BEAVER DAM LAKE MANAGEMENT DISTRICT

LIBRARY LAKE SOUTHEAST STORMWATER IMPROVEMENTS PHASE 1

CUMBERLAND, BARRON COUNTY, WISCONSIN

ALL ELEVATIONS ARE IN NAVD 88 - DATUM

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* THIS PLAN SET CONTAINS 19 PLAN SHEETS

WISCONSIN
DEREK R. LASH
E-40938
PLYMOUTH, MN
PROFESSIONAL ENGINEER

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

DEREK R. LASH, P.E.

REG. NO. 40938-6 DATE: 6/18/2021

MY LICENSE RENEWAL DATE IS 7/31/2022

PAGES OR SHEETS COVERED BY THIS SEAL:

ALL SHEETS

LEGEND

FEATURE	EXISTING	PROPOSED
MINOR CONTOUR	1246	1246
MAJOR CONTOUR	1245	1245
EDGE OF CATTAILS		
DELINEATED WETLAND	W/D	
FENCE		
BURIED ELECTRIC LINES	E-U	
OVERHEAD ELECTRIC	E-O	
PROPERTY LINE		
TREE LINE		
TREE		
BORING		
SANITARY SEWER LINE		
SANITARY SEWER MANHOLE	S	
STORM SEWER LINE		
STORM SEWER MANHOLE		
STORM SEWER ROAD INLET		
WATERMAIN	W	
BOLLARD		
ELECTRIC POLE		
GUY WIRE		
SILT FENCE		SF
SEDIMENT LOG		
INLET PROTECTION		
CONSTRUCTION LIMITS		

DIGGERS HOTLINE

WISCONSIN STATUE 182.0175 REQUIRES EVERY EXCAVATOR AND EVERYONE RESPONSIBLE FOR PLANNING NON-EMERGENCY EXCAVATIONS TO PROVIDE ADVANCE NOTICE OF AT LEAST **THREE** BUSINESS DAYS TO THE ONE CALL SYSTEM. SEE THE STATE STATUE FOR THE DEFINITION OF EXCAVATION. DIGGERS HOTLINE NEEDS TO BE CONTACTED PRIOR TO EXCAVATION AND PLANNING AN EXCAVATION IN ORDER TO COMPLY WITH THE STATE STATUE.

DIGGERS HOTLINE SHOULD ALSO BE USED TO OBTAIN INFORMATION ON SAFE WORKING CLEARANCES FROM OVERHEAD LINES. OSHA REQUIRES THAT YOU STAY AT LEAST 10 FEET AWAY FROM DISTRIBUTION LINES AND UP TO 16 FEET AWAY FROM TRANSMISSION LINES WITH EXCAVATORS, BACK-HOES, WHEEL LOADERS, DIGGER DERRICKS USED FOR AUGURING HOLES, AND SETTING POLES IN TELECOMMUNICATIONS AND ELECTRICAL WORK, ETC. THE 2010 OSHA CRANE STANDARD REQUIRES ADDITIONAL RESTRICTIONS FOR OTHER TYPES OF CRANES OR HOISTING DEVICES.

SEE THE EXCAVATOR'S GUIDE TO DIGGERS HOTLINE FOR ADDITIONAL INFORMATION.

CONTACTING DIGGERS HOTLINE

BY PHONE: DIGGERS HOTLINE IS AVAILABLE 24 HOURS A DAY, 7 DAYS A WEEK, 365 DAYS A YEAR BY CALLING THE THREE-DIGIT CODE **811** OR BY CALLING (800) 242-8511. TDD USERS MAY CALL (800) 542-2289.

BY EMAIL: ON THE DIGGERS HOTLINE WEBSITE, **WWW.DIGGERSHOTLINE.COM**, YOU CAN EMAIL LOCATE REQUESTS TO THE CALL CENTER. TO ACCESS THE ONLINE EMAIL FORM, GO TO DIGGERS HOTLINE WEBSITE, **WWW.DIGGERSHOTLINE.COM**.

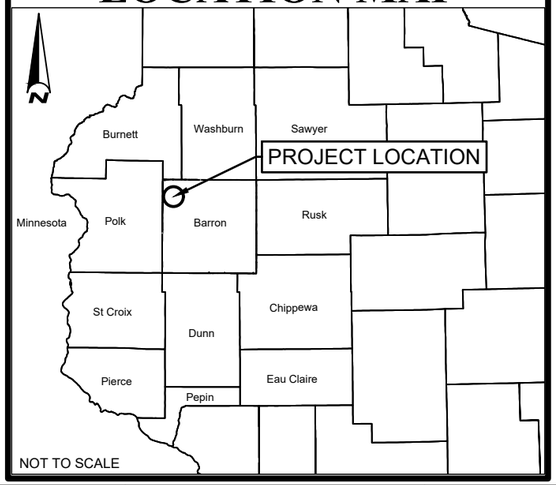
EXISTING UTILITIES

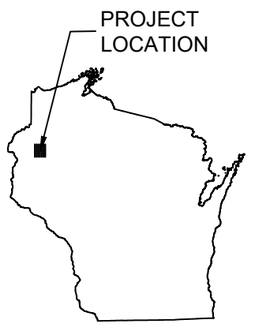
THE LOCATION OF UNDERGROUND FACILITIES AND/OR STRUCTURES AS SHOWN ON THE PLANS ARE BASED ON AVAILABLE RECORD AT THE TIME THE PLANS WERE PREPARED AND ARE NOT GUARANTEED TO BE COMPLETE OR CORRECT. THE SUBSURFACE UTILITY INFORMATION SHOWN IS UTILITY QUALITY LEVEL D, AS DETERMINED USING THE GUIDELINES OF "CI/ASCE 38-02 STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA." THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING ALL UTILITIES 72 HOURS PRIOR TO CONSTRUCTION TO DETERMINE THE EXACT LOCATION OF ALL FACILITIES AND TO PROVIDE ADEQUATE PROTECTION OF SAID UTILITIES DURING THE COURSE OF WORK.

CONSTRUCTION NOTE

CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO MAINTAIN OPERATION OF EXISTING UTILITIES THROUGHOUT THE DURATION OF THE PROJECT. IN THE EVENT THAT AN INTERRUPTION OF SERVICE IS UNAVOIDABLE IN ORDER TO COMPLETE THE WORK, CONTRACTOR SHALL PROVIDE ADEQUATE NOTIFICATION TO ALL AFFECTED BUSINESSES A MINIMUM OF 3 WORKING DAYS IN ADVANCE OF ANY INTERRUPTION.

LOCATION MAP





GOVERNING SPECIFICATIONS

THE DESIGN ADHERES TO NATURAL RESOURCE CONSERVATION SERVICE (NRSC) STANDARDS, AS WELL AS THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES (WIDNR).

THE 2021 EDITION OF THE WISCONSIN DEPARTMENT OF TRANSPORTATION (WISDOT) "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO WISCONSIN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

CLIENT
BEAVER DAM LAKE MANAGEMENT DISTRICT
P.O. BOX 232
CUMBERLAND, WI 54829

ENGINEER
EMMONS & OLIVIER RESOURCES, INC.
1919 UNIVERSITY AVE W - SUITE 300
ST. PAUL, MINNESOTA 55104
TELEPHONE: (651) 770-8448
FAX: (651) 770-2552
eorinc.com

NO	DATE	BY	REVISION
6			
5			
4			
3	06/17/2021	DEM	FINAL PLANS
2	05/21/2021	DEM	PRE-FINAL PLANS
1	10/30/2020	DEM	PRELIMINARY PLANS

811 Know what's below. Call before you dig.

DIGGERS HOTLINE™

SUBMISSION DATE: 06/17/2021

DESIGN BY DEM | DRAWN BY DRL | CHECKED BY DRL

EOR PROJECT NO. 00909_0024

Emmons & Olivier Resources, Inc.
1919 University Ave W, Suite 300, St Paul, MN 55104
water ecology community
Tele: 651.770.8448
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LIBRARY LAKE SOUTHEAST STORMWATER IMPROVEMENTS PHASE 1
CUMBERLAND, BARRON COUNTY, WISCONSIN

STATE PROJECT NO. ---- | CITY PROJECT NO. ---

TITLE SHEET

SHEET 01 OF 19 SHEETS

Plot Date: 06/17/2021
Drawing name: X:\Clients_Private\00909_Beaver_Dam_Lake_Assoc\0024_SE_Stormwater_Park_Ph1\09_GIMS\dwg\00909_0024_CD.dwg
Xrefs: _0909-0024_X-BASE2_0909_0024_P_BASE_P12_0909_0024_LS-P1

GENERAL SITE WORK NOTES

1. CONTRACTOR TO VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO BEGINNING ANY CONSTRUCTION BY CALLING DIGGERS HOTLINE 1-800-242-8511.

2. VERIFY HORIZONTAL LOCATION AND ELEVATION WHERE A CONNECTION TO EXISTING PAVEMENT, STRUCTURE, PIPE OR OTHER SITE FEATURE IS TO BE MADE. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES OR VARIATIONS FROM THE PLANS.

3. REFERENCE TO WISDOT SPECIFICATIONS SHALL MEAN THE 2021 SPECIFICATIONS FOR CONSTRUCTION.

4. CONTRACTOR SHALL ADHERE TO ALL OF THE REQUIREMENTS OF THE CITY AND WISDOT RIGHT-OF-WAY PERMITS.

GENERAL UTILITY NOTES

1. CONTRACTOR SHALL CONTACT 'DIGGERS HOTLINE' (1-800-242-8511) AT LEAST THREE BUSINESS DAYS PRIOR TO EXCAVATION/CONSTRUCTION FOR UTILITY LOCATIONS.

2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LOCATIONS AND INVERTS, SHOWN OR NOT SHOWN. ANY DISCREPANCY BETWEEN PLANS AND FIELD CONDITIONS SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY.

3. ALL UTILITY WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CITY OF CUMBERLAND SPECIFICATIONS AND BUILDING PERMIT REQUIREMENTS.

4. CONTRACTOR WILL BE RESPONSIBLE FOR OBTAINING THE APPROPRIATE SEWER, WATER AND PLUMBING PERMITS FROM THE CITY OF CUMBERLAND.

5. UTILITY TRENCHES SHALL BE COMPACTED TO 95% STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D698.78 OR AASHTO T-99) FROM THE PIPE ZONE TO WITHIN THREE FEET OF THE GROUND SURFACE AND 100% STANDARD PROCTOR IN THE UPPER THREE FEET.

6. FIELD ADJUST ALL CASTINGS TO MATCH FINAL GRADES.

7. CONNECTION TO THE EXISTING STORM SEWER REQUIRES INSPECTION BY THE CITY OF CUMBERLAND.

8. CONTRACTOR SHALL NOTIFY THE CITY OF CUMBERLAND 48 HOURS IN ADVANCE OF WORKING WITHIN THE EXISTING RIGHT OF WAY. CITY INSPECTORS MUST OBSERVE ALL WORK COMPLETED WITHIN THE EXISTING RIGHT OF WAY INCLUDING REMOVAL OF EXISTING BITUMINOUS PAVEMENT, EXCAVATION OF TRENCHES, PLACEMENT OF UTILITY CONNECTIONS TO EXISTING LINES, BACKFILLING AND PLACEMENT OF BITUMINOUS PAVEMENT OR CONCRETE APRONS, SIDEWALKS, AND CURB & GUTTER.

SITE REMOVAL NOTES

1. BITUMINOUS PAVEMENT REMOVALS ARE TO BE MADE TO A VERTICAL SAW CUT OR TO A NEAT MILLED EDGE IN ACCORDANCE WITH WISDOT SPECIFICATIONS.

2. CONCRETE PAVEMENT, SIDEWALK, CURB & GUTTER AND OTHER POURED CONCRETE ITEMS ARE TO BE REMOVED TO AN EXISTING EXPANSION OR CONTRACTION JOINT. SAW CUT AS NECESSARY FOR A NEAT EDGE OF REMOVAL.

3. SALVAGED SEWER CASTINGS AND MANHOLE SECTIONS SHALL BE CLEANED AND INSPECTED FOR DAMAGE PRIOR TO REINSTALLATION.

4. ALL REMOVAL ITEMS SHALL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS SPECIFIED OTHERWISE AND SHALL BE DISPOSED OF OFF-SITE IN A MANNER MEETING ALL APPLICABLE REGULATIONS.

STORM SEWER NOTES

1. STORM SEWER CONSTRUCTION SHALL BE IN ACCORDANCE WITH WISDOT SPECIFICATIONS.

2. STORM SEWER SHALL BE PRECAST REINFORCED CONCRETE. CASTING SHALL BE AS SPECIFIED ON THE PLANS OR APPROVED EQUAL.

3. MANHOLES SHALL BE PRECAST REINFORCED CONCRETE IN ACCORDANCE WITH WISDOT SPECIFICATIONS. MANHOLES SHALL HAVE A MINIMUM OF 2 ADJUSTMENT RINGS AND MORTAR AND A MAXIMUM OF 12" OF ADJUSTMENT RINGS AND MORTAR.

4. PIPE LENGTHS ON THE PLAN INCLUDE THE APRON SECTION.

5. STORM SEWER PIPE JOINTS SHALL BE TIED AS SPECIFIED ON THE PLANS.

6. THE CONTRACTOR WILL LOCATE THE MANHOLE STRUCTURE AS NECESSARY FROM REFERENCE POINTS. PIPE ALIGNMENTS ARE STAKED TO CENTER OF CASTING - CONTRACTOR WILL ADJUST THE ALIGNMENT TO FIT THE ACTUAL STRUCTURES INSTALLED.

GRADING & EROSION CONTROL NOTES

1. CONTRACTOR SHALL CONTACT 'DIGGERS HOTLINE' (1-800-242-8511) AT LEAST THREE BUSINESS DAYS PRIOR TO EXCAVATION/ CONSTRUCTION, FOR UTILITY LOCATIONS.

2. CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES AND TOPOGRAPHIC FEATURES PRIOR TO START OF SITE GRADING. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES OR VARIATIONS.

3. ENGINEER SHALL PROVIDE HORIZONTAL AND VERTICAL CONTROL BENCHMARKS. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL SAID HORIZONTAL AND VERTICAL CONTROL POINTS SET BY ENGINEER AND ANY ADDITIONAL CONSTRUCTION STAKING.

4. CONTRACTOR TO ADHERE TO ALL CITY, DNR, WISDOT AND WPDES PERMIT REQUIREMENTS, EVEN IF ACQUISITION OF THE WPDES PERMIT IS NOT REQUIRED, INCLUDING THE REQUIREMENT TO MINIMIZE THE AREA DISTURBED BY GRADING AT ANY GIVEN TIME AND TO COMPLETE VEGETATION RESTORATION WITHIN THE TIME REQUIRED BY THE PERMIT AFTER COMPLETION OF GRADING OF AN AREA AFTER FINAL GRADING OR STORM SEWER CONSTRUCTION.

5. ALL EXPOSED SOIL AREAS WITHIN 100 FEET OF A WATER OF THE STATE OR ANY STORMWATER CONVEYANCE SYSTEM WHICH IS CONNECTED TO A WATER OF THE STATE MUST BE STABILIZED WITHIN 24 HOURS AFTER FINAL GRADING OR STORM SEWER CONSTRUCTION.

6. ALL CONSTRUCTION ENTRANCES SHALL BE SURFACED WITH CRUSHED ROCK ACROSS FULL WIDTH FROM ENTRANCE POINT TO 50 FEET INTO THE CONSTRUCTION ZONE. SEE DETAIL.

7. INLET PROTECTION IS TO BE USED DURING CONSTRUCTION. SEE DETAIL.

8. ALL EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH CITY, COUNTY, AND STATE PERMITS.

9. CONTRACTOR SHALL PROVIDE ADDITIONAL TEMPORARY EROSION CONTROL MEASURES AS DIRECTED BY THE ENGINEER INCIDENTAL TO THE CONTRACT WITH NO ADDITIONAL COST TO THE OWNER.

10. REMOVE ALL EROSION CONTROL MEASURES AFTER VEGETATION IS ESTABLISHED, AS DIRECTED BY THE ENGINEER.

11. THE CONTRACTOR SHALL REMOVE ALL SOILS AND SEDIMENT TRACKED ONTO EXISTING STREETS AND PAVED AREAS, AS DIRECTED BY THE ENGINEER, INCIDENTAL TO THE CONTRACT WITH NO ADDITIONAL COST TO THE OWNER.

12. IF BLOWING DUST BECOMES A NUISANCE, THE CONTRACTOR SHALL APPLY WATER FROM A TANK TRUCK TO ALL CONSTRUCTION AREAS.

13. SWEEP ADJACENT STREETS AS DIRECTED BY THE ENGINEER.

14. INSPECT EROSION CONTROL DEVICES ONCE PER WEEK OR AFTER EACH RAINFALL EVENT OF 0.50-INCHES OR GREATER AND AT LEAST DAILY DURING PROLONGED RAINFALL. IMMEDIATELY REPAIR FAILED OR FAILING EROSION CONTROL DEVICES.

15. SEDIMENT REMOVAL - SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH STORM EVENT, INCIDENTAL TO THE CONTRACT WITH NO ADDITIONAL COST TO THE OWNER.

16. ANY SEDIMENT REMAINING IN PLACE AFTER THE EROSION CONTROL DEVICE IS NO LONGER REQUIRED SHALL BE GRADED TO CONFORM WITH THE EXISTING GRADE, PREPARED, AND SEEDED WITH THE APPROPRIATE SEED MIX AS DIRECTED BY THE ENGINEER.

17. SUITABLE GRADING MATERIAL SHALL CONSIST OF ALL SOIL ENCOUNTERED ON THE SITE WITH EXCEPTION OF TOPSOIL, DEBRIS, ORGANIC MATERIAL AND OTHER UNSTABLE MATERIAL. STOCKPILE TOPSOIL AND GRANULAR FILL AT LOCATIONS DIRECTED BY ENGINEER.

18. EXISTING GRANULAR MATERIALS SHALL BE SEGREGATED AND STOCKPILED FOR REUSE ON-SITE.

19. CONTRACTOR SHALL STRIP, STOCKPILE AND RE-SPREAD EXISTING ON-SITE TOPSOIL TO PROVIDE A UNIFORM THICKNESS, MINIMUM 4", ON ALL DISTURBED AREAS TO BE SODDED OR SEEDED.

20. SUBGRADE EXCAVATION SHALL BE BACKFILLED IMMEDIATELY AFTER EXCAVATION TO HELP OFFSET ANY STABILITY PROBLEMS DUE TO WATER SEEPAGE OR STEEP SLOPES. WHEN PLACING NEW SURFACE MATERIAL ADJACENT TO EXISTING PAVEMENT, THE EXCAVATION SHALL BE BACKFILLED PROMPTLY TO AVOID UNDERMINING OF THE EXISTING PAVEMENT.

21. GRADES SHOWN ARE FINISHED GRADES, CONTRACTOR SHALL ROUGH GRADE TO SUBGRADE ELEVATIONS. SUBGRADE ELEVATIONS SHALL BE INSPECTED AND APPROVED PRIOR TO PLACEMENT OF FINISH MATERIALS.

22. FINAL GRADING TOLERANCES ARE ±0.1 FEET OF PLAN GRADES.

23. ALL EXCESS MATERIAL, BITUMINOUS SURFACING, CONCRETE ITEMS, ANY ABANDONED UTILITY ITEMS, AND OTHER UNSTABLE MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS SPECIFIED OTHERWISE AND SHALL BE DISPOSED OF OFF-SITE IN A MANNER MEETING ALL APPLICABLE REGULATIONS.

24. CONTRACTOR IS RESPONSIBLE FOR GRADING AND SLOPING THE FINISHED GROUND SURFACE TO PROVIDE SMOOTH & UNIFORM SLOPES, WHICH PROVIDE POSITIVE DRAINAGE AND PREVENT PONDING IN LOWER AREAS. CONTACT ENGINEER IF FIELD ADJUSTMENTS TO GRADING PLANS ARE REQUIRED.

25. UNDER PAVEMENTS COMPACT THE UPPER THREE FEET OF SUBGRADE TO 100% STANDARD PROCTOR DENSITY AT OPTIMUM MOISTURE CONTENT AND 95% STANDARD PROCTOR DENSITY BELOW THE UPPER THREE FEET OF SUBGRADE. OUTSIDE OF PAVEMENT AREAS COMPACT EMBANKMENTS TO 95% STANDARD PROCTOR DENSITY.

RESTORATION NOTES

1. TURF RESTORATION IS SEEDING IN ACCORDANCE WITH THE RESTORATION PLAN.

Library Lake Southeast Stormwater Improvements			
Engineering Standards			
Prepared by EOR; October 30, 2020			
1	Streambank or shoreline protection with revegetation, soil bioengineering or upland erosion control	NRCS Technical Guide Streambank and Shoreline Protection Standard 580 (August, 2018)	580
2		NRCS Technical Guide Shoreland Habitat Standard 643A (July, 2001)	643A
3	Sediment Basins	Wisconsin DNR Technical Standard 1001, Wet Detention Basin (October 2007)	1001
4	Pervious Pavement	Wisconsin DNR Technical Standard 1008, Permable Pavement (February, 2016)	1008
5	Rain Gardens	Wisconsin DNR Technical Standard 1009, Rain Garden (September, 2018)	1009
6	Vegetation Planting	NRCS Technical Guide Tree / Shrub Establishment Standard 612 (January, 2018)	612
7	Wisconsin Department of Transportation 2021 Standard Specifications (Spec)	Part 2 - Earthwork	
8		Part 3 -Bases and Subbases	
9		Part 4 - Pavements	
10		Part 5 - Structures	
11		Part 6 - Incidental Construction	

PERMITS

***CONTRACTOR SHALL ADHERE TO ALL REQUIREMENTS OF ALL PERMITS SECURED BY CONTRACTOR OR BY OWNER.

1. CITY OF CUMBERLAND, RIGHT-OF-WAY

   A. FOR SITE ACCESS.
   B. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A RIGHT-OF-WAY PERMIT / EASEMENT PERMIT FROM THE CITY.
   C. CONTRACTOR SHALL PREPARE AND SUBMIT ALL APPLICATIONS AND OTHER PERMIT REQUIREMENTS IN ORDER TO SECURE THE PERMIT.
   D. ANY COST INCURRED FOR OBTAINING THE PERMIT SHALL BE INCIDENTAL TO TRAFFIC CONTROL.

2. WISCONSIN DOT PERMIT TO WORK ON HIGHWAY RIGHT-OF-WAY

   A. FOR ACCESS TO STATE HIGHWAY 63 FOR HAULING EXCAVATED SOIL AND OTHER MATERIALS TO & FROM THE SITE.
   B. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A RIGHT-OF-WAY PERMIT.
   C. CONTRACTOR SHALL PREPARE AND SUBMIT ALL APPLICATIONS AND OTHER PERMIT REQUIREMENTS IN ORDER TO SECURE THE PERMIT.
   D. ANY COST INCURRED FOR OBTAINING THE PERMIT SHALL BE INCIDENTAL TO TRAFFIC CONTROL.

3. WISCONSIN DNR WPDES PERMIT

   A. FOR CONSTRUCTION SITE STORM WATER.
   B. OWNER SHALL SUBMIT FOR THE PERMIT.

4. WISCONSIN DNR WETLAND IMPACTS

   A. OWNER HAS SUBMITTED FOR THIS PERMIT.

5. ARMY CORPS OF ENGINEERS WETLAND IMPACTS

   A. OWNER HAS SUBMITTED FOR THIS PERMIT.

BASE BID

ITEM NO.	ITEM DESCRIPTION	WISDOT REFERENCE	UNIT	QUANTITY
1	Clearing	201.0115	ACRE	0.40
2	Grubbing	201.0205	ACRE	0.40
3	Removing Concrete Pavement	204.0100	SY	320
4	Removing Concrete Sidewalk	204.0195	SY	6
5	Removing Fence, 4' Chain Link	204.0170	LF	254
6	Removing Fence, 6' Chain Link	204.0170	LF	58
7	Removing Storm Sewer, 15"	204.0245	LF	45
8	Removing Storm Sewer, 18"	204.0245	LF	10
9	Sealing Pipes (Soil Tight Bulkhead)	204.0280	EACH	1
10	Excavation Common (F)	205.0100	CY	1700
11	Apron Endwalls for Culvert Pipe 21-inch	520.1021	EACH	2
12	Apron Endwalls for Culvert Pipe 24-inch (w/Reinforced Concrete Footing)	520.1024	EACH	1
13	Riprap Medium	606.0200	CY	40
14	Storm Sewer Pipe Reinforced Concrete Class IV 15-inch	608.0415	LF	48
15	Storm Sewer Pipe Reinforced Concrete Class IV 18-inch	608.0418	LF	303
16	Storm Sewer Pipe Reinforced Concrete Class IV 21-inch	608.0421	LF	275
17	Storm Sewer Pipe Reinforced Concrete Class IV 24-inch	608.0424	LF	37
18	Manhole Covers Type J	611.0530	EACH	6
19	Casting Assembly, Design Pond Skimmer Plate Style, Center Hinged, Heavy Duty, Neenah R560-72H	611.0600	EACH	1
20	Manholes 4-FT Diameter	611.3004	EACH	9
21	Manholes 5-FT Diameter	611.3005	EACH	1
22	Manholes 5-FT Diameter (No Top Slab - For Pond Outlet Control Structure)	611.3005	EACH	1
23	Mobilization	618.1000	EACH	1
24	Mulching, Method C, Crimping (2 tons of mulch per acre)	627.02	SY	9930
25	Silt Fence	628.1904	LF	1830
26	Ditto	628.20	SY	2225
27	Inlet Protection Type D	628.70	EACH	3
28	Temporary Ditch Checks (12" Curlex Sediment Logs or Approved Equal)	628.7504	LF	330
29	Tracking Pads	628.7560	EACH	1
30	Seeding Mixture No. 40 (2 pounds per 1000 square feet)	630.0140	LB	180
31	Seeding Nurse Crop (0.80 pounds per 1000 square feet)	630.0400	LB	80
32	Traffic Control	643.5000	EACH	1
ADD ALTERNATE 1				
1	Apron Endwalls for Culvert Pipe Aluminum 15-inch	523.0315	EACH	2
2	Water Main Gate Valve and Valve Box, 16-inch (Ductile Iron Resilient)	SPECIAL	EACH	2
3	Storm Sewer Pipe PVC 16-inch (D900)	SPECIAL	LF	40
ADD ALTERNATE 2				
1	Baffle (Momentum Preserver, Energy Dissipator, D13)	SPECIAL	EACH	1
2	Baffle (Momentum Preserver, Energy Skimmer, S15)	SPECIAL	EACH	2
3	Baffle (Momentum Preserver, Energy Skimmer, S21)	SPECIAL	EACH	1

NO	DATE	BY	REVISION
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SUBMISSION DATE: 06/17/2021

DESIGN BY DRL | DRAWN BY DEM | CHECKED BY DRL

EOR PROJECT NO. 00909_0024

Emmons & Olivier Resources, Inc.
water ecology community
1919 University Ave W, Suite 300, St Paul, MN 55104
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LIBRARY LAKE SOUTHEAST STORMWATER IMPROVEMENTS
PHASE 1
CUMBERLAND, BARRON COUNTY, WISCONSIN

STATE PROJECT NO. ---- | CITY PROJECT NO. ---

NOTES & ESTIMATED QUANTITIES

SHEET 02 OF 19 SHEETS

Plot Date: 06/17/2021
Drawing name: X:\Clients_Private\00909_Beaver_Dam_Lake_Assoc\0024_SE_Stormwater_Park_Ph1\09_GMS\dwg\0909_0024_CO.dwg
Xrefs: 0909-0024_X-BASE2, 0909_0024_P_BASE_P12, 0909_0024_LS-P1

NOTE:
FOR SOIL BORING INFORMATION AND LOGS, REFER TO THE REPORT BY AET PROJECT NO. 31-20717

N

SCALE IN FEET

0 75 150 300

NO	DATE	BY	REVISION
6			
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CUMBERLAND, BARRON COUNTY, WISCONSIN

STATE PROJECT NO. ---- | CITY PROJECT NO. ---

OVERVIEW & SOIL BORING PLAN

SHEET 03 OF 19 SHEETS

Plot Date: 06/17/2021
Drawing name: X:\Clients_Private\00909_Beaver_Dam_Lake_Assoc\0024_SE_Stormwater_Park_Ph1\09_GIMS\dwg\0909_0024_CD.dwg
Xrefs: \0909-0024_X-BASE\2.0909_0024_P_BASE_P12_0909_0024_LS-P1

NOTES:

1. CONTRACTOR SHALL WORK WITH THE ENGINEER TO MODIFY THIS SITE PLAN TO FULFILL THE REQUIREMENTS OF THE WISCONSIN DNR WPDES PERMIT FOR STORMWATER ASSOCIATED WITH LAND DISTURBING CONSTRUCTION ACTIVITY.

2. CONTRACTOR SHALL IMPLEMENT POLLUTION PREVENTION MEASURES INCLUDING BUT NOT LIMITED TO: TEMPORARY SEDIMENTATION BASIN / TRAP & OUTLET DEVICE; STORAGE FACILITY FOR CHEMICALS, CEMENT, ETC.; SPILL PREVENTION & RESPONSE PROCEDURES. THESE ITEMS SHALL BE INCIDENTAL TO THE CONTRACT WITH NO ADDITIONAL COST TO THE OWNER,

DRAINAGE AREA SUMMARY	
NAME	AREA (SQ-FT)
1S	64,634
2S	17,625
3S	58,113
4S	11,851
5S	68,533
6S	25,562
7S	46,438
8S	13,760
9S	29,210
10S	15,591
11S	11,802
12S	9,471
13S	9,513
14S	6,105
TOTAL	378,208

N

SCALE IN FEET

0 75 150 300

NO	DATE	BY	REVISION
6			
5			
4			
3	06/17/2021	DEM	FINAL PLANS
2	05/21/2021	DEM	PRE-FINAL PLANS
1	10/30/2020	DEM	PRELIMINARY PLANS

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SUBMISSION DATE: 06/17/2021

DESIGN BY DRL | DRAWN BY DEM | CHECKED BY DRL

EOR PROJECT NO. 00909_0024

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Tele: 651.770.8448
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BEAVER DAM LAKE MANAGEMENT DISTRICT
P.O. BOX 232
CUMBERLAND, WI 54829

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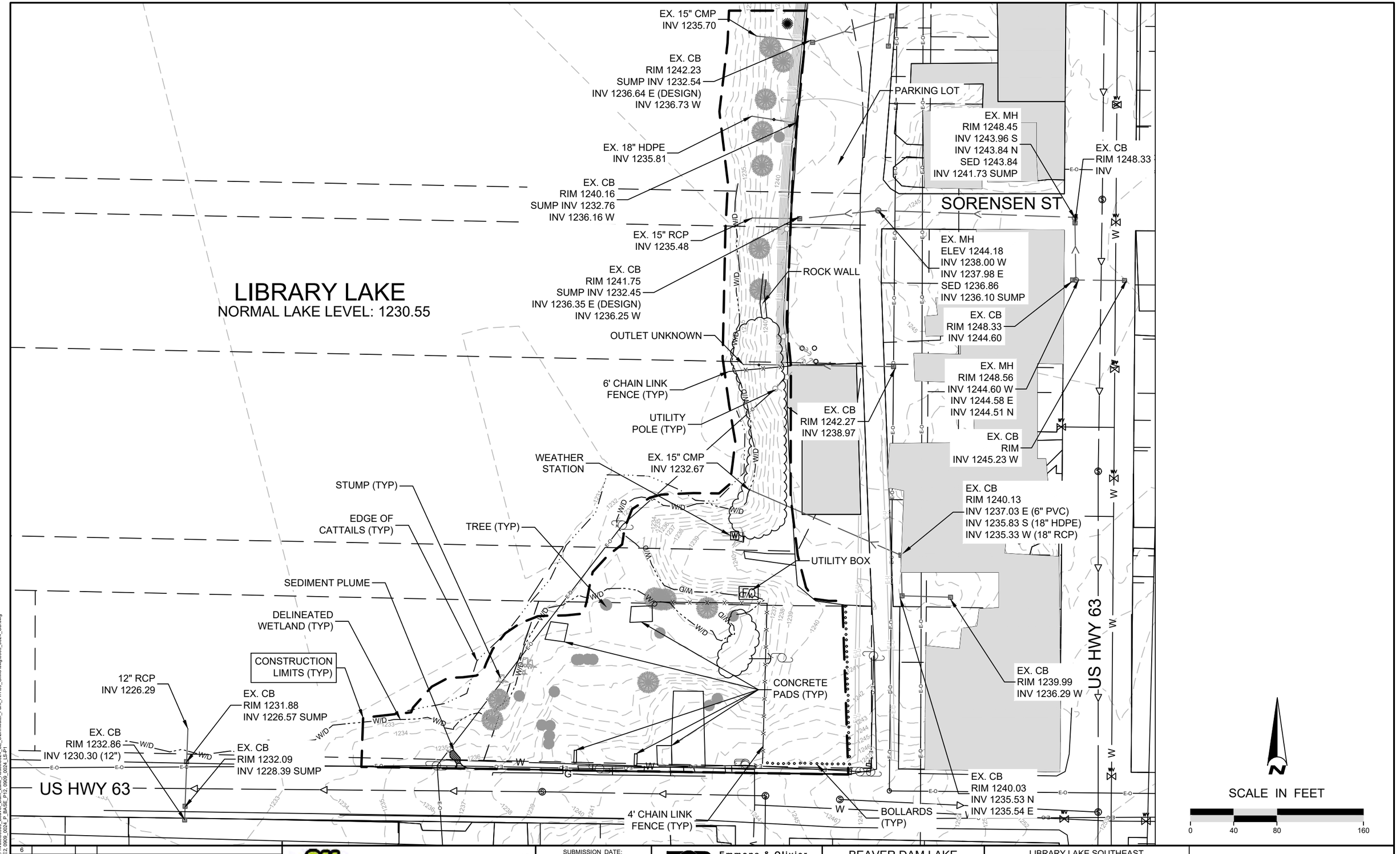
CUMBERLAND, BARRON COUNTY, WISCONSIN

STATE PROJECT NO. ---- | CITY PROJECT NO. ---

DRAINAGE AREA & SWPPP SITE PLAN

SHEET 04 OF 19 SHEETS

Plot Date: 06/17/2021
Drawing name: X:\Clients_Private\00909_Beaver_Dam_Lake_Assoc\0024_SE_Stormwater_Park_Ph1\09_GIMS\dwg\0909_0024_CD.dwg
Xrefs: 0909-0024_X-BASE2, 0909_0024_P_BASE_P12, 0909_0024_LS-P1



NO	DATE	BY	REVISION
6			
5			
4			
3	06/17/2021	DEM	FINAL PLANS
2	05/21/2021	DEM	PRE-FINAL PLANS
1	10/30/2020	DEM	PRELIMINARY PLANS

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EXISTING CONDITIONS

SHEET 05 OF 19 SHEETS

Plot Date: 06/17/2021
Drawing Name: X:\Clients_Private\00909_Beaver_Dam_Lake_Assoc\0024_SE_Stormwater_Park_Ph1\09_GIMS\dwg\0909_0024_CD.dwg
Xrefs: _0909-0024_X-BASE2_0909_0024_P_BASE_P12_0909_0024_LS-P1

APRON ENDWALL OUTLET PROTECTION (TYP)

INLET PROTECTION (TYP) 02/14

SORENSEN ST

LIBRARY LAKE
NORMAL LAKE LEVEL: 1230.55

03/14 SILT FENCE DOUBLE ROLL (TYP)

04/14 SEDIMENT CONTROL LOG DITCH CHECKS (TYP)

CONSTRUCTION LIMITS (TYP)

US HWY 63

TRACKING PAD 01/14

US HWY 63

NOTE:

1. CONTRACTOR SHALL PLACE OUTLET PROTECTION IN ALL APRON ENDWALLS DURING CONSTRUCTION TO MINIMIZE SEDIMENT DISCHARGE TO THE LAKE.

2. CONTRACTOR SHALL REMOVE EXCESS SEDIMENT ACCUMULATION IN PROPOSED STORMWATER POND IF BOTTOM ELEVATION IS SHALLOWER THAN 1228.50-FEET.

N

SCALE IN FEET

0 40 80 160

NO	DATE	BY	REVISION
6			
5			
4			
3	06/17/2021	DEM	FINAL PLANS
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1	10/30/2020	DEM	PRELIMINARY PLANS

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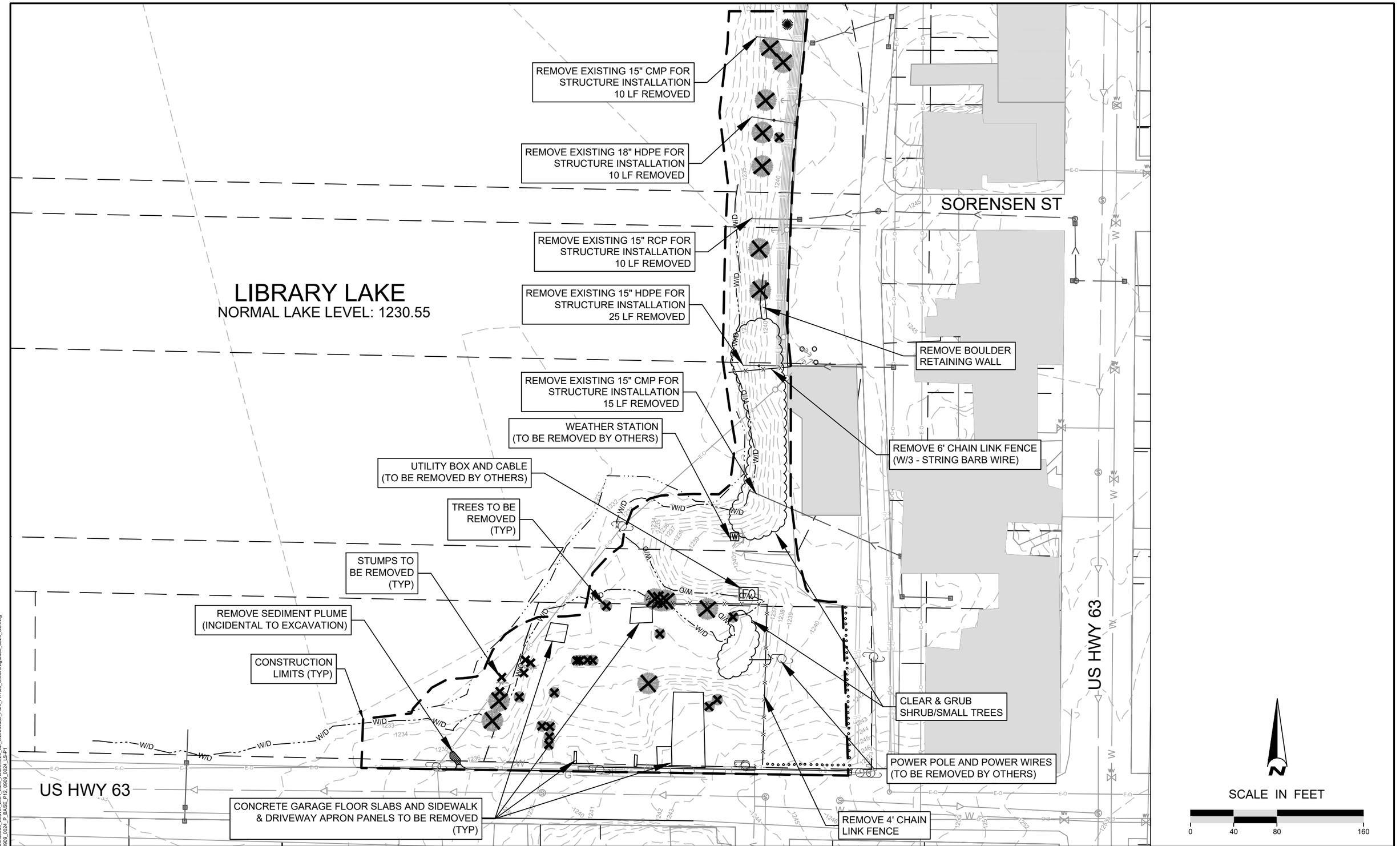
EROSION & SEDIMENT CONTROL PLAN

SHEET 06 OF 19 SHEETS

Plot Date: 06/17/2021
Drawing name: X:\Clients_Private\00909_Beaver_Dam_Lake_Assoc\0024_SE_Stormwater_Park_Ph1\09_GIMS\dwg\0909_0024_CD.dwg
Xrefs: 0909-0024_X-BASE2, 0909_0024_P_BASE_P12, 0909_0024_LS-P1



NO	DATE	BY	REVISION
6			
5			
4			
3	06/17/2021	DEM	FINAL PLANS
2	05/21/2021	DEM	PRE-FINAL PLANS
1	10/30/2020	DEM	PRELIMINARY PLANS

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DEMOLITION & REMOVALS PLAN

SHEET 07 OF 19 SHEETS

Plot Date: 06/17/2021
Drawing name: X:\Clients_Private\00909_Beaver_Dam_Lake_Assoc\0024_SE_Stormwater_Park_Ph1\09_GMS\dwg\0909_0024_CD.dwg
Xrefs: \0909-0024_X-BASE2.0909_0024_P_BASE_P12_0909_0024_LS-P1

PROPOSED STORM SEWER

LIBRARY LAKE
NORMAL LAKE LEVEL: 1230.55

SORENSEN ST

US HWY 63

CONSTRUCTION LIMITS (TYP)

STORM WATER POND
NWL: 1233.50 (5140 SF)
BOT: 1228.50

SCALE IN FEET
0 40 80 160

NO	DATE	BY	REVISION
6			
5			
4			
3	06/17/2021	DEM	FINAL PLANS
2	05/21/2021	DEM	PRE-FINAL PLANS
1	10/30/2020	DEM	PRELIMINARY PLANS

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STATE PROJECT NO. ---- | CITY PROJECT NO. ---

GRADING & DRAINAGE PLAN OVERVIEW

SHEET 08 OF 19 SHEETS

Plot Date: 06/17/2021
Drawing name: X:\Clients_Private\00909_Beaver_Dam_Lake_Assoc\0024_SE_Stormwater_Park_Ph1\09_GIMS\dwg\0909_0024_CD.dwg
Xrefs: 0909-A004_X-BASE2; 0909_0024_P_BASE_P12; 0909_0024_LS-P1

EMERGENCY
OVERFLOW: 1235.50
(100-YR)

CONSTRUCTION LIMITS (TYP)

BOTTOM
ELEV: 1228.5

10' W BENCH
ELEV: 1233.5

1239.5

1235.25

1232.5

1233.25

CAUTION

CAUTION OVERHEAD
ELECTRICAL WIRE

SCALE IN FEET

0 20 40 80

NO	DATE	BY	REVISION
6			
5			
4			
3	06/17/2021	DEM	FINAL PLANS
2	05/21/2021	DEM	PRE-FINAL PLANS
1	10/30/2020	DEM	PRELIMINARY PLANS

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LIBRARY LAKE SOUTHEAST
STORMWATER IMPROVEMENTS
PHASE 1
CUMBERLAND, BARRON COUNTY,
WISCONSIN

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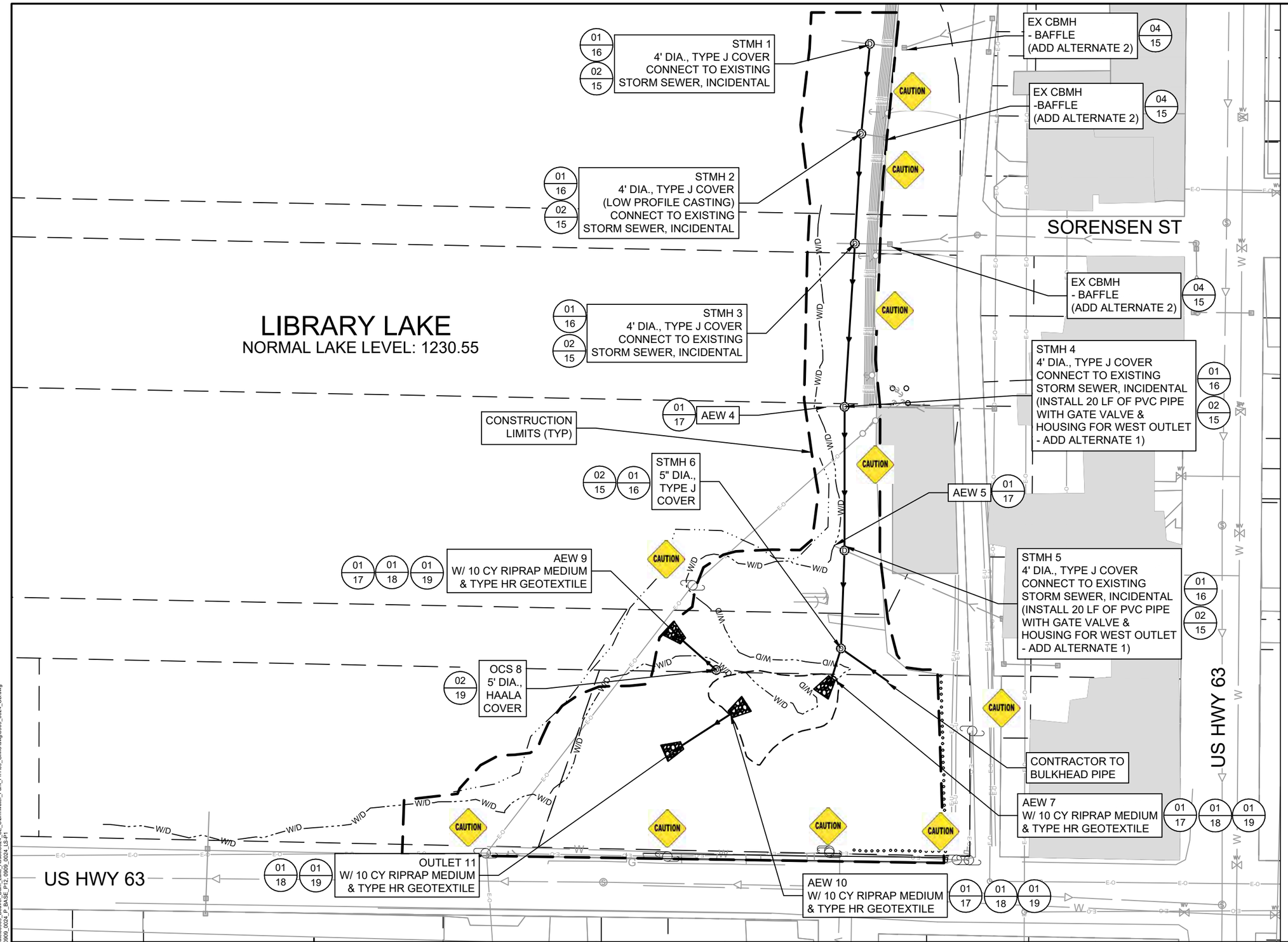
GRADING & DRAINAGE PLAN

SHEET 09 OF 19 SHEETS

Plot Date: 06/17/2021
Drawing name: X:\Clients_Private\00909_Beaver_Dam_Lake_Assoc\0024_SE_Stormwater_Park_Ph1\09_GIMS\dwg\0909_0024_CD.dwg
Xrefs: 0909-0024_X-BASE2, 0909_0024_P_BASE_P12, 0909_0024_LS-P1



NOTE:

1. FOR STMH 2 THE CONTRACTOR SHALL USE A LOW PROFILE CASTING TO ACHIEVE THE PROPOSED RIM ELEVATION

CAUTION — CAUTION OVERHEAD /UNDERGROUND ELECTRICAL WIRE

SCALE IN FEET

0 40 80 160

NO	DATE	BY	REVISION
6			
5			
4			
3	06/17/2021	DEM	FINAL PLANS
2	05/21/2021	DEM	PRE-FINAL PLANS
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STORM SEWER PLAN OVERVIEW

SHEET 10 OF 19 SHEETS

Plot Date: 06/17/2021
Drawing name: X:\Clients_Private\00909_Beaver_Dam_Lake_Assoc\0024_SE_Stormwater_Park_Ph1\09_GIMS\dwg\0909_0024_CD.dwg
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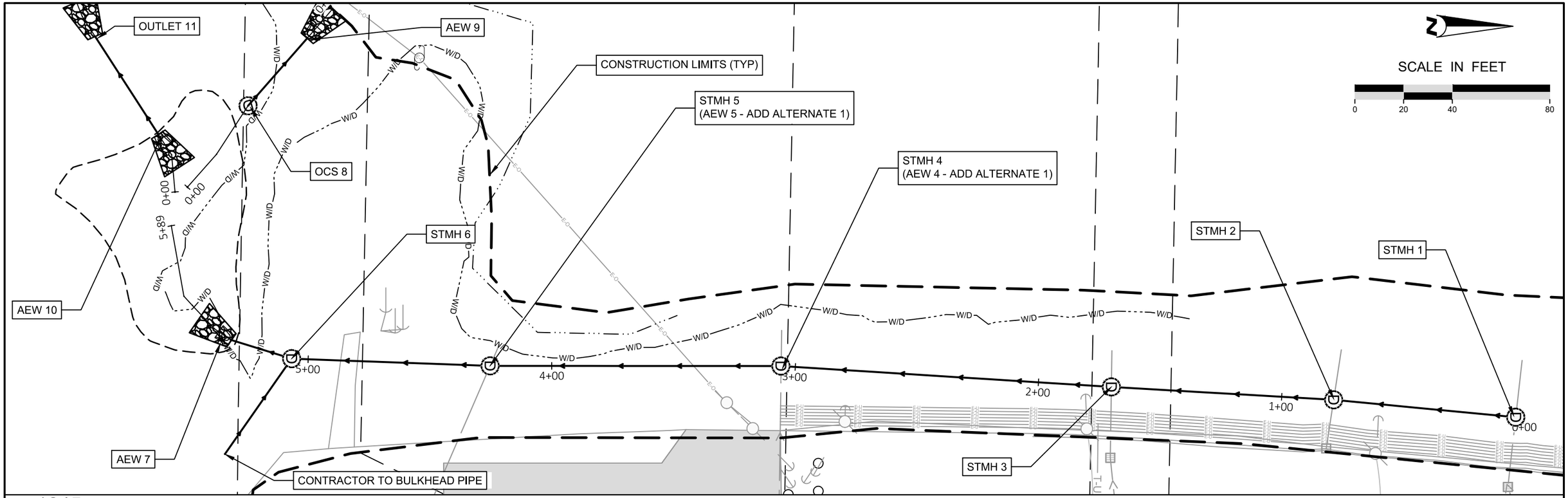

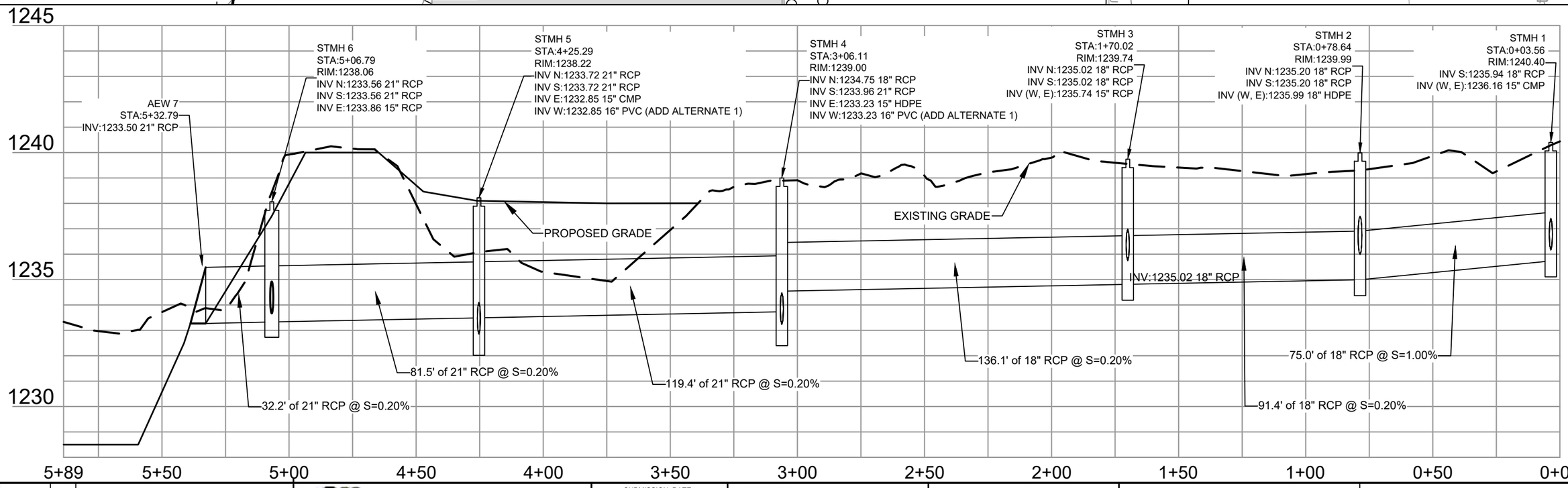

NO	DATE	BY	REVISION
6			
5			
4			
3	06/17/2021	DEM	FINAL PLANS
2	05/21/2021	DEM	PRE-FINAL PLANS
1	10/30/2020	DEM	PRELIMINARY PLANS

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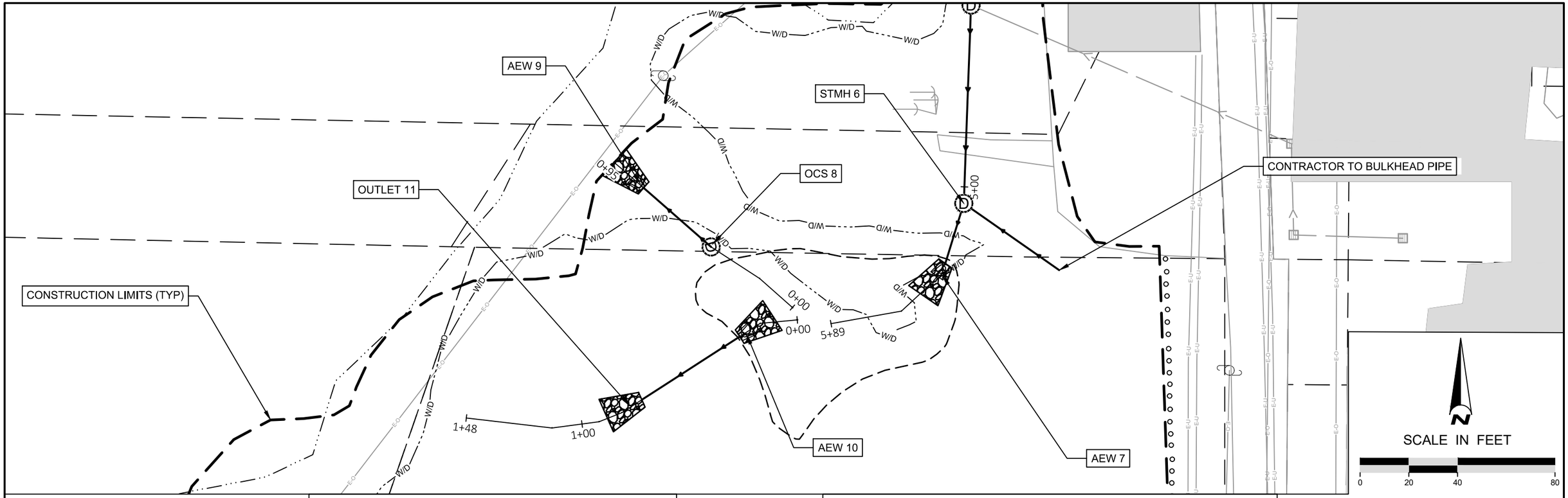
STORM SEWER PLAN & PROFILE 1

SHEET 11 OF 19 SHEETS

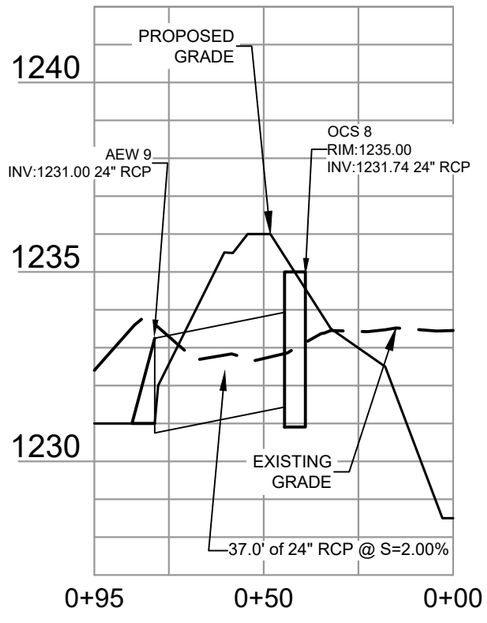
Plot Date: 06/17/2021
Drawing name: X:\Clients_Private\00909_Beaver_Dam_Lake_Assoc\0024_SE_Stormwater_Park_Ph1\09_GIMS\dwg\0909_0024_CD.dwg
Xrefs: 0909-0024_X-BASE2, 0909_0024_P_BASE_P12, 0909_0024_LS-P1

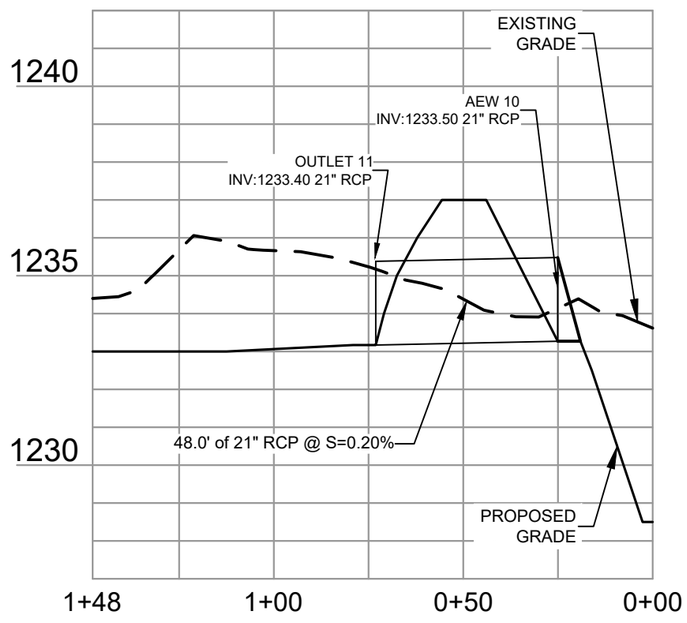


NOTE:

1. TIE ALL JOINTS FOR THE FOLLOWING PIPE SECTIONS

A. STMH 6 TO AEW 7
B. AEW 10 TO OUTLET 11
C. OCS 8 TO AEW 9





NO	DATE	BY	REVISION
6			
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4			
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2	05/21/2021	DEM	PRE-FINAL PLANS
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STORM SEWER PLAN & PROFILE 2

SHEET 12 OF 19 SHEETS

Plot Date: 06/17/2021
Drawing name: X:\Clients_Private\00909_Beaver_Dam_Lake_Assoc\0024_SE_Stormwater_Park_Phi109_GMS\dwg\0909_0024_CD.dwg
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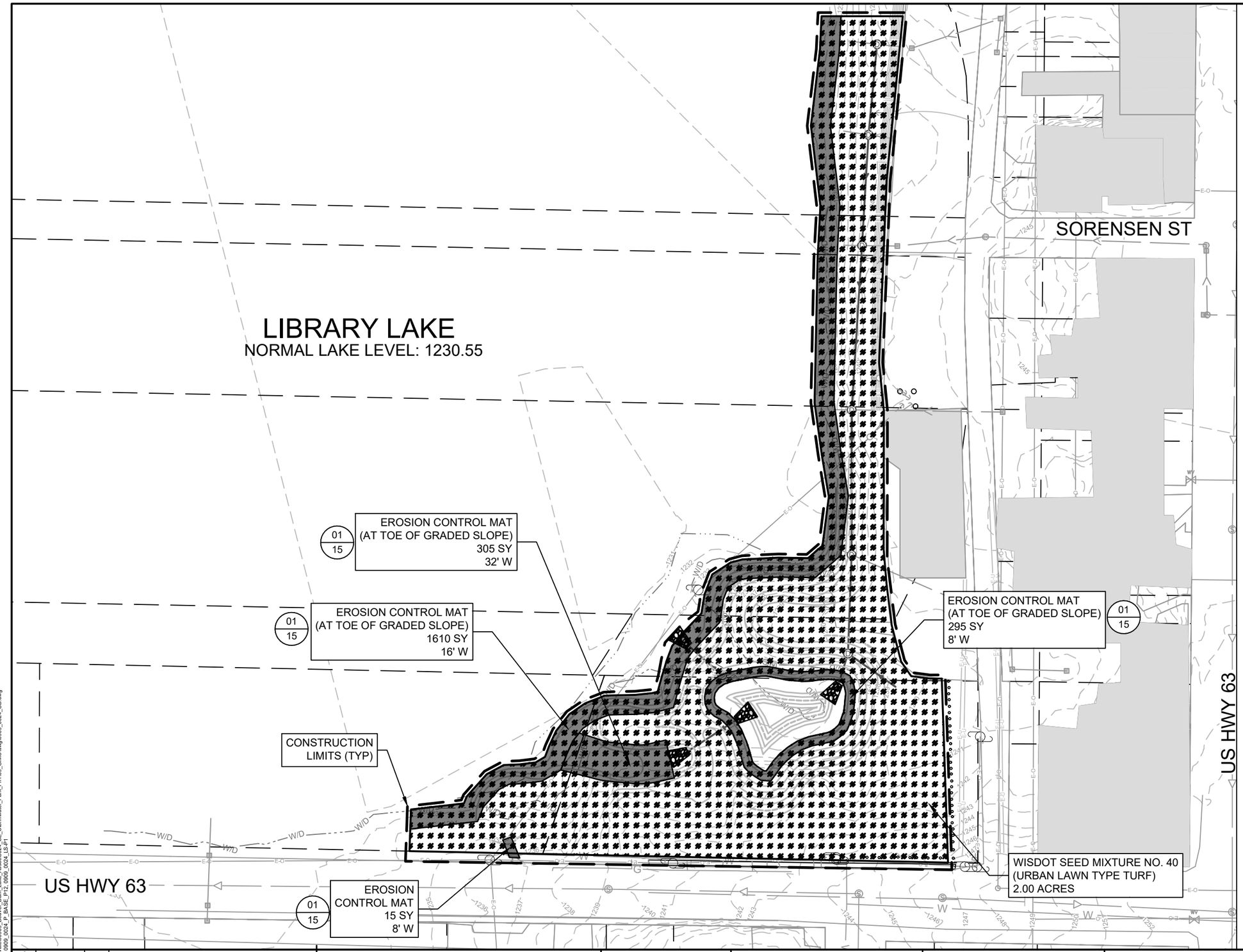

NOTE:

1. ENSURE A MINIMUM DEPTH OF 4 INCHES OF TOP SOIL SPREAD UNIFORMLY ACROSS ALL DISTURBED AREAS.

2. ALL DISTURBED AREAS ARE TO BE SEEDED WITH:

A. WISDOT SEED MIXTURE NO. 40 AT A RATE OF 2 LBS PER 1000 SF OR 87 LBS PER ACRE
B. NURSE CROP SEED MIXTURE AT A RATE OF 0.80 LBS OER 1000 SQUARE FEET OR 35 LBS PER ACRE.

3. APPLY STRAW MULCH (CRIMPED) AT A RATE OF 2 TONS PER ACRE. INSURE UNIFORM COVERAGE AND NO STRAW IS BLOWN OFF THE PROJECT SITE.

4. INSTALL EROSION CONTROL MAT (URBAN CLASS I TYPE A - CURLEX I FIBRENET OR APPROVED EQUAL) AS SPECIFIED IN THE PLANS.

5. CONTRACTOR SHALL NOT BE PAID FOR ANY EROSION CONTROL MAT IF IT IS NOT INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, INCLUDING BUT NOT LIMITED TO EDGE TRENCHING AND PROPER STAPLE INSTALLATION.

NO	DATE	BY	REVISION
6			
5			
4			
3	06/17/2021	DEM	FINAL PLANS
2	05/21/2021	DEM	PRE-FINAL PLANS
1	10/30/2020	DEM	PRELIMINARY PLANS

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DRL	DEM	DRL

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STATE PROJECT NO. ----
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RESTORATION PLAN

SHEET 13 OF 19 SHEETS

Plot Date: 06/17/2021
Drawing name: X:\Clients_Private\00909_Beaver_Dam_Lake_Assoc\0024_SE_Stormwater_Park_Ph1\09_GIMS\dwg\0909_0024_CD.dwg
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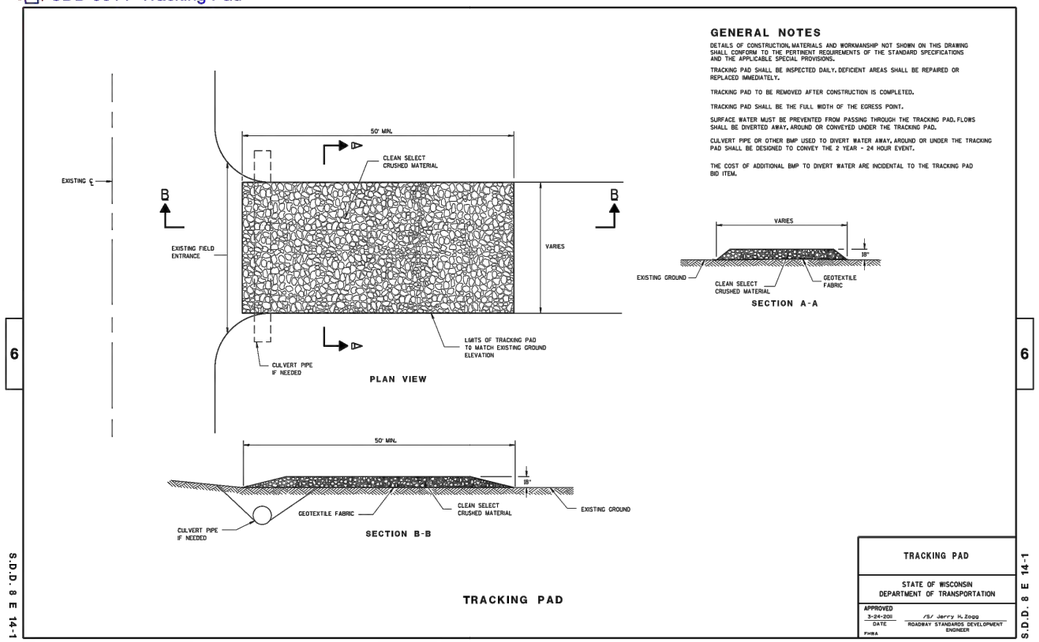
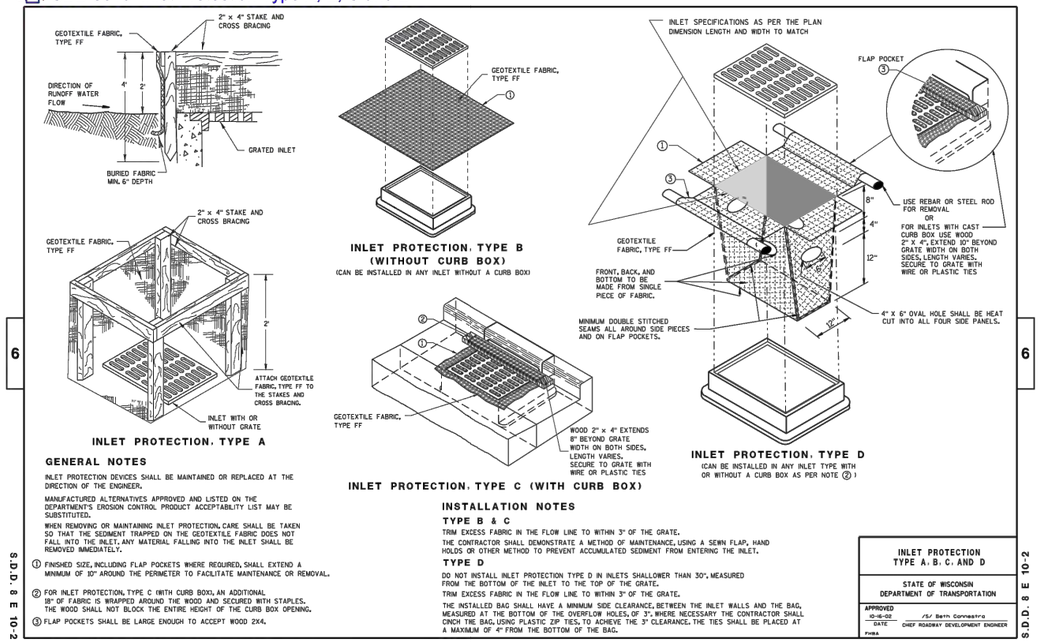
SDD 8e14 Tracking Pad



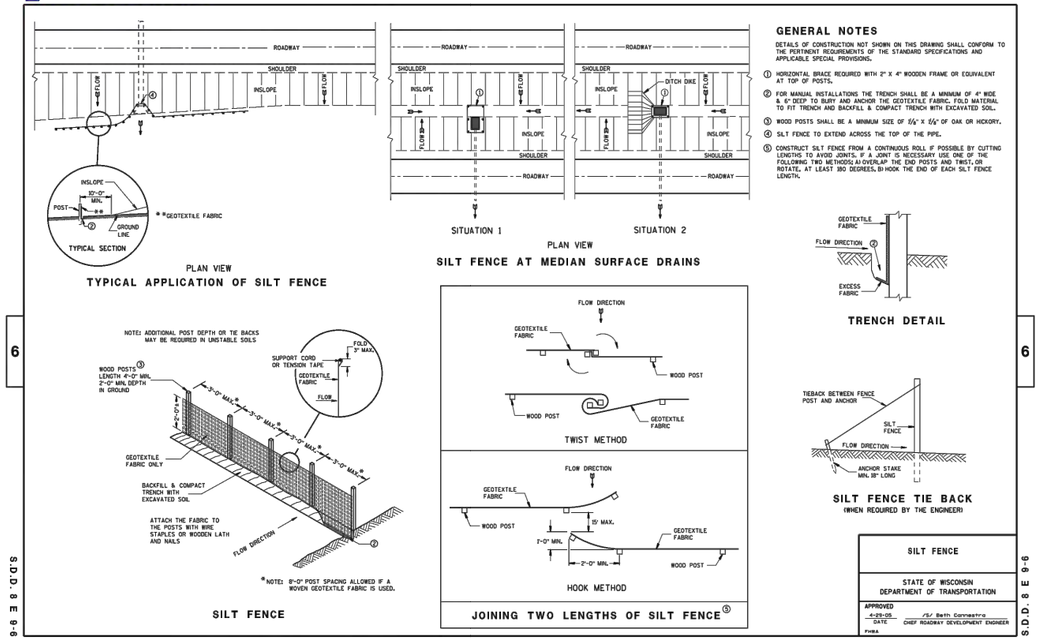
01
14
TRACKING PAD
NOT TO SCALE

SDD 8e10 Inlet Protection Type A, B, C and D



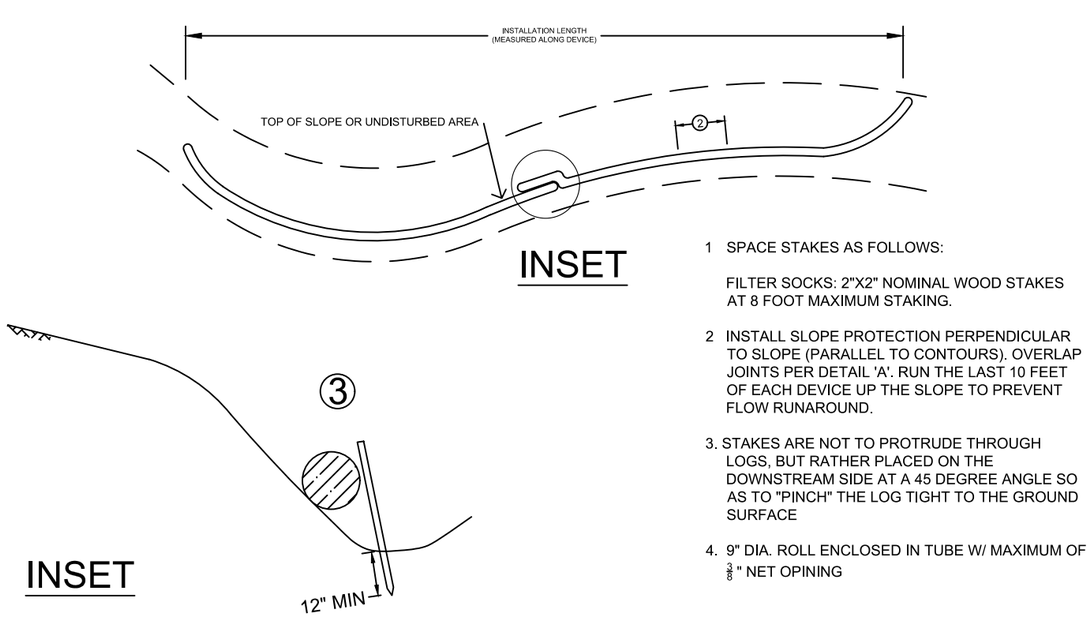
02
14
INLET PROTECTION
NOT TO SCALE

SDD 8e9 Silt Fence



03
14
SILT FENCE
NOT TO SCALE

SDD 8e13 Sediment Logs



04
14
SEDIMENT LOGS
NOT TO SCALE

NO	DATE	BY	REVISION
6			
5			
4			
3	06/17/2021	DEM	FINAL PLANS
2	05/21/2021	DEM	PRE-FINAL PLANS
1	10/30/2020	DEM	PRELIMINARY PLANS

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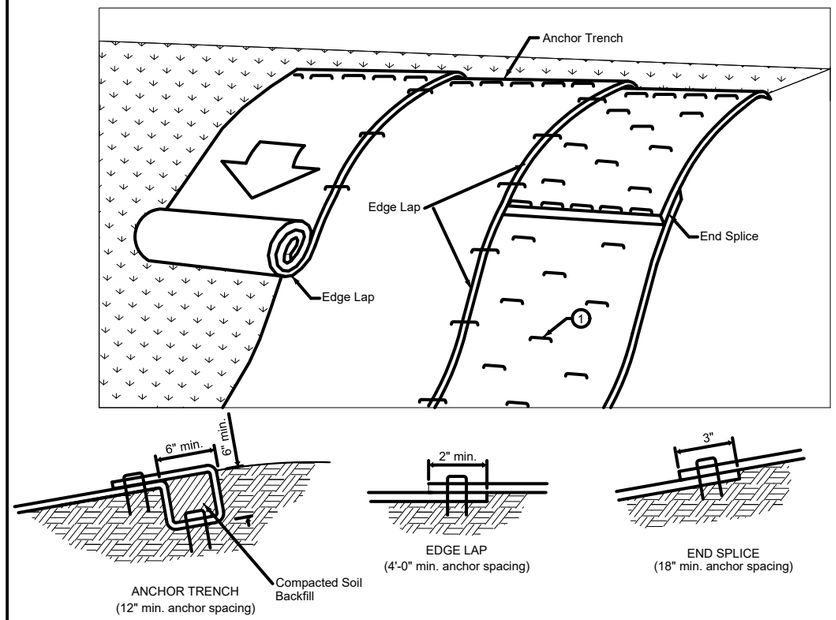
DETAIL SHEET 1

SHEET 14 OF 19 SHEETS

Plot Date: 06/17/2021
Drawing name: X:\Clients_Private\00909_Beaver_Dam_Lake_Assoc\0024_SE_Stormwater_Park_Ph1\09_GMS\dwg\00909_0024_CD.dwg
Xrefs: \0909-0024_X-BASE2.0909_0024_P_BASE_P12_0909_0024_LS-P1



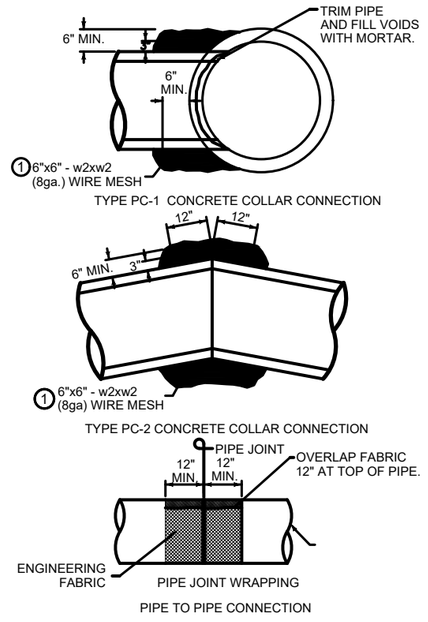
NOTES:

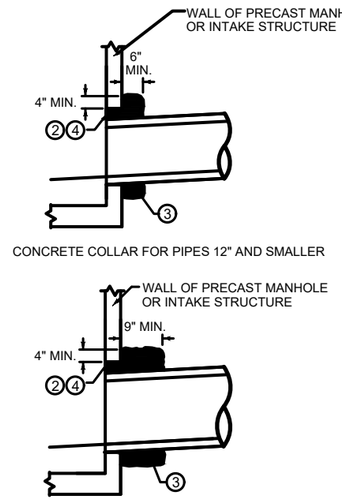
1. SECURE BLANKET TO GROUND ACCORDING TO MANUFACTURER'S RECOMMENDED ANCHORING PATTERN AND MINIMUM SHOWN IN TABLE 1.
2. SPACE TOP ROW OF STAPLES AT 18 INCH, BOTTOM ROW AT 36 INCH CENTERS, AND ALL OTHERS AT 24 INCH CENTERS. APPROXIMATELY 30 STAPLES REQUIRED PER SQUARE (100 SQ.-FT.) OF EROSION CONTROL MAT.
3. WHERE EROSIVE GULLIES HAVE DEVELOPED IN BACKSLOPE, FILL WITH SOIL AND COMPACT PRIOR TO PLACEMENT OF EROSION CONTROL MAT.
4. 4 FEET MINIMUM TO 8 FEET MAXIMUM OR AS SPECIFIED. PLACE STAPLES THE SAME AS FOR SPECIAL DITCH CONTROL.
5. 4 FEET UNLESS SPECIFIED OTHERWISE FOR FORESLOPE PROTECTION.
6. IF EROSIVE RILL HAS DEVELOPED ADJACENT TO SHOULDER MATERIAL, FILL WITH SUITABLE SOIL AND COMPACT PRIOR TO PLACEMENT OF MAT.
7. EROSION CONTROL BLANKET SHALL BE MNDOT CATEGORY 3N.

TABLE 1

Max. slope	Min. anchors
≤ 3:1	1.5/yd²
2:1	2/yd²
1:1	2.5/yd²

01/15 EROSION CONTROL MATTING
NOT TO SCALE

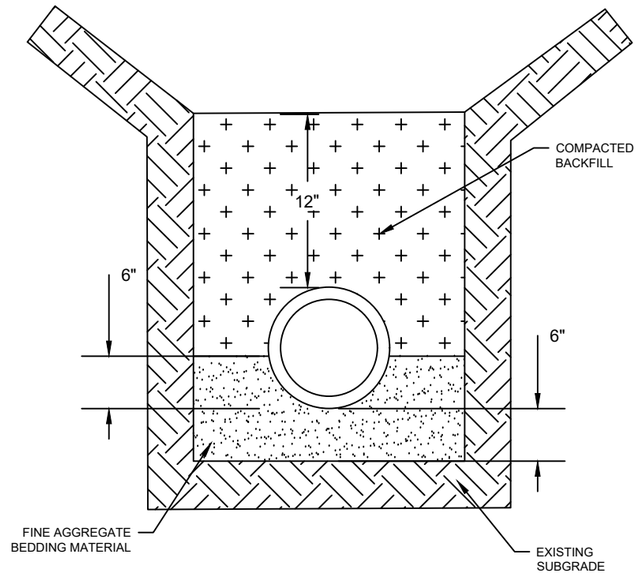




1. LAP ENDS OF WIRE MESH A MINIMUM OF 6 INCHES.
2. CONCRETE COLLAR IS REQUIRED WHEN ANNULAR SPACE BETWEEN THE OUTSIDE OF THE PIPE AND THE WALL OF THE STRUCTURE IS 2 INCHES OR GREATER.
3. PROVIDE TWO #4 HOOP BARS IN CONCRETE COLLAR. LAP BARS A MINIMUM OF 6 INCHES.
4. TROWEL CONCRETE FLUSH WITH INSIDE WALL OF STRUCTURE.

NOTE
CONNECTIONS TO EXISTING PIPE AND STRUCTURES MUST INCLUDE BUT NOT LIMITED TO THE FOLLOWING BELL & SPIGOT, GASKET, TIES & GEOTEXTILE FABRIC, MORTAR & REBAR, FLEXSEAL OR SIMILAR WATER INTRUSION SEAL

02/15 CONNECTION TO EXISTING STORM SEWER
NOT TO SCALE

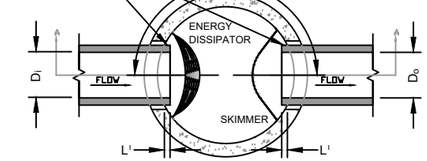


03/15 PIPE BEDDING DETAIL
NOT TO SCALE

FOR NEW MANHOLE CONSTRUCTION, CONTRACTOR TO MINIMIZE PIPE PROTRUSION (L)

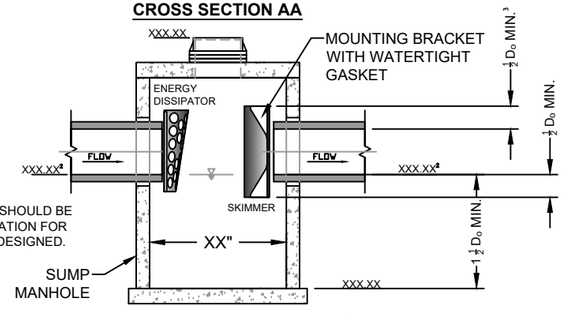
PLAN VIEW

REFER TO MANHOLE SIZING CHART TO ENSURE PROJECT SPECIFIC DESIGN FEASIBILITY



NOTE 1: STOCK COMPONENTS ARE DESIGNED TO ACCOMMODATE A 6" CONCRETE PIPE PROTRUSION (L, MEASURED AT SIDE OF PIPE). FOR CUSTOM DESIGNS, AND/OR PROJECT SPECIFIC DETAILS, CONTACT MOMENTUM.

CROSS SECTION AA



NOTE 2: INLET AND OUTLET INVERTS SHOULD BE AT APPROXIMATELY THE SAME ELEVATION FOR THE PRESERVER™ TO FUNCTION AS DESIGNED.

NOTE 3: STOCK SKIMMERS HAVE A FREEBOARD DEPTH OF ½ D_o. FOR GREATER FREEBOARD DEPTHS, DESIGNERS CAN UPSIZE THE SKIMMER, OR USE A CUSTOMIZED SKIMMER. FOR CUSTOM DESIGNS, AND/OR PROJECT SPECIFIC DETAILS, CONTACT MOMENTUM.

04/15 BAFFLE DETAIL (ADD ALTERNATE 2)
NOT TO SCALE

NO	DATE	BY	REVISION
6			
5			
4			
3	06/17/2021	DEM	FINAL PLANS
2	05/21/2021	DEM	PRE-FINAL PLANS
1	10/30/2020	DEM	PRELIMINARY PLANS

811 Know what's below. Call before you dig.
DIGGERS HOTLINE™

SUBMISSION DATE: 06/17/2021
DESIGN BY DRL | DRAWN BY DEM | CHECKED BY DRL
EOR PROJECT NO. 00909_0024

Emmons & Olivier Resources, Inc.
water ecology community
1919 University Ave W, Suite 300, St Paul, MN 55104
Tele: 651.770.8448
www.eorinc.com

BEAVER DAM LAKE MANAGEMENT DISTRICT
P.O. BOX 232
CUMBERLAND, WI 54829

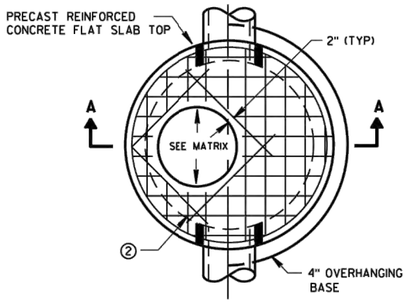
LIBRARY LAKE SOUTHEAST STORMWATER IMPROVEMENTS PHASE 1
CUMBERLAND, BARRON COUNTY, WISCONSIN
STATE PROJECT NO. ---- | CITY PROJECT NO. ---

DETAIL SHEET 2

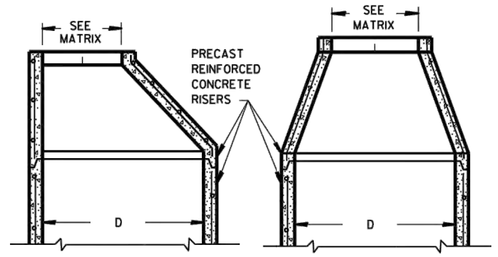
SHEET 15 OF 19 SHEETS

Plot Date: 06/17/2021
Drawing name: X:\Clients_Private\00909_Beaver_Dam_Lake_Assoc\0024_SE_Stormwater_Park_Ph1\09_GMS\dwg\0909_0024_CD.dwg
Xrefs: \0909-0024_X-BASE2.0909_0024_P_BASE_P12_0909_0024_LS-P1

SDD 8b9 Manholes 3-FT, 4-FT, 5-FT, 6-FT, 7-FT, and 8-FT Diameter

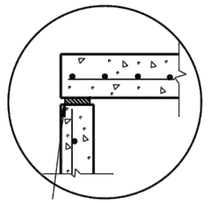


PLAN VIEW CIRCULAR OPENING



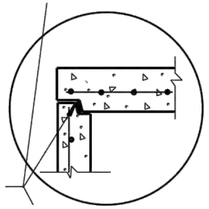
OPTIONAL PRECAST REINFORCED CONCRETE ECCENTRIC TOP

OPTIONAL PRECAST REINFORCED CONCRETE CONCENTRIC TOP

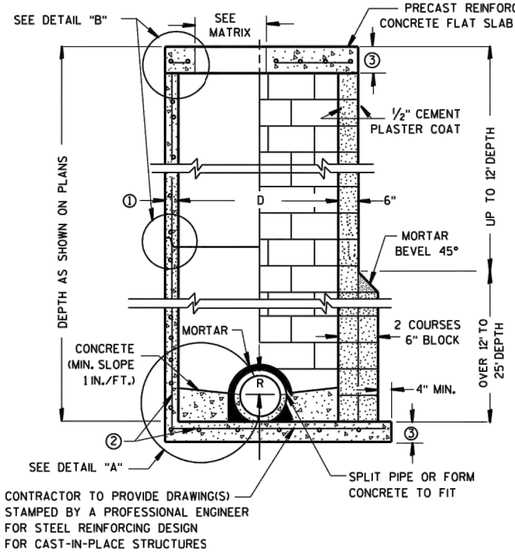


TOP WITH PLAIN END JOINT

JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C990 (TYP)

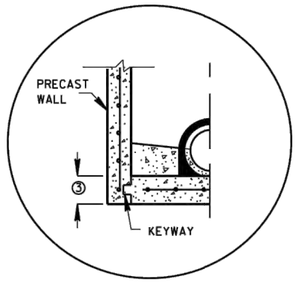


TOP WITH TONGUE AND GROOVE JOINT



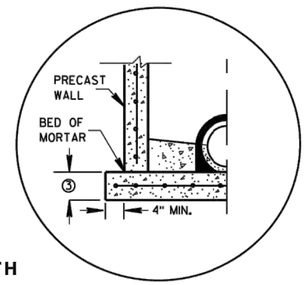
PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE

CONCRETE BLOCK WITH CAST-IN-PLACE OR PRECAST REINFORCED CONCRETE BASE ②



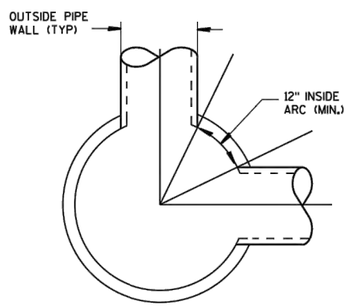
PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION

DETAIL "B"



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

DETAIL "A"



DETAIL "C"

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST MANHOLE UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR UNDERGROUND DRAINAGE STRUCTURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 3X3-L", "CATCH BASINS 4-B", "INLETS 2X3-H", ETC. THE FIRST NUMBERS DESIGNATE THE SIZE OF THE STRUCTURE, AND THE FOLLOWING LETTER DESIGNATES THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6 INCHES IN DEPTH, WHICH MEETS THE REQUIREMENTS OF FOUNDATION BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

PRECAST REINFORCED CONE TOPS (ECCENTRIC OR CONCENTRIC) OR PRECAST REINFORCED FLAT SLAB TOPS MAY BE USED ON CONCRETE BLOCK STRUCTURES.

ECCENTRIC CONE TOPS MAY BE USED ON ALL STRUCTURES, AND CONCENTRIC CONE TOPS SHALL BE USED ONLY ON STRUCTURES 5 FEET OR LESS IN DEPTH, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

STEPS MEETING AASHTO M199 AND THE FOLLOWING REQUIREMENTS SHALL BE INSTALLED IN ALL STRUCTURES OVER 5 FEET IN DEPTH: 16 INCH C-C MAXIMUM SPACING; PROJECT A MINIMUM CLEAR DISTANCE OF 4 INCHES FROM THE WALL AT THE POINT OF EMBEDMENT; MINIMUM LENGTH OF 10 INCHES; MINIMUM WALL EMBEDMENT OF 3 INCHES. FERROUS METAL STEPS NOT PAINTED OR TREATED TO RESIST CORROSION SHALL HAVE A MINIMUM CROSS SECTIONAL DIMENSION OF 1 INCH.

STEPS OF APPROVED POLYPROPYLENE PLASTIC COATED REINFORCEMENT BAR ARE ACCEPTABLE. REINFORCING BAR MUST BE A MINIMUM OF ½" AND MEET THE REQUIREMENTS OF ASTM A615.

CERTIFICATION SHALL BE PROVIDED THAT INSTALLED STEPS WHEN TESTED IN ACCORDANCE WITH SECTION 10 OF AASHTO T280 CAN WITHSTAND A VERTICAL LOAD OF 800 LBS. AND A HORIZONTAL LOAD OF 400 LBS.

ALL BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

CONCRETE BLOCK WILL NOT BE PERMITED FOR STRUCTURES GREATER THAN 4 FEET IN DIAMETER.

PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

ALL PRECAST MANHOLE UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M 199.

4" OVERHANGING BASES ARE REQUIRED FOR ALL CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

FOR ADDITIONAL CONFIGURATIONS, MAINTAIN A MINIMUM OF 12 INCHES AS MEASURED FROM THE INSIDE OF THE STRUCTURE WALL BETWEEN THE OUTSIDE PIPE WALLS OF ADJACENT PIPES. SEE DETAIL "C".

① MINIMUM WALL THICKNESS SHALL BE 4 INCHES FOR 3-FT, 5 INCHES FOR 4-FT, 6 INCHES FOR 5-FT, 7 INCHES FOR 6-FT, 8 INCHES FOR 7-FT AND 9 INCHES FOR 8-FT DIAMETER PRECAST MANHOLES.

② FOR PRECAST MANHOLES PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.

③ PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER OF 48" AND LESS SHALL HAVE A MINIMUM THICKNESS OF 6". PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER LARGER THAN 48" SHALL HAVE A MINIMUM THICKNESS OF 8".

MANHOLE COVER OPENING MATRIX

MANHOLE COVER TYPE	C	ALL J'S	K	L	M
OPENING SIZE (FT)					
2 DIA.	X	X		X	
3 DIA.			X		X

PIPE MATRIX

MANHOLE SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	180° SEPARATION (IN)	90° SEPARATION (IN)
3-FT	15	12
4-FT	24	18
5-FT	36	24
6-FT	42	36
7-FT	48	36
8-FT	60	42

MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2016 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA

S.D.D. 8 B 9-2

MANHOLE DETAIL
01/16
NOT TO SCALE

NO	DATE	BY	REVISION
6			
5			
4			
3	06/17/2021	DEM	FINAL PLANS
2	05/21/2021	DEM	PRE-FINAL PLANS
1	10/30/2020	DEM	PRELIMINARY PLANS

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SUBMISSION DATE: 06/17/2021
DESIGN BY DRL | DRAWN BY DEM | CHECKED BY DRL
EOR PROJECT NO. 00909_0024

Emmons & Olivier Resources, Inc.
1919 University Ave W, Suite 300, St Paul, MN 55104
water ecology community
Tele: 651.770.8448
www.eorinc.com

BEAVER DAM LAKE MANAGEMENT DISTRICT
P.O. BOX 232
CUMBERLAND, WI 54829

LIBRARY LAKE SOUTHEAST STORMWATER IMPROVEMENTS PHASE 1
CUMBERLAND, BARRON COUNTY, WISCONSIN
STATE PROJECT NO. ---- | CITY PROJECT NO. ---

DETAIL SHEET 3
SHEET 16 OF 19 SHEETS

Plot Date: 06/17/2021
Drawing name: X:\Clients_Private\00909_Beaver_Dam_Lake_Assoc\0024_SE_Stormwater_Park_Ph1\09_GIMS\dwg\0909_0024_CD.dwg
Xrefs: 0909-A004_X-BASE2 0909_0024_P_BASE_P12, 0909_0024_LS-P1

SDD 8f1 Apron Endwalls for Culvert Pipe

METAL APRON ENDWALLS

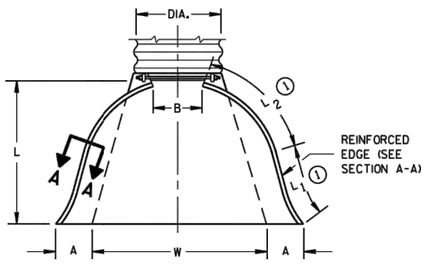
PIPE DIA. (IN.)	MIN. THICK. (inches) STEEL	MIN. THICK. (inches) ALUM.	DIMENSIONS (inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	36	2 1/2 to 1	1 Pc.
21	.064	.060	9	12	6	36	18	29 5/8	42	2 1/2 to 1	1 Pc.
24	.064	.075	10	13	6	41	18	37 1/4	48	2 1/2 to 1	1 Pc.
30	.079	.075	12	16	8	51	18	52 1/4	60	2 1/2 to 1	1 Pc.
36	.079	.105	14	19	9	60	24	59 3/4	72	2 1/2 to 1	2 Pc.
42	.109	.105	16	22	11	69	24	75 5/8	84	2 1/2 to 1	2 Pc.
48	.109	.105	18	27	12	78	24	81	90	2 1/4 to 1	3 Pc.
54	.109	.105	18	30	12	84	30	85 1/2	102	2 1/4 to 1	3 Pc.
60	.109×	.105×	18	33	12	87	—	—	114	2 to 1	3 Pc.
66	.109×	.105×	18	36	12	87	—	—	120	2 to 1	3 Pc.
72	.109×	.105×	18	39	12	87	—	—	126	2 to 1	3 Pc.
78	.109×	.105×	18	42	12	87	—	—	132	1 1/2 to 1	3 Pc.
84	.109×	.105×	18	45	12	87	—	—	138	1 1/2 to 1	3 Pc.
90	.109×	.105×	18	37	12	87	—	—	144	1 1/2 to 1	3 Pc.
96	.109×	.105×	18	35	12	87	—	—	150	1 1/2 to 1	3 Pc.

× EXCEPT CENTER PANEL SEE GENERAL NOTES

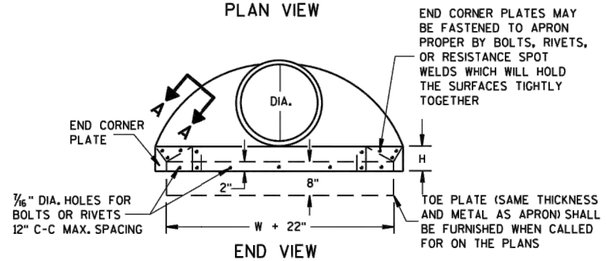
REINFORCED CONCRETE APRON ENDWALLS

PIPE DIA. (IN.)	DIMENSIONS (inches) T	A	B	C	D	E	G	APPROX. SLOPE
12	2	4	24	48 1/8	72 1/8	24	2	3 to 1
15	2 1/4	6	27	46	73	30	2 1/4	3 to 1
18	2 1/2	9	27	46	73	36	2 1/2	3 to 1
21	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	3 to 1
24	3	9 1/2	43 1/2	30	73 1/2	48	3	3 to 1
27	3 1/4	10 1/2	49 1/2	24	73 1/2	54	3 1/4	3 to 1
30	3 1/2	12	54	19 3/4	73 1/2	60	3 1/2	3 to 1
36	4	15	63	34 3/4	97 3/4	72	4	3 to 1
42	4 1/2	21	63	35	98	78	4 1/2	3 to 1
48	5	24	72	26	98	84	5	3 to 1
54	5 1/2	27	65	* 33 1/4 - ** 35	* 98 1/4 - ** 100	90	5 1/2	2 2/3 to 1
60	6	* 30 - ** 35	60	39	99	96	5	2 to 1
66	6 1/2	* 24 - ** 30	* 72 - ** 78	* ** 21-27	99	102	5 1/2	2 to 1
72	7	* 24 - ** 36	78	21	99	108	6	2 to 1
78	7 1/2	* 24 - ** 36	78	21	99	114	6 1/2	2 to 1
84	8	36	90 1/2	21	111 1/2	120	6 1/2	1 1/2 to 1
90	8 1/2	41	87 1/2	24	111 1/2	132	6 1/2	1 1/2 to 1

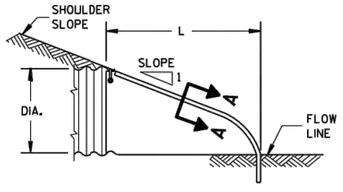
*MINIMUM
**MAXIMUM



PLAN VIEW

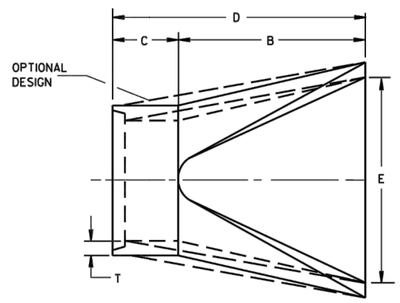


END VIEW

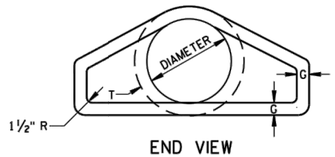


SIDE ELEVATION

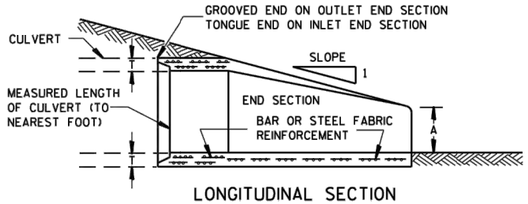
METAL ENDWALLS



PLAN

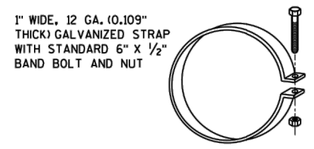


END VIEW



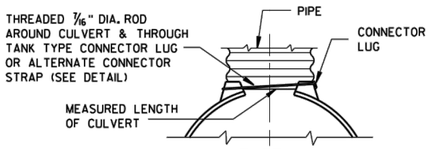
LONGITUDINAL SECTION

CONCRETE ENDWALLS

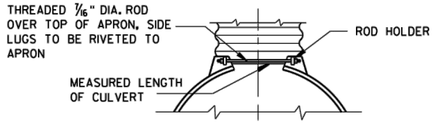


ALTERNATE FOR TYPE 1 CONNECTION

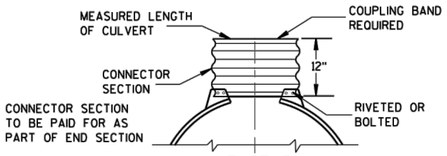
END SECTION CONNECTOR STRAP



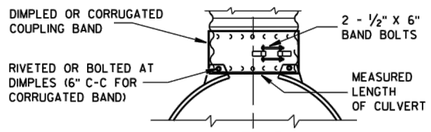
TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

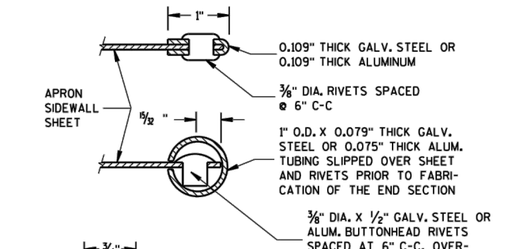
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

FOR CIRCUMFERENTIALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2, 3 OR 5 AS APPLICABLE.

FOR HELICALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2 OR 5.

FOR HELICALLY CORRUGATED PIPES WITH TWO CIRCUMFERENTIAL CORRUGATIONS AT EACH END USE ENDWALL CONNECTION DETAILS 1, 2 OR 3.

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

CONCRETE CULVERT ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VISE VERSA. GALVANIZED STEEL OR ALUMINUM ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE OF THE SAME METAL.

ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE PERIMETER.

LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 60" THROUGH 96" DIAMETER APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.

WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8-30-94 DATE
/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

S.D.D. 8 F 1-11

01/17 APRON ENDWALLS DETAIL
NOT TO SCALE

NO	DATE	BY	REVISION
6			
5			
4			
3	06/17/2021	DEM	FINAL PLANS
2	05/21/2021	DEM	PRE-FINAL PLANS
1	10/30/2020	DEM	PRELIMINARY PLANS

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SUBMISSION DATE: 06/17/2021
DESIGN BY DRL DRAWN BY DEM CHECKED BY DRL
EOR PROJECT NO. 00909_0024

Emmons & Olivier Resources, Inc.
1919 University Ave W, Suite 300, St Paul, MN 55104
water ecology community
Tele: 651.770.8448
www.eorinc.com

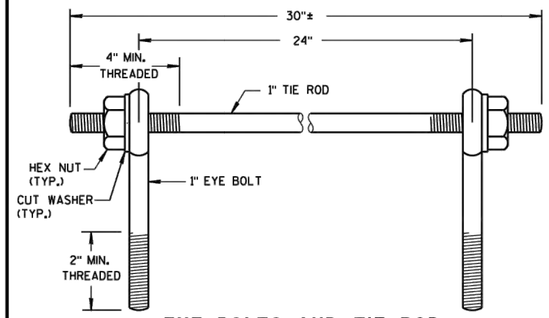
BEAVER DAM LAKE MANAGEMENT DISTRICT
P.O. BOX 232
CUMBERLAND, WI 54829

LIBRARY LAKE SOUTHEAST STORMWATER IMPROVEMENTS PHASE 1
CUMBERLAND, BARRON COUNTY, WISCONSIN
STATE PROJECT NO. ---- CITY PROJECT NO. ---

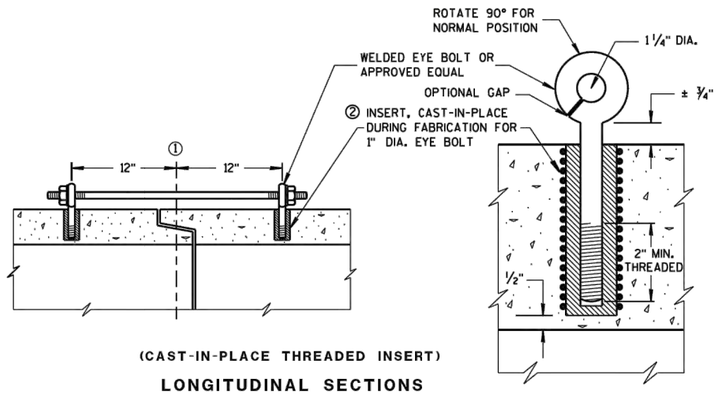
DETAIL SHEET 4
SHEET 17 OF 19 SHEETS

Plot Date: 06/17/2021
Drawing name: X:\Clients_Private\60909_Beaver_Dam_Lake_Assoc\0024_SE_Stormwater_Park_Ph1\99_GIMS\dwg\0909_0024_CD.dwg
Xrefs: 0909-0024_X-BASE2 0909_0024_P_BASE_P12 0909_0024_LS-P1

SDD 8f4 Joint Ties for Concrete Pipe and Concrete Pipe Collars



EYE BOLTS AND TIE ROD



(CAST-IN-PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 1)

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

CONCRETE CULVERT AND STORM SEWER PIPE SHALL BE TIED TOGETHER IN THE MANNER ILLUSTRATED BY THIS DETAIL AT LOCATIONS DESIGNATED IN THE STANDARD SPECIFICATIONS AND THE PLAN. THE CONTRACTOR MAY USE EITHER ALTERNATE 1, 2 OR 3 FOR DRAINAGE STRUCTURES. ONLY ALTERNATE 1 AND 3 MAY BE USED FOR CATTLE PASSES, UNLESS OTHERWISE STATED IN THE CONTRACT. THE MATERIALS, FABRICATION AND WORK NECESSARY TO TIE THE PIPE BY THIS DETAIL WILL BE CONSIDERED INCIDENTAL TO THE PIPE AND APRON ENDWALLS IF REQUIRED.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR JOINT TIES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

① ℄ OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.

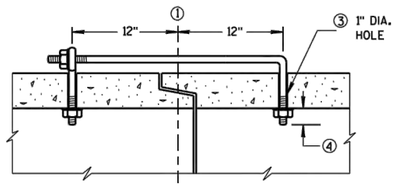
② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

③ HOLES SHALL BE CAST-IN-PLACE OR DRILLED 12 INCHES FROM ℄ OF TONGUE AND GROOVE.

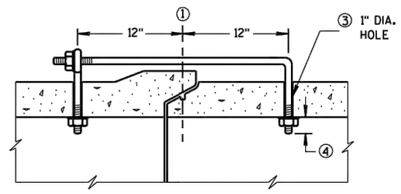
④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

⑤ OPENING TO BE ROD DIAMETER PLUS 1 INCH.

⑥ LENGTH ADEQUATE TO EXTEND TO WITHIN 1/2 INCH OF THE INNER SURFACE OF THE PIPE.



(TONGUE & GROOVE PIPE)

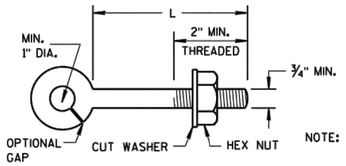


(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

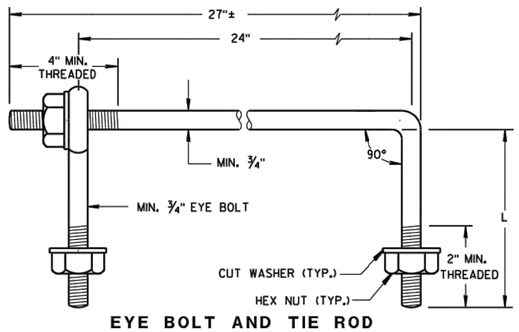
EYE BOLT DIMENSION TABLE

PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	



EYE BOLT

NOTE: TWO EYE BOLTS MAY BE USED WITH A 30" LONG THREADED ROD IN LIEU OF THE 90° BENT TIE ROD.



EYE BOLT AND TIE ROD

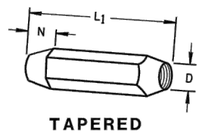
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 2)

ADJUSTABLE TIE ROD TABLE

PIPE DIAMETER	TIE ROD DIAMETER	D	L_1	N
12-60	5/8	5/8	5	1/2
66-84	3/4	3/4	5	1/2
90-108	1	1	7	1 1/16

DIMENSIONS SHOWN ARE IN INCHES



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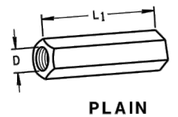
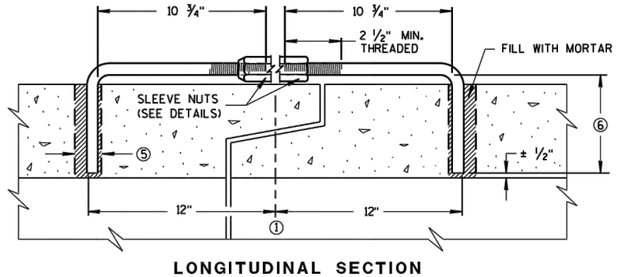


PLAIN

RIGHT AND LEFT THREADS

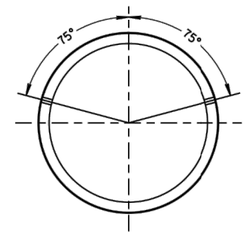
SLEEVE NUTS



LONGITUDINAL SECTION

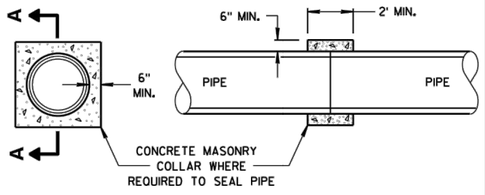
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



PLACEMENT OF (2) CAST-IN-PLACE INSERTS OR HOLES DURING FABRICATION FOR PIPE SECTIONS REQUIRING TIE RODS

TRANSVERSE SECTION



SECTION A-A

CONCRETE COLLAR DETAIL

JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6-5-2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

S.D.D. 8 F 4-7

S.D.D. 8 F 4-7

01/18 JOINT TIES DETAIL

NOT TO SCALE

NO	DATE	BY	REVISION
6			
5			
4			
3	06/17/2021	DEM	FINAL PLANS
2	05/21/2021	DEM	PRE-FINAL PLANS
1	10/30/2020	DEM	PRELIMINARY PLANS

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SUBMISSION DATE: 06/17/2021

DESIGN BY DRL | DRAWN BY DEM | CHECKED BY DRL

EOR PROJECT NO. 00909_0024

Emmons & Olivier Resources, Inc.
1919 University Ave W, Suite 300, St Paul, MN 55104
Tele: 651.770.8448
www.eorinc.com

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P.O. BOX 232
CUMBERLAND, WI 54829

LIBRARY LAKE SOUTHEAST STORMWATER IMPROVEMENTS PHASE 1
CUMBERLAND, BARRON COUNTY, WISCONSIN

STATE PROJECT NO. ---- | CITY PROJECT NO. ---

DETAIL SHEET 5

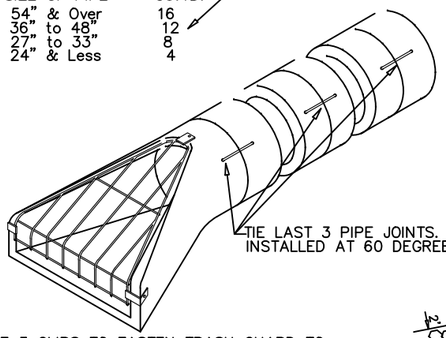
SHEET 18 OF 19 SHEETS

Plot Date: 06/17/2021
Drawing name: X:\Clients_Private\00909_Beaver_Dam_Lake_Assoc\0024_SE_Stormwater_Park_Ph1\09_GIMS\dwg\0909_0024_CD.dwg
Xrefs: \0909-0024_X-BASE2.0909_0024_P_BASE_P12_0909_0024_LS-P1

SEE DWGS FOR QTY OF RIPRAP REQUIRED

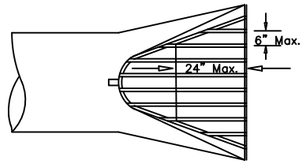
SIZE OF PIPE	CU.YD.
54" & Over	16
36" to 48"	12
27" to 33"	8
24" & Less	4

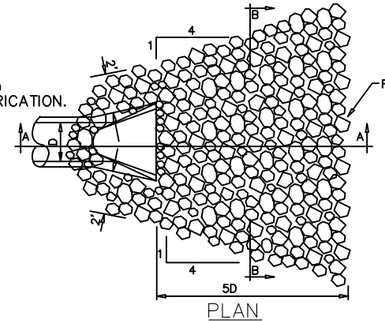
THESE QUANTITIES AND CLASS OF RIP-RAP SHOULD VARY ON VELOCITY.



TIE LAST 3 PIPE JOINTS. USE 2 TIE BOLT FASTENERS PER JOINT INSTALLED AT 60 DEGREES FROM TOP OR BOTTOM OF PIPE

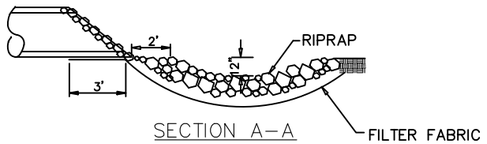
PROVIDE 3 CLIPS TO FASTEN TRASH GUARD TO FLARED END. HOT DIP GALVANIZE AFTER FABRICATION.





PLAN

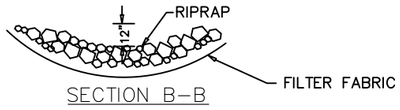
SIZE OF BARS	"H"		BOLTS
15-18"	3/4"	4"	5/8"
21" to 42"	1"	6"	3/4"
48" to 72"	1 1/4"	12"	1"



SECTION A-A

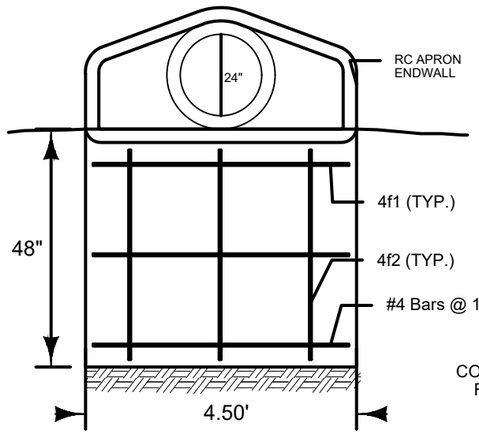
ANCHOR BOTH SIDES

SIDE VIEW

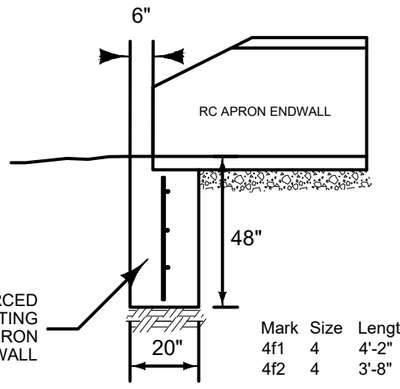


SECTION B-B

FRONT FACE



TYPICAL SECTION



Mark	Size	Length	Count
4f1	4	4'-2"	3
4f2	4	3'-8"	3

01 19 APRON ENDWALL & RIPRAP (W/ RC FOOTING) DETAIL

NOT TO SCALE

02 19 5' DIA. POND SKIMMER GRATE

NOT TO SCALE

NOTES:

1. HAALA INDUSTRIES SLEEPY EYE, MN OR APPROVED EQUAL
2. MODEL NUMBER PS60-72H
3. GALVANIZED STEEL
4. FASTEN TO MANHOLE BARREL A MINIMUM OF FOUR MOUNTING SLOTS
5. UTILIZE STAINLESS STEEL WEDGE ANCHORS MIN $\frac{1}{2}$" X 3 $\frac{3}{4}$"
6. PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE (SEE 01/16)

NO	DATE	BY	REVISION
6			
5			
4			
3	06/17/2021	DEM	FINAL PLANS
2	05/21/2021	DEM	PRE-FINAL PLANS
1	10/30/2020	DEM	PRELIMINARY PLANS

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SUBMISSION DATE: 06/17/2021

DESIGN BY DRL | DRAWN BY DEM | CHECKED BY DRL

EOR PROJECT NO. 00909_0024

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CUMBERLAND, BARRON COUNTY, WISCONSIN

STATE PROJECT NO. ---- | CITY PROJECT NO. ---

DETAIL SHEET 6

SHEET 19 OF 19 SHEETS

Plot Date: 06/17/2021
Drawing name: X:\Clients_Private\00909_Beaver_Dam_Lake_Assoc\0024_SE_Stormwater_Park_Ph1\09_GIMS\dwg\0909_0024_CD.dwg
Xrefs: 0909-0024_X-BASE2, 0909_0024_P_BASE_P12, 0909_0024_LS-P1