

PUBLIC NOTICE

REQUEST FOR PERMISSION TO ALTER A U.S. ARMY CORPS OF ENGINEERS PROJECT UNDER SECTION 408

TITLE: Cape May County – Rehabilitate 96th Street (CR 657) Bridge Structure Number 0500-006 sited at the Great Channel Portion of the New Jersey Intracoastal Waterway Federal Navigation Channel in the Borough of Stone Harbor, Cape May County, New Jersey

PUBLIC NOTICE IDENTIFICATION NUMBER: 408-NAP-2023-0012

PUBLIC NOTICE COMMENT PERIOD:

Begins: **12 July 2024**

Expires: **12 August 2024**

Interested parties are hereby notified that an application has been received for a Department of the Army Section 408 permission for certain work at or near a federal project of the United States, as described below and shown on attached figures. Written comments are being solicited from anyone having an interest in the requested alteration. Comments will become part of the U.S. Army Corps of Engineers' (USACE's) administrative record and will be considered in determining whether to approve the request. Comments supporting, opposing, or identifying concerns that should be considered by the USACE in its decision process are all welcome.

This public notice is not a paid advertisement and is for public information only. Issuance of this notice does not imply USACE endorsement of the project as described.

1. REQUESTOR: In compliance with 33 USC 408 (Section 14 of the Rivers and Harbors Act of 1899; hereinafter Section 408), Cape May County has requested permission to rehabilitate 96th Street (CR 657) Bridge Structure Number 0500-006, which is sited at the Great Channel Portion of the New Jersey Intracoastal Waterway Federal Navigation Channel.

2. LOCATION: The proposed project is sited at the Great Channel Portion of the New Jersey Intracoastal Waterway Federal Navigation Channel in the Borough of Stone Harbor, Cape May County, New Jersey, at approximate coordinates 39.056987, -74.765333.

3. LOCATION MAP(S)/DRAWING(S): Please see attached Project Plan Sheets 1-202.

4. REQUESTOR'S PROPOSED ACTION: As stated in the Section 408 Submittal Package provided by the requestor, the proposed action entails the following:

- Replacing the existing main span with a new double leaf, simple trunnion bascule span utilizing electromechanical gear train assemblies.
 - The bascule span will be widened to match the cross-section of the existing approach spans, allowing 5.0-foot wide shoulders for potential future bike lane use, and a 6.0-foot wide sidewalk on each fascia to coincide with 11.0-foot wide traffic lanes in each direction (this is an increase of 8.0-feet in the roadway portion of the section, approximately 17.0-feet in total widening of the cross-section). New traffic barriers/railings will be installed at the curb line.
 - The bascule span was set to a similar length of the existing, allowing approximately 51.0-feet of horizontal clearance for the channel compared to approximately 50.0-feet of existing horizontal clearance. The vertical clearance and general appearances will be similar to the existing structure.
 - A double leaf, simple trunnion span will appear and operate substantially similar to the existing span to satisfy the New Jersey State Historic Preservation Office (NJSHPO) while also remaining respectful of the aesthetics and history of this prominent crossing. This movable bridge type is also common throughout the County and the State, simplifying maintenance for County staff.
 - The new deck will be a closed deck system (concrete surface) to reduce corrosion of structural components below. New foundations/piers and a new submarine cable to power the bridge systems will also be provided for the replacement of the main span. The intent is to perform much of the foundation work outside the footprint of the existing bridge to reduce impacts to traffic. These are some of the most time intensive activities, and such accommodations will minimize impacts to traffic.
 - To avoid long-term closures of the bridge to vehicular traffic, a fixed temporary bridge crossing is anticipated to be installed during construction while critical elements of the new bascule span are being constructed. The intent is to prevent traffic detours of more than sixty (60) days at a given time during off-peak seasons and avoid vehicular detours during the peak summer season. It is anticipated that smaller vessels will be allowed to pass underneath the temporary fixed span.
- A new, strengthened, and resilient fender system will be installed in the navigable channel. The fender system will be extended further beyond the limits of the new piers to allow for channelization of vessels prior to the main span's pier/foundation components.
- A new pre-stressed adjacent box beam superstructure in Span #14 raised 12.0-inches at the abutment.
 - This will address the deficient condition of the superstructure as well as minimize the risk of future deterioration by increasing clearance above water.
 - This superstructure type will maintain aesthetic consistency between existing approach spans.
 - This will reduce flooding on the bridge as the approach roadways are exposed to flood events.
 - This improves resiliency of the low-clearance span especially in consideration of future sea level rise.
- Raising of Span #1 12.0-inches at the abutment.
 - This will reduce flooding on the bridge as the approach roadways are exposed to flood events.

- This will minimize risk of future deterioration by increasing clearance above water.
- This improves resiliency of the low clearance span especially in consideration of future sea level rise.
- Replacement of the flanking spans immediately adjacent to the bascule span.
 - A similar pre-stressed concrete structure type similar to Span #14 is anticipated.
 - Directly over the counterweights where space is limited, steel framing and exodermic decking is anticipated.
- A new 6.0-foot wide sidewalk along the North fascia.
 - This will provide pedestrian connectivity along both fascias of the structure and allow County staff safer access to the bridge house. New pedestrian railings will be installed to coincide with this element.
 - This also improves pedestrian safety by no longer having pedestrians needing to cross the County Road at the base of the bridge where sightlines are limited.
- New warning gates and traffic signals.
 - An upgraded movable span safety system will serve to alert vehicular and pedestrian traffic of span openings with modern warning gates built to withstand extreme wind loads. These gates would not be expected to stop a vehicle in a head-on collision.
- Proposed scour countermeasures at the East abutment.
 - Scour countermeasures to protect the abutment and mitigate risks from large storm events.
- Partial depth removal and reconstruction of the existing approach span deck within the roadway.

5. REGULATORY AUTHORITY: This request will be reviewed according to the provisions of Section 14 of the Rivers and Harbors Act of 1899 (33 U.S.C. 408). A requestor has the responsibility to acquire all other permissions or authorizations required by federal, state, and local laws or regulations, including any required permits from the USACE Regulatory Program under Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403), Section 404 of the Clean Water Act (33 USC Section 1344) and/or Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 USC 1413). Any Section 10/404/103 permit decision associated with the proposed alteration is separate from and will not be included in the Section 408 permission decision. An approval under Section 408 does not grant any property rights or exclusive privileges nor does it authorize any injury to the property or rights of others.

6. ENVIRONMENTAL COMPLIANCE: A decision on a Section 408 request is a federal action, and therefore subject to the National Environmental Policy Act (NEPA) and other environmental compliance requirements. While ensuring compliance is the responsibility of USACE, the requester is providing all information that the Philadelphia District identifies as necessary to satisfy all applicable federal laws, executive orders, regulations, policies, and ordinances. Based on information provided by the applicant to date, current Corps regulations governing NEPA implementation, and/or the contents of existing NEPA documentation if available, it is likely that the proposed action will be determined to be categorically excluded from the need to prepare an Environmental Assessment (EA) or Environmental Impact Statement (EIS). This determination will be finalized following

completion of agency coordination and prior to issuance of the Section 408 Permission Decision.

7. EVALUATION: As part of its evaluation, USACE will first make a determination that the submittal from the requestor is complete. The Philadelphia District is working closely with the requestor to ensure that all required technical plans, maps, drawings, and specifications are provided and are complete. Once the package is complete, a District-led review will be conducted to determine, in accordance with Engineering Circular (EC) 1165-2-216, whether the proposed alteration will impair the usefulness of the USACE Project or be injurious to the public interest, as follows:

- A. *Impair the Usefulness of the Project Determination.* The Philadelphia District's Section 408 review team will determine if the proposed alteration will limit the ability of the federally authorized project to function as authorized, or will compromise or change any authorized project conditions, purposes or outputs.
- B. *Injurious to the Public Interest Determination.* Proposed alterations will be reviewed to determine the probable impacts, including cumulative impacts, on the public interest. Evaluation of the probable impacts that the proposed alteration to the USACE project may have on the public interest requires a careful weighing of all those factors that are relevant in each particular case. Factors that may be relevant to the public interest depend upon the type of USACE project being altered and may include, but are not limited to, such things as conservation, economic development, historic properties, cultural resources, environmental impacts, water supply, water quality, flood hazards, floodplains, residual risk, induced damages, navigation, shore erosion or accretion, and recreation. The decision whether to approve an alteration will be determined by the consideration of whether benefits are commensurate with risks. If the potential detriments are found to outweigh the potential benefits, then it may be determined that the proposed alteration is injurious to the public interest.

8. SOLICITATION OF COMMENTS: The USACE is soliciting comments from the public; federal, state, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of the proposed activity. Any comments received will be considered by USACE to determine whether to issue, modify, condition, or deny a permission for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and other public interest factors listed above. Comments are considered in making a final determination whether the proposed action will be categorically excluded from the need to prepare further NEPA documentation. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

- A. It should be noted that materials submitted as part of the Section 408 request become part of the public record and are thus available to the general public under the procedures of the Freedom of Information Act (FOIA). Individuals may submit a written request to the Philadelphia District Corps of Engineers, Office of Counsel to obtain copies of said materials under the FOIA.

- B. It is presumed that all parties viewing this notice will wish to respond to this public notice; therefore, a lack of response will be interpreted as meaning that there is no objection to the project as described.

9. COMMENT SUBMISSION AND ADDITIONAL INFORMATION: Written comments on the described work should reference the USACE Public Notice Identification Number found on the first page of this notice. Comments must reach this office no later than the stated expiration date of the Public Notice to become part of the record and be considered in the decision. Comments or requests for additional information should be emailed or mailed to the following address:

Email: Bishel.Baby@usace.army.mil

Mailing Address:

U.S. Army Corps of Engineers

Philadelphia District

Attn: Bishel B. Baby

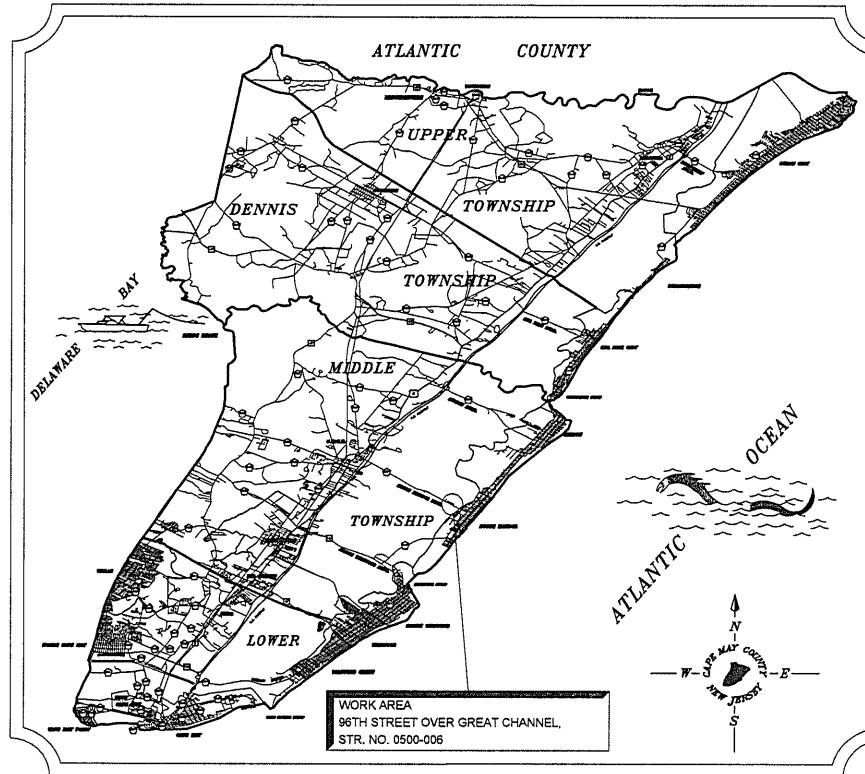
1650 Arch Street, 7th Floor

Philadelphia, PA 19103-2004

REHABILITATION OF 96TH STREET (CR657) BRIDGE OVER GREAT CHANNEL STR. NO. 0500-006

PUBLIC UTILITIES

SOUTH JERSEY GAS COMPANY 1700 U.S. ROUTE 9 NORTH CAPE MAY COURTHOUSE, NJ 08210 609-495-2900
ATLANTIC CITY ELECTRIC CMCH OPERATIONS 420 U.S. ROUTE 9 NORTH CAPE MAY COURTHOUSE, NJ 08210 609-493-3817
COMCAST COMMUNICATIONS, INC. 901 WEST LEEDS AVE. ABSECON, NJ 08201 609-677-7332
VERIZON NEW JERSEY, INC. 657 FLORIDA GROVE RD. HOPELAWN, NJ 08561 732-683-5174
STONE HARBOR DEPT. OF WATER AND SEWER 3508 SECOND AVE. STONE HARBOR, NJ 08247 609-368-4223
CAPE MAY COUNTY MUNICIPAL UTILITIES AUTHORITY 1523 U.S. ROUTE 9 NORTH CAPE MAY COURTHOUSE, NJ 08210 609-495-9029



LOCATION AND KEY MAP

N.T.S.

STANDARD NJDOT ROADWAY CONSTRUCTION/TRAFFIC CONTROL/BRIDGE CONSTRUCTION DETAILS BOOKLET, LATEST EDITIONS AND STANDARD ELECTRICAL DETAILS BOOKLET, LATEST EDITIONS, ARE APPLICABLE TO THIS PROJECT EXCEPT FOR THOSE DETAILS CONTAINED HEREIN.

N.J. DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION OF 2019 WITH AMENDMENTS (INCLUDING BASELINE DOCUMENT CHANGES) THERETO TO GOVERN (<https://www.state.nj.us/transportationeng/documents/bcd/>)

MARCH 2025

NOTE:
BEFORE STARTING WORK, THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES, CAPE MAY COUNTY, USGC AND OTHER INTERESTED PARTIES OF THE SCHEDULE AND STARTING DATE. TRAFFIC CONTROL MUST BE MARKED BY THE CONTRACTOR, AND THE UTILITIES PROTECTED AS REQUIRED BY THE UTILITY COMPANIES.

INDEX OF SHEETS

SHEET NUMBERS	DESCRIPTION
1	KEY SHEET
2 - 40	ROADWAY PLANS
41 - 122	STRUCTURES PLANS
123 - 143	MECHANICAL PLANS
144 - 195	ELECTRICAL PLANS
196 - 202	ARCHITECTURAL PLANS

APPROVED
DIRECTOR, BOARD OF CHOSEN COMMISSIONERS

DATE

RECOMMENDED BY
ROBERT CHURCH, P.E.
CAPE MAY COUNTY ENGINEER

DATE

PREPARED BY: WSP USA INC.
2000 LENOX DRIVE, LAWRENCEVILLE, NJ, 08648



CAPE MAY COUNTY

MARC S. ESPOSITO

N.J. PE LICENSE NUMBER
24GE0484300

DATE

Designed by

Drawn by

Checked by

JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

DRAWING TITLE:

KEY SHEET



DATE: 4/9/2024

SCALE: AS SHOWN

SHEET REFERENCE NO.: 01

SHEET NO.: 001 of 202

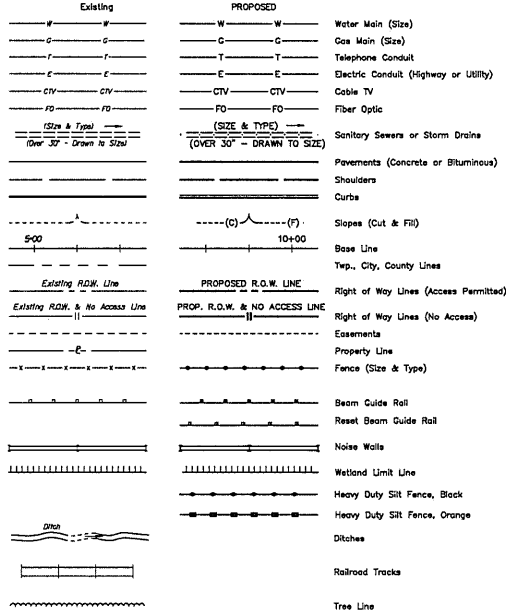
SEQ. NO.	ITEM NO.	DESCRIPTION	UNIT	CONTRACT QUANTITY	PLAN SHEET TOTALS	IF AND WHERE DIRECTED	AS-BUILT QUANTITY	DISTRIBUTION: PLAN SHEET QUANTITY									
1	151000M	PERFORMANCE BOND AND PAYMENT BOND	LUMP SUM	LUMP SUM													
2	152015P	POLLUTION LIABILITY INSURANCE	LUMP SUM	LUMP SUM													
3	153003P	PROGRESS SCHEDULE #	LUMP SUM	LUMP SUM													
4	153004M	PROGRESS SCHEDULE 2 UPDATE	UNIT	18		18											
5	154003P	Mobilization	LUMP SUM	LUMP SUM													
6	156005M	HEAVY DUTY SILT FENCE, ORANGE	L.F.	200		200											
7	156030M	18" ROLLER TYPE 2, 2' X 4'	UNIT	4	4			D-1	2	D-3	2						
8	156040M	FLOATING TURBIDITY BARRIER, TYPE 3	L.F.	300		300											
9	156050P	CONCRETE WASHOUT SYSTEM	LUMP SUM	LUMP SUM													
10	156072M	OIL ONLY EMERGENCY SPILL KIT, TYPE 1	UNIT	2		2											
11	160004M	FUEL PRICE ADJUSTMENT	DOLLAR	DOLLAR													
12	161005P	FINAL CLEANUP	LUMP SUM	LUMP SUM													
13	201003P	CLEARING SITE	C.Y.	10		10											
14	202008M	EXCAVATION, TEST PIT	LUMP SUM	LUMP SUM													
15	202021P	REMOVAL OF PAVEMENT	S.Y.	185				C-1	119	C-3	66						
16	203021P	1-14 30" L AGGREGATE	C.Y.	104		104											
17	301008P	SUBBASE	C.Y.	92		92		C-1	46	C-3	46						
18		EDGE GRADES AGGREGATE BASE COURSE, 6" THICK	S.Y.	42		42		C-1	27	C-3	15						
19	401006P	11MA MILLING, 3" OR LESS	S.Y.	808		808		C-1	462	C-3	344						
20	401027M	POLYMERIZED JOINT ADHESIVE	I.F.	940		940											
21	401030M	TACK COAT	GAL	400		400											
22	401054M	HOT MIX ASPHALT 12.5 M 64 SURFACE COURSE	TON	301	301			C-1	173	C-3	128						
23	401058M	HOT MIX ASPHALT 19 M 64 INTERMEDIATE COURSE	TON	44	44			C-1	17	C-3	17						
24	401064M	HOT MIX ASPHALT 12.5 M 64 BASE COURSE	TON	85	85			C-1	41	C-3	24						
25	601070M	CLEANING EXISTING PIPE, 12" TO 24" DIAMETER	L.F.	500		500											
26	602009M	RESET EXISTING CASTING	UNIT	4	4			D-1	2	D-3	2						
27	602215M	CLEANING DRAINAGE STRUCTURE	UNIT	4		4											
28	602220M	TRENCH DRAIN	L.F.	61	61			D-3	61								
29		WOOD DECKING	S.Y.	20	20			C-3	20								
30	606012P	CONCRETE SIDEWALK, 4" THICK	S.Y.	293	293			C-1	153	C-3	120						
31	606030P	HOT MIX ASPHALT DRIVEWAY, 6" THICK	S.Y.	29	29			C-3	29								
32	606051P	CONCRETE DRIVEWAY, 6" THICK	S.Y.	78	78			C-3	78								
33		RESET BRICK PAVERS	S.Y.	98	98			C-3	98								
34	606004P	DETTICULAR WARNING SURFACE	S.Y.	2	2			C-1	1	C-3	1						
35	607021P	6" X 12" CONCRETE VERTICAL CURB	L.F.	707	707			C-1	435	C-3	272						
36	608003P	NOVAELETATIVE SURFACE, HOT MIX ASPHALT	S.Y.	61	61			C-1	13	C-3	8						
37	609003M	BEAM GUIDE RAIL	L.F.	154	154			C-1	151	C-3	13						
38	609007M	TANGENT GUIDE RAIL TERMINAL	UNIT	4	4			C-1	3	C-3	1						
39	609009M	BEAM GUIDE RAIL ANCHORAGE	UNIT	1	1			C-1	1								
40	609006M	APPROACH GUIDE RAIL TRANSITION TL-2	UNIT	3	3			C-1	1	C-3	1						
41	610002M	TRAFFIC STRIPES, 4"	L.F.	2838		2,838		C-1	2	C-3	1						
42	610008M	TRAFFIC STRIPES, 6"	L.F.	2648		2,648											
43	610009M	TRAFFIC MARKINGS	S.F.	70		70											
44	610010M	TRAFFIC MARKINGS, LINES, 12"	L.F.	207		207											
45	610017M	TRAFFIC MARKINGS, LINES, 24"	L.F.	36		36											
46	610021M	RTM, BI-DIRECTIONAL, AMBER LENS	UNIT	17		17											
47	610023M	HST PATTERNED CROSSWALK	S.Y.	42	42			C-3	42								
48	612003P	REGULATORY AND WARNING SIGN	S.F.	50		50											
49	651255M	RESET WATER VALVE BOX	UNIT	1	1			D-3	1								
50	652004M	RT-GIT GAS VALVE BOX	UNIT	4	4			D-3	4								
51	602021M	TRFF REMOVAL, OVER 6" TO 12" DIAMETER	UNIT	1	1			C-3	1								
52	804000P	TCP SOL SPREADING 4" THICK	S.Y.	52	52			C-3	52								
53	804010P	BORROW TOPSOIL	C.Y.	6		6											
54	805005P	FERTILIZING AND SEEDING, TYPE A-3	S.Y.	52		52		C-3	52								
55	806000M	FIBER MULCHING	S.Y.	52		52		C-3	52								
56	809012M	GRAVEL MULCHING	S.Y.	176		176		C-1	176								
57	809018M	WOOD MULCHING	S.Y.	4		4		C-3	4								
58	810003M	MOVING	ACRE	1		1											

PREPARED BY: WSP USA INC. 2000 LENOX DRIVE, LAWRENCEVILLE, NJ, 08848 	 CAPE MAY COUNTY EV Designed by: _____ Drawn by: _____ Checked by: _____	JOB: REHABILITATION OF 96TH STREET (CR657) BRIDGE OVER GREAT CHANNEL STR. NO. 0500-006	PROJECT LOCATION: STONE HARBOR BOUGH AND MIDDLE TOWNSHIP CAPE MAY COUNTY, NEW JERSEY DRAWING TITLE: ESTIMATE- DISTRIBUTION OF QUANTITIES	DATE: 4/5/2024 SCALE: N.T.S. SHEET REFERENCE NO.: 01 SHEET NO. 002 of 202
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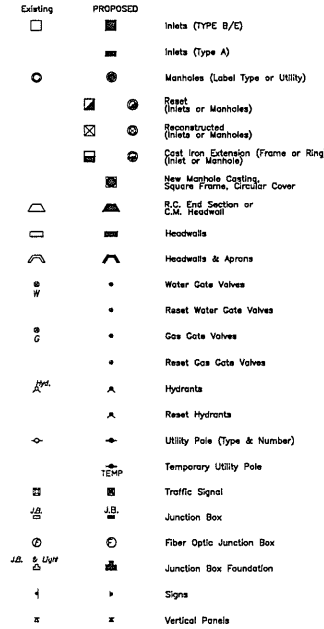
STEVEN M. ARBIZ N.J. PE LICENSE NUMBER: 24603811900 DATE: _____

STANDARD CONSTRUCTION NOTES FOR ROAD IMPROVEMENTS

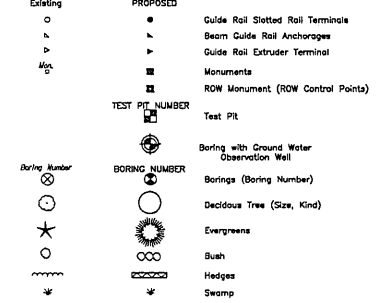
Linear Features



Topographical Features



Topographical Features



ABBREVIATIONS USED IN THIS CONTRACT

AH, BK.	AHEAD, BACK	J.B.	JUNCTION BOX	R.C.P., R.C.C.P.	REINFORCED CONCRETE CULVERT PIPE
AUX.	AUXILIARY	LT., RT.	LEFT, RIGHT	RCP	REINFORCED CONCRETE ELLIPTICAL PIPE
B.L.	BASELINE	L.O.D.	LIMIT OF DISTURBANCE	RCP, R.C.P.	REINFORCED CONCRETE PIPE
B.M.	BENCH MARK	L.O.E	LIMIT OF EXCAVATION	R.M.C., R.M.C.	RIGID METALLIC CONDUIT
B.G.R.A.	BEAM GUIDE RAIL ANCHORAGE	L.O.P.	LIMIT OF PAVEMENT (PAVING)	R.N.M.C., R.N.M.C.	RIGID NON-METALLIC CONDUIT
BIT., BITUM.	BITUMINOUS	L.O.M.	LIMIT OF MILLING	ROW, R.O.W.	RIGHT OF WAY
B.L.D.G.	BUILDING	M.B.	MAILBOX	R.R.	RAILROAD
C.L.	CENTERLINE	M.P.	MILE POST	R.T.E., RT.	ROUTE
C.I.P.	CAST IRON PIPE	MAX.	MAXIMUM	SAN.	SANITARY
C.M.P.	CORRUGATED METAL PIPE	M.E.C.	MEET EXISTING CURB	SW, SDWK.	SIDEWALK
CONC.	CONCRETE	M.E.P.	MEET EXISTING PAVEMENT	S.H.D.	STATE HIGHWAY DEPARTMENT
C.R.	COUNTY ROUTE	MIN.	MINIMUM	SHLD.	SHOULDER
C.T.	CURB TRANSITION	MTD	MANUFACTURED TREATMENT DEVICE	S.L.	SURVEY LINE
CULV.	CULVERT	NO.	NUMBER	S.O.D.	SUBBASE OUTLET DRAIN
D. DIA.	DIAMETER	N.T.S.	NOT TO SCALE	STY.	STREET
D.C.	DEPRESSED CURB	N.V.S.	NON VEGETATIVE SURFACE	T.	TANGENT
DE	DITCH EXCAVATION	PAV'T.	PAVEMENT	T.B.A.	TO BE ABANDONED
DH	DRILL HOLE	PERF.	PERFORATED	T.B.R.	TO BE REMOVED
DWY	DRIVEWAY	P.G.L.	PROFILE GRADE LINE	TEL.	TELEPHONE
E.B., W.B., N.B., S.B.	EASTBOUND, WESTBOUND	P.L.	PROPERTY LINE, PROFILE LINE	TEMP.	TEMPORARY
		PK	PARKER KAYLON MASONRY NAIL	T.G.R.T.	TANGENT GUIDE RAIL TERMINAL
		POC, P.O.C.	POINT ON CURVE	THK., TH.	THICK
EL., ELEV.	ELEVATION	POL, P.O.L.	POINT ON LINE	TYP.	TYPICAL
EXIST.	EXISTING	POY, P.O.T.	POINT ON TANGENT	U.D.	UNDERDRAIN
F.G.R.T.	FLARED GUIDE RAIL TERMINAL	PRC, P.R.C.	POINT OF REVERSE CURVE	UP, U.P.	UTILITY POLE
FM	FORCE MAIN	PROP.	PROPOSED	VAR.	VARIABLE, VARIES
GR.	GRATE	PT, P.T.	POINT OF TANGENCY	W.C.V.C.	WHITE CONCRETE VERTICAL CURB
HT.	HEIGHT	P.V.C., P.V.C.	POLYVINYL CHLORIDE PIPE, POINT OF VERTICAL CURVATURE	WM	WATER METER
H.W.	HEADWALL	P.V.I.	POINT OF VERTICAL INTERSECTION	X-SECT	CROSS SECTION
HYD.	HYDRANT	P.V.T., P.V.T.	POINT OF VERTICAL TANGENCY, PAVEMENT		
INV.	INVERT				
IP	IRON PIN				
IS.	ISLAND				

PREPARED BY: WSP USA INC.
200 LENOX DRIVE, LAWRENCEVILLE, N.J., 08848



CAPE MAY COUNTY

STEVEN M. ARBIZ

N.J. PE LICENSE NUMBER:
24GE0381900

DATE

DESIGNED BY

DRAWN BY

CHECKED BY

JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY
DRAWING TITLE:
CONSTRUCTION
LEGEND

DATE: 4/9/2024
SCALE: N.T.S.
SHEET REFERENCE NO.:
SHEET NO.: 003 of 222

GENERAL NOTES:

1. THE CONTRACTOR IS TO VISIT THE SITE BEFORE BIDDING TO BECOME FAMILIAR WITH THE PRESENT CONDITIONS AND TO EVALUATE FOR ITSELF THE EXTENT AND NATURE OF THE WORK TO BE DONE UNDER THIS CONTRACT.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFICATION AND COORDINATION WITH ALL UTILITY COMPANIES AND SHALL HAVE ALL UTILITIES CLEARLY MARKED OUT BEFORE COMMENCEMENT OF ANY WORK.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING PROPER AND SUFFICIENT CONSTRUCTION PROTECTION TO THE WORKERS AND THE PUBLIC. OSHA AND ALL COUNTY AND STATE CODES SHALL BE FOLLOWED.
4. THE CONTRACTOR SHALL COORDINATE THEIR ACTIVITIES AND COOPERATE WITH THE COUNTY OF CAPE MAY DURING REPLACEMENT OF EXISTING SIGNS AND SIGN POSTS WITHIN THE PROJECT LIMITS DURING CONSTRUCTION ON THIS PROJECT.
5. THE CONTRACTOR IS DIRECTED TO NOTIFY THE COUNTY CLERK, POLICE AND FIRE DEPARTMENT ONE WEEK PRIOR TO THE START OF CONSTRUCTION AND 24 HOURS PRIOR TO ANY IMPLEMENTATION OF ANY DETOUR OR CLOSING OF THE ROADWAY.
6. PRIOR TO CONSTRUCTION, AN INSPECTION IS TO BE MADE BY THE CONTRACTOR AND THE REPRESENTATIVE OF THE COUNTY'S ENGINEERING DEPARTMENT TO DETERMINE WHICH TRAFFIC CONTROL DEVICES ARE TO BE REMOVED FROM THE PROJECT OR RESET BY THE CONTRACTOR.
7. THE CONTRACTOR IS DIRECTED TO NOTIFY RESIDENTS/PROPERTY OWNERS 24 HOURS PRIOR TO ANY CONSTRUCTION WORK IN THEIR DRIVEWAYS/SIDEWALK OR ON THEIR PROPERTY. CONTRACTOR IS TO PROVIDE EMERGENCY ACCESS TO ALL SITES DURING ALL PHASES OF CONSTRUCTION.
8. THE CONTRACTOR IS DIRECTED TO NOTIFY ALL COMMERCIAL SITES OR PROFESSIONAL OFFICES ONE WEEK PRIOR TO ANY CONSTRUCTION WORK IN THEIR DRIVEWAY OR TRAFFIC MODIFICATION NEAR THEIR DRIVEWAY.
9. FOR THE DURATION OF THE CONSTRUCTION, THE CONTRACTOR SHALL NOT RESTRICT ACCESS TO ANY RESIDENTIAL OR COMMERCIAL BUILDINGS OR DRIVEWAYS WITHIN THE PROJECT LIMITS.
10. NO CONSTRUCTION ACTIVITIES SHALL EXTEND BEYOND THE LIMITS OF WORK AS SHOWN ON THE CONSTRUCTION PLANS.
11. THE CONTRACTOR SHALL KEEP THE STREET CLEAR OF DIRT AND BE RESPONSIBLE FOR ANY STREET CLEANUP AS PART OF THE COURSE OF THE PROJECT. ALL EXCAVATED MATERIAL SHALL BE REMOVED FROM THE SITE AT END OF EACH WORK DAY. NO STOCKPILING IS PERMITTED WITHIN PROJECT LIMITS. STAGING AND STOCKPILING OF CONSTRUCTION MATERIAL AND VEHICLES TO OCCUR OFFSITE IN A PAVED COUNTY OWNED LOT.
12. THE CONTRACTOR MUST UTILIZE ALL BEST MANAGEMENT PRACTICES DURING CONSTRUCTION. THE CONTRACTOR MUST STABILIZE ALL DISTURBED AREAS IN ACCORDANCE WITH SOIL EROSION AND SEDIMENT CONTROL STANDARDS.
13. ALL EXISTING TREES ARE TO REMAIN UNLESS OTHERWISE SPECIFIED. THE CONTRACTOR SHALL NOT REMOVE ANY PLANT MATERIAL UNLESS SPECIFICALLY INSTRUCTED TO DO SO ON THE PLANS AND BY THE ENGINEER. TREES AND BUSHES SHALL NOT BE TRIMMED OR REMOVED WITHOUT PRIOR APPROVAL OF THE COUNTY.
14. THE CONTRACTOR SHALL COORDINATE WITH NEW JERSEY TRANSIT BUS OPERATIONS TO PROVIDE FOR TEMPORARY RELOCATION OF BUS STOPS AND MAINTENANCE OF BUS SERVICE, IF IMPACTED.
15. ALL WORK SHALL BE IN CONFORMANCE WITH THE NEW JERSEY BARRIER FREE SUBCODE (CAJ04000S A117.1A1892).
16. ALL WORK SHALL BE IN CONFORMANCE WITH THE NEW JERSEY DEPARTMENT OF TRANSPORTATION 2018 STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION AS REVISED BY THE LATEST SUPPLEMENTAL SPECIFICATIONS AND THE COUNTY OF CAPE MAY STANDARD SPECIFICATIONS TO GOVERN. CURRENT NEW JERSEY DEPARTMENT OF TRANSPORTATION STANDARD ROADWAY, TRAFFIC CONTROL, BRIDGE CONSTRUCTION DETAILS SHALL BE UTILIZED UNLESS A DETAIL IS CONTAINED IN THE CONTRACT DOCUMENTS. VARIOUS NEW JERSEY DEPARTMENT OF TRANSPORTATION STANDARD ROADWAY CONSTRUCTION DETAILS ARE CONTAINED IN THE CONTRACT DOCUMENT SET AND WERE THE MOST CURRENT REVISION AT THE TIME OF PRINTING. THE CONTRACTOR IS ADVISED THAT THE VARIOUS NOTED DETAILS CONTAINED IN THIS DOCUMENT SET ARE FOR REFERENCE ONLY AND THAT THE CONTRACTOR SHALL OBTAIN AND UTILIZE THE MOST CURRENT N.J.D.O.T. STANDARD DETAILS.
17. AT THE END OF EACH WORKDAY, THE CONTRACTOR SHALL CLEAN AND REMOVE ALL CONSTRUCTION DEBRIS FROM ROADWAYS AND MAINTAIN SAFE ACCESS TO ALL HOMES AND BUSINESSES FOR PEDESTRIANS AND VEHICLES.
18. ALL SIDEWALK CURB RAMPS SHALL BE INCLUDED IN THE UNIT PRICE FOR CONCRETE SIDEWALKS AND SHALL COMPLY WITH PROVIDING A SIDEWALK RAMP IN COMPLIANCE WITH THE REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT. DETECTABLE WARNING SURFACES WILL BE APPLIED TO EACH RAMP IDENTIFIED WITHIN THE PROJECT LIMITS.
19. ANY TEMPORARY RIDING SURFACE WITHIN THE PROJECT SHALL BE 8" CLEAN STONE OR BASE PAVEMENT. SOIL RIDING SURFACES ARE NOT PERMITTED.
20. THE CONTRACTOR SHALL SAFELY REMOVE, RELOCATE, TEMPORARILY STORE AND RESET SIGNS, MAILBOXES, FENCES, LANDSCAPING, AND ANY OTHER ROADSIDE FEATURE THAT MAY BE IN CONFLICT WITH THE PROPOSED CONSTRUCTION OR AS DIRECTED BY THE ENGINEER.

GENERAL NOTES-continued

21. THE CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE WITH ALL FEDERAL, STATE, COUNTY AND MUNICIPAL ORDINANCES, REGULATIONS, AND REGULATIONS.
22. THE CONTRACTOR MUST PERFORM ALL CONSTRUCTION OPERATIONS IN ACCORDANCE WITH THE HIGH VOLTAGE PROXIMITY ACT, ALL OSHA REQUIREMENTS, AND THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY.
23. THE CONTRACTOR MUST PROVIDE AND MAINTAIN ALL NECESSARY SAFEGUARDS TO PROTECT PUBLIC SAFETY AND ADJOINING PROPERTIES. THE CONTRACTOR IS RESPONSIBLE FOR ALL DAMAGES DUE TO THIS OPERATIONS TO ALL PARTS OF THE WORK ZONE AND TO ALL ADJOINING PROPERTIES. ANY DAMAGES DONE SHALL BE REPAIRED AND RESTORED TO THE SATISFACTION OF THE ENGINEER AT NO COST TO THE COUNTY.
24. THE CONTRACTOR MUST FURNISH, PLACE AND MAINTAIN ALL SHEETING, BRACING, SHORING, AND OTHER SUPPORTS REQUIRED BY THE WORK. DESIGN FOR THE SHEETING, BRACING, SHORING, AND OTHER TEMPORARY SUPPORTS SHALL BE PERFORMED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW JERSEY AND SUBMITTED FOR APPROVAL BY THE ENGINEER. NO SEPARATE PAYMENT BE MADE FOR THE DESIGN FURNISHING, INSTALLATION, MAINTENANCE, OR REMOVAL OF THE SHEETING, BRACING, SHORING, AND OTHER SUPPORTS REQUIRED BY THE WORK. ALL COSTS THEREOF SHALL BE INCLUDED IN PRICE FOR THE VARIOUS CONTRACT ITEMS.
25. THE CONTRACTOR MUST MAINTAIN THE CONSTRUCTION SITE AND ANY STORAGE SITE IN A NEAT AND CLEAN CONDITION. STORAGE OF POTENTIALLY CONTAMINATING MATERIALS TO THE WATERWAY, INCLUDING PETROLEUM PRODUCTS, MUST BE WITH SUFFICIENT CONTAINMENT TO PREVENT SPILLAGE/SEEPAGE INTO THE SURROUNDING AREAS AND WATERWAY. THE CONTRACTOR IS RESPONSIBLE FOR REMEDIAL ACTION, AS REQUIRED, FOR ANY CONTAMINATION THAT MAY OCCUR TO THE WATERWAY OR SURROUNDING AREAS DUE TO ANY OF ITS OPERATIONS, DELIVERIES, OR MACHINERY/EQUIPMENT AT NO COST TO THE COUNTY.
26. A PRE-CONSTRUCTION MEETING WITH THE COUNTY ENGINEER'S REPRESENTATIVE WILL BE HELD PRIOR TO BEGINNING ANY CONSTRUCTION ON THE PROJECT.

CONSTRUCTION NOTES:

1. ALL WORK MATERIALS SHALL MEET THE REQUIREMENTS OF THE LOCAL AND STATE NEW JERSEY UNIFORM CONSTRUCTION CODES CONSTRUCTION CODES LATEST EDITION, AND THE SPECIFICATIONS OF THE NATIONAL BOARD OF FIRE UNDERWRITERS AND THE NJ DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2018 AS AMENDED.
2. QUANTITIES SHOWN HEREIN ARE APPROXIMATE AND FOR INFORMATION ONLY. THE CONTRACTOR SHALL PROVIDE ALL MATERIALS NECESSARY TO CONSTRUCT THE PROJECT COMPLETE.
3. ALL DIMENSIONS, ELEVATIONS, AND DETAILS OF EXISTING FEATURES SHOWN ON THESE DRAWINGS HAVE BEEN OBTAINED FROM OR BASED ON LIMITED FIELD MEASUREMENTS AND SURVEY. THE CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS WHICH MAY AFFECT FABRICATION AND CONSTRUCTION BEFORE COMMENCEMENT OF CONSTRUCTION WORK.
4. THE CONTRACTOR IS ADVISED THAT ADDITIONAL "NOTES" WILL BE FOUND ON SUBSEQUENT SHEETS OF THE CONTRACT PLANS AND SUCH "NOTES" SHALL PERTAINING TO THE NOTES THEY ARE PLACED ON, ALSO SUPPLEMENT THE GENERAL NOTES LISTED HEREIN.
5. THE CONTRACTOR SHALL PERFORM ALL WORK WITH CARE SO THAT ANY MATERIALS WHICH ARE TO BE EITHER REMAINING IN PLACE OR BE RELOCATED WILL NOT BE DAMAGED. IF THE CONTRACTOR DAMAGES ANY MATERIALS, WHICH ARE TO REMAIN IN PLACE OR BE RELOCATED, THE DAMAGED MATERIALS SHALL BE REPAIRED OR REPLACED IN A MANNER SATISFACTORY TO THE ENGINEER AT THE EXPENSE OF THE CONTRACTOR.
6. WHENEVER ITEMS IN THE CONTRACT REQUIRE MATERIALS TO BE REMOVED AND DISPOSED OF, THE COST OF SUPPLYING A DISPOSAL AREA AND TRANSPORTATION TO THAT AREA SHALL BE INCLUDED IN THE UNIT PRICES BID FOR THESE ITEMS.
7. THE CONTRACTOR SHALL TAKE EXTRA PRECAUTION NOT TO DAMAGE THE EXISTING SEWERS DURING CONSTRUCTION. HEAVY CONSTRUCTION EQUIPMENT SHOULD NOT BE OPERATED OVER OR NEAR THE EXISTING SEWER ONCE THE EXISTING PAVEMENT IS REMOVED. ANY PORTION OF THE EXISTING SEWER SYSTEM WITHIN THE PROJECT LIMITS DAMAGED BY THE CONTRACTOR SHALL BE REPAIRED, REPLACED AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE ENGINEER. IN ADDITION THAT PORTION OF THE SEWER SHALL BE CLEANED AND FLUSHED AS NECESSARY TO MAKE THE SYSTEM OPERABLE.
8. INLETS SHALL NOT, UNDER ANY CIRCUMSTANCES, BE CONNECTED TO A SANITARY SEWER SYSTEM.
9. INLETS IN THE PROJECT AREAS SHALL BE MAINTAINED OPERABLE AT ALL TIMES. THE CONTRACTOR SHALL TAKE THE NECESSARY PRECAUTIONS TO AVOID FILLING THE GUTCH BASINS WITH DEBRIS WITHIN THE PROJECT LIMITS DURING THE CONTRACT OPERATIONS. IF, AS A RESULT OF CONSTRUCTION, A FLOODING CONDITION OCCURS, OR IN THE EVENT THE CONTRACTOR'S OPERATIONS DAMAGE OR BLOCK THE DRAINAGE SYSTEM, THE CONTRACTOR SHALL, AT HIS EXPENSE IMMEDIATELY REPAIR OR RESTORE THE DRAINAGE SYSTEM AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE TEMPORARY MEANS (PIPES, PUMPS, ETC.) TO DRAIN ANY STORM WATER WHICH MAY DEVELOP OR BE CAUSED BY THE PROJECT DURING THE DURATION OF THE CONSTRUCTION. THE CONTRACTOR SHALL SUBMIT A DRAINAGE CONTROL PLAN TO THE ENGINEER FOR REVIEW PRIOR TO THE START OF EACH CONSTRUCTION STAGE. COST OF THIS WORK SHALL BE DEEMED TO HAVE BEEN INCLUDED IN THE PRICE FOR ALL SCHEDULED ITEMS.

CONSTRUCTION NOTES-continued

10. ANY DAMAGE OCCURRING TO EXISTING PAVEMENT, SHOULDER, CURBING, TRAFFIC SIGNAL, ETC. BY CONSTRUCTION VEHICLES AND/OR MATERIAL STORAGE SHALL BE CORRECTED IN SATISFACTORY MANNER BY THE CONTRACTOR AT HIS OWN EXPENSE TO THE SATISFACTION OF THE ENGINEER.
11. NO JACKHAMMERING ALLOWED AFTER 6:00 P.M.
12. WHERE APPLICABLE, END CONCRETE CURB AT NEAREST EXPANSION JOINT OR INLET.
13. WHERE PROPOSED SIDEWALK MEETS EXISTING CONCRETE SIDEWALK, THE EXISTING CONCRETE SIDEWALK SHALL BE REMOVED TO THE NEAREST EXPANSION JOINT OR SAWCUT AT THE LIMITS IDENTIFIED ON THE PLANS. NO SEPARATE PAYMENT SHALL BE MADE FOR THE SAWCUTTING OF EXISTING SIDEWALK, BUT THE COSTS SHALL BE INCLUDED IN THE PRICES BID FOR THE VARIOUS SIDEWALK PAY ITEMS WITHIN THIS CONTRACT. NO SEPARATE PAYMENT SHALL BE MADE FOR REMOVAL OF CURB OR SIDEWALK.
14. DROP CURB SHALL BE PROVIDED AT ALL EXISTING AND PROPOSED HANDICAP RAMPS AND DRIVEWAYS AT LOCATIONS WHERE CONCRETE CURB IS PROPOSED WITHIN THE PROJECT LIMITS.
15. MEET EXISTING GRADES AT ALL LIMITS OF CONSTRUCTION.
16. WHERE EXISTING INLETS OR MANHOLES ARE SHOWN TO BE REMOVED, THE COST THEREOF SHALL BE DEEMED INCLUDED IN THE PRICE BID FOR THE PAY ITEM "CLEARING SITE".
17. ALL NEW PAVEMENTS SHALL MEET EXISTING PAVEMENTS TO REMAIN SMOOTHLY AND EVENLY WITH NO TRIPPING HAZARDS TO THE SATISFACTION OF THE ENGINEER.
18. CONTRACTOR SHALL PERFORM PAVING TO PROVIDE POSITIVE DRAINAGE AND TO ENSURE THAT NO PONDING OCCURS.
19. REMOVAL OF EXISTING TRAFFIC SIGNALS SHALL BE PAID FOR UNDER CLEARING SITE.
20. ALL CURB RAMPS MUST CONFORM TO AMERICAN WITH DISABILITIES ACT (ADA) REQUIREMENTS AS OUTLINED IN THE ADA ACCESSIBILITY GUIDELINES (ADAAG) AND SHOWN ON THE PLANS AND DETAILS PROVIDED HEREIN UNLESS OTHERWISE NOTED ON THE PLANS. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL LAYOUT RAMPS TO DETERMINE IF RAMPS CAN BE CONSTRUCTED PER THE PLANS AND DETAILS.
21. NO SEPARATE PAYMENT WILL BE MADE FOR ANY EXISTING STRIPING THAT IS REMOVED IN THE MILLING PROCESS.
22. CONTRACTOR SHALL CLEAN AND SWEEP AND TACK THE PAVEMENT IMMEDIATELY PRIOR TO OVERLAY.
23. COLD JOINTS RESULTING FROM THE PAVEMENT REPAIR SHALL BE TREATED WITH AN APPLICATION OF POLYMERIZED JOINT ADHESIVE IN ACCORDANCE WITH THE NDOT STANDARD SPECIFICATIONS (NO SEPARATE PAYMENT).
24. CONTRACTOR SHALL MAINTAIN EXISTING DRAINAGE PATTERNS WHEN RECONSTRUCTING UNLESS OTHERWISE DIRECTED BY THE ENGINEER. CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY QUESTIONABLE DRAINAGE AREAS SO THAT FIELD ADJUSTMENTS CAN BE MADE TO ELIMINATE PONDING.
25. THE LOCATION AND CONFIGURATION OF EXISTING TRAFFIC STRIPES AND MARKINGS SHOWN ON THE PLANS ARE APPROXIMATE. THE CONTRACTOR SHALL MEASURE AND RECORD THE ACTUAL SIZE, LOCATION AND CONFIGURATION OF EXISTING TRAFFIC STRIPES AND MARKINGS AND REPLACE IN KIND OR AS DIRECTED BY THE ENGINEER OR SHOWN IN THE PLAN. THERE WILL BE NO SEPARATE PAYMENT FOR THIS TASK. MEET EXISTING STRIPING AT ALL LIMITS OF CONSTRUCTION OR AS SHOWN ON PLANS.
26. PROPOSED SIGN LOCATIONS SHOWN ON THE PLAN ARE APPROXIMATE. CONTRACTOR SHALL LOCATE SIGNS IN COMPLIANCE WITH THE NADOT RECOMMENDATIONS AND/OR AS DIRECTED BY THE RESIDENT ENGINEER. WHERE ORIGINATED BY THE CONTRACTOR, EXISTING SIGN POSTS SHALL REMAIN IN PLACE AND WAP AROUND AROUND REFLECTIVE SIGN POST WRAP IN COMPLIANCE WITH THE MUTCD INSTALLED ON THE POSTS.

SURVEY NOTES:

1. DESIGN IS BASED UPON SURVEYED BASE MAPPING CONDUCTED IN 2021 PROVIDED BY WSP.
2. THE EXISTING TOPOGRAPHIC FEATURES SHOWN ON THE PLANS DEPICT EXISTING CONDITIONS IN THE PROJECT AREA AS OF THE DATE OF THE SURVEY BASE MAPPING PREPARED FOR THE IMPROVEMENT PLANS AS REPRESENTED ABOVE. THE CONTRACTOR SHALL VERIFY THE SURFACE MEASUREMENT ALL EXISTING PHYSICAL FEATURES ON THE SURFACE AS WELL AS ALL SUBSURFACE FEATURES, INCLUDING EXISTING SURFACE AND UNDERGROUND UTILITY FACILITIES. PRIOR TO CONSTRUCTION, IN THE EVENT THE CONTRACTOR IDENTIFIES CHANGED FIELD CONDITIONS AFFECTING THE PROPOSED WORK, THE CONTRACTOR SHALL SO NOTIFY THE RESIDENT ENGINEER FOR DIRECTION PRIOR TO CONSTRUCTION IN THESE AREAS. TOPOGRAPHIC CHANGES IDENTIFIED BUT NOT LISTED TO BE ARE LISTED ON THE CONSTRUCTION PLANS.

UTILITY NOTES:

1. LOCATION OF UTILITIES, PUBLIC AND/OR PRIVATE, INDICATED AS EXISTING AND/OR TO BE CONSTRUCTED AS SHOWN ON THE PLANS ARE APPROXIMATE. THEIR EXACT LOCATIONS SHALL BE DETERMINED IN THE FIELD. ADDITIONAL UTILITY LINES WHETHER ABANDONED OR IN SERVICE MAY EXIST AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONDUIT OPERATIONS AND TAKE ALL THE NECESSARY PRECAUTIONS TO PREVENT INTERFERENCE WITH OR DAMAGE TO THESE OR OTHER FACILITIES DURING THE COURSE OF CONSTRUCTION.
2. UTILITY INFORMATION LABELED ON PLANS IS DERIVED FROM FIELD SURVEY AND RECORDS. SUCH INFORMATION MAY NOT BE ACCURATE OR RELIABLE. WSP EXPRESSLY DISCLAIMS RESPONSIBILITY FOR THE ACCURACY OR RELIABILITY OF UTILITY INFORMATION DERIVED ACCORDING TO FIELD SURVEY AND RECORDS.
3. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL CONTRACT THE NEW JERSEY ONE-CALL CENTER BY CALLING 1-800-272-1100 AND WITH THEIR ASSISTANCE, SHALL VERIFY THE EXACT LOCATION SIZE AND DIMENSION OF ALL BURIED UTILITIES. THE COUNTY ASSUMES NO RESPONSIBILITY FOR THE LOCATION OF UNDERGROUND UTILITIES NOT VISIBLE AT THE TIME FIELD SURVEYS WERE CONDUCTED.
4. THE CONTRACTOR IS ALSO RESPONSIBLE FOR CONTACTING THE OWNERS OF ANY PRIVATE UTILITIES FOR MARK OUTS.
5. ANY UTILITY STRUCTURE, GRATES, OR VALVES ETC. REQUIRING RESETTING GRATES SHALL BE RESET TO FINISHED GRADE ELEVATION.
6. ALL UTILITY WORK SHALL BE DONE BY EITHER UTILITY OWNER OR BY APPROVED CONTRACTOR.
7. CONTRACTOR IS RESPONSIBLE FOR OBTAINING STANDARD DRAWINGS FROM UTILITY OWNER.
8. MANHOLES ARE TO BE RESET BY RESPECTIVE UTILITY COMPANIES UNLESS OTHERWISE NOTED ON PLANS.

PERMITS				
PERMIT TYPE & FILE NO.	ISSUED	EXPIRES	SELECTED CONDITIONS (SEE ACTUAL PERMITS FOR ADDITIONAL CONDITIONS)	
1. USDCO BRIDGE PERMIT	T.B.D.	T.B.D.		
2. NDEP COASTAL WETLANDS IP	T.B.D.	T.B.D.		
3. NDEP FLOOD HAZARD IP	T.B.D.	T.B.D.		
4. NDEP WATERFRONT DEVELOPMENT IP	T.B.D.	T.B.D.		
5. USACE NATIONWIDE PERMIT	T.B.D.	T.B.D.		
6. CAPE ATLANTIC SCD CERTIFICATION	T.B.D.	T.B.D.		

PREPARED BY: WSP USA INC.
205 DUNDON DRIVE, LAWRENCEVILLE, NJ, 08648

STEVEN M. ARBIZ

N.J. PE LICENSE NUMBER:
24GE001900

DATE



CAPE MAY COUNTY

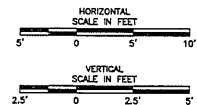
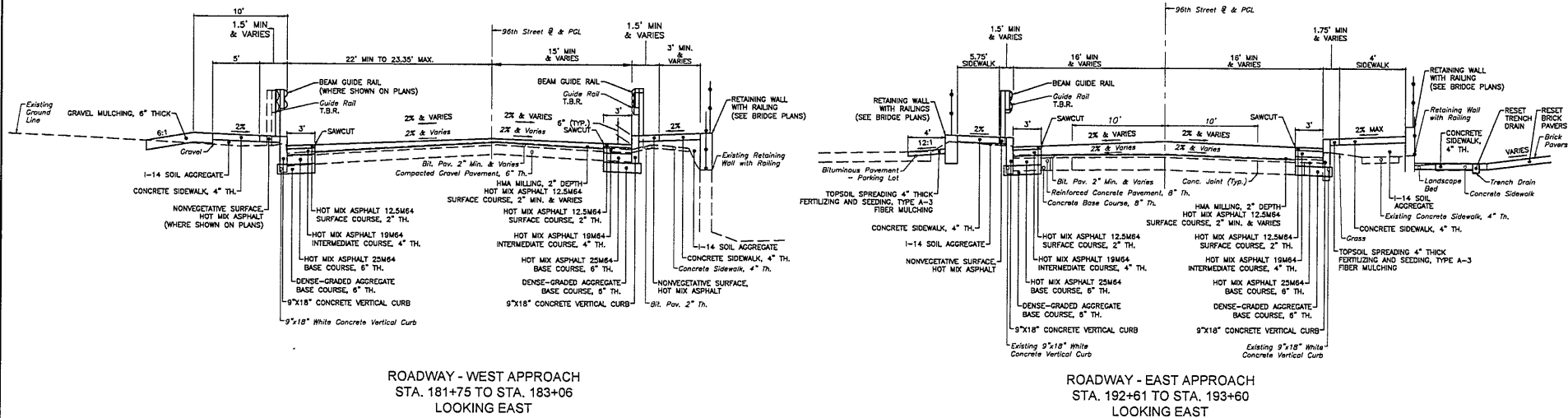
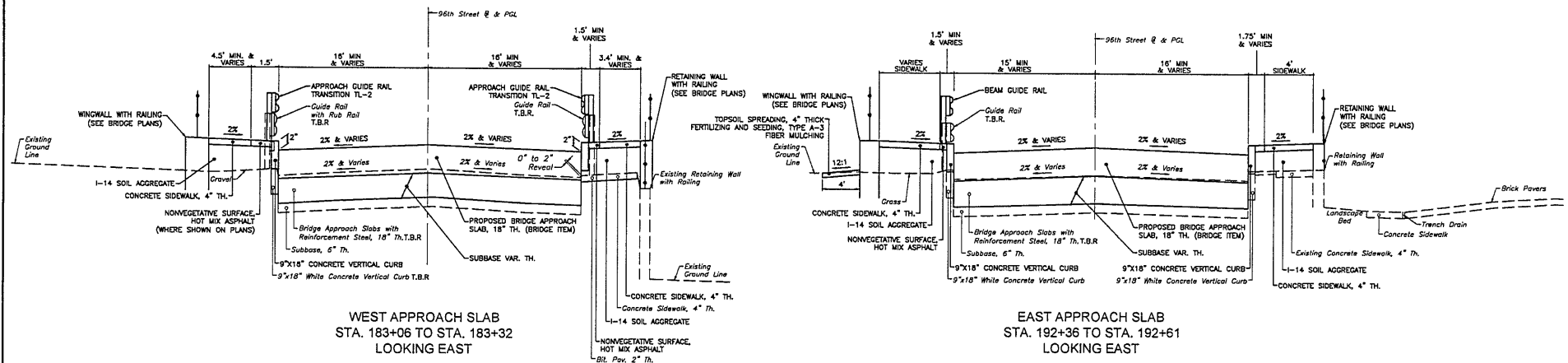
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PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY
DRAWING TITLE:
GENERAL NOTES
STR. NO. 0500-006

DATE:
4/9/2024
SCALE:
N.T.S.
SHEET REFERENCE NO.:
OF
SHEET NO.:
004 OF 202



PREPARED BY: WSP USA INC.
2009 LENOX DRIVE, LAWRENCEVILLE, N.J. 08648



STEVEN M. ARBIZ

N.J. PE LICENSE NUMBER:
340623811900

DATE



CAPE MAY COUNTY

DESIGNED BY

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REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

DRAWING TITLE:

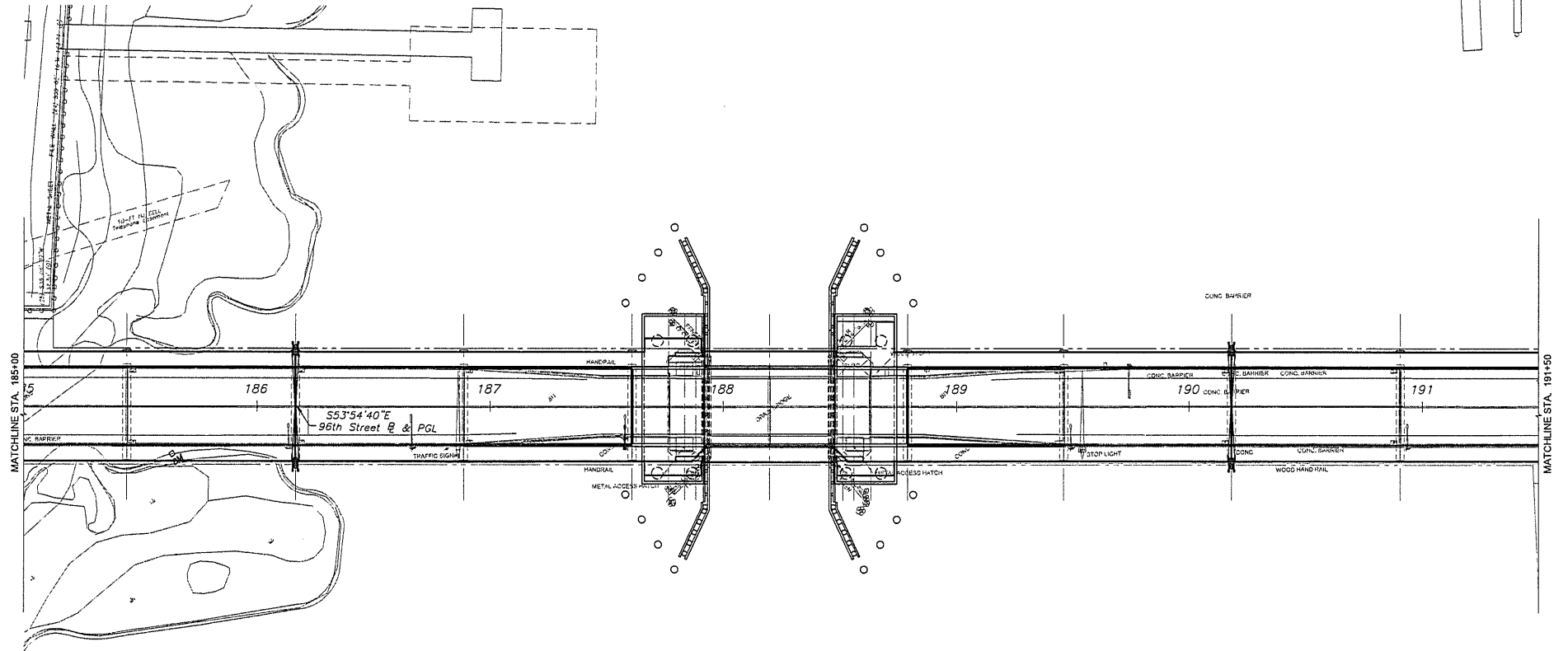
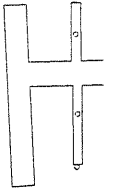
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DATE: 4/9/2024

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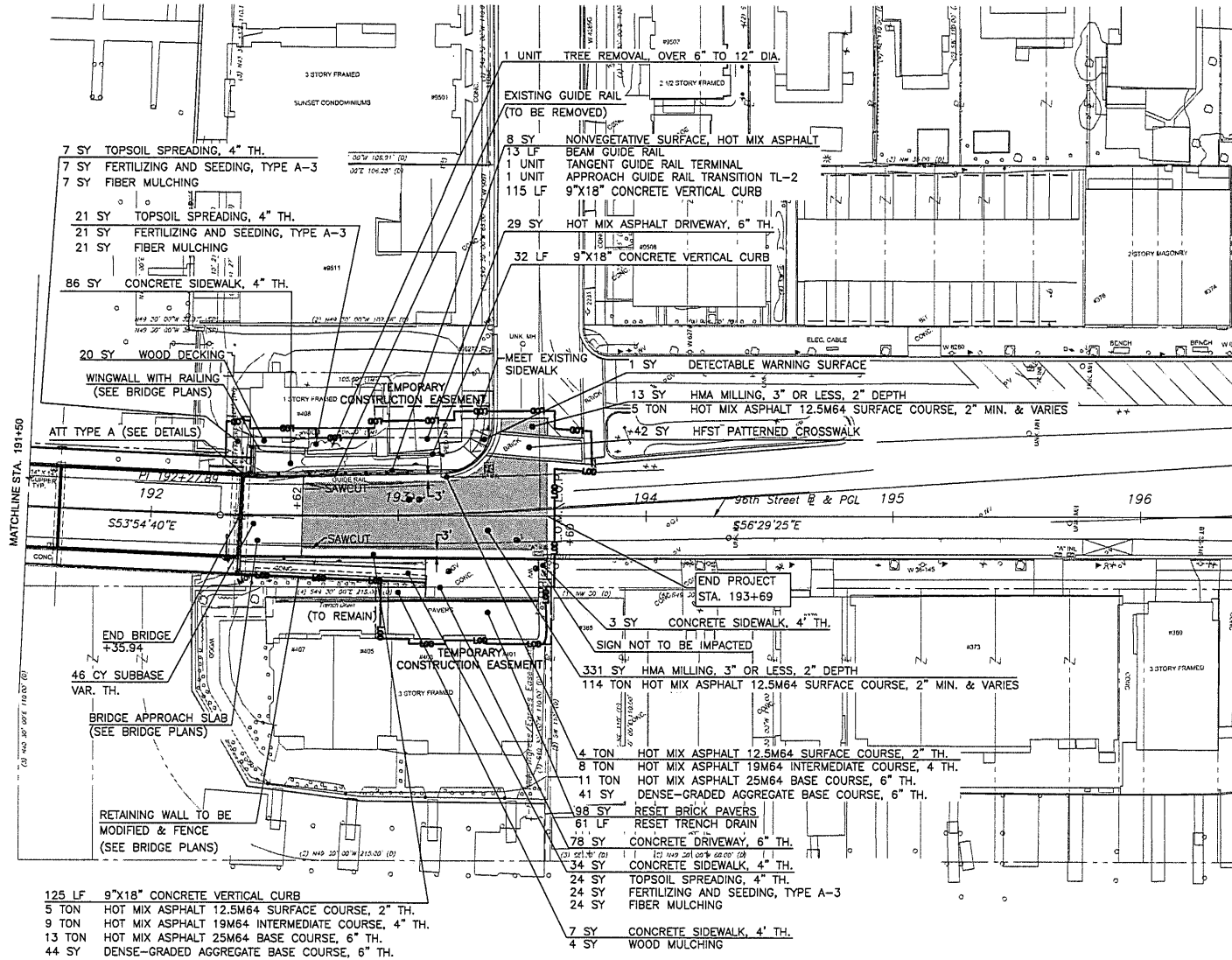
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THIS PLAN SHEET

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SCALE IN FEET

PREPARED BY: WSP USA INC. 2000 LENOX DRIVE, LAWRENCEVILLE, N.J. 08448				CAPE MAY COUNTY		JOB: REHABILITATION OF 96TH STREET (CR657) BRIDGE OVER GREAT CHANNEL STR. NO. 0500-006	PROJECT LOCATION: STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP CAPE MAY COUNTY, NEW JERSEY		DATE: 4/9/2024			
STEVEN M. ARBIZ							N.J. LICENSE NUMBER: 24GE03811900		SCALE: AS SHOWN	SHEET REFERENCE NO.: d		
									CONSTRUCTION PLAN - 2		SHEET NO.: 007 of 202	
				Designed by		Drawn by		Checked by				



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SCALE IN FEET

PREPARED BY: WSP USA INC.
2000 LENOX DRIVE, LAWRENCEVILLE, N.J. 08648



CAPE MAY COUNTY

STEVEN M. ARBIZ

N.J. LICENSE NUMBER:
24062811800

DATE

Designed by

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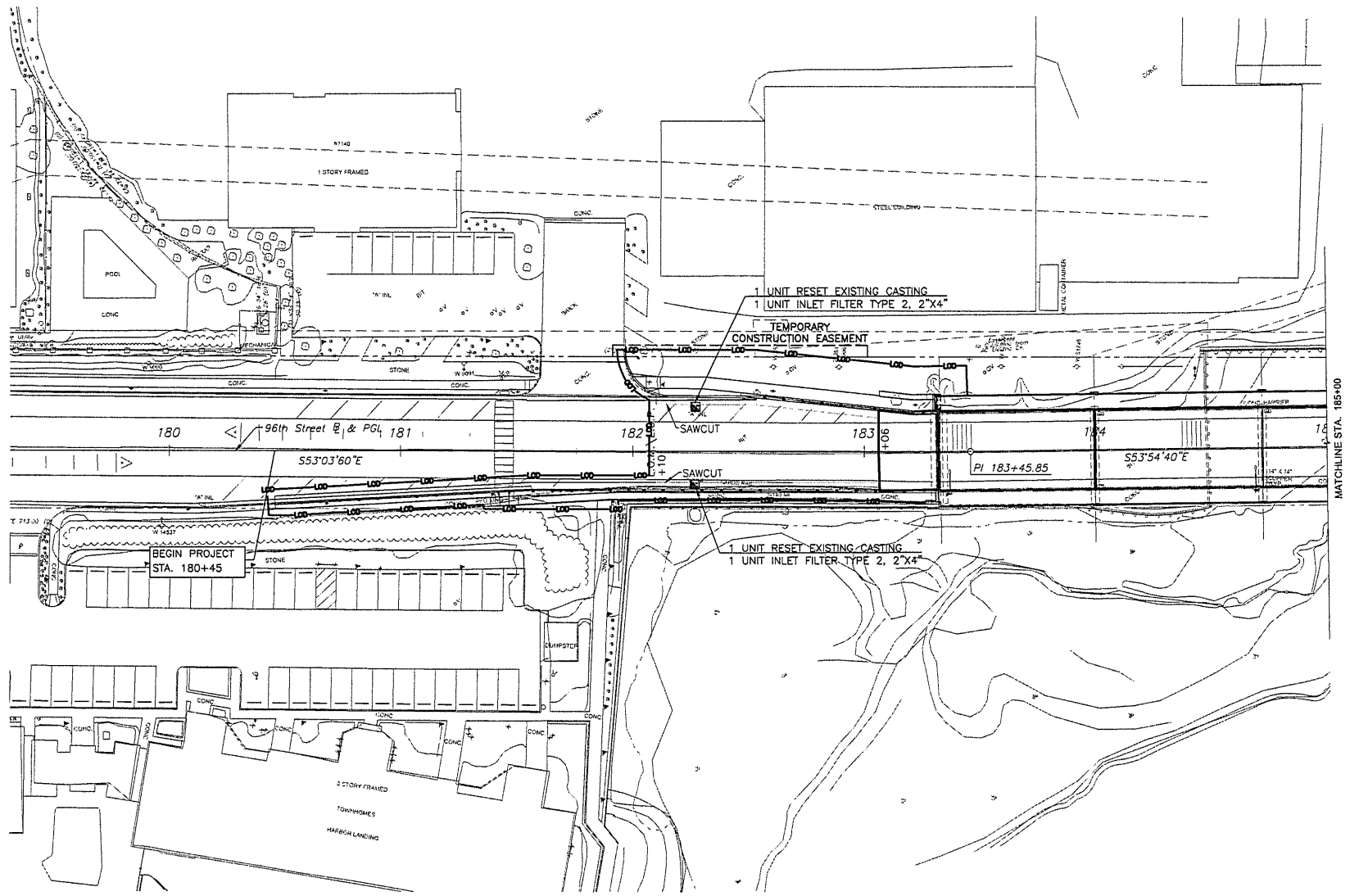
JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

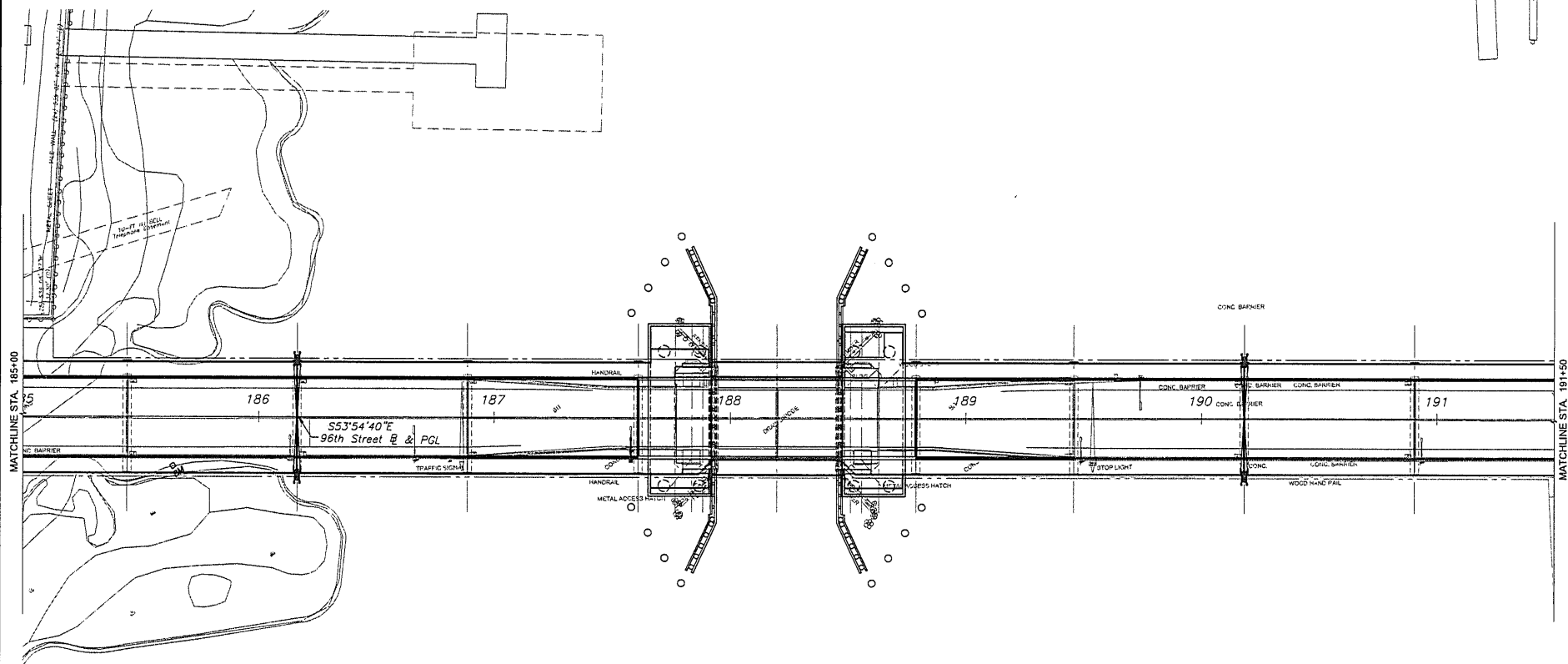
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CONSTRUCTION PLAN - 3

DATE: 4/9/2024
SCALE: AS SHOWN
SHEET REFERENCE NO.:
of
SHEET NO.:
008 of 202



<div>PREPARED BY: WSP USA INC. 2000 LINDSEY DRIVE, LAWRENCEVILLE, N.J. 08848</div> <div>STEVEN M. ARBIZ</div> <div>N.J. PE LICENSE NUMBER: 24GE0311900</div> <div>DATE</div>	<div>WSP</div> <div>CAPE MAY COUNTY</div> <div>Designed by</div> <div>Drawn by</div> <div>Checked by</div>	<div>JOB:</div> <div>REHABILITATION OF 96TH STREET (CR657) BRIDGE OVER GREAT CHANNEL STR. NO. 0500-006</div>	<div>PROJECT LOCATION: STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP CAPE MAY COUNTY, NEW JERSEY</div> <div>DRAWING TITLE:</div> <div>DRAINAGE AND GRADING PLAN - 1</div>	<div>DATE:</div> <div>4/9/2024</div> <div>SCALE:</div> <div>AS SHOWN</div> <div>SHEET REFERENCE NO.:</div> <div>OF</div> <div>SHEET NO.:</div> <div>009 of 202</div>
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NO PAY ITEMS ON
THIS PLAN SHEET



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2000 LENOX DRIVE, LAWRENCEVILLE, N.J. 08648

115



CAPE MAY COUNTY

STEVEN M. ARBIZ N.J. PE LICENSE NUMBER:
24GE03811900

DATE _____

Designed by

DeKam, NY

Checked by _____

JO9:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

DRAWING TITLE:

DRAINAGE AND GRADING
PLAN - 2

P	DATE: 4/9/2024
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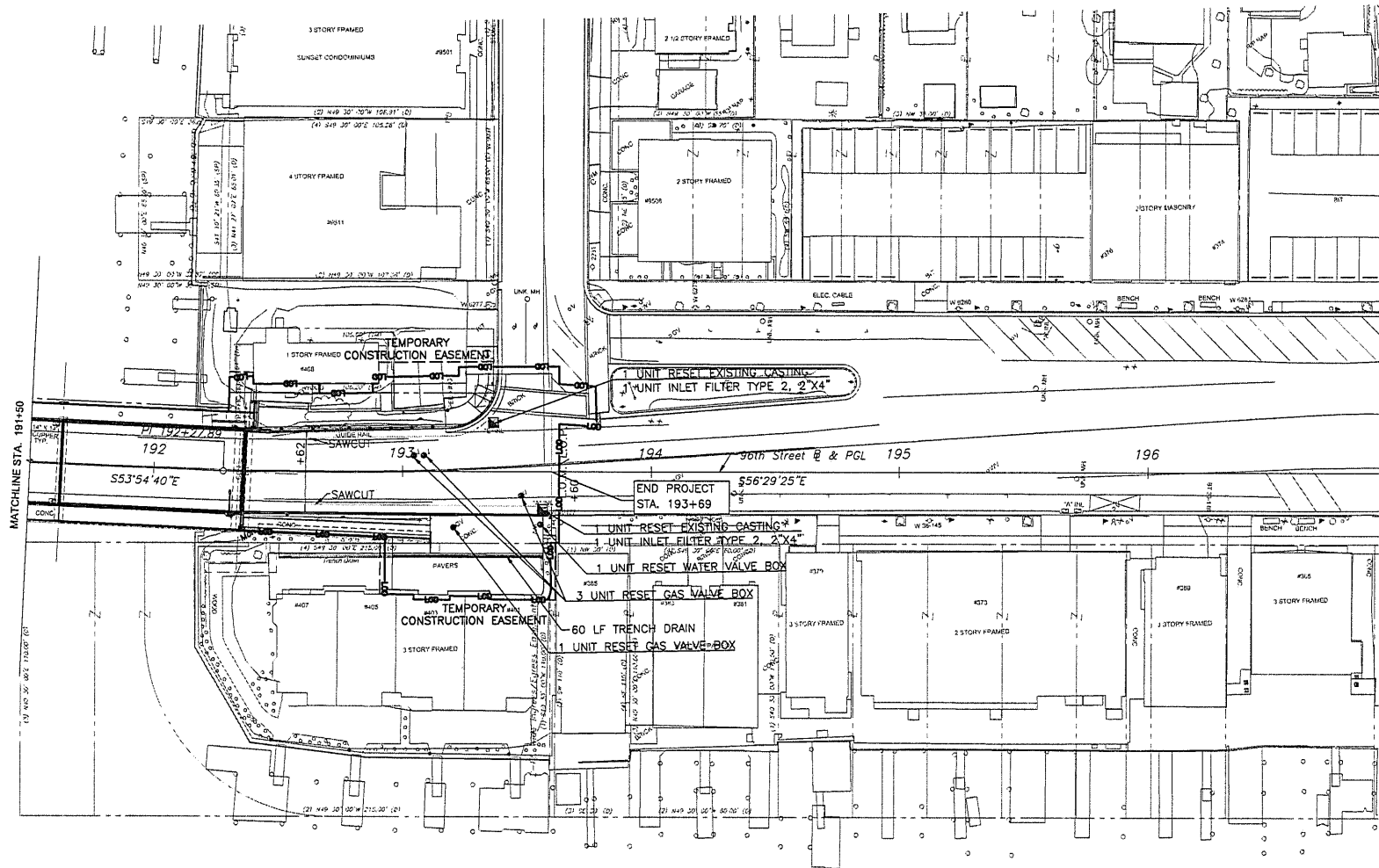
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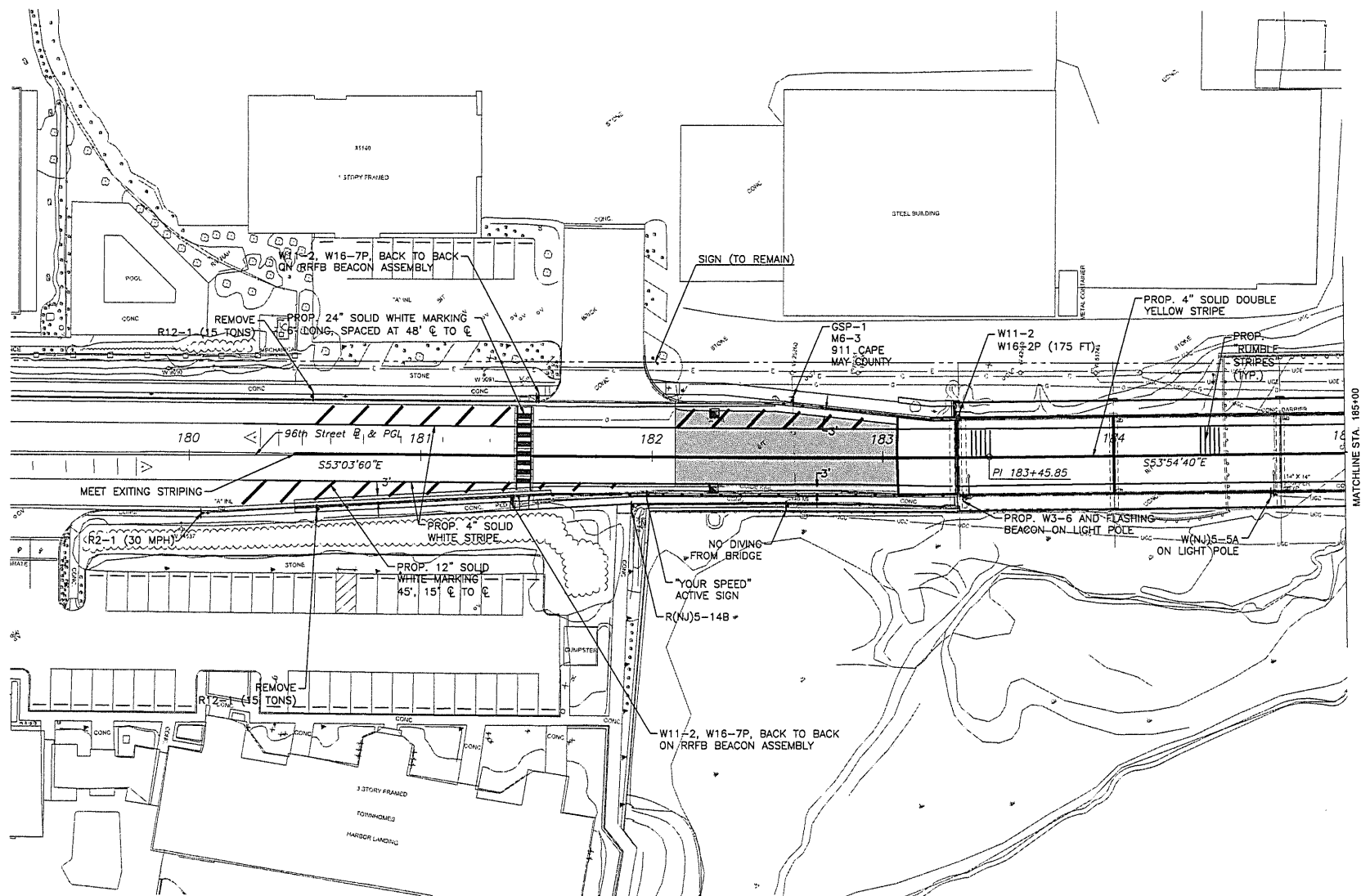
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of

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<div>PREPARED BY: WSP USA INC. 2000 LEXINGTON DRIVE, LAWRENCEVILLE, N.J. 08048</div> <div>STEVEN M. ARBIZ</div> <div>N.J. PE LICENSE NUMBER: 24GE03811900</div> <div>DATE</div>	<div> CAPE MAY COUNTY</div> <div>DESIGNED BY: [signature] DRAWN BY: [signature] CHECKED BY: [signature]</div>	<div>JOB: REHABILITATION OF 96TH STREET (CR657) BRIDGE OVER GREAT CHANNEL STR. NO. 0500-006</div>	<div>PROJECT LOCATION: STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP CAPE MAY COUNTY, NEW JERSEY</div> <div>DRAWING TITLE: DRAINAGE AND GRADING PLAN - 3</div>	<div>DATE: 4/9/2024</div> <div>SCALE: AS SHOWN</div> <div>SHEET REFERENCE NO.: 3</div> <div>SHEET NO.: 011 of 222</div>
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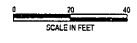
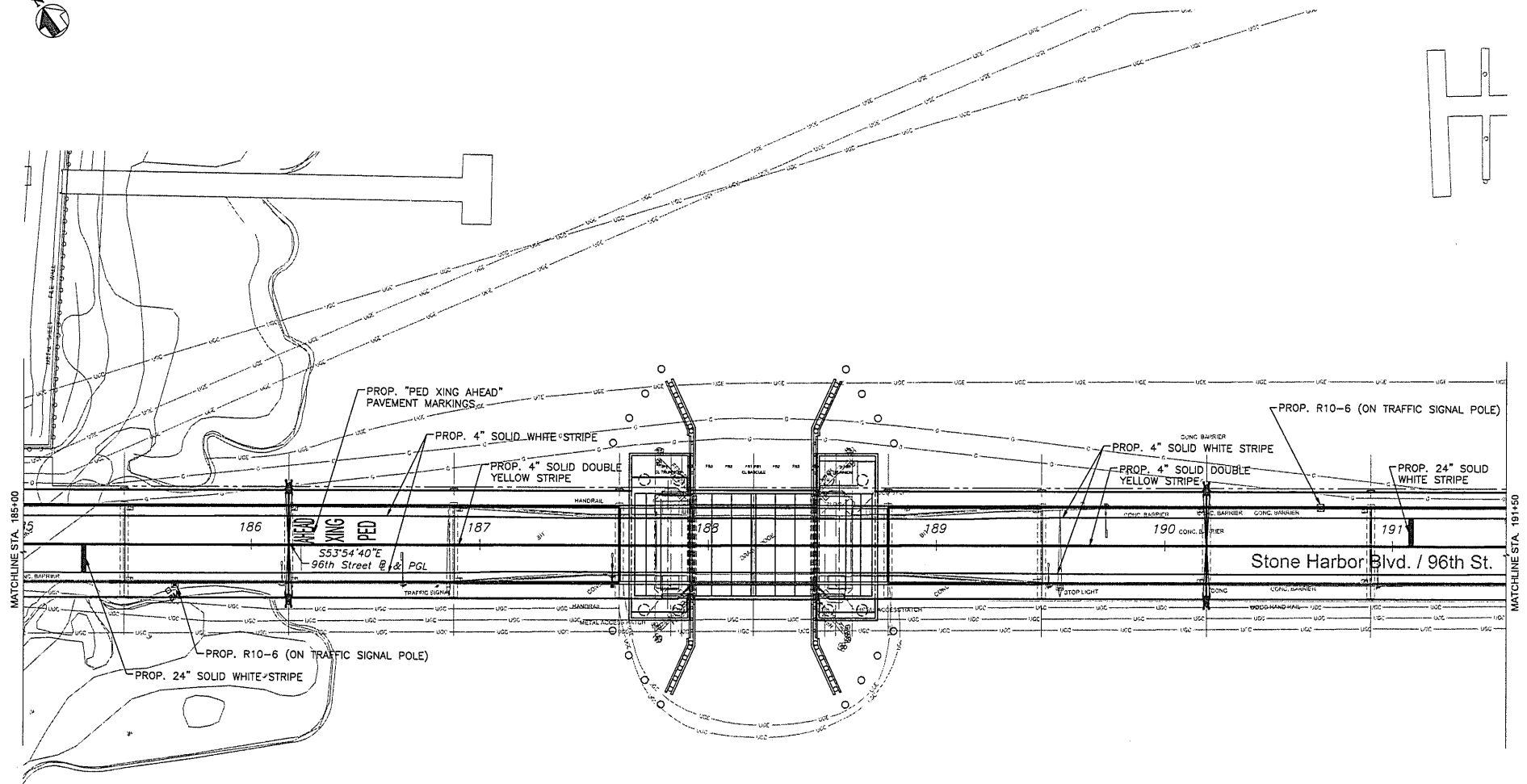
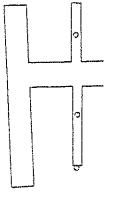




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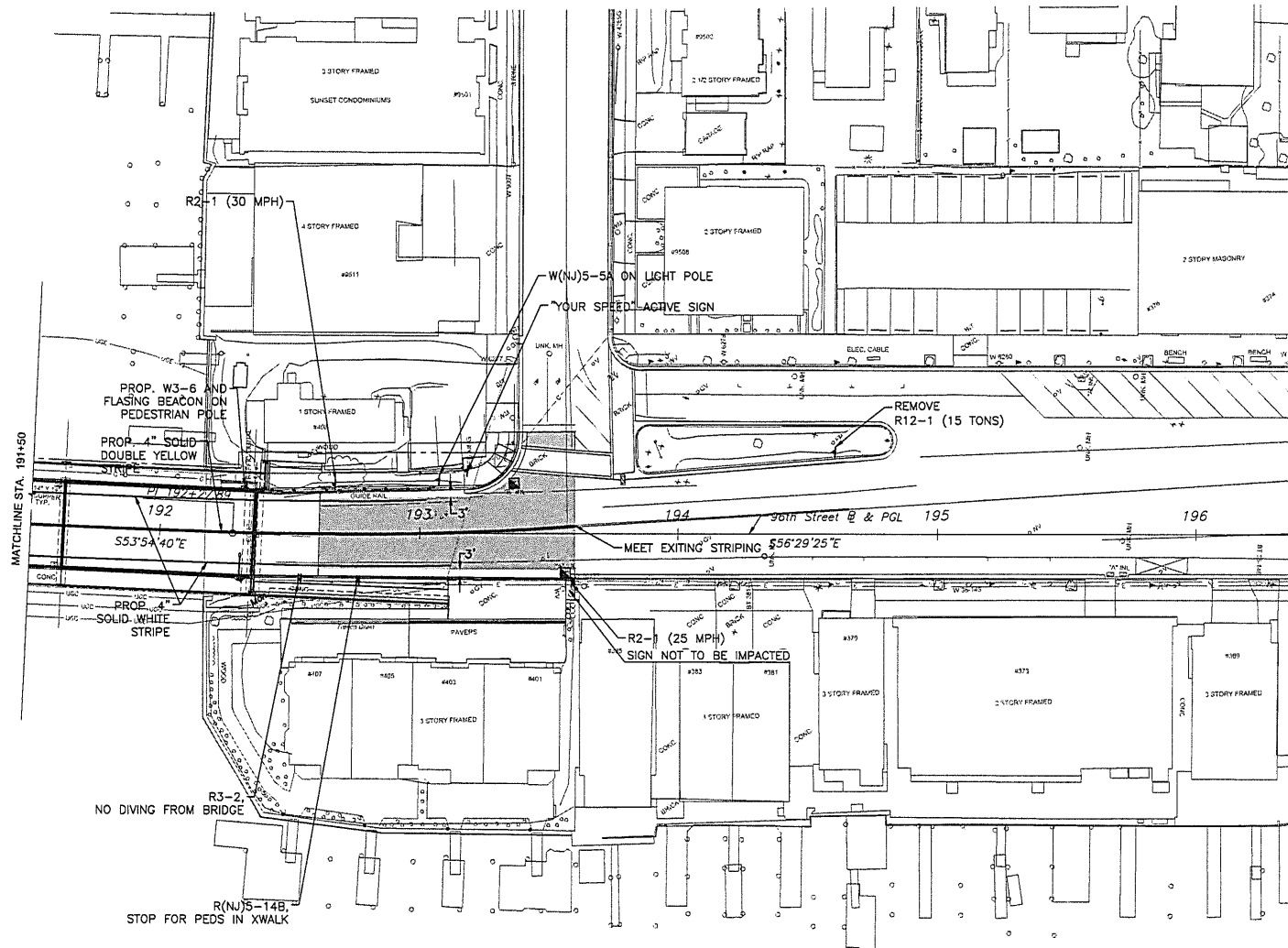
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SHEET NO.:	012 of 202

DATE _____

Checked by _____



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STEVEN M. ARBIZ				N.J. PE LICENSE NUMBER: 24GE0011900					SCALE: 1" = 20'		
DESIGNED BY		DRAWN BY		CHECKED BY		SHEET REFERENCE NO.: 9		SHEET NO.: 013 OF 202			



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SCALE IN FEET

PREPARED BY: WSP USA INC.
2006 LENOX DRIVE, LAWRENCEVILLE, N.J. 08648



CAPE MAY COUNTY

STEVEN M. ARBIZ

N.J. PE LICENSE NUMBER:
240E081900

DATE

DESIGNED BY

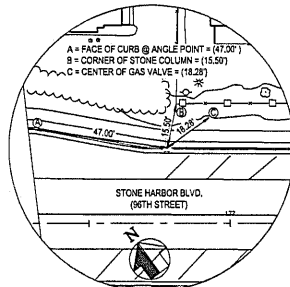
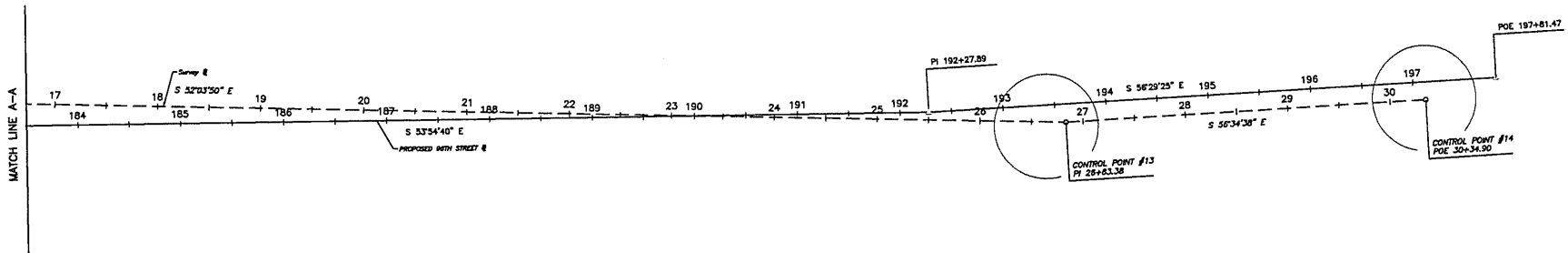
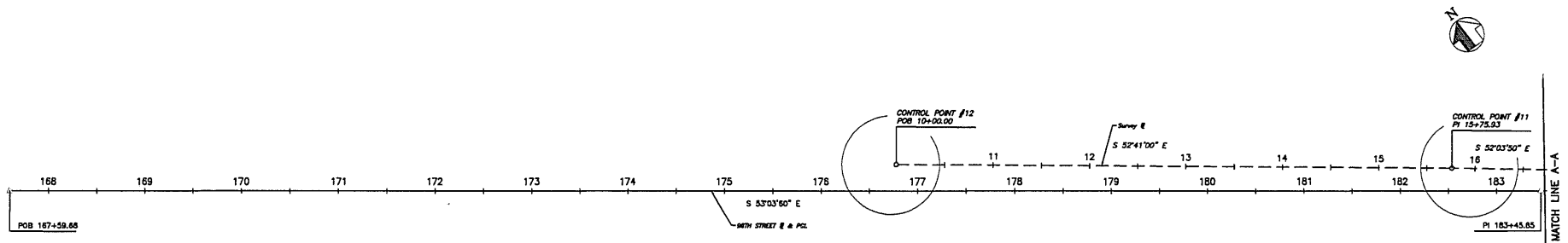
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CHECKED BY

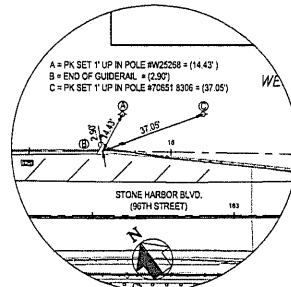
JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY
DRAWING TITLE:
SIGNING AND STRIPING
PLAN - 3

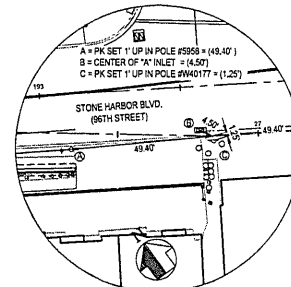
DATE:
4/5/2024
SCALE:
1" = 20'
SHEET REFERENCE NO.
of
SHEET NO.:
214 of 222



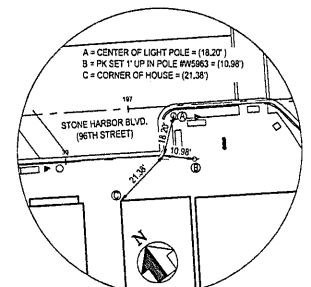
CONTROL POINT #12 MAG HUB SET
IN CURB LINE ON NORTH SIDE OF
96TH STREET
N: 82,254.6985
E: 415,881.9154
ELEV: 7.413
SCALE: 1" = 20'



CONTROL POINT #11 MAG NAIL SET
IN CURB LINE ON NORTH SIDE OF
96TH STREET
N: 81,905.5597
E: 416,339.9497
ELEV: 6.419
SCALE: 1" = 20'



CONTROL POINT #13 MPKS
SET IN CURB LINE ON SOUTH SIDE
OF 96TH STREET
N: 81,224.7207
E: 417,213.3822
ELEV: 4.650
SCALE: 1" = 20'



CONTROL POINT #14 MAG NAIL SET
IN CURB LINE ON SOUTH SIDE OF
96TH STREET
N: 81,051.0584
E: 417,506.7818
ELEV: 4.036
SCALE: 1" = 20'

ALIGNMENT DATA			
POINT	STATION	NORTHING	EASTING
96TH STREET			
POB	167+59.68	82785.0340	415132.1292
PI	167+59.68	81831.9239	415099.5803
PI	197+77.89	81312.3656	417122.7682
POE	197+81.47	81006.7464	417574.3358
SURVEY BASELINE			
CP #12	120+00.00	81254.6985	415881.9154
CP #11	157+75.93	81905.5597	416339.9497
CP #13	26+83.38	81224.7207	417213.3822
CP #14	30+34.90	81031.0584	417506.7818

STATIONS AND OFFSET				
96TH STREET				
TIE POINT	REFERENCE BASELINE	BASELINE STATION	OFFSET (FT)	
POINT	STATION			
POL	177+00.00	SURVEY BASELINE	10+22.48	RT
PI	183+45.85	SURVEY BASELINE	16+68.55	RT
PI	197+77.89	SURVEY BASELINE	25+50.13	LT
POL	197+00.00	SURVEY BASELINE	30+23.23	LT

HORIZONTAL DATUM
LOCAL PROJECT GROUND COORDINATES
DERIVED FROM NAD83 (2011)
U.S. SURVEY FEET
VERTICAL DATUM
NORTH AMERICAN VERTICAL DATUM 1988

SCALE IN FEET
50' 0 50' 100'

PREPARED BY: WSP USA INC.
2005 LINDEN DRIVE, LAWRENCEVILLE, N.J. 08648



CAPE MAY COUNTY

DW

EV

DW

STEVEN M. ARBIZ

N.J. PE LICENSE NUMBER:
24632811900

DATE

Designed by

Drawn by

Checked by

JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

DRAWING TITLE:

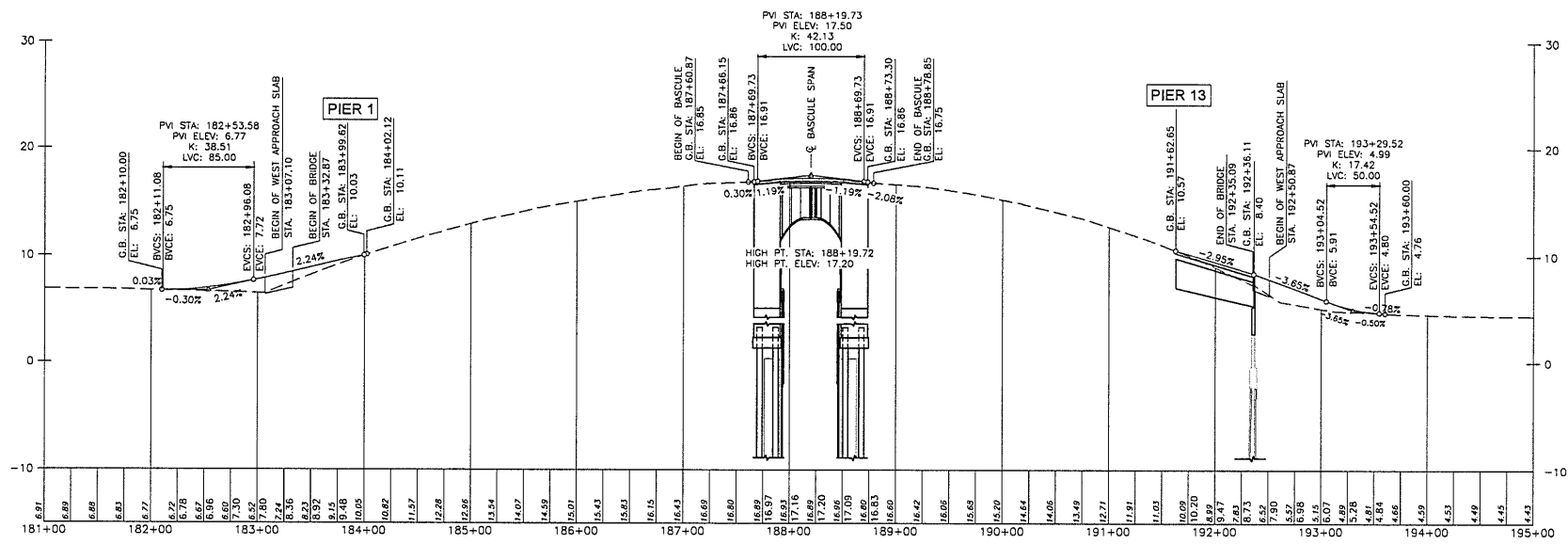
TIES

DATE: 4/5/2024

SCALE: 1" = 50'

SHEET REFERENCE NO: 4

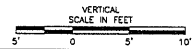
SHEET NO: 015 of 202



96TH STREET PROFILE
DESIGN SPEED = 30 MPH

HORIZONTAL DATUM
LOCAL PROJECT GROUND COORDINATES
DERIVED FROM NAD83 (2011)
U.S. SURVEY FEET

VERTICAL DATUM
NORTH AMERICAN VERTICAL DATUM 1988



PREPARED BY: WSP USA, INC.
2000 LEXON DRIVE, LAWRENCEVILLE, N.J. 08848



CAPE MAY COUNTY

STEVEN M. ARBIZ

N.J. PE LICENSE NUMBER
24062811900

DATE

DW

EV

DW

Designed by

Drawn by

Checked by

JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MOORE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

DRAWING TITLE:

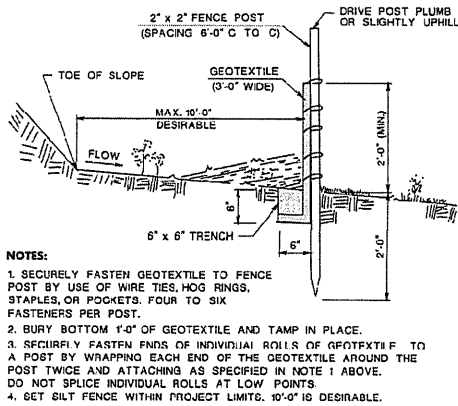
PROFILE

DATE: 4/9/2024

SCALE: 1" = 50'

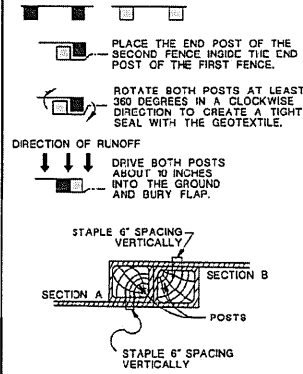
SHEET REFERENCE NO.:
of

SHEET NO.:
016 of 222



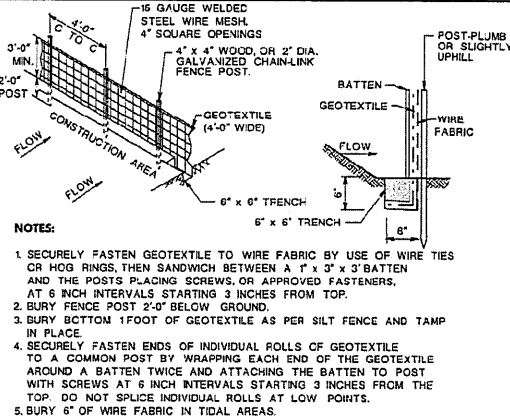
SILT FENCE

CD-158-1.1



ATTACHING TWO SILT FENCES

CD-158-1.2



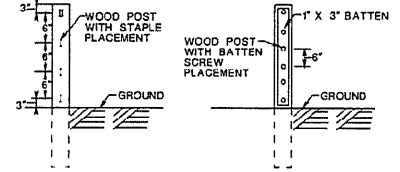
HEAVY DUTY SILT FENCE

CD-150-1.3

FASTENERS FOR WOOD POSTS				
	GAUGE	CROWN	LEGS	STAPLES/POST
WIRE STAPLES	17 MIN.	1/4" WIDE	1/2" LONG	5 MIN.
SCREWS		LENGTH 2"	PHILLIPS HEADS 2"	SCREW/POST 6 MIN.

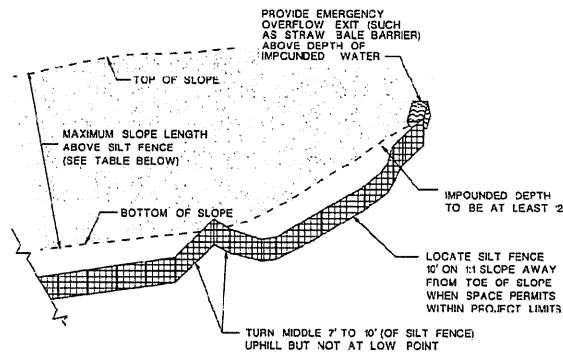
SOURCE: GA SWCC

FASTENER PLACEMENT



SILT FENCE FASTENER REQUIREMENTS

CD-150-1.4



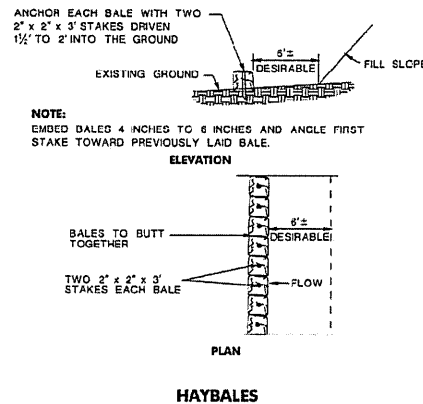
CRITERIA FOR SILT FENCE PLACEMENT

LAND SLOPE (PERCENT)	MAXIMUM SLOPE LENGTH ABOVE FENCE (FEET)
<2	100
2 TO 5	75
5 TO 10	50
10 TO 20	25
>20 *	15

* IN AREAS WHERE THE SLOPE IS GREATER THAN 20%, PROVIDE A FLAT AREA LENGTH OF 10 FEET BETWEEN THE TOE OF THE SLOPE AND THE FENCE TO BE PROVIDED.

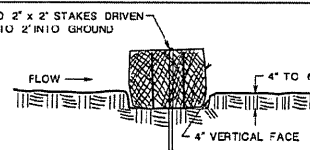
SILT FENCE ON A STEEP OR LONG GRADE

CD-150-1.5



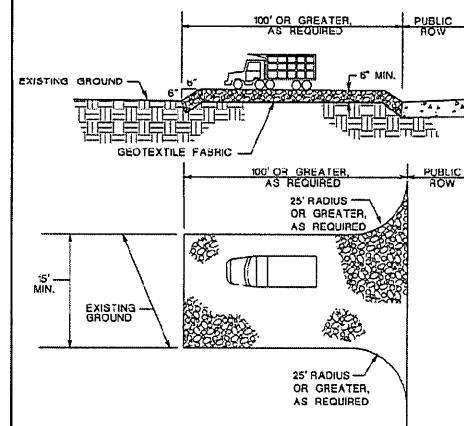
HAYBALES

CD-158-16



EMBEDDING DETAIL

CD-158-17



PROFILE AND PLAN VIEW

STABILIZED CONSTRUCTION DRIVEWAY

CD-158-18

SOIL EROSION AND SEDIMENT CONTROL MEASURES

N.T.S.

PREPARED BY: WSP USA INC.
2000 LINCOLN DRIVE, LAWRENCEVILLE, N.J. 08846



STEVEN M. ARBIZ

N.J. PE LICENSE NUMBER:
240633811900

DATE



CAPE MAY COUNTY

DESIGNED BY

DRAWN BY

CHECKED BY

JOB:

REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

DRAWING TITLE:

CONSTRUCTION DETAILS

DATE:

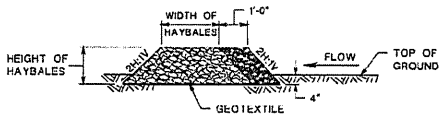
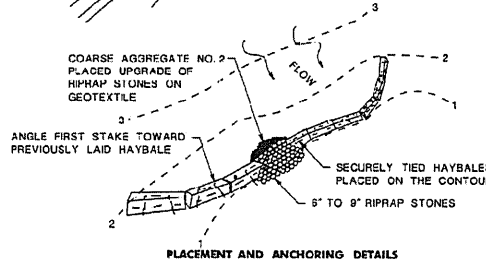
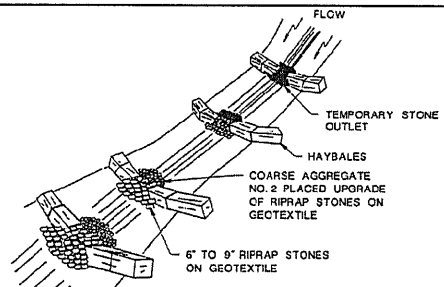
4/5/2024

SCALE:

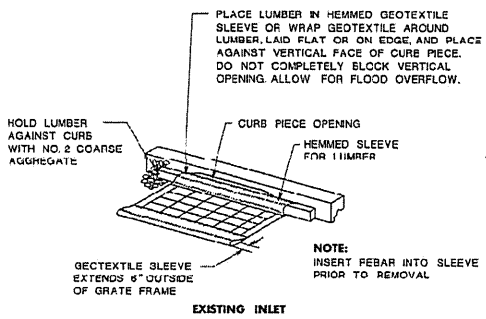
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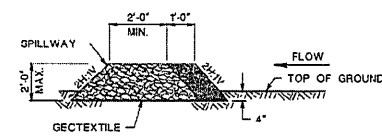
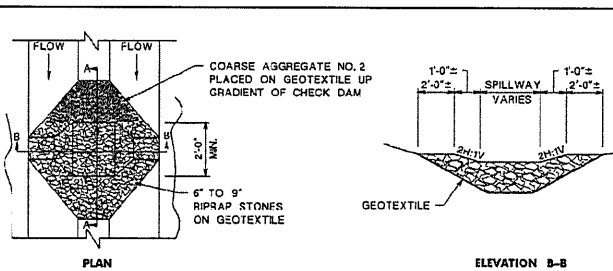
017 of 202



HAYBALE CHECK DAM WITH TEMPORARY STONE OUTLET
CD-158-2.1

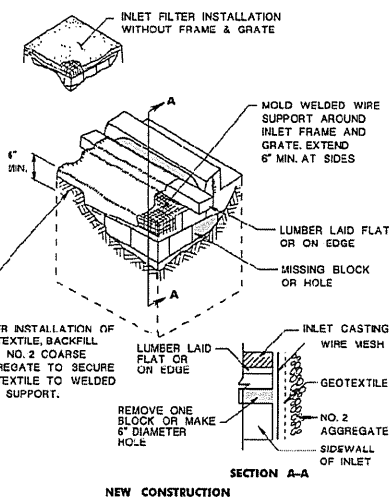


INLET FILTERS, TYPE 1



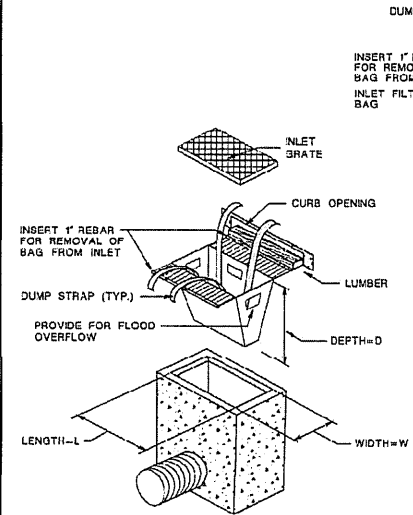
STONE CHECK DAM

CD-158-2.2



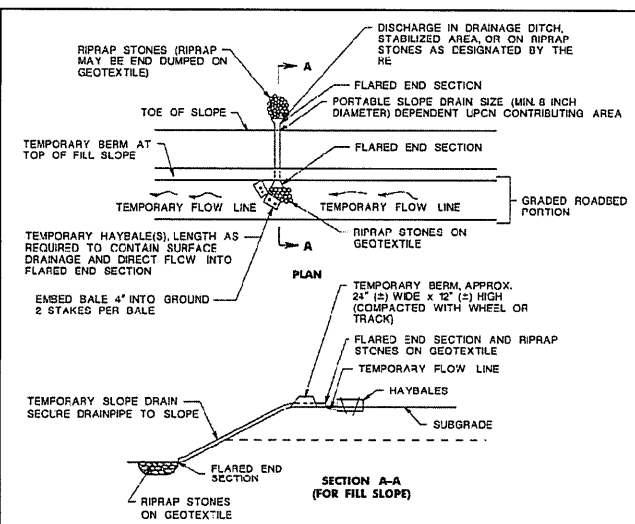
NEW CONSTRUCTION

CD-158-2.4



INLET FILTERS, TYPE 2

CD-158-2.5



SLOPE DRAIN

CD-158-2.3

SOIL EROSION AND SEDIMENT CONTROL MEASURES

N.T.S.

PREPARED BY: WSP USA INC.
2000 LENOX DRIVE, LAWRENCEVILLE, N.J. 08648



CAPE MAY COUNTY

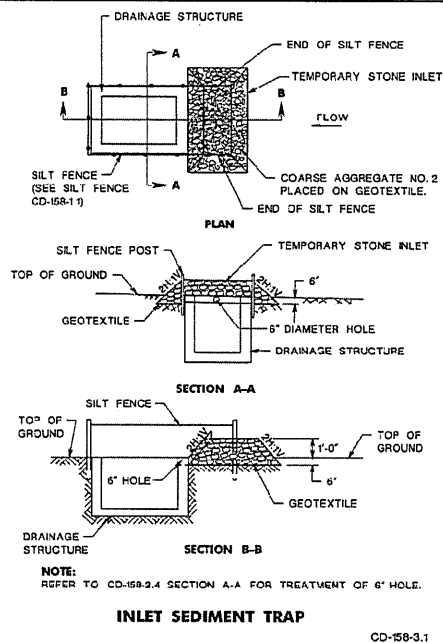
STEVEN M. ARBIZ N.J. PE LICENSE NUMBER: 246020811900

DESIGNED BY: _____ DRAWN BY: _____ CHECKED BY: _____

JOB: REHABILITATION OF 96TH STREET (CR657) BRIDGE OVER GREAT CHANNEL STR. NO. 0500-006

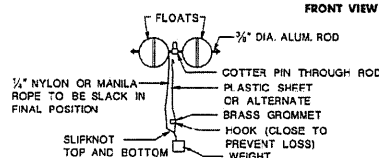
PROJECT LOCATION: STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP CAPE MAY COUNTY, NEW JERSEY
DRAWING TITLE: CONSTRUCTION DETAILS

DATE: 4/5/2024
SCALE: N.T.S.
SHEET REFERENCE NO.: 4
SHEET NO.: 018 of 202

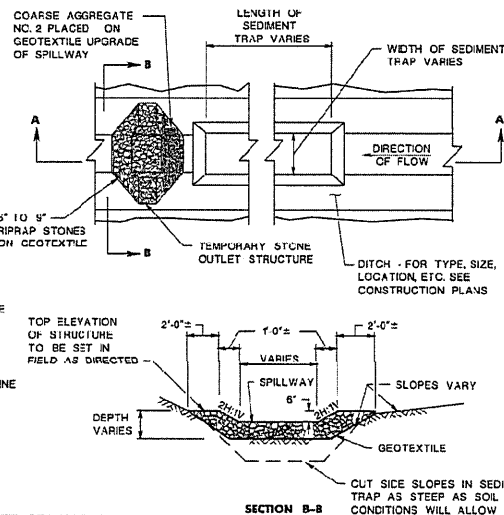


NOTE:

1/4" NYLON OR MANILA ROPE FORMS REINFORCEMENT; AIDS IN REMOVAL OR RELOCATION OF BARRIER BY SERVING AS A PICK-UP LINE FOR WEIGHTS. ROPES AND WEIGHTS ARE TO BE ATTACHED TO END FLOATS AND EVERY SECOND FLOAT BETWEEN END FLOATS.

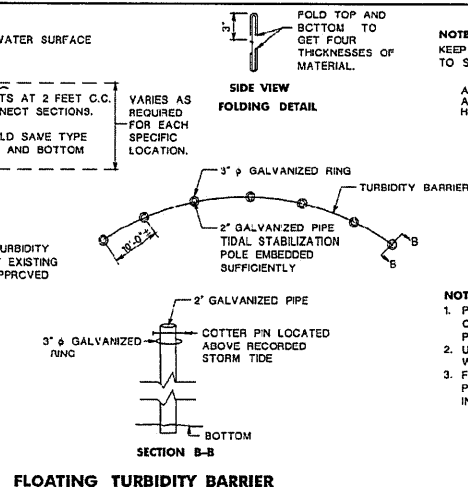


NOTE: SUITABLE ALTERNATE MAY BE FASTENED TO STAKES DRIVEN INTO THE BOTTOM IN LIEU OF FLOATS AND WEIGHTS.



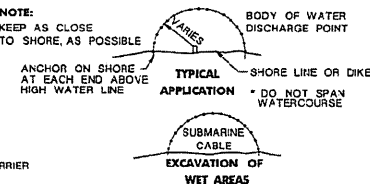
STONE OUTLET SEDIMENT TRAPS, 1' x 1'

CD-158-3.3



FLOATING TURBIDITY BARRIER

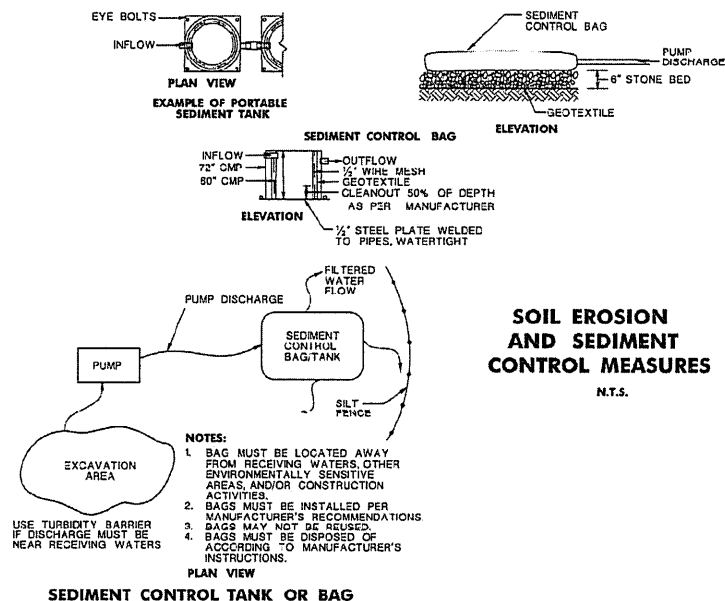
NOTE: KEEP AS CLOSE TO SHORE, AS POSSIBLE



NOTES:

1. PLACE TURBIDITY BARRIER AS TO EFFECTIVELY CONTROL SILT DISPERSION UNDER THE CONDITIONS PRESENT ON A PARTICULAR PROJECT.
2. USE APPROPRIATE NAVIGATIONAL WARNING LIGHTS WHEN USED NEXT TO NAVIGATIONAL CHANNEL.
3. FASTEN TURBIDITY BARRIER TO EMBEDDED GALVANIZED PIPE IN TIDAL OR FLOWING CONDITIONS TO KEEP BARRIER IN PLACE.

CD-158-3.2



NOTES:

1. BAG MUST BE LOCATED AWAY FROM RECEIVING WATERS, OTHER ENVIRONMENTALLY SENSITIVE AREAS, AND/OR CONSTRUCTION ACTIVITIES.
2. BAGS MUST BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
3. BAGS MAY NOT BE REUSED.
4. BAGS MUST BE DISPOSED OF ACCORDING TO MANUFACTURER'S INSTRUCTIONS.

PLAN VIEW

SEDIMENT CONTROL TANK OR BAG

CD-158-3.4

PREPARED BY: WSP USA INC.
2000 LENOX DRIVE, LAWRENCEVILLE, N.J. 08648



CAPE MAY COUNTY

STEVEN M. ARBIZ

N.J. PE LICENSE NUMBER
240620811900

DATE

Designed by

Drawn by

Checked by

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MOORE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

DRAWING TITLE:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

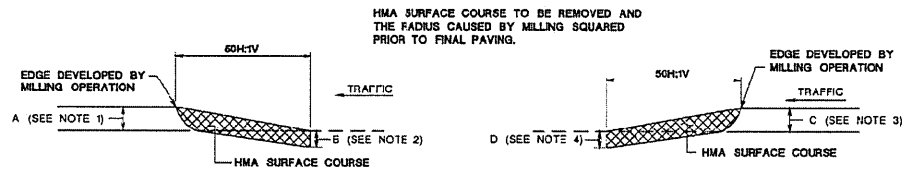
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4/5/2024

SCALE:
N.T.S.

SHEET REFERENCE NO.:
11

SHEET NO.:
019 of 202

CONSTRUCTION DETAILS

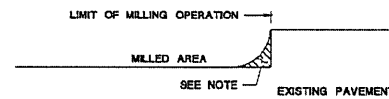


NOTES:

1. USE HMA SURFACE COURSE IN THE MILLING TRANSITION WHEN LEADING EDGE DEVELOPED BY MILLING OPERATION IS EQUAL TO OR GREATER THAN 1 INCH. NONE REQUIRED FOR EDGE LESS THAN 1 INCH.
2. ENSURE THAT THE THICKNESS OF THE HMA SURFACE COURSE IN THE MILLING TRANSITION IS NOT LESS THAN B. B IS EQUAL TO 2 INCHES OR A, WHICHEVER IS LESS.
3. USE HMA SURFACE COURSE IN THE MILLING TRANSITION WHEN TRAILING EDGE DEVELOPED BY MILLING OPERATION IS EQUAL TO OR GREATER THAN 1 1/2 INCHES. NONE REQUIRED FOR EDGE LESS THAN 1 1/2 INCHES.
4. ENSURE THAT THE THICKNESS OF THE HMA SURFACE COURSE IN THE MILLING TRANSITION IS NOT LESS THAN D. D IS EQUAL TO 2 INCHES OR C, WHICHEVER IS LESS.

MILLING TRANSITIONS

CD-401-1.1



NOTE:
REMOVE THE HMA MATERIAL LEFT BY THE DRUM RADIUS AT THE LIMITS OF THE MILLING OPERATION. ENSURE THAT THE FACE IS CLEAN AND VERTICAL BY SAWCUTTING OR TRANSVERSE MILLING. THIS END TREATMENT IS NOT APPLICABLE TO TEMPORARY LIMITS OF MILLING (I.E. END OF WORKDAY). IT IS APPLICABLE TO ALL AREAS WHERE THE COMPLETED MILLING OPERATION MATCHES ANY EXISTING PAVEMENT INCLUDING BRIDGES.

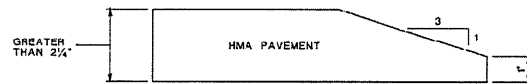
END TREATMENT FOR MILLING OPERATIONS

CD-401-1.2

NOTE:
HMA = HOT MIX ASPHALT

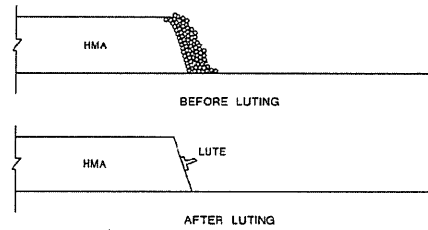
MILLING
N.T.S.

PREPARED BY: WSP USA INC. 2005 LENOX DRIVE, LAWRENCEVILLE, N.J. 08648		CAPE MAY COUNTY	JOB: REHABILITATION OF 96TH STREET (CR657) BRIDGE OVER GREAT CHANNEL STR. NO. 0500-006	PROJECT LOCATION: STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP CAPE MAY COUNTY, NEW JERSEY	DATE: 4/9/2024
STEVEN M. ARBIZ N.J. PE LICENSE NUMBER: 240E01811900	DATE	DESIGNED BY: _____ DRAWN BY: _____ CHECKED BY: _____	DRAWING TITLE: CONSTRUCTION DETAILS	SCALE: N.T.S. SHEET REFERENCE NO.: SHEET NO.: 220 of 202	



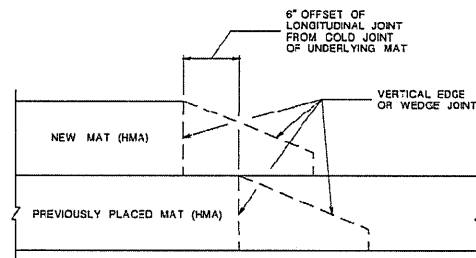
WEDGE JOINT
(NOTE 1) CD-401-2.6

CD-401-2.1



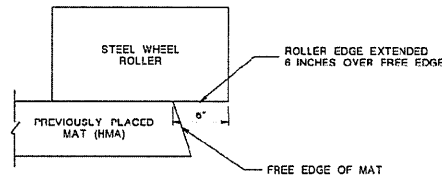
COMPACTION OF UNCONFINED VERTICAL EDGE
(NOTE 3) CD-401-2.6

CD-401-2.4



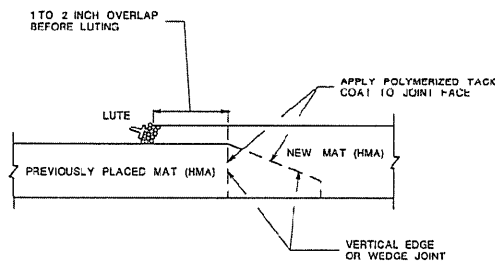
OFFSET OF JOINTS
(NOTE 2) CD-401-2.6

CD-401-2.2

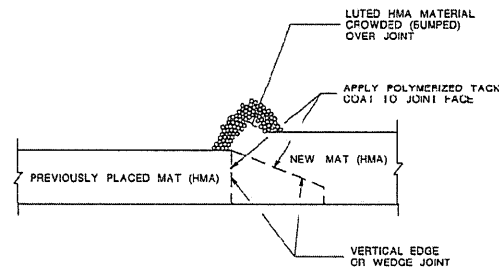


ROLLER PLACEMENT FOR COMPACTING ALONG THE UNCONFINED VERTICAL EDGE
(NOTE 6) CD-401-2.6

CD-401-2.5



OVERLAPPED HMA BEFORE LUTING
(NOTES 4 & 5) CD-401-2.6



HMA AFTER LUTING
(NOTE 4) CD-401-2.6

HMA PAVEMENT

CD-401-2.3



NOTES:

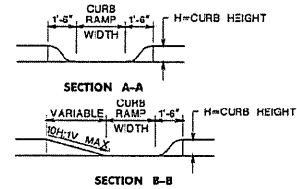
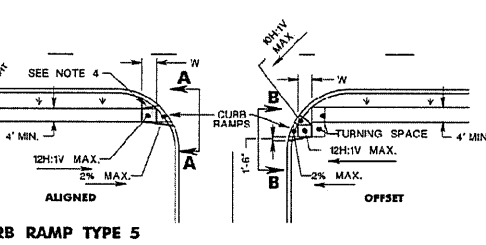
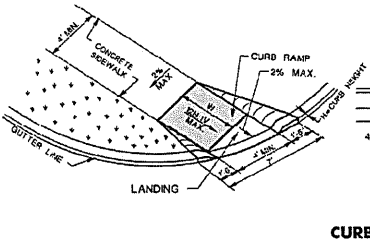
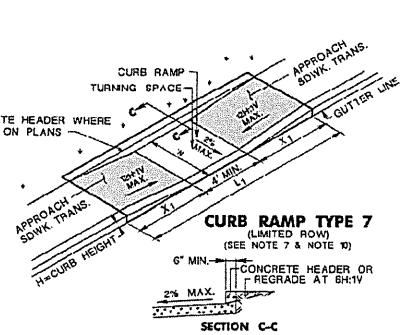
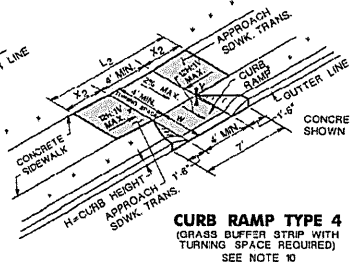
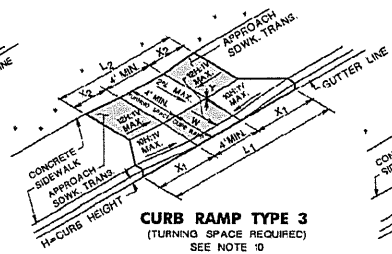
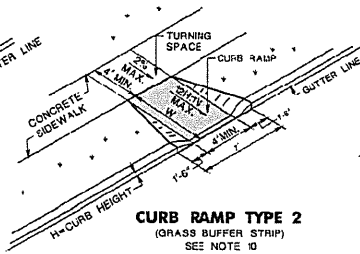
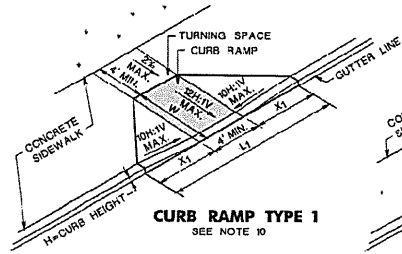
1. WHEN HMA LIFT THICKNESS IS GREATER THAN 2 1/4 INCHES AND WHEN TRAFFIC IS TO BE MAINTAINED, CONSTRUCT A WEDGE JOINT.
2. ENSURE THAT THE JOINT IN THE HMA SURFACE COURSE IS OFFSET FROM THE LANE LINES BY 6 INCHES. IN THE CENTERLINE OF A ROADWAY, ENSURE THAT THE JOINT FALLS BETWEEN THE DOUBLE YELLOW TRAFFIC STRIPE.
3. ENSURE THE LUTE OPERATOR MANUALLY BUMPS THE EDGE TO OBTAIN A TRUE VERTICAL AND DENSE UNCONFINED EDGE.
4. ENSURE THAT THE OVERLAPPED HMA MATERIAL AT THE JOINT IS TIGHTLY CROWDED (BUMPED) OVER THE JOINT ONTO THE NEWLY PLACED LANE LEAVING A SMALL MOUND OF MIX HUMPED UP FOR THE ROLLERS TO COMPACT.
5. FOR THE WEDGE JOINT, ENSURE THAT COARSE AGGREGATE PARTICLES ARE KEPT AWAY FROM THE POINT WHERE THE WEDGE MEETS THE SURFACE OF THE PREVIOUSLY PLACED LANE.
6. TO PREVENT LATERAL DISPLACEMENT OF THE UNCONFINED EDGE, ENSURE THAT THE EDGE OF THE ROLLER WHEEL EXTENDS OVER THE FREE EDGE OF THE HMA MAT BY AT LEAST 6 INCHES.

CD-401-2.6

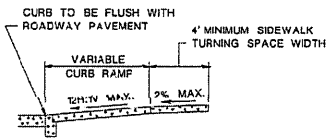
LONGITUDINAL JOINTS IN HMA
N.T.S.

HMA = HOT MIX ASPHALT

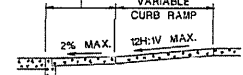
PREPARED BY: WSP USA INC. 2000 LENOX DRIVE, LAWRENCEVILLE, N.J. 08488 STEVEN M. ARBIZ N.J. PE LICENSE NUMBER: 24CE02811900 DATE:		 CAPE MAY COUNTY DESIGNED BY: _____ DRAWN BY: _____ CHECKED BY: _____	JOB: REHABILITATION OF 96TH STREET (CR657) BRIDGE OVER GREAT CHANNEL STR. NO. 0500-006	PROJECT LOCATION: STONE HARBOR BOROUGH AND WOODLE TOWNSHIP CAPE MAY COUNTY, NEW JERSEY DRAWING TITLE: CONSTRUCTION DETAILS	DATE: 4/5/2024 SCALE: N.T.S. SHEET REFERENCE NO.: OF SHEET NO.: 021 of 202
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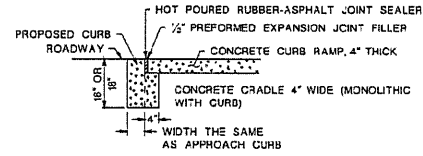
NOTE:
CURB RAMP OPENING TO BE FLUSH WITH ROADWAY PAVEMENT (CURB RAMP TYPES 5 & 6).



SECTION THROUGH CURB RAMPS 1 THROUGH 4
VARIABLE LANDING OR TURNING SPACE



- NOTES:**
1. KEEP TURNING SPACE, APPROACH SIDEWALK TRANSITIONS, AND CURB RAMP CLEAR OF OBSTRUCTIONS THAT PROTRUDE ABOVE THE SURFACE.
 2. FOR DIMENSIONS SEE CD-606-3 AND CD-606-4.
 3. CURB (DROPPED CURB) GUTTERLINE TO BE FLUSH WITH ROADWAY PAVEMENT THE ENTIRE WIDTH OF THE RAMP (4 FEET MIN) AT ALL CURB RAMPS.
 4. FOR CURB RAMP TYPES 5 AND 6, IF A GRASS BUFFER DOES NOT EXIST, SLOPE CURB TO EQUAL SLOPE OF ADJACENT CURB RAMP.
 5. SIDEWALK AND CURB RAMP WITHIN AREA ENCLOSED BY HEAVY LINES INDICATES THE PAY LIMIT FOR CONCRETE SIDEWALK OF THE APPROPRIATE ADJACENT THICKNESS.
 6. CURB AND HEADER WITHIN AREA ENCLOSED BY HEAVY LINES INDICATES THE PAY LIMIT FOR VERTICAL CURB OR SLOPING CURB OF THE APPROPRIATE ADJACENT SIZE AND KIND.
 7. WHERE THE DISTANCE FROM THE CUTTER LINE TO THE OUTSIDE EDGE OF SIDEWALK IS 6 FEET OR LESS, USE CURB RAMP TYPE 7, INSTEAD OF CURB RAMP TYPE 1 THROUGH 4.
 8. CROSSWALKS AND STOP LINES MAY BE MARKED OR UNMARKED, SEE PLANS.
 9. THE 12H:1V MAX SLOPE IS THE RUNNING SLOPE FOR CURB RAMPS, BUT ONLY THE 12H:1V SLOPE MEASURED AS X_2 IS THE RUNNING SLOPE FOR TYPE 3 AND TYPE 4 CURB RAMPS. ENSURE THE RUNNING SLOPE OF CURB RAMPS DOES NOT REQUIRE ITS LENGTH TO EXCEED 15 FEET. THE RUNNING SLOPE MAY EXCEED THE 12H:1V MAX SLOPE SO AS NOT TO EXCEED THE 15 FEET MAXIMUM LENGTH.
 10. CURB RAMP TYPE 1 THROUGH 7 ARE NORMALLY PLACED ON THE RADIUS RETURN AT THE INTERSECTION AND ON A TANGENT SECTION AS DRAWN.

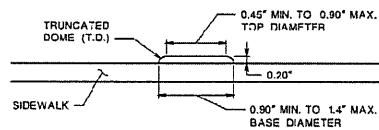
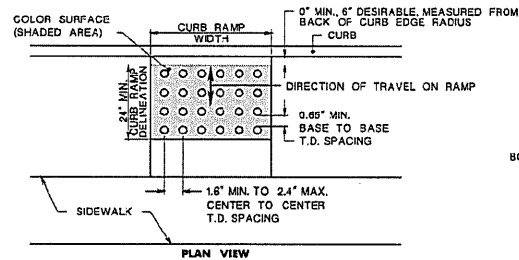


CONCRETE SIDEWALK
(PUBLIC SIDEWALK CURB RAMP)
N.T.S.

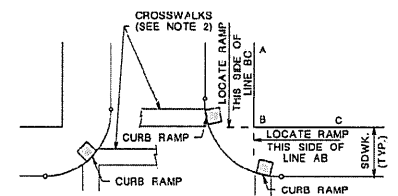
CURB RAMPS

CD-606-1.1

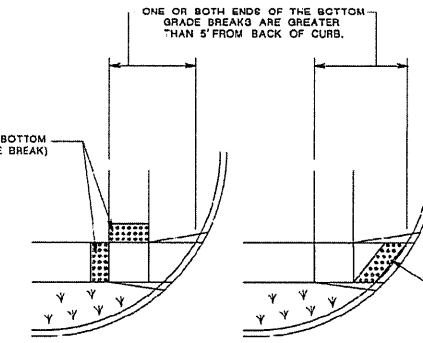
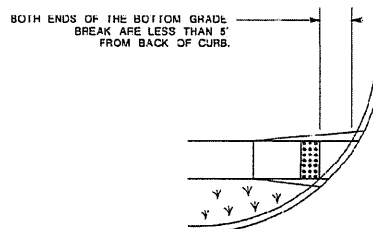
PREPARED BY: WSP USA INC. 2020 LENOX DRIVE, LAWRENCEVILLE, N.J. 08648 STEVEN M. ARBIZ N.J. PE LICENSE NUMBER: 2402011902	WSP DATE	CAPE MAY COUNTY DESIGNED BY: [Signature] DRAWN BY: [Signature] CHECKED BY: [Signature]	PROJECT LOCATION: REHABILITATION OF 96TH STREET (CR657) BRIDGE OVER GREAT CHANNEL STR. NO. 0500-006	PROJECT LOCATION: STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP CAPE MAY COUNTY, NEW JERSEY DRAWING TITLE: CONSTRUCTION DETAILS	DATE: 4/9/2024 SCALE: N.T.S. SHEET REFERENCE NO.: of SHEET NO.: 122 of 202
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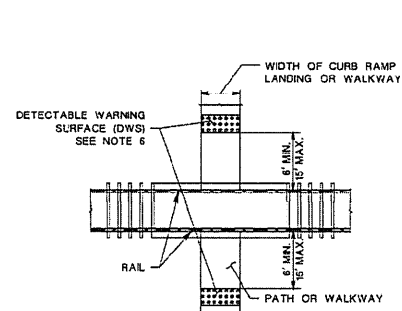
DETECTABLE WARNING SURFACE



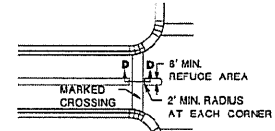
LOCATION OF CURB RAMP TYPES 1, 2, 3, 4, & 7 FOR CROSSING PARALLEL AND PERPENDICULAR TO HIGHWAY



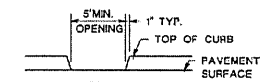
PLACEMENT OF DETECTABLE WARNING SURFACE FOR CURB RAMP TYPE 5 AND 6



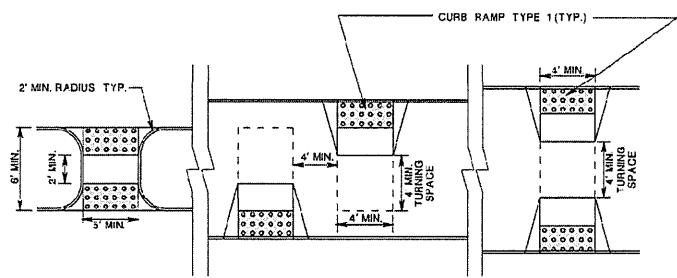
PEDESTRIAN RAILROAD CROSSING



NOTE:
WHERE PRACTICAL, RUN LEFT TURN ISLAND OR DIVISIONAL ISLAND BEFORE CROSSWALK TO ELIMINATE CUT-THROUGH





PEDESTRIAN REFUGE ISLAND WALKWAY OPENING AT INTERSECTIONS



PEDESTRIAN REFUGE ISLAND

DETECTABLE WARNING SURFACE
N.T.S.

- NOTES:**
1. KEEP TURNING SPACE, APPROACH SIDEWALK TRANSITIONS, AND CURB RAMP CLEAR OF OBSTRUCTIONS THAT PROTRUDE ABOVE THE SURFACE.
 2. CROSSWALKS AND STOP LINES MAY BE MARKED OR UNMARKED, SEE PLANS.
 3. FOR NARROW ISLAND WIDTH, SEE PEDESTRIAN REFUGE ISLAND WALKWAY OPENING AT INTERSECTIONS DETAIL.
 4. FOR MEDIUM AND LARGE ISLAND WIDTH, SEE CURB RAMP TYPE 1 ON CD-606-1.
 5. CONSTRUCT CURB RAMP TYPES 1, 2, 3, 4, & 7 PERPENDICULAR TO CURBLINE, AS SHOWN.
 6. IF A CURB RAMP IS REQUIRED, THE LOCATION OF THE DETECTABLE WARNING SURFACE MUST BE AT THE BOTTOM OF THE RAMP AND WITHIN THE REQUIRED DISTANCE FROM THE RAIL.
 7. A STANDARD DETECTABLE WARNING (DWS) SURFACE IS NOT AVAILABLE TO FIT THIS APPLICATION, AND THEREFORE ONE WILL NEED TO BE CUSTOMIZED. THE DWS SHOULD COVER THE ENTIRE WIDTH OF THE RAMP. THE ROWS OF DOMES ON THE DWS SHOULD FOLLOW THE DIRECTION OF TRAVEL OF THE RAMP, SO PEDESTRIANS WHO USE MOBILE DEVICES CAN TRACK BETWEEN THE DOMES.

PREPARED BY: WSP USA INC. 2000 LEXMOR DRIVE, LAWRENCEVILLE, N.J. 08648 STEVEN M. ARBIZ N.J. LICENSE NUMBER: 24CE0311900 DATE:	  CAPE MAY COUNTY DESIGNED BY: _____ DRAWN BY: _____ CHECKED BY: _____	JOB: REHABILITATION OF 96TH STREET (CR657) BRIDGE OVER GREAT CHANNEL STR. NO. 0500-006 PROJECT LOCATION: STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP CAPE MAY COUNTY, NEW JERSEY DRAWING TITLE: CONSTRUCTION DETAILS	DATE: 4/9/2024 SCALE: N.T.S. SHEET REFERENCE NO.: 48 SHEET NO.: 003 of 202
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CURB RAMP TYPE 1

0.0 % GUTTER LINE PROFILE					
H	W	X ₁₀	X ₁₁	L ₁	L ₂
INCHES	FEET	FEET	FEET	FEET	FEET
3	3	2.50	2.50	9.00	
4	3	3.33	3.33	10.67	
5	3	4.17	4.17	12.33	
6	3	5.00	5.00	14.00	
7	3	5.83	5.83	15.67	
8	3	6.67	6.67	17.33	
9	3	7.50	7.50	19.00	

1.0 % GUTTER LINE PROFILE					
H	W	X ₁₀	X ₁₁	L ₁	L ₂
INCHES	FEET	FEET	FEET	FEET	FEET
3	3	2.78	2.78	9.05	
4	3	3.70	3.70	10.73	
5	3	4.63	4.63	12.42	
6	3	5.56	5.56	14.10	
7	3	6.48	6.48	15.78	
8	3	7.41	7.41	17.47	
9	3	8.33	8.33	19.15	

2.0 % GUTTER LINE PROFILE					
H	W	X ₁₀	X ₁₁	L ₁	L ₂
INCHES	FEET	FEET	FEET	FEET	FEET
3	3	3.13	3.13	9.21	
4	3	4.17	4.17	10.94	
5	3	5.21	5.21	12.68	
6	3	6.25	6.25	14.42	
7	3	7.29	7.29	16.15	
8	3	8.33	8.33	17.89	
9	3	9.38	9.38	19.63	

3.0 % GUTTER LINE PROFILE					
H	W	X ₁₀	X ₁₁	L ₁	L ₂
INCHES	FEET	FEET	FEET	FEET	FEET
3	3	3.57	3.57	9.49	
4	3	4.76	4.76	11.33	
5	3	5.95	5.95	13.16	
6	3	7.14	7.14	15.00	
7	3	8.33	8.33	16.83	
8	3	9.52	9.52	18.67	
9	3	10.71	10.71	20.50	

CURB RAMP TYPE 3

0.0 % GUTTER LINE PROFILE					
H	W	X ₁₀	X ₁₁	L ₁	L ₂
INCHES	FEET	FEET	FEET	FEET	FEET
3	3	2.50	2.50	9.00	
4	3	3.33	3.33	10.67	
5	3	4.17	4.17	12.33	
6	3	5.00	5.00	14.00	
7	3	5.83	5.83	15.67	
8	3	6.67	6.67	17.33	
9	3	7.50	7.50	19.00	

1.0 % GUTTER LINE PROFILE					
H	W	X ₁₀	X ₁₁	L ₁	L ₂
INCHES	FEET	FEET	FEET	FEET	FEET
3	3	2.78	2.78	9.05	
4	3	3.70	3.70	10.73	
5	3	4.63	4.63	12.42	
6	3	5.56	5.56	14.10	
7	3	6.48	6.48	15.78	
8	3	7.41	7.41	17.47	
9	3	8.33	8.33	19.15	

2.0 % GUTTER LINE PROFILE					
H	W	X ₁₀	X ₁₁	L ₁	L ₂
INCHES	FEET	FEET	FEET	FEET	FEET
3	3	3.13	3.13	9.21	
4	3	4.17	4.17	10.94	
5	3	5.21	5.21	12.68	
6	3	6.25	6.25	14.42	
7	3	7.29	7.29	16.15	
8	3	8.33	8.33	17.89	
9	3	9.38	9.38	19.63	

3.0 % GUTTER LINE PROFILE					
H	W	X ₁₀	X ₁₁	L ₁	L ₂
INCHES	FEET	FEET	FEET	FEET	FEET
3	3	3.57	3.57	9.49	
4	3	4.76	4.76	11.33	
5	3	5.95	5.95	13.16	
6	3	7.14	7.14	15.00	
7	3	8.33	8.33	16.83	
8	3	9.52	9.52	18.67	
9	3	10.71	10.71	20.50	

1.0 % GUTTER LINE PROFILE					
H	W	X ₁₀	X ₁₁	L ₁	L ₂
INCHES	FEET	FEET	FEET	FEET	FEET
3	3	2.78	2.78	9.05	
4	3	3.70	3.70	10.73	
5	3	4.63	4.63	12.42	
6	3	5.56	5.56	14.10	
7	3	6.48	6.48	15.78	
8	3	7.41	7.41	17.47	
9	3	8.33	8.33	19.15	

2.0 % GUTTER LINE PROFILE					
H	W	X ₁₀	X ₁₁	L ₁	L ₂
INCHES	FEET	FEET	FEET	FEET	FEET
3	3	3.13	3.13	9.21	
4	3	4.17	4.17	10.94	
5	3	5.21	5.21	12.68	
6	3	6.25	6.25	14.42	
7	3	7.29	7.29	16.15	
8	3	8.33	8.33	17.89	
9	3	9.38	9.38	19.63	

3.0 % GUTTER LINE PROFILE					
H	W	X ₁₀	X ₁₁	L ₁	L ₂
INCHES	FEET	FEET	FEET	FEET	FEET
3	3	3.57	3.57	9.49	
4	3	4.76	4.76	11.33	
5	3	5.95	5.95	13.16	
6	3	7.14	7.14	15.00	
7	3	8.33	8.33	16.83	
8	3	9.52	9.52	18.67	
9	3	10.71	10.71	20.50	

2.0 % GUTTER LINE PROFILE					
H	W	X ₁₀	X ₁₁	L ₁	L ₂
INCHES	FEET	FEET	FEET	FEET	FEET
3	3	3.13	3.13	9.21	
4	3	4.17	4.17	10.94	
5	3	5.21	5.21	12.68	
6	3	6.25	6.25	14.42	
7	3	7.29	7.29	16.15	
8	3	8.33	8.33	17.89	
9	3	9.38	9.38	19.63	

3.0 % GUTTER LINE PROFILE					
H	W	X ₁₀	X ₁₁	L ₁	L ₂
INCHES	FEET	FEET	FEET	FEET	FEET
3	3	3.57	3.57	9.49	
4	3	4.76	4.76	11.33	
5	3	5.95	5.95	13.16	
6	3	7.14	7.14	15.00	
7	3	8.33	8.33	16.83	
8	3	9.52	9.52	18.67	
9	3	10.71	10.71	20.50	

3.0 % GUTTER LINE PROFILE					
H	W	X ₁₀	X ₁₁	L ₁	L ₂
INCHES	FEET	FEET	FEET	FEET	FEET
3	3	3.57	3.57	9.49	
4	3	4.76	4.76	11.33	
5	3	5.95	5.95	13.16	
6	3	7.14	7.14	15.00	
7	3	8.33	8.33	16.83	
8	3	9.52	9.52	18.67	
9	3	10.71	10.71	20.50	

3.0 % GUTTER LINE PROFILE					
H	W	X ₁₀	X ₁₁	L ₁	L ₂
INCHES	FEET	FEET	FEET	FEET	FEET
3	3	3.57	3.57	9.49	
4	3	4.76	4.76	11.33	
5	3	5.95	5.95	13.16	
6	3	7.14	7.14	15.00	
7	3	8.33	8.33	16.83	
8	3	9.52	9.52	18.67	
9	3	10.71	10.71	20.50	

4.0 % GUTTER LINE PROFILE					
H	W	X ₁₀	X ₁₁	L ₁	L ₂
INCHES	FEET	FEET	FEET	FEET	FEET
3	3	4.17	4.17	9.95	
4	3	5.56	5.56	13.24	
5	3	6.94	6.94	16.53	
6	3	8.33	8.33	19.82	
7	3	9.72	9.72	23.11	
8	3	11.11	11.11	26.40	
9	3	12.50	12.50	29.69	

5.0 % GUTTER LINE PROFILE					
H	W	X ₁₀	X ₁₁	L ₁	L ₂
INCHES	FEET	FEET	FEET	FEET	FEET
3	3	5.00	5.00	10.67	
4	3	6.67	6.67	14.22	
5	3	8.33	8.33	17.78	
6	3	10.00	10.00	21.33	
7	3	11.67	11.67	24.89	
8	3	13.33	13.33	28.44	
9	3	15.00	15.00	32.00	

6.0 % GUTTER LINE PROFILE					
H	W	X ₁₀	X ₁₁	L ₁	L ₂
INCHES	FEET	FEET	FEET	FEET	FEET
3	3	6.25	6.25	13.89	
4	3	8.33	8.33	18.44	
5	3	10.42	10.42	23.00	
6	3	12.50	12.50	27.56	
7	3	14.58	14.58	32.11	
8	3	16.67	16.67	36.67	
9	3	18.75	18.75	41.22	

7.0 % GUTTER LINE PROFILE					
H	W	X ₁₀	X ₁₁	L ₁	L ₂
INCHES	FEET	FEET	FEET	FEET	FEET
3	3	7.50	7.50	15.00	
4	3	10.00	10.00	20.00	
5	3	12.50	12.50	25.00	
6	3	15.00	15.00	30.00	
7	3	17.50	17.50	35.00	
8	3	20.00	20.00	40.00	
9	3	22.50	22.50	45.00	

CURB RAMP TYPE 2

0.0 % GUTTER LINE PROFILE					
H	W	X ₁₀	X ₁₁	L ₁	L ₂
INCHES	FEET	FEET	FEET	FEET	FEET
3	3	1.50	1.50	7.00	
4	3	2.00	2.00	9.33	
5	3	2.50	2.50	11.67	
6	3	3.00	3.00	14.00	
7	3	3.50	3.50	16.33	
8	3	4.00	4.00	18.67	
9	3	4.50	4.50	21.00	

NOTES:

1. FOR CURB RAMP TYPES, SEE CD-606-1.

2. THE ABOVE TABLES ARE BASED ON THE SPECIFIC GUTTER PROFILE REFERENCED. THEY DO NOT TAKE INTO ACCOUNT VARIATIONS IN THE GUTTER PROFILE. THE ABOVE TABLES TO BE USED BY THE DESIGNER AND CONTRACTORS TO GET APPROXIMATE DIMENSIONS OF THE CURB RAMP AT EACH LOCATION. FINAL DIMENSIONS WILL BE DETERMINED BY ACTUAL MEASUREMENTS IN THE FIELD DURING CONSTRUCTION.

3. THE 12:1 MAX SLOPE IS THE RUNNING SLOPE FOR CURB RAMP TYPES, BUT ONLY THE 12:1 MAX SLOPE MEASURED AS X IS THE RUNNING SLOPE FOR TYPE 3 AND TYPE 4 CURB RAMP TYPES. ENSURE THE RUNNING SLOPE OF CURB RAMP TYPES DOES NOT EXCEED ITS LENGTH TO EXCEED 5 FEET. THE RUNNING SLOPE MAY EXCEED THE 12:1 MAX SLOPE SO AS NOT TO EXCEED THE 5 FEET MAXIMUM LENGTH. THE TABLES ALREADY APPLY THE 5 FEET RULE FOR THOSE CALCULATED LENGTHS WHICH EXCEED 5 FEET.

4. DIMENSIONS SHOWN IN TABLES ARE FOR 3 INCH TO 3 INCH CURB HEIGHTS. WHERE THE CURB HEIGHTS ARE OTHER THAN WHAT IS PROVIDED IN THE TABLES, THE DIMENSIONS OF THE RAMP WILL HAVE TO BE CALCULATED BASED ON CROSS SLOPES SHOWN.

CONCRETE SIDEWALK

(PUBLIC SIDEWALK CURB RAMP TABLES)
N.T.S.

LEGEND

U = UPPER SIDE OF GUTTER LINE PROFILE

L = LOWER SIDE OF GUTTER LINE PROFILE

FOR THE OTHER ABBREVIATIONS - REFER TO CD-605-1

* TYPE 3 RAMP IS NOT APPLICABLE, USE TYPE 1

** TYPE 4 RAMP IS NOT APPLICABLE, USE TYPE 2

CD-606-3.1

PREPARED BY: WSP USA INC.
2000 LINDEN DRIVE, LAWRENCEVILLE, GA 30046

STEVEN M. ARBIZ

CURB RAMP TYPE 4

0.0 % GUTTER LINE PROFILE					
H	W	Y	X ₁₀	X ₄	L ₁
INCHES	FEET	INCHES	FEET	FEET	FEET
3			0.91	0.91	3.82
4			1.91	1.91	7.82
5			2.91	2.91	9.81
6	2.75	2.75	3.91	3.91	11.82
7			4.91	4.91	13.83
8			5.91	5.91	15.83
9			6.91	6.91	17.83
3			**	**	**
4			1.72	1.72	7.41
5			2.72	2.72	9.44
6	3.0	3.0	3.72	3.72	11.43
7			4.72	4.72	13.45
8			5.72	5.72	15.45
9			6.72	6.72	17.45
3			**	**	**
4			1.34	1.34	6.68
5			2.34	2.34	8.68
6	3.5	3.5	3.34	3.34	10.69
7			4.34	4.34	12.69
8			5.34	5.34	14.69
9			6.34	6.34	16.69
3			**	**	**
4			**	**	**
5			1.96	1.96	7.92
6	4.0	4.0	2.96	2.96	9.93
7			3.96	3.96	11.93
8			4.96	4.96	13.93
9			5.96	5.96	15.93

1.0 % GUTTER LINE PROFILE					
H	W	Y	X ₁₀	X ₄	L ₁
INCHES	FEET	INCHES	FEET	FEET	FEET
3			1.04	0.81	3.85
4			2.17	1.73	7.88
5			3.31	2.61	9.91
6	2.75	2.75	4.45	3.49	11.94
7			5.58	4.39	13.97
8			6.72	5.28	16.00
9			7.86	6.17	18.03
3			0.82	0.64	5.45
4			1.96	1.50	7.49
5			3.09	2.43	9.52
6	3.0	3.0	4.23	3.34	11.55
7			5.37	4.22	13.58
8			6.50	5.11	15.61
9			7.64	6.00	17.64
3			0.39	0.30	6.69
4			1.51	1.00	6.72
5			2.66	2.09	8.75
6	3.5	3.5	3.80	2.98	10.78
7			4.94	3.89	12.81
8			6.07	4.77	14.84
9			7.21	5.66	16.87
3			**	**	**
4			1.09	0.86	5.95
5			2.23	1.75	7.98
6	4.0	4.0	3.37	2.65	10.01
7			4.50	3.54	12.04
8			5.64	4.49	14.07
9			6.78	5.32	16.10

2.0 % GUTTER LINE PROFILE					
H	W	Y	X ₁₀	X ₄	L ₁
INCHES	FEET	INCHES	FEET	FEET	FEET
3			1.20	0.73	5.93
4			2.52	1.54	8.06
5			3.85	2.35	10.18
6	2.75	2.75	5.15	3.16	12.30
7			6.47	3.96	14.43
8			7.78	4.77	16.55
9			9.10	5.58	18.67
3			0.92	0.58	5.53
4			2.27	1.39	7.65
5			3.50	2.20	9.78
6	3.0	3.0	4.70	3.04	11.90
7			6.22	3.81	14.02
8			7.59	4.60	16.15
9			8.95	5.42	18.27
3			0.45	0.28	4.72
4			1.77	1.08	6.85
5			3.08	1.89	8.97
6	3.5	3.5	4.40	2.70	11.09
7			5.72	3.50	13.22
8			7.03	4.31	15.34
9			8.35	5.12	17.46
3			**	**	**
4			1.17	0.78	6.04
5			2.58	1.58	8.16
6	4.0	4.0	3.90	2.39	10.29
7			5.22	3.20	12.41
8			6.53	4.00	14.53
9			7.85	4.81	16.66

3.0 % GUTTER LINE PROFILE					
H	W	Y	X ₁₀	X ₄	L ₁
INCHES	FEET	INCHES	FEET	FEET	FEET
3			1.42	0.67	6.09
4			2.99	1.41	8.39
5			4.55	2.14	10.69
6	2.75	2.75	6.11	2.88	12.99
7			7.68	3.61	15.29
8			9.24	4.35	17.59
9			10.81	5.08	19.89
3			1.13	0.53	5.66
4			2.69	1.27	7.96
5			4.25	2.00	10.26
6	3.0	3.0	5.82	2.74	12.55
7			7.38	3.47	14.85
8			8.94	4.21	17.15
9			10.51	4.94	19.45
3			0.53	0.25	4.78
4			2.10	0.99	7.08
5			3.66	1.72	9.38
6	3.5	3.5	5.22	2.46	11.68
7			6.79	3.19	13.98
8			8.35	3.93	16.28
9			9.91	4.66	18.58
3			**	**	**
4			1.50	0.71	6.23
5			3.07	1.44	8.51
6	4.0	4.0	4.63	2.18	10.81
7			6.19	2.91	13.11
8			7.76	3.65	15.41
9			9.32	4.38	17.71

CURB RAMP TYPE 7

0.0 % GUTTER LINE PROFILE					
H	W	Y	X ₁₀	X ₄	L ₁
INCHES	FEET	INCHES	FEET	FEET	FEET
3			3.00	3.00	10.00
4			4.00	4.00	12.00
5			5.00	5.00	14.00
6	4" MIN.		6.00	6.00	16.00
7	7" MAX.		7.00	7.00	18.00
8			8.00	8.00	20.00
9			9.00	9.00	22.00

4.0 % GUTTER LINE PROFILE					
H	W	Y	X ₁₀	X ₄	L ₁
INCHES	FEET	INCHES	FEET	FEET	FEET
3			5.77	2.03	11.80
4			7.70	2.70	14.90
5			9.62	3.38	17.00
6	4" MIN.		11.55	4.06	19.50
7	7" MAX.		13.47	4.73	22.20
8			15.40	5.41	24.80
9			17.32	6.08	27.40

4.0 % GUTTER LINE PROFILE					
H	W	Y	X ₁₀	X ₄	L ₁
INCHES	FEET	INCHES	FEET	FEET	FEET
3			1.75	0.62	6.37
4			3.66	1.29	8.97
5			5.60	1.97	11.57
6	2.75	2.75	7.53	2.64	14.17
7			9.45	3.32	16.77
8			11.38	4.00	19.37
9			13.30	4.67	21.97
3			1.39	0.49	5.88
4			3.31	1.16	8.48
5			5.24	1.84	11.08
6	3.0	3.0	7.16	2.52	13.68
7			9.09	3.19	16.28
8			11.01	3.87	18.88
9			12.94	4.54	21.48
3			0.66	0.23	4.89
4			2.58	0.91	7.49
5			4.51	1.58	10.09
6	3.5	3.5	6.43	2.26	12.69
7			8.36	2.93	15.29
8			10.28	3.61	17.89
9			12.20	4.29	20.49
3			**	**	**
4			1.85	0.65	6.50
5			3.78	1.33	9.10
6	4.0	4.0	5.70	2.00	11.70
7			7.62	2.68	14.30
8			9.55	3.35	16.90
9			11.47	4.03	19.50

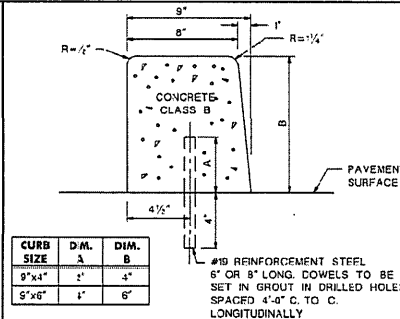
5.0 % GUTTER LINE PROFILE					
H	W	Y	X ₁₀	X ₄	L ₁
INCHES	FEET	INCHES	FEET	FEET	FEET
3			2.28	0.57	6.85
4			4.78	1.19	9.98
5			7.29	1.82	13.10
6	2.75	2.75	9.79	2.45	16.23
7			12.29	3.07	19.36
8			14.79	3.70	22.49
9			17.30	4.32	25.62
3			1.80	0.45	6.26
4			4.31	1.08	9.38
5			6.81	1.70	12.51
6	3.0	3.0	9.31	2.33	15.64
7			11.81	2.95	18.77
8			14.32	3.58	21.90
9			16.82	4.20	25.03
3			0.85	0.31	5.07
4			3.36	0.94	8.20
5			5.86	1.56	11.32
6	3.5	3.5	8.36	2.19	14.45
7			10.86	2.81	17.58
8			13.37	3.44	20.71
9			15.87	4.06	23.84
3			**	**	**
4			2.41	0.69	7.01
5			4.91	1.32	10.14
6	4.0	4.0	7.41	1.95	13.26
7			9.91	2.58	16.39
8			12.42	3.20	19.52
9			14.92	3.83	22.65

6.0 % GUTTER LINE PROFILE					
H	W	Y	X ₁₀	X ₄	L ₁
INCHES	FEET	INCHES	FEET	FEET	FEET
3			3.25	0.53	7.79
4			6.54	1.13	13.35
5			10.41	1.69	16.10
6	2.75	2.75	13.90	2.27	20.26
7			17.00	2.86	24.89
8			20.00	3.44	29.44
9			23.00	4.02	34.00
3			2.58	0.42	7.00
4			6.16	1.00	11.16
5			9.73	1.58	15.31
6	3.0	3.0	13.31	2.16	19.47
7			16.00	2.75	23.75
8			18.00	3.33	28.00
9			20.00	3.91	32.00
3			1.22	0.20	5.42
4			4.80	0.78	9.58
5			8.37	1.36	13.74
6	3.5	3.5	11.55	1.94	17.89
7			15.00	2.52	22.52
8			18.00	3.11	27.11
9			21.00	3.69	31.69
3			**	**	**
4			3.44	0.56	8.00
5			7.02	1.14	12.16
6	4.0	4.0	10.59	1.72	16.31
7			14.17	2.30	20.47
8			17.00	2.89	24.89
9			20.00	3.47	29.47

7.0 % GUTTER LINE PROFILE					
H	W	Y	X ₁₀	X ₄	L ₁
INCHES	FEET	INCHES	FEET	FEET	
3			5.71	0.50	13.20
4			11.97	1.04	17.01
5			15.00	1.58	21.00
6			16.00	2.12	25.00
7	2.75	2.75	15.00	2.67	21.67
8			15.00	3.21	22.21
9			15.00	3.75	22.75
3			4.52	0.59	8.91
4			10.78	0.94	20.40
5			15.00	1.48	20.48
6	3.0	3.0	15.00	2.00	21.02
7			15.00	2.57	21.57
8			16.00	2.11	23.11
9			15.00	3.65	22.65
3			2.14	0.12	3.32
4			8.40	0.72	13.13
5			14.67	1.27	19.94
6			15.00	1.81	20.82
7	3.5	3.5	15.00	2.36	23.36
8			15.00	2.90	24.90
9			15.00	3.45	25.45
2			**	**	**
4			6.03	0.52	10.53
5			12.29	1.07	17.35
6	4.0	4.0	15.00	1.61	20.61
7			15.00	2.15	21.15
8			15.00	2.70	21.70
9			15.00	3.24	22.24

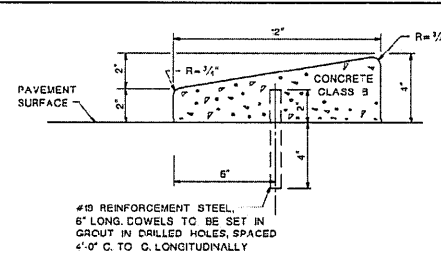
GENERAL NOTES APPLYING TO ALL TYPES OF DOWELLED CURBS

1. CONSTRUCT THE TRANSVERSE JOINTS AS SPECIFIED FOR THE CURB, EXCEPT THAT THE THICKNESS OF THE JOINT FILLER IN THE CURB TO BE AS FOLLOWS:
 - (a) 1/2 INCH FOR INTERMEDIATE JOINTS AND JOINTS OVER DEFINITE CRACKS.
 - (b) 1/2 INCH OVER PAVEMENT JOINTS WHERE SLAB LENGTH IS 50 FEET OR LESS.
 - (c) 1 INCH OVER PAVEMENT JOINTS WHERE SLAB LENGTH IS MORE THAN 50 FEET VARIABLE IN MULTIPLES OF 1/2 INCH BUT NOT LESS THAN THE EXISTING WIDTH OF THE TRANSVERSE JOINTS IN BRIDGES AND THE JOINTS BETWEEN THE APPROACH SLABS AND BRIDGES.
2. FOR THICKNESS OF 1 INCH OR MORE, LAYERS OF 1/2 INCH MATERIAL MAY BE GLUED OR OTHERWISE FASTENED TOGETHER BY A MEANS SATISFACTORY TO THE RE. WHERE THE REQUIRED JOINT OPENING EXCEEDS 1 INCH, THE CONTRACTOR MAY CONSTRUCT OPEN JOINTS, IF DESIRED.
3. WHERE COWELLED CURB IS TO BE CONSTRUCTED ACROSS A LONGITUDINAL JOINT IN THE EXISTING PAVEMENT, THE DOWELS IN THE SHORTER PORTION OF THE CURB PANEL ARE TO BE OMITTED AND THE CURB IN THE PORTION OF THE PANEL TO BE CONSTRUCTED WITH 45# SMOOTH ROLL ROOFING BETWEEN IT AND THE EXISTING PAVEMENT.



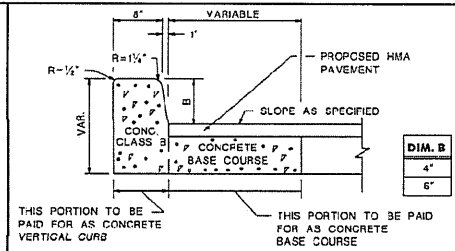
9' x 12' CONCRETE VERTICAL CURB, DOWELLED

CD-607-1.2



12' x 3' CONCRETE SLOPING CURB, DOWELLED

CD-607-1.3

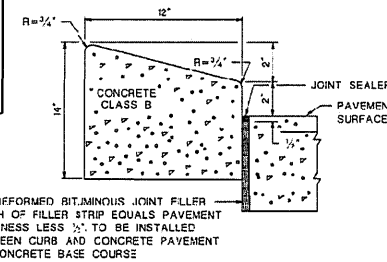


NOTES:
EXPANSION JOINTS 1/2 INCH WIDE IN THE CURB AND EXPANSION JOINT ASSEMBLY IN THE MONOLITHIC PAVEMENT STRIP TO BE DIRECTLY OPPOSITE EVERY TRANSVERSE JOINT IN THE CENTRAL PAVEMENT STRIPS. JOINT MATERIAL IN THE CURB TO BE AS SPECIFIED FOR CONCRETE VERTICAL CURB. THE TRANSVERSE EXPANSION JOINT MATERIAL NOT TO EXTEND THROUGH THE CURB.

CONCRETE VERTICAL CURB MONOLITHIC WITH CONCRETE BASE COURSE

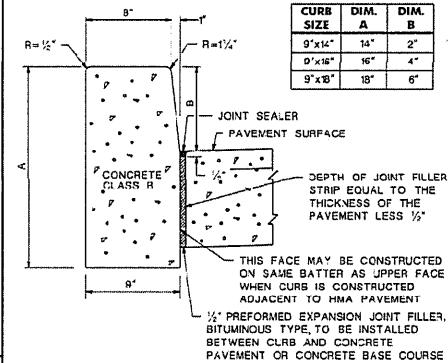
CD-607-1.4

CD-607-1.1



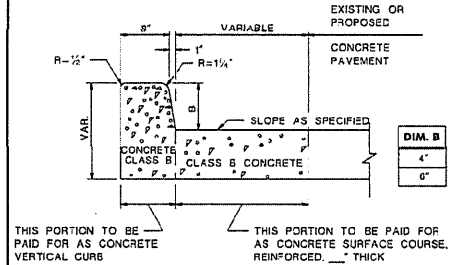
12' x 13' CONCRETE SLOPING CURB

CD-607-1.5



CONCRETE VERTICAL CURB

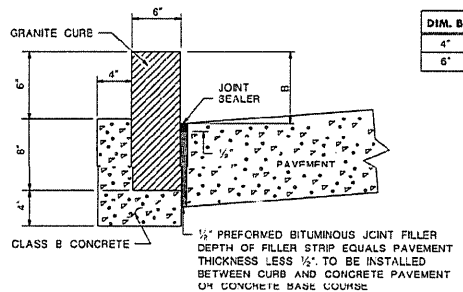
CD-607-1.6



NOTES:
EXPANSION JOINTS 1/2 INCH WIDE IN THE CURB AND EXPANSION JOINT ASSEMBLY IN THE MONOLITHIC PAVEMENT STRIP TO BE DIRECTLY OPPOSITE EVERY TRANSVERSE JOINT IN THE CENTRAL PAVEMENT STRIPS. JOINT MATERIAL IN THE CURB TO BE AS SPECIFIED FOR CONCRETE VERTICAL CURB. THE TRANSVERSE EXPANSION JOINT MATERIAL NOT TO EXTEND THROUGH THE CURB.

CONCRETE VERTICAL CURB MONOLITHIC WITH CONCRETE PAVEMENT

CD-607-1.7



NOTE:
FOUNDATION TO BE INSTALLED THE ENTIRE LENGTH OF THE GRANITE CURB.

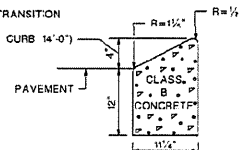
NEW OR RESET GRANITE CURB

CD-607-1.8

NOTES:

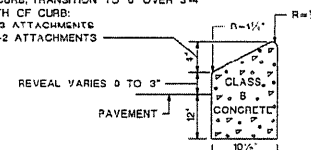
1. PAYMENT FOR LIP CURB WILL BE MADE UNDER 9' x 16' CONCRETE VERTICAL CURB.
2. SEE BRIDGE ATTACHMENT DETAILS ON SHEETS CD 609 14 THRU CD 609 17E.

AT END OF CURB, TRANSITION TO 9' OVER 3'-4' (TOTAL LENGTH OF CURB 14'-0')



TYPE B ATTACHMENT

AT END OF CURB, TRANSITION TO 9' OVER 3'-4' TOTAL LENGTH OF CURB: 17'-0" FOR TL-3 ATTACHMENTS 24'-0" FOR TL-2 ATTACHMENTS



TYPE A ATTACHMENT

LIP CURB FOR BEAM GUIDE RAIL ATTACHMENTS

CD-607-1.9

CONCRETE AND GRANITE CURB

N.T.S.

NOTE:
REINFORCEMENT STEEL IS IN METRIC UNITS.
HMA = HOT MIX ASPHALT

PREPARED BY: WSP USA INC.
2000 LENOX DRIVE, LAWRENCEVILLE, N.J. 08648



CAPE MAY COUNTY

STEVEN M. ARBIZ

N.J. LICENSE NUMBER
24CE0311900

DATE

DESIGNED BY

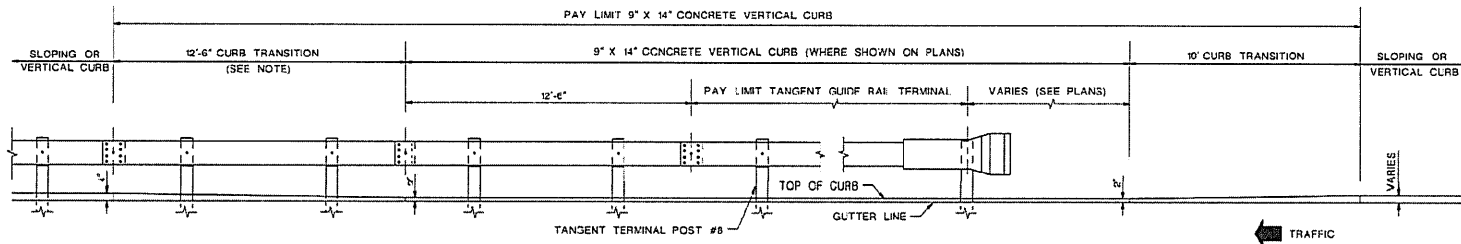
DRAWN BY

CHECKED BY

JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY
DRAWING TITLE:
CONSTRUCTION DETAILS

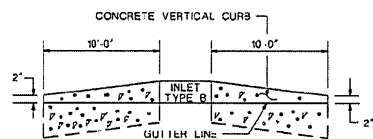
DATE:
4/5/2024
SCALE:
N.T.S.
SHEET REFERENCE NO.:
OF
SHEET NO.:
026 OF 202



NOTE: A RAIL HEIGHT TRANSITION MAY ALSO BE REQUIRED. SEE CD-609-5.

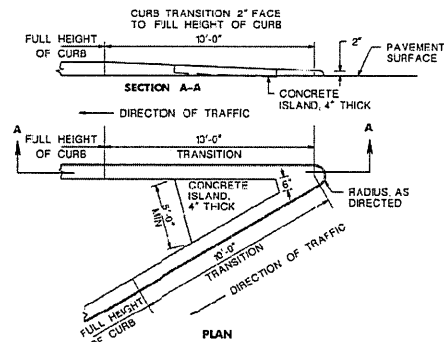
METHOD OF TRANSITIONING TO 2" VERTICAL CURB AT A TANGENT GUIDE RAIL TERMINAL

CD-607-2.1



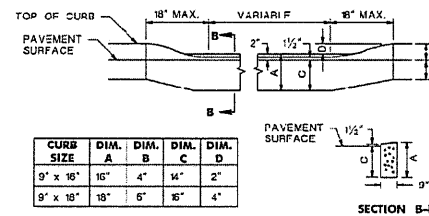
CURB TREATMENT AT BERM SECTION AND ALL CURB ENDS

CU-607-2.2



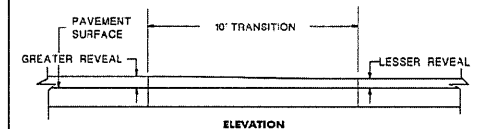
APPROACH CURBED GORE AREA TREATMENT

CD-607-2.3



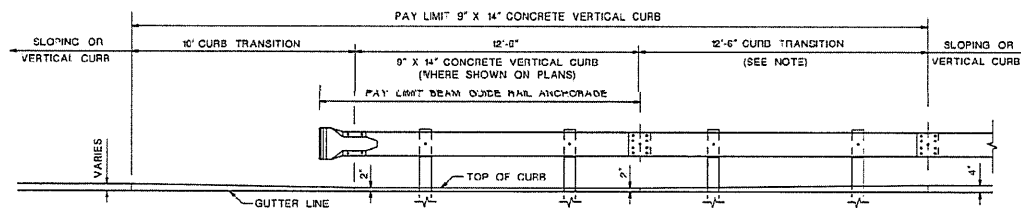
METHOD OF DEPRESSING CURB AT DRIVEWAYS

CD-607-2.4



LINEAR CURB TRANSITION

CD-607-2.5



NOTE: A RAIL HEIGHT TRANSITION MAY ALSO BE REQUIRED. SEE CD-609-4.

METHOD OF TRANSITIONING TO 2" VERTICAL CURB AT A BEAM GUIDE RAIL ANCHORAGE

CD-607-2.6

CURB TRANSITIONS

N.T.S.

PREPARED BY: WSP USA INC.
2000 LENOX DRIVE, LAWRENCEVILLE, N.J. 08648



CAPE MAY COUNTY

STEVEN M. ARBIZ

N.J. PE LICENSE NUMBER
24GE03811800

DATE



DESIGNED BY



DRAWN BY



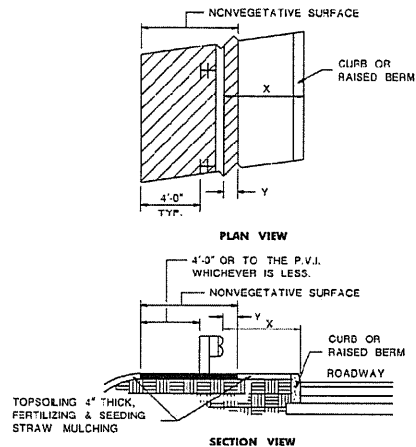
CHECKED BY

JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

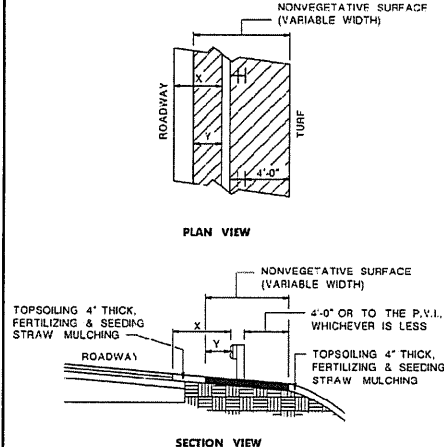
DRAWING TITLE:
CONSTRUCTION DETAILS

DATE:
4/9/2024
SCALE:
N.T.S.
SHEET REFERENCE NO.:
41
SHEET NO.:
027 of 202



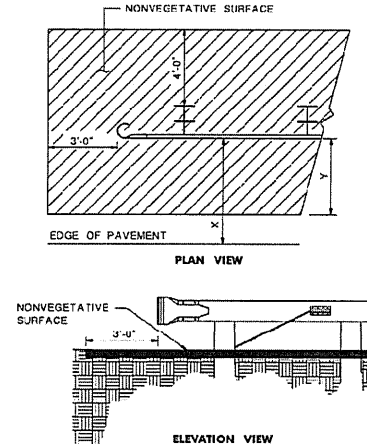
NONVEGETATIVE SURFACES AROUND GUIDE RAIL BEHIND CURB OR RAISED BERM

CD-608-1.1



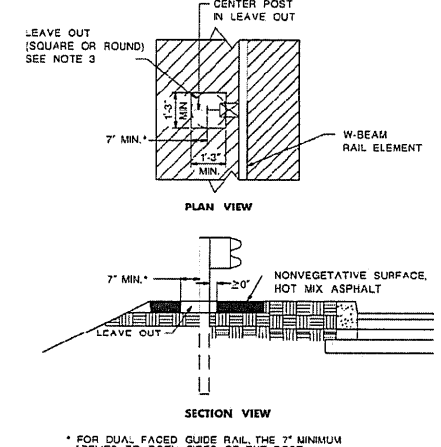
NONVEGETATIVE SURFACE AT EDGE OF PAVEMENT ON UMBRELLA SECTION WHERE GUIDE RAIL IS USED

CD-608-1.2



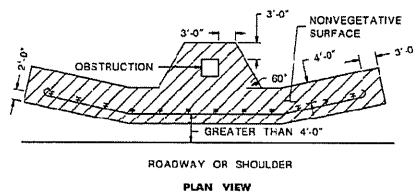
NONVEGETATIVE SURFACES AROUND BEAM GUIDE RAIL ANCHORAGE

CD-608-1.3



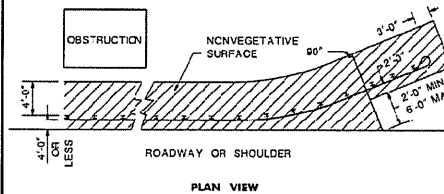
LEAVE OUT FOR STANDARD ITEM "NONVEGETATIVE SURFACE, HOT MIX ASPHALT" ONLY

CD-608-1.4



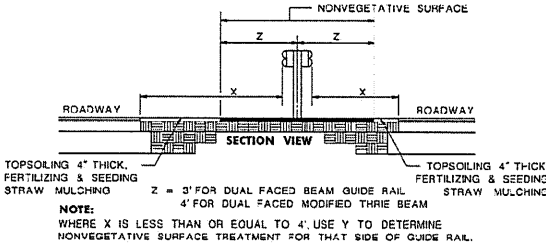
NONVEGETATIVE SURFACE AROUND FLARED GUIDE RAIL WHERE GUIDE RAIL OFFSET FROM EDGE OF PAVEMENT IS GREATER THAN 4'-0"

CD-608-1.5



NONVEGETATIVE SURFACE AROUND FLARED GUIDE RAIL WHERE GUIDE RAIL OFFSET FROM EDGE OF PAVEMENT IS 4'-0" OR LESS

CD-608-1.6

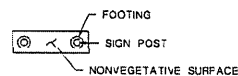


NONVEGETATIVE SURFACE UNDER MEDIAN GUIDE RAIL

CD-608-1.7

X	Y
GUIDE RAIL OFFSET FROM EDGE OF PAVEMENT	WIDTH OF NONVEGETATIVE SURFACE IN FRONT OF GUIDE RAIL
GREATER THAN 4'-0"	2'-0"
LESS THAN OR EQUAL TO 4'-0"	Y=X

CD-608-1.8



THE NONVEGETATIVE SURFACE IS TO FORM A RECTANGULAR PAD WHOSE OUTSIDE LIMITS EXTEND A MINIMUM OF 3'-0" BEYOND THE POST FOOTING.

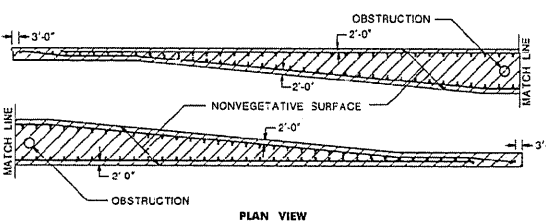
NONVEGETATIVE SURFACE AROUND OVERHEAD SIGN FOUNDATIONS AND UNDER LARGE GROUND MOUNTED SIGNS

CD-608-1.9

GENERAL NOTES:

- IF THE END OF THE GUIDE RAIL IS BURIED IN THE SLOPE, THE LIMIT OF NONVEGETATIVE SURFACE RELATIVE TO THE BURIED GUIDE RAIL WILL BE DETERMINED BY THE RE.
- SEE TYPICAL SECTIONS FOR CROSS SLOPES IN ROADSIDE (BORDER OR SIDEWALK AREA).
- LEAVE OUTS CAN BE FILLED WITH:
 - COARSE AGGREGATE, SIZE NO. 57 TO BE HAND TAMPED, THEN SEAL SURFACE WITH EMULSIFIED ASPHALT AT 0.35 GAL/SY ±0.05 AS PER STANDARD SPECIFICATIONS SECTION 932; OR
 - COARSE AGGREGATE, SIZE NO. 57 IN BASE OF LEAVE OUT AND TOP WITH NONVEGETATIVE SURFACE, HMA, 2" THICK, GRADE TO DRAIN AND HAND TAMP LEAVE OUT SURFACE.

CD-608-1.10



NONVEGETATIVE SURFACE AT MEDIAN GUIDE RAIL

CD-608-1.11

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2000 LINDX DRIVE, LAWRENCEVILLE, NJ, 08648



CAPE MAY COUNTY

STEVEN M. ARBIZ

N.J. PE LICENSE NUMBER:
24602811900

DATE

DESIGNED BY

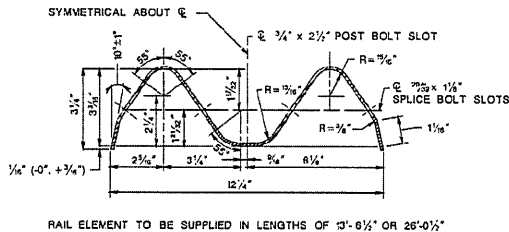
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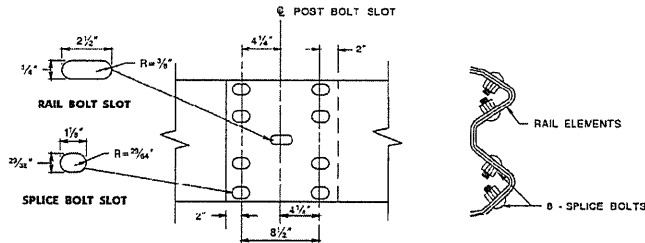
JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MOORE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY
DRAWING TITLE:
CONSTRUCTION DETAILS

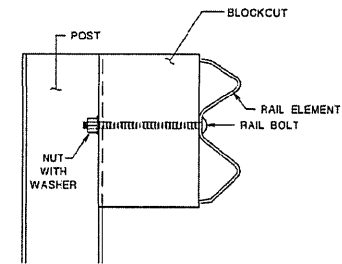
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SHEET REFERENCE NO.:
SHEET NO.: 228 of 202



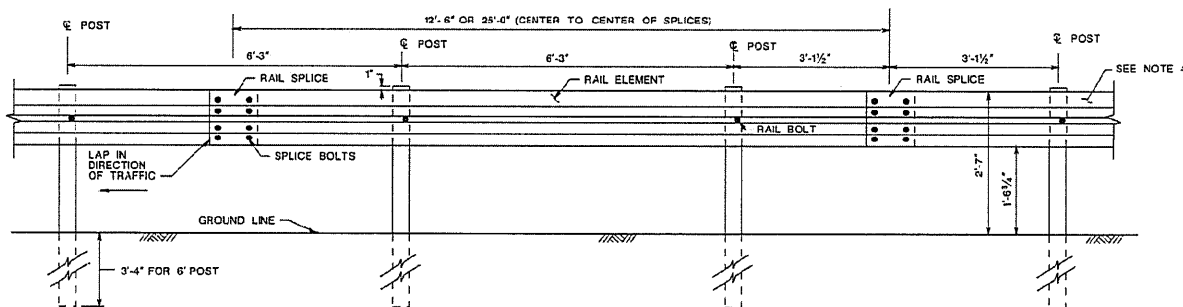
W-BEAM RAIL ELEMENT



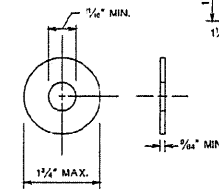
RAIL SPLICE



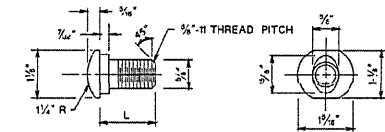
BEAM GUIDE RAIL POST ASSEMBLY



BEAM GUIDE RAIL

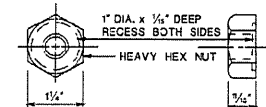


STEEL WASHER



TYPE	L	MIN. THREAD LENGTH
3PLICE	1 1/4"	FULL LENGTH THREAD
RAIL	9 1/2"	1 3/4"

3/8" DIA. BUTTON HEAD BOLT

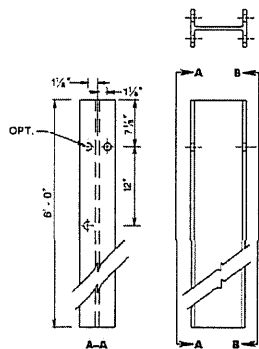


3/8" DIA. RECESS NUT

SPLICE & RAIL NUT & BOLT

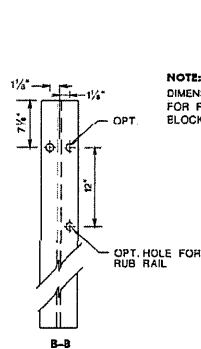
BEAM GUIDE RAIL (MASH TL-3)

N.T.S.

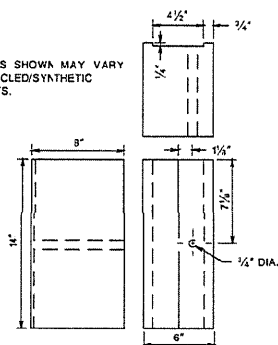


W6x8.5 OR W6x9 STEEL POST

6" POST

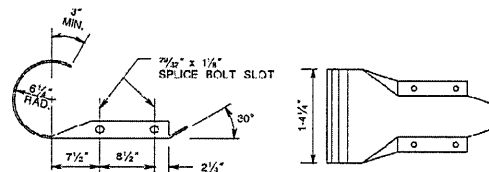


NOTE: ALL HOLES 3/16" DIA.



APPROVED RECYCLED/ SYNTHETIC MATERIALS
6"x8"x14" BLOCKOUT

NOTE: DIMENSIONS SHOWN MAY VARY FOR RECYCLED/SYNTHETIC BLOCKOUTS.



END SECTION (ROUNDED)

NOTES:

- ALL DIMENSIONS ARE SUBJECT TO MANUFACTURING TOLERANCES.
- FURNISH RAIL ELEMENTS SHOPCURVED, CONCAVE OR CONVEX, FOR RADII BETWEEN 20 AND 150 FEET.
- WHERE TRANSITIONING TO EXISTING GUIDE RAIL, AN END TERMINAL, OR A CRASH CUSHION MOUNTED AT A HEIGHT OTHER THAN 2'-7", THE VERTICAL TRANSITION TO BE ACCOMPLISHED IN A MINIMUM LENGTH OF 12'-6" FOR EACH 2" OF VERTICAL CHANGE. SEE CD 606 B.
- INSTALL AN END TERMINAL AS SHOWN ON THE PLANS. USE THE END SECTION (ROUNDED) ON THE END OF THE RAIL ELEMENT WHERE DUAL FACED BEAM GUIDE RAIL ENDS AND SINGLE FACED BEAM GUIDE RAIL BEGINS.

CD-606-1.1

PREPARED BY: WSP USA, INC.
2000 LINDEN DRIVE, LAWRENCEVILLE, N.J. 08648



CAPE MAY COUNTY

STEVEN M. ARBIZ

N.J. PE LICENSE NUMBER
240E0811900

DATE



Designed by



Drawn by



Checked by

JOB

REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MOORE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

DRAWING TITLE:

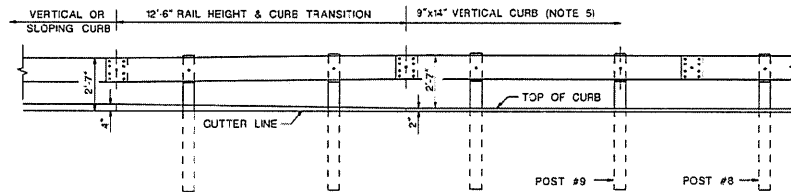
CONSTRUCTION DETAILS

DATE: 4/9/2024

SCALE: N.T.S.

SHEET REFERENCE NO.: 01

SHEET NO.: 029 OF 202

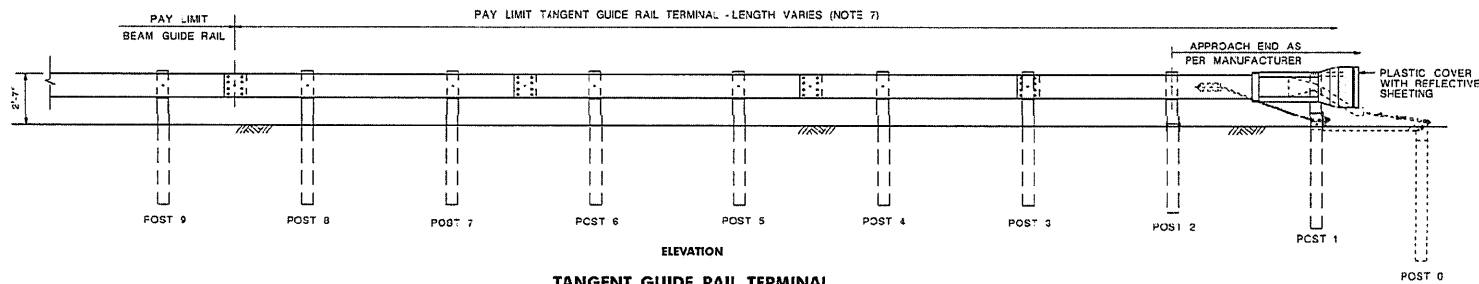
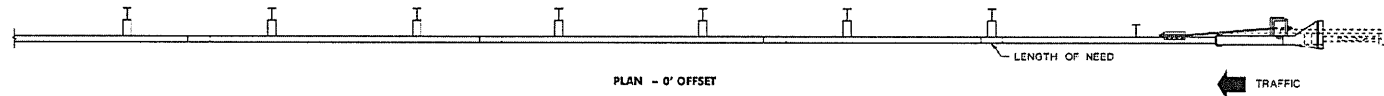
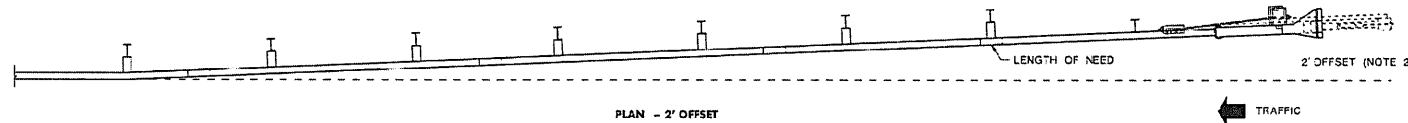


**RAIL HEIGHT TRANSITION FOR TANGENT GUIDE RAIL TERMINAL WITH 2" VERTICAL CURB
WHERE GUIDE RAIL IS OFFSET LESS THAN 4 FEET FROM THE GUTTER LINE (NOTE 6)**

← TRAFFIC

NOTES:

1. NUMBER OF POSTS, TYPE OF POST, POST SPACING, FLARE RATE, AND MATERIALS TO BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND THE DEPARTMENT'S QUALIFIED PRODUCTS LIST.
2. THE LOCATION OF THE 2 FOOT OFFSET VARIES WITH EACH MANUFACTURER. WHERE A 2 FOOT OFFSET IS SHOWN ON THE PLANS, CONSTRUCT THE TANGENT GUIDE RAIL TERMINAL WITH A STRAIGHT FLARE FOR ITS ENTIRE LENGTH AS PER THE MANUFACTURER.
3. WHERE GUIDE RAIL IS INSTALLED FLUSH WITH THE GUTTER LINE OR OFFSET 6 INCHES FROM THE GUTTER LINE, CONSTRUCT THE TANGENT GUIDE RAIL TERMINAL WITH A TWO FOOT OFFSET SO THAT THE TERMINAL END DOES NOT PROTRUDE INTO THE ROADWAY.
4. WHERE THE DOWNSTREAM GUIDE RAIL IS ON A HORIZONTAL CURVE, CONSTRUCT THE TANGENT GUIDE RAIL TERMINAL IN A STRAIGHT LINE AS SHOWN ON THIS DETAIL (DO NOT FOLLOW THE HORIZONTAL CURVE).
5. 8"x14" CONCRETE VERTICAL CURB WHRRF SHOWN ON PLANS SEE CD-609-2 FOR ADDITIONAL CURB TRANSITION DETAILS.
6. WHERE GUIDE RAIL IS OFFSET 4 FEET OR MORE FROM THE GUTTER LINE, RAIL HEIGHT OF THE GUIDE RAIL AND TANGENT GUIDE RAIL TERMINAL IS MEASURED FROM THE GROUND LINE (CD-609-8A); A RAIL HEIGHT TRANSITION IS NOT REQUIRED.
7. LENGTH OF TANGENT GUIDE RAIL TERMINAL AS PER MANUFACTURER. SEE QUALIFIED PRODUCTS LIST.
8. LOCATION OF POST #1 AS SHOWN ON THE PLANS.



TANGENT GUIDE RAIL TERMINAL

**TANGENT GUIDE
RAIL TERMINAL
(MASH TL-3)**

N.T.S.

CD-609-5.1

PREPARED BY: WSP USA INC.
2005 LINDEN DRIVE, LAWRENCEVILLE, N.J. 08648



CAPE MAY COUNTY

STEVEN M. ARBIZ

N.J. LICENSE NUMBER
24CE03811900

DATE

DESIGNED BY

DRAWN BY

CHECKED BY

JOB:

REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:

STONE HARBOR BOROUGH AND NEEDLE TONING-UP
CAPE MAY COUNTY, NEW JERSEY

DRAWING TITLE:

CONSTRUCTION DETAILS

DATE:

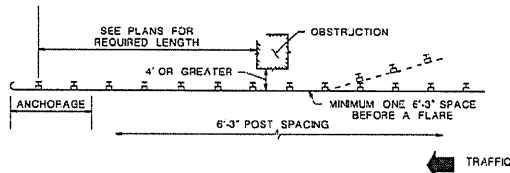
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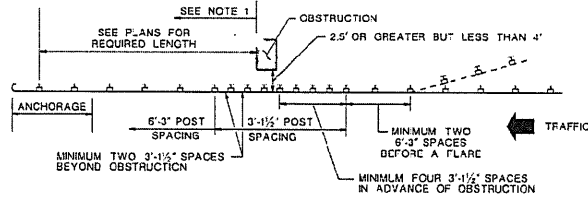
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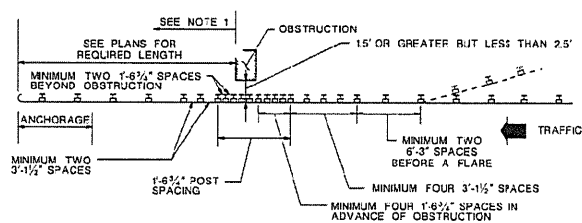
01 of 202



WHERE CLEARANCE FROM FACE OF RAIL TO OBSTRUCTION IS 4' OR GREATER (SEE NOTE 2)



WHERE CLEARANCE FROM FACE OF RAIL TO OBSTRUCTION IS 2.5' OR GREATER BUT LESS THAN 4' (SEE NOTE 2)



WHERE CLEARANCE FROM FACE OF RAIL TO OBSTRUCTION IS 1.5' OR GREATER BUT LESS THAN 2.5' (SEE NOTE 2)

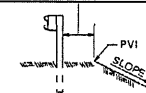
CLEARANCE FROM FACE OF RAIL TO OBSTRUCTION

NOTES:

- WHERE AN APPROACH END TREATMENT AT THE TRAILING END OF GUIDE RAIL IS SHOWN ON THE PLANS, THE POST SPACING REQUIREMENTS SHALL BE THE SAME AS THE APPROACH END.
- IN A FILL SECTION WHERE THE DISTANCE FROM THE BACK OF THE POST TO THE PVI IS LESS THAN 1' AND THE SLOPE IS STEEPER THAN 3:1, THE MINIMUM CLEARANCE FROM THE FACE OF THE RAIL TO AN OBSTRUCTION IS INCREASED BY 1' DUE TO INCREASED POST DEFLECTION.
- ADDITIONAL POSTS AND BLOCKOUTS WILL BE PAID FOR UNDER PAY ITEM "BEAM GUIDE RAIL POST".

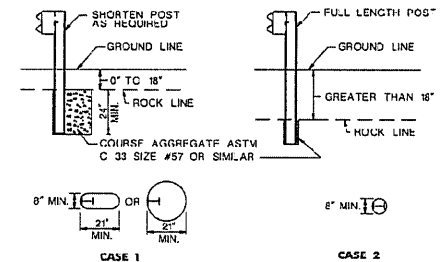
CD-609-8.1

DISTANCE FROM BACK OF POST TO PVI	SLOPE	ADDITIONAL POST LENGTH
IF LESS THAN 2' BUT GREATER OR EQUAL TO 1'	3:1 OR FLATTER STEEPER THAN 6:1 TO 3:1 STEEPER THAN 3:1 TO 2:1	NO CHANGE 1' 2'
IF LESS THAN 1'	3:1 OR FLATTER STEEPER THAN 6:1 TO 3:1 STEEPER THAN 3:1 TO 2:1	1' 2' 3'



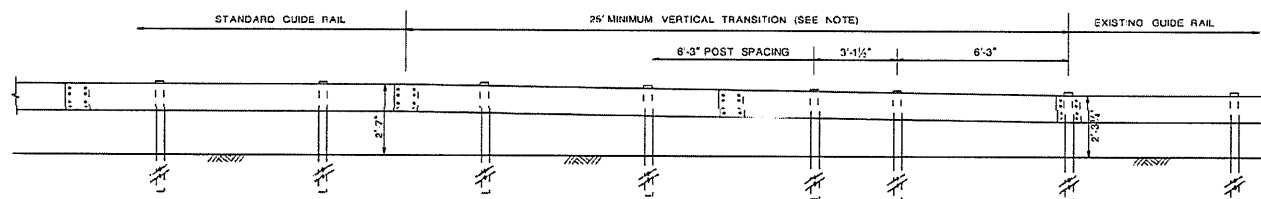
ADDITIONAL LENGTH BEAM GUIDE RAIL POSTS

CD-609-8.2



GUIDE RAIL POST INSTALLATION IN ROCK

CD-609-8.3



NOTE: WHERE TRANSITIONING TO EXISTING GUIDE RAIL, AN END TERMINAL, OR A CRASH CUSHION MOUNTED AT A HEIGHT OTHER THAN 2'-7", THE VERTICAL TRANSITION SHALL BE ACCOMPLISHED IN A MINIMUM LENGTH OF 12'-0" FOR EACH 2" OF VERTICAL CHANGE.

VERTICAL TRANSITION TO EXISTING 27 1/4" HIGH GUIDE RAIL

CD-609-8.4

BEAM GUIDE RAIL TREATMENTS

N.T.S.

PREPARED BY: WSP USA, INC.
2000 LEXOX DRIVE, LAWRENCEVILLE, N.J. 08648



CAPE MAY COUNTY

STEVEN M. ARBIZ

N.J. PE LICENSE NUMBER
240E03811900

DATE



Designed by



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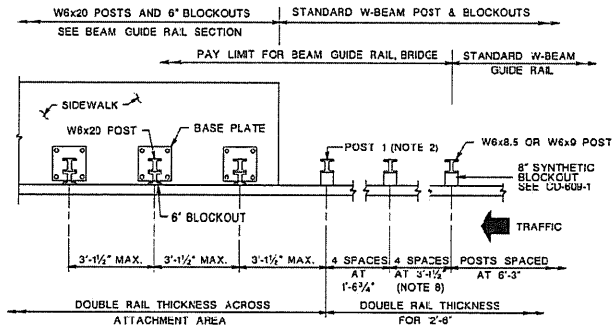


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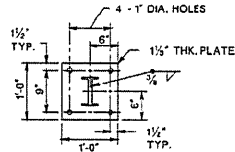
JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MOORE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY
DRAWING TITLE:
CONSTRUCTION DETAILS

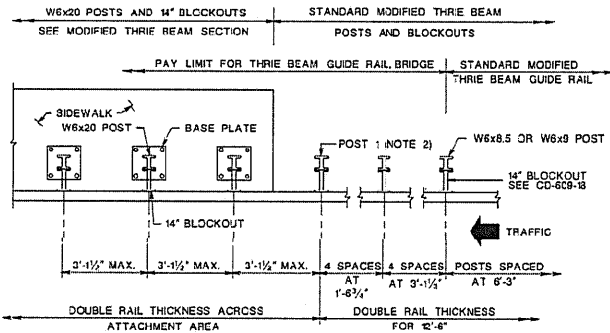
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of
SHEET NO.:
022 of 202



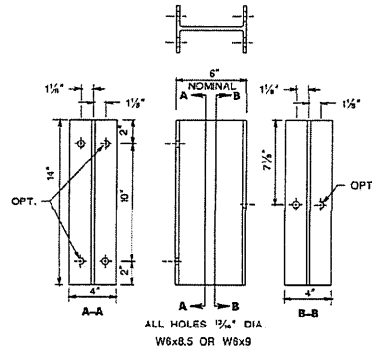
BEAM GUIDE RAIL ATTACHMENT TO SIDEWALK (NCHRP 350 TL-3)



BASE PLATE

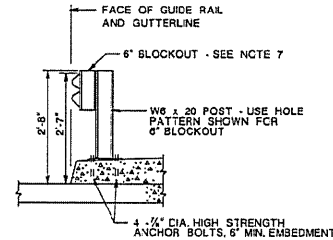


MODIFIED THRIE BEAM GUIDE RAIL ATTACHMENT TO SIDEWALK (NCHRP 350 TL-4)

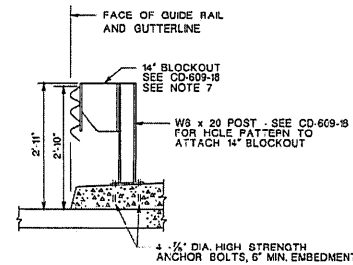


ALL HOLES 1/4\"/>

6\"/>



BEAM GUIDE RAIL SECTION



MODIFIED THRIE BEAM SECTION

NOTES:

1. USE "BEAM GUIDE RAIL, BRIDGE" ITEM OR "THRIE BEAM GUIDE RAIL, BRIDGE" ITEM IF SIDEWALK IS ON A STRUCTURE. IF SIDEWALK IS NOT ON A STRUCTURE, USE "BEAM GUIDE RAIL, BRIDGE" ITEM OR "THRIE BEAM GUIDE RAIL, BRIDGE" ITEM AND SIDEWALK IS TO BE A MINIMUM 8\"/>

BEAM GUIDE RAIL ATTACHMENTS

N.T.S.

CD-609-11.1

PREPARED BY: WSP USA INC.
2000 LENOX DRIVE, LAWRENCEVILLE, N.J. 08441



CAPE MAY COUNTY

STEVEN M. ARBIZ

N.J. LICENSE NUMBER
24CE0811900

DATE

DESIGNED BY

DRAWN BY

CHECKED BY

JOB

REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

DRAWING TITLE

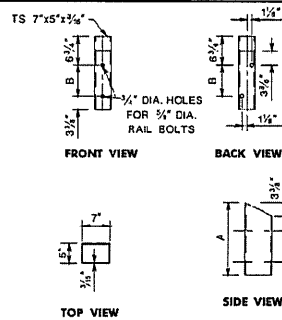
CONSTRUCTION DETAILS

DATE: 4/9/2024

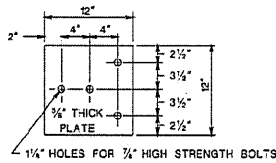
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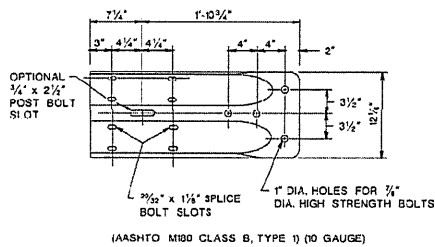
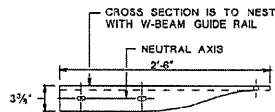
SHEET NO.:
034 OF 202



**STRUCTURAL TUBE BLOCKOUTS
TL-3 ATTACHMENTS
(CD-609-14, 15, 16, 17, 17B, 17C)**



**BACKUP PLATE FOR W-BEAM
TERMINAL CONNECTOR**



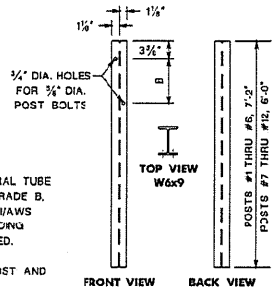
W-BEAM TERMINAL CONNECTOR

DIM.	POSTS #1 - #11	POST #12
A	1'-5 1/4"	1'-1 1/4"
B	7 3/4"	3 3/4"

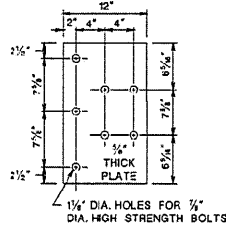
BLOCKOUT DIMENSIONS

NOTES:

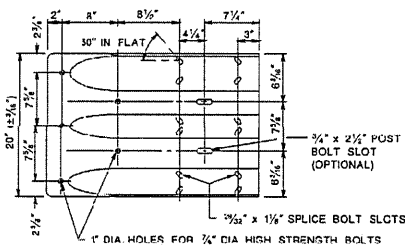
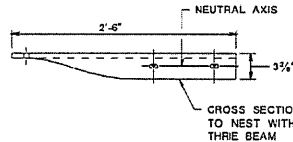
1. STEEL FOR STRUCTURAL TUBE TO BE ASTM A500 GRADE B, WELDED AS PER ANS/AWS D11. STRUCTURAL WELDING CODE, AND GALVANIZED.
2. SEE CD-609-18 FOR POST AND RAIL BOLT DETAILS.



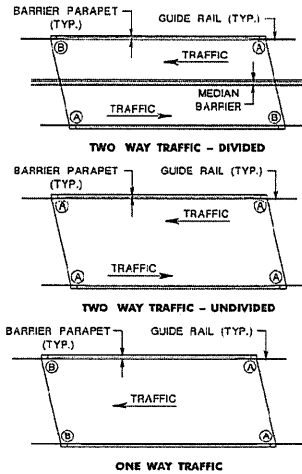
**POSTS - TL-3 ATTACHMENTS
(CD-609-14, 15, 16, 17, 17B, 17C)**



**BACKUP PLATE FOR THREE
BEAM TERMINAL CONNECTOR**

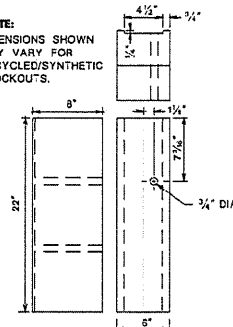


THREE BEAM TERMINAL CONNECTOR

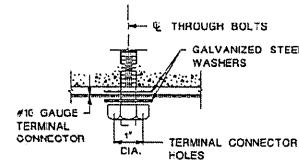


BRIDGE ATTACHMENT TYPES

NOTE:
DIMENSIONS SHOWN
MAY VARY FOR
RECYCLED/SYNTHETIC
BLOCKOUTS.



**APPROVED RECYCLED
SYNTHETIC MATERIALS
6" x 8" x 22" BLOCKOUT
TL-2 ATTACHMENTS
(CD-609-15A, 15B,
16A, 17A, 17D, 17E)**



TERMINAL ANCHORAGE

GENERAL NOTES FOR TL-2 & TL-3 ATTACHMENTS (CD-609-14 THRU CD-609-17E)

1. THIS GUIDE RAIL TRANSITION IS APPROPRIATE FOR CONNECTION TO A VERTICAL CONCRETE SHAPE AND SHOULD NOT BE CONNECTED DIRECTLY TO A CONCRETE SAFETY SHAPE. CONCRETE SAFETY BARRIER SHOULD BE TRANSITIONED TO A VERTICAL SHAPE AT THE GUIDE RAIL CONNECTION.
2. FOR RECOMMENDED ATTACHMENT, REFER TO "BRIDGE ATTACHMENT TYPES", THIS SHEET.
3. ALL CROSS SLOPES BETWEEN THE PAVEMENT EDGE AND POSTS TO BE 10:1V OR FLATTER.
4. EMBANKMENT MATERIAL CONFORMING TO THE NJDOT STANDARD SPECIFICATIONS SECTION 233 TO EXTEND AT A 2% SLOPE FOR A MINIMUM OF 2'-0" BEHIND THE POSTS AT WHICH POINT A SLOPE OF NO STEEPER THAN 2:1V SHOULD EXTEND A MINIMUM OF 4'-0" FURTHER.
5. LOCATE DRAINAGE INLETS AND ELECTRICAL JUNCTION BOXES ON APPROACHES SO AS NOT TO INTERFERE WITH GUIDE RAIL POST SPACING.
6. STRUCTURAL STEEL PLATES AND SHAPES TO CONFORM TO AASHTO M270 AND DE GALVANIZED PER AASHTO M11.
7. HIGH STRENGTH STEEL BOLTS, NUTS AND WASHERS TO CONFORM TO AASHTO M164 ZINC COATED BOLTS, NUTS AND WASHERS TO BE TREATED ACCORDING TO AASHTO M232M.
8. THE THICKNESS OF THREE-BEAM AND W-BEAM RAIL ELEMENTS IS 12-GAUGE UNLESS OTHERWISE NOTED.
9. FOR ADDITIONAL THREE BEAM AND W-BEAM DETAILS REFER TO CD-609-1 AND CD-609-1B.
10. CONCRETE CURB TO BE PAID UNDER 9"x16" CONCRETE VERTICAL CURB (SEE CD-607-1.9).
11. W-BEAM AND THREE BEAM TERMINAL CONNECTORS USE AASHTO M180 MECHANICAL PROPERTIES FOR BEAM & TRANSITION SECTIONS.

GENERAL NOTES FOR TL-3 ATTACHMENTS (CD-609-14, 15, 16, 17, 17B & 17C)

12. AT TYPE (A) ATTACHMENTS, THREE BEAM RAIL ELEMENT WILL REQUIRE ADDITIONAL RAIL BOLT SLOTS FOR POST #1, #3, #5, #7 AND #9. HOLES ARE TO BE SHOP PUNCHED OR DRILLED BEFORE GALVANIZATION. NO FIELD DRILLING IS PERMITTED.
13. POSTS 1 THRU 6 TO BE 7'-2" LONG WITH 4'-10" POST EMBEDMENT. POSTS 7 THRU 12 TO BE 6'-0" LONG WITH 3'-0" POST EMBEDMENT.
14. WHEN THE CONFIGURATION OF BRIDGE ABUTMENTS AND WINGWALLS DO NOT ACCOMMODATE THE INSTALLATION OF POST 1, THE POST MAY BE ATTACHED TO THE ABUTMENT HEADER WITH THE USE OF A BASE PLATE.
15. STRUCTURAL TUBE BLOCKOUTS ARE TO BE USED FOR POSTS 1 THRU 12.

**BEAM GUIDE RAIL
ATTACHMENTS
(MASH TL-2 & TL-3)
N.T.S.**

CD-609-13.1

PREPARED BY: WSP USA INC.
2000 LONCH DRIVE, LAWRENCEVILLE, N.J. 08648



CAPE MAY COUNTY

STEVEN M. ARBIZ

N.J. PE LICENSE NUMBER:
24603811800

DATE



Designed by

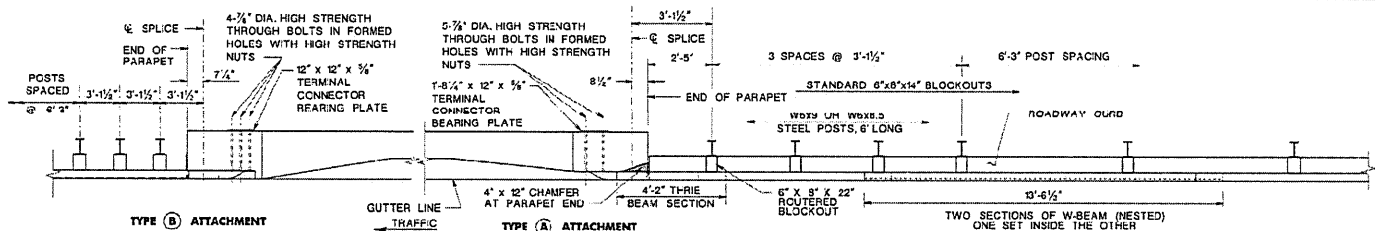
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Checked by

JOB:
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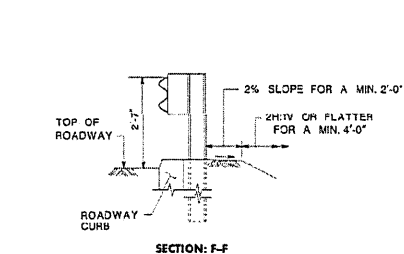
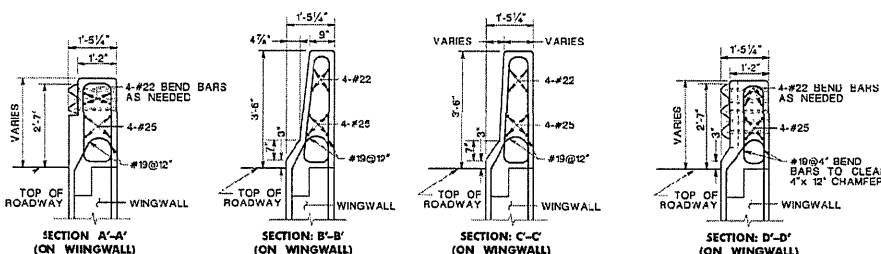
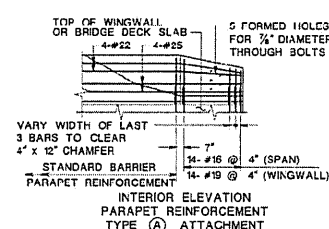
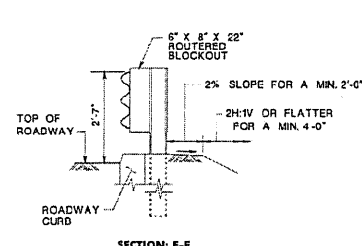
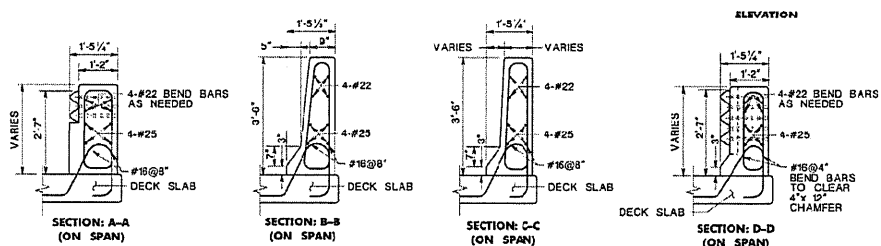
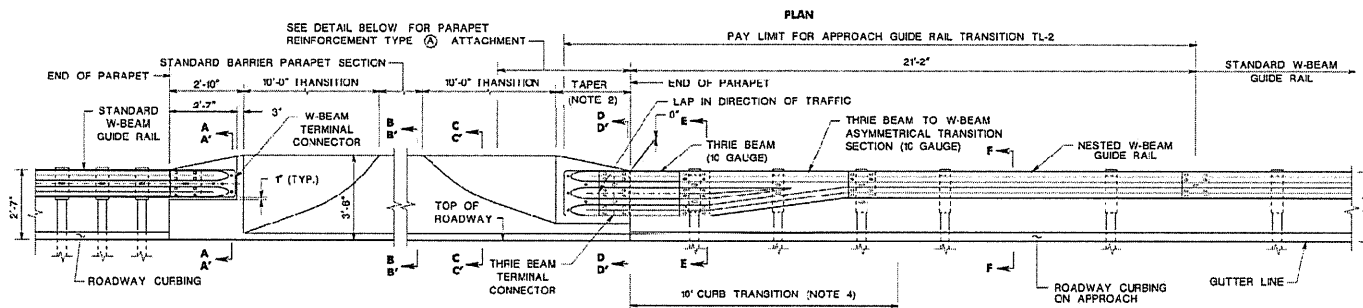
PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY
DRAWING TITLE:
CONSTRUCTION DETAILS

DATE: 4/9/2024
SCALE: N.T.S.
SHEET REFERENCE NO.:
of
SHEET NO.:
CS of 202



NOTES:



1. SEE CD-609-13 FOR ADDITIONAL NOTES AND DETAILS.
2. THE MINIMUM TAPER LENGTH IS BASED ON PARAPET HEIGHT. THE TAPER MUST BE 5:1 OR FLATTER WITH 8:1 DESIRABLE. SEE BRIDGE PLANS FOR TAPER LENGTH.
3. REINFORCEMENT STEEL IS IN METRIC UNITS.
4. TRANSITION LAST 10 FEET OF ROADWAY CURBING TO MATCH BARRIER PARAPET SHAPE.
5. FOR ADDITIONAL PARAPET DETAILS & DIMENSIONS, REFER TO BCD-507-9.



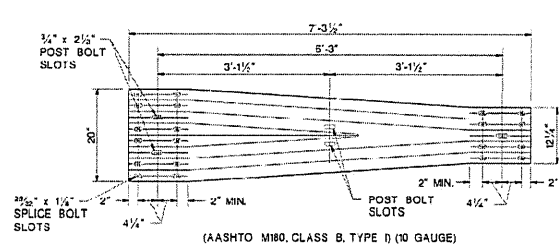
BEAM GUIDE RAIL ATTACHMENTS

N.T.S.

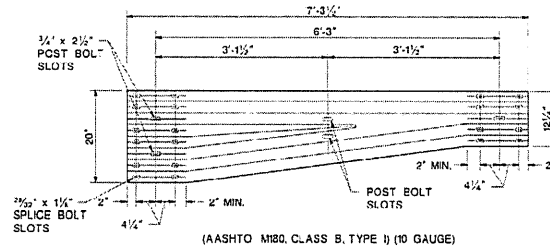
GUIDE RAIL ATTACHMENT - NEW CONSTRUCTION - DESIGN SPEED 45 MPH OR LESS (MASH TL-2) F SHAPE BARRIER PARAPET (WITH ROADWAY CURBING ON APPROACH)

PREPARED BY: WSP USA INC. 2000 LEXIA DRIVE, LAWRENCEVILLE, NJ 08648 STEVEN M. ARBIZ N.J. LICENSE NUMBER: 24CE0811900	 DATE:	 CAPE MAY COUNTY DESIGNED BY: _____ DRAWN BY: _____ CHECKED BY: _____	JOB: REHABILITATION OF 96TH STREET (CR657) BRIDGE OVER GREAT CHANNEL STR. NO. 0500-006	PROJECT LOCATION: STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP CAPE MAY COUNTY, NEW JERSEY DRAWING TITLE: CONSTRUCTION DETAILS	DATE: 4/5/2024 SCALE: N.T.S. SHEET REFERENCE NO.: of SHEET NO.: 036 of 202
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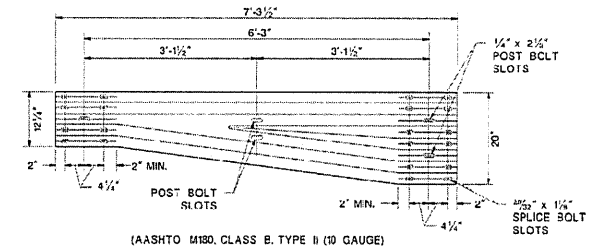
CD-609-15B.1



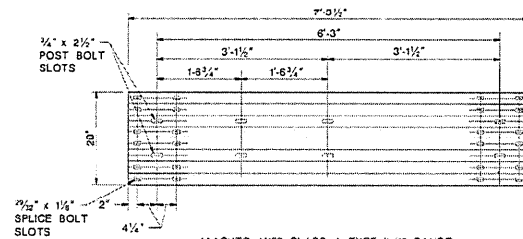
**THRIE BEAM TO W-BEAM SYMMETRICAL
TRANSITION SECTION - SEE NOTE 1**



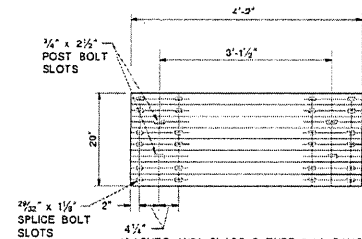
**THRIE BEAM TO W-BEAM ASYMMETRICAL TRANSITION
SECTION - RIGHT SIDE APPROACH - SEE NOTE 2**



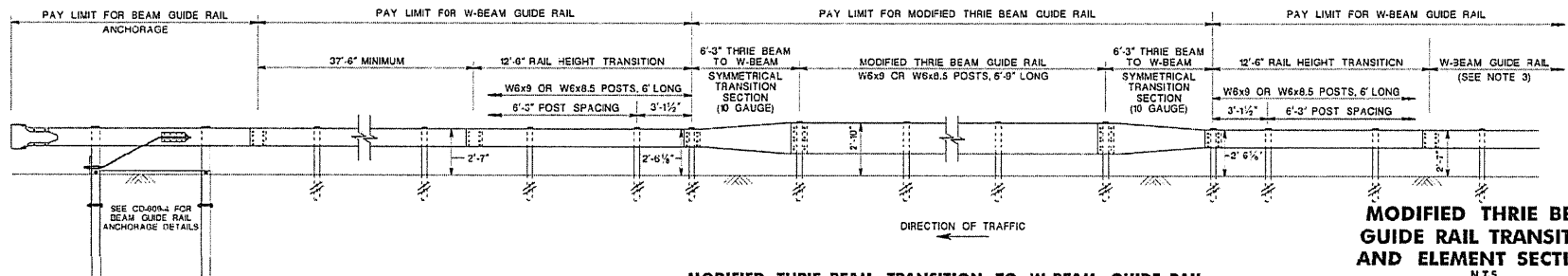
**THRIE BEAM TO W-BEAM ASYMMETRICAL TRANSITION
SECTION - LEFT SIDE APPROACH - SEE NOTE 2**



**7'-3 1/2" THRIE BEAM SECTION
FOR TL-3 BRIDGE ATTACHMENTS**



**4'-2" THRIE BEAM SECTION
FOR TL-2 BRIDGE ATTACHMENTS**

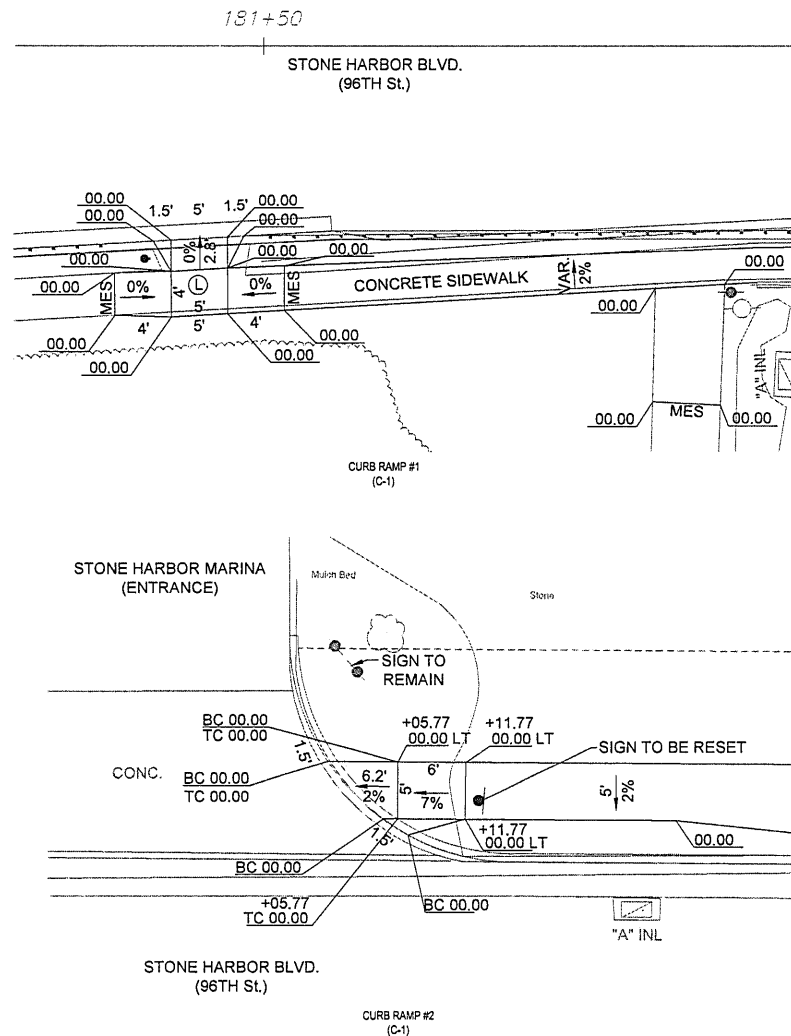
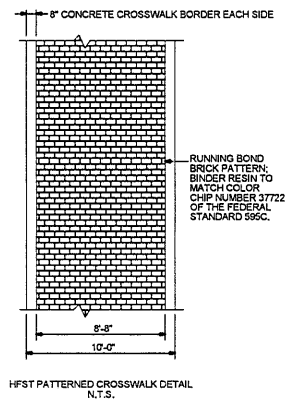


**MODIFIED THRIE BEAM
GUIDE RAIL TRANSITION
AND ELEMENT SECTIONS
N.T.S.**

NOTES:

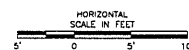
1. A THRIE BEAM TO W-BEAM SYMMETRICAL TRANSITION SECTION IS USED WHERE A VERTICAL TRANSITION IS REQUIRED, SUCH AS A TRANSITION FROM MODIFIED THRIE BEAM TO W-BEAM GUIDE RAIL.
2. A THRIE BEAM TO W-BEAM ASYMMETRICAL TRANSITION SECTION IS USED WHERE A VERTICAL TRANSITION IS NOT REQUIRED, SUCH AS A TRANSITION FROM THRIE BEAM AT A BRIDGE ATTACHMENT TO W-BEAM GUIDE RAIL.
3. A MINIMUM 12'-6" LENGTH OF BEAM GUIDE RAIL IS REQUIRED BETWEEN THE 12'-6" RAIL HEIGHT TRANSITION AND A TANGENT GUIDE RAIL TERMINAL. A MINIMUM 25' LENGTH OF BEAM GUIDE RAIL IS REQUIRED BETWEEN THE 12'-6" RAIL HEIGHT TRANSITION AND A STRAIGHT FLARE OF BEAM GUIDE RAIL.

PREPARED BY: WSP USA INC. 2030 LENOX DRIVE, LAWRENCEVILLE, N.J. 08848 STEVEN M. ARBIZ		N.J. PE LICENSE NUMBER: 24603811900		DATE:		WSP CAPE MAY COUNTY		CD-600-20.1		PROJECT LOCATION: STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP CAPE MAY COUNTY, NEW JERSEY		DATE: 4/9/2024	
						JOB: REHABILITATION OF 96TH STREET (CR657) BRIDGE OVER GREAT CHANNEL STR. NO. 0500-006		DRAWING TITLE: CONSTRUCTION DETAILS		SCALE: N.T.S.		SHEET REFERENCE NO.: of	
						DESIGNED BY:		DRAWN BY:		CHECKED BY:		SHEET NO.: 037 of 202	

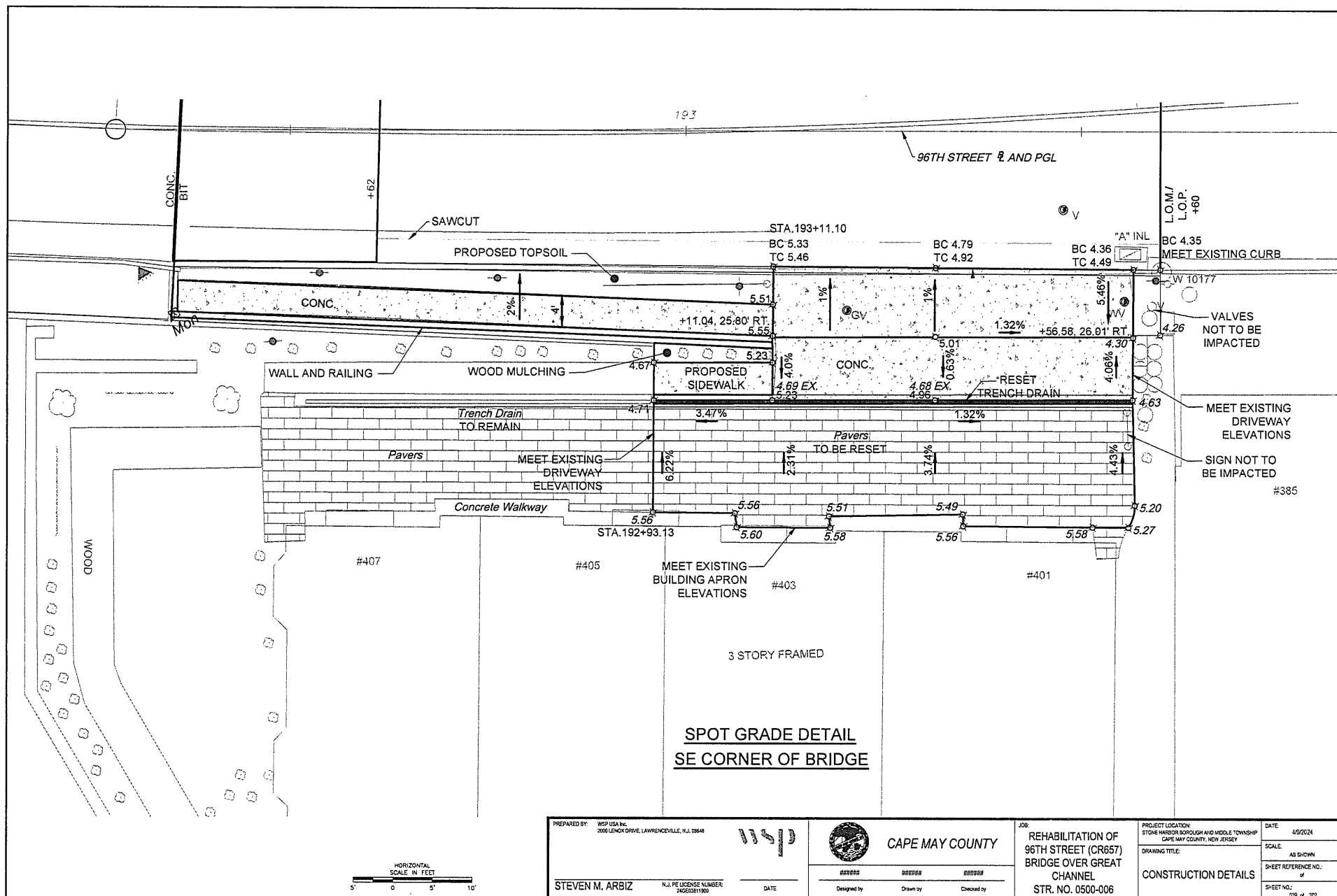


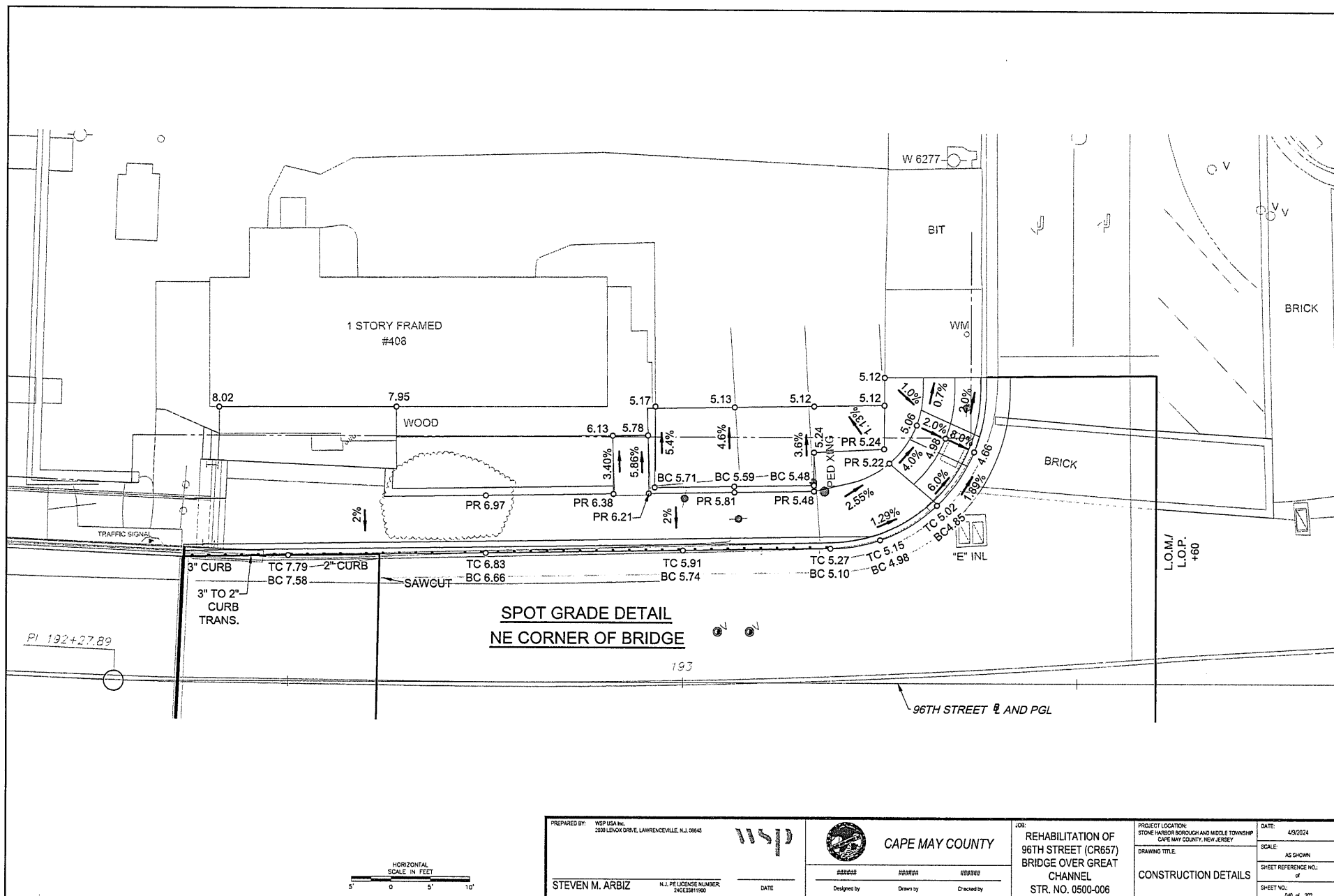
LEGEND:

- MES MEET EXISTING SIDEWALK
- PROPOSED UTILITY POLE
- L LANDING, 2% MAX ALL DIRECTIONS
- PEDESTRIAN PUSH BUTTON



PREPARED BY: WSP USA INC. 2000 LENOX DRIVE, LAWRENCEVILLE, GA 30046 STEVEN M. ARSIZ N.J. PE LICENSE NUMBER: 24GE03811000	 DATE	 CAPE MAY COUNTY DESIGNED BY: ##### DRAWN BY: ##### CHECKED BY: #####	JOB: REHABILITATION OF 96TH STREET (CR657) BRIDGE OVER GREAT CHANNEL STR. NO. 0500-006	PROJECT LOCATION: STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP CAPE MAY COUNTY, NEW JERSEY DRAWING TITLE: ADA CURB RAMP DETAILS	DATE: 4/9/2024 SCALE: AS SHOWN SHEET REFERENCE NO.: 038 of 202
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SEQ. NO.	ITEM NO.	DESCRIPTION	UNIT	CONTRACT QUANTITY	PLAN SHEET TOTAL	IF AND WHERE DIRECTED
B-1	157XXX	SUBMARINE CABLE LOCATION	LS	LUMP SUM	LUMP SUM	
B-2	160009M	STEEL PRICE ADJUSTMENT	LS	LUMP SUM	LUMP SUM	
B-3	162009P	VIBRATION MONITORING	LS	LUMP SUM	LUMP SUM	
B-4	201009P	CLEARING SITE, BRIDGE (STR. NO. 0500-006)	LS	LUMP SUM	LUMP SUM	
B-5	201009P	CLEARING SITE, STRUCTURE (SPAN 14)	LS	LUMP SUM	LUMP SUM	
B-6	201009P	CLEARING SITE, STRUCTURE (BASCULE SPAN SUBSTRUCTURE)	LS	LUMP SUM	LUMP SUM	
B-7	201009P	CLEARING SITE, STRUCTURE (BASCULE SPAN SUPERSTRUCTURE)	LS	LUMP SUM	LUMP SUM	
B-8	201037P	ASBESTOS REMOVAL, BRIDGE NO. 0500-000	LS	LUMP SUM	LUMP SUM	
B-9	201039P	TEMPORARY SHIELDING (APPROX. 2000 SY)	LS	LUMP SUM	LUMP SUM	
B-10	201XXX	BATHYMETRIC SURVEY (PRE-CONSTRUCTION)	LS	LUMP SUM	LUMP SUM	
B-11	201XXX	BATHYMETRIC SURVEY (POST-CONSTRUCTION)	LS	LUMP SUM	LUMP SUM	
B-12	202009P	EXCAVATION, UNCLASSIFIED	CY	190	190	
B-13	203009P	1/8 SOL AGGREGATE	CY	250	250	
B-14	501006P	PERMANENT SHEETING	SF	800	800	
B-15	501009P	TEMPORARY COFFERDAM	LS	LUMP SUM	LUMP SUM	
B-16	502003P	FURNISHING EQUIPMENT FOR DRIVING PILES	LS	LUMP SUM	LUMP SUM	
B-17	502173M	STEEL H-PILE, FURNISHED, HP 14 X 102	LF	100	100	
B-18	502191M	STEEL H-PILE, DRIVEN, HP 14 X 102	LF	100	100	
B-19	502207M	PILE SHOE	UNIT	4	4	
B-20	503003P	FURNISHING DRILLED SHAFT EQUIPMENT	LS	LUMP SUM	LUMP SUM	
B-21	503012M	CROSSHOLE SONIC LOGGING	UNIT	8	8	
B-22	503019M	SHAFT CORING	LF	128	128	
B-23	503027M	DRILLED SHAFT IN SOL, 60" DIAMETER	LF	640	640	
B-24	503048M	OBSTRUCTION REMOVAL	LF	32	32	
B-25	503051M	TOMOGRAPHY	UNIT	4	4	
B-26	504006P	REINFORCEMENT STEEL, EPOXY-COATED	LB	15000	15000	
B-27	504009P	REINFORCEMENT STEEL, GALVANIZED	LB	20200	20200	
B-28	504015P	CONCRETE FOOTING	CY	716	716	
B-29	504024P	CONCRETE ABUTMENT WALL	CY	30	30	
B-30	504027P	CONCRETE PIER COLUMN AND CAP	CY	600	600	
B-31	504036P	EPOXY WATERPROOFING	SY	30	30	
B-32	505018P	PRESTRESSED CONCRETE BOX BEAM, (TYPE B1-3B), 36" X 33"	LF	978	978	
B-33	505037P	PRESTRESSED CONCRETE SLAB BEAM, (TYPE B1-3B), 30" X 12"	LF	136	136	
B-34	505000P	PRECAST CONCRETE SEAL SLAB	CY	190	190	
B-35	506003P	STRUCTURAL STEEL	LS	LUMP SUM	LUMP SUM	
B-36	506003P	STRUCTURAL STEEL BASCULE SPAN	LS	LUMP SUM	LUMP SUM	
B-37	506006P	REINFORCED ELASTOMERIC BEARING ASSEMBLY, TYPE I	UNIT	55	55	
B-38	506006P	REINFORCED ELASTOMERIC BEARING ASSEMBLY, TYPE II	UNIT	78	78	
B-39	506012P	SHEAR CONNECTOR	UNIT	1162	1162	
B-40	506016P	GRIDER JACKING	LS	LUMP SUM	LUMP SUM	
B-41	507015P	STRIP SEAL EXPANSION JOINT ASSEMBLY	LF	282	282	
B-42	507024P	CONCRETE BRIDGE DECK, HPC	CY	65	65	
B-43	507033P	CONCRETE BRIDGE SIDEWALK, HPC	CY	10	10	
B-44	507038P	CONCRETE BRIDGE PARAPET, HPC	LF	446	446	
B-45	507051P	CONCRETE BRIDGE APPROACH	CY	90	90	
B-46	507084P	STEEL 3 BAR BRIDGE RAILING	LF	214	214	
B-47	507123P	CONCRETE BRIDGE DECK, LHPC	CY	21	21	
B-48	514006P	TEMPORARY STRUCTURE, TWO-WAY	LS	LUMP SUM	LUMP SUM	
B-49	514021P	CONSTRUCTION ACCESS	LS	LUMP SUM	LUMP SUM	
B-50	515XXX	FRP SKID-PROOF PLATE	SF	6057	6057	
B-51	515020P	FRP SIDEWALK	SF	1721	1721	
B-52	516003P	PRECAST EXODERMIC BRIDGE DECK SYSTEM (BASCULE SPAN)	SF	1590	1590	
B-53	516003P	PRECAST EXODERMIC BRIDGE DECK SYSTEM (SPAN OVER COUNTERWEIGHT)	SF	1502	1502	
B-54	518140P	SPAN LOCK PLATFORM	LS	LUMP SUM	LUMP SUM	
B-55	551006M	CONCRETE DECK REPAIR, TYPE B	SF	150	0	150
B-56	551009M	CONCRETE DECK REPAIR, TYPE C	SF	120	0	120
B-57	551020M	CONCRETE DECK REPAIR, TYPE D	SF	90	0	90
B-58	552003M	PRESSURE INJECTION, CONCRETE CRACKS	LF	140	140	
B-59	555003M	SUBSTRUCTURE CONCRETE REPAIR (TYPE D)	SF	210	210	
B-60	555003M	SUBSTRUCTURE CONCRETE REPAIR (TYPE E)	SF	30	30	
B-61	555003M	SUBSTRUCTURE CONCRETE REPAIR (TYPE F)	SF	20	0	20
B-62	603095P	CONCRETE ARMOR UNITS	SY	120	120	
B-63	603XXX	COARSE AGGREGATE, SIZE NO. 57	SY	180	180	
B-64	605193P	HANDRAIL (APPROACH SPANS)	LF	1679	1679	
B-65	605193P	HANDRAIL (PARAPET MOUNTED)	LF	1569	1569	
B-66	605193P	HANDRAIL (BASCULE SPAN)	LF	252	252	
B-67	612023P	SPECIALIZED SKIN	UNIT	2	2	
B-68	70400XX	CONSTRUCTION WEBCAM	LS	LUMP SUM	LUMP SUM	
B-69	752003P	CONTROL HOUSE	LS	LUMP SUM	LUMP SUM	
B-70		SPAN BALANCE TESTING	LS	LUMP SUM	LUMP SUM	
B-71		SPAN BALANCE CONCRETE FILL	CY	80	80	
B-72		SPAN BALANCE STEEL BALLAST	LB	21400	21400	

SEQ. NO.	ITEM NO.	DESCRIPTION	UNIT	CONTRACT QUANTITY	PLAN SHEET TOTAL	IF AND WHERE DIRECTED
B-73		SPAN BALANCE BLOCKS	UNIT	220	220	
B-74		BASCULE SPAN JOINT ASSEMBLY	LF	110	110	
B-75		RELOCATE TEMPORARY STRUCTURE, TWO-WAY	UNIT	3	3	
B-76		BIRD ENCLOSURE SYSTEM	LS	LUMP SUM	LUMP SUM	
B-77		CLEARING SITE, STRUCTURE (FENDERS)	LS	LUMP SUM	LUMP SUM	
B-78	511019M	TIDE CLEARANCE GAUGE	UNIT	2	2	
B-79		MARITIME SON	UNIT	4	4	
B-80		ACCESS LADDER	UNIT	4	4	
B-81		POLYMER STRUCTURAL PILE (TYPE 1)	LF	1815	1815	
B-82		POLYMER STRUCTURAL PILE (TYPE 2)	LF	2111	2111	
B-83		POLYMER STRUCTURAL PILE DOLPHIN	LF	1210	1210	
B-84		POLYMER STRUCTURAL WALE	LF	2209	2209	
B-85		POLYMER STRUCTURAL MAINTENANCE WALKWAY	SF	788	788	
B-86		NAVIGATION LIGHTING SYSTEM (FENDER)	UNIT	4	4	
B-87		TRUNNION ASSEMBLIES	EACH	4	4	
B-88		SPAN DRIVE RACK AND PINION GEAR ASSEMBLIES	UNIT	4	4	
B-89		SPAN DRIVE REDUCERS ASSEMBLIES	EACH	6	6	
B-90		SPAN DRIVE PINION BEARINGS	EACH	8	8	
B-91		SPAN DRIVE SHAFTS, COUPLINGS, AND KEYS	UNIT	2	2	
B-92		SPAN DRIVE MACHINERY SUPPORTS	UNIT	2	2	
B-93		SPAN DRIVE BRAKE SYSTEM	EACH	8	8	
B-94		SPAN LOCK ASSEMBLIES	EACH	2	2	
B-95		PREVENTIVE MAINTENANCE	LS	1	1	
B-96		MOVABLE BRIDGE OPERATOR	LS	1	1	
B-97		MOVABLE BRIDGE COORDINATOR	LS	1	1	
B-98	701010P	1" RIGID METALLIC CONDUIT, PVC COATED	LF	440	400	40
B-99	701011P	1 1/2" RIGID METALLIC CONDUIT, PVC COATED	LF	275	250	25
B-100	701016P	2" RIGID METALLIC CONDUIT, PVC COATED	LF	440	400	40
B-101	701020P	3" RIGID METALLIC CONDUIT, PVC COATED	LF	660	600	60
B-102	701038P	1" FLEXIBLE METALLIC CONDUIT	LF	165	150	15
B-103	701039P	1 1/2" FLEXIBLE METALLIC CONDUIT	LF	185	150	15
B-104	701331P	#12 COPPER CONDUCTOR	LF	35500	35000	3500
B-105	701330P	#10 COPPER CONDUCTOR	LF	12100	11000	1100
B-106	701324P	#6 COPPER CONDUCTOR	LF	550	500	50
B-107	701XXX	#1 COPPER CONDUCTOR	LF	330	300	30
B-108	701319P	#1/8 COPPER CONDUCTOR	LF	660	600	60
B-109	701365P	250 KCMIL COPPER CONDUCTOR	LF	220	200	20
B-110	701339P	#500 KCMIL RHW AVG COPPER CONDUCTOR	LF	1650	1500	150
B-111	701036M	10" X 30" JUNCTION BOXES	UNIT	3	3	
B-112	703003M	LIGHTING STANDARD ALUMINUM	UNIT	8	8	
B-113	703018M	LUMINAIRE	UNIT	8	8	
B-114	750030P	VECTOR DUTY MOTOR	UNIT	4	4	
B-115	750018P	FLUX VECTOR DRIVE AND CABINET	UNIT	1	1	
B-116	750033P	DYNAMIC BRAKING RESISTOR BANK	UNIT	4	4	
B-117	750018P	SURGE SUPPRESSOR CABINET	U	1	1	
B-118	701360P	#2 CONDUCTOR SHELDED VFD CABLE	LF	600	600	
B-119	75001P	PROGRAMMABLE LOGIC CONTROLLER SYSTEM	LS	LUMP SUM	LUMP SUM	
B-120	750043P	CONTROL DESK	LS	LUMP SUM	LUMP SUM	
B-121	750031P	MOTOR CONTROL CENTER	UNIT	1	1	
B-122	706020M	WARNING GATE	UNIT	4	4	
B-123	751003P	STANDBY ENGINE GENERATOR	LS	LUMP SUM	LUMP SUM	
B-124	750006P	AUTOMATIC TRANSFER SWITCH	UNIT	1	1	
B-125	70052P	GROUNDING AND BONDING SYSTEM	LS	LUMP SUM	LUMP SUM	
B-126	750065P	TESTING, FINAL ACCEPTANCE	LS	LUMP SUM	LUMP SUM	
B-127	750064P	TESTING FACTORY INSPECTION AND TESTING	LS	LUMP SUM	LUMP SUM	
B-128	750064P	TESTING MANUFACTURER'S FIELD START-UP AND TESTING	LS	LUMP SUM	LUMP SUM	
B-129	75006P	TRAINING (OPERATOR)	LS	LUMP SUM	LUMP SUM	
B-130	750060P	TRAINING (SERVICE PERSONNEL/ENGINEER)	LS	LUMP SUM	LUMP SUM	
B-131	752003P	CONTROL HOUSE (Lighting & Recepiacles)	LS	LUMP SUM	LUMP SUM	
B-132	750050P	ELECTRICAL WORK, CCTV SYSTEM	LS	LUMP SUM	LUMP SUM	
B-133	750050P	ELECTRICAL WORK, PUBLIC ADDRESS SYSTEM	LS	LUMP SUM	LUMP SUM	
B-134	750033P	FIRE DETECTION AND FIRE ALARM SYSTEM	LS	LUMP SUM	LUMP SUM	
B-135	750050P	ELECTRICAL WORK, SUBMARINE CABLE	LS	LUMP SUM	LUMP SUM	
B-136	750050P	ELECTRICAL WORK, SUBMARINE CABLE CABINET	LS	LUMP SUM	LUMP SUM	
B-137	750050P	ELECTRICAL WORK TEMPORARY MONITORS	LS	LUMP SUM	LUMP SUM	
B-138	750050P	ELECTRICAL WORK INSTRUMENTATION	LS	LUMP SUM	LUMP SUM	
B-139	75048P	DEMOLITION AND REMOVAL	LS	LUMP SUM	LUMP SUM	
B-140	772001P	ELECTRICAL SERVICE	LS	LUMP SUM	LUMP SUM	
B-141		NAVIGATIONAL AIDS	LS	LUMP SUM	LUMP SUM	
B-142		SPARE PARTS	LS	LUMP SUM	LUMP SUM	

PREPARED BY: WSP USA INC.
2000 LENOX DRIVE, LAWRENCEVILLE, N.J. 08648

MARC S. ESPOSITO

N.J. LICENSE NUMBER
24020486200

DATE



CAPE MAY COUNTY

####

KYLE G

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Designed by

Drawn by

Checked by

JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY
DRAWING TITLE:
ESTIMATE -
DISTRIBUTION OF
QUANTITIES

DATE:
4/9/2024



SCALE:
AS SHOWN

SHEET REFERENCE NO.:
of

SHEET NO.:
041 of 202

ABBREVIATIONS

ABD	ABANDONED	EL	ELEVATION	L.O.W.	LIMIT OF WORK	PCI	PRESTRESSED CONCRETE INSTITUTE	TBR	TO BE REMOVED
ABUT.	ABUTMENT	(E)	EPOXY COATED REINFORCEMENT	LIN	LINEAR	PSU	PREFABRICATED SUPERSTRUCTURE UNIT	T&G	TONGUE AND GROOVE
ACCEL.	ACCELERATION	EQ	EQUALLY	LF	LINEAR FOOT	PS	PRESTRESSED	T	TOP
AH	AHEAD	EST	ESTIMATED	LL	LIVE LOAD	PGL	PROFILE GRADE LINE	T/	TOP OF
ALIGN.	ALIGNMENT	EXC	EXCAVATION	LG	LONG	PL	PROFILE LINE	T&B	TOP AND BOTTOM
ALT	ALTERNATE	EXIST. or EX	EXISTING	LONGIT	LONGITUDINAL	PL	PROPERTY LINE	TC	TOP OF CURB
ALT W/	ALTERNATE WITH	EXO	EXODERMIC	LP	LOW POINT	PROP.	PROPOSED	TOPO	TOPOGRAPHY
APPR	APPROACH	EXP or E	EXPANSION	LS	LUMP SUM	QTY	QUANTITY	TWP	TOWNSHIP
APPROX	APPROXIMATE, APPROXIMATELY	EXT	EXTERIOR, EXTERNAL, EXTENSION			R	RADIUS	TRK	TRACK
ACBM	ARTICULATED CONCRETE BLOCK MATTRESS	FASC	FASCIA	MB	MAILBOX	RR	RAILROAD	TRANSV	TRANSVERSE
AB	AS-BUILT	FPS	FEET PER SECOND	MB	MEDIAN BARRIER	REF	REFERENCE	TYP	TYPICAL
@	AT	FT or '	FEET, FOOT	MH	MANHOLE	RC	REINFORCED CONCRETE	UHPC	ULTRA HIGH PERFORMANCE CONCRETE
AUX	AUXILIARY	FOC	FIBER OPTIC CABLE	MATL	MATERIAL	RCCP	REINFORCED CONCRETE CULVERT PIPE	UNDERCLR	UNDER CLEARANCE
AVE	AVENUE	FS	FIELD SPLICE	MAX.	MAXIMUM	RCFES	REINFORCED CONCRETE FLARED END SECTION	UD	UNDER DRAIN
		FIN.	FINISH, FINISHED	MHW	MEAN HIGH WATER	RCS	REINFORCED CONCRETE PIPE	UON	UNLESS OTHERWISE NOTED
BK	BACK	FIX. or F	FIXED	MSE	MECHANICALLY STABILIZED EARTH	RSS	REINFORCED SOIL SLOPE	UTIL	UTILITY
B/C	BARRIER CURB	FB	FLOOR BEAM	MCR-PILE	MICRO-PILE	REINF	REINFORCED, REINFORCEMENT	UP	UTILITY POLE
B/C	BASELINE	FTG	FOOTING	MI	MILES	REL	RELOCATED	VMS	VARIABLE MESSAGE SIGN
BRGS	BEARINGS	FM	FORCE MAIN	MIN	MINIMUM	REQ'D	REQUIRED	VAR	VARIES, VARIABLE
BB	BOX BEAM	FDN	FOUNDATION	MVC	MINIMUM VERTICAL CLEARANCE	RE	RESIDENT ENGINEER	VEL	VELOCITY
B/G	BASCULE GIRDER	FF	FRONT FACE	MON	MONUMENT	RET	RETAINING	VERT	VERTICAL
BP	BASCULE PIER	FRP	FIBER REINFORCED POLYMER	MUP	MULTI-USE PATH	REV	REVISION	VC	VERTICAL CURVE
BEGIN.	BEGINNING	FRPP	FIBER REINFORCED POLYMER PIPE	NEC	NATIONAL ELECTRIC CODE	RT	RIGHT	V	VOLT
BM	BENCH MARK	FRPL	FIBER REINFORCED POLYMER PLASTIC LUMBER	NAV	NAVIGATION	R.O.W.	RIGHT OF WAY	WG	WARNING GATE
BETW	BETWEEN	FRSL	FIBER REINFORCED STRUCTURAL LUMBER	NF	NEAR FACE	RMC	RIGID METALLIC CONDUIT	WTR	WATER
BIT	BITUMINOUS			NWS	NORMAL WATER SOURCE	RNMC	RIGID NON-METALLIC CONDUIT	WM	WATER METER
BORO	BOROUGH			N	NORTH	RD	ROAD	WSE	WATER SURFACE ELEVATION
BOT or B	BOTTOM			NB	NORTHBOUND	RDWY	ROADWAY	WS	WEARING SURFACE
BLVD	BOULEVARD			NE	NORTHEAST	RT	ROUTE	WT	WEIGHT
BLDG	BUILDING			NW	NORTHWEST			WWF	WELDED WIRE FABRIC
				NA	NOT APPLICABLE	SAN	SANITARY	WWM	WELDED WIRE MESH
CJ	CAST IRON			N-C	NOT IN CONTRACT	SECT	SECTION	W	WEST
CIP	CAST IRON PIPE			NTS	NOT TO SCALE	SGMTL	SEGMENTAL	WB	WESTBOUND
C-I-P	CAST-IN-PLACE			NO.	NUMBER	SPC	SEISMIC PERFORMANCE CATEGORY	WW	WING WALL
CAT.	CATENARY			NOS	NUMBERS	SCPTU	SEISMIC PIEZOCONIC PENETRATION TEST	WV	WITH
CP	CATHODIC PROTECTION			NSTM	NON-REDUNDANT STEEL TENSION MEMBER (PREVIOUSLY FCM)	SCC	SELF-CONSOLIDATING CONCRETE	WM	WORKING POINT
CTR	CENTER					SH	SHEET	W	WROUGHT IRON
CL	CENTER LINE			OPP	OPPOSITE	SHT PILE	SHEET PILE	YD	YARDS
CG	CENTER OF GRAVITY			OPT.	OPTIONAL	SHTG	SHEETING	YR	YEAR
C/C or C TO C	CENTER TO CENTER	HW	HEAD WALL	OZ	OUNCE	SHLD	SHOULDER		
CLF	CHAIN-LINK FENCE	HT	HEIGHT	O TO O	OUT TO OUT	SDVK	SIDEWALK		
CHK	CHECKED	HEX	HEXAGONAL	OC	OUTLET CONTROL STRUCTURE	S	SOUTH		
CKT	CIRCUIT	HD	HIGH DENSITY, HEAVY DUTY, HEAD	OD	OUTSIDE DIAMETER	SB	SOUTHBOUND		
CLR	CLEAR, CLEARANCE	HPC	HIGH PERFORMANCE CONCRETE	O/L	OVERLAY	SE	SOUTHEAST		
CCTV	CLOSED CIRCUIT TELEVISION	HPS	HIGH PERFORMANCE STEEL			SPA @	SOUTHWEST		
COL	COLUMN	HP	HIGH POINT	PK	PARKER KAYLON MASONRY NAIL	SPA	SPACED AT, SPACING AT		
CONC	CONCRETE	HPS	HIGH PRESSURE SODIUM	PA	PASCALS	SPEC	SPECIFICATION		
CONN @	CONNECTION PLATE	HS	HIGH STRENGTH	PAVT	PAVEMENT	SQ	SQUARE		
CONSTR	CONSTRUCTION	HSS	HIGH STRENGTH STEEL, HOLLOW STRUCTURAL SECTION	PERF	PERFORATED	SF	SQUARE FOOT		
CONT	CONTINUOUS, CONTINUED	HWY	HIGHWAY	PETRO	PETROLEUM	SI	SQUARE INCH		
CONTR	CONTRACTION	HORIZ	HORIZONTAL	CPTU	PIEZOCONIC PENETRATION TEST	SY	SQUARE YARD		
CORR	CORROSION	HERCP	HORIZONTAL ELLIPTICAL REINFORCED CONCRETE PIPE	PDA	PILE DRIVING ANALYZER	SS	STAINLESS STEEL		
CAACP	CORRUGATED ALUMINUM ALLOY CULVERT PIPE	HMA	HOT MIX ASPHALT	PL	PLATE	STD	STANDARD		
CAALUP	CORRUGATED ALUMINUM ALLOY UNDERDRAIN PIPE	HYD	HYDRANT	PT	POINT	SPT	STANDARD PENETRATION TEST		
CMP	CORRUGATED METAL PIPE			POB	POINT OF BEGINNING	STA	STATION		
CMUP	CORRUGATED METAL UNDERDRAIN PIPE			PCC	POINT OF COMPOUND CURVE	S-I-P	STAY-IN-PLACE		
CSCP	CORRUGATED STEEL CULVERT PIPE			PC	POINT OF CURVATURE	SP	STEEL PIPE		
CSUP	CORRUGATED STEEL UNDERDRAIN PIPE			POE	POINT OF END	STIFF. PL	STIFFENER PLATE		
CR	COUNTY ROAD			PI	POINT OF INTERSECTION	STIRRUP	STORM WATER MANAGEMENT		
CCV	COVER			PVC	POINT OF VERTICAL CURVATURE	STY	STORY		
CCV P	COVER PLATE			PVRC	POINT OF VERTICAL INTERSECTION	ST	STREET		
X-SECT	CROSS SECTION			PVT	POINT OF VERTICAL REVERSE CURVATURE	STR	STRUCTURE		
CF	CUBIC FEET			POC	POINT OF VERTICAL TANGENCY	SOD	SUBBASE OUTLET DRAIN		
CFS	CUBIC FEET PER SECOND			POL	POINT ON CURVE	SUBSTR	SUBSTRUCTURE		
CY or CU YD	CUBIC YARD			PRC	POINT ON REVERSE CURVE	SURVEY LINE	SURVEY LINE		
CULV	CULVERT			POT	POINT ON TANGENT	\$	SYMMETRY, SYMMETRICAL		
				PPC	POLYESTER POLYMER CONCRETE	SYM			
DL	DEAD LOAD			PVC	POLYVINYL CHLORIDE PIPE	TAN.	TANGENT		
DEG or °	DEGREE			LB or #	POUNDS	TEMP.	TEMPERATURE, TEMPORARY		
DGA	DENSE GRADED AGGREGATE			PLF	POUNDS PER LINEAR FOOT	T	THICK, THICKNESS		
DES	DESIGNED			PSF	POUNDS PER SQUARE FOOT	TBA	TO BE ABANDONED		
DIAG	DIAGONAL			PSI	POUNDS PER SQUARE INCH				
DIA or D	DIAMETER			PC	PRECAST				
DIAPH	DIAPHRAGM								
DIM.	DIMENSION								
DOLL.	DOLLAR								
DWG	DRAWING								
DWN	DRAWN								
DS	DRILLED SHAFT								
DWY	DRIVEWAY								
DI	DUCTILE IRON								
DIP	DUCTILE IRON PIPE								
DMS	DYNAMIC MESSAGE SIGN								
EA	EACH								
EF	EACH FACE								
E	EAST								
EB	EASTBOUND								
ELEC	ELECTRIC, ELECTRICAL								

PREPARED BY: WSP USA INC. 2000 LINCOLN DRIVE, LAWRENCEVILLE, N.J. 08048 	 CAPE MAY COUNTY	JOB: REHABILITATION OF 96TH STREET (CR657) BRIDGE OVER GREAT CHANNEL STR. NO. 0500-006	PROJECT LOCATION: STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP CAPE MAY COUNTY, NEW JERSEY DRAWING TITLE: ABBREVIATIONS	DATE: 4/9/2024 SCALE: AS SHOWN SHEET REFERENCE NO.: 4 SHEET NO.: 02 of 202
MARC S. ESPOSITO N.J. PE LICENSE NUMBER: 2406454300	DATE:	DESIGNED BY:	DRAWN BY:	CHECKED BY:

GENERAL NOTES:

1. DESIGN SPECIFICATIONS:

NEW ELEMENTS: 2002 (9TH EDITION) AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS WITH CURRENT INTERIMS, AS MODIFIED BY SECTION 3 OF THE NJDOT DESIGN MANUAL FOR BRIDGES AND STRUCTURES 6TH EDITION, 2016.

2023 (3RD EDITION) AASHTO LRFD MOVABLE HIGHWAY BRIDGE DESIGN SPECIFICATIONS.

NJDOT DESIGN MANUAL FOR BRIDGES AND STRUCTURES 6TH EDITION, 2016.

AASHTO/AWS D1.5/2020 BRIDGE WELDING CODE WITH 2023 INTERIM PROVISIONS.

EXISTING ELEMENTS: 2002 AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 17TH EDITION, AS MODIFIED BY SECTION 3 OF NJDOT DESIGN MANUAL FOR BRIDGES AND STRUCTURES.

2. CONSTRUCTION SPECIFICATIONS:

2019 NJDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION WITH CURRENT SUPPLEMENTAL SPECIFICATIONS AS AMENDED BY THE SPECIAL PROVISIONS.

3. LIVE LOAD:

EXISTING COMPONENTS: AASHTO HS20-44 ± 10% OR AN ALTERNATE MILITARY LOADING OF TWO AXLES FOUR FEET APART WITH EACH AXLE WEIGHING 24,000 LBS., WHICHEVER PRODUCES THE GREATEST STRESS.

EXISTING BRIDGE IS LOAD POSTED FOR 15 TONS (SEE LATEST BRIDGE SURVEY REPORT FOR CURRENT LOAD RATINGS). THE CONTRACTOR SHALL ONLY USE EQUIPMENT ON THE BRIDGE THAT COMPLIES WITH THE EXISTING LOAD POSTING RESTRICTION. NO CONSTRUCTION EQUIPMENT OR VEHICLE IN EXCESS OF 15 TON GROSS WEIGHT SHALL BE PERMITTED ON THE BRIDGE. DO NOT STORE MATERIALS OR EQUIPMENT ON THE BRIDGE OR ANY OTHER STRUCTURES WITHOUT THE APPROVAL OF THE RE.

NEW COMPONENTS: AASHTO LRFD HL-93 VEHICULAR LIVE LOADING AND NJDOT PERMIT VEHICLE, WHICHEVER GOVERNS.

NEW BRIDGE TRAFFIC RAILING DESIGN IMPACT LEVEL = TL-4 (MASH).

PEDESTRIAN RAILING AND HANDRAIL MOUNTED ON EXISTING BARRIER: OSHA PEDESTRIAN LOADING

4. CONCRETE COMPRESSIVE STRESS:

(A) DESIGN COMPRESSIVE STRENGTH (F_C):

CLASS A OR SCC = 4,000 PSI
CLASS B = 3,000 PSI
CLASS P = 5,000 PSI
CLASS HPC-1, HPC-2 = 4,000 PSI
PRECAST AND CAST-IN-PLACE ULTRA-HIGH PERFORMANCE CONCRETE (UHPC) = 14,000 PSI

(B) CLASS MIX DESIGN STRENGTHS:

(IN ACCORDANCE WITH TABLES 903.01.06-3, AND 903.05.02-1 OF THE NJDOT STANDARD SPECIFICATIONS AND THE SPECIAL PROVISIONS).
CLASS A OR SCC = 4,000 PSI AT 28 DAYS
CLASS B = 3,700 PSI AT 28 DAYS
CLASS P = 5,500 PSI AT 28 DAYS
PRECAST AND CAST-IN-PLACE UHPC = 22,000 PSI AT 28 DAYS

CLASS MIX DESIGN STRENGTHS:

(C) (IN ACCORDANCE WITH TABLE 903.05.02-1 OF THE NJDOT STANDARD SPECIFICATIONS).
HPC-1, HPC-2 = 5,400 PSI.

5. STRUCTURAL STEEL:

(A) STRUCTURAL STEEL (UNLESS OTHERWISE NOTED): AASHTO M270, GRADE 36 OR 50 (ASTM A709, GRADE 36 OR 50). UNLESS OTHERWISE NOTED, STRUCTURAL STEEL SHALL BE GRADE 50.

(B) HIGH-STRENGTH BOLTS: ASTM F3125, GRADE A325, T-RHEADS EXCLUDED FROM THE SHEAR PLANE.

(C) RAIL BARS: ASTM A500, GRADE B, ANCHOR BOLTS ASTM F1554, GRADE 55 (GALVANIZED).

(D) ALL PROPOSED STRUCTURAL STEEL AND BOLTS SHALL BE HOT DIP GALVANIZED T.C. BOLTS AND THEN INTERMEDIATE AND TOP COATED (TOP COAT SHALL BE FIELD APPLIED FOR FASTENERS).

(E) JOINT WELDING PROCEDURES, OVERALL FABRICATION METHODS, AND QUALITY CONTROL INSPECTION PROCEDURES TO BE DEVELOPED, REVIEWED AND CERTIFIED BY THE CONTRACTOR TO BE IN COMPLIANCE WITH THE PROJECT REQUIREMENTS. THESE DOCUMENTS SHALL BE SUBMITTED TO THE RESIDENT ENGINEER PRIOR TO FABRICATION. FOR ADDITIONAL REQUIREMENTS FOR THE BASCULE SPAN ASSEMBLY NOTES ON SHEET BXX.

(F) NO WELDS, TEMPORARY OR PERMANENT, SHALL BE MADE TO THE TENSION FLANGE UNLESS DESIGNATED ON THE CONTRACT PLANS. FOR THE BASCULE SPAN, NO WELDS, TEMPORARY OR PERMANENT, SHALL BE MADE TO ANY MEMBER, UNLESS DESIGNATED ON THE CONTRACT PLANS, WITHOUT PRIOR APPROVAL ON THE ENGINEER.

(G) ALLOWANCES SHALL BE MADE IN THE SHOP FOR SHRINKAGE DUE TO WELDING AND BURNING. IF UNEVEN SHRINKAGE IS ANTICIPATED, CAMBER ORDINATES SHALL BE ADJUSTED ACCORDINGLY.

(H) SEE STRUCTURAL STEEL PLANS FOR ANY MEMBER OF MEMBER COMPONENTS DESIGNATED AS NON-REDUNDANT STEEL TENSION MEMBERS (NSTM). ALL WELDS TO STEEL DESIGNATED AS NSTM SHALL BE DESIGNATED FRACTURE CRITICAL WELDS. MEMBER OR MEMBER COMPONENTS AND WELDS DESIGNATED AS FRACTURE CRITICAL SHALL BE SUBJECT TO THE PROVISIONS OF THE MOST CURRENT EDITION OF THE AASHTO/AWS D1.5 BRIDGE WELDING CODE, SECTION 12 - FRACTURE CONTROL PLAN.

(I) FINISH: REFER TO SHEET BXX AND SPECIAL PROVISIONS FOR FINISHING REQUIREMENTS.

(J) GIRDERS AND PERMANENT STEEL ELEMENTS: AASHTO M270, GRADE 50 (ASTM A709, GRADE 50) WITH SUPPLEMENTARY REQUIREMENTS FOR ALL MEMBER COMPONENTS MARKED (T).

(K) ALL NEW STEEL MEMBERS SHALL INCLUDE SUPPLEMENTARY REQUIREMENTS FOR TOUGHNESS ON ALL MEMBER COMPONENTS USING CHARPY V-NOTCH TESTING.

6. REINFORCEMENT STEEL:

ASTM A615, F_y = 60,000 PSI, GALVANIZED ACCORDING TO NJDOT STANDARD SPECIFICATIONS, ASTM A615 (GRADE 60) EPOXY-COATED TO BE USED ONLY FOR REPAIRS OR CONNECTIONS/DOWELING TO EXISTING COMPONENTS IN LOCATIONS INDICATED.

7. SUPERSTRUCTURE:

(A) DEAD LOAD INCLUDES A 25 PSF PROVISION FOR A FUTURE 2-INCH THICK OVERLAY PROTECTIVE SYSTEM ON SPAN 14. NO OVERLAY PROVISIONS ARE MADE FOR THE BASCULE SPAN.

8. SUPERSTRUCTURE (CONT):

(D) UNLESS NOTED OTHERWISE, BOLTS SHALL MEET THE REQUIREMENTS OF ASTM F3125 GRADE A325, TYPE 3. FOR ALL GRADE F1552 BOLTS, THE RE SHALL BE PRESENT DURING THE REMOVAL OF ALL TWIST-OFF SPLINES.

(E) ALL THREADED RODS FOR USE IN CONCRETE SHALL BE GALVANIZED AND MEET THE REQUIREMENTS OF ASTM F1554 GRADE 36. ALL OTHER THREADED RODS SHALL MEET THE REQUIREMENTS OF ASTM A36. DECK JOINTS AND DECK ARMORING (GALVANIZED); AASHTO M270, GRADE 36 (ASTM A709, GRADE 36)

(F) CONCRETE STRUCTURES:
CLASS HPC-1: CONCRETE PARAPETS AND SPAN 14 DECK
CLASS P: PRECAST BEAMS
UHPC: CLOSURE JOINTS BETWEEN PRECAST ELEMENTS

(G) TEMPORARY BRIDGE: ALL STEEL COMPONENTS AASHTO M270, GRADE 50 OR AS SPECIFIED BY THE MANUFACTURER TO MEET ALL PROJECT SPECIFIC REQUIREMENTS PER SPECIAL PROVISIONS

(H) BRIDGE RAILING MEMBERS: (DUAL COATED; GALVANIZED AND PAINTED PER SPECIAL PROVISIONS)
RAIL BARS: ASTM A500, GRADE B
RAIL POSTS: AASHTO M270, GRADE 50 (ASTM A709, GRADE 50)

(I) DECK:
EXODERMIC DECK STRUCTURAL TEES, BARS AND MISCELLANEOUS PLATES:
ASTM A572/A709 GRADE 50
GALVANIZED IN ACCORDANCE WITH ASTM A123

(J) SEE SPECIAL PROVISIONS FOR ADDITIONAL FIBERGLASS REINFORCED POLYMER PANEL MATERIAL REQUIREMENTS.

(K) FOR BASCULE SPAN ASSEMBLY AND ERECTION NOTES, SEE SHEET BXX.

9. SUBSTRUCTURE:

(A) CONCRETE STRUCTURE:
CLASS A: ABUTMENT PILE CAPS, MEDIAN WALLS, FACING
CLASS B: ABUTMENTS AND RETAINING WALLS
CLASS HPC-2: CAST-IN-PLACE BASCULE PIER ELEMENTS.
CLASS SCC: DRILLED SHAFTS.

(B) STRUCTURAL STEEL: INTERMEDIATE SHEETING: AASHTO M270, GRADE 50 (ASTM A709, GRADE 50)

(C) ALL MISCELLANEOUS STEEL (CONNECTION PLATES, ANGLES, ETC.): AASHTO M270, GRADE 50 (ASTM A709, GRADE 50)

(D) THREADED RODS AND BASE PLATES FOR ABUTMENT: GALVANIZED PER ASTM A123

(E) SHEAR CONNECTORS: GALVANIZED PER ASTM A780

(F) MECHANICAL COUPLERS: AASHTO M232

10. SEISMIC DESIGN CRITERIA:

PEAK GROUND ACCELERATION COEFFICIENT (PGA)
SHORT-PERIOD SPECTRAL ACCELERATION COEFFICIENT
LONG-PERIOD SPECTRAL ACCELERATION COEFFICIENT
SITE CLASS
SHORT PERIOD SITE FACTOR
1-SEC PERIOD SITE FACTOR
SEISMIC DESIGN CATEGORY (SDC)

PGA = 0.000g
S_a = 0.000g
S₁ = 0.000g
D
F_a = X.X
F_v = X.X
A

11. BORINGS:

INDICATES LOCATION OF BORINGS

INDICATES LOCATION OF PREVIOUS BORINGS

12. FATIGUE:

ALLOWABLE FATIGUE THRESHOLD STRESSES BASED ON AASHTO TABLE 6.6.1.2.3-1

13. FOUNDATION DESIGN CRITERIA:

5 FT DIAMETER DRILLED SHAFTS

PIER NUMBER	7 & 8
NOMINAL COMPRESSION RESISTANCE FOR SINGLE SHAFT (KIPS)	2,400
FACTORED COMPRESSION RESISTANCE FOR SINGLE SHAFT (KIPS)	1,700
ESTIMATED TIP ELEVATION (FEET)	-85
MINIMUM SHAFT TIP ELEVATION (FEET)	-70
NOMINAL UPLIFT RESISTANCE FOR SINGLE SHAFT (KIPS)	X
FACTORED UPLIFT RESISTANCE FOR SINGLE SHAFT (KIPS)	X

(A) BASED ON THE RESULTS OF THE O-CELL TESTING, THE ENGINEER SHALL PROVIDE THE FINAL TIP ELEVATION FOR THE PRODUCTION DRILLED SHAFTS.

(B) THE TIDAL ELEVATIONS SHOWN ON THE PLANS WERE DETERMINED BASED ON THE PROCEDURES DEFINED IN THE STATE OF NEW JERSEY DEPARTMENT OF TRANSPORTATION'S "MEAN HIGH WATER MANUAL" OF 2008. THE CONTRACTOR SHOULD USE JUDGEMENT WHEN APPLYING THESE DATA FOR ALL CONSTRUCTION ACTIVITIES. TIDAL ELEVATIONS ARE BASED ON DATUM NAVD 88.

(C) FOUNDATION EXCAVATION SHOULD BE INSPECTED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW JERSEY WITH SUFFICIENT GEOTECHNICAL EXPERTISE, SERVING AS A REPRESENTATIVE OF THE RESIDENT ENGINEER, TO VERIFY THAT THE MATERIAL ON WHICH THE FOUNDATION BEARS HAS THE CAPACITY NOTED IN THE DESIGN CRITERIA.

(D) PRIOR TO PLACING CONCRETE, DEWATER AS NECESSARY TO MAINTAIN DRY CONSTRUCTION. THERE WILL BE NO SEPARATE PAYMENT FOR DEWATERING. COST IS CONSIDERED INCIDENTAL TO THE RELEVANT PAY ITEM.

14. DIMENSIONS AND ELEVATIONS:

(A) DIMENSIONS AND ELEVATIONS SHOWN IN THESE PLANS ARE BASED ON ORIGINAL CONSTRUCTION PLANS, AND LIMITED SURVEY PERFORMED DURING DESIGN. WHERE IN CONFLICT WITH THE ORIGINAL CONSTRUCTION PLANS, NEW SURVEY INFORMATION HAS BEEN USED, THE CONTRACTOR SHALL VERIFY DIMENSIONS AND ELEVATIONS PRIOR TO CONSTRUCTION. ANY NECESSARY ADJUSTMENTS SHALL BE SUBMITTED BY THE CONTRACTOR FOR THE COUNTY'S APPROVAL AT NO ADDITIONAL COST OR SCHEDULE IMPACTS DUE TO SUCH ADJUSTMENTS. ACTUAL SITE CONDITIONS ENCOUNTERED SHALL BE ACCOUNTED FOR AND REFLECTED IN SHOP DRAWINGS. THERE SHALL BE NO CLAIMS WHATSOEVER SHOULD THE CONTRACTOR'S SURVEY DIFFER.

(B) ALL ELEVATIONS SHOWN ON THESE PLANS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM (NAVD)-1988. ALL ELEVATIONS SHOWN ON ORIGINAL CONSTRUCTION PLANS WERE BASED ON THE NATIONAL GEODETTIC VERTICAL DATUM (NGVD)-1929. THE DIFFERENCE IN ELEVATIONS BETWEEN NAVD 1988 AND NGVD 1929 AT THE BRIDGE IS +1.36 FEET. NGVD 1929 ELEVATIONS ARE HIGHER THAN NAVD 1988 AT THIS SITE.

(C) EXISTING PLANS ARE AVAILABLE FROM THE COUNTY FOR INFORMATION ONLY. RELIANCE ON INFORMATION SHOWN ON EXISTING PLANS DOES NOT RELIEVE THE CONTRACTOR FROM VERIFYING EXISTING DIMENSIONS AND ELEVATIONS.

UTILITIES:

(A) PROVISIONS SHALL BE MADE TO ENSURE THAT ANY EXISTING UTILITIES ARE NOT DAMAGED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND PROTECT THE UTILITIES.

(B) SERVICE IN UNDERGROUND AND AERIAL UTILITIES SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.



(C) THE CONTRACTOR SHALL COORDINATE WITH ALL UTILITY OWNERS PRIOR TO THE START OF CONSTRUCTION.

(D) BRIDGE POWER SHALL BE MAINTAINED AT ALL TIMES, EXCEPT AS NOTED IN THE SPECIAL PROVISIONS.

(E) THE INFORMATION SHOWN ON THESE CONTRACT PLANS CONCERNING THE TYPE AND LOCATION OF THE UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL-INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING THEIR OWN DETERMINATION AS TO THE TYPE AND LOCATION OF UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERE TO.

(F) THE CONTRACTOR SHALL PROTECT AND MAINTAIN ALL UTILITIES AT ALL TIMES UNLESS SPECIFICALLY DIRECTED OTHERWISE.

(G) THE LOCATION OF SUBMARINE UTILITIES/CABLES SHOWN ON THE PLANS ARE APPROXIMATE. THE LOCATIONS PROVIDED MAY NOT BE ACCURATE AND MAY NOT INCLUDE ALL FACILITIES PRESENT ON-SITE. THE CONTRACTOR SHALL LOCATE ALL SUBMARINE UTILITIES PRIOR TO REMOVAL OF THE EXISTING FENDER OR ANY INSTALLATION WORK IS PERFORMED INCLUDING SPUDDING BARGES OR OTHER WORK PLATFORMS.

PREPARED BY: WSP USA, Inc. 2000 LENOX DRIVE, LAWRENCEVILLE, VA 20648			JOB: REHABILITATION OF 96TH STREET (CR657) BRIDGE OVER GREAT CHANNEL STR. NO. 0500-006	PROJECT LOCATION: STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP CAPE MAY COUNTY, NEW JERSEY	DATE: 4/9/2024
MARC S. ESPOSITO	N.J. PE LICENSE NUMBER: 24CE0464300	DATE	Designed by ZACK S	Drawn by	Checked by
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17. ENVIRONMENTAL PERMITS:

- (A) THE CONTRACTOR SHALL COMPLY WITH ALL CONDITIONS OF ALL ENVIRONMENTAL PERMITS FOR THIS PROJECT. THE PERMITS OBTAINED ARE INCLUDED IN THE SPECIAL PROVISIONS.
- (B) TURBIDITY BARRIERS SHALL REMAIN IN PLACE DURING ALL IN-WATER WORK ACTIVITIES.
- (C) NO EQUIPMENT OR TOOLS MAY BE STORED OUTSIDE OF DESIGNATED STAGING AREA IDENTIFIED IN THE ENVIRONMENTAL PERMIT PLANS. CONSTRUCT SOIL EROSION AND SEDIMENT CONTROL MEASURES TO PREVENT SOILS AND OTHER MATERIALS FROM BEING DEPOSITED ON EXISTING ROADWAYS AND ON ADJACENT AREAS OUTSIDE OF THE CONSTRUCTION LIMITS, AS DIRECTED BY THE RE. IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.

18. ENVIRONMENTAL:

- (A) FOR EQUIPMENT OR MATERIAL STOCKPILING REQUIREMENTS, SEE THE SPECIAL PROVISIONS.
- (B) MEASURES SHALL BE TAKEN TO PREVENT ANY DEBRIS FROM ENTERING THE WATERWAY, ROADWAYS, STORAGE AREAS AND WETLAND AREAS DURING CONSTRUCTION.
- (C) REFER TO PERMITS FOR ADDITIONAL REQUIREMENTS.

19. NAVIGATION CHANNEL:

- (A) THE NAVIGATION CHANNEL SHALL BE MAINTAINED BY THE CONTRACTOR IN ACCORDANCE WITH US COAST GUARD RESTRICTIONS. SEE SPECIFICATIONS AND ENVIRONMENTAL PLANS FOR CHANNEL FOUling RESTRICTIONS, NOTIFICATION REQUIREMENTS AND TIMING RESTRICTIONS.
- (B) AT LEAST ONE HALF OF THE NAVIGATION CHANNEL SHALL BE MAINTAINED BY THE CONTRACTOR AT ALL TIMES IN ACCORDANCE WITH THE UNITED STATES COAST GUARD RESTRICTIONS. SEE THE SPECIFICATIONS FOR CHANNEL FOUling RESTRICTIONS AND NOTIFICATION REQUIREMENTS.

20. UNITED STATES COAST GUARD:

- IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE UNITED STATES COAST GUARD PRIOR TO BEGINNING ANY WORK IN OR OVER THE WATERWAY. THE CONTRACTOR SHALL COMPLY WITH U.S.C.G. REQUIREMENTS.

21. PAINTING OF STRUCTURE SHALL BE AS FOLLOWS:

- (A) BRIDGE RAILINGS: GALVANIZE AND PAINT IN ACCORDANCE WITH SPECIAL PROVISIONS. FINISH COAT COLOR: LAKE BLUE (FEDERAL CHIP NUMBER 25189)
- (B) METALIZE AND PROVIDE FINISH COAT TO ALL BASCULE SPAN STRUCTURAL STEEL AS PER THE SPECIAL PROVISIONS. FINISH COAT COLOR TO BE LAKE BLUE (FEDERAL CHIP NUMBER 25189).

22. MISCELLANEOUS:

- (A) THE CONTRACTOR SHALL PERFORM ALL WORK WITH CARE SO THAT ANY UTILITIES, UTILITY POLES, STRUCTURES, OR ANY OTHER MATERIALS WHICH ARE TO REMAIN IN PLACE WILL NOT BE DAMAGED. IF THE CONTRACTOR DAMAGES ANY MATERIALS TO REMAIN IN PLACE, THE CONTRACTOR SHALL REPAIR OR REPLACE THE DAMAGED MEMBER(S) IN A MANNER SATISFACTORY TO THE RESIDENT ENGINEER AT THE CONTRACTOR'S EXPENSE.
- (B) THE CONTRACTOR SHALL OBSERVE ALL OF THE RULES, REGULATIONS, AND DIRECTIONS OF THE LOCAL MUNICIPALITIES AND TAKE SUCH PROTECTIVE MEASURES AS MAY BE ORDERED BY THE RESIDENT ENGINEER. ANY DAMAGE CAUSED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED IN A MANNER SATISFACTORY TO THE RE AT THE CONTRACTOR'S EXPENSE.
- (C) PROVIDE 3" OF COVER TO REINFORCEMENT STEEL UNLESS NOTED OTHERWISE.
- (D) THERE SHALL BE NO CLAIM AGAINST THE COUNTY MADE BY THE CONTRACTOR FOR WORK PERTAINING TO MODIFICATIONS AS MAY BE REQUIRED DUE TO ANY DIFFERENCE BETWEEN THE ACTUAL FIELD CONDITIONS AND THOSE SHOWN BY THE DETAILS AND DIMENSIONS ON THE CONTRACT PLANS. THE CONTRACTOR WILL BE PAID AT THE PRICES BID FOR THE ACTUAL QUANTITIES CONSTRUCTED FOR UNIT PRICE ITEMS DESIGNATED AS MEASURED ITEMS (AS DEFINED IN SECTION 109.01 OF THE SPECIFICATIONS) OR FOR THE WORK PERFORMED FOR LUMP SUM PAY ITEMS OR PROPOSAL ITEMS (AS DEFINED IN SECTION 109.01 OF THE SPECIFICATIONS), AS INDICATED BY THE VARIOUS PAY ITEMS IN THE CONTRACT.
- (E) UNLESS SPECIFICALLY DESIGNATED FOR REMOVAL AND/OR REPLACEMENT THE HISTORIC CHARACTER DEFINING FEATURES AS DESCRIBED IN THE SPECIAL PROVISIONS MUST BE PROTECTED AND MAINTAINED THROUGHOUT THE DURATION OF CONSTRUCTION AND MODIFICATIONS TO ANY FEATURE MAY ONLY BE CARRIED OUT AS SPECIFIED IN THESE CONTRACT DOCUMENTS. IF UNFORESEEN CONDITIONS ARE ENCOUNTERED WHICH AFFECT MAY CHARACTER DEFINING FEATURES, IMMEDIATELY NOTIFY THE RE AND COORDINATE WITH NHPMO. NHPMO RESERVES THE RIGHT TO REJECT A PROPOSED PROJECT ELEMENT OR WORK PROCEDURE IF IT IS DEEMED TO BE INCONSISTENT WITH THE CHARACTER OF THE EXISTING STRUCTURE. ALL WORK IMPACTING CHARACTER DEFINING FEATURES MUST BE SUBMITTED AND APPROVED BY NHPMO AND THE RE.
- (F) THE INFORMATION PRESENTED HEREON IS FOR INFORMATIONAL PURPOSES ONLY AND IS NOT GUARANTEED TO BE CORRECT. BIDDERS SHALL VISIT THE SITE BEFORE SUBMITTING BIDS TO ASCERTAIN THE EXTENT OF THE WORK. THE CONTRACTOR'S BID SHALL ACCOUNT FOR REMOVAL AND RECONSTRUCTION OF BRIDGE ELEMENTS WITH COMPLIANCE OF LOAD POSTING. ALL SITE VISITS ARE TO BE COORDINATED WITH THE COUNTY.
- (G) QUANTITIES SHOWN IN THESE PLANS FOR VARIOUS REPAIRS ARE APPROXIMATE. PRIOR TO FABRICATION AND DEVELOPMENT OF SHOP DRAWINGS THE CONTRACTOR SHALL DETERMINE, DOCUMENT AND OBTAIN THE ENGINEER'S APPROVAL FOR THE REQUIRED REPAIR LIMITS FOR THOSE ITEMS WHERE QUANTITIES ARE LIKELY TO CHANGE.
- (H) FOR ACCEPTABLE LANE CLOSURE HOURS, SEE THE SPECIAL PROVISIONS.
- (I) CONTRACTOR SHALL COORDINATE WITH USCG FOR ALL WORKS, TEMPORARY IMPACTS, IF ANY, TO MARINE TRAFFIC AND SUBMIT ALL CORRESPONDENCE TO THE RESIDENT ENGINEER. SEE SPECIAL PROVISIONS.
- (J) SEE SPECIAL PROVISIONS FOR SEASONAL WORK RESTRICTIONS.
- (K) THE CONTRACTOR SHALL CONDUCT A BATHYMETRIC SURVEY PRIOR TO THE ONSET OF CONSTRUCTION ACTIVITIES TO VERIFY THE EXISTING CONDITIONS OF THE WATERWAY. AFTER THE CONSTRUCTION OF THE FENDER IS COMPLETE, THE CONTRACTOR SHALL CONDUCT A FINAL SURVEY TO VERIFY THE NAVIGABLE CHANNEL HAS BEEN RESTORED TO ITS ORIGINAL CONDITION AND FREE OF DEBRIS.
- (L) DO NOT STORE OR STOCKPILE EQUIPMENT OR MATERIALS WITHIN OPEN WATER, WETLANDS, OR WETLAND BUFFER UNLESS ALLOWED BY THE PERMITS. DO NOT STORE OR STOCKPILE MATERIALS ON THE CLOSED PORTION (OR ANY PORTION) OF THE BRIDGE. UNLESS SPECIFICALLY APPROVED IN WRITING BY THE COUNTY.

MISCELLANEOUS (CONT):

- (M) THE CONTRACTOR SHALL TAKE EVERY PRECAUTION TO AVOID DAMAGING THE EXISTING BRIDGE ELEMENTS THAT ARE TO REMAIN. ANY DAMAGE CAUSED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED IN A MANNER SATISFACTORY TO THE COUNTY AT THE CONTRACTOR'S EXPENSE.
- (N) NAVIGATIONAL LIGHTING SHALL REMAIN OPERATIONAL AND VISIBLE AT ALL TIMES FOR THE DURATION OF THE CONTRACT. TEMPORARY LIGHTING SHALL BE INSTALLED AND MAINTAINED DURING ANY TIME THAT PERMANENT FIXTURES ARE NOT OPERATIONAL.
- (O) UPON NOTIFICATION BY THE RE, SUSPEND OPERATIONS AS NECESSARY AND PROVIDE SAFE AND ADEQUATE ACCESS INTO OR THROUGH THE WORK SITE BY EMERGENCY VEHICLES, VESSELS, AND/OR PERSONNEL.
- (P) THE RE OR DESIGNATED REPRESENTATIVE WILL INSPECT ALL PHASES OF THE WORK TO ENSURE THAT THEY ARE PERFORMED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ACCESS, INCLUDING ALL EQUIPMENT NECESSARY, FOR THE RE AND HIS INSPECTION PERSONNEL. THE PRESENCE OF THE RE SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO PROVIDE ADEQUATE INSPECTIONS OF HIS OWN TO ASSURE COMPLIANCE WITH THE CONTRACT DOCUMENTS.
- (Q) GRADING, CLEARING, OR FILLING ACTIVITIES WITHIN OPEN WATERS, WETLANDS, AND WETLAND BUFFERS ARE PROHIBITED UNLESS SPECIFICALLY AUTHORIZED BY THE PERMITS ISSUED TO THE COUNTY FOR THIS PROJECT.
- (R) DURING REMOVAL OPERATIONS, DO NOT DROP WASTE, DEBRIS, OR OTHER MATERIALS INTO THE WATERWAY. IF THE RE DETERMINES THAT ADEQUATE PROTECTIVE DEVICES ARE NOT BEING EMPLOYED, THE WORK SHALL BE SUSPENDED UNTIL ADEQUATE PROTECTION IS PROVIDED, AND THE SUSPENSION WILL NOT BE A CAUSE TO EXTEND THE CONTRACT COMPLETION DATE. PROPERLY DISPOSE OF ALL MATERIAL GENERATED DURING REMOVAL OPERATIONS.
- (S) THE CONTRACTOR IS ADVISED THAT ADDITIONAL "NOTES" WILL BE FOUND ON SUBSEQUENT SHEETS OF THE CONTRACT PLANS AND SUCH "NOTES" WHILE PERTAINING TO THE SPECIAL PROVISIONS, THEY ARE PLACED ON, ALSO SUPPLEMENT THE GENERAL NOTES LISTED HEREIN.
- (T) THE CONTRACTOR MAY NOT DRILL INTO ANY SUPERSTRUCTURE OR SUBSTRUCTURE ELEMENTS FOR THE INSTALLATION OF TEMPORARY SHIELDING OR ANY OTHER TEMPORARY SUPPORT WITHOUT THE APPROVAL OF THE RE.
- (U) SHOULD AN EMERGENCY EVACUATION EVENT BE REQUIRED DURING CONSTRUCTION, THE CONTRACTOR SHALL WORK WITH THE RE AND THE COUNTY TO PROVIDE SAFE PASSAGE OF ALL MODES OF TRANSPORTATION UNLESS IT IS DEEMED NOT FEASIBLE BY THE RE BASED ON THE CONDITIONS OF THE CONSTRUCTION SITE.
- (V) SEE ELECTRICAL DRAWINGS FOR ELECTRICAL GENERAL NOTES, LEGEND AND ABBREVIATIONS.
- (W) SEE MECHANICAL DRAWINGS FOR MECHANICAL GENERAL NOTES.
- (X) SEE BUILDING DRAWINGS FOR BUILDING GENERAL NOTES, LEGEND AND ABBREVIATIONS.
- (Y) SEE HIGHWAY DRAWINGS FOR ADDITIONAL LEGEND AND ABBREVIATIONS.
- (Z) HIGHWAY LIGHTING ABOVE AND BELOW DECK WILL REMAIN OPERATIONAL AND VISIBLE FOR THE DURATION OF THE CONTRACT.
- (AA) THE CONTRACTOR WILL DESIGN AND PROVIDE ALL TEMPORARY SUPPORTS, BRACING OR OTHER DEVICES THAT MAY BE REQUIRED, OR THAT MAY BE DIRECTED BY THE RESIDENT ENGINEER, TO PROTECT THE SAFETY OF ADJACENT STRUCTURES, ROADWAYS OR UTILITIES. THE COST OF THE WORK WILL BE INCLUDED IN THE BID FOR THE VARIOUS ITEMS OF WORK UNDER THIS CONTRACT.
- (AB) UPON NOTIFICATION OF ANY UNDESIRABLE CONSTRUCTION PRACTICES, THE CONTRACTOR WILL DISCONTINUE ALL OPERATIONS IN THE AFFECTED AREA. IMMEDIATE ACTIONS WILL BE TAKEN TO CORRECT THE SITUATION TO THE SATISFACTION OF THE RESIDENT ENGINEER BEFORE WORK IS RESUMED.
- (AC) CONTRACTOR SHALL BE RESPONSIBLE FOR THE STABILITY AND INTEGRITY OF THE STRUCTURE DURING THE REMOVAL AND ANY PROPOSED RECONSTRUCTION WORK FOR THIS PROJECT, INCLUDING ANY TEMPORARY CONDITIONS BASED UPON THE CONTRACTOR'S MEANS AND METHODS. THIS RESPONSIBILITY EXTENDS UNTIL ALL WORK IS COMPLETE AND THE JOB IS CLOSED, RETURNING THE BRIDGE TO THE COUNTY IN A CONDITION THAT IS APPROVED BY THE COUNTY.
- (AD) THE CONTRACTOR IS CAUTIONED THAT THE STRENGTH OF THE CONCRETE IN THE EXISTING DECK, CURBS AND SIDEWALKS MAY SIGNIFICANTLY EXCEED THE DESIGN STRENGTH SPECIFIED ON THE ORIGINAL CONSTRUCTION AND REHABILITATION PLANS. THE CONTRACTOR SHALL NOT RELY ON THESE NOMINAL VALUES OF THE STRENGTH OF THE EXISTING CONCRETE IN SELECTING THE EQUIPMENT REQUIRED FOR ITS DEMOLITION. NO TIME OR COST CLAIMS DUE TO EXISTING CONCRETE STRENGTH WILL BE CONSIDERED BY THE COUNTY.
- (AE) THROUGHOUT THESE PLANS, WHERE CALCULATIONS OR DESIGN ARE REQUIRED TO BE SUBMITTED BY THE CONTRACTOR FOR THE ENGINEER'S APPROVAL, THEY MUST BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER IN THE STATE OF NEW JERSEY. CALCULATIONS FOR ANY SUCH REQUIRED ITEM MUST BE PREPARED TO THE STANDARD OF PROFESSIONAL CARE FOR THE ITEM IN QUESTION, UTILIZING ALL APPLICABLE CODES AND VERIFYING ALL APPLICABLE COMPONENTS, LIMIT STATES AND CIRCUMSTANCES, ETC. IT IS NOT PRACTICAL TO LIST ALL SUCH CIRCUMSTANCES OR CASES WITHIN THE CONTRACT, HOWEVER IT IS THE RIGHT OF THE RESIDENT ENGINEER TO UPHOLD THE STANDARD OF PROFESSIONAL CARE IN THE INTERPRETATION OF ANY REQUIRED CALCULATIONS OR DESIGN.
- (AF) ALL WORK SHOWN THROUGHOUT THESE PLANS IS REQUIRED TO BE COMPLETED PER THE CONTRACT BID DOCUMENTS. THE PAYMENT OF WHICH IS INCLUDED IN THE LIST OF PAY ITEMS. ALL WORK IS INCLUDED IN THESE PAY ITEMS, EITHER EXPLICITLY OR IMPLICITLY, AND THE CONTRACTOR MUST INCLUDE ALL WORK REQUIRED FOR EACH ITEM IN THEIR BID. NO CLAIMS WILL BE ENTERTAINED FOR WORK SHOWN BUT NOT EXPLICITLY STATED IN A PAY ITEM DESCRIPTION IN THE SPECIFICATIONS OR PLANS. ANY NOTES OR TABLES THROUGHOUT THESE PLANS WHICH PROVIDE ADDITIONAL INFORMATION REGARDING WHERE PAYMENT IS TO BE MADE FOR CERTAIN ITEMS IS INCLUDED AS A GUIDE TO THE CONTRACTOR ONLY AND DOES NOT SUPERSEDE THIS NOTE.

MISCELLANEOUS (CONT):

- (AG) MASS CONCRETE REQUIREMENTS SHALL APPLY TO ALL COMPONENTS AS DEFINED BY THE STANDARD SPECIFICATIONS INCLUDING NEW FOOTINGS, ABUTMENTS, AND SUBSTRUCTURE ELEMENTS. SUBMIT MASS CONCRETE POUR PLAN FOR APPROVAL. BASED ON THE CONTRACTORS' SCHEDULE, ALSO SUBMIT A COLD WEATHER AND/OR HOT WEATHER CONCRETE PLAN AS APPROPRIATE.
- (AH) EXAMPLE, VERIFY, AND DETERMINE ALL CONDITIONS, DIMENSIONS, ELEVATIONS AND GEOMETRY OF THE INFORMATION SHOWN ON THE PLANS PRIOR TO DEVELOPMENT OF WORKING DRAWINGS AND BEGINNING WORK. IF FIELD CONDITIONS AND DIMENSIONS DIFFER FROM THOSE SHOWN ON THE PLANS, IMMEDIATELY NOTIFY THE ENGINEER AND INCORPORATE THE FIELD CONDITIONS AND DIMENSIONS INTO THE PREPARATION OF WORKING DRAWINGS AS APPLICABLE.

ADDITIONAL FENDER DESIGN NOTES:

- (A) THE PERFORMANCE OF THE FENDER IS TO BE EXPRESSED BY THE VALUE OF ENERGY ABSORBED DURING COMPRESSION OF THE FENDER UP TO THE DESIGNED DEFLECTION AND THE MAXIMUM VALUE OF THE REACTION LOAD GENERATED. THE PERFORMANCE OF THE FENDER SHALL CONFORM TO THE SPECIAL PROVISIONS. THE FENDERS SHALL ACHIEVE A PERFORMANCE OF THE STATED NOMINAL DESIGN PERFORMANCE. SHOULD THE CONTRACTOR PROPOSE ANY ELEMENTS WITH MATERIAL PROPERTIES BEYOND THE TOLERANCE LIMITS DEFINED IN THE SPECIAL PROVISIONS, AN INDEPENDENT DESIGN OF THE ENTIRE FENDER SYSTEM SHALL ACCOMPANY THE REQUESTED ELEMENTS AND SHALL MEET THE FOLLOWING MINIMUM PERFORMANCE REQUIREMENTS AT THE LEVEL OF THE TOP WALE:

- | | |
|-------------------------------------|-----------|
| i. ZONE 1 (TANGENT FENDER SEGMENTS) | |
| - MINIMUM ENERGY CAPACITY | = XX K-FT |
| - MAXIMUM DEFLECTION | = XX FT |
| - MINIMUM TIP ELEVATION | = XXXX FT |
| ii. ZONE 2 (FLARED FENDER SEGMENTS) | |
| - MINIMUM ENERGY CAPACITY | = XX K-FT |
| - MAXIMUM DEFLECTION | = XX FT |
| - MINIMUM TIP ELEVATION | = XXXX FT |
| iii. ZONE 3 (DOLPHIN) | |
| - MINIMUM ENERGY CAPACITY | = XX K-FT |
| - MAXIMUM DEFLECTION | = XX FT |
| - MINIMUM TIP ELEVATION | = XXXX FT |
- (B) FIBER REINFORCED POLYMER PIPE PILE (FRPP) - 24" DIAMETER.
- | | |
|-------------------------|-------------------------|
| MODULUS OF ELASTICITY | = 5,700 KSI |
| STIFFNESS (EI) | = 2.11 E+10 LB.-SQ. IN. |
| YIELD STRESS IN BENDING | = 58.1 KSI |
- (C) FIBER REINFORCED POLYMER COMPOSITE PILE - 13" DIAMETER.
- | | |
|-------------------------|-------------------------|
| MODULUS OF ELASTICITY | = 1,023 KSI |
| STIFFNESS (EI) | = 1.43 E+09 LB.-SQ. IN. |
| YIELD STRESS IN BENDING | = 14.9 KSI |
- (D) FIBER REINFORCED POLYMER PIPE PILE (FRPP) - 36" DIAMETER.
- | | |
|-------------------------|-------------------------|
| MODULUS OF ELASTICITY | = 5,700 KSI |
| STIFFNESS (EI) | = 1.38 E+10 LB.-SQ. IN. |
| YIELD STRESS IN BENDING | = 58.1 KSI |
- (E) FIBER REINFORCED PLASTIC LUMBER (FRPL) - 12" x 12".
- | | |
|-------------------------|-------------------------|
| MODULUS OF ELASTICITY | = 540 KSI |
| STIFFNESS (EI) | = 8.50 E+08 LB.-SQ. IN. |
| YIELD STRESS IN BENDING | = 9.1 KSI |
- (F) FIBER REINFORCED STRUCTURAL LUMBER (FRSL) - 3" x 10".
- | | |
|---|------------|
| MODULUS OF ELASTICITY | = 306 KSI |
| FLEXURAL STRENGTH | = 2.75 KSI |
| COMPRESSIVE STRENGTH (PARALLEL TO GRAIN) | = 2.84 KSI |
| COMPRESSIVE STRENGTH (PERPENDICULAR TO GRAIN) | = 1.48 KSI |
- (G) HARDWARE:
- NUTS, BOLTS, WASHERS, THREADED RODS, AND SCREWS SHALL BE 316L STAINLESS STEEL. BOLTS SHALL CONFORM ASTM A320 GRADE B8M, CLASS 1. NUTS SHALL CONFORM TO ASTM A194 GRADE B8M.
- (H) ACCESS LADDER:
- THE LADDER AND ASSOCIATED MOUNTING BRACKETS SHALL BE MADE FROM ALUMINUM CONFORMING TO ASTM B221, 6061-T6 ALLOY. THE COST OF THE LADDER AND ASSOCIATED MOUNTING BRACKETS SHALL BE INCLUDED IN THE PAY ITEM "ACCESS LADDERS".
- (I) THE COST OF FIBERGLASS REINFORCED WALES INCLUDING COMPOSITE LUMBER SPACER BLOCKS, FRPL WALKWAY DECK SUPPORT, SPLICING AND STAINLESS STEEL CONNECTION HARDWARE SHALL BE INCLUDED IN PAY ITEM "POLYMER STRUCTURAL WALE".
- (J) THE COST OF MAINTENANCE WALKWAY INCLUDES COMPOSITE LUMBER RAILING, COMPOSITE LUMBER POST, COMPOSITE LUMBER PLANKS, PIER MOUNTED ALUMINUM HANDRAIL AND ALL CONNECTING HARDWARE SHALL BE INCLUDED IN PAY ITEM "POLYMER STRUCTURAL MAINTENANCE WALKWAY."

PREPARED BY: WSP USA INC.
2020 LUNCH DRIVE, LAWRENCEVILLE, NJ, 08044

MARC S. ESPOSITO

N.J. PE LICENSE NUMBER:
2460445000

DATE

WSP



CAPE MAY COUNTY

***** ZACK S *****

Designed by Drawn by Checked by

JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR, BORDENHUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

DRAWING TITLE:
GENERAL NOTES - 2

DATE: 4/5/2024

SCALE:
AS SHOWN

SHEET REFERENCE NO.:
d

SHEET NO.:
044 of 202

The diagram illustrates the correct use of section designations and drawing numbers for a sectioned part. It shows a vertical section line on the left, with the word "SECTION" written to its left. A circular part is shown in section, with the section designation "A" and the drawing number "B1" inside. A north arrow is shown at the top left. Labels with leader lines point to the section designation and drawing number, stating: "SECTION DESIGNATION (LETTER)", "DRAWING NUMBER ON WHICH THE SECTION APPEARS", "SECTION DESIGNATION (LETTER)", and "DRAWING NUMBER ON WHICH THE SECTION IS CALLED OUT". Below this, a similar diagram shows a sectioned part with the section designation "A" and the drawing number "1". Labels with leader lines point to the section designation and drawing number, stating: "SECTION DESIGNATION (LETTER)", "SECTION ON THE SAME SHEET", "DETAIL DESIGNATION (LETTER)", and "DRAWING NUMBER ON WHICH THE DETAIL APPEARS". At the bottom, a similar diagram shows a sectioned part with the section designation "1" and the drawing number "B1". Labels with leader lines point to the section designation and drawing number, stating: "DETAIL DESIGNATION (LETTER)", "DRAWING NUMBER ON WHICH THE DETAIL IS CALLED OUT", "DETAIL DESIGNATION (LETTER)", and "DETAIL ON THE SAME SHEET".

BAR SIZE
STRUCTURE UNIT
BAR NUMBER

16 BM 22

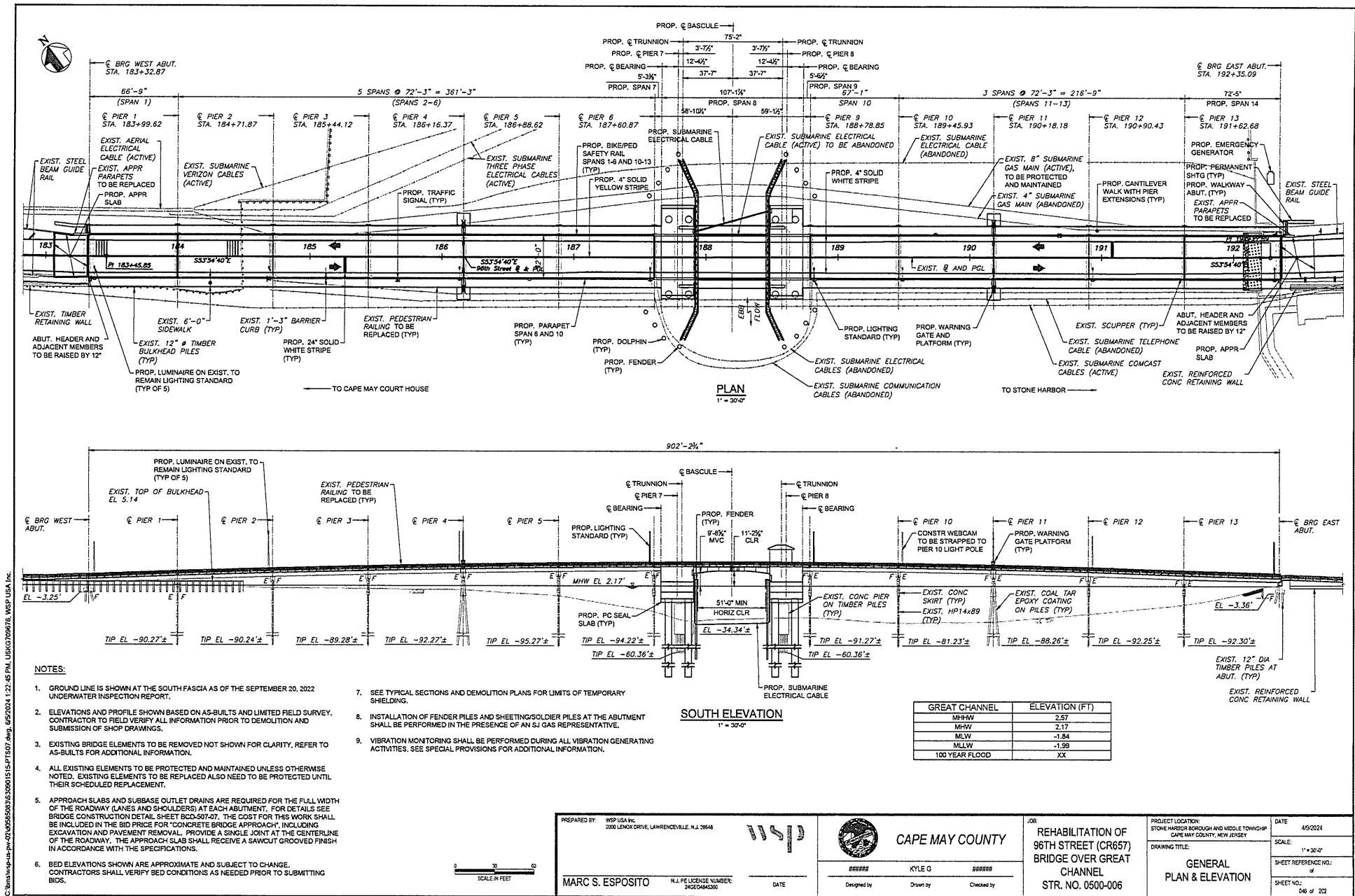
BM - BEAM
A - ABUTMENT
W - SHEETING ABUTMENT WALL/ WINGWALL

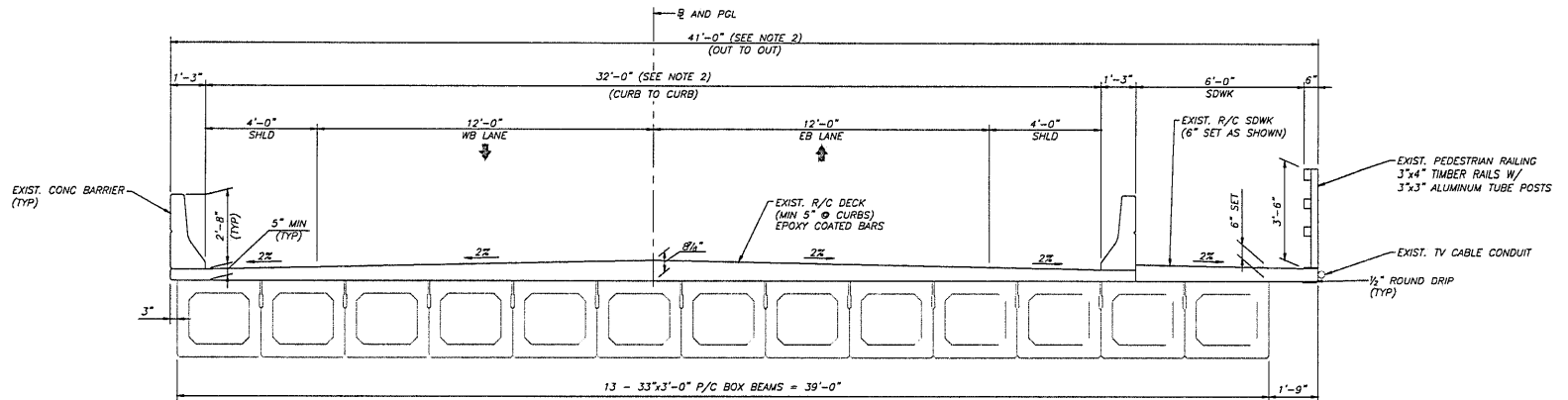
SHEET NUMBER	DRAWING TITLE
1	KEY SHEET
2	ESTIMATE - DISTRIBUTION OF QUANTITIES
3	ABBREVIATIONS
4	GENERAL NOTES - 1
5	GENERAL NOTES - 2
6	INDEX OF DRAWINGS & LEGEND
7	GENERAL PLAN & ELEVATION
8	TYPICAL SECTIONS - 1
9	TYPICAL SECTIONS - 2
10	DEMOLITION PLAN & ELEVATION
11	BASULCE PIER DEMOLITION DETAILS
12	WEST ABUTMENT REPAIR PLAN, ELEVATION, & SECTION
13	EAST ABUTMENT REPAIR PLAN, ELEVATION, & SECTION
14	WINGWALL REPAIR DETAILS
15	SPAN 1 CONCEPTUAL JACKING PLAN & DETAILS
16	SUBSTRUCTURE REPAIR DETAILS - 1
17	SUBSTRUCTURE REPAIR DETAILS - 2
18	SCOUR COUNTERMEASURES PLAN
19	EAST ABUTMENT SCOUR COUNTERMEASURES
20	CONCRETE ARMOR UNITS DETAILS
21	SPAN 14 FRAMING PLAN & DETAILS
22	SPAN 14 BEAM DETAILS - 1
23	SPAN 14 DECK PLAN & DETAILS
24	FLANKING SPAN FRAMING PLAN & DETAILS
25	APPROACH SPAN BEARING DETAILS
26	DECK JOINT REPAIR DETAILS
27	APPROACH SPAN FRAMING AND RAILING PLAN - 1
28	APPROACH SPAN FRAMING AND RAILING PLAN - 2
29	CANTILEVER WALKWAY EAST ABUTMENT PLAN & DETAILS
30	CANTILEVER WALKWAY WEST ABUTMENT PLAN & DETAILS
31	CANTILEVER WALKWAY & WARNING GATE SECTION AT PIER
32	CANTILEVER WALKWAY SECTION AT PIER
33	CANTILEVER WALKWAY STEEL DETAILS - 1
34	CANTILEVER WALKWAY STEEL DETAILS - 2
35	CANTILEVER WALKWAY STEEL DETAILS - 3
36	WARNING GATE PLATFORM DETAILS
37	APPROACH SPAN HANDRAIL AND GRATING DETAILS
38	BASULCE AND FLANKING SPAN, GENERAL PLAN & ELEVATION
39	BASULCE PIER CLEARANCE DIAGRAM
40	BASULCE PIER GENERAL PLAN
41	BASULCE PIER FOOTING PLAN
42	BASULCE PIER SEAL SLAB PLAN
43	DRILLED SHAFT DETAILS
44	BASULCE PIER ELEVATION
45	BASULCE PIER TRANSVERSE SECTION
46	FBS ELEVATION & DETAILS
47	BASULCE PIER LONGITUDINAL SECTION - 1
48	BASULCE PIER LONGITUDINAL SECTION - 2
49	BASULCE PIER LONGITUDINAL SECTION - 3
50	BASULCE SPAN ASSEMBLY NOTES
51	BASULCE SPAN FRAMING PLAN
52	BASULCE SPAN EAST LEAF LONGITUDINAL SECTION
53	BASULCE SPAN TRANSVERSE SECTIONS - 1
54	BASULCE SPAN TRANSVERSE SECTIONS - 2
55	BASULCE SPAN EAST LEAF GIRDER ELEVATION
56	BASULCE SPAN GIRDER SECTIONS & DETAILS
57	BASULCE SPAN COUNTERWEIGHT PLAN
58	BASULCE SPAN COUNTERWEIGHT SECTIONS - 1
59	BASULCE SPAN COUNTERWEIGHT SECTIONS - 2
60	BASULCE SPAN LIVE LOAD SHOE DETAILS
61	BASULCE SPAN FLOORBEAM DETAILS - 1
62	BASULCE SPAN FLOORBEAM DETAILS - 2
63	BASULCE SPAN LATERAL BRACING DETAILS
64	BASULCE SPAN SIDEWALL DETAILS
65	BASULCE SPAN RACK ASSEMBLY AND DETAILS
66	BASULCE SPAN DECK PLAN
67	EXODERMC DECK PANEL PLAN - 1
68	BASULCE SPAN DECK PANEL PLAN - 1
69	BASULCE SPAN DECK PANEL PLAN - 2

[illegible][illegible]

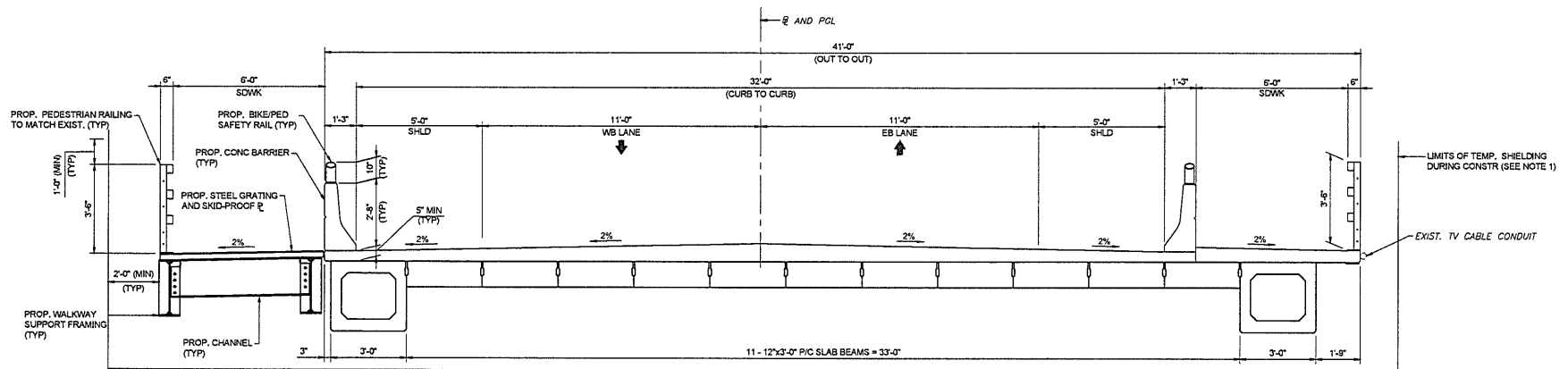
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DATE: 4/9/2024
SCALE: AS SHOWN
SHEET REFERENCE NO.:
of
SHEET NO.:
045 of 202





TYPICAL SECTION - EXISTING APPROACH SPAN
(SPANS 1-5 & 11-14) (LOOKING EAST)
1/2" = 1'-0"



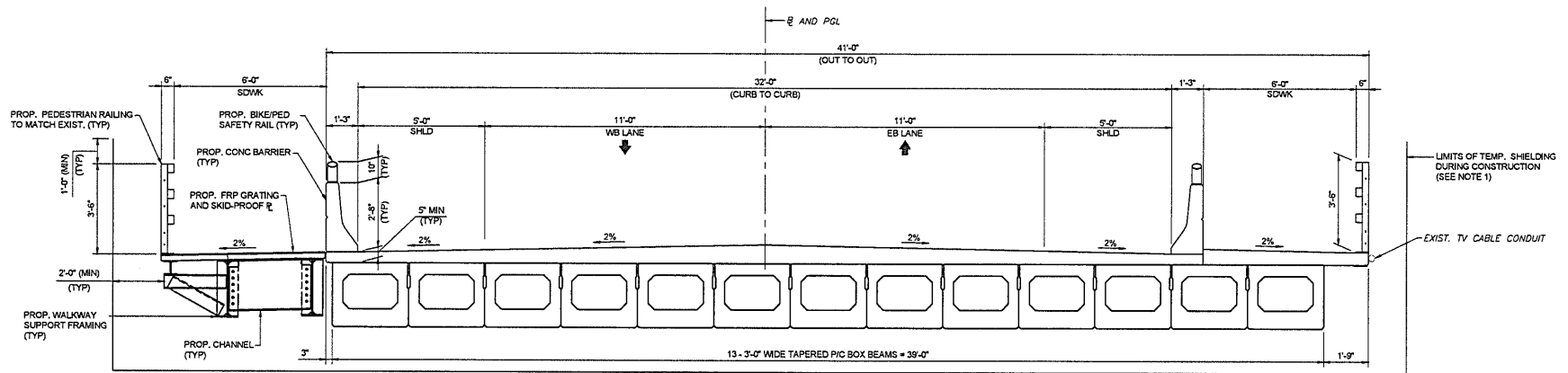
TYPICAL SECTION - PROPOSED FLANKING SPAN
(SPANS 7 & 9) (LOOKING EAST)
1/2" = 1'-0"

NOTES:

1. LIMITS OF TEMPORARY SHIELDING SHOWN ARE MINIMUM LIMITS FOR PROPOSED WORK. THE CONTRACTOR MAY INSTALL SHIELDING TO THE REDUCED LIMITS SHOWN FOR DEMOLITION PRIOR TO CONSTRUCTION ACTIVITIES AT NO ADDITIONAL COST.
2. EXISTING TYPICAL SPAN IS SHOWN. THE CONTRACTOR IS ALERTED THAT THE CURB-TO-CURB AND OUT-TO-OUT WIDTHS ARE REDUCED IN SPANS 6 THROUGH 10. REFER TO AS-BUILTS FOR ADDITIONAL DETAILS.



PREPARED BY: WSP USA INC. 2006 LENOX DRIVE, LAWRENCEVILLE, N.J. 08648 MARC S. ESPOSITO N.J. PE LICENSE NUMBER: 24C04843000	 DATE:	 CAPE MAY COUNTY DESIGNED BY: KYLE G. DRAWN BY: KYLE G. CHECKED BY:	JOB: REHABILITATION OF 96TH STREET (CR657) BRIDGE OVER GREAT CHANNEL STR. NO. 0500-006	PROJECT LOCATION: STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP CAPE MAY COUNTY, NEW JERSEY DRAWING TITLE: TYPICAL SECTIONS - 1	DATE: 4/5/2024 SCALE: 1/2" = 1'-0" SHEET REFERENCE NO.: SHEET NO.: 247 OF 222
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TYPICAL SECTION - PROPOSED SPAN 14
(LOOKING EAST)
1/2" = 1'-0"

NOTES:

1. LIMITS OF TEMPORARY SHIELDING SHOWN ARE MINIMUM LIMITS FOR PROPOSED WORK. THE CONTRACTOR MAY INSTALL SHIELDING TO THE REDUCED LIMITS SHOWN FOR DEMOLITION PRIOR TO CONSTRUCTION ACTIVITIES AT NO ADDITIONAL COST.
2. PROPOSED RAILING AND NEW SIDEWALK WORK SHOWN FOR SPAN 14 IS SIMILAR FOR THE REMAINING APPROACH SPANS. FOR A SECTION OF THE TYPICAL APPROACH SPANS, SEE SH BXX.

SCALE IN FEET
0 2 4

PREPARED BY: WSP USA Inc.
2006 LENOX DRIVE, LAWRENCEVILLE, NJ, 08845



CAPE MAY COUNTY

MARC S. ESPOSITO

N.J. PE LICENSE NUMBER:
24620483300

DATE

Designed by

KYLE G

Drawn by

Checked by

JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

DRAWING TITLE:

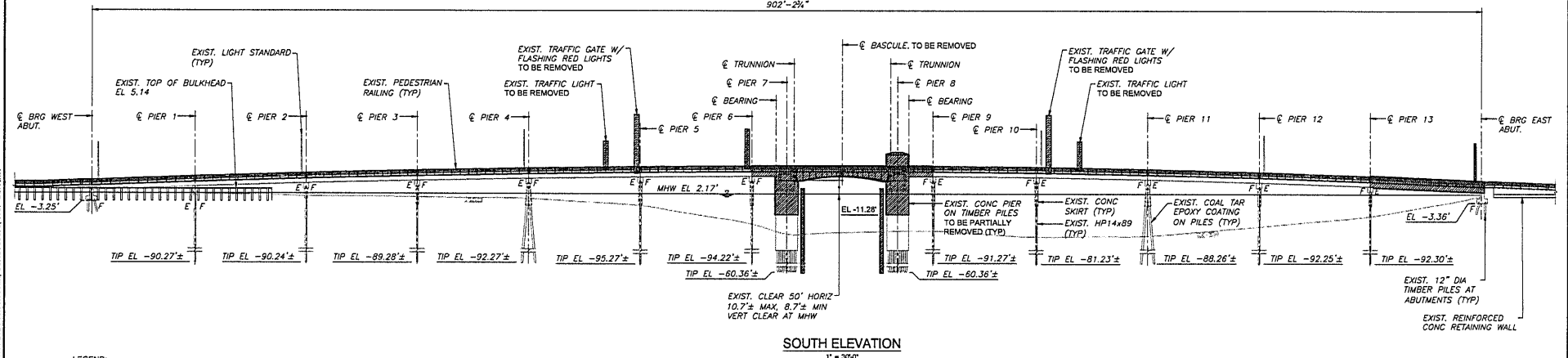
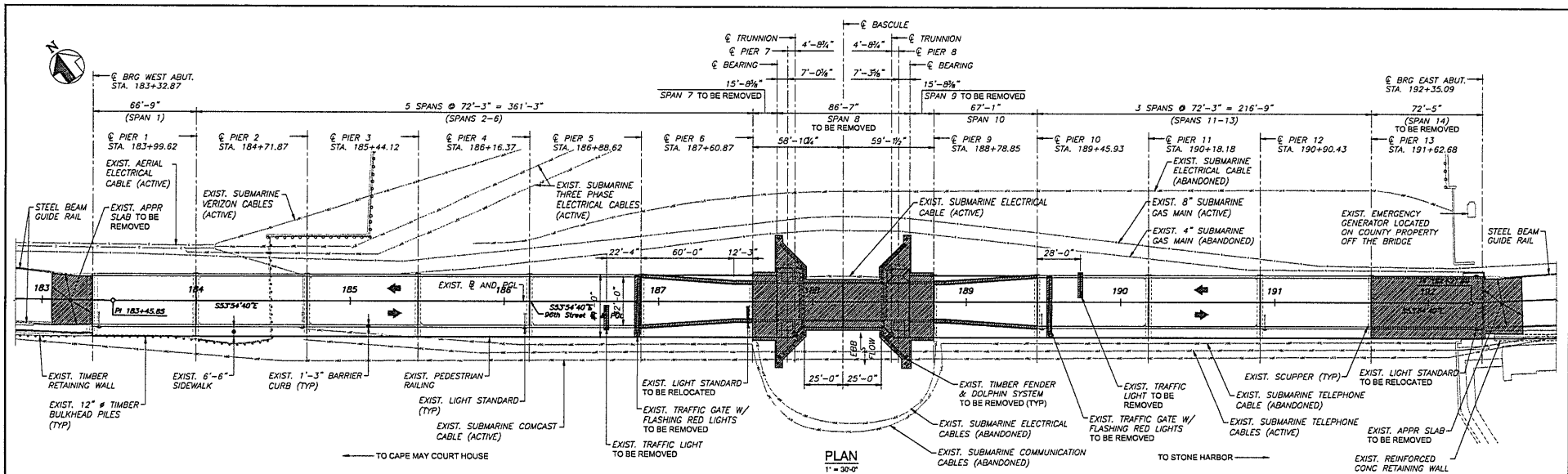
TYPICAL SECTIONS - 2

DATE: 4/5/2024

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

SHEET REFERENCE NO.: 18

SHEET NO.: 248 of 252



LEGEND:

TO BE REMOVED

NOTES:

- DIVERS WILL BE REQUIRED FOR PIER REMOVAL AND FENDER REMOVAL ACTIVITIES AT A MINIMUM.
- EXISTING GATES AND TRAFFIC LIGHTS SHALL BE MAINTAINED AND DELIVERED TO THE COUNTY'S STORAGE YARD AS DIRECTED BY THE RE.
- GROUND LINE IS SHOWN AT THE SOUTH FASCIA AS OF THE SEPTEMBER 20, 2022 UNDERWATER INSPECTION REPORT.

0 30 60
SCALE IN FEET

PREPARED BY: WSP USA INC.
2008 LENOX DRIVE, LAWRENCEVILLE, N.J. 08648



CAPE MAY COUNTY

MARC S. ESPOSITO

N.J. PE LICENSE NUMBER:
2460484330

DATE

Designed by

Drawn by

Checked by

JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

DRAWING TITLE:

DEMOLITION
PLAN & ELEVATION

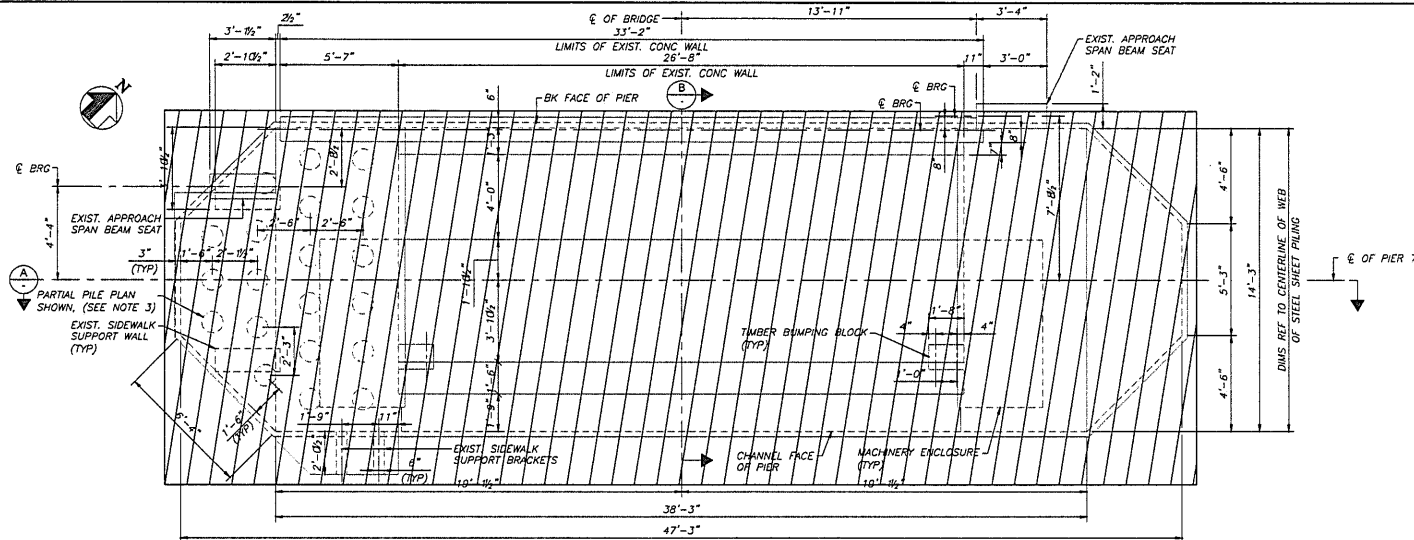
DATE: 4/5/2024

SCALE: 1" = 30'-0"

SHEET REFERENCE NO.: 4

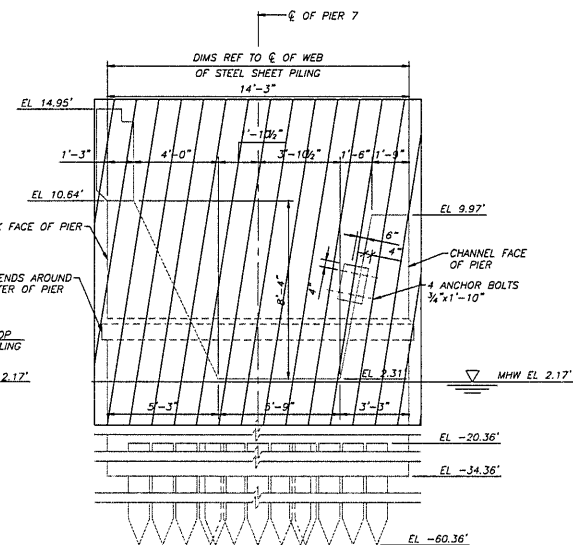
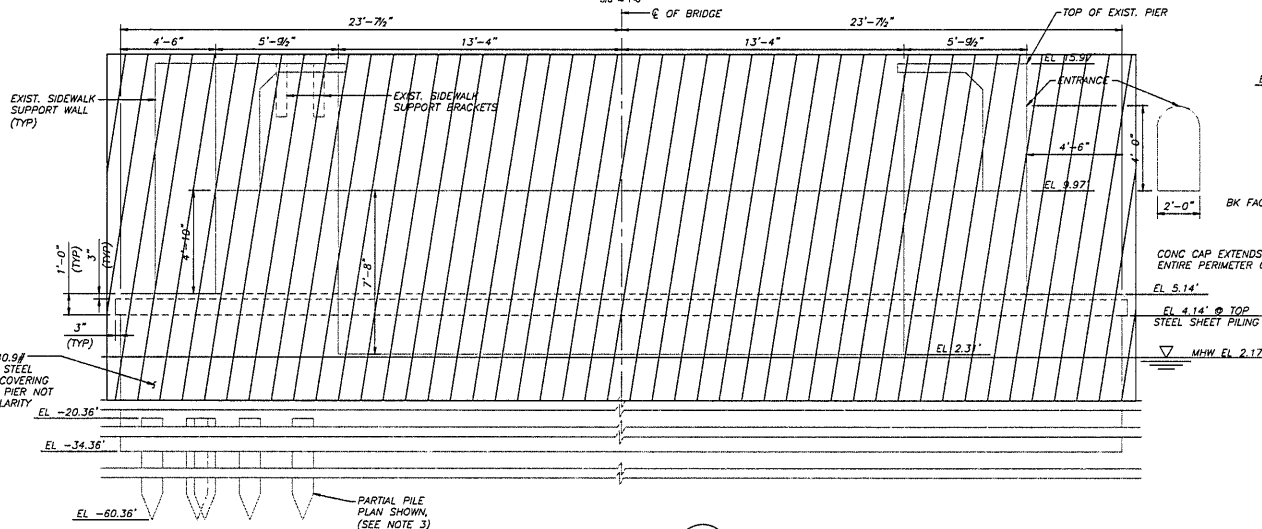
SHEET NO.: 548 of 202

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- NOTES:
1. CONCRETE PIER EXTENDS TO ELEVATION -34.36 INCLUDING 8" THICK SEAL WHICH EXTENDS FROM ELEVATION -34.36 UPWARD TO ELEVATION -26.36.
 2. OVERALL LIMITS OF ELEMENTS TO BE REMOVED ARE SHOWN. REINFORCEMENT, TIE RODS, SHEET PILING AND MISCELLANEOUS DETAILS ARE NOT SHOWN FOR CLARITY. SEE AS-BUILTS FOR ADDITIONAL DETAIL.
 3. EXISTING PILE PLAN FOLLOWS THE GRID AS SHOWN FOR FULL LIMITS OF PIER AND SYMMETRICAL ABOUT CENTERLINE OF PIER. DETAILS NOT SHOWN FOR CLARITY. SEE AS-BUILTS FOR ADDITIONAL DETAIL.

LEGEND:
 TO BE REMOVED



SECTION
(CONCRETE BASCULE PIER)
3/8" = 1'-0"

PREPARED BY: WSP USA INC.
2006 LENOX DRIVE, LAWRENCEVILLE, N.J. 08848



CAPE MAY COUNTY

MARC S. ESPOSITO

N.J. PE LICENSE NUMBER:
246204843300

DATE

Designed by

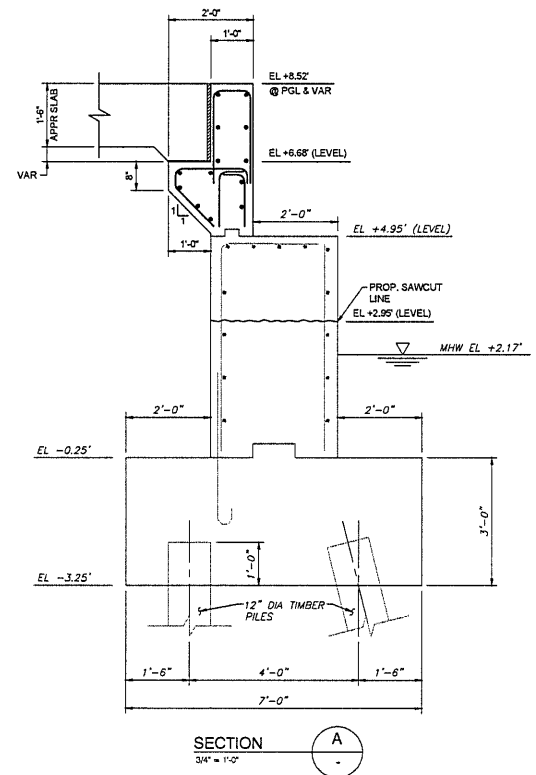
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JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

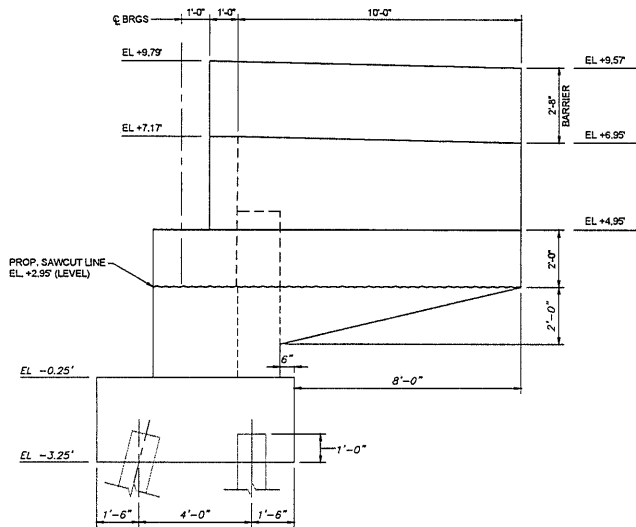
PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY
DRAWING TITLE:
BASCULE PIER
DEMOLITION DETAILS

DATE:
4/9/2024
SCALE:
3/8" = 1'-0"
SHEET REFERENCE NO.:
2
SHEET NO.:
050 of 202

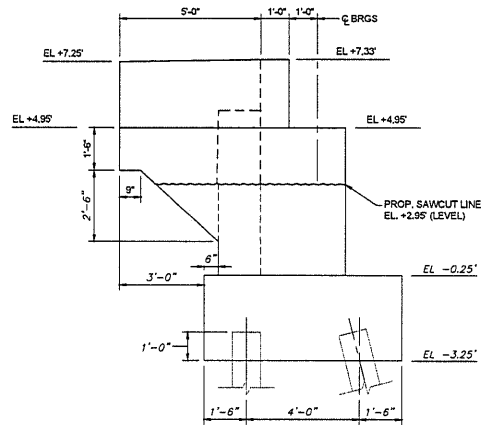


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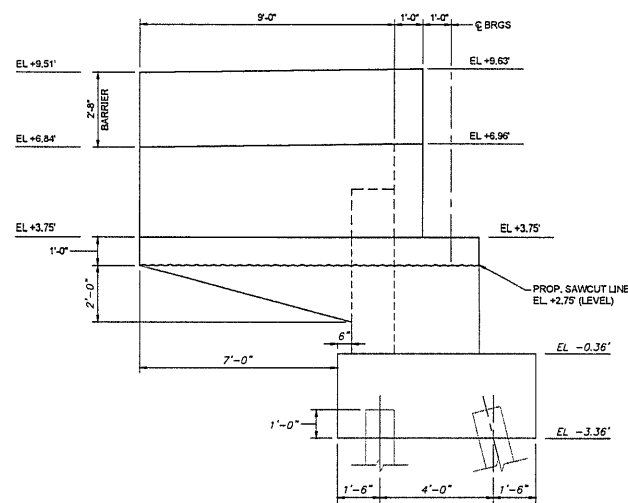
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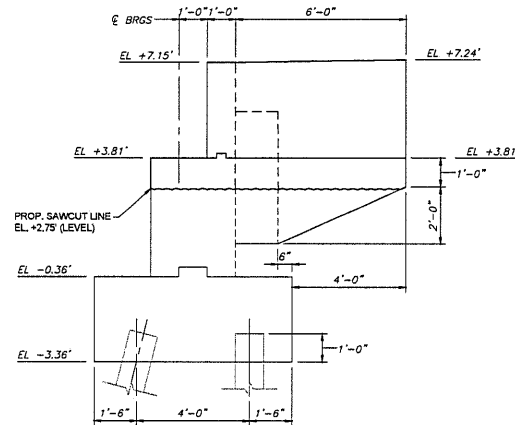
ELEVATION
(NORTHWEST WINGWALL)
1/2" = 1'-0"



ELEVATION
(SOUTHWEST WINGWALL)
1/2" = 1'-0"





ELEVATION
(NORTHEAST WINGWALL)
1/2" = 1'-0"

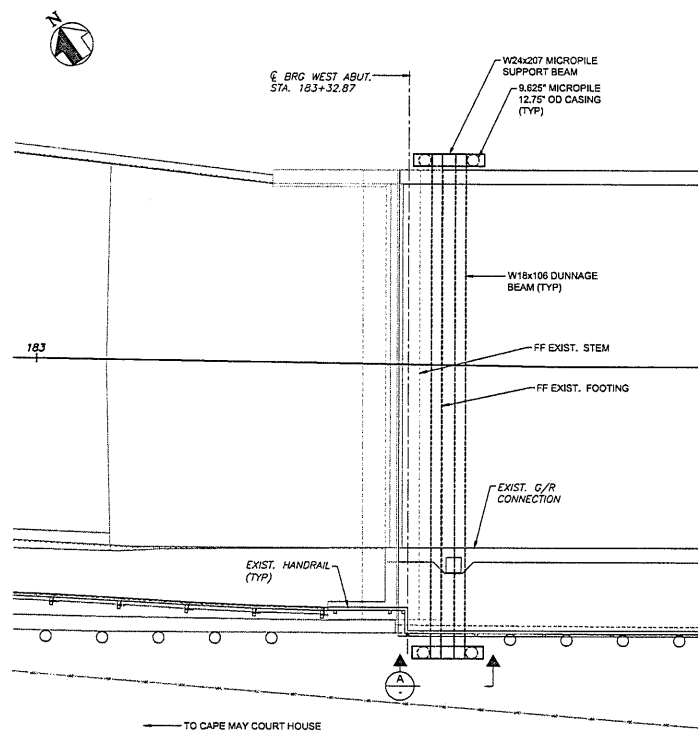


ELEVATION
(SOUTHEAST WINGWALL)
1/2" = 1'-0"

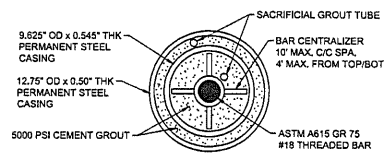


PREPARED BY: WSP USA INC. 2008 LEXINGTON DRIVE, LAWRENCEVILLE, N.J. 08648 MARC S. ESPOSITO N.J. PE LICENSE NUMBER: 24GED443300	DATE:	  CAPE MAY COUNTY DESIGNED BY: KYLE G.	JOB: REHABILITATION OF 96TH STREET (CR657) BRIDGE OVER GREAT CHANNEL STR. NO. 0500-006	PROJECT LOCATION: STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP CAPE MAY COUNTY, NEW JERSEY DRAWING TITLE: WINGWALL REPAIR DETAILS	DATE: 4/9/2024 SCALE: 1/2" = 1'-0" SHEET REFERENCE NO.: 2 SHEET NO.: 033 of 222
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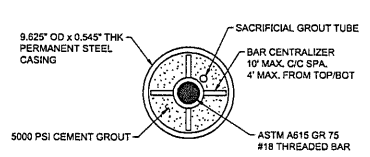
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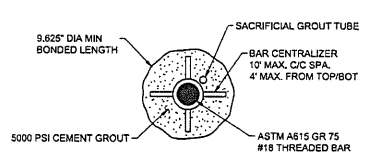
PLAN
(WEST ABUTMENT)
1" = 5'-0"



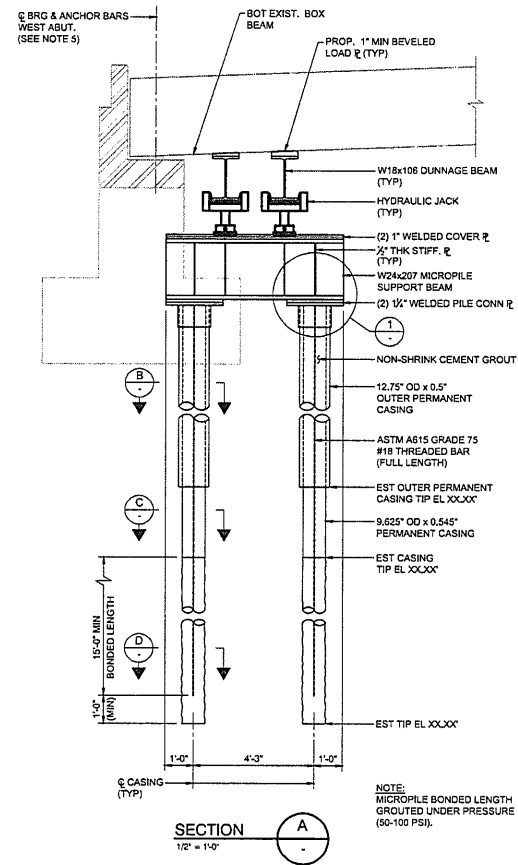
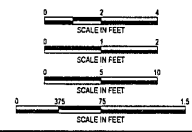
SECTION B
2" = 1'-0"



SECTION C
2" = 1'-0"



SECTION D
2" = 1'-0"

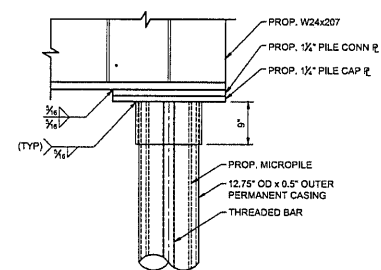


SECTION A
1/2" = 1'-0"

NOTE:
MICROPILE BONDED LENGTH
GROUTED UNDER PRESSURE
(50-100 PSI).

LEGEND:
SUBSTRUCTURE DEMOLITION
AND RECONSTRUCTION

- NOTES:**
1. THE JACKING PLAN SHOWN ON THIS DRAWING IS CONCEPTUAL IN NATURE. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE COMPLETE DESIGN AND DETAILING OF THE SPAN 1 JACKING AND FOR MAINTAINING THE INTEGRITY OF COMPONENTS TO REMAIN. THE CONTRACTOR SHALL EMPLOY A LICENSED PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF NEW JERSEY TO DESIGN AND DETAIL THE SPAN JACKING. THE CONTRACTOR MUST SUBMIT THE JACKING CALCULATIONS AND SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL.
 2. ALL COSTS FOR THE JACKING PLAN PERFORMED, INCLUDING THE DESIGN AND DETAILING, INCLUDING THE COST FOR TEMPORARY SUPPORTS AND FOUNDATION ELEMENTS SUCH AS MICROPILES, SHALL BE PAID FOR UNDER "ORDER JACKING".
 3. AN ALTERNATE METHOD OF SPAN JACKING MEETING ALL THESE REQUIREMENTS MAY BE PROPOSED BY THE CONTRACTOR FOR REVIEW AND APPROVAL BY THE RE.
 4. FOR WEST ABUTMENT REPAIR PLAN, ELEVATION AND SECTION, SEE SHEET B03.
 5. CONTRACTOR MUST REMOVE CONNECTION BETWEEN ANCHOR BARS AND ABUTMENT PRIOR TO JACKING PROCEDURE.
- SUGGESTED SEQUENCE OF CONSTRUCTION:**
1. INSTALL MICROPILES.
 2. PERFORM LOCAL EXCAVATION AS NEEDED FOR SUPPORT ELEMENTS.
 3. ATTACH SUPPORT BEAMS TO THE TOP OF THE PILES AS PERMITTED BY TIDAL CONDITIONS.
 4. DISCONNECT ANY EXISTING GUIDERAIL OR HANDRAIL ELEMENTS THAT WOULD INHIBIT OR BECOME DAMAGED FROM JACKING OPERATIONS.
 5. JACK THE SUPPORT BEAM TO THE BOTTOM OF THE SPAN 1 BOX BEAMS UNTIL SNUG TIGHT.
 6. DEMOLISH ABUTMENT UNTIL ANCHOR RODS THROUGH BEARING ARE DISCONNECTED FROM ABUTMENT.
 7. JACK THE SPAN A TOTAL OF 1'-0" OR UNTIL THE WEST ABUTMENT JOINT REACHES THE ELEVATION SHOWN ON THE ABUTMENT PLANS.
 8. FINISH DEMOLITION OF ABUTMENT AND REBUILD ACCORDING TO DETAILS SHOWN ON WEST ABUTMENT SHEET.
 9. INSTALL NEW BEARING PADS AT WEST ABUTMENT BRIDGE SEAT.
 10. ONCE THE REPAIR IS COMPLETED, REMOVE TEMPORARY SUPPORTS AND CUT OFF MICROPILES AT MIDLINE. RESTORE HANDRAIL AND GUIDERAIL CONNECTIONS. BACKFILL ANY EXCAVATION AND RESTORE ORIGINAL SITE CONDITIONS.



DETAIL 1
1" = 1'-0"

PREPARED BY: WSP USA, INC.
2009 LEXINGTON DRIVE, LAWRENCEVILLE, NJ 08648

MARC S. ESPOSITO N.J. PE LICENSE NUMBER: 24CE04842000

WSP

CAPE MAY COUNTY

KYLE G

Designed by Drawn by Checked by

PROJECT: REHABILITATION OF 96TH STREET (CR657) BRIDGE OVER GREAT CHANNEL STR. NO. 0500-006

PROJECT LOCATION: STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP, CAPE MAY COUNTY, NEW JERSEY

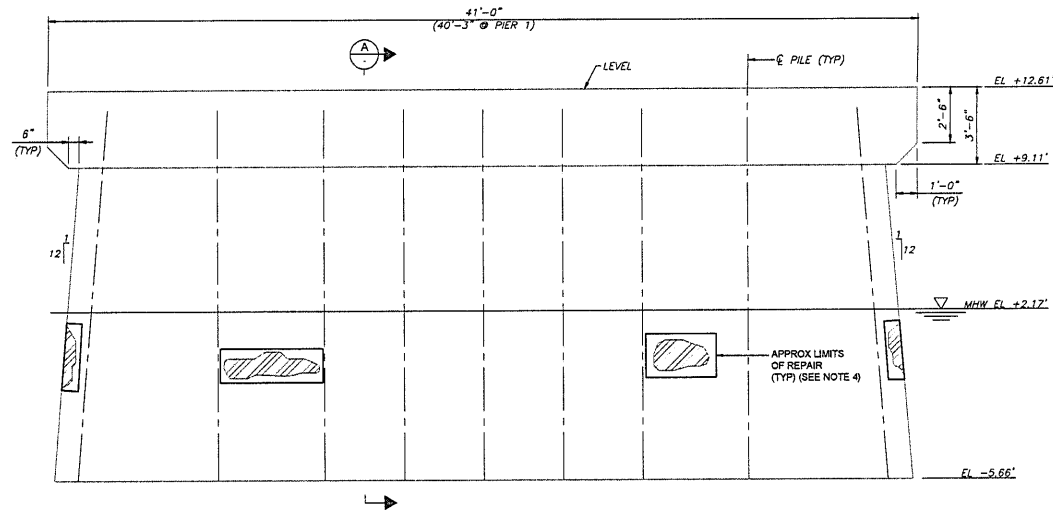
DRAWING TITLE: SPAN 1 CONCEPTUAL JACKING PLAN & DETAILS

DATE: 4/5/2024

SCALE: AS SHOWN

SHEET REFERENCE NO.: of

SHEET NO.: 091 of 202



LEGEND:

- INDICATES EXISTING SPALL TO BE REPAIRED.
- INDICATES EXISTING CRACK TO BE REPAIRED.

TYPICAL PIER ELEVATION
(PIER 5 SHOWN, PIERS 1-4 & 10-13 SIMILAR) (LOOKING EAST)
3/8" = 1'-0"

NOTES:

1. FOR ABUTMENT ELEVATION AND TYPICAL ELEMENTS, SEE SHEET BX.
2. DEFECTS SHOWN IN THE TYPICAL ELEVATION ARE INDICATIVE OF THE CONDITIONS ON THE WEST FACE OF PIER 5. SEE TABLE 1 FOR CONDITIONS AT REMAINING SUBSTRUCTURE ELEMENTS.
3. SUPERSTRUCTURE NOT SHOWN FOR CLARITY. CONTRACTOR MUST ACCOUNT FOR AVAILABLE HEADROOM BELOW BEAMS.
4. FOR REPAIR DETAILS, SEE SH BXX.

TABLE 1 - PIER CONCRETE REPAIRS				
UNIT	COMPONENT	FACE	DEFECT TYPE	NOTES
PIER 3	STEM	S. NOSE	SPALL	TIDAL ZONE
	STEM	N. NOSE	SPALL	TIDAL ZONE
PIER 4	STEM	N. NOSE	SPALL	TIDAL ZONE
	STEM	S. NOSE	SPALL	TIDAL ZONE
PIER 5	STEM	N. NOSE	SPALL	TIDAL ZONE
	STEM	WEST	SPALL	TIDAL ZONE, 1/2" POINT FROM N-S
	STEM	WEST	SPALL	TIDAL ZONE, 1/2" POINT FROM S-N
	STEM	S. NOSE	SPALL	TIDAL ZONE
PIER 6	STEM	N. NOSE	SPALL	TIDAL ZONE
	PIER CAP	WEST	CRACK	1/2" POINT FROM N-S
	STEM	WEST	CRACK	MAP AND VERTICAL CRACKING
PIER 9	STEM	S. NOSE	SPALL	NEAR PIER CAP
	STEM	N. NOSE	SPALL	MID-HEIGHT
	STEM	N. NOSE	SPALL	TIDAL ZONE
PIER 10	STEM	S. NOSE	SPALL	TIDAL ZONE
	STEM	N. NOSE	SPALL	TIDAL ZONE
	STEM	WEST	SPALL	TIDAL ZONE
	STEM	S. NOSE	SPALL	BOTTOM EDGE OF STEM
PIER 11	STEM	WEST	CRACK	VERTICAL WITH RUST
	STEM	N. NOSE	SPALL	TIDAL ZONE
	STEM	S. NOSE	SPALL	TIDAL ZONE
PIER 12	STEM	N. NOSE	SPALL	TIDAL ZONE
	STEM	N. NOSE	CRACK	FULL-HEIGHT
	STEM	WEST	SPALL	BOTTOM EDGE OF STEM
	STEM	EAST	SPALL	BOTTOM EDGE OF STEM
	STEM	S. NOSE	SPALL	TIDAL ZONE
PIER 13	STEM	N. NOSE	SPALL	TIDAL ZONE
	STEM	WEST	SPALL	TIDAL ZONE

SCALE IN FEET
0 3 6

PREPARED BY: WSP USA INC.
2000 LINCOLN DRIVE, LAWRENCEVILLE, N.J. 08648

MARC S. ESPOSITO

N.J. PE LICENSE NUMBER:
24GED445006

DATE



CAPE MAY COUNTY

DESIGNED BY
KYLE G

DRAWN BY
KYLE G

CHECKED BY
KYLE G

JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

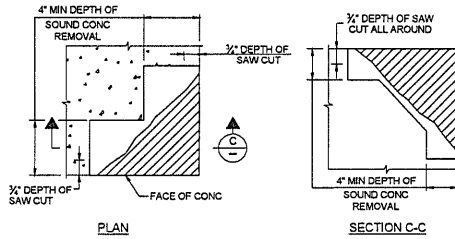
PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

DRAWING TITLE:
SUBSTRUCTURE
REPAIR DETAILS - 1

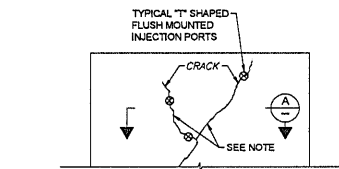
DATE: 4/9/2024

SCALE:
3/8" = 1'-0"

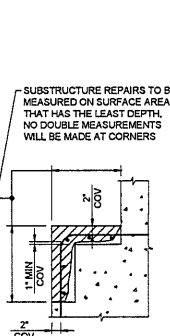
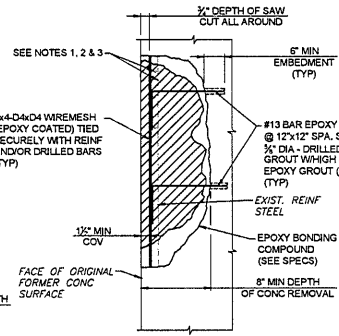
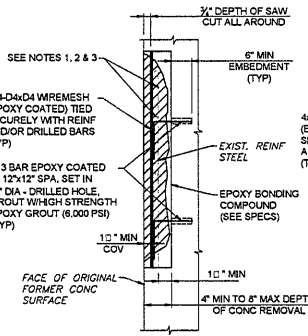
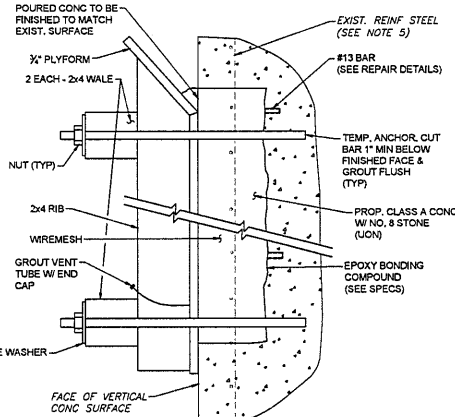
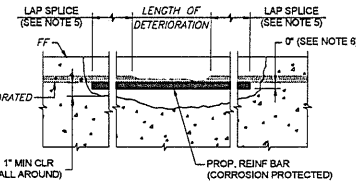
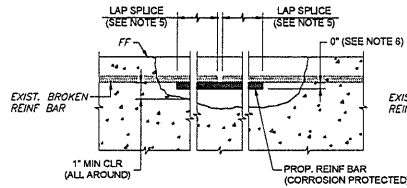
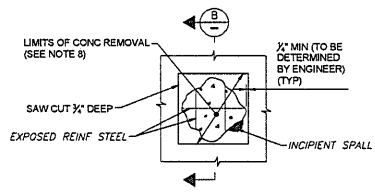
SHEET REFERENCE NO.:
of
SHEET NO.: 055 of 202



SPALL REPAIR AT CORNERS



TYPICAL WALL FACE OR PIER FACE



- NOTES:**
- ALL DETEIORATED AND DELAMINATED CONCRETE SHALL BE REMOVED TO THE REPAIR DEPTH AS SHOWN. REMOVAL SHALL EXTEND INTO SOUND CONCRETE FOR A DEPTH OF NOT LESS THAN 3/4" AND NOT MORE THAN 1". THE EDGES OF THE AREA TO BE REPAIRED SHOULD BE SAW-CUT BACK SHARP, PERPENDICULAR TO THE FACE OF THE CONCRETE TO AT LEAST 3/4" DEEP, WHERE MORE THAN HALF THE DIAMETER OF THE STEEL IS EXPOSED. 1" MINIMUM OF CONCRETE REMOVAL AROUND THE BAR IS REQUIRED.
 - ALL DETEIORATED AND DELAMINATED CONCRETE SHALL BE REMOVED TO A MINIMUM DEPTH OF 1" BELOW OR BEHIND EXISTING REINFORCING STEEL TO REPAIR DEPTH AS SHOWN ON THE PLAN.
 - SEE SPECIFICATIONS FOR METHOD OF SURFACE PREPARATION AND CLEANING OF REINFORCEMENT.
 - TYPE AND LIMITS OF REPAIR ARE APPROXIMATE AND SHALL BE SUBJECT TO APPROVAL OF THE COUNTY.
 - CLEAN EXISTING REBAR TO REMAIN AND COAT WITH EPOXY COATING ON ALL EXISTING EXPOSED REINFORCEMENT STEEL. A NEW EPOXY COATED REINFORCEMENT BAR SHALL BE PLACED TO SUPPLEMENT AN EXISTING REINFORCEMENT BAR WHEN AN EXISTING BAR HAS A SECTION LOSS OF 25% OR MORE OF THE ORIGINAL CROSS SECTION, AS DETERMINED BY THE ENGINEER, OR THE EXISTING REINFORCEMENT BAR IS BROKEN. THE NEW BAR SHALL EXTEND 30 BAR DIAMETERS IN EACH DIRECTION FROM WHERE THE SECTION LOSS OR BREAK ENDS. MODIFY THE LIMITS OF THE REPAIR AREA TO MEET THE REINFORCEMENT SPLICE LAP REQUIREMENTS.
 - THE NEW REINFORCEMENT BAR SHALL BE PLACED AT THE SAME LEVEL ALONGSIDE THE EXISTING DETEIORATED OR BROKEN REINFORCEMENT BAR.
 - IF NO REINFORCEMENT IS FOUND IN THE CONCRETE REPAIR AREA, PROVIDE #16 @ 12" (EPOXY COATED) EACH WAY. THE COST OF ALL LABOR AND MATERIAL REQUIRED TO INSTALL SUPPLEMENTAL REINFORCEMENT, WIRE MESH AND #13 DOWELS SHALL NOT BE MEASURED SEPARATELY FOR PAYMENT, AND ALL COSTS SHALL BE INCLUDED IN THE PRICE BID FOR THE "SUBSTRUCTURE CONCRETE REPAIR" ITEM.
 - UPON APPROVAL OF THE ENGINEER, MODIFY THE LIMITS OF CONCRETE REMOVAL AS SHOWN IN THE "LIMITS OF REPAIR AREA (ELEVATION VIEW)" WHEN SUPPLEMENTARY REINFORCEMENT BARS ARE REQUIRED.
 - NO SEPARATE PAYMENT WILL BE MADE FOR EPOXY BONDING COMPOUND, DRILLING AND GROUTING FOR REBARS, REINFORCEMENT, WIRE MESH, CHAMFERS IN CONCRETE AND FORM WORK, BUT ALL ASSOCIATED COSTS SHALL BE INCLUDED IN THE UNIT COST OF THE "SUBSTRUCTURE CONCRETE REPAIR" TYPES.
 - CLEAN CONCRETE SURFACES TO BE REPAIRED AND APPLY APPROVED BONDING COMPOUND PER SPECIAL PROVISIONS.
 - CONSTRUCT FORMS AS REQUIRED FOR VARIOUS SPALL REPAIRS. THE CONTRACTOR IS RESPONSIBLE FOR DEVELOPMENT OF ALL DETAILS FOR ANY FORMWORK THAT HE USES. SCHEMATIC DETAILS ARE SHOWN FOR GUIDANCE ONLY.
 - APPLY CLASS "A" CONCRETE AS PER SPECIFICATIONS TO MATCH EXISTING CONCRETE SURFACES AND ARCHITECTURAL DETAILS. CLASS "A" CONCRETE SHALL INCLUDE CORROSION-INHIBITOR ADMIXTURE AND AIR ENTRAINMENT ADMIXTURE. QUICK SETTING PATCH MATERIAL SHALL BE PERMITTED WITH THE APPROVAL OF THE ENGINEER. REFER TO NJDOT SPECIFICATION FOR GUIDANCE AS TO THE SELECTION OF A QUICK SETTING PATCH MATERIAL PRODUCT.
 - REPAIR OF SPALLED TOP EDGE OF PIER CAP, ABUTMENT OR WALL SHALL BE SIMILAR TO TYPICAL CORNER SPALL REPAIR.
 - MEASUREMENT WILL BE MADE ON SQ FT OF SURFACE AREA OF CONCRETE REPAIRED FOR EITHER TYPE D OR TYPE E AS DETERMINED BY THE DEPTH OF REPAIR AND RE'S APPROVAL.
 - PROVIDE ADEQUATE SHIELDING TO PREVENT CONCRETE OR ANY DEBRIS FROM FALLING AS PER SPECIAL PROVISION SECTION 201.03.02.
 - THE TOP SURFACE OF THE REPAIRS AREA SHALL BE FLUSH WITH THE ADJACENT EXISTING SURFACE AREA.
 - CRACK REPAIR: FOR CRACKS LESS THAN 3/4", NO REPAIR IS REQUIRED. CRACKS BETWEEN 3/4" TO 3/4", CRACK SEALING MATERIAL SHALL BE PRESSURE INJECTED INTO THE CRACK. FOR ADDITIONAL INFORMATION SEE SECTION 552 OF SPECIFICATIONS. LIMITS OF CRACK REPAIR SHALL BE AS DIRECTED BY RESIDENT ENGINEER. FOR CRACK WIDTH MORE THAN 3/4", REPAIR SHALL BE AS PER CONCRETE SPALL REPAIR.

LEGEND:

AREA OF REMOVAL

INDICATES SOUND CONCRETE TO BE REMOVED.

PREPARED BY: WSP USA INC.
2000 LONG DRIVE, LAWRENCEVILLE, NJ, 08648

MARC S. ESPOSITO

N.J. PE LICENSE NUMBER: 3460484300

DATE:

WSP

CAPE MAY COUNTY

ZACK S

Designed by

Drawn by

Checked by

REHABILITATION OF 96TH STREET (CR657) BRIDGE OVER GREAT CHANNEL

STR. NO. 0500-006

SUBSTRUCTURE REPAIR DETAILS - 2

PROJECT LOCATION: STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP, CAPE MAY COUNTY, NEW JERSEY

DRAWING TITLE:

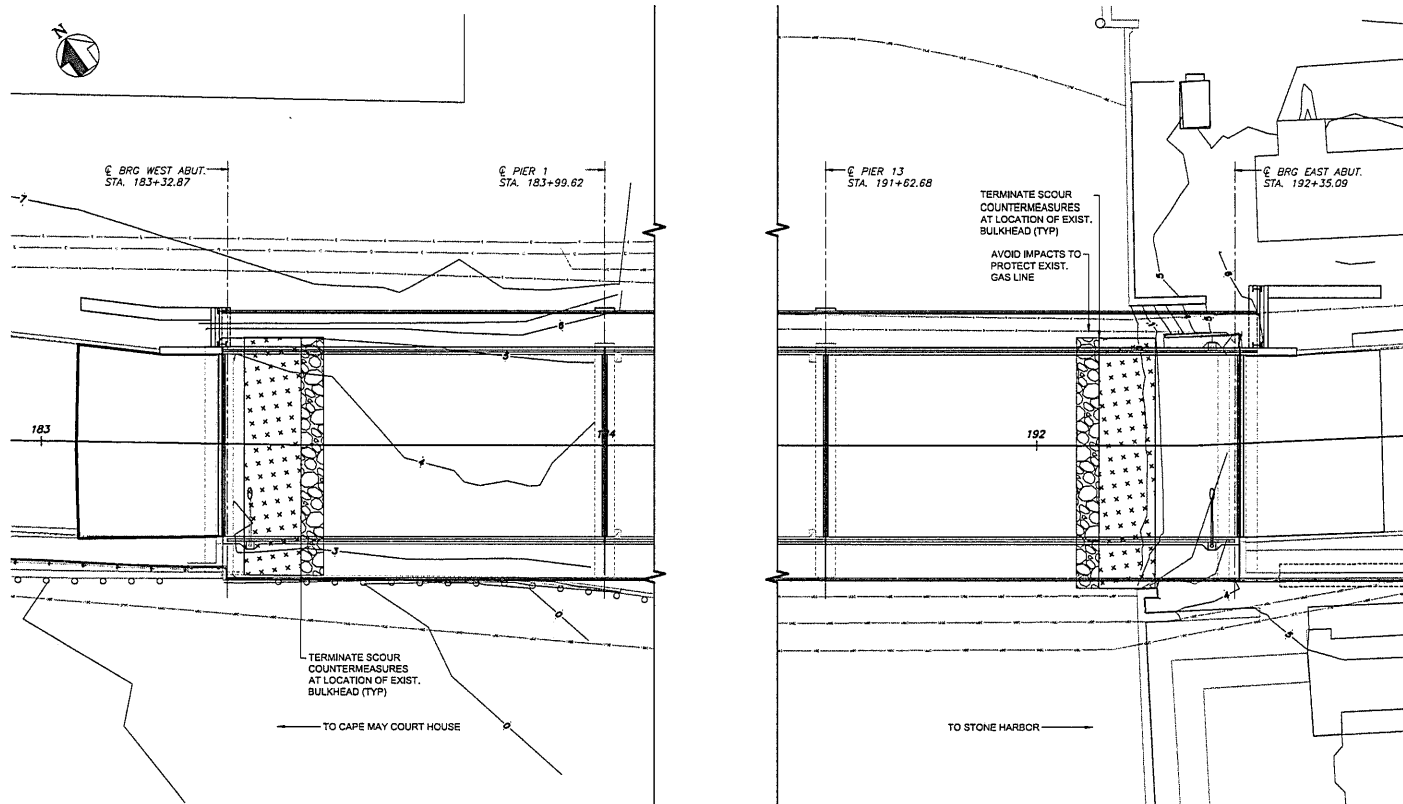
DATE: 4/5/2024

SCALE: AS SHOWN

SHEET REFERENCE NO.:

SHEET NO.:

056 OF 202



SCOUR COUNTERMEASURES

1" = 10'

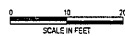
NOTES:

1. PRIOR TO INSTALLATION OF A-JACKS UNITS, GRADE THE GROUND IN FRONT OF THE ABUTMENT AND PLACE A 3/4" THICK (MIN.) LAYER OF NO. 57 BEDDING STONE WITH GRADATION CONFORMING TO THE PERFECT SPECIFICATIONS.
2. ALL COSTS FOR THE FURNISHING AND INSTALLING OF NO. 57 STONE, AND GEOTEXTILE SHALL BE INCLUDED IN THE BID PRICE FOR "COARSE AGGREGATE, SIZE NO. 57". THIS INCLUDES THE STONE/RIPRAP TO THE LIMITS SHOWN ON THE PLANS WHICH EXTENDS BEYOND THE CONCRETE ARMOR UNITS. PROVIDE TWO LAYERS OF GEOTEXTILE BETWEEN SUBGRADE AND STONE/RIPRAP.
3. CONTRACTOR IS ALERTED THAT IT MAY BE NECESSARY TO HAND PLACE A-JACK UNITS UNDER BRIDGE DUE TO LIMITED HEADROOM.
4. FOR DETAILS OF A-JACKS, SEE CONCRETE ARMOR UNITS DETAILS SHEET.
5. RELOCATING EXISTING RIP RAP TO BE INCLUDED IN THE BID PRICE FOR "CLEARING SITE, BRIDGE".
6. SCOUR COUNTERMEASURE INSTALLATION SHALL BE PERFORMED WITHOUT INSTALLATION DRIVEN SHEETING. INSTALLATION IN THE WET OR USE OF PORTA-DAM SYSTEMS MAY BE CONSIDERED CONSISTENT WITH PERMITS. ANY OTHER PROCEDURE FOLLOWED WILL REQUIRE THE CONTRACTOR TO SUBMIT PERMIT MODIFICATIONS FOR APPROVAL AT NO ADDITIONAL COST OR EXTENSION OF TIME. THE CLOSE PROXIMITY OF THE UTILITIES NEEDS TO BE ACCOUNTED FOR ANY INSTALLATION PROCEDURE.
7. SCHEMATIC LAYOUT OF ARMOR UNITS IS SHOWN. INSTALLATION TO BE IN TIGHT FORMATION AS SHOWN ON CONCRETE ARMOR UNIT DETAILS SHEET AND AS SPECIFIED IN THE SPECIAL PROVISIONS.
8. MINIMUM DEPTH OF SCOUR COUNTERMEASURES REQUIRED ARE SHOWN. SHOULD THE CONTRACTOR INCREASE THE DEPTH AT ANY LOCATION FOR THEIR CONVENIENCE, IT WILL NOT BE MEASURED FOR ADDITIONAL COMPENSATION.
9. FOR DETAILS OF ARMOR UNITS, SEE SH BXX.

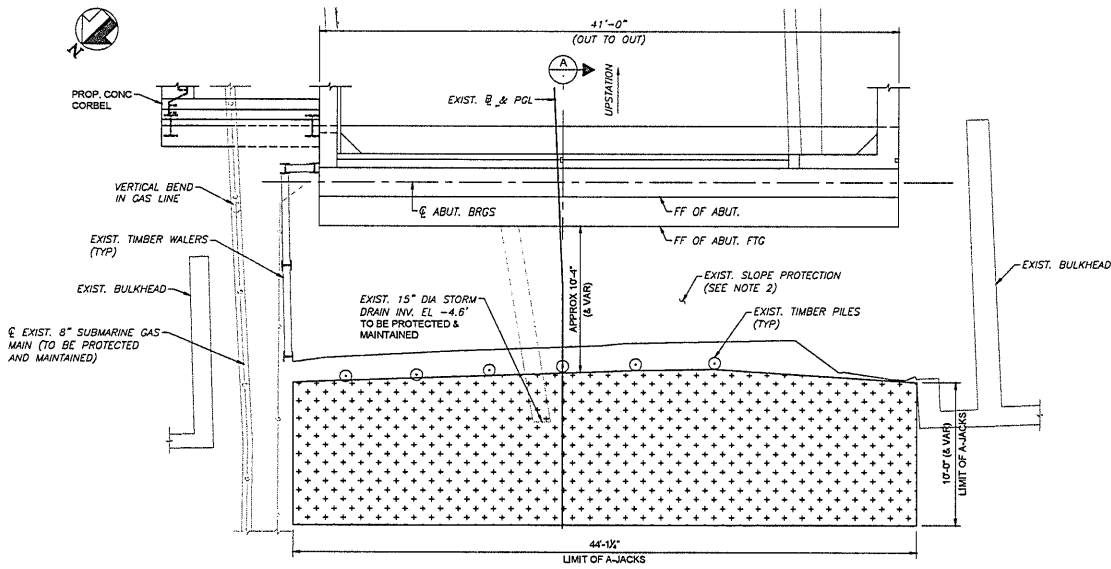
GREAT CHANNEL	ELEVATION (FT)
MHW	2.57
MW	2.17
MLW	-1.84
MLW	-1.99
100 YEAR FLOOD	XX

LEGEND:

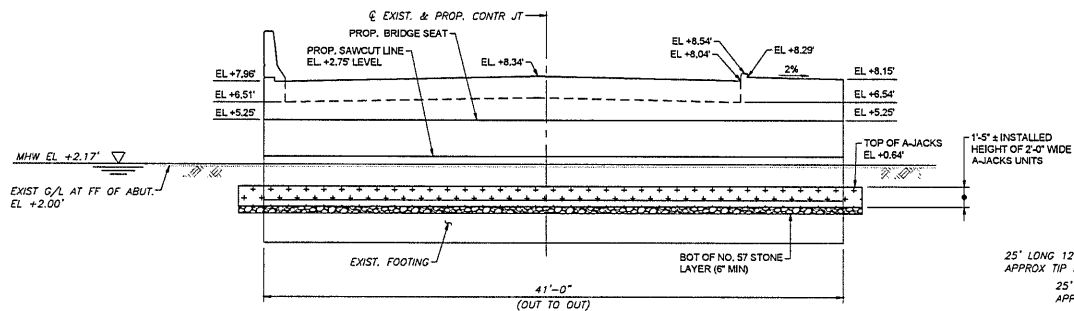
- A-JACKS
- STONE (RIPRAP)



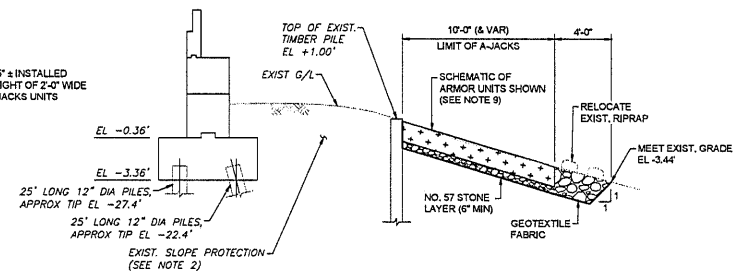
PREPARED BY: WSP USA Inc. 2000 LENOX DRIVE, LAWRENCEVILLE, N.J. 08448 MARC S. ESPOSITO	N.J. PE LICENSE NUMBER: 24624845300	DATE			CAPE MAY COUNTY KYLE G Designed by Drawn by Checked by	JOB: REHABILITATION OF 96TH STREET (CR657) BRIDGE OVER GREAT CHANNEL STR. NO. 0500-006	PROJECT LOCATION: STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP CAPE MAY COUNTY, NEW JERSEY DRAWING TITLE: SCOUR COUNTERMEASURES PLAN	DATE: 4/9/2024 SCALE: 1" = 10'-0" SHEET REFERENCE NO.: of SHEET NO.: 557 of 202
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PLAN
(EAST ABUTMENT)
1/4" = 1'-0"



ELEVATION
(EAST ABUTMENT)
1/4" = 1'-0"



SECTION
A-A
1/4" = 1'-0"

NOTES:

- FOR GENERAL NOTES, SEE SH BX.
- SLOPE PROTECTION/SCOUR COUNTERMEASURES EXIST IN THE FORM OF CONCRETE, RIPRAP, AND/OR GROUTED RIPRAP. ALL EXISTING PROTECTION SHALL REMAIN WHERE IT DOES NOT CONFLICT WITH PROPOSED SCOUR COUNTERMEASURES. EXISTING PROTECTION IN CONFLICT WITH PROPOSED SCOUR COUNTERMEASURES SHALL BE RELOCATED BEYOND THE LIMITS OF A-JACKS, AND AS DIRECTED BY THE RE.
- THE PAY ITEM "COARSE AGGREGATE, SIZE NO. 57" SHALL INCLUDE ALL COSTS FOR FURNISHING AND INSTALLING OF COARSE AGGREGATE, GEOTEXTILE, GRADING AND EXCAVATION, REMOVAL AND DISPOSAL OF EXISTING TIMBER PILES AND OTHER MATERIALS, TO THE COMPLETE SATISFACTION OF THE ENGINEER.
- RELOCATING EXISTING RIP RAP TO BE INCLUDED IN THE BID PRICE FOR "CLEARING SITE, BRIDGE".
- PRECAST ARMOR UNIT MATRIX IS SHOWN CONCEPTUALLY. THE CONTRACTOR SHALL COORDINATE WITH THE MANUFACTURER FOR RECOMMENDED MATRIX CONFIGURATION AND CABLE REQUIREMENTS TO MEET THE SCOUR LIMITS SHOWN ON PLANS.
- WEST ABUTMENT DETAILS NOT SHOWN, BUT OVERALL LAYOUT AND INSTALLATION IS SIMILAR WITH THE EXCEPTION OF THE LIMITS OF EXISTING BULKHEADS AND PRESENCE OF EXISTING SLOPE PROTECTION.
- FOR DETAILS OF ARMOR UNITS, SEE SH BXX.

LEGEND:

- A-JACKS
- STONE (RIPRAP)
- STONE (COARSE AGGREGATE)

SCALE IN FEET

PREPARED BY: WSP USA INC.
2000 LENOX DRIVE, LAWRENCEVILLE, NJ 08648



CAPE MAY COUNTY

MARC S. ESPOSITO

N.J. PE LICENSE NUMBER:
24GED443006

DATE

DESIGNED BY

DRAWN BY

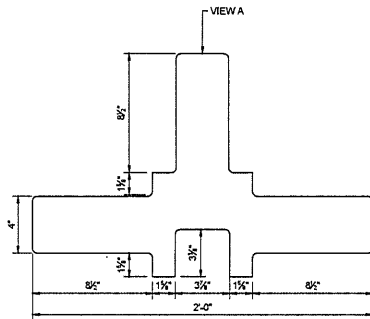
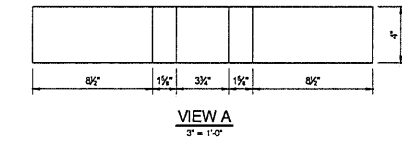
CHECKED BY

JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

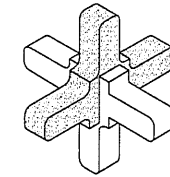
PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY
DRAWING TITLE:
EAST ABUTMENT SCOUR
COUNTERMEASURES

DATE:
4/9/2024
SCALE:
1/4" = 1'-0"
SHEET REFERENCE NO.:
of
SHEET NO.:
058 of 202

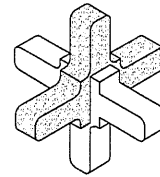
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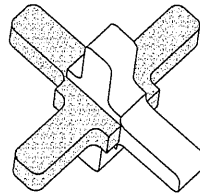
A - JACKS, 24 - INCH
3' = 1'-0"



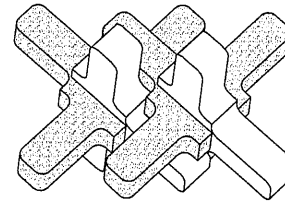
1. IDENTIFY A-JACKS COMPONENTS



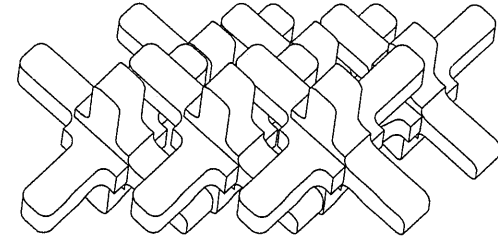
2. IDENTIFY CORNERS WITH AND WITHOUT FILLETS.



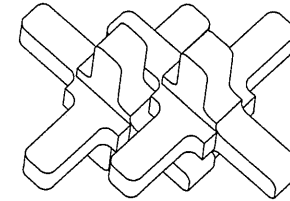
3. PROPER ROTATION OF A-JACKS.



4. ALIGN ALL A-JACKS IN SAME DIRECTION. CORNERS WITHOUT FILLET MUST LINE UP.

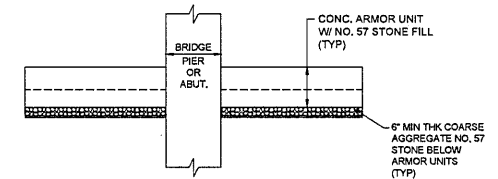
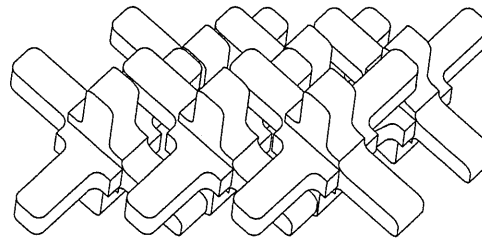


5. INSTALL 2ND ROW OF A-JACKS USING SAME ALIGNMENT.



6. 2ND LEVEL OF A-JACKS WILL FIT WHEN PROPERLY ALIGNED WITH 1ST LEVEL.

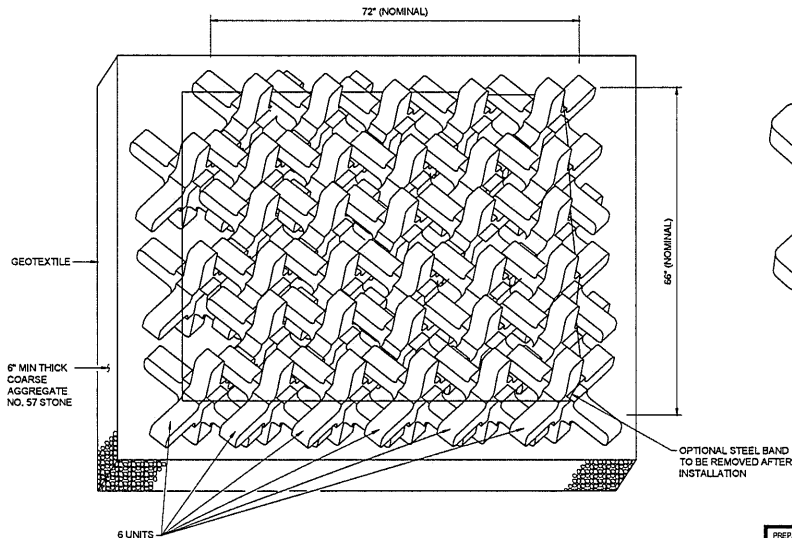
A - JACKS CONSTRUCTION DETAILS
3' = 1'-0"



TYPICAL PRECAST ARMOR UNITS INSTALLATION
3' = 1'-0"

NOTES:

1. PRECAST CONCRETE ARMOR UNITS SHALL BE A-JACKS SYSTEM OR APPROVED EQUAL.
2. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.



TYPICAL 6 - 6 MATRIX
(SEE NOTE 5)
3' = 1'-0"



PREPARED BY: WSP USA, Inc.
2000 LENOX DRIVE, LAWRENCEVILLE, NJ 08648



CAPE MAY COUNTY

MARC S. ESPOSITO

N.J. PE LICENSE NUMBER:
24GED0445300

DATE

Designed by

Drawn by

Checked by

JOB:

REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

DRAWING TITLE:

**CONCRETE ARMOR
UNITS DETAIL**

DATE: 4/5/2024

SCALE: 3' = 1'-0"

SHEET REFERENCE NO.: 4

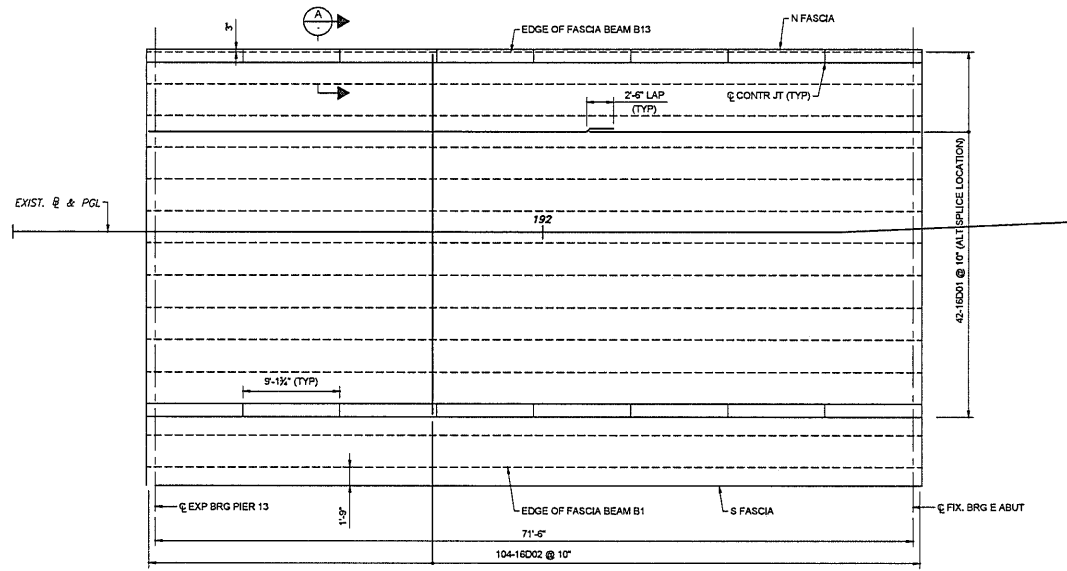
SHEET NO.: 059 of 202

DATE: 4/9/2024

SCALE: AS SHOWN

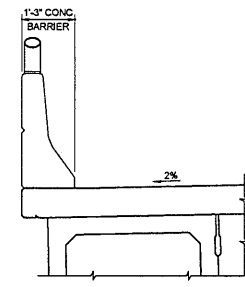
SHEET REFERENCE NO. of

SHEET NO.: 000 of 202



PLAN
3/16" = 1'-0"

- NOTES:**
1. FOR EXPANSION JOINT DETAILS, SEE SH BXX.
 2. REINFORCEMENT SPACING SHALL BE ADJUSTED AS REQUIRED TO AVOID THE SHEAR REINFORCEMENT IN THE BEAMS AND JOINT STUDS/ARMORING AT THE DECK JOINTS.
 3. NO STAY-IN-PLACE FORM IS PERMITTED IN THE FASCIA OVERHANG AREAS.
 4. DECK SLAB CONCRETE SHALL NOT BE PLACED UNTIL BEAM GROUT ACHIEVES STRENGTH AND ALL POST-TENSIONING BARS ARE PLACED UNDER THE FULL LOAD SPECIFIED. FOR ADDITIONAL DECK SLAB CONSTRUCTION SEQUENCE REQUIREMENTS, SEE SH BXX.
 5. UNLESS NOTED OTHERWISE, MINIMUM LAP SPLICE LENGTH IS 2'-0" FOR #13 AND 2'-6" FOR #16 BARS.





NOTE: CANTILEVER WALKWAY
NOT SHOWN FOR CLARITY

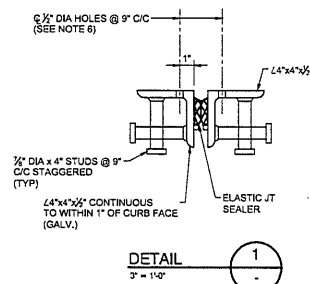
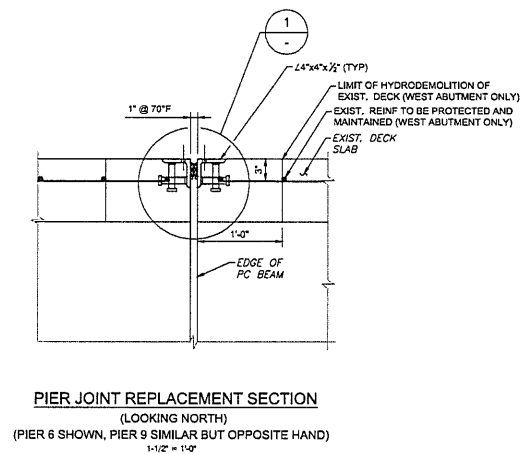
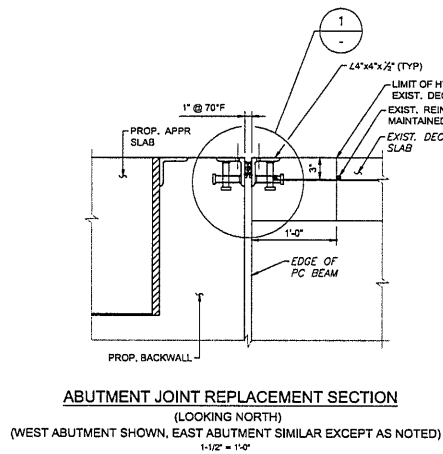
SECTION
3/4" = 1'-0"
A
—

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PREPARED BY: WSP USA Inc. 2000 LENOX DRIVE, LAWRENCEVILLE, N.J. 08848				CAPE MAY COUNTY		JOB: REHABILITATION OF 96TH STREET (CR657) BRIDGE OVER GREAT CHANNEL STR. NO. 0500-006	PROJECT LOCATION: STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP CAPE MAY COUNTY, NEW JERSEY	DATE: 4/9/2024
MARC S. ESPOSITO				N.J. PE LICENSE NUMBER: 24CE0446300	DATE	ZACK S		DRAWING TITLE: SPAN 14 DECK PLAN & DETAILS
					Designed by	Drawn by	Checked by	SHEET REFERENCE NO.: of

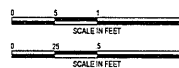
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NOTES:

1. FOR GENERAL NOTES, SEE SH BX.
2. TOP OF DECK JOINT SHALL MATCH TOP OF ROADWAY, WITH REGARD TO BOTH CROSS SLOPES AND ROADWAY PROFILE.
3. FOR ADDITIONAL STRIP SEAL DECK JOINT DETAILS, SEE NJDOT STANDARD BRIDGE CONSTRUCTION DETAIL BCD-507-02 AND STANDARD DRAWING PLATES 2.7-1, 2.7-2 AND 2.7-4 FROM THE NJDOT BRIDGE DESIGN MANUAL FOR BRIDGES AND STRUCTURES, SIXTH EDITION.
4. NEOPRENE STRIP SEAL SHALL BE INSTALLED IN A CONTINUOUS LENGTH OVER THE ENTIRE WIDTH OF THE SUPERSTRUCTURE WITH NO FIELD SPLICES PERMITTED. AN APPROVED LUBRICANT/ADHESIVE FOR THE INSTALLATION AND PERMANENT BONDING TO THE STEEL RAIL SHALL BE PLACED PRIOR TO THE STRIP SEAL INSTALLATION.
5. FOR REINFORCEMENT IN THE END OF DECK, SEE SH BX.
6. STAGGER HOLES BETWEEN STUDS, VIBRATE CONCRETE UNTIL HOLES ARE FILLED.
7. PROPOSED NORTH SIDEWALK AND ASSOCIATED FRAMING NOT SHOWN FOR CLARITY.
8. DECK JOINT RECONSTRUCTION SHALL BE PERFORMED TO AVOID DAMAGE TO SCULPERS AT ALL LOCATIONS.

JOINT REPAIR SCHEDULE	
LOCATION	TYPE
W. ABUT.	REPLACEMENT
PIER 1	RESET
PIER 6	REPLACEMENT
PIER 9	REPLACEMENT
PIER 13	REPLACEMENT
E. ABUT.	REPLACEMENT



PREPARED BY: WSP USA Inc.
2005 LENOX DRIVE, LAWRENCEVILLE, N.J. 08648

MARC S. ESPOSITO

N.J. PE LICENSE NUMBER:
2405048200

DATE



CAPE MAY COUNTY

DESIGNED BY

Drawn by

Checked by

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ZACK S

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JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

DRAWING TITLE:

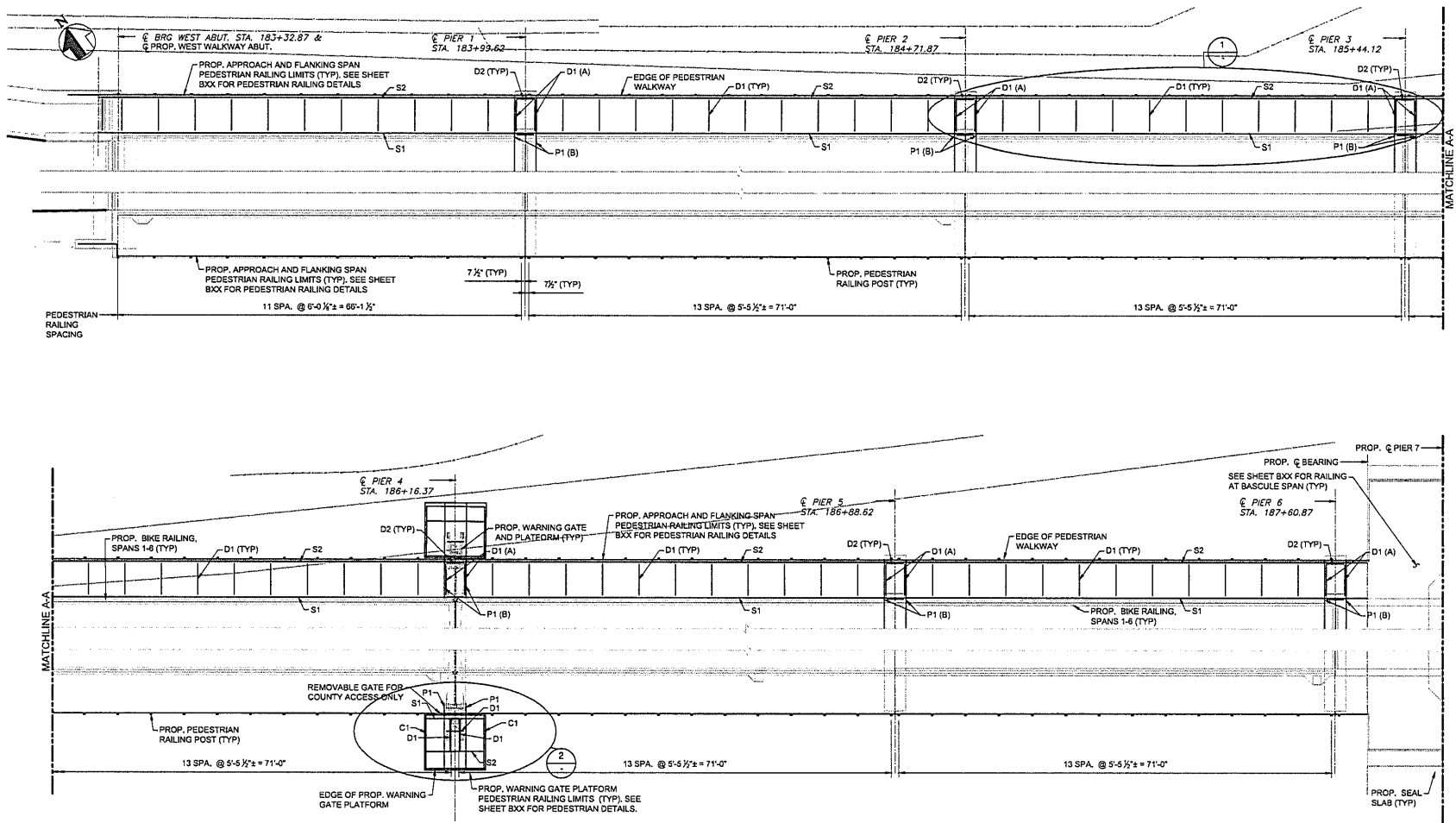
DECK JOINT REPAIR
DETAILS

DATE: 4/5/2024

SCALE: AS SHOWN

SHEET REFERENCE NO.: of

SHEET NO.: 005 of 202



FRAMING PLAN
1/8" = 1'-0"

SCALE IN FEET

PREPARED BY: WSP USA INC.
2000 LENOX DRIVE, LAWRENCEVILLE, N.J. 08848

MARC S. ESPOSITO

2406040000
N.J. PE LICENSE NUMBER

DATE



CAPE MAY COUNTY

DESIGNED BY

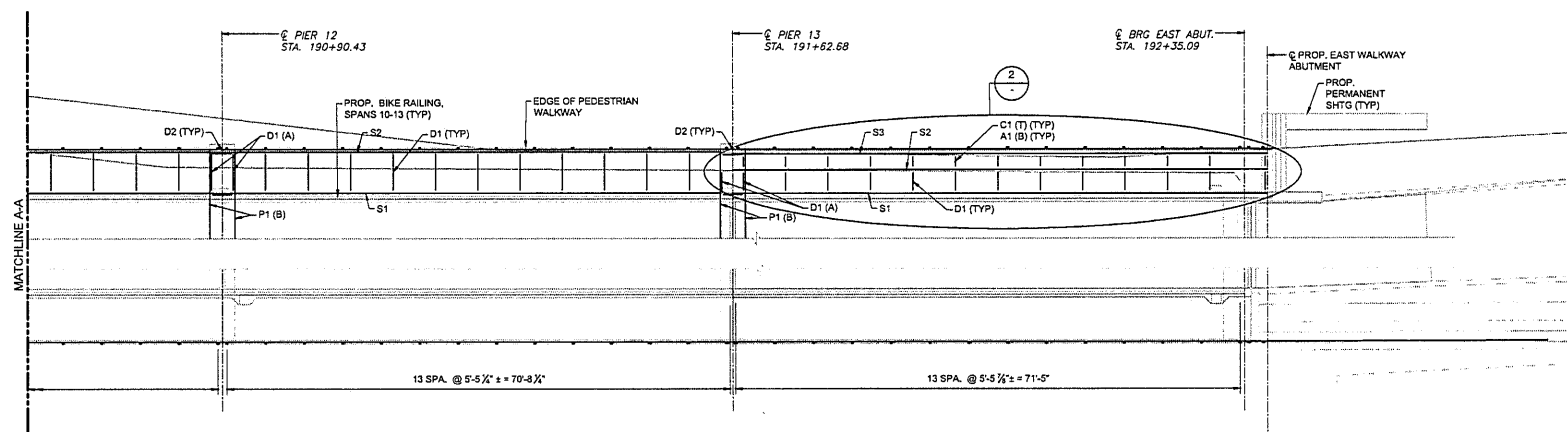
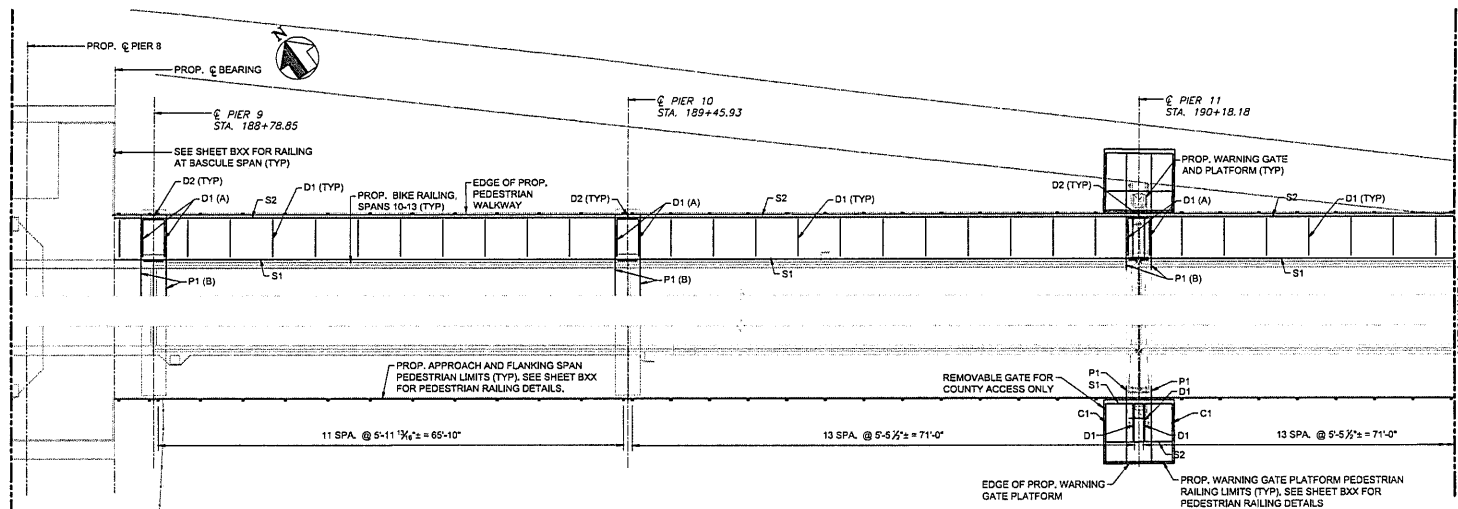
DRAWN BY

CHECKED BY

JOH
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY
DRAWING TITLE:
APPROACH SPAN
FRAMING AND RAILING
PLAN - 1

DATE: 4/9/2024
SCALE: 1/8" = 1'-0"
SHEET REFERENCE NO.:
SHEET NO.: 006 of 202



FRAMING PLAN
1/8" = 1'-0"



PREPARED BY: WSP USA INC.
2000 LINDX DRIVE, LAWRENCEVILLE, N.J. 08848



MARC S. ESPOSITO

N.J. PE LICENSE NUMBER:
24060406200

DATE



CAPE MAY COUNTY

MEGAN Q

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Checked by

JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

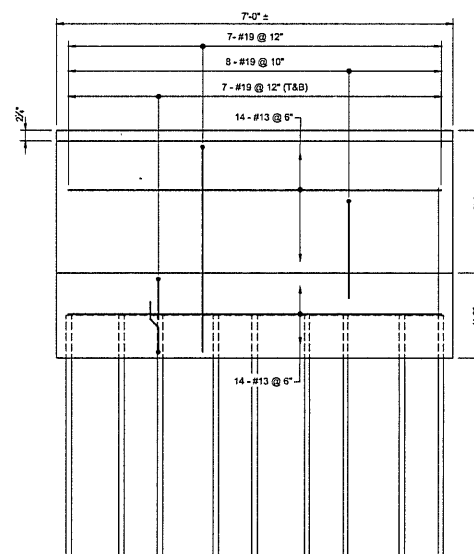
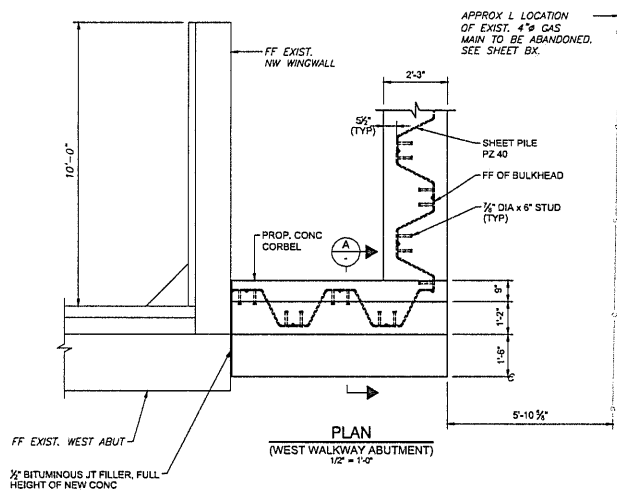
DRAWING TITLE:
APPROACH SPAN
FRAMING AND RAILING
PLAN - 2

DATE:
4/9/2024

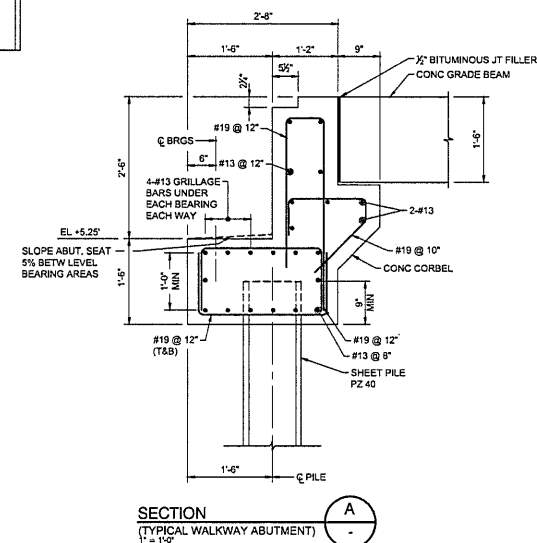
SCALE:
1/8" = 1'-0"

SHEET REFERENCE NO.:
#

SHEET NO.:
357 of 332

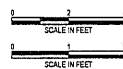


ELEVATION
(WEST WALKWAY ABUTMENT)
1" = 1'40"



1. FOR ADDITIONAL NOTES, SEE SH 8XX.

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PREPARED BY: WSP USA Inc.
2000 LENOX DRIVE, LAWRENCEVILLE, N.J. 08548

MARC S. ESPOSITO N.J. PE LICENSE NUMBER:
24GEO4845300

DATE _____



CAPE MAY COUNTY

2018-2019

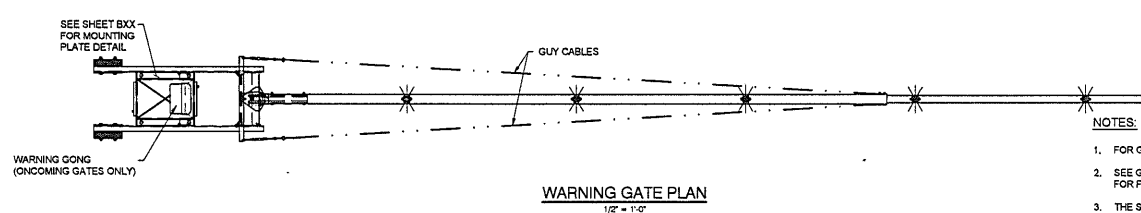
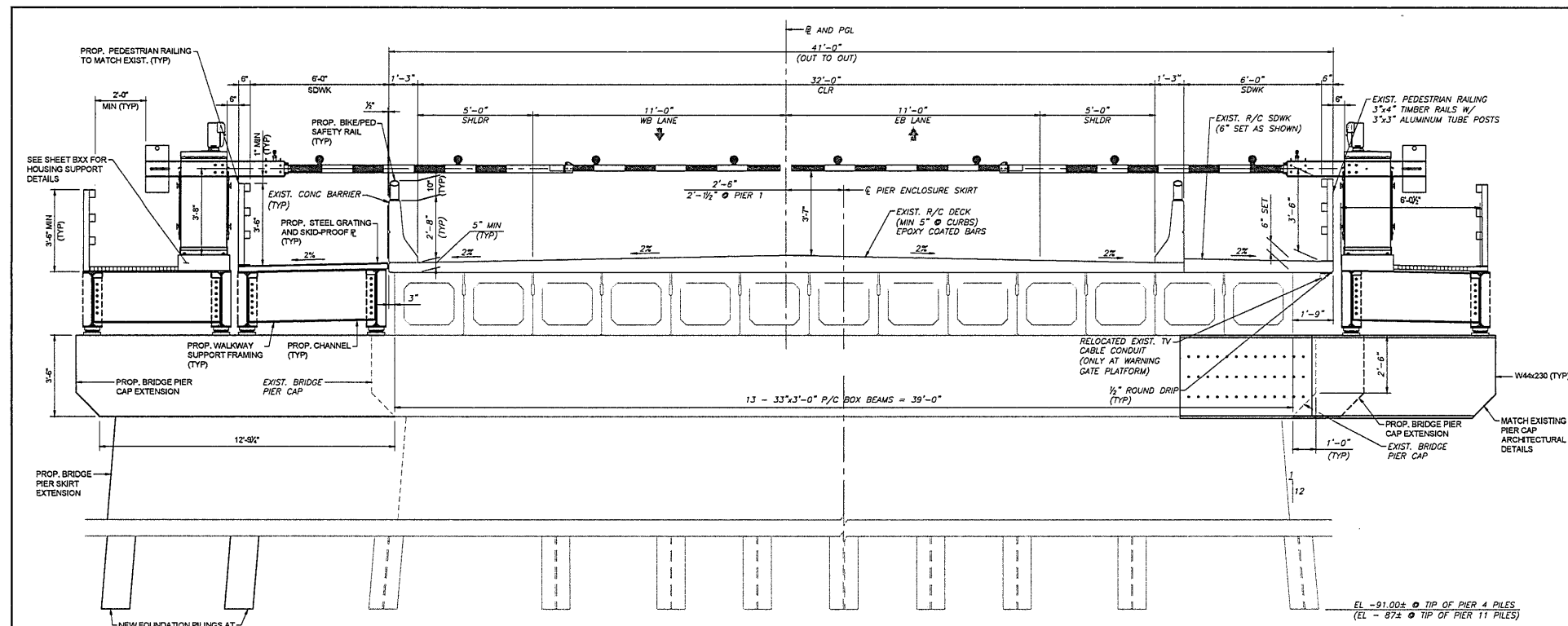
MEGAN Q

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JOB: REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION: STONE HARBOR BOROUGH AND MIDDLE TOWNS CAPE MAY COUNTY, NEW JERSEY
DRAWING TITLE: CANTILEVER WALKWAY WEST ABUTMENT PLAN & DETAILS

DATE:	4/9/2024
SCALE:	AS SHOWN
SHEET REFERENCE NO.	of
SHEET NO.:	



- NOTES:**
- FOR GENERAL NOTES, SEE SHEETS B2 & B3.
 - SEE GENERAL PLAN AND ELEVATION FOR THE LOCATION OF PIER 4 & 11. FOR FRAMING PLANS OF GATE PLATFORMS, SEE SH, BXX.
 - THE STRUCTURAL STEEL FOR WARNING GATE PLATFORM INCLUDING GRATING, SHIM PLATES AND ANY MISCELLANEOUS HARDWARE SHALL BE PAID UNDER THE ITEM "STRUCTURAL STEEL".
 - REMOVAL OF EXISTING WARNING GATE SHALL BE PAID FOR UNDER THE ITEM "CLEARING SITE BRIDGE". THE EXISTING WARNING GATE SHOULD ONLY BE REMOVED ONCE THE NEW WARNING GATES ARE FULLY OPERATIONAL.
 - THE WARNING GATE DETAILS SHOWN ARE CONCEPTUAL ONLY AND DO NOT REPRESENT THE ACTUAL GATES THAT WILL BE REQUIRED BASED ON THE LOADS SPECIFIED.
 - ALL DIMENSIONS SHOULD BE FIELD VERIFIED PRIOR TO SHOP DRAWING SUBMITTAL.
 - WARNING GATE HOUSING TO BE 0.25" THICK ALUMINUM.
 - WARNING GATE SIDE ARM CHANNELS, COUNTERWEIGHT, AND ANCHOR BOLTS TO BE HOT-DIPPED GALVANIZED.
 - PIER CAP AND SKIRT EXTENSION TO MATCH EXISTING ARCHITECTURAL FINISHES.
 - PAINT CANTILEVER SUPPORT TO MATCH EXISTING PIER COLORING. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

0 2 4
SCALE IN FEET

PREPARED BY: WSP USA INC.
2000 LENOX DRIVE, LAWRENCEVILLE, NJ 08648
MARC S. ESPOSITO
N.J. REG. LICENSE NUMBER: 24000482000
DATE:

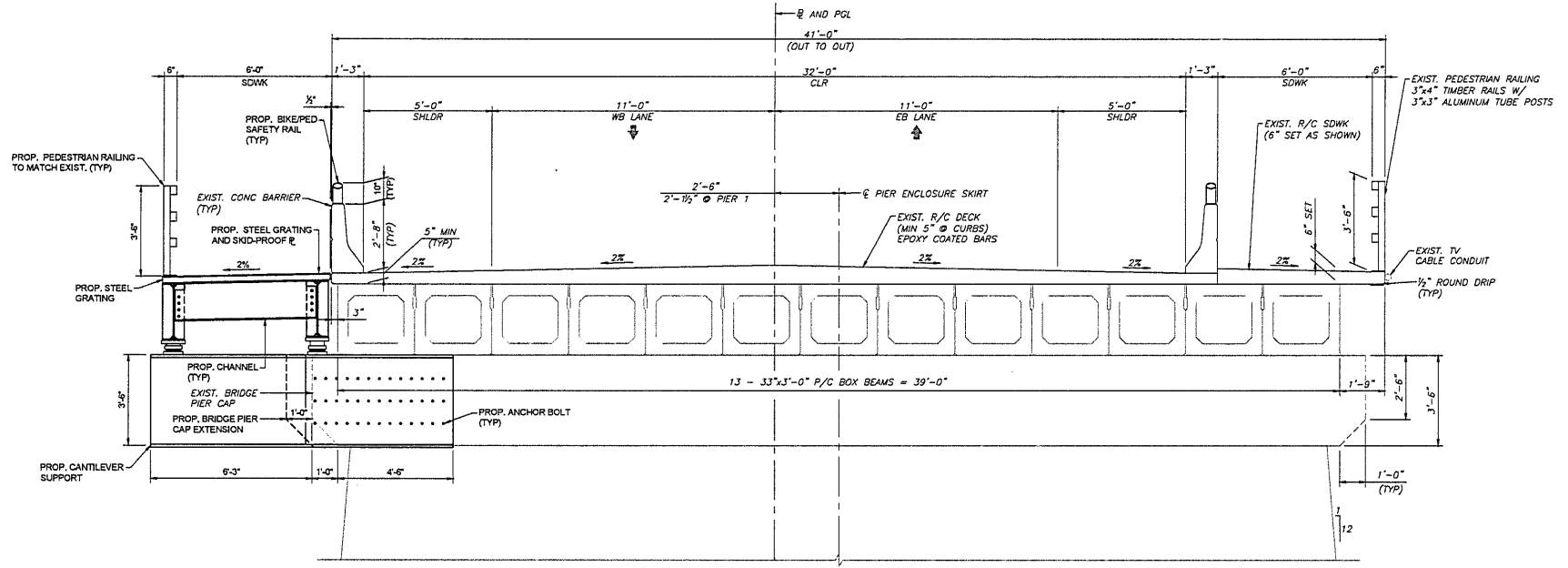
WSP

CAPE MAY COUNTY
MEGAN Q
Designed by Drawn by Checked by

JOB: REHABILITATION OF 96TH STREET (CR657) BRIDGE OVER GREAT CHANNEL STR. NO. 0500-006

PROJECT LOCATION: STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP CAPE MAY COUNTY, NEW JERSEY
DRAWING TITLE: CANTILEVER WALKWAY & WARNING GATE SECTION AT PIER
DATE: 4/9/2024
SCALE: 1/2" = 1'-0"
SHEET REFERENCE NO.: OF
SHEET NO.: 073 OF 202

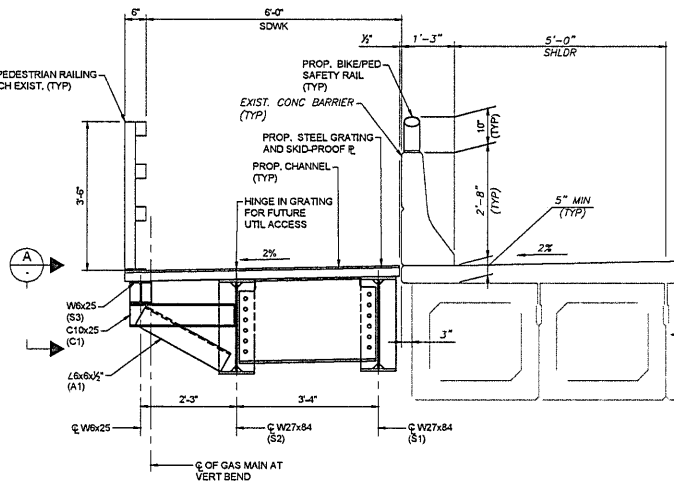
c:\nra\wsp-us-pr-02\0500003\050001515-PT531.dwg, 5/16/2024 11:01:21 AM, USG709676, WSP USA Inc.



TYPICAL SECTION - PROPOSED APPROACH SPAN
(LOOKING EAST)
1/2" = 1'-0"

NOTES:

1. FOR GENERAL NOTES, SEE SHEET B2 & B3.
2. FOR STRUCTURAL STEEL DETAILS SEE SHEET B24 & B25.
3. FRP GRATING IS USED FOR THE SPAN 14 WALKWAY.
4. CONTRACTOR SHALL SHIM WALKWAY SUCH THAT HIGH POINT OF SKID PROOF PLATE IS IN LINE WITH THE TOP OF ADJACENT BRIDGE DECK.



SPAN 14 WALKWAY SECTION
(LOOKING EAST)
3/4" = 1'-0"

PREPARED BY: WSP USA INC.
7000 LEXINGTON DRIVE, LAWRENCEVILLE, N.J. 08448



CAPE MAY COUNTY

MARC S. ESPOSITO

N.J. PE LICENSE NUMBER
240204842026

DATE

Designed by

Drawn by

Checked by

REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

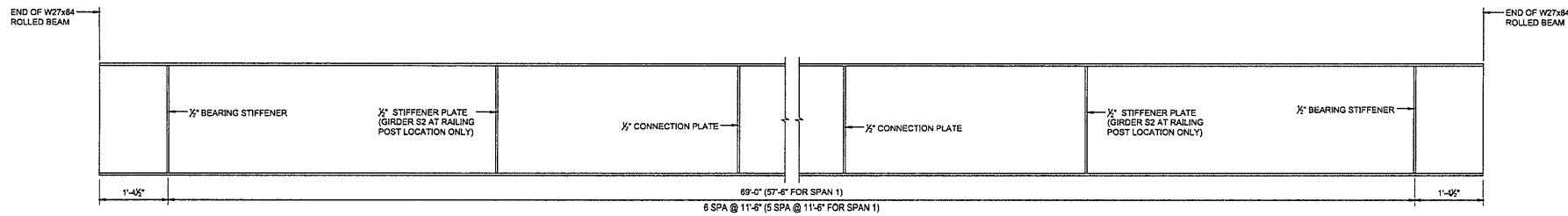
DRAWING TITLE:
CANTILEVER WALKWAY
SECTION AT PIER

DATE
4/5/2024

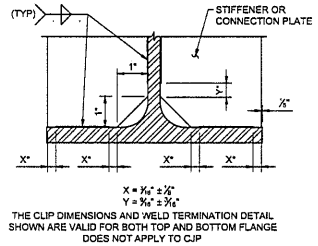
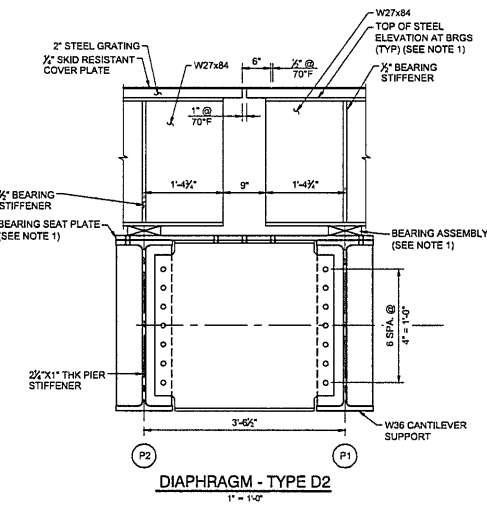
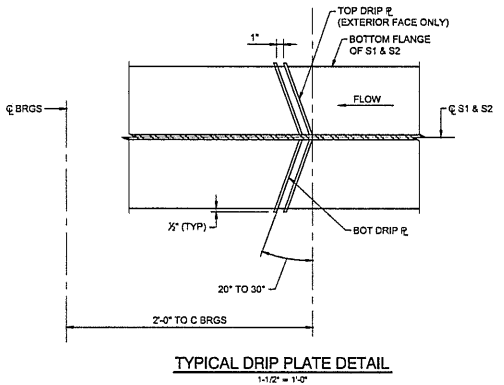
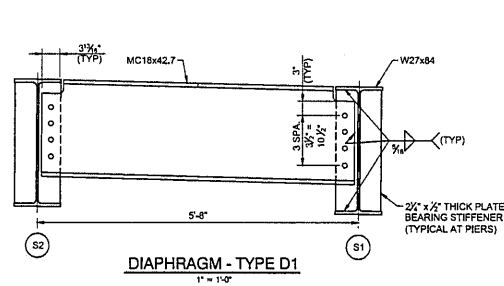
SCALE:
AS SHOWN

SHEET REFERENCE NO.:
OF

SHEET NO.:
071 of 202

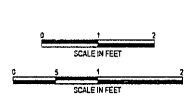


ELEVATION
PEDESTRIAN WALKWAY STRINGERS
 (TYPICAL SPAN SHOWN AND SPAN 1 AS NOTED)
 1" = 1'-0"



NOTES:

- GENERAL:
 - FOR GENERAL NOTES SEE SHEET XX.
 - FOR BEARING DETAILS AND FOR TOP OF STEEL ELEVATIONS AT BEARING, SEE SHEET XX.
 - FOR FRAMING PLANS SEE SHEET XX & XX.
 - ALL DIMENSIONS SHOWN ARE MEASURED IN THE HORIZONTAL PLANE, AND ARE BASED ON THE ASSUMED TEMPERATURE @ 70°F.
 - ENDS OF ALL GIRDERS SHALL BE GROUND SMOOTH.
 - ALL BEAMS SHALL BE ERECTED FOR DEAD LOAD FIT WITH WEBS VERTICAL UNDER DEAD LOADS. BEARINGS SHALL BE FULLY SEATED TO GIRDER BOTTOM FLANGES UNDER FULL DEAD LOAD.
 - ALL DIAPHRAGMS AND CONNECTION PLATES SHALL BE PLACED NORMAL TO THE GIRDERS UNLESS OTHERWISE NOTED.
 - ALL CONNECTIONS, INCLUDING DIAPHRAGM CONNECTIONS SHALL BE SLIP CRITICAL CONNECTIONS IN ACCORDANCE WITH THE AASHTO REQUIREMENTS. ALL BOLTS ON INTERMEDIATE DIAPHRAGM CONNECTIONS SHALL BE FULLY TORQUED PRIOR TO FULL APPLICATION OF SUPERSTRUCTURE DEAD LOAD.
- MATERIALS:
 - ALL STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 50 UNLESS OTHERWISE NOTED. SEE SPECIAL PROVISIONS FOR FINISHING REQUIREMENTS.
 - ALL BOLTS SHALL BE 3/4" DIAMETER HIGH-STRENGTH BOLTS UNLESS SPECIFIED OTHERWISE AND CONFORM TO ASTM F3125 GRADE A325, TYPE 1 WITH THREADS EXCLUDED FROM THE SHEAR PLANE. ALL BOLTS SHALL BE FULLY TORQUED UPON INSTALLATION OF THE BEAMS AND DIAPHRAGMS PRIOR TO PLACING ADDITIONAL LOADINGS.
- FABRICATION AND SUBMITTALS:
 - PRIOR TO ANY DRILLING, THE CONTRACTOR HAS TO LOCATE EXISTING REBAR AT EACH LOCATION WHERE THE CANTILEVER SUPPORT IS BEING INSTALLED. SUBMIT THE LOCATION OF REBAR IN THE PIER CAP TO THE RE. MEASURES MUST BE TAKEN TO AVOID DRILLING INTO THE EXISTING REBAR.
 - THE CONTRACTOR'S STEEL FABRICATOR IS RESPONSIBLE FOR DETAILING THE STEEL ACCOUNTING FOR THE FIELD CONDITIONS ENCOUNTERED.
 - THE CONTRACTOR SHALL FIELD VERIFY AND DOCUMENT ALL EXISTING CONDITIONS PRIOR TO THE BEGINNING OF WORK. IF ANY DISCREPANCY IS NOTICED IN THE EXISTING CONCRETE, STOP WORKING IMMEDIATELY AND NOTIFY RE.
 - THE CONTRACTOR SHALL SUBMIT FOR THE ENGINEER'S APPROVAL AN ERECTION PROCEDURE, PLAN, AND SKETCHES, DESCRIBING HIS MEANS AND METHOD OF STEEL ERECTIONS AND THE PROPOSED SEQUENCE OF CONSTRUCTION. THE SUBMITTAL SHALL INCLUDE THE DESIGN AND DETAILS FOR THE ERECTION SCHEME USED. THE WORKING DRAWING SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW JERSEY AND SHALL BE SUBMITTED FOR APPROVAL. ALL FIELD-VERIFIED DETAILS SHOULD BE CLEARLY SHOWN IN THE SHOP DRAWINGS. IT IS ASSUMED THAT THE CONTRACTOR WILL USE A TEMPLATE WITH THE ACTUAL DRILLED LOCATIONS OF ANCHORS FOR THE FABRICATION OF THE STEEL CANTILEVER EXTENSIONS TO ACHIEVE THE TOLERANCES NECESSARY FOR STANDARD BOLT HOLES. SHOULD AN ALTERNATIVE CONSTRUCTION PROCEDURE BE PURSUED IT SHALL BE SUBMITTED FOR APPROVAL.
- PAYMENT:
 - ALL STRUCTURAL STEEL WILL BE PAID FOR US AS A LUMP SUM ITEM. THIS SHALL INCLUDE ALL FIELD MEASUREMENTS, SHOP DRAWINGS, CONNECTIONS, AND ALL OTHER MISCELLANEOUS ITEMS, EQUIPMENT, LABOR, TOOLS, AND HARDWARE AS NECESSARY FOR FURNISHING AND ERECTING THE STRUCTURAL STEEL.
- CONSTRUCTION:
 - THE STABILITY OF THE SUPERSTRUCTURE STEEL DURING AND AFTER ITS ERECTION AND CONSTRUCTION SHALL SOLELY BE THE RESPONSIBILITY OF THE CONTRACTOR. SHOP DRAWINGS SHALL ACCOUNT FOR BEAM LAYOUTS, TEMPORARY SUPPORTS, AND CONNECTIONS.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STABILITY OF THE CANTILEVER SUPPORTS AT THE PIER LOCATIONS. BREAKER BETWEEN THE NUTS AND THE STEEL SECTIONS.
 - ANCHORAGE CONNECTION INSTALLATION:
 - IDENTIFY AND MARK OUT THE POSITION OF REINFORCING STEEL AND OTHER EMBEDDED ITEMS PRIOR TO DRILLING HOLES FOR ANCHORS. CONTRACTOR SHALL SUBMIT THEIR PROCEDURE FOR LOCATING EXISTING REINFORCEMENT. IF THIS PROCEDURE IS FOUND TO HAVE POOR ACCURACY AT ANY TIME, THE METHOD SHALL BE MODIFIED AS REQUESTED AND AS FREQUENTLY DEEMED APPROPRIATE BY THE RE. EXERCISE CARE IN CORING OR DRILLING TO AVOID DAMAGING EXISTING REINFORCING OR EMBEDDED ITEMS ARE ENCOUNTERED DURING DRILLING. CONTRACTOR SHALL SUBMIT THE METHODS TO TAKE PRECAUTIONS AS NECESSARY. MINOR RELOCATION OF BOLT HOLES COMPARED TO THOSE SHOWN IN THE DETAILS WILL BE ALLOWED, PENDING THE COUNTY'S APPROVAL OF MODIFIED DETAILS.
 - DRILL THE HOLES AS SPECIFIED BY THE ANCHOR MANUFACTURER. ALL HOLES SHALL BE DRILLED PERPENDICULAR TO THE CONCRETE SURFACE TO FACILITATE ALIGNMENT AND INSTALLATION OF THE STEEL SECTIONS.
 - PROPERLY CLEAN AND ROUGHEN CORED HOLE AS PER THE MANUFACTURER'S INSTRUCTIONS.
 - PERFORM ANCHOR INSTALLATION IN ACCORDANCE WITH MANUFACTURER INSTRUCTIONS. DO NOT FULLY TORQUE THE BOLTS. INSTALL NUTS ACCORDING TO THE TURN OF THE NUT PROCEDURE OR OTHER APPROVED METHOD.
 - USE A TEMPLATE TO CAPTURE THE LOCATIONS OF THE ANCHORS IN THE PIER CAP AND TO SHOP DRILL THE HOLES FOR THE CANTILEVER SUPPORT.
 - ALL BOLTS ON THE PIER TO CANTILEVER SUPPORT CONNECTIONS SHALL BE SNUG TIGHT WITH DOUBLE NUTS PRIOR TO RELEASE IT FROM CRANE OR TEMPORARY SUPPORT.
 - ALL HARDWARE FOR ANCHORING THE PIER EXTENSIONS SHALL BE STAINLESS STEEL TYPE TYPE 316. PROVIDE A PHENOLIC WASHER AS AN ELECTRIC BOND BREAKER BETWEEN THE NUTS AND STEEL SECTIONS.



PREPARED BY: WSP USA INC.
 2000 LENOX DRIVE, LAWRENCEVILLE, N.J. 08048

MARC S. ESPOSITO

N.J. PE LICENSE NUMBER:
 24020484300

DATE

WSP

CAPE MAY COUNTY

ZACK S

Designed by Drawn by Checked by

JOB:

REHABILITATION OF
 96TH STREET (CR657)
 BRIDGE OVER GREAT
 CHANNEL
 STR. NO. 0500-006

PROJECT LOCATION:
 STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
 CAPE MAY COUNTY, NEW JERSEY

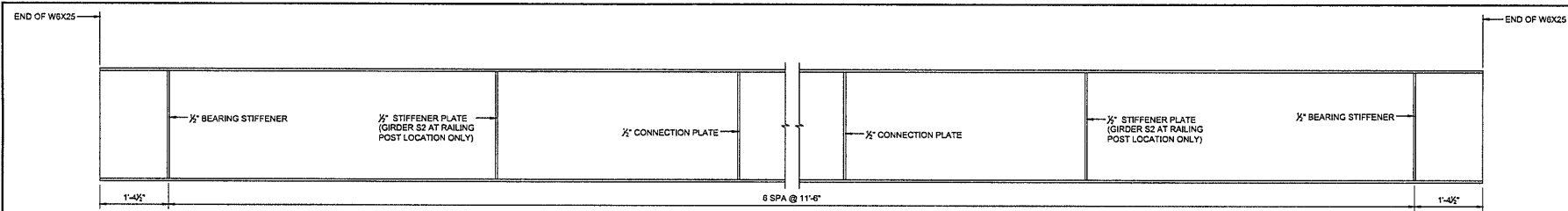
DRAWING TITLE:
 CANTILEVER WALKWAY
 STEEL DETAILS - 1

DATE:
 4/9/2024

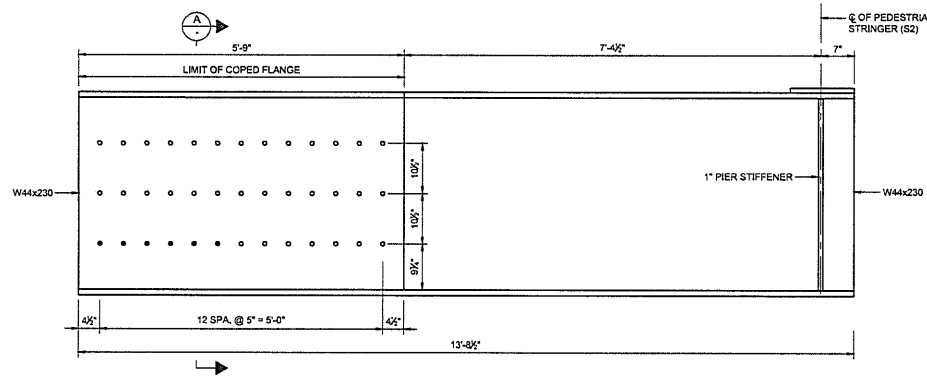
SCALE:
 AS SHOWN

SHEET REFERENCE NO.:
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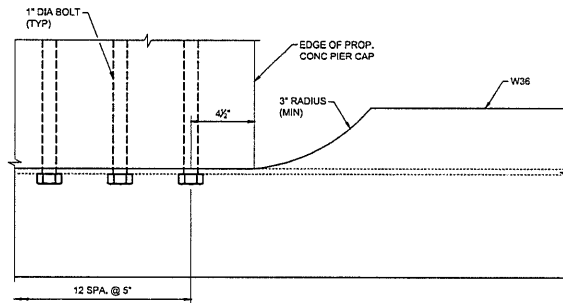
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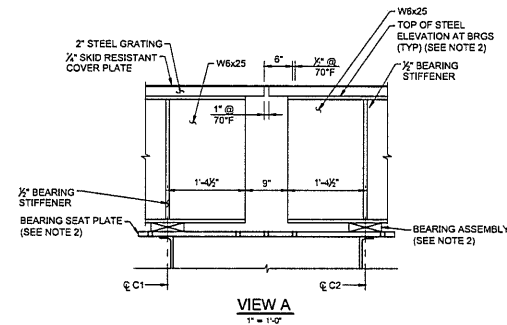
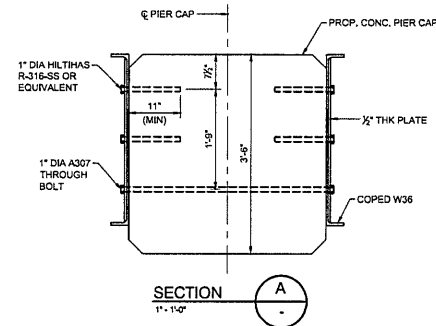
ELEVATION
PEDESTRIAN WALKWAY STRINGER
(S3)
1" = 1'-0"



ELEVATION
CANTILEVER SUPPORT AT PIERS
(P1 & P2)
1" = 1'-0"



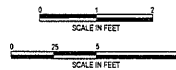
FANGE COPING DETAIL
(TOP OF FLANGE SHOWN, BOTTOM SIMILAR)
2" = 1'-0"



- NOTES:
1. FOR GENERAL NOTES, SEE SHEET B2 & B3.
2. FOR ADDITIONAL NOTES SEE SHEET B24.

LEGEND:

- 1" DIA HILTI-R-316-SS BOLT
- 1" DIA A307 THROUGH BOLT



PREPARED BY: WSP USA Inc.
2008 LENOX DRIVE, LAWRENCEVILLE, NJ 08848



CAPE MAY COUNTY

MARC S. ESPOSITO

N.J. PE LICENSE NUMBER:
24GED484230

DATE

Designed by

Drawn by

Checked by

JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

DRAWING TITLE:

CANTILEVER WALKWAY
STEEL DETAILS - 2

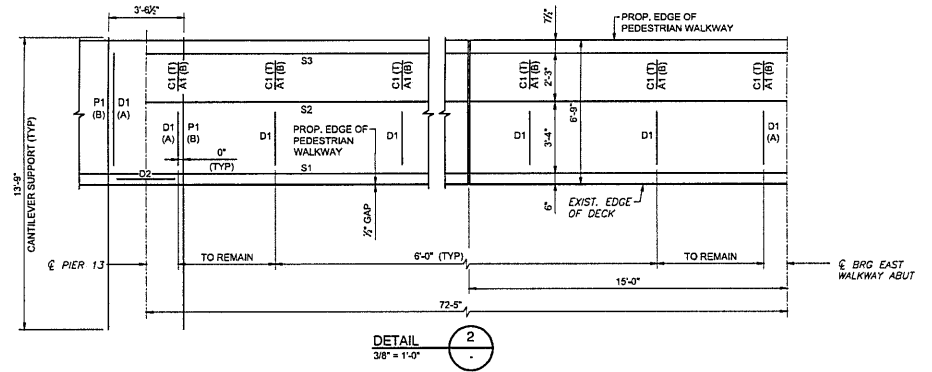
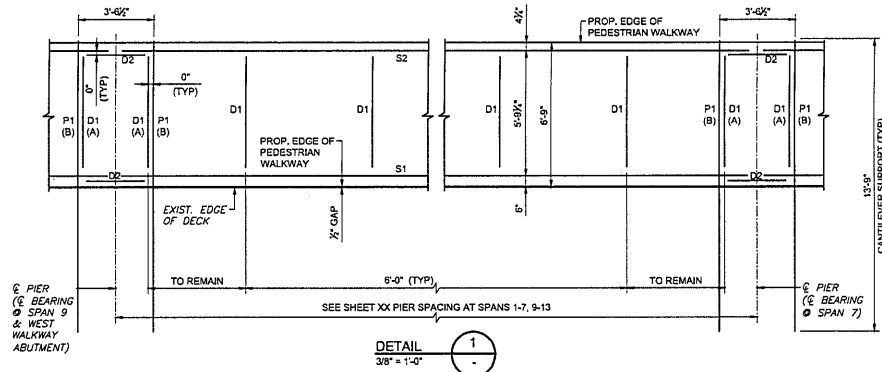
DATE: 4/9/2024

SCALE: AS SHOWN

SHEET REFERENCE NO.: of

SHEET NO.: 222 of 222

c:\bentley\p4\p4-02\055503\3530601515-PT35.dwg, 5/16/2024 11:01:41 AM, USX3706676, WSP USA Inc.



PREPARED BY: WSP USA Inc.
2000 LENOX DRIVE, LAWRENCEVILLE, N.J. 08648



CAPE MAY COUNTY

MARC S. ESPOSITO

N.J. PE LICENSE NUMBER:
24CE0404300

DATE

Designed by

MEGAN Q

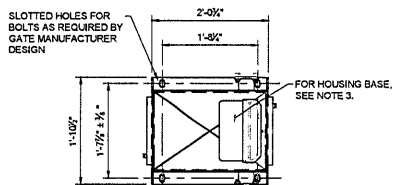
Drawn by

Checked by

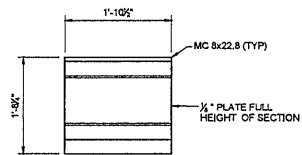
JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY
DRAWING TITLE:
CANTILEVER WALKWAY
STEEL DETAILS - 3

DATE:
4/5/2024
SCALE:
3/8" = 1'-0"
SHEET REFERENCE NO.:
4
SHEET NO.:
274 of 282



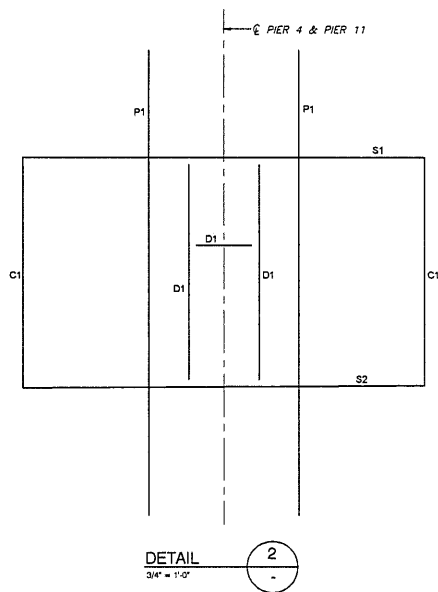
MOUNTING PLATE DETAIL
1" = 1'-0"



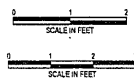
HOUSING SUPPORT DETAILS
1" = 1'-0"

NOTES:

1. ALL DIMENSIONS SHALL BE FIELD VERIFIED PRIOR TO SHOP DRAWING SUBMITTAL.
2. FINAL MOUNTING PLATE DIMENSIONS TO BE SUBMITTED VIA THE SHOP DRAWING PROCESS BASED ON THE HOUSING SIZE OF THE WARNING GATE SELECTION.
3. MOUNTING PLATE UNDER FOOTPRINT OF GATE HOUSING SHALL HAVE OPENINGS FOR ALL NECESSARY CONNECTIONS AS COORDINATED WITH THE GATE MANUFACTURER. OPENINGS SHALL ONLY BE LARGE ENOUGH TO ACCOMMODATE CONNECTION WITH A TIGHT SEAL.
4. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS. ADJUSTMENTS TO SUPPORT MEMBER SPACING SHALL BE ALLOWED FOR FIT UP WITH PRIOR APPROVAL OF THE ENGINEER. SUBMIT DETAILS FOR APPROVAL.
5. CONTRACTOR SHALL SHIM PLATFORM SUCH THAT TOP OF PLATFORM GRATING IS LEVEL AND IN LINE WITH THE TOP OF ADJACENT BRIDGE DECK, OR AS DIRECTED BY THE ENGINEER.



DETAIL
3/4" = 1'-0"



PREPARED BY: WSP USA INC.
2008 LENOX DRIVE, LAWRENCEVILLE, N.J. 08648



CAPE MAY COUNTY

MARC S. ESPOSITO

N.J. PE LICENSE NUMBER:
246204845300

DATE

Designed by

MEGAN Q

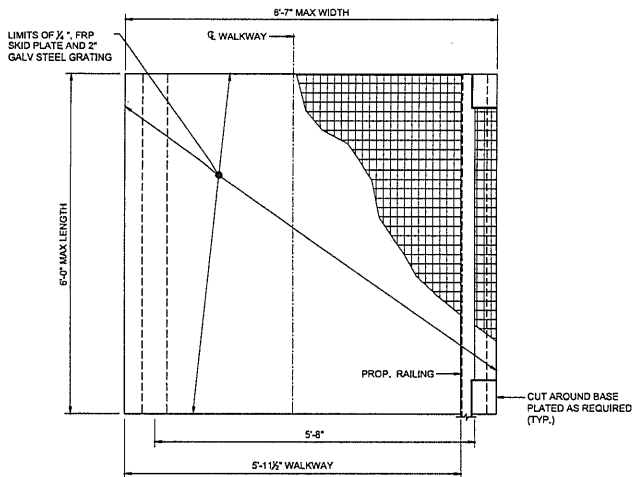
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Checked by

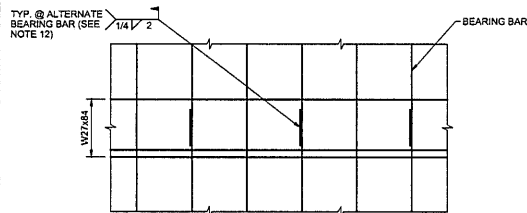
JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY
DRAWING TITLE:
WARNING GATE
PLATFORM DETAILS

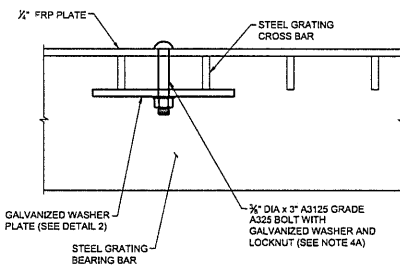
DATE:
4/5/2024
SCALE:
AS SHOWN
SHEET REFERENCE NO.:
97
SHEET NO.:
075 of 202



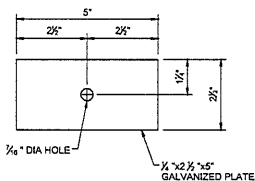
TYPICAL GRATING/FRP PLATE DETAIL
1" = 1'-0"



WALKWAY ATTACHMENT DETAILS
N.T.S.



TYPICAL SECTION AT BOLT AND FRP PLATE
5\"/>



DETAIL 2: WASHER PLATE
5\"/>

NOTES:

1. MATERIALS: GENERAL

A. ALL PLATE ATTACHMENT BOLTS SHALL MEET THE REQUIREMENTS OF ASTM F3125 GRADE A325. ALL BOLTS AND WASHER ASSEMBLIES SHALL BE GALVANIZED STEEL.

2. MATERIALS: MOLDED FRP FLOOR PLATE

A. MANUFACTURE: FLOOR PLATE SHALL BE OF A ONE PIECE MOLDED CONSTRUCTION OR PLAITRODED CONSTRUCTION MANUFACTURED BY BUILDING UP MULTIPLE LAYERS OF RESIN-IMPREGNATED FIBERGLASS REINFORCEMENTS WHICH ARE CONTINUOUS AND EQUALLY ORIENTED IN THE LENGTH AND WIDTH DIRECTIONS. NOMINAL THICKNESS SHALL BE INCH. PERCENTAGE OF GLASS (BY WEIGHT) SHALL NOT EXCEED 35% SO AS TO ACHIEVE MAXIMUM CORROSION RESISTANCE, AND AS REQUIRED TO MAINTAIN THE STRUCTURAL REQUIREMENTS OF THE CONTRACT DOCUMENTS. AFTER MOLDING, NO DRY GLASS FIBERS SHALL BE VISIBLE ON ANY SURFACE. ALL SURFACES SHALL BE SMOOTH AND UNIFORM WITH NO EVIDENCE OF FIBER ORIENTATION IRREGULARITIES, INTERLAMINAR VOIDS, POROSITY, RESIN RICH, OR RESIN STARVED AREAS.

B. NON-SLIP SURFACING: FLOOR PLATE SHALL HAVE A STANDARD #20-430 QUARTZ GRITTED SURFACE INTEGRALLY MOLDED INTO THE PLATE DURING THE MANUFACTURING PROCESS.

C. FIRE RATING: FLOOR PLATE SHALL BE FIRE RETARDANT WITH A TESTED FLAME SPREAD RATING OF 25 OR LESS WHEN TESTED IN ACCORDANCE WITH ASTM E84. CERTIFICATIONS SHALL BE DATED WITHIN THE PAST TWO YEARS, AND TEST DATA PERFORMED ONLY ON THE RESIN SHALL NOT BE ACCEPTABLE. PLATES SHALL ALSO HAVE TESTED BURN TIME OF LESS THAN 30 SECONDS AND AN EXTENT OF BURN RATE OF LESS THAN OR EQUAL TO 10 MILLIMETERS AS PER ASTM D635.

D. RESIN SYSTEM: THE RESIN SYSTEM USED IN THE MANUFACTURE OF THE PLATE SHALL BE VINYL-ESTER, OR PROVEN EQUAL. MANUFACTURER MAY BE REQUIRED TO SUBMIT CORROSION DATA FROM TESTS PERFORMED ON ACTUAL PLATE PRODUCTS IN STANDARD CHEMICAL ENVIRONMENTS. CORROSION RESISTANCE DATA OF THE BASE RESIN FROM THE MANUFACTURER IS NOT A TRUE INDICATOR OF PLATE PRODUCT CORROSION RESISTANCE AND SHALL NOT BE ACCEPTED.

E. COLOR: BLUE TO MATCH EXISTING AND PROPOSED RAILING

3. STEEL GRATING:

A. STEEL GRATING SHALL HAVE A MINIMUM SECTION MODULUS OF 3.2 IN³/FT. THE ASSUMED MINIMUM WEIGHT OF STEEL GRATING IS 16.4 LBS/SF.

4. SUBMITTALS: THE CONTRACTOR SHALL SUBMIT DETAILED SHOP DRAWINGS THAT SHALL INCLUDE, BUT ARE NOT LIMITED TO:

A. ALL PANEL DIMENSIONS AND AN OVERALL LAYOUT OF THE FRP DECK PLATES CONFIGURATION.

B. ANY OTHER INFORMATION AS REQUIRED TO FABRICATE AND INSTALL THE FRP DECK PLATES AS OUTLINES IN THE CONTRACT DOCUMENTS.

4. FABRICATION:

A. MEASUREMENTS: FRP PLATES SUPPLIED SHALL MEET THE DIMENSIONAL REQUIREMENTS SHOWN OR SPECIFIED. THE CONTRACTORS SHALL FIELD-VERIFY MEASUREMENTS AND LOCATIONS OF REQUIRED HOLES IN RELATION TO THE STEEL GRID DECK BEFORE PLATE FABRICATION. BOLT SPACING CAN BE ADJUSTED, IN CONJUNCTION WITH MANUFACTURER SPACING REQUIREMENTS, IF REQUIRED. FINAL BOLT SPACINGS SHALL BE SUBMITTED IN SHOP DRAWINGS FOR REVIEW.

B. SEALING: ALL SHOP FABRICATED PLATE CUTS SHALL BE COATED WITH VINYL-ESTER RESIN, OR PROVEN EQUAL COMPATIBLE WITH THE RESIN USED FOR THE FRP PLATE, TO PROVIDE MAXIMUM CORROSION RESISTANCE. ALL FIELD FABRICATED CUTS SHALL BE COATED SIMILARLY BY THE CONTRACTOR IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

C. HARDWARE: BOLTS SHALL MEET THE REQUIREMENTS OF ASTM F3125 GRADE 325. BOLT AND WASHER ASSEMBLIES SHALL BE GALVANIZED AND PROVIDED AND SPACED AS SHOWN ON PLANS, UNLESS REQUIRED DUE TO CONFLICTS. ALL FLOOR PLATES ARE TO BE BOLTED IN PLACE. BOLT SPACING CAN BE MODIFIED BY THE CONTRACTOR AND SUBMITTED FOR REVIEW DURING THE SHOP DRAWING PROCESS. CONTRACTOR IS RESPONSIBLE TO ENSURE BOLT ARRANGEMENT WILL WORK WITH EXISTING STEEL GRID DECK.

5. QUALITY ASSURANCE:

A. ALL ITEMS TO BE PROVIDED FOR THE PEDESTRIAN DECK PLATES SHALL BE FURNISHED ONLY BY MANUFACTURERS HAVING A MINIMUM OF TEN (10) YEARS EXPERIENCE OF DESIGN AND MANUFACTURE OF SIMILAR PRODUCTS. ADDITIONALLY, IF REQUESTED, A RECORD OF AT LEAST FIVE (5) PREVIOUS, SEPARATE, SIMILAR SUCCESSFUL INSTALLATIONS IN THE LAST FIVE (5) YEARS SHALL BE PROVIDED.

B. MANUFACTURER SHALL OFFER A 3 YEAR LIMITED WARRANTY ON FRP PRODUCTS AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP.

C. MANUFACTURER SHALL BE CERTIFIED TO THE LATEST ISO 9001 STANDARD.

D. MANUFACTURER SHALL PROVIDE PROOF OF CERTIFICATION FROM AT LEAST TWO OTHER QUALITY ASSURANCE PROGRAMS FOR ITS FACILITIES OR PRODUCTS (UL, DNV, ABS, USCG, AARF).

6. PRODUCT DELIVERY AND STORAGE:

A. DELIVERY OF MATERIALS: MANUFACTURED MATERIALS SHALL DELIVERED IN ORIGINAL UNBROKEN PALLETS, PACKAGES, CONTAINERS, OR BUNDLES BEARING THE LABEL OF THE MANUFACTURER ADHESIVES, RESINS AND THEIR CATALYSTS AND HARDENERS SHALL BE CRATED OR BOXED SEPARATELY AND NOTES AS SUCH TO FACILITATE THEIR MOVEMENT TO A DRY INDOOR STORAGE FACILITY.

B. STORAGE OF PRODUCTS: ALL MATERIALS SHALL BE CAREFULLY HANDLED TO PREVENT THEM FROM ABRASION, CRACKING, CHIPPING, TWISTING, OTHER DEFORMATIONS, AND OTHER TYPES OF DAMAGE. ADHESIVES, RESINS, AND THEIR CATALYSTS ARE TO BE STORED IN DRY INDOOR STORAGE FACILITIES BETWEEN 70 AND 85 DEGREES FAHRENHEIT (21 TO 29 DEGREES CELSIUS) UNTIL THEY ARE REQUIRED.

7. CONSTRUCTION REQUIREMENTS:

A. CONTRACTOR SHALL INSTALL PLATES IN ACCORDANCE WITH THE PLANS AND MANUFACTURER'S ASSEMBLY DRAWINGS. LOCK PLATES SECURELY IN PLACE WITH HOLD-DOWN FASTENERS AS SPECIFIED HEREIN. FIELD CUT AND DRILL FIBERGLASS REINFORCED PLASTIC PRODUCTS, ONLY AS APPROVED BY THE RE, WITH CARBIDE OR DIAMOND TIPPED BITS AND BLADES. SEAL CUT OR DRILLED SURFACES IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. FOLLOW MANUFACTURER'S INSTRUCTION WHEN CUTTING OR DRILLING FIBERGLASS PRODUCTS OR USING RESIN PRODUCTS; PROVIDE ADEQUATE VENTILATION.

8. METHOD OF MEASUREMENT

A. FRP PLATES WILL BE MEASURED FOR PAYMENT IN SQUARE FEET INSTALLED IN PLACE. THIS SHALL INCLUDE ALL FIELD MEASURING, SHOP DRAWINGS, CONNECTIONS, AND ALL OTHER MISCELLANEOUS ITEMS, EQUIPMENT, LABOR, TOOLS, AND HARDWARE NECESSARY FOR FURNISHING AND ERECTING THE FRP DECK PLATES. THE CONTRACTOR SHALL FOLLOW ALL MANUFACTURER RECOMMENDATIONS, AND ALL COSTS SHALL BE INCLUDED UNDER THIS PAY ITEM.

9. BASIS OF PAYMENT:

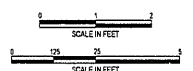
A. FRP PLATES WILL BE PAID FOR UNDER THE STRUCTURAL STEEL ITEMS.

10. THE REQUIRED FRP SIDEWALK INSTALLATION MUST BE SCHEDULED TO MEET THE CONSTRUCTION STAGING. THE COST FOR ALL COLD WEATHER PROTECTION REQUIRED TO MEET THIS TIME FRAME SHOULD BE INCLUDED IN THE BID PRICE AND SHALL NOT BE PAID SEPARATELY. THE CONTRACTOR IS ALERTED THAT FIELD SPlicing, BOLT HOLE PATCHING AND TOP PLATE APPLICATION ARE TEMPERATURE SENSITIVE ACTIVITIES. PROTECTION METHODS SHALL BE SUBMITTED TO ENGINEER FOR APPROVAL.

11. FRP SIDEWALK SHALL BE CONNECTED TO SUPPORTING STEEL WITH 1/2" DIAMETER STAINLESS STEEL 316 SOCKET HEAD CAP SCREWS, PHENOLIC WASHERS AND HEX NUTS AS SHOWN ON THE DRAWINGS. A BEVELED WASHER MAY BE USED TO CORRECT FOR THE SLOPE OF THE FRP SIDEWALK CONNECTION TO THE LEVEL SUPPORTING STEEL BASED UPON THE MANUFACTURER'S RECOMMENDATIONS. A PHENOLIC BOND BREAKER SHALL BE APPLIED TO ALL CONTACT SURFACES BETWEEN THE STAINLESS STEEL AND STRUCTURAL STEEL.

12. THE CONTRACTOR SHALL SUBMIT FABRICATION DRAWINGS AND DESIGN CALCULATIONS TO ENGINEER FOR REVIEW AND APPROVAL (SEE SPECIAL PROVISIONS). THE FRP PANELS SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW JERSEY. PANELS SHALL BE DESIGNED TO RESIST THE FOLLOWING LOADING CONDITION: 100 PSF PEDESTRIAN LOAD

13. CONTRACTOR SHALL PERFORM ALL WELDING WITH CARE. WELDING ON GALVANIZED STEEL CAN BE HAZARDOUS, AS AN ALTERNATE TO WELDING THE BEARING BARS TO THE STEEL FRAMING, GALVANIZED GRATING CLIPS PROVIDING SIMILAR CAPACITY CAN BE SUBMITTED FOR APPROVAL. A MINIMUM OF 8 GRATING CLIPS WITH A TESTED CAPACITY OF 900 LB PER UNIT WILL BE NEEDED FOR EACH GRATING PANEL. NO ADDITIONAL COMPENSATION WILL BE MADE FOR THE TYPE OF THE CONNECTION INSTALLED.



PREPARED BY: WSP USA Inc.
2002 LENOX DRIVE, LAWRENCEVILLE, N.J. 08448



CAPE MAY COUNTY

MARC S. ESPOSITO

N.J. PE LICENSE NUMBER
140004000

DATE

MEGAN Q

Designed by

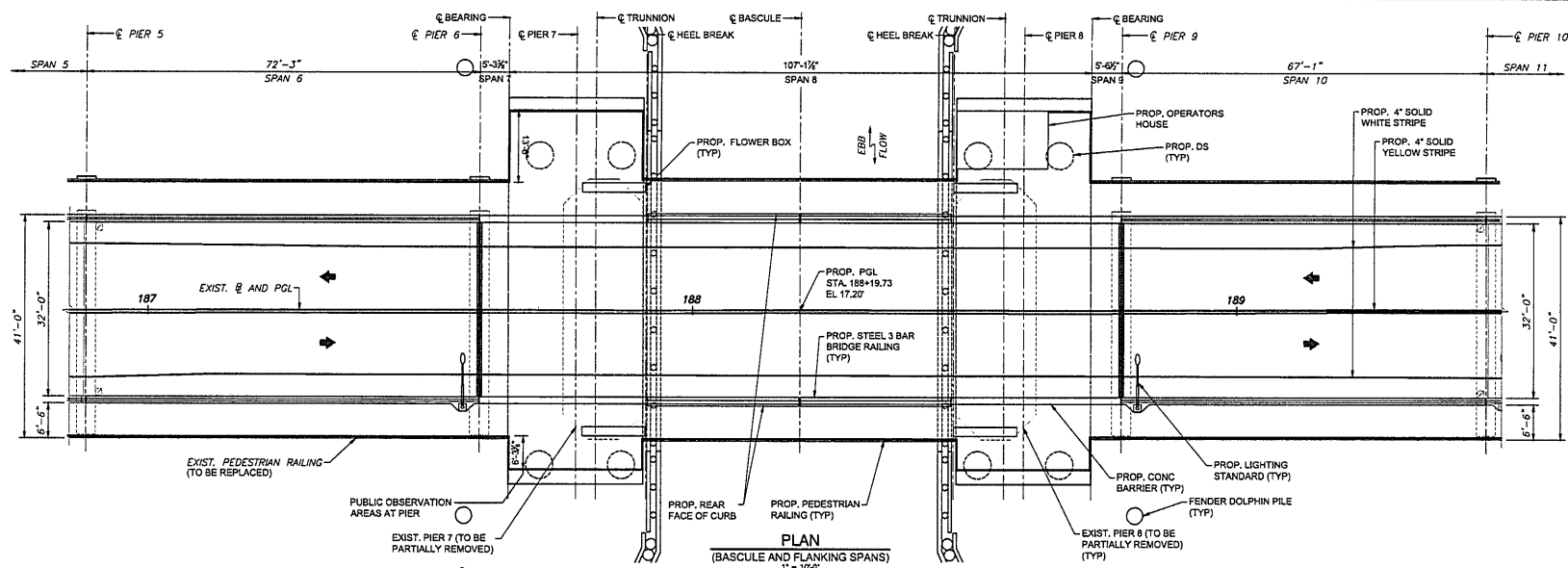
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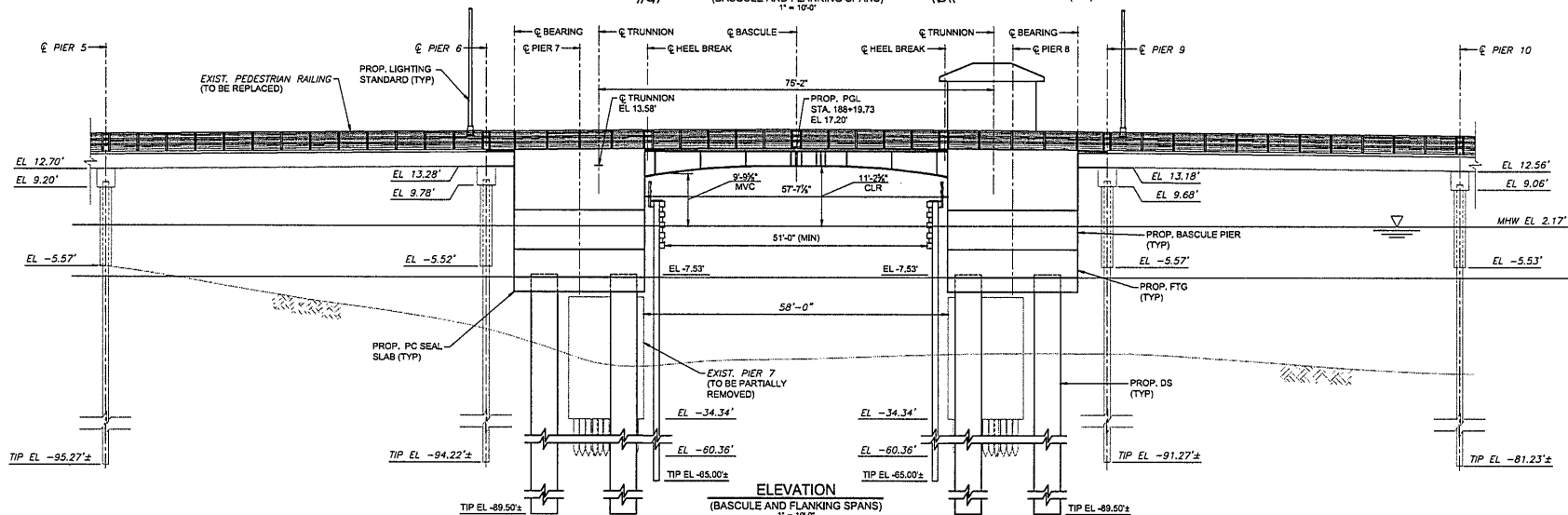
JO0
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND WIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY
DRAWING TITLE:
APPROACH SPAN
HANDRAIL AND
GRATING DETAILS

DATE:
4/9/2024
SCALE:
AS SHOWN
SHEET REFERENCE NO.:
of
SHEET NO.:
078 of 202



PLAN
(BASCULE AND FLANKING SPANS)
1" = 10'±



ELEVATION
(BASCULE AND FLANKING SPANS)
1" = 10'±

NOTES:

1. ELEVATIONS AND PROFILE SHOWN BASED ON AS-BUILTS AND LIMITED FIELD SURVEY. CONTRACTOR TO FIELD VERIFY ALL INFORMATION PRIOR TO DEMOLITION AND SUBMISSION OF SHOP DRAWINGS.

0 10 20
SCALE IN FEET

PREPARED BY: WSP USA Inc.
2000 LEXOR DRIVE, LAWRENCEVILLE, NJ 08648

MARC S. ESPOSITO

N.J. REG. LICENSE NO.:
240204843006

DATE



CAPE MAY COUNTY

DESIGNED BY

KYLE G

DATE

JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY
DRAWING TITLE:
BASCULE AND FLANKING
SPAN, GENERAL
PLAN & ELEVATION

DATE:
4/5/2024
SCALE:
1" = 10'-0"
SHEET REFERENCE NO.:
OF
SHEET NO.:
077 of 202

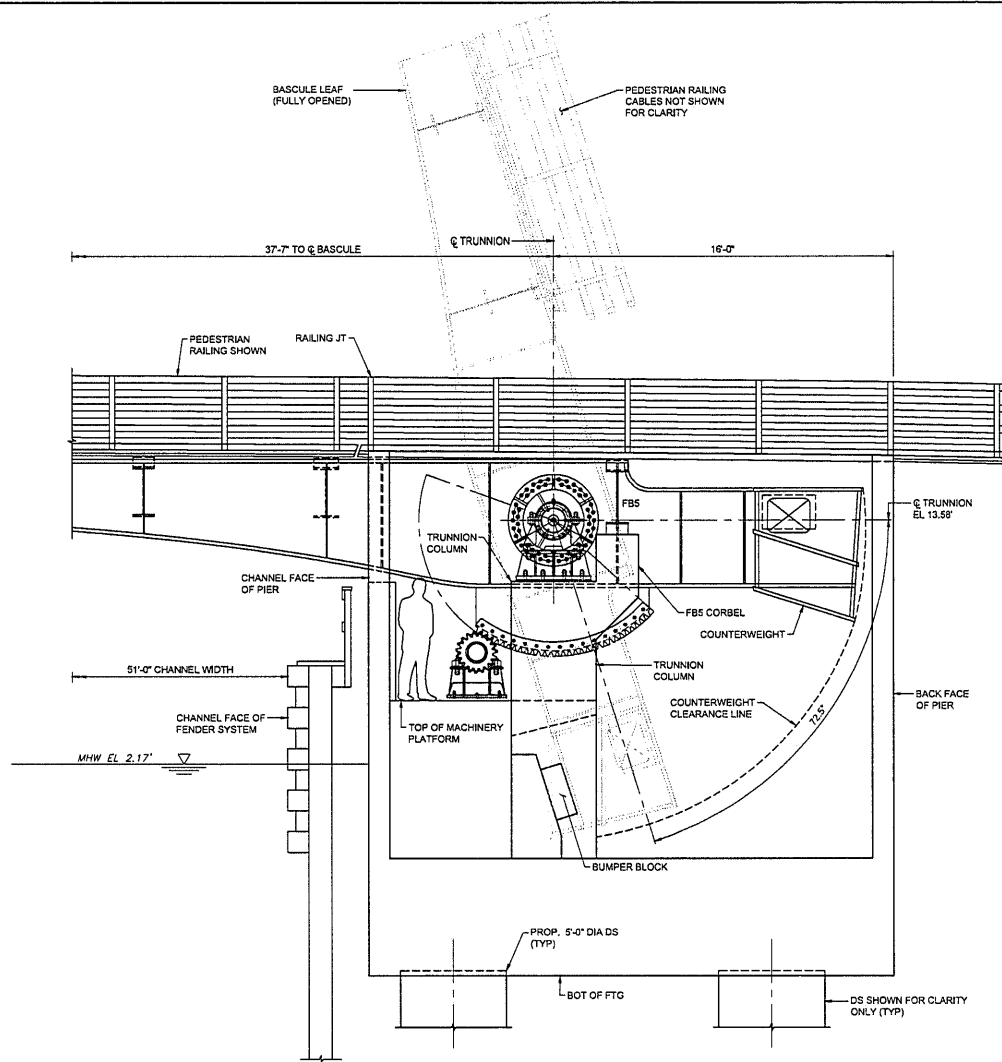
CHANNEL FACE OF
FENDER SYSTEM

1'-1 1/2"

PEDESTRIAN RAILING
CABLES NOT SHOWN
FOR CLARITY

EAST LEAF CLEARANCE DIAGRAM AT FENDER

3/8" = 1'-0"



EAST LEAF CLEARANCE DIAGRAM

3/8" = 1'-0"

NOTE:

SEAL SLAB NOT SHOWN FOR CLARITY.

0 3 6
SCALE IN FEET

PREPARED BY: WSP USA INC.
2000 LENOX DRIVE, LAWRENCEVILLE, N.J. 08848



CAPE MAY COUNTY

MARC S. ESPOSITO

N.J. PE LICENSE NUMBER:
240604842006

DATE

DESIGNED BY
KYLE G

DRAWN BY

CHECKED BY

JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

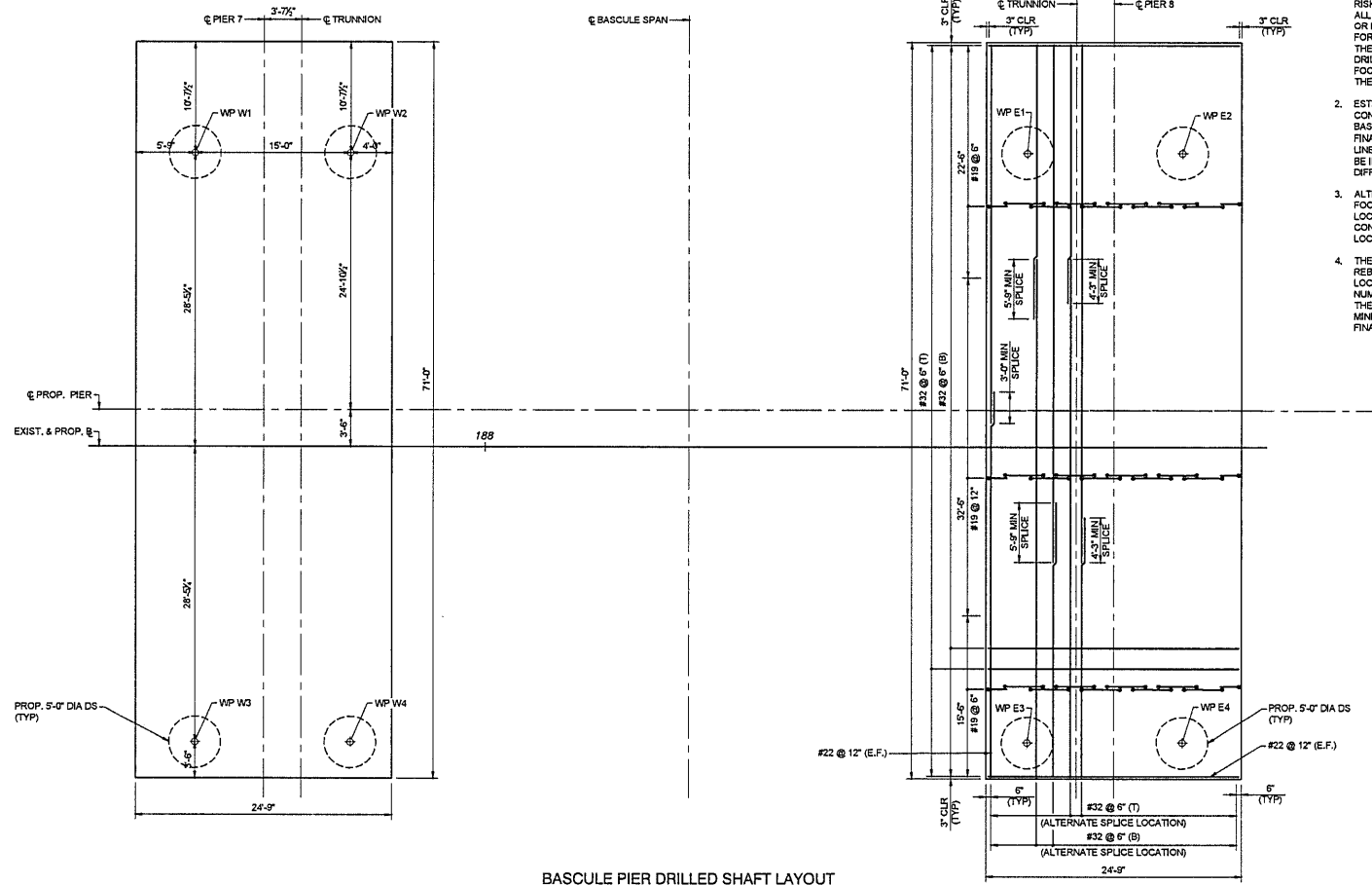
PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY
DRAWING TITLE:
BASCULE PIER
CLEARANCE DIAGRAM

DATE: 4/9/2024

SCALE: 3/8" = 1'-0"

SHEET REFERENCE NO.: 1

SHEET NO.: 013 of 202



BASCULE PIER DRILLED SHAFT LAYOUT
3/16" = 1'-0"

NOTES:

1. PERMANENT CASINGS ARE REQUIRED AS SHOWN ON THE PLANS. THE CONTRACTOR SHALL DETERMINE THEIR PREFERRED TOP OF CASING ELEVATION TO ACCOUNT FOR RISK OF STORM SURGES/EVENTS DURING CONSTRUCTION. ALL CASINGS SHALL EXTEND A MINIMUM OF 3' ABOVE MHW OR HIGHER. LENGTH OF CASING WILL NOT BE MEASURED FOR PAYMENT. THE CONTRACTOR SHALL ACCOUNT FOR THE INTENDED LENGTH IN THEIR UNIT PRICE FOR THE DRILLED SHAFT ITEMS. CUT CASINGS TO THE BOTTOM OF FOOTING ELEVATION UNLESS OTHERWISE APPROVED BY THE RE.
2. ESTIMATED DRILLED SHAFT TIP ELEVATIONS ARE CONSIDERED IN DRILLED SHAFT LINEAR FOOT QUANTITIES. BASED ON CONDITIONS OBSERVED, THE RE MAY DIRECT FINAL TIP ELEVATIONS TO BE REDUCED. THE PAYMENT FOR LINEAR FOOT UNIT PRICES OR LUMP SUM ITEMS WILL NOT BE INCREASED IF THE FINAL TIP ELEVATIONS ARE DIFFERENT FROM THE TIP ELEVATIONS PROVIDED.
3. ALTERNATING SPICE LOCATIONS ARE SHOWN FOR FOOTING REINFORCEMENT. EVERY OTHER BAR SHALL BE LOCATED AT THE ALTERNATE SPICE LOCATION. THE CONTRACTOR MAY PROPOSE ALTERNATE SPICE LOCATIONS FOR APPROVAL BY THE ENGINEER.
4. THE CONTRACTOR MAY ADJUST THE SPACING OF THE REBAR IN THE FOOTING TO ACCOUNT FOR THE AS-BUILT LOCATION OF DRILLED SHAFT REINFORCEMENT. THE NUMBER OF REBAR MUST BE MAINTAINED AS SHOWN ON THESE DRAWINGS, AND MUST BE PLACED TO COMPLY WITH MINIMUM SPACING LIMITATIONS OF AASHTO BASED ON THE FINAL MIX APPROVED FOR THE FOOTING INSTALLATION.

NOTE:
REINFORCEMENT IS SHOWN FOR PIER 8 ONLY, PIER 7 SIMILAR.



PREPARED BY: WSP USA Inc.
2000 LEXIA DRIVE, LAWRENCEVILLE, N.J. 08648



CAPE MAY COUNTY

MARC S. ESPOSITO

N.J. PE LICENSE NUMBER
PA62048400

DATE

Designed by

Drawn by

Checked by

JOB:

REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

DRAWING TITLE:

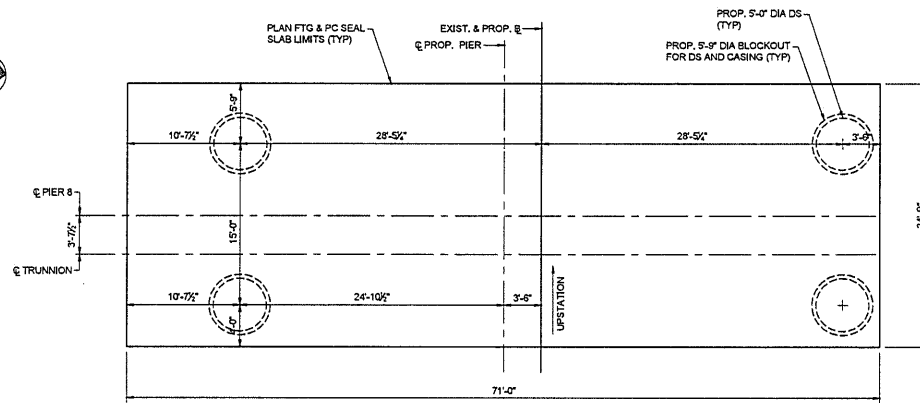
BASCULE PIER
FOOTING PLAN

DATE: 4/5/2024

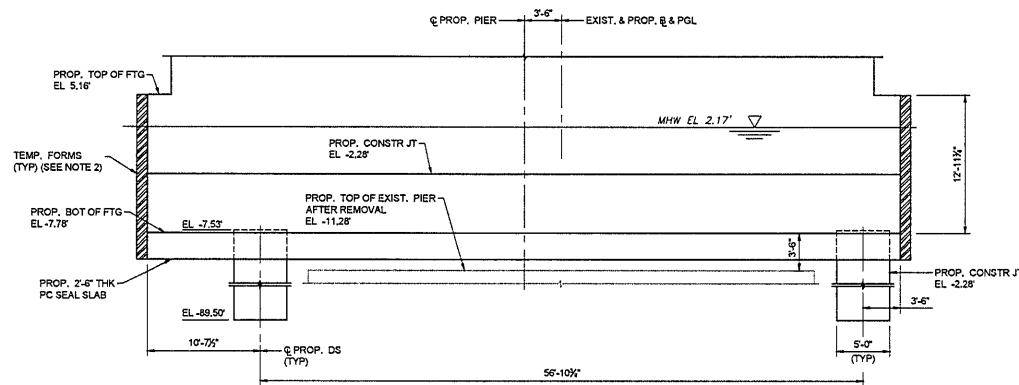
SCALE: 3/16" = 1'-0"

SHEET REFERENCE NO.:
OF

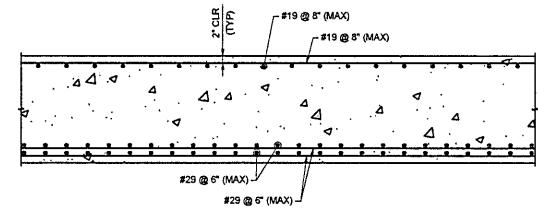
SHEET NO.:
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BASCULE PIER SEAL SLAB PLAN
(PIER 8 SHOWN, PIER 7 SIMILAR)
3/16" = 1'-0"



ELEVATION - PROPOSED BASCULE PIER
(PIER 8 SHOWN, PIER 7 SIMILAR) (LOOKING EAST)
3/16" = 1'-0"

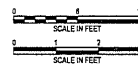


TYPICAL SEAL SLAB REINFORCEMENT
3/4" = 1'-0"

NOTES:

1. PRECAST SEAL SLAB AND FORMWORK TO BE CONSTRUCTED WATER TIGHT. FORMWORK TO BE REMOVED FOLLOWING FOOTING CONSTRUCTION. PRECAST SEAL SLAB TO BE LEFT IN PLACE.
2. PRECAST SEAL SLAB TO BE CLASS P CONCRETE. TEMPORARY FORMWORK TO BE STEEL.
3. GENERAL REQUIREMENTS FOR THE PRECAST SEAL SLAB ARE SHOWN. FINAL DESIGN, DETAILS AND DIMENSIONS TO BE DETERMINED BY THE CONTRACTOR. SUBMIT THE PRECAST SEAL SLAB DESIGN FOR APPROVAL, INCLUDING CALCULATIONS SIGNED BY A LICENSED PE. SHOULD THE CONTRACTOR ELECT TO USE TEMPORARY SUPPORT METHODS FOR THE PRECAST SEAL SLAB, PROVIDE DESIGN CALCULATIONS AND DETAILS AS NEEDED TO FACILITATE THE WORK.
4. THE CONTRACTOR MAY CONSIDER USING LIGHTWEIGHT CONCRETE OR TEMPORARY SUPPORT METHODS FOR THE PRECAST SEAL SLAB SUCH AS SUPPORTS FROM THE EXISTING BRIDGE FOOTING, SUPPORTS SPANNING THE DRILLED SHAFTS, OR OVERHEAD SUPPORTS.
5. THE CONTRACTOR SHOULD ACCOUNT FOR ANY ANTICIPATED DEFLECTIONS.

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PREPARED BY: WSP USA, Inc.
2000 LENOX DRIVE, LAWRENCEVILLE, N.J. 08848



MARC S. ESPOSITO

N.J. PE LICENSE NUMBER:
2460484200

DATE



CAPE MAY COUNTY

DESIGNED BY

DRAWN BY

CHECKED BY

JOB
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

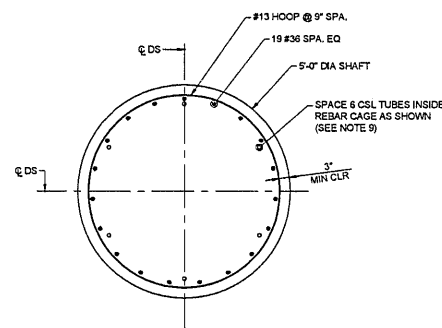
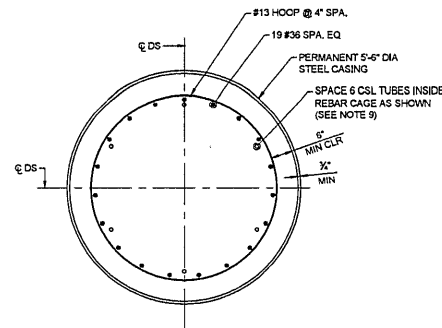
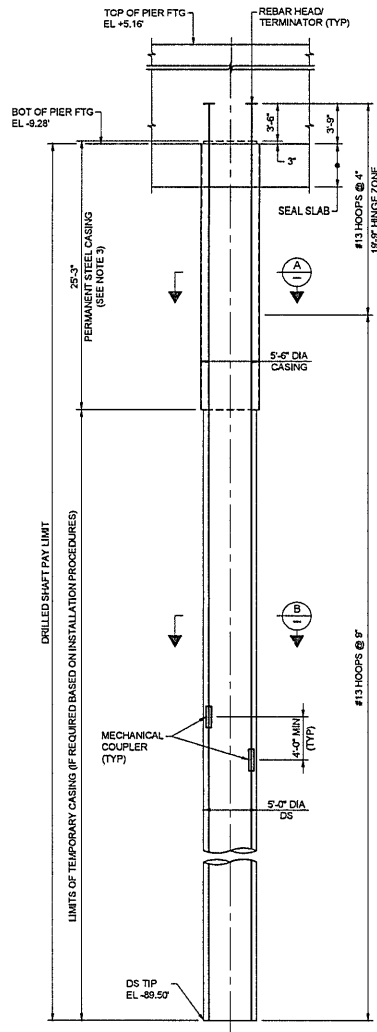
PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY
DRAWING TITLE:
BASCULE PIER
SEAL SLAB PLAN

DATE:
4/5/2024

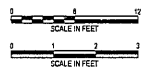
SCALE:
AS SHOWN


SHEET REFERENCE NO.:
OF

SHEET NO.:
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- NOTES:**
- SEE SH BXX FOR LOCATION OF DRILLED SHAFTS.
 - ELEVATION VIEW IS NOT TO SCALE.
 - ALL PERMANENT STEEL CASINGS SHALL BE ASTM A 252 GRADE 2. THE COST OF THE PERMANENT STEEL CASINGS SHALL BE INCLUDED IN THE COST OF THE BID ITEM DRILLED SHAFT IN SOIL 60" DIAMETER. LIMITS OF PERMANENT SHEETING SHOWN ARE BASED ON THE FINAL TOP OF DRILLED SHAFT ELEVATION. ADDITIONAL TEMPORARY CASING ABOVE THIS ELEVATION MAY BE PROVIDED FOR THE CONTRACTOR'S PROCEDURES AT NO ADDITIONAL COST. LIMITS OF TEMPORARY CASING SHOWN ARE STRICTLY TO DEMONSTRATE A POTENTIAL PROCEDURE FOR DRILLED SHAFT CONSTRUCTION. THE COST FOR ANY TEMPORARY CASING NEEDED SHALL ALSO BE INCLUDED IN THE COST OF THE BID ITEM DRILLED SHAFT IN SOIL 60" DIAMETER. THE PROPOSED METHOD TO CONSTRUCT THE DRILLED SHAFT IS SUBJECT TO THE APPROVAL OF THE ENGINEER. NO ADDITIONAL COMPENSATION WILL BE MADE BASED ON THE ITEMS OF WORK ASSOCIATED WITH THE APPROVED PROCEDURE.
 - SPIRAL REINFORCEMENT MAY BE SUBSTITUTED FOR THE HOOP REINFORCEMENT SHOWN ON THE DRAWING. NO SEISMIC HOOKS ARE ALLOWED. THE SPIRALS IN THE HINGE ZONE SHALL BE FORMED EITHER BY FULLY DEVELOPED BUTT WELDS OR BY APPROVED MECHANICAL COUPLERS. SPIRALS BELOW THE HINGE ZONE MAY BE LAPPED USING APPROPRIATE LAP LENGTHS.
 - WELDING OF REINFORCEMENT SHALL BE IN ACCORDANCE WITH AWS D1.4.
 - CONTRACTOR SHALL NOT YIELD/DEFORM REBAR CAGE DURING ITS LIFTING, HANDLING, AND PLACEMENT.
 - ADJACENT LONGITUDINAL BARS SHALL BE SPLICED IN STAGGERED FASHION.
 - MECHANICAL CONNECTIONS SHALL DEVELOP AT LEAST 125 PERCENT OF YIELD STRENGTH OF THE BAR. NO COUPLERS SHALL BE PERMITTED WITHIN THE SEISMIC HINGE ZONE IDENTIFIED, TYPE 2 COUPLERS SHALL BE USED IN THE DRILLED SHAFTS.
 - STEEL PIPES OF SUITABLE STRENGTH SHALL BE FURNISHED AND INSTALLED FOR THE FULL LENGTH OF THE DRILLED SHAFTS FOR CROSSHOLE SONIC LOGGING (CSL). DETAILS OF THE INSTALLATION FOR CSL SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO DRILLED SHAFT WORK.
 - THE ESTIMATED DRILLED SHAFT TIP ELEVATIONS SHOWN ON THE PLANS SHALL APPLY UNLESS OTHERWISE DIRECTED BY THE ENGINEER. NO DRILLED SHAFT SHALL BE INSTALLED AT A TIP ELEVATION SHALLOWER THAN THE TIP ELEVATION SHOWN ON THE PLANS.
 - SEE SH BXX FOR BOTTOM OF FOOTING ELEVATIONS.
 - COST OF REINFORCEMENT STEEL SHALL BE INCLUDED IN THE COST OF THE DRILLED SHAFTS. REINFORCEMENT IN THE DRILLED SHAFTS MAY BE PLAIN STEEL AND SHALL NOT BE IN CONTACT WITH THE GALVANIZED REINFORCEMENT IN THE FOOTING.
 - PROVIDE EQUIPMENT THAT IS CAPABLE OF INSTALLING 5.5-FT DIAMETER SHAFT IN SOIL TO A DEPTH OF 100 FEET IN WATER.
 - THE TOP OF THE PERMANENT CASING AND THE DRILLED SHAFT IS SEVERAL INCHES INTO THE PROPOSED FOOTING AS SHOWN. THE TOP OF THE DRILLED SHAFT AT THIS ELEVATION SHALL BE SOUND MATERIAL AND THE FINISHED SURFACE AFTER REMOVAL OF ANY LOOSE CONCRETE. THE PERMANENT CASING SHALL BE CUT TO THE TOP OF SHAFT ELEVATION TO ALLOW INSTALLATION OF REBAR.
 - CONTRACTOR TO SUBMIT A WORK PLAN AND INSTALLATION METHOD FOR APPROVAL TO ENSURE THE BOTTOM IS STABLE DURING SHAFT EXCAVATION AND THAT HYDROSTATIC PRESSURE IS MAINTAINED.



PREPARED BY: WSP USA INC. 2000 LENOX DRIVE LAWRENCEVILLE, NJ 08648 MARC S. ESPOSITO N.J. PE LICENSE NUMBER: 34620484300	DATE:	 CAPE MAY COUNTY DESIGNED BY: KYLE G DRAWN BY:	JOB: REHABILITATION OF 96TH STREET (CR657) BRIDGE OVER GREAT CHANNEL STR. NO. 0500-006	PROJECT LOCATION: STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP CAPE MAY COUNTY, NEW JERSEY DRAWING TITLE: DRILLED SHAFT DETAILS	DATE: 4/9/2024 SCALE: AS SHOWN SHEET REFERENCE NO.: 18 SHEET NO.: 202 of 202
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11/11/11



DATE _____

Designed by _____ Drawn by _____ Checked by _____

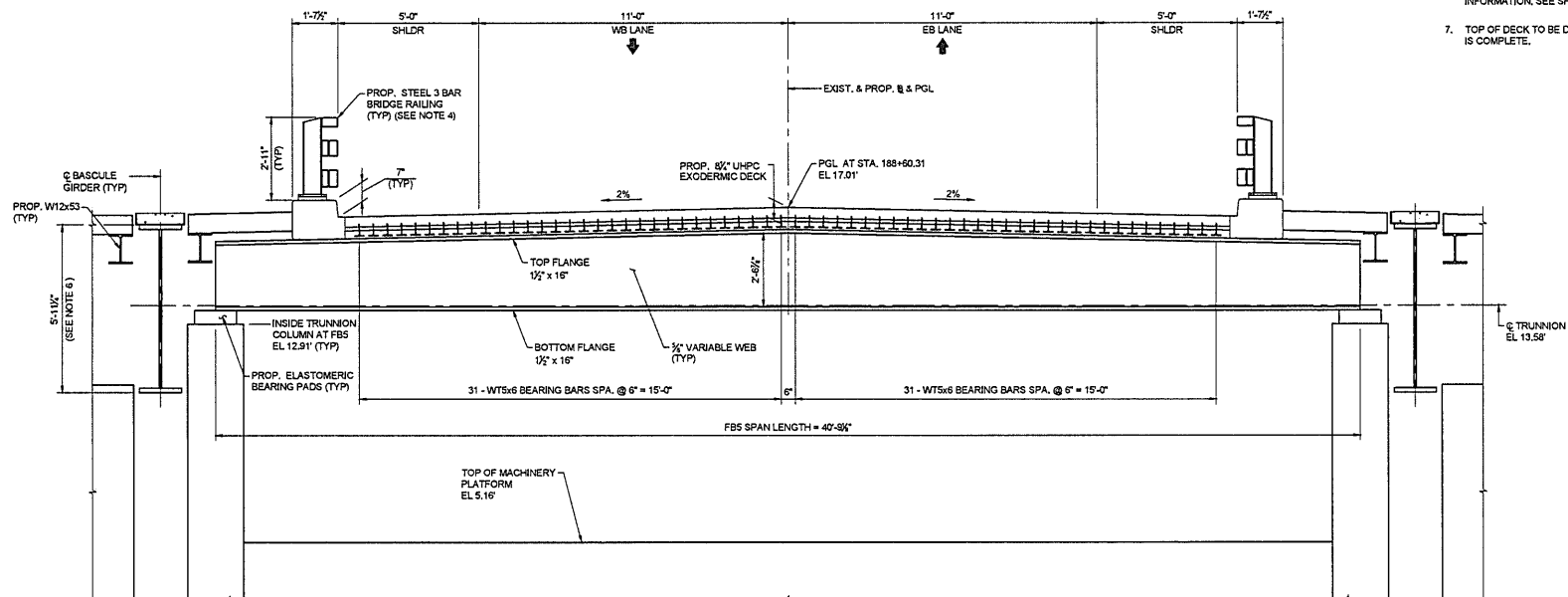
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION: STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP CAPE MAY COUNTY, NEW JERSEY
DRAWING TITLE: BASCULE PIER 8 TRANSVERSE SECTION

DATE:	4/9/2024
SCALE:	3/8" = 1'-0"
SHEET REFERENCE N	of
SHEET NO.:	

NOTES:

1. FOR GENERAL NOTES, SEE SHEET BX.
2. FULL DEPTH CLOSURE POCKETS TO BE PROVIDED AT FLOORBEAMS.
3. SHEAR CONNECTORS ON FLOORBEAMS ARE NOT SHOWN ON THIS SHEET. SEE SH BOX FOR ADDITIONAL DETAILS.
4. FOR EXODERMIC DECK DETAILS FOR SPAN OVER COUNTERWEIGHT, SEE SHEET BX.
5. THE STEEL 3 BAR BRIDGE RAILING TO BE PROVIDED IS THE OREGON DOT 3-TUBE CURB MOUNT BRIDGE RAIL. SEE OREGON DOT STANDARD DRAWING BR208 FOR ADDITIONAL INFORMATION. THE TRANSITION TO CONCRETE PARAPET SHALL BE SIMILAR TO THE DETAILS SHOWN IN OREGON DOT STANDARD DRAWING BR209 WITHOUT A GUIDERAIL ATTACHMENT.
6. GIRDERS ARE VARIABLE DEPTHS. DEPTH OF GIRDERS SHOWN ON TYPICAL SECTIONS ARE FOR GENERAL INFORMATION. SEE SHEET BXX FOR GIRDER INFORMATION.
7. TOP OF DECK TO BE DIAMOND GROUND AFTER UHPC CURING IS COMPLETE.



TYPICAL SECTION - SPAN OVER COUNTERWEIGHT AT FB5
(FB5E SHOWN, LOOKING EAST, FB5W SIMILAR)
1/2" = 1'-0"

SCALE IN FEET

PREPARED BY: WSP USA INC.
2000 LENOX DRIVE, LAWRENCEVILLE, N.J. 08848



CAPE MAY COUNTY

MARC S. ESPOSITO N.J. RE LICENSE NUMBER 24020484300

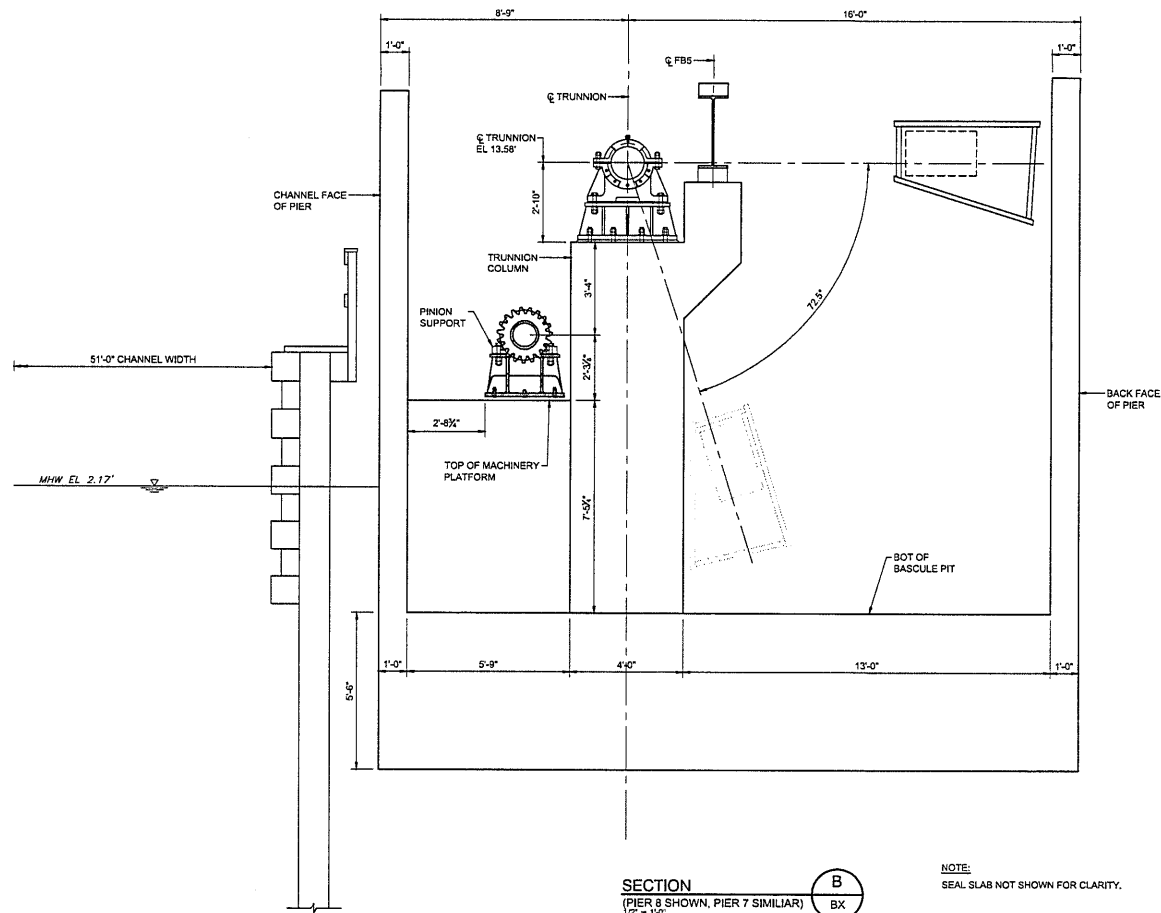
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KYLE G
Designed by Drawn by Checked by

JOB: REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MOORE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY
DRAWING TITLE:
FB5 ELEVATION
& DETAILS

DATE: 4/9/2024
SCALE: 1/2" = 1'-0"
SHEET REFERENCE NO.:
SHEET NO.: 088 of 202



3 2 1
SCALE IN FEET

PREPARED BY: WSP USA INC.
2005 LENOX DRIVE, LAWRENCEVILLE, N.J. 08648



CAPE MAY COUNTY

MARC S. ESPOSITO N.J. PE LICENSE NUMBER:
24GE04M3200

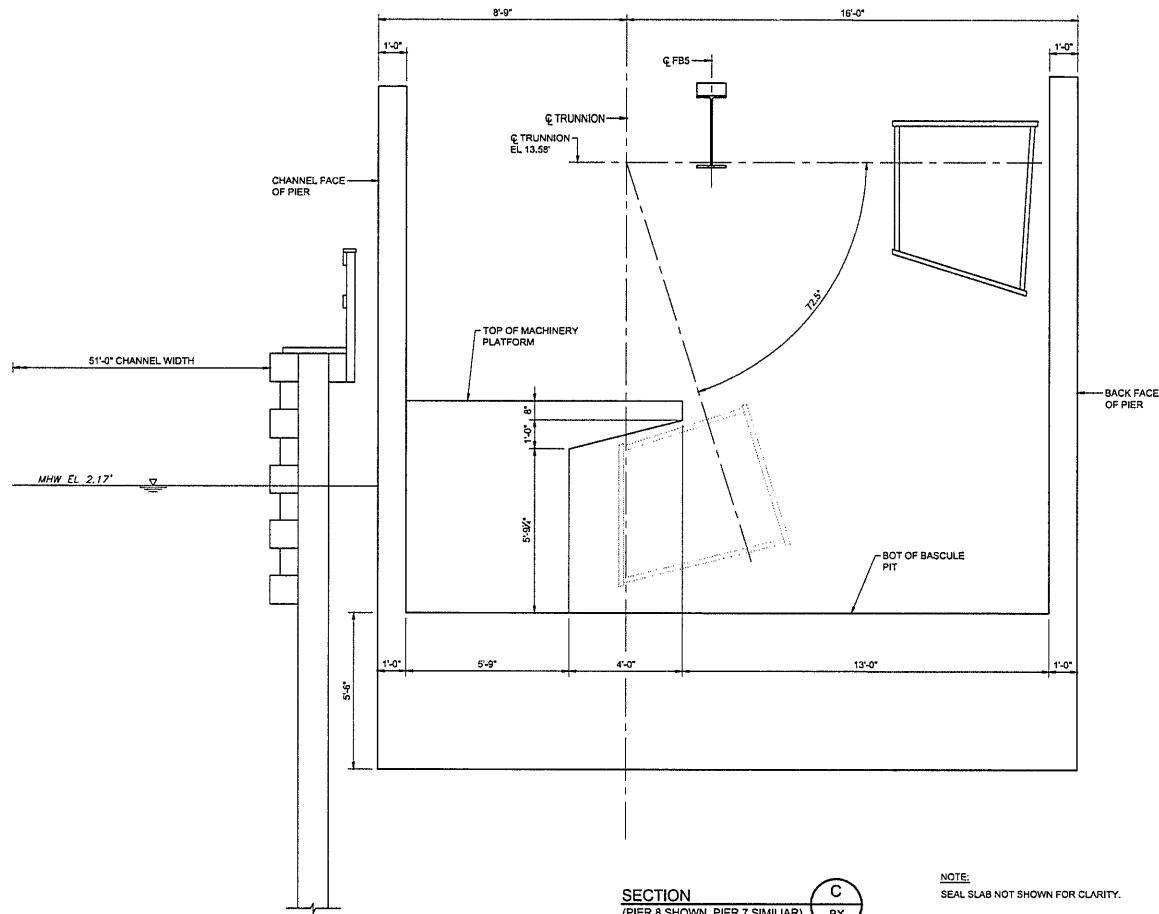
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DESIGNED BY: KYLE G
DRAWN BY: CHECKED BY:

JOB: REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY
DRAWING TITLE:
BASCULE PIER
LONGITUDINAL
SECTION - 1

DATE: 4/5/2024
SCALE: 1/2" = 1'-0"
SHEET REFERENCE NO.:
SHEET NO.: 087 of 222



SECTION
(PIER 8 SHOWN, PIER 7 SIMILIAR)
1/2" = 1'-0"



NOTE:
SEAL SLAB NOT SHOWN FOR CLARITY.

SCALE IN FEET

PREPARED BY: WSP USA INC.
200 LENOX DRIVE, LAWRENCEVILLE, N.J. 08648



CAPE MAY COUNTY

MARC S. ESPOSITO N.J. PE LICENSE NUMBER: 3452048400

DATE

DESIGNED BY: KYLE G. CHECKED BY:

JO: REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

DRAWING TITLE:
BASCULE PIER
LONGITUDINAL
SECTION - 2

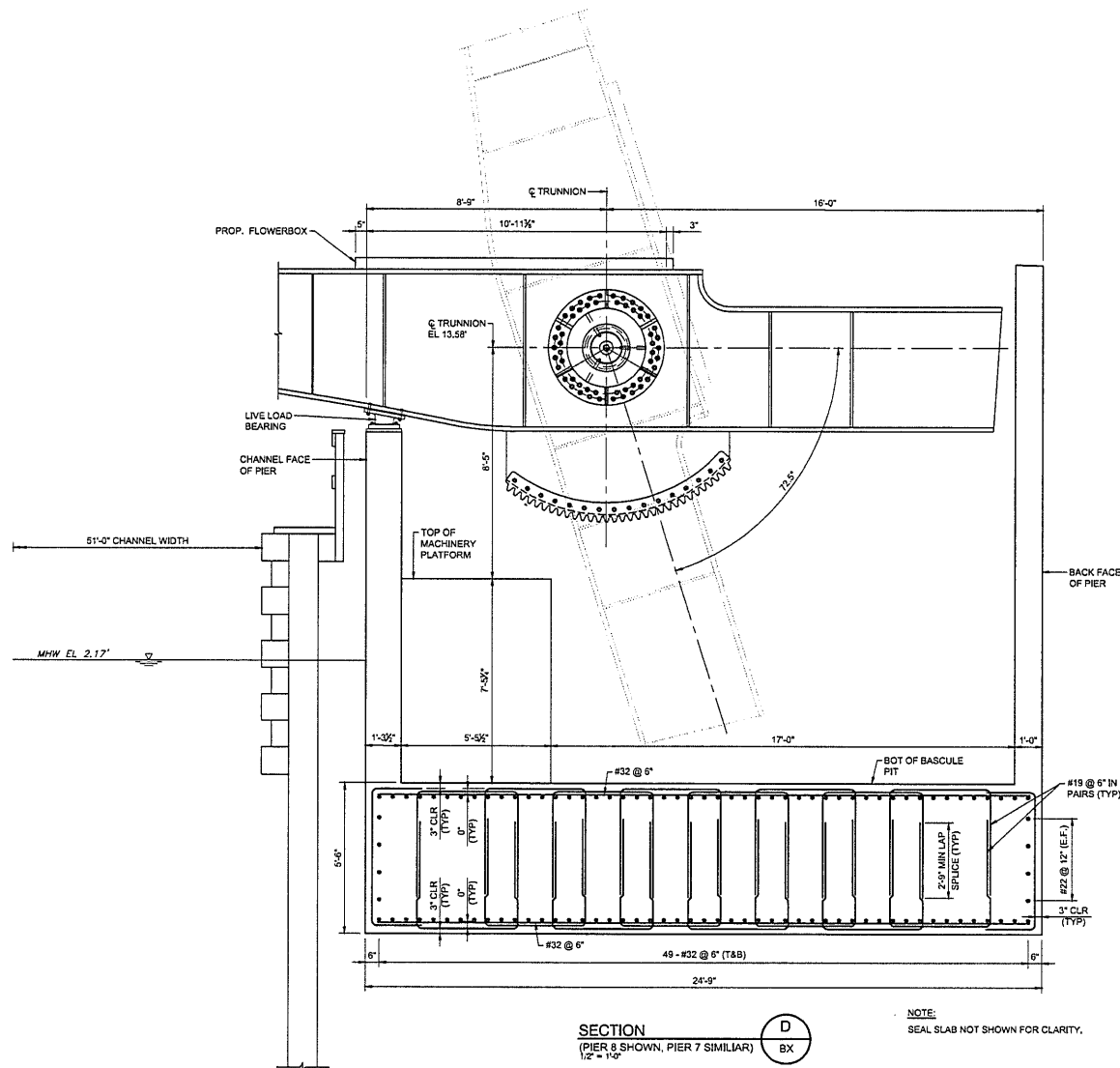
DATE: 4/5/2024

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

SHEET REFERENCE NO.:
OF

SHEET NO.:
388 of 202

- NOTES:**
- OVERALL FOOTPRINT OF BASCULE GIRDER SHOWN ON THIS SHEET. STIFFENERS AND CONNECTION PLATE DETAILS ARE NOT SHOWN HERE, REFER TO BASCULE GIRDER DETAIL SHEETS.



NOTE:
SEAL SLAB NOT SHOWN FOR CLARITY.

PREPARED BY: WSP USA Inc.
2000 LENOX DRIVE, LAWRENCEVILLE, NJ 08648



CAPE MAY COUNTY

MARC S. ESPOSITO

N.J. PE LICENSE NUMBER:
24CE0446300

DATE

Designed by

KYLE Q

Drawn by

Checked by

JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

DRAWING TITLE:
BASCULE PIER
LONGITUDINAL
SECTION - 3

DATE:
4/9/2024

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

SHEET REFERENCE NO.:
of

SHEET NO.:
089 of 302

BASCULE SPAN ASSEMBLY NOTES:

GENERAL:

1. DEVELOP AND IMPLEMENT PROCEDURES NECESSARY TO OBTAIN SATISFACTORY ALIGNMENT, DEVELOP AND IMPLEMENT A BASCULE SPAN ASSEMBLY WORK PLAN INCLUDING ALL NECESSARY TEMPORARY SUPPORTS, TIE-BACKS, FALSEWORK, SHORING, JACKING, ETC., AND PROCEDURES TO SAFELY ERECT THE BASCULE LEAVES. SUBMIT FOR APPROVAL THE SEQUENCE OF CONSTRUCTION OF THE SPAN AND METHODS EMPLOYED INCLUDING THE USE OF ANY TEMPORARY ELEMENTS NEEDED TO FACILITATE THE WORK PLAN. THE SUBMISSION MAY BE DEVELOPED AS THE CONTRACTOR DEEMS NECESSARY TO CONVEY THE PROCEDURES, A NARRATIVE, DRAWINGS, CATALOGUE CUTS, AND DESIGN FOR TEMPORARY ELEMENTS ARE ALL ANTICIPATED AS PART OF THE BASCULE SPAN ASSEMBLY WORK PLAN.
2. REVIEW AND APPROVAL OF THE BASCULE SPAN ASSEMBLY WORK PLAN FOR COMPLIANCE WITH THE MINIMUM REQUIREMENTS OF THE CONTRACT DOCUMENTS AND IS NOT A RELIEF OF RESPONSIBILITY FOR THE SATISFACTORY ALIGNMENT AND SAFE ERECTION OF THE BASCULE SPANS.
3. PERFORM SHOP FABRICATION OF STRUCTURAL STEEL FOR THE BASCULE LEAVES IN ACCORDANCE WITH THE PROVISIONS STATED HEREIN. THE PLANS, APPROVED SHOP DRAWINGS, SECTIONS 506 AND 514 OF THE SPECIFICATIONS, AND AASHTO/ANSI/AWS BRIDGE WELDING CODE D1.5.
4. ENSURE THE FABRICATION AND SHOP ASSEMBLY OF THE BASCULE LEAVES IS PERFORMED BY A SHOP CERTIFIED FABRICATOR UNDER THE AISC QUALITY CERTIFICATION PROGRAM AS MEETING THE REQUIREMENTS OF CATEGORY I/IF OR CBR (MAJOR BRIDGE). FABRICATOR MUST DEMONSTRATE SUCCESSFUL FABRICATION AND ASSEMBLY OF TWO DOUBLE LEAF BASCULE BRIDGES IN THE PAST 10 YEARS WITH OWNERS LETTERS OF RECOMMENDATION, SUBMIT EXPERIENCE FOR APPROVAL.
5. CONSTRUCTION WHICH REQUIRES CLOSURE OF THE SPAN TO VEHICULAR TRAFFIC MUST COMMENCE AFTER THANKSGIVING WEEKEND, AND TERMINATE PRIOR TO THE FOLLOWING MEMORIAL DAY HOLIDAY WEEKEND FOR EACH YEAR OF CONSTRUCTION. THE DURATION OF EACH VEHICULAR SHUTDOWN PERIOD IS LIMITED TO A MAXIMUM OF 90 CONSECUTIVE CALENDAR DAYS AND IS SUBJECT TO APPROVAL BY THE COUNTY.
6. HALF OF THE NAVIGABLE CHANNEL MUST REMAIN OPEN AT ALL TIMES FOR VESSELS WITH A MINIMUM VERTICAL CLEARANCE OF 9'-0". DURING THE ENTIRE SEQUENCE OF BASCULE SPAN ERECTION, HALF OF THE NAVIGABLE CHANNEL MUST BE MAINTAINED WITH UNLIMITED VERTICAL CLEARANCE AT ALL TIMES. DURING PLANNED VEHICULAR CLOSURES PRIOR TO BASCULE SPAN ERECTION, THE NAVIGABLE CHANNEL MUST BE MAINTAINED AT ITS FULL WIDTH WITH UNLIMITED VERTICAL CLEARANCE AT ALL TIMES. COORDINATE ALL CHANNEL AND NAVIGATION IMPACTS WITH THE USCG, PROVIDING ALL BACKUP DOCUMENTATION AND ADVANCE NOTICE REQUIRED TO SATISFY USCG. ANY DELAYS OR REJECTIONS RELATED TO INCOMPLETE OR INADEQUATE INFORMATION SHARED WITH THE USCG ARE STRICTLY THE CONTRACTOR'S RESPONSIBILITY AND WILL NOT BE SUBJECT TO ADDITIONAL COST OR AN EXTENSION OF TIME. THE DURATION OF EACH MARINE SHUTDOWN PERIOD WHERE UNLIMITED CLEARANCE IS NOT AVAILABLE IS LIMITED TO A MAXIMUM OF 90 CONSECUTIVE CALENDAR DAYS AND SUBJECT TO APPROVAL BY THE USCG AND THE COUNTY.
7. ANY WORK TO BE PERFORMED USING SINGLE LANE CLOSURES SHALL BE PERFORMED USING NIGHT HOURS IF PERFORMED WITHIN THE PEAK SEASON UNLESS OTHERWISE APPROVED BY THE COUNTY. THE PEAK SEASON IS DEFINED IN THE PROJECT SPECIFICATIONS.

BASCULE SPAN SHOP ASSEMBLY:

GENERAL:

1. ASSEMBLE THE BASCULE SPAN (BOTH LEAVES) IN THE SHOP IN ITS ENTIRETY AND MARK FOR RE-ASSEMBLY IN THE FIELD. SHOP ASSEMBLY INCLUDES GIRDERS, COUNTERWEIGHTS BOXES, FLOORBEAMS, FLOORBEAM BRACKETS, SPAN LOCK CONNECTIONS AND A TEMPLATE FOR VERIFYING SPAN LOCK FIT-UP, EXODERMIC DECK, SIDEWALK BRACKETS, AND SIDEWALK, INCLUDE LATERAL BRACING IN THE SHOP ASSEMBLY. HOWEVER, USE UNDERSIZE BOLTS FOR FASTENING LATERAL BRACING.
2. THE SHOP ASSEMBLY INCLUDES THE PERMANENT INSTALLATION OF THE TRUNNION SHAFT, TRUNNION HUB AND TRUNNION RING ASSEMBLY IN EACH GIRDER. ASSEMBLE THE STEEL FOR EACH LEAF AFTER BOTH TRUNNION ASSEMBLIES ARE SET TRUE, LEVEL AND COLLINEAR WITH EACH OTHER. FOR TRUNNION ASSEMBLY INSTALLATION, IT IS REQUIRED THAT THE MACHINING SET UP FOR EACH GIRDER OF A GIVEN LEAF BE BASED ON THE SAME SURVEY. IT IS PREFERRED TO HAVE THE WEBS OF THE BASCULE GIRDERS AND TRUNNION MILLED AND BORED WITH ONE CONTINUOUS SET OF A COMBINED BORING BAR, MILLING MACHINE. HOWEVER, ALTERNATIVE PROCEDURES PROPOSED BY THE CONTRACTOR AND APPROVED BY THE COUNTY WOULD BE ACCEPTABLE.
3. THE SHOP ASSEMBLY SHALL RESULT IN BASCULE GIRDERS THAT ARE STRAIGHT AND PARALLEL TO EACH OTHER, FLOORBEAMS, FLOORBEAM BRACKETS, AND SIDEWALK BRACKETS SHALL BE PERPENDICULAR TO THE GIRDERS. WEBS OF GIRDERS SHALL BE VERTICAL, WEBS OF FLOORBEAMS AND FLOORBEAM BRACKETS SHALL BE PERPENDICULAR TO THE GIRDER FLANGES. ALL MEMBERS SHALL BE CAMBERED TO THE APPROVED VALUES.
4. THE BASCULE SPAN INSTALLATION AND SHOP ASSEMBLY IS SUBJECT TO STRICT TOLERANCE REQUIREMENTS AS SPECIFIED THROUGHOUT THE CONTRACT PLANS AND SPECIAL PROVISIONS. ANY DEVIATION FROM THESE TOLERANCES IN THE AS-BUILT CONDITIONS ON-SITE OR FROM THE SURVEY DATA FROM THE SHOP ASSEMBLY MAY BE THE CAUSE FOR REJECTION OF THE NON-CONFORMING ELEMENT(S). SHOULD REPLACEMENT BE NEEDED OF ANY ELEMENT TO ACCOMMODATE THE PROPER FIT OR ALIGNMENT OF THE BASCULE SPAN, IT SHALL BE REPLACED AT NO ADDITIONAL COST TO THE COUNTY.

BASCULE SPAN FIELD ERECTION:

ASSEMBLY AND ERECTION CONCEPTS:

1. PROVIDE FOR THE STABILITY OF THE SPAN DURING ALL PHASES OF ERECTION AND CONSTRUCTION.
2. THERE SHALL BE NO SEPARATE PAYMENT FOR THE TEMPORARY SUPPORTS, TEMPORARY BRACING, TEMPORARY LIFTING EQUIPMENT OR TEMPORARY BALANCE MATERIAL REQUIRED THROUGHOUT THE CONSTRUCTION FOR INSTALLATION, STABILITY, OR ANY OTHER TEMPORARY NEEDED, COST FOR DESIGN, INSTALLATION AND REMOVAL SHALL BE INCLUDED IN THE VARIOUS BID ITEMS INCLUDED IN THE CONTRACT DOCUMENTS.
3. RETAIN A LICENSED PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF NEW JERSEY TO DESIGN ALL TEMPORARY SHORING, BRACING, SUPPORTS, FALSEWORK, JACKING, TIE-BACKS, OR ANY OTHER TEMPORARY PROVISION TO ALLOW FOR CONSTRUCTION OF THE BASCULE SPAN. SUBMIT ALL CALCULATIONS TO THE ENGINEER FOR REVIEW AND APPROVAL.
4. THE ERECTION OF THE STRUCTURAL STEEL FRAMING SHALL BE PERFORMED WITH MATCH-MARKS ESTABLISHED DURING SHOP ASSEMBLY SUCH THAT THE RELATIVE POSITION OF CONNECTED COMPONENTS WILL BE TO THE ASSEMBLED CONFIGURATION ESTABLISHED IN THE SHOP AT THE TIME OF COMPLETE STRUCTURE ASSEMBLY.
5. FOR THE BASCULE SPAN ERECTION, THE CONTRACTOR HAS THE OPTION TO EITHER COMPLETELY ERECT EACH LEAF IN POSITION OR HAVE EACH LEAF DELIVERED TO THE SITE PARTIALLY OR FULLY ASSEMBLED.
6. THE CONTRACTOR SHALL SUBMIT DETAILS THAT DESCRIBE THE PROPOSED PROCEDURE, INCLUDING COMPLETE DETAILS AND CALCULATIONS FOR THE PROPOSED SUPPORTS AND REQUIRED LIFTING OPERATIONS DURING ALL PHASES OF THE WORK, INCLUDING OFF-SITE ERECTION, SHIPMENT TO THE SITE, AND LIFTING INTO PLACE TO THE ENGINEER FOR REVIEW PRIOR TO THE START OF ERECTION. PROPOSED LIFTING POINTS ARE TO BE IDENTIFIED. ALL PROCEDURES AND CALCULATIONS SHALL BE PREPARED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW JERSEY.
7. OTHER THAN THE TRUNNION ASSEMBLIES, MECHANICAL AND ELECTRICAL COMPONENTS TO BE LOCATED ON THE SPANS SHALL NOT BE MOUNTED TO THE PARTIALLY OR FULLY ASSEMBLED SPAN DURING SHIPMENT, BEARINGS AND THEIR HOUSINGS SHOULD BE INSTALLED ON THE TRUNNION SHAFTS IN THE FIELD PRIOR TO ERECTION OF THE BASCULE GIRDERS.
8. PRIOR TO ANY CLOSING OR RESTRICTION OF THE NAVIGATION CHANNEL, AND PRIOR TO THE START OF ANY WORK, THE CONTRACTOR MUST OBTAIN THE APPROVAL OF THE USCG.
9. THE FIELD ERECTION SHALL RESULT IN BASCULE GIRDERS THAT ARE STRAIGHT AND PARALLEL TO EACH OTHER, FLOORBEAMS, FLOORBEAM BRACKETS, AND SIDEWALK BRACKETS SHALL BE PERPENDICULAR TO THE GIRDERS. WEBS OF GIRDERS SHALL BE VERTICAL, WEBS OF FLOORBEAMS AND FLOORBEAM BRACKETS SHALL BE PERPENDICULAR TO THE GIRDER FLANGES. ALL MEMBERS SHALL BE CAMBERED TO THE APPROVED VALUES.
10. CONTINUOUSLY MONITOR AND RECORD TRUNNION AND GIRDER ALIGNMENTS AND ANTI-TURN DURING THE SEQUENCE OF ERECTION.
11. GENERALLY, FULL MAKEUP AND TIGHTENING OF CONNECTIONS IS TO PROGRESS IN THE SAME MANNER AS ERECTION OF THE FRAMING AND IN ACCORDANCE WITH THE APPROVED BASCULE SPAN ASSEMBLY WORK PLAN.
12. TEMPERATURE CLOSING OF SPAN FOR VERIFICATION OF ALIGNMENT SHOULD BE ACCOMPLISHED IN THE EARLY MORNING IMMEDIATELY FOLLOWING SUNRISE TO AVOID TEMPERATURE EFFECTS.
13. MAINTAIN A COUNTERWEIGHT HEAVY CONDITION AT ALL TIMES DURING ERECTION. ADJUST THE BALANCE AFTER THE ERECTION IS COMPLETE IN ACCORDANCE WITH THE APPROVED BASCULE SPAN ASSEMBLY WORK PLAN. COMMENCE LOADING OF FINAL STEEL COUNTERWEIGHT BALLAST ONLY AFTER ERECTION AND COMPLETION OF THE ASSEMBLY OF THE BASCULE GIRDERS AND ALL MAIN AND SECONDARY MEMBERS BETWEEN THE BASCULE GIRDERS. THE INTENT OF THIS PROVISION IS TO ENSURE THAT ALL PRIMARY AND SECONDARY LOAD PATHS ARE FULLY FUNCTIONAL AT THE TIME THAT BALLAST LOADING IS INITIATED.
14. COMMENCE ERECTION OF EXODERMIC PANELS ON THE LEAVES ONLY AFTER INSTALLATION OF STEEL COUNTERWEIGHT BALLAST IN THE COUNTERWEIGHT. THE INTENT OF THIS PROVISION IS TO BRING EACH LEAF INTO A COUNTERWEIGHT HEAVY CONDITION PRIOR TO ERECTION OF THE GRID FLOORING.
15. A LAND SURVEYOR LICENSED IN THE STATE OF NEW JERSEY SHALL PERFORM ALL SURVEY WORK REQUIRED FOR BASCULE SPAN ERECTION. THE DEGREE OF ACCURACY OF THE WORK SHALL BE FIRST ORDER. A WRITTEN PROCEDURE FOR OBTAINING FIRST ORDER ACCURACY SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO THE START OF ANY SURVEY WORK. AN IMPORTANT ASPECT OF THE SURVEY IS ASSURING THAT THE SPAN IS ALIGNED SUCH THAT WHEN IT IS LOWERED IT SEATS IN THE PROPER POSITION.

16. THE BASCULE LEAVES SHALL BE SURVEYED TO VERIFY SPAN GEOMETRY. BASCULE GIRDERS MUST BE IN-LINE AND PARALLEL. MEASUREMENTS SHALL BE TAKEN ACROSS THE CHANNEL AND SHALL BE BACK CHECKED BY MEASURING THE DIAGONAL SPAN DIMENSIONS. MEASUREMENTS TAKEN TO VERIFY SPAN GEOMETRY SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO FINAL DRILLING OF THE TRUNNION BEARING MOUNTING BOLTS. THE BASCULE SPAN ERECTION IS SUBJECT TO STRICT TOLERANCE REQUIREMENTS AS SPECIFIED THROUGHOUT THE CONTRACT PLANS AND SPECIAL PROVISIONS. ANY DEVIATION FROM THESE TOLERANCES IN THE AS-BUILT CONDITIONS ON-SITE MAY BE THE CAUSE FOR REJECTION OF THE NON-CONFORMING ELEMENT(S). SHOULD REPLACEMENT BE NEEDED OF ANY ELEMENT TO ACCOMMODATE THE PROPER FIT OR ALIGNMENT OF THE BASCULE SPAN, IT SHALL BE REPLACED AT NO ADDITIONAL COST TO THE COUNTY.

ASSUMED CONSTRUCTION SEQUENCE:

1. INSTALL COUNTERWEIGHT PIT SHORING SYSTEM.
2. ERECT FIRST LEAF'S BASCULE GIRDERS. THE CONTRACTOR SHALL PROPOSE WHICH LEAF TO BE ERECTED FIRST IN THE BASCULE SPAN ASSEMBLY WORK PLAN.
3. INSTALL COUNTERWEIGHT STEEL FRAMING.
4. INSTALL COUNTERWEIGHT BALLAST TO THE EXTENT NECESSARY TO MAINTAIN A COUNTERWEIGHT HEAVY CONDITION DURING INSTALLATION OF THE REMAINING STEEL FRAMING. THE REACTION FORCE AT THE COUNTERWEIGHT SHOULD BE APPROXIMATELY 8 KIPS FOLLOWING FRAMING INSTALLATION.
5. INSTALL REMAINDER OF THE BASCULE SPAN FRAMING INCLUDING FLOORBEAMS AND SIDEWALK BRACKETS.
6. INSTALL COUNTERWEIGHT BALLAST TO THE EXTENT NECESSARY TO MAINTAIN A COUNTERWEIGHT HEAVY CONDITION DURING INSTALLATION OF THE BASCULE SPAN DECK AND SIDEWALK GRATING/SKID-PROOF PLATES.
7. INSTALL EXODERMIC DECK PANELS AND ALL CLOSURE POURS.
8. INSTALL SIDEWALK GRATING/SKID PROOF PLATES.
9. AFTER A MINIMUM OF THREE DAYS AND THE CLOSURE POURS HAVE ACHIEVED A STRENGTH OF 14 KSI, ERECTION MAY CONTINUE.
10. UTILIZING A CRANE OR OTHER MEANS DESIGNED BY THE CONTRACTOR, RAISE THE LEAF INTO THE FULLY OPEN POSITION AND THE BACK AND SECURE THE LEAF. NO HOLES MAY BE DRILLED INTO ANY PERMANENT ELEMENTS FOR THE LEAF-RAISING OR TIE-BACK ELEMENTS.
11. REPEAT STEPS FOR THE SECOND LEAF.

NOTE: IT IS ANTICIPATED THAT THE SPAN WILL BE ERECTED IN THE LOWERED POSITION. SHOULD AN ALTERNATE POSITION FOR ERECTION BE PROPOSED, THE CONTRACTOR SHALL VERIFY THE ADEQUACY OF CONNECTIONS BASED ON THE SEQUENCE OF INSTALLATION AND PROVIDE ANY ADDITIONAL CAPACITY NEEDED TO SUCCESSFULLY COMPLETE THE ERECTION SEQUENCE.

RACK ALIGNMENT NOTES AND PROCEDURES:

1. REFERENCE SHOP ASSEMBLY RACK SEGMENTS NOTES.
2. AFTER THE BASCULE STEEL IS ERECTED AND THE SPAN HAS BEEN PRELIMINARILY BALANCED, THE FOLLOWING PROCEDURE SHALL BE FOLLOWED TO ALIGN AND INSTALL THE RACK IN THEIR FINAL POSITIONS. IF PROPER ALIGNMENT IS NOT ACHIEVED UPON COMPLETION OF THE BASCULE SPAN ASSEMBLY, THE CONTRACTOR WILL HAVE TO FIELD ADJUST AND REALIGN THE RACK SEGMENTS TO ACHIEVE THE SPECIFIED RACK ALIGNMENT FOR PROPER MATING CONTACT WITH ITS MATING PINION.
3. FINAL RACK ALIGNMENT SHALL BE ACHIEVED IN THE FIELD (AFTER FULL APPLICATION OF DEAD LOAD) TO PROVIDE THE REQUIRED RACK AND PINION TOOTH CONTACT BY ADJUSTING THE SHIMS BETWEEN EACH RACK FRAME AND EACH BASCULE GIRDER BOTTOM FLANGE. UTILIZE TAPERED OR CUSTOM MILLED SHIMS AS NEEDED. FIELD ADJUSTMENTS OF THE BOLTED CONNECTION OF THE RACK SEGMENTS TO THE RACK FRAME SHALL BE PERFORMED ONLY IF REQUIRED AFTER ALL OTHER MEANS TO ADJUST THE ALIGNMENT HAVE BEEN EXHAUSTED. FINAL FINISHED BODY BODY BOLTS BETWEEN THE RACK FRAME AND BASCULE GIRDER BOTTOM FLANGE SHALL BE INSTALLED AFTER RACK AND PINION TOOTH CONTACT HAS BEEN ACHIEVED AFTER FULL APPLICATION OF DEAD LOAD IN THE FIELD. FIELD ALIGN THE PINIONS TO THE RACKS BY ADJUSTING THE POSITION OF PINION BEARINGS ON THE SUPPORT WELDMENTS PRIOR TO DRILLING AND REMAINING FINAL HOLES IN THE SUPPORT WELDMENTS.
4. THE CONTRACTOR SHALL SUBMIT PROPOSED DETAILS FOR ALIGNING THE RACKS IN ACCORDANCE WITH THE PROCEDURE ABOVE TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO THE START OF WORK. IT'S NOTED THAT THE PROCEDURE FOLLOWED AT ONE RACK FRAME MAY NOT BE SUITABLE FOR OTHER RACK FRAMES. CONSIDER EACH CASE INDEPENDENTLY TO PROVIDE THE PROPER ALIGNMENT.

PREPARED BY: WSP USA INC.
2000 LEXOX DRIVE, LAWRENCEVILLE, NJ, 08848

MARC S. ESPOSITO

N.J. PE LICENSE NUMBER:
24060485000

DATE



CAPE MAY COUNTY

KYLE G

Designed by

Drawn by

Checked by

JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

DRAWING TITLE:

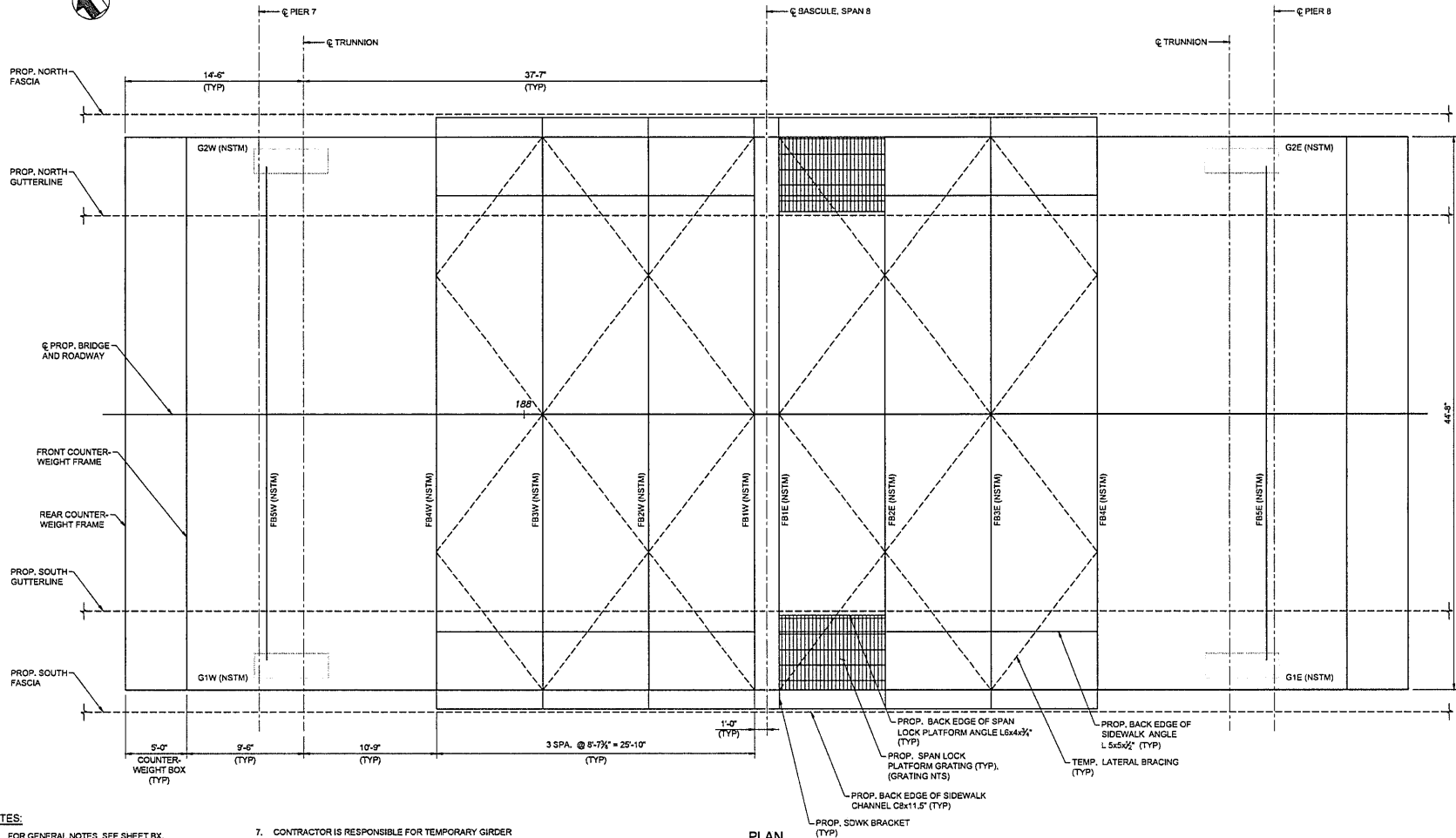
BASCULE SPAN
ASSEMBLY NOTES

DATE: 4/9/2024

SCALE: AS SHOWN

SHEET REFERENCE NO.: #

SHEET NO.: 090 OF 202



NOTES:

1. FOR GENERAL NOTES, SEE SHEET BX.
2. NON-REDUNDANT STEEL TENSION MEMBERS (NSTM) ARE IDENTIFIED IN THE PLAN.
3. FOR TRANSVERSE SECTION THROUGH THE BASCULE SPAN, SEE SHEETS BX THROUGH BX.
4. FOR GIRDER DETAILS, SEE SHEET BX.
5. FOR FLOORBEAM DETAILS, SEE SHEET BX.
6. FOR SIDEWALK CONNECTION DETAILS, SEE SHEET BX.
7. CONTRACTOR IS RESPONSIBLE FOR TEMPORARY GIRDER AND SPAN STABILITY WHILE UNDER CONSTRUCTION.
8. FOR TEMPORARY LATERAL BRACING DETAILS, SEE SH BX.
9. FOR FLOORBEAM S FRAMING DETAILS, SEE SH BX.
10. ALL NEW STEEL SHALL BE CHARPY V-NOTCH TESTED AS PRIMARY TENSION CARRYING ELEMENT.
11. THE CONTRACTOR IS ALTERED THAT THE STRUCTURAL STEEL MEMBERS SIDEWALK CURB ANGLE AND THE SIDEWALK CHANNEL SHALL SPAN THE ENTIRE LENGTH OF THE SIDEWALK IN THE BASCULE SPAN.

PLAN
(BASCULE SPAN)
1/4" = 1'-0"



PREPARED BY: WSP USA INC.
2000 LEXOX DRIVE, LAWRENCEVILLE, N.J. 08648

MARC S. ESPOSITO

N.J. PE LICENSE NUMBER
24CE0484300

DATE



CAPE MAY COUNTY

DESIGNED BY
KYLE G

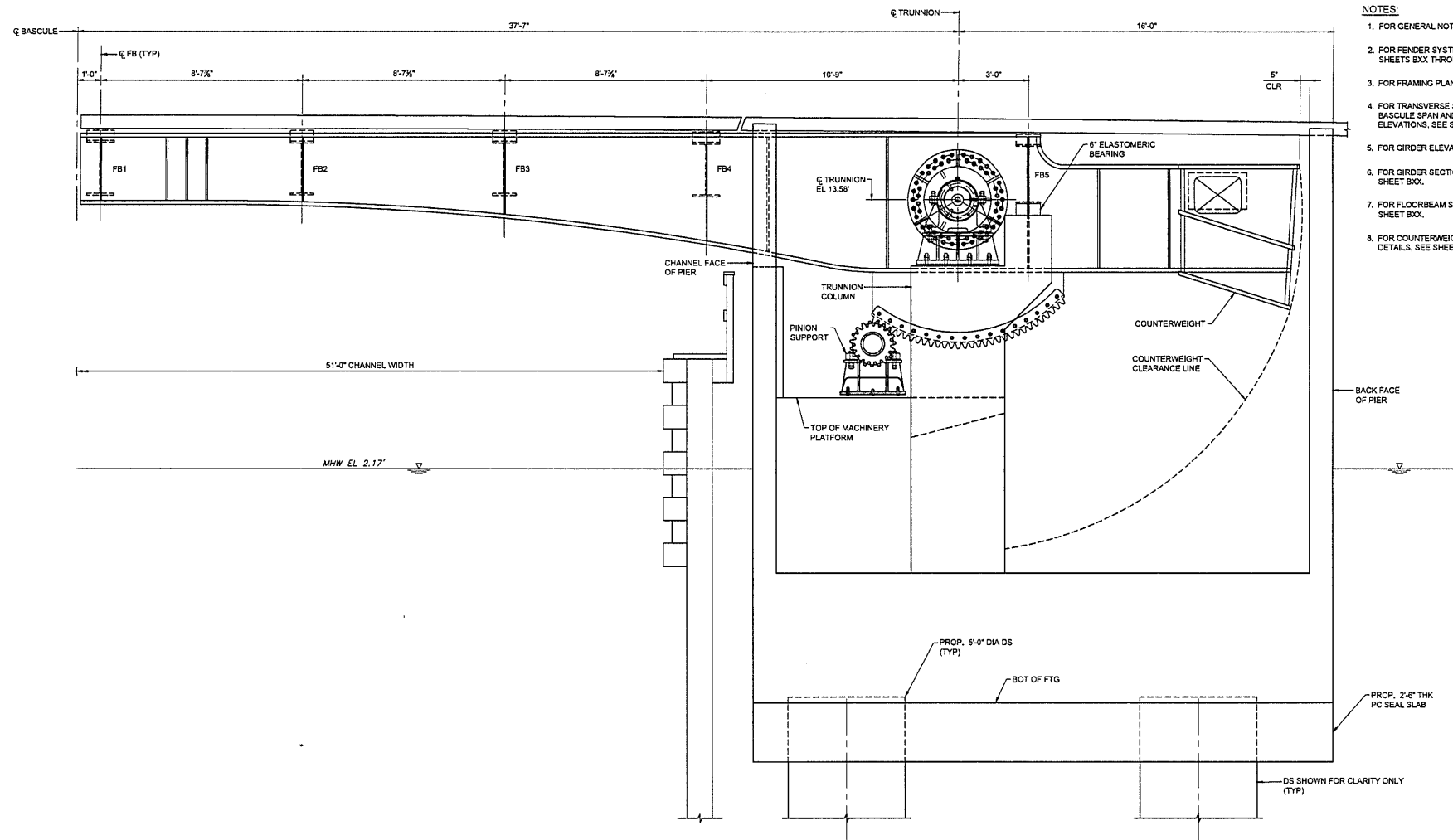
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CHECKED BY

JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MOORE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY
DRAWING TITLE:
BASCULE SPAN
FRAMING PLAN

DATE:
4/9/2024
SCALE:
1/4" = 1'-0"
SHEET REFERENCE NO.:
OF
SHEET NO.:
091 of 202



EAST LEAF LONGITUDINAL SECTION
1/2" = 1'-0"



MARC S. ESPOSITO N.J. PE LICENSE NUMBER:
24CE04845300

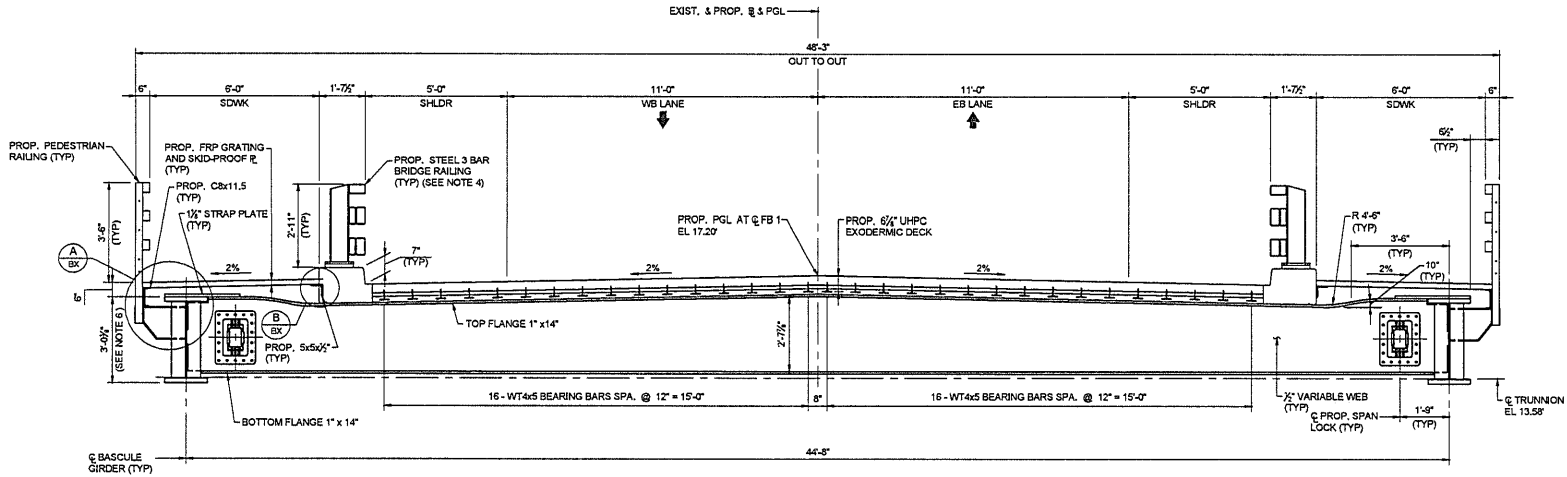


CAPE MAY COUNTY

KYLE G *****

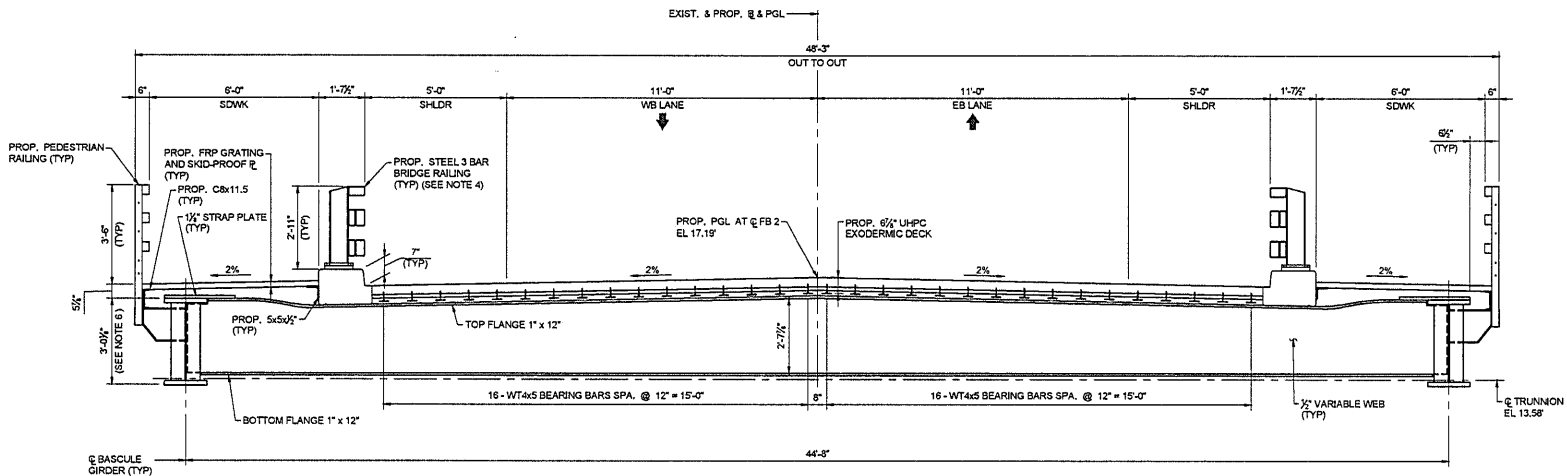
JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

DATE:	4/9/2024
SCALE:	1/2" = 1'-0"
SHEET REFERENCE NO.	of
SHEET NO.:	008 of 008



TYPICAL SECTION - PROPOSED BASCULE SPAN AT FB1
(FB1E SHOWN, LOOKING EAST, FB1W SIMILAR)
1/2" = 1'-0"

- NOTES:**
1. FOR GENERAL NOTES, SEE SHEET BX.
 2. FULL DEPTH CLOSURE POCKET TO BE PROVIDED AT FLOORBEAMS.
 3. SHEAR CONNECTORS ON FLOORBEAMS ARE NOT SHOWN ON THIS SHEET, SEE SHEET BXX FOR ADDITIONAL DETAILS.
 4. THE STEEL 3 BAR BRIDGE RAILING TO BE PROVIDED IS THE OREGON DOT 3-TUBE CLIP MOUNT BRIDGE RAIL. SEE OREGON DOT STANDARD DRAWING BR208 FOR ADDITIONAL INFORMATION. THE TRANSITION TO CONCRETE PARAPET SHALL BE SIMILAR TO THE DETAILS SHOWN IN OREGON DOT STANDARD DRAWING BR209 WITHOUT A GUIDERAIL ATTACHMENT.
 5. FOR SPAN LOCK DETAILS, SEE SHEET MXX.
 6. GIRDERS ARE VARIABLE DEPTHS. DEPTH OF GIRDERS SHOWN ON TYPICAL SECTION ARE FOR GENERAL INFORMATION. SEE SHEET BXX FOR GIRDER ELEVATION.
 7. BOLTS FOR GIRDER TO FLOORBEAM CONNECTION NOT SHOWN FOR CLARITY. FOR GIRDER TO FLOORBEAM CONNECTION DETAILS, SEE SHEET BX.



TYPICAL SECTION - PROPOSED BASCULE SPAN AT FB2
(FB2E SHOWN, LOOKING EAST, FB2W SIMILAR)
1/2" = 1'-0"

SCALE IN FEET

PREPARED BY: WSP USA Inc.
2005 LENOX DRIVE, LAWRENCEVILLE, NJ 08643

MARC S. ESPOSITO

N.J. PE LICENSE NUMBER:
24GE044300

DATE



CAPE MAY COUNTY

DESIGNED BY

KYLE G

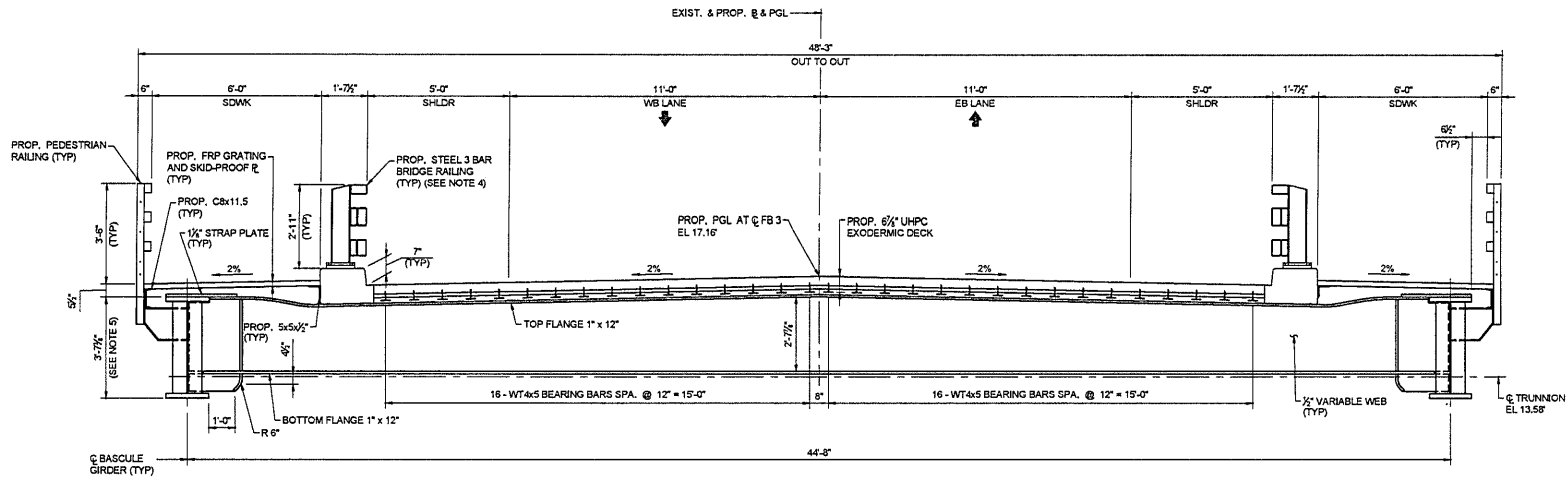
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CHECKED BY

JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY
DRAWING TITLE:
BASCULE SPAN
TRANSVERSE SECTIONS
- 1

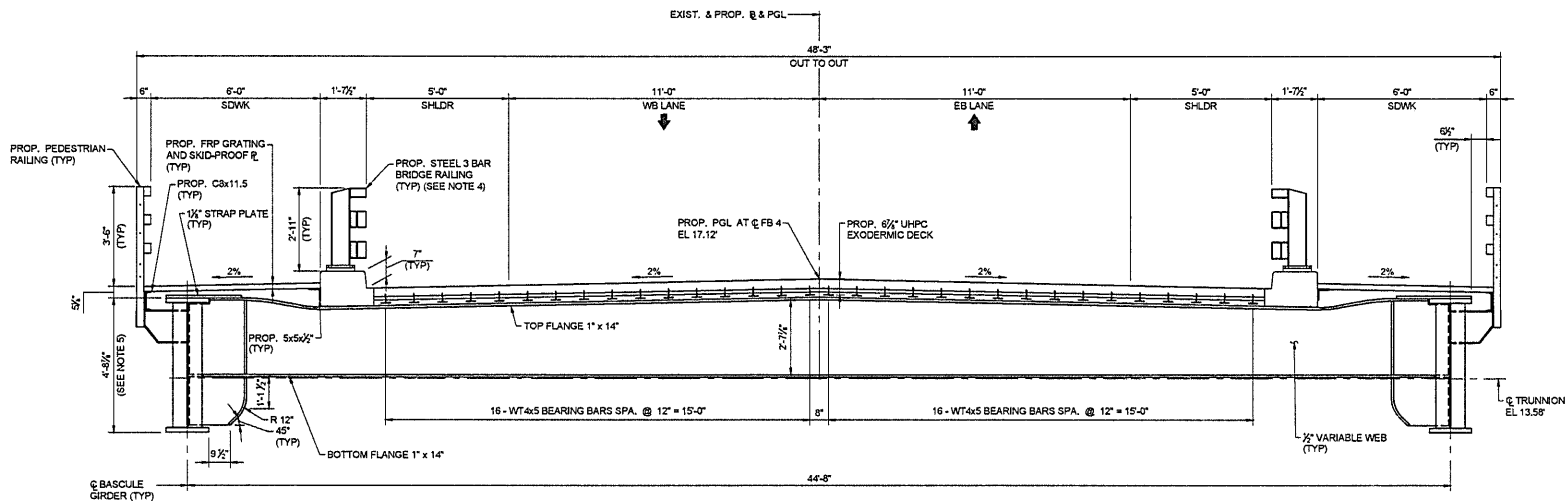
DATE:
4/5/2024
SCALE:
1/2" = 1'-0"
SHEET REFERENCE NO.:
of
SHEET NO.:
583 of 207



TYPICAL SECTION - PROPOSED BASCULE SPAN AT FB3
(FB3E SHOWN, LOOKING EAST, FB3W SIMILAR)
1/2" = 1'-0"

NOTES:

1. FOR ADDITIONAL NOTES, SEE SHEET BX.
2. FULL DEPTH CLOSURE POURS TO BE PROVIDED AT FLOORBEAMS.
3. SHEAR CONNECTORS ON FLOORBEAMS ARE NOT SHOWN ON THIS SHEET. SEE SH BXX FOR ADDITIONAL DETAILS.
4. THE STEEL 3 BAR BRIDGE RAILING TO BE PROVIDED IS THE OREGON DOT 3-TUBE CURB MOUNT BRIDGE RAIL. SEE OREGON DOT STANDARD DRAWING BR208 FOR ADDITIONAL INFORMATION. THE TRANSITION TO CONCRETE PARAPET SHALL BE SIMILAR TO THE DETAILS SHOWN IN OREGON DOT STANDARD DRAWING BR209 WITHOUT A GUIDERAIL ATTACHMENT.
5. GIRDERS ARE VARIABLE DEPTHS. DEPTH OF GIRDERS SHOWN ON TYPICAL SECTIONS ARE FOR GENERAL INFORMATION. SEE SHEET BXX FOR GIRDER INFORMATION.
6. BOLTS FOR GIRDER TO FLOORBEAM CONNECTION NOT SHOWN FOR CLARITY. FOR GIRDER TO FLOORBEAM CONNECTION DETAILS, SEE SHEET BX.



TYPICAL SECTION - PROPOSED BASCULE SPAN AT FB4
(FB4E SHOWN, LOOKING EAST, FB4W SIMILAR)
1/2" = 1'-0"

0 1 2
SCALE IN FEET

PREPARED BY: WSP USA INC.
2000 LENOX DRIVE, LAWRENCEVILLE, NJ, 08848



CAPE MAY COUNTY

MARC S. ESPOSITO N.J. PE LICENSE NUMBER
240CE0482006

DATE

DESIGNED BY

KYLE G

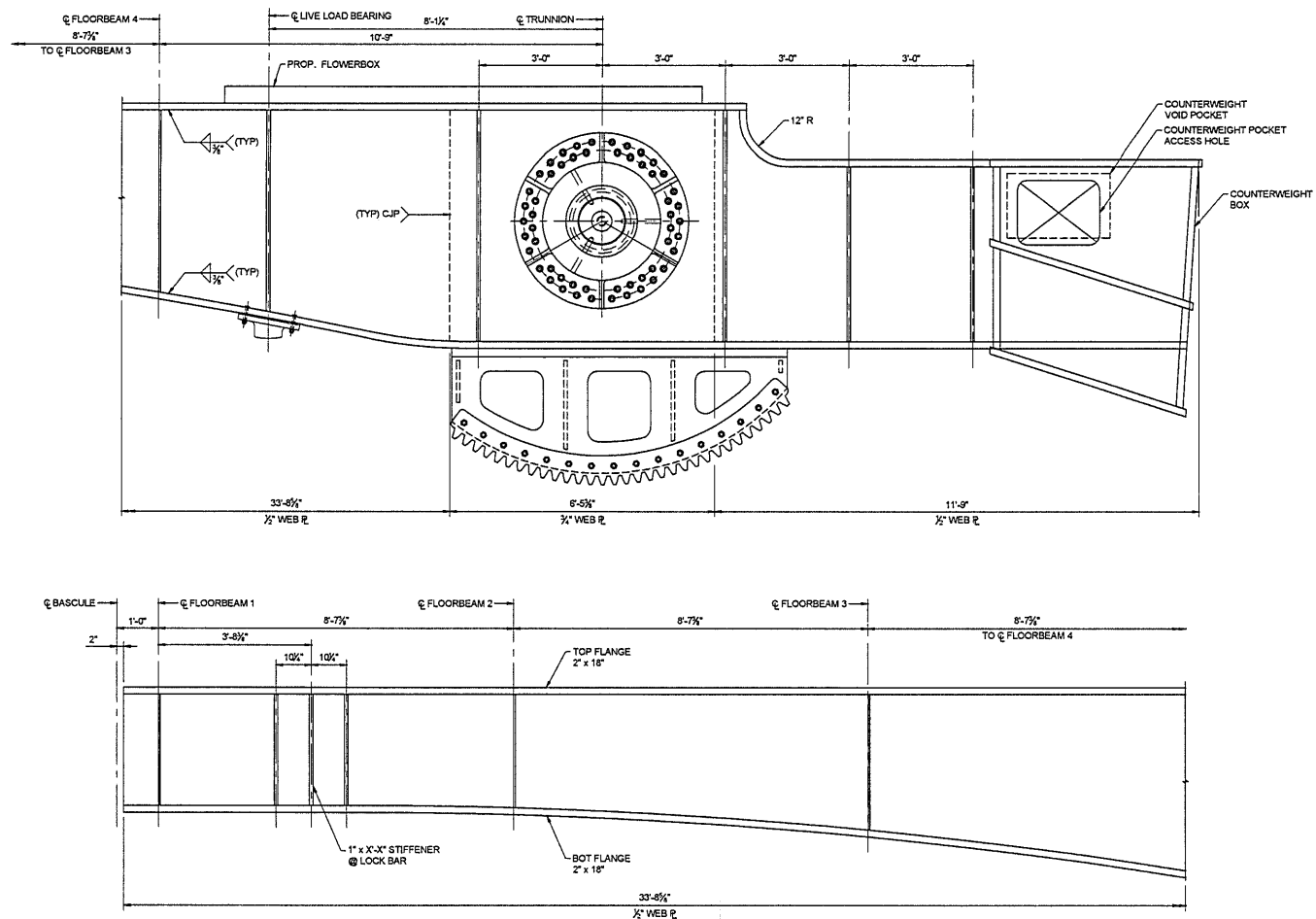
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JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY
DRAWING TITLE:
BASCULE SPAN
TRANSVERSE SECTIONS
- 2

DATE:
4/9/2024
SCALE:
1/2" = 1'-0"
SHEET REFERENCE NO.:
OF
SHEET NO.:
294 of 322



NOTES:

1. BORE WEB FOR TRUNNION HUB ALIGNMENT AND INTERFERENCE FIT.
2. MILL BOTH FACES OF WEB FOR TRUNNION HUB ALIGNMENT AND FIT UP.
3. MILL BOTTOM FACE OF BOTTOM FLANGE FOR RACK SUPPORT ALIGNMENT AND FIT UP.
4. SEE SHEET MXX FOR HUB FASTENER REQUIREMENTS, BOLT PATTERN AND ADDITIONAL INFORMATION.
5. SEE MACHINERY SPECIAL PROVISIONS FOR MILLING REQUIREMENTS.
6. FOR COUNTERWEIGHT DETAILS, SEE SH SXX THROUGH SXX.
7. FOR RACK FRAME DETAILS, SEE SH SXX.
8. FOR LIVE LOAD BEARING DETAILS, SEE SH SXX.
9. PROVIDE A 1:2.5 BLEND AT THE WEB THICKNESS TRANSITIONS, ON BOTH SIDES. SUBMIT TRANSITION DETAILS TO ENGINEER FOR APPROVAL.

EAST LEAF GIRDER ELEVATION

PREPARED BY: WSP USA INC.
2000 LENOX DRIVE, LAWRENCEVILLE, N.J. 08648



CAPE MAY COUNTY

MARC S. ESPOSITO

N.J. PE LICENSE NUMBER
J62084300

DATE

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KYLE G

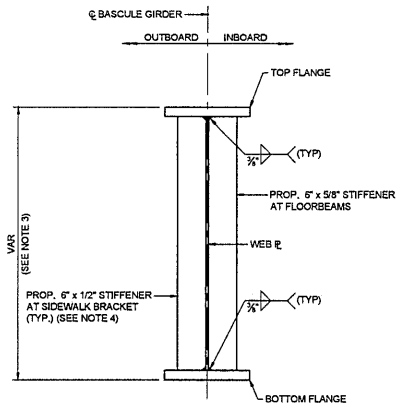
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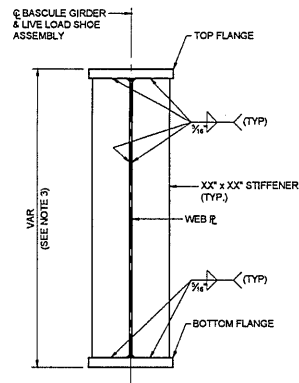
JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY
DRAWING TITLE:
BASCULE SPAN
EAST LEAF GIRDER
ELEVATION

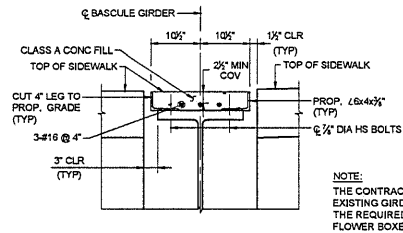
DATE:
4/5/2024
SCALE:
3/4" = 1'-0"
SHEET REFERENCE NO.:
OF
SHEET NO.:
005 of 202



TYPICAL SECTION THRU
BASCULE GIRDER AT FB1 THRU FB4
1" = 1'-0"



SECTION THRU BASCULE GIRDER
AT LIVE LOAD BEARING
1" = 1'-0"



FLOWER BOX DETAIL
1" = 1'-0"

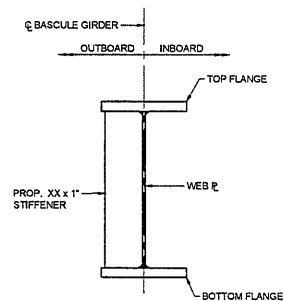
NOTE:
THE CONTRACTOR SHALL SURVEY TOP OF
EXISTING GIRDER ELEVATION AND CALCULATE
THE REQUIRED DEPTH OF CONCRETE AT THE
FLOWER BOXES.

NOTES:

- FOR GENERAL NOTES, SEE SHEET B-XX
- FOR FRAMING PLAN, SEE SHEET B-XX
- GIRDERS ARE VARIABLE DEPTHS. DEPTH OF GIRDERS SHOWN ON TYPICAL SECTION ARE FOR GENERAL INFORMATION. FOR GIRDER ELEVATION, SEE SHEET B-XX.
- FOR SIDEWALK BRACKET DETAILS, SEE SHEET B-XX.
- ALL BOLTS (UNLESS OTHERWISE NOTED) SHALL BE 7/8" DIA HS BOLTS AND CONFORM TO ASTM F1552, WITH SUITABLE NUTS AND WASHERS HAVING AN UNTHREADED SHANK OF SUFFICIENT LENGTH SO AS TO NOT ALLOW ANY THREADS TO EXIST IN THE PLANE BETWEEN THE TWO CONNECTED PARTS (SHEAR PLANE). CONNECTION SHALL BE FRICTION TYPE WITH CLEAN MILL SCALE AND BLAST CLEAN SURFACES, AND WITH CLASS "A" COATING IN ACCORDANCE WITH AASHTO SPECIFICATIONS.
- ALL HOLES IN THE WEB AND FLANGE SHALL BE 1/8" DIAMETER.
- AT THE GIRDER FLOORBEAM CONNECTION ANY ADJUSTMENTS FROM THE SHOP FIT-UP OF BOLTED CONNECTIONS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
- THE CONTRACTOR SHALL SUBMIT CALCULATIONS ALONG WITH MATERIAL AND SPECIFICATIONS INCLUDED IN THE SHOP DRAWING FOR ANY MODIFICATIONS TO THE GIRDER FLOORBEAM CONNECTION. THE CALCULATIONS SHALL BE AN ANALYSIS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF N.J.
- ALL WELDS ARE SUBJECT TO NONDESTRUCTIVE TESTING AS PER ASW D1.5 REQUIREMENTS UNDER THE QUALITY CONTROL WELDING INSPECTION.

ERECTION NOTES:

- FIELD ELONGATION OR ENLARGEMENT OF HOLES WILL NOT BE ALLOWED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STABILITY OF THE BASCULE GIRDERS DURING ERECTION



TYPICAL SECTION THRU
BASCULE GIRDER AT FB1 AND FB2
1" = 1'-0"



PREPARED BY: WSP USA INC.
2030 LEXINGTON DRIVE, LAWRENCEVILLE, N.J. 08848



CAPE MAY COUNTY

MARC S. ESPOSITO N.J. PE LICENSE NUMBER: 240E0405300

DATE

Designed by

Drawn by

Checked by

JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

DRAWING TITLE:

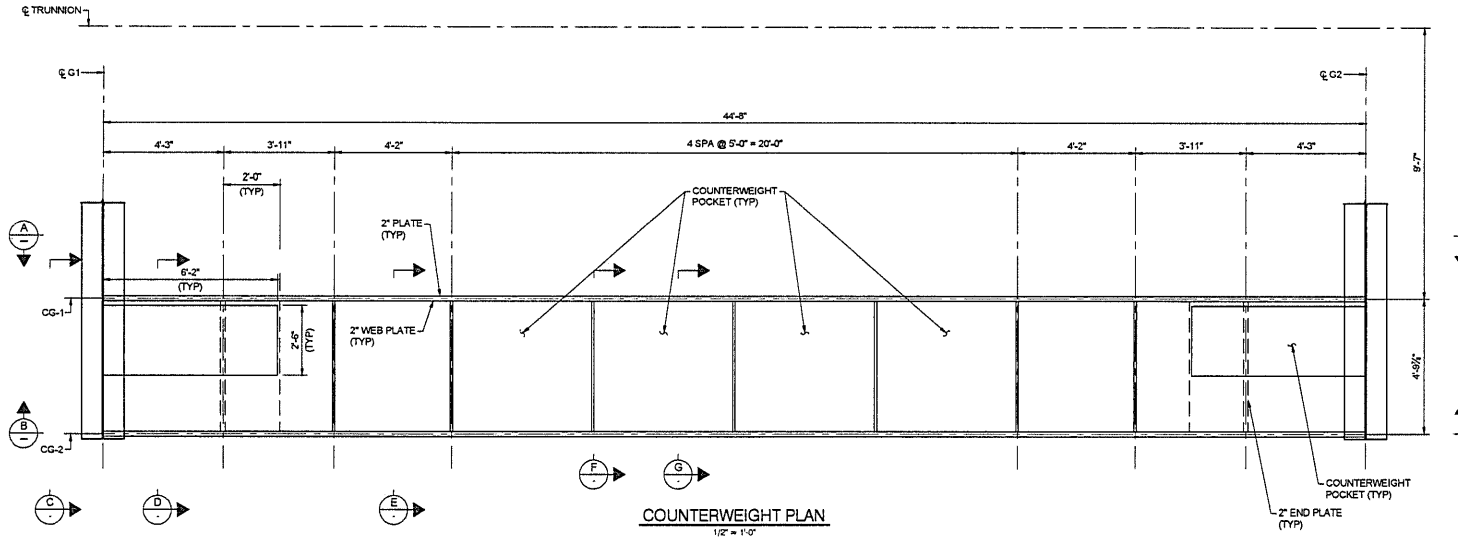
BASCULE SPAN GIRDER
SECTIONS & DETAILS

DATE: 4/5/2024

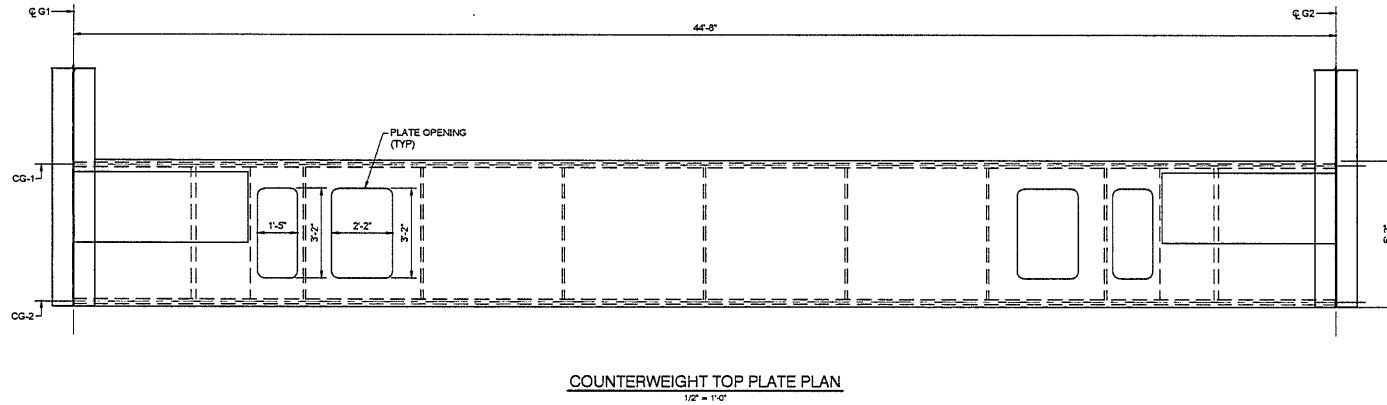
SCALE: 1" = 1'-0"

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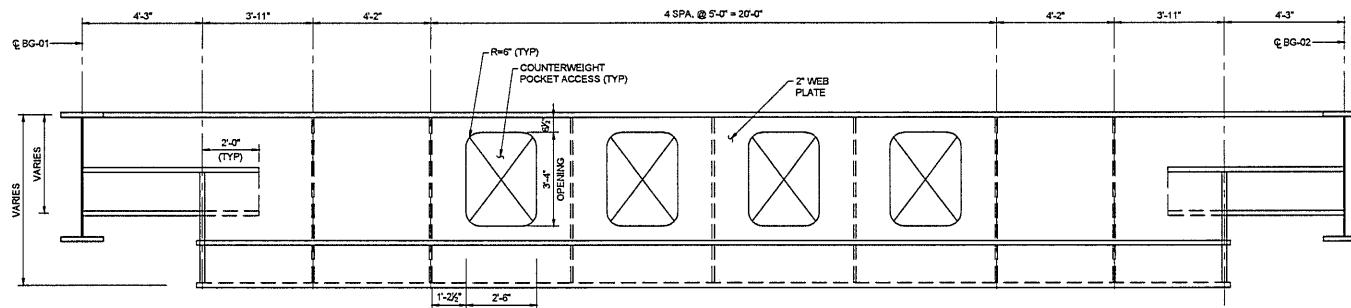
SHEET NO.: 096 of 202



- NOTES:**
1. FOR GENERAL NOTES, SEE SHEET BX.
 2. STUDS MAY NOT BE SHOWN IN VARIOUS PLANS AND SECTION VIEWS THROUGHOUT COUNTERWEIGHT SHEETS. STUDS SHALL BE PROVIDED ON ALL INTERIOR SURFACES WHERE CONCRETE IS PROVIDED. DETAILER MAY ADJUST STUDS LOCALLY ± TO FACILITATE STRUCTURAL DETAILING OF THE COUNTERWEIGHT AND/OR AVOID INTERFERENCE WHERE REQUIRED.

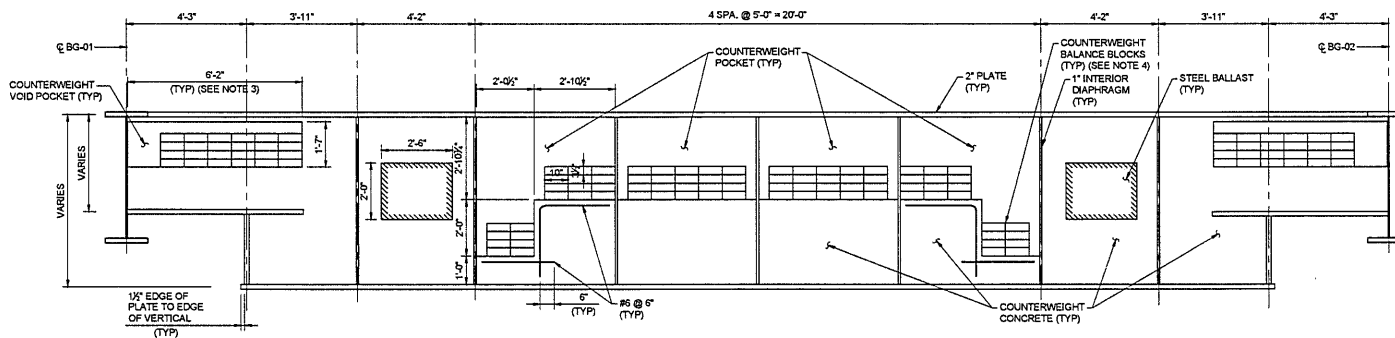


PREPARED BY: WSP USA INC. 2000 LENOX DRIVE LAWRENCEVILLE, NJ 08048			CAPE MAY COUNTY	JOB: REHABILITATION OF 96TH STREET (CR657) BRIDGE OVER GREAT CHANNEL STR. NO. 0500-006	PROJECT LOCATION: STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP CAPE MAY COUNTY, NEW JERSEY	DATE: 4/9/2024
					DRAWING TITLE: BASCULE SPAN COUNTERWEIGHT PLAN	SCALE: 1/2" = 1'-0"
MARC S. ESPOSITO	N.J. PE LICENSE NUMBER: 24GE0480300	DATE	ZACK S	Designed by Drawn by Checked by	SHEET REFERENCE NO.: 28	SHEET NO.: 287 of 202



SECTION
(LOOKING TOWARDS
APPROACH SPAN)
1/2" = 1'-0"

A
B23



SECTION
(LOOKING TOWARDS
BASCULE SPAN)
1/2" = 1'-0"

B
B23

NOTES:

- FOR GENERAL NOTES, SEE SHEET BX.
- FOR INTERIOR DIAPHRAGM DETAILS, SEE SECTION X ON SHEET BX.
- CONTRACTOR TO CONFIRM POCKET DEPTH DURING DEVELOPMENT OF CONTRACTOR'S SPAN BALANCE CALCULATIONS IN ACCORDANCE WITH PROJECT SPECIFICATIONS. CONTRACTOR SHALL INCREASE POCKET DEPTH, IF REQUIRED, TO MEET BALANCE PERFORMANCE CRITERIA.
- FOR BALANCE BLOCK DETAILS, SEE SHEET BX. BALANCE BLOCK ARRANGEMENT SHOWN ON THIS SHEET IS STRICTLY ILLUSTRATIVE PURPOSES AND NOT INTENDED TO REFLECT THE BALANCE BLOCK REQUIREMENTS AT ANY TIME DURING CONSTRUCTION OR AT COMPLETION.

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0 2 4
SCALE IN FEET

PREPARED BY: WSP USA Inc.
2000 LENOX DRIVE, LAWRENCEVILLE, N.J. 08848



CAPE MAY COUNTY

MARC S. ESPOSITO

N.J. PE LICENSE NUMBER:
240204M3006

DATE

Designed by

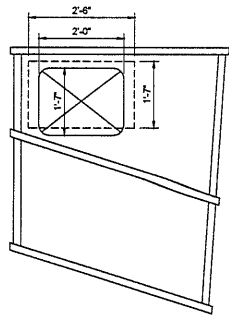
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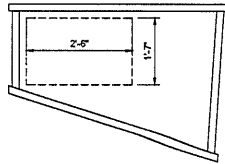
JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY
DRAWING TITLE:
BASCULE SPAN
COUNTERWEIGHT
SECTIONS - 1

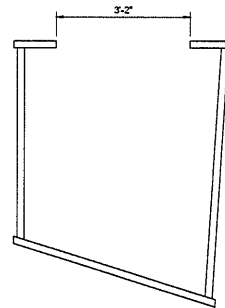
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4/9/2024
SCALE:
1/2" = 1'-0"
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of
SHEET NO.:
038 of 202



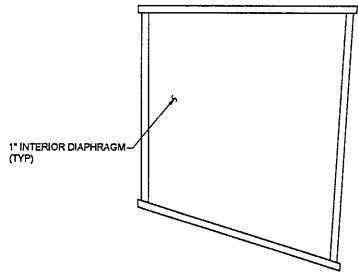
SECTION C
3/4" = 1'-0"



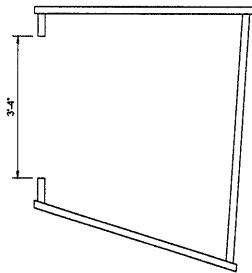
SECTION D
3/4" = 1'-0"



SECTION E
3/4" = 1'-0"



SECTION F
3/4" = 1'-0"



SECTION G
3/4" = 1'-0"

NOTES:

1. FOR GENERAL NOTES, SEE SHEET BX.
2. FOR INTERIOR DIAPHRAGM DETAILS, SEE SECTION X ON SHEET BX.
3. CONTRACTOR TO CONFIRM POCKET DEPTH DURING DEVELOPMENT OF CONTRACTOR'S SPAN BALANCE CALCULATIONS IN ACCORDANCE WITH PROJECT SPECIFICATIONS. CONTRACTOR SHALL INCREASE POCKET DEPTH, IF REQUIRED, TO MEET BALANCE PERFORMANCE CRITERIA.
4. FOR BALANCE BLOCK DETAILS, SEE SHEET BX.

0 1 2 3
SCALE IN FEET

PREPARED BY: WSP USA Inc.
2000 LENOX DRIVE, LAWRENCEVILLE, N.J. 08648



CAPE MAY COUNTY

MARC S. ESPOSITO

N.J. PE LICENSE NUMBER:
2405046200

DATE

DESIGNED BY
ZACK S

DRAWN BY

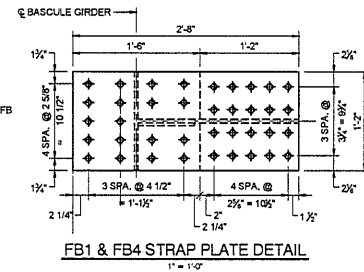
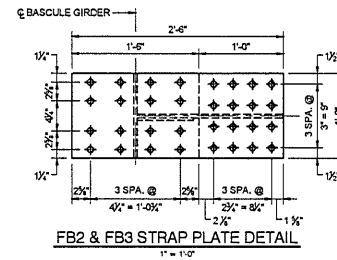
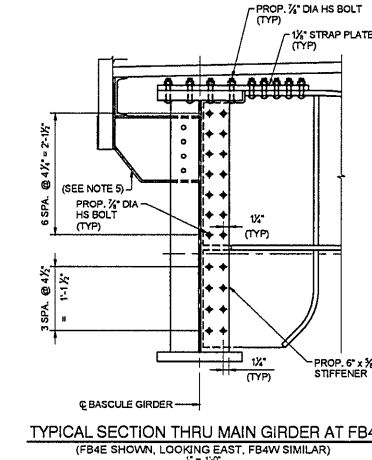
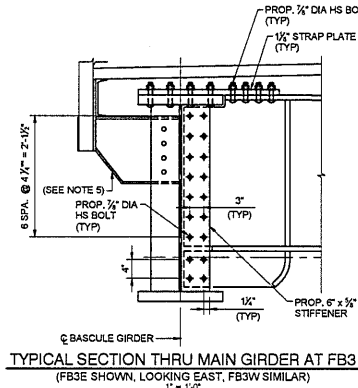
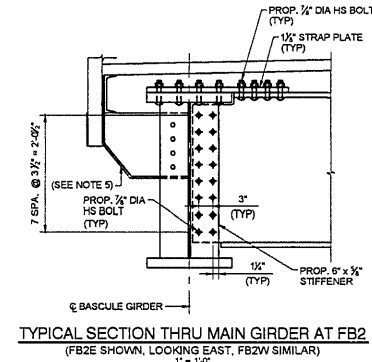
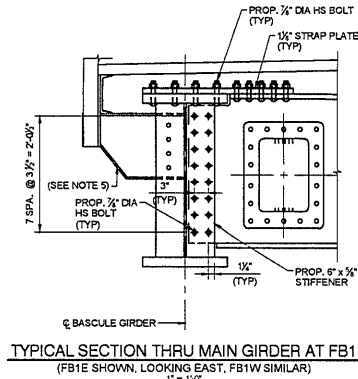
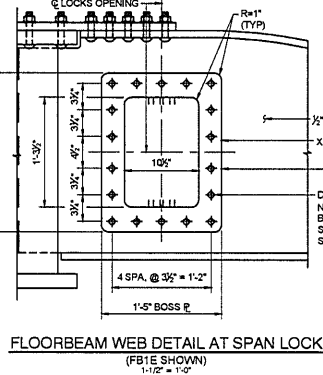
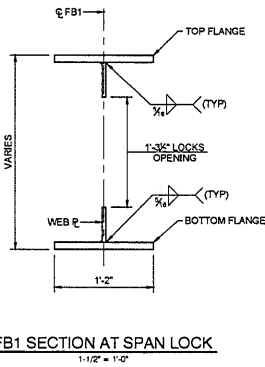
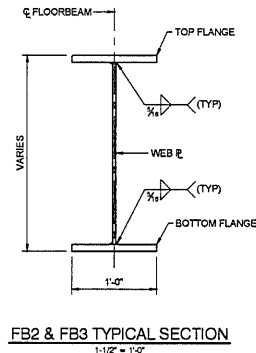
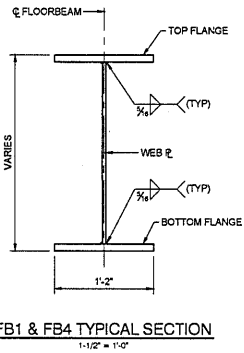
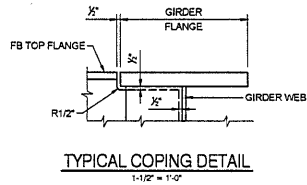
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JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

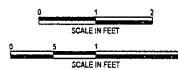
PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY
DRAWING TITLE:
BASCULE SPAN
COUNTERWEIGHT
SECTIONS - 2

DATE: 4/5/2024
SCALE: 3/4" = 1'-0"
SHEET REFERENCE NO.:
of
SHEET NO.:
009 of 202

DATE:	4/9/2024
SCALE:	AS SHOWN
SHEET REFERENCE NO.	of
SHEET NO.:	100 of 200



- NOTES:**
- FOR GENERAL NOTES, SEE SHEET X-XX
 - FOR FRAMING PLAN, SEE SHEET S-XX
 - FOR FLOORBEAM TRANSVERSE SECTIONS, SEE DRAWINGS S-XX THRU S-XX.
 - FOR ADDITIONAL SPAN LOCK DETAILS, SEE SHEET M-XX
 - FOR THE SIDEWALK CONNECTION BRACKET DETAIL, SEE SHEET BXX.
 - ALL BOLTS (UNLESS OTHERWISE NOTED) SHALL BE 3/4" DIA HS BOLTS AND CONFORM TO ASTM F1552, WITH SUITABLE NUTS AND WASHERS HAVING AN UNTHREADED SHAFT OF SUFFICIENT LENGTH SO AS TO NOT ALLOW ANY THREADS TO EXIST IN THE PLANE BETWEEN THE TWO CONNECTED PARTS (SHEAR PLANE). CONNECTION SHALL BE FRICTION TYPE WITH CLEAN MILL SCALE AND BLAST CLEAN SURFACES, AND WITH CLASS "A" COATING IN ACCORDANCE WITH AASHTO SPECIFICATIONS.
 - THE CONTRACTOR SHALL SUBMIT CALCULATIONS ALONG WITH MATERIAL AND SPECIFICATIONS INCLUDED IN THE SHOP DRAWING FOR ANY MODIFICATIONS TO THE GIRDER FLOORBEAM CONNECTION. THE CALCULATIONS SHALL BE AN ANALYSIS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF N.J.
 - ALL HOLES IN THE WEB SHALL BE 15/16" DIAMETER.
 - DUE TO THE BEAM FABRICATION TOLERANCES, A STUD HEIGHT OTHER THAN THAT SHOWN MAY BE REQUIRED. AFTER THE BEAMS HAVE BEEN INSTALLED AND THE CONTRACTOR SHALL SURVEY THE TOPS OF THE BEAMS, AND VERIFY THAT THE 4X4" HIGH SHEAR STUDS, WHEN INSTALLED, WILL PROTRUDE A MINIMUM OF 2" ABOVE THE BOTTOM REAR OF DECK SLAB AND SHALL BE A MINIMUM OF 3" BELOW THE TOP OF THE DECK SLAB. THE ANTICIPATED STUD HEIGHT IS 4 1/2". THE CONTRACTOR SHALL VERIFY AND MAKE ADJUSTMENTS AS NEEDED AT NO ADDITIONAL COST AND SUBMIT ANY CHANGES TO THE RE FOR APPROVAL.
 - ALL WELDS ARE SUBJECT TO NONDESTRUCTIVE TESTING AS PER ASW D1.5 REQUIREMENTS UNDER THE QUALITY CONTROL WELDING INSPECTION.
- ERECTION NOTES:**
- FOR NOTES REGARDING BASCULE SPAN STEEL SUPERSTRUCTURE ERECTION REFER TO SH BXX.



PREPARED BY: WSP USA INC.
200 LEXON DRIVE, LAWRENCEVILLE, N.J. 08648



CAPE MAY COUNTY

MARC S. ESPOSITO N.J. PE LICENSE NUMBER 24060404300

DATE

Designed by KYLE G

Drawn by

Checked by

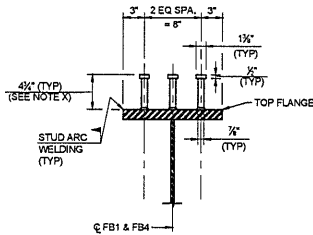
JOB: REHABILITATION OF 96TH STREET (CR657) BRIDGE OVER GREAT CHANNEL STR. NO. 0500-006

PROJECT LOCATION: STONE-HARBOR BOROUGH AND MIDDLE TOWNSHIP CAPE MAY COUNTY, NEW JERSEY
DRAWING TITLE: BASCULE SPAN FLOORBEAM DETAILS - 1

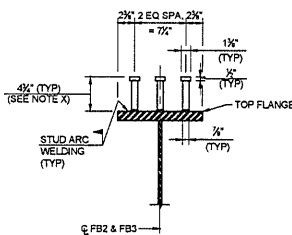
DATE: 4/9/2024
SCALE: AS SHOWN
SHEET REFERENCE NO.:
SHEET NO.: 101 of 202

NOTE:

1. CONTRACTOR SHALL PLACE SHEAR CONNECTORS AROUND DECK PANEL COMPONENTS. EXACT LOCATIONS CAN VARY, BUT THE COUNT OF SHEAR CONNECTORS MUST BE MAINTAINED. A MINIMUM 1.5" CLEAR FROM STUD TO EDGE OF POCKET MUST BE HELD. AN ESTIMATED POCKET SIZE IS SHOWN. SHOULD THE CONTRACTOR PREFER TO MODIFY THE DIMENSION TO ACCOUNT FOR THEIR EQUIPMENT, CLEARANCES, OR PREFERENCES, A REVISED DETAIL SHALL BE SUBMITTED FOR APPROVAL.



FB1 & FB4 SHEAR CONNECTOR DETAIL
1-1/2" = 1'-0"



FB2 & FB3 SHEAR CONNECTOR DETAIL
1-1/2" = 1'-0"



PREPARED BY: WSP USA INC.
2020 LENOX DRIVE, LAWRENCEVILLE, N.J. 08488



CAPE MAY COUNTY

MARC S. ESPOSITO N.J. PE LICENSE NUMBER: 240204843006

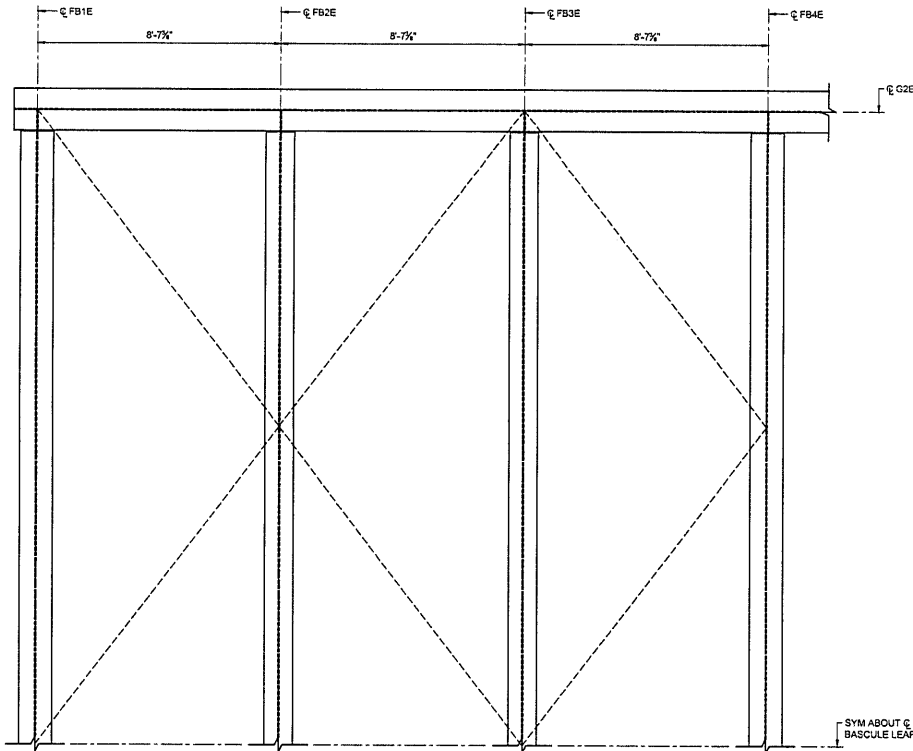
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DESIGNED BY: KYLE G
DRAWN BY: [blank]
CHECKED BY: [blank]

JOB: REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY
DRAWING TITLE:
BASCULE SPAN
FLOORBEAM DETAILS - 2

DATE: 4/9/2024
SCALE: 1-1/2" = 1'-0"
SHEET REFERENCE NO.:
of
SHEET NO.: 102 of 202



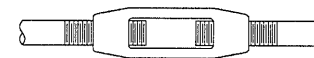
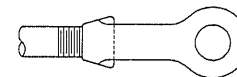
TEMPORARY LATERAL BRACING PLAN
(EAST LEAF SHOWN, WEST LEAF OPPOSITE HAND)
1/2\"/>

NOTES:

1. INSTALL TEMPORARY BRACING DURING BASCULE LEAF STEEL ERECTION. UTILIZE TEMPORARY RODS TO ADJUST ALIGNMENT OF BASCULE GIRDERS.
2. INSTALL DOUBLE NUTS AT TURNBUCKLES AND CLEVISSES TO PROVIDE POSITIVE LOCK AFTER ADJUSTMENT.
3. TEMPORARY BRACING TO REMAIN IN PLACE UNTIL EXODERMIC DECK IS PLACED AND CURED. REMOVE TEMPORARY BRACING RODS, TEMPORARY GUSSET PLATES AND TEMPORARY CONNECTION ANGLES AFTER DECK HAS CURED. CONNECTION PLATE BOLTS TO REMAIN.
4. CONNECTION PLATE BOLTS SHALL BE 3/4\"/>
5. PAINT COLOR FOR TEMPORARY BRACING COMPONENTS SHALL BE "RED" TO INDICATE REMOVAL.
6. FOR GENERAL NOTES, SEE SH BX.
7. FOR FRAMING PLAN, SEE SH BX.

LEGEND:

- (*) CLEVISSES (XX REQUIRED PER LEAF):
- NUMBER 5
 - LRFD STRENGTH - 90 KIPS
 - 1\"/>
 - EYE PLATE THICKNESS - 3/4\"/>
 - EYE OUTER DIAMETER - 5\"/>
 - EYE INNER DIAMETER - 1 1/4\"/>
 - THREAD - 1 1/2\"/>
- (**) CLEVIS PINS (XX REQUIRED PER LEAF):
- ASTM A108 GRADE 1016 TO 1030
 - 1 1/2\"/>
 - 2\"/>
 - 3/4\"/>
- (***) RODS (XX REQUIRED PER LEAF):
- ASTM 36
 - 1 1/2\"/>
 - THREAD - 1 1/2\"/>
- (*) TURNBUCKLES (XX REQUIRED PER LEAF):
- LRFD STRENGTH - 70 KIPS
 - LENGTH - 11\"/>
 - THREAD - 1 1/2\"/>



PREPARED BY: WSP USA INC.
2995 LINDEN DRIVE, LAWRENCEVILLE, NJ, 08441



CAPE MAY COUNTY

MARC S. ESPOSITO N.J. PE LICENSE NUMBER:
2460446300

DATE

Designed by

Drawn by

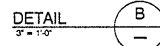
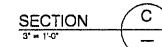
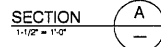
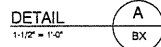
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JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY
DRAWING TITLE:
BASCULE SPAN
LATERAL BRACING
DETAILS

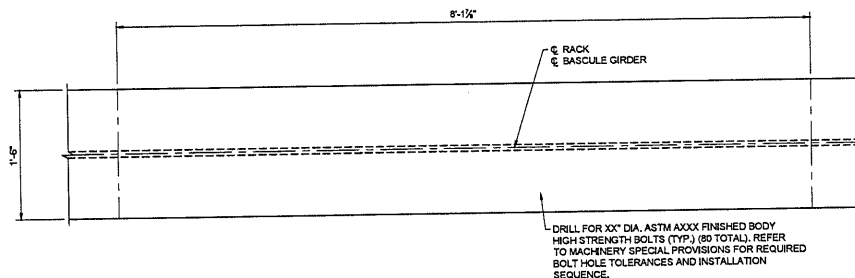
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4/5/2024
SCALE:
AS SHOWN
SHEET REFERENCE NO.:

SHEET NO.:
103 of 202

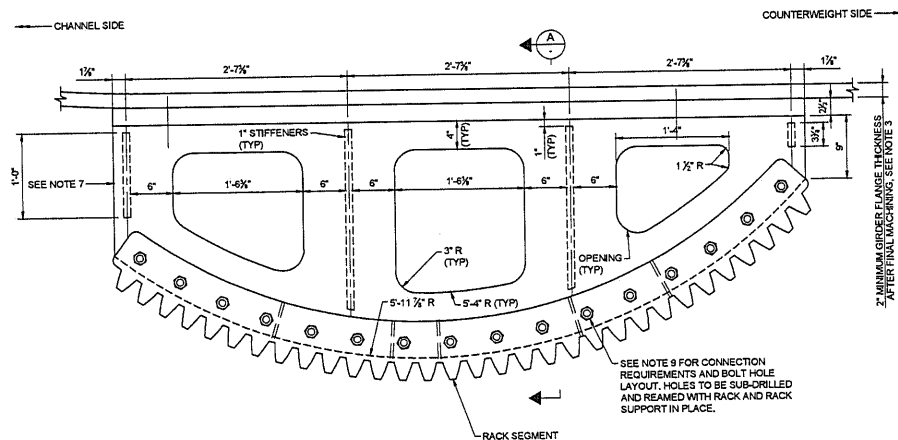


1. SEE SPECIAL PROVISIONS FOR APPROVED SIDEWALK MANUFACTURERS.
2. THESE DRAWINGS DETAIL ONE AND THREE QUARTERS INCH (1/4") DEEP FRP PANEL SYSTEM INCLUDING A SKID-RESISTANT TOP PLATE. PANELS ARE HANGING FROM THE CONCRETE USING SUPPORTS FOR THE PANELS MUST BE DETAILED ACCORDING TO PANEL DEPTH. AS DETERMINED BY THE MANUFACTURER SELECTED BY CONTRACTOR.
3. A 1/2" SKID RESISTANT TOP PLATE SHALL BE FIELD INSTALLED TO THE SIDEWALK PANELS AFTER ALL FIELD SPACING AND PATCHING IS COMPLETED. COST IS CONSIDERED INCIDENTAL TO "POLYMER STRUCTURAL MEMBER" PAY ITEM. THE CONTRACTOR IS ALERTED THAT APPLICATION OF TOP PLATE MAY BE A TEMPERATURE SENSITIVE ACTIVITY. SEE BELOW NOTE.
4. THE REQUIRED FRP SIDEWALK INSTALLATION MUST BE SCHEDULED TO MEET THE CONSTRUCTION STAGING. THE COST FOR ALL COLD WEATHER PROTECTION REQUIRED TO MEET THIS TIME FRAME SHOULD BE INCLUDED IN THE BID PRICE AND SHALL NOT BE PAID SEPARATELY. THE CONTRACTOR IS ALERTED THAT FIELD SPlicing, BOLT HOLE PATCHING AND TOP PLATE INSTALLATION ARE ALTERATIVE SECTIVE ACTIVITIES. PROTECTION METHODS SHALL BE SUBMITTED TO ENGINEER FOR APPROVAL.
5. FRP SIDEWALK SHALL BE CONNECTED TO SUPPORTING STEEL WITH 1/2" DIAMETER STAINLESS STEEL 316 SOCKET HEAD CAP SCREWS. PHENOLIC WASHERS AND NUTS ARE SHOWN ON THE DRAWING. A SEVELED WASHER MAY BE USED TO CORRECT FOR THE SLOPE OF THE FRP SIDEWALK CONNECTION TO THE LEVEL SUPPORTING STEEL BASED UPON THE MANUFACTURER'S RECOMMENDATION. A PHENOLIC BOND BREAKER SHALL BE APPLIED TO ALL CONTACT SURFACES BETWEEN THE STAINLESS STEEL AND STRUCTURAL STEEL.
6. THE CONTRACTOR SHALL SUBMIT FABRICATION DRAWINGS AND DESIGN CALCULATIONS FOR THE FRP SIDEWALK PROPOSED FOR REVIEW AND APPROVAL (SEE SPECIAL PROVISIONS). THE FRP PANELS SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW JERSEY. PANELS SHALL BE DETAILED TO RESIST THE FOLLOWING LOADING CONDITION: 100 PSF PEDESTRIAN LOAD.
7. THE CONTRACTOR MAY SUBMIT ALTERNATE CONNECTION METHODS AND TOP PLATE APPLICATIONS. ENGINEER FOR APPROVAL SHALL REVIEW THAT THE ALTERNATE METHODS ARE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
8. PRIOR TO FABRICATION AND SUBMITTING SHOP DRAWINGS, THE CONTRACTOR SHALL FIELD MEASURE EXISTING BOLT AND RIVET LOCATIONS IN THE TOP PLATE OF THE EXISTING SIDEWALK. THE CONTRACTOR SHALL SUPPORT ELEMENTS SHOWN ON THIS SHEET AND REUSE HOLES WHERE AVAILABLE FOR PROPOSED CONNECTIONS.
9. SUBMIT SEALER DETAILS BETWEEN CURB AND SIDEWALK FOR APPROVAL.
10. THE CONTRACTOR IS RESPONSIBLE FOR THE FULL DESIGN AND DETAILING OF THE FRP SIDEWALK AND ITS CONNECTIONS BASED UPON THE MANUFACTURER'S RECOMMENDATIONS. CALCULATIONS SHALL BE SUBMITTED IN ALL LIMIT STATES IN THE OPEN AND CLOSED POSITIONS.





RACK SUPPORT PLAN VIEW
1-1/2" = 1'-0"



RACK AND RACK SUPPORT ELEVATION VIEW
EAST BASCULE LEAF
(2 LOCATIONS, WEST BASCULE LEAF SIMILAR)
1-1/2" = 1'-0"

NOTES:

1. WORK TO BE PERFORMED AT ALL (4) RACK ASSEMBLIES. RACK FRAME ASSEMBLY ONLY SHOWN FOR THE EAST BASCULE LEAF. WEST BASCULE LEAF HAS SIMILAR RACK FRAME ASSEMBLY UNLESS OTHERWISE NOTED.
2. ALL STIFFENER PLATES TO BE FABRICATED FROM STRUCTURAL STEEL, ASTM AXXX, GR. 50.
3. THICKNESSES SHOWN ARE AFTER MACHINING. SEE MECHANICAL DRAWINGS FOR ADDITIONAL REQUIREMENTS.
4. COORDINATE GEOMETRY OF RACK SUPPORT WITH MAIN GIRDER GEOMETRY.
5. STRESS RELIEVE RACK SUPPORT AFTER WELDING AND BEFORE FINAL MACHINING.
6. GRIND ALL EDGES OF RACK SUPPORT WEB PLATES TO 1/4" MINIMUM RADIUS AND SMOOTH ALL SHARP EDGES.
7. CONTRACTOR TO PROVIDE FULL BEARING BETWEEN BASCULE GIRDER BOTTOM FLANGE AND RACK SUPPORT TOP PLATE. HIGH STRENGTH BOLTS SHALL NOT BE USED TO PULL THESE MATING SURFACE TOGETHER.
8. LUBRICATE RACK TEETH IN ACCORDANCE WITH THE SPECIFICATIONS.
9. MILL IN SHOP TAPERED SHIMS TO FIELD ADJUST RACK.
10. PERFORM 100% UT TESTING OF WELDS CONNECTING RACK FORGING TO RACK FRAME ELEMENTS.
11. FOR ADDITIONAL RACK INFORMATION, SEE MOX.
12. FOR ADDITIONAL SHIM INFORMATION, SEE MOX.
13. FOR ADDITIONAL GIRDER DETAILS SEE SXX.

SECTION A
1-1/2" = 1'-0"

0 5 10
SCALE IN FEET

PREPARED BY: WSP USA INC.
2000 LINCOLN DRIVE, LAWRENCEVILLE, NJ 08648



CAPE MAY COUNTY

MARC S. ESPOSITO N.J. PE LICENSE NUMBER: 2460440000

DATE

Designed by

MEGAN Q

Drawn by

Checked by

JOB:

REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

DRAWING TITLE:
**BASCULE SPAN
RACK ASSEMBLY
AND DETAILS**

DATE:

4/9/2024

SCALE:

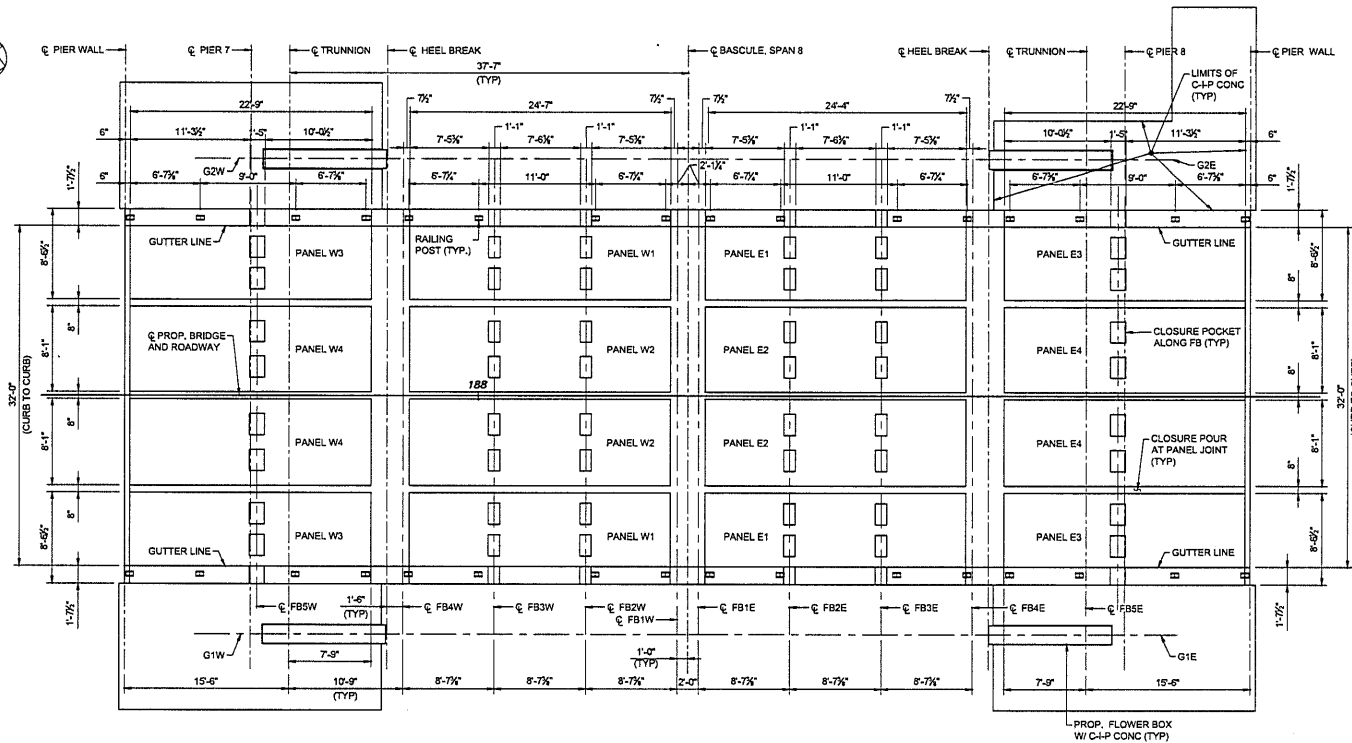
1-1/2" = 1'-0"

SHEET REFERENCE NO.:

of

SHEET NO.:

105 of 202



NOTE:

1. CLOSURE POCKETS ARE SHOWN FOR INTERIOR FLOORBEAMS. CLOSURE POURS ARE REQUIRED FOR THE FULL LENGTH OF THE PANEL FOR THE TOE AND HEEL JOINTS.

PLAN
(BASCULE SPAN)
3/16" = 1'-0"



PREPARED BY: WSP USA Inc.
2006 LENOX DRIVE, LAWRENCEVILLE, N.J. 08648



CAPE MAY COUNTY

MARC S. ESPOSITO

N.J. PE LICENSE NUMBER:
J000040000

DATE



MEGAN Q

DESIGNED BY

DRAWN BY

CHECKED BY

**REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006**

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

DRAWING TITLE:

**BASCULE SPAN
DECK PLAN**

DATE: 4/9/2024

SCALE:
3/16" = 1'-0"

SHEET REFERENCE NO.:
of

SHEET NO.:
108 of 202

NOTES:

THE FOLLOWING NOTES APPLY TO THE EXODERMIC DECK PANELS. FOR ADDITIONAL NOTES, SEE THE GENERAL NOTES.

1. PROVIDE UHPC FOR CLOSURE POCKETS IN ACCORDANCE WITH THE SPECIAL PROVISIONS.
2. STEEL
 - (A) THE STEEL GRID COMPONENTS, WT SECTIONS, DISTRIBUTION BARS AND MISCELLANEOUS PLATES SHALL BE FABRICATED FROM STEEL MEETING THE REQUIREMENTS OF ASTM A709 GRADE 50. WELDING SHALL BE IN CONFORMANCE WITH THE AASHTO/AWS BRIDGE WELDING CODE D1.5. WT SECTIONS MAY ALSO BE ASTM A592 AS AN ALTERNATIVE.
 - (B) VERTICAL SHEET METAL FORM PANS (BULKHEADS) INSTALLED IN GRID PRIOR TO GALVANIZATION SHALL CONFORM TO ASTM A568 OR A1011. GALVANIZED SHEET METAL FORMS INSTALLED FOLLOWING GRID PANEL GALVANIZATION SHALL CONFORM TO ASTM A653. FLAT FORM PANS SHALL BE 20 GAUGE.
 - (C) ALL COMPONENTS IN STEEL GRID FOR EXODERMIC DECK SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123.
 - (D) ANY DEFECTS AND DAMAGES IN GALVANIZING SHALL BE REPAIRED AS PER SPECIFICATIONS. SEE SPECIAL PROVISIONS FOR PRECAUTIONS.
3. REINFORCEMENT STEEL
 - (A) ALL REINFORCEMENT STEEL IN THE EXODERMIC DECK PANELS AND IN ALL CAST-IN-PLACE CONCRETE ADJOINING THE EXODERMIC DECK PANELS, SUCH AS IN PANEL SPlice JOINTS, POURS OVER FLOORBEAMS AND/OR STRINGERS, AND AT EXPANSION JOINTS, SHALL BE ASTM A615 GRADE 60, GALVANIZED PER ASTM A787 CLASS 1.
 - (B) UNLESS NOTED OTHERWISE, MINIMUM CONCRETE COVER MEASURED FROM THE FACE OF UHPC TO THE FACE OF ANY GALVANIZED REINFORCING BAR SHALL BE 1.75" AT THE TOP OF THE EXODERMIC DECK (PPC OVERLAY SHALL NOT BE PERMITTED TO CONTRIBUTE TO THE COVER PROVIDED), 2" AT SIDE EDGES AND 1" AT THE BOTTOM OF THE EXODERMIC DECK.
 - (C) MINIMUM LAP SPlice LENGTH IS 1'-0" FOR #13 AND 2'-3" FOR #16 GRADE 60 BARS, UNLESS NOTED OTHERWISE ON THE DRAWINGS.
 - (D) TRANSVERSE REINFORCING BARS (PARALLEL TO WT SECTIONS) SHALL BE ADJUSTED TO MAINTAIN A 1" MINIMUM CLEARANCE BETWEEN REINFORCING BARS AND WT WEBS.
 - (E) FINAL BAR DETAILING SHALL BE DEVELOPED BY THE CONTRACTOR AND SUBMITTED TO THE COUNTY FOR APPROVAL. ALL BARS IN THE SCHEDULES PROVIDED SHALL BE ACCOUNTED FOR IN THE FINAL PANELS. BAR LENGTHS PROVIDED ARE MINIMUMS. THE CONTRACTOR MAY CHOOSE TO MAKE BARS LONGER AT NO ADDITIONAL COST. THE REBAR SHALL BE THE LENGTH REQUIRED TO MEET THE LIMITS SHOWN IN THE DETAILS WHILE MAINTAINING THE MINIMUM COVER LISTED ABOVE.
4. FABRICATION
 - (A) A GENERIC GRID SYSTEM IS SHOWN ON THE DRAWINGS. MINOR DEVIATIONS, AS MANUFACTURED BY INDIVIDUAL SUPPLIERS, WILL BE CONSIDERED FOR APPROVAL IN THE SHOP DRAWINGS. DETAILS SUGGESTED BY MANUFACTURER TO BE SUBMITTED FOR APPROVAL.
 - (B) EXODERMIC PANELS ARE DIMENSIONED TO THE ANTICIPATED LIMITS OF THE PANEL SPlice JOINTS OR DECK JOINTS. THE CONTRACTOR MAY PROPOSE FABRICATING LARGER PANELS THAN WHAT IS SHOWN IN THESE PLANS. SUBMIT ALL DETAILS OF PROPOSED OPERATION TO DEPARTMENT FOR APPROVAL, INCLUDING SHIPPING METHOD. THE USE OF LARGER PANELS IS CONTINGENT UPON THE COUNTY'S APPROVAL. MINIMUM SPACING OF STEEL GRID AND REINFORCEMENT STEEL SHOWN SHALL BE MAINTAINED.
 - (C) THE DIMENSIONAL TOLERANCES FOR EACH STEEL GRID PANEL SHALL BE IN ACCORDANCE WITH THE CURRENT PUBLISHED STANDARDS OF THE BRIDGE GRID FLOORING MANUFACTURERS ASSOCIATION.
 - (D) CONTRACTOR SHALL SUBMIT DETAILED SHOP DRAWINGS AND CALCULATIONS PREPARED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF NEW JERSEY. THE CONTRACTOR SHALL DEVELOP THE DETAILED SEQUENCE OF WORK, TASKS TO BE PERFORMED, FORM WORK, LIFTING, HANDLING, AND LEVELING OF EXODERMIC PANELS. CALCULATIONS SHALL BE SUBMITTED TO THE COUNTY FOR APPROVAL.
 - (E) OMIT DISTRIBUTION BARS OVER FLOORBEAMS AND/OR STRINGERS AS NECESSARY TO PROVIDE CLEARANCE FOR SHEAR CONNECTORS AND LEVELING BOLTS.
 - (F) WT SECTION LAYOUT HAS BEEN DEVELOPED TO MINIMIZE CONFLICTS WITH THE SCUPPERS. ONLY A SINGLE WT SECTION SHALL BE CUT AT EACH SCUPPER LOCATION TO AVOID THE CONFLICT BETWEEN THESE ELEMENTS. SEE SH, BXX FOR DETAILS.
 - (G) RAILING POST SPACING SHALL NOT EXCEED 11'-0".
 - (H) SCUPPERS SHALL BE SET BELOW ANY OVERPOUR IN THE PRECAST CONCRETE DECK SO THAT THEY ARE FLUSH WITH THE FINAL RIDING SURFACE.



- (I) THE TOP SURFACE OF THE EXODERMIC PANELS SHALL BE BROOM FINISH. THE SURFACE WILL BE GROUND DOWN AFTER INSTALLATION, 1/4" MINIMUM OVERPOUR THICKNESS IS REQUIRED AND NOT SHOWN ON ALL THE DETAILS WITHIN THE PLANS.
 - (J) CONTRACTOR MAY PROPOSE MINOR CHANGES TO PANEL DIMENSIONS TO GROUP SIMILAR PANELS TOGETHER INTO ONE PANEL SIZE. ALL SCUPPER, JUNCTION BOX, MINIMUM AND MAXIMUM TRANSVERSE JOINT WIDTHS, AND SHEAR CONNECTOR REQUIREMENTS MUST BE MAINTAINED. PROPOSED CHANGES MUST BE SUBMITTED TO THE COUNTY FOR APPROVAL.
5. INSTALLATION
 - (A) CONTRACTOR SHALL PERFORM FIELD SURVEY OF EXISTING DECK ELEVATIONS BEFORE REMOVAL OF EXISTING DECK AND SHALL PERFORM FIELD SURVEY OF TOP OF PANEL SUPPORTING ELEMENTS TO REMAIN AND AFTER INSTALLATION OF PROPOSED ELEMENTS (WHERE APPLICABLE) PRIOR TO INSTALLATION OF EXODERMIC DECK PANELS. CONTRACTOR SHALL SUBMIT HAUNCH CALCULATIONS BASED ON THESE SURVEYS TO THE COUNTY FOR APPROVAL.
 - (B) PRIOR TO EXODERMIC DECK PANEL INSTALLATION, THE TOP SURFACES OF PROPOSED STRINGERS, EXISTING STRINGERS TO REMAIN, AND PROPOSED FLOORBEAMS SHALL BE PREPARED IN ACCORDANCE WITH THE SPECIFICATIONS.
 - (C) SHEAR CONNECTORS MUST BE INSTALLED ON STRINGERS AND FLOORBEAMS AS INDICATED ON THESE DRAWINGS. THE CONTRACTOR MAY CHOOSE TO INSTALL SHEAR CONNECTORS PRIOR TO FINAL PLACEMENT OF EXODERMIC DECK PANELS. CONTRACTOR MUST COORDINATE LOCATION OF SHEAR CONNECTORS WITH EXODERMIC PANELS IN ORDER TO PROVIDE THE REQUIRED QUANTITY OF SHEAR CONNECTORS. RESPECT SPACING LIMITATIONS OF SHEAR CONNECTORS, AND AVOID CONFLICTS WITH THE WT SECTIONS AND REBAR IN PANELS.
 - (D) PANELS SHALL BE STABILIZED DURING INSTALLATION TO AVOID "WALKING" OF THE PANELS. THE CONTRACTOR SHALL SUBMIT DETAILS OF STABILIZATION TO THE COUNTY FOR APPROVAL.
 - (E) PROVIDE A MINIMUM OF THREE LEVELING AND SUPPORT BOLTS ALONG EACH STRINGER FOR ALL DECK PANELS WIDER THAN 9'. TWO BOLTS PER SUPPORT MEMBER FOR PANELS LESS THAN 9' WILL BE PERMITTED. SEE SH, BXX FOR DETAILS.
 - (F) FINAL PANEL ELEVATIONS SHALL BE ATTAINED BY ADJUSTING THE TORQUE ON LEVELING SCREWS TO PROMOTE AN EQUAL DISTRIBUTION OF PANEL DEAD LOAD TO ALL PANEL SUPPORTING ELEMENTS. THE TORQUE SCHEDULE SHALL BE SUBMITTED WITH THE SHOP DRAWINGS FOR THE PANELS. ALL LEVELING BOLTS SHALL BE EQUALLY TORQUED TO APPROXIMATELY THE SAME VALUE WITH NO MORE THAN 10 PERCENT DEVIATION FROM THE AVERAGE.
 - (G) THE SHEET METAL FORMS SHALL BE INSTALLED IN SUCH A MANNER AS TO MINIMIZE LEAKAGE.
 - (H) CONCRETE FOR TRANSVERSE JOINTS SHALL BE RODDED OR VIBRATED TO ENSURE THAT ALL VOIDS IN THE TRANSVERSE JOINTS ARE FILLED.
 - (I) CONCRETE DAMS / HAUNCH ANGLES SHALL BE USED TO RETAIN CONCRETE PLACED WITHIN THE HAUNCH ABOVE THE TOP FLANGE OF THE STRINGERS, GIRDERS, AND FLOORBEAMS. THE PROPOSED METHOD FOR RETAINING HAUNCH CONCRETE SHALL BE SUBMITTED TO THE COUNTY FOR APPROVAL.
 - (J) WELDING OF INTEGRAL VERTICAL BULKHEADS WILL ONLY BE ALLOWED PRIOR TO GALVANIZING. WELDS FOR THE BULKHEADS WILL ONLY BE ALLOWED WITHIN THE BOTTOM 1" OF THE WT SECTIONS. HAUNCH ANGLES SHALL NOT BE WELDED TO STRINGERS, FLOORBEAMS, OR GIRDERS WITHIN NEGATIVE MOMENT REGIONS.
 - (K) IF PANELS ARE STACKED FOR STORAGE PRIOR TO FIELD INSTALLATION, BLOCKING OR SOME OTHER MEANS FOR CUSHIONING SHALL BE PROVIDED SO THAT THE PANELS DO NOT BEAR ON THE EMBEDDED ANCHOR BOLTS. ALTERNATIVELY, AT THE CONTRACTOR'S OPTION, COUPLING NUTS WHICH CAN DEVELOP A MINIMUM OF 125% OF THE SPECIFIED YIELD STRENGTH OF THE ANCHOR BOLTS MAY BE SET FLUSH WITH THE TOP OF THE PRECAST CONCRETE TO RECEIVE FIELD PLACED ANCHOR BOLTS AT NO ADDITIONAL COST. SEE SH, BXX FOR THE DETAILS.
 - (L) A RIGID LIFTING FRAME SHALL BE USED AND CONCRETE TENSILE STRESSES SHALL BE CONTROLLED DURING HANDLING. SEE SPECIAL PROVISIONS FOR REQUIREMENTS. FOR PANELS CONTAINING SCUPPERS, PANEL LIFTING OPERATIONS THAT ENGAGE A DISCONTINUOUS (CUT) MAIN BAR WILL NOT BE PERMITTED.
 - (M) PRECAST PANELS SHALL REACH A MINIMUM AGE OF 75 DAYS PRIOR TO INSTALLATION. PANELS SHALL BE STORED IN A SAFE LOCATION AND THE FINAL ACCEPTANCE OF THE PANELS IS SUBJECT TO THE APPROVAL OF THE RE.
 7. FOR EXODERMIC DECK RELATED QUANTITIES, SEE SH, BXX.

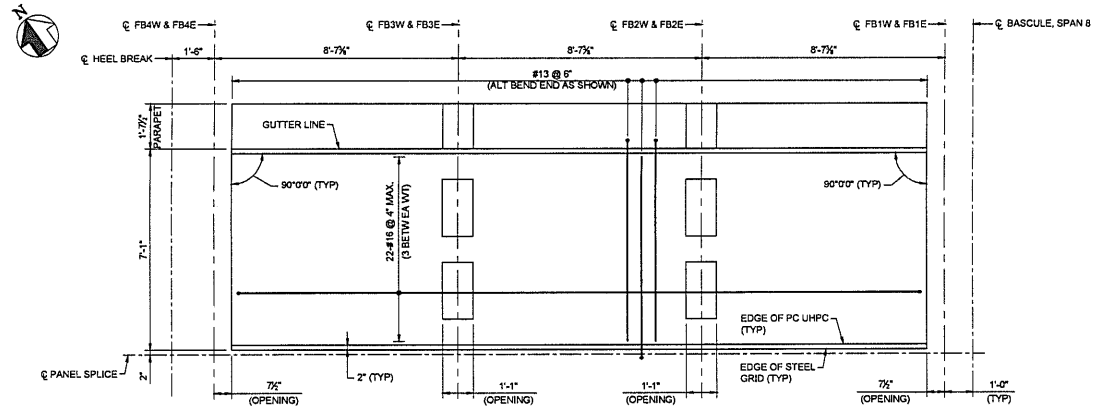
8. FOR LOCATION OF SCUPPERS BY BASELINE STATION, SEE SH, BXX.
9. ALL PANELS WITH SIGNIFICANT GEOMETRIC VARIATIONS AND/OR FEATURES SUCH AS SCUPPERS OR LIGHT STANDARDS HAVE BEEN DETAILED. PANELS WITH MINOR GEOMETRIC VARIATIONS OR WHERE THE INCLUSION OF A FEATURE WILL RESULT IN DETAILS SIMILAR TO THOSE PROVIDED FOR ANOTHER PANEL TYPE MAY NOT HAVE BEEN PROVIDED. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE COUNTY FOR APPROVAL FOR ALL PANELS. NOTES ARE PROVIDED WITHIN THE PANEL DETAILS TO INDICATE WHERE SIMILARITIES EXIST FOR THE PANELS NOT SHOWN AND WHICH DETAILS SHOULD BE FOLLOWED FOR THESE PANELS.

SUGGESTED PANEL INSTALLATION SEQUENCE:

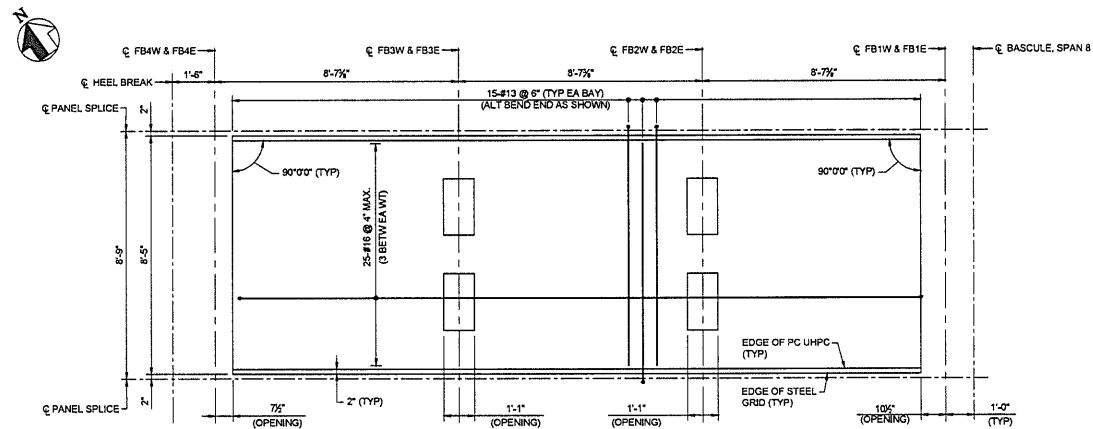
1. PREPARE ALL SURFACES IN ACCORDANCE WITH THE SPECIFICATIONS.
2. FORM HAUNCHES BETWEEN THE BOTTOM OF EXODERMIC PANEL AND TOP OF STRINGERS AND FLOORBEAMS.
3. FULLY EXTEND LEVELING BOLTS TO PREVENT PANEL WEIGHT FROM BEING TRANSFERRED TO THE HAUNCH FORMS.
4. PLACE ALL EXODERMIC DECK PANELS.
5. ADJUST LEVELING DEVICES TO BRING PANELS TO CORRECT GRADE AND ELEVATION. ENSURE THAT THERE ARE NO GAPS IN THE HAUNCH FORMS.
6. INSTALL SHEAR CONNECTORS ON ALL STRINGERS AND FLOORBEAMS AND FIELD APPLY GALVANIZING COMPOUND TO SHEAR CONNECTORS.
7. INSTALL FIELD PLACED R.M.C. AND JUNCTION BOXES.
8. POUR UHPC OVER PANEL SUPPORTING ELEMENTS FOR CLOSURE POCKETS AND AT PANEL SPICES.
9. AFTER UHPC OVER PANEL SUPPORTING ELEMENTS FOR CLOSURE POCKETS AND AT PANEL SPICES HAS CURED, PLACE CAST-IN-PLACE UHPC AT DECK JOINT BLOCKOUTS.

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PREPARED BY: WSP USA Inc. 2008 LENOX DRIVE, LAWRENCEVILLE, N.J. 08448				 CAPE MAY COUNTY		JOB: REHABILITATION OF 96TH STREET (CR657) BRIDGE OVER GREAT CHANNEL STR. NO. 0500-006		PROJECT LOCATION: STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP CAPE MAY COUNTY, NEW JERSEY		DATE: 4/5/2024	
MARC S. ESPOSITO		A.J. PE N.J. PE LICENSE NUMBER: 2002046020		DATE		Designed by KYLE G		Drawing Title: EXODERMIC DECK PANEL NOTES		SCALE: AS SHOWN	
						Drawn by		SHEET REFERENCE NO.: of		SHEET NO.: 107 of 232	



EXODERMIC DECK PANEL PLAN, TYPE W1 & E1
(BASCULE SPAN)
1/2" = 1'-0"



EXODERMIC DECK PANEL PLAN, TYPE W2 & E2
(BASCULE SPAN)
1/2" = 1'-0"

0 2 4
SCALE IN FEET

PREPARED BY: WSP USA INC.
2000 LINCOLN DRIVE, LAWRENCEVILLE, N.J. 08648



MARC S. ESPOSITO N.J. PE LICENSE NUMBER
246204543000

DATE



CAPE MAY COUNTY

DESIGNED BY

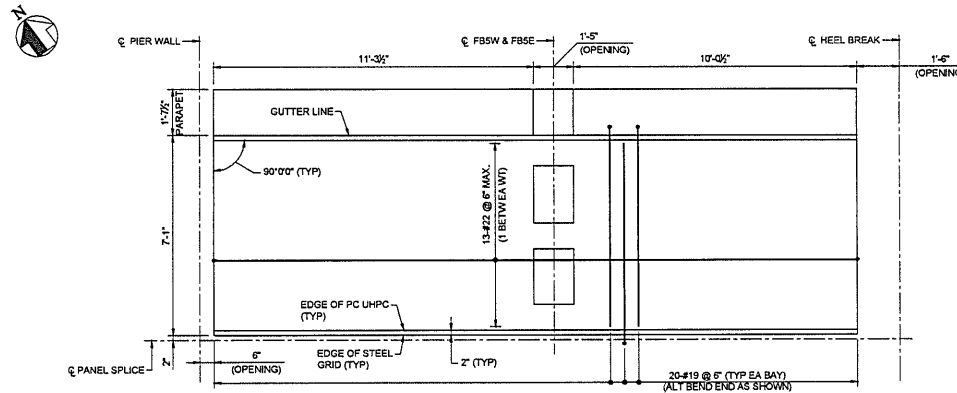
MEGAN Q

CHECKED BY

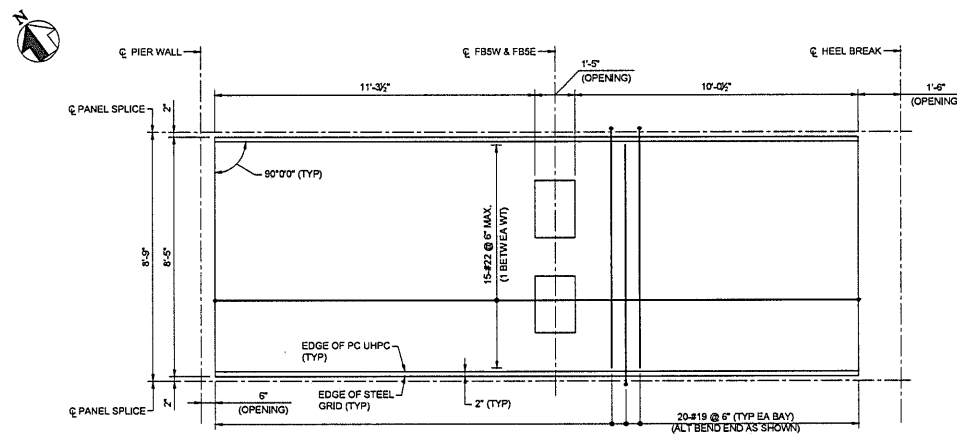
JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY
DRAWING TITLE:
BASCULE SPAN
DECK PANEL PLAN - 1

DATE:
4/9/2024
SCALE:
1/2" = 1'-0"
SHEET REFERENCE NO.:
of
SHEET NO.:
108 of 202





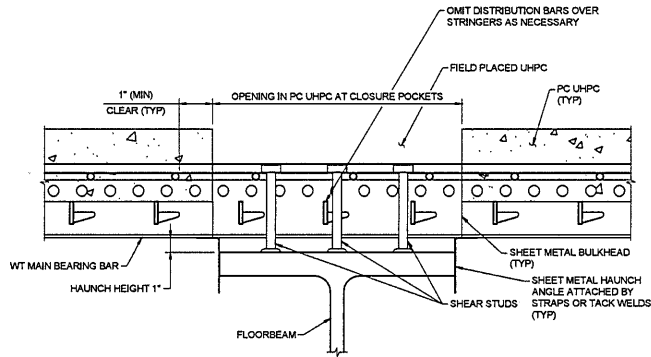
EXODERMIC DECK PANEL PLAN, TYPE W3 & E3
(BASCULE SPAN)
1/2" = 1'-0"



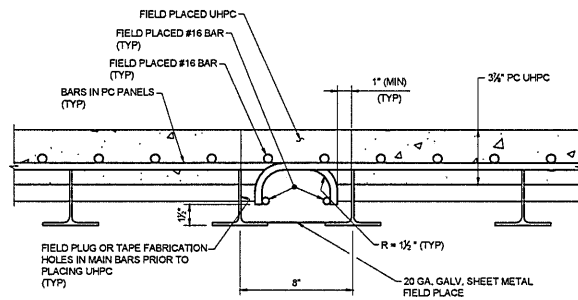
EXODERMIC DECK PANEL PLAN, TYPE W4 & E4
(BASCULE SPAN)
1/2" = 1'-0"



PREPARED BY: WSP USA INC. 2000 LINCOLN DRIVE, LAWRENCEVILLE, N.J. 08648 MARC S. ESPOSITO N.J. PE LICENSE NUMBER: 24GE0464300 DATE:	  CAPE MAY COUNTY DESIGNED BY: MEGAN Q. CHECKED BY:	JOB: REHABILITATION OF 96TH STREET (CR657) BRIDGE OVER GREAT CHANNEL STR. NO. 0500-006	PROJECT LOCATION: STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP CAPE MAY COUNTY, NEW JERSEY DRAWING TITLE: BASCULE SPAN DECK PANEL PLAN - 2	DATE: 4/5/2024 SCALE: 1/2" = 1'-0" SHEET REFERENCE NO.: of SHEET NO.: 159 of 202
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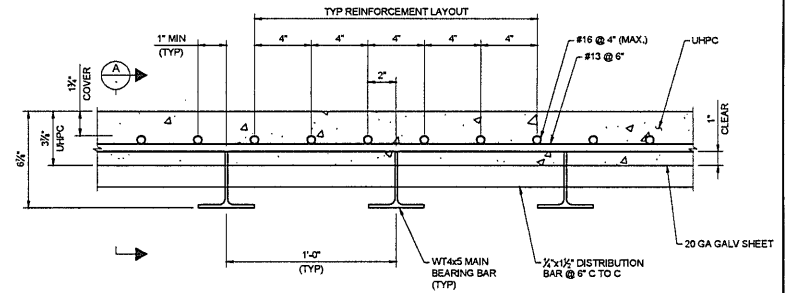
BASCULE SPAN FLOORBEAM CONNECTION DETAIL
(SPAN OVER COUNTERWEIGHT SIMILAR AS NOTED)
3" = 1'-0"



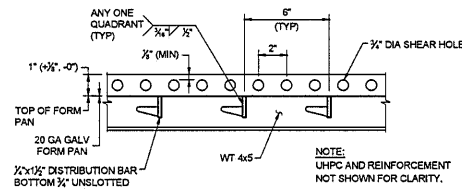
BASCULE SPAN SECTION AT PANEL SPLICE
(SPAN OVER COUNTERWEIGHT SIMILAR AS NOTED)
3" = 1'-0"

HAUNCH FORMING NOTES:

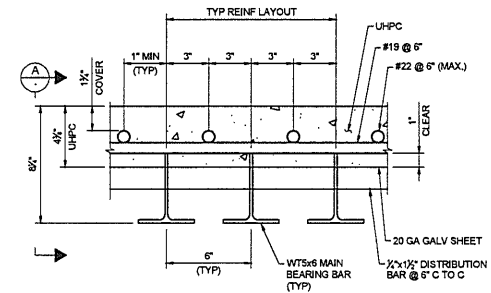
1. LEVELING BOLTS NOT SHOWN.
2. OTHER HAUNCH FORMING OPTIONS POSSIBLE. SUBMIT DETAILS IN SHOP PLAN.
3. OMIT DISTRIBUTION BARS OVER FLOORBEAM OR STRINGERS AS NECESSARY TO PROVIDE CLEARANCE FOR SHEAR STUDS AND LEVELING BOLTS.
4. DECK CROSS SLOPE NOT SHOWN, SEE TYPICAL SECTIONS.



BASCULE SPAN PARTIAL-DECK SECTION
3" = 1'-0"





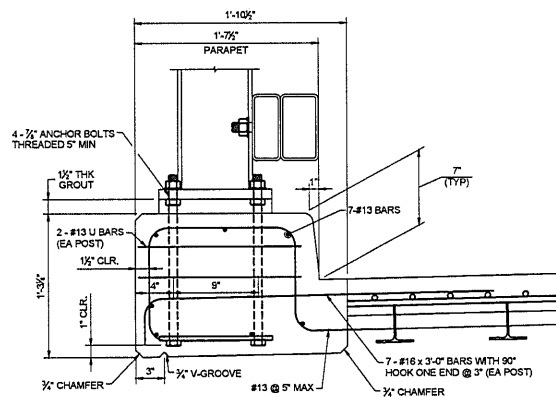
SECTION
(SPAN OVER COUNTERWEIGHT SIMILAR AS NOTED)
3" = 1'-0"



SPAN OVER COUNTERWEIGHT - PARTIAL DECK SECTION
3" = 1'-0"





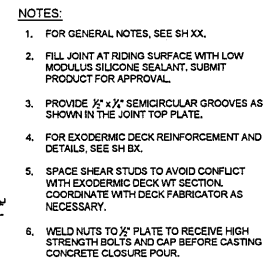
PREPARED BY: WSP USA INC. 2000 LENOX DRIVE, LAWRENCEVILLE, N.J. 08648 MARC S. ESPOSITO N.J. PE LICENSE NUMBER: 24020484300 DATE:		 CAPE MAY COUNTY DESIGNED BY: ZACK S DRAWN BY: ZACK S CHECKED BY:	JOB: REHABILITATION OF 96TH STREET (CR657) BRIDGE OVER GREAT CHANNEL STR. NO. 0500-006	PROJECT LOCATION: STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP CAPE MAY COUNTY, NEW JERSEY DRAWING TITLE: BASCULE SPAN DECK DETAILS - 1	DATE: 4/9/2024 SCALE: 3" = 1'-0" SHEET REFERENCE NO.: SHEET NO.: 110 OF 202
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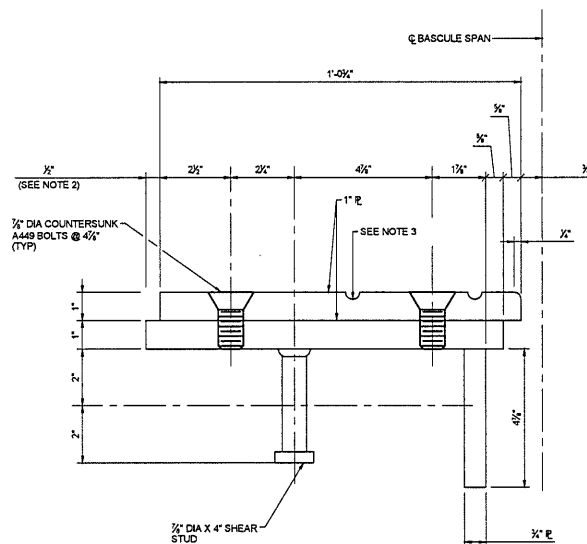
BASCULE SPAN CURB DETAIL
(SPAN OVER COUNTERWEIGHT SIMILAR AS NOTED)
2" = 1'-0"



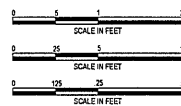
PREPARED BY: WSP USA INC. 2000 LENOX DRIVE, LAWRENCEVILLE, N.J. 08048  MARC S. ESPOSITO N.J. PE LICENSE NUMBER: 34604840300 DATE:	 CAPE MAY COUNTY DESIGNED BY: ZACK S. DRAWN BY: CHECKED BY:	JOB: REHABILITATION OF 96TH STREET (CR657) BRIDGE OVER GREAT CHANNEL STR. NO. 0500-006	PROJECT LOCATION: STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP CAPE MAY COUNTY, NEW JERSEY DRAWING TITLE: BASCULE SPAN DECK DETAILS - 2	DATE: 4/5/2024 SCALE: 2" = 1'-0" SHEET REFERENCE NO.: of SHEET NO.: 111 of 202
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Technical drawing of a floorbeam shear connector detail, labeled "SECTION" and "3' x 1'-0\"". The drawing shows a cross-section of a concrete slab with a steel beam and a shear connector. Key dimensions include a 1'-0\" span and a 1 1/2\" width. Callouts include "OMIT DISTRIBUTION BARS OVER FLOORBEAM", "WELDED NUT (TYP) (SEE NOTE 6)", "PROP. 1/2\" DIA HS BOLT (TYP)", "PROP. R 1/2\" x 4\"", and "SEE NOTE 4". A note at the bottom states: "NOTE: FLOORBEAM SHEAR CONNECTORS NOT SHOWN FOR CLARITY."



DETAIL 1
6" = 1'-0"



Designed by

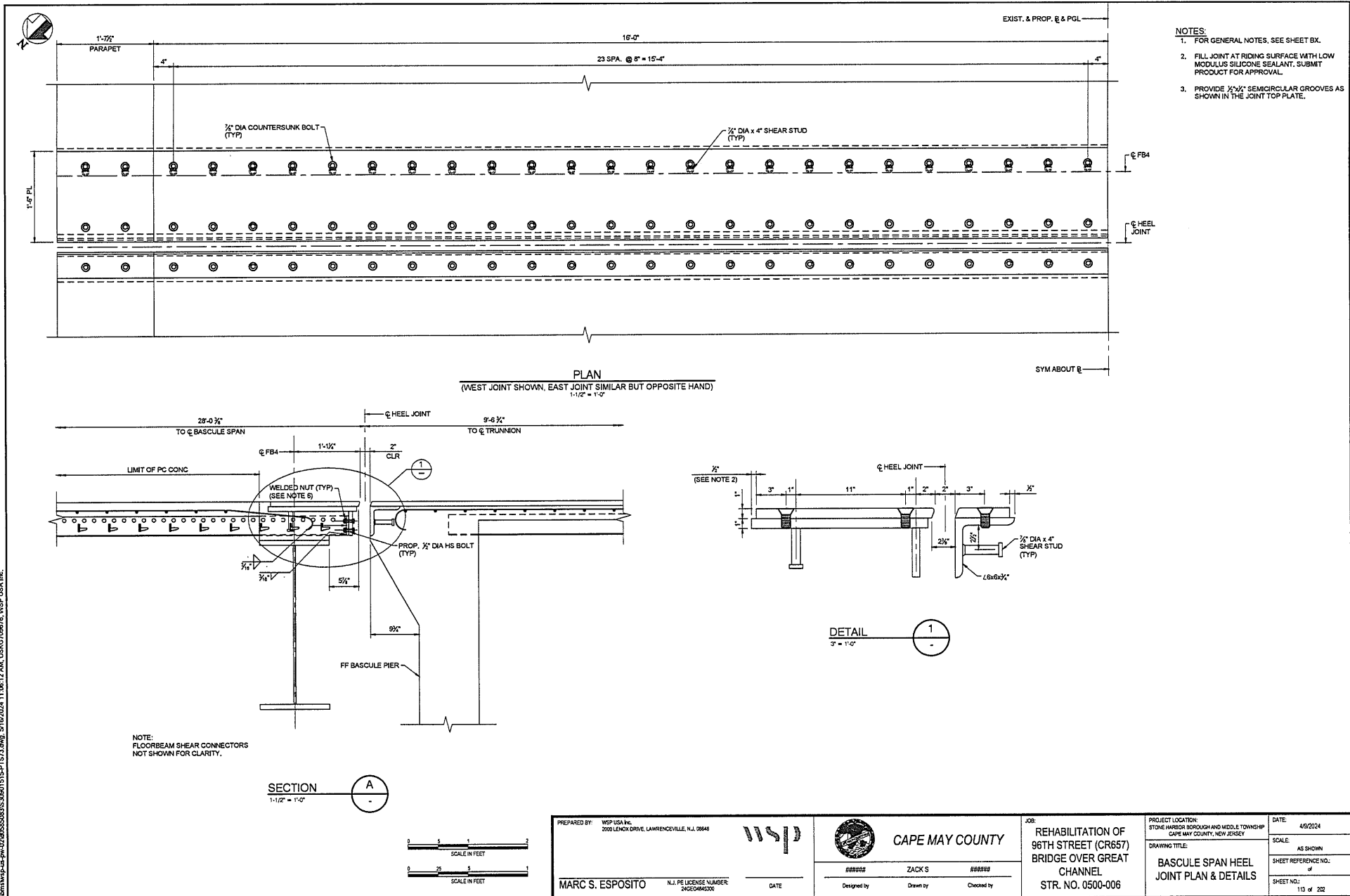
ZACK S

Drawn by

Checked by

PROJECT LOCATION: STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP CAPE MAY COUNTY, NEW JERSEY
DRAWING TITLE: BASCULE SPAN TOE JOINT PLAN & DETAILS

P	DATE:	4/9/2024
	SCALE:	AS SHOWN
	SHEET REFERENCE	of
	SHEET NO.:	112 of 20

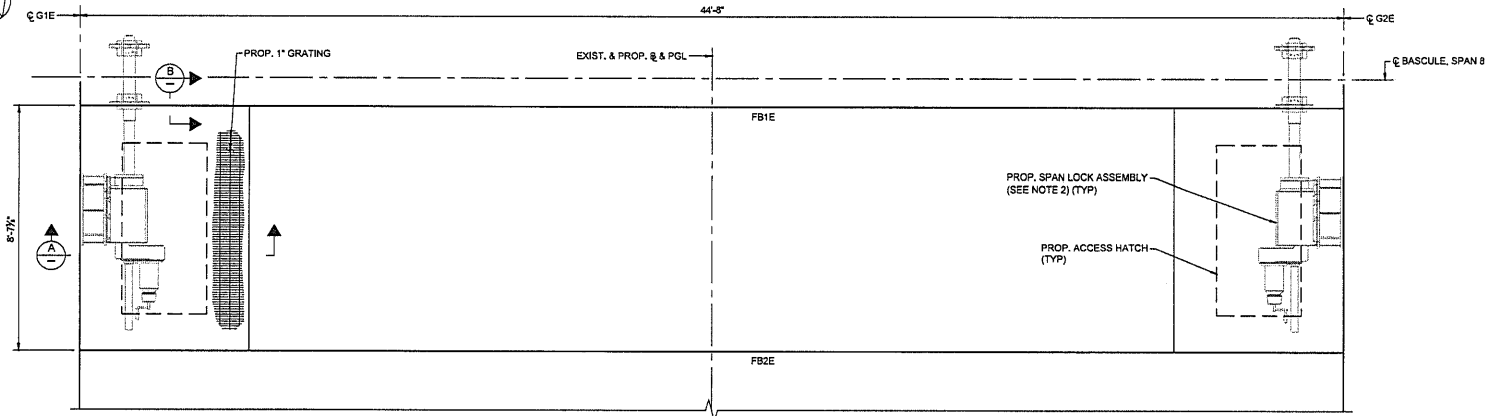


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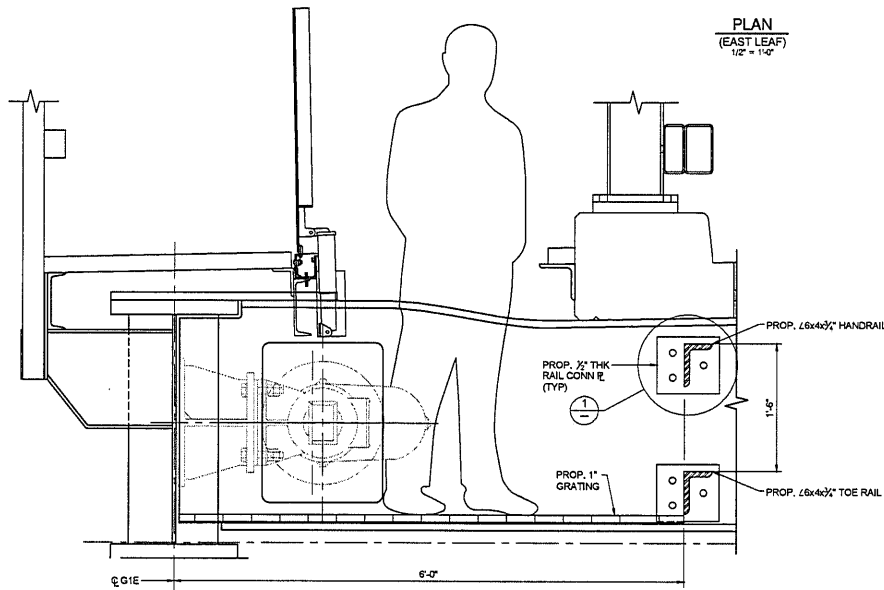


NOTES:

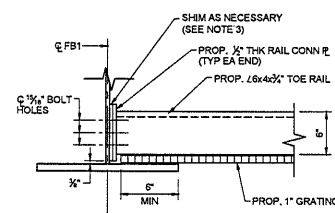
1. FOR GENERAL NOTES, SEE SHEET BX.
2. FOR SPAN LOCK ASSEMBLY DETAILS, SEE SHEET BX.
3. TO ACCOMMODATE FITUP, A SINGLE SHIM PLATE UP TO 1/2" IN THICKNESS MAY BE USED AT EACH CONNECTION LOCATION OF RAIL TO FLOORBEAM.



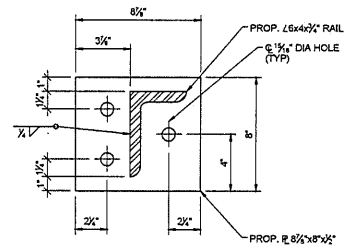
PLAN
(EAST LEAF)
1/2" = 1'-0"



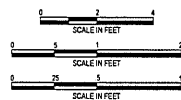
SECTION
(SOUTH SIDE SHOWN, NORTH SIDE OPPOSITE HAND)
1-1/2" = 1'-0"



SECTION
1-1/2" = 1'-0"



DETAIL
1
1/2" = 1'-0"



PREPARED BY: WSP USA Inc.
2000 LENOX DRIVE, LAWRENCEVILLE, N.J. 08648



CAPE MAY COUNTY

MARC S. ESPOSITO N.J. PE LICENSE NUMBER: 2462084202

DATE

DESIGNED BY: KYLE G

DRAWN BY: KYLE G

CHECKED BY: KYLE G

**REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006**

**PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY**

**DRAWING TITLE:
SPAN LOCK
PLATFORM PLAN
& DETAILS**

DATE: 4/9/2024

SCALE: AS SHOWN

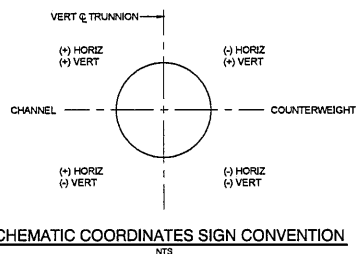
SHEET REFERENCE NO.: of

SHEET NO.: 114 of 202

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SUMMARY OF PROPOSED CONDITION - EAST LEAF							
		TOE REACTION	WEIGHT		X-DIST	MX	Y-DIST
		(LBS)	(LBS)	(KIPS)	(FT)	(K-FT)	(FT)
FORWARD	EXOERMIC DECK						
	SIDEWALK						
	SIDEWALK BRACKETS						
	CURB RAILING						
	CURB RAILING POSTS						
	HANDRAIL						
	HANDRAIL POSTS						
	SPAN LOCK						
	SPAN LOCK PLATFORM						
	LATERAL BRACING						
REAR	BASCULE GIRDERS						
	FLOORBEAMS						
	JOINTS						
	TOTAL FORWARD						
	COUNTERWEIGHT FRAME						
ALL	COUNTERWEIGHT CONCRETE						
	STEEL BALLAST						
	BALANCE BLOCKS						
	TOTAL REAR						
	TOE REACTION						
	TOTAL						
	CENTER OF GRAVITY, X						
	CENTER OF GRAVITY, Y						
	DEGREES ABOVE HORIZONTAL						

SUMMARY OF PROPOSED CONDITION - WEST LEAF							
		TOE REACTION	WEIGHT		X-DIST	MX	Y-DIST
		(LBS)	(LBS)	(KIPS)	(FT)	(K-FT)	(FT)
FORWARD	EXOERMIC DECK						
	SIDEWALK						
	SIDEWALK BRACKETS						
	CURB RAILING						
	CURB RAILING POSTS						
	HANDRAIL						
	HANDRAIL POSTS						
	SPAN LOCK						
	SPAN LOCK LOCK RECIEVER						
	LATERAL BRACING						
REAR	BASCULE GIRDERS						
	FLOORBEAMS						
	JOINTS						
	TOTAL FORWARD						
	COUNTERWEIGHT FRAME						
ALL	COUNTERWEIGHT CONCRETE						
	STEEL BALLAST						
	BALANCE BLOCKS						
	TOTAL REAR						
	TOE REACTION						
	TOTAL						
	CENTER OF GRAVITY, X						
	CENTER OF GRAVITY, Y						
	DEGREES ABOVE HORIZONTAL						



NOTES:

1. THE VALUES SHOWN IN THE BALANCE TABLE ARE FOR THE BASCULE SPAN IN THE CLOSED POSITION WITH SPAN LOCKS WITHDRAWN AND ARE IN ACCORDANCE WITH THE SCHEMATIC MOMENT SIGN CONVENTION SHOWN ON THIS SHEET.
2. THE CONTRACTOR SHALL PREPARE AND SUBMIT A DETAILED BASCULE LEAF CONSTRUCTION BALANCE PROCEDURE IN ACCORDANCE WITH THE SPECIAL PROVISIONS AND IN THE FORMAT SHOWN ON THIS SHEET. THE CONTRACTOR IS ALERTED THAT COUNTERWEIGHT LOADINGS MAY REQUIRE INSTALLING AND REMOVING BALLAST SLABS AND BALANCE BLOCKS AS REQUIRED DURING CONSTRUCTION. PROVIDE INTERNAL STABILITY TO BALLAST SLABS DURING CONSTRUCTION AND BEFORE CONCRETE PLACEMENT FOR PROPER BALLAST SPAN ENCAPSULATION.
3. THE COUNTERWEIGHT BOX SHALL BE FULLY SHORED DURING PLACEMENT OF COUNTERWEIGHT CONCRETE AND STEEL SLABS.
4. THE VALUES SHOWN IN THE BALANCE TABLES ASSUME AN AVERAGE UNIT WEIGHT OF 145 PCF AND 120 PCF FOR THE COUNTERWEIGHT NORMAL WEIGHT AND LIGHTWEIGHT CONCRETE REPETITIVELY. REFER TO THE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION. ALL CONCRETE SHALL BE PAID FOR UNDER ITEM "SPAN BALANCE CONCRETE FILL".
5. ALL STEEL FOR THE BALLAST SLABS SHALL BE ASTM A36 OR APPROVED COMMERCIAL GRADE STEEL.
6. ALL COST FOR THE BALLAST SLABS INCLUDING BUT NOT LIMITED TO, POSITIONING AND REPOSITIONING IS TO BE INCLUDED UNDER ITEM "SPAN BALANCE STEEL BALLAST".
7. PROVIDE 100 ADDITIONAL BALANCE BLOCKS PER LEAF FOR FIELD ADJUSTMENTS. STORE SPARE COUNTERWEIGHT BLOCKS AT THE SITE AS DIRECTED BY THE R.E.
8. ALL COST FOR THE BALANCE BLOCKS INCLUDING, BUT NOT LIMITED TO, POSITIONING AND REPOSITIONING IS TO BE INCLUDED UNDER ITEM "SPAN BALANCE BLOCKS".
9. THE LOCATIONS AND QUANTITIES OF BALANCE MATERIAL SHOWN ON THE PLANS ARE APPROXIMATE. THE EXACT QUANTITY, LOCATION AND SIZE OF BALANCE MATERIAL SHALL BE DETERMINED AND DOCUMENTED BY THE CONTRACTOR IN ACCORDANCE WITH THE SPECIAL PROVISIONS. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE STEEL BALLAST SLABS AND BALANCE BLOCK NECESSARY TO BALANCE THE BASCULE SPAN. QUANTITIES AND DIMENSIONS SHOWN THROUGHOUT THE PLANS ARE BIDDING PURPOSES ONLY.
10. THE BALANCE TABLE SHOWN IN THIS SHEET FOR THE FINAL CONDITION. THE CONTRACTOR IS RESPONSIBLE FOR BALANCING THE LEAF DURING THE VARIOUS CONSTRUCTION STAGES. IF REQUIRED, INCLUDING PROVISIONS SUPPLEMENTAL BALANCE MATERIAL AS DESCRIBED IN THE SPECIAL PROVISIONS.
11. THE LOCATIONS AND QUANTITIES OF BALANCE MATERIAL SHOWN IN THESE PLANS ARE APPROXIMATE. DETERMINE AND DOCUMENT THE EXACT QUANTITY, LOCATION AND SIZE OF BALANCE MATERIAL IN ACCORDANCE WITH THE SPECIAL PROVISIONS.
12. DOCUMENT COUNTERWEIGHT POCKET DIMENSIONS AND TABULATE COUNTERWEIGHT BLOCKS IN THE COUNTERWEIGHT POCKETS. PERFORM STRAIN GAUGE TESTING IN ACCORDANCE WITH SPECIAL PROVISIONS. SUPPLEMENT THE CONTRACTOR'S SPAN BALANCE COMPUTATIONS WITH RESULT FROM STRAIN GAUGE TESTING.
13. UPON COMPLETION OF THE BALANCING, DOWNWARD TOE REACTIONS OF 1.5 KIPS (WITHIN TOLERANCES LISTED IN THE SPECIAL PROVISIONS) SHALL BE ACHIEVED AT EACH GIRDER.
14. ALL PROPOSED WEIGHTS IN THE COUNTERWEIGHT POCKETS SHALL BE ADEQUATELY SECURED IN POSITION.
15. CONTRACTOR SHALL SUBMIT PROPOSED PROCEDURE AND CALCULATIONS FOR ADJUSTING AND ADDING WEIGHTS TO THE COUNTERWEIGHT POCKETS SUCH THAT A NET DOWNWARDS TOE REACTION IS MAINTAINED AND THERE IS NO OVERSTRESS TO EXISTING STRUCTURAL MEMBERS. VALUES PROVIDED ON THIS SHEET ARE ESTIMATES ONLY.
16. PREPARE AND SUBMIT BALANCE TABLE COMPUTATIONS IN ACCORDANCE WITH THE SPECIAL PROVISIONS. PREPARE BALANCE COMPUTATIONS BASED ON INFORMATION FROM APPROVED SHOP DRAWINGS.

PREPARED BY: WSP USA INC.
2000 LINCOLN DRIVE, LAWRENCEVILLE, N.J. 08648



CAPE MAY COUNTY

MARC S. ESPOSITO N.J. PE LICENSE NUMBER 24024463000

DATE

Designed by KYLE G Drawn by Checked by

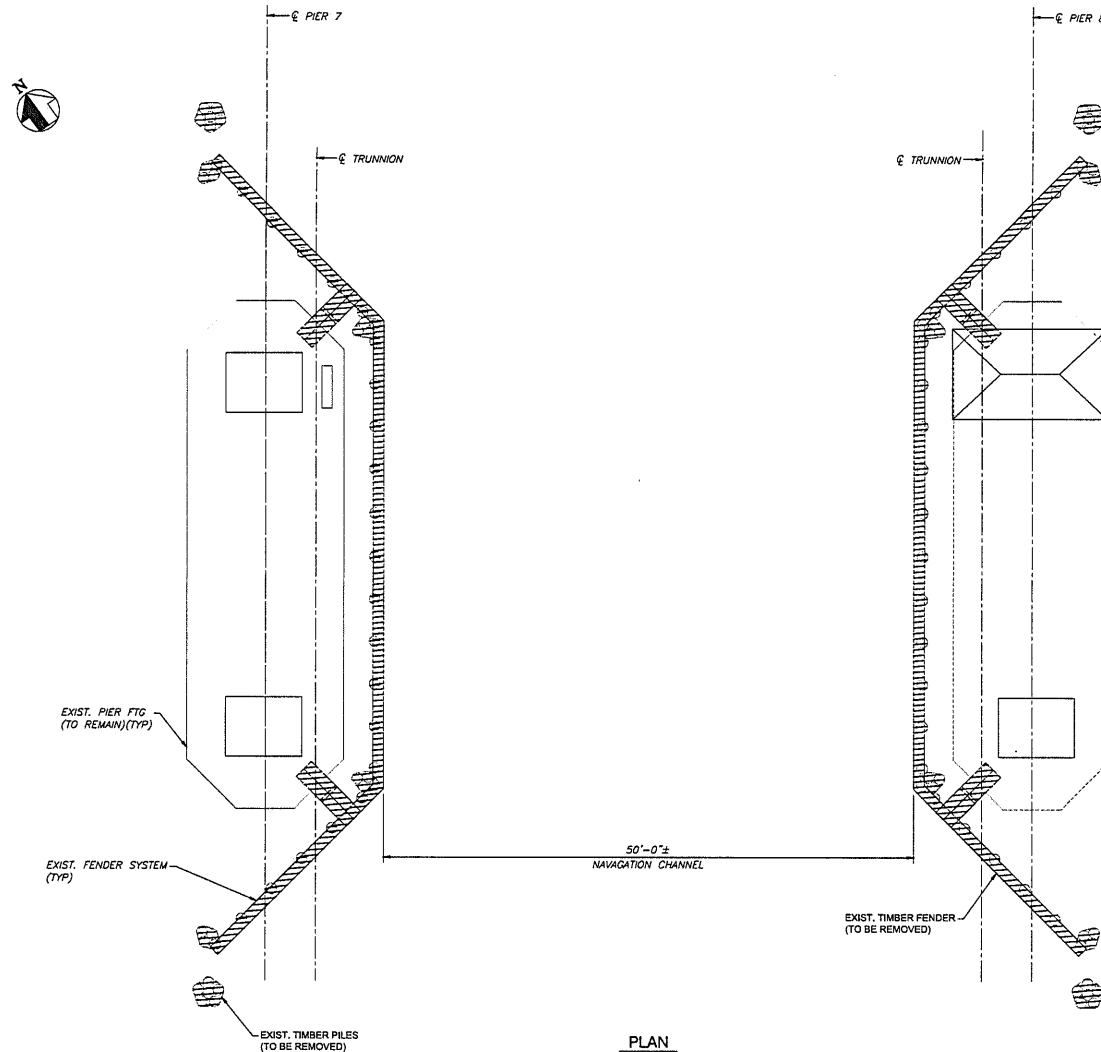
JOB: REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MOORE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

DATE: 4/9/2024

DRAWING TITLE:
BASCULE SPAN
BALANCE TABLE

SCALE: AS SHOWN
SHEET REFERENCE NO.:
d
SHEET NO.:
115 of 202



PLAN
(FENDER)
3/16" = 1'-0"



NOTES:

1. THE INFORMATION PRESENTED ON THESE DEMOLITION DRAWINGS IS FOR INFORMATION ONLY AND IS NOT GUARANTEED TO BE CORRECT, THE EXACT SIZE, LOCATION AND MATERIAL OF EXISTING STRUCTURE MAY NOT BE BUILT TO THE PLANS ON FILE. THE CONTRACTOR SHALL ALSO TAKE NOTE THAT ELEMENTS OF THE EXISTING FENDERS HAVE BROKEN AND/OR ARE MISSING. THE CONTRACTOR SHALL SAFELY REMOVE THE INTACT AND BROKEN ELEMENTS, INCLUDING REMOVAL OF EXISTING RAIL ELEMENTS MOUNTED TO PIERS, AND THE COST SHALL BE INCLUDED IN THE UNIT PRICE BID FOR "CLEARING SITE, STRUCTURE". THE BIDDER SHALL VISIT THE BRIDGE SITE BEFORE SUBMITTING BIDS TO ASCERTAIN THE EXTENT OF THE WORK. THE BID PRICE FOR "CLEARING SITE, STRUCTURE" SHALL INCLUDE ANY TEMPORARY SHIELDING OR ANY PROCEDURES CARRIED OUT BY THE CONTRACTOR TO COLLECT AND DISPOSE OF DEBRIS GENERATED FROM THE REMOVAL OF THE EXISTING FENDERS AND ITS MISCELLANEOUS APPURTENANCES.
2. THIS DEMOLITION DRAWING IS BASED ON INFORMATION TAKEN FROM THE "PLANS FOR BRIDGE ACROSS GREAT CHANNEL INCLUDING BASCULE DRAW SPAN, WOOD TRESTLE & BULKHEADS DATED 1930 AND RECONSTRUCTION OF THE GREAT CHANNEL BRIDGE STONE HARBOR BOULEVARD OVER GREAT CHANNEL DATED 1885 IS INTENDED TO SHOW THE LIMITS OF COMPONENTS TO BE DEMOLISHED. ONLY GENERAL INFORMATION IS PRESENTED. FOR MORE IN-DEPTH INFORMATION, THE CONTRACTOR SHALL OBTAIN THE ORIGINAL CONSTRUCTION AND OTHER PLANS. FURTHERMORE, THE CONTRACTOR SHALL VERIFY THE INFORMATION SHOWN ON THESE PLANS AND THE ORIGINAL CONSTRUCTION DRAWINGS BY PERFORMING A FIELD SURVEY. ANY ADJUSTMENTS REQUIRED RESULTING FROM THE FIELD SURVEY SHALL BE SUBMITTED BY THE CONTRACTOR FOR THE ENGINEER'S APPROVAL AT NO ADDITIONAL COST TO THE COUNTY.
3. ALL EXISTING TIMBER WALES AND OF THE EXISTING FENDER SYSTEM SHALL BE REMOVED. ALL EXISTING TIMBER PILES SHALL BE REMOVED TO A MINIMUM DEPTH 3 FEET BELOW THE MUDLINE. THE EXISTING PILES WHICH HAVE CONFLICTS WITH THE PROPOSED FENDER PILES SHALL BE REMOVED ENTIRELY. WHEN ANY UNEXPECTED CONFLICTS FOR THE PROPOSED FENDER SYSTEM ARE FOUND OR ANY FIELD CHANGES ARE PROPOSED DURING CONSTRUCTION, THE CONTRACTOR SHALL REPORT THE CONFLICTS AND/OR SUBMIT THE PROPOSED FIELD CHANGES TO THE ENGINEER FOR APPROVAL PRIOR TO ANY FABRICATION AND CONSTRUCTION AT NO ADDITIONAL COST TO THE COUNTY. THE CONTRACTOR SHALL ACCOUNT FOR THE LOCATION OF EXISTING PILES IN THEIR INSTALLATION PLAN AND PROCEDURES.
4. THE CONTRACTOR IS ALERTED TO THE FACT THAT THERE ARE UTILITIES IN THIS AREA. THE UTILITIES' APPROXIMATE LOCATION HAVE BEEN PROVIDED ON THE CONTRACT DRAWINGS USING THE MOST UP-TO-DATE AVAILABLE INFORMATION. THIS DOES NOT RELIEVE THE CONTRACTOR FROM THE RESPONSIBILITY OF CONTACTING ALL THE UTILITY AGENCIES AND ACCURATELY LOCATING ALL THE UTILITIES WHICH MAY INTERFERE WITH THE CONSTRUCTION OF THIS PROJECT PRIOR TO THE START OF ANY WORK. THE CONTRACTOR SHALL INCLUDE ALL THE LOCATIONS OF THE UTILITIES AND ANY MITIGATION OR RELOCATION MEASURES ON ANY APPLICABLE WORKING DRAWINGS. ADDITIONAL REQUIREMENTS ARE DEFINED IN THE SPECIAL PROVISIONS.
5. THE CONTRACTOR IS CAUTIONED THAT THE TIME ALLOWED FOR THE BRIDGE DETOUR SEASONS ARE LIMITED. THE WATERWAY AND NAVIGATION CHANNEL SHALL BE MAINTAINED BY THE CONTRACTOR AT ALL TIMES ALLOWING MARINE TRAFFIC TO PROCEED UNINHIBITED. AT A MINIMUM, HALF THE CHANNEL WIDTH SHALL BE DEDICATED FOR PUBLIC NAVIGATION AT ALL TIMES DURING CONSTRUCTION. SEE SPECIAL PROVISIONS FOR CLOSURE LIMITATIONS.
6. UNDERWATER BED CONDITIONS, DEBRIS OR OBSTRUCTIONS, IF ANY, ARE BASED ON LATEST AVAILABLE UNDERWATER INSPECTION REPORT. THE CONTRACTOR SHALL MAKE THEIR OWN DETERMINATION REGARDING REMOVAL NEEDS AND PROCEDURES AT THEIR DISCRETION AND THE COST FOR ANY REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR "CLEARING SITE, UNDERWATER". COSTS TO MOBILIZE ANY EQUIPMENT OR PROCEDURES TO REMOVE DEBRIS OR OTHER OBSTRUCTIONS SHALL BE INCLUDED IN THE UNIT PRICE FOR "FURNISHING EQUIPMENT FOR UNDERWATER REMOVAL". THERE SHALL BE NO CLAIMS FOR ADDITIONAL COST OR SCHEDULE EXTENSIONS FOR ANY CONDITIONS RELATED TO DEBRIS/OBSTRUCTIONS.
7. PRIOR TO DEMOLITION, THE CONTRACTOR SHALL SUBMIT DETAILED DEMOLITION PLANS AND CALCULATIONS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN NEW JERSEY INDICATING METHOD OF DEMOLITION, SEQUENCE AND SCHEDULE OF DEMOLITION, STRUCTURE STABILITY AND LOADS IMPOSED DURING REMOVAL OPERATIONS, TYPES OF EQUIPMENT BEING USED, SAFETY REGULATION TO BE FOLLOWED, MAINTENANCE AND PROTECTION OF TRAFFIC LAYOUT AND SCHEMES. TEMPORARY UTILITY SUPPORTS AND METHOD OF DISPOSAL FOR MATERIALS AND DEBRIS - FOR THE ENGINEER'S APPROVAL. THE CONTRACTOR SHALL USE CAUTION WHILE REMOVING THE EXISTING FENDER COMPONENTS. PROPERLY SIZED REMOVAL EQUIPMENT SHALL BE SELECTED, AND JUDICIOUS REMOVAL METHODS SHALL BE USED TO ENSURE THAT DEMOLITION ACTIVITIES DO NOT DISRUPT VEHICULAR OR MARINE TRAFFIC.
8. CONTRACTOR SHALL MAINTAIN TEMPORARY CHANNEL MARKINGS, BUOYS, AND NAVIGATIONAL LIGHTING AT ALL TIMES DURING EXISTING FENDER DEMOLITION AND NEW FENDER CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE MEANS TO PROTECT THE PIERS FROM VESSEL COLLISION AFTER THE EXISTING FENDERS HAVE BEEN REMOVED AND UNTIL COMPLETION OF THE NEW FENDER.
9. PERFORM VIBRATION MONITORING IN ACCORDANCE WITH THE SPECIAL PROVISIONS.
10. THE CONTRACTOR SHALL REMOVE THE EXISTING NAVIGATION LIGHTS MOUNTED TO THE FENDERS AND RETURN THEM TO THE COUNTY'S TRAFFIC AND ELECTRICAL DEPARTMENT. CONTRACTOR SHALL PROVIDE OR MAINTAIN TEMPORARY NAVIGATION LIGHTING THROUGHOUT THE DEMOLITION AND FENDER CONSTRUCTION.

PREPARED BY: WSP USA INC.
2000 LENOX DRIVE, LAWRENCEVILLE, N.J. 08648



CAPE MAY COUNTY

MARC S. ESPOSITO

N.J. PE LICENSE NUMBER:
240E04045306

DATE

Designed by

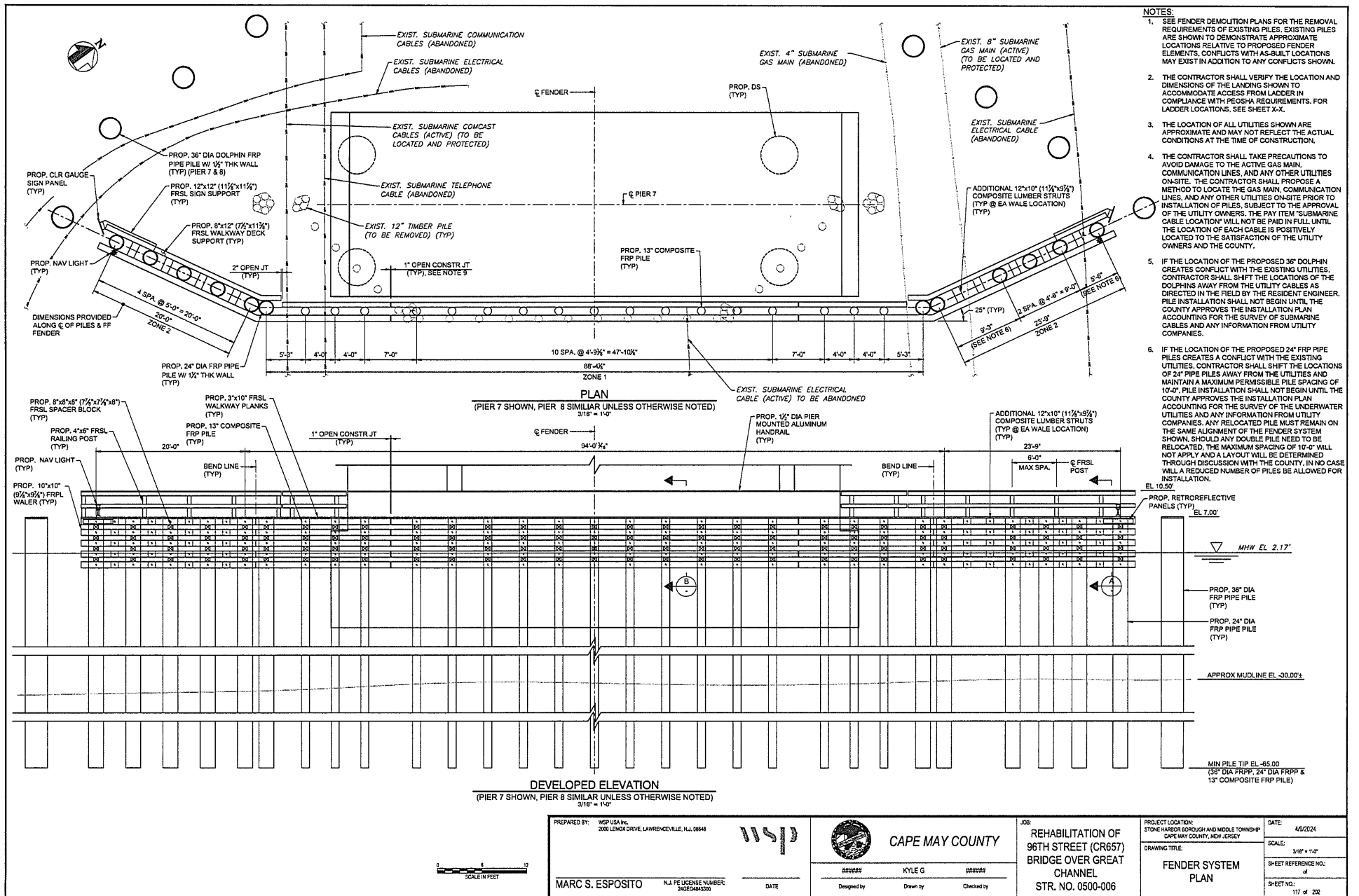
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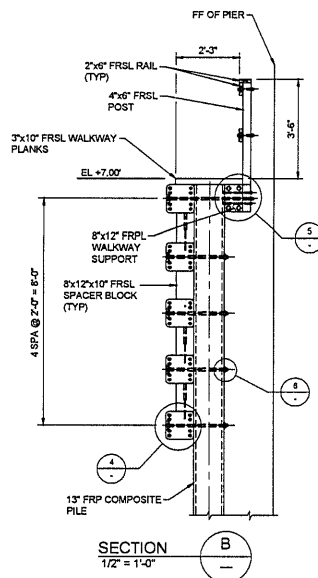
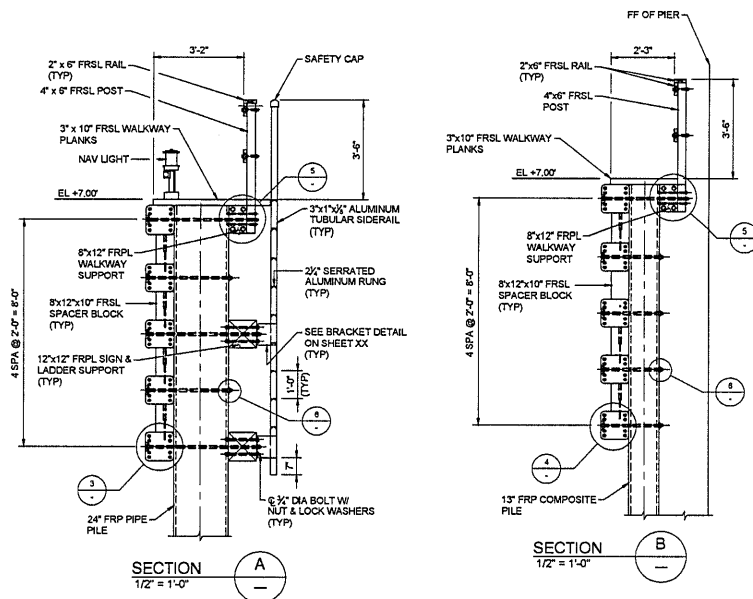
JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MOORE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY
DRAWING TITLE:
FENDER DEMOLITION
PLAN

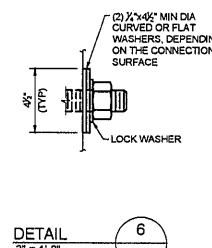
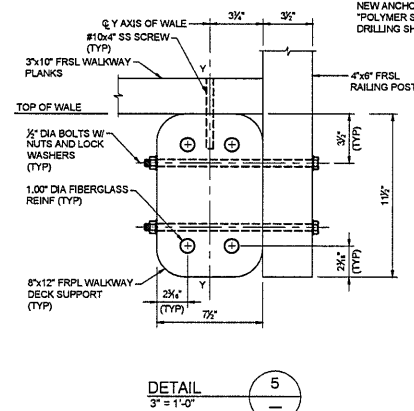
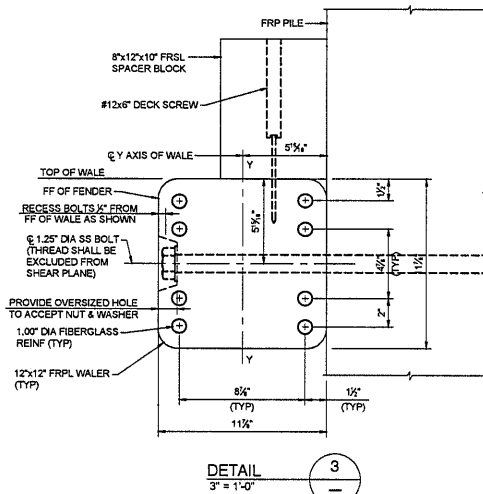
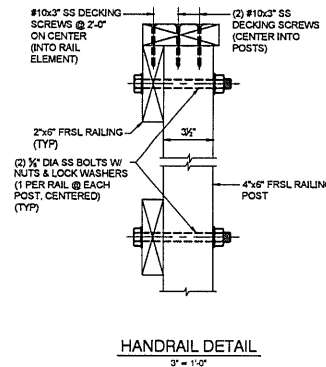
DATE: 4/5/2024
SCALE: 3/16" = 1'-0"
SHEET REFERENCE NO.:
118 of 202



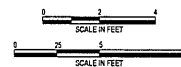
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NOTE:
PROPOSED ANCHOR BOLTS SHALL BE OFFSET 5" MIN VERTICALLY DOWN FROM THE EXISTING BOLT LOCATIONS. THE EPOXY ADHESIVE SHALL BE HILTI HIT-RE 500 V3 OR APPROVED EQUAL. THE LOCATIONS SHALL BE FINALIZED PRIOR TO THE FABRICATION OF NEW LADDERS. ADHESIVE ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH THE SPECIAL PROVISIONS. THE CONTRACTOR SHALL PERFORM A PULL OUT TEST (FOR 10 KIPS) ON 100% OF BOLTS INSTALLED. THE PULL OUT TEST AND INSTALLATION OF NEW ANCHOR BOLTS SHALL BE INCLUDED IN THE PAY ITEM "POLYMER STRUCTURAL MAINTENANCE WALKWAY". CORE DRILLING SHALL NOT BE ALLOWED.



- NOTES:**
1. LUMBER DIMENSIONS THAT ARE PROVIDED ARE NOMINAL.
 2. THE CONTRACTOR SHALL FOLLOW THE MATERIAL MANUFACTURER RECOMMENDATIONS FOR HANDLING, STORAGE, CUTTING, DRILLING, INSTALLATION, SPlicing AND DRIVING.
 3. ALL EXPOSED HARDWARE ON THE CHANNEL SIDE OF THE FENDER SHALL BE COUNTERSUNK AND RECESSED 1/2" FROM THE FACE OF THE MEMBER. THE RECESS SHALL BE FILLED WITH SILICONE COLORED TO MATCH THE FENDER.
 4. STAINLESS STEEL ANCHOR RODS SHALL BE DRILLED AND EPOXY GROUTED INTO THE EXISTING CAISSON. THE ANCHOR RODS SHALL BE COUNTERSUNK AND RECESSED 1/2" FROM THE FACE OF THE MEMBER.
 5. THE SILICONE SEALANT SHALL CONFORM TO ASTM C820. THE COLOR OF THE SEALANT SHALL MATCH THE COLOR OF THE FRPL.
 6. THE COST OF FRSL SPACER BLOCK SHALL BE INCLUDED IN THE PAY ITEM "POLYMER STRUCTURAL WALK".
 7. ALL BOLTS, NUTS, WASHERS AND THREADED RODS FOR MOUNTING HARDWARE ONTO CONCRETE PIER SHALL BE INCLUDED IN THE PAY ITEM "POLYMER STRUCTURAL MAINTENANCE WALKWAY".
 8. FRPL WALKWAY DECK SUPPORTS AND OTHER MISCELLANEOUS COMPOSITE LUMBER ELEMENTS ARE QUANTIFIED AND WILL BE PAID FOR UNDER "POLYMER STRUCTURAL WALK".
 9. CONTRACTOR MAY PROVIDE AN ALTERNATE CONNECTION DETAIL FOR THE FRPL WALES. WORKING DRAWINGS AND DETAILS FOR THE PROPOSED ALTERNATE CONNECTION SHALL BE SUBMITTED ALONG WITH CALCULATION CHECKS FOR ENGINEER'S REVIEW AND APPROVAL AT NO ADDITIONAL COST TO THE COUNTY.
 10. FOR SIGN DETAILS, SEE SHEET X-X.
 11. FOR ADDITIONAL NOTES, SEE SHEET X-X.
 12. FOR FRP WALE SPlice DETAILS, SEE SHEET X-X.



PREPARED BY: MSP USA INC.
2008 LENOX DRIVE, LAWRENCEVILLE, NJ 08648

MARC S. ESPOSITO N.J. PE LICENSE NUMBER: 246204840300

wsp



CAPE MAY COUNTY

DESIGNED BY

ZACK S

DRAWN BY

CHECKED BY

JOB: REHABILITATION OF 96TH STREET (CR657) BRIDGE OVER GREAT CHANNEL STR. NO. 0500-006

PROJECT LOCATION: STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP CAPE MAY COUNTY, NEW JERSEY

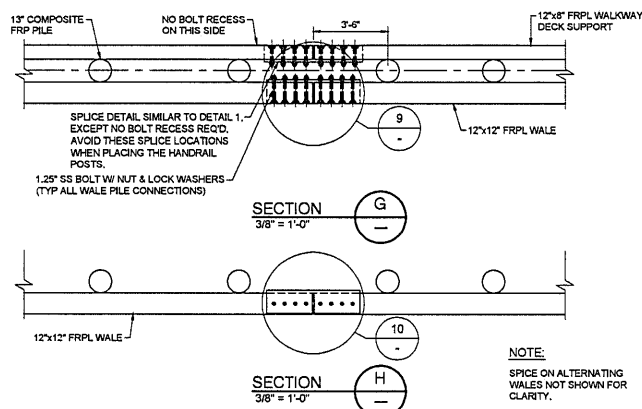
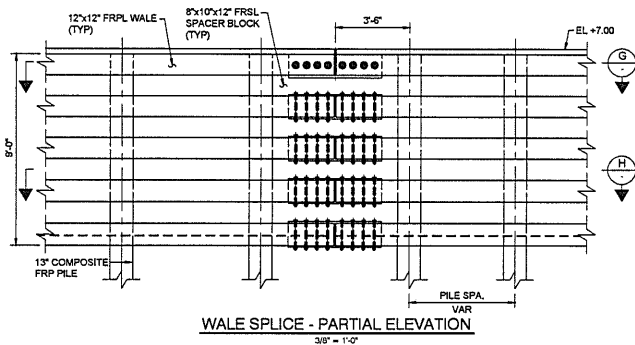
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DATE: 4/9/2024

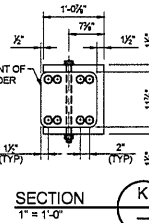
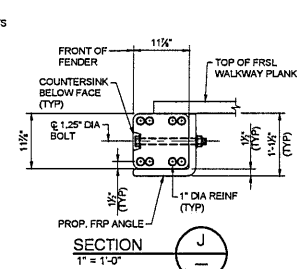
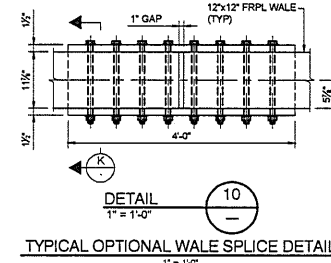
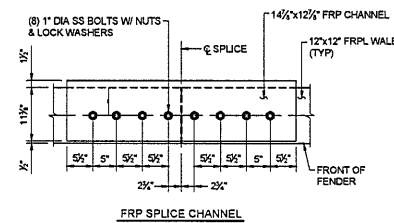
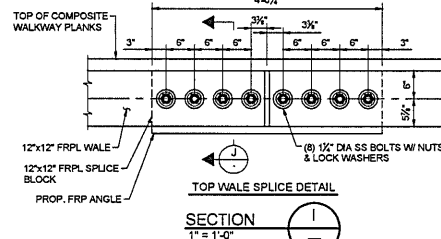
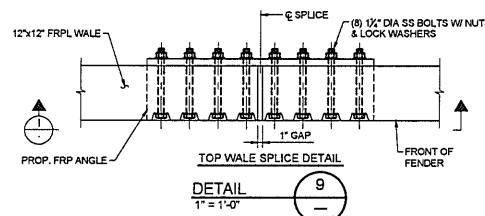
SCALE: AS SHOWN

SHEET REFERENCE NO. of

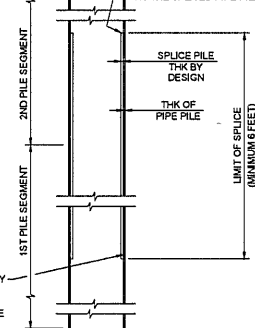
SHEET NO: 118 of 252



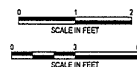
NOTE:
SPICE ON ALTERNATING
WALES NOT SHOWN FOR
CLARITY.



SECTION OF SPLICE PILE
ADHESIVELY BONDED INTO
TOP PILING IN SHOP. SECTION
OF SPLICING PILE SHALL HAVE
THE SAME SHEAR PLANE AREA
AS THE SPLICED PIPE PILE.



- NOTES:**
- LUMBER DIMENSIONS THAT ARE PROVIDED ARE NOMINAL.
 - THE CONTRACTOR SHALL FOLLOW THE MATERIAL MANUFACTURER RECOMMENDATIONS FOR HANDLING, STORAGE, CUTTING, DRILLING, INSTALLATION, SPLICING AND DRIVING.
 - ALL EXPOSED HARDWARE ON THE CHANNEL SIDE OF THE FENDER SHALL BE COUNTERSUNK AND RECESSED 1/2" FROM THE FACE OF THE MEMBER. THE RECESS SHALL BE FILLED WITH SILICONE COLORED TO MATCH THE FENDER.
 - ALL FRP WALE SPLICES ARE OPTIONAL BASED ON THE CONTRACTOR'S SELECTED MEANS AND METHODS. FINAL DETAILS AND DESIGN CALCULATION OF THE SPLICES SHALL BE SUBMITTED TO ENGINEER FOR APPROVAL. FRPL WALERS AND WALKWAY DECK SUPPORTS SHALL NOT BE SPLICED AT PILES. ALL WALE SPLICES SHALL BE DESIGNED TO TRANSFER THE FULL MOMENT AND SHEAR CAPACITY OF THE WALE AND TO MEET THE MANUFACTURER'S REQUIREMENTS. CONTRACTOR SHALL SUBMIT THE WALE SPLICE DESIGN CALCULATION SIGNED AND SEALED BY A NJ LICENSED PROFESSIONAL ENGINEER FOR ENGINEER'S APPROVAL. ALL REQUIRED TEST DATA OF SPLICE MATERIALS AND METHODS MUST BE SUBMITTED ALONG WITH THE DESIGN CALCULATION FOR ENGINEER'S APPROVAL.
 - THE SPLICE FOR THE PIPE PILE SHALL BE ADHESIVELY BONDED INTO THE TOP PILE IN THE SHOP. THE SPLICE PILE SHALL HAVE THE SAME SHEAR PLANE AREA AS THE SPLICED PILE.
 - THE PILE TIPS SHALL BE WELDED TO THE PILES IN ACCORDANCE WITH ANSI/AASHTO A900 WELDING CODE D1.5. GENERAL DIMENSIONAL REQUIREMENTS ARE SHOWN. ALTERNATE PRODUCTS MAY BE SUBMITTED BY THE CONTRACTOR, SUBJECT TO THE APPROVAL OF THE ENGINEER.
 - ALL PILE SPLICING DETAILS ARE OPTIONAL BASED ON THE CONTRACTOR'S SELECTED MEANS AND METHODS. THE PILE SPLICING DETAILS SHOWN ARE CONCEPTUAL. FINAL DETAILS AND DESIGN OF THE SPLICES SHALL BE SUBMITTED TO ENGINEER FOR APPROVAL IF PURSUED BY THE CONTRACTOR. THE PILE SPLICE SHALL BE DESIGNED TO MEET THE MANUFACTURER'S REQUIREMENT, TO DEVELOP THE FULL PILE MOMENT AND SHEAR CAPACITIES OF THE PILE AND TO ACCOMMODATE INSTALLATION LIMITATIONS BASED ON THE DRIVING EQUIPMENT THAT THE CONTRACTOR SELECTS. PILE SPLICE SHALL BE AT LEAST 5 FEET BELOW THE BOTTOM WALE. CONTRACTOR SHALL SUBMIT THE PILE SPLICE DESIGN CALCULATION SIGNED AND SEALED BY A NJ LICENSED PROFESSIONAL ENGINEER FOR ENGINEER'S APPROVAL. ALL REQUIRED TEST DATA OF SPLICE MATERIALS AND METHODS MUST BE SUBMITTED ALONG WITH THE DESIGN CALCULATION FOR ENGINEER'S APPROVAL.



PREPARED BY: WSP USA, Inc.
2000 LENOX DRIVE, LAWRENCEVILLE, NJ, 08648
MARC S. ESPOSITO N.J. PE LICENSE NUMBER: 24060443200
DATE



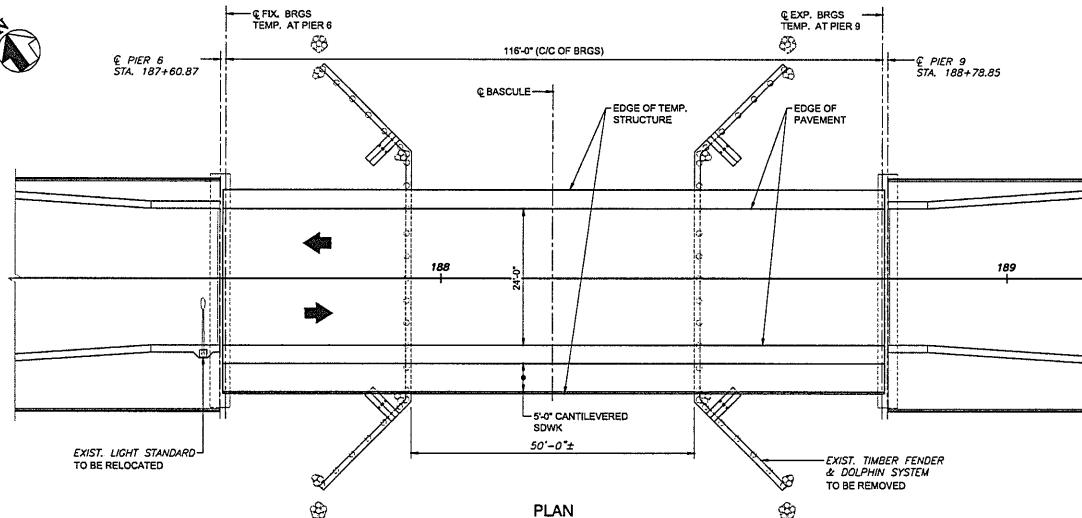
CAPE MAY COUNTY

DESIGNED BY: ZACK S. DRAWN BY: CHECKED BY:

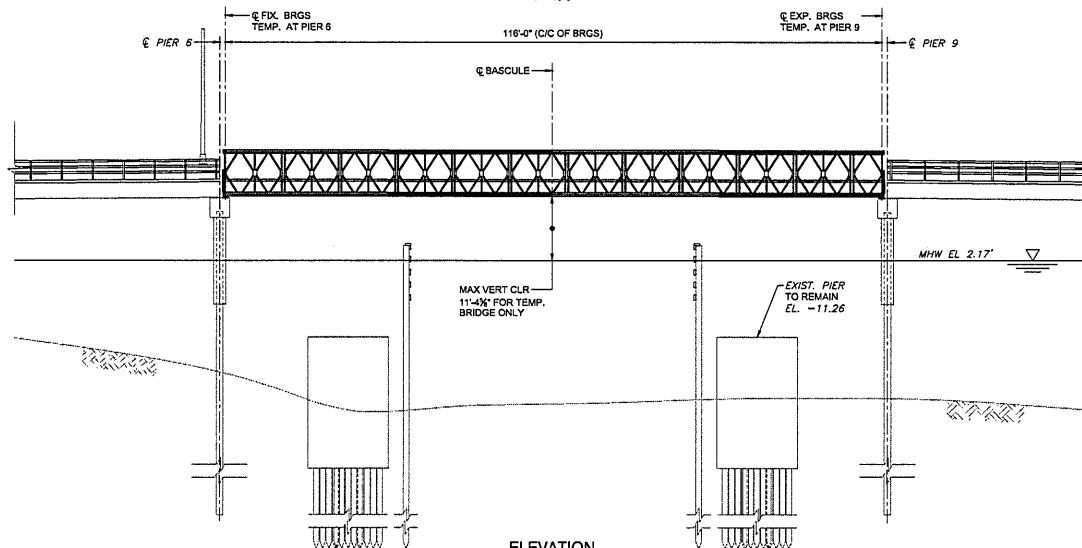
JOB: REHABILITATION OF 96TH STREET (CR657) BRIDGE OVER GREAT CHANNEL STR. NO. 0500-006

PROJECT LOCATION: STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP CAPE MAY COUNTY, NEW JERSEY
DRAWING TITLE: FENDER DETAILS - 2

DATE: 4/9/2024
SCALE: AS SHOWN
SHEET REFERENCE NO.: 11
SHEET NO.: 19 OF 202



PLAN
(BASCALE AND FLANKING SPANS)
1" = 10'-0"



ELEVATION
(BASCALE AND FLANKING SPANS)
1" = 10'-0"

0 10 20
SCALE IN FEET

NOTES:

- DESIGN OF THE TEMPORARY BRIDGE SHALL BE PER 2020 (9TH EDITION) AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS WITH CURRENT INTERIMS, AS MODIFIED BY SECTION 3 OF THE NJDOT DESIGN MANUAL FOR BRIDGES AND STRUCTURES 6TH EDITION, 2016.
- THE TEMPORARY BRIDGE IS SHOWN CONCEPTUALLY AND ALL ASSOCIATED DETAILING, DIMENSIONS, WORKING POINTS, AND LOADS FOR FOUNDATION DESIGN INCLUDED IN THE CONTRACT PLANS ARE BASED ON THE ASSUMPTION THAT THE ACROW 700XS PANEL BRIDGE (120X36 TS33SH) WILL BE UTILIZED FOR THE TEMPORARY STRUCTURE. THE CONTRACTOR MAY PROPOSE AN ALTERNATE SYSTEM MEETING ALL REQUIREMENTS OF THE PLANS AND SPECIFICATIONS.
- THE TEMPORARY BRIDGE / SHALL MEET THE FOLLOWING CRITERIA:
 - MODULAR STEEL TRUSS PANEL TYPE BRIDGE
 - BRIDGE WIDTH = 36.00 FT MAXIMUM (BETWEEN OUTERMOST POINTS OF TRUSS)
 - STRUCTURE DEPTH = X-X" MAXIMUM (FROM TOP OF ROADWAY SURFACE TO THE BOTTOM OF TRUSS PANEL)
 - DESIGN LIVE LOAD = LOAD AND RESISTANCE FACTOR DESIGN (LRFD); HL-93, OR NJDOT PERMIT VEHICLE, WHICHEVER GOVERNS
 - MAXIMUM LIVE LOAD DEFLECTION = L/1000
- THE TEMPORARY BRIDGE SHALL INCLUDE A MINIMUM OF A MASH TL-4 COMPLIANT BARRIER/RAILINGS. IN THE EVENT A MASH TL-5 COMPLIANT BARRIER IS ABLE TO BE UTILIZED PRIOR TO TEMPORARY BRIDGE PLACEMENT, A MASH TL-5 COMPLIANT BARRIER SHALL BE USED.
- IF THE CONTRACTOR ELECTS TO USE THE TEMPORARY BRIDGE FOR DELIVERY OF PREFABRICATED SUPERSTRUCTURE UNITS, AS A STAGING AREA, OR FOR LARGE CONSTRUCTION EQUIPMENT/VEHICLES, CALCULATIONS AND SHOP DRAWINGS RELATING TO THE TEMPORARY BRIDGE, TEMPORARY SHEETING, AND EXISTING PIER SHALL INCLUDE THESE PROPOSED LOADS AND SUPPORTING CAPACITY CALCULATIONS FOR ALL STAGES. ADDITIONAL SHOP DRAWINGS DETAILING SHORT TERM BRIDGE CLOSURES SHALL ALSO BE PROVIDED.
- FOR THE TEMPORARY BRIDGE THE CONTRACTOR IS TO MAINTAIN THE EXISTING MINIMUM VERTICAL CLEARANCE SHOWN.
- EXISTING ELEMENTS ON THIS SHEET ARE SHOWN FOR REFERENCE ONLY AND MAY NEED TO BE REMOVED/RELOCATED PRIOR TO THE INSTALLATION OF THE TEMPORARY BRIDGE COMPONENTS. COORDINATE TEMPORARY BRIDGE PLACEMENT AND ASPHALT STAGING WITH ALL UTILITIES AND EXISTING FEATURES.
- THE GENERAL PLAN AND ELEVATION OF THE TEMPORARY BRIDGE SHOWN ON THIS SHEET IS INTENDED TO SHOW CONDITIONS IMMEDIATELY AFTER INSTALLATION OF THE TEMPORARY BRIDGE IS COMPLETED.
- ALL COSTS OF DESIGN, TRUSS FABRICATION, TRANSPORT, INSTALLATION, AND REMOVAL RELATED TO THE TEMPORARY BRIDGE SHALL BE INCLUDED IN THE BID ITEM "TEMPORARY STRUCTURE, TWO-WAY".
- ALL COSTS FOR RELOCATING THE TEMPORARY STRUCTURE THROUGH THE PROJECT LIFETIME SHALL BE INCLUDED IN THE BID ITEM "RELOCATE TEMPORARY STRUCTURE, TWO-WAY".

PREPARED BY: WSP USA INC.
2000 LENOX DRIVE, LAWRENCEVILLE, NJ 08848



MARC S. ESPOSITO

N.J. PE LICENSE NUMBER:
PAGE0484200

DATE



CAPE MAY COUNTY

DESIGNED BY

KYLE G

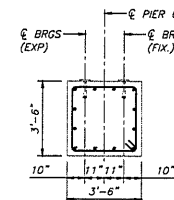
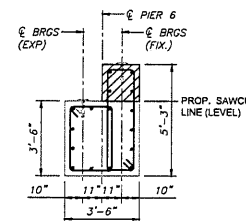
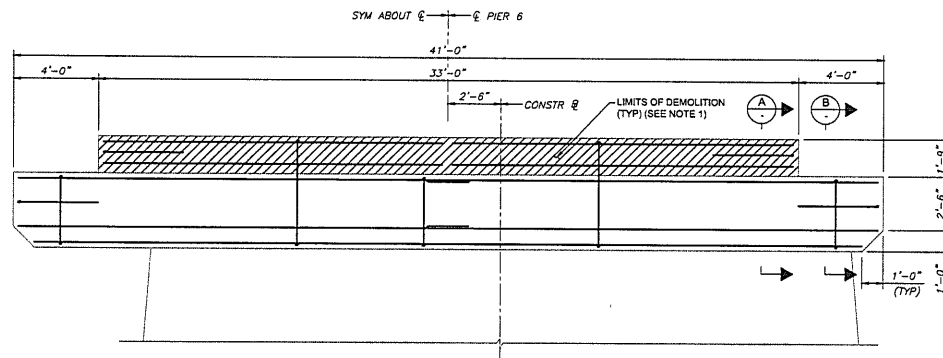
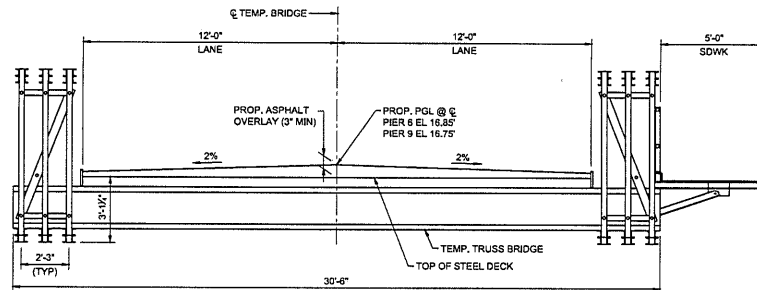
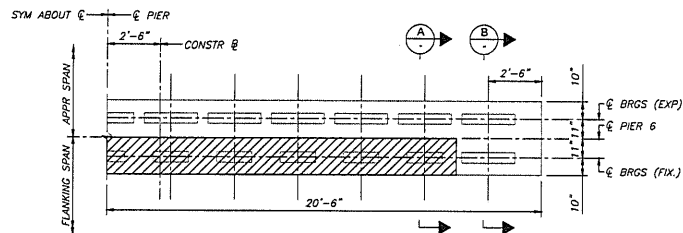
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JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY
DRAWING TITLE:
TEMPORARY BRIDGE
GENERAL PLAN &
ELEVATION

DATE:
4/9/2024
SCALE:
1" = 10'-0"
SHEET REFERENCE NO.:
OF
SHEET NO.:
121 OF 202



NOTES:

1. THE CONTRACTOR IS ALERTED THAT PIERS 6 AND PIERS 9 WILL REQUIRE PARTIAL DEMOLITION TO PLACE THE TEMPORARY BRIDGE. THE EXTENTS OF THE DEMOLITION FOOTPRINT IS MARKED ON THE PLANS FOR CLARIFICATION. DETAILS AND THE PROCEDURE OF THE DEMOLITION PROCESS SHALL BE SUBMITTED BY A NEW JERSEY LICENSED PROFESSIONAL ENGINEER TO THE COUNTY AND RE FOR REVIEW.
2. THE PORTIONS OF PIER 6 AND PIER 9 THAT ARE DEMOLISHED SHALL BE RECONSTRUCTED. SEE SHEET BXX FOR RECONSTRUCTION DETAILS. THE CONTRACTOR SHALL SUBMIT DETAILS FOR THE RECONSTRUCTION PROCESS AND THE APPROPRIATE CALCULATIONS SATISFYING THE FOUNDATION DESIGN CRITERIA LISTED HERE IN THE PLANS AND SPECIAL PROVISIONS TO THE COUNTY AND RE FOR REVIEW.
3. REFER TO THE SUGGESTED CONSTRUCTION SEQUENCE FOR THE TEMPORARY BRIDGE STRUCTURE REGARDING THE DEMOLITION AND RECONSTRUCTION TIMELINE.
4. MATERIAL COSTS, INSTALLATION, AND REMOVAL OF THE PIER CAP ELEMENTS AS DESCRIBED ON THIS SHEET ARE TO BE INCLUDED UNDER PAY ITEM "TEMPORARY STRUCTURE, TWO-WAY". SEE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.
5. FOR ADDITIONAL NOTES, SEE SH BXX.
6. FOR GENERAL NOTES, SEE SH BXX.
7. MODIFICATIONS TO THE PIER CAP FOR PIERS 6 AND PIER 9 DETAILED IN THE PLANS ARE DESIGNED BASED ON THE LOADS FOR THE ACROW 700 XS PANEL BRIDGE AND CAN BE UTILIZED IF THAT BRIDGE TYPE IS SELECTED BY THE CONTRACTOR FOR THE TEMPORARY STRUCTURE. IF AN ALTERNATIVE IS SELECTED OR ANY DETAILS ARE CHANGED BY THE CONTRACTOR FOR THE TEMPORARY STRUCTURE, THE CONTRACTOR SHALL SUBMIT CALCULATIONS SATISFYING THE FOUNDATION DESIGN CRITERIA LISTED IN THE PLANS AND SPECIAL PROVISIONS ALONG WITH ANY DRAWINGS NECESSARY TO DEMONSTRATE THE CHANGES NEEDED TO FACILITATE PROPER INSTALLATION, REMOVAL, AND RECONSTRUCTION OF THE PIERS FOR THE FINAL CONDITIONS.
8. SUBMIT ASPHALT OVERLAY AND TACK COAT INSTALLED ON THE TEMPORARY BRIDGE FOR THE ENGINEER'S REVIEW AND APPROVAL. SEE SPECIAL PROVISIONS FOR ADDITIONAL DETAILS.
9. MAINTENANCE FOR THE PROPOSED ASPHALT OVERLAY ON THE TEMPORARY BRIDGE MEETING THE SATISFACTION OF THE RE/COUNTY IS THE CONTRACTOR'S RESPONSIBILITY THROUGHOUT CONSTRUCTION. NO ADDITIONAL COMPENSATION WILL BE MADE TO MAINTAIN, REPAIR, OR RECONSTRUCT THE OVERLAY.
10. THE BEGINNING AND END STATIONS FOR THE TEMPORARY BRIDGE ARE APPROXIMATE AND ARE BASED ON THE GEOMETRY OF THE ASSUMED TEMPORARY BRIDGE. THE ACTUAL BEGINNING AND END STATIONING MAY BE ADJUSTED BASED ON THE ACTUAL TEMPORARY STRUCTURE SELECTED BY THE CONTRACTOR.

SCALE IN FEET

PREPARED BY: WSP USA INC.
2000 LENOX DRIVE, LAWRENCEVILLE, N.J. 08848



CAPE MAY COUNTY

MARC S. ESPOSITO N.J. LICENSE NUMBER 24GED048300

DATE

DESIGNED BY KYLE G

DRAWN BY

CHECKED BY

PROJECT LOCATION: STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

DRAWING TITLE: TEMPORARY BRIDGE NOTES & DETAILS

DATE: 4/5/2024

SCALE: 3/8" = 1'-0"

SHEET REFERENCE NO.: of

SHEET NO.: 122 of 202

GENERAL MACHINERY NOTES

1. DETAILS OF MACHINERY SHALL CONFORM TO THE LFSD, 2023 STANDARD SPECIFICATIONS MOVABLE HIGHWAY BRIDGES, 3RD EDITION (ALL INTERIM REVISIONS) AS PUBLISHED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, UNLESS OTHERWISE SHOWN ON PLANS, OR PROVIDED FOR IN SPECIFICATIONS. WELDING SHALL BE IN ACCORDANCE WITH AWS BRIDGE WELDING CODE AASHTO/AWS-D1.5M/D1.5:2020 INCLUDING ALL INTERIM REVISIONS.
2. ANY REFERENCE TO THE "SPECIFICATIONS" INCLUDES REFERENCE TO ALL SUPPLEMENTAL SPECIFICATIONS, SPECIAL PROVISIONS AND SPECIFICATIONS REFERENCED HERE-IN.
3. VERIFY ALL FIELD SENSITIVE DIMENSIONS FOR PROPER COORDINATION AND ALIGNMENT WITH MACHINERY SUPPORTS.
4. MENTION OF A MANUFACTURER'S NAME OR MODEL DOES NOT REPRESENT A PREFERENCE, BUT IS USED TO SET A STANDARD.
5. MODEL NUMBERS AND DETAILS OF REDUCERS, COUPLINGS, BEARINGS, AND OTHER STANDARD COMPONENTS ARE BASED ON MANUFACTURER'S CATALOG DATA CURRENT AT THE TIME THE PLANS WERE PREPARED. EQUIVALENT MODELS FROM OTHER MANUFACTURERS MAY BE SUBSTITUTED AT THE OPTION OF THE CONTRACTOR AND WITH THE APPROVAL OF THE COUNTY, ALL RELATED STRUCTURAL, MECHANICAL, AND ELECTRICAL DETAILS SHALL BE REVISED BY THE CONTRACTOR TO SUIT CERTIFIED DIMENSIONS OF THE COMPONENTS ACTUALLY FURNISHED AT NO ADDITIONAL COST TO THE COUNTY.
6. THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE IMPORTANCE OF PROMPT SUBMISSION OF SHOP DRAWINGS FOR APPROVAL. DETAIL DRAWINGS, ASSEMBLY DRAWINGS AND ERECTION DRAWINGS SHALL BE SUBMITTED TOGETHER AS A COMPLETE PACKAGE. MACHINERY MATERIALS OR COMPONENTS SHALL NOT BE PURCHASED OR FABRICATED WITHOUT APPROVED SHOP DRAWINGS AND/OR CATALOG CUTS. APPROVED AS NOTED SHOP DRAWINGS OR CATALOG CUTS SHALL NOT BE CONSIDERED AS ACCEPTABLE FOR THE STANDARD OF PURCHASING OR FABRICATION OF MACHINERY MATERIALS OR COMPONENTS. ADDITIONALLY, THERE WILL BE NO PARTIAL PAYMENT FOR SHOP DRAWING SUBMISSION.
7. TAKE ALL NECESSARY PRECAUTIONS TO SAFEGUARD AND PROTECT NEW BRIDGE MACHINERY COMPONENTS PRIOR TO INSTALLATION AND THROUGHOUT THE WORK.
8. ADDITIONAL SUPPLEMENTARY REQUIREMENTS ARE SHOWN IN MACHINERY MATERIAL LISTS. WHERE ACCEPTANCE REQUIREMENTS ARE NOT READILY DEFINED BY THE REFERENCED ASTM OR SPECIFICATION, THEY SHALL BE AGREED UPON BY THE MANUFACTURER AND PURCHASER AND INCLUDED IN THE PURCHASE ORDER PRIOR TO FABRICATION.
9. ALL DIMENSIONS FOR MACHINE FINISHED SURFACES SHALL BE HELD TO ± 0.10 INCH EXCEPT AS OTHERWISE REQUIRED, SHOWN ON THE PLANS, BY SPECIFICATIONS OR AS DIRECTED BY THE ENGINEER.
10. MACHINE ALL MATING SURFACES OF MACHINERY PARTS, SUPPORTS, AND EXTERNAL EDGES.
11. DETAIL AND MACHINE EDGES AND CORNERS OF ALL MACHINERY PARTS WITH SUITABLE FILLETS AND CHAMFERS, PROVIDE A $\frac{1}{4}$ " MINIMUM RADIUS OR CHAMFER IF THE PART THICKNESS IS LESS THAN $\frac{1}{4}$ " AND $\frac{1}{2}$ " IF THE PART THICKNESS IS EQUAL TO OR GREATER THAN $\frac{1}{4}$ " UNLESS OTHERWISE NOTED. IN THE CASE OF MATING PARTS, PROVIDE ALLOWANCES ACCOUNTING FOR THE PROPER FIT AND ASSEMBLY. SHOW SUCH DETAILS ON SHOP DRAWINGS.
12. PROVIDE CASTINGS WITH CORNERS AND EDGES THAT HAVE SUITABLE FILLETS AND RADI. IN GENERAL, PROVIDE A MINIMUM $\frac{1}{2}$ " R FOR FILLETS OR RADI OF SECTIONS EQUAL OR GREATER THAN $2"$ AND $\frac{1}{2}"$ R FOR SECTIONS LESS THAN $2"$. SPOT FACE ALL BOLT HOLES IN CASTINGS.
13. MACHINERY DIMENSIONS SHOWN ON DRAWINGS ARE DIMENSIONS AFTER MACHINING.
14. PROVIDE MACHINERY SUPPORTS THAT ARE FLAT, LEVEL, AND PARALLEL TO EACH OTHER AND THE MOUNTING BASE PLATE. THICKNESS OF MOUNTING PLATES GIVEN ARE FOR AFTER FINISHING.

15. FITS AND FINISHES FOR MACHINERY SHALL BE AS FOLLOWS UNLESS OTHERWISE NOTED:

SURFACE	FIT	FINISH (MICROINCHES)
MACHINERY BASE ON STEEL	-	125
MACHINERY BASE ON MASONRY	-	250
SHAFT JOURNALS	RC8	8
JOURNAL BUSHING	RC8	16
SPLIT BUSHING IN BASE	LC1	125
SOLID BUSHING IN BASE (TO $\frac{1}{4}"$ WALL)	FN1	63
SOLID BUSHING IN BASE (OVER $\frac{1}{4}"$ WALL)	FN1	63
HUBS ON SHAFT (TO $2"$ BORE)	FN2	32
HUBS ON SHAFT (OVER $2"$ BORE)	FN2	63
HUBS ON MAIN TRUNNION	FN2	63
SLIDING BEARINGS	RC8	32
KEYS AND KEYWAYS	ANSI B17.1	63
TEETH OF OPEN SPUR GEARS (UNDER 1.75 DIAMETRAL PITCH)	-	125

THE ABOVE FITS FOR CYLINDRICAL PARTS SHALL ALSO APPLY TO THE DIMENSIONS OF NON-CYLINDRICAL PARTS.

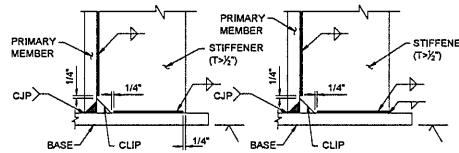
16. MACHINERY DIMENSIONS SHOWN ON THE DRAWINGS ARE DIMENSIONS AFTER MACHINING, UNLESS OTHERWISE INDICATED OR REQUIRED FOR THE PROPER ASSEMBLY OF PART. DIMENSIONAL TOLERANCES FOR MACHINERY IN GENERAL SHALL BE AS FOLLOWS:

SURFACE STRAIGHTNESS	± 0.010
FLATNESS	± 0.010
PARALLELISM	± 0.005
PERPENDICULARITY (PER LINEAR FT.)	± 0.005
ANGULARITY (PER LINEAR FT.)	± 0.02
POSITION (FEATURES WITHIN A COMPONENT)	± 0.02
CONCENTRICITY	± 0.005
CIRCULAR RUNOUT	± 0.005
REFERENCE DIMENSION (BASED ON MANUFACTURER'S AVAILABLE DATA)	± 0.005

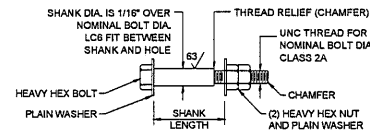
17. PROVIDE WELDMENTS COMPRISED OF ASTM A709 GRADE 50 STRUCTURAL STEEL FOR SUPPORTS OF MECHANICAL COMPONENTS.
18. PROVIDE TYPE 316 STAINLESS STEEL SHIMS FOR LEVELING AND ALIGNING ALL MACHINERY COMPONENTS. PROVIDE SHIMS OF $\frac{1}{4}$ " INCH NOMINAL THICKNESS, UNLESS OTHERWISE SPECIFIED, WITH ADJUSTMENT VARIATIONS AS DESCRIBED IN THE SPECIFICATIONS.
19. PROVIDE ASTM A449 OR ASTM F3125 GRADE A325 H.S. (HIGH STRENGTH) FASTENERS OF THE FOLLOWING TYPES:
 - A. H.S. MACHINERY BOLTS: USED TO CONNECT MACHINERY TO SUPPORTS UNLESS OTHERWISE NOTED.
 - B. H.S. TURNED BOLT: USED TO MAINTAIN ALIGNMENT OF MACHINERY COMPONENTS.
 - C. H.S. STRUCTURAL BOLT: USED TO CONNECT MACHINERY SUPPORTS TO STRUCTURAL STEEL.

MACHINERY WELDMENT NOTES:

1. CLIP STIFFENERS AS NECESSARY TO AVOID OVERLAP OF WELDS OR CLEAR FILLET WELDS BY A MINIMUM OF $\frac{1}{4}"$.
2. WHERE CJP IS NOT REQUIRED, MILL ALL VERTICAL PLATES TO BEAR ON HORIZONTAL PLATES PRIOR TO WELDING.
3. WHERE MACHINING IS REQUIRED, STRESS RELIEVE ALL WELDMENTS AFTER WELDING AND BEFORE MACHINING, UNLESS OTHERWISE APPROVED.
4. BREAK ALL SHARP EDGES.
5. UNLESS A SURFACE IS DESIGNATED TO BE GALVANIZED, BLAST CLEAN BOTTOM SURFACE TO "NEAR WHITE" CONDITION AND ANCHOR PROFILE PER PAINTING SPECIFICATIONS. DO NOT PAINT BOTTOM SURFACE. APPLY CORROSION INHIBITOR TO PROTECT SURFACE DURING SHIPPING AND STORAGE. REMOVE ALL CORROSION INHIBITOR PRIOR TO INSTALLATION AND GROUTING.



TYPICAL MACHINERY WELDMENT DETAIL



TYPICAL H.S. TURNED BOLT DETAIL

SHANK LENGTH TO BE $\frac{1}{4}"$ LESS THAN GRIP THICKNESS OF CONNECTION. REFER TO SPECIAL PROVISIONS FOR BOLT TENSIONING REQUIREMENTS.

OPERATING MACHINERY:

1. DURING NORMAL OPERATION (UTILITY), EACH OPERATING MACHINERY ASSEMBLY IS DESIGNED TO ACCELERATE THE SPAN UNIFORMLY TO FULL SPEED IN A MINIMUM OF 10 SECONDS. RUN AT CONSTANT SPEED. DECELERATE THE SPAN UNIFORMLY FOR A MINIMUM OF 10 SECONDS AND CREEP TO ITS FINAL POSITION. THE OPERATING TIME IS APPROXIMATELY 70 SECONDS FOR THE LEAF AGAINST A WIND LOAD OF 10 LBS/SQ FT. ON ANY VERTICAL PROJECTION OF THE OPEN SPAN. NORMAL AND MAXIMUM ANGLES OF OPENING FOR THE BASCULE LEAVES IS 72.5 DEGREES.
2. THE RACK AND THE PINION TOOTH LOADS (TANGENTIAL) AT 100% FULL LOAD MOTOR TORQUE AND RATED SPEED WITH AN OVERALL EFFICIENCY OF 82% IS APPROXIMATELY 41.1 KIPS. THE RACK AND PINION TOOTH LOAD (TANGENTIAL) AT THE MAXIMUM STARTING TORQUE REQUIRED AS PER THE 2023 AASHTO LFSD MOVABLE BRIDGE DESIGN IS 81.25 KIPS.

SPAN LOCK MACHINERY:

1. DURING NORMAL OPERATION, EACH SPAN LOCK MACHINERY ASSEMBLY IS DESIGNED TO SIMULTANEOUSLY DISENGAGE/ENGAGE RECEIVING SOCKETS LOCATED AT THE TOE OF THE SPAN, WITH THE SPAN SEATED AND THE SPAN LOCKS DRIVEN. THE SPAN LOCK MACHINERY IS DESIGNED TO TRANSMIT A MAXIMUM SHEAR LOAD OF 79.5 KIPS. THE OPERATING TIME TO PULL/DRIE THE LOCK BARS IS APPROXIMATELY 12 SECONDS.
2. DURING MANUAL OPERATION, EACH SPAN LOCK SHALL BE HAND CRANKED. THE TIME REQUIRED TO MANUALLY PULL/DRIE EACH LOCK BAR IS 10 MINUTES.

SPAN SUPPORT SYSTEM NOTES:

1. THE WEIGHT OF THE LEAF IS SUPPORTED BY THE TRUNNION ASSEMBLY WHERE SPAN LOADS (DEAD LOAD, LIVE LOAD, AND IMPACT) ARE TRANSFERRED TO THE TRUNNION BEARINGS. THE TRUNNION ASSEMBLY INCLUDES TRUNNION SHAFT, PILLOW BLOCK CYLINDRICAL SLEEVE BEARINGS, BEARING HOUSING, AND TRUNNION SHAFT HUB.

PREPARED BY: WSP USA Inc.
2009 LYNDX DRIVE, LAWRENCEVILLE, N.J. 08448



Robert Algazi

N.J. PE LICENSE NUMBER
24GE0558700

DATE



CAPE MAY COUNTY

MAG

JP

RA

Designed by

Drawn by

Checked by

JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND WIDUOLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

DRAWING TITLE:

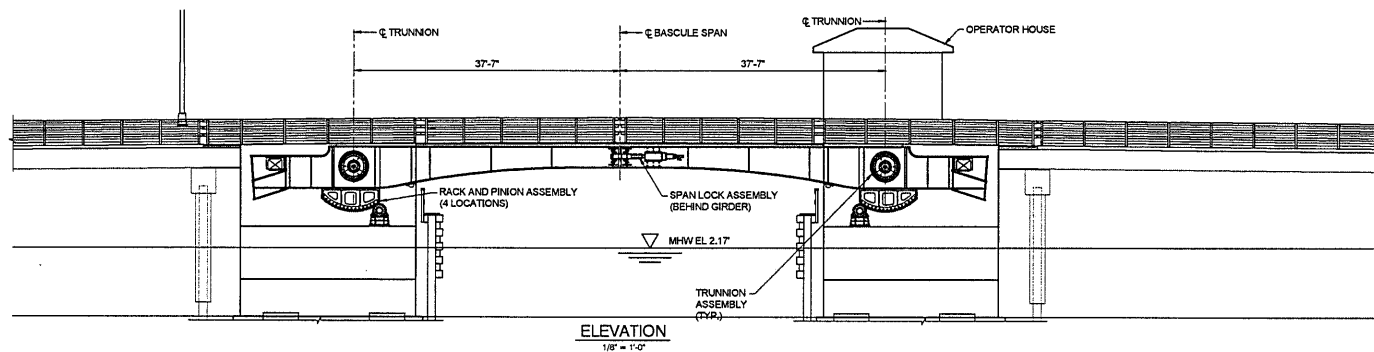
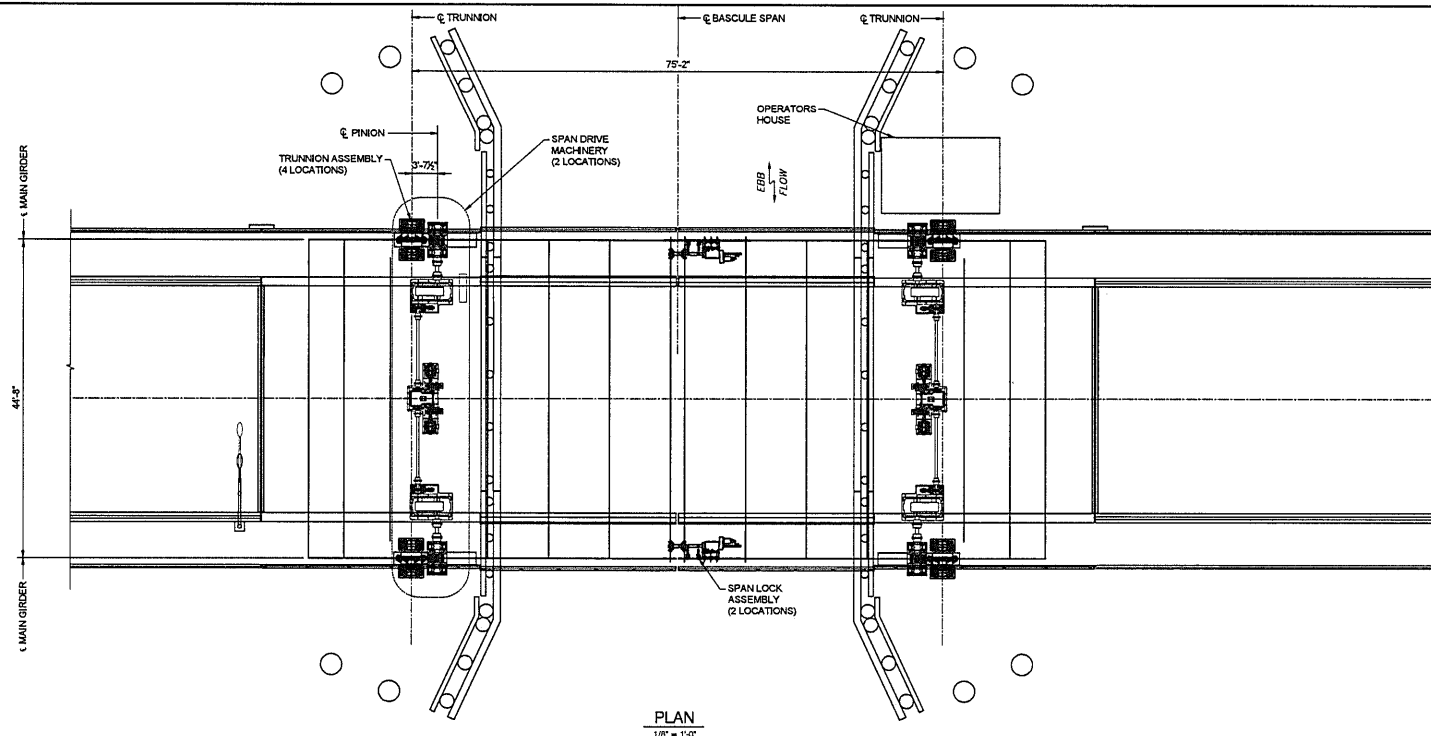
GENERAL MACHINERY
NOTES

DATE:
4/9/2024

SCALE:

SHEET REFERENCE NO.:
of

SHEET NO.:
123 of 222



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SCALE IN FEET

PREPARED BY: WSP USA INC.
2000 LYNCH DRIVE, LAWRENCEVILLE, N.J. 08848



Robert Algazi

N.J. PE LICENSE NUMBER
24GE25568700

DATE



CAPE MAY COUNTY

MAG

JP

RA

Designed by

Drawn by

Checked by

JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

DRAWING TITLE:

GENERAL MACHINERY
LAYOUT

DATE: 4/9/2024

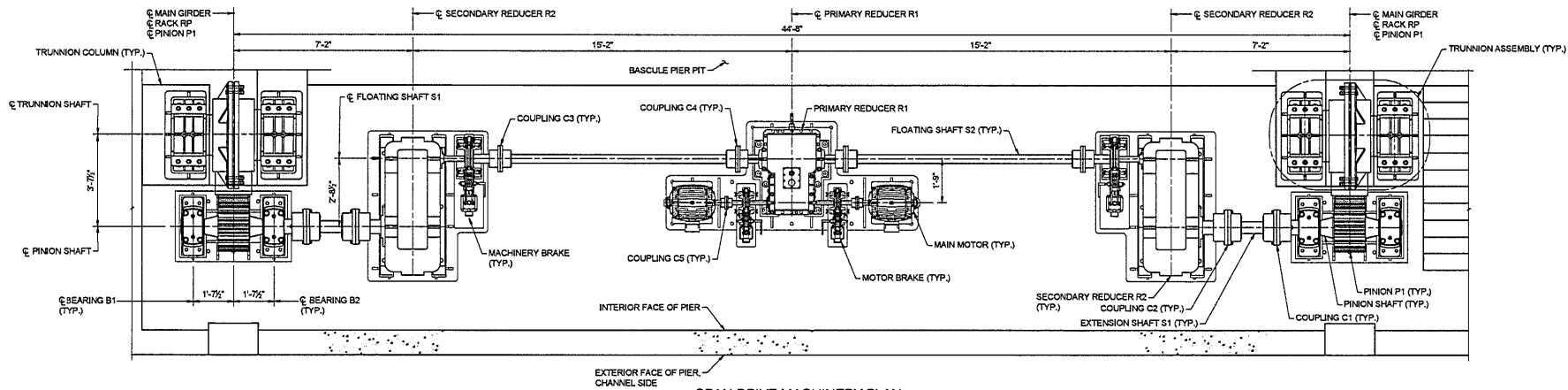
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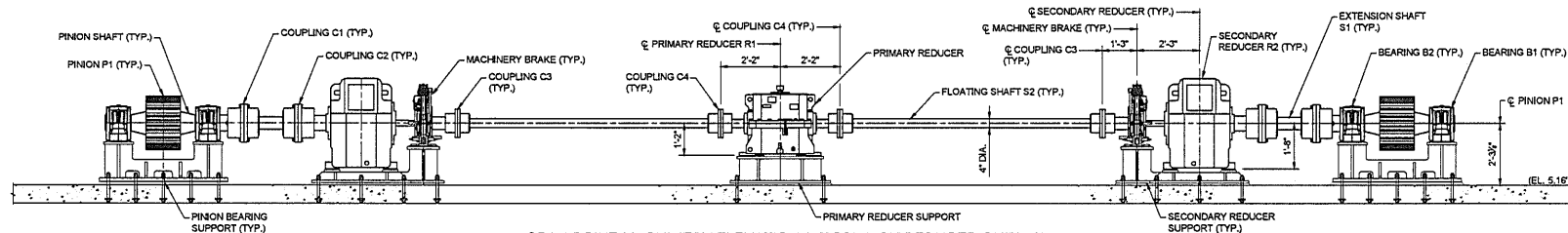
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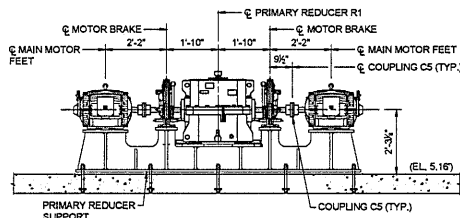
124 of 202



SPAN DRIVE MACHINERY PLAN
SCALE 1/2" = 1'-0"



SPAN DRIVE MACHINERY ELEVATION (AT PRIMARY REDUCER OUTPUT)
SCALE 1/2" = 1'-0"



SPAN DRIVE MACHINERY ELEVATION (AT PRIMARY REDUCTION INPUT)
SCALE 1/2" = 1'-0"

NOTES:

1. FOR GENERAL MACHINERY NOTES, SEE SHEET M-01.
2. FOR OPERATING MACHINERY COMPONENTS AND MATERIALS, SEE SHEET M-04.
3. OPERATING MACHINERY GUARDS NOT SHOWN FOR CLARITY.
4. FLOATING SHAFT S2 AND EXTENSION SHAFT S1 FINAL SHAFT LENGTH TO BE DETERMINED BASED ON OTHER MACHINERY INSTALLED.

0 10
SCALE IN FEET

PREPARED BY: WSP USA INC.
2080 LINDOX DRIVE, LAWRENCEVILLE, N.J. 08648



CAPE MAY COUNTY

Robert Algazi

N.J. PE LICENSE NUMBER:
24GE05568700

DATE

MAG

Designed by

JP

Drawn by

RA

Checked by

JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY
DRAWING TITLE:
SPAN DRIVE MACHINERY
PLAN AND ELEVATION

DATE: 4/9/2024
SCALE: AS NOTED
SHEET REFERENCE NO.: #
SHEET NO.: 125 of 202

TABLE OF OPERATING MACHINERY COUPLINGS											
PART	QTY	SIZE	TORQUE RATING (IN-KIPS)	TYPE	DRIVING HALF**			DRIVEN HALF**			MANUF.
					NOMINAL BORE (IN)	KEY (IN X IN)	RIGID=R FLEX=F	NOMINAL BORE (IN)	KEY (IN X IN)		
C1	4	1055G52	655.2	SINGLE ENGAGE, GEAR	7	1 1/4 x 1 1/2	F R	7	1 1/4 x 1 1/2	FALK	
C2	4	1055G52	655.2	SINGLE ENGAGE, GEAR	*	*	R F	7	1 1/4 x 1 1/2	FALK	
C3	4	1035G52	163.8	SINGLE ENGAGE, GEAR	4	1 x 1	F R	*	*	FALK	
C4	4	1035G52	163.8	SINGLE ENGAGE, GEAR	*	*	R F	4	1 x 1	FALK	
C5	4	1060T10	6.05	STEELFLEX GRID	*	*	F F	*	*	FALK	

* SIZE TO MATCH SHAFTS OF SPECIFIED COMPONENTS, SHAFT SIZE MAY CONTROL COUPLING SIZE.
 ** FLEXIBLE HUBS ON FLOATING AND EXTENSION SHAFTS.

TABLE OF OPERATING MACHINERY BEARINGS						
PART	QTY	SHAFT DIAMETER (IN)	DESCRIPTION	DYNAMIC RATING	STATIC RATING	MANUFACTURER
B1	4	7	SPLIT TYPE PILLOW BLOCK WITH SPHERICAL ROLLER BEARING (FLOAT)	301.6	382	SKF
B2	4	7	SPLIT TYPE PILLOW BLOCK WITH SPHERICAL ROLLER BEARING (FIXED)	301.6	382	SKF

TABLE OF OPERATING MACHINERY BRAKES					
PART	QTY	TORQUE SETTING (LB-FT)	NEMA TORQUE RATING (LB-FT)	WHEEL DIA. (IN)	MANUFACTURER
MOTOR BRAKE	4	90	100	8	BUBENZER
MACHINERY BRAKE	4	600	550	13	BUBENZER

TABLE OF OPERATING MACHINERY GEARING						
ID	PART	QTY	RATIO	DESCRIPTION	TORQUE RATING AT 1.0 AGMA SERVICE FACTOR (FT-KIPS)	MANUFACTURER
RP	RACK SEGMENT	4	7.105:1	3.5 IN CIRCULAR PITCH 20 DEG INVOLUTE FULL DEPTH	63.6 (AT PINION SHAFT)	
P1	PINION	4				
R1	PRIMARY REDUCER	2	13.95:1	CUSTOM DOUBLE REDUCTION PARALLEL SHAFT DIFFERENTIAL REDUCER MAIN INPUT: 25 HP AT 864 RPM THROUGH HARDENED GEARING	1.59 (AT OUTPUT SHAFT)	NUTTALL
R2	SECONDARY REDUCER	4	40:1	CUSTOM TRIPLE REDUCTION PARALLEL SHAFT REDUCER SINGLE INPUT AND SINGLE OUTPUT. INPUT: 12.5 HP AT 62 RPM THROUGH HARDENED GEARING	63.6 (AT OUTPUT SHAFT)	NUTTALL

OPERATING MACHINERY MATERIAL LIST			
ID	COMPONENT	MATERIAL	DESIGNATION
RP	RACK SEGMENT	ALLOY STEEL FORGING	ASTM GRADE A290 GRADE 4 CLASS I
P1	PINION AND INTEGRAL SHAFT	ALLOY STEEL FORGING	ASTM GRADE A291 GRADE 7 CLASS H
S1	EXTENSION SHAFT	ALLOY STEEL FORGING	ASTM A668 CLASS D
S2	FLOATING SHAFT	ALLOY STEEL FORGING	ASTM A668 CLASS D
-	KEYS	ALLOY STEEL FORGING	ASTM A668 CLASS K
-	SHIMS	STAINLESS STEEL	ASTM A240, TYPE 316

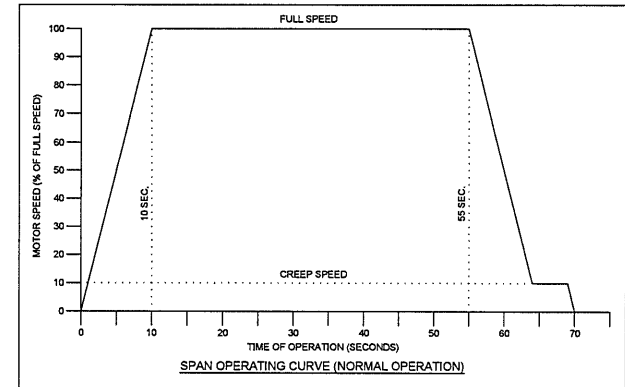


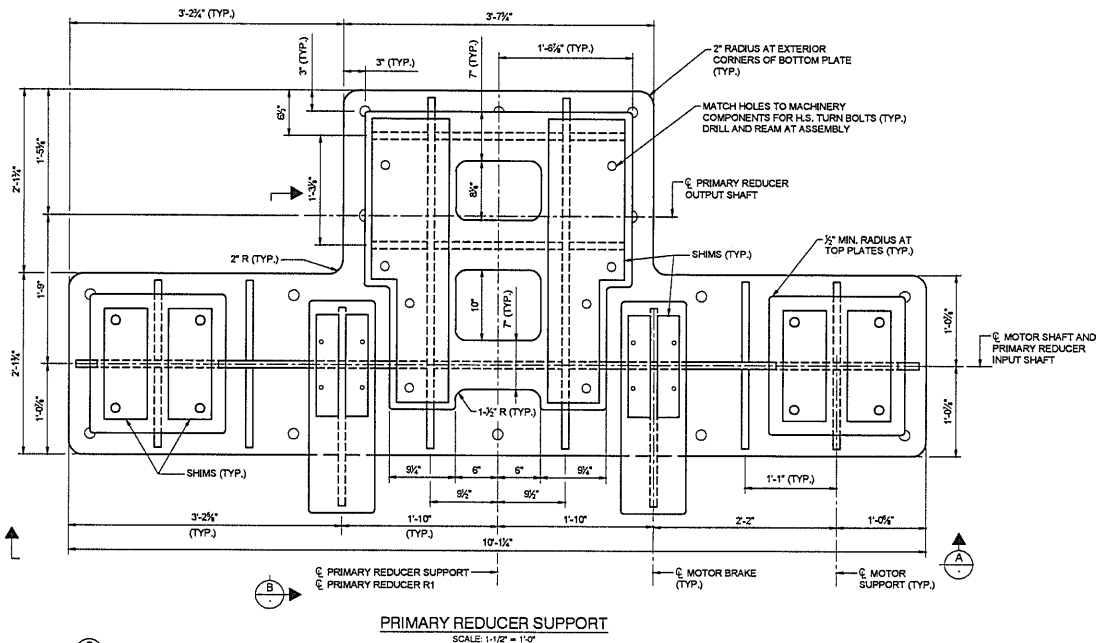
TABLE OF REQUIRED MOTOR TORQUES			
Starting Torque, Ts	123.2 ft-lb	Constant Velocity Torque, Tcv	107.1 ft-lb
Acceleration Torque, Ta	55.0 ft-lb	150% Motor Rated Torque	227.96 ft-lb

* INCLUDES THE EFFICIENCIES OF THE GEARS.

NOTES:

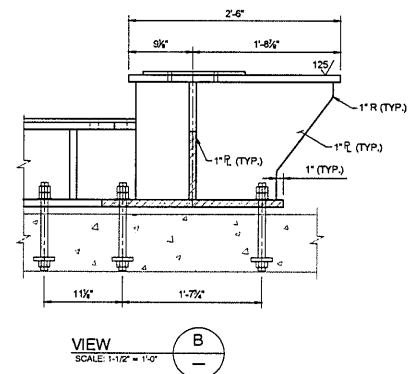
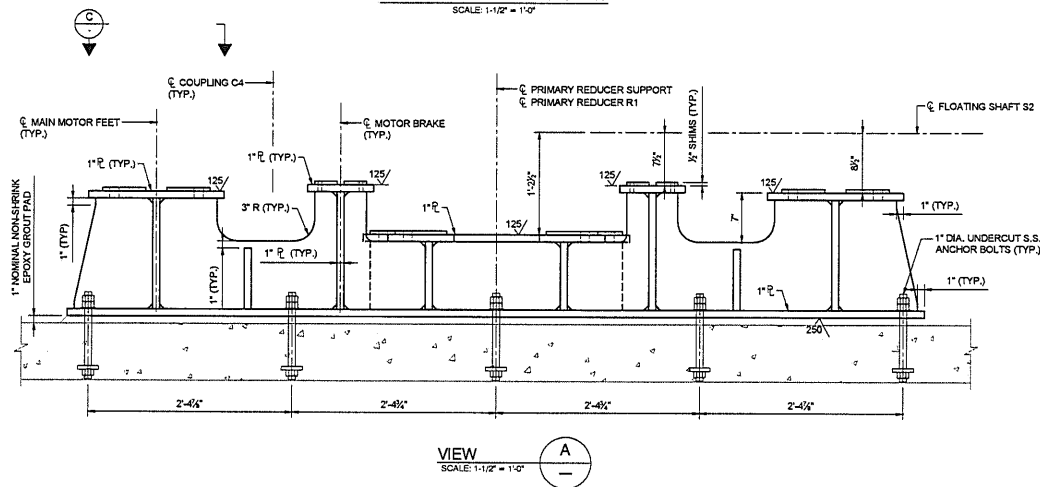
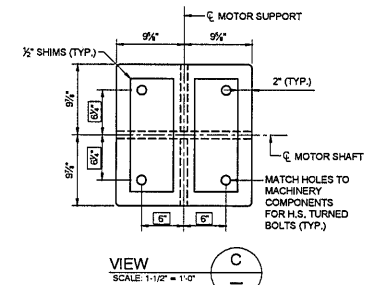
- FOR GENERAL MACHINERY NOTES, SEE SHEET M-01.
- MANUFACTURERS SHOWN OR AN APPROVED EQUAL MAY BE CONSIDERED.

PREPARED BY: WSP USA Inc. 2000 LENOX DRIVE, LAWRENCEVILLE, N.J. 08648 	RA Robert Algazi	MAG N.J. PE LICENSE NUMBER: 24GE0558670	DATE	CAPE MAY COUNTY	JOB: REHABILITATION OF 96TH STREET (CR657) BRIDGE OVER GREAT CHANNEL STR. NO. 0500-006	PROJECT LOCATION: STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP CAPE MAY COUNTY, NEW JERSEY DRAWING TITLE: SPAN DRIVE MACHINERY TABLES	DATE: 4/5/2024
							SCALE: AS NOTED SHEET REFERENCE NO.: of SHEET NO. 128 of 202



NOTES:

1. FOR GENERAL MACHINERY NOTES, SEE SHEET M-01.
2. USE STEEL PLATE WELDMENTS, FABRICATED WITH 1/2" CONTINUOUS FILLET WELDS FOR MACHINERY SUPPORTS.
3. PLAN VIEW PROFILE DIMENSIONS GIVEN ARE FOR REFERENCE ONLY. COORDINATE SIZE OF SUPPORT PLATES WITH SPECIAL REDUCER UNITS, MOTORS, AND BRAKES.
4. MACHINERY SUPPORT PLATE ELEVATION ARE TO BE BASED ON SPECIFIED REDUCER UNITS, MOTORS, AND BRAKES. ALLOW FOR NOMINAL 1/2" SHIM THICKNESSES. COORDINATE SHIM PACK DIMENSIONS WITH SPECIFIED COMPONENTS.
5. OVERSIZE MACHINERY SUPPORT BASE PLATES 1" MIN. ALL AROUND THE BASE OF ALL MACHINERY UNLESS OTHERWISE SPECIFIED.



PREPARED BY: WSP USA Inc.
2009 LENOX DRIVE, LAWRENCEVILLE, N.J. 08448



CAPE MAY COUNTY

Robert Algazi

N.J. PELICULENSE NUMBER:
JN090568700

DATE

SH
Designed by

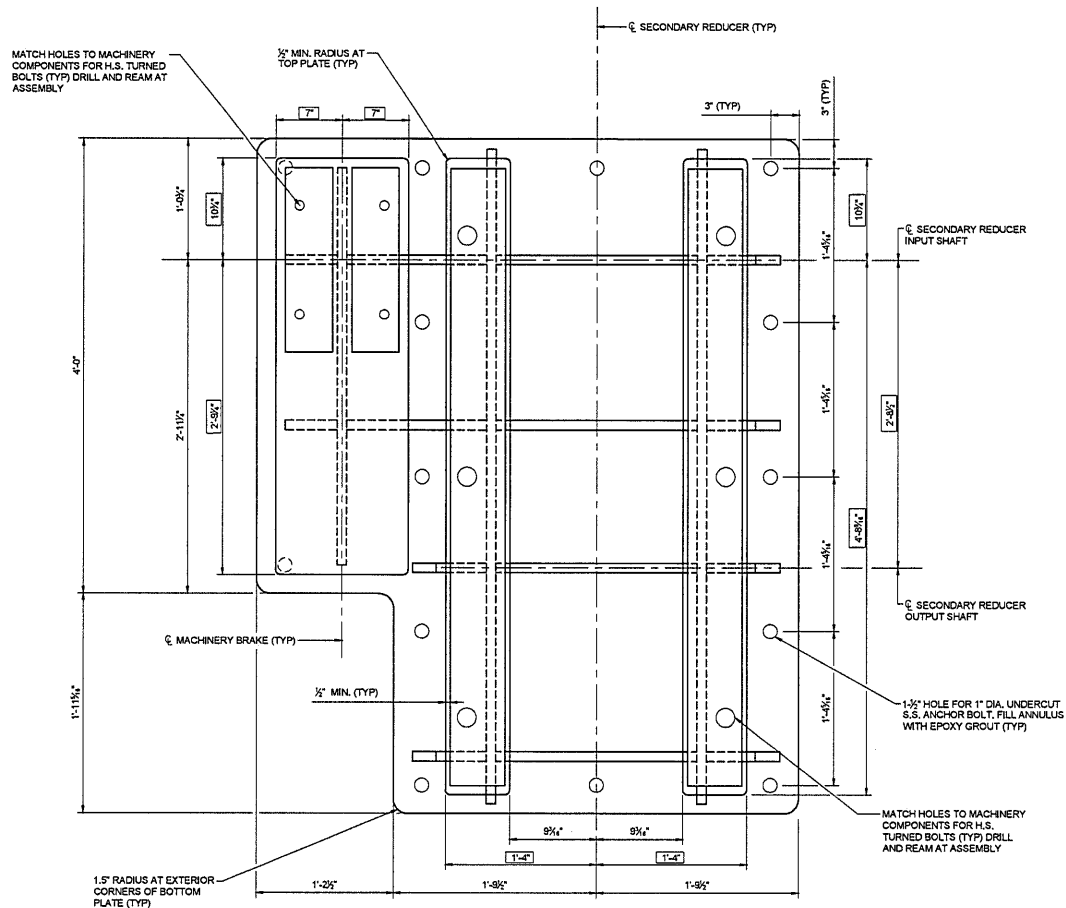
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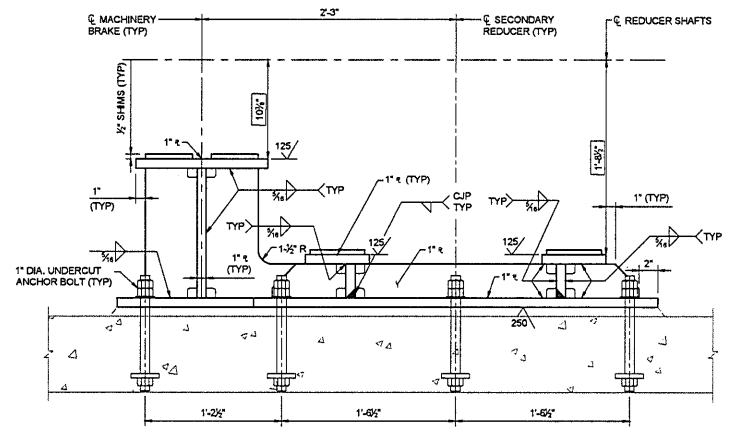
JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY
DRAWING TITLE:
SPAN DRIVE MACHINERY
SUPPORT DETAILS (1 OF 3)

DATE: 4/5/2024
SCALE: AS NOTED
SHEET REFERENCE NO.:
SHEET NO.: 127 of 202



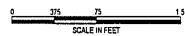
SECONDARY REDUCER SUPPORT
SCALE: 2" = 1'-0"



ELEVATION
SCALE: 2" = 1'-0"

NOTES:

1. REFER TO DWG. NO. BM-4 FOR RELATED NOTES.
2. MATCH HOLES TO MACHINERY COMPONENTS FOR H.S. TURNED BOLTS.



PREPARED BY: WSP USA Inc.
2000 LINDOR DRIVE, LAWRENCEVILLE, N.J. 08848



Robert Algazi

N.J. P.E. LICENSE NUMBER:
24695568700

DATE



CAPE MAY COUNTY

SH

SH

RA

Designed by

Drawn by

Checked by

JOB:

REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:

STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

DRAWING TITLE:

SPAN DRIVE MACHINERY
SUPPORT DETAILS (2 OF 3)

DATE:

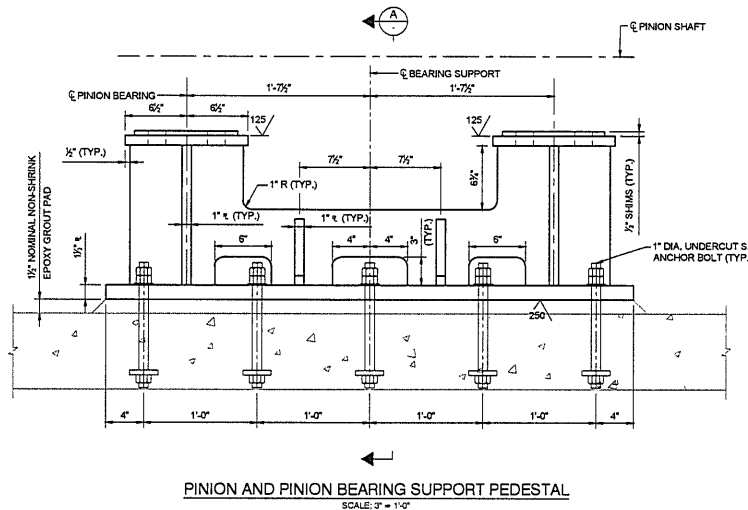
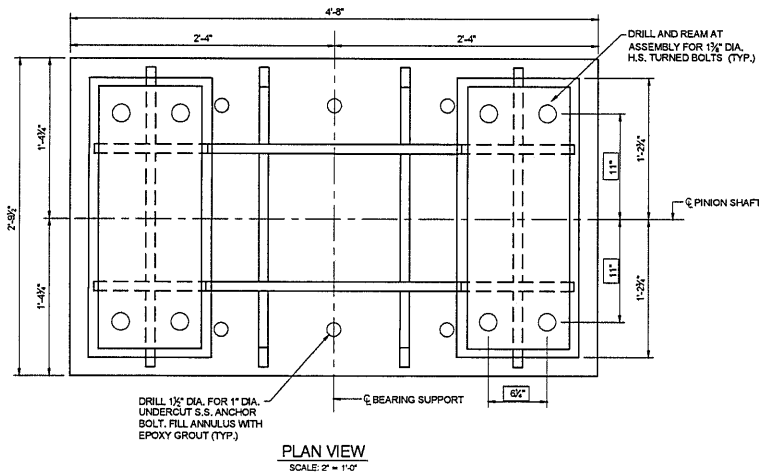
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SCALE:

AS NOTED

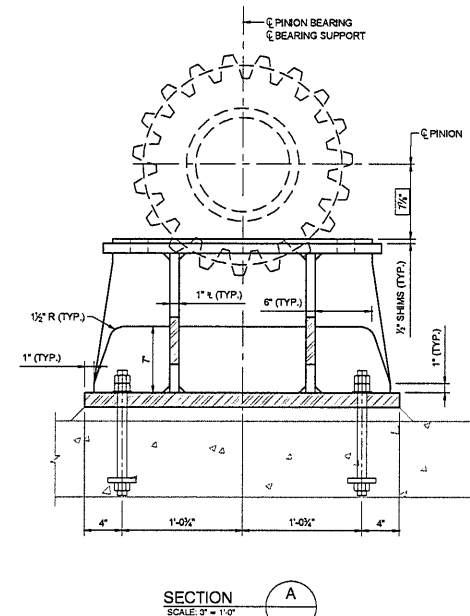
SHEET REFERENCE NO.:

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NOTES:

1. REFER TO DWG. NO M-5 FOR RELATED NOTES.
2. MATCH HOLES TO MACHINERY COMPONENTS FOR H.S. TURNED BOLTS.



0 5 10
SCALE IN FEET

PREPARED BY: WSP USA Inc.
2009 LENOX DRIVE, LAWRENCEVILLE, N.J. 08448



Robert Algazi

N.J. LICENSE NUMBER:
JN060581700

DATE



CAPE MAY COUNTY

SH
Designed by

SH
Drawn by

RA
Checked by

JOB

REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

DRAWING TITLE:

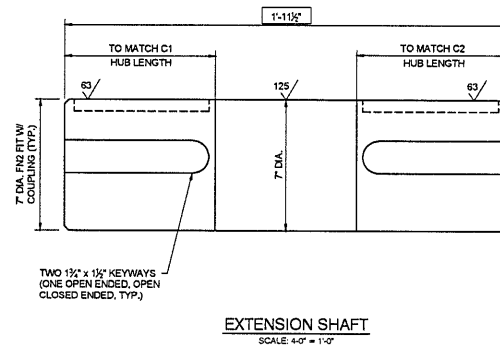
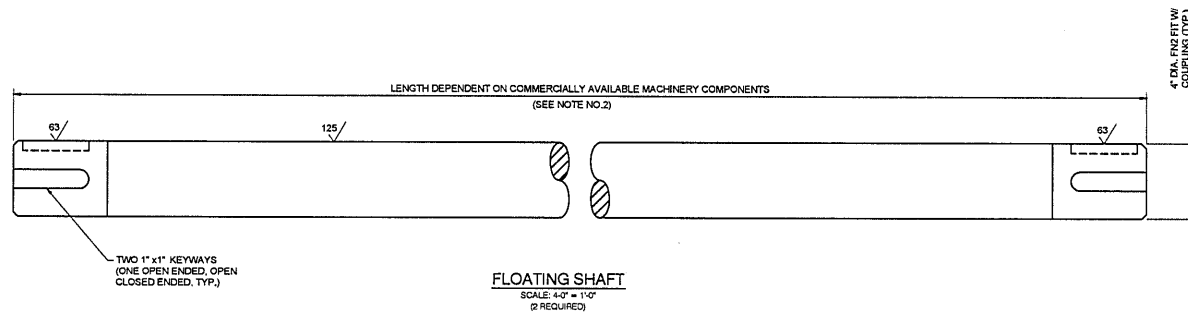
SPAN DRIVE MACHINERY
SUPPORT DETAILS (3 OF 3)

DATE: 4/9/2024

SCALE: AS NOTED

SHEET REFERENCE NO.:
of

SHEET NO.:
128 of 202



NOTES:

1. FOR GENERAL MACHINERY NOTES, SEE SHEET M-01.
2. VERIFY FLOATING SHAFT LENGTH DIMENSION WITH PRIMARY AND SECONDARY REDUCER LIMITS.
3. SHAFT CHAMFER AND RADIi SHALL HAVE A 63 MICRINCH FINISH.
4. FLOATING SHAFTS SHALL BE STRESS RELIEVED AFTER WELDING AND PRIOR TO MACHINING

0 5 1 2
SCALE IN FEET

PREPARED BY: WSP USA Inc.
2000 LINDA DRIVE, LAWRENCEVILLE, N.J. 08948



CAPE MAY COUNTY

Robert Algazi

N.J. PE LICENSE NUMBER:
246595568700

DATE

SH
Designed by

SH
Drawn by

RA
Checked by

JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

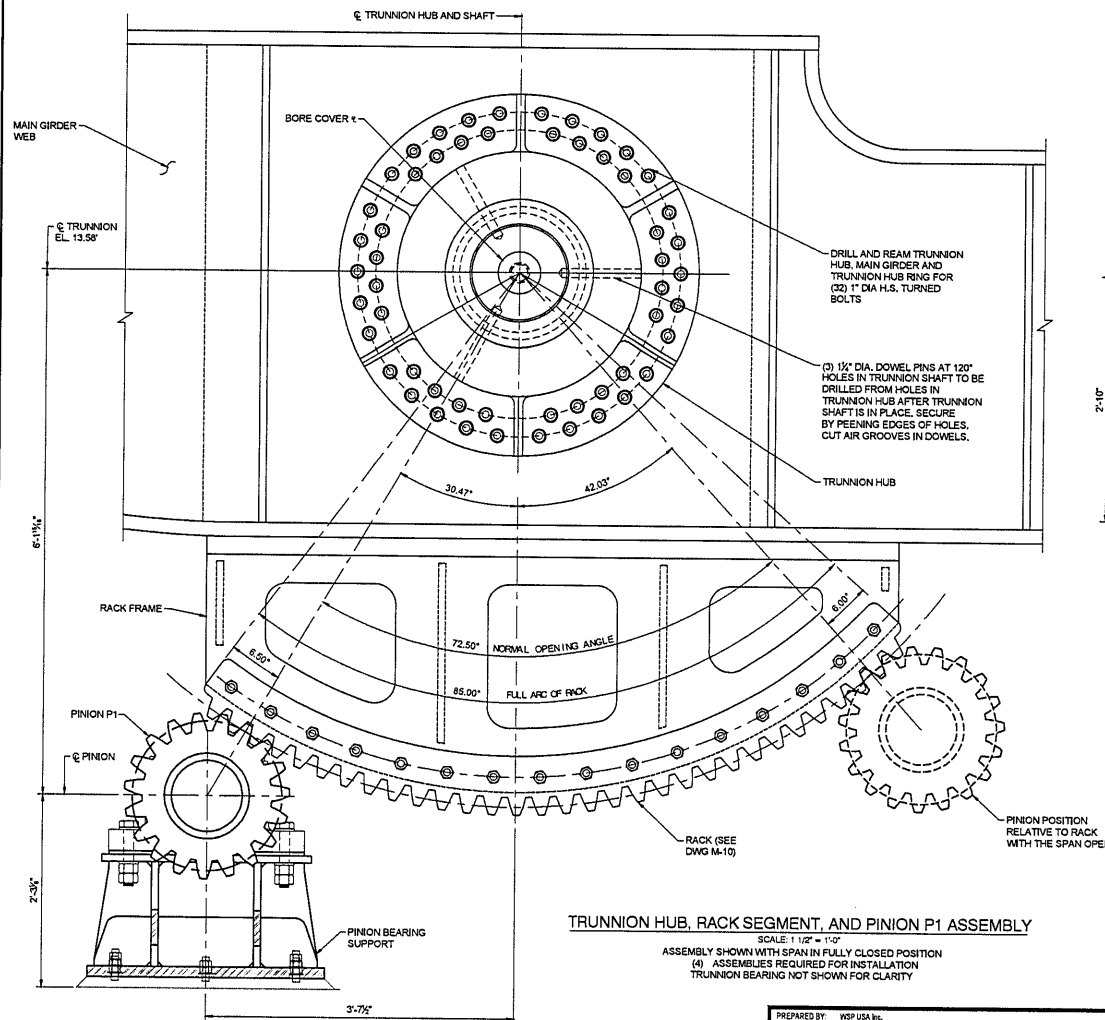
DRAWING TITLE:
SPAN DRIVE ASSEMBLY
DETAILS

DATE:
4/9/2024

SCALE:
AS NOTED

SHEET REFERENCE NO.:
of

SHEET NO.:
130 of 202



TRUNNION HUB, RACK SEGMENT, AND PINION P1 ASSEMBLY

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

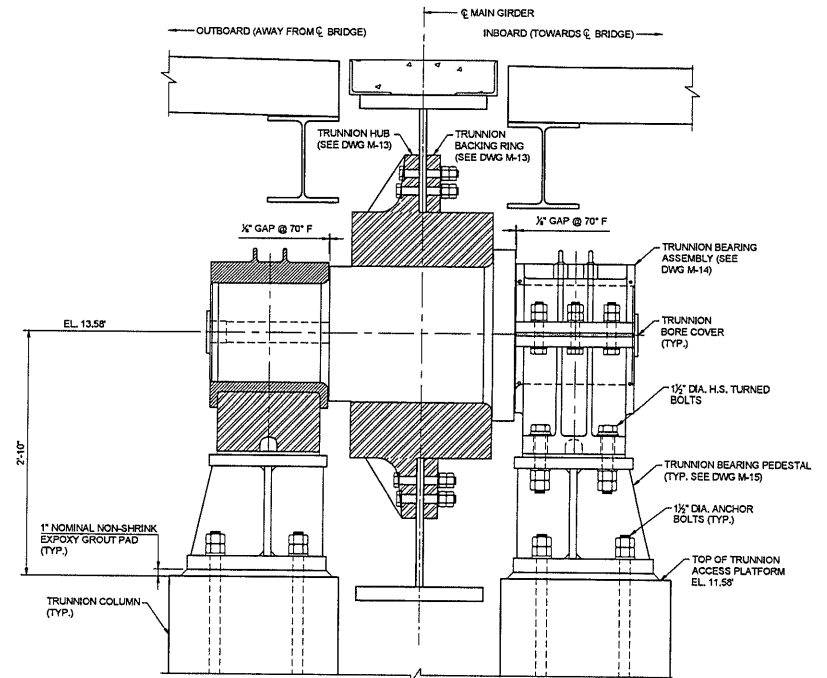
ASSEMBLY SHOWN WITH SPAN IN FULLY CLOSED POSITION

(4) ASSEMBLIES REQUIRED FOR INSTALLATION

TRUNNION BEARING NOT SHOWN FOR CLARITY

0 1 2

SCALE IN FEET



TRUNNION ASSEMBLY

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

(4) ASSEMBLIES REQUIRED FOR INSTALLATION

NOTES:

1. FOR GENERAL MACHINERY NOTES, SEE DRAWING M-01.
2. FOR OPERATING MACHINERY COMPONENTS AND MATERIALS, SEE DRAWING M-04.
3. FOR TRUNNION ASSEMBLY MATERIALS, SEE DRAWING M-12.

PREPARED BY: WSP USA INC.
2000 LENOX DRIVE, LAWRENCEVILLE, N.J. 08448



CAPE MAY COUNTY

Robert Algazi

N.J. PE LICENSE NUMBER:
J469556700

DATE

MAG
Designed by

JP
Drawn by

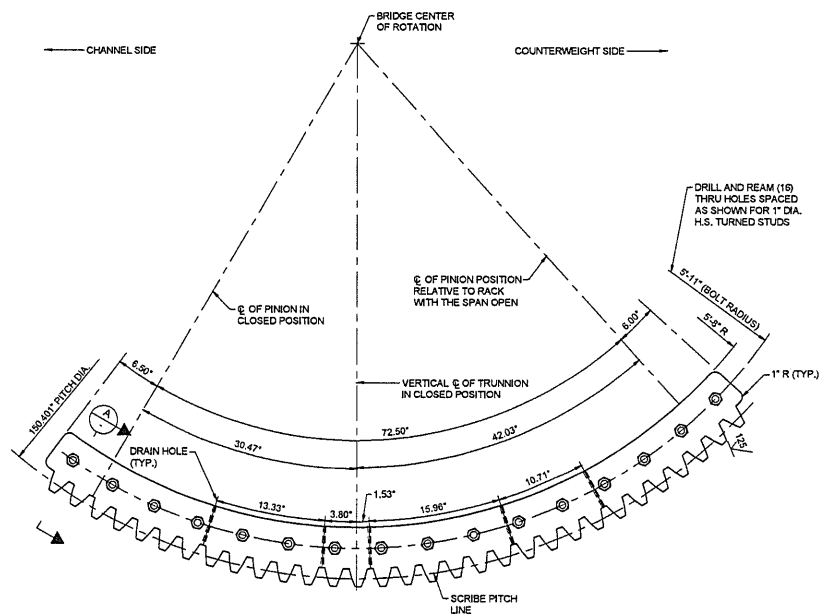
RA
Checked by

JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

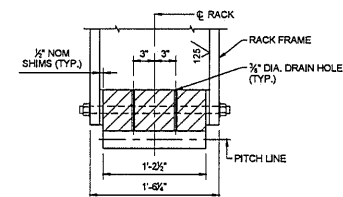
DRAWING TITLE:
RACK, PINION, AND
TRUNNION ASSEMBLY

DATE: 4/9/2024
SCALE: AS NOTED
SHEET REFERENCE NO.:
of
SHEET NO.:
131 of 202



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

RACK GEAR DATA	
CIRCULAR PITCH	3.6 IN
NO. OF TEETH	31 (OF 135 FULL CIRCLE TEETH)
PITCH DIAMETER	150.401 IN
FACE WIDTH	14.5 IN
ADDENDUM	1.114 IN
DEDENDUM	1.393 IN
ANSI/AGMA GEAR QUALITY	9
TOOTH FORM: 20 DEG FULL DEPTH INVOLUTE	

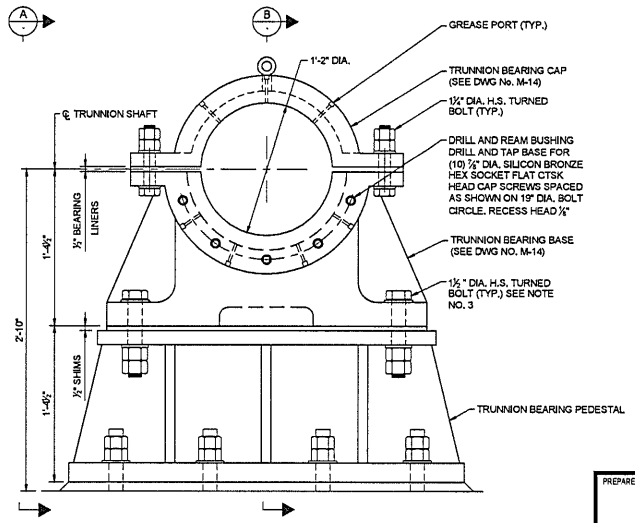
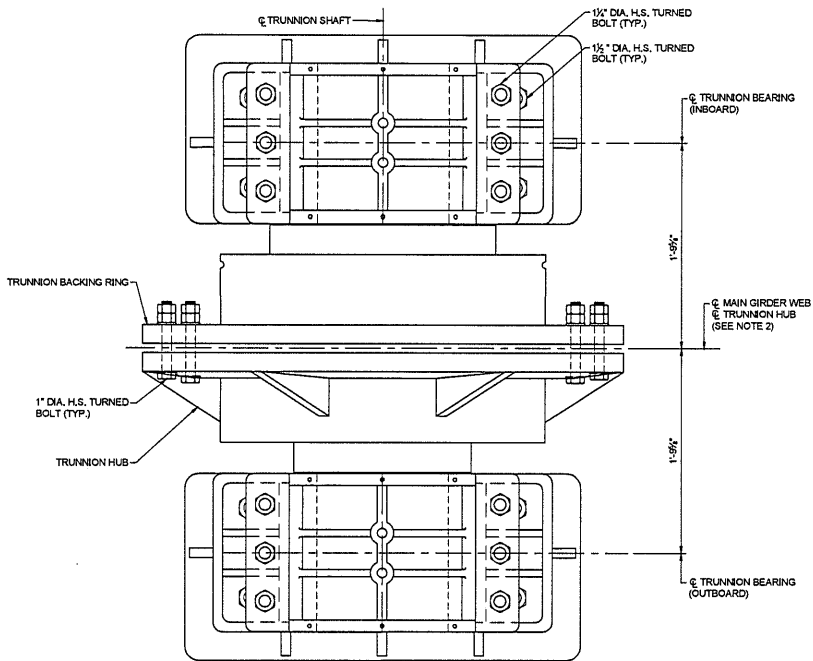


VIEW A
SCALE: 1 1/2" = 1'-0"

- NOTES:**
1. FOR GENERAL MACHINERY NOTES, SEE SHEET M-01
 2. FOR OPERATING COMPONENT AND MATERIALS, SEE SHEET M-04
 3. 125 MICROINCH FINISH ALL OVER RACK SURFACES.
 4. LOCATE DRAIN HOLES AT ROOT OF GEAR TEETH.
 5. ARC LENGTHS SHOWN ARE TAKEN AT PITCH LINE.

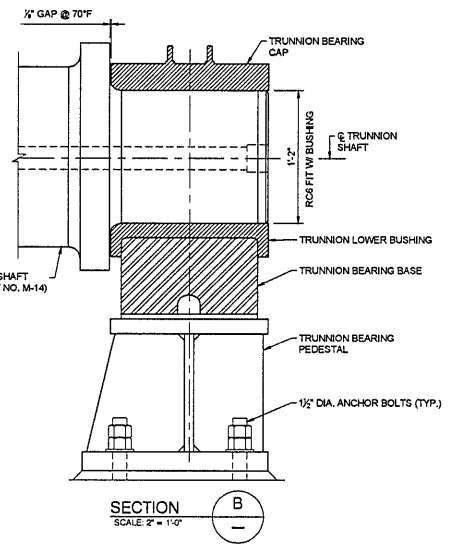
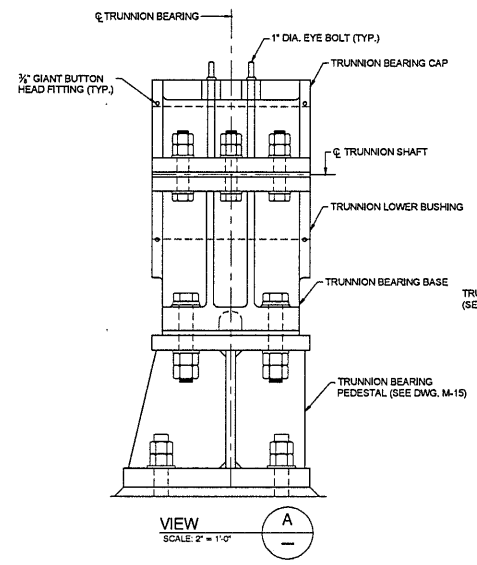
0 1 2
SCALE IN FEET

PREPARED BY: WSP USA, INC. 2000 LINDA DRIVE, LAWRENCEVILLE, N.J. 08648 Robert Algazi N.J. PE LICENSE NUMBER: 24685568700 DATE:	 CAPE MAY COUNTY MAG JP RA Designed by Drawn by Checked by	JOB: REHABILITATION OF 96TH STREET (CR657) BRIDGE OVER GREAT CHANNEL STR. NO. 0500-006	PROJECT LOCATION: STONE HARBOR BOROUGH AND WOODLE TOWNSHIP CAPE MAY COUNTY, NEW JERSEY	DATE: 4/9/2024
			DRAWING TITLE: RACK DETAILS	SCALE: AS NOTED SHEET REFERENCE NO.: 112 of 202



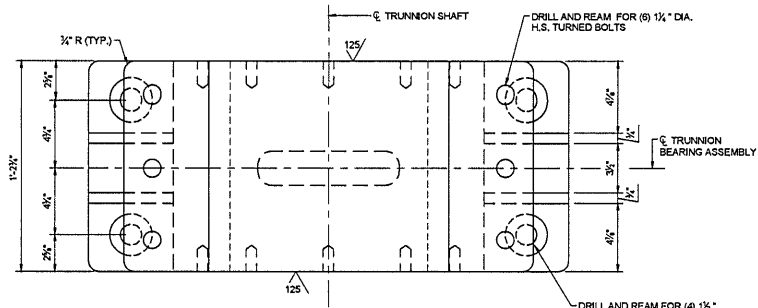
TRUNNION BEARING ASSEMBLY
SCALE: 2" = 1'-0"
NOTE: BEARING IS SYMMETRIC ABOUT ϕ

TRUNNION ASSEMBLY MATERIAL LIST		
COMPONENT	MATERIAL	DESIGNATION
TRUNNION SHAFT	CARBON STEEL FORGING	ASTM A668 CLASS D
TRUNNION HUB	STEEL CASTING	ASTM A148 GRADE 90-60
TRUNNION HUB RING	ALLOY STEEL FORGING	ASTM A668 CLASS G
TRUNNION HUB DOWEL PIN	ALLOY STEEL FORGING	ASTM A668 CLASS K
TRUNNION HUB BEARING CAP	BRONZE CASTING	ASTM B22 UNS C91100
TRUNNION BEARING LINERS	ROLLED TEMPERED BRASS	ASTM B36 UNS C26800 H02
TRUNNION BEARING BUSHING	BRONZE CASTING	ASTM B22 UNS C91100
TRUNNION BEARING BASE	STEEL CASTING	ASTM A148 GRADE 80-50
TRUNNION BORE COVER	STRUCTURAL STEEL	ASTM A36
TRUNNION CAP AND BASE TURNED BOLTS	ALLOY STEEL FORGING	ASTM A193 GRADE B7
SUPPORT WELDMENTS	STRUCTURAL STEEL	ASTM A709 GRADE 50

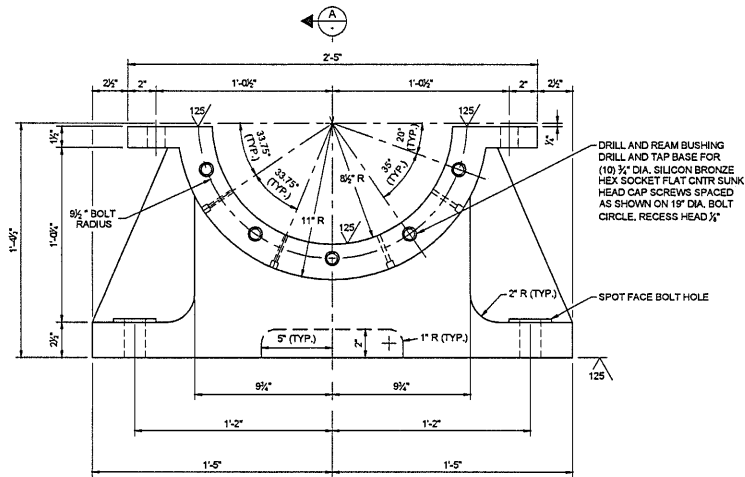


- NOTES:**
- FOR GENERAL MACHINERY NOTES, SEE SHEET M-01.
 - FOR MAIN GIRDER MACHINING, SEE STRUCTURAL DRAWINGS.
 - DRILL HOLES FOR BOLTS IN THE FIELD FROM SOLID MATERIAL WITH TRUNNIONS ALIGNED. BEARING BASE HOLES MAY BE DRILLED UNDERSIZED IN THE SHOP.

PREPARED BY: WSP USA Inc. 2000 LENOX DRIVE, LAWRENCEVILLE, N.J. 08848						JOB: REHABILITATION OF 96TH STREET (CR657) BRIDGE OVER GREAT CHANNEL STR. NO. 0500-006		PROJECT LOCATION: STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP CAPE MAY COUNTY, NEW JERSEY		DATE: 4/9/2024	
Robert Algazi		N.J. PE LICENSE NUMBER: 34025554700		DATE:		MAG JP RA		DRAWING TITLE: TRUNNION ASSEMBLY		SCALE: AS NOTED	
Designed by		Drawn by		Checked by		SHEET REFERENCE NO. of		SHEET NO. 134 of 252			

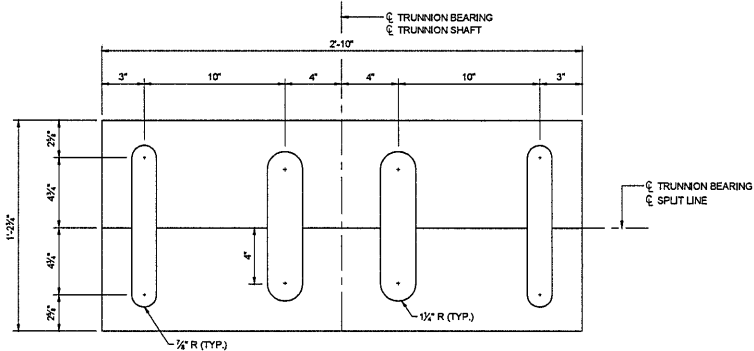


PLAN VIEW
SCALE: 3" = 1'-0"

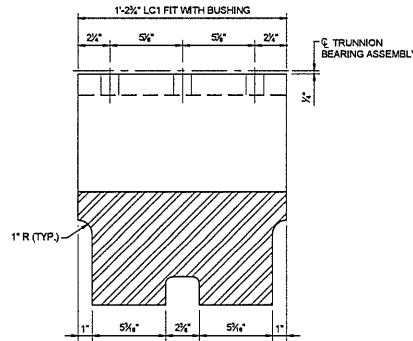


ELEVATION

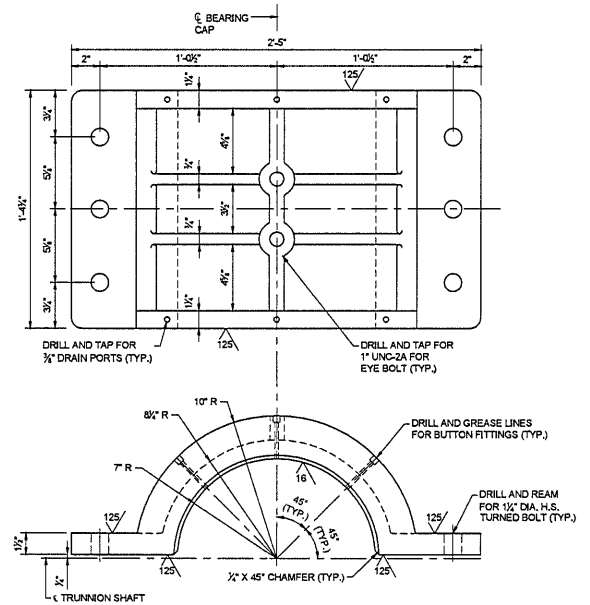
TRUNNION BEARING BASE
SCALE: 3" = 1'-0"
NOTE: BEARING IS SYMMETRIC ABOUT C



SPLIT SHIM DETAIL
SCALE: 3" = 1'-0"



SECTION
SCALE: 3" = 1'-0"



TRUNNION BEARING CAP
SCALE: 3" = 1'-0"

PREPARED BY: WSP USA INC.
2999 LYNDOR DRIVE, LAWRENCEVILLE, N.J. 08848



CAPE MAY COUNTY

Robert Algazi

N.J. PE LICENSE NUMBER:
240626568700

DATE

MAG

JK

RA

Designed by

Drawn by

Checked by

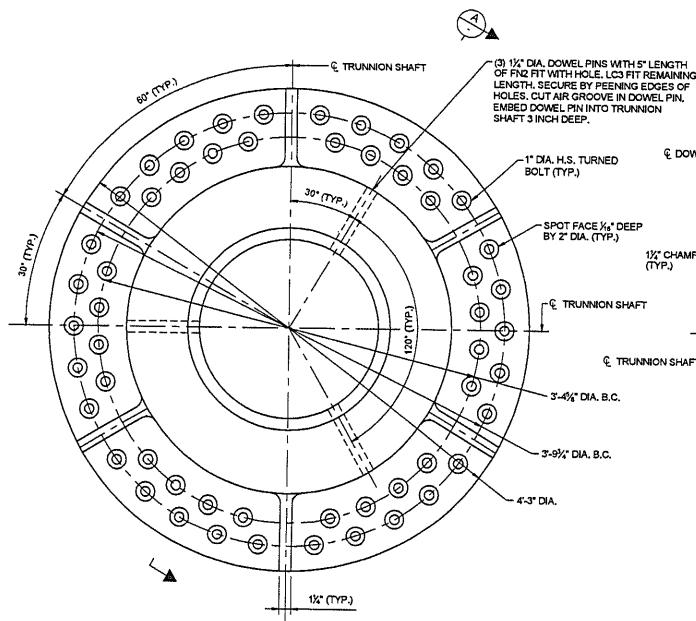
JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BRIDGE AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY
DRAWING TITLE:
TRUNNION ASSEMBLY
DETAILS (1 OF 5)

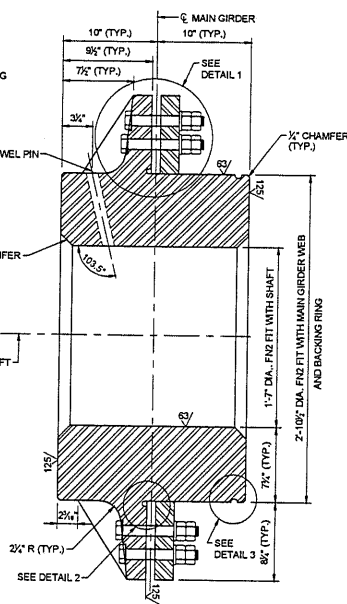
DATE:
4/9/2024
SCALE:
AS NOTED
SHEET REFERENCE NO.:

SHEET NO.:
125 of 202

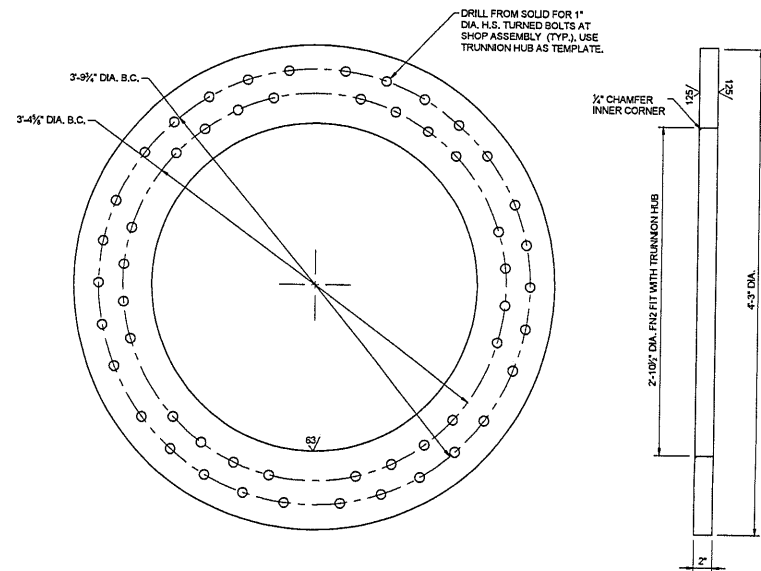
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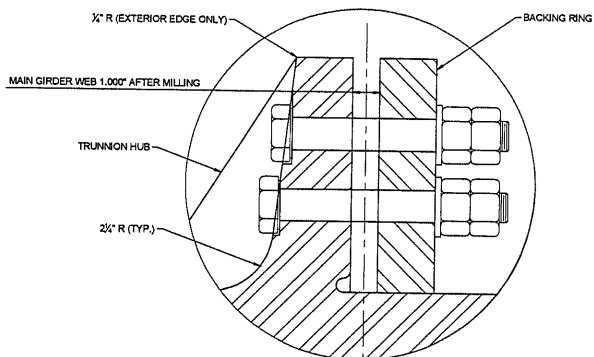
TRUNNION HUB
SCALE: 2" = 1'-0"



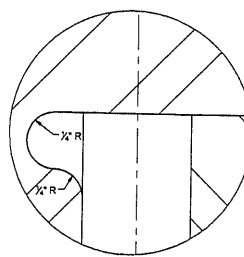
SECTION A - A
SCALE: 2" = 1'-0"



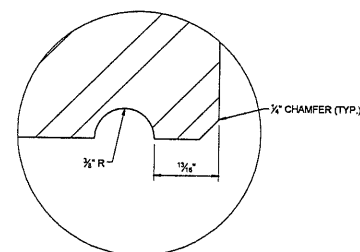
BACKING RING
SCALE: 2" = 1'-0"



DETAIL 1
6" = 1'-0"



DETAIL 2
6" = 1'-0"
AROUND CIRCUMFERENCE



DETAIL 3
6" = 1'-0"
AROUND CIRCUMFERENCE AT BOTH ENDS OF HUB

- NOTES:
- FOR GENERAL MACHINERY NOTES, SEE M-01
 - AFTER FINAL MACHINING, BLAST FAYING SURFACES TO A CLASS B SLIP COEFFICIENT ON MAIN GIRDER WEBS, TRUNNION HUB, AND BACKING RING.

0 25 50
SCALE IN FEET

PREPARED BY: WSP USA Inc.
2000 LENOX DRIVE, LAWRENCEVILLE, N.J. 08848

Robert Algazi

N.J. PE LICENSE NUMBER:
34225588700

DATE

WSP



CAPE MAY COUNTY

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JB

Designed by

Drawn by

Checked by

JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

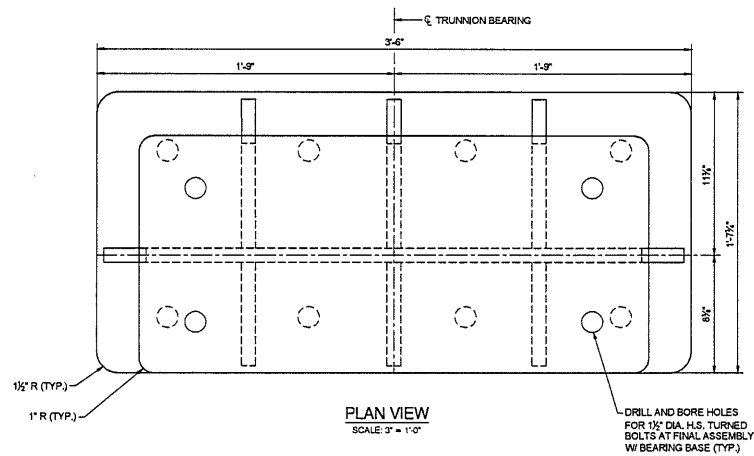
PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY
DRAWING TITLE:
TRUNNION ASSEMBLY
DETAILS (3 OF 5)

DATE:
4/9/2024

SCALE:
AS NOTED

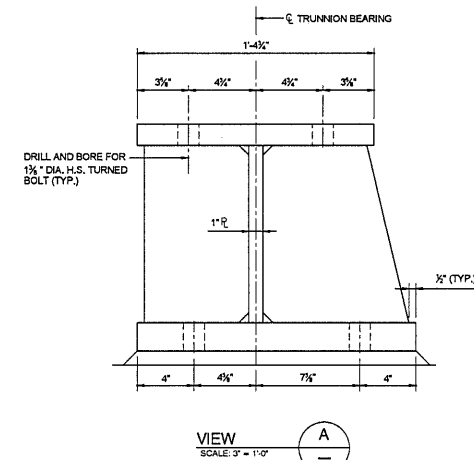
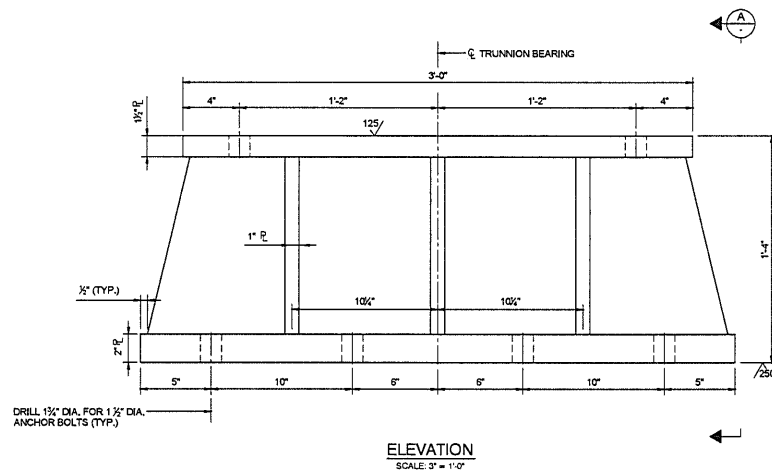
SHEET REFERENCE NO.:
1

SHEET NO.:
137 of 202



NOTES:

1. FOR GENERAL MACHINERY NOTES, SEE SHEET M-01.
2. USE STEEL PLATE WELDMENTS, FABRICATED WITH 1/2" CONTINUOUS FILLET WELDS FOR TRUNNION BEARING PEDESTAL UNLESS OTHERWISE NOTED.
3. MILL ALL CONNECTING PLATES TO BEAR PRIOR TO WELDING.



TRUNNION BEARING PEDESTAL
SCALE: 3" = 1'-0"



PREPARED BY: WSP USA INC.
2000 LENOX DRIVE, LAWRENCEVILLE, N.J. 08048



CAPE MAY COUNTY

SH

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Designed by

Drawn by

Checked by

Robert Algazi

N.J. PE LICENSE NUMBER:
24625568706

DATE

JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

DRAWING TITLE:

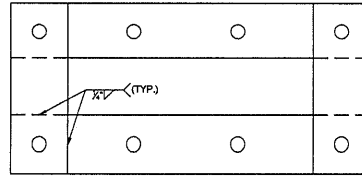
TRUNNION ASSEMBLY
DETAILS (4 OF 5)

DATE: 4/5/2024

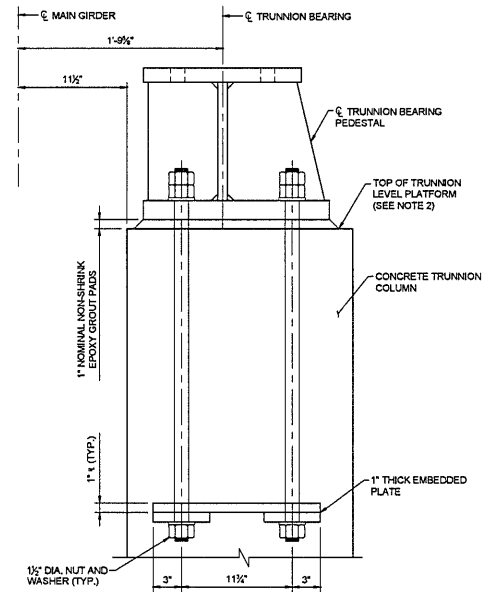
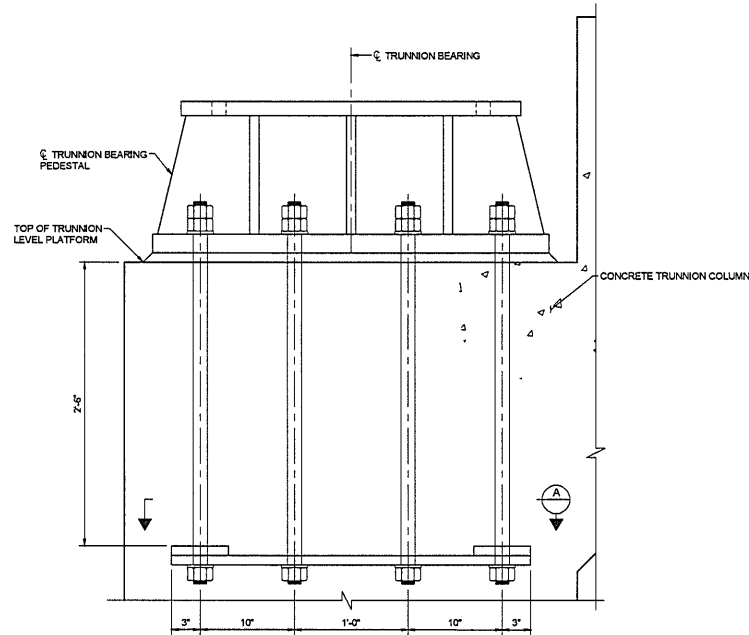
SCALE: AS NOTED

SHEET REFERENCE NO.:
OF

SHEET NO.:
138 of 202



SECTION A
SCALE 2" = 1'-0"



TRUNNION ANCHORAGE SYSTEM
SCALE: 2" = 1'-0"

NOTES:

1. FOR GENERAL MACHINERY NOTES. SEE SHEET M-01.
2. FINISHED ELEVATION OF CONCRETE AT TRUNNION LEVEL VARIES DUE TO SLOPE. SEE BASCULE PIER DRAWINGS FOR DETAILS. VARY GROUT PAD TO ACCOMMODATE CONCRETE ELEVATION AND SLOPE

0 75 15
SCALE IN FEET

PREPARED BY: WSP USA INC.
2000 LENOX DRIVE, LAWRENCEVILLE, N.J. 08648



CAPE MAY COUNTY

Robert Algazi

N.J. PE LICENSE NUMBER:
240E92568700

DATE

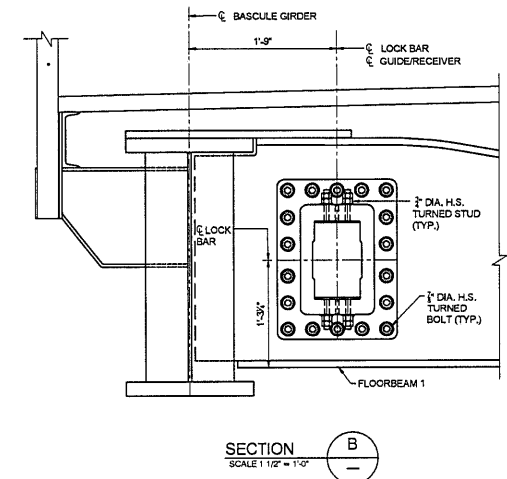
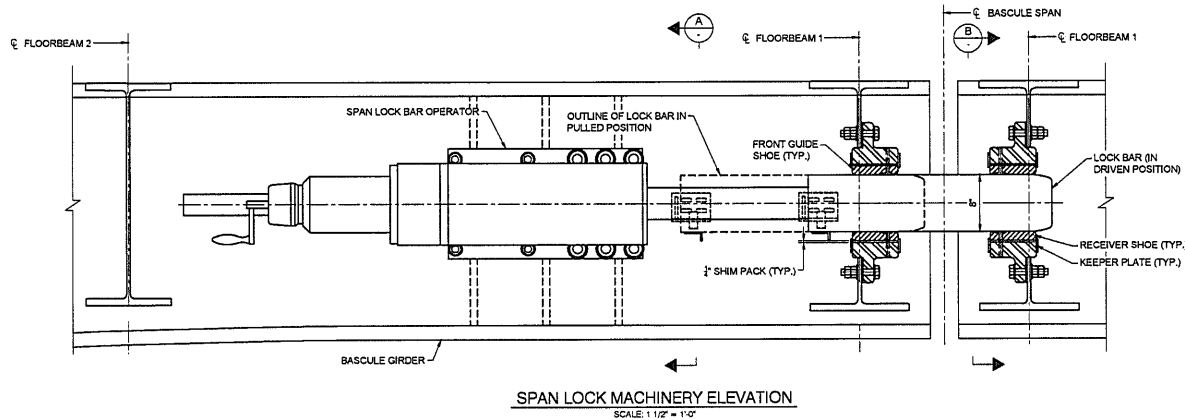
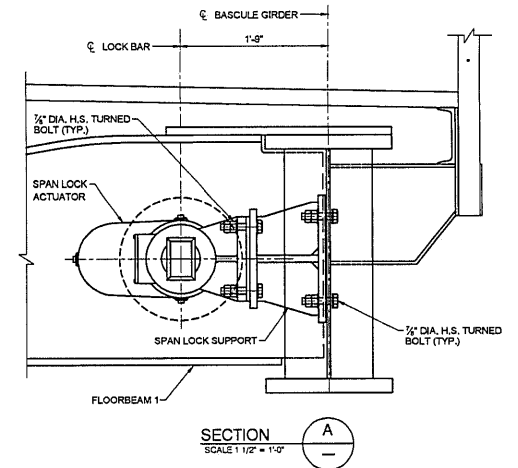
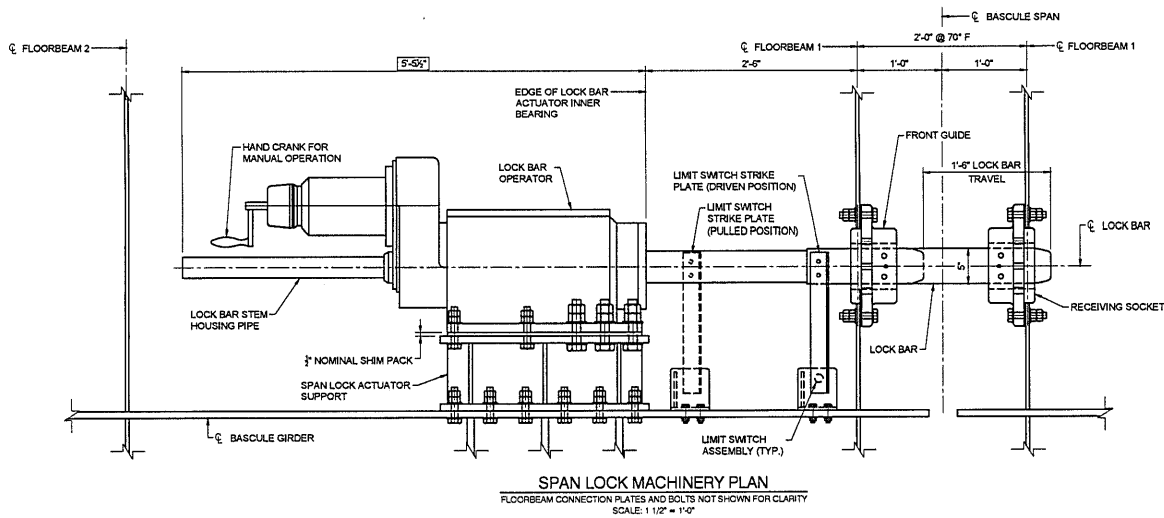
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Designed by Drawn by Checked by

JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY
DRAWING TITLE:
TRUNNION ASSEMBLY
DETAILS (5 OF 5)

DATE:
4/9/2024
SCALE:
AS NOTED
SHEET REFERENCE NO.:

SHEET NO.:
139 of 202



SPAN LOCK ASSEMBLY MATERIALS LIST			
COMPONENTS	QNTY	MATERIAL	DESIGNATION
LOCK BAR	2	ALLOY STEEL FORGING	ASTM A668 CLASS M
FRONT GUIDE HOUSING	2	ALLOY STEEL FORGING	ASTM A668 CLASS G
FRONT GUIDE SHOE	4	BRONZE CASTING	ASTM B22 UNS NO. C86300
RECEIVER HOUSING	2	ALLOY STEEL FORGING	ASTM A668 CLASS G
RECEIVER SHOE	4	BRONZE CASTING	ASTM B22 UNS NO. C86300
SHOE STUDS	16	ALLOY STEEL	ASTM A193 GR. B7
KEEPER PLATE	16	STRUCTURAL STEEL	ASTM A709 GR. 50
LIMIT SWITCH STRIKE PLATE	2	STRUCTURAL STEEL	ASTM A709 GR. 50
LIMIT SWITCH SUPPORT	2	STRUCTURAL STEEL	ASTM A709 GR. 50
ACTUATOR SUPPORT	2	STRUCTURAL STEEL	ASTM A709 GR. 50

0 5 10
SCALE IN FEET

PREPARED BY: WSP USA Inc.
2005 LINDSEY DRIVE, LAWRENCEVILLE, N.J. 08648

Robert Algazi

N.J. PE LICENSE NUMBER:
24GE05586700

DATE



CAPE MAY COUNTY

RA

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JS

Designed by

Drawn by

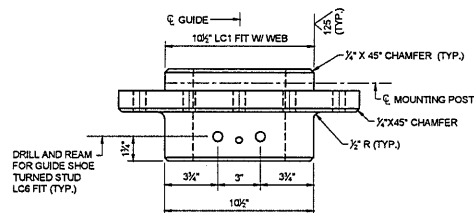
Checked by

JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

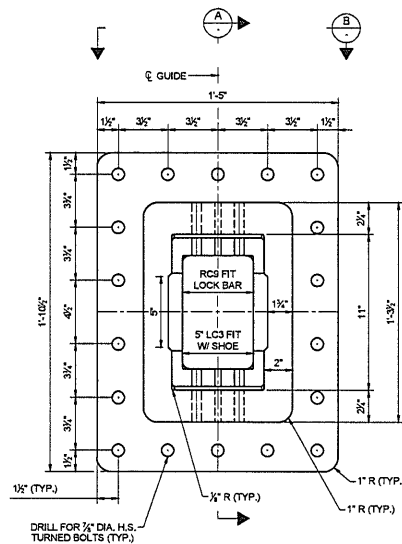
PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY
DRAWING TITLE:
SPAN LOCK ASSEMBLY

DATE: 4/9/2024
SCALE: AS NOTED
SHEET REFERENCE NO. of
SHEET NO. 140 of 202

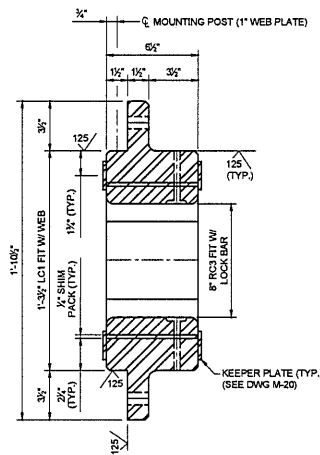
NOTES:
1. FOR GENERAL MACHINERY NOTES, SEE SHEET M-01.



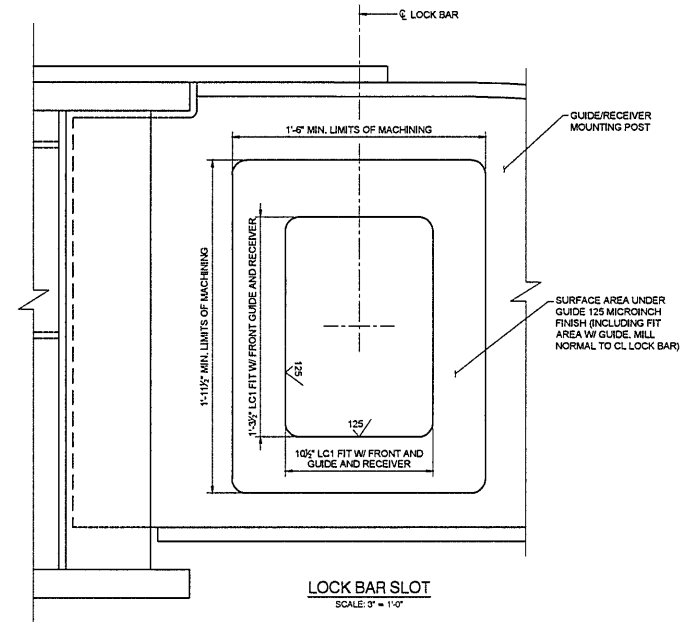
SECTION B
SCALE 3" = 1'-0"



FRONT AND REAR GUIDES
SCALE 3" = 1'-0"
(RECEIVER SIMILAR EXCEPT FOR SHOES)
(KEEPER PLATE NOT SHOWN FOR CLARITY)



SECTION A
SCALE 3" = 1'-0"



LOCK BAR SLOT
SCALE 3" = 1'-0"

NOTES:

1. UTILIZE LOCTITE 242 FOR TAPPED HOLES IN SHOES.
2. UTILIZE LOCTITE 242 IN KEEPER PLATE CAP SCREW TAPPED HOLES.
3. MINIMIZE WEB THICKNESS AFTER MACHINING IS 3/4".
4. LC1 FIT AT FRONT GUIDE AND RECEIVER, 1/4" CLEARANCE AT TOP AND BOTTOM, 1/4" CLEARANCE ON EACH SIDE FOR REAR GUIDE



PREPARED BY: WSP USA INC.
2000 LENOX DRIVE, LAWRENCEVILLE, N.J. 08848



CAPE MAY COUNTY

Robert Algazi

N.J. PE LICENSE NUMBER:
240E05566700

DATE

RA

SH

RA

Designed by

Drawn by

Checked by

JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

DRAWING TITLE:
SPAN LOCK DETAILS
(1 OF 3)

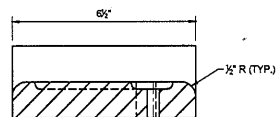
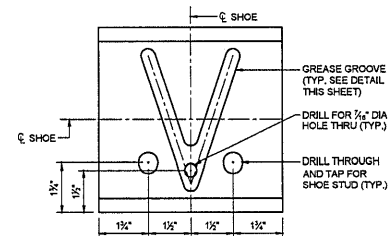
DATE:
4/5/2024

SCALE:
AS NOTED

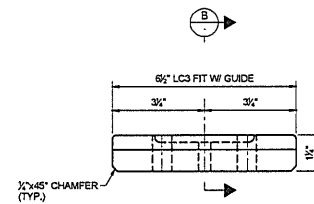
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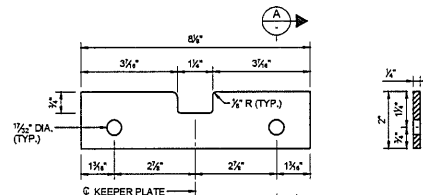
141 of 222



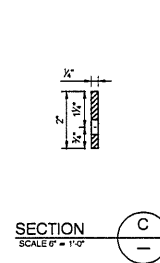
SECTION A
SCALE 8" = 1'-0"



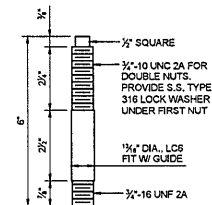
SECTION B
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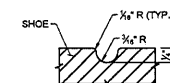
KEEPER PLATE
SCALE: 6" = 1'-0"



SECTION _____ C
SCALE 6" = 1'-0"



SHOE STUD DETAIL
SCALE: 8" = 1'-0"



GREASE GROOVE DETAIL
SCALE: 12" = 1'-0"

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- 0 5 10
SCALE IN FEET

1151

DATE _____



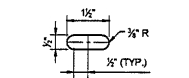
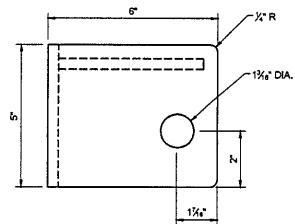
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Designed by	Drawn by	Checked by

DATE: 4/9/2024

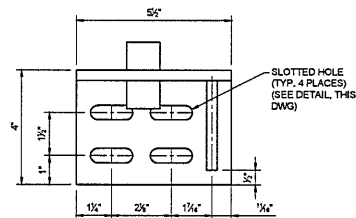
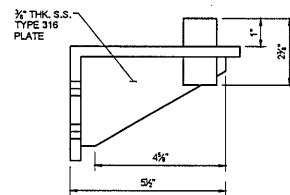
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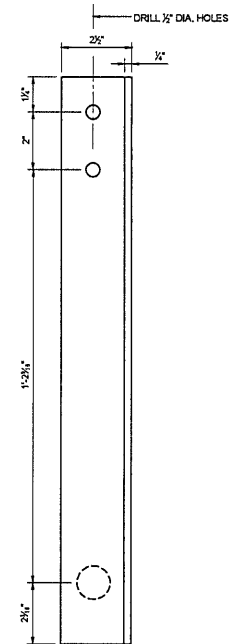
SHEET NO.: 142 of 202



SLOTTED HOLE DETAIL
SCALE: 3/4" = 1'-0"



LIMIT SWITCH SUPPORT DETAIL
SCALE: 3/4" = 1'-0"



LIMIT SWITCH STRIKE PLATE
SCALE: 3/4" = 1'-0"

- NOTES:**
1. FOR GENERAL MACHINERY NOTES, SEE SHEET M-01.



PREPARED BY: WSP USA Inc.
2000 LENOX DRIVE, LAWRENCEVILLE, N.J. 08648



CAPE MAY COUNTY

Robert Algazi

N.J. PE LICENSE NUMBER:
24GE05568706

DATE

RA

Designed by

SH

Drawn by

RA

Checked by

JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

DRAWING TITLE:

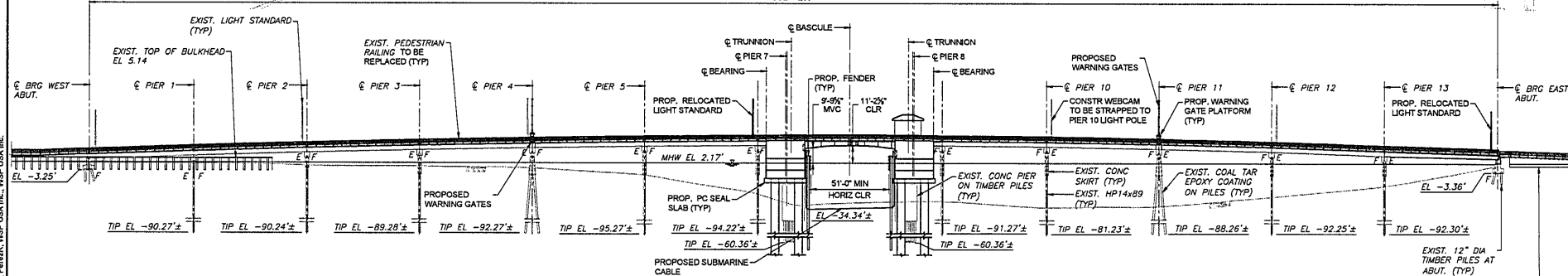
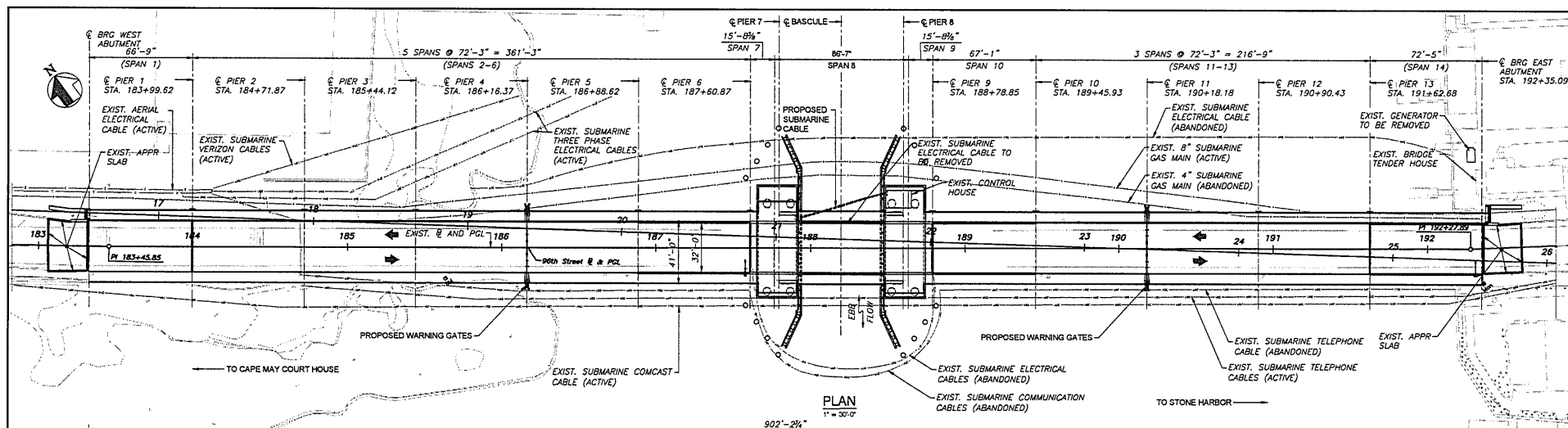
SPAN LOCK DETAILS
(3 OF 3)

DATE:
4/5/2024

SCALE:
AS NOTED

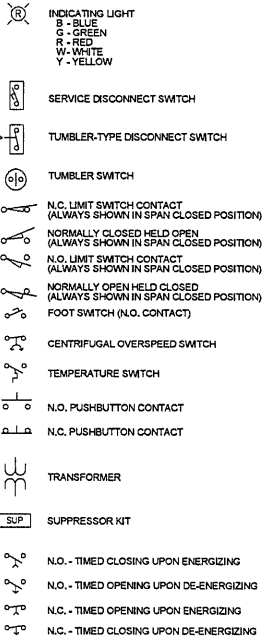
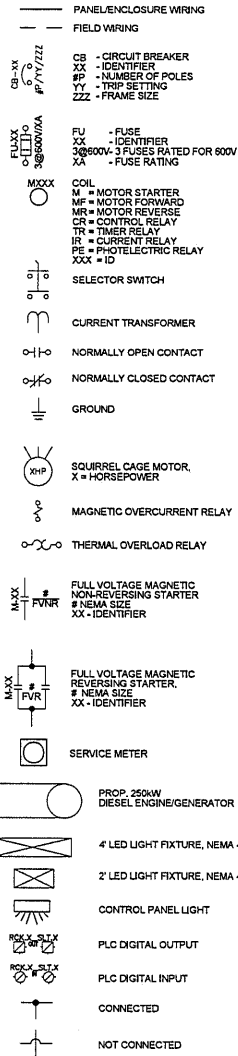
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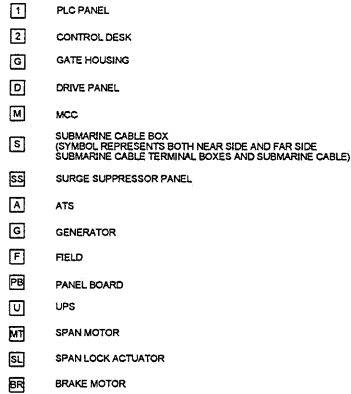
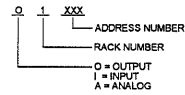


- | | | | |
|---|---|---|--|
| <p>1. ELECTRIC SERVICE AND MAIN FEEDER
FURNISH AND INSTALL A 400A, 208V/120V, 3-PHASE, 4-WIRE "WYE" ELECTRICAL SERVICE WITH 100' IN LENGTH WITH ATLANTIC CITY ELECTRIC REQUIREMENTS, INCLUDING METERING EQUIPMENT AND SUPPORTS. FURNISH AND INSTALL GROUNDING ELECTRODES AT THE SERVICE POINT PER NEC AND ATLANTIC CITY ELECTRIC REQUIREMENTS. FURNISH AND INSTALL SURGE SUPPRESSION DEVICES. FURNISH AND INSTALL NEW TELEPHONE SERVICE, WIRING, AND TELEPHONE JACKS.</p> | <p>5. CCTV, COMMUNICATIONS, FIRE ALARM, AND WEATHER SYSTEMS
FURNISH AND INSTALL A CCTV SYSTEM WITH CAMERAS AND A DIGITAL VIDEO RECORDER (DVR). THE DVR MUST BE CAPABLE OF RECORDING 15 DAYS OF VIDEO FOR EACH CAMERA CONCURRENTLY.</p> <p>6. FURNISH AND INSTALL AN INTERCOM AND PUBLIC ADDRESS SYSTEM (PA) CONSISTING OF OUTDOOR HORNS, INDOOR SPEAKERS, INTERCOM STATIONS, AND THE ASSOCIATED AMPLIFIERS.</p> <p>7. FURNISH AND INSTALL A FIRE ALARM SYSTEM IN THE CONTROL HOUSE AND MACHINERY ROOMS.</p> <p>8. FURNISH AND INSTALL A WEATHER STATION WITH SENSORS MOUNTED TO THE CONTROL HOUSE ROOF FASCIA AND A DISPLAY UNIT MOUNTED ON THE CONTROL DESK.</p> <p>9. MOTORS AND DRIVES
FURNISH AND INSTALL VECTOR DUTY SPAN MAIN MOTOR AND DISCONNECT SWITCHES.</p> <p>10. FURNISH AND INSTALL AC VARIABLE FREQUENCY DRIVES WITH EXTERNALLY MOUNTED DYNAMIC BRAKING RESISTORS AND ACCESSORIES.</p> <p>11. LIGHTING AND RECEPTACLES
FURNISH AND INSTALL LIGHTING AND RECEPTACLES IN THE CONTROL HOUSE AND BASCULE PIER. LIGHT SWITCHES IN HOUSE.</p> <p>12. FURNISH AND INSTALL BATTERY-OPERATED EMERGENCY LIGHTING IN THE CONTROL HOUSE AND BASCULE PIERS.</p> | <p>13. TRAFFIC CONTROL
FURNISH AND INSTALL "DRAWBRIDGE AHEAD" WARNING SIGNS AND FLASHING LIGHTS. FURNISH AND INSTALL ALUMINUM TRAFFIC SIGNAL MAST ASSEMBLIES WITH POLYCARBONATE SIGNAL HEADS. MAST ARM CONFIGURATIONS SHALL MATCH THE EXISTING SIGNALS.</p> <p>14. WARNING GATES:
FURNISH AND INSTALL FOUR (4) NEW WARNING GATES WITH FLASHING ARM LIGHTS WITH STEADY BURN TIP. FURNISH AND INSTALL NEW CONDUITS, POWER AND CONTROL CONDUCTORS.</p> <p>15. NAVIGATION LIGHTING AND SIGNALS
FURNISH AND INSTALL A NAVIGATION LIGHTING SYSTEM.</p> <p>16. FURNISH AND INSTALL A CHANNEL FLOODLIGHT TO ILLUMINATE VESSELS. FURNISH AND INSTALL A HORN. FURNISH AND INSTALL A VHF MARINE BAND RADIO SYSTEM.</p> <p>17. SUBMARINE CABLE
FURNISH AND INSTALL A SUBMARINE CABLE ASSEMBLY WITH TERMINATION CABINETS WITH TERMINAL BLOCKS AND ENCLOSURE HEATERS. COORDINATE INSTALLATION WITH OTHER DISCIPLINES DURING CONSTRUCTION.</p> <p>18. STANDBY GENERATOR SET:
FURNISH AND INSTALL A NEW NATURAL GAS ENGINE STANDBY GENERATOR ON THE NORTH SIDE OF THE EAST APPROACH, ADJACENT TO THE NEW SIDEWALK. GENERATOR SET SHALL HAVE SOUND ATTENUATING OUTDOOR ENCLOSURE. GENERATOR PAD SHALL BE ABOVE THE 100 YEAR FLOOD LEVEL.</p> | <p>EXIST: RETAINING WALL
CONC.</p> |
| <p>2. MCC AND POWER DISTRIBUTION PANELS
FURNISH AND INSTALL A MAIN CIRCUIT BREAKER WHERE THE MAIN FEEDER ENTERS THE ATS. FURNISH AND INSTALL ONE ENCLOSED CIRCUIT BREAKER FOR THE GENERATOR. FURNISH AND INSTALL A MOTOR CONTROL CENTER (MCC). FURNISH AND INSTALL ONE (1) 200A PANELBOARD. FURNISH AND INSTALL AN UNINTERRUPTIBLE POWER SUPPLY (UPS) TO POWER THE CONTROL SYSTEM FOR AT LEAST 30-60 MINUTES. SIZE UPS ACCORDING TO THE FINAL LOAD CONFIGURATION DETERMINED IN DETAIL DESIGN AND SHOP DRAWING PREPARATION.</p> | | | |
| <p>3. LIGHTNING PROTECTION, GROUNDING, AND SURGE SUPPRESSION
FURNISH AND INSTALL A NFPA 780-COMPLIANT LIGHTNING PROTECTION SYSTEM FOR THE CONTROL HOUSE, OBTAIN AND AFFIX A UL MASTER LABEL TO THE CONTROL HOUSE. BOND THE MOVABLE LEAVES TO THE LIGHTNING PROTECTION SYSTEM THROUGH A FLEXIBLE CABLE SEPARATED FROM THE SYSTEM GROUND, ALONG THE FULL LENGTH OF THE BRIDGE AND APPROACHES. BOND ALL METAL RAILINGS (TRAFFIC AND PEDESTRIAN) TO THE LIGHTNING PROTECTION SYSTEM. BOND THE RAILINGS TO THE MAIN CONDUCTOR BETWEEN DISCONTINUITIES (DO NOT CONSIDER RAILING EXPANSION JOINTS AS ELECTRICALLY CONTINUOUS). FURNISH AND INSTALL A GROUNDING SYSTEM FOR THE BRIDGE STRUCTURE ACCORDING TO NEC REQUIREMENTS. FURNISH AND INSTALL A SURGE SUPPRESSION SYSTEM.</p> | | | |
| <p>4. CONTROLS
FURNISH AND INSTALL DUAL PLC CONTROL SYSTEM WITH LIMITED RELEV BACKUP, INCLUDING CONTROL CONSOLE AND PLC PANEL. FURNISH AND INSTALL ROTARY CAM LIMIT SWITCHES WITH INTEGRAL RESOLVER FOR POSITION INDICATION OF EACH LEAF. FURNISH AND INSTALL ONE (1) PROXIMITY-TYPE LIMIT SWITCHES FOR FULLY SEATED DETECTION FOR EACH LEAF. FURNISH AND INSTALL ONE (1) LEVER-TYPE LIMIT SWITCH FOR OVERTRAVEL DETECTION FOR EACH LEAF. FURNISH AND INSTALL ONE (1) LEVER-TYPE LIMIT SWITCH FOR SPAN LOCK POSITION INDICATION AND CONTROL. WARNING GATES, AND BRAKES SHALL USE THE MANUFACTURER'S INTEGRAL LIMIT SWITCHES.</p> | | | |

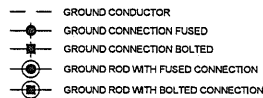
ELECTRICAL SYMBOLS:



TERMINAL BLOCK LEGEND:

PROGRAMMABLE LOGIC CONTROLLER
I/O ADDRESS ASSIGNMENT:

GROUNDING & BONDING LEGEND:



ABBREVIATIONS:

1P	ONE (1) POLE	SC	SPAN CONTROL
2P	TWO (2) POLES	SCR	SILICON CONTROLLED RECTIFIER
3P	THREE (3) POLES	SCTC	SUBMARINE CABLE TERMINAL CABINET
AMP	AMPERES	SE	SOUTHEAST OR SWITCH
AJAMP	ALTERNATING CURRENT	SEBO	SOUTHEAST BARRIER GATE
AH	AIR HORN	SEC	SECONDARY/SECONDS
AR	AS REQUIRED	SHT	SHEET
AN	ABOVE FINISH FLOOR	S.I.	SPARK IGNITED
ANN	ANNUNCIATOR	SP	SPARE
ASR	AMBER SIGNAL RELAY	SS	STAINLESS STEEL
ATS	AUTOMATIC TRANSFER SWITCH	SSL	SOUTH SPAN LOCKS
AUX	AUXILIARY	SW	SOUTH-WEST OR SWITCH
AWG	AMERICAN WIRE GAUGE	SWBG	SOUTHWEST BARRIER GATE
BC	CONTROL BUS	SWWG	SOUTHWEST WARNING GATE
BG	BARRIER GATE	TACH	TACHOMETER
BLP	BRIDGE LIGHTING PANEL	TC	TERMINAL CABINET
BPY	BYPASS	THK	THICK
BPR	BYPASS RELAY	TR	TIMER
BRK	BRAKE	TS	TWISTED SHIELDED PAIR
C	CONDUIT/CONDUCTOR	TS	TRAFFIC SIGNAL
CB	CIRCUIT BREAKER	TX	TRANSFORMER
CCTV	CLOSED CIRCUIT TELEVISION SYSTEM	TYP	TYPICAL
CKT	CIRCUIT	UAI	UNDER ANOTHER ITEM
CL	CENTER LINE	US	UNITED STATES
CONN	CONNECTION	UTIL	UTILITY
CONT	CONTINUED	V	VARIABLE VOLTAGE RELAY
CP	CONTROL PANEL	VFD	VARIABLE FREQUENCY DRIVE
CR	CONTROL RELAY	VM	VOLTMETER
CS	CONTROL SELECTOR SWITCH	W	WEST
CT	CURRENT TRANSFORMER	WG	WARNING GATE
DSR	DYNAMIC BRAKING RESISTOR	WSL	WEST GALE LOCK
DIA	DIAMETER	WT	WEIGHT
FVD	FLUX VECTOR DRIVE	XFMR	TRANSFORMER
DWG	DRAWING		
E	EAST		
ELEV	ELEVATION		
EM	EMERGENCY		
ES	EMERGENCY STOP		
ESL	EAST SPAN LOCK		
ETC.	ETCETERA		
EXT	EXISTING		
FA	FIRE ALARM		
FL	FLASHER		
FLA	FULL LOAD AMPS		
FS	FAR SIDE		
FU	FUSE		
GALV	GALVANIZED		
GEN	GENERATOR		
GFI	GROUND FAULT INDICATING		
GND	GROUND		
HD	HEAVY DUTY		
HP	HORSEPOWER		
HR	HAND RELEASE		
HT	HEAT TRACE		
HTR-HCO	HEATER (HEAT CUTOFF PANEL)		
HW	HIGH WATER		
IP	INDICATING LIGHT		
IP	INTERNET PROTOCOL		
JB	JUNCTION BOX		
KVA	KILOVOLT-AMPERES		
KW	KILOWATTS		
L	LOWER		
LED	LIGHT EMITTING DIODE		
LK	LOCK		
LS	LIMIT SWITCH		
LT	LIGHTING/LIGHT		
LW	LOW WATER		
MA	MACHINERY		
MB	MOTOR BRAKE		
MBEG	MOVABLE BRIDGE ENGINEERING GROUP		
MCB	MOTOR CONTROL BREAKER		
MAB	MACHINERY BRAKE		
MCC	MOTOR CONTROL CENTER		
MIN	MINIMUM		
MM	MAIN MOTOR		
MSI	MIDDLE SPAN LOCK		
N.C.	NORMALLY CLOSED		
NE	NORTH-EAST		
NEBG	NORTHEAST BARRIER GATE		
NEC	NATIONAL ELECTRICAL CODE		
NEWG	NORTHEAST WARNING GATE		
NJDOT	NEW JERSEY DEPARTMENT OF TRANSPORTATION		
NL	NAVIGATION LIGHT		
NO	NUMBER		
N.O.	NORMALLY OPEN		
NOR	NORMAL		
NS	NEAR SIDE		
NTS	NORTH SPAN LOCKS		
NTS	NOT TO SCALE		
NW	NORTHWEST		
NWBG	NORTHWEST BARRIER GATE		
CL	OVERLOAD		
OS	OVER SPEED		
PA	PUBLIC ADDRESS		
PF	POWER FACTOR		
PFR	PHASE FAILURE/REVERSAL RELAY		
PL	PLATE		
PLC	PROGRAMMABLE LOGIC CONTROLLER		
POB	POWER OVER ETHERNET		
POS	POSITION		
PRI	PRIMARY		
PVC	POLY VINYL CHLORIDE		
PWR	POWER		
RGS	RIGID GALVANIZED STEEL		
RL	ROADWAY LIGHTING		
RLC	ROADWAY LIGHTING CABINET		
RMC	RIGID METALLIC CONDUIT		
RPM	REVOLUTIONS PER MINUTE		

PREPARED BY: WSP USA Inc.
2005 LINDSEY DRIVE, LAWRENCEVILLE, N.J. 08846

Kevin Walsh

N.J. PE LICENSE NUMBER:
240695175000

DATE



CAPE MAY COUNTY

AM

JP

BC

Designed by

Drawn by

Checked by

JOB

REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

DRAWING TITLE:

ELECTRICAL LEGEND AND
ABBREVIATIONS

DATE: 4/9/2024

SCALE: NTS

SHEET REFERENCE NO.: 4

SHEET NO.: 145 of 202

GENERAL ELECTRICAL NOTES:

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE 2020 NATIONAL ELECTRICAL CODE, AASHTO, U.S. COAST GUARD, NEW JERSEY DEPARTMENT OF TRANSPORTATION, MOVABLE BRIDGE ENGINEERING GROUP, AND LOCAL ORDINANCES & REGULATIONS.
2. PROVIDE EQUIPMENT GROUNDING AND BONDING PER NATIONAL ELECTRICAL CODE ARTICLE 250 REQUIREMENTS. ALL JUNCTION BOXES SHALL BE GROUNDED AND BONDED (DOOR, BACK PANEL, AND HOUSING).
3. ALL WIRING AND CONDUIT FURNISHED AND INSTALLED UNDER THIS CONTRACT SHALL BE NEW. SELECT ALL WIRES TO BE TYPE XLP STRANDED COPPER WITH INSULATION RATED FOR 900 VOLT, #14 AWG MINIMUM. PVC COATED RIGID GALVANIZED STEEL 1" MINIMUM SIZE CONDUIT, UNLESS OTHERWISE NOTED. ALL EXISTING WIRING AND CONDUIT, IF REPLACED WITH NEW, SHALL BE DISCONNECTED AND REMOVED. MAXIMUM LENGTH OF FLEXIBLE METALLIC CONDUIT SHALL NOT EXCEED 18 INCHES IN LENGTH.
4. USE SEAL TIGHT, METALLIC LIQUID TIGHT FLEXIBLE CONDUIT WITH INTERNAL GROUNDING, FOR FINAL CONNECTIONS TO MOTORS, AND LIMIT SWITCHES OR ANY EQUIPMENT THAT MAY HAVE EXCESSIVE VIBRATION. SUPPORT METALLIC FLEXIBLE CONDUITS WITHIN 3 FEET OF THE DEVICES OR JUNCTION BOXES.
5. INSTALL ALL CONDUIT SUPPORTS PER AASHTO LRFD MOVABLE HIGHWAY BRIDGE DESIGN SPECIFICATIONS SECTION 8.10 CONDUIT SUPPORT REQUIREMENTS. LIMIT TOTAL ANGULAR CONDUIT BENDS BETWEEN PULL/JUNCTION BOXES TO 270 DEGREES. RADIUS OF CONDUIT BENDS SHALL BE PER N.E.C. 2020 ARTICLE 344.28. ALL PULL BOXES ARE NOT NECESSARILY SHOWN ON THE DRAWINGS. IF REQUIRED, ADDITIONAL BOXES SHALL BE PROVIDED WITHOUT ADDITIONAL COST TO COUNTY.
6. RUN ALL CONDUITS AT RIGHT ANGLES OR PARALLEL TO BRIDGE HOUSE/BRIDGE LINES. RACK NEATLY AND FASTEN SECURELY. USE INSULATED BUSHINGS AND DOUBLE NUTS. PROVIDE PULL/JUNCTION BOXES AS REQUIRED TO FACILITATE WIRING. METALLIC LIQUID TIGHT CONDUIT HUBS SHALL BE USED AT ALL LOCATIONS WHERE CONDUITS ENTER BOXES OR ENCLOSURES, PVC COATED WHERE REQUIRED.
7. CONDUIT AND WIRE MAY BE SUBJECTED TO SUCH MODIFICATIONS AS REQUIRED TO SUIT CONDITIONS AT BRIDGE/HOUSE OR OF EQUIPMENT AND TO AVOID INTERFERENCE WITH WORK OF OTHER TRADES. ALL CONDUIT TO BE PROPERLY GROUNDED AND BONDED USING PROPER GROUNDED FITTINGS.
8. FURNISH AND INSTALL EXPANSION FITTINGS WITH INTERNAL GROUNDING AND BONDING OF THE APPROVED TYPE WHEREVER CONDUITS PASS THROUGH STRUCTURAL EXPANSION JOINTS. EXPANSION/DEFLECTION FITTINGS NOT SHOWN ON THE PLAN SHALL BE FURNISHED AND INSTALLED AS NECESSARY OR DETERMINED IN THE FIELD. EXPANSION AND DEFLECTION FITTINGS SHALL NOT BE USED TO CORRECT POORLY ALIGNED CONDUITS. ANY CONDUIT INSTALLATIONS NOT MEETING THIS REQUIREMENTS WILL BE REJECTED.
9. BREATHERS AND DRAINS MUST BE PROVIDED IN ALL JUNCTION BOXES. HOLE SIZE AS REQUIRED BY APPROVED DRAIN/BREATHING FITTING.
10. LOCATIONS OF ELECTRICAL EQUIPMENT AND DEVICES ARE APPROXIMATE. EXACT LOCATIONS SHALL BE DETERMINED BASED UPON APPROVED SHOP DRAWINGS AND ACCURATE FIELD MEASURED DIMENSIONS. STRIP HEATERS MUST BE PROVIDED FOR OUTSIDE EQUIPMENT.
11. UPON COMPLETION OF ELECTRICAL INSTALLATION, THE CONTRACTOR SHALL TEST THE COMPLETE ELECTRICAL SYSTEM FOR ACCEPTANCE AS PER SPECIAL PROVISIONS AND TECHNICAL SPECIFICATIONS. THE SYSTEM SHALL BE TESTED STEP BY STEP FOR SHORT CIRCUITS, GROUNDING, PROPER OPERATION, AND INTERLOCKS IN THE PRESENCE OF THE ENGINEER, MANUFACTURER, AND COUNTY REPRESENTATIVE. ALL FINDINGS SHALL BE RECORDED. THE CONTRACTOR SHALL DEVELOP A DETAILED TESTING PROCEDURE TO BE APPROVED BY THE ENGINEER OF RECORD.
12. ELECTRICAL EQUIPMENT BEING REMOVED SHALL BE DISPOSED OF BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE COUNTY. ANY EQUIPMENT REQUIRED TO BE TURNED OVER TO THE COUNTY SHALL BE DELIVERED, WITHOUT DAMAGE, TO A LOCATION AS DETERMINED BY THE ENGINEER TWO WEEKS PRIOR TO THE EQUIPMENT BEING REMOVED. ALL HANDLING AND DELIVERY, INCLUDING LOADING AND UNLOADING CHARGES SHALL BE INCLUDED IN THE CONTRACT UNIT PRICES. A SAMPLE OF ITEMS TO BE SALVAGED INCLUDE WARNING GATES, BARRIER GATES, TRAFFIC SIGNALS AND POLE, SPAN LOCKS, IN ADDITION TO ANY OTHER ITEMS DEEMED NECESSARY FOR SALVAGE BY THE ENGINEER AS PER LIST IN THE SPECIAL PROVISIONS.
13. EACH RELAY AND CONTACTOR SHALL BE FURNISHED WITH MANUFACTURER'S SUPPRESSOR KIT, AS REQUIRED.
14. THE CONTRACTOR SHALL INCLUDE ON EACH SHEET OF THE ELECTRICAL SCHEMATICS AND SHOP DRAWINGS, AN ALPHABETICAL LIST OF ALL SYMBOLS WITH DESCRIPTIONS.
15. ALL CONTACTORS SHALL BE PROVIDED WITH 2 NORMALLY OPEN AND 2 NORMALLY CLOSED AUXILIARY CONTACTS.
16. FURNISH AND INSTALL BRASS TAGS ON BOTH ENDS OF ALL CONDUITS.

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PREPARED BY: WSP USA Inc.
2000 LYONS DRIVE, LAWRENCEVILLE, N.J. 08848



Kevin Walsh

N.J. PE LICENSE NUMBER
24025175000

DATE



CAPE MAY COUNTY

AM

JP

BC

Designed by

Drawn by

Checked by

JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

DRAWING TITLE:

ELECTRICAL GENERAL
NOTES

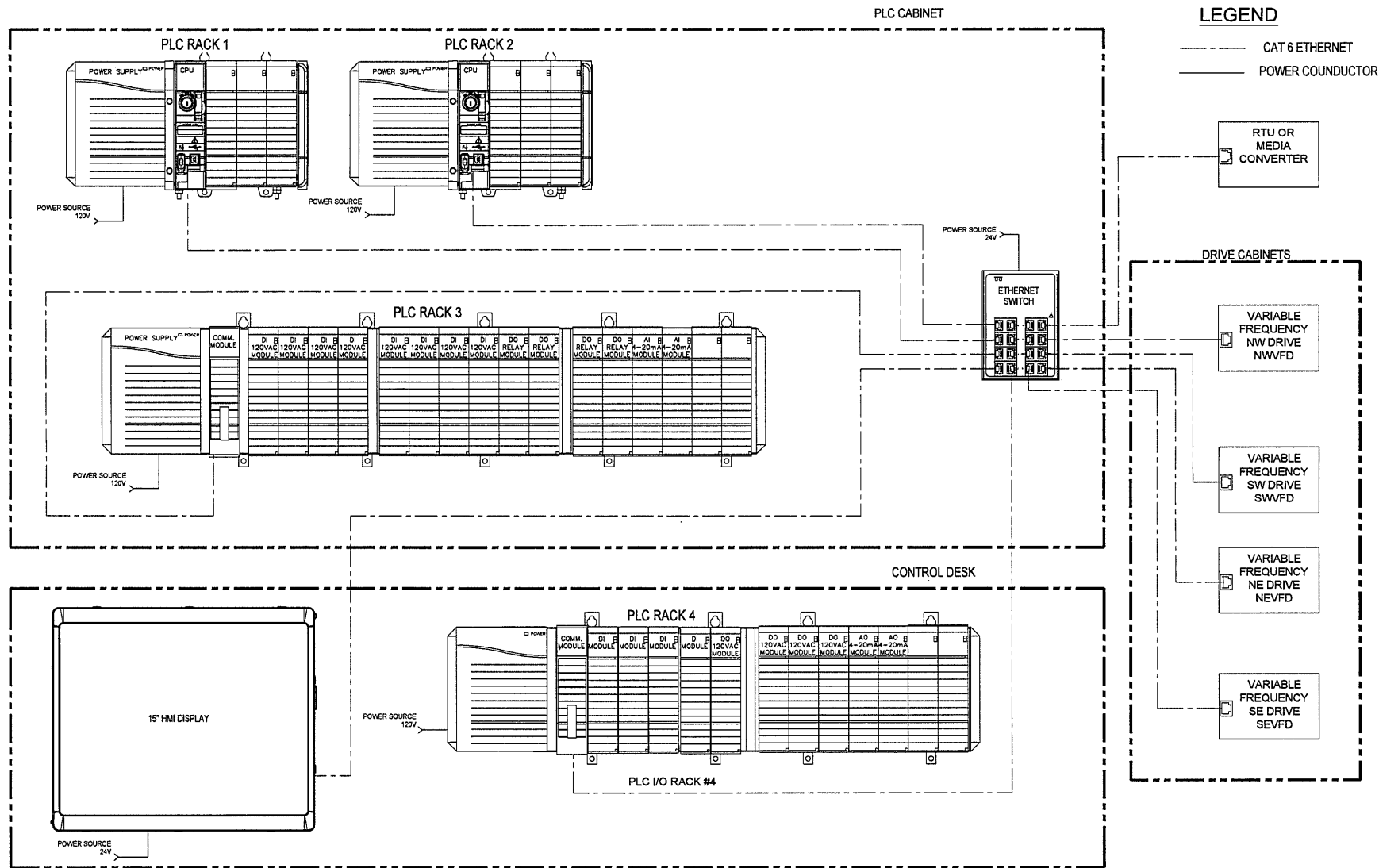
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146 of 202

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PREPARED BY: WSP USA Inc.
2000 LENOX DRIVE, LAWRENCEVILLE, N.J. 08848



CAPE MAY COUNTY

Kevin Walsh

N.J. PE LICENSE NUMBER:
34GE0170000

DATE

AM
Designed by

JP
Drawn by

BC
Checked by

JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

DRAWING TITLE:

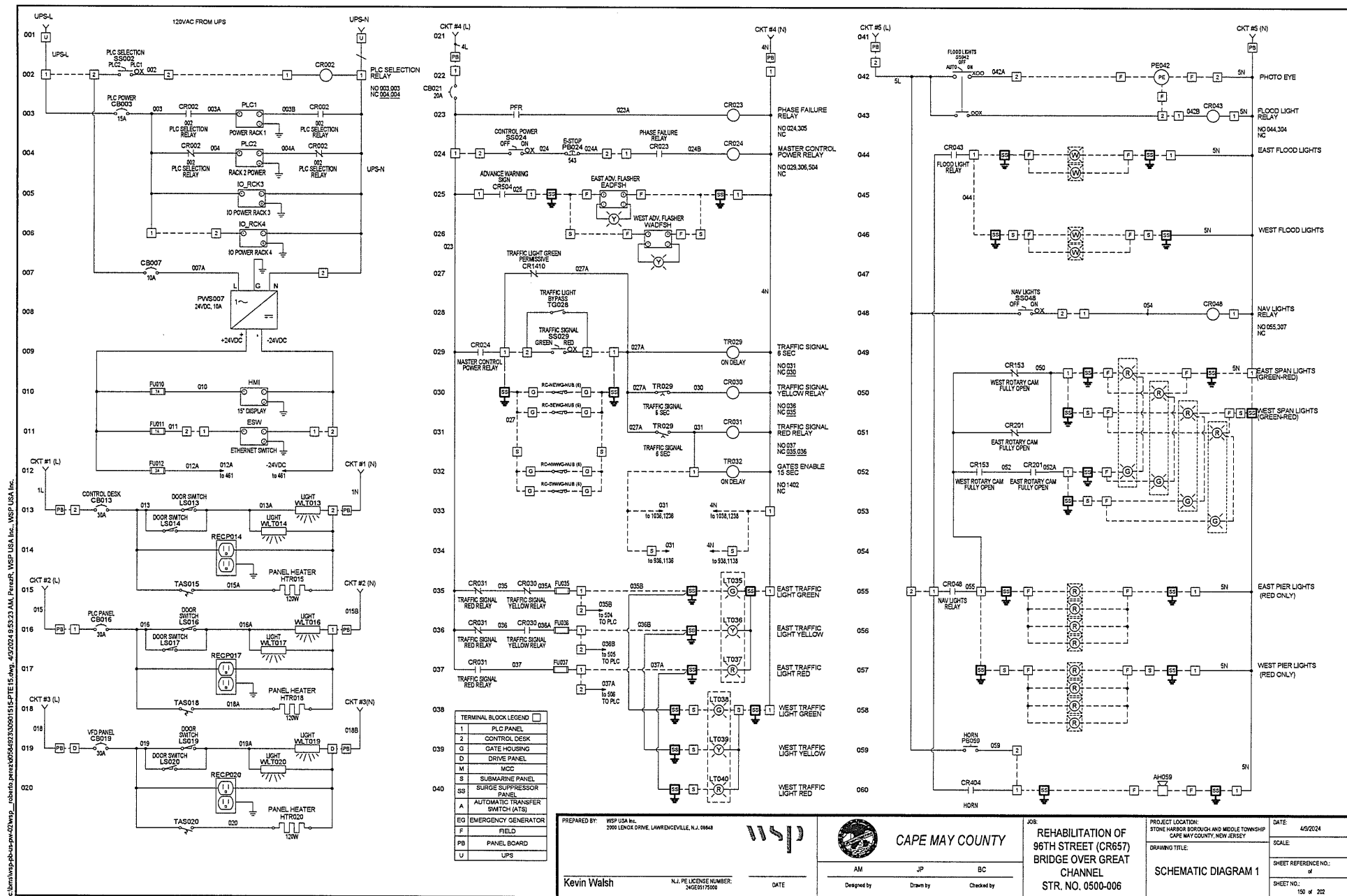
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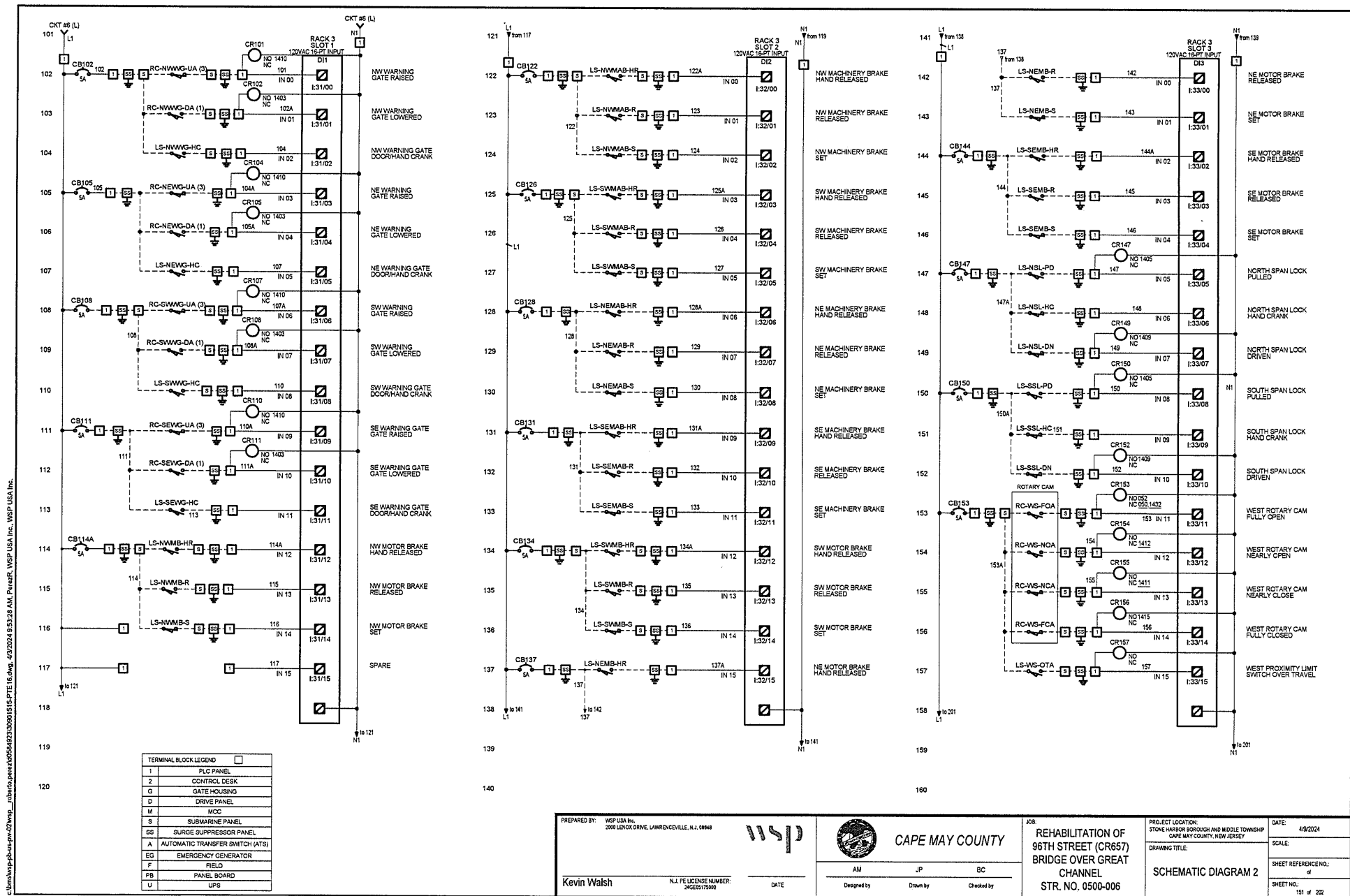
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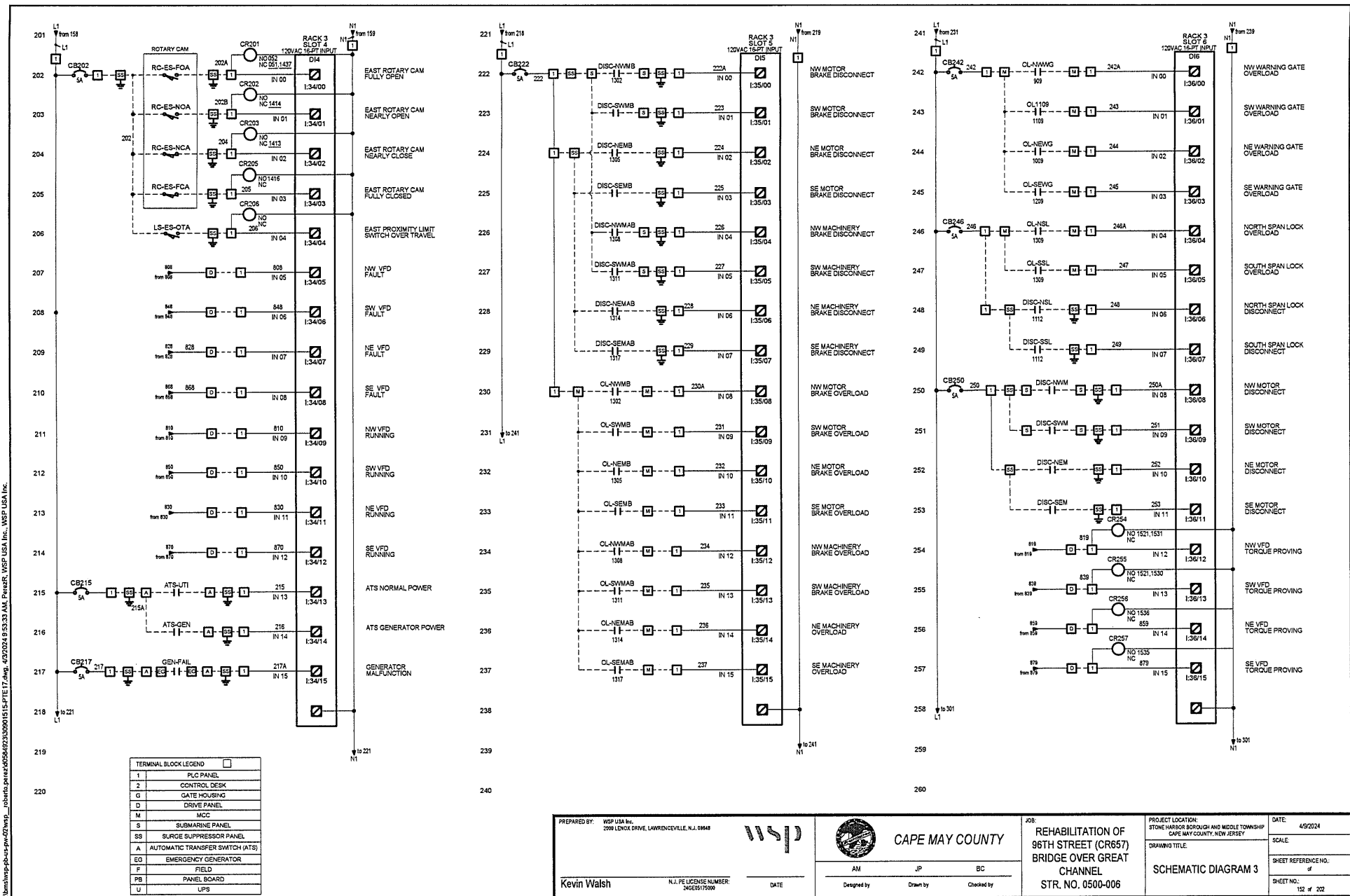
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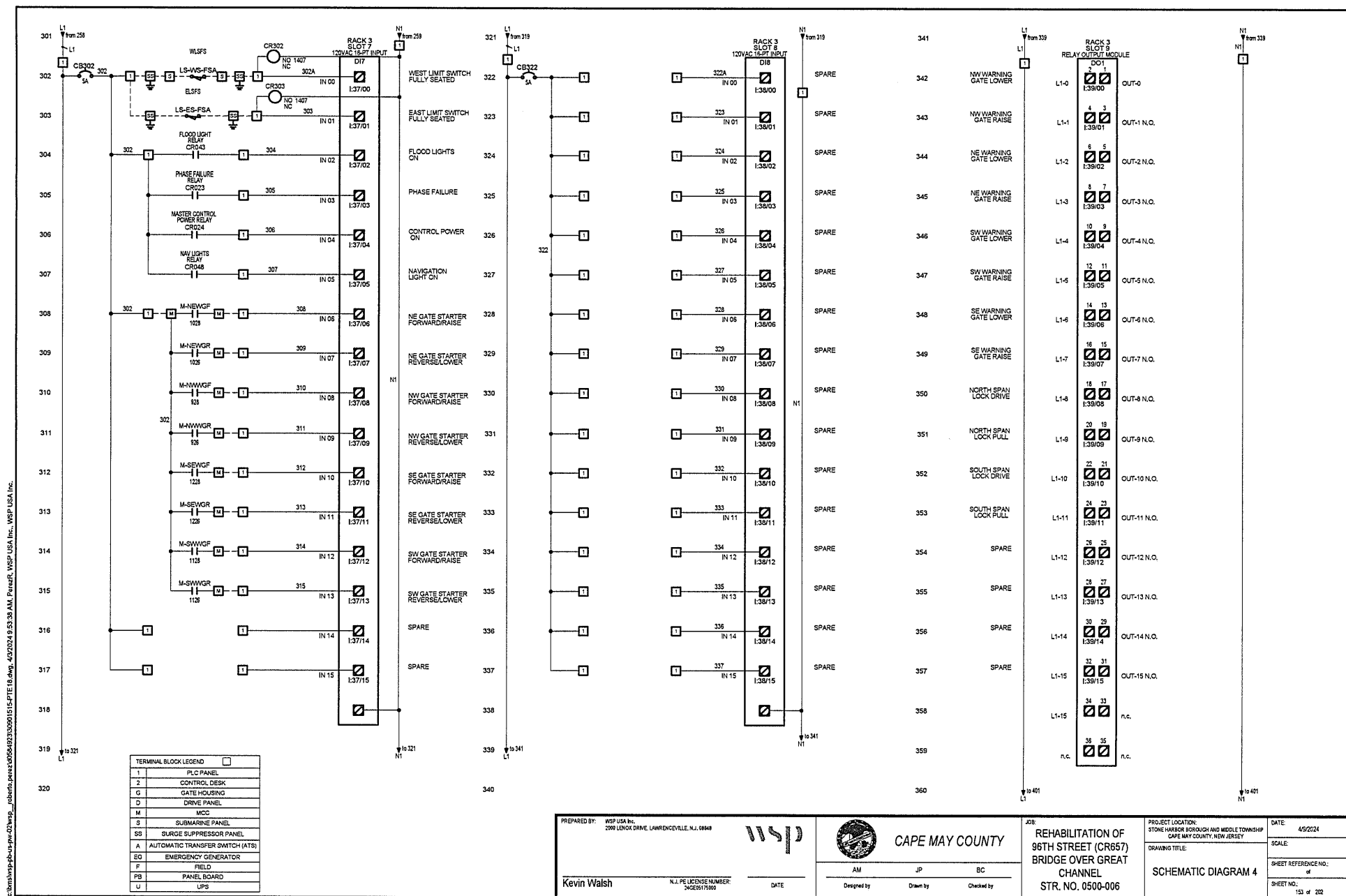
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149 of 202



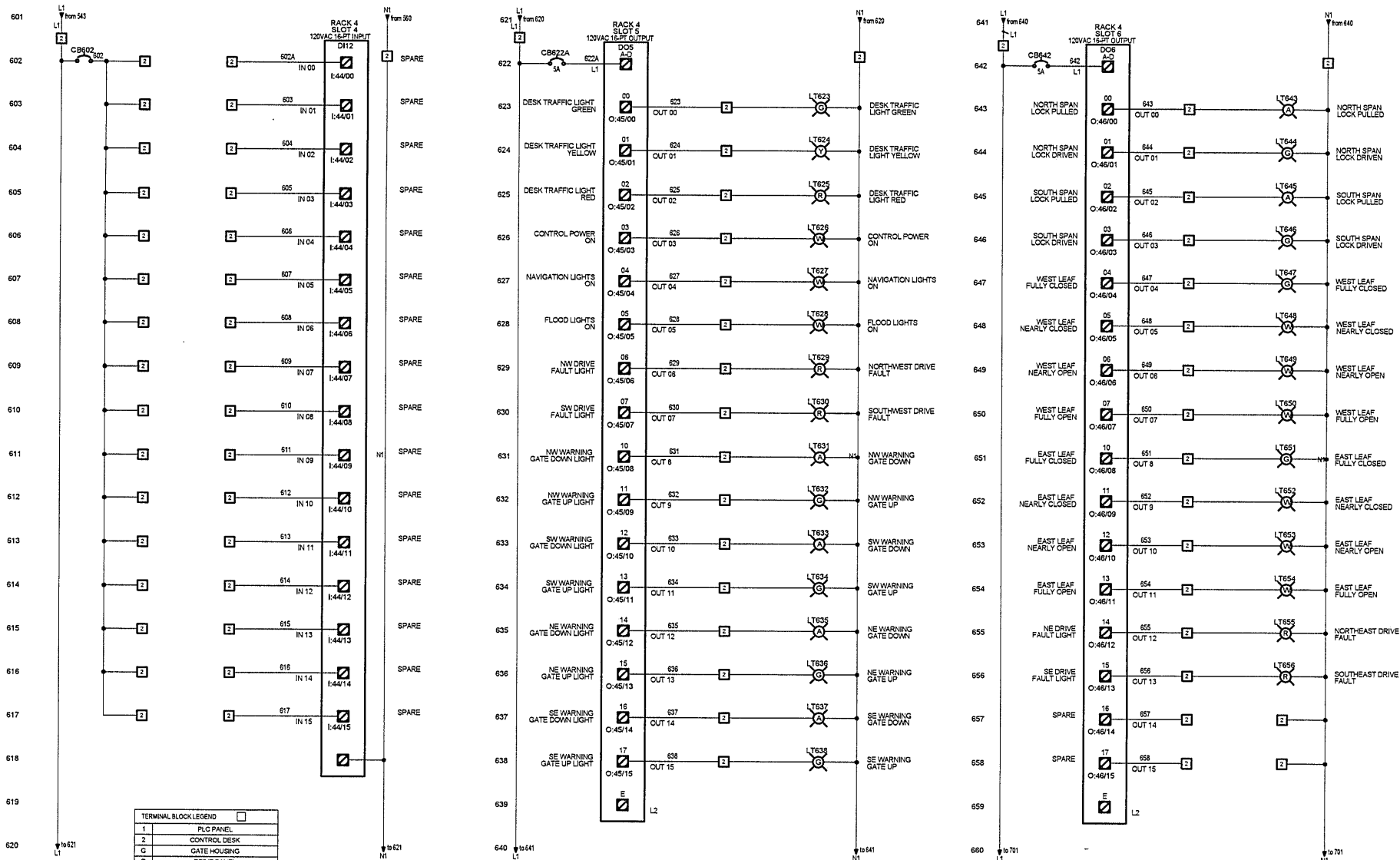








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PREPARED BY: WSP USA Inc.
2000 LENOX DRIVE, LAWRENCEVILLE, N.J. 08446

Kevin Walsh

N.J. PE LICENSE NUMBER:
3465917000

DATE



CAPE MAY COUNTY

AM

JP

BC

Designed by

Drawn by

Checked by

JO8
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

DRAWING TITLE:

Schematic Diagram 8

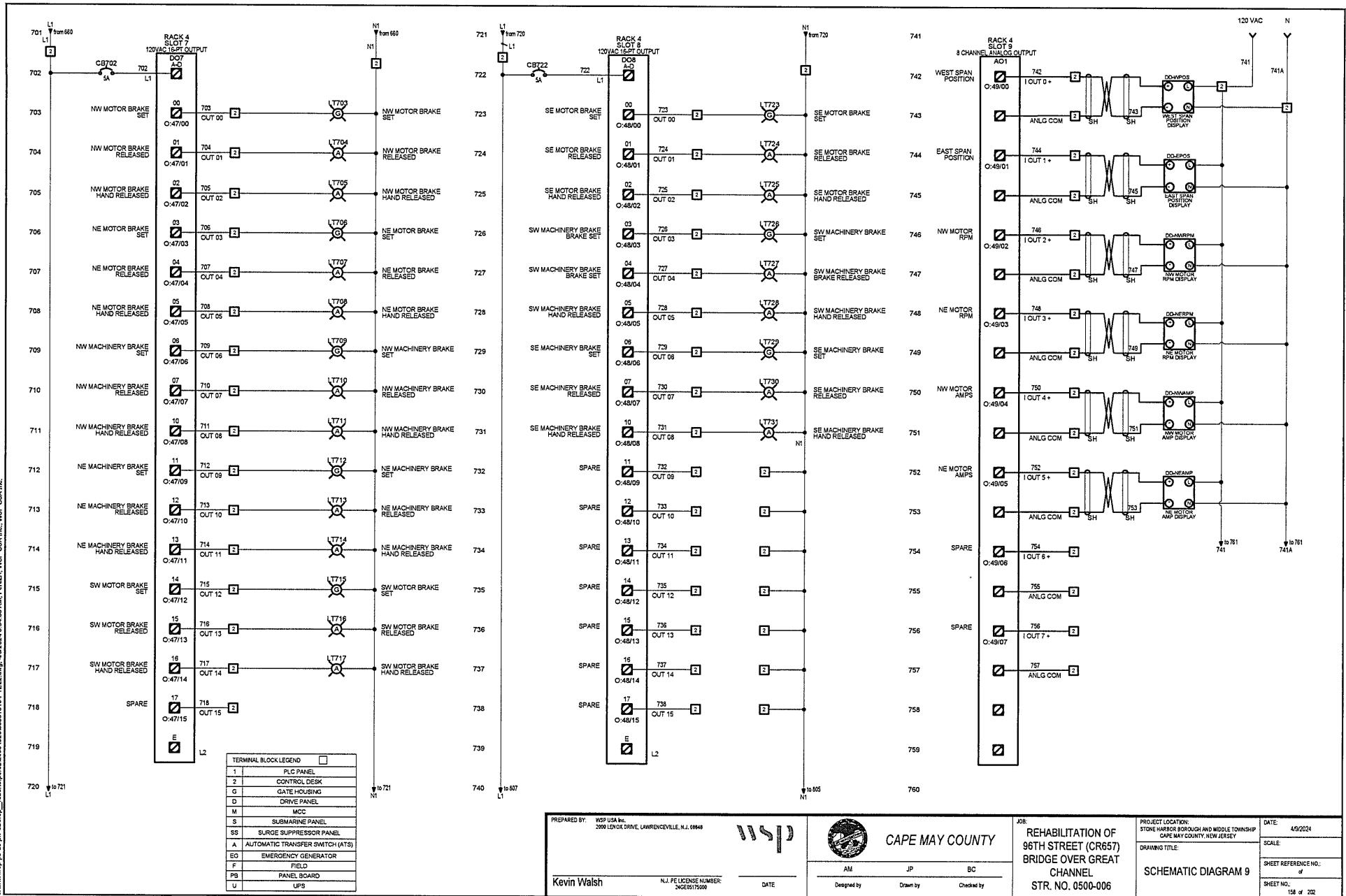
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SHEET REFERENCE NO.:

137 of 202

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PREPARED BY: WSP USA Inc.
2009 LENOX DRIVE, LAWRENCEVILLE, N.J. 08448

Kevin Walsh

N.J. PE LICENSE NUMBER:
24659175009

DATE



CAPE MAY COUNTY

AM

JP

BC

Designed by

Drawn by

Checked by

JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

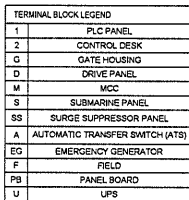
DRAWING TITLE:
SCHEMATIC DIAGRAM 9

DATE:
4/5/2024

SCALE:

SHEET REFERENCE NO.:
of

SHEET NO.:
158 of 202



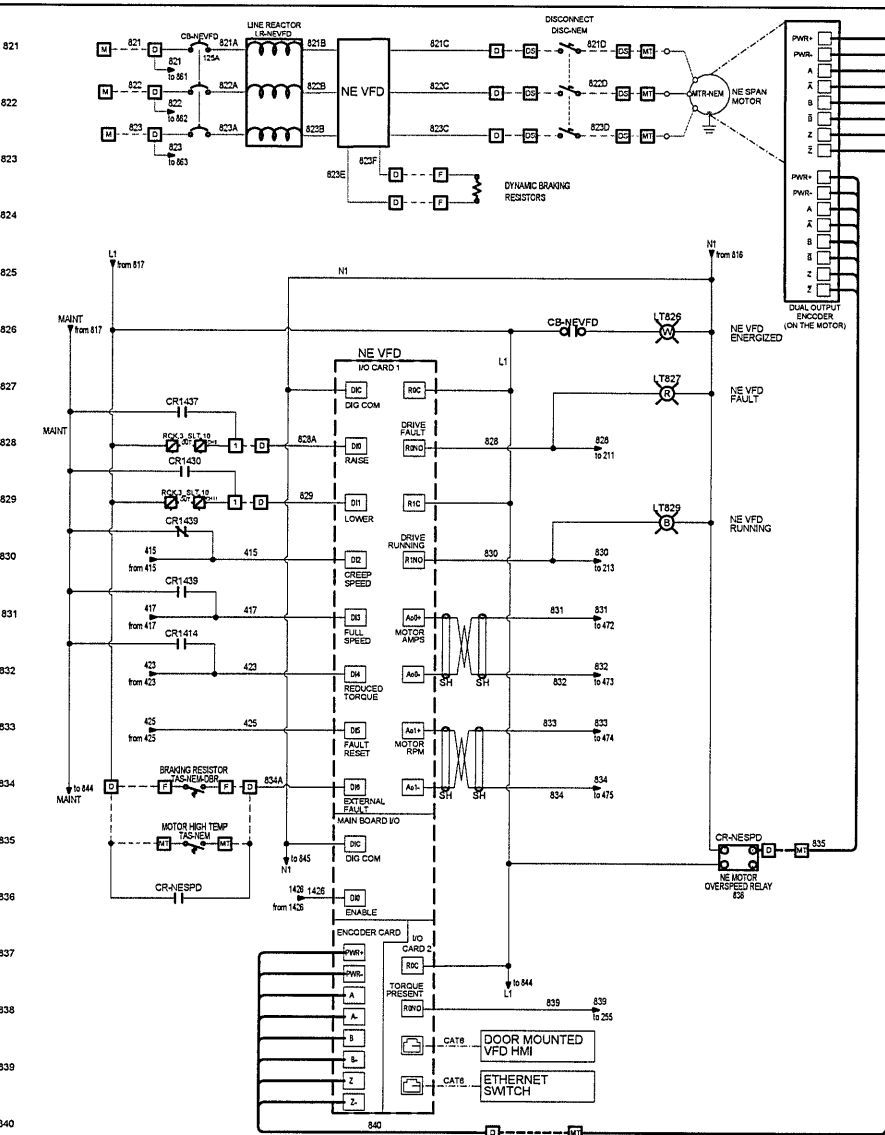
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DATE: 4/9/2024

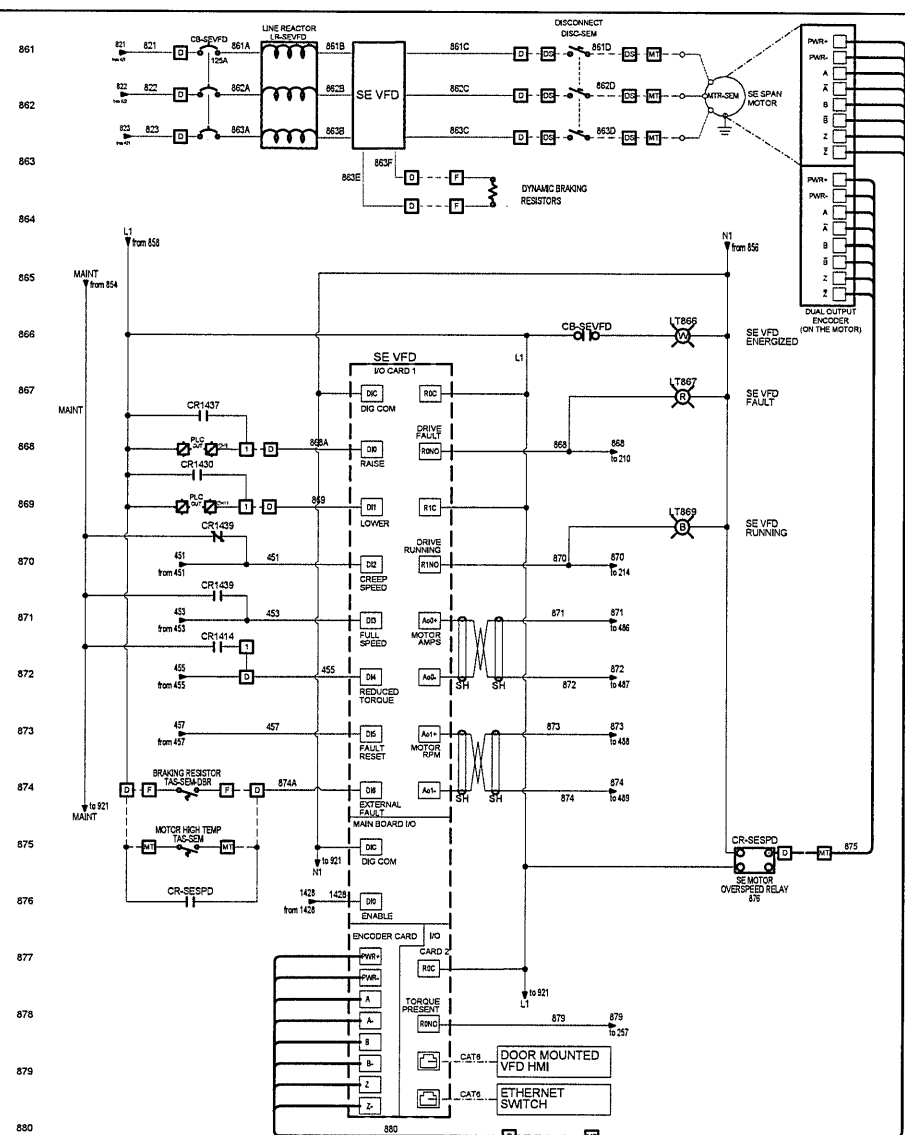
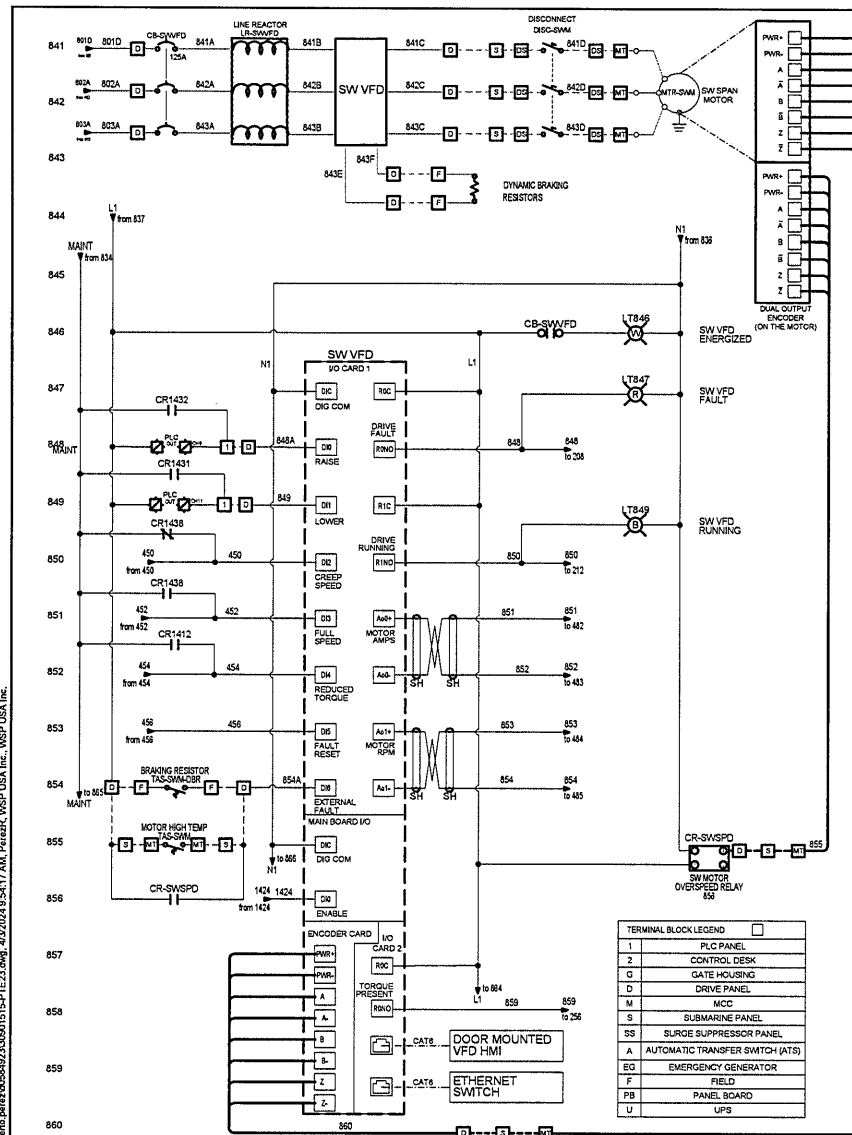
SCALE:

SHEET REFERENCE NO.:
of

SHEET NO.:
159 of 202



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PREPARED BY: WSP USA INC.
2005 LENOX DRIVE, LAWRENCEVILLE, N.J. 08444



CAPE MAY COUNTY

JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

DRAWING TITLE:

SCHEMATIC DIAGRAM 12

DATE: 4/9/2024

SCALE:

SHEET REFERENCE NO.:

161 of 202

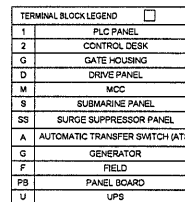
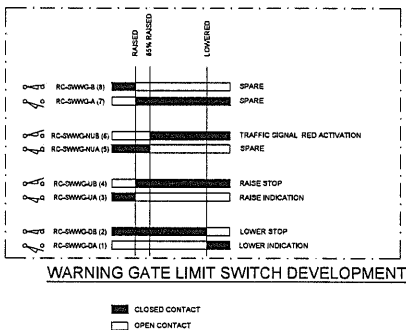
Kevin Walsh

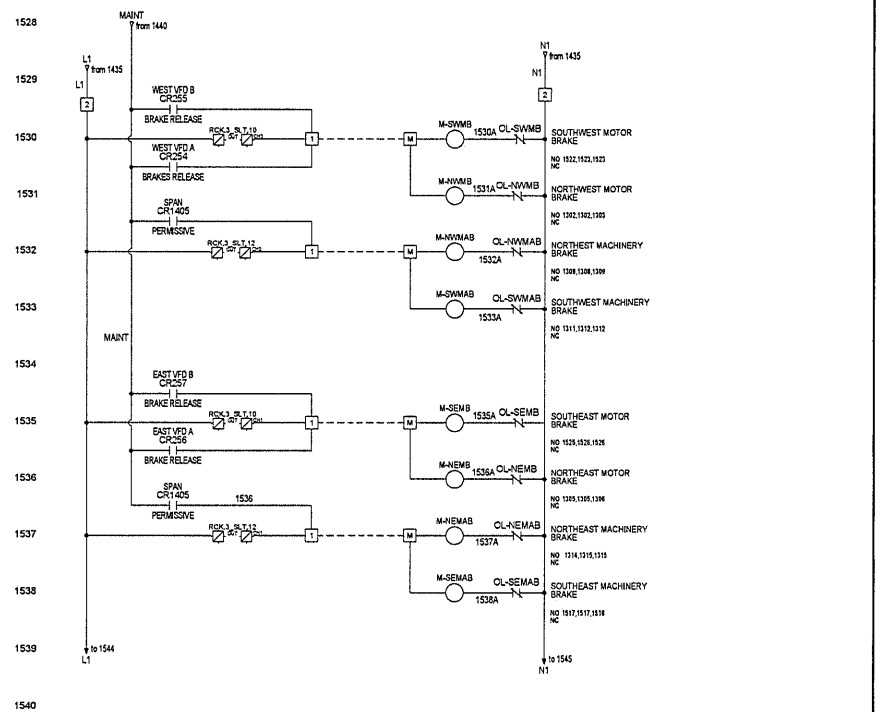
N.J. LICENSE NUMBER:
JG658175000

DATE

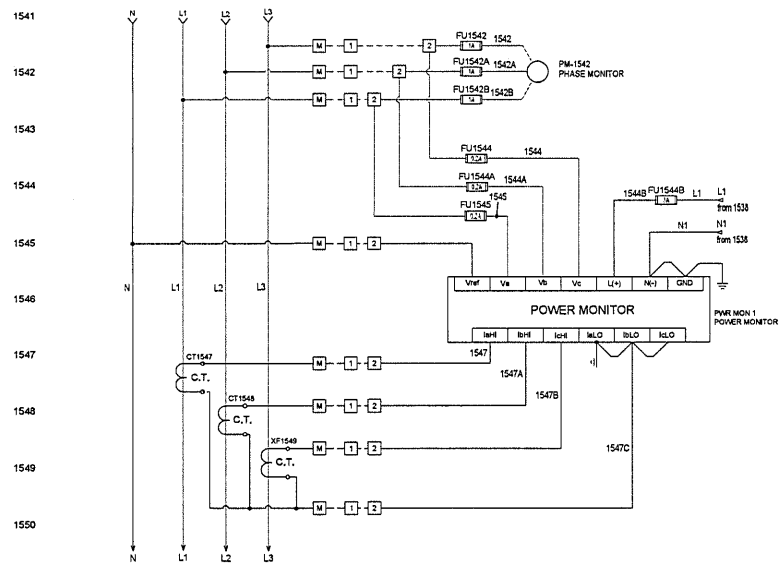
AM JP BC

Designed by Drawn by Checked by





JOB	REHABILITATION OF 96TH STREET (CR657) BRIDGE OVER GREAT CHANNEL STR. NO. 0500-006	PROJECT LOCATION:	DATE:
		DRAWING TITLE:	SCALE:
		SHEET REFERENCE NO.:	
		STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP CAPE MAY COUNTY, NEW JERSEY	4/9/2024
		SCHEMATIC DIAGRAM 19	156 of 202



TERMINAL BLOCK LEGEND	
1	PLC PANEL
2	CONTROL DESK
G	GATE HOUSING
D	DRIVE PANEL
M	MCC
S	SUBMARINE PANEL
SS	SURGE SUPPRESSOR PANEL
A	AUTOMATIC TRANSFER SWITCH (ATS)
G	GENERATOR
F	FIELD
PB	PANEL BOARD
U	UPS

PREPARED BY: WSP USA Inc,
2000 LENOX DRIVE, LAWRENCEVILLE, N.J. 08548



CAPE MAY COUNTY

AM	JP	BC
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JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION: STONE HARBOR BOROUGH AND MIDDLE TOWN CAPE MAY COUNTY, NEW JERSEY
DRAWING TITLE: SCHEMATIC DIAGRAM 2

SHIP	DATE: 4/9/2024
	SCALE:
	SHEET REFERENCE NO. 1
	SHEET NO.: 169 of 200

I/O 4-20MA ANALOGS

RACK 3 SLOT 13, ANALOG INPUT MODULE 1				
MODULE TAG	ADDRESS	INPUT/OUTPUT	EQUIPMENT	FUNCTION
A11	131300	IN-0	WEST SPAN	POSITION RESOLVER
A11	131301	IN-1	EAST SPAN	POSITION RESOLVER
A11	131302	IN-2	NW MOTOR	AMP
A11	131303	IN-3	NW MOTOR	RPM
A11	131304	IN-4	NE MOTOR	AMP
A11	131305	IN-5	NE MOTOR	RPM
A11	131306	IN-6	SPARE	
A11	131307	IN-7	SPARE	

RACK 4 SLOT 10 ANALOG OUTPUT MODULE 2				
MODULE TAG	ADDRESS	INPUT/OUTPUT	EQUIPMENT	FUNCTION
AQ2	0-41000	I OUT 0 +	SW MOTOR	RPM
AQ2	0-41001	I OUT 1 +	SE MOTOR	RPM
AQ2	0-41002	I OUT 2 +	SW MOTOR	AMPS
AQ2	0-41003	I OUT 3 +	SE MOTOR	AMPS
AQ2	0-41004	I OUT 4 +	SPARE	
AQ2	0-41005	I OUT 5 +	SPARE	
AQ2	0-41006	I OUT 6 +	SPARE	
AQ2	0-41007	I OUT 7 +	SPARE	

RACK 3 SLOT 14 ANALOG INPUT MODULE 2				
MODULE TAG	ADDRESS	INPUT/OUTPUT	EQUIPMENT	FUNCTION
A2	131400	IN-0	SW MOTOR	AMP
A2	131401	IN-1	SW MOTOR	RPM
A2	131402	IN-2	SE MOTOR	AMP
A2	131403	IN-3	SE MOTOR	RPM
A2	131404	IN-4	SPARE	
A2	131405	IN-5	SPARE	
A2	131406	IN-6	SPARE	
A2	131407	IN-7	SPARE	

RACK 4 SLOT 9 ANALOG OUTPUT MODULE 1				
MODULE TAG	ADDRESS	INPUT/OUTPUT	EQUIPMENT	FUNCTION
AQ1	0-4900	I OUT 0 +	WEST SPAN	POSITION
AQ1	0-4901	I OUT 1 +	EAST SPAN	POSITION
AQ1	0-4902	I OUT 2 +	NW MOTOR	RPM
AQ1	0-4903	I OUT 3 +	NE MOTOR	RPM
AQ1	0-4904	I OUT 4 +	NW MOTOR	AMPS
AQ1	0-4905	I OUT 5 +	NE MOTOR	AMPS
AQ1	0-4906	I OUT 6 +	SPARE	
AQ1	0-4907	I OUT 7 +	SPARE	

I/O 120VAC DIGITAL INPUTS

RACK 3 SLOT 1, 120VAC DIGITAL INPUT MODULE 1				
MODULE TAG	ADDRESS	INPUT/OUTPUT	EQUIPMENT	FUNCTION
D1	13100	IN 00	NW WARNING	GATE RAISED
D1	13101	IN 01	NW WARNING	GATE LOWERED
D1	13102	IN 02	NW WARNING GATE	DOORHAND CRANK
D1	13103	IN 03	NE WARNING	GATE RAISED
D1	13104	IN 04	NE WARNING	GATE LOWERED
D1	13105	IN 05	NE WARNING GATE	DOORHAND CRANK
D1	13106	IN 06	SW WARNING	GATE RAISED
D1	13107	IN 07	SW WARNING	DOORHAND CRANK
D1	13108	IN 08	SW WARNING GATE	GATE RAISED
D1	13109	IN 09	SE WARNING GATE	GATE LOWERED
D1	13110	IN 10	SE WARNING GATE	DOORHAND CRANK
D1	13111	IN 11	SE WARNING GATE	DOORHAND CRANK
D1	13112	IN 12	NW MOTOR BRAKE	HAND RELEASED
D1	13113	IN 13	NW MOTOR BRAKE	RELEASED
D1	13114	IN 14	NW MOTOR BRAKE	SET
D1	13115	IN 15	SPARE	

RACK 3 SLOT 4, 120VAC DIGITAL INPUT MODULE 4				
MODULE TAG	ADDRESS	INPUT/OUTPUT	EQUIPMENT	FUNCTION
D4	13400	IN 00	EAST ROTARY CAM	FULLY OPEN
D4	13401	IN 01	EAST ROTARY CAM	NEARLY OPEN
D4	13402	IN 02	EAST ROTARY CAM	NEARLY CLOSE
D4	13403	IN 03	EAST ROTARY CAM	FULLY CLOSED
D4	13404	IN 04	EAST LEVER LIMIT	SWITCH OVER TRAVEL
D4	13405	IN 05	NW VFD	FAULT
D4	13406	IN 06	SW VFD	FAULT
D4	13407	IN 07	NE VFD	FAULT
D4	13408	IN 08	SE VFD	FAULT
D4	13409	IN 09	NW VFD	RUNNING
D4	13410	IN 10	SW VFD	RUNNING
D4	13411	IN 11	NE VFD	RUNNING
D4	13412	IN 12	SE VFD	RUNNING
D4	13413	IN 13	ATS NORMAL POWER	
D4	13414	IN 14	ATS GENERATOR POWER	
D4	13415	IN 15	GENERATOR	MAJFUNCTION

RACK 3 SLOT 7, 120VAC DIGITAL INPUT MODULE 7				
MODULE TAG	ADDRESS	INPUT/OUTPUT	EQUIPMENT	FUNCTION
D7	13700	IN 00	WEST FULLY SEATED	LIMIT SWITCH
D7	13701	IN 01	EAST FULLY SEATED	LIMIT SWITCH
D7	13702	IN 02	NAVIGATION	LIGHT ON
D7	13703	IN 03	PHASE FAILURE	
D7	13704	IN 04	CONTROL POWER	ON
D7	13705	IN 05	FLOOD LIGHTS	ON
D7	13706	IN 06	NE GATE STARTER	RAISE
D7	13707	IN 07	NE GATE STARTER	LOWER
D7	13708	IN 08	NW GATE STARTER	RAISE
D7	13709	IN 09	NW GATE STARTER	LOWER
D7	13710	IN 10	SE GATE STARTER	RAISE
D7	13711	IN 11	SE GATE STARTER	LOWER
D7	13712	IN 12	SW GATE STARTER	RAISE
D7	13713	IN 13	SW GATE STARTER	LOWER
D7	13714	IN 14	SPARE	
D7	13715	IN 15	SPARE	

RACK 3 SLOT 2, 120VAC DIGITAL INPUT MODULE 2				
MODULE TAG	ADDRESS	INPUT/OUTPUT	EQUIPMENT	FUNCTION
D2	13200	IN 00	NW MACHINERY BRAKE	HAND RELEASED
D2	13201	IN 01	NW MACHINERY BRAKE	RELEASED
D2	13202	IN 02	NW MACHINERY BRAKE	SET
D2	13203	IN 03	SW MACHINERY BRAKE	HAND RELEASED
D2	13204	IN 04	SW MACHINERY BRAKE	RELEASED
D2	13205	IN 05	SW MACHINERY BRAKE	SET
D2	13206	IN 06	NE MACHINERY BRAKE	HAND RELEASED
D2	13207	IN 07	NE MACHINERY BRAKE	RELEASED
D2	13208	IN 08	NE MACHINERY BRAKE	SET
D2	13209	IN 09	SE MACHINERY BRAKE	HAND RELEASED
D2	13210	IN 10	SE MACHINERY BRAKE	RELEASED
D2	13211	IN 11	SE MACHINERY BRAKE	SET
D2	13212	IN 12	SW MOTOR BRAKE	HAND RELEASED
D2	13213	IN 13	SW MOTOR BRAKE	RELEASED
D2	13214	IN 14	SW MOTOR BRAKE	SET
D2	13215	IN 15	NE MOTOR BRAKE	HAND RELEASED

RACK 3 SLOT 5, 120VAC DIGITAL INPUT MODULE 5				
MODULE TAG	ADDRESS	INPUT/OUTPUT	EQUIPMENT	FUNCTION
D5	13500	IN 00	NW MOTOR	BRAKE DISCONNECT
D5	13501	IN 01	SW MOTOR	BRAKE DISCONNECT
D5	13502	IN 02	NE MOTOR	BRAKE DISCONNECT
D5	13503	IN 03	SE MOTOR	BRAKE DISCONNECT
D5	13504	IN 04	NW MACHINERY	BRAKE DISCONNECT
D5	13505	IN 05	SW MACHINERY	BRAKE DISCONNECT
D5	13506	IN 06	NE MACHINERY	BRAKE DISCONNECT
D5	13507	IN 07	SE MACHINERY	BRAKE DISCONNECT
D5	13508	IN 08	NW MOTOR	BRAKE OVERLOAD
D5	13509	IN 09	SW MOTOR	BRAKE OVERLOAD
D5	13510	IN 10	NE MOTOR	BRAKE OVERLOAD
D5	13511	IN 11	SE MOTOR	BRAKE OVERLOAD
D5	13512	IN 12	NW MACHINERY	BRAKE OVERLOAD
D5	13513	IN 13	SW MACHINERY	BRAKE OVERLOAD
D5	13514	IN 14	NE MACHINERY	BRAKE OVERLOAD
D5	13515	IN 15	SE MACHINERY	BRAKE OVERLOAD

RACK 3 SLOT 3, 120VAC DIGITAL INPUT MODULE 3				
MODULE TAG	ADDRESS	INPUT/OUTPUT	EQUIPMENT	FUNCTION
D3	13300	IN 00	NE MOTOR BRAKE	HAND RELEASED
D3	13301	IN 01	NE MOTOR BRAKE	RELEASED
D3	13302	IN 02	SE MOTOR BRAKE	HAND RELEASED
D3	13303	IN 03	SE MOTOR BRAKE	RELEASED
D3	13304	IN 04	SE MOTOR BRAKE	SET
D3	13305	IN 05	NORTH SPAN LOCK	PULLED
D3	13306	IN 06	NORTH SPAN LOCK	HAND CRANK
D3	13307	IN 07	NORTH SPAN LOCK	DRIVEN
D3	13308	IN 08	SOUTH SPAN LOCK	PULLED
D3	13309	IN 09	SOUTH SPAN LOCK	HAND CRANK
D3	13310	IN 10	SOUTH SPAN LOCK	DRIVEN
D3	13311	IN 11	WEST ROTARY CAM	FULLY OPEN
D3	13312	IN 12	WEST ROTARY CAM	NEARLY OPEN
D3	13313	IN 13	WEST ROTARY CAM	NEARLY CLOSE
D3	13314	IN 14	WEST ROTARY CAM	FULLY CLOSED
D3	13315	IN 15	WEST LEVER LIMIT	SWITCH OVER TRAVEL

RACK 3 SLOT 6, 120VAC DIGITAL INPUT MODULE 6				
MODULE TAG	ADDRESS	INPUT/OUTPUT	EQUIPMENT	FUNCTION
D6	13600	IN 00	NW WARNING GATE	OVERLOAD
D6	13601	IN 01	SW WARNING GATE	OVERLOAD
D6	13602	IN 02	NE WARNING GATE	OVERLOAD
D6	13603	IN 03	SE WARNING GATE	OVERLOAD
D6	13604	IN 04	NORTH SPAN LOCK	OVERLOAD
D6	13605	IN 05	SOUTH SPAN LOCK	OVERLOAD
D6	13606	IN 06	NORTH SPAN LOCK	DISCONNECT
D6	13607	IN 07	SOUTH SPAN LOCK	DISCONNECT
D6	13608	IN 08	NW MOTOR	DISCONNECT
D6	13609	IN 09	SW MOTOR	DISCONNECT
D6	13610	IN 10	NE MOTOR	DISCONNECT
D6	13611	IN 11	SE MOTOR	DISCONNECT
D6	13612	IN 12	NW VFD	TORQUE PROVING
D6	13613	IN 13	SW VFD	TORQUE PROVING
D6	13614	IN 14	NE VFD	TORQUE PROVING
D6	13615	IN 15	SE VFD	TORQUE PROVING

PREPARED BY: WSP USA Inc.
2005 LENOX DRIVE, LAWRENCEVILLE, N.J. 08648

Kevin Walsh

N.J. PE LICENSE NUMBER
24GE017500

DATE



CAPE MAY COUNTY

AM JP BC

Designed by Drawn by Checked by

JOB

REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

DRAWING TITLE:

10 LIST 1 OF 3

DATE: 4/5/2024

SCALE:

SHEET REFERENCE NO.
of

SHEET NO.
178 of 202

I/O 120VAC DIGITAL INPUTS (CONT.)

MODULE TAG	ADDRESS	INPUT/OUTPUT	EQUIPMENT	FUNCTION
D10	I11/00	IN 00	SPARE	
D10	I11/01	IN 01	SPARE	
D10	I11/02	IN 02	SPARE	
D10	I11/03	IN 03	SPARE	
D10	I11/04	IN 04	SPARE	
D10	I11/05	IN 05	SPARE	
D10	I11/06	IN 06	SPARE	
D10	I11/07	IN 07	SPARE	
D10	I11/08	IN 08	SPARE	
D10	I11/09	IN 09	SPARE	
D10	I11/10	IN 10	SPARE	
D10	I11/11	IN 11	SPARE	
D10	I11/12	IN 12	SPARE	
D10	I11/13	IN 13	SPARE	
D10	I11/14	IN 14	SPARE	
D10	I11/15	IN 15	SPARE	

MODULE TAG	ADDRESS	INPUT/OUTPUT	EQUIPMENT	FUNCTION
D10	I41/00	IN 00	PROGRAM MODE	
D10	I41/01	IN 01	MAINTENANCE MODE	
D10	I41/02	IN 02	TRAFFIC LIGHT	GREEN
D10	I41/03	IN 03	TRAFFIC LIGHT	YELLOW
D10	I41/04	IN 04	TRAFFIC LIGHT	RED
D10	I41/05	IN 05	GENERATOR	IN AUTO
D10	I41/06	IN 06	GENERATOR	RUN
D10	I41/07	IN 07	GENERATOR	TEST
D10	I41/08	IN 08	WARNING	GATE BYPASS
D10	I41/09	IN 09	NW WARNING	GATE LOWER
D10	I41/10	IN 10	NW WARNING	GATE RAISE
D10	I41/11	IN 11	NE WARNING	GATE LOWER
D10	I41/12	IN 12	NE WARNING	GATE RAISE
D10	I41/13	IN 13	SW WARNING	GATE LOWER
D10	I41/14	IN 14	SW WARNING	GATE RAISE
D10	I41/15	IN 15	SPARE	

MODULE TAG	ADDRESS	INPUT/OUTPUT	EQUIPMENT	FUNCTION
D10	I42/00	IN 00	SE WARNING	GATE LOWER
D10	I42/01	IN 01	SE WARNING	GATE RAISE
D10	I42/02	IN 02	NORTH SPAN LOCKS	PULL
D10	I42/03	IN 03	NORTH SPAN LOCKS	DRIVE
D10	I42/04	IN 04	SOUTH SPAN LOCKS	PULL
D10	I42/05	IN 05	SOUTH SPAN LOCKS	DRIVE
D10	I42/06	IN 06	SOUTH SPAN LOCKS	PULL
D10	I42/07	IN 07	ALL WARNING	GATES RAISE
D10	I42/08	IN 08	WEST SPAN	LOWER
D10	I42/09	IN 09	WEST SPAN	RAISE
D10	I42/10	IN 10	DUAL SPAN	STOP
D10	I42/11	IN 11	EAST SPAN	LOWER
D10	I42/12	IN 12	EAST SPAN	RAISE
D10	I42/13	IN 13	EAST SPAN	STOP
D10	I42/14	IN 14	START OPEN	SEQUENCE
D10	I42/15	IN 15	START CLOSE	SEQUENCE

MODULE TAG	ADDRESS	INPUT/OUTPUT	EQUIPMENT	FUNCTION
D11	I43/00	IN 00	LAMP TEST	
D11	I43/01	IN 01	E-STOP	
D11	I43/02	IN 02	NW VFD	FAULT RESET
D11	I43/03	IN 03	SW VFD	FAULT RESET
D11	I43/04	IN 04	NE VFD	FAULT RESET
D11	I43/05	IN 05	SE VFD	FAULT RESET
D11	I43/06	IN 06	NW VFD	SELECT
D11	I43/07	IN 07	WEST VFDs	AUTO SELECT
D11	I43/08	IN 08	SW VFD	SELECT
D11	I43/09	IN 09	BRAKES BYPASS	
D11	I43/10	IN 10	FULLY CLOSED	BYPASS
D11	I43/11	IN 11	NE VFD	SELECT
D11	I43/12	IN 12	EAST VFDs	AUTO SELECT
D11	I43/13	IN 13	SE VFD	SELECT
D11	I43/14	IN 14	SPARE	
D11	I43/15	IN 15	SPARE	

MODULE TAG	ADDRESS	INPUT/OUTPUT	EQUIPMENT	FUNCTION
D12	I44/00	IN 00	SPARE	
D12	I44/01	IN 01	SPARE	
D12	I44/02	IN 02	SPARE	
D12	I44/03	IN 03	SPARE	
D12	I44/04	IN 04	SPARE	
D12	I44/05	IN 05	SPARE	
D12	I44/06	IN 06	SPARE	
D12	I44/07	IN 07	SPARE	
D12	I44/08	IN 08	SPARE	
D12	I44/09	IN 09	SPARE	
D12	I44/10	IN 10	SPARE	
D12	I44/11	IN 11	SPARE	
D12	I44/12	IN 12	SPARE	
D12	I44/13	IN 13	SPARE	
D12	I44/14	IN 14	SPARE	
D12	I44/15	IN 15	SPARE	



I/O RELAY OUTPUT MODULES

MODULE TAG	ADDRESS	INPUT/OUTPUT	EQUIPMENT	FUNCTION
D01	O31/00	OUT-0 N.O.	NW WARNING	GATE LOWER
D01	O31/01	OUT-1 N.O.	NW WARNING	GATE RAISE
D01	O31/02	OUT-2 N.O.	NE WARNING	GATE LOWER
D01	O31/03	OUT-3 N.O.	NE WARNING	GATE RAISE
D01	O31/04	OUT-4 N.O.	SW WARNING	GATE LOWER
D01	O31/05	OUT-5 N.O.	SW WARNING	GATE RAISE
D01	O31/06	OUT-6 N.O.	SE WARNING	GATE LOWER
D01	O31/07	OUT-7 N.O.	SE WARNING	GATE RAISE
D01	O31/08	OUT-8 N.O.	NORTH SPAN	LOCK DRIVE
D01	O31/09	OUT-9 N.O.	NORTH SPAN	LOCK PULL
D01	O31/10	OUT-10 N.O.	SOUTH SPAN	LOCK DRIVE
D01	O31/11	OUT-11 N.O.	SOUTH SPAN	LOCK PULL
D01	O31/12	OUT-12 N.O.	SPARE	
D01	O31/13	OUT-13 N.O.	SPARE	
D01	O31/14	OUT-14 N.O.	SPARE	
D01	O31/15	OUT-15 N.O.	SPARE	

MODULE TAG	ADDRESS	INPUT/OUTPUT	EQUIPMENT	FUNCTION
D02	O31/00	OUT-0 N.O.	WEST MOTORS	BRAKE RELEASE
D02	O31/01	OUT-1 N.O.	EAST MOTORS	BRAKE RELEASE
D02	O31/02	OUT-2 N.O.	HORN	
D02	O31/03	OUT-3 N.O.	HEATING	CONTACTOR
D02	O31/04	OUT-4 N.O.	NW WARNING	GATE GONG
D02	O31/05	OUT-5 N.O.	NE WARNING	GATE GONG
D02	O31/06	OUT-6 N.O.	NW DRIVE	ENABLE
D02	O31/07	OUT-7 N.O.	NE DRIVE	ENABLE
D02	O31/08	OUT-8 N.O.	NW DRIVE	RUN RAISE
D02	O31/09	OUT-9 N.O.	NE DRIVE	RUN RAISE
D02	O31/10	OUT-10 N.O.	NW DRIVE	RUN LOWER
D02	O31/11	OUT-11 N.O.	NE DRIVE	RUN LOWER
D02	O31/12	OUT-12 N.O.	NW DRIVE	CREEP SPEED
D02	O31/13	OUT-13 N.O.	NE DRIVE	CREEP SPEED
D02	O31/14	OUT-14 N.O.	NW DRIVE	FULL SPEED
D02	O31/15	OUT-15 N.O.	NE DRIVE	FULL SPEED

MODULE TAG	ADDRESS	INPUT/OUTPUT	EQUIPMENT	FUNCTION
D03	O31/106	OUT-0 N.O.	NW DRIVE	REDUCED TORQUE
D03	O31/107	OUT-1 N.O.	NE DRIVE	REDUCED TORQUE
D03	O31/108	OUT-2 N.O.	NW DRIVE	FAULT RESET
D03	O31/109	OUT-3 N.O.	NE DRIVE	FAULT RESET
D03	O31/110	OUT-4 N.O.	NW GATE	LOWER PERM.
D03	O31/111	OUT-5 N.O.	NW GATE	RAISE PERM.
D03	O31/112	OUT-6 N.O.	NE GATE	LOWER PERM.
D03	O31/113	OUT-7 N.O.	NE GATE	RAISE PERM.
D03	O31/114	OUT-8 N.O.	SW GATE	LOWER PERM.
D03	O31/115	OUT-9 N.O.	SW GATE	RAISE PERM.
D03	O31/116	OUT-10 N.O.	SE GATE	LOWER PERM.
D03	O31/117	OUT-11 N.O.	SE GATE	RAISE PERM.
D03	O31/118	OUT-12 N.O.	SPARE	
D03	O31/119	OUT-13 N.O.	GENERATOR	IN AUTO CMD
D03	O31/120	OUT-14 N.O.	GENERATOR	RUN CMD
D03	O31/121	OUT-15 N.O.	GENERATOR	TEST CMD

MODULE TAG	ADDRESS	INPUT/OUTPUT	EQUIPMENT	FUNCTION
D04	O31/200	OUT-0 N.O.	WEST MACHINERY	BRAKES RELEASE
D04	O31/201	OUT-1 N.O.	EAST MACHINERY	BRAKES RELEASE
D04	O31/202	OUT-2 N.O.	SW DRIVE	ENABLE
D04	O31/203	OUT-3 N.O.	SE DRIVE	ENABLE
D04	O31/204	OUT-4 N.O.	SW DRIVE	RUN RAISE
D04	O31/205	OUT-5 N.O.	SE DRIVE	RUN RAISE
D04	O31/206	OUT-6 N.O.	SW DRIVE	RUN LOWER
D04	O31/207	OUT-7 N.O.	SE DRIVE	RUN LOWER
D04	O31/208	OUT-8 N.O.	SW DRIVE	CREEP SPEED
D04	O31/209	OUT-9 N.O.	SE DRIVE	CREEP SPEED
D04	O31/210	OUT-10 N.O.	SW DRIVE	FULL SPEED
D04	O31/211	OUT-11 N.O.	SE DRIVE	FULL SPEED
D04	O31/212	OUT-12 N.O.	SW DRIVE	REDUCED TORQUE
D04	O31/213	OUT-13 N.O.	SE DRIVE	REDUCED TORQUE
D04	O31/214	OUT-14 N.O.	SW DRIVE	FAULT RESET
D04	O31/215	OUT-15 N.O.	SE DRIVE	FAULT RESET

PREPARED BY: WSP USA Inc. 200 LYNCH DRIVE, LAWRENCEVILLE, N.J. 08448 Kevin Walsh N.J. PE LICENSE NUMBER: 34CE0175300 DATE:	  AM JP BC Designed by Drawn by Checked by	JOB: REHABILITATION OF 96TH STREET (CR657) BRIDGE OVER GREAT CHANNEL STR. NO. 0500-006	PROJECT LOCATION: STONE HARBOR BOOROUGH AND MIDDLE TOWNSHIP CAPE MAY COUNTY, NEW JERSEY DRAWING TITLE: IO LIST 2 OF 3	DATE: 4/9/2024 SCALE: SHEET REFERENCE NO. of SHEET NO.: 171 of 202
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I/O 120VAC DIGITAL OUTPUTS



RACK 4 SLOT 5, 120VAC DIGITAL OUTPUT MODULE 1				
MODULE TAG	ADDRESS	INPUT/OUTPUT	EQUIPMENT	FUNCTION
D05	0.4500	OUT 00	DESK TRAFFIC LIGHT	GREEN
D05	0.4501	OUT 01	DESK TRAFFIC LIGHT	YELLOW
D05	0.4502	OUT 02	DESK TRAFFIC LIGHT	RED
D05	0.4503	OUT 03	CONTROL POWER	ON
D05	0.4504	OUT 04	NAVIGATION LIGHTS	ON
D05	0.4505	OUT 05	FLOOD LIGHTS	ON
D05	0.4506	OUT 06	NW DRIVE	FAULT LIGHT
D05	0.4507	OUT 07	SW DRIVE	FAULT LIGHT
D05	0.4508	OUT 08	NW WARNING GATE	DOWN LIGHT
D05	0.4509	OUT 09	NW WARNING GATE	UP LIGHT
D05	0.4510	OUT 10	SW WARNING GATE	DOWN LIGHT
D05	0.4511	OUT 11	SW WARNING GATE	UP LIGHT
D05	0.4512	OUT 12	NE WARNING GATE	DOWN LIGHT
D05	0.4513	OUT 13	NE WARNING GATE	UP LIGHT
D05	0.4514	OUT 14	SE WARNING GATE	DOWN LIGHT
D05	0.4515	OUT 15	SE WARNING GATE	UP LIGHT

RACK 4 SLOT 6, 120VAC DIGITAL OUTPUT MODULE 2				
MODULE TAG	ADDRESS	INPUT/OUTPUT	EQUIPMENT	FUNCTION
D06	0.4600	OUT 00	NORTH SPAN	LOCK PULLED
D06	0.4601	OUT 01	NORTH SPAN	LOCK DRIVEN
D06	0.4602	OUT 02	SOUTH SPAN	LOCK PULLED
D06	0.4603	OUT 03	SOUTH SPAN	LOCK DRIVEN
D06	0.4604	OUT 04	WEST LEAF	FULLY CLOSED
D06	0.4605	OUT 05	WEST LEAF	NEARLY CLOSED
D06	0.4606	OUT 06	WEST LEAF	NEARLY OPEN
D06	0.4607	OUT 07	WEST LEAF	FULLY OPEN
D06	0.4608	OUT 08	EAST LEAF	FULLY CLOSED
D06	0.4609	OUT 09	EAST LEAF	NEARLY CLOSED
D06	0.4610	OUT 10	EAST LEAF	NEARLY OPEN
D06	0.4611	OUT 11	EAST LEAF	FULLY OPEN
D06	0.4612	OUT 12	NE DRIVE	FAULT
D06	0.4613	OUT 13	SE DRIVE	FAULT
D06	0.4614	OUT 14	SPARE	
D06	0.4615	OUT 15	SPARE	

RACK 4 SLOT 7, 120VAC DIGITAL OUTPUT MODULE 3				
MODULE TAG	ADDRESS	INPUT/OUTPUT	EQUIPMENT	FUNCTION
D07	0.4700	OUT 00	NW MOTOR BRAKE	SET
D07	0.4701	OUT 01	NW MOTOR BRAKE	RELEASED
D07	0.4702	OUT 02	NW MOTOR BRAKE	HAND RELEASED
D07	0.4703	OUT 03	NE MOTOR BRAKE	SET
D07	0.4704	OUT 04	NE MOTOR BRAKE	RELEASED
D07	0.4705	OUT 05	NE MOTOR BRAKE	HAND RELEASED
D07	0.4706	OUT 06	NW MACHINERY BRAKE	SET
D07	0.4707	OUT 07	NW MACHINERY BRAKE	RELEASED
D07	0.4708	OUT 08	NW MACHINERY BRAKE	HAND RELEASED
D07	0.4709	OUT 09	NE MACHINERY BRAKE	SET
D07	0.4710	OUT 10	NE MACHINERY BRAKE	RELEASED
D07	0.4711	OUT 11	NE MACHINERY BRAKE	HAND RELEASED
D07	0.4712	OUT 12	SW MOTOR BRAKE	SET
D07	0.4713	OUT 13	SW MOTOR BRAKE	RELEASED
D07	0.4714	OUT 14	SW MOTOR BRAKE	HAND RELEASED
D07	0.4715	OUT 15	SPARE	

RACK 4 SLOT 8, 120VAC DIGITAL OUTPUT MODULE 3				
MODULE TAG	ADDRESS	INPUT/OUTPUT	EQUIPMENT	FUNCTION
D08	0.4800	OUT 00	SE MOTOR BRAKE	SET
D08	0.4801	OUT 01	SE MOTOR BRAKE	RELEASED
D08	0.4802	OUT 02	SE MOTOR BRAKE	HAND RELEASED
D08	0.4803	OUT 03	SW MACHINERY BRAKE	SET
D08	0.4804	OUT 04	SW MACHINERY BRAKE	RELEASED
D08	0.4805	OUT 05	SW MACHINERY BRAKE	HAND RELEASED
D08	0.4806	OUT 06	SE MACHINERY BRAKE	SET
D08	0.4807	OUT 07	SE MACHINERY BRAKE	RELEASED
D08	0.4808	OUT 08	SE MACHINERY BRAKE	HAND RELEASED
D08	0.4809	OUT 09	SPARE	
D08	0.4810	OUT 10	SPARE	
D08	0.4811	OUT 11	SPARE	
D08	0.4812	OUT 12	SPARE	
D08	0.4813	OUT 13	SPARE	
D08	0.4814	OUT 14	SPARE	
D08	0.4815	OUT 15	SPARE	

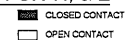
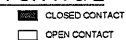
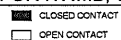
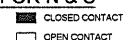
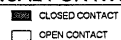
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PREPARED BY: WSP USA Inc. 2000 LINDEN DRIVE, LAWRENCEVILLE, N.J. 08648 	 CAPE MAY COUNTY AM JP BC Designed by Drawn by Checked by	JOB: REHABILITATION OF 96TH STREET (CR657) BRIDGE OVER GREAT CHANNEL STR. NO. 0500-006	PROJECT LOCATION: STONE HARBOR BOROUGH AND WEDGE TOWNSHIP CAPE MAY COUNTY, NEW JERSEY	DATE: 4/9/2024
			DRAWING TITLE: IO LIST 3 OF 3	SCALE: SHEET REFERENCE NO.: of SHEET NO.: 172 of 202

Kevin Walsh

N.J. PE LICENSE NUMBER:
24GE05175000



DATE



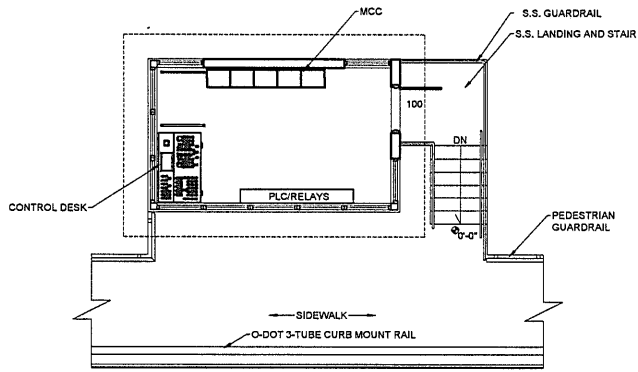
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DISTRIBUTION PANEL CIRCUIT SCHEDULE													
SERVICE VOLTAGE: 120/208				BUS RATING: 225 A				LOCATION: ELECTRICAL ROOM					
MOUNTING: WALL				BUS CONNECTION: 1P 3W									
DESCRIPTION	VOLT AMPS		BREAKER	CIRCUIT NO.	BUS CONNECTION	BREAKER	CIRCUIT NO.	VOLT AMPS		DESCRIPTION			
	A	C						A	C				
CONTROL POWER UPS	1500		1 20	1	1	2 15	1	240		WARNING GATE LIGHTS			
CONTROL DESK LIGHT AND RECEPT		600	1 20	3	1	4 20	1	2400		MAIN PANEL LIGHT			
DRIVE PANEL LIGHT AND RECEPT	2400		1 20	5	1	6 20	1	500		TRAFFIC LIGHTS			
CONTROL ROOM LIGHTS			1 20	7	1	8 20	1			ELECTRICAL ROOM LIGHTS			
CONTROL ROOM RECEPT			1 20	9	1	10 20	1			ELECTRICAL ROOM RECEPT			
NAVIGATION LIGHTS		0.64	1 20	11	1	12 20	1	1248		HORN COMPRESSOR			
				13	1	14 20	1						
CONTROL ROOM HEAT PUMP			2 20	15	1	16 20	2			ELECTRICAL ROOM HEAT PUMP			
				17	1	18 20	2						
TOTAL	-	-		S/N		-		-					
BUS A: - VA				MAIN BREAKER RATING: 175A				DEMAND AMPS: - A					
BUS C: - VA								CONTINUOUS AMPS: - A					
TOTAL CONNECTED LOAD: - VA				(FULL SIZE NEUTRAL)				NON-CONTINUOUS AMPS: - A					
								PHASING: 3 @ 208 VOLTS					

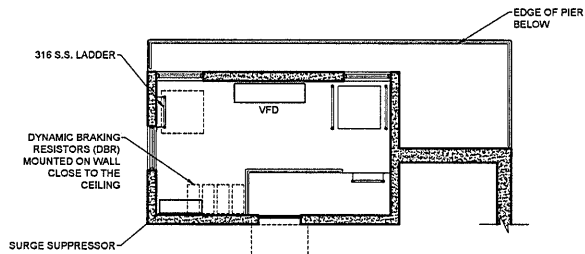
DP-1 PANELBOARD SCHEDULE

PREPARED BY: WSP USA Inc. 2009 LENOX DRIVE, LAWRENCEVILLE, N.J. 08848			CAPE MAY COUNTY	JOB: REHABILITATION OF 96TH STREET (CR657) BRIDGE OVER GREAT CHANNEL STR. NO. 0500-006	PROJECT LOCATION: STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP CAPE MAY COUNTY, NEW JERSEY	DATE: 4/9/2024
Kevin Walsh	N.J. REGISTRATION NUMBER: 24GE0175000	DATE	AM JP BC Designed by Drawn by Checked by		DRAWING TITLE: ELECTRICAL PANEL SCHEDULES	SCALE: NTS
					SHEET REFERENCE NO.: OF	SHEET NO.: 174 of 202

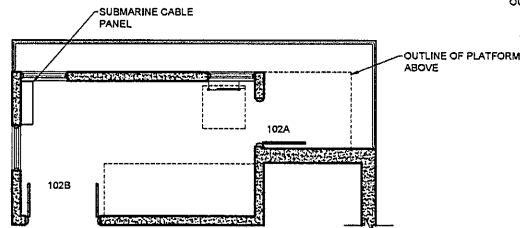
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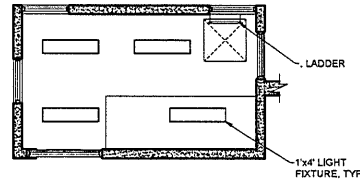
1 CONTROL ROOM FLOOR PLAN
SCALE: 1/4" = 1'-0"



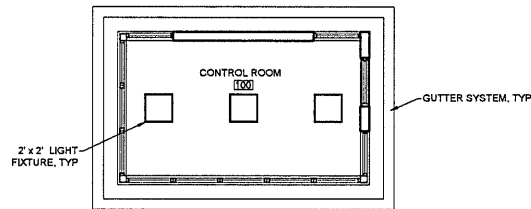
2 MEZZANINE FLOOR PLAN
SCALE: 1/4" = 1'-0"



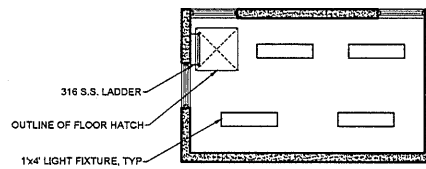
3 STORAGE ROOM FLOOR PLAN
SCALE: 1/4" = 1'-0"



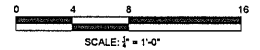
4 STORAGE ROOM RCP
SCALE: 1/4" = 1'-0"



5 CONTROL ROOM RCP
SCALE: 1/4" = 1'-0"



6 MEZZANINE RCP
SCALE: 1/4" = 1'-0"



PREPARED BY: WSP USA, Inc.
2000 LENOX DRIVE, LAWRENCEVILLE, N.J. 08848



CAPE MAY COUNTY

JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY
DRAWING TITLE:
ELECTRICAL CONTROL
& MEZZANINE ROOM
LAYOUT

DATE: 4/5/2024
SCALE: AS NOTED
SHEET REFERENCE NO.: 17
SHEET NO.: 175 of 202

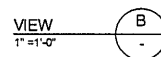
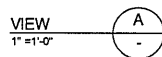
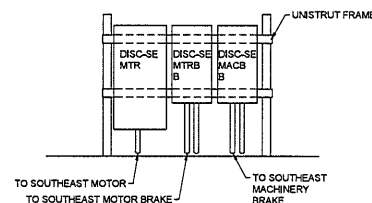
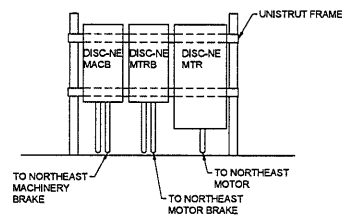
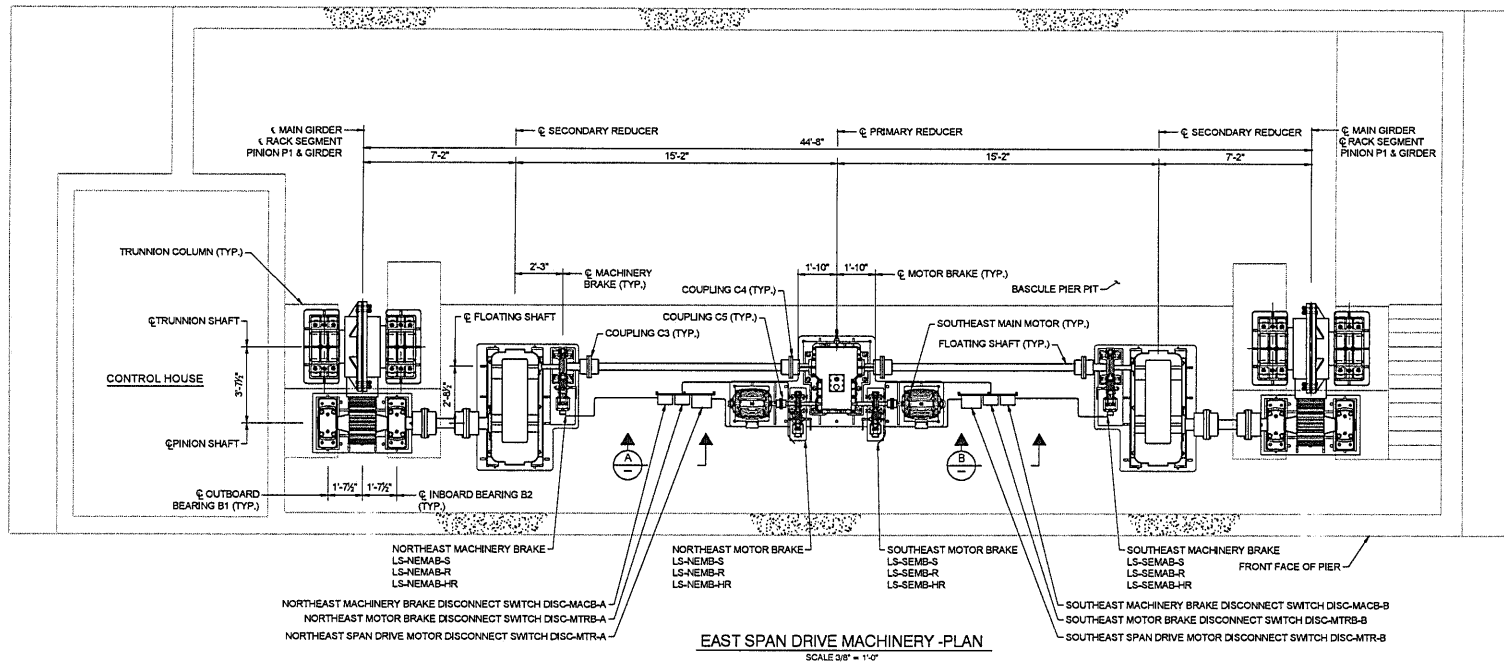
Kevin Walsh

N.J. PE LICENSE NUMBER:
24GER0175000

DATE

AM JP SC

Designed by Drawn by Checked by



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SCALE IN FEET

PREPARED BY: WSP USA Inc.
2000 LEHIGH DRIVE, LAWRENCEVILLE, N.J. 08648

Kevin Walsh

N.J. PE LICENSE NUMBER: 24695175009



CAPE MAY COUNTY

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JOB: REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

DRAWING TITLE:
**ELECTRICAL MACHINERY
PLAN**

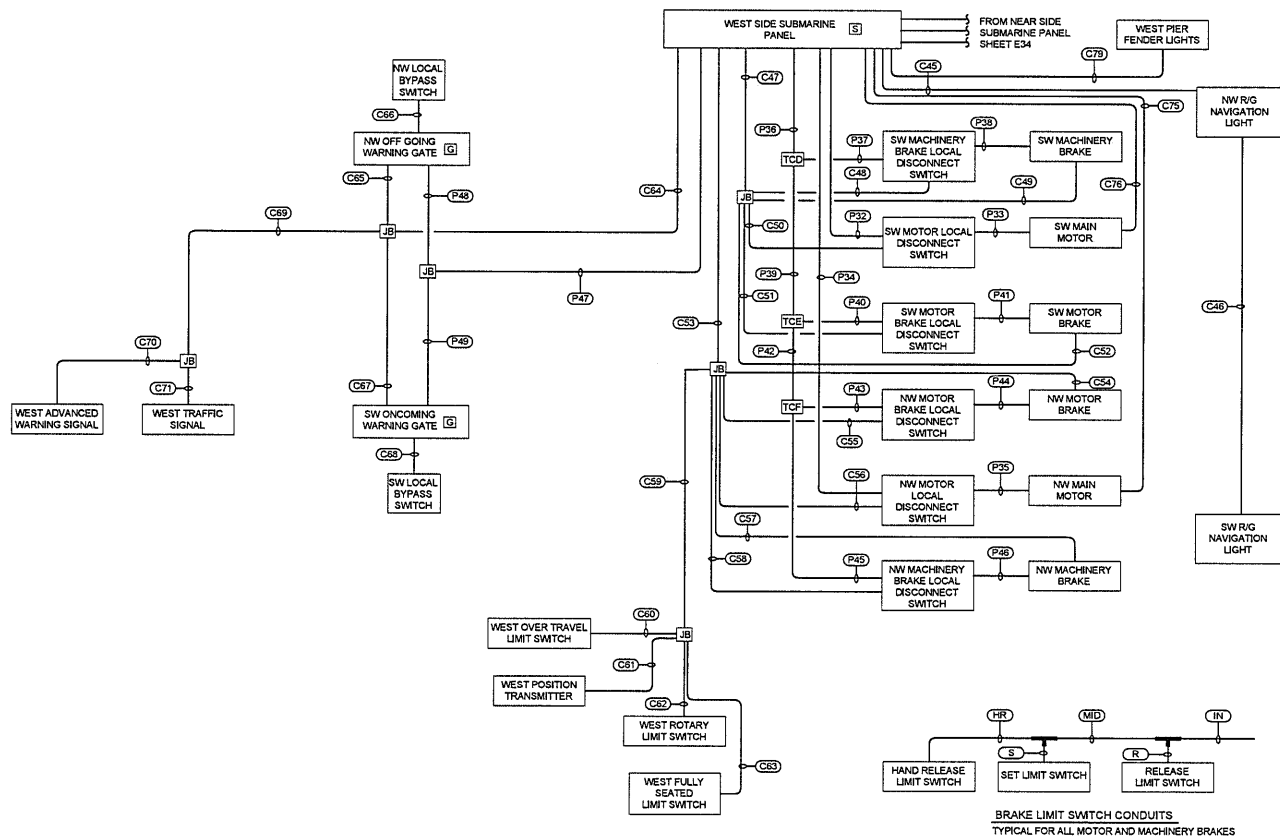
DATE: 4/5/2024

SCALE: AS NOTED

SHEET REFERENCE NO.:
of

SHEET NO.:
178 of 202

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PREPARED BY: WSP USA INC.
2000 LENOX DRIVE, LAWRENCEVILLE, N.J. 08848



CAPE MAY COUNTY

Kevin Walsh

N.J. PE LICENSE NUMBER:
240695175000

DATE

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JOB: REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY
DRAWING TITLE:
CONDUIT
INTERCONNECTION
DIAGRAM 2

DATE: 4/9/2024
SCALE: NTS
SHEET REFERENCE NO.:
of
SHEET NO.:
178 of 222

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CONDUIT NUMBER	SIZE INCH	VOLTS	FROM	TO	NO	AWG	WIRE NUMBERS
S1	3 1/2	208	HAND HOLE	METER	4	500	511, 512, 513, N
P1	3 1/2	208	METER	MAIN DISCONNECT CIRCUIT BREAKER	4	500	11A, 12A, 13A, N
P2	3 1/2	208	MAIN DISCONNECT CIRCUIT BREAKER	AUTOMATIC TRANSFER SWITCH	4	500	11A, 112A, 113A, N
P3	3 1/2	208	AUTOMATIC TRANSFER SWITCH	MOTOR CONTROL CENTER	4	500	118, 112B, 113B, N
P4	3 1/2	208	AUTOMATIC TRANSFER SWITCH	150 KW GENERATOR	4	500	121, 122, 123, N
P5	2 1/2	208	MOTOR CONTROL CENTER	PANELBOARD	4	1/0	131, 132, 133, N
P6	2 1/2	208	MOTOR CONTROL CENTER	EAST-SIDE SUBMARINE CABLE	22	10	1110B, 1110C, 1110D, 1502D, 1502F, 1503H, 1508B, 1508F, 1509B, 1511B, 1512B, 1512F, 1522B, 1523B, 1523F, 910B, 910C, 910D, 4 SP
P7	1 1/2	208	MOTOR CONTROL CENTER	TEE CONDULET A	8	10	801H, 802, 803, 841C, 842C, 843C, N
P8	1	208	TEE CONDULET A	LOCAL DISCONNECT NORTHEAST MACHINERY BRAKE	16	10	1514B, 1515B, 1515F, 1505B, 1505F, 1506B, 1517B, 1517F, 1518B, 1525B, 1526B, 1526F, 4 SP
P9	1	208	LOCAL DISCONNECT NORTHEAST MACHINERY BRAKE	NORTHEAST MACHINERY BRAKE	4	10	1514B, 1515B, 1515F, 15P
P10	1 1/2	208	TEE CONDULET A	TEE CONDULET B	4	10	1514C, 1515C, 1515G, 1 SP
P11	1	208	TEE CONDULET B	LOCAL DISCONNECT NORTHEAST MOTOR BRAKE	12	10	1505B, 1505F, 1506B, 1517B, 1517F, 1518B, 1525B, 1526B, 1526F, 3 SP
P12	1	208	LOCAL DISCONNECT NORTHEAST MOTOR BRAKE	NORTHEAST MOTOR BRAKE	3	10	1505B, 1505F, 1506B, 1 SP
P13	1	208	TEE CONDULET B	TEE CONDULET C	4	10	1505C, 1505G, 1506C, 1SP
P14	1	208	TEE CONDULET C	LOCAL DISCONNECT SOUTHEAST MOTOR BRAKE	4	10	1517B, 1517F, 1518B, 1525B, 1526B, 1526F, 2 SP
P15	1	208	LOCAL DISCONNECT SOUTHEAST MOTOR BRAKE	SOUTHEAST MOTOR BRAKE	2	10	1525B, 1526B, 1526F, 1 SP
P16	1	208	TEE CONDULET C	LOCAL DISCONNECT SOUTHEAST MACHINERY BRAKE	1	10	1525C, 1526C, 1526G, 1 SP
P17	1	208	LOCAL DISCONNECT SOUTHEAST MACHINERY BRAKE	SOUTHEAST MACHINERY BRAKE	4	10	1517B, 1517F, 1518B, 1 SP
P18	1 1/2	208	DRIVE PANEL	LOCAL DISCONNECT NORTHEAST MAIN MOTOR	4	10	1517C, 1517G, 1518C, 1 SP
P19	1 1/2	208	LOCAL DISCONNECT NORTHEAST MAIN MOTOR	NORTHEAST MAIN MOTOR	4	2	821C, 822C, 823C, 1SP
P20	1 1/2	208	DRIVE PANEL	LOCAL DISCONNECT SOUTHEAST MAIN MOTOR	4	2	821D, 822D, 823D, 1SP
P21	1 1/2	208	LOCAL DISCONNECT SOUTHEAST MAIN MOTOR	SOUTHEAST MAIN MOTOR	4	2	851C, 862C, 863C, 1SP
P22	1	208	MOTOR CONTROL CENTER	SPAN LOCKS JUNCTION BOX (POWER)	4	2	861D, 862D, 863D, 1SP
P23	1	208	SPAN LOCKS JUNCTION BOX (POWER)	NORTH SPAN LOCK LOCAL DISCONNECT	8	10	1310A, 1310B, 1310C, 1310E, 1310F, 1310G, 2SP
P24	1	208	NORTH SPAN LOCK LOCAL DISCONNECT	NORTH SPAN LOCK	2	10	1310A, 1310B, 1310C, 1SP
P25	1	208	SPAN LOCKS JUNCTION BOX (POWER)	SOUTH SPAN LOCK LOCAL DISCONNECT	4	10	1312A, 1312B, 1312C, 1SP
P26	1	208	SOUTH SPAN LOCK LOCAL DISCONNECT	SOUTH SPAN LOCK	4	10	1310E, 1310F, 1310G, 1SP
P27	1	208	MOTOR CONTROL CENTER	EAST WARNING GATES JUNCTION BOX (POWER)	4	10	1312E, 1312F, 1312G, 1SP
P28	1	208	EAST GATES JUNCTION BOX (POWER)	SOUTHEAST OFF WARNING GATE	8	10	1210B, 1210C, 1210D, 1010B, 1010C, 1010D, 2 SP
P29	1	208	EAST GATES JUNCTION BOX (POWER)	NORTHEAST ON WARNING GATE	2	10	1210B, 1210C, 1210D, 1SP
P30	2 1/2	208	MOTOR CONTROL CENTER	DRIVE PANEL	4	10	1010B, 1010C, 1010D, 1SP
P31	2 1/2	208	DRIVE PANEL	MOTOR CONTROL CENTER	8	1	801D, 802A, 803A, 821, 822, 823, 2SP
P32	1 1/2	208	WEST SUBMARINE CABLE	LOCAL DISCONNECT SOUTHWEST MAIN MOTOR	2	6	801H, 802, 803, 841C, 842C, 843C, 2SP
P33	1 1/2	208	LOCAL DISCONNECT SOUTHWEST MAIN MOTOR	SOUTHWEST MAIN MOTOR	8	2	841C, 842C, 843C, 1SP
P34	1 1/2	208	WEST SUBMARINE CABLE	LOCAL DISCONNECT NORTHWEST MAIN MOTOR	4	2	841D, 842D, 843D, 1SP
P35	1 1/2	208	LOCAL DISCONNECT NORTHWEST MAIN MOTOR	NORTHWEST MAIN MOTOR	4	2	801H, 802, 803, 1SP
P36	1 1/2	208	WEST SUBMARINE CABLE	TEE CONDULET D	4	2	801J, 802F, 803F, 1SP
P37	1	208	TEE CONDULET D	LOCAL DISCONNECT SOUTHWEST MACHINERY BRAKE	1	2	1511B, 1512B, 1512F, 1522B, 1523B, 1523F, 1502D, 1502F, 1503H, 1508B, 1508F, 1509B, 4SP
P38	1	208	LOCAL DISCONNECT SOUTHWEST MACHINERY BRAKE	SOUTHWEST MACHINERY BRAKE	4	10	1511B, 1512B, 1512F, 15P
P39	1 1/2	208	TEE CONDULET D	TEE CONDULET E	4	10	1511C, 1512C, 1512G, 1SP

PREPARED BY: WSP USA Inc.
2000 LENOX DRIVE, LAWRENCEVILLE, N.J. 08044

Kevin Walsh

N.J. PE LICENSE NUMBER
24GE0175000

DATE

CAPE MAY COUNTY

AM JP BC

Designed by Drawn by Checked by

JOB: REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

DRAWING TITLE:
CONDUIT AND CABLE
SCHEDULE 1

DATE: 4/9/2024

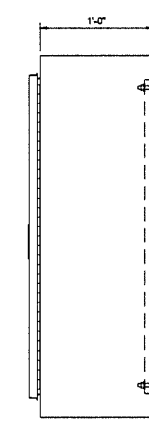
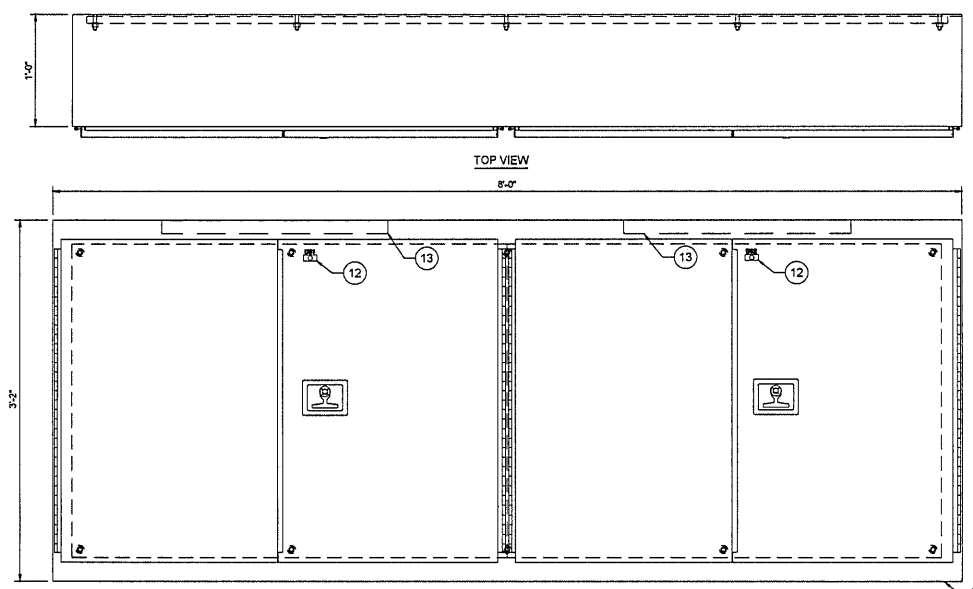
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of

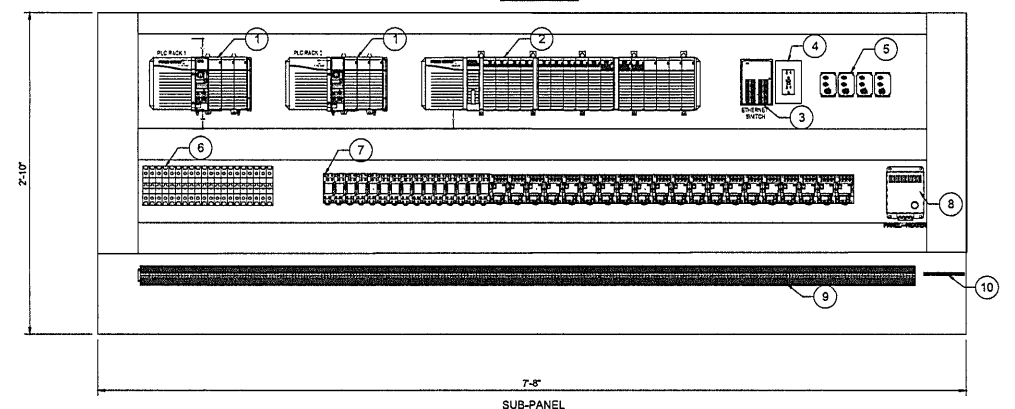
SHEET NO.:
179 of 222



ENCLOSURE
NEMA TYPE 12
W/ BOTTOM PLATES



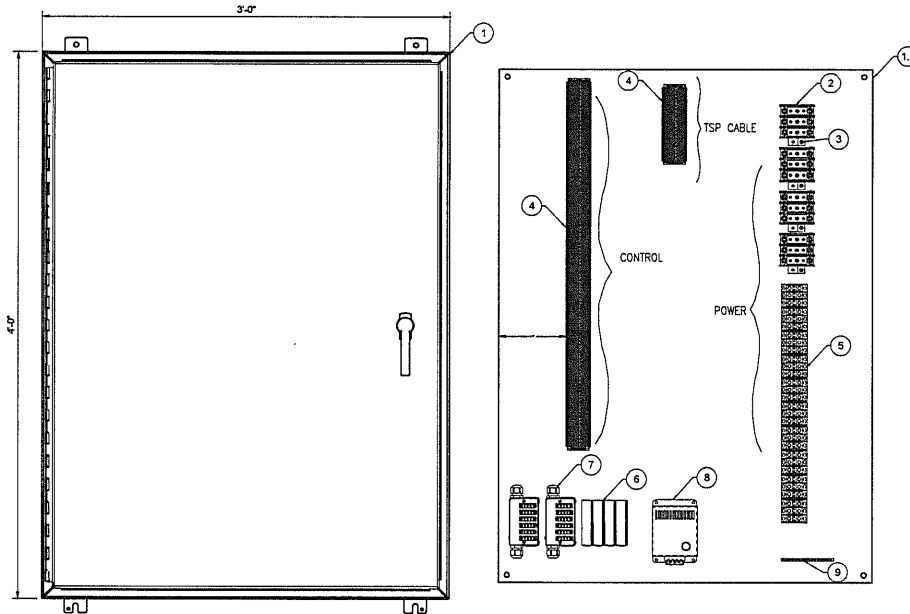
SIDE VIEW
28"H X 96"W X 12"D
NEMA 12



SUB-PANEL
CP-1 CONTROL PANEL

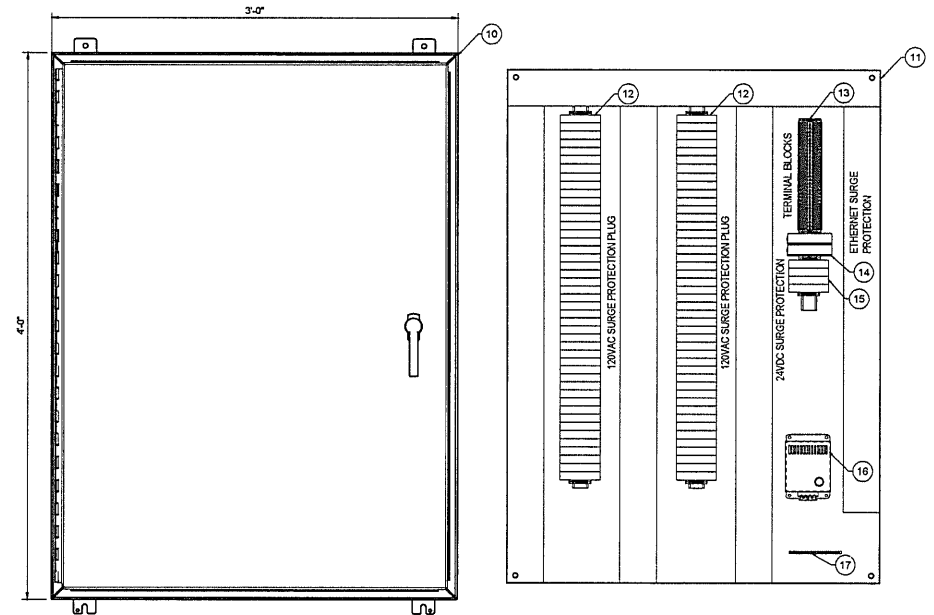
BILL OF MATERIAL (BOM)	
1	REDUNDANT PLC CPU RACKS WITH PROCESSOR, POWER SUPPLY AND ETHERNET COMMUNICATION
2	PLC INPUT/OUTPUT RACK WITH POWER SUPPLY, I/O AND COMMUNICATION MODULE
3	ETHERNET SWITCH
4	GFI
5	TIMER RELAYS AS REQUIRED
6	120 VAC CIRCUIT BREAKERS AS REQUIRED
7	120 VAC GENERAL PURPOSE RELAYS
8	PANEL HEATER WITH INTEGRATED THERMOSTAT
9	TERMINAL BLOCKS AS REQUIRED
10	GROUND BAR
11	NEMA 12 ENCLOSURE
12	DOOR SWITCHES
13	LED PANEL LIGHT FIXTURES

PREPARED BY: WSP USA INC. 2000 LEHIGH DRIVE, LAWRENCEVILLE, N.A. 30046		JOBS: REHABILITATION OF 96TH STREET (CR657) BRIDGE OVER GREAT CHANNEL STR. NO. 0500-006	PROJECT LOCATION: STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP CAPE MAY COUNTY, NEW JERSEY	DATE: 4/9/2024
Kevin Walsh	N.J. PE LICENSE NUMBER: 24CE05173000	AM JP BC	DRAWING TITLE: MISCELLANEOUS ELECTRICAL DETAILS 1	SCALE:
DATE	DESIGNED BY: Kevin Walsh	Drawn by	SHEET NO. 184 of 202	



TYPICAL ENCLOSURE 48"x36"x12" NEMA 4X STAINLESS STEEL 316.

SUBMARINE TERMINAL CABINET
(TYPICAL FOR EAST AND WEST SIDE)



ENCLOSURE 48"x36"x12" NEMA 12 PAINTED STEEL.

SURGE SUPPRESSOR CABINET

BILL OF MATERIAL (BOM)	
1	NEMA 4X SS 316 SUBMARINE CABLE TERMINATION CABINET
1	BACK PANEL
2	MOTORS POWER DISTRIBUTION BLOCKS
3	MOTOR GROUND LUGS
4	CONTROLS TERMINAL BLOCKS
5	208/120VAC POWER TERMINAL BLOCKS
6	ETHERNET PATCH CONNECTORS
7	24 STRANDS SINGLE MODE FIBER PATCH PANELS
8	PANEL HEATER WITH INTEGRATED THERMOSTAT
9	GROUND BAR

BILL OF MATERIAL (BOM)	
10	NEMA 12 PAINTED STEEL SUPPRESSOR CABINET
11	BACK PANEL
12	120 VAC SURGE SUPPRESSORS
13	TERMINAL BLOCKS
14	ETHERNET SURGE SUPPRESSORS
15	24 VDC SURGE SUPPRESSORS
16	PANEL HEATER WITH INTEGRATED THERMOSTAT
17	GROUND BAR

PREPARED BY: WSP USA Inc.
2009 LENOX DRIVE, LAWRENCEVILLE, N.J. 08848



Kevin Walsh

N.J. PE LICENSE NUMBER:
JAC0517500

DATE



CAPE MAY COUNTY

AM

JP

BC

Designed by

Drawn by

Checked by

JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

DRAWING TITLE:

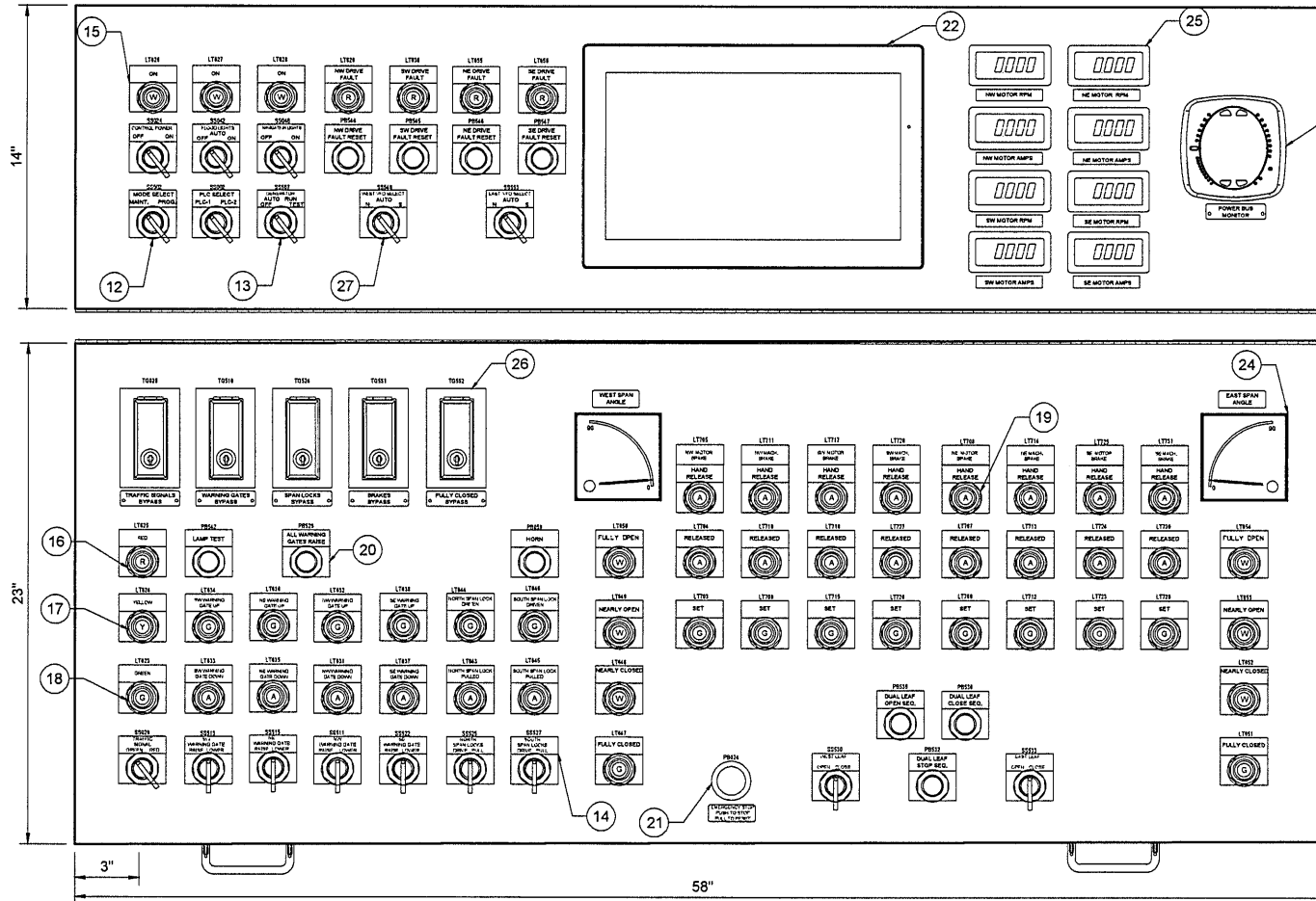
MISCELLANEOUS
ELECTRICAL DETAILS 2

DATE: 4/5/2024

SCALE:

SHEET REFERENCE NO.:

185 of 202

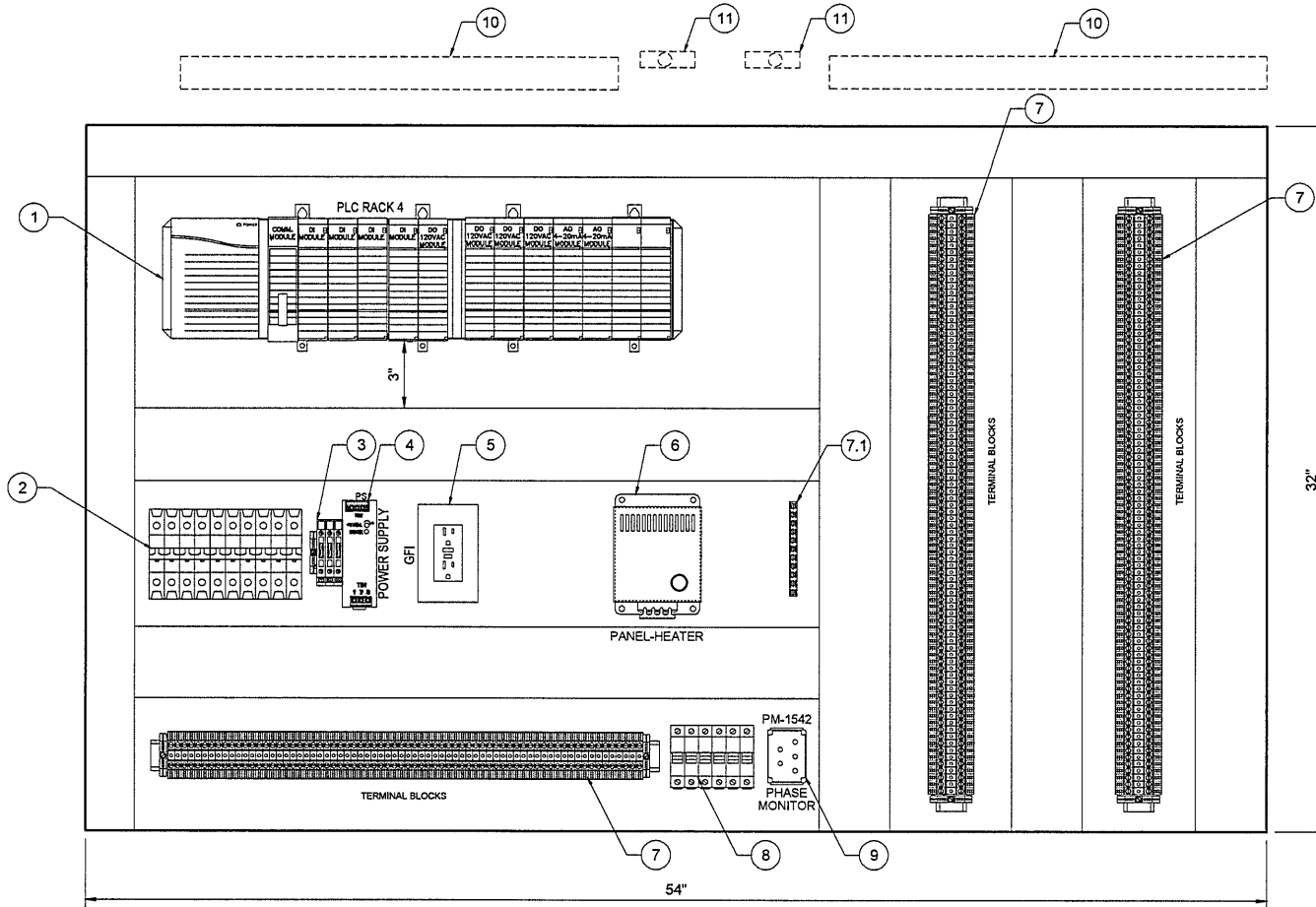


BILL OF MATERIAL (BOM) CONT.	
12	30 MM 2 POS. SELECTOR SWITCH MAINTAINED TYPICAL
13	30 MM 4 POS. SELECTOR SWITCH MAINTAINED
14	30 MM 3 POS. SELECTOR SWITCH RETURN CENTER TYPICAL
15	30 MM 120VAC LED PILOT LIGHT WHITE TYPICAL
16	30 MM 120VAC LED PILOT LIGHT RED TYPICAL
17	30 MM 120VAC LED PILOT LIGHT YELLOW TYPICAL
18	30 MM 120VAC LED PILOT LIGHT GREEN TYPICAL
19	30 MM 120VAC LED PILOT LIGHT AMBER TYPICAL
20	30 MM MOMENTARY PUSH BUTTON TYPICAL
21	30 MM E-STOP PUSH BUTTON MAINTAINED TYPICAL
22	24 VDC 15" HUMAN MACHINE INTERFACE
23	SMART POWER METER
24	ANGLE INDICATION DISPLAYS TYP.
25	MOTORS AMPS & RPM 7-SEG DIGITAL DISPLAYS TYPICAL
26	BYPASS TOGGLE SWITCH TYP.
27	30 MM 3 POS. SELECTOR SWITCH MAINTAINED TYPICAL

CONTROL DESK LAYOUT
SCALE: NTS

PREPARED BY: WSP USA Inc. 200 LENOX DRIVE, LAWRENCEVILLE, N.J. 08408 Kevin Walsh N.J. PE LICENSE NUMBER: 24625175000 DATE:	 AM JP BC Designed by Drawn by Checked by	JOB: REHABILITATION OF 96TH STREET (CR657) BRIDGE OVER GREAT CHANNEL STR. NO. 0500-006	PROJECT LOCATION: STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP CAPE MAY COUNTY, NEW JERSEY	DATE: 4/5/2024
			DRAWING TITLE: CONTROL DESK LAYOUT	SCALE: SHEET REFERENCE NO.: SHEET NO.: 188 of 202

c:\bml\wsp-pb-us-pw-02\wsp_p-bmlto_perseus\056493\000115\IS\PT12.dwg, 4/30/2024 9:56:57 AM, PerezR, WSP USA Inc., WSP USA Inc.



CP-2 BACKPANEL ELEVATION VIEW
SCALE: NTS

BILL OF MATERIAL (BOM)	
1	PLC REMOTE INPUT/OUTPUT RACK, WITH POWER SUPPLY, ETHERNET COMMUNICATION AND I/O MODULES.
2	120 VAC CIRCUIT BREAKERS AS REQUIRED
3	DC GLASS FUSE TERMINAL BLOCKS W/ FUSE
4	120VAC IN - 24VDC OUT POWER SUPPLY
5	GFI
6	PANEL HEATER WITH INTEGRATED THERMOSTAT
7	TERMINAL BLOCKS AS REQUIRED
7.1	GROUND BAR
8	240VAC, FUSE HOLDERS W/ 1A/0.2A FUSE
9	PHASE MONITOR
10	LED PANEL LIGHT FIXTURES
11	DOOR SWITCHES

PREPARED BY: WSP USA Inc.
2000 LENOX DRIVE, LAWRENCEVILLE, N.J. 08448



Kevin Walsh

N.J. PE LICENSE NUMBER:
ANG6517500

DATE



CAPE MAY COUNTY

AM

JP

BC

Designed by

Drawn by

Checked by

JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

DRAWING TITLE:

CONTROL DESK DETAIL

DATE: 4/9/2024

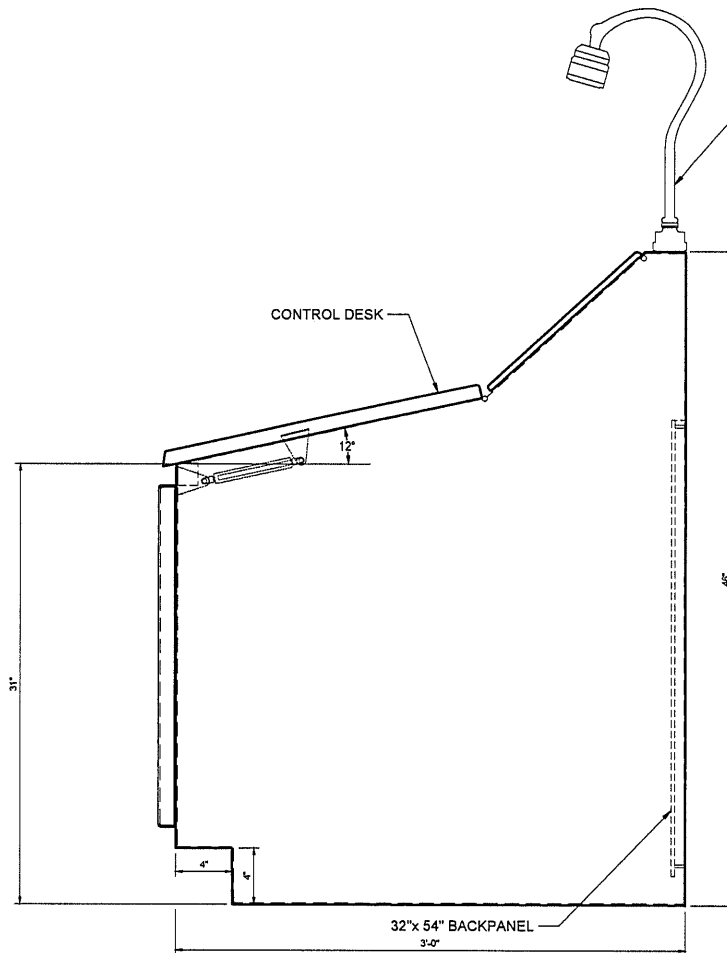
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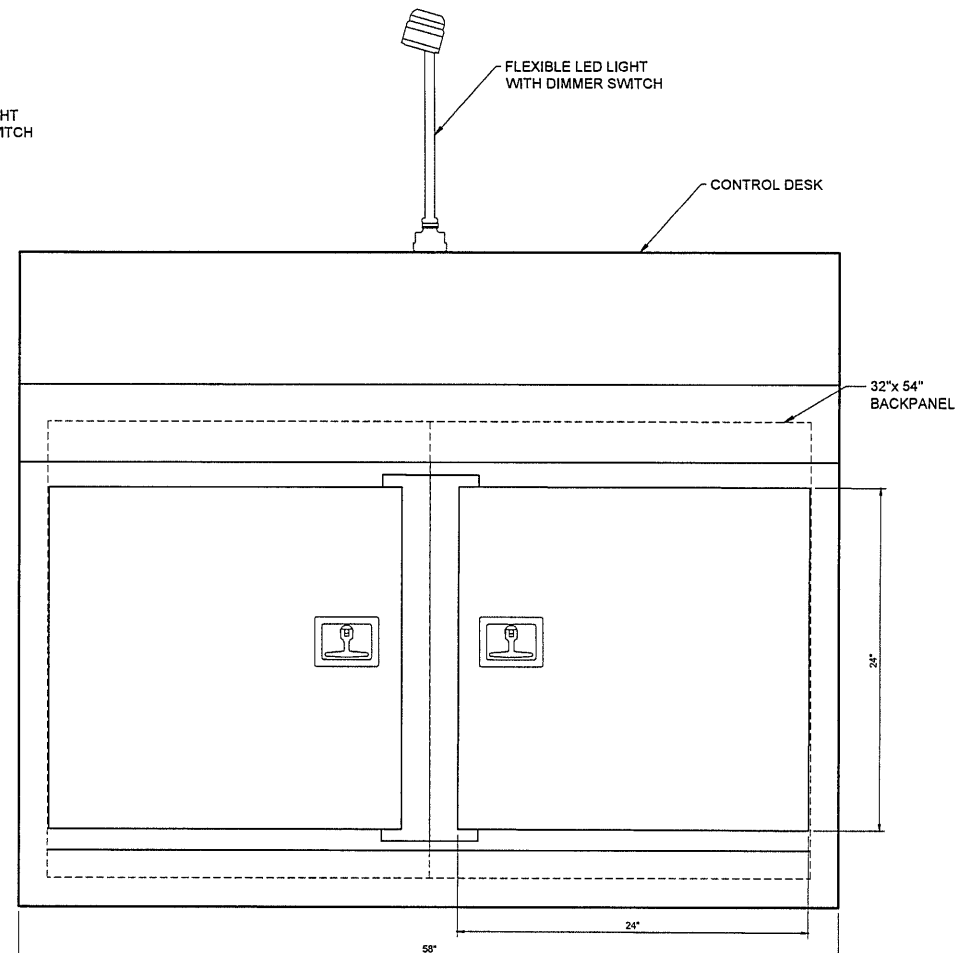
of

SHEET NO.:

189 of 202



SIDE ELEVATION



FRONT ELEVATION

CP-2 CONTROL DESK ENCLOSURE
SCALE: 3" = 1'-0"

- NOTES:
1. BODY OF CONTROL DESK IS MADE OF 11 GAUGE STEEL AND FINISHED IN ANSI 61 GRAY.
 2. CONTROL CONSOLE LID AND PINNACLE MATERIAL TO BE 10 GAUGE STAINLESS STEEL 316.
 3. ALL CORNERS AND EDGES TO BE ROUNDED AND SMOOTH.
 4. BOTTOM OF DESK TO BE OPEN WITH TWO INCH FLANGE AROUND THE INSIDE PERIMETER.
 5. ACCESS DOOR EQUIPPED WITH 3-POINT LATCH FLUSH HANDLE.

PREPARED BY: WSP USA INC.
200 LENOX DRIVE, LAWRENCEVILLE, N.J. 08448



CAPE MAY COUNTY

AM

JP

SC

Kevin Walsh

N.J. PE LICENSE NUMBER:
34GER0175000

DATE

Designed by

Drawn by

Checked by

JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

DRAWING TITLE:

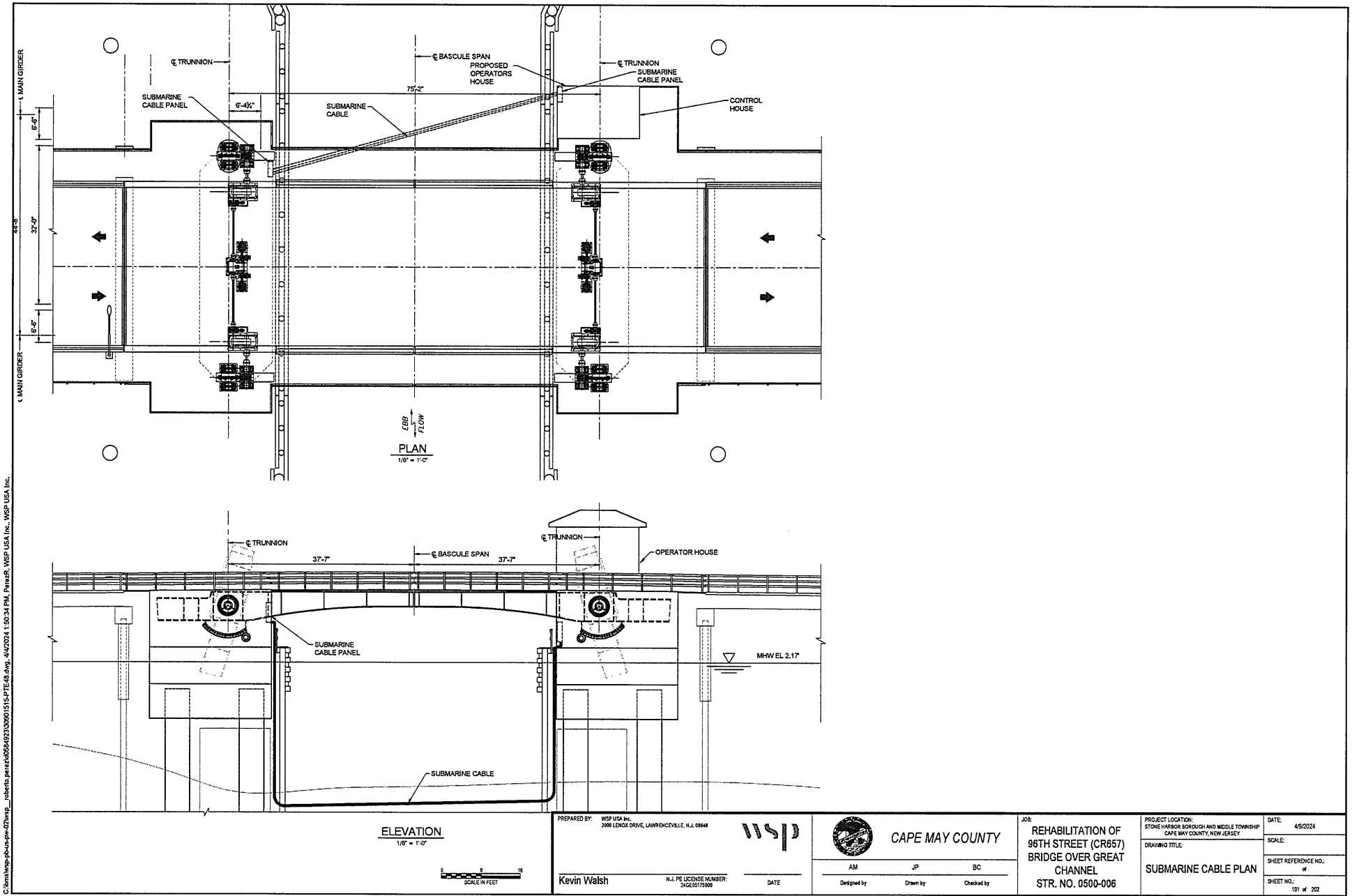
CONTROL DESK DETAILS

DATE: 4/9/2024

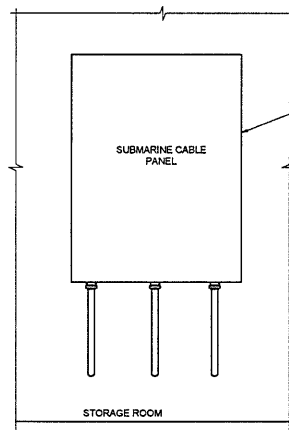
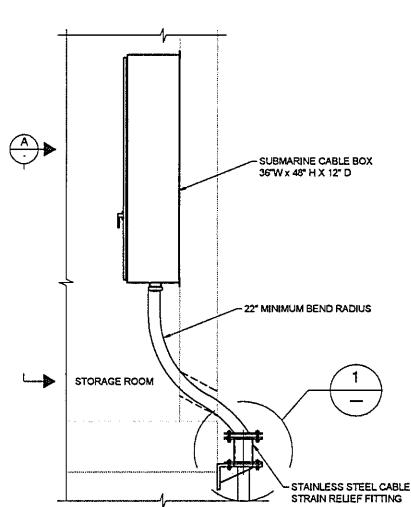
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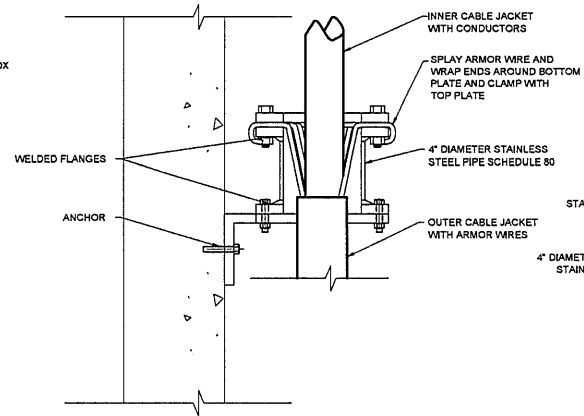
SHEET NO. 190 of 202



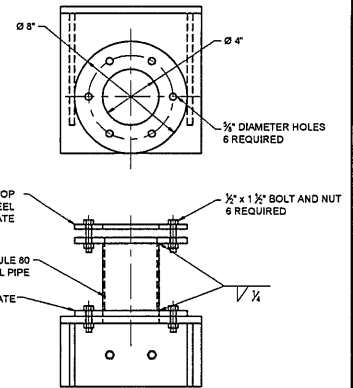
SHEET NO.: 192 of 200



VIEW A




SUBMARINE CABLE CLAMP
ASSEMBLY DETAIL
NTS

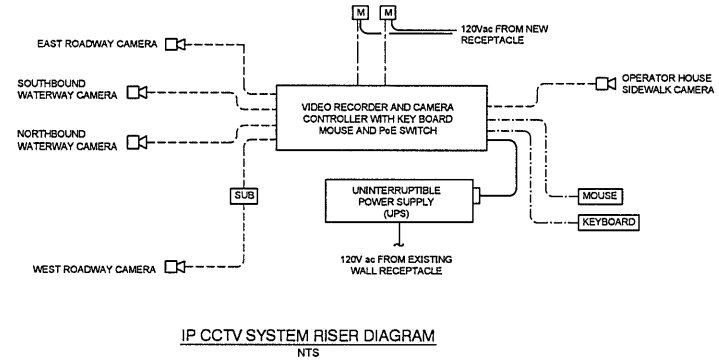
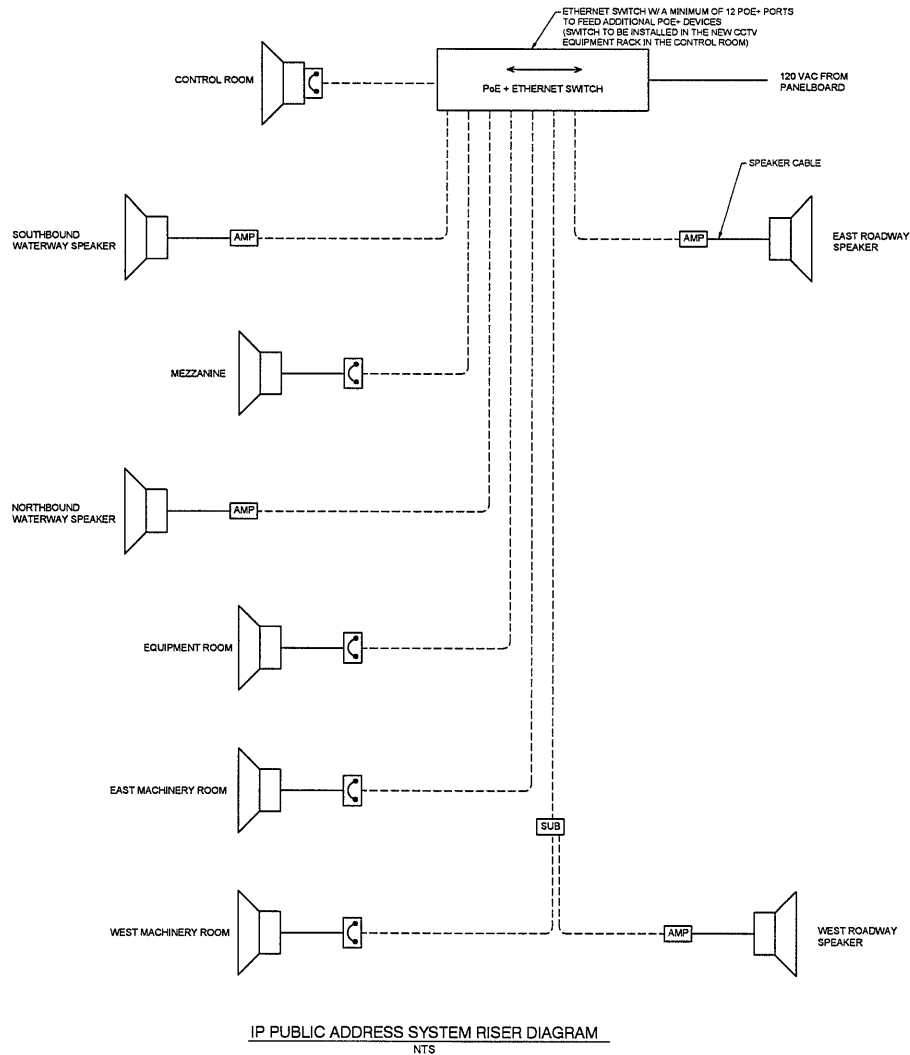


DETAIL 1

c:\bim\wsp\pdp-up-gw-02\wsp..._cabinto_perceuto05849230601515\PTES0.dwg, 4/3/2024 9:57:42 AM, PunaR, WSP USA Inc., WSP USA Inc.


PREPARED BY: WSP USA Inc. 2000 LENOX DRIVE, LAWRENCEVILLE, N.J. 08648 Kevin Walsh N.J. PE LICENSE NUMBER: J005917000	<div style="text-align: center;">  CAPE MAY COUNTY </div> <div style="display: flex; justify-content: space-around; font-size: small;"> AM JP BC </div> <div style="display: flex; justify-content: space-around; font-size: x-small;"> Designed by Drawn by Checked by </div>	JOB: REHABILITATION OF 96TH STREET (CR657) BRIDGE OVER GREAT CHANNEL STR. NO. 0500-006	PROJECT LOCATION: STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP CAPE MAY COUNTY, NEW JERSEY DRAWING TITLE: SUBMARINE CABLE DETAILS	<div style="display: flex; justify-content: space-between; font-size: x-small;"> DATE: 4/5/2024 SHEET NO.: 193 of 202 </div> <div style="display: flex; justify-content: space-between; font-size: x-small;"> SCALE: 1"=1' SHEET REFERENCE NO.: of </div>
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c:\bms\wsp\p-u-pw-02\wsp...roberts_parea\0584\023\06001515-PT-33.dwg 4/2/2024 5:57:48 AM, PareaR, WSP USA Inc., WSP USA Inc.



LEGEND

- IP CCTV POE CAMERA W/
PAN TILT ZOOM (PTZ)
- CCTV MONITOR
- PA SPEAKER
- IP POE/POE+ HANDSET
(UNLESS OTHERWISE NOTED)
- VIDEO RECORDER, CAMERA
CONTROLLER AND 8 PORT
PoE ETHERNET SWITCH
- ETHERNET SWITCH
- 120V a.c. POWER WIRING
- ETHERNET CABLE
- VIDEO CABLE HDMI OR VGA
- USB CABLE
- PoE IP SPEAKER AMPLIFIER
- DESKTOP IP POE/POE+ HANDSET
(UNLESS NOTED OTHERWISE)

PREPARED BY: WSP USA Inc. 2000 LENOX DRIVE, LAWRENCEVILLE, N.J. 08848	wsp	 CAPE MAY COUNTY	JOB: REHABILITATION OF 96TH STREET (CR657) BRIDGE OVER GREAT CHANNEL STR. NO. 0500-006	PROJECT LOCATION: STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP CAPE MAY COUNTY, NEW JERSEY	DATE: 4/5/2024
Kevin Walsh	N.J. PE LICENSE NUMBER: 240250175005	DATE	Designed by AM Drawn by JP Checked by BC	DRAWING TITLE: COMMUNICATION SYSTEM BLOCK DIAGRAM	SCALE: NTS SHEET REFERENCE NO. of SHEET NO. 154 of 202

GENERAL NOTES

1. ALL WORK PERFORMED BY THE CONTRACTOR SHALL BE IN STRICT CONFORMANCE WITH THE PROVISIONS OF THE LATEST EDITION OF THE NEW JERSEY STATE UNIFORM CONSTRUCTION CODE AND INTERNATIONAL BUILDING CODE OF NEW JERSEY AND ALL ITS SUB CODES, OSHA AND ADA REQUIREMENTS AND ANY OTHER LOCAL, REGIONAL OR FEDERAL REGULATIONS.

2. THE CONTRACTOR IS RESPONSIBLE FOR AND SHALL VERIFY EXISTING CONDITIONS AND REVIEW THESE CONDITIONS WITH THE PLANS BEFORE DURING AND AFTER CONSTRUCTION, AND ANY DISCREPANCIES BETWEEN THE ACTUAL CONDITIONS AND THE PLANS AND SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT IN WRITING IMMEDIATELY.

3. ALL WALL THICKNESS ARE NOMINAL DIMENSIONS ONLY ROUNDED TO THE NEAREST WHOLE INCH. REFER TO WALL SECTIONS AND DETAILS FOR THEIR ACTUAL THICKNESS.

4. ALL DIMENSIONS ARE FROM THE FACE OF METAL STUD, FACE OF GYPSUM BOARD BOARD UNLESS OTHERWISE NOTED.

5. EXCEPT WHERE OTHERWISE INDICATED, ALL WALLS AND PARTITION ARE DIMENSIONED TO THEIR "NOMINAL" SIZE. WHERE DIMENSIONS ARE NOTED AS "MIN.", PROVIDE MIN. CLEAR TO FINISH SURFACES.

6. BEFORE COMMENCING WORK, THE CONTRACTOR SHALL PROPERLY IDENTIFY AND MARK-UP ALL EXISTING UTILITIES.

7. DO NOT SCALE DRAWINGS.

8. MINOR DETAILS NOT USUALLY SHOWN OR SPECIFIED BUT NECESSARY FOR PROPER EXECUTION OF ANY PART OF THE WORK SHALL BE INCLUDED AS IF THEY WERE INDICATED IN THE DRAWINGS.

9. REFER TO STRUCTURAL, MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS FOR ADDITIONAL GENERAL NOTES, ABBREVIATIONS, SYMBOLS AND LEGENDS. ALL NOTES ARE TO BE REVIEWED AND APPLIED TO RELATED BUILDING COMPONENTS.

10. WHERE PIPING IS TO BE CONCEALED, THE HUNG OR FURRED CEILING IN THESE AREAS ARE NOT TO BE INSTALLED UNTIL THOSE PIPES HAVE BEEN PROPERLY TESTED.

11. ALL STRUCTURAL STEEL LESS THAN 8" FROM EXTERIOR SHALL BE PROPERLY WATERPROOFED.

12. EXCEPT AS OTHERWISE INDICATED, DOOR SADDLES OR DIVIDING STRIPS ARE REQUIRED AT INTERIOR DOOR OPENINGS WHERE DIFFERENT TYPES OF FLOOR FINISHES OCCUR IN IMMEDIATELY ADJOINING ROOMS. POSITION ON LINE OF CENTER DOOR WHEN DOOR IS CLOSED.

13. THE GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL UNFITS, STRUTS, BRACKETS, HANGERS, ETC. WHEREVER NECESSARY TO SUPPORT OR BRACE ALL FINISHES, EQUIPMENT RECESSES, HEADS OVER OPENINGS, FURNITURE, ETC.

14. THE CONTRACTOR SHALL VERIFY LOCATIONS OF ALL UNDERGROUND UTILITIES AND ELECTRICAL CONDUITS PRIOR TO STARTING ANY EXCAVATION OPERATIONS. SHOULD ANY CONDUITS BE ENCOUNTERED WHICH WERE NOT KNOWN TO EXIST, THE CONTRACTOR SHALL STOP WORK IN THAT AREA AND IMMEDIATELY NOTIFY THE ARCHITECT.

15. SWEEPING, BRUSHING, AND OTHER GENERAL CLEANING OF COMPLETED WORK AND THE REMOVAL OF DEBRIS, SURPLUS MATERIALS, TOOLS NOT IN ACTIVE USE, SCAFFOLDING AND OTHER EQUIPMENT NO LONGER NEEDED SHALL BE CARRIED OUT ON AN ONGOING BASIS. IN ADDITION, REMOVE STAINS, SPOTS, MARKS, AND DIRT FROM FINISH WORK. THE JOB IS TO BE MAINTAINED FREE OF RUBBISH. DISPOSE OF ALL RUBBISH IN ACCORDANCE WITH LOCAL ORDINANCES.

16. ALL HEIGHTS INDICATED ON REFLECTED CEILING PLANS ARE FROM TOP OF FINISHED FLOOR TO BOTTOM OF CEILING / FIXTURE SPECIFIED, U.O.N.

17. THE CONTRACTOR SHALL FURNISH & INSTALL ALL CLIPS, ANGLES AND MISC. STEEL TO SECURE FRAMING TO STRUCTURE

18. HINGE SIDE OF DOOR TO BE 4" FROM ADJACENT WALL OR AS OTHERWISE MENTIONED.

19. ALL METAL FLASHING SHALL BE STAINLESS STEEL, UNLESS NOTED OTHERWISE.

20. ALL EXPOSED INTERIOR/EXTERIOR METAL ITEMS TO BE PRIME AND PAINTED (INCLUDING GALVANIZED METALS) UNLESS OTHERWISE NOTED.

ABBREVIATIONS

ALUM. ALUMINUM

A.F.F. ABOVE FINISH FLOOR

ALT. ALTERNATE

APPROX. APPROXIMATE

ARCH. ARCHITECT

ARCH'L. ARCHITECTURAL

BD. BOARD

BLDG. BUILDING

BOT. BOTTOM

C.J. CONTROL JOINT

CLO. CLOSET

CU. CONDENSING UNIT

CLO. CLOSET

COL. COLUMN

C.M.U. CONCRETE MASONRY UNIT

CONC. CONCRETE

CONST. CONSTRUCTION

CONT. CONTINUOUS

DET. DETAIL

DA. DIAMETER

DM. DIMENSION

DN. DOWN

DR. DRAWING

DWG. DRAWING

EA. EACH

ELEC. ELECTRIC

ELECT'L. ELECTRICAL

ENCL. ENCLOSURE

EL. ELEVATION

EQUIP. EQUIPMENT

EQ. EQUAL

EXIST. EXISTING

E.T.R. EXISTING TO REMAIN

EXP. EXPANSION

EXT. EXTERIOR

E.J. EXPANSION JOINT

F.D. FLOOR DRAIN

F.E. FREIGHT ELEVATOR

FDN. FOUNDATION

FIN. FINISH

FL. FLOOR

FLUOR. FLUORESCENT

FT. FOOT / FEET

FIG. FOOTING

GA. GAUGE

GALV. GALVANIZED

GL. GLASS

GWB GYPSUM WALL BOARD

GP. BO. GYPSUM BOARD

HWDR. HARDWARE

HWOD. HARDWOOD

H.M. HOLLOW METAL

H.P. HIGH POINT

HT. HEIGHT

H.V.A.C. HEATING, VENTILATION, & AIR CONDITIONING

HORIZ. HORIZONTAL

HR. HOUR

I.D. INSIDE DIAMETER

IN. INCH / INCHES

INCL. INCLUDING

INFO. INFORMATION

INSUL. INSULATION

INV. INVERT

JT. JOINT

LAM. LAMINATE

LG. LONG

L.P. LOW POINT

LT. LIGHT

LT. WT. LIGHT WEIGHT

MACH. MACHINE

M.H. MAN-HOLE

MAT'L. MATERIAL

MAX. MAXIMUM

MECH. MECHANICAL

MEMB. MEMBRANE

MIN. MINIMUM

MISC. MISCELLANEOUS

MLDG. MOLDING

MTD. MOUNTED

MTL. METAL

MFD. METAL FLOOR DECK

MOD. MEDIUM DENSITY FIBERBOARD

MRO. METAL ROOF DECK

MULL. MULLION

N. NORTH

N.I.C. NOT IN CONTRACT

NO. NUMBER

N.T.S. NOT TO SCALE

O.A. OVERALL

O.A.I. OUTSIDE AIR INTAKE

O.C. ON CENTER

OPNG. OPENING

OPP. OPPOSITE

ORIG. ORIGINAL

O.H. OVERHEAD

O.D. OVERFLOW DRAIN

PART. PARTITION

PTN. PARTITION

PLAS. PLASTIC

PL. LAM. PLASTIC LAMINATE

PL. PLATE

PLYWD. PLYWOOD

PANL. PANEL

PR. PAIR

PTD. PAINTED

P.V.C. POLYVINYL CHLORIDE

P.S.I. POUNDS PER SQUARE INCH

P.S.F. POUNDS PER SQUARE FOOT

R. RISER

RAD. RADIUS

RB. RUBBER BASE

REF. REFLECTED

RCP. REFLECTED CEILING PLAN

R.D. ROOF DRAIN

RE. REFERENCE

REFL. REFLECTED

REQ'D. REQUIRED

REINFR. REINFORCING

REV. REVISION

RM. ROOM

R.O.D. ROUGH OPENING ROOF OVERFLOW DRAIN

SECT. SECTION

SHO. SHOWER

SIM. SIMILAR

SK. SKETCH

SPECS. SPECIFICATIONS

SQ. SQUARE

S/STL. STAINLESS STEEL

STL. STEEL

STD. STANDARD

STRUCT. STRUCTURE

STRUCT'L. STRUCTURAL

SUSP. SUSPENDED

T/. TOP OF

T.O. TOP OF

TEL. TELEPHONE

TER. TERRAZZO

TRANS. TRANSFORMER

TYP. TYPICAL

TBD. TO BE DETERMINED

U.L. UNDERWRITER'S LABORATORY UNFINISHED UNLESS OTHERWISE NOTED

UNFIN. UNFINISHED

U.O.N. UNLESS OTHERWISE NOTED

UTIL. UTILITY

V.B. VINYL BASE

V.C.T. VINYL COMPOSITION TILE

VERT. VERTICAL

VEST. VESTIBULE

V.F. VERIFY IN FIELD

VOL. VOLUME

VTR. VENT THRU ROOF

W/. WITH

W.C. WATER CLOSET

WOW. WINDOW


W.F. WIDE FLANGE


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
W.P. WORKING POINT


W.W.F. WELDED WIRE FABRIC


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 PARTITION TYPE


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
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

 DEMOLITION KEYNOTES



 REVISION TAG


 DOOR NUMBER


 ELEVATION POINTER / WORK POINT


 Drawing Title

 Drawing No.  DETAIL


 Sheet No.  SCALE


 Drawing Scale


 BUILDING SECTION


 PLAN DETAIL OR SECTION DETAIL


MATERIALS LEGEND


 CONCRETE


 ASPHALT SHINGLE


 CMU


 STEEL


 PLYWOOD


 WOOD STUD / WOOD BLOCKING

 RIGID INSULATION

 SHM

 GYPSUM BOARD

 GRAVEL / POROUS FILL

 BATT INSULATION

BUILDING CODE INFORMATION

PROJECT NAME: 96TH STREET (CR657) BRIDGE OVER GREAT CHANNEL REHABILITATION

LOCATION: MIDDLE TOWNSHIP BOROUGH OF STONE HARBOR, CAPE MAY COUNTY, NEW JERSEY, 08247

THE PRIMARY CODE REFERENCE WILL BE THE NEW JERSEY UNIFORM CONSTRUCTION CODE (N.J.A.C. 5:23 ET SEQ). THE UNIFORM CONSTRUCTION CODE ADOPTS SEVERAL MODEL CODES THAT ARE REFERENCED AS SUBCODES. THESE SUBCODES ARE AN INTEGRAL PART OF THE UNIFORM CONSTRUCTION CODE AND ARE AS FOLLOWS:

SUBCODE	NATIONAL MODEL CODE	UCC REFERENCE
BUILDING	IBC/2021 NEW JERSEY EDITION	N.J.A.C. 5:23-3.14
ACCESSIBILITY	ANSI-A117.1 2017-EXEMPT-SECTION 1103.2.2	NJAC 5.23-7
PLUMBING	NATIONAL STANDARD PLUMBING CODE 2021	N.J.A.C. 5:23-3.15
ELECTRICAL	NATIONAL ELECTRICAL CODE (NFPA70) 2020	N.J.A.C. 5:23-3.16
ENERGY	ASHRAE 90.1-2019	N.J.A.C. 5:23-3.18
MECHANICAL	INTERNATIONAL MECHANICAL CODE 2021	N.J.A.C. 5:23-3.20

GENERAL BUILDING INFORMATION

	CRITERION / DESIGNATION	IBC PREFERENCE
USE AND OCCUPANCY CLASSIFICATION	BUSINESS B	SECTION 304
OCCUPANCY	NON-SEPARATED	SECTION 508.3
CONSTRUCTION CLASSIFICATION	IIB (2B)	TABLE 601
FIRE SUPPRESSION	NO	TABLE 603.2.13

GENERAL BUILDING HEIGHTS & AREAS
CONSTRUCTION CLASSIFICATION TYPE IIB (2B)

BUILDING AREA	ALLOWABLE	PROPOSED	IBC PREFERENCE
CONTROL ROOM	23,000 S.F.	192, S.F.	508.2
MEZZANINE	23,000 S.F.	192, S.F.	
EQUIPMENT ROOM	23,000 S.F.	192 S.F.	
TOTAL	46,000 S.F.	PROPOSED AREA OF BUILDING 576 S.F.	
NO. OF STORIES	THREE STORIES	TWO STORIES	TABLE 504
BUILDING HEIGHT	55'	ACTUAL 24'	


MEANS OF EGRESS FROM BUILDING-TABLE 1006.2.1


OCCUPANT LOAD	NO. OF EXIT REQUIRED	NO. OF EXIT PROVIDED
BUSINESS (B) 2 OCC. Actual	1	1
-	-	-
-	-	-
-	-	-

MAXIMUM FLOOR ARE PER OCCUPANT (TABLE 1004.5)

LOCATION	GROSS FLOOR
BUSINESS (B)	150w GROSS FLR. AREA

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2000 LENOX DRIVE, LAWRENCEVILLE, N.J. 08846



 CAPE MAY COUNTY

N.J. PE LICENSE NUMBER

DATE

Designed by

Drawn by

Checked by

JOB: REHABILITATION OF 96TH STREET (CR657) BRIDGE OVER GREAT CHANNEL STR. NO. 0500-006

PROJECT LOCATION: STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP CAPE MAY COUNTY, NEW JERSEY

DRAWING TITLE: GENERAL NOTES, ABBREVIATIONS, SYMBOLS, & LEGEND AND BUILDING CODE

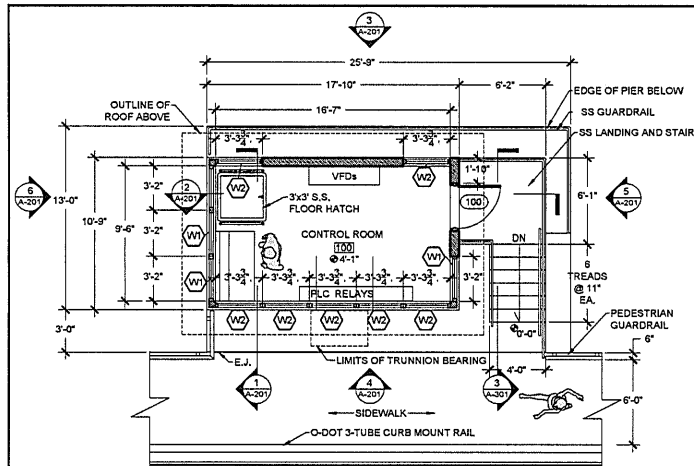
DATE: 4/9/2024

SCALE: N/A

SHEET REFERENCE NO.: 1 of 7

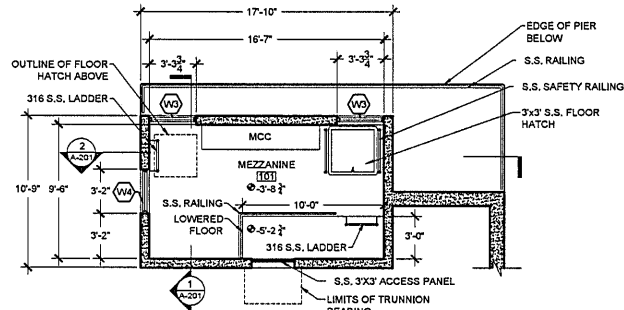
SHEET NO.: 136 of 202

C:\Users\USR671902\OneDrive - WSP O365\Documents\96th St Bridge\30901515-A001.dwg, 3/14/2024 10:28:33 AM, AutoCAD PDF (High Quality Print).pc3



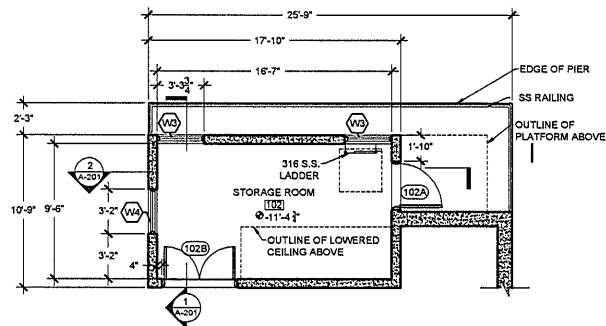
1 CONTROL ROOM FLOOR PLAN

SCALE: 1/4" = 1'-0"



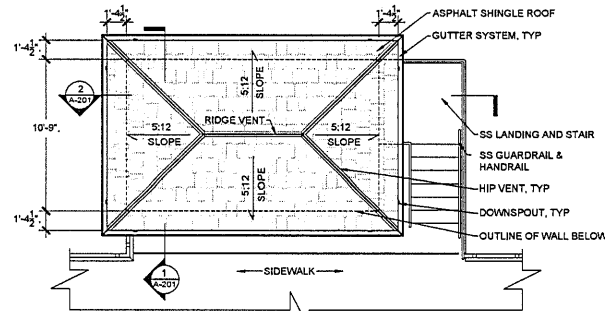
2 MEZZANINE FLOOR PLAN

SCALE: 1/4" = 1'-0"



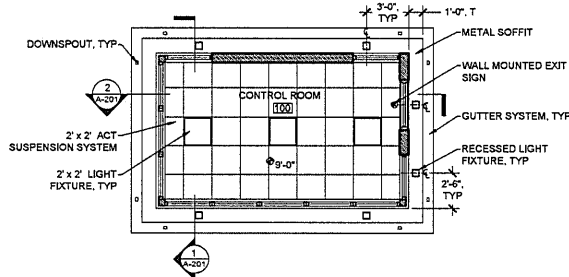
3 STORAGE ROOM FLOOR PLAN

SCALE: 1/4" = 1'-0"



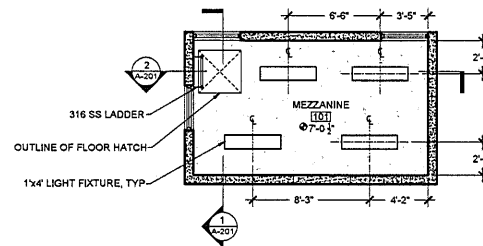
4 CONTROLHOUSE - ROOF PLAN

SCALE: 1/4" = 1'-0"



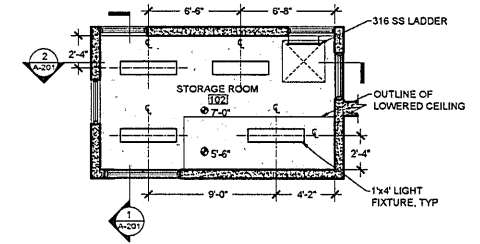
5 CONTROL ROOM RCP

SCALE: 1/4" = 1'-0"



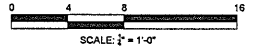
6 MEZZANINE RCP

SCALE: 1/4" = 1'-0"



7 STORAGE ROOM RCP

SCALE: 1/4" = 1'-0"



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CAPE MAY COUNTY

JOB: REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

DRAWING TITLE:
CONTROLHOUSE FLOOR PLANS, ROOF
PLAN AND REFLECTED CEILING PLANS

DATE: 4/9/2024

SCALE: 1/4" = 1'-0"

SHEET REFERENCE NO.: 2 of 7

SHEET NO.: 181 of 202

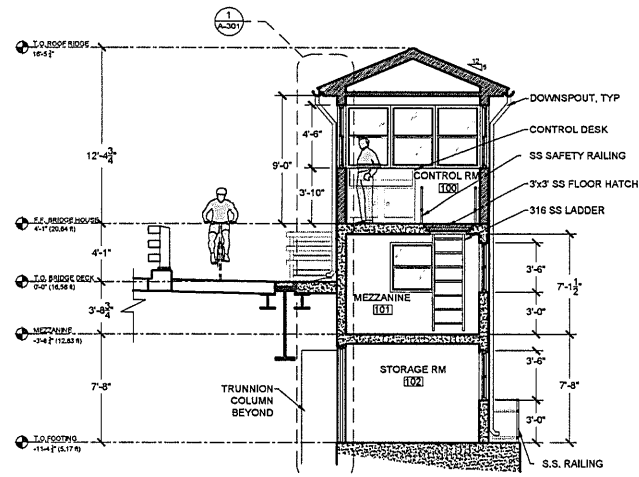
N.J. PE LICENSE NUMBER: _____

DATE: _____

Designed by: _____

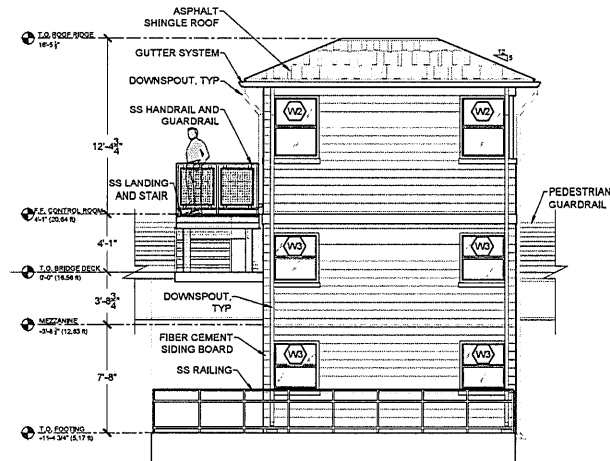
Drawn by: _____

Checked by: _____



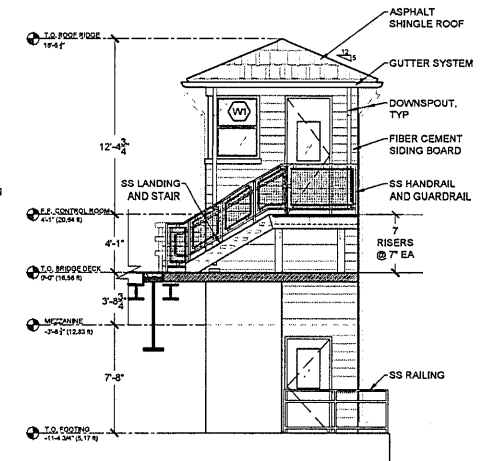
1 CROSS SECTION

SCALE: 1/4" = 1'-0"



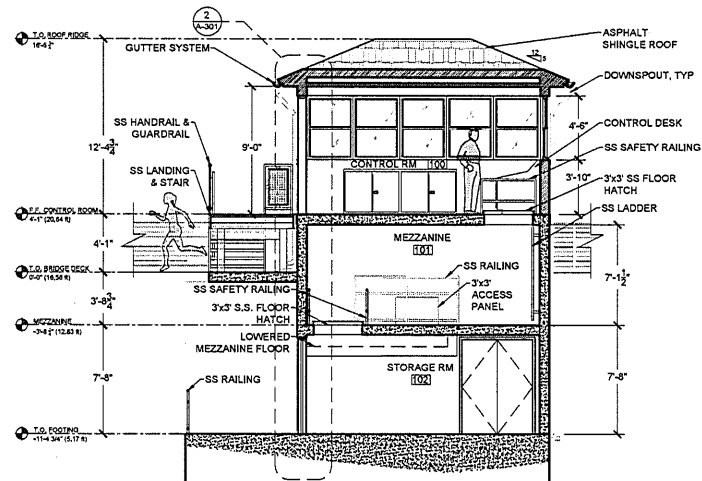
3 NORTH ELEVATION

SCALE: 1/4" = 1'-0"



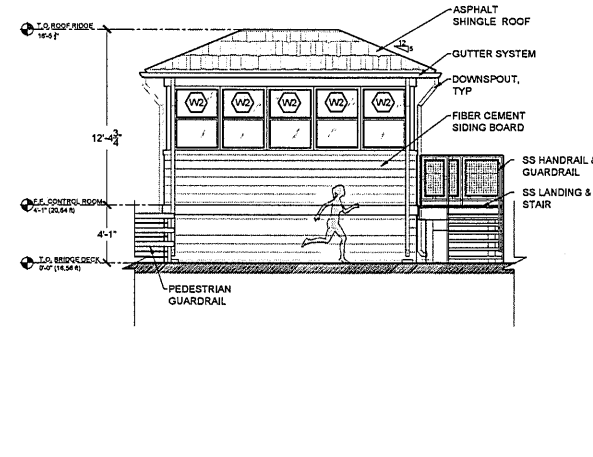
5 EAST ELEVATION

SCALE: 1/4" = 1'-0"



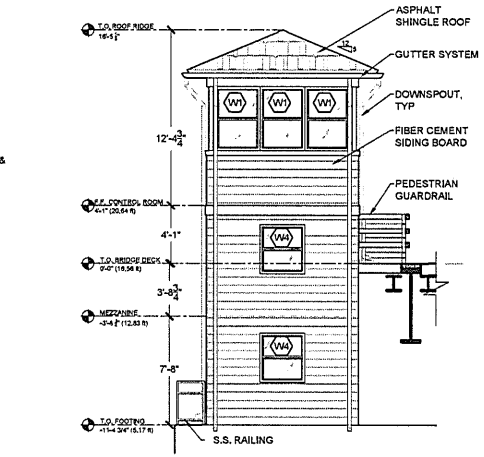
2 LONGITUDINAL SECTION

SCALE: 1/4" = 1'-0"

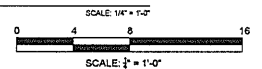


4 SOUTH ELEVATION

SCALE: 1/4" = 1'-0"



6 WEST ELEVATION



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CAPE MAY COUNTY

JOB:
REHABILITATION OF
96TH STREET (CR657)
BRIDGE OVER GREAT
CHANNEL
STR. NO. 0500-006

PROJECT LOCATION:
STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY

DRAWING TITLE:
CONTROL HOUSE SECTIONS AND
EXTERIOR ELEVATIONS

DATE: 4/5/2024

SCALE: 1/4" = 1'-0"

SHEET REFERENCE NO.: 3 of 7

SHEET NO.: 158 of 202

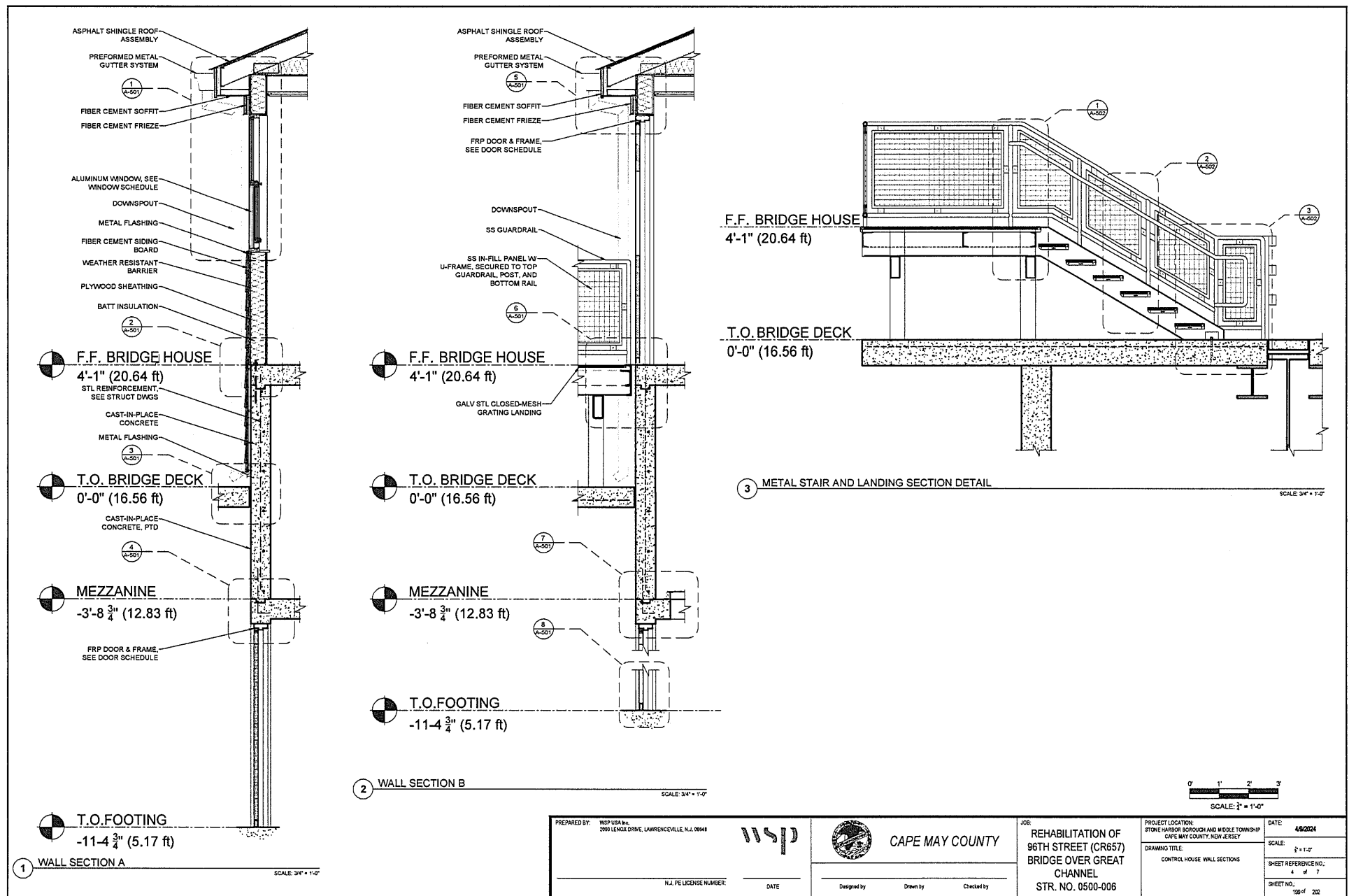
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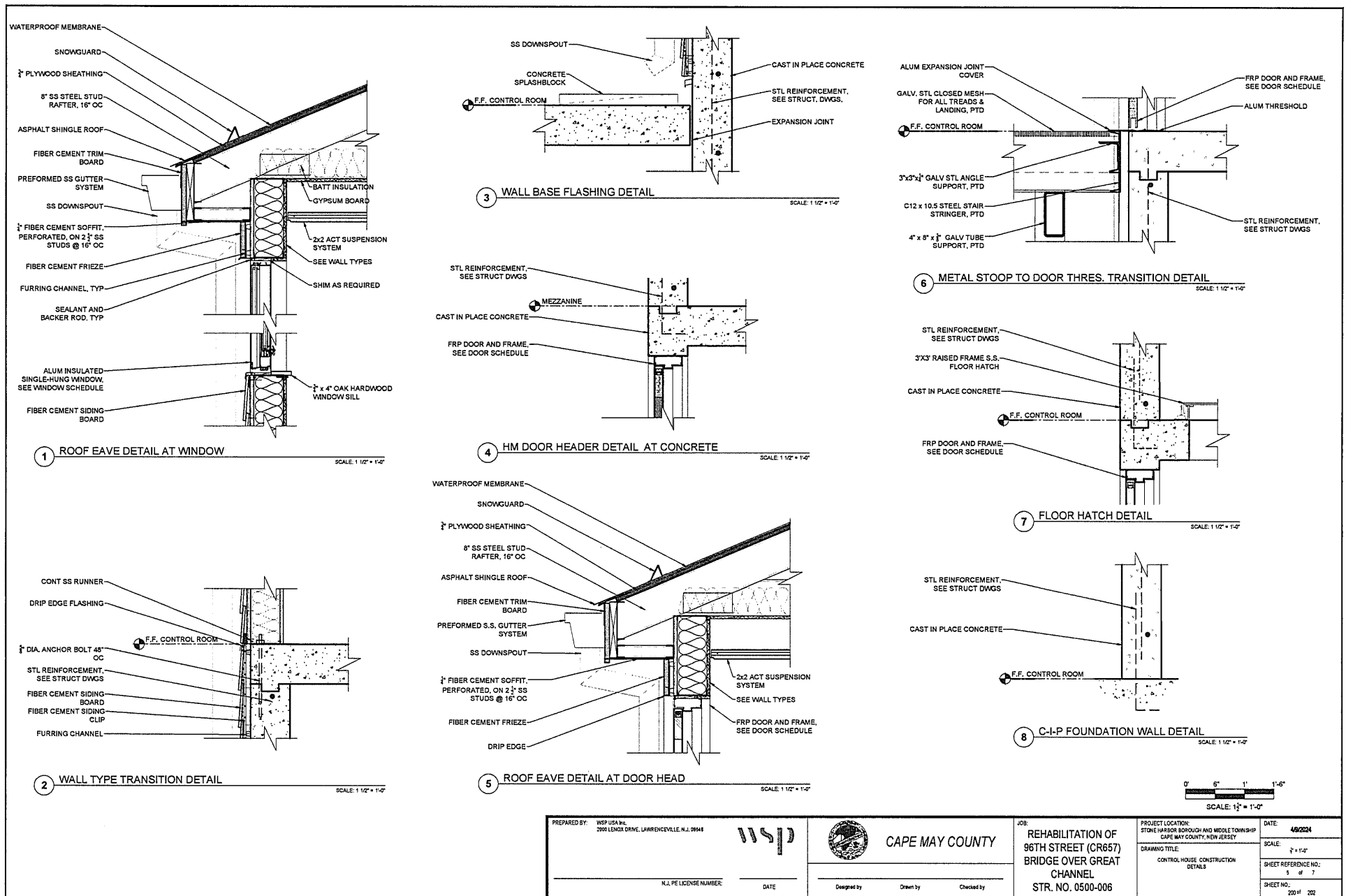
DATE

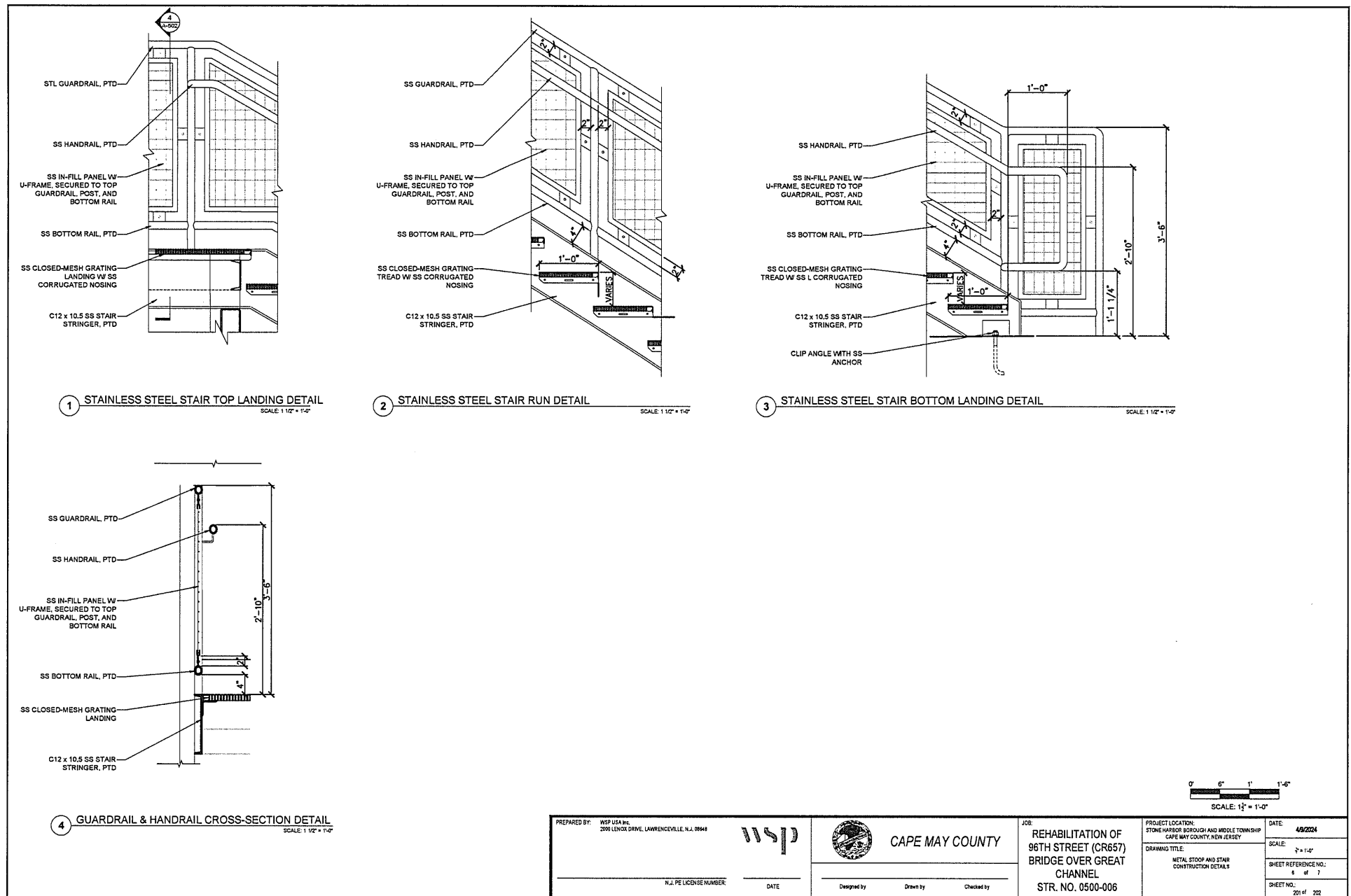
Designed by

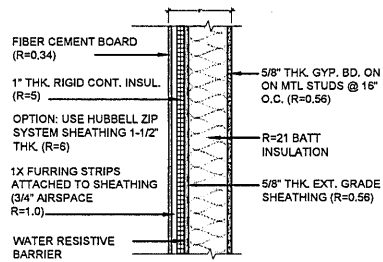
Drawn by

Checked by

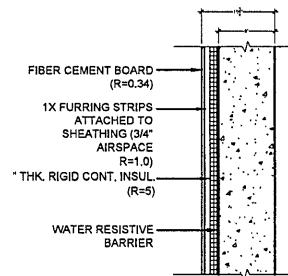










1 FIBER CEMENT ON STEEL STUD WALL ASSEMBLY SCALE: 1 1/2" = 1'-0"



1 FIBER CEMENT ON CAST IN PLACE CONCRETE SCALE: 1 1/2" = 1'-0"

PREPARED BY: WSP USA Inc. 200 LENOX DRIVE, LAWRENCEVILLE, N.J. 08648 N.J. PE LICENSE NUMBER: _____ DATE: _____		 CAPE MAY COUNTY Designed by _____ Drawn by _____ Checked by _____	JOB: REHABILITATION OF 96TH STREET (CR657) BRIDGE OVER GREAT CHANNEL STR. NO. 0500-006	PROJECT LOCATION: STONE HARBOR BOROUGH AND MIDDLE TOWNSHIP CAPE MAY COUNTY, NEW JERSEY DRAWING TITLE: CONTROL HOUSE WALL TYPES	DATE: 4/8/2024 SCALE: 1/2" = 1'-0" SHEET REFERENCE NO.: 7 of 7 SHEET NO.: 202 of 202
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