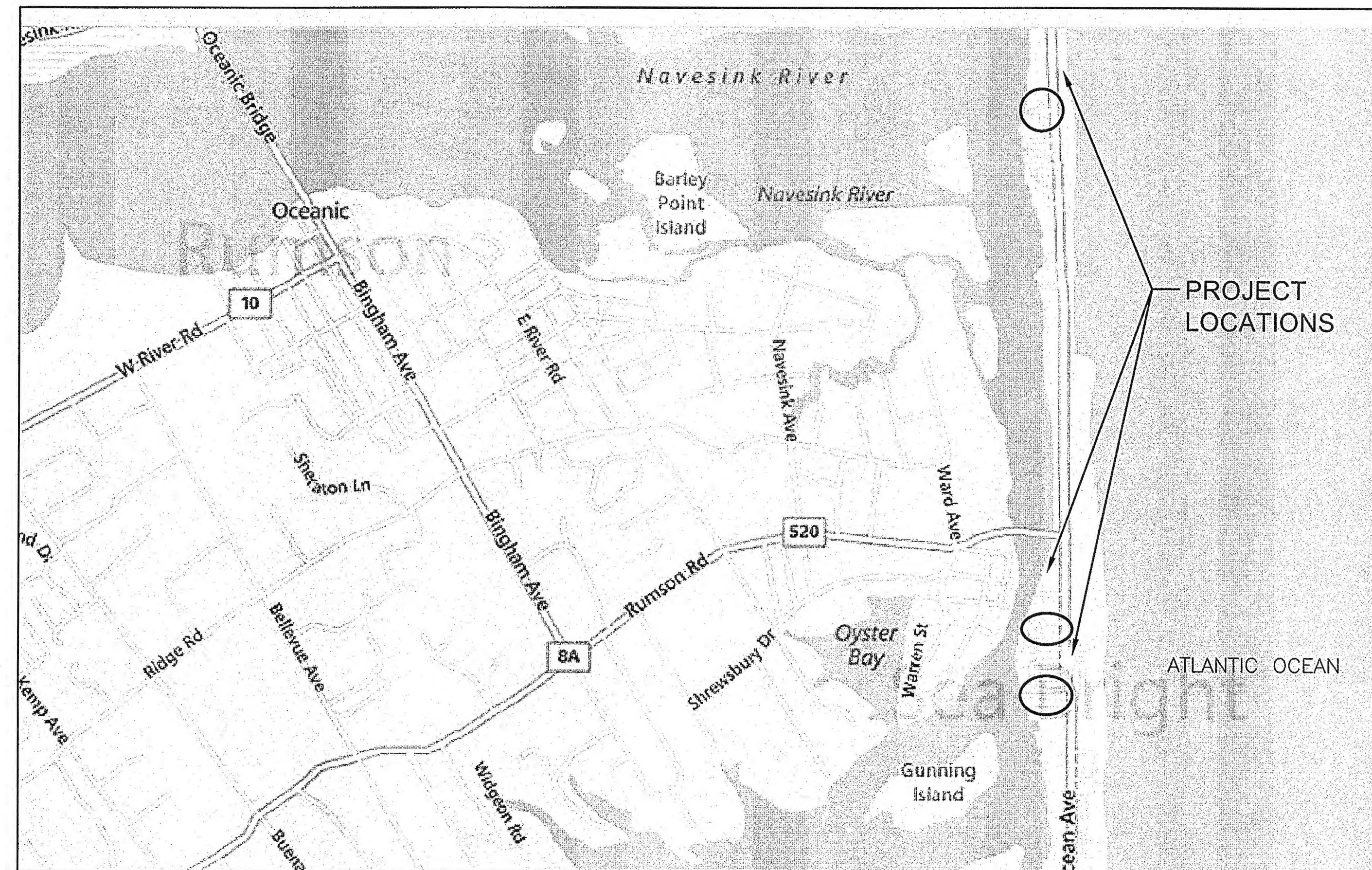


# PLANS FOR FLOOD MITIGATION PROJECT: RECONSTRUCTION OF SIX BULKHEADS AND NEW STORMWATER PUMP STATION

BOROUGH OF SEA BRIGHT  
MONMOUTH COUNTY, NEW JERSEY

UTILITY OWNERS	
<b>ELECTRIC</b>	
JCP&L 1 RIVER CENTER 331 NEWMAN SPRINGS ROAD BUILDING #3 (732) 212-4246 RED BANK, NJ 07701	
<b>GAS</b>	
N.J. NATURAL GAS COMPANY 1415 WYCOFF ROAD WALL, NEW JERSEY 07719	(732) 938-1179
<b>WATER</b>	
N.J. AMERICAN WATER COMPANY 661 SHREWSBURY AVENUE SHREWSBURY, NEW JERSEY 07701	(732) 842-6900
<b>TELEPHONE</b>	
VERIZON 5100 BELMAR BOULEVARD FARMINGDALE, NEW JERSEY 07727	(732) 751-8730
<b>CABLE</b>	
COMCAST CABLEVISION 403 SOUTH STREET EATONTOWN, NEW JERSEY 07724	(732) 935-5482
<b>SEWER</b>	
TWO RIVERS WATER RECLAMATION AUTHORITY 1 HIGHLAND AVENUE MONMOUTH BEACH, NEW JERSEY 07750	(732) 229-8578
<p>LOCATION OF UTILITIES SHOWN ON THESE PLANS ARE NOT WARRANTED AS TO EXACTNESS. CONTRACTOR SHALL DETERMINE EXACT LOCATION AND DEPTH OF UTILITIES PRIOR TO CONSTRUCTION IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS AND OTHER APPLICABLE LAWS.</p> <p style="text-align: center;">PRIOR TO DIGGING CALL 1-800-272-1000</p>	



KEY MAP  
NOT TO SCALE

SHEET INDEX		
SHEET	DWG	DESCRIPTION
1	-	COVER SHEET
2	S1	LEGEND, GENERAL NOTES, AND ABBREVIATIONS
3	S2	CONSTRUCTION PLAN - OSBORNE PLACE
4	S3	CONSTRUCTION PLAN - CENTER STREET
5	S4	CONSTRUCTION PLAN - BEACH STREET
6	S5	CONSTRUCTION PLAN - SOUTH STREET
7	S6	CONSTRUCTION PLAN - RIVER STREET
*	S7	CONSTRUCTION PLAN - BEACH WAY
*	S8	CONSTRUCTION PLAN - BEACH WAY
10	S9	ELEVATIONS, SECTIONS AND DETAILS
11	PP-1	DRAINAGE PLAN AND PROFILE - OSBORNE PLACE
12	PP-2	DRAINAGE PLAN AND PROFILE - CENTER STREET
13	PP-3	DRAINAGE PLAN - BEACH STREET
14	PP-4	DRAINAGE PLAN AND PROFILE - SOUTH STREET
15	PP-5	DRAINAGE PLAN AND PROFILE - RIVER STREET
16	CD-1	CONSTRUCTION DETAILS
17	CD-2	CONSTRUCTION DETAILS
18	SE-1	SOIL EROSION AND SEDIMENT CONTROL DETAILS
19	SE-2	SOIL EROSION AND SEDIMENT CONTROL NOTES

\* - NOT INCLUDED IN THIS SUBMISSION

NOTE:  
BEACH WAY CONSTRUCTION PLANS ARE NOT INCLUDED IN THIS PERMIT SUBMISSION AS THERE IS NO IN-WATER WORK INVOLVED.

U.S.A.C.E. NATIONWIDE PERMITS  
No. 3 AND 7  
PERMIT PLANS

PREPARED BY  
**JACLYN J. FLOR, P.E., P.P.**  
BOROUGH OF SEA BRIGHT

**TM ASSOCIATES**  
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*Jaclyn J. Flor*  
**JACLYN J. FLOR, P.E., P.P.**  
LICENSED PROFESSIONAL ENGINEER  
STATE OF NEW JERSEY LICENSE No. 246E04542600

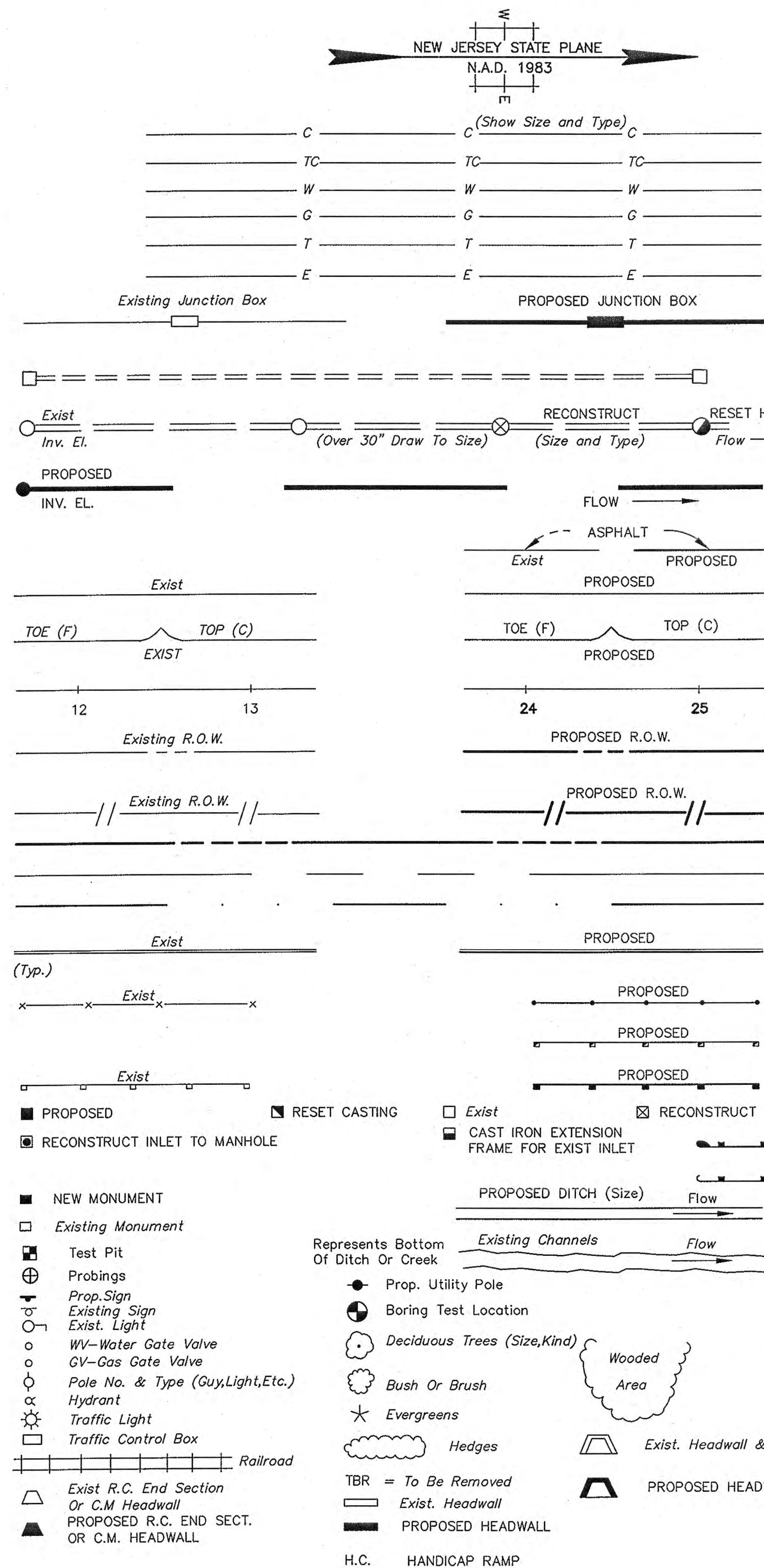
4/7/14  
DATE

SBRT-00861  
SHEET 1 OF 19

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### STANDARD LEGEND



### STANDARD ABBREVIATIONS

LC	LOCKING COVER	PT	POINT OF TANGENCY
B	BASE LINE	PI	POINT OF INTERSECTION
AGG.	AGGREGATE	PVC	POINT OF VERTICAL CURVATURE
C	CUT	PVT	POINT OF VERTICAL TANGENCY
F	FILL	PVI	POINT OF VERTICAL INTERSECTION
DC	DEPRESSED CURB	POL	POINT ON LINE
DWY	DRIVEWAY	A.D.	ALGEBRAIC DIFFERENCE
C. TO C.	CENTER TO CENTER	K	RATE OF VERTICAL CURVATURE
FERT.	FERTILIZER	VC	VERTICAL CURVE (LENGTH)
GRD	GRADED	HMA	HOT MIX ASPHALT
C.R.	COUNTY ROUTE	CONC	CONCRETE
P.G.L.	PROFILE GRADE LINE	CRSE.	COURSE
PVMT.	PAVEMENT	CP	CONTROL POINT
REINF.	REINFORCED	C.Y.	CUBIC YARD
RT.	RIGHT	EX	EXISTING
SW, SDWK	SIDEWALK	GR	GRATE
VAR.	VARIABLE	ELEV.	ELEVATION
FT.	FEET	H.C.	HANDICAP RAMP
INV.	INVERT	NO.	NUMBER
L.O.M.	LIMIT OF MILLING	R	RADIUS
L.O.P.	LIMIT OF PAVING	T.B.R.	TO BE REMOVED
L.S.	LUMP SUM	UN	UNIT
L.F.	LINEAR FEET	U.E.H.	USE EXISTING HEAD
LT.	LEFT	S.C.F.	SEDIMENT CONTROL FENCE
MIN.	MINIMUM	NJAWC	NEW JERSEY AMERICAN WATER COMPANY
M.H.	MANHOLE		
P	PROPERTY LINE		
PROP.	PROPOSED		
L	LENGTH		
N	NORTH		
S	SOUTH		
E	EAST		
W	WEST		
RCCP	REINFORCED CONCRETE CULVERT PIPE		
R.C.E.S.	REINFORCED CONCRETE END SECTION		
R.R.S.P.	RIP RAP STONE PROTECTION		
R.O.W.	RIGHT OF WAY		
S.F.	SQUARE FEET		
S.M.	STREET NAME SIGN		
S.O.D.	SUBBASE OUTLET DRAIN		
SURF.	SURFACE		
STAB.	STABILIZED		
S.Y.	SQUARE YARD		
STA.	STATION		

### GENERAL NOTES

- DATA**  
HORIZONTAL DATUM: NAD83  
VERTICAL DATUM: NAVD88  
TIDAL STATION: SEA BRIGHT, SHREWSBURY RIVER ID:8531804  
NOAA TIDAL DISK: J-5 RESET 1950
- DESIGN SPECIFICATIONS:**  
2002 AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES (17TH EDITION).  
ARMY CORPS OF ENGINEERS SHORE PROTECTION MANUAL  
ADA ACCESSIBILITY GUIDELINES FOR THE PUBLIC RIGHT-OF-WAY (PROWAG)
- CONSTRUCTION SPECIFICATIONS:**  
2007 NJDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AS MODIFIED BY THE SUPPLEMENTARY SPECIFICATIONS.
- DESIGN LOADS:**  
LIVE LOAD SURCHARGE: 250 PSF
- STEEL SHEETING:**  
ALL SHEETING SHALL CONFORM TO ASTM A572 GRADE 50. SHEETING SHALL BE HOT-DIPPED GALVANIZED, MIN. THICKNESS 6 MILS.  
  
ALL TIE RODS, PLATES, AND WALES SHALL CONFORM TO AASHTO M270, GRADE 26. ALL BOLTS, WASHERS, NUTS, TIE RODS, PLATES, AND WALES SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH AASHTO M232.  
  
STEEL SHEETING SHALL BE P2C-13 OR EQUAL. THE TIE-RODS AND WALES SHALL BE GALVANIZED. TIE-RODS, WALES, TIMBER ANCHOR PILES AND OTHER COMPONENTS SHALL BE INCLUDED IN THE L.F. COST OF STEEL SHEETING AS SHOWN ON THE PLANS.  
  
NO PAYMENT WILL BE MADE FOR ANY UTILITY RELOCATION, TEMPORARY MOVEMENT, OR REINSTALLATION REQUIRED FOR THE INSTALLATION OF THE SHEETING. ALL COSTS ASSOCIATED WITH UTILITY MOVEMENTS ARE TO BE INCLUDED IN THE PAY ITEM "STEEL SHEETING".
- ALUMINUM SHEETING:**  
ALL SHEETING SHALL CONFORM TO AA ASM 35 AND AA ADM 1.  
  
THE SHEETING SHALL BE PZH-153 OR EQUAL. THE TIE-RODS AND WALE SHALL BE ALUMINUM. TIE-RODS, WALES, TIMBER ANCHOR PILES AND OTHER COMPONENTS SHALL BE INCLUDED IN THE L.F. COST OF ALUMINUM SHEETING AS SHOWN ON THE PLANS.  
  
NO PAYMENT WILL BE MADE FOR ANY UTILITY RELOCATION, TEMPORARY MOVEMENT, OR REINSTALLATION REQUIRED FOR THE INSTALLATION OF THE SHEETING. ALL COSTS ASSOCIATED WITH UTILITY MOVEMENTS ARE TO BE INCLUDED IN THE PAY ITEM "ALUMINUM SHEETING".
- TIMBER ANCHOR PILES:**  
TIMBER ANCHOR PILES SHALL BE TREATED SOUTHERN PINE PILES SUPPLIED WITH A MIN. BUTT DIAMETER SPECIFIED ON THE PLANS.  
  
STEEL FASTENERS FOR TIMBER, INCLUDING PLATES, NUTS, AND WASHERS, SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M232, UNLESS OTHERWISE NOTED.  
  
COST OF TIMBER ANCHOR PILES SHALL BE INCLUDED IN THE L.F. COST OF SHEETING.
- EXISTING DIMENSION VERIFICATION:**  
DIMENSIONS OF THE EXISTING BULKHEAD AND DETAILS ON THE PLANS ARE BASED ON FIELD SURVEYS. THE CONTRACTOR SHALL FIELD VERIFY THE DIMENSIONS AND ORIENTATIONS OF ALL EXISTING MEMBERS AND SUBMIT SHOP DRAWINGS FOR THE PROPOSED BULKHEAD. WRITTEN VERIFICATIONS SHALL INCLUDE SKETCHES, PHOTOGRAPHS AND DESCRIPTIONS AS NEEDED TO CLEARLY DEFINE THE AS-BUILT DIMENSIONS THAT WILL BE INCORPORATED INTO THE SHOP DRAWINGS.
- VARIATIONS FROM THE PLAN DIMENSIONS ARE TO BE EXPECTED:**  
NO ADDITIONAL PAYMENT FOR ANY ADDITIONAL COST ABOVE THE CONTRACTOR'S UNIT PRICE BID WILL BE MADE RESULTING FROM VARIATIONS FROM PLAN DIMENSIONS.
- CONTRACT BID PRICE:**  
CONTRACT BID PRICES SHALL BE BASED ON RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING SITE BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS, DIMENSIONS AND ELEVATIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD. MATERIAL SHALL NOT BE ORDERED UNTIL THE ACTUAL DETAILS, DIMENSIONS & ELEVATIONS HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.
- OPEN WATER PROTECTION:**  
THE CONTRACTOR SHALL EXECUTE HIS WORK IN SUCH A MANNER AND TAKE SUCH PRECAUTIONS AS NECESSARY TO PREVENT THE FALLING OF DEBRIS AND FILL MATERIAL INTO THE RIVER. THE METHODS OF PROTECTION PROPOSED BY THE CONTRACTOR SHALL BE APPROVED BY THE ENGINEER (NO SEPARATE PAYMENT SHALL BE MADE). ANY SPILLAGE OF OIL OR OIL BASED PRODUCTS DURING CONSTRUCTION MUST BE PROMPTLY REPORTED TO THE COAST GUARD BY CALLING 1-800-424-8802.
- SOIL EROSION AND SEDIMENT CONTROL:**  
ALL WORK IS TO BE PERFORMED IN ACCORDANCE WITH THE CURRENT EDITION OF THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY. ALL SOIL EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO GROUND DISTURBANCE.
- BACKFILL:**  
COMPACT BORROW EXCAVATION, SELECT MATERIAL OR ON-SITE MATERIAL AS APPROVED BY ENGINEER MUST BE PLACED IN THE VICINITY OF ANCHOR BEFORE PRESSURE IS APPLIED AGAINST THE SHEET PILING.
- QUANTITIES:**  
ITEMS NOT LISTED SEPARATELY IN THE PROPOSAL ARE SUBSIDIARY TO OTHER ITEMS IN THE PROPOSAL.  
  
THE COST OF ALL HARDWARE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE VARIOUS STEEL, TIMBER, AND ALUMINUM ITEMS.
- UTILITIES:**  
PRIOR TO ALL CONSTRUCTION, THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ANY EXISTING UTILITY FACILITIES. CONTRACTOR SHALL CALL 1-800-272-1000 PRIOR TO ANY DIGGING FOR MARK OUT OF UTILITY LOCATIONS.  
  
CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE HIGH VOLTAGE PROXIMITY ACT. LOW PROFILE EQUIPMENT MAY BE REQUIRED IN CERTAIN LOCATIONS.  
  
NO SEPARATE PAYMENT WILL BE MADE FOR COORDINATION WITH UTILITY COMPANIES OR ANY UTILITY RELOCATION, TEMPORARY MOVEMENT, OR REINSTALLATION REQUIRED FOR THE WORK. ALL COSTS ASSOCIATED WITH UTILITY COORDINATION ARE TO BE INCLUDED IN THE VARIOUS PAY ITEMS IN THE PROPOSAL.
- PROTECTION OF EXISTING FEATURES:**  
THE CONTRACTOR SHALL EXECUTE HIS WORK IN SUCH A MANNER AND TAKE SUCH PRECAUTIONS AS NECESSARY TO PREVENT DAMAGE TO EXISTING SHEETING ADJACENT TO THE PROPOSED SHEETING; PROPERTY CORNERS; TREES, SHRUBS, AND LANDSCAPING; RETAINING WALLS, ETC. EXISTING ITEMS SCHEDULED TO REMAIN THAT ARE DAMAGED BY THE CONTRACTOR SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE.  
  
CONNECTION TO EXISTING SHEETING SHALL BE DEVELOPED BY THE CONTRACTOR. THE METHODS OF PROTECTION AND CONNECTION PROPOSED BY THE CONTRACTOR SHALL BE APPROVED BY THE ENGINEER (NO SEPARATE PAYMENT).
- DEWATERING:**  
NO SEPARATE PAYMENT WILL BE MADE FOR ANY DEWATERING OPERATIONS. ALL COST ASSOCIATED WITH DEWATERING SHALL BE INCLUDED IN THE VARIOUS BID ITEMS.
- CONTRACTOR SUBMITTALS:**  
CONTRACTOR SHALL SUBMIT ALL DETAILS AND LAYOUT PLAN FOR SHEETING, CLOSURE PLATES, WALES AND OTHER COMPONENTS ASSOCIATED WITH THE SHEETING.
- TEMPORARY CHAIN LINK FENCE:**  
6' HIGH CHAIN LINK TEMPORARY CONSTRUCTION FENCE SHALL BE INSTALLED AROUND THE CONSTRUCTION SITE. THE FENCE SHALL BE INSTALLED PRIOR TO CONSTRUCTION AND REMAIN UP UNTIL ALL PHASES OF CONSTRUCTION ARE COMPLETE COST FOR PROVIDING AND MAINTAINING TEMPORARY FENCING SHALL BE INCLUDED IN THE VARIOUS BID ITEMS IN THE PROPOSAL.
- CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING DRIVEWAY AND PEDESTRIAN ACCESS AT ALL LOCATIONS THROUGHOUT THE DURATION OF THE PROJECT. THE COST FOR THIS WORK SHALL BE INCLUDED IN THE VARIOUS BID ITEMS IN THE PROPOSAL.**
- THE CONTRACTOR SHALL PROTECT ALL SURVEY CONTROL POINT MARKS FROM DAMAGE AND SHALL ESTABLISH OFFSET POINTS AS REQUIRED FOR HIS WORK.**

### MINIMUM STEEL SHEETING PROPERTIES

MATERIAL:	ASTM A572 GR. 50
WEB THICKNESS:	0.375 IN
FLANGE THICKNESS:	0.375 IN
MOMENT OF INERTIA:	152.0 IN <sup>4</sup> /FT
SECTION MODULUS:	24.2 IN <sup>3</sup> /FT

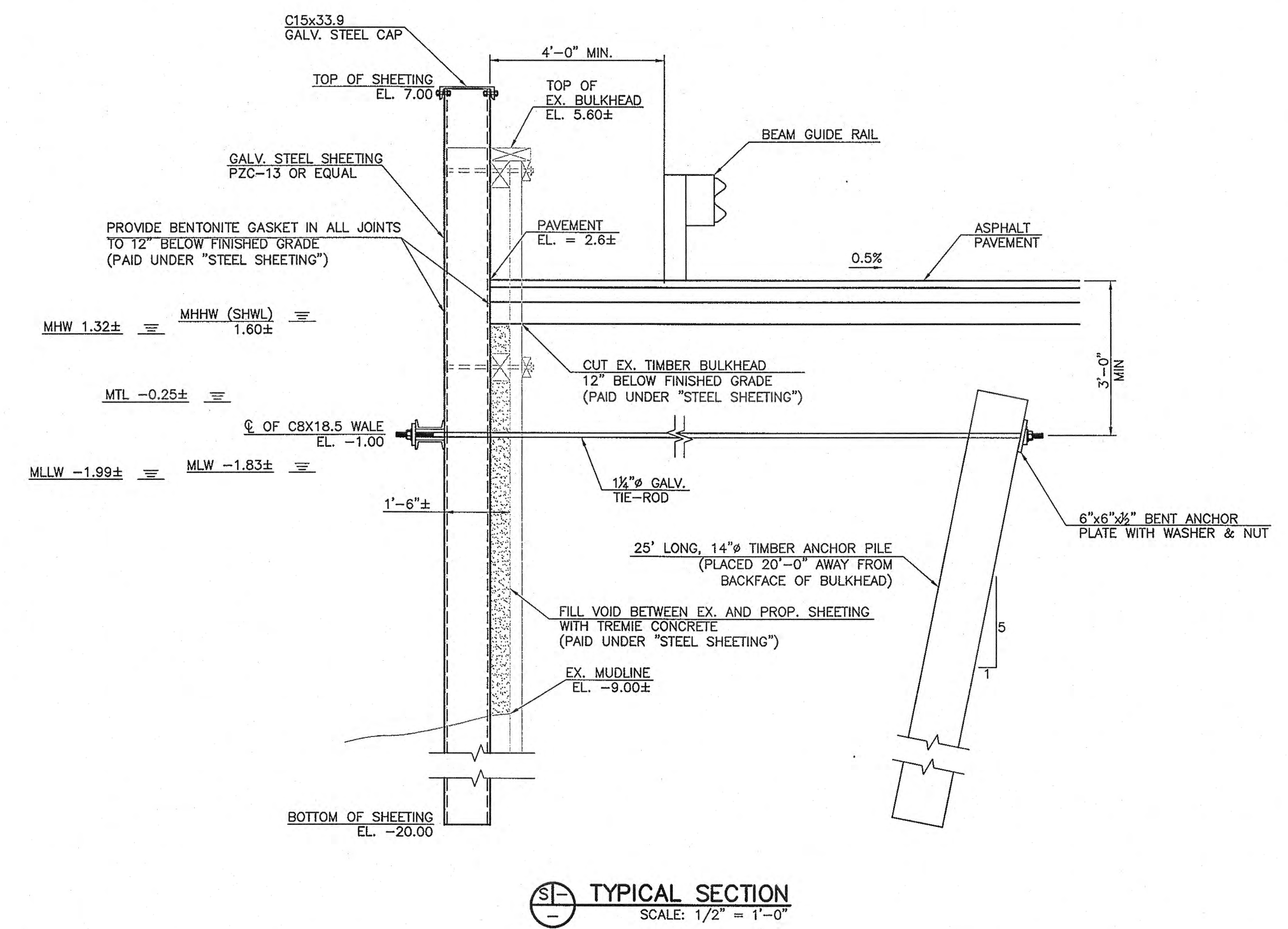
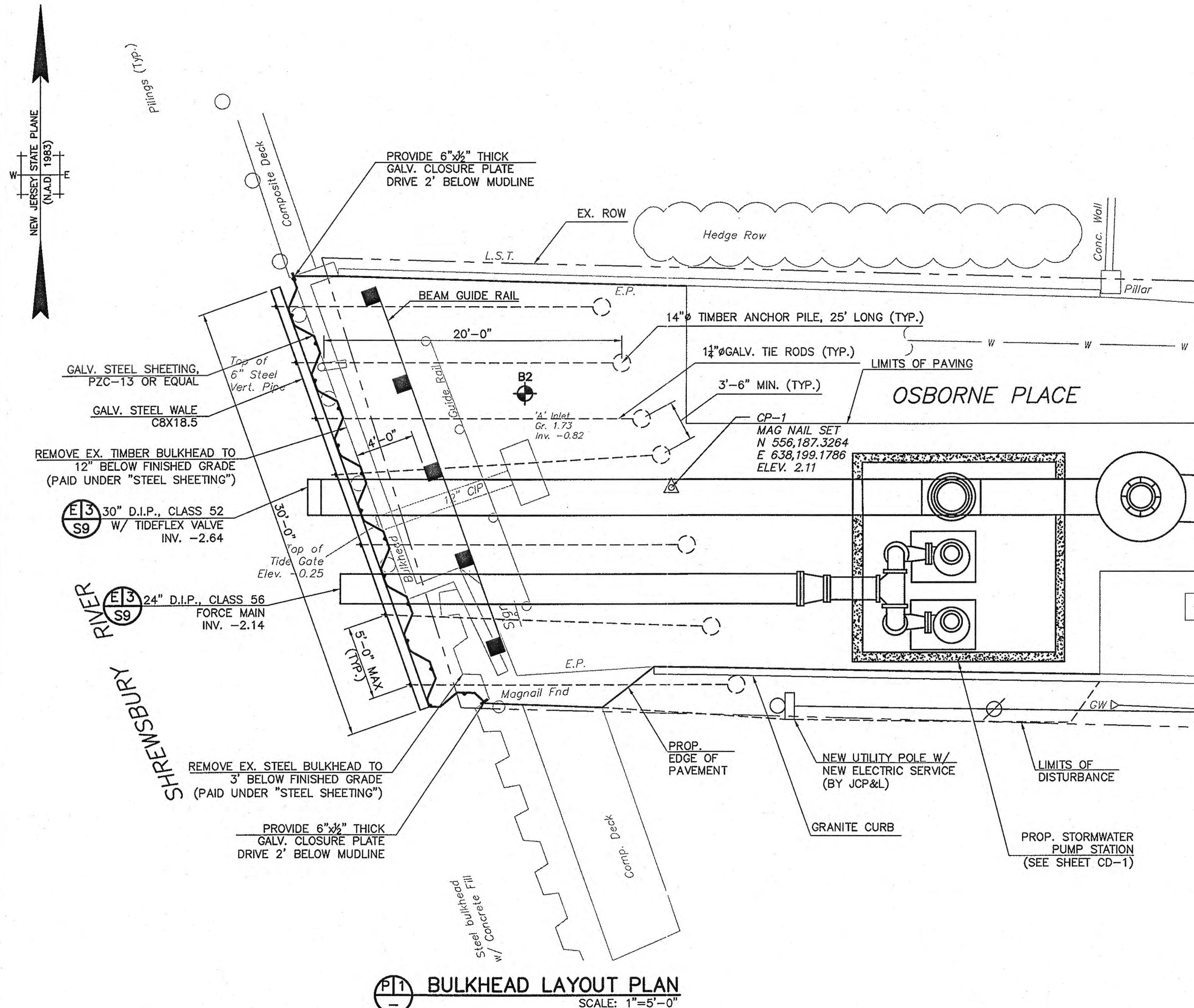
### MINIMUM ALUMINUM SHEETING PROPERTIES

MATERIAL:	6061-T6 MARINE GRADE
WEB THICKNESS:	0.183 IN
FLANGE THICKNESS:	0.183 IN
MOMENT OF INERTIA:	65.0 IN <sup>4</sup> /FT
SECTION MODULUS:	13.0 IN <sup>3</sup> /FT

## PERMIT PLANS

NO.	DATE	REVISIONS	BY	CHECKED
BOROUGH OF SEA BRIGHT				
<b>FLOOD MITIGATION PROJECT: RECONSTRUCTION OF SIX BULKHEADS AND NEW STORMWATER PUMP STATION</b>				
BOROUGH OF SEA BRIGHT, MONMOUTH COUNTY, NEW JERSEY				
<b>LEGEND, GENERAL NOTES &amp; ABBREVIATIONS</b>				
<b>TM ASSOCIATES</b> 11 TINDALL ROAD MIDDLETOWN, NJ 07748 TEL 732-671-6400 FAX 732-671-7365		<b>JACLYN J. FLOR, P.E., P.P. C.M.E.</b> <i>Jaclyn Flor</i> LICENSED PROFESSIONAL ENGINEER STATE OF NEW JERSEY LICENSE No. 240E04542600		DRAWING <b>S1</b> SHEET
NEW JERSEY BOARD OF PROFESSIONAL ENGINEERS AND LAND SURVEYORS CERTIFICATE OF AUTHORIZATION 240A 27887500		DESIGNED BY: APM PROJECT NO.: SBRT-00861		DRAWN BY: JRG CHECKED BY: FSB FIELD Bk. #: N/A
2				OF 19

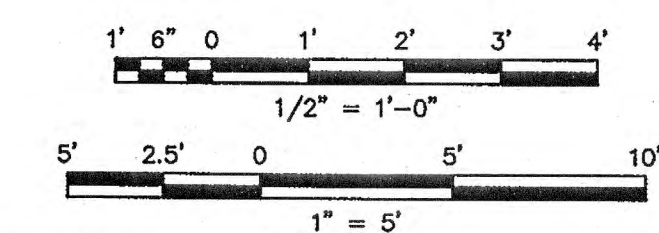




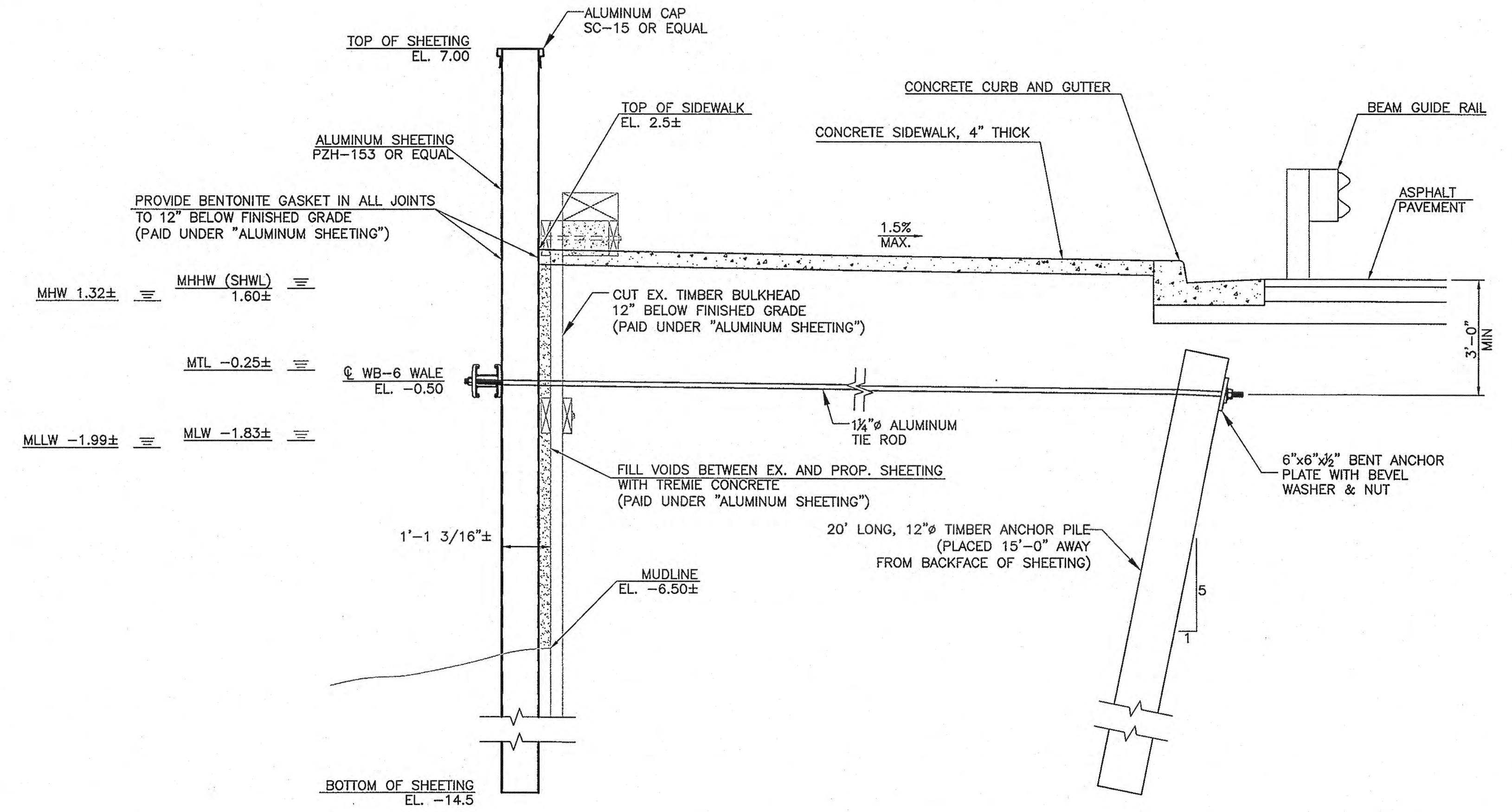
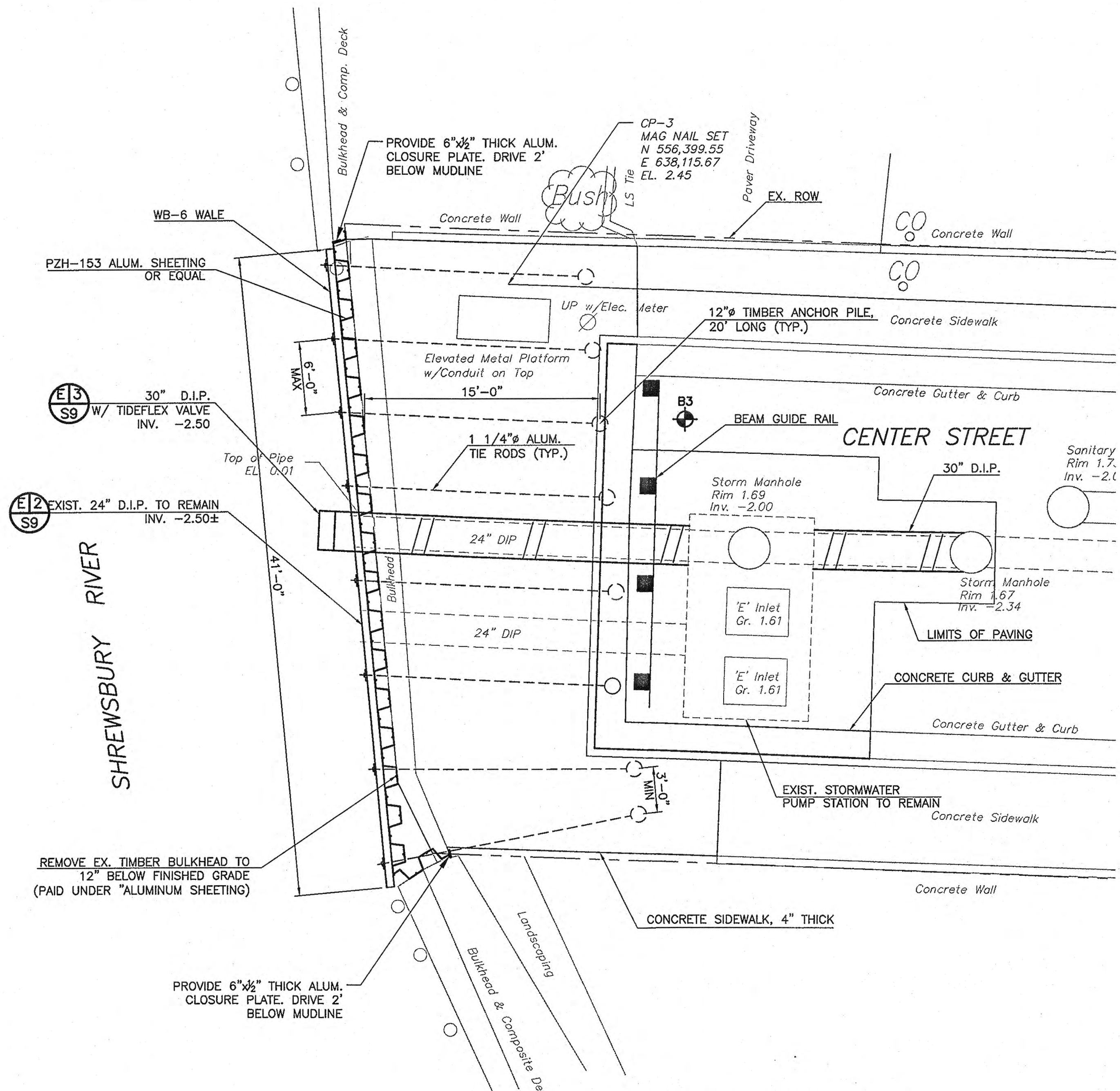
- NOTES:**
1. GUIDERAIL POST SPACING SHALL BE ADJUSTED AS NECESSARY TO AVOID CONFLICTS WITH TIE RODS, DRAINAGE, AND UNDERGROUND UTILITIES.
  2. NO TOPSOIL STOCKPILING SHALL BE ALLOWED ON SITE.
  3. ALL MEAN TIDE LINES ARE COINCIDENT WITH THE FACE OF BULKHEADS.

**PERMIT PLANS**

NO.	DATE	REVISIONS	RFS	EJN
1	4/1/14	ADDED NOTE 3 PER N.J.P.E. COMMENTS		
BOROUGH OF SEA BRIGHT				
FLOOD MITIGATION PROJECT: RECONSTRUCTION OF SIX BULKHEADS AND NEW STORMWATER PUMP STATION BOROUGH OF SEA BRIGHT, MONMOUTH COUNTY, NEW JERSEY				
CONSTRUCTION PLAN OSBORNE PLACE				
 TM ASSOCIATES 11 TINDALL ROAD MIDDLETOWN, NJ 07748 TEL 732-671-6400 FAX 732-671-7365		JACLYN J. FLOR, P.E., P.P. C.M.E.  LICENSED PROFESSIONAL ENGINEER STATE OF NEW JERSEY LICENSE No. 24GE04542600 DATE 4/1/14		DRAWING <b>S2</b> SHEET <b>3</b> OF 19
DESIGNED BY	APM	DRAWN BY	APM	CHECKED BY
PROJECT NO.	SBRT-00861	CADD FILE	SBRT00861-OSBORNE PL.dwg	FIELD BK. #
				N/A



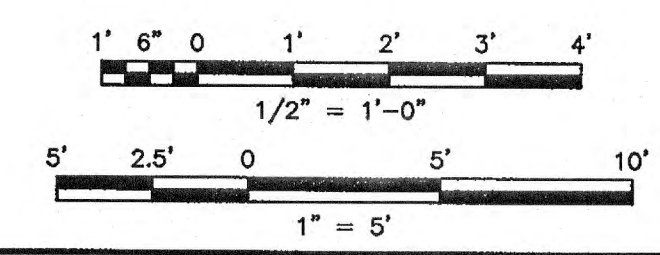




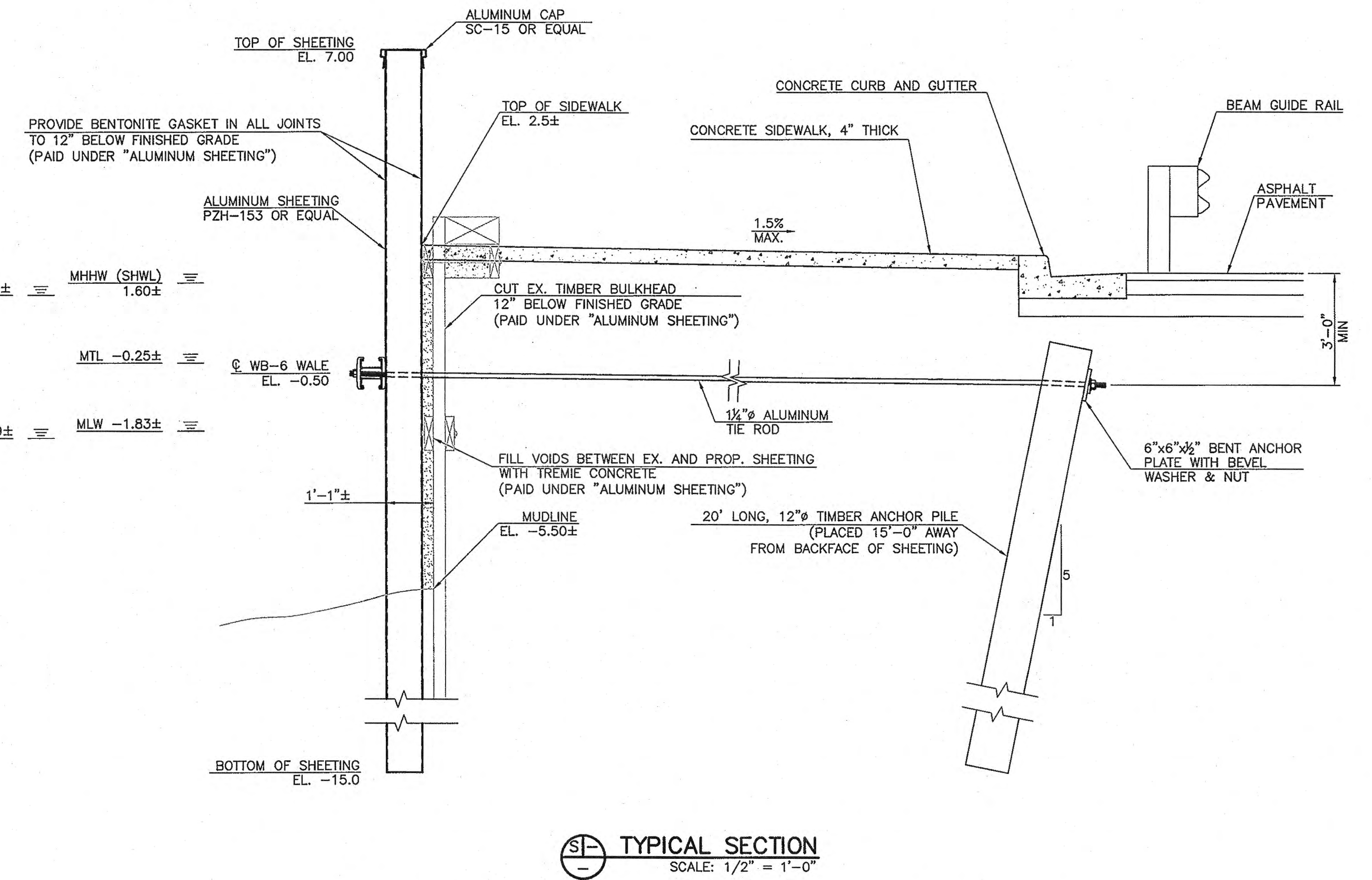
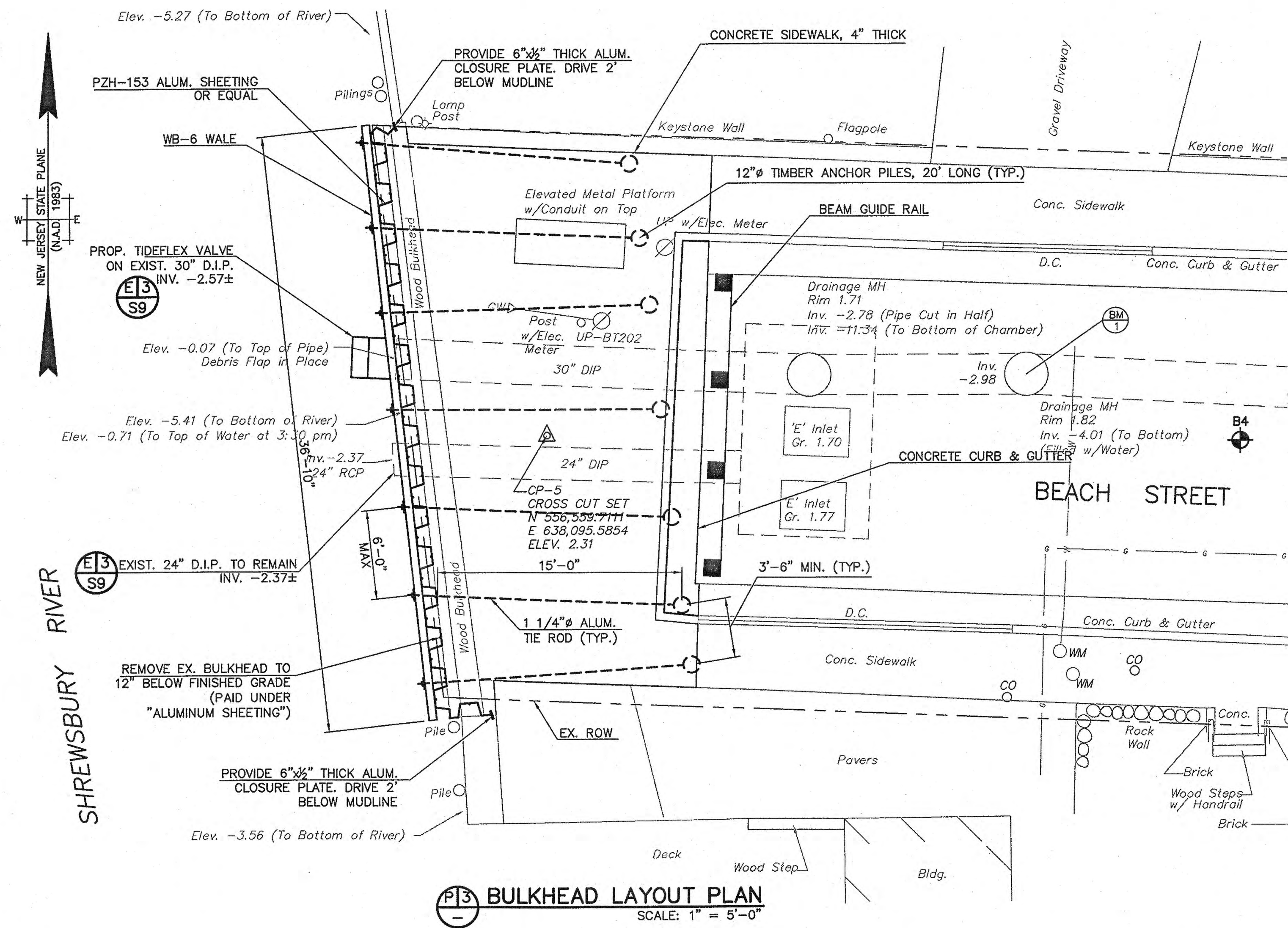
- NOTES:**
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  2. NO TOPSOIL STOCKPILING SHALL BE ALLOWED ON SITE.
  3. ALL MEAN TIDE LINES ARE COINCIDENT WITH THE FACE OF BULKHEADS.

**PERMIT PLANS**

1	4/1/14	ADDED NOTE 3 PER NJDEP COMMENTS	RFS	EJN
NO.	DATE	REVISIONS	BY	CHECKED
BOROUGH OF SEA BRIGHT				
FLOOD MITIGATION PROJECT: RECONSTRUCTION OF SIX BULKHEADS AND NEW STORMWATER PUMP STATION BOROUGH OF SEA BRIGHT, MONMOUTH COUNTY, NEW JERSEY				
CONSTRUCTION PLAN CENTER STREET				
		<b>JACLYN J. FLOR, P.E., P.P. C.M.E.</b>  LICENSED PROFESSIONAL ENGINEER STATE OF NEW JERSEY LICENSE No. 246E04542800		DRAWING <b>S3</b>
NEW JERSEY BOARD OF PROFESSIONAL ENGINEERS AND LAND SURVEYORS CERTIFICATE OF AUTHORIZATION 246E-2782-2900		PROJECT NO. SBRT-00861 CADD FILE SBRT00861-CENTER ST.dwg	DRAWN BY JRG CHECKED BY FSB DATE 4/1/14	SHEET <b>4</b> OF 19



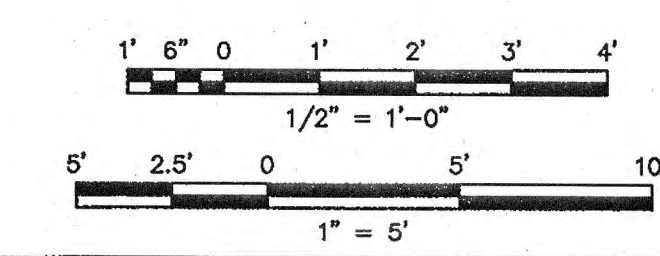




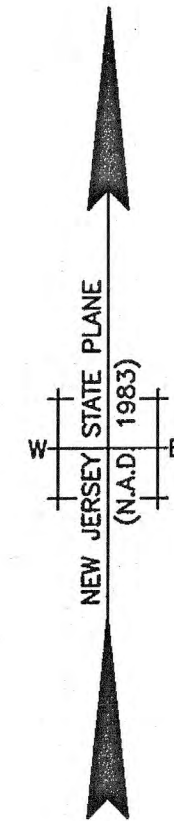
- NOTES:**
1. GUIDERAIL POST SPACING SHALL BE ADJUSTED AS NECESSARY TO AVOID CONFLICTS WITH TIE RODS, DRAINAGE, AND UNDERGROUND UTILITIES.
  2. NO TOPSOIL STOCKPILING SHALL BE ALLOWED ON SITE.
  3. ALL MEAN TIDE LINES ARE COINCIDENT WITH THE FACE OF BULKHEADS.

**PERMIT PLANS**

1	4/1/14	ADDED NOTE 3 PER NJDEP COMMENTS	RFS	EJN
NO.	DATE	REVISIONS	BY	CHECKED
BOROUGH OF SEA BRIGHT				
FLOOD MITIGATION PROJECT: RECONSTRUCTION OF SIX BULKHEADS AND NEW STORMWATER PUMP STATION BOROUGH OF SEA BRIGHT, MONMOUTH COUNTY, NEW JERSEY				
CONSTRUCTION PLAN BEACH STREET				
		<b>JACLYN J. FLOR, P.E., P.P. C.M.E.</b> <small>11 TINDALL ROAD MIDDLETOWN, NJ 07748 TEL 732-671-6400 FAX 732-671-7365</small>		DRAWING <b>S4</b>
<small>NEW JERSEY BOARD OF PROFESSIONAL ENGINEERS AND LAND SURVEYORS CERTIFICATE OF AUTHORIZATION 24GA 27987509</small>		<small>DESIGNED BY: APM PROJECT NO: SBRT-00861</small>		SHEET <b>5</b> OF 19

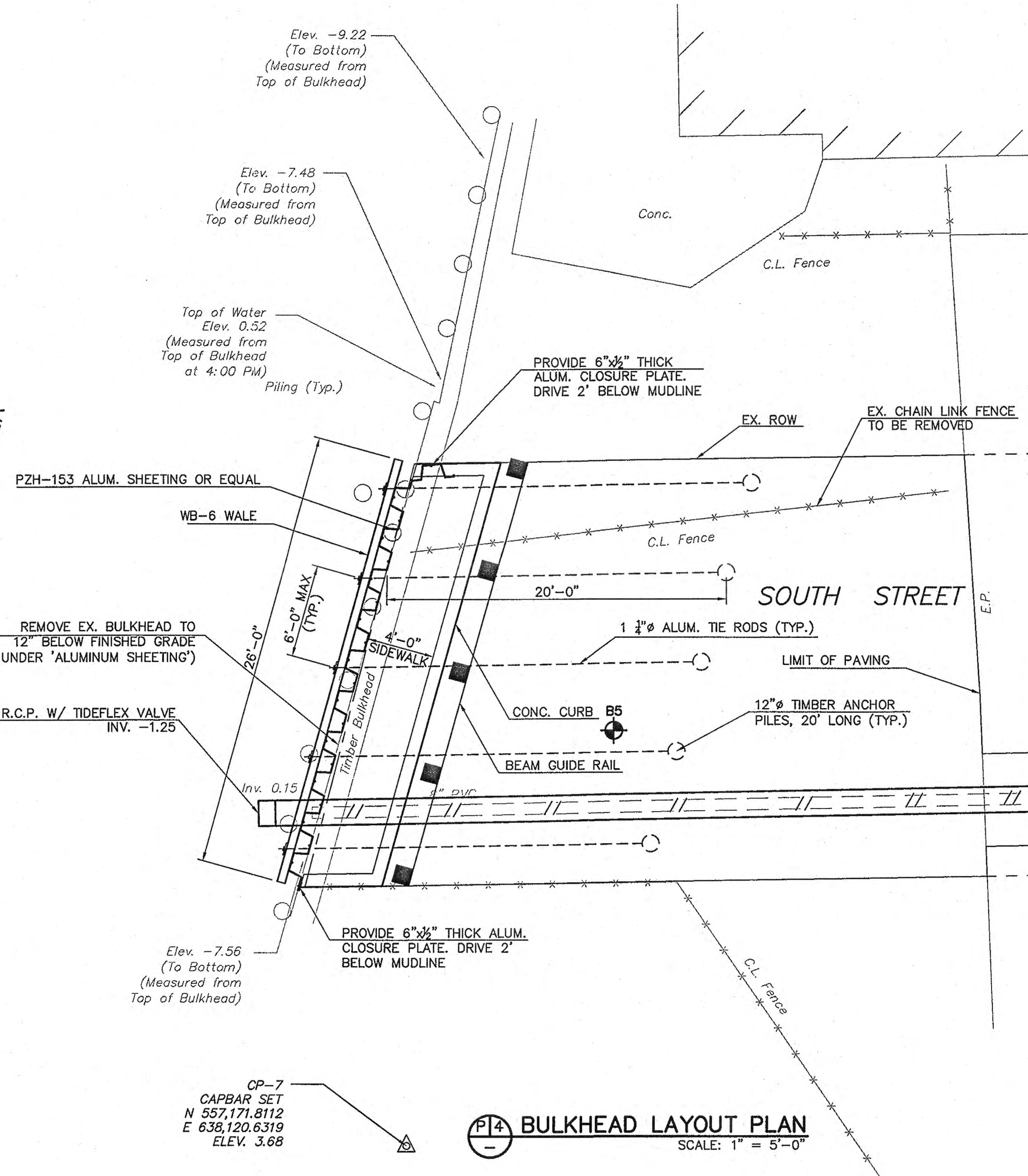






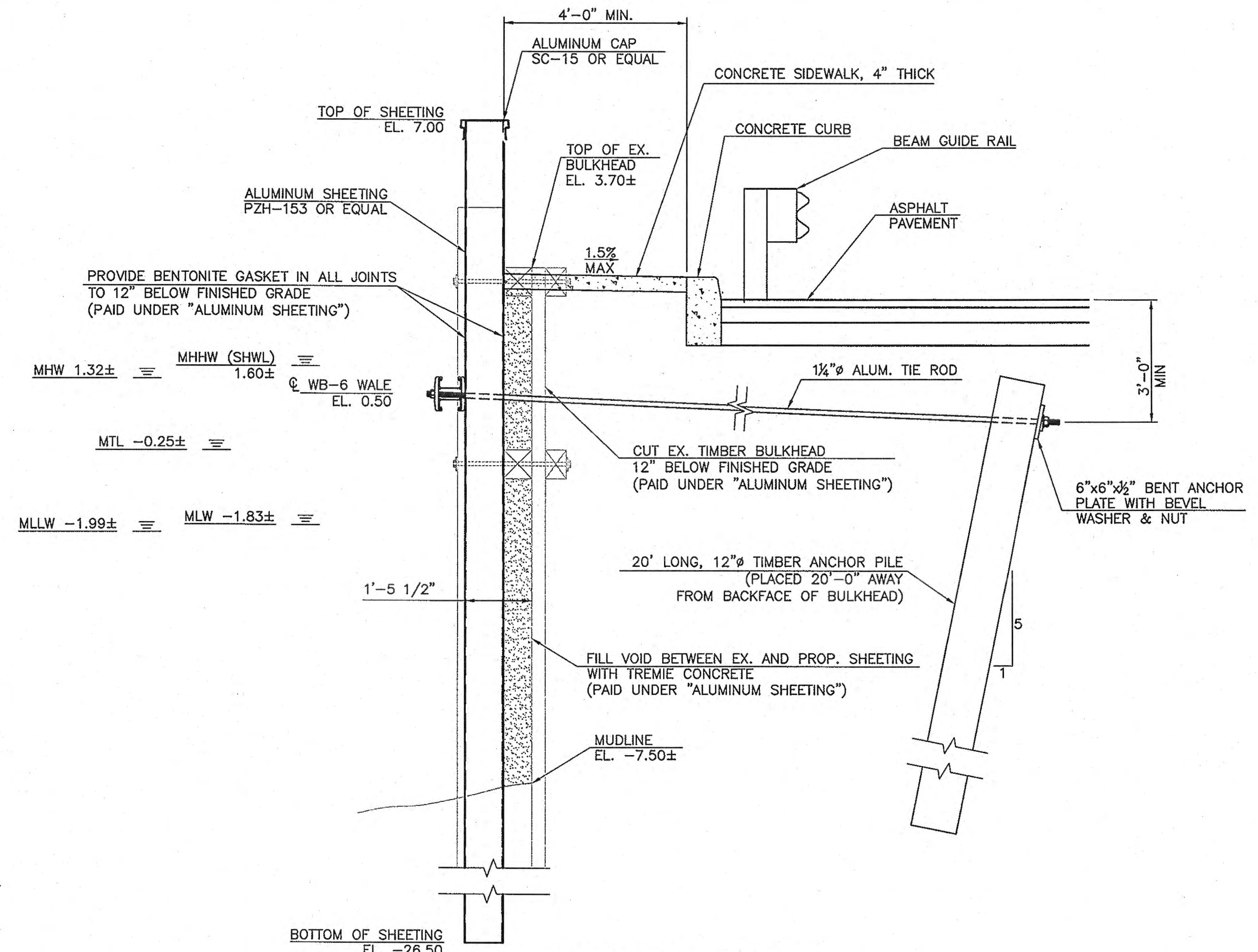
SHREWSBURY RIVER

E 3 S9



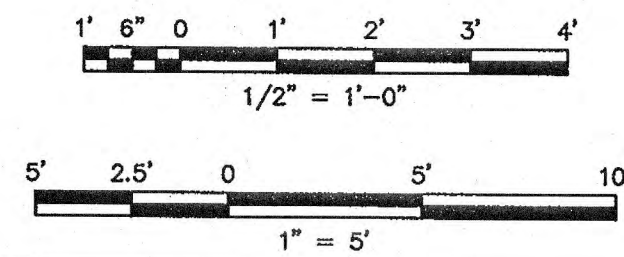
**P14 BULKHEAD LAYOUT PLAN**  
SCALE: 1" = 5'-0"

OP-7  
CAPBAR SET  
N 557,171.8112  
E 638,120.6319  
ELEV. 3.68



**TYPICAL SECTION**  
SCALE: 1/2" = 1'-0"

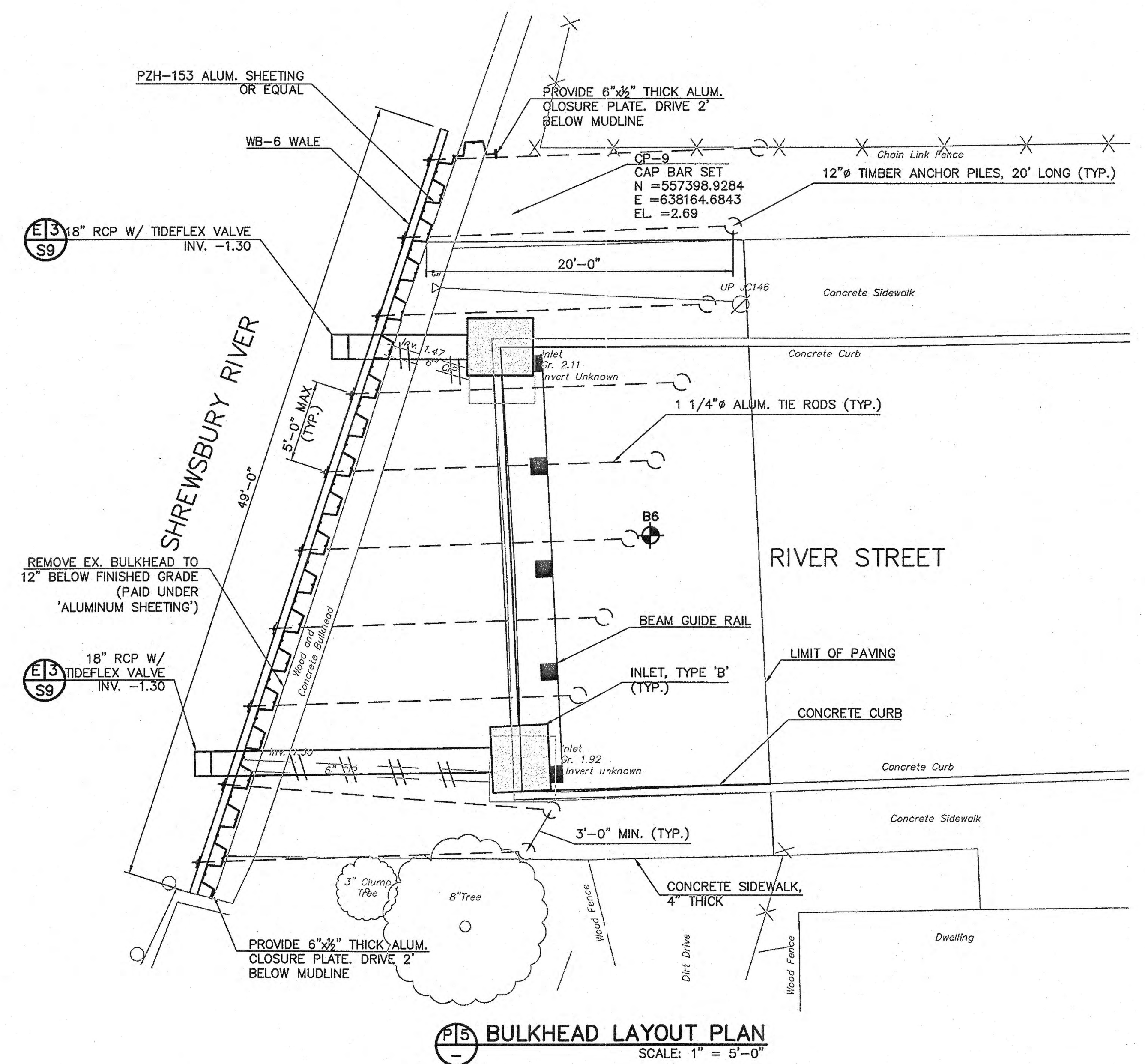
- NOTES:
1. GUIDERAIL POST SPACING SHALL BE ADJUSTED AS NECESSARY TO AVOID CONFLICTS WITH TIE RODS, DRAINAGE, AND UNDERGROUND UTILITIES.
  2. NO TOPSOIL STOCKPILING SHALL BE ALLOWED ON SITE.
  3. ALL MEAN TIDE LINES ARE COINCIDENT WITH THE FACE OF BULKHEADS.



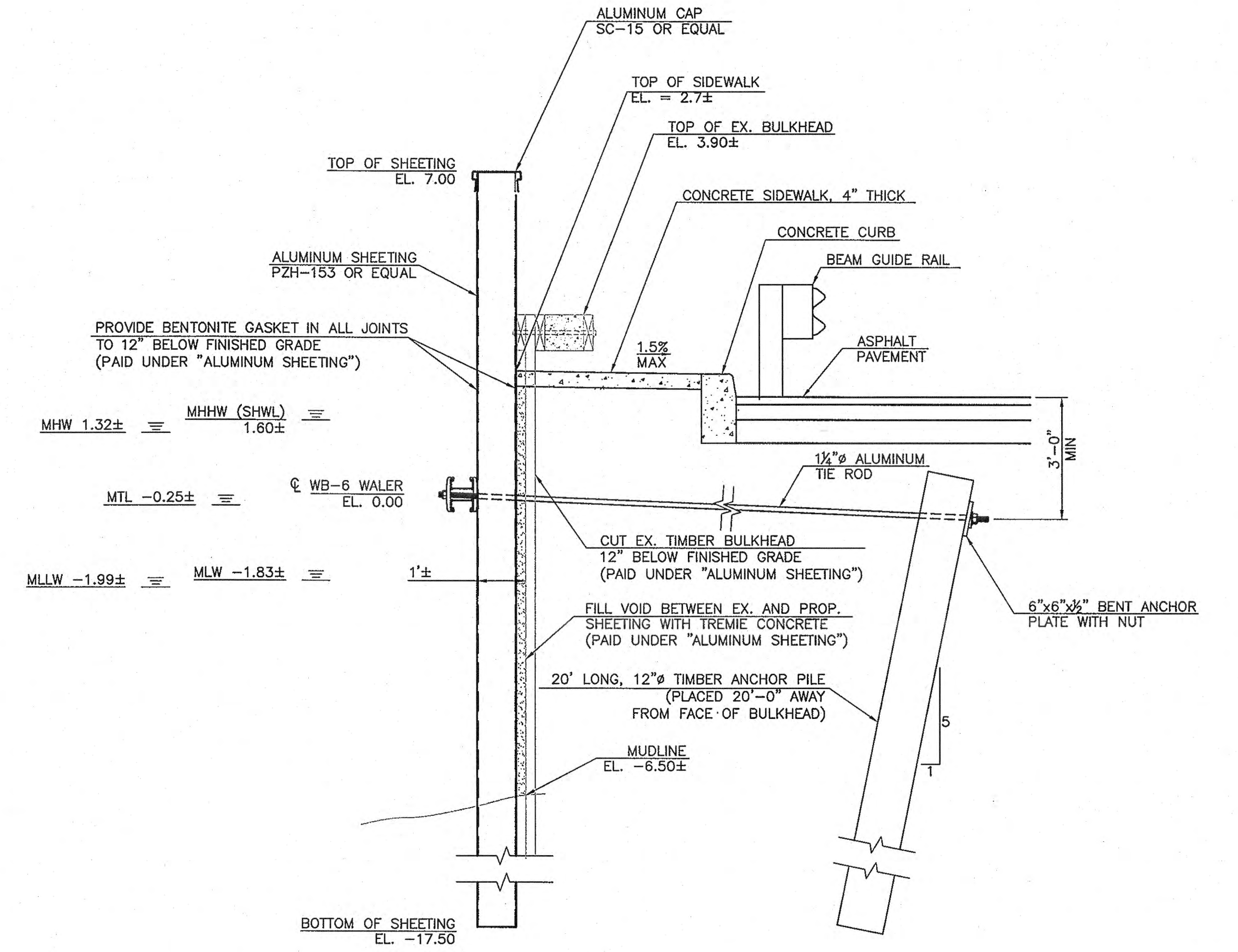
### PERMIT PLANS

NO.	DATE	REVISIONS	RFS	EJN
1	4/1/14	ADDED NOTE 3 PER NJDEP COMMENTS		
BOROUGH OF SEA BRIGHT				
FLOOD MITIGATION PROJECT: RECONSTRUCTION OF SIX BULKHEADS AND NEW STORMWATER PUMP STATION BOROUGH OF SEA BRIGHT, MONMOUTH COUNTY, NEW JERSEY				
CONSTRUCTION PLAN SOUTH STREET				
 <b>T&amp;M ASSOCIATES</b> 11 TINDALL ROAD MIDDLETOWN, NJ 07748 TEL 732-671-6400 FAX 732-671-7365		<b>JACLYN J. FLOR, P.E., P.P. C.M.E.</b>  4/7/14 DATE LICENSED PROFESSIONAL ENGINEER STATE OF NEW JERSEY LICENSE No. 24GE04542600		DRAWING <b>S5</b>
DESIGNED BY: APM DRAWN BY: JRG CHECKED BY: FSB		PROJECT NO.: SBRT-00861 CADD FILE: SBRT00861-SOUTH ST.dwg FIELD BK. #: N/A		SHEET <b>6</b> OF 19





**P15 BULKHEAD LAYOUT PLAN**  
SCALE: 1" = 5'-0"



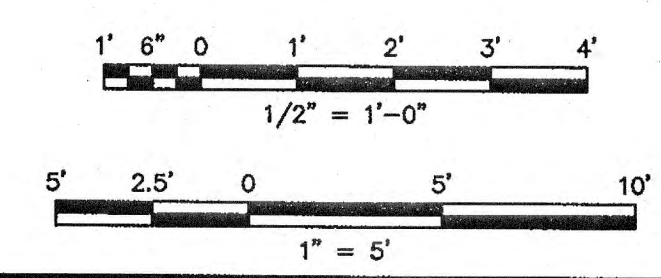
**SI TYPICAL SECTION**  
SCALE: 1/2" = 1'-0"

**NOTES:**

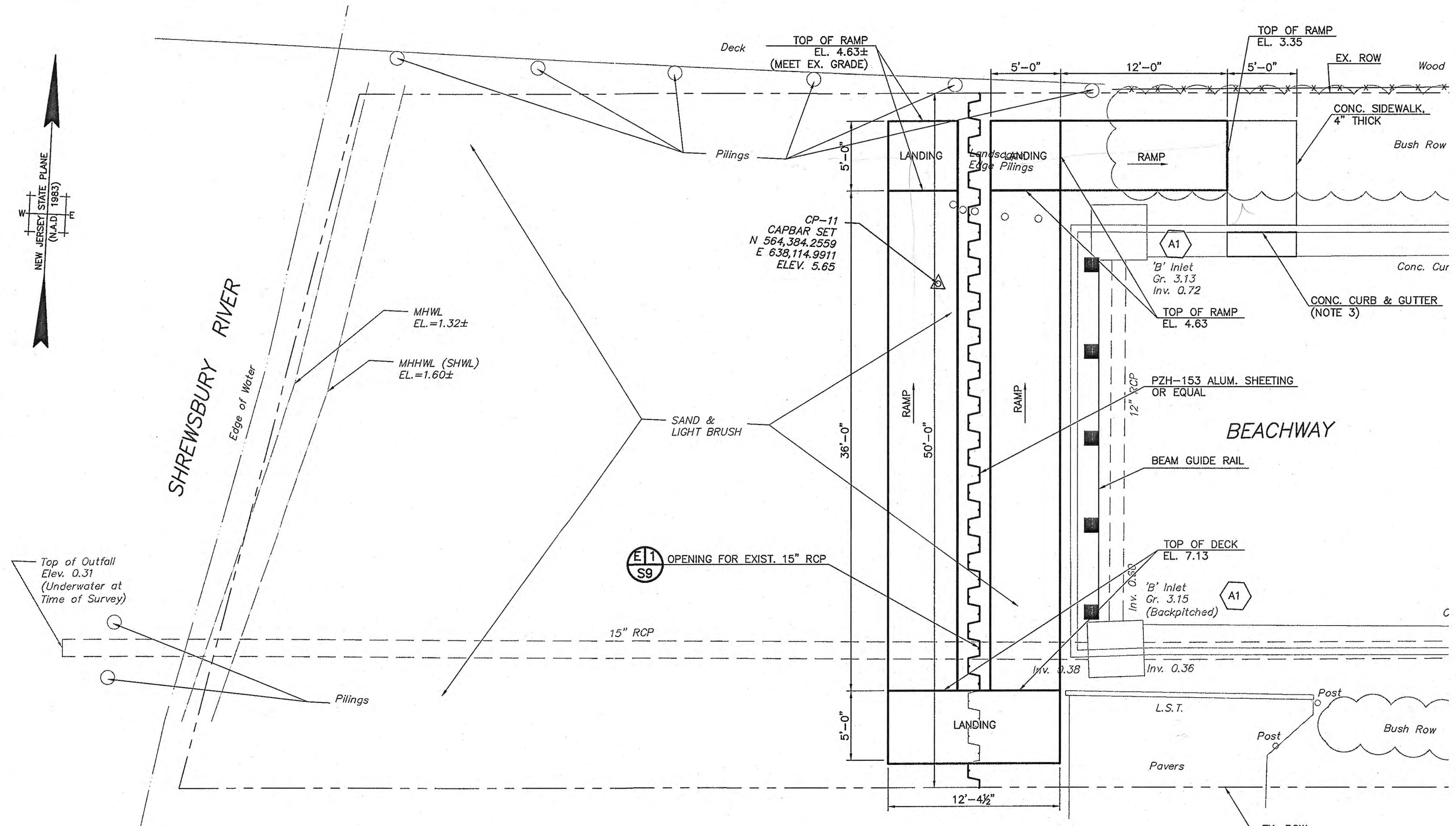
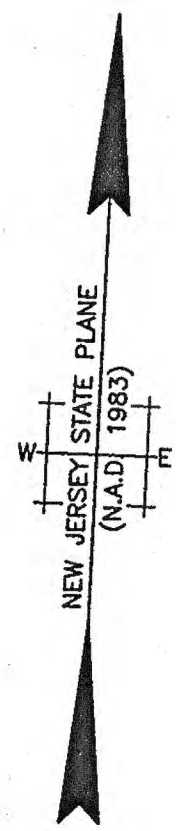
1. GUIDERAIL POST SPACING SHALL BE ADJUSTED AS NECESSARY TO AVOID CONFLICTS WITH TIE RODS, DRAINAGE, AND UNDERGROUND UTILITIES.
2. NO TOPSOIL STOCKPILING SHALL BE ALLOWED ON SITE.
3. ALL MEAN TIDE LINES ARE COINCIDENT WITH THE FACE OF BULKHEADS.

**PERMIT PLANS**

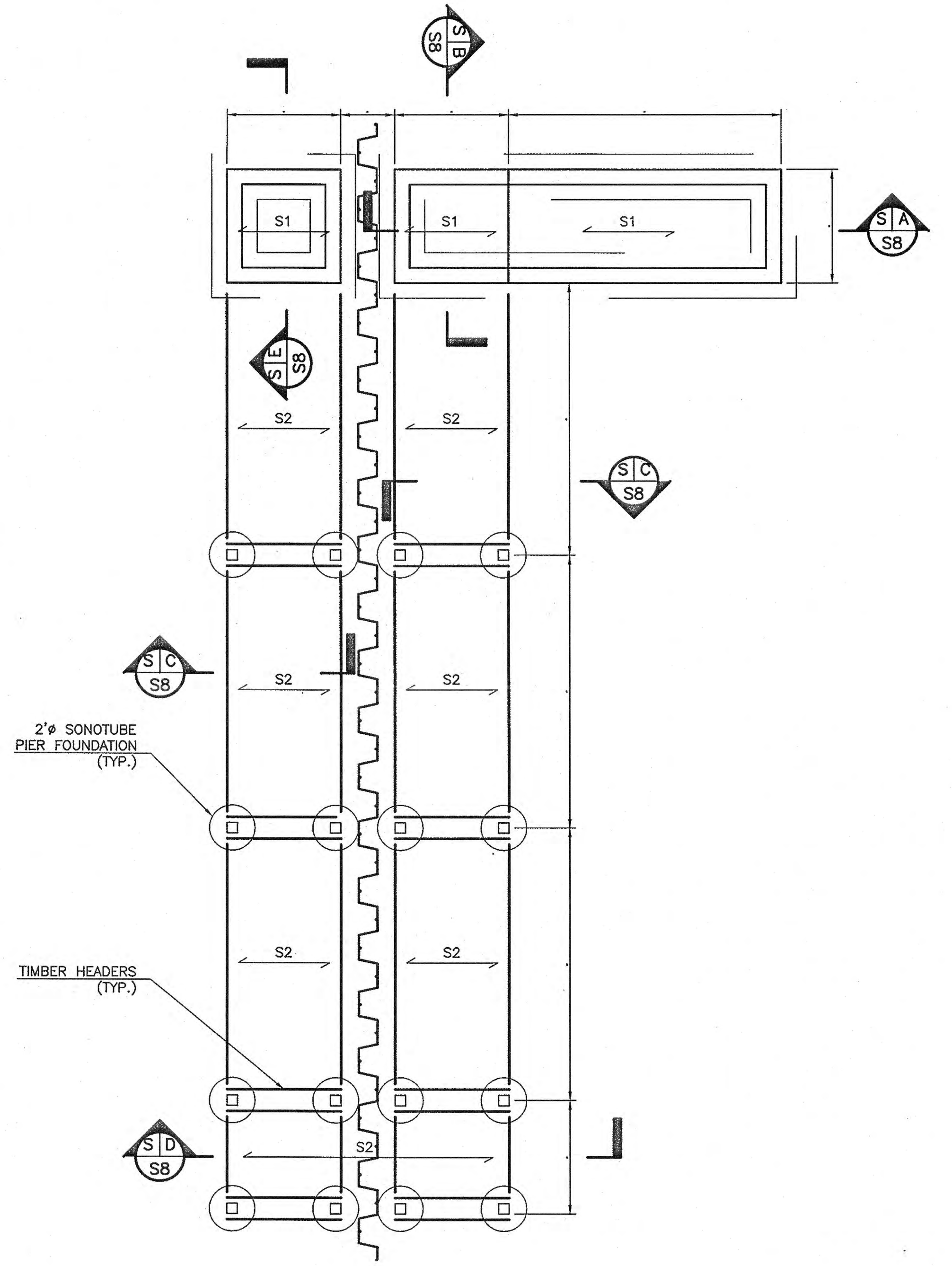
1	4/1/14	ADDED NOTE 3 PER NJDEP COMMENTS	RFS	EJN
NO.	DATE	REVISIONS	BY	CHECKED
<b>BOROUGH OF SEA BRIGHT</b>				
<b>FLOOD MITIGATION PROJECT: RECONSTRUCTION OF SIX BULKHEADS AND NEW STORMWATER PUMP STATION</b>				
<b>BOROUGH OF SEA BRIGHT, MONMOUTH COUNTY, NEW JERSEY</b>				
<b>CONSTRUCTION PLAN RIVER STREET</b>				
<b>JACLYN J. FLOR, P.E., P.P. C.M.E.</b>		DRAWING <b>S6</b>		
 DATE: 4/1/14		SHEET		
LICENSED PROFESSIONAL ENGINEER STATE OF NEW JERSEY LICENSE No. 24GE04542600		<b>7</b> OF <b>19</b>		
DESIGNED BY	APM	DRAWN BY	APM	CHECKED BY
PROJECT NO.	SBRT-00861	CADD FILE	SBRT00861-RIVER ST.dwg	FIELD BK. #
NEW JERSEY BOARD OF PROFESSIONAL ENGINEERS AND LAND SURVEYORS		CERTIFICATE OF AUTHORIZATION 24GE-0282600		







**P16 BULKHEAD/RAMP LAYOUT PLAN**  
SCALE: 1"=5'-0"



**P17 RAMP FRAMING PLAN**  
SCALE: 1/4" = 1'-0"

**GENERAL NOTES**

**FOUNDATIONS**

- EXCAVATE THE FOUNDATION TO THE DEPTH AND EXTENT INDICATED ON THE PLANS. ALL SUBGRADES SHALL BE APPROVED IN WRITING BY A SOILS ENGINEER PRIOR TO BACKFILLING.
- BOTTOM OF FOOTINGS MUST BEAR ON SOIL CAPABLE OF SAFELY SUPPORTING 3000 PSF.
- BOTTOM OF ALL FOOTINGS MUST BE INSPECTED AND APPROVED BY A REGISTERED SOILS ENGINEER BEFORE PLACING ANY CONCRETE. APPROVAL IN WRITING MUST INDICATE THE SOIL IS ADEQUATE TO SAFELY SUSTAIN SPECIFIED SOIL BEARING PRESSURE.
- BOTTOM OF ALL EXTERIOR FOOTINGS SHALL BE MINIMUM THREE FEET BELOW FINISH GRADE.

**CONCRETE**

- ALL CONCRETE SHALL
  - BE READY-MIX.
  - HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS.
  - SLUMP (AT POINT OF CONCRETE PLACEMENT) SHALL BE 3 INCH MINIMUM AND 6 INCH MAXIMUM.
  - CONCRETE EXPOSED TO WEATHER SHALL HAVE 5% PERCENT AIR ENTRAINMENT.
  - SUBMIT MIX DESIGNS FOR REVIEW.
- ALL CONCRETE WORK SHALL COMPLY WITH THE REQUIREMENTS OF THE LATEST EDITION OF THE ACI BUILDING CODE (ACI 318), THE ACI DETAILING MANUAL (ACI 315), AND THE SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS (ACI 301).
- ALL REINFORCING STEEL SHALL BE MANUFACTURED FROM HIGH STRENGTH BILLET STEEL CONFORMING TO ASTM DESIGNATION A615 GRADE 60. WWF SHALL COMPLY WITH ASTM A185.

- LAP ALL BARS MINIMUM 48 DIAMETERS. LAP ALL WWF A MINIMUM OF 12 INCHES.
- FOR GRADE BEAMS LAP ALL TOP STEEL AT MID-SPAN AND LAP BOTTOM STEEL OVER SUPPORT.
- CONSTRUCTION JOINTS IN SLABS AND GRADE BEAMS SHALL BE AT MID-SPAN AND KEY JOINTED WITH REINFORCING CONTINUOUS ACROSS JOINT.
- ALL REINFORCEMENT SHALL BE GALVANIZED.

**TIMBER**

- ALL STRUCTURAL TIMBER SHALL BE SOUTHERN PINE #2 MINIMUM, STRESS GRADE LUMBER OR APPROVED EQUAL. THE MINIMUM ALLOWABLE PROPERTIES ARE AS FOLLOWS:  
F<sub>b</sub>=1200 PSI F<sub>v</sub>=175 PSI E=1,600,000 PSI
- ALL STRUCTURAL TIMBER TO BE STAMPED IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION "CONSTRUCTION MANUAL".
- ALL TIMBER AND TIMBER CONSTRUCTION SHALL COMPLY WITH SPECIFICATIONS AND CODES AS SPECIFIED BELOW:
  - AMERICAN INSTITUTE OF TIMBER CONSTRUCTION: TIMBER CONSTRUCTION MANUAL.
  - NATIONAL FOREST PRODUCTS ASSOCIATION: NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION.
  - AMERICAN PLYWOOD ASSOCIATION: PLYWOOD DESIGN SPECIFICATION.
  - AMERICAN WOOD-PRESERVERS ASSOCIATION STANDARDS.
  - NATIONAL LUMBER MANUFACTURERS ASSOCIATION: NATIONAL DESIGN SPECIFICATION FOR STRESS-GRADE LUMBER AND ITS FASTENINGS.
- ALL TIMBER CONNECTIONS SHALL BE MADE USING PREFABRICATED CONNECTORS. TOE-NAILING IS NOT PERMITTED. SUBMIT MANUFACTURER'S DATA FOR

REVIEW. FASTENERS SHALL BE AS MANUFACTURED BY HECKMANN, KANT SAG, SIMPSON OR APPROVED EQUAL.

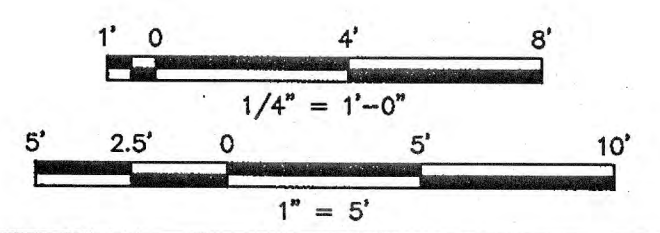
- THE MINIMUM ALLOWABLE PROPERTIES FOR TIMBER DECKING ARE AS FOLLOWS:  
F<sub>b</sub>=2640 PSI F<sub>v</sub>=165 PSI E=1,800,000 PSI.

**MASONRY**

- MASONRY UNITS SHALL BE TYPE N-1
  - ASTM C90 HOLLOW GROUTED SOLID BELOW GRADE.
  - ASTM C90 HOLLOW ABOVE GRADE.
  - WITH MINIMUM COMPRESSIVE STRENGTH OF 1900 PSI
  - ALL CMU SHALL BE LAID IN A FULL BED OF MORTAR.
- ALL MORTAR SHALL BE ASTM C270 TYPE S WITH A MINIMUM COMPRESSIVE STRENGTH OF 1800 PSI AT 28 DAYS.
- LAI UP MASONRY DESIGN F<sub>m</sub> IS 1350 PSI FOR STANDARD CONCRETE MASONRY.
- ALL CONCRETE MASONRY SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES ACI 530-95/ASCE 5-95" AND "SPECIFICATIONS FOR MASONRY STRUCTURES ACI 530.1-95/ASCE 6-95" AND INSPECTED BY A LICENSED ENGINEER.
- PROVIDE HOT-DIPPED GALVANIZED TRUSS TYPE HORIZONTAL JOINT REINFORCEMENT, MIN. 9 GA, AT 16" ON CENTER VERTICAL IN ALL MASONRY WALLS.

**NOTES**

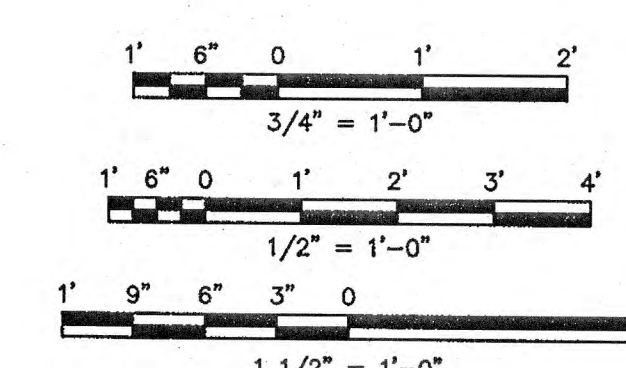
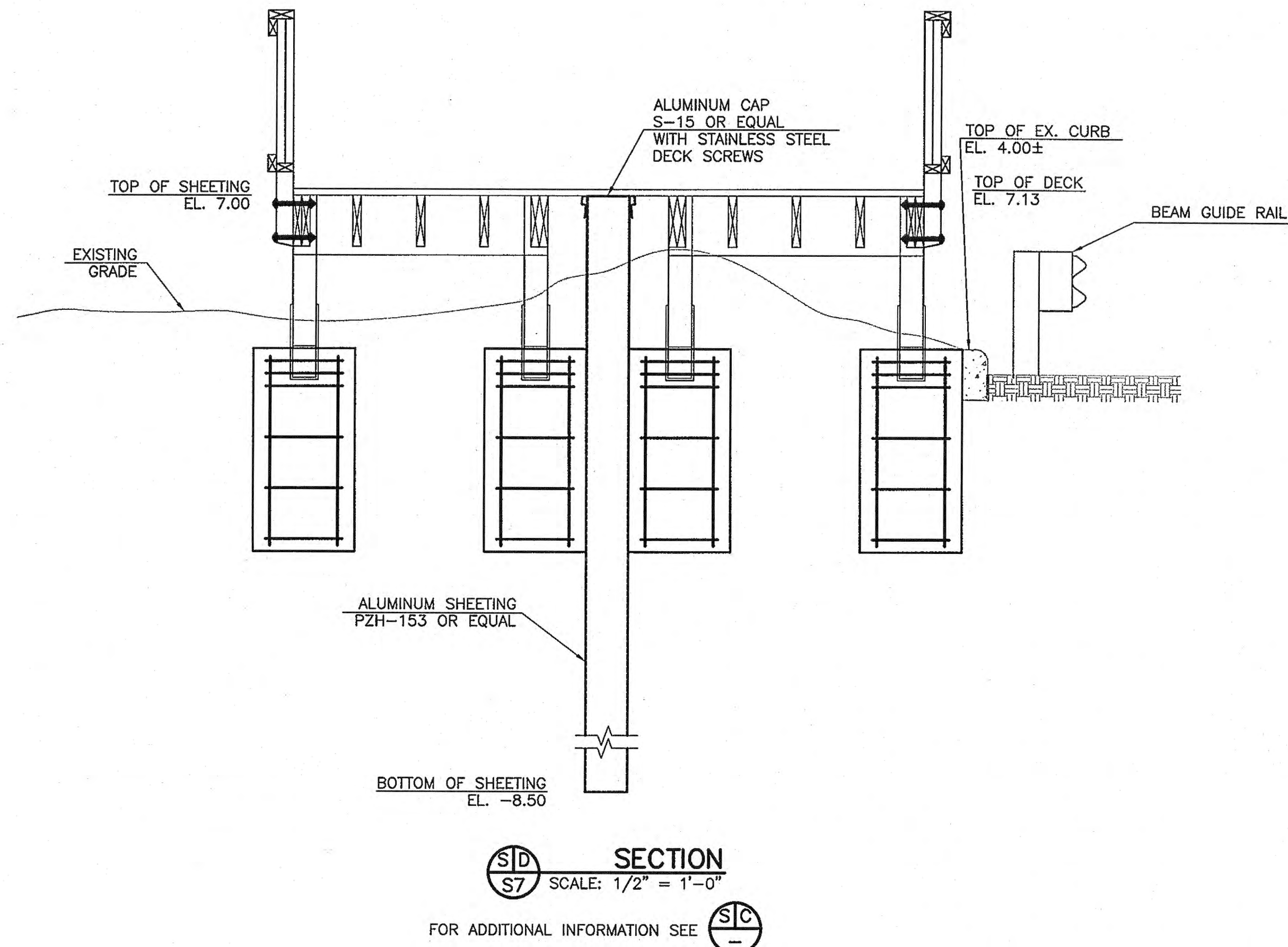
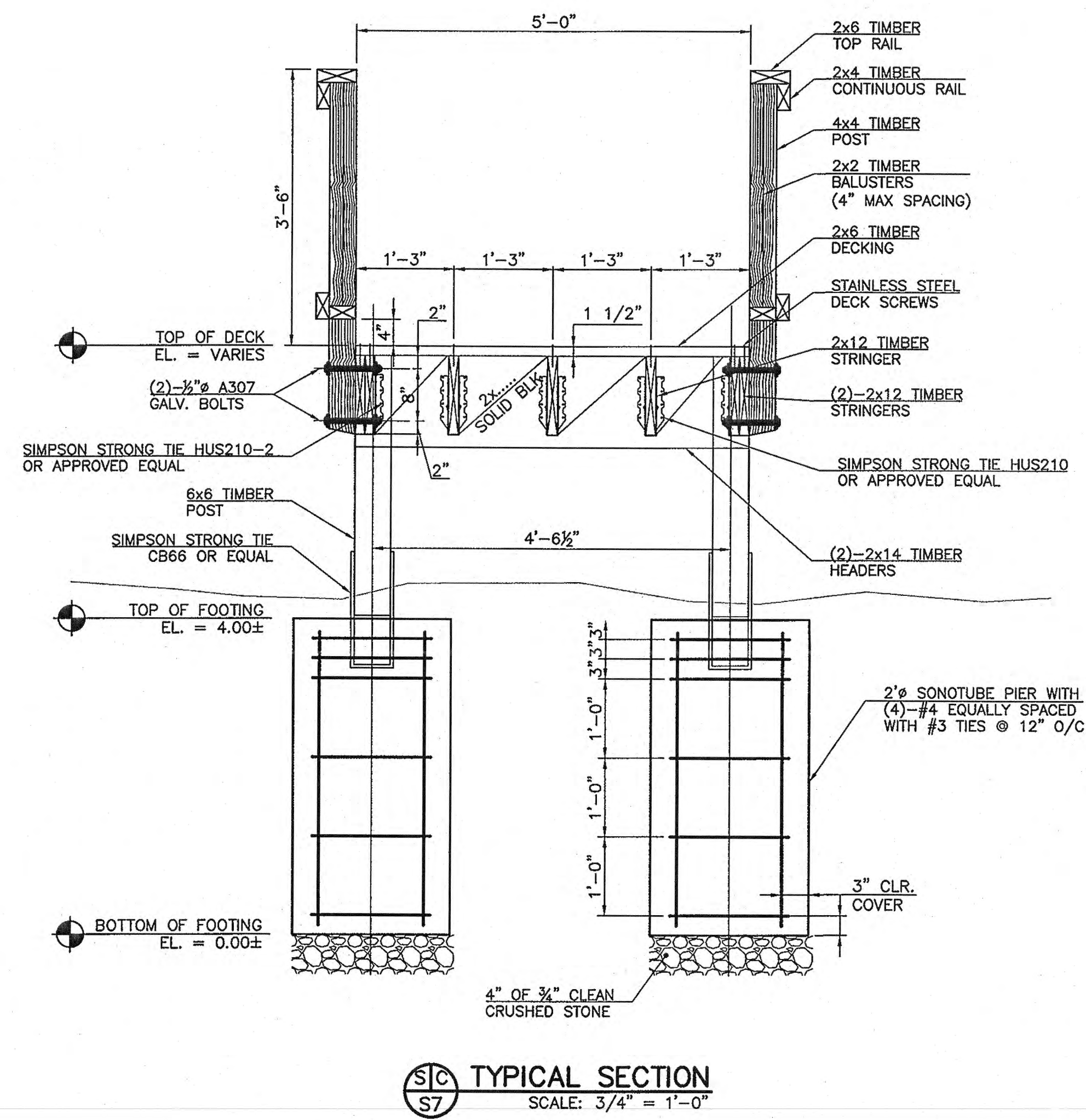
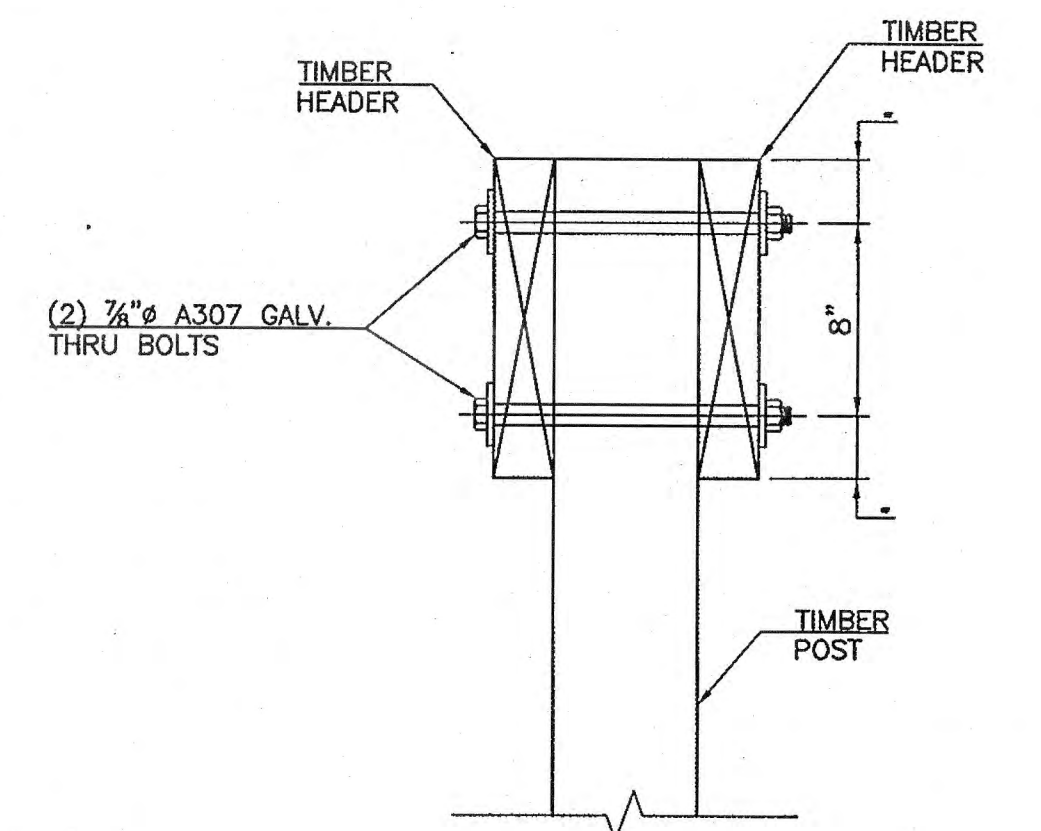
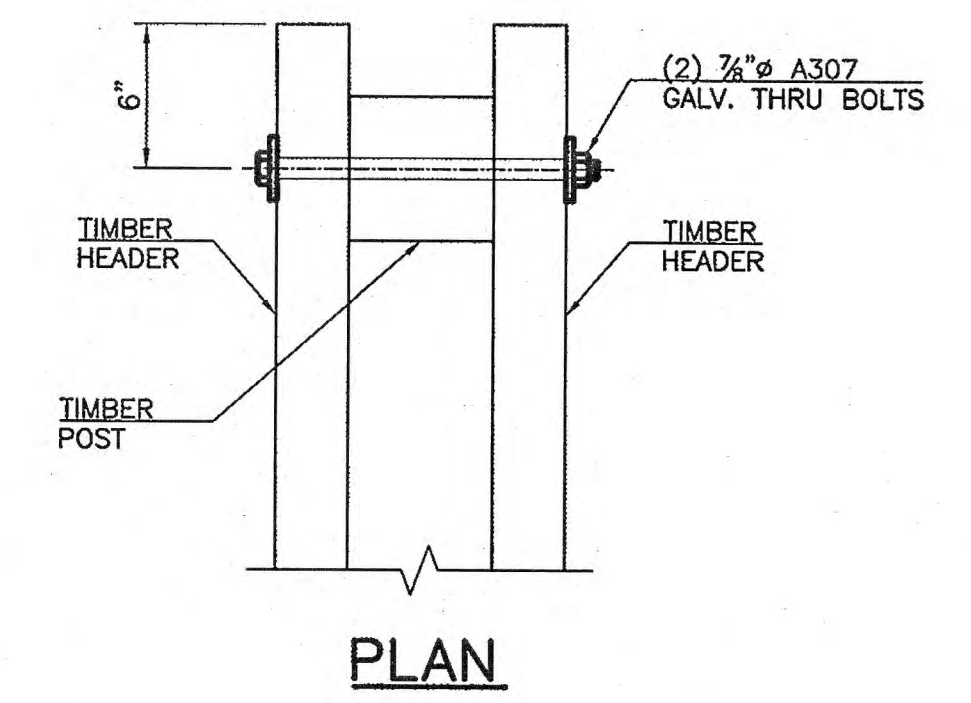
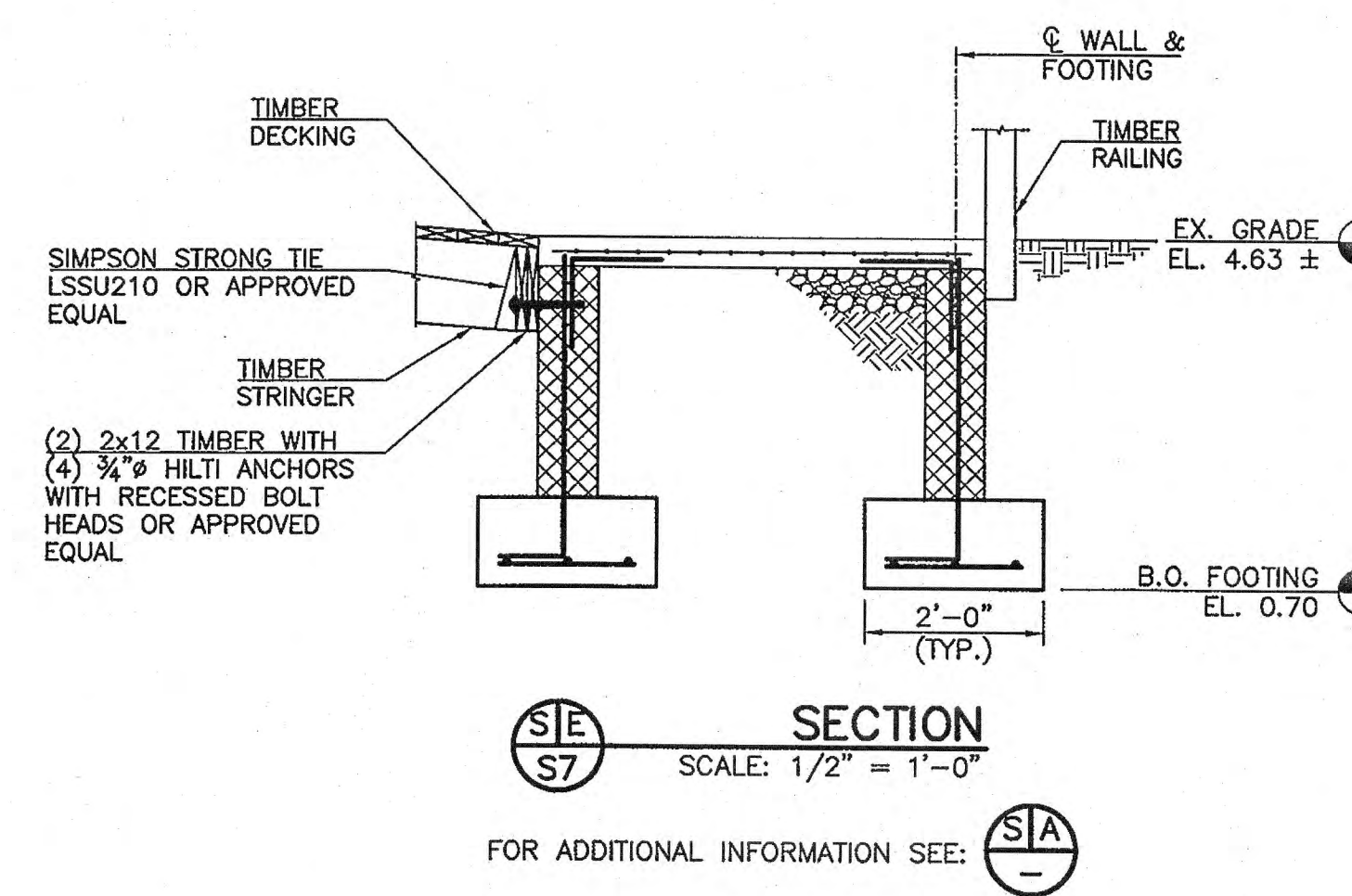
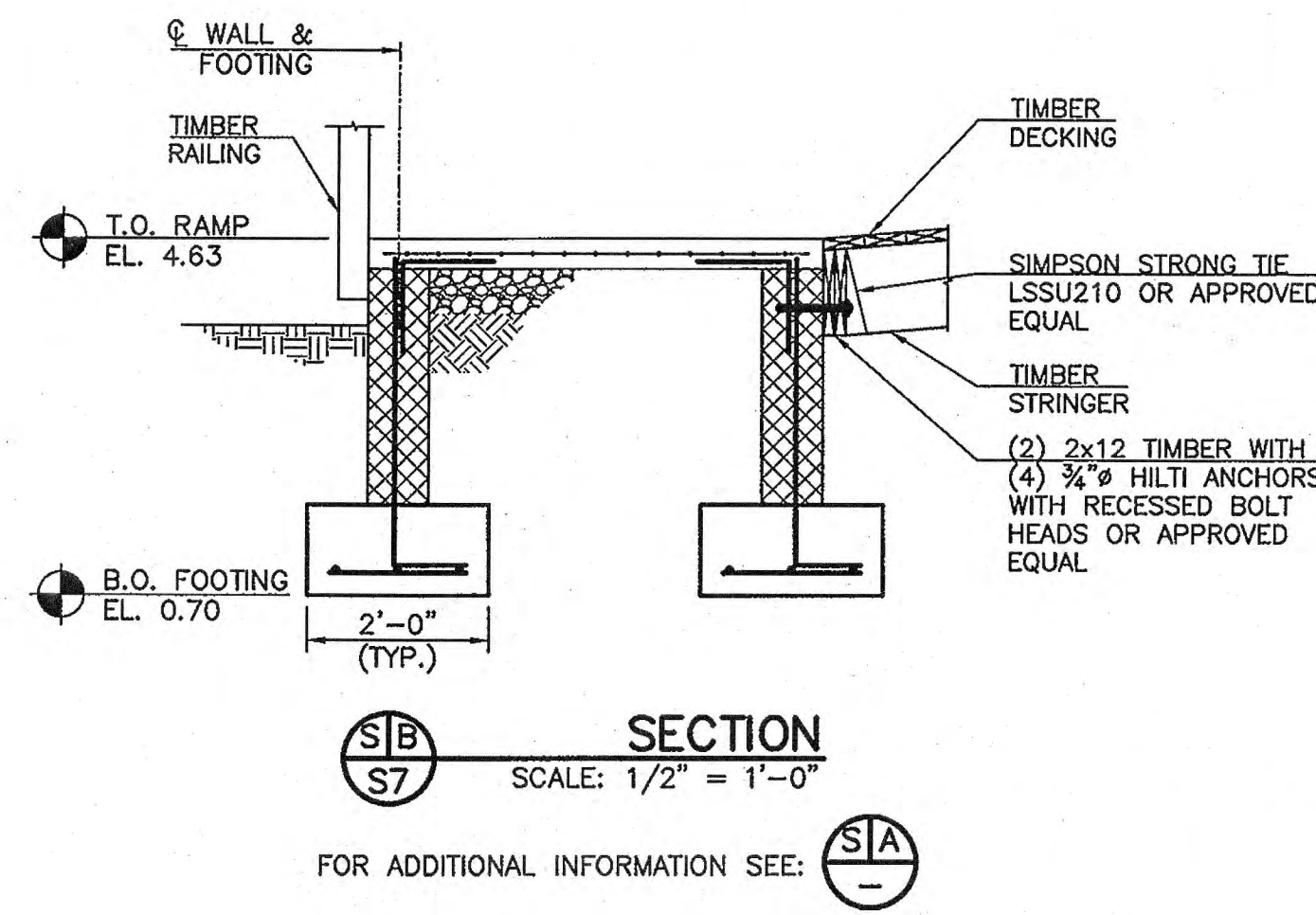
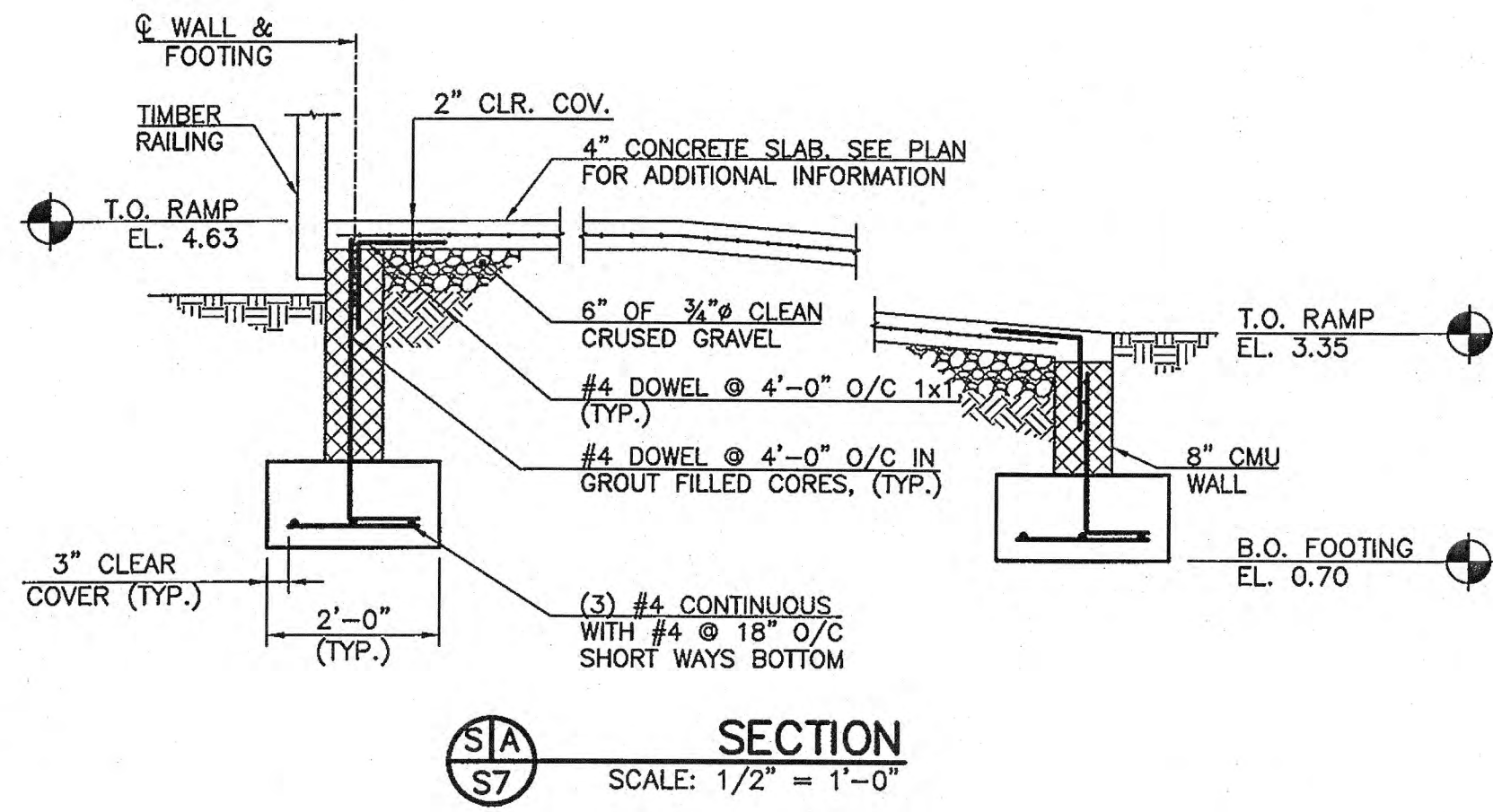
- S1 INDICATES 4" CONCRETE SLAB WITH 6"x6" W2.0xW2.0 WELDED WIRE FABRIC OVER 3/4" CRUSHED STONE FILL.
- S2 INDICATES 2"x6" SOUTHERN YELLOW PINE DECKING. ARROW INDICATES SPAN DIRECTION.
- PROVIDE ADA COMPLIANT PEDESTRIAN CURB RAMP.
- GUIDERAIL POST SPACING SHALL BE ADJUSTED AS NECESSARY TO AVOID CONFLICTS WITH TIE RODS, DRAINAGE, AND UNDERGROUND UTILITIES.
- NO TOPSOIL STOCKPILING SHALL BE ALLOWED ON SITE.



**PERMIT PLANS**

1	4/1/14	ADDED NOTE 3 PER NJDEP COMMENTS	RFS	EJN
NO.	DATE	REVISIONS	BY	CHECKED
<b>BOROUGH OF SEA BRIGHT</b>				
<b>FLOOD MITIGATION PROJECT: RECONSTRUCTION OF SIX BULKHEADS AND NEW STORMWATER PUMP STATION</b>				
<b>BOROUGH OF SEA BRIGHT, MONMOUTH COUNTY, NEW JERSEY</b>				
<b>CONSTRUCTION PLAN</b>				
<b>BEACH WAY BULKHEAD REPLACEMENT</b>				
<b>JACLYN J. FLOR, P.E., P.P. C.M.E.</b>		DRAWING <b>S7</b>		
 LICENSED PROFESSIONAL ENGINEER STATE OF NEW JERSEY LICENSE No. 24GE04542600 DATE: 4/1/14		SHEET <b>8</b> OF <b>19</b>		
NEW JERSEY BOARD OF PROFESSIONAL ENGINEERS AND LAND SURVEYORS CERTIFICATE OF AUTHORIZATION 24GE 27887500		DESIGNED BY: APM DRAWN BY: APM CHECKED BY: FSB PROJECT NO: SBRT-00861 CADD FILE: SBRT00861-BEACH WAY.dwg FIELD BK. #: N/A		

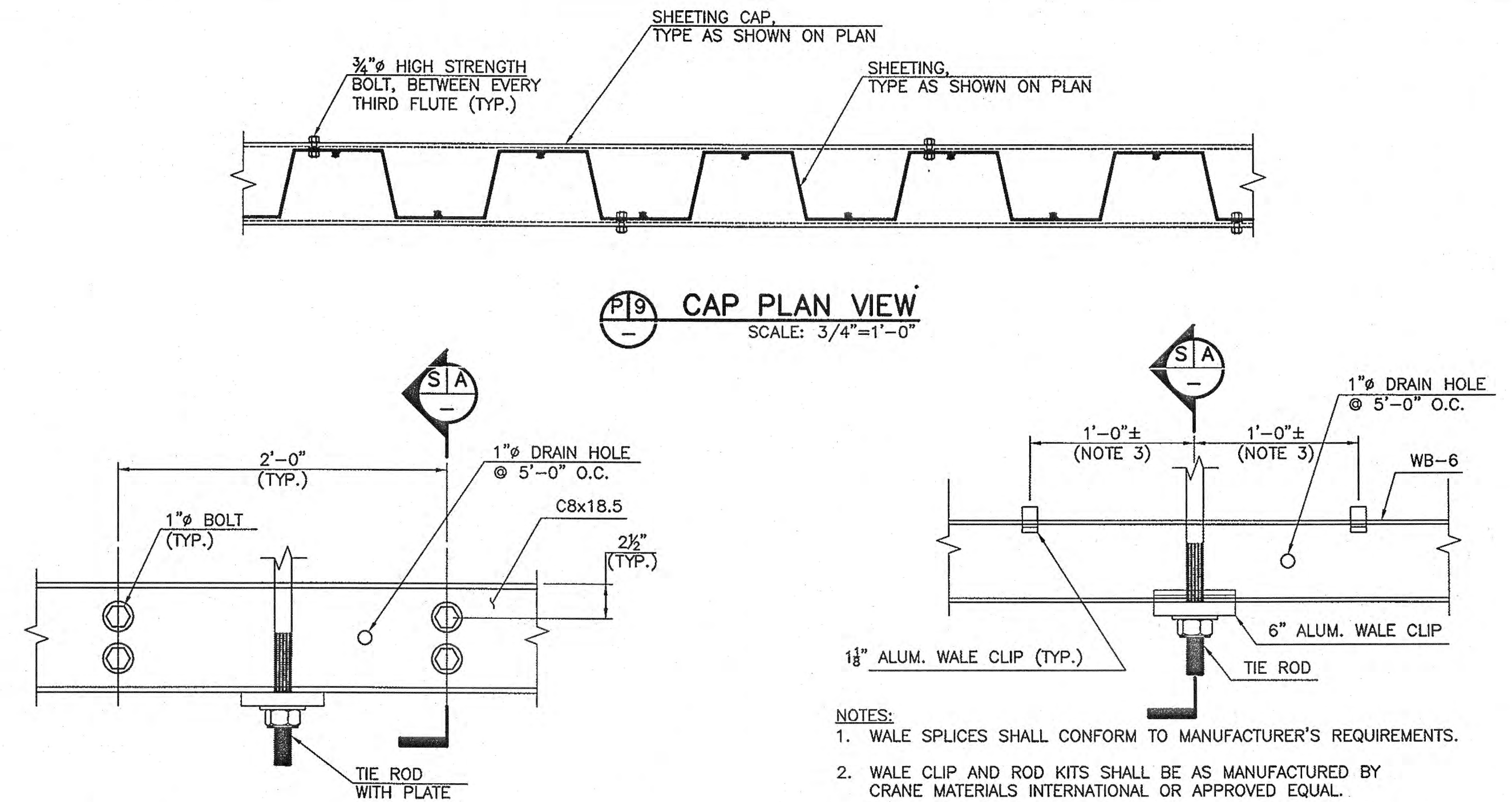
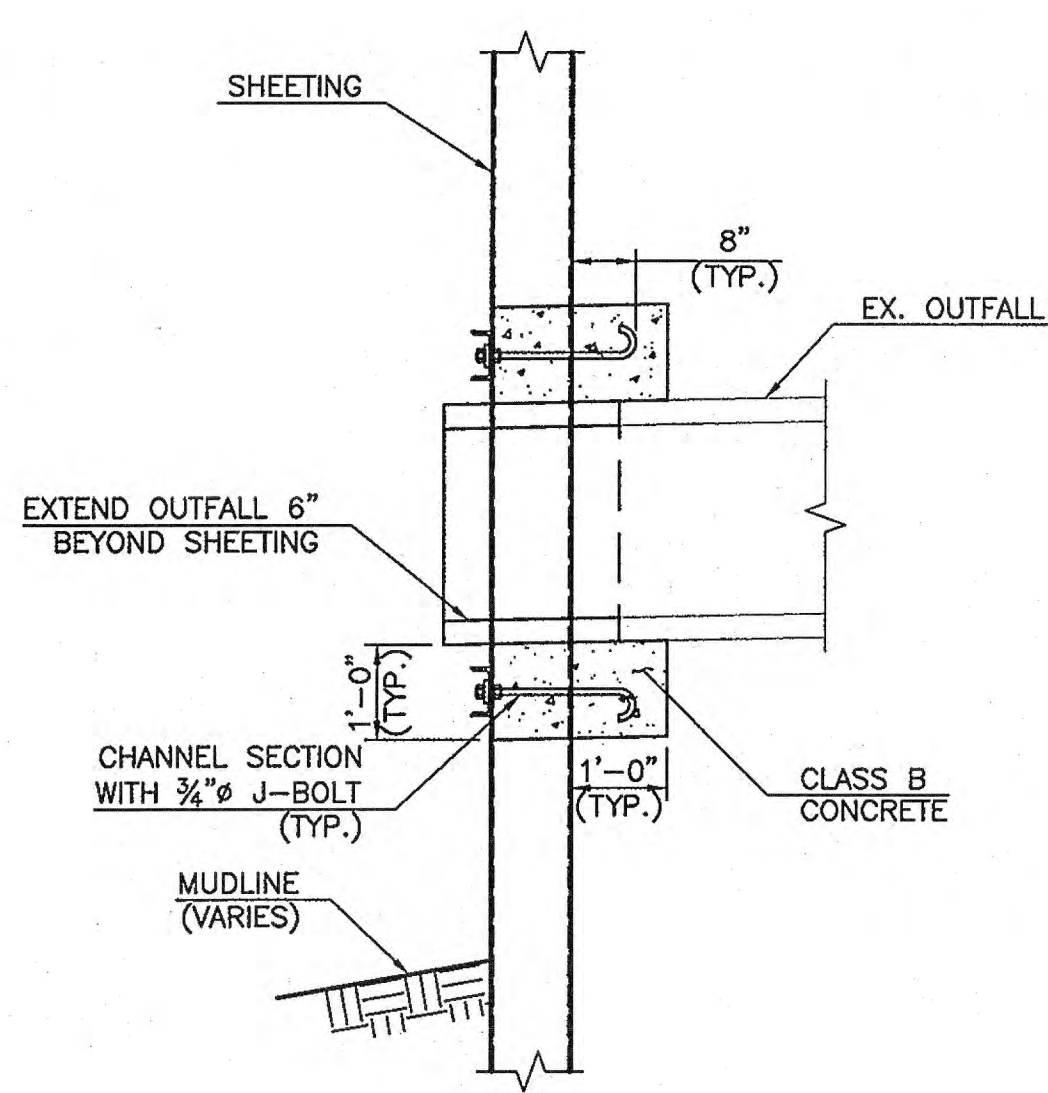
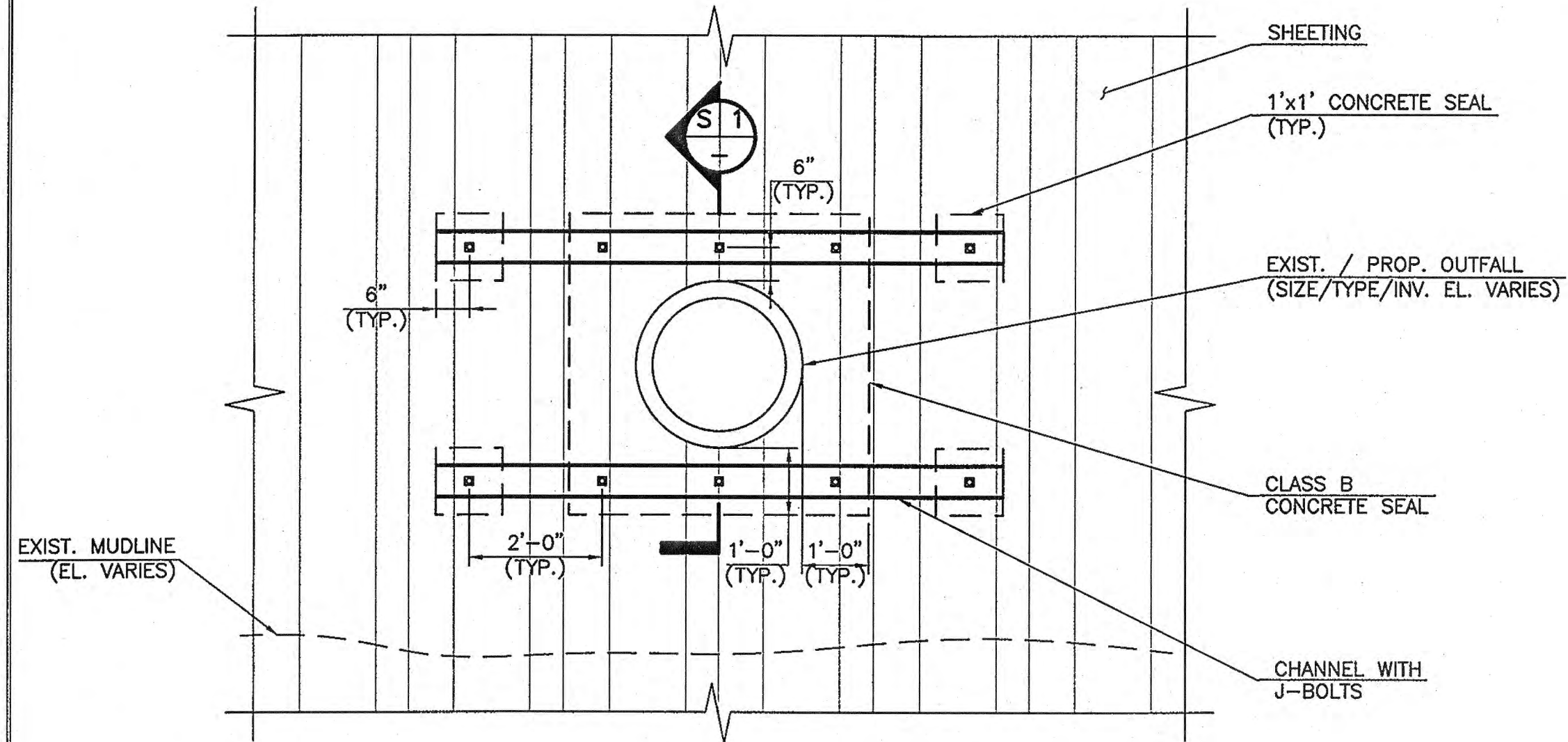




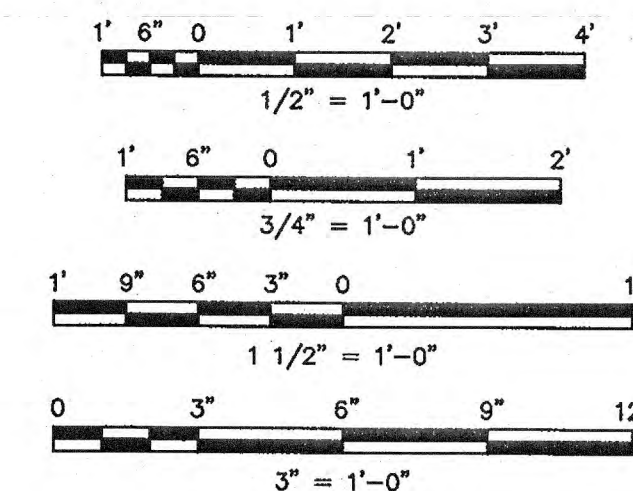
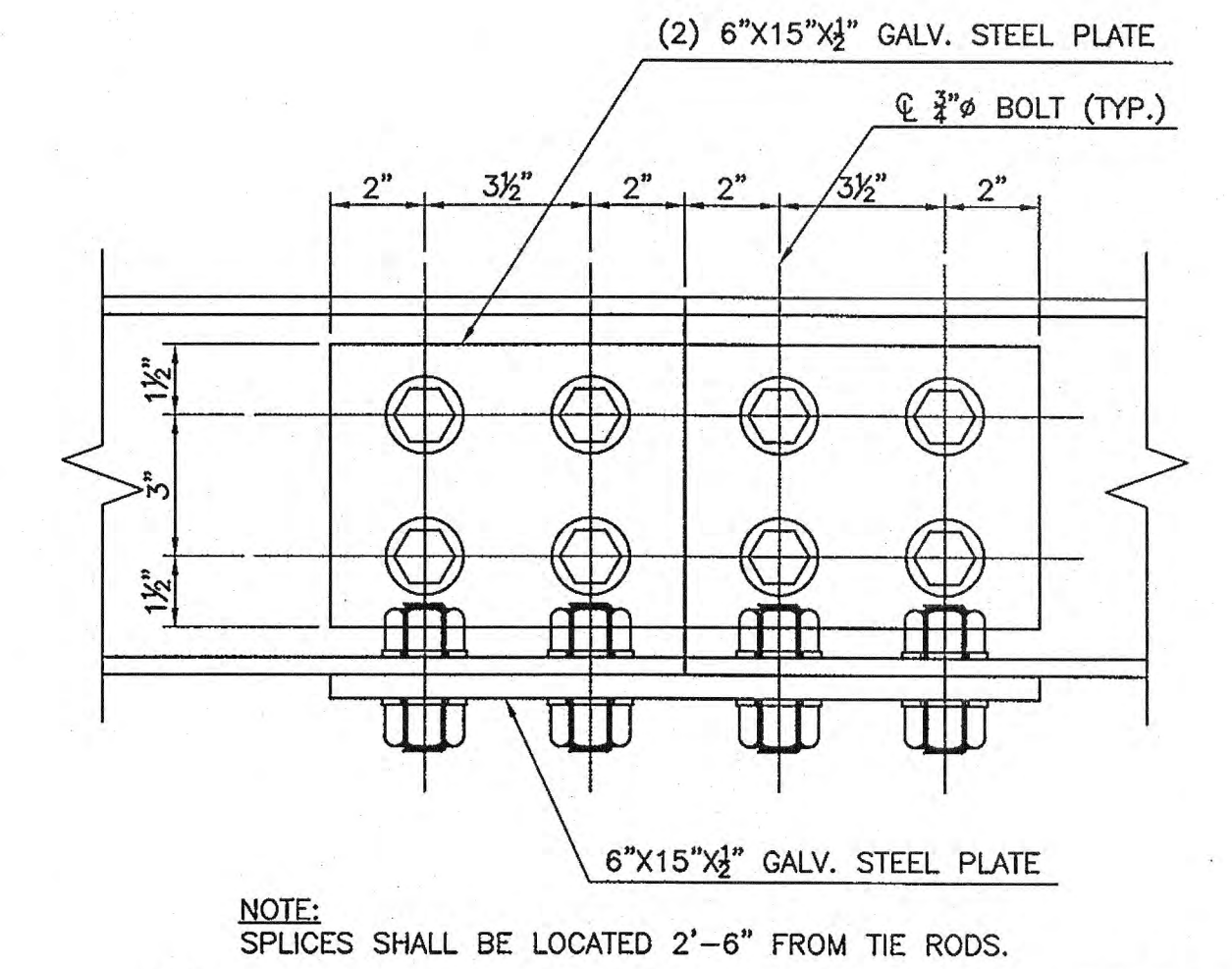
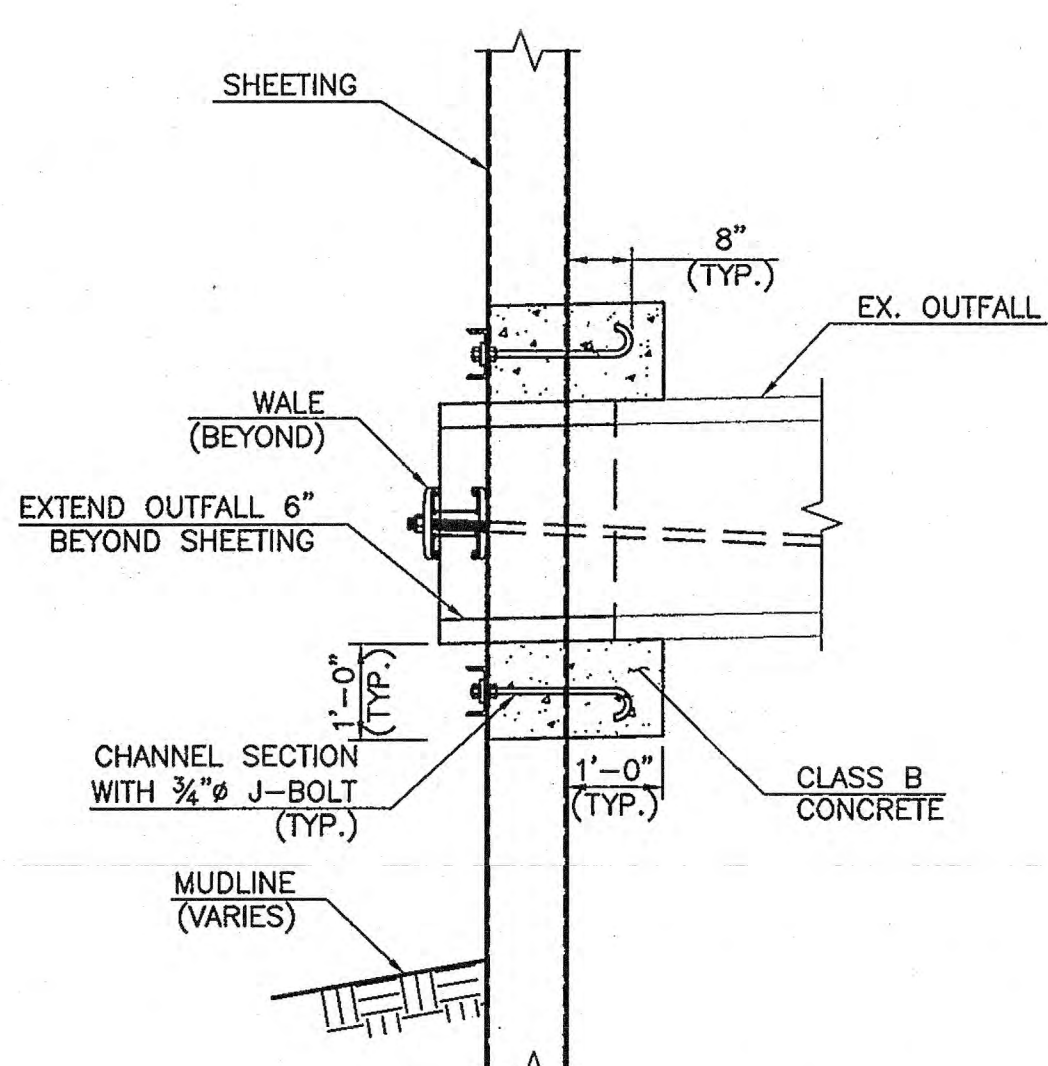
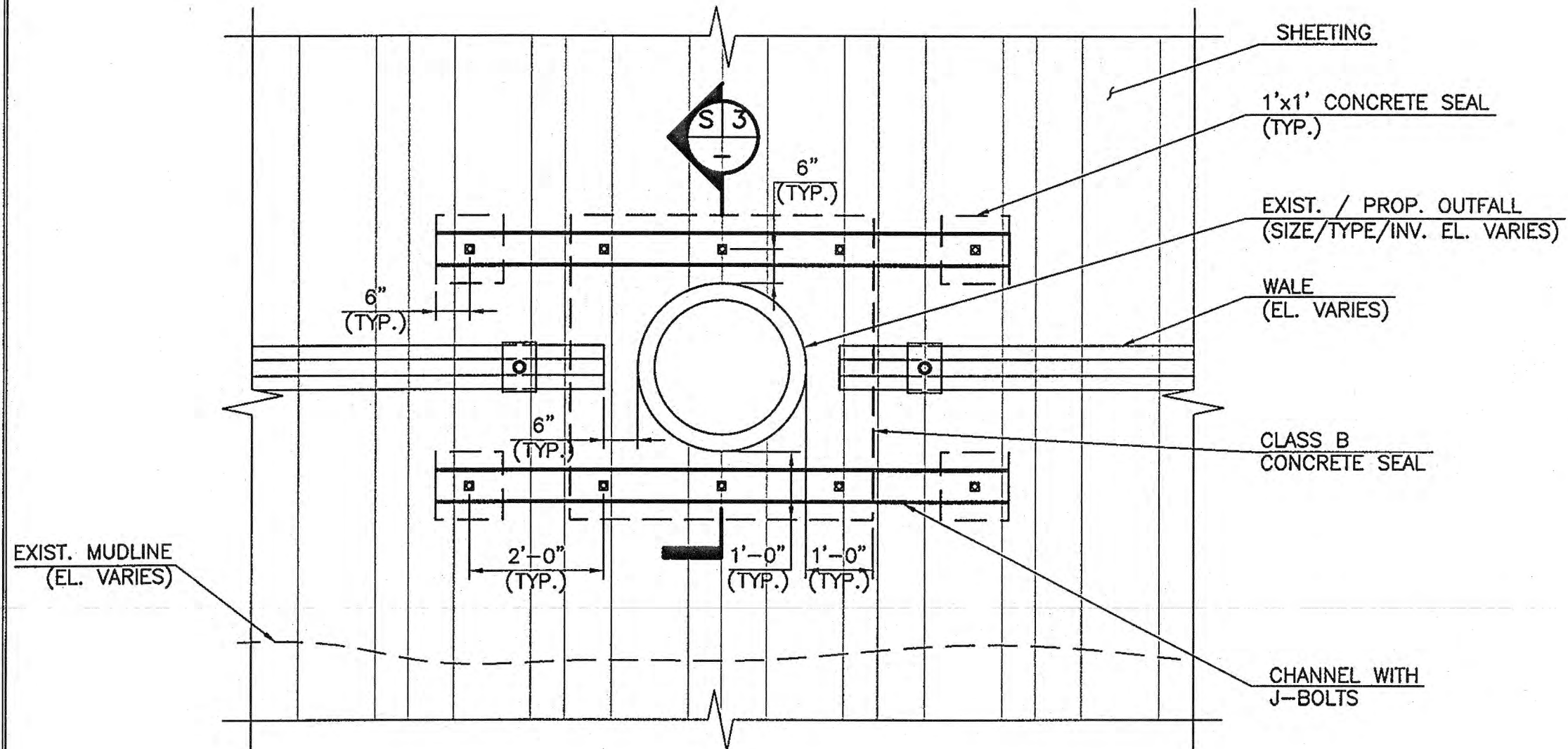
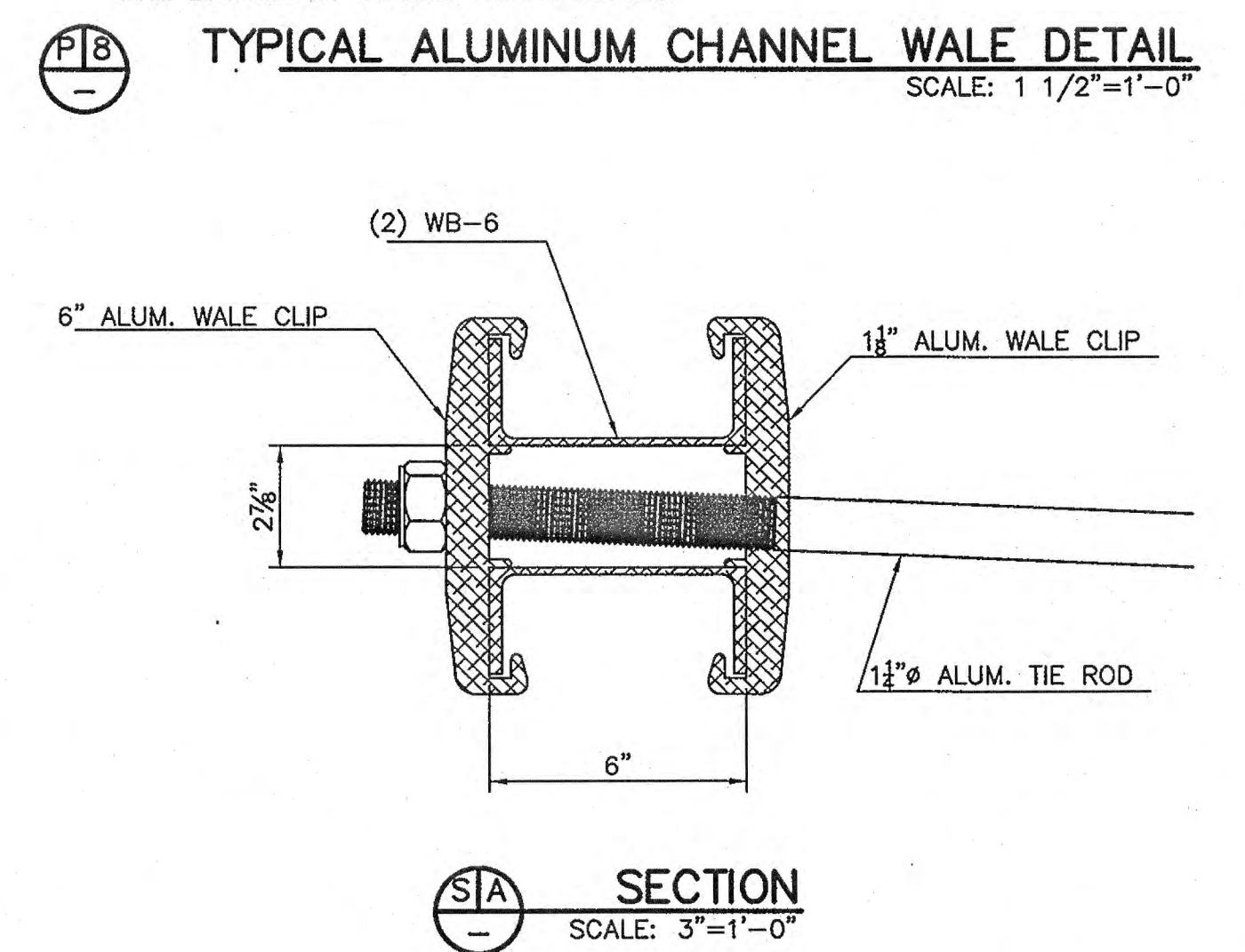
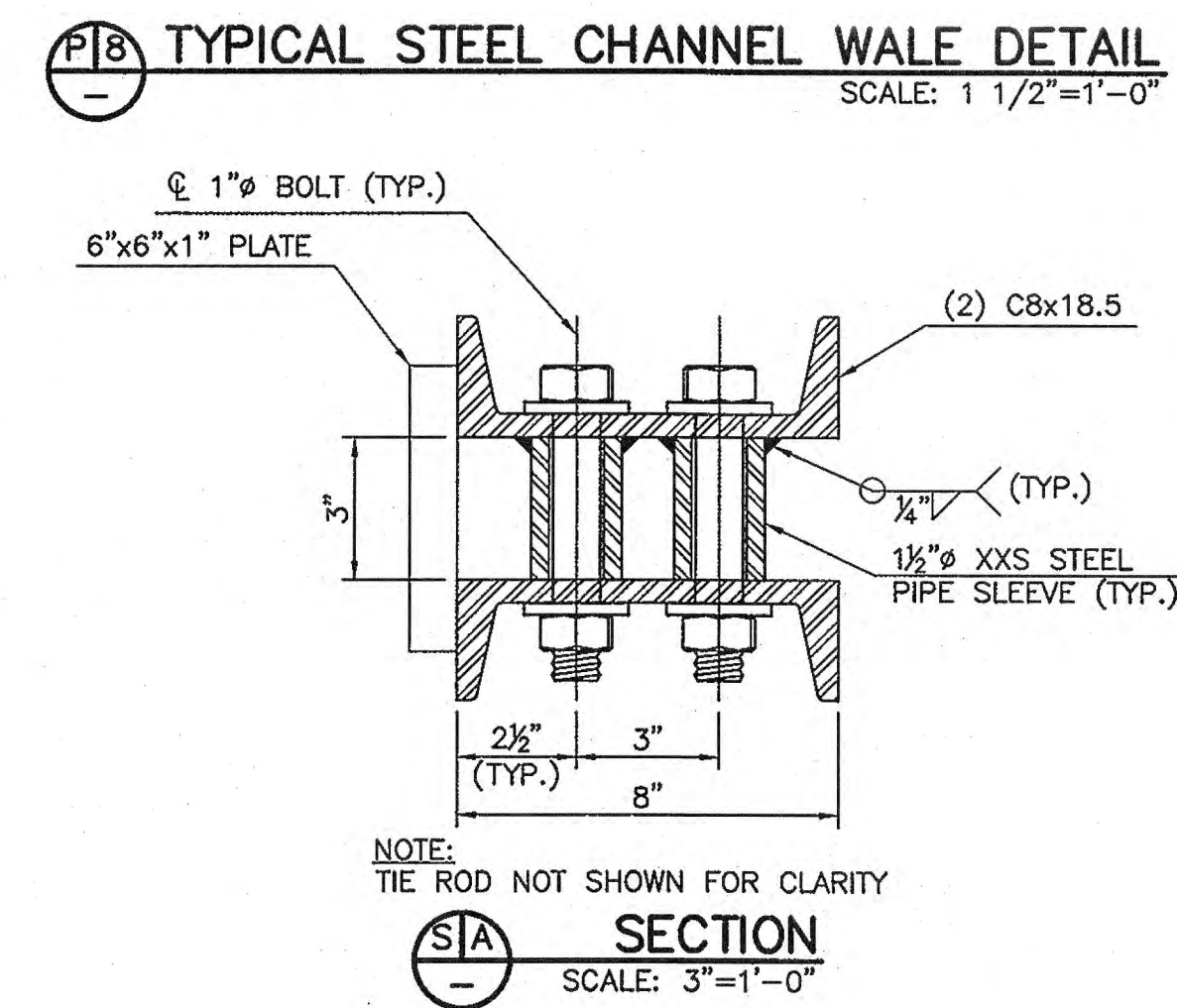
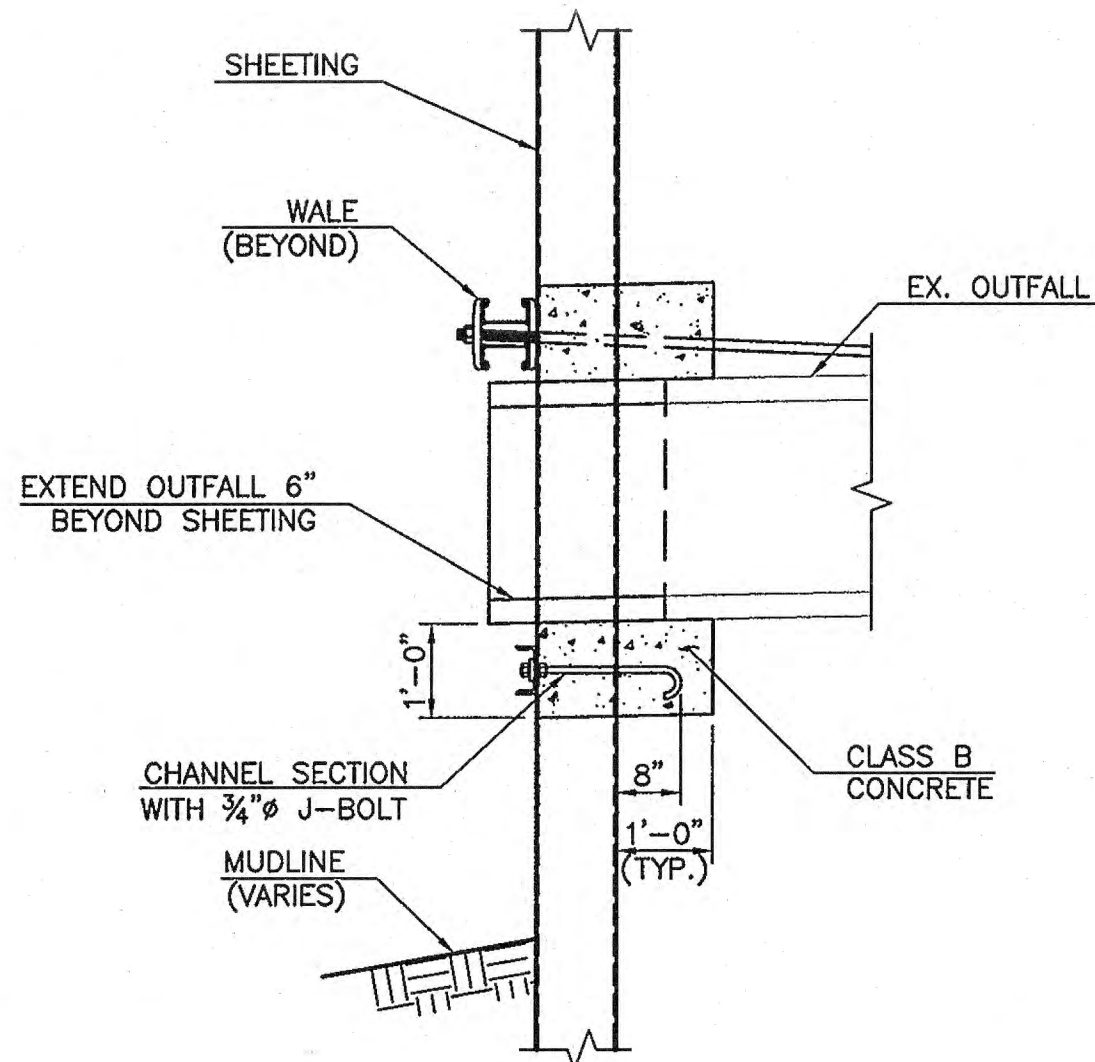
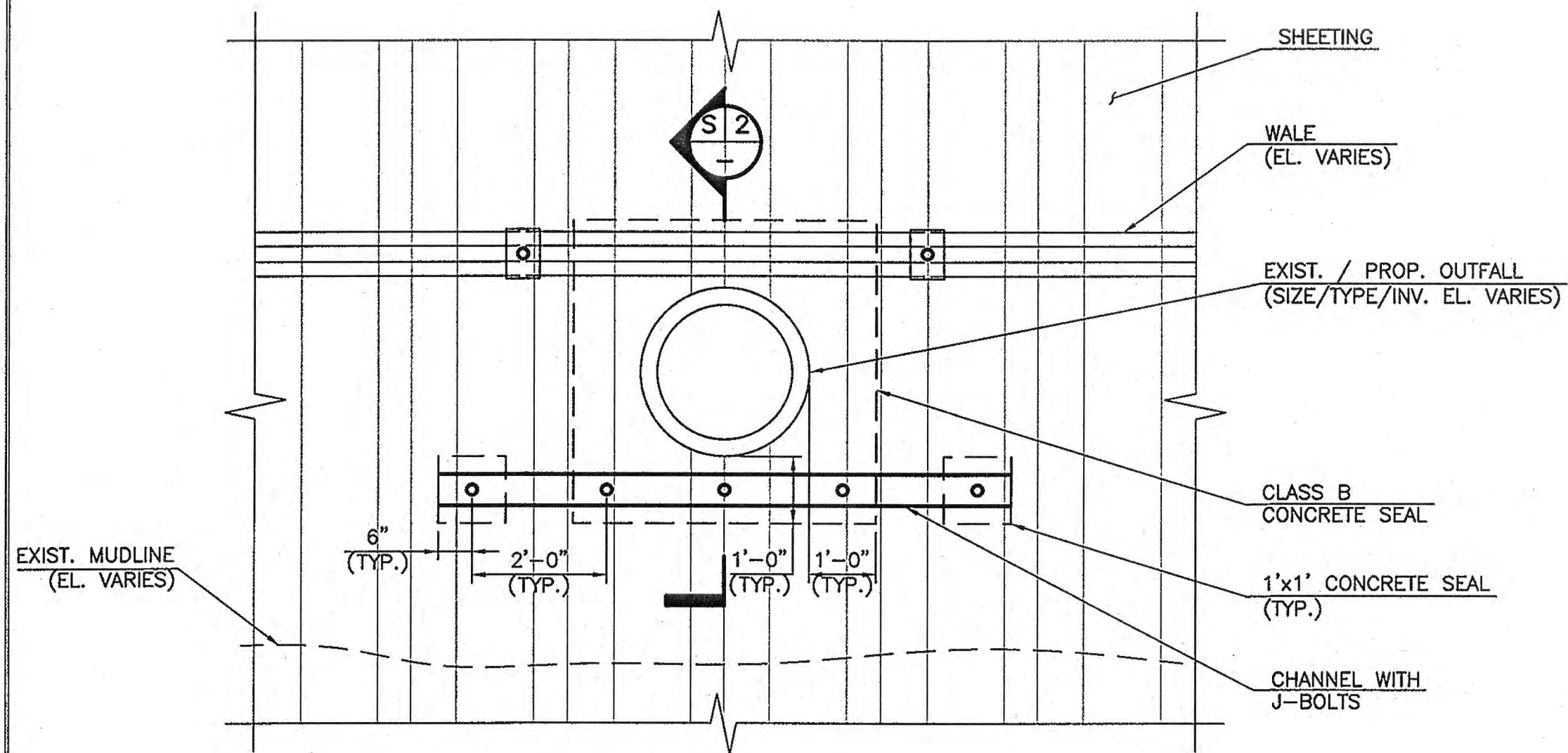
### PERMIT PLANS

NO.	DATE	REVISIONS	BY	CHECKED
BOROUGH OF SEA BRIGHT				
FLOOD MITIGATION PROJECT: RECONSTRUCTION OF SIX BULKHEADS AND NEW STORMWATER PUMP STATION BOROUGH OF SEA BRIGHT, MONMOUTH COUNTY, NEW JERSEY				
CONSTRUCTION PLAN BEACH WAY				
 11 TINDALL ROAD MIDDLETOWN, NJ 07748 TEL 732-671-6400 FAX 732-671-7395		<b>JACLYN J. FLOR, P.E., P.P. C.M.E.</b>  4/7/14 DATE		DRAWING <b>S8</b> SHEET
NEW JERSEY BOARD OF PROFESSIONAL ENGINEERS AND LAND SURVEYORS CERTIFICATE OF AUTHORIZATION 246A 22887500		PROJECT NO. SBR1-00861 CADD FILE SBR100861-BEACH WAY.dwg CHECKED BY APM FIELD BK # N/A		<b>9</b> OF 19





- NOTES:**
- WALE SPLICES SHALL CONFORM TO MANUFACTURER'S REQUIREMENTS.
  - WALE CLIP AND ROD KITS SHALL BE AS MANUFACTURED BY CRANE MATERIALS INTERNATIONAL OR APPROVED EQUAL.
  - SPACING SHALL BE ADJUSTED AS NECESSARY SO THAT WALE CLIPS ARE LOCATED AT INWARD-FACING FLUTES.

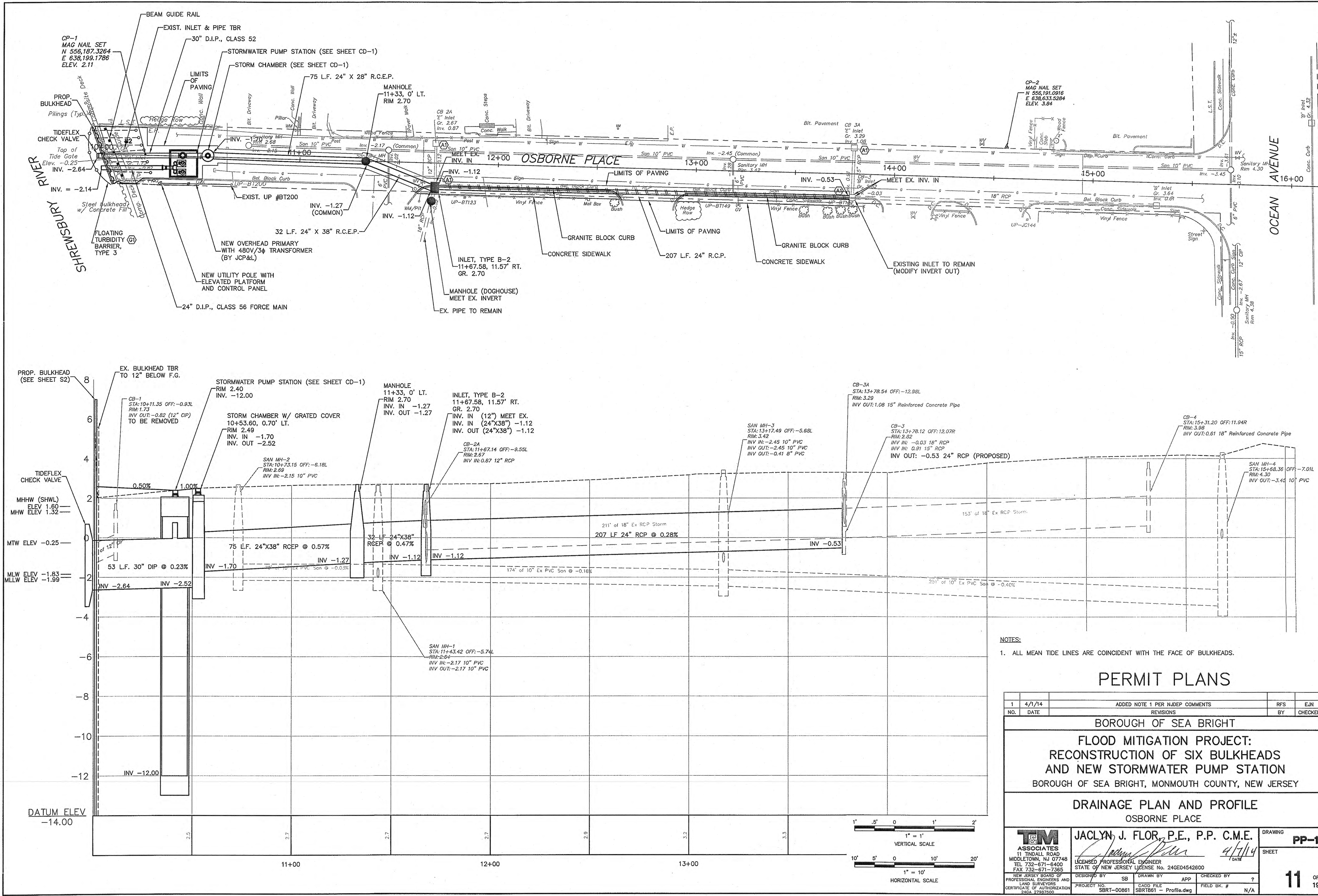


- NOTES:**
- WALE LENGTHS SHALL BE A MINIMUM OF 20'-0". STEEL WALE SPLICES SHALL CONFORM TO THE DETAIL SHOWN ON THE PLANS. ALUMINUM WALE SPLICES SHALL CONFORM TO THE MANUFACTURER'S REQUIREMENTS.
  - CONTRACTOR SHALL VERIFY INVERTS AT OUTFALL AND ADJUST OUTFALL INVERT AS DIRECTED BY THE ENGINEER.
  - CHANNEL FOR OUTFALL OPENING SHALL BE MC 6x12 (GALV.) FOR STEEL SHEETING AND SHALL BE CS 6x4.03 FOR ALUMINUM SHEETING.
  - ALL HARDWARE FOR STEEL SHEETING SHALL BE GALVANIZED. ALL HARDWARE FOR ALUMINUM SHEETING SHALL BE STAINLESS STEEL OR ALUMINUM.

### PERMIT PLANS

NO.	DATE	REVISIONS	BY	CHECKED
BOROUGH OF SEA BRIGHT				
<b>FLOOD MITIGATION PROJECT: RECONSTRUCTION OF SIX BULKHEADS AND NEW STORMWATER PUMP STATION</b>				
BOROUGH OF SEA BRIGHT, MONMOUTH COUNTY, NEW JERSEY				
<b>ELEVATIONS, SECTIONS AND DETAILS</b>				
<b>JACLYN J. FLOR, P.E., P.P. C.M.E.</b> 11 TINDALL ROAD MIDDLETOWN, NJ 07748 TEL 732-671-6400 FAX 732-671-7365		DRAWING <b>S9</b> SHEET DATE <b>4/7/14</b>		
NEW JERSEY BOARD OF PROFESSIONAL ENGINEERS AND LAND SURVEYORS CERTIFICATE OF AUTHORIZATION 246A 27387500		DESIGNED BY <b>APM</b> DRAWN BY <b>JRG</b> CHECKED BY <b>FSB</b> PROJECT NO. <b>SBRT-00861</b> CADD FILE <b>SBRT00861-DTL.dwg</b> FIELD BK. # <b>N/A</b>		

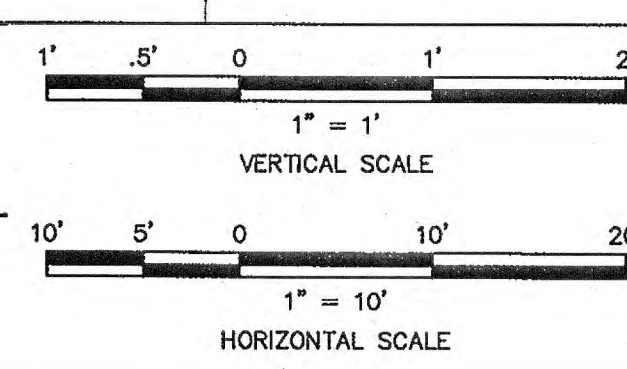




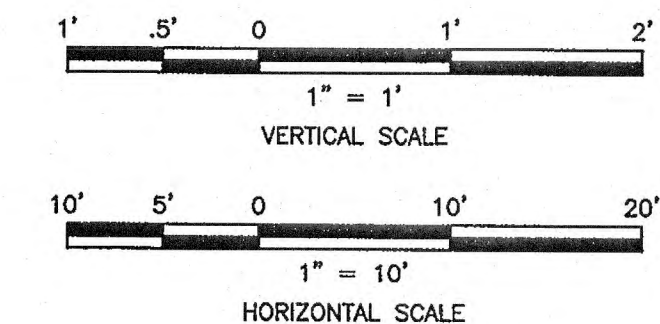
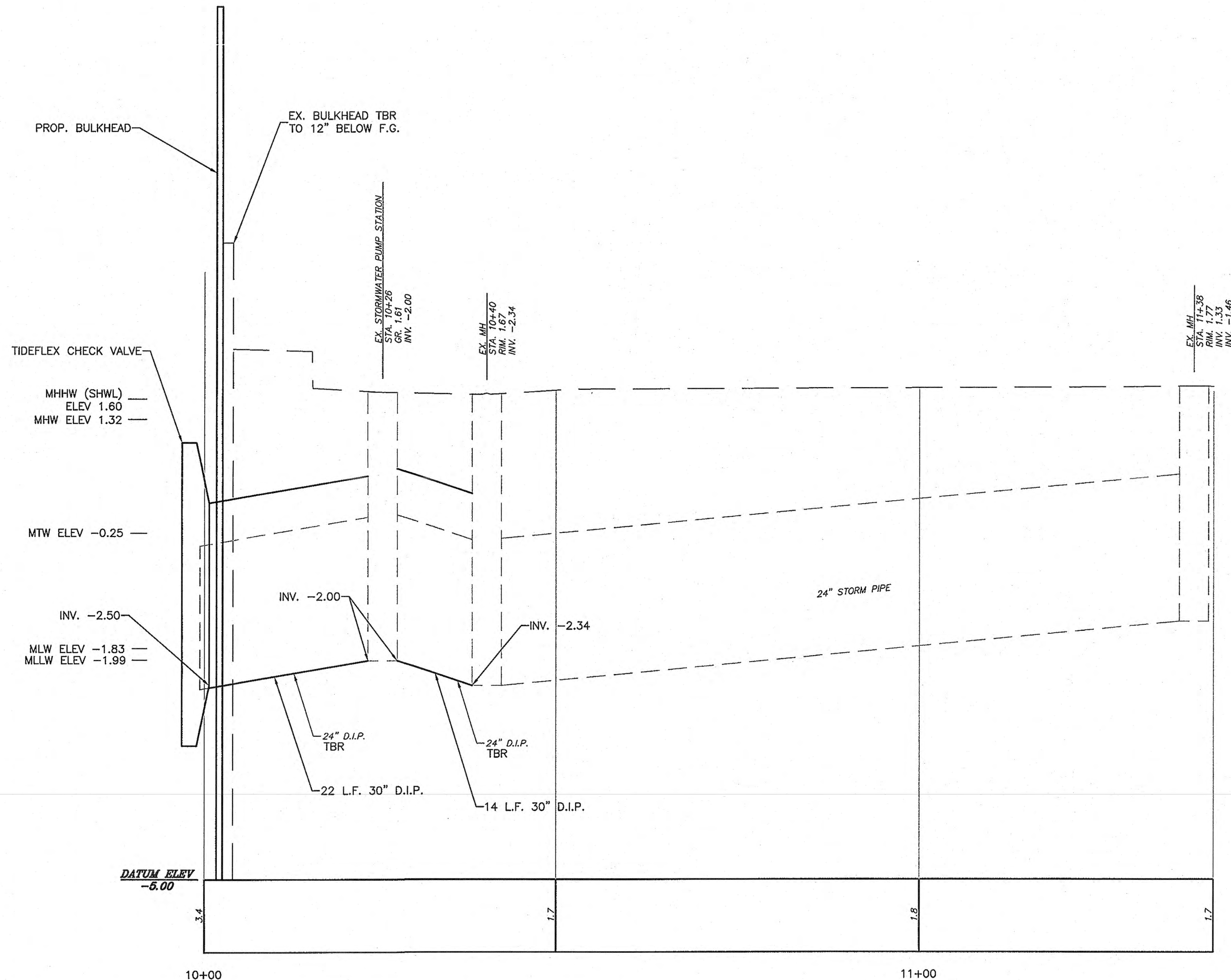
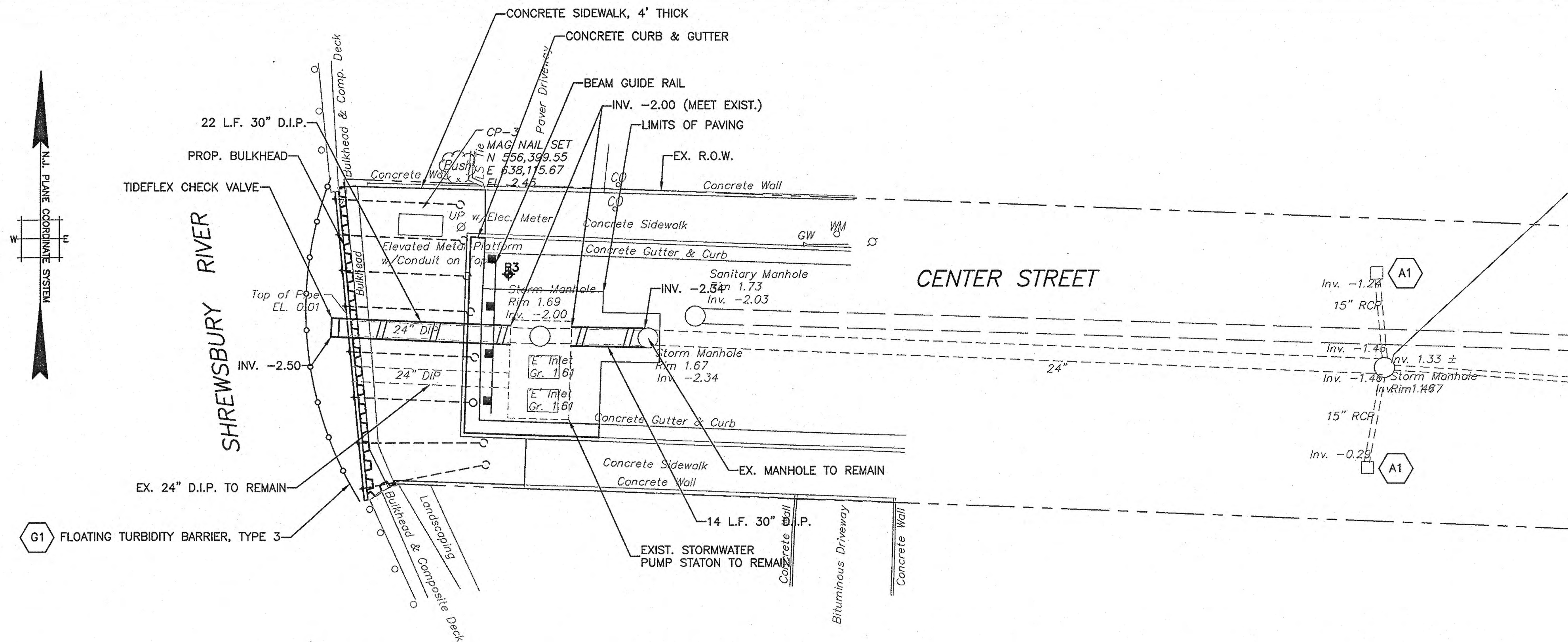
NOTES:  
 1. ALL MEAN TIDE LINES ARE COINCIDENT WITH THE FACE OF BULKHEADS.

### PERMIT PLANS

1	4/1/14	ADDED NOTE 1 PER NJDEP COMMENTS	RFS	EJN
NO.		DATE	REVISIONS	BY
BOROUGH OF SEA BRIGHT				
FLOOD MITIGATION PROJECT: RECONSTRUCTION OF SIX BULKHEADS AND NEW STORMWATER PUMP STATION				
BOROUGH OF SEA BRIGHT, MONMOUTH COUNTY, NEW JERSEY				
DRAINAGE PLAN AND PROFILE OSBORNE PLACE				
		<b>JACLYN J. FLOR, P.E., P.P. C.M.E.</b>  DATE: 4/7/14		DRAWING <b>PP-1</b>
11 TINDALL ROAD MIDDLETOWN, NJ 07748 TEL 732-671-6400 FAX 732-671-7365		LICENSED PROFESSIONAL ENGINEER STATE OF NEW JERSEY LICENSE No. 24GE04542600		
DESIGNED BY	SB	DRAWN BY	APP	CHECKED BY
PROJECT NO.	SBRT-00861	CADD FILE	SBRT061 - Profile.dwg	FIELD BK. #
NEW JERSEY BOARD OF PROFESSIONAL ENGINEERS AND LAND SURVEYORS		CERTIFICATE OF AUTHORIZATION 24GA 27887500		
11		OF 19		







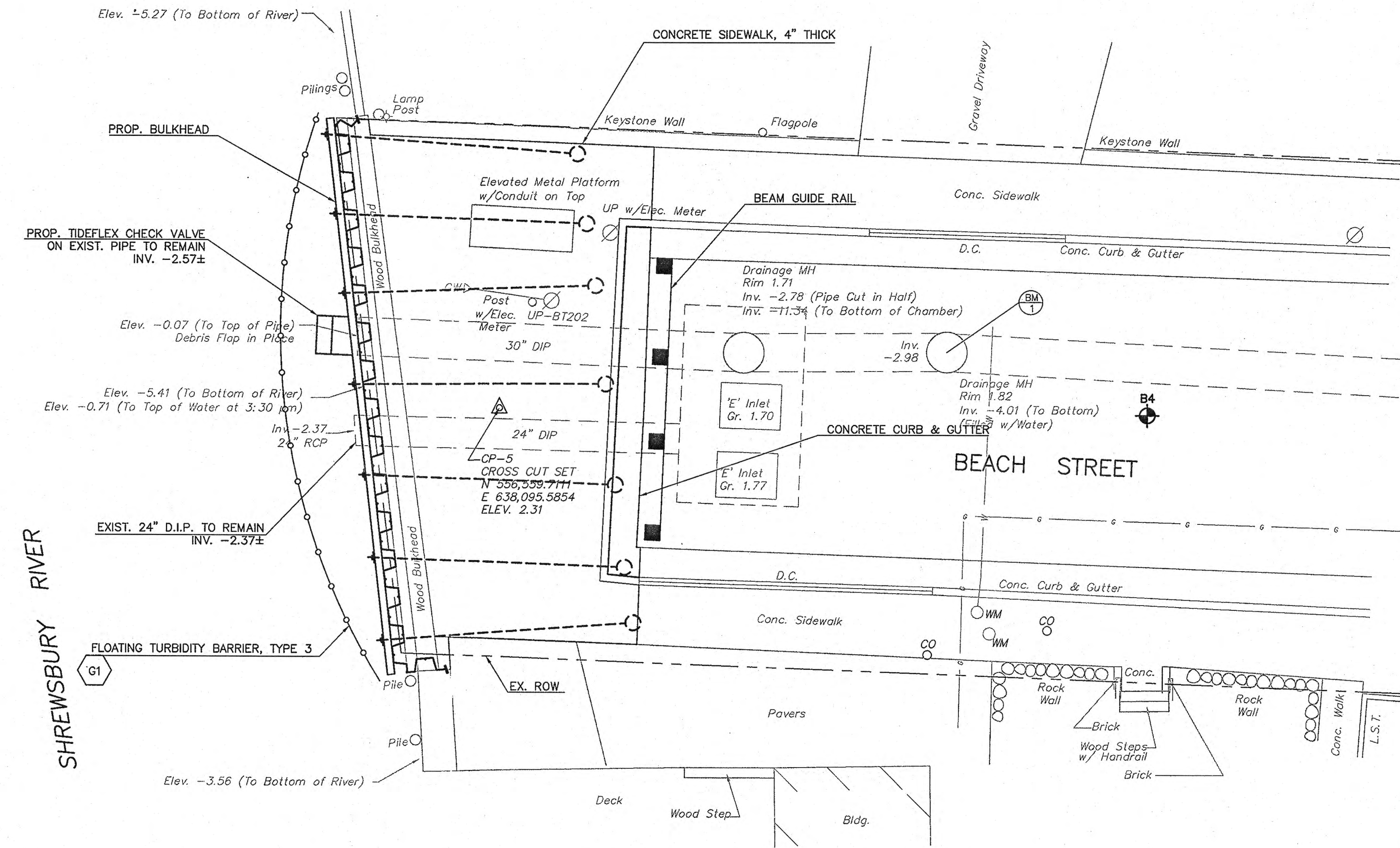
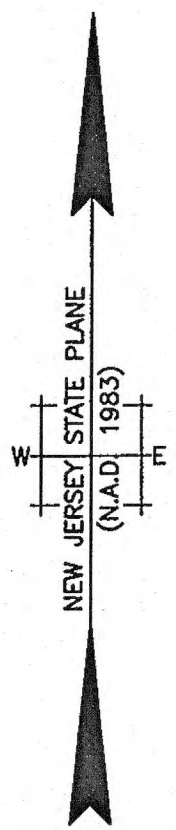
NOTES:

- 1. ALL MEAN TIDE LINES ARE COINCIDENT WITH THE FACE OF BULKHEADS.

### PERMIT PLANS

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NO.	DATE	REVISIONS	BY	CHECKED
BOROUGH OF SEA BRIGHT				
FLOOD MITIGATION PROJECT: RECONSTRUCTION OF SIX BULKHEADS AND NEW STORMWATER PUMP STATION				
BOROUGH OF SEA BRIGHT, MONMOUTH COUNTY, NEW JERSEY				
DRAINAGE PLAN AND PROFILE CENTER STREET				
<p><b>T&amp;M ASSOCIATES</b> 11 TINDALL ROAD MIDDLETOWN, NJ 07748 TEL 732-671-6400 FAX 732-671-7365</p>		<p><b>JACLYN J. FLOR, P.E., P.P. C.M.E.</b> <i>Jaclyn Flor</i> DATE: 4/1/14</p>		<p>DRAWING SHEET <b>PP-2</b></p>
<p>NEW JERSEY BOARD OF PROFESSIONAL ENGINEERS AND LAND SURVEYORS CERTIFICATE OF AUTHORIZATION 240A 2287500</p>		<p>DESIGNED BY: APM DRAWN BY: JRG CHECKED BY: FSB</p>		<p>PROJECT NO.: SBR10-00861 CADD FILE: SBR100861-CENTER ST.DR.dwg FIELD BK. #: N/A</p>
				<p><b>12</b> OF 19</p>





NOTES:

- 1. ALL MEAN TIDE LINES ARE COINCIDENT WITH THE FACE OF BULKHEADS.

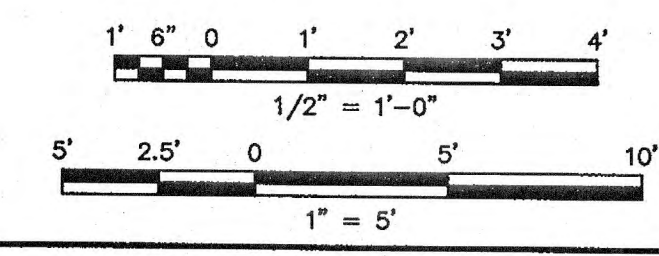
PERMIT PLANS

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NO.	DATE	REVISIONS	BY	CHECKED

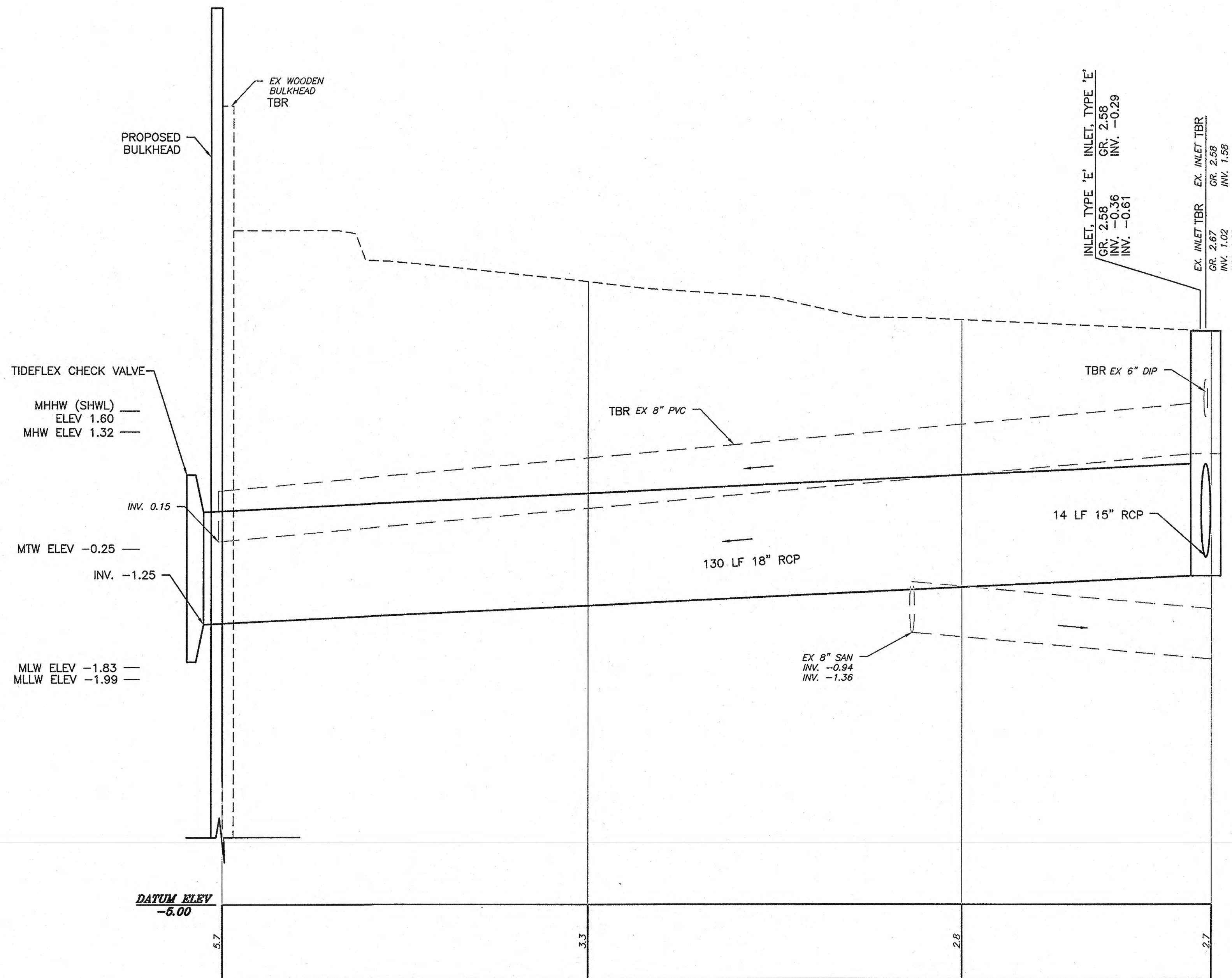
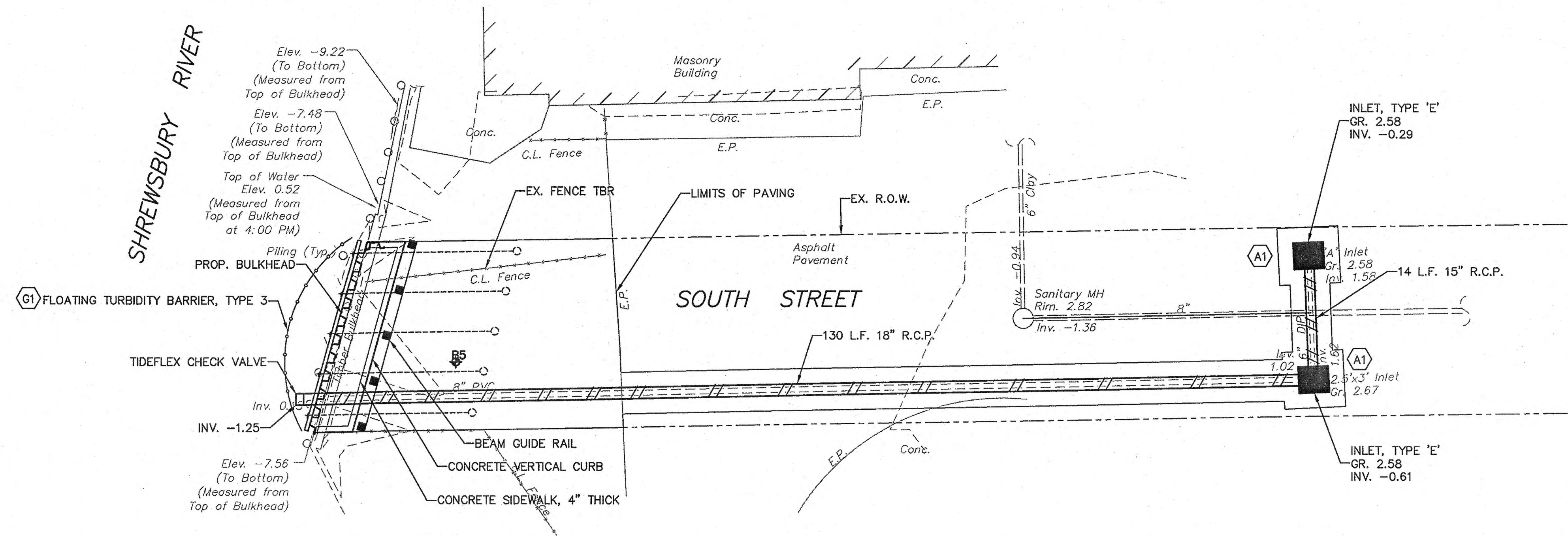
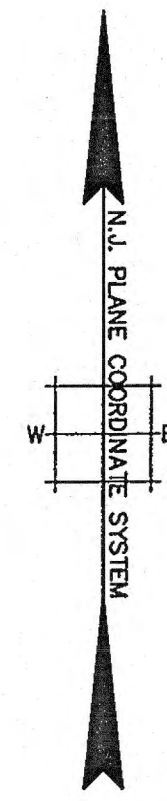
BOROUGH OF SEA BRIGHT  
**FLOOD MITIGATION PROJECT:  
 RECONSTRUCTION OF SIX BULKHEADS  
 AND NEW STORMWATER PUMP STATION**  
 BOROUGH OF SEA BRIGHT, MONMOUTH COUNTY, NEW JERSEY

**DRAINAGE PLAN**  
 BEACH STREET

 T&M ASSOCIATES 11 TINDALL ROAD MIDDLETOWN, NJ 07748 TEL 732-671-6400 FAX 732-671-7365	<b>JACLYN J. FLOR, P.E., P.P. C.M.E.</b> LICENSED PROFESSIONAL ENGINEER STATE OF NEW JERSEY LICENSE No. 24GE04542600		DRAWING <b>PP-3</b>
	PROJECT NO. SBRT-00861	CADD FILE SBRT00861-BEACH_ST_DR.dwg	CHECKED BY FSB







NOTES:

- 1. ALL MEAN TIDE LINES ARE COINCIDENT WITH THE FACE OF BULKHEADS.

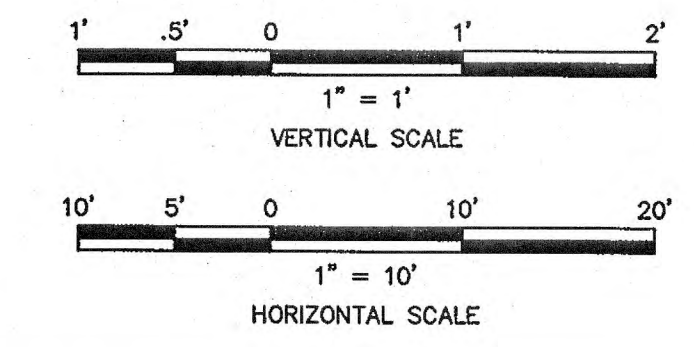
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NO.	DATE	REVISIONS	BY	CHECKED

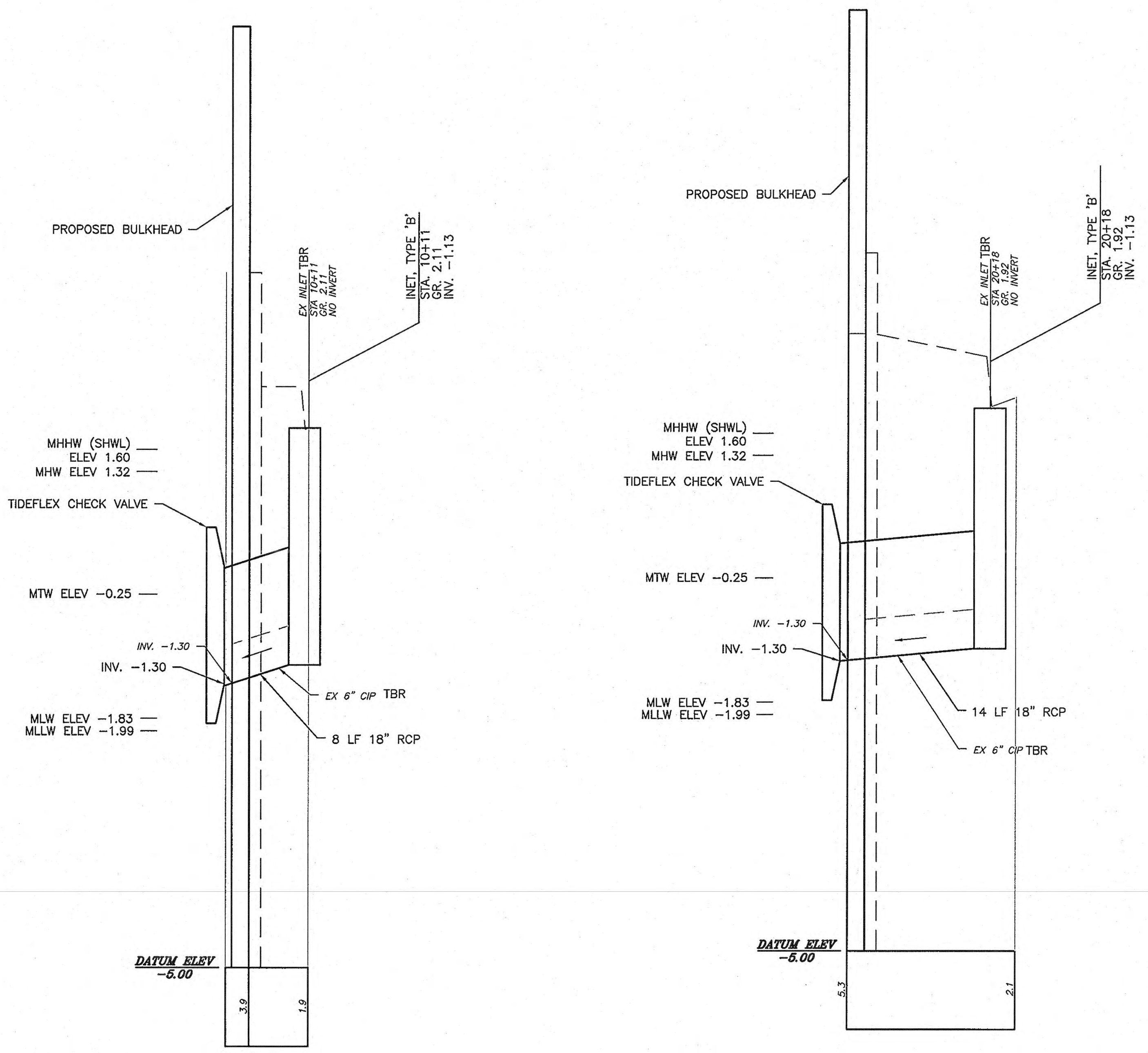
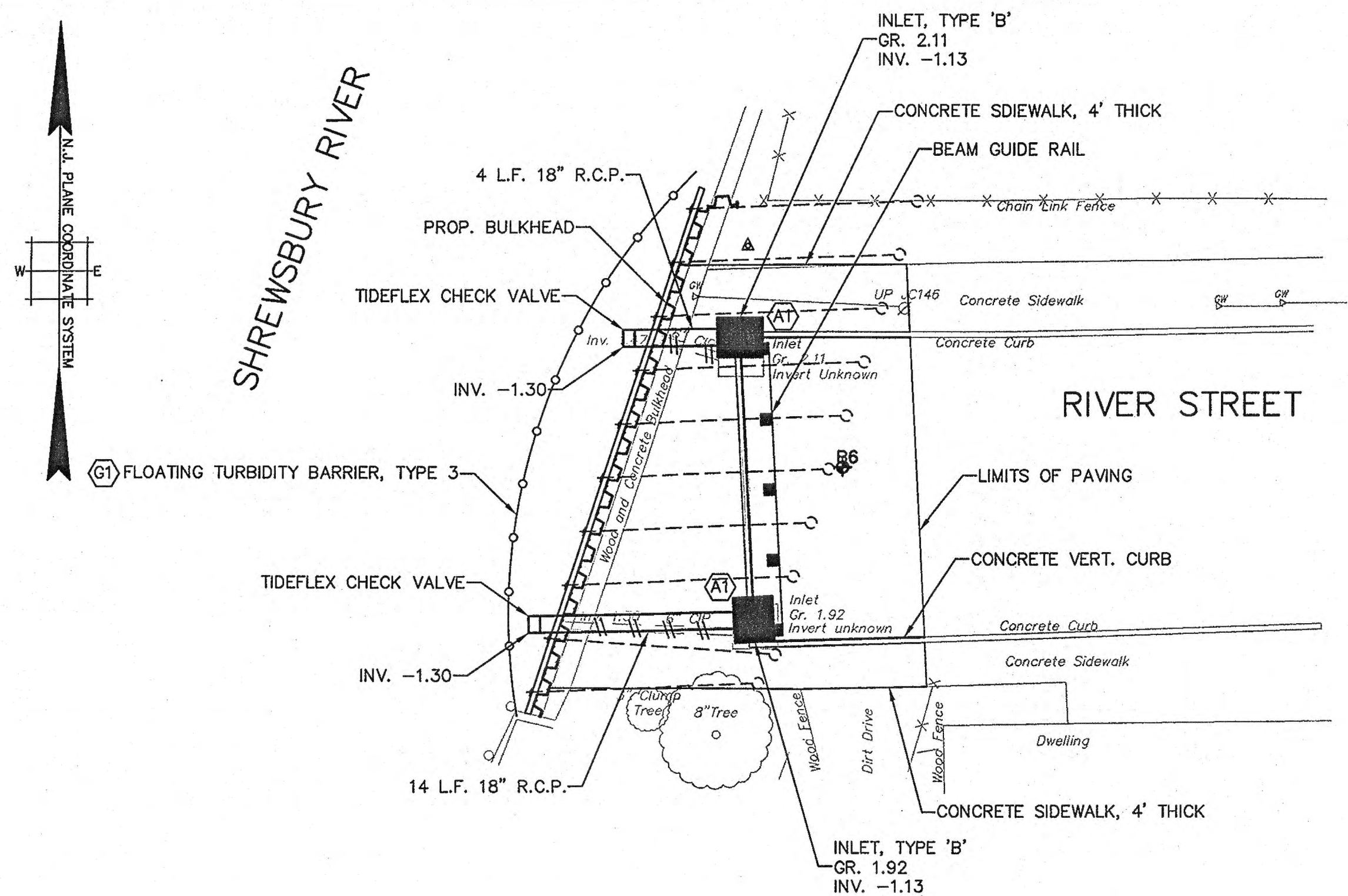
BOROUGH OF SEA BRIGHT  
**FLOOD MITIGATION PROJECT:  
 RECONSTRUCTION OF SIX BULKHEADS  
 AND NEW STORMWATER PUMP STATION**  
 BOROUGH OF SEA BRIGHT, MONMOUTH COUNTY, NEW JERSEY

**DRAINAGE PLAN AND PROFILE  
 SOUTH STREET**

 <b>T&amp;M ASSOCIATES</b> 11 TINDAL ROAD MIDDLETOWN, NJ 07748 TEL 732-671-6400 FAX 732-671-7365	<b>JACLYN J. FLOR, P.E., P.P. C.M.E.</b> LICENSED PROFESSIONAL ENGINEER STATE OF NEW JERSEY LICENSE No. 24GE04542600		DRAWING <b>PP-4</b>
	DESIGNED BY: SGA PROJECT NO.: SBRT-00861	DRAWN BY: YKH CADD FILE: SBRT00861-SOUTH ST...	CHECKED BY: RM FIELD BK. #: N/A



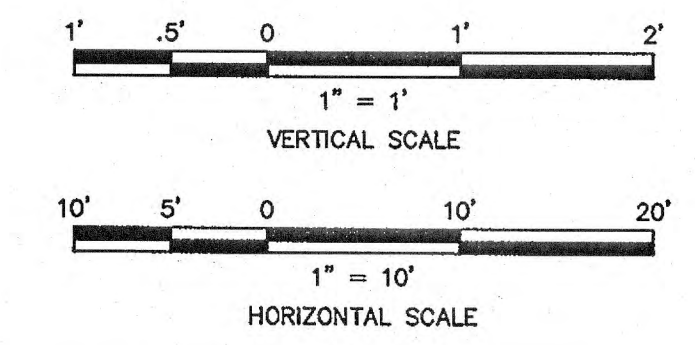




NOTES:  
 1. ALL MEAN TIDE LINES ARE COINCIDENT WITH THE FACE OF BULKHEADS.

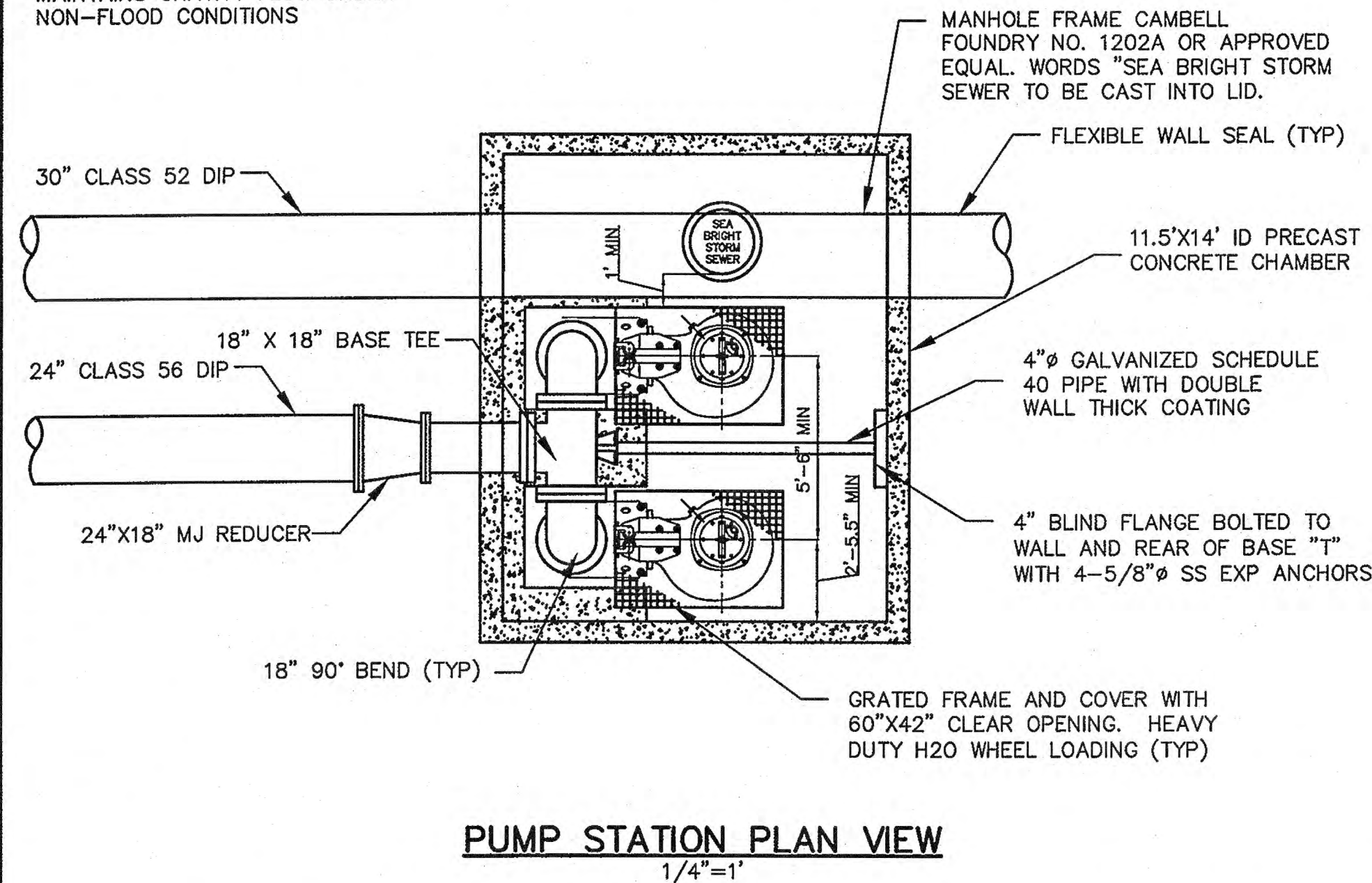
### PERMIT PLANS

1	4/1/14	ADDED NOTE 1 PER NJDEP COMMENTS	RFS	EJN
NO.	DATE	REVISIONS	BY	CHECKED
BOROUGH OF SEA BRIGHT				
FLOOD MITIGATION PROJECT: RECONSTRUCTION OF SIX BULKHEADS AND NEW STORMWATER PUMP STATION				
BOROUGH OF SEA BRIGHT, MONMOUTH COUNTY, NEW JERSEY				
DRAINAGE PLAN AND PROFILE RIVER STREET				
		<b>JACLYN J. FLOR, P.E., P.P. C.M.E.</b>  DATE: 4/1/14		DRAWING <b>PP-5</b>
11 TINDALL ROAD MIDDLETOWN, NJ 07748 TEL 732-671-6400 FAX 732-671-7365		LICENSED PROFESSIONAL ENGINEER STATE OF NEW JERSEY LICENSE No. 24GE04542800		SHEET <b>15</b> OF 19
DESIGNED BY APM	DRAWN BY APM	CHECKED BY FSB	FIELD BK. # N/A	
PROJECT NO. SBR1-00861	CADD FILE SBR100861-RIVER ST_DR.dwg	CERTIFICATE OF AUTHORIZATION 24CA 27287200		

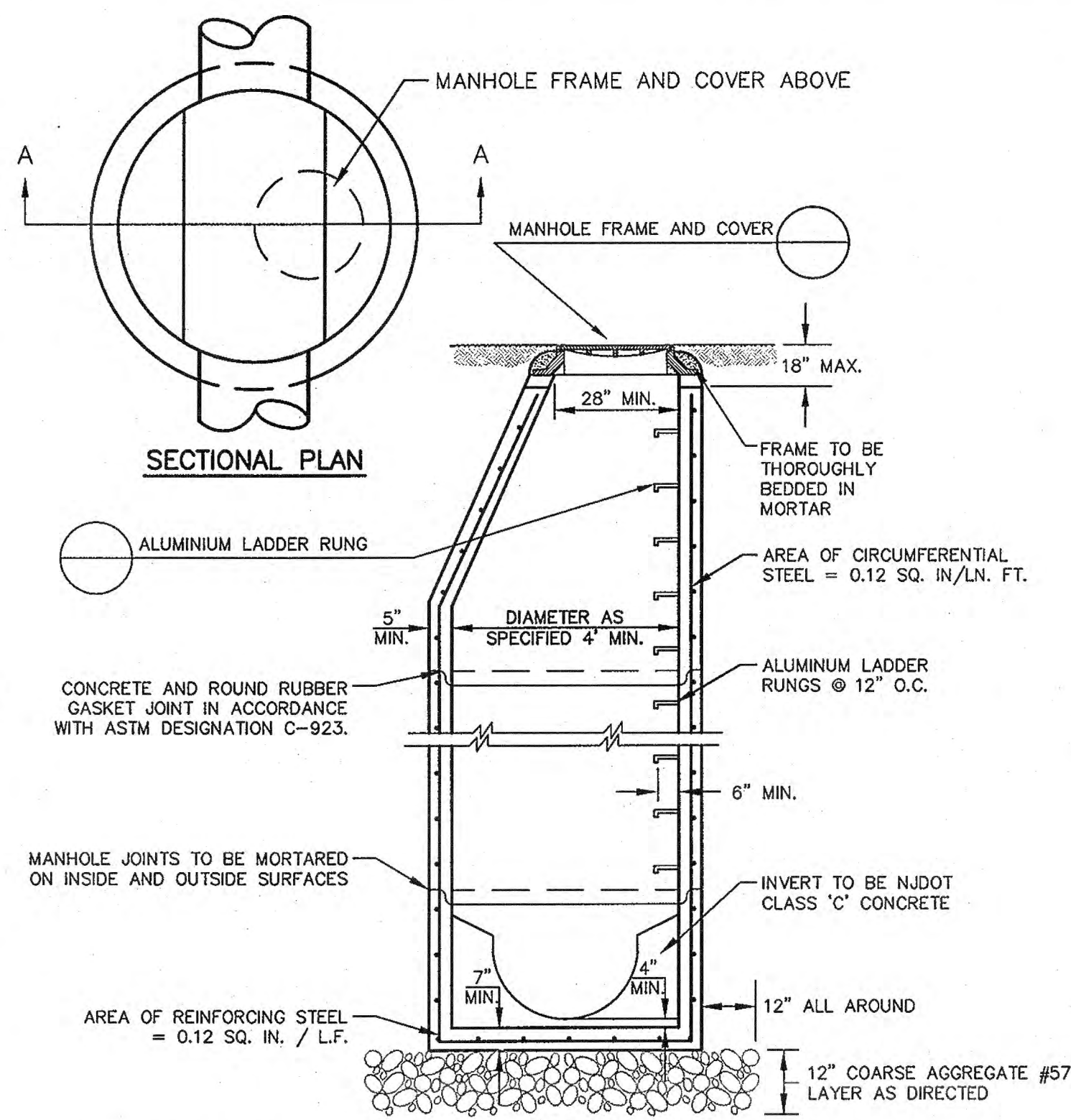




NOTE:  
EXISTING STORM SEWER SYSTEM  
MAINTAINS GRAVITY FLOW UNDER  
NON-FLOOD CONDITIONS



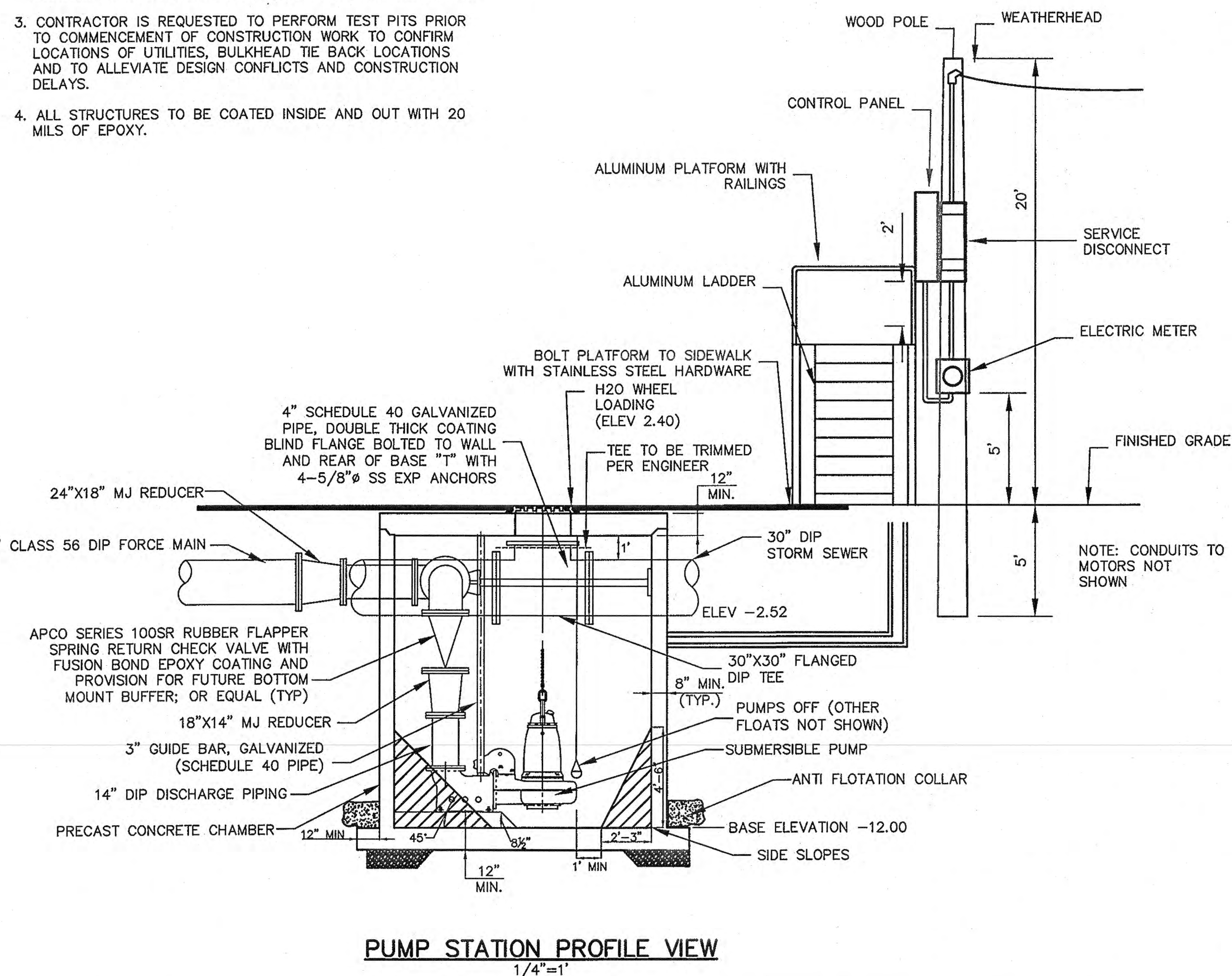
**PUMP STATION PLAN VIEW**  
1/4"=1'



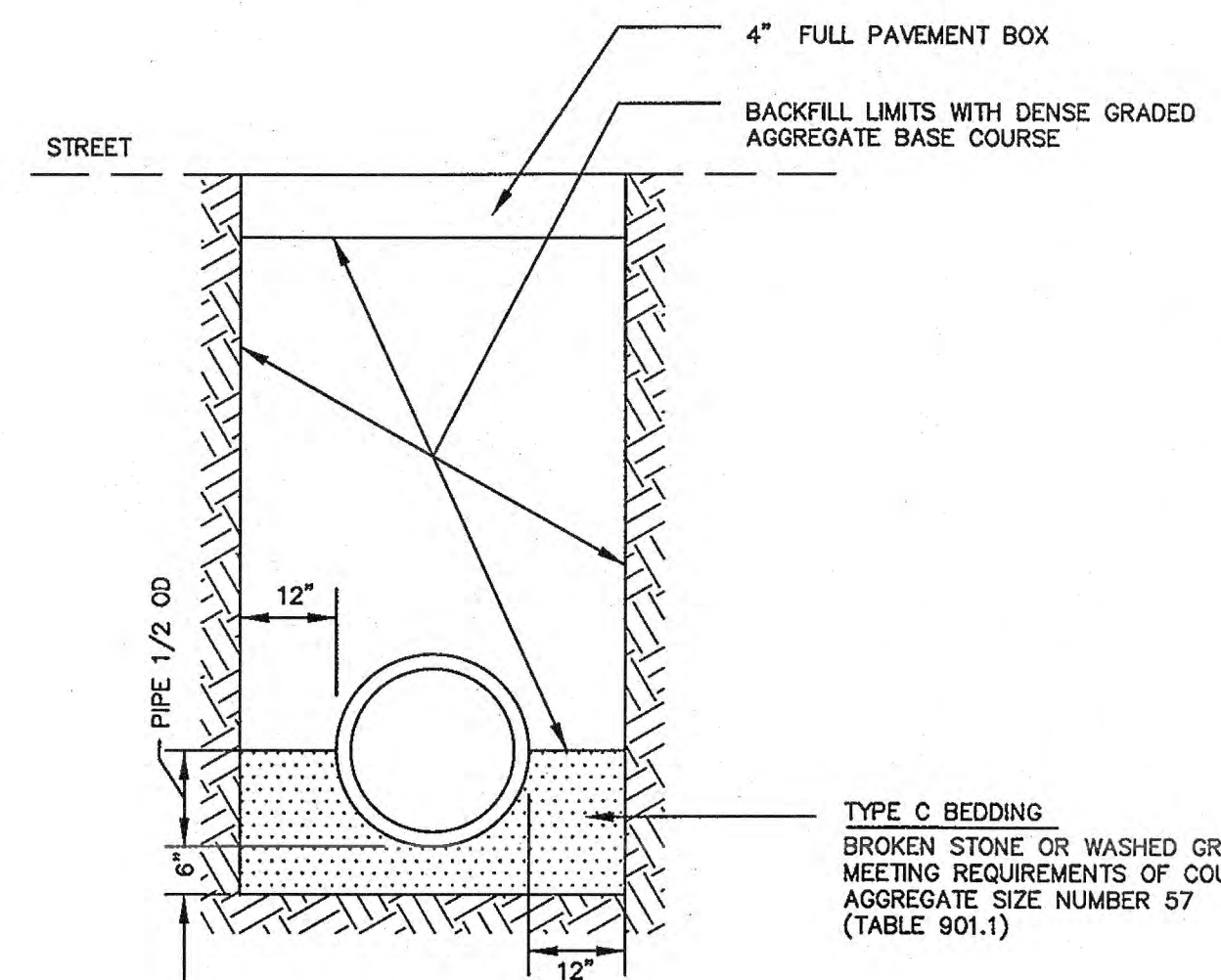
- CONSTRUCTION NOTES:**
1. PRECAST MANHOLE SECTIONS TO BE ON ACCORDANCE WITH LATEST ASTM SPECIFICATION ASTM C-473 WITH RUBBER GASKET JOINTS, CONFORMING TO ASTM SPECIFICATION C-923. MAXIMUM ADSORPTION TO BE 8% IN ACCORDANCE WITH ASTM SPECIFICATION C-478.
  2. MINIMUM COMPRESSION STRENGTH TO BE 4000 PSI.

**PRECAST DRAINAGE MANHOLE**  
NOT TO SCALE

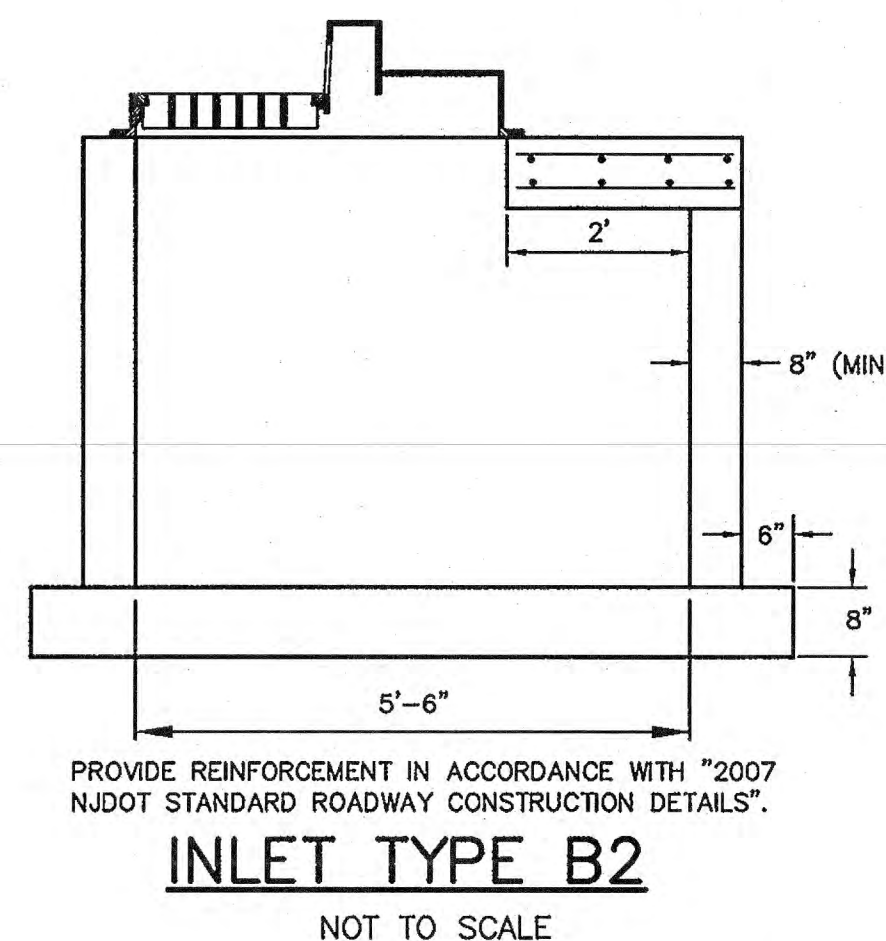
- NOTES:**
1. DEWATERING WILL BE REQUIRED DURING CONSTRUCTION. A CRITICAL TYPE MUFFLER MUST BE PLACED ON THE PUMP(S) DRIVE. IF POWERED BY INTERNAL COMBUSTION ENGINE(S) OR GENERATOR(S). COST FOR DEWATERING TO BE INCLUDED IN THE VARIOUS BID ITEMS SCHEDULED IN THE PROPOSAL.
  2. AREA IS UNDER TIDAL INFLUENCE. CONSTRUCTION SCHEDULING SHOULD BE COORDINATED WITH TIDE SCHEDULE.
  3. CONTRACTOR IS REQUESTED TO PERFORM TEST PITS PRIOR TO COMMENCEMENT OF CONSTRUCTION WORK TO CONFIRM LOCATIONS OF UTILITIES, BULKHEAD TIE BACK LOCATIONS AND TO ALLEVIATE DESIGN CONFLICTS AND CONSTRUCTION DELAYS.
  4. ALL STRUCTURES TO BE COATED INSIDE AND OUT WITH 20 MILS OF EPOXY.



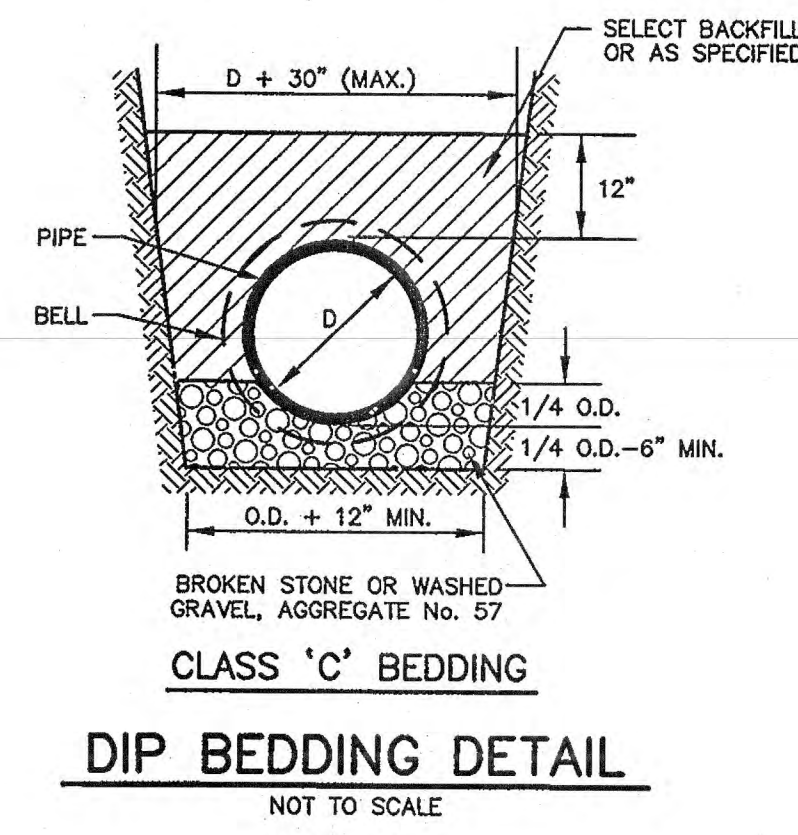
**PUMP STATION PROFILE VIEW**  
1/4"=1'



**CIRCULAR AND ELLIPTICAL RCP PIPE BEDDING DETAIL**  
NOT TO SCALE



**INLET TYPE B2**  
NOT TO SCALE



**DIP BEDDING DETAIL**  
NOT TO SCALE

**GENERAL NOTES**

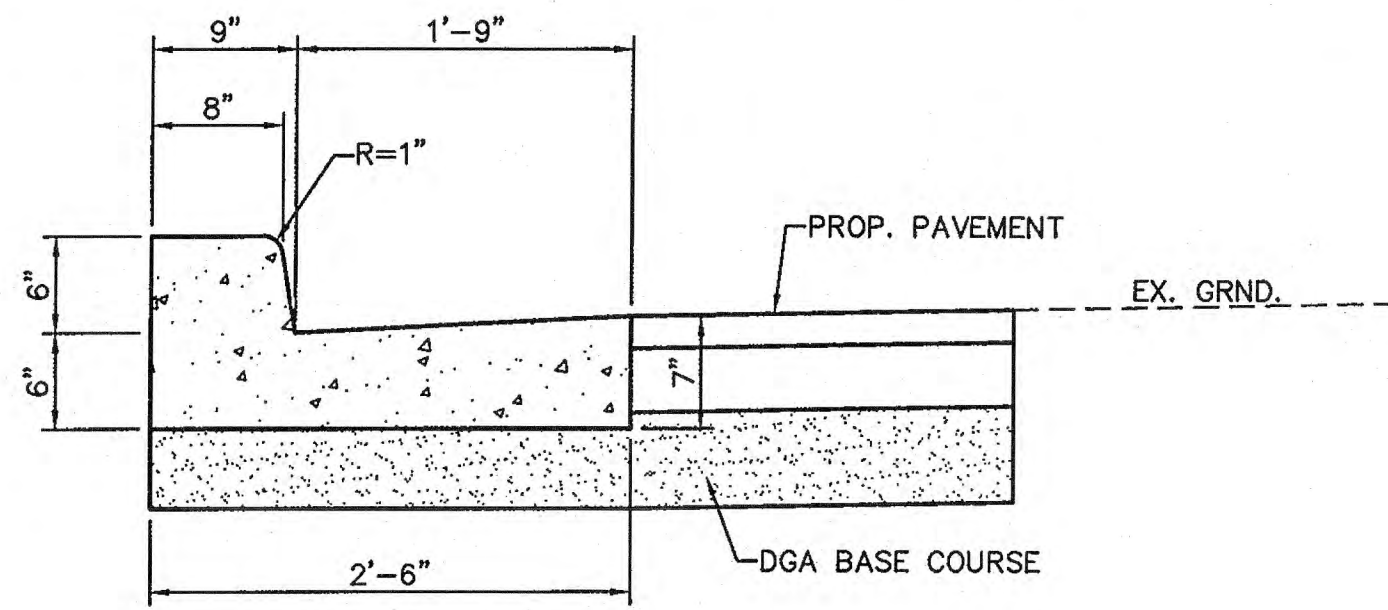
1. **DESIGN SPECIFICATIONS**  
2002 (17TH EDITION) AASHTO STANDARD SPECIFICATION FOR HIGHWAY BRIDGES WITH INTERIMS AS MODIFIED BY SECTION 3A OF NJDOT DESIGN MANUAL FOR BRIDGES AND STRUCTURES.
2. **CONSTRUCTION SPECIFICATIONS**  
2007 NJDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION WITH CURRENT SUPPLEMENTAL SPECIFICATIONS AS MODIFIED BY THE SPECIAL PROVISIONS.
3. **LIVE LOAD**  
AASHTO HS 20 + 25% (HS25) OR TANDEM 24 KIP AXLES AT 4 FOOT CENTERS, WHICHEVER GOVERNS.
4. **CONCRETE DESIGN STRESSES**  
(A) SPECIFIED DESIGN COMPRESSIVE STRENGTH ( $f'_c$ ) (IN ACCORDANCE WITH THE RETEST LIMIT AS SPECIFIED IN SECTION 903 OF THE NJDOT STANDARD SPECIFICATIONS)  
CLASS P (STRUCTURE) ..... 5,000 PSI  
CLASS A ..... 4,000 PSI  
CLASS B ..... 3,000 PSI  
CLASS S ..... 2,000 PSI  
(B) CLASS DESIGN STRENGTHS (IN ACCORDANCE WITH SECTION 903 OF THE NJDOT STANDARD SPECIFICATIONS)  
CLASS P (STRUCTURE) ..... 5,500 PSI  
CLASS A ..... 4,600 PSI  
CLASS B ..... 3,700 PSI  
CLASS S ..... 2,000 PSI  
(C) ALLOWABLE STRESSES, EXTREME FIBER IN COMPRESSION ( $f_c$ )  
CLASS P (STRUCTURE) ..... 2,000 PSI  
CLASS A ..... 1,600 PSI  
CLASS B ..... 1,200 PSI  
(D) CONCRETE PROVIDED FOR FOOTINGS AND RETAINING WALLS SHALL BE CLASS B. CONCRETE IN PRECAST STRUCTURES SHALL BE CLASS P.
5. **REINFORCEMENT STEEL**  
(A) ASTM A615 (GRADE 60)  $f_s = 24,000$  PSI.  
(B) ALL REINFORCEMENT STEEL SHALL BE EPOXY COATED AFTER FABRICATION.
6. **FOUNDATION DESIGN CRITERIA**  
(A) MAX. ALLOWABLE BEARING CAPACITY: 1500 PCF  
(B) UNIT WEIGHT OF SOIL: 110 PCF  
(C) FRICTION ANGLE: 30°  
(D) REFER TO GEOTECHNICAL REPORT PREPARED BY "GENTECH", LAST REVISED MAY 14, 2013 FOR MORE INFORMATION.
7. **REINFORCED CONCRETE STRUCTURE, PRECAST**  
THE INLET TYPE B2, MANHOLE AND THE PUMP STATION SHALL BE DESIGNED BY THE CONTRACTOR. SERVICE LOAD DESIGN METHOD (ALLOWABLE STRESS DESIGN) SHALL BE USED FOR THE DESIGN. ALL REINFORCEMENT CONSTRUCTION DETAILS AND PLANS SHALL BE SUBMITTED FOR REVIEW AND APPROVAL BY THE ENGINEER. ALL DIMENSIONS SHOWN AND REINFORCEMENT DESIGNATIONS ARE MINIMUM REQUIREMENTS TO BE MET BY THE CONTRACTOR. REDUCTIONS TO THESE DIMENSIONS AND DESIGNATIONS SHALL NOT BE PERMITTED.  
  
THE MANUFACTURING PLANT SHALL BE CERTIFIED BY EITHER THE NATIONAL PRECAST CONCRETE ASSOCIATION OR BY THE PRECAST/PRESTRESSED CONCRETE INSTITUTE PLAN CERTIFICATION PROGRAM. CERTIFICATIONS SHALL LIST THE PROPER PRODUCT BEING SUPPLIED. WRITTEN PLAN CERTIFICATIONS SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO FINAL APPROVAL.  
  
THE FABRICATOR CHOSEN TO SUPPLY THE PRECAST STRUCTURES IS REQUIRED TO SUPPLY SIX (6) COPIES OF STRUCTURAL CALCULATIONS AND DETAILED SHOP DRAWINGS FOR REVIEW AND APPROVAL BY THE ENGINEER. CALCULATIONS AND DRAWINGS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW JERSEY.
8. FOOTER AND INVERTS SHALL BE CONSTRUCTED WITH NJDOT CLASS "C" CONCRETE.
9. IF WALL CONSTRUCTION OTHER THAN CONCRETE, THE WALLS SHALL BE PLASTERED BOTH INSIDE AND OUTSIDE WITH 1/2" THICK CEMENT PLASTER.
10. A MINIMUM OF 12" COARSE AGGREGATE SHALL BE PLACED BENEATH ALL STRUCTURES. COST SHALL BE INCLUDED IN THE COST OF THE STRUCTURE.
11. THE CONTRACTOR SHALL VERIFY EXISTING AND PROPOSED PIPE INVERTS, INLETS AND MANHOLE DIAMETER AND SIZES PRIOR TO ORDERING, FABRICATING OR INSTALLING ANY DRAINAGE STRUCTURES.

PUMP STATION REINFORCING & CLEAR COVER			
LOCATION		REINFORCING	CLEAR COVER
TOP SLAB	TOP BAR	#4 @12" O.C. BOTHWAYS	1.5"
	BOTTOM BAR	#6 @6" O.C. BOTHWAYS	1.5"
BOTTOM SLAB	TOP BAR	#5 @12" O.C. BOTHWAYS	1.5"
	BOTTOM BAR	#5 @12" O.C. BOTHWAYS	3.0"
SIDE WALLS	INTERIOR BAR	#5 @12" O.C. BOTHWAYS	1.5"
	EXTERIOR BAR	#5 @12" O.C. BOTHWAYS	1.5"

**PERMIT PLANS**

NO.	DATE	REVISIONS	BY	CHECKED
BOROUGH OF SEA BRIGHT				
FLOOD MITIGATION PROJECT: RECONSTRUCTION OF SIX BULKHEADS AND NEW STORMWATER PUMP STATION BOROUGH OF SEA BRIGHT, MONMOUTH COUNTY, NEW JERSEY				
CONSTRUCTION DETAILS				
 11 TINDALL ROAD MIDDLETOWN, NJ 07748 TEL 732-671-6400 FAX 732-671-7365		JACLYN J. FLOR, P.E., P.P. C.M.E. LICENSED PROFESSIONAL ENGINEER STATE OF NEW JERSEY LICENSE No. 24E004542600		DRAWING <b>CD-1</b> SHEET
NEW JERSEY BOARD OF PROFESSIONAL ENGINEERS AND LAND SURVEYORS CERTIFICATE OF AUTHORIZATION 246A-22887500		DESIGNED BY SB DRAWN BY APP CHECKED BY ? PROJECT NO. SBRT-00861 CADD FILE SBRT00861-CD.dwg FIELD BK. # N/A		16 OF 19 PLOT DATE: Apr 07, 2014



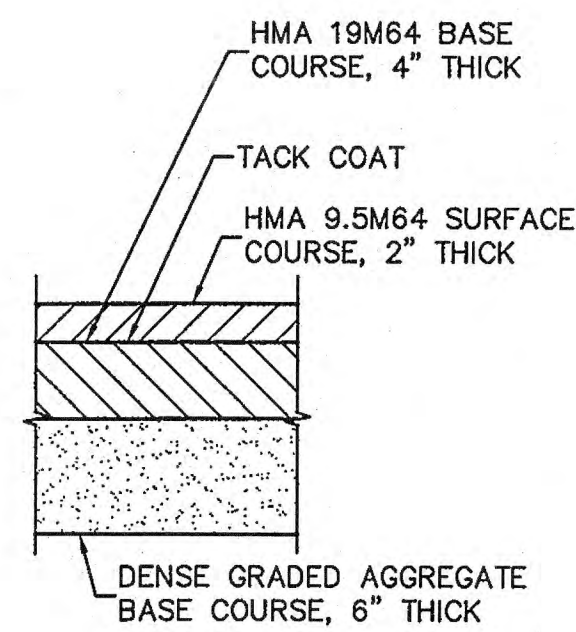


**NOTES:**

1. ALL CONCRETE SHALL BE N.J.D.O.T. CLASS "B".
2. DIMENSIONS MAY VARY SLIGHTLY TO MEET EXISTING CONDITIONS.
3. PROVIDE WELDED WIRE FABRIC REINFORCEMENT, TYPE 6x6-W2.9xW2.9, AT ALL DRIVEWAYS.
4. PROVIDE PREFORMED BITUMINOUS FIBER EXPANSION JOINTS, 1/2" THICK AT 20'-0" (MAXIMUM) INTERVALS. PROVIDE DUMMY JOINTS (FORMED) MIDWAY BETWEEN EXPANSION JOINTS.

**COMBINATION CONCRETE CURB AND GUTTER**

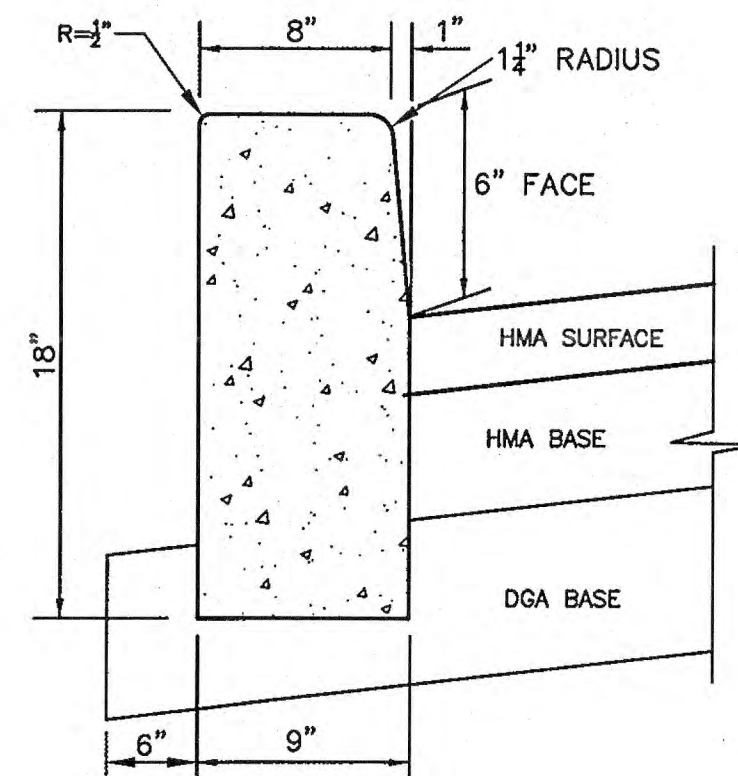
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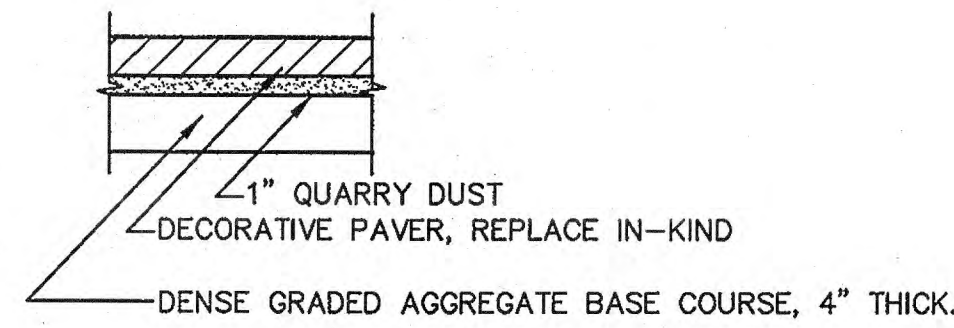
NOTE: COST OF SAWCUTTING EXISTING PAVEMENT TO BE INCLUDED IN THE VARIOUS ASPHALT PAY ITEMS.

**PROP. PAVEMENT SECTION**

N.T.S.

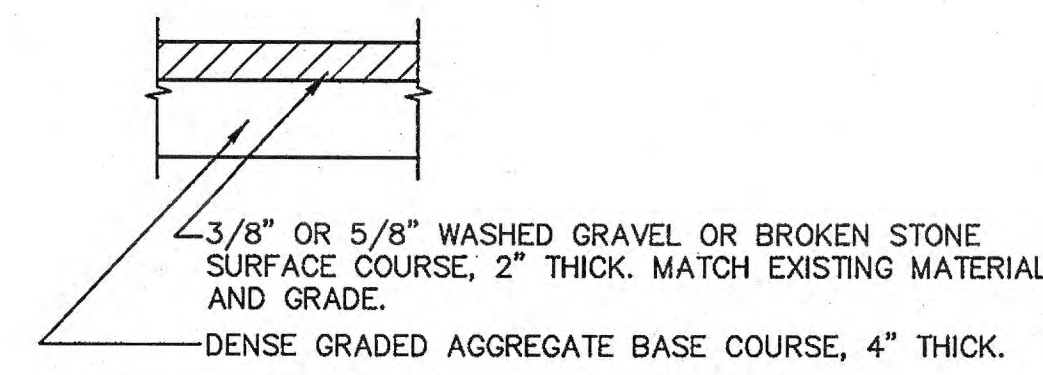


1. ALL CONCRETE SHALL BE N.J.D.O.T. CLASS "B".
2. PROVIDE PREFORMED BITUMINOUS FIBER EXPANSION JOINTS, 1/2" THICK AT 20'-0" (MAXIMUM) INTERVALS AND AT INLET HEADS. PROVIDE DUMMY JOINTS (FORMED) AT 10'-0" INTERVALS. JOINTS SHALL EXTEND THE FULL 18" DEPTH OF THE CURB.
3. CONCRETE TO TEST 4500 PSI MINIMUM ON 28-DAY TEST. AIR ENTRAINMENT 4% TO 7%. SLUMP TO BE 5" MAX.



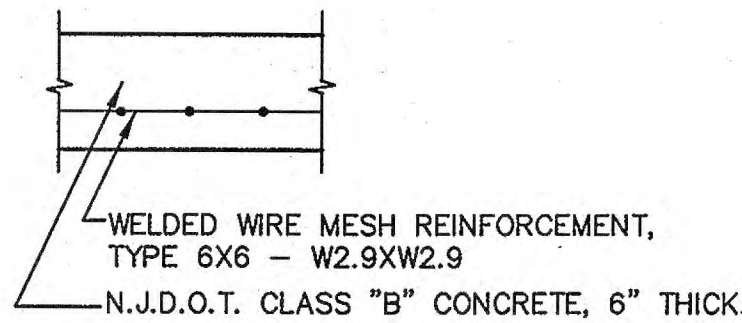
**DECORATIVE PAVER DRIVEWAY**

NOT TO SCALE



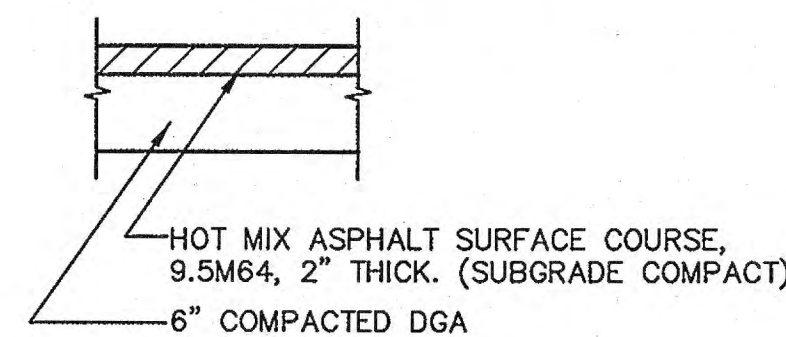
**DECORATIVE STONE DRIVEWAY**

NOT TO SCALE



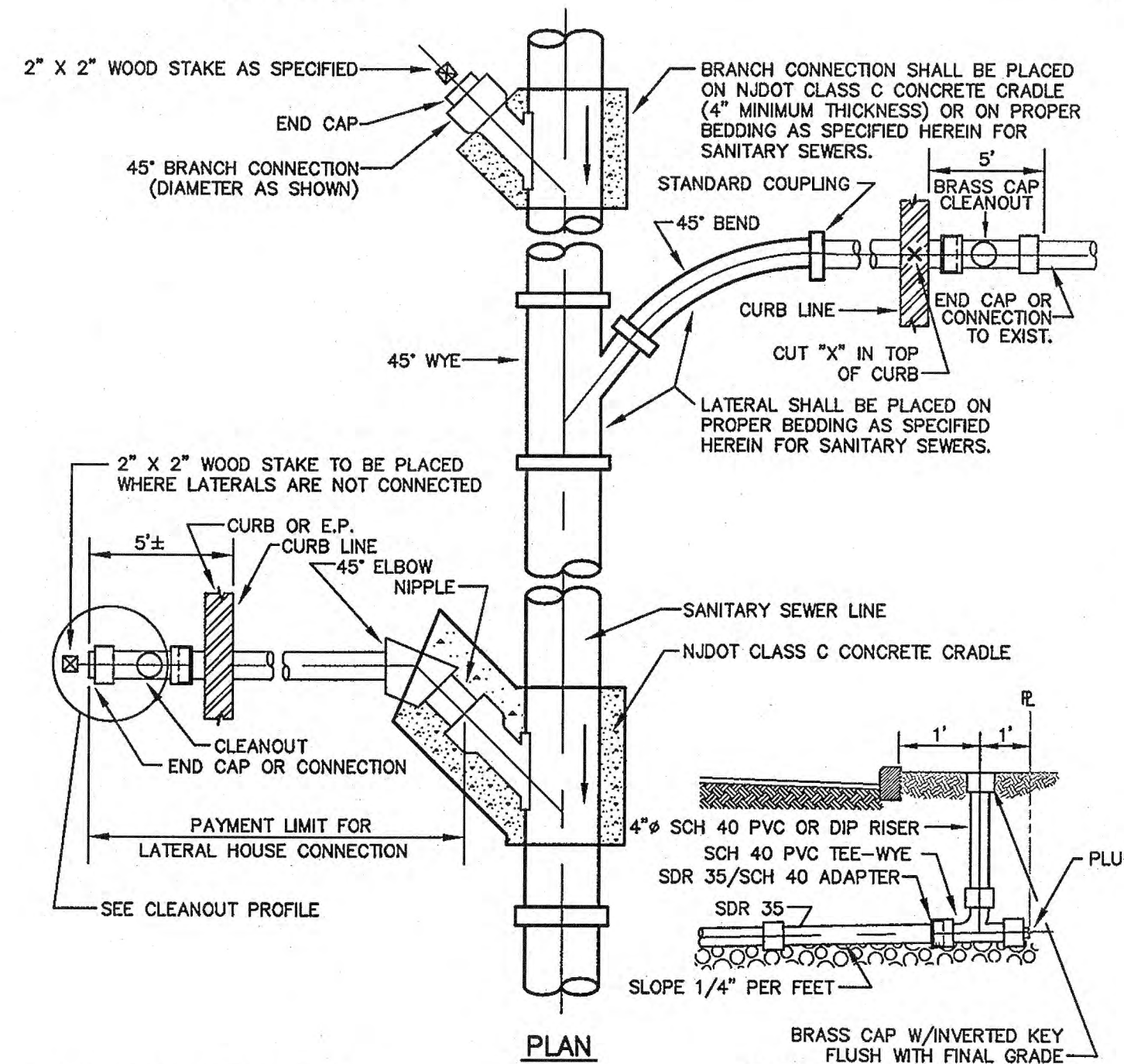
**CONCRETE DRIVEWAY, REINFORCED**

NOT TO SCALE



**HOT MIX ASPHALT DRIVEWAY**

NOT TO SCALE

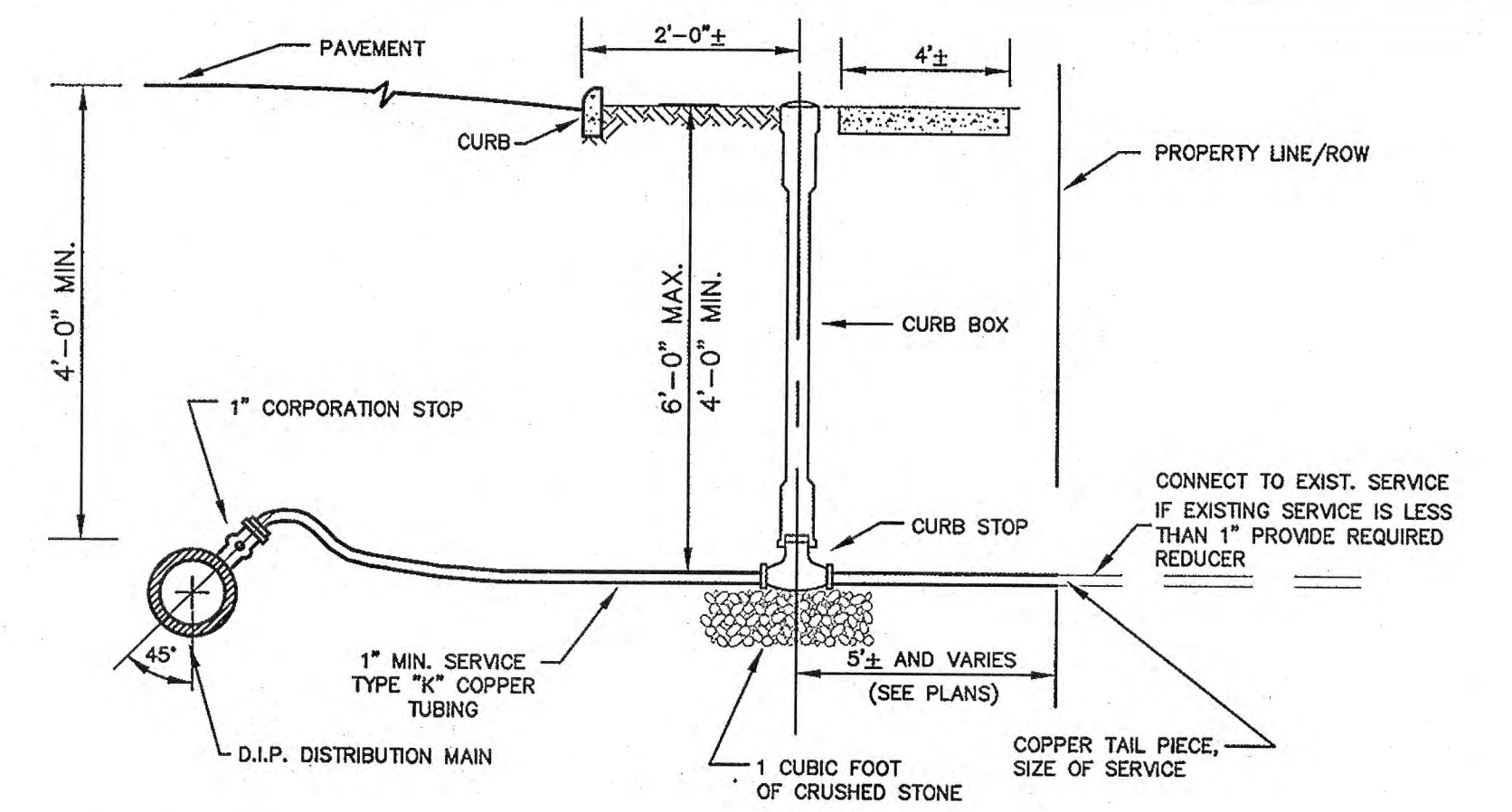


**CONSTRUCTION NOTES:**

1. CONTRACTOR TO COORDINATE WITH BOROUGH ON LATERAL RESTORATION AND ALLOW FOR THIS WORK IN THEIR PRICING.
2. DETAIL SHOWS CONSTRUCTION OF A "BRANCH CONNECTION" AND OF TWO DIFFERENT TYPES OF "LATERAL HOUSE CONNECTION". TYPE OF CONNECTION IS AT CONTRACTOR'S OPTION.
3. SIZE OF LATERAL TO BE AS SHOWN ON THE PLANS OR AS DIRECTED, 4" MINIMUM.
4. CLEAN-OUTS IN DRIVEWAYS SHALL BE COVERED WITH A MONUMENT BOX -- CAMPBELL PATTERN NO. 4155 OR EQUAL.

**RESTORATION OF BRANCH AND LATERAL HOUSE CONNECTIONS**

N.T.S.

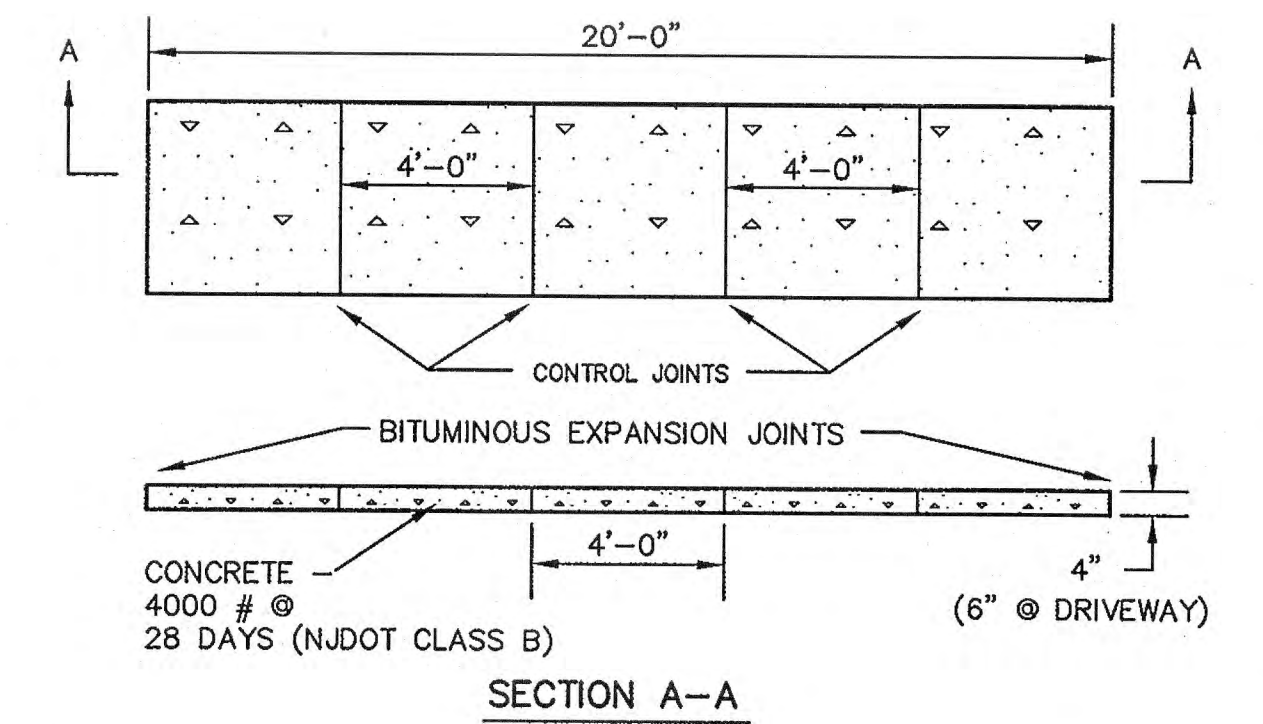


**CONSTRUCTION NOTES:**

1. ALL SERVICES RESTORED MUST INCLUDE FULL TRENCH, SIDEWALK, CURB, LANDSCAPING, AND PAVEMENT RESTORATION. SEE ROADWAY RESTORATION DETAILS.
2. THIS IS A TYPICAL DETAIL. CONTRACTOR TO COORDINATE WITH NEW JERSEY AMERICAN WATER FOR SERVICE CONNECTION RESTORATION MEANS AND METHODS.

**RESTORATION OF HOUSE WATER SERVICE CONNECTION**

NOT TO SCALE

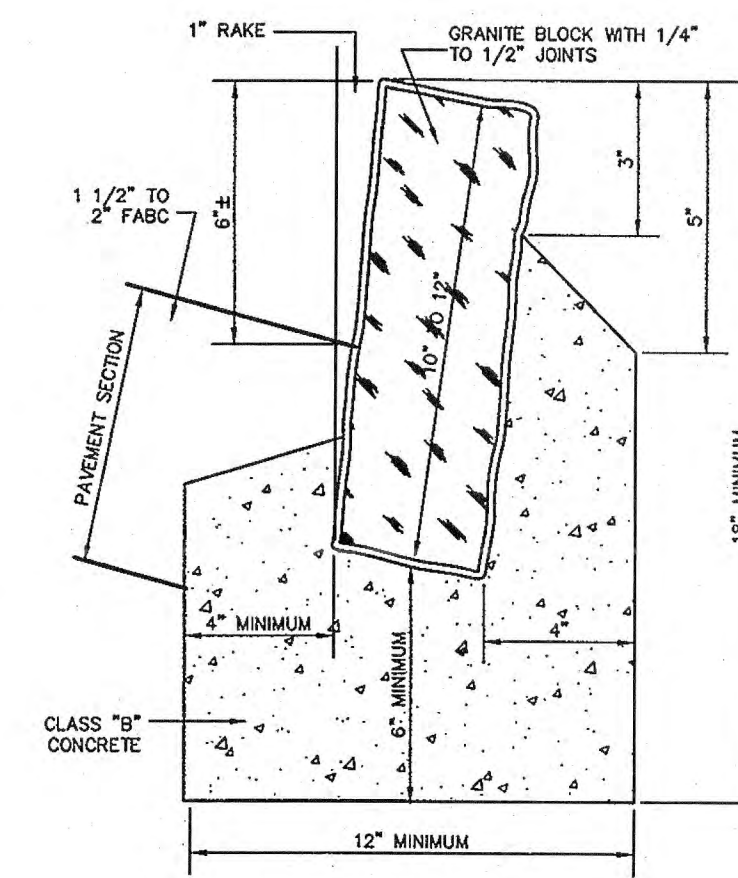


**CONSTRUCTION NOTES:**

1. A PREFORMED, BITUMINOUS EXPANSION JOINT 1/2" THICK, 4" WIDE, AND EXTENDING THE FULL WIDTH OF THE WALK, UNBROKEN, SHALL BE INSTALLED EVERY TWENTY (20) FEET.
2. CONTROL JOINTS SHALL BE INSTALLED EVERY FOUR (4) FEET THE FULL WALK WIDTH TO A DEPTH OF 1".
3. THERE SHALL BE A FLOAT FINISH WITH THE EDGES FINISHED WITH A SUITABLE TOOL.

**SIDEWALK JOINT DETAIL**

NOT TO SCALE



**GRANITE (BELGIAN) BLOCK CURB**

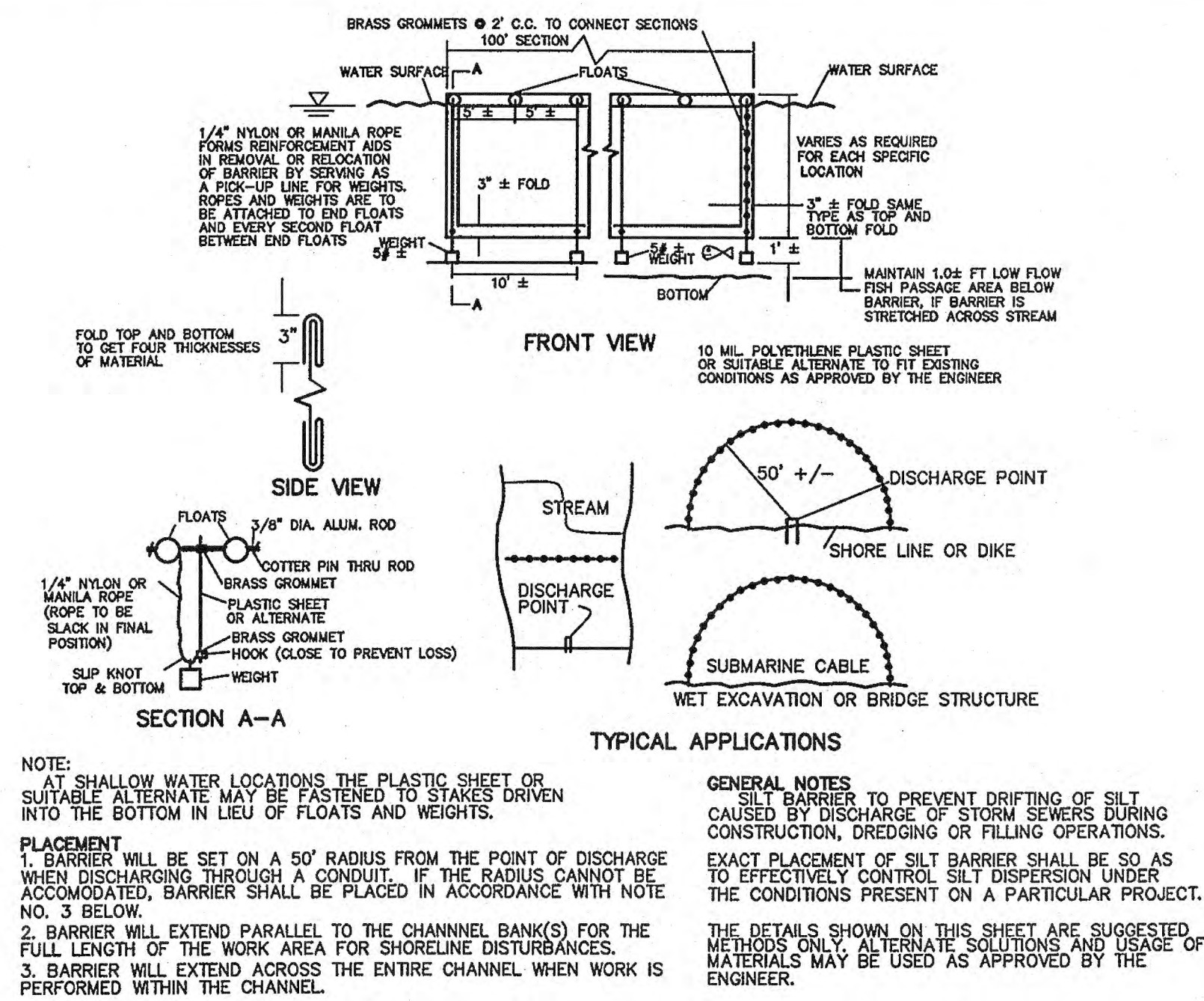
NOT TO SCALE

- CONSTRUCTION NOTES:**
1. ALL MATERIALS AND WORKMANSHIP, UNLESS OTHERWISE SPECIFIED, TO BE IN ACCORDANCE WITH N.J.D.O.T. STANDARD SPECIFICATIONS AND SUPPLEMENTAL SPECIFICATIONS.
  2. PROVIDE 1/2" PREFORMED EXPANSION JOINT FILLER TRIMMED TO CONFORM TO CURB SECTION. AT P.C. & P.T. OF CURB RETURNS AT 50' INTERVALS ELSEWHERE.
  3. USE ONLY 12"-14" LONG BLOCKS WITHIN 10' OF ANY CURB INLET.
  4. ALL BLOCK DIMENSIONS MUST BE IN ACCORDANCE WITH THE PROVISIONS OF SUBSECTION 910.06 OF THE SUPPLEMENTAL SPECIFICATIONS.

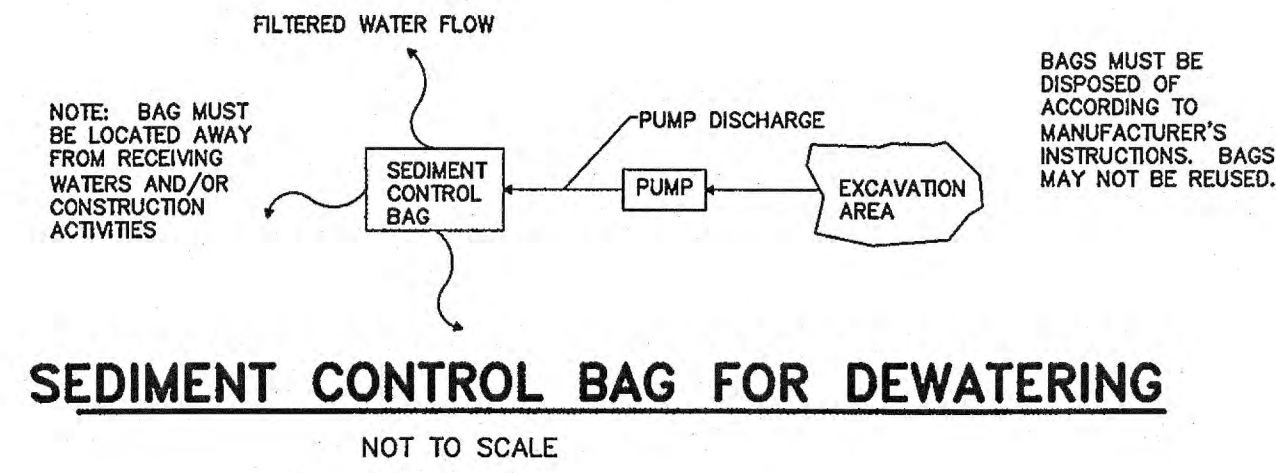
**PERMIT PLANS**

NO.	DATE	REVISIONS	BY	CHECKED
BOROUGH OF SEA BRIGHT				
FLOOD MITIGATION PROJECT: RECONSTRUCTION OF SIX BULKHEADS AND NEW STORMWATER PUMP STATION BOROUGH OF SEA BRIGHT, MONMOUTH COUNTY, NEW JERSEY				
CONSTRUCTION DETAILS				
<b>T&amp;M ASSOCIATES</b> 11 TINDALL ROAD MIDDLETOWN, NJ 07748 TEL 732-671-6400 FAX 732-671-7365		<b>JACLYN J. FLOR, P.E., P.P. C.M.E.</b>  LICENSED PROFESSIONAL ENGINEER STATE OF NEW JERSEY LICENSE No. 246E04542800		DRAWING <b>CD-2</b> SHEET
NEW JERSEY BOARD OF PROFESSIONAL ENGINEERS AND LAND SURVEYORS CERTIFICATE OF AUTHORIZATION 246A 22887500		DESIGNED BY SB DRAWN BY APP CHECKED BY ? PROJECT NO. SBRT-00861 CADD FILE SBRT00861-CD.dwg FIELD BK. # N/A		17 OF 19

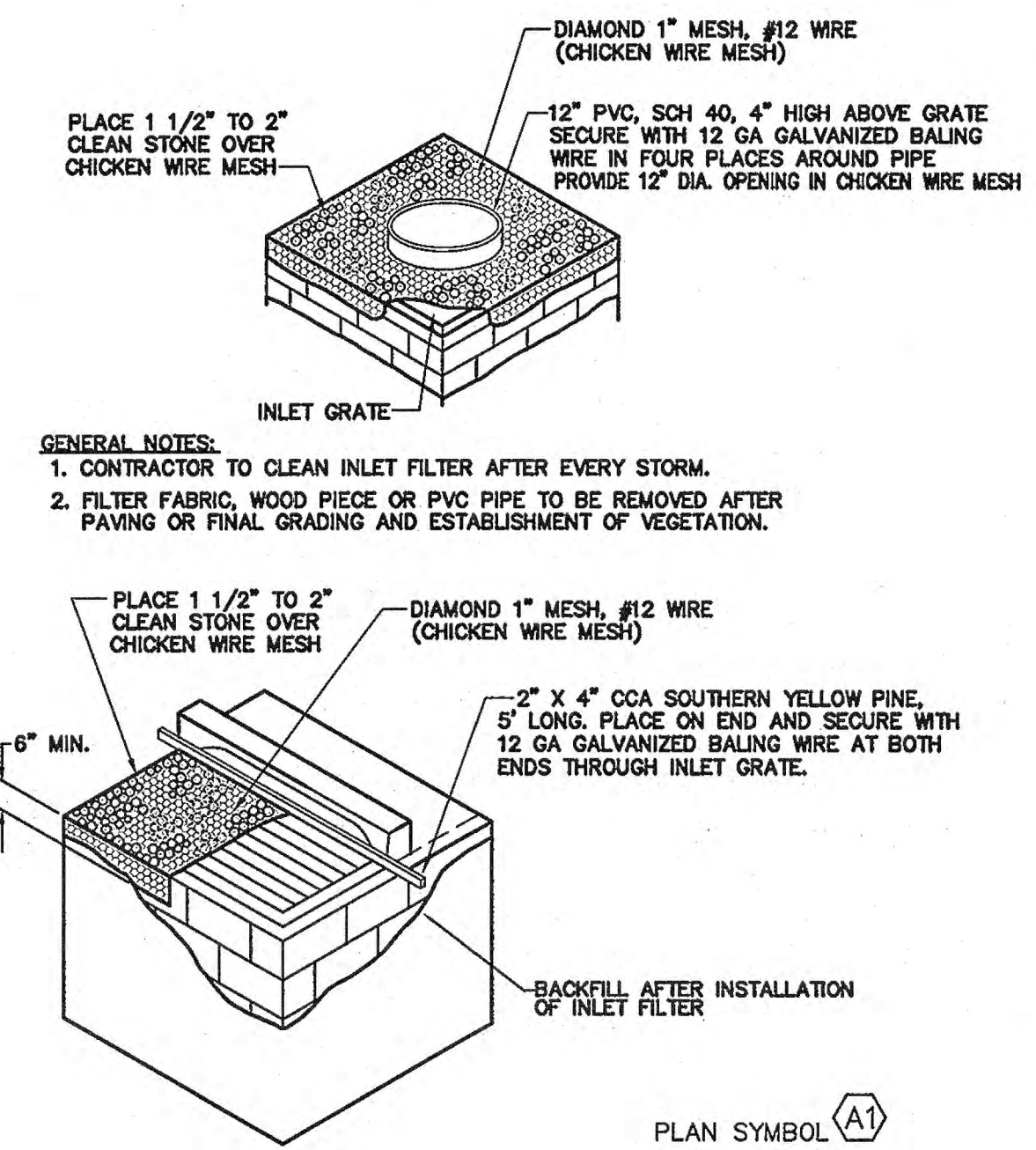




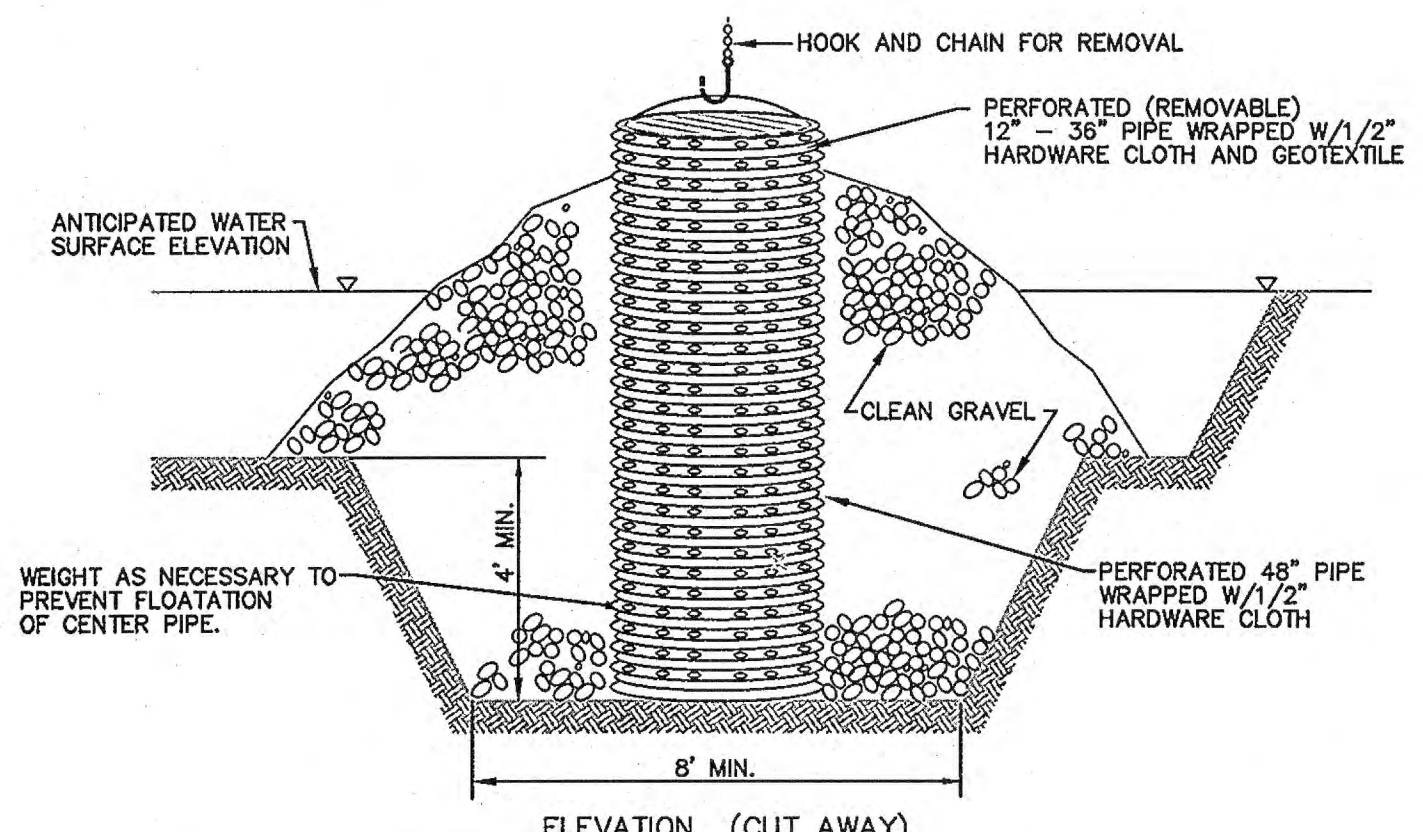
**FLOATING TURBIDITY BARRIER, TYPE 3**  
NOT TO SCALE  
PLAN SYMBOL G1



**SEDIMENT CONTROL BAG FOR DEWATERING**  
NOT TO SCALE



**INLET FILTERS, TYPE 1**  
NOT TO SCALE



**REMOVABLE PUMPING STATION**  
NOT TO SCALE

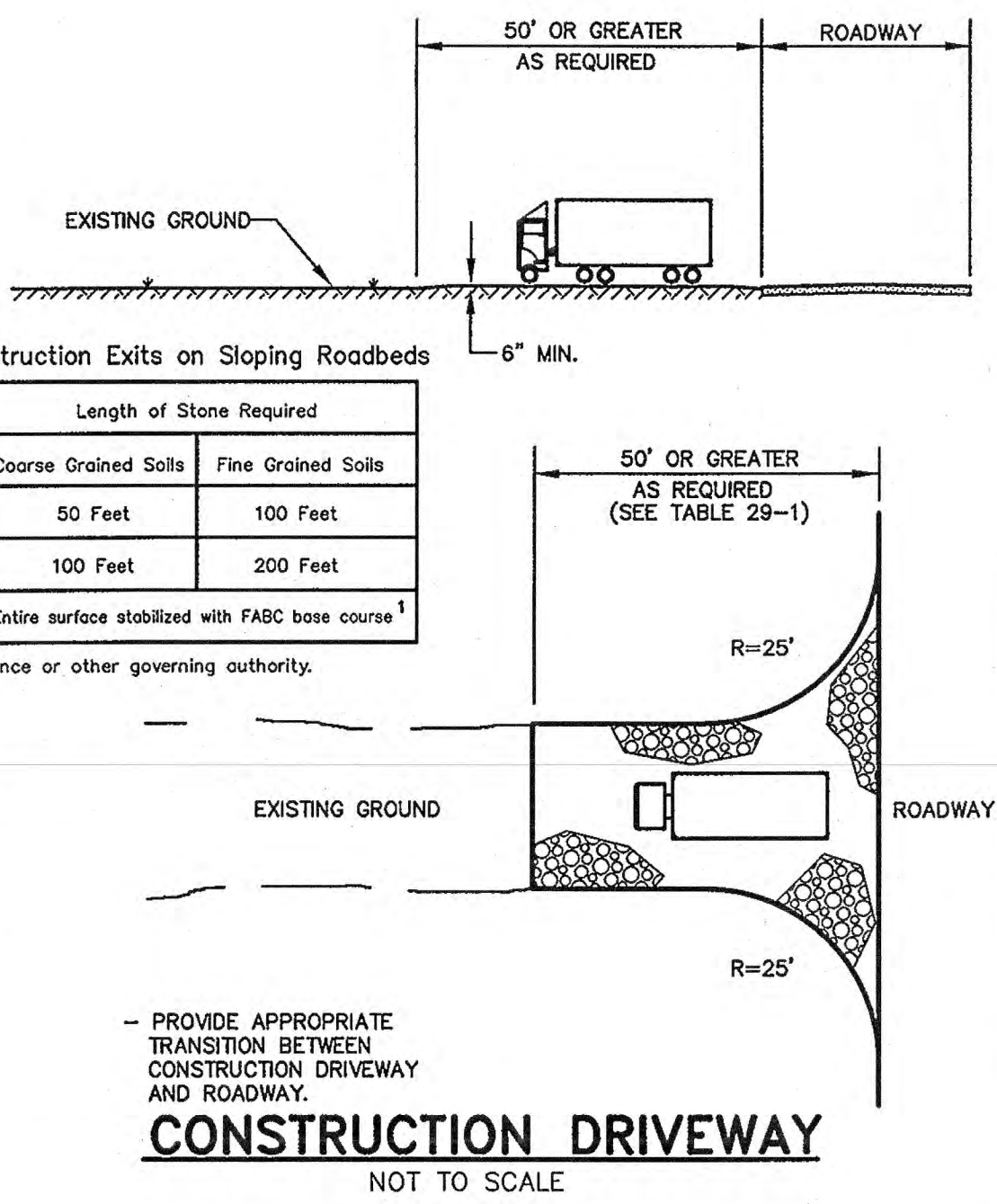
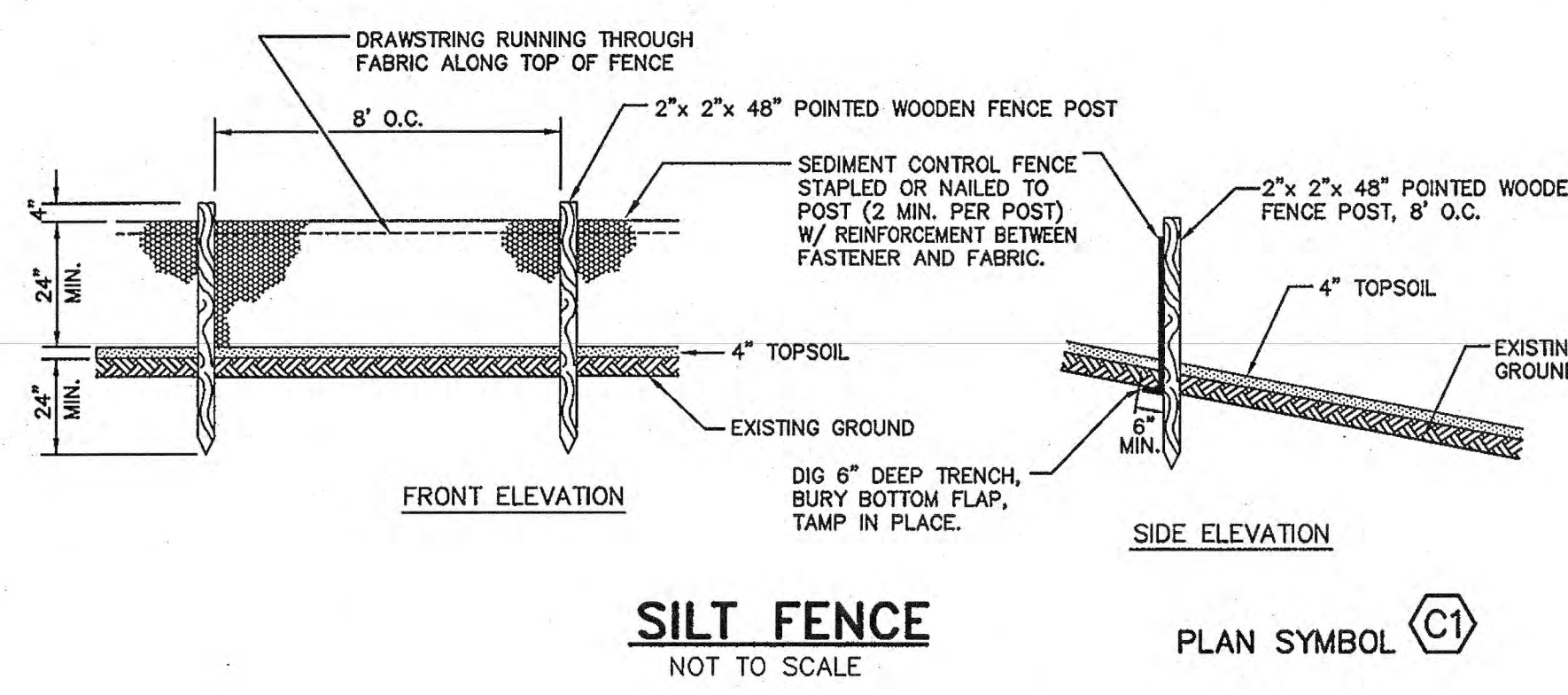


Table 29-1: Lengths of Construction Exits on Sloping Roadbeds

Percent Slope of Roadway	Length of Stone Required	
	Coarse Grained Soils	Fine Grained Soils
0 to 2%	50 Feet	100 Feet
2 to 5%	100 Feet	200 Feet
> 5%	Entire surface stabilized with FABC base course <sup>1</sup>	

1. As prescribed by local ordinance or other governing authority.



**SILT FENCE**  
NOT TO SCALE  
PLAN SYMBOL C1

**SOIL EROSION AND SEDIMENT CONTROL NOTES**

- THE FREEHOLD SOIL CONSERVATION DISTRICT SHALL BE NOTIFIED FORTY-EIGHT (48) HOURS IN ADVANCE OF ANY SOIL DISTURBING ACTIVITY.
- ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES ARE TO BE INSTALLED PRIOR TO SOIL DISTURBANCE, OR IN THEIR PROPER SEQUENCE AND MAINTAINED UNTIL PERMANENT PROTECTION IS ESTABLISHED.
- ANY CHANGES TO THE CERTIFIED SOIL EROSION AND SEDIMENT CONTROL PLANS WILL REQUIRE THE SUBMISSION OF REVISED SOIL EROSION AND SEDIMENT CONTROL PLANS TO THE DISTRICT FOR RE-CERTIFICATION. THE REVISED PLANS MUST MEET ALL CURRENT STATE SOIL EROSION AND SEDIMENT CONTROL STANDARDS.
- N.J.S.A. 4:24-39 ET. SEQ. REQUIRES THAT NO CERTIFICATES OF OCCUPANCY BE ISSUED BEFORE THE DISTRICT DETERMINES THAT A PROJECT OR PORTION THEREOF IS IN FULL COMPLIANCE WITH THE CERTIFIED PLAN AND STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY AND A REPORT OF COMPLIANCE HAS BEEN ISSUED. UPON WRITTEN REQUEST FROM THE APPLICANT, THE DISTRICT MAY ISSUE A REPORT OF COMPLIANCE WITH CONDITIONS ON A LOT-BY-LOT OR SECTION-BY-SECTION BASIS, PROVIDED THAT THE PROJECT OR PORTION THEREOF IS IN SATISFACTORY COMPLIANCE WITH THE SEQUENCE OF DEVELOPMENT AND TEMPORARY MEASURES FOR SOIL EROSION AND SEDIMENT CONTROL HAVE BEEN IMPLEMENTED, INCLUDING PROVISIONS FOR STABILIZATION AND SITE WORK.
- ANY DISTURBED AREAS THAT WILL BE LEFT EXPOSED MORE THAN SIXTY (60) DAYS, AND NOT SUBJECT TO CONSTRUCTION TRAFFIC, WILL IMMEDIATELY RECEIVE A TEMPORARY SEEDING. IF THE SEASON PREVENTS THE ESTABLISHMENT OF TEMPORARY COVER, THE DISTURBED AREAS WILL BE MULCHED WITH STRAW, OR EQUIVALENT MATERIAL, AT A RATE OF 2 TO 2 1/2 TONS PER ACRE, ACCORDING TO STATE STANDARD FOR STABILIZATION WITH MULCH ONLY.
- IMMEDIATELY FOLLOWING INITIAL DISTURBANCE OR ROUGH GRADING, ALL CRITICAL AREAS SUBJECT TO EROSION (I.E. STEEP SLOPES AND ROADWAY EMBANKMENTS) WILL RECEIVE TEMPORARY SEEDING IN COMBINATION WITH STRAW MULCH OR A SUITABLE EQUIVALENT, AND A MULCH ANCHOR, IN ACCORDANCE WITH STATE STANDARDS.
- A SUB-BASE COURSE WILL BE APPLIED IMMEDIATELY FOLLOWING ROUGH GRADING AND INSTALLATION OF IMPROVEMENTS TO STABILIZE STREETS, ROADS, DRIVEWAYS, AND PARKING AREAS. IN AREAS WHERE NO UTILITIES ARE PRESENT, THE SUB-BASE SHALL BE INSTALLED WITHIN FIFTEEN (15) DAYS OF THE PRELIMINARY GRADING.
- THE STANDARD FOR STABILIZED CONSTRUCTION ACCESS REQUIRES THE INSTALLATION OF A PAD OF CLEAN CRUSHED STONE AT POINTS WHERE TRAFFIC WILL BE ACCESSING THE CONSTRUCTION SITE. AFTER INTERIOR ROADWAYS ARE PAVED, INDIVIDUAL LOTS REQUIRE A STABILIZED CONSTRUCTION ENTRANCE CONSISTING OF ONE INCH TO TWO INCH (1" - 2") STONE FOR A MINIMUM LENGTH OF TEN FEET (10') EQUAL TO THE LOT ENTRANCE WIDTH. ALL OTHER ACCESS POINTS SHALL BE BLOCKED OFF.
- ALL SOIL WASHED, DROPPED, SPILLED, OR TRACKED OUTSIDE THE LIMIT OF DISTURBANCE OR ONTO PUBLIC RIGHT-OF-WAYS WILL BE REMOVED IMMEDIATELY.
- PERMANENT VEGETATION IS TO BE SEED OR SODDED ON ALL EXPOSED AREAS WITHIN TEN (10) DAYS AFTER FINAL GRADING.
- AT THE TIME THAT SITE PREPARATION FOR PERMANENT VEGETATIVE STABILIZATION IS GOING TO BE ACCOMPLISHED, ANY SOIL THAT WILL NOT PROVIDE A SUITABLE ENVIRONMENT TO SUPPORT ADEQUATE VEGETATIVE GROUND COVER SHALL BE REMOVED OR TREATED IN SUCH A WAY THAT IT WILL PERMANENTLY ADJUST THE SOIL CONDITIONS AND RENDER IT SUITABLE FOR VEGETATIVE GROUND COVER. IF THE REMOVAL OR TREATMENT OF THE SOIL WILL NOT PROVIDE SUITABLE CONDITIONS, NON-VEGETATIVE MEANS OF PERMANENT GROUND STABILIZATION WILL HAVE TO BE EMPLOYED.
- IN ACCORDANCE WITH THE STANDARD FOR MANAGEMENT OF HIGH ACID PRODUCING SOILS, ANY SOIL HAVING A PH OF 4 OR LESS OR CONTAINING IRON SULFIDES SHALL BE ULTIMATELY PLACED OR BURIED WITH LIMESTONE APPLIED AT THE RATE OF 10 TONS/ACRE, (OR 450 LBS/SQ FT OF SURFACE AREA) AND COVERED WITH A MINIMUM OF 12" OF SETTLED SOIL WITH A PH OF 5 OR MORE, OR 24" WHERE TREES OR SHRUBS ARE TO BE PLANTED.
- CONDUIT OUTLET PROTECTION MUST BE INSTALLED AT ALL REQUIRED OUTFALLS PRIOR TO THE DRAINAGE SYSTEM BECOMING OPERATIONAL.
- UNFILTERED DEWATERING IS NOT PERMITTED. NECESSARY PRECAUTIONS MUST BE TAKEN DURING ALL DEWATERING OPERATIONS TO MINIMIZE SEDIMENT TRANSFER. ANY DEWATERING METHODS USED MUST BE IN ACCORDANCE WITH THE STANDARD FOR DEWATERING.
- SHOULD THE CONTROL OF DUST AT THE SITE BE NECESSARY, THE SITE WILL BE SPRINKLED UNTIL THE SURFACE IS WET, TEMPORARY VEGETATIVE COVER SHALL BE ESTABLISHED OR MULCH SHALL BE APPLIED AS REQUIRED BY THE STANDARD FOR DUST CONTROL.
- STOCKPILE AND STAGING LOCATIONS ESTABLISHED IN THE FIELD SHALL BE PLACED WITHIN THE LIMIT OF DISTURBANCE ACCORDING TO THE CERTIFIED PLAN. STAGING AND STOCKPILES NOT LOCATED WITHIN THE LIMIT OF DISTURBANCE WILL REQUIRE CERTIFICATION OF A REVISED SOIL EROSION AND SEDIMENT CONTROL PLAN. CERTIFICATION OF A NEW SOIL EROSION AND SEDIMENT CONTROL PLAN MAY BE REQUIRED FOR THESE ACTIVITIES IF AN AREA GREATER THAN 5,000 SQUARE FEET IS DISTURBED.
- ALL SOIL STOCKPILES ARE TO BE TEMPORARILY STABILIZED IN ACCORDANCE WITH SOIL EROSION AND SEDIMENT CONTROL NOTE #6.
- THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR ANY EROSION OR SEDIMENTATION THAT MAY OCCUR BELOW STORMWATER OUTFALLS OR OFFSITE AS A RESULT OF CONSTRUCTION OF THE PROJECT.

THE TOTAL ESTIMATED TIME OF CONSTRUCTION IS 240 DAYS

PROPOSED CONSTRUCTION SEQUENCE	APPROX. DURATION:
1. APPLICATION OF PROPER MEASURES FOR THE CONTROL OF SOIL EROSION & SEDIMENT CONTROL.	1 DAY
2. CLEARING OF THE SITE & PART. DEMOLITION OF EX. BULKHEADS.	15 DAYS
3. EXISTING DRAINAGE REMOVAL/ROADWAY EXCAVATION.	10 DAYS
4. TEMPORARY STABILIZATION OF DISTURBED AREAS IN A ROUGH GRADED CONDITION SHALL BE MAINTAINED BY SEEDING AND/OR MULCHING UNTIL PROPER WEATHER CONDITIONS EXIST FOR THE ESTABLISHMENT OF A PERMANENT VEGETATIVE COVER.	1 DAY
5. INSTALLATION OF PROPOSED SHEET PILING.	15 DAYS
6. INSTALLATION OF PROPOSED DRAINAGE.	15 DAYS
7. INSTALLATION OF PROPOSED CURB, SIDEWALK, AND PAVEMENT.	30 DAYS
8. INSTALLATION OF TOPSOILING, FERTILIZING, SEEDING, AND MULCHING.	1 DAY
9. REMOVAL OF SOIL EROSION AND SEDIMENT CONTROL DEVICES AFTER ESTABLISHED VEGETATIVE GROWTH HAS OCCURRED.	1 DAY
<b>TOTAL:</b>	<b>90 DAYS</b>

NOTE: MAINTENANCE OF SOIL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE ON-GOING.

**PERMIT PLANS**

1	4/1/14	SE&SC NOTES REVISED BY FREEHOLD SCD	RFS	EJN
NO.	DATE	REVISIONS	BY	CHECKED

**BOROUGH OF SEA BRIGHT**

**FLOOD MITIGATION PROJECT:  
RECONSTRUCTION OF SIX BULKHEADS  
AND NEW STORMWATER PUMP STATION**

BOROUGH OF SEA BRIGHT, MONMOUTH COUNTY, NEW JERSEY

**SOIL EROSION & SEDIMENT CONTROL DETAILS**

 <b>TM ASSOCIATES</b> 7200 RINGBELL ROAD MIDDLETOWN, NJ 07748 TEL 732-671-6400 FAX 732-671-7365	<b>JACLYN J. FLOR, P.E., P.P. C.M.E.</b> LICENSED PROFESSIONAL ENGINEER STATE OF NEW JERSEY LICENSE NO. 24GE04542600		DRAWING
	DESIGNED BY NB DRAWN BY NB CHECKED BY JWF		<b>SE-1</b> SHEET
NEW JERSEY BOARD OF PROFESSIONAL ENGINEERS AND LAND SURVEYORS CERTIFICATE OF AUTHORIZATION 24GA 27887200	PROJECT NO. SBR1-00861	CADD FILE SBR100861-SE.dwg	FIELD BK. # N/A

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STANDARD FOR TEMPORARY VEGETATIVE COVER FOR SOIL STABILIZATION

Definition. Establishment of temporary vegetative cover on soils exposed for periods of two to six months which are not being graded, not under active construction or not scheduled for permanent seeding within 90 days.

Purpose. To temporarily stabilize the soil and reduce damage from wind and water erosion until permanent stabilization is accomplished.

Water Quality Enhancement. Provides temporary protection against the impacts of wind and rain, slows the over land movement of stormwater runoff, increases infiltration and retains soil and nutrients in place, protecting streams or other stormwater conveyances.

Where Applicable. On exposed soils that have the potential for causing off-site environmental damage.

Methods and Materials. 1. Site Preparation. A. Grade as needed and feasible to permit the use of conventional equipment for seedbed preparation, seeding, mulch application, and mulch anchoring. All grading should be done in accordance with Standards for Land Grading, pg. 19-1.

2. Seeded Preparation. A. Apply ground limestone and fertilizer according to soil test recommendations such as offered by Rutgers Co-operative Extension. Soil sample mullers are available from the local Rutgers Co-operative Extension offices. Fertilizer shall be applied at the rate of 500 pounds per acre or 11 pounds per 1,000 square feet of 10-20-10 or equivalent with 50% water insoluble nitrogen unless a soil test indicates otherwise. Apply limestone at the rate of 2 tons/acre unless soil testing indicates otherwise. Calcium carbonate is the equivalent and standard for measuring the ability of liming materials to neutralize soil acidity and supply calcium and magnesium to grasses and legumes.

TABLE 7-2 TEMPORARY VEGETATIVE STABILIZATION GRASSES, SEEDING RATES, DATES AND DEPTH.

Table with columns for SEED SELECTIONS, SEEDING RATE (pounds), OPTIMUM SEEDING DATE, and OPTIMUM SEED DEPTH (inches). Rows include Cool Season Grasses (Perennial ryegrass, Spring oats, Winter barley, Annual ryegrass, Winter cereal rye) and Warm Season Grasses (Pearl millet, Millet).

1. Seeding rates for warm season grasses, selections 5 - 7 shall be adjusted to reflect the amount of Pure Live Seed (PLS) as determined by a germination test result. No adjustment is required for cool season grasses. 2. May be planted throughout summer if soil moisture is adequate or seeded area can be irrigated. 3. Plant Hardness Zone (see figure 7-1, pg. 7-4.) 4. Twice the depth for sandy soils.

B. Conventional Seeding. Apply seed uniformly by hand, cyclone (centrifugal) seeder, drop seeder, drill or outdragger. Except for drilled, hydroseeded or outdragger seedings, seed shall be incorporated into the soil, to a depth of 1/4 to 1/2 inch, by raking or dragging. Depth of seed placement may be 1/4 inch deeper on coarse textured soil.

4. Mulching. Mulching is required on all seeding. Mulch will insure against erosion before grass is established and will promote faster and earlier establishment. The existence of vegetation sufficient to control soil erosion shall be deemed compliance with this mulching requirement.

A. Straw or Hay. Unretted small grain straw, hay free of seeds, applied at the rate of 1-1/2 to 2 tons per acre (70 to 90 pounds per 1,000 square feet), except that where a crimper is used instead of a liquid mulch-blinder (tackifying or adhesive agent), the rate of application is 3 tons per acre. Mulch chopper-blenders must not grind the mulch. Hay mulch is not recommended for establishing fine turf or lawns due to the presence of weed seed.

(1) Organic and Vegetable Based Binders - Naturally occurring, powder based, hydrophilic materials when mixed with water formulates a gel and when applied to mulch under satisfactory curing conditions will form membrane networks of insoluble polymers. The vegetable gel shall be physiologically harmless and not result in a phytotoxic effect or impede growth of turfgrasses.

B. Wood-fiber or paper-fiber mulch. Shall be made from wood, plant fibers or paper containing no growth or germination inhibiting materials, used at the rate of 1,500 pounds per acre (or as recommended by the project manufacturer) and may be applied by a hydroseeder. This mulch shall not be mixed in the tank with seed.

NOTE: All page numbers and Standards references refer to "Standards for Soil Erosion and Sediment Control in New Jersey", January 2014, by the NEW JERSEY STATE SOIL CONSERVATION COMMITTEE.

STANDARD FOR STABILIZATION WITH MULCH ONLY

Definition. Stabilizing exposed soils with non-vegetative materials exposed for periods longer than 14 days.

Purpose. To protect exposed soil surfaces from erosion damage and to reduce offsite environmental damage.

Water Quality Enhancement. Provides temporary mechanical protection against wind or rainfall induced soil erosion until permanent vegetative cover may be established.

Where Applicable. This practice is applicable to areas subject to erosion, where the season and other conditions may not be suitable for growing an erosion-resistant cover or where stabilization is needed for a short period until more suitable protection can be applied.

Methods and Materials. 1. Site Preparation. A. Grade as needed and feasible to permit the use of conventional equipment for seedbed preparation, seeding, mulch application, and mulch anchoring. All grading should be done in accordance with Standards for Land Grading.

2. Protective Materials. A. Unretted small-grain straw, at 2.0 to 2.5 tons per acre, is spread uniformly at 90 to 115 pounds per 1,000 square feet and anchored with a mulch anchoring tool, liquid mulch binders, or netting tie down. Other suitable materials may be used if approved by the Soil Conservation District. The approved rates above have been met when the mulch covers the ground completely upon visual inspection, i.e. the soil cannot be seen below the mulch.

A. Peg and Twine - Drive 8 to 10 inch wooden pegs to within 2 to 3 inches of the soil surface every 4 feet in all directions. Stakes may be driven before or after applying mulch. Secure mulch to soil surface by stretching twine between pegs in a criss-cross and a square pattern. Secure twine around each peg with two or more round turns.

STANDARD FOR MANAGEMENT OF HIGH ACID-PRODUCING SOILS

Definition. High acid-producing soils are soils with a pH of 4.0 or less or contain iron sulfide. Purpose. To prevent or limit exposure area, time, and spreading by equipment or rainfall on- and off-site and to minimize erosion, sedimentation and acid leachate-related damages.

Map showing locations of high acid-producing soils in New Jersey, including Cheesapeake, Engleheart Sand, Hornerstown, Kirkwood, Mogohy, Monacaquan, Marshaltown, Merchantville, Newswick, Raritan, Red Bank, Shark River, Tinton, Wenonah, and Woodbury Clay.

High acid-producing soils may be present in undisturbed soils at varying depths, including near the soil surface to excavations or deep disturbances. Its presence on a site may be significant or limited in the soil profile. High acid-producing soils are commonly black, dark brown, gray or greenish with silvery pyrite or marcasite nuggets or flakes.

1. Limit the excavation area and exposure time when high acid-producing soils are encountered. 2. Topsoil stripped from the site shall be stored separately from temporarily stockpiled high acid-producing soils. 3. Stockpiles of high acid-producing soil should be located on level land to minimize its movement, especially when this material has a high clay content.

B. Following burial or removal of high acid-producing soil, topsoiling and seeding of the site (see Temporary Vegetative Cover for Soil Stabilization, Permanent Vegetative Cover for Soil Stabilization, and Topsoiling), mulching must continue for a minimum of 6 months to ensure there is adequate stabilization and that no high acid-producing soil problems emerge.

STANDARD FOR PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION

Definition. Establishment of permanent vegetative cover on exposed soils where perennial vegetation is needed for long-term protection.

Purpose. To permanently stabilize the soil, ensuring conservation of soil and water, and to enhance the environment. Water Quality Enhancement. Slows the over-land movement of stormwater runoff, increases infiltration and retains soil and nutrients on site, protecting streams or other stormwater conveyances.

Where Applicable. On exposed soils that have a potential for causing off-site environmental damage.

Methods and Materials. 1. Site Preparation. A. Grade as needed and feasible to permit the use of conventional equipment for seedbed preparation, seeding, mulch application, and mulch anchoring. All grading should be done in accordance with Standard for Land Grading.

2. Seeded Preparation. A. Uniformly apply ground limestone and fertilizer to topsoil which has been spread and firmed, according to soil test recommendations such as offered by Rutgers Co-operative Extension. Soil sample mullers are available from the local Rutgers Cooperative Extension offices (http://njaes.rutgers.edu/county/). Fertilizer shall be applied at the rate of 500 pounds per acre or 11 pounds per 1,000 square feet of 10-10-10 or equivalent with 50% water insoluble nitrogen unless a soil test indicates otherwise and incorporated into the surface 4 inches.

B. Conventional Seeding is performed by applying seed uniformly by hand, cyclone (centrifugal) seeder, drop seeder, drill or outdragger. Except for drilled, hydroseeded or outdragger seedings, seed shall be incorporated into the soil within 24 hours of seedbed preparation to a depth of 1/4 to 1/2 inch, by raking or dragging. Depth of seed placement may be 1/4 inch deeper on coarse-textured soil.

4. Mulching. Mulching is required on all seeding. Mulch will protect against erosion before grass is established and will promote faster and earlier establishment. The existence of vegetation sufficient to control soil erosion shall be deemed compliance with this mulching requirement.

Application - Spread mulch uniformly by hand or mechanically so that at least 85% of the soil surface is covered. For uniform distribution of hand-spread mulch, divide area into approximately 1,000 square feet sections and distribute 70 to 90 pounds within each section.

1. Peg and Twine. Drive 8 to 10 inch wooden pegs to within 2 to 3 inches of the soil surface every 4 feet in all directions. Stakes may be driven before or after applying mulch. Secure mulch to soil surface by stretching twine between pegs in a criss-cross and a square pattern. Secure twine around each peg with two or more round turns.

(1) Organic and Vegetable Based Binders - Naturally occurring, powder-based, hydrophilic materials when mixed with water formulates a gel and when applied to mulch under satisfactory curing conditions will form membrane networks of insoluble polymers. The vegetable gel shall be physiologically harmless and not result in a phytotoxic effect or impede growth of turfgrasses.

C. Pelletized mulch - compressed and extruded paper and/or wood fiber product, which may contain co-polymers, tackifiers, fertilizers, and coloring agents. The dry pellets, when applied to a seeded area and watered, form a mulch mat.

5. Irrigation (where feasible). If soil moisture is deficient supply new seeding with adequate water (a minimum of 1/4 inch applied up to twice a day until vegetation is well established). This is especially true when seedings are made in abnormally dry or hot weather or on droughty sites.

7. Establishing Permanent Vegetative Stabilization. The quality of permanent vegetation rests with the contractor. The timing of seeding, preparing the seedbed, applying nutrients, mulch and other management are essential. The seed application rates in Table 4-3 are required when a Report of Compliance is requested prior to actual establishment of permanent vegetation.

PERMIT PLANS

Table with columns for NO., DATE, REVISIONS, and BY. Revision 1: 4/3/14, REVISED TO REFERENCE 2014 STANDARDS FOR SE&SC.

BOROUGH OF SEA BRIGHT FLOOD MITIGATION PROJECT: RECONSTRUCTION OF SIX BULKHEADS AND NEW STORMWATER PUMP STATION. BOROUGH OF SEA BRIGHT, MONMOUTH COUNTY, NEW JERSEY. SOIL EROSION & SEDIMENT CONTROL NOTES.

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