

MICHIGAN DEPARTMENT
OF
NATURAL RESOURCES

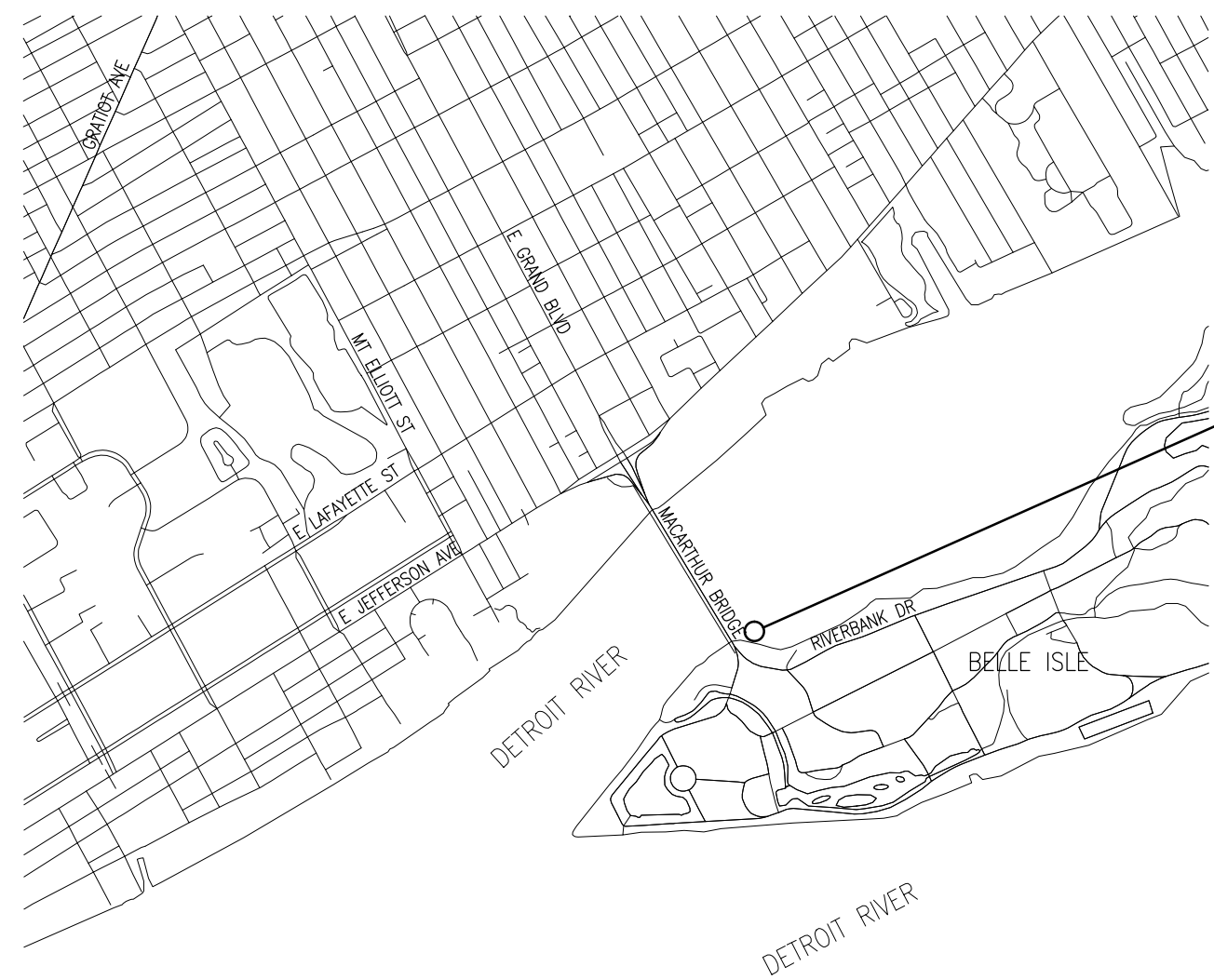
PARKS AND RECREATION DIVISION

FILE NO: 75/15224.MNB INDEX NO: 59715

PLANS OF PIER RENOVATIONS AND SITE IMPROVEMENTS

BELLE ISLE BOAT CLUB FISHING ACCESS

T2S, R12E
WAYNE COUNTY, MICHIGAN



PROJECT
LOCATION

NORTHWEST DESIGN GROUP, LLC
PROFESSIONAL IN RESPONSIBLE
CHARGE OF THE PROJECT

SHEETS: ALL

NAME:
AMANDA H. PORATH, PE

SHEET INDEX

- G-001 COVER
- G-002 LEGEND
- G-003 NOTES
- C-101 SITE REMOVAL
- C-102 SITE LAYOUT & LANDSCAPE
- C-103 SITE GRADING
- C-104 PARKING LOT PLANS
- C-401 SOIL BORINGS
- C-402 SOIL BORINGS
- C-501 SITE DETAILS
- S-101 PIER REMOVAL
- S-102 PIER STRUCTURE & ELECTRICAL PLAN
- S-103 BRIDGE PLAN & SECTION
- S-104 PLAN OF BRIDGE DECK
- S-501 PIER & BRIDGE REMOVAL SECTION
- S-502 BRIDGE ELEVATION & SLAB/RAILING PLAN
- S-503 PIER DETAILS
- S-504 PIER DETAILS
- S-505 PIER DETAILS
- S-506 BRIDGE ABUTMENT DETAILS
- S-507 BRIDGE BEAM DETAILS
- S-508 BRIDGE BEAM DETAILS
- S-509 BRIDGE RAIL DETAILS
- S-510 BRIDGE RAIL DETAILS
- S-511 BRIDGE APPROACH DETAILS
- E-101 SITE ELECTRICAL PLAN
- E-501 ELECTRICAL DETAILS

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BELLE ISLE BOAT CLUB FISHING ACCESS

WAYNE COUNTY, MICHIGAN
FILE NO: 75/15224.MNB INDEX NO: 59715

PREPARED FOR: MICHIGAN DEPARTMENT OF TECHNOLOGY,
MANAGEMENT AND BUDGET/MICHIGAN DEPARTMENT
OF NATURAL RESOURCES

PP	12.21.16	OWNER REVIEW
MARK	DATE	ISSUED FOR
PROJECT NO	N3055.180	
CADD FILE	G-001 COVER	
MANAGER	AHP	
DESIGNED BY	AHP	
DRAWN BY	SMM	
CHECKED BY	AHP	

SHEET TITLE

COVER

G-001



STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ROBERT C. HALL, RA, NCARB, DIRECTOR

===== 12" SAN =====	EX SANITARY SEWER
===== 6" FM =====	EX SANITARY SEWER FORCEMAIN
===== 12" STM =====	EX STORM SEWER
===== 24" CULV =====	EX CULVERT
----- U/G-E -----	EX UNDERGROUND ELECTRIC LINE
----- O/H-E -----	EX OVERHEAD ELECTRIC LINE
----- T -----	EX TELEPHONE LINE
----- CATV -----	EX CATV LINE
----- FO -----	EX FIBEROPTIC LINE
----- 10" W -----	EX WATER LINE
----- 4" G -----	EX GAS LINE
----- 12" OIL -----	EX OIL LINE
===== 12" SAN =====	PROP SANITARY SEWER
===== 6" FM =====	PROP SANITARY SEWER FORCEMAIN
===== 12" STM =====	PROP STORM SEWER
===== 24" CULV =====	PROP CULVERT
===== 10" W =====	PROP WATER
----- E -----	PROP ELECTRIC LINE
----- 6" G -----	PROP GAS LINE
----- 3" DSP -----	PROP SUPPRESSION STANDPIPE LINE, DRY
----- A -----	PROP COMPRESSED AIR LINE
----- DIESEL -----	PROP DIESEL LINE
----- GASOLINE -----	PROP GASOLINE LINE

	EX CONTOUR LINE
	PROP CONTOUR LINE
	PROP UNDERWATER CONTOUR LINE
	PROP DREDGE LIMIT
	PROPERTY LINE
	GOVERNMENT LINE
	ROW LINE
	EX FENCE
	PROP FENCE
	EX TREE LINE
	PROP CLEARING/TREE LINE
	WETLANDS AREA
	EX DRAINAGE COURSE
	PROP DRAINAGE COURSE
	EDGE OF WATER
	RAILROAD
	EX GUARDRAIL
	PROP GUARDRAIL
	PROP SLOPE STAKE LINE

	EX MAILBOX
	EX SIGN
	FLAG POLE
	POST & DESC
	EX GROUND ELEVATION
	FINISH GRADE ELEVATION
	DRAINAGE DIRECTION
	PROP BARRIER FREE SYMBOL
	BENCHMARK
	HORIZONTAL CONTROL POINT
	FOUND PROPERTY CORNER
	FOUND R/W MARKER
	GOVERNMENT CORNER
	SOIL BORING
	MONITOR WELL

	EX RETAINING WALL & DESC
	EX SITE FURNISHINGS & DESC
	EX CONIFER TREE
	EX DECIDUOUS TREE
	PROP CONIFER TREE
	PROP DECIDUOUS TREE
	PROP ORNAMENTAL TREE
	PROP SHRUBS
	PROP MULCH BED
	PROP COBBLE STONE
	PROP STONE RETAINING WALL
	PROP SITE FURNISHINGS

	EX SAN MH		EX LIGHT POLE
	EX SAN SEWER CLEANOUT		EX UTILITY POLE
	EX STORM CB		EX GUY ANCHOR
	EX STORM SEWER (DRAINAGE) MH		EX ELECTRIC HAND HOLE
	EX CULVERT END SECTION		EX SQUARE HAND HOLE
	EX HEADWALL		EX UNDERGROUND MARKER
	EX WATER GATE VALVE		EX WATER CURB STOP BOX
	EX WATER METER		EX TELEPHONE MH
	EX WATER MH		EX ELECTRIC MH
	EX WATER WELL		EX ROUND HAND HOLE
	EX FIRE HYDRANT		EX ELECTRIC BOX
	EX IRRIGATION		EX ELECTRIC TRANSFORMER
MHXX	PROP SAN MH		CABLE TV PEDESTAL
	PROP SAN SEWER CLEANOUT		EX TELEPHONE PEDESTAL
CBXX	PROP STORM CB		EX GAS VALVE
YDXX	PROP YARD DRAIN		EX GAS LINE MARKER
MHXX	PROP STORM MH		FIBER OPTIC MARKER
	PROP CULVERT END SECTION		RAILROAD SIGNAL
	PROP HEADWALL		
	PROP WATER MH	HAZARDOUS OR FLAMMABLE MATERIAL	USED WITH UNDERGROUND GAS & ELECTRICAL LINES
	PROP WATER VALVE	CAUTION - CRITICAL UNDERGROUND UTILITY	USED WITH FIBER OPTIC, TELEPHONE LINES & WATER LINES
	PROP WATER RISER		
	PROP WATER METER		
	PROP WATER WELL		
	PROP FIRE HYDRANT		
	PROP FIRE DEPT CONNECTION INLET		
	PROP FIRE DEPT CONNECTION OUTLET		
	PROP REDUCER		
	PROP SEPTIC TANK		

=====	EX SURVEY C
=====	EX PAVT EDGE
=====	EX AGG EDGE
=====	EX CURB
=====	EX SIDEWALK
=====	EX PAVEMENT JOINT
=====	EX TRAIL
=====	PROP CONST C
=====	PROP PAVT EDGE
=====	PROP SHOULDER PAVED
=====	PROP AGG EDGE
=====	PROP CURB
=====	PROP SIDEWALK
=====	PROP PAVEMENT JOINT
=====	PROP TRAIL

	REMOVING PAVT, SIDEWALK
(R)	REMOVING
(REL-B/O)	RELOCATE-BY OTHERS
(R-B/O)	REMOVE-BY OTHERS
(A)	ABANDON
(S)	SAVE
(B)	BULKHEAD
	REMOVING CONC CURB

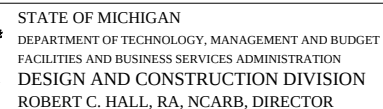
EX 1 STORY HOUSE
FFE 0.0

EX BUILDING, DESCRIPTION & FFE

BUILDING
FFE 0.0

PROP BUILDING, DESCRIPTION & FFE

	EX LIGHTING
	EX RECEPTACLE
	EX JUNCTION
	EX TRANSFORMER
	EX PANEL
	PROP LIGHTING
	PROP RECEPTACLE
	PROP JUNCTION
	PROP TRANSFORMER
	PROP PANEL
	PROP ELEC FEEDER CIRCUIT
	HOME RUN TO PANEL
	PROP 50A SITE
	PROP 100A SITE
	PROP PHOTOCCELL



WATNE COUNTY, MICHIGAN
FILE NO: 751/15224.MNB
INDEX NO: 59715

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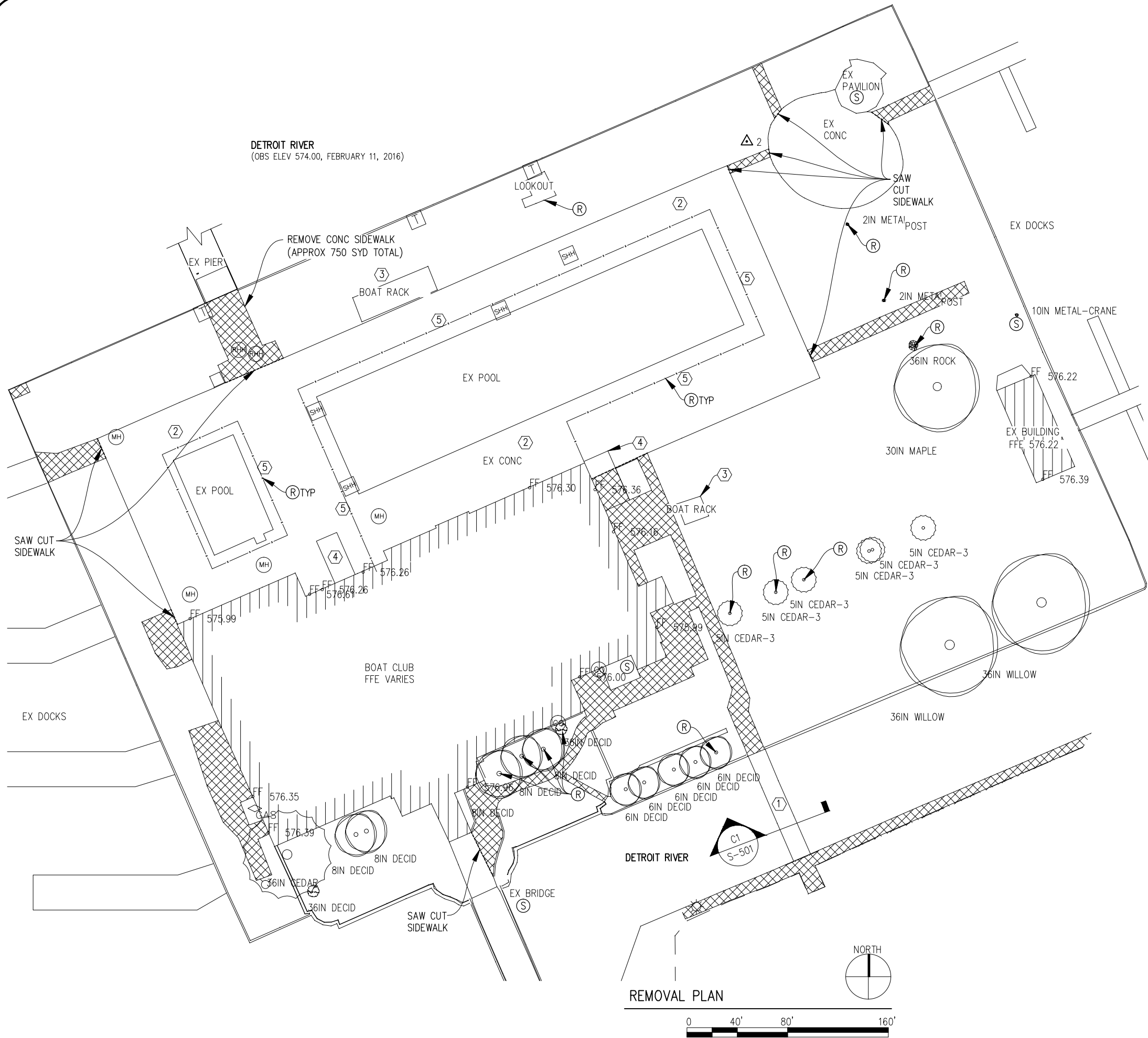
LEGEND

G-002

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ROBERT C. HALL, RA, NCARB, DIRECTOR

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\\NDGSRV1\LandProjects\Land Projects R2\N3055.180 BELLE ISLE\SHEETS\C-101 SITE REMOVAL.dwg 11/2/2016 10:50:48 AM



GENERAL SHEET NOTES

1. HORIZONTAL AND VERTICAL CONTROL IS BASED ON MICHIGAN STATE PLANE COORDINATE SYSTEM, SOUTH ZONE GEOID 12b.
2. TOPOGRAPHIC SURVEY PERFORMED BY NORTHWEST DESIGN GROUP, LLC., FEBRUARY 11, 2016.

SHEET KEYNOTES

1. REMOVE EXISTING STEEL BRIDGE AND PILES INCLUDING SECURITY FENCE AND GATE. (APPROX 334 SFT)
2. EXISTING ELEVATED SLAB TO BE PROTECTED.
3. EXISTING BOAT RACK TO BE RELOCATED BY OTHERS.
4. EXISTING STAIRS TO REMAIN AND BE PROTECTED.
5. EXISTING POOL SAFETY BARRIER TO BE REMOVED.

LISTING OF CONTROL POINTS

POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	308954.988	13494718.876	577.66	CP IR&NDG-CAP
2	309410.472	13494636.123	576.11	CP IR&NDG-CAP
3	309197.777	13495085.006	577.34	CP IR&NDG-CAP
101	308991.592	13494505.391	577.18	MP SPIKE

NOTE: POINTS 1, 3 & 101 NOT IN THIS VIEW

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SHEET TITLE		

SITE REMOVAL

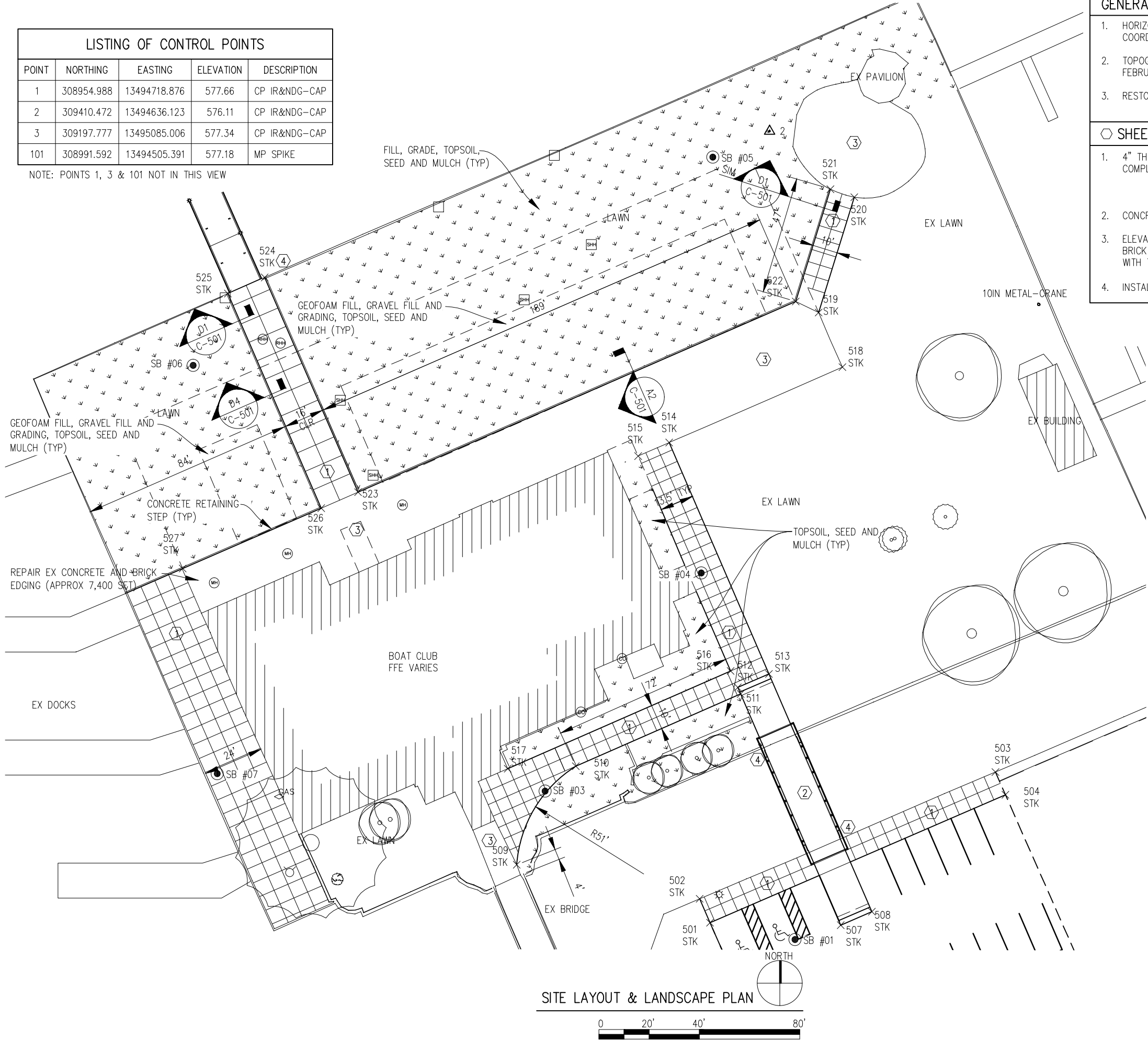
C-101



STATE OF MICHIGAN
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2. TOPOGRAPHIC SURVEY PERFORMED BY NORTHWEST DESIGN GROUP, LLC., FEBRUARY 11, 2016.
3. RESTORE AREAS WHERE EX SIDEWALK WAS REMOVED AND NOT REPLACED.

SHEET KEYNOTES

1. 4" TH. CONCRETE SIDEWALK. SAWCUT CONTROL JOINTS PROVIDE ADA COMPLIANT SIDEWALK:
RUNNING SLOPE $\leq 5\%$
CROSS SLOPE $\leq 1.5\%$
2. CONCRETE BRIDGE, SEE SHEET S-103.
3. ELEVATED CONCRETE SIDEWALK REPAIR AREA. POWERWASH. REMOVE EX BRICK AND FILL SPACES WITH CONCRETE. COAT ALL CONCRETE SURFACES WITH THOROCCOAT COLOR CHOSEN BY OWNER.
4. INSTALL 4" DIA JET FILTER AT A EA EXISTING WEEP HOLE IN SHEET PILE.

LISTING OF STAKE POINTS

POINT	NORTHING	EASTING	DESCRIPTION
500	309068.158	13494624.373	STK
501	309095.318	13494612.405	STK
502	309104.846	13494608.273	STK
503	309155.314	13494726.085	STK
504	309146.267	13494730.075	STK
505	308993.913	13494797.274	STK
506	308940.832	13494680.579	STK
507	309094.340	13494664.465	STK
508	309099.704	13494676.853	STK
509	309118.415	13494535.398	STK
510	309157.628	13494558.904	STK
511	309186.417	13494624.597	STK
512	309189.012	13494623.473	STK
513	309194.376	13494635.861	STK
514	309286.554	13494596.131	STK
515	309281.149	13494583.760	STK
516	309195.572	13494620.599	STK
517	309156.666	13494531.782	STK
518	309316.590	13494665.114	STK
519	309338.321	13494655.651	STK
520	309384.241	13494669.843	STK
521	309387.402	13494660.353	STK
522	309342.717	13494646.543	STK
523	309266.789	13494472.180	STK
524	309352.261	13494434.961	STK
525	309345.874	13494420.291	STK
526	309260.402	13494457.510	STK
527	309236.359	13494402.295	STK

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WAYNE COUNTY, MICHIGAN
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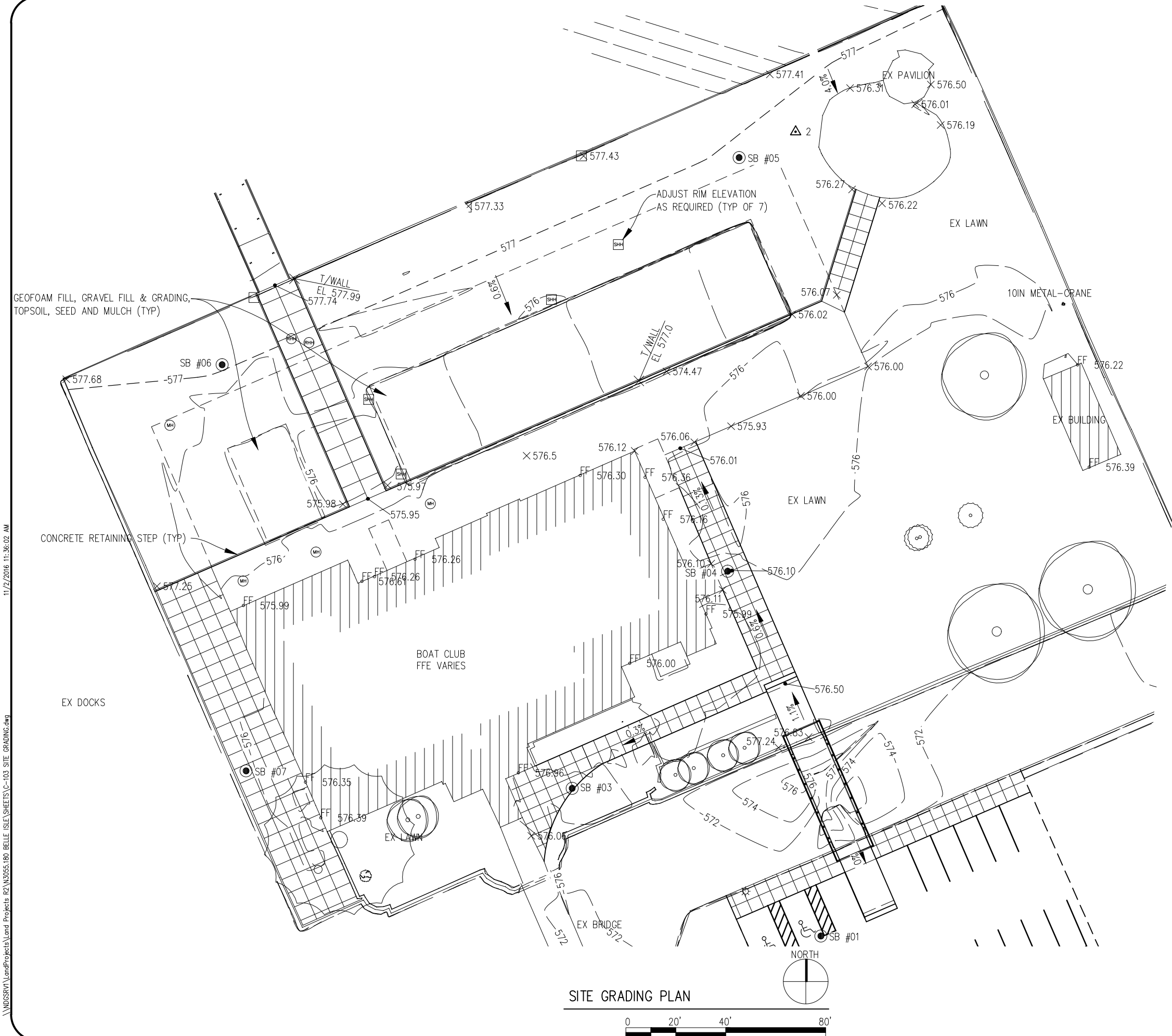
SITE LAYOUT &
LANDSCAPE



STATE OF MICHIGAN
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FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
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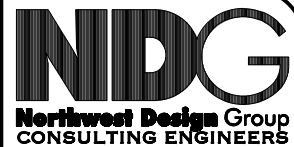
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\\NDGSRV1\LandProjects\Land Projects R2\N3055.180 BELLE ISLE\SHEETS\C-103 SITE GRADING.dwg



GENERAL SHEET NOTES

- HORIZONTAL AND VERTICAL CONTROL IS BASED ON MICHIGAN STATE PLANE COORDINATE SYSTEM, SOUTH ZONE GEOID 12b.
- TOPOGRAPHIC SURVEY PERFORMED BY NORTHWEST DESIGN GROUP, LLC., FEBRUARY 11, 2016.
- RESTORE AREAS WHERE EX SIDEWALK WAS REMOVED AND NOT REPLACED.



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CADD FILE	C-103 SITE GRADING	
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DRAWN BY	SMM	
CHECKED BY	AHP	
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SHEET TITLE		

SITE GRADING

C-103

LISTING OF BENCHMARK POINTS				
POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
301	309025.4	13494879.4	579.92	BM 1 CHISELED SQ N EDGE LP
302	308961.8	13494612.7	579.28	BM 2 CHISELED SQ S EDGE PP

NOTE: POINTS 1, 3 & 101 NOT IN THIS VIEW

LISTING OF CONTROL POINTS				
POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	308954.988	13494718.876	577.66	CP IR&NDG-CAP
2	309410.472	13494636.123	576.11	CP IR&NDG-CAP
3	309197.777	13495085.006	577.34	CP IR&NDG-CAP
101	308991.592	13494505.391	577.18	MP SPIKE

NOTE: POINTS 2 & 3 NOT IN THIS VIEW

LISTING OF CATCH BASINS		
TAG	RIM EL	BOT EL
CB 1 (#10352)	577.13	574.38
CB 2 (#10346)	577.01	574.51
CB 3 (#10477)	576.29	574.29
CB 4 (#10621)	577.19	574.19
CB 5 (#10622)	576.81	574.81

HMA APPLICATION ESTIMATE				
IDENT. NO.	ITEM	RATE: LB/SYD	PERFORMANCE GRADE	REMARKS
Ⓣ	HMA, LVSP	165	58-28	TOP COURSE (AWI = 220 MIN)
Ⓛ	HMA, LVSP	165	58-28	LEVELING COURSE
BOND COAT		0.05 - 0.15 GAL/SYD	FOR INFORMATION ONLY	

LISTING OF STAKE POINTS			
POINT	NORTHING	EASTING	DESCRIPTION
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506	308940.832	13494680.579	STK
507	309094.340	13494664.465	STK
508	309099.704	13494676.853	STK

- GENERAL SHEET NOTES
1. PARKING SPACES PROVIDED IN REPAIRED AREA = 2 ADA & 37 STANDARD.

2. PROVIDE BARRIER FREE SIGNS AND POSTS AS REQUIRED BY CODE AND ADA.

3. INSTALL CAST IN PLACE TRUNCATED DOME DETECTABLE WARNING SYSTEM, COMPOSITE, DARK GREY 24" DEEP x FULL WIDTH OF SIDEWALK, FRONT EDGE 6" FROM EDGE OF PAVEMENT.
- SHEET KEYNOTES
1. EXISTING HMA TO REMAIN IN THIS AREA.

2. EXISTING CONCRETE SIDEWALK TO REMAIN.

3. REMOVE AND REPLACE HMA (NOTE HMA IN POOR CONDITIONS, NEED TO REMOVE AT LEAST 2 1/2" OF SURFACE MATERIAL HMA OR AGGREGATE FOR NEW CONSTRUCTION) IN THIS AREA.

4. REMOVE AND REPLACE CONCRETE SIDEWALK IN THIS AREA.

5. NEW 4" TH. CONCRETE SIDEWALK. SAWCUT CONTROL JOINTS PROVIDE ADA COMPLIANT SIDEWALK:

RUNNING SLOPE ≤ 1:20

CROSS SLOPE ≤ 1:48

6. NEW HMA PARKING LOT. CONSTRUCT PER APPLICATION TABLE. GRADE PAVEMENT TO DRAIN TO EX CATCH BASINS.

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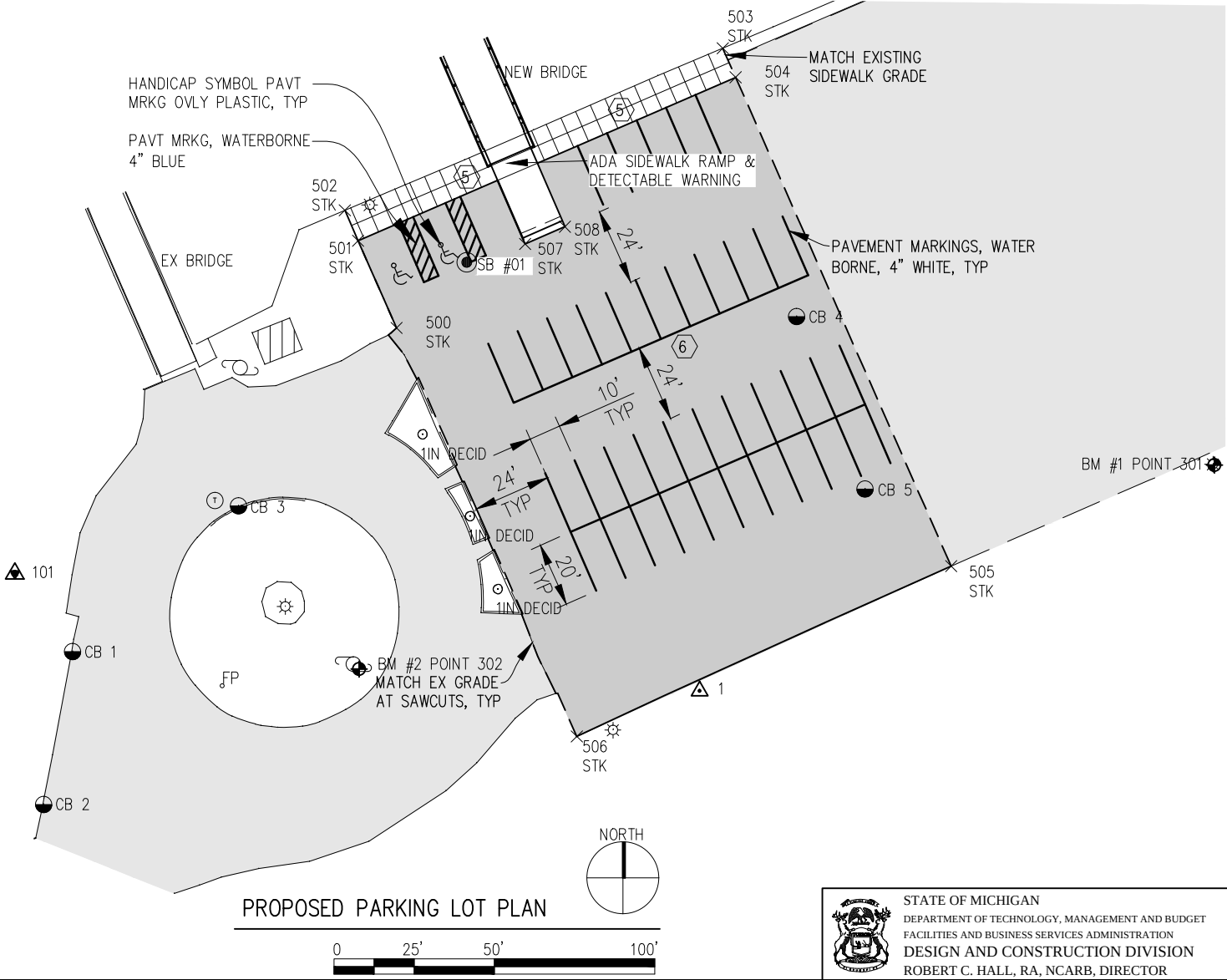
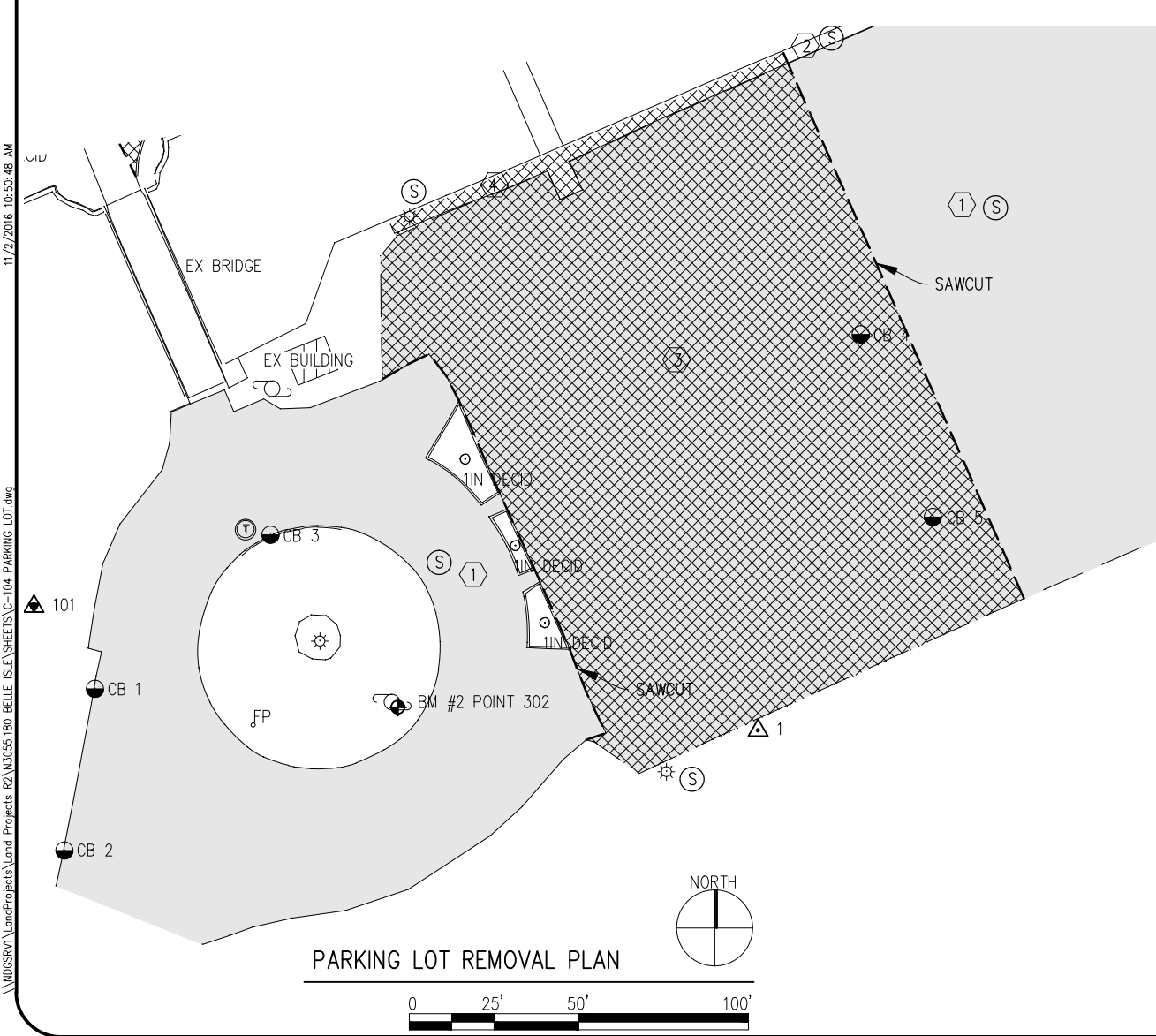
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SHEET TITLE		

PARKING LOT
PLANS

C-104



STATE OF MICHIGAN

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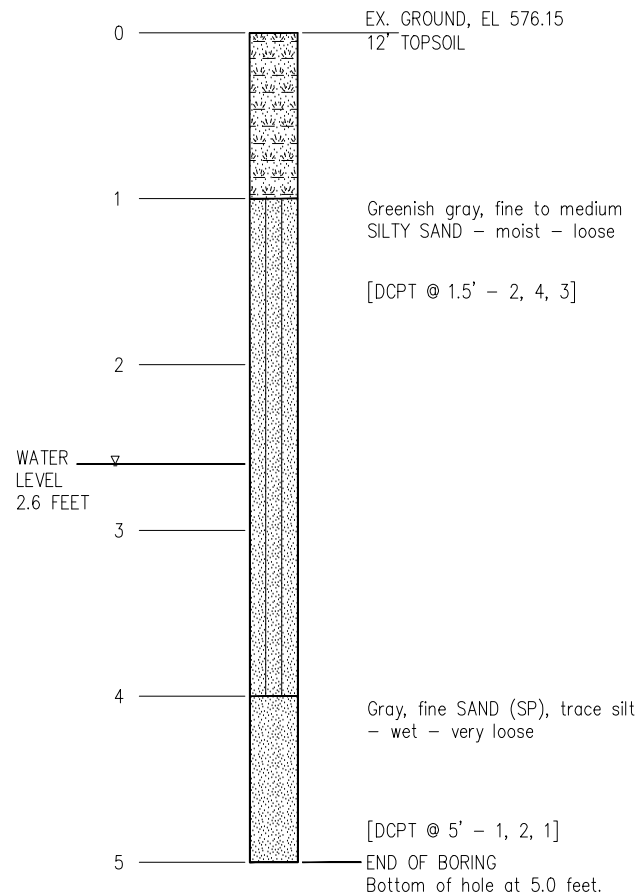
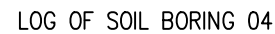
1. DCPT (DYNAMIC CONE PENETROMETER TEST) VALUES DENOTE THE NUMBER OF BLOWS REQUIRED TO DRIVE A 1.5' DIA CONE 3 SUCCESSIVE 1.75" INCREMENTS USING A 15LB MASS FALLING 20".
2. WATER LEVELS MAY BE INFLUENCED BY RESIDUAL BORING WATER.
3. THE SOIL BORING LOGS REPRESENT POINT INFORMATION. PRESENTATION OF THIS INFORMATION IN NO WAY IMPLIES THAT SUBSURFACE CONDITIONS ARE THE SAME AT LOCATIONS OTHER THAN THE EXACT LOCATION OF THE BORING.
4. THE SOIL BORINGS WERE DRILLED AND LOGGED BY NORTHWEST DESIGN GROUP, LLC. ON NOVEMBER 8, 2016.
5. SEE SHEETS C-102, C-103 AND C-104 FOR BORING LOCATIONS, EXCEPT BORING 02. BORING 02 IS NOT SHOWN ON DRAWINGS OR IN PROPOSED WORK AREAS.



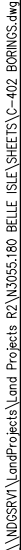
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C-401



12/16/2016 11:17:59 AM



EX. GROUND, EL. 576.27
18" TOPSOIL

0

1

Grayish brown, fine SILTY SAND (SM) – moist – very loose
[DCPT @ 1.5' – 2, 3, 2]

2

3

4

5

[DCPT @ 5' – 3, 3, 2]
trace gravel, becomes wet

6

7

[DCPT @ 7' – 2, 2, 1]
no gravel

8

9

10

END OF BORING
Bottom of hole at 10.0 feet.

EX. GROUND, EL 576.53

12" TOPSOIL

Grayish brown, fine to medium CLAYEY SAND (SC) - moist - medium stiff

[DCPT @ 1.5' - 6, 3, 4]

WATER LEVEL 2.8 FEET

few gravel, becomes wet

[DCPT @ 3.5' - 5, 3, 2]

[DCPT @ 5' - 6, 3, 5]

No recovery due to heave. 2nd hole attempted, refusal encountered at 1.7'.

END OF BORING

Bottom of hole at 5.0 feet.

1. DCPT (DYNAMIC CONE PENETROMETER TEST) VALUES DENOTE THE NUMBER OF BLOWS REQUIRED TO DRIVE A 1.5" DIA CONE 3 SUCCESSIVE 1.75" INCREMENTS USING A 15LB MASS FALLING 20".
2. WATER LEVELS MAY BE INFLUENCED BY RESIDUAL BORING WATER.
3. THE SOIL BORING LOGS REPRESENT POINT INFORMATION. PRESENTATION OF THIS INFORMATION IN NO WAY IMPLIES THAT SUBSURFACE CONDITIONS ARE THE SAME AT LOCATIONS OTHER THAN THE EXACT LOCATION OF THE BORING.
4. THE SOIL BORINGS WERE DRILLED AND LOGGED BY NORTHWEST DESIGN GROUP, LLC. ON NOVEMBER 8, 2016.
5. SEE SHEETS C-102, C-103 AND C-104 FOR BORING LOCATIONS.



WAYNE COUNTY, MICHIGAN
FILE NO: 751/15224.MNB INDEX NO: 59715

PREPARED FOR: MICHIGAN DEPARTMENT OF TECHNOLOGY,
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OF NATURAL RESOURCES

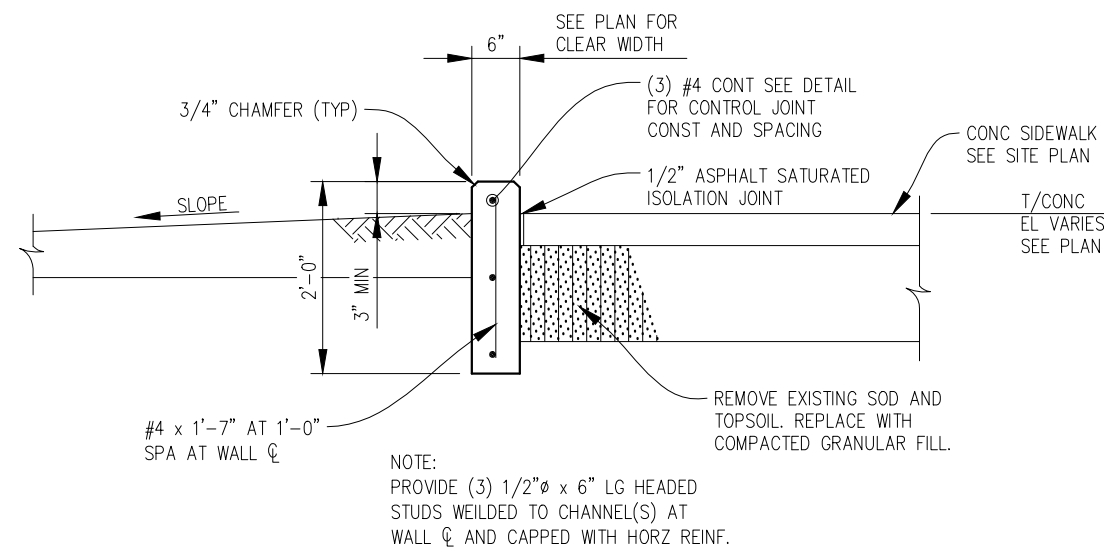
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MARK	DATE	ISSUED FOR
PROJECT NO		N3055.180
CADD FILE		C-402 BORINGS
MANAGER		AHP
DESIGNED BY		AHP
DRAWN BY		SMM
CHECKED BY		AHP

SHEET TITLE

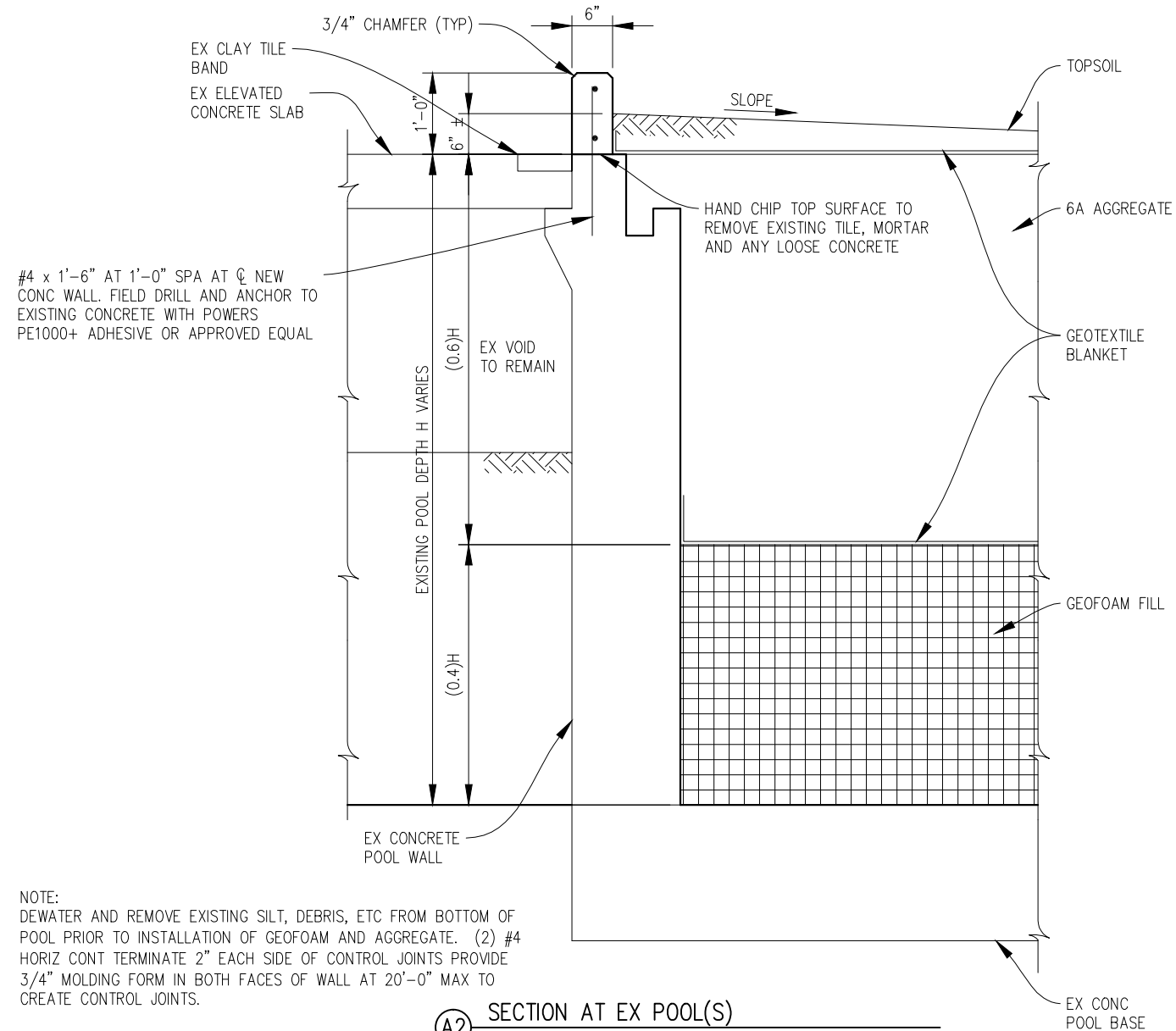
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DESIGN AND CONSTRUCTION DIVISION
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C-402

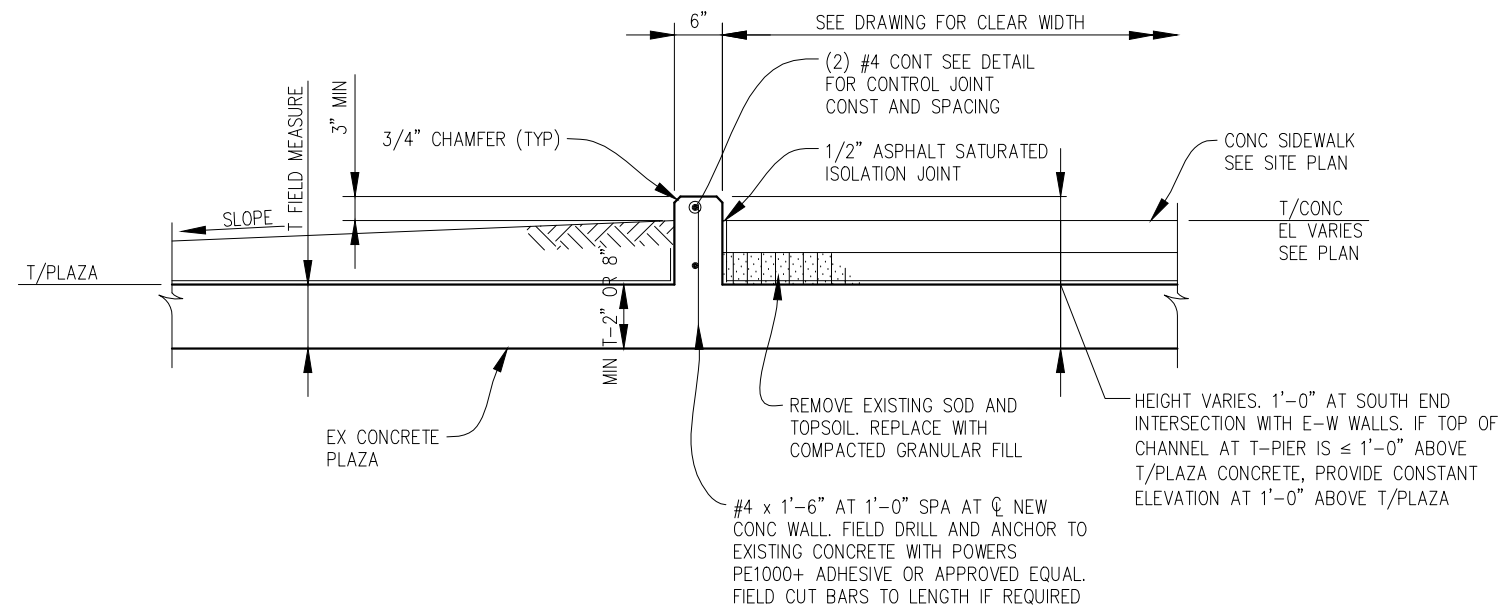
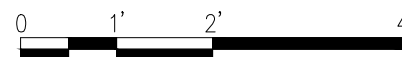
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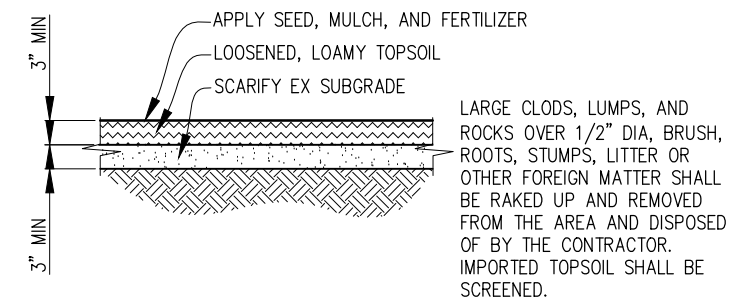
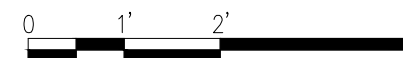
D1 SECTION – RETAINING STEP BETWEEN PLAZA AND T-PIER



② SECTION AT EX POOL(S)

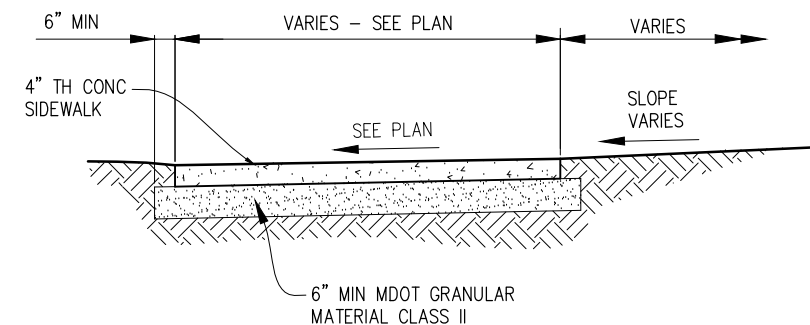


SECTION - RETAINING STEP AT PLAZA



RESTORATION DETAIL

NOT TO SCALE



CONCRETE SIDEWALK DETAIL

NOT TO SCALE



BELLE ISLE BOAT CLUB FISHING ACCESS

WAYNE COUNTY, MICHIGAN

FILE NO: 751/15224.MNB INDEX NO: 59715

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PP	12.21.16	OWNER REVIEW
MARK	DATE	ISSUED FOR
PROJECT NO N3055.180		
CADD FILE	C-501 SITE DETAILS	
MANAGER	AHP	
DESIGNED BY	AHP	
DRAWN BY	SMM	
CHECKED BY	AHP	
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SHEET TITLE		

SITE DETAILS

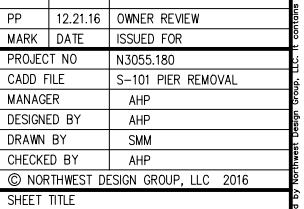
C-501



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S-101



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A circular diagram divided into four quadrants by a vertical and a horizontal line. The top quadrant is labeled 'NORTH'.

1. LOCATE EXISTING UNDERGROUND UTILITIES BEFORE DIGGING.
2. CORE BORE UNDER EXISTING SIDEWALLS AND DRIVEWAYS AS REQUIRED FOR ELECTRICAL WORK.
3. REPAIR DISTURBED FINISHED GRADE AS REQUIRED TO MATCH EXISTING.
4. EXPOSED CONDUITS SHALL BE RGC. BURIED CONDUIT SHALL BE PVC SCHEDULE 40.
5. BURY ELECTRICAL CONDUITS AT 30" BELOW FINISHED GRADE (BFG) AND PROVIDE WITH ELECTRICAL MARKER TAPE AT 6" BFG.

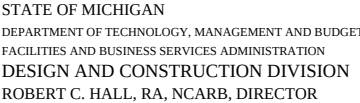
1. FIX CRACKED PILE OR CRACKED CONNECTION BY WELDING.
2. FIX HOLES IN BEAM WEB WITH WELDED PATCH MATCHING WEB.
3. REPLACE LOOSE OR MISSING BOLT, MATCHING EXISTING OR BETTER.
4. FIX CRACKED OR GOUGED BEAM BY WELDING.
5. FIX BEND IN FLANGE BY STRAIGHTENING.
6. FIX CRACKS IN SHEET PILE BY REPLACING SHEET PILE TO MATCH EXISTING SECTION AND PROFILE.
7. REPLACE MISSING SHEET PILE AND CAP WITH SAME SECTION AND PROFILE AS EXISTING.
8. FIX BROKEN X BRACING BY REPLACING MEMBERS TO MATCH EXISTING.
9. FIX BENT CHANNEL BY STRAIGHTENING.
10. FIX LARGE CRACK, HOLE IN PIPE MAST BELOW WATER BY REMOVING AND REPLACING BOTTOM SECTION OF MAST. REPAIR BEAM BY WELDING SPlicing MEMBERS MATCHING EXISTING.
11. FIX SEPARATED SHEET PILE
12. CONNECT TO NEAREST AVAILABLE 1P20A CIRCUIT BREAKER IN EXISTING 120V PANEL IN BOAT CLUB. FEED WITH #8, #10 GROUND IN 1" CONDUIT. CONTROL EXTERIOR LIGHTING WITH NEW PHOTOCCELL MOUNTED ON NORTH SIDE OF BOAT CLUB BUILDING.

GENERAL NOTE (APPLIES TO ALL FIXTURES):

- $$1. \quad UV = 120/277V.$$

REMARKS:

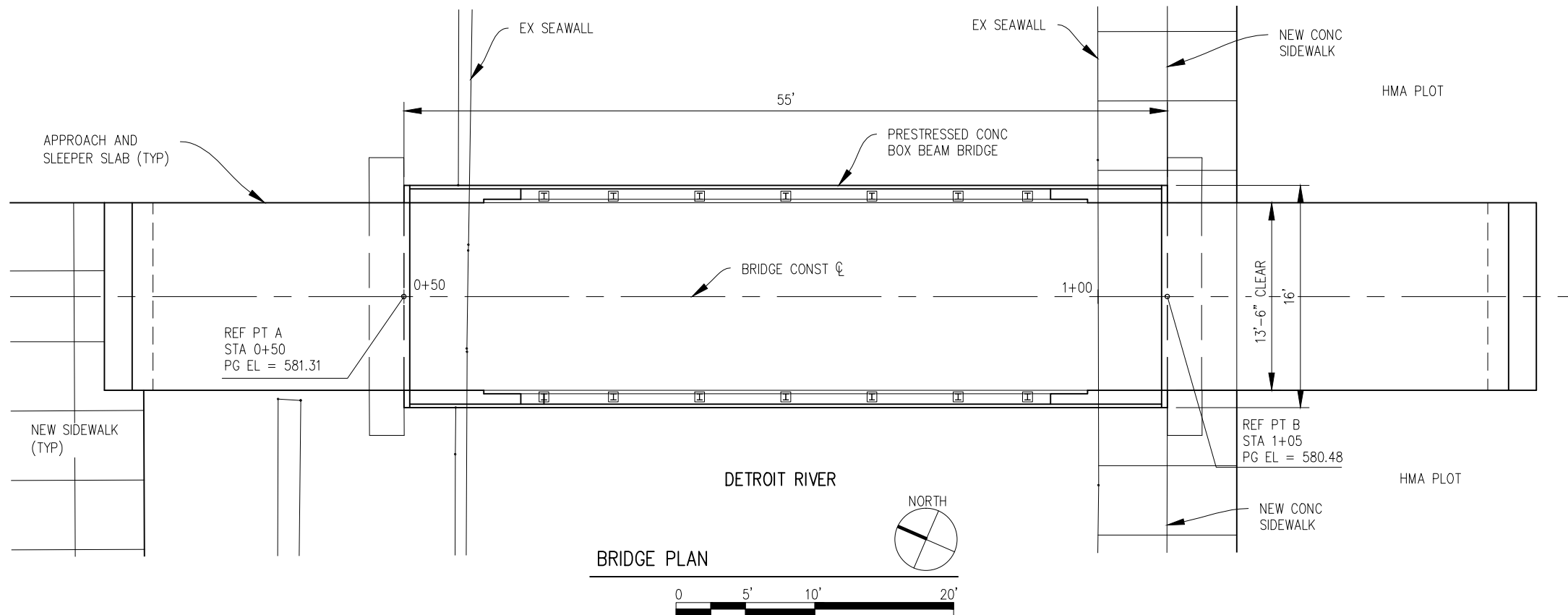
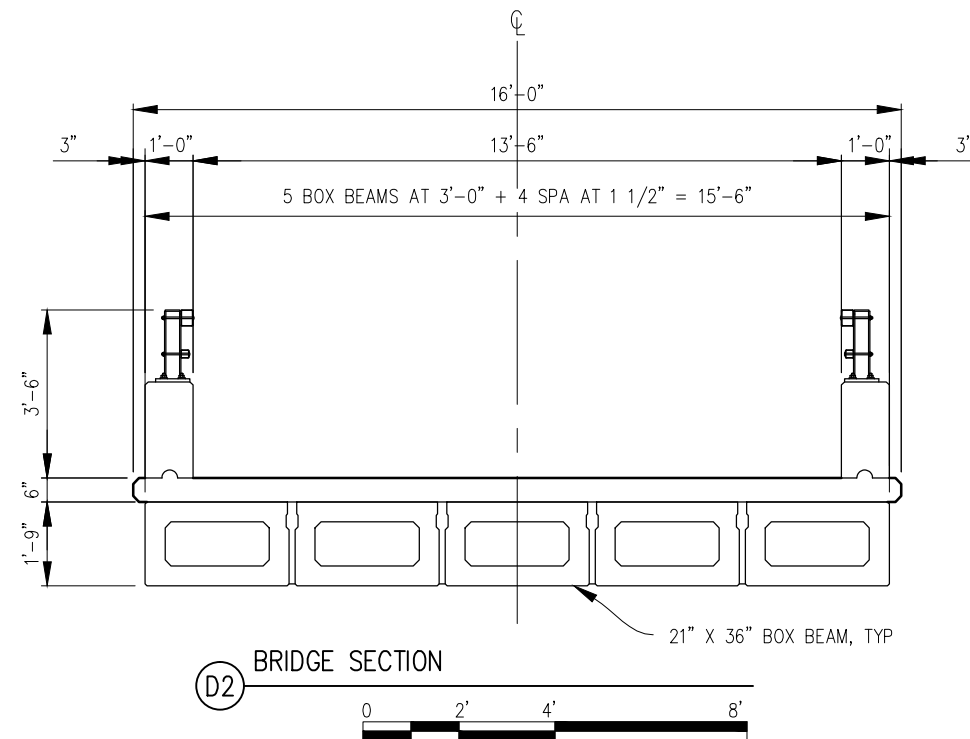
- ① REFER TO BASE DETAIL(S), SEE SHEET E-501.
- ② CONFIGURE BASE PLATE AS DETAILED ON SHEET E-501 AND PRIME AND PAINT TO MATCH FIXTURE. AIM/ORIENT FIXTURE TO LIGHT PIER.
- ③ MOUNT SECURELY TO STRUCTURE WITH 3/4" THREADED PIPE AT 24" ABOVE TOP OF PIER.



FILE NO: 751/15224.MNB
INDEX NO: 59715

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S-102



GENERAL SHEET NOTES

1. THE DESIGN OF THIS STRUCTURE IS BASED ON CURRENT AASHTO LRFD BRIDGE DESIGN SPECIFICATION PEDESTRIAN LOADING OF 90 PSF AND A MAINTENANCE VEHICLE H20 LOADING, NOT ACTING CONCURRENTLY. LIVE LOAD DEFLECTION DOES NOT EXCEED 1/360 OF SPAN LENGTH.
2. THE DESIGN OF THE STRUCTURAL MEMBERS IS BASED ON MATERIAL OF THE FOLLOWING GRADES AND STRESSES:

CONCRETE: GRADE S2	F'C = 3,000 PSI
CONCRETE: GRADE D	F'C = 4,000 PSI
STEEL REINFORCEMENT	FY = 60,000 PSI
STEEL REINFORCEMENT:	
STIRRUPS FOR PRESTRESSED 21" BOX BEAMS	FY = 40,000 PSI
STRUCTURAL STEEL:	
AASHTO M270	
GRADE 36	FY = 36,000 PSI
STRUCTURAL STEEL:	
AASHTO M270	
GRADE 50W	FY = 50,000 PSI
PRESTRESSED CONCRETE	F'C = 7,000 PSI
PRESTRESSED CONCRETE COMPRESSIVE	
STRENGTH AT RELEASE	F'ci = 4,000 PSI
PRESTRESSING STRANDS	FPU = 270,000 PSI
3. ALL EXPOSED CONCRETE CORNERS SHOWN SQUARE ON THE PLANS SHALL BE BEVELED WITH 1/2" TRIANGULAR MOLDINGS EXCEPT AS OTHERWISE NOTED.
4. THE EXISTING SHEET PILE WALL PAINT MAY CONTAIN LEAD.
5. THE DESIGN OF THE FOUNDATION PILING IS BASED ON MATERIAL OF THE FOLLOWING GRADES AND STRESSES (AND LOSSES):

CONCRETE: GRADE S1 F' C = 3,500 PSI
STEEL REINFORCEMENT FY = 60,000 PSI
FOUNDATION PILING (STEEL H--PILING):
AASHTO M270
GRADE 50 FY = 50,000 PSI
FOUNDATION PILING (STEEL H--PILING):
AASHTO M270
GRADE 50W FY = 50,000 PSI

GENERAL SHEET NOTES CONT

6. UNLESS OTHERWISE SHOWN ON THE PLANS PROVIDE SUFFICIENT CONCRETE CLEAR COVER FOR REINFORCEMENT ACCORDING TO THE FOLLOWING:

CONCRETE CAST AGAINST EARTH:	3 IN.
PRESTRESSED BEAMS:	1 IN.
ALL OTHER UNLESS SHOWN ON PLANS:	2 IN.
7. THE CONTRACTOR SHALL LOCATE ALL ACTIVE UNDERGROUND UTILITIES PRIOR TO STARTING WORK AND SHALL CONDUCT HIS OPERATIONS IN SUCH A MANNER AS TO ENSURE THAT THOSE UTILITIES NOT REQUIRING RELOCATION WILL NOT BE DISTURBED.
8. WATER LEVEL IS SUBJECT TO CHANGE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING A DETERMINATION OF WATER LEVELS THAT MAY EXIST DURING CONSTRUCTION.
9. SOIL CLASSIFIED AS SHALL BE UNDERCUT AND REPLACED WITH "EMBANKMENT, STRUCTURE, CIP" COMPACTED TO 100 PERCENT OF MAXIMUM UNIT WEIGHT. EXCAVATION AND BACKFILL QUANTITIES ARE BASED ON AN ESTIMATED UNDERCUT TO ELEVATION. ACTUAL LIMITS OF EXCAVATION WILL BE DETERMINED BY THE ENGINEER AT THE TIME OF CONSTRUCTION.
10. MEASURES SHALL BE TAKEN TO PREVENT DEBRIS FROM FALLING FROM THE STRUCTURE. IF DEBRIS FALLS INTO THE WATERWAY, IT SHALL BE REMOVED WITHIN 24 HOURS. SINCE DISTURBANCE OF THE WATERWAY BOTTOM MAY BE AS HARMFUL AS THE DEBRIS ITSELF, THE PREVENTIVE MEASURES MUST BE EFFECTIVE.



BELLE ISLE BOAT CLUB FISHING ACCESS

WAYNE COUNTY, MICHIGAN
FILE NO: 751/15224.MNB
INDEX NO: 59715

INDEX NO: 59715

PREPARED FOR: MICHIGAN DEPARTMENT OF TECHNOLOGY,
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OF NATURAL RESOURCES

PP	12.21.16	OWNER REVIEW
MARK	DATE	ISSUED FOR
PROJECT NO	N3055.180	
CADD FILE	S-103 BRIDGE PLAN & SEC	
MANAGER	AHP	
DESIGNED BY	AHP	
DRAWN BY	SMM	
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SHEET TITLE		

BRIDGE
PLAN & SECTION

S-103



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GENERAL SHEET NOTES

1. JWP DENOTES JOINT WATERPROOFING.
2. HPJS DENOTES HOT-POURED JOINT SEALANT.
3. A RUBBED SURFACE FINISH ON THE VERTICAL AND TOP CONCRETE SURFACES OF THE PARAPET RAILING IS REQUIRED ON THIS STRUCTURE.
4. "EDGE" OR "GROOVE" DENOTES EDGING OR GROOVING WITH AN APPROVED TOOL.
5. LOW TEMPERATURE PROTECTION OF CONCRETE SHALL BE APPLIED ACCORDING TO APPLICABLE CODES.
6. THE CONTRACTOR IS TO PROVIDE A SAWED JOINT 1 1/2" DEEP BY 1/8" WIDE (MINIMUM) IN THE SP OF SLAB AT THE LOCATIONS SHOW IN SECTION(S). THE JOINT IS TO BE SAWED WITHIN 24 HOURS OF PLACING THE CURING AND IS TO BE FILLED TO 1/4" BELOW TOP OF CONCRETE WITH POLYURETHANE OR POLYURETHANE HYBRID SEALANT.



BELLE ISLE BOAT CLUB FISHING ACCESS
WAYNE COUNTY MICHIGAN

WAYNE COUNTY, MICHIGAN
FILE NO. 75-45004-11115

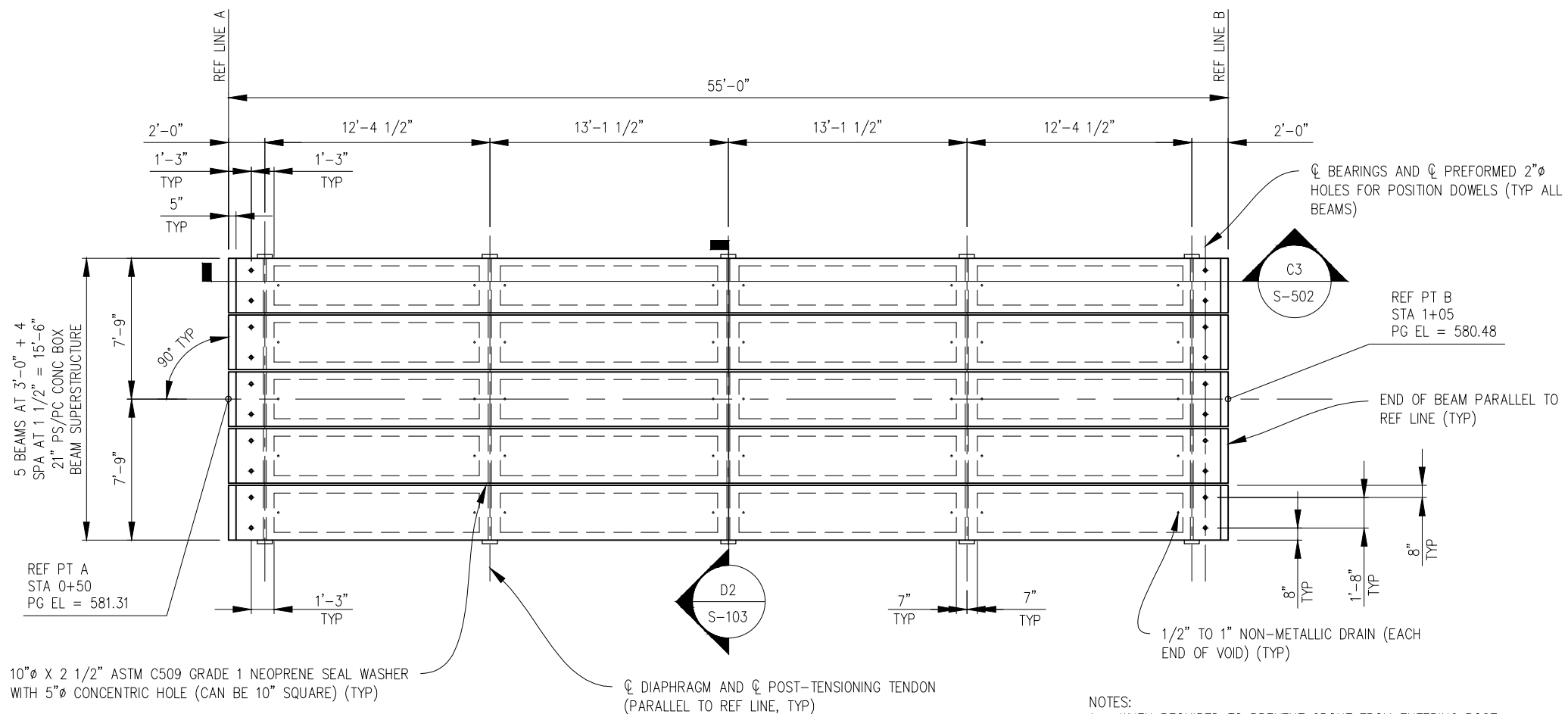
INDEX NO: 59/15

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PP	12.21.16	OWNER REVIEW
MARK	DATE	ISSUED FOR
		N3055.180
CADD FILE		S-104 PLAN OF BRIDGE DECK
MANAGER		AHP
DESIGNED BY		AHP
DRAWN BY		SMM
CHECKED BY		AHP
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PLAN OF BRIDGE DECK

S-104



NOTES:

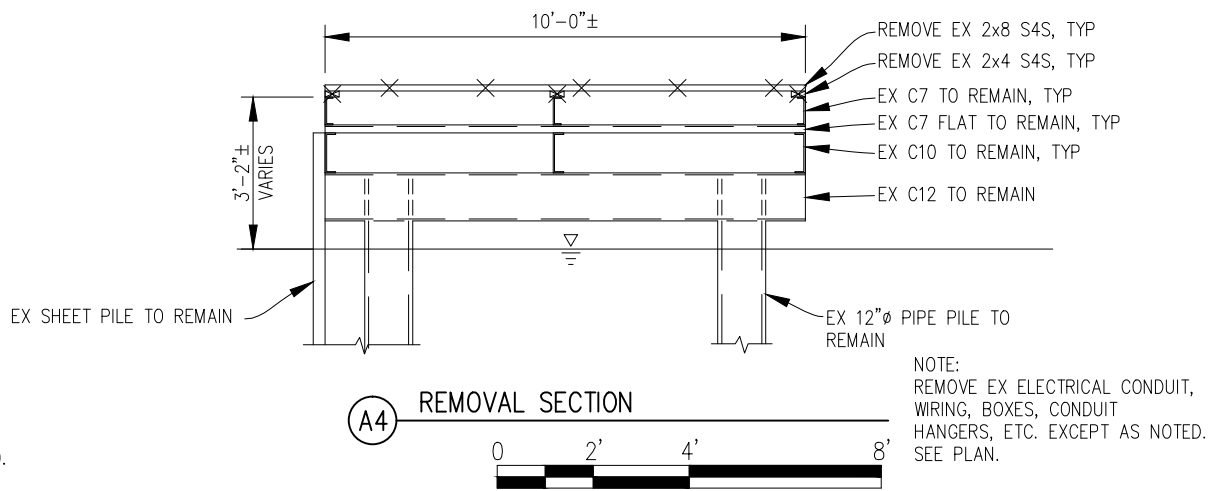
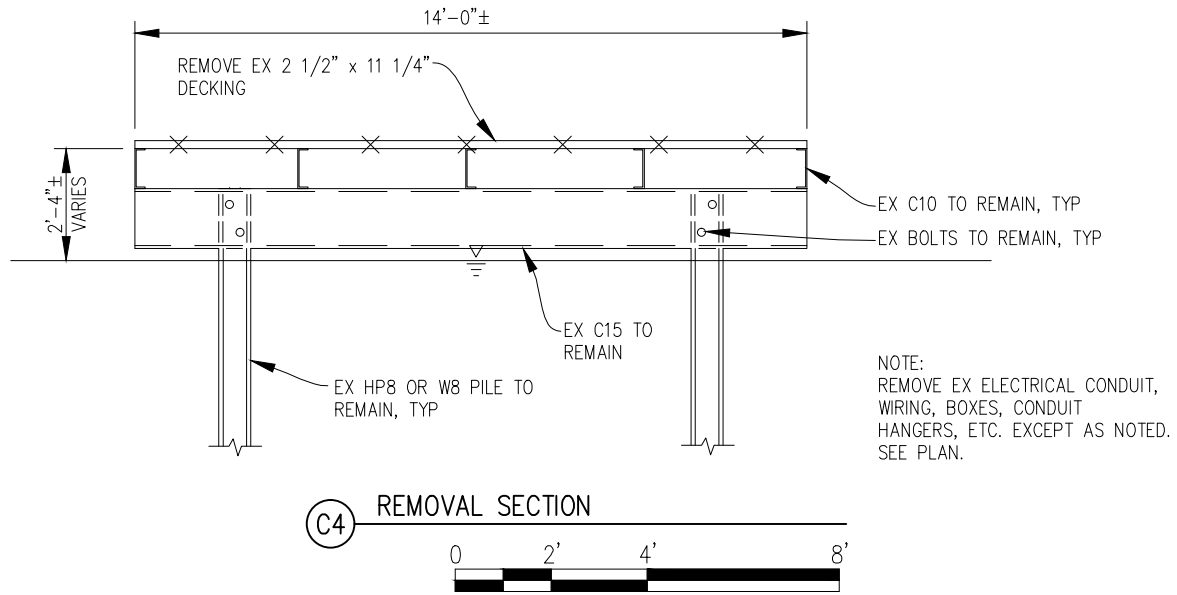
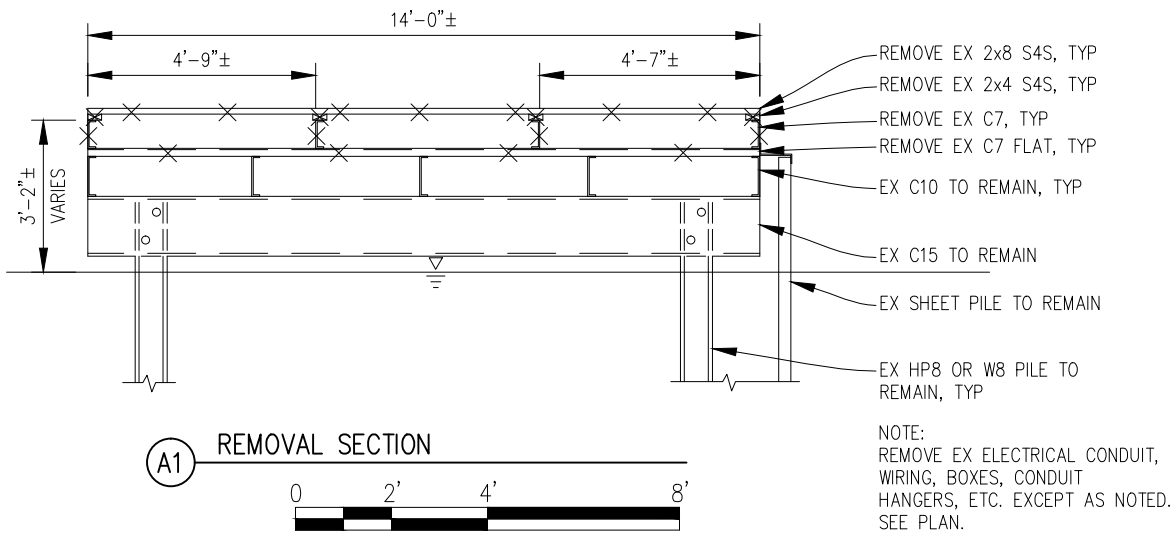
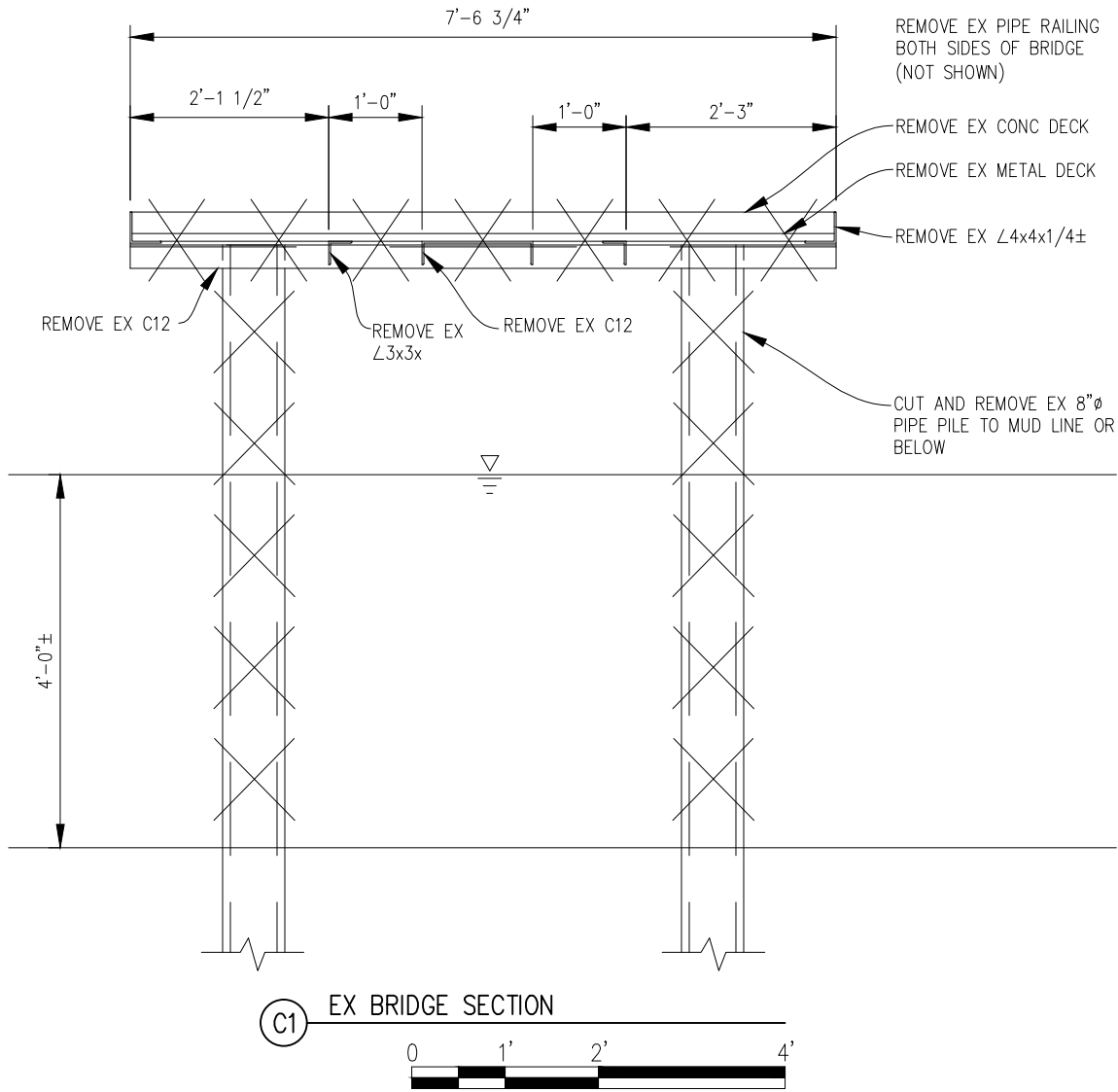
1. WHEN REQUIRED TO PREVENT GROUT FROM ENTERING POST TENSIONING HOLE AROUND SEAL WASHERS:
FILL KEYWAY, WITH TYPE H-1 MORTAR, FLUSH WITH SIDE OF BEAM FOR 6" MIN BOTH SIDES OF HOLE.
2. USE 3"Ø, 4"Ø, 5"Ø AS REQUIRED FOR BEAM SIZE AND POST TENSIONING FORCE.



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\\NDGSRV1\LandProjects\Land Projects\R2\N3055.180 BELLE ISLE\PROJECTS\S-501 PIER & BRIDGE REM.dwg



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WAYNE COUNTY, MICHIGAN

FILE NO: 751/15224.MNB

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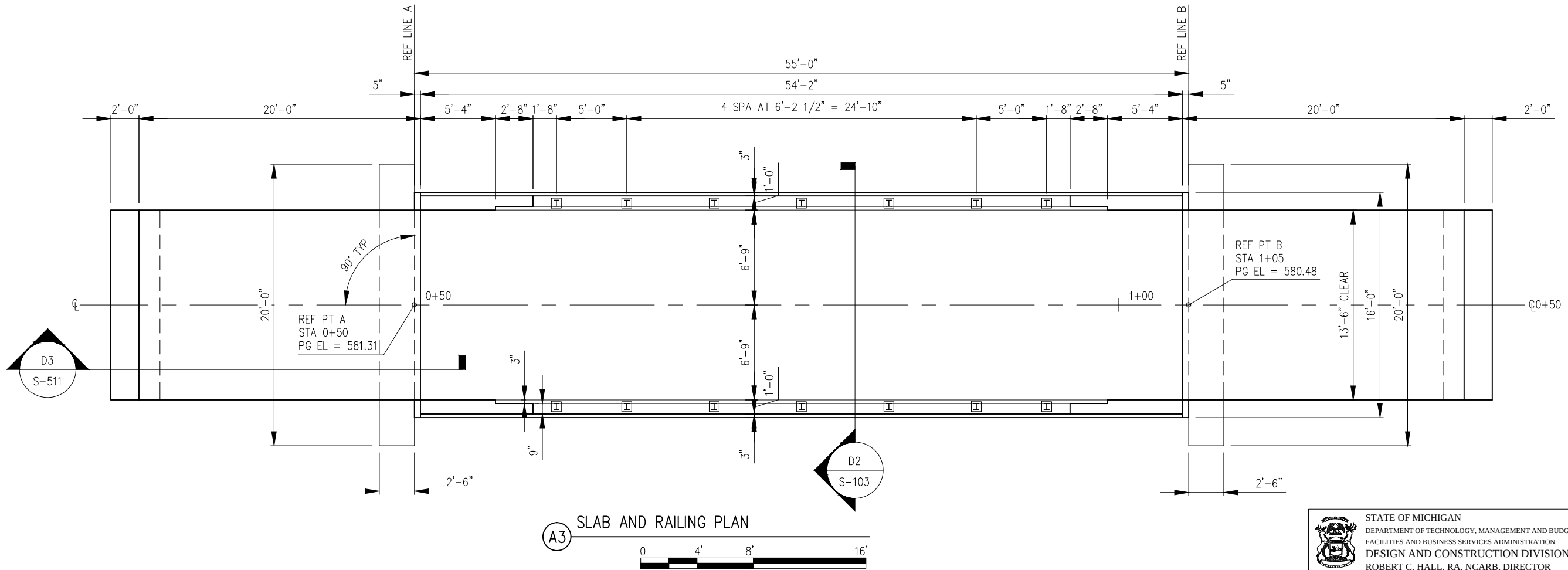
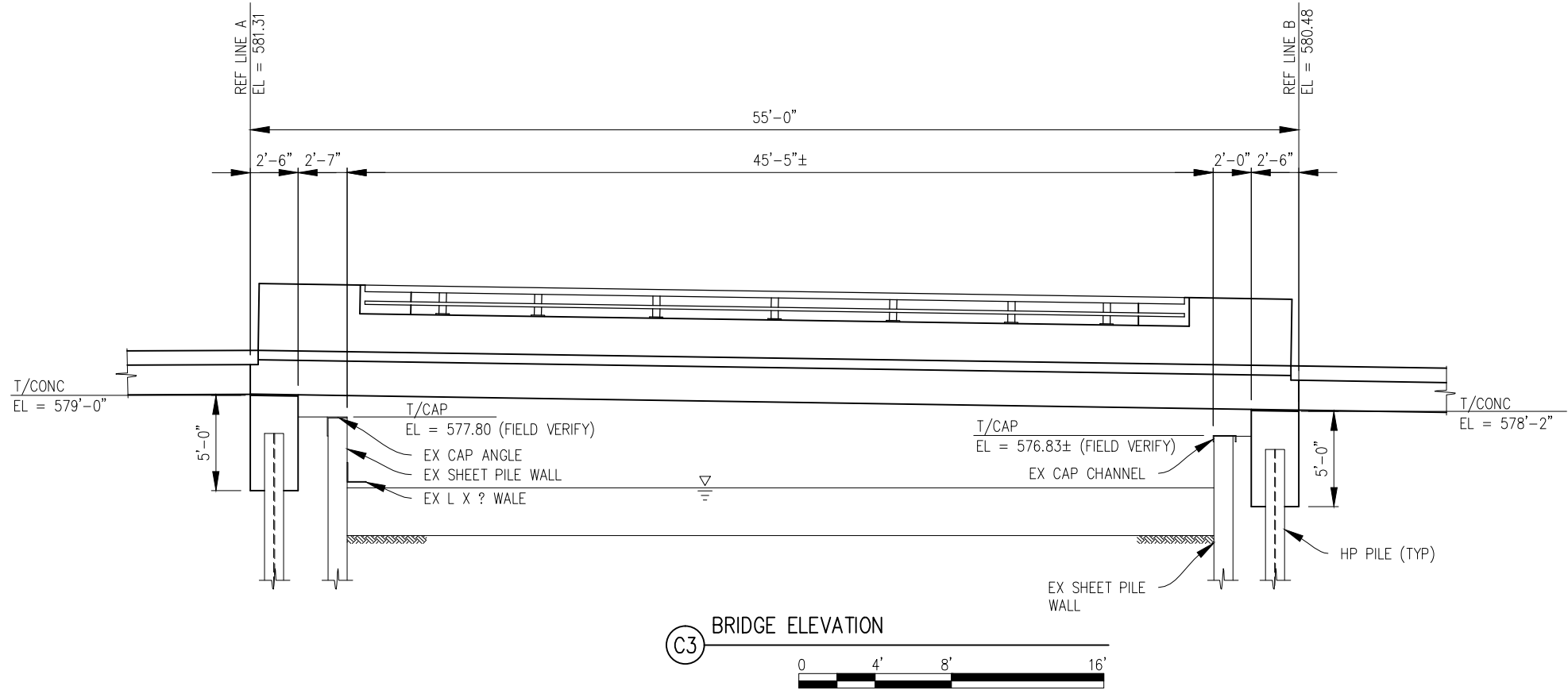
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PROJECT NO	N3055.180	
CADD FILE	S-501 PIER & BRIDGE REM	
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PIER AND
BRIDGE REMOVALS

S-501

11/2/2016 2:23:49 PM

\\NDGSRV1\LandProjects\Land Projects\2\N3055.180 BELLE ISLE\PROJECTS\S-502 BRID ELEV SLAB RAIL.dwg



GENERAL SHEET NOTES

1. A COFFERDAM HAS NOT BEEN PROVIDED FOR THIS STRUCTURE. OTHER MEANS OF WATER CONTROL MAY BE USED, AS APPROVED BY THE ENGINEER, PROVIDED THEY DO NOT DISTURB THE STREAM BED. WATER CONTROL, WHETHER IT BE BY COFFERDAM OR OTHER APPROVED MEANS.
2. ITEMS CAST INTO STRUCTURAL PRECAST CONCRETE TO FACILITATE BRIDGE CONSTRUCTION (FORMING, FINISHING, ETC.) SHALL BE GALVANIZED OR EPOXY COATED.
3. DO NOT USE WHEELED, ROLLER BASED OR MACHINE MOUNTED COMPACTION EQUIPMENT TO COMPACT THE SUBGRADE, SUBBASE, AND BASE WITHIN 10' OF THE SLEEPER SLAB AFTER IT IS BUILT. USE ONLY HAND/PLATE COMPACTORS. CONTACT PRESSURE OF COMPACTION EQUIPMENT SHALL NOT EXCEED 10 PSI.

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BRIDGE ELEVATION
& SLAB/
RAILING PLAN

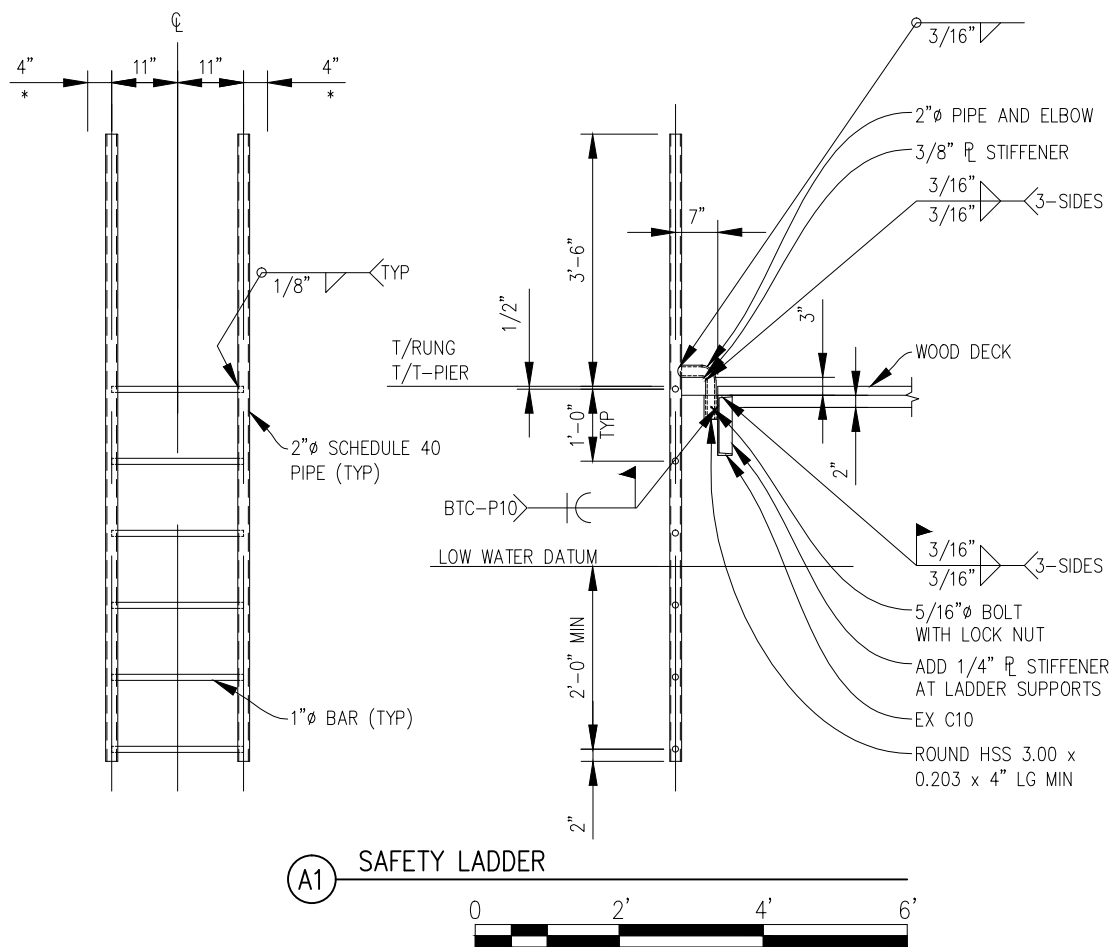
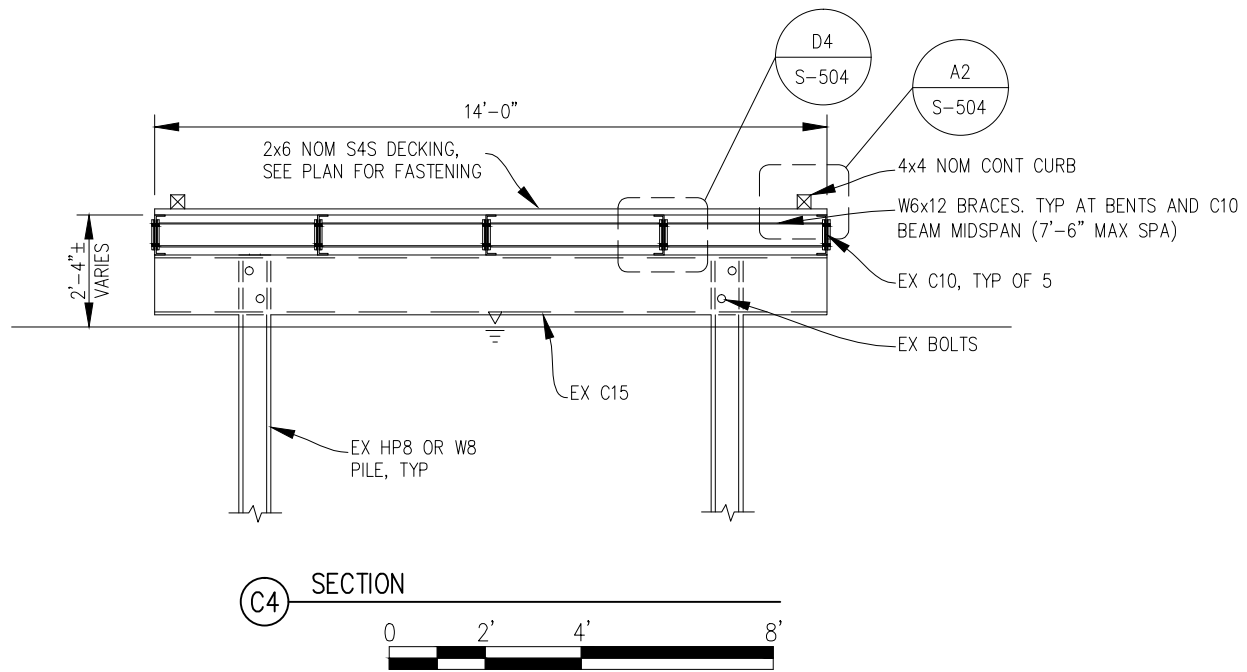
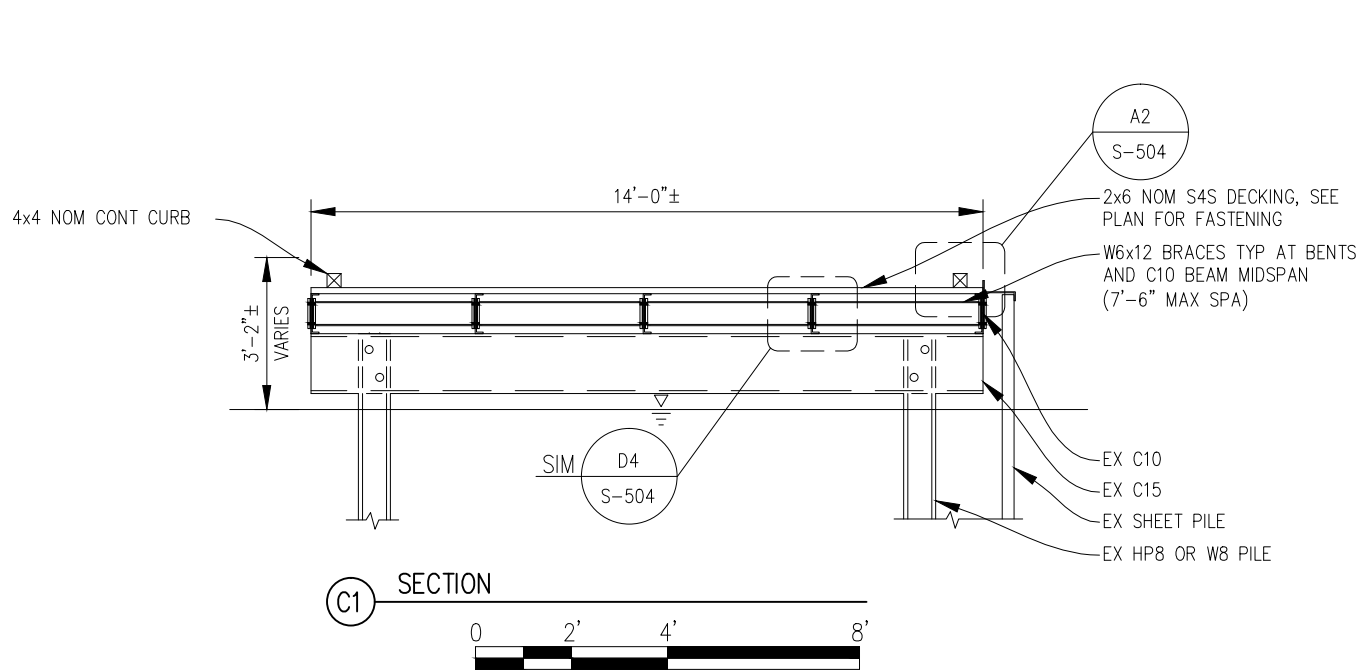
S-502



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\\NDGSRV1\LandProjects\Land Projects R2\N3055.180 BELLE ISLE\SHEETS\S-503 PIER DETAILS.dwg



- NOTES:
- EASE/GRIND ALL EDGES, ENDS AND WELDS TO REMOVE ALL SHARP EDGES, BURRS, ETC.
 - HOT DIP GALVANIZE AFTER FABRICATION.

* MIN CLEAR WIDTH OF NOT LESS THAN 1'-3" SHALL BE PROVIDED EACH WAY FROM LADDER CL TO ANY PERMANENT OBJECTS (GUARDRAIL COMPONENTS, ETC)



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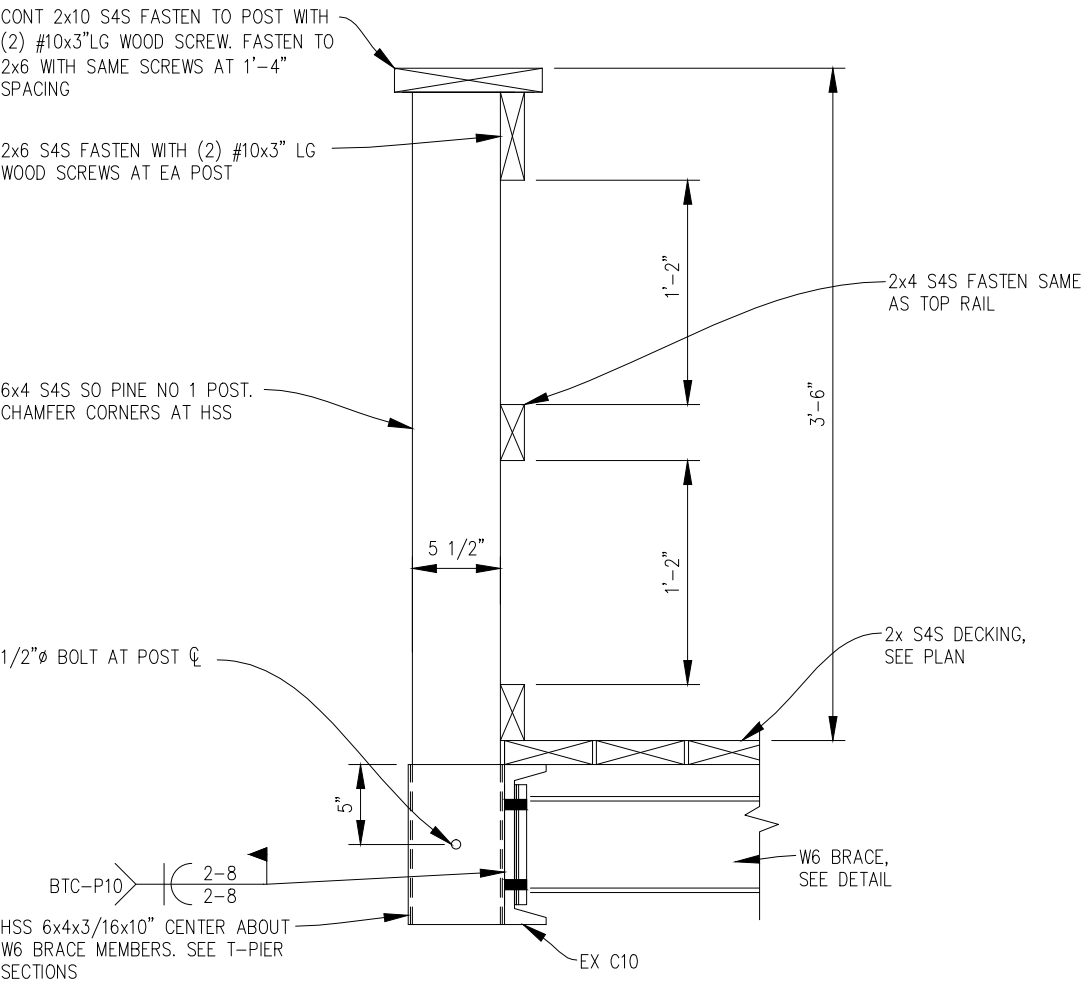
PIER DETAILS

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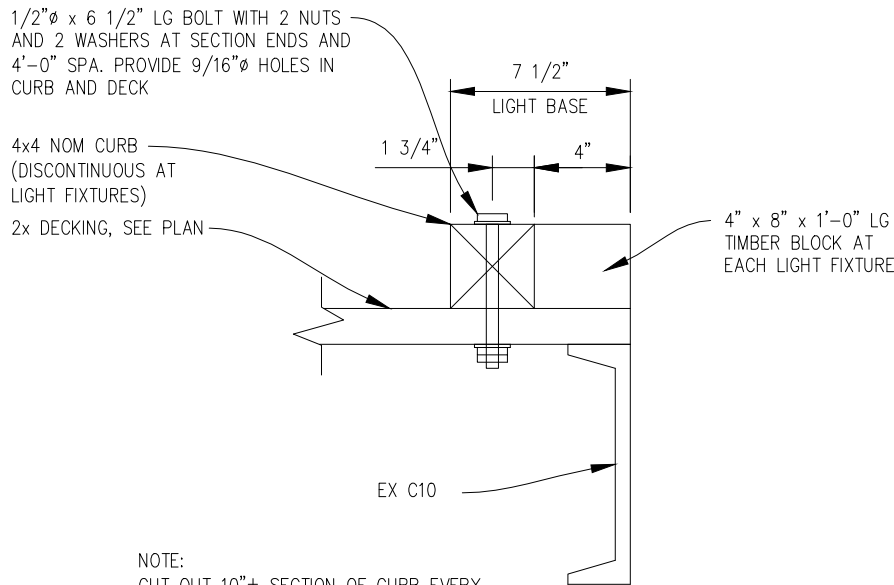
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C2 GUARDRAIL AT T-PIER - ALTERNATE 1

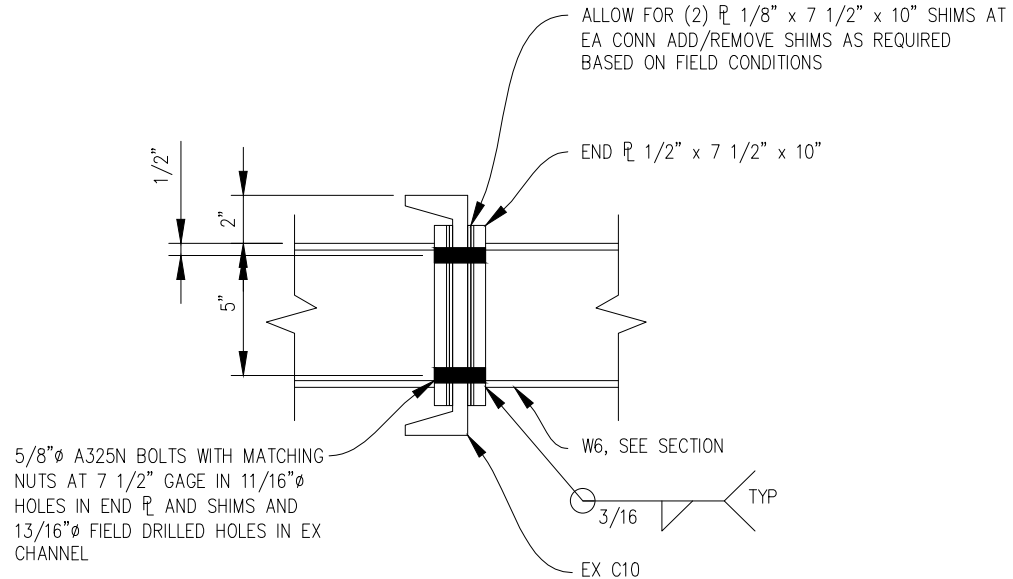
0 1/2' 1' 2'



NOTE:
CUT OUT 10" ± SECTION OF CURB EVERY 20'-0" FOR LIGHT FIXTURE BASE. SEE PLAN.

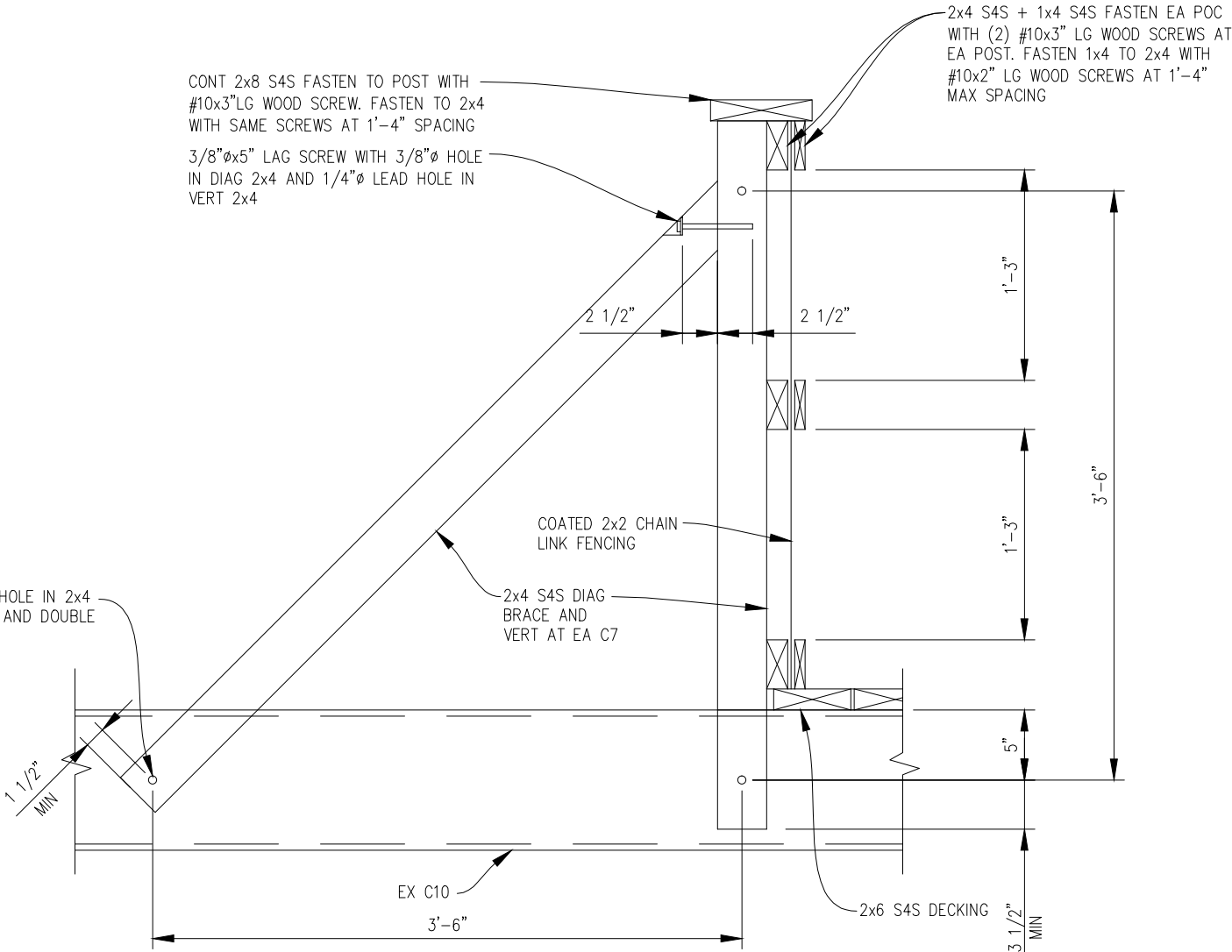
A2 TYPICAL EDGE CURB - BASE BID

0 1/2' 1' 1 1/2'



D4 STRENGTHENING DETAIL AT C10

0 1/2' 1' 1 1/2'



A4 TYPICAL BARRIER (2) LOCATIONS

0 1/2' 1' 2'



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BELLE ISLE BOAT CLUB FISHING ACCESS

WAYNE COUNTY, MICHIGAN

INDEX NO: 59715

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CADD FILE	S-504 PIER DETAILS	
MANAGER	AHP	
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PIER DETAILS

S-504

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WAYNE COUNTY, MICHIGAN
FILE NO: 751/15224.MNB
INDEX NO: 59715

PREPARED FOR: MICHIGAN DEPARTMENT OF TECHNOLOGY,
MANAGEMENT AND BUDGET/MICHIGAN DEPARTMENT
OF NATURAL RESOURCES

PP	12.21.16	OWNER REVIEW
MARK	DATE	ISSUED FOR
PROJECT NO		N3055.180
CADD FILE	S-505 PIER DETAILS	
MANAGER	AHP	
DESIGNED BY	AHP	
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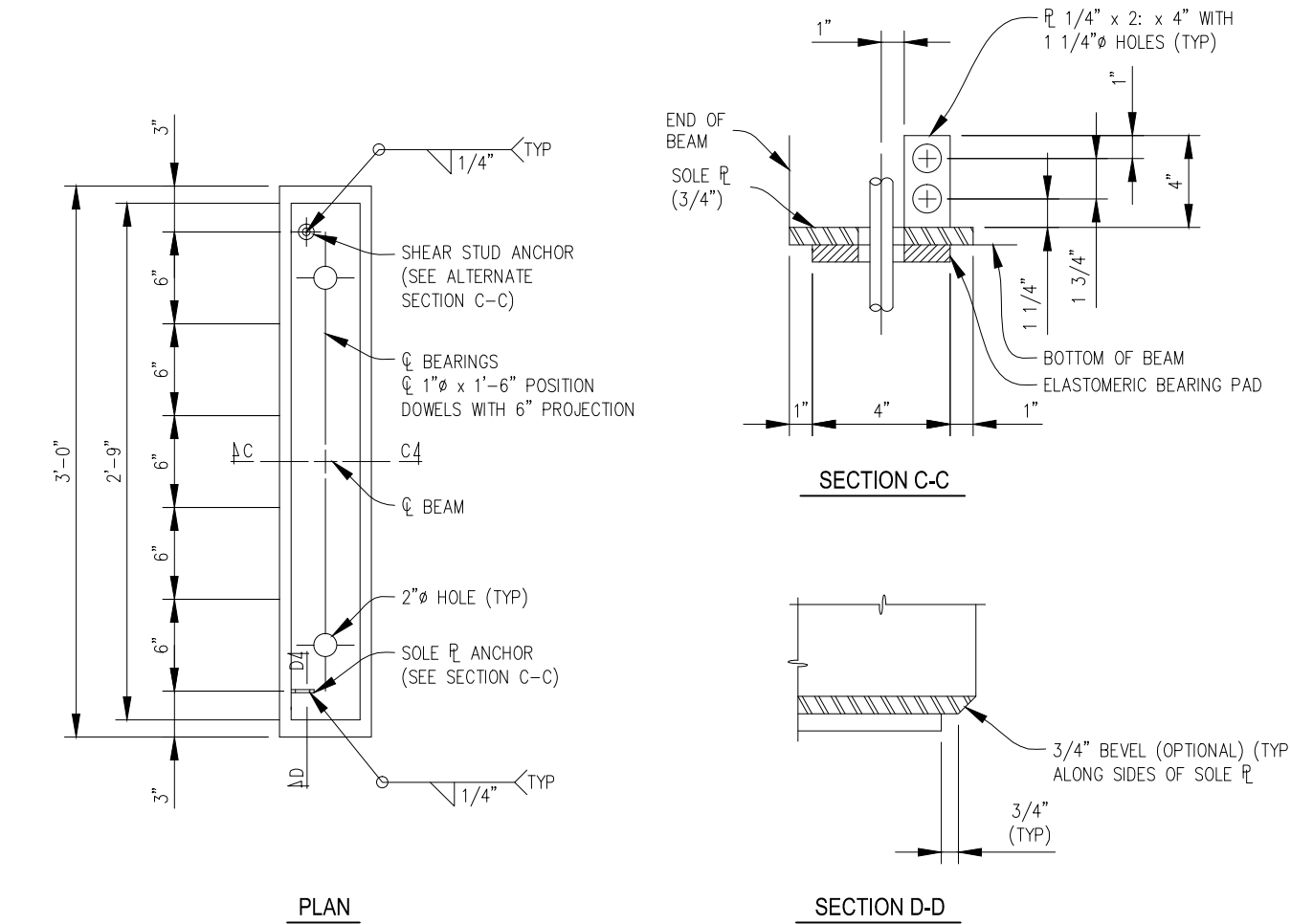
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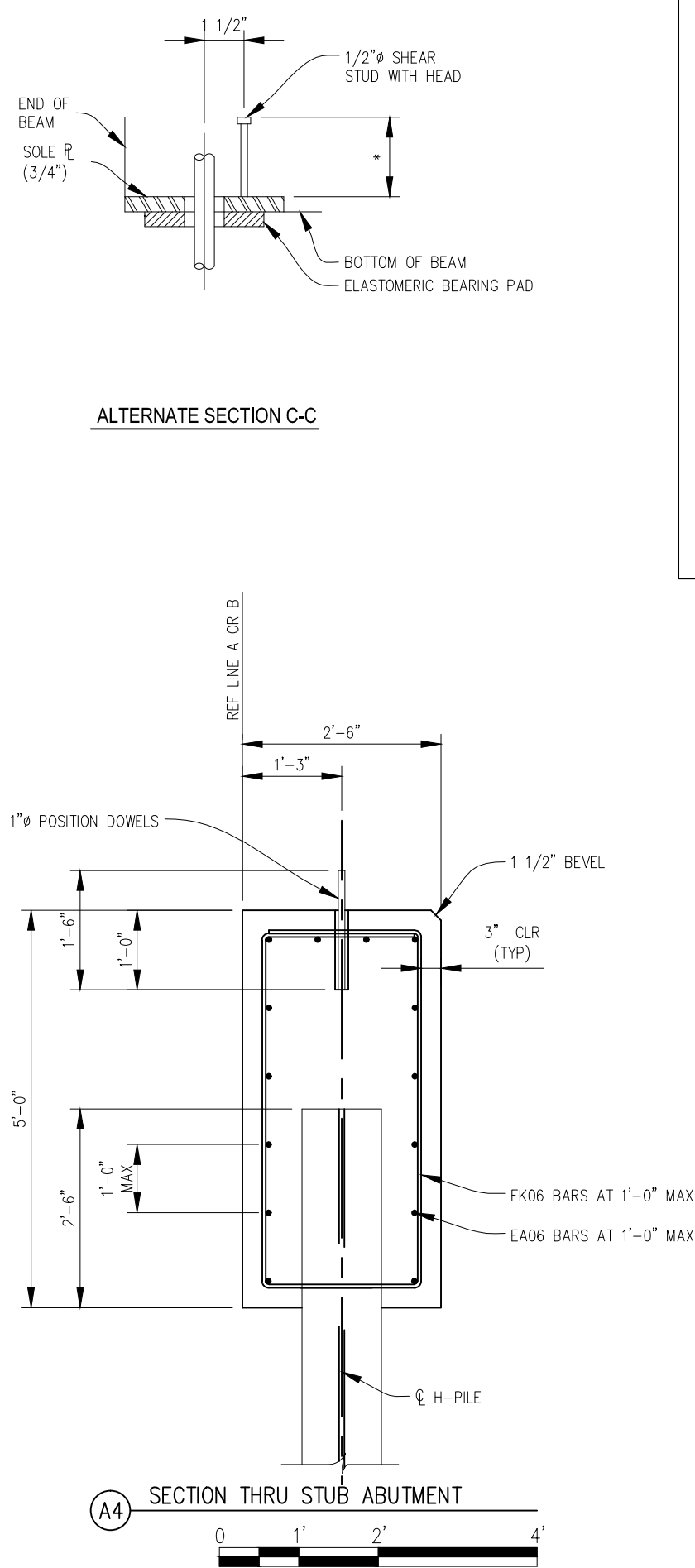
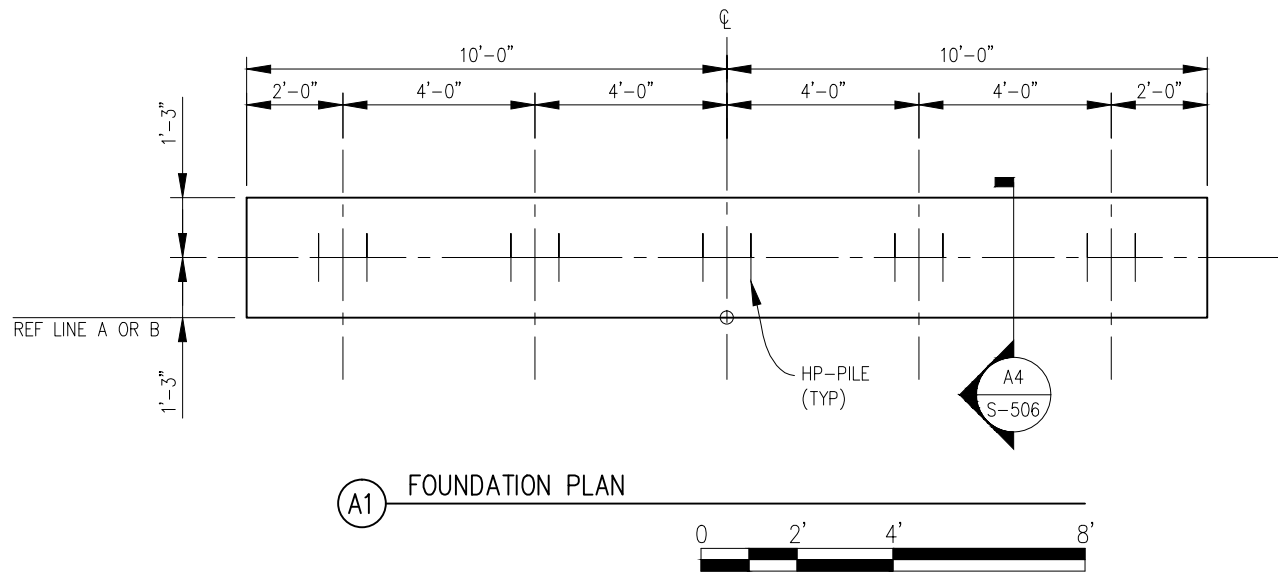
A diagram of a 4-bit shift register. It consists of four rectangular cells arranged horizontally. Above the cells are labels: '0' above the first cell, '1'' above the second cell, '2'' above the third cell, and '4'' above the fourth cell. The cells are filled with alternating black and white patterns: the first cell is white, the second is black, the third is white, and the fourth is black.



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(C2) BEARING DETAILS FOR CONCRETE BOX BEAMS



- GENERAL SHEET NOTES
1. JWP DENOTES JOINT WATERPROOFING.
 2. NS DENOTES NEAR SIDE.
 3. FS DENOTES FAR SIDE.
 4. ES DENOTES EACH SIDE.
 5. THE CONTRACTOR MAY ADHESIVE ANCHOR POSITION DOWELS IN HOLES DRILLED IN THE CONCRETE AT ABUTMENT A AND B.
 6. LOW TEMPERATURE PROTECTION OF CONCRETE SHALL BE APPLIED ACCORDING TO APPLICABLE CODES.
 7. DRIVE ALL PILES TO A NOMINAL PILE DRIVING RESISTANCE NOT LESS THAN 20 TONS.
 8. THE ESTIMATED PILE LENGTH IS BASED ON THE STATIC ANALYSIS IS 55' DRIVEN.
 9. STEEL PILES SHALL BE HP 12X53.
 10. PILES ARE TO BE DRIVEN TO SUCH ACCURACY THAT THE ENDS OF THE PILES TO BE EMBEDDED IN THE CONCRETE ARE WITHIN 3" OF THE LOCATION SHOWN ON THE PLANS.
 11. USE STEEL FOR H-PILES AND SPLICES THAT HAVE A YIELD STRENGTH NOT LESS THAN 50,000 PSI.
 12. MINIMUM PILE PENETRATION (ABUT A AND B), 10' BELOW CHANNEL BOTTOM.

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BELLE ISLE BOAT CLUB FISHING ACCESS
WAYNE COUNTY, MICHIGAN
FILE NO: 751/15224-MNB INDEX NO: 59715
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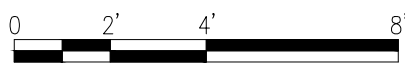
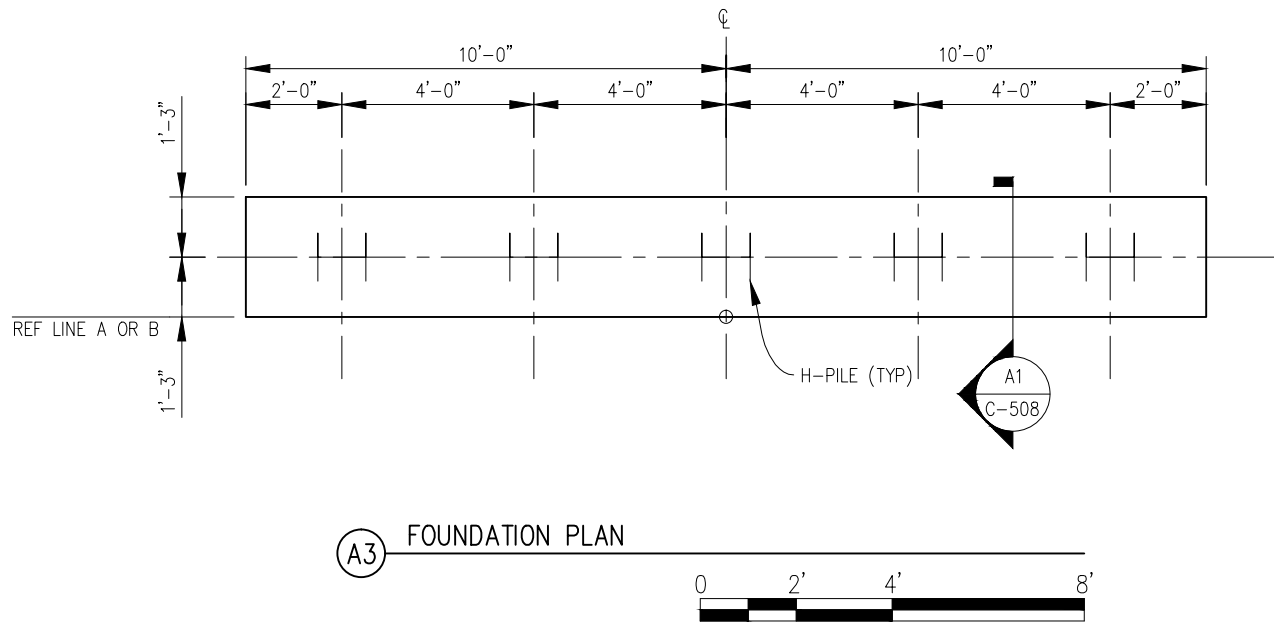
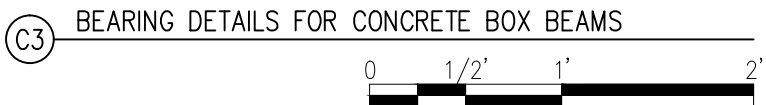
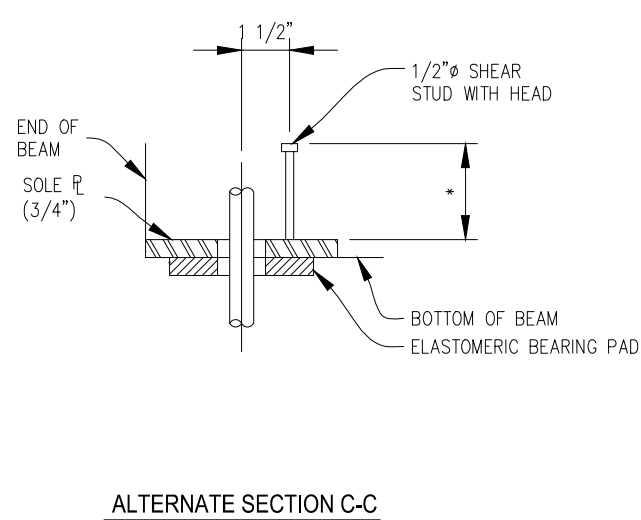
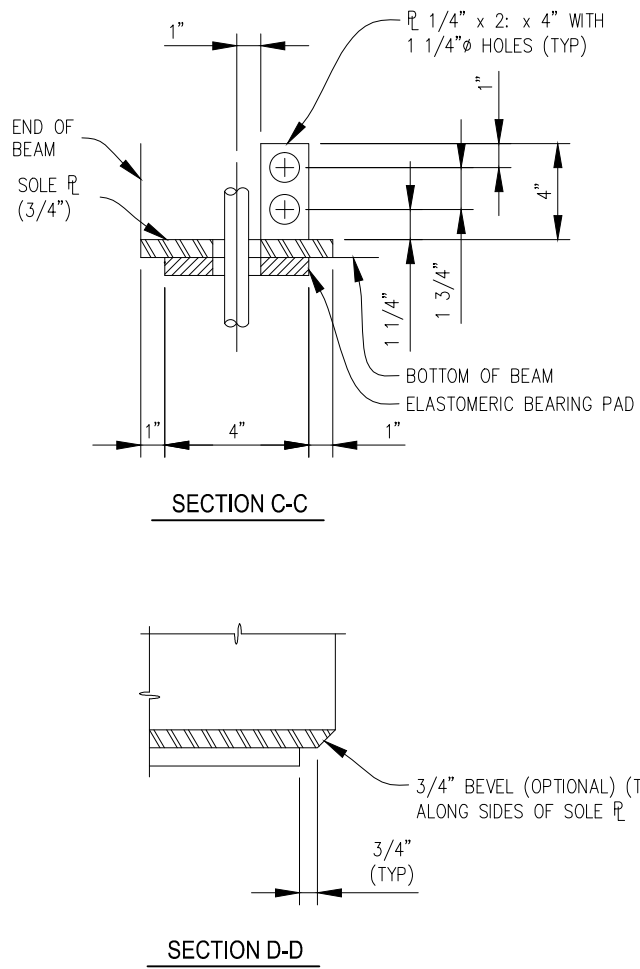
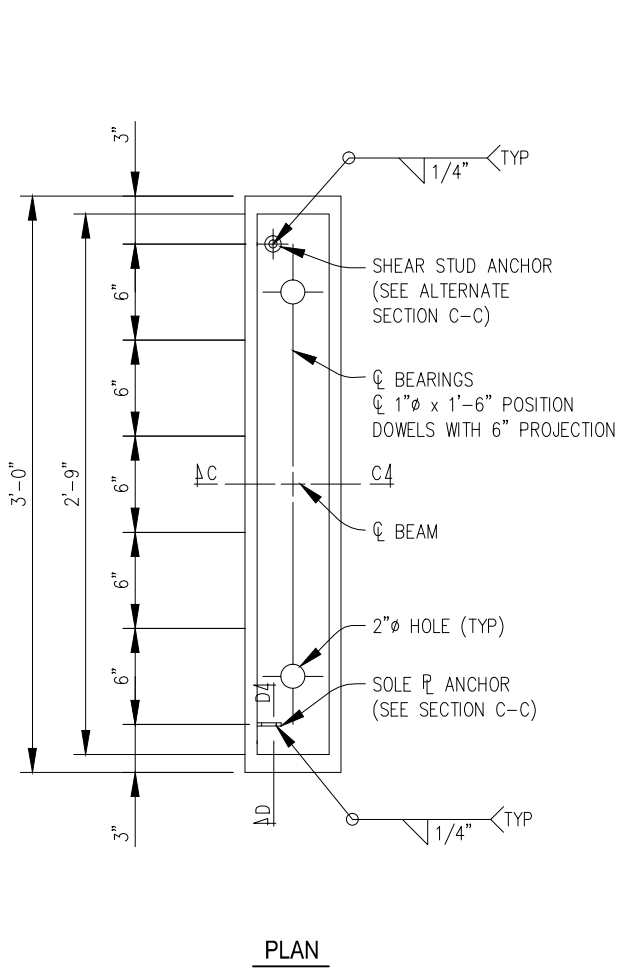
BRIDGE
ABUTMENT
DETAILS

S-506

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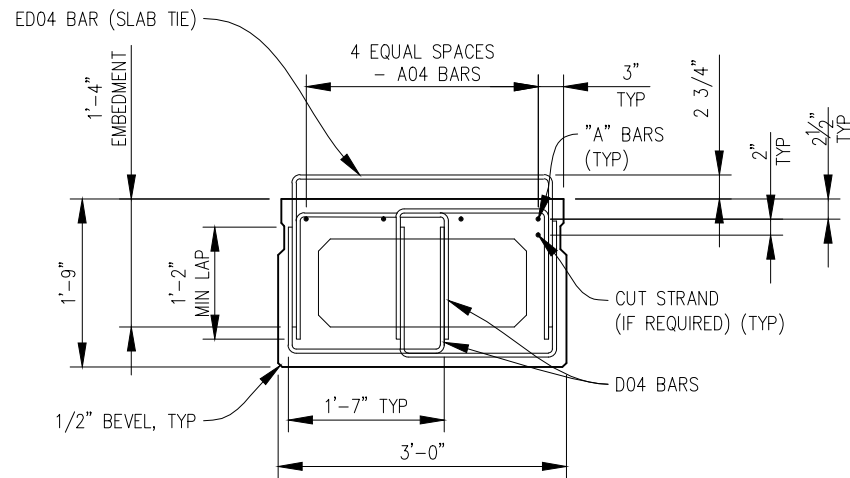
BELLE ISLE BOAT CLUB FISHING ACCESS
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BRIDGE ABUTMENT
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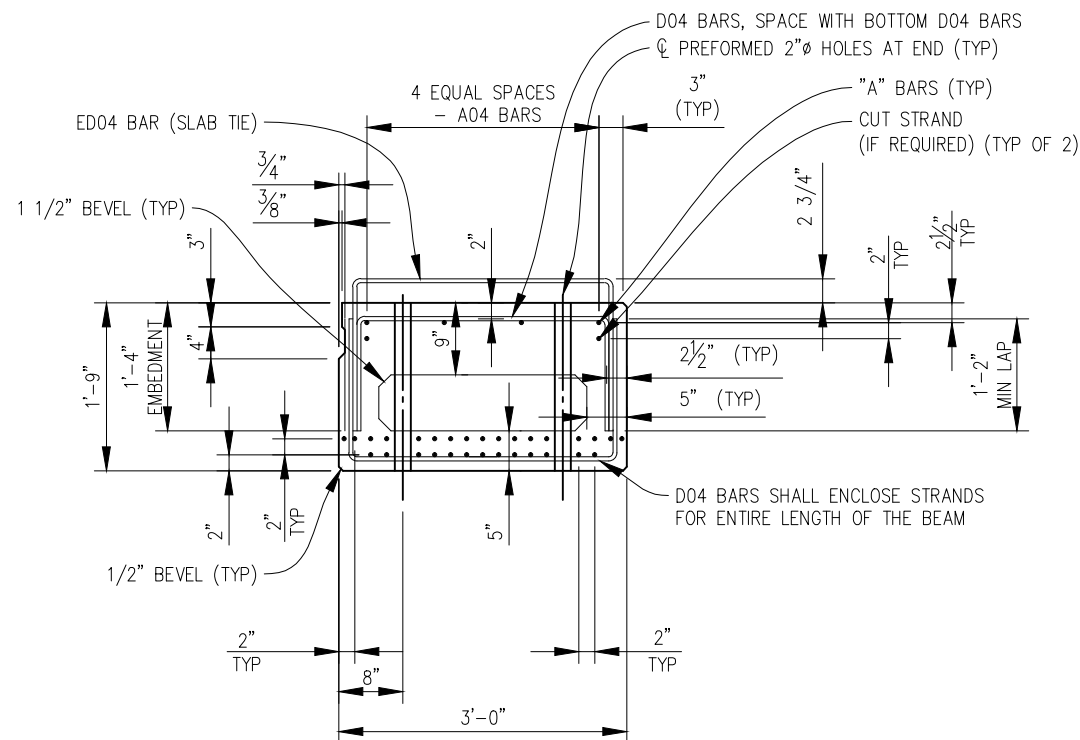
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\\NDGSRV1\LandProjects\Land Projects R2\N3055.180 BELLE ISLE\SHEETS\S-507 BRIDGE BEAM DET.dwg 12/21/2016 1:52:14 AM



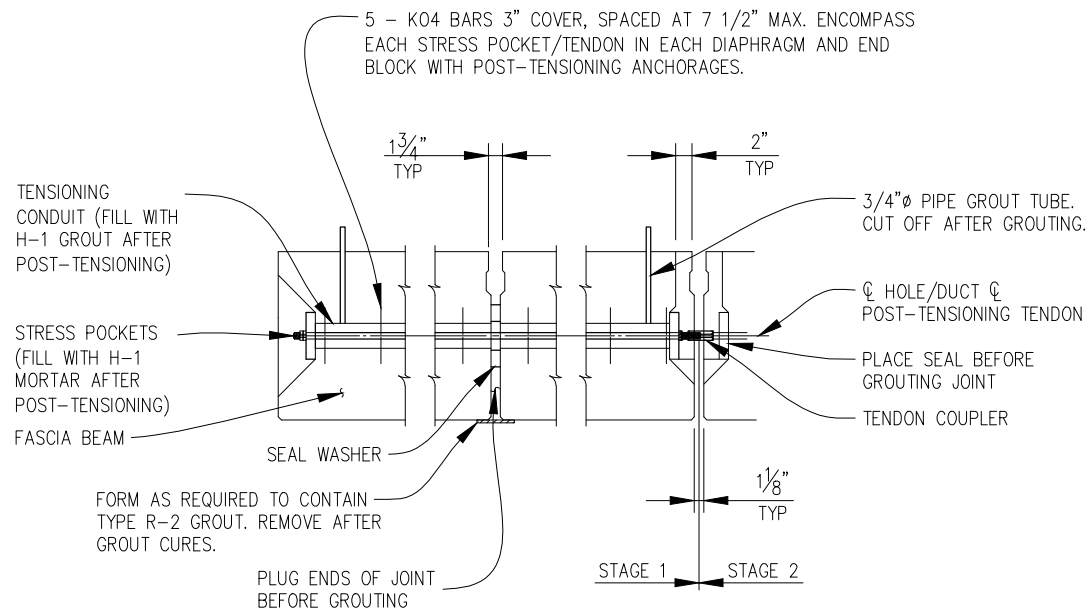
- NOTES:
1. DECREASE VOID BOXES HEIGHT IN FASCIA BEAMS TO INCREASE TOP FLANGE THICKNESS TO 9" FOR EMBEDMENT OF BRIDGE BARRIER BARS.
 2. ALL A BARS SHALL BE GRADE 60 (ksi).
 3. ALL D AND ED BARS SHALL BE GRADE 40 (ksi).

D1 TYPICAL SECTION - DOUBLE STIRRUP DETAIL, ALL BEAMS

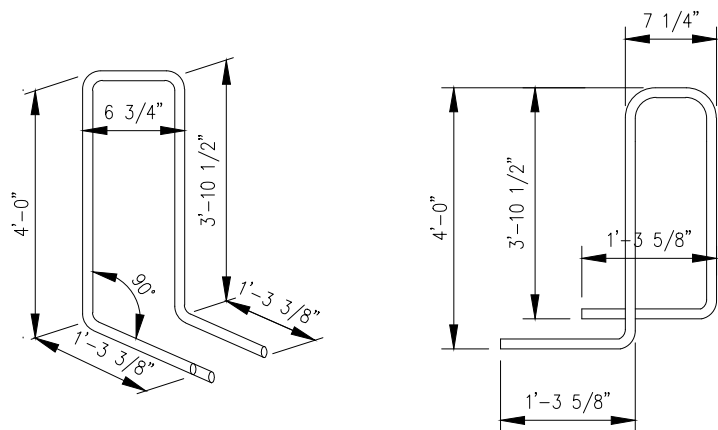


- NOTES:
1. DECREASE VOID BOXES HEIGHT TO PROVIDE 1 1/2" CLEAR COVER FOR PRESTRESSING STRANDS IN UPPER ROW.
 2. RAILING BARS NOT SHOWN.
 3. ALL A BARS SHALL BE GRADE 60 (ksi).
 4. ALL D AND ED BARS SHALL BE GRADE 40 (ksi).

A1 TYPICAL SECTION - 21" BEAMS



D4 POST - TENSIONING DETAIL



A4 SECTION

GENERAL SHEET NOTES

1. IF THE POSITION DOWELS AT ABUTMENT A OR B ARE MISALIGNED, IN RELATIONSHIP TO THE CENTERLINE OF BEARINGS, DUE TO TEMPERATURE EFFECTS ON THE BEAMS, HOLES IN THE ELASTOMERIC BEARINGS SHALL BE CENTERED ON THE DOWELS.
2. PRESTRESSING STRANDS SHALL BE GIVEN AN INITIAL PRESTRESS AS FOLLOWS:
0.6" DIA. - 44,000 LBS. PRESTRESS
3. TOTAL ESTIMATED CHANGE OF LENGTH OF BOTTOM FLANGE AT TRANSFER OF PRESTRESS FORCE IS 3/16".
4. THE ESTIMATED BEAM CAMBER AT RELEASE IS 1/2". THIS CAMBER IS DUE TO PRESTRESS AND DEAD LOAD OF THE BEAM ONLY AND IS MEASURED IN THE ERECTED POSITION.
5. THE INITIAL FORCE IN THE TRANSVERSE POST TENSIONING TENDONS SHALL BE 120,000 LBS EACH.
6. LIFTING DEVICES SHALL BE REMOVED AFTER BEAMS ARE ERECTED. REMOVAL IS INCLUDED IN THE BID ITEM
7. USE NON-DEFORMED STEEL RODS IN ACCORDANCE WITH AASHTO M 270 GRADE 36 AND HOT-DIP GALVANIZED IN ACCORDANCE WITH AASHTO M 111, AS POSITION DOWELS FOR PRECAST BEAMS.
8. PRESTRESSING STRAND SHALL BE 0.6" NOMINAL DIAMETER MEETING THE REQUIREMENTS OF AASHTO M203 (ASTM A416), GRADE 270, LOW RELAXATION STRAND.
9. STEEL FOR SOLE PLATES AND OTHER BEARING COMPONENTS SHALL MEET THE REQUIREMENTS OF AASHTO M 270 GRADE 36. SOLE PLATES ARE REQUIRED IN ALL BEAM ENDS.
10. ITEMS CAST INTO THE BEAMS TO FACILITATE BRIDGE CONSTRUCTION FORMING, FINISHING, ETC. SHALL BE GALVANIZED OR EPOXY COATED.
11. LONGITUDINAL BEAM STEEL REINFORCEMENT (A BARS) SHALL BE GRADE 60 (KSI). THE DESIGN OF TRANSVERSE BEAM STEEL REINFORCEMENT, STIRRUPS AND SLAB TIES (ED & D BARS) IS BASED ON GRADE 40 (KSI); THE USE OF EITHER GRADE 40 OR GRADE 60 IS ALLOWED IN CONSTRUCTION OF THE BEAM.

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BELLE ISLE BOAT CLUB FISHING ACCESS

WAYNE COUNTY, MICHIGAN

FILE NO: 751/15224.MNB

INDEX NO: 59715

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CADD FILE	S-507 BRIDGE BEAM DET	
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BRIDGE
BEAM DETAILS

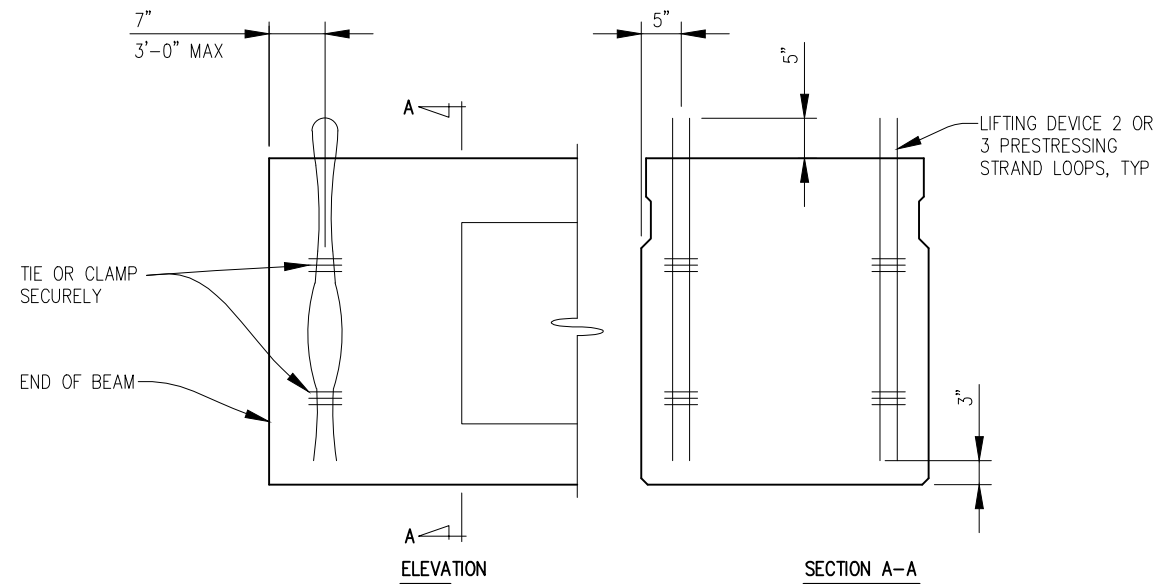
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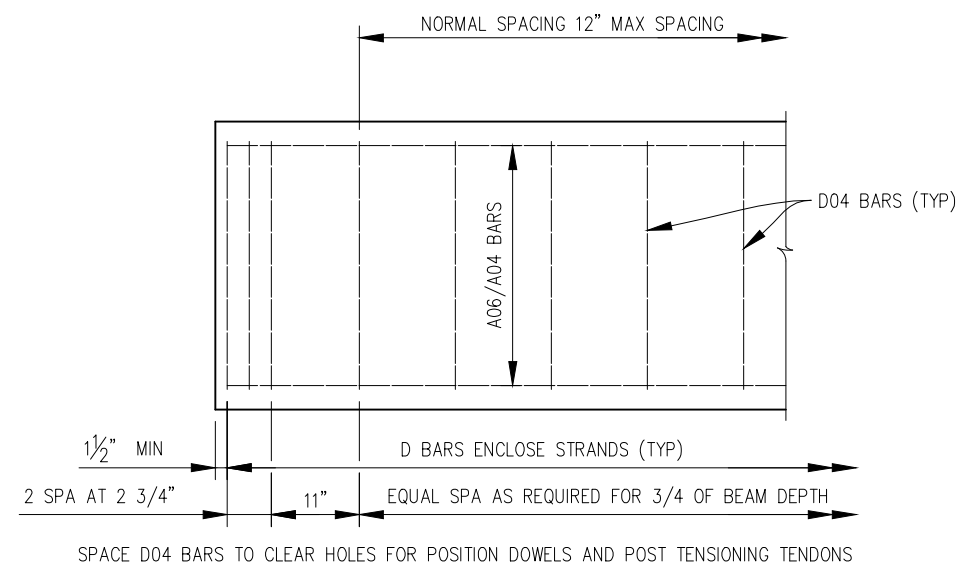
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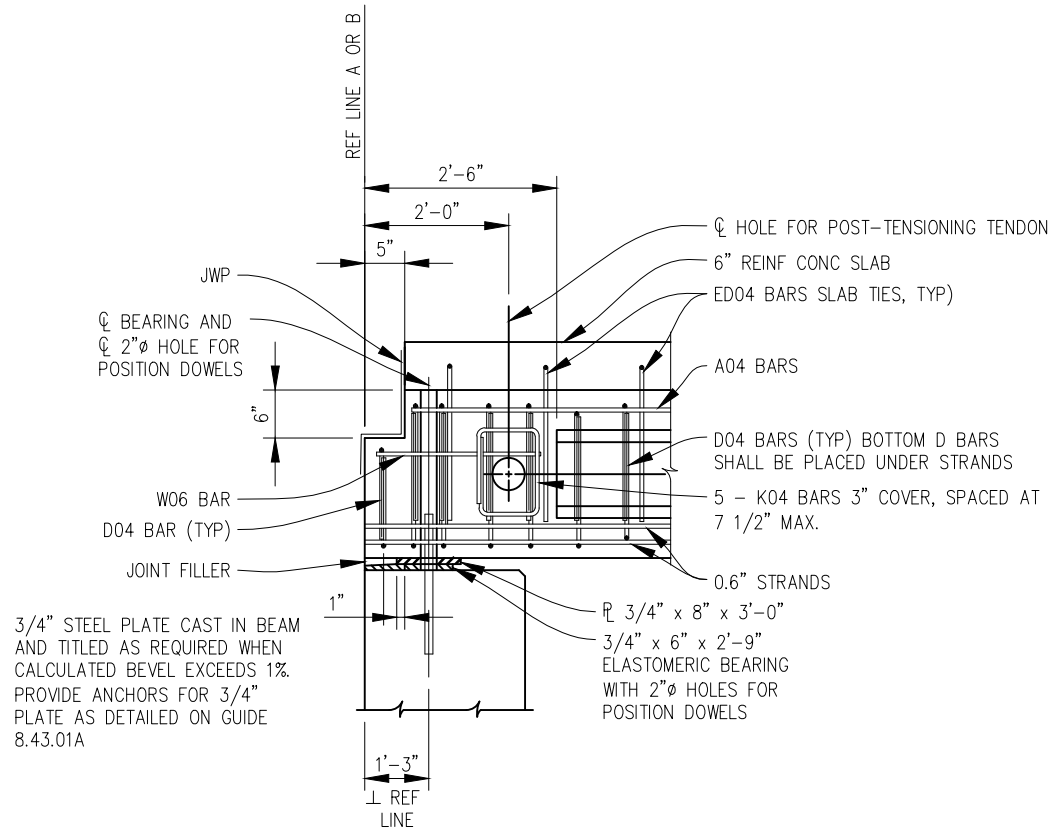
\\NDGSRV1\LandProjects\Land Projects R2\N3055.180 BELLE ISLE\Sheets\S-508 BRIDGE BEAM DET.dwg



(C2) DETAILS FOR BOX BEAM



(A2) SECTION



(A4) SECTION THROUGH END BLOCK AT ABUTMENT



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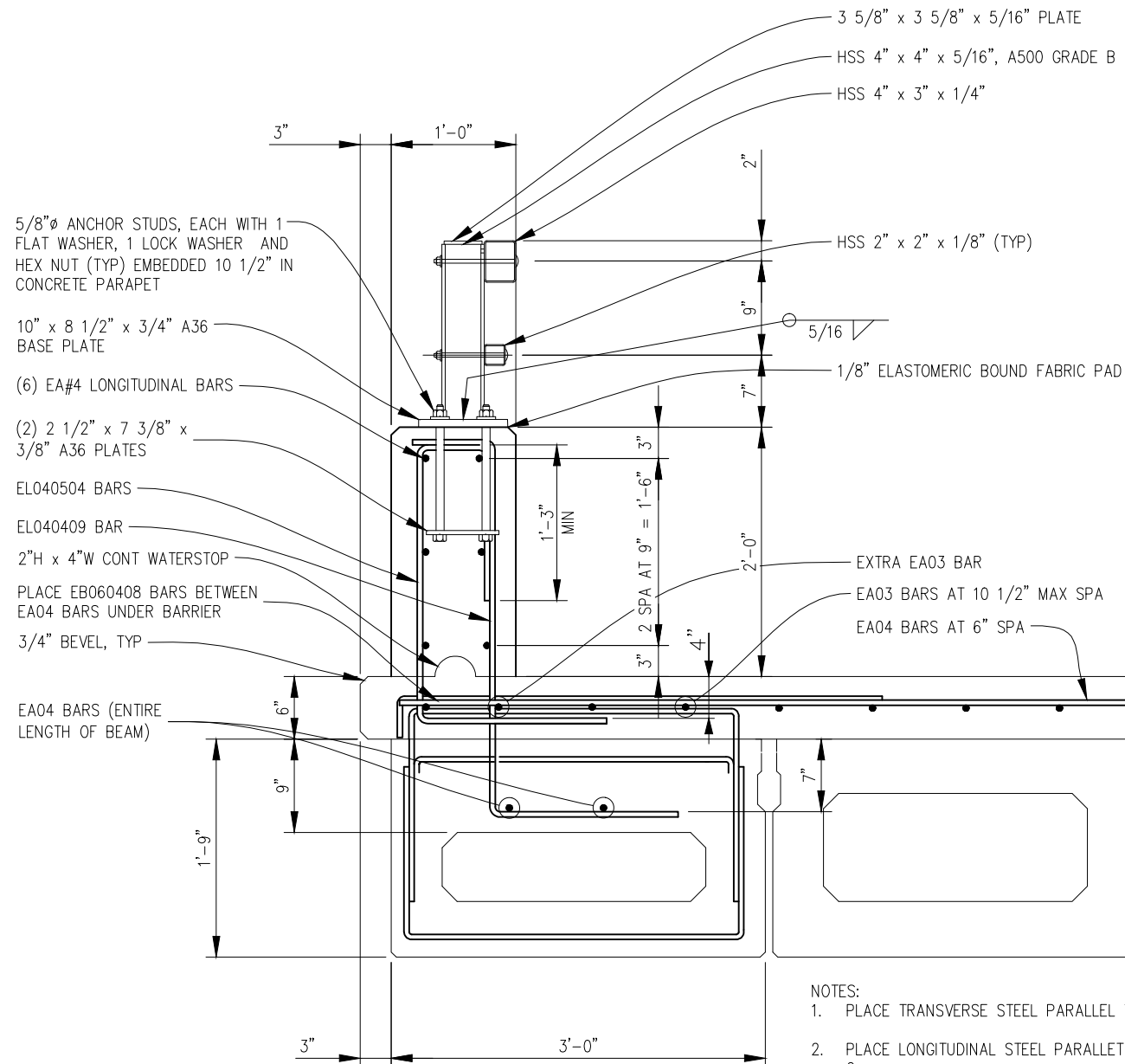
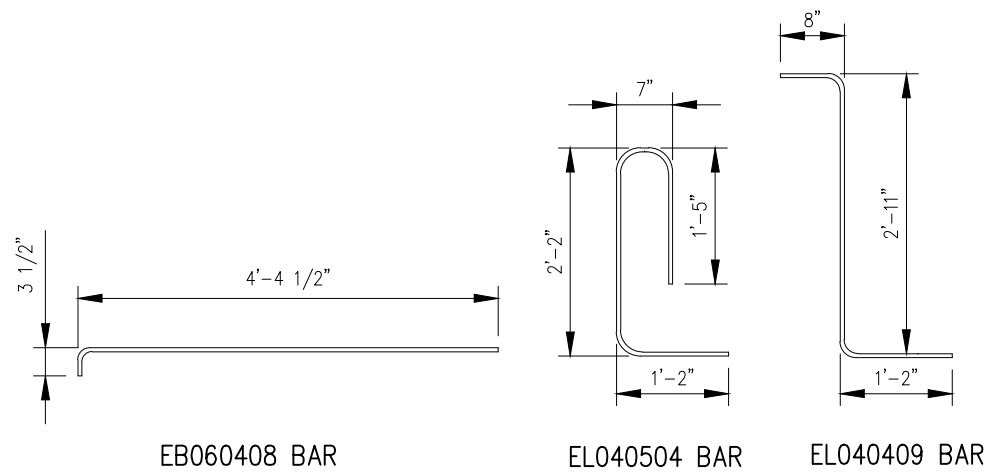
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BRIDGE
BEAM
DETAILS

S-508

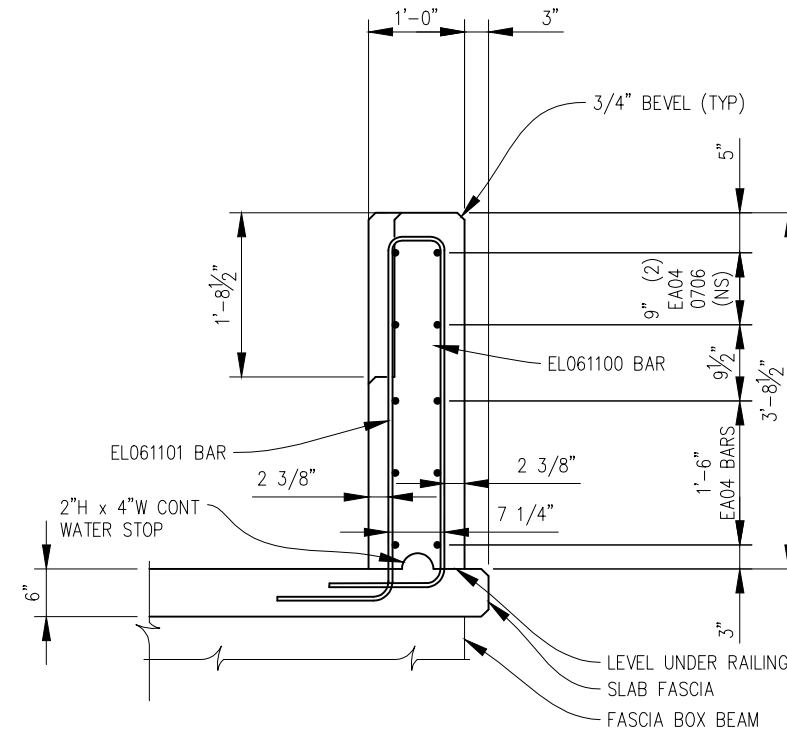
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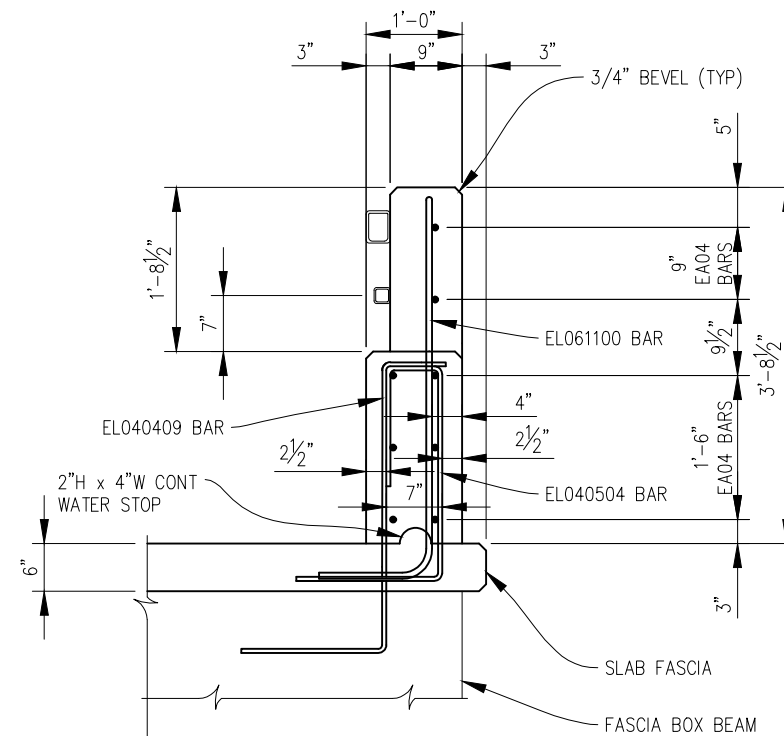
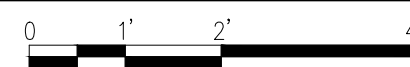
NOTES:

1. PLACE TRANSVERSE STEEL PARALLEL TO REF LINE.
2. PLACE LONGITUDINAL STEEL PARALLEL TO BRIDGE CL.
3. FOR ADDITIONAL DETAILS OF BRIDGE RAILING, SEE STANDARD PLAN B-25-SERIES. BARS WITH PREFIX "E" ARE TO BE EPOXY COATED.

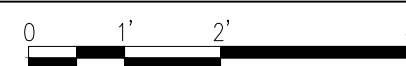
A2 RAILING ON CONCRETE BOX BEAM



D5 SECTION AT END WALL



A5 SECTION AT END WALL



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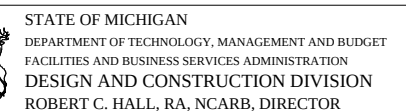
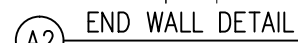
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CADD FILE	S-509 BRIDGE RAIL DET	
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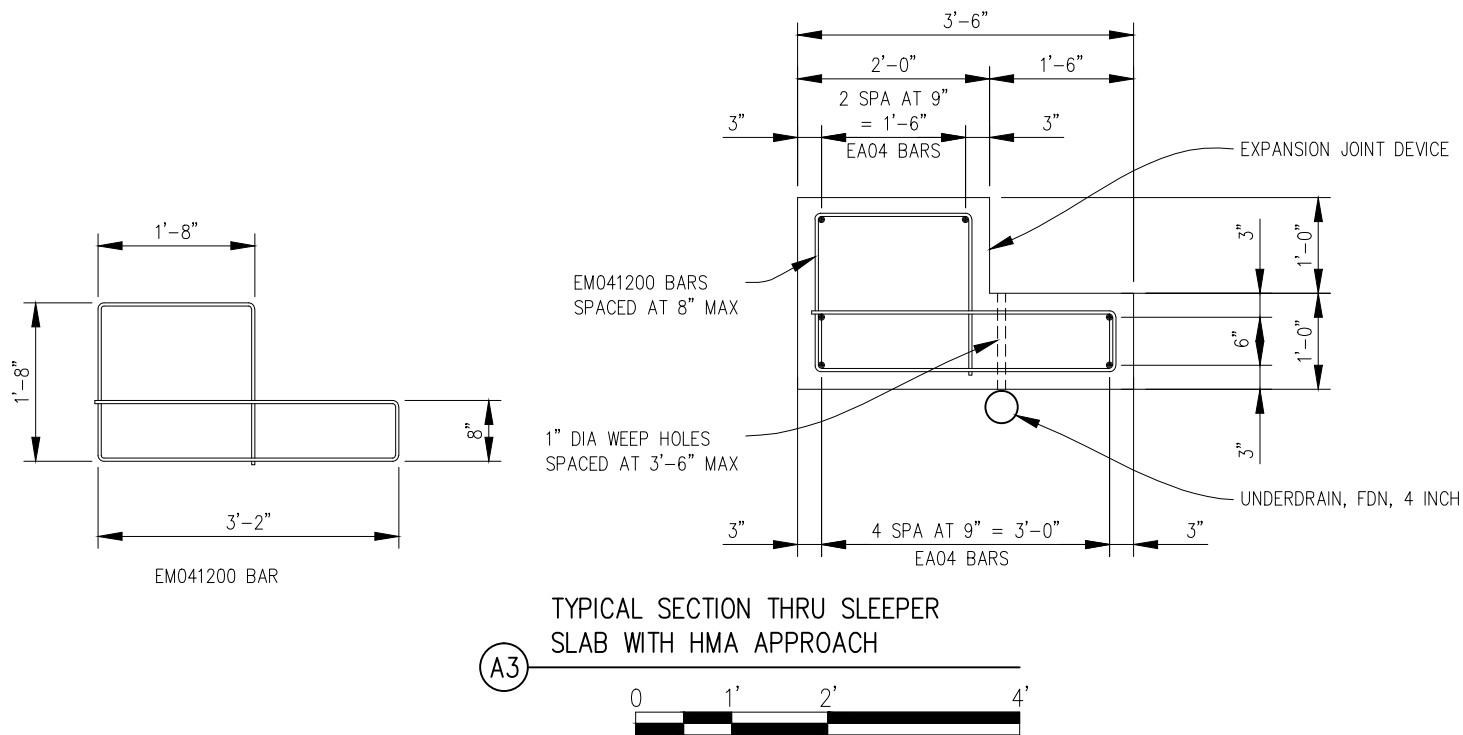
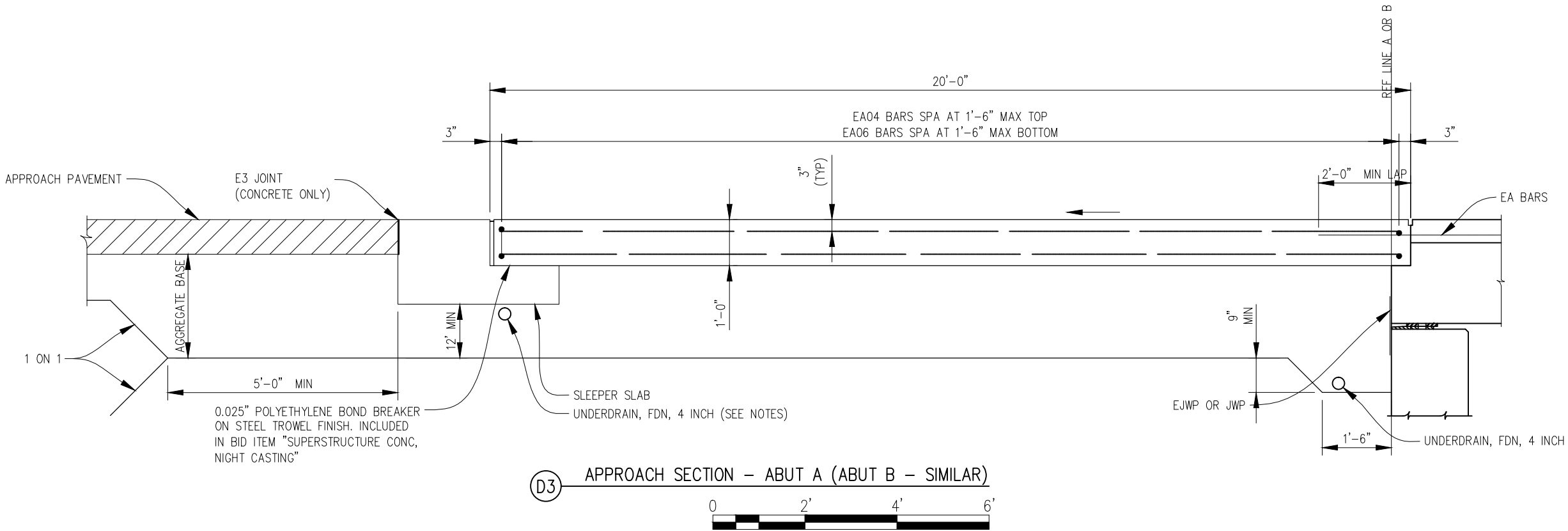
BRIDGE
RAIL DETAILS

S-509



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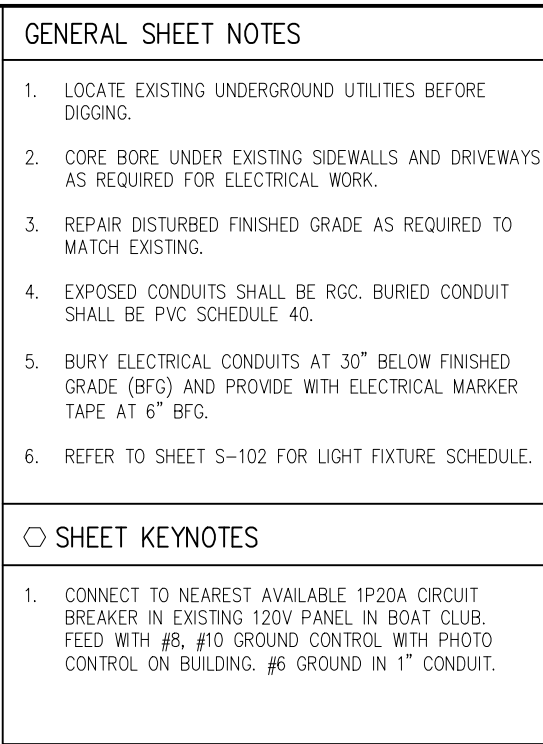
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BRIDGE
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LISTING OF CONTROL POINTS				
POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	308954.988	13494718.876	577.66	CP IR&NDG—CAP
2	309410.472	13494636.123	576.11	CP IR&NDG—CAP
3	309197.777	13495085.006	577.34	CP IR&NDG—CAP
101	308991.592	13494505.391	577.18	MP SPIKE

NOTE: POINTS 1, 3 & 101 NOT IN THIS VIEW



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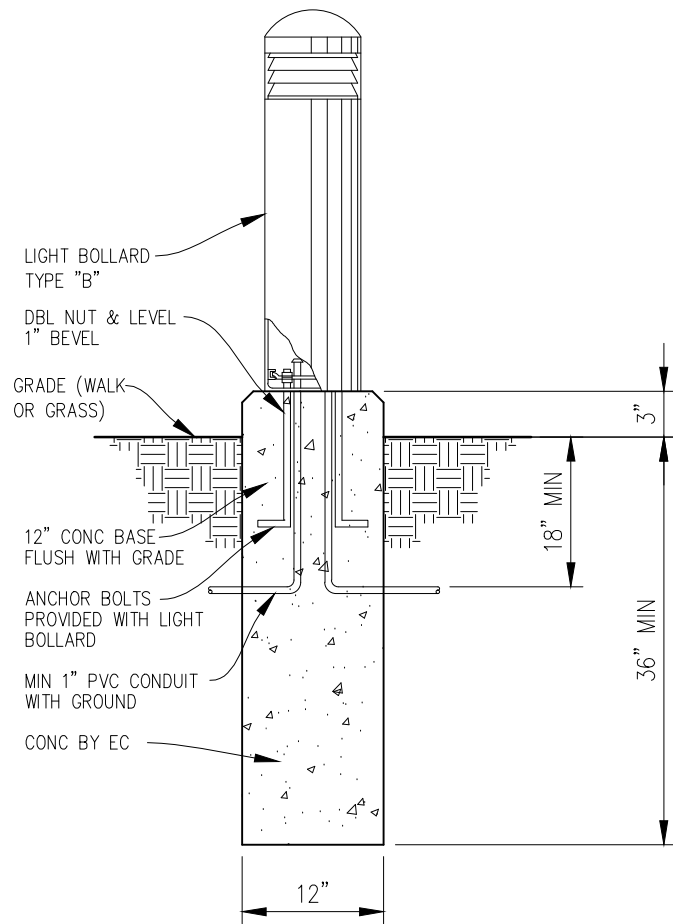
SITE ELECTRICAL PLAN

E-101

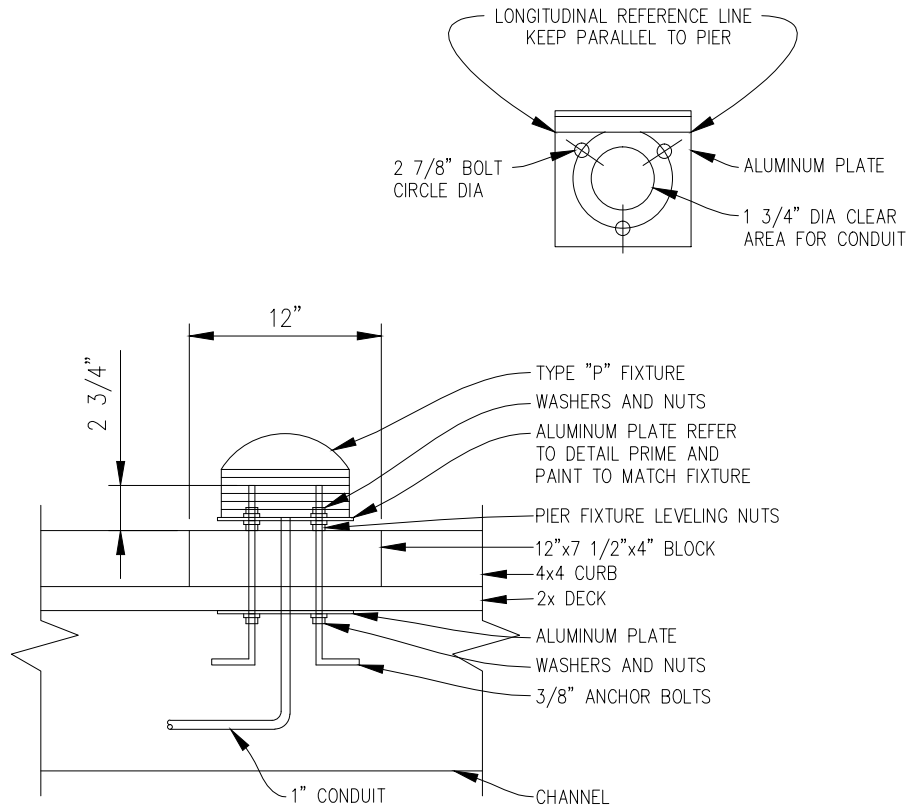
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A1 LIGHT BOLLARD TYPE "B" BASE DETAIL
NOT TO SCALE



A4 PIER FIXTURE TYPE "P"
NOT TO SCALE

GENERAL SHEET NOTES

- ALL MATERIALS SHALL BE NEW AND CONFORM WITH STANDARDS OF UNDERWRITER'S LABORATORIES.
- INSTALLATION SHALL COMPLY WITH ALL APPLICABLE NATIONAL AND STATE ELECTRIC CODES, AND ALL LOCAL CODES.
- ALL WORK SHALL BE DONE IN BEST POSSIBLE MANNER BY LICENSED ELECTRICIANS WHO SHALL ALSO BE RESPONSIBLE FOR CUTTING AND PATCHING REQUIRED TO INSTALL ELECTRICAL WORK.
- CONTRACTOR SHALL OBTAIN ALL PERMITS AND SHALL PAY ALL NECESSARY FEES.
- BIDDERS SHALL VISIT SITE BEFORE SUBMITTING PROPOSALS AND FULLY INFORM THEMSELVES AS TO JOB AND SITE CONDITIONS, AND ANY OTHER CONDITIONS UNDER WHICH HIS WORK MUST BE DONE.
- ALL WIRING SHALL BE #12 AWG MINIMUM, TYPE THW, THHN, OR THWN. FOR RUNS OVER 100 FEET, USE #10 AWG IN LIEU OF #12. ALL WIRING SHALL BE IN METALLIC CONDUIT EITHER IMC, RGC, OR EMT.
- RGC OR IMC SHALL BE USED, AND ELSEWHERE WHERE SUBJECT TO PHYSICAL DAMAGE OR EXPOSED TO ELEMENTS. ALL CONDUIT LOCATIONS OUTSIDE TO BE WATER TIGHT.
- PROVIDE TYPEWRITTEN DIRECTORIES FOR ALL PANELS WITH CIRCUIT REVISIONS.
- ELECTRICAL CONTRACTOR SHALL LEAVE ENTIRE ELECTRICAL SYSTEM IN PROPER WORKING ORDER, AND SHALL EXTEND TO OWNER ANY GUARANTEE EXTENDED BY MANUFACTURER OF EQUIPMENT AND DEVICES INSTALLED AND FURNISHED BY CONTRACTOR. GUARANTEE PERIOD SHALL BE EXTENDED AS OF DATE OF SUBSTANTIAL COMPLETION ONE YEAR BY CONTRACTOR. GUARANTEE SHALL COVER ALL LABOR AND MATERIALS NECESSARY TO CORRECT DEFECTS IN MATERIALS OR WORKMANSHIP DURING GUARANTEE PERIOD.
- SEAL AROUND ALL PENETRATIONS THROUGH FIRE RATED FLOORS AND WALLS WITH NELSON ELECTRIC FLAMESEAL PUTTY.
- SCHEDULE ALL WORK WITH OWNER.
- TERMINATE ALL CONDUIT RUNS TO EQUIPMENT WITH FLEXIBLE METAL CONDUIT. LENGTH SHALL NOT EXCEED 6 FEET.
- ELECTRICAL CONTRACTOR TO VISIT SITE PRIOR TO DEMOLITION OR CONSTRUCTION AND COORDINATE REPLACEMENT OF EXISTING ELECTRICAL PANEL WITH OWNER.
- ALL ELECTRICAL CONNECTIONS SHALL BE LOCATED AT LEAST 12 INCHES ABOVE THE DECK OF THE PIER BUT NOT BELOW THE ELECTRICAL DATUM PLANE (2 FEET ABOVE THE HIGHEST WATER LEVEL) PER NEC ARTICLE 555.



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MARK	DATE	ISSUED FOR
PROJECT NO	N3055.180	
CADD FILE	E-501 ELECTRICAL DETAILS	
MANAGER	AHP	
DESIGNED BY	AHP	
DRAWN BY	SMM	
CHECKED BY	AHP	
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E-501