CITY OF KIRKLAND
TOTEM LAKE CONNECTOR – ISSUE FOR BID
JOB NO. 01-20-PW

DECEMBER 06, 2019

CITY OFFICIALS

CONTACT PERSONNEL

KIRKLAND

PROJECT SITE

PEDESTRIAN OVERPASS SITE

NAME
WASTE WATER TREATMENT DIVISION

PHONE
206-477-5414
<table>
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GENERAL STRUCTURAL NOTES:

1. CONSTRUCTION NOTES:

1.1 GENERAL:

1.1.1 SHEET:

1.1.2 ITEM TO BE INSTALLED ONLY AS TYPICAL.

1.1.3 ITEM NOT REQUIRED UNDER THIS CONTRACT.

1.1.4 MANUFACTURER APPROVED HARDWARE SHALL BE USED.

1.1.5 DISC BEARINGS SHALL CONFORM TO SPECIAL.

1.1.6 BEARS.

1.1.7 P2-P6, AND PEDESTALS OF PIERS P7-P11 SHALL BE CAST-IN-PLACE CONCRETE.

1.1.8 LEVELING COURSE - TYPE I, GRADE 3

1.1.9 BONDING AGENT - TYPE IV, GRADE 1,

1.1.10 MIDCOAT: POLYAMIDE HIGH PERFORMANCE EPOXY

1.1.11 TOPCOAT: ALIPHATIC POLYURETHANE

1.2 DESIGN CODES:

1.2.1 ASHRAE: JUNIOR 5, GRADE 2

1.2.2 NATIONAL FIRE PROTECTION ASSOCIATION:

1.3 DESIGN LOADS:

1.3.1 DEAD LOAD

1.3.2 LIVE LOAD (UNFACTORED)

1.3.3 BRIDGE CLASSIFICATION: OTHER BRIDGE

1.3.4 VEHICULAR COLLISION LOAD

1.3.5 UNIFORM TEMPERATURE LOAD

1.3.6 BRIDGE DESIGN LIFE: 75 YEARS

1.4 PERFORMANCE LEVEL:

1.5.1 BELOW GIRDING STRUCTURAL CORROSION LOSS RATES FOR NON-AGGRESSIVE FLL (PER ORM 3.10.2.2):

1.5.2 CONCRETE CLASS:

1.6 ALL UNITS ARE IN FEET WITH A REFERENCE CONSTRUCTION TEMPERATURE OF 70°F UNLESS NOTED OTHERWISE.

1.7 DEFINITIONS:

1.7.1 BF:

1.7.2 C:

1.7.3 D:

1.7.4 E:

1.7.5 F:

1.7.6 H:

1.7.7 I:

1.7.8 J:

1.7.9 K:

1.7.10 L:

1.7.11 M:

1.7.12 N:

1.7.13 O:

1.7.14 P:

1.7.15 Q:

1.7.16 R:

1.7.17 S:

1.7.18 T:

1.7.19 U:

1.7.20 V:

1.7.21 W:

1.7.22 X:

1.7.23 Y:

1.7.24 Z:

1.8.1 EXPOSED FACES OF ABUTMENTS A 1 AND A 12, PIERS B 11, ALL OTHER CAST-IN-PLACE CONCRETE SHALL BE CAST-IN-PLACE CONCRETE.

1.8.2 EXPOSED FACES OF STUDS AND HANGERS, ALL OTHER CAST-IN-PLACE CONCRETE SHALL BE CAST-IN-PLACE CONCRETE.

1.8.3 EXPOSED FACES OF STUDS AND HANGERS, ALL OTHER CAST-IN-PLACE CONCRETE SHALL BE CAST-IN-PLACE CONCRETE.

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1.8.23 EXPOSED FACES OF STUDS AND HANGERS, ALL OTHER CAST-IN-PLACE CONCRETE SHALL BE CAST-IN-PLACE CONCRETE.
1. For general structural notes, see DWG TLC-S-101.
2. Azimuth is measured as a positive angle clockwise from north.
3. Elevations and dimensions in these plans are calculated from a 2017-2018 field survey by Gallaway. The contractors shall verify all the dependent dimensions in the field.
4. This information has been assembled on the city of Kirkland geographic information system. Data provided herein is derived from a number of sources with varying levels of accuracy. The city of Kirkland disclaims any responsibility for the accuracy or completeness of information contained herein.
5. Project location: King County, section 12, township 26 north, range 5 east.
7. Future works shown along Totem Lake Blvd. are part of the Comfort Inn Pond Stormwater Bypass Project and may be completed prior to the start of construction for this project.
8. Future storm sewer and outfall are part of the Comfort Inn Pond stormwater bypass project and may be completed prior to the start of construction for this project.
9. Future underground power lines and PSE poles along east side of DVG row may be completed prior to the start of construction for this project.
TLC-S-105 TABLE 1: PAVEMENT/GRAVEL INTERFACE LOCATIONS

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* SEE PAVED SURFACE TRANSITION DETAIL ON DWG TLC-S-115.

TLC-S-105 TABLE 2: LUMINAIRE LOCATIONS

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* ADJUST AS REQUIRED TO AVOID CONFLICT WITH RAILING FOOTINGS.

NOTES:

1. FOR GENERAL STRUCTURAL NOTES, SEE DRAWING TLC-S-101.
2. GRAVEL SHOULDERS SHALL BE 4" THICK CRUSHED SURFACE TOP COURSE.

GENERAL ARRANGEMENT - SHEET 1
NOTES:
1. FOR GENERAL STRUCTURAL NOTES SEE DWG TLC-S-101.
2. FUTURE SANITARY SEWER FORCE MAIN NOT SHOWN.
1. FOR GENERAL STRUCTURAL NOTES SEE DWG TLC-S-101.
2. ALL DRILLING OPERATIONS FOR DRILLED SHAFT FOUNDATIONS SCHEDULED ON THIS SHEET SHALL BE MONITORED BY THE RESIDENT ENGINEER.
3. THESE NOTES PERTAIN ONLY TO THE DRILLED SHAFT TYPE DETAILED ON THIS SHEET.
4. DRILLED SHAFT TIP ELEVATIONS SHALL BE VERIFIED BY THE GEOTECHNICAL ENGINEER PRIOR TO CONSTRUCTION.
5. THE EXACT LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES SHALL BE CONFIRMED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
6. PRIOR TO CASTING CONNECTION TO PILE CAP, CONTRACTOR SHALL REMOVE LAITANCE DOWN TO SOUND CONCRETE AT THE CONSTRUCTION JOINT AND SHALL CLEAN EXPOSED REINFORCEMENT.
7. LAP LENGTH FOR TRANVERSE REINFORCEMENT SHALL BE 48 BAR DIAMETERS MINIMUM.
8. STEEL PIPES PROVIDED AS ACCESS TUBES FOR CSL TESTING SHALL BE IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS.
9. THE CONTRACTOR SHALL PROVIDE ADEQUATE BRACING TO MAINTAIN THE REINFORCEMENT CAGE STABILITY AT ALL CONSTRUCTION STAGES.
10. LAP SPLICES SHALL NOT BE PERMITTED FOR LONGITUDINAL REINFORCEMENT.
11. ALL WELDS FOR STEEL CASING SHALL BE COMPLETE JOINT PENETRATION (WELDING SHALL MEET THE REQUIREMENTS OF STD. SPEC. W-62.3(a)-94). FOR WELD DIMENSIONS, SEE TABLE 2.
12. AS-BUILT LOCATIONS AND ELEVATIONS OF TOP OF SHIFTS SHALL BE SUBMITTED TO ENGINEER OF RECORD (EOR) PRIOR TO PROCEEDING WITH CONSTRUCTION.
13. PROVIDE 90° CLEAR FROM TOP OF SPIRAL TO LOWEST POINT OF CONSTRUCTION JOINT. VERTICAL BREAK IN SPIRAL TO ALLOW PLACEMENT OF BOTTOM MAT OF PILE CAP REINFORCEMENT, SHALL NOT EXCEED 6" AT A1 OR 5" AT A12.

NOTES:

TYPICAL ELEVATION - A1

TYPICAL ELEVATION - A12

SCALE: NTS

SCALE: NTS

TYP SPIRAL TERMINATION DETAIL

SCALE: NTS

WELDED LAP SPLICE DETAIL

SCALE: NTS

(WELDING SHALL MEET THE REQUIREMENTS OF STD. SPEC. W-62.3(a)-94. FOR WELD DIMENSIONS, SEE TABLE 2.)

NOTE:

1. FOR GENERAL STRUCTURAL NOTES SEE DWG TLC-S-101.
2. ALL DRILLING OPERATIONS FOR DRILLED SHAFT FOUNDATIONS SCHEDULED ON THIS SHEET SHALL BE MONITORED BY THE RESIDENT ENGINEER.
3. THESE NOTES PERTAIN ONLY TO THE DRILLED SHAFT TYPE DETAILED ON THIS SHEET.
4. DRILLED SHAFT TIP ELEVATIONS SHALL BE VERIFIED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF REINFORCING STEEL AND CONCRETE.
5. THE EXACT LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES SHALL BE CONFIRMED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
6. PRIOR TO CASTING CONNECTION TO PILE CAP, CONTRACTOR SHALL REMOVE LAITANCE DOWN TO SOUND CONCRETE AT THE CONSTRUCTION JOINT AND SHALL CLEAN EXPOSED REINFORCEMENT.
7. LAP LENGTH FOR TRANSVERSE REINFORCEMENT SHALL BE 48 BAR DIAMETERS MINIMUM.
8. STEEL PIPES PROVIDED AS ACCESS TUBES FOR CSL TESTING SHALL BE IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS.
9. THE CONTRACTOR SHALL PROVIDE ADEQUATE BRACING TO MAINTAIN THE REINFORCEMENT CAGE STABILITY AT ALL CONSTRUCTION STAGES.
10. LAP SPLICES SHALL NOT BE PERMITTED FOR LONGITUDINAL REINFORCEMENT.
11. ALL WELDS FOR STEEL CASING SHALL BE COMPLETE JOINT PENETRATION (WELDING SHALL MEET THE REQUIREMENTS OF STD. SPEC. W-62.3(a)-94). FOR WELD DIMENSIONS, SEE TABLE 2.
12. AS-BUILT LOCATIONS AND ELEVATIONS OF TOP OF SHIFTS SHALL BE SUBMITTED TO ENGINEER OF RECORD (EOR) PRIOR TO PROCEEDING WITH CONSTRUCTION.
13. PROVIDE 90° CLEAR FROM TOP OF SPIRAL TO LOWEST POINT OF CONSTRUCTION JOINT. VERTICAL BREAK IN SPIRAL TO ALLOW PLACEMENT OF BOTTOM MAT OF PILE CAP REINFORCEMENT, SHALL NOT EXCEED 6" AT A1 OR 5" AT A12.

NOTES:

TYPICAL ELEVATION - A1

TYPICAL ELEVATION - A12

SCALE: NTS

SCALE: NTS

TYP SPIRAL TERMINATION DETAIL

SCALE: NTS

WELDED LAP SPLICE DETAIL

SCALE: NTS

(WELDING SHALL MEET THE REQUIREMENTS OF STD. SPEC. W-62.3(a)-94. FOR WELD DIMENSIONS, SEE TABLE 2.)

NOTE:

1. FOR GENERAL STRUCTURAL NOTES SEE DWG TLC-S-101.
2. ALL DRILLING OPERATIONS FOR DRILLED SHAFT FOUNDATIONS SCHEDULED ON THIS SHEET SHALL BE MONITORED BY THE RESIDENT ENGINEER.
3. THESE NOTES PERTAIN ONLY TO THE DRILLED SHAFT TYPE DETAILED ON THIS SHEET.
4. DRILLED SHAFT TIP ELEVATIONS SHALL BE VERIFIED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF REINFORCING STEEL AND CONCRETE.
5. THE EXACT LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES SHALL BE CONFIRMED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
6. PRIOR TO CASTING CONNECTION TO PILE CAP, CONTRACTOR SHALL REMOVE LAITANCE DOWN TO SOUND CONCRETE AT THE CONSTRUCTION JOINT AND SHALL CLEAN EXPOSED REINFORCEMENT.
7. LAP LENGTH FOR TRANSVERSE REINFORCEMENT SHALL BE 48 BAR DIAMETERS MINIMUM.
8. STEEL PIPES PROVIDED AS ACCESS TUBES FOR CSL TESTING SHALL BE IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS.
9. THE CONTRACTOR SHALL PROVIDE ADEQUATE BRACING TO MAINTAIN THE REINFORCEMENT CAGE STABILITY AT ALL CONSTRUCTION STAGES.
10. LAP SPLICES SHALL NOT BE PERMITTED FOR LONGITUDINAL REINFORCEMENT.
11. ALL WELDS FOR STEEL CASING SHALL BE COMPLETE JOINT PENETRATION (WELDING SHALL MEET THE REQUIREMENTS OF STD. SPEC. W-62.3(a)-94). FOR WELD DIMENSIONS, SEE TABLE 2.
12. AS-BUILT LOCATIONS AND ELEVATIONS OF TOP OF SHIFTS SHALL BE SUBMITTED TO ENGINEER OF RECORD (EOR) PRIOR TO PROCEEDING WITH CONSTRUCTION.
13. PROVIDE 90° CLEAR FROM TOP OF SPIRAL TO LOWEST POINT OF CONSTRUCTION JOINT. VERTICAL BREAK IN SPIRAL TO ALLOW PLACEMENT OF BOTTOM MAT OF PILE CAP REINFORCEMENT, SHALL NOT EXCEED 6" AT A1 OR 5" AT A12.
NOTES:
1. FOR GENERAL STRUCTURAL NOTES SEE DWG TLC-S-101.
2. ALL DRILLING OPERATIONS FOR DRILLED SHAFT FOUNDATIONS SCHEDULED ON THIS SHEET SHALL BE MONITORED BY THE RESIDENT ENGINEER.
3. THESE NOTES PERTAIN ONLY TO THE DRILLED SHAFT TYPE DETAILED ON THIS SHEET.
4. DRILLED SHAFT TIP ELEVATIONS SHALL BE VERIFIED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF REINFORCING STEEL AND CONCRETE.
5. THE EXACT LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES SHALL BE CONFIRMED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
6. PRIOR TO CASTING CONNECTION TO COLUMN REINFORCEMENT, CONTRACTOR SHALL REMOVE LAITANCE DOWN TO SOUND CONCRETE AT THE CONSTRUCTION JOINT AND SHALL CLEAN EXPOSED REINFORCEMENT.
7. LAP LENGTH FOR TRANSVERSE REINFORCEMENT SHALL BE 48 BAR DIAMETERS MINIMUM.
8. STEEL PIPES PROVIDED AS ACCESS TUBES FOR CSL TESTING SHALL BE IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS.
9. THE CONTRACTOR SHALL PROVIDE ADEQUATE BRACING TO MAINTAIN THE REINFORCEMENT CAGE STABILITY AT ALL CONSTRUCTION STAGES.
10. LAP SPLICES SHALL NOT BE PERMITTED FOR LONGITUDINAL REINFORCEMENT. MECHANICAL SPLICES ARE PERMITTED WHERE THEY ARE STAGGERED AT 24".
11. ALL WELDS FOR STEEL CASING SHALL BE COMPLETE JOINT PENETRATION GROOVE WELDS.
12. AS-BUILT LOCATIONS AND ELEVATIONS OF SHAFTS SHALL BE SENT TO ENGINEER OF RECORD (COR) PRIOR TO PROCEEDING WITH PIER CONSTRUCTION.
1. FOR GENERAL STRUCTURAL NOTES SEE EFIG TLC-S-101.
2. ALL DRILLING OPERATIONS FOR DRILLED SHAFT FOUNDATIONS SCHEDULED ON THIS SHEET SHALL BE MONITORED BY THE RESIDENT ENGINEER.
3. THESE NOTES PERTAIN ONLY TO THE DRILLED SHAFT TYPE DETAILED ON THIS SHEET.
4. DRILLED SHAFT TIP ELEVATIONS SHALL BE VERIFIED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF REINFORCING STEEL AND CONCRETE.
5. THE EXACT LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES SHALL BE CONFIRMED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
6. PRIOR TO CASTING PEDESTAL, THE CONTRACTOR SHALL REMOVE LAITANCE FROM STAGE 1 CIP POUR.
7. LAP LENGTH FOR TRANSVERSE REINFORCEMENT SHALL BE 48 BAR DIAMETERS MINIMUM.
8. STEEL TUBES PROVIDED AS ACCESS TUBES FOR CSL TESTING SHALL BE IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS.
9. THE CONTRACTOR SHALL PROVIDE ADEQUATE BRACING TO MAINTAIN THE REINFORCEMENT CAGE STABILITY AT ALL CONSTRUCTION STAGES.
10. LAP SPLICES SHALL NOT BE PERMITTED FOR LONGITUDINAL REINFORCEMENT.
11. ALL WELDS FOR STEEL CASING SHALL BE COMPLETE JOINT PENETRATION.
12. AS-BUILT LOCATIONS AND ELEVATIONS OF TOP OF SHAFTS SHALL BE SENT TO ENGINEER OF RECORD (EOR) PRIOR TO PROCEEDING WITH PIER CONSTRUCTION.
13. STARTER BARS SHALL BE SET TO TARGET WP COORDINATES WHICH MAY VARY FROM CONSTRUCTED POSITION OF SHAFT.
1. For general structural notes see DWG TLC-S-101.

2. Strut/tie consists of PT bar within sheathing and hollow pipe strut between arms of Y-pier. PT bar shall be post tensioned from live end prior to release of pier formwork in accordance with the following post tensioning sequence:
   a. Place CIP concrete including pipe strut.
   b. At 7 days, strip forms, leaving the Y-pier arms supported.
   c. Post tension the thread bar using hydraulic jack to 110 kips and tighten anchor nut using hand tools.
   d. Release jack.
   e. Finish stripping forms.
   f. Grout annulus around PT bar.
   g. Pourback blockout.

3. PT bar dead end to be secured prior to concrete placement and shall include nuts on both sides of anchor plate.

4. Pigmented sealer shall be applied to all faces below bearing seat.

5. Bearing plinths shall be placed separately from the pier. Plinths shall be sized to be 3" wider than the bearing masonry plate in each direction, but shall be at least 6" clear of edge of pier. Plinth height shall be determined based on actual bearing height, but shall be 3" min to 6" max. Contractor to submit plans dimensions to Engineer of record for review prior to setting rebar cage and pouring pier.

6. See note 10 on DWG TLC-S-145 regarding electrical grounding of structure.
TYPICAL Y-PIER REINFORCEMENT

SECTION SCALE 1" = 1'-0"

SECTION SCALE 5" = 1'-0"

SECTION SCALE 1" = 1'-0"

SECTION SCALE 1" = 1'-0"

SECTION SCALE 1" = 1'-0"

SECTION SCALE 1" = 1'-0"

SECTION SCALE 1" = 1'-0"

SECTION SCALE 1" = 1'-0"

NOTES:
1. FOR GENERAL NOTES, SEE DWG No. TLC-S-123 FOR PIER 13
2. CONDUIT AT PIER 4 NOT SHOWN
3. EMBEDDED CONDUIT AT PIER 4 NOT SHOWN

CONCRETE Y-PIER REINFORCEMENT

NOTES:
1. FOR GENERAL NOTES, SEE DWG TLC-S-123

CONCRETE Y-PIER REINFORCEMENT

SECTION SCALE 1" = 1'-0"
1. For general structural notes see OWG TLC-S-101 and OWG TLC-S-133.

2. Hangers are perpendicular to arch centerline and coincide with floor-beam and tie-chord centerlines.

3. For hanger size see Table TLC-S-130 Tables 1 and 2.

4. Arch dimensions are drawn in true elevation at centerline of arch pipe and vary from actual in-plane dimensions.

5. Arch centerline profiles are planar and rotated 15-degrees about the axis drawn through the workpoints at each end of the respective span.

6. Knuckles are formed through a direct welded connection of the arch pipe mouth cut to the tie-chord. Trimmed to accommodate end beam where required. Arch shall be welded to end beam as required to create a continuous weld.

7. Locate arch pipe some along inner radius such that it follows the plane of bending.

8. For hanger types A, B, and C details, see OWG TLC-S-133.
ARCH BEND RADIUS GEOMETRY VIEWED WITHIN ARCH PLANE

SCALE: 1" = 10'

STEEL SUBASSEMBLY KEYPLAN

EXPANSION JOINT

STEEL ELEVATION

SCALE: 1" = 10'

FRAME PLAN

SCALE: 1" = 10'

NOTES:

1. FOR NOTES SEE DWG TLC-S-131.
2. SHEAR CONNECTORS INSTALLED PERPENDICULAR TO TIE-CHORD PIPE ALONG SPAN 3 ONLY.
NOTES:

1. FOR NOTES SEE DWG TLC-S-131.
3. TIE-CHORDS ARE STRAIGHT (UNEVEN IN ELEVATION) FROM PIER P5 TO PIER P6.
4. FOR HANGER TYPES A, B AND C DETAILS SEE DWG TLC-S-132.
FIELD SPACED TYPE 1 (4 LOCATIONS), SEE DWG TLC-S-140 (TYP)

GRADE SEE NOTE 2

SPACER LOCATION (TYP)

STEEL 1-PER (TYP)

SPACER LOCATION (TYP)

STEEL 2-PER (TYP)

GRADE SEE NOTE 2

FULLY DETAIL

DETAIL

FIELD SPACED

FIELD SPACED

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TIE-CHORD, ARCH & HANGER
TYPE 1 SPLICE WELDED DETAIL
SCALE: 1/8" = 1'-0" (VIEW IN PLAN)

TIE-CHORD & ARCH
TYPE 2 SPLICE BOLTED DETAIL
SCALE: 1/8" = 1'-0" (VIEW DOWN ON PLANE, SECTION THRU MID-HEIGHT OF PIPE)

TIE-CHORD, ARCH & HANGER
TYPE 3 SPLICE TELESCOPING DETAIL
SCALE: 1/8" = 1'-0" (AT TIE-CHORD CENTERLINE, SECTION)

NOTES:
1. FOR GENERAL STRUCTURAL NOTES SEE DWG TLC-S-101.
2. STEEL DETAILER SHALL ACCOUNT FOR CURVATURE OF MEMBERS IN FIELD SPLICE ASSEMBLIES, AND VERIFY DIAMETER OF TELESCOPING PIECE WORKS WITH ACTUAL I.D. OF THE TIE-CHORD PIPES.
3. TYPE 2 FIELD SPLICE REQUIRES SHORING APPROVED BY ENGINEER TO ENSURE DEFLECTIONS AND STRESS ARE CONTROLLED.
4. TIE-CHORD BEND RADII SHALL ACCOUNT FOR INNER AND OUTER GRADE.
5. ALL SPLICES ARE INTENDED TO BE PERPENDICULAR TO PIPE CENTERLINE.
1. FOR GENERAL STRUCTURAL NOTES SEE DWG TLC-S-101.
2. END BEAM END SECTIONS ARE SLIGHTLY SKEWED WITH TIE-CHORD PIPES DUE TO DIFFERING LONGITUDINAL GRADE OF INNER AND OUTER RINGS.
3. BEARING AND DIAPHRAGM STIFFENERS USE COMMON DETAILING, EXCEPT WELD SIZES.
4. END BEAMS SHALL USE HIGH PERFORMANCE STEEL (HPS).
5. THREADED ROD ¾" x 3" WELDED TO BEAM 6'-1" FROM BRIDGE CENTERLINE FOR SECURING PC PANEL.
6. STOP ATTACHMENT PLATE WELDS ½" FROM EDGES OF SHORTER PLATE.
ISSUE FOR BID

MWBM

FILENAME:

ENGINEER

DATE:

DETAILS - SHEET 3

BEAM

ENGINEER

2019/12/06

CHJS

DETAILS - SHEET 3

SUPERSTRUCTURE

49664

DATE:

2019/12/06

CITY OF KIRKLAND

DAMPER SUPPLIER.

OUTER DAMPERS ARE ASSUMED TO BE 1125-LBS EA WITH REF. DIMENSIONS OF

NOMINAL

KINK

FROM BRIDGE CENTERLINE FOR SECURING PC PANEL.

FROM EDGES OF SHORTER PLATE. SEE TLC-S-139 FOR

STOP ATTACHMENT PLATE WELDS

5' - END BEAM OVERLOOK FRAMING

TIE-CHORD

SHEAR PLATE (TYP) SEE

DIAPHRAGM

ATTACHMENT PLATE WELDS 6" FROM EDGES OF SHORTER PLATE. SEE TLC-S-139 FOR WELD DETAILS.

WEB ANGLE IS CONSTANT AT 1:6 RELATIVE TO CENTERLINE OF BOX.

INNER & OUTER DAMPERS ARE ASSUMED TO BE 1125-LBS EA WITH REF. DIMENSIONS OF 12"Wx1"Hx0.75", DAMPER DESIGN, DETAILS, AND ACCESS HOLE/END TO BE FINANCED BY DAMPER SUPPLIER.

NOTE 6

NOTE 7

NOTE 8

NOTE 1

NOTE 2

NOTE 3

NOTE 4

NOTE 5

1. FOR GENERAL STRUCTURAL NOTES SEE DWG TLC-S-101.

2. END BEAMS ARE END SECTIONS SLIGHTLY SKEWED WITH TIE-CHORD PIPE DUE TO DIFFERING LONGITUDINAL GRADE OF INNER AND OUTER RINGS.

3. BEARING AND DIAPHRAGM STIFFENERS USE COMMON DETAILING.

4. END BEAMS SHALL USE HIGH PERFORMANCE STEEL (HPS).

5. THREADED ROD ¾"x5' WELDED TO BEAM 6"-7 FROM BRIDGE CENTERLINE FOR SECURING PC PANEL.

6. BEAM CENTERLINE FOR SECURING PC PANEL.

7. WEB ANGLE IS CONSTANT AT 1:6 RELATIVE TO CENTERLINE OF BOX.

8. INNER & OUTER DAMPERS ARE ASSUMED TO BE 1125-LBS EA WITH REF. DIMENSIONS OF 12"Wx1"Hx0.75", DAMPER DESIGN, DETAILS, AND ACCESS HOLE/END TO BE FINANCED BY DAMPER SUPPLIER.

CITY OF KIRKLAND

DEPARTMENT OF PUBLIC WORKS

123 FIFTH AVENUE, KIRKLAND, WA 98033

PHONE 425-587-3800  www.kirklandwa.gov

COWI

APPROVED RTY.

SUPERSTRUCTURE

END BEAM DETAILS - SHEET 3
### Table 1: Floor-Beam Length

<table>
<thead>
<tr>
<th>Floor-Beam Type</th>
<th>Slope</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>FB1 Level 17'-6&quot;</td>
<td>3.5%</td>
<td>Similar at super-elevation transition - see Table 1.</td>
</tr>
<tr>
<td>FB2 -0.3%</td>
<td></td>
<td>TBC BY DETAILER.</td>
</tr>
<tr>
<td>FB3 -0.6%</td>
<td></td>
<td>TBC BY DETAILER.</td>
</tr>
<tr>
<td>FB4 -0.9%</td>
<td></td>
<td>TBC BY DETAILER.</td>
</tr>
<tr>
<td>FB5 -1.2%</td>
<td></td>
<td>TBC BY DETAILER.</td>
</tr>
<tr>
<td>FB6 -1.5%</td>
<td></td>
<td>TBC BY DETAILER.</td>
</tr>
</tbody>
</table>

### Notes:

1. For general structural notes see DWG TLC-S-101.
2. Floor-beams are W12x58.
3. Floor-beam lengths, end cut geometry and gusset plate connections vary per the respective slope of the floor-beam type as shown in Table 1.
4. Fabricator to verify radius of bent plate works with actual O.D. of the tie-chord pipes.
5. For details of down lights under bridge see electrical drawings.
0. 5'-0" APPROACH SLAB TRANSITION BETWEEN (CORDON TO CONSTANT)

1. 0% ON TIE-CHORD SPACING (TYP)

2. TIE-CHORD LOOP RAMP DRAIN

3. NO TOP COAT WHERE IS CAST AGAINST PIP

4. SHEAR STUDS

5. SHEAR STUDS "NO BOLT PAS 0.12"

6. RAILING ANCHOR RODS

7. POUR CABLE MONOLITHIC WITH DECK ON 2ND STAGE

8. CIP CONCRETE MIX SHALL BE PIGMENTED BLUE PER SPECIAL PROVISIONS. SORRY AND CURB FACES SHALL BE STAIN WSDOT GRAY.

9. ADD SURFACE CONTROL JOINTS AT CENTER OF EACH FLOOR-BEAM AND END-BEAM IN TRANSVERSE DIRECTION USING 4" DEEP LEAF CUT, FILLED WITH SHAPELEX OR APPROVED EQUIVALENT. STOP CUT IF FROM CURB FACE.


11. CIP CONCRETE MIX SHALL BE PIGMENTED DARK GRAY FOR SPECIAL PROVISIONS. CURB FACES SHALL BE STAIN WSDOT GRAY.
TABLE 148-1: GAP "A" SETTING DIMENSIONS (INCHES)

<table>
<thead>
<tr>
<th>TEMPERATURE (F)</th>
<th>20</th>
<th>40</th>
<th>60</th>
<th>80</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOE 1</td>
<td>0.06&quot;</td>
<td>0.06&quot;</td>
<td>0.06&quot;</td>
<td>0.06&quot;</td>
<td>0.06&quot;</td>
</tr>
<tr>
<td>HOE 2</td>
<td>0.06&quot;</td>
<td>0.06&quot;</td>
<td>0.06&quot;</td>
<td>0.06&quot;</td>
<td>0.06&quot;</td>
</tr>
</tbody>
</table>

NOTES:
1. FOR GENERAL STRUCTURAL NOTES SEE DWG. TLS-S-101.
2. PAINTED SURFACES SHALL MATCH COLOR USED ON RAILING POSTS.
3. UNLESS NOTED OTHERWISE, ALL STEEL COMPONENTS SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION AND ASSEMBLY.
4. COVER PLATE SYSTEM SHALL EXTEND FULL WIDTH BETWEEN CURBS USING WABO SAFETY FLEX ELASTOMERIC, PAINTED STEEL C/W GRIT SURFACE, OR APPROVED EQUIVALENT.
5. COMPRESSION SEAL SHALL EXTEND FULL LENGTH OF ANGLES.
6. BOLTS SHALL BE TORQUED USING TURN-OFF-THE-NUT AFTER INSTALLATION OF COMPRESSION SEAL AND COVER PLATE.
**TLC-S-149 TABLE 1: BEARING LOADS AND MOVEMENTS (PER BEARING)**

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>BEARING TYPES</th>
<th>LOAD BEARING</th>
<th>SERVICE LOAD</th>
<th>EXTREME LOAD</th>
<th>SERVICE MOVEMENT</th>
<th>EXTREME MOVEMENT</th>
<th>SERVICE ROTATION</th>
<th>EXTREME ROTATION</th>
<th>TOP OF BEARING</th>
<th>ELEVATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>4.1</td>
<td>20</td>
<td>10</td>
<td>0.5</td>
<td>2</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>4.1</td>
<td>20</td>
<td>10</td>
<td>0.5</td>
<td>2</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
<td>4.1</td>
<td>20</td>
<td>10</td>
<td>0.5</td>
<td>2</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
</tr>
</tbody>
</table>

**NOTES:**
1. DISPLACEMENT AND ROTATIONS ARE EACH WAY (± THE VALUES SHOWN, UNO).
2. TRANSVERSE REACTIONS ARE TAKEN BY TYPES 2 AND 4 BEARINGS ONLY.
3. LONGITUDINAL REACTIONS ARE TAKEN BY TYPES 3 AND 4 BEARINGS ONLY.
4. TRANSVERSE MOVEMENT DEMANDS AT TYPES 1 AND 3 BEARINGS IS 3".
5. TRANSVERSE ROTATION DEMANDS ARE NEGLIGIBLE.
6. VERTICAL ROTATION DEMANDS ARE NEGLIGIBLE.
7. THE TABLE ABOVE DOES NOT INCLUDE AN ALLOWANCE FOR UNCERTAINTIES AS REQUIRED BY MUNI LS ERD.
8. BEARING REPLACEMENT PROCEDURE: SEE EXPANSION BEARING SETTING TABLE.

**TLC-S-149 TABLE 2: EXPANSION BEARING SETTING TABLE**

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>171'</th>
<th>172'</th>
<th>201'</th>
<th>202'</th>
<th>203'</th>
<th>204'</th>
<th>205'</th>
<th>206'</th>
<th>207'</th>
<th>208'</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>±0.5</td>
<td>±0.5</td>
<td>±0.5</td>
<td>±0.5</td>
<td>±0.5</td>
<td>±0.5</td>
<td>±0.5</td>
<td>±0.5</td>
<td>±0.5</td>
<td>±0.5</td>
</tr>
<tr>
<td>2</td>
<td>±0.5</td>
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**NOTES:**
1. DISPLACEMENT AND ROTATIONS ARE EACH WAY (± THE VALUES SHOWN), UNO.
2. TRANSVERSE REACTIONS ARE TAKEN BY TYPES 2 AND 4 BEARINGS ONLY.
3. LONGITUDINAL REACTIONS ARE TAKEN BY TYPES 3 AND 4 BEARINGS ONLY.
4. TRANSVERSE MOVEMENT DEMANDS AT TYPES 1 AND 3 BEARINGS IS 3".
5. TRANSVERSE ROTATION DEMANDS ARE NEGLIGIBLE.
6. VERTICAL ROTATION DEMANDS ARE NEGLIGIBLE.
7. THE TABLE ABOVE DOES NOT INCLUDE AN ALLOWANCE FOR UNCERTAINTIES AS REQUIRED BY MUNI LS ERD.
8. BEARING REPLACEMENT PROCEDURE: SEE EXPANSION BEARING SETTING TABLE.

**BEARING REPLACEMENT PROCEDURE (CONTINUED):**

1. ALL BEARINGS SHALL BE DISC BEARINGS, DESIGNED AND FABRICATION IN ACCORDANCE WITH THE SPECIFIC PRECISIONS. BEARINGS SHALL BE DESIGNED AND DETAINED TO BE EASILY REPLACEABLE.
2. BEARING SUPPLIER SHALL SUBMIT DETAILED DESIGN CALCULATIONS AND SHOP DRAWINGS TO THE ENGINEER OF RECORD FOR REVIEW AND APPROVAL PRIOR TO BEGINNING FABRICATION.
3. BEARING REPLACEMENT PROCEDURE:
   a. DESIGN AND DETAILS OF JACKING PROCESS FOR BEARING REPLACEMENT SHALL BE REVIEWED AND APPROVED BY A WASHINGTON DEPARTMENT OF TRANSPORTATION.
   b. BRIDGE SHALL BE CLOSED TO TRAFFIC DURING ALL STAGES OF JACKING AND BEARING REPLACEMENT. JACKING SHALL OCCUR NEAR THE NOMINAL CONSTRUCTION TEMPERATURE TO MINIMIZE RESTRAINT FORCES.
   c. EXPANSION BEARINGS BEARING END BEAM TOP OF BEARING NEED BE AGED BETWEEN THEM IS LESS THAN 20'.
1. MASONRY PLATE SHALL BE CONNECTED TO SUBSTRUCTURE USING 4 COUNT 1½" ~ F1554 GRADE 105 ANCHOR RODS AT TYPES 2 AND 4 BEARINGS. NUMBER AND SIZE OF ANCHOR RODS MAY BE REDUCED AT OTHER BEARINGS PER THE BEARING SUPPLIER'S DESIGNS. ANCHOR RODS SHALL EXTEND 18" MINIMUM BELOW TOP OF PIER OR TOP OF ABUTMENT SEAT.

2. CONTRACTOR SHALL ESTABLISH BEARING PLINTH ELEVATIONS BY DEDUCTING THE ACTUAL BEARING THICKNESS FROM THE TOP OF BEARING ELEVATIONS.

3. LENGTH AND SIZE OF WELD CONNECTING SOLE PLATE TO END BEAM SHALL BE PER THE BEARING SUPPLIER'S DESIGN.

4. ANCHOR RODS MAY BE INSTALLED USING BLOCKOUTS OR COUPLERS PER MANUFACTURER REQUIREMENTS.
DETAIL SCALE: ½" = 1'-0"

NOTES:
1. FOR GENERAL STRUCTURAL NOTES SEE DWG. TLS-S-101.
2. GRATING SHALL BE HOT DIPPED GALVANIZED WELDED BAR STEEL GRATING WITH ¾" x 12" BEARING BARS (1½") O.C.
3. GRATING SHALL BE CUT FROM 3 FOOT WIDE STANDARD GRATING WITH EXPOSED ENDS BRUSH PAINTED WITH GALVACOON OR APPROVED EQUIVALENT.
4. FRAMING ANGLES AND SUPPORT PLATES SHALL BE PAINTED THE SAME DARK GRAY COLOR AS THE RAILING POSTS.
5. GRATING CLIPS AND BOLTS PER MANUFACTURER REQUIREMENTS.

DETAIL SCALE: ½" = 1'-0"
The document contains a detailed engineering drawing of a rest area with various specifications and annotations. It includes details on rest area posts, seating types, construction joints, and various materials and components such as concrete decks, railings, and lighting. The drawing provides dimensions, quantities, and notes for each component, ensuring a clear understanding of the project requirements. It also includes a note for contractor confirmation of bench fabrication details and specifies that all tamper-resistant bolts shall be stainless steel. The drawing is dated December 6, 2019, and is part of the City of Kirkland's project for the Totem Lake Connection. The City of Kirkland Department of Public Works is responsible for the project, and the drawing is approved by Cowi.
REST AREA PAVING PLAN - WEST

SCALE: \( \frac{1}{2}" = 1'-0" \)

KEY PLAN

SCALE: 1" = 10'

GRID DIMENSIONS:

LEGEND:

- \( \theta = 0' - 1/2" \)
- \( \theta = 0' - 2" \)
- \( \theta = 0' - 3" \)

NOTES:

1. FOR GENERAL STRUCTURAL NOTES, SEE Dwg TLC-S-101.
2. THERMOPLASTIC PATTERN MAY BE PRECUT FROM SHEETS AND APPLIED TO DECK USING TEMPORARY BACKING SHEET OR MANUALLY GRIDDED AND APPLIED.
3. FOR INFORMATION REGARDING APPLICATION OF THERMOPLASTIC APPLICATION, SEE SPECIAL PROVISIONS.

CITY OF KIRKLAND
DEPARTMENT OF PUBLIC WORKS
123 FIFTH AVENUE KIRKLAND, WA 98033
(425) 567-3800  www.kirklandwa.gov

REST AREA PAVING PLAN - SHEET 2

COWI

APPROVED BY:

CITY OF KIRKLAND
TOTEM LAKE CONNECTION

TLC-A-153

AS SHOWN

REST AREA PAVING PLAN - EAST

---

LEGEND:
- 180'-1½"
- 180'-2"
- 180'-2½"
- 180'-3"

NOTES:
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3. FOR INFORMATION REGARDING APPLICATION OF THERMOPLASTIC APPLICATION, SEE SPECIAL PROVISIONS.
R120'-0" FLARED RAILING TERMINATION AT STA 13+42±

SIDEWALK CONNECTION

LUMINARIES (TYP.) SEE NOTE 2

R120'-0" CURVED RAILING CUTOFF AT STA 23+92.5 ±

SIDEWALK CONNECTION

SOUTH APPROACH DETAIL

SCALE: 1" = 20'-0"

FLARED RAILING TERMINATION PLAN

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

CURVED RAILING CUTOFF AT STA 23+21 ±

SPLIT RAIL FENCE,
SEE CIVIL PLANS

SOUTH APPROACH TYP. RAILING TERMINATION ELEVATION

SCALE: 1" = 20'-0"

NOTES:
1. FOR GENERAL STRUCTURAL NOTES, SEE DWG TLC-S-101.
2. SEE NOTES ON DWG TLC-A-155.
3. ALL ENLARGED DETAILS ARE AT SCALE: 2" = 1'-0".
4. RAILING PIPE SHALL BE CURVED (NOT CHORDED) THROUGHOUT.
5. RAILING PIPE LICES LOCATED 8" FABRICATOR AS REQUIRED WITH MAX DISTANCE BETWEEN 5 LICES OF 20'-0".
6. FABRICATOR SHALL FINALIZE RAILING TERMINATION GEOMETR FOR ROYAL B ENGINEER.
7. FOR LUMINARIES LOCATIONS, SEE DWG TLC-S-105 AND ELECTRICAL DWGS. AVOID CONFLICT BETWEEN LUMINARIES AND RAILING FOUNDATIONS; ADJUST AS REQUIRED.

EXPANSION JOINT DETAIL

SCALE: 1" = 1'-0"

NOTES:
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**SUGGESTED CONSTRUCTION STAGING:**

1. **CHECKED BY:** CHJS 2019/12/06
2. **ENGINEER:** D.BAUGHMAN
3. **FILENAME:** TLC-S-123
4. **DATE:** 2019/12/06
5. **AS SHOWN:** 123 FIFTH AVENUE KIRKLAND, WA 98033
6. **DEPARTMENT OF PUBLIC WORKS:** CITY OF KIRKLAND
7. **PROFESSIONAL ENGINEER:** SUGGESTED CONSTRUCTION STAGING
8. **SCALE:** 800' = 1"
9. **NO. DATE BY APPR. REVISION**
10. **SWPPP REQUIREMENTS.
    - TEMPORARY CONSTRUCTION ACCESS ROAD ALONG THE SLOPE OF THE CKC TRAIL TO THE CENTER OF THE LOOP RAMP FROM NORTHWEST DITCH.
    - CONSTRUCT TEMPORARY TRAIL DETOUR SOUTH OF NE 124TH ST ALONG EAST EDGE OF CKC ROW.
    - CONSTRUCT TEMPORARY PLYWOOD PLATFORMS AROUND DRILLED SHAFT LOCATIONS FOR P8-P10.
    - TEMPORARY HIGH VISIBILITY SILT FENCE OUTSIDE SUPERSTRUCTURE DRIP LINE.
    - FUTURE STORM SEWER OUTLET.
    - TEMPORARY CONSTRUCTION ACCESS ROAD ALONG SLOPE.
    - WETLAND DELINEATION.
    - TEMPORARY EROSION CONTROL MEASURES AS SHOWN IN THE PLANS OR APPROVED CONSTRUCTION.
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SUGGESTED CONSTRUCTION STAGING CONTINUED:

10. ERECTION SEQUENCE OF SPANS 2-11 (CONT.)

- Place spans 5 & 6 as an assembled unit to allow crane boom to maintain sufficient distance from the SCL power lines. Could utilize a spreader beam with counterweights on outriggers and stability lines attached to each end of unit to shift the center of gravity for the pick.
- Connect bolted splice after adjusting span 4 end to remove sag.
- Secure final bearings at pier P9.
- Remove temporary bracing struts at P9.

11. ASSEMBLE SPAN 1 STEELWORK & LIFT INTO PLACE ADJUSTING SPAN 2 END BEFORE CONNECTING BOLTED SPlice TO REMOVE SAG.

12. MSE WALL CONSTRUCTION
   a. Construct East and West MSE Walls for South Approach Ramp.

13. Concurrent with MSE Wall Construction, place precast concrete deck panels across all spans from A1 to P3 and A12 to P4 (TBC with Engineer).

14. CIP Concrete Pour Sequence in Two Stages
   a. Form spans 3 and 11 on falsework and all curbs/deck fascia, place rebar, railing anchorages (ensuring no conflicts with conduit) and deck drains.
   b. Install spill protection around loop ramp over wetlands and on spans 2 and span 4.
   c. Pour from A12 to P3, from low to high elevation.
   d. Pour from P3 to P4, applying colored pigment to surface.
   e. Pour approach slabs.
   f. Install joints, dampers and railing.
   g. Apply finished sealant to A1 and A12, and deck as designated in Plans.
   h. Install lighting, resting area treatment and benches.
   i. Remove temporary construction access and roadway materials, finish grading.
   j. Complete 1-10, 1-50, 1-50 B & L-104998.34 and 1-205 B.

15. Restoration
   a. In-kind restoration of OHC Trail from NE 120th St to 128th Ln NE, finished grading & infill, retard ponds.
   b. Soil stabilization, landscaping and irrigation, tree plantings & signage.
   c. Remove fencing.
1. SIDEWALK GUARDRAIL SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH MANUFACTURER SPECIFICATIONS. SEE SPECIAL PROVISIONS.

2. CIP PILE SHALL USE CONCRETE CLASS 3000.