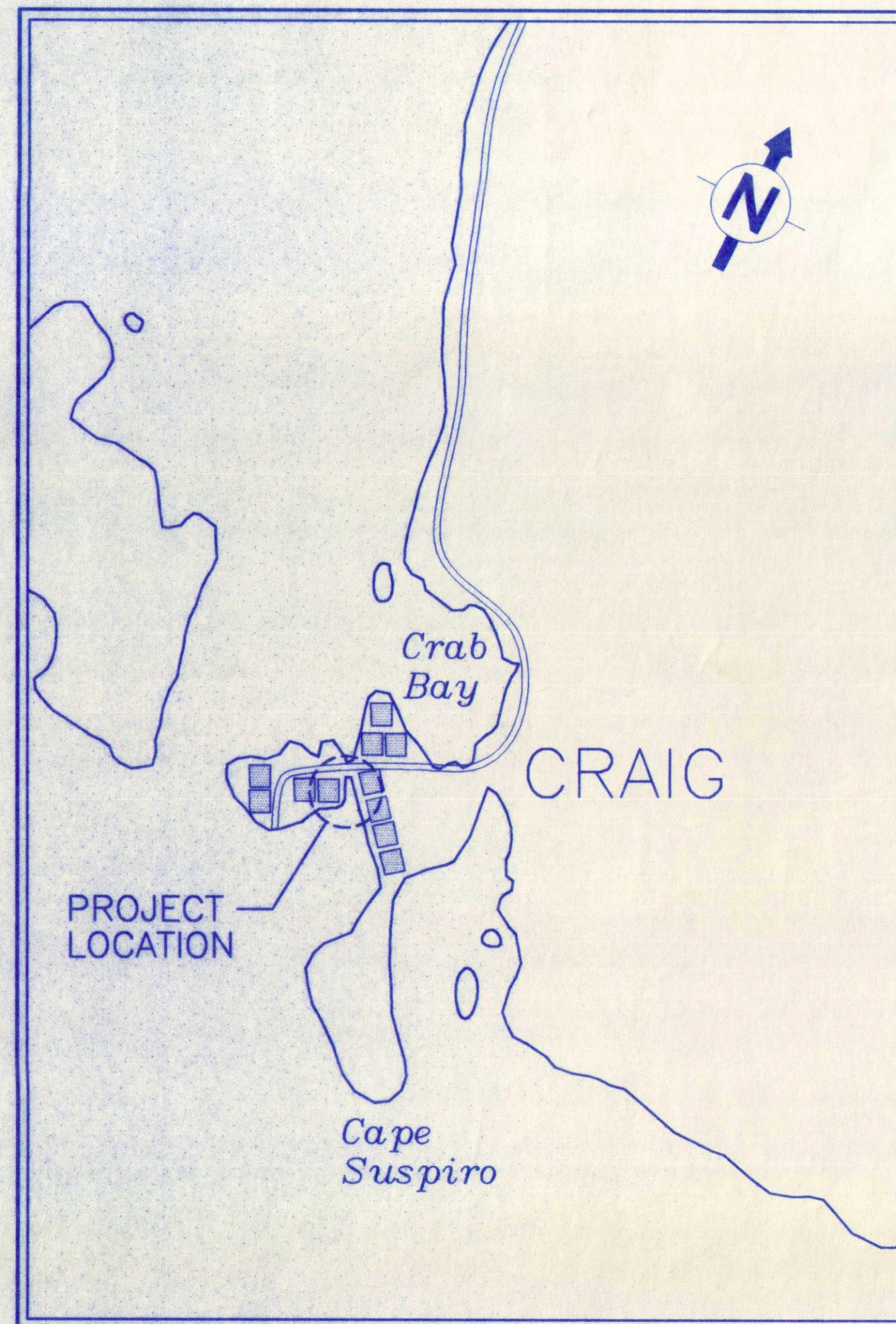


# CITY OF CRAIG SOUTH COVE HARBOR IMPROVEMENTS 1995

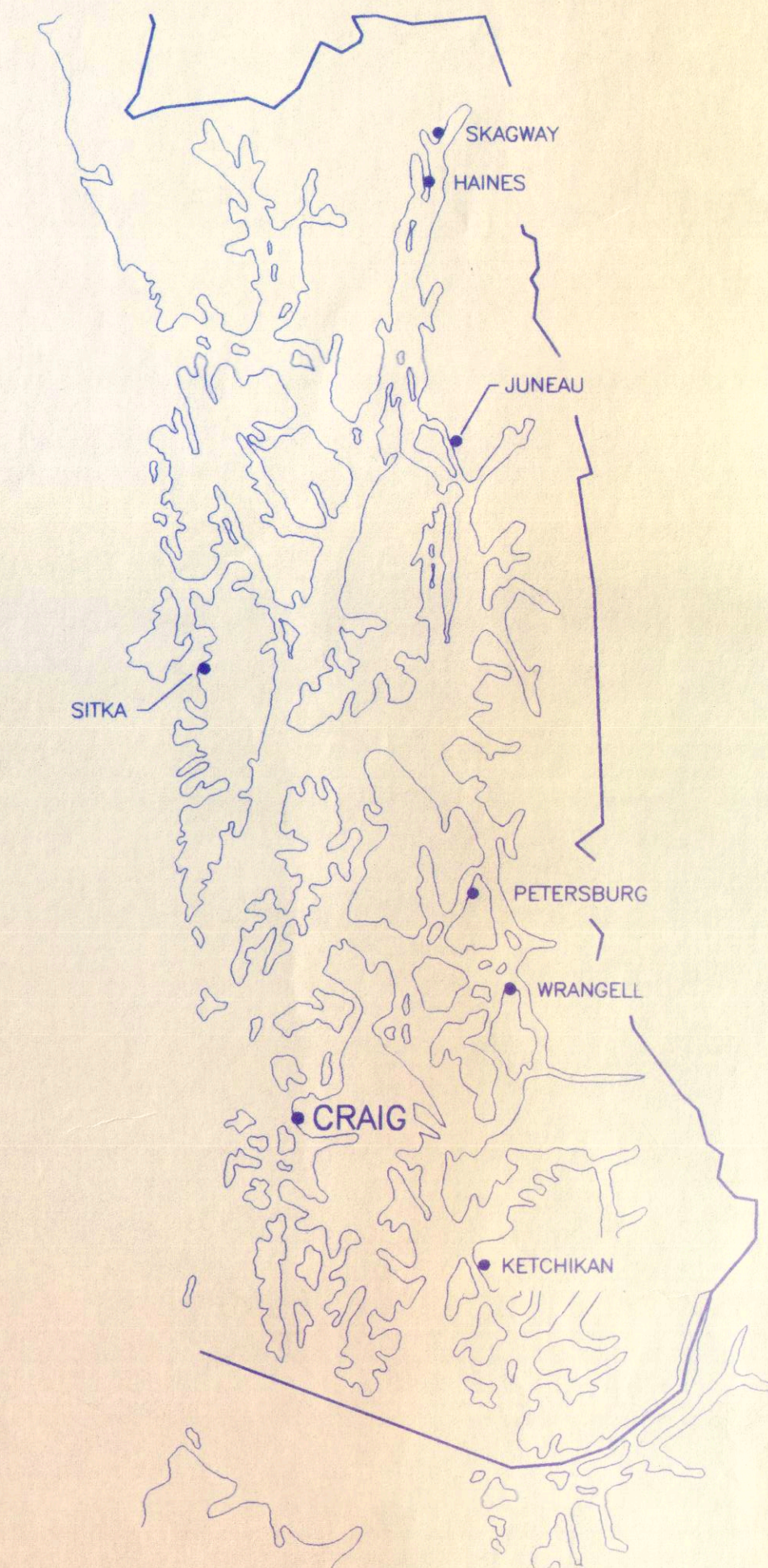
South Cove Harbor



**LOCATION MAP**



**VICINITY MAP**



**SOUTHEAST ALASKA**

FOR BIDDING PURPOSES

**CITY OF CRAIG  
SOUTH COVE HARBOR IMPROVEMENTS**

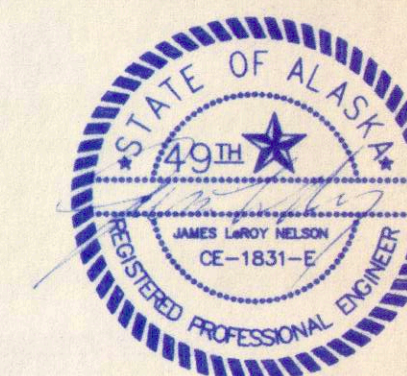
**Peratrovich, Nottingham &  
Engineering Consultants**

3220 Hospital Drive, Suite 200  
Juneau, Alaska 99801 (907) 586-2093

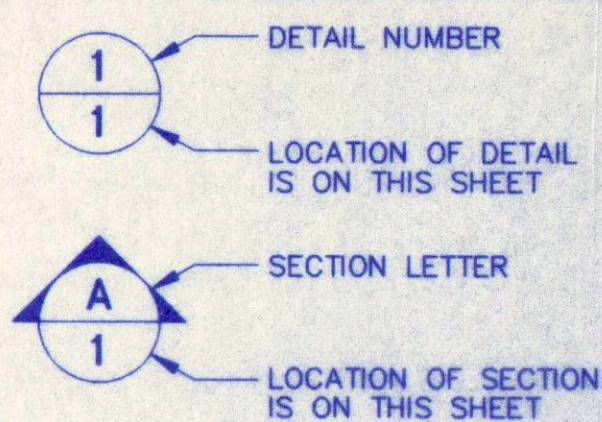
Designed: JWG  
Drawn: TMS  
Checked: JLN  
Project No: 95236

Date: OCT 1995  
Scale: AS NOTED

**COVER SHEET**



**LEGEND**

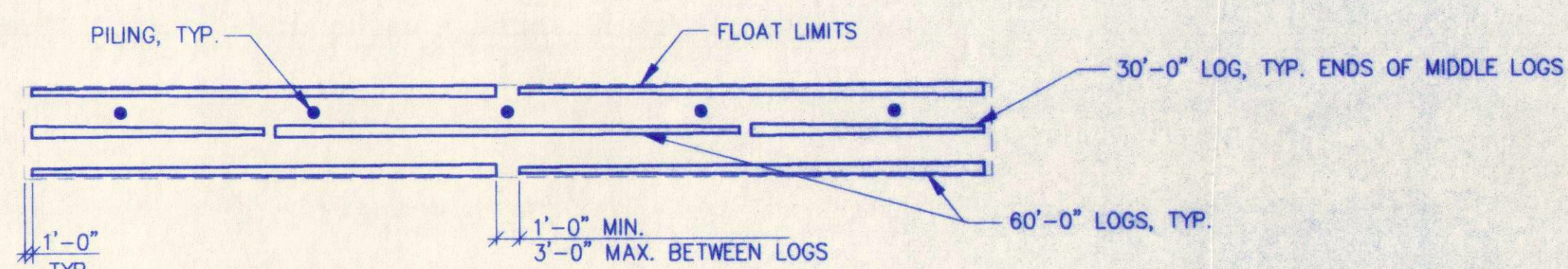
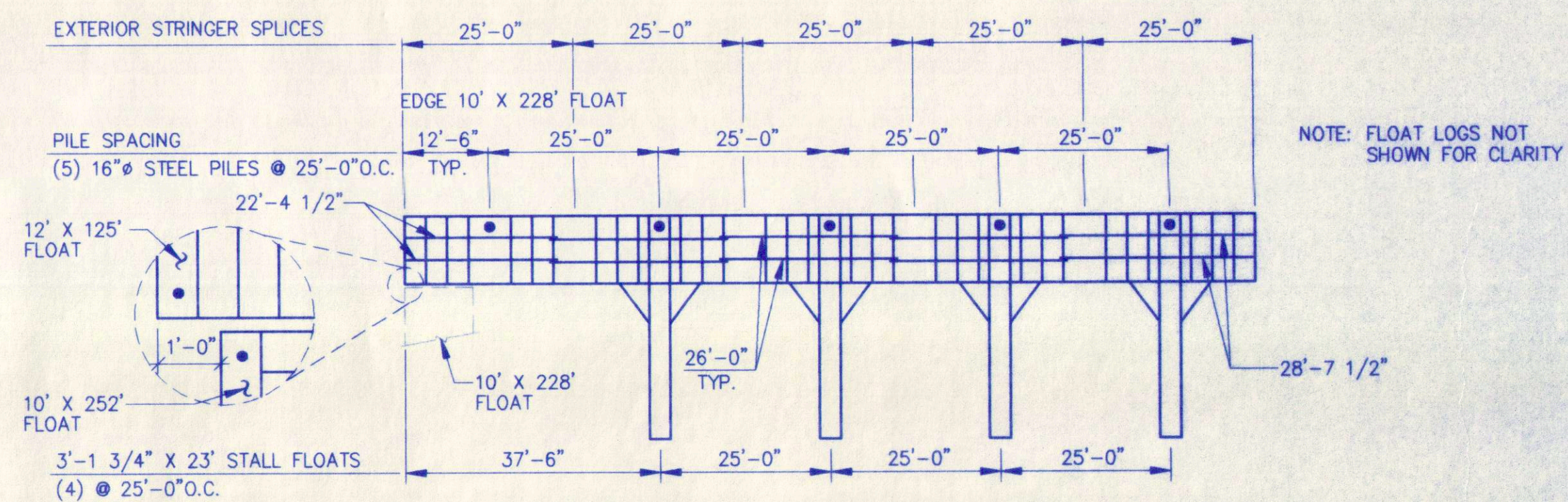
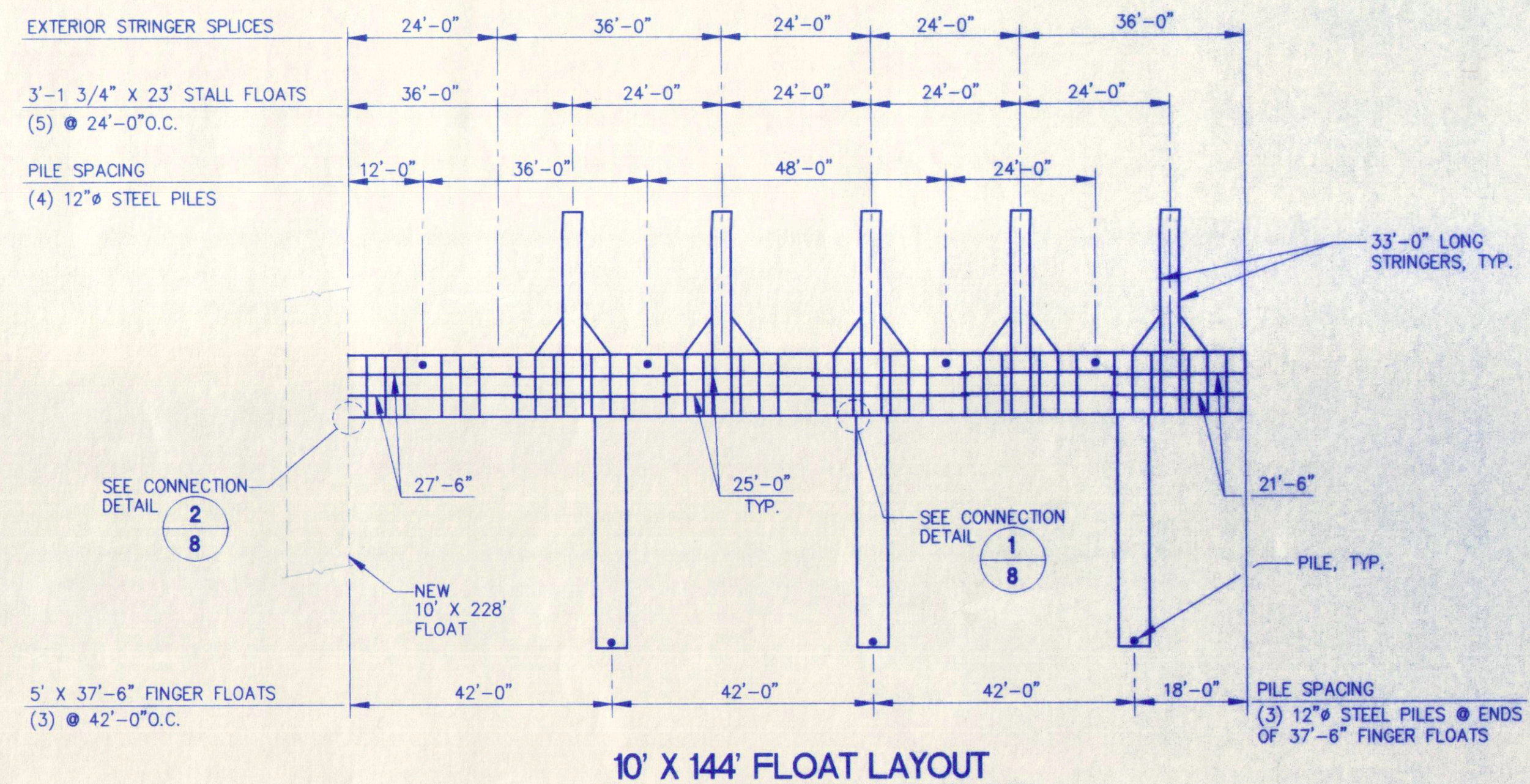
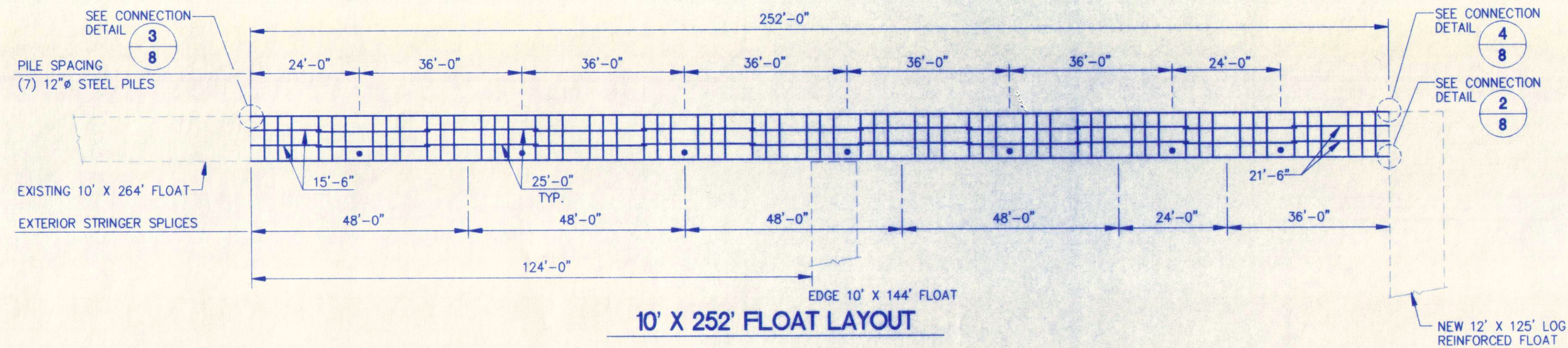


**DRAWING INDEX**

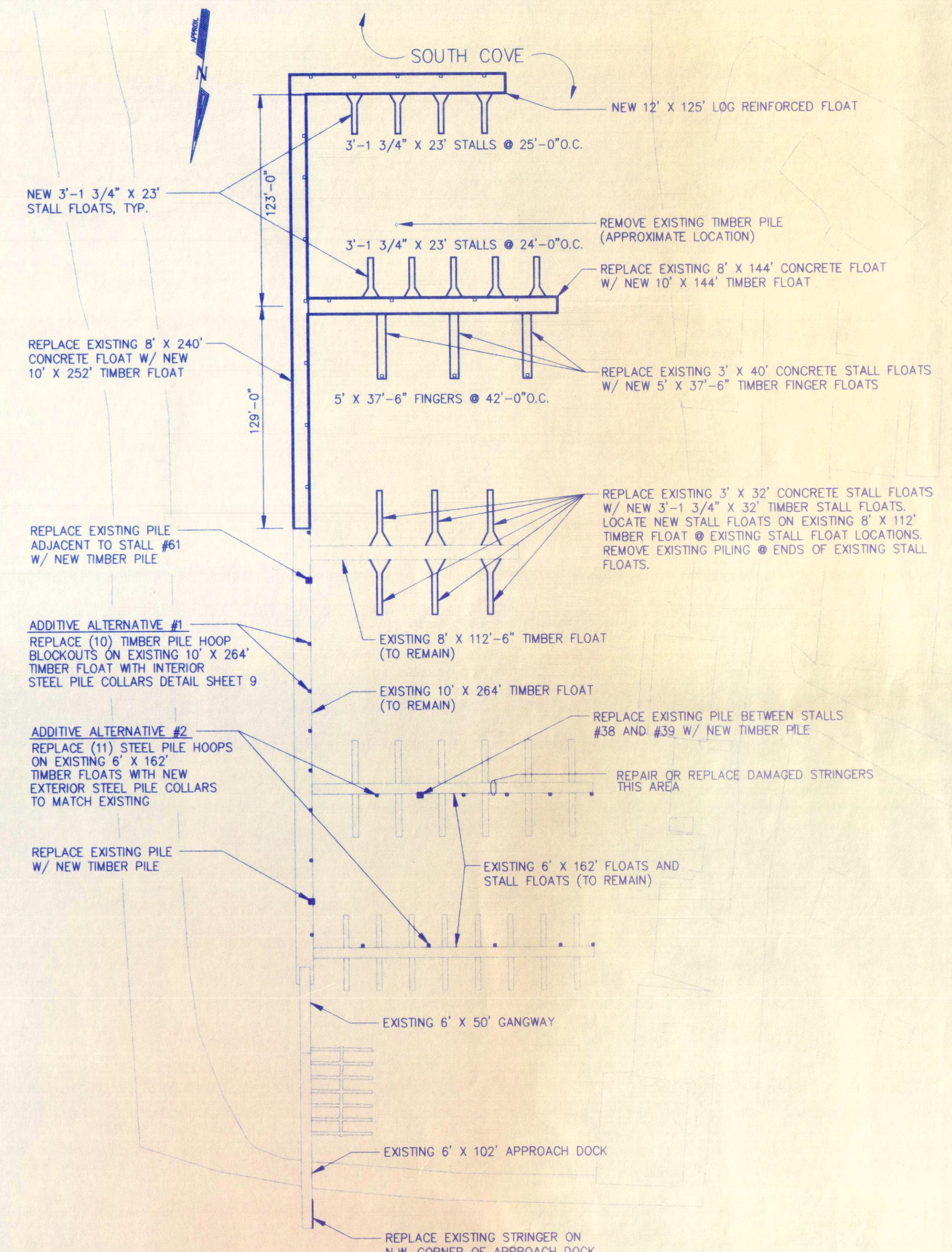
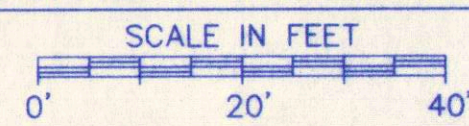
DWG. NO.	TITLE	DWG. NO.	TITLE
1	COVER SHEET	12	SITE PLAN - POWER
2	SITE PLAN AND FLOAT LAYOUTS	13	SITE PLAN - LIGHTING AND HEAT CABLE
3	12' x 125' LOG REINFORCED FLOAT	14	DETAILS (ELECTRICAL)
4	10' x 144' AND 10' x 252' TIMBER FLOATS	15	SCHEMATIC AND DETAIL (ELECTRICAL)
5	5' x 37'-6" FINGER FLOAT	16	ELECTRICAL SPECIFICATIONS
6	3'-1 3/4" x 23' STALL FLOAT	-	-
7	3'-1 3/4" x 32' STALL FLOAT	-	-
8	FLOAT CONNECTION DETAILS	-	-
9	ANCHOR PILE SCHEDULE AND MISC. DETAILS	-	-
10	WATERLINE	-	-
11	GENERAL NOTES	-	-

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**12' X 125' LOG REINFORCED FLOAT LAYOUT**



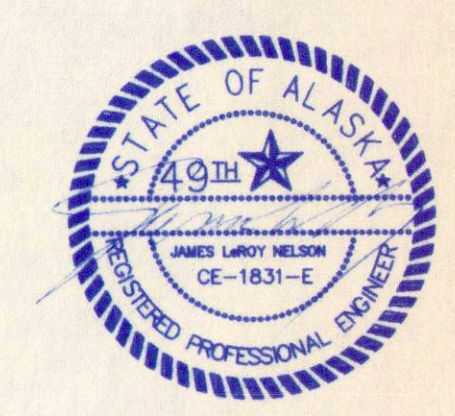
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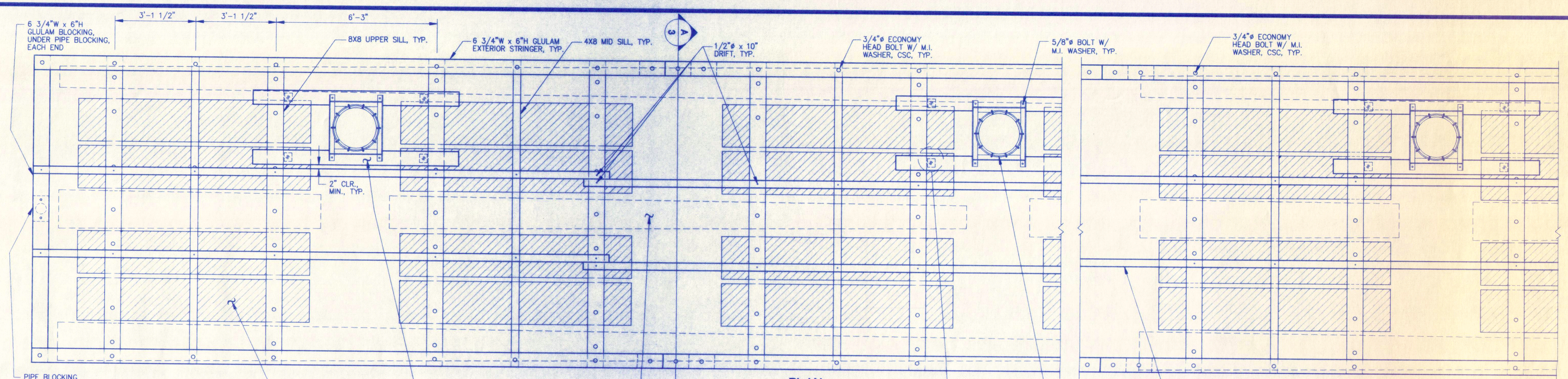
**SITE PLAN AND FLOAT LAYOUTS** 2 of 16



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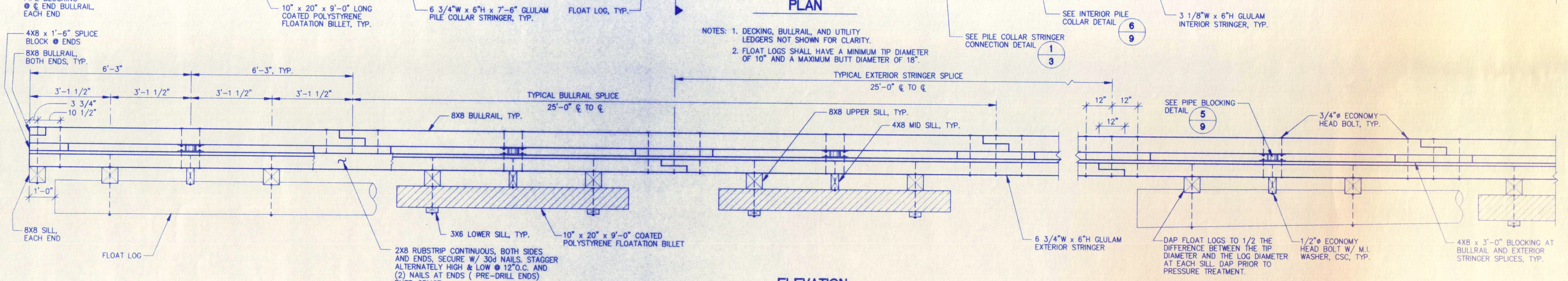
Designed: JWG  
Drawn: TMS  
Checked: JLN  
Project No: 95236  
Date: OCT. 1995  
Scale: AS NOTED



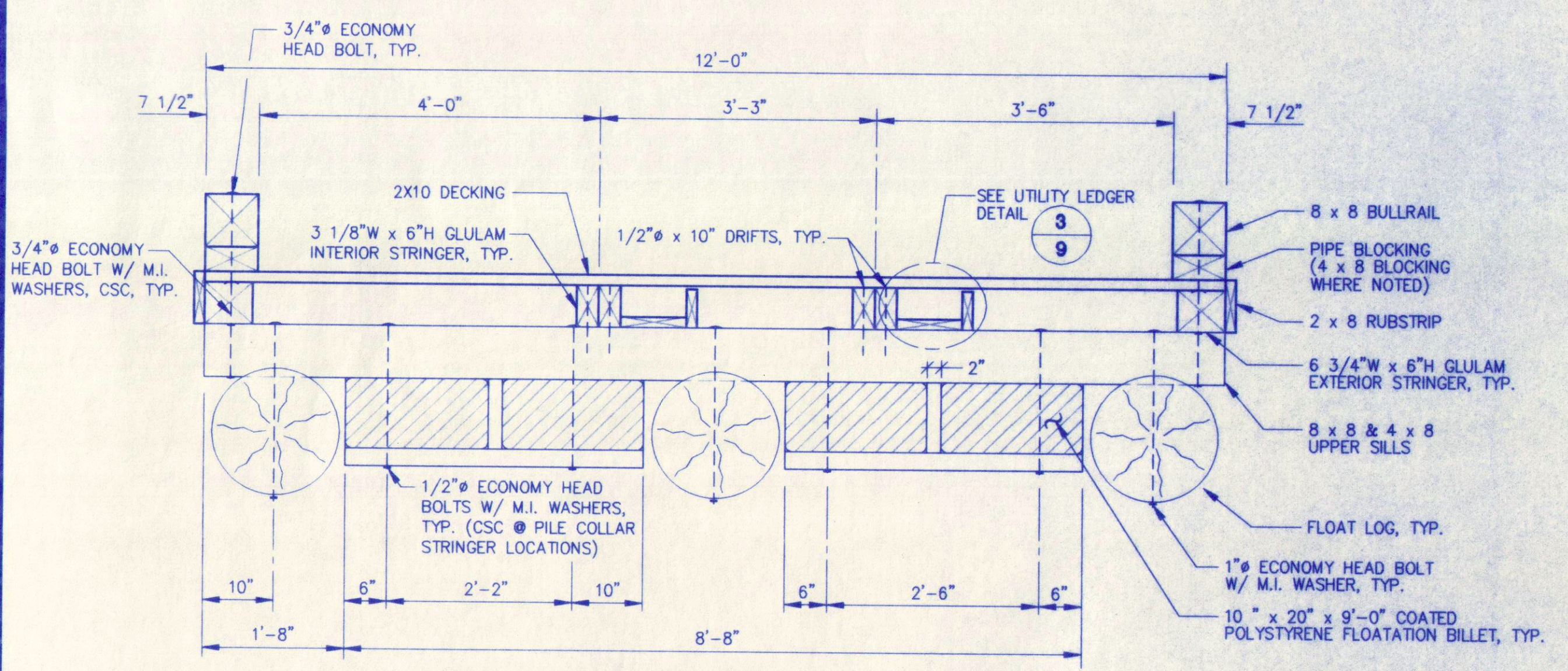


PLAN

NOTES: 1. DECKING, BULLRAIL, AND UTILITY LEDGERS NOT SHOWN FOR CLARITY.  
2. FLOAT LOGS SHALL HAVE A MINIMUM TIP DIAMETER OF 10" AND A MAXIMUM BUTT DIAMETER OF 18"

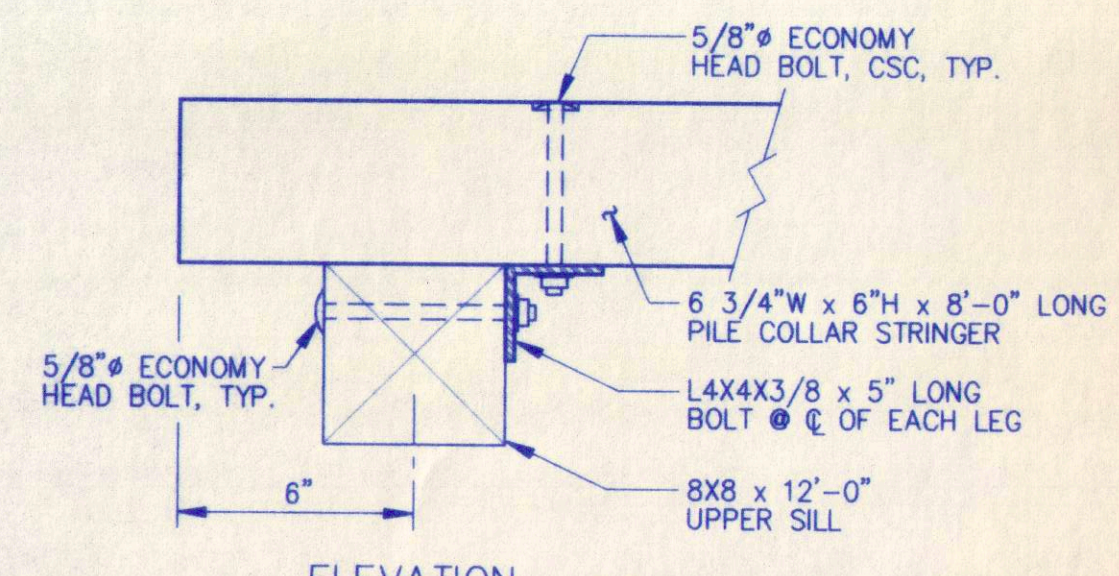


ELEVATION



A 3 TYPICAL SECTION

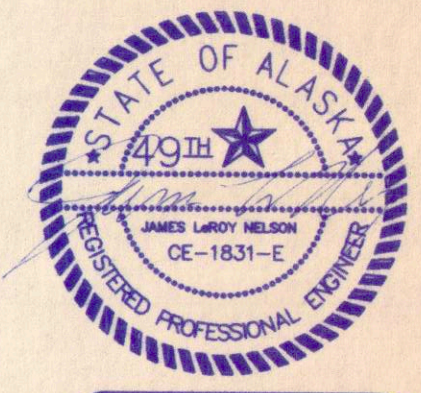
NOTE: UTILITY LEDGER NOT REQUIRED ON PILE HOOP SIDE OF FLOAT.



1 3 PILE COLLAR STRINGER CONNECTION DETAIL

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SOUTH COVE HARBOR IMPROVEMENTS

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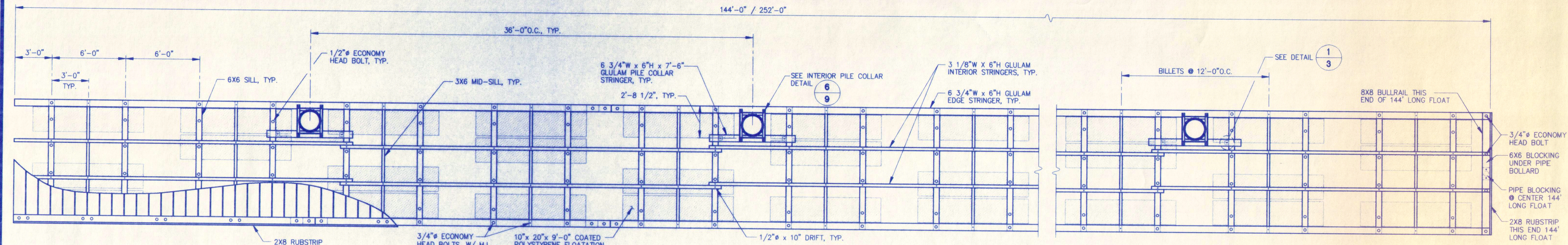
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Juneau, Alaska 99801 (907) 586-2093 FAX (907) 586-2099

12' x 125'  
LOG REINFORCED FLOAT

Designed: JWG  
Drawn: TMS  
Checked: JLN  
Project No: 95236

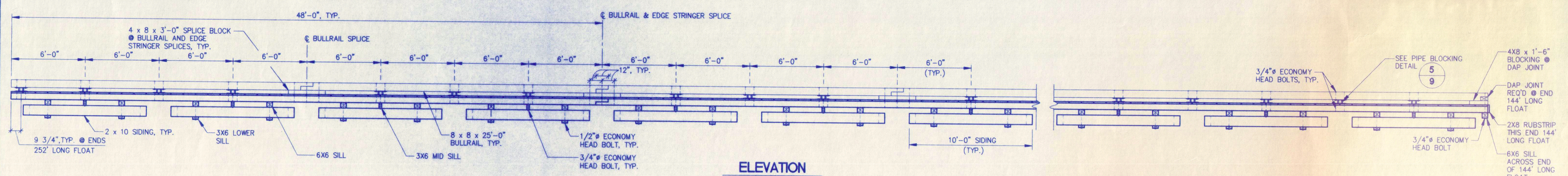
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Scale: AS NOTED





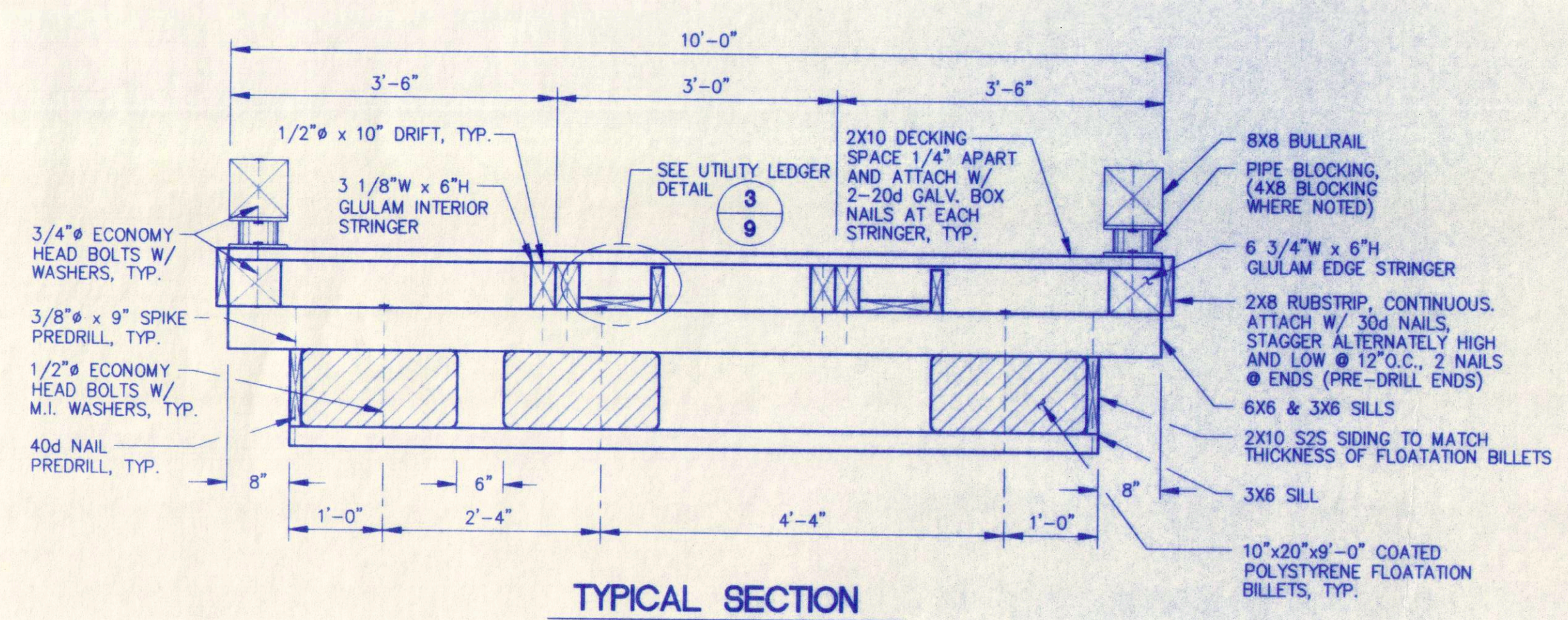
**PLAN**

NOTE: UTILITY LEDGERS NOT SHOWN FOR CLARITY



**ELEVATION**

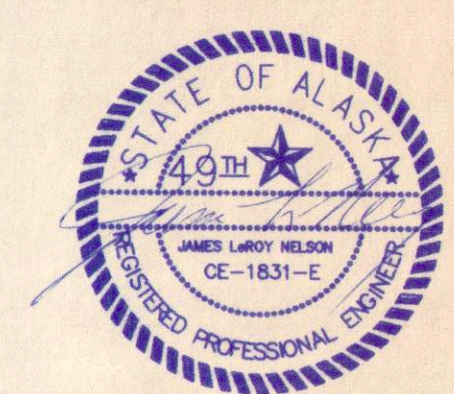
NOTE: 2 x 8 RUBSTRIP NOT SHOWN FOR CLARITY



**TYPICAL SECTION**

NOTE: UTILITY LEDGER NOT REQUIRED ON PILE HOOP SIDE OF FLOAT.

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Designed: JWG  
Drawn: TMS  
Checked: JLN  
Project No: 95236

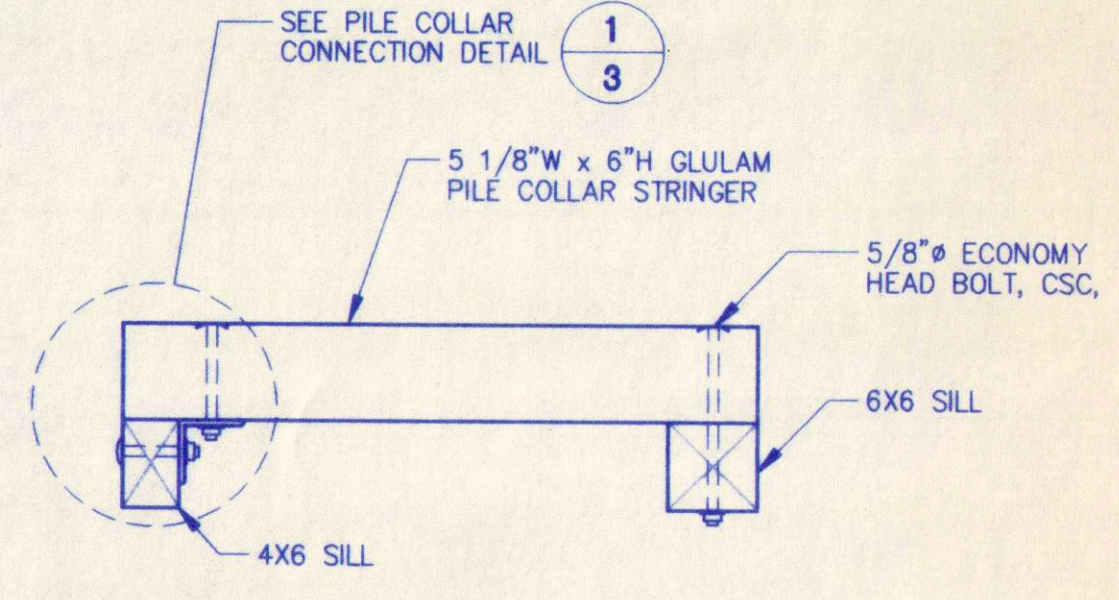
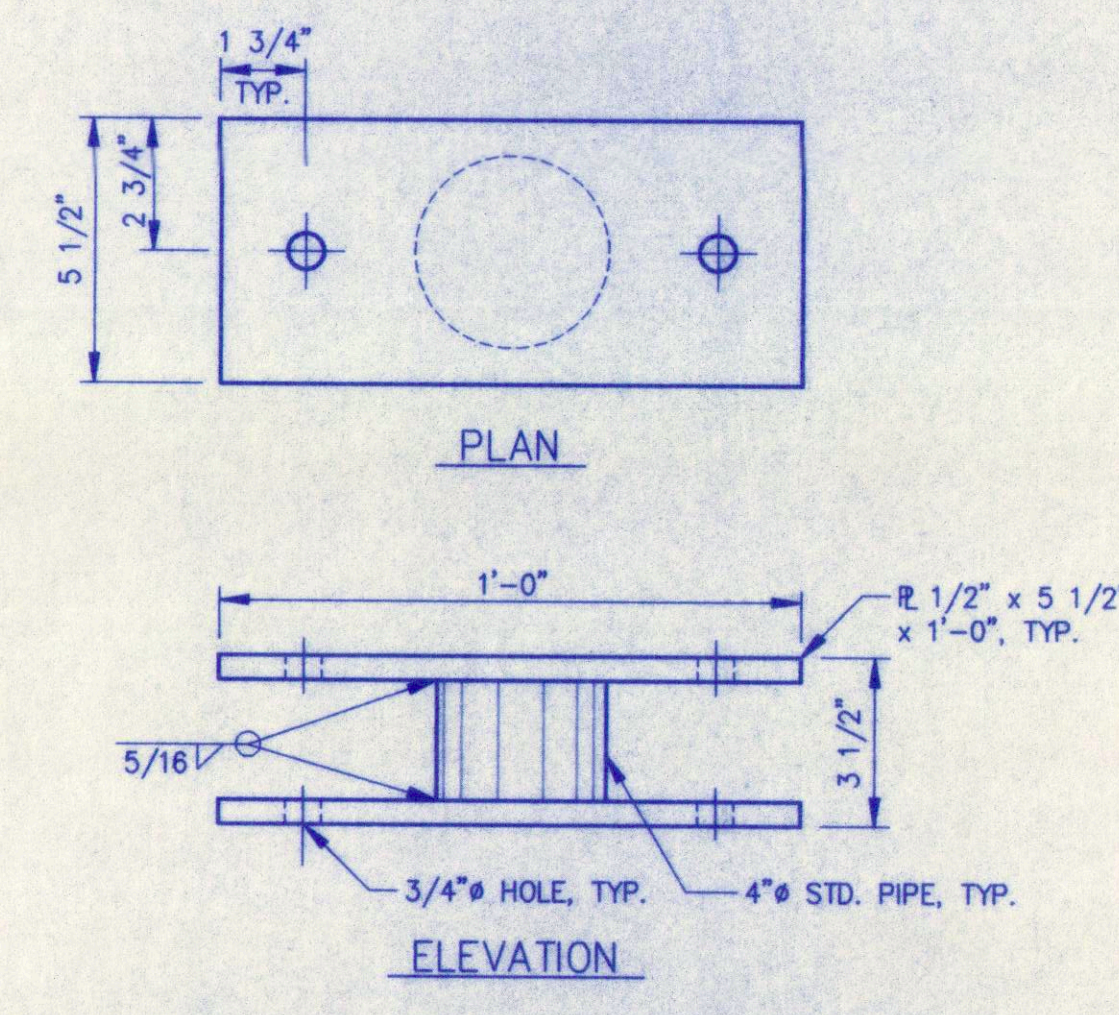
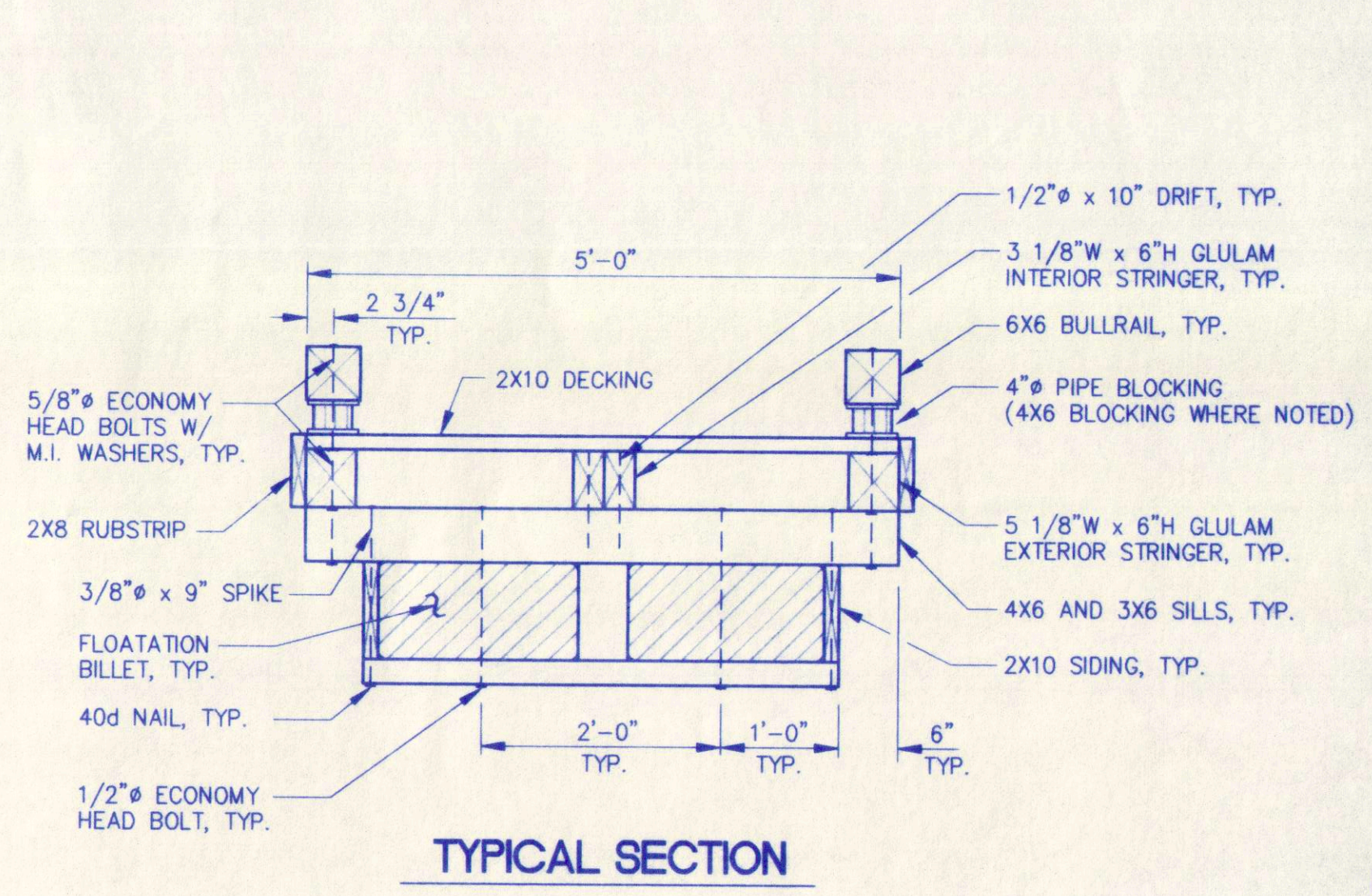
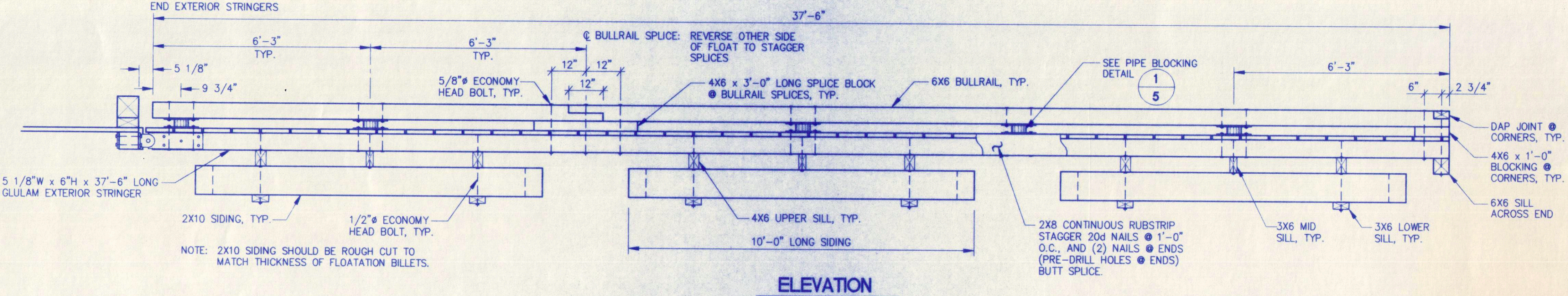
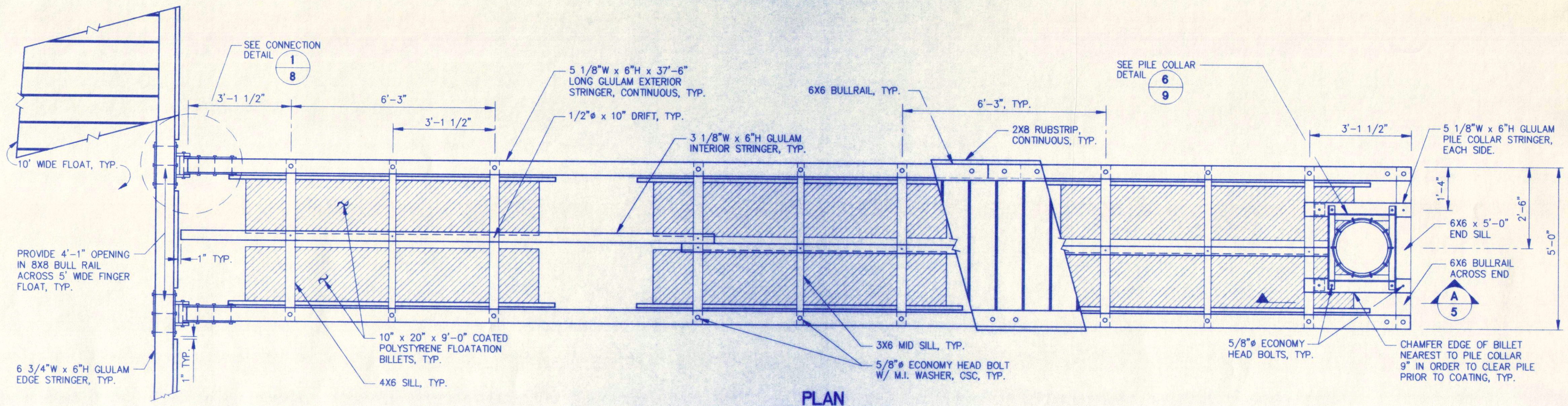
3220 Hospital Drive, Suite 200  
Juneau, Alaska 99801 (907) 586-2093 FAX (907) 586-2099

Date: OCT. 1995  
Scale: AS NOTED

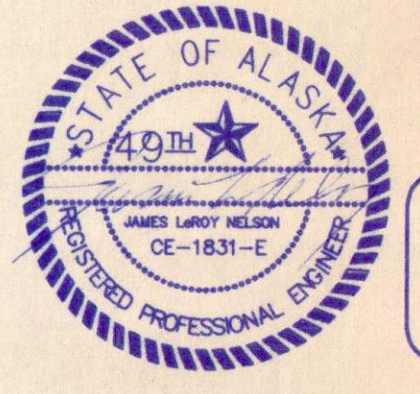
**10' X 144' AND  
10' X 252' TIMBER FLOATS**

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Drawn: TMS  
Checked: JLN  
Project No: 95236

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Juneau, Alaska 99801 (907) 586-2093 FAX (907) 586-2099

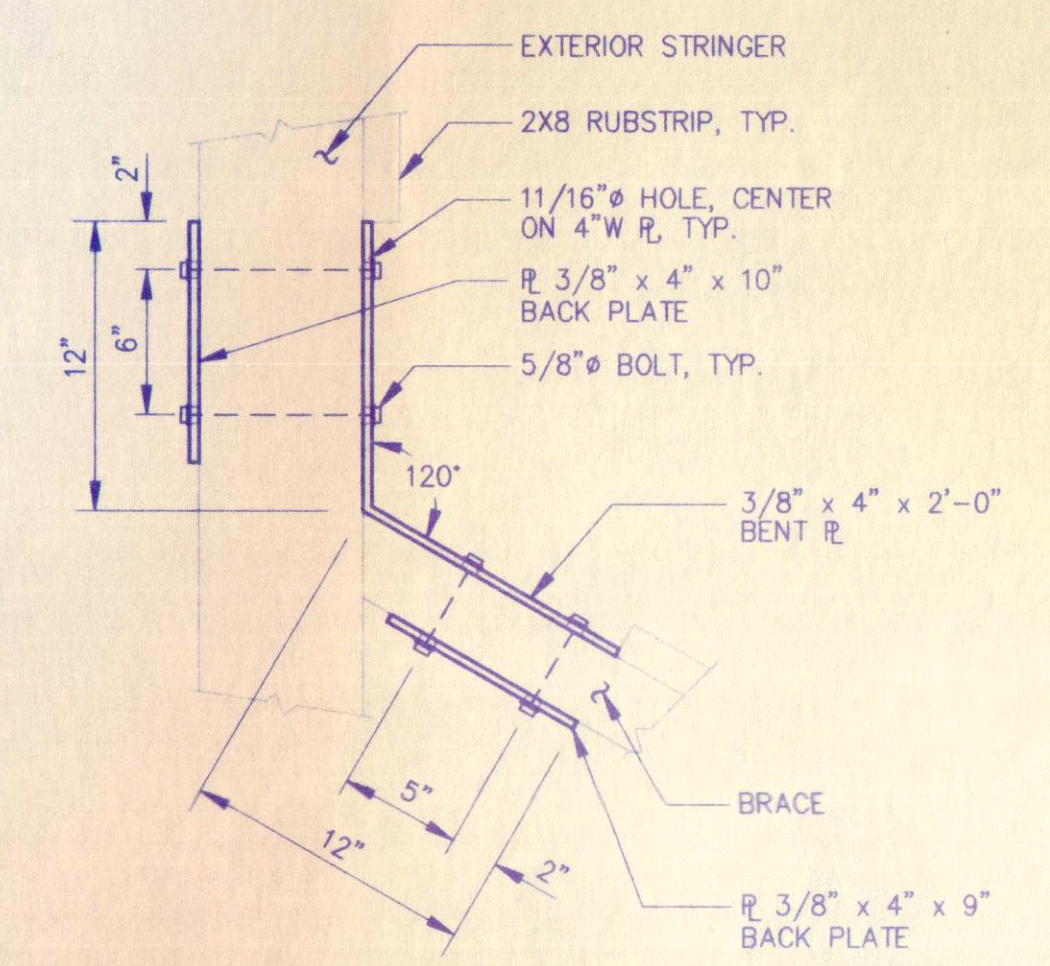
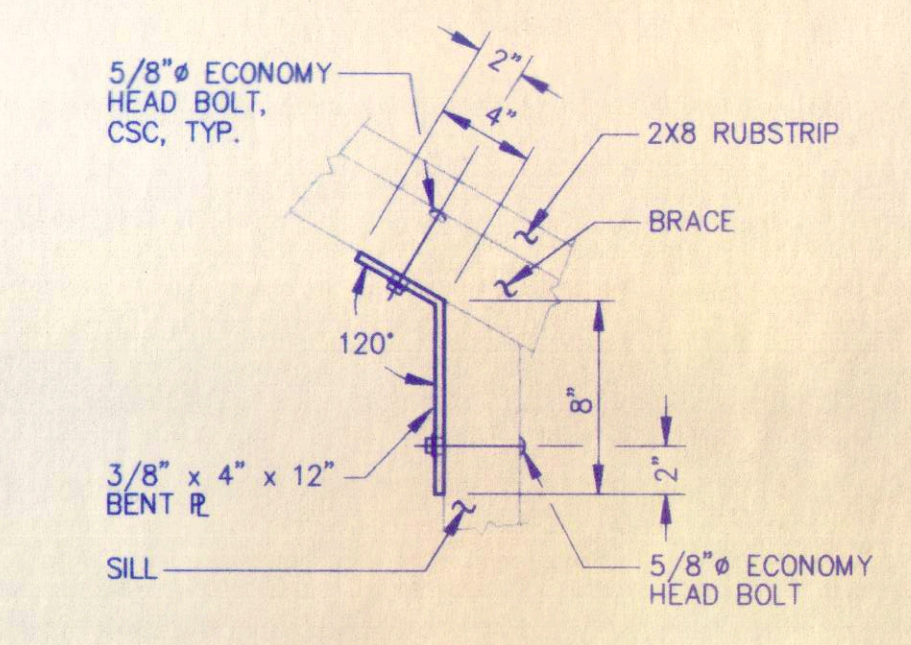
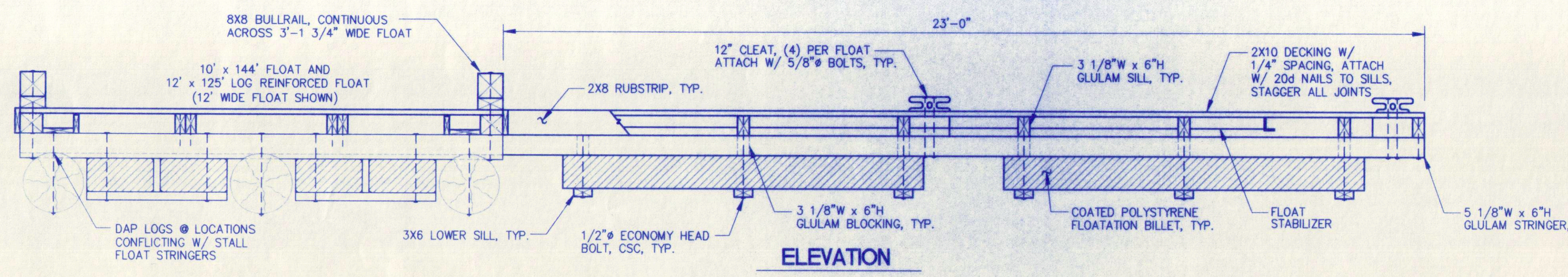
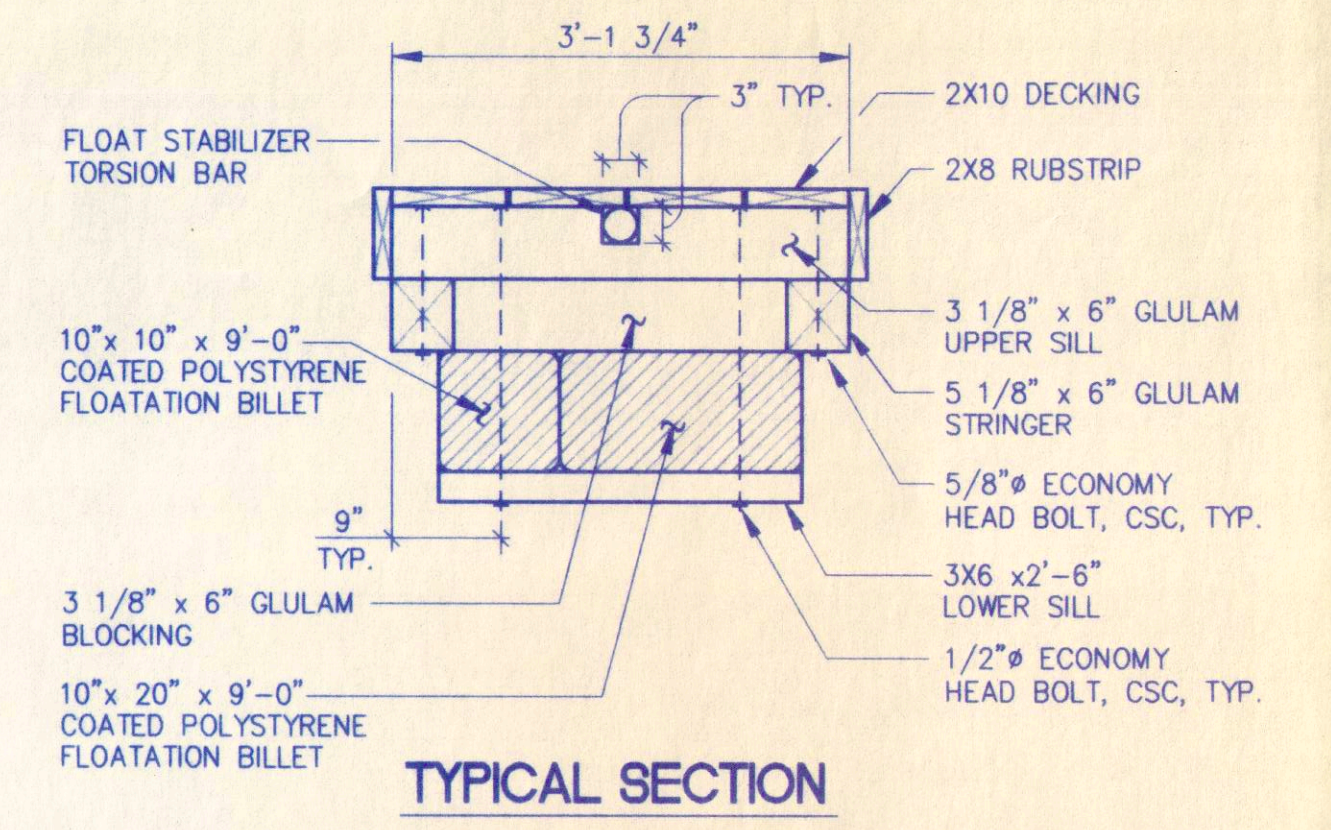
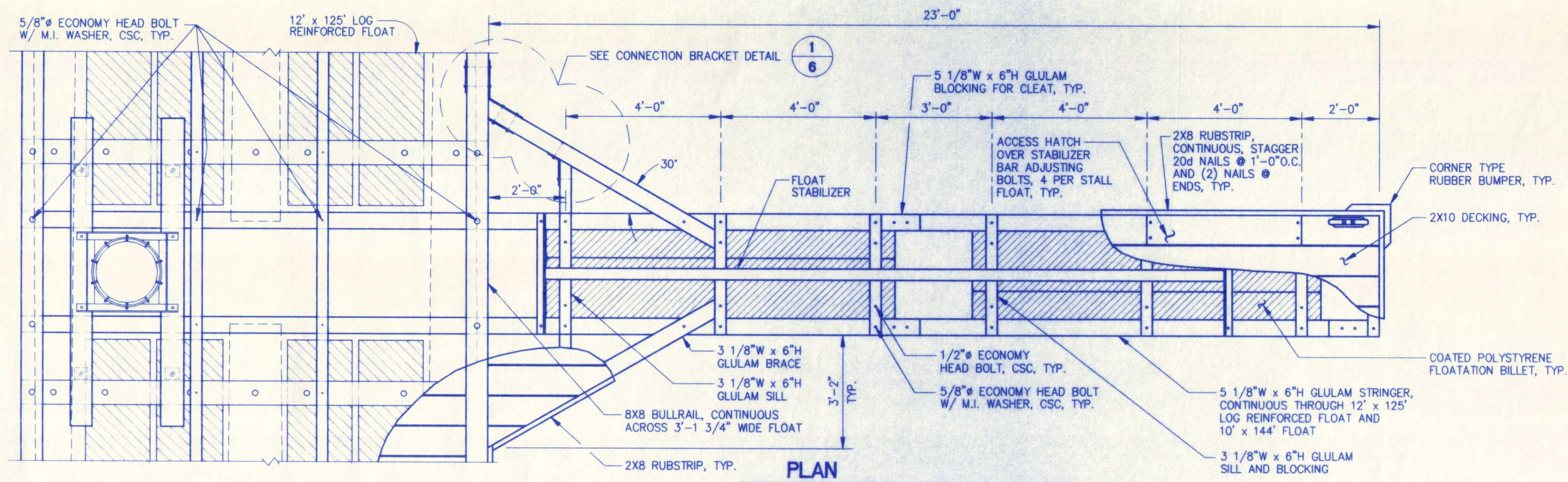
Date: OCT. 1995  
Scale: AS NOTED

**5' x 37'-6' FINGER FLOAT**

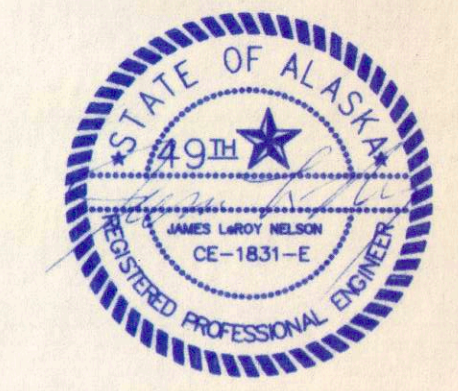
sheet  
5 of 16

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1/6 CONNECTION BRACKET DETAIL



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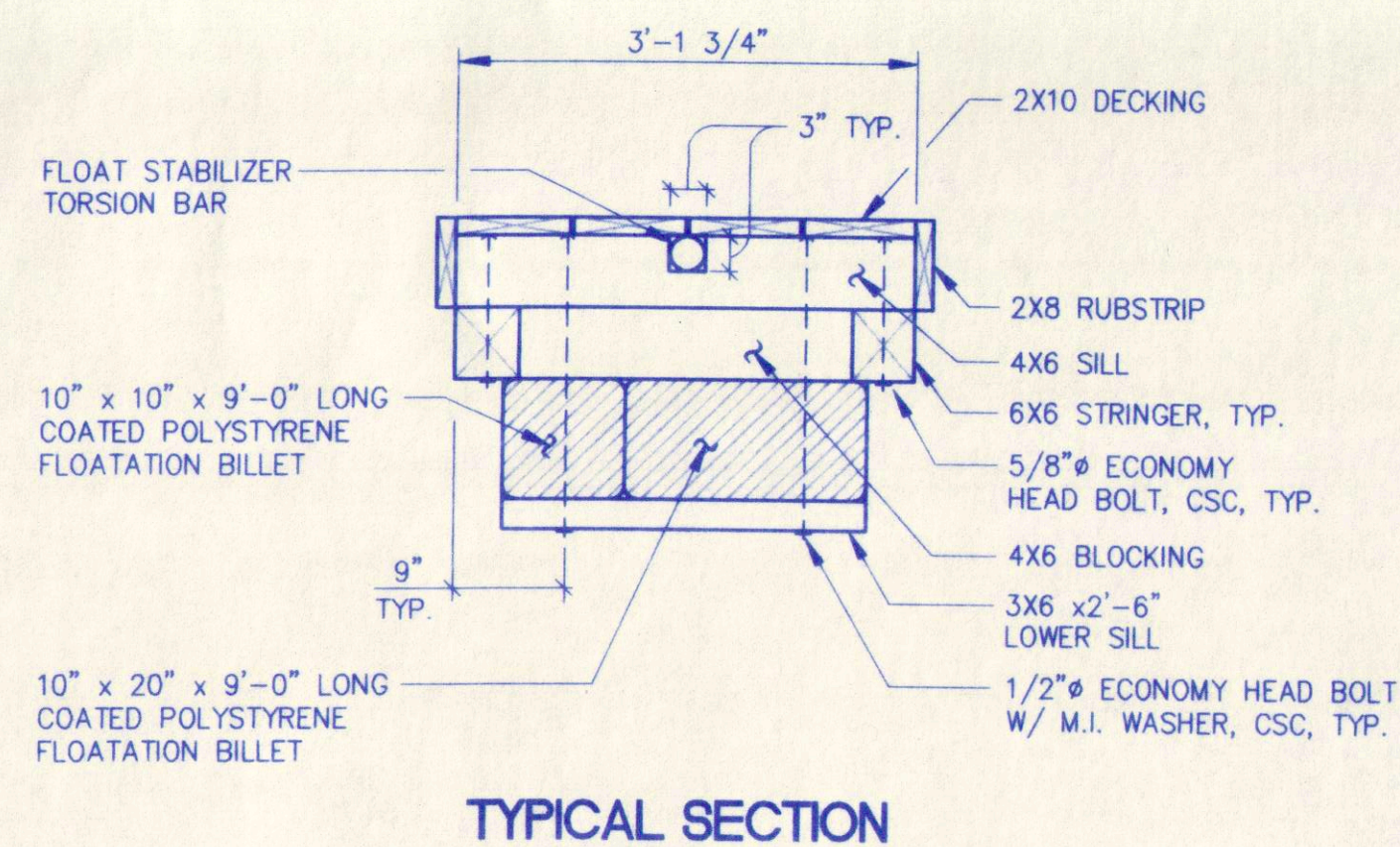
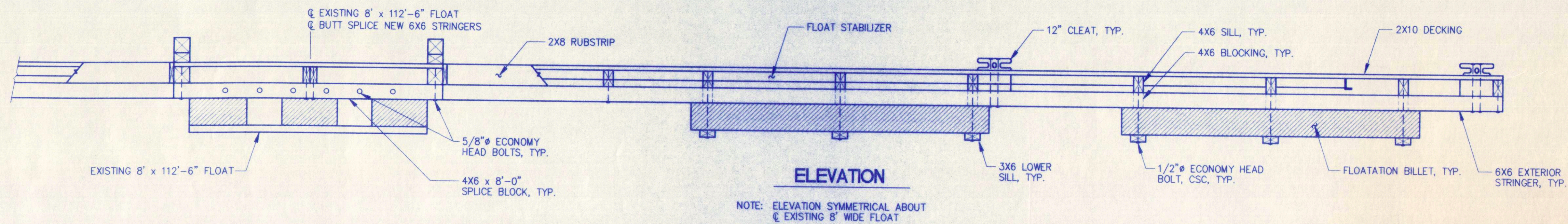
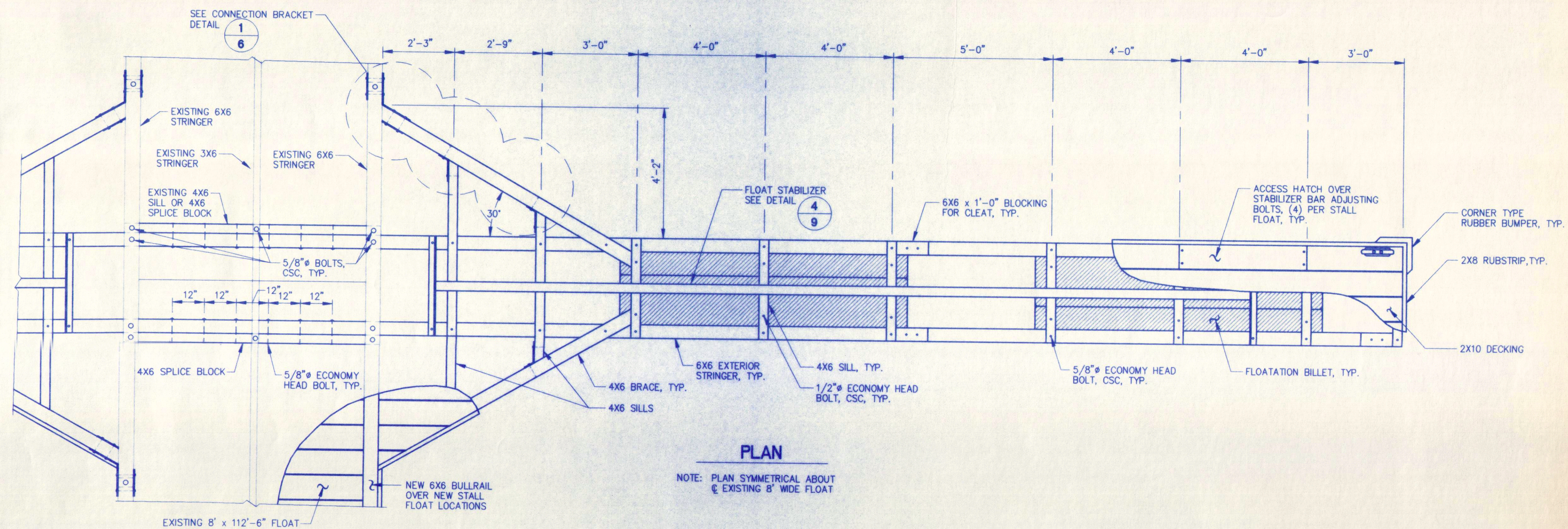
Designed: JWG  
Drawn: TMS  
Checked: JLN  
Project No. 95236

Date: OCT. 1995  
Scale: AS NOTED

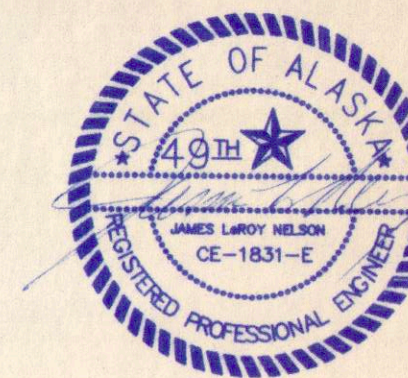
3'-1 3/4' x 23' STALL FLOAT sheet 6 of 16

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Designed: JWG  
 Drawn: TMS  
 Checked: JLN  
 Project No: 95236

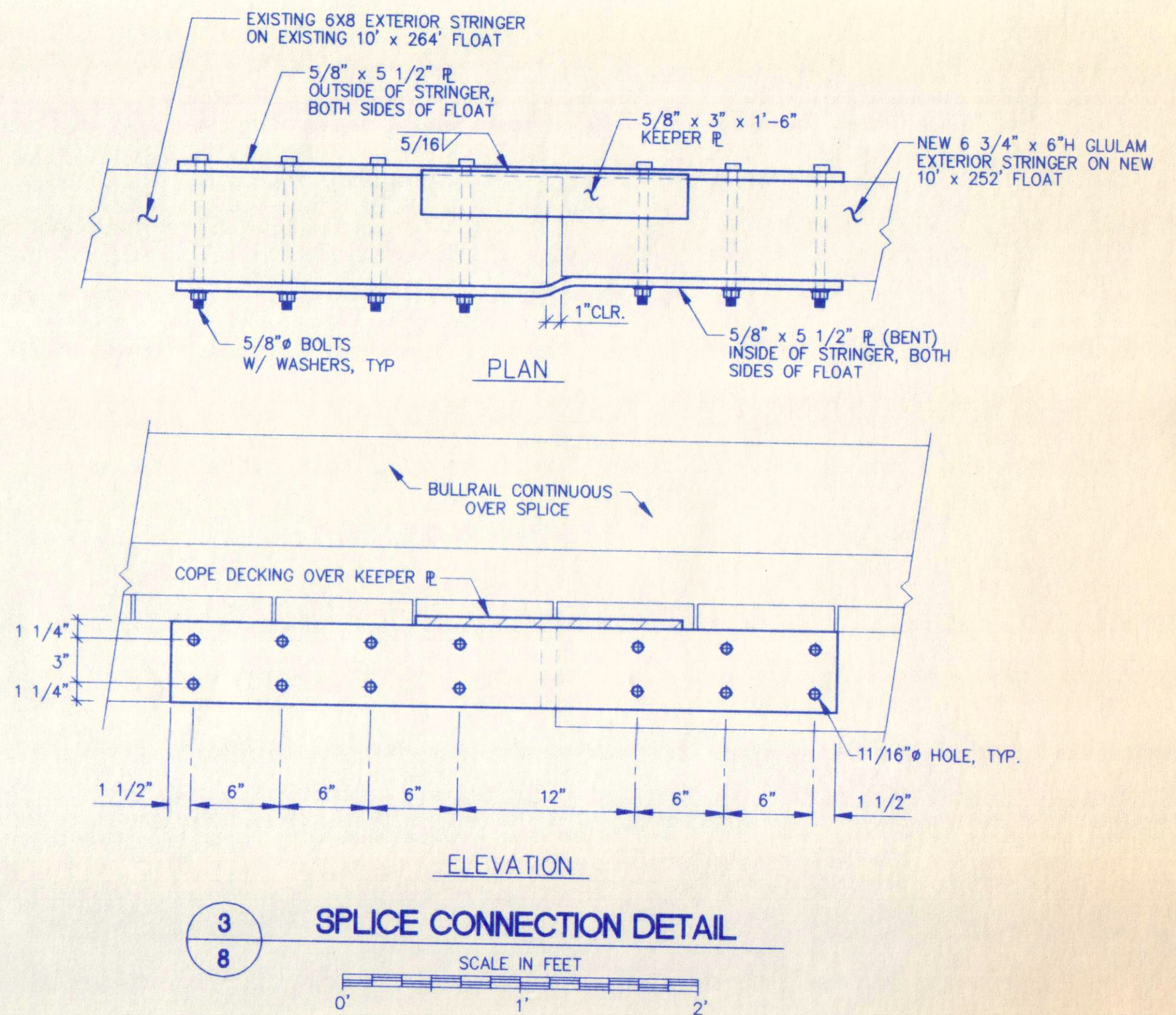
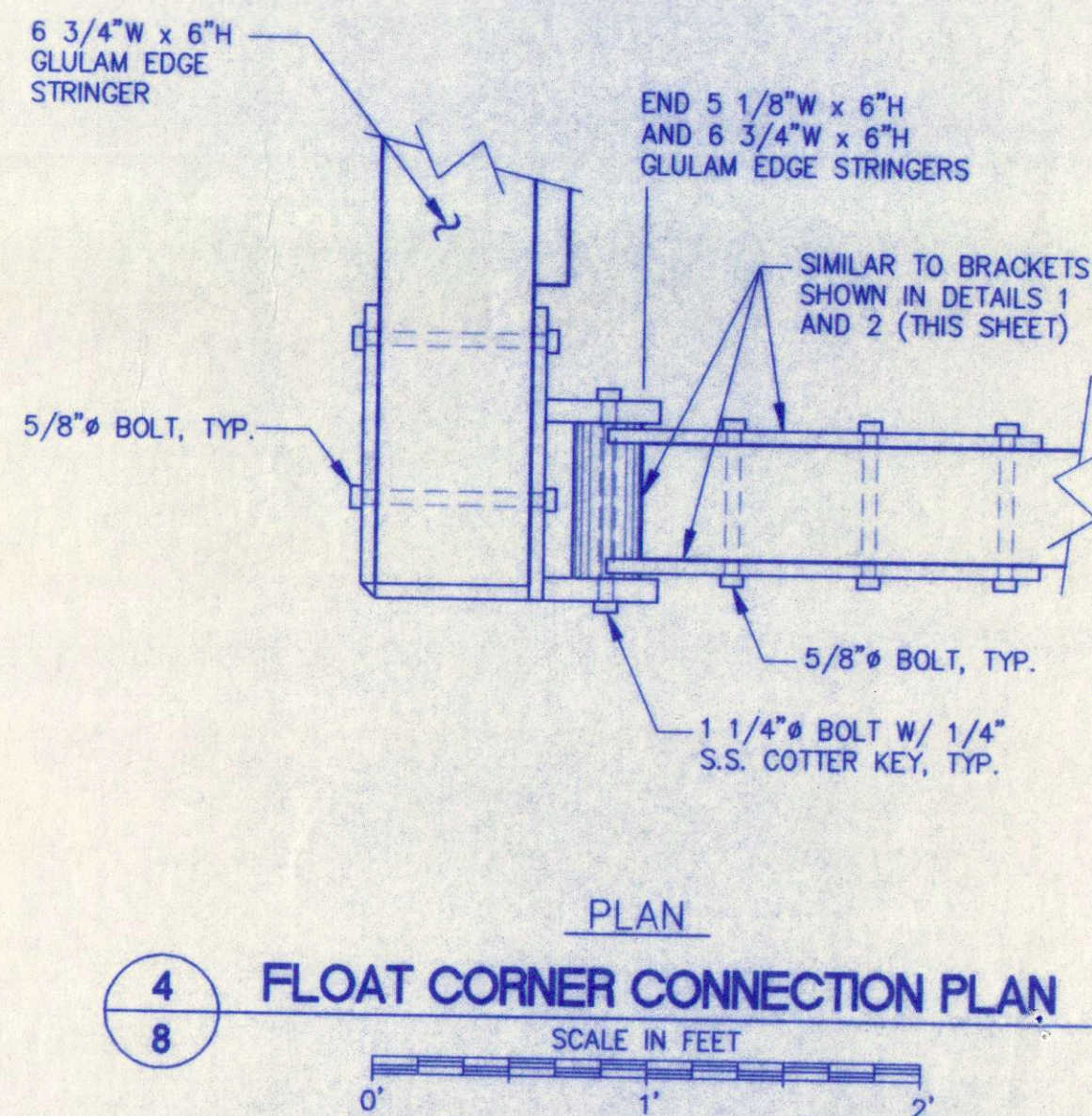
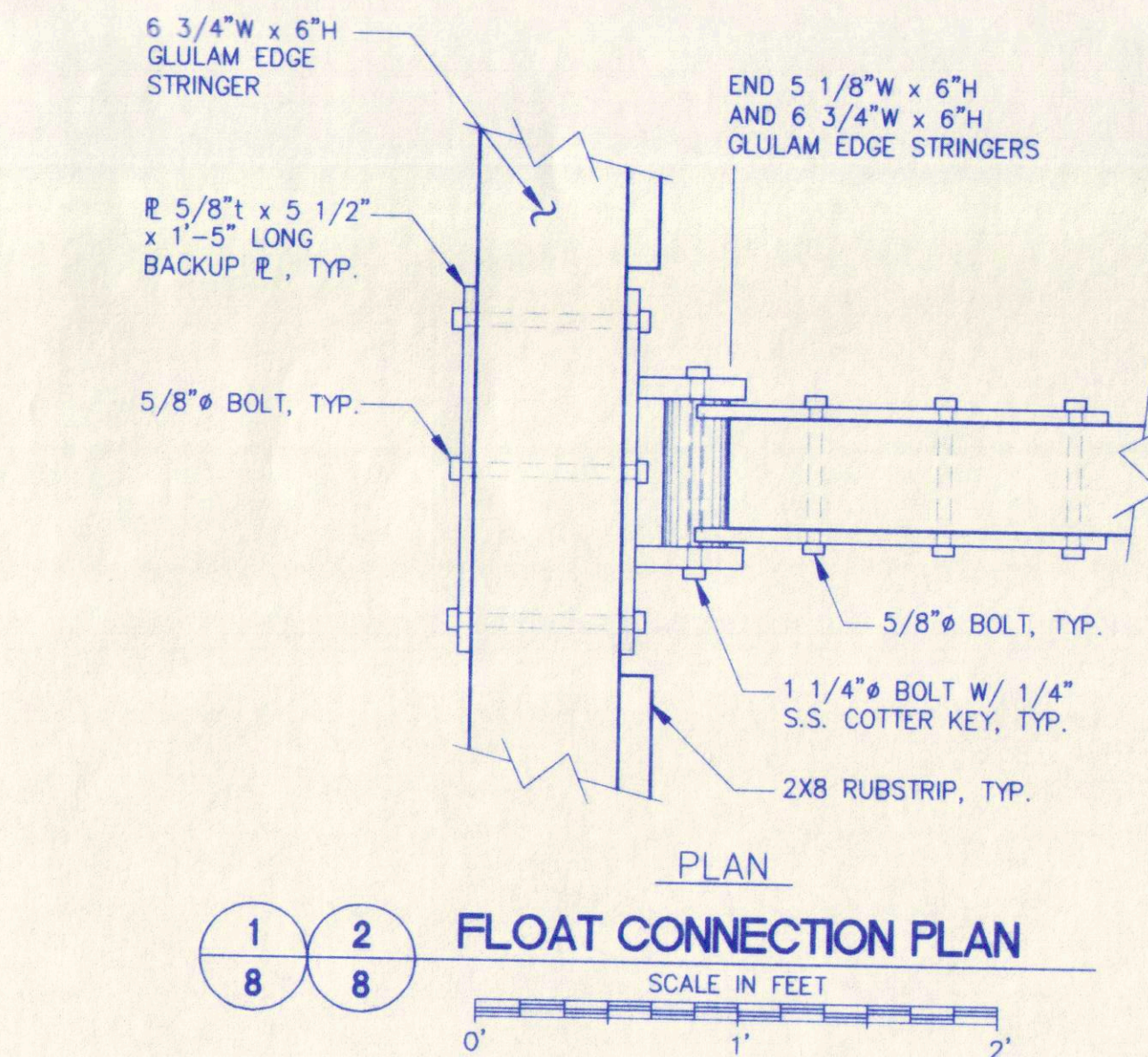
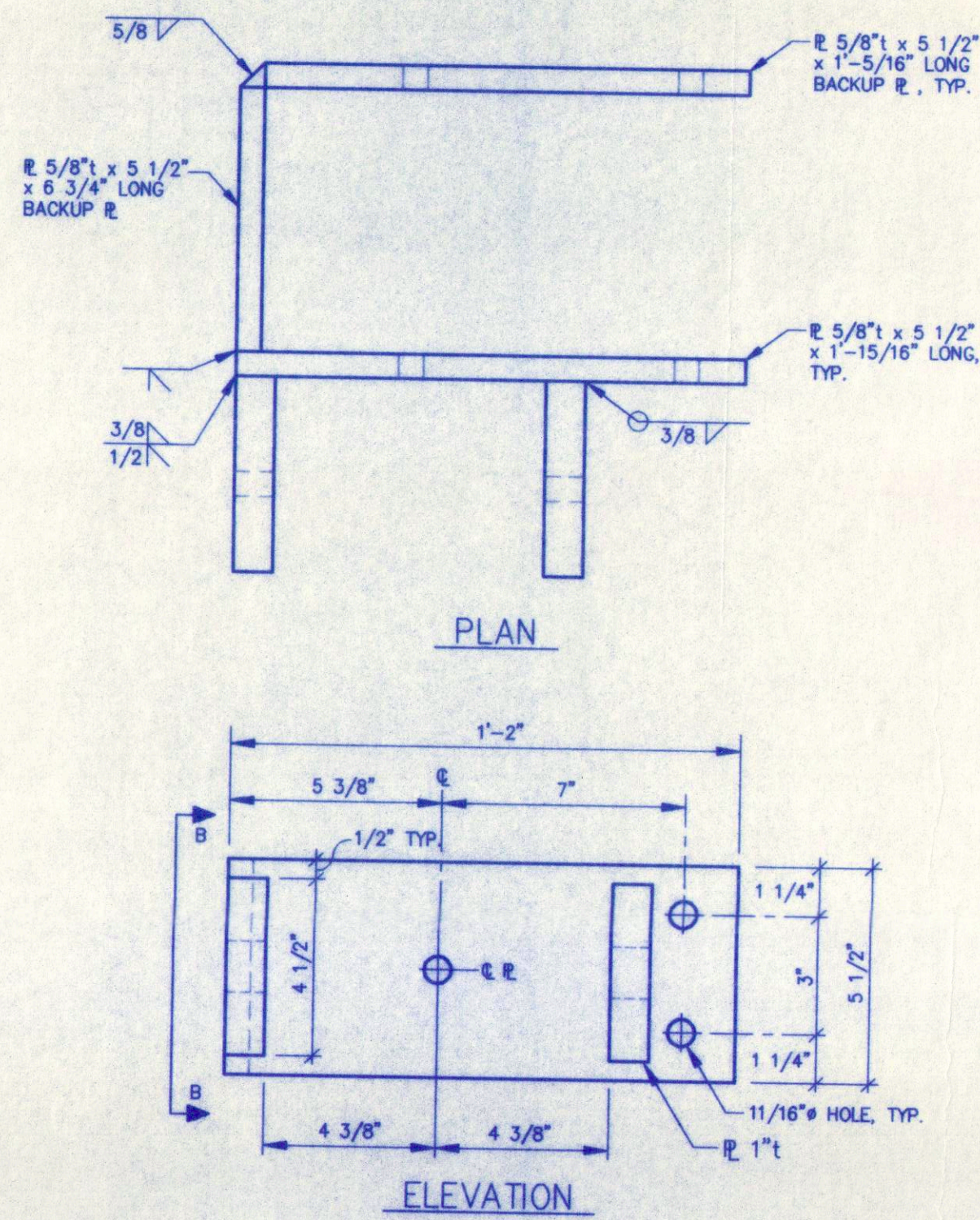
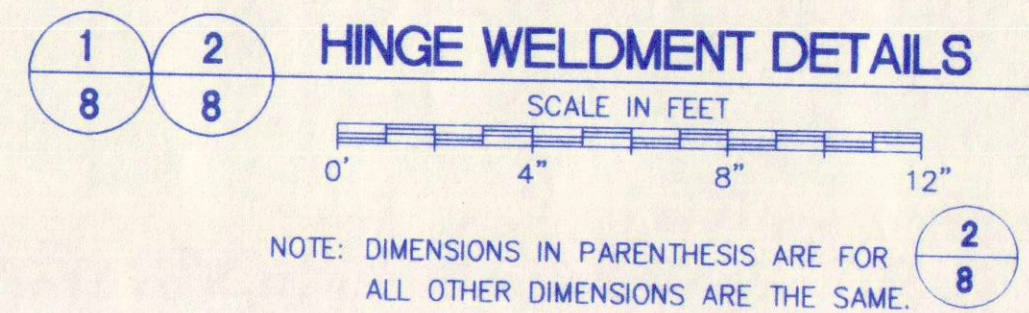
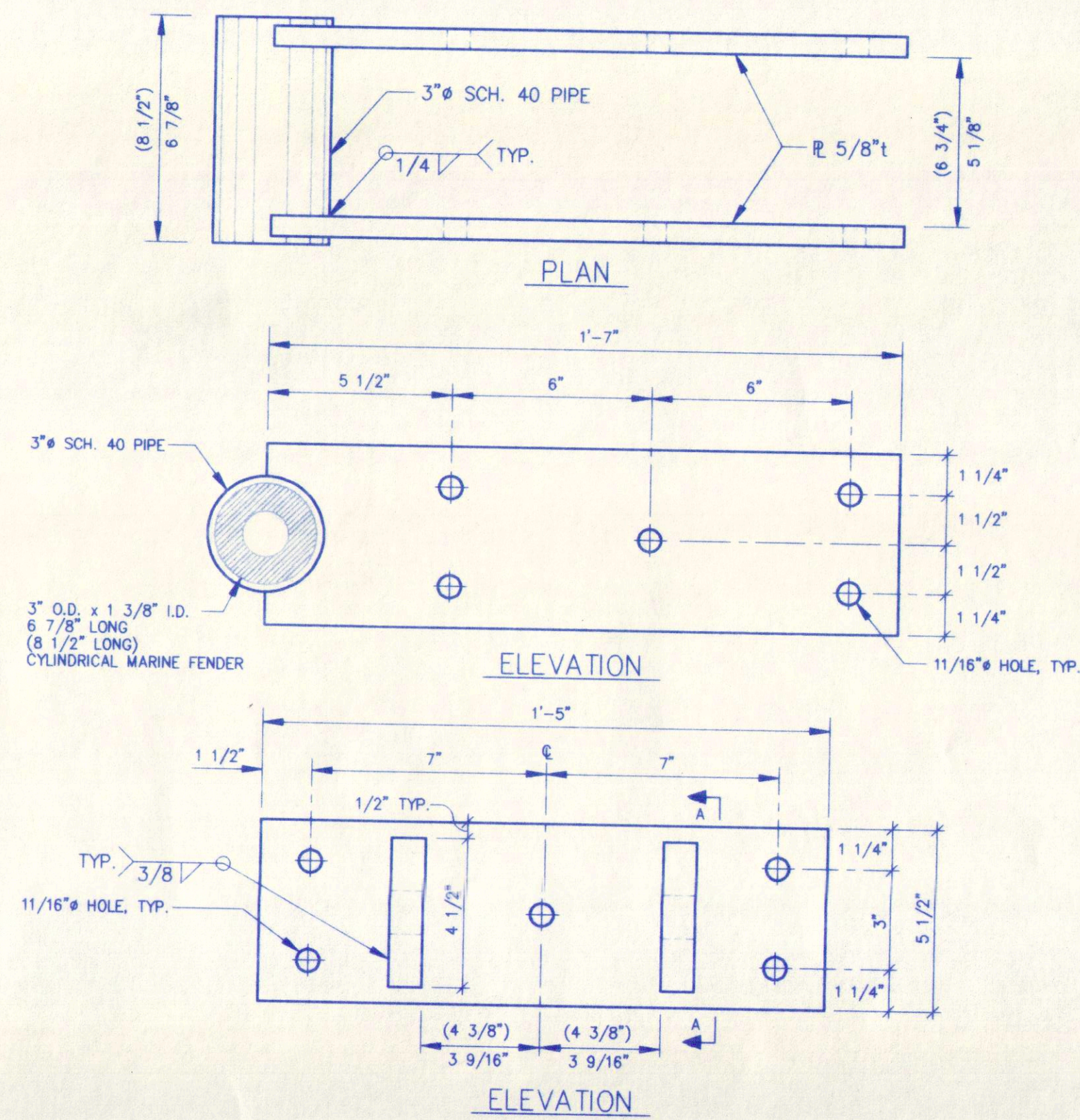
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Date: OCT. 1995  
 Scale: AS NOTED

**3'-1 3/4' x 32' STALL FLOAT** sheet 7 of 16

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**CITY OF CRAIG  
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**Pn Peratovich, Nottingham & Drage, Inc.**  
Engineering Consultants

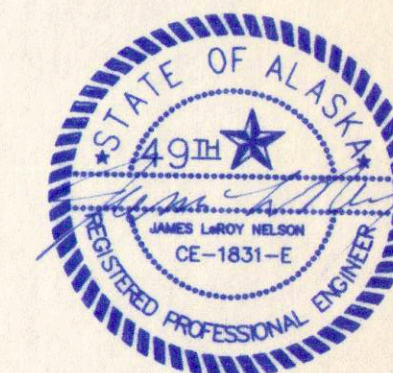
3220 Hospital Drive, Suite 200  
Juneau, Alaska 99801 (907) 586-2093 FAX (907) 586-2099

Designed: JWC  
Drawn: TMS  
Checked: JLN  
Project No: 95236

Date: OCT. 1995  
Scale: AS NOTED

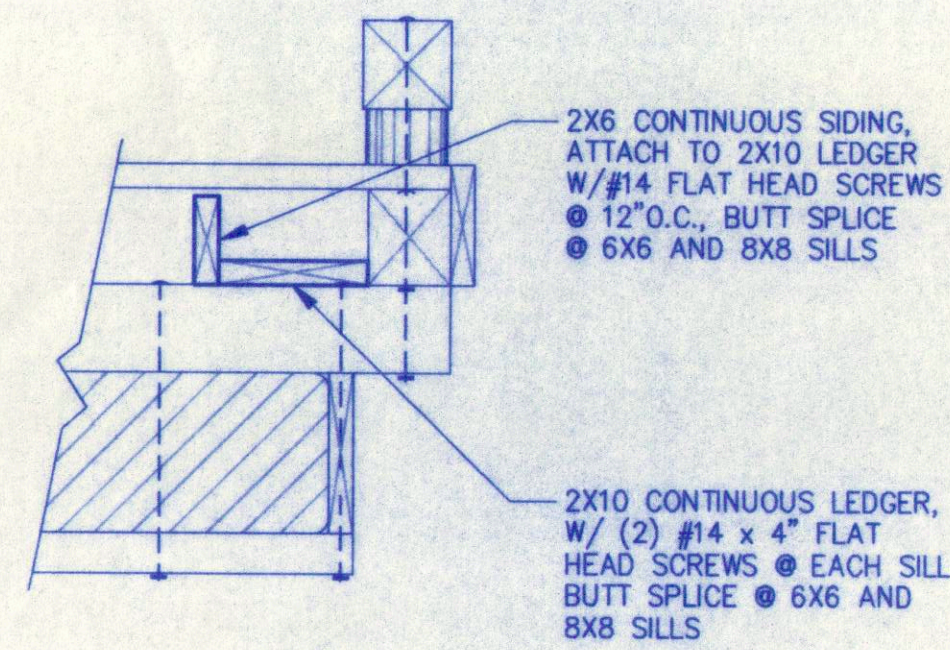
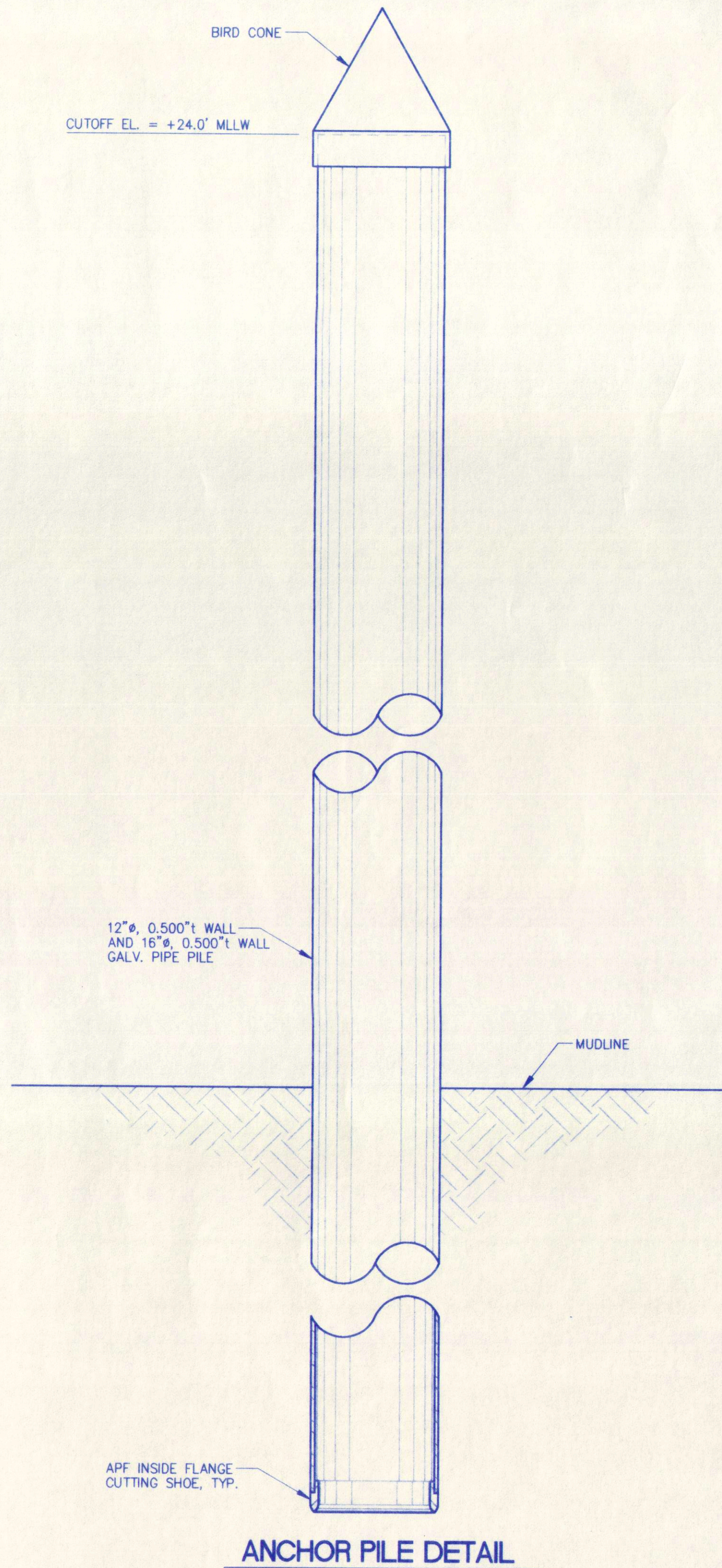
**FLOAT CONNECTION DETAILS**

sheet  
**8 of 16**

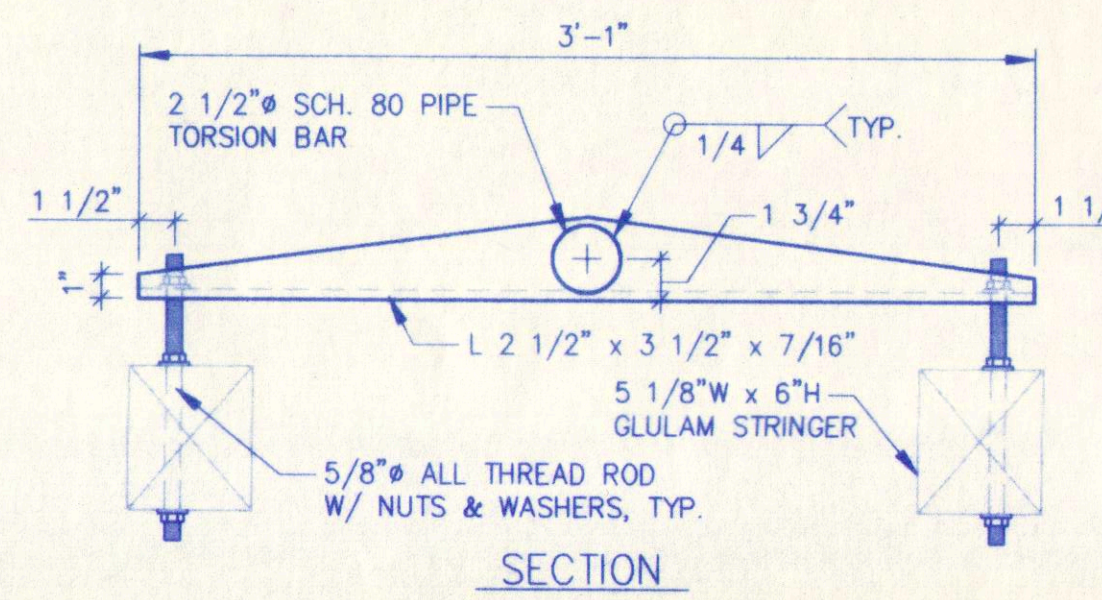
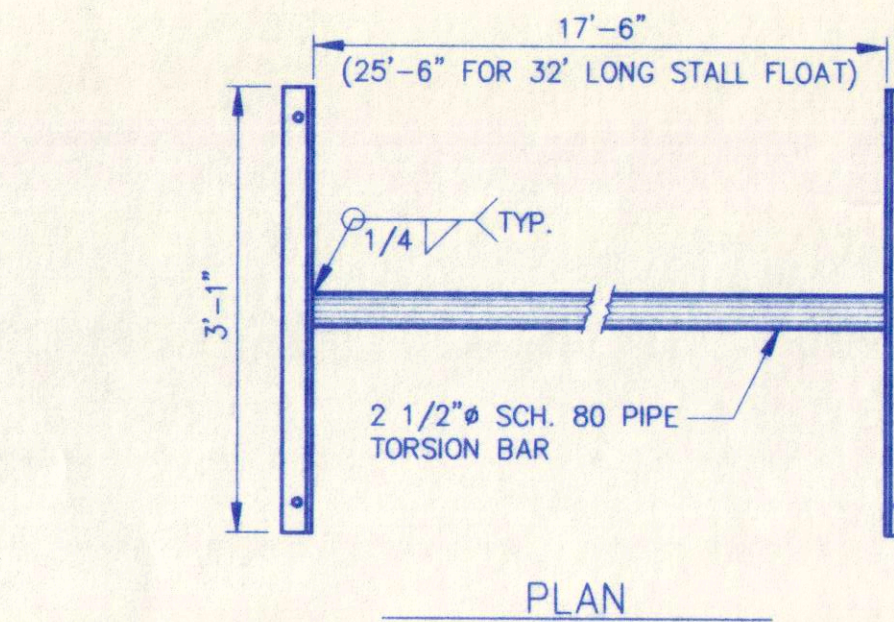




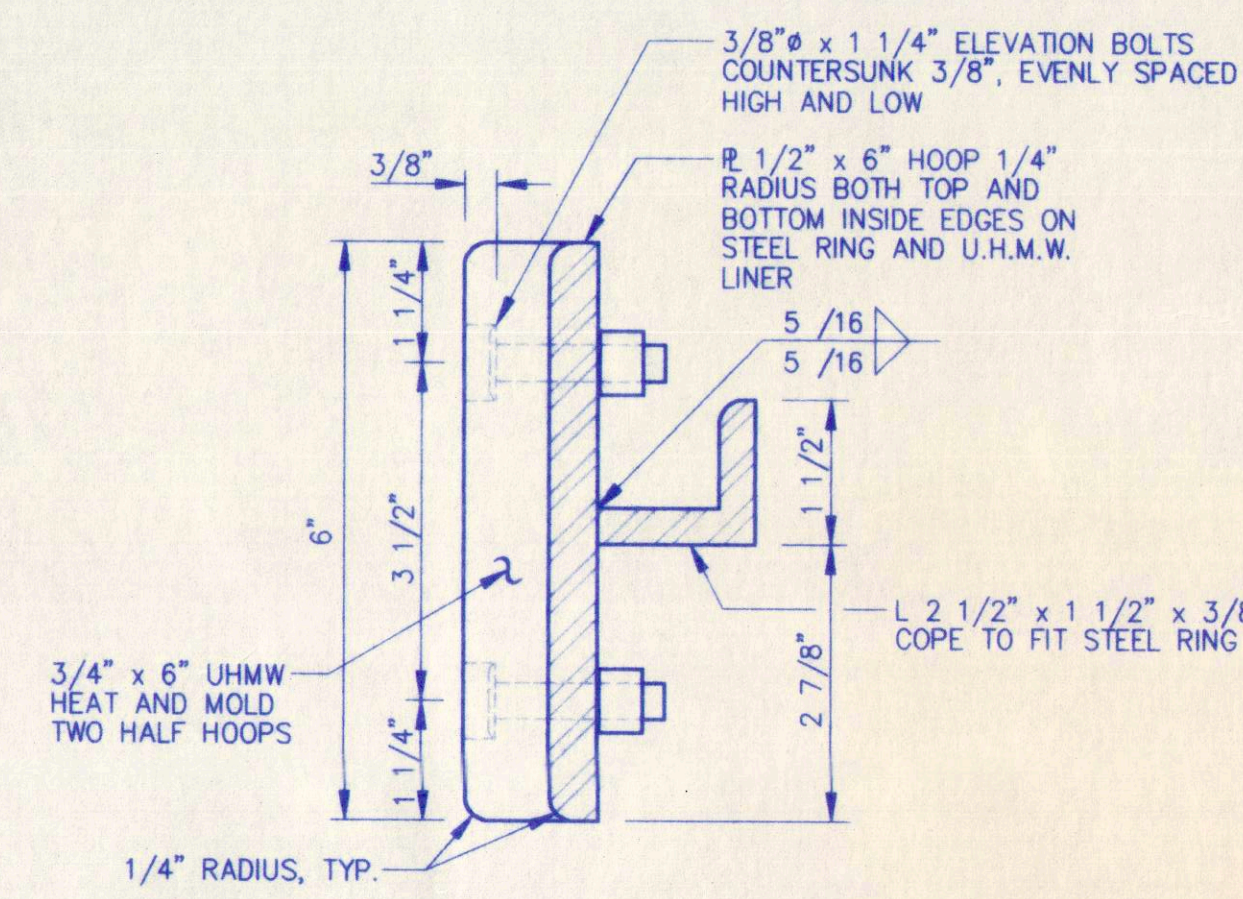
PILE SCHEDULE				
LOCATION	QUANTITY	PILE DIAMETER	PILE LENGTH	WALL THICKNESS
10' X 228' FLOAT	6	12"	70'	3/8"
10' X 144' FLOAT	4	12"	70'	3/8"
12' X 125' LOG REINFORCED FLOAT	5	12"	70'	1/2"
ENDS OF 5' X 37'-6" FINGER FLOATS	3	12"	70'	3/8"
PILES NOTED FOR REPLACEMENT	3	TIMBER PILES	70'	



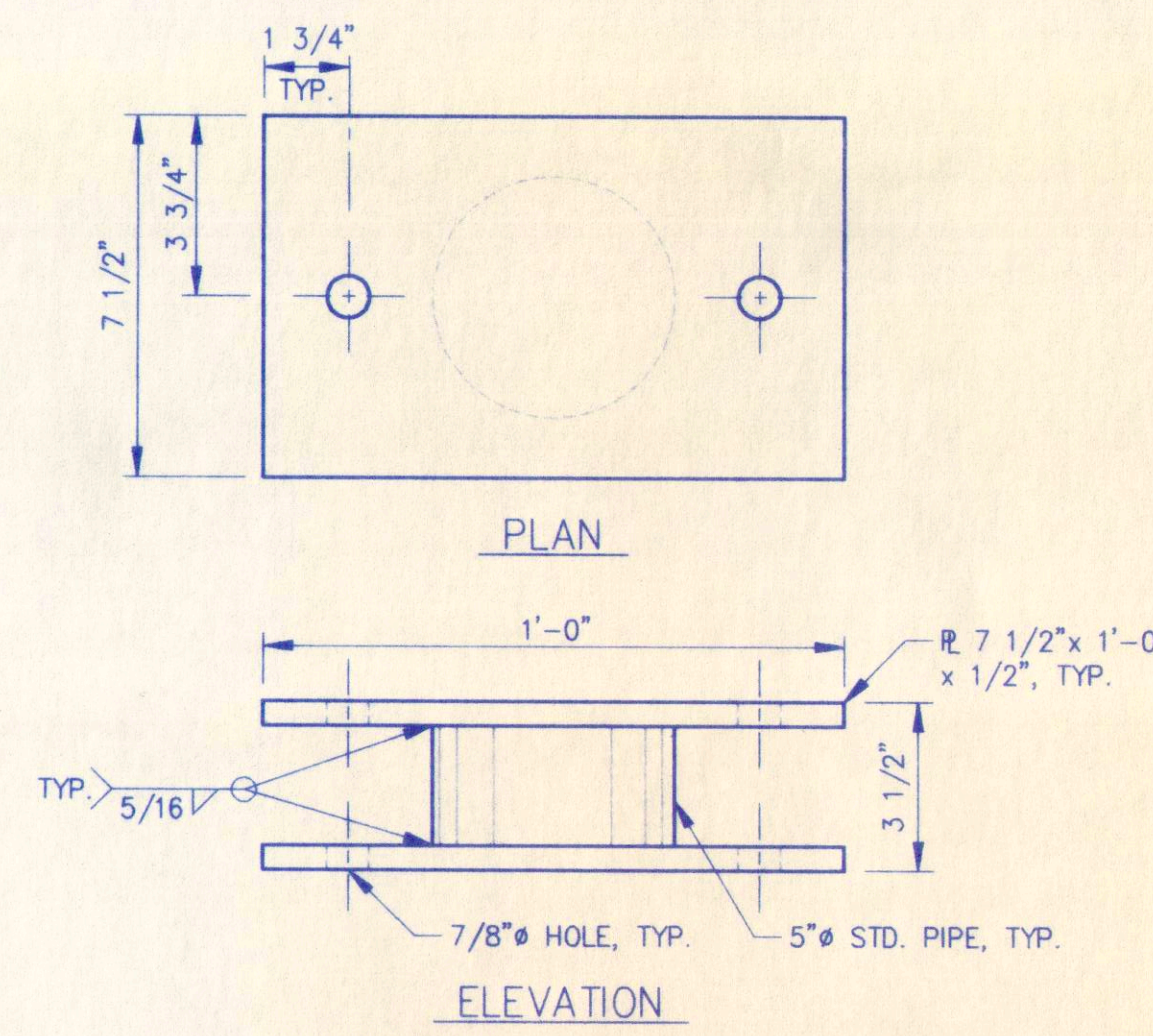
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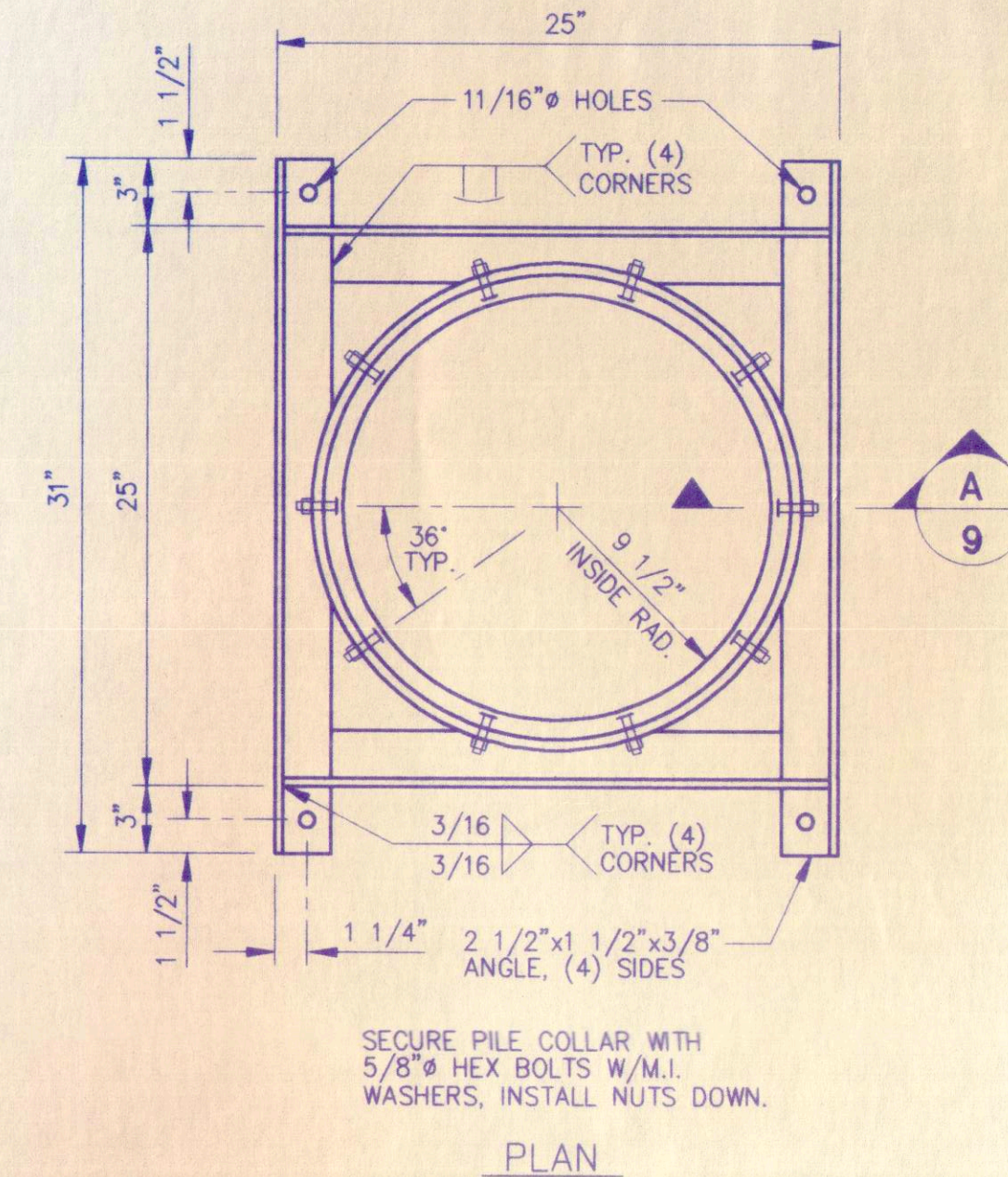
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**9**



**A**  
**9**



**5**  
**9**



**6**  
**9**

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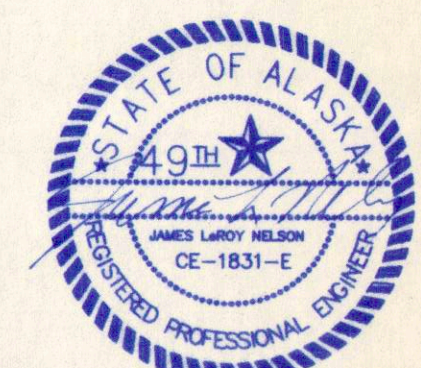
**CITY OF CRAIG  
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Engineering Consultants**

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Juneau, Alaska 99801 (907) 586-2093 FAX (907) 586-2099

**ANCHOR PILE SCHEDULE  
AND MISC. DETAILS**

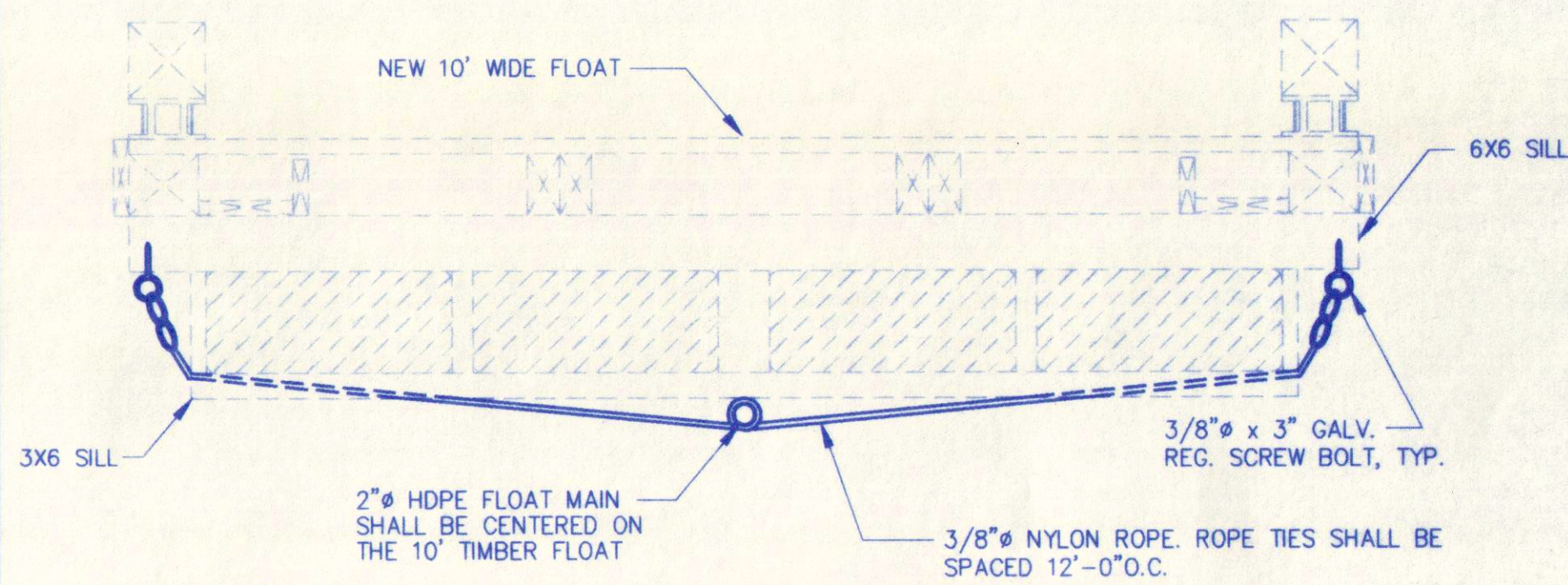
sheet  
**9 of 16**



Designed: JWG  
Drawn: TMS  
Checked: JLN  
Project No: 95236  
Date: OCT. 1995  
Scale: AS NOTED

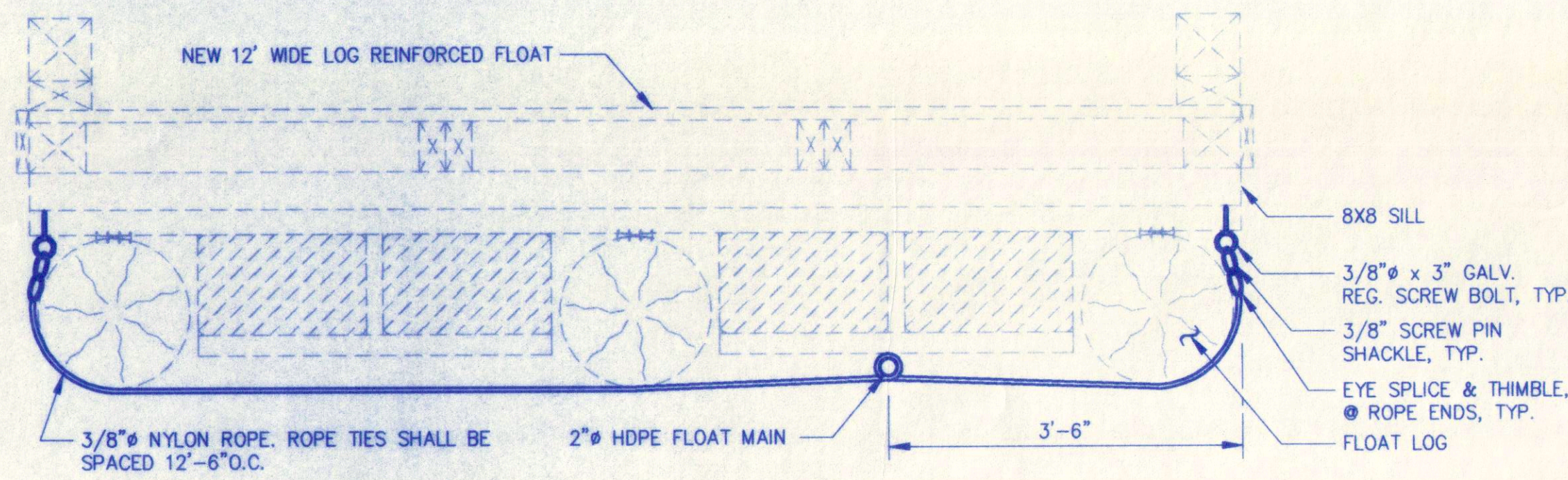
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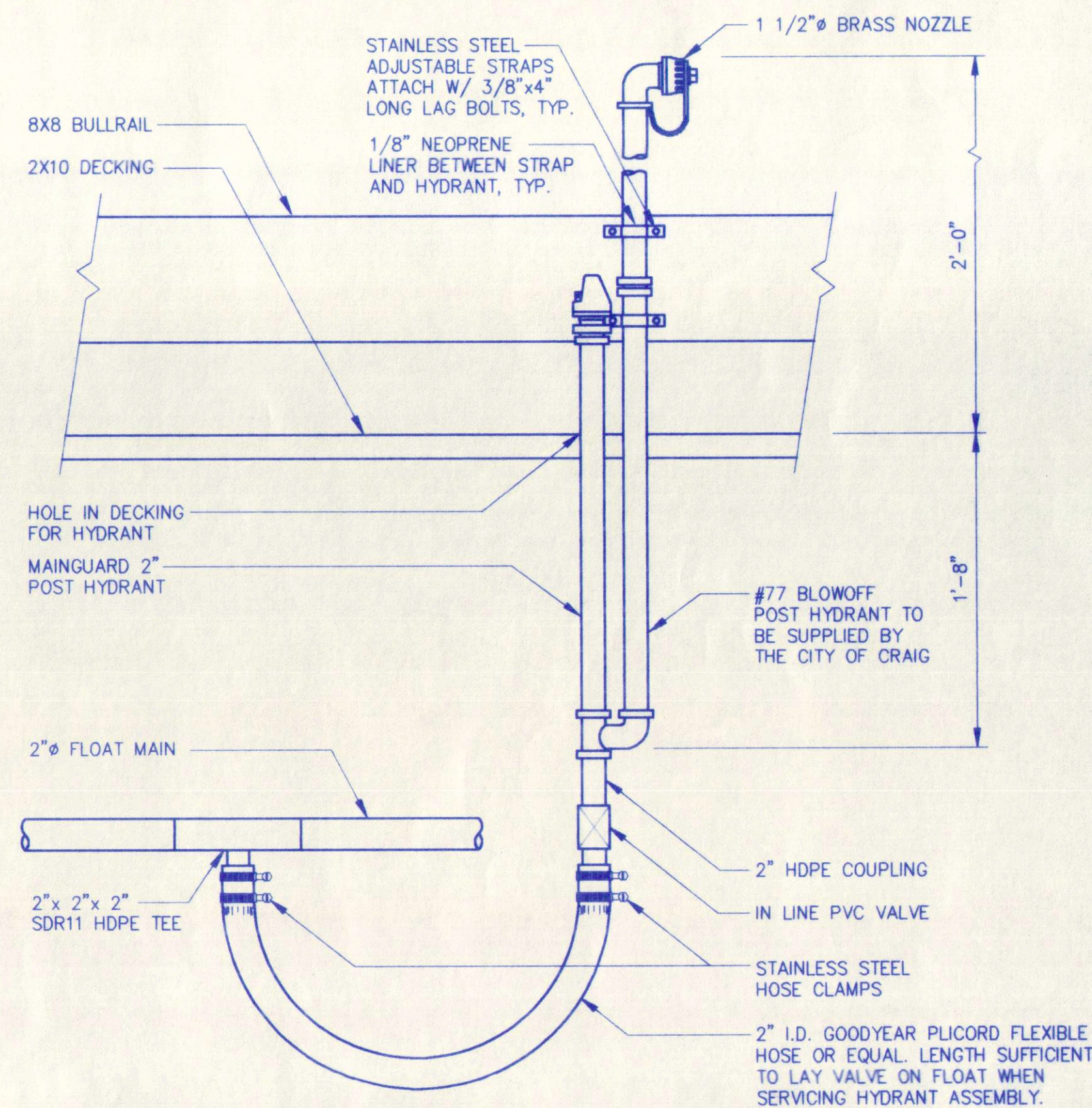
**WATERLINE INSTALLATION (10' FLOAT)**

NOT TO SCALE



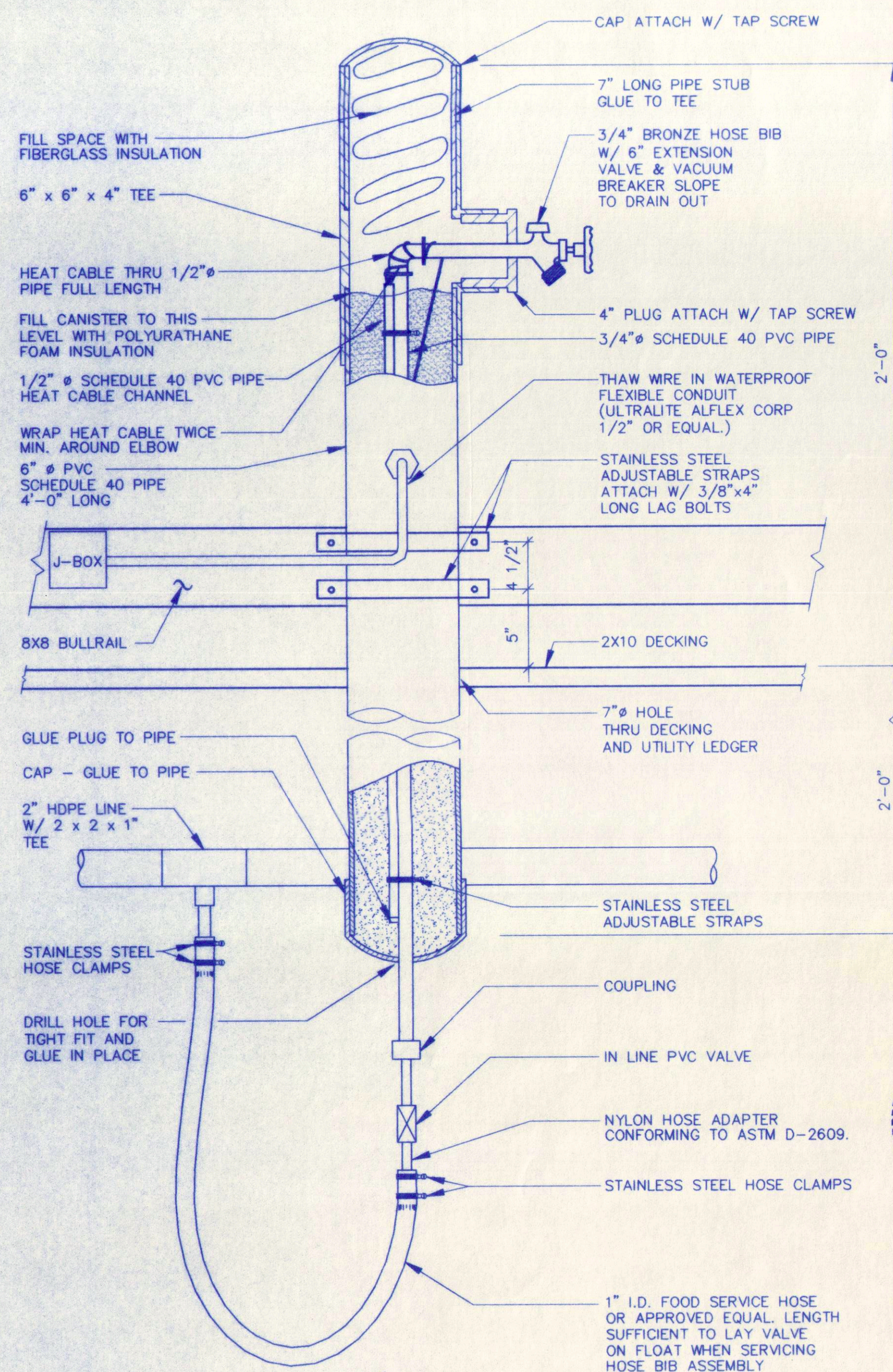
**WATERLINE INSTALLATION (12' LOG REINFORCED FLOAT)**

NOT TO SCALE



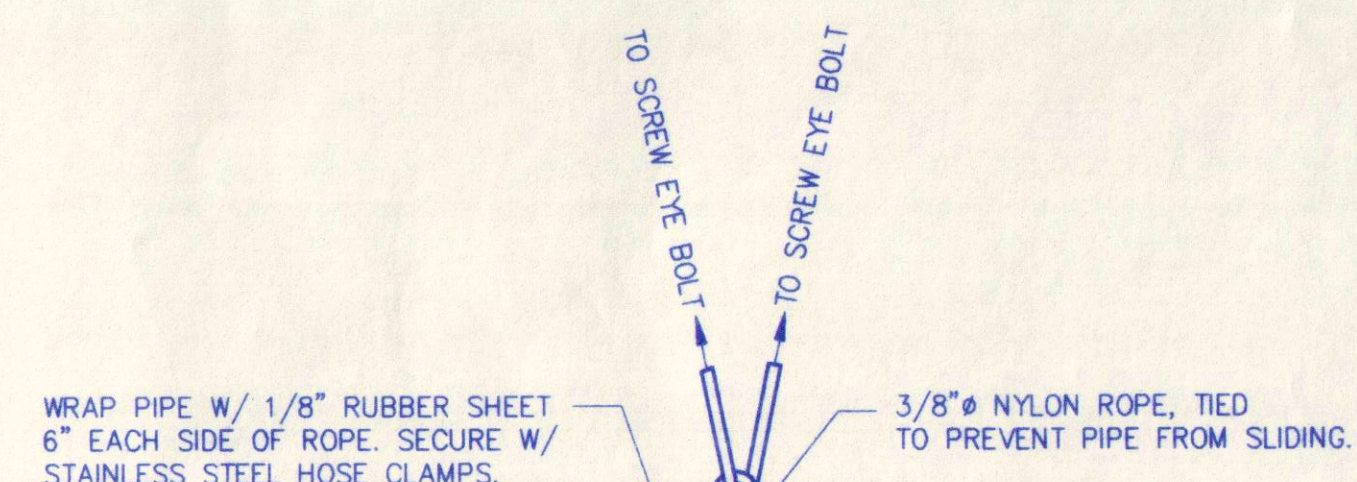
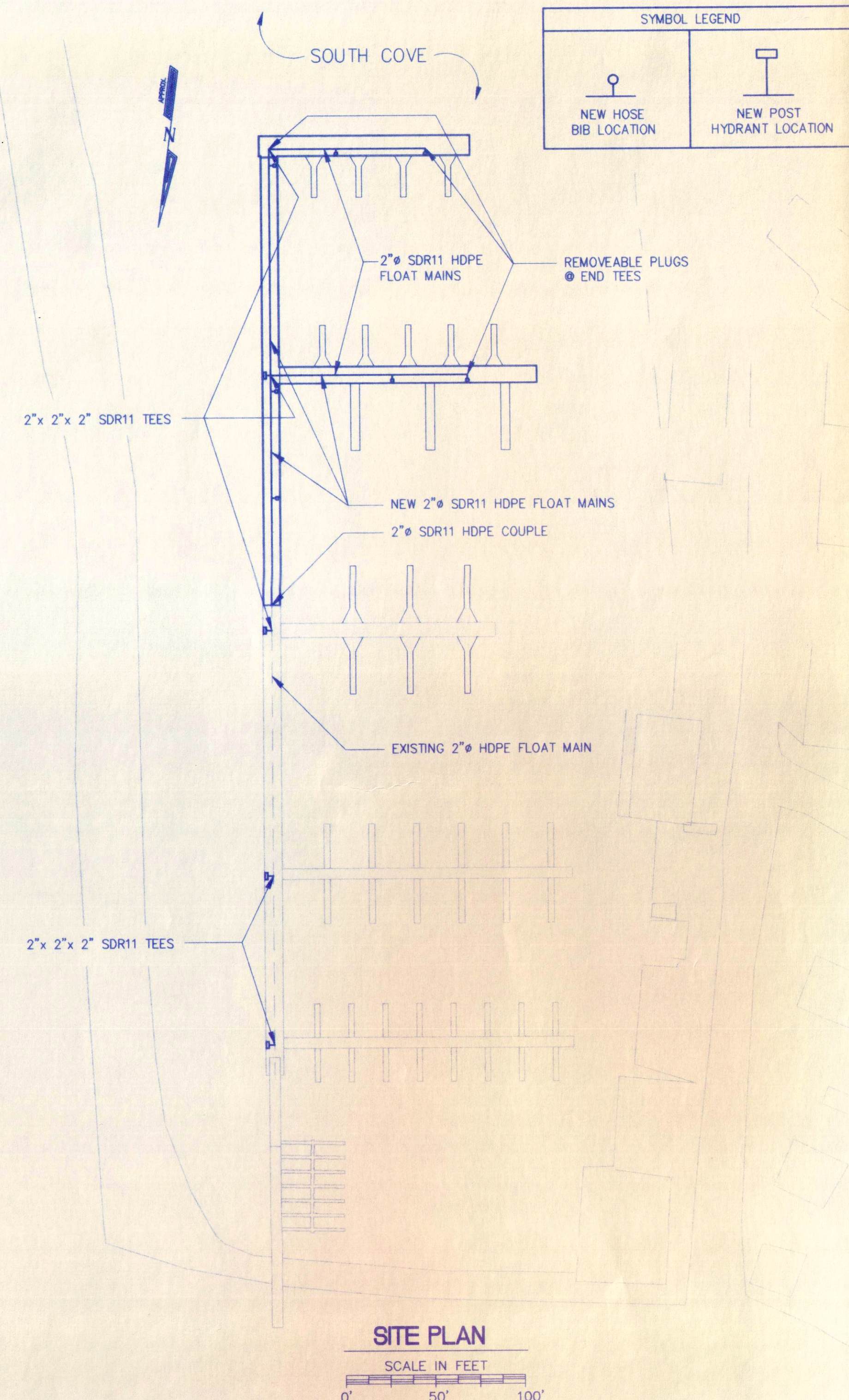
**HYDRANT ASSEMBLY DETAIL**

NOT TO SCALE



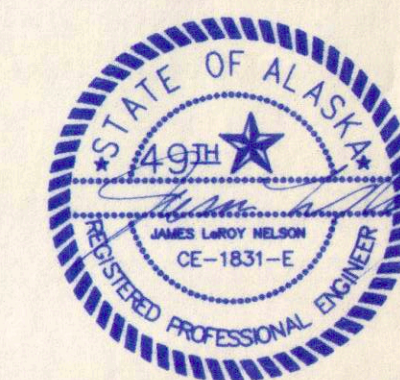
**HOSE BIB ASSEMBLY DETAIL**

NOT TO SCALE



**TYPICAL ROPE ATTACHMENT DETAIL**

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Engineering Consultants

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Designed: JWG  
Drawn: TMS  
Checked: JLN  
Project No: 95236

Date: OCT. 1995  
Scale: AS NOTED

**WATERLINE** sheet 10 of 16



## MATERIALS AND CONSTRUCTION

### STRUCTURAL STEEL

All steel float hardware including connection brackets, pipe blocking, and pile hoops shall be ASTM A36, galvanized.

### STEEL PIPE PILES

Pipe for float anchor piles shall be ASTM A252, GRADE 3, galvanized.

### TIMBER PILES

New timber piles shall be Coast Region Douglas Fir and shall conform to ASTM D-25 with 44 inch minimum butt circumference and 8 inch minimum tip diameter. All timber piles shall be pressure treated with ACZA to a net dry salt retention of 2.5 pounds per cubic foot, minimum, in accordance with AWWA C-18. Cutoffs and minor damaged areas shall be field swabbed with the same preservative per AWWA M4. The cutoff tops of timber piles shall be scatter nailed with twenty 4 inch copper nails.

### BOLTS

All bolts shall be ASTM A307 galvanized. Galvanized malleable-iron washers shall be used wherever bolt heads or nuts would otherwise bear on wood. Bolt holes shall be 1/8" oversized except as otherwise noted.

### STEEL WELDING

Per current American Welding Society AWS D1.1 Code. All welders shall be qualified per AWS for the type of welding anticipated.

### GALVANIZING

All structural steel, pile and hardware shall be galvanized per ASTM A123 or A153 after fabrication unless otherwise noted. Galvanizing damaged from shipping, handling, welding or by other means shall be repaired by spray metalizing or by stick galvanizing with zinc or aluminum alloy sticks. Contractor shall submit repair material and method of repair for review and approval.

### TIMBER

All timber materials shall be Coast Region Douglas Fir No. 1 or better per West Coast Lumber Grading Rules Standard No. 17, S4S. All timber shall be pressure treated with ACZA to a net dry salt retention of 2.5 pounds per cubic foot, minimum, in accordance with AWWA C-18. Fabrication and drilling of timber shall be done as much as possible before treating. Field drilled holes, cuts and minor damaged areas shall be field swabbed with the same preservative per AWWA M4.

### GLUED-LAMINATED TIMBER

All glulam members shall be 24F-V4 DF/DF per AITC. All glulams shall be pressure treated with ACZA to a net dry salt retention of 2.5 pounds per cubic foot, minimum, in accordance with AWWA C-18. Fabrication and drilling of timber shall be done as much as possible before treating. Field drilled holes, cuts and minor damaged areas shall be field swabbed with the same preservative per AWWA M4. Glulams shall be supplied flat with no camber. All faces shall be smooth. All voids, knots or other discontinuities larger than 3/4 of an inch in any dimension shall be filled with approved material.

### COATED FLOATATION BILLETS

Floatation billets shall be Western Insulfoam Type II Expanded Polystyrene or approved equivalent. Minimum requirements of foam are as follows: Density 1.15 lb/cubic foot, 15 psi at 10% deformation, 40 psi flexural strength, 3% maximum water absorption by volume. The foam coating shall be spray applied polyurethane, 60 mil minimum thickness.

### WATERLINE

Waterline and appurtenances materials shall be as noted on the plans. Install pipe fittings, valves, meters, and other appurtenances according with manufacturers recommendations, AWWA C600 and AWWA C651. Connections to existing system shall not be permitted until new lines have been flushed, pressure tested, disinfected and approved. Lines shall be pressure tested to 250 psi for 15 minutes without pumping, with no significant loss of pressure or volume. Lines shall be flushed, disinfected and tested in accordance with AWWA C651. Contractor shall submit a testing and disinfection plan for review and approval prior to testing and disinfecting.

### PIPE PILE INSTALLATION

The contractor shall submit a plan for pile driving. The plan shall contain hammer type and driving method. The contractor shall not mobilize hammers and related equipment prior to receiving written approval of the plan. The contractor shall allow one week for review of the plan by the Engineer.

All pile installation shall be conducted with the Engineer present. The Contractor shall assist the Engineer with monitoring of the pile driving. The Contractor shall mark each pile with one foot increments with every five foot increment numbered. The marks shall be visible from all sides if the pile.

Any hammer that causes damage to any pile shall be substituted with an acceptable alternate hammer at no additional expense to the owner.

Float piles shall be placed vertical such that the float can freely move through all tidal ranges. The piles shall be driven through pile collars in final position.

All float anchor piles shall be driven to 20' minimum penetration.

All steel pile cutoff and unused pipe shall become the property of the Owner. The contractor shall remove the pipe from the project site and shall neatly stack the pipe as approved by the Owner within 5 miles of the construction site.

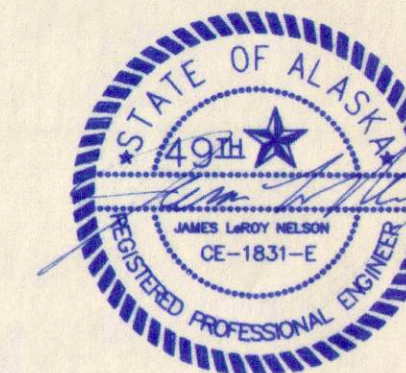
### SUBMITTALS

Shop drawings for all fabricated materials shall be submitted to the Engineer for written approval prior to fabrication of any item. Certifications, manufacturers data and other information for all materials, including those not specifically noted in the General Notes or shown on individual drawings, shall be submitted to the engineer for approval. All methods and materials shall conform to the contract documents, General Notes, the plans, good workmanship, generally accepted industry standards and manufacturers recommendations.

The following is a partial list of required submittals for this project: The engineer may require additional submittals.

Timber Grading Certification and Pressure Treatment Certification for Timber  
Galvanizing repair method for both shop and field repair.  
Spray metalizing method for both shop and field repair.  
AWS Welders Certification Information Welding Procedures  
Steel Fabrication Drawings  
Pile Driving Plan  
Floatation Billet Fabrication Drawings  
Catalog Cuts for all Water Appurtenances  
Waterline Testing Program

FOR BIDDING PURPOSES ONLY



**CITY OF CRAIG  
SOUTH COVE HARBOR IMPROVEMENTS**

Designed: JWG  
Drawn: TMS  
Checked: JLN  
Project No: 95236

**Peratrovich, Nottingham & Drage, Inc.**  
Engineering Consultants

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Juneau, Alaska 99801 (907) 586-2093 FAX (907) 586-2099**

Date: OCT. 1995  
Scale: AS NOTED

**GENERAL NOTES**

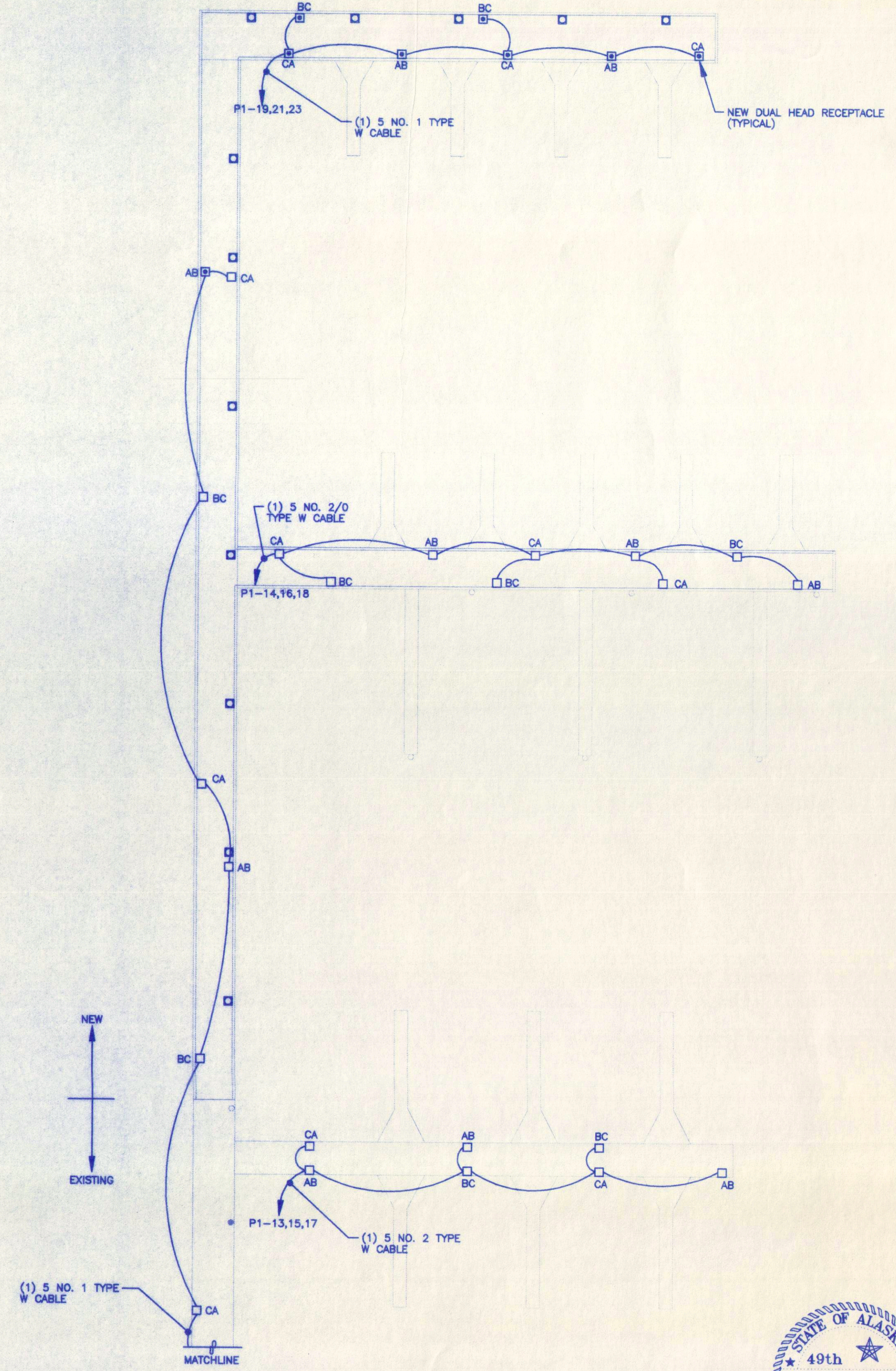
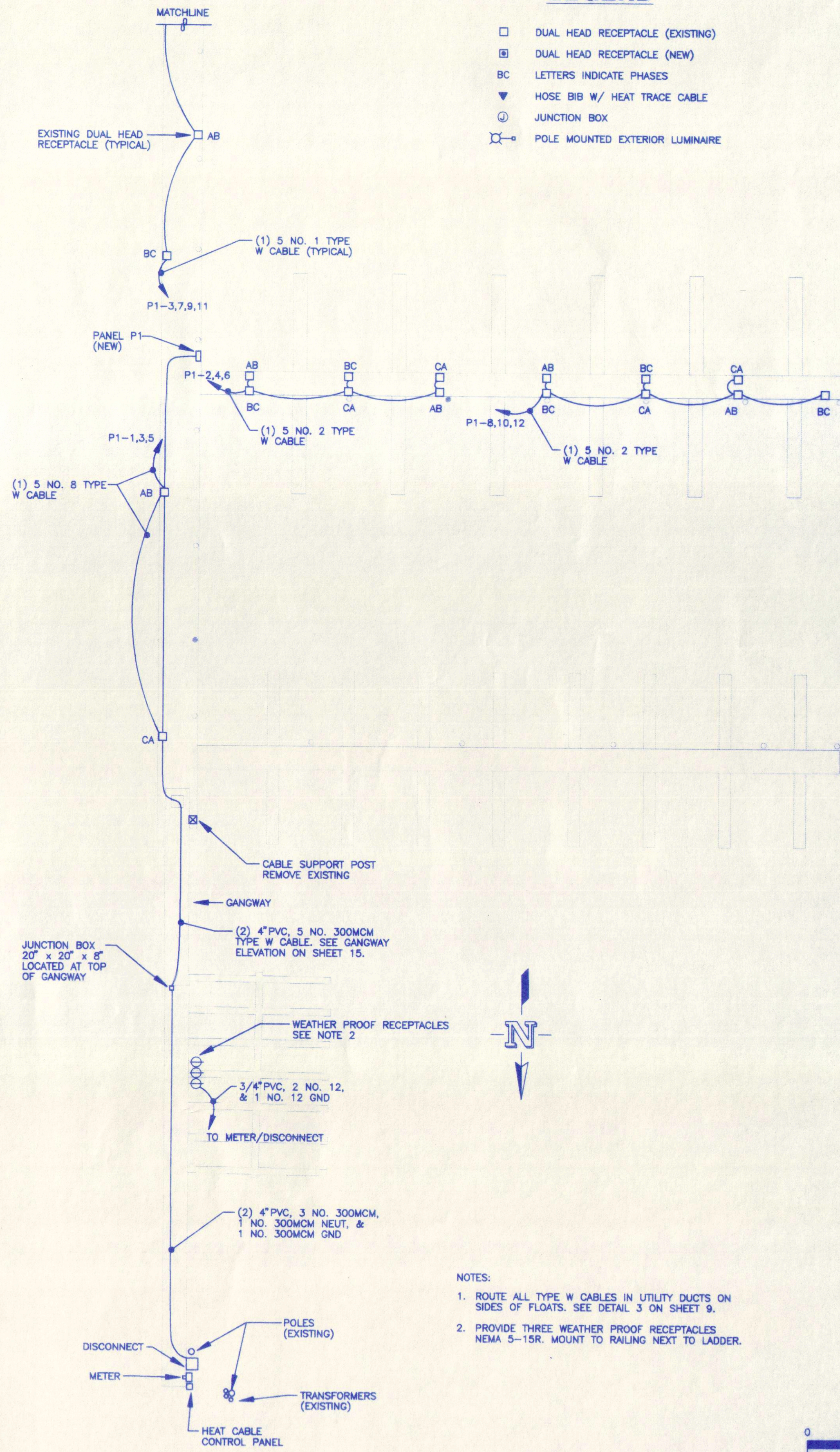
sheet  
**11 of 16**

Peratrovich, Nottingham and Drage, Inc. (PN&D) is not responsible for safety programs, methods or procedures of operation, or the construction of the design shown on these drawings. Drawings are for the use of this project only and are not intended for reuse without written approval from PN&D. Drawings are also not to be used in any manner that would constitute a detriment directly or indirectly to Peratrovich, Nottingham and Drage, Inc.



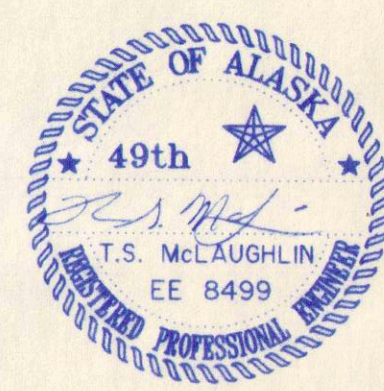
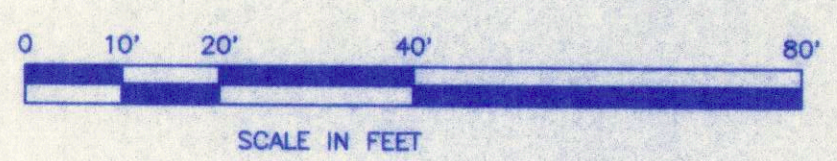
**LEGEND**

- DUAL HEAD RECEPTACLE (EXISTING)
- ▣ DUAL HEAD RECEPTACLE (NEW)
- BC LETTERS INDICATE PHASES
- ▼ HOSE BIB W/ HEAT TRACE CABLE
- ⊙ JUNCTION BOX
- ⊗ POLE MOUNTED EXTERIOR LUMINAIRE



- NOTES:
- ROUTE ALL TYPE W CABLES IN UTILITY DUCTS ON SIDES OF FLOATS. SEE DETAIL 3 ON SHEET 9.
  - PROVIDE THREE WEATHER PROOF RECEPTACLES NEMA 5-15R. MOUNT TO RAILING NEXT TO LADDER.

**SITE PLAN**



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**CITY OF CRAIG  
SOUTH COVE HARBOR IMPROVEMENTS**

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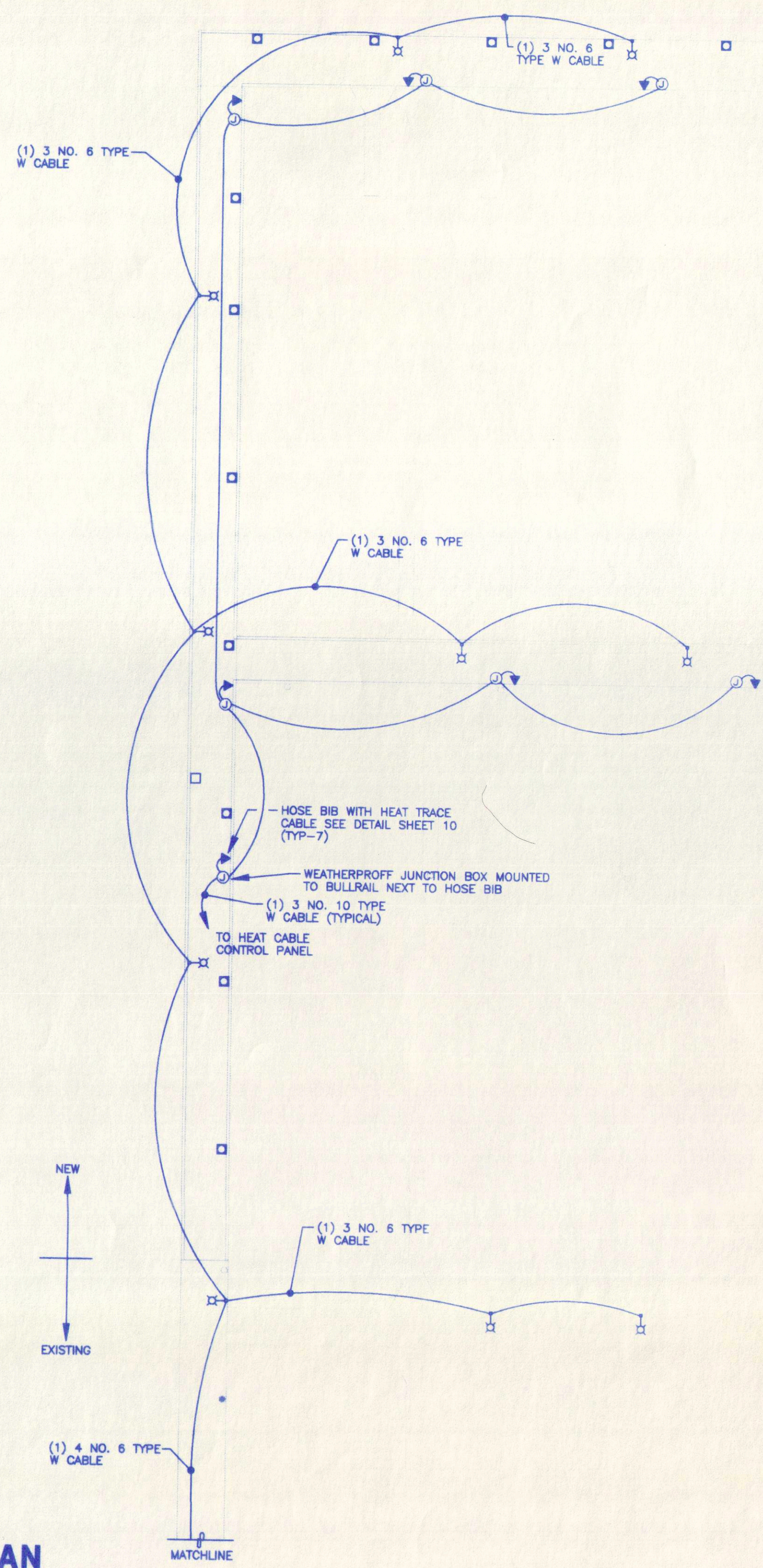
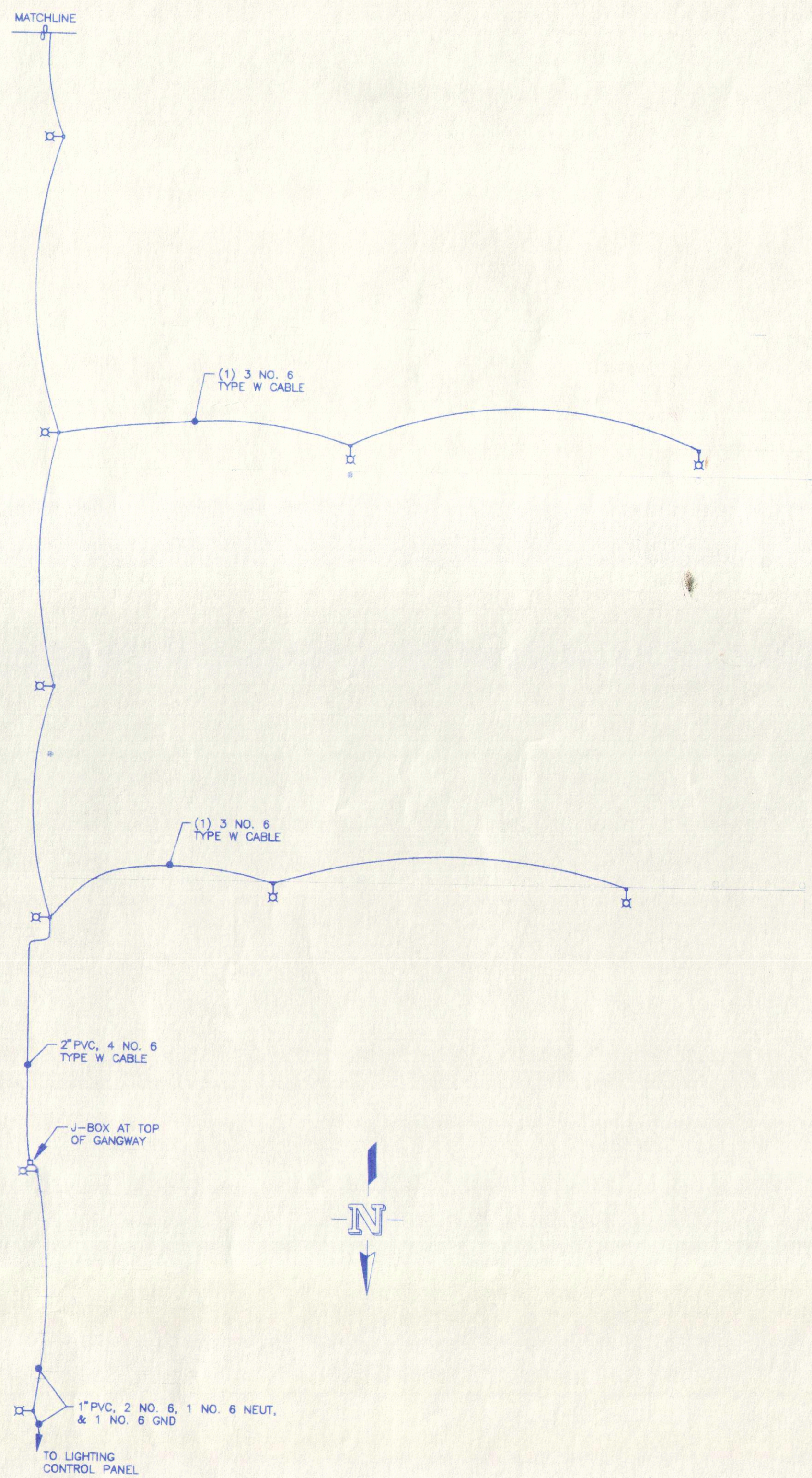
Designed: GSS  
Drawn: JLC  
Checked: TSM  
Project No: 95236

Date: 7-NOV-95  
Scale: GRAPHIC

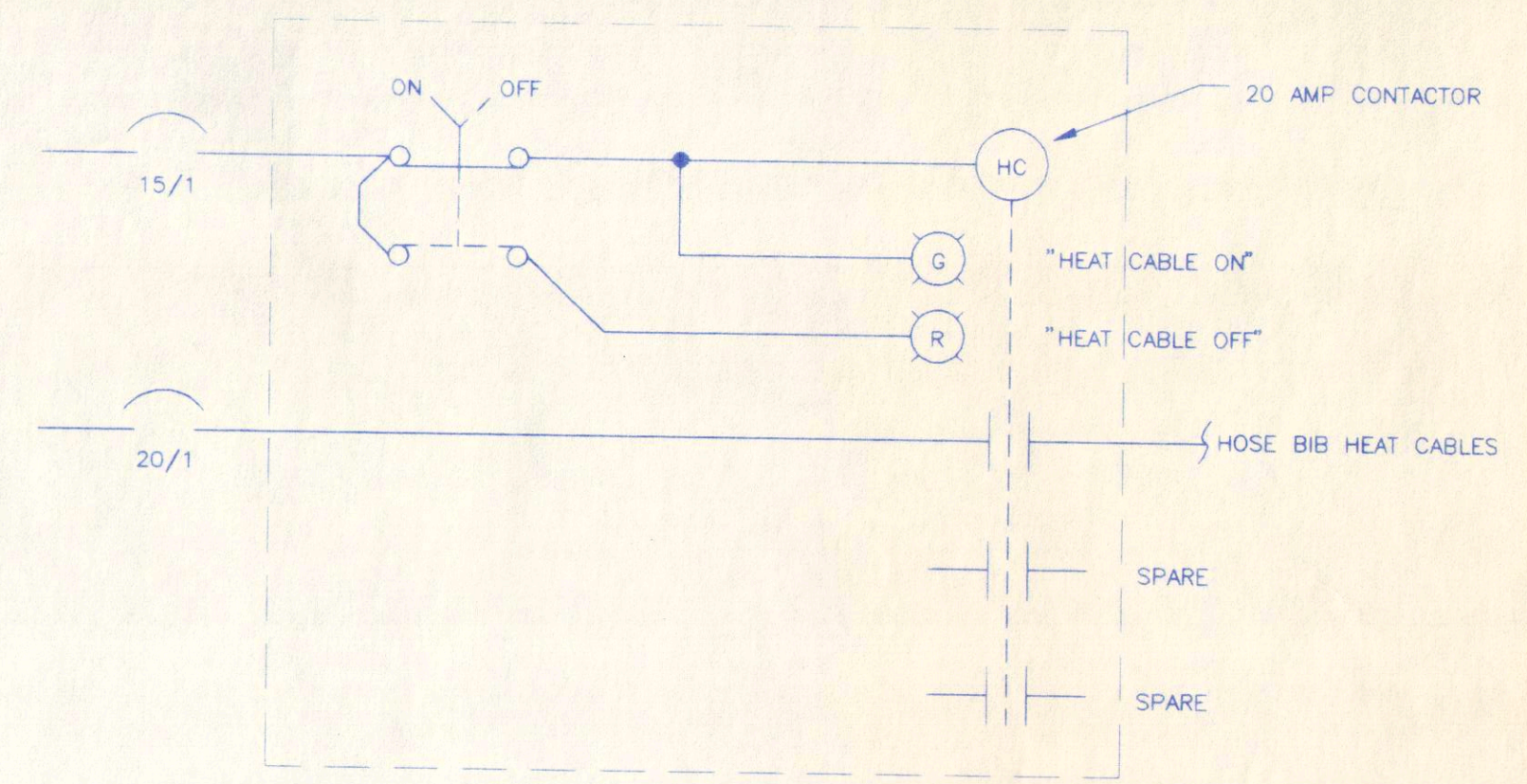
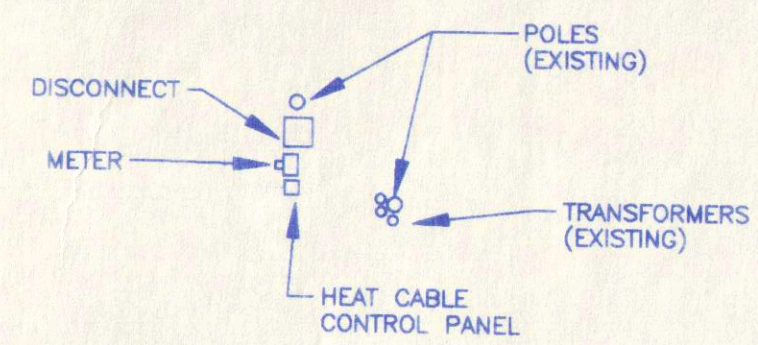
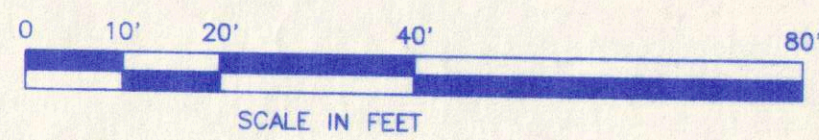
**SITE PLAN - POWER**

sheet  
**12 of 16**



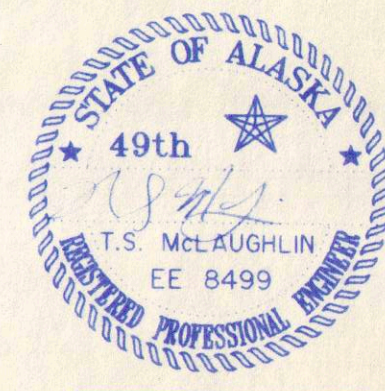


**SITE PLAN**



NOTE:  
 1. PROVIDE HEAT CABLE CONTROLS AS SHOWN. SELECTOR SWITCH, PILOT LIGHTS, AND CONTACTOR SHALL BE MOUNTED INSIDE A 18" H x 12" W, NEMA 4X ENCLOSURE WITH A 3" x 5" WINDOW. THE PILOT LIGHTS SHALL BE VISIBLE THROUGH THE WINDOW.

**DETAIL - HEAT CABLE CONTROLS**  
 NO SCALE



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**E-2**

**CITY OF CRAIG**  
**SOUTH COVE HARBOR IMPROVEMENTS**

**Peratovich, Nottingham & Drage, Inc.**  
 Engineering Consultants

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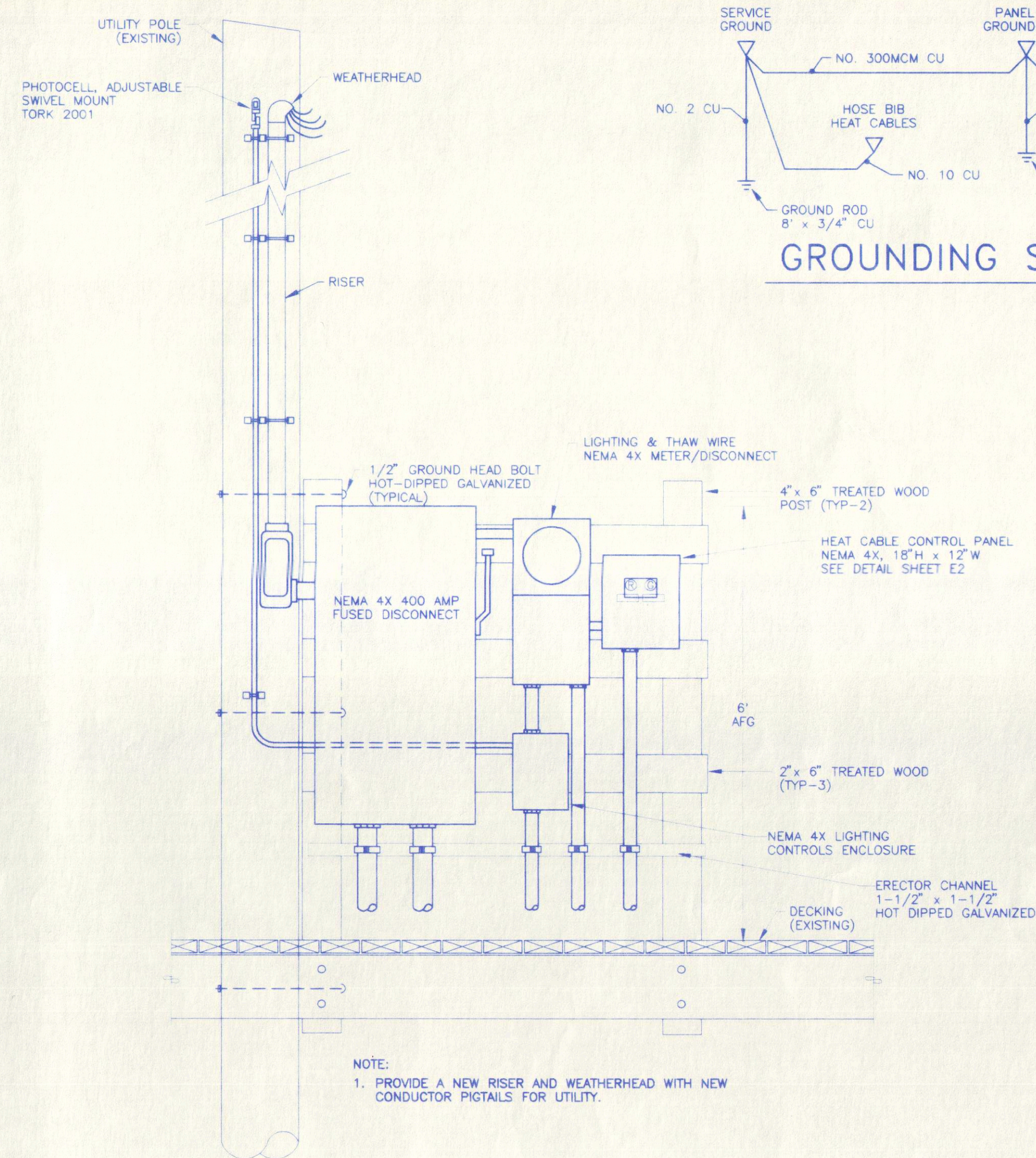
Designed: GSS  
 Drawn: JLC  
 Checked: TSM  
 Project No: 95236

Date: 7-NOV-95  
 Scale: GRAPHIC

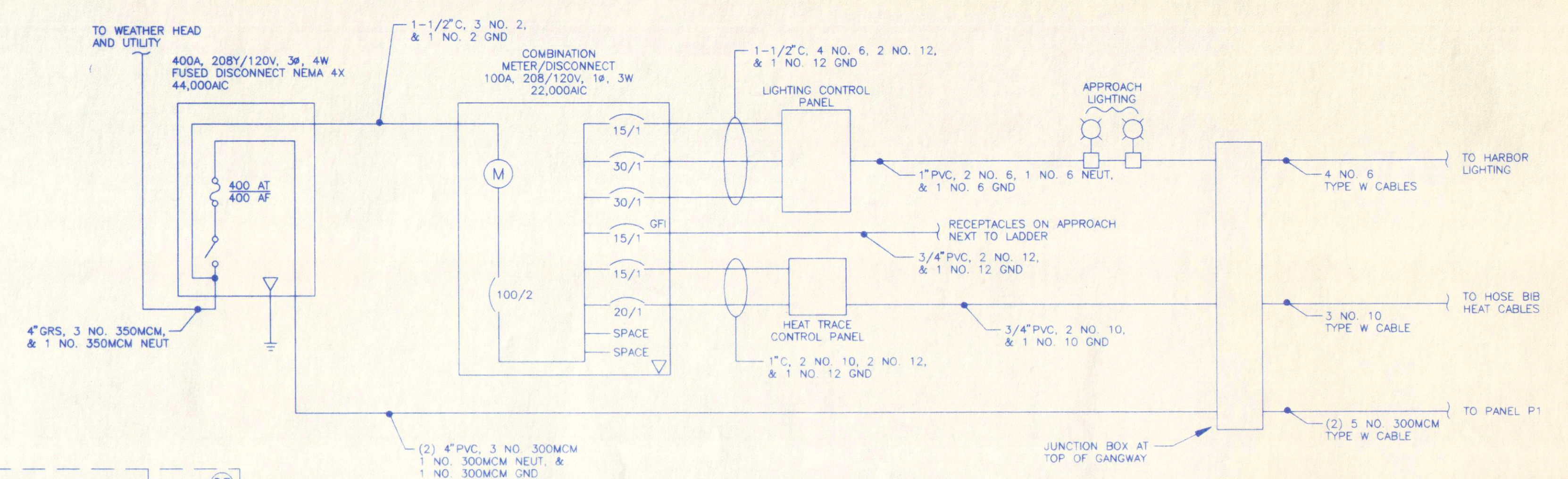
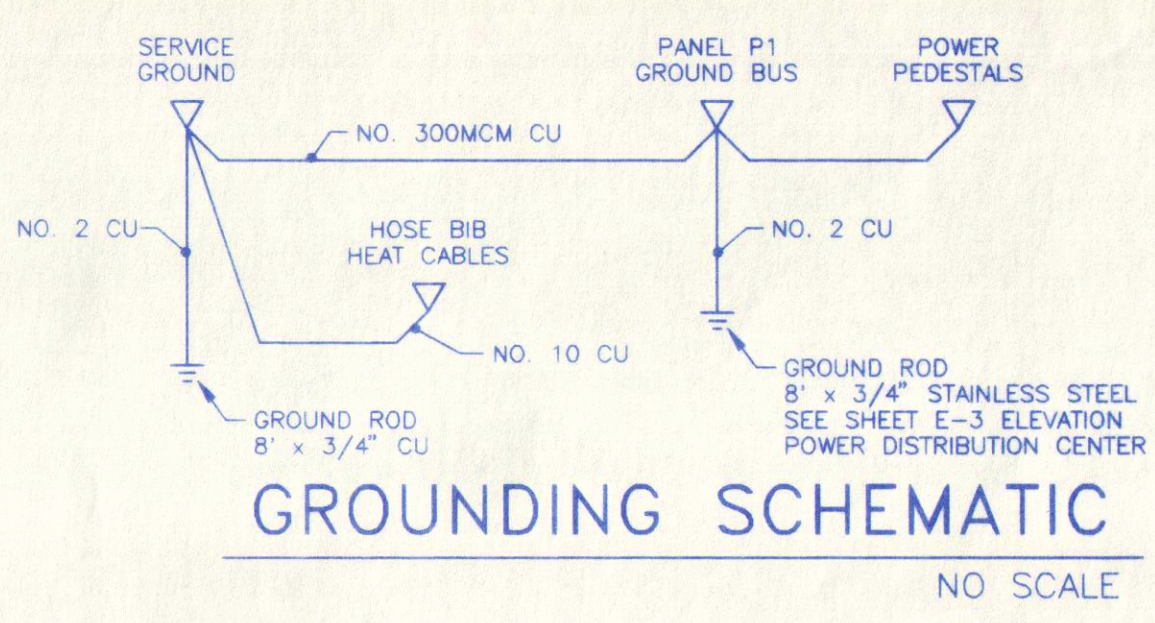
**SITE PLAN - LIGHTING & HEAT CABLE**

sheet  
**13 of 16**

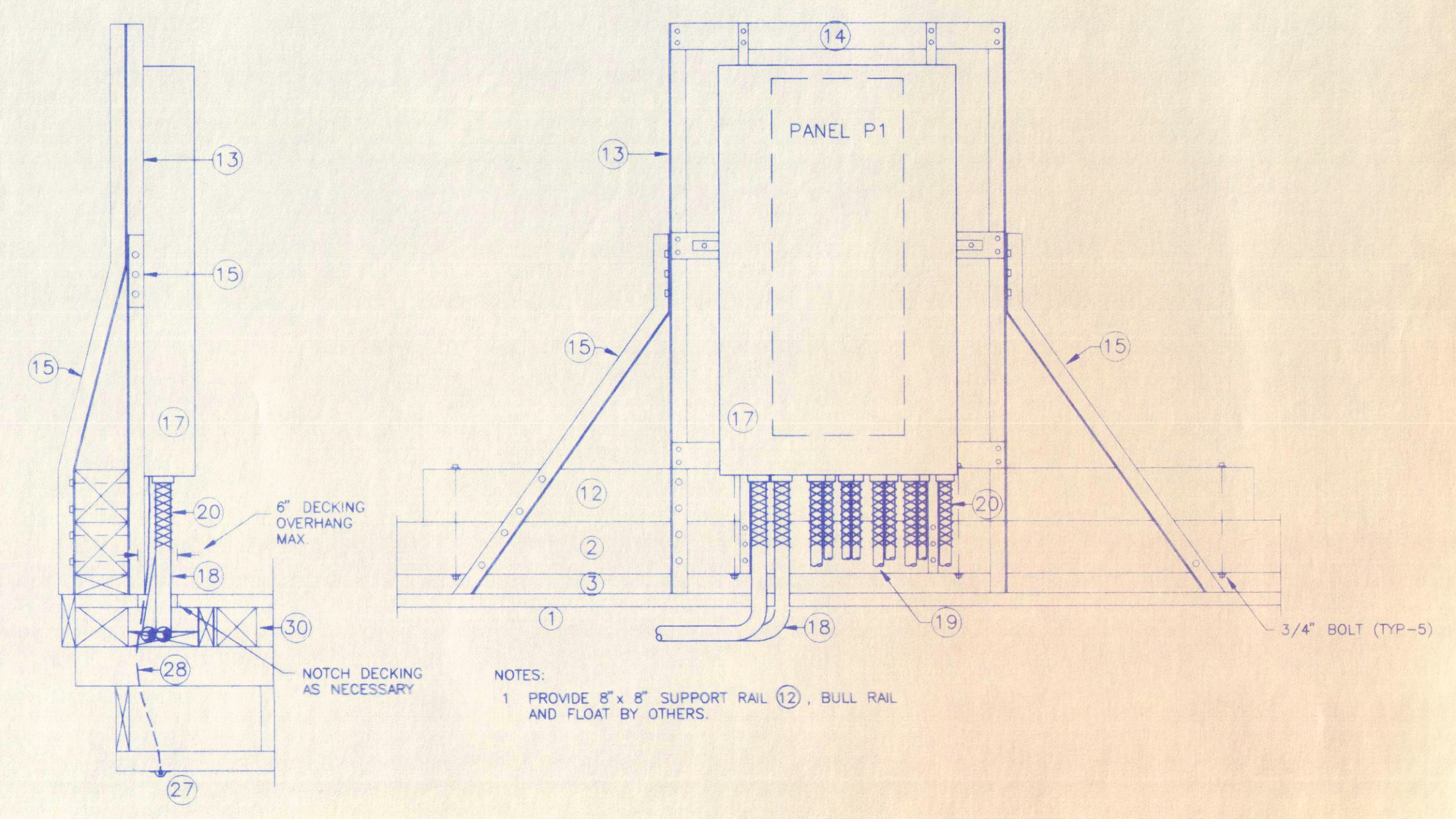
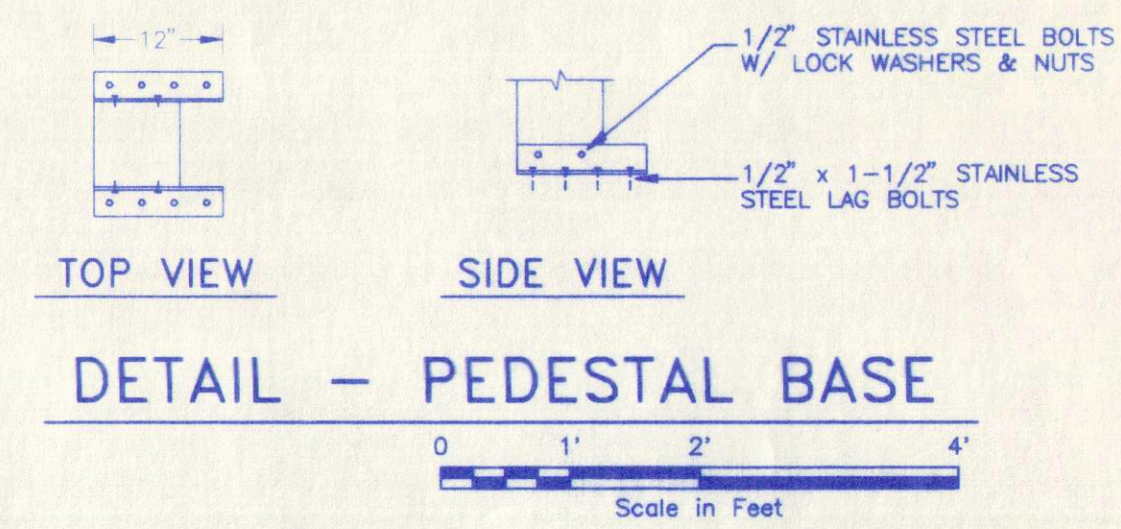
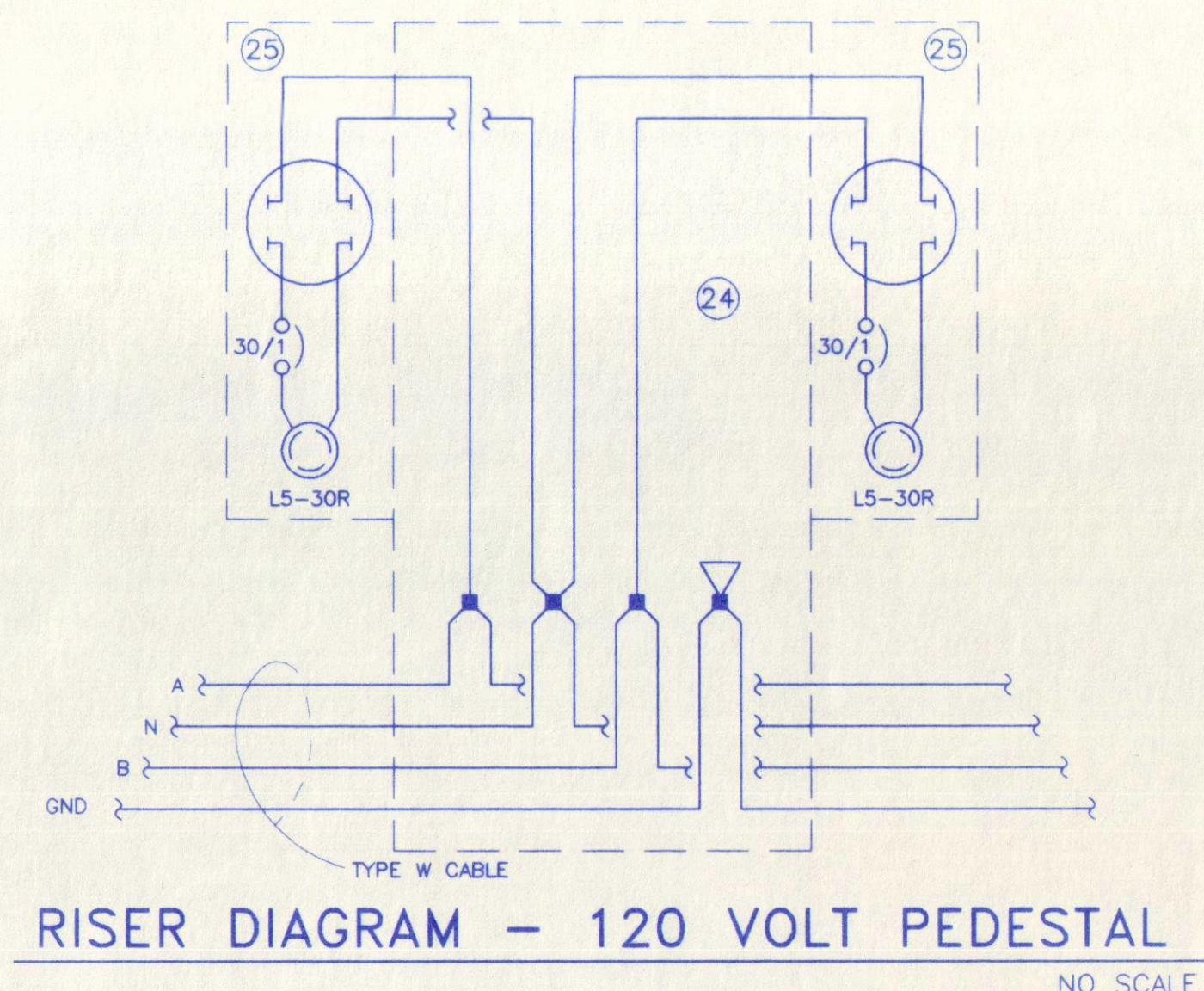




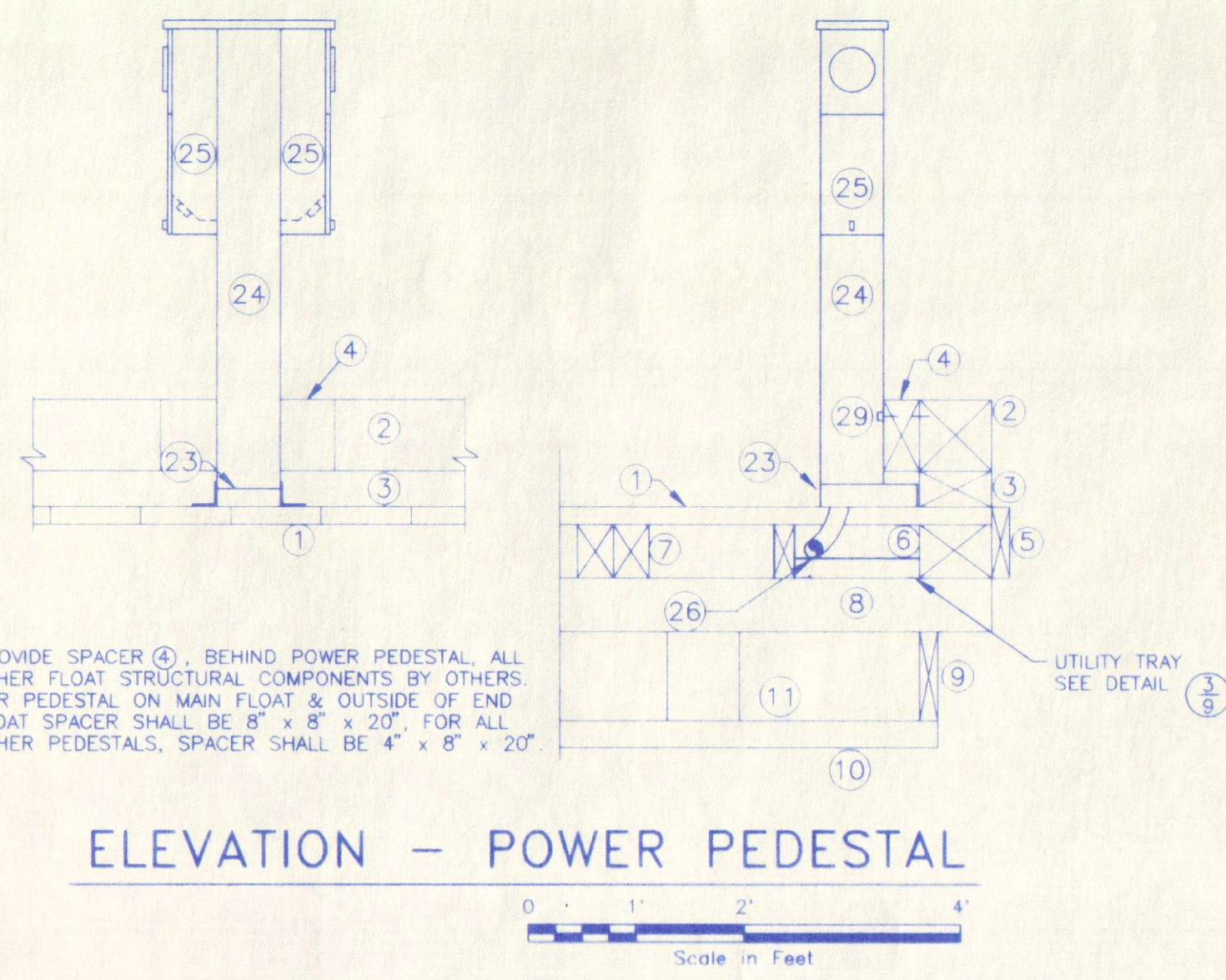
**ELEVATION - SERVICE ENTRANCE**  
NO SCALE



**SINGLE LINE DIAGRAM**



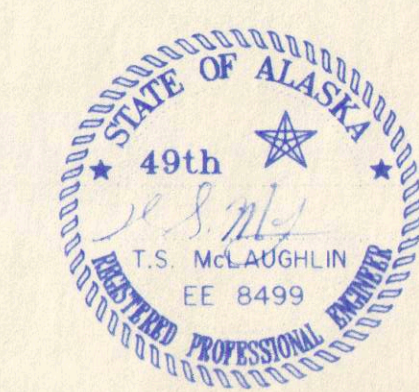
**ELEVATION - POWER DISTRIBUTION CENTER**  
Scale in Feet



**ELEVATION - POWER PEDESTAL**  
Scale in Feet

**EQUIPMENT SCHEDULE:**

- |   |  |   |
|---|--|---|
| ① DECKING   | } BY OTHERS  | ⑱ TYPE W SERVICE CABLE  |
| ② BULLRAIL  |  | ⑲ TYPE W FEEDER CABLE   |
| ③ BLOCKING  | } BY OTHERS  | ⑳ CABLE GRIPS, STAINLESS STEEL  |
| ④ 4" x 8" x 20" OR 8" x 8" x 20" TREATED WOOD SPACER (NEW)  |  | ㉑ NOT USED  |
| ⑤ BUMPER BOARD  |  | ㉒ NOT USED  |
| ⑥ STRINGER  |  | ㉓ PEDESTAL BASE - 2-1/2"H x 4"W x 12", 1/4" STAINLESS STEEL ANGLE IRON (SEE DETAIL)                           |
| ⑦ STRINGER  |  | ㉔ 8x10 PEDESTAL - 14 GA STAINLESS STEEL (316)   |
| ⑧ SILLS   |  | ㉕ POWER HEAD W/ METER BASE, CIRCUIT BREAKER, & RECEPTACLE & LOCKABLE COVER - 16 GA STAINLESS STEEL (316)      |
| ⑨ SIDING  |  | ㉖ TYPE W CABLES (TYP)   |
| ⑩ SILL  |  | ㉗ 3/4" x 6" GROUND ROD, STAINLESS STEEL, FASTENED TO BASE OF FLOAT W/ COPPER STRAPS, CONNECT TO SYSTEM GROUND |
| ⑪ FLOTATION PLANKS  |  | ㉘ NO. 2 COPPER GROUND   |
| ⑫ 8"x8" SUPPORT (NEW)   |  | ㉙ 1/2" x 6" STAINLESS STEEL LAG BOLT  |
| ⑬ 2-1/2"x2-1/2"x1/4" ANGLE IRON STAND   | ㉚ NO. 2 COPPER GROUND  |   |
| ⑭ 4"x1/4" FLAT STEEL PLATE  | ㉛ NEW 6"x6" TIMBER DECKING SUPPORT, SPANNING AT LEAST TWO SILLS AND SECURED TO SILLS W/ ONE 1/2" x 10" HOT-DIPPED GALVANIZED STEEL DRIFT PER SILL. DECKING TO BE SECURED TO SUPPORT W/ 2-20d BOX NAILS PER PLANK. THE SUPPORT SHALL BE TREATED TO 0.8 PCF RETENTION BY ASSAY PER A.W.P.A. C-18 (LATEST EDITION). |   |
| ⑮ 2-1/2"x2-1/2"x1/4" ANGLE IRON BRACE HOT-DIPPED GALV. OR STAINLESS STEEL   |  |   |
| ⑯ NOT USED  |  |   |
| ⑰ HOFFMAN FIBERGLASS NEMA 4X ENCLOSURE W/ CHROMALOX 1-1/2" x 6-1/2" 150W STRIP HEATER & THERMOSTAT (ALLEN BRADLEY BULLETIN 837) |  |   |



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**E-3**

**CITY OF CRAIG  
SOUTH COVE HARBOR IMPROVEMENTS**

**P N Peratrovich, Nottingham & Drage, Inc.**  
Engineering Consultants

Designed: GSS  
Drawn: JLC  
Checked: TSM  
Project No: 95236

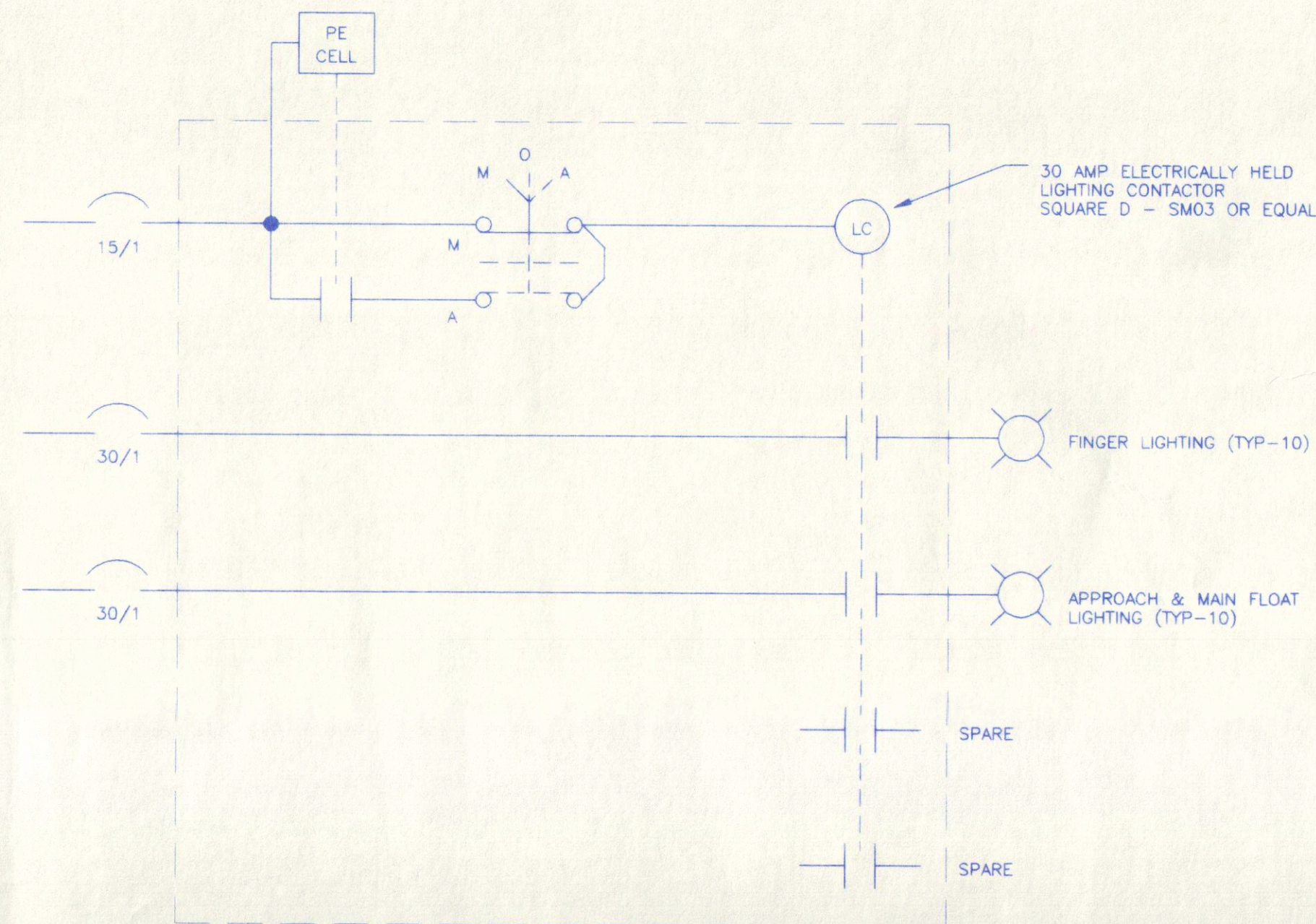
3220 Hospital Drive, Suite 200  
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Date: 7-NOV-95  
Scale: 1" = 1'

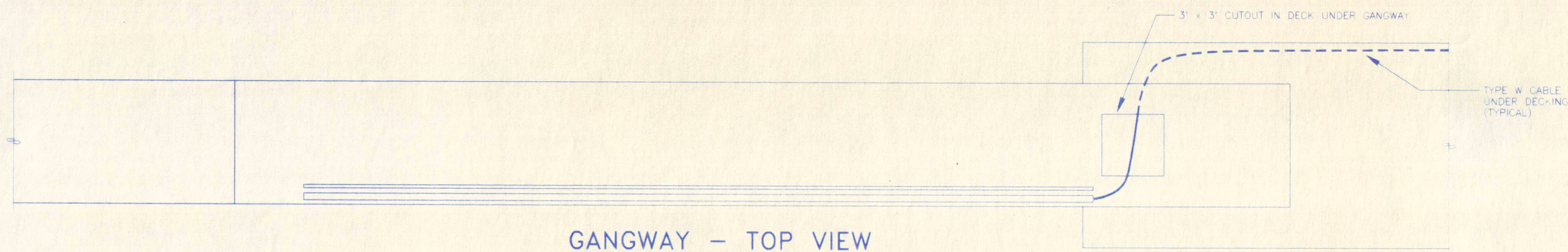
**DETAILS**

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**14 of 16**

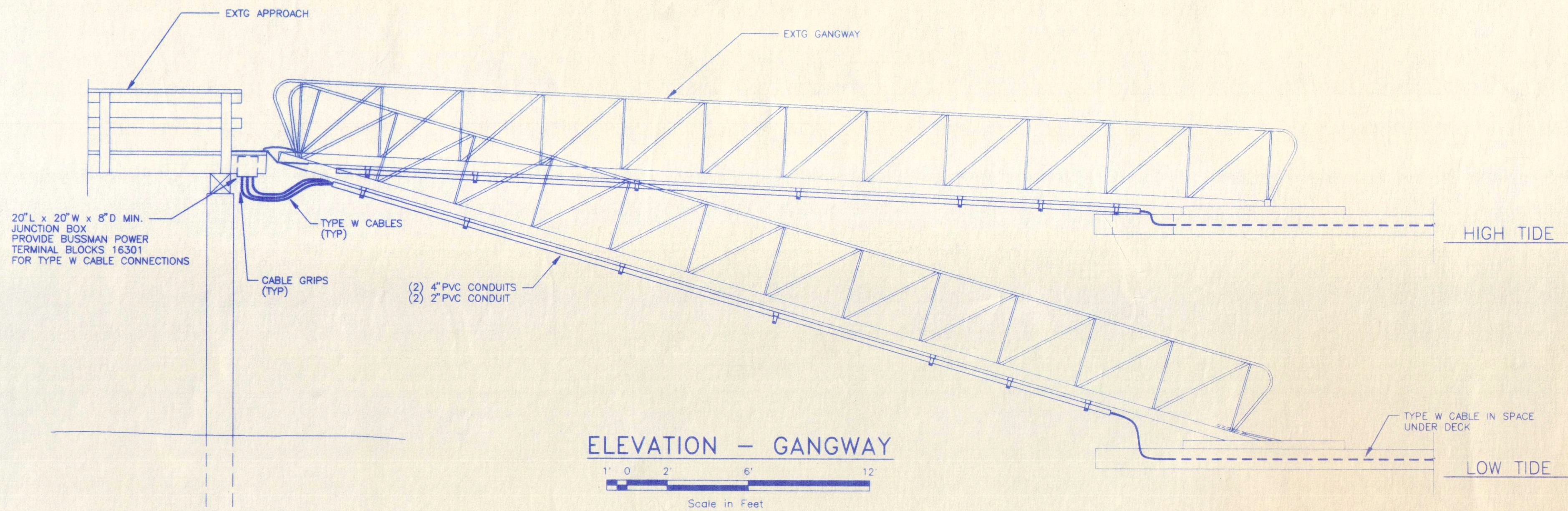




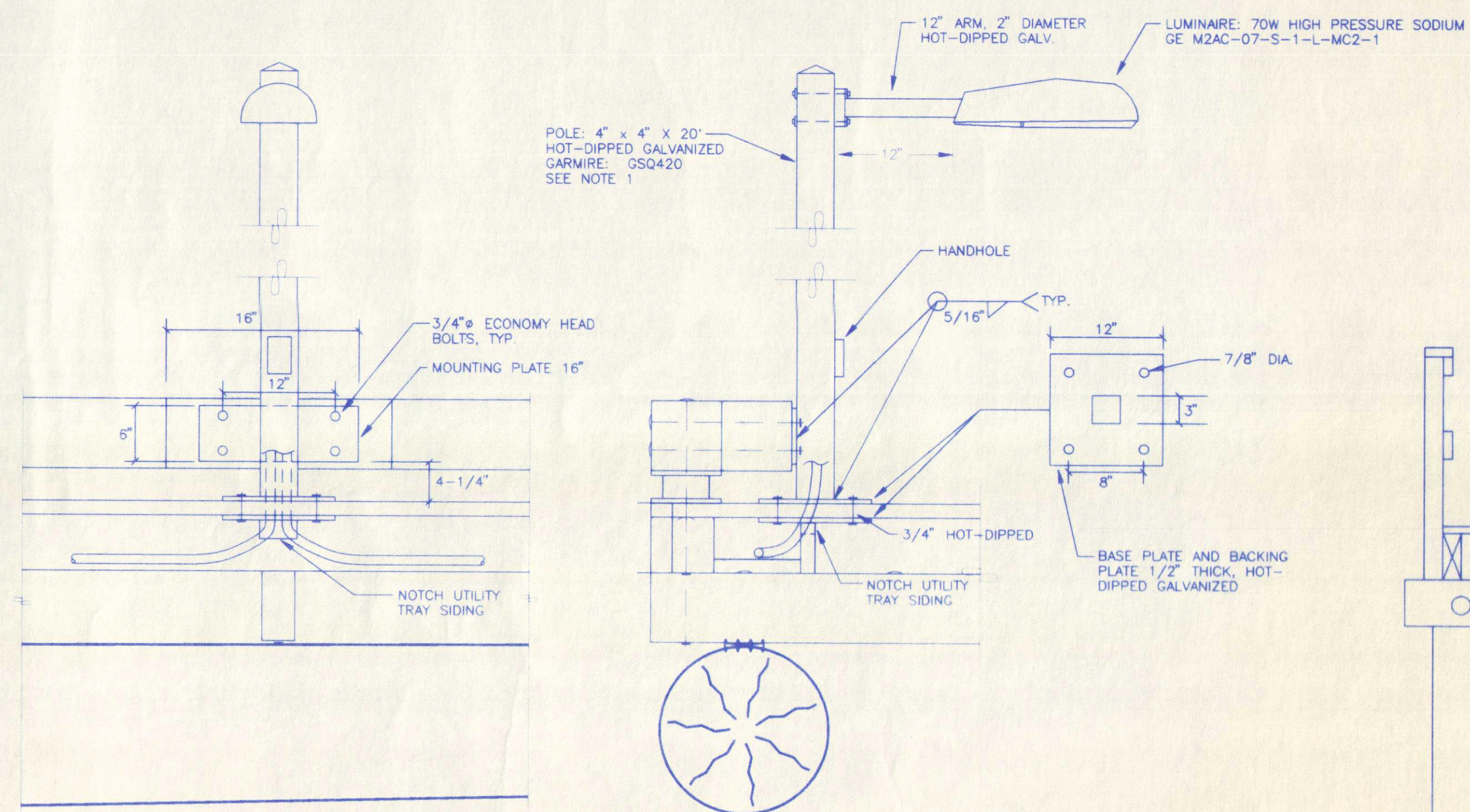
SCHEMATIC - LIGHTING CONTROLS  
NO SCALE



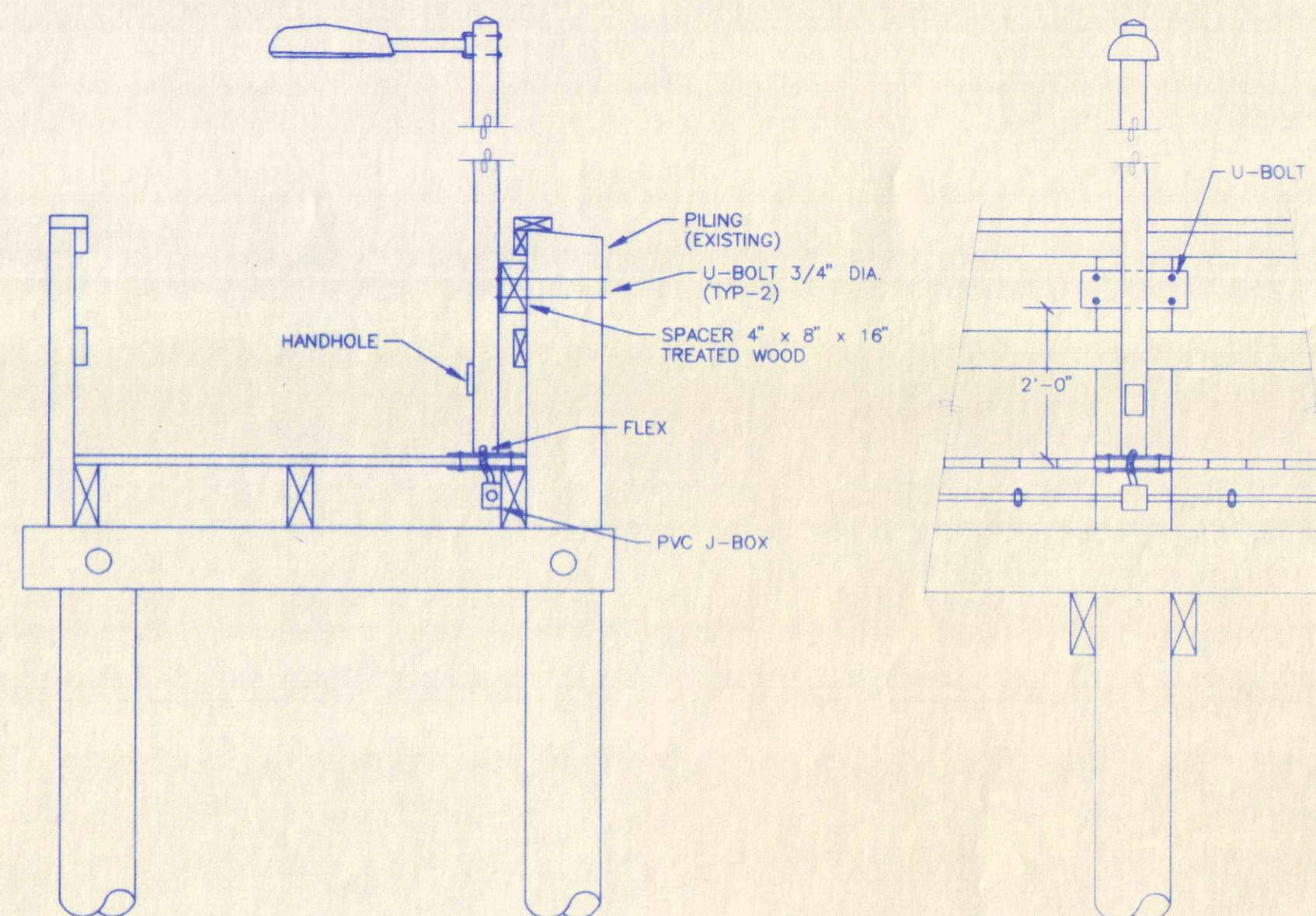
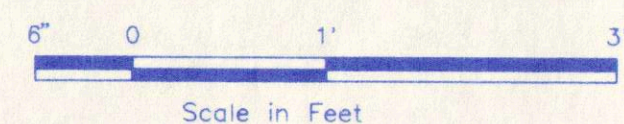
GANGWAY - TOP VIEW



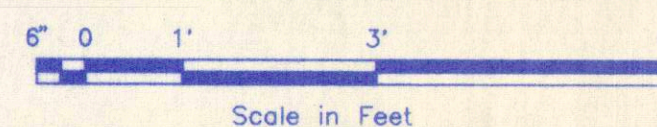
ELEVATION - GANGWAY



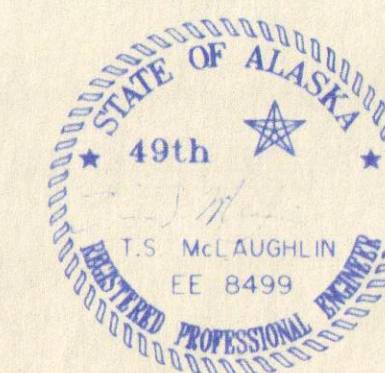
DETAIL - DOCK LIGHT POLES



DETAIL - APPROACH LIGHT POLES



- NOTES:
1. PROVIDE LIGHTING AS SHOWN. WELD MOUNTING PLATE AND BASE PLATE TO POLE BEFORE HOT-DIP GALVANIZING. NOTE THAT THE MOUNTING PLATES FOR THE TWO POLES ON THE APPROACH DOCK ARE HIGHER THAN THOSE FOR THE POLES ON THE FLOAT.
  2. PROVIDE SLACK IN CABLE, UNDER DECK, TO ALLOW FOR MOVEMENT OF GANGWAY. PROVIDE PLANKING UNDER CABLE TO KEEP CABLE ABOVE WATER.



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E-4

**CITY OF CRAIG**  
**SOUTH COVE HARBOR IMPROVEMENTS**

**p n Peratrovich, Nottingham & Drage, Inc.**  
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Designed: GSS  
Drawn: JLC  
Checked: TSM  
Project No: 95236

Date: 7-NOV-95  
Scale: GRAPHIC

**SCHEMATIC & DETAIL**

sheet  
15 of 16



# ELECTRICAL SPECIFICATIONS

## 16010 GENERAL

- A. The electrical drawings are diagrammatic in nature. The plans show the general locations of electrical devices, unless dimensioned thereon. Make minor relocations as required to provide a symmetrical appearance, or to avoid conflict with other structural, architectural, or mechanical features.
- B. Comply with the latest edition of the NEC and NFPA codes and standards as well as the applicable Federal, State, and local codes.
- D. Unless otherwise noted, provide new, high-quality equipment and materials which are standard and current within the industry, and approved by Underwriters' Laboratory.
- E. All products shall be delivered and stored in original containers. Protect all items from dirt, water, chemical, and/or mechanical damage.
- F. Bring discrepancies between drawings, or between the drawings and the field condition, or between the drawings and the specifications, to the attention of the Engineer.
- G. Submittals: Prior to purchasing or ordering materials, equipment, or systems, provide six sets of submittals for such items as noted in following Sections of these Specifications. Such submittals shall be in accordance with the following:
1. Catalog Cuts: The submittals shall show the manufacturer, model number, options, and accessories provided with the equipment or material. All sizes, capacities, and dimensions shall be included.
- H. Variations from the specifications or design concept shall be so noted with the submittal.
- I. All submittal material shall be bound and indexed, and tabs shall segregate the specification sections. The submittal material shall be certified as having been reviewed for conformity with the contract documents.
- J. Obtain written permission from the Engineer prior to cutting or piercing structural members.
- K. All ferrous products exposed to the weather shall be hot dipped galvanized.

## 16015 - REFERENCE SYMBOLS

- A. The symbols used in the drawings are specific to this project and are shown on the legend.
- B. The following abbreviations and initials are utilized in the Contract Documents:
- |      |  |
|------|--|
| AWG  | American Wire Gauge                            |
| NEC  | National Electrical Code                       |
| NEMA | National Electrical Manufacturers' Association |
| UL   | Underwriters' Laboratories                     |
| AFG  | Above Finished Grade                           |
| GFI  | Ground Fault Interrupter                       |
| GRS  | Galvanized Rigid Steel                         |
| PVC  | Polyvinyl Chloride                             |
| UON  | Unless Otherwise Noted                         |
| WP   | Weatherproof                                   |

## 16020 SCOPE OF WORK

- A. Power - Demolish all existing electrical equipment except the power pedestals. Provide power to new hose bib heat cables and new and existing power pedestals as shown. This includes a new service entrance with a fused disconnect, a meter/disconnect for lighting and heat cables, control panels for lighting and heat cables, and a new main distribution panel. Replace all existing conductors with new conductors as shown.
- B. Lighting - Demolish existing lighting. Provide new lighting as shown.

## 16110 RACEWAYS

- A. No submittals required.
- B. All rigid steel conduit and fittings shall meet ANSI requirements.
- C. Exterior Conduit: Provide only GRS conduit within ten feet AFG, unless otherwise noted.
- D. Install conduit mechanically and electrically continuous from termination to termination. Connect securely to cabinets, junction boxes, and device boxes.
- E. PVC Conduit: Polyvinyl Chloride conduit shall be Schedule 80 UL Listed for exposed use.

## 16120 WIRE AND CABLE

- A. Provide catalog cuts for Type W cable.
- B. Utilize 600 volt rated wire insulation where the impressed voltage is less than 600 volts and greater than 100 volts.
- C. Utilize minimum wire sizes as follows, unless otherwise noted:
1. No. 12 AWG for branch circuit wiring.
  2. No. 16 AWG for control circuit wiring.
  3. No. 16 AWG for lighting fixture wiring.
- D. Size all conductors according to American Wire Gauge (AWG).
- E. Provide conductors with THW, THWN, THHN, or XHHW insulation, unless otherwise noted.
- F. Provide solderless type connectors for conductors. Utilize preinsulated "twist-on" type for conductors No. 10 AWG or less in size, or bolt or compression set type with a preformed cover, heat shrink tubing, or tape for insulation.
- G. Float service and feeder cables shall be copper, flexible, Type W cables with a thermoset Chlorinated Polyethylene (CPE) jacket. The cable shall be suitable for immersion in saltwater, as manufactured by Carol or an approved equal.

## 16130 OUTLET AND JUNCTION BOXES

- A. Provide cast thermoplastic, or fiberglass outlet and junction boxes as required. All boxes shall be designed for wet locations and a corrosive environment (NEMA 4X).
- B. Install junction boxes in permanently accessible locations only.

## 16133 CABINETS

- A. Provide catalog cuts for the panelboard enclosure, the panelboard cabinet, the lighting control enclosure, and the heat cable control enclosure.
- B. All enclosures shall be Hoffman NEMA 4X, 316 stainless steel or fiberglass, with hinged, latching, lockable doors.

## 16140 POWER PEDESTALS

- A. Provide shop drawings showing the pedestal wiring diagrams and catalog cuts for all related equipment.
- B. The pedestals shall be designed to provide shore tie service to boats moored at the floats, in accordance with the drawings. The pedestals posts shall be constructed of 14 ga marine grade stainless steel (316) and the covers shall be constructed of 16 ga marine grade stainless steel (316). All hardware shall be stainless steel. The pedestals shall provide access for type W cable in accordance with the drawings. Pedestals shall be provided with cable supporting clamps and loop-feed lugs. All inaccessible conductors shall be coated for protection from the sea spray environment. All conductors shall be copper. Each pedestal shall service one or two shore tie connections as shown on the plans. The power heads shall have a lockable cover. Receptacle plugs shall be locked in place when cover is locked.
- C. The pedestals shall provide 120 volt service at their associated receptacles. The internal buswork shall be rated a t 100 amperes or greater. The receptacles shall be rated a t 30 amperes, 120V, locking type, marine grade, NEMA LS-30R. The meter bases shall utilize four jaw sockets connected for 120 volt meters.

## 16170 DISCONNECTS

- A. Provide catalog cuts for all disconnects.
- B. Provide disconnects with NEMA 4X enclosures.
- C. Provide switches which open all ungrounded conductors.
- D. Provide heavy duty type disconnects, rated for 600V service. Each disconnect shall be horsepower rated with quick-make, quick-break switching.
- E. Provide the enclosure with an interlocking cover which cannot be opened with the switch closed. Supply with a defeating mechanism.
- F. Provide disconnects with the handle lockable in the "off" position.
- G. Utilize Class RK1 fuses.
- H. Size fuses as shown in the drawings.
- I. Provide three spare fuses.

## 16180 CIRCUIT BREAKERS

- A. Provide 10,000 ampere symmetrical interrupting capacity minimum, unless otherwise noted. All circuit breakers shall be a bolt-in type.
- B. The schedules in the drawings indicate the number of poles and ampere ratings for branch circuits to electrical devices. Provide the ratings as required with changes in equipment or circuit requirements.
- C. Circuit all feeder and branch circuits as shown in the drawings.
- D. Provide GFI circuit breakers as indicated in the drawings.

## 16190 SUPPORTING DEVICES

- A. Conduit: Utilize galvanized conduit straps where surface mounted and spring cups or hangers where suspended.
- B. Boxes: Utilize purpose made hangers as required where flush mounted.
- C. Allow for a minimum safety factor of five to one to support equipment loads. Plumbers tape and wire are not approved.

## 16450 GROUNDING

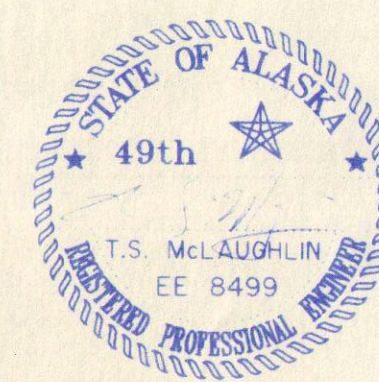
- A. Connect all non-current carrying electrical equipment, raceways, and enclosures to the service entrance ground bar.
- B. Provide grounding as required and shown in the drawings.
- C. Provide conductors where non-metallic conduit is utilized, to connect metallic non-current carrying equipment to the ground plane.

## 16471 PANELBOARDS

- A. Provide catalog cuts, device layouts and sizes for all panelboard equipment.
- B. Panelboards shall be sized and rated in accordance to the panel schedules in the drawings. The bus bars may be copper or aluminum. Provide with multiple lugs as required. Provide a neutral terminal bar. Provide a ground terminal bar if ground conductors are terminated in the panelboard. Brace for 10,000 symmetrical RMS amperes, unless otherwise noted.
- C. Size the enclosure to allow for adequate wire gutter space. The front shall be a single element with a lockable door. The front shall be removable only with the door open. A typed circuit directory shall be located inside the door. Provide keys. The interior assembly shall be deadfront with the front cover removed.
- D. Mount with the top of the enclosure at 72 inches above finished floor, unless otherwise noted. Install the panelboard interiors after the enclosure has been installed.
- E. Install circuit breakers in the order specified in the drawing panelboard schedules, unless approval otherwise is granted. Type the circuit directory with circuit descriptions as they are shown in the drawing panelboard schedules. The directory shall be configured identically with the circuit breaker configuration.

## 16865 HEAT CABLES

- A. Provide catalog cuts for heat cables equipment.
- B. Provide self regulating heat cables for hose bibs. Heat cables shall have a fluoropolymer outer jacket & shall be Raychem BBTV-CT or an approved equal.



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E-5

**CITY OF CRAIG**  
**SOUTH COVE HARBOR IMPROVEMENTS**

**Peratovich, Nottingham & Drage, Inc.**  
Engineering Consultants

3220 Hospital Drive, Suite 200  
Juneau, Alaska 99801 19071 586-2093 FAX 19071 586-2099

Designed: GSS  
Drawn: JLC  
Checked: TSM  
Project No: 95236  
Date: 7-NOV-95  
Scale: GRAPHIC

**ELECTRICAL SPECIFICATIONS**

sheet  
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