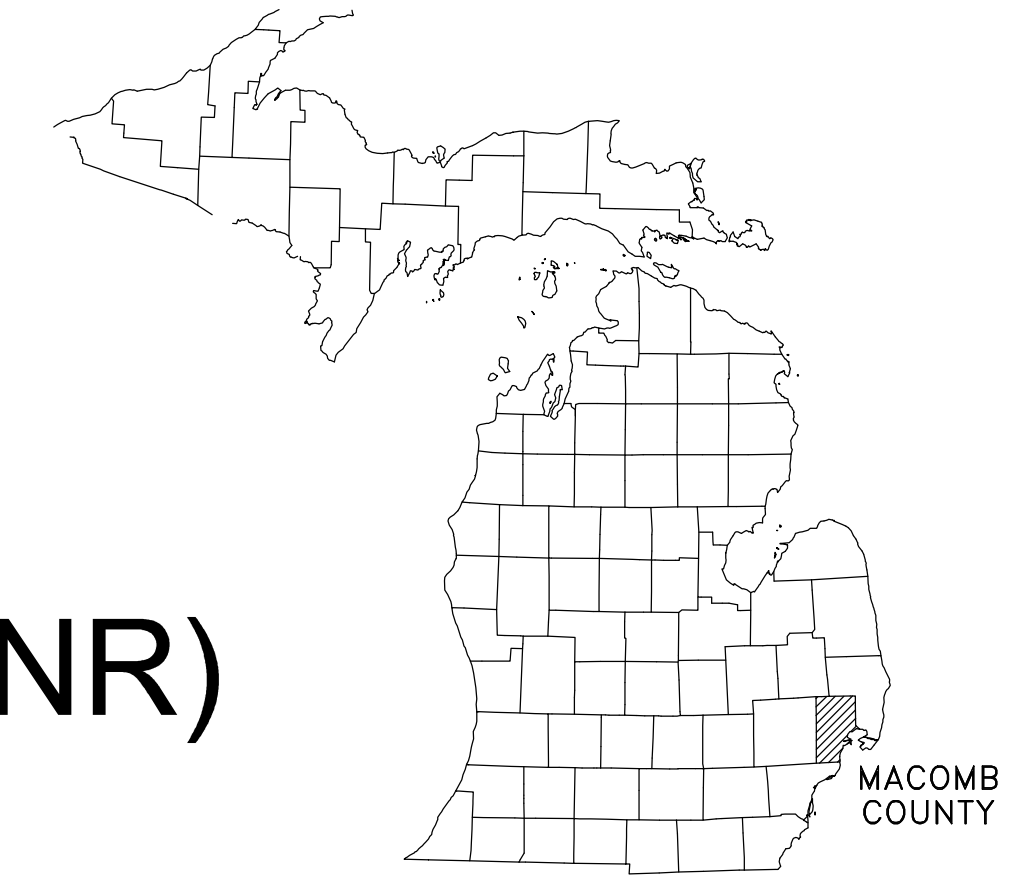


SITE CONSTRUCTION PLANS FOR WATERFRONT PARK SHORELINE IMPROVEMENTS

HARRISON TOWNSHIP, MACOMB COUNTY, MICHIGAN
MICHIGAN DEPARTMENT OF NATURAL RESOURCES (MDNR)
TRUST FUND GRANT TF18-0061



COUNTY KEY
NOT TO SCALE



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*SHEET C-4.2 NOT USED

KENNETH J. VERKEST
SUPERVISOR

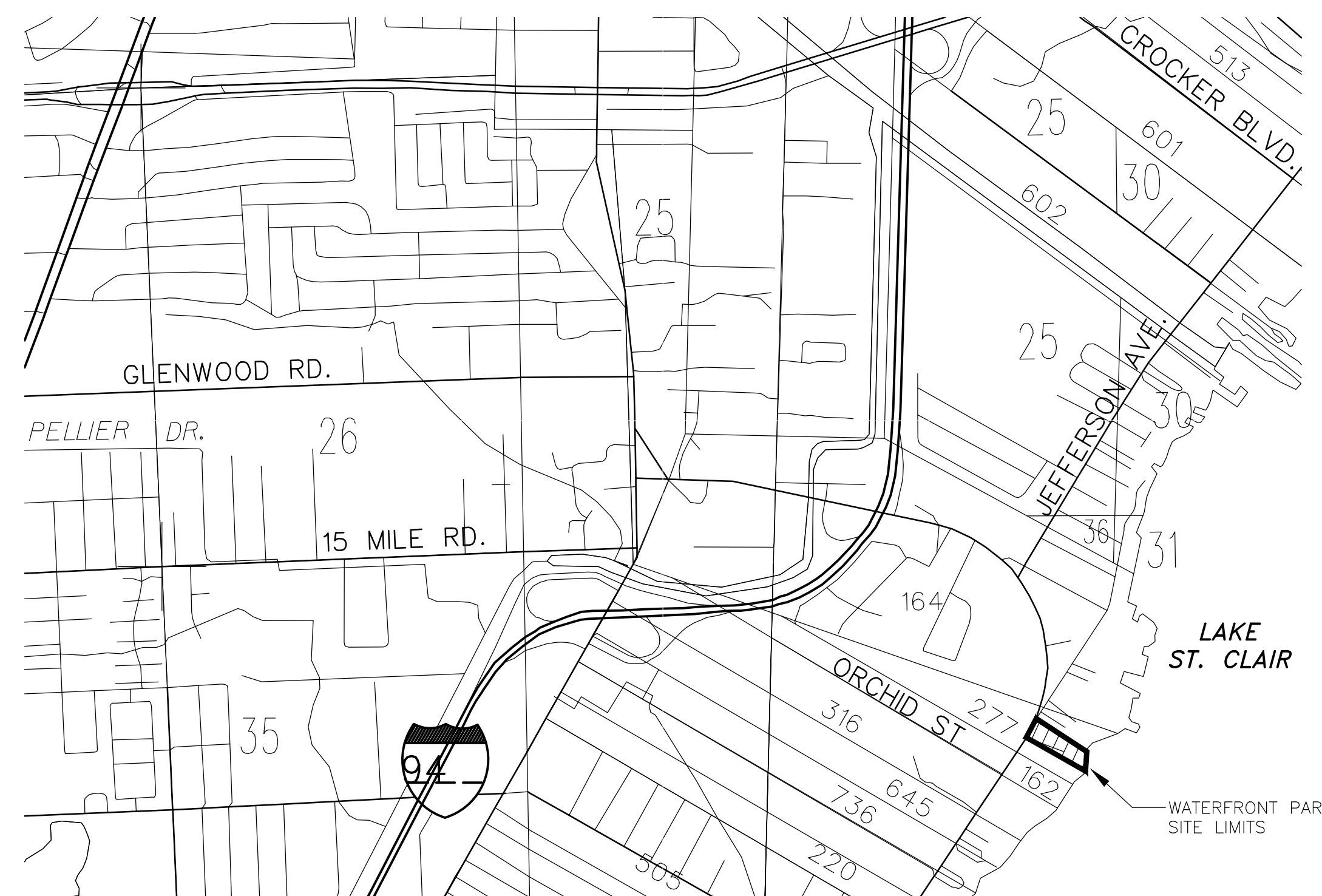
ADAM WIT
CITY CLERK

LAWRENCE TOMENELLO
TREASURER

TRUSTEES

BRIAN BATKINS
DAVID BRATTO
DEAN OLGATI
PAULA ROSE

JUSTIN MURPHY
DIRECTOR OF PUBLIC SERVICES



LOCATION MAP
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ISSUED:
ISSUE FOR BID 4/10/2024

JOB NO. HSN6004.03D	SHEET C-0.0
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WADE TRIM
500 Griswold Avenue, Suite 2500
Detroit, MI 48226
313.961.2850
www.wadetrिम.com

PREPARED UNDER THE SUPERVISION OF:

Scott A. Lautzenheiser
SCOTT A. LAUTZENHEISER, PLA 1543
REGISTRATION NO.



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LEGEND

	EXISTING	PROPOSED
CABLE TV		
CABLE TV POLE	⊙	⊙
CABLE TV PEDESTAL	⊙	⊙
OVERHEAD CABLE TELEVISION	—CTV— CTV—	—CTV— CTV—
UNDERGROUND CABLE TELEVISION	—UCTV— UCTV—	—UCTV— UCTV—
ELECTRICAL		
MANHOLE	⊙	⊙
POWER POLE	⊙	⊙
OVERHEAD ELECTRIC	—E— E—	—E— E—
UNDERGROUND ELECTRIC	—UE— UE—	—UE— UE—
GAS		
MANHOLE	⊙	⊙
METER	⊙	⊙
STOP BOX	⊙	⊙
SHUTOFF VALVE	⊙	⊙
GAS	—G— G—	—G— G—
MONUMENTS		
IRON (FOUND)	⊙	⊙
IRON (SET)	⊙	⊙
BENCH MARK	⊙	⊙
GOVERNMENT CORNER	⊙	⊙
MONUMENT BOX	⊙	⊙
MONUMENT	⊙	⊙
NAIL & TAG	⊙	⊙
PINCH IRON	⊙	⊙
PK NAIL	⊙	⊙
RAILROAD SPIKE	⊙	⊙
RIGHT-OF-WAY MARKER	⊙	⊙
SPIKE	⊙	⊙
USGS MONUMENT	⊙	⊙
OVERHEAD UTILITIES		
GUY WIRE ANCHOR	⊙	⊙
GUY POLE	⊙	⊙
LAMP POLE	⊙	⊙
METAL LIGHT POLE	⊙	⊙
POWER & LIGHT POLE	⊙	⊙
POWER & TELEPHONE POLE	⊙	⊙
TELE, CTV, PWR & LIGHT POLE	⊙	⊙
TELE, CTV, & POWER POLE	⊙	⊙
TELE, & CTV POLE	⊙	⊙
TELE, CTV, & LIGHT POLE	⊙	⊙
TELE, & LIGHT POLE	⊙	⊙
TELE, POWER, & LIGHT POLE	⊙	⊙
UTILITY POLE	⊙	⊙
OVERHEAD CABLE TV & TELEPHONE	—CTV&T—	—CTV&T—
OVERHEAD ELECTRIC & CABLE TV	—E&CTV—	—E&CTV—
OVERHEAD ELECTRIC, CABLE TV AND TELEPHONE	—E&CTV&T—	—E&CTV&T—
TELEPHONE		
TELEPHONE POLE	⊙	⊙
TELEPHONE MANHOLE	⊙	⊙
TELEPHONE PEDESTAL	⊙	⊙
OVERHEAD TELEPHONE	—T— T—	—T— T—
UNDERGROUND TELEPHONE	—UT— UT—	—UT— UT—
SANITARY SEWER		
CLEAN OUT	⊙	⊙
SANITARY MANHOLE	⊙	⊙

	EXISTING	PROPOSED
STORM SEWER/DRAINAGE		
CATCH BASIN (ROUND GRATE)	⊙	⊙
CATCH BASIN (SQUARE GRATE)	⊙	⊙
CULVERT END SECTION	⊙	⊙
STORM MANHOLE	⊙	⊙
DITCH CENTERLINE	—	—
STORM SEWER	—	—
UNDERGROUND UTILITIES		
UTILITY MANHOLE	⊙	⊙
FIBER OPTIC	—FO—	—FO—
UNDERGROUND CTV & TELEPHONE	—UCTV&T—	—UCTV&T—
UNDERGROUND ELEC. & CABLE TV	—UE&CTV—	—UE&CTV—
UNDERGROUND ELEC. & TELEPHONE	—UE&T—	—UE&T—
UNDERGROUND ELECTRIC, CABLE TV AND TELEPHONE	—UE&CTV&T—	—UE&CTV&T—
VEGETATION		
CONIFEROUS TREE	⊙	⊙
DECIDUOUS TREE	⊙	⊙
BRUSH LINE	—	—
EDGE OF WOODS	—	—
HEDGE	—	—
PATTERNS		
AREA OF EXISTING STONE	▨	▨
AREA OF EXISTING BOARDWALK	▨	▨
CONCRETE	▨	▨
GRAVEL	▨	▨
ASPHALT	▨	▨
EXISTING VEGETATION	▨	▨
CLEAR AND GRUB	▨	▨
REMOVE EXISTING PAVEMENT	▨	▨
SITE FILL	▨	▨
LINE WORK		
BUILDING	—	—
FENCE	—	—
GRAVEL	—	—
PROPERTY LINE	—	—
RIGHT OF WAY	—R/W—	—R/W—
SECTION LINE	—	—
SILT FENCE	—	—
TO BE DEMOLISHED/REMOVED	· · · · ·	· · · · ·
TOP OF BANK	—	—
TREE PROTECTION FENCE	—	—
GABION WALL	—	—
WOOD FENCE	—	—
GUARDRAIL	—	—
BOULDER/EDGE WALL	—	—
CONCRETE WALL	—	—
FLOODPLAIN	—	—

GENERAL CONSTRUCTION NOTES

CONTRACTOR REQUIREMENTS:

1. WORK REQUIRED UNDER THIS CONTRACT INCLUDES FURNISHING ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS REQUIRED FOR THE CONSTRUCTION OF THE SITE IMPROVEMENTS TO WATERFRONT PARK PROJECT. WORK SHALL INCLUDE SHORELINE PLATFORM CONSTRUCTION, WALKS, DOCKS, STORMWATER MANAGEMENT, LANDSCAPING, APPLICABLE PERMITS, AND EROSION CONTROL MEASURES.
2. THE CONTRACTOR SHALL MAKE THEIR OWN DETERMINATION OF THE EXISTING SUBSURFACE CONDITIONS. ANY SUBSURFACE INVESTIGATION REPORTS ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY. EXISTING SOIL CONDITIONS ON THE PROJECT SITE, SPECIFICALLY THE SHORELINE, MAY INCLUDE AREAS OF SATURATED SOILS. THE CONTRACTOR SHALL INCLUDE PROVISIONS FOR MANAGING WATER IN THE CONSTRUCTION ZONE AND WORKING WITH WET SOILS IN HIS/HER BID.
3. CONTRACTOR SHALL HAVE AN APPROVED SET OF PLANS, SHOP DRAWINGS, SPECIFICATIONS AND PERMITS ON THE JOB SITE AT ALL TIMES. SURVEY EQUIPMENT MUST BE KEPT ON SITE AT ALL TIMES DURING CONSTRUCTION.

SURVEY INFORMATION:

1. TOPOGRAPHIC DATA SHOWN ON THESE PLANS IS FOR THE INFORMATION OF THE CONTRACTOR. THE CONTRACTOR SHALL MAKE ADDITIONAL INVESTIGATIONS AS REQUIRED TO ACQUAINT HIMSELF ADEQUATELY WITH THE SITE TOPOGRAPHY AND SUBSURFACE CONDITIONS FOR THE PREPARATION OF HIS BID AND FOR THE SUCCESSFUL EXECUTION OF HIS WORK.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SURVEY REQUIREMENTS OF THIS PROJECT AND SHALL USE A MICHIGAN LICENSED LAND SURVEYOR.
3. THE BASE SURVEY INFORMATION WAS PERFORMED BY WADE TRIM ASSOCIATES, INC. IN 2019. SURVEY INFORMATION FOR THE GAZEBO WAS PERFORMED BY WADE TRIM ASSOCIATES, INC. 2013.
4. SURVEY HORIZONTAL AND VERTICAL CONTROL BASED ON NAD83 AND USGS BENCHMARKS FOR THE AMPHITHEATER AREA AND NAD83 AND NAVD88 FOR THE SHERIFFS DOCK AREA.

PERMITTING/STORMWATER MANAGEMENT

1. THE CONTRACTOR IS RESPONSIBLE FOR ADHERING TO ALL PERMIT CONDITIONS FOR FEDERAL, STATE AND LOCAL PERMITS. CONTRACTOR SHALL COORDINATE ALL WORK WITH THE COUNTY AND ENGINEER BEFORE STARTING CONSTRUCTION.
2. THE PROJECT IS LOCATED WITHIN A PUBLIC PARK MAINTAINED AND OPERATED BY THE CHARTER TOWNSHIP OF HARRISON PARKS DEPARTMENT. THESE AREAS ARE TO BE LOCKED DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING THE WORK ZONES WITH FENCING AND SIGNAGE AS REQUIRED UNTIL WORK IS COMPLETE. COORDINATION AND APPROVAL OF THE CONTRACTORS ACCESS PLAN AND CONSTRUCTION SCHEDULE WILL BE REQUIRED OF THE CONTRACTOR. WAYNE COUNTY PARKS AND THE CHARTER TOWNSHIP OF HARRISON WILL BE CONSULTED BEFORE AND DURING CONSTRUCTION IN ORDER FOR THE CONTRACTOR TO BE GRANTED APPROVAL PRIOR TO COMMENCING WORK AND MAINTAINING SAFE ACCESS FOR THE PARK OPERATORS THROUGHOUT CONSTRUCTION.

SITE PREPARATION:

1. THE CONTRACTOR SHALL NOTIFY MISS DIG (811), A MINIMUM OF THREE WORKING DAYS PRIOR TO BEGINNING CONSTRUCTION IN THE AREA OF THE WORK.
2. THE CONTRACTOR SHALL SUBMIT AN ACCESS PLAN TO THE OWNER AND ENGINEER FOR REVIEW AND APPROVAL PRIOR TO COMMENCING WORK. ACCESS THROUGH CANOPY TREES WILL NOT BE PERMITTED.
3. ALL ITEMS NOT SPECIFICALLY DESIGNATED TO BE REMOVED SHALL REMAIN AND BE PROTECTED FROM DAMAGE DURING CONSTRUCTION. ANY ITEMS TO REMAIN THAT ARE DAMAGED BY CONSTRUCTION ACTIVITIES SHALL BE REPLACED/REPAIRED TO THE OWNER'S SATISFACTION AT THE CONTRACTOR'S EXPENSE.
4. THE LIMITS OF CONSTRUCTION IN LAKE ST. CLAIR ARE LIMITED TO ACTIVITIES ASSOCIATED WITH REVETMENT STONE PLACEMENT & WATERFRONT CONSTRUCTION. DISTURBANCE TO THE LAKE BOTTOM OUTSIDE THE SCOPE OF WORK IS PROHIBITED.
5. BURIED CONCRETE RUBBLE MAY EXIST IN VARIOUS DEPTHS ALONG THE LAKE SHORELINE. THE CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF THIS MATERIAL ON AN AS NEEDED BASIS TO FACILITATE PILE INSTALLATION IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. WHERE FINISH GRADES EXPOSE ANY RUBBLE IT SHALL BE REMOVED IN ITS ENTIRETY.
6. ALL BROKEN CONCRETE MAY BE USED AS FILL BELOW THE ARMOR STONE SHORE PROTECTION. UNDER NO CIRCUMSTANCES SHALL ANY BROKEN CONCRETE BE VISIBLE AT SPECIFIED FINISH GRADES.
7. WATER LEVELS IN LAKE ST. CLAIR FLUCTUATE DAILY. THE CONTRACTOR SHALL MANAGE ALL WATER IN ORDER FOR THE WORK TO BE COMPLETED AS SPECIFIED. DEWATERING SHALL BE AT THE CONTRACTOR'S EXPENSE.
8. ALL LITTER AND DEBRIS SHALL BE REMOVED FROM THE WORK ZONE. ALL VEGETATION WITHIN THE WORK ZONE INDICATED ON THE PLANS TO BE REMOVED SHALL BE REMOVED AND PROPERLY DISPOSED OF BY THE CONTRACTOR.
9. CONTRACTOR SHALL REMOVE RUBBLE FILL WHEN ENCOUNTERED DURING SITE PREPARATION AND REPLACE WITH CLEAN FILL AS DIRECTED BY THE ENGINEER. THIS SHALL BE INCIDENTAL TO THE EARTHWORK COST OF THE PROJECT.
10. PARK WILL BE CLOSED DURING CONSTRUCTION. CONTRACTOR SHALL PLACE A LOCK ON EXISTING FENCE AROUND PROJECT SITE TO PROVIDE ACCESS, PROVIDE "DANGER-CONSTRUCTION AREA-KEEP OUT" SIGNS AT 100' INTERVALS, AND MOUNT SIGNS TO FENCING. THE CONTRACTOR SHALL RESTORE THE WORK AREA, INCLUDING THE AREA IMPACTED BY TEMPORARY FENCE ERECTION AT COMPLETION OF THE PROJECT.
11. THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR THE CONDITIONS AT THE JOB SITE, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND SHALL NOT BE LIMITED TO NORMAL WORKING HOURS.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING THE WORK SITE AGAINST TRESPASS, VANADALISM, DUMPING AND THEFT.
13. CONTRACTOR SHALL MAINTAIN STORM DRAINAGE DURING CONSTRUCTION. THE CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE TO AND THROUGH EXISTING DRAINAGE FACILITIES FROM ALL DISTURBED AREAS BOTH DURING AND AT THE COMPLETION OF THE PROJECT.

STORM SEWER NOTES

1. ALL STORM SEWER CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS AND GENERAL SPECIFICATION OF THE AGENCY OR AGENCIES HAVING JURISDICTION OF THE STORM SEWER AND CONSTRUCTION AREA.
2. DETAILS ARE FOR STRUCTURES WITH NO MORE THAN TWO PIPES, 180' APART. LARGER DIAMETER STRUCTURES MAY BE REQUIRED FOR DIFFERENT CONFIGURATIONS.
3. ALL STRUCTURES REQUIRE A MINIMUM OF 8-INCHES OF WALL BETWEEN PIPE OPENINGS. LARGER DIAMETER STRUCTURES MAY BE REQUIRED WHERE PIPE ENTERING THE STRUCTURE ARE LESS THAN 90° APART IN ANY DIRECTION.
4. ALL CASTING RIMS SHALL BE SET TO GRADE OR AS SHOWN ON THE PLANS.
5. MANHOLE STEPS TO BE GRAY IRON OR STEEL REINFORCED POLYPROPYLENE ASTM 2146, TYPE II, GRADE 49108.
6. MANHOLE FRAME AND COVER SHALL BE PER THE PLANS.
7. DIFFERENTIAL OF EXCAVATION AROUND EXISTING MANHOLES SHALL NOT EXCEED SIX FEET.
8. PLACE SAND BACKFILL WITHIN THREE FEET OF ALL STRUCTURES.
9. ALL STORM SEWER PIPE SHALL HAVE BEDDING PER THE DETAIL ON THIS SHEET UNLESS OTHERWISE NOTED ON THE PLANS.
10. ALL PRECAST PRODUCTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-478.
11. ALL DRAINAGE STRUCTURES LOCATED WITHIN PAVEMENT MUST HAVE UNDER DRAIN.

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HARRISON TOWNSHIP
 WATERFRONT PARK
 SHORELINE IMPROVEMENTS
 GENERAL NOTES AND LEGEND

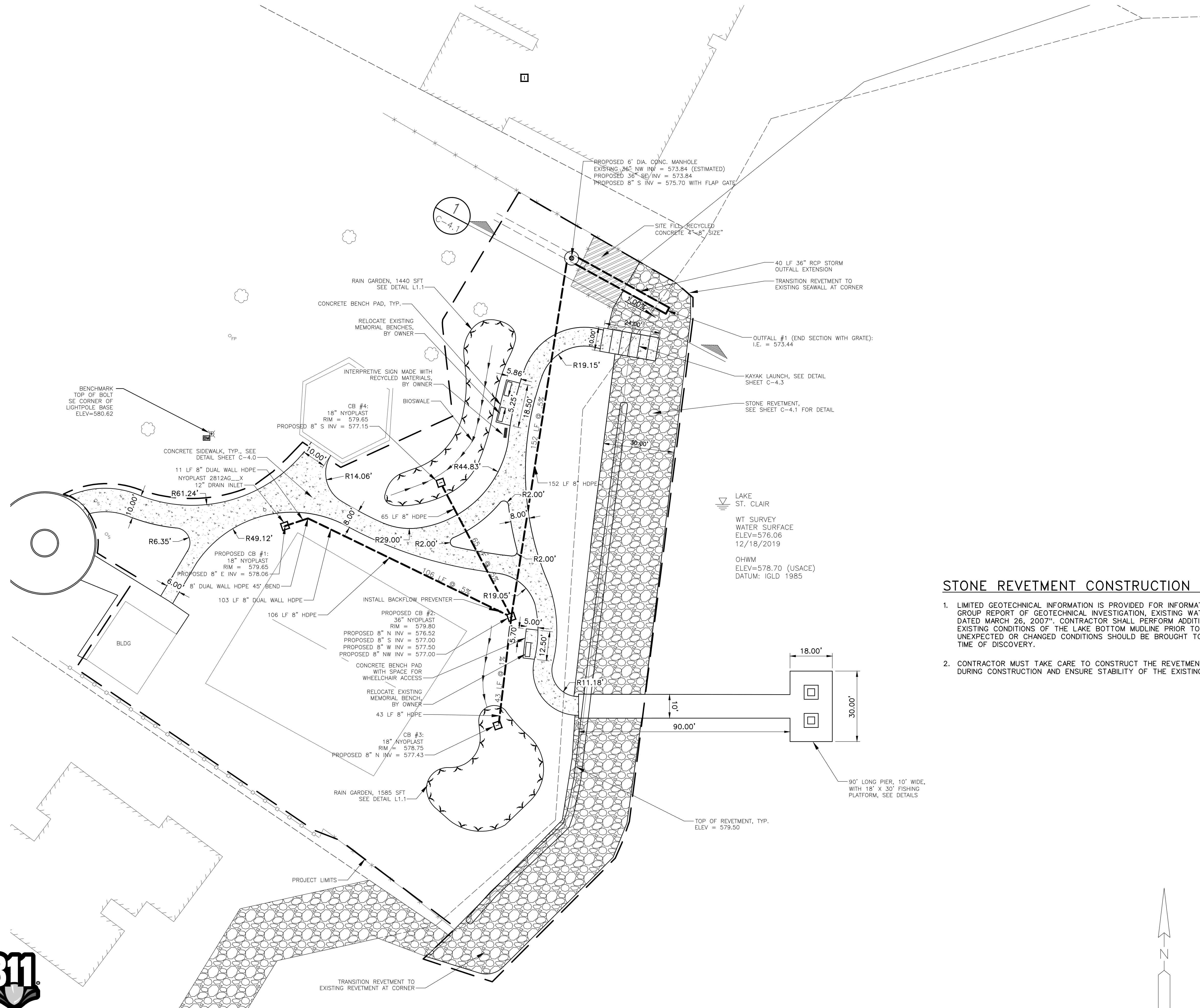
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STONE REVETMENT CONSTRUCTION NOTES:

1. LIMITED GEOTECHNICAL INFORMATION IS PROVIDED FOR INFORMATION ONLY IN "G2 CONSULTING GROUP REPORT OF GEOTECHNICAL INVESTIGATION, EXISTING WATERFRONT PARK SHELTER" REPORT DATED MARCH 26, 2007". CONTRACTOR SHALL PERFORM ADDITIONAL INVESTIGATION AND DOCUMENT EXISTING CONDITIONS OF THE LAKE BOTTOM MUDLINE PRIOR TO ORDERING REVETMENT MATERIALS. UNEXPECTED OR CHANGED CONDITIONS SHOULD BE BROUGHT TO THE ENGINEER'S ATTENTION AS THE TIME OF DISCOVERY.
2. CONTRACTOR MUST TAKE CARE TO CONSTRUCT THE REVETMENTS TO MINIMIZE UNBALANCED LOADS DURING CONSTRUCTION AND ENSURE STABILITY OF THE EXISTING WALL DURING CONSTRUCTION.

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313.961.3600
www.wadetrtrim.com

**HARRISON TOWNSHIP
WATERFRONT PARK
SHORELINE IMPROVEMENTS
SITE PLAN**

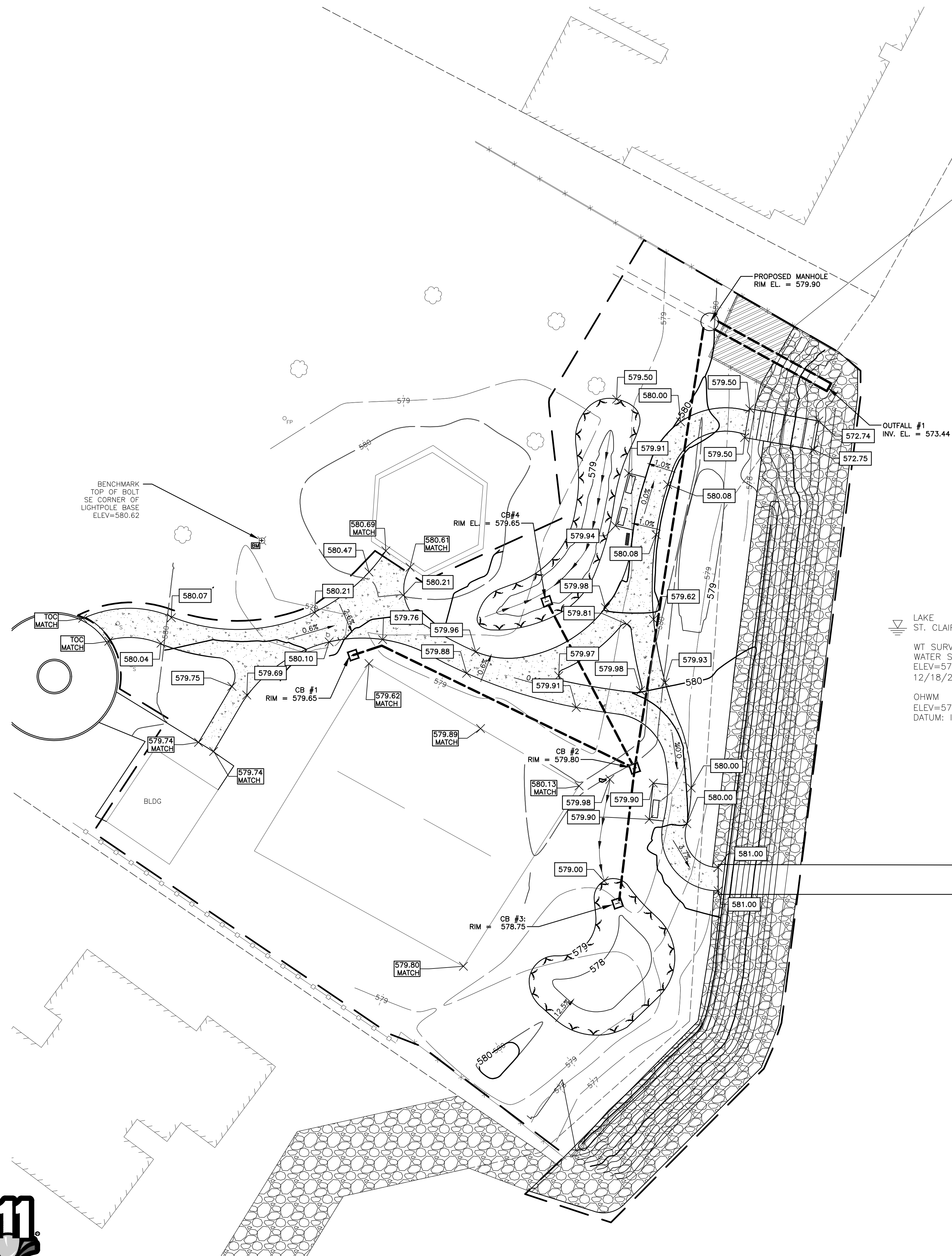
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PROJECT MANAGER: C:\PW_WORK\2024\125772\PLANS-COR-GRADING-PLANDWG - C-3.0 - PLOTTED 4/5/2024 1:42 PM BY DENNIS, KATE



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NOTES:

- EXCESS SOIL EXCAVATION THAT IS NOT USED IN THE REGRADING OPERATIONS SHALL BE RELOCATED ON SITE AT A LOCATION DETERMINED IN THE FIELD. CONTRACTOR SHALL PLACE THIS SOIL IN A MOUND WITH NO GREATER THAN 1:3 SIDE SLOPES, AND SHALL INSTALL 4" TOPSOIL, SEED, AND MULCH. GRASSY MOUND WILL SERVE AS AN INFORMAL PLAY FEATURE FOR PARK.

FILL BELOW ORDINARY HIGH WATER MARK (ELEV. 576.3)

ACTIVITY	LENGTH (FEET)	WIDTH (FEET)	DEPTH (FEET)	AREA (SQ. FEET)	VOLUME (CUBIC YARDS)
SHORELINE IMPROVEMENTS	280	17	4.5	5372	567

NOTE: REPORTED AREA AND VOLUME BASED ON CORRECTIONS DUE TO A COMPLEX IMPACT AREA AND DIFFERENCES IN PROPOSED AND EXISTING SURFACE VOLUMES AND NOT LxWxD CALCULATIONS

EXCAVATION BELOW ORDINARY HIGH WATER MARK (ELEV. 576.3)

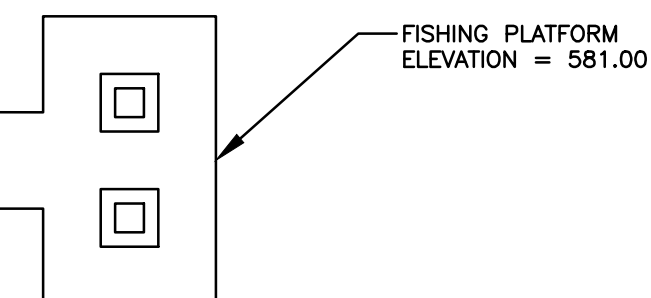
ACTIVITY	LENGTH (FEET)	WIDTH (FEET)	DEPTH (FEET)	AREA (SQ. FEET)	VOLUME (CUBIC YARDS)
STONE REVETMENT TOESTONE	280	23	4.5	6440	400

NOTE: REPORTED AREA AND VOLUME BASED ON CORRECTIONS DUE TO A COMPLEX IMPACT AREA AND DIFFERENCES IN PROPOSED AND EXISTING SURFACE VOLUMES AND NOT LxWxD CALCULATIONS

FILL BELOW 100-YEAR FLOODPLAIN ELEVATION (579.6)

ACTIVITY	AREA (SQ. FEET)	GROSS CUT VOLUME (CUBIC YARDS)	GROSS FILL VOLUME (CUBIC YARDS)	NET FILL VOLUME (CUBIC YARDS)
SHORELINE IMPROVEMENTS: CUT AND FILL BELOW 579.6	16,100	73	1057	984

LAKE ST. CLAIR
WT SURVEY WATER SURFACE ELEV=576.06 12/18/2019
OHWM ELEV=578.70 (USACE) DATUM: IGLD 1985



HARRISON TOWNSHIP
WATERFRONT PARK
SHORELINE IMPROVEMENTS
GRADING PLAN

ISSUED FOR: DATE: BY:
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SHEET C-3.0

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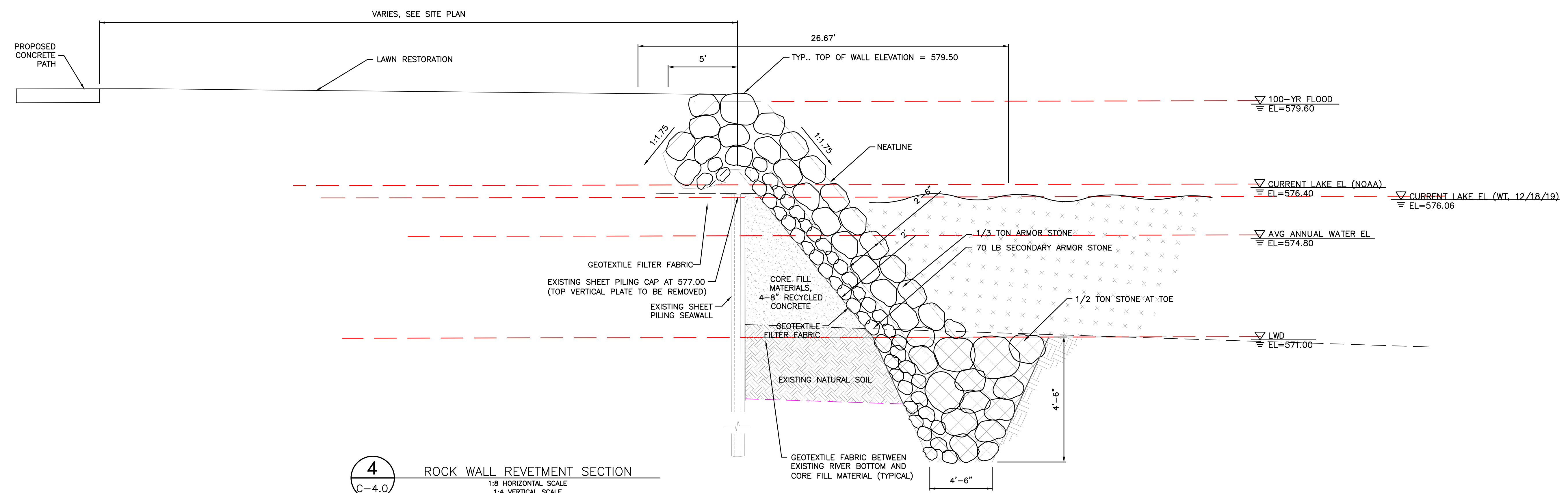
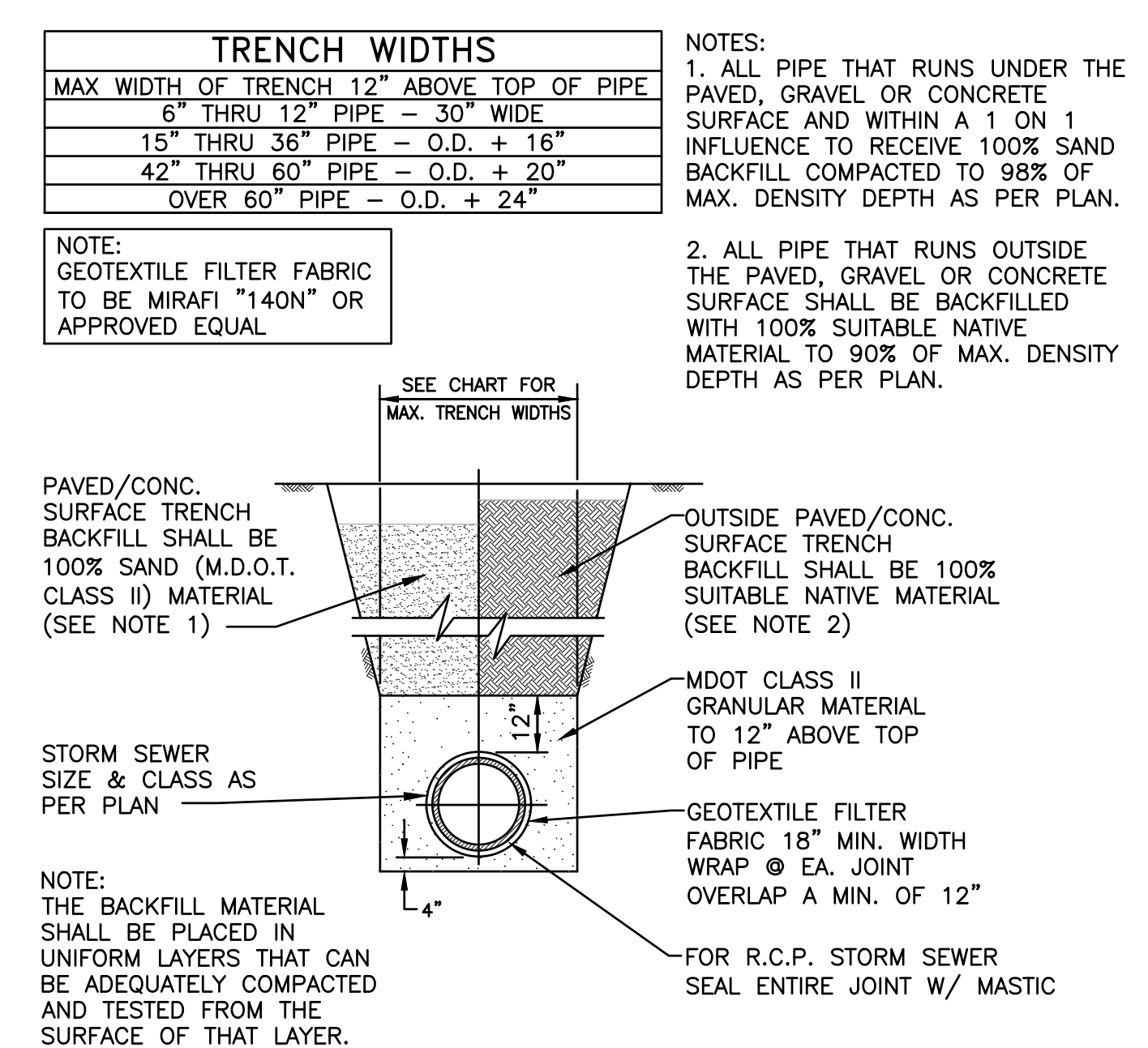
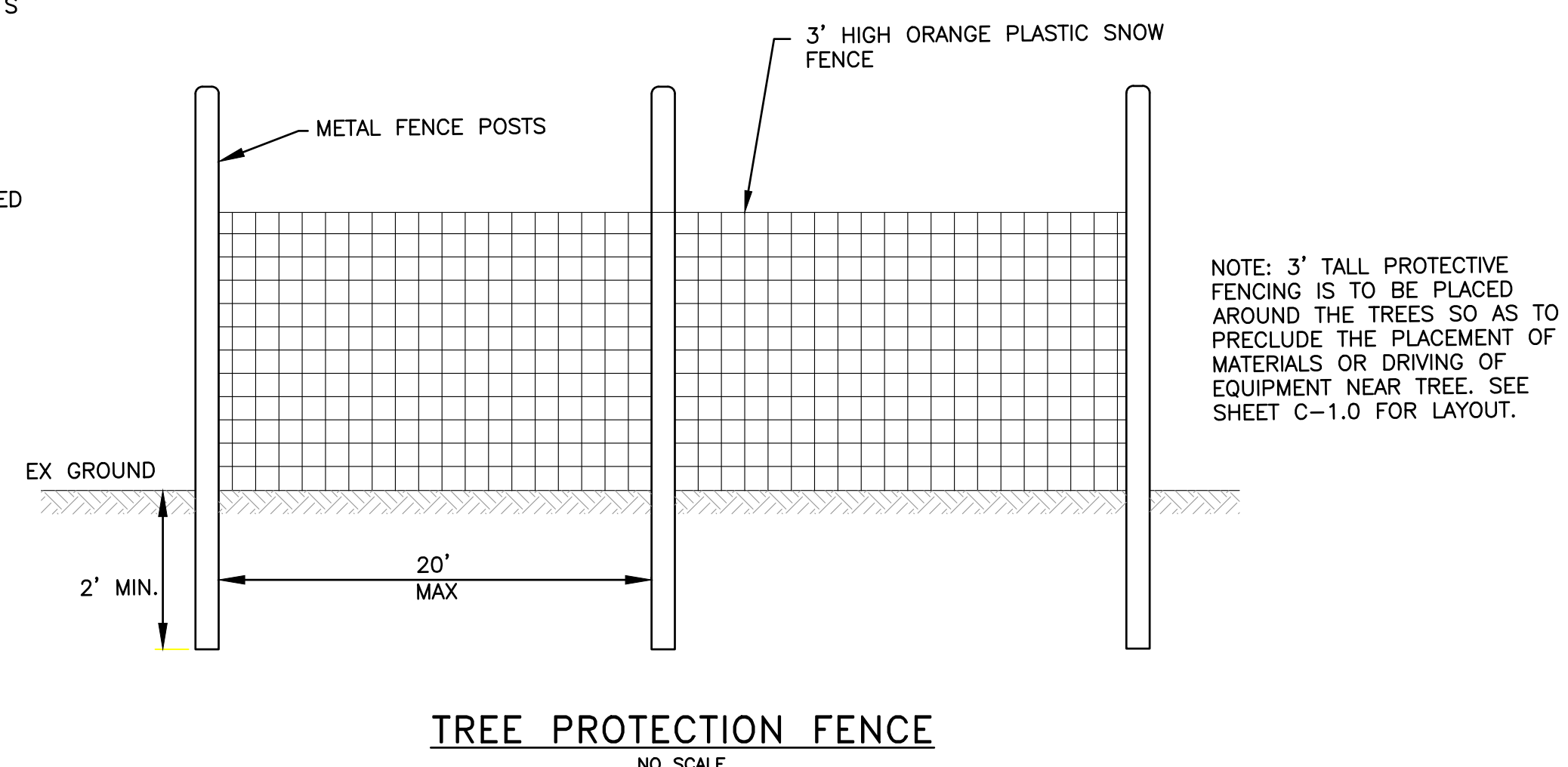
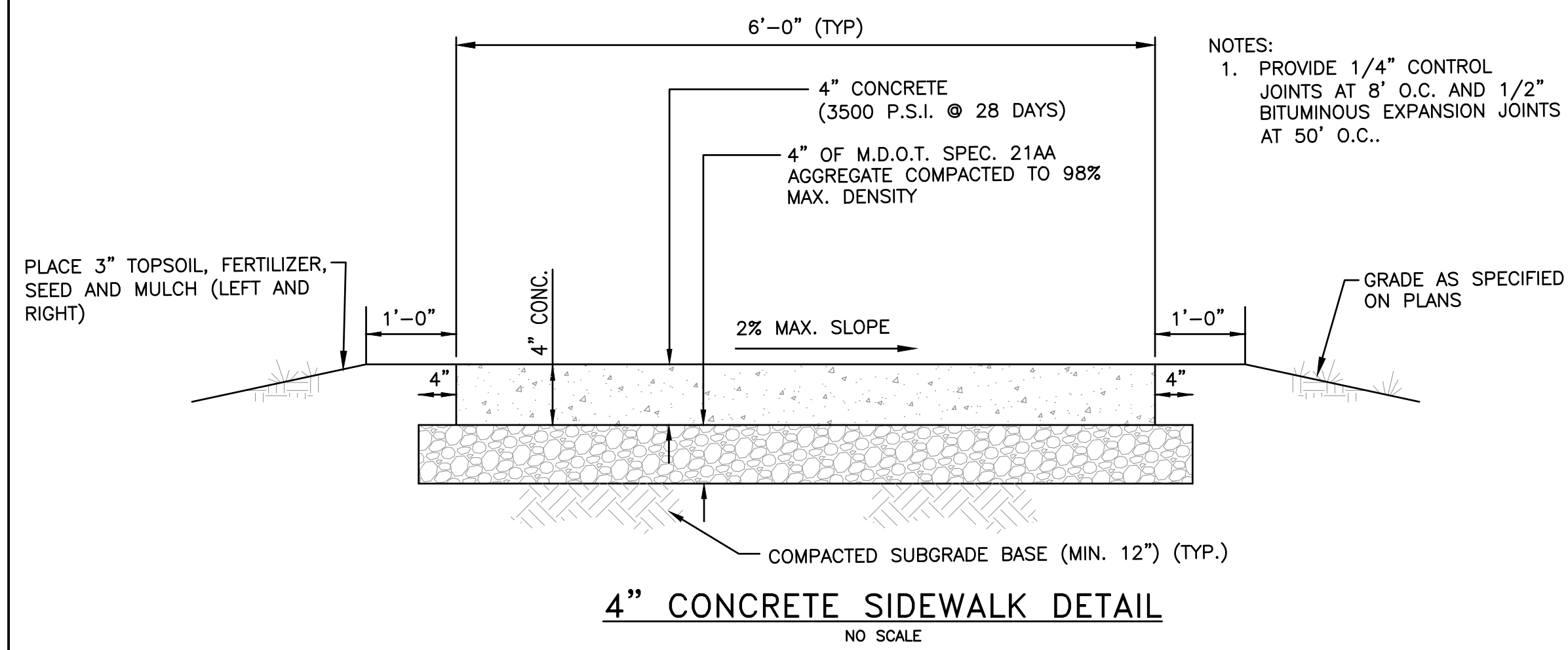


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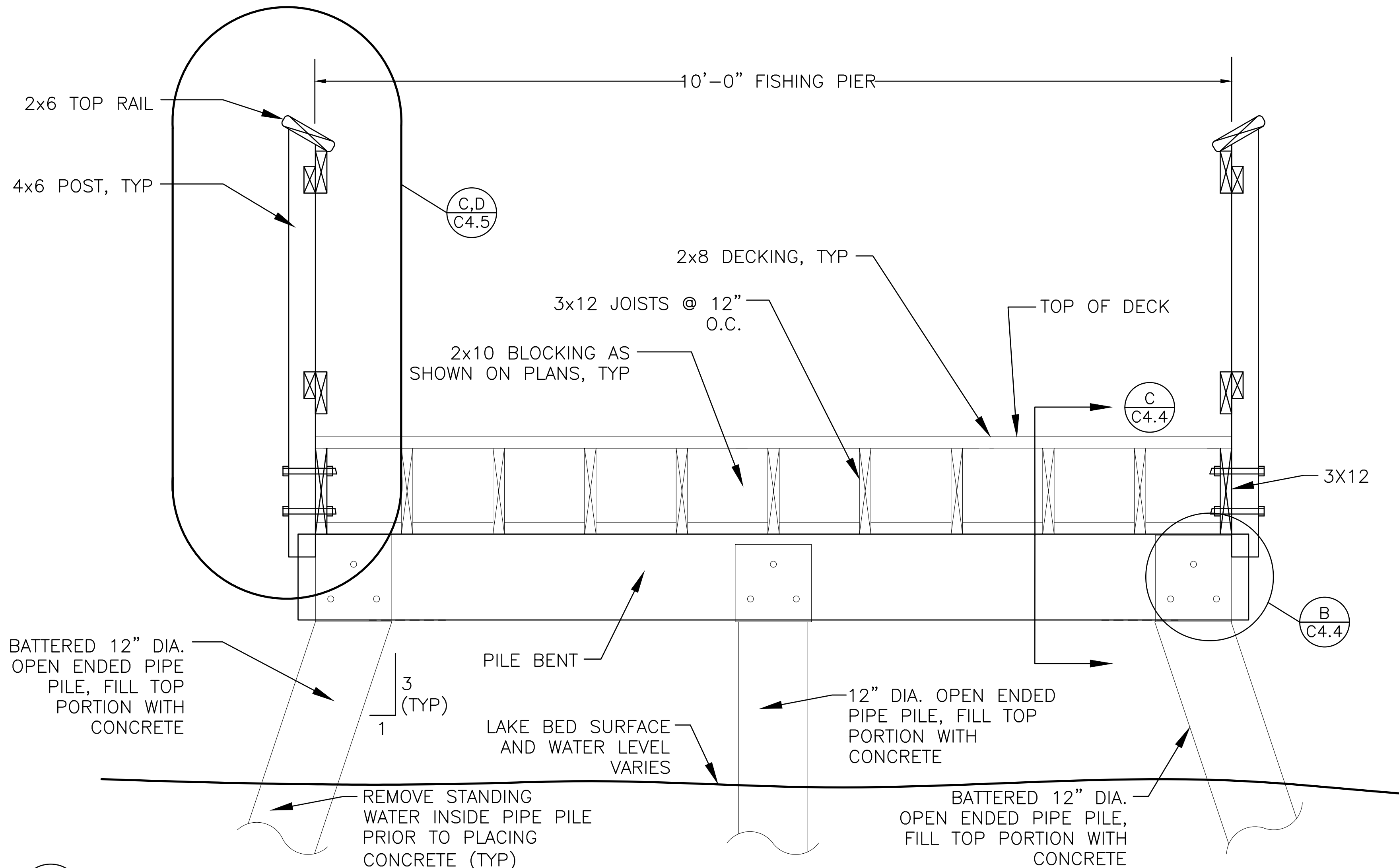
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SITE DETAILS

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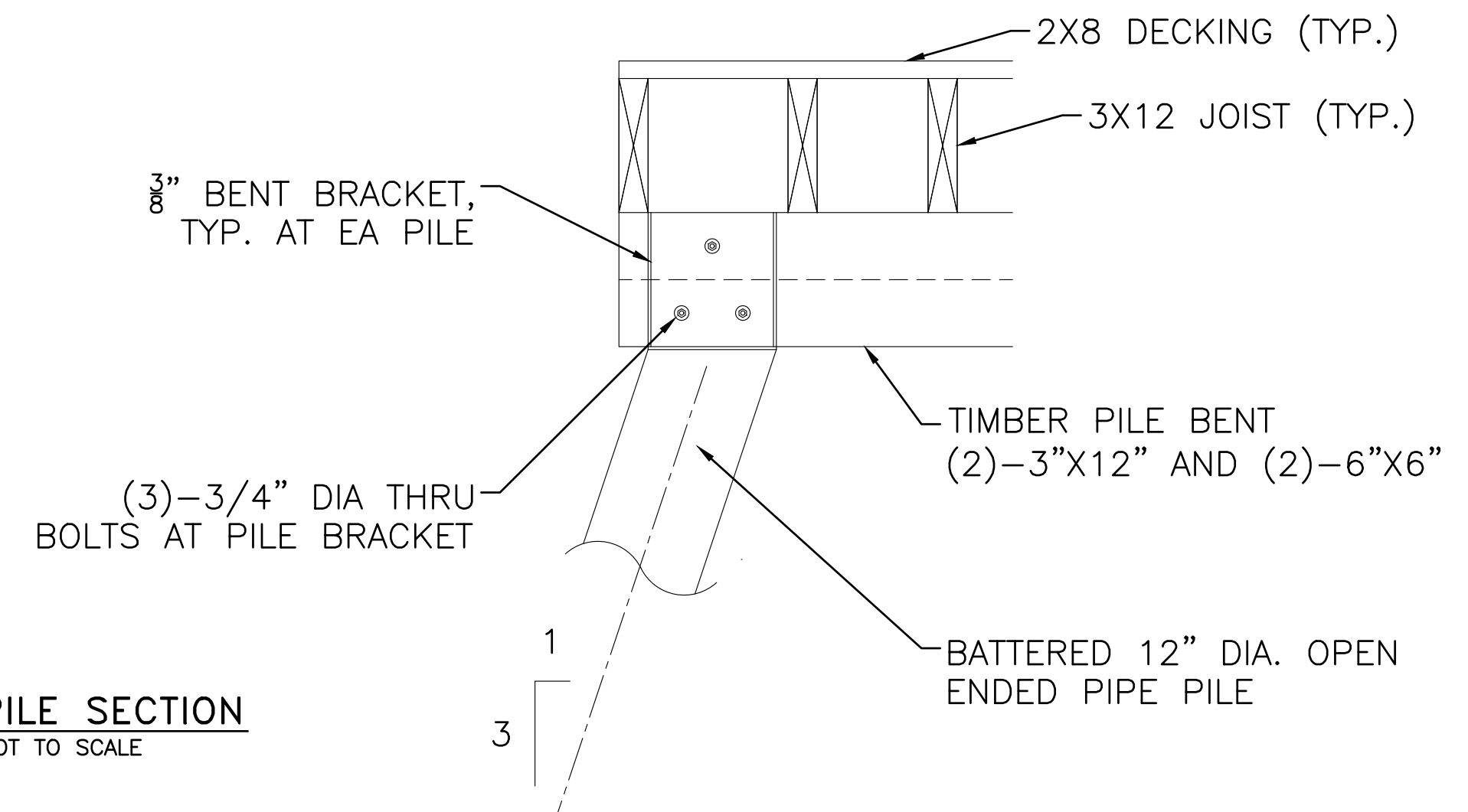
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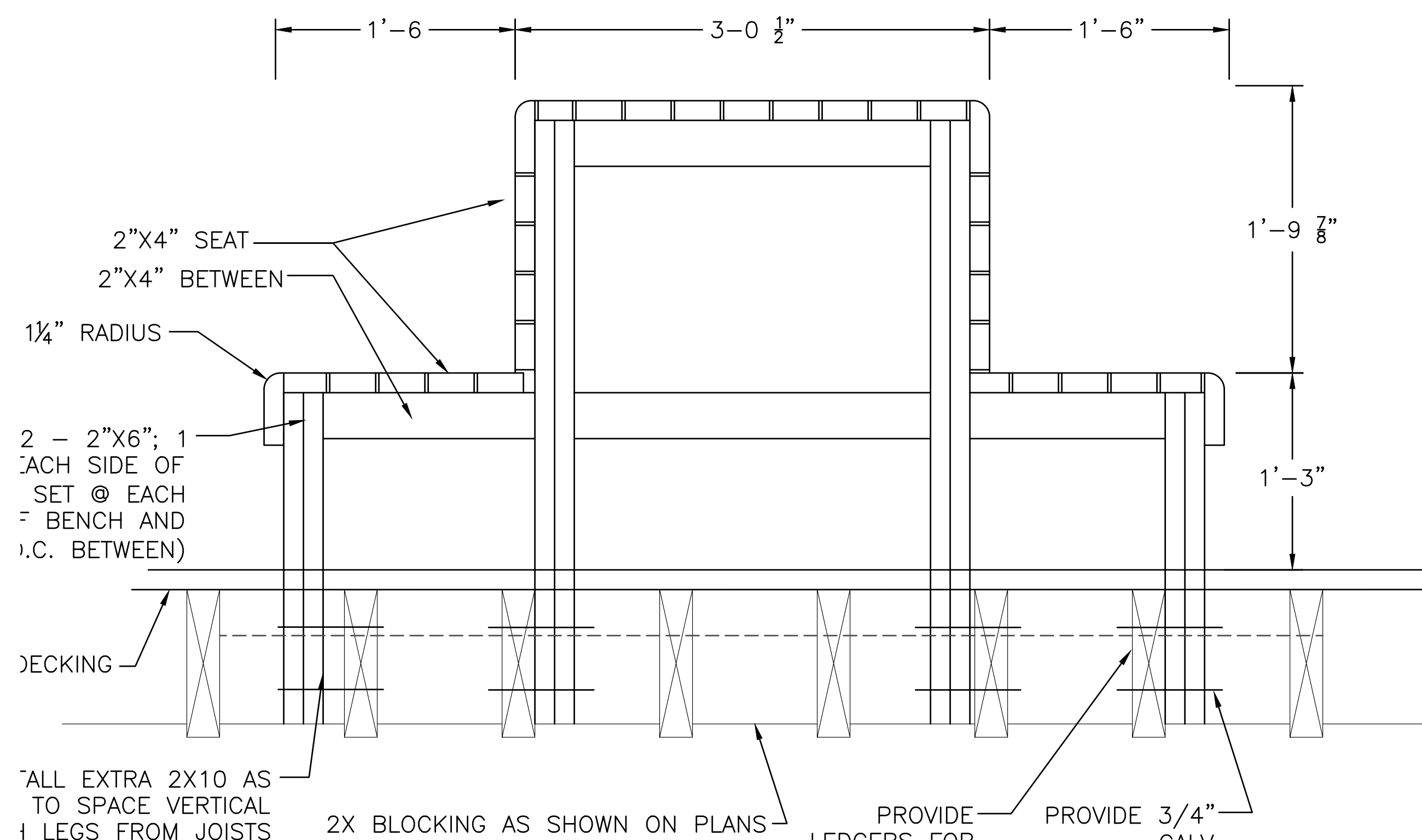
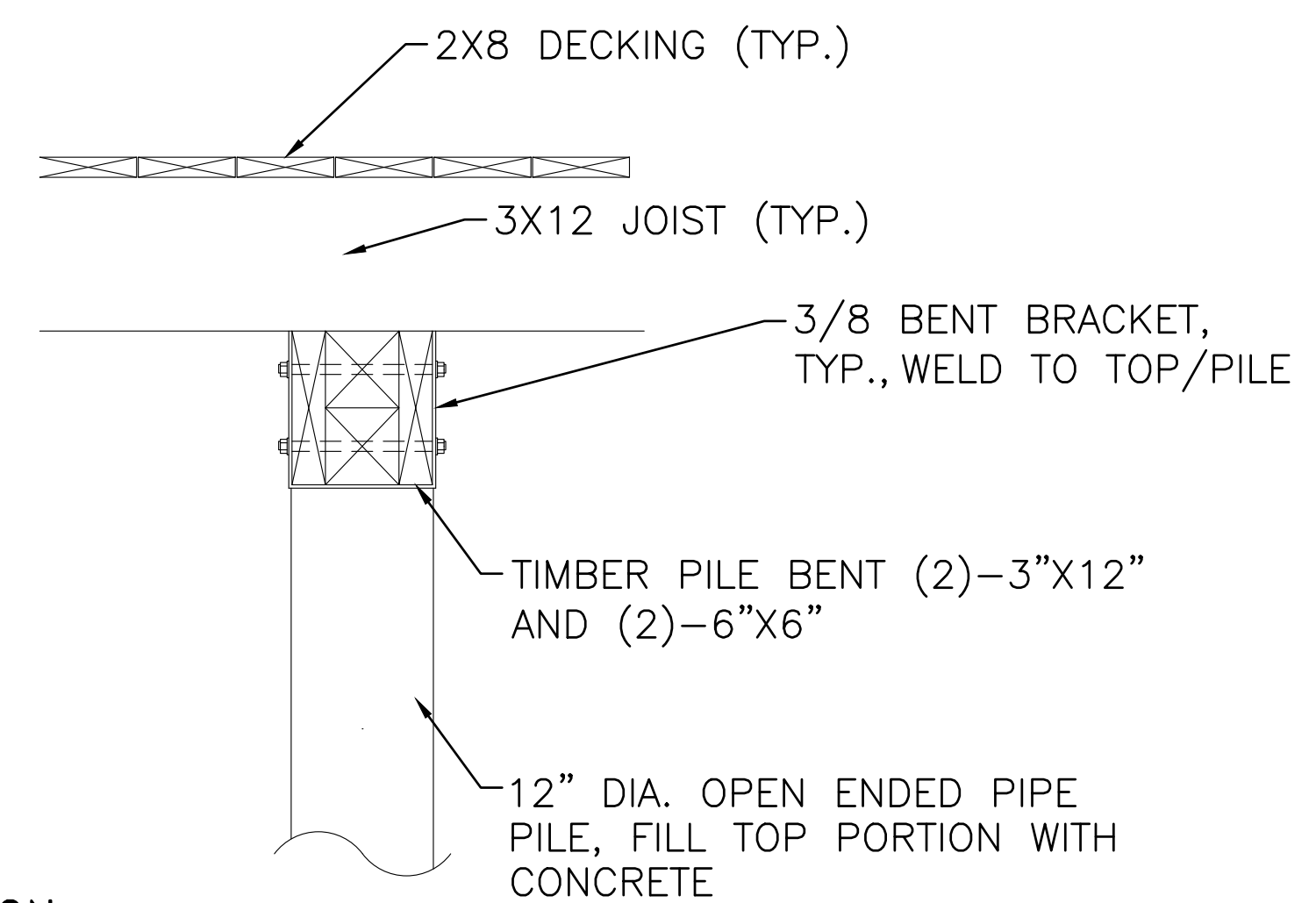


A PIER AND RAILING SECTION
C4.4 NOT TO SCALE

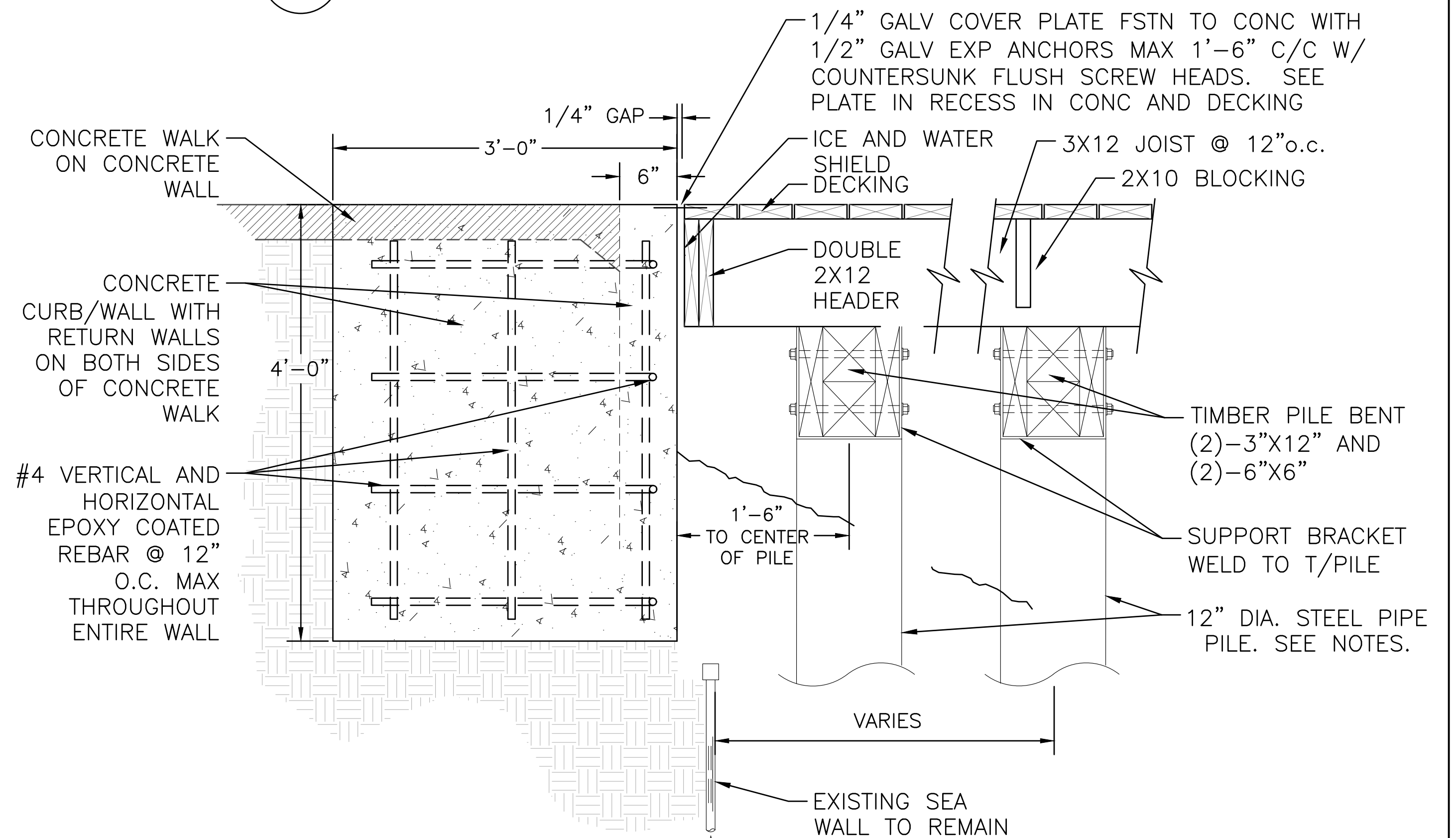
B PILE SECTION
C4.4 NOT TO SCALE



C TYPICAL PILE SECTION
C4.4 NOT TO SCALE



D FISHING PIER BENCH SECTION
C4.4 NOT TO SCALE



E TRANSITION - PIER TO CONCRETE WALK CONNECTION
C4.4 NOT TO SCALE

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HARRISON TOWNSHIP
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STRUCTURAL DETAILS

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BID: 4/10/24 MDC

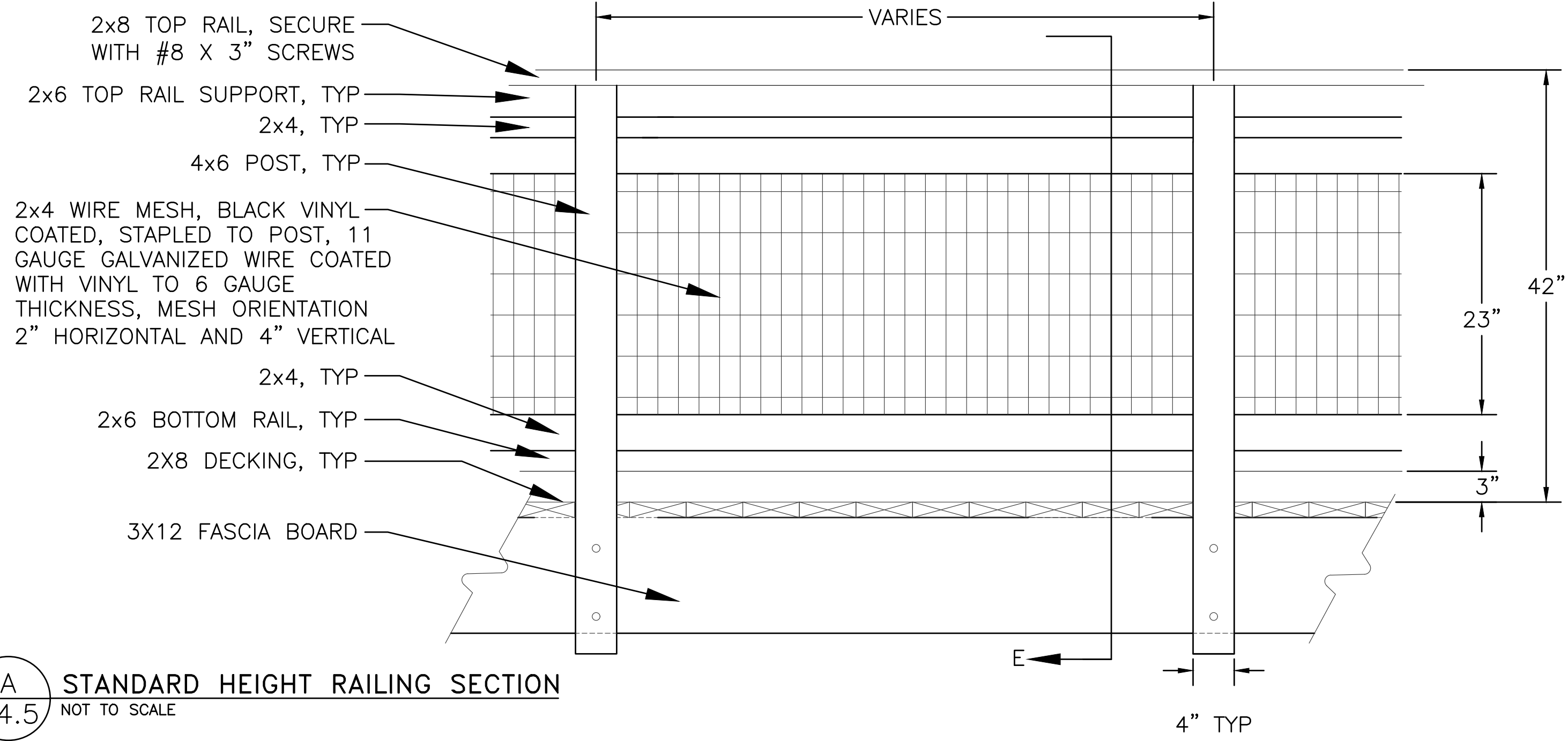
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SHEET

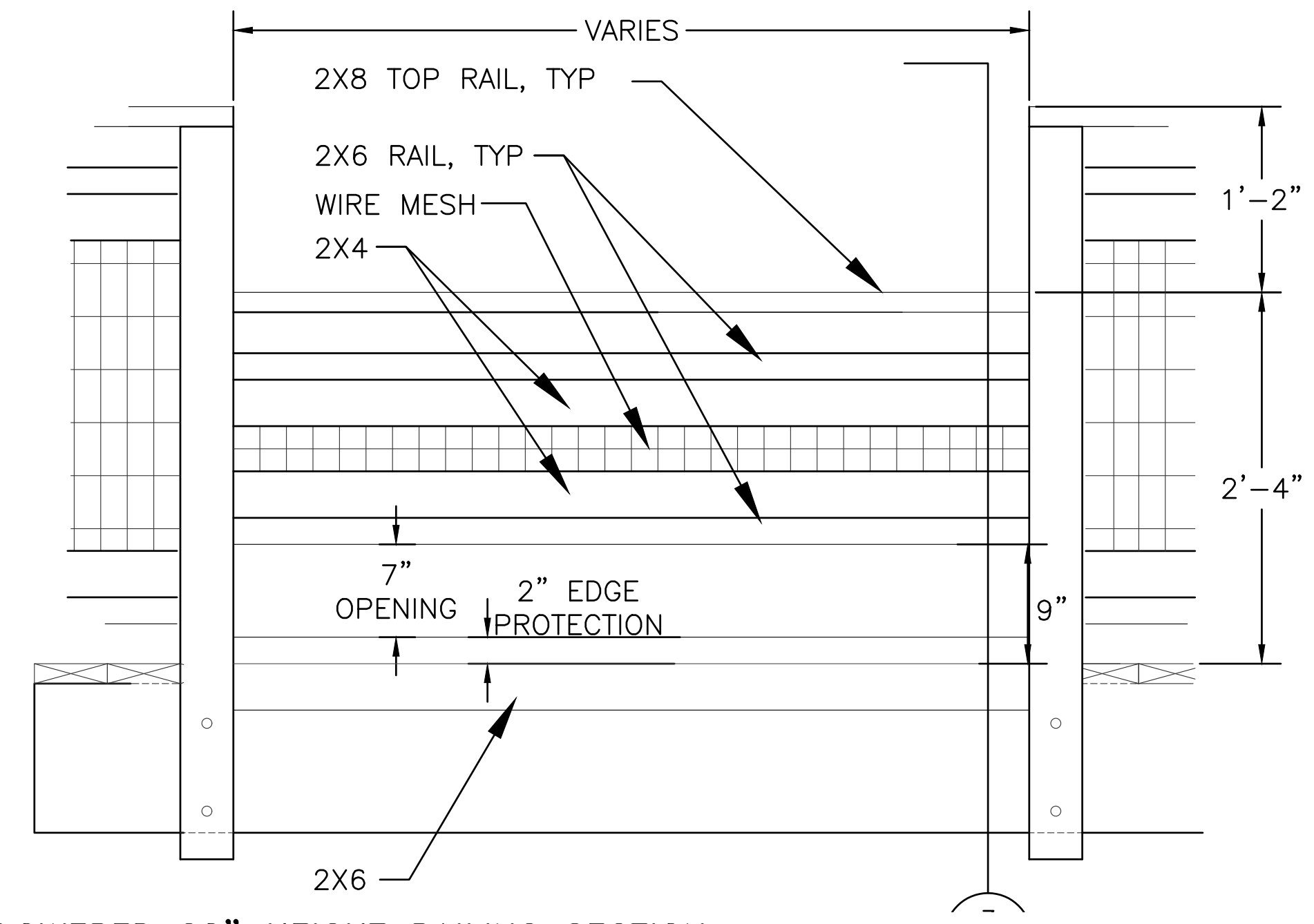
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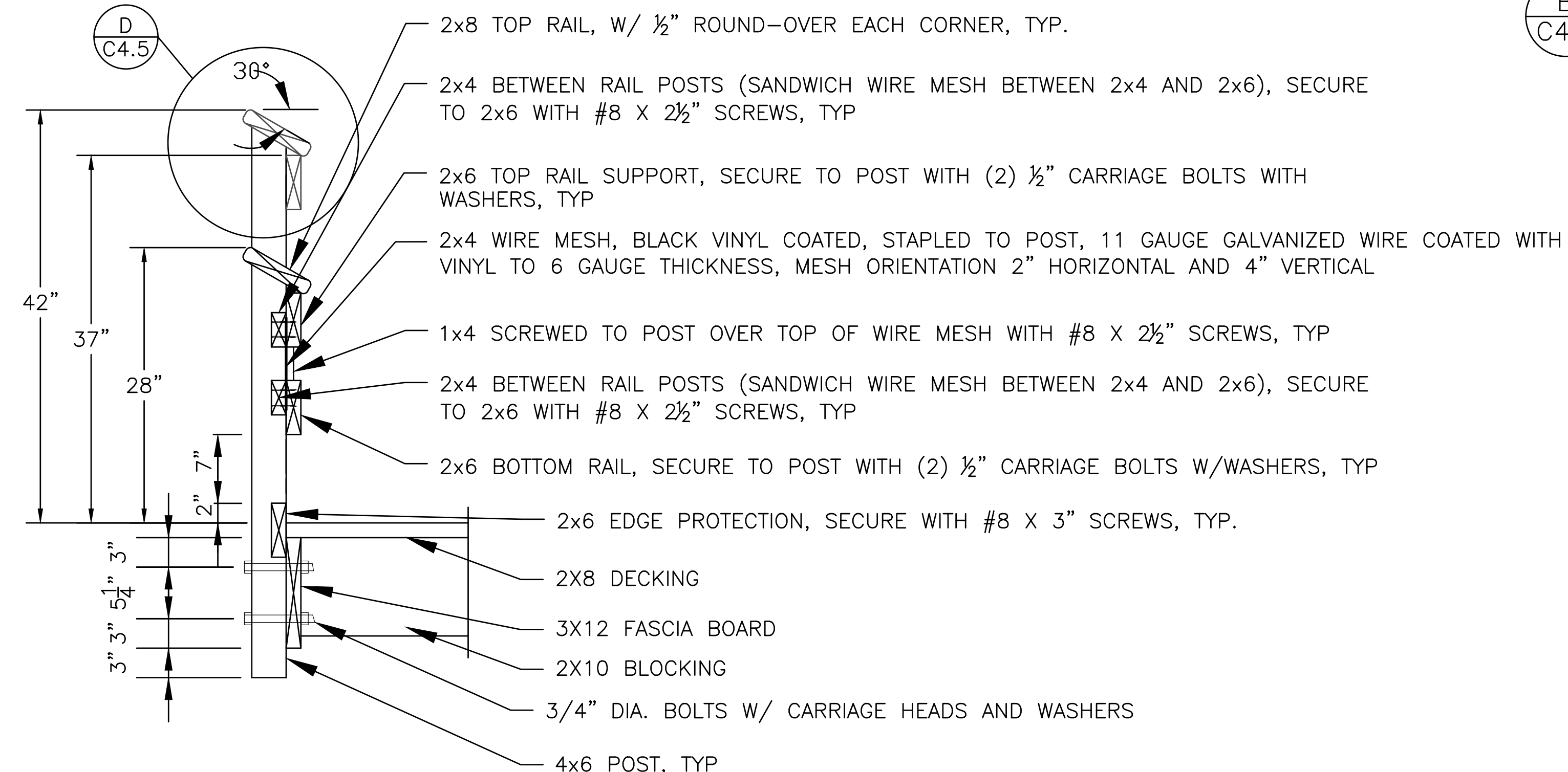
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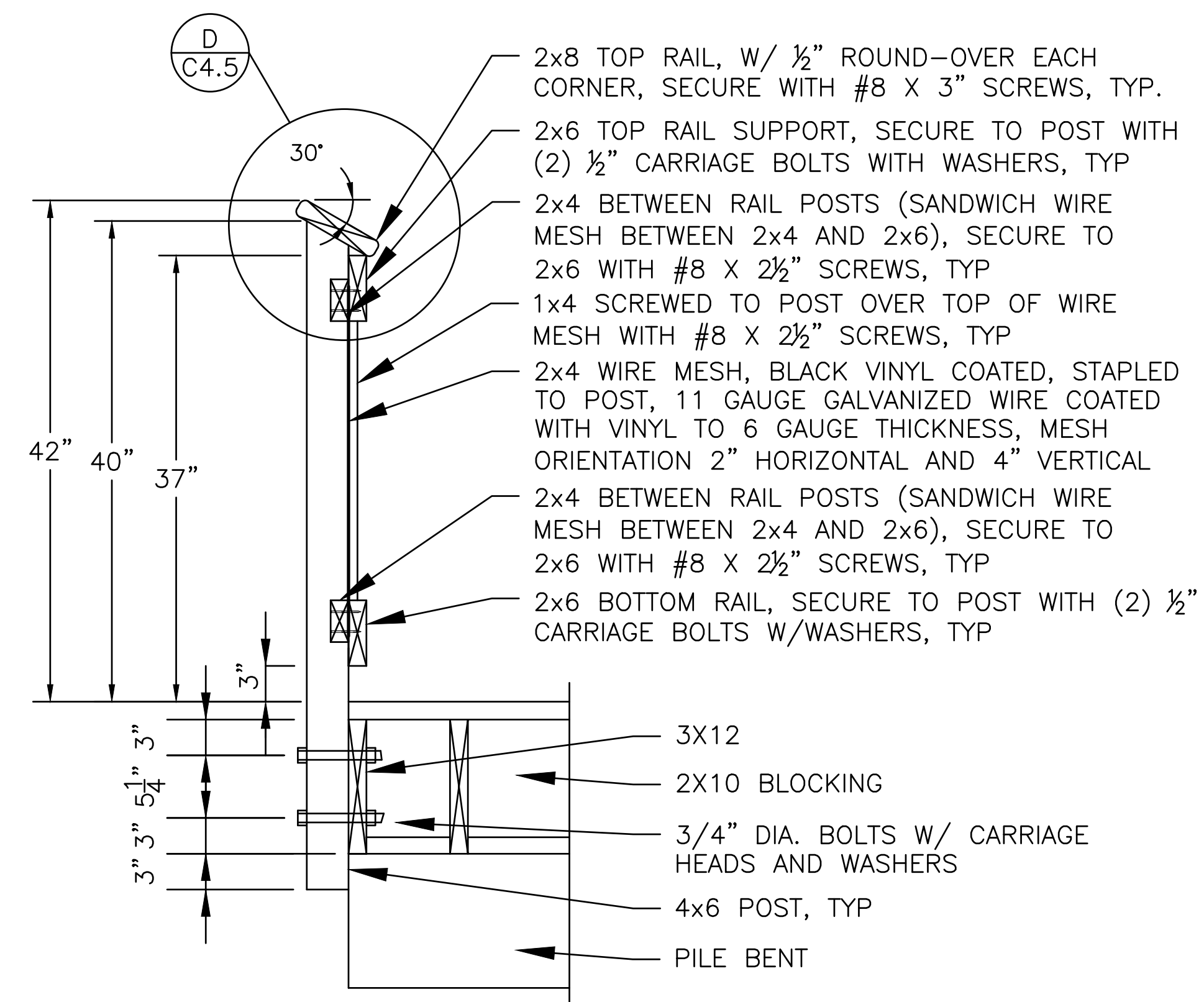
A STANDARD HEIGHT RAILING SECTION
C4.5 NOT TO SCALE



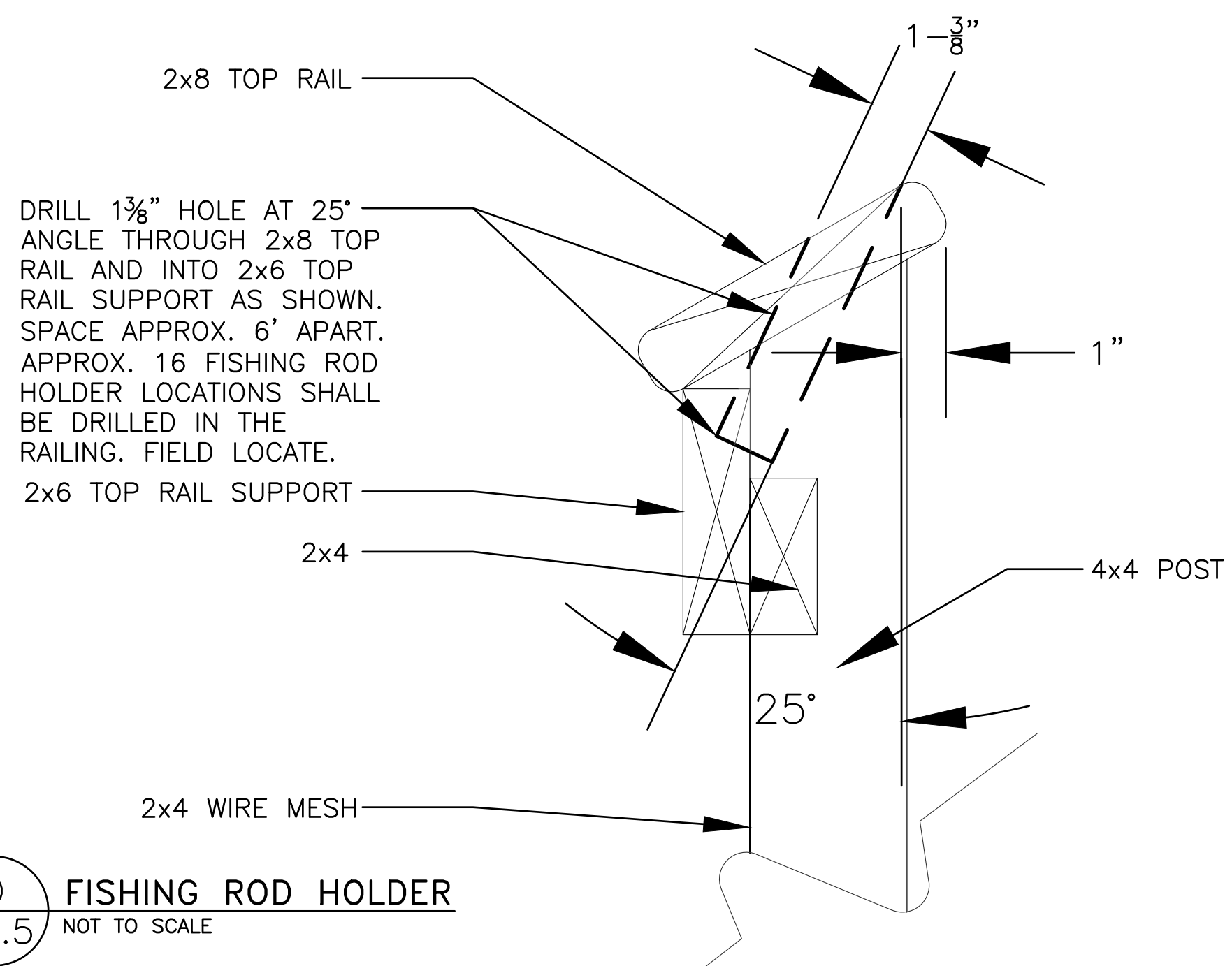
B LOWERED 28" HEIGHT RAILING SECTION
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C LOWERED 28" HEIGHT RAILING SUPPORT SECTION
C4.5 NOT TO SCALE



E STANDARD RAILING SUPPORT SECTION
C4.5 NOT TO SCALE



D FISHING ROD HOLDER
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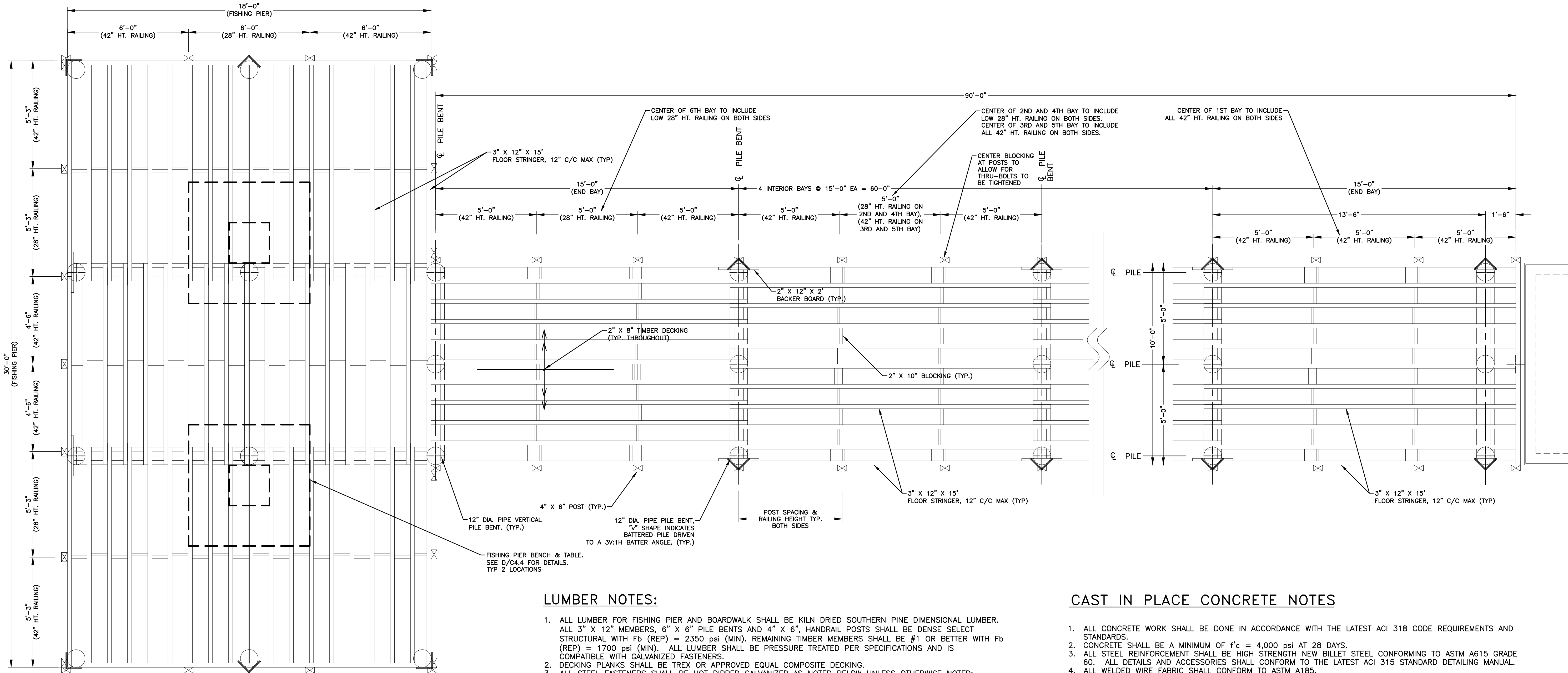
REV#	DATE	DESCRIPTION	BY

150 Graham Avenue, Suite 2500
Dulles, VA 22024
313.961.3650
www.wadefirm.com

HARRISON TOWNSHIP
WATERFRONT PARK
SHORELINE IMPROVEMENTS
STRUCTURAL DETAILS

ISSUED FOR:	DATE:	BY:
BID	4/10/24	MDC
JOB NO.	HSN6004.03D	
SHEET	C-4.5	

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GENERAL STRUCTURAL NOTES

- THE GENERAL STRUCTURAL NOTES ARE INTENDED TO AUGMENT THE DRAWINGS. SHOULD CONFLICTS OCCUR BETWEEN THE DRAWINGS AND/OR THE GENERAL STRUCTURAL NOTES, THE STRICTEST PROVISION SHALL GOVERN.
- THE CONTRACT STRUCTURAL DRAWINGS AND NOTES REPRESENT THE FINISHED, SELF SUPPORTING, STABLE STRUCTURE UNLESS OTHERWISE INDICATED. THEY DO NOT INDICATE THE MEANS OR METHOD OF CONSTRUCTION. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND CONSTRUCTION SEQUENCE AND PROVIDE ALL MEASURES NECESSARY TO ENSURE THE STABILITY AND SAFETY OF THE STRUCTURE AND ITS COMPONENTS. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, SHORING FOR CONSTRUCTION EQUIPMENT, SHORING FOR THE BUILDING, SHORING FOR EARTH BANKS, FORMS, SCAFFOLDING, PLANKING, SAFETY NETS, SUPPORT AND BRACING FOR CRANES AND GIN POLES, ETC.
- CONTRACTOR IS RESPONSIBLE TO VERIFY ALL RELEVANT DIMENSIONS AND ELEVATIONS FOR PREFABRICATED ITEMS AGAINST APPROVED MANUFACTURERS CERTIFIED DRAWINGS.
- UNLESS NOTED OTHERWISE, REQUIREMENTS GIVEN FOR ONE OR MORE LOCATIONS ALSO APPLY AT OTHER LOCATIONS AT WHICH CONDITIONS ARE SIMILAR. THE REQUIREMENTS GIVEN SHALL BE ADAPTED TO CONDITIONS AT SUCH OTHER LOCATIONS.
- THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL DIMENSIONS AND ELEVATIONS SHOWN ON THE PLANS AND FOR COORDINATING ALL DIMENSIONS AND ELEVATIONS SHOWN ON THE DRAWINGS. IF DISCREPANCIES IN THE DIMENSIONS OCCUR, IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO BRING THE DISCREPANCY TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
- DECKING SHALL BE TREX OR EQUAL. COLOR TO BE DETERMINED BY OWNER. DECKING SHALL BE INSTALLED PER MANUFACTURERS SPECIFICATIONS.
- DRIVE ALL PILES TO A MINIMUM BEARING CAPACITY OF 15 TONS.
- USE PILE SHELLS WITH A MINIMUM 0.312 NOMINAL WALL THICKNESS, 12" O.D.
- A MINIMUM PILE TIP ELEVATION IS TO BE -31 FEET BELOW LAKE BOTTOM.
- DRIVE PILES TO SUCH ACCURACY THAT THE ENDS OF THE PILES TO BE EMBEDDED ARE WITHIN 3" OF THE LOCATION SHOWN ON THE PLANS.
- STEEL PILES USED FOR PILE BENTS ARE CONSIDERED MAIN MEMBERS AND ALL WELDING MUST BE ACCORDING TO AASHTO/AWS D1.5 BRIDGE WELDING CODE, AS MODIFIED BY THE CURRENT SPECIAL PROVISION FOR STRUCTURAL STEEL AND ALUMINUM CONSTRUCTION

LUMBER NOTES:

- ALL LUMBER FOR FISHING PIER AND BOARDWALK SHALL BE KILN DRIED SOUTHERN PINE DIMENSIONAL LUMBER. ALL 3" X 12" MEMBERS, 6" X 6" PILE BENTS AND 4" X 6", HANDRAIL POSTS SHALL BE DENSE SELECT STRUCTURAL WITH Fb (REP) = 2350 psi (MIN). REMAINING TIMBER MEMBERS SHALL BE #1 OR BETTER WITH Fb (REP) = 1700 psi (MIN). ALL LUMBER SHALL BE PRESSURE TREATED PER SPECIFICATIONS AND IS COMPATIBLE WITH GALVANIZED FASTENERS.
- DECKING PLANKS SHALL BE TREX OR APPROVED EQUAL COMPOSITE DECKING.
- ALL STEEL FASTENERS SHALL BE HOT DIPPED GALVANIZED AS NOTED BELOW UNLESS OTHERWISE NOTED:
 - FASTENERS (BOLTS, NAILS, SCREWS PER ASTM A153 (MIN 1.0 OZ/SFT)
 - JOIST HANGERS & BRACKETS PER ASTM A653, G 185 (MIN 0.9 OZ/SFT)
- ALL NAILS SHALL BE GALVANIZED SPIRAL SHANKED COATED NAILS FOR EXTERIOR USE UNLESS OTHERWISE NOTED.
- STEEL PLATES SHALL BE Fy=36 KSI. PLATES SHALL BE GALVANIZED.
- WELDED CONNECTIONS SHALL CONFORM TO THE AWS STRUCTURAL WELDING CODE AND USE 70 ksi ELECTRODES.
- PREFABRICATED HANGERS/CONNECTORS (SIMPSON OR EQUAL) AND FASTENERS IN CONTACT WITH PRESSURE TREATED LUMBER SHALL BE GALVANIZED.
- ALL TOENAIL CONNECTIONS SHALL BE PRE-DRILLED TO PREVENT SPLITTING.
- PROVIDE 1/8" GAP BETWEEN DECK PLANKS.
- ALL DECK BUTT JOINTS SHALL BE CENTERED OVER STRINGERS, ADJACENT SPLICES SHALL BE MIN TWO STRINGERS DISTANCE (< 2'-0") APART.
- DECKING SHALL BE FASTENED TO STRINGERS W/ #12 X 3" GALVANIZED DECK SCREWS. USE THREE (3) DECK SCREWS @ PLANK ENDS & TWO (2) SCREWS @ INTERIOR CONNECTIONS TO STRINGERS.
- ALL THRU-BOLTS SHALL HAVE GALVANIZED OVERSIZED WASHERS BEHIND BOLT HEADS AND NUTS.
- 1/2" LAG SCREWS SHALL BE MIN 5" LONG.
- THE BOARDWALK HAS BEEN DESIGNED FOR A PEDESTRIAN LIVE LOAD OF 90 PSF OR A UTILITY VEHICLE LOAD OF 4,000 LBS (TWO 2 KIP AXLES SPACED AT 7'). THE LIVE LOADS SHALL NOT ACT CONCURRENTLY.
- VERTICAL PILES ARE DESIGNED AS COMPRESSIVE PILES. THE STEEL PIPE PILES SHALL ACT AS FRICTION PILES AND SHALL BE DRIVEN OPEN ENDED TO A MINIMUM BEARING CAPACITY OF 15 TONS. THE NOMINAL LOAD ON THE PILES SHALL BE AS FOLLOWS:
 - FISHING PIER PILE = 17.0 KIPS
 - BOARDWALK PILE = 3.5 KIPS
- WELDED WIRE PANELS MEETING THE REQUIREMENTS OF ASTM F-2453 SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION PER ASTM A-123. THEY SHALL THEN BE BLACK PVC (VINYL) COATED. THE WIRE PANELS SHALL BE PREPARED PER PVC MANUFACTURERS RECOMMENDATIONS FOR GALV SURFACES PRIOR TO PLACING THE PVC COATING.
- FIELD VERIFY THE CLEAR OPENINGS AT THE RAILINGS PRIOR TO FABRICATING THE WIRE PANELS. THE DISTANCE BETWEEN THE TIMBER MEMBERS AND THE PANEL EDGES SHALL NOT EXCEED 4 INCHES.
- DRILL PILOT HOLES IN THE TOP AND BOTTOM RAILS PRIOR TO INSTALLATION OF LAG SCREWS FOR WELDED WIRE PANELS.
- CONTRACTOR SHALL NOT MIX GALVANIZED AND STAINLESS STEEL. ANY METAL PARTS IN CONTACT WITH OTHER METAL PARTS SHALL BE OF A SIMILAR MATERIAL.
- DO NOT CONNECT ALUMINUM DIRECTLY TO PRESSURE TREATED WOOD. USE DISSIMILAR MATERIAL PROTECTION.
- ALL WOOD SHALL BE IN SOUND CONDITION. DO NOT USE LUMBER WITH LARGE SPLITS OR CHECKS. IF DRILLING OR ATTACHING FASTENERS CAUSES SPLITS OR CHECKS, REMOVE AND REPLACE THE DAMAGED MEMBER.
- THROUGH BOLTS FOR PIER BRACKETS SHALL BE GALVANIZED TO G185.

CAST IN PLACE CONCRETE NOTES

- ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH THE LATEST ACI 318 CODE REQUIREMENTS AND STANDARDS.
- CONCRETE SHALL BE A MINIMUM OF f'c = 4,000 psi AT 28 DAYS.
- ALL STEEL REINFORCEMENT SHALL BE HIGH STRENGTH NEW BILLET STEEL CONFORMING TO ASTM A615 GRADE 60. ALL DETAILS AND ACCESSORIES SHALL CONFORM TO THE LATEST ACI 315 STANDARD DETAILING MANUAL.
- ALL WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185.
- REINFORCEMENT PROTECTION SHALL BE AS FOLLOWS U.O.N.
 - CONCRETE POURED AGAINST EARTH 3"
 - ALL OTHER CONCRETE 2"
- ALL EMBEDDED ITEMS SHALL BE PLACED IN THE FORMWORK PRIOR TO PLACING CONCRETE. DRILLING AND GROUTING IS ACCEPTABLE SUBJECT TO ENGINEER APPROVAL.
- FIELD BEND BARS COLD. DO NOT FIELD BEND BARS WITH HEAT OR BARS PARTIALLY EMBEDDED IN CONCRETE.
- ALL EXTERIOR CONCRETE SHALL BE AIR-ENTRAINED.

BOARDWALK/FISHING PIER LOADS		
DECK LIVE LOADS		
OCCUPANCY OR USE	UNIFORM (PSF)	CONCENTRATED (LBS.)
PEDESTRIAN LOADS	90	250
VEHICULAR LIVE LOADS		
UTILITY VEHICLE	TWO (2) 2 KIP AXLES @ 7' O.C.	
WIND LOADS		
LOAD OR VARIABLE	VALUE	
BASIC WIND SPEED (3-SECOND GUST)	90 MPH	
BASE WIND PRESSURE (ON GROSS AREA)	12.23 PSF	
LONGITUDINAL LOADS		
LOAD OR VARIABLE	VALUE	
5% OF 90 PSF PEDESTRIAN LOAD AT EVERY FOURTH FRAME/FOUNDATION LOCATION.	250 LBS MIN	
TRANSVERSE LOADS		
LOAD OR VARIABLE	VALUE	
5% OF 90 PSF PEDESTRIAN LOAD AT ALL FRAME/FOUNDATION LOCATIONS. 15% OF VEHICLE LOADS (BOARDWALK ONLY).	250 LBS MIN	
NOTES:		
ALL LOADS ARE BASED ON CURRENT 2018 MICHIGAN BUILDING CODES, SECTION 16, UNLESS NOTED OTHERWISE. MEMBERS DESIGNATED USING ASD AND 2018 NDS WOOD VALUES.		

PROJECT MANAGER: C:\PW\WORK\01252722\VP15-CSP-STRUCTURAL DETAILS.DWG - C-4.6 - PLOTTED 4/25/2024 12:45 PM BY DENNIS, KATIE



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1500 Greenfield Avenue, Suite 2500
 Oak Brook, IL 60451
 312.961.3650
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HARRISON TOWNSHIP
 WATERFRONT PARK
 SHORELINE IMPROVEMENTS

STRUCTURAL DETAILS

ISSUED FOR: DATE: BY:
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JOB NO.
 HSN6004.03D

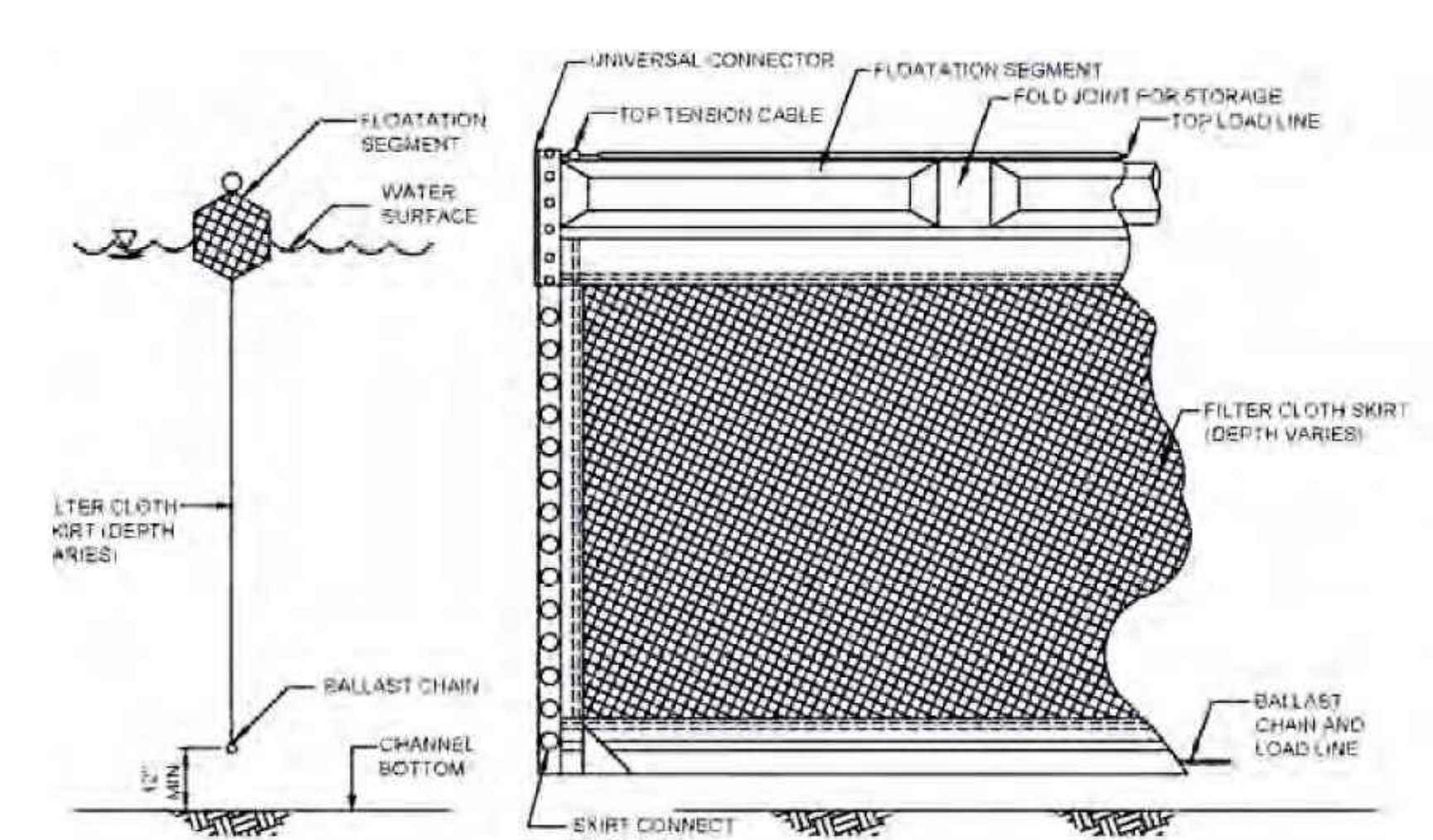
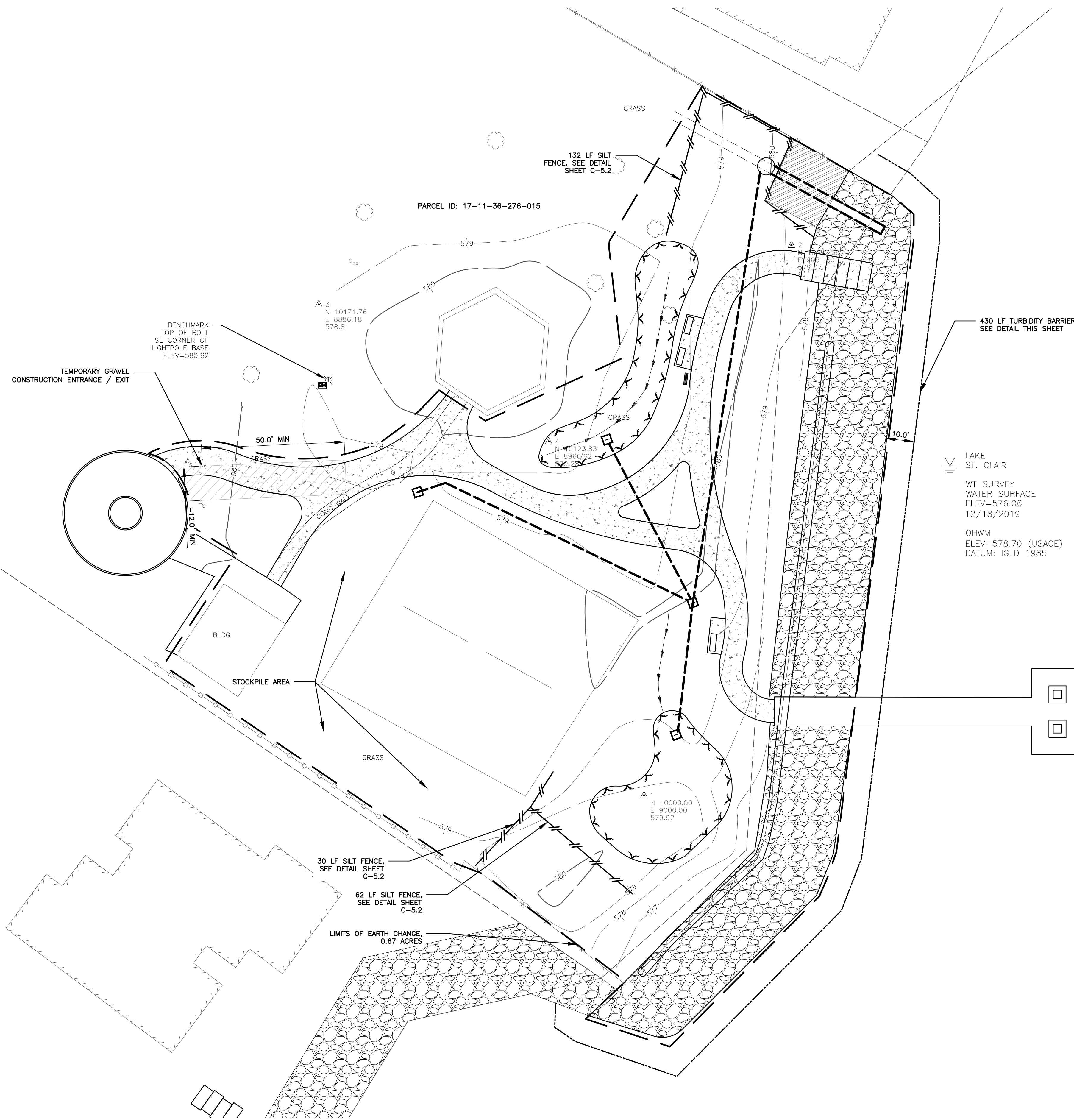
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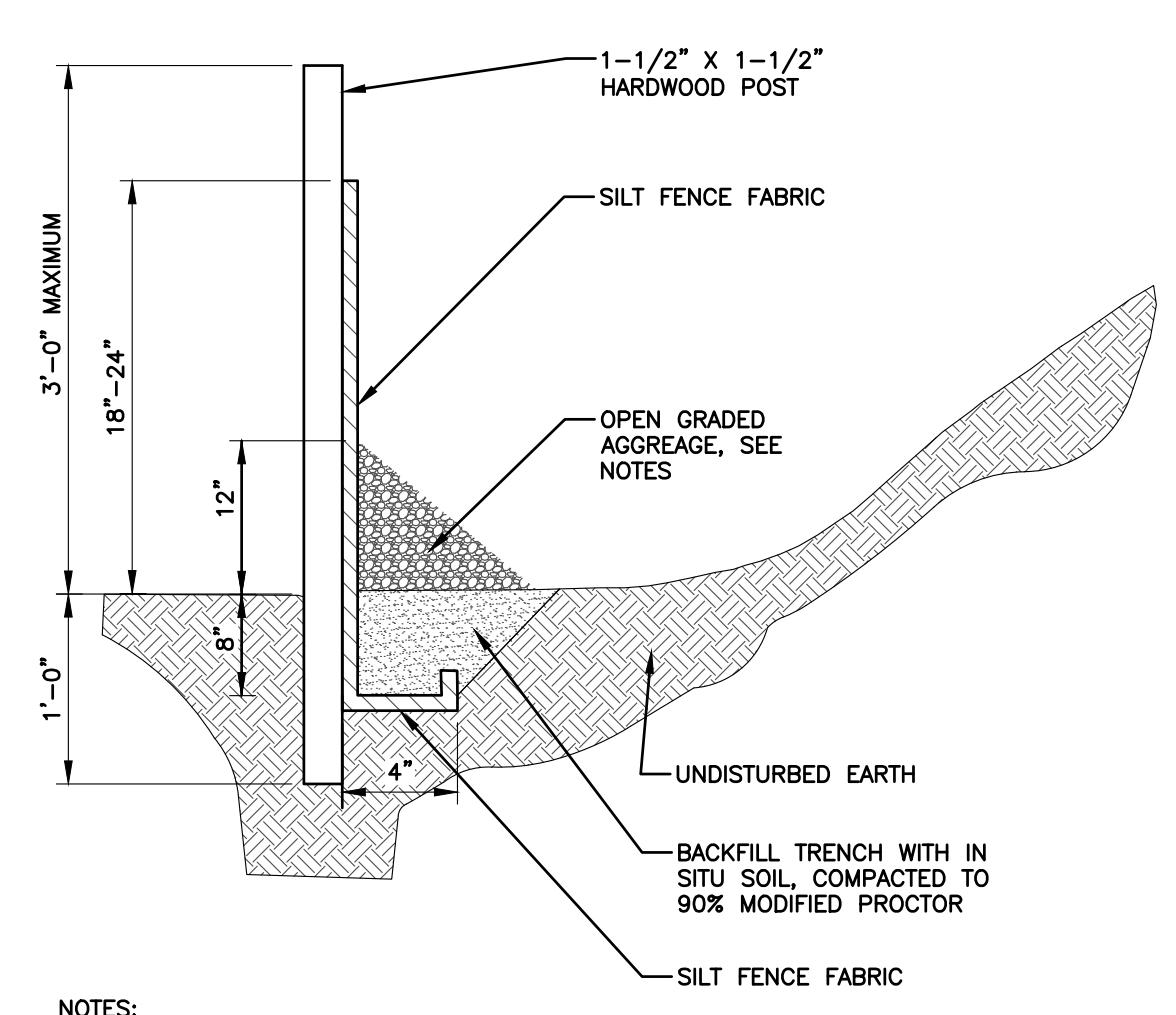
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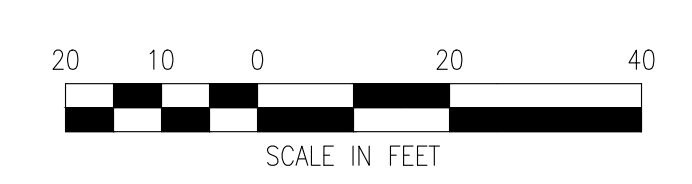
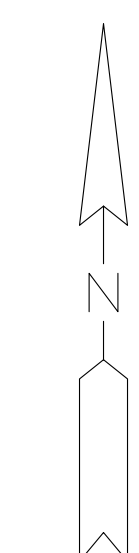


LEGAL DESCRIPTION
SUPERVISOR'S PLAT NO. 4 LOT 23



NOTES:
 POST SPACING: 6-FOOT MAX
 FABRIC: 36 INCHES IN WIDTH, MUST MEET ASTM D6461, 4 FT MINIMUM OVERLAP AT JOINTS (ENDS).
 STONE: IF SILT FENCE IS DESIGNED AND UTILIZED AS A DIVERSION, PLACE OPEN GRADED AGGREGATE WASHED STONE 12 INCHES DEEP AT SILT FENCE AS SHOWN.
 CURL EACH END OF THE SILT FENCE UPHILL IN A "J" PATTERN TO PREVENT RELEASE OF UNTREATED STORM FLOWS.

SILT FENCE DETAIL
NOT TO SCALE



REV#	DATE	DESCRIPTION	BY

500 Gravel Avenue, Suite 2500
 311.951.3850
 www.wadetrim.com

**HARRISON TOWNSHIP
 WATERFRONT PARK
 SHORELINE IMPROVEMENTS**
 SOIL EROSION AND SEDIMENTATION CONTROL PLAN

ISSUED FOR: BID	DATE: 4/10/24	BY: MDC
JOB NO. HSN6004.03D		
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SOIL EROSION AND SEDIMENTATION CONTROL NOTES


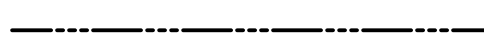

MACOMB COUNTY PUBLIC WORKS OFFICE SOIL EROSION CONTROL NOTES

1. THIS PROJECT SHALL BE CONSTRUCTED IN COMPLIANCE WITH PART 91 OF ACT 451 OF 1994, AS AMENDED, THE SOIL EROSION AND SEDIMENTATION CONTROL ACT AND THE MACOMB COUNTY SOIL EROSION AND SEDIMENTATION CONTROL ORDINANCE.
2. ALL EROSION AND SEDIMENTATION CONTROL WORK SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE MACOMB COUNTY PUBLIC WORKS OFFICE.
3. EROSION AND ANY SEDIMENTATION FROM WORK ON THIS SITE SHALL BE CONTAINED ON THE SITE AND NOT ALLOWED TO COLLECT ON ANY OFF SITE AREAS OR IN WATERWAYS. WATERWAYS INCLUDE BOTH NATURAL AND MAN MADE OPEN DITCHES, STREAMS, STORM DRAINS, LAKES AND PONDS.
4. STAGING THE WORK WILL BE DONE BY THE CONTRACTOR AS DIRECTED IN THESE PLANS AND AS REQUIRED TO ENSURE PROGRESSIVE STABILIZATION OF DISTURBED EARTH CHANGE.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION AND MAINTENANCE OF SOIL EROSION AND SEDIMENTATION CONTROL DEVICES.
6. THE CONTRACTOR SHALL IMPLEMENT AND MAINTAIN THE SOIL EROSION CONTROL MEASURES AS SHOWN ON THE PLANS BEFORE AND AT ALL TIMES DURING CONSTRUCTION ON THIS PROJECT. ANY MODIFICATIONS OR ADDITIONS TO SOIL EROSION CONTROL MEASURES DUE TO CONSTRUCTION OR CHANGED CONDITIONS SHALL BE COMPLIED WITH AS REQUIRED OR DIRECTED BY THE MACOMB COUNTY PUBLIC WORKS OFFICE.
7. IF ANY OF THE SESC MEASURES ON THE SITE ARE DEEMED INADEQUATE OR INEFFECTIVE, THE MACOMB COUNTY PUBLIC WORKS OFFICE SESC DIVISION HAS THE RIGHT TO REQUIRE ADDITIONAL SESC MEASURES AT THE EXPENSE OF THE CONTRACTOR.
8. INSTALL 1"x3" CRUSHED CONCRETE ACCESS DRIVE PLACED ON GEOTEXTILE FABRIC AS INDICATED ON THE PLAN. NEW LAYERS OF CRUSHED CONCRETE WILL BE ADDED AS OLD LAYERS BECOME COMPACTED.
9. INSTALL SILT FENCE AS INDICATED ON THE PLANS AND AT ADDITIONAL AREAS AS NECESSARY.
 - A. SILT FENCE SHALL BE INSTALLED PER DETAIL.
 - B. BUILD UP OF SEDIMENT SHALL BE REMOVED WHEN SEDIMENT ACCUMULATES TO 1/3 TO 1/2 OF THE HEIGHT OF THE SILT FENCE.
 - C. IF SILT FENCE FABRIC DECOMPOSES OR BECOMES INEFFECTIVE PRIOR TO THE END OF EXPECTED USABLE LIFE AND THE BARRIER IS STILL REQUIRED, THE SILT FENCE SHALL BE REPLACED PROMPTLY.
 - D. SILT FENCE SHALL BE INSPECTED WEEKLY UNDER NORMAL CONDITIONS, WITHIN 24 HOURS OF RAINFALL AND DAILY DURING A PROLONGED RAIN EVENT. REQUIRED MAINTENANCE SHALL BE PROVIDED PROMPTLY.
10. INSTALL INLET FILTER ON ALL PAVEMENT CATCH BASINS PER DETAIL.
 - A. INLET FILTERS SHALL BE INSPECTED WEEKLY UNDER NORMAL CONDITIONS, WITHIN 24 HOURS OF RAINFALL AND DAILY DURING A PROLONGED RAIN EVENT.
 - B. BUILDUP OF SEDIMENT AND DEBRIS SHALL BE REMOVED PROMPTLY.
 - C. IF FABRIC DECOMPOSES OR BECOMES INEFFECTIVE PRIOR TO THE END OF EXPECTED USABLE LIFE AND THE BARRIER IS STILL REQUIRED, THE FABRIC SHALL BE REPLACED PROMPTLY.
11. UTILITIES AND PUMP STATION
 - A. THE ROAD RIGHT OF WAY MUST BE SEEDED AND MULCHED WITHIN 5 CALENDAR DAYS AFTER UTILITIES HAVE BEEN INSTALLED. IF THIS IS NOT POSSIBLE, ALL SESC MEASURES MUST STAY IN PLACE AND MUST BE MAINTAINED UNTIL PERMANENT STABILIZATION IS COMPLETED.
12. ALL STOCKPILED SOILS SHALL BE MAINTAINED IN SUCH A WAY AS TO PREVENT EROSION FROM LEAVING THE SITE. IF THE STOCKPILE WILL BE ON SITE FOR MORE THAN 30 DAYS, THEN THE STOCKPILE MUST BE SEEDED. SILT FENCE MUST BE INSTALLED AROUND THE PERIMETER OF THE STOCKPILE.
13. IMMEDIATELY AFTER SEEDING, MULCH ALL SEEDED AREAS WITH UNWEATHERED SMALL GRAIN STRAW, SPREAD UNIFORMLY AT A RATE OF 1 TO 2 TONS PER ACRE OR 100 POUNDS (2-3 BALES) PER 1,000 SQUARE FEET. THIS MULCH SHOULD BE ANCHORED WITH DISC TYPE MULCH ANCHORING TOOL OR OTHER MEANS AS APPROVED BY THE MACOMB COUNTY PUBLIC WORKS OFFICE. MULCH MATTING MAY BE USED IN LIEU OF LOOSE MULCH.
14. IF ANY DEWATERING IS NEEDED, IT SHALL BE DISCHARGED THROUGH A FILTER BAG OVER A WELL VEGETATED AREA. THE PUMP MUST DISCHARGE AT A NON-EROSIVE VELOCITY. IF NECESSARY, AN APPROVED ENERGY DISSIPATER MAY BE USED.
15. ALL DIRT TRACKED ONTO ANY ROADWAY SHALL BE REMOVED IMMEDIATELY.
16. STREETS AND OR PARKING AREAS SHALL BE SCRAPED ON A DAILY BASIS.
17. DURING DRY PERIODS, ALL DISTURBED AREAS SHALL BE WATERED FOR DUST CONTROL.
18. PERMANENT SOIL EROSION CONTROL MEASURES FOR ALL SLOPES, CHANNELS, DITCHES, OR ANY DISTURBED LAND AREA SHALL BE COMPLETED WITHIN 5 CALENDAR DAYS AFTER FINAL GRADING OR THE FINAL EARTH CHANGE HAS BEEN COMPLETED. WHEN IT IS NOT POSSIBLE TO PERMANENTLY STABILIZE A DISTURBED AREA AFTER EARTH CHANGE ACTIVITY CEASES, TEMPORARY SOIL EROSION MEASURES SHALL BE IMPLEMENTED IMMEDIATELY. ALL TEMPORARY SOIL EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE IMPLEMENTED. ALL PERMANENT SOIL EROSION CONTROL MEASURES WILL BE IMPLEMENTED AND ESTABLISHED BEFORE A CERTIFICATE OF COMPLIANCE IS ISSUED.
19. FINAL GRADE, ESTABLISH VEGETATION, AND/OR LANDSCAPE ALL DISTURBED AREAS NOT BUILT OR PAVED UPON.
20. REMOVE ALL TEMPORARY SOIL EROSION DEVICES AFTER PERMANENT STABILIZATION IS ESTABLISHED.
21. SOIL TYPES:
 - La - LAMSON FINE SANDY LOAM
 - Msb - MINOA FINE SANDY LOAM, 0 TO 4 PERCENT SLOPES
22. DISTANCE TO NEAREST WATERCOURSE IN FEET: 0
23. NAME OF NEAREST WATERCOURSE: Lake St. Clair
24. APPROXIMATE START DATE ON : JUNE 1, 2020
25. APPROXIMATE COMPLETION DATE ON : SEPTEMBER 30, 2020
26. TOTAL ACRES DISTURBED = 0.8 ACRES.
27. DESIGNATED CONTACT FOR ALL TEMPORARY/PERMANENT SOIL EROSION CONTROL MEASURES:
 - MR. DAVID AXTELL
 - DIRECTOR OF ENGINEERING SERVICES
 - CHARTER TOWNSHIP OF HARRISON
 - PH:(586) 466-1447

SEQUENCE FOR CONSTRUCTION – SESC		SCHEDULE	
		START DATE	END DATE
1	INSTALL INLET FILTERS, REMOVE AT PROJECT COMPLETION	06/2020	09/2020
2	INSTALL TEMPORARY CRUSHED CONCRETE SITE ACCESS DRIVE, REMOVE AFTER COMPLETION OF PROJECT	06/2020	09/2020
3	INSTALL FLOATING TURBIDITY CURTAIN, REMOVE AFTER COMPLETION OF PROJECT	06/2020	09/2020
4	INSTALL SILT FENCE, REMOVE AFTER COMPLETION OF PROJECT	06/2020	09/2020
5	INSTALL TOPSOIL, SEED AND MULCH AS NECESSARY IN RESTORATION AREAS	07/2020	10/2020

- Notes:
1. CONTRACTOR SHALL SUBMIT EXACT SCHEDULE TO MACOMB COUNTY DEPARTMENT OF PUBLIC WORKS FOR REVIEW AND APPROVAL PRIOR TO OBTAINING PERMIT.

LEGEND

-  SILT FENCE
-  TURBIDITY BARRIER
-  TEMPORARY GRAVEL CONSTRUCTION ENTRANCE / EXIT

REV#	DATE	DESCRIPTION	BY

500 Griswold Avenue, Suite 2500
 Warren, MI 48090
 313.981.3850
 www.wadeftrim.com



HARRISON TOWNSHIP
 WATERFRONT PARK
 SHORELINE IMPROVEMENTS
 SOIL EROSION AND SEDIMENTATION CONTROL
 LEGEND AND NOTES

ISSUED FOR:	DATE:	BY:
BID	4/10/24	MDC
JOB NO.	HSN6004.03D	
SHEET	C-5.1	

PROJECT MANAGER: FIELD BOOK INFORMATION: C:\PW_MORRIS\10125772\PLANS-SESC-LEGEND-AND-NOTES.DWG - C-5.1 - PLOTTED 4/5/2024 12:45 PM BY DENNIS, KATIE

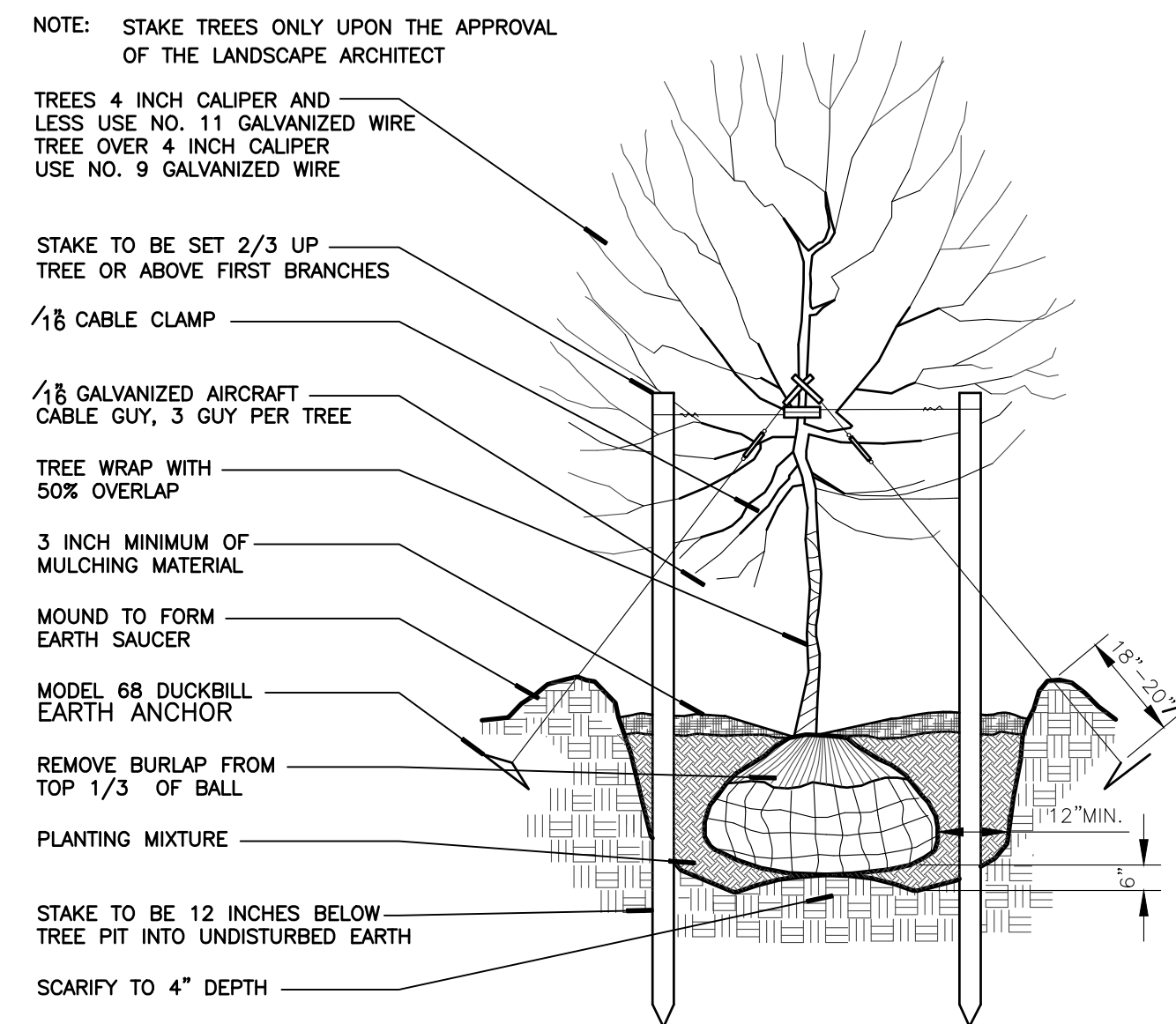


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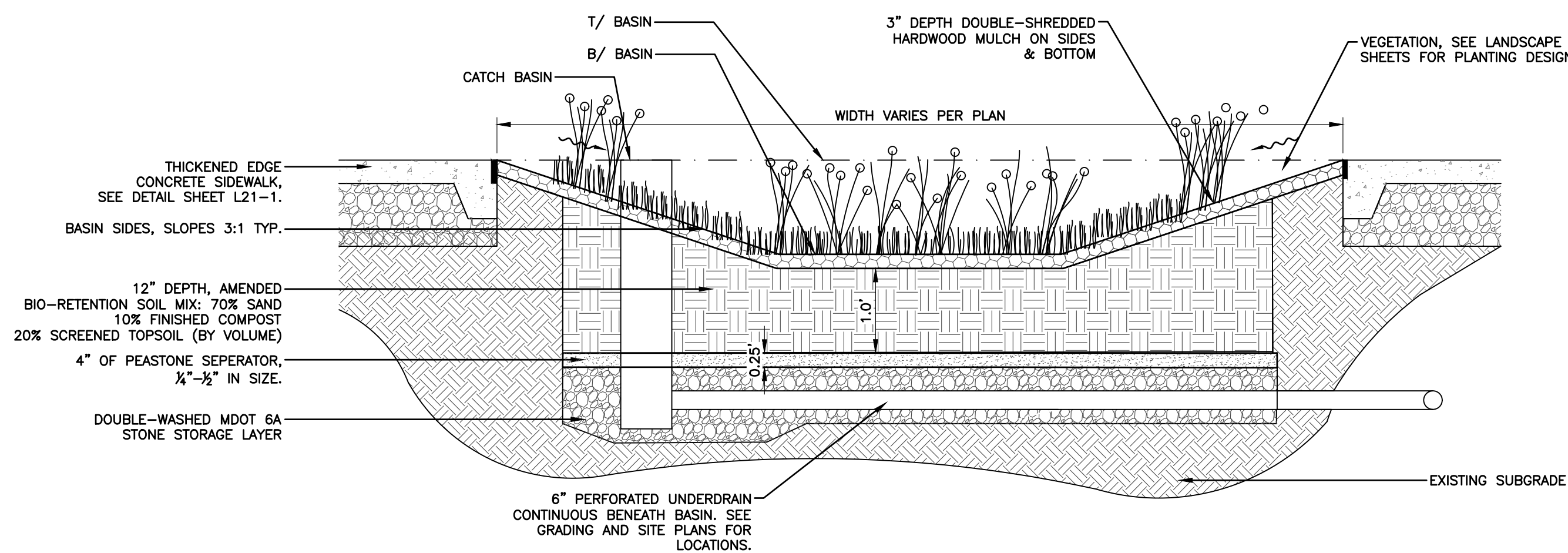
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LANDSCAPE NOTES

- ALL PLANTS TO BE INSTALLED IN ACCORDANCE WITH AMERICAN ASSOCIATION OF NURSERYMEN LANDSCAPE STANDARDS.
- CONTRACTOR SHALL PROVIDE A PLANTING MIXTURE MEETING THE REQUIREMENTS OF THE SPECIFICATION. IF THE ENGINEER HAS ANY CONCERNS WITH THE QUALITY OF THE PLANTING MIXTURE, THE ENGINEER SHALL BE ALLOWED TWO WEEKS TO OBTAIN SOIL TEST TO DETERMINE COMPLIANCE. NO PLANT MATERIAL SHALL BE PLANTED PRIOR TO ENGINEER APPROVAL OF PLANTING MIXTURE. ALL PLANT MATERIAL SHALL BE MAINTAINED BY THE CONTRACTOR IN A VIGOROUS GROWING CONDITION DURING THIS TIME AT NO ADDITIONAL COST.
- SPACING OF PLANT MATERIALS SHALL BE AS SHOWN ON DRAWING OR ON PLANT LIST. THE ENGINEER SHALL REVIEW THE PLACEMENT OF PLANT MATERIAL PRIOR TO AND AFTER INSTALLATION, AND RESERVES THE RIGHT TO ADJUST LAYOUT TO ACCOMMODATE SITE CONDITIONS AND DESIGN INTENT.
- ALL PLANT MATERIALS SHALL CONFORM TO PLANT SCHEDULES. SIZES SHALL BE THE MINIMUM STATED ON THE PLANT LIST OR LARGER. ALL MEASUREMENTS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "A.A.N. STANDARDS FOR NURSERY STOCK."
- NO PLANT SHALL BE PUT INTO THE GROUND BEFORE ROUGH GRADING HAS BEEN FINISHED AND REVIEWED BY THE ENGINEER.
- FINAL PLANT LOCATIONS SHALL BE MARKED BY CONTRACTOR THREE WORKING DAYS PRIOR TO PLANTING FOR ENGINEER REVIEW.
- ALL PLANTED PLANTS SHALL BEAR THE SAME RELATIONSHIP TO FINISHED GRADE AS THE PLANTS ORIGINAL GRADE BEFORE DIGGING.
- PLANT MATERIAL, ESPECIALLY EVERGREENS, TO BE PLANTED HIGHER THAN NORMAL WHEN HEAVY SOIL CONDITIONS (CLAY, ETC.) PREVAIL.
- IF FOR ANY REASON ANY BALLED AND BURLAPED PLANT MATERIALS NEED TO BE STORED ON SITE LONGER THAN A 24-HOUR PERIOD, THEIR ROOT BALLS SHALL BE PROTECTED. ALL PLANTS SHALL BE THOROUGHLY WATERED EACH DAY THEY ARE STORED ON SITE AND THROUGH CONSTRUCTION. ANY PLANTS ALLOWED TO DRY OUT AS DETERMINED BY THE ENGINEER WILL BE REJECTED.
- NO CONTAINER GROWN STOCK WILL BE ACCEPTED IF IT IS ROOT BOUND. ALL WRAPPING MATERIALS MADE OF SYNTHETIC OR PLASTICS SHALL BE COMPLETELY REMOVED AT TIME OF PLANTING.
- THE CONTRACTOR SHALL FILL PLANT PIT WITH PREPARED PLANT MIX TO 1/2 DEPTH OF ROOT BALL OR ROOT MASS, PACK FIRMLY, PUDDLE WITH WATER; THEN FOR BALLED AND BURLAPED MATERIAL, THE BURLAP AND ALL LACING (INCLUDING WIRE BASKET IF NECESSARY) SHALL BE REMOVED FROM THE UPPER 1/3 OF ROOTBALL, THEN FINISH BACKFILLING ADDING SOLID FERTILIZER TO THE PLANT MIX, PACK FIRMLY AND WATER. A SAUCER SHALL BE PLACED AROUND EVERY PLANT AND SHALL BE APPROVED PRIOR TO PLACEMENT OF ANY MULCH.
- ALL DISTURBED LAWN AREAS SHALL BE RESTORED WITH 4-INCHES OF TOPSOIL, SPREAD, FINE GRADED, AND SEEDED AS SPECIFIED. THIS WORK SHALL BE INCIDENTAL TO THE PROJECT.
- ALL TREES AND SHRUBS ARE TO BE FERTILIZED AT THE TIME OF PLANTING WITH AGRIFORM 21-GRAM FERTILIZER TABLETS AT RATES RECOMMENDED BY MANUFACTURER.
- ALL TREES SHALL BE STAKED. THE STAKING SHALL BE ADJUSTED AND REPAIRED AS NECESSARY AND REMOVED AT THE END OF THE ESTABLISHMENT PERIOD.
- ALL PLANTS AND STAKES SHALL BE SET PLUMB UNLESS OTHERWISE SPECIFIED. ALL GUYS AND STAKES MUST BE LOCATED WITHIN EACH TREES MULCHED AREA TO ELIMINATE THE POSSIBILITY OF MOWER CONTACT AND TO REDUCE MAINTENANCE.
- AT PLANTING TIME, ALL DECIDUOUS TREES SHALL BE THINNED BY REMOVING INTERIOR SECONDARY TWIGS, INFERIOR BRANCHES, TEMPORARY BRANCHES, AND CROSSED BRANCHES ACCORDING TO ANSI A300-1995.
- CONTRACTOR SHALL APPLY ENGINEER APPROVED PRE-EMERGENT HERBICIDE TO SHRUB AND GROUND COVER PLANTING AREAS AT THE TIME OF PLANTING (IF SPRING PLANTED) OR THE FOLLOWING SPRING. CONTRACTOR SHALL ENSURE THE PLANT MATERIALS ARE RESISTANT TO THE HERBICIDES PROPERTIES. HERBICIDE SHALL BE APPLIED ACCORDING TO MANUFACTURERS SPECIFICATIONS AND IN ACCORDANCE WITH SOUND HORTICULTURAL PRACTICES.
- ALL EVERGREEN PLANTS SHALL BE SPRAYED ACCORDING TO MANUFACTURES INSTRUCTIONS WITH AN ANTI-DESICCANT THE FIRST WINTER. THE ENGINEER SHALL BE NOTIFIED THREE DAYS PRIOR TO THIS WORK.
- ALL TREES, SHRUBS AND PERENNIAL GROUND COVER SHALL RECEIVE A MINIMUM DEPTH OF THREE INCHES DOUBLE SHREDDED HARDWOOD BARK MULCH. WHERE PLANT BEDS MEET PAVEMENTS, LAWN, OR STEEL EDGING CUT THE GRADE TO ALLOW FOR MULCH AND THREE-INCH DROP FROM ADJOINING FINISH GRADE.
- ALL PLANT BEDS SHALL BE EXCAVATED TO A MINIMUM DEPTH OF 12-INCHES AND BACKFILLED WITH SPECIFIED PLANT MIX AS PER PERENNIAL PLANTING BED DETAIL.
- THE CONTRACTOR SHALL PROVIDED A 1 YEAR WARRANTY FOR ALL SEEDED AREAS.



TREE PLANTING DETAIL
SECTION



3 TYPICAL BIORETENTION BASIN DETAIL
NO SCALE



Native Connections

3815 N Westnedge Ave, Kalamazoo, MI 49004
(P) 269.459.6900
info@nativeconnections.net
www.nativeconnections.net

BioSwale / Raingarden Seed Mix

This mix is similar to our Wet-Mesic Prairie, except more specifically designed for swales, detention basins, and raingardens. It has less emphasis on the tallest grasses and more emphasis on the showier, more common wildflowers. For a shorter stature, we can easily customize it by eliminating the tall grasses and increasing the shorter sedges and rushes.

Total Seeding Rate: 31 lbs per acre
3.75 lbs grasses • 2.25 lbs forbs • 25 lbs nurse crop
63 native seeds per sq ft

Call, email or visit our website for pricing.

Grasses, Sedges & Rushes	PLS Oz/acre	Seeds/sq ft
Andropogon gerardii	6.00	1.38
Carex bebbii	3.00	2.34
Carex vulpinoidea	4.00	9.18
Elymus canadensis	16.00	1.91
Elymus virginicus	16.00	1.54
Glyceria striata	0.50	1.84
Juncus effusus	0.25	5.74
Juncus tenuis	0.25	5.74
Panicum virgatum	4.00	1.29
Sorghastrum nutans	6.00	1.65
Spartina pectinata	4.00	0.61
Total Grasses	60.00	33.21

Forbs	PLS Oz/acre	Seeds/sq ft
Allium cernuum	2.00	0.35
Asclepias incarnata	1.00	0.11
Aster novae-angliae	0.25	0.38
Cassia hebecarpa	4.00	0.13
Desmodium canadense	0.50	0.06
Echinacea purpurea	8.00	1.21
Eupatorium purpureum	0.25	0.24
Helianthus annuus	8.00	1.16
Hypericum punctatum	0.50	2.18
Lobelia siphilitica	0.50	5.74
Monarda fistulosa	0.50	0.80
Pycnanthemum virginianum	0.25	1.26
Ratibida pinnata	1.50	1.03
Rudbeckia hirta	5.00	10.56
Solidago riddellii	0.50	1.07
Verbena hastata	1.50	3.20
Zizia aurea	1.75	0.44
Total Forbs	36.00	29.93

Temporary Grass Cover	Oz/acre	Seeds/sq ft
Lolium multiflorum	80.00	24.79
Avena sativa	320.00	7.35
Total Temp Grasses	400.00	32.14

REV#	DATE	DESCRIPTION	BY

1500 Gratiot Avenue, Suite 2500
Dow City, MO 64704
313.961.3650
www.wadetrims.com

WADE TRIM

HARRISON TOWNSHIP
WATERFRONT PARK
SHORELINE IMPROVEMENTS
LANDSCAPE DETAILS

ISSUED FOR: DATE: BY:
BID 4/10/24 MDC

JOB NO.
HSN6004.03D

SHEET
L-1.1

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PROJECT MANAGER: C:\PW\WORK\10125722\PLANS-CSP-LANDSCAPE DETAILS.DWG - L-1.1 - PLOTTED 4/9/2024 12:45 PM BY DENNIS, KATIE

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