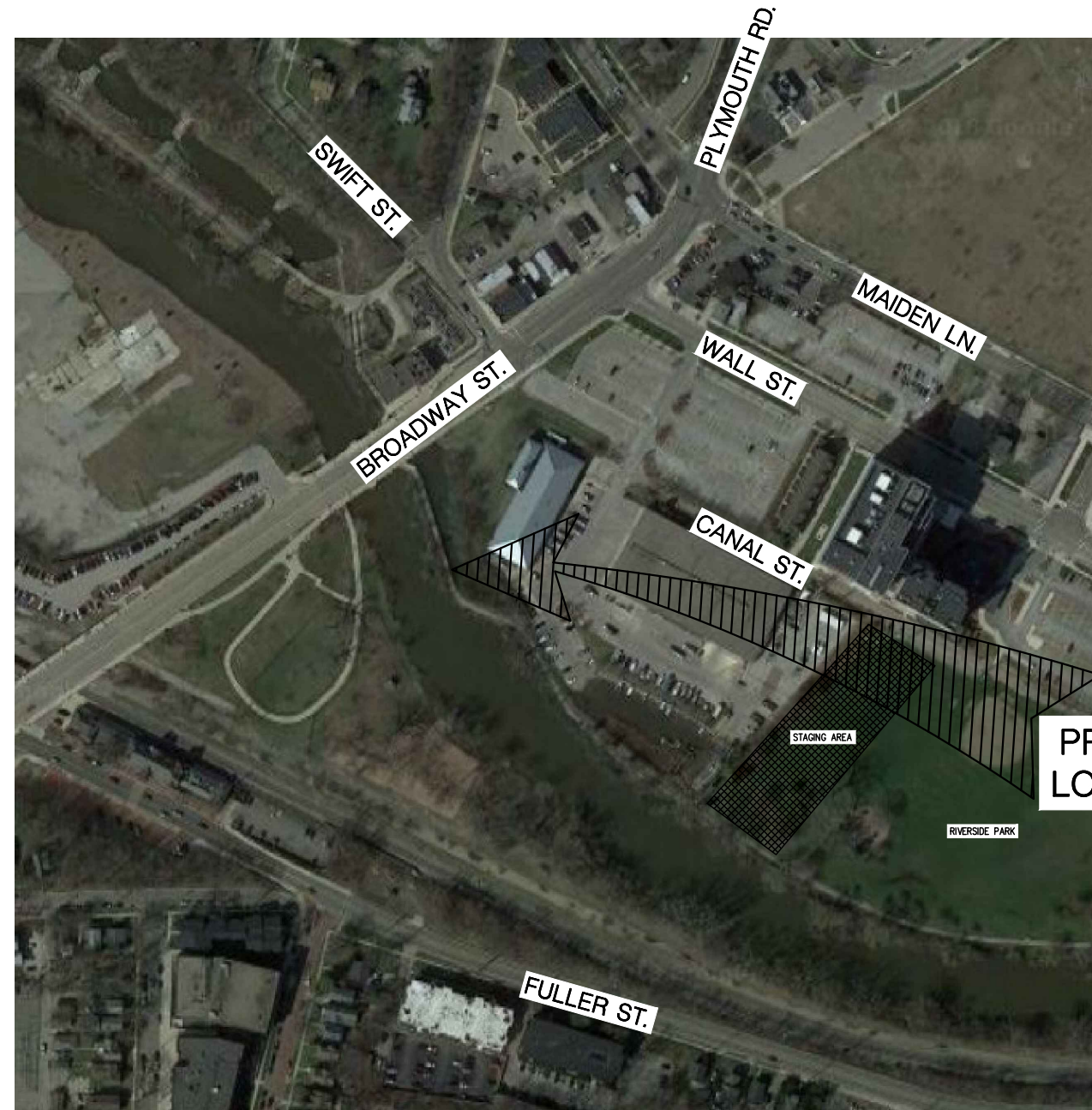


CONSTRUCTION PLANS FOR CITY OF ANN ARBOR PARKS AND RECREATION RIVERSIDE PARK BOARDWALK REPLACEMENT CITY OF ANN ARBOR WASHTENAW COUNTY, MICHIGAN



M.D.O.T. STANDARD PLANS

R-96-E SOIL EROSION & SEDIMENTATION CONTROL MEASURES
R-100-H SEEDING AND TREE PLANTING



PROJECT DESCRIPTION
PROJECT INCLUDES THE REMOVAL AND REPLACEMENT OF THE EXISTING WOODEN BOARDWALK.

SHEET INDEX

- 1 - COVER SHEET
- 2 - ALIGNMENT SHEET
- 3 - GENERAL PLAN OF SITE
- 4 - BOARDWALK DETAILS
- 5 - BOARDWALK DETAILS
- 6 - DETOUR SHEET
- 7 - MISCELLANEOUS NOTE SHEET

LOCATION MAP

SCALE: 1"=200'



PROPERTY ADDRESS

CITY OF ANN ARBOR
RIVERSIDE PARK
1000 CANAL ST.
ANN ARBOR, MI 48105

OWNER INFORMATION

CITY OF ANN ARBOR PARKS AND RECREATION DEPARTMENT
301 E. HURON STREET
ANN ARBOR, MI 48104



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PLAN SUBMITTALS AND CHANGES

BIDDING DOCUMENTS	
DATE	DESCRIPTION
06/16/18	ISSUED FOR BIDS

REV:

SHT# 1 OF 7
JOB No: 18C0060

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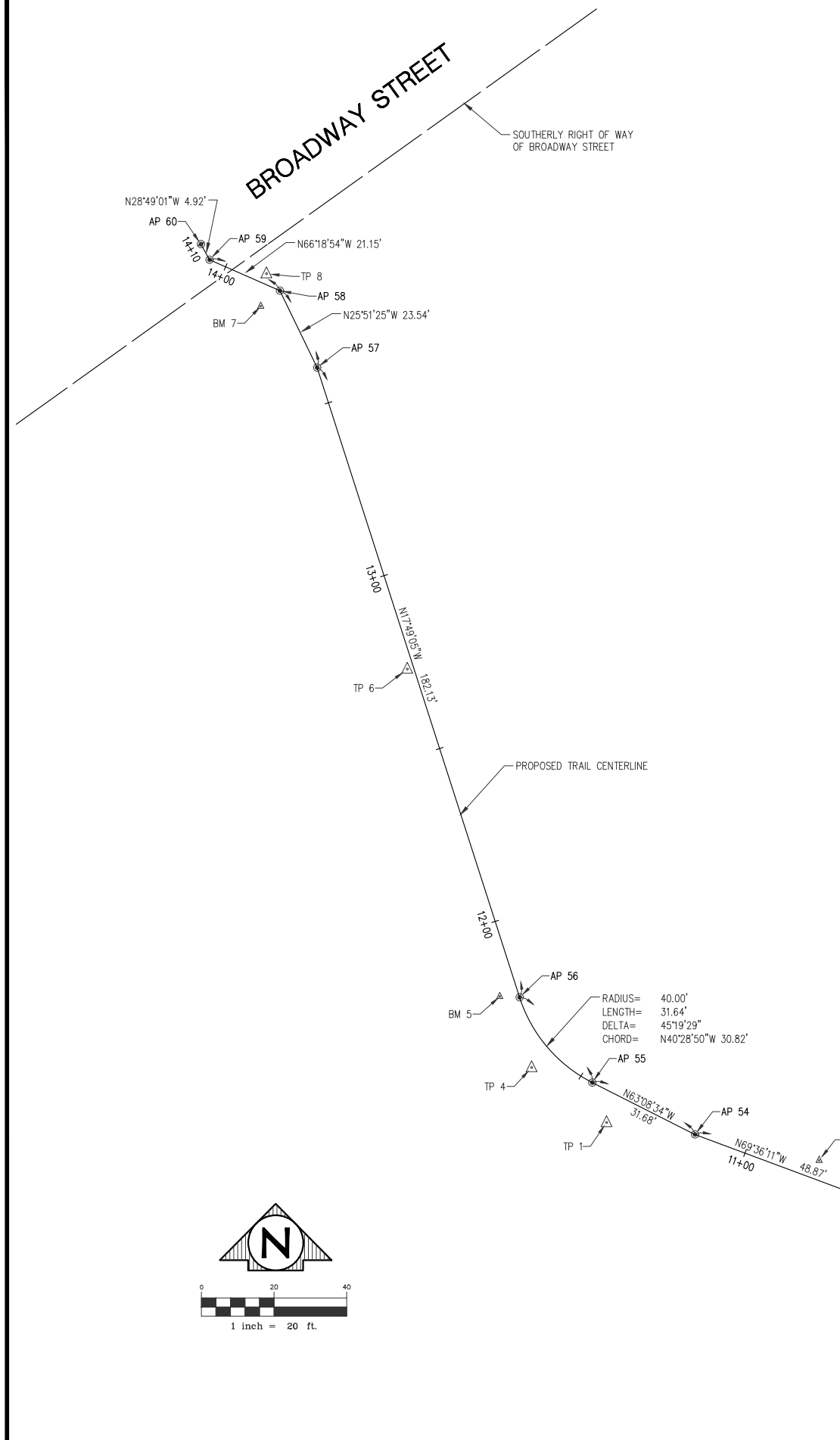


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540 S. Saginaw St., Suite 200
Flint, MI 48502

PLAN DATE: JUNE 2018
PROJECT MGR: DRS
REVIEWER: DRS
SCALE: 1" = 200'

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PREPARED FOR
**CITY OF ANN ARBOR
RIVERSIDE PARK BOARDWALK**
ANN ARBOR, WASHTENAW COUNTY, MICHIGAN
COVER SHEET



PROPOSED TRAIL ALIGNMENT

BENCHMARK DATA TABLE

NUMBER	NORTHING	EASTING	ELEVATION	STATION	OFFSET	DESCRIPTION
BM 2	287756	13293044	763.70	10+80.17	5.24' RT	SET CHISELED SQUARE ON THE NORTHWEST CORNER OF CONCRETE SLAB FOR PARK BENCH, 27'± WESTERLY OF FENCE LINE
BM 5	287801	13292956	763.71	11+79.93	5.11' LT	SET CHISELED "X" ON THE TOP OF SHEET PILE CAP, 1'± NORTH OF THE SOUTH END OF SHEET PILE
BM 7	287991	13292890	763.16	13+86.81	6.03' LT	SET CHISELED SQUARE ON THE SOUTHWEST CORNER OF CONCRETE WALK AT NORTH END OF BOARDWALK

TRAVERSE POINT DATA TABLE

NUMBER	NORTHING	EASTING	STATION	OFFSET	DESCRIPTION
TP 1	287766.6060	13292985.6630	11+37.92	8.07' LT	SET ROD WITH ROWE TRAVERSE CAP, 9'± NORTH OF CENTERLINE OF NORTHERLY CMP CULVERT & 3.5'± WEST OF WEST EDGE OF ASPHALT TRAIL
TP 3	287712.2460	13293097.9570	10+12.15	5.86' RT	SET ROD WITH ROWE TRAVERSE CAP, 39'± SOUTH OF METAL LIGHT POLE AT BEND IN TRAIL & 2'± EAST OF EAST EDGE OF ASPHALT TRAIL
TP 4	287781.7580	13292965.0610	11+60.99	6.95' LT	SET ROD WITH ROWE TRAVERSE CAP, 20'± SOUTHWEST OF SOUTH END OF BOARDWALK & 3'± WEST OF WEST EDGE OF ASPHALT TRAIL
TP 6	287891.4500	13292930.8100	12+73.54	1.80' LT	SET PK NAIL IN BOARDWALK, 94'± NORTH OF SOUTH END OF BOARDWALK & 3'± EAST OF SHEET PILE
TP 8	288000.3200	13292892.0400	13+88.97	2.79' RT	SET PK NAIL IN CONCRETE WALK, 7'± NORTH OF BOARDWALK & 4'± EAST OF WEST EDGE OF BOARDWALK EXTENDED TO THE NORTH

ALIGNMENT POINT DATA TABLE

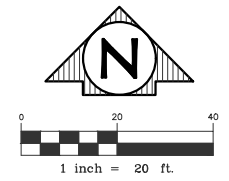
NUMBER	NORTHING	EASTING	STATION	OFFSET	DESCRIPTION
AP 51	287698.7790	13293098.7620	10+00.00	0.00' RT	POINT OF BEGINNING OF TRAIL ALIGNMENT
AP 52	287719.3065	13293087.2962	10+23.51	0.00' RT	POINT OF CURVATURE OF TRAIL ALIGNMENT
AP 53	287746.2860	13293055.8250	10+65.84	0.00' RT	POINT OF TANGENCY OF TRAIL ALIGNMENT
AP 54	287763.3190	13293010.0171	11+14.71	0.00' RT	POINT OF INTERSECTION OF TRAIL ALIGNMENT
AP 55	287777.6312	13292981.7541	11+46.39	0.00' RT	POINT OF CURVATURE OF TRAIL ALIGNMENT
AP 56	287801.0767	13292961.7435	11+78.03	0.00' RT	POINT OF TANGENCY OF TRAIL ALIGNMENT
AP 57	287974.4665	13292906.0137	13+60.16	0.00' RT	POINT OF INTERSECTION OF TRAIL ALIGNMENT
AP 58	287995.6514	13292895.7464	13+83.70	0.00' RT	POINT OF INTERSECTION OF TRAIL ALIGNMENT
AP 59	288004.1475	13292876.3780	14+04.85	0.00' RT	POINT OF INTERSECTION OF TRAIL ALIGNMENT
AP 60	288008.4555	13292874.0080	14+09.77	0.00' RT	POINT OF ENDING OF TRAIL ALIGNMENT

LEGEND

- ▲ BENCHMARK
- ALIGNMENT POINT
- △ TRAVERSE POINT
- ⊙ SECTION CORNER

NOTES:

VERTICAL DATUM IS NAVD88
 HORIZONTAL DATUM IS MICHIGAN STATE PLANE COORDINATE SYSTEM, SOUTH ZONE NAD83 (2011)
 UNITS ARE INTERNATIONAL FEET.



DATE OF PLAN: JUNE 2018

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BIDDING DOCUMENTS	
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CITY OF ANN ARBOR
ALIGNMENT SHEET
 RIVERSIDE PARK BOARDWALK
 OVER THE HURON RIVER

APPROVED _____

MDOT UNIT	CONSULT UNIT	DATE
DRAWN BY	JUL	06/18
CHECKED BY	ANH	06/18
SHEET	2	OF 7
STR NO.	----	

RE: Projects\1800080\Drawings\Construction Drawings\1800080-CONTR01.dwg
 PLOTED: 6/18/2018 1:34 PM

EXISTING STRUCTURE:

THE EXISTING STRUCTURE IS A WOODEN PLANK PEDESTRIAN BOARDWALK RESTING ON STEEL PILES. THERE ARE CONCRETE ABUTMENTS AT EACH END OF THE BOARDWALK. THE BOARDWALK HAS A LENGTH OF 200'± AND A WIDTH OF 10'±. THE EXISTING STRUCTURE IS IN POOR CONDITION. REMOVAL OF THE STRUCTURE IS PAID FOR AS "STRUCTURES, REM".

GENERAL PLAN OF SITE NOTES:

THE WORK COVERED BY THESE PLANS INCLUDES REMOVAL OF THE EXISTING BOARDWALK, CONSTRUCTION OF THE NEW BOARDWALK, CLOSING THE MULTI-USE TRAIL, AND RELATED APPROACH WORK TO THE LIMITS SHOWN.

THE CONTRACTOR SHALL LOCATE ALL ACTIVE UNDERGROUND UTILITIES PRIOR TO STARTING WORK AND SHALL CONDUCT THEIR OPERATIONS IN SUCH A MANNER AS TO ENSURE THAT THOSE UTILITIES NOT REQUIRING RELOCATION WILL NOT BE DISTURBED.

THE GROUND ADJACENT TO THE STRUCTURE SHALL BE GRADED BY THE CONTRACTOR TO PROVIDE DRAINAGE.

RIVERSIDE PARK PEDESTRIAN TRAIL IS TO BE CLOSED DURING CONSTRUCTION.

PLAN ELEVATIONS REFER TO NAVD88 DATUM.

THE WATER LEVEL IS SUBJECT TO CHANGE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING A DETERMINATION OF WATER LEVELS THAT MAY EXIST DURING CONSTRUCTION.

MEASURES SHALL BE TAKEN TO PREVENT DEBRIS FROM FALLING FROM THE BOARDWALK INTO THE RIVER. IF DEBRIS FALLS INTO THE RIVER, IT SHALL BE REMOVED IMMEDIATELY.

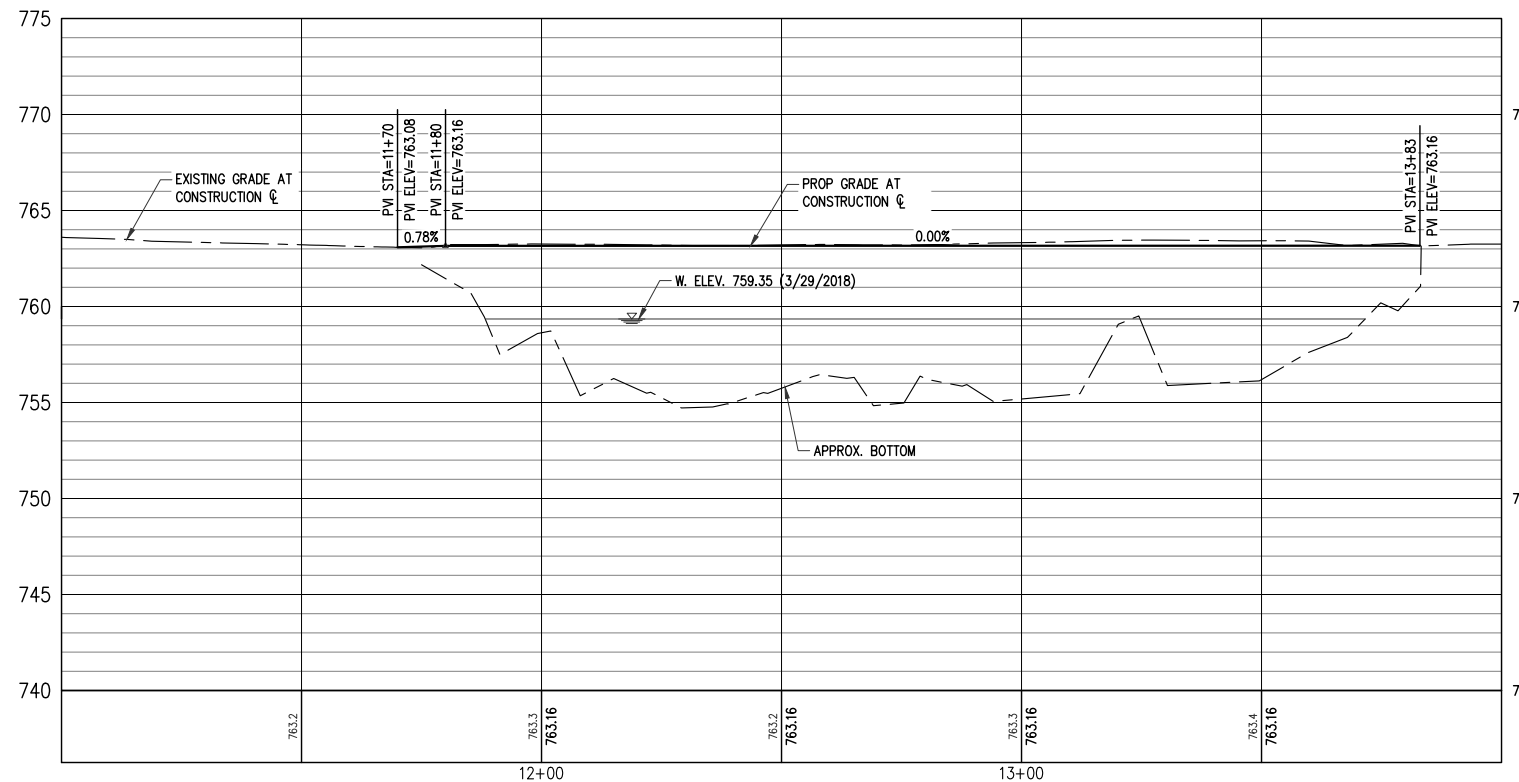
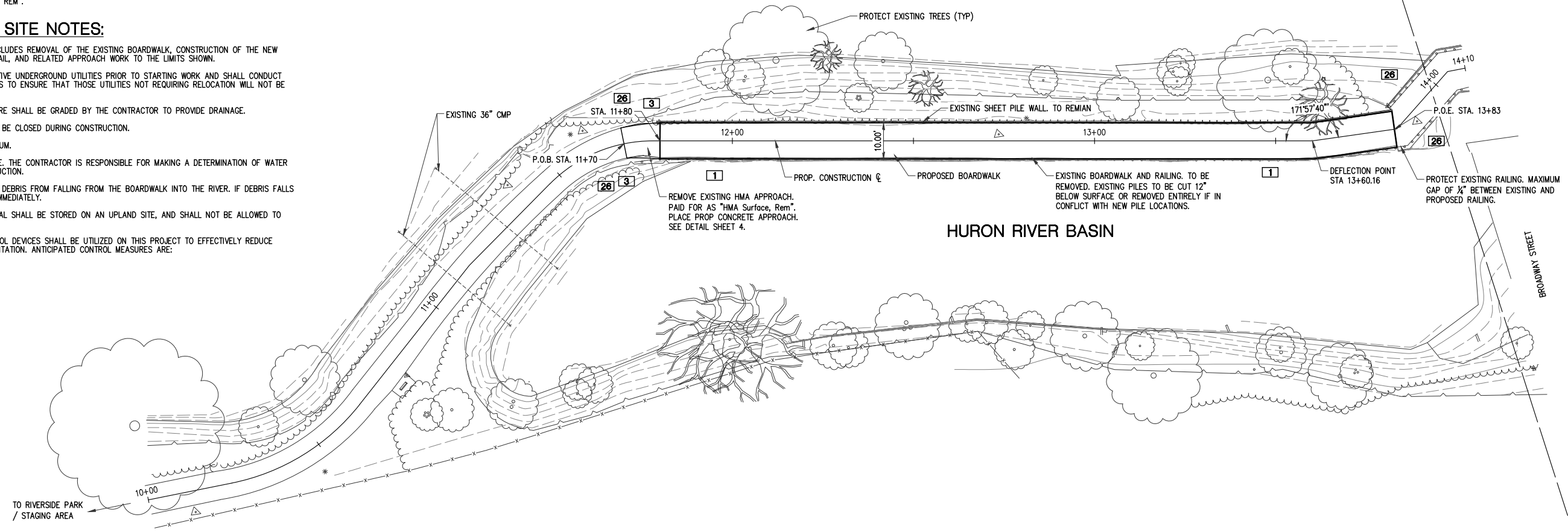
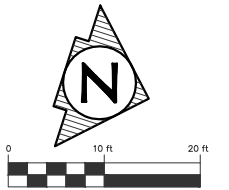
TEMPORARILY STORED EXCAVATED MATERIAL SHALL BE STORED ON AN UPLAND SITE, AND SHALL NOT BE ALLOWED TO ERODE INTO THE WATERCOURSE.

SOIL EROSION AND SEDIMENTATION CONTROL DEVICES SHALL BE UTILIZED ON THIS PROJECT TO EFFECTIVELY REDUCE ACCELERATED SOIL EROSION AND SEDIMENTATION. ANTICIPATED CONTROL MEASURES ARE:

1 3 26

HURON RIVER

FLOW ←



PLAN SUBMITTALS AND CHANGES

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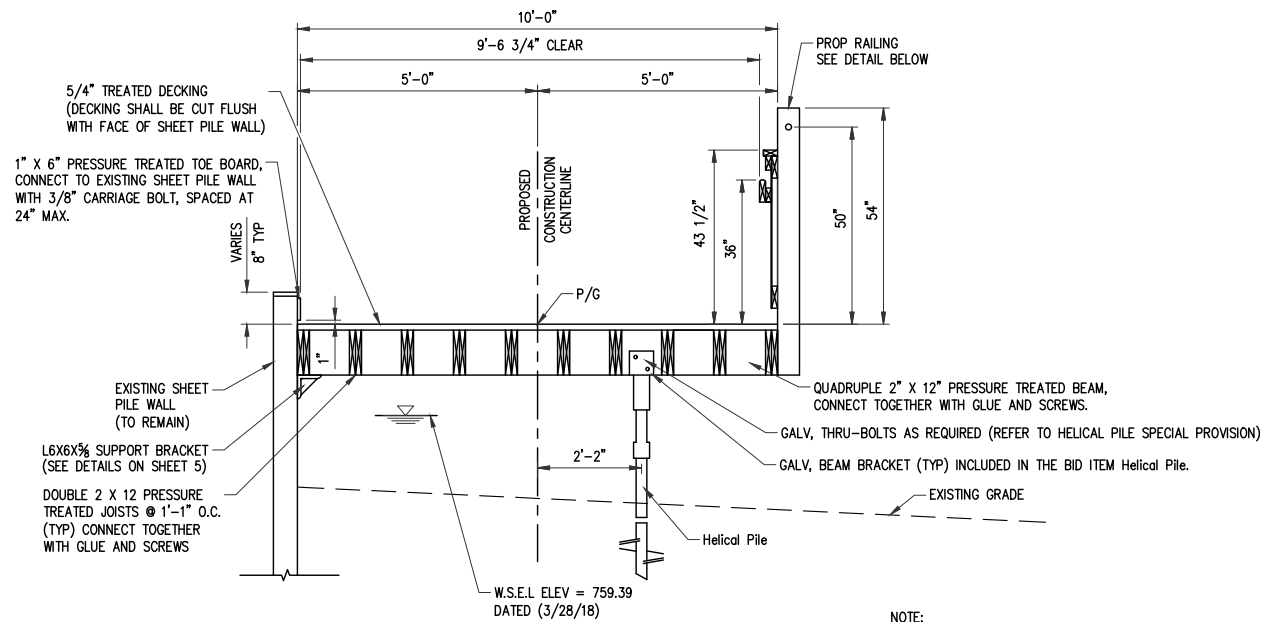
CITY OF ANN ARBOR
GENERAL PLAN OF SITE
RIVERSIDE PARK BOARDWALK
OVER THE HURON RIVER

APPROVED _____

MDOT UNIT	CONSULT UNIT	DATE

SHEET 3 OF 7
STR NO. _____

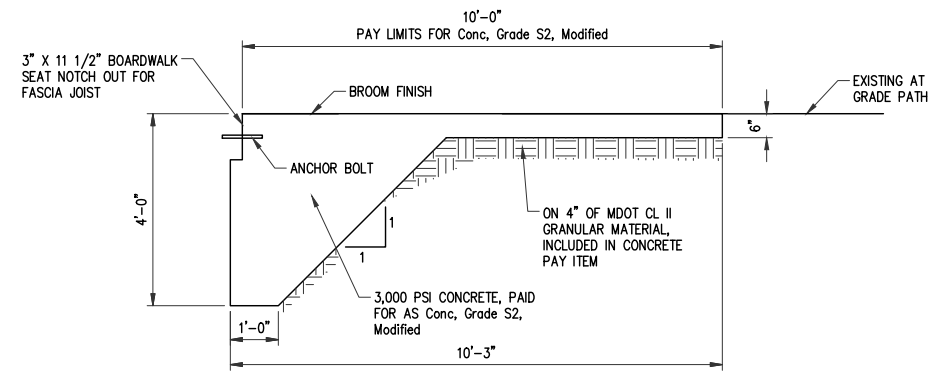
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PROPOSED TYPICAL BOARDWALK SECTION

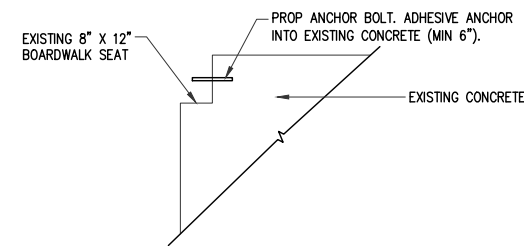
SCALE: 1/2" = 1'-0"

NOTE:
ALL WORK AND MATERIALS REQUIRED TO INSTALL BOARDWALK, AS SHOWN, EXCEPT Helical Pile, IS INCLUDED IN Structure, Timber, Boardwalk PAY ITEM BY THE FOOT AND NOT PAID FOR SEPARATE.



CONCRETE APPROACH DETAIL

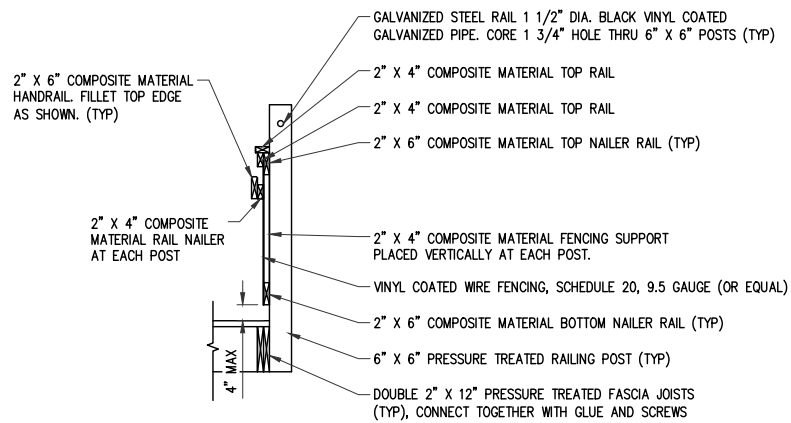
SCALE: 1/2" = 1'-0"
TO APPLY: STA 11+70 (POB) TO STA 11+80



EXISTING CONCRETE APPROACH DETAIL

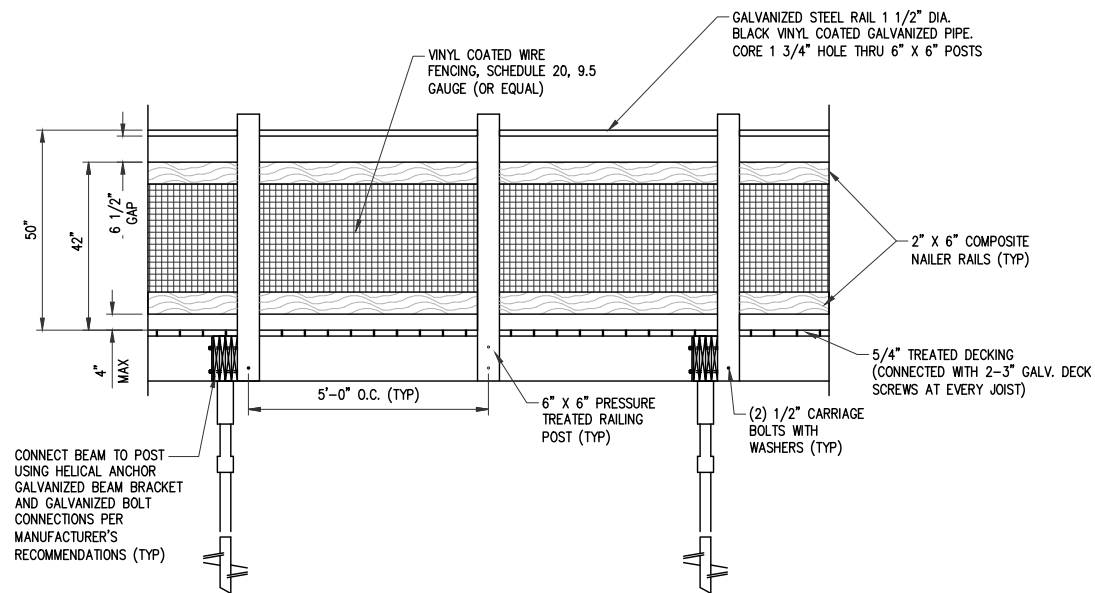
SCALE: 1/2" = 1'-0"
TO APPLY: STA 13+83 (POE)

- NOTES:
1. ANCHOR DOUBLE 2" X 12" BEAM TO CONCRETE USING 3/4" X 12" THREADED ANCHOR BOLTS 2' O.C. AVOIDING JOIST LOCATIONS. (INCLUDED IN Structure, Timber, Boardwalk PAY ITEM AND NOT PAID FOR SEPARATE.)
 2. PLACE 1/4" X 10" X 8" DIAMOND TREATED PLATE STEEL BENT TO 10 DEGREE ANGLE AT CENTER. ATTACHED WITH 1/2" X 3" LAG BOLTS 12" O.C. ON BOARDWALK SIDE ONLY (INCLUDED IN Structure, Timber, Boardwalk PAY ITEM AND NOT PAID FOR SEPARATE.)
 3. PAID FOR BY THE CYD OF CONCRETE AS Conc, Grade S2, Modified.



PROPOSED TYPICAL RAILING DETAIL

SCALE: 1/2" = 1'-0"



BOARDWALK RAILING ELEVATION

SCALE: 1/2" = 1'-0"

BOARDWALK NOTES:

THE DESIGN OF THIS STRUCTURE IS BASED ON CURRENT AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, PEDESTRIAN LOADING OF 90 PSF AND A MAINTENANCE VEHICLE H10 LOADING, NOT ACTING CONCURRENTLY.

ALL WORK AND MATERIALS REQUIRED TO INSTALL TIMBER BOARDWALK WILL BE PAID FOR AS Structure, Timber, Boardwalk.

ALL LUMBER MATERIALS SHALL BE PRESSURE TREATED WITH AN APPROVED PROCESS AND PRESERVATION IN ACCORDANCE WITH AMERICAN WOOD PROTECTION ASSOCIATION STANDARDS. SUITABLE FOR GROUND CONTACT.

ALL LUMBER SHALL BE IDENTIFIED BY THE GRADE MARK OF OR CERTIFICATE OF INSPECTING AGENCY.

ALL LUMBER SHALL BE SOUTHERN YELLOW PINE, GRADE OF LUMBER AS INDICATED IN THE SPECIAL PROVISIONS WITH PRESERVATION TREATMENT WITH RETENTION LEVEL OF 0.4 (LB/CU.FT.) OF ACQ-B.

ALL SCREWS, BOLTS, AND NAILS SHALL BE HOT-DIPPED GALVANIZED STEEL.

ALL METAL HARDWARE INCLUDING JOIST HANGERS SHALL BE HOT-DIPPED GALVANIZED STEEL.

ALL NAILS SHALL MEET THE REQUIREMENTS OF ASTM F-1667. WOOD SCREWS SHALL MEET THE REQUIREMENTS OF ANSI/ASME B18.2.1. THREADED NAILS SHALL INCLUDE HELICAL (SPIRAL) AND ANNULAR (RING-SHRANK) NAILS.

VERTICAL HELICAL PILES SHALL BE INSTALLED TO A MINIMUM ULTIMATE PILE CAPACITY OF 22 KIPS.

DESIGN HELICAL PILE SYSTEM FOR A DESIGN LIFE OF 50 YEARS.

PLAN SUBMITTALS AND CHANGES

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CITY OF ANN ARBOR

BOARDWALK DETAILS

RIVERSIDE PARK BOARDWALK OVER THE HURON RIVER

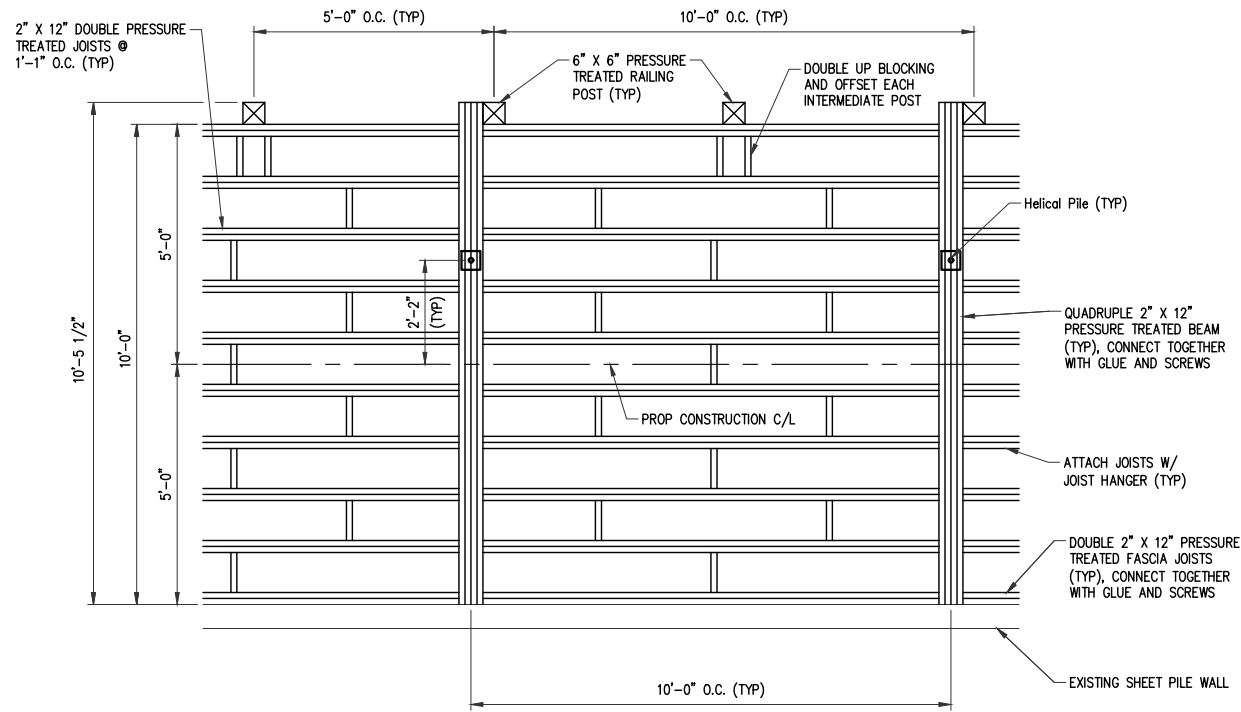
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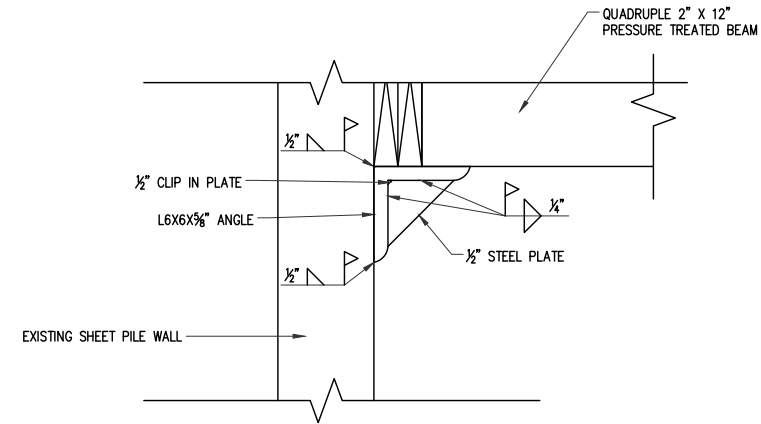
SHEET 4 OF 7

STR NO. _____

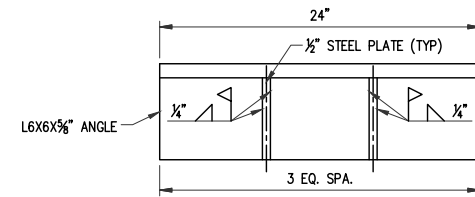
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BOARDWALK FRAMING PLAN
SCALE: 1/2" = 1'-0"

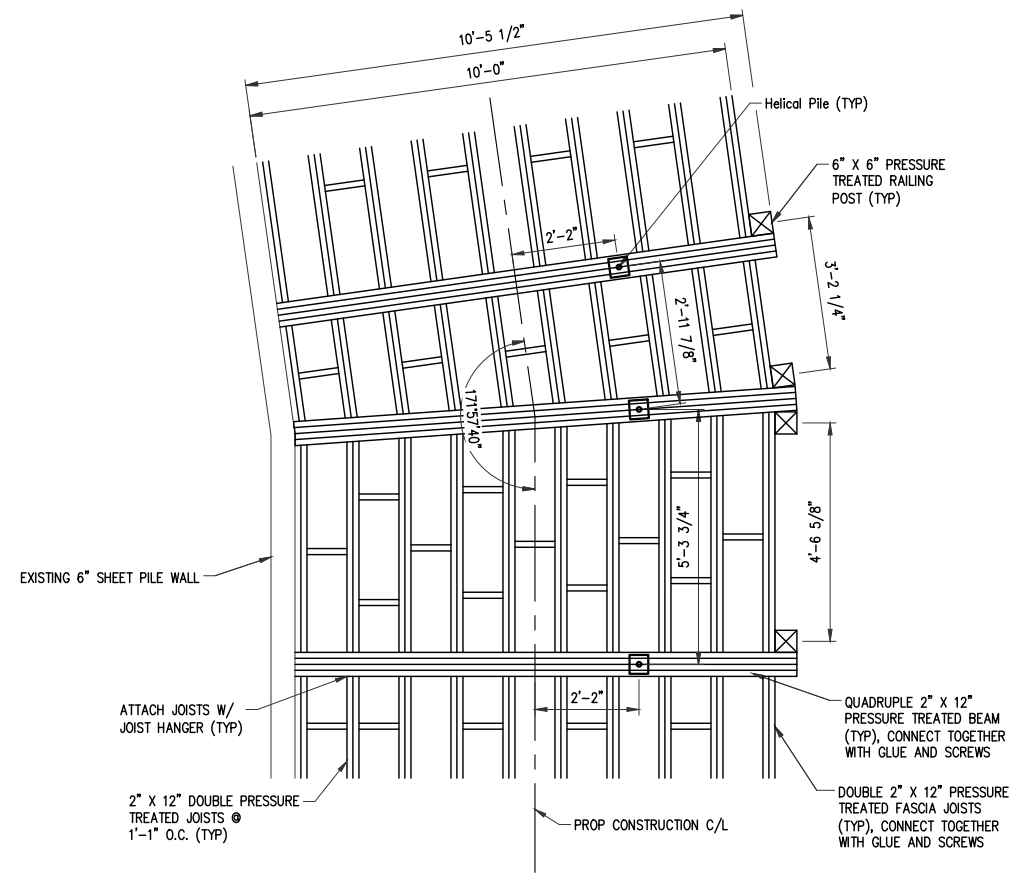


BOARDWALK SUPPORT DETAIL
SCALE: 1/4" = 1"

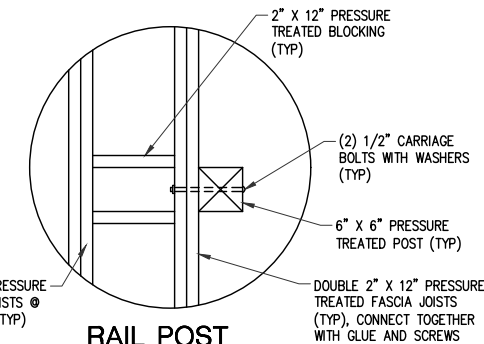


BOARDWALK SUPPORT BRACKET
SCALE: 1/4" = 1"

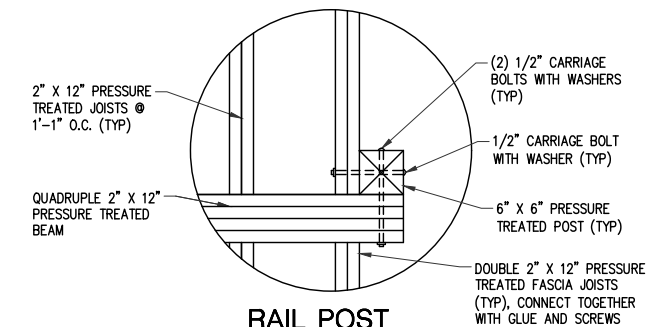
- NOTES:
1. STRUCTURAL STEEL MEMBERS TO BE A36 STEEL OR STRONGER.
 2. MINIMUM STRENGTH OF WELDING MATERIAL TO BE 70 KSI
 3. COST FOR STEEL SUPPORT BRACKETS AND WELDING TO BE INCLUDED IN PAY ITEM Structural Steel, Mixed.
 4. GRIND SHEET PILING SURFACE UNTIL ALL GRIME AND CORROSION IS REMOVED AND BARE STEEL IS VISIBLE. REMOVE ALL RUST, DIRT, AND MILL SCALE FROM ALL STEEL SURFACES BEFORE WELDING.
 5. A TOTAL MINIMUM WELD LENGTH OF 8" ALONG BOTH TOP AND BOTTOM OF STEEL BRACKET MUST BE WELDED TO SHEET PILING.



BOARDWALK TURN FRAMING PLAN
SCALE: 1/2" = 1'-0"



RAIL POST CONNECTION DETAIL
SCALE: 1" = 1'-0"



RAIL POST CONNECTION DETAIL - AT BEAM
SCALE: 1" = 1'-0"



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CITY OF ANN ARBOR
BOARDWALK DETAILS







RIVERSIDE PARK BOARDWALK
OVER THE HURON RIVER

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MDOT UNIT	
CONSULT UNIT	DATE
DRAWN BY: JHL	06/18
CHECKED BY: ANH	06/18
SHEET 5 OF 7	
STR NO.	

Projects\160000\00\Drawings\SH-160000-DET.dwg 6/18/2018 1:34 PM

SIGN LEGEND

- ①  TYPE II - 4 FT PEDESTRIAN BARRICADE - DOUBLE SIDED
- ②  R9-9 (30" X 18")
- ③  M4-9aL (30" X 24")
- ④  M4-9aR (30" X 24")
- ⑤  M4-9a (30" X 30")
- ⑥  M4-8a (24" X 18")



TRAFFIC CONTROL NOTES

ALL MEASURES REQUIRED FOR TRAFFIC CONTROL DURING CONSTRUCTION SHALL CONFORM WITH THE 2011 EDITION OF THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (M.M.U.T.C.D.), AND THE M.D.O.T. 2012 STANDARD SPECIFICATIONS FOR CONSTRUCTION, SECTION 812, UNLESS MODIFIED BY THIS PLAN OR DIRECTED OTHERWISE BY THE ENGINEER.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING, PLACING, MAINTAINING, AND REMOVING ALL TRAFFIC CONTROL DEVICES.

ALL SIGNS SHALL BE TYPE B - TEMPORARY WITH A 7 FOOT BOTTOM HEIGHT. SIGNS SHALL BE MOUNTED ON SUITABLE, DRIVEN STEEL SUPPORT POSTS THAT WILL PROVIDE THE 7 FOOT BOTTOM HEIGHT. COST FOR SIGN POSTS SHALL BE INCLUDED IN THE "Sign, Type B, Temp, Prismatic" PAY ITEM.

PRIOR TO DRIVING POSTS FOR SIGNS, THE CONTRACTOR SHALL CALL MISS DIG (1-800-482-7171 OR 811) OR VISIT www.missdig.org FOR THE LOCATIONS OF ALL UNDERGROUND UTILITIES, THREE WORKING DAYS PRIOR TO STARTING WORK.

ALL BARRICADES AND TEMPORARY SIGNS SHALL BE PROPERLY WEIGHTED. ANY BARRICADES OR TEMPORARY SIGNS DAMAGED BY THE CONTRACTOR OR DUE TO IMPROPER USE SHALL BE REPLACED PROMPTLY AT THE CONTRACTOR'S EXPENSE.

MAINTAINING TRAFFIC QUANTITIES

SYMBOL	ITEM	QUANTITY	SIGNS	
			SIGN AREA SFT	TOTAL AREA SFT
2	R9-9	5	3.75	19
3	M4-9aL	3	5	15
4	M4-9aR	4	5	20
5	M4-9a	2	5	10
6	M4-8a	2	5	10
SIGN, TYPE B, TEMP, PRISMATIC			74 SFT	
PEDESTRIAN TYPE II BARRICADE, TEMP			7 EA	



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CITY OF ANN ARBOR
DETOUR SHEET
RIVERSIDE PARK BOARDWALK
OVER THE HURON RIVER

APPROVED _____

MDOT UNIT	
CONSULT UNIT	
DRAWN BY	JUL 6/1/18
CHECKED BY	XXX X
SHEET	6 OF 7
STR NO.	

Projects\180308\01\Construction Drawings\SH-180308-NT.dwg PLOTED: 6/19/2018 1:35 PM



CONSTRUCTION AREA STAGING NOTES

CONTRACTOR SHALL STAGE CONSTRUCTION OPERATIONS IN RIVERSIDE PARK.
 CONTRACTOR MAY USE 2 PARKING SPACES ALONG CANAL STREET.
 MATERIAL STORAGE SHALL BE NEAR SOCCER GOAL STORAGE AREA.
 CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS RESULTING FROM CONSTRUCTION OPERATIONS, INCLUDING FILLING RUTS AND HOLES, IN RIVERSIDE PARK. NOT PAID FOR SEPARATELY, INCLUDED IN OTHER PAY ITEMS.

STAGING AREA

PROJECT QUANTITIES		
DESCRIPTION	UNITS	QUANTITY
Mobilization, Max (\$18,000)	LSUM	1
Structures, Rem	LSUM	1
Embankment, CIP	Cyd	2
Excavation, Earth	Cyd	6
Erosion Control, Silt Fence	Ft	250
Erosion Control, Turbidity Curtain, Deep	Ft	250
HMA Surface, Rem	Syd	11
Conc, Grade S2, Modified	Cyd	6
Structural Steel, Mixed, Erect	Lb	1017
Structural Steel, Mixed, Furn and Fab	Lb	1017
Structure, Timber, Boardwalk	Ft	203
Adhesive Anchoring of Horizontal Bar, 3/4 inch	Ea	5
Sign, Type B, Temp, Prismatic, Furn	Sft	74
Sign, Type B, Temp, Prismatic, Oper	Sft	74
Pedestrian Type II Barricade, Temp	Ea	7
Slope Restoration, Modified	LSUM	1
Helical Pile	Ea	21
Helical Pile, Load Test	Ea	1
Helical Pile Equipment, Furn	LSUM	1



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CITY OF ANN ARBOR
MISCELLANEOUS NOTE SHEET
 RIVERSIDE PARK BOARDWALK
 OVER THE HURON RIVER

MDOT UNIT	
CONSULT UNIT	
DRAWN BY	JUL 06/18
CHECKED BY	ANH 06/18
SHEET	7 OF 7
STR NO.	----

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Projects\180080\Draw\Construction Drawings\SH-180080-N1.dwg
 PLOT: 06/18/2018 1:38 PM