

# RIVER STREET SHORELINE IMPROVEMENTS CITY OF NEW HAVEN OFFICE OF ECONOMIC DEVELOPMENT 165 CHURCH STREET NEW HAVEN, CT 06510

JUNE 20, 2017

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611 Access Road Stratford, CT 06615  
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PREPARED FOR:

CITY OF NEW HAVEN  
OFFICE OF ECONOMIC  
DEVELOPMENT  
165 CHURCH STREET  
NEW HAVEN, CT 06510

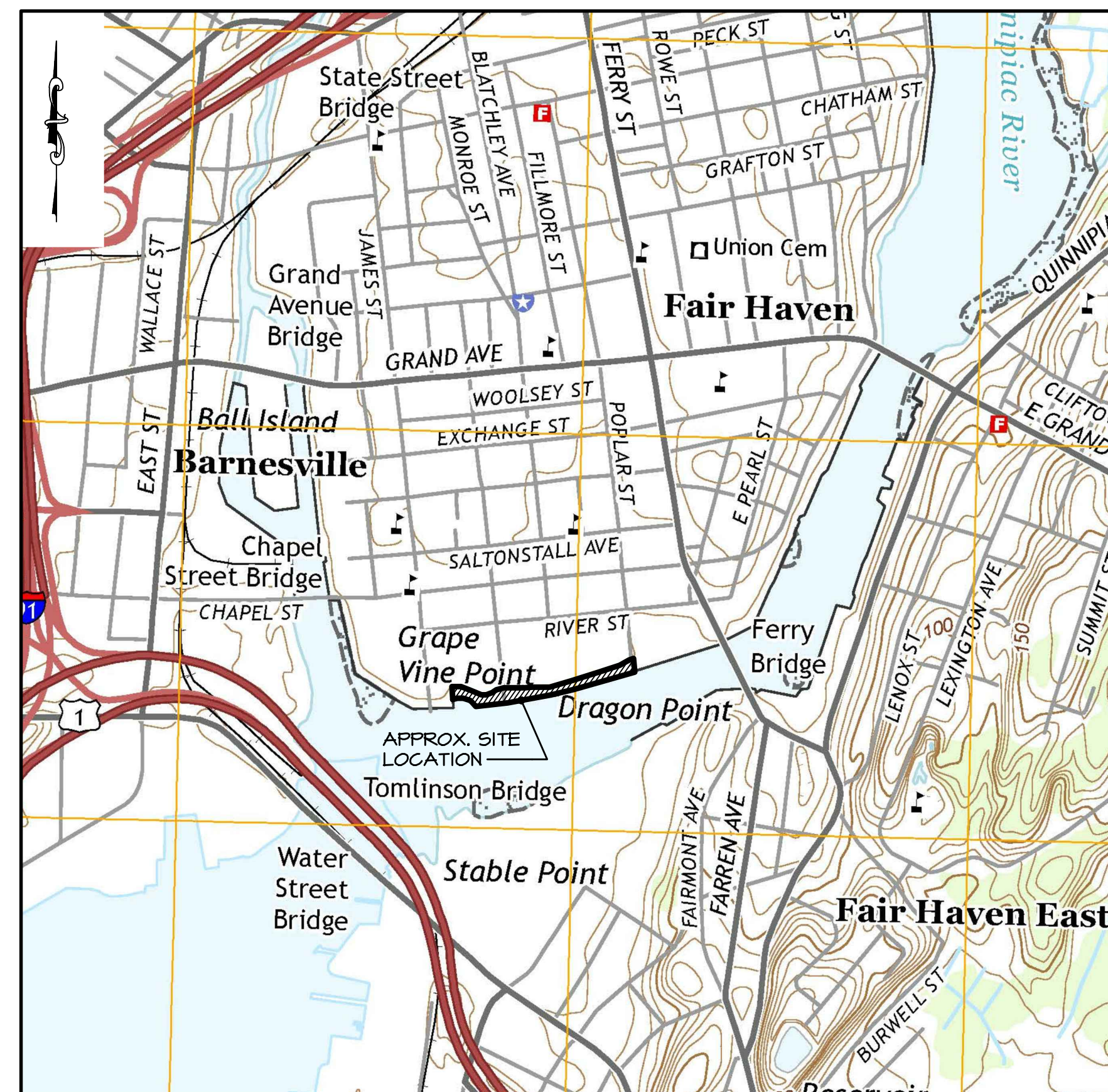
PROJECT:

RIVER STREET  
SHORELINE IMPROVEMENTS  
RIVER STREET  
NEW HAVEN, CT 06513

DRAWING:

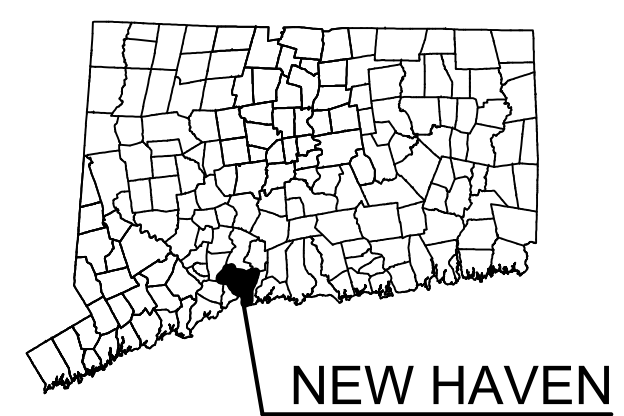
TITLE SHEET,  
DRAWING LIST, &  
VICINITY MAP

Designed By:	CGE	Date:	06/20/2017
Drawn By:	CLW	Scale:	As Noted
Checked By:	TD	Project Number:	201684
CAD File:	C:\NOVED_RIVERSTREET 1-6.DWG	Drawing No.:	1 of 17



TAKEN FROM:  
USGS NEW HAVEN QUADRANGLE  
CONNECTICUT-NEW HAVEN CO.  
7.5 MINUTE SERIES  
NEW HAVEN, CT  
2015

**VICINITY MAP**  
APPROX. SCALE: 1" = 1000'-0"



**AERIAL PHOTO**  
APPROX. SCALE: 1" = 300'-0"

## GENERAL NOTES

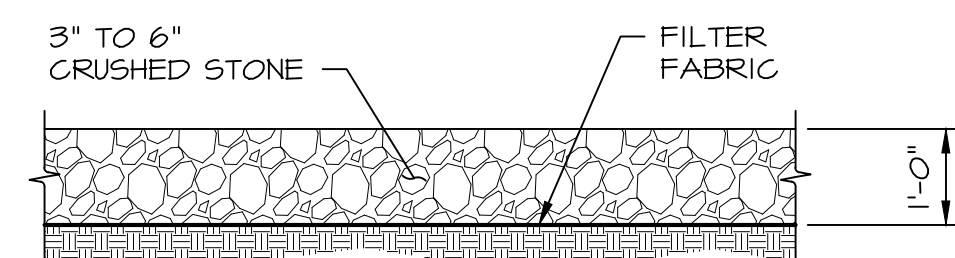
- WORK SHALL BE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS. THE CONTRACT SPECIFICATIONS INCLUDE THE CITY OF NEW HAVEN STANDARD SPECIFICATIONS AS AMENDED AND SUPPLEMENTED BY PROJECT SPECIFIC SECTIONS.
- AVAILABLE BORING LOGS AND SUBSURFACE INFORMATION IS PROVIDED FOR BIDDERS INFORMATION IN MEMORANDUM TITLED "RIVER STREET SHORELINE IMPROVEMENTS, QUINNIPIAC RIVER, NEW HAVEN, CONNECTICUT, SUBSURFACE DATA", PREPARED BY RACE AND DATED JANUARY 18, 2017.
- IF, DURING THE PERFORMANCE OF THE WORK, THE CONTRACTOR FINDS A CONFLICT, ERROR, OR DISCREPANCY IN THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL SO REPORT TO THE ENGINEER IN WRITING AT ONCE. BEFORE PROCEEDING WITH THE WORK AFFECTED THEREBY, THE CONTRACTOR SHALL OBTAIN A WRITTEN INTERPRETATION OR CLARIFICATION FROM THE ENGINEER. ANY WORK DONE BEFORE THE ENGINEER RENDERS HIS DECISION IS AT THE CONTRACTOR'S SOLE RISK.
- SITE PLAN BASED ON INFORMATION FROM:
  - PROPERTY TOPOGRAPHIC SURVEY, 46 AND 56 RIVER STREET, NEW HAVEN, CT, 1/30/2016 BY WESCOTT AND MAPES, INC.
  - EXISTING SITE PLAN AND SECTIONS, 7 SHEETS, RIVER STREET WATERFRONT DEVELOPMENT, QUINNIPIAC RIVER, NEW HAVEN, CT, 2/8/2016 BY ROBERGE ASSOCIATES COASTAL ENGINEERS (RACE).
  - EXHIBIT C: DECLARATION OF ENVIRONMENTAL LAND USE RESTRICTION AND GRANT EASEMENT FORMER HESS TERMINAL, 100 RIVER STREET, NEW HAVEN, CONNECTICUT, 4/8/2015, BY WESCOTT AND MAPES, INC.
  - TOPOGRAPHIC SURVEY, SHORELINE STABILIZATION AND LLOYD STREET CONSTRUCTIONS (AS BUILT), 01/30/15 BY MILONE AND MACBROOM
  - RESUBDIVISION SURVEY #10 RIVER STREET, NEW HAVEN, CONNECTICUT MAP 165, BLOCK 609, PARCEL 4, 1/2/2009 BY WESCOTT AND MAPES, INC.
  - SUPPLEMENTARY INFORMATION OBTAINED BY RACE COASTAL ENGINEERS, LLC ON 11/02/2016 AND ONLY REPRESENT THE SITE CONDITIONS AT THAT TIME.
  - TIDAL ELEVATION DATA HAS BEEN TAKEN FROM PAST SURVEYS AND PERMITS (AS CONVERTED TO NAVD88). THESE VALUES APPROXIMATELY CORRELATE TO THOSE INTERPOLATED FROM THE 1988 TIDAL PROFILES AS PREPARED BY USACE.
- ELEVATIONS ARE REFERENCED TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)
- CONTRACTOR SHALL HIRE A LICENSED LAND SURVEYOR TO STAKE THE C.J.L. LINE. C.J.L. SHALL BE CLEARLY DEMARCATED AND STAKES AND MARKERS PROTECTED AND MAINTAINED DURING THE PROJECT DURATION.
- DRAINAGE FEATURES INDICATED ARE TO FACILITATE BULKHEAD CONSTRUCTION AND ARE AN INTERIM CONDITION. FINAL DRAINAGE DESIGN AND CONSTRUCTION TO BE BY OTHERS FOR SITE DEVELOPMENT. CLOSURES OR UPDATES TO PENETRATIONS THROUGH BULKHEAD FOR DRAINAGE UPDATES SHALL BE REVIEWED BY ENGINEER FOR COMPATIBILITY WITH BULKHEAD DESIGN. INCREASE OF EXISTING GROUNDWATER TABLE FROM DEVELOPMENT BY OTHERS IS TO BE AVOIDED.
- UTILITIES: CONTRACTOR IS RESPONSIBLE FOR CALL BEFORE YOU DIG (CBYD) AND ALL COORDINATION WITH UTILITY COMPANIES. ALL UTILITY LINES SHALL BE MARKED IN THE FIELD WITH COORDINATION OF THE UTILITY COMPANIES AND PROTECTED.
- GUARDS TO BE INSTALLED BY OTHERS AT CITY'S DIRECTION WHERE REQUIRED PER CONNECTICUT STATE BUILDING CODE SECTION 1013.9 (AMD).
- PROPOSED BULKHEAD HAS BEEN DESIGNED FOR AN ALLOWABLE LIVE LOAD SURCHARGE OF 250 POUNDS PER SQUARE FOOT.



### PROJECT TIDAL ELEVATIONS:

DATUM	NAVD 88 (FT)	NGVD 29 (FT)	MLW (FT)
COASTAL JURISDICTIONAL LIMIT	+4.60'	+5.60'	+8.10'
HIGH TIDE LINE	+4.60'	+5.60'	+8.10'
MEAN HIGH WATER	+2.80'	+3.80'	+6.30'
NAVD 88	0.00'	+1.0'	+3.50'
NGVD 29	-1.04'	0.00'	+2.50'
MEAN LOW WATER	-3.50'	-2.46'	0.00'

\* PER NOAA VERTCON- EL. 0.00' NAVD88 = EL. +1.04' NGVD29

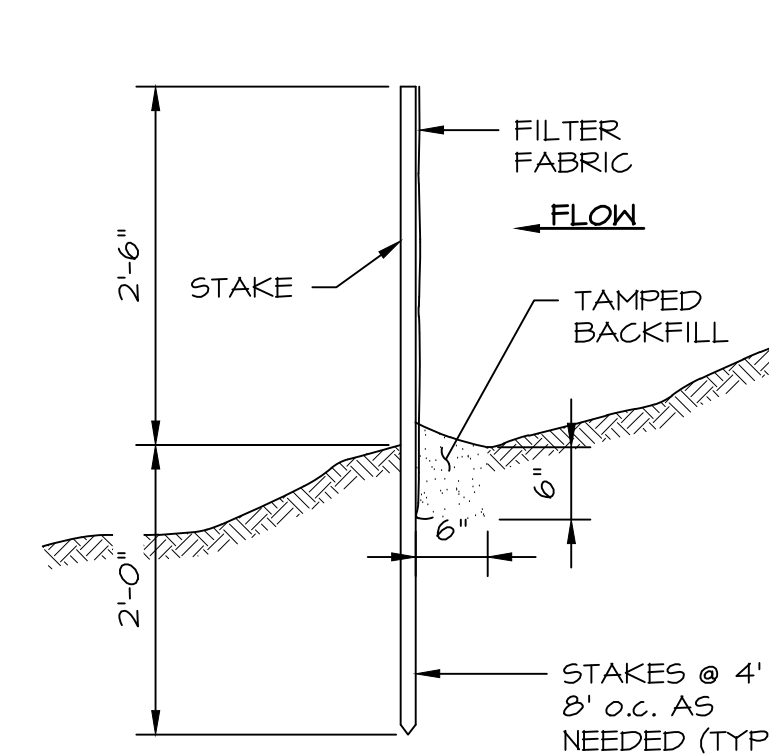


### ANTI-MUD TRACKING PAD SECTION

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

## SEDIMENTATION & EROSION CONTROL PLAN

APPROX. SCALE: 1" = 80'-0"

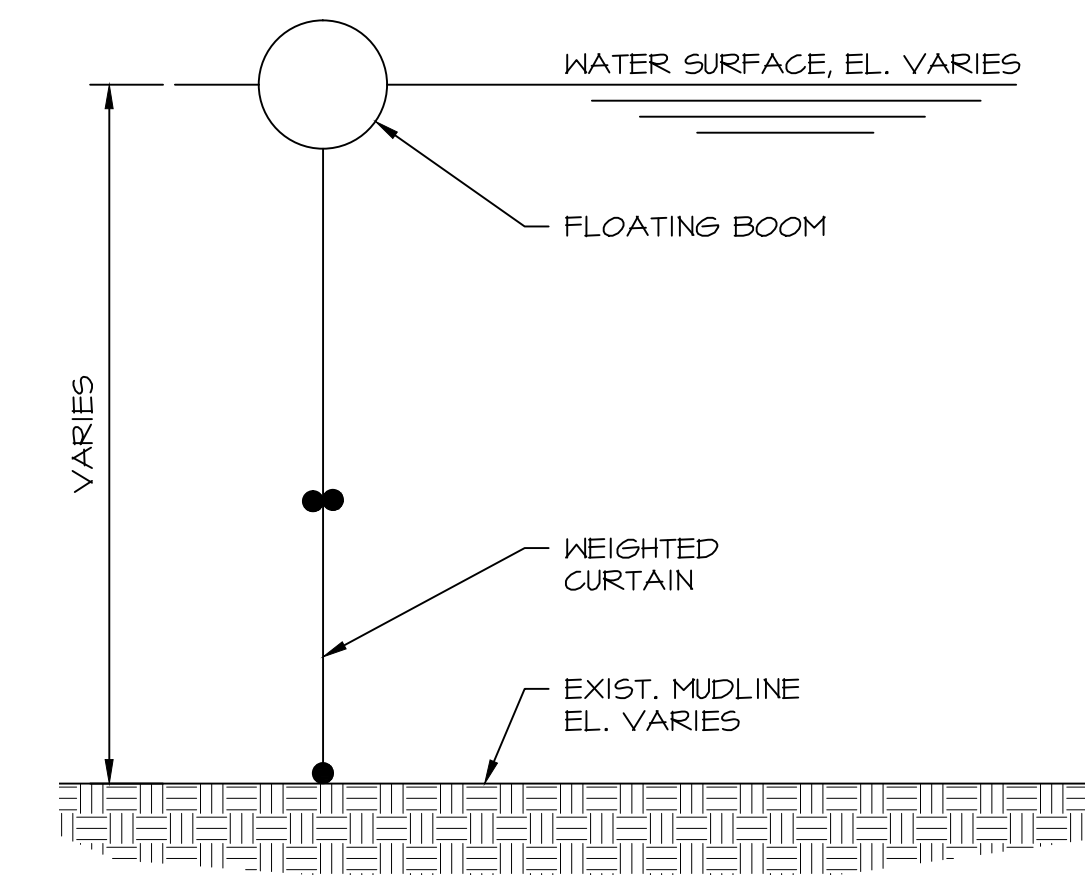


### NOTES:

- DO NOT INSTALL SILT FENCE BELOW MEAN HIGH WATER (M.H.W.).
- PRIOR TO REMOVAL OF SILT FENCE, CONTRACTOR SHALL REMOVE & DISPOSE OF MATERIAL COLLECTED BY SILT FENCE AND RE-GRADE DISTURBED AREAS TO PRE-CONSTRUCTION CONDITIONS.

### SILT FENCE DETAIL

SCALE: 3/4" = 1'-0"



### NOTES:

- FLOATING TURBIDITY BARRIER TO BE ANCHORED APPROPRIATELY TO PROVIDE LATERAL STABILITY.
- PROVIDE TURBIDITY CURTAIN WHERE SOIL IS DISTURBED AT OR BELOW THE WATER LINE. TURBIDITY CURTAIN TO BE INSTALLED PRIOR TO EXCAVATING OR DISTURBING SOIL.

### TURBIDITY CURTAIN DETAIL

SCALE: 1" = 1'-0"

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PREPARED FOR:

CITY OF NEW HAVEN  
OFFICE OF ECONOMIC  
DEVELOPMENT  
165 CHURCH STREET  
NEW HAVEN, CT 06510

PROJECT:

RIVER STREET  
SHORELINE IMPROVEMENTS  
RIVER STREET  
NEW HAVEN, CT 06513

DRAWING:

PROJECT NOTES AND  
SEDIMENTATION &  
EROSION CONTROL

Designed By: CGE Date: 06/20/2017

Drawn By: CLW Scale: AS NOTED

Checked By: TD Project Number: 201684

CAD File: C:\NOED\_RIVERSTREET  
1-6.DWG Drawing No.: 2 of 17

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**PREPARED FOR:**

CITY OF NEW HAVEN  
 OFFICE OF ECONOMIC DEVELOPMENT  
 165 CHURCH STREET  
 NEW HAVEN, CT 06510

**PROJECT:**

RIVER STREET SHORELINE IMPROVEMENTS  
 RIVER STREET  
 NEW HAVEN, CT 06513

**DRAWING:**

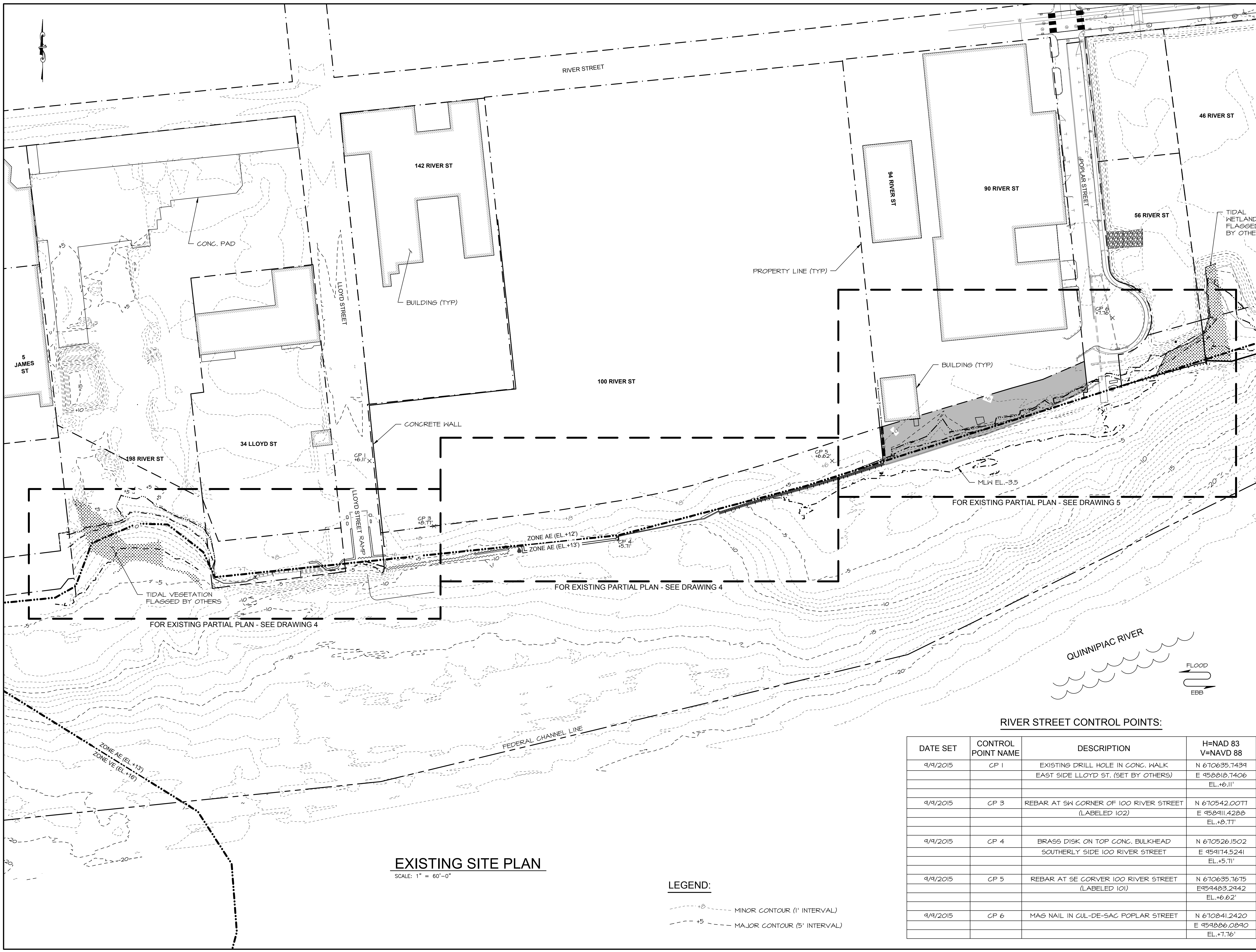
EXISTING SITE PLAN

Designed By: CGE Date: 06/20/2017

Drawn By: CLW Scale: 1" = 60'-0"

Checked By: TD Project Number: 201684

CAD File: C:\NOED\_RIVERSTREET\1-6.DWG Drawing No.: 3 of 17



**EXISTING SITE PLAN**  
 SCALE: 1" = 60'-0"

**LEGEND:**

- - - +5 - MINOR CONTOUR (1' INTERVAL)
- - - +5 - MAJOR CONTOUR (5' INTERVAL)

**RIVER STREET CONTROL POINTS:**

DATE SET	CONTROL POINT NAME	DESCRIPTION	H=NAD 83 V=NAVD 88
9/9/2015	CP 1	EXISTING DRILL HOLE IN CONC. WALK EAST SIDE LLOYD ST. (SET BY OTHERS)	N 670635.7439 E 958818.7406 EL.+6.11'
9/9/2015	CP 3	REBAR AT SW CORNER OF 100 RIVER STREET (LABELED 102)	N 670542.0077 E 958911.4288 EL.+8.77'
9/9/2015	CP 4	BRASS DISK ON TOP CONC. BULKHEAD SOUTHERLY SIDE 100 RIVER STREET	N 670526.1502 E 959174.5241 EL.+5.71'
9/9/2015	CP 5	REBAR AT SE CORNER 100 RIVER STREET (LABELED 101)	N 670635.7675 E 959483.2442 EL.+6.62'
9/9/2015	CP 6	MAG NAIL IN CUL-DE-SAC POPLAR STREET	N 670841.2420 E 959886.0890 EL.+7.76'

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165 CHURCH STREET  
NEW HAVEN, CT 06510

**PROJECT:**

RIVER STREET  
SHORELINE IMPROVEMENTS  
RIVER STREET  
NEW HAVEN, CT 06513

**DRAWING:**

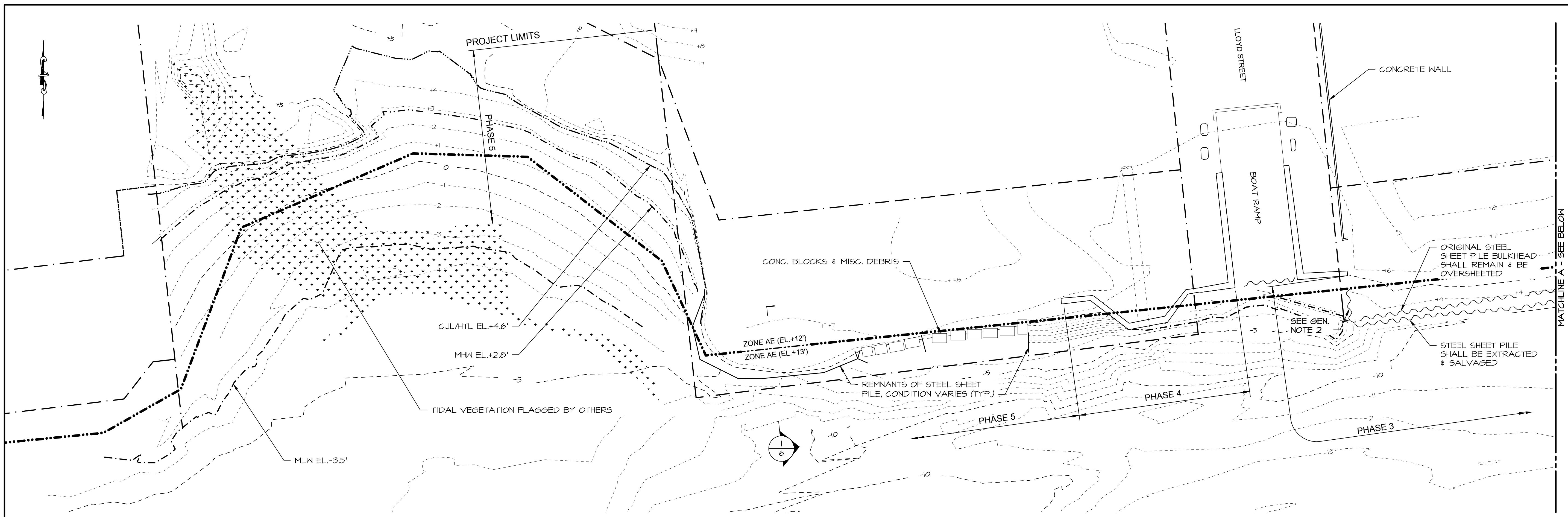
PARTIAL EXISTING PLAN  
1 OF 2

Designed By: CGE Date: 06/20/2017

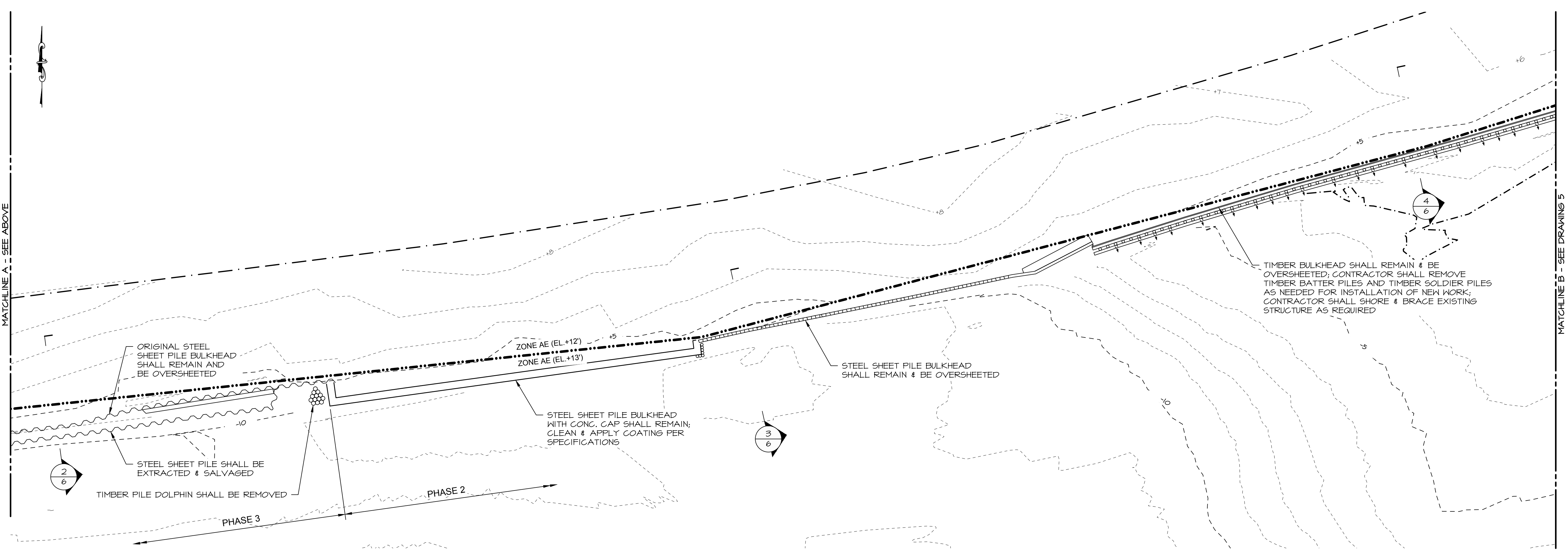
Drawn By: CLW Scale: 1" = 20'-0"

Checked By: TD Project Number: 201684

CAD File: C:\NOED\_RIVERSTREET\1-6.DWG Drawing No.: 4 of 17



**PARTIAL EXISTING PLAN**  
SCALE: 1" = 20'-0"



**PARTIAL EXISTING PLAN**  
SCALE: 1" = 20'-0"

**LEGEND:**

- - - - - MINOR CONTOUR (1' INTERVAL)
- - - - - MAJOR CONTOUR (5' INTERVAL)

**GENERAL NOTES:**

1. FOR PROJECT NOTES, SEE DWG. NO. 2.
2. EXISTING BULKHEAD CONDITION AND EXTENT SHALL BE VERIFIED IN FIELD. CONTRACTOR SHALL SEQUENCE EXCAVATION AND DEMOLITION TO AVOID COLLAPSE OF EXISTING STRUCTURES AND SOIL. CONTRACTOR SHALL PROVIDE SUPPLEMENTARY SHORING AND BRACING AS NEEDED TO COMPLETE THE PROJECT AND ACCOMMODATE CONTRACTOR'S MEANS AND METHODS.

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**PREPARED FOR:**

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 OFFICE OF ECONOMIC  
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 165 CHURCH STREET  
 NEW HAVEN, CT 06510

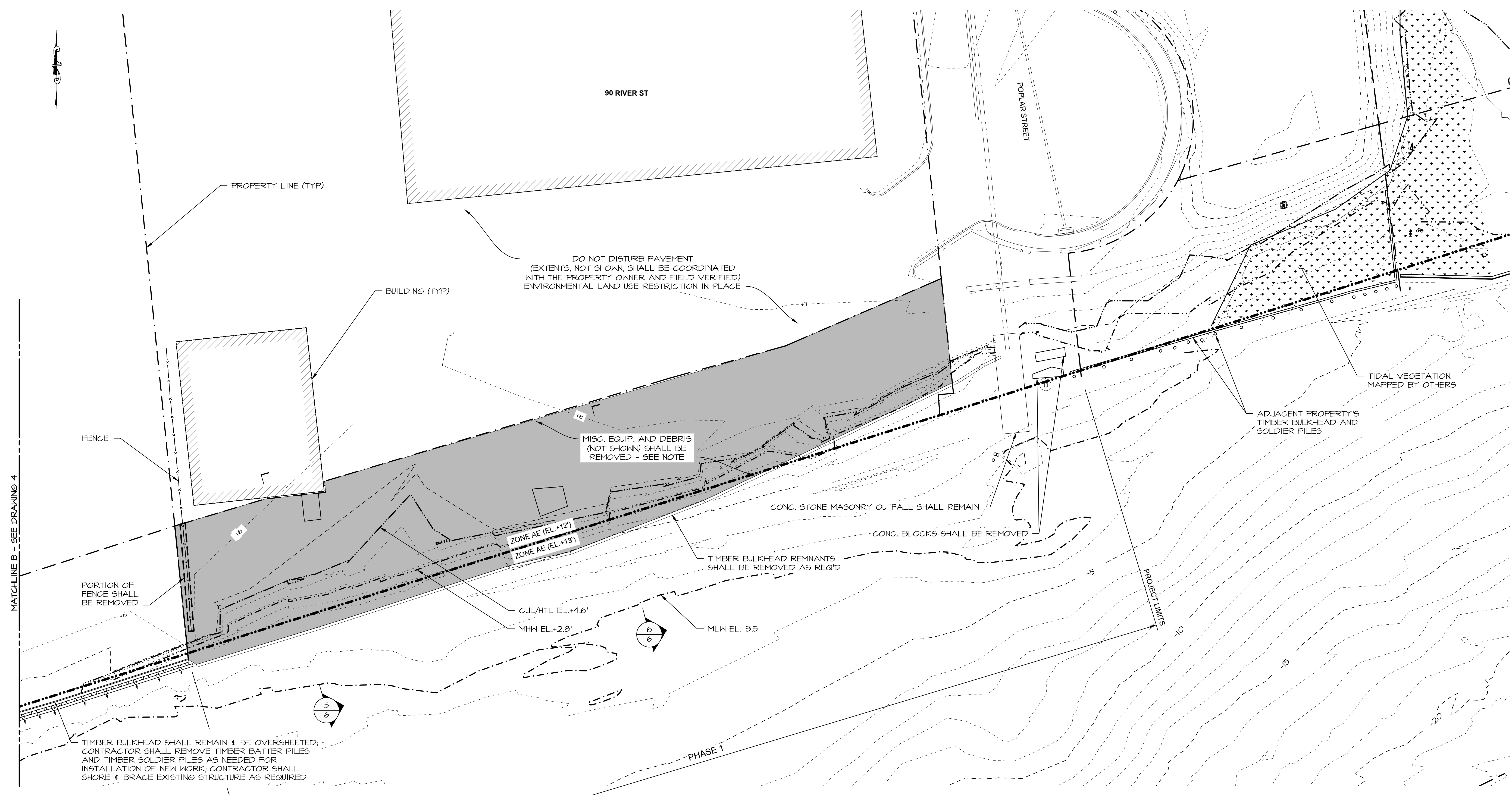
**PROJECT:**

RIVER STREET  
 SHORELINE IMPROVEMENTS  
 RIVER STREET  
 NEW HAVEN, CT 06513

**DRAWING:**

PARTIAL EXISTING PLAN  
 2 OF 2

Designed By:	CGE	Date:	06/20/2017
Drawn By:	CLW	Scale:	1" = 20'-0"
Checked By:	TD	Project Number:	201684
CAD File:	C:\NOED_RIVERSTREET 1-6.DWG	Drawn No.:	5 of 17



**PARTIAL EXISTING PLAN**  
 SCALE: 1" = 20'-0"

**LEGEND:**  
 ---+0--- MINOR CONTOUR (1' INTERVAL)  
 ---+5--- MAJOR CONTOUR (5' INTERVAL)

**NOTE:**  
 PAVEMENTS, PILES, AND OTHER STRUCTURES, INCLUDING EQUIPMENT AND ALL DEBRIS IN AREA NOTED SHALL BE DEMOLISHED AND REMOVED BY CONTRACTOR WITHIN BID COSTS.

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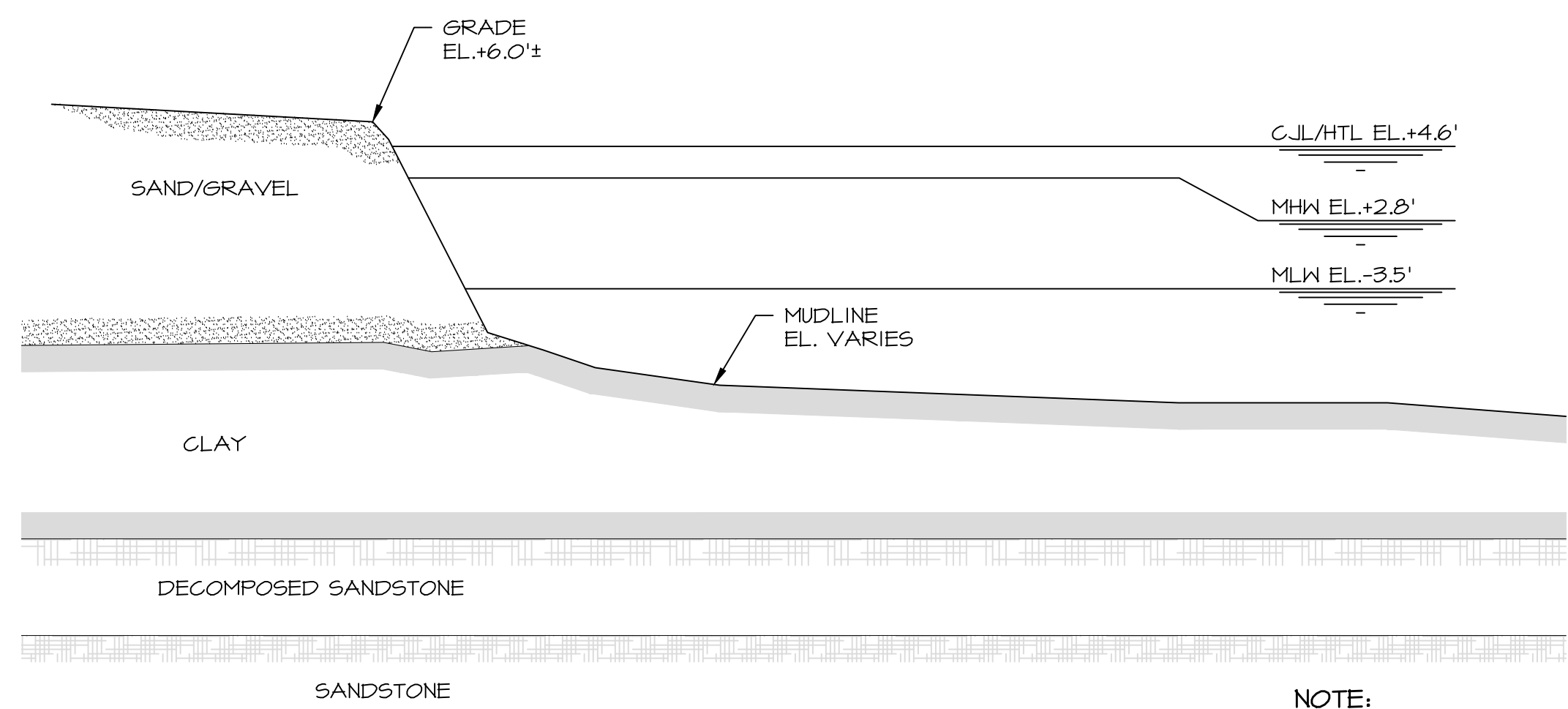
**PROJECT:**

RIVER STREET  
SHORELINE IMPROVEMENTS  
RIVER STREET  
NEW HAVEN, CT 06513

**DRAWING:**

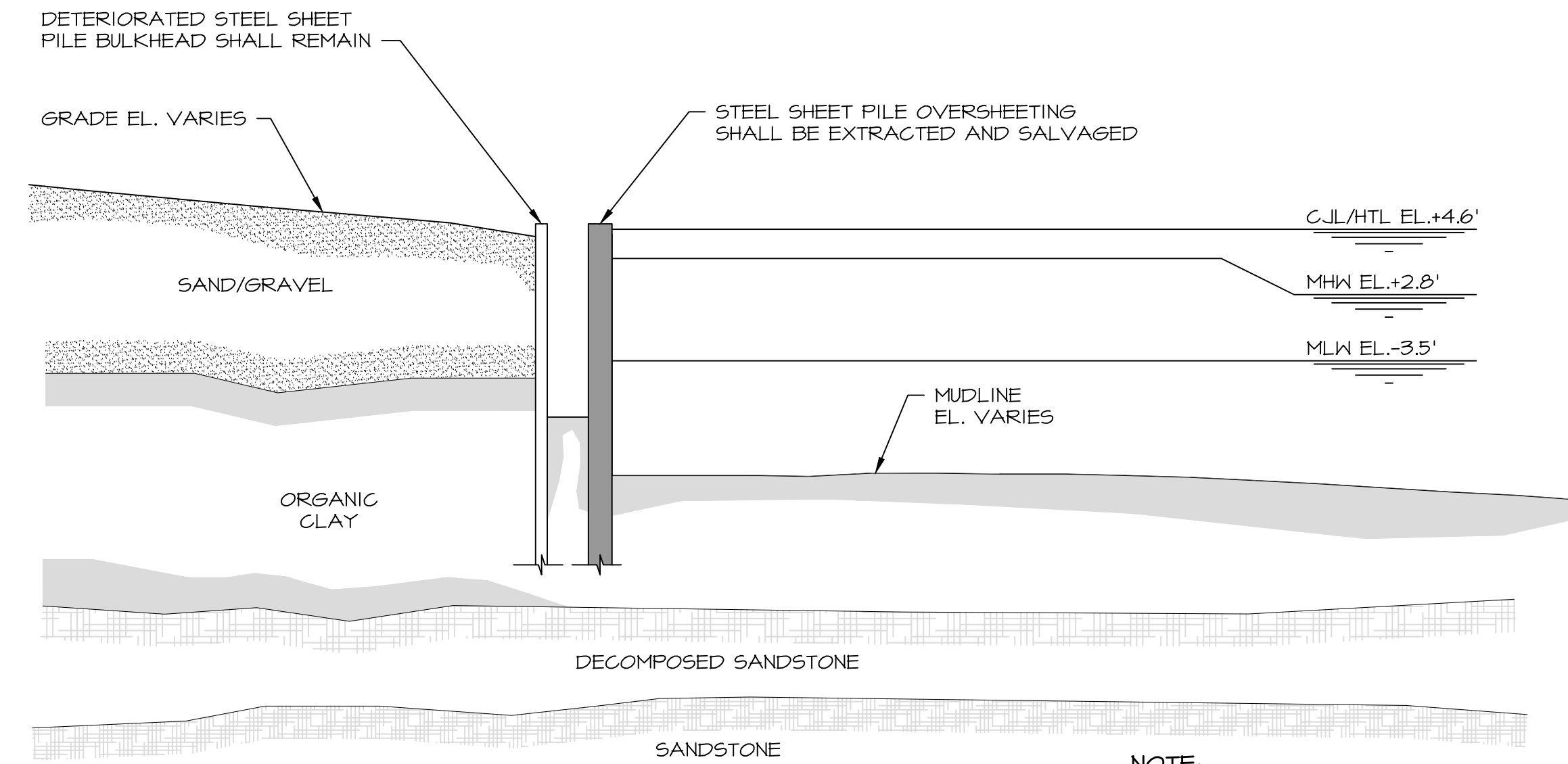
EXISTING SECTIONS

Designed By:	CGE	Date:	06/20/2017
Drawn By:	CLW	Scale:	AS NOTED
Checked By:	TD	Project Number:	201684
CAD File:	C:\NHOED_RIVERSTREET 1-6.DWG	Drawing No.:	6 of 17



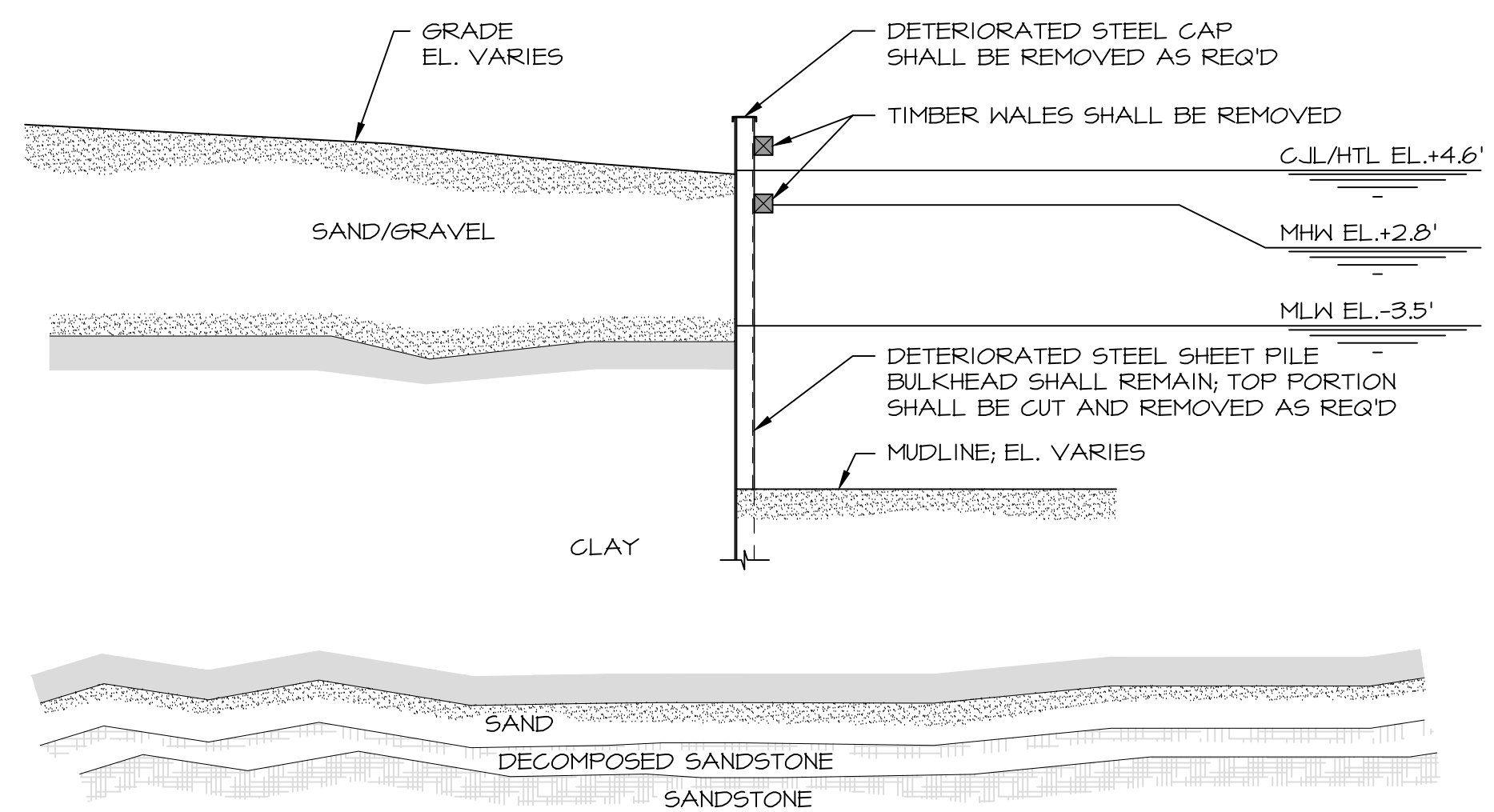
**EXISTING SECTION 1**  
SCALE: 1/8" = 1'-0"

**NOTE:**  
APPROXIMATE SOIL PROFILE SHOWN, AS INFERRED FROM BORINGS R-506, R-507 (RACE), B-1 (MILONE & MACBROOM 2013). SEE GEOTECHNICAL REPORT FOR SUBSURFACE INFORMATION. ACTUAL CONDITIONS WILL VARY BETWEEN BORINGS.



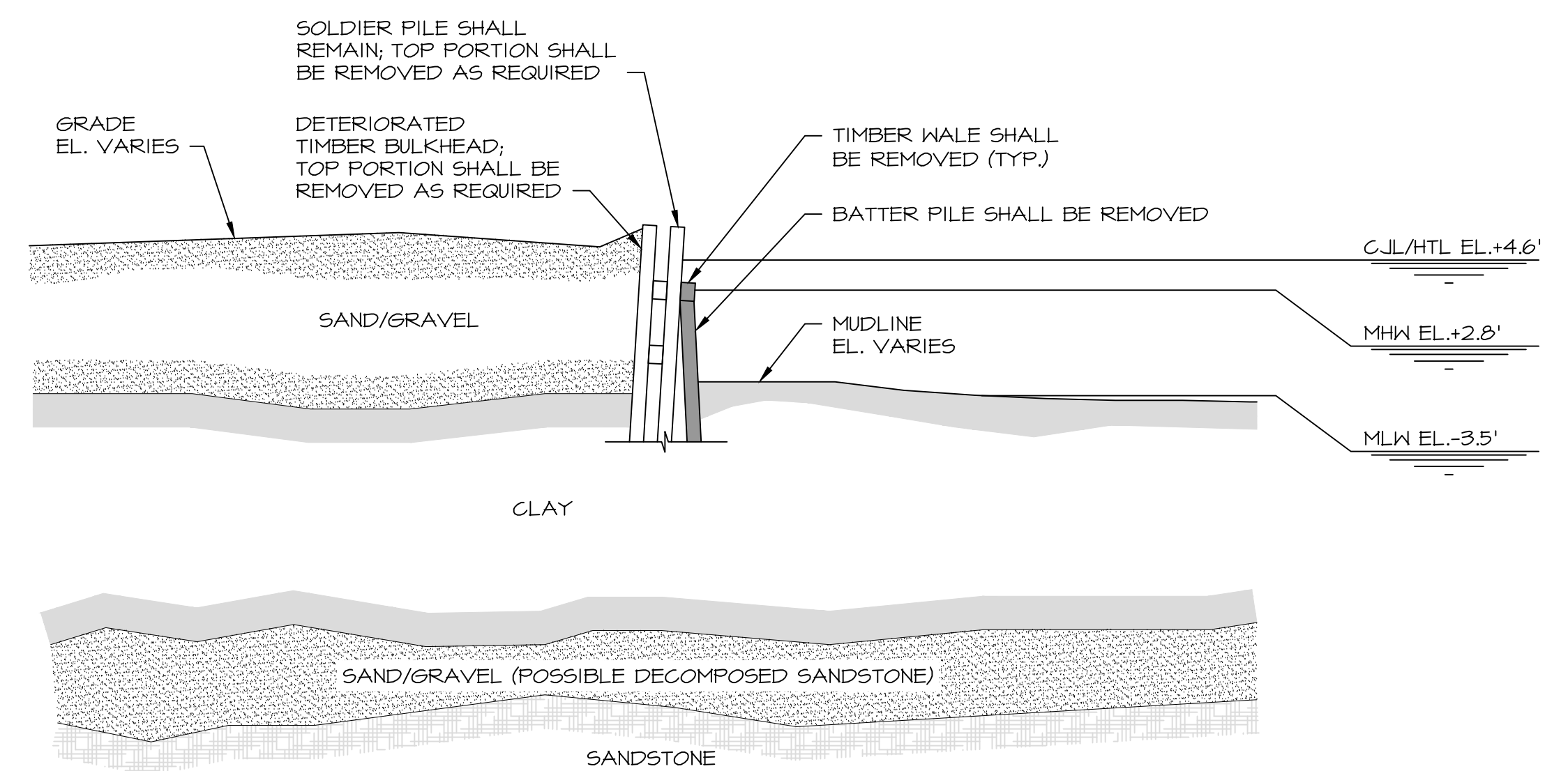
**EXISTING SECTION 2**  
SCALE: 1/8" = 1'-0"

**NOTE:**  
APPROXIMATE SOIL PROFILE SHOWN, AS INFERRED FROM BORINGS R-504 (RACE), B-II (MILONE & MACBROOM 2013). SEE GEOTECHNICAL REPORT FOR SUBSURFACE INFORMATION. ACTUAL CONDITIONS WILL VARY BETWEEN BORINGS.



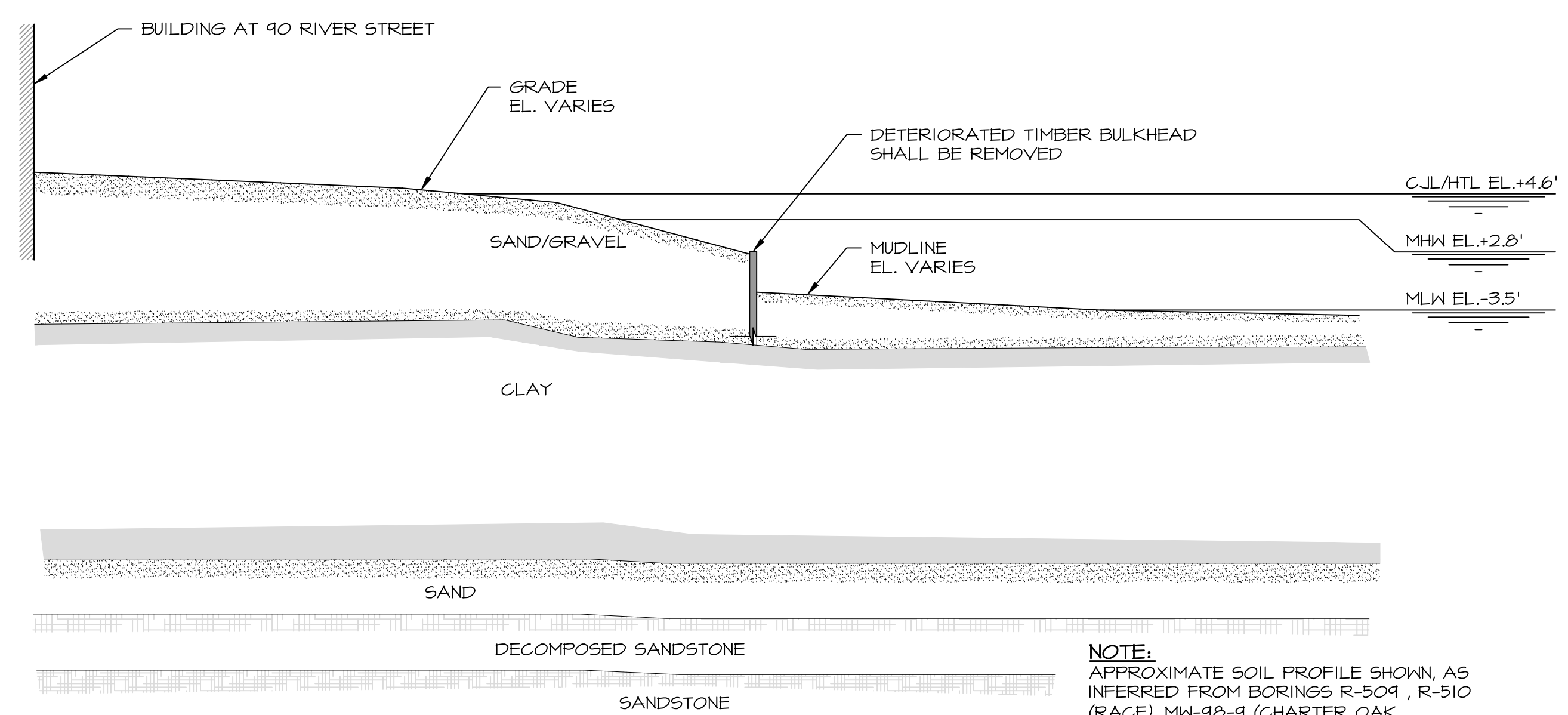
**EXISTING SECTION 3**  
SCALE: 1/8" = 1'-0"

**NOTE:**  
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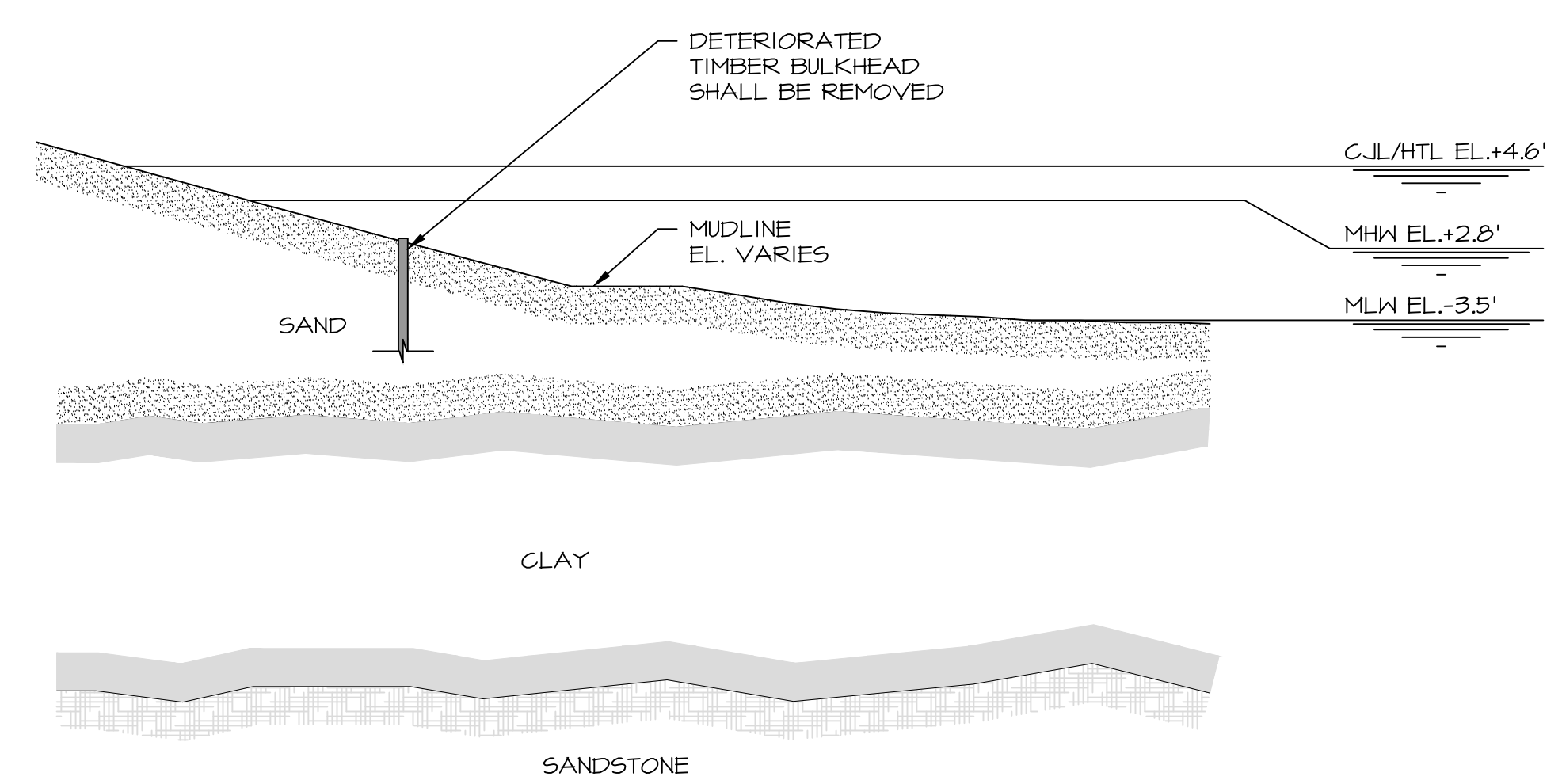
**EXISTING SECTION 4**  
SCALE: 1/8" = 1'-0"

**NOTE:**  
APPROXIMATE SOIL PROFILE SHOWN, AS INFERRED FROM BORINGS R-508 (RACE), B-4 (MILONE & MACBROOM 2007). SEE GEOTECHNICAL REPORT FOR SUBSURFACE INFORMATION. ACTUAL CONDITIONS WILL VARY BETWEEN BORINGS.



**EXISTING SECTION 5**  
SCALE: 1/8" = 1'-0"

**NOTE:**  
APPROXIMATE SOIL PROFILE SHOWN, AS INFERRED FROM BORINGS R-509, R-510 (RACE), MN-98-9 (CHARTER OAK ENVIRONMENTAL SERVICES CIRCA 1996 - 1998). SEE GEOTECHNICAL REPORT FOR SUBSURFACE INFORMATION. ACTUAL CONDITIONS WILL VARY BETWEEN BORINGS.



**EXISTING SECTION 6**  
SCALE: 1/8" = 1'-0"

**NOTE:**  
APPROXIMATE SOIL PROFILE SHOWN, AS INFERRED FROM BORINGS R-510 (RACE) MN-96-4 (CHARTER OAK ENVIRONMENTAL SERVICES CIRCA 1996 - 1998). SEE GEOTECHNICAL REPORT FOR SUBSURFACE INFORMATION. ACTUAL CONDITIONS WILL VARY BETWEEN BORINGS.

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 165 CHURCH STREET  
 NEW HAVEN, CT 06510

**PROJECT:**

RIVER STREET  
 SHORELINE IMPROVEMENTS  
 RIVER STREET  
 NEW HAVEN, CT 06513

**DRAWING:**

REPAIR SITE PLAN

Designed By: CGE Date: 06/20/2017

Drawn By: CLW Scale: 1" = 60'-0"

Checked By: TD Project Number: 201684

CAD File: C:\NOED\_RIVERSTREET\T-1.DWG Drawing No.: 7 of 17



**REPAIR SITE PLAN**  
 SCALE: 1" = 60'-0"

- LEGEND:**
- - - - - MINOR CONTOUR (1' INTERVAL)
  - - - - - MAJOR CONTOUR (5' INTERVAL)
  - - - - - REGRADING CONTOUR

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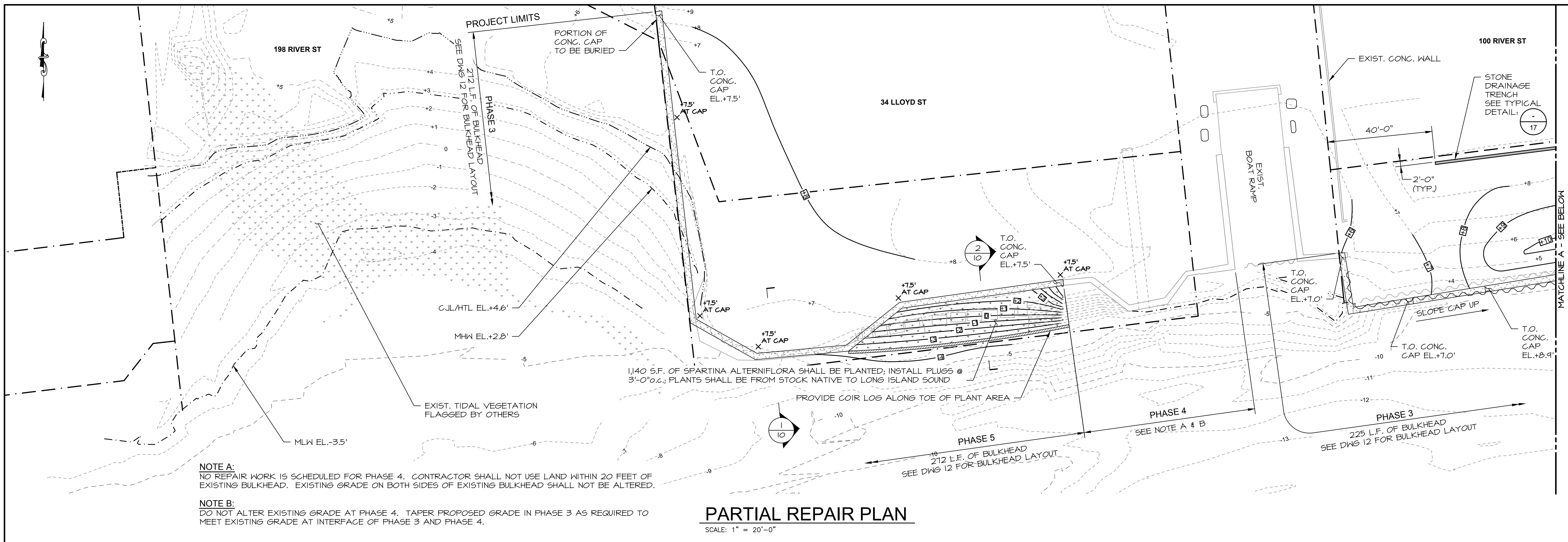
**PROJECT:**

RIVER STREET  
SHORELINE IMPROVEMENTS  
RIVER STREET  
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**DRAWING:**

PARTIAL REPAIR PLAN  
1 OF 2

Designed By:	CGE	Date:	06/20/2017
Drawn By:	CLW	Scale:	1" = 20'-0"
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CAD File:	C:\NOED_RIVERSTREET T-1.DWG	Drawn No.:	8 of 17

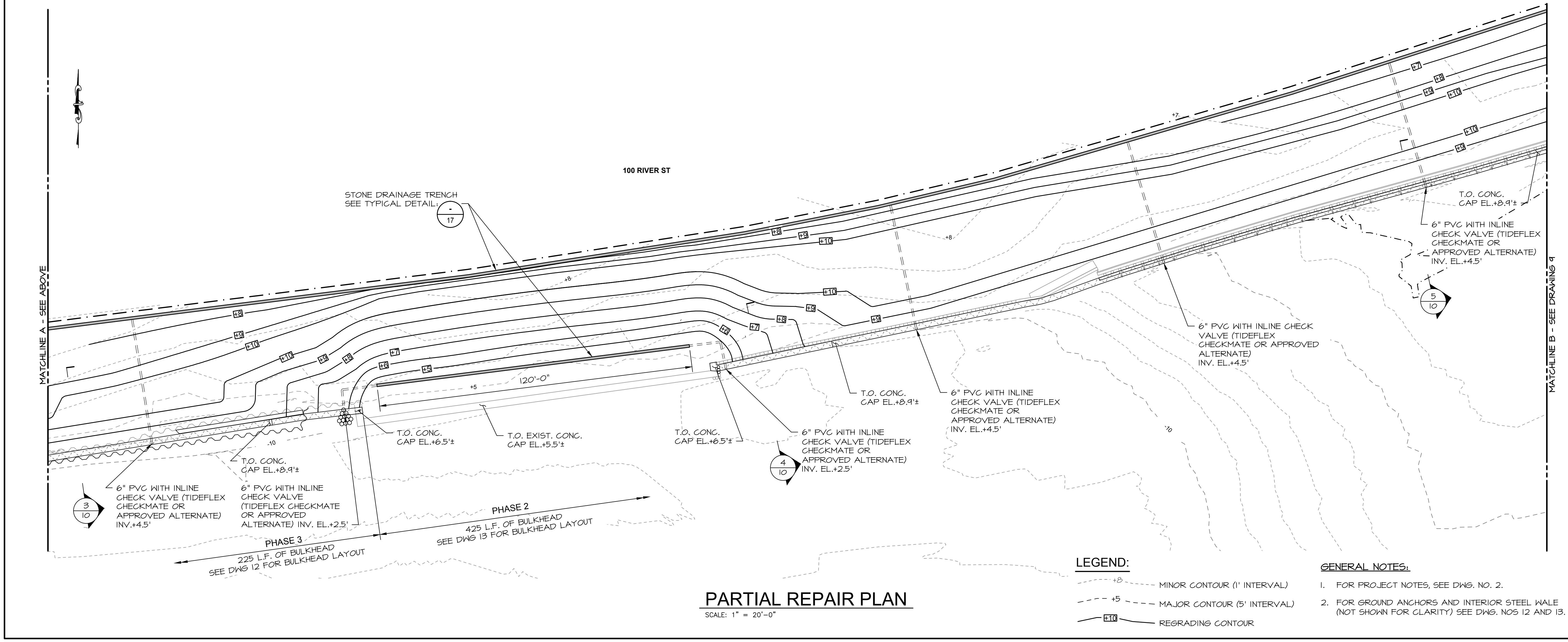


**PARTIAL REPAIR PLAN**

SCALE: 1" = 20'-0"

**NOTE A:**  
NO REPAIR WORK IS SCHEDULED FOR PHASE 4. CONTRACTOR SHALL NOT USE LAND WITHIN 20 FEET OF EXISTING BULKHEAD. EXISTING GRADE ON BOTH SIDES OF EXISTING BULKHEAD SHALL NOT BE ALTERED.

**NOTE B:**  
DO NOT ALTER EXISTING GRADE AT PHASE 4. TAPER PROPOSED GRADE IN PHASE 3 AS REQUIRED TO MEET EXISTING GRADE AT INTERFACE OF PHASE 3 AND PHASE 4.



**PARTIAL REPAIR PLAN**

SCALE: 1" = 20'-0"

**LEGEND:**

- - - MINOR CONTOUR (1' INTERVAL)
- - - MAJOR CONTOUR (5' INTERVAL)
- - - REGRADING CONTOUR

**GENERAL NOTES:**

1. FOR PROJECT NOTES, SEE DWS. NO. 2.
2. FOR GROUND ANCHORS AND INTERIOR STEEL WALE (NOT SHOWN FOR CLARITY) SEE DWS. NOS 12 AND 13.



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**REVISIONS:**

NO.	DESCRIPTION	BY	DATE

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NOT FOR CONSTRUCTION**

**PREPARED FOR:**

CITY OF NEW HAVEN  
OFFICE OF ECONOMIC  
DEVELOPMENT  
165 CHURCH STREET  
NEW HAVEN, CT 06510

**PROJECT:**

RIVER STREET  
SHORELINE IMPROVEMENTS  
RIVER STREET  
NEW HAVEN, CT 06513

**DRAWING:**

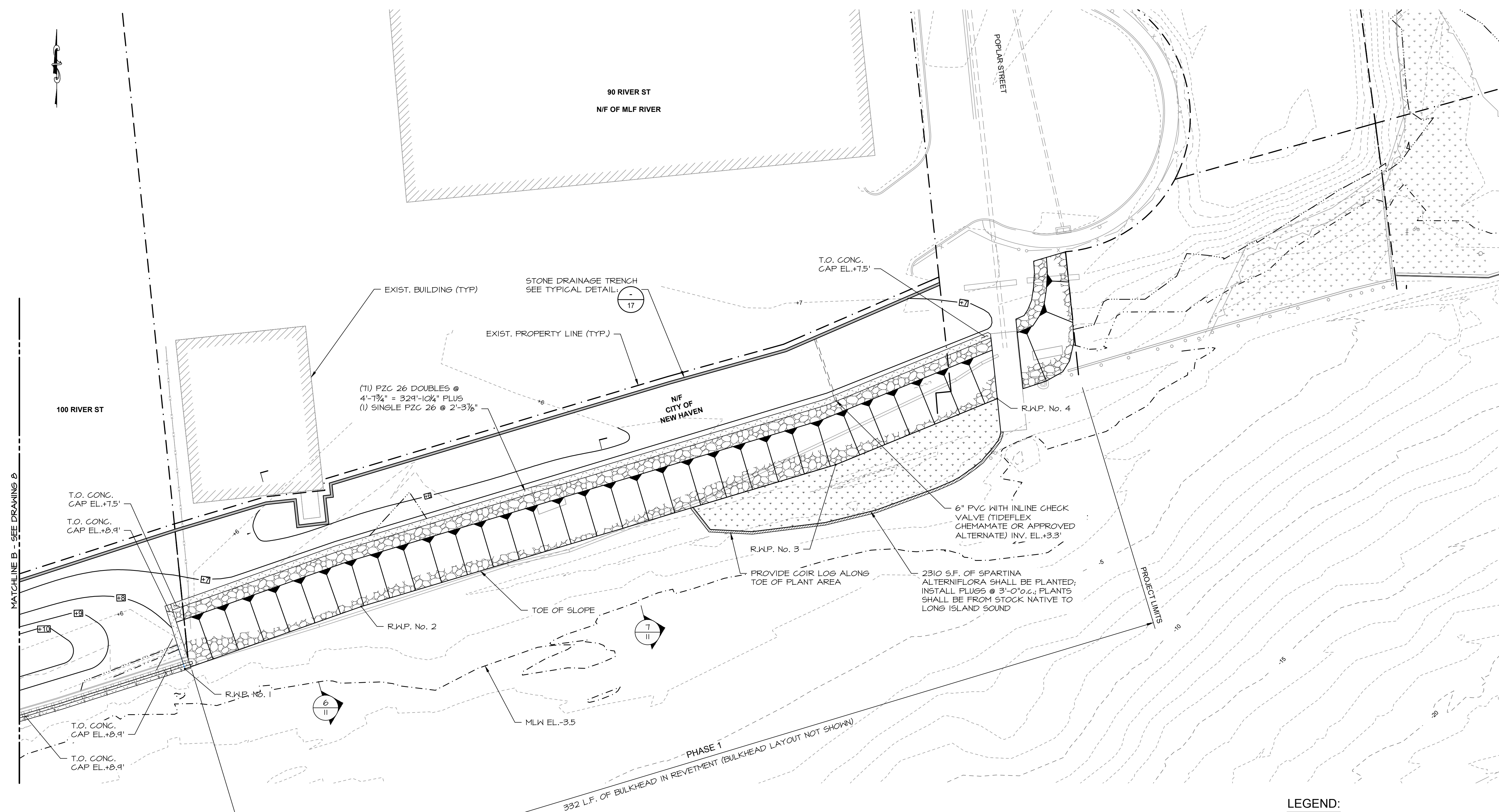
PARTIAL REPAIR PLAN  
2 OF 2

Designed By: CGE Date: 06/20/2017

Drawn By: CLW Scale: 1" = 20'-0"

Checked By: TD Project Number: 201684

CAD File: C:\NOED\_RIVERSTREET\7-TL.DWG Drawing No.: 9 of 17



**PARTIAL REPAIR PLAN**  
SCALE: 1" = 20'-0"

**LEGEND:**  
 ---+5--- MINOR CONTOUR (1' INTERVAL)  
 - - - +5 - - - MAJOR CONTOUR (5' INTERVAL)  
 [E10] REGRADING CONTOUR

**GENERAL NOTES:**  
 1. FOR PROJECT NOTES, SEE DWG. NO. 2.  
 2. FOR GROUND ANCHORS AND INTERIOR STEEL WALE (NOT SHOWN FOR CLARITY) SEE DWGS. NOS 12 AND 13.

DESIGNATION NUMBER	NORTHING	EASTING
R.W.P. No. 1	670628.11	459555.69
R.W.P. No. 2	670652.11	459623.52
R.W.P. No. 3	670706.61	459805.85
R.W.P. No. 4	670732.03	459867.96

**NOTE:**  
 WORKING POINTS TAKEN AT TOE OF SLOPE.  
 SEE DRAWING 11 FOR REVETMENT SECTIONS.

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PREPARED FOR:

CITY OF NEW HAVEN  
OFFICE OF ECONOMIC DEVELOPMENT  
165 CHURCH STREET  
NEW HAVEN, CT 06510

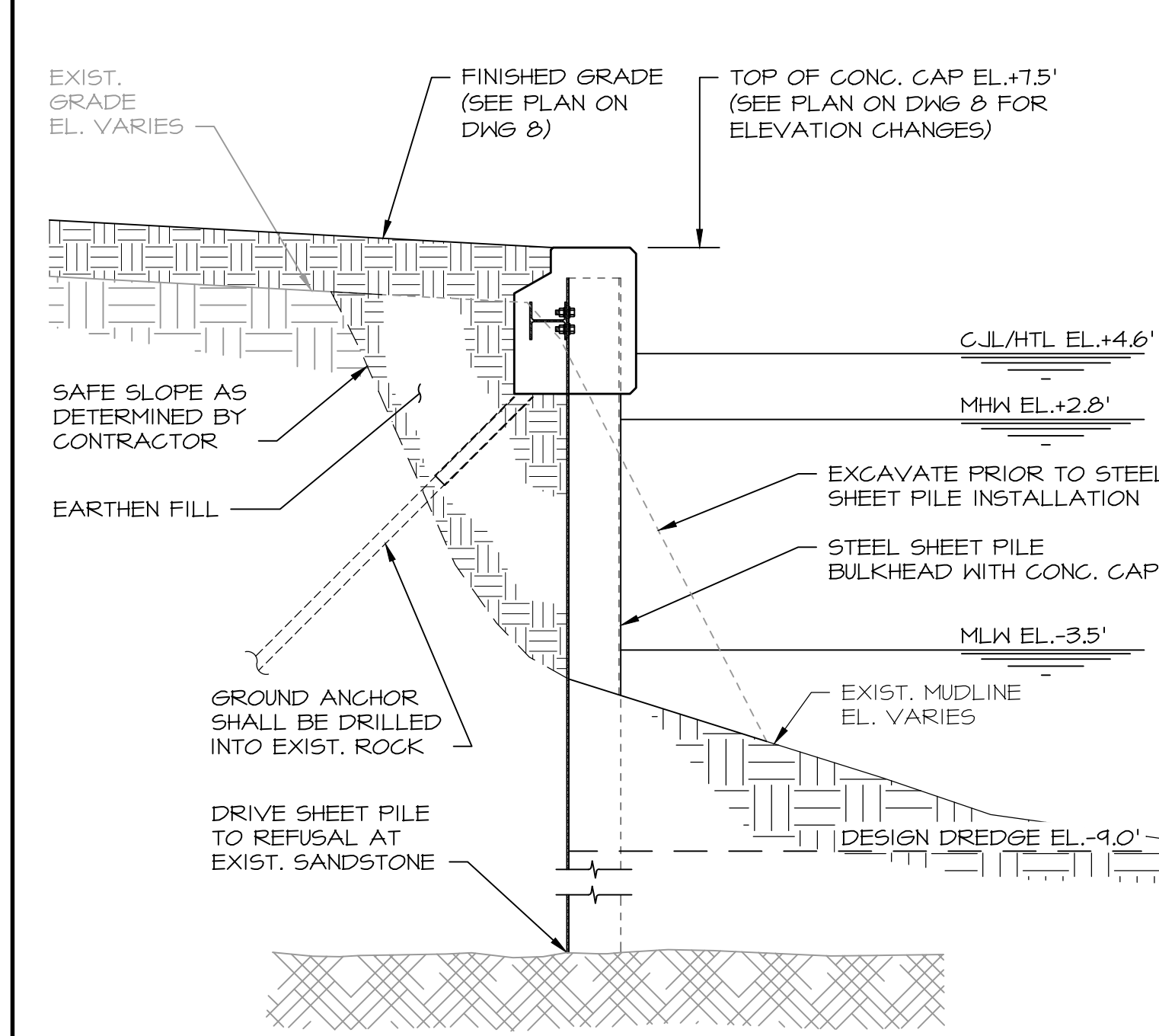
PROJECT:

RIVER STREET  
SHORELINE IMPROVEMENTS  
RIVER STREET  
NEW HAVEN, CT 06513

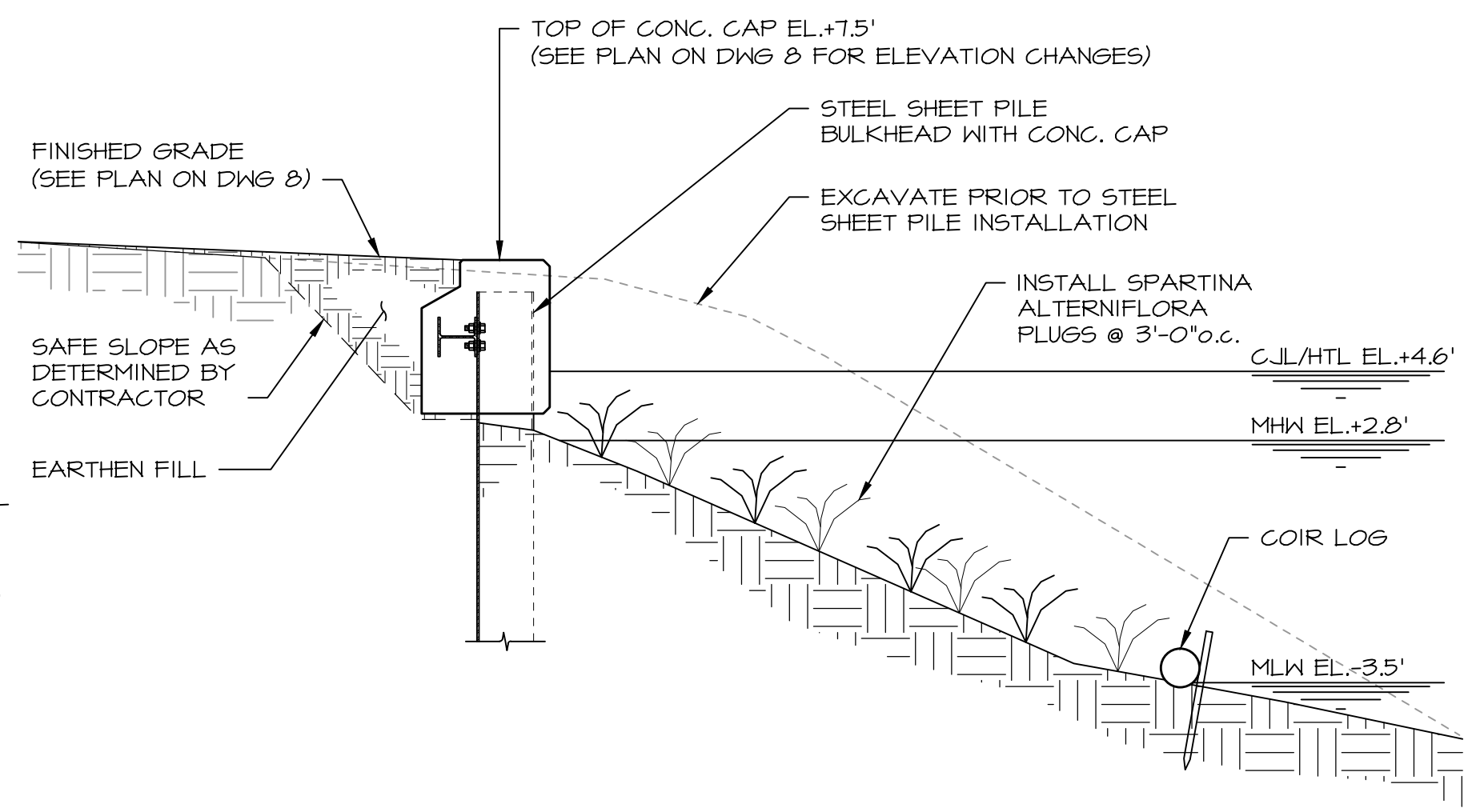
DRAWING:

REPAIR SECTIONS  
1 of 2

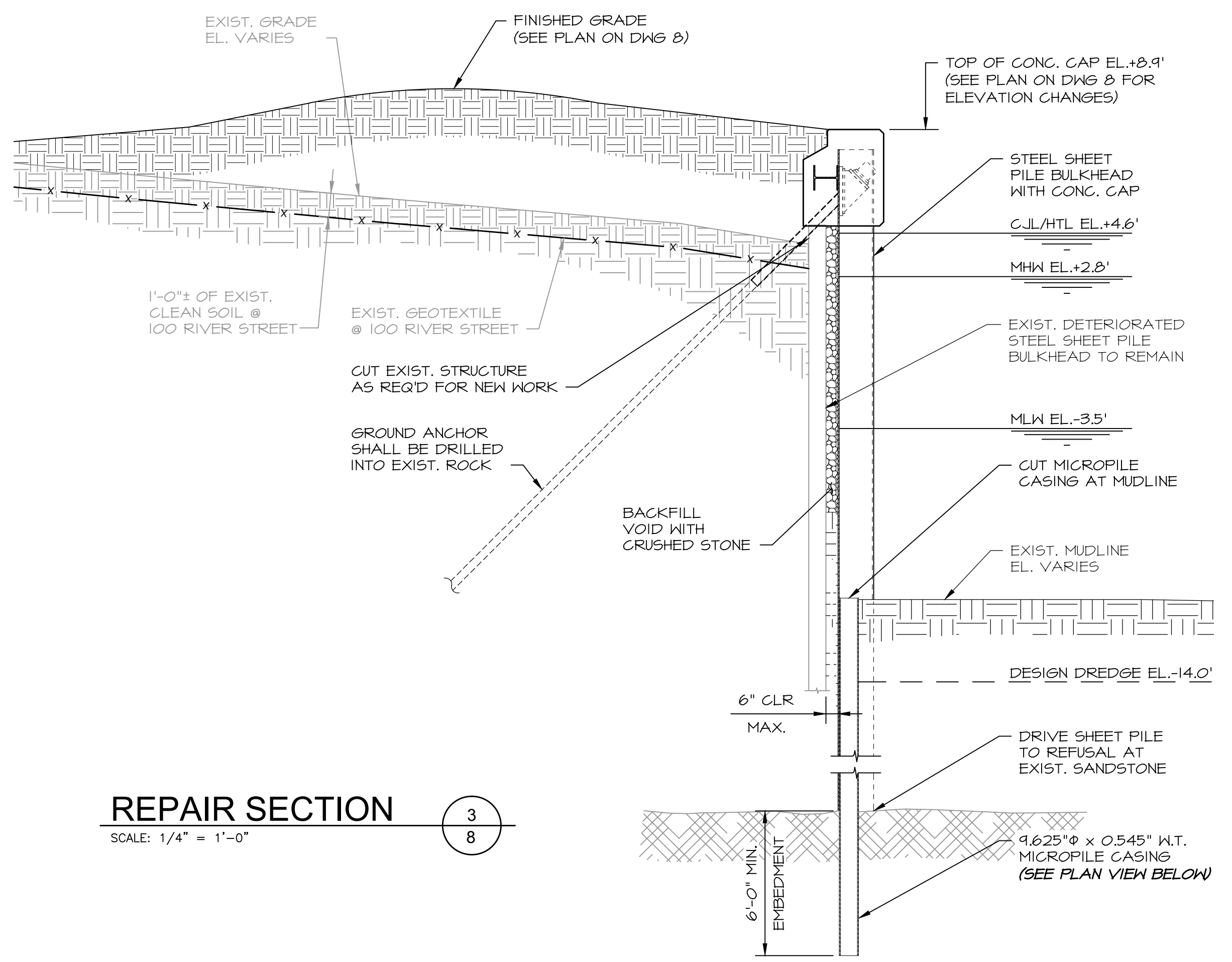
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Drawn By:	CLW	Scale:	1/4"=1'-0"
Checked By:	TD	Project Number:	201684
CAD File:	C:\NOED_RIVERSTREET\7-17.DWG	Drawn No.:	10 of 17



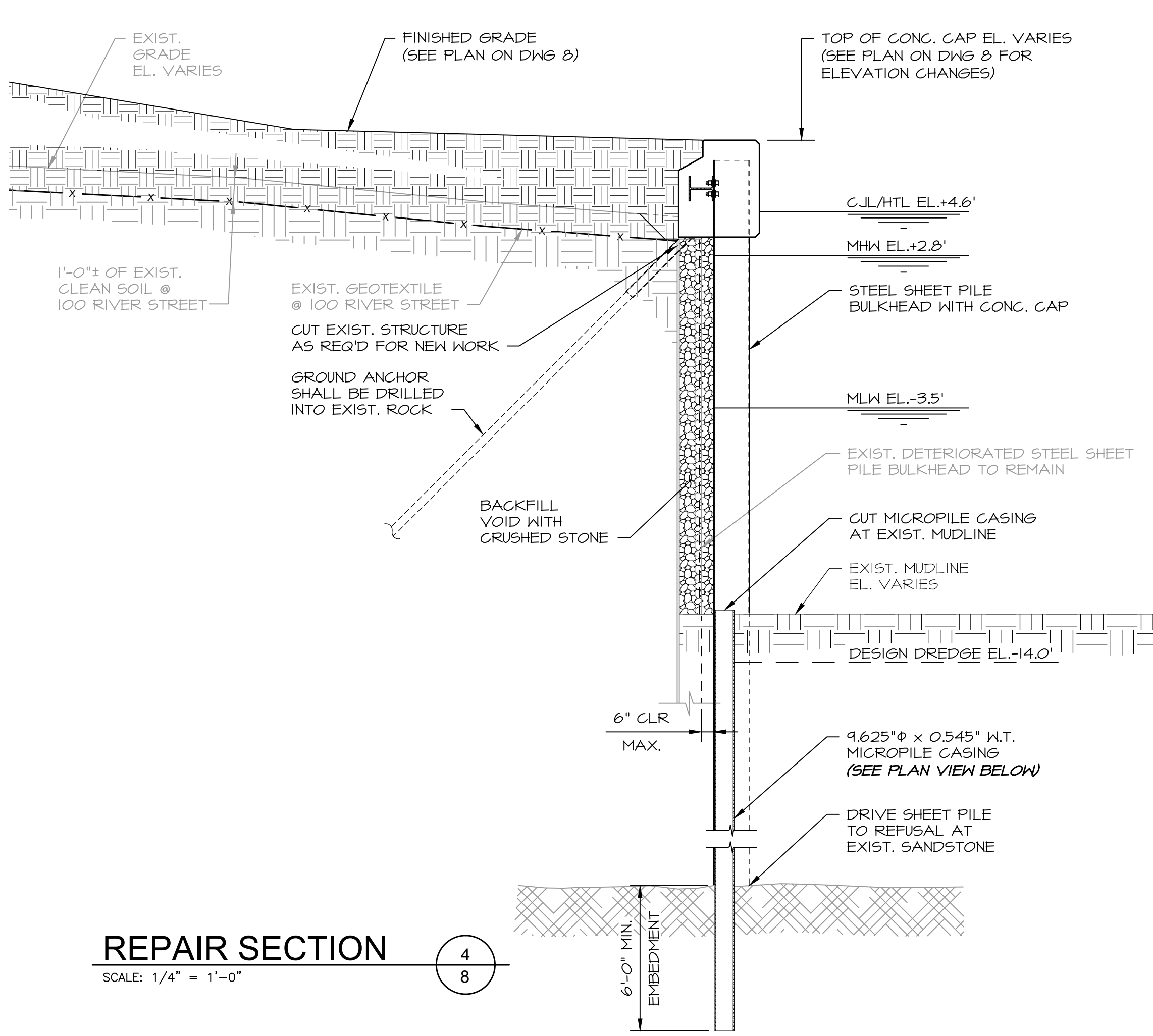
**REPAIR SECTION 1**  
SCALE: 1/4" = 1'-0"



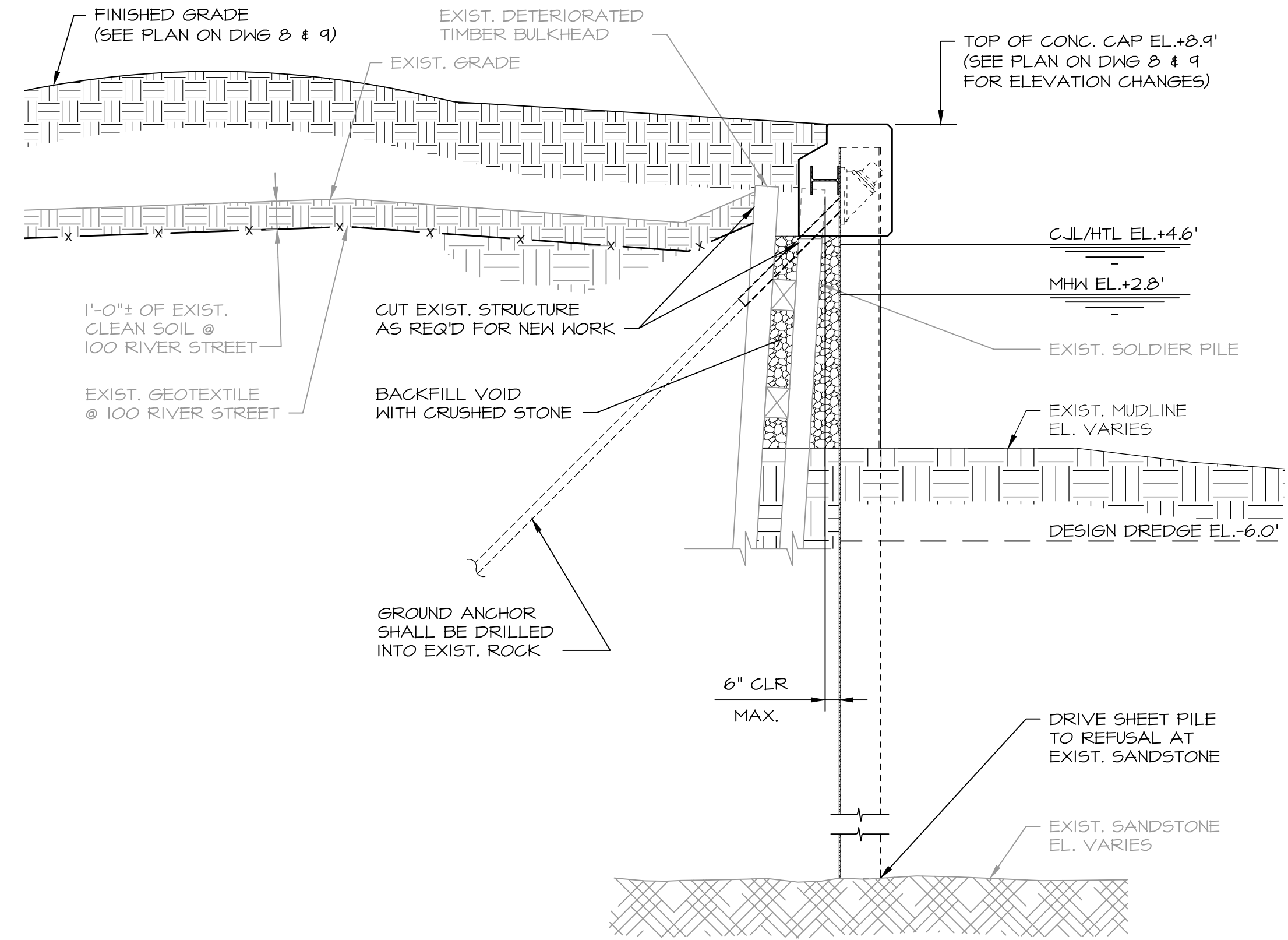
**REPAIR SECTION 2**  
SCALE: 1/4" = 1'-0"



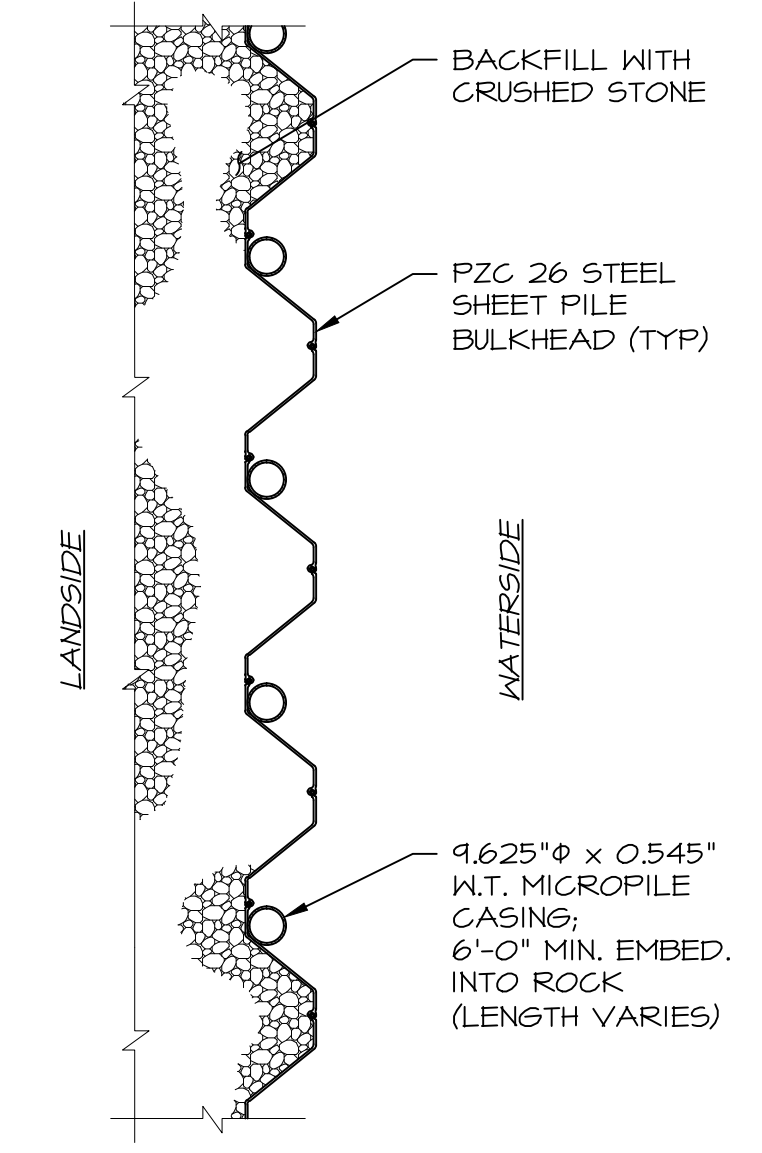
**REPAIR SECTION 3**  
SCALE: 1/4" = 1'-0"



**REPAIR SECTION 4**  
SCALE: 1/4" = 1'-0"



**REPAIR SECTION 5**  
SCALE: 1/4" = 1'-0"



**TYPICAL ROCK PIN DETAIL - PLAN VIEW**  
SCALE: 1/4" = 1'-0"

**NOTE:**  
REFER TO DRAWING 6 FOR APPROXIMATE SOIL PROFILES AND GEOTECHNICAL REPORT FOR SUBSURFACE INFORMATION. ACTUAL CONDITIONS WILL VARY BETWEEN BORINGS.

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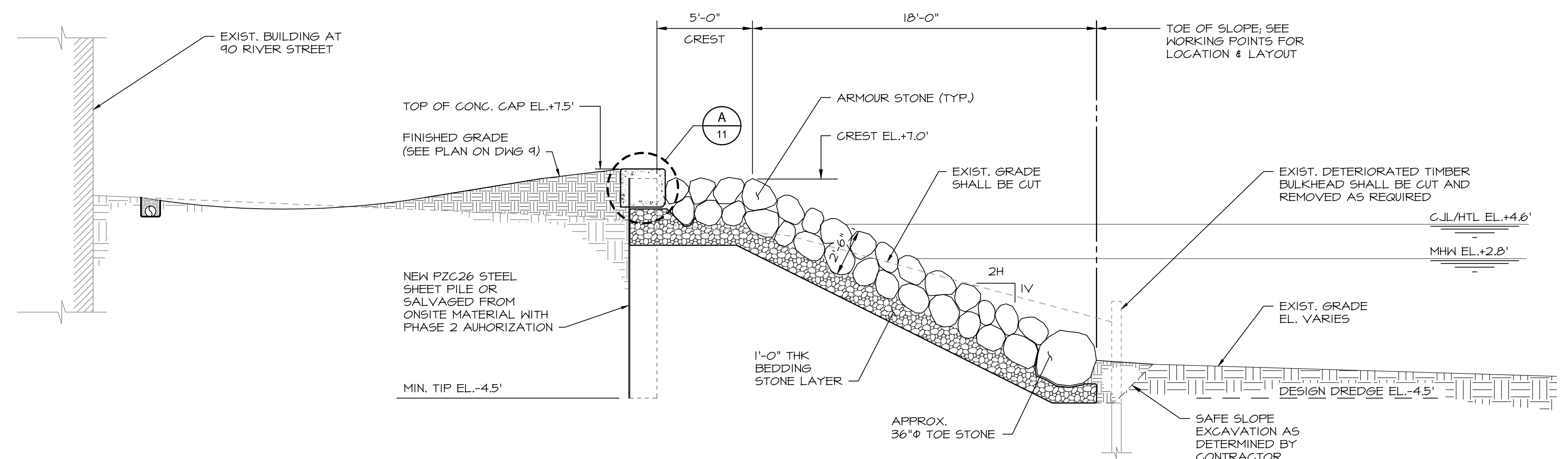
**ISSUED FOR BID  
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PREPARED FOR:  
**CITY OF NEW HAVEN  
OFFICE OF ECONOMIC  
DEVELOPMENT  
165 CHURCH STREET  
NEW HAVEN, CT 06510**

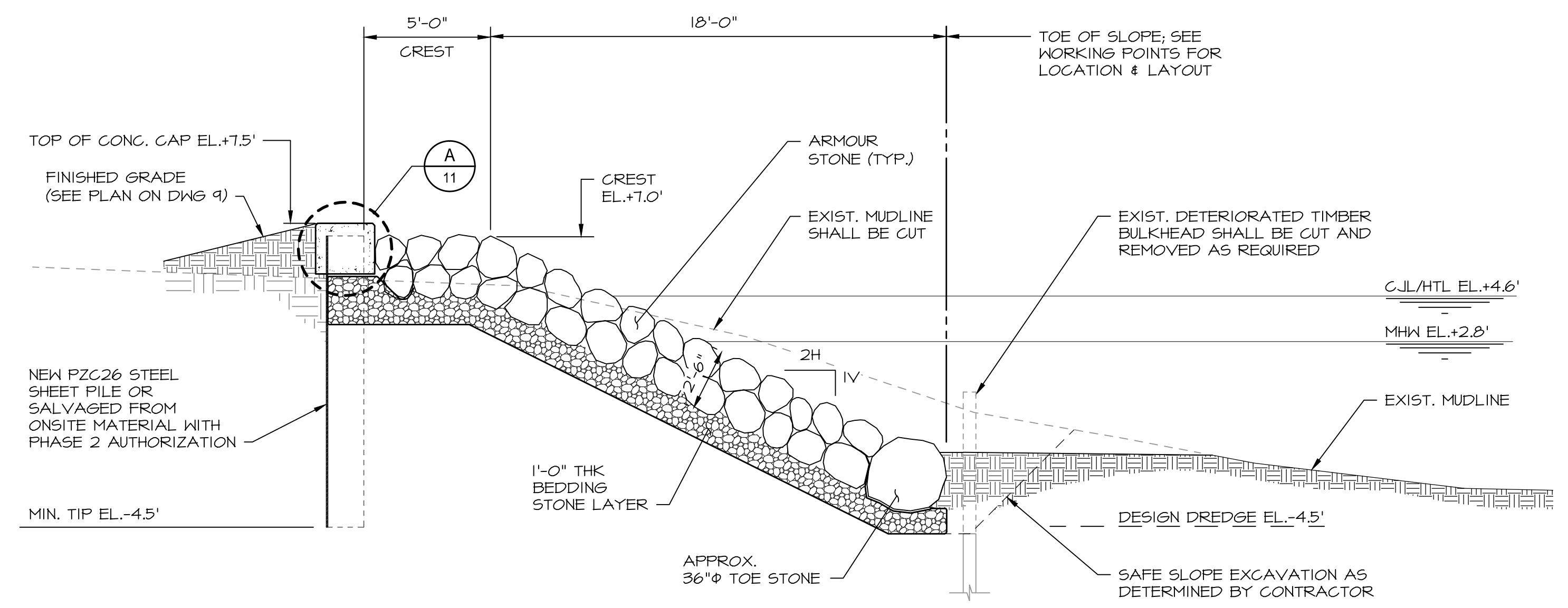
PROJECT:  
**RIVER STREET  
SHORELINE IMPROVEMENTS  
RIVER STREET  
NEW HAVEN, CT 06513**

DRAWING:  
**REPAIR SECTIONS  
2 of 2**

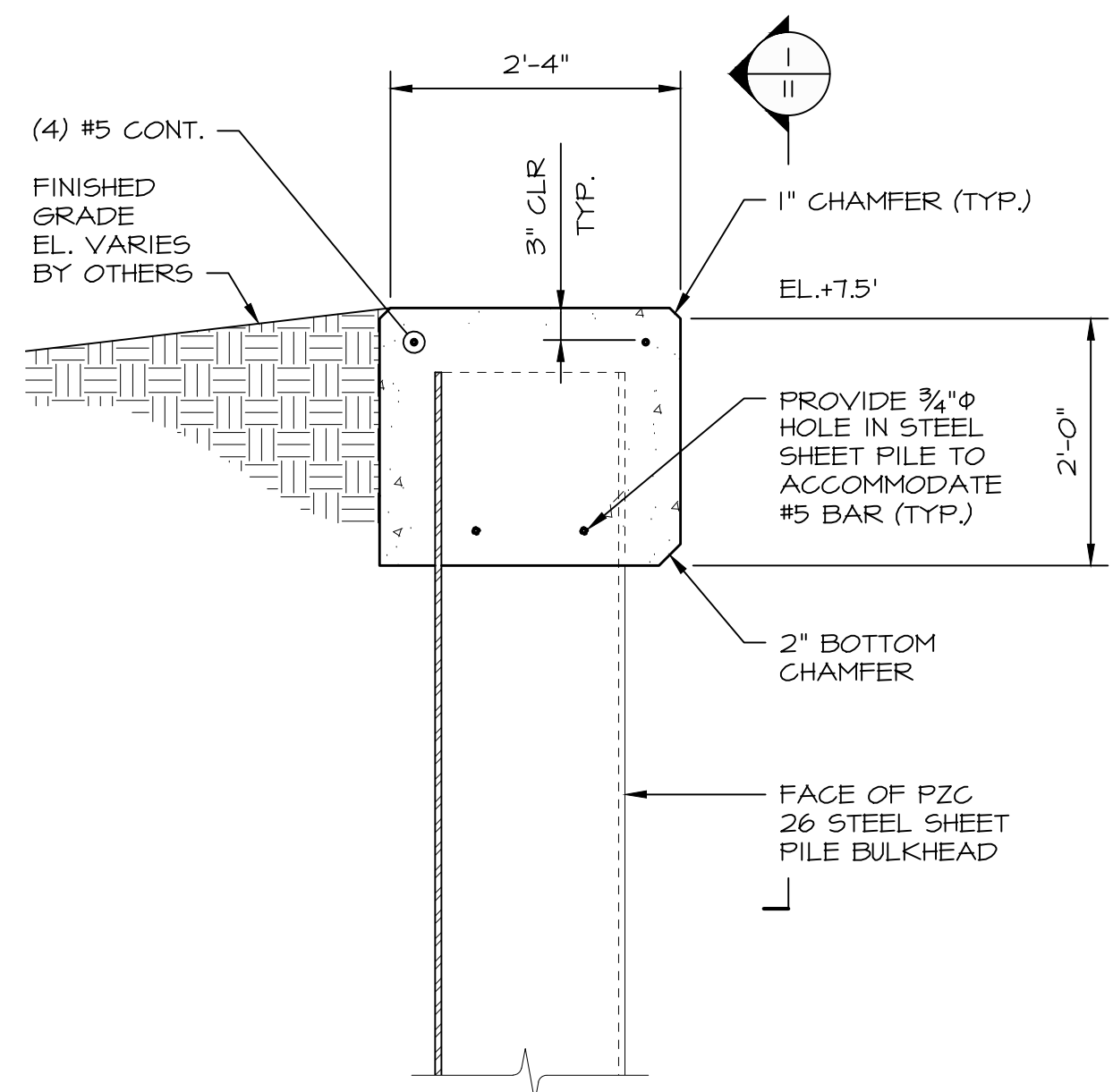
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Drawn By:	CLW	Scale:	AS NOTED
Checked By:	TD	Project Number:	201684
CAD File:	C:\NOED_RIVERSTREET 7-TL.DWG	Draw No.:	11 of 17



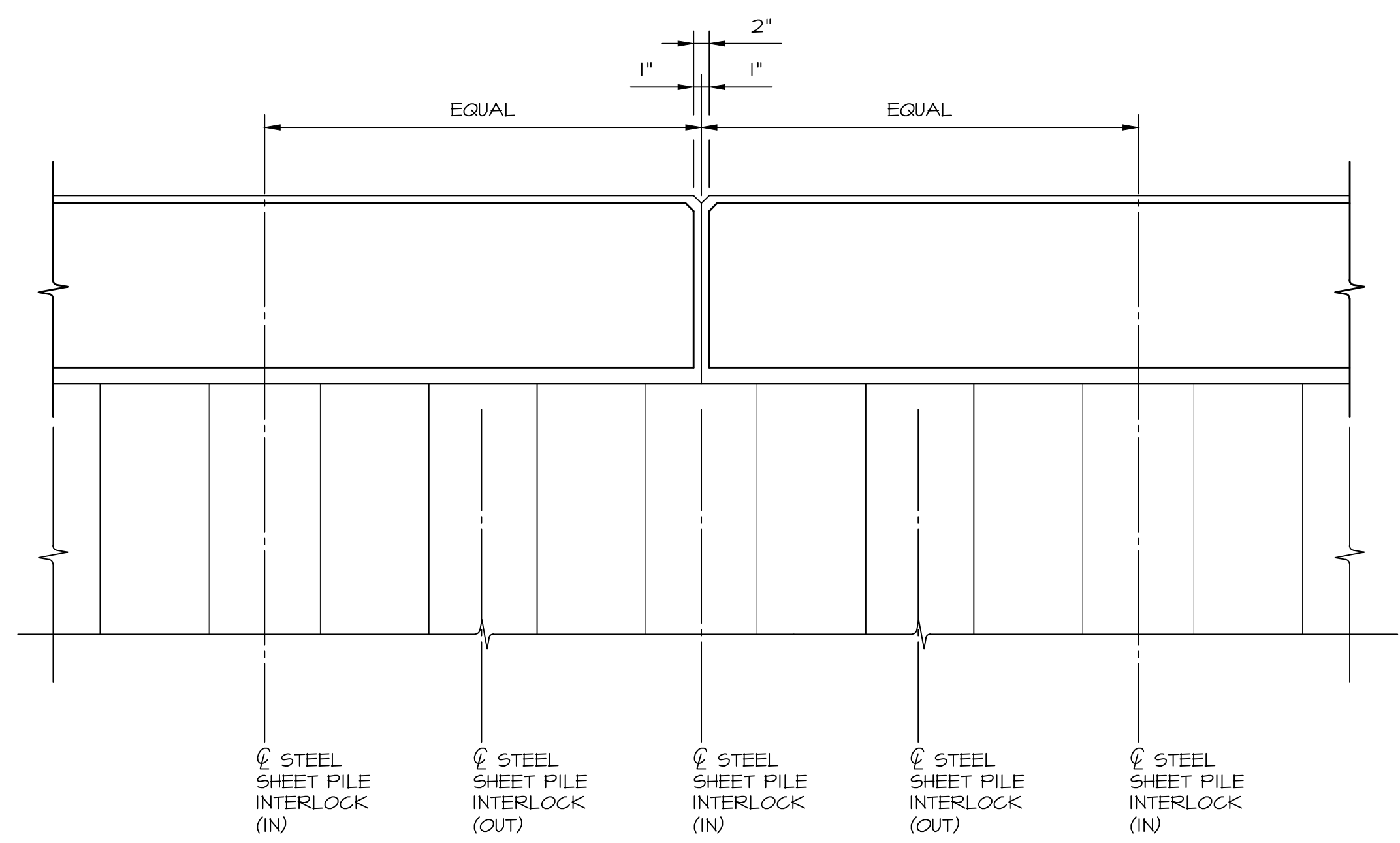
**REPAIR SECTION 6**  
SCALE: 1/4" = 1'-0"



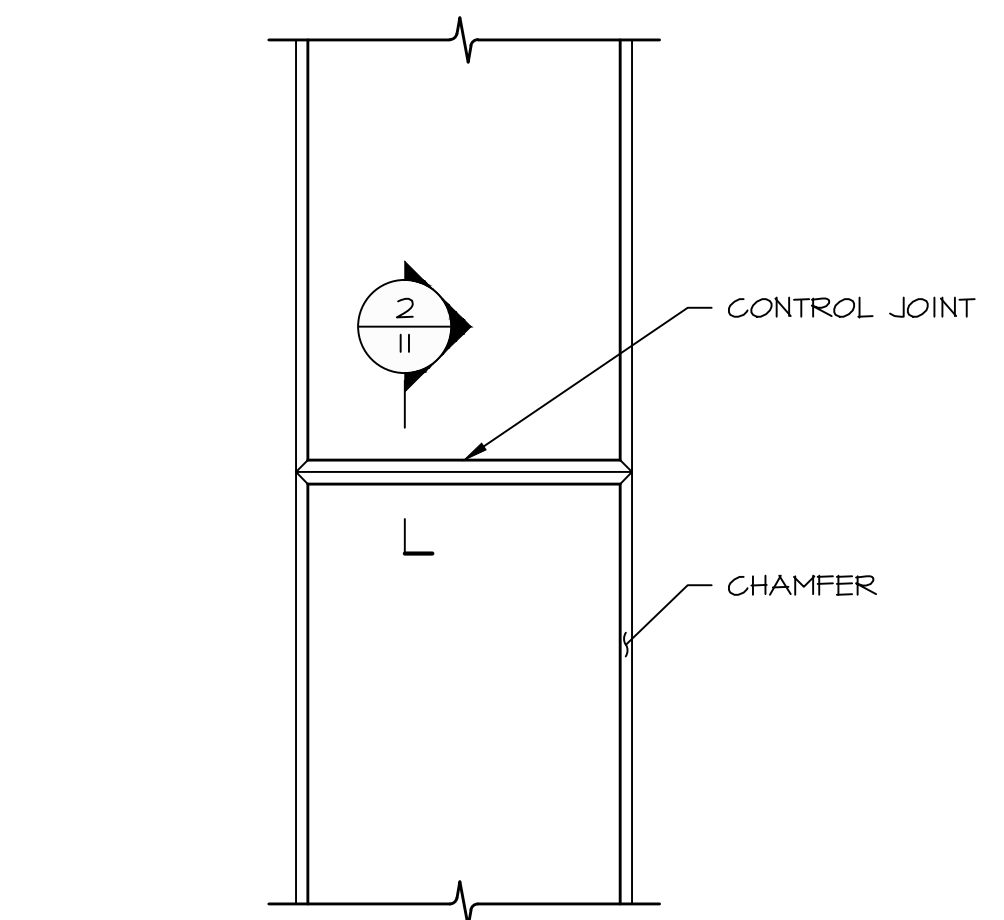
**REPAIR SECTION 7**  
SCALE: 1/4" = 1'-0"



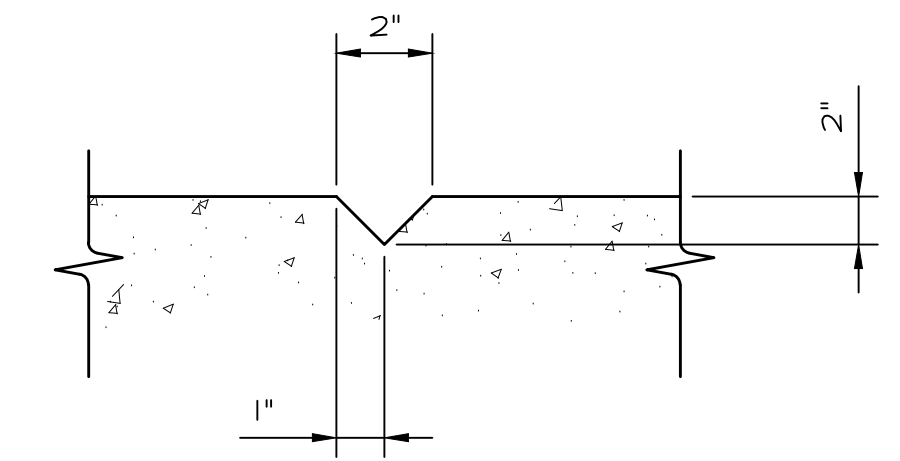
**CONCRETE CAP DETAIL**  
SCALE: 3/4" = 1'-0"



**CAP CONTROL JOINT ELEVATION**  
SCALE: 3/4" = 1'-0"



**CAP CONTROL JOINT - PLAN**  
SCALE: 3/4" = 1'-0"



**CONTROL JOINT SECTION**  
SCALE: 3/4" = 1'-0"

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PREPARED FOR:

**CITY OF NEW HAVEN  
OFFICE OF ECONOMIC  
DEVELOPMENT  
165 CHURCH STREET  
NEW HAVEN, CT 06510**

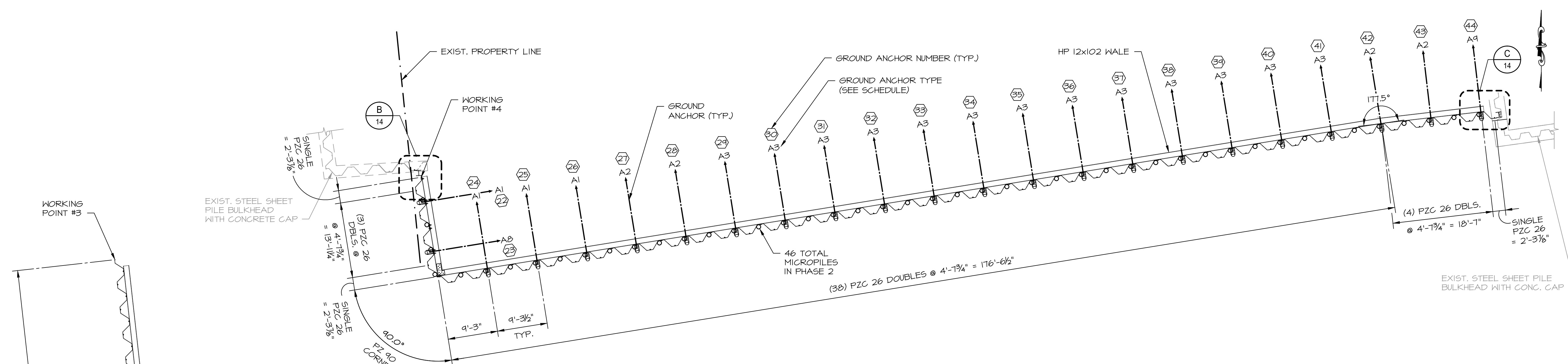
PROJECT:

**RIVER STREET  
SHORELINE IMPROVEMENTS  
RIVER STREET  
NEW HAVEN, CT 06513**

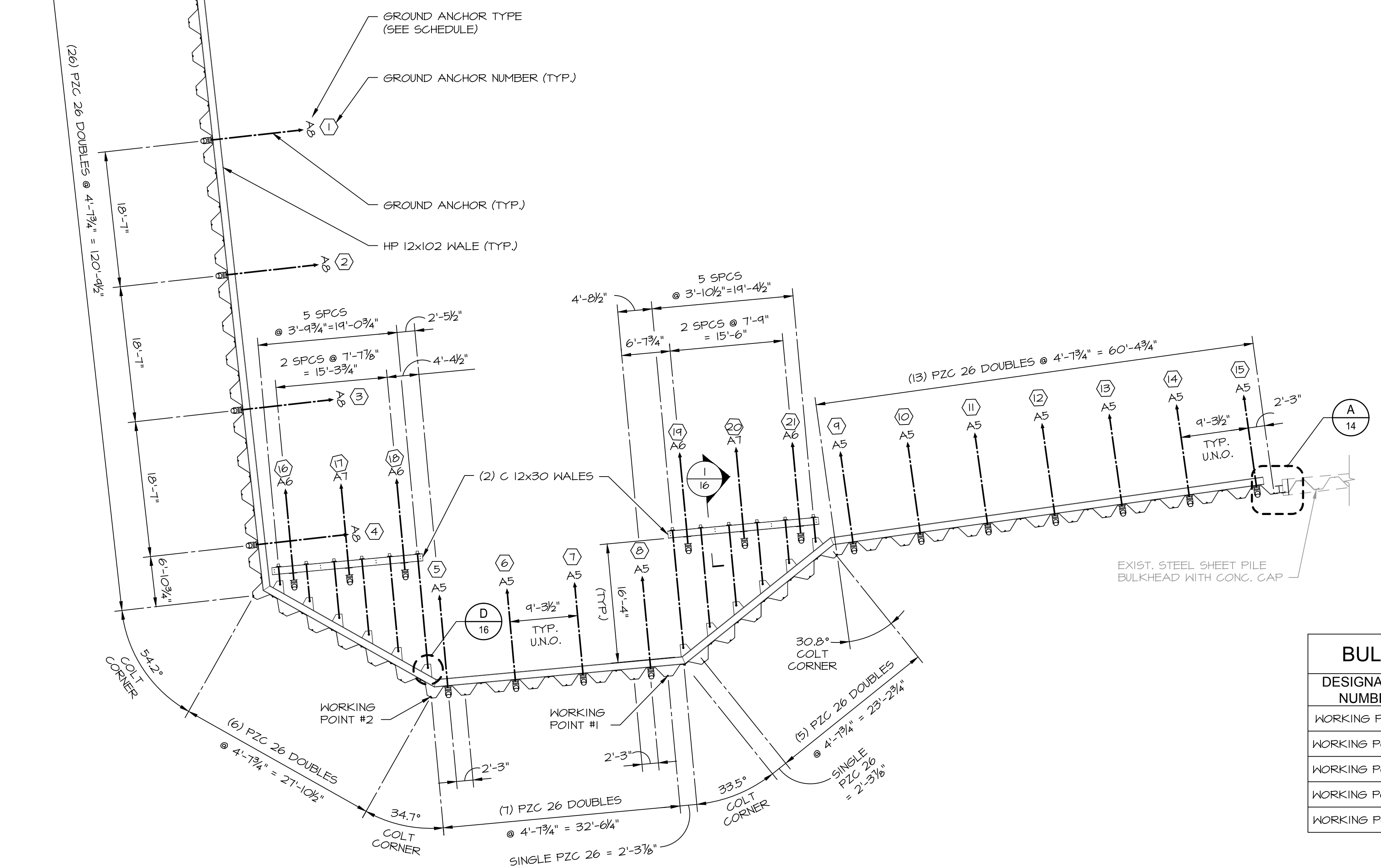
DRAWING:

**BULKHEAD PLANS -  
SHEET 1 of 2**

Designed By:	CGE	Date:	06/20/2017
Drawn By:	CLW	Scale:	AS NOTED
Checked By:	TD	Project Number:	201684
CAD File:	C:\NOED_RIVERSTREET T-1.DWG	Draw No.:	12 of 17



**BULKHEAD PLAN - PHASE 3**  
SCALE: 1" = 10'-0"



**BULKHEAD PLAN - PHASE 5**  
SCALE: 1" = 10'-0"

Ground Anchor No.	Top of Wall Elevation (at Top of Concrete Cap)	Working Point Elevation (NAVD88)
1 to 15	7.50	4.67
16 to 21	n/a	3.20
22 to 24	7.10	4.26
25	7.50	4.66
26	7.90	5.06
27	8.30	5.46
28	8.70	5.86
29 to 41	8.90	6.07
42	8.22	5.38
43	7.53	4.70
44	6.85	4.01

\* FOR GROUND ANCHOR NUMBERS 16 TO 21, SEE SECTION 1 ON DWG. 16 FOR WORKING POINT LOCATION. FOR ALL OTHER GROUND ANCHORS, SEE CONCRETE CAP SECTION DETAIL ON DWG. 15.

BULKHEAD WORKING POINTS		
DESIGNATION NUMBER	NORTHING	EASTING
WORKING POINT #1	670463.61	958648.14
WORKING POINT #2	670460.16	958615.68
WORKING POINT #3	670544.63	958571.98
WORKING POINT #4	670447.91	958840.23
WORKING POINT #5	670474.56	958843.20

GROUND ANCHORS		
TYPE	ANGLE	DESIGN LOAD
A1	45°	165 kips
A2	45°	170 kips
A3	45°	182 kips
A4	45°	152 kips
A5	45°	124 kips
A6	45°	115 kips
A7	45°	192 kips
A8	45°	137 kips
A9	45°	128 kips

**GENERAL NOTES:**

- FOR PROJECT NOTES, SEE DWG. NO. 2.
- CONCRETE CAP NOT SHOWN FOR CLARITY.
- STEEL SHEET PILE LAYOUT SHOWN IS SCHEMATIC ONLY AND IS NOT INTENDED TO DICTATE DRIVING DIRECTION OR END DETAILS. DEVIATION FROM THE LAYOUT SHOWN MAY CHANGE END DETAILS, CORNER DETAILS, DRIVING DIRECTION, ANCHOR LOCATIONS OR LOADING, AND QUANTITIES OF MATERIALS. EXISTING CONDITIONS MUST BE FIELD VERIFIED BY THE CONTRACTOR. THE CONTRACTOR SHALL SUBMIT A SHEET PILE LAYOUT PLAN BASED ON SITE INFORMATION PROVIDED BY HIS/HER LAND SURVEYOR FOR REVIEW BY THE ENGINEER. THE LAYOUT PLAN SHALL INCLUDE CORNER AND END DETAILS PLUS ANY CHANGE IN ANCHOR LOCATIONS FROM THE CONTRACT DOCUMENTS. CHANGES IN MATERIALS, QUANTITIES, DESIGN, OR SCHEDULE, RESULTING FROM A LAYOUT PREFERRED BY THE CONTRACTOR SHALL NOT CONSTITUTE A CHANGED CONDITION ELIGIBLE FOR ADDITIONAL COMPENSATION.

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NOT FOR CONSTRUCTION**

PREPARED FOR:

CITY OF NEW HAVEN  
OFFICE OF ECONOMIC  
DEVELOPMENT  
165 CHURCH STREET  
NEW HAVEN, CT 06510

PROJECT:

RIVER STREET  
SHORELINE IMPROVEMENTS  
RIVER STREET  
NEW HAVEN, CT 06513

DRAWING:

BULKHEAD PLANS -  
SHEET 2 of 2

Designed By: CGE Date: 06/20/2017

Drawn By: CLW Scale: AS NOTED

Checked By: TD Project Number: 201684

CAD File: C:\NOED\_RIVERSTREET\T-11.DWG Drawing No.:

Ground Anchor No.	Top of Wall Elevation (at Top of Concrete Cap)	Working Point Elevation (NAVD88)
45	6.75	3.92
46	7.26	4.42
47	7.76	4.93
48	8.27	5.43
49	8.77	5.94
50 to 86	8.90	6.07

\* FOR WORKING POINT LOCATION, SEE CONCRETE CAP SECTION DETAIL ON DWG. 15.

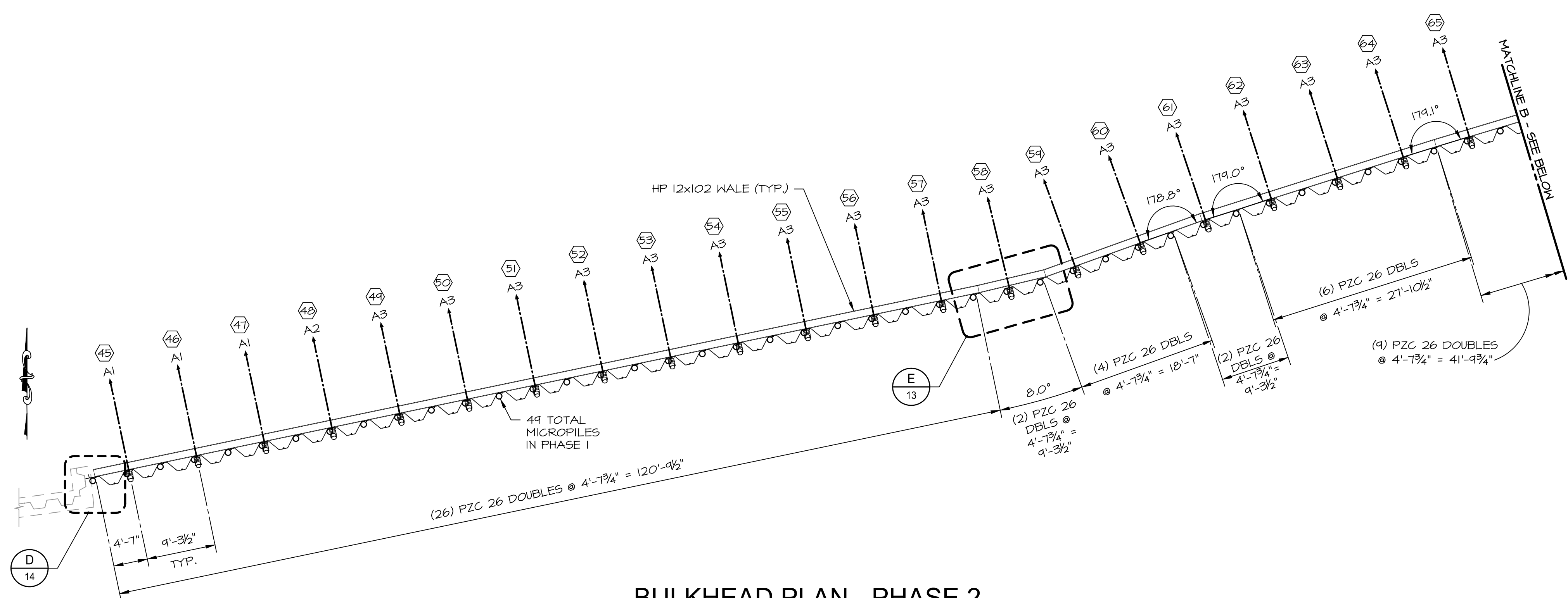
GROUND ANCHORS		
TYPE	ANGLE	DESIGN LOAD
A1	45°	165 kips
A2	45°	170 kips
A3	45°	182 kips
A4	45°	152 kips

**GENERAL NOTES:**

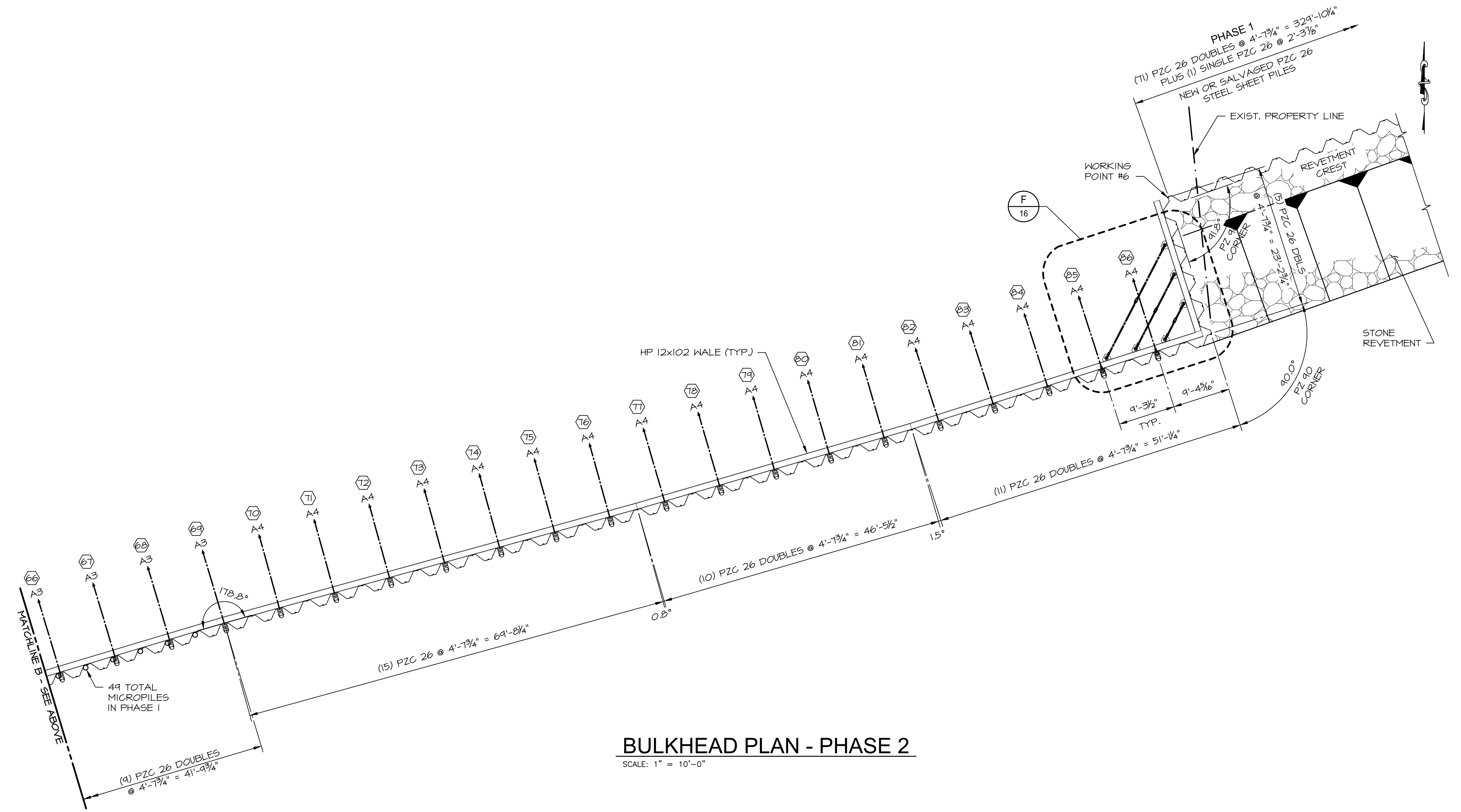
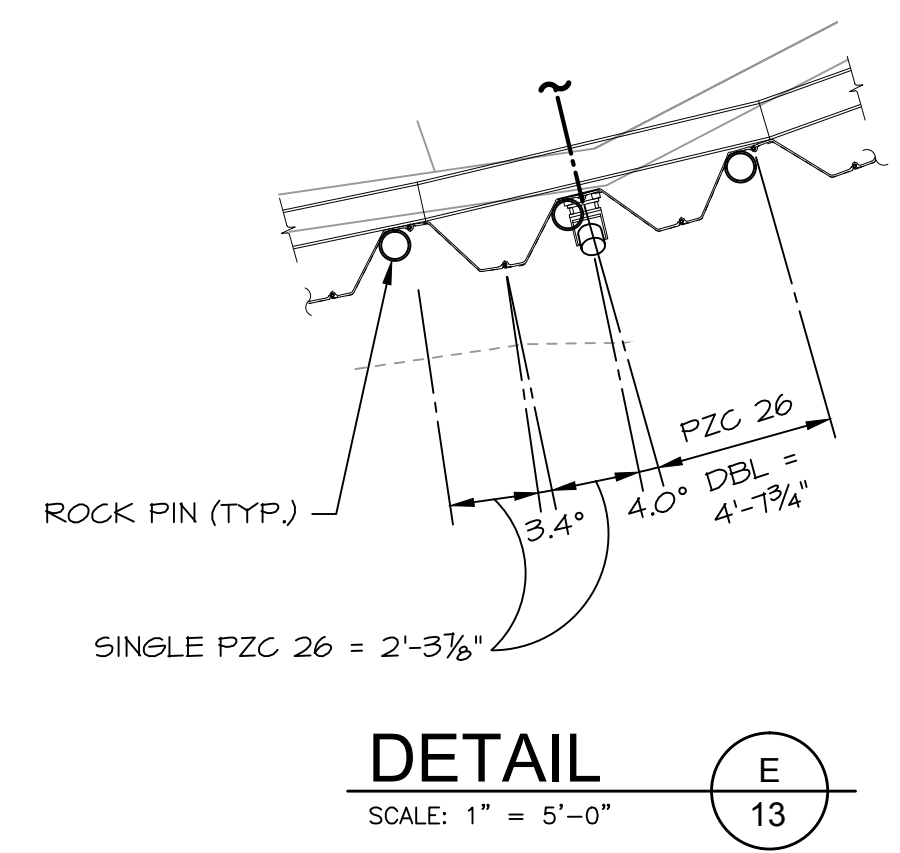
- FOR PROJECT NOTES, SEE DWG. NO. 2.
- CONCRETE CAP NOT SHOWN FOR CLARITY.
- STEEL SHEET PILE LAYOUT SHOWN IS SCHEMATIC ONLY AND IS NOT INTENDED TO DICTATE DRIVING DIRECTION OR END DETAILS. DEVIATION FROM THE LAYOUT SHOWN MAY CHANGE END DETAILS, CORNER DETAILS, DRIVING DIRECTION, ANCHOR LOCATIONS OR LOADING, AND QUANTITIES OF MATERIALS. EXISTING CONDITIONS MUST BE FIELD VERIFIED BY THE CONTRACTOR. THE CONTRACTOR SHALL SUBMIT A SHEET PILE LAYOUT PLAN BASED ON SITE INFORMATION PROVIDED BY HIS/HER LAND SURVEYOR FOR REVIEW BY THE ENGINEER. THE LAYOUT PLAN SHALL INCLUDE CORNER AND END DETAILS PLUS ANY CHANGE IN ANCHOR LOCATIONS FROM THE CONTRACT DOCUMENTS. CHANGES IN MATERIALS, QUANTITIES, DESIGN, OR SCHEDULE, RESULTING FROM A LAYOUT PREFERRED BY THE CONTRACTOR SHALL NOT CONSTITUTE A CHANGED CONDITION ELIGIBLE FOR ADDITIONAL COMPENSATION.

**BULKHEAD WORKING POINTS**

DESIGNATION NUMBER	NORTHING	EASTING
WORKING POINT #6	670652.28	959549.95



**BULKHEAD PLAN - PHASE 2**  
SCALE: 1" = 10'-0"



**BULKHEAD PLAN - PHASE 2**  
SCALE: 1" = 10'-0"

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**PREPARED FOR:**

CITY OF NEW HAVEN  
OFFICE OF ECONOMIC DEVELOPMENT  
165 CHURCH STREET  
NEW HAVEN, CT 06510

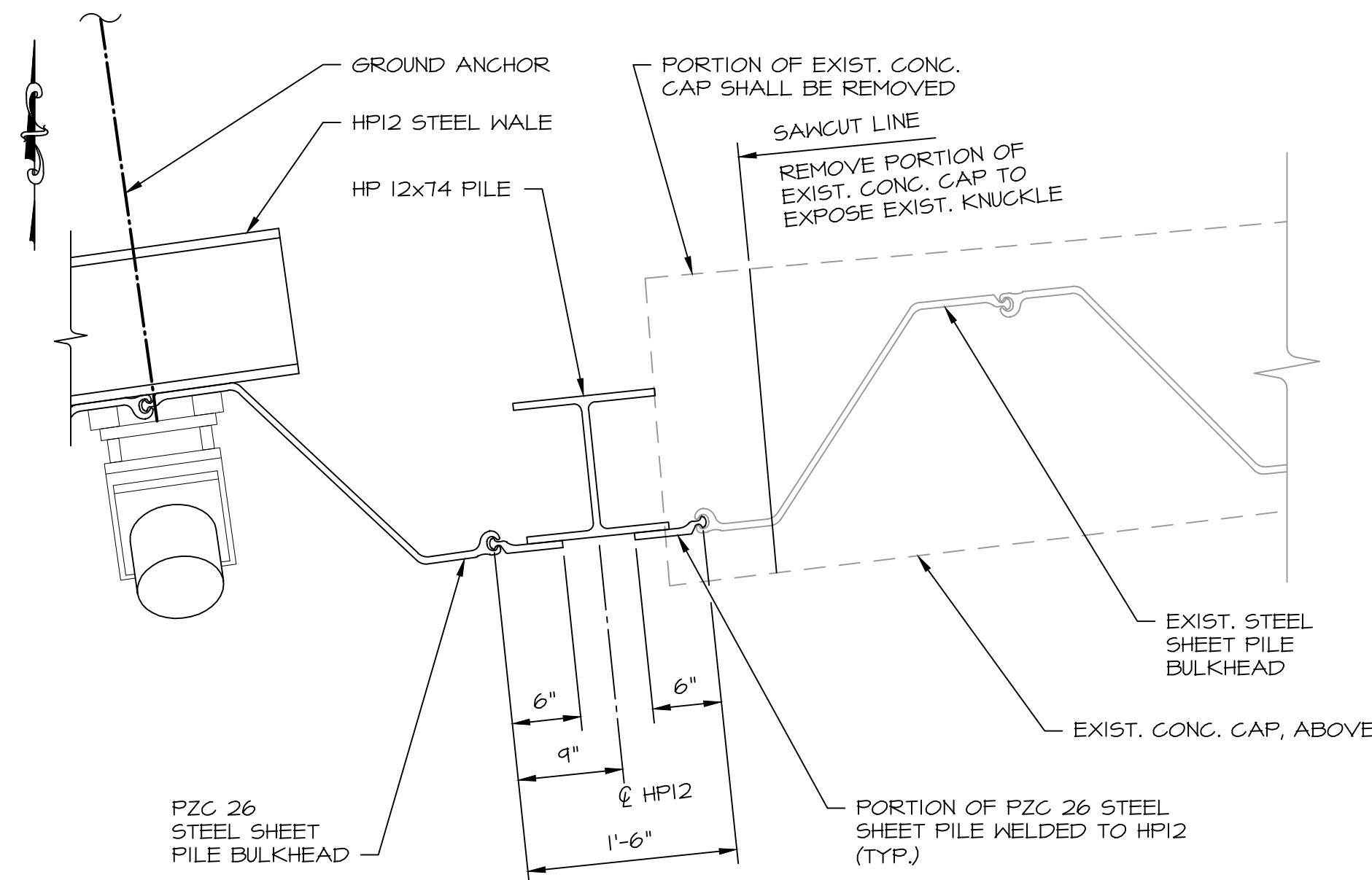
**PROJECT:**

RIVER STREET  
SHORELINE IMPROVEMENTS  
RIVER STREET  
NEW HAVEN, CT 06513

**DRAWING:**

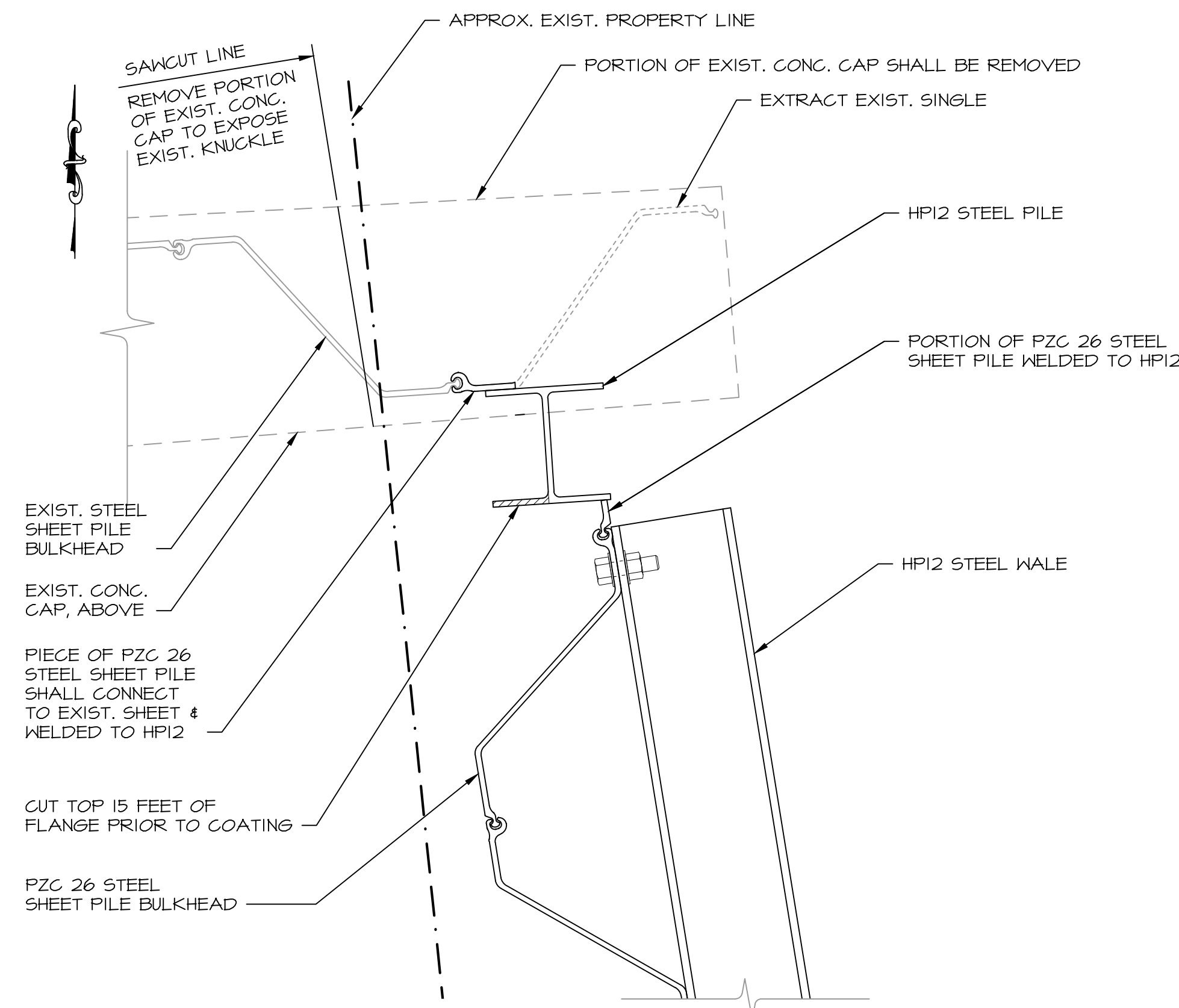
BULKHEAD CLOSURE DETAILS

Designed By:	CGE	Date:	06/20/2017
Drawn By:	CLW	Scale:	1"=1'-0"
Checked By:	TD	Project Number:	201684
CAD File:	GNHOED_RIVERSTREET 7-17.DWG	Drawing No.:	14 of 17



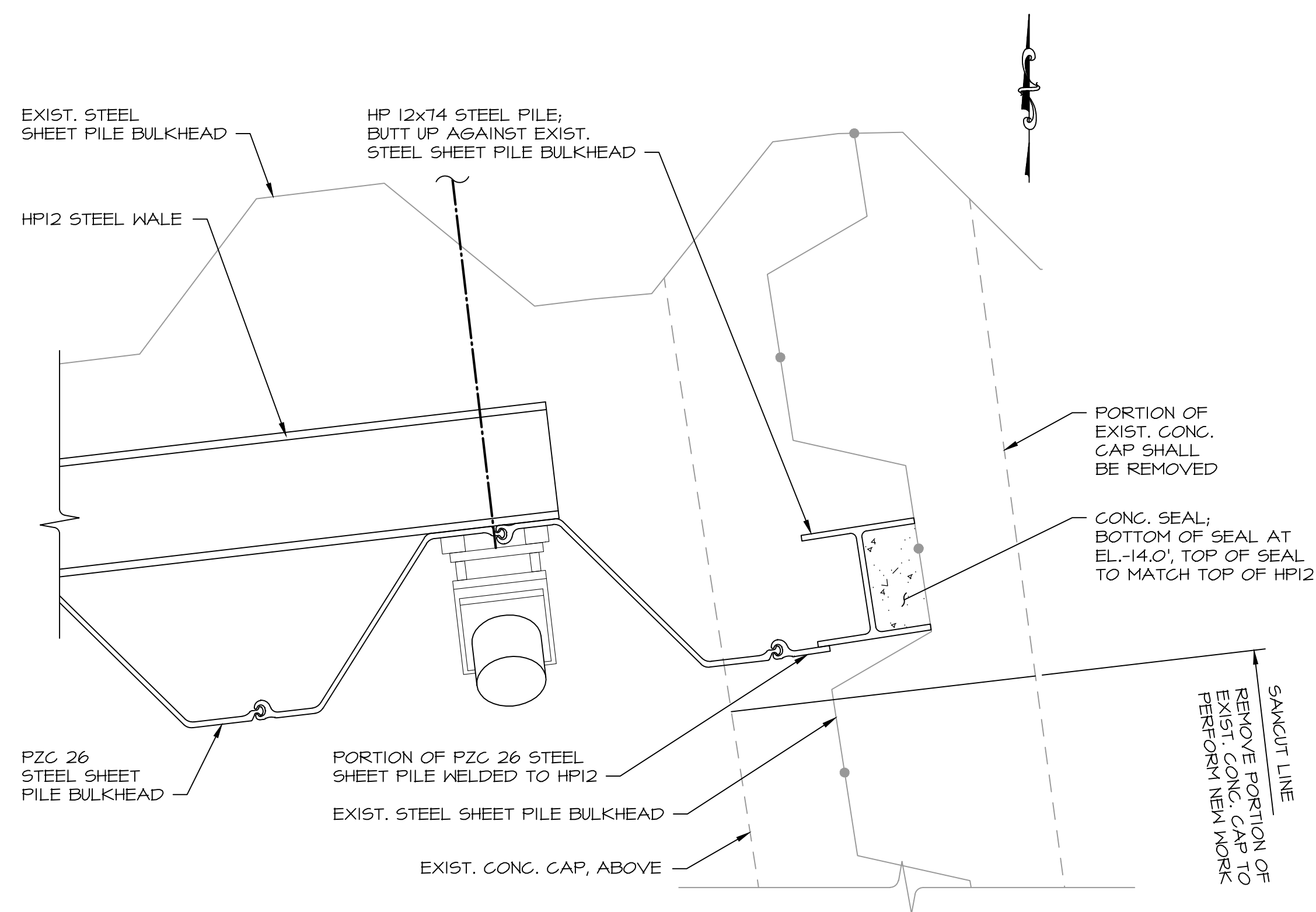
**NOTE:**  
CONCRETE CAP FOR NEW PZC 26 STEEL SHEET PILE BULKHEAD NOT SHOWN FOR CLARITY.

**CLOSURE DETAIL A**  
SCALE: 1" = 1'-0"



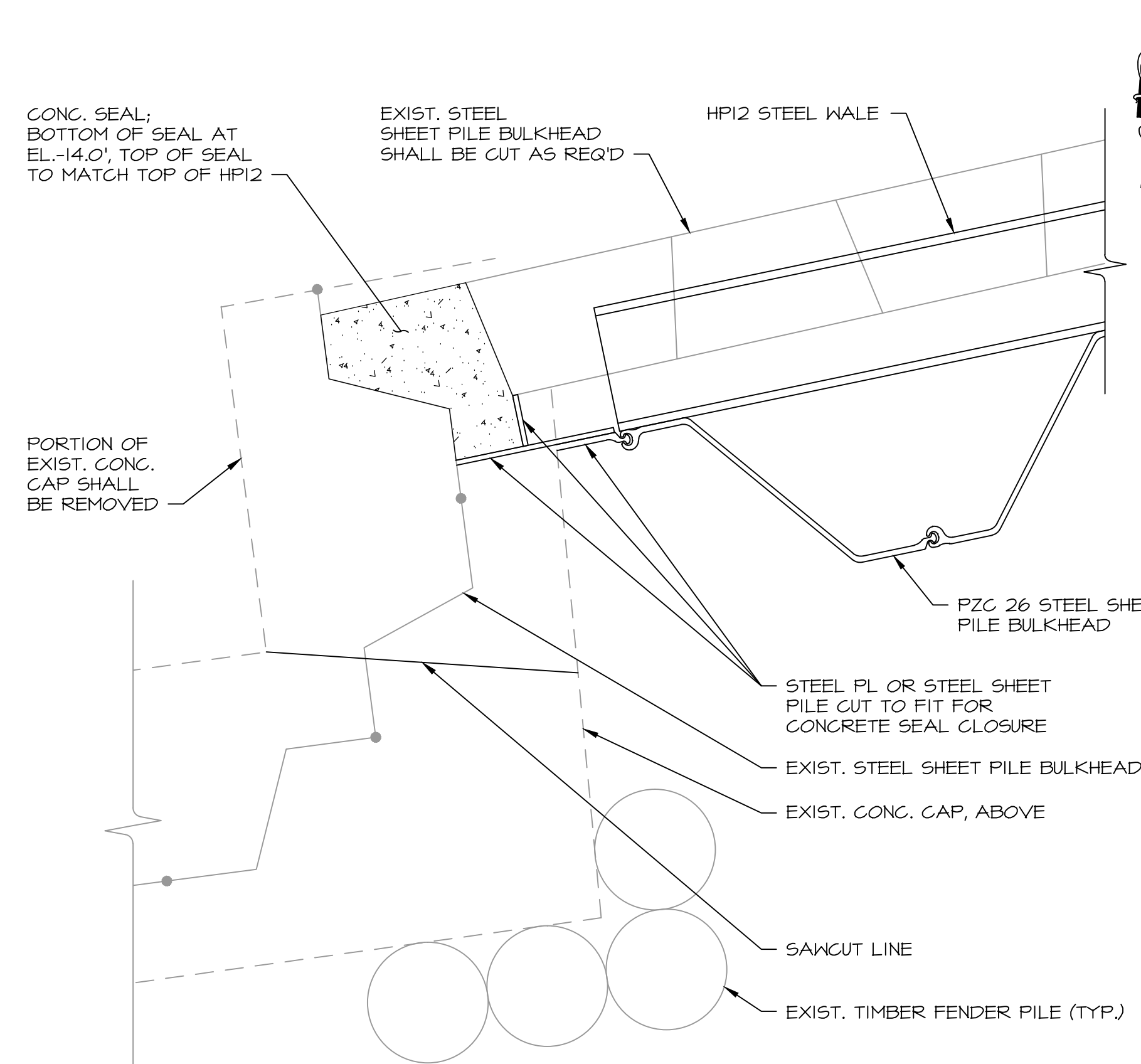
**NOTE:**  
CONCRETE CAP FOR NEW PZC 26 STEEL SHEET PILE BULKHEAD NOT SHOWN FOR CLARITY.

**CLOSURE DETAIL B**  
SCALE: 1" = 1'-0"



**NOTE:**  
CONCRETE CAP FOR PZC 26 STEEL SHEET PILE BULKHEAD NOT SHOWN FOR CLARITY.

**CLOSURE DETAIL C**  
SCALE: 1" = 1'-0"



**NOTE:**  
CONCRETE CAP FOR PZC 26 STEEL SHEET PILE BULKHEAD NOT SHOWN FOR CLARITY.

**CLOSURE DETAIL D**  
SCALE: 1" = 1'-0"

**GENERAL NOTES:**

- FOR PROJECT NOTES, SEE DWG. NO. 2.
- CLOSURE DETAILS SHOWN ARE FOR REFERENCE ONLY. CLOSURE AND END DETAILS SHALL BE FIELD VERIFIED TO FIT UP TO EXISTING STRUCTURES AND GRADES. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL OF END DETAILS WITH ADEQUATE TOLERANCE AND ADJUSTMENT FOR FIT UP TO ACTUAL FIELD CONDITIONS.
- LENGTHS OF HP SECTIONS, CORNER SECTIONS, AND CUT PORTIONS OF PZC STEEL SHEET PILE SHALL BE THE SAME LENGTH AS THE NEW STEEL SHEET PILE.

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PREPARED FOR:

CITY OF NEW HAVEN  
OFFICE OF ECONOMIC  
DEVELOPMENT  
165 CHURCH STREET  
NEW HAVEN, CT 06510

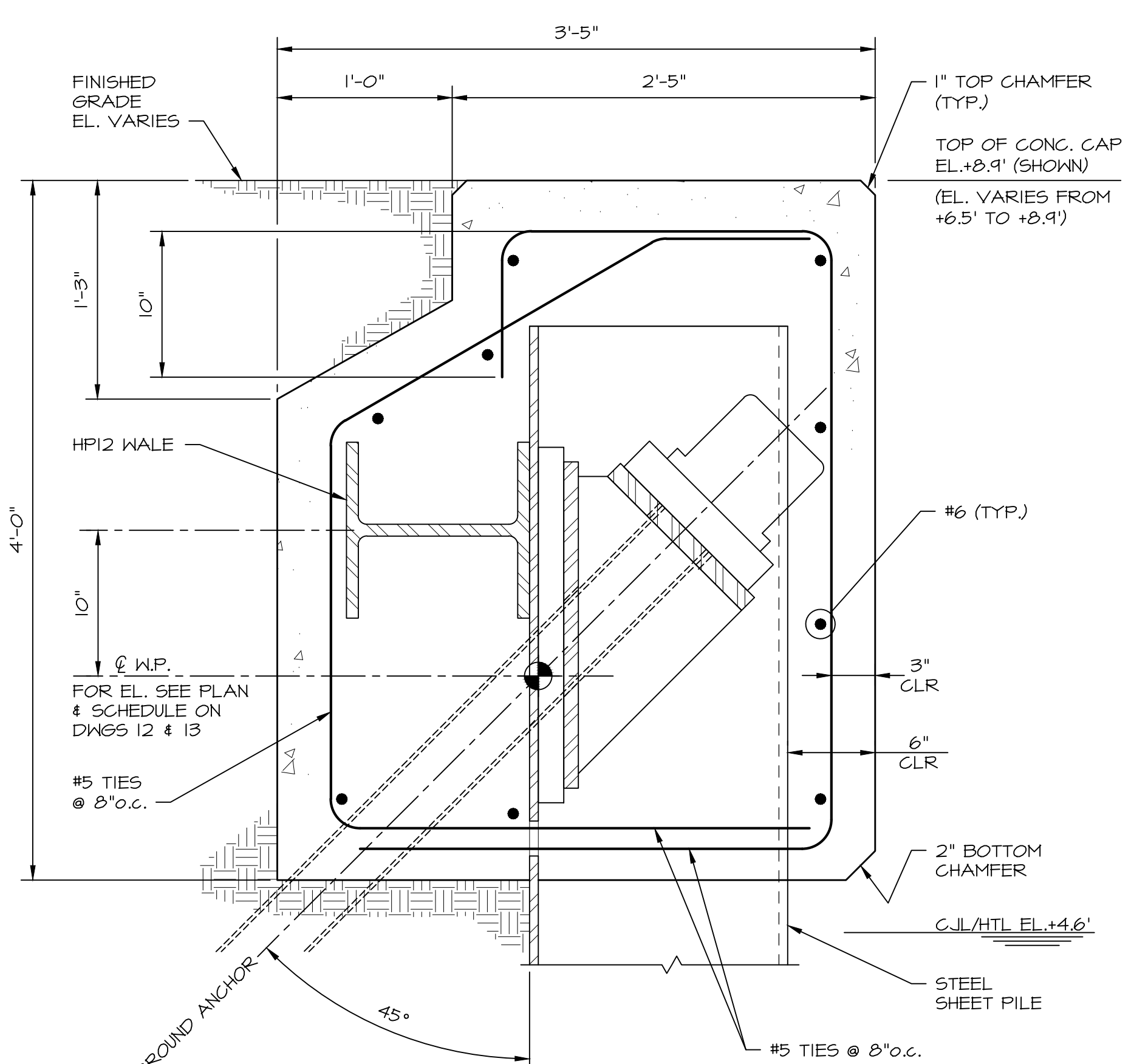
PROJECT:

RIVER STREET  
SHORELINE IMPROVEMENTS  
RIVER STREET  
NEW HAVEN, CT 06513

DRAWING:

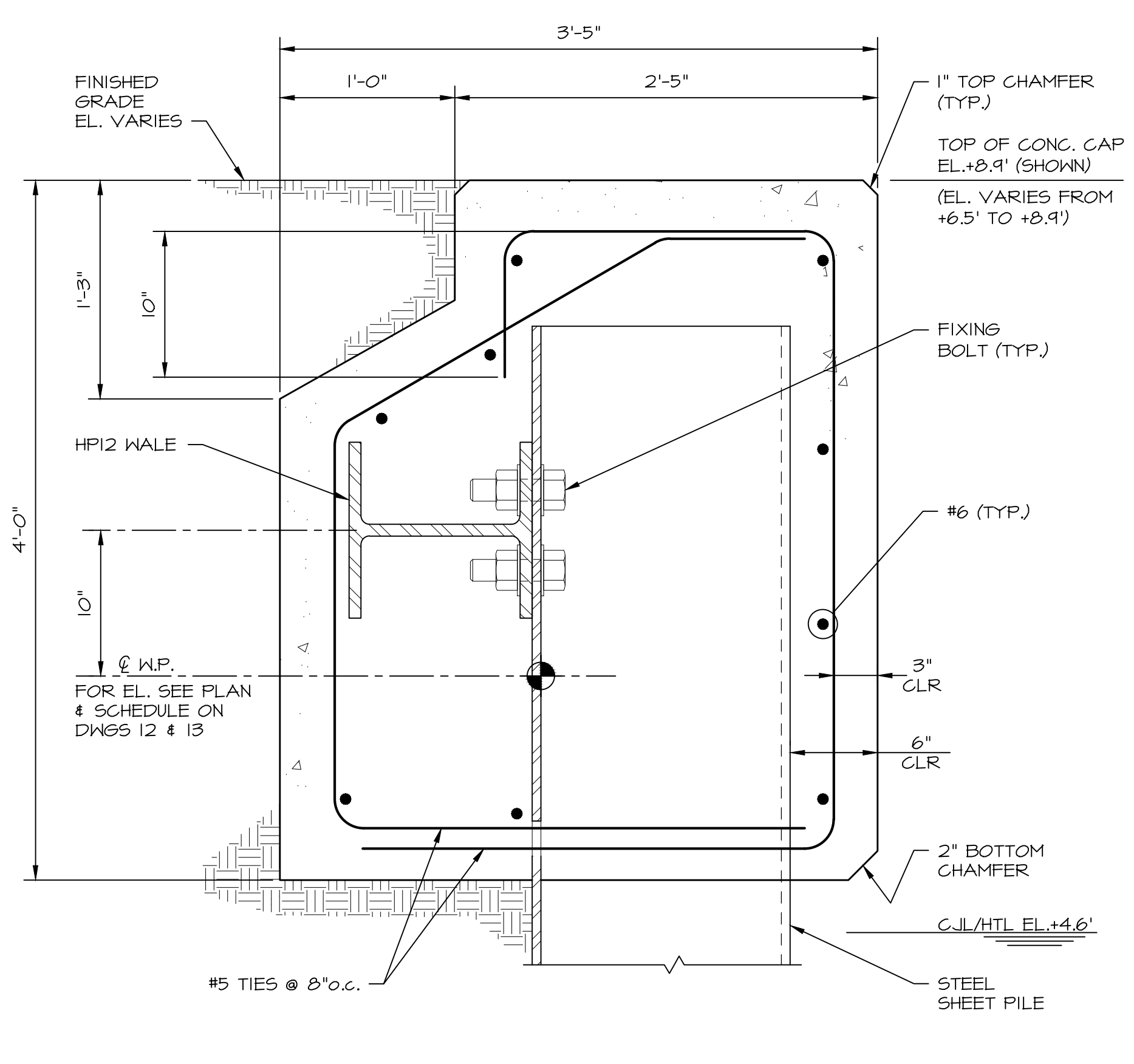
BULKHEAD DETAILS  
SHEET 1 OF 3

Designed By:	CGE	Date:	06/20/2017
Drawn By:	CLW	Scale:	AS NOTED
Checked By:	TD	Project Number:	201684
CAD File:	C:\NOED_RIVERSTREET T-1.DWG	Drawing No.:	15 of 17



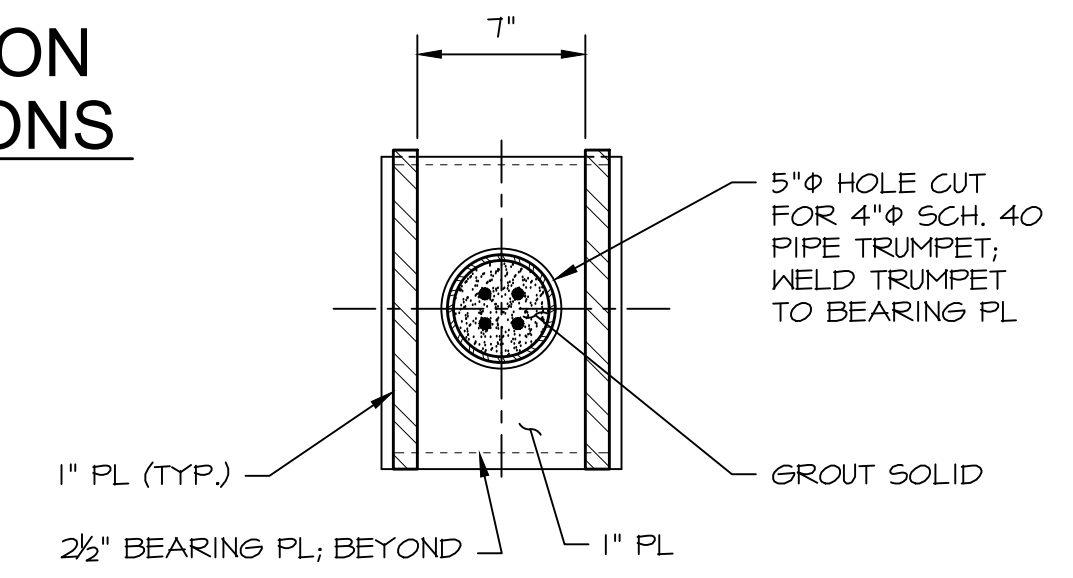
**TYPICAL CONCRETE CAP SECTION AT GROUND ANCHOR LOCATIONS**

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



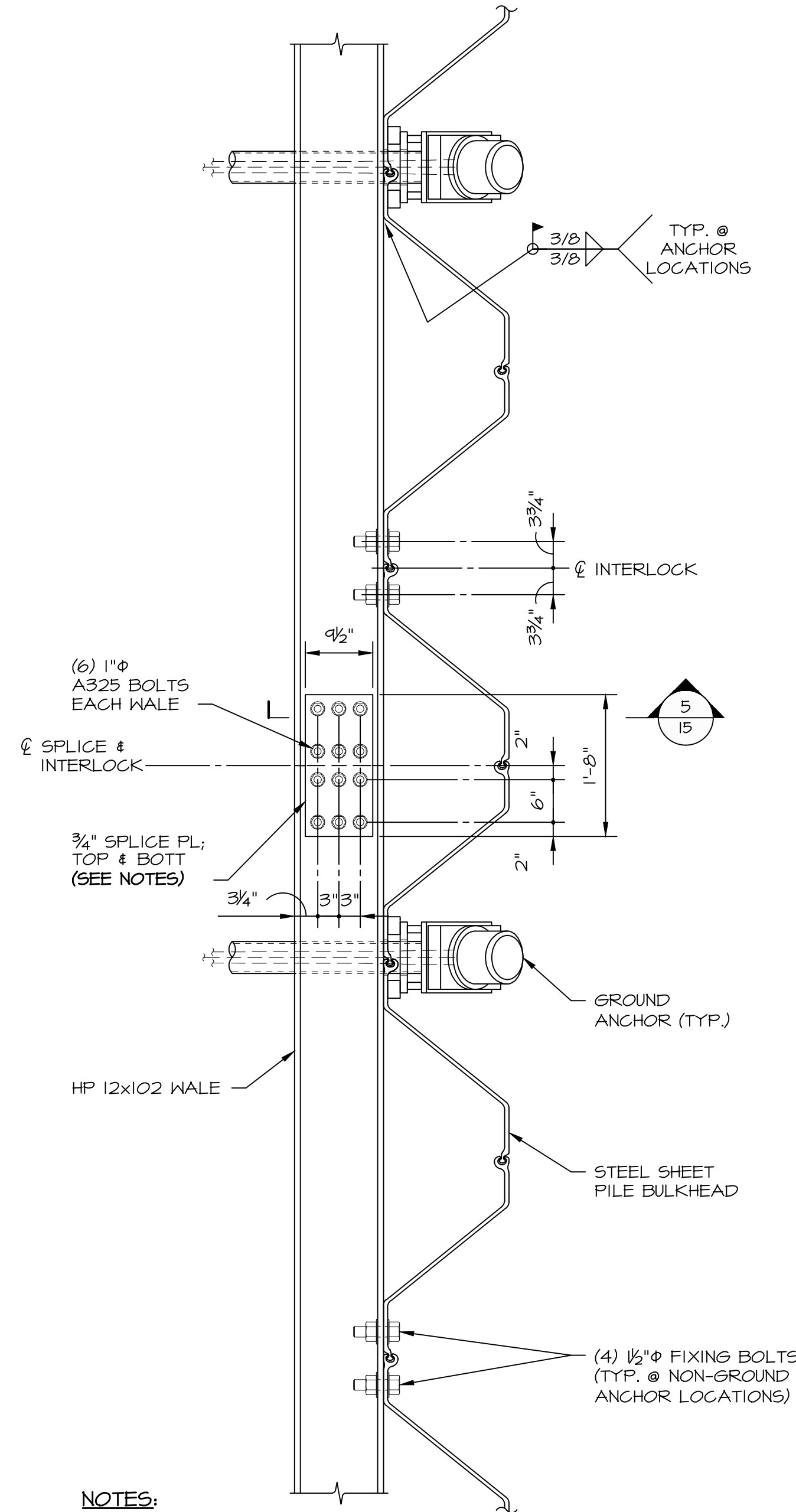
**TYPICAL CONCRETE CAP SECTION AT WALE CONNECTION LOCATIONS**

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



**SECTION 3**

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

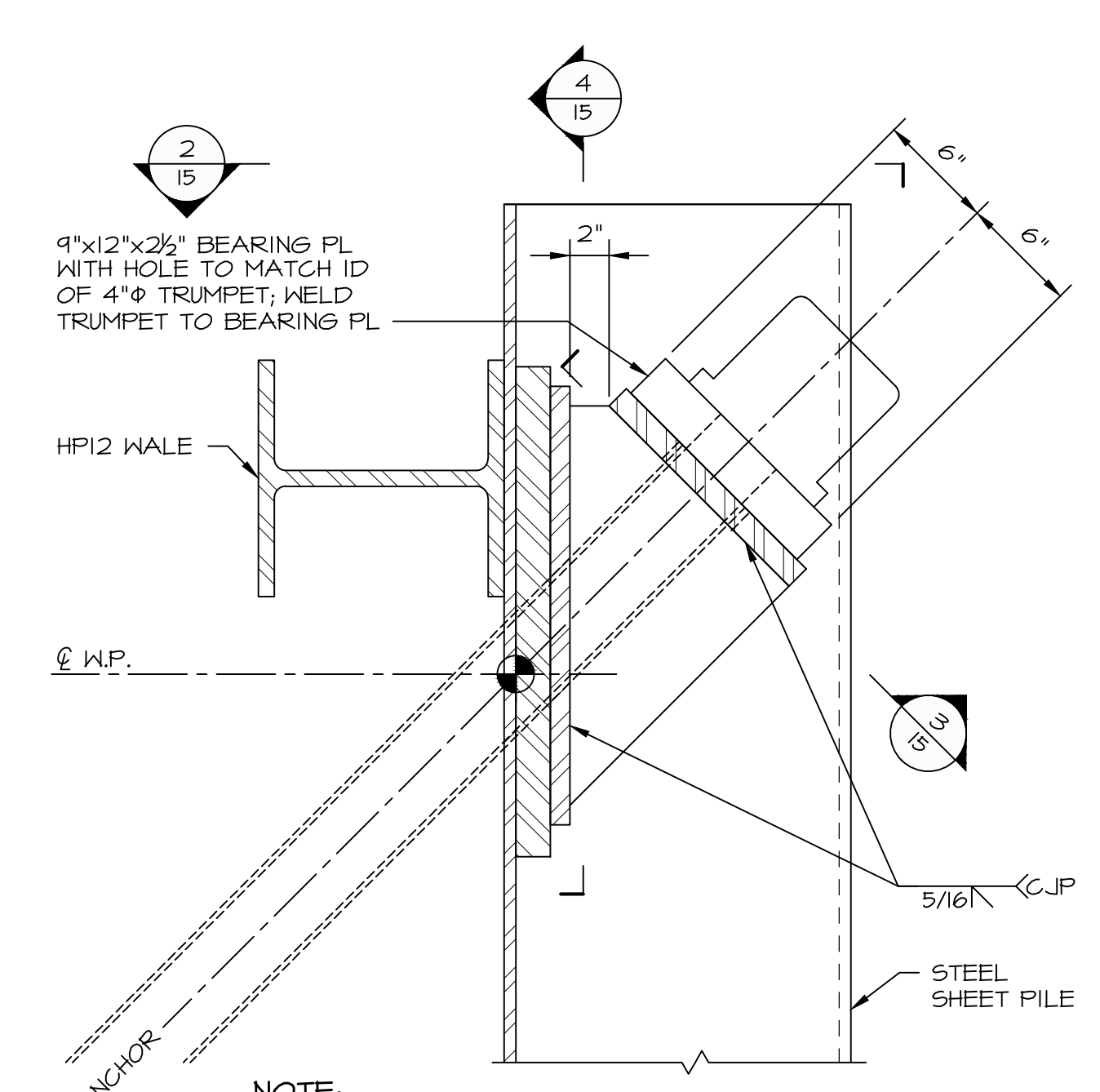


**NOTES:**

- SUBMIT SPLICE LOCATIONS AND SHOP DRAWINGS TO ENGINEER FOR REVIEW.
- MAXIMUM SPACING OF SPLICES SHALL BE 30 FEET NOMINAL.
- SPLICE SHALL BE LOCATED AT MIDPOINT BETWEEN GROUND ANCHORS.

**WALE CONNECTION PLAN DETAIL**

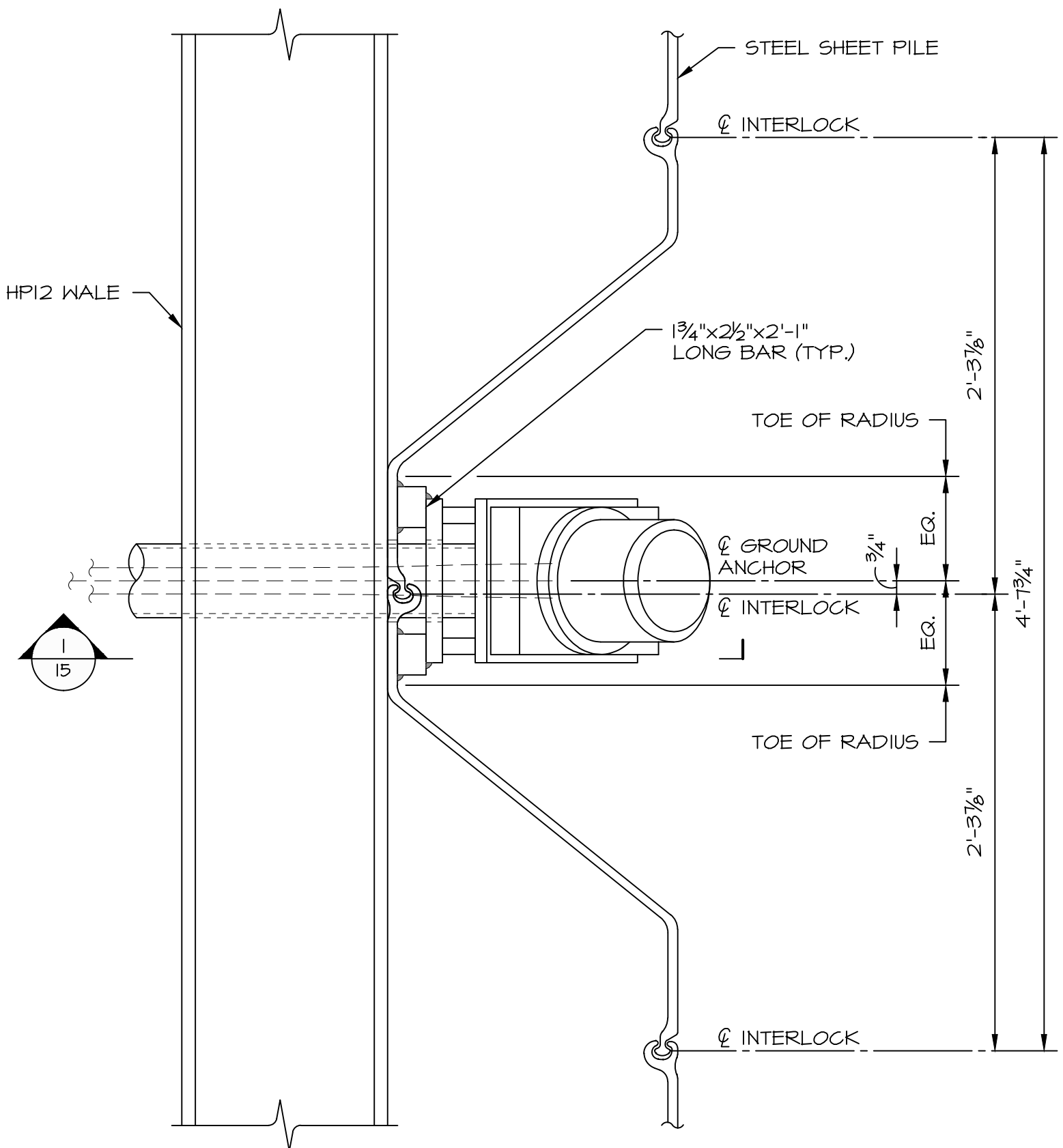
SCALE: 3/4" = 1'-0"



**NOTE:**  
ALL PLATES SHALL BE ASTM A572 Fy=50 ksi.

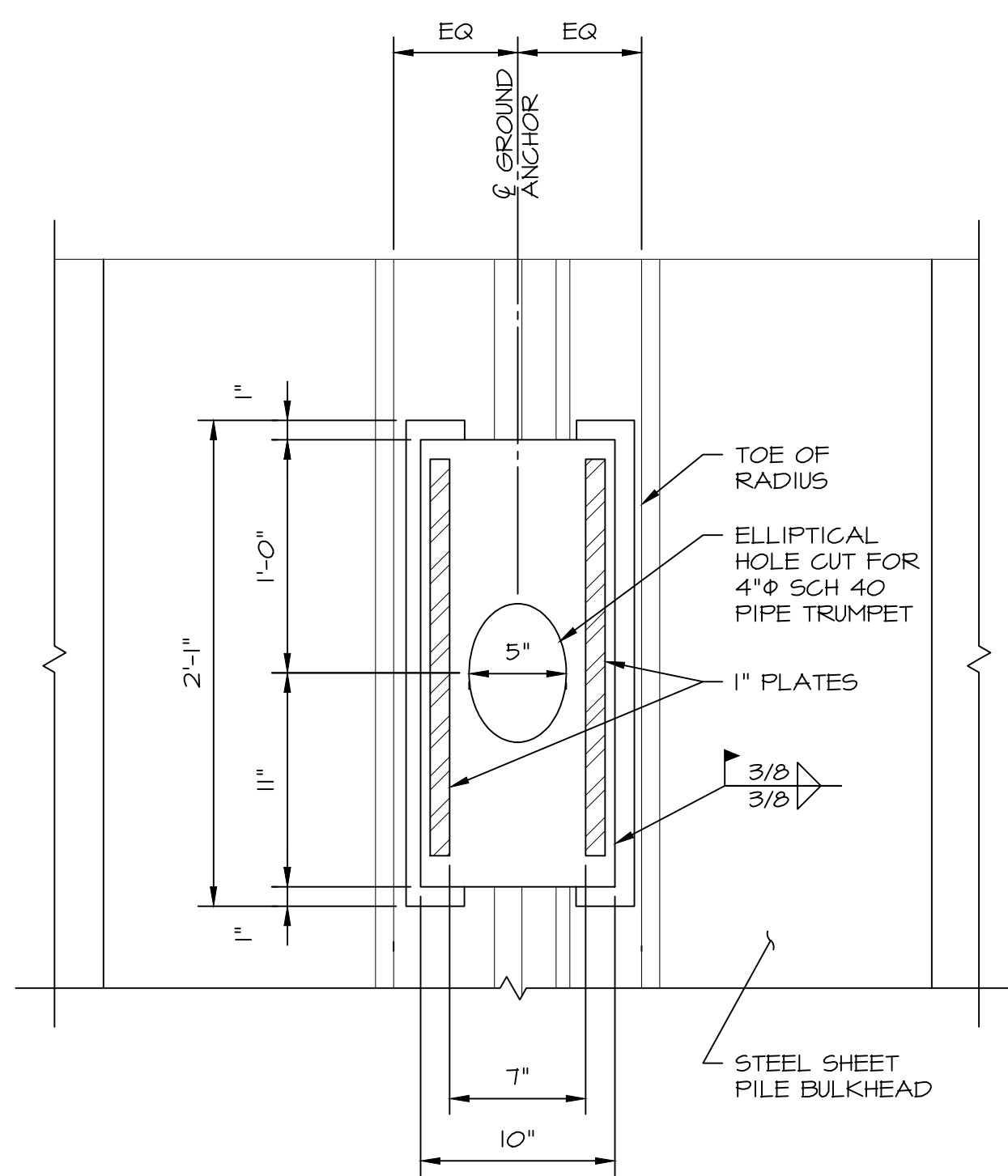
**SECTION 1**

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



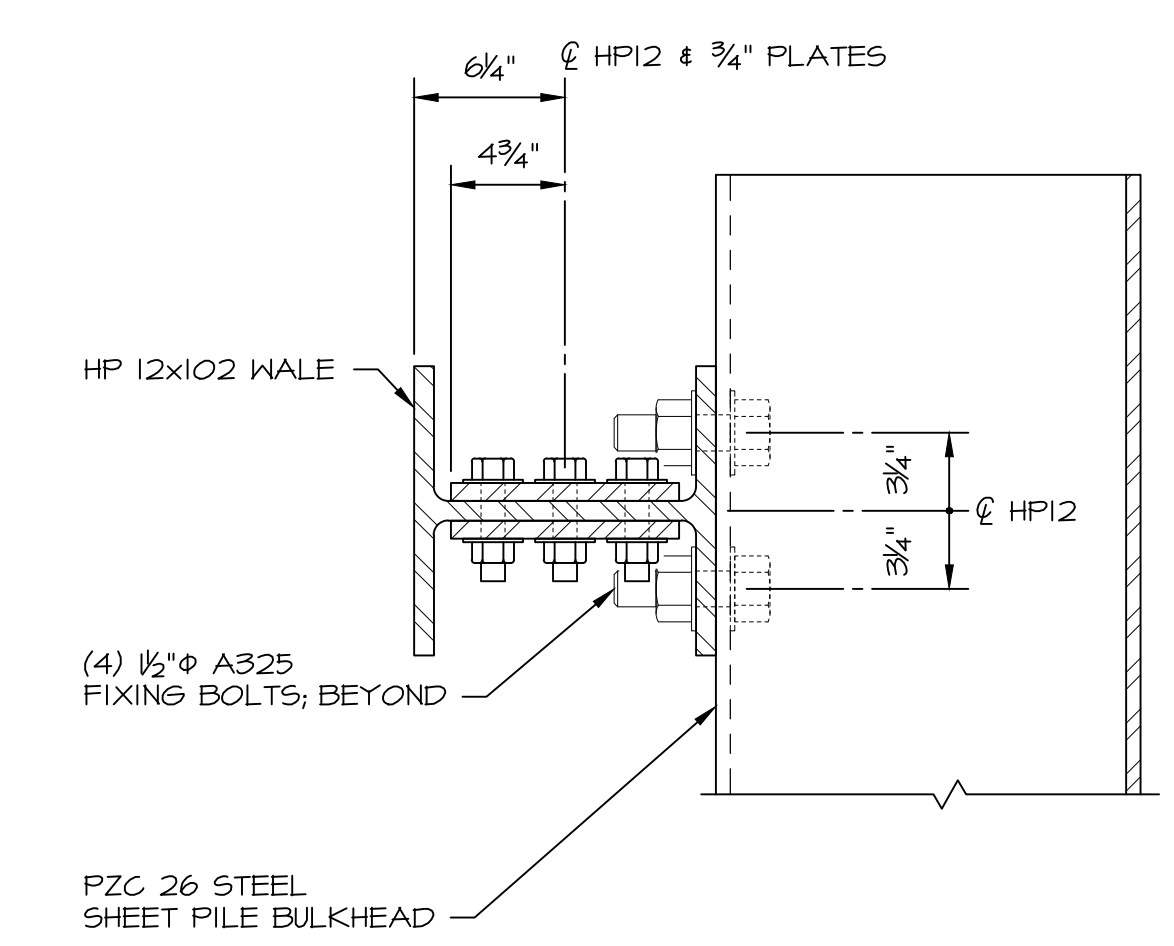
**PLAN DETAIL 2**

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



**SECTION 4**

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



**SECTION 5**

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

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NO.	DESCRIPTION	BY	DATE

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PREPARED FOR:

CITY OF NEW HAVEN  
OFFICE OF ECONOMIC  
DEVELOPMENT  
165 CHURCH STREET  
NEW HAVEN, CT 06510

PROJECT:

RIVER STREET  
SHORELINE IMPROVEMENTS  
RIVER STREET  
NEW HAVEN, CT 06513

DRAWING:

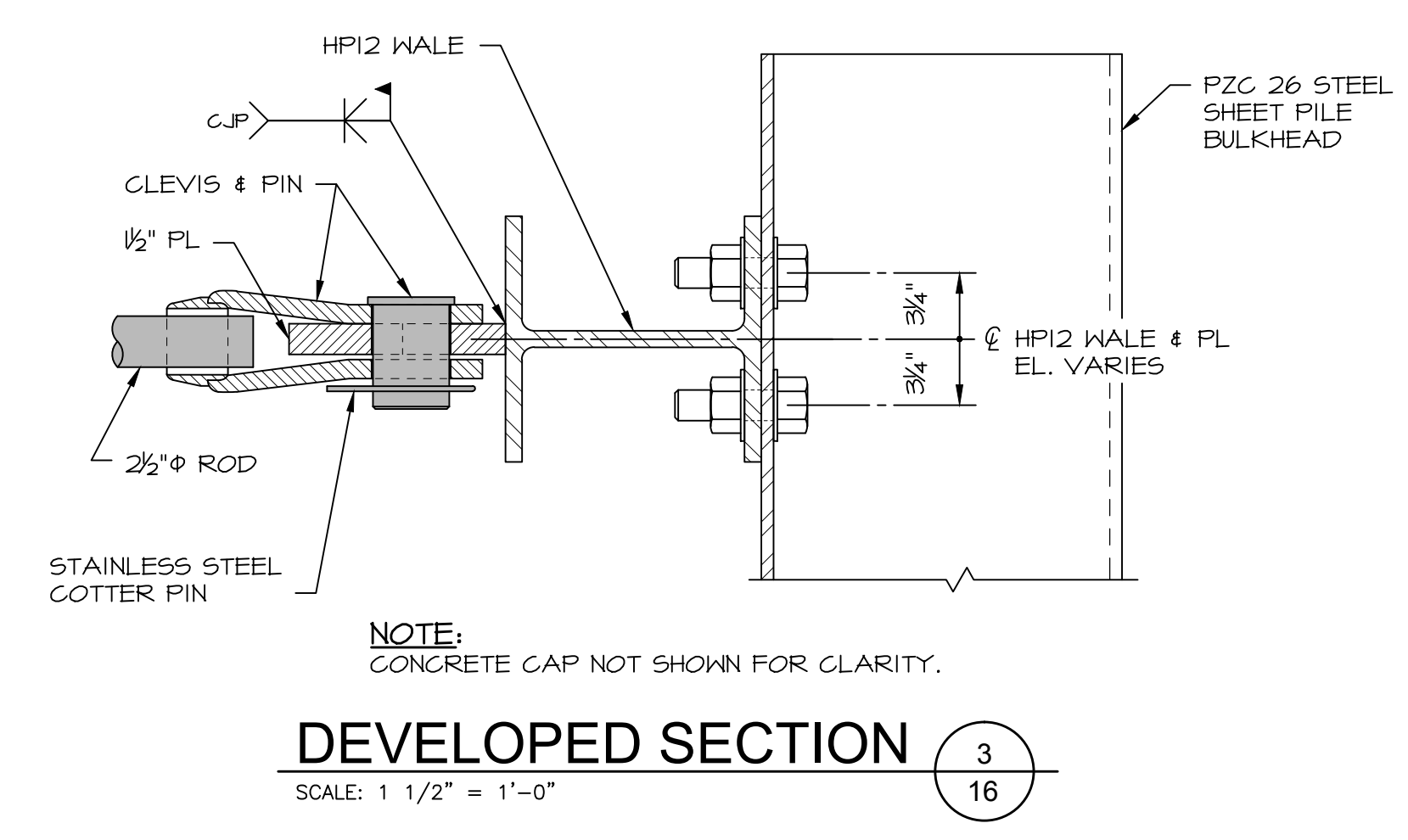
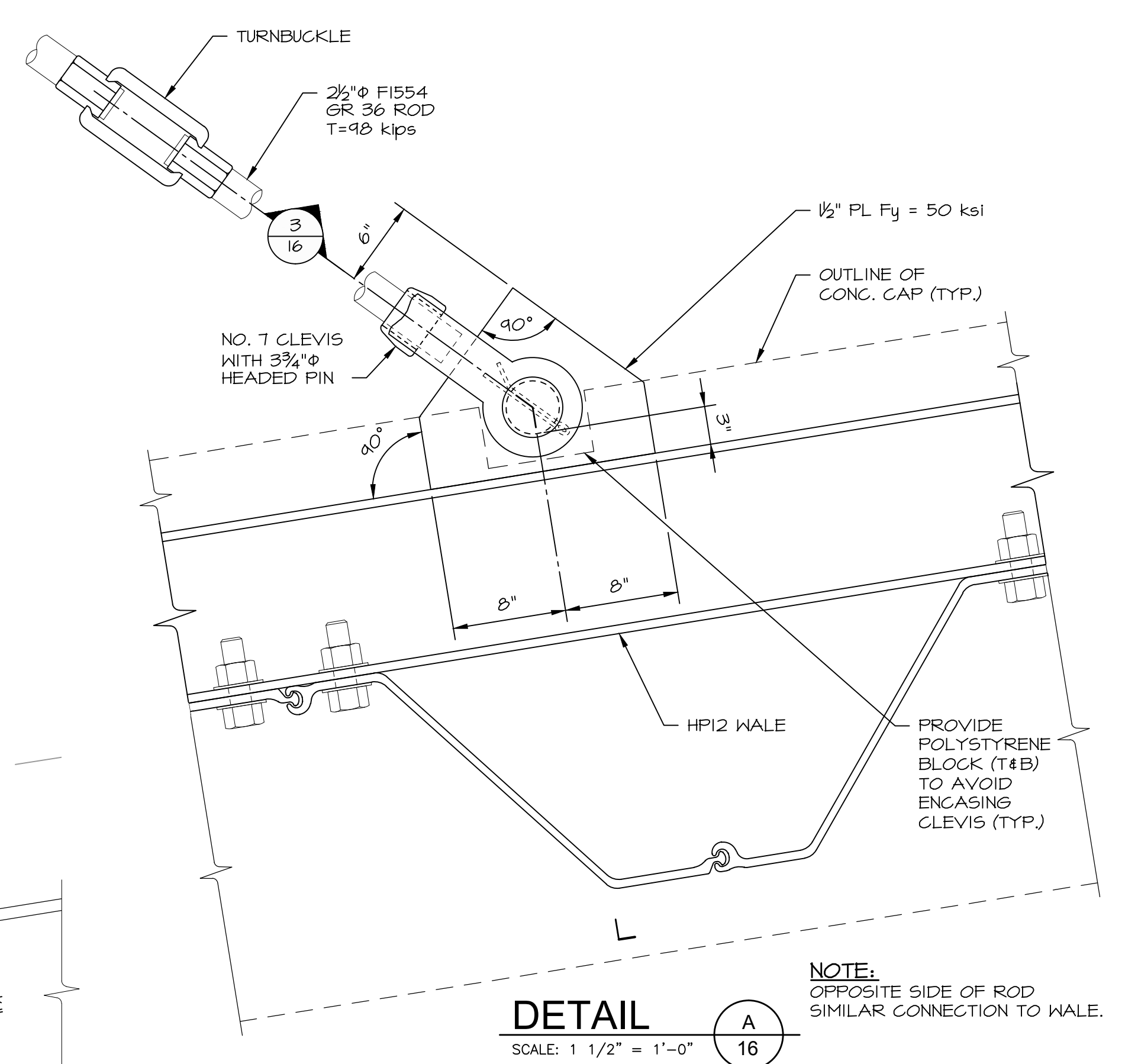
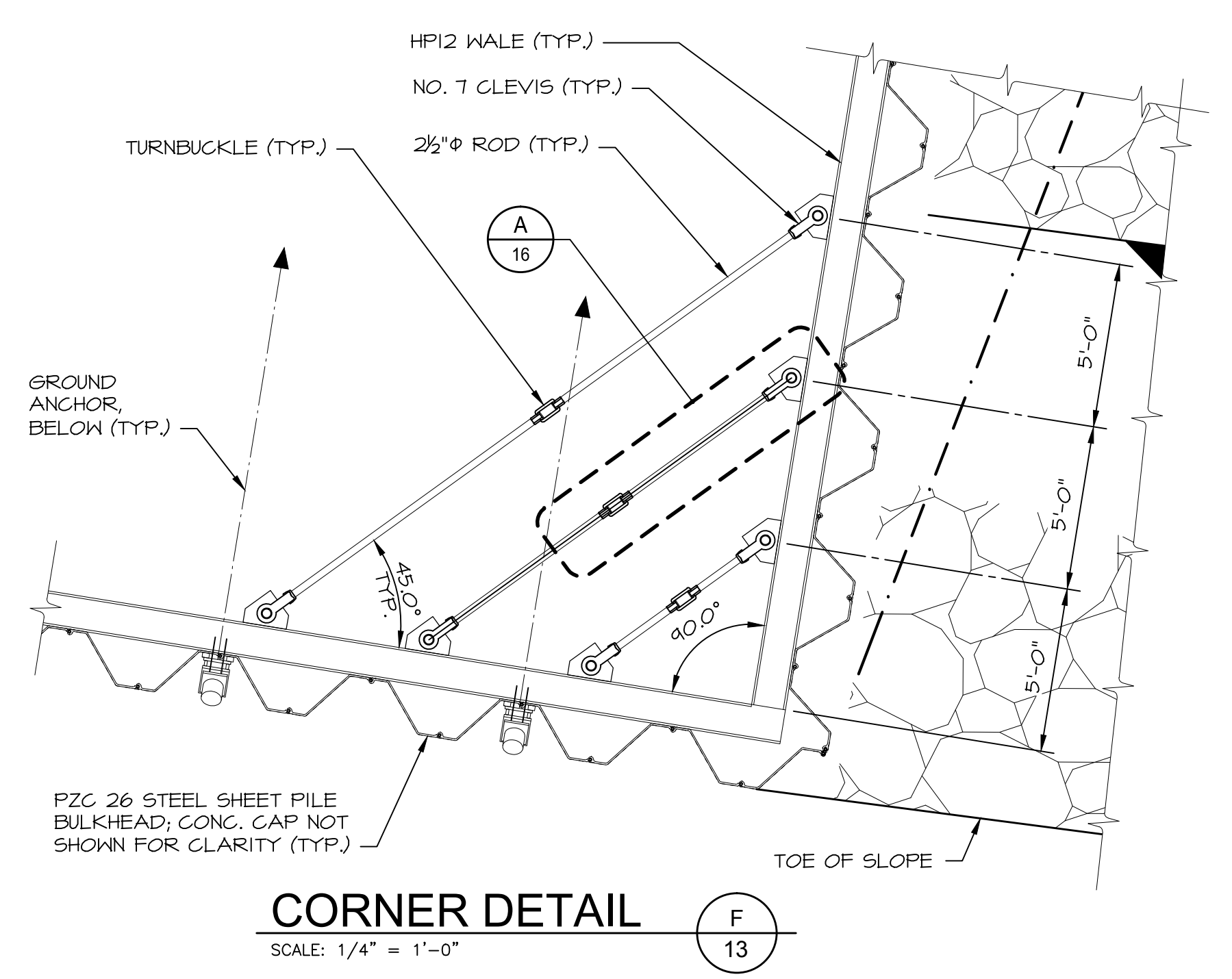
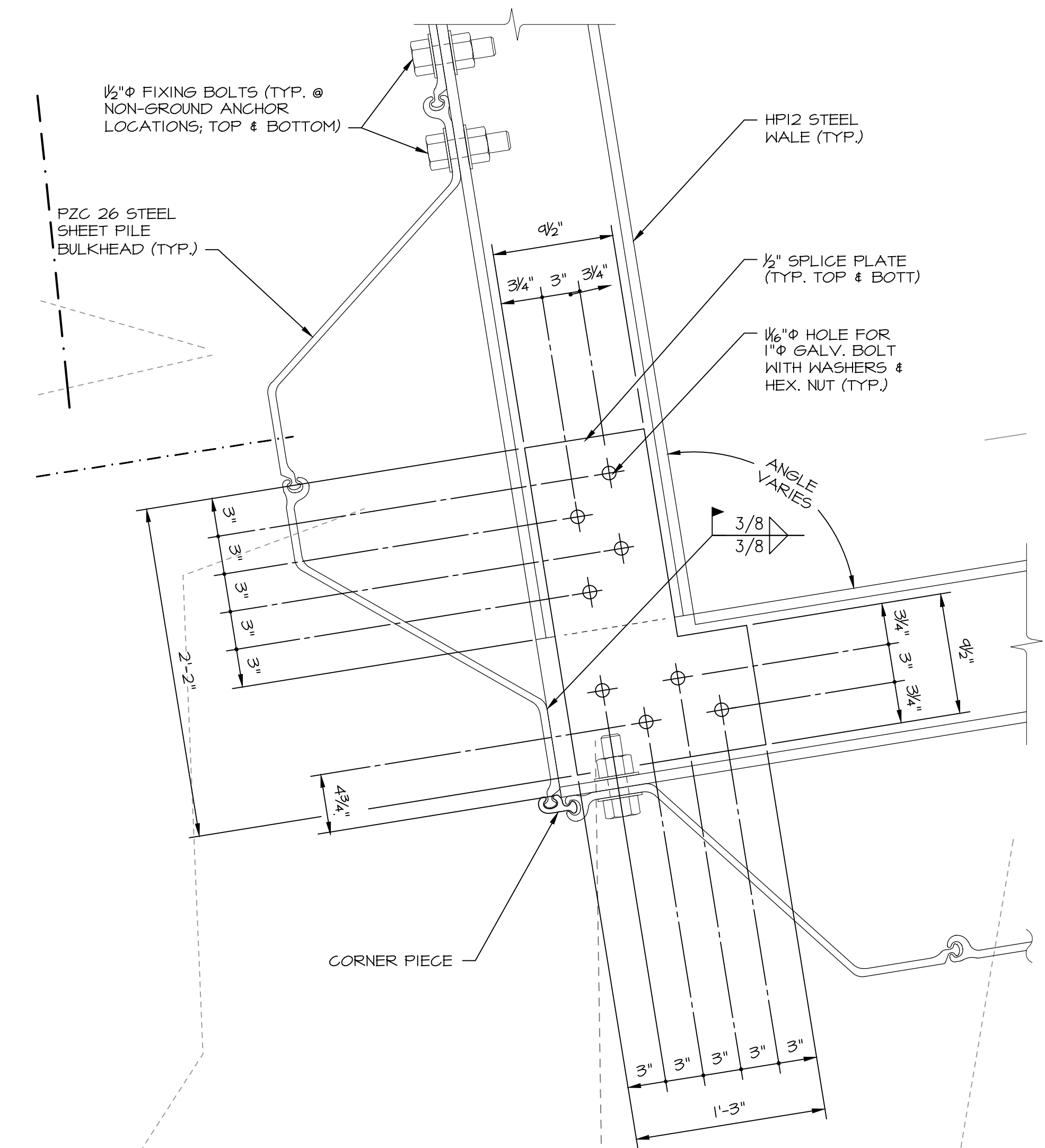
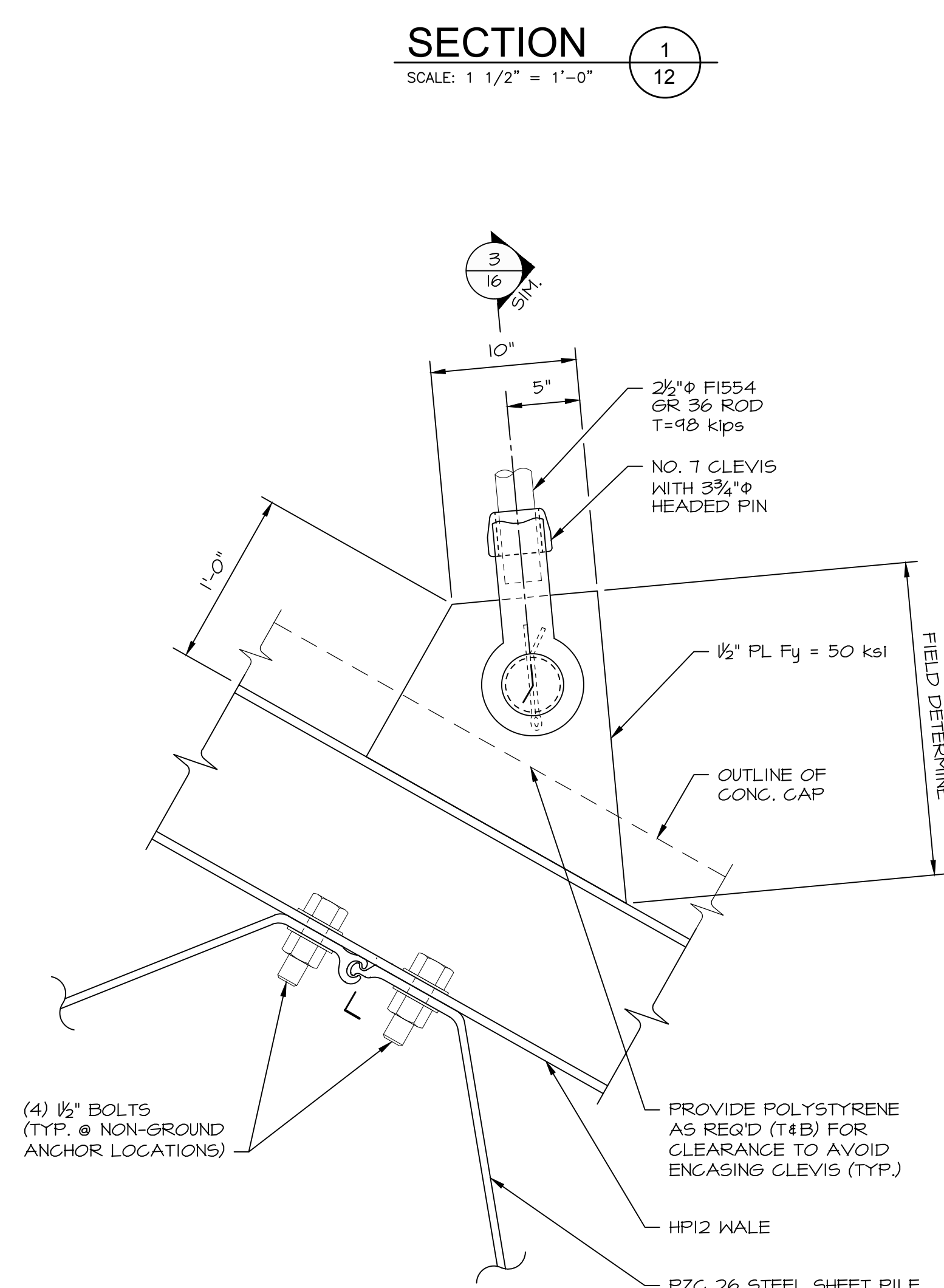
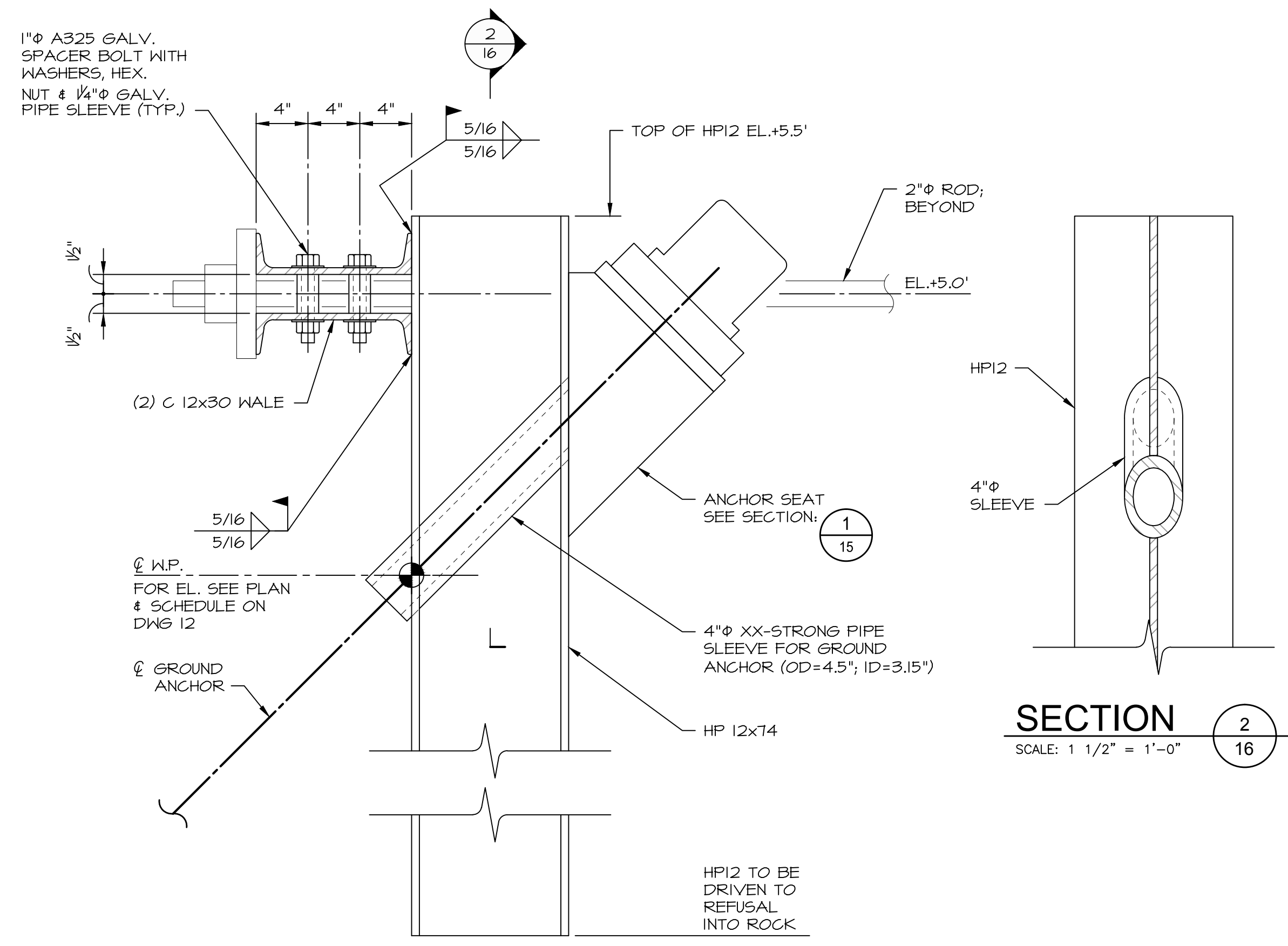
BULKHEAD DETAILS  
SHEET 2 OF 3

Designed By: CGE Date: 06/20/2017

Drawn By: CLW Scale: AS NOTED

Checked By: TD Project Number: 201684

CAD File: C:\NOED\_RIVERSTREET-T1.DWG Drawing No.: 16 of 17



**WALE CONNECTION - CORNER DETAIL**  
SCALE: 1 1/2" = 1'-0"

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



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**PREPARED FOR:**

CITY OF NEW HAVEN  
 OFFICE OF ECONOMIC DEVELOPMENT  
 165 CHURCH STREET  
 NEW HAVEN, CT 06510

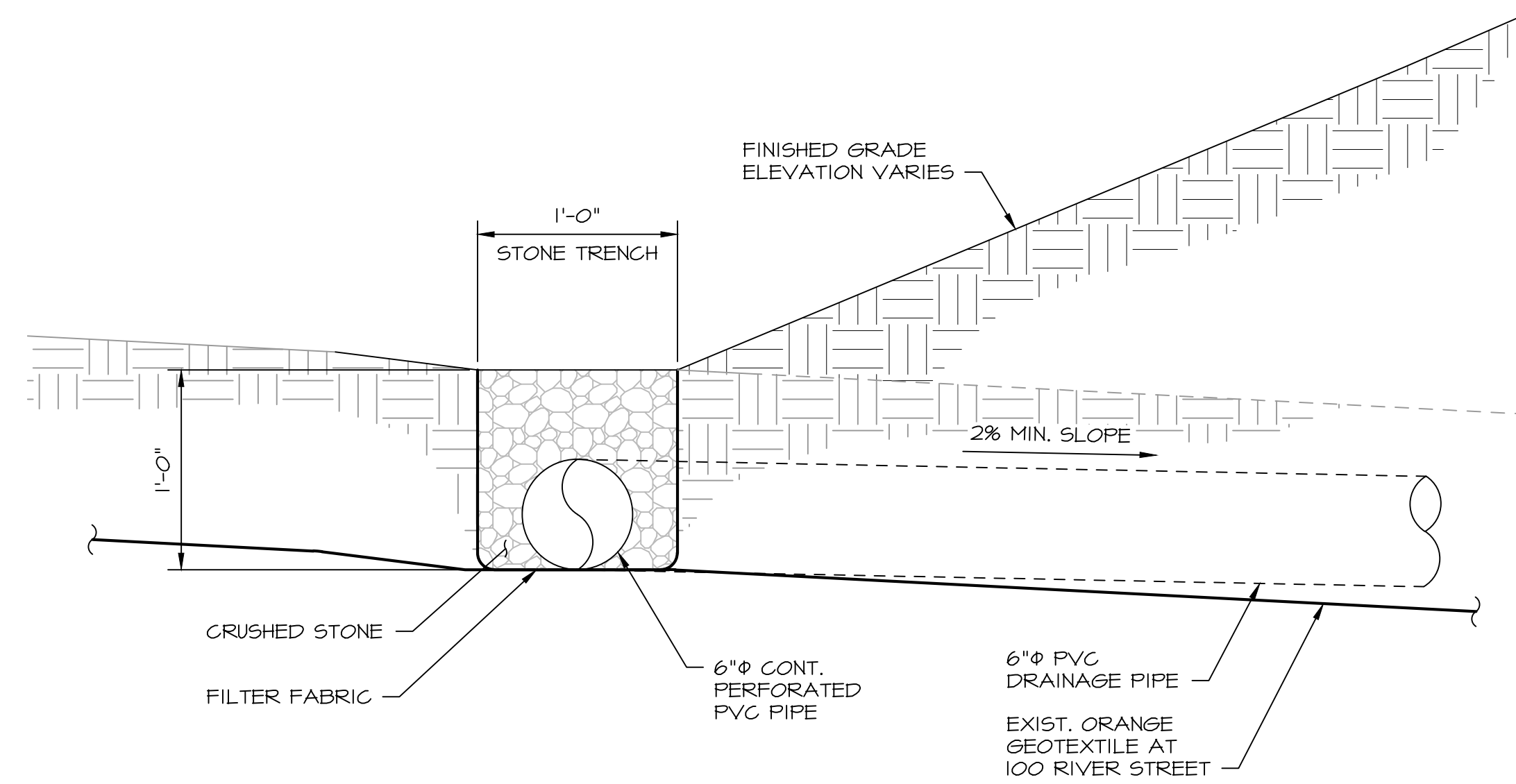
**PROJECT:**

RIVER STREET  
 SHORELINE IMPROVEMENTS  
 RIVER STREET  
 NEW HAVEN, CT 06513

**DRAWING:**

BULKHEAD DETAILS  
 SHEET 3 OF 3

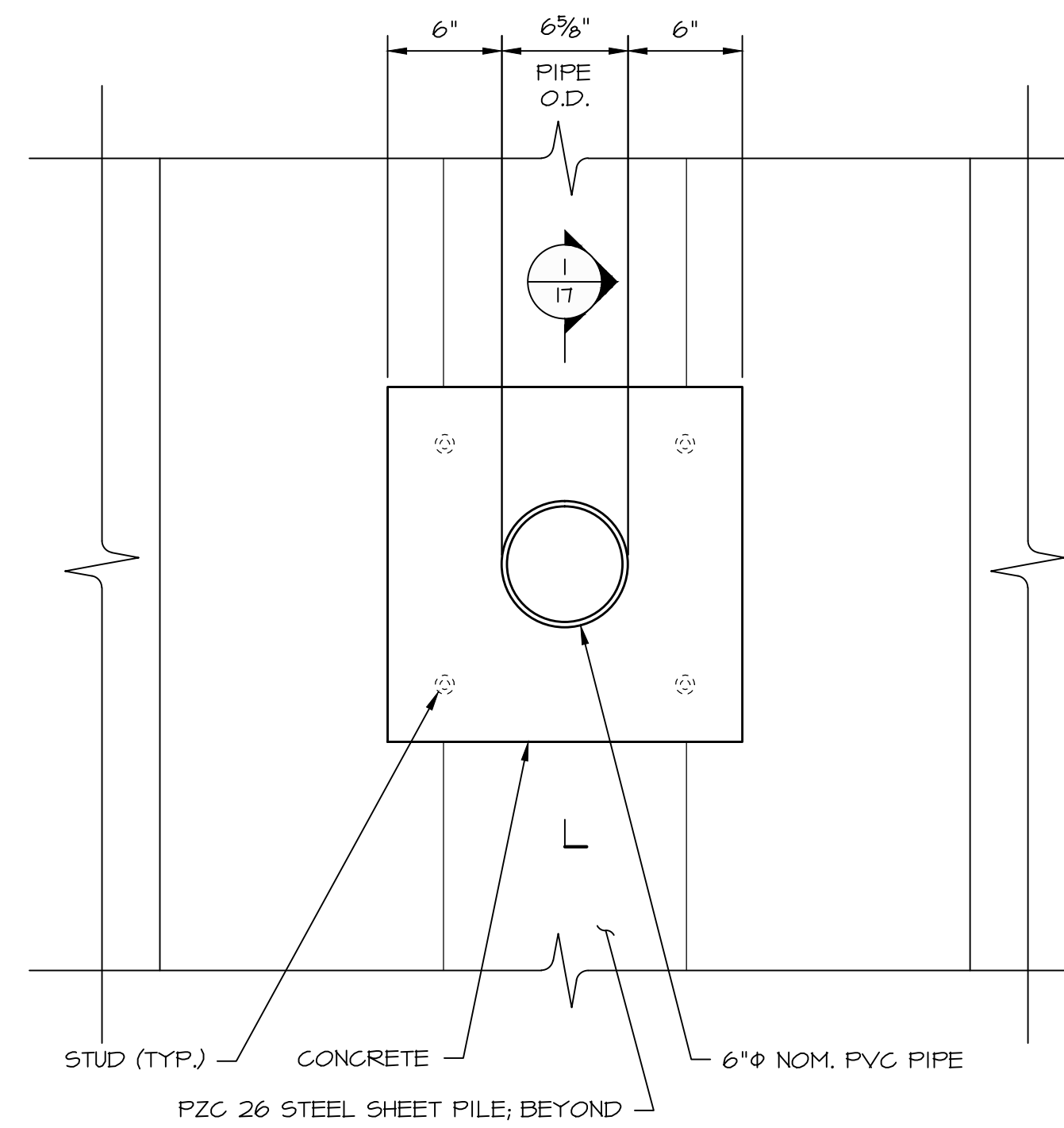
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Drawn By:	CLW	Scale:	AS NOTED
Checked By:	TD	Project Number:	201684
CAD File:	C:\NOED_RIVERSTREET 7-TL.DWG	Drawing No.:	17 of 17



**NOTE:**  
SEE GENERAL NOTE No. 7 ON DRAWING 2.

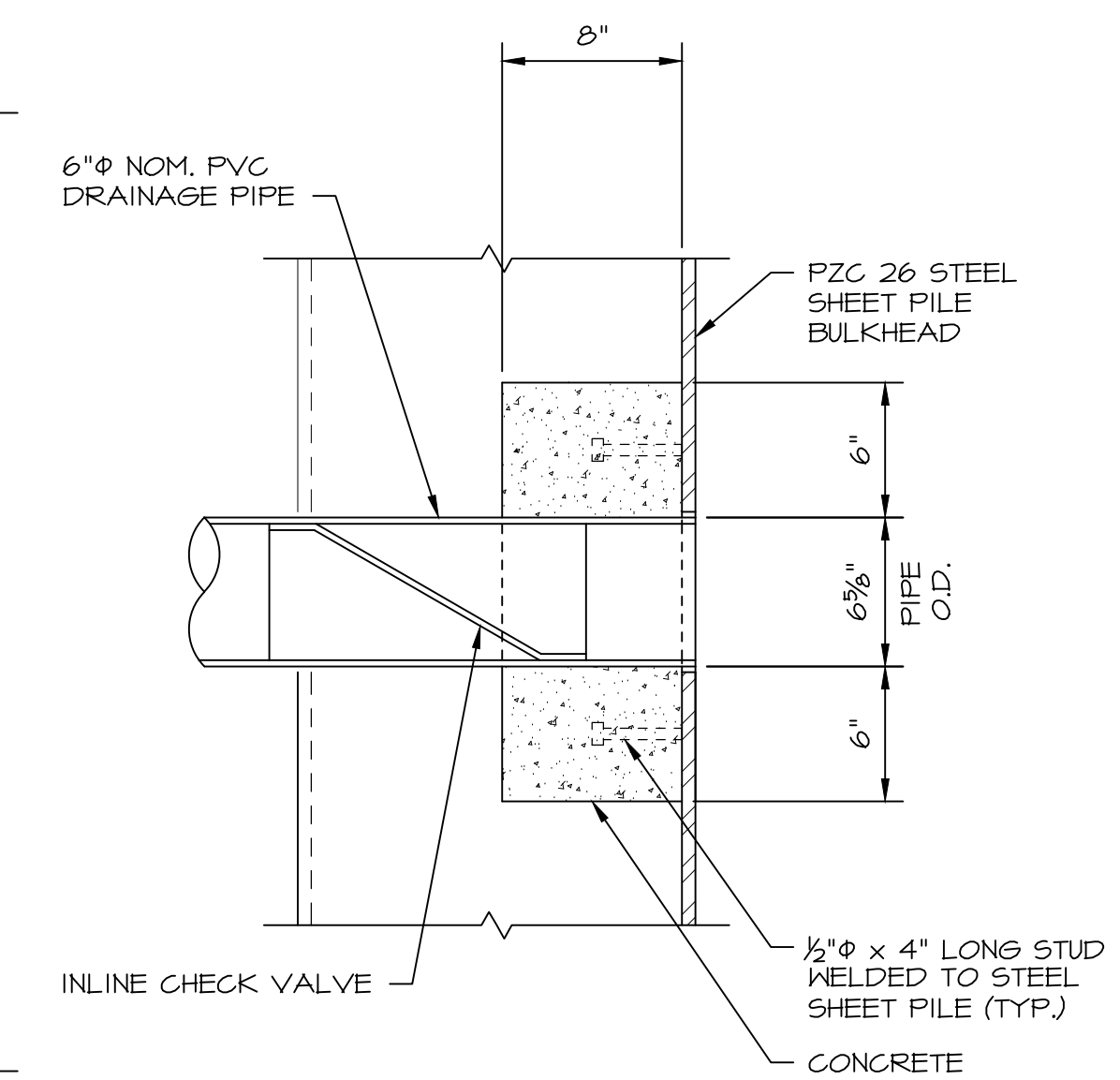
**TEMPORARY DRAINAGE TRENCH DETAIL**

SCALE: 3/4" = 1'-0"



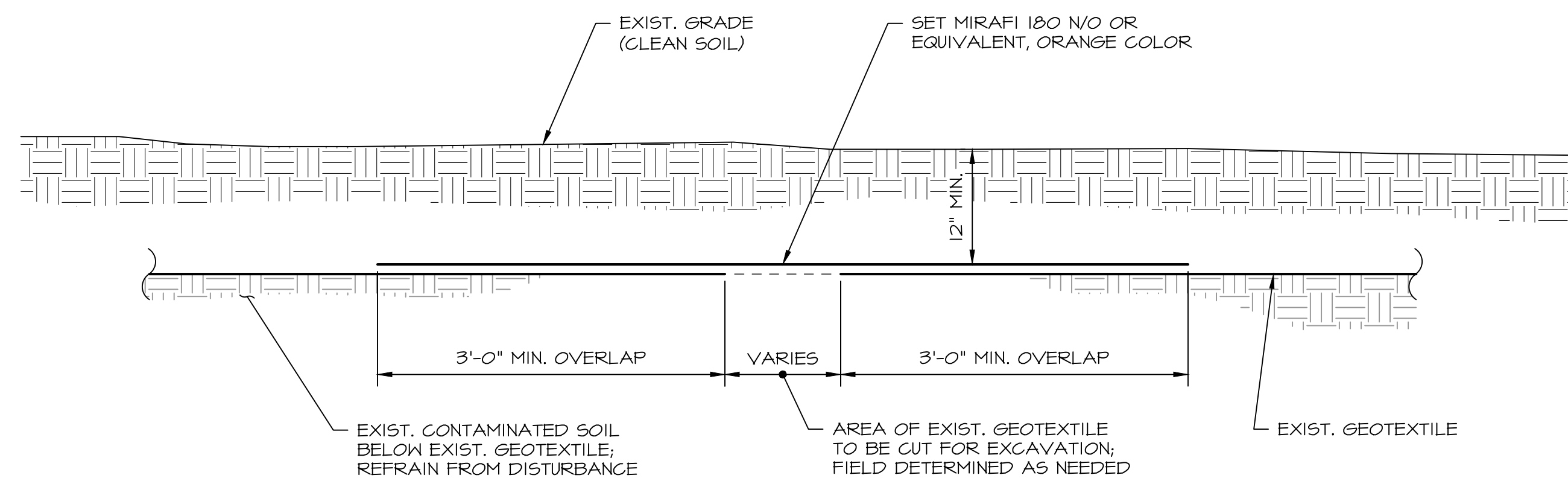
**PIPE DRAIN ELEVATION**

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



**SECTION 1/17**

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



**NOTES:**

- ENVIRONMENTAL LAND USE RESTRICTION EXISTS OR HAS BEEN PROPOSED FOR 100 RIVER STREET. CONTRACTOR SHALL RECEIVE WRITTEN PERMISSION FROM THE CITY PRIOR TO ANY EXCAVATION, DEMOLITION, OR DRILLING WITH CONFIRMATION THAT CONNECTICUT DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION HAS PERMITTED EXCAVATION OR ANY OTHER FORM OF SUBGRADE WORK.
- CONTRACTOR SHALL SEQUENCE WORK TO LIMIT THE AMOUNT OF DISTURBANCE OF ONSITE SOILS. WHERE DISTURBANCE CAN NOT BE AVOIDED, CONTRACTOR SHALL RESTORE GEOTEXTILE DEMARCATION AND CLEAN FILL SURFACE LAYER PER DETAIL.

**GEOTEXTILE DEMARCATION PATCH**

SCALE: 1" = 1'-0"