A/3B Rock Riffle (3A) and Pipe Outlet Riffle (3B) Detail (Not to Scale)

**SECTION**

Match Constructed Grade To Existing Grade  
Geotextile  
18" Min  
Backfill Trench With Soil And Compact To A Density Equal To Or Greater Than Surrounding Soil.  
1' Min  
2' MAX.  
Thickness = 18"  
2' (Min.)  
Normal Water Line  
H=Varies See Plans For Limits  
Existing Grade  
Geotextile

**NOTES:**

1. Geotextile (non-woven, needle punched) min. criteria:  
Grab Tensile strength (lb) ASTM D 4632 \_\_\_\_\_ 202  
Elongation at failure (%) ASTM D 4632 \_\_\_\_\_ ≥50  
Trapezoidal tear strength (lb) ASTM D 4533 \_\_\_\_\_ 79  
Puncture strength (lb) ASTM D 6241 \_\_\_\_\_ 433  
Ultraviolet light (% retained strength) ASTM 4355 \_\_\_\_\_ min 50  
Apparent opening size (AOS) ASTM D 4751 \_\_\_\_\_ max 0.22 mm (US sieve size 70)  
Permittivity sec<sup>-1</sup>/ ASTM D 4491 \_\_\_\_\_ min 0.7
2. Any geotextile splices shall overlap a minimum of 18 inches, with upstream or upslope geotextile overlapping the abutting downslope geotextile.
3. The rock shall be compacted with the placement equipment to increase in-place density. The complete job shall present a workmanlike finish.

Rock Riprap Shall Be Gradation No.4 Quality Designation "A" As Per IDOT Standard Specification.

Designed	M. DUNNIES	Date	10/7/13
Drawn		Checked	
Approved			

ROCK RIPRAP STREAMBANK PROTECTION DETAIL

USDA  
United States Department of Agriculture  
Natural Resources Conservation Service

File No. IL-ENG-162  
Drawing No. 1 of 1  
Page 1 of 1  
Sheet of

Adapted from Standard Drawing IL-640 in the Illinois Urban Manual.

REVISIONS	DATE	BY	FILE

**BANGS LAKE OUTFALL IMPROVEMENTS WAUCONDA, IL**

**HMG ENGINEERS, INC.**  
975 CAMPUS DRIVE  
MUNDELEIN, ILLINOIS 60060  
WWW.HMGENGINEERS.COM

(847) 362-5959

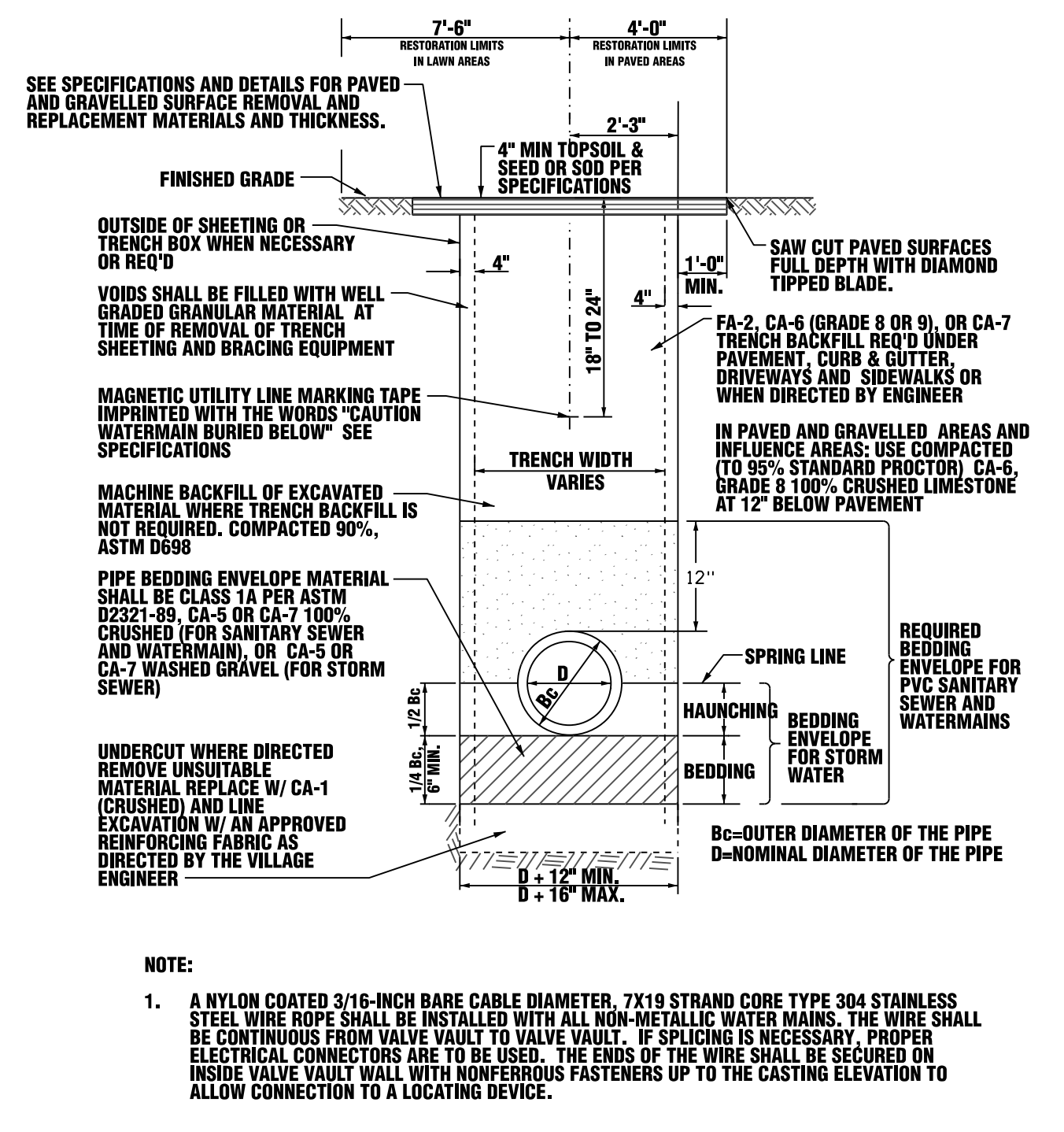
**HMG ENGINEERS**

SURVEY	PK, DAA
DESIGN	CSR, DAA
DRAWN	CSR, DAA, JRM
CHECKED	CSR, DAA
DATE	SEPTEMBER 2024

**SHEET 38**

JOB NO. 8537

5\_8537-Bangs Lake Outfall Improvements\_Plan\_Sheets\_Details.dgn\_39\_Construction Details - Sanitary and Storm



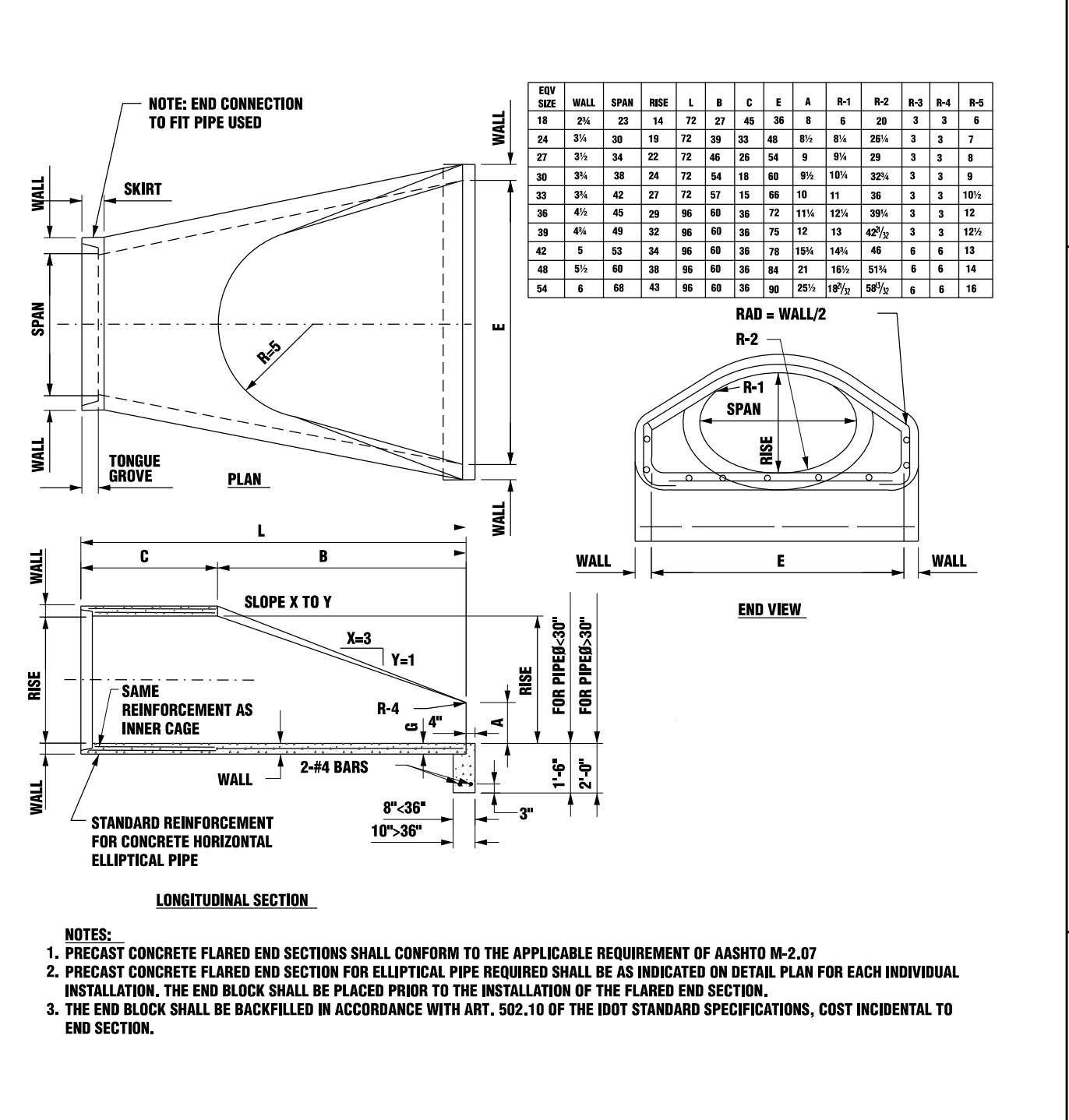
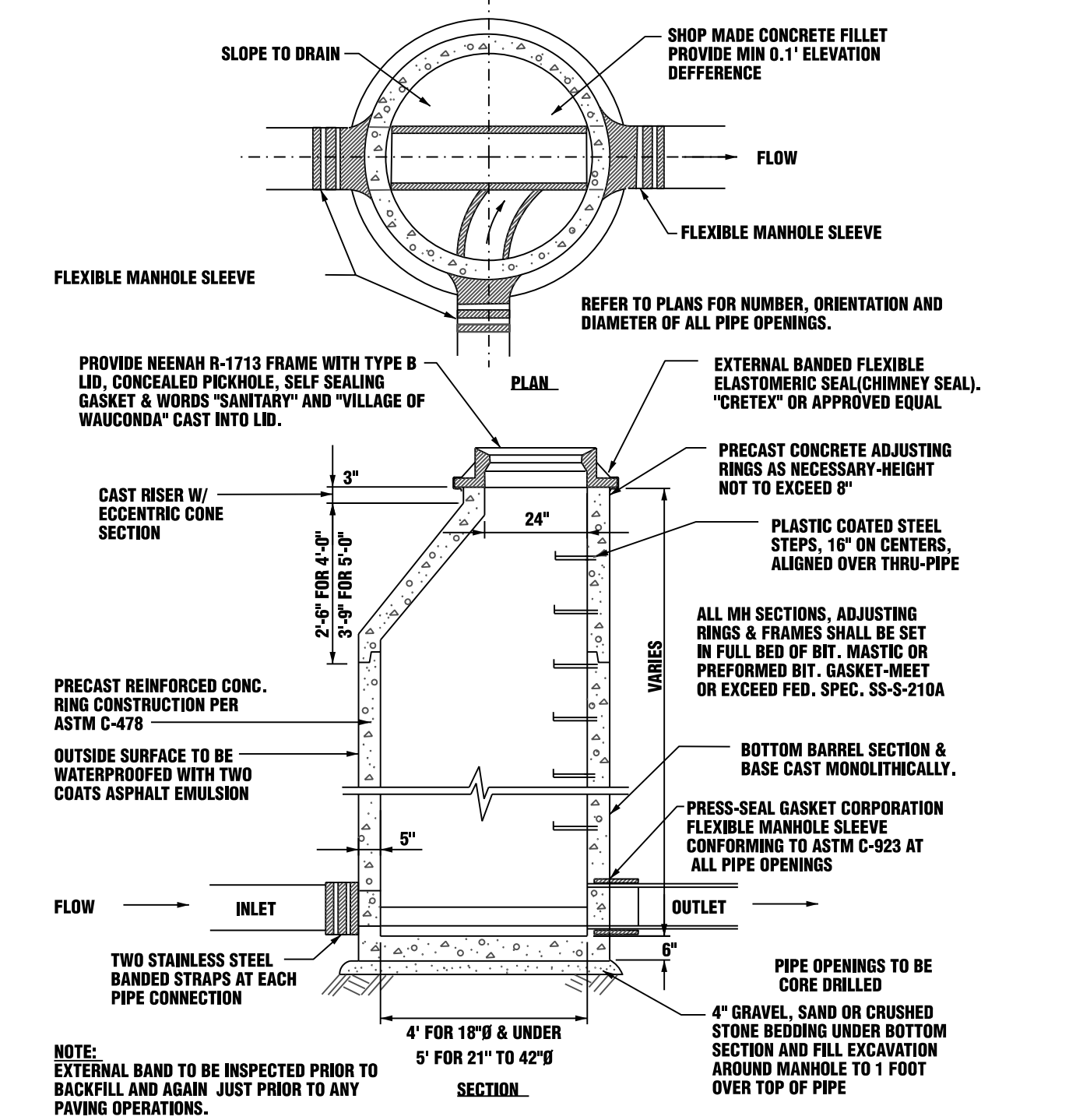
**MATERIAL STANDARDS**  
N.T.S.

**HMG ENGINEERS**  
VILLAGE OF WAUCONDA

REVISION		Date
By	Description	Date

STANDARD NO. 202

ITEM	BRAND	PRODUCT		
<b>FIRE HYDRANTS:</b> TRAFFIC MODEL W/ LOCATOR WIRE & FLANGE PACKAGE	WATEROUS PAKER COPPERHEAD INDUSTRIES	WH87-500 SLOSHOT BURST CABLE COBRA ACCESS POINT		
<b>GATE VALVES (UP TO 16" IN SIZE):</b> (SPECIFY SIZE, NON-RISEING, STEM, 2" NUT, M.L., OPEN LEFT)	AMERICAN FLOW CONTROL	SERIES 2500 RESILIENT WEDGE		
<b>VALVE BOXES:</b> (3 PIECE)	TYLER UNION ADAPTOR	S860 VALVE BOX ADAPTOR II		
<b>CURB STOPS:</b> (SPECIFY SIZE)	FORD	B44-644MML		
<b>B-BOX:</b> (AT LEAST 1 1/2" TOP SECTION)	FORD	EM2-60-67		
<b>WATER SERVICE SADDLES:</b> (ALL SERVICE SADDLES SHALL BE DOUBLE STAP: BRONZE, NYLON COATED OR STAINLESS STEEL)	FORD	FC202		
<b>CORPORATION COCKS:</b> (SPECIFY SIZE)	FORD	F1000-4		
<b>MANHOLE FRAMES AND LIDS:</b> (SSL = SELF SEALING, CONCEALED PICKHOLE LID WITH PROPER UTILITY MARKINGS)		CLOSED LID	OPEN GRATE	YARD INLET
		R-1713 "SANITARY" SSL	R-1772 W/ R-2502	R-4340-B
		R-1713 "WATER" SSL		
		R-1772 "STORM"		
<b>CURB FRAME AND GRATES:</b>		M-3, 12 CURB	B-6, 12 CURB	B-6, 18 CURB
		R-3501-E2	R-3281-A	R-3278-A



**TYPICAL TRENCH AND BEDDING DETAIL**  
N.T.S.

**HMG ENGINEERS**  
VILLAGE OF WAUCONDA

REVISION		Date
By	Description	Date
CSB	2017 ORDINANCE UPDATE	1/17

STANDARD NO. 201

**MATERIAL STANDARDS**  
N.T.S.

**HMG ENGINEERS**  
VILLAGE OF WAUCONDA

REVISION		Date
By	Description	Date

STANDARD NO. 202

**SANITARY MANHOLE**  
N.T.S.

**HMG ENGINEERS**  
VILLAGE OF WAUCONDA

REVISION		Date
By	Description	Date

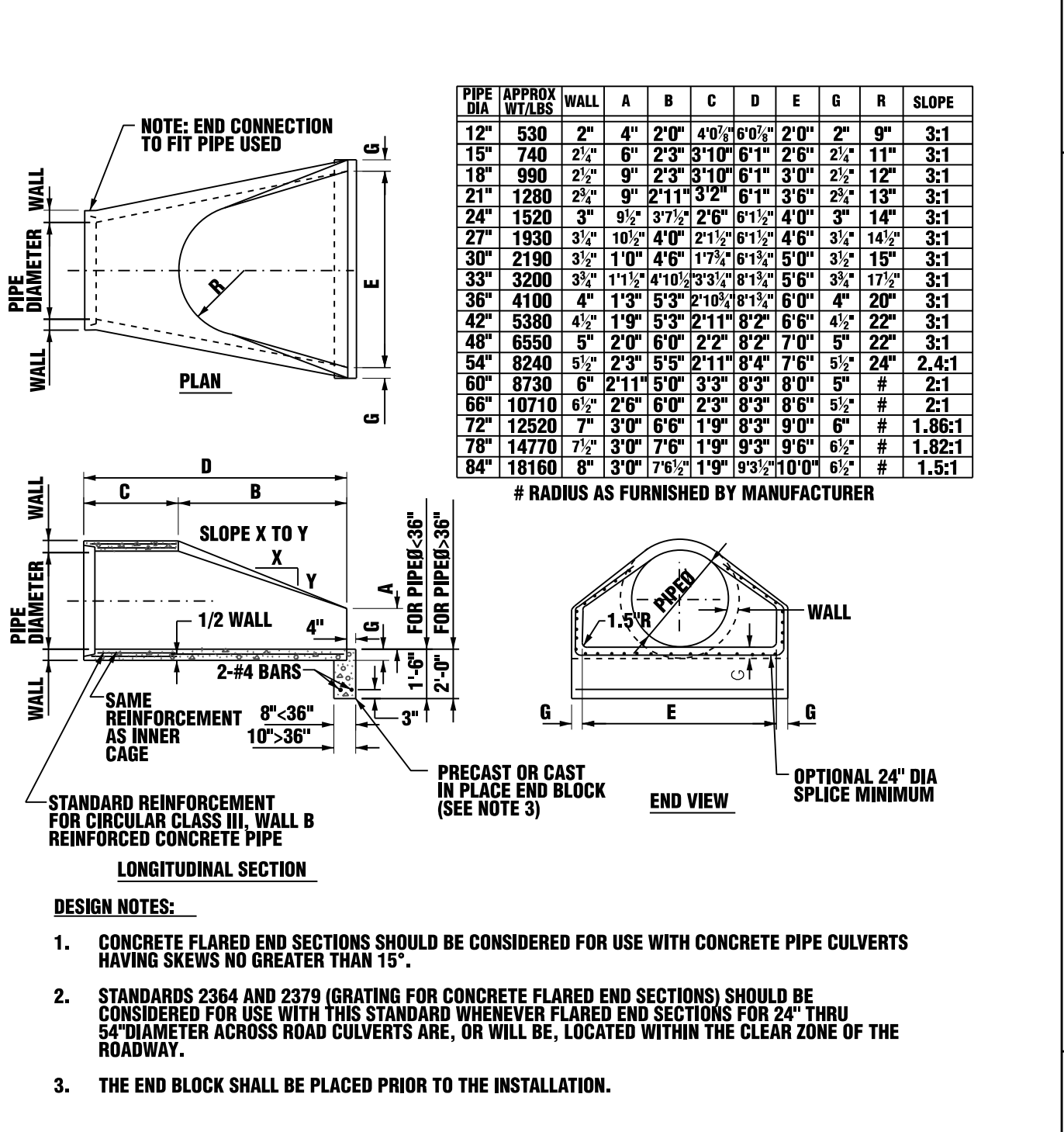
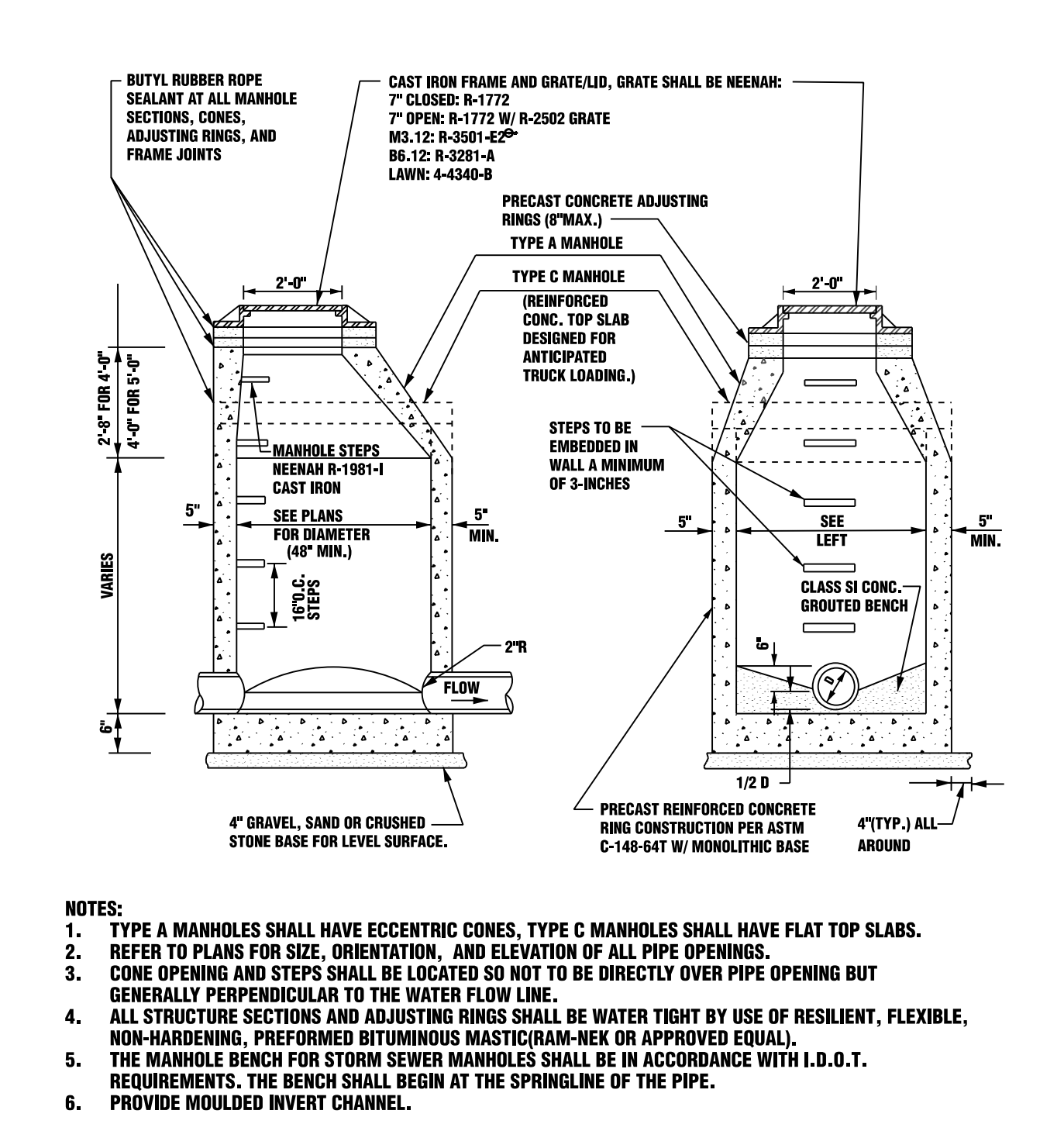
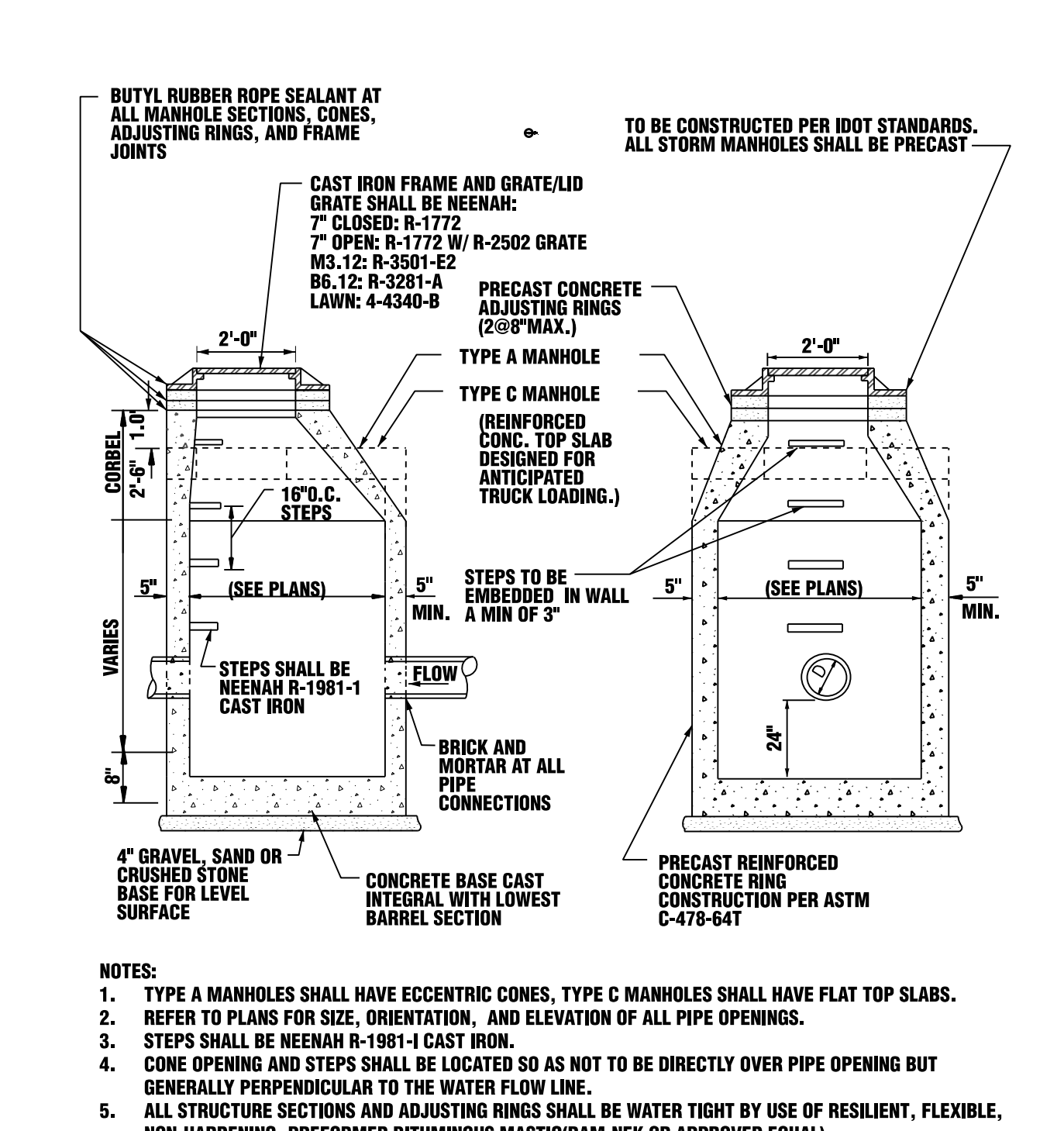
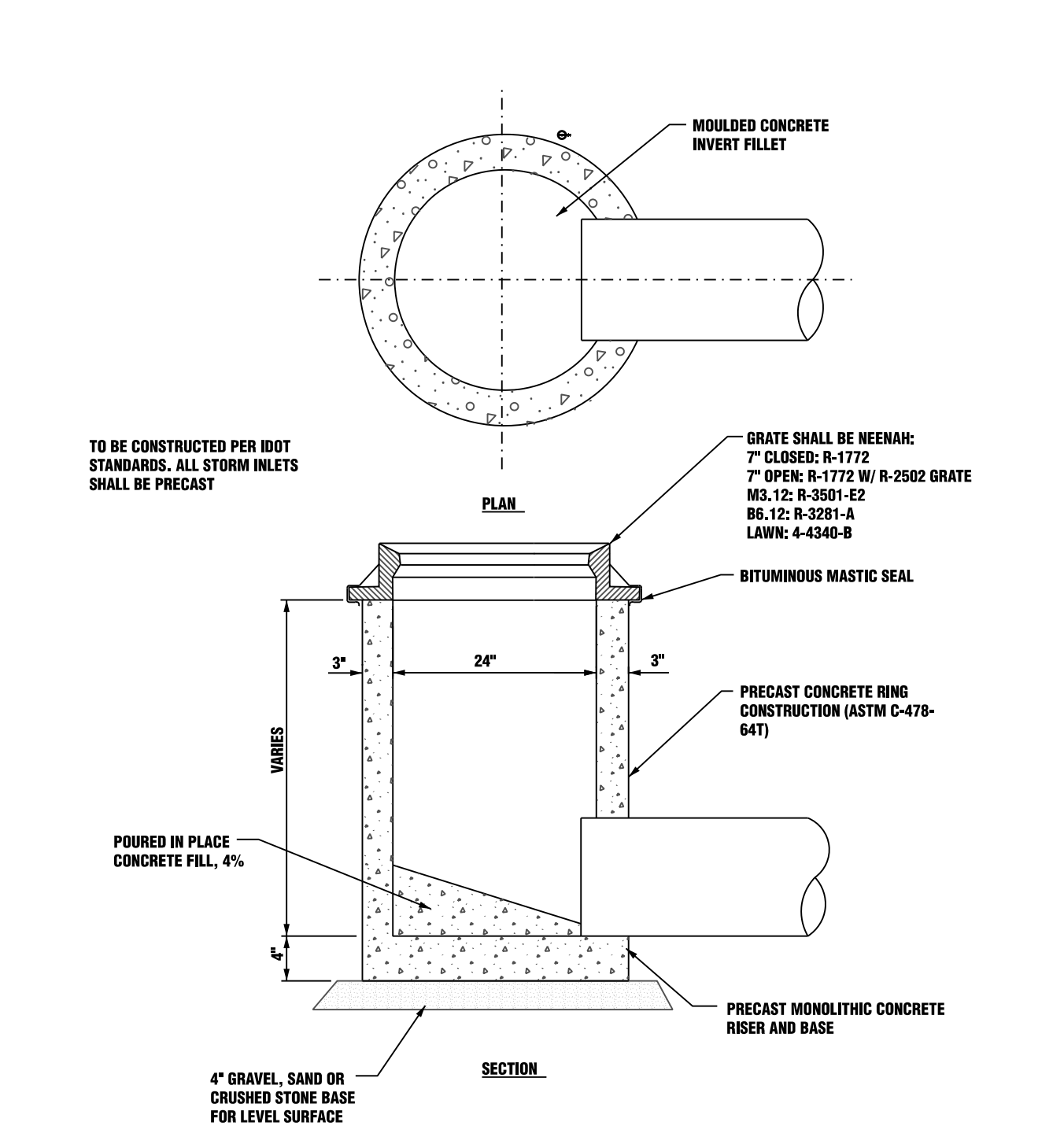
STANDARD NO. 301

**PRECAST REINFORCED CONCRETE HORIZONTAL ELLIPTICAL FLARED END SECTION**  
N.T.S.

**HMG ENGINEERS**  
VILLAGE OF WAUCONDA

REVISION		Date
By	Description	Date

STANDARD NO. 410



**STORM INLET, TYPE A**  
N.T.S.

**HMG ENGINEERS**  
VILLAGE OF WAUCONDA

REVISION		Date
By	Description	Date

STANDARD NO. 401

**STORM CATCH BASIN, TYPE A OR C**  
N.T.S.

**HMG ENGINEERS**  
VILLAGE OF WAUCONDA

REVISION		Date
By	Description	Date

STANDARD NO. 403

**STORM MANHOLE, TYPE A OR C**  
N.T.S.

**HMG ENGINEERS**  
VILLAGE OF WAUCONDA

REVISION		Date
By	Description	Date

STANDARD NO. 402

**PRECAST RCP FLARED END SECTION**  
N.T.S.

**HMG ENGINEERS**  
VILLAGE OF WAUCONDA

REVISION		Date
By	Description	Date

STANDARD NO. 409

REVISION		Date
By	Description	Date

DATE: SEPTEMBER 2024

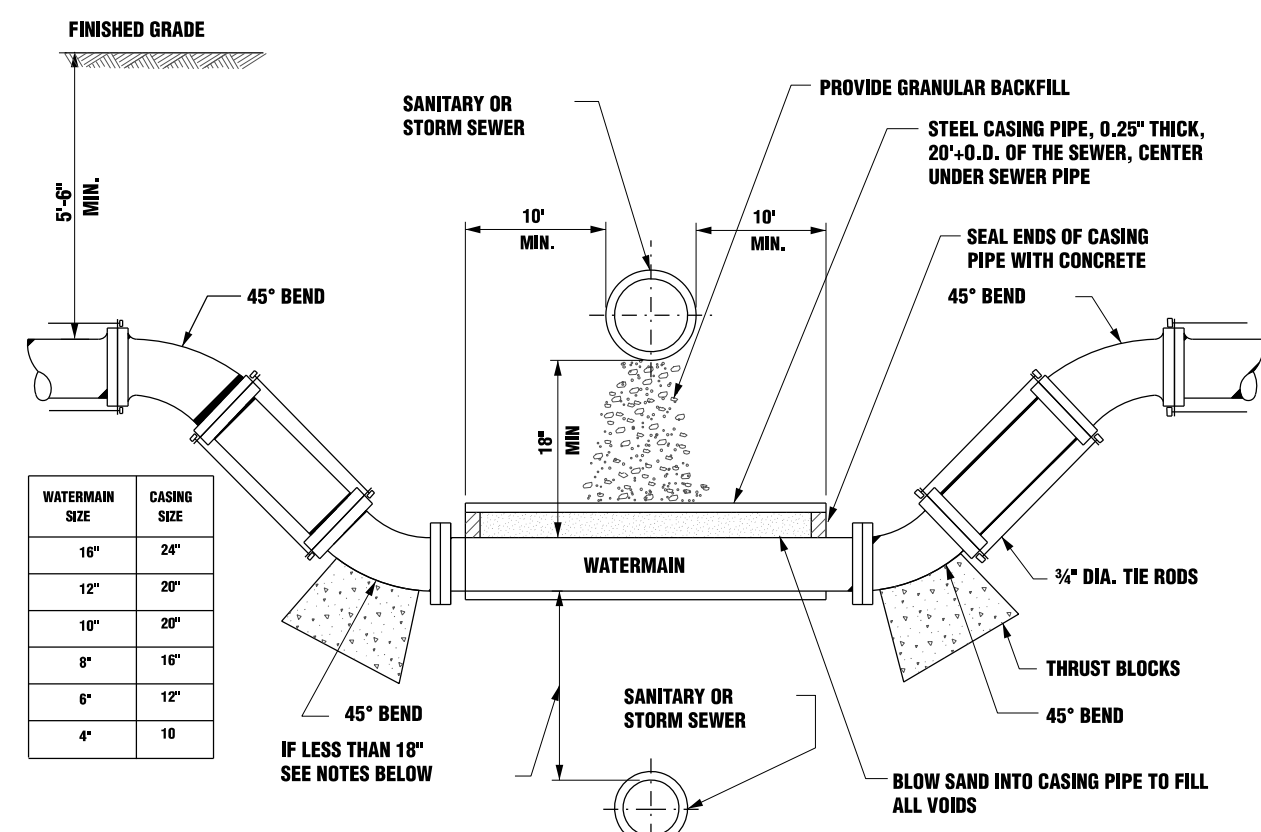
**SHEET**  
39

JOB NO. 8537

**CONSTRUCTION DETAILS**  
**STORM AND SANITARY SEWER**

**BANGS LAKE OUTFALL IMPROVEMENTS**  
**WAUCONDA, IL**

**HMG ENGINEERS, INC.**  
**975 CAMPUS DRIVE**  
**MUNDELEIN, ILLINOIS 60060**  
**WWW.HMGENGINEERS.COM**  
**(847) 362-5959**

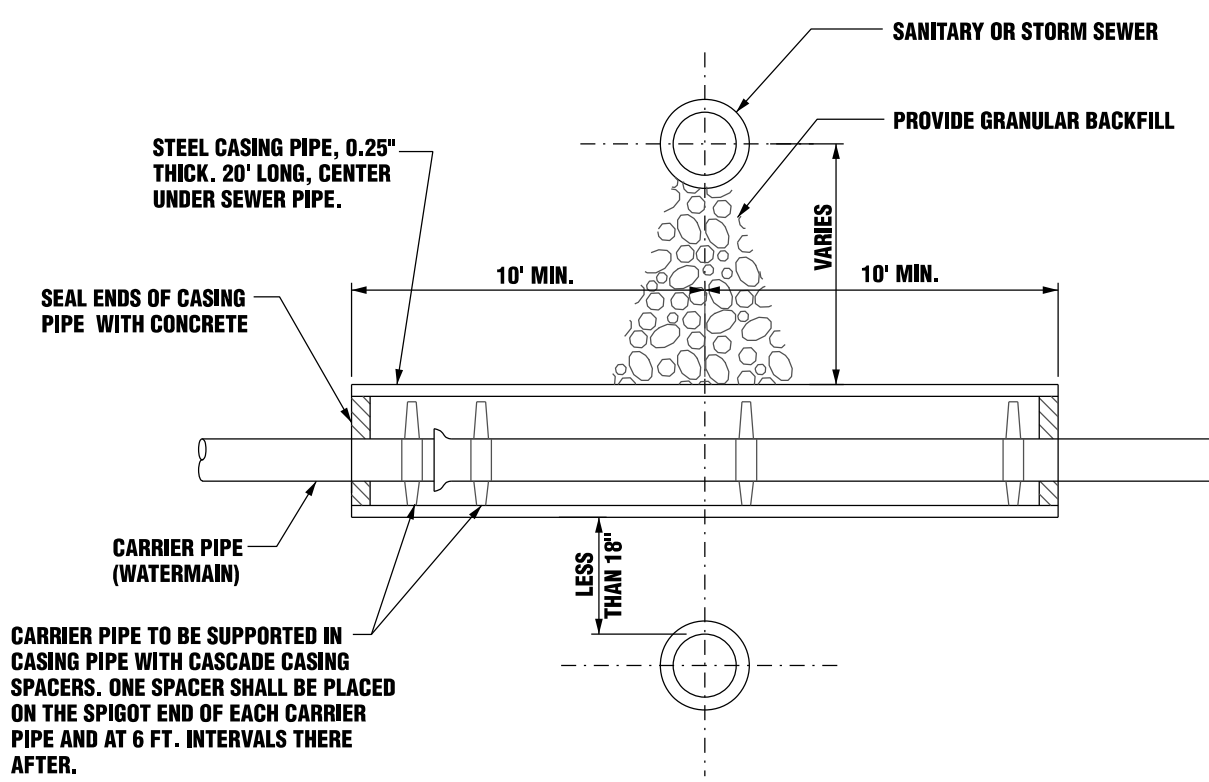


**EPA REQUIREMENTS**

WHERE A WATERMAIN CROSSES BELOW A SANITARY OR STORM SEWER, REGARDLESS OF THE VERTICAL SEPARATION, BOTH THE WATERMAIN AND THIS SEWER MUST BE CONSTRUCTED OF WATERMAIN TYPE MATERIALS, AND CONSTRUCTION MUST EXTEND ON EACH SIDE OF THE CROSSING UNTIL THE NORMAL DISTANCE FROM THE WATERMAIN TO THE SEWER IS AT LEAST 10 FEET. THE SEWER MUST BE CONSTRUCTED OF SLIP-ON OR MECHANICAL JOINT CAST IRON OR DUCTILE IRON PIPE, ASBESTOS CEMENT PRESSURE PIPE, PRE-STRESSED CONCRETE PIPE OR PVC PIPE MEETING WATERMAIN STANDARDS. AS AN ALTERNATE, EITHER THE WATERMAIN OR THE SEWER CAN BE INSTALLED INSIDE A CASING PIPE WHICH EXTENDS AT LEAST 10 FEET ON EACH SIDE OF THE CROSSING.

THE PRECEDING REQUIREMENT ALSO APPLIES WHERE THE BOTTOM OF THE WATERMAIN IS LESS THAN 18" ABOVE THE TOP OF THE SANITARY OR STORM SEWER AND WHERE THE HORIZONTAL DISTANCE BETWEEN THE WATERMAIN AND THE SANITARY OR STORM SEWER IS LESS THAN 10'.

\*\*ALSO SEE "EPA WATER AND SEWER SEPARATION REQUIREMENTS" FOR ADDITIONAL REQUIREMENTS

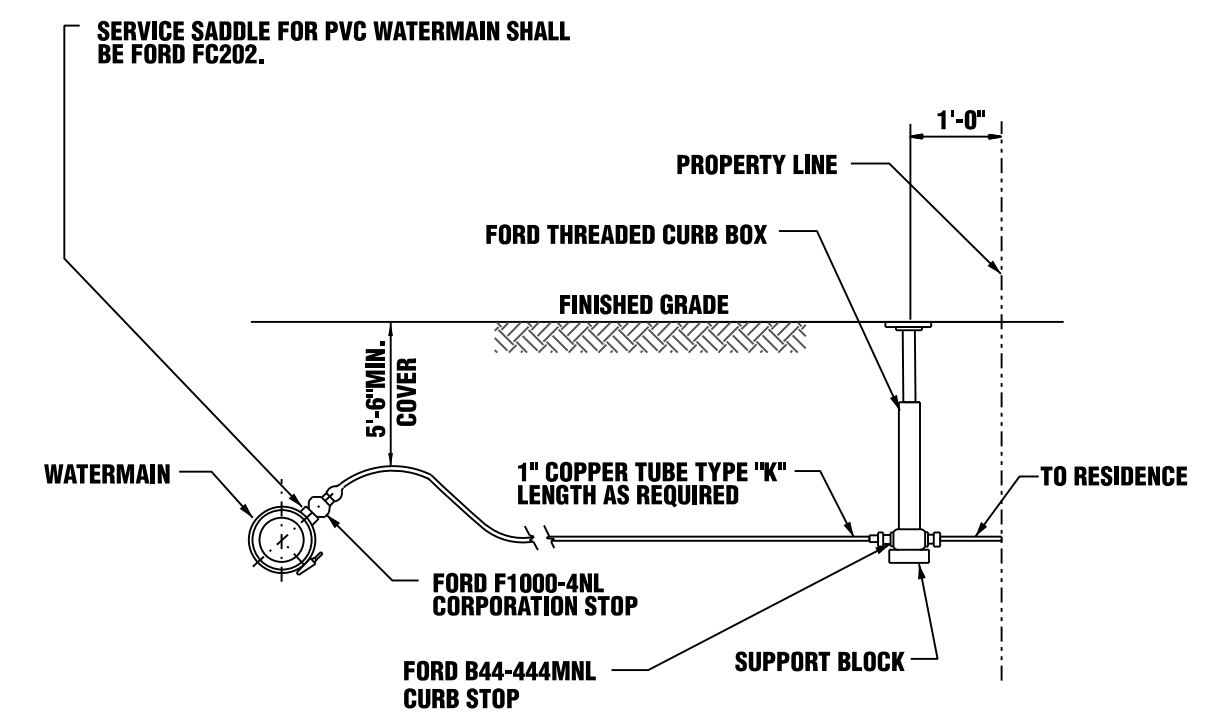


**EPA REQUIREMENTS**

WHERE A WATERMAIN CROSSES BELOW A SANITARY OR STORM SEWER, REGARDLESS OF THE VERTICAL SEPARATION, BOTH THE WATERMAIN AND SEWER MUST BE CONSTRUCTED OF WATERMAIN TYPE MATERIALS, AND THAT THIS CONSTRUCTION MUST EXTEND ON EACH SIDE OF THE CROSSING UNTIL THE PRECEDING REQUIREMENT ALSO APPLIES WHERE THE BOTTOM OF THE WATERMAIN IS LESS THAN 18-INCHES ABOVE THE TOP OF THE SANITARY OR STORM SEWER. NORMAL DISTANCE FROM THE WATERMAIN TO THE SEWER IS AT LEAST 10-FEET. THE SEWER MUST BE CONSTRUCTED OF SLIP-ON OR MECHANICAL JOINT CAST IRON OR DUCTILE IRON PIPE, PRESTRESSED CONCRETE PIPE OR PVC PIPE MEETING WATERMAIN STANDARDS. AS AN ALTERNATE, EITHER THE WATERMAIN OR THE SEWER CAN BE INSTALLED INSIDE A CASING PIPE WHICH EXTENDS AT LEAST 10-FEET ON EACH SIDE OF THE CROSSING.

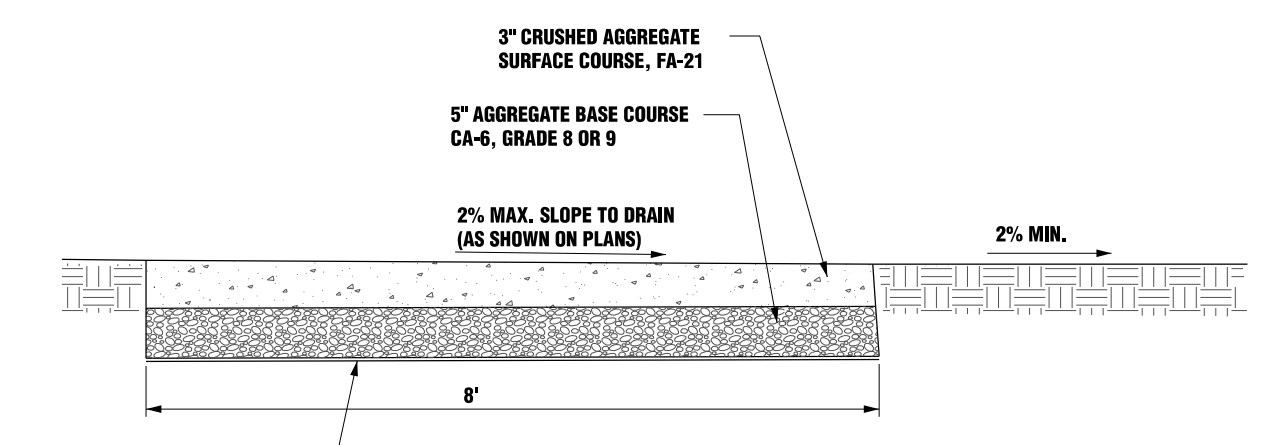
THE PRECEDING REQUIREMENT ALSO APPLIES WHERE THE BOTTOM OF THE WATERMAIN IS LESS THAN 18-INCHES ABOVE THE TOP OF THE SANITARY OR STORM SEWER.

WATERMAIN SIZE	CASING SIZE
16"	24"
12"	20"
10"	20"
8"	16"
6"	12"
4"	10"



**NOTES:**

- NO JOINTS SHALL BE PERMITTED IN THE SERVICE LINE FROM THE MAIN TO THE CURB STOP EXCEPT AS NECESSARY TO CLEAR OTHER UTILITIES ETC. SUBJECT TO THE APPROVAL OF THE VILLAGE OR ITS REPRESENTATIVE.
- ALL SERVICES TO BE TAPPED AFTER WATERMAIN PASSES PRESSURE AND CHLORINATION TESTS.
- THE WATER SERVICE IS THE RESPONSIBILITY OF THE PROPERTY OWNER FROM THE CONNECTION AT THE MAIN TO THE BUILDING.



**NOTES:**

- THE FILTER FABRIC SHALL MEET THE REQUIREMENTS IN IDOT MATERIAL SPECIFICATIONS 592 GEOTEXTILE TABLE 1 OR 2, CLASS I, II, III.
- SUBGRADE SHALL BE COMPACTED PRIOR TO THE INSTALLATION OF THE GEOTEXTILE FILTER FABRIC.
- CA-6 AGGREGATE BASE SHALL BE COMPACTED IN 6-INCH LIFTS MAX.
- FA-21 SURFACE COURSE AGGREGATE SHALL BE COMPACTED TO FINAL GRADES AS SHOWN ON THE PLANS.

**WATERMAIN CASING PIPE AND SEWER SEPARATION**  
N.T.S.

**HMG ENGINEERS** VILLAGE OF WAUCONDA

REVISION	By	Description	Date

STANDARD NO. 506

**WATERMAIN CASING PIPE DETAIL W/ SPACERS**  
N.T.S.

**HMG ENGINEERS** VILLAGE OF WAUCONDA

REVISION	By	Description	Date

STANDARD NO. 509

**WATER SERVICE CONNECTION**  
N.T.S.

**HMG ENGINEERS** VILLAGE OF WAUCONDA

REVISION	By	Description	Date

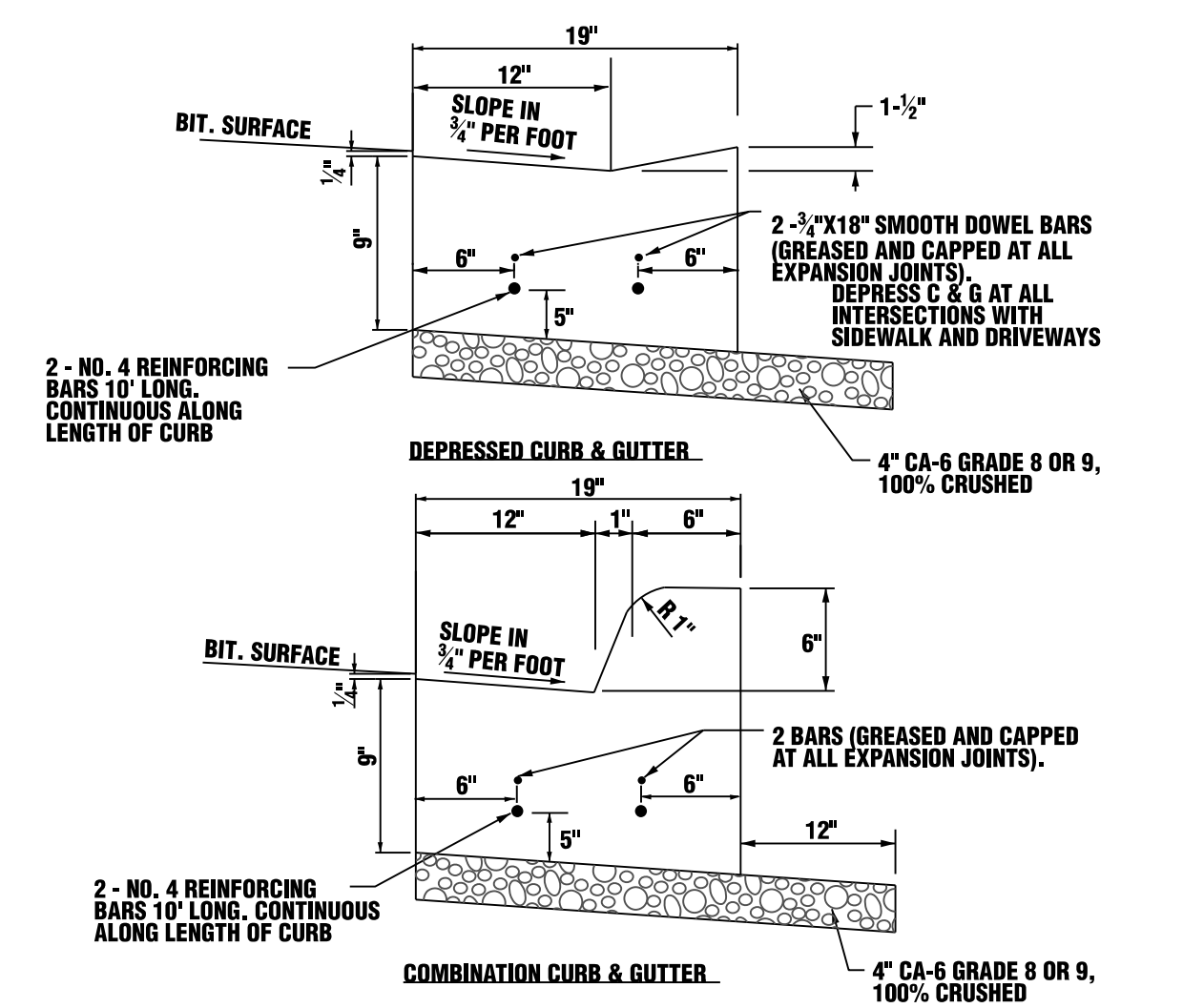
STANDARD NO. 503

**CRUSHED AGGREGATE PATH**  
N.T.S.

**HMG ENGINEERS** VILLAGE OF WAUCONDA

REVISION	By	Description	Date

STANDARD NO. 612



**NOTES:**

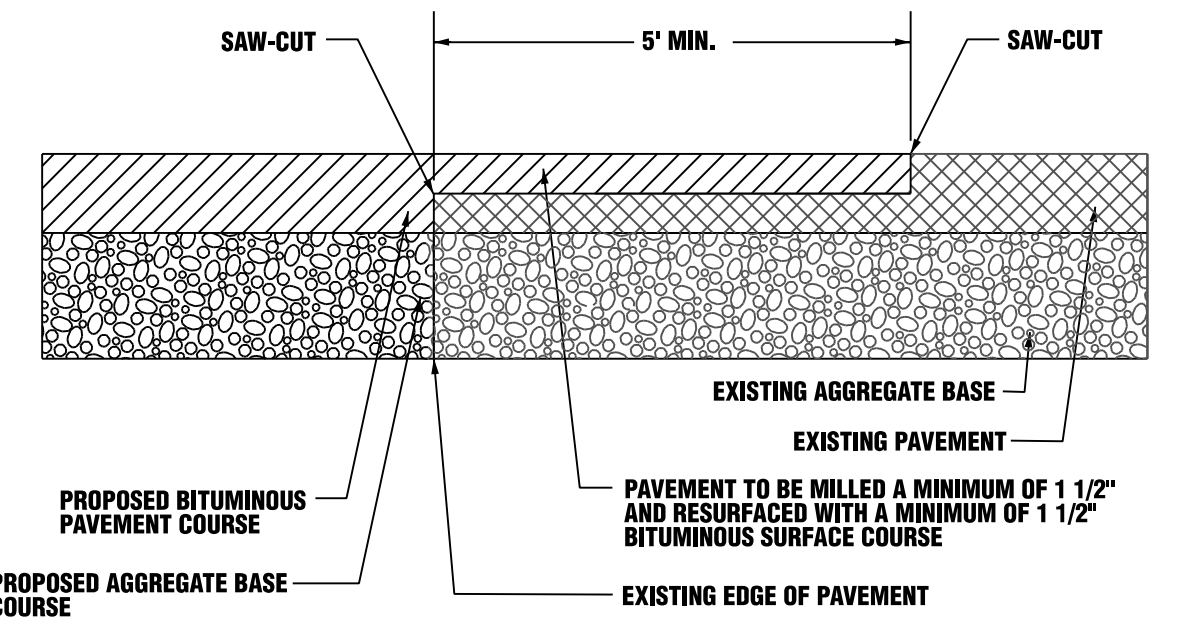
- CONTRACTION JOINTS SHALL BE PLACED AT TWENTY FEET INTERVALS (MAXIMUM) AND SHALL BE SAW CUT TO A DEPTH OF 3/4" INCHES WITHIN 24 HOURS OF CONCRETE PLACEMENT.
- EXPANSION JOINTS SHALL BE INSTALLED FIVE FEET EACH SIDE OF CURB INLETS, AT ALL PC'S AND PT'S, AT 60 FOOT INTERVALS AND AT THE END OF EACH DAYS POUR.
- CONCRETE SHALL BE CLASS SI AND IN ACCORDANCE WITH THE IDOT STANDARD SPECIFICATIONS.
- EXPANSION MATERIAL SHALL BE 3/4" PREFORMED IN ACCORDANCE WITH IDOT STANDARD SPECIFICATIONS.
- CONCRETE TO BE CURED IN ACCORDANCE WITH IDOT STANDARD SPECIFICATIONS.
- REVERSE PITCH CURB AND GUTTER SHALL SLOPE 3/4" PER FOOT AWAY FROM FACE OF CURB IN AREAS INDICATED ON PLANS.

**CURB AND GUTTER - B6.12**  
N.T.S.

**HMG ENGINEERS** VILLAGE OF WAUCONDA

REVISION	By	Description	Date

STANDARD NO. 605



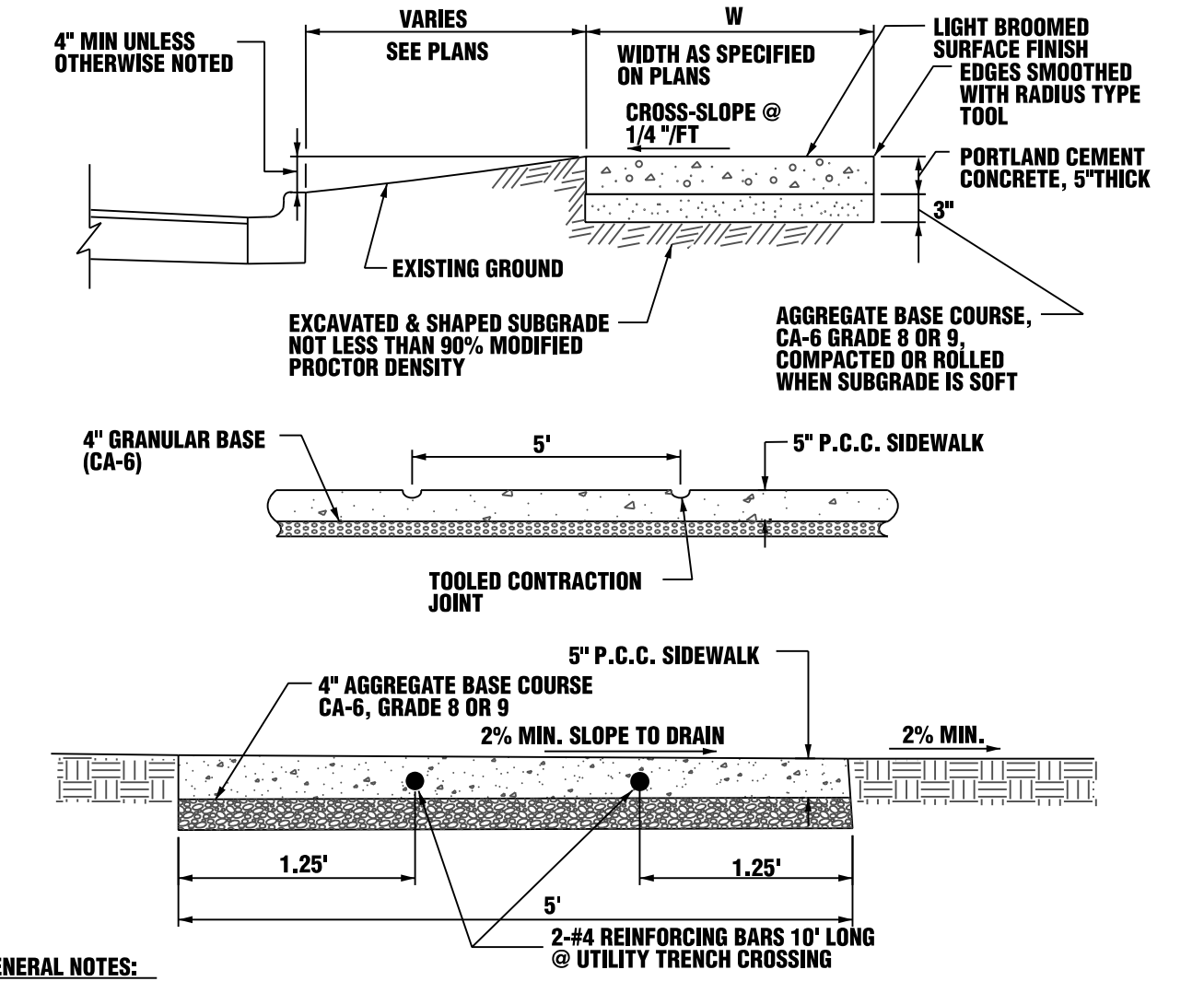
PAVEMENT TO BE MILLED A MINIMUM OF 1 1/2" AND RESURFACED WITH A MINIMUM OF 1 1/2" BITUMINOUS SURFACE COURSE

**MILLING/BUTT-JOINT DETAIL**  
N.T.S.

**HMG ENGINEERS** VILLAGE OF WAUCONDA

REVISION	By	Description	Date

STANDARD NO. 604



**GENERAL NOTES:**

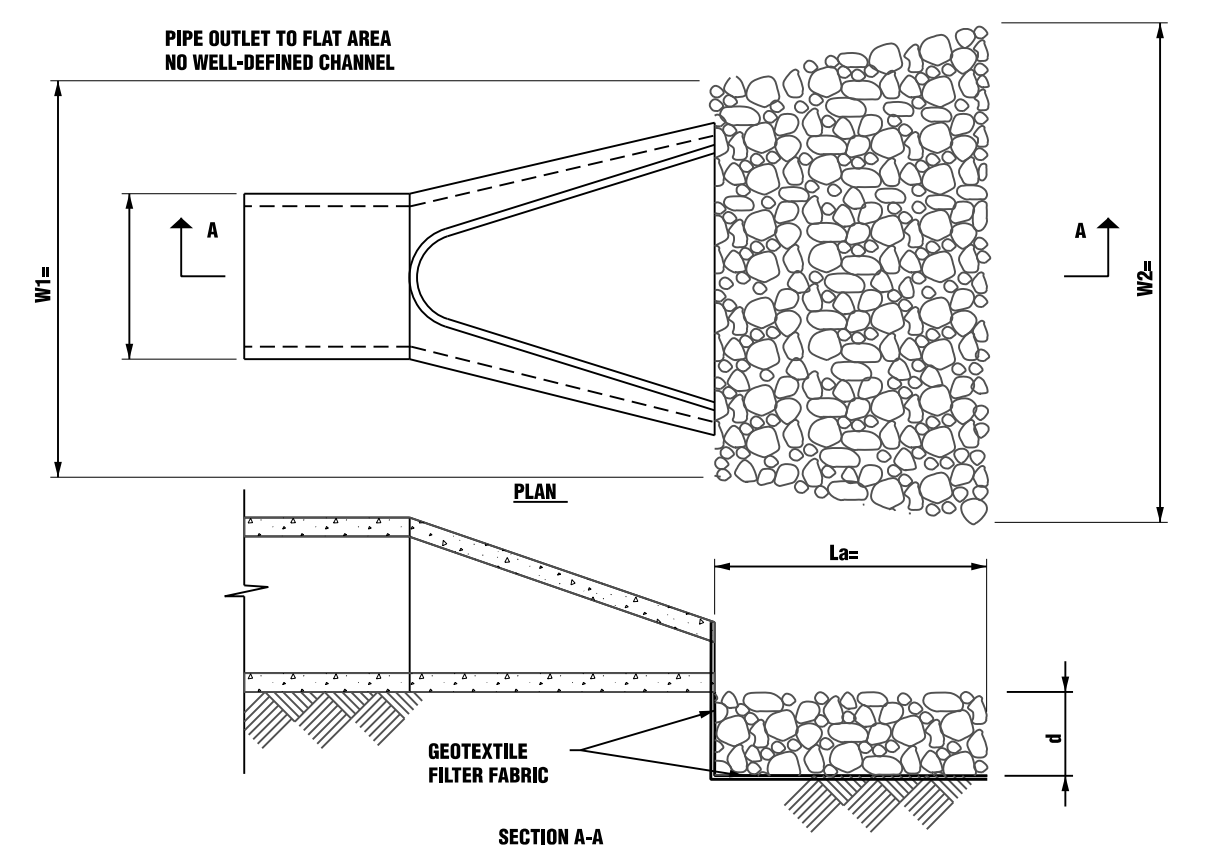
- AT LOCATIONS WHERE SIDEWALK IS SUBJECTED TO WHEEL TRAFFIC AND/OR CONSTRUCTED ACROSS ACCESS DRIVE ENTRANCES, THE NEW P.C.C. SIDEWALK SECTION SHALL BE THICKENED TO 6" ACROSS THE WIDTH OF THE DRIVEWAY. THIS WORK SHALL BE CONSIDERED AS INCIDENTAL, AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
- PLACING, FINISHING AND CURING OF P.C.C. SIDEWALK SHALL MEET THE REQUIREMENTS OF SECTIONS 624 & 625 OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION. USE 1/2 BAG MIX WITH 4% AIR ENTRAINMENT.
- SLAB OR PANEL CONTRACTION (CONTROL) JOINTS SHALL BE AS FOLLOWS:  
FOR 4' SIDEWALK WIDTH = 5' O.C. JOINT SPACING  
5' SIDEWALK WIDTH = 5' O.C. JOINT SPACING  
6' SIDEWALK WIDTH = 6' O.C. JOINT SPACING  
8' SIDEWALK WIDTH = 8' O.C. JOINT SPACING
- TRANSVERSE EXPANSION JOINTS SHALL CONSIST OF PREFORMED JOINT FILLER OF THICKNESS AS FOLLOWS:  
1/2" BETWEEN SIDEWALK AND STRUCTURES, STANDARDS, POLES 3/4" AT SIDEWALK INTERVALS OF NOT MORE THAN 50 FEET & BUTTING CONCRETE CURBS OR PAVEMENT.
- IF EXCAVATION OR UNDERCUTTING OF SUBGRADE HAS BEEN MADE DEEPER THAN NECESSARY, THE BASE SHALL BE BROUGHT TO PROPER GRADE BY THE ADDITION OF WELL COMPACTED BEDDING MATERIAL WITHOUT ANY EXTRA COMPENSATION DUE TO THE CONTRACTOR.

**CONCRETE SIDEWALK**  
N.T.S.

**HMG ENGINEERS** VILLAGE OF WAUCONDA

REVISION	By	Description	Date

STANDARD NO. 609



**SECTION A-A**

DIA. (Inches)	Lgt(H)	W1 (Inches)	W2 (H)	ROCK SIZE	d (Inches)	VOLUME(cy)
12	10	36	11	RR3	15	3.25
15	12	45	13.2	RR3	15	4.70
18	14	54	15.5	RR3	15	6.5
21	15	63	17	RR3	15	7.7
24	16	72	18	RR3	15	8.9
27	17	81	20	RR3	15	10.5
30	18	90	21	RR3	15	11.9
36	20	108	23	RR4	20	19.8
42	22	126	26	RR4	20	24.8
48	24	144	28	RR4	20	29.8

DESIGN VALUES BASED ON MINIMUM TAILWATER AND V-5 FPS IN ACCORDANCE WITH CODE 510 OF "BLUE BOOK"

**NOTES:**

- THE FILTER FABRIC SHALL MEET THE REQUIREMENTS IN IDOT MATERIAL SPECIFICATIONS 592 GEOTEXTILE TABLE 1 OR 2, CLASS I, II, III.
- THE RIP RAP SHALL BE PLACED ACCORDING TO IDOT CONSTRUCTION SPECIFICATIONS STONE RIP RAP. THE ROCK MAY BE EQUIPMENT PLACED.
- LIMITS OF RIP RAP AT FLARED END SECTION SHALL BE INSTALLED AS SHOWN ON THE DRAWINGS, OTHERWISE, THE ABOVE TABLE SHALL BE USED FOR PLACEMENT OF RIP RAP.

**RIP RAP AT FLARED END SECTION**  
N.T.S.

**HMG ENGINEERS** VILLAGE OF WAUCONDA

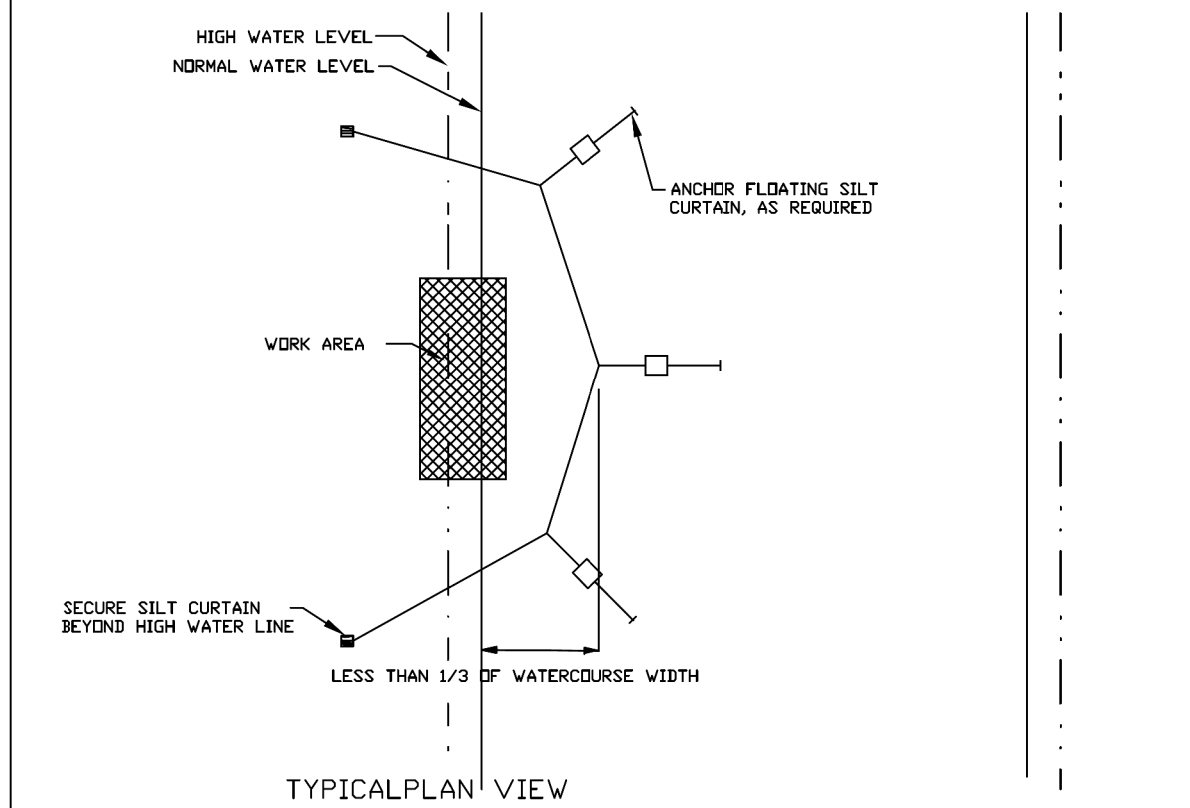
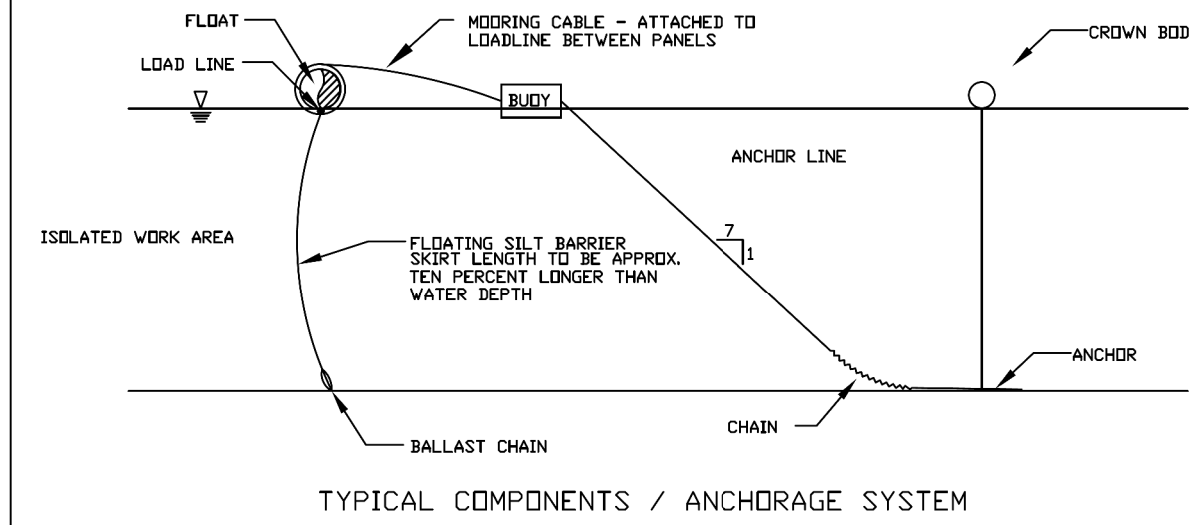
REVISION	By	Description	Date

STANDARD NO. 412

5\_8537-Bangs Lake Outfall Improvements\_Plan\_Sheets\_Details.dgn 40\_Construction Details - Water and Pavement



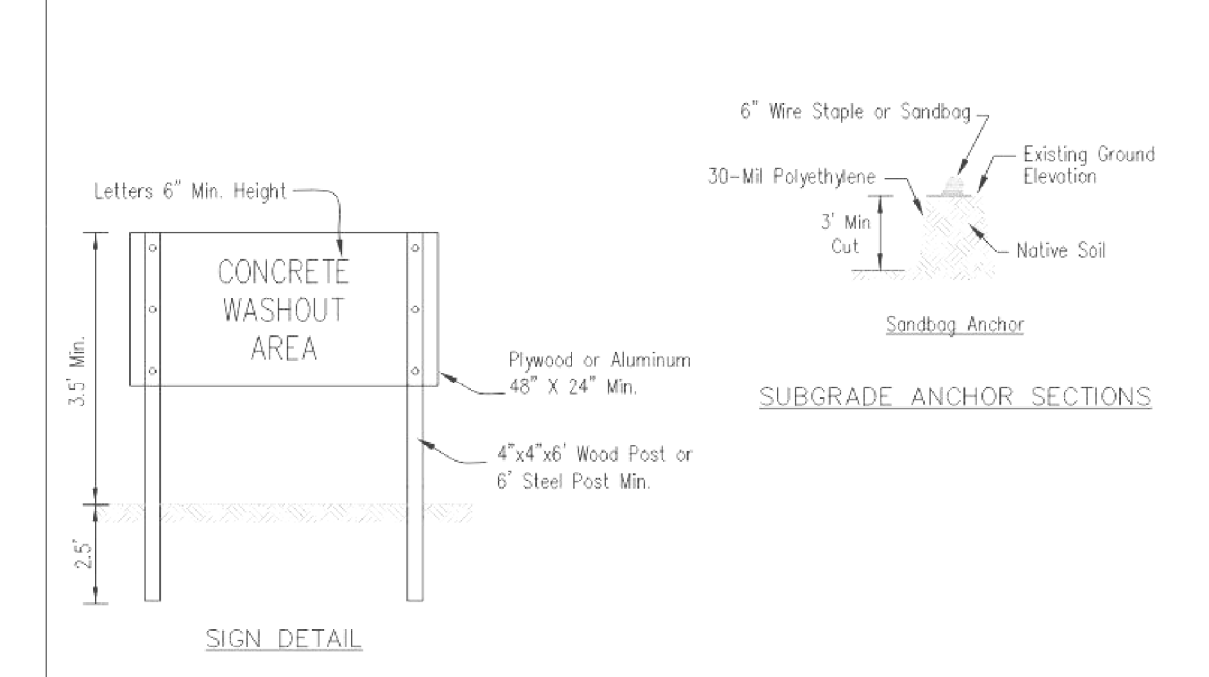
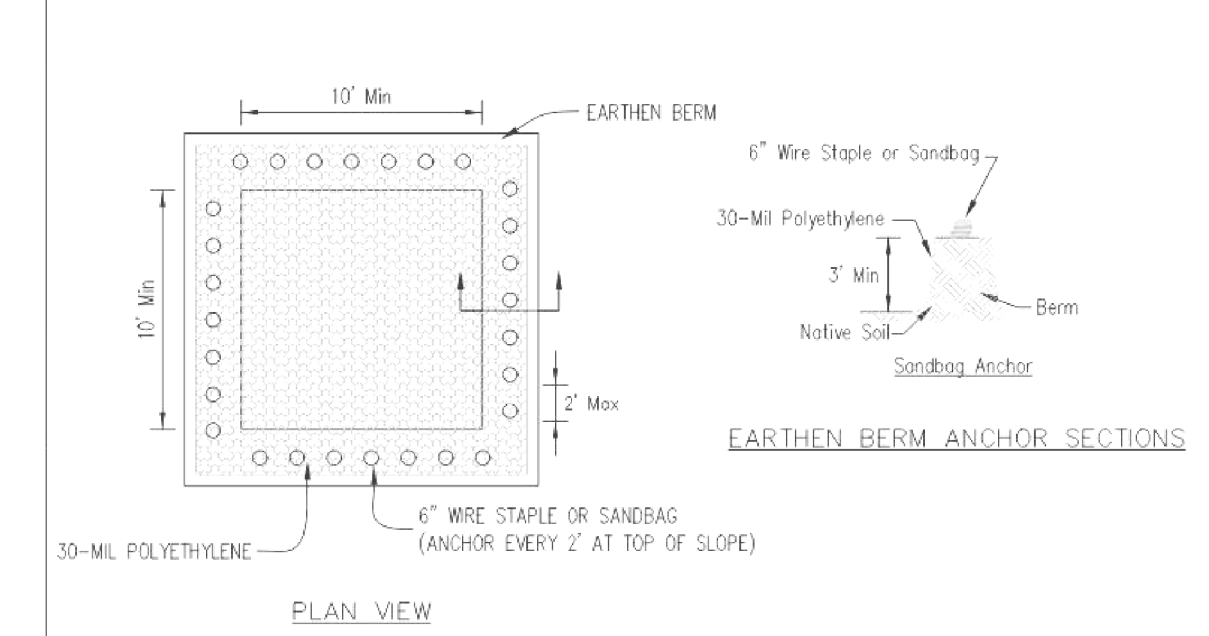
### FLOATING SILT CURTAIN - TYPICAL LAYOUT



Maximum flow for waterbody shall be less than 5fps.  
Isolated work area shall not exceed more than 1/3 stream width.  
Silt curtain shall be placed parallel to stream flow.

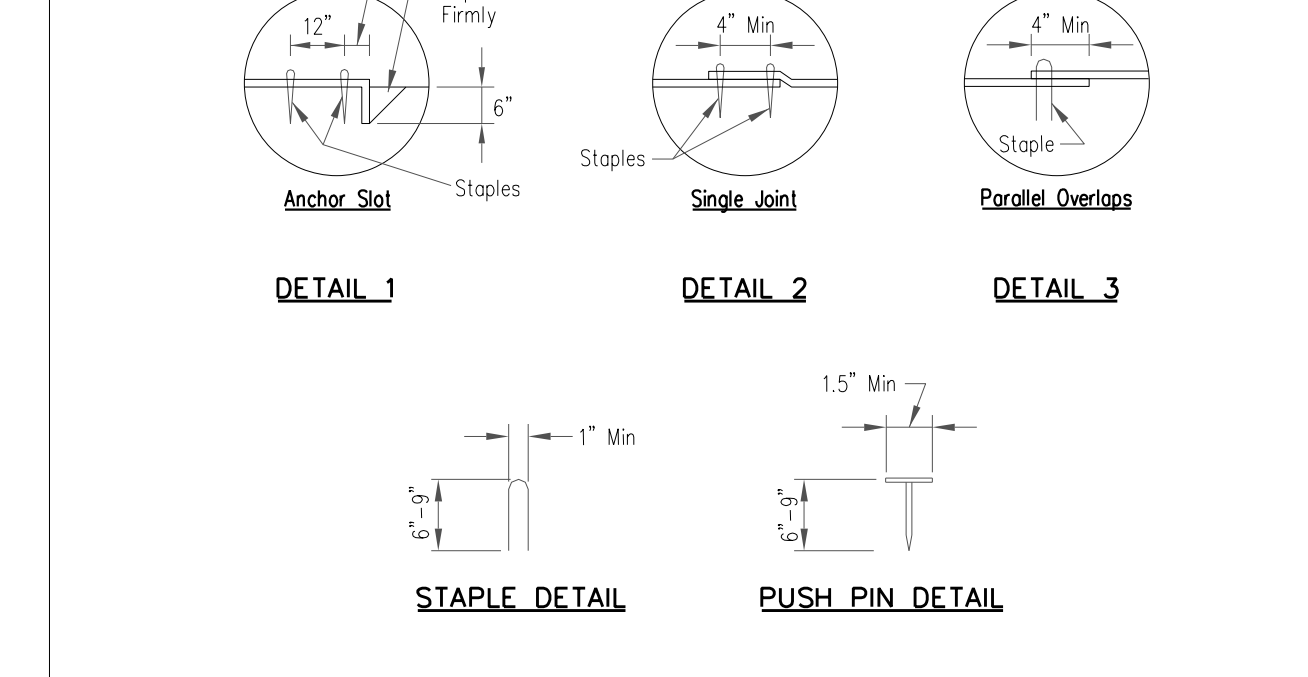
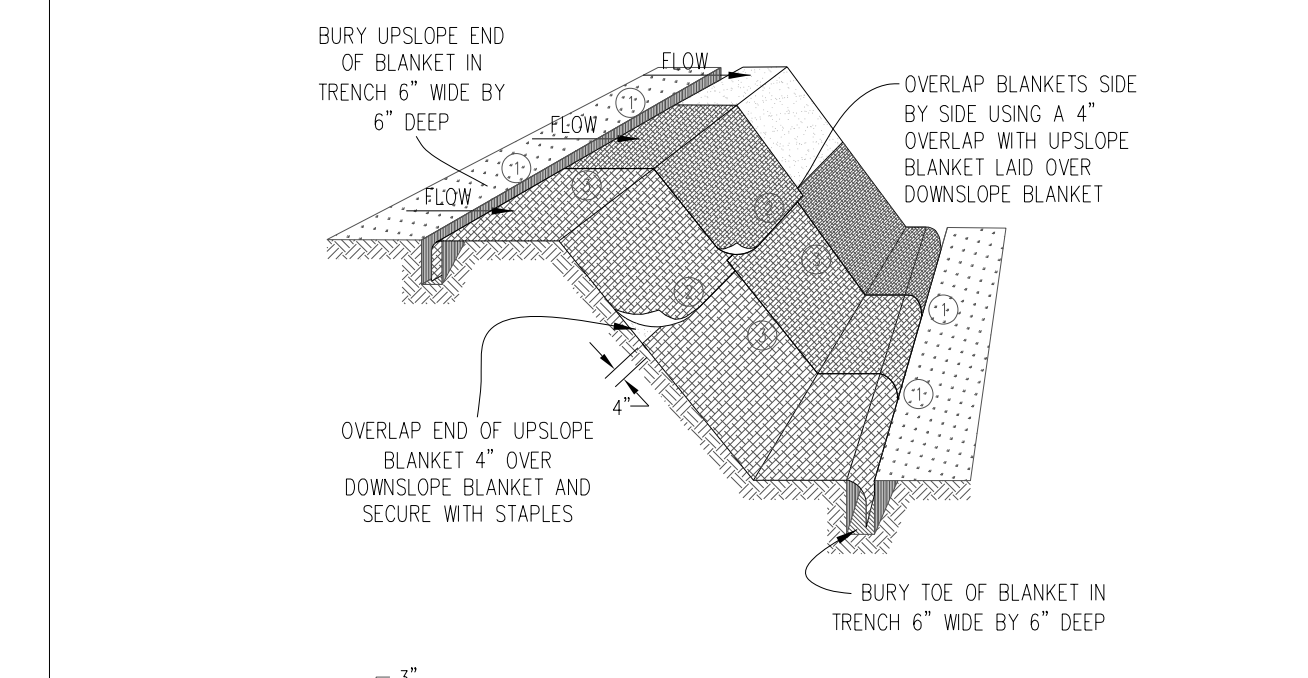
REFERENCE	STANDARD DWG. NO.
Project _____	IUM-617A
Designed _____	SHEET 1 OF 1
Checked _____	DATE 1-06-2012
Approved _____	

AUTOCAD2006



- NOTES:**
- Maintaining temporary concrete washout facilities shall include removing and disposing of hardened concrete and/or slurry and returning the facilities to a functional condition.
  - Facility shall be cleaned or reconstructed in a new area once washout becomes two-thirds full.

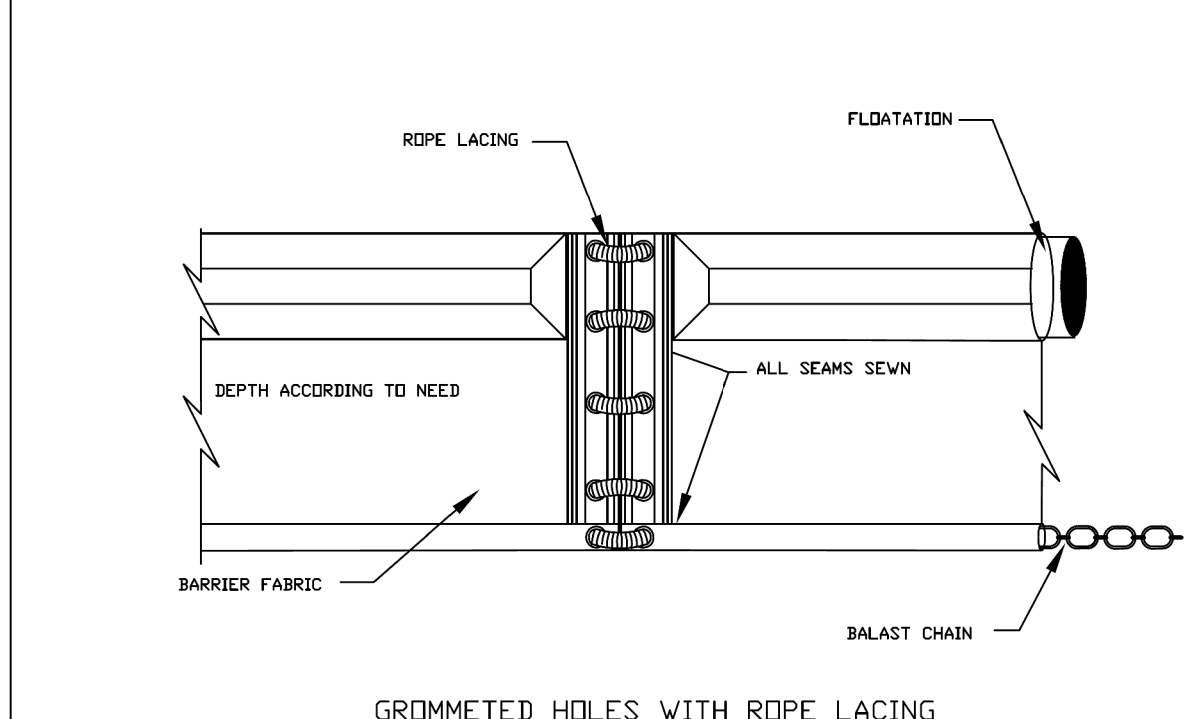
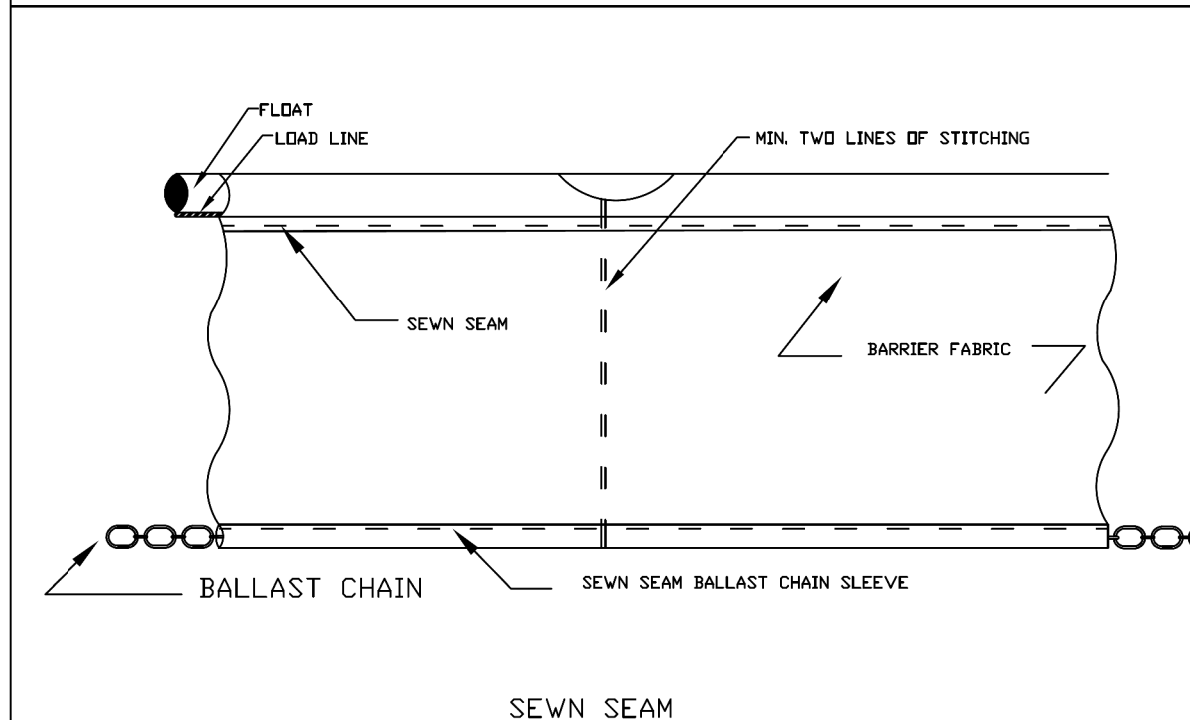
DESIGNED	DATE
Checked _____	_____
Approved _____	_____



- NOTES:**
- Staples shall be placed in a diamond pattern at 2 per s.y. for stitched blankets. Non-stitched shall use 4 staples per s.y. of material. This equates to 200 staples with stitched blanket and 400 staples with non-stitched blanket per 100 s.y. of material.
  - Staple or push pin lengths shall be selected based on soil type and conditions. (minimum staple length is 6")
  - Erosion control material shall be placed in contact with the soil over a prepared seedbed.
  - All anchor slots shall be stapled at approximately 12" intervals.

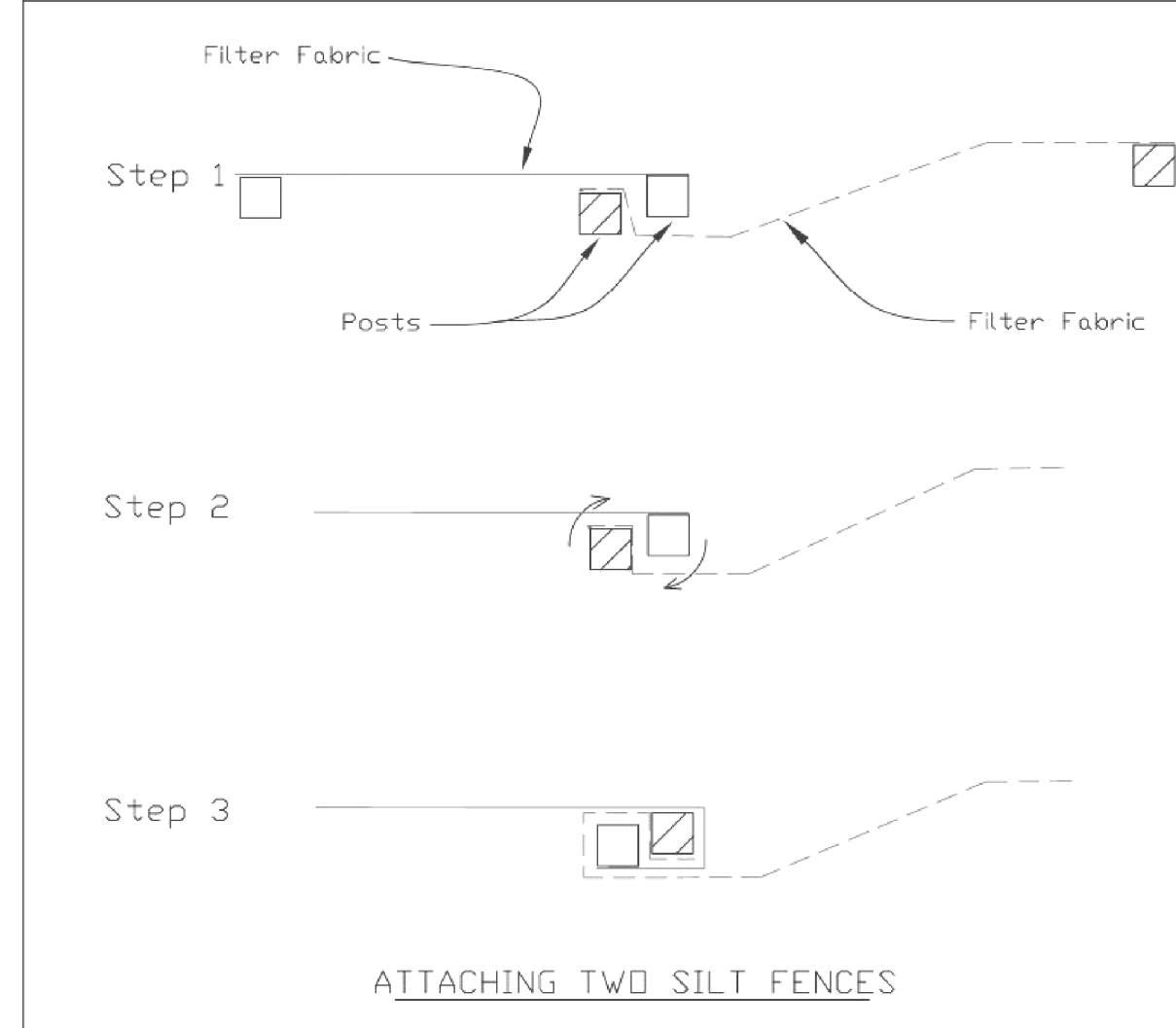
DESIGNED	DATE
Checked _____	_____
Approved _____	_____

### FLOATING SILT CURTAIN - PANEL CONNECTORS



REFERENCE	STANDARD DWG. NO.
Project _____	IUM-617B
Designed _____	SHEET 1 OF 1
Checked _____	DATE 1-6-2012
Approved _____	

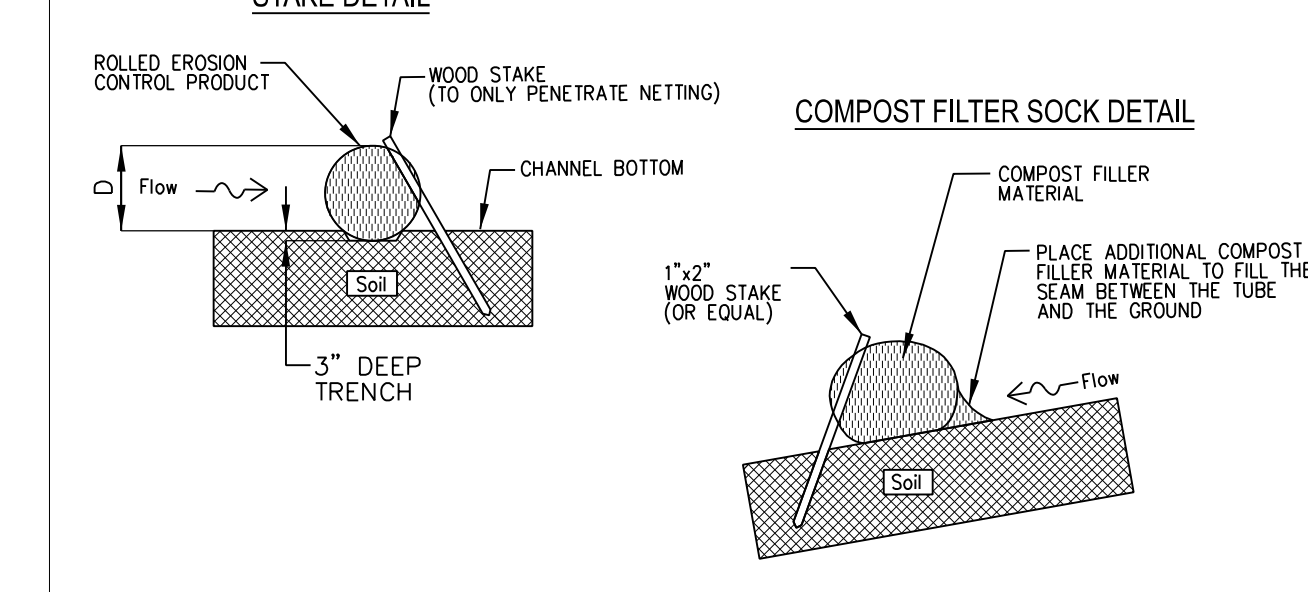
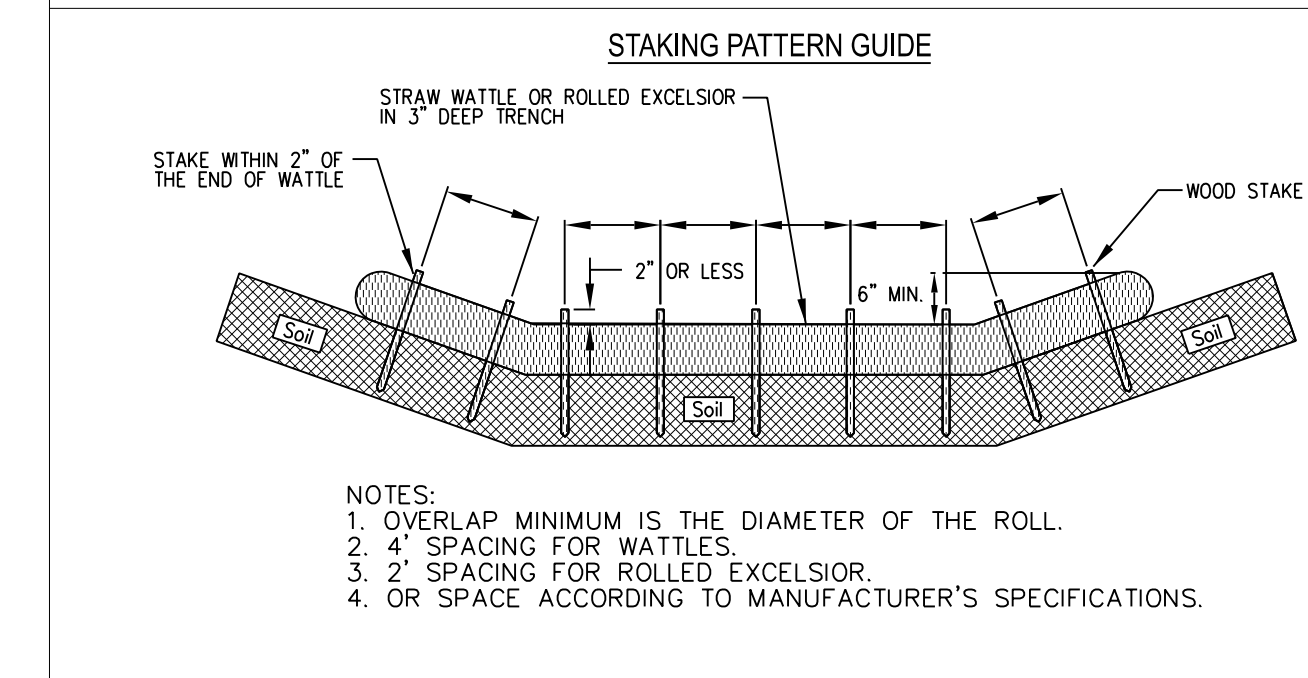
### SILT FENCE - SPLICING TWO FENCES



- NOTES:**
- Place the end post of the second fence inside the end post of the first fence.
  - Rotate both posts at least 180 degrees in a clockwise direction to create a tight seal with the fabric material.
  - Cut the fabric near the bottom of the stakes to accommodate the 6" flap.
  - Drive both posts a minimum of 18 inches into the ground and bury the flap.
  - Compact backfill (particularly at splices) completely to prevent stormwater piping.

REFERENCE	STANDARD DWG. NO.
Project _____	IUM-620B(W)
Designed _____	SHEET 1 OF 1
Checked _____	DATE 3-16-2012
Approved _____	

### ROLLED EROSION CONTROL PRODUCTS



- NOTES:**
- DRAWINGS ARE NOT TO SCALE.
  - ENDS OF WATTLES OR ROLLED EXCELSIOR SHALL BE TURNED AT LEAST 6" UPSLOPE.
  - RECOMMENDED STAKES ARE 1 1/8" WIDE x 1 1/8" THICK x 30" LONG.
  - STAKES SHALL NOT EXTEND ABOVE THE STRAW WATTLE MORE THAN 2".
  - SPACING: THE TOE OF THE UPSLOPE DITCH CHECK SHALL CREATE A HORIZONTAL LINE WITH THE TOP OF THE DOWNSLOPE DITCH CHECK.
  - WHEN COMPOST FILTER SOCK DITCH CHECK IS USED, PLACE A COMPOST BERM UPSTREAM OF THE FILTER SOCK (SEE IUM 805). A TRENCH IS NOT REQUIRED.

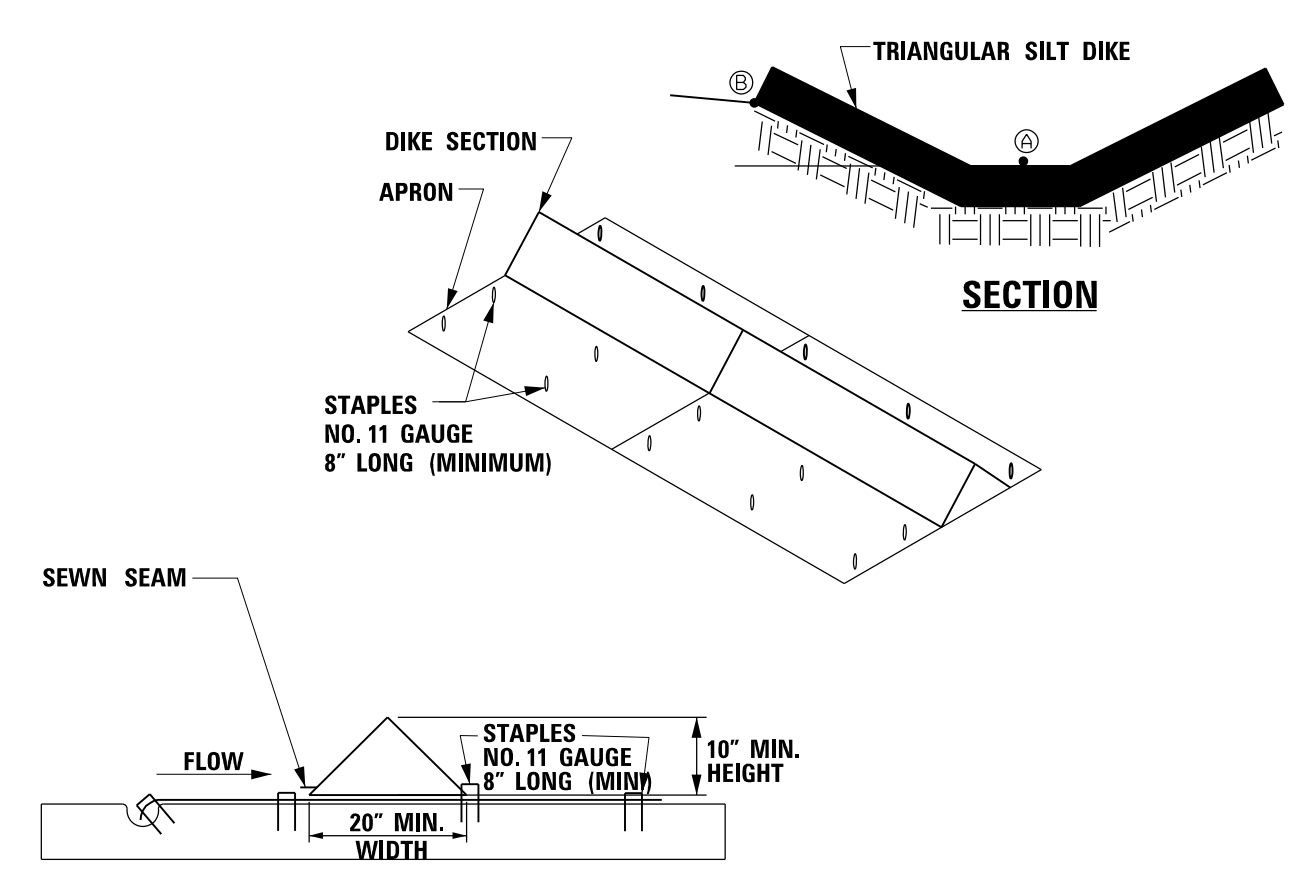
REFERENCE	STANDARD DWG. NO.
Project _____	IUM-514
Designed _____	SHEET 1 OF 1
Checked _____	DATE 08-19-2011
Approved _____	

5\_8537-Bangs Lake Outfall Improvements\_Plan\_Sheets\_Details.dgn 41\_SEESC\_Notes\_and\_Details

REVISIONS									
DATE									
BY									
DATE									
BY									
DATE									
<b>SOIL EROSION AND SEDIMENTATION CONTROL CONSTRUCTION DETAILS</b>									
<b>BANGS LAKE OUTFALL IMPROVEMENTS WAUCONDA, IL</b>									
<b>HMG ENGINEERS, INC. 975 CAMPUS DRIVE MUNDELEIN, ILLINOIS 60060 WWW.HMGENGINEERS.COM</b>									
<b>HMG ENGINEERS</b>									
(847) 362-5959									
SURVEY PK. DAA									
DESIGN CSB, DAA									
DRAWN CSB, DAA, JRM									
CHECKED CSB, DAA									
DATE SEPTEMBER 2024									
<b>SHEET 41</b>									
JOB NO. 8537									

**SOIL EROSION AND SEDIMENT CONTROL NOTES**  
(BASED ON LAKE COUNTY STORMWATER MANAGEMENT COMMISSION REQUIREMENTS)

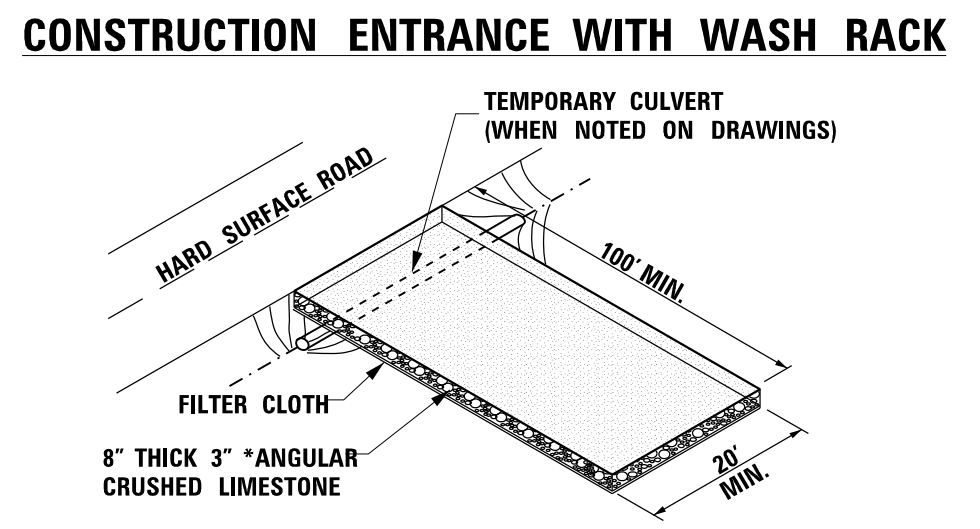
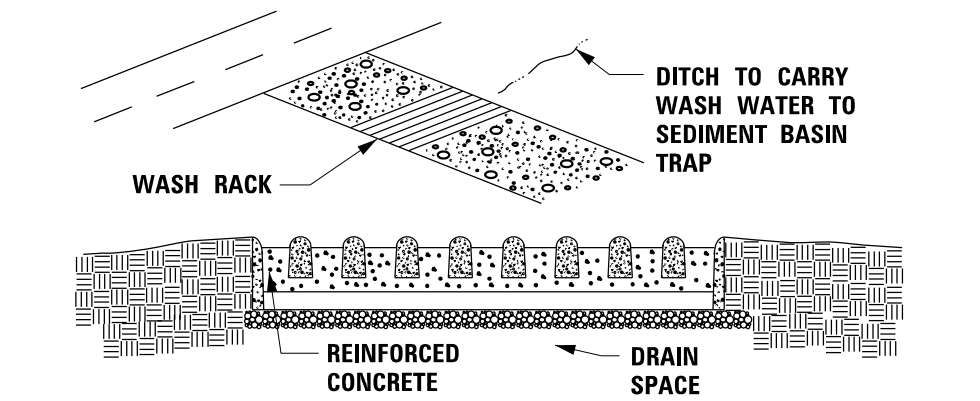
- A. SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF HYDROLOGIC DISTURBANCE OF UPLAND AREAS.
- B. FOR THOSE DEVELOPMENTS THAT REQUIRE A DESIGNATED EROSION CONTROL INSPECTOR (DECI), INSPECTIONS AND DOCUMENTATION SHALL BE PERFORMED, AT A MINIMUM:  
\*UPON COMPLETION OF SEDIMENT AND RUNOFF CONTROL MEASURES (INCLUDING PERIMETER CONTROLS AND DIVERSIONS).  
\*PRIOR TO PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING, AFTER EVERY SEVEN (7) CALENDAR DAYS OR STORM EVENT WITH GREATER THAN 0.5 INCH OF RAINFALL OR LIQUID EQUIVALENT PRECIPITATION.
- C. SOIL DISTURBANCE SHALL BE CONDUCTED IN SUCH A MANNER AS TO MINIMIZE EROSION, IF STRIPPING, CLEARING, GRADING, OR LANDSCAPING ARE TO BE DONE IN PHASES, THE PERMITEE SHALL PLAN FOR APPROPRIATE SOIL EROSION AND SEDIMENT CONTROL MEASURES.
- D. A STABILIZED MAT OF CRUSHED STONE MEETING IDOT GRADATION CA-1 UNDERLAIN WITH FILTER FABRIC AND IN ACCORDANCE WITH THE ILLINOIS URBAN MANUAL, OR OTHER APPROPRIATE MEASURE(S) AS APPROVED BY THE ENFORCEMENT OFFICER, SHALL BE INSTALLED AT ANY POINT WHERE TRAFFIC WILL BE ENTERING OR LEAVING A CONSTRUCTION SITE. SEDIMENT OR SOIL REACHING AN IMPROVED PUBLIC RIGHT-OF-WAY, STREET, ALLEY OR PARKING AREA SHALL BE REMOVED BY SCRAPING OR STREET CLEANING AS ACCUMULATIONS WARRANT AND TRANSPORTED TO A CONTROLLED SEDIMENT DISPOSAL AREA.
- E. TEMPORARY DIVERSIONS SHALL BE CONSTRUCTED AS NECESSARY TO DIRECT ALL RUNOFF FROM HYDROLOGICALLY DISTURBED AREAS TO AN APPROPRIATE SEDIMENT TRAP OR BASIN.
- F. DISTURBED AREAS SHALL BE STABILIZED WITH TEMPORARY OR PERMANENT MEASURES WITHIN SEVEN (7) CALENDAR DAYS FOLLOWING THE END OF ACTIVE HYDROLOGIC DISTURBANCE OR REDISTURBANCE.
- G. ALL STOCKPILES SHALL HAVE APPROPRIATE MEASURES TO PREVENT EROSION. STOCKPILES SHALL NOT BE PLACED IN FLOOD PRONE AREAS OR WETLANDS AND DESIGNATED BUFFERS.
- H. SLOPES STEEPER THAN 3H:1V SHALL BE STABILIZED WITH APPROPRIATE MEASURES AS APPROVED BY THE ENFORCEMENT OFFICER.
- I. APPROPRIATE EROSION CONTROL BLANKET SHALL BE INSTALLED ON ALL INTERIOR DETENTION BASIN SIDE SLOPES BETWEEN THE NORMAL WATER LEVEL AND HIGH WATER LEVEL.
- J. STORM SEWERS THAT ARE OR WILL BE FUNCTIONING DURING CONSTRUCTION SHALL BE PROTECTED BY AN APPROPRIATE SEDIMENT CONTROL MEASURE.
- K. IF DEWATERING SERVICES ARE USED, ADJOINING PROPERTIES AND DISCHARGE LOCATIONS SHALL BE PROTECTED FROM EROSION AND SEDIMENTATION. DISCHARGES SHALL BE Routed THROUGH AN APPROVED ANIONIC POLYMER DEWATERING SYSTEM OR A SIMILAR MEASURE AS APPROVED BY THE ENFORCEMENT OFFICER. DEWATERING SYSTEMS SHOULD BE INSPECTED DAILY DURING OPERATIONAL PERIODS. THE ENFORCEMENT OFFICER, OR APPROVED REPRESENTATIVE, MUST BE PRESENT AT THE COMMENCEMENT OF DEWATERING ACTIVITIES.
- L. IF INSTALLED SOIL EROSION AND SEDIMENT CONTROL MEASURES DO NOT MINIMIZE SEDIMENT LEAVING THE DEVELOPMENT SITE, ADDITIONAL MEASURES SUCH AS ANIONIC POLYMERS OR FILTRATION SYSTEMS MAY BE REQUIRED BY THE ENFORCEMENT OFFICER.
- M. ALL TEMPORARY AND PERMANENT EROSION CONTROL MEASURES MUST BE MAINTAINED AND REPAIRED AS NEEDED. THE PROPERTY OWNER SHALL BE ULTIMATELY RESPONSIBLE FOR MAINTENANCE AND REPAIR.
- N. ALL TEMPORARY SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED.
- O. THE EROSION CONTROL MEASURES INDICATED ON THE PLANS ARE THE MINIMUM REQUIREMENTS. ADDITIONAL MEASURES MAY BE REQUIRED, AS DIRECTED BY THE ENGINEER, ENFORCEMENT OFFICER, OR OTHER GOVERNING AGENCY.
- P. IF HORIZONTAL DIRECTIONALLY DRILLED PIPE INSTALLATIONS ARE PART OF THE PROJECT, THEN SILT FENCE SHALL BE ERECTED AROUND THE PERIMETER OF ALL BORE PITS (COST INCIDENTAL).
- Q. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.



**TRIANGULAR SILT DIKE**  
N.T.S.

NOTES:

1. TRIANGULAR SILT DIKES OR APPROVED EQUAL SHALL BE INSTALLED AT LOCATIONS SHOWN ON PLANS OR AS DIRECTED BY THE OWNER OR ENGINEER.
2. TRIANGULAR SILT DIKES SHALL BE INSTALLED PER MANUFACTURER'S INSTRUCTIONS.
3. ELEVATION OF POINT (A) SHALL NEVER EXCEED ELEVATION OF POINT (B).

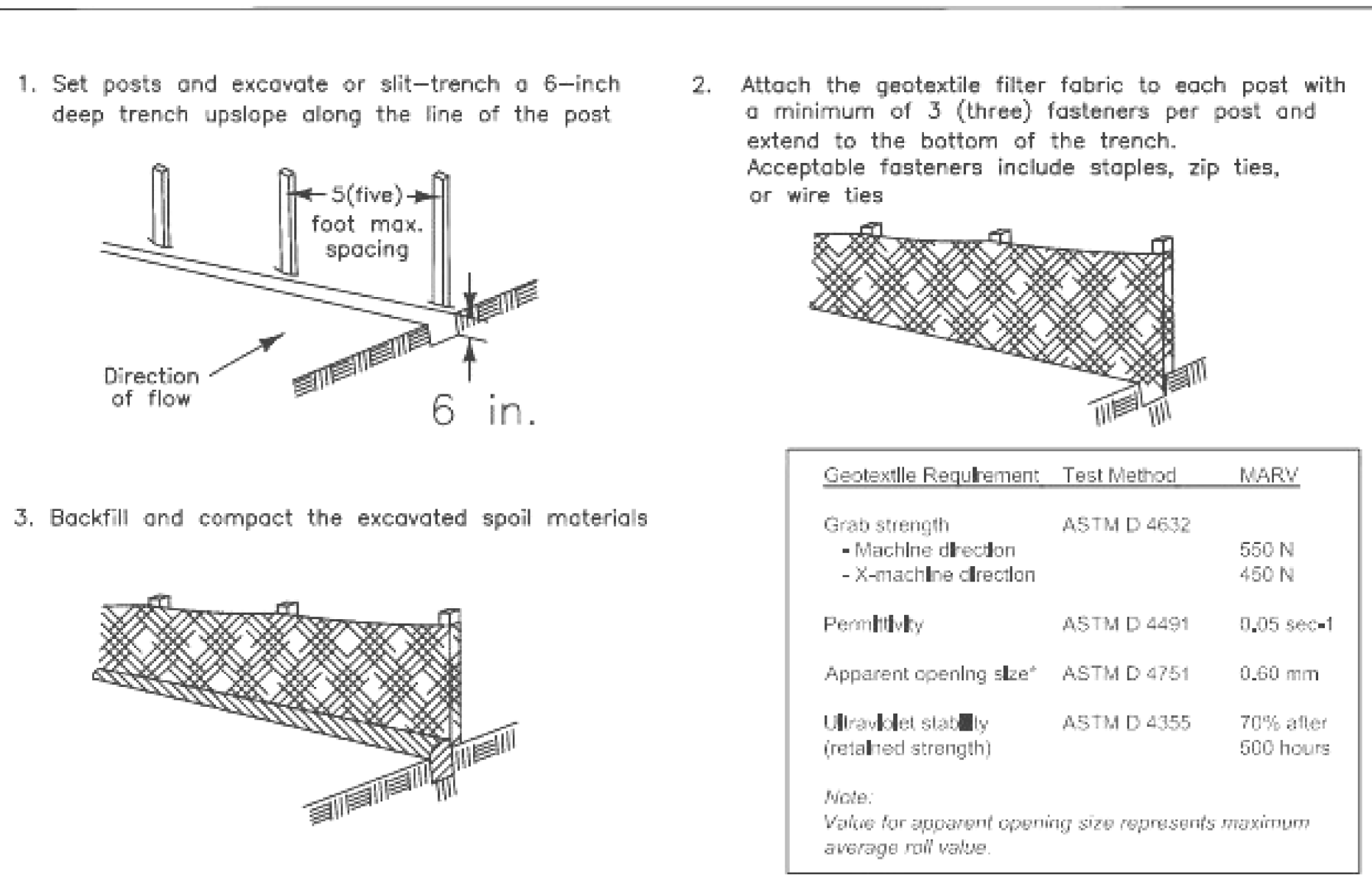


**CONSTRUCTION ENTRANCE WITH WASH RACK**

**STABILIZED CONSTRUCTION ENTRANCE**  
N.T.S.

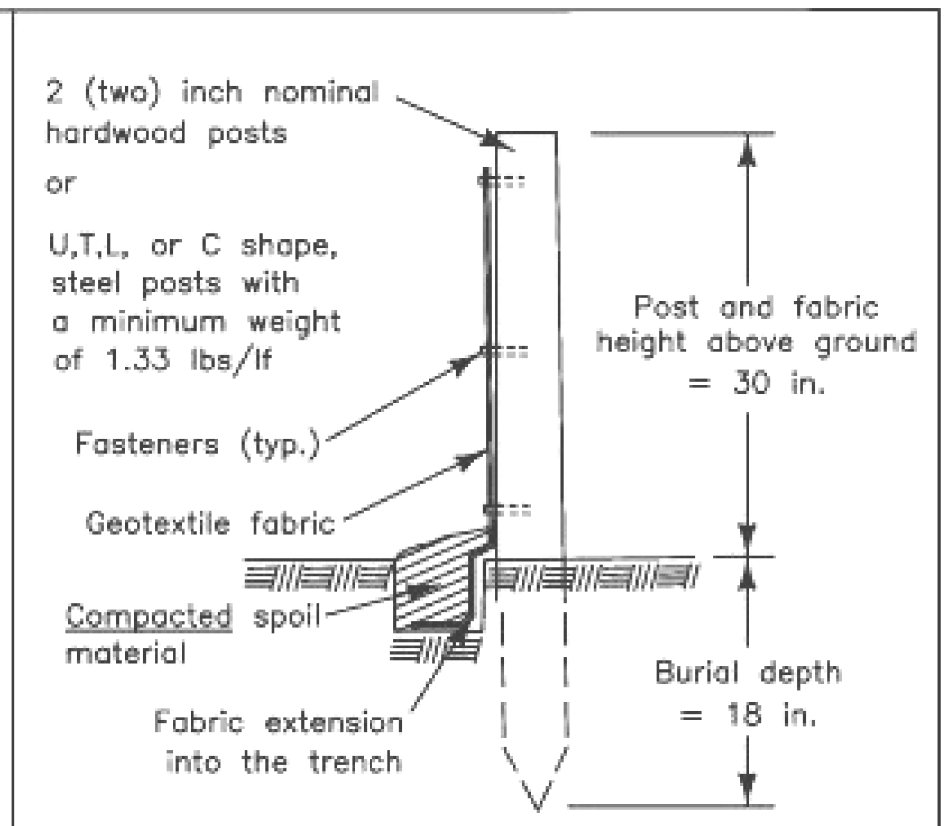
NOTE:

1. A STABILIZED MAT OF AGGREGATE UNDERLAIN WITH FILTER CLOTH (OR OTHER APPROPRIATE MEASURE) SHALL BE LOCATED AT ANY POINT WHERE TRAFFIC WILL BE ENTERING OR LEAVING A CONSTRUCTION SITE TO OR FROM A PUBLIC RIGHT-OF-WAY, STREET, ALLEY OR PARKING AREA.
2. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT INTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED INTO PUBLIC RIGHTS-OF-WAY ECT. MUST BE REMOVED IMMEDIATELY AND TRANSPORTED TO A CONTROLLED SEDIMENT DISPOSAL AREA.
3. FILTER CLOTH - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
4. WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE INTO PUBLIC RIGHTS-OF-WAY. WHEN A WASH RACK IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT-TRAPPING DEVICE. CONSTRUCTION ENTRANCE(S) SHALL INCLUDE A WASH RACK WHERE NOTED ON DRAWINGS, OR WHEN NECESSARY.
5. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.
6. CONTRACTOR SHALL CONSTRUCT AND MAINTAIN STABILIZED GRAVEL CONSTRUCTION ENTRANCE AT ALL LOCATIONS NOTED ON THE PLANS (COST INCIDENTAL).
7. REMOVE STABILIZATION GRAVEL ENTRANCE AT TIME OF FINAL RESTORATION. REMOVE TEMPORARY CULVERT (IF INSTALLED) AND REGRADE TO ORIGINAL CONDITIONS AND/OR AS NOTED ON DRAWINGS (COST INCIDENTAL).



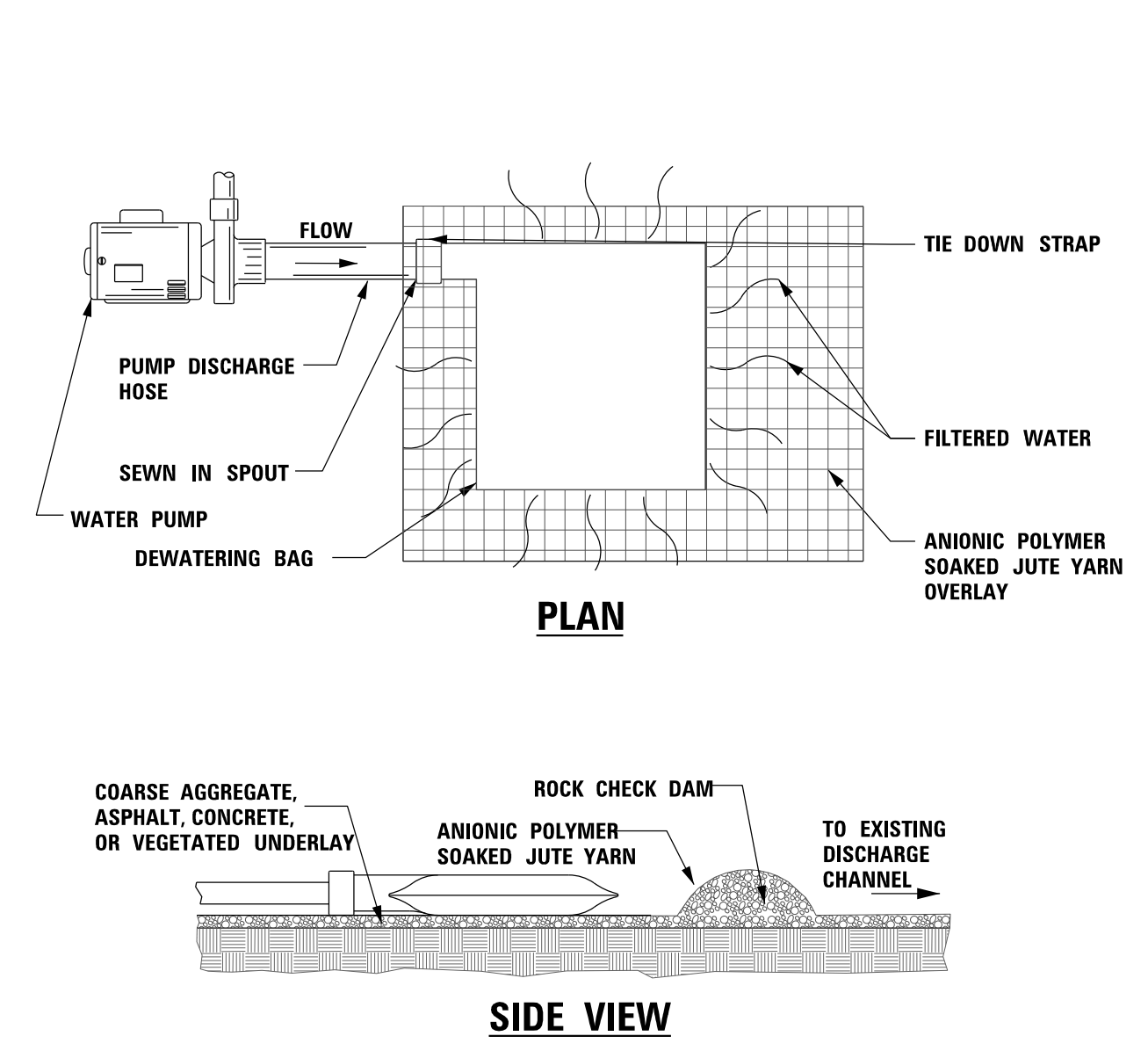
**SILT FENCE DETAIL**

DATE: 4/21/08 BY: KAW  
REVISED: BY:



**DEWATERING BAG**  
N.T.S.

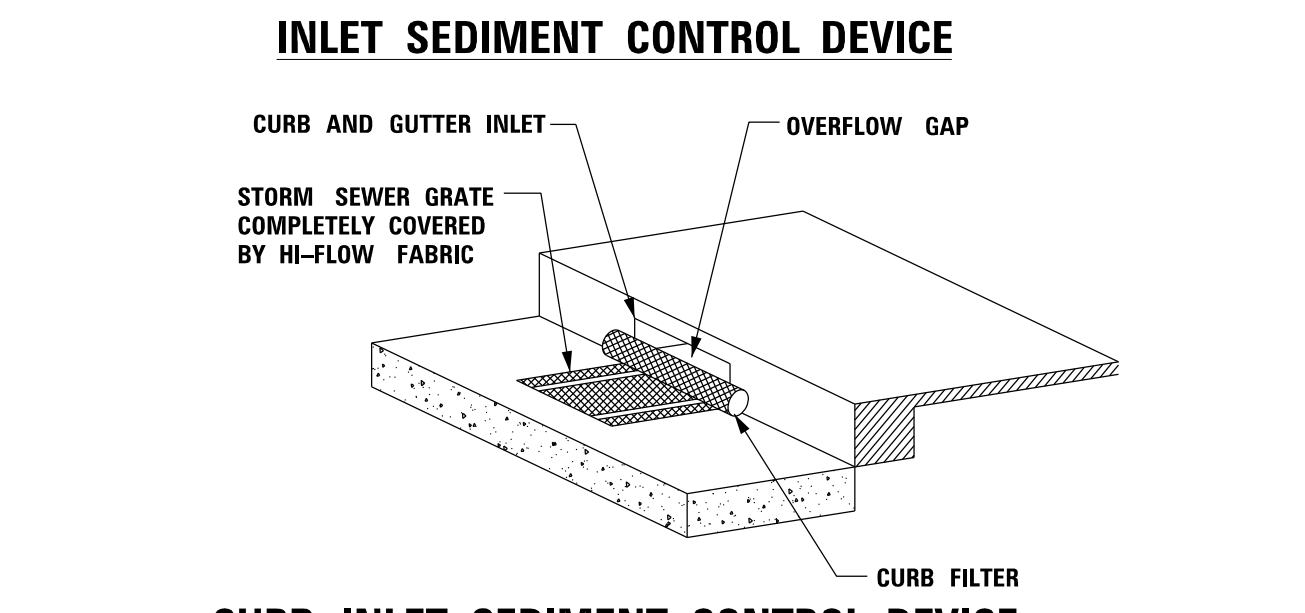
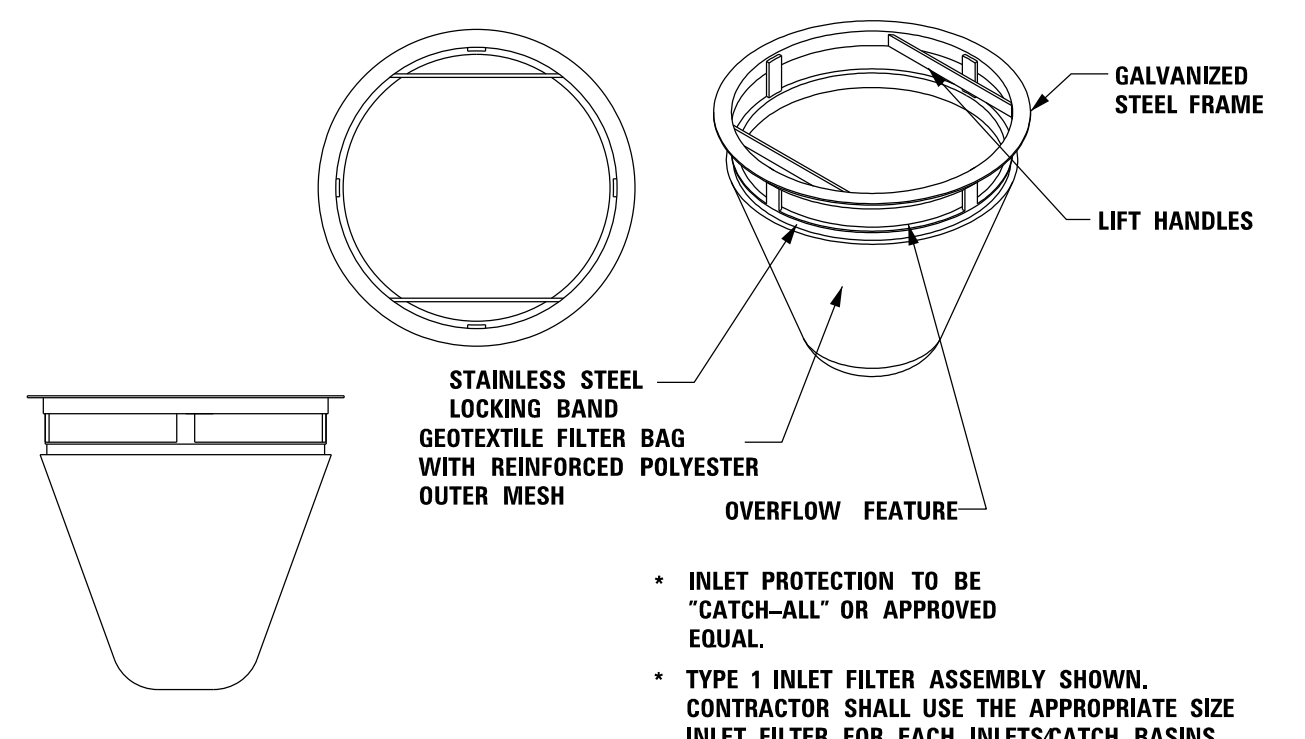
LAKE COUNTY  
STORMWATER MANAGEMENT COMMISSION



**DEWATERING BAG**  
N.T.S.

NOTES:

1. DEWATERING BAG TO BE APPROXIMATELY SIZED FOR DISCHARGE PUMP.
2. INSTALL ROCK CHECK DAM OF CLEAN, ANGULAR STONE, CA-7 OR CA-11 (NO FINES) PROPOSED HEIGHT IS 6 INCHES.
3. PERFORM MAINTENANCE WHEN BAG IS 1/3 FULL OF SEDIMENT OR WHEN WATER FLOW HAS BEEN GREATLY REDUCED.
4. REPLACE JUTE YARN WHEN CLOGGED OR AS NECESSARY.
5. ADD ADDITIONAL ANIONIC POWDER POLYMER AS DIRECTED BY MANUFACTURER OR AS NECESSARY.



**INLET SEDIMENT CONTROL DEVICE**

**CURB INLET SEDIMENT CONTROL DEVICE WITH CURB FILTER**  
N.T.S.

NOTES:

1. PERFORM MAINTENANCE AFTER EACH RAINFALL, SNOWFALL, OR SNOWMELT EVENT (12" IN 24 HOURS) AND AS NECESSARY.
2. FOR CURB INLETS, CONTRACTOR TO INSTALL SEDIMENT CONTROL DEVICE WITH CURB FILTER. FOR INLETS NOT IN CURBLINE, INSTALL INLET SEDIMENT CONTROL DEVICE.

5\_8537-Bangs Lake Outfall Improvements\_Plan\_Sheets\_Details.dgn 42\_SESC\_Notes\_and\_Details

REVISIONS

NO.	DATE	BY	DESCRIPTION

PK, DAA  
CSB, DAA  
CSB, DAA, JRM  
CSB, DAA  
SEPTEMBER 2024

**HMG ENGINEERS**

WWW.HMGENGINEERS.COM

(847) 362-5959

**SOIL EROSION AND SEDIMENTATION CONTROL NOTES AND DETAILS**

**BANGS LAKE OUTFALL IMPROVEMENTS WAUCONDA, IL**

**HMG ENGINEERS, INC.**  
975 CAMPUS DRIVE  
MUNDELEIN, ILLINOIS 60060

**SHEET 42**