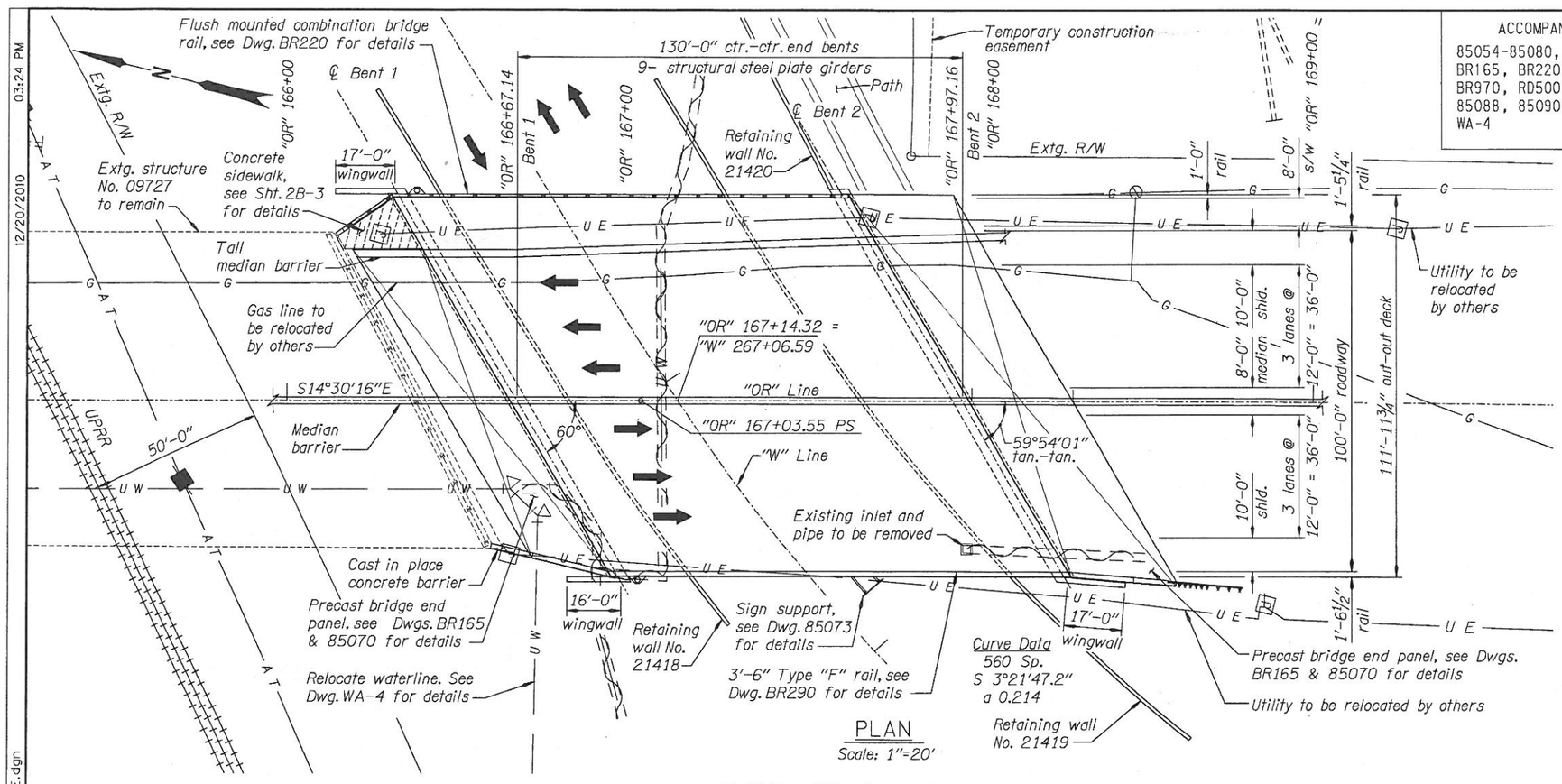
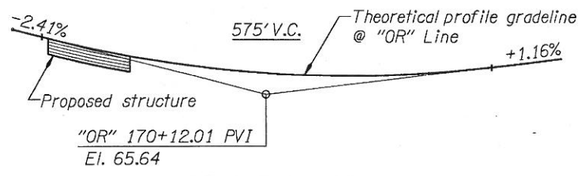
ACCOMPANIED BY DWGS.
85054-85080, BR115, BR140, BR157, BR165, BR220, BR290, BR291, BR445, BR970, RD500, RD515, RD545, 85081, 85088, 85090, 85096, 85098, 2B-3, WA-4

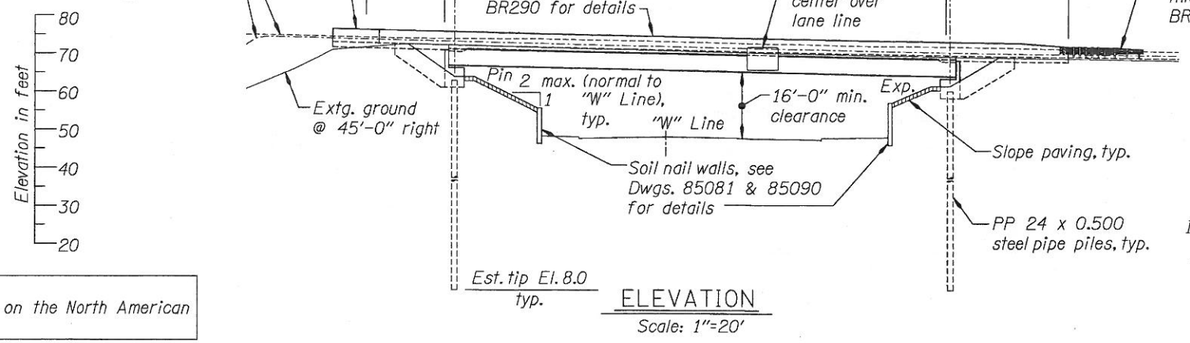


PLAN
Scale: 1"=20'

LOCATION MAP
No Scale



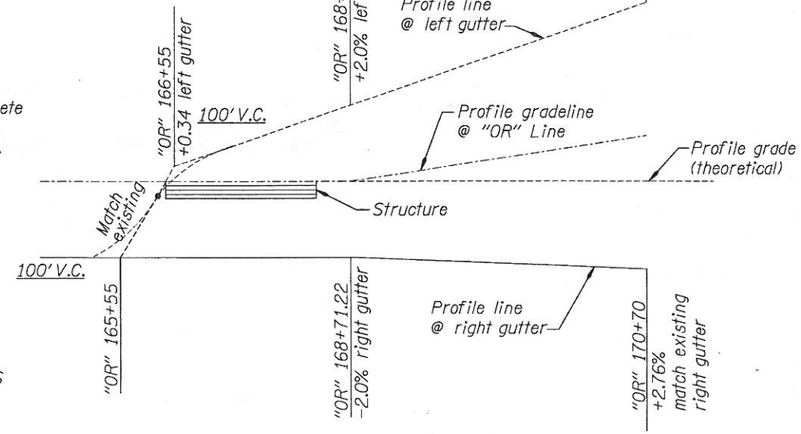
GRADELINE DIAGRAM
No Scale



ELEVATION
Scale: 1"=20'

Note:
Elevations are based on the North American Vertical Datum, 1988.

WARNING:
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.



SUPERELEVATION DIAGRAM
No Scale

CI 08-010

	DATE	REVISION	BY

ACCOMPANIED BY DWGS. See Table

DRAFTER: OBEC CAD
DESIGNER:
CHECKER: Peter G. Slocum, P.E., S.E.
REVIEWER: Peter R. Pagter, P.E., S.E.

REGISTERED PROFESSIONAL ENGINEER 60,181 OREGON JULY 13, 2004 ANDREW D. HOWE
EXPIRES: 6/30/2011

OREGON DEPARTMENT OF TRANSPORTATION

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831 CHARE PARKWAY, MEDFORD OREGON 97504-4025
5005 SW MEADOWS ROAD, SUITE 120, LAKE OSWEGO OREGON 97504-4288

STRUCTURE NO. 21417
DATE December 2010
CALC. BOOK 6296

HWY 160 OVER WASHINGTON ST.
OR213: I-205-REDLAND ROAD OXING (OREGON CITY)
CASCADE HWY SOUTH MP 0.01
CLACKAMAS COUNTY

PLAN & ELEVATION

SHEET 1 OF 28
DRAWING NO. 85053

File No. 23303

I:\Projects\0019\0019098\00190980 3\Cad\Mstation\Final Plans\Bridge 21417\00190980 3 01 PE.dgn 12/20/2010 03:24 PM

General Notes:

All materials and workmanship shall conform to the 2008 Oregon Standard Specifications for Construction and the Special Provisions.

The bridge is designed with an allowance of 25 psf for future wearing surface and all of the following live loading according to the 2010 AASHTO LRFD Bridge Design Specifications, (5th Edition):

Service and Strength-1 Limit States:
- HL-93: Design truck (or trucks per LRFD 3.6.1.3) or the design tandems and the design lane load.

Strength-2 Limit State:
- ODOT Permit Vehicle Type OR-STP-4E.
- ODOT Permit Vehicle Type OR-STP-5BW.

Seismic design is performed in accordance with the "AASHTO Guide Specifications for LRFD Seismic Bridge Design" as modified by the "ODOT Bridge Design & Drafting Manual" for 500- and 1000-year criteria. The Horizontal Peak Ground Acceleration Coefficients (PGA) for the 500 year (Serviceable) and 1000 year (No Collapse) return periods are 0.18g and 0.25g respectively, based on 2002 USGS Seismic Hazard Maps. The bridge site is defined as a Site Class D with Site Factors (F_{pga}) of 1.44 and 1.30.

Construct bridge using accelerated bridge construction techniques. See Drawings 85077 through 85080 for site plan, construction sequence, and details.

Provide all other reinforcing steel according to ASTM Specification A706, or ASTM A615 Grade 60. Provide field bent or welded reinforcement according to ASTM Specification A706. Splice reinforcing steel at alternate bars, staggered at least one splice length or as far as possible, unless shown. Provide the following splice lengths, unless shown otherwise:

	*Reinforcing Splice Length (Class B) Grade 60									
Bar Size	3	4	5	6	7	8	9	10	11	14 & 18
Splice Length (Uncoated)	1'-0"	1'-4"	1'-8"	2'-0"	2'-8"	3'-6"	4'-4"	5'-7"	6'-9"	Not Permitted
Splice Length (Coated)	1'-2"	1'-7"	2'-0"	2'-4"	3'-1"	4'-1"	5'-2"	6'-6"	8'-0"	Not Permitted

*Increase the splice lengths by ALL the applicable percentages:
- 40% for locations with 12" or more of fresh concrete placed below.
- 30% for regions with more than 50% of bars spliced in one splice region.
- 25% (epoxy only) for locations with less than: $3d_b$ of cover or $6d_b$ clear spacing or both.
- Percentage need not exceed 40% for epoxy top bars.

Use epoxy coated reinforcing steel for all bars extending into curb or bridge rail.

Support the bottom mat reinforcing steel from the forms with precast mortar blocks at 2'-0" maximum centers each way. Support the top mat of reinforcing steel from the bottom mat of reinforcing steel with wire bar supports shown in Chapter 3 of the CRSI Manual of Standard Practice (SBU, BBU, or CHCU). Place wire bar supports at 2'-0" maximum centers.

Place bars 2" clear of the nearest face of concrete (unless shown otherwise).

1 Provide Deck Concrete, Class HPC 4000 with fibers - ¾" concrete in the bridge deck.
Provide General Structural Concrete, Class 4000 - ¾" concrete in the end beams.
Provide Foundation Concrete, Class 4000 - 1½", 1" or ¾" concrete in the pile caps.
Provide Class HPC 4000 - 1½", 1" or ¾" concrete in reinforced concrete end panels.
Provide Foundation Concrete, Class 3300 - 1½", 1" or ¾" concrete for all other concrete.

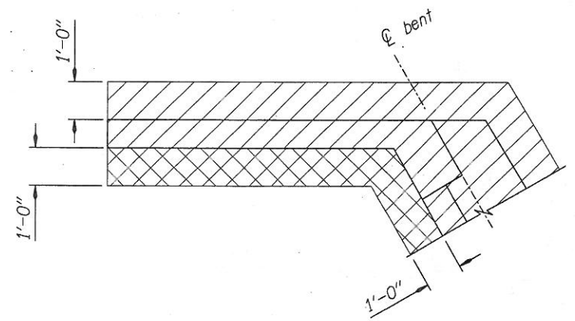
Oregon law requires the rules set forth in OAR 952-001-0010 through 952-001-0090, adopted by the Oregon Utility Notification Center, to be observed. Copies of these rules may be obtained from the Center by calling 1-800-332-2344 or 811.

Provide expanded coil ferrule threaded structural concrete inserts hot-dip galvanized after fabrication meeting the following requirements:

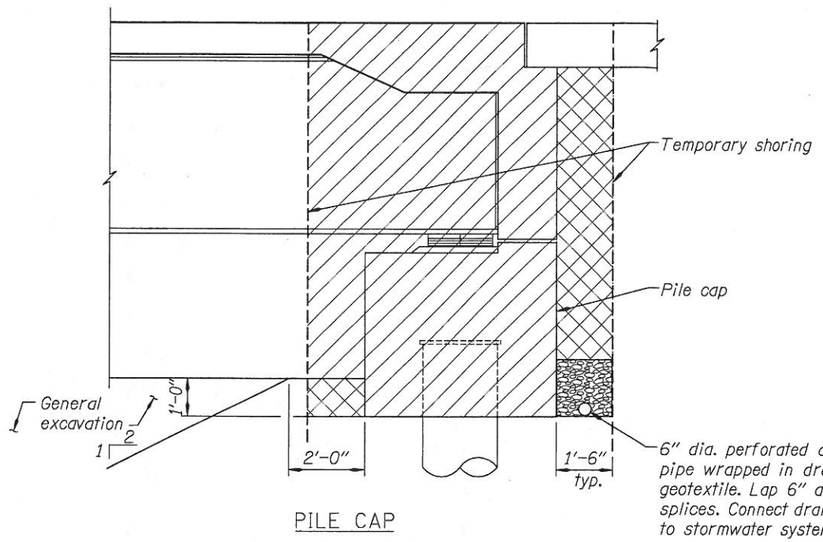
Bolt/threaded rod diameter	Minimum safe tension working load	Minimum safe shear working load	Minimum/maximum length
¾"	4000 lb.	2000 lb.	4½"/4¾"
1"	5800 lb.	4000 lb.	5½"/5¾"

Install short galvanized ASTM A307 bolts in inserts not immediately used. Make insert threads oversized where needed to accommodate hot-dip galvanized bolts.

The contractor shall provide and install utility culverts under the bridge end panels, blockouts in concrete, threaded inserts in the deck slab, and other hardware as noted in the plans.



TYPICAL WINGWALL



PILE CAP

Structure excavation | Granular structure backfill | Drain rock

STRUCTURE EXCAVATION & BACKFILL PAY LIMITS

No Scale

WARNING:
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

CI 08-010

	DATE	REVISION	BY
1	2/2011	Revised note	ADH

ACCOMPANIED BY DWGS. See Dwg. 85053 for this structure

DRAFTER: OBEC CAD
DESIGNER:
CHECKER: Peter G. Slocum — Peter G. Slocum, P.E., S.E.
REVIEWER: Peter R. Pagter — Peter R. Pagter, P.E., S.E.

REGISTERED PROFESSIONAL ENGINEER 60,181 OREGON JULY 15, 2008 ANDREW D. HOWE
EXPIRES: 6/30/2011

OREGON DEPARTMENT OF TRANSPORTATION

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5005 SW MEADOWS ROAD, SUITE 120, LAKE OSWEGO OREGON 97504-4288

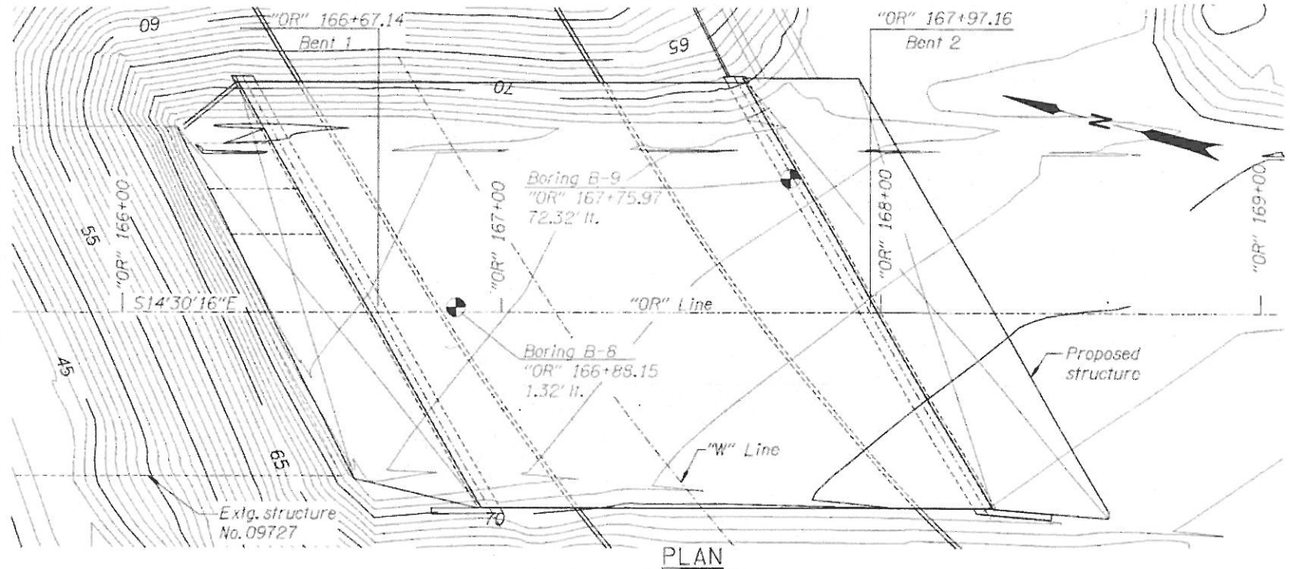
STRUCTURE NO. 21417
DATE December 2010
CALC. BOOK 6296

HWY 160 OVER WASHINGTON ST.
OR213: I-205-REDLAND ROAD OXING (OREGON CITY)
CASCADE HWY SOUTH MP 0.01
CLACKAMAS COUNTY

GENERAL NOTES

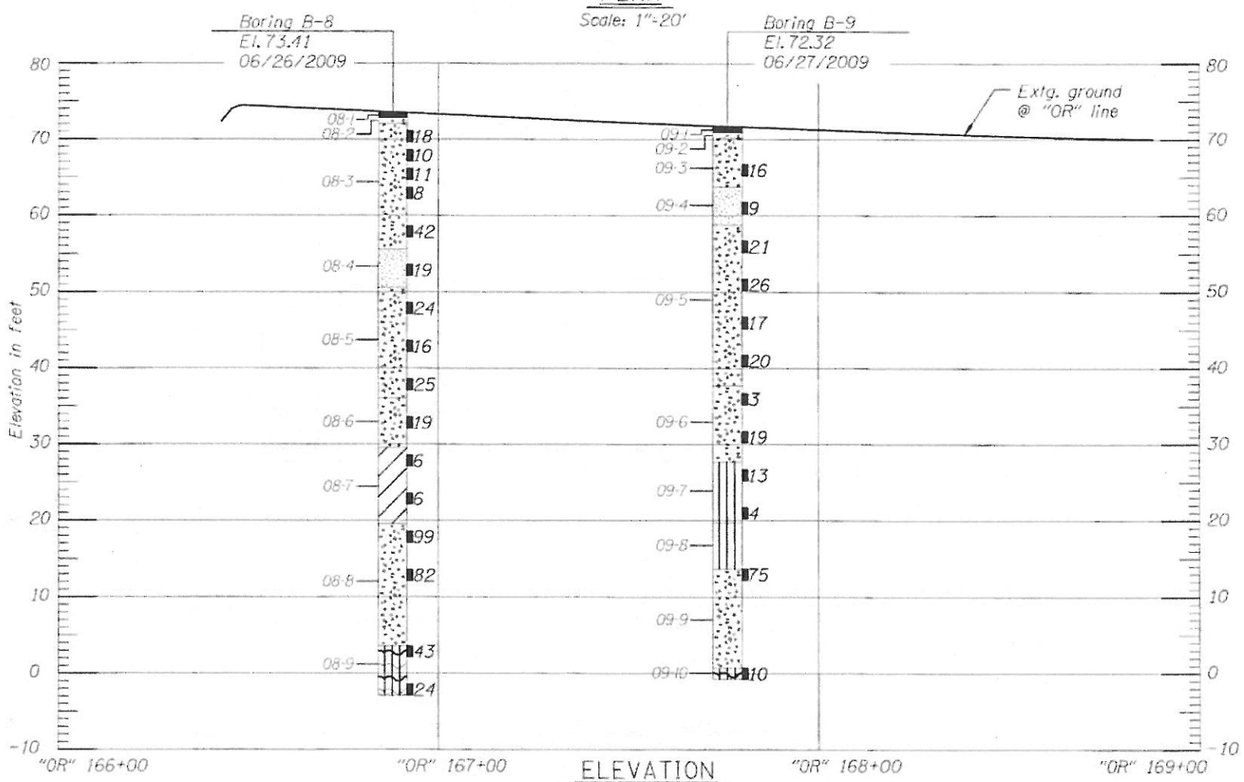
SHEET 2 OF 28
DRAWING NO. 85054

File No. 23304



PLAN

Scale: 1"=20'



ELEVATION

Horizontal Scale: 1"=20'
Vertical Scale: 1"=10'

LEGEND OF MATERIALS

Asphalt Concrete | Clay | Silt

Gravel | Sand | Siltstone

LEGEND OF SYMBOLS

26 — Standard penetration test N Value (uncorrected)

'N' = 'N'-value: Uncorrected (raw) standard penetration resistance in accordance with ASTM D 1586[1]

B-08 = Test Boring Designation and Approximate Location

Test Boring B-08 Unit Descriptions

ID No.	Description
08-1	Asphalt Concrete
08-2	Base Aggregate
08-3	Silty GRAVEL FILL with sand (GM-Fill); brown-gray, moist, medium dense to dense, angular to subangular gravel
08-4	Clayey silty SAND FILL with gravel (SM-Fill); brown, moist, medium dense, fine to coarse sand
08-5	Sandy GRAVEL FILL with silt and trace clay (GM-GP-Fill); brown-gray, moist, medium dense, subangular to angular gravel
08-6	Sandy GRAVEL FILL with silt and trace clay(GP-GM-Fill); brown, moist, medium dense, angular gravel, boulder encountered between 37.5 to 40.5 feet
08-7	CLAY with silt (CH); brown, medium to high plasticity, moist to wet, medium stiff, micaceous
08-8	Sandy GRAVEL with trace silt (GP); brown-gray, moist to wet, very dense, subrounded gravel
08-9	Clayey SILT with trace sand (MH); orange-brown, medium to high plasticity, moist, hard to very stiff (Sandy River Mudstone)

Test Boring B-09 Unit Descriptions

ID No.	Description
09-1	Asphalt Concrete
09-2	Base Aggregate
09-3	Sandy GRAVEL FILL with silt and trace clay and cobbles(GM-Fill); brown, moist, medium dense, angular gravel
09-4	Silty SAND FILL with gravel and trace clay (SM-Fill); brown, moist, loose
09-5	Sandy GRAVEL FILL with silt and trace clay(GP-GM-Fill); moist, medium dense, subangular gravel
09-6	Silty GRAVEL FILL with sand (GM-Fill); brown, moist, very loose to medium dense, angular gravel
09-7	SILT with clay and trace sand (MH); gray, medium plasticity, moist, stiff
09-8	SILT with sand and trace clay (ML-MH); brown, low plasticity, moist, soft, stratified
09-9	Sandy GRAVEL with trace silt (GP); gray, moist to wet, very dense, subangular to subrounded gravel
09-10	Clayey SILT (MH); brown, moist, stiff (Sandy River Mudstone)

WARNING:
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

NOTES:

1. Borings completed with a CME-75 truck-mounted drill rig. SPT blow counts were measured with an automatic hammer with an approximate efficiency of 70%.
2. Geotechnical data shown on this drawing are a consolidation of information and/or revision in terminology from drill logs. The drill logs and any other exploration data used in compiling this drawing are available upon request. Contractor shall refer to Geotechnical Reports and drill logs and the information contain therein.

Note:
Elevations are based on the North American Vertical Datum, 1988.

CI 08-010

△	DATE	REVISION	BY

ACCOMPANIED BY DWGS. See Dwg. 85053 for this structure

DRAFTER: C. TAYLOR
DESIGNER: A. PYRCH
CHECKER:
REVIEWER:

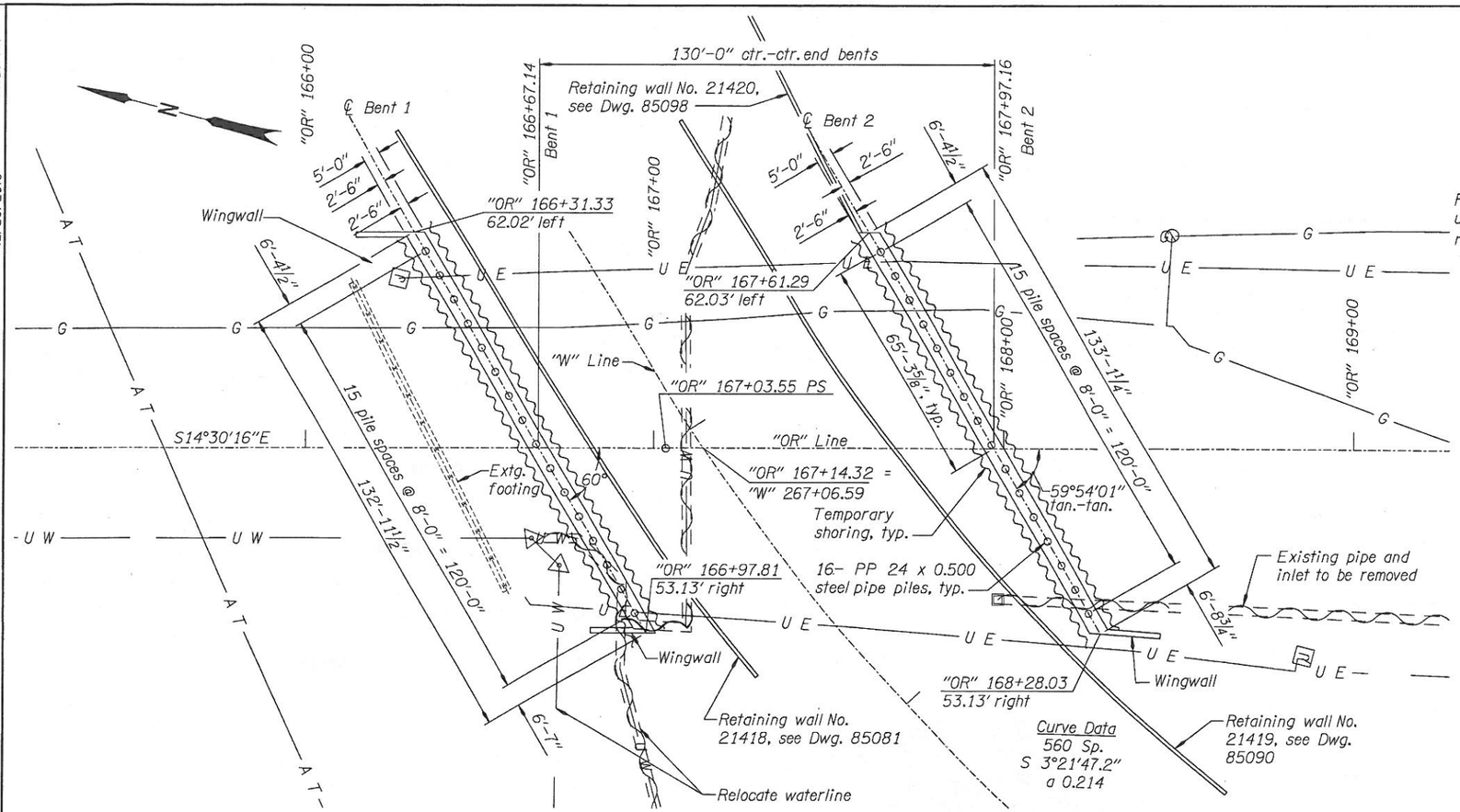
REGISTERED PROFESSIONAL ENGINEER 58419PE OREGON RISHENG PAO EXPIRES: 12/31/2010

OREGON DEPARTMENT OF TRANSPORTATION

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

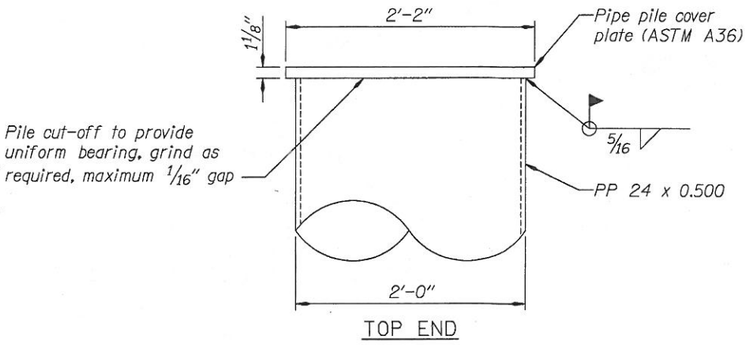
STRUCTURE NO.	HWY 160 OVER WASHINGTON ST.	SHEET
21417	OR213: I-205-REDLAND ROAD OXING (OREGON CITY)	3 OF 28
DATE	CASCADE HWY SOUTH MP 0.01	DRAWING NO.
December 2010	CLACKAMAS COUNTY	85055
CALC. BOOK	FOUNDATION DATA	
6296		

File No. 23305

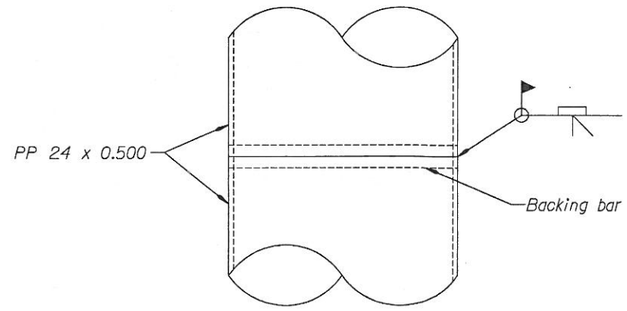


FOUNDATION PLAN

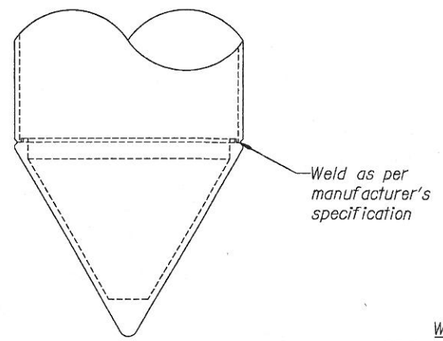
Scale: 1"=20'



TOP END



PILE SPLICE



TYPICAL REINFORCED PIPE PILE TIP

PIPE PILE DETAILS

No Scale

Foundation General Notes:

All bents, provide PP 24 x 0.500, ASTM A252 Grade 2 piling with inside fitting conical reinforced tips driven closed-ended to a nominal capacity of 630 kips per pile.

Pile tip elevation for minimum pile penetration is El. 19.0 at Bent 1 and El. 14.0 at Bent 2.

Drive all piling to the specified nominal capacity using driving criteria developed from a Wave Equation Analysis. The associated resistance factor is 0.50.

Bents are parallel: bearing = S45°29'44"W.

WARNING:
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

CI 08-010

	DATE	REVISION	BY

ACCOMPANIED BY DWGS. See Dwg. 85053 for this structure

DRAFTER: OBEC CAD
DESIGNER:
CHECKER: Peter G. Slocum, P.E., S.E.
REVIEWER: Peter R. Pagter, P.E., S.E.

REGISTERED PROFESSIONAL ENGINEER 60,161 OREGON JULY 13, 2004 ANDREW D. HOWE
EXPIRES: 6/30/2011

OREGON DEPARTMENT OF TRANSPORTATION

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STRUCTURE NO. 21417
DATE December 2010
CALC. BOOK 6296

HWY 160 OVER WASHINGTON ST.
OR213: I-205-REDLAND ROAD OXING (OREGON CITY)
CASCADE HWY SOUTH MP 0.01
CLACKAMAS COUNTY

FOUNDATION PLAN

SHEET 4 OF 28
DRAWING NO. 85056

File No. 23306

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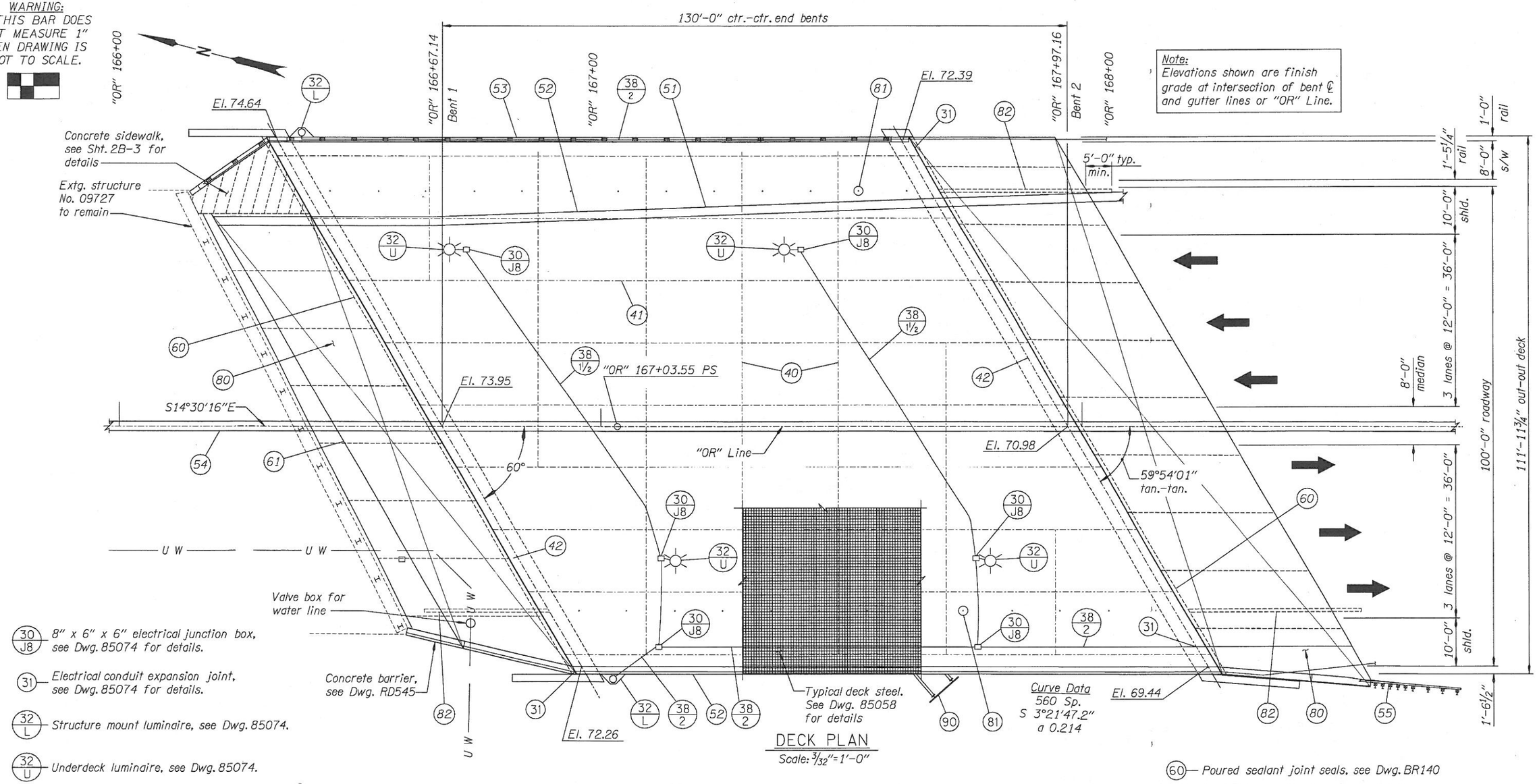
WARNING:
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.



Note:
Elevations shown are finish grade at intersection of bent ℄ and gutter lines or "OR" Line.

DECK PLAN
Scale: 3/32"=1'-0"

(30 J8) 8" x 6" x 6" electrical junction box, see Dwg. 85074 for details.

(31) Electrical conduit expansion joint, see Dwg. 85074 for details.

(32 L) Structure mount luminaire, see Dwg. 85074.

(32 U) Underdeck luminaire, see Dwg. 85074.

(38 1½) 1½" dia. electrical conduit.

(38 2) 2" dia. electrical conduit.

(40) Intermediate cross frames, see Dwg. 85064 for details.

(41) Steel girders, see Dwgs. 85060-85062 for details.

(42) End cross frames, see Dwg. 85063 for details.

(51) Tall median barrier, see Dwg. RD545 for details.

(52) 3'-6" Type "F" rail, see Dwg. BR290 for details.

(53) Flush mounted combination bridge rail, see Dwg. BR220 for details.

(54) Median barrier, see Dwg. RD500 for details.

(55) Transition 3'-6" concrete bridge rail to guardrail, see Dwg. BR291 for details.

(60) Poured sealant joint seals, see Dwg. BR140

(61) Asphaltic plug joint, see Dwg. BR157

(80) Precast bridge end panel at bridge ends, see Dwgs. 85070 & BR165. Field verify dimensions of end panels prior to fabrication.

(81) ¾" dia. inserts for utilities @ 10'-0" max. centers.

(82) 8" dia. Sch. 40 galvanized steel pipe under end panel

(90) Structure mounted sign, center over lane line, see Dwg. 85073 for details.

CI 08-010

	DATE	REVISION	BY

ACCOMPANIED BY DWGS. See Dwg. 85053 for this structure

DRAFTER: OBEC CAD
DESIGNER:
CHECKER: Peter G. Slocum, P.E., S.E.
REVIEWER: Peter R. Pogter, P.E., S.E.

REGISTERED PROFESSIONAL ENGINEER 60.181 OREGON JULY 13, 2004 ANDREW D. HOWE
EXPIRES: 6/30/2011

OREGON DEPARTMENT OF TRANSPORTATION

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5005 SW MEADOWS ROAD, SUITE 120, LAKE OSWEGO OREGON 97504-4288

STRUCTURE NO. 21417
DATE December 2010
CALC. BOOK 6296

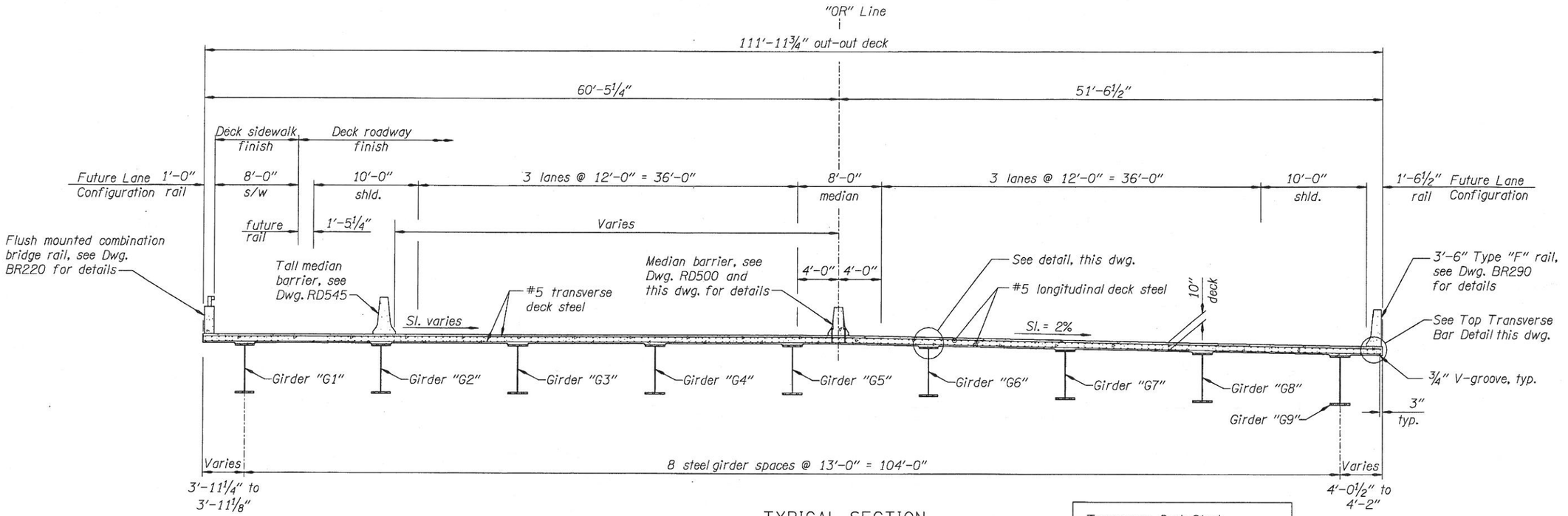
HWY 160 OVER WASHINGTON ST.
OR213: I-205-REDLAND ROAD OXING (OREGON CITY)
CASCADE HWY SOUTH MP 0.01
CLACKAMAS COUNTY

DECK PLAN

SHEET 5 OF 28
DRAWING NO. 85057

File No. 23307

WARNING:
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.



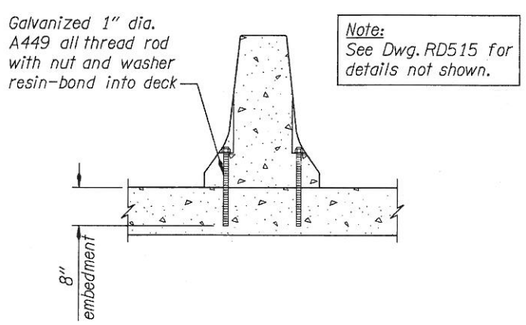
TYPICAL SECTION
Scale: 3/16"=1'-0"

Transverse Deck Steel:

#5 @ 5" max. top and bottom.

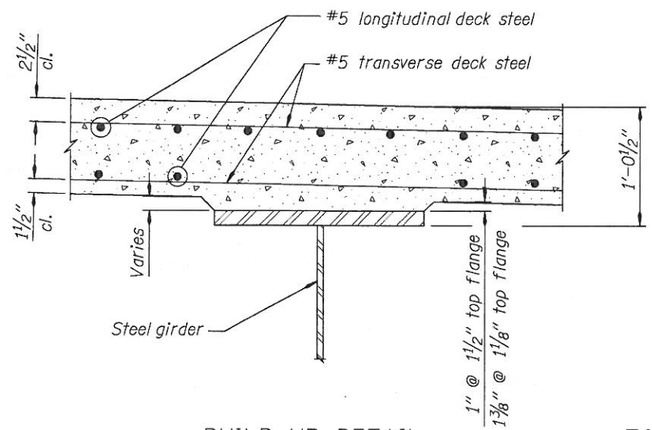
Longitudinal Deck Steel:

#5 @ 8" max. top and bottom.

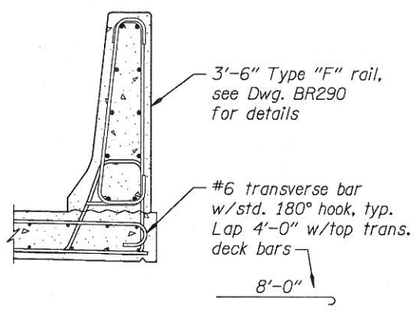


Note:
See Dwg. RD515 for details not shown.

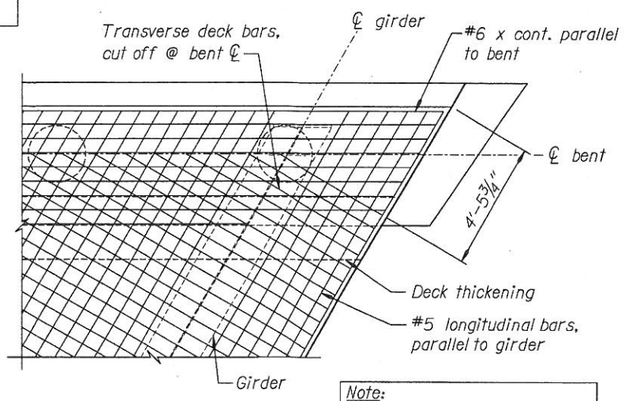
RESIN BONDED ANCHOR INSTALLATION
No Scale



BUILD-UP DETAIL
Scale: 1½"=1'-0"



TOP TRANSVERSE BAR DETAIL
Scale: ¾"=1'-0"



Note:
See Thickened Deck/End Wall Reinforcement Detail, Dwg. 85068 for details not shown

ACUTE ANGLE DETAIL
Scale: ⅜"=1'-0"

CI 08-010

	DATE	REVISION	BY

ACCOMPANIED BY DWGS. See Dwg. 85053 for this structure

DRAFTER: OBEC CAD
DESIGNER:
CHECKER: Peter G. Slocum, P.E., S.E.
REVIEWER: Peter R. Pagter, P.E., S.E.

REGISTERED PROFESSIONAL ENGINEER 60,181 OREGON JULY 13, 2004 ANDREW D. HOWE
EXPIRES 6/30/2011

OREGON DEPARTMENT OF TRANSPORTATION

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5005 SW MEADOWS ROAD, SUITE 120, LAKE OSWEGO OREGON 97504-4288

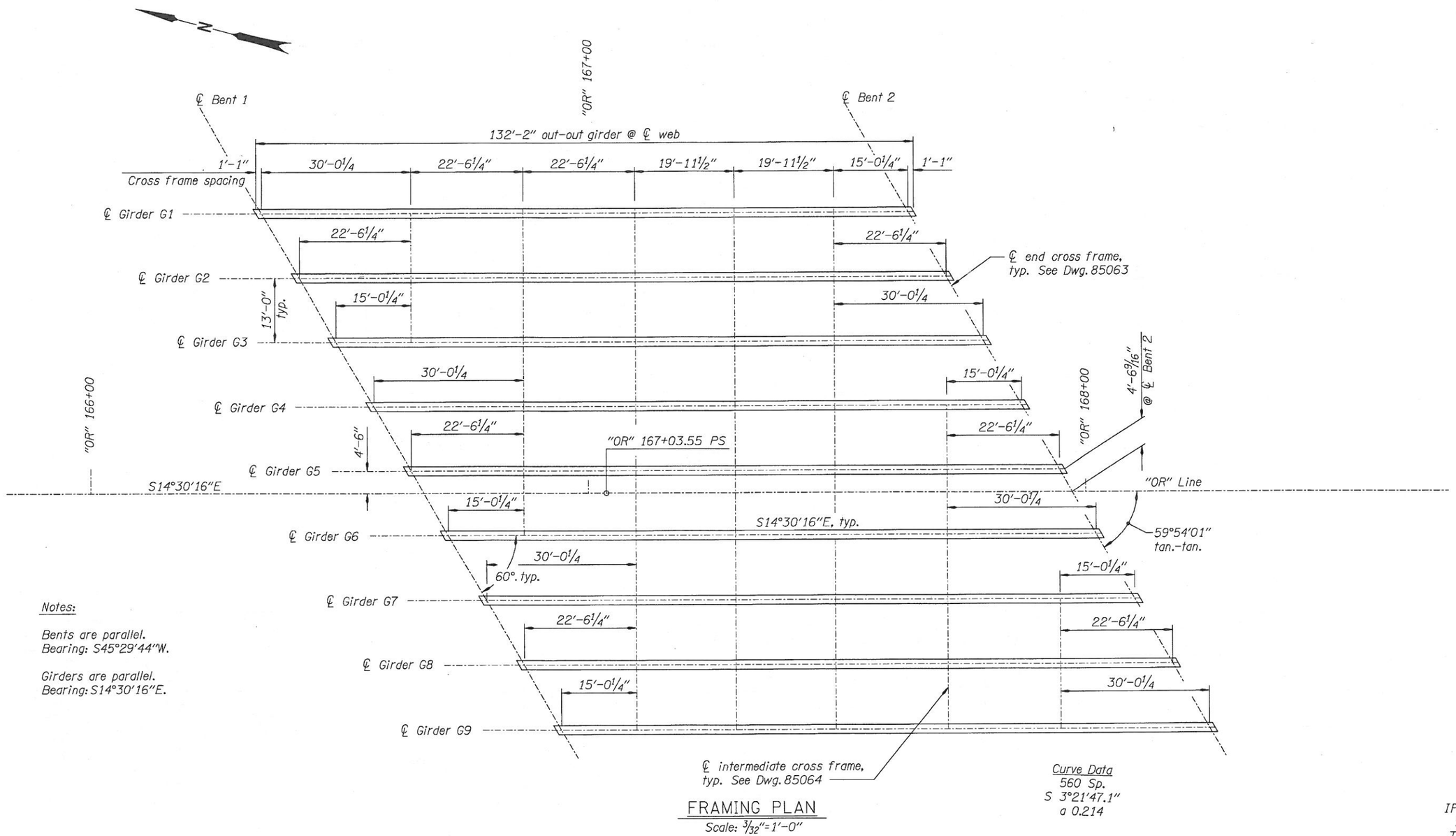
STRUCTURE NO. 21417
DATE December 2010
CALC. BOOK 6296

HWY 160 OVER WASHINGTON ST.
OR213: I-205-REDLAND ROAD OXING (OREGON CITY)
CASCADE HWY SOUTH MP 0.01
CLACKAMAS COUNTY

TYPICAL SECTION

SHEET 6 OF 28
DRAWING NO. 85058

File No. 23308



FRAMING PLAN
Scale: 3/32"=1'-0"

Notes:

Bents are parallel.
Bearing: S45°29'44"W.

Girders are parallel.
Bearing: S14°30'16"E.

Curve Data
560 Sp.
S 3°21'47.1"
a 0.214

WARNING:
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

CI 08-010

	DATE	REVISION	BY

ACCOMPANIED BY DWGS. See Dwg. 85053 for this structure

DRAFTER: OBEC CAD
DESIGNER:
CHECKER: Peter G. Slocum, P.E., S.E.
REVIEWER: Peter R. Pogter, P.E., S.E.

REGISTERED PROFESSIONAL ENGINEER 80,181 OREGON JULY 15, 2004 ANDREW D. HOPE
EXPIRES: 6/30/2011

OREGON DEPARTMENT OF TRANSPORTATION

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STRUCTURE NO. 21417
DATE December 2010
CALC. BOOK 6296

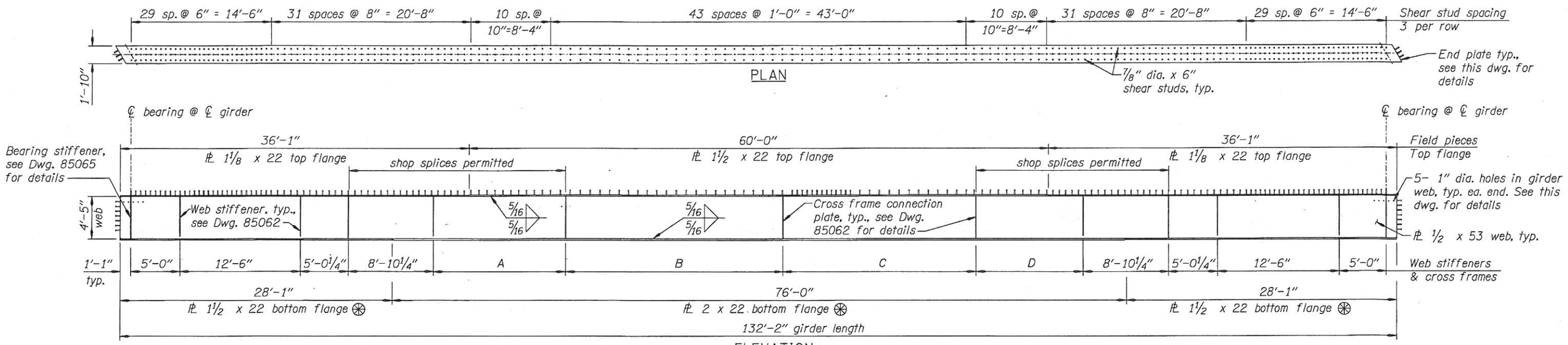
HWY 160 OVER WASHINGTON ST.
OR213: I-205-REDLAND ROAD OXING (OREGON CITY)
CASCADE HWY SOUTH MP 0.01
CLACKAMAS COUNTY

FRAMING PLAN

SHEET 7 OF 28
DRAWING NO. 85059

File No. 23309

I:\Projects\0019\0019098\001909803\Cad\Mstation\Final Plans\Bridge 21417\001909803 07 Framing Plan.dgn 12/20/2010 03:25 PM

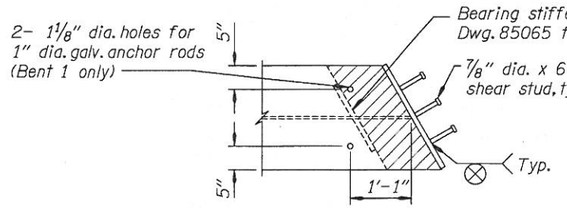


GIRDER DETAILS - GIRDERS G2, G5, & G8

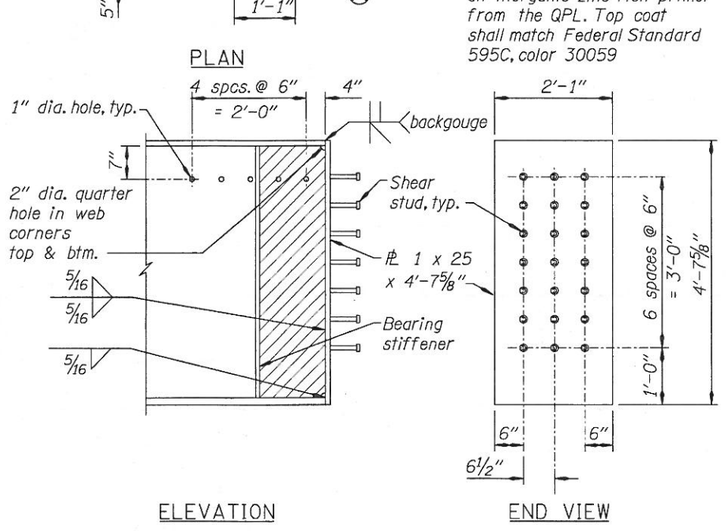
Scale: 3/16"=1'-0"

TABLE - 1						
	LENGTH				**FIELD SPLICE LOCATION	
GIRDER	A	B	C	D	BACK	AHEAD
G2	13'-8"	22'-6 1/4"	19'-11 1/2	11'-1 1/4"	35'-0"	35'-0"
G5	13'-8"	19'-11 1/2	19'-11 1/2	13'-8"	35'-0"	35'-0"
G8	11'-1 1/4"	19'-11 1/2	22'-6 1/4"	13'-8"	35'-0"	35'-0"

**Use field splices as required for constructability. Dimension is measured from bearing stiffener.

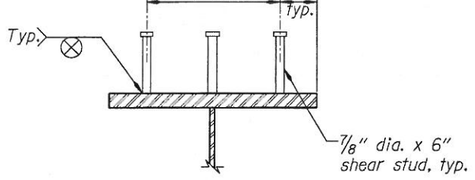


PLAN



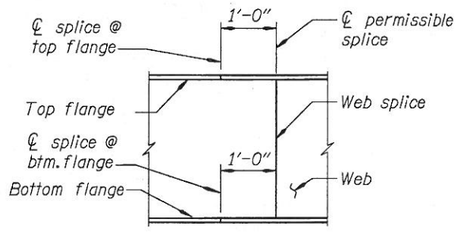
END PLATE DETAIL

No Scale



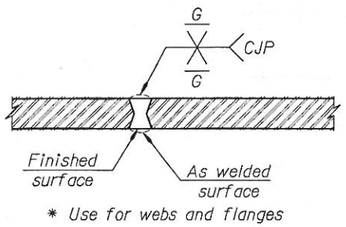
SHEAR STUD DETAIL

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



SHOP SPLICE OFFSET

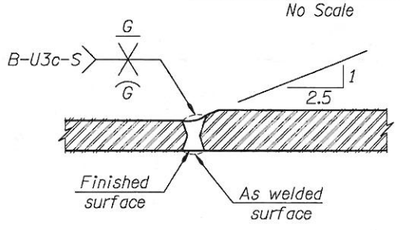
No Scale



* Use for webs and flanges

*FLANGE W/NO THICKNESS CHANGE

No Scale



FLANGE W/THICKNESS CHANGE

No Scale

Legend

Paint girder ends as shown. Use a 3 coat system including an inorganic zinc rich primer from the QPL. Top coat shall match Federal Standard 595C, color 30059

Girder and Cross Frame Notes:

All dimensions shall be reviewed by the Engineer.

All longitudinal dimensions are on a horizontal line - adjust for superelevation and grade.

All stiffeners and girder ends are to be vertical in final erected position.

Web thickness shown may be increased up to 1/16".

Additional compression flange weld splices will be permitted at locations approved by the Engineer.

All steel shall conform to ASTM A709, Grade 50W (AASHTO M270, Grade 50W).

⊛ Indicates check sample required from flange plates so marked, see Special Provisions.

For the purpose of Charpy toughness testing and welding inspection/repair, etc., main load carrying members are Girders G1-G9.

All cross frame bolts shall be fully tightened prior to placing deck concrete.

Shear studs shall conform to ASTM A108, Grade 1018 or 1020 with a minimum yield strength of 50 ksi and a minimum ultimate strength of 60 ksi.

Welding Notes:

Welding shall conform to the latest edition of AWS D1.5 as modified by the Special Provisions.

WARNING:
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

CI 08-010

△	DATE	REVISION	BY

ACCOMPANIED BY DWGS. See Dwg. 85053 for this structure

DRAFTER: OBEC CAD
DESIGNER:
CHECKER: Peter G. Slocum, P.E., S.E.
REVIEWER: Peter R. Pogter, P.E., S.E.

REGISTERED PROFESSIONAL ENGINEER 60,181 OREGON JULY 15, 2004 ANDREW D. HOWE
EXPIRES: 6/30/2011

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STRUCTURE NO. 21417
DATE December 2010
CALC. BOOK 6296

HWY 160 OVER WASHINGTON ST.
OR213: I-205-REDLAND ROAD OXING (OREGON CITY)
CASCADE HWY SOUTH MP 0.01
CLACKAMAS COUNTY

GIRDER DETAILS - 1

SHEET 8 OF 28
DRAWING NO. 85060

File No. 23310

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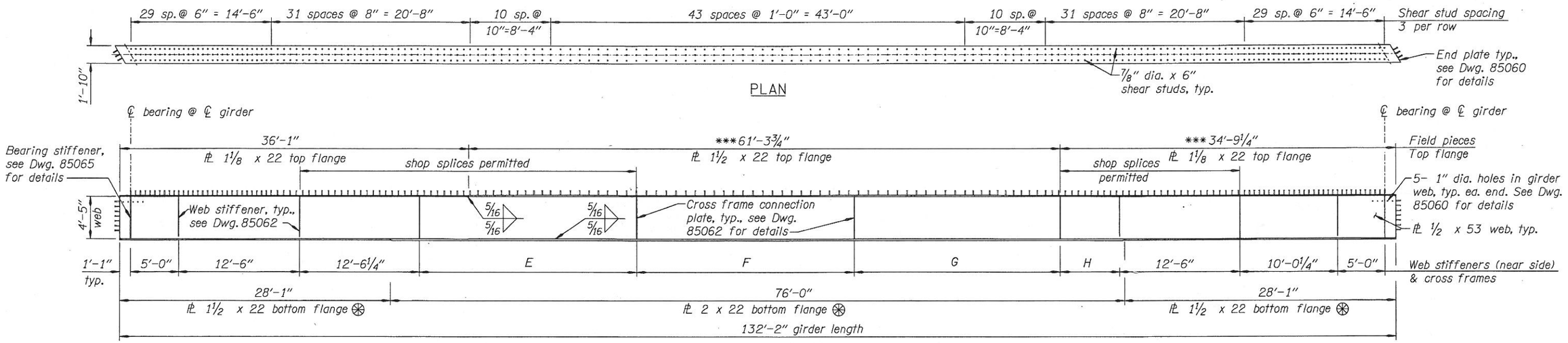


ELEVATION

GIRDER DETAILS - GIRDERS G1, G4 & G7

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

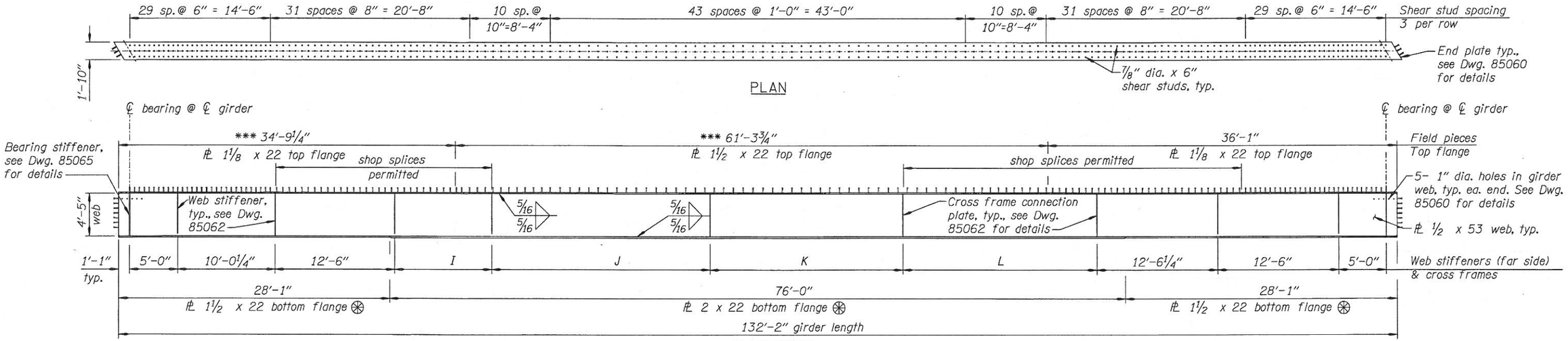
TABLE - 2						
GIRDER	LENGTH				**FIELD SPLICE LOCATION	
	E	F	G	H	BACK	AHEAD
G1	22'-6 1/4"	22'-6 1/4"	19'-11 1/2	7'-5 1/2"	35'-0"	31'-1 3/4"
G4	22'-6 1/4"	19'-11 1/2	19'-11 1/2	10'-0 1/4"	35'-0"	33'-8 1/4"
G7	19'-11 1/2	22'-6 1/4"	22'-6 1/4"	10'-0 1/4"	35'-0"	33'-8 1/4"

**Use field splices as required for constructability. Dimension is measured from bearing stiffener.

*** Adjust plate length as required for field splice locations if field splices are used.

TABLE - 3						
GIRDER	LENGTH				**FIELD SPLICE LOCATION	
	I	J	K	L	BACK	AHEAD
G3	10'-0 1/4"	22'-6 1/4"	19'-11 1/2	19'-11 1/2	33'-8 1/4"	35'-0"
G6	10'-0 1/4"	19'-11 1/2	19'-11 1/2	22'-6 1/4"	33'-8 1/4"	35'-0"
G9	7'-5 1/2"	19'-11 1/2	22'-6 1/4"	22'-6 1/4"	31'-1 3/4"	35'-0"

WARNING: IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.



ELEVATION

GIRDER DETAILS - GIRDERS G3, G6 & G9

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

CI 08-010

△	DATE	REVISION	BY

ACCOMPANIED BY DWGS. See Dwg. 85053 for this structure

DRAFTER: OBEC CAD
DESIGNER:
CHECKER: Peter G. Slocum, P.E., S.E.
REVIEWER: Peter R. Pagter, P.E., S.E.

REGISTERED PROFESSIONAL ENGINEER 60,181 OREGON JULY 13, 2004 ANDREW D. HOWE
EXPIRES: 6/30/2011

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STRUCTURE NO. 21417
DATE December 2010
CALC. BOOK 6296

HWY 160 OVER WASHINGTON ST.
OR213: I-205-REDLAND ROAD OXING (OREGON CITY)
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CLACKAMAS COUNTY

GIRDER DETAILS - 2

SHEET 9 OF 28
DRAWING NO. 85061

File No. 23311

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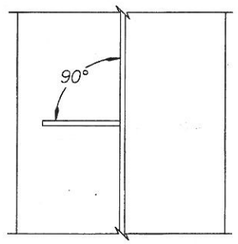
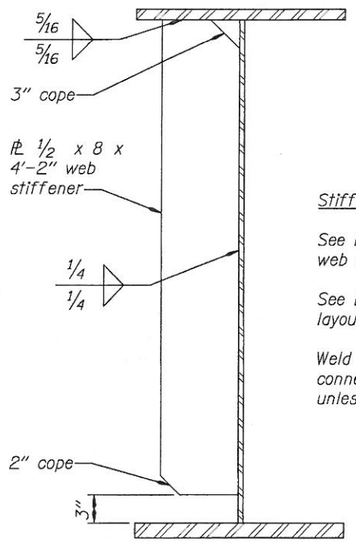


PLAN



ELEVATION

WEB STIFFENERS

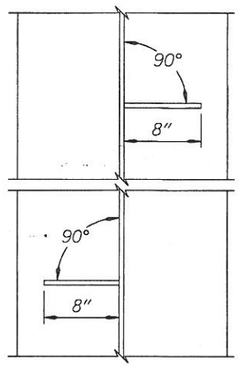
Scale: 1½"=1'-0"

Stiffener Notes:

See Dwgs. 85060 and 85061 for web stiffener and cross frame locations.

See Dwg. 85063 for connection bolt layouts, typ.

Weld terminations shown on cross frame connection are typical for all fillet welds unless shown otherwise.



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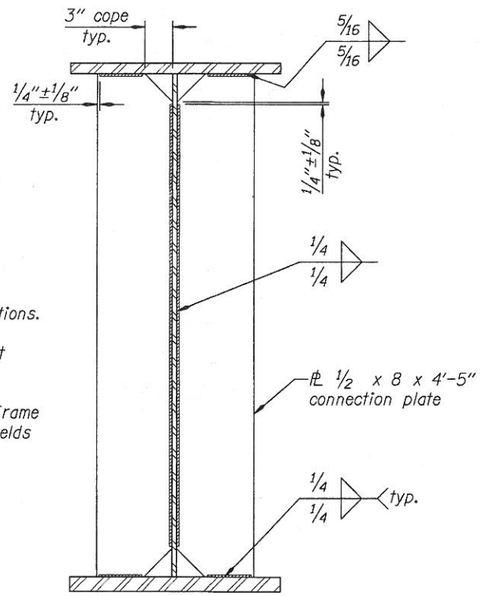


ELEVATION

CROSS FRAME CONNECTION

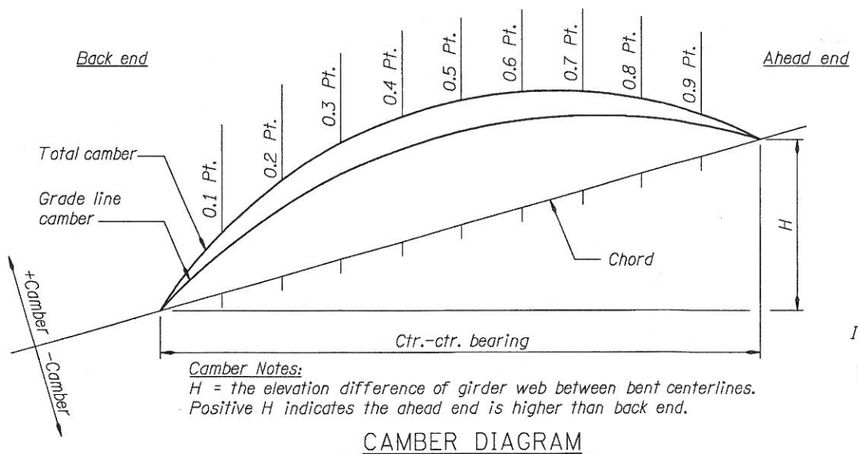
Scale: 1½"=1'-0"

Girder	Grade Camber (in.)								
Pt.	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
G1	9/16	15/16	1 3/16	1 3/16	1	1 1/16	3/8	1/8	0
G2	3/8	9/16	5/8	5/8	3/8	1/8	-1/16	-3/16	-1/8
G3	3/16	1/4	1/16	1/16	-1/8	-5/16	-7/16	-7/16	-1/4
G4	0	-1/16	-3/16	-3/8	-9/16	-11/16	-11/16	-9/16	-3/8
G5	-1/8	-5/16	-1/2	-11/16	-7/8	-15/16	-7/8	-3/4	-7/16
G6	-1/4	-7/16	-11/16	-7/8	-1 1/16	-1 1/8	-1	-13/16	-7/16
G7	-1/4	-9/16	-13/16	-1 1/16	-1 3/16	-1 3/16	-1 1/8	-7/8	-1/2
G8	-5/16	-5/8	-15/16	-1 3/16	-1 5/16	-1 5/16	-1 3/16	-7/8	-1/2
G9	-3/8	-3/4	-1 1/16	-1 5/16	-1 7/16	-1 3/8	-1 1/4	-15/16	-9/16

Item	Camber (in.)								
Pt.	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
Girder	3/8	3/4	1	1 3/16	1 1/4	1 3/16	1	3/4	3/8
Deck	2	3 13/16	5 1/8	5 15/16	6 3/16	5 15/16	5 1/8	3 13/16	2
Rail	1/8	3/16	1/4	5/16	3/8	5/16	1/4	3/16	1/8
Shrinkage	7/8	1 1/2	1 15/16	2 3/16	2 5/16	2 3/16	1 15/16	1 1/2	7/8

Girder	Total Camber (in.)								
Pt.	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
G1	3 15/16	7 3/16	9 1/2	10 13/16	11 1/8	10 5/16	8 11/16	6 3/8	3 3/8
G2	3 3/4	6 13/16	8 15/16	10 1/4	10 1/2	9 3/4	8 1/4	6 1/16	3 1/4
G3	3 9/16	6 1/2	8 3/8	9 11/16	10	9 5/16	7 7/8	5 13/16	3 1/8
G4	3 3/8	6 3/16	8 1/8	9 1/4	9 9/16	8 15/16	7 5/8	5 11/16	3
G5	3 1/4	5 15/16	7 13/16	8 15/16	9 1/4	8 11/16	7 7/16	5 1/2	2 15/16
G6	3 1/8	5 13/16	7 5/8	8 3/4	9 1/16	8 1/2	7 5/16	5 7/16	2 15/16
G7	3 1/8	5 11/16	7 1/2	8 9/16	8 15/16	8 7/16	7 3/16	5 3/8	2 7/8
G8	3 1/16	5 5/8	7 3/8	8 7/16	8 13/16	8 5/16	7 1/8	5 3/8	2 7/8
G9	3	5 1/2	7 1/4	8 5/16	8 11/16	8 1/4	7 1/16	5 5/16	2 13/16

H (ft.)	
G1	-2.30
G2	-2.49
G3	-2.66
G4	-2.81
G5	-2.93
G6	-2.95
G7	-2.91
G8	-2.87
G9	-2.82



Camber Notes:
H = the elevation difference of girder web between bent centerlines.
Positive H indicates the ahead end is higher than back end.

CAMBER DIAGRAM

No Scale

WARNING:
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

CI 08-010

△	DATE	REVISION	BY

ACCOMPANIED BY DWGS. See Dwg. 85053 for this structure

DRAFTER: OBEC CAD
DESIGNER:
CHECKER: Peter G. Slocum, P.E., S.E.
REVIEWER: Peter R. Pogter, P.E., S.E.

REGISTERED PROFESSIONAL ENGINEER 60,181 OREGON JULY 14, 2006 ANDREW D. HOWE
EXPIRES: 6/30/2011

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5005 SW MEADOWS ROAD, SUITE 120, LAKE OSWEGO OREGON 97504-4288

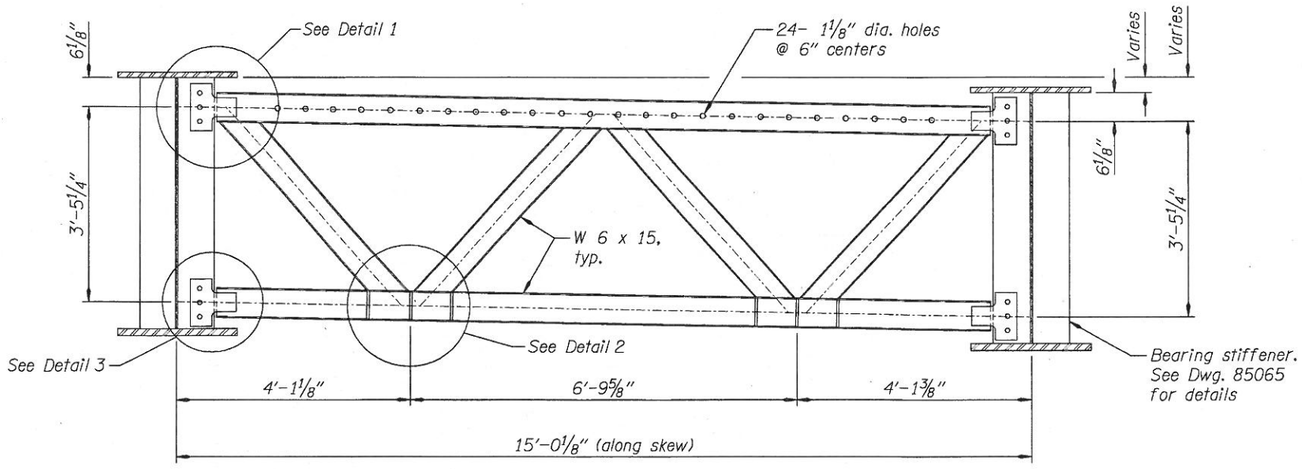
STRUCTURE NO. 21417
DATE December 2010
CALC. BOOK 6296

HWY 160 OVER WASHINGTON ST.
OR213: I-205-REDLAND ROAD OXING (OREGON CITY)
CASCADE HWY SOUTH MP 0.01
CLACKAMAS COUNTY

GIRDER DETAILS - 3

SHEET 10 OF 28
DRAWING NO. 85062

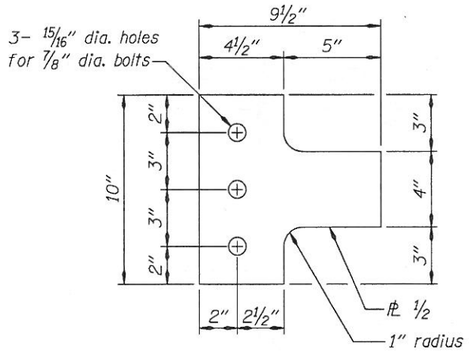
File No. 23312



END CROSS FRAMES (LOOKING AT BENT, BENT 2 SHOWN)

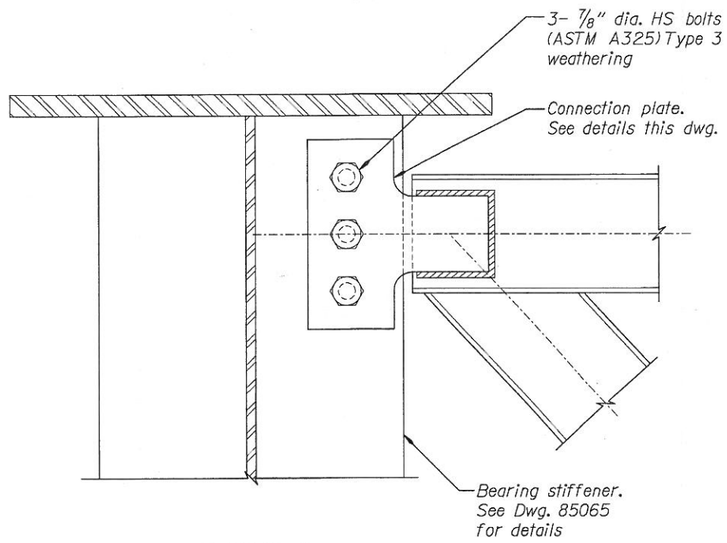
Scale: 3/4"=1'-0"

Note:
End cross frames to be painted. Paint using a 3 coat system including an inorganic zinc rich primer from the QPL. Top coat shall match Federal Standard 595C, color 30059.



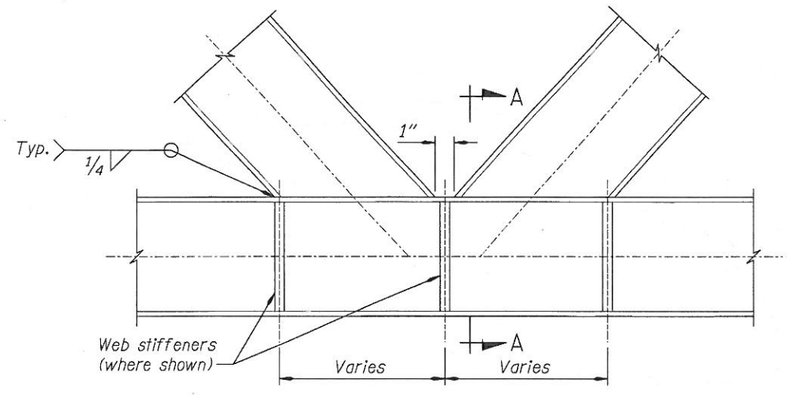
CONNECTION PLATE

Scale: 3"=1'-0"



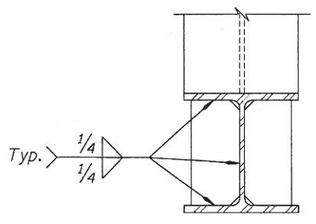
DETAIL 1

Scale: 3"=1'-0"

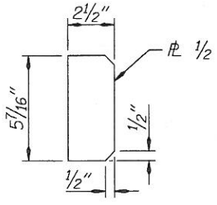


DETAIL 2

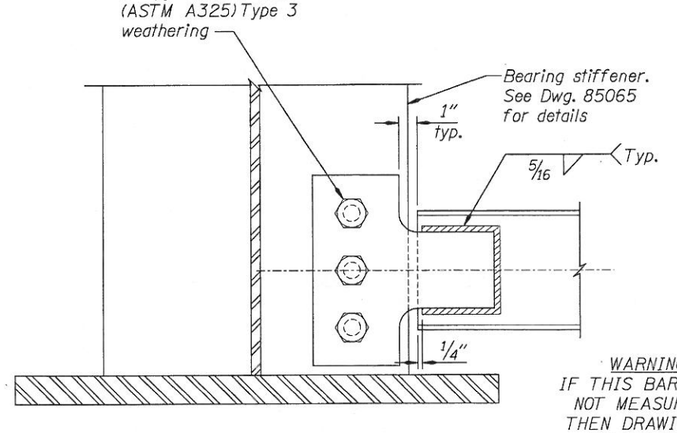
Scale: 3"=1'-0"



SECTION A-A



STIFFENER



DETAIL 3

Scale: 3"=1'-0"

WARNING:
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

CI 08-010

	DATE	REVISION	BY

ACCOMPANIED BY DWGS. See Dwg. 85053 for this structure

DRAFTER: OBEC CAD
DESIGNER:
CHECKER: Peter G. Slocum, P.E., S.E.
REVIEWER: Peter R. Hagter, P.E., S.E.

REGISTERED PROFESSIONAL ENGINEER OREGON 60,181 JULY 15, 2004 ANDREW D. HOWE
EXPIRES: 6/30/2011

OREGON DEPARTMENT OF TRANSPORTATION

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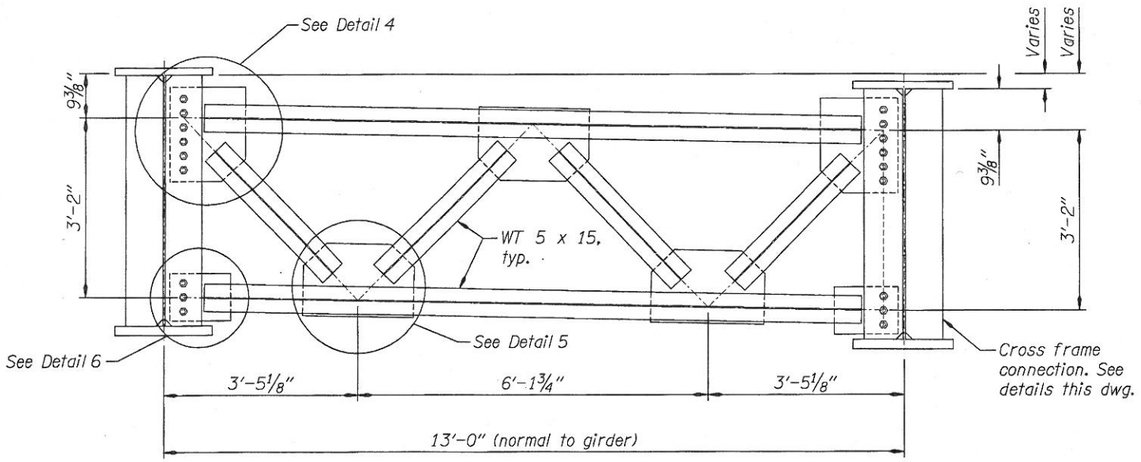
STRUCTURE NO. 21417
DATE December 2010
CALC. BOOK 6296

HWY 160 OVER WASHINGTON ST.
OR213: I-205-REDLAND ROAD OXING (OREGON CITY)
CASCADE HWY SOUTH MP 0.01
CLACKAMAS COUNTY

END CROSS FRAME DETAILS

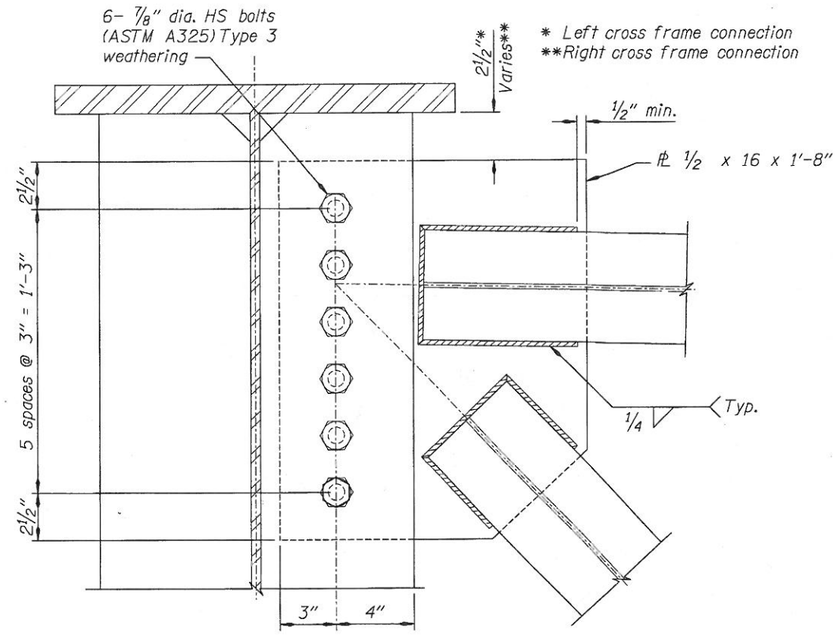
SHEET 11 OF 28
DRAWING NO. 85063

File No. 23313



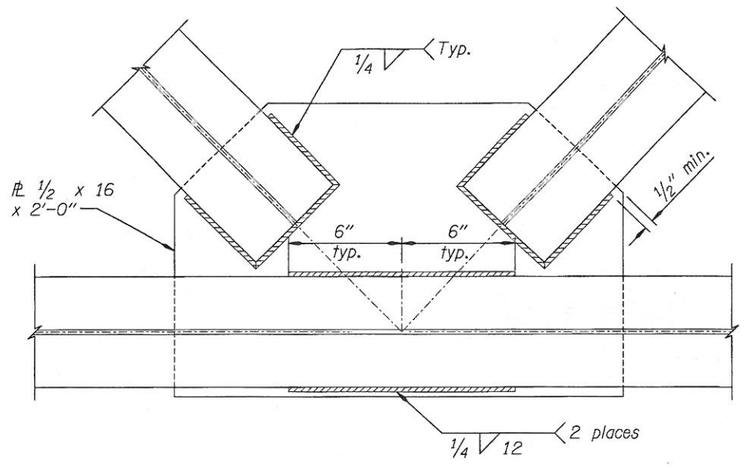
INTERMEDIATE CROSS FRAMES

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



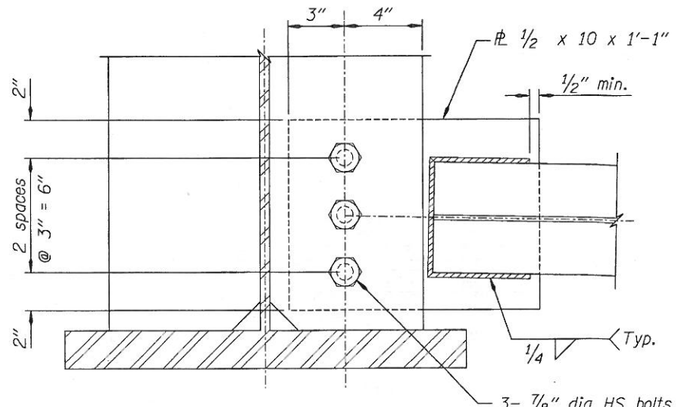
DETAIL 4

Scale: 3"=1'-0"



DETAIL 5

Scale: 3"=1'-0"



DETAIL 6

Scale: 3"=1'-0"

WARNING:
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

CI 08-010

	DATE	REVISION	BY

ACCOMPANIED BY DWGS. See Dwg. 85053 for this structure

DRAFTER: OBEC CAD
DESIGNER:
CHECKER: Peter G. Slocum, P.E., S.E.
REVIEWER: Peter R. Fogler, P.E., S.E.

REGISTERED PROFESSIONAL ENGINEER 60,181 OREGON JULY 13, 2004 ANDREW D. HOWE
EXPIRES: 6/30/2011

OREGON DEPARTMENT OF TRANSPORTATION

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5005 SW MEADOWS ROAD, SUITE 120, LAKE OSWEGO OREGON 97504-4288

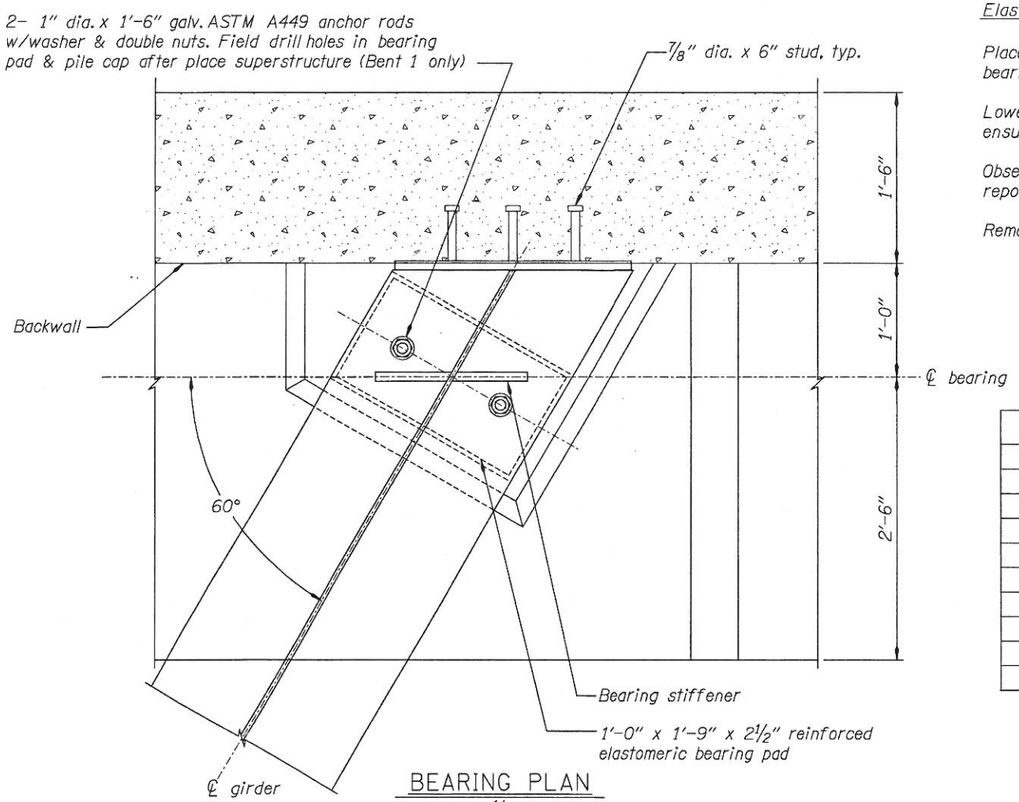
STRUCTURE NO. 21417
DATE December 2010
CALC. BOOK 6296

HWY 160 OVER WASHINGTON ST.
OR213: I-205-REDLAND ROAD OXING (OREGON CITY)
CASCADE HWY SOUTH MP 0.01
CLACKAMAS COUNTY

INTERMEDIATE CROSS FRAME DETAILS

SHEET 12 OF 28
DRAWING NO. 85064

File No. 23314



BEARING PLAN

Scale: 1½"=1'–0"

Elastomeric Bearing Pad and Girder Placement Procedure:

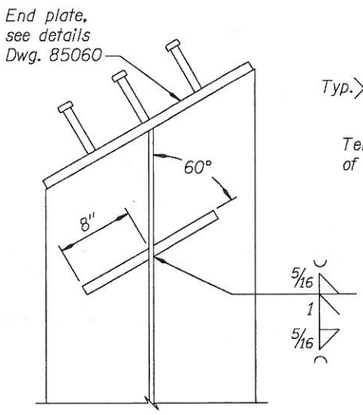
Place ½" layer of grout in bearing pad area. Place bearing pad normal to girder centerline.

Lower bridge onto bearings before grout is fully set to ensure uniform bearing across full width of bearing pads.

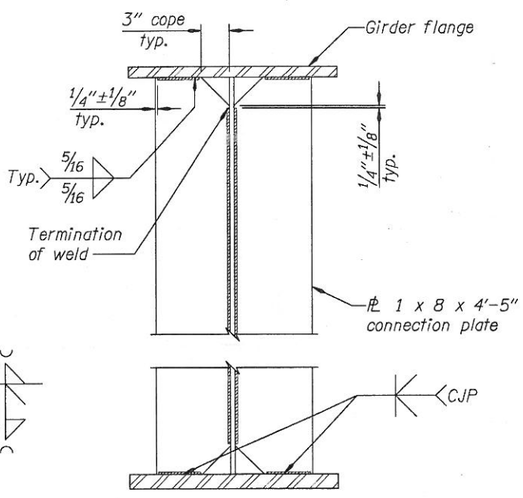
Observe orientation of bearing pads. Raise bridge and reposition bearing pads if directed by the Engineer.

Remove any excess grout protruding around bearing pads.

ELEVATIONS AT BOTTOM OF GIRDER		
GIRDER	BENT 1	BENT 2
G1	69.02	66.72
G2	68.93	66.44
G3	68.79	66.13
G4	68.63	65.82
G5	68.43	65.50
G6	68.06	65.12
G7	67.62	64.71
G8	67.18	64.31
G9	66.74	63.92



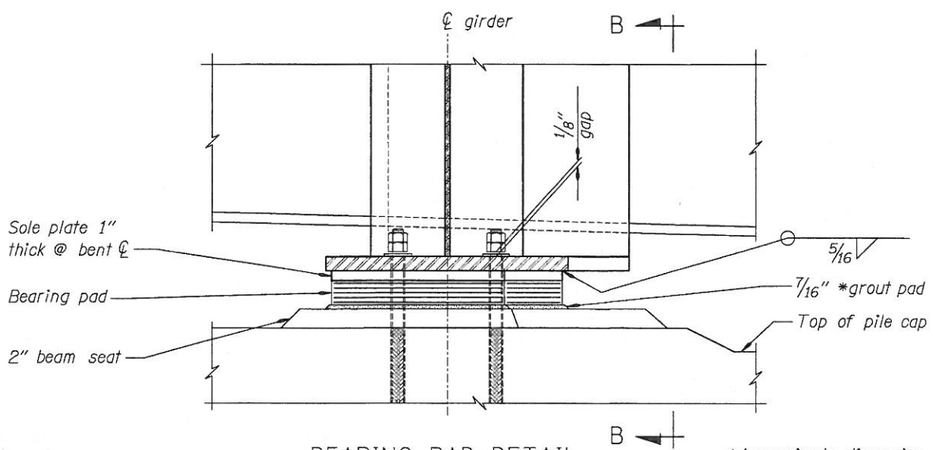
PLAN



ELEVATION

BEARING STIFFENER DETAILS

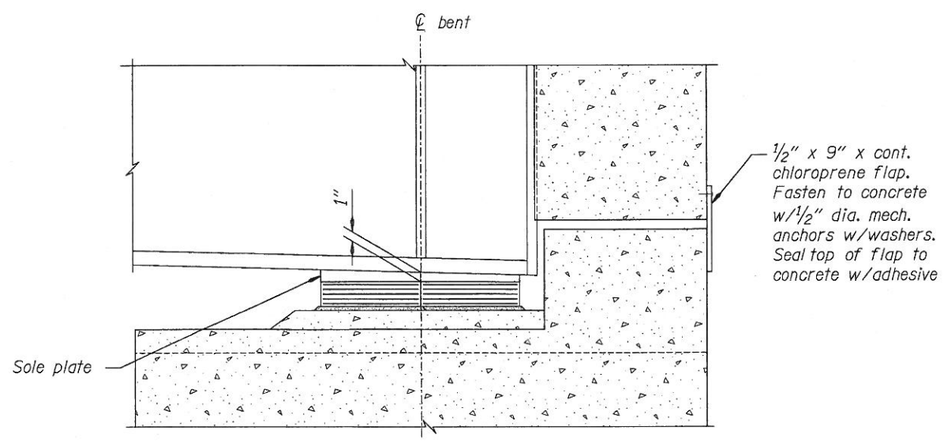
Scale: 1½"=1'–0"



BEARING PAD DETAIL

Scale: 1½"=1'–0"

*Approximate dimension after placement of bridge.



SECTION B-B

Scale: 1½"=1'–0"

WARNING:
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

CI 08-010

△	DATE	REVISION	BY

ACCOMPANIED BY DWGS. See Dwg. 85053 for this structure

DRAFTER: OBEC CAD

DESIGNER:

CHECKER: Peter G. Slocum, P.E., S.E.

REVIEWER: Peter R. Pagter, P.E., S.E.

REGISTERED PROFESSIONAL ENGINEER 60,181 OREGON JULY 13, 2004 ANDREW D. HOWE

EXPIRES: 6/30/2011

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STRUCTURE NO. 21417

DATE December 2010

CALC. BOOK 6296

HWY 160 OVER WASHINGTON ST.
OR213: I-205-REDLAND ROAD OXING (OREGON CITY)
CASCADE HWY SOUTH MP 0.01
CLACKAMAS COUNTY

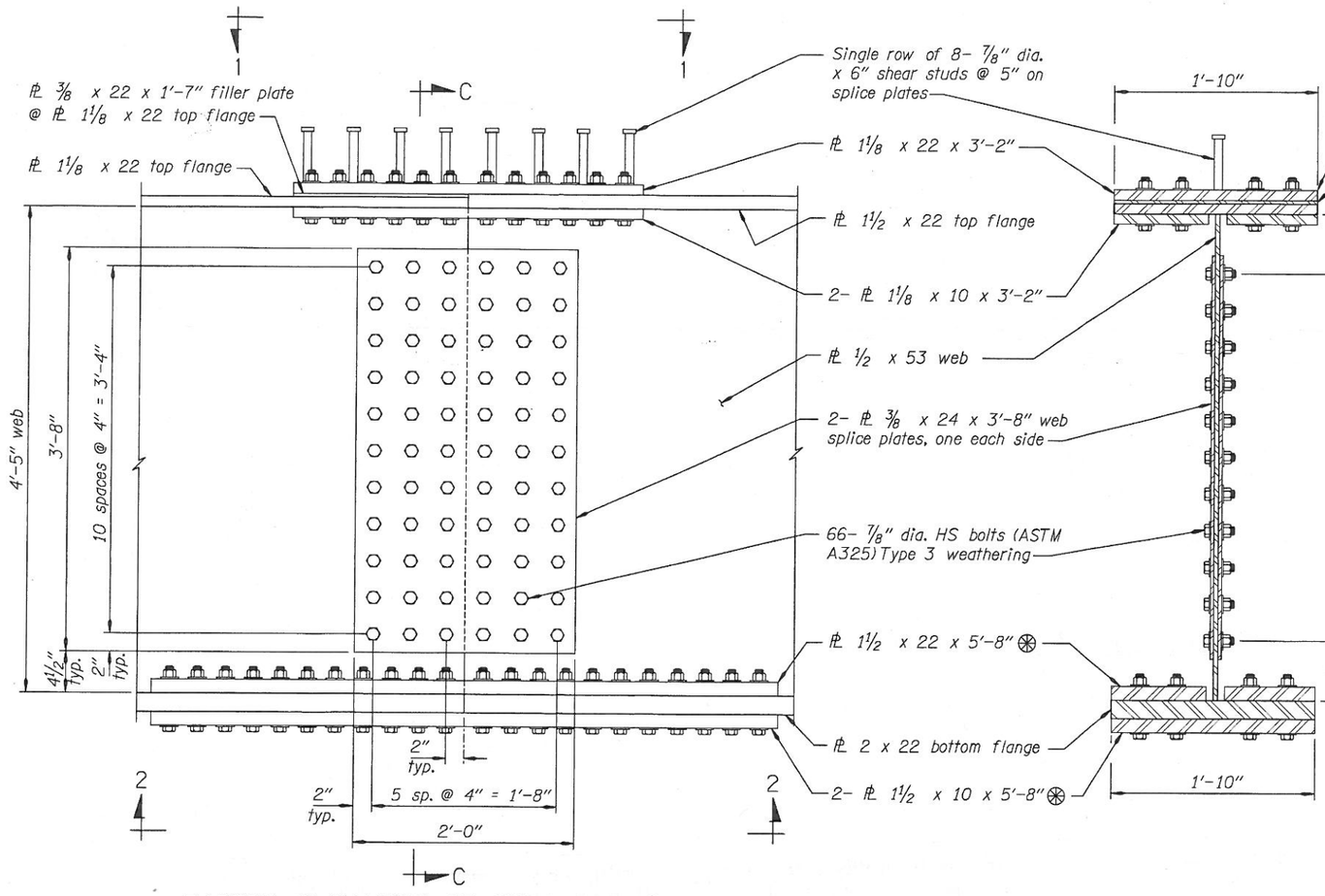
BEARING DETAILS

SHEET 13 OF 28

DRAWING NO. 85065

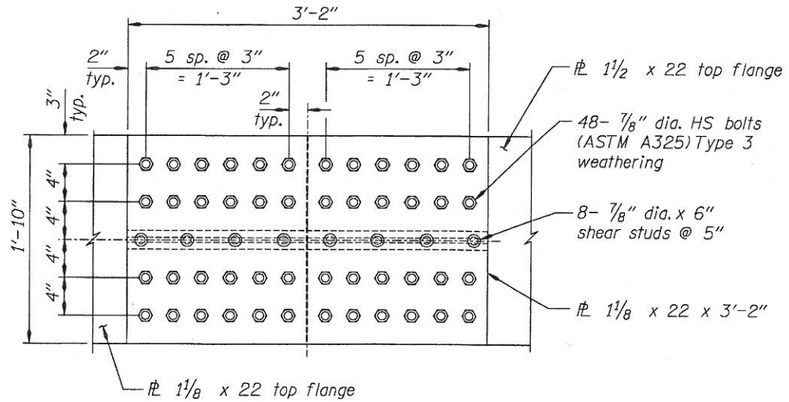
File No. 22315

I:\Projects\0019\0019098\001909803\Cad\Mstation\Final Plans\Bridge 21417\001909803 13 Bearing Details.dgn 12/20/2010 03:26 PM



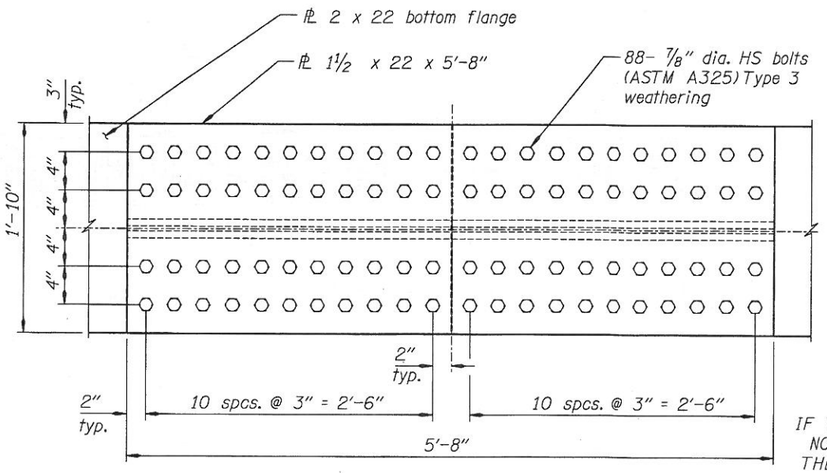
PARTIAL ELEVATION AT FIELD SPLICE

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



VIEW 1-1

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



VIEW 2-2

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

SECTION C-C

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

Field Splice Notes:

All bolt threads shall be excluded from shear plane.

To provide bolt installation and tightening clearance, assemble flange splice plates prior to installation of outer row bolts of web splice plates.

Where possible, only the heads of bolts shall be exposed to view.

See Dwgs. 85060 and 85061 for optional field splice locations

⊛ Indicates check sample required from splice plates so marked, see Special Provisions.

WARNING:
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

CI 08-010

△	DATE	REVISION	BY

ACCOMPANIED BY DWGS. See Dwg. 85053 for this structure

DRAFTER: OBEC CAD
DESIGNER:
CHECKER: Peter G. Slocum, P.E., S.E.
REVIEWER: Peter R. Pagter, P.E., S.E.

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STRUCTURE NO. 21417
DATE December 2010
CALC. BOOK 6296

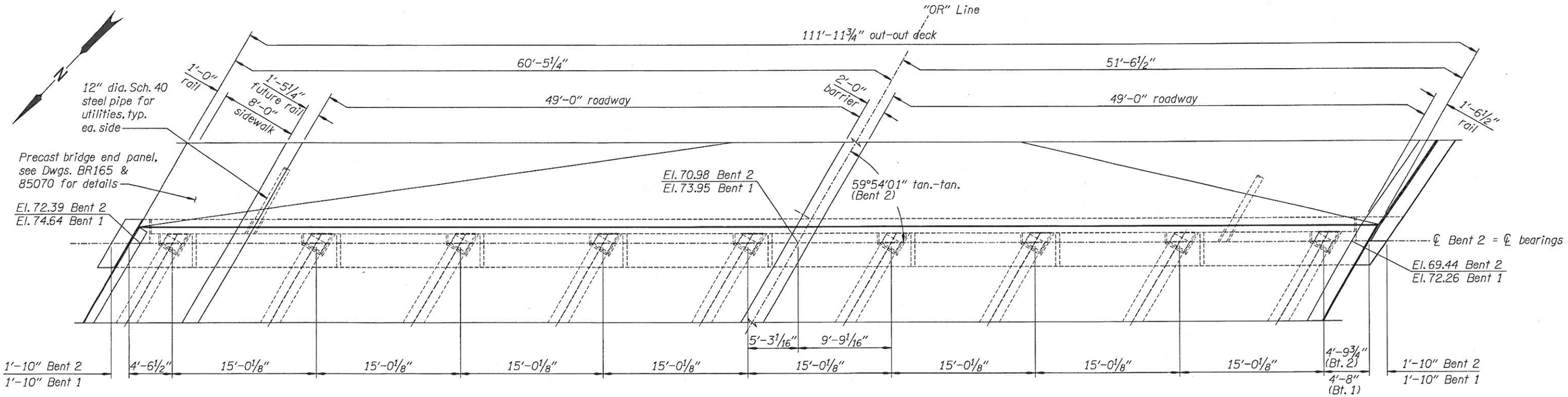
HWY 160 OVER WASHINGTON ST.
OR213: I-205-REDLAND ROAD OXING (OREGON CITY)
CASCADE HWY SOUTH MP 0.01
CLACKAMAS COUNTY

OPTIONAL FIELD SPLICE DETAILS

SHEET 14 OF 28
DRAWING NO. 85066

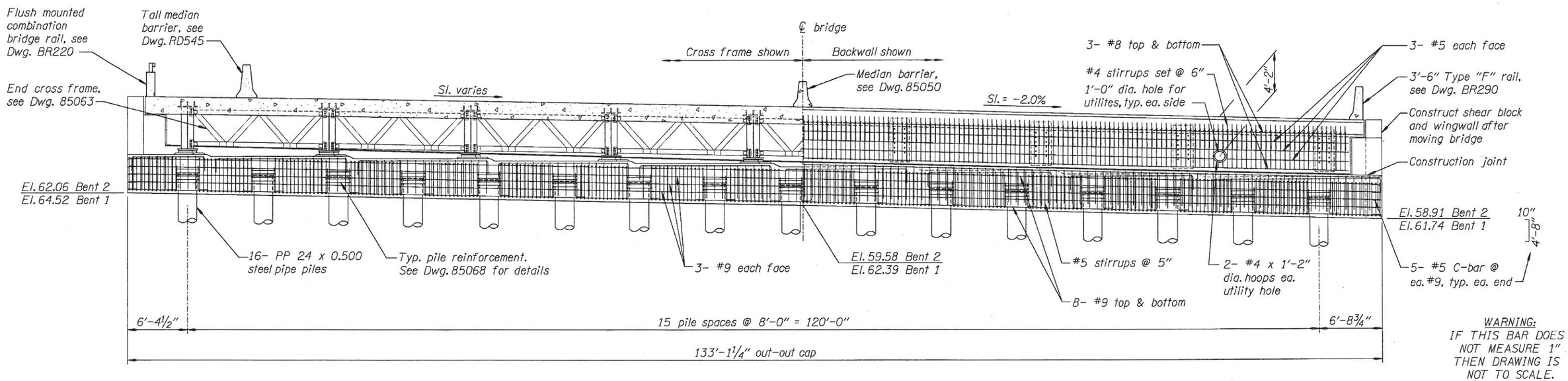
File No. 23316

I:\Projects\0019\0019098\001909803\Cad\Mstation\Final Plans\Bridge 21417\001909803 14 Field Splice Details.dgn 12/20/2010 03:26 PM



PLAN - BENT 2 (BENT 1 SIMILAR)

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



ELEVATION - BENT 2 (BENT 1 SIMILAR)

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

WARNING:
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

CI 08-010

	DATE	REVISION	BY

ACCOMPANIED BY DWGS. See Dwg. 85053 for this structure

DRAFTER: OBEC CAD
DESIGNER:
CHECKER: Peter G. Slocum, P.E., S.E.
REVIEWER: Peter R. Pagter, P.E., S.E.

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STRUCTURE NO. 21417
DATE December 2010
CALC. BOOK 6296

HWY 160 OVER WASHINGTON ST.
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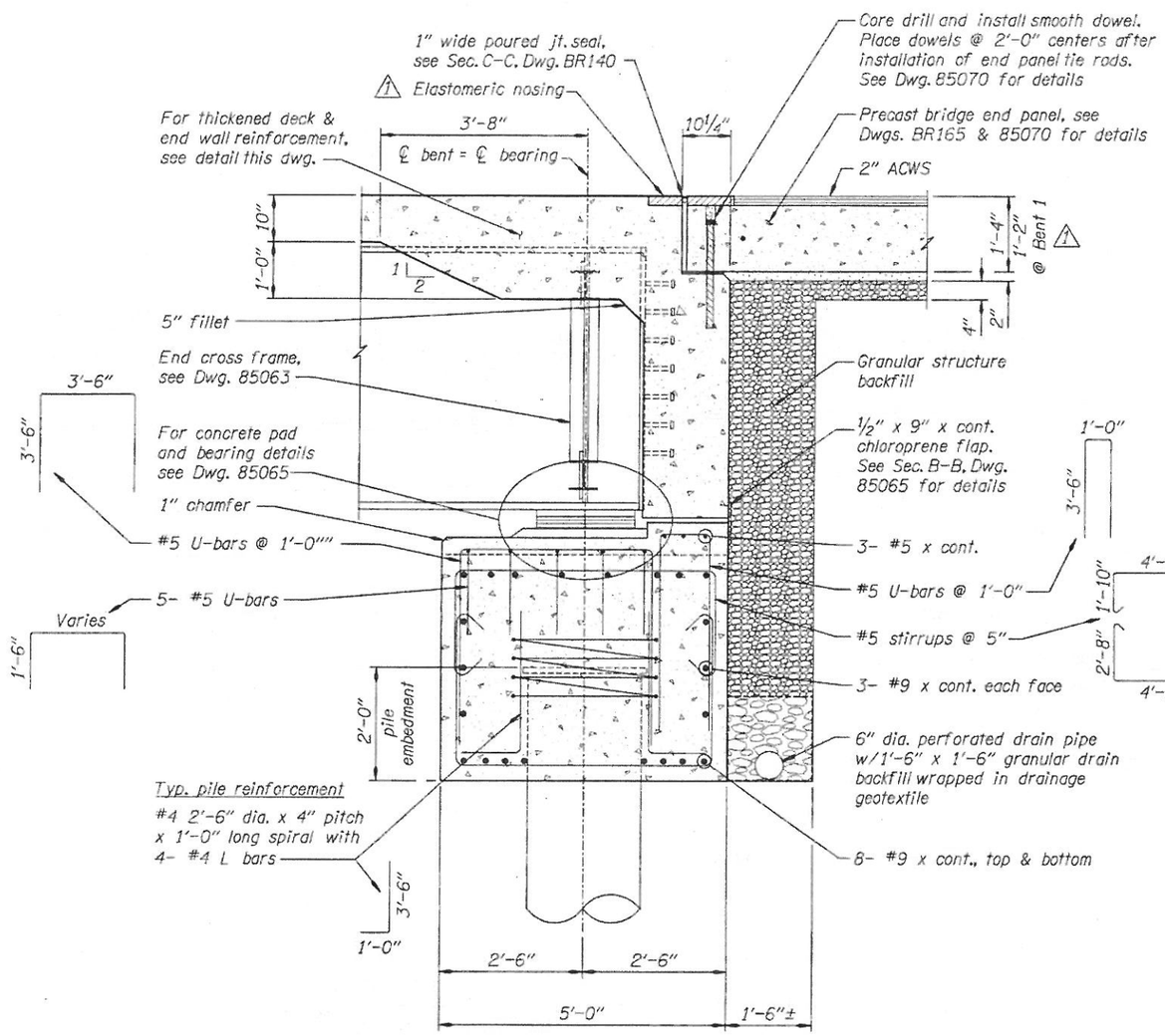
BENT 2 PLAN & ELEVATION (BENT 1 SIMILAR)

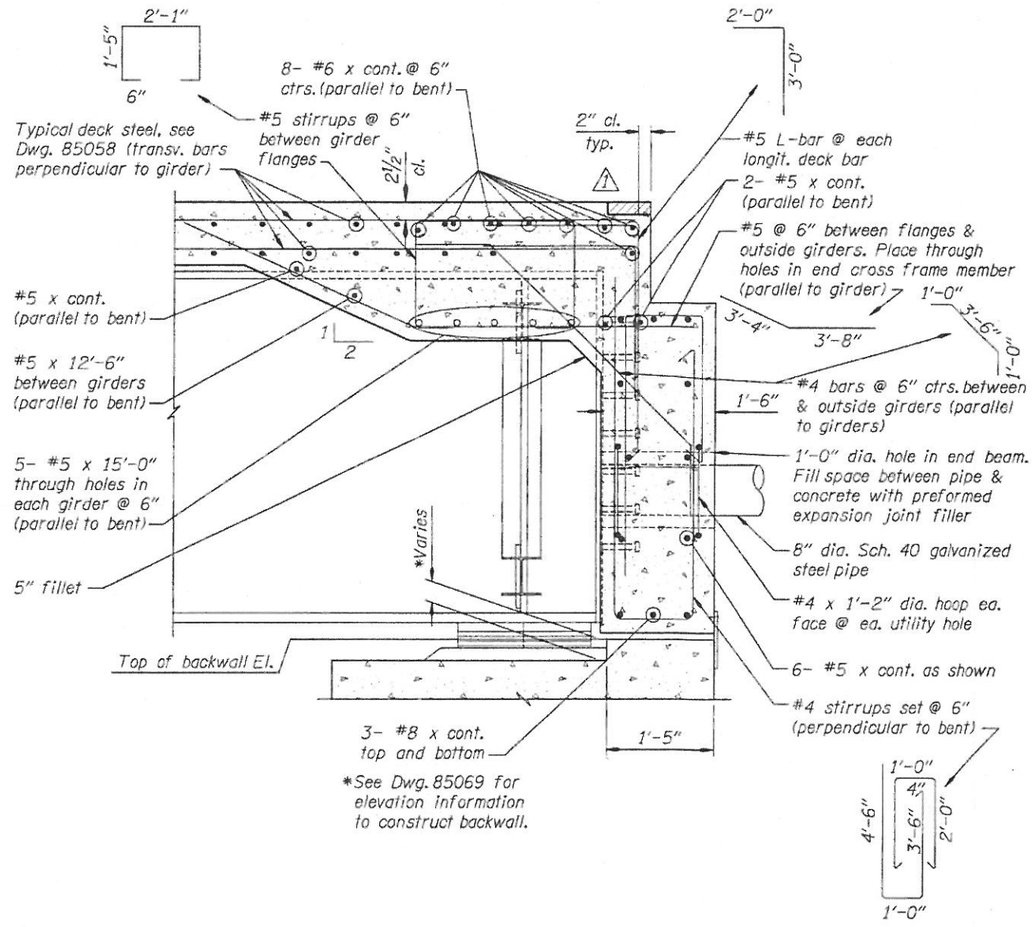
SHEET 15 OF 28
DRAWING NO. 85067

File No. 23317



TYPICAL SECTION - BENT 2 (BENT 1 SIMILAR)

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



*See Dwg. 85069 for elevation information to construct backwall.

THICKENED DECK/END BEAM REINFORCEMENT DETAIL

Scale: 1"=1'-0"

WARNING:
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

CI 08-010

△	DATE	REVISION	BY
1	02/11	Added elastomeric nosing	ADH

ACCOMPANIED BY DWGS. See Dwg. 85053 for this structure

DRAFTER: OBEC CAD
DESIGNER:
CHECKER: Peter G. Slocum — Peter G. Slocum, P.E., S.E.
REVIEWER: Peter R. Pagter — Peter R. Pagter, P.E., S.E.

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HWY 160 OVER WASHINGTON ST.
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CLACKAMAS COUNTY

BENT DETAILS - 1

SHEET 16 OF 28
DRAWING NO. 85068

File No. 23318

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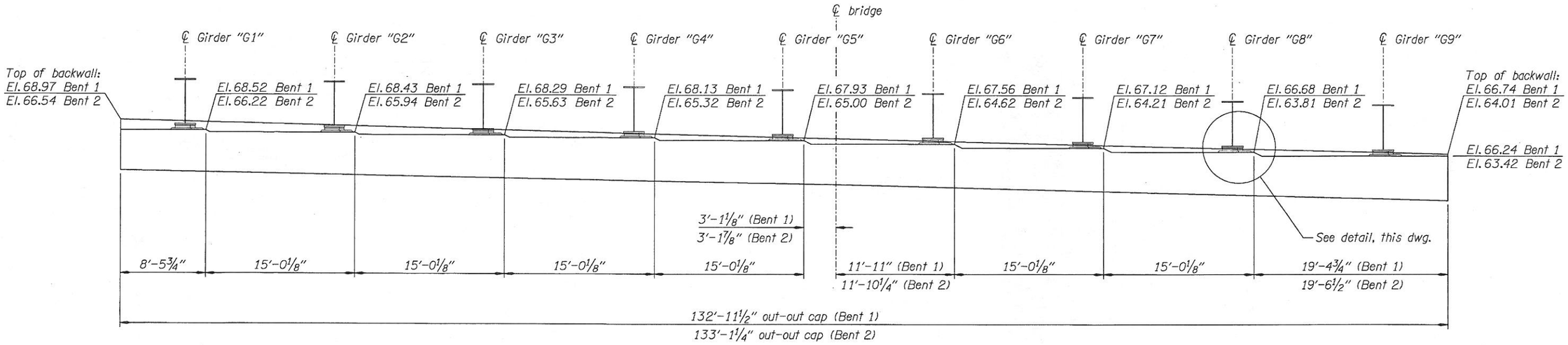
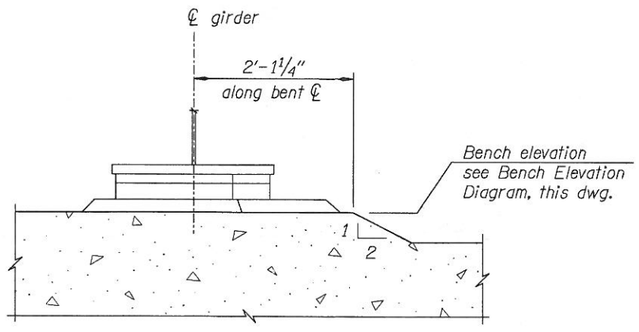


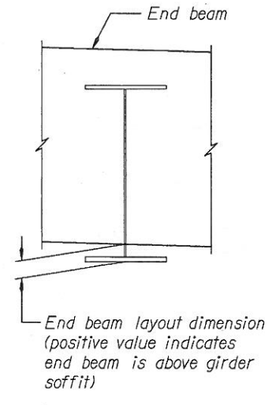
BENCH ELEVATION DIAGRAM

No Scale



STEP DETAIL

Scale: 1″=1′-0″



END BEAM LAYOUT

Scale: ½″=1′-0″

End Beam Layout Dimensions		
Girder	Bent 1	Bent 2
"G1"	+2 9/16"	−2 5/8"
"G2"	+1/4"	−2 5/8"
"G3"	−1 7/16"	−2 1/4"
"G4"	−2 15/16"	−1 15/16"
"G5"	−3 7/8"	−1 1/2"
"G6"	−2 13/16"	−5/16"
"G7"	−15/16"	+1 1/4"
"G8"	+15/16	+2 5/8"
"G9"	+2 7/8"	+3 15/16"

WARNING:
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

CI 08-010

△	DATE	REVISION	BY

ACCOMPANIED BY DWGS. See Dwg. 85053 for this structure

DRAFTER: OBEC CAD
DESIGNER:
CHECKER: Peter G. Slocum, P.E., S.E.
REVIEWER: Peter R. Ragter, P.E., S.E.

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STRUCTURE NO. 21417
DATE December 2010
CALC. BOOK 6296

HWY 160 OVER WASHINGTON ST.
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CASCADE HWY SOUTH MP 0.01
CLACKAMAS COUNTY

BENT DETAILS - 2

SHEET 17 OF 28
DRAWING NO. 85069

File No. 23319

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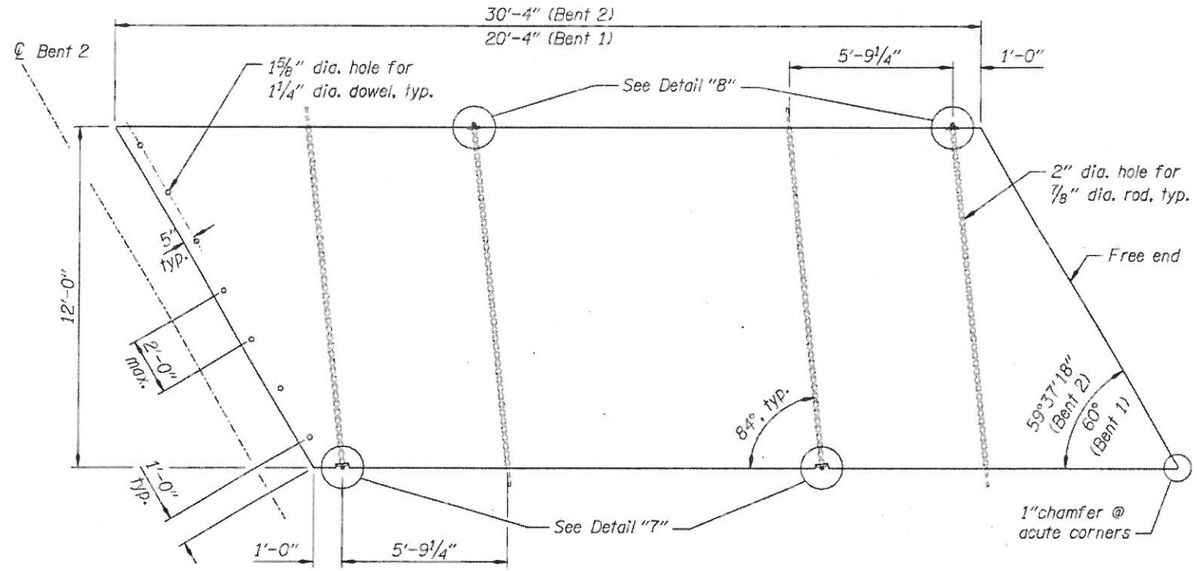
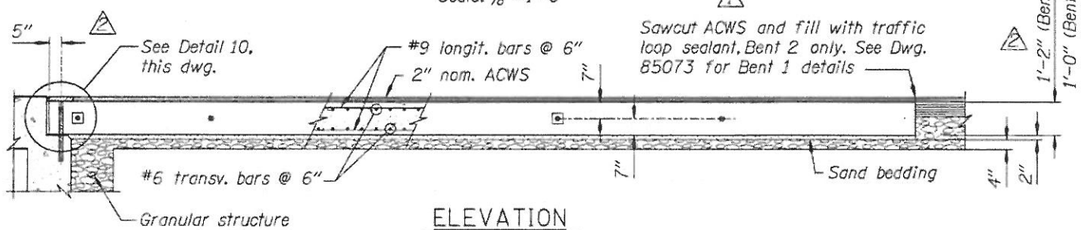


Right Exterior Panel Widths		
	Bent End	Free End
Bent 1	12'-0"	6'-8⅝"
Bent 2	7'-6⅞"	12'-0"

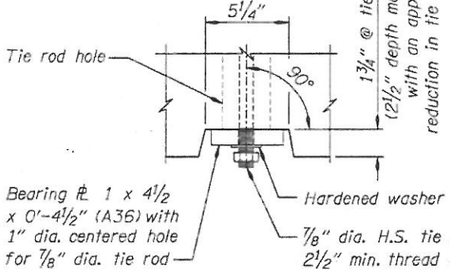
End Panel Notes:
See Dwg. BR165 for details not shown.

Install valve access box for new water line. See Sht. WA-14 for details. Field verify location prior to fabrication.

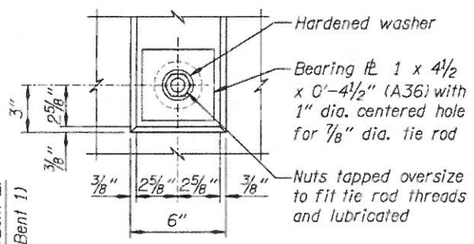
PARTIAL PLAN
Scale: ⅜"=1'-0"



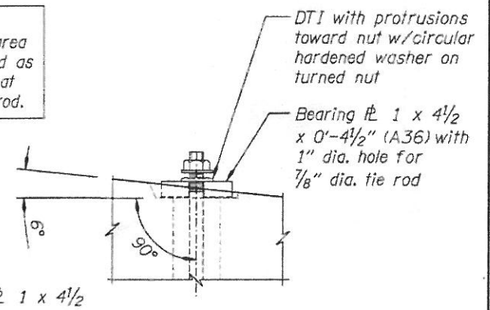
ELEVATION
Scale: ⅜"=1'-0"

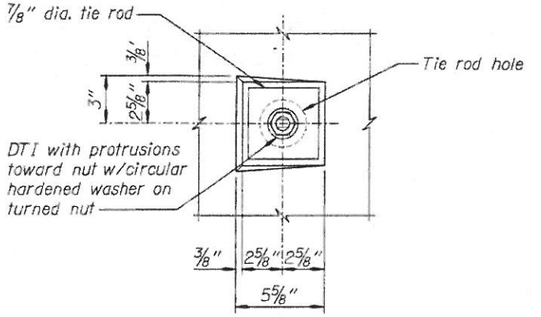


Note:
Form recess bearing area perpendicular to tie rod as shown. Use Detail "8" at tensioning end of tie rod.

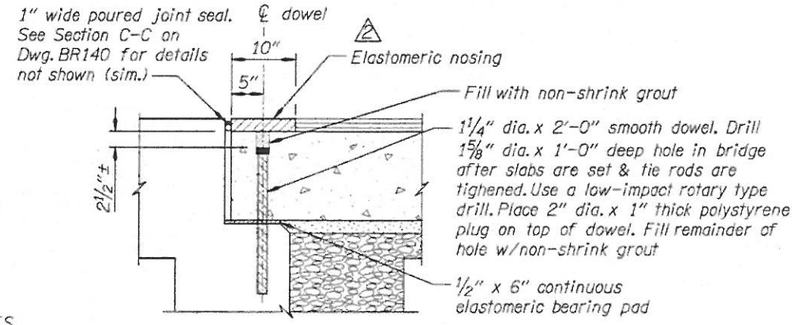


DETAIL "7"
Scale: ⅛"=1'-0"





DETAIL "8"
Scale: ⅛"=1'-0"



WARNING:
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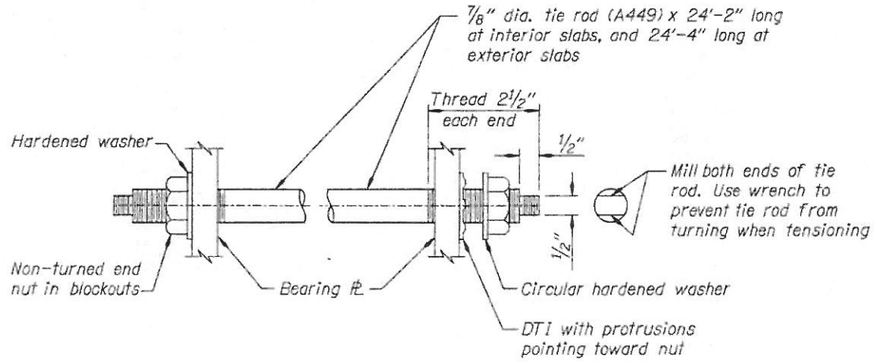
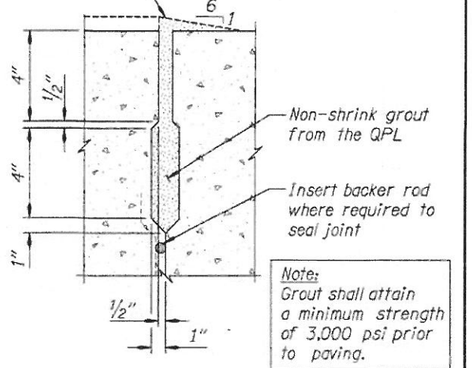
DETAIL 10
Scale: 1"=1'-0"



TIE ROD DETAIL
No Scale



Note:
Grout shall attain a minimum strength of 3,000 psi prior to paving.

KEYWAY GROUT DETAIL
Scale: ⅛"=1'-0"

CI 08-010

△	DATE	REVISION	BY
1	01/11	Revised note	ADH
2	02/11	Added elastomeric nosing	ADH

ACCOMPANIED BY DWGS. See Dwg. 85053 for this structure

DRAFTER: OBEC CAD
DESIGNER:
CHECKER: Peter G. Slocum, P.E., S.E.
REVIEWER: Peter R. Pogter, P.E., S.E.

REGISTERED PROFESSIONAL ENGINEER #10,181 OREGON JULY 13, 2004 ANDREW D. HOWE
EXPIRES: 6/30/2011

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STRUCTURE NO. 21417
DATE December 2010
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HWY 160 OVER WASHINGTON ST.
OR213: I-205-REDLAND ROAD OXING (OREGON CITY)
CASCADE HWY SOUTH MP 0.01
CLACKAMAS COUNTY

PRECAST END PANEL DETAILS

SHEET 18 OF 28
DRAWING NO. 85070

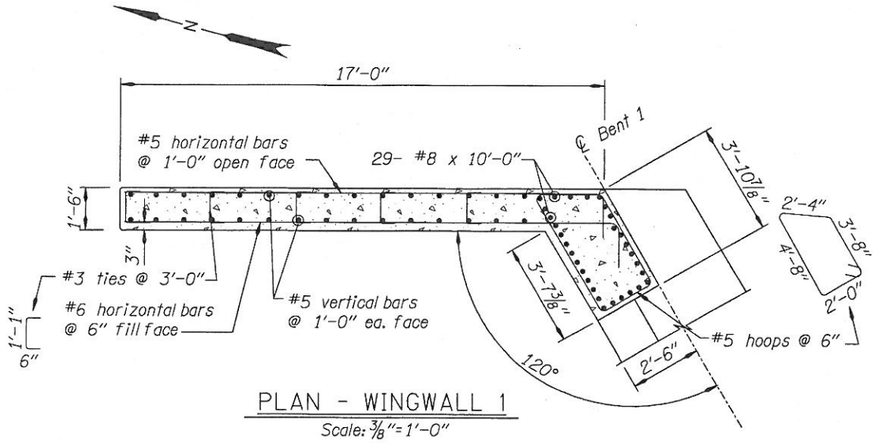
File No. 23320

WARNING:
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

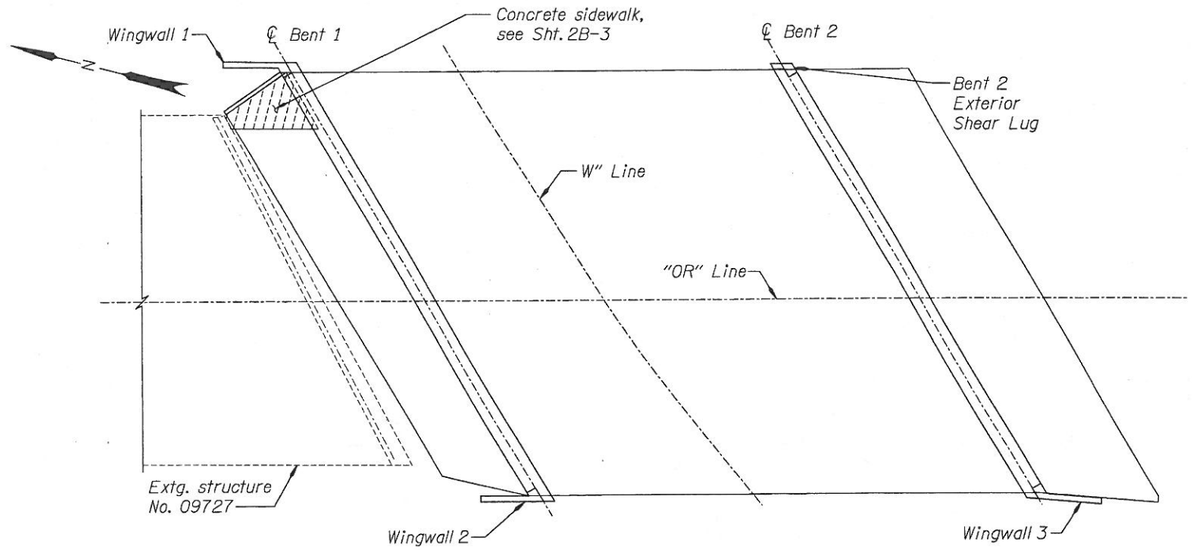
Wingwall Notes:

Pour against undisturbed or compacted material.

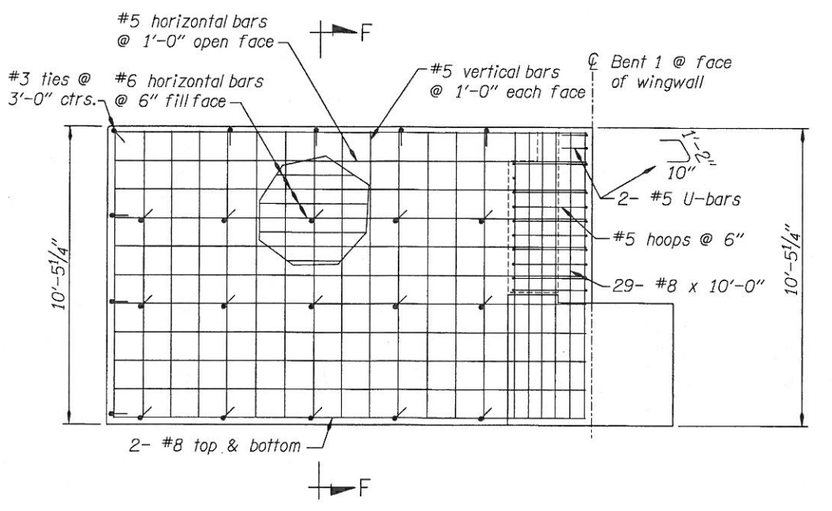
See Dwg. 85072 for Wingwalls 2 and 3.



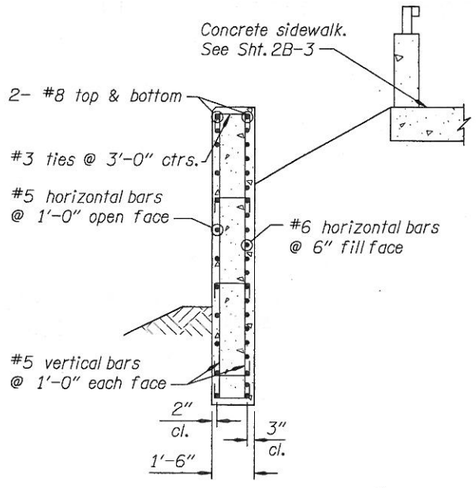
PLAN - WINGWALL 1
Scale: 3/8"=1'-0"



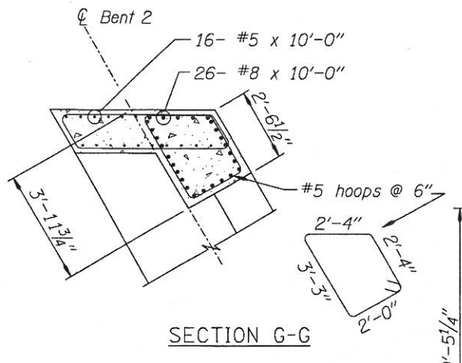
PLAN - WINGWALLS
Scale: 1"=20'



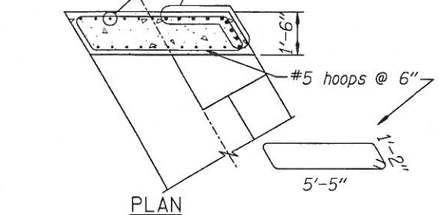
ELEVATION - WINGWALL 1
Scale: 3/8"=1'-0"



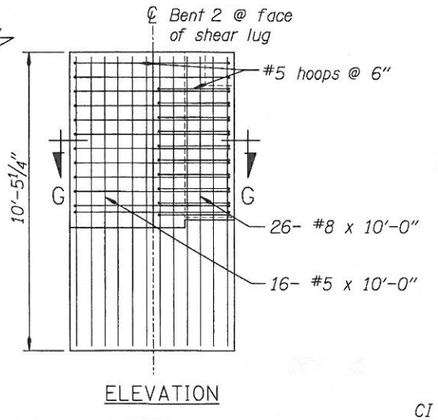
SECTION F-F
Scale: 3/8"=1'-0"



SECTION G-G



PLAN



ELEVATION

BENT 2 EXTERIOR SHEAR LUG
Scale: 3/8"=1'-0"

CI 08-010

	DATE	REVISION	BY

ACCOMPANIED BY DWGS. See Dwg. 85053 for this structure

DRAFTER: OBEC CAD
DESIGNER:
CHECKER: Peter G. Slocum, P.E., S.E.
REVIEWER: Peter R. Pogter, P.E., S.E.

REGISTERED PROFESSIONAL ENGINEER 60,181 OREGON JULY 13, 2004 ANDREW D. HOWE
EXPIRES: 6/30/2011

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831 O'HARE PARKWAY, MEDFORD OREGON 97504-4005
5005 SW MEADOWS ROAD, SUITE 120, LAKE OSWEGO OREGON 97504-4288

STRUCTURE NO. 21417
DATE December 2010
CALC. BOOK 6296

HWY 160 OVER WASHINGTON ST.
OR213: I-205-REDLAND ROAD OXING (OREGON CITY)
CASCADE HWY SOUTH MP 0.01
CLACKAMAS COUNTY

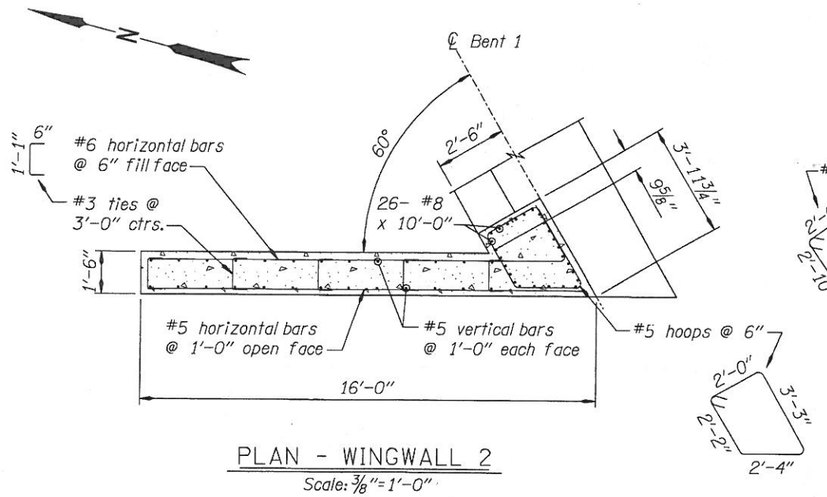
WINGWALL DETAILS - 1

SHEET 19 OF 28
DRAWING NO. 85071

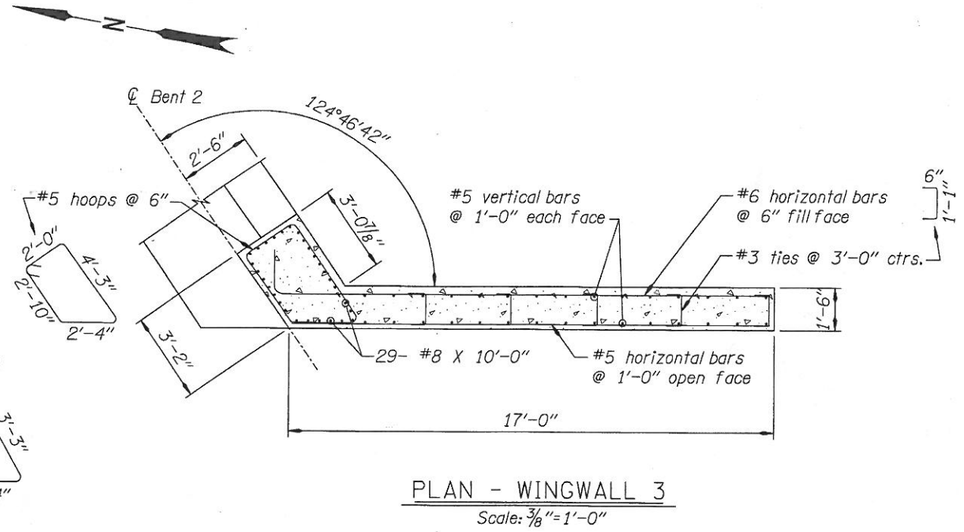
File No. 23321

i:\Projects\0019\0019098\001909803\Cad\Mstation\Final Plans\Bridge 21417\001909803 19 Wingwall Details - 1.dgn 12/20/2010 03:27 PM

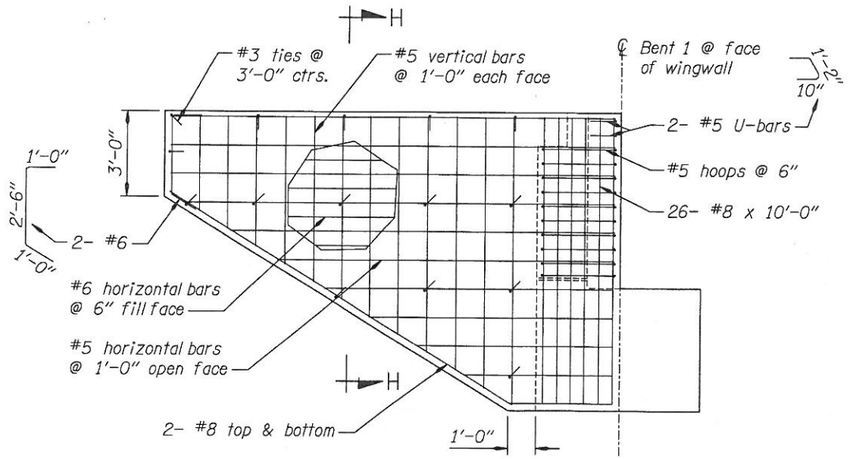
Note:
See Dwg. 85071 for wingwall plan.



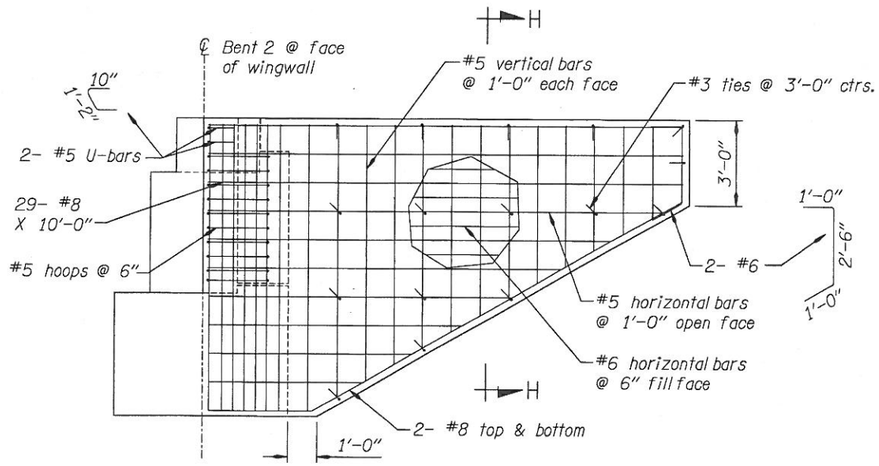
PLAN - WINGWALL 2
Scale: ⅜"=1'-0"



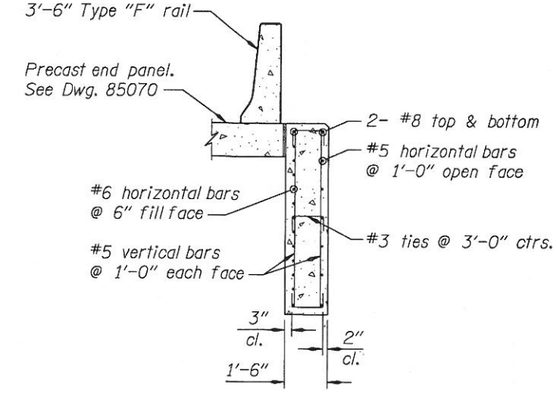
PLAN - WINGWALL 3
Scale: ⅜"=1'-0"



ELEVATION - WINGWALL 2
Scale: ⅜"=1'-0"



ELEVATION - WINGWALL 3
Scale: ⅜"=1'-0"



SECTION H-H
Scale: ⅜"=1'-0"

WARNING:
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

CI 08-010

	DATE	REVISION	BY

ACCOMPANIED BY DWGS. See Dwg. 85053 for this structure

DRAFTER: OBEC CAD
DESIGNER:
CHECKER: Peter G. Slocum, P.E., S.E.
REVIEWER: Peter R. Pogter, P.E., S.E.

REGISTERED PROFESSIONAL ENGINEER 60,181 OREGON JULY 15, 2004 ANDREW D. HOWE
EXPIRES: 6/30/2011

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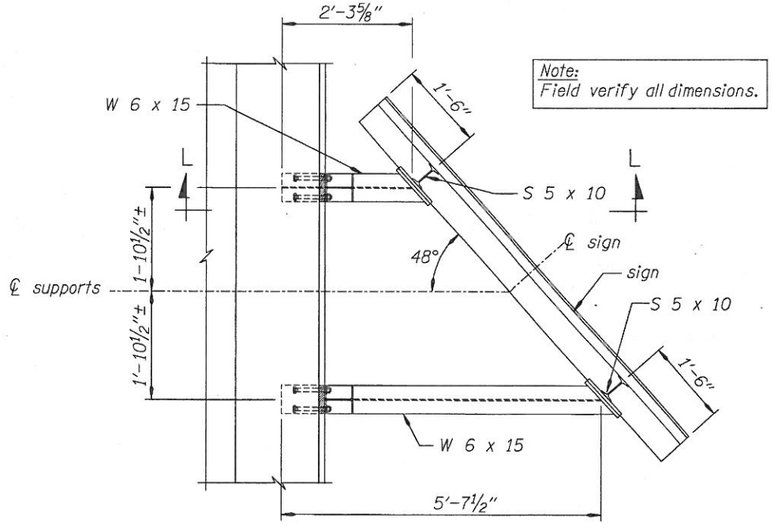
STRUCTURE NO. 21417
DATE December 2010
CALC. BOOK 6296

HWY 160 OVER WASHINGTON ST.
OR213: I-205-REDLAND ROAD OXING (OREGON CITY)
CASCADE HWY SOUTH MP 0.01
CLACKAMAS COUNTY

WINGWALL DETAILS - 2

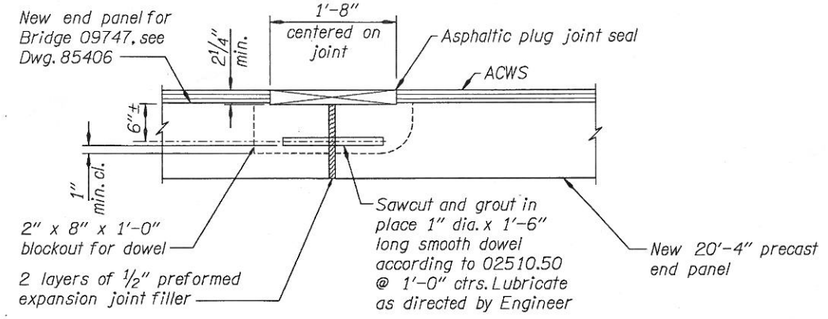
SHEET 20 OF 28
DRAWING NO. 85072

File No. 23322



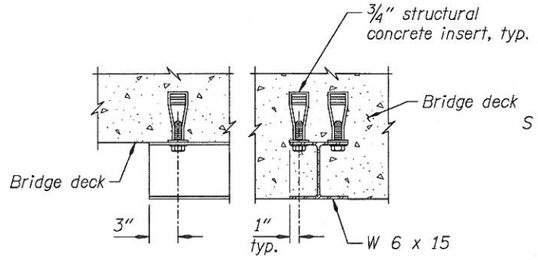
Note:
Field verify all dimensions.

PLAN



END PANEL DETAIL AT PAVING SLAB

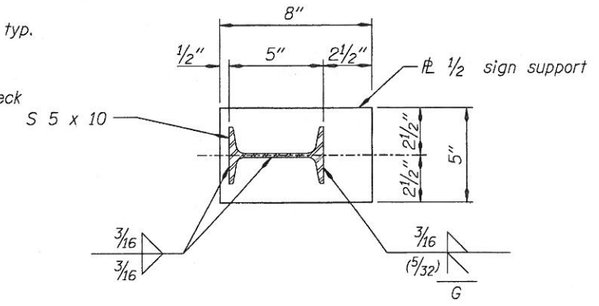
No Scale



ELEVATION SECTION

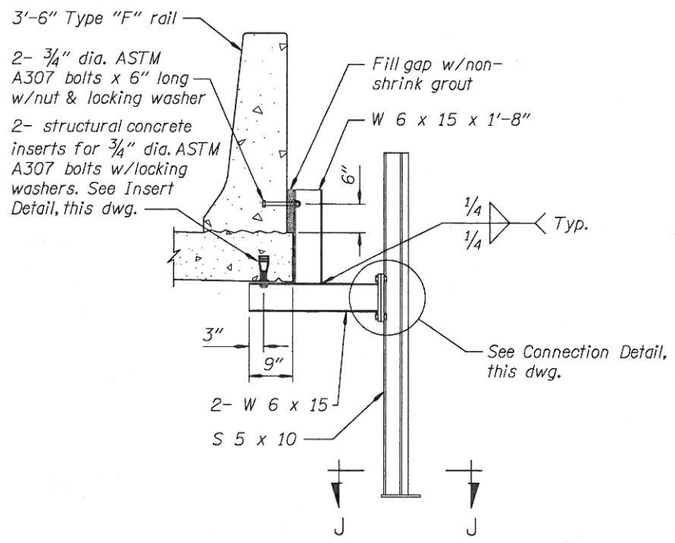
INSERT DETAIL

Scale: 1½"=1'-0"



SECTION J-J

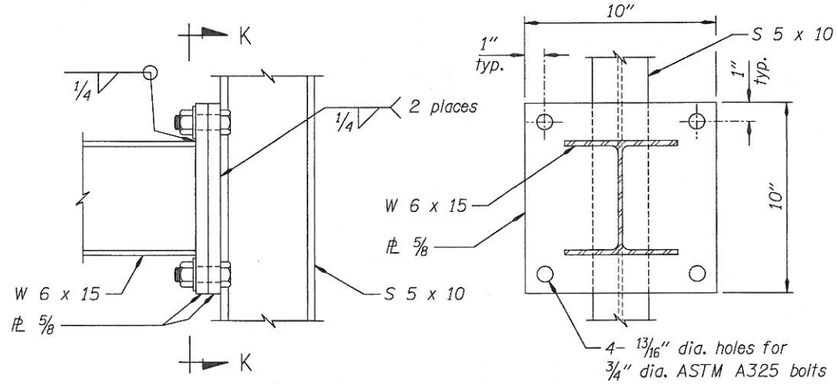
Scale: 3"=1'-0"



SECTION C-C

SIGN MOUNT DETAILS

Scale: ¾"=1'-0"



SECTION K-K

CONNECTION DETAILS

Scale: 3"=1'-0"

WARNING:
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

CI 08-010

	DATE	REVISION	BY

ACCOMPANIED BY DWGS. See Dwg. 85053 for this structure

DRAFTER: OBEC CAD
DESIGNER:
CHECKER: Peter G. Slocum, P.E., S.E.
REVIEWER: Peter R. Pagter, P.E., S.E.

REGISTERED PROFESSIONAL ENGINEER 60.101 OREGON JULY 13, 2004 ANDREW D. HOWE

EXPIRES: 6/30/2011

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5005 SW MEADOWS ROAD, SUITE 120, LAKE OSWEGO OREGON 97504-4288

STRUCTURE NO. 21417
DATE December 2010
CALC. BOOK 6296

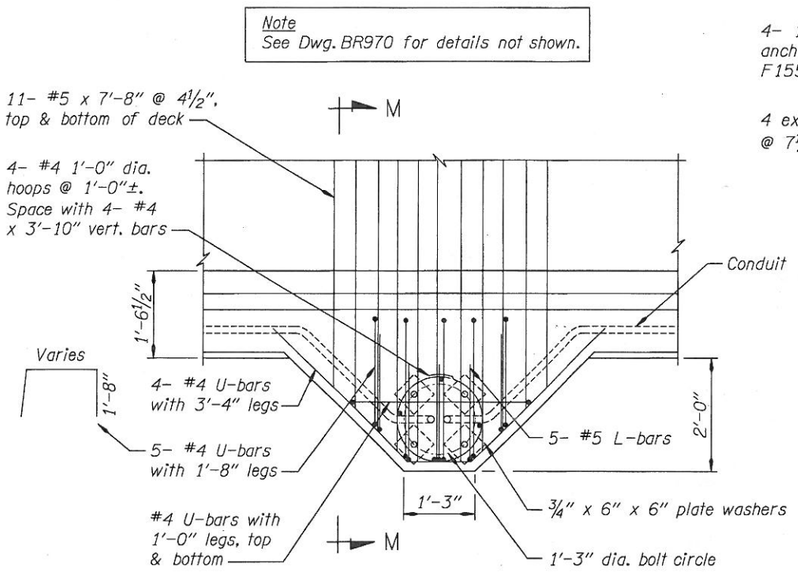
HWY 160 OVER WASHINGTON ST.
OR213: I-205-REDLAND ROAD OXING (OREGON CITY)
CASCADE HWY SOUTH MP 0.01
CLACKAMAS COUNTY

MISCELLANEOUS DETAILS - 1

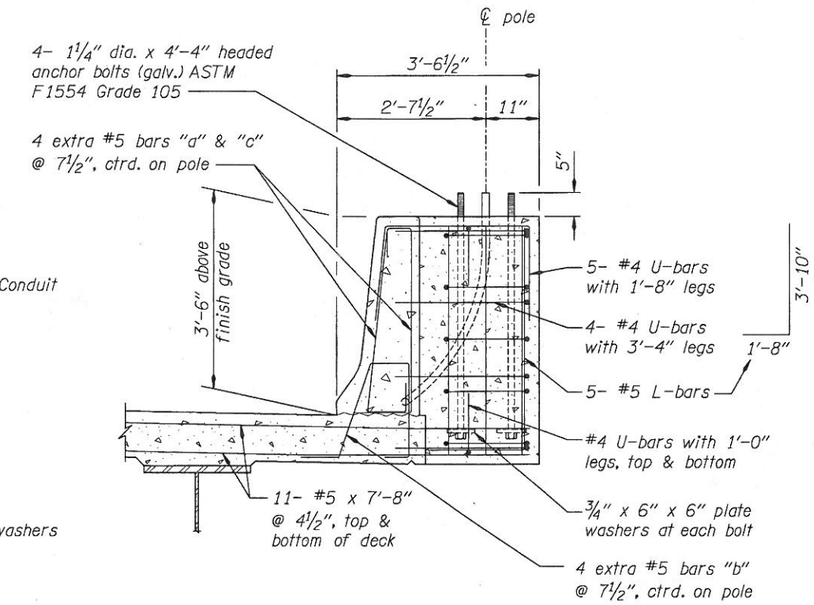
SHEET 21 OF 28
DRAWING NO. 85073

File No. 23323

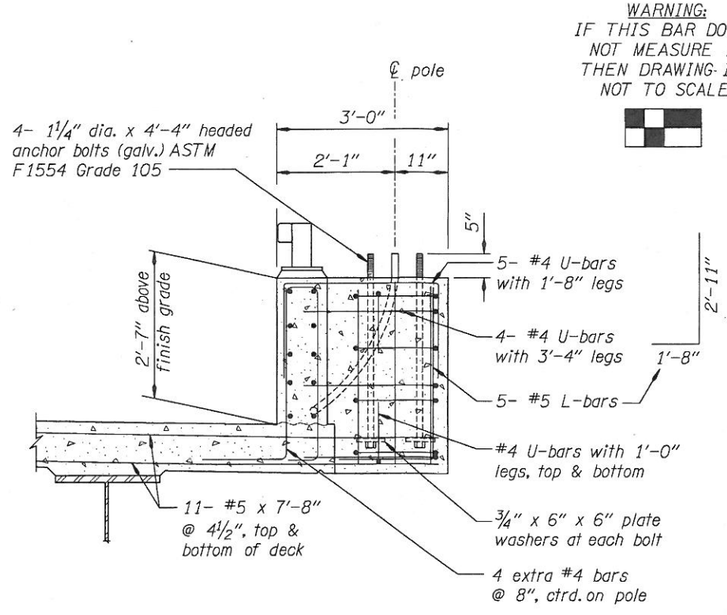
Note
See Dwg. BR970 for details not shown.



LUMINAIRE SUPPORT DETAILS
Scale: ¾"=1'-0"



"F" RAIL

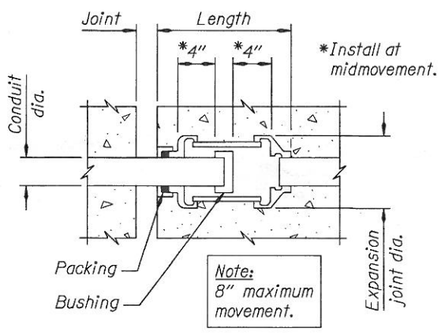


FLUSH MOUNTED COMBINATION RAIL

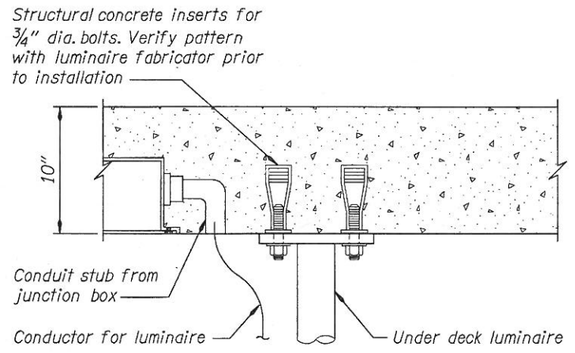
SECTION M-M
Scale: ¾"=1'-0"

Conduit Nominal Dia.	Conduit Expansion Joint	
	Nominal Dia.	Length
¾"	2¼"	1'-0"
1"	2½"	1'-0"
1¼"	3"	1'-0"
1½"	3½"	1'-0½"
2"	4"	1'-0½"

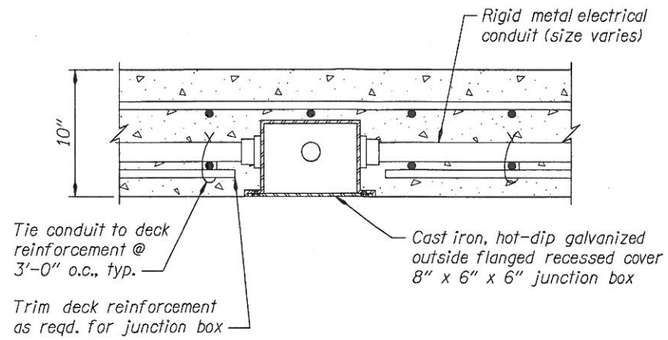
Note:
Conduit expansion joint lengths and diameters shown are approximate only. See manufacturer's literature for exact dimensions. Design movement may be increased or decreased as required.



ELECTRICAL CONDUIT EXPANSION JOINT
No Scale



UNDER DECK LUMINAIRE SUPPORT DETAIL
No Scale



BOTTOM OPENING JUNCTION BOX
No Scale

CI 08-010

△	DATE	REVISION	BY

ACCOMPANIED BY DWGS. See Dwg. 85053 for this structure

DRAFTER: OBEC CAD
DESIGNER:
CHECKER: Peter G. Slocum, P.E., S.E.
REVIEWER: Peter R. Pogter, P.E., S.E.

REGISTERED PROFESSIONAL ENGINEER 60181 OREGON JULY 13, 2004 ANDREW D. HOWE
EXPIRES: 6/30/2011

OREGON DEPARTMENT OF TRANSPORTATION

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831 O'HARE PARKWAY, MEDFORD OREGON 97504-4005
5005 SW MEADOWS ROAD, SUITE 120, LAKE OSWEGO OREGON 97504-4288

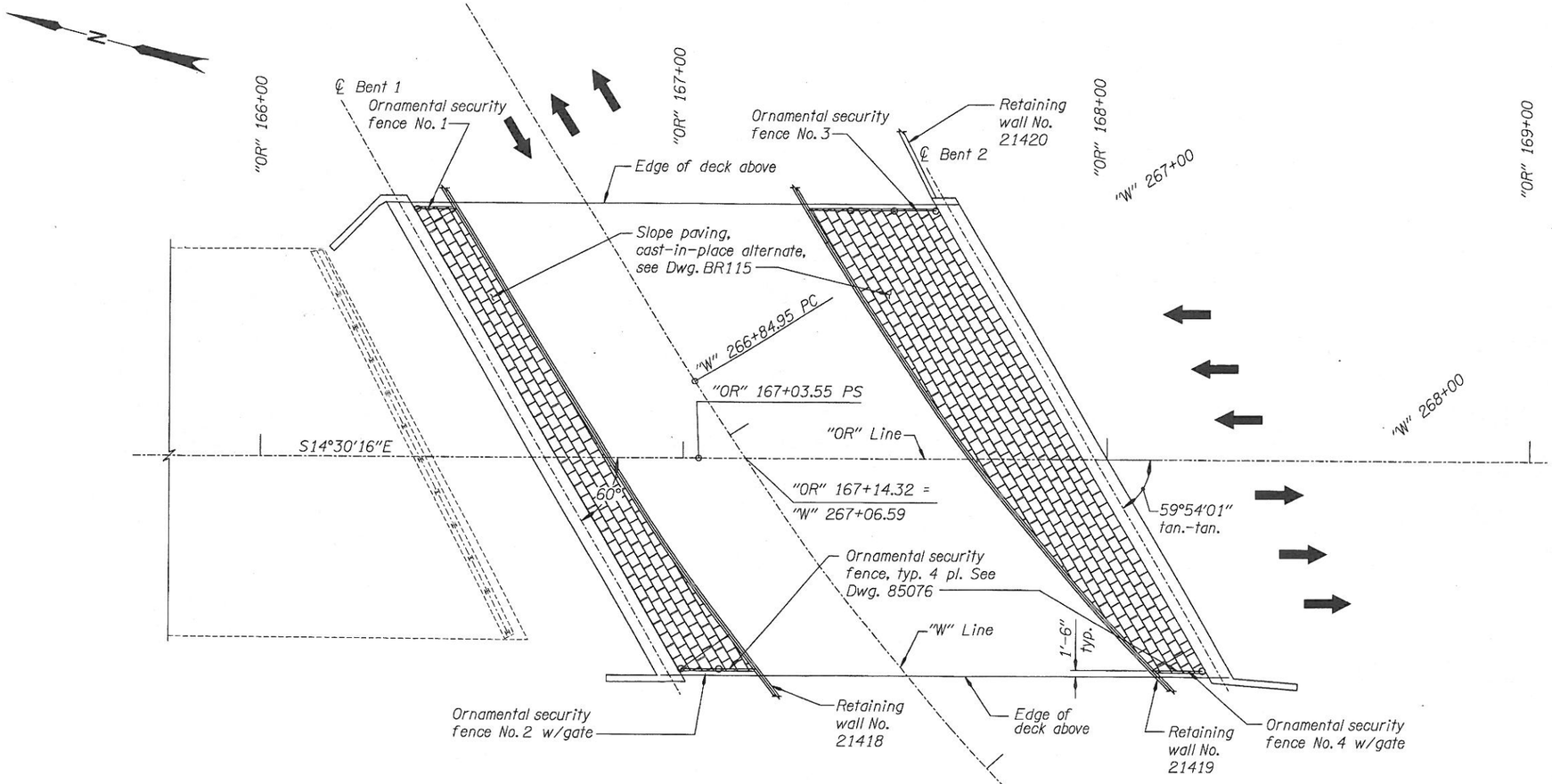
STRUCTURE NO. 21417
DATE December 2010
CALC. BOOK 6296

HWY 160 OVER WASHINGTON ST.
OR213: I-205-REDLAND ROAD OXING (OREGON CITY)
CASCADE HWY SOUTH MP 0.01
CLACKAMAS COUNTY

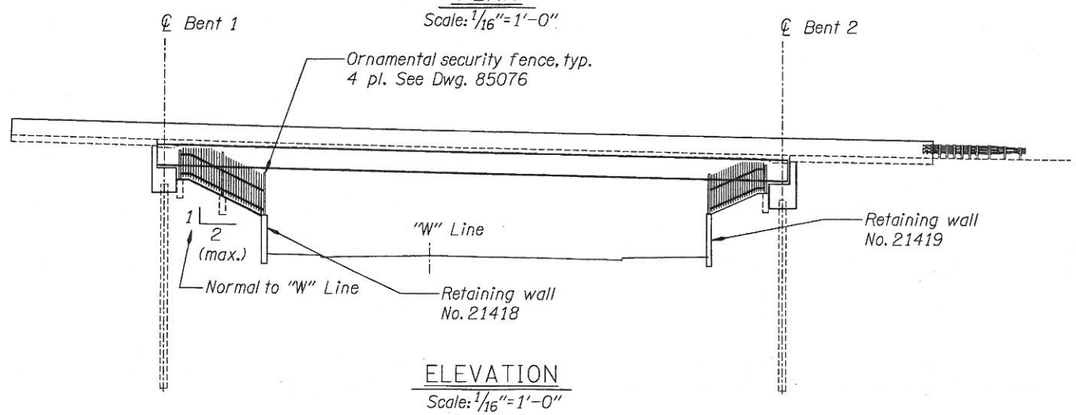
MISCELLANEOUS DETAILS - 2

SHEET 22 OF 28
DRAWING NO. 85074

File No. 23324



PLAN
Scale: 1/16"=1'-0"



ELEVATION
Scale: 1/16"=1'-0"

Note:
See Dwg. 85076 for security fencing details.

WARNING:
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

CI 08-010

△	DATE	REVISION	BY

ACCOMPANIED BY DWGS. See Dwg. 85053 for this structure

DRAFTER: OBEC CAD
DESIGNER:
CHECKER: Peter G. Slocum, P.E., S.E.
REVIEWER: Peter R. Pagter, P.E., S.E.

REGISTERED PROFESSIONAL ENGINEER 80,181 OREGON JULY 19, 2004 ANDREW D. HOWE
EXPIRES: 6/30/2011

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5005 SW MEADOWS ROAD, SUITE 120, LAKE OSWEGO OREGON 97504-4288

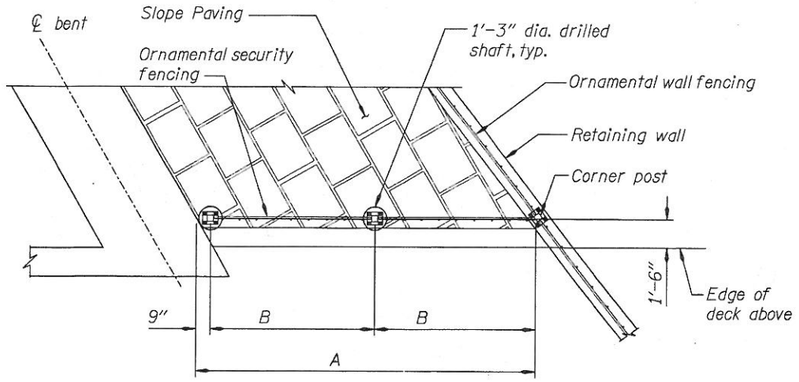
STRUCTURE NO. 21417
DATE December 2010
CALC. BOOK 6296

HWY 160 OVER WASHINGTON ST.
OR213: I-205-REDLAND ROAD OXING (OREGON CITY)
CASCADE HWY SOUTH MP 0.01
CLACKAMAS COUNTY

SLOPE PAVING DETAILS

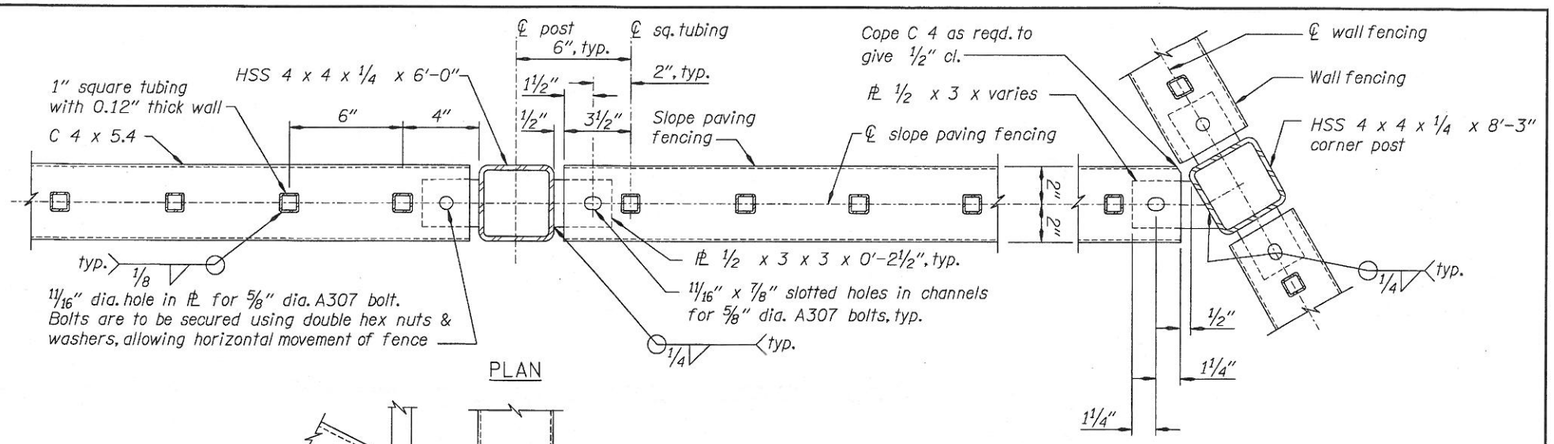
SHEET 23 OF 28
DRAWING NO. 85075

File No. 23325

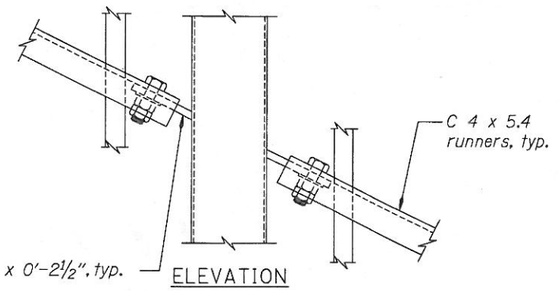


PLAN-TYPICAL ORNAMENTAL SECURITY FENCE

Scale: 1/4"=1'-0"



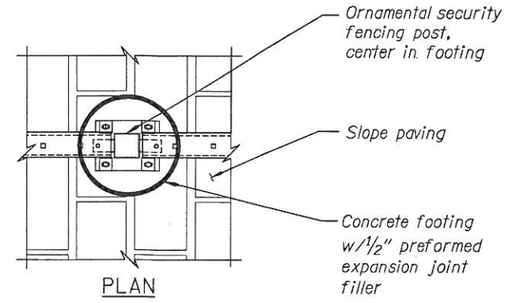
PLAN



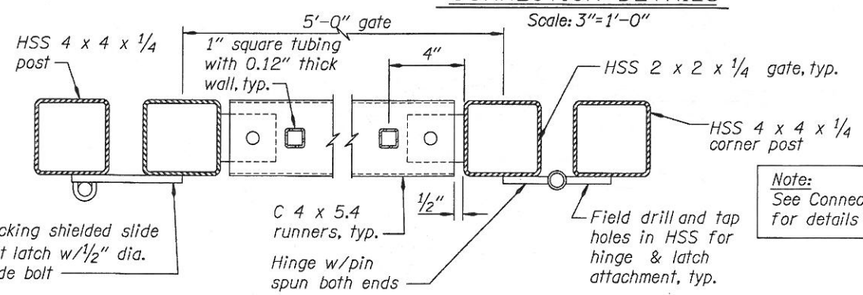
ELEVATION

CONNECTION DETAILS

Scale: 3"=1'-0"



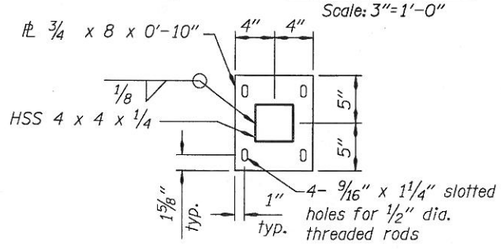
PLAN



Note:
See Connection Details for details not shown.

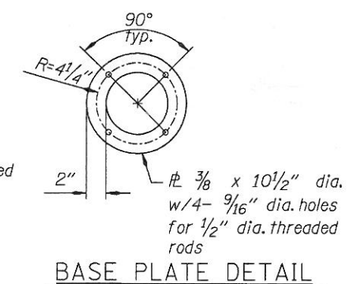
GATE DETAIL

Scale: 3"=1'-0"



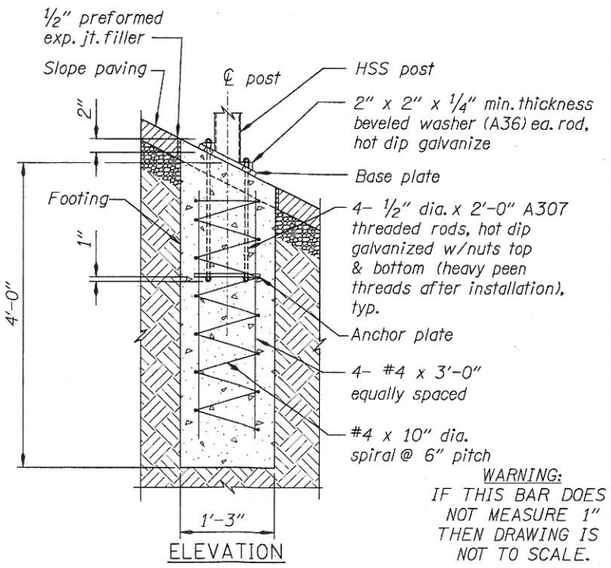
ANCHOR PLATE DETAIL

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



BASE PLATE DETAIL

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

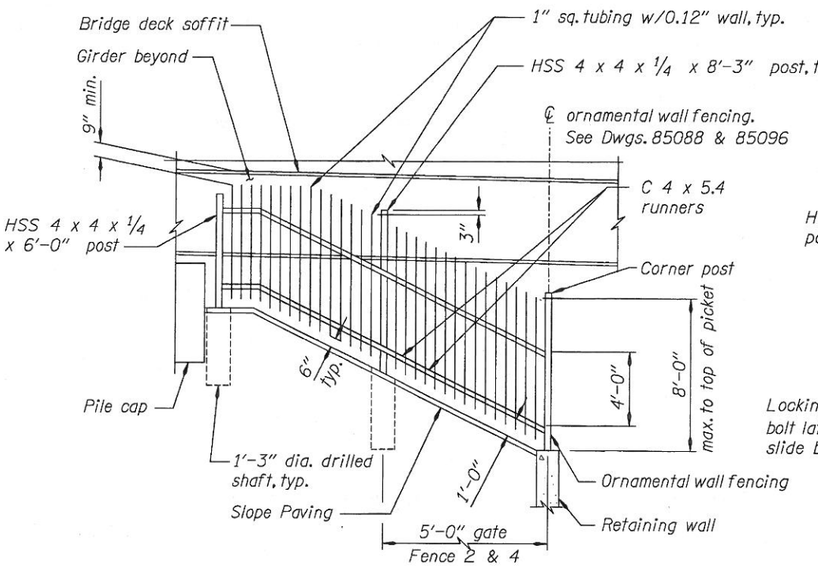


ELEVATION

WARNING:
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

CONCRETE FOOTING DETAILS

Scale: 1"=1'-0"



ELEVATION-TYPICAL ORNAMENTAL SECURITY FENCE

Scale: 1/4"=1'-0"

*Fence No.	Length "A"	No. of footings	Footing Spacing "B"	Gate
1	9'-2"	1	-	No
2	17'-9"	2	8'-6"	Yes
3	30'-0"	3	10'-0"	No
4	11'-10"	1	-	Yes

*See Dwg. 85075

△	DATE	REVISION	BY

ACCOMPANIED BY DWGS. See Dwg. 85053 for this structure

DRAFTER: OBEC CAD
DESIGNER:
CHECKER: Peter G. Slocum, P.E., S.E.
REVIEWER: Peter R. Pogter, P.E., S.E.

REGISTERED PROFESSIONAL ENGINEER 60,181 OREGON JULY 12, 2004 ANDREW D. HOWE
EXPIRES: 6/30/2011

OREGON DEPARTMENT OF TRANSPORTATION

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5005 SW MEADOWS ROAD, SUITE 120, LAKE OSWEGO OREGON 97504-4288

STRUCTURE NO. 21417
DATE December 2010
CALC. BOOK 6296

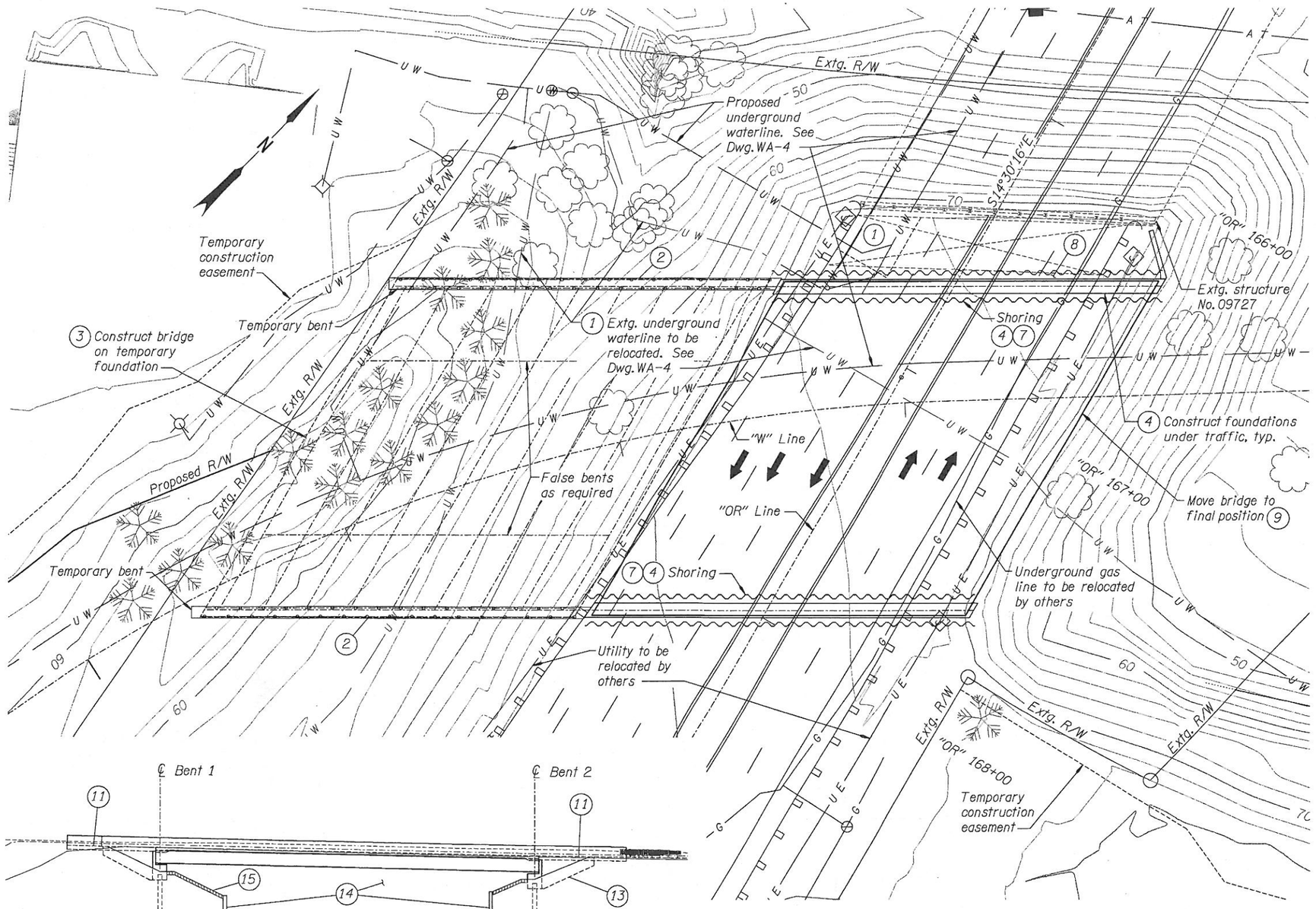
HWY 160 OVER WASHINGTON ST.
OR213: I-205-REDLAND ROAD OXING (OREGON CITY)
CASCADE HWY SOUTH MP 0.01
CLACKAMAS COUNTY

ORNAMENTAL SECURITY FENCE DETAILS

SHEET 24 OF 28
DRAWING NO. 85076

CI 08-010

File No. 23326



ELEVATION
Scale: 1"=20'

SITE PLAN
Scale: 1"=20'

Notes:

Design temporary foundations in accordance with the "AASHTO Guide Design Specifications for Bridge Temporary Works" except as noted.

Design driven piles and spread footings in accordance with the "AASHTO Standard Specifications for Highway Bridges".

Provide jacking systems as required with a minimum working capacity of 150% of the calculated load.

See Dwg. 85079 for foundation construction details.

Construction Sequence:

Preparatory Work:

(1) Relocate waterline.

(2) Construct temporary foundations.

(3) Construct bridge on temporary foundations.

(4) Construct permanent foundations under traffic. See sequence on Dwg. 85079.

Under Closure:

(5) Remove temporary slabs and support beams.

(6) Perform excavation for new bridge.

(7) Remove temporary shoring.

(8) Remove required portion of existing paving slab at existing structure No. 09727.

(9) Move bridge into position and place on permanent bearings.

(10) Backfill behind abutments. Place pipes for utilities as shown.

(11) Place end panels.

(12) Place ACWS on end panels and approach roadway as required.

After Bridge Installation:

(13) Complete abutment construction.

(14) Excavate under bridge and construct soil nail walls.

(15) Install slope paving.

(16) Install security fence.

(17) Install median barrier on bridge.

WARNING:
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

CI 08-010

△	DATE	REVISION	BY

ACCOMPANIED BY DWGS. See Dwg. 85053 for this structure

DRAFTER: OBEC CAD
DESIGNER:
CHECKER: Peter G. Slocum, P.E., S.E.
REVIEWER: Peter R. Pagter, P.E., S.E.

REGISTERED PROFESSIONAL ENGINEER 60,181 OREGON JULY 13, 2004 ANDREW D. HOWE
EXPIRES: 6/30/2011

OREGON DEPARTMENT OF TRANSPORTATION

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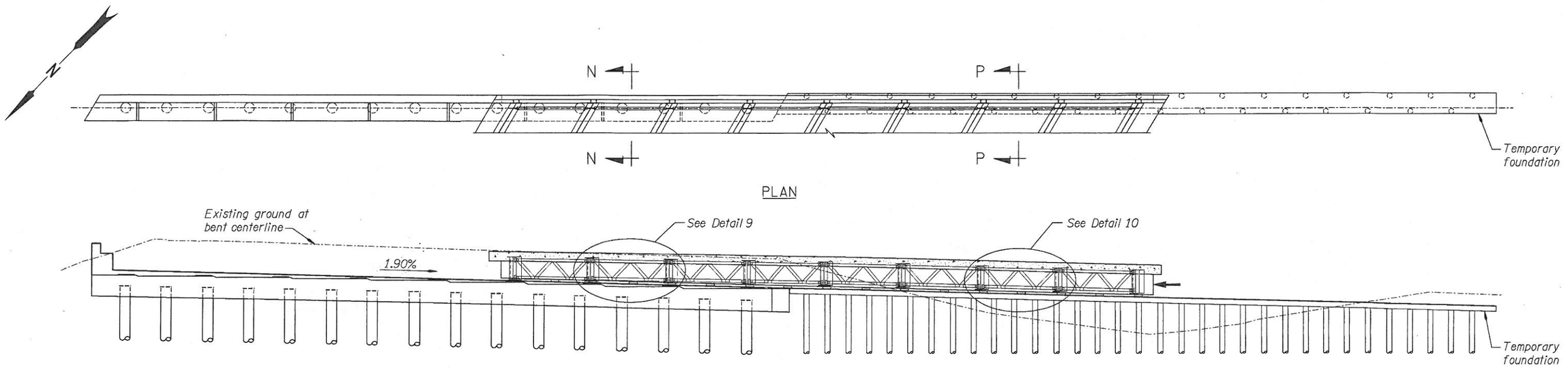
STRUCTURE NO. 21417
DATE December 2010
CALC. BOOK 6296

HWY 160 OVER WASHINGTON ST.
OR213: I-205-REDLAND ROAD OXING (OREGON CITY)
CASCADE HWY SOUTH MP 0.01
CLACKAMAS COUNTY

BRIDGE MOVING SITE PLAN

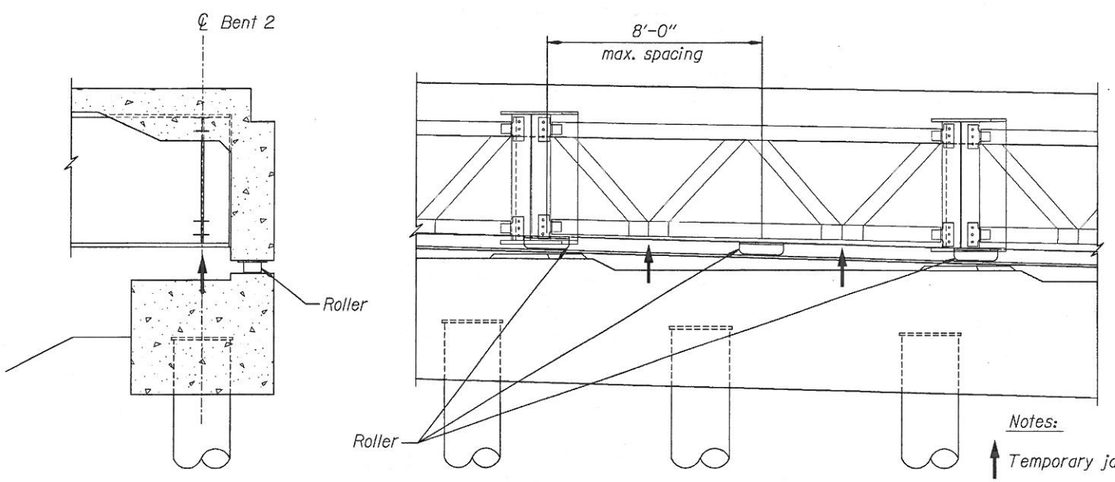
SHEET 25 OF 28
DRAWING NO. 85077

File No. 23327



BRIDGE INSTALLATION DETAILS (BENT 2 SHOWN)

Scale: 1"=10'



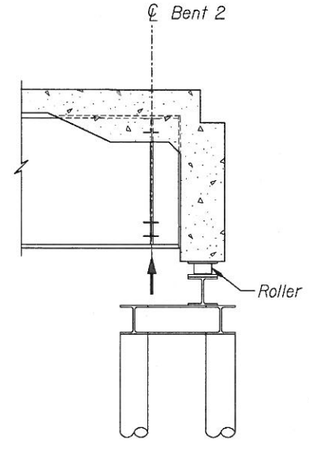
SECTION N-N
Scale: 3/8"=1'-0"

DETAIL 9
Scale: 3/8"=1'-0"

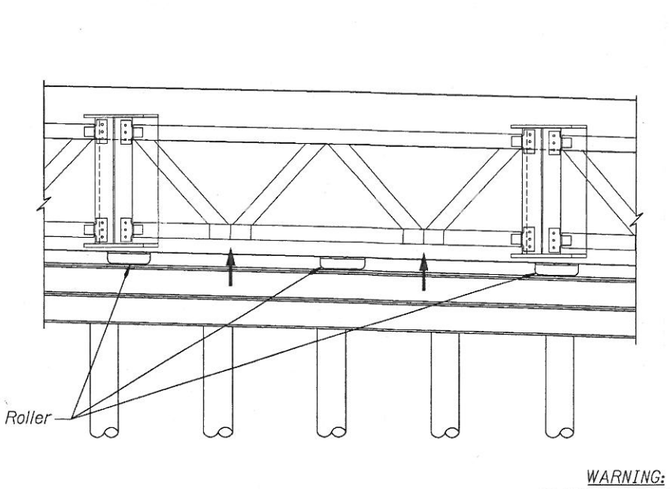
Notes:

↑ Temporary jacking location.

Approximate service load jacking forces assuming 16 vertical jacks and 1 horizontal jack per bent:
Vertical: 100 kips.
Horizontal: 42 kips.



SECTION P-P
Scale: 3/8"=1'-0"



DETAIL 10
Scale: 3/8"=1'-0"

WARNING:
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

CI 08-010

△	DATE	REVISION	BY

ACCOMPANIED BY DWGS. See Dwg. 85053 for this structure

DRAFTER: OBEC CAD
DESIGNER:
CHECKER: Peter G. Slocum, P.E., S.E.
REVIEWER: Peter R. Pegter, P.E., S.E.

REGISTERED PROFESSIONAL ENGINEER 60,181 OREGON JULY 13, 2004 ANDREW D. HOWE
EXPIRES: 6/30/2011

OREGON DEPARTMENT OF TRANSPORTATION

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831 CHARE PARKWAY, MEDFORD OREGON 97504-4005
5005 SW MEADOWS ROAD, SUITE 120, LAKE OSWEGO OREGON 97504-4288

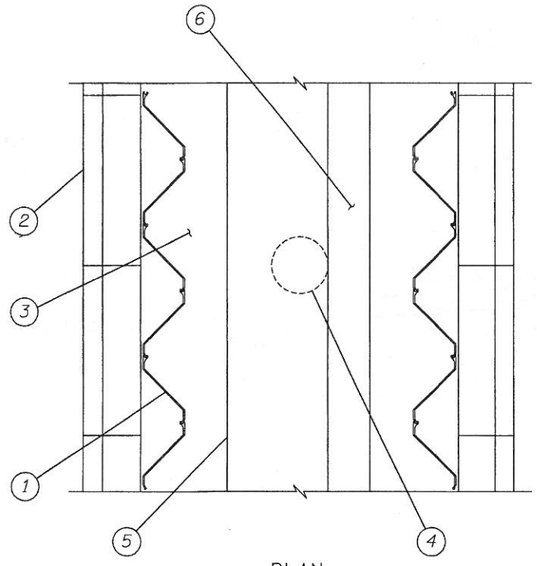
STRUCTURE NO. 21417
DATE December 2010
CALC. BOOK 6296

HWY 160 OVER WASHINGTON ST.
OR213: I-205-REDLAND ROAD OXING (OREGON CITY)
CASCADE HWY SOUTH MP 0.01
CLACKAMAS COUNTY

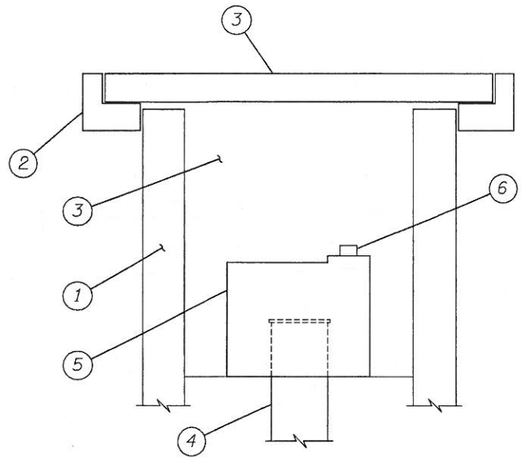
BRIDGE MOVING DETAILS - 1

SHEET 26 OF 28
DRAWING NO. 85078

File No. 23328



PLAN



ELEVATION

FOUNDATION CONSTRUCTION

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

Foundation Construction Sequence:

Under nightly lane closures in stages:

(1) *Install shoring. Remove existing paving slab at existing structure No. 09727. Repair pavement as required prior to reopening lane to traffic.*

(2) *Install temporary slab support beams. Repair pavement as required prior to reopening lane to traffic.*

(3) *Excavate for pile cap and install temporary slabs.* Stagger joints 2'-0" min. from joints between support beam segments.*

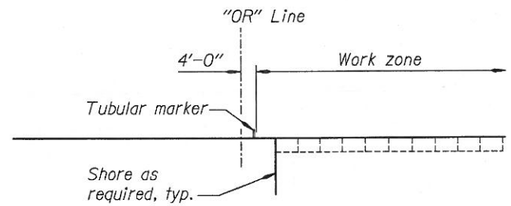
(4) *Drive piles.**

(5) *Construct pile cap* (excluding west wingwalls and shear blocks).*

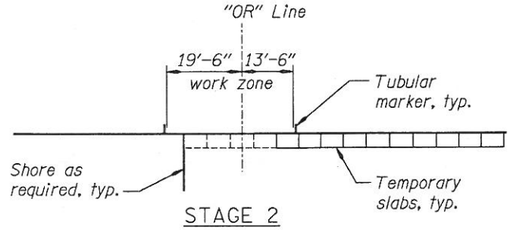
(6) *Install roller system.**

**Remove and reinstall temporary slabs nightly as required.*

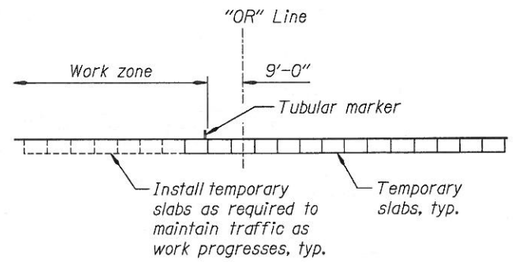
Note:
Work Zones shown available during night lane closures only. See Traffic Control Plans for full details.



STAGE 1



STAGE 2



STAGE 3

FOUNDATION CONSTRUCTION STAGING

No Scale

WARNING:
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ACCOMPANIED BY DWGS. See Dwg. 85053 for this structure

DRAFTER: OBEC CAD
DESIGNER:
CHECKER: Peter G. Slocum, P.E., S.E.
REVIEWER: Peter R. Pagter, P.E., S.E.

REGISTERED PROFESSIONAL ENGINEER 60,181 OREGON JULY 15, 2004 ANDREW D. HOWE
EXPIRES: 6/30/2011

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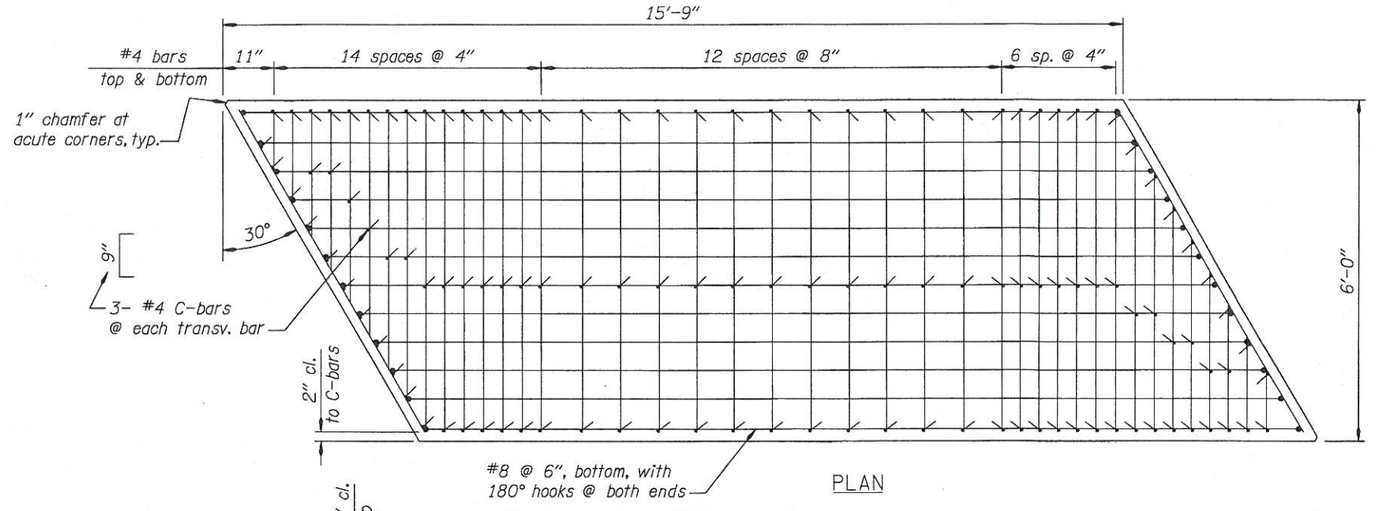
STRUCTURE NO. 21417
DATE December 2010
CALC. BOOK 6296

HWY 160 OVER WASHINGTON ST.
OR213: I-205-REDLAND ROAD OXING (OREGON CITY)
CASCADE HWY SOUTH MP 0.01
CLACKAMAS COUNTY

BRIDGE MOVING DETAILS - 2

SHEET 27 OF 28
DRAWING NO. 85079

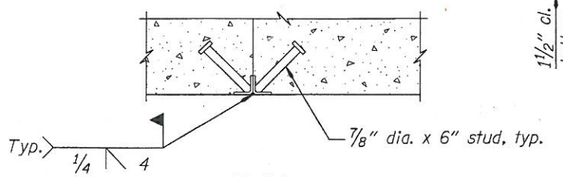
File No. 23329



PRECAST TEMPORARY SLAB DETAILS

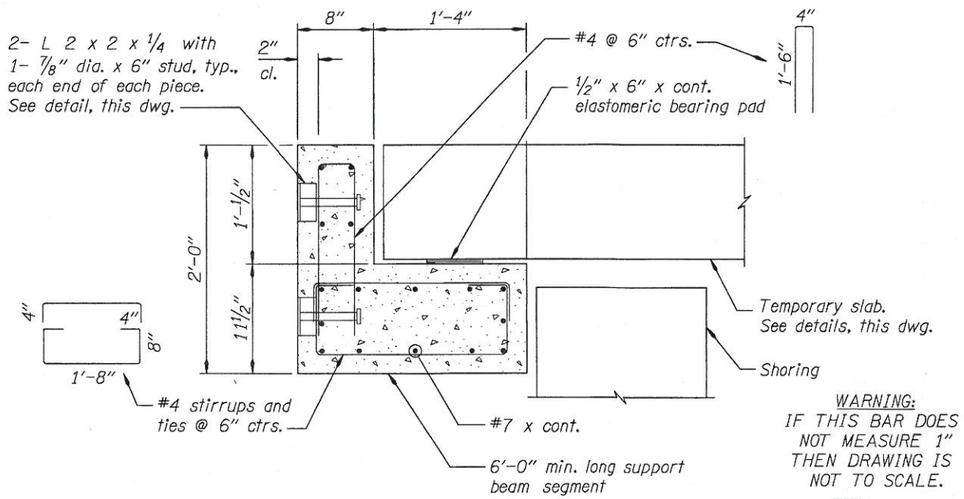
Scale: 3/4"=1'-0"

Note:
Contractor shall determine and be responsible for lifting and handling design and details.



SUPPORT BEAM CONNECTION DETAILS

Scale: 1½"=1'-0"



PRECAST TEMPORARY SLAB SUPPORT BEAM DETAIL

Scale: 1½"=1'-0"

CI 08-010

	DATE	REVISION	BY

ACCOMPANIED BY DWGS. See Dwg. 85053 for this structure

DRAFTER: OBEC CAD
DESIGNER:
CHECKER: Peter G. Slocum, P.E., S.E.
REVIEWER: Peter R. Pagter, P.E., S.E.

REGISTERED PROFESSIONAL ENGINEER 60,181 OREGON JULY 13, 2004 ANDREW D. HOWE
EXPIRES: 6/30/2011

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STRUCTURE NO. 21417
DATE December 2010
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HWY 160 OVER WASHINGTON ST.
OR213: I-205-REDLAND ROAD OXING (OREGON CITY)
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CLACKAMAS COUNTY

BRIDGE MOVING DETAILS - 3

SHEET 28 OF 28
DRAWING NO. 85080

File No. 23330