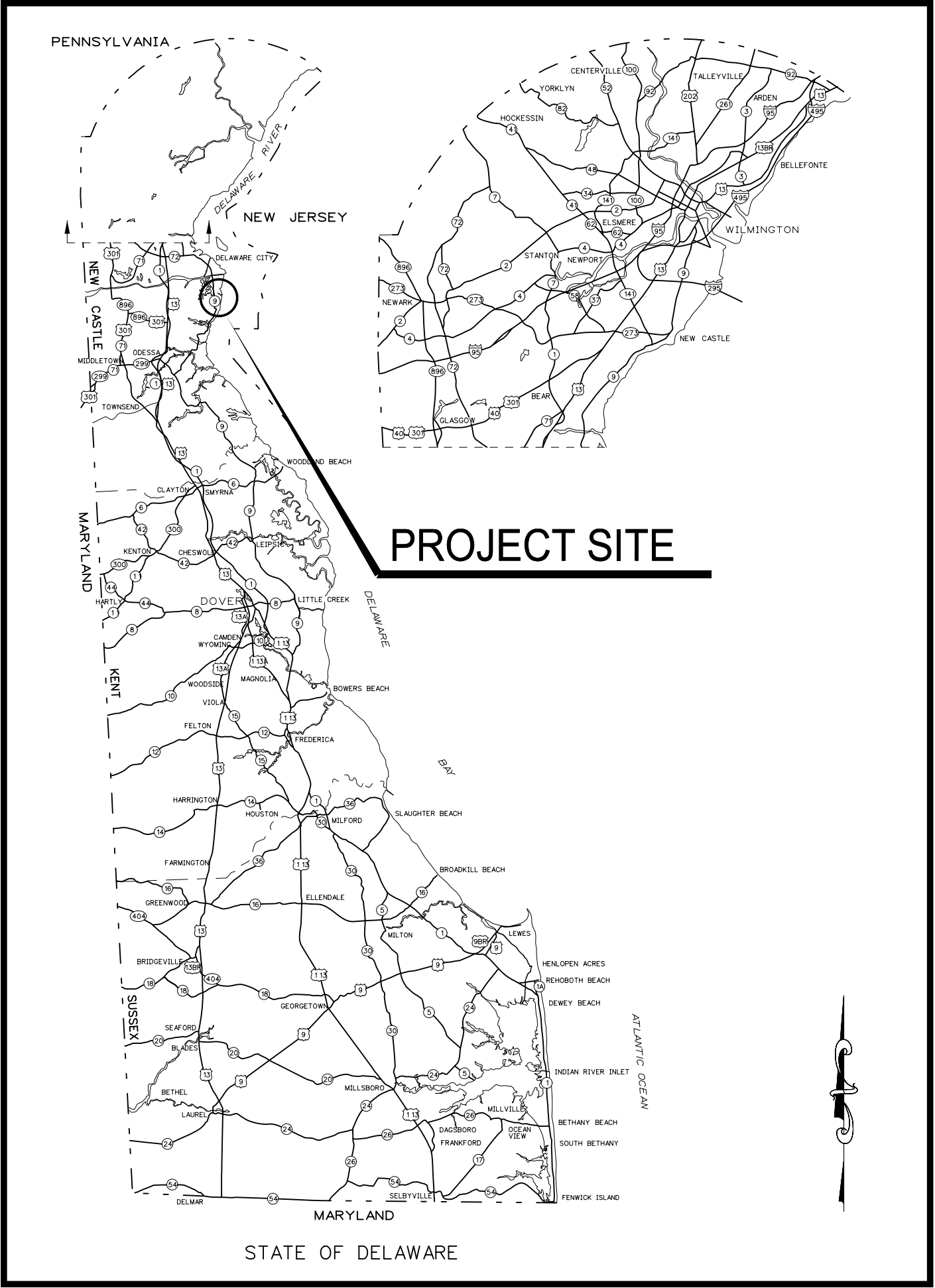
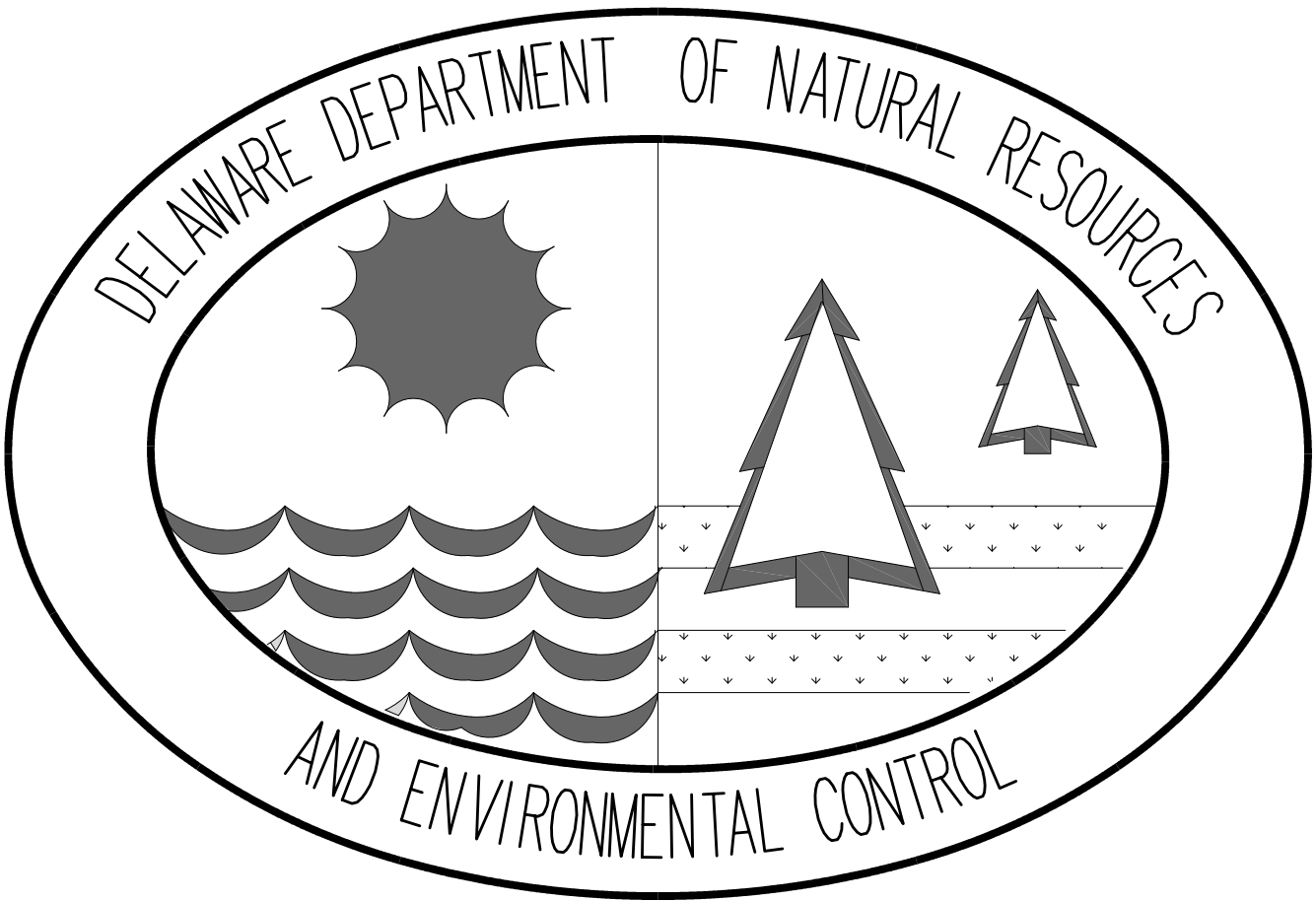


STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
DIVISION OF FISH & WILDLIFE

Delaware Bayshore Byway
COOPER-CROSS WILDLIFE
VIEWING ENHANCEMENTS

CONTRACT NO. FW-1-15
FINAL PLANS
AUGUST 28, 2017



LOCATION MAP



SITE MAP
INDEX OF SHEETS

SHEET NO.:	TITLE
C-1	GENERAL NOTES & CLEARING DETAIL
C-2	CONSTRUCTION PLAN
C-2.01	PROFILE
C-3 TO C-4	CONSTRUCTION DETAILS
C-5	TACKBOARD STRUCTURE WITH 3'X6' CABINET
S-1	STRUCTURAL GENERAL NOTES
S-2	GENERAL PLAN AND FOUNDATION LAYOUT
S-3	SUBSTRUCTURE DETAILS
S-4	BOARDWALK TYPICAL SECTION AND FRAMING
S-5	VIEWING AREA GENERAL PLAN AND FRAMING PLAN
S-6	VIEWING AREA SECTIONS
S-7	RAILING DETAILS
ES-1 TO ES-3	EROSION AND SEDIMENT CONTROL PLAN AND DETAILS

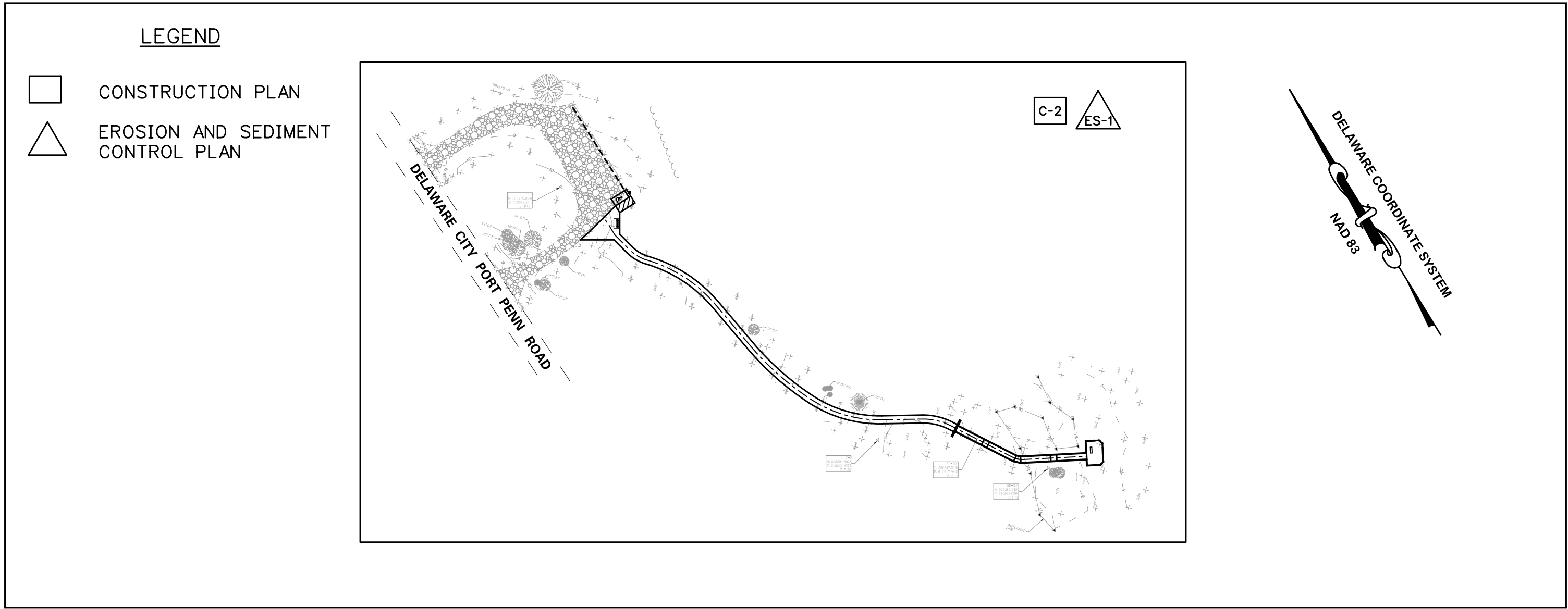
OWNER INFORMATION

OWNER: STATE OF DELAWARE
89 KINGS HIGHWAY
DOVER, DELAWARE 19901

PROPERTY ADDRESS: 740 DELAWARE CITY PORT PENN ROAD
MIDDLETOWN, DELAWARE 19709

TAX PARCEL #: 13-010.00-008 / 13-010.00-009

DESIGNER/APPLICANT: RK&K
700 E. PRATT STREET, SUITE 500
BALTIMORE, MARYLAND 21202



SHEET INDEX
SCALE: 1"=100'

PREPARED BY
THE CONSULTING FIRM OF

RK&K RUMMEL, KLEPPER & KAHL, LLP
CONSULTING ENGINEERS
700 E. PRATT STREET, SUITE 500
BALTIMORE, MD 21202

Nancy R. Bergman
DIRECTOR

8/28/2017
DATE

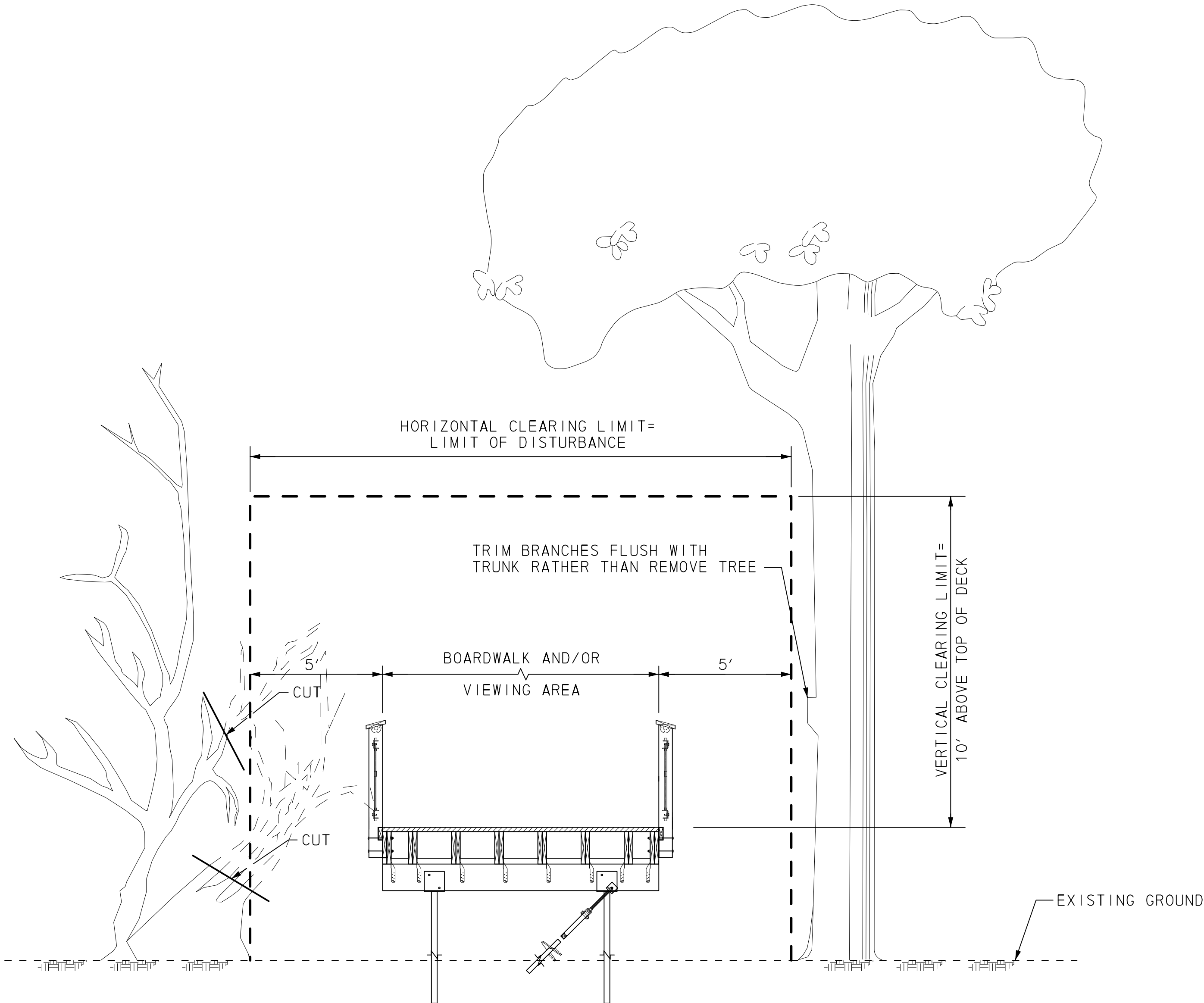
PREPARED FOR:
DELAWARE DIVISION OF FISH & WILDLIFE
89 KINGS HIGHWAY
DOVER, DELAWARE 19901
PHONE: 302-739-9231
FAX: (302) 739-7026

DATE: AUGUST 28, 2017

MAURY RUTH BERGMAN
LICENSE
No. 16737
DELAWARE
PROFESSIONAL ENGINEER

GENERAL NOTES

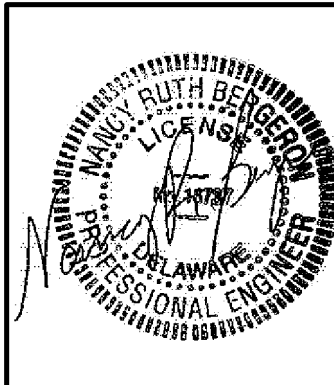
- BEFORE EXCAVATION IS STARTED IN AREAS OF UNDERGROUND UTILITIES, THE CONTRACTOR SHALL GIVE NOTIFICATION BY TELEPHONE, CALLING "MISS UTILITY", TEL. (800) 282-8555. THE CONTRACTOR IS ADVISED THAT MISS UTILITY HAS REFUSED TO LOCATE UTILITIES ON STATE PROPERTY IN SOME INSTANCES. THE CONTRACTOR SHALL VERIFY EXACT LOCATIONS OF ALL UTILITIES IN THE FIELD BY EMPLOYING A PROFESSIONAL UTILITY LOCATOR TO FIELD LOCATE EXISTING UTILITIES PRIOR TO ANY EXCAVATION. EXISTING UTILITIES ARE SHOWN ON THE DRAWINGS BASED ON THE BEST INFORMATION AVAILABLE. HOWEVER THIS INFORMATION HAS NOT BEEN FIELD VERIFIED AND IS NOT GUARANTEED. ALL EXISTING UTILITIES SHALL BE PROTECTED AND TEMPORARILY SUPPORTED OR RELOCATED AS NECESSARY TO COMPLETE THE WORK IN ACCORDANCE WITH THE PERTINENT UTILITY COMPANY REQUIREMENTS. ALL COSTS SHALL BE INCIDENTAL TO THE CONTRACT.
- THE CONTRACTOR SHALL DESIGNATE A PERSON WHO SHALL BE RESPONSIBLE FOR IMPLEMENTING AND MAINTAINING THE EROSION AND SEDIMENT CONTROL PLANS, AND A PERSON WHO SHALL BE RESPONSIBLE FOR WORK SAFETY.
- THE CONTRACTOR IS RESPONSIBLE FOR SECURING THE AREA WITHIN THE LIMITS OF DISTURBANCE TO PROHIBIT PUBLIC ACCESS UNTIL COMPLETION OF THE PROJECT. THE CONTRACTOR'S PROCEDURE/METHOD FOR LIMITING ACCESS SHALL BE SUBMITTED TO THE OWNER FOR REVIEW AND APPROVAL PRIOR TO THE START OF WORK. THE COST SHALL BE INCLUDED IN THE CONTRACT.
- THE LIMIT OF DISTURBANCE SHALL BE AS SHOWN ON THE PLANS. THE CONTRACTOR SHALL NOT WORK OR TRESPASS OUTSIDE OF THE LIMIT OF DISTURBANCE AS SHOWN ON THE PLANS UNLESS OTHERWISE APPROVED BY THE OWNER.
- APPROVED COVERS TO PREVENT MATERIAL FROM LEAVING THE TRUCKS MUST BE INSTALLED OVER ALL LOADED TRUCKS HAULING BORROW, EXCAVATED MATERIALS, AND/OR FINE AGGREGATES TO OR FROM THE PROJECT SITE OVER STATE MAINTAINED ROADS. THE TRUCKS SHALL BE FULLY COVERED AND THE COVERS SHALL BE TIED ON THE REAR AND BOTH SIDES TO PREVENT MATERIAL FROM LEAVING THE TRUCK DURING HAULING.
- IN CASE OF CONFLICT BETWEEN THE "MANUFACTURER'S RECOMMENDATIONS" FOR AN APPROVED MATERIAL AND THE GOVERNING "CONTRACT SPECIFICATIONS" FOR THE MATERIAL, THE MORE RESTRICTIVE OF THE TWO SHALL PREVAIL UNLESS OTHERWISE DIRECTED BY THE OWNER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING, BY SURVEY, ALL POINTS AND LIMIT OF DISTURBANCE LINES NECESSARY FOR CONSTRUCTION OF THE PROJECT. THE CONTRACTOR SHALL ENGAGE A PROFESSIONAL LAND SURVEYOR, REGISTERED IN THE STATE OF DELAWARE, TO PERFORM REQUIRED SURVEYING SERVICES. ALL SURVEY STAKEOUT WORK SHALL BE INCLUDED IN THE CONTRACT.
- THE CONTRACTOR SHALL SUBMIT A STAGING PLAN TO THE OWNER FOR APPROVAL PRIOR TO CONSTRUCTION OF THE PROJECT. THE STAGING PLAN SHALL INCLUDE SITE LOCATION, EROSION AND SEDIMENT CONTROLS, AND ALL OTHER INCIDENTALS, AS DIRECTED BY THE OWNER. ALL COSTS ASSOCIATED WITH PREPARING AND IMPLEMENTING THE STAGING PLAN SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- ALL CONSTRUCTION ACCESS SHALL USE THE STABILIZED CONSTRUCTION ENTRANCE. CONSTRUCTION, MAINTENANCE, CLEANING, RE-COMPACTING, REMOVAL AND REPLACEMENT OF THE BASE COURSE MATERIALS FOR THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENT CONTROL PLAN AS DIRECTED BY THE CERTIFIED CONSTRUCTION REVIEWER AND THE OWNER. THE CONTRACTOR IS RESPONSIBLE FOR CLEANING THE ROAD AT THE CONSTRUCTION ENTRANCE AT THE END OF EACH WORKING DAY.
- THE CONTRACTOR MAY STORE OR STOCKPILE EQUIPMENT OR MATERIALS ON THE PROJECT SITE IN THE CONSTRUCTION STAGING AREA SHOWN ON THE PLAN. PROPER EROSION AND SEDIMENT CONTROL MEASURES, AS DETERMINED BY THE OWNER, SHALL BE INSTALLED IN ALL STAGING AREAS. SILT FENCE SHALL BE PLACED AROUND THE STOCKPILE AREAS AS DIRECTED BY THE OWNER. THE COST OF EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INCIDENTAL TO THE CONTRACT.
- UPON COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL FULLY RESTORE ALL AREAS USED FOR STAGING OPERATIONS, INCLUDING SOIL STOCKPILE AREAS, TO ITS ORIGINAL CONDITION TO THE SATISFACTION OF THE OWNER. ALL COSTS ASSOCIATED WITH RESTORATION OF THE STAGING AREA SHALL BE AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL PROVIDE NECESSARY RESTROOM FACILITIES FOR WORKERS DURING CONSTRUCTION.
- THE DATUM USED ON THIS PROJECT IS HORIZONTAL NAD 83/91 AND VERTICAL NGVD 88.
- THE MAXIMUM SLOPE OF THE TRAIL IN THE DIRECTION OF TRAVEL SHALL NOT EXCEED 5% AT ANY LOCATION.
- THE CONTRACTOR SHALL CLOSE THE ENTRANCE TO THE PROJECT SITE AT ALL TIMES WHEN WORK IS NOT IN PROGRESS TO PREVENT UNAUTHORIZED ENTRY INTO THE SITE. THE OWNER MUST HAVE EMERGENCY ACCESS AT ALL TIMES. PROPOSED METHOD OF ENTRANCE CLOSURE SHALL BE SUBMITTED FOR OWNER'S APPROVAL.
- ALL CONSTRUCTION IS TO BE IN ACCORDANCE WITH THE DELDOT STANDARDS SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION DATED 2011 AND SUPPLEMENTAL SPECIFICATIONS, AND STANDARD CONSTRUCTION DETAILS, UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIFICATIONS FOR THIS PROJECT AND AS FOLLOWS. FOR THIS PROJECT, DIVISION 100 GENERAL PROVISIONS IN THE DELDOT STANDARD SPECIFICATIONS DOES NOT APPLY. THERE WILL BE NO MEASUREMENT FOR PAYMENT EXCEPT WHERE SPECIFICALLY STATED IN THE PLANS AND SPECIFICATIONS FOR THIS PROJECT.
- ALL WORK IN WETLANDS SHALL BE PERFORMED IN ACCORDANCE WITH THE PERMIT CONDITIONS AND AS FOLLOWS. IMPACTS FROM VEHICLES TRANSVERSING WETLANDS SHALL BE REDUCED BY USING SUPPORT MATS, LOW IMPACT EQUIPMENT AND BY MINIMIZING VEHICULAR TRAFFIC. ALL VEHICLES OR EQUIPMENT TRANSVERSING, OR OPERATED IN, WETLANDS SHALL BE ADEQUATELY SUPPORTED BY MATS AT ALL TIMES.

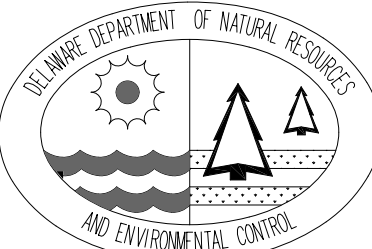


BOARDWALK & VIEWING AREA CLEARING LIMITS

CLEARING AND PRUNING NOTES:

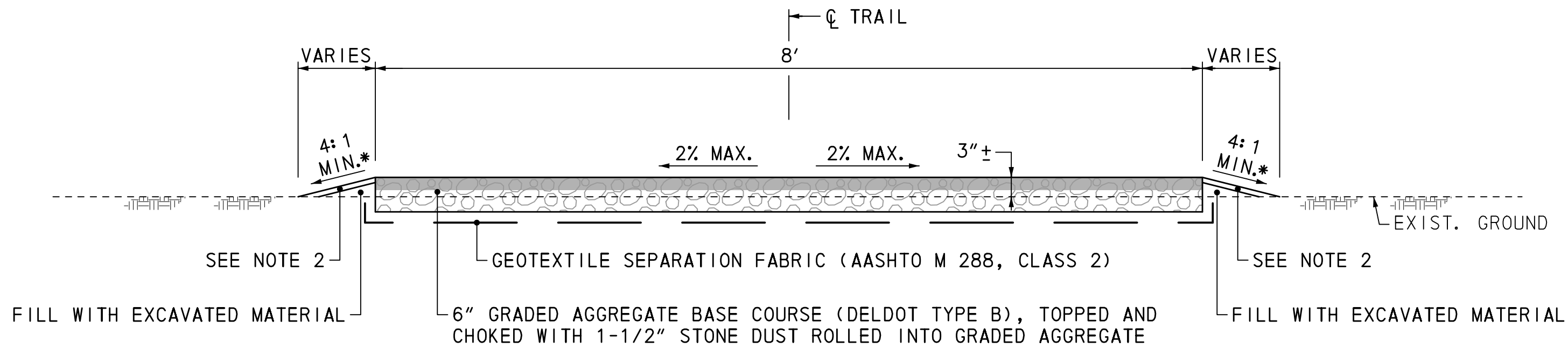
- IN AREAS WHERE TREES AND/OR SHRUBS WILL BE OVERHANGING OR ENCROACHING ON THE BOARDWALK AND VIEWING AREA, PRUNING MAY BE NECESSARY TO ACHIEVE A VERTICAL AND/OR HORIZONTAL CLEAR SPACE AS SHOWN ON THE DETAIL ON THIS SHEET. THE CONTRACTOR SHALL PRUNE EXISTING TREE AND SHRUB BRANCHES IN ACCORDANCE WITH THE INTERNATIONAL SOCIETY OF ARBORCULTURE (I.S.A.) STANDARDS. THE INTENT OF THIS WORK IS TO NOT REMOVE LARGE TREES. THE OWNER WILL IDENTIFY AND CLEARLY MARK ALL TREES TO BE REMOVED.
- CLEARING OPERATIONS SHALL NOT INCLUDE GRUBBING. CLEARED VEGETATION SHALL BE CUT FLUSH WITH THE GROUND AND THERE SHALL BE NO DISTURBANCE OF THE ROOT MAT.
- ALL MATERIAL RESULTING FROM PRUNING AND REMOVAL OF TREES, SHRUBS, AND OTHER VEGETATION SHALL BE DISPOSED OF OFFSITE BY THE CONTRACTOR.
- ALL TREE REMOVAL AND PRUNING NECESSARY FOR CONSTRUCTION, AS DIRECTED BY THE OWNER, SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND SHALL BE DONE AT NO ADDITIONAL COST TO THE OWNER.
- THE LIMITS OF CLEARING AND DISTURBANCE SHOWN ARE NOT INTENDED TO RESTRICT OR OBSTRUCT PROPER PRUNING PROCEDURES IN ACCORDANCE WITH THE STANDARDS REFERENCED IN NOTE 1.
- WITHIN THE LIMIT OF THE BOARDWALK AND VIEWING AREA, THE CONTRACTOR SHALL REMOVE LARGE SHRUBS AND YOUNG TREES WITHIN THE CLEARING LIMITS TO ELIMINATE POTENTIAL FIRE HAZARD.



<div>DELAWARE BAYSHORE BYWAY COOPER-CROSS WILDLIFE VIEWING ENHANCEMENTS</div> <div>GENERAL NOTES & CLEARING DETAIL</div>	DATE:	DESCRIPTION:	BY:
	DATE:	DESCRIPTION:	BY:
	DATE:	DESCRIPTION:	BY:
	DATE:	DESCRIPTION:	BY:
	DATE:	DESCRIPTION:	BY:
<div>DESIGNED BY: RKK</div> <div>DRAWN BY: RKK</div> <div>BUILDING NO.: N/A</div> <div>DATE: AUGUST 28, 2017</div> <div>SCALE: NOT TO SCALE</div> <div>SHEET NO.: C-1</div> <div>DFW PROJECT #: FW-1-15</div> <div>CONTRACT #: FW-1-15</div>	<div></div>		

NOTES:

1. THE PROPOSED 3'x6' SINGLE SIDED KIOSK WITH BULLETIN BOARDS TO BE FURNISHED BY OWNER AND INSTALLED BY CONTRACTOR.THE CONTRACTOR SHALL COORDINATE PICK-UP AND DELIVERY OF THE KIOSK WITH THE OWNER.
2. CRASHWORTHY BOLLARDS TO BE CONSTRUCTED PER DETAILS SHOWN ON C-4.THE INTENT OF THE BOLLARD ADJACENT TO THE BOARDWALK IS TO KEEP MOTORIZED VEHICLES AND MAINTENANCE EQUIPMENT OFF OF THE BOARDWALK AND VIEWING AREA.
3. ALL FIRE LANES, FIRE HYDRANTS, AND FIRE DEPARTMENT CONNECTIONS SHALL BE MARKED IN ACCORDANCE WITH THE STATE FIRE PREVENTION REGULATIONS.
4. THE CONTRACTOR INSTALL TWO (2) BENCHES ADJACENT TO THE TRAIL IN ACCORDANCE WITH THE BENCH AREA DETAIL SHOWN ON SHEET C-3.THE LOCATION OF THE BENCHES SHALL BE COORDINATED WITH THE OWNER IN THE FIELD.

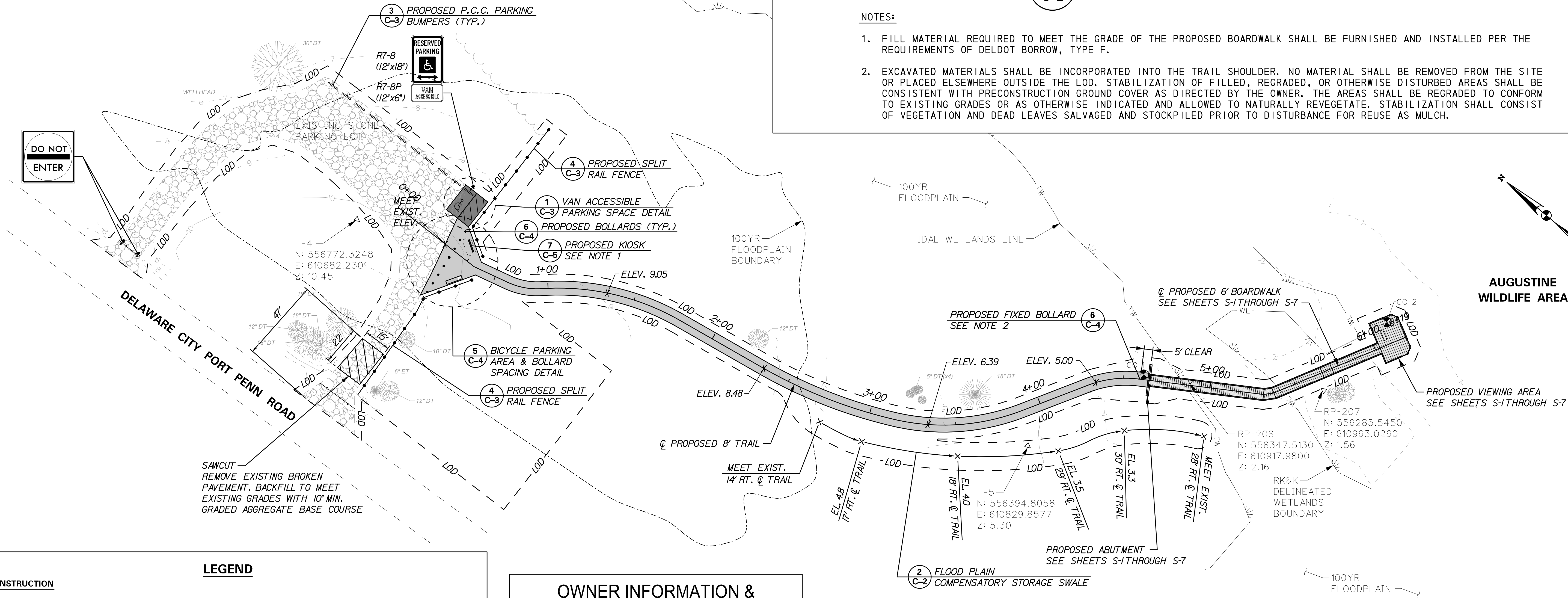


*UNLESS OTHERWISE NOTED OR SHOWN ON PLANS

1
C-2
TYPICAL SECTION - AT-GRADE TRAIL
N. T. S.

NOTES:

1. FILL MATERIAL REQUIRED TO MEET THE GRADE OF THE PROPOSED BOARDWALK SHALL BE FURNISHED AND INSTALLED PER THE REQUIREMENTS OF DELDOT BORROW, TYPE F.
2. EXCAVATED MATERIALS SHALL BE INCORPORATED INTO THE TRAIL SHOULDER. NO MATERIAL SHALL BE REMOVED FROM THE SITE OR PLACED ELSEWHERE OUTSIDE THE LOD. STABILIZATION OF FILLED, REGRADED, OR OTHERWISE DISTURBED AREAS SHALL BE CONSISTENT WITH PRECONSTRUCTION GROUND COVER AS DIRECTED BY THE OWNER. THE AREAS SHALL BE REGRADED TO CONFORM TO EXISTING GRADES OR AS OTHERWISE INDICATED AND ALLOWED TO NATURALLY REVEGETATE. STABILIZATION SHALL CONSIST OF VEGETATION AND DEAD LEAVES SALVAGED AND STOCKPILED PRIOR TO DISTURBANCE FOR REUSE AS MULCH.



CONSTRUCTION

- PROPOSED TRAIL
- PROPOSED BOARDWALK & VIEWING AREA
- PROPOSED P.C.C. PARKING PAD

EXISTING SYMBOLS

- 15x16 SPOT ELEVATION
- 9--- CONTOUR LINE
- △ SURVEY TRAVERSE POINT
- WL--- RK&K DELINEATED WETLAND BOUNDARY
- TW--- TIDAL WETLAND LINE
- ELEV. 15J2 SPOT ELEVATION
- LOD--- LIMIT OF DISTURBANCE
- BOLLARD
- SOIL BORING
- CONIFEROUS TREE 6" AND LARGER
- DECIDUOUS TREE 6" AND LARGER
- TREELINE
- GRAVEL PARKING LOT
- FLOODPLAIN (100 YR)

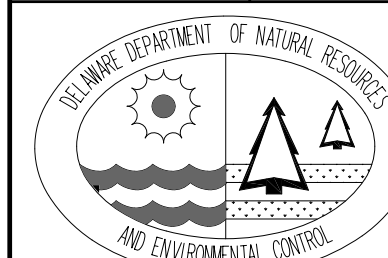
OWNER INFORMATION & MISCELLANEOUS NOTES

- OWNER: STATE OF DELAWARE
89 KINGS HIGHWAY
DOVER, DELAWARE 19901
- PROPERTY ADDRESS: 740 DELAWARE CITY PORT PENN ROAD
MIDDLETOWN, DELAWARE 19709
- TAX PARCEL #: 13-010.00-008 / 13-010.00-009
- DESIGNER/APPLICANT: RK&K
700 E. PRATT STREET, SUITE 500
BALTIMORE, MARYLAND 21202
1. THERE ARE NO WATER MAINS OR FIRE HYDRANTS ON OR ADJACENT TO THE PROPERTY.
 2. THE MAXIMUM HEIGHT OF THE STRUCTURE IS 42 INCHES ABOVE THE DECK.
 3. THE PROPOSED BUILDING CONSTRUCTION IS TYPE 5.
 4. NEW CASTLE COUNTY'S PLANNING DEPARTMENT REFERENCE NUMBER SHALL BE OBTAINED BY THE CONTRACTOR.

2
C-2
FLOOD PLAIN COMPENSATORY STORAGE SWALE
N. T. S.

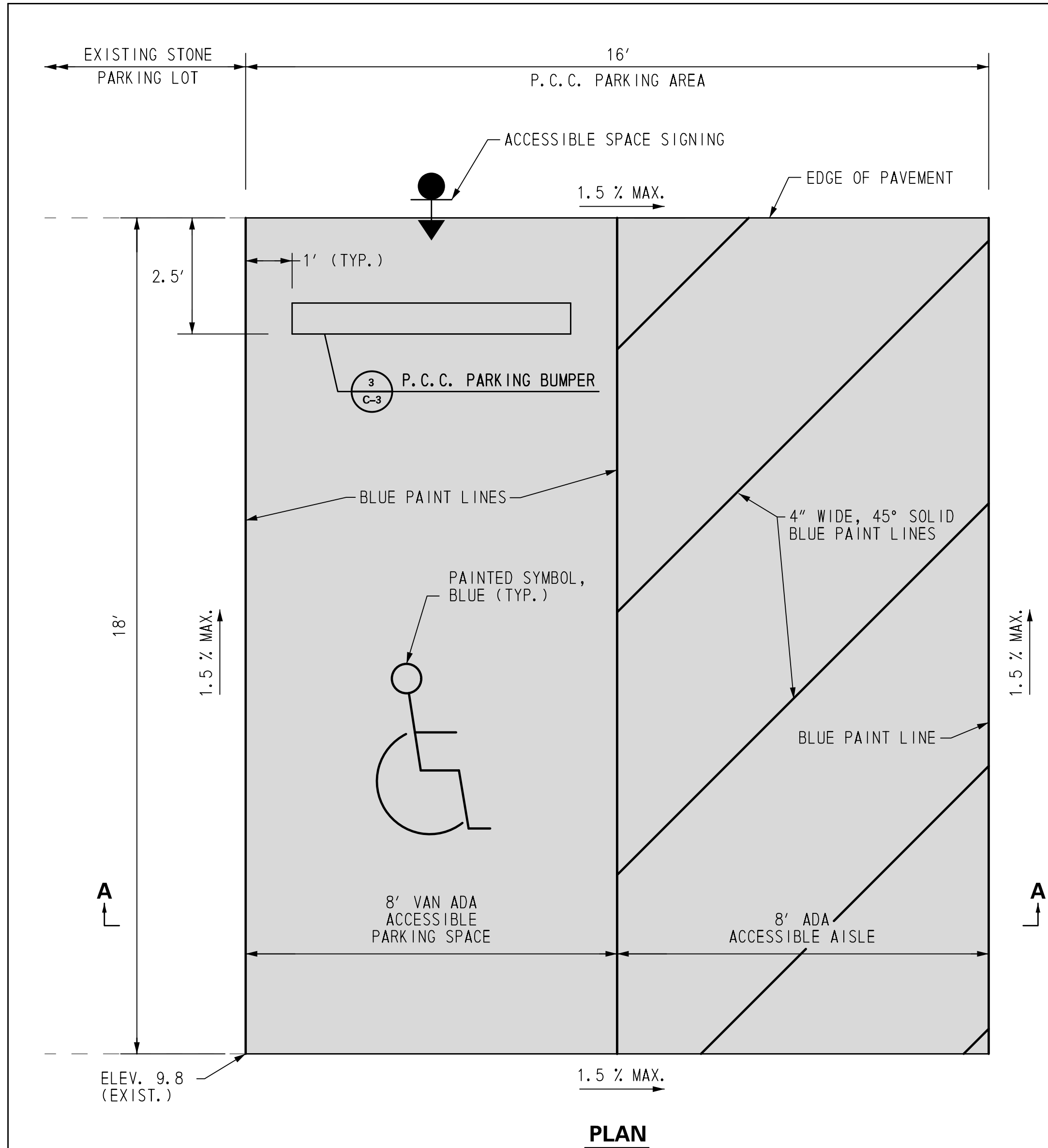
1. STABILIZE SWALE WITH PERMANENT SEED MIX NO. 13, 6" TOPSOIL, SOIL STABILIZATION MATTING, SSM-II (NORTH AMERICAN GREEN SCI50BN)

DELAWARE BAYSHORE BYWAY
COOPER-CROSS
WILDLIFE VIEWING ENHANCEMENTS
CONSTRUCTION PLAN

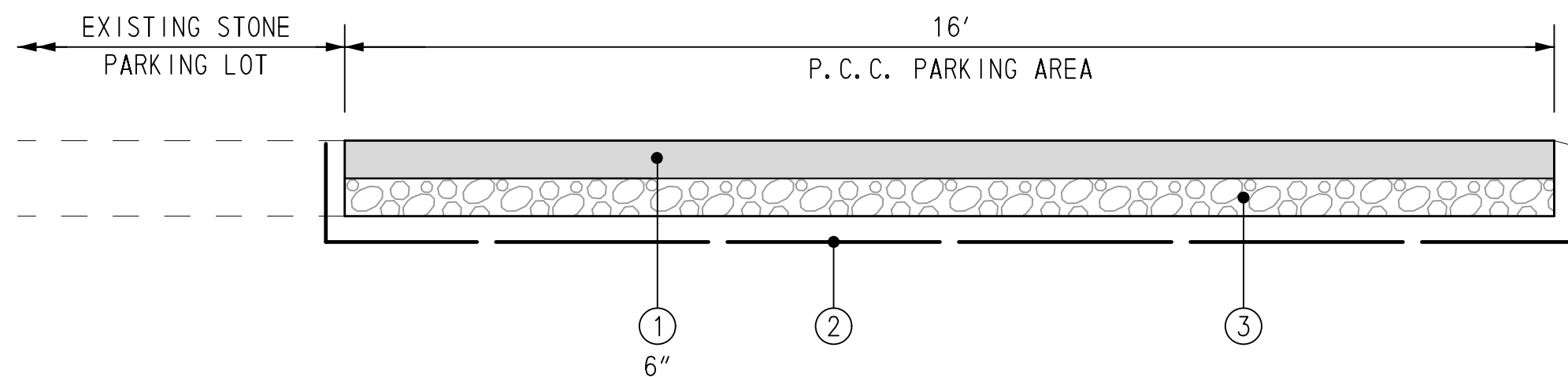


DESIGNED BY:	RKK
DRAWN BY:	RKK
BUILDING NO.:	N/A
DATE:	AUGUST 28, 2017
SCALE:	1" = 30'
SHEET NO.:	C-2
DFW PROJECT #:	FW-1-15
CONTRACT #:	FW-1-15

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PLAN

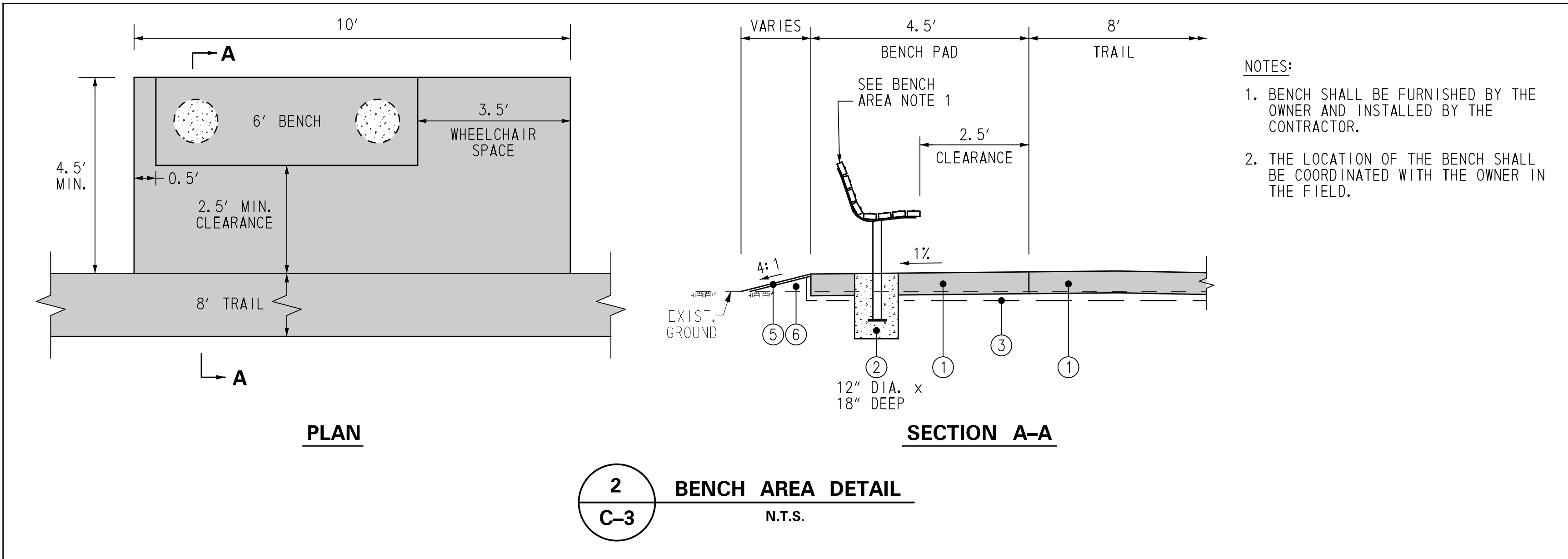


SECTION A-A

1 VAN ACCESSIBLE PARKING SPACE DETAIL
C-3 N.T.S.

LEGEND

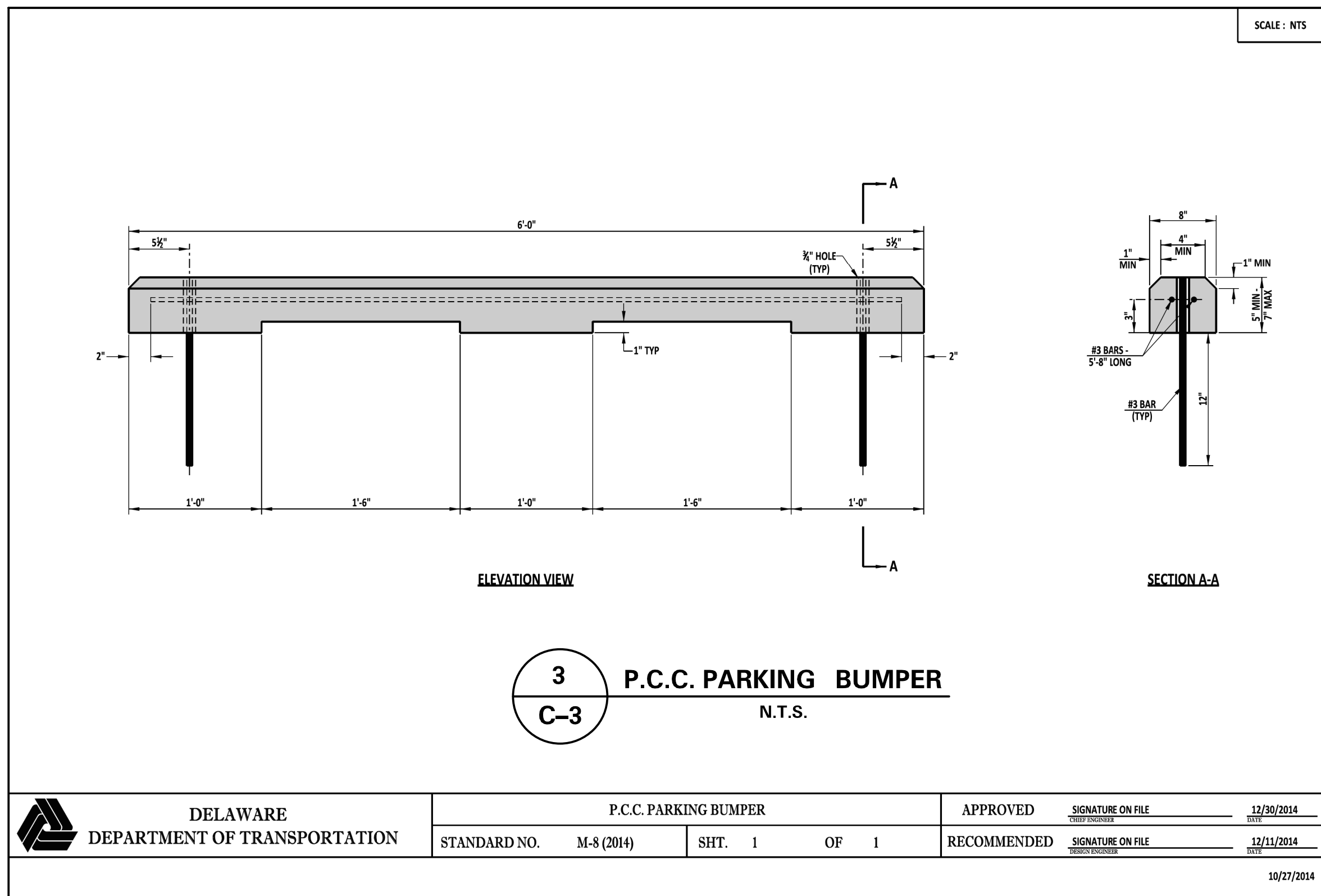
- ① DELDOT CLASS A CONCRETE. CONCRETE SHALL BE 4500 PSI.
- ② GEOTEXTILE SEPARATION FABRIC (AASHTO M 288, CLASS 2)
- ③ 6" GRADED AGGREGATE BASE COURSE



PLAN

SECTION A-A

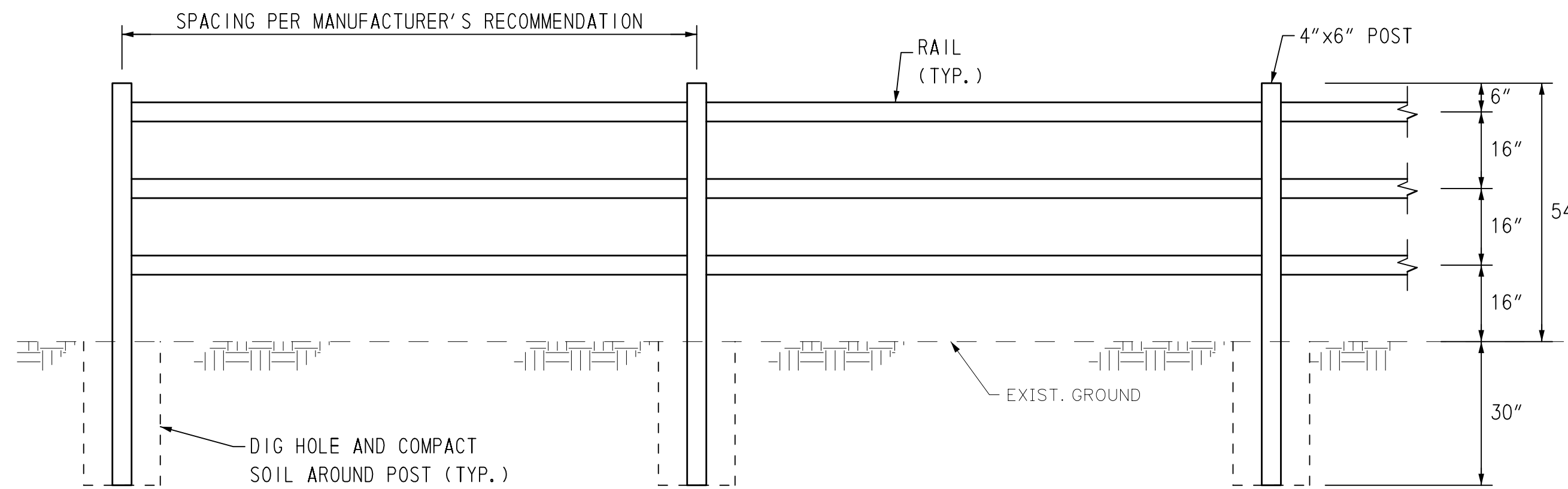
2 BENCH AREA DETAIL
C-3 N.T.S.



3 P.C.C. PARKING BUMPER
C-3 N.T.S.

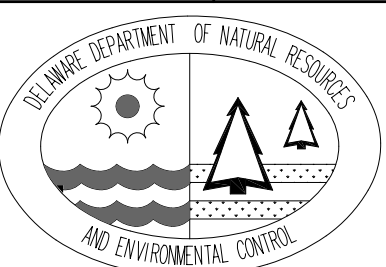
SPLIT RAIL FENCE NOTES:

- SPLIT RAIL FENCE SHALL BE A 3 RAIL SYSTEM.
- ALL WOOD SHALL BE PRESSURE TREATED WOOD WITH A WATERBORNE PRESERVATIVE TREATMENT MEETING THE REQUIREMENTS OF THE APWA USE CATEGORY FOR UC4A, GROUND CONTACT GENERAL USE.
- POST DIMENSIONS SHALL BE APPROXIMATELY 4"x6"x84".
- RAILS SHALL BE TRIANGULAR WITH AN AVERAGE GIRTH OF 12-13".
- POSTS SHALL BE EMBEDDED 30", THE HOLE SHALL BE BACKFILLED WITH THE ORIGINAL SOIL AND FIRMLY COMPACTED AROUND THE POST.

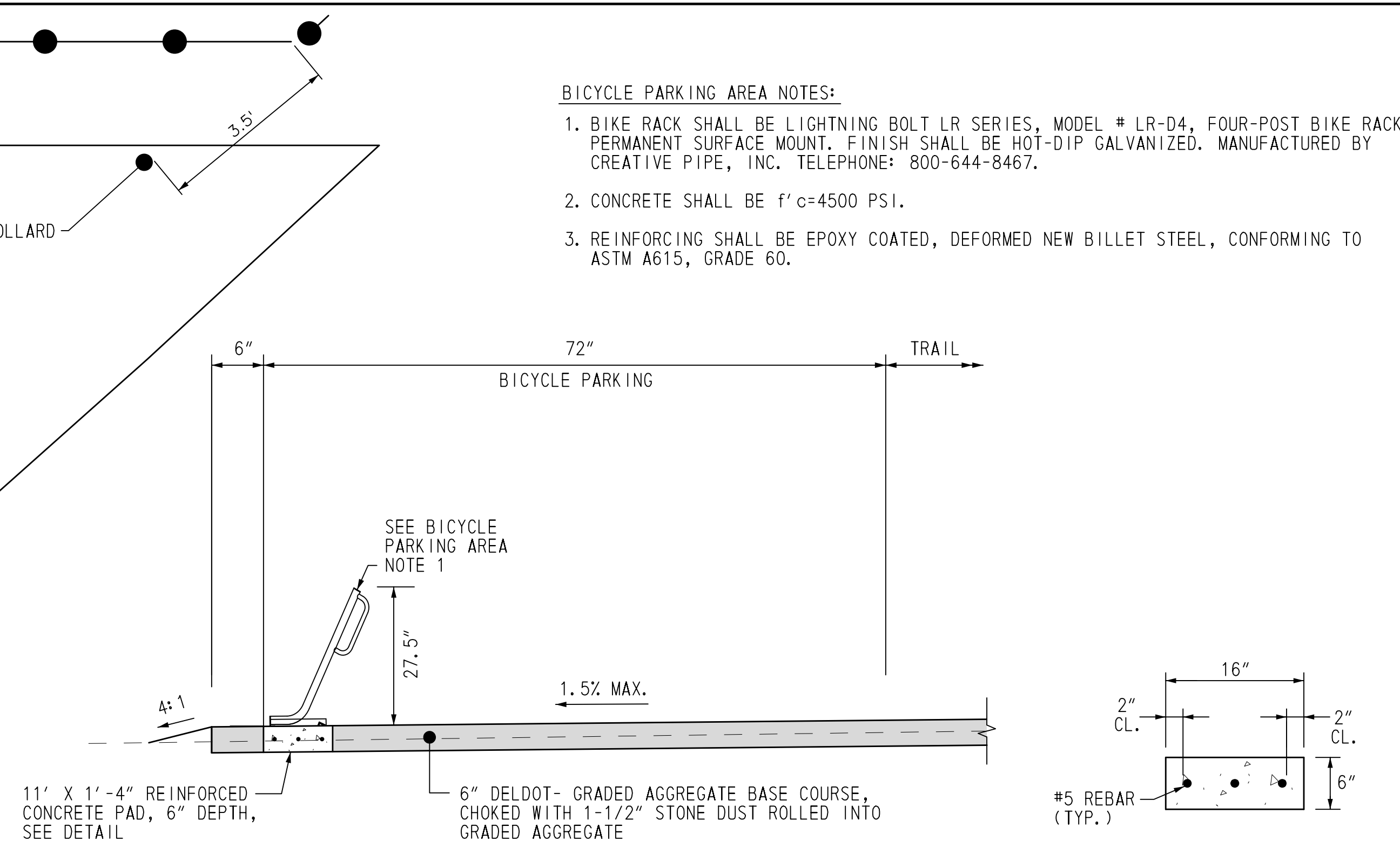
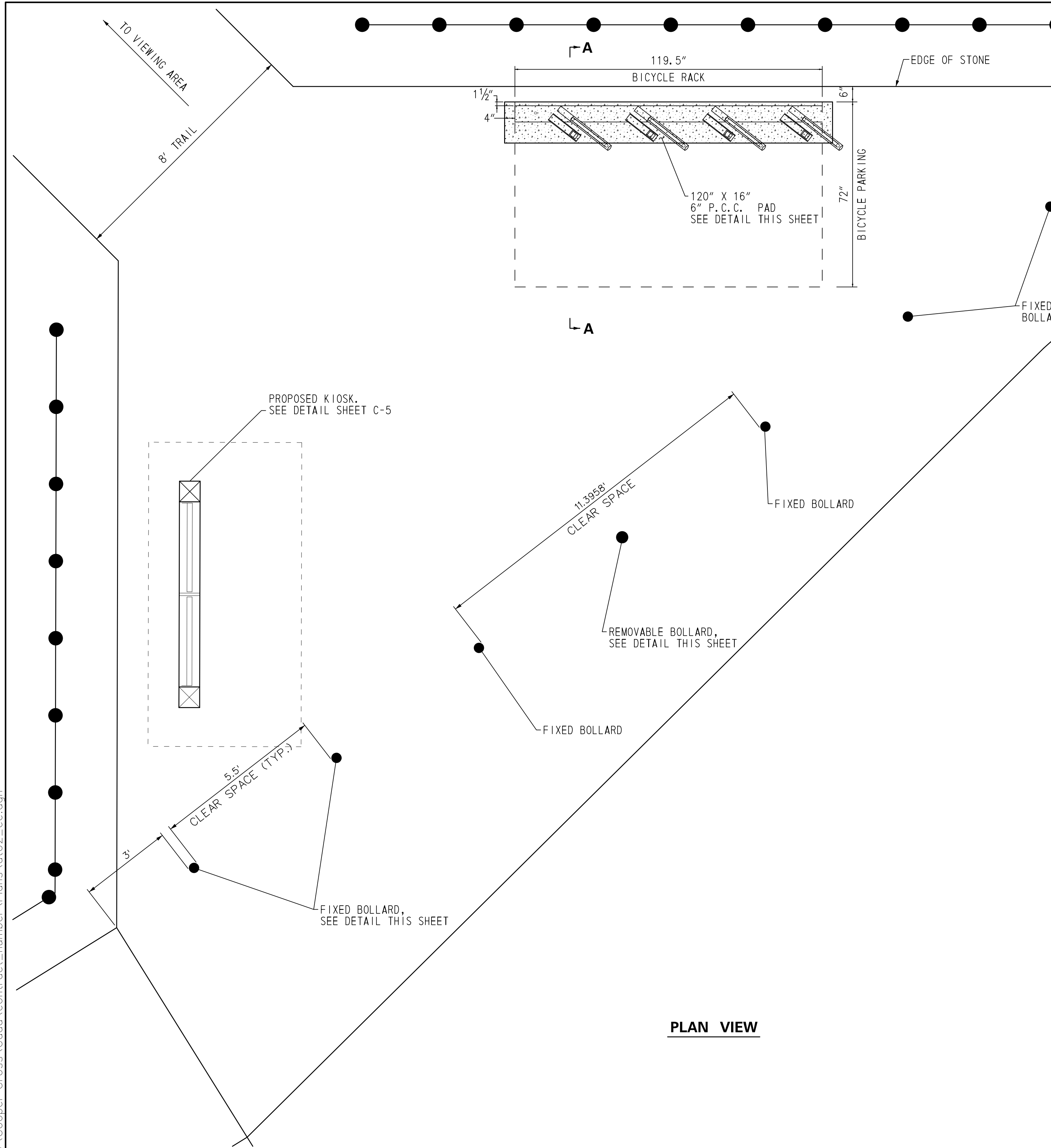


4 SPLIT RAIL FENCE
C-3 N.T.S.

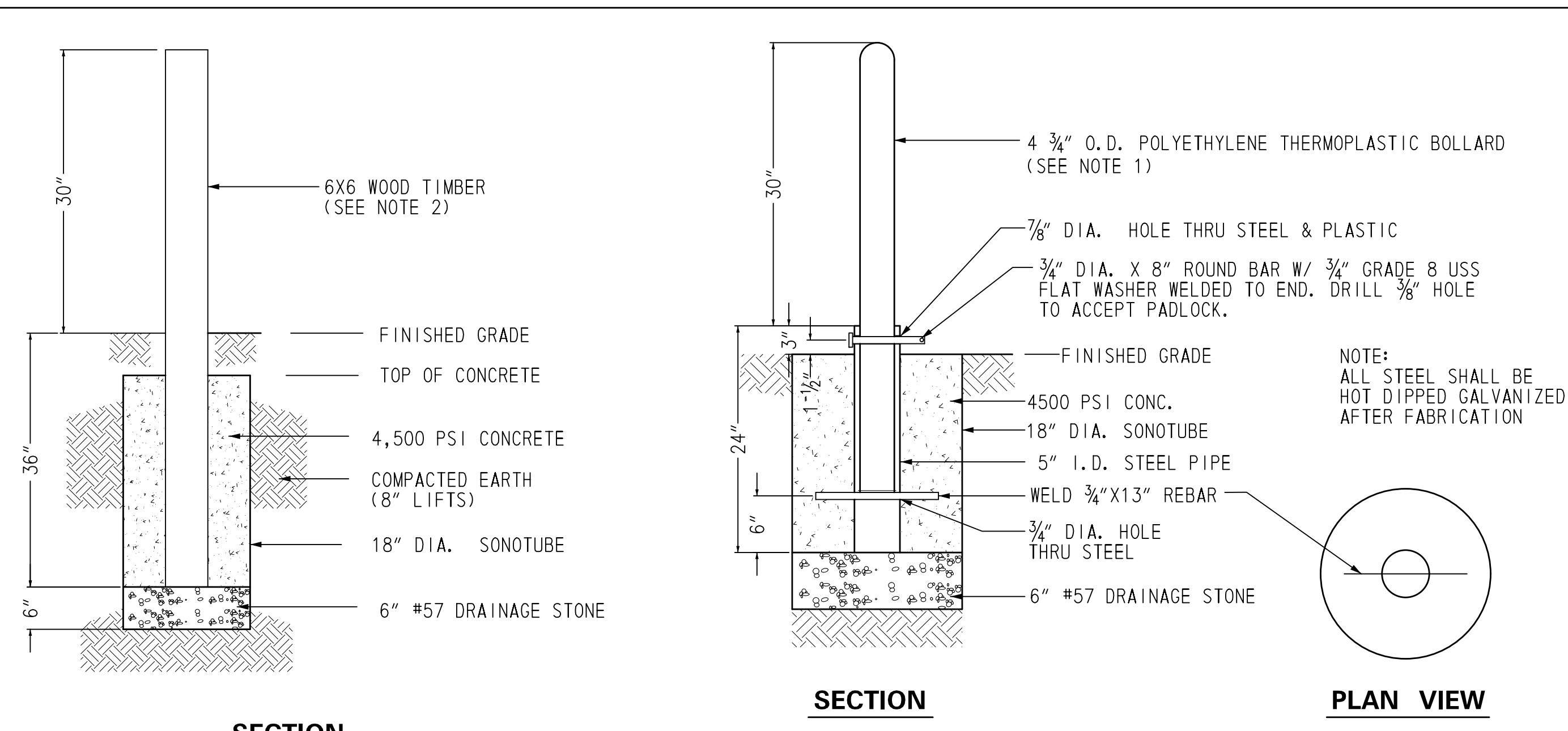
DELAWARE BAYSHORE BYWAY
COOPER-CROSS
WILDLIFE VIEWING ENHANCEMENTS
CONSTRUCTION DETAILS



DESIGNED BY: RKK
DRAWN BY: RKK
BUILDING NO.: N/A
DATE: AUGUST 28, 2017
SCALE: NOT TO SCALE
SHEET NO.: C-3
DFW PROJECT #: FW-1-15
CONTRACT #: FW-1-15



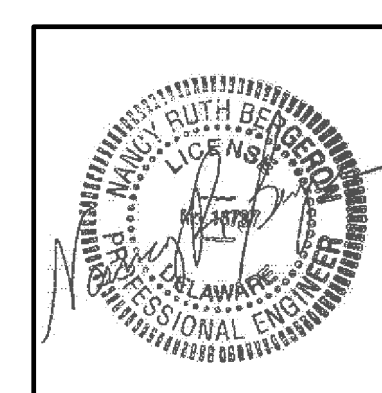
CONCRETE PAD DETAIL


**REMOVABLE BOLLARD**

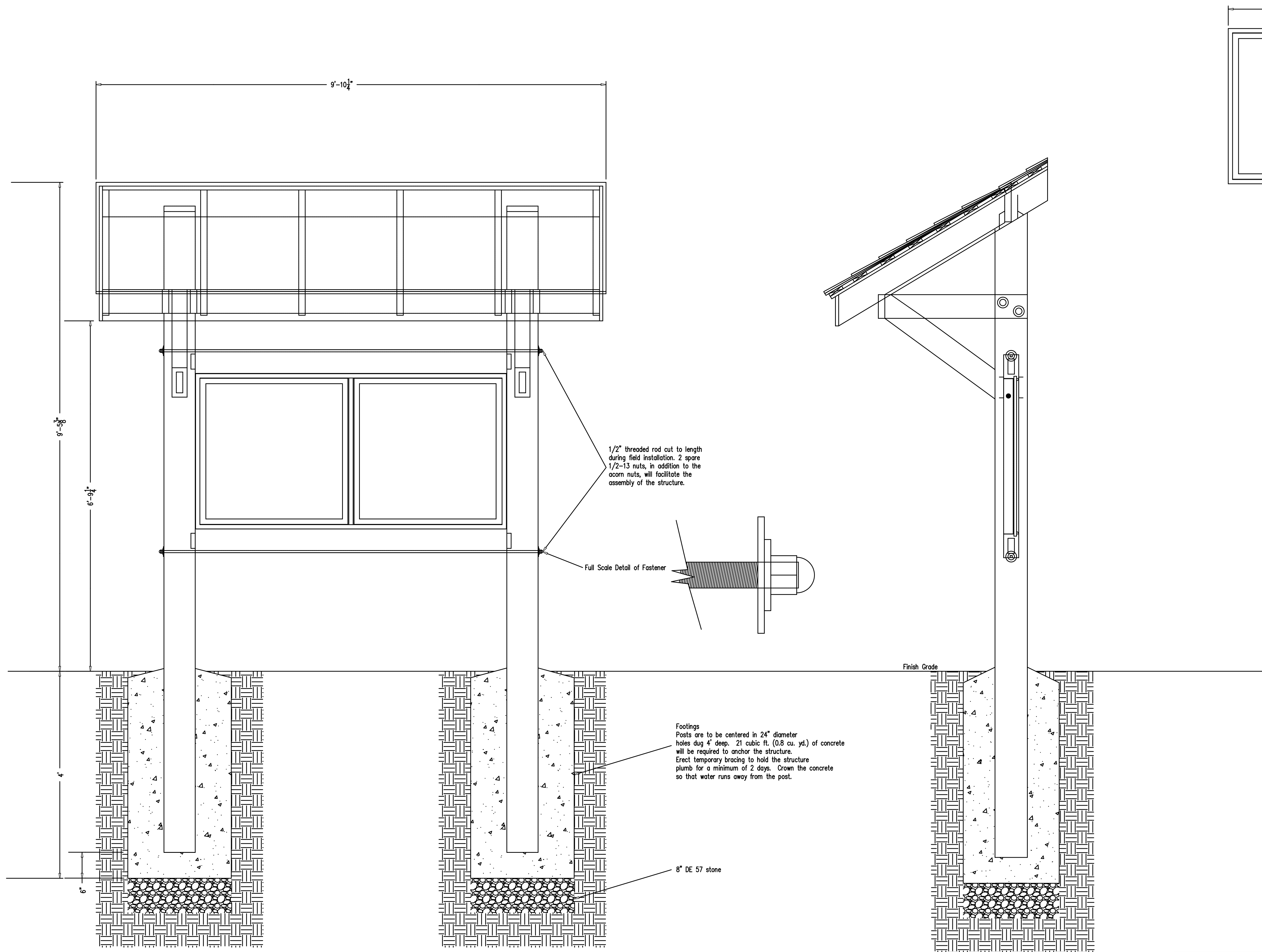
- BOLLARD NOTES:
1. REMOVABLE BOLLARD IS MODEL NUMBER BPD-YL-31#2-52-S BY BOLLARDS N SLEEVES (1-800-914-4771). CUT TO HEIGHT DIMENSION AS SHOWN. SUBMIT MANUFACTURER'S STANDARD COLORS FOR SELECTION BY OWNER.
 2. WOOD TIMBER SHALL BE PRESSURE TREATED WOOD WITH A WATERBORNE PRESERVATIVE TREATMENT MEETING THE REQUIREMENTS OF THE APWA USE CATEGORY FOR UC4A, GROUND CONTACT GENERAL USE.

6	BOLLARD DETAILS
C-4	N.T.S.

5	BICYCLE PARKING AREA & BOLLARD SPACING DETAIL
C-4	N.T.S.

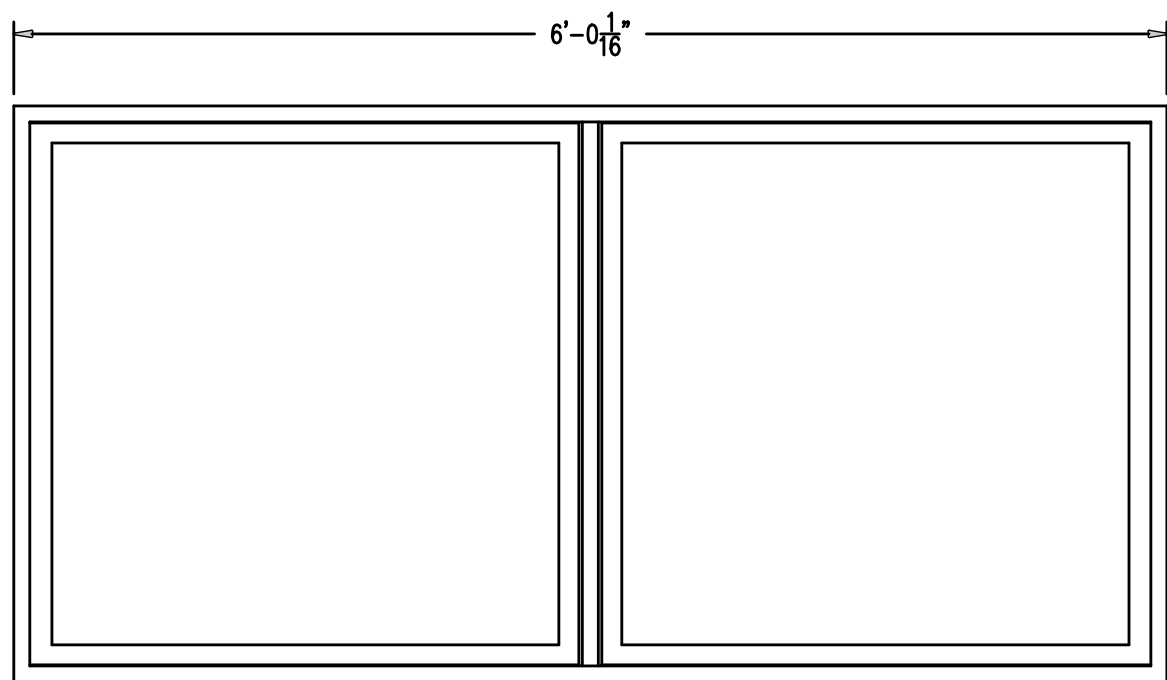


 DELAWARE BAYSHORE BYWAY COOPER-CROSS WILDLIFE VIEWING ENHANCEMENTS	DATE: _____	DESCRIPTION: _____	BY: _____
	DATE: _____	DESCRIPTION: _____	BY: _____
CONSTRUCTION DETAILS			
DESIGNED BY: _____ RKK			
DRAWN BY: _____ RKK			
BUILDING NO.: _____ N/A			
DATE: _____ AUGUST 28, 2017			
SCALE: _____ NOT TO SCALE			
SHEET NO.: C-4			
DFW PROJECT #: _____ FW-1-15			
CONTRACT #: _____ FW-1-15			



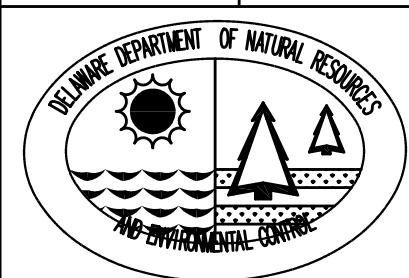
Front Elevation
For the sake of clarity, the roof treatment
and detail of the cabinet opening back are not shown.

Side Elevation
Cabinet and Cabinet backing are shown.
Gable end fascia removed for clarity.



Cabinet

OWNER SUPPLIED DETAIL



DESIGNED BY:

O.D.D.

DRAWN BY:

O.D.D.

BUILDING NO.:

O.D.D.

DATE:

AUGUST 28, 2017

SCALE:

SCALE

SHEET NO.:

C-5

PROJECT #:

FW-1-15

CONTRACT #:

FW-1-15

DATE:	DESCRIPTION:	BY:
DATE:	DESCRIPTION:	BY:
8.8.14	REVISED DETAILS	DMH

STANDARD
FISH AND WILDLIFE TACKBOARD
LARGE (3' X 6' CABINET) VERSION

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STRUCTURAL GENERAL NOTES

1. DESIGN

A. THE FOLLOWING DESIGN CODES WERE USED FOR STRUCTURAL DESIGN:

1. INTERNATIONAL BUILDING CODE (IBC) DATED 2015.

2. NATIONAL DESIGN SPECIFICATION (NDS) FOR WOOD CONSTRUCTION, 2015 EDITION

B. DESIGN IS BASED ON THE LRFD DESIGN METHOD.

C. PEDESTRIAN LOAD: 100 PSF.

D. VEHICLE LOAD: NONE.
2. WOOD FRAMING

A. ALL MEMBERS SHALL BE FRAMED, ANCHORED, TIED AND BRACED IN ACCORDANCE WITH GOOD CONSTRUCTION PRACTICE AND APPLICABLE CODES.

B. ALL WOOD FRAMING, INCLUDING PILE CAPS, JOISTS, AND BLOCKING, SHALL BE SOUTHERN YELLOW PINE, NO. 2 OR BETTER. REFER TO WOOD PRESERVATIVE TREATMENT REQUIREMENTS BELOW.

C. NAILED CONNECTIONS SHALL BE PERMITTED EXCEPT WHERE NOTED OTHERWISE.
3. PULTRUDED FIBERGLASS I-BAR GRATING

A. I-BAR GRATING SHALL BE STRONGWELL DURAGRID I-4000 1½ INCH OR APPROVED EQUAL.

B. GRATING PANELS SHALL BE MADE OF 1½ INCH DEEP PULTRUDED I-BARS SPACED AT 1 INCH ON CENTER. THE CROSS-RODS SHALL BE SPACED A MAXIMUM OF 12". RESIN SHALL BE POLYESTER. THE TOP OF THE PANELS SHALL BE COVERED WITH A BONDED GRIT ANTI SKID SURFACE WITH A UV RESISTANT URETHANE TOP COAT. COLOR SHALL BE MANUFACTURER'S STANDARD GRAY. INSERT HOLD DOWN FASTENERS PER MANUFACTURER'S RECOMMENDATIONS. ALL FASTENERS SHALL BE TYPE 316 STAINLESS STEEL.

C. CONTRACTOR SHALL SUBMIT THE I-BAR GRATING LAYOUT AND MANUFACTURER'S SAMPLE FOR REVIEW AND APPROVAL. I-BAR GRATING PANELS SHALL HAVE CONTINUOUS BEARING BARS ACROSS THE ENTIRE 6'-0" WIDTH OF THE BOARDWALK. LONGITUDINAL JOINTS IN THE I-BAR PANELS WILL NOT BE ALLOWED ON THE BOARDWALK.
4. WOOD PRESERVATIVE TREATMENT

A. ALL TIMBER MEMBERS SHALL BE PRESSURE TREATED WITH A WATERBORNE PRESERVATIVE TREATMENT. THE PRESERVATIVE MAY BE EITHER AWP/ APPROVED OR APPROVED VIA THE INTERNATIONAL CODE COUNCIL - EVALUATION SERVICE (ICC-ES). TREATMENT SHALL INCLUDE A WATER REPELLENT ADDITIVE. TREATMENT SHALL MEET THE REQUIREMENTS OF THE FOLLOWING AWP/ USE CATEGORIES:

1. RAILING - UC3B, ABOVE GROUND EXPOSED

2. FRAMING - UC4A, GROUND CONTACT GENERAL USE

3. PIER CAPS AND ABUTMENT SILL PLATE - UC4B, GROUND CONTACT HEAVY DUTY

B. THE CONTRACTOR SHALL SUBMIT THE PRESERVATIVE MATERIALS INTENDED FOR USE FOR REVIEW AND APPROVAL. THE SUBMITTAL SHALL INCLUDE THE RETENTION LEVEL AND DOCUMENTATION OF AWP/ OR ICC APPROVAL.

C. ALL HOLES, CUTS, AND INJURIES SUCH AS ABRASIONS OR HOLES FROM REMOVAL OF NAILS AND SPIKES WHICH MAY PENETRATE THE TREATED ZONE SHALL BE FIELD TREATED. AN AWP/ OR ICC-ES ACCEPTED COMPATIBLE PRESERVATIVE SYSTEM SHALL BE USED FOR TREATMENT. FIELD TREATMENT PRESERVATIVES SHALL BE APPLIED IN ACCORDANCE WITH THE PRODUCT LABEL. THE APPLICATION METHOD SHALL COAT ANY SURFACE THAT IS EXPOSED BY DAMAGE OR FIELD FABRICATION WHILE NOT USING EXCESSIVE PRESERVATIVE. ANY EXCESS PRESERVATIVE NOT ABSORBED BY THE WOOD PRODUCT SHALL BE CLEANED FROM THE SURFACE PRIOR TO USE OF THE PRODUCT. CAREFUL ATTENTION SHOULD BE GIVEN TO MATERIALS PLACED IN AQUATIC ENVIRONMENTS. THESE MATERIALS SHALL NOT BE USED UNLESS THE FIELD TREATED SURFACE IS CLEAN, DRY, AND FREE OF EXCESS PRESERVATIVE.
5. STRUCTURAL STEEL AND MISCELLANEOUS METALS

A. STEEL FOR MISCELLANEOUS SHAPES, PLATES, AND ASSEMBLIES SHALL BE ASTM A36.

B. ELECTRODES FOR FIELD AND SHOP WELDING SHALL BE E70.

C. ALL BOLTS SHALL BE ASTM A307.

D. ALL STEEL, BOLTS, SPIKES, NAILS, AND OTHER HARDWARE SHALL BE HOT DIP GALVANIZED PER ASTM A123 AND A153 UNLESS NOTED OTHERWISE.
6. STRAPS AND HANGERS

A. STRAPS AND HANGERS SHALL BE ZMAX COATING HOT DIP GALVANIZED. INSTALL PER MANUFACTURER'S RECOMMENDATIONS. ALL FASTENERS SHALL BE HOT DIP GALVANIZED. SIZE AND NUMBER PER MANUFACTURER'S RECOMMENDATIONS. SIMPSON PRODUCTS CALLED OUT ON THE PLANS MAY BE REPLACED WITH APPROVED EQUALS.
7. COMPOSITE BOARDS

A. COMPOSITE BOARDS SHALL BE SELECTED FROM THE FOLLOWING APPROVED LIST:

1. BEDFORD TECHNOLOGIES FIBERFORCE, WORTHINGTON, MN

2. RENEW PLASTICS TRIMAX STRUCTURAL LUMBER, LUXEMBURG, WI

3. TANGENT TECHNOLOGIES, LLC POLYFORCE STRUCTURAL PLASTIC LUMBER, AURORA, IL

B. COMPOSITE BOARDS SHALL BE IN "WEATHERED WOOD" COLOR, CONTRACTOR TO SUBMIT SAMPLE FOR REVIEW AND APPROVAL.

C. COMPOSITE BOARDS SHALL BE USED FOR RAILING TOP RAIL. SEE PLANS FOR DETAILS.
8. CONCRETE AND REINFORCING STEEL

A. CONCRETE SHALL BE DELDOT CLASS A (f'c=4500 PSI).

B. REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60.

C. CHAMFER ALL EXPOSED EDGES OF SUBSTRUCTURE CONCRETE 3/4" X 3/4", UNLESS NOTED OTHERWISE

D. ALL KEYS ARE NOMINAL SIZE.
9. FOUNDATION

A. THE OBSERVATION DECK SHALL BE SUPPORTED BY HELICAL PILES. THE PILES SHALL BE IN ACCORDANCE WITH THE SPECIAL PROVISIONS. THE HELICAL PILES SHALL PROVIDE MINIMUM SERVICE AXIAL CAPACITIES AS SHOWN IN THE CHART ON THIS DRAWING. A GEOTECHNICAL REPORT HAS BEEN PREPARED FOR INFORMATIONAL PURPOSES ONLY AND IS AVAILABLE UPON REQUEST.

B. THE MINIMUM TOP OF HELIX DEPTH BELOW THE EXISTING GROUND LINE SHALL BE 12 FEET. THE CONTRACTOR MAY ANTICIPATE THAT DEPTHS EXCEEDING THIS MINIMUM WILL BE NECESSARY TO ACHIEVE THE REQUIRED CAPACITY.

PILE DESIGN LOADS KIPS/PILE (SERVICE)			
CONDITION	ABUTMENT	BOARDWALK	VIEWING AREA
VERTICAL PILE - COMPRESSION	6.5	4	6.5
VERTICAL PILE - TENSION (DUE TO UPLIFT)	--	1	1
BATTERED PILE - TENSION	--	7	4

NOTE: BATTERED PILE LOADS HAVE BEEN RESOLVED TO ACT ALONG THE SHAFT OF THE PILE AT 2V:1H BATTER. LATERAL PILE LOADS ACT AT THE PILE CAP ELEVATION.

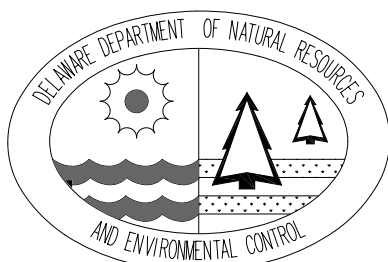
CODE INFORMATION	
OCCUPANCY:	ASSEMBLY, A-5
USABLE SPACE:	384 SQ. FT. (OBSERVATION AREA ONLY, RAMP EXCLUDED)
OCCUPANCY LOAD:	26
CONSTRUCTION TYPE	5B
PLANS IN CONFORMANCE WITH ICC/ANSI A117.1 ACCESSABILITY CODE	

DELAWARE BAYSHORE BYWAY

COOPER-CROSS

WILDLIFE VIEWING ENHANCEMENTS

STRUCTURAL GENERAL NOTES



DESIGNED BY:

RKK

DRAWN BY:

RKK

BUILDING NO.:

N/A

DATE:

AUGUST 28, 2017

SCALE:

N/A

SHEET NO.:

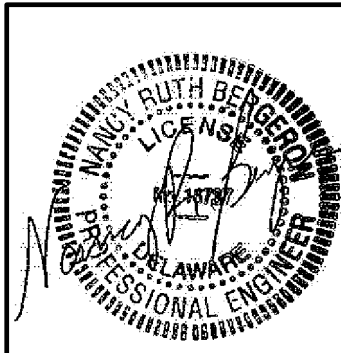
S-1

DFW PROJECT #:

FW-1-15

CONTRACT #:

FW-1-15



DATE: DESCRIPTION: BY:

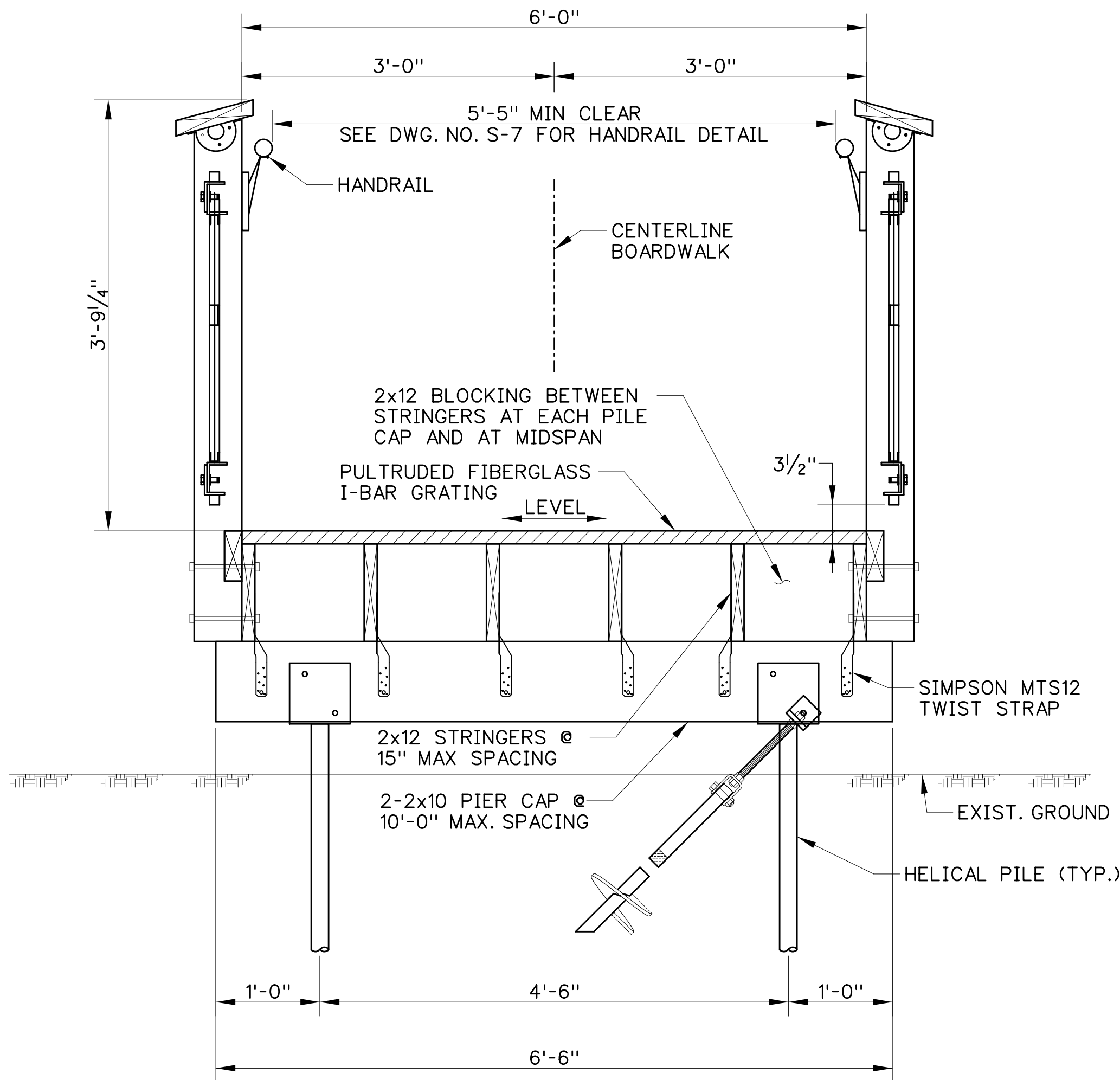
DATE: DESCRIPTION: BY:

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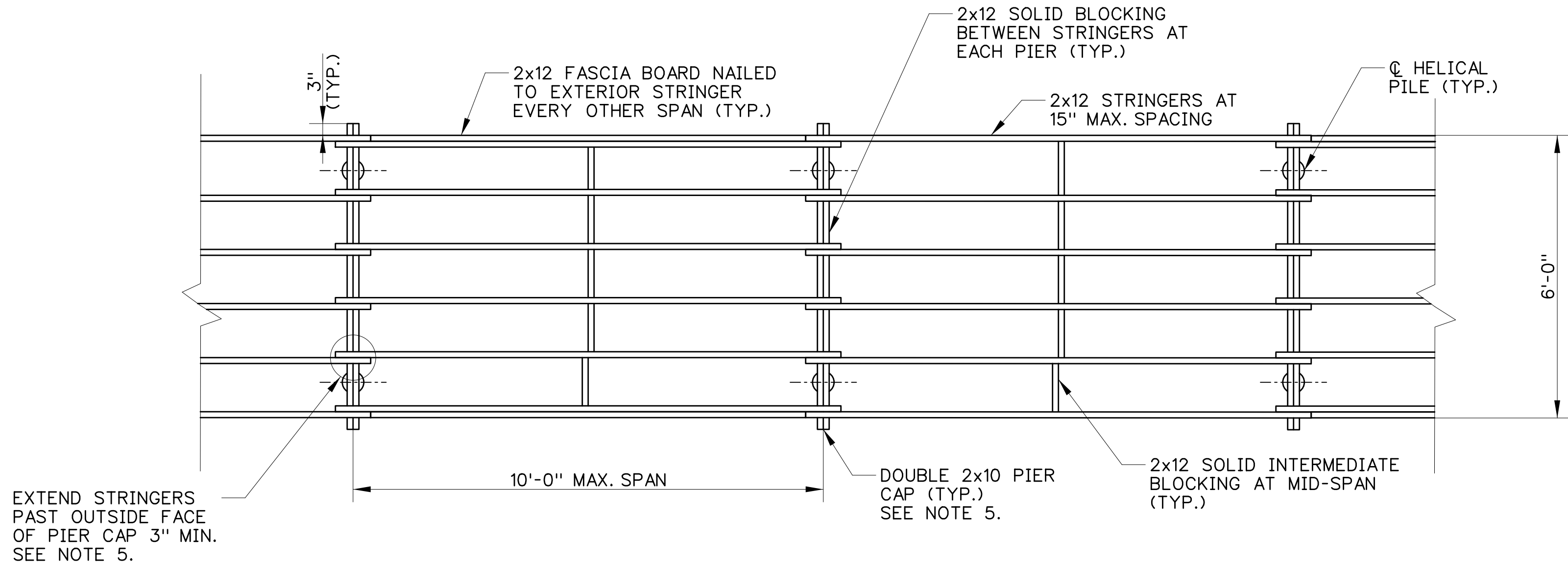


TYPICAL BOARDWALK SECTION

SCALE: 1"=1'-0"

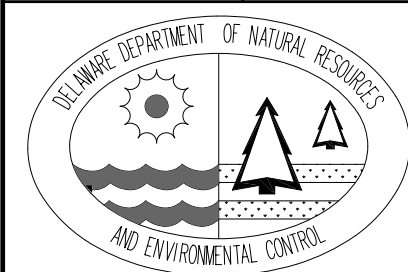
NOTE:

1. HELICAL PILES SHALL BE IN ACCORDANCE WITH SPECIAL PROVISION T-618500.
2. TWIST STRAPS TO BE 16-GAUGE, Z-MAX. GALVANIZED, INSTALLED WITH 14 HOT-DIP GALVANIZED 10d 1/2" NAILS PER MANUFACTURER'S RECOMMENDATIONS.
3. GAPS BETWEEN ADJACENT DECKING SECTIONS SHALL NOT EXCEED 1/2" AT ANY LOCATION.
4. UNLESS SHOWN OTHERWISE RESTORE AREA TO ORIGINAL GRADE. THE AREAS SHALL BE ALLOWED TO NATURALLY REVEGETATE. WETLANDS SHALL BE MINIMALLY DISTURBED BY USING SUPPORT MATS, LOW IMPACT EQUIPMENT, AND BY MINIMIZING VEHICULAR TRAFFIC AND ALLOWED TO NATURALLY REVEGETATE.
5. PIER CAPS AT EITHER END OF LANDING NO. 2 SHALL CONSIST OF 4-2x10. STRINGERS MAY BE BUTTED OVER THESE PIERS AND NEED NOT EXTEND 3" BEYOND OUTSIDE FACE OF PIER CAP.
6. RAILING POSTS SHALL BE LOCATED APPROXIMATELY AT PIERS AND MIDSPAN. COORDINATE WITH BLOCKING. CONTRACTOR SHALL DETERMINE FINAL POST LAYOUT IN ACCORDANCE WITH THE SPACING REQUIREMENTS ON DWG. NO. S-7.



FRAMING DETAIL

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



DESIGNED BY:

RKK

DRAWN BY:

RKK

BUILDING NO.:

N/A

DATE:

AUGUST 28, 2017

SCALE:

AS NOTED

SHEET NO.:

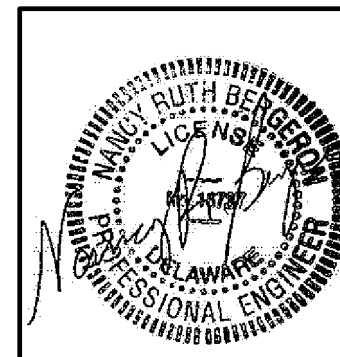
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DFW PROJECT #:

FW-1-15

CONTRACT #:

FW-1-15

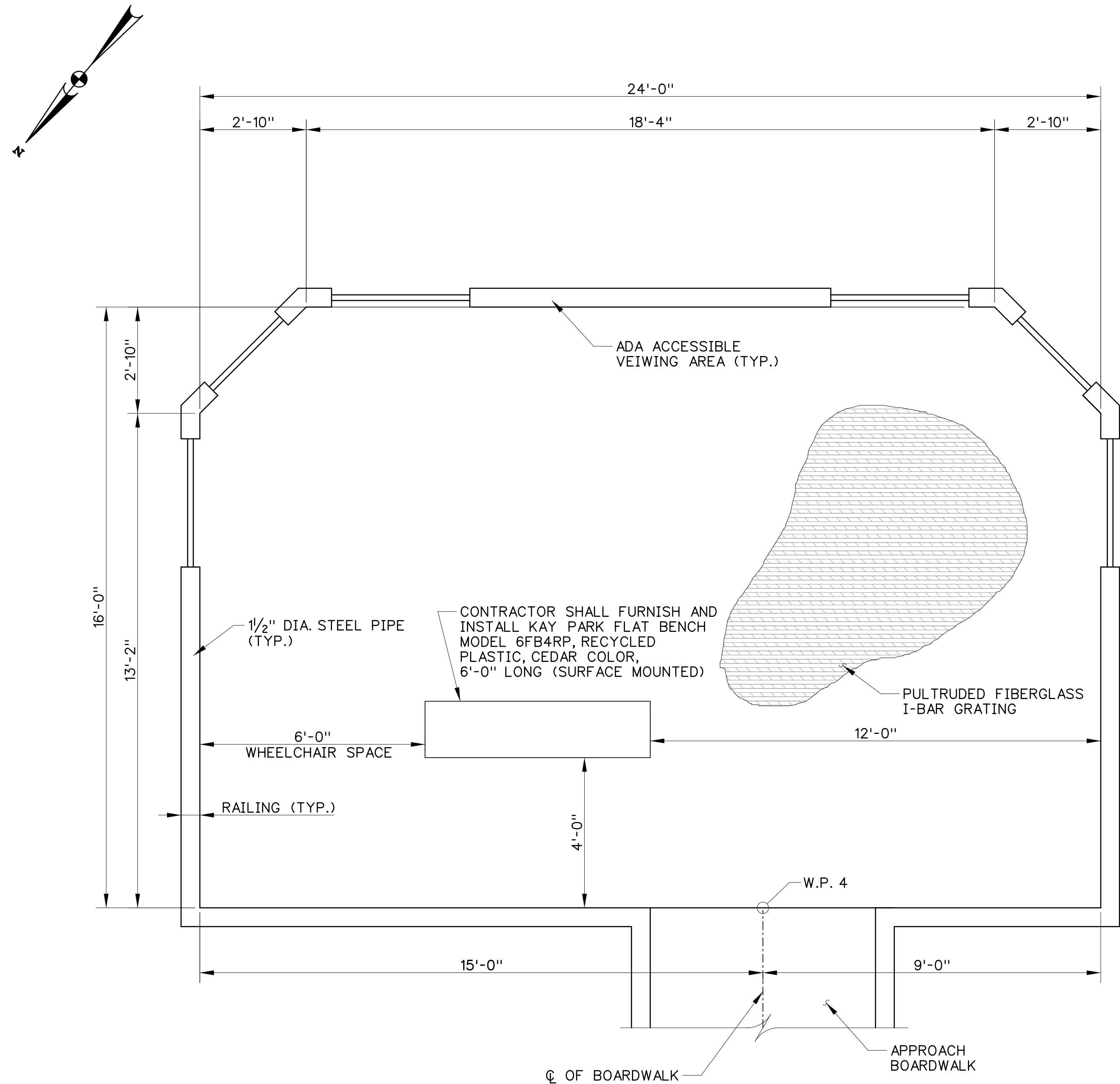


DATE: DESCRIPTION: BY:

DATE: DESCRIPTION: BY:

DELAWARE BAYSHORE BYWAY
COOPER-CROSS
WILDLIFE VIEWING ENHANCEMENTS
BOARDWALK TYPICAL SECTION
AND FRAMING

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GENERAL PLAN

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

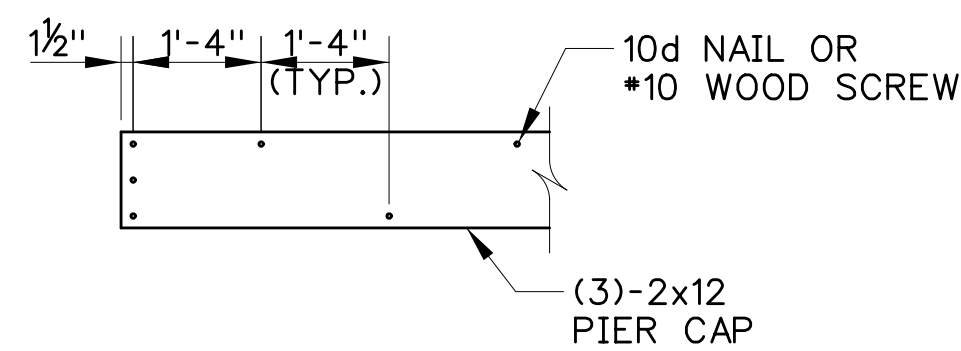
NOTES:

1.FOR SECTIONS A-A AND B-B SEE DWG. NO. S-6.

2.RAILING POST LOCATIONS ARE APPROXIMATE, BUT SHALL ADHERE TO THE GENERAL LAYOUT SHOWN IN THE FRAMING PLAN. POST SPACING ALONG EACH SIDE SHALL REMAIN AT APPROXIMATELY EQUAL SPACINGS, AND MUST BE ARRANGED IN SUCH A WAY THAT ADA ACCESSIBLE VIEWING AREA DIMENSIONS ARE MAINTAINED. CONTRACTOR TO SHIM OR BLOCK AS REQUIRED FOR POST CONNECTION TO FRAMING.

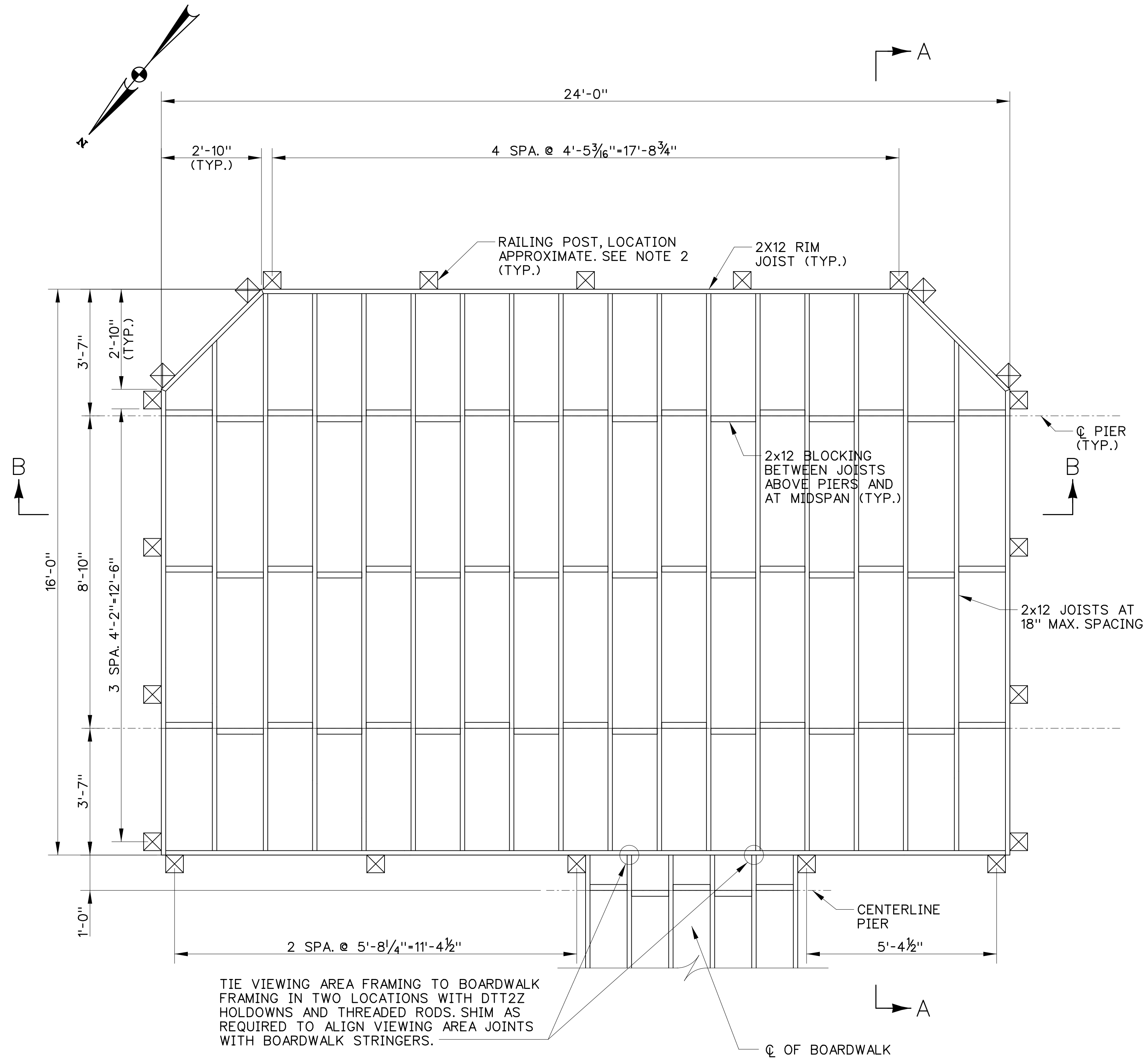
3.ATTACH RIM JOISTS TO JOISTS WITH A MINIMUM OF 3-10d NAILS END NAILED TO JOISTS.

4.CONSTRUCT (3)-2x12 PIER CAPS AS FOLLOWS: ATTACH OUTSIDE 2x12, TO EITHER SIDE OF AN INTERIOR 2x12 WITH 10d NAILS OR •10 WOOD SCREWS > 3" LONG USING THE PATTERN SHOWN.



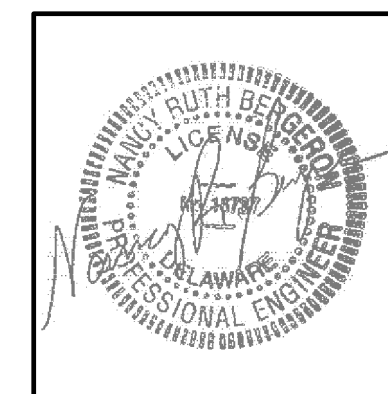
PIER CAP CONSTRUCTION DETAIL

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

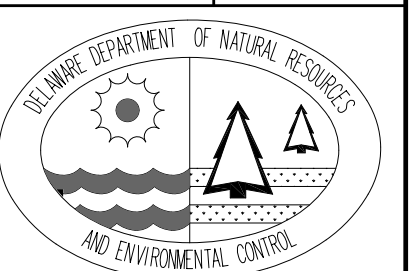


FRAMING PLAN

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



DELAWARE BAYSHORE BYWAY
COOPER-CROSS
WILDLIFE VIEWING ENHANCEMENTS
VIEWING AREA GENERAL PLAN
AND FRAMING PLAN



DESIGNED BY:

RKK

DRAWN BY:

RKK

BUILDING NO.:

N/A

DATE:

AUGUST 28, 2017

SCALE:

AS NOTED

SHEET NO.:

S-5

DFW PROJECT #:

FW-1-15

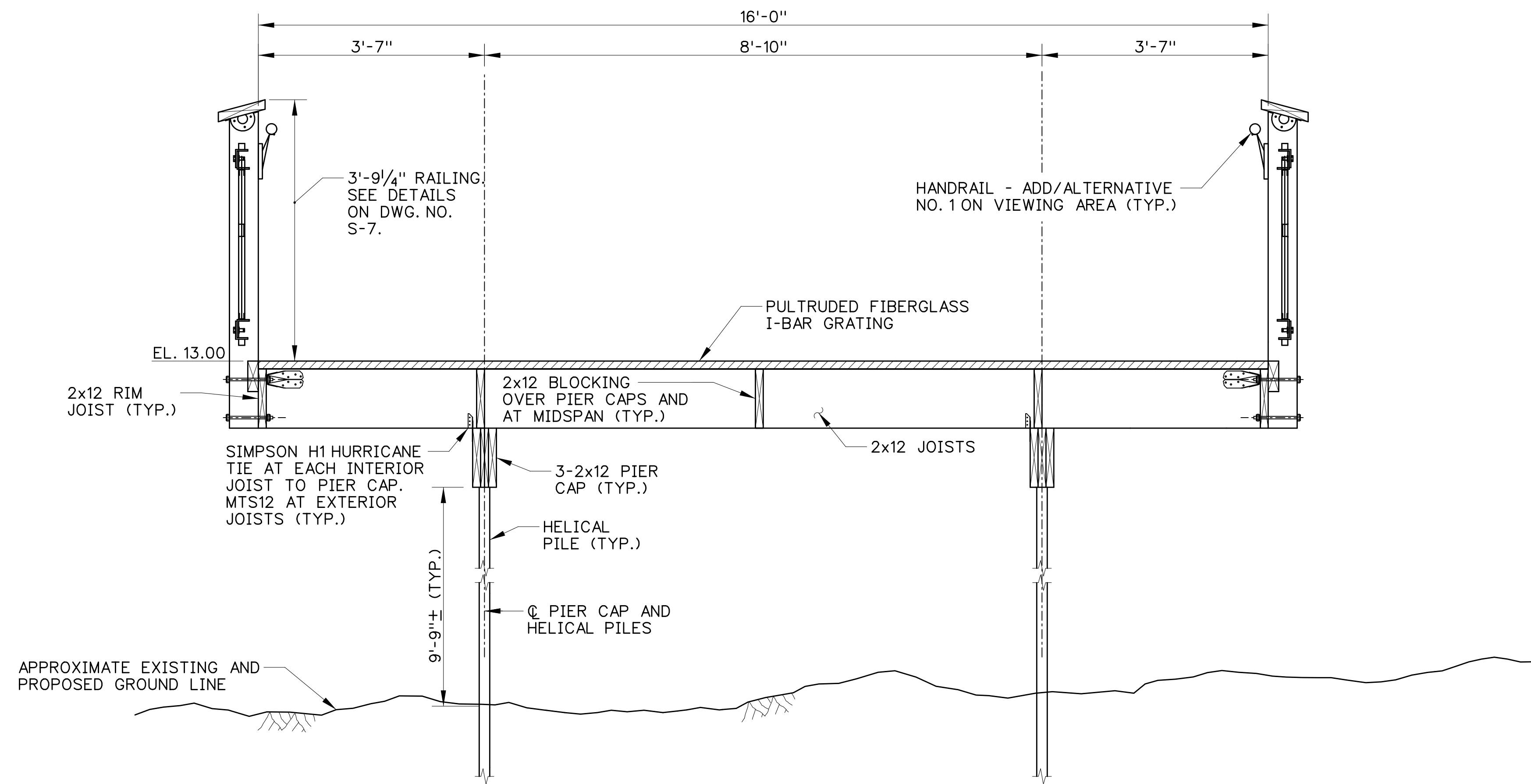
CONTRACT #:

FW-1-15

BY: DATE: DESCRIPTION:

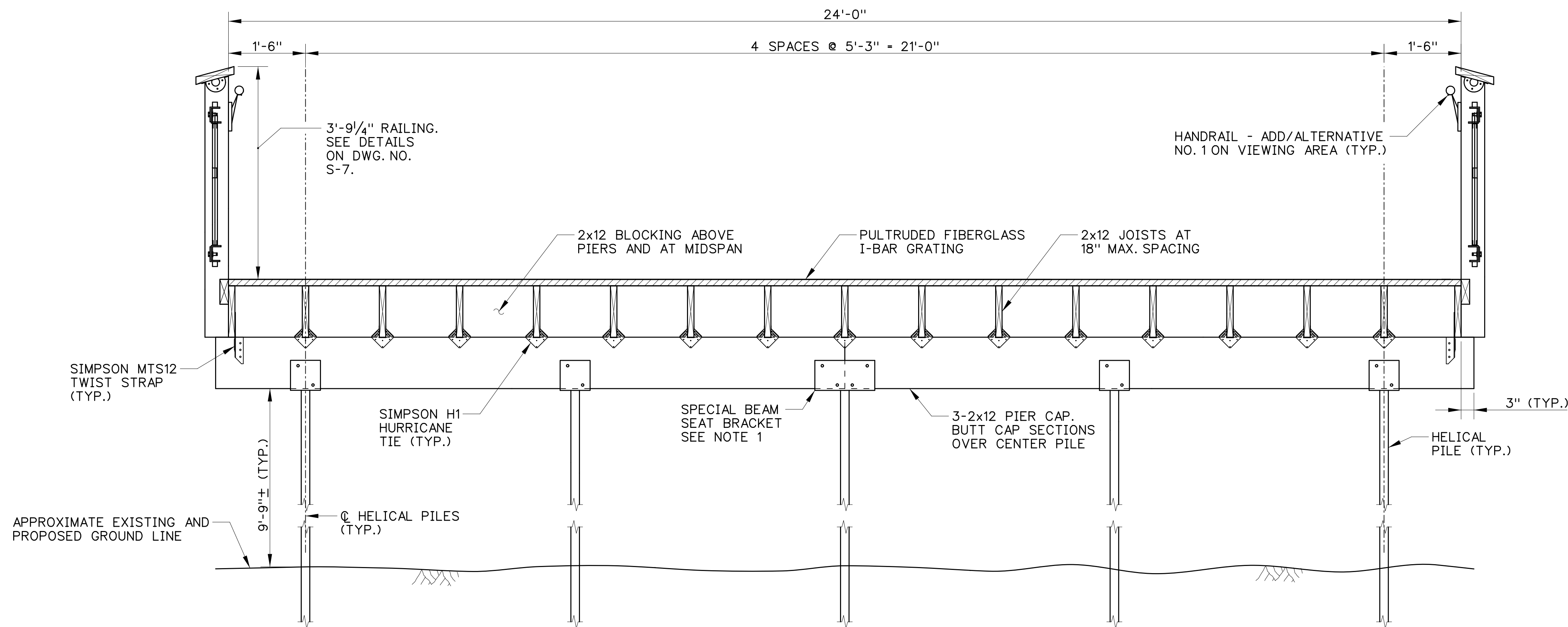
BY: DATE: DESCRIPTION:

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SECTION A-A

SCALE: $\frac{3}{4}$ "=1'-0"



SECTION B-B

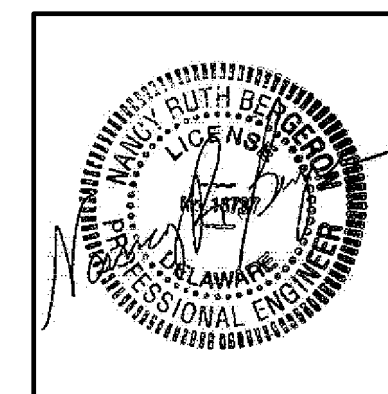
SCALE: $\frac{3}{4}$ "=1'-0"

ADD ALTERNATE NO. 1

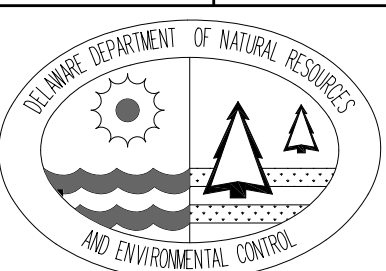
ADD ALTERNATE NO. 1 SHALL CONSIST OF FURNISHING AND INSTALLING HANDRAIL AROUND THE PERIMETER OF THE OBSERVATION PLATFORM. HANDRAIL SHALL MATCH THE HANDRAIL ON THE BOARDWALK.

NOTES:

- BEAM SEAT BRACKET AT CENTER PILE SHALL PROVIDE A MINIMUM 7 INCHES OF BEARING LENGTH FOR EACH PIER CAP SECTION AND TWO THRU-BOLTS FOR EACH PIER CAP SECTION.
- BATTERED PILES NOT SHOWN. SEE DRAWING NO. S-2 FOR THE PILE LAYOUT.



DELAWARE BAYSHORE BYWAY
COOPER-CROSS
WILDLIFE VIEWING ENHANCEMENTS
VIEWING AREA SECTIONS



DESIGNED BY:

RKK

DRAWN BY:

RKK

BUILDING NO.:

N/A

DATE:

AUGUST 28, 2017

SCALE:

AS NOTED

SHEET NO.:

S-6

DFW PROJECT #:

FW-1-15

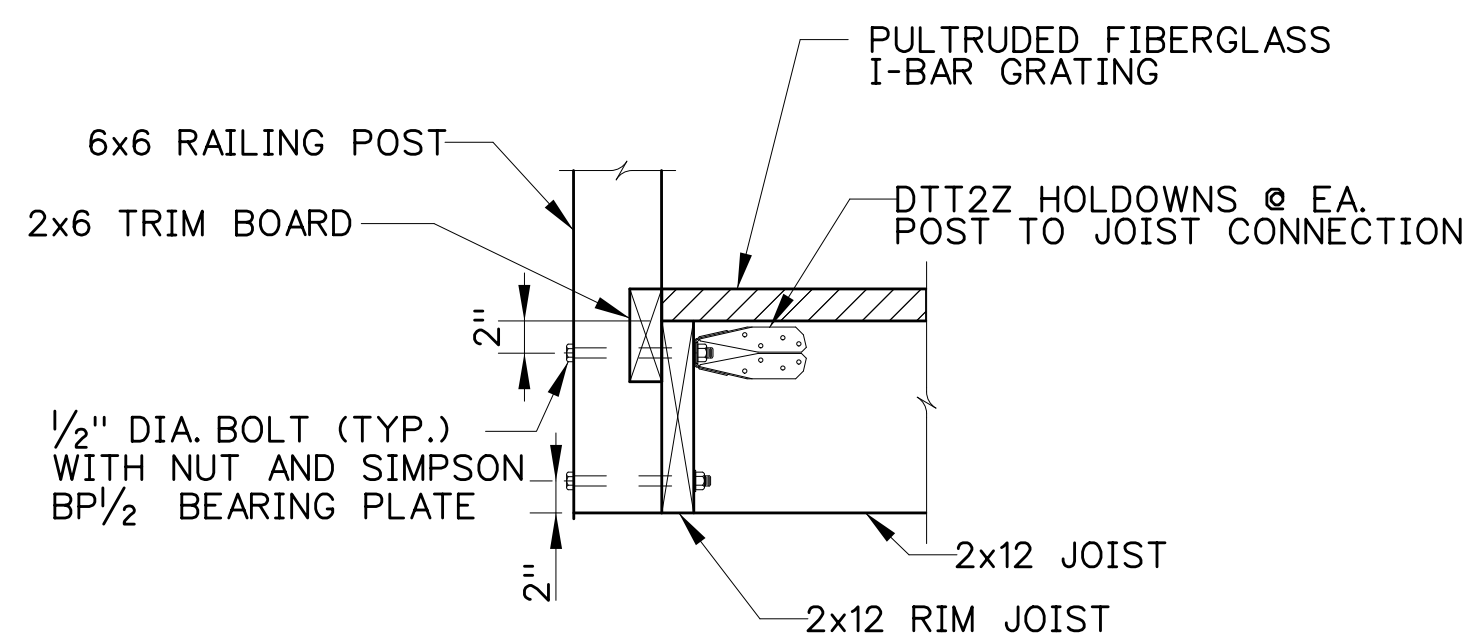
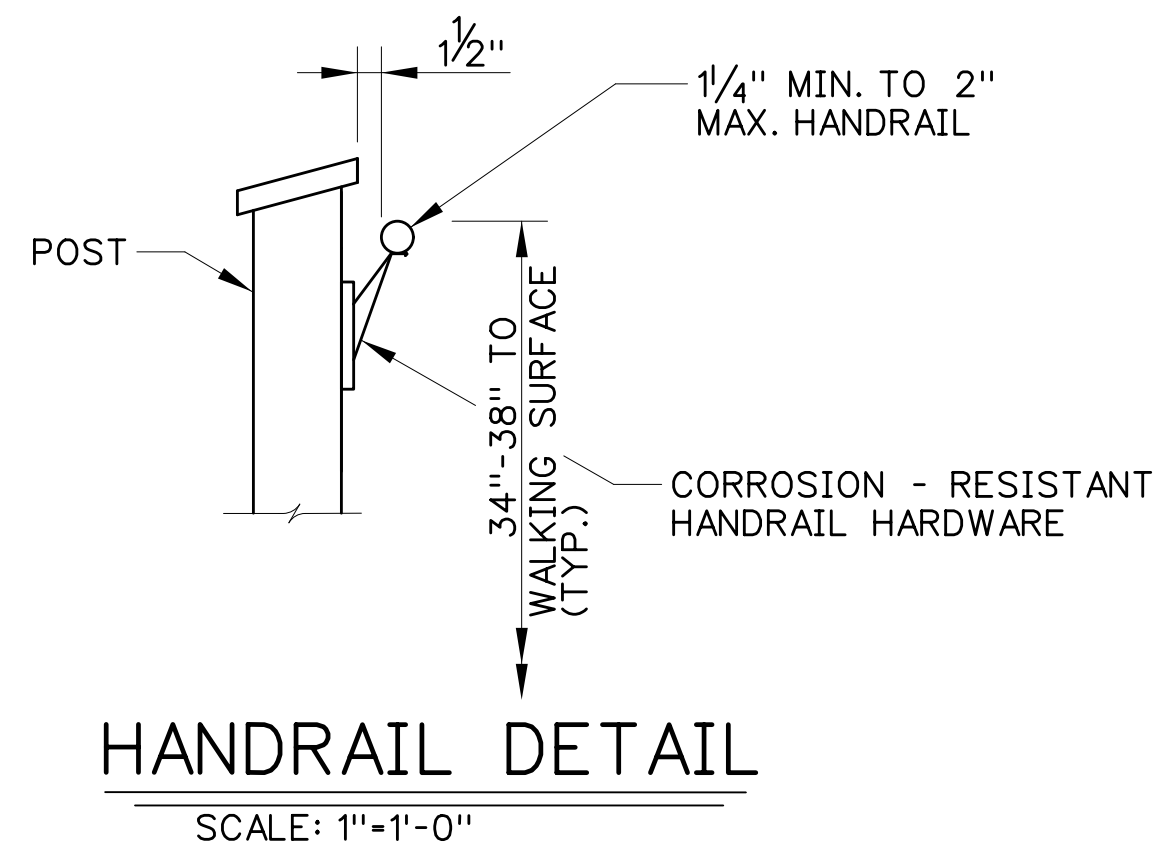
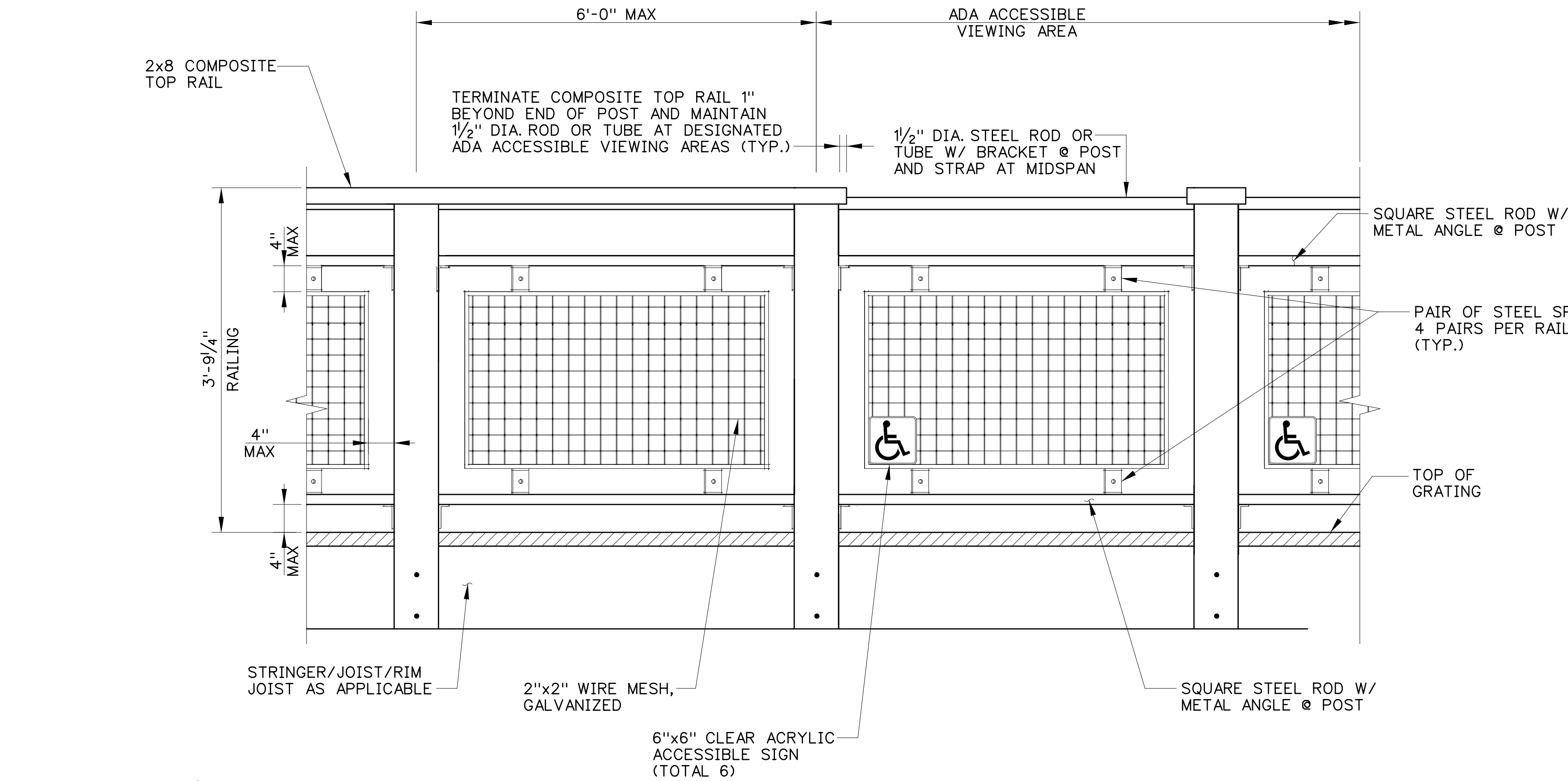
CONTRACT #:

FW-1-15

DATE: DESCRIPTION: BY:

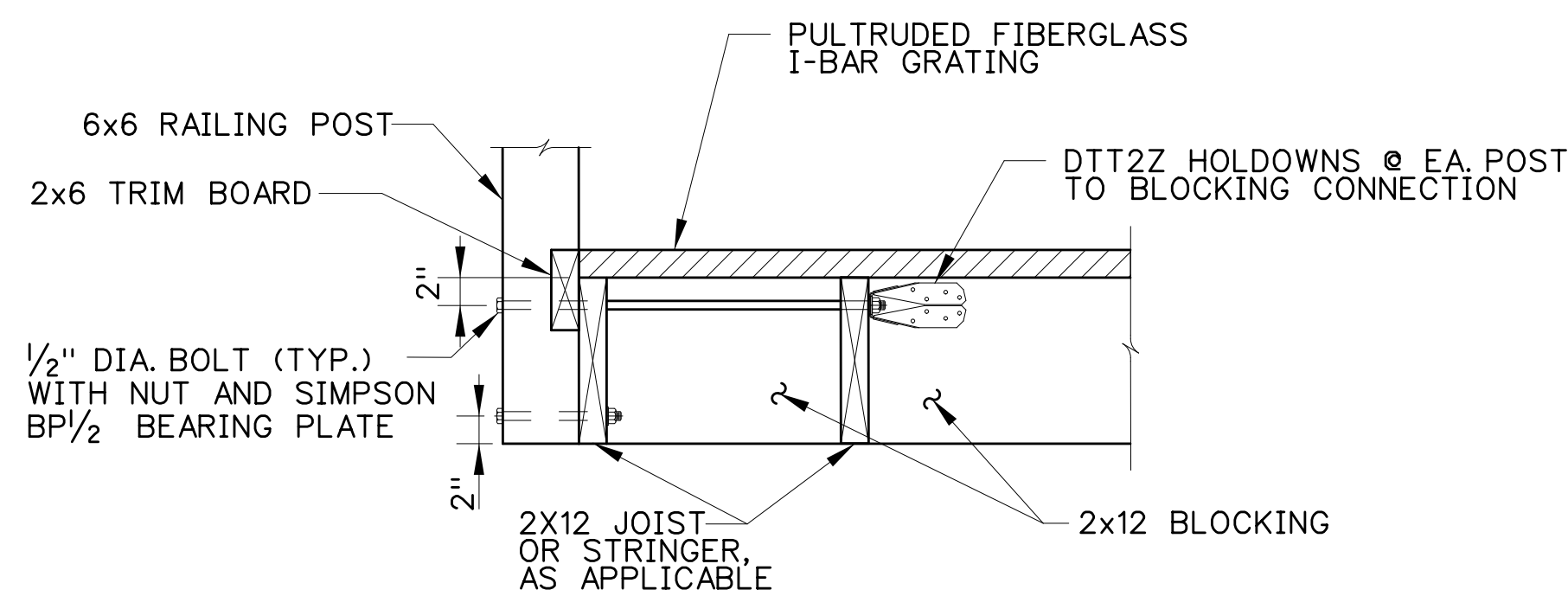
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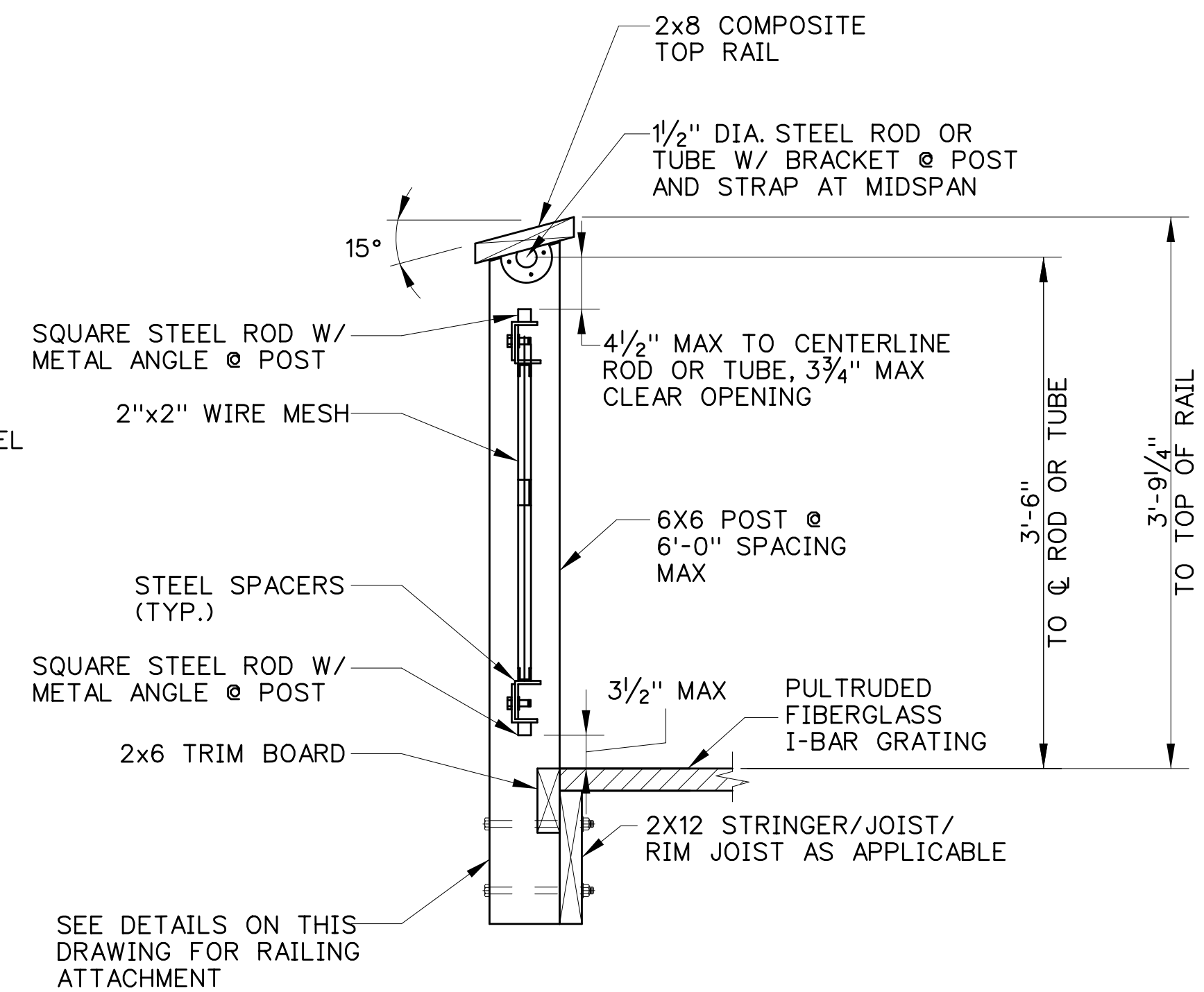
TYPICAL RAILING ATTACHMENT TO RIM JOIST DETAIL

SCALE: 1"=1'-0"



TYPICAL RAILING ATTACHMENT TO EXTERIOR JOIST OR STRINGER DETAIL

SCALE: 1"=1'-0"

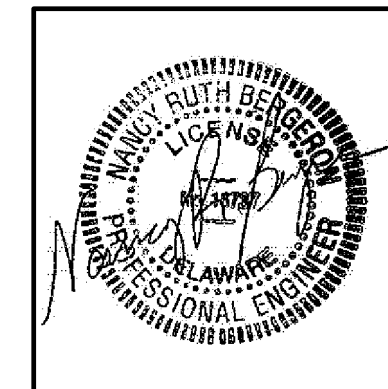


TYPICAL RAILING SECTION

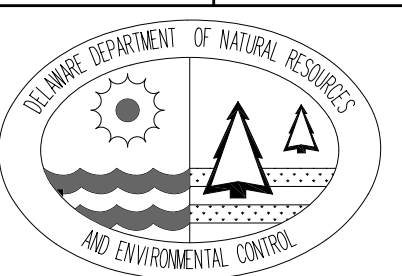
SCALE: 1"=1'-0"

RAILING NOTES:

1. GENERAL CONTRACTOR TO VERIFY THAT THE RAILING SYSTEM MEETS APPLICABLE CODES AND THE DESIGN AND SHOP DRAWINGS SHALL BE CERTIFIED AS INDICATED IN THE PERFORMANCE SPECIFICATIONS. SEE SPECIAL PROVISIONS FOR RAILING DELEGATED DESIGN REQUIREMENTS.
2. SET RAILING POSTS PLUMB THROUGHOUT, INCLUDING RAMPED SECTIONS OF THE BOARDWALK WHERE THE WALKING SURFACE IS NOT LEVEL. FABRICATE INFILL PANELS AND POST CONNECTIONS TO ACCOMMODATE GRADE.
3. RAILING POST CONNECTION CONFIGURATIONS FOR WHICH A DETAIL HAS NOT BEEN PROVIDED SHALL BE SECURELY BRACED AND CONNECTED USING METHODS SIMILAR TO THOSE SHOWN HERE. CONNECTIONS SHALL INCLUDE BEARING PLATES TO PROVIDE A LARGE BEARING AREA UNDER THE BOLT HEADS AND TENSION HOLDDOWNS TO TRANSMIT PRYING FORCES INTO THE JOISTS/ BLOCKING THROUGH SHEAR IN THE FASTENERS. IN NO CASE SHALL RAILING POSTS BE CONNECTED ONLY TO THE RIM JOIST.
4. THE RAILING SHALL NOT ALLOW PASSAGE OF A 4" SPHERE AT ANY POINT.
5. HANDRAILS ARE REQUIRED FOR THE FULL LENGTH OF THE BOARDWALK AND SHALL RETURN TO THE RAILING AT EACH END. HANDRAILS ON THE VIEWING AREA ARE ADD/ALTERNATIVE NO. 1.
6. GALVANIZED STEEL BRACKETS SHALL BE PROVIDED AT POSTS TO RESTRICT LATERAL MOVEMENT OF THE 1/2" DIA. STEEL ROD OR TUBE. INTERMEDIATE STEEL STRAPS SHALL BE PROVIDED AT MIDSPAN OF THE STEEL ROD OR TUBE WHEREVER THE COMPOSITE TOP RAIL IS PRESENT. THE BRACKETS SHALL BE ATTACHED TO THE POSTS. THE COMPOSITE TOP RAIL SHALL BE ATTACHED TO THE BRACKETS AND INTERMEDIATE STRAPS.
7. CONTRACTOR TO PROVIDE STEEL STRAP CONNECTOR ON THE UNDERSIDE OF THE COMPOSITE TOP RAIL AT THE CORNERS OF THE WILDLIFE VIEWING AREA TO CONNECT THE MITER JOINT. BEND STRAP TO FIT COMPOUND MITER.
8. ALL STEEL COMPONENTS SHALL BE HOT DIP GALVANIZED.



DELAWARE BAYSHORE BYWAY
COOPER-CROSS
WILDLIFE VIEWING ENHANCEMENTS
RAILING DETAILS



DESIGNED BY:

RKK

DRAWN BY:

RKK

BUILDING NO.:

N/A

DATE:

AUGUST 28, 2017

SCALE:

AS NOTED

SHEET NO.:

S-7

DFW PROJECT #:

FW-1-15

CONTRACT #:

FW-1-15

DATE: DESCRIPTION:

DATE: DESCRIPTION:

BY:

BY:

Standard Detail & Specifications

Silt Fence

Section

Min. 40" stake length

Reinforcing strip over geosynthetic fabric (typ., each stake)

Flow

Embed fabric min. 8" vertically into ground

Min. 24" stake length above ground

Min. 16" stake length driven into ground

Plan

Ends placed uplope to contain runoff

Flow

6' Max.

2" X 2" wooden post (Typ.)

DATA

Max. controlled slope

Source:

Adapted from MD Stds. & Specs. for ESC

Symbol:

SF

Detail No.

DE-ESC-3.1.2.1

Sheet 1 of 2

Standard Detail & Specifications

Silt Fence

Construction Detail

Posts

Staple

Section A

Section B

Staple

Top

Method for joining continuous sections

Construction Notes:

- Geosynthetic fabric to be fastened securely to fence posts with wire ties or staples.
- When two sections of filter cloth adjoin each other they shall be overlapped by six inches and folded.
- Maintenance shall be performed as needed and material removed when "bulges" develop in the silt fence.

Materials:

- Stakes: Steel (either T or U) or 2" x 2" hardwood
- Geosynthetic Fabric: Type GD-1
- Reinforcing strip: Wooden lath, plastic strip or other approved equivalent
- Prefabricated Unit: Geofab, Envirofence, or approved equivalent

Source:

Adapted from MD Stds. & Specs. for ESC

Symbol:

SF

Detail No.

DE-ESC-3.1.2.1

Sheet 2 of 2

Standard Detail & Specifications

Stabilized Construct. Entrance

Plan

50' min.

10' min.

Wash rack (optional)

10' min.

10' min.

DE #3 Stone

Provide positive drainage to sediment trapping device

Profile

50' min.

6" min.

Mountable berm (as needed)

Exist. pave

Culvert pipe (as needed)

Exist. grnd

GS-1 geotextile

10' min.

3' min.

3' min.

Type GS-1 geotextile fabric

Section A-A (Std.)

Source:

Adapted from VA ESC Handbook

Symbol:

SCE

Detail No.

DE-ESC-3.4.7

Sheet 1 of 2

Standard Detail & Specifications

Stabilized Construct. Entrance

Section A-A (Opt.)

Equipment wheel track + 2'

Metal bars set in reinforced conc. (traffic bearing grates, timber mats or other approved equiv. may be substituted)

Provide space for drainage

Construction Notes:

- Stone size - Use DE #3 stone.
- Length - As required, but not less than 50 feet (except on a single residence lot where a 30 foot minimum length would apply).
- Thickness - Not less than size (6) inches.
- Width - Ten (10) foot minimum, but not less than the full width at points where ingress or egress occurs.
- Geotextile - Type GS-1; placed over the entire area prior to placing of stone.
- Surface Water - All surface water flowing or diverted toward construction entrances shall be piped across the entrance. If piping is impractical, a mountable berm with 5:1 slopes will be permitted.
- Maintenance - The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment. All sediment spilled, dropped, washed or tracked onto public rights-of-way must be removed immediately.
- Washing - Vehicle wheels shall be cleaned to remove sediment prior to entrance onto public rights-of-way. When washing is required, it shall be done on an area stabilized with stone and which drains into an approved sediment trapping device.
- Inspection - Periodic inspection and needed maintenance shall be provided after each rain.

Source:

Adapted from VA ESC Handbook

Symbol:

SCE

Detail No.

DE-ESC-3.4.7

Sheet 2 of 2

Standard Detail & Specifications

Dust Control

Temporary Methods:

- Mulches - See **DE-ESC-3.4.5**, Standard Detail and Specifications for Mulching.
- Vegetative cover - See **DE-ESC-3.4.3**, Std. Detail and Specifications for Vegetative Stabilization.
- Adhesives - Use on mineral soils only (not effective on muck soils). Keep traffic off these areas. The following table may be used for general guidance.

Type of Emulsion	Water Dilution	Type of Nozzle	Apply Gal/Ac.
Latex emulsion	12.5:1	Fine spray	235
Resin-in-water emulsion	4:1	Fine spray	300
Acrylic emulsion (non-traffic)	7:1	Coarse spray	450
Acrylic emulsion (traffic)	3.5:1	Coarse spray	350

- Tillage - For emergency temporary treatment, scarify the soil surface to prevent or reduce the amount of blowing dust until a more appropriate solution can be implemented. Begin the tillage operation on the windward side of the site using a chisel-type plow for best results.
- Sprinkling - Sprinkle site with water until the surface is moist. Repeat as needed.
- Calcium Chloride - Apply as flakes or granular material with a spreader at a rate that will keep the soil surface moist. Re-apply as necessary.
- Barriers - Place barriers such as silt board fences, snow fences, hay bales, etc. at right angles to the prevailing air currents at intervals of approx. 10X their height.

Permanent Methods:

- Vegetative cover - See **DE-ESC-3.4.3**, Std. Detail and Specifications for Vegetative Stabilization.
- Stone - Apply layer of crushed stone or coarse gravel to protect soil surface.

Source:

Adapted from VA ESC Handbook

Symbol:

Detail No.

DE-ESC-3.4.8

Sheet 1 of 1

Standard Detail & Specifications

Construction Site Waste Mgt & Spill Control

DATA TO BE PROVIDED

Volume of Potential Pollution

Height of containment

Area of containment

Volume of containment

Fuel Tank

Double layer plastic sheeting, or approved equal

Min. 9" compost log or DE# 3 Stone berm

Stake as required per compost log manufacturer guidelines

Double layer plastic sheeting

Fuel Tank

Spill containment Area

Source:

Delaware ESC Handbook

Symbol:

Detail No.

DE-ESC-3.6.1

Sheet 1 of 5

Standard Detail & Specifications

Construction Site Waste Mgt & Spill Control

Pollution Prevention - Spill Prevention

- Fueling should only take place in signed designated areas, away from downstream drainage facilities and watercourses.
- Fueling must be with nozzles equipped with automatic shut-off to control drips. Do not top off.
- Protect the areas where equipment or vehicles are being repaired, maintained, fueled or parked from storm water run-on and runoff.
- Use barriers such as berms to prevent storm water run-on and runoff, and to contain spills.
- Place a "Fueling Area" sign next to each fueling area.
- Store hazardous materials such as fuel, solvents, oil and chemicals in secondary containment.
- Inspect vehicles and equipment for leaks on each day of use. Repair fluid and oil leaks immediately.
- Absorbent spill clean-up materials and spill kits must be available in fueling areas and on fuel trucks.
- If fueling is to take place at night, make sure the fueling area is sufficiently illuminated.
- Properly dispose of used oil, fluids, lubricants and spill clean-up materials.

CLEAN UP SPILLS

- If it is safe to do so, immediately contain and clean up any chemical and/or hazardous material spills.
- Properly dispose of used oil, fluids, lubricants and spill clean-up materials.
- Do not bury spills or wash them down with water.

LEAKS AND DRIPS

- Use drip pans or absorbent pads at all times. Place under and around leaky equipment.
- Do not allow oil, grease, fuel or chemicals to drip onto the ground.
- Have spill kits and clean up material on-site.
- Repair leaky equipment promptly or remove problem vehicles and equipment from the site. Clean up contaminated soil immediately.
- Store contaminated waste in sealed containers constructed of suitable material. Label these containers properly.
- Clean up all spills and leaks. Promptly dispose of waste and spent clean up materials.

Source:

Delaware ESC Handbook

Symbol:

Detail No.

DE-ESC-3.6.1

Sheet 2 of 5

Standard Detail & Specifications

Construction Site Waste Mgt & Spill Control

Notes:

The Construction Site Pollution Prevention Plan should include the following elements:

- Material Inventory**

Document the storage and use of the following materials:

 - Concrete
 - Detergents
 - Paints (enamel and latex)
 - Cleaning solvents
 - Pesticides
 - Wood scraps
 - Fertilizers
 - Petroleum based products
- Good housekeeping practices**
 - Store only enough product required to do the job.
 - All materials shall be stored in a neat, orderly manner in their original labeled containers and covered.
 - Substances shall not be mixed.
 - When possible, all of a product shall be used up prior to disposal of the container.
 - Manufacturers' instructions for disposal shall be strictly adhered to.
 - The site foreman shall designate someone to inspect all BMPs daily.
- Waste management practices**
 - All waste materials shall be collected and stored in securely lidded dumpsters in a location that does not drain to a waterbody.
 - Waste materials shall be salvaged and/or recycled whenever possible.
 - The dumpsters shall be emptied a minimum of twice per week, or more if necessary. The licensed trash hauler is responsible for cleaning out dumpsters.

Source:

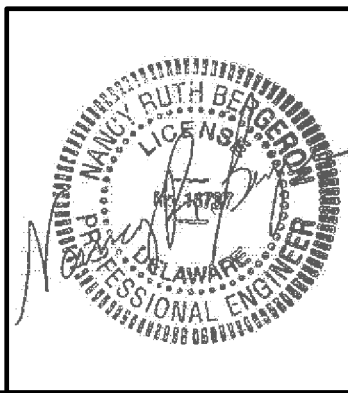
Adapted from USEPA Pub. 840-B-92-002

Symbol:

Detail No.

DE-ESC-3.6.1

Sheet 3 of 5



BY:

DATE:

DESCRIPTION:

DELAWARE BAYSHORE BYWAY COOPER-CROSS WILDLIFE VIEWING ENHANCEMENTS

EROSION AND SEDIMENT CONTROL DETAILS

DESIGNED BY:

RKK

DRAWN BY:

RKK

BUILDING NO.:

N/A

DATE:

AUGUST 28, 2017

SCALE:

NOT TO SCALE

SHEET NO.:

ES-2

DFW PROJECT #:

FW-1-15

CONTRACT #:

FW-1-15

