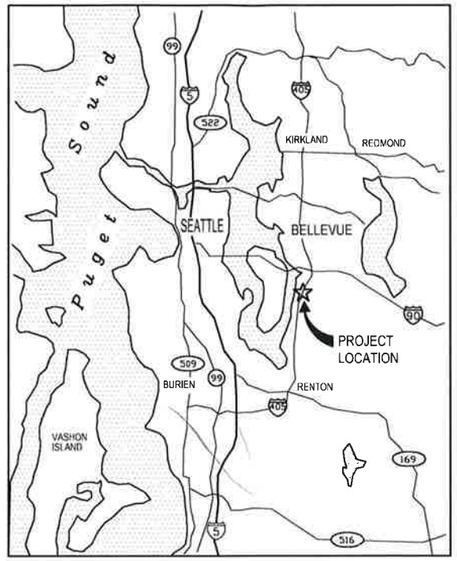
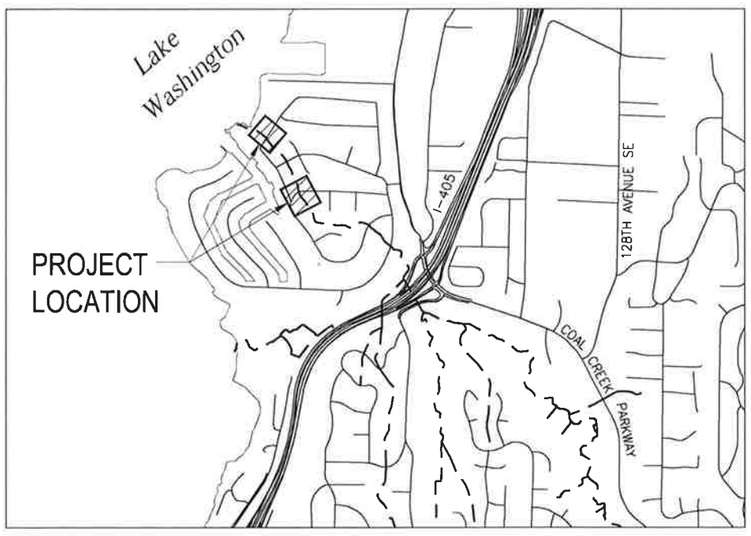
CITY OF BELLEVUE

UTILITIES DEPARTMENT

LOWER COAL CREEK
FLOOD HAZARD REDUCTION PROJECT - GROUP 3
GLACIER KEY AND LOWER SKAGIT KEY CULVERT REPLACEMENTS
C.I.P. # D-106
BID NO.: 19014



VICINITY MAP



LOCATION MAP

MAYOR
JOHN CHELMINIAK

DEPUTY MAYOR
LYNNE ROBINSON

CITY MANAGER
BRAD MIYAKE

DIRECTOR OF UTILITIES DEPARTMENT
NAV OTAL

CITY COUNCIL
CONRAD LEE
JARED NIEUWENNHUIS
JENNIFER ROBERTSON
JOHN STOKES
JANICE ZAHN

SHEET INDEX

NO	DATE	BY	APPR	REVISIONS

Know what's below. Call before you dig.

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Approved By
D Harris 2/6/19 DESIGN MANAGER DATE
J Stockwell 1/26/19 PROJECT MANAGER DATE

KA DESIGNED BY	DATE
NS DRAWN BY	DATE
CG CHECKED BY	DATE

City of Bellevue UTILITIES

FLOOD HAZARD REDUCTION PROJECT
TITLE SHEET - SHEET INDEX

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ABBREVIATIONS

&	AND
Δ	ANGLE
°	DEGREE
ø	DIAMETER
(E)	EPOXY COATED
'	FEET, MINUTES
"	INCHES, SECONDS
#	NUMBER
%	PERCENT
AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
ABS	ACRYLONITRILE–BUTADIENE–STYRENE
AC	ASBESTOS CONCRETE
ADA	AMERICANS WITH DISABILITIES ACT
ADV	ADVANCE
APPROX	APPROXIMATE
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AWWA	AMERICAN WATER WORKS ASSOCIATION
BMP	BEST MANAGEMENT PRACTICE
BTM	BOTTOM
C	CENTRIGRADE
CB	CATCH BASIN
CDF	CONTROLLED DENSITY FILL
CFS	CUBIC FEET PER SECOND
CI	CAST IRON
CL	CENTERLINE, CLASS
CMP	CORRUGATED METAL PIPE
COB	CITY OF BELLEVUE
CON	CONIFER
CONC	CONCRETE
CONT	CONTAINER
CPE	CORRUGATED POLYETHYLENE PIPE
CSBC	CRUSHED SURFACING BASE COURSE
CSL	CROSS SONIC LOGGING
CSTC	CRUSHED SURFACING TOP COURSE
CTR	CENTER
D	STORM DRAIN
DEC	DECIDUOUS
DES	DESIGN
DI	DUCTILE IRON
DIA	DIAMETER
DSD	DEVELOPMENT SERVICES DEPARTMENT
DTL	DETAIL
DW	DRIVEWAY
DWG	DRAWING
E	EAST
EQ	EQUAL
EL, ELEV	ELEVATION
EPDM	ETHYLENE PROPYLENE DIENE TERPOLYMER
ESC	EROSION AND SEDIMENT CONTROL
ESMT	EASEMENT
EX, EXIST	EXISTING
F	FILL
FEMA	FEDERAL EMERGENCY MANAGEMENT AGENCY
FIC	FOUND IN CASE
FL	FLOW LINE
FLXFL	FLANGE BY FLANGE
FM	FORCE MAIN
FOGB	FACE OF GRADE BEAM
FRP	FIBER REINFORCED POLYMER
FT	FEET
FUT	FUTURE
G	GAS
GALV	GALVANIZED
GPM	GALLONS PER MINUTE
HDPE	HIGH DENSITY POLYETHYLENE
HMA	HOT MIX ASPHALT
H, HORIZ	HORIZONTAL
HPA	HYDRAULIC PROJECT APPROVAL
HS	HIGH STRENGTH
HSE	HOUSE
HSS	HIGH STRENGTH STEEL
I	INTERSTATE
ID	IDENTIFIER
IE	INVERT ELEVATION
IN	INCH
IPS	IRON PIPE SIZE
IRC	INTERNATIONAL RESIDENTIAL CODE
IRR	IRRIGATION
KSI	KIPS PER SQUARE INCH
L	LEFT, LENGTH
LB	POUND
LF	LINEAR FEET
LT	LEFT
LWD	LARGE WOODY DEBRIS
MB	MAILBOX
MAX	MAXIMUM
MH	MANHOLE
MIL	MILLIMETER
MIN	MINIMUM, MINUTE
MJ	MECHANICAL JOINT
MON	MONUMENT
N	NORTH
NAD	NORTH AMERICAN DATUM
NAVD	NORTH AMERICAN VERTICAL DATUM
NC	NON–CORRODING
NCHRP	NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM
NE	NORTHEAST
NTS	NOT TO SCALE
NW	NORTHWEST
OC	ON CENTER
OD	OUTER DIAMETER
OHW	ORDINARY HIGH WATER
PC	POINT OF CURVATURE
PCC	PLAIN CEMENT CONCRETE
PCCP	PORTLAND CEMENT CONCRETE PAVEMENT
PCP	PRECAST CONCRETE PANEL
PED	PEDESTRIAN
PERM	PERMANENT
PERP	PERPENDICULAR
PG	PERFORMANCE GRADE
PI	POINT OF INTERSECTION
PL	PLATE
PS	PRESTRESSED
PSE	PUGET SOUND ENERGY
PSI	POUNDS PER SQUARE INCH
PT	POINT OF TANGENCY
PVI	POINT OF VIRTUAL INTERSECTION
QTY	QUANTITY
R	RIGHT
REINF	REINFORCEMENT
ROW	RIGHT OF WAY
RT	RIGHT
S	SANITARY SEWER
S	SOUTH
SCH	SCHEDULE
SD	STORM DRAIN
SDCB	STORM DRAIN CATCH BASIN
SE	SOUTH EAST
SF	SQUARE FEET
SP	SPACED
SPEC	SPECIFICATION
SS	SANITARY SEWER, STAINLESS STEEL
SSMH	SANITARY MANHOLE
SSS	SANITARY SIDE SEWER
STA	STATION
STD	STANDARD
SW	SOUTHWEST
SWLK	SIDEWALK
SWPPP	STORMWATER POLLUTION PREVENTION PLAN
T	TELEPHONE
TEMP	TEMPORARY
TOC	TOP OF CURB
TL	TRAFFIC LOAD
TYP	TYPICAL
UGP	UNDERGROUND POWER
UNO	UNLESS NOTED OTHERWISE
VC	VERTICAL CURVE
VIF	VERIFY IN FIELD
V, VERT	VERTICAL
W	WATER
W	WEST
W/	WITH
WAC	WASHINGTON ADMINISTRATIVE CODE
WM	WATERMAIN
WSDOT	WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
WSE	WATER SURFACE ELEVATION

SYMBOLS

SYMBOL EXIST.	SYMBOL PROP.	DESCRIPTION
⌋	⌋	CAP/PLUG
⌗	⌗	COUPLING
◦	•	GUARD POST
▷	▶	REDUCER
⊿	◭	THRUST BLOCK
⊞	◪	WATER METER
		FIRE HYDRANTS:
♙	♟	2–NOZZLE
☼	✹	3–NOZZLE
		JOINTS:
‖	‖	FLANGE/BLIND FL
[	[	MECHANICAL
(	(	PUSH–ON/HUB
I	I	THREAD
		VALVES:
⚲	⚲	AIR RELIEF
⚲	⚲	BLOW–OFF
⋈	⋈	BUTTERFLY
⋈	⋈	CHECK
⋈	⋈	GATE/GENERAL
⋈	⋈	PLUG VALVE
⋈	⋈	GAS METER
⋈	⋈	GAS VALVE
△	▲	PAD MOUNTED TRANSFORMER
P	P	POWER VAULT
⊠		TRANSMISSION TOWER
☼	☼	UTILITY POLE
⟵	⟵	UTILITY POLE ANCHOR
▫	■	TELEPHONE RISER
T	T	TELEPHONE VAULT
⊕	◓	MONUMENT (IN CASE)
⊕	◓	MONUMENT (SURFACE)
⊘	⊗	SOIL BORING
×	⊗	SPOT ELEVATION
○	●	SAN. SEWER MANHOLE
□	■	STORM DRAIN CATCH BASIN
◎	◉	STORM DRAIN CATCH BASIN
◎	◉	STORM DRAIN MANHOLE
UG ☼	UG ☼	STREETLIGHT ASSEMBLY W/ UNDERGROUND POWER
		EMBANKMENT
▭	▬	MAIL BOX
		RIP RAP
		ROCKERY
		STREAMBED MATERIAL
		SHRUB
⊥	⊥	WOOD SIGN POST
⊥	⊥	METAL SIGN POST
		TREE (Conifer)
		TREE (Deciduous)
☼	☼	YARD LIGHT
	✕	TREE REMOVAL

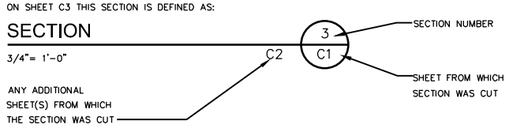
	SURFACE FEATURES:
	BUILDING LINE (EXISTING)
	BUILDING LINE (PROPOSED)
	CREEK/DITCH CENTERLINE (EXIST.)
	CREEK/DITCH CENTERLINE (PROP.)
	CURB/PAVEMENT/SIDEWALK (EX)
	CURB/PAVEMENT/SIDEWALK (PROP)
	FENCE (EXISTING)
	FENCE (PROPOSED)
	GUARDRAIL (EXISTING)
	GUARDRAIL (PROPOSED)
	LAKE/POND
	RETAINING WALL (EXISTING)
	RETAINING WALL (PROPOSED)
	RIVERBANK/SHORELINE
F F	SURFACE FILL (PROPOSED)
C C	SURFACE CUT (PROPOSED)
	SURVEY:
	CENTERLINE (EXISTING)
	CENTERLINE (PROPOSED)
	CONTOUR (DEPRESSION)
	CONTOUR (EXISTING)
	CONTOUR (INDEX)
	CONTOUR (PROPOSED)
	EASEMENT (PERMANENT)
	EASEMENT (TEMPORARY)
	PROPERTY LINE (EXISTING)
	RIGHT–OF–WAY (EXISTING)
	RIGHT–OF–WAY (PROPOSED)
	UTILITIES (EXISTING):
TV	CABLE TELEVISION (BURIED)
FM	FORCE MAIN
I	IRRIGATION
G	GAS
P	POWER (AERIAL)
P	POWER (BURIED)
S	SANITARY SEWER
SSS	SIDE SEWER SERVICE
D	STORM DRAINAGE
D	REMOVED STORM DRAINAGE
	PROPOSED STORM DRAINAGE
T	TELEPHONE (BURIED)
	UTILITY SERVICE LINE (GENERAL)
W	WATER
W	REMOVED WATER
W W W	PROPOSED WATER
	HIGH VISIBILITY FENCE
	COIR LOG PLACEMENT
XXXX	LOT NUMBER

SHEET REFERENCE

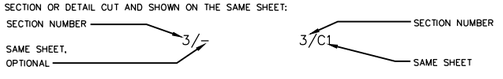
SECTIONS ARE CROSS REFERENCED IN THE FOLLOWING MANNER:

SECTION CUT ON SHEET C1:

ON SHEET C3 THIS SECTION IS DEFINED AS:



SECTION OR DETAIL CUT AND SHOWN ON THE SAME SHEET:



GENERAL NOTES

1. ALL WORK SHALL CONFORM TO THE 2018 CITY OF BELLEVUE UTILITIES DEPARTMENT ENGINEERING STANDARDS, CITY OF BELLEVUE TRANSPORTATION DEPARTMENT DESIGN MANUAL, APPLICABLE CITY CODES, AND THE MOST RECENT WSDOT STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION.
2. THE LOCATIONS OF ALL EXISTING UTILITIES SHOWN HEREON HAVE BEEN ESTABLISHED BY FIELD SURVEY OR OBTAINED FROM AVAILABLE RECORDS AND SHOULD THEREFORE BE CONSIDERED APPROXIMATE ONLY AND NOT NECESSARILY COMPLETE. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO INDEPENDENTLY VERIFY THE ACCURACY OF ALL UTILITY LOCATIONS SHOWN, AND TO FURTHER DISCOVER AND AVOID ANY OTHER UTILITIES NOT SHOWN HEREON WHICH MAY BE AFFECTED BY THE IMPLEMENTATION OF THIS PLAN.
3. CALL 1–800–424–5555, OR 8–1–1, 72 HOURS BEFORE CONSTRUCTION FOR UTILITY LOCATES.
4. A COPY OF THE APPROVED PLANS MUST BE AT THE JOB SITE WHENEVER CONSTRUCTION IS IN PROGRESS.
5. AVOID CROSSING WATER OR SEWER MAINS AT HIGHLY ACUTE ANGLES. THE SMALLEST ANGLE MEASURE BETWEEN UTILITIES SHOULD BE 45 TO 90 DEGREES.
6. AT POINTS WHERE EXISTING THRUST BLOCKING IS FOUND, MINIMUM CLEARANCE BETWEEN THE CONCRETE BLOCKING AND OTHER BURIED UTILITIES OR STRUCTURES SHALL BE 5 FEET.
7. WORKERS MUST FOLLOW CONFINED SPACE REGULATIONS AND PROCEDURES WHEN ENTERING OR DOING WORK IN COB OWNED CONFINED SPACES. COMPLETED PERMIT MUST BE GIVEN TO THE UTILITIES INSPECTOR PRIOR TO ENTRY.
8. MANHOLES, CATCH BASINS AND VAULTS ARE CONSIDERED TO BE PERMIT–REQUIRED CONFINED SPACES. ENTRY INTO THESE SPACES SHALL BE IN ACCORDANCE WITH CHAPTER 296–809 WAC.
9. ALL TRENCHES SHALL BE COMPACTED, AND HOT MIX ASPHALT IN PLACE IN PAVED AREAS, PRIOR TO TESTING STORM AND SEWER LINES FOR ACCEPTANCE.

NO	DATE	BY	APPR	REVISIONS

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1420 Fifth Avenue, Suite 650
Seattle, Washington 98101
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Approved By

DESIGN MANAGER DATE

PROJECT MANAGER DATE

KA	
DESIGNED BY	DATE
NS	
DRAWN BY	DATE
GG	
CHECKED BY	DATE

City of Bellevue
UTILITIES

FLOOD HAZARD REDUCTION PROJECT
ABBREVIATIONS - LEGEND - SYMBOLS - GENERAL NOTES

G2

SHT 2 OF 54

WATER GENERAL NOTES

1. NOT USED.
2. ALL PIPE SHALL BE DUCTILE IRON CLASS 52 UNLESS OTHERWISE SHOWN.
3. ALL PIPE AND FITTINGS NOT TO BE DISINFECTED IN PLACE SHALL BE SWABBED WITH 1% AVAILABLE CHLORINE SOLUTION PRIOR TO INSTALLATION.
4. THE NEW WATER MAIN SHALL BE CONNECTED TO THE EXISTING SYSTEM ONLY AFTER NEW MAIN IS PRESSURE TESTED, FLUSHED, DISINFECTED AND SATISFACTORY BACTERIOLOGICAL SAMPLE RESULTS ARE OBTAINED AND RECEIVED BY THE CITY INSPECTOR. SEE STANDARD DETAIL W-9.
5. AFTER DISINFECTING THE WATERMAIN, DISPOSE OF CHLORINATED WATER BY DISCHARGING TO THE NEAREST OPERATING SANITARY SEWER.
6. WATERMAIN SHUT-OFF SHALL BE COORDINATED WITH THE WATER OPERATIONS DIVISION FOR PREFERRED TIMING DURING FLOW CONTROL CONDITIONS. WATERMAIN SHUT-OFFS SHALL NOT BE SCHEDULED TO TAKE PLACE ON FRIDAYS, OR ON THE FIVE DAYS BEFORE NOR ONE DAY AFTER A CITY HOLIDAY, UNLESS OTHERWISE APPROVED BY THE UTILITY.
7. NOT USED.
8. DEFLECT THE WATERMAIN ABOVE OR BELOW EXISTING UTILITIES AS REQUIRED TO MAINTAIN 3 FT. MINIMUM COVER AND 12 INCH MINIMUM VERTICAL CLEARANCE BETWEEN UTILITIES UNLESS OTHERWISE SPECIFIED.
9. WRAP ALL DUCTILE IRON PIPE AND ADJACENT VALVES AND FITTINGS WITH 8-MIL. POLYETHYLENE CONFORMING TO AWWA C105.
10. THE WATERMAIN SHALL BE INSTALLED ONLY AFTER THE ROADWAY SUBGRADE IS BACKFILLED, GRADED AND COMPACTED IN CUT AND FILL AREAS.
11. NOT USED.
12. ALL FITTINGS SHALL BE RESTRAINED PER STANDARD DETAILS UNLESS OTHERWISE SPECIFIED.
13. NOT USED.
14. WHEN WORKING WITH ASBESTOS CEMENT PIPE, THE CONTRACTOR IS REQUIRED TO MAINTAIN WORKERS' EXPOSURE TO ASBESTOS MATERIAL AT OR BELOW THE LIMIT PRESCRIBED IN WAC 296-62-07705.
15. NOT USED.
16. NOT USED.
17. NOT USED.
18. NOT USED.
19. NOT USED.
20. NOT USED
21. NOT USED.
22. WHERE WATERMAIN CROSSES ABOVE OR BELOW SANITARY SEWER, ONE FULL LENGTH OF WATER PIPE SHALL BE CENTERED FOR MAXIMUM JOINT SEPARATION.
23. NOT USED.
24. NOT USED.
25. NOT USED.
26. NOT USED.
27. NOT USED.

STORM DRAINAGE GENERAL NOTES

1. NOT USED.
2. UNLESS OTHERWISE NOTED, STORM PIPE SHALL BE CORRUGATED POLYETHYLENE CULVERT AND STORM DRAIN PIPE JOINTS SHALL BE CLASSIFIED AS "WATERTIGHT." WATERTIGHT JOINTS SHALL BE MADE WITH A SLEEVE OR WITH A BELL SPIGOT AND SHALL CONFORM TO ASTM D 3212 (10.8 PSI) USING ELASTOMERIC GASKETS CONFORMING TO ASTM F 477. GASKETED JOINTS SHALL BE LUBRICATED AS RECOMMENDED BY THE PRODUCER DURING INSTALLATION. "SOILTIGHT" JOINTS SHALL NOT BE PERMITTED. UNLESS OTHERWISE NOTED, BEDDING AND BACKFILL SHALL BE AS SHOWN IN THE STANDARD DETAILS D-25 AND D-46.
3. NOT USED.
4. NOT USED.
5. PROVIDE AND MAINTAIN TEMPORARY SEDIMENTATION COLLECTION FACILITIES TO ENSURE THAT SEDIMENT OR OTHER HAZARDOUS MATERIALS DO NOT ENTER THE STORM DRAINAGE SYSTEM IN ACCORDANCE WITH THE SITE'S APPROVED SWPPP. FOR ALL CONSTRUCTION DURING THE RAINY SEASON, DOWNHILL BASINS AND INLETS MUST BE PROTECTED WITH CATCH BASIN INSERTS. SIMPLY PLACING FILTER FABRIC UNDER THE GRATE IS NOT ACCEPTABLE.
6. PRIOR TO FINAL INSPECTION AND ACCEPTANCE OF STORM DRAINAGE WORK, PIPES AND STORM DRAIN STRUCTURES SHALL BE CLEANED AND FLUSHED. ANY OBSTRUCTIONS TO FLOW WITHIN THE STORM DRAIN SYSTEM, (SUCH AS RUBBLE, MORTAR AND WEDGED DEBRIS), SHALL BE REMOVED AT THE NEAREST STRUCTURE. WASH WATER OF ANY SORT SHALL NOT BE DISCHARGED TO THE STORM DRAIN SYSTEM OR SURFACE WATERS.
7. NOT USED
8. ALL GRATES IN ROADWAYS SHALL BE DUCTILE IRON, BOLT-LOCKING, VANED GRATES PER THE STANDARD DETAILS. STRUCTURES IN TRAFFIC LANES OUTSIDE OF THE CURBLINE WHICH DO NOT COLLECT RUNOFF SHALL BE FITTED WITH ROUND, BOLT-LOCKING SOLID COVERS. OFF-STREET STRUCTURES WHICH DO NOT COLLECT RUNOFF SHALL BE FITTED WITH BOLT-LOCKING SOLID COVERS.
9. NOT USED
10. ALL NEW MANHOLES SHALL HAVE A MINIMUM INSIDE DIAMETER OF 48" AND SHALL CONFORM TO THE STANDARD DETAILS. ALL NEW CATCH BASINS SHALL CONFORM TO THE STANDARD DETAILS.
11. NOT USED
12. ALL TESTING AND CONNECTIONS TO EXISTING MAINS SHALL BE DONE IN THE PRESENCE OF A REPRESENTATIVE OF THE CITY OF BELLEVUE UTILITIES DEPARTMENT.
13. NOT USED.
14. ALL PUBLIC STORM DRAINS SHALL BE AIR TESTED AND HAVE A VIDEO INSPECTION PERFORMED PRIOR TO ACCEPTANCE (SEE #23 BELOW). STORM MAIN CONSTRUCTED WITH FLEXIBLE PIPE SHALL BE DEFLECTION TESTED WITH A MANDREL PRIOR TO ACCEPTANCE.
15. NOT USED
16. ALL MANHOLES/ CATCH BASINS IN UNPAVED AREAS SHALL INCLUDE A CONCRETE SEAL AROUND ADJUSTMENT RINGS PER STANDARD DETAILS.
17. ALL STORM MAIN EXTENSIONS WITHIN THE PUBLIC RIGHT-OF-WAY OR IN EASEMENTS MUST BE "STAKED" BY A SURVEYOR LICENSED IN WASHINGTON STATE FOR "LINE AND GRADE" AND CUT SHEETS PROVIDED TO THE ENGINEER, PRIOR TO STARTING CONSTRUCTION.
18. NOT USED.
19. STORM DRAINAGE MAINLINES, STUBS AND FITTINGS SHALL BE CONSTRUCTED USING THE SAME PIPE MATERIAL AND MANUFACTURER. CONNECTIONS BETWEEN STUBS AND THE MAINLINE WILL BE MADE WITH A TEE FITTING. TEE FITTING SHALL BE FROM SAME MANUFACTURER AS PIPE. CUT-IN CONNECTIONS ARE ONLY ALLOWED WHEN CONNECTING A NEW STUB TO AN EXISTING MAINLINE.
20. NOT USED.
21. PLACEMENT OF SURFACE APPURTENANCES (MH LIDS, VALVE LIDS, ETC) IN TIRE TRACKS OF TRAFFIC LANES SHALL BE AVOIDED WHENEVER POSSIBLE.
22. NOT USED.
23. THE CONTRACTOR SHALL PERFORM A VIDEO INSPECTION PER CONTRACT SPEC. 7-04 OF THE STORM PIPE INTERIOR FOR THE CITY'S REVIEW. THE VIDEO SHALL PROVIDE A MINIMUM OF 14 LINES PER MILLIMETER RESOLUTION AND COVER THE ENTIRE LENGTH OF THE APPLICABLE PIPE. THE CAMERA SHALL BE MOVED THROUGH THE PIPE AT A UNIFORM RATE (< 30 FT/MIN), STOPPING WHEN NECESSARY TO ENSURE PROPER DOCUMENTATION OF THE PIPE CONDITION. THE VIDEO SHALL BE TAKEN AFTER INSTALLATION AND CLEANING TO INSURE THAT NO DEFECTS EXIST. THE PROJECT WILL NOT BE ACCEPTED UNTIL ALL DEFECTS HAVE BEEN REPAIRED.
24. NOT USED.
25. ALL CONCRETE STRUCTURES (VAULTS, CATCH BASINS, MANHOLES, OIL/WATER SEPARATORS, ETC.) SHALL BE VACUUM TESTED.
26. MANHOLES, CATCH BASINS AND INLETS IN EASEMENTS SHALL BE CONSTRUCTED TO PROVIDE A STABLE, LEVEL GRADE FOR A MINIMUM RADIUS OF 2.5 FEET AROUND THE CENTER OF THE ACCESS OPENING TO ACCOMMODATE CONFINED SPACE ENTRY EQUIPMENT.
27. TOPS OF MANHOLES/ CATCH BASINS WITHIN PUBLIC RIGHT-OF-WAY SHALL NOT BE ADJUSTED TO FINAL GRADE UNTIL AFTER PAVING.
28. CONTRACTOR SHALL ADJUST ALL MANHOLE/ CATCH BASIN RIMS TO FLUSH WITH FINAL FINISHED GRADES, UNLESS OTHERWISE SHOWN.
29. CONTRACTOR SHALL INSTALL, AT ALL CONNECTIONS TO EXISTING DOWNSTREAM MANHOLES/ CATCH BASINS, SCREENS OR PLUGS TO PREVENT FOREIGN MATERIALS FROM ENTERING EXISTING STORM DRAINAGE SYSTEM. SCREENS OR PLUGS SHALL REMAIN IN PLACE THROUGHOUT THE DURATION OF THE CONSTRUCTION AND SHALL BE REMOVED ALONG WITH COLLECTED DEBRIS AT THE TIME OF FINAL INSPECTION AND IN THE PRESENCE OF A REPRESENTATIVE OF THE CITY OF BELLEVUE UTILITIES DEPARTMENT.
30. NOT USED.
31. THE CONTRACTOR SHALL MAINTAIN A MINIMUM OF FIVE FEET (5') HORIZONTAL SEPARATION BETWEEN ALL WATER AND STORM DRAINAGE LINES. ANY CONFLICT SHALL BE REPORTED TO THE UTILITY AND THE DEVELOPER'S ENGINEER PRIOR TO CONSTRUCTION.
32. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT NO CONFLICTS EXIST BETWEEN STORM DRAINAGE LINES AND PROPOSED OR EXISTING UTILITIES PRIOR TO CONSTRUCTION.
33. NOT USED.
34. MINIMUM COVER OVER STORM DRAINAGE PIPE SHALL BE 2 FEET, UNLESS OTHERWISE SHOWN.
35. NOT USED.
36. NOT USED.
37. NOT USED.
38. NOT USED.
39. NOT USED.

SANITARY SEWER GENERAL NOTES

1. NOT USED.
2. NOT USED.
3. NOT USED.
4. NOT USED.
5. NOT USED.
6. NOT USED.
7. NOT USED.
8. NOT USED.
9. NOT USED.
10. NOT USED.
11. NOT USED.
12. NOT USED.
13. TOPS OF MANHOLES WITHIN PUBLIC RIGHTS-OF-WAY SHALL NOT BE ADJUSTED TO FINAL GRADE UNTIL JUST PRIOR TO PAVING.
14. NOT USED.
15. CONTRACTOR SHALL ADJUST ALL MANHOLE RIMS TO FLUSH WITH FINAL FINISHED GRADES, UNLESS OTHERWISE SHOWN.
16. NOT USED.
17. NOT USED.
18. NOT USED.
19. NOT USED.
20. NOT USED.
21. NOT USED.
22. NOT USED.
23. NOT USED.
24. NOT USED.
25. NOT USED.
26. NOT USED.
27. NOT USED.
28. NOT USED.
29. NOT USED.
30. NOT USED.
31. NOT USED.
32. NOT USED.

TRANSPORTATION DEPARTMENT CONSTRUCTION NOTES

1. NOT USED.
2. THE DESIGN ELEMENTS WITHIN THESE PLANS HAVE BEEN REVIEWED ACCORDING TO THE LATEST EDITION OF THE CITY OF BELLEVUE TRANSPORTATION DEPARTMENT DESIGN MANUAL. THIS APPROVAL IS SUBJECT TO FIELD INSPECTION; OVERSIGHT OR VIOLATION OF CITY ORDINANCES IS NOT INCLUDED IN THIS APPROVAL. VARIANCES TO THESE STANDARDS ARE BY APPROVAL OF THE TRANSPORTATION DEPARTMENT REVIEW ENGINEER AND THE TRANSPORTATION DEPARTMENT CONSTRUCTION INSPECTOR.
3. APPROVAL OF THIS ROAD, GRADING, AND/OR DRAINAGE PLAN DOES NOT CONSTITUTE AN APPROVAL OF ANY OTHER CONSTRUCTION (E.G., DOMESTIC WATER CONVEYANCE, SEWER CONVEYANCE, GAS, ELECTRICAL, ETC.).
4. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CALL FOR A PRE-CONSTRUCTION CONFERENCE AT 425-452-6875 PRIOR TO ANY CLEARING, GRADING, OR CONSTRUCTION ACTIVITY. THIS CONFERENCE MUST BE ATTENDED BY THE CONTRACTOR AND THE TRANSPORTATION DEPARTMENT CONSTRUCTION INSPECTOR. A RIGHT OF WAY PERMIT MUST BE OBTAINED PRIOR TO SCHEDULING THE PRE-CONSTRUCTION CONFERENCE.
5. THE TRANSPORTATION DEPARTMENT CONSTRUCTION INSPECTOR MAY ISSUE A STOP WORK ORDER IF APPROVED PLANS ARE NOT AVAILABLE AT THE SITE WHEN NEEDED.
6. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL NECESSARY RIGHT OF WAY USE PERMITS BEFORE BEGINNING WORK.
7. IN CONNECTION WITH THE PERFORMANCE OF WORK COVERED BY THIS APPROVAL, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE SAFEGUARDS, SAFETY DEVICES, PROTECTIVE EQUIPMENT, FLAGGERS, AND ANY OTHER SERVICES OR DEVICES NECESSARY TO PROTECT PROPERTY AND THE LIFE, HEALTH, AND SAFETY OF THE PUBLIC. TRAFFIC CONTROL PLANS MUST BE SUBMITTED UNDER THE RIGHT OF WAY USE PERMIT PRIOR TO WORK COMMENCING IN THE RIGHT OF WAY.
8. NOT USED.
9. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY TELEPHONE, GAS, POWER, AND CABLE TV COMPANIES OF PROPOSED WORK PRIOR TO CONSTRUCTION.
10. PRIOR TO THE PLACEMENT OF ASPHALT PAVING, THE CONTRACTOR MUST SUBMIT COMPACTION TEST RESULTS (CONDUCTED BY A LICENSED SOILS ENGINEER) TO THE TRANSPORTATION DEPARTMENT CONSTRUCTION INSPECTOR. PROOF ROLLING OF THE ROADWAY WILL BE CONDUCTED IN THE PRESENCE OF THE TRANSPORTATION CONSTRUCTION INSPECTOR PRIOR TO CRUSHED ROCK PLACEMENT.
11. THE FINAL TOP LIFT FOR THE ROADWAY MAY BE PLACED ONLY AFTER APRIL 1ST AND PRIOR TO OCTOBER 1ST, SUBJECT TO TRANSPORTATION DEPARTMENT CONSTRUCTION INSPECTOR APPROVAL. ALL OTHER LIMITATIONS PER WSDOT STANDARD SPECIFICATIONS 5-04.3 SHALL APPLY.
12. NOT USED.
13. ALL CITY-OWNED UTILITIES VALVE BOXES, MANHOLE COVERS, CATCH BASINS, AND MONUMENT CASES WHICH ARE IN THE ASPHALT PORTION OF THE ROADWAY SHALL BE ADJUSTED TO THE FINAL ROADWAY GRADE FOR THAT PORTION OF THE PROJECT WITHIN ONE WEEK OF THE PLACEMENT OF FINAL LIFT. THESE ITEMS WILL BE ADJUSTED TO THE FINAL GRADE ONLY AFTER THE FINAL LIFT OF ASPHALT IS PLACED.
14. NOT USED.
15. STREET SIGNS ARE TO BE PROVIDED AND INSTALLED BY THE CONTRACTOR AS DIRECTED PER A SIGNING PLAN APPROVED BY THE TRANSPORTATION DEPARTMENT. CONTACT THE TRAFFIC ENGINEERING TECHNICIAN AT (425) 452-4499 AT LEAST 72 HOURS PRIOR TO INSTALLATION FOR FIELD LAYOUT DIRECTION. ALL SIGNS MUST BE IN GOOD CONDITION PRIOR TO FINAL ACCEPTANCE OF THE ROADWAY.
16. RELOCATION OF STREET SIGNS MUST BE COORDINATED WITH THE TRANSPORTATION DEPARTMENT CONSTRUCTION INSPECTOR.
17. NOT USED.
18. DRIVEWAY APRONS MUST BE PLACED AND CONSTRUCTED PER THE CITY OF BELLEVUE TRANSPORTATION DEPARTMENT DESIGN MANUAL.
19. NOT USED.
20. THE CONTRACTOR MUST CALL FOR CONCRETE FORM INSPECTION AND/OR STRING INSPECTION PRIOR TO POURING CONCRETE.
21. THE CONTRACTOR MUST CALL FOR SIGHT DISTANCE INSPECTION PRIOR TO PROJECT COMPLETION. THIS INSPECTION WILL INCLUDE DRIVEWAYS AND INTERSECTIONS FOR VEHICULAR SIGHT DISTANCE, AND SIDEWALK AND OTHER PEDESTRIAN FACILITIES FOR PEDESTRIAN SIGHT DISTANCE. FINAL SIGHT DISTANCE MUST TAKE INTO CONSIDERATION THE ANTICIPATED HEIGHT OF MATURE LANDSCAPING.
22. THE CONTRACTOR MUST PROVIDE FOR CONSTRUCTION WORKER PARKING, EQUIPMENT STORAGE, AND MATERIAL STORAGE ON SITE. EXCEPTIONS MAY BE GRANTED BY THE TRANSPORTATION DEPARTMENT DIRECTOR UNDER CERTAIN CONDITIONS.
23. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF PUBLIC UTILITIES AND COORDINATION WITH FRANCHISE UTILITIES. THIS WORK MUST BE COORDINATED SUCH THAT, FOR EXAMPLE, THE PLACEMENTS OF UTILITY VAULTS DO NOT CREATE A CONFLICT WITH THE INSTALLATION OF DRIVEWAY APPROACHES AND/OR SIDEWALKS AT 2% CROSS SLOPE AND MAXIMUM OF 8% RUNNING SLOPE PER ADA REQUIREMENTS.

NO	DATE	BY	APPR	REVISIONS

GERARD MICHAEL SCHELLE
STATE OF WASHINGTON
35788
REGISTERED PROFESSIONAL ENGINEER

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CITY OF BELLEVUE WASHINGTON

City of Bellevue
UTILITIES

FLOOD HAZARD REDUCTION PROJECT
NOTES

G3

CITY OF BELLEVUE CONTROL POINTS

ID	DESCRIPTION	NORTHING	EASTING	ELEVATION
H3328/V861 (NOT SHOWN)	3"x3" CONCRETE MON W/ ⅜" DIA BRASS PLUG W/ PUNCH MARK IN CASE. SOUTHERLY END OF INTERSECTION SKAGIT KEY & GLACIER KEY	211034.86	1306161.34	29.69
H3329	3"x3" CONCRETE MON W/ ⅜" DIA BRASS PLUG W/ PUNCH MARK IN CASE	211168.28	1306348.87	--

ROAD CURVE DATA TABLE

CURVE NO.	PI STATION	DELTA Δ	RADIUS	TANGENT	LENGTH
C1	11+40.69	70°15'03"	200.00'	140.69	245.22'

INCOMING BEARING AT STA 11+00.00	N 48°05'34" E
BEARING PI STA 11+40.69 TO PI STA 12+45.22	N 89°41'44" E

PC STATION 10+00 (NOT SHOWN)
NORTHING 211034.86
EASTING 1306161.34

HORIZONTAL DATUM:
WASHINGTON STATE PLANE COORDINATES, NORTH ZONE (BASED UPON NAD 83/11)

VERTICAL DATUM:
NAVD 88

CONTROL METHOD:
HORIZONTAL AND VERTICAL CONTROL COORDINATES WERE DERIVED USING TRIGONOMETRIC TRAVERSE METHODS USING A LEICA TPS-1201 TOTAL STATION TIED TO CITY OF BELLEVUE CONTROL POINTS.

FIELD SURVEY PERFORMED OCTOBER AND NOVEMBER 2015 BY TETRA TECH AND JUNE 2017 BY PARAMETRIX.

NAVD 88

0 5 10 15 20
SCALE IN FEET

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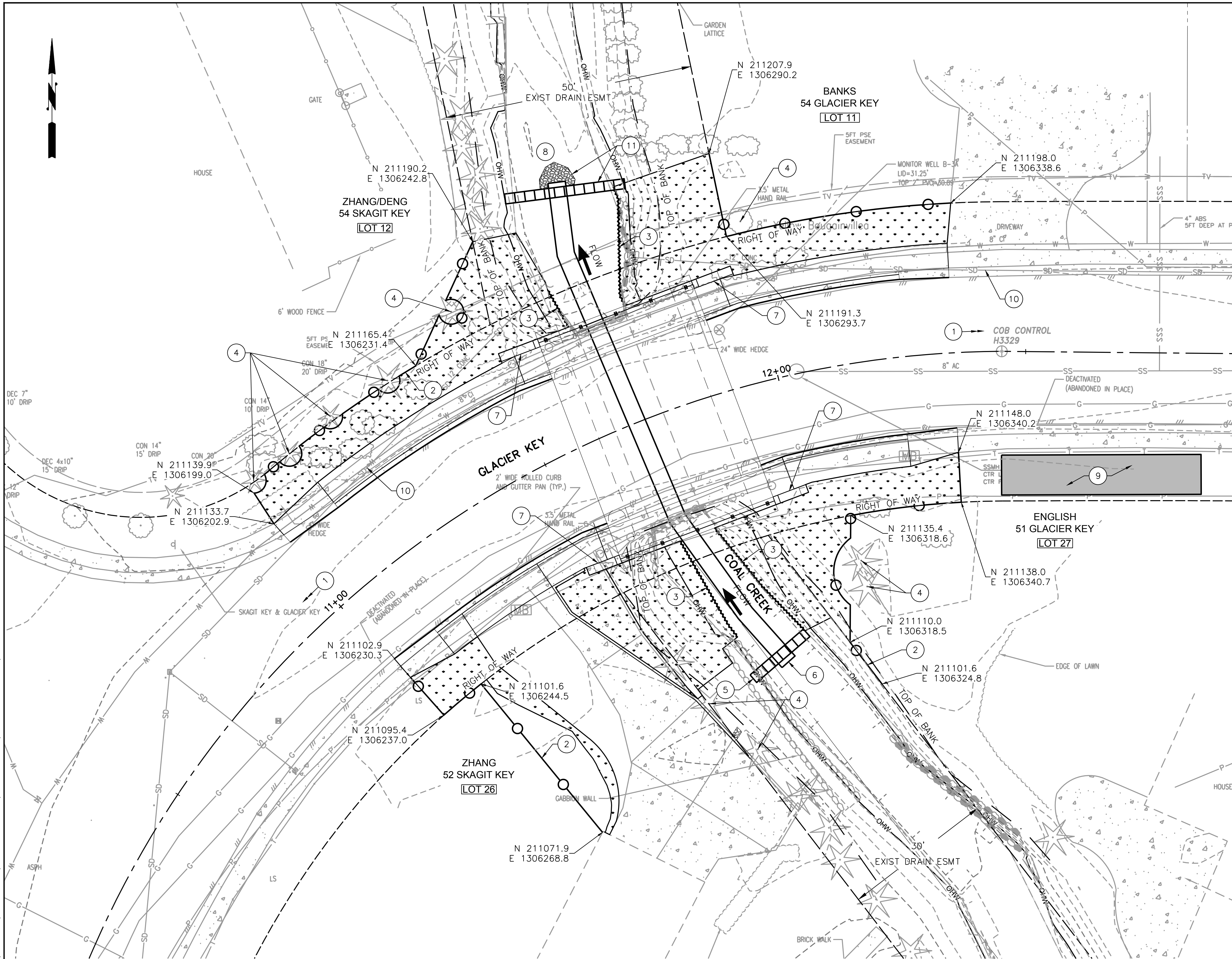
City of Bellevue
UTILITIES

FLOOD HAZARD REDUCTION PROJECT
GLACIER KEY EXISTING CONDITIONS AND SURVEY CONTROL

G-EC1 | SHT 4 OF 54



CONSTRUCTION NOTES:

1. CATCH BASIN INLET PROTECTION PER COB BMP C220. INSTALL ON ALL CB WITHIN 200 FT DOWNSTREAM OF PROJECT.
2. HIGH VISIBILITY FENCE PER WSDOT STANDARD PLAN I–10.10–01, APPROX 296 LF
3. COIR LOG PLACEMENT, SEE DETAIL 1/G–E2, APPROX 90 LF.
4. TREE PROTECTION PER COB BMP T101, EXCEPT FOR WEED CONTROL.
5. TEMPORARY GRAVEL BAG BERM
6. TEMPORARY STREAM BYPASS PIPELINE. MINIMUM 42" DIA SMOOTH BORE AND 62 CFS CAPACITY, APPROX 110 LF.
7. PROTECT NEW BRIDGE WING WALLS AFTER CONSTRUCTION DURING SITE ACCESS.
8. ESTABLISH TURBIDITY MONITORING LOCATION WITHIN 50 FT DOWNSTREAM OF STREAM BYPASS END.
9. SUGGESTED BAKER TANK LOCATION. FINAL LOCATION BY CONTRACTOR.
10. CONTRACTOR TO SUBMIT TO ENGINEER FOR APPROVAL A PLAN TO BYPASS STREET RUNOFF AROUND OR THROUGH CONSTRUCTION ZONE AND DISCHARGE TO STREAM BYPASS OUTFALL LOCATION. MOVABLE PIPES IN STREAM CHANNEL OR STREET LEVEL PUMPS ARE ACCEPTABLE. RUNOFF OVER BARE SOIL WILL NOT BE PERMITTED. CONTRACTOR IS ADVISED THAT THE PREDICTED 2–YEAR STORM FLOW IN THE NORTHEAST SD IS APPROXIMATELY 1.4 CFS.
11. TEMPORARY WATER BARRIER SEE STREAM BYPASS NOTE 5/G–E2

LEGEND

BIODEGRADABLE EROSION CONTROL BLANKET PER COB BMP C122. NO WOOD CHIP MULCH, LANDSCAPE PER SHEET G–L1.

HIGH VISIBILITY FENCE

COIR LOG

GENERAL NOTE:

1. SEE SHEET G–E2 FOR GENERAL STREAM BYPASS AND ESC NOTES.

DATUM
NAVD 88

0 5 10 15 20
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FLOOD HAZARD REDUCTION PROJECT
GLACIER KEY
STREAM BYPASS AND ESC PLAN

G-E1

EROSION CONTROL GENERAL NOTES

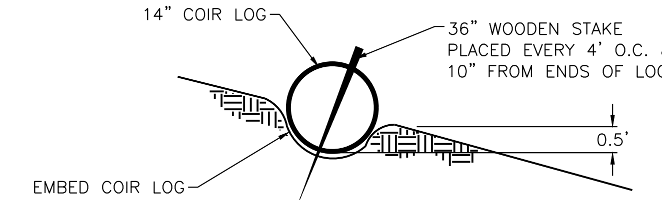
1. ALL CLEARING & GRADING CONSTRUCTION MUST BE IN ACCORDANCE WITH CITY OF BELLEVUE (COB) CLEARING & GRADING CODE, CLEARING & GRADING DEVELOPMENT STANDARDS, LAND USE CODE, UNIFORM BUILDING CODE, PERMIT CONDITIONS, AND ALL OTHER APPLICABLE CODES, ORDINANCES, AND STANDARDS. THE DESIGN ELEMENTS WITHIN THESE PLANS HAVE BEEN REVIEWED ACCORDING TO THESE REQUIREMENTS. ANY VARIANCE FROM ADOPTED EROSION CONTROL STANDARDS IS NOT ALLOWED UNLESS SPECIFICALLY APPROVED BY THE CITY OF BELLEVUE DEVELOPMENT SERVICES (DSD) PRIOR TO CONSTRUCTION. IT SHALL BE THE SOLE RESPONSIBILITY OF THE APPLICANT AND THE PROFESSIONAL CIVIL ENGINEER TO CORRECT ANY ERROR, OMISSION, OR VARIATION FROM THE ABOVE REQUIREMENTS FOUND IN THESE PLANS. ALL CORRECTIONS SHALL BE AT NO ADDITIONAL COST OR LIABILITY TO THE COB.
2. NOT USED.
3. NOT USED.
4. THE IMPLEMENTATION OF THE ESC PLANS AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE ESC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED AND VEGETATION/LANDSCAPING IS ESTABLISHED.
5. THE ESC FACILITIES SHOWN MUST BE CONSTRUCTED IN CONJUNCTION WITH ALL CLEARING AND GRADING ACTIVITIES, AND IN SUCH A MANNER AS TO INSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DO NOT ENTER THE DRAINAGE SYSTEM, ROADWAYS, OR VIOLATE APPLICABLE WATER STANDARDS.
6. THE ESC FACILITIES SHOWN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE ESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT-LADEN WATER DO NOT LEAVE THE SITE.
7. NOT USED.
8. THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN SHALL BE CLEARLY FENCED IN THE FIELD PRIOR TO CONSTRUCTION. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE FENCED CLEARING LIMITS SHALL BE PERMITTED. THE FENCING SHALL BE MAINTAINED BY THE CONTRACTOR FOR THE DURATION OF CONSTRUCTION.
9. CLEARING SHALL BE LIMITED TO THE AREAS WITHIN THE APPROVED DISTURBANCE LIMITS. EXPOSED SOILS MUST BE COVERED AT THE END OF EACH WORKING DAY WHEN WORKING FROM OCTOBER 1ST THROUGH APRIL 30TH. FROM MAY 1ST THROUGH SEPTEMBER 30TH, EXPOSED SOILS MUST BE COVERED AT THE END OF EACH CONSTRUCTION WEEK AND ALSO AT THE THREAT OF RAIN.
10. AT NO TIME SHALL MORE THAN ONE FOOT OF SEDIMENT BE ALLOWED TO ACCUMULATE WITHIN A TRAPPED CATCH BASIN. ALL CATCH BASINS AND CONVEYANCE LINES SHALL BE CLEANED PRIOR TO PAVING. THE CLEANING OPERATION SHALL NOT FLUSH SEDIMENT LADEN WATER INTO THE DOWNSTREAM SYSTEM.
11. STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT.
12. THE CONTRACTOR MUST MAINTAIN A SWEEPER ON SITE DURING EARTHWORK AND IMMEDIATELY REMOVE SOIL THAT HAS BEEN TRACKED ONTO PAVED AREAS AS RESULT OF CONSTRUCTION.
13. THE ESC FACILITIES SHALL BE INSPECTED DAILY BY THE CONTRACTOR AND MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTIONING.
14. ANY EXCAVATED MATERIAL REMOVED FROM THE CONSTRUCTION SITE AND DEPOSITED ON PROPERTY WITHIN THE CITY LIMITS MUST BE DONE IN COMPLIANCE WITH A VALID CLEARING & GRADING PERMIT. LOCATIONS FOR THE MOBILIZATION AREA AND STOCKPILED MATERIAL MUST BE APPROVED BY THE CLEARING AND GRADING INSPECTOR AT LEAST 24 HOURS IN ADVANCE OF ANY STOCKPILING.
15. THE ESC FACILITIES ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A MONTH OR WITHIN THE 48 HOURS FOLLOWING A MAJOR STORM EVENT.
16. FINAL SITE GRADING MUST DIRECT DRAINAGE AWAY FROM ALL BUILDING STRUCTURES AT A MINIMUM 5% SLOPE, PER THE INTERNATIONAL RESIDENTIAL CODE (IRC) R401.3.
17. THE CONTRACTOR SHALL PREPARE AN UPDATE TO THE TURBIDITY AND pH MONITORING PLAN THAT MEETS COB CLEARING AND GRADING DEVELOPMENT STANDARDS. THE TURBIDITY AND pH MONITORING PLAN SHALL BE SUBMITTED AT THE PRE-CONSTRUCTION MEETING AND INSPECTION.

EROSION & SEDIMENTATION CONTROL NOTES:

1. EXPOSED SOIL SHALL BE COVERED IN ACCORDANCE WITH COB EROSION CONTROL GENERAL NOTE 9. SOIL COVERING SHALL BE SELECTED FROM COB BMP C120-TEMPORARY SEEDING, COB BMP C121-MULCHING, COB BMP C122-EROSION CONTROL NETS AND BLANKETS, OR COB BMP C123-PLASTIC COVERING FOR SLOPES AND STOCKPILES, AS APPROPRIATE.
2. THE CONTRACTOR WILL BE RESPONSIBLE AT ALL TIMES FOR PREVENTING SILT-LADEN RUNOFF FROM DISCHARGING FROM THE PROJECT SITE. NO MORE WORK SHALL BE PERFORMED IN ONE DAY THAN CAN BE COMPLETED WITHOUT THE INSTALLATION OF EROSION CONTROL MEASURES DURING THAT SAME DAY. SOILS SHALL BE STABILIZED AT THE END OF THE SHIFT BEFORE A HOLIDAY OR WEEKEND IF NEEDED BASED ON THE WEATHER FORECAST.
3. ALL EROSION AND SEDIMENTATION CONTROL FACILITIES SHALL BE INSPECTED AND MAINTAINED DAILY. SEDIMENT SHALL BE REMOVED BY THE CONTRACTOR ON A WEEKLY BASIS AS A MINIMUM AND ON A DAILY BASIS DURING PERIODS OF RAINFALL AS IT BECOMES NECESSARY. THE CONTRACTOR SHALL RELOCATE, REBUILD, AND MAKE ADJUSTMENTS TO THESE FACILITIES AS NECESSARY DURING CONSTRUCTION.
4. SOIL EXPOSURE SHALL BE MINIMIZED THROUGH THE USE OF TEMPORARY BMP GROUND COVER AND STABILIZATION PRACTICES. EXPOSED DUST-PRODUCING SURFACES SHALL BE SPRINKLED DAILY UNTIL WET WHILE AVOIDING PRODUCING RUNOFF. PAVED STREETS SHALL BE SWEPT FOLLOWING CONSTRUCTION ACTIVITIES WHEN DIRECTED BY THE ENGINEER.
5. AT NO TIME SHALL CONCRETE, CONCRETE BY-PRODUCTS, VEHICLE FLUIDS, PAINT, CHEMICALS, OR OTHER POLLUTING MATTER BE PERMITTED TO DISCHARGE FROM THE PROJECT SITE TO THE STREAM OR STORM DRAINAGE SYSTEM. ALL POLLUTANTS OTHER THAN SEDIMENT THAT OCCUR ON-SITE DURING CONSTRUCTION SHALL BE HANDLED AND LEGALLY DISPOSED OF IN A MANNER THAT DOES NOT CAUSE CONTAMINATION OF STORM OR SURFACE WATERS. POLLUTANTS OF CONCERN INCLUDE, BUT ARE NOT LIMITED TO, FUELS, LUBRICANTS, SOLVENTS, CONCRETE BYPRODUCTS, AND CONSTRUCTION MATERIALS.
6. REMOVAL OF ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE DONE AFTER THE WORKING AREA IS STABILIZED OR AS DIRECTED BY THE ENGINEER.

STREAM BYPASS NOTES:

1. COMPLETE DEFISHING OPERATIONS PER CONTRACT SPEC 8-03.2(1) PRIOR TO DIVERTING CREEK FLOW INTO THE BYPASS.
2. ALL STREAMFLOWS SHALL BE DIVERTED INTO A BYPASS SYSTEM IN ACCORDANCE WITH THE HPA. BYPASS SHALL PROVIDE MINIMUM 62 CFS CAPACITY. THE DIVERSION PLAN SHOWN IS A SCHEMATIC REPRESENTATION ONLY; PRIOR TO INSTALLATION, THE CONTRACTOR SHALL SUBMIT PLANS FOR A BYPASS SYSTEM FOR REVIEW AND APPROVAL BY THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL DESIGN AND PERFORMANCE OF DIVERSION AND WILL BE RESPONSIBLE FOR DAMAGES CAUSED BY THE FAILURE OF THE DIVERSION. 62 CFS IS THE PREDICTED 2-YEAR PEAK STORM FLOW. 95% OF THE TIME, THE AVERAGE JULY-SEPTEMBER MONTHLY FLOW IS PREDICTED TO BE LESS THAN 7.5 CFS. SEE ALSO STREAM BYPASS NOTE #8.
3. THE CONTRACTOR SHALL REMOVE WATER FROM THE WORK ZONE AS REQUIRED. DEWATERING PUMP(S) SHALL PUMP WATER TO CONTRACTOR-PROVIDED TANKS. PRIOR TO BEGINNING CONSTRUCTION, CONTRACTOR SHALL SUBMIT TO ENGINEER FOR APPROVAL A PLAN FOR STAGING TEMPORARY WATER STORAGE TANKS. UNDER NO CIRCUMSTANCES SHALL ANY TURBID WATER BE DISCHARGED INTO THE STREAM SYSTEM. COSTS FOR TREATING AND DISPOSING OF WATER THAT ENTERS THE WORK ZONE SHALL BE SOLELY THE CONTRACTOR'S RESPONSIBILITY.
4. BYPASS PIPE SHALL BE PLACED WITH A DOWN-GRADIENT SLOPE SUCH THAT THE PIPE INVERT ON THE DOWNSTREAM SEGMENT IS AT OR BELOW THE PIPE INVERT AT AN UPSTREAM SEGMENT. THERE SHALL BE NO 'CRESTS' GREATER THAN 6-INCHES IN THE PIPE PROFILE. THE CONTRACTOR SHALL ATTEMPT TO PLACE THE BYPASS PIPE WITH A UNIFORM SLOPE.
5. THE DIVERSION OUTFALL AREA SHALL BE PROTECTED BY SECURING THE PIPE OUTLET, GRAVEL BAGGING, AND PROVIDING ENERGY DISSIPATION TO THE SATISFACTION OF THE ENGINEER.
6. THE POSITION OF TEMPORARY BYPASS PIPELINE SHALL BE RELOCATED AS REQUIRED TO ALLOW CONSTRUCTION OF IMPROVEMENTS. THE BYPASS PIPE SHALL BE ANCHORED IN POSITION USING TEMPORARY REMOVABLE ANCHORS TO PREVENT DISPLACEMENT, INCLUDING DURING FLOOD FLOWS.
7. THE TEMPORARY BYPASS PIPELINE HAS LIMITED FLOW CAPACITY. CONTRACTOR SHALL COORDINATE WORK IN THE CHANNEL DURING PERIODS OF NO RAINFALL. CONTRACTOR SHALL EVACUATE AND LEAVE THE CONSTRUCTION SITE DURING NON-WORKING HOURS SUCH THAT FLOWS IN EXCESS OF THE BYPASS CAPACITY WILL FLOW THROUGH THE SITE WITHOUT MOBILIZING DISTURBED EARTH.
8. CONTINUOUS BASE FLOW IN THE CREEK AND BYPASS SYSTEM IS EXPECTED THROUGHOUT CONSTRUCTION. COAL CREEK IS AN URBAN CREEK. FLOWS IN THE CREEK CAN CHANGE SIGNIFICANTLY AND IN SHORT TIME (MINUTES) FOLLOWING RAINFALL. THE CONTRACTOR SHALL NOT WORK WITHIN THE CREEK BANKS DURING RAINFALL EVENTS OR FLOWS GREATER THAN BASE FLOW BEFORE THE BYPASS IS IN PLACE.
9. MATERIALS USED FOR DIVERSION SHALL BE REMOVED FROM THE SITE AT THE COMPLETION OF THE PROJECT.



COIR LOG PLACEMENT (1 / G-E1 & S-E1)
SCALE: NTS

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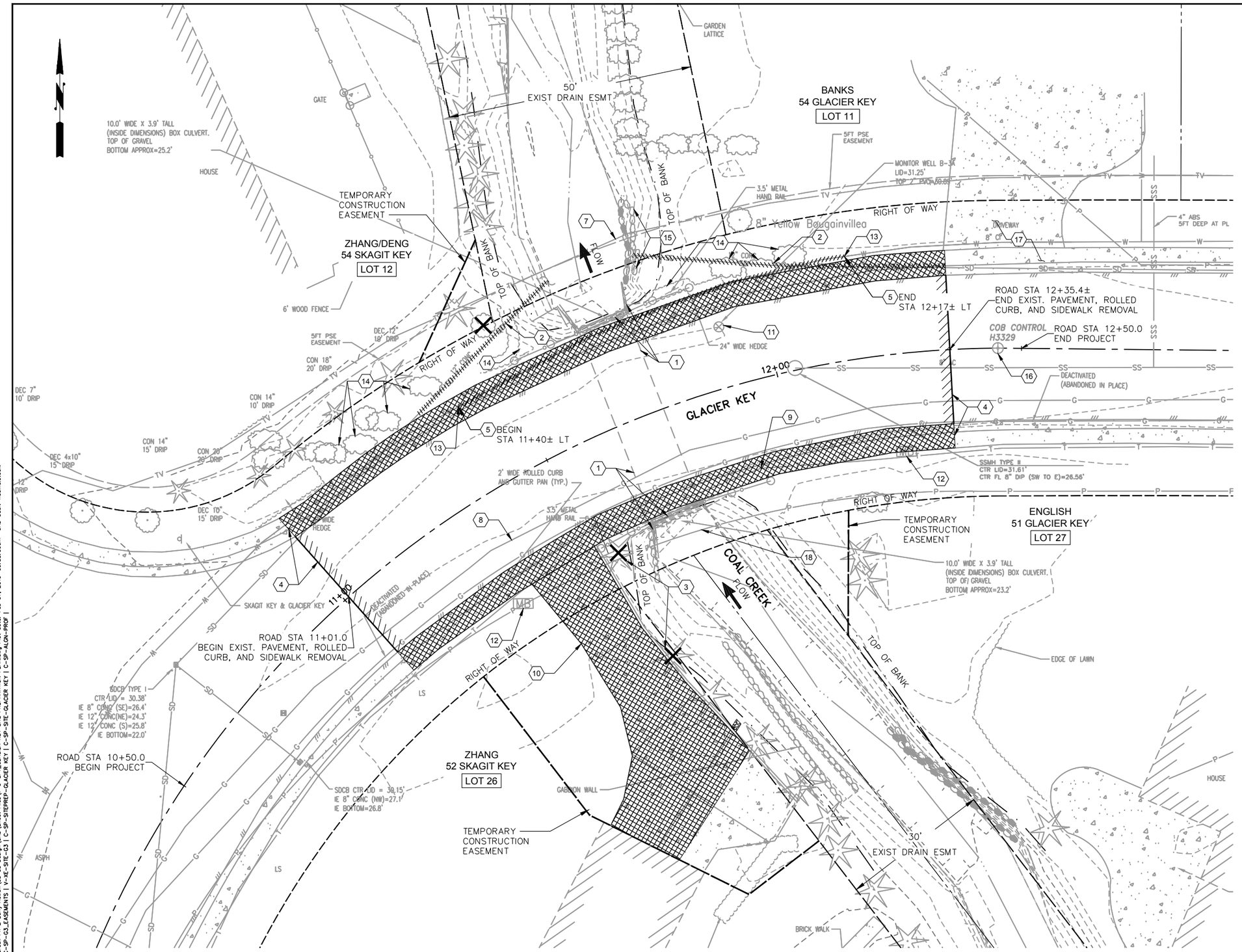
FLOOD HAZARD REDUCTION PROJECT
GLACIER KEY
STREAM BYPASS AND ESC NOTES

G-E2



SITE PREPARATION NOTES:

1. REMOVE EXISTING CONCRETE BOX CULVERT, WINGWALLS AND PEDESTRIAN RAIL.
2. REMOVE EXISTING 12" CONC SD STA 11+36± LT TO STA 11+64± LT AND STA 11+79± LT TO STA 12+34± LT
3. REMOVE EXISTING TREE.
4. SAWCUT EXISTING ROAD, SIDEWALK, AND ROLLED CURB.
5. REMOVE EXISTING 8" CI WM. SEE SITE PREPARATION NOTE 13
6. NOT USED
7. RELOCATE CABLE, BY OTHERS (COMCAST)
8. GAS MAIN TO BE DEACTIVATED, BY OTHERS (PSE). GAS MAIN CAP LOCATIONS NOT SHOWN (BEYOND PLAN LIMITS).
9. RELOCATE TELEPHONE, BY OTHERS (CENTURYLINK)
10. REMOVE EXISTING CONCRETE DRIVEWAY. SEE ALSO CONSTRUCTION NOTE 15, G-C1 FOR TEMPORARY GRAVEL DRIVEWAY SURFACING.
11. REMOVE ABANDONED AND DECOMMISSIONED WELL CASING AND SURFACE MONUMENT TO DEPTH NEEDED FOR CONSTRUCTION
12. RELOCATE MAILBOX, SEE SHEET G-C1 FOR LOCATION.
13. CUT AND CAP EXIST WATER MAIN BEFORE STARTING DEMOLITION OF EXIST CONC BOX CULVERT. INSTALL TEMPORARY 2-INCH BLOW-OFF VALVE PER COB STD DETAIL W-15, BOTH SIDES.
14. REMOVE SHRUBS
15. REMOVE ROCKERY, APPROX 20 LF.
16. PROTECT EXIST SURVEY MONUMENT DURING CONSTRUCTION.
17. PROTECT EXIST DRIVEWAY APPROACH DURING CONSTRUCTION.
18. RELOCATE POWER, BY OTHERS (PSE).

GENERAL NOTES:

1. SEE SHEET G2 FOR GENERAL NOTES.
2. SEE SHEET G3 FOR STORM DRAINAGE GENERAL NOTES, SANITARY SEWER GENERAL NOTES, AND TRANSPORTATION DEPARTMENT CONSTRUCTION NOTES.

LEGEND

STORM DRAIN/WATER/SEWER PIPE REMOVAL

CONCRETE DRIVEWAY/SIDEWALK/ROLLED CURB REMOVAL

DATUM
NAVD 88

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FLOOD HAZARD REDUCTION PROJECT
GLACIER KEY
SITE PREPARATION PLAN

G-SP1 | SHT 7 OF 54

Path: P:\174271 Lower Coal Creek Ph 2 Early Action\05 C3 Design\CAD\Sheet Files\7 C-SP1_GLACIER KEY SITE PREPARATION PLAN.dwg Plot date: Feb 07, 2019-09:53:06am CAD User: nadine.stock
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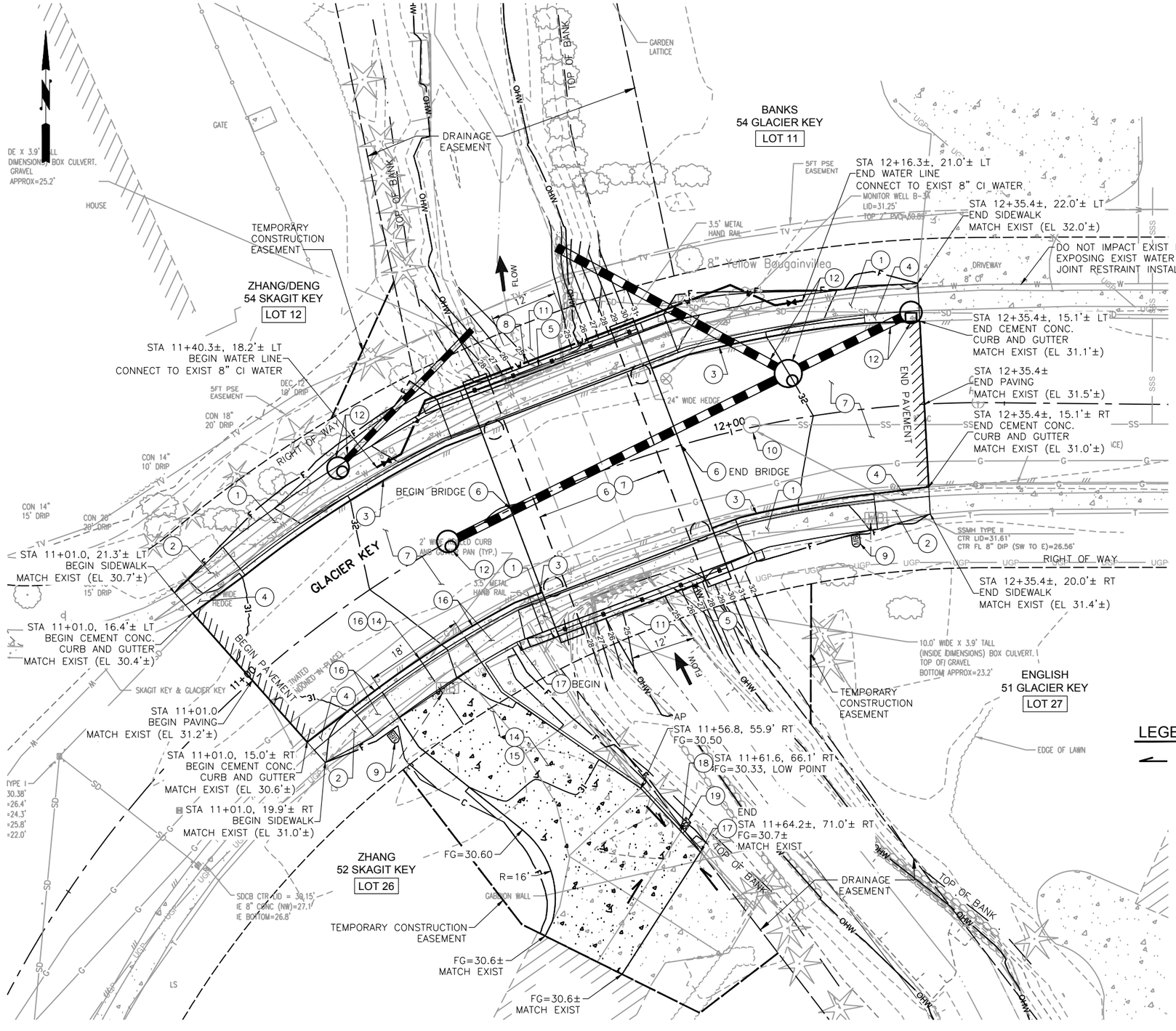

CONSTRUCTION NOTES:

1. CEMENT CONCRETE SIDEWALK, SEE COB STD DETAIL SW-110-1/G-C5.
2. TAPER CEMENT CONCRETE SIDEWALK TO MATCH EXIST. TAPER LENGTH = 10 FT
3. CEMENT CONCRETE TRAFFIC CURB AND GUTTER, SEE COB STD DETAIL SW-100-1/G-C5.
4. TRANSITION ROLLED CURB TO CEMENT CONCRETE TRAFFIC CURB AND GUTTER, SEE 2/G-C4.
5. BRIDGE RAIL WITH MIN TL-1 RATING, SEE SHEET G-B11.
6. BRIDGE, SEE SHEETS G-B1 TO G-B14. STA 11+57.43 TO STA 11+90.57.
7. SEE TYPICAL ROADWAY APPROACH AND BRIDGE SECTION FOR PAVING, 1/G-C4 AND 3/G-C4.
8. ATTACH WATER MAIN TO BRIDGE. SEE SHEET G-C3 FOR WATER MAIN PROFILE. SEE A/G-B10 FOR WATER MAIN SUPPORTS ON BRIDGE.
9. RELOCATED MAILBOX
10. RAISE SANITARY SEWER MANHOLE TO GRADE. INSTALL 48" DIA. RISER SECTION. SEE G-C2 FOR ELEVATION.
11. SEE SHEET G-H1 FOR CHANNEL GRADING.
12. SEE ROAD PROFILE, G-C2, FOR STORM DRAIN. SEE ALSO GENERAL NOTE 6.
13. NOT USED
14. CEMENT CONCRETE DRIVEWAY PROFILE SEE 2/G-C3
15. MAINTAIN DRIVEWAY ACCESS DURING CONSTRUCTION. INSTALL TEMPORARY GRAVEL DRIVEWAY.
16. CEMENT CONCRETE DRIVEWAY APPROACH, SEE COB STD DETAIL SW-170-1/G-C5 & DW APPROACH PLAN 1/G-C2
17. CEMENT CONCRETE PEDESTRIAN CURB SEE COB STD DETAIL SW-100-1/G-C5
18. CURB OPENING SEE 3/G-C3
19. SPLASH PAD 16" WIDE X 2 FT LONG 6" THICK LAYER WASHED DRAIN ROCK OR STREAMBED COBBLE (2" - 4" MIN)

GENERAL NOTES

1. SEE SHEET G2 FOR GENERAL. SEE SHEET G3 FOR WATER, STORM DRAINAGE, SEWER AND TRANSPORTATION NOTES.
2. SEE SHEET G-EC1 FOR ROAD ALIGNMENT DATA.
3. SEE WATER MAIN PROFILE, SHEET G-C3 FOR JOINT RESTRAINTS.
4. CONTRACTOR TO RELOCATE WATER LINE.
5. RELOCATION OF TELEPHONE (CENTURYLINK), UNDERGROUND POWER (PSE), CABLE (COMCAST), AND GAS (PSE) BY OTHERS.
6. TRENCHING FOR STORM DRAIN PER COB STD DETAIL D-25.

PAVING NOTES

1. PAVING LIMITS FOR FRANCHISE UTILITY TRENCHING, EXPOSING EXIST WATER PIPE FOR JOINT RESTRAINT, OR STORM CATCH BASIN INSTALLATION MAY BE ADJUSTED BY THE TRANSPORTATION INSPECTOR BASED ON FIELD CONDITIONS.
2. ANY DAMAGE TO THE ROADWAY CAUSED DURING CONSTRUCTION MUST BE RESTORED AT THE DIRECTION OF THE TRANSPORTATION INSPECTOR.

GRADING NOTE

ROADWAY GRADING LIMITS SHOWN BY CUT OR FILL LINE. SEE SHEET G-C2 FOR ROAD PROFILE. SEE SHEET G-H1 FOR CHANNEL GRADING.

DATUM
NAVD 88

0 5 10 15 20
SCALE IN FEET

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STATE OF WASHINGTON · KEVIN R. ARMSTRONG · 41627 · REGISTERED PROFESSIONAL ENGINEER · 02/27/2019

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CITY OF BELLEVUE WASHINGTON

City of Bellevue
UTILITIES

FLOOD HAZARD REDUCTION PROJECT
GLACIER KEY
ROAD PLAN

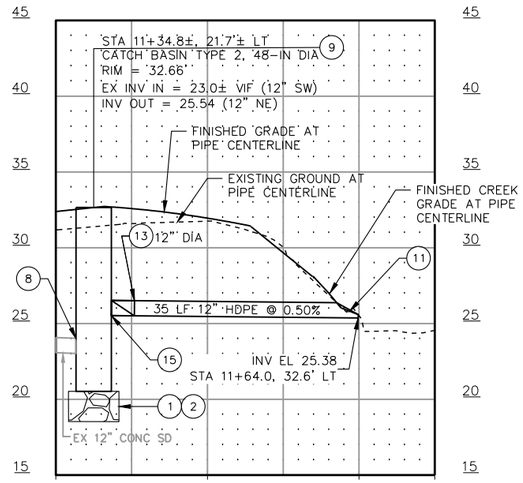
G-C1

SHT 8 OF 54

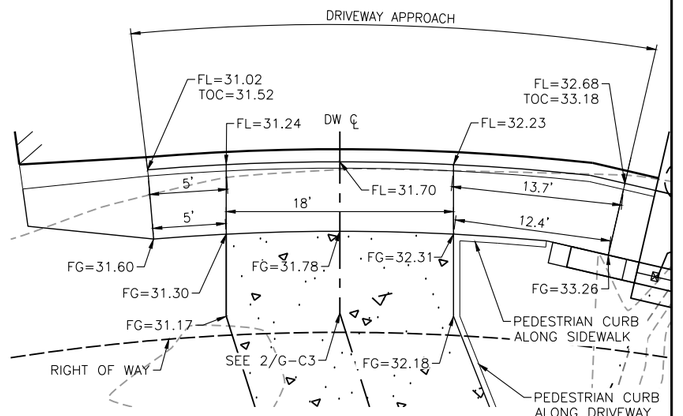
Path: P:\TA271 Lower Coal Creek Ph 2 Early Action\05 G3 Design\CAD\Sheet Files\8 G-C1_GLACIER KEY ROAD PLAN.dwg Plot date: Feb 07, 2019-09:53:21am CAD User: nadine.stock.
Xref Filename: | G3-border | C-SP-SITE-GLACIER KEY | C-SP-CONTOURS-GLACIER KEY | C-SP-DHW | V-XE-SITE-G3 | C-SP-G3-EASEMENTS | C-SP-ALGN-PROF |

CONSTRUCTION NOTES:

1. STRUCTURE FOUNDATION MATERIAL SHALL BE 2" MIN. CSBC LEVELING COURSE OVER 2 FT THICK, 4" QUARRY SPALLS WRAPPED IN NONWOVEN GEOTEXTILE FOR SEPARATION OVER GEOSYTHETIC REINFORCEMENT GRID. STRUCTURE FOUNDATION MATERIAL MIN. 12" BEYOND OUTSIDE DIA.
2. ACTIVE SUPPORT OF EXCAVATION AND DEWATERING, WITH GROUNDWATER CUTOFF WILL BE REQUIRED FOR INSTALLATION OF SIPHON AND ASSOCIATED STRUCTURES. CONTRACTOR TO COORDINATE SIPHON CONSTRUCTION WITH BRIDGE AND STREAM BYPASS WORK. CONTRACTOR SHALL SUBMIT AN EXCAVATION SUPPORT AND DEWATERING PLAN PER THE CONTRACT SPECIFICATIONS.
3. SEE G-B1 TO G-B14 FOR BRIDGE.
4. SEE B/G-H2 FOR CREEK SECTION UNDER BRIDGE.
5. RAISE SANITARY SEWER MANHOLE TO GRADE. INSTALL 48" DIA. MANHOLE RISER SECTION.
6. SEE SHEET G-SP1 FOR EXIST CULVERT REMOVAL
7. PIPE BEDDING FOR FLEXIBLE PIPE PER COB STD DTL D-25A WITH SPECIAL FOUNDATION MATERIAL OF 2 FT THICK, 4" QUARRY SPALLS WRAPPED IN NONWOVEN GEOTEXTILE FOR SEPARATION OVER GEOSYTHETIC REINFORCEMENT GRID. FULL PIPE LENGTH BETWEEN CATCH BASINS.
8. CONNECT EXISTING PIPE TO TYPE-2 CATCH BASIN.
9. TYPE-2 CATCH BASIN PER COB STD DETAIL D-4 WITH MANHOLE RING AND COVER PER COB STD DETAIL D-21.
10. PROVIDE KNOCKOUT ON OPPOSITE WALL OF CB FROM INLET PIPE AT SAME INV EL 24.48' FOR 20" (O.D.) FUTURE CONNECTION.
11. VERIFY POSITIVE SLOPE TO CREEK (0.5% MIN.) PRIOR TO OUTLET PIPE INSTALLATION. OUTLET PIPE WITH BEVEL TO MATCH CREEK SIDE SLOPE PER COB STD DETAIL D-34.
12. THE CONTRACTOR SHALL RELOCATE ANY SANITARY OR WATER SERVICE CONNECTION CROSSINGS IF IN CONFLICT WITH THE PROPOSED STORM SYSTEM.
13. "CHECKMATE" INLINE CHECK VALVE AS MANUFACTURED BY TIDEFLEX OR APPROVED EQUAL. INSTALL UPSTREAM CLAMP CONFIGURATION. INSTALL PER MANUFACTURERS' RECOMMENDATIONS, SEE CONTRACT SPECIFICATION SECTION 7-11.
14. PROVIDE TEMPORARY PLUG ON 20" (O.D.) SIPHON PIPE.
15. KOR-N-SEAL, FLEXIBLE PIPE TO MANHOLE CONNECTOR.
16. INSTALL EPDM PAD, 1/4" THICK MIN. BETWEEN OUTSIDE EDGE OF BRIDGE WINGWALL AND SIDE OF STORM PIPE. ADVANTEK FRP BY ADVANTAGE INDUSTRIAL SOLUTIONS OR APPROVED EQUAL.
17. FRANCHISE UTILITY DESIGN BORE PROFILE (BY OTHERS), SEE FRANCHISE UTILITY RELOCATION PLANS. APPROXIMATE DEPTH SHOWN.
18. HDPE PIPE, 20" (O.D.) IPS DR32.5, PE 4710



OUTFALL PROFILE 1
SCALE: HORIZ: 1"= 10' VERT: 1"=5'



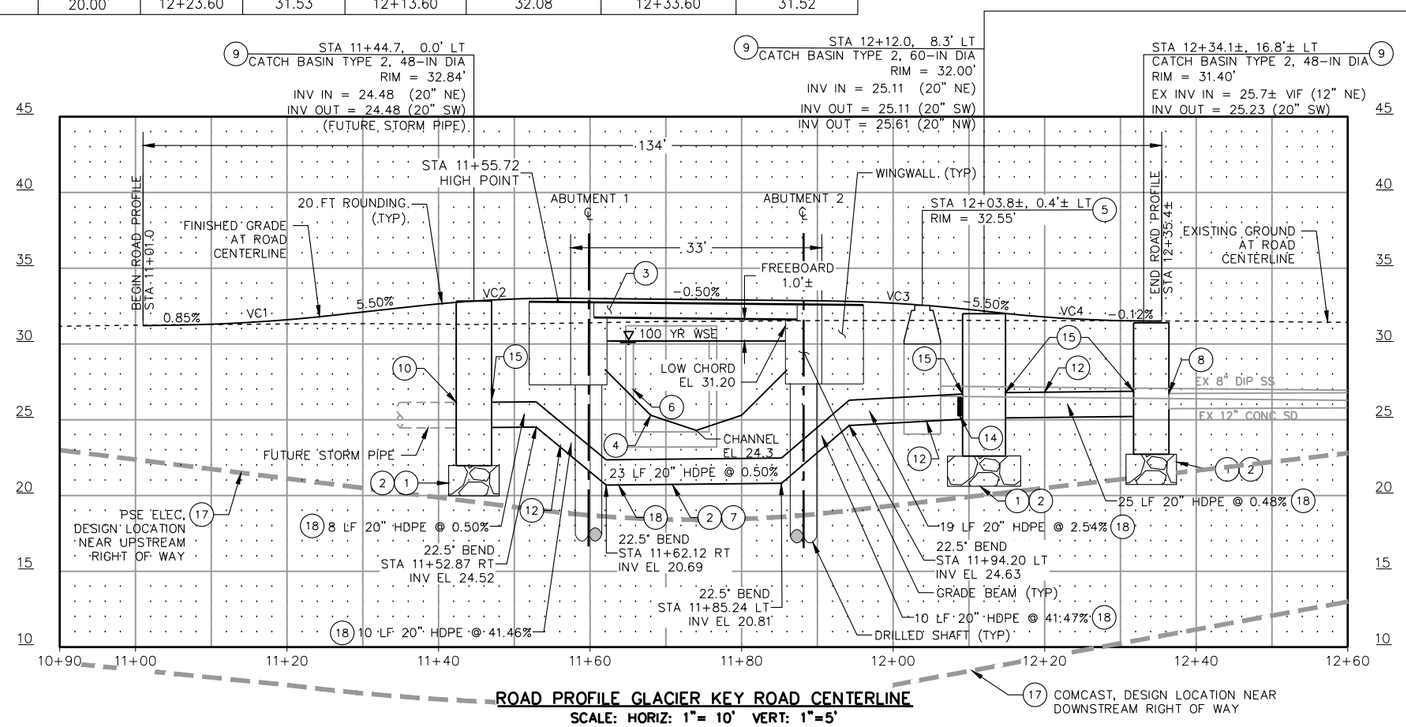
1 / G-C1 **DW APPROACH PLAN**
SCALE: 1" = 6'

VERTICAL CURVE DATA TABLE

CURVE #	LENGTH	PVI STA	PVI ELEV	BEGIN VC STA	BEGIN VC ELEV	END VC STA	END VC ELEV
VC1	20.00'	11+16.00	31.34	11+06.00	31.25	11+26.00	31.89
VC2	20.00'	11+47.40	33.07	11+37.40	32.52	11+57.40	33.02
VC3	20.00'	12+00.60	32.80	11+90.60	32.85	12+10.60	32.25
VC4	20.00'	12+23.60	31.53	12+13.60	32.08	12+33.60	31.52

STATION/OFFSET NOTE:

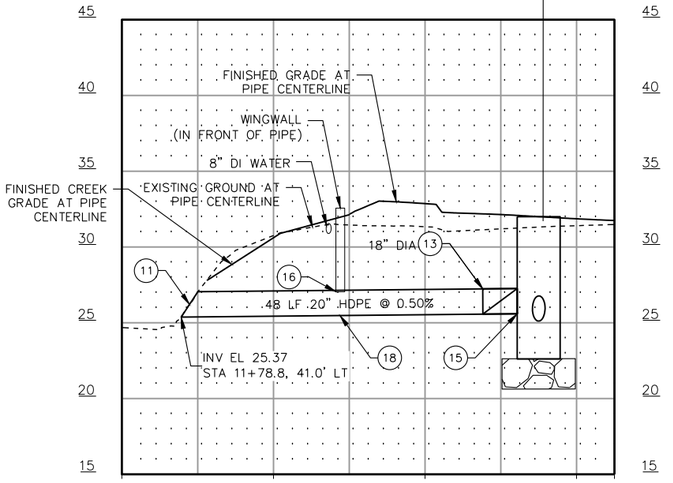
1. ALL STATIONS ARE ROAD ALIGNMENT STATIONS UNLESS OTHERWISE NOTED.
2. STATIONS AND OFFSETS ARE SHOWN TO CENTER OF STRUCTURE, EXCEPT WHERE OTHERWISE NOTED.



ROAD PROFILE GLACIER KEY ROAD CENTERLINE
SCALE: HORIZ: 1"= 10' VERT: 1"=5'

17 COMCAST, DESIGN LOCATION NEAR DOWNSTREAM RIGHT OF WAY

SAME CATCH BASIN



OUTFALL PROFILE 2
SCALE: HORIZ: 1"= 10' VERT: 1"=5'

NAVD 88

0 5 10 15 20
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KEVIN R. ASH — STATE OF WASHINGTON — 21623 — REGISTERED PROFESSIONAL ENGINEER — 05/07/2019

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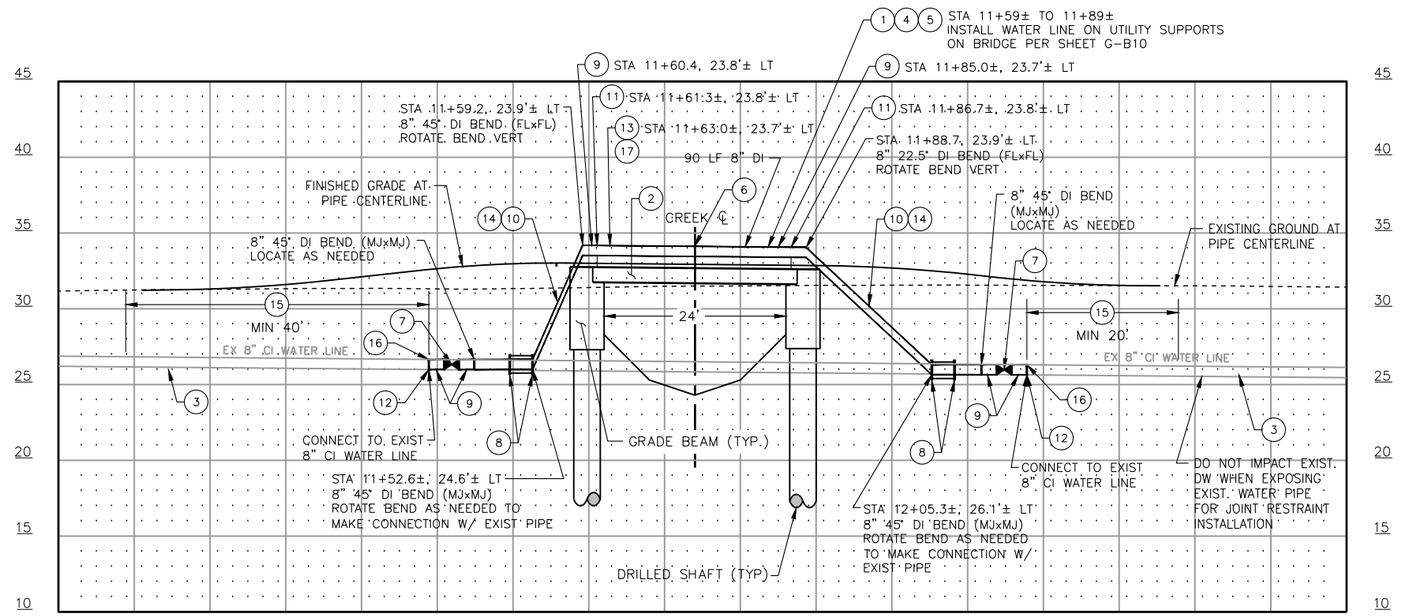
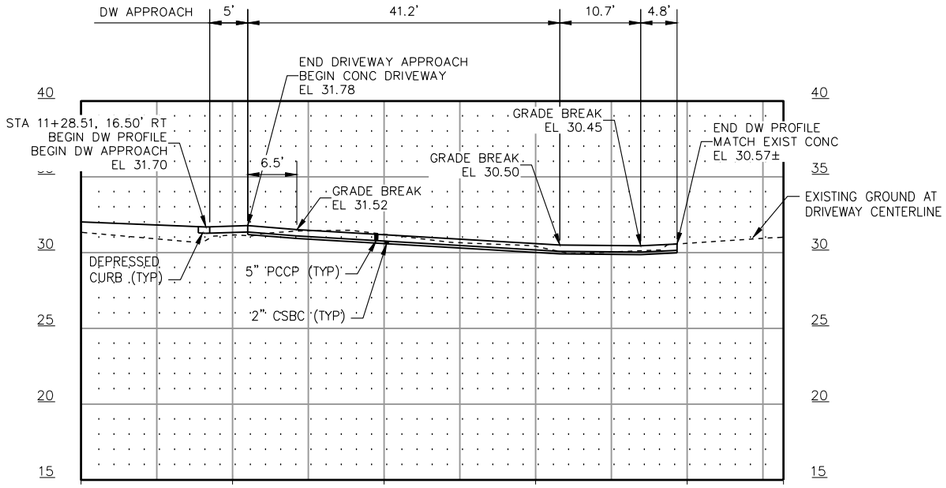
UTILITIES

FLOOD HAZARD REDUCTION PROJECT
GLACIER KEY
ROAD PROFILE

G-C2 | SHT 9 OF 54



WATER PROFILE – GLACIER KEY ROAD
SCALE: HORIZ: 1"= 10' VERT: 1"=5'



2 / G-C1 **CEMENT CONCRETE DRIVEWAY PROFILE**
SCALE: HORIZ: 1" = 10' VERT: 1" = 5'

STATION/OFFSET NOTE:

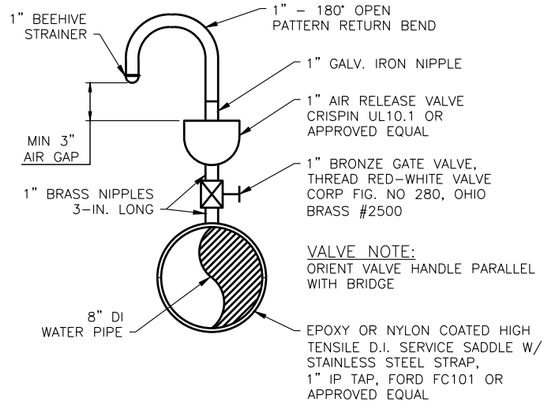
1. ALL STATIONS ARE ROAD ALIGNMENT STATIONS UNLESS OTHERWISE NOTED.

CONSTRUCTION NOTES:

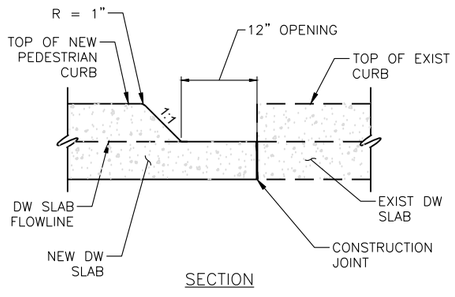
1. PROVIDE RESTRAINED JOINTS ON NEW WATER PIPE & FITTINGS.
2. SEE G-B1 TO G-B14 FOR BRIDGE.
3. LOCATION AND DEPTH SHOWN ARE APPROXIMATE ONLY. CONTRACTOR SHALL POTHOLE TO DETERMINE EXACT LOCATION AND DEPTH PRIOR TO CONSTRUCTION.
4. PROVIDE PIPE INSULATION W/ ALUMINUM JACKETING ON EXPOSED WATER PIPE STA 11+59± TO 11+89±. ATTACH INSULATION WITH METAL BANDING. INSTALL INSULATION BETWEEN UTILITY SUPPORTS. SEE CONTRACT SPECS SECTION 10-01.
5. INSTALL EPDM WEAR PAD, 1/4" THICK, UNDER PIPE AT ALL UTILITY SUPPORTS. ADVANTEK FRP BY ADVANTAGE INDUSTRIAL SOLUTIONS OR APPROVED EQUAL.
6. PLACE PIPE BELL JOINT IN MIDDLE OF BRIDGE.
7. 8" GATE VALVE (MJxMJ)
8. INSTALL PIPE RESTRAINT GLAND (ROMAC 611 OR EQUAL) ON PIPE. INSTALL (2) EYE BOLTS AT BEND MJ FITTING, ON OPPOSITE SIDES OF THE PIPE. CONNECT PIPE GLAND AND EYE BOLTS WITH (2) 316SS ALL-THREAD, 36" LONG. MATERIALS SHALL BE COMPATIBLE WITH JOINT RESTRAINT SYSTEM.
9. 8" DI SLEEVE (MJxMJ), LONG PATTERN.
10. INSTALL FLEX-TEND SERIES 4408F20B, FORCE BALANCED FLEXIBLE EXPANSION JOINT, OR APPROVED EQUAL.
    STA 11+49± LT (CENTER OF JOINT)
    STA 12+09± LT (CENTER OF JOINT)
11. INSTALL SADDLE PIPE SUPPORT, STANDON MODEL C92 304SS, OR APPROVED EQUAL. ATTACH PIPE SUPPORT BASEPLATE (4"x6") TO TOP OF BRIDGE ABUTMENT/ENDCAP USING 1/2" DAYTON SUPERIOR F64 FERRULE LOOP INSERTS, WITH NC THREADED BOLTS. CONTRACTOR SHALL PROVIDE 2" SCH 40 STAINLESS STEEL EXTENSION PIPE, LENGTH AS REQUIRED, PER MANUFACTURER'S PIPE SUPPORT INSTALLATION GUIDE. WELD EXTENSION PIPE TO BASE AND COLLAR AFTER INSTALLATION, AS NOTED IN THE MANUFACTURER'S PIPE SUPPORT INSTALLATION GUIDE.
12. MJ GLAND ON EXIST PIPE SHALL BE COMPATIBLE WITH CAST IRON.
13. AIR RELEASE VALVE (WATER), SEE 1/-.
14. PROVIDE MIN 7FT LENGTH BETWEEN PIPE BENDS FOR INSTALLATION OF FLEX-TEND EXPANSION JOINT.
15. EXPOSE EXISTING PIPE TO NEXT TWO EXISTING PIPE JOINTS BEYOND CONNECTION. INSTALL JOINT RESTRAINT AT NEXT TWO EXISTING PIPE JOINTS. JOINT RESTRAINT GLANDS SHALL BE ROMAC 611 OR EQUAL.
16. CUT AND CAP EXISTING WATER MAIN AT BOTH ENDS PRIOR TO STARTING DEMOLITION OF THE EXIST CONCRETE BOX CULVERT. INSTALL TEMPORARY 2-INCH BLOW-OFF VALVE PER COB STD DETAIL W-15, BOTH SIDES.
17. AIR RELEASE VALVE INSULATION, SEE 4/-.

PIPE SUPPORT ON BRIDGE ABUTMENT/ENDCAP NOTES:

1. SEE SHEET G-B4 FOR BRIDGE ABUTMENT/ENDCAP REBAR.
2. INSERTS SHALL BE DAYTON SUPERIOR F64 FERRULE LOOP OR APPROVED EQUAL WITH 4" MIN. EMBEDMENT DEPTH AND MIN. SAFE WORKING LOAD OF 3,000 LBS IN TENSION AND 1,800 LBS IN SHEAR.

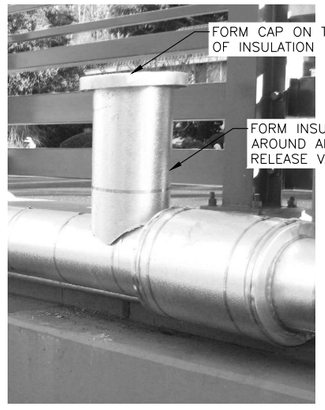


1 / – **AIR RELEASE VALVE (WATER)**
SCALE: NTS



SECTION

3 / G-C1 **CURB OPENING DETAIL**
SCALE: NTS



INSULATION NOTE:
THE CONTRACTOR IS ENCOURAGED TO VISIT AND VIEW THE EXISTING INSULATION LOCATED NEAR 8 SKAGIT KEY FOR EXAMPLE OF FINISHED AIR RELEASE VALVE INSULATION.

4 / – **AIR RELEASE VALVE INSULATION DETAIL**
SCALE: NTS

DATUM
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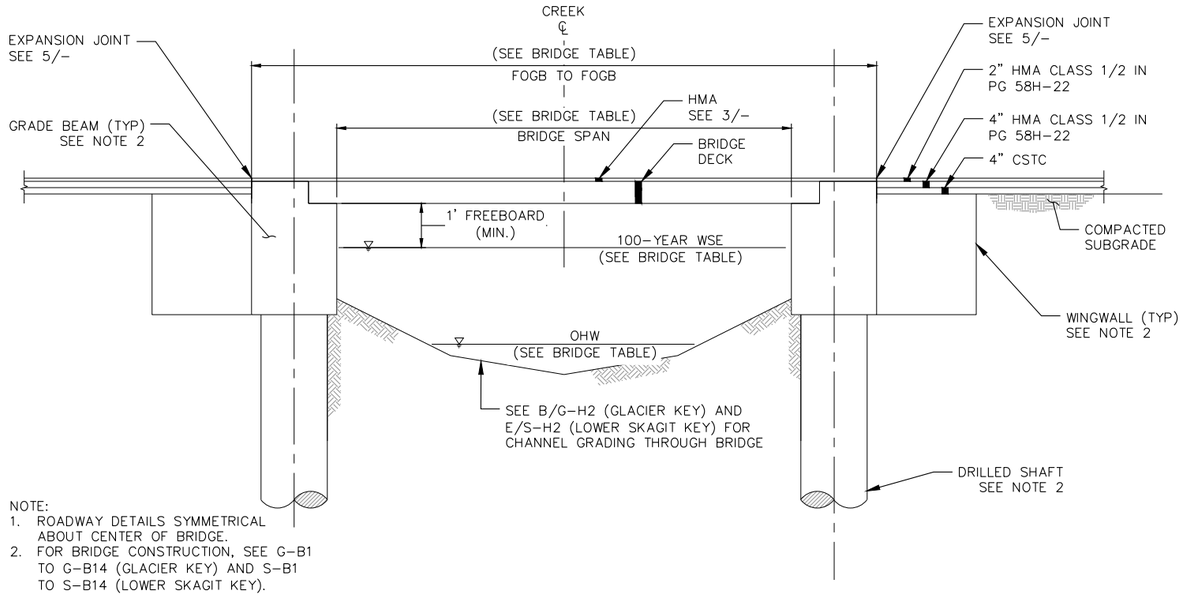
City of Bellevue
UTILITIES

FLOOD HAZARD REDUCTION PROJECT
GLACIER KEY WATER LINE PROFILE
AND DRIVEWAY PROFILE

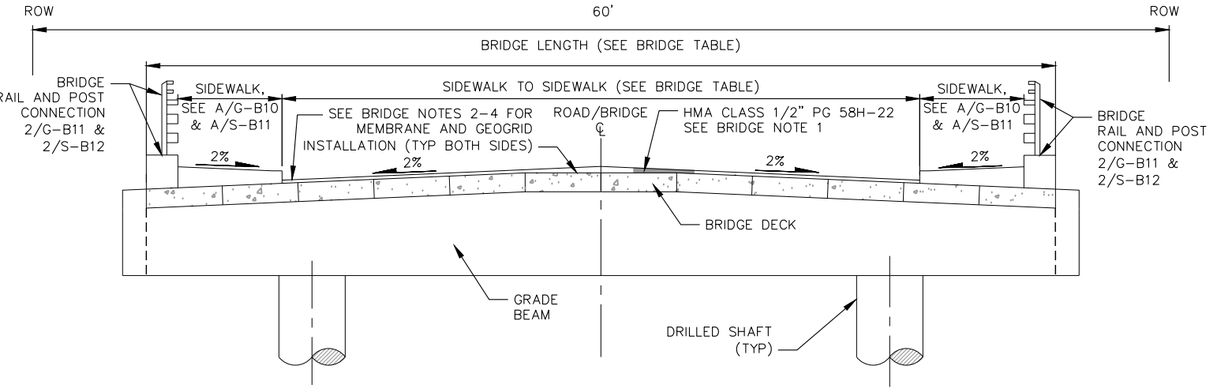
G-C3 | SHT 10 OF 54



NOTE:
1. ROADWAY DETAILS SYMMETRICAL ABOUT CENTER OF BRIDGE.
2. FOR BRIDGE CONSTRUCTION, SEE G–B1 TO G–B14 (GLACIER KEY) AND S–B1 TO S–B14 (LOWER SKAGIT KEY).

BRIDGE SECTION AT CENTERLINE

SCALE: NTS — S–C1 & G–C1 (1)



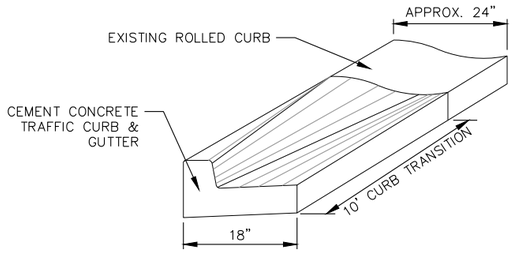
BRIDGE NOTES:
1. MINIMUM HMA THICKNESS 2". HMA DEPTH VARIES, MAX 2" THICK LIFTS FOR HMA WEARING COURSE. INSTALL HMA AT BRIDGE CENTER IN ONE LIFT (DEPTH VARIES 2"–2.5").
2. INSTALL WATERPROOF MEMBRANE AGAINST BRIDGE DECK PER MANUFACTURERS RECOMMENDATIONS. WRAP MEMBRANE UP SIDES OF SIDEWALK EDGE 0.1 FEET.
3. APPLY TACK COAT TO MEMBRANE PRIOR TO INSTALLING GEOGRID. TACK COAT TO BE PER MANUFACTURER'S RECOMMENDATIONS.
4. INSTALL GEOGRID PER MANUFACTURER'S RECOMMENDATIONS. WRAP GEOGRID UP SIDES OF SIDEWALK EDGE 0.1 FT.

TYPICAL BRIDGE SECTION

SCALE: NTS — S–C1 & G–C1 (3)

BRIDGE TABLE

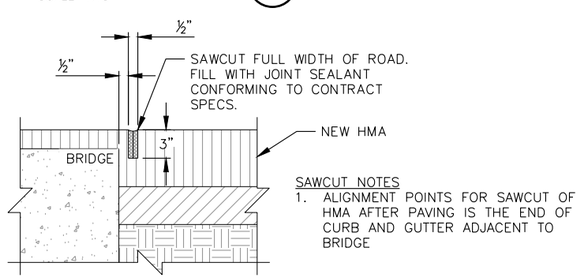
LOCATION	FOGB TO FOGB (FACE OF GRADE BEAM)	SPAN	100 YR WSE NAVD 88	OHW NAVD 88	BRIDGE LENGTH	SWLK TO SWLK (PERP. TO TRAVELED ROAD)
LOWER SKAGIT KEY	35.1'± (20° SKEW)	25.5'± (20° SKEW)	23.3	20.3±	51.1'± (20° SKEW)	33'–0"
GLACIER KEY	33'	24'	30.2	26.5±	48'–0"	33'–0"



CURB NOTES:
1. TRANSITIONS SHALL BE ACCOMPLISHED BY THE USE OF DIRECT STRAIGHT LINE TRANSITIONS OF THE FLOW LINE AND OTHER SURFACE FEATURES.

ROLLED CURB TRANSITION DETAIL

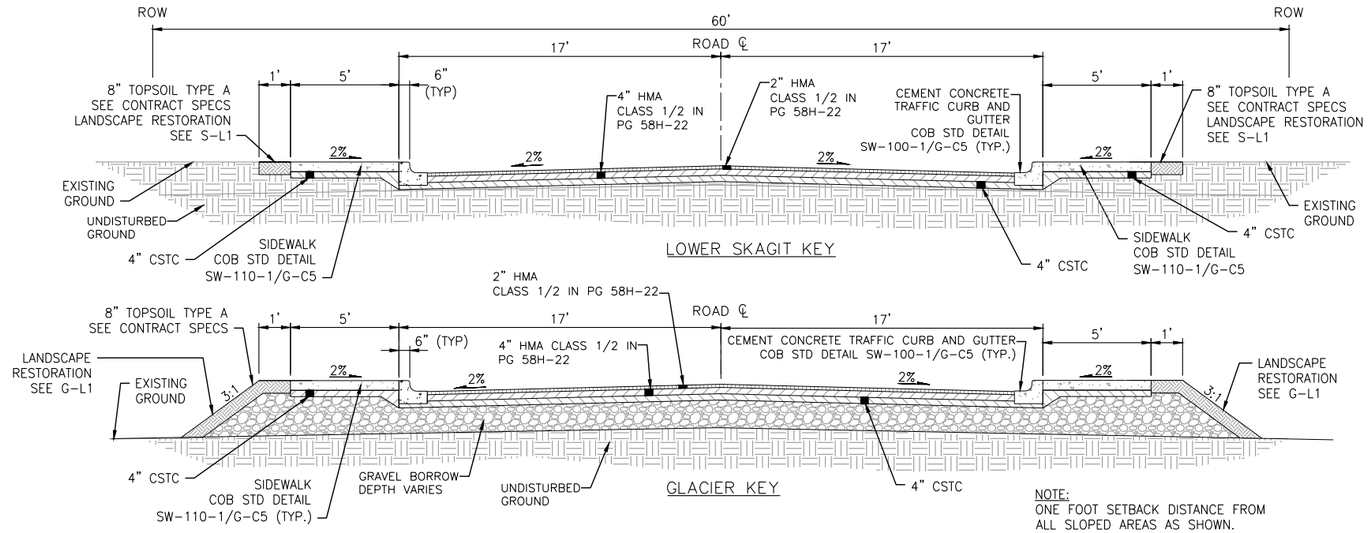
SCALE: NTS — S–C1 & G–C1 (2)



SAWCUT NOTES
1. ALIGNMENT POINTS FOR SAWCUT OF HMA AFTER PAVING IS THE END OF CURB AND GUTTER ADJACENT TO BRIDGE

EXPANSION JOINT

SCALE: NTS — – (5)



NOTE:
ONE FOOT SETBACK DISTANCE FROM ALL SLOPED AREAS AS SHOWN.

TYPICAL ROADWAY APPROACH SECTION

SCALE: NTS — S–C1 & G–C1 (4)

NO	DATE	BY	APPR	REVISIONS

KEVIN R. ANE — STATE OF WASHINGTON — 21627 — REGISTERED PROFESSIONAL ENGINEER — 05/04/2019

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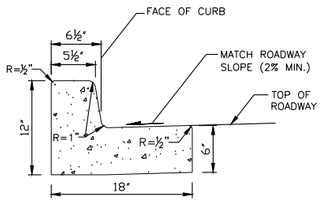
FLOOD HAZARD REDUCTION PROJECT
MISCELLANEOUS DETAILS

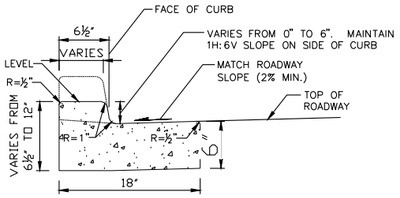
G-C4

SHT 11 OF 54

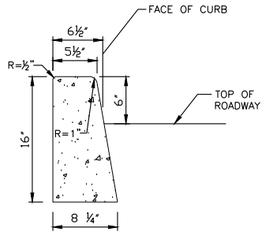
Path: P:\134271 Lower Coal Creek Ph 2 Early Action\05 G3 Design\CAD\Sheet Files\1 G-C4_GLACIER KEY MISC DTLS AND DWY PROF.dwg Plot date: Feb 07, 2019-09:53:55am CAD User: nadine.stock.
Xref Filename: | G3-border | C-SP-WINGWALL DETAILS |



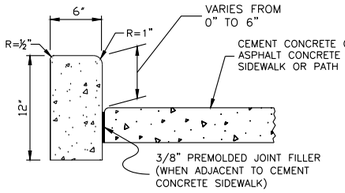
CEMENT CONCRETE TRAFFIC CURB AND GUTTER



DEPRESSED CURB SECTION



CEMENT CONCRETE TRAFFIC CURB

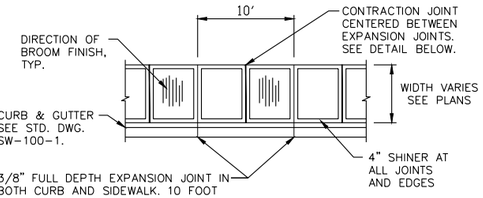


CEMENT CONCRETE PEDESTRIAN CURB

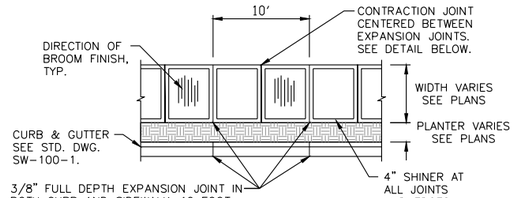
NOTES:

1. ALL CEMENT CONCRETE CURBS SHALL BE CONSTRUCTED WITH AIR ENTRAINED CONCRETE CLASS 3000 CONFORMING TO WSDOT STD. SPEC. 6-02 EXCEPT AS SPECIFIED IN NOTE 2.
2. CEMENT CONCRETE CURB OR CURB AND GUTTER ALONG THE FULL WIDTH OF A DRIVEWAY ENTRANCE SHALL BE CONSTRUCTED WITH AIR ENTRAINED CONCRETE CLASS 4000 CONFORMING TO WSDOT STD. SPEC. 6-02.
3. REMOVAL/REPLACEMENT OF CEMENT CONCRETE CURB SHALL BE FROM EXPANSION JOINT TO EXPANSION JOINT UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

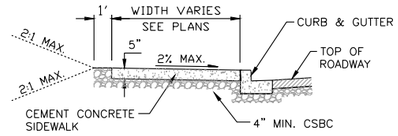
CEMENT CONCRETE CURBS
COB STD SW-100-1



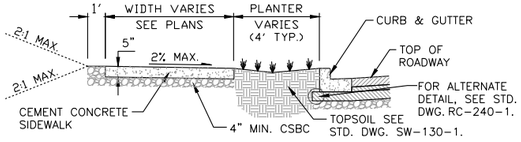
PLAN – CURBSIDE SIDEWALK



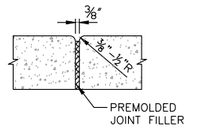
PLAN – SIDEWALK WITH PLANTER STRIP



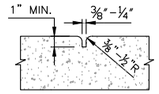
SECTION – CURBSIDE SIDEWALK



SECTION – SIDEWALK WITH PLANTER STRIP



FULL DEPTH EXPANSION JOINT DETAIL

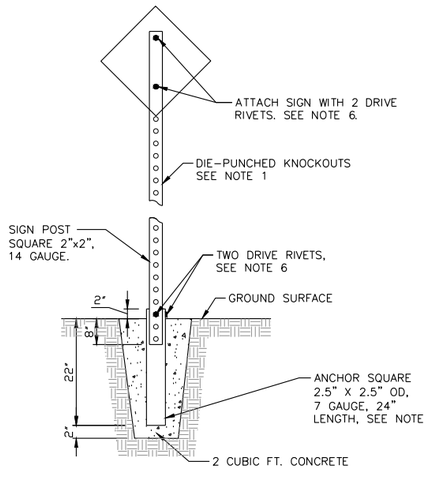


CONTRACTION JOINT DETAIL

NOTES:

1. CONCRETE SHALL BE AIR ENTRAINED CLASS 3000 PER SECTION 6-02 OF WSDOT STANDARD SPECIFICATIONS.
2. FINISH: LIGHT FINISH WITH A STIFF BROOM PERPENDICULAR TO CURB. FOR GRADES OVER 4%, FINISH WITH A STIPPLE BRUSH.
3. REMOVAL/REPLACEMENT OF CEMENT CONCRETE CURB SHALL BE FROM EXPANSION JOINT TO EXPANSION JOINT UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
4. LIDS FOR JUNCTION BOXES AND UTILITY VAULTS SHALL BE NON-SKID AS SPECIFIED BY THE ENGINEER.

SIDEWALK
COB STD SW-110-1



SQUARE METAL POST

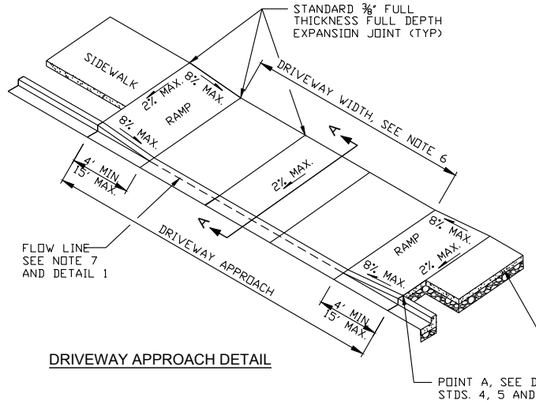
SIGN POST NOTES

1. SIGN POST SHALL BE 2"x2" SQUARE STEEL POSTS, MINIMUM 14 GAUGE, WITH 7/16" DIE-PUNCHED KNOCKOUTS ON 1" CENTERS FULL LENGTH FOUR SIDES.
2. STOP AND YIELD SIGN POSTS SHALL HAVE REFLECTOR ATTACHMENT FOR ALTERNATING 1' BANDS OF RED AND WHITE, SEE STD. DWG. SG-110-1.
3. FOR IN-SIDEWALK INSTALLATIONS, CORE 4" DIAM. HOLE. ANCHOR LENGTH MAY BE DECREASED TO 12".
4. POST SHALL BE ROLLED CARBON SHEET STEEL AND SHALL BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A653, G90, STRUCTURAL QUALITY GRADE 50.
5. ANCHOR SHALL HAVE FOUR 7/16" DIAM. HOLES, ONE EACH SIDE, 2" FROM TOP END. ANCHOR SHALL MEET THE REQUIREMENTS OF ASTM A500 GRADE B AND SHALL BE HOT DIPPED GALVANIZED.
6. INSTALL TWO DRIVE RIVETS AT 90 DEGREES TO EACH OTHER. DRIVE RIVETS TO BE 3/8" DIA., ZUMAR TL3806 OR DUNLAP INDUSTRIAL VCR221.

SIGN INSTALLATION NOTES

1. SIGN SHEETING REQUIREMENTS:
   STOP, YIELD, KEEP RT, TURN RESTRICTION, LARGE ARROW, CHEVRON, CURVE/TURN WARNING, PED & ADV PED CROSSING, SCHOOL AND ADV SCHOOL CROSSING, STOP/YIELD/SIGNAL AHEAD, OBJECT MARKERS, END OF ROAD MARKER, ALL STREET NAME SIGNS AND ALL MAST ARM OR OVERHEAD MOUNTED SIGNS SHALL BE 3M DIAMOND GRADE DG3 REFLECTIVE SHEETING OR APPROVED EQUAL. ALL OTHER SIGNS SHALL BE 3M HIGH INTENSITY PRISMATIC SHEETING, OR APPROVED EQUAL.
2. SIGN HEIGHT SHALL BE 7' FROM BOTTOM OF SIGN TO STREET OR SIDEWALK OR 6.5' FROM BOTTOM OF LOWER SIGN FOR MULTIPLE SIGNS ON ONE POST. EXCEPTIONS ONLY AS SPECIFICALLY STATED ON PLANS OR APPROVED BY THE ENGINEER.

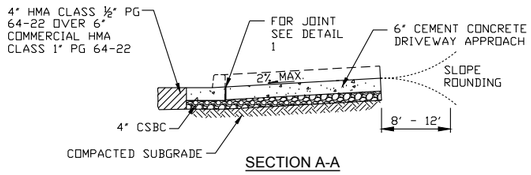
SIGN INSTALLATION DETAILS
COB STD SG-100-1



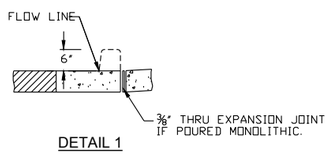
DRIVEWAY APPROACH DETAIL

NOTES:

1. ALL JOINTS SHALL BE CLEANED AND EDGED.
2. SEE DESIGN STANDARD 5 FOR GRADE REQUIREMENTS. SLOPE ROUNDING IS REQUIRED AT DRIVEWAY GRADE TRANSITIONS AS SHOWN IN SECTION A-A.
3. CONCRETE SHALL BE A CLASS 4000 P.C.C. MIX WITH A COMPRESSIVE STRENGTH OF 3000 PSI WITHIN 3 DAYS (CURB, GUTTER, DRIVEWAY APPROACH, RAMPS AND ALL OTHER ITEMS SPECIFIED BY THE ENGINEER).
4. CONCRETE PAVEMENT SHALL BE BRUSHED WITH A FIBER OR WIRE BRUSH OF A TYPE APPROVED BY THE ENGINEER, PERPENDICULAR TO THE WALKING DIRECTION.
5. 3/8" THRU EXPANSION JOINTS SHALL BE PLACED AT BACK, SIDES AND FRONT. MAXIMUM EXPANSION JOINT SPACING IS 14' CENTER TO CENTER.
6. DRIVEWAY WIDTHS SHALL BE SPECIFIED BY THE ENGINEER. SEE DES. STD. 5 FOR BASIC DESIGN GUIDELINES. DRIVEWAY WIDTH DOES NOT INCLUDE ADJACENT RAMPS.
7. ALTERNATE DESIGN WITH LIP PERMITTED ONLY WITH APPROVAL OF REVIEW ENGINEER AND TRANSPORTATION INSPECTOR.



SECTION A-A



DETAIL 1

DRIVEWAY OR PRIVATE ROAD APPROACH WITH SIDEWALK
COB STD SW-170-1

NO	DATE	BY	APPR	REVISIONS

TETRA TECH
www.tetratech.com
1420 Fifth Avenue, Suite 650
Seattle, Washington 98101
Phone: 206-728-9655 Fax: 206-883-9301

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PROJECT MANAGER	DATE

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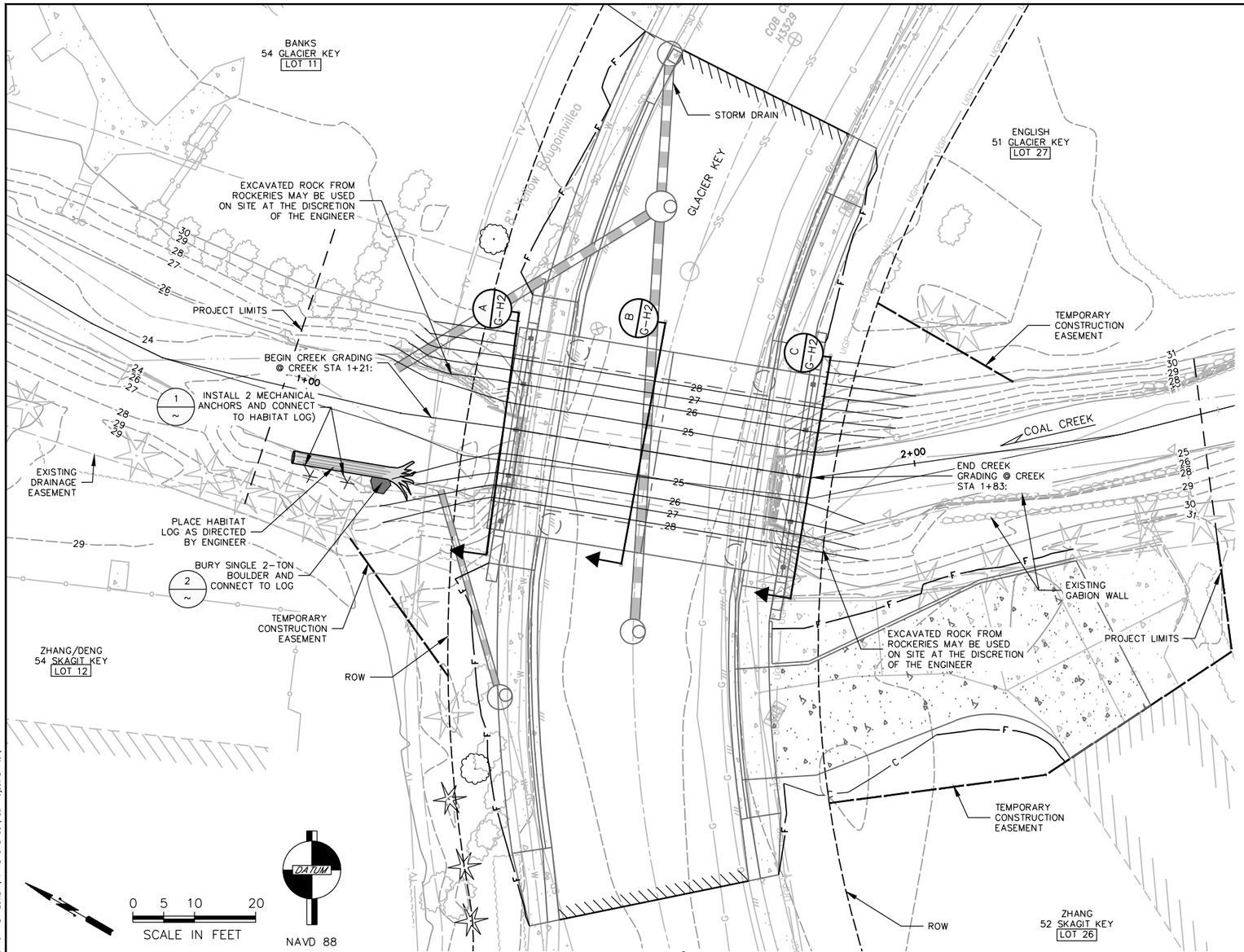
DESIGNED BY	DATE
NS	
DRAWN BY	DATE
GG	
CHECKED BY	DATE

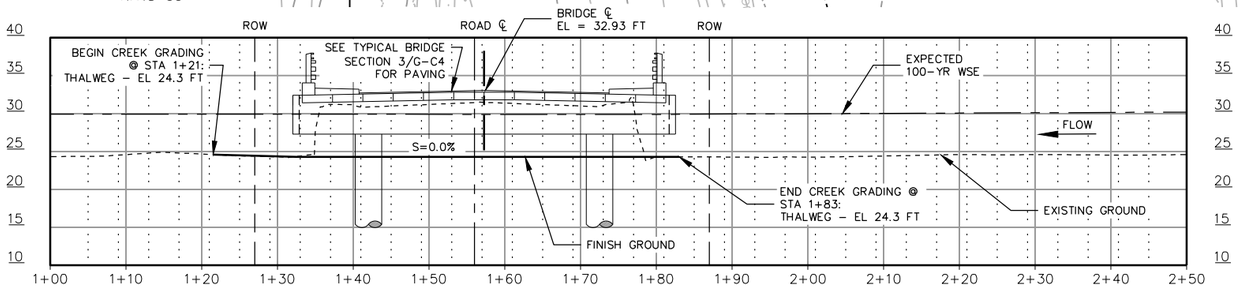
City of Bellevue
UTILITIES

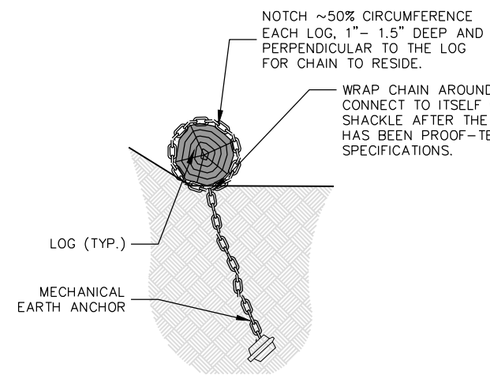
FLOOD HAZARD REDUCTION PROJECT
TRANSPORTATION STANDARD DETAILS

G-C5

SHT 12 OF 54

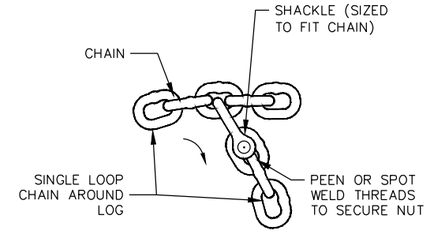






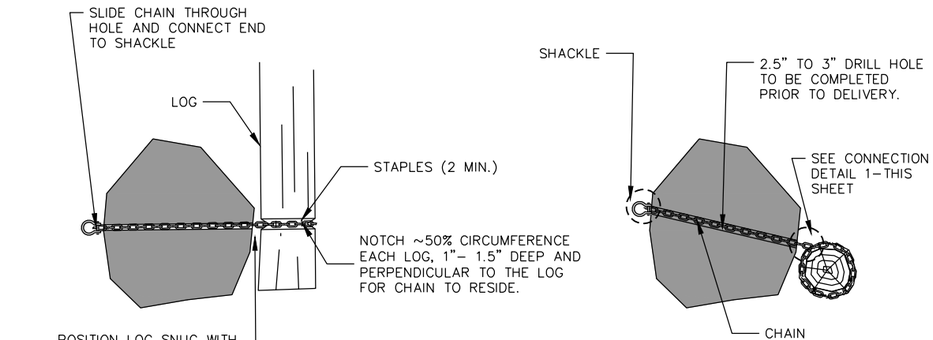
LOG TO MECHANICAL ANCHOR CONNECTION (1)

N.T.S.



CONNECTION DETAIL 1

N.T.S.



BOULDER TO LOG CONNECTION (2)

N.T.S.

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nhc
northwest hydraulic consultants
12787 Gateway Drive South
Seattle, WA 98168
Phone: (2016) 241-6000 Fax: (206) 439-2420

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PROJECT MANAGER DATE

D. HINTON DESIGNED BY DATE
D. HINTON DRAWN BY DATE
E. ROWLAND CHECKED BY DATE

City of Bellevue
UTILITIES

FLOOD HAZARD REDUCTION PROJECT
GLACIER KEY HABITAT CREEK GRADING
PLAN & PROFILE

G-H1 SHT 13 OF 54

Path: G:\2003781_LowerCoalCreek_Group3\AC_2003781\Mxd\2003781_GlacierBegin_v2.dwg Plot date: Feb 06, 2019–10:10:48am CAD User: ahinton
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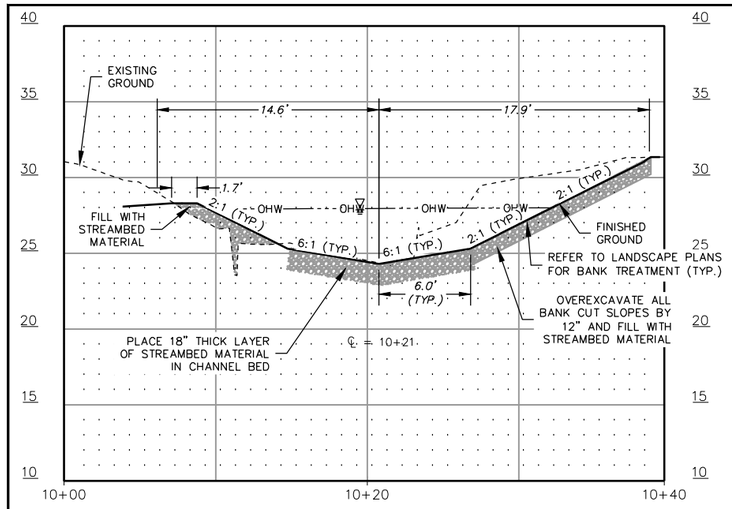
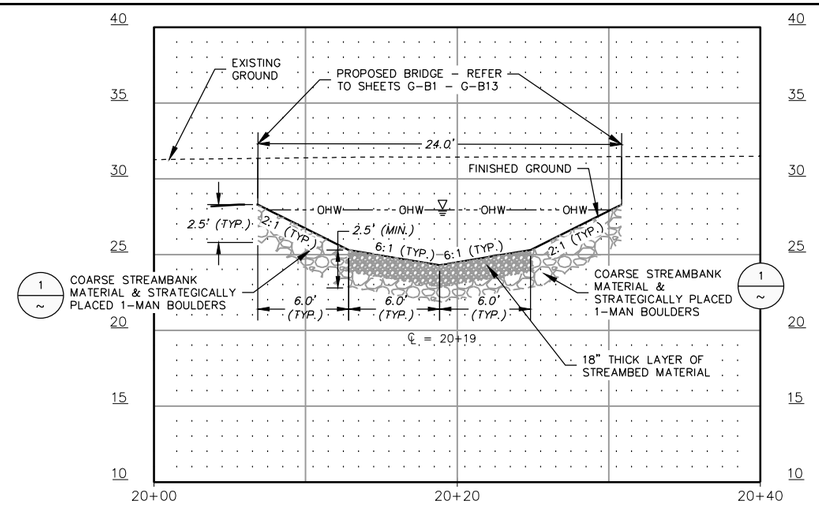


SECTION STA. 1+32 (A / G-H1)

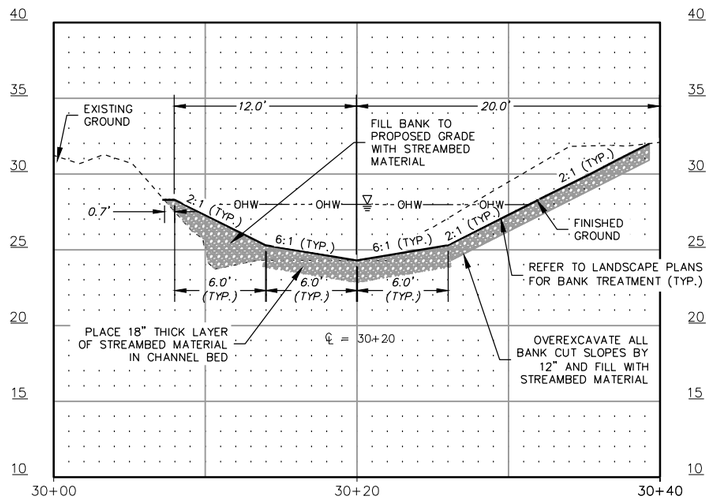
1" = 5' (HORIZ.) 1" = 5' (VERT.)



SECTION STA. 1+55 (B / G-H1)

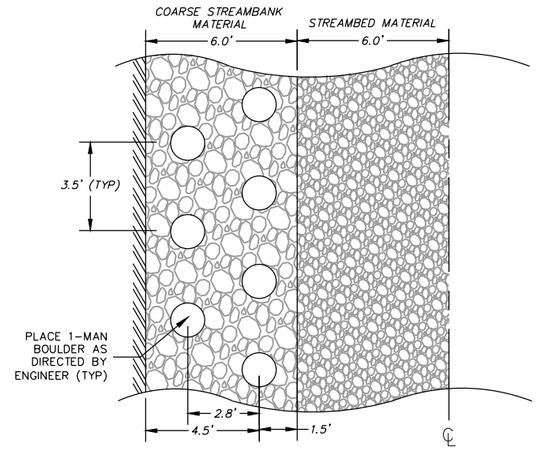
1" = 5' (HORIZ.) 1" = 5' (VERT.)

NOTE:
1. SECTIONS RELATE TO THE FOLLOWING STATIONS
   - SECTION A: STA. 1+18 TO 1+33 (FACE OF BRIDGE)
   - SECTION B: 1+33 TO 1+82 (FACE OF BRIDGE)
   - SECTION C: 1+82 TO 2+03
2. ALL PORTIONS OF THE CREEK BED AND BANKS REQUIRING EXCAVATION SHALL BE OVER-EXCAVATED BY 12 INCHES AND FILLED WITH STREAMBED GRAVEL

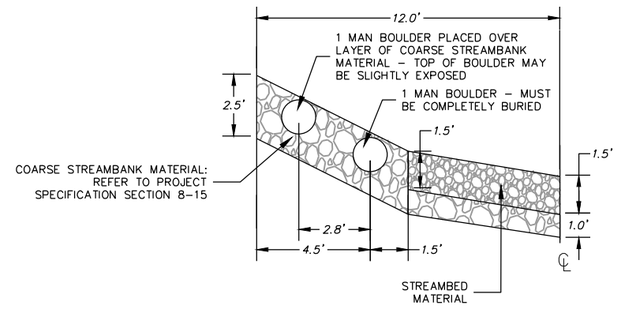


SECTION STA. 1+83 (C / G-H1)

1" = 5' (HORIZ.) 1" = 5' (VERT.)



NOTE:
DETAIL APPLIES EQUALLY TO LEFT AND RIGHT BANKS



COARSE STREAMBANK MATERIAL DETAIL (1 / S-H2)

1"= 3'-0"

DATUM
NAVD 88

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JASON DONALD LABOR — STATE OF WASHINGTON — PROFESSIONAL ENGINEER — 2/7/19

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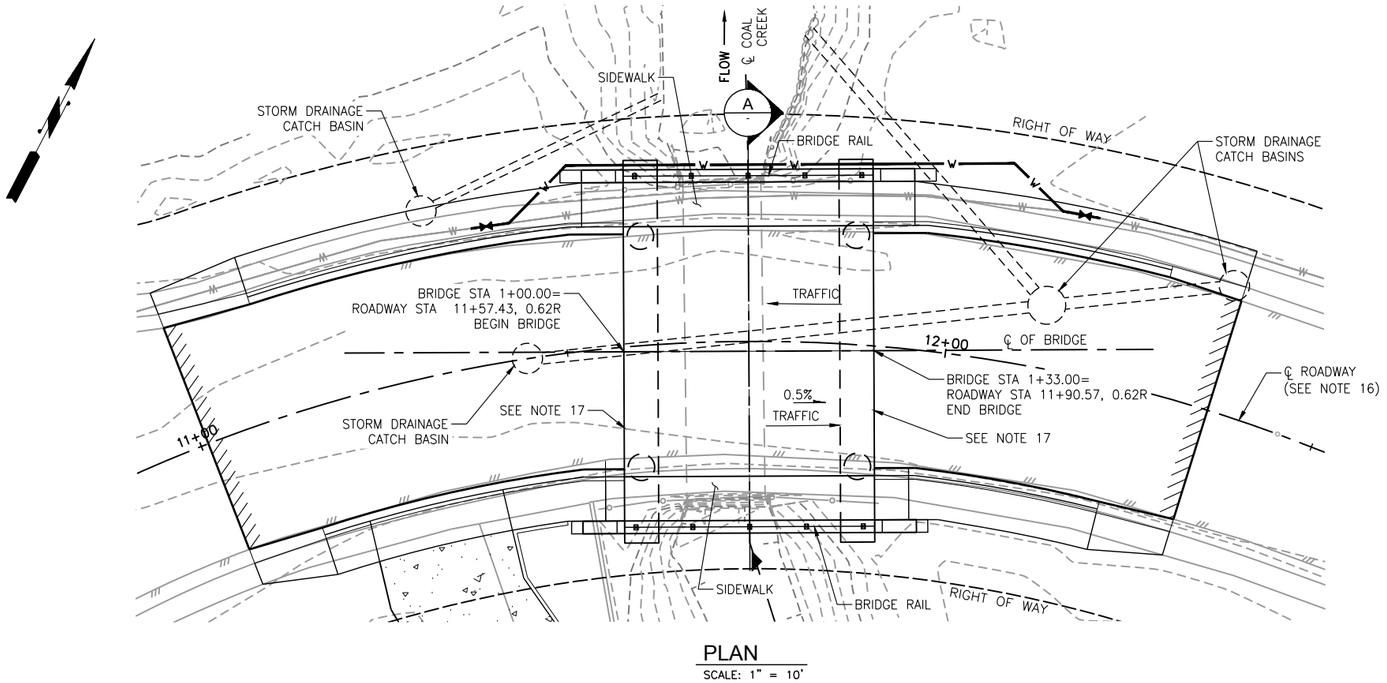
D. HINTON DESIGNED BY DATE
D. HINTON DRAWN BY DATE
E. ROWLAND CHECKED BY DATE

City of Bellevue UTILITIES

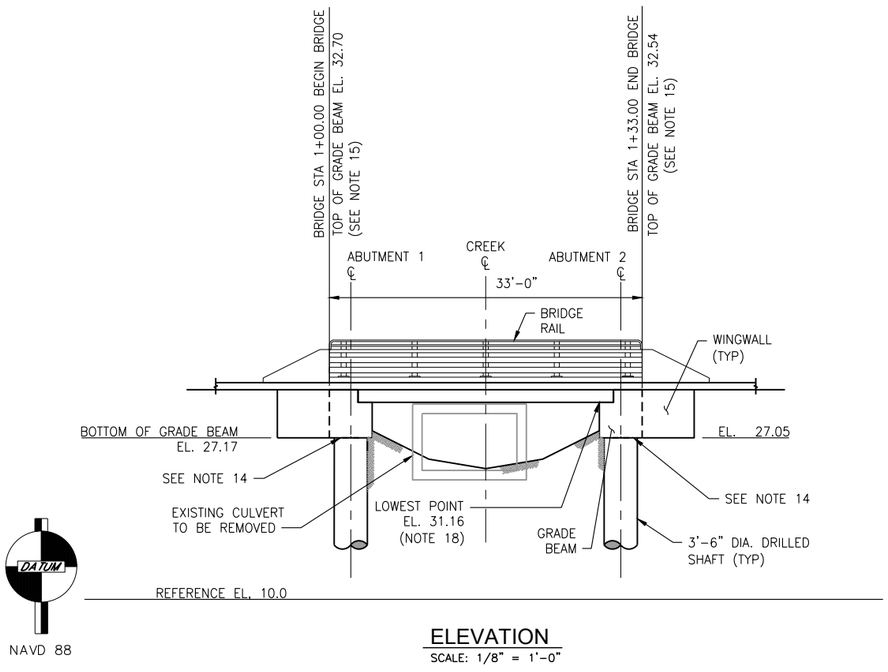
FLOOD HAZARD REDUCTION PROJECT

GLACIER KEY CREEK GRADING SECTION VIEWS

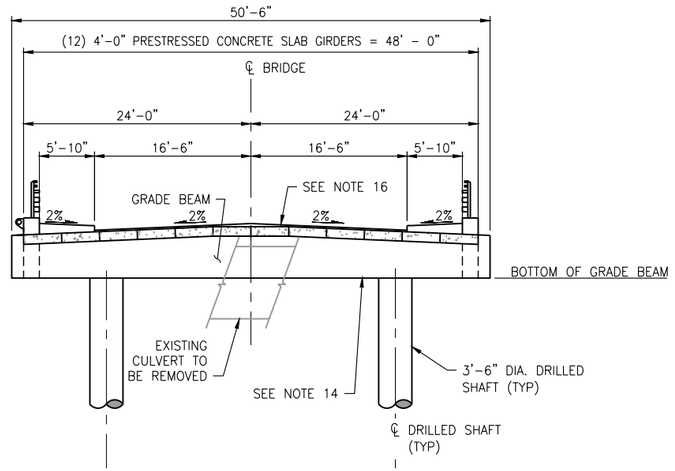
G-H2 | SHT 14 OF 54



PLAN
SCALE: 1" = 10'



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



A BRIDGE SECTION (LOOKING AT ABUTMENT)
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

1. ALL MATERIALS AND WORKMANSHIP FOR STRUCTURAL ELEMENTS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION, DATED 2018 AND AMENDMENTS.

2. THE STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS SEVENTH EDITION – 2017, MODIFIED BY THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION BRIDGE DESIGN MANUAL.

3. SEISMIC DESIGN HAS BEEN DONE USING THE FOLLOWING SEISMIC PARAMETERS:

SEISMIC DESIGN PARAMETERS	
SDs	0.91
SD1	0.88
Site Class	E
Site Adjusted PGA, As	0.4

4. BRIDGE RAIL AND ANCHORAGE PROVIDED HAS BEEN CRASH TESTED TO MEET NCHRP 350 TL-4 REQUIREMENTS. CONCRETE REINFORCEMENT IS DETAILED FOR TL-1 PER PROJECT REQUIREMENTS.

5. CONCRETE COMPRESSIVE STRENGTH SHALL BE AS FOLLOWS:

   DRILLED SHAFT.....CLASS 5,000P
   ALL CAST-IN-PLACE.....CLASS 4000
   PRE-STRESSED CONCRETE SLAB GIRDER.....7000 PSI AT 28 DAYS
   .....6000 PSI AT PRE-STRESSED RELEASED
   GROUT.....5000 PSI (SEE SPECIFICATIONS)

6. GRADE BEAM CONCRETE SHALL BE 3,000 PSI PRIOR TO PLACING PRECAST CONCRETE PANELS.

7. UNLESS OTHERWISE SHOWN ON THE PLANS, THE CONCRETE COVER MEASURED FROM THE FACE OF THE CONCRETE TO THE FACE OF ANY REINFORCING BAR SHALL BE AS FOLLOWS:

TOP OF ROADWAY SLAB	2 INCHES
BOTTOM OF ROADWAY SLAB	1-½ INCHES
CONCRETE CAST AGAINST EARTH	3 INCHES
CONCRETE EXPOSED TO EARTH OR WEATHER	
PRIMARY REINFORCEMENT	2 INCHES
SECONDARY REINFORCEMENT (TIES OR STIRRUPS)	1-½ INCHES

8. UNLESS OTHERWISE SHOWN ON THE PLANS, ALL EXTERIOR CORNERS AND EDGES SHALL HAVE ¾" CHAMFER.

9. THE UTILITY CENTERLINES ARE SHOWN FOR REFERENCE ONLY. THE CONTRACTOR SHALL COORDINATE THESE PLANS WITH RELEVANT UTILITY INFORMATION SHOWN ON SHEETS G-C2 AND G-C3.

10. A PIGMENT SEALER SHALL BE APPLIED TO THE EXTERIOR SURFACE OF THE GRADE BEAM, WING WALL, BRIDGE RAIL TERMINAL EXTERIOR, PRESTRESSED CONCRETE SLAB GIRDERS AND THE BRIDGE RAIL PEDESTAL CONCRETE. THE COLOR SHALL BE MT. ST. HELENS GRAY.

11. [XXX] INDICATES BAR MARK NUMBER.

12. ALL STEEL REINFORCING SHALL CONFORM TO ASTM A706 GRADE 60.

13. [E] INDICATES EPOXY COATED BAR.

14. EXCAVATE 6" BELOW GRADE BEAM AND WINGWALL BOTTOM ELEVATION. PLACE 6" CSBC FULL WIDTH AND LENGTH OF GRADE BEAM AND WINGWALL.

15. ELEVATION IS TO TOP OF CONCRETE AT THE CENTERLINE OF BRIDGE. FOR ROADWAY PROFILE SEE SHEET G-C2. SEE SHEET G-C4 FOR TYPICAL CROSS SECTIONS.

16. SEE SHEET G-EC1 FOR ROADWAY ALIGNMENT DATA.

17. PLACE STRUCTURAL BACKFILL 24'' LATERALLY FROM GRADE BEAM PER CONTRACT SPECS.

18. LOWEST POINT APPLIES TO GIRDERS 1 & 12.

12" PRESTRESSED CONCRETE SLAB GIRDERS
LOADING: HL-93

NO	DATE	BY	APPR	REVISIONS

BRIAN S. TEWITCHETT, STATE OF WASHINGTON, 40905, REGISTERED PROFESSIONAL ENGINEER, 7/1/2019

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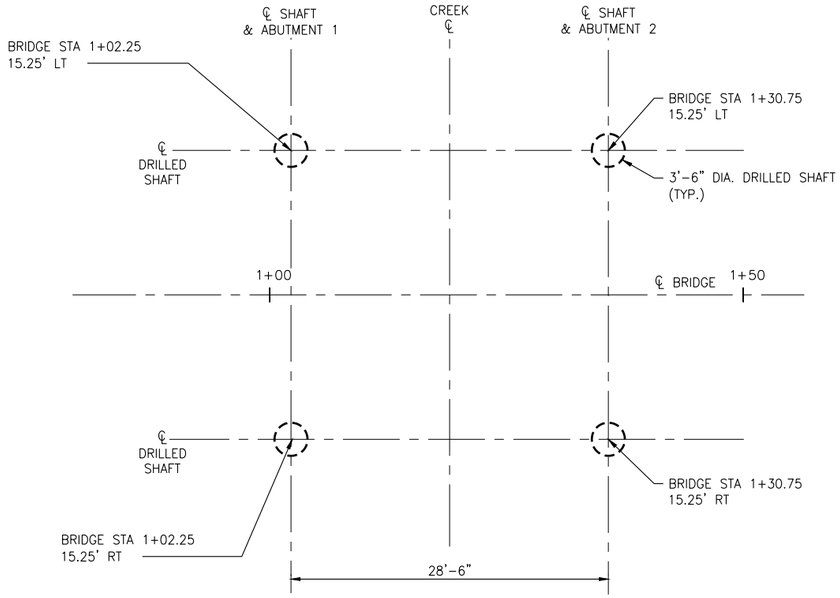
City of Bellevue UTILITIES

FLOOD HAZARD REDUCTION PROJECT
GLACIER KEY BRIDGE LAYOUT AND GENERAL NOTES

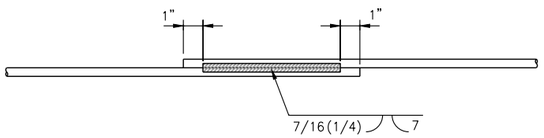
G-B1 | SHT 15 OF 54

Path: P:\134371 Lower Coal Creek Ph 2 Early Action\05 C3 Design\CAD\Sheet Files\15 G-B1_GLACIER KEY BRIDGE_LAYOUT.dwg Plot date: Feb 07, 2019-09:54:18am CAD User: nadine.stock.
Xref Filename: | G1-border | C-SP-ALGN-PROF | C-SP-SITE-GLACIER KEY | V-XE-SITE-G3 | C-SP-BRIDGE DETAILS-GLACIER |



FOUNDATION PLAN

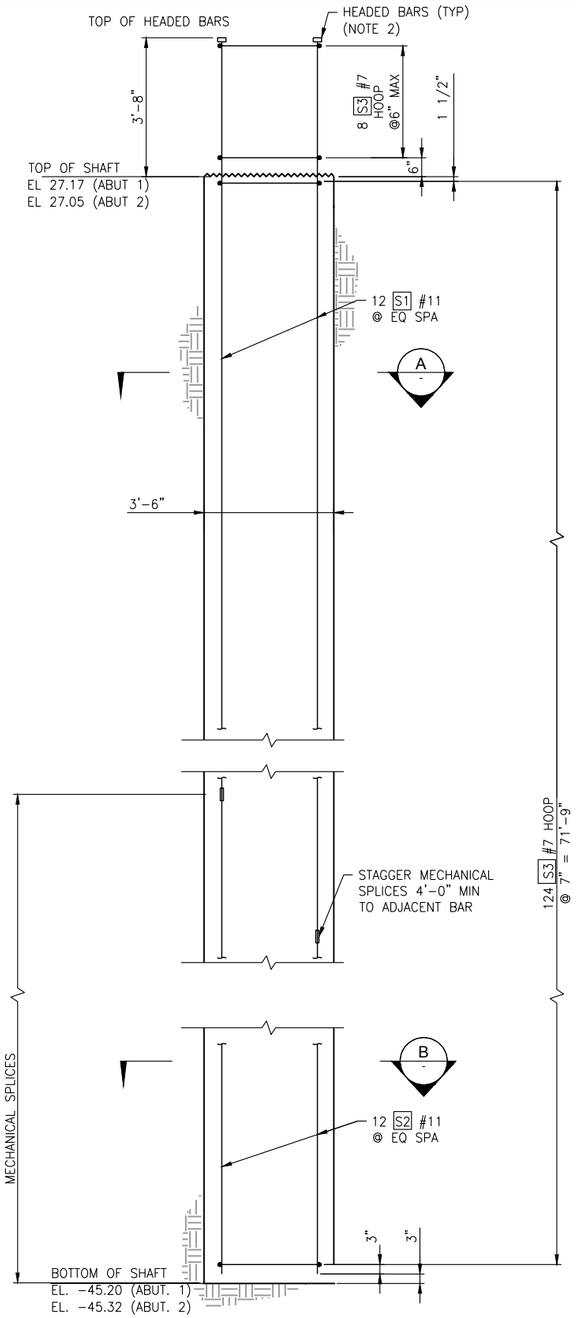
SCALE: 1 1/2" = 1'-0"



HOOP WELD SPLICE DETAIL

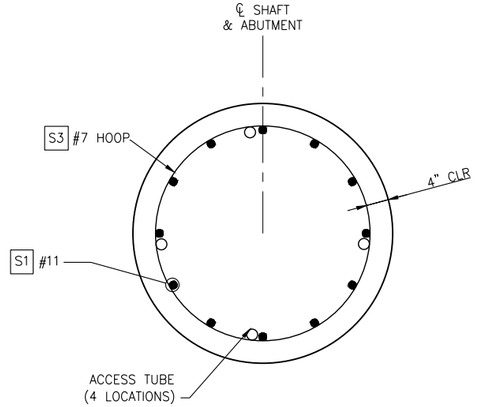
SCALE: NTS

WELDING SHALL MEET THE REQUIREMENTS OF SECTION 6-02.3(24)E WELDING REINFORCING STEEL OF THE STANDARD SPECIFICATIONS.



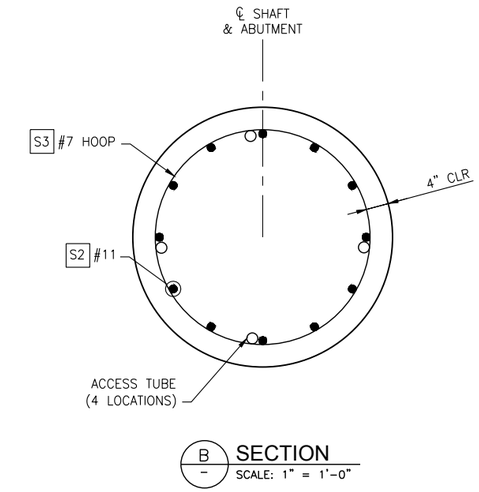
DRILLED SHAFT ELEVATION

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



A — SECTION

SCALE: 1" = 1'-0"



B — SECTION

SCALE: 1" = 1'-0"

DRILLED SHAFT NOTES:

1. ADDITIONAL SUPPORT OF THE SHAFT SIDEWALLS (SUCH AS CASING OR SLURRY) MAY BE NEEDED TO MITIGATE POTENTIAL CAVING OR SLOUGHING SOILS, ESPECIALLY IN THE UPPER 25 FEET OF THE SOIL PROFILE WHERE SOIL CONDITIONS ARE EXPECTED TO BE VERY LOOSE/SOFT. SEE THE SOIL BORING INFORMATION IN THE GEOTECHNICAL DATA REPORT. IF CONTRACTOR ELECTS TO USE A CASING, VIBRATORY METHODS SHALL NOT BE USED TO INSTALL OR REMOVE THE CASING.
2. HEADED BARS SHALL MEET REQUIREMENTS OF SECTION 9-07.2(1) HEADED STEEL REINFORCING BAR OF THE STANDARD SPECIFICATIONS.

NO	DATE	BY	APPR	REVISIONS

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www.tetratech.com
1420 Fifth Avenue, Suite 650
Seattle, Washington 98101
Phone: 206-728-9655 Fax: 883-9301

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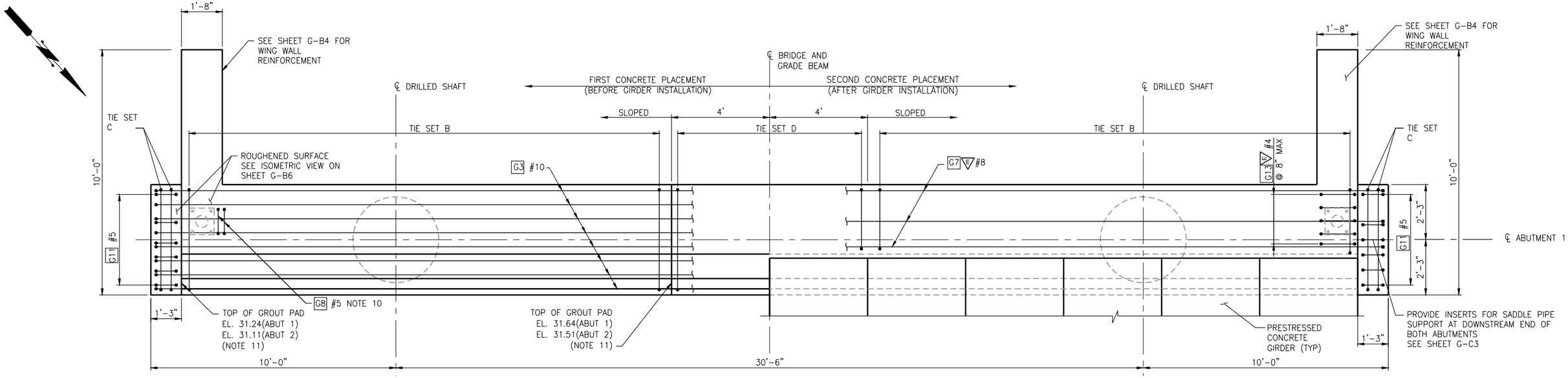
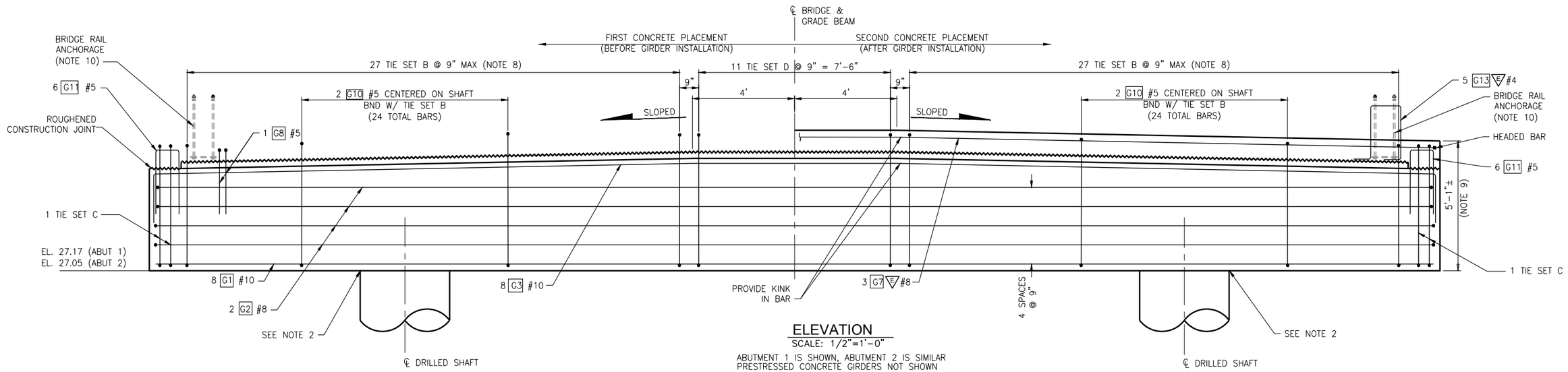
FLOOD HAZARD REDUCTION PROJECT
GLACIER KEY BRIDGE
FOUNDATION PLAN AND DETAILS

G-B2 | SHT 16 OF 54



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

ABUTMENT 1 IS SHOWN, ABUTMENT 2 IS SIMILAR



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

ABUTMENT 1 IS SHOWN, ABUTMENT 2 IS SIMILAR
PRESTRESSED CONCRETE GIRDERS NOT SHOWN

NOTES:

1. TOP OF GROUT PAD AND GRADE BEAM REINFORCEMENT IS SYMMETRICAL ABOUT CENTERLINE OF BRIDGE.
2. GRADE BEAM TO DRILLED SHAFT AND GRADE BEAM TO WING WALL CONNECTION DETAILS ARE NOT SHOWN. SEE SHEET G-B4.
3. EACH TIE SET B CONSISTS OF 1 G4 #5, 2 G5 #5, 2 G9 #5, 1 G6 E #5 & 1 G15 #5.
4. EACH TIE SET C CONSISTS OF 1 G4 #5, 2 G5 #5, 2 G9 #5, 1 G12 #5 & 1 G15 #5.
5. EACH TIE SET D CONSIST OF 2 G5 #5, 1 G14 #5, 1 G15 #5, 1 G16 E #5, & 2 G17 #5.
6. SEE SHEETS G-B4 THRU G-B6 FOR SECOND CONCRETE PLACEMENT.
7. BRIDGE RAIL PEDESTAL AND SIDEWALK NOT SHOWN. SEE SHEET G-B10.
8. ADJUST REINFORCEMENT SPACING TO CLEAR SHAFT REINFORCING.
9. HEIGHT OF GRADE BEAM IS DEPENDENT ON DEFLECTION OF NEOPRENE RUBBER STRIP DUE TO WEIGHT OF GIRDERS.
10. SEE SHEET G-B10 AND G-B11 FOR ADDITIONAL INFORMATION FOR BRIDGE RAIL ANCHORAGE.
11. SEE SHEET G-B6 FOR GROUT PAD DETAILS.

NO	DATE	BY	APPR	REVISIONS

BRIAN S. TWITCHELL — STATE OF WASHINGTON — 40908 — REGISTERED PROFESSIONAL ENGINEER — 2/7/2019

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NS	
DRAWN BY	DATE
AA	
CHECKED BY	DATE

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FLOOD HAZARD REDUCTION PROJECT
GLACIER KEY BRIDGE ABUTMENT
PLAN AND ELEVATION

G-B3

SHT 17 OF 54

Path: P:\174271 Lower Coal Creek Ph 2 Early Action\06 G3 Design\CAD\Sheet Files\17 G-B3_GLACIER KEY BRIDGE ABUTMENT PLAN & ELEVATION.dwg Plot date: Feb 07, 2019-09:54:55am CAD User: nadine.stock
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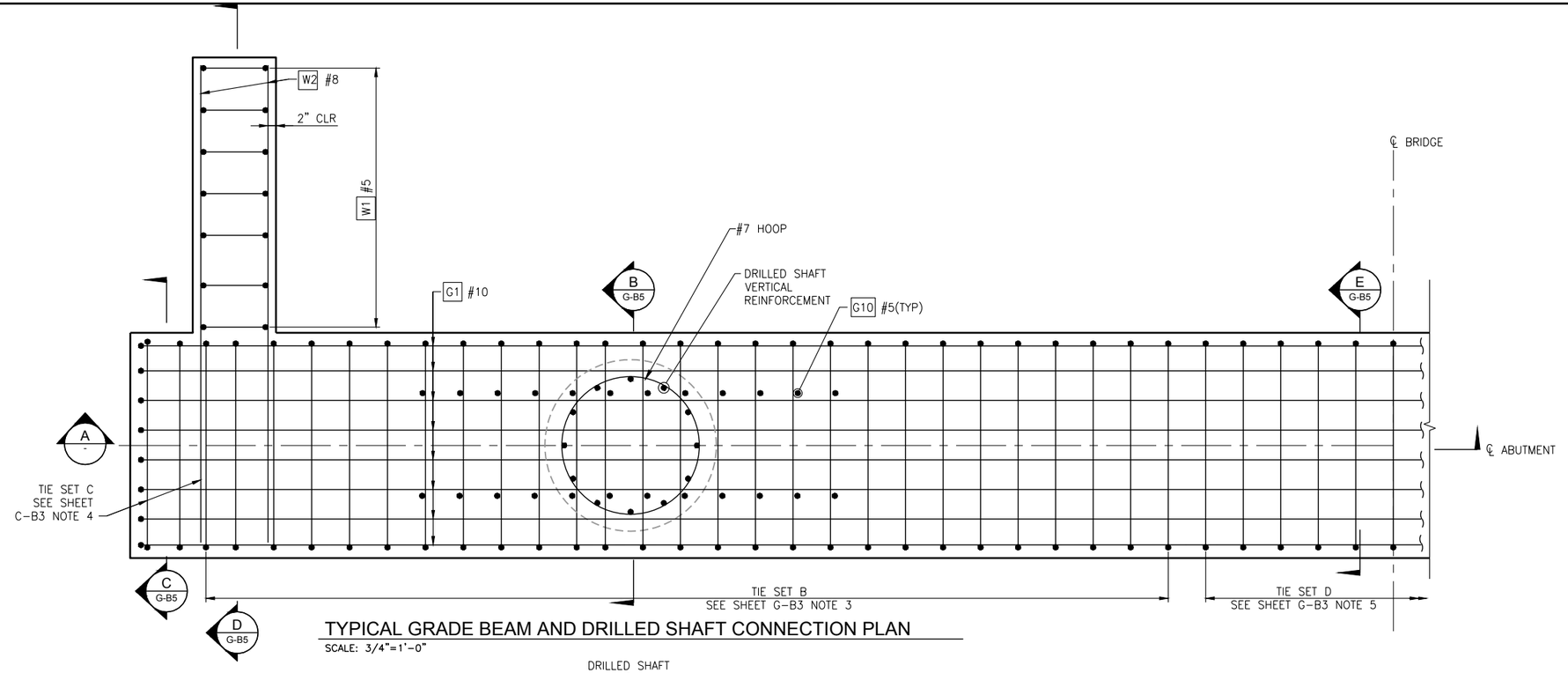
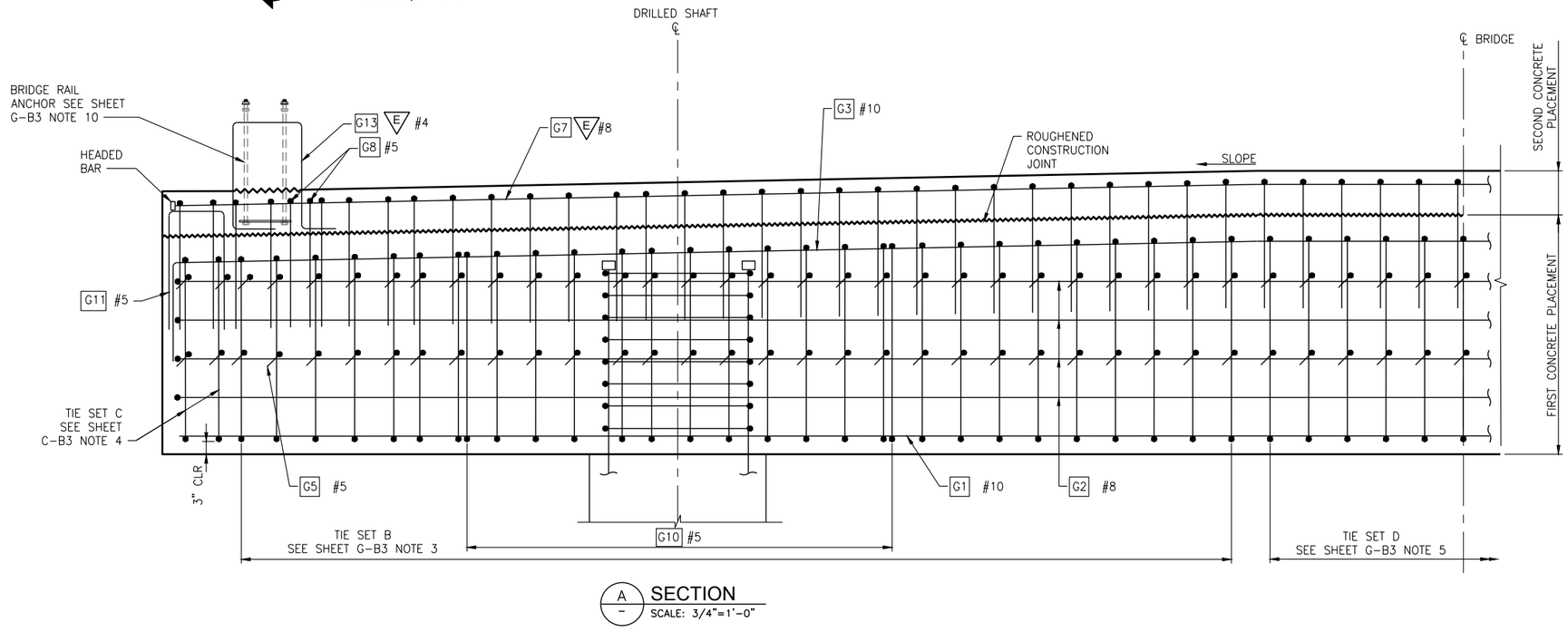


TYPICAL GRADE BEAM AND DRILLED SHAFT CONNECTION PLAN

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



A – SECTION

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

NOTES:

1. FIRST AND SECOND CONCRETE PLACEMENT SHOWN. SEE G-B10 FOR SIDEWALK AND BRIDGE RAIL PEDESTAL REINFORCEMENT.
2. ALTERNATE HOOKS OF HORIZONTAL TIES ALONG LENGTH OF GRADE BEAM.

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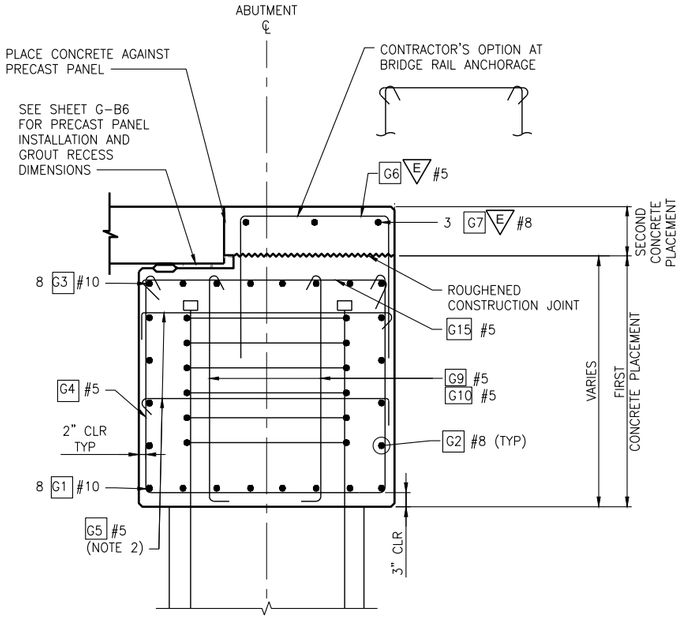
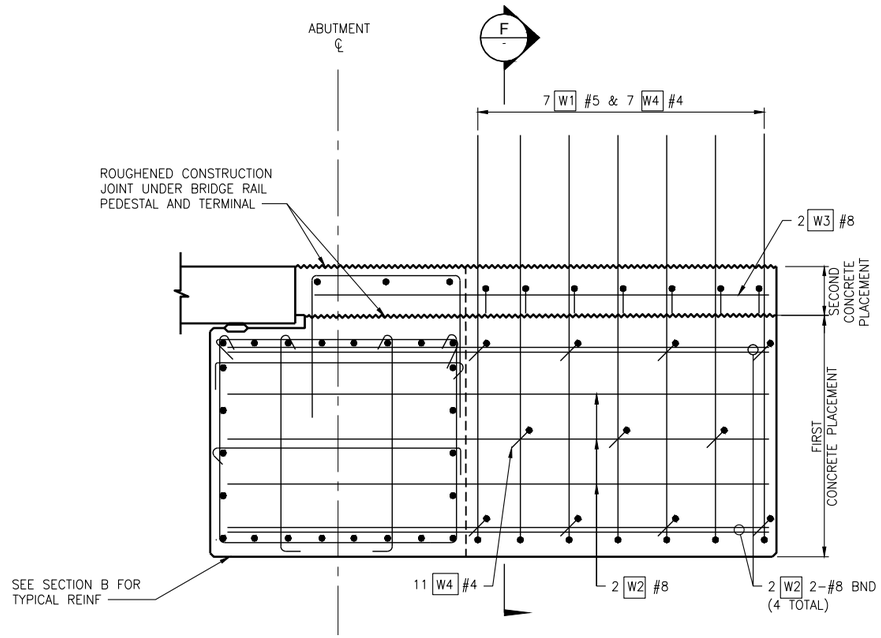
FLOOD HAZARD REDUCTION PROJECT
GLACIER KEY BRIDGE
ABUTMENT DETAILS 1

G-B4 | SHT 18 OF 54

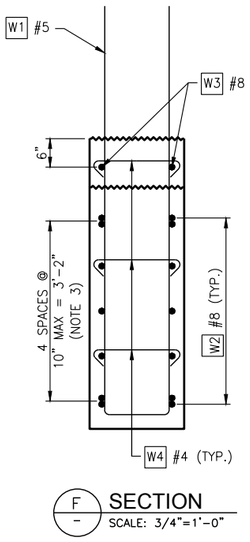


B G-B4 SECTION
SCALE: 3/4"=1'-0"

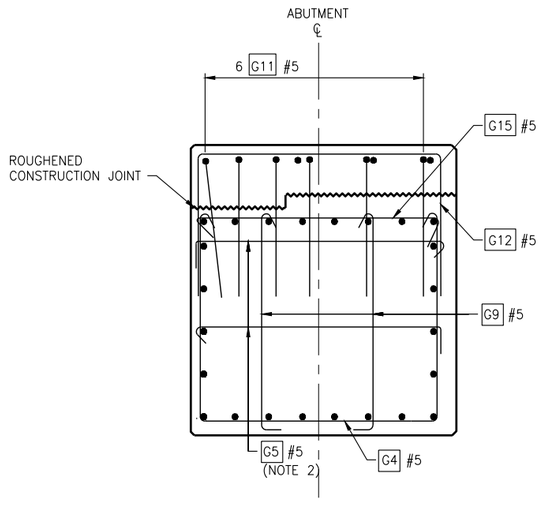


D G-B4 SECTION
SCALE: 3/4"=1'-0"

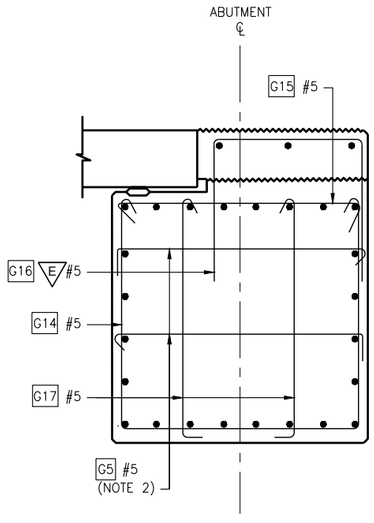
SEE SHEET G-B12 FOR LOCATION OF W1 BRIDGE RAIL ANCHORAGE NOT SHOWN



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



C G-B4 SECTION
SCALE: 3/4"=1'-0"



E G-B4 SECTION
SCALE: 3/4"=1'-0"

NOTES:

1. FIRST AND SECOND CONCRETE PLACEMENT SHOWN. SEE G-B10 FOR SIDEWALK AND BRIDGE RAIL PEDESTAL REINFORCEMENT.
2. ALTERNATE HOOKS OF HORIZONTAL TIES ALONG LENGTH OF GRADE BEAM.
3. ADJUST TO MISS GRADE BEAM REINFORCEMENT.

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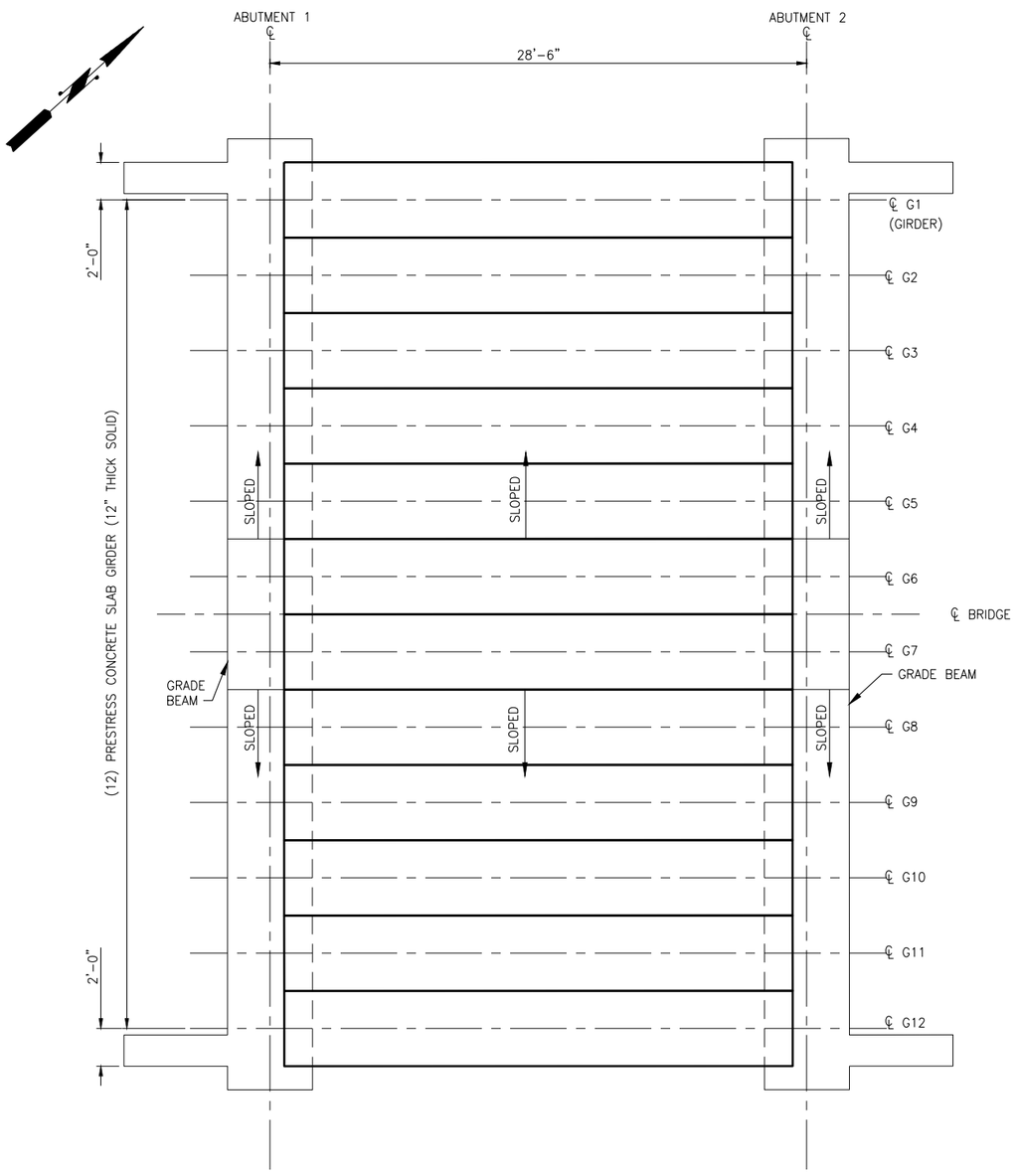
GLACIER KEY BRIDGE
ABUTMENT DETAILS 2

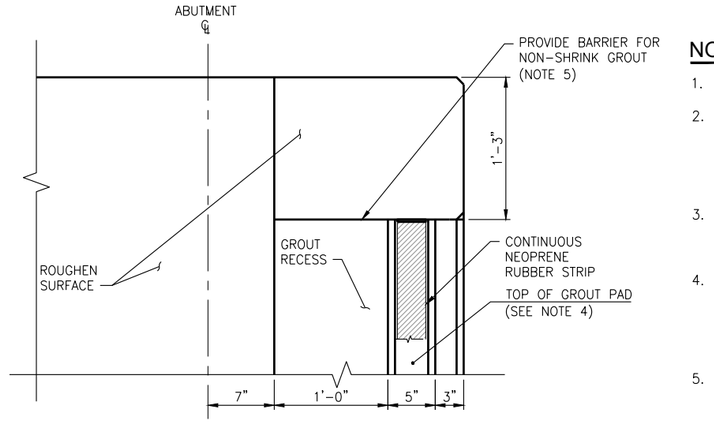
G-B5

SHT 19 OF 54

Path: P:\134271 Lower Coal Creek Ph 2 Early Action\05 G3 Design\CAD\Sheet Files\19 G-B5_GLACIER KEY BRIDGE ABUTMENT DETAILS 2.dwg Plot date: Feb 07, 2019-09:55:22am CAD User: nadine.stock
Xref Filename: | Group2-border | C-SP-BRIDGE DETAILS |



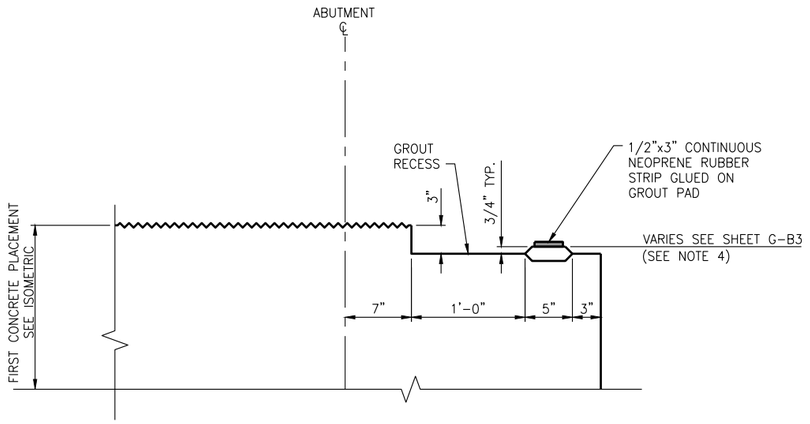
FRAMING PLAN
SCALE: 1/4"=1'-0"



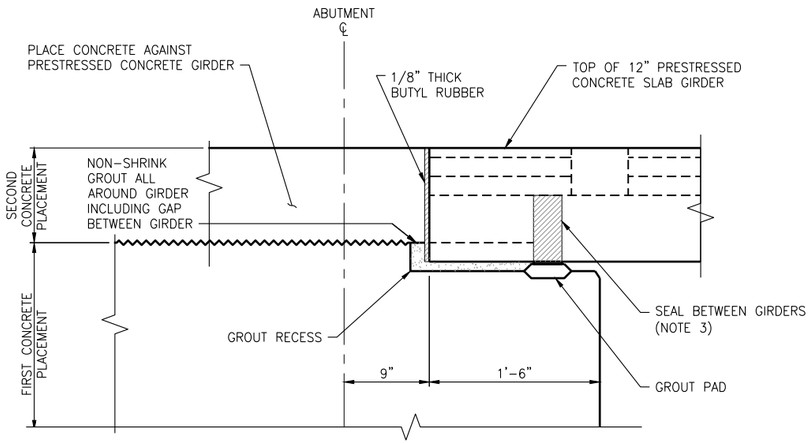
PLAN AT GRADE BEAM END FIRST CONCRETE PLACEMENT
SCALE: 1 1/2"=1'-0"

NOTES:

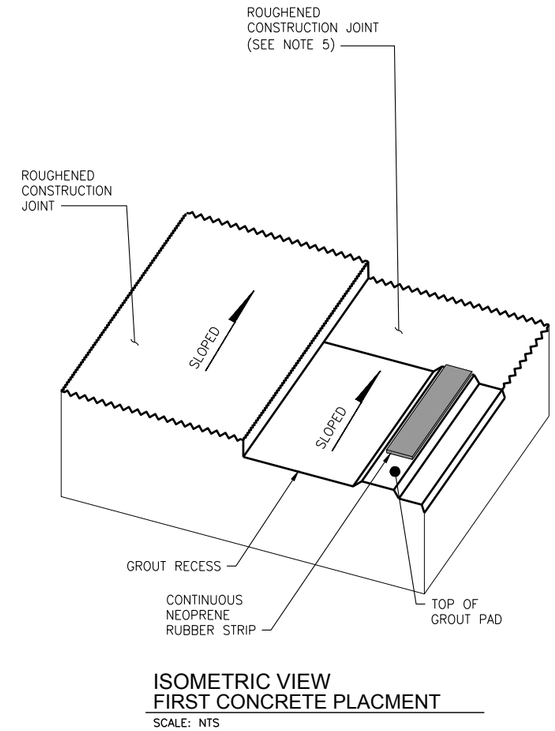
1. GRADE BEAM REINFORCING BARS ARE NOT SHOWN FOR CLARITY.
2. GRADE BEAM PLAN AND SECTION SHOWN ARE TYPICAL GRADE BEAM DETAILS FOR THE BLOCKOUT AT THE PRESTRESSED CONCRETE GIRDER SUPPORT AND SEAL DETAIL FOR THE PREPARATION AND INSTALLATION OF THE PRECAST CONCRETE SLAB GIRDER AT THE FIRST CONCRETE PLACEMENT OF THE GRADE BEAM.
3. THE CONTRACTOR SHALL PROVIDE A SEAL BETWEEN GIRDERS BEFORE GROUTING UNDER THE GIRDERS AND PLACING THE SECOND CONCRETE PLACEMENT OF THE GRADE BEAM.
4. TOP OF GROUT PAD AT THE CONTINUOUS RUBBER STRIP SHALL BE KEPT SMOOTH FOR THE ENTIRE LENGTH OF SLAB GIRDER SUPPORT. THE MAXIMUM GAP UNDER A 10'-0" STRAIGHT EDGE SHALL BE LESS THAN 1/8". PATCH AND GRIND THE TOP OF GROUT PAD AS REQUIRED TO PROVIDE THE SMOOTH LEVELED SURFACE.
5. THE CONTRACTOR SHALL PROVIDE A BARRIER FOR PLACING NON-SHRINK GROUT IN THE GROUT RECESS AND SHALL PROVIDE 1/8 INCH THICK BUTYL RUBBER BONDED TO PRECAST CONCRETE SLAB GIRDER OVER THE FULL CONTACT AREA OF THE GRADE BEAM AND PRESTRESSED CONCRETE SLAB GIRDER PRIOR TO PLACING THE REMAINING GRADE BEAM CONCRETE.



GRADE BEAM SECTION - PREPARATION OF GIRDER INSTALLATION
SCALE: 1 1/2"=1'-0"



GRADE BEAM SECTION - SECOND CONCRETE PLACEMENT AFTER GIRDER INSTALLATION
SCALE: 1 1/2"=1'-0"



ISOMETRIC VIEW
FIRST CONCRETE PLACMENT
SCALE: NTS

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GLACIER KEY BRIDGE
FRAMING PLAN AND GIRDER INSTALLATION

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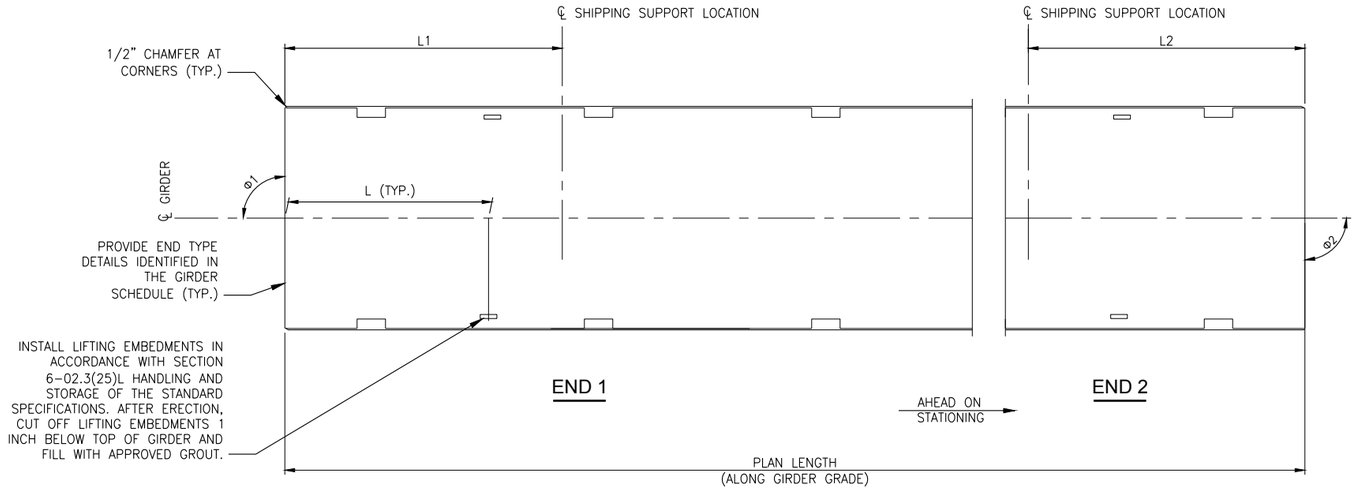
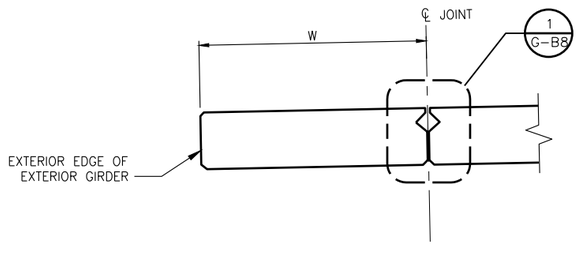
GIRDER SCHEDULE

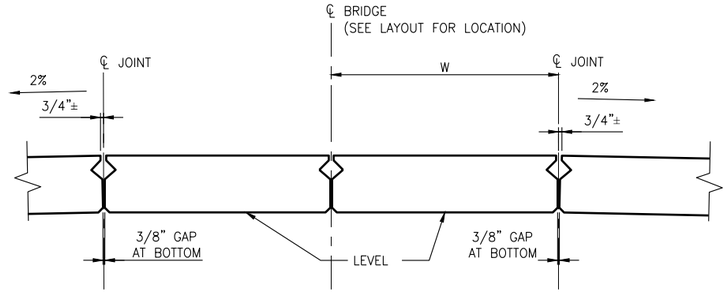
GIRDER	GIRDER HEIGHT H	GIRDER WIDTH W	VOIDS		END 1 TYPE	END 2 TYPE	"A" DIMENSIONS AT ℄ BEARINGS	L	L1	L2	ø1	ø2	GIRDER LENGTH (ALONG GIRDER GRADE) (SEE GIRDER NOTE 1)	MIN CONC COMP STRENGTH		PRESTRESSING STRANDS (SEE GIRDER NOTES 2-4)					MIDSPAN VERTICAL DEFLECTION		TRANSVERSE REINFORCEMENT									LONGITUDINAL REINFORCEMENT			
																ROW 1			TOP ROW				ZONE 1			ZONE 2			ZONE 3			P1		P2	
			NUMBER	DIAMETER										@ 28 DAYS F'C (KSI)	@ RELEASE F'C (KSI)	PERMANENT STRANDS	EXTENDED NUMBER AND LENGTH	DEBONDED NUMBER AND LENGTH	PERMANENT STRANDS	TEMPORARY STRANDS	LOWER BOUND @ 40 DAYS	UPPER BOUND @ 120 DAYS	BAR SIZE	SPACING	LENGTH	BAR SIZE	SPACING	LENGTH	BAR SIZE	SPACING	LENGTH	BAR SIZE	NO. OF BARS	BAR SIZE	NO. OF BARS
ALL	1'-0"	4'-0"	-	-	B	B	-	1'-9"	1'-0"	1'-0"	90°	90°	27'-0"	7.0	6.0	12	-	-	4	-	1/4"	3/4"	5	3"	1'-0"	5	5"	5'-0"	5	6" MAX.	7'-4 1/4"	4	4	4	4



PLAN
SCALE: NTS



EXTERIOR EDGE DETAIL
SCALE: NTS



CROWN DETAIL
SCALE: NTS

GIRDER NOTES:

1. PLAN LENGTH SHALL BE INCREASED AS NECESSARY TO COMPENSATE FOR SHORTENING DUE TO PRESTRESS AND SHRINKAGE.
2. ALL STRANDS SHALL BE 0.6" DIA. AASHTO M203 GRADE 270 LOW RELAXATION STRANDS, JACKED TO 202.5 KSI. STRANDS SHALL BE SYMMETRICAL ABOUT THE GIRDER CENTERLINE. EXTERIOR STRANDS IN EACH ROW SHALL BE FULLY BONDED.
3. STRUCTURAL STEEL SHAPES AND ASSEMBLIES SHALL BE ASTM A36, UNLESS NOTED OTHERWISE. THEY SHALL BE PAINTED WITH A PRIMER COAT IN ACCORDANCE WITH SECTION 6-07.3(9) PAINTING NEW STEEL STRUCTURES OF THE STANDARD SPECIFICATIONS. WELD TIES SHALL BE PAINTED WITH A FIELD PRIMER COAT OF AN ORGANIC ZINC PAINT AFTER FILED WELDING.
4. TRANSVERSE REINFORCEMENT ZONES ARE SYMMETRICAL ABOUT MID-SPAN.
5. CUT ALL STANDS 1" BELOW CONCRETE SURFACE AND GROUT WITH AN APPROVED EPOXY GROUT.

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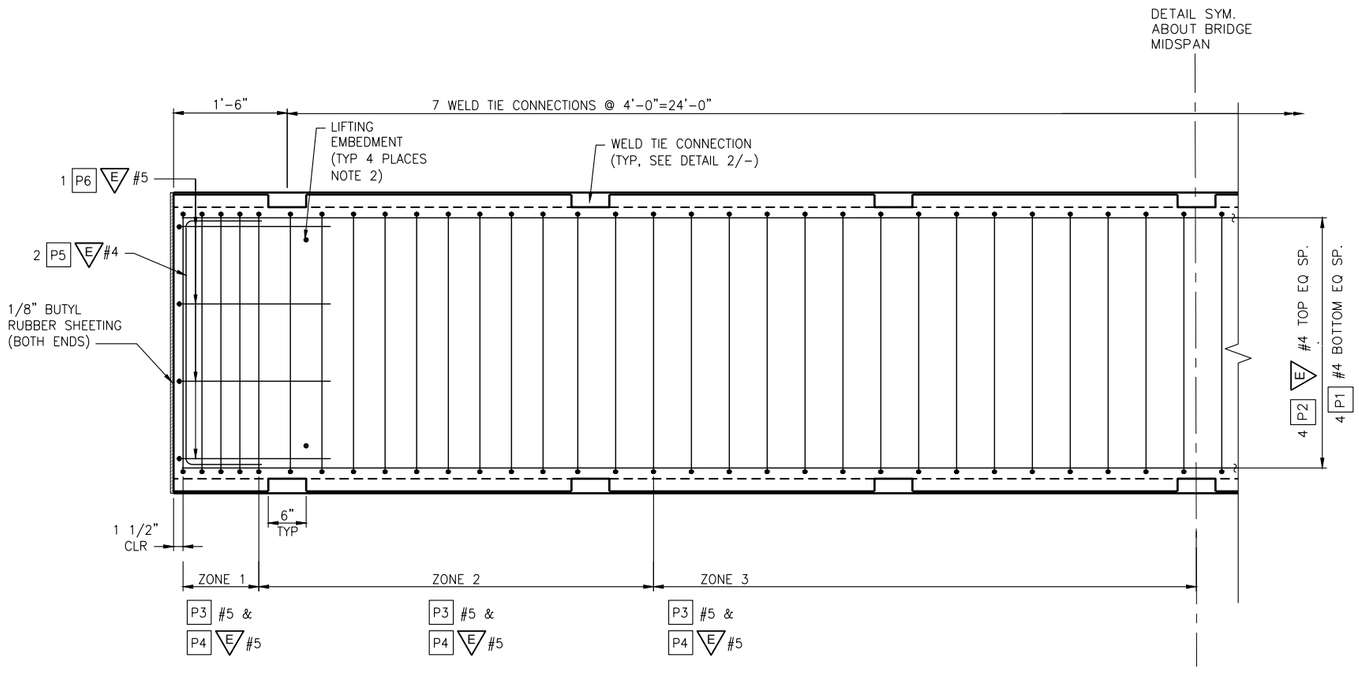
GLACIER KEY BRIDGE PS CONCRETE SLAB GIRDER SCHEDULE

G-B7

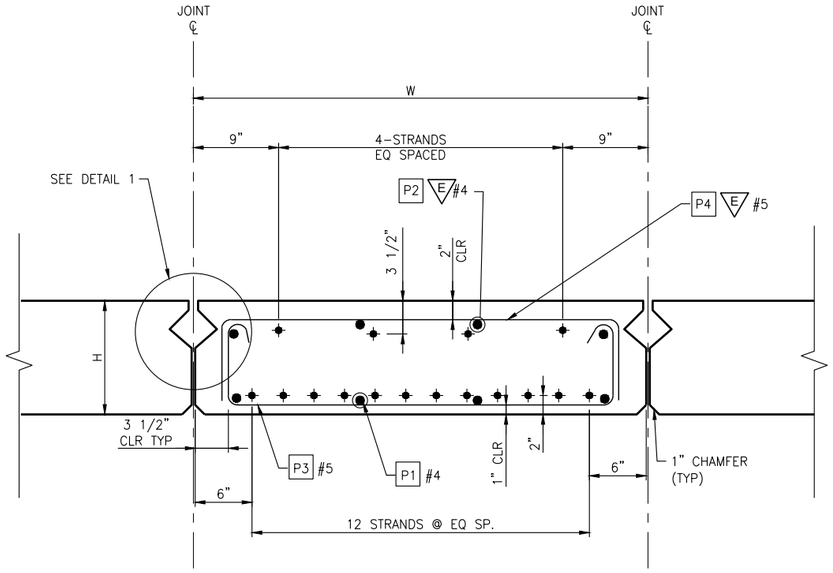
SHT 21 OF 54



PLAN (GIRDERS G2 TO G11)

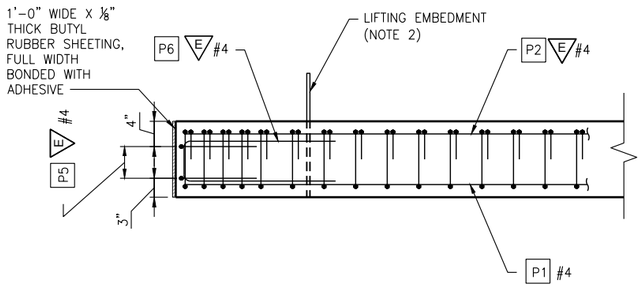
SCALE: 1" = 1'-0"

REINFORCEMENT IS SYMMETRICAL ABOUT MID-SPAN



TYPICAL SECTION

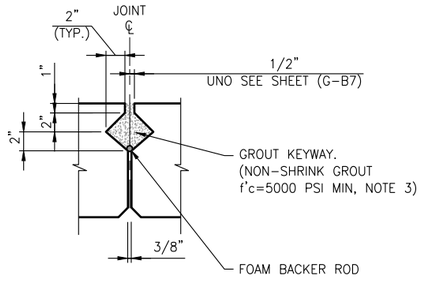
SCALE: 1-1/2" = 1'-0"



ELEVATION

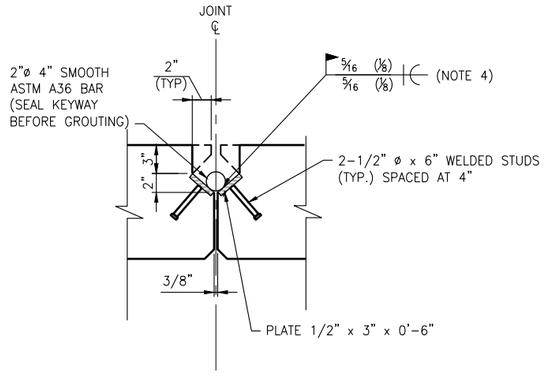
SCALE: 1" = 1'-0"

SEE PLAN FOR TRANSVERSE REINFORCEMENT BAR MARKS



1 / G-B7 KEYWAY DETAIL

SCALE: NTS



2 / - WELD TIE CONNECTION DETAIL

SCALE: NTS

NOTES:

1. KEYWAY AND WELD TIE CONNECTION ARE NOT PROVIDED AT THE EXTERIOR SIDE OF THE EXTERIOR PANELS G1 & G12. SEE SHEET G-B7.
2. INSTALL LIFTING EMBEDMENTS IN ACCORDANCE WITH SECTION 6-02.3(25)L HANDLING AND STORAGE OF THE STANDARD SPECIFICATIONS. AFTER ERECTION, CUT OFF LIFTING EMBEDMENTS 1 INCH BELOW TOP OF GIRDER AND FILL WITH APPROVED GROUT.
3. GROUT PRECAST CONCRETE GIRDER CONNECTION AND KEYWAY PER SECTION 6-02.3(25)O GIRDER TO GIRDER CONNECTIONS OF THE STANDARD SPECIFICATIONS. GROUT SHALL BE TYPE 2.
4. WELD TIES SHALL BE PAINTED WITH A FIELD PRIMER COAT OF AN ORGANIC ZINC PAINT AFTER FIELD WELDING PER SECTION 6-07.3(9) PAINTING OF NEW STEEL STRUCTURES OF THE STANDARD SPECIFICATIONS.

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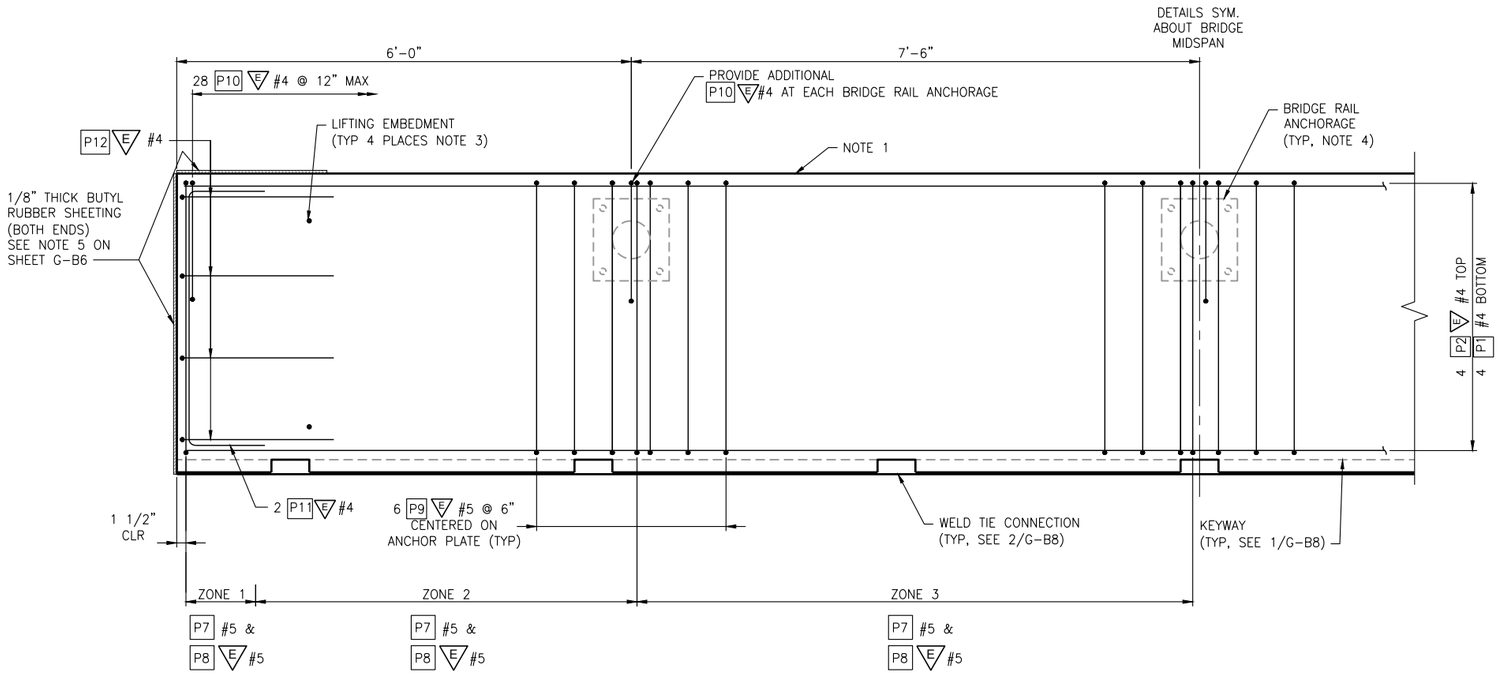
PS CONCRETE SLAB GIRDER DETAILS 1

G-B8 | SHT 22 OF 54

Path: P:\134271 Lower Coal Creek Ph 2 Epoxy Action\05 G3 Design\CAD\Sheet Files\22 G-B8_GLACIER KEY BRIDGE PS CONCRETE SLAB GIRDER DETAILS 1.dwg Plot date: Feb 07, 2019-09:56:07am CAD User: nadine.stock.
Xref Filename: | C-SP-BRIDGE DETAILS | G3-border |

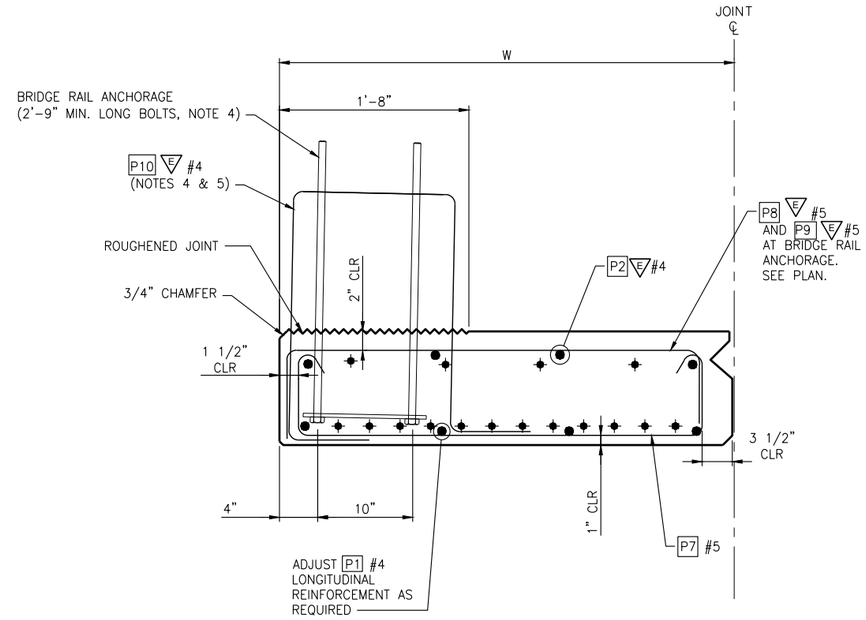


EXTERIOR GIRDER (G1) PLAN

SCALE: 1" = 1'-0"

SEE NOTE 2

(G1 SHOWN G12 SIMILAR)

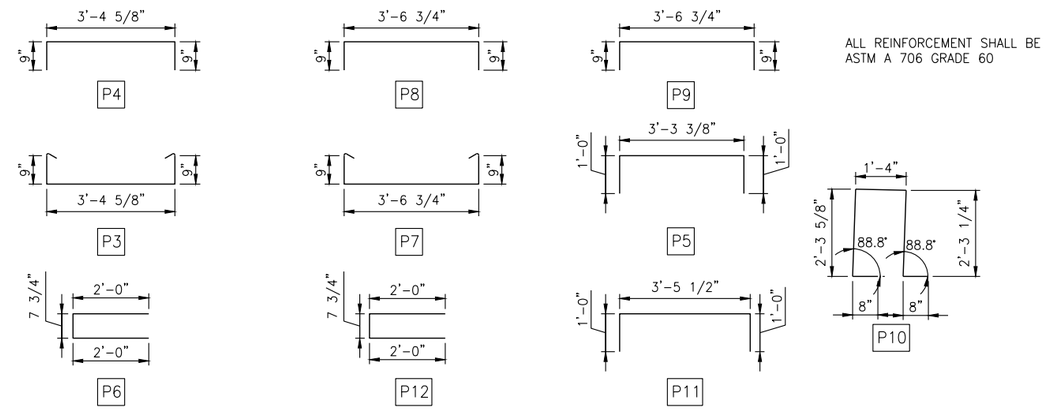


EXTERIOR GIRDER SECTION AT ANCHOR PLATE

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

SEE SHEET G-B8 FOR INFORMATION NOT SHOWN

BEND DIAGRAM (DIMENSIONS ARE OUT TO OUT)



NOTES:

1. KEYWAY AND WELD TIES ARE NOT PROVIDED AT THE EXTERIOR SIDE OF EXTERIOR GIRDERS G1 AND G12.
2. DETAILS FOR GIRDER G1 SHOWN. DETAILS FOR GIRDER G12 ARE SIMILAR.
3. SEE SHEET G-B8 FOR LOCATIONS AND DETAILS OF LIFTING EMBEDMENTS AND WELD TIES.
4. RAIL ANCHORAGE AND PEDESTAL REINF SHALL BE INSTALLED WITH ANGLE TO COMPENSATE FOR GIRDER TRANSVERSE SLOPE. SEE SHEET G-B11 FOR BRIDGE RAIL DETAILS.
5. SEE NOTE 3 ON SHEET G-B10.

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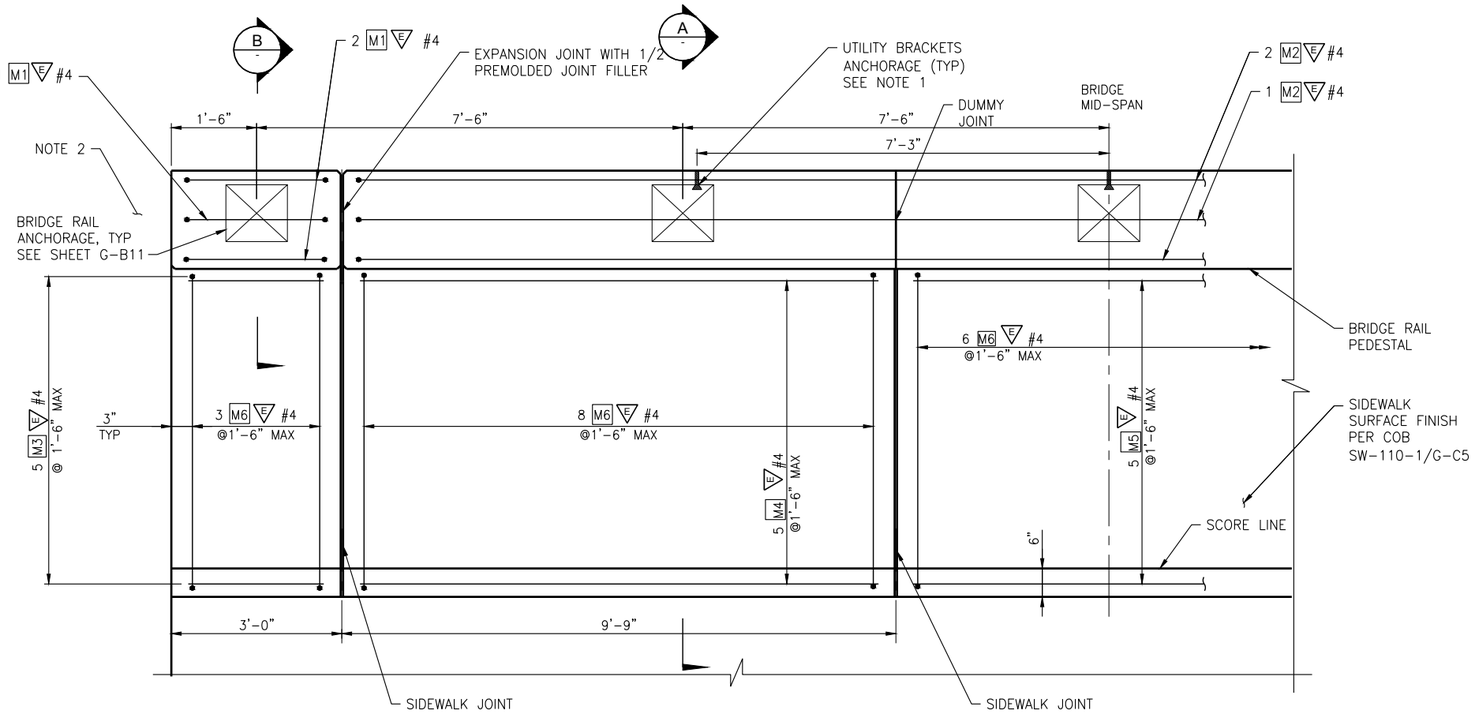
GLACIER KEY BRIDGE
PS CONCRETE SLAB GIRDER DETAILS 2

G-B9

SHT 23 OF 54



BRIDGE RAIL PEDESTAL AND SIDEWALK PLAN

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

NW CORNER SHOWN. OTHERS ARE SIMILAR.
SIDEWALK AND BRIDGE RAILING PEDESTAL REINFORCEMENT IS SYMMETRICAL ABOUT THE ROAD CENTERLINE AND BRIDGE MID-SPAN
UTILITIES P10 #4 & G13 #4 NOT SHOWN

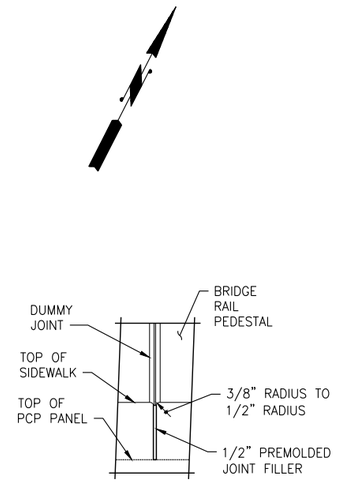
NOTES:

1. UTILITY BRACKET PROVIDED ONLY ON THE DOWNSTREAM SIDES OF BRIDGE. PROVIDE 13/16" DIA. HOLE FOR 3/4" DIA. BOLT 0'-11" DIRECTLY BELOW TOP HOLE PROVIDED IN UTILITY BRACKET. ANCHORS ARE HOT-DIP GALVANIZED FERRULE LOOP INSERTS WITH CLOSED-BACK FERRULE THREADED TO RECEIVE HOT-DIP GALVANIZED 3/4" DIAMETER BOLTS (ASTM A307).

   MINIMUM INSERT LENGTH = 6"
   MINIMUM SAFEWORKING LOAD IN TENSION = 4,000 POUNDS
   MINIMUM SAFEWORKING LOAD IN SHEAR = 3,000 POUNDS

2. BRIDGE RAIL TERMINAL AND WING WALL NOT SHOWN. SEE SHEET G-B12 AND G-B4 RESPECTIVELY.

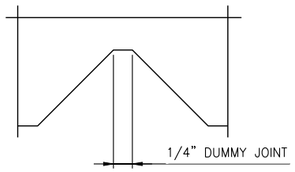
3. CLEAR COVER AT TOP OF BAR IS DEPENDENT ON GIRDER CAMBER. MINIMUM CLEAR COVER SHALL BE 1 ½ INCHES.



SIDEWALK JOINT DETAIL

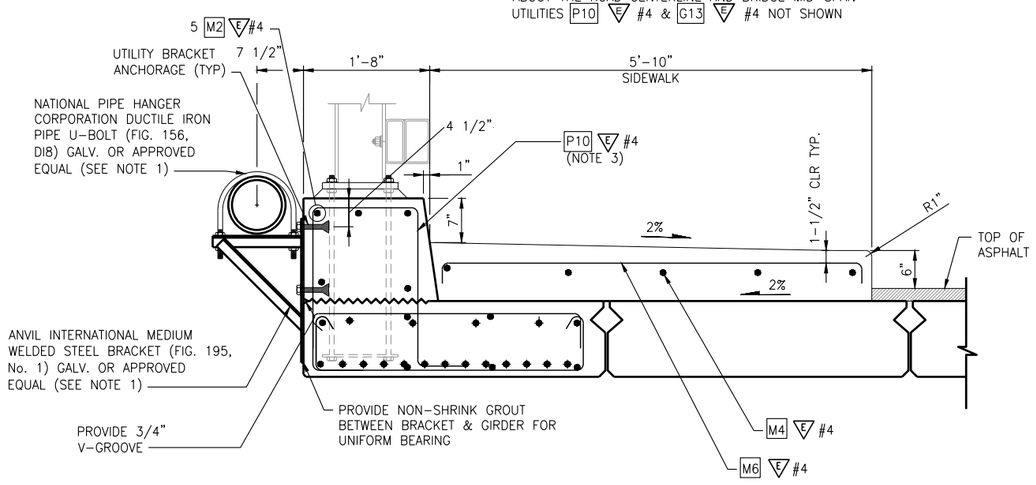
SCALE: NTS

SIDEWALK REINFORCING STEEL NOT SHOWN FOR CLARITY



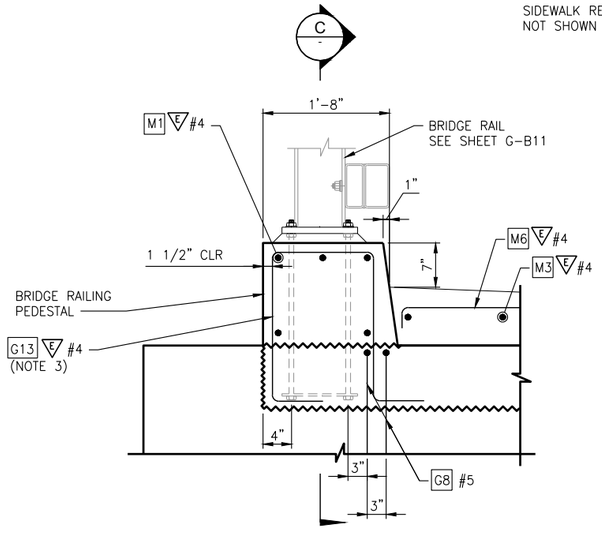
DUMMY JOINT DETAIL

SCALE: NTS



A SECTION

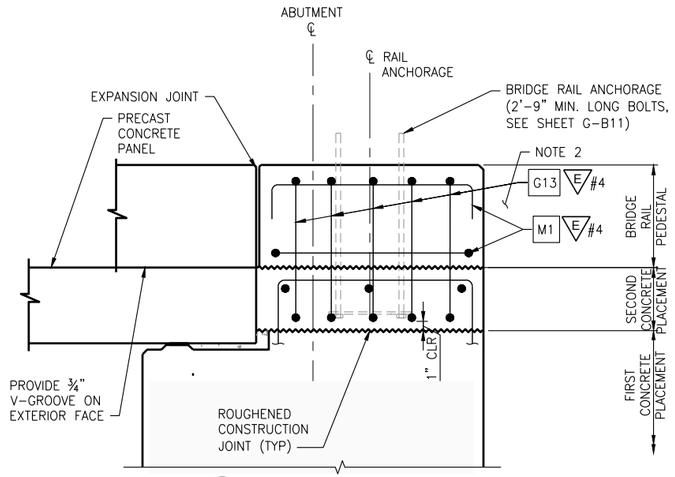
SCALE: 1" = 1'-0"



B SECTION AT GRADE BEAM

SCALE: 1" = 1'-0"

REINFORCEMENT PLACED IN FIRST CONCRETE PLACEMENT AND UTILITIES NOT SHOWN



C BRIDGE RAILING SECTION

SCALE: 1" = 1'-0"

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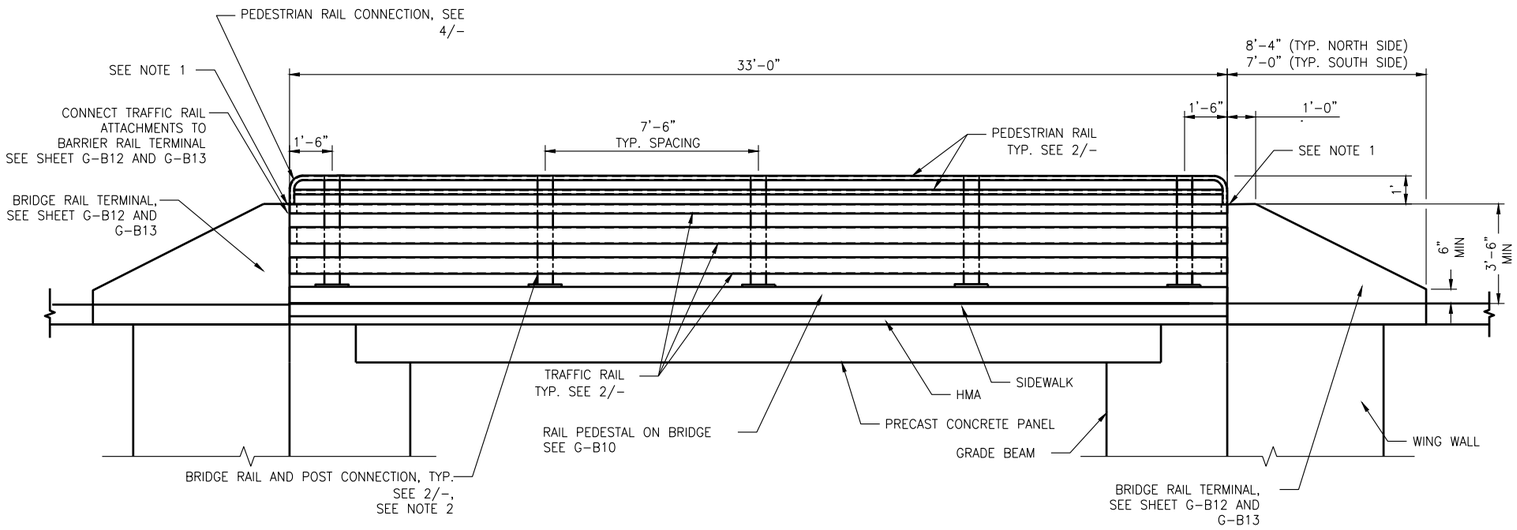
GLACIER KEY BRIDGE
SIDEWALK PLAN AND DETAILS

G-B10

SHT 24 OF 54

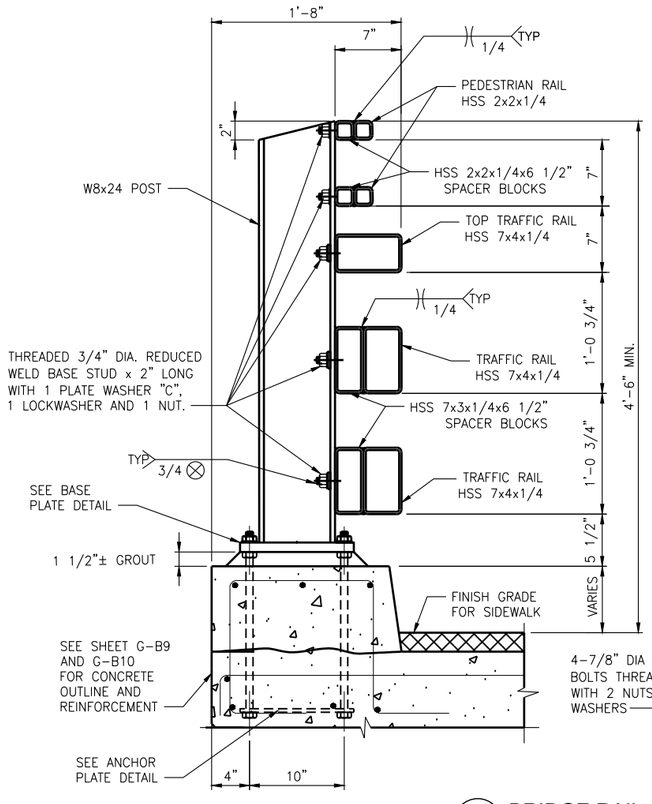


BRIDGE RAIL ELEVATION

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

NOTES:

1. ALIGN TOP OF CAST IN PLACE CONCRETE BRIDGE RAIL TERMINAL WITH TOP OF UPPER MOST TRAFFIC RAIL.
2. ALL RAILING POSTS SHALL BE INSTALLED VERTICALLY. WHERE POSTS ARE ON AN INCLINED SURFACE, THE ANGLE OF THE POST SHALL BE ADJUSTED SO THAT THE POST SHALL BE VERTICAL. INSTALL POSTS NORMAL TO GRADE IN LONGITUDINAL DIRECTION.
3. PROVIDE STRUCTURAL TUBING ACCORDING TO AASHTO A500 GRADE B.
4. PROVIDE STEEL POSTS AND PLATES CONFORMING TO AASHTO M183 (ASTM A36) GRADE 36 RESPECTIVELY.
5. PROVIDE HIGH STRENGTH ANCHOR BOLTS ACCORDING TO AASHTO M314 GRADE 105; ASTM F 1554, GRADE 105; OR ASTM A449 TYPE 1.
6. FINISH ALL METAL WITH ONE COAT OF SHOP-APPLIED PRIMER AND FOUR COATS OF INDUSTRIAL GRADE ENAMEL INCLUDING INSIDE OF SPACER BLOCKS. FINISH PAINT COLOR SHALL BE WSDOT CASCADE GREEN. PAINT SHALL BE APPLIED IN ACCORDANCE WITH SECTION SECTION 6-07 PAINTING OF THE STANDARD SPECIFICATIONS.



2 BRIDGE RAIL AND POST CONNECTION DETAIL

SCALE: NTS

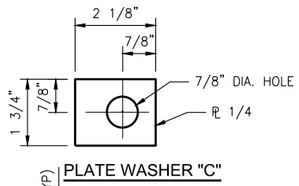
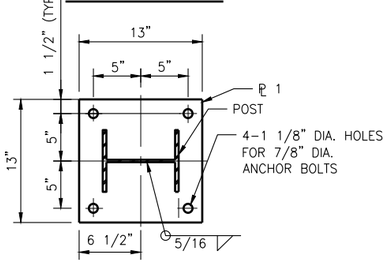
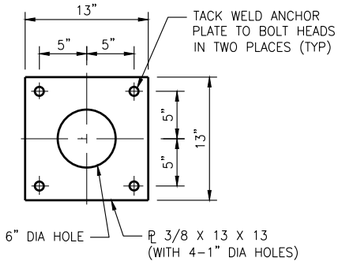


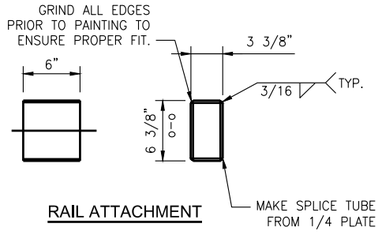
PLATE WASHER "C"



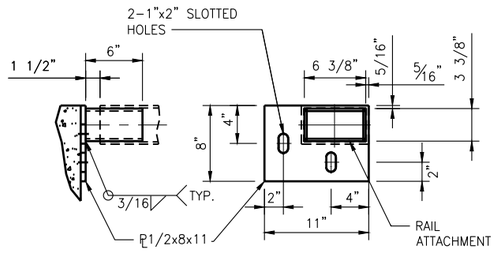
BASE PLATE DETAIL



ANCHOR PLATE DETAIL

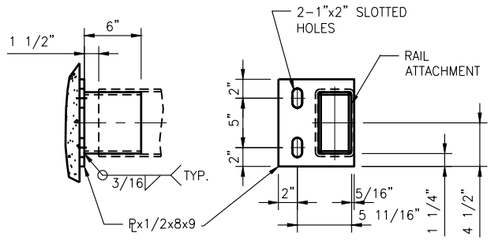


RAIL ATTACHMENT



NOTE
RAIL ATTACHMENT BRACKET SHOWN FOR RIGHT SIDE ABUTMENT 1 AND LEFT SIDE ABUTMENT 2. DETAILS FOR OTHER TERMINALS SIMILAR BUT MIRRORED AROUND LEFT EDGE OF PLATE

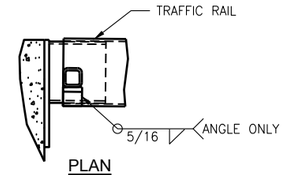
TOP TRAFFIC RAIL ATTACHMENT BRACKET



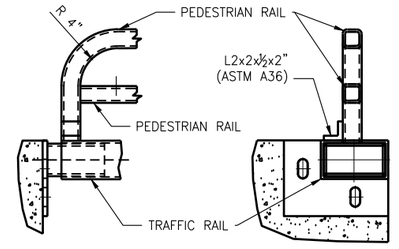
TRAFFIC RAIL ATTACHMENT BRACKET

3 G-B12,G-B13 TRAFFIC RAIL ATTACHMENT BRACKET

SCALE: NTS



PLAN



SECTION AT BARRIER RAIL

SECTION AT BARRIER TERMINAL FACE

4 – PEDESTRIAN RAIL CONNECTION DETAIL

SCALE: NTS

NO	DATE	BY	APPR	REVISIONS

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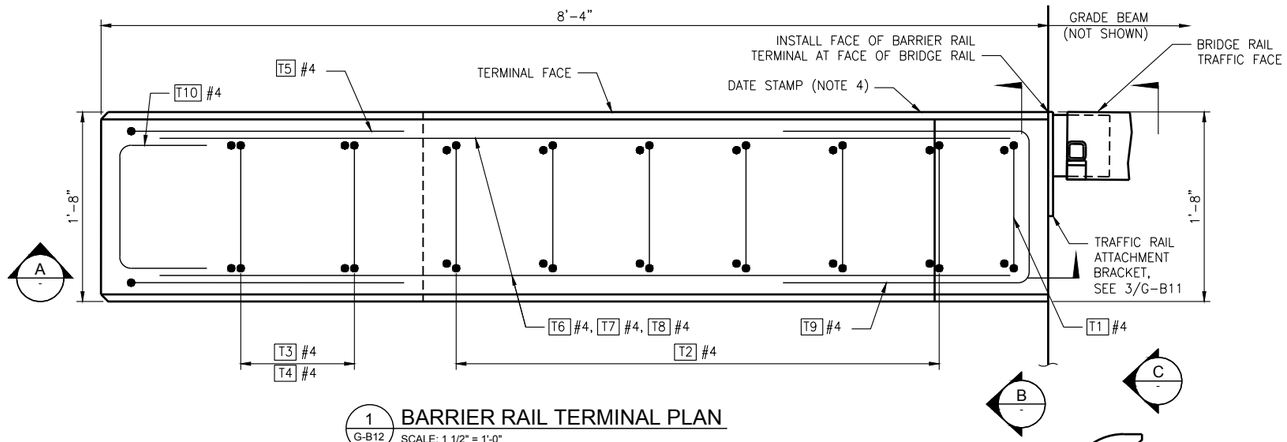
GMS
DESIGNED BY NS DATE
DRAWN BY AA DATE
CHECKED BY DATE

City of Bellevue UTILITIES

FLOOD HAZARD REDUCTION PROJECT
GLACIER KEY BRIDGE
RAIL DETAILS

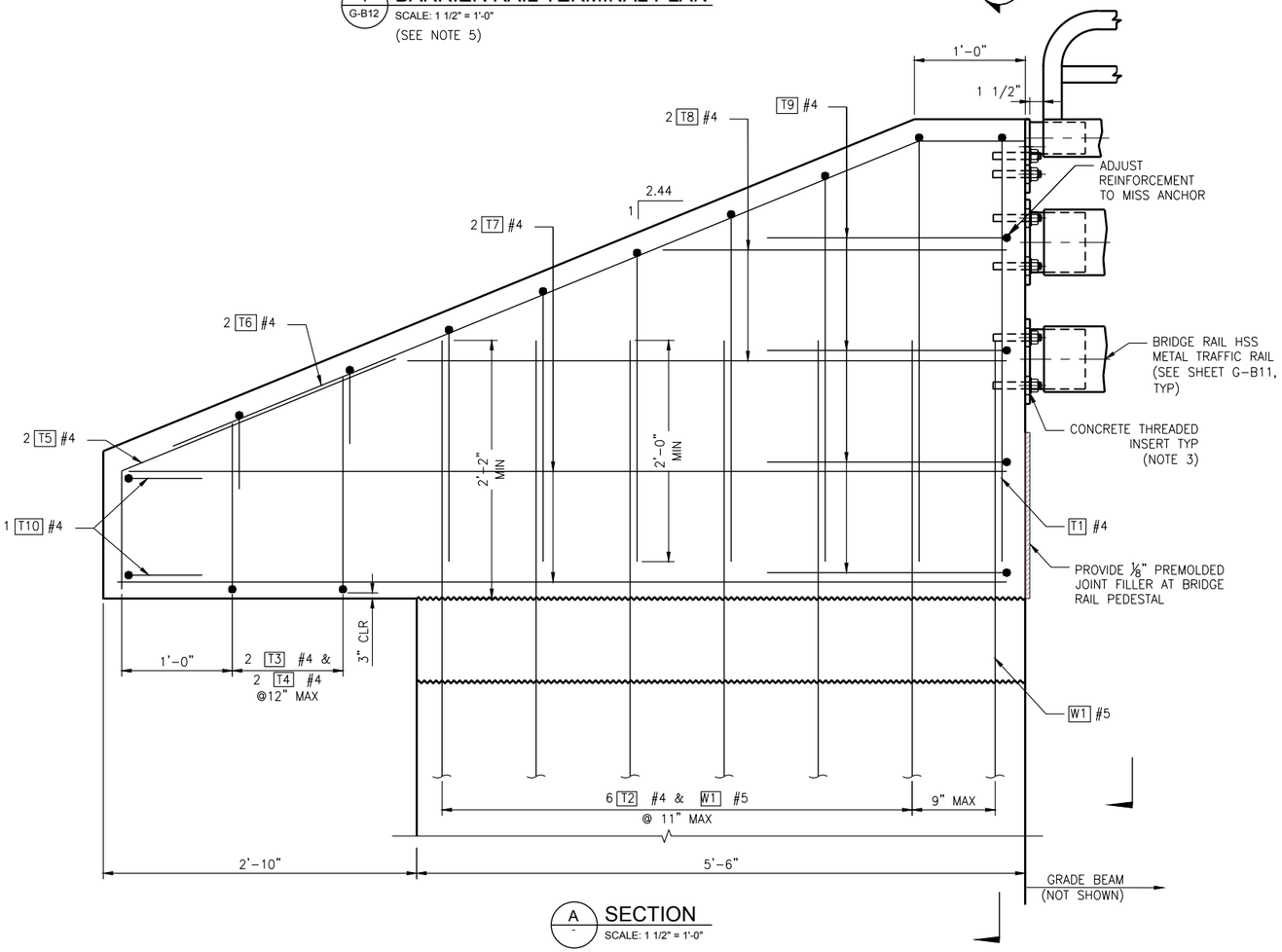
G-B11 | SHT 25 OF 54



1 G-B12 **BARRIER RAIL TERMINAL PLAN**

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

(SEE NOTE 5)

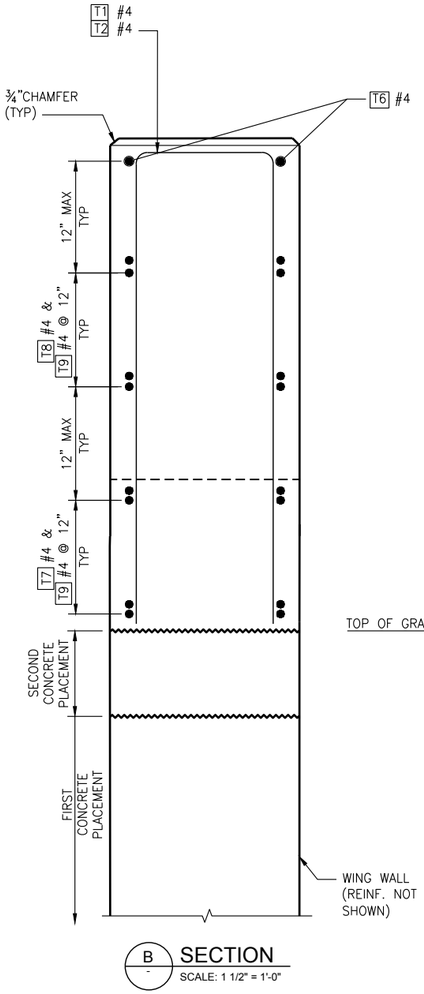


A SECTION

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

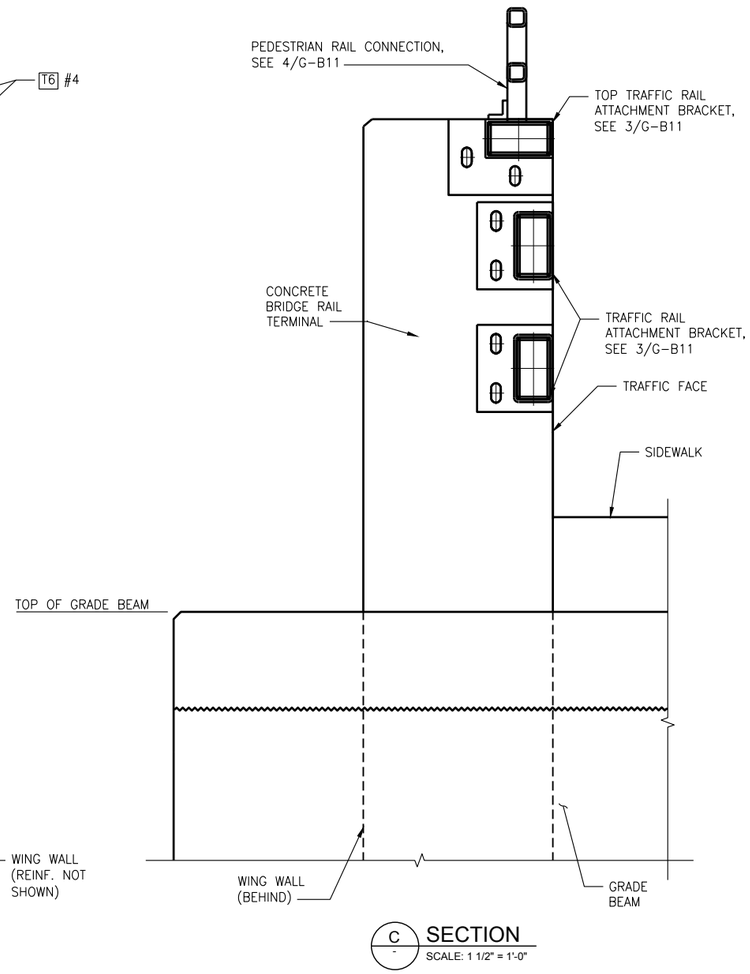
NOTES:

1. SEE NOTES ON G-B11 FOR HARDWARE REQUIREMENTS FOR BRIDGE RAILING.
2. ALL REINFORCEMENT SHALL CONFORM TO ASTM A706 OR AASHTO M31 (ASTM A615) GRADE 60.
3. CONCRETE INSERTS SHALL BE HOT-DIP GALVANIZED FERRULE LOOP INSERTS WITH CLOSED-BACK FERULE THREADED TO RECEIVE GALVANIZED 3/4 INCH DIAMETER BOLTS (ASTM A307)
   MINIMUM EMBEDMENT LENGTH = 6"
   MINIMUM SAFE WORKING LOAD IN TENSION = 4000 POUNDS
   MINIMUM SAFE WORKING LOAD IN SHEAR = 4000 POUNDS
4. STAMP BRIDGE YEAR CONSTRUCTION NUMERAL "2019" ON BARRIER FACE PER WSDOT STD PLAN E-1. PLACE CENTER OF DATE STAMP 12" FROM BRIDGE FACE OF BRIDGE RAIL TERMINAL AND 14" FROM TOP OF BRIDGE RAIL TERMINAL.
5. NORTH SIDE ABUTMENT 2 TERMINAL SHOWN. DETAILS FOR NORTH SIDE OF ABUTMENT 1, SIMILAR BUT MIRRORED ABOUT THE MIDSPAN OF THE BRIDGE.



B SECTION

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



C SECTION

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

NO	DATE	BY	APPR	REVISIONS

BRIAN S. TWITCHELL — 40506 — REGISTERED PROFESSIONAL ENGINEER — STATE OF WASHINGTON — 2/7/2019

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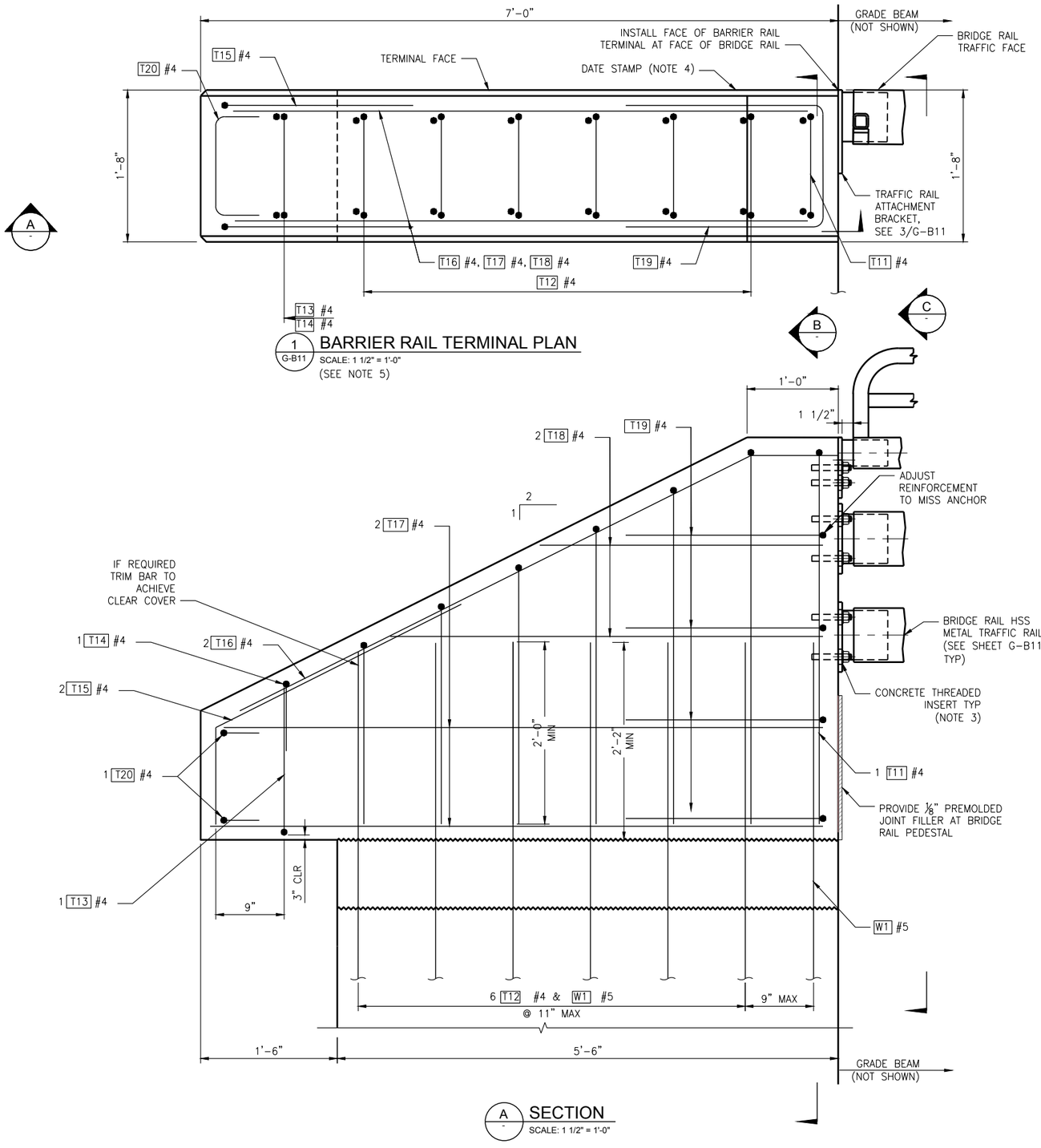
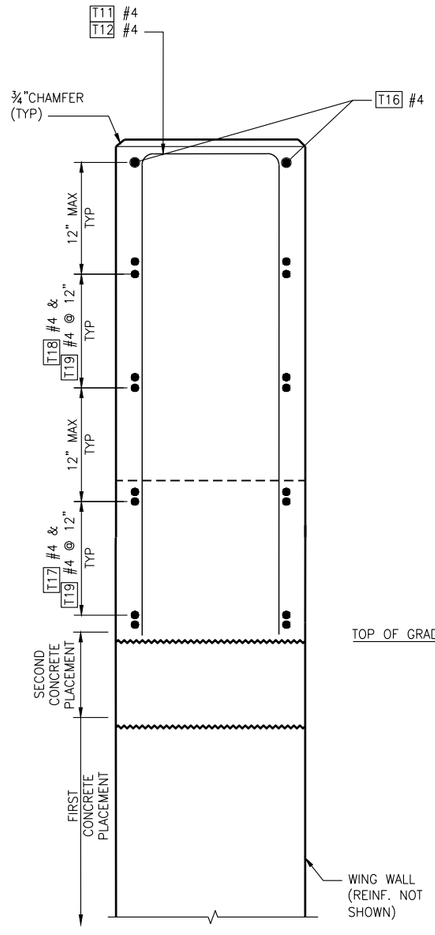
FLOOD HAZARD REDUCTION PROJECT
GLACIER KEY BRIDGE
RAIL TERMINAL DETAILS 1

G-B12 SHT 26 OF 54



1 G-B11 **BARRIER RAIL TERMINAL PLAN**
SCALE: 1 1/2" = 1'-0"
(SEE NOTE 5)

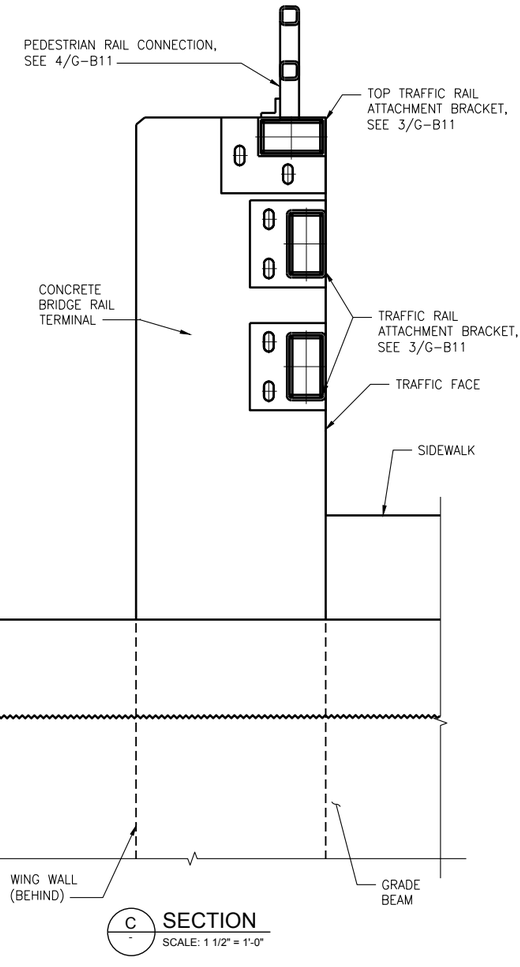
A - **SECTION**
SCALE: 1 1/2" = 1'-0"



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

NOTES:

1. SEE NOTES ON G-B11 FOR HARDWARE REQUIREMENTS FOR BRIDGE RAILING.
2. ALL REINFORCEMENT SHALL CONFORM TO ASTM A706 OR AASHTO M31 (ASTM A615) GRADE 60.
3. CONCRETE INSERTS SHALL BE HOT-DIP GALVANIZED FERRULE LOOP INSERTS WITH CLOSED-BACK FERULE THREADED TO RECEIVE GALVANIZED 3/4 INCH DIAMETER BOLTS (ASTM A307)
   MINIMUM EMBEDMENT LENGTH = 6"
   MINIMUM SAFE WORKING LOAD IN TENSION = 4000 POUNDS
   MINIMUM SAFE WORKING LOAD IN SHEAR = 4000 POUNDS
4. STAMP BRIDGE YEAR CONSTRUCTION NUMERAL "2019" ON BARRIER FACE PER WSDOT STD PLAN E-1. PLACE CENTER OF DATE STAMP 12" FROM BRIDGE FACE OF BRIDGE RAIL TERMINAL AND 14" FROM TOP OF BRIDGE RAIL TERMINAL.
5. SOUTH SIDE ABUTMENT 1 TERMINAL SHOWN. DETAILS FOR SOUTH SIDE OF ABUTMENT 2, SIMILAR BUT MIRRORED ABOUT THE MIDSPAN OF THE BRIDGE.



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

NO	DATE	BY	APPR	REVISIONS

BRIAN S. TWITCHELL, STATE OF WASHINGTON, 40905, REGISTERED PROFESSIONAL ENGINEER, 2/7/2019

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UTILITIES

FLOOD HAZARD REDUCTION PROJECT
GLACIER KEY BRIDGE
RAIL TERMINAL DETAILS 2

G-B13 SHT 27 OF 54

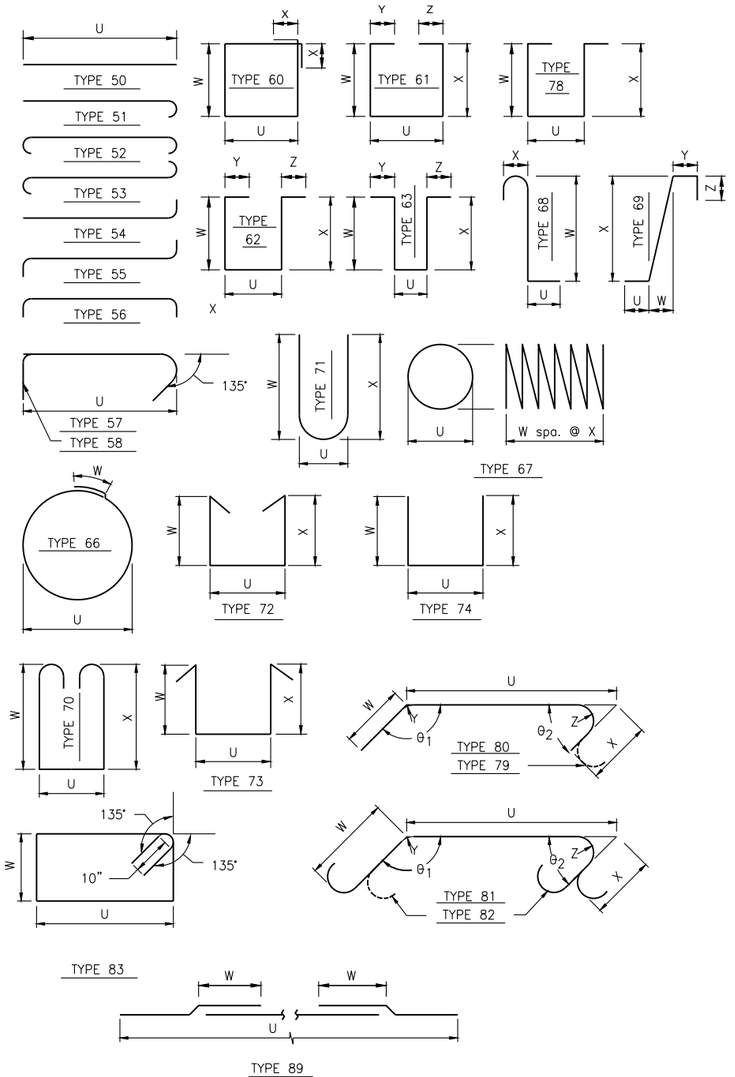
S = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
L - LUMP SUM QUANTITY
T OR S - FOR TIE & STIRRUP RADIUS
E - FOR EARTHQUAKETAIL WITH TIE & STIRRUP RADIUS

E = BAR IS TO BE EPOXY COATED.
V = BAR DIMENSIONS VARY BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.

NO MARK	LOCATION	SIZE	NO REQ'D	BEND TYPE	BEND RADIUS	LUMP SUM	SUBSTR.	EPOXY COAT	VARIES	NO EACH	DIMENSIONS(OUT TO OUT) U FT	U IN	W FT	W IN	X FT	X IN	Y FT	Y IN	Z FT	Z IN	1 DEG	2 DEG	LENGTH FT	LENGTH IN	WEIGHT LBS
	SHAFT																								
S1	LONGITUDINAL	11	48	50			S		V	24	52	0.5											52	0.5	13783
											56	0.5											56	0.5	
S2	LONGITUDINAL	11	48	50			S		V	12	23	9.0											23	9.0	5547
											19	9.0											19	9.0	
S3	HOOP	7	528	66			S				2	10.0	0	9.0									9	5.1	10170
	GRADE BEAM																								
G1	LONGITUDINAL	10	16	50			S				50	2.0											50	2.0	3454
G2	LONGITUDINAL	8	16	56			S				49	11.3											52	2.3	2229
G3	LONGITUDINAL	10	16	56			S				50	2.0											53	1.8	3659
G4	STIRRUP	5	116	72	T		S		V	4	4	2.0	3	7.0	3	7.0							12	0.5	1507
											4	2.0	3	11.9	3	11.9							12	10.3	
G5	TIE	5	276	58	T		S				4	2.0											4	11.9	1437
G6	U BAR	5	108	74	T		S	E			2	6.5	2	6.0	2	6.0							7	3.9	825
G7	LONGITUDINAL	8	6	50			S	E			50	2.0											50	2.0	804
G8	U BAR	5	8	74	T		S				1	1.0	2	6.0	2	6.0							5	10.4	49
G9	TIE	5	232	58	T		S		V	8	3	7.0											4	4.9	1116
											3	11.9											4	9.8	
G10	TIE	5	96	58	T		S		V	8	3	8.0											4	5.9	458
											3	10.0											4	7.9	
G11	GIRDER STOP U BAR	5	24	74	T		S				0	11.5	2	6.0	2	6.0							5	8.9	144
G12	GIRDER STOP U BAR	5	8	74	T		S				4	2.0	2	6.0	2	6.0							8	11.4	75
G13	PEDESTAL BAR	4	20	62	T		S	E			1	4.0	2	1.5	2	1.5	0	8.0	0	8.0			6	6.9	88
G14	STIRRUP	5	22	72	T		S				4	2.0	3	11.9	3	11.9							12	10.3	295
G15	TOP TIE	5	138	72	T		S				4	2.0	0	0.0	0	0.0							4	2.0	600
G16	U BAR	5	22	74	T		S	E			2	6.5	2	6.0	2	6.0							7	3.9	168
G17	TIE	5	44	58	T		S				3	11.9											4	9.8	221
	WING WALL																								
W1	U BAR	5	28	74	T		S				1	2.0	7	3.3	7	3.3							15	6.0	453
W2	LONGITUDINAL	8	56	50			S				9	8.0											9	8.0	1445
W3	LONGITUDINAL	8	8	50			S				8	0.5											8	0.5	172
W4	TIE	4	72	72	T		S				1	5.0	0	0.0	0	0.0							1	5.0	68
	SIDEWALK & RAIL PEDESTAL																								
M1	PEDESTAL LONGITUDINAL	4	20	56				E			2	8.0											3	9.5	51
M2	PEDESTAL LONGITUDINAL	4	10	56				E			26	8.0											27	9.5	186
M3	SIDEWALK LONGITUDINAL	4	20	50				E			2	9.0											2	9.0	37
M4	SIDEWALK LONGITUDINAL	4	20	50				E			9	6.0											9	6.0	127
M5	SIDEWALK LONGITUDINAL	4	10	50				E			7	3.0											7	3.0	48
M6	SIDEWALK TRANSVERSE	4	56	56	T			E			5	7.0											6	1.9	230
	BRIDGE RAIL TERMINAL																								
T1	TOP U BAR	4	2	74	T		S				1	3.0	4	1.3	4	1.3							9	3.4	12
T2	BOTTOM U BAR	4	12	74	T		S		V	2	1	3.0	2	4.0	2	4.0							5	8.9	60
											1	3.0	4	1.3	4	1.3							9	3.4	
T3	TOP U BAR	4	4	74	T		S		V	2	1	3.0	1	6.0	1	6.0							4	0.9	12
											1	3.0	1	10.9	1	10.9							4	10.7	
T4	TOP U BAR	4	4	74	T		S				1	3.0	0	8.0	0	8.0							2	4.9	6
T5	TOP BAR	4	4	69	T		S				1	0.0	1	0.1	2	5.6	0	0.0	0	0.0			3	7.4	10
T6	TOP BAR	4	4	69	T		S				0	0.0	6	8.7	2	9.0	0	10.0	0	0.0			8	1.3	22
T7	LONGITUDINAL	4	8	50			S				7	11.5											7	11.5	43
T8	LONGITUDINAL	4	8	50			S		V	4	5	6.1											5	6.1	23
											3	0.9											3	0.9	
T9	U BAR	4	8	74	T		S				1	4.0	2	2.0	2	2.0							5	5.9	29
T10	TOP U BAR	4	4	74	T		S				1	4.0	0	8.0	0	8.0							2	5.9	7

NO MARK	LOCATION	SIZE	NO REQ'D	BEND TYPE	BEND RADIUS	LUMP SUM	SUBSTR.	EPOXY COAT	VARIES	NO EACH	DIMENSIONS(OUT TO OUT) U FT	U IN	W FT	W IN	X FT	X IN	Y FT	Y IN	Z FT	Z IN	1 DEG	2 DEG	LENGTH FT	LENGTH IN	WEIGHT LBS
T11	TOP U BAR	4	2	74	T		S				1	3.0	4	1.3	4	1.3							9	3.4	12
T12	TOP U BAR	4	12	74	T		S		V	2	1	3.0	2	1.3	2	1.3							5	3.4	58
											1	3.0	4	1.3	4	1.3							9	3.5	
T13	BOTTOM U BAR	4	2	74	T		S				1	3.0	1	5.9	1	5.9							4	0.7	5
T14	TOP U BAR	4	2	74	T		S				1	3.0	0	8.0	0	8.0							2	4.9	3
T15	TOP BAR	4	4	69	T		S				1	0.0	1	2.3	2	4.3	0	0.0	0	0.0			3	7.2	10
T16	TOP BAR	4	4	69	T		S				0	0.0	5	5.0	2	8.5	0	10.0	0	0.0			6	10.8	18
T17	LONGITUDINAL	4	8	50			S				6	7.5											6	7.5	35
T18	LONGITUDINAL	4	8	50			S		V	4	4	7.5											4	7.5	19
											2	7.5											2	7.5	
T19	U BAR	4	8	74	T		S				1	4.0	2	2.0	2	2.0							5	5.9	29
T20	END U BAR	4	4	74	T		S				1	4.0	0	8.0	0	8.0							2	5.9	7

BENDING DIAGRAMS



NO	DATE	BY	APPR	REVISIONS

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City of Bellevue
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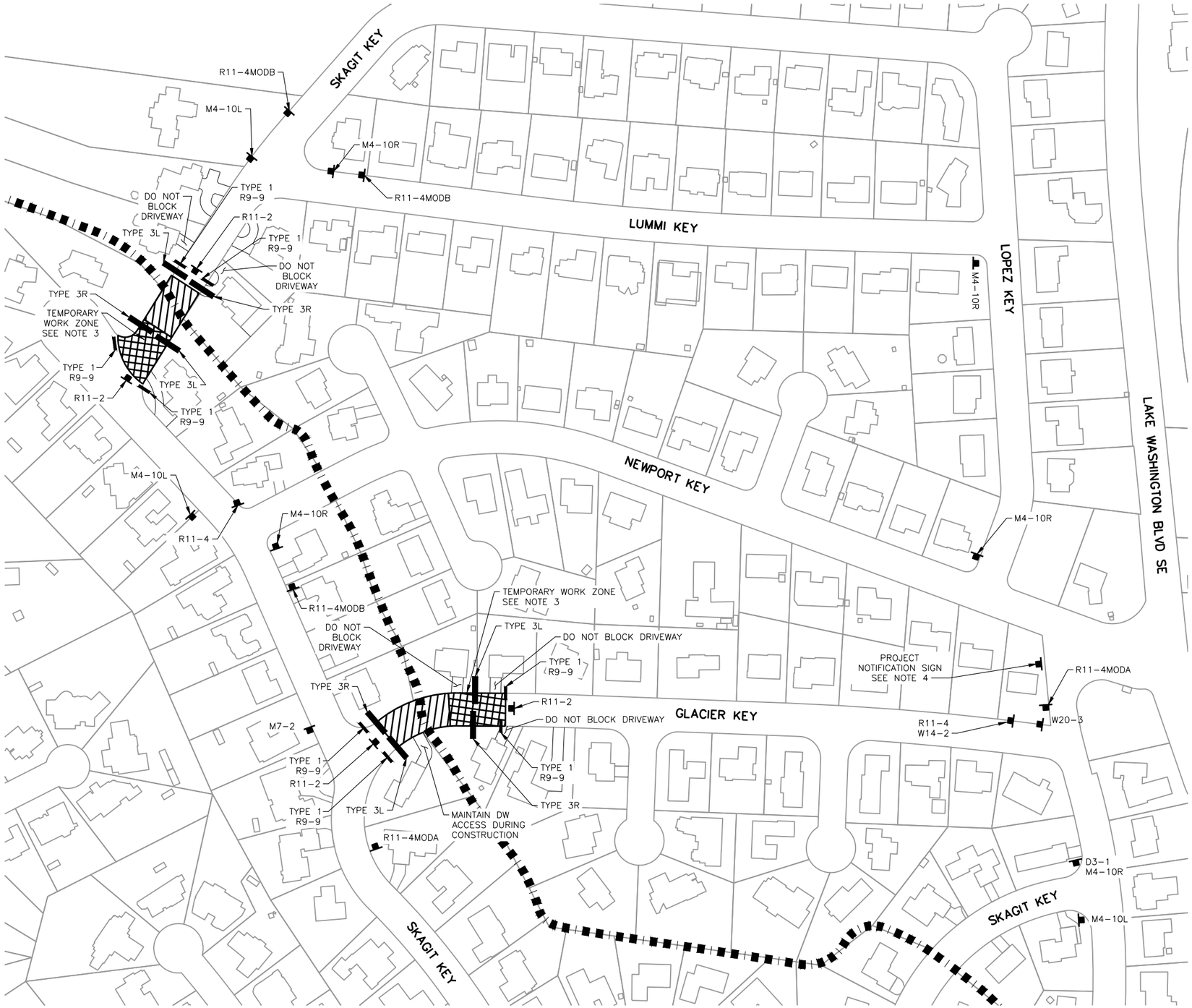
FLOOD HAZARD REDUCTION PROJECT
GLACIER KEY BRIDGE
BAR LIST

G-B14 | SHT 28 OF 54



LEGEND

- TYPE 1 BARRICADE
- TYPE 3 BARRICADE
- TEMPORARY TRAFFIC CONTROL SIGN
- TEMPORARY WORK ZONE
- WORK SPACE

R11-4MODA 60x30 — GLACIER KEY CLOSED / FOLLOW DETOUR

R11-2 48x30 — ROAD CLOSED

M7-2 24x18

R11-4 60x30 — ROAD CLOSED TO THRU TRAFFIC

W14-2 36x36 — NO OUTLET

M4-10L 48x18 — DETOUR

M4-10R 48x18 — DETOUR

R9-9 24x12 — SIDEWALK CLOSED

W20-3 36x36 — ROAD CLOSED AHEAD

D3-1 18x12 — GLACIER KEY

R11-4MODB 60x30 — SKAGIT KEY CLOSED / FOLLOW DETOUR

TRAFFIC CONTROL NOTES:

1. DO NOT PLACE BARRICADES TO BLOCK ACCESS TO DRIVEWAYS. MAINTAIN DRIVEWAY ACCESS AT ALL TIMES DURING CONSTRUCTION.
2. INSTALL TEMPORARY TRAFFIC CONTROL ZONE SIGNS PER WSDOT STD. PLAN K-80.10-01.
3. TEMPORARY WORK ZONE EXPANDED AS SHOWN DURING DRILLING OPERATION. DO NOT BLOCK DRIVEWAYS WITH TEMPORARY WORK ZONE.
4. CONTRACTOR TO INSTALL PROJECT NOTIFICATION SIGN, PROVIDED BY COB, PER COB STD DETAIL W-53.
5. ALL SIGNS ARE BLACK AND ORANGE UNLESS OTHERWISE NOTED.
6. MAINTAIN MAILBOX ACCESS FOR MAIL DELIVERY AT ALL TIMES DURING CONSTRUCTION.

TRAFFIC CONTROL PLAN SUBMITTAL:

1. CONTRACTOR SHALL SUBMIT FOR APPROVAL PROJECT SPECIFIC TRAFFIC CONTROL PLAN REFLECTING THEIR WORK ACTIVITIES WHEN IT DIFFERS FROM THE TRAFFIC CONTROL SHOWN. SEE SECTION 1-10 OF THE CONTRACT SPECIFICATIONS.

DATUM
NAVD 88

0 50 100 150 200
SCALE IN FEET

NO	DATE	BY	APPR	REVISIONS

KEVIN R. AAS — STATE OF WASHINGTON — 43627 — REGISTERED PROFESSIONAL ENGINEER — 01/27/2017

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Phone: 206-728-9655 Fax: 206-883-9301

Approved By

DESIGN MANAGER DATE

PROJECT MANAGER DATE

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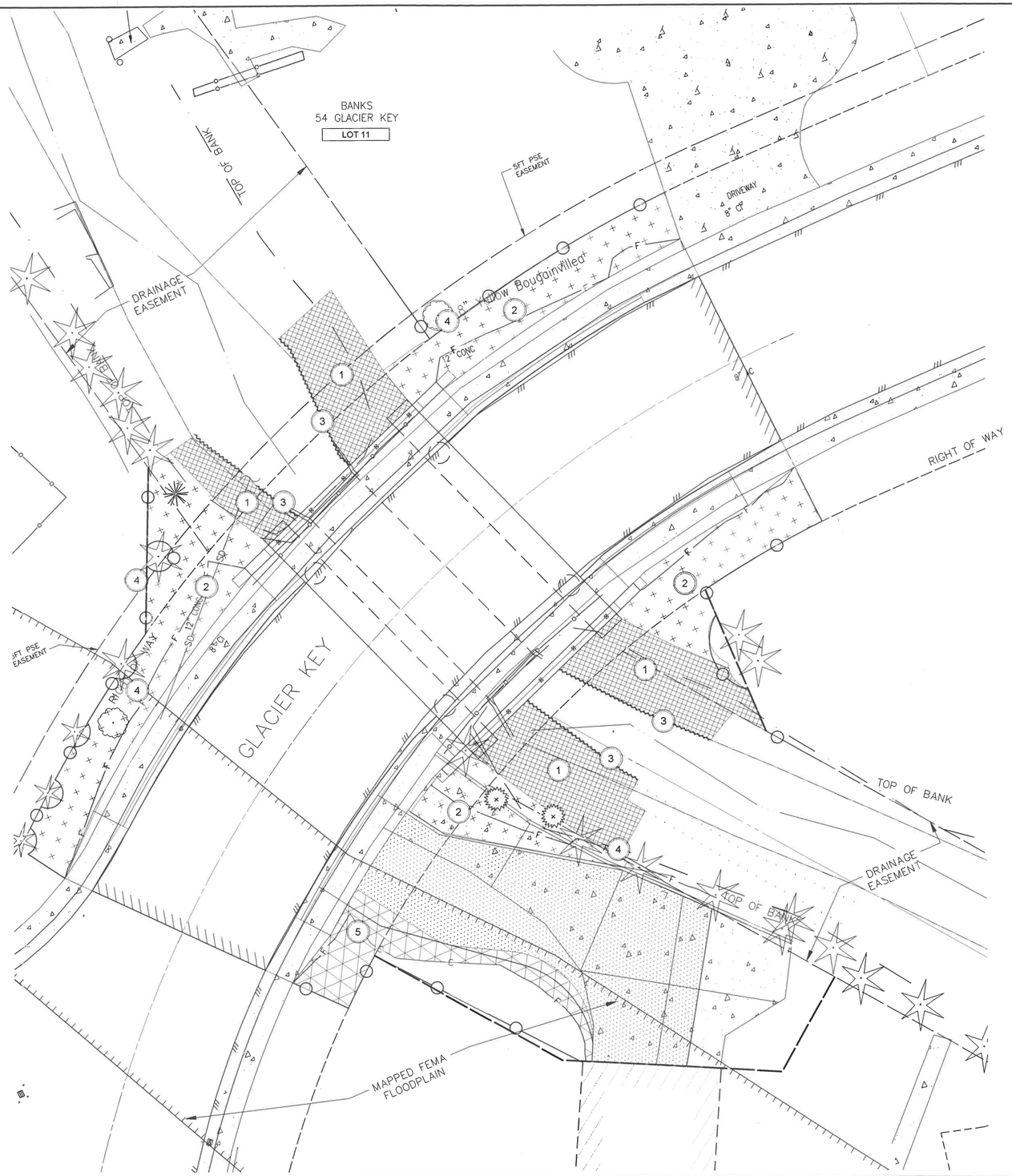
City of Bellevue
UTILITIES

FLOOD HAZARD REDUCTION PROJECT
GLACIER KEY AND LOWER SKAGIT KEY TRAFFIC CONTROL

G-TC1

SHT 29 OF 54



PLANTING LEGEND AND MATERIALS LIST:

	SCIENTIFIC NAME	COMMON NAME	QTY	MIN SIZE / CONDITION	SPACING	NOTES
	TREES					
	PSEUDOTSUGA MENZIESII	DOUGLAS-FIR	2	4' TALL / #5 CONT	Per Plan	SEE DETAIL 4/C-L2
	THUJA PLICATA	WESTERN RED CEDAR	1	4' TALL / #5 CONT	Per Plan	
	ZONE 1 PLANTINGS					
	CORNUS SERICEA	RED OSIER DOGWOOD	192	30" x 1/2" / LIVESTAKE	18" OC	SEE DETAIL 1/C-L2
	SALIX HOOKERIANA	HOOKER'S WILLOW	192	30" x 1/2" / LIVESTAKE	18" OC	
	SALIX SITCHENSIS	SITKA WILLOW	192	30" x 1/2" / LIVESTAKE	18" OC	
	ZONE 2 PLANTINGS					
	CORNUS SERICEA	RED OSIER DOGWOOD	40	12" / #1 CONT	3' OC	SEE DETAIL 2/C-L2
	HOLODISCUS DISCOLOR	OCEANSPRAY	23	12" / #1 CONT	3' OC	
	PHYSOCARPUS CAPITATUS	PACIFIC NINEBARK	22	12" / #1 CONT	3' OC	
	ROSA PISOCARPA	CLUSTERED WILD ROSE	40	12" / #1 CONT	3' OC	
	RUBUS SPECTABILIS	SALMONBERRY	40	12" / #1 CONT	3' OC	
	SYMPHORICARPOS ALBUS	SNOWBERRY	40	12" / #1 CONT	3' OC	
	GAULTHERIA SHALLON	SALAL	23	12" / #1 CONT	3' OC	
	VACCINIUM OVATUM	EVERGREEN HUCKLEBERRY	23	24" / #2 CONT	3' OC	
	COIR LOG PLANTINGS					
	SALIX SITCHENSIS	SITKA WILLOW	32	30" x 1/2" / LIVESTAKE	1' OC	SEE DETAIL 3/C-L2
	CORNUS SERICEA	RED OSIER DOGWOOD	32	30" x 1/2" / LIVESTAKE	1' OC	
	SALIX HOOKERIANA	HOOKER'S WILLOW	32	30" x 1/2" / LIVESTAKE	1' OC	
	LAWN RESTORATION					
	SOD					SEE DETAIL 6/C-L2

DATUM
NAVD 88
0 5 10 15 20
SCALE IN FEET

CONSTRUCTION NOTES:

1. ZONE 1 RIPARIAN RESTORATION, SEE DETAIL 1/C-L2
2. ZONE 2 RIPARIAN RESTORATION, SEE DETAIL 2/C-L2
3. COIR LOG PLANTING, SEE DETAIL 3/C-L2
4. ADJUST PLANT INSTALLATION AROUND RETAINED TREES.
5. LAWN RESTORATION, SEE DETAIL 6/C-L2

GENERAL NOTES

1. LOCATE AND PROTECT EXISTING LANDSCAPE IRRIGATION. REPAIR OR REPLACE IF DAMAGED.

STATE OF WASHINGTON · JENS REUBEN SWENSON · NO. 656 EXP. 10/31/20 · LANDSCAPE ARCHITECT

NO	DATE	BY	APPR	REVISIONS

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DESIGN MANAGER DATE

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JC	02/06/19
DESIGNED BY	DATE
JC	02/06/19
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BB	02/06/19
CHECKED BY	DATE

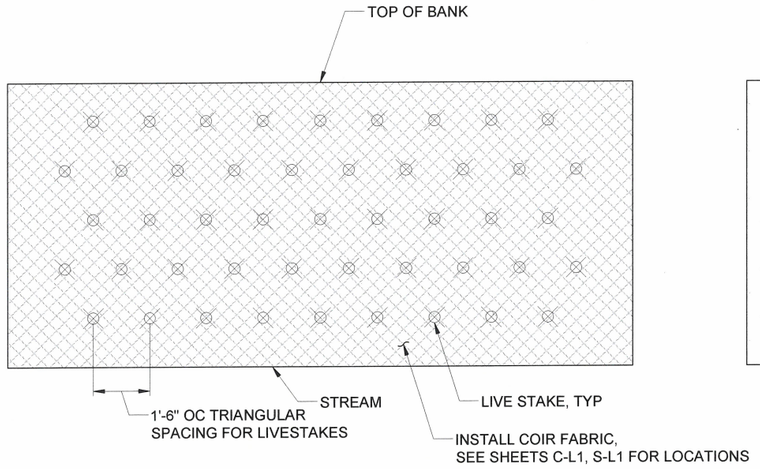
City of Bellevue
UTILITIES

FLOOD HAZARD REDUCTION PROJECT GLACIER KEY RIPARIAN RESTORATION PLAN

G-L1 | SHT 30 OF 54

NOTE:

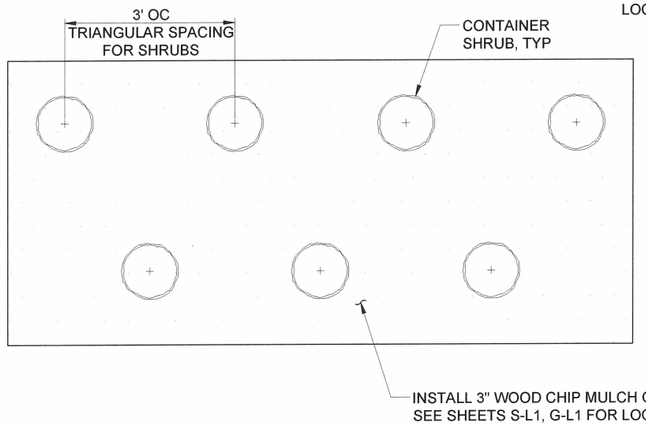
1. INSTALL LIVESTAKES THROUGH COIR FABRIC
2. DISTRIBUTE STAKES RANDOMLY BY SPECIES



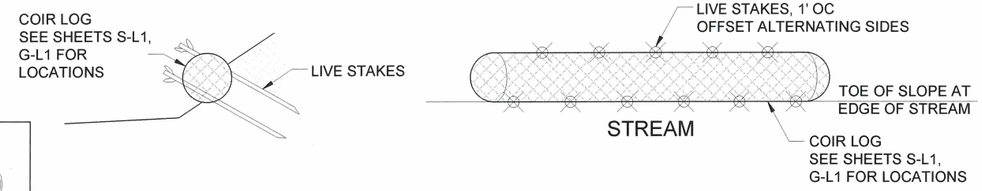
ZONE 1 PLANTING
SCALE: 3/4"=1'-0"
S-L1 | 1 G-L1

NOTE:

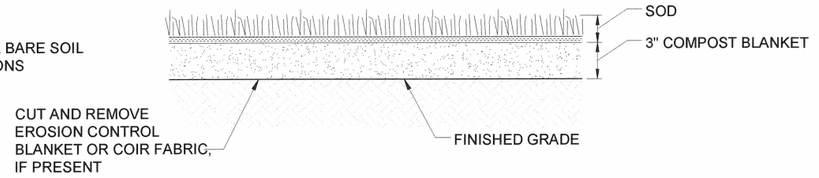
1. PLANT SHRUBS IN SINGLE SPECIES GROUPS OF 3 TO 5 PLANTS
2. INSTALL SHRUBS THROUGH COIR FABRIC, IF PRESENT. SEE DETAIL 5/-



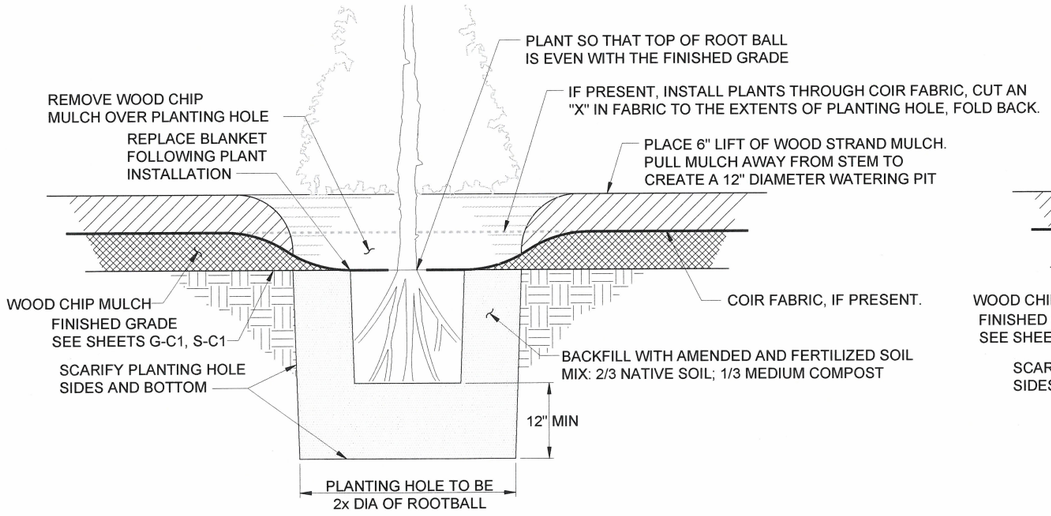
ZONE 2 PLANTING
SCALE: 3/4"=1'-0"
S-L1 | 2 G-L1



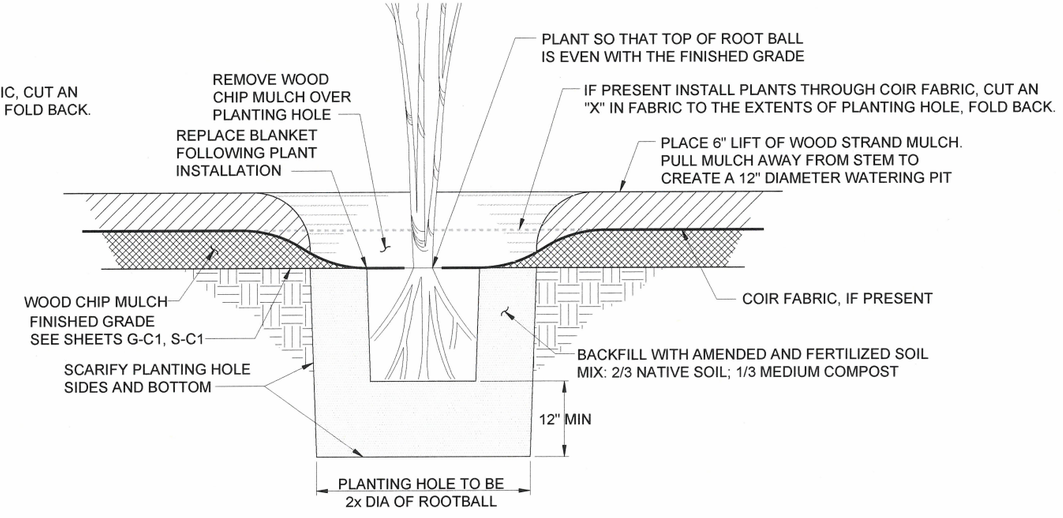
COIR LOG PLANTING
SCALE: 3/4"=1'-0"
N-L1 | 3 C-L1



LAWN RESTORATION
NO SCALE
S-L1 | 6 G-L1



TREE PLANTING
NO SCALE
S-L1 | 4 G-L1



SHRUB PLANTING
NO SCALE
S-L1 | 5 G-L1

STATE OF WASHINGTON
JENS REUBEN SWENSON
No. 656 EXP. 10/31/20
LANDSCAPE ARCHITECT

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City of Bellevue
UTILITIES

FLOOD HAZARD REDUCTION PROJECT
LANDSCAPE RESTORATION DETAILS

C-L2 | SHT 31 OF 54

CITY OF BELLEVUE CONTROL POINTS

ID	DESCRIPTION	NORTHING	EASTING	ELEVATION
H2633 (NOT SHOWN)	2" DIA CITY OF BELLEVUE BRASS CAP STAMPED "2633". SET IN FLOWLINE ROLLED CURB/GUTTER ON WEST SIDE OF INTERSECTION WHERE NORTHBOUND SKAGIT KEY TURNS TO EASTBOUND SKAGIT KEY @ RESIDENCE #63 SKAGIT KEY.	211731.17	1305710.66	–
H2634/V620 (NOT SHOWN)	4"x4" CONCRETE MON W/ 3/8" DIA BRASS ROD W/ PUNCH MARK IN CASE. ON CENTERLINE SKAGIT KEY – 58 FEET± SOUTHWEST OF INTERSECTION SKAGIT KEY & LUMMI KEY – OPPOSITE HSE #77 SKAGIT KEY.	212089.67	1305949.43	22.60

HORIZONTAL DATUM:
WASHINGTON STATE PLANE COORDINATES, NORTH ZONE (BASED UPON NAD 83/11)

VERTICAL DATUM:
NAVD 88

CONTROL METHOD:
HORIZONTAL AND VERTICAL CONTROL COORDINATES WERE DERIVED USING TRIGONOMETRIC TRAVERSE METHODS USING A LEICA TPS-1201 TOTAL STATION TIED TO CITY OF BELLEVUE CONTROL POINTS.

FIELD SURVEY PERFORMED OCTOBER AND NOVEMBER 2015 BY TETRA TECH AND JUNE 2017 BY PARAMETRIX.

DATUM NAVD 88

0 5 10 15 20 SCALE IN FEET

NO	DATE	BY	APPR	REVISIONS

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GG CHECKED BY DATE

City of Bellevue UTILITIES

FLOOD HAZARD REDUCTION PROJECT LOWER SKAGIT KEY EXISTING CONDITIONS AND SURVEY CONTROL

S-EC1

CONSTRUCTION NOTES:

1. CATCH BASIN INLET PROTECTION INSERT PER COB BMP C220. INSTALL ON ALL CB WITHIN 200 FT DOWNSTREAM OF PROJECT
2. HIGH VISIBILITY FENCE PER WSDOT STANDARD PLAN I-10.10-01, APPROX 225 LF
3. COIR LOG PLACEMENT, SEE DETAIL 1/C-E2, APPROX 40 LF.
5. TEMPORARY GRAVEL BAG BERM
6. TEMPORARY STREAM BYPASS PIPELINE. MINIMUM 42" DIA SMOOTH BORE AND 62 CFS CAPACITY, APPROX 100 LF
7. PROTECT BRIDGE WING WALLS AFTER CONSTRUCTION DURING SITE ACCESS
8. CONTRACTOR TO SUBMIT TO ENGINEER FOR APPROVAL A PLAN TO BYPASS STREET RUNOFF AROUND OR THROUGH CONSTRUCTION ZONE AND DISCHARGE TO STREAM BYPASS OUTFALL LOCATION. MOVABLE PIPES IN STREAM CHANNEL OR STREET LEVEL PUMPS ARE ACCEPTABLE. RUNOFF OVER BARE SOIL WILL NOT BE PERMITTED. CONTRACTOR IS ADVISED THAT THE PREDICTED 2-YEAR STORM FLOW IN THE NORTHWEST SD IS ABOUT 2.8 CFS.
9. ESTABLISH TURBIDITY MONITORING LOCATION AT STREAM BYPASS END. DO NOT ENCROACH BEYOND RIGHT OF WAY.
10. TEMPORARY WATER BARRIER. DO NOT ENCROACH BEYOND RIGHT OF WAY. SEE STREAM BYPASS NOTE 5/G-E2.
11. SUGGESTED BAKER TANK LOCATION. FINAL LOCATION BY CONTRACTOR.

GENERAL NOTE:

1. SEE SHEET G-E2 FOR GENERAL STREAM BYPASS AND ESC NOTES.

LEGEND:

- BIODEGRADABLE EROSION CONTROL BLANKET PER COB BMP C122. NO WOOD CHIP MULCH. LANDSCAPE PER SHEET S-L1.
- HIGH VISIBILITY FENCE
- COIR LOG

NO	DATE	BY	APPR	REVISIONS

KEVIN R. ANDERSON — STATE OF WASHINGTON — 41627 — REGISTERED PROFESSIONAL ENGINEER — 02/27/20

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CITY OF BELLEVUE WASHINGTON

City of Bellevue
UTILITIES

FLOOD HAZARD REDUCTION PROJECT
LOWER SKAGIT KEY
STREAM BYPASS AND ESC PLAN

S-E1

SHT 33 OF 54

Path: P:\134271 Lower Coal Creek Ph 2 Early Action\05 G3 Design\CAD\Sheet Files\33 S-E1_LOWER SKAGIT KEY STRM BYPASS AND ESC PLN.dwg Plot date: Feb 07, 2019-09:58:06am CAD User: nadine.stock.
Xref Filename: | G3-border | C-SP-OHW | C-SP-FEMA | V-XC-SITE-G3 | C-SP-PROJ-LIMITS_G3 | C-SP-SITE-SKAGIT KEY-LOWER | C-SP-ALGN-PROF |

SITE PREPARATION NOTES:

1. REMOVE EXISTING CORRUGATED METAL CULVERT AND GUARDRAIL.
2. REMOVE EXISTING TREE.
3. REMOVE EXISTING STORM DRAIN, PLUG ENDS.
4. SAWCUT EXISTING ROAD, SIDEWALK, AND ROLLED CURB AND GUTTER.
5. REMOVE EXISTING 8" CI WATER MAIN.
6. RELOCATE SIGN, BY OTHERS (HOME OWNERS) PRIOR TO CONSTRUCTION.
7. GAS MAIN TO BE DEACTIVATED, BY OTHERS (PSE).
8. RELOCATE STREET LIGHT, BY OTHERS (PSE).
9. RELOCATE UNDERGROUND POWER, BY OTHERS (PSE).
10. RELOCATE UNDERGROUND CABLE, BY OTHERS (COMCAST).
11. REMOVE ABANDONED AND DECOMMISSIONED WELL CASING AND SURFACE MONUMENT TO DEPTH NEEDED FOR CONSTRUCTION.
12. CUT AND CAP EXIST WATER MAIN BEFORE STARTING DEMOLITION OF EXIST CONC BOX CULVERT. INSTALL TEMPORARY 2-INCH BLOW-OFF VALVE PER COB STD DETAIL W-15, BOTH SIDES.
13. REMOVE GEOTECHNICAL BOREHOLE CONCRETE CAP.
14. PROTECT EXIST DRIVEWAY APPROACH DURING CONSTRUCTION.
15. COORDINATE REMOVAL OF EXISTING PLANTS WITH PROPERTY OWNER FOR 68 SKAGIT KEY.
16. GAS MAIN CAP, BY OTHERS (PSE).
17. CUT ANY TREE ROOTS THAT EXTEND BEYOND RIGHT OF WAY AT THE RIGHT OF WAY LIMITS.

GENERAL NOTES:

1. SEE SHEET G2 FOR GENERAL NOTES.
2. SEE SHEET G3 FOR STORM DRAINAGE GENERAL NOTES, SANITARY SEWER GENERAL NOTES, AND TRANSPORTATION DEPARTMENT CONSTRUCTION NOTES.

LEGEND

STORM DRAIN/WATER/SEWER PIPE REMOVAL

CONCRETE DRIVEWAY/SIDEWALK/ROLLED CURB REMOVAL

DATUM
NAVD 88

0 5 10 15 20
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KEVIN R. ALLEN — STATE OF WASHINGTON — 43623 — REGISTERED PROFESSIONAL ENGINEER — 03/01/2019

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City of Bellevue
UTILITIES

FLOOD HAZARD REDUCTION PROJECT
LOWER SKAGIT KEY
SITE PREPARATION PLAN

S-SP1

SHT 34 OF 54

Path: P:\174371 Lower Coal Creek Ph 2 Early Action\05 G3 Design\CAD\Sheet Files\34 S-SP1_LOWER SKAGIT KEY SITE PREPARATION PLAN.dwg Plot date: Feb 07, 2019-09:58:21am CAD User: nadine.stock.
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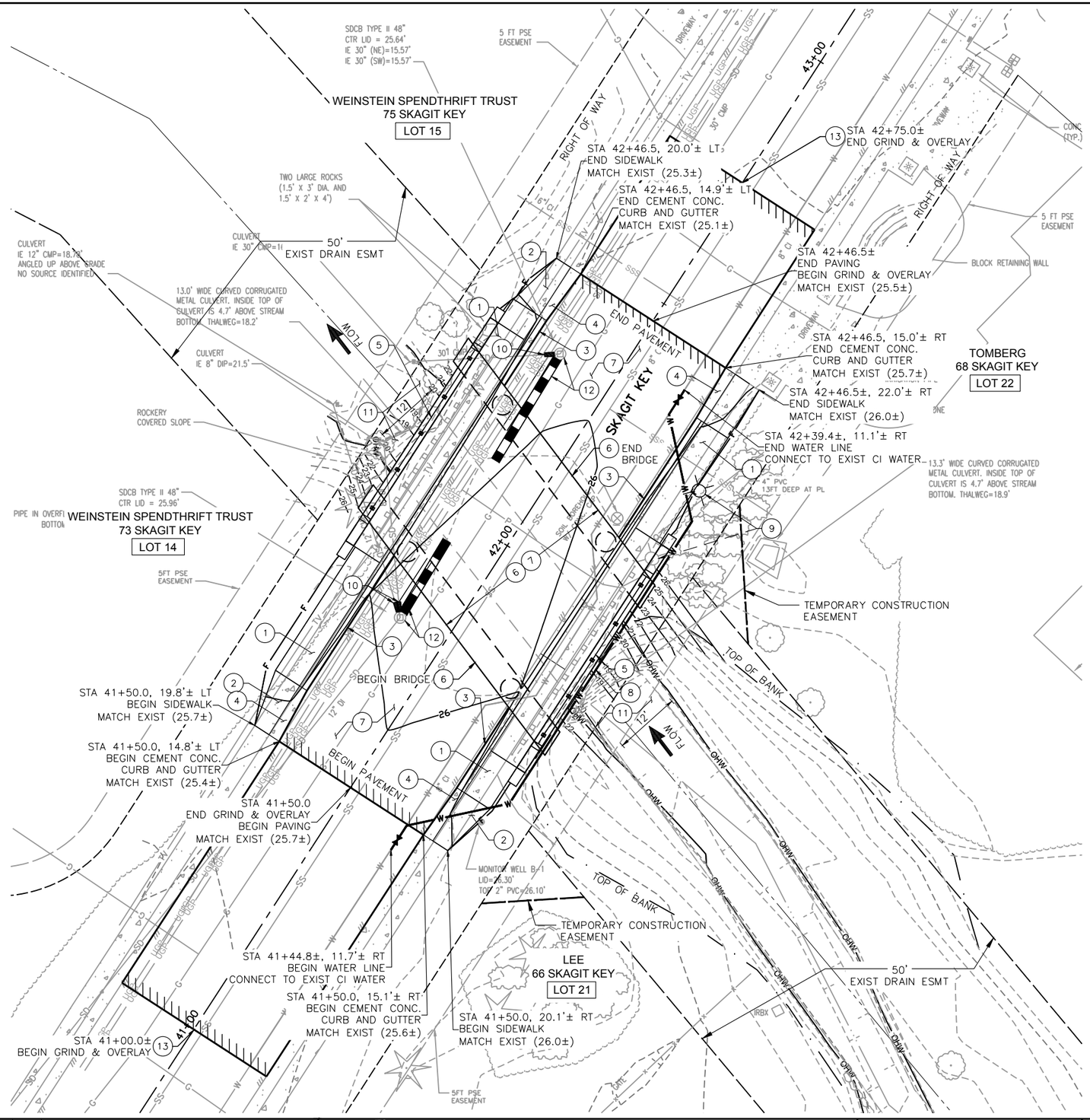

CONSTRUCTION NOTES:

1. CEMENT CONCRETE SIDEWALK, SEE COB STD DETAIL SW-110-1/G-C5.
2. TAPER CEMENT CONCRETE SIDEWALK TO MATCH EXIST. TAPER LENGTH = 10 FT
3. CEMENT CONCRETE TRAFFIC CURB AND GUTTER, SEE COB STD DETAIL SW-100-1/G-C5.
4. TRANSITION ROLLED CURB TO CEMENT CONCRETE TRAFFIC CURB AND GUTTER, SEE 2/G-C5.
5. BRIDGE RAIL WITH MIN TL-1 RATING, SEE SHEET S-B11.
6. BRIDGE, SEE SHEETS S-B1 TO S-B12. STA 41+82.24 TO STA 42+17.35.
7. SEE TYPICAL ROADWAY APPROACH AND BRIDGE SECTION FOR PAVING, 1/G-C4 AND 3/G-C4.
8. ATTACH WATER MAIN TO BRIDGE. SEE SHEET S-C3 FOR WATER MAIN PROFILE. SEE A/S-B10 FOR WATER MAIN SUPPORTS ON BRIDGE.
9. LIGHT POLE RELOCATION BY FRANCHISE UTILITY (PSE). FINAL LOCATION TO BE COORDINATED WITH PSE. SEE CONTRACT SPECS SECTION 1-07.3 FOR COORDINATION REQUIREMENTS. APPROX. STA 42+26 RT.
10. PLUG EXIST STORM CONNECTION IN CATCH BASIN
11. SEE SHEET S-H1 FOR CHANNEL GRADING.
12. SEE ROAD PROFILE, S-C2, FOR STORM DRAIN. SEE ALSO GENERAL NOTE 6.
13. 2" GRIND ASPHALT PAVEMENT, FULL ROAD WIDTH. OVERLAY WITH 2" HMA CLASS ½ INCH PG 58H-22. ADJUST GRIND & OVERLAY LIMITS AS DIRECTED BY TRANSPORTATION INSPECTOR.

GENERAL NOTES

1. SEE SHEET G2 AND G3 FOR GENERAL, WATER, STORM DRAINAGE, AND TRANSPORTATION NOTES.
2. SEE SHEET S-EC1 FOR ROAD ALIGNMENT.
3. SEE WATER MAIN PROFILE, SHEET S-C3 FOR JOINT RESTRAINTS.
4. CONTRACTOR TO RELOCATE WATER LINE.
5. RELOCATION OF UNDERGROUND POWER (PSE), CABLE (COMCAST), ILLUMINATION (PSE), AND GAS (PSE) BY OTHERS.
6. TRENCHING FOR STORM DRAIN PER COB STD DETAIL D-25. UNLESS OTHERWISE NOTED, BACKFILL PER BRIDGE AND ROAD PLANS.

PAVING NOTES

1. PAVING LIMITS FOR FRANCHISE UTILITY TRENCHING OR EXPOSING EXIST WATER PIPE FOR JOINT RESTRAINT MAY BE ADJUSTED BY THE TRANSPORTATION INSPECTOR BASED ON FIELD CONDITIONS.
2. ANY DAMAGE TO THE ROADWAY CAUSED DURING CONSTRUCTION MUST BE RESTORED AT THE DIRECTION OF THE TRANSPORTATION INSPECTOR.

GRADING NOTE

ROADWAY GRADING LIMITS SHOWN BY CUT OR FILL LINE. SEE SHEET S-C2 FOR ROAD PROFILE. SEE SHEET S-H1 FOR CHANNEL GRADING.

NAVD 88

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KEVIN R. AAS — STATE OF WASHINGTON — 21627 — REGISTERED PROFESSIONAL ENGINEER — 05/04/2019

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City of Bellevue UTILITIES

FLOOD HAZARD REDUCTION PROJECT
LOWER SKAGIT KEY
ROAD PLAN

S-C1 | SHT 35 OF 54

Path: P:\134271 Lower Cost Creek Ph 2 Early Action\05 G3 Design\CAD\Sheet Files\35 S-C1_LOWER SKAGIT KEY ROAD PLAN.dwg Plot date: Feb 07, 2019-09:58:40am CAD User: nadine.stock.
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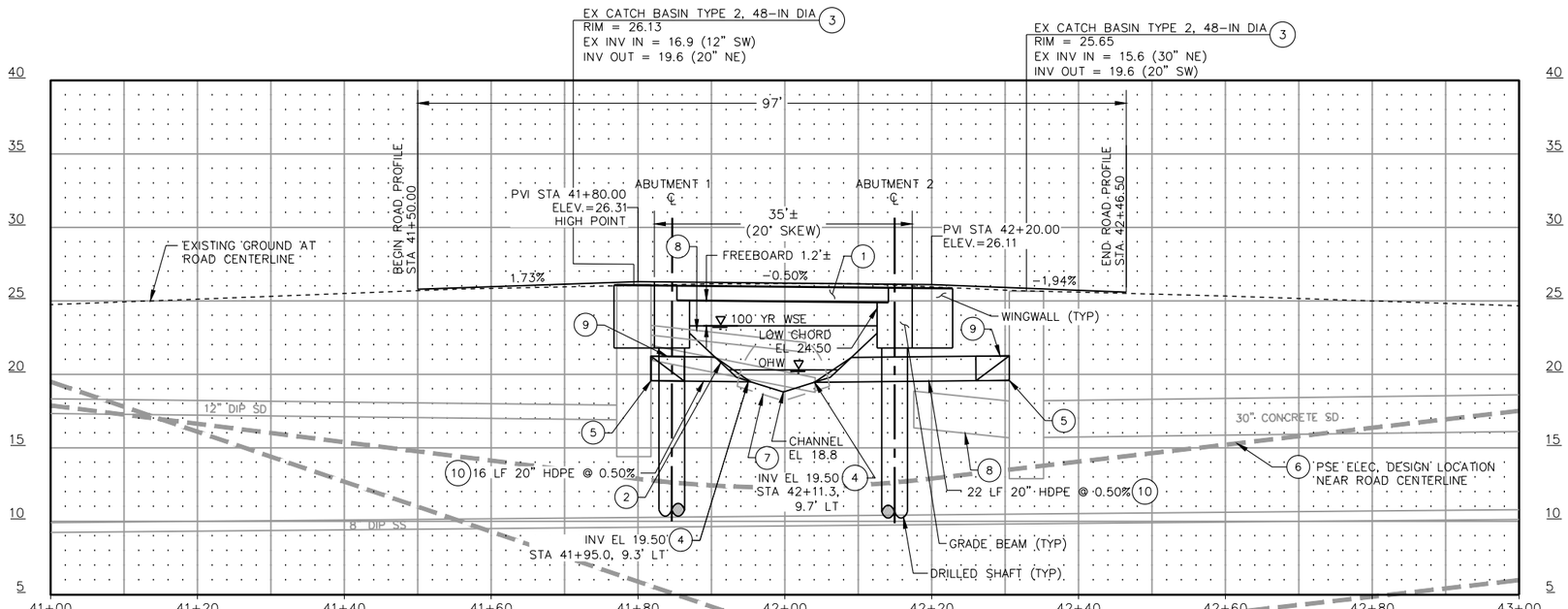
CONSTRUCTION NOTES:

1. SEE S-B1 TO S-B14 FOR BRIDGE.
2. SEE E/S-H2 FOR CREEK SECTION UNDER BRIDGE.
3. ADJUST CATCH BASIN TO GRADE, SEE CONTRACT SPECIFICATION SECTION 7-08
4. VERIFY POSITIVE SLOPE TO CREEK (0.5% MIN.) PRIOR TO OUTLET PIPE INSTALLATION. OUTLET PIPE WITH BEVEL TO MATCH CREEK SIDE SLOPE PER COB STD DETAIL D-34.
5. KOR-N-SEAL, FLEXIBLE PIPE TO MANHOLE CONNECTOR.
6. FRANCHISE UTILITY DESIGN BORE PROFILE (BY OTHERS), SEE FRANCHISE UTILITY RELOCATION PLANS. APPROXIMATE DEPTH SHOWN.
7. SEE SHEET S-SP1 FOR EXIST CULVERT REMOVAL.
8. SEE SHEET S-SP1 FOR EXIST STORM REMOVALS.
9. 18" DIA. "CHECKMATE" INLINE CHECK VALVE AS MANUFACTURED BY TIDEFLEX OR APPROVED EQUAL. INSTALL PER MANUFACTURERS' RECOMMENDATIONS, SEE CONTRACT SPECIFICATION SECTION 7-11.
10. HDPE PIPE, 20" (O.D.) IPS DR32.5, PE 4710



ROAD PROFILE LOWER SKAGIT KEY ROAD CENTERLINE
SCALE: HORIZ: 1"= 10' VERT: 1"=5'

STATION/OFFSET NOTE:

1. ALL STATIONS ARE ROAD ALIGNMENT STATIONS UNLESS OTHERWISE NOTED.
2. STATIONS AND OFFSETS ARE SHOWN TO CENTER OF STRUCTURE, EXCEPT WHERE OTHERWISE NOTED.

DATUM
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KEVIN R. ANDERSON — STATE OF WASHINGTON — 21123 — REGISTERED PROFESSIONAL ENGINEER — 05/07/2019

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CITY OF BELLEVUE WASHINGTON

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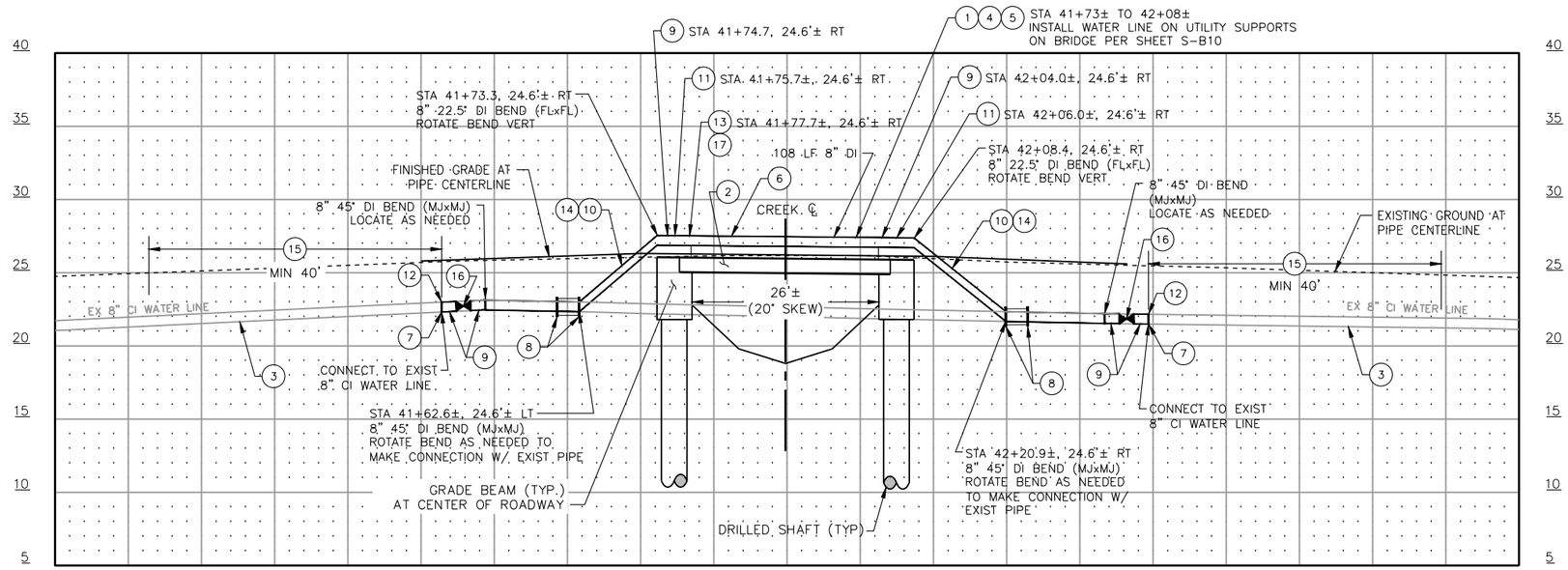
UTILITIES

FLOOD HAZARD REDUCTION PROJECT
LOWER SKAGIT KEY
ROAD PROFILE

S-C2

SHT 36 OF 54



WATER PROFILE – LOWER SKAGIT KEY ROAD
SCALE: HORIZ: 1"= 10' VERT: 1"=5'

STATION/OFFSET NOTE:

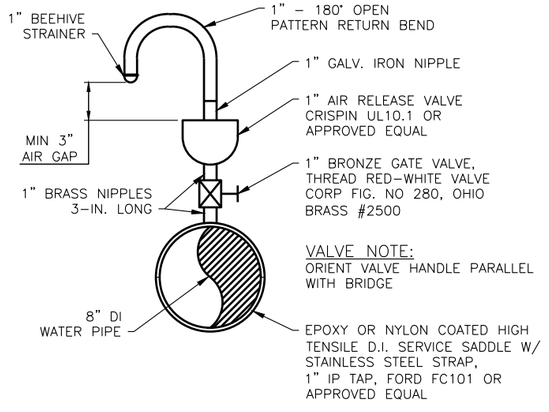
1. ALL STATIONS ARE ROAD ALIGNMENT STATIONS UNLESS OTHERWISE NOTED.

PIPE SUPPORT ON BRIDGE ABUTMENT/ENDCAP NOTES:

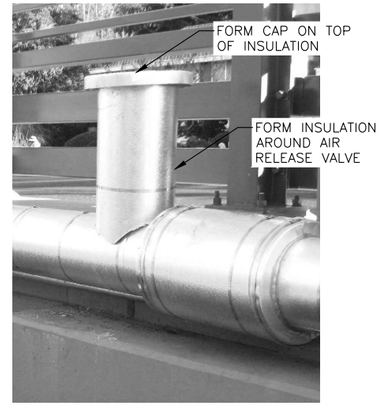
1. SEE SHEET S-B4 FOR BRIDGE ABUTMENT/ENDCAP REBAR.
2. INSERTS SHALL BE DAYTON SUPERIOR F64 FERRULE LOOP OR APPROVED EQUAL WITH 4" MIN. EMBEDMENT DEPTH AND MIN. SAFE WORKING LOAD OF 3,000 LBS IN TENSION AND 1,800 LBS IN SHEAR.

CONSTRUCTION NOTES:

1. PROVIDE RESTRAINED JOINTS ON NEW WATER PIPE & FITTINGS.
2. SEE S-B1 TO S-B12 FOR BRIDGE.
3. LOCATION AND DEPTH SHOWN ARE APPROXIMATE ONLY. CONTRACTOR SHALL POTHOLE TO DETERMINE EXACT LOCATION AND DEPTH PRIOR TO CONSTRUCTION.
4. PROVIDE PIPE INSULATION W/ ALUMINUM JACKETING ON EXPOSED WATER PIPE STA 41+73± TO 42+08±. ATTACH INSULATION WITH METAL BANDING. INSTALL INSULATION BETWEEN UTILITY SUPPORTS. SEE CONTRACT SPECS SECTION 10-01.
5. INSTALL EPDM WEAR PAD, 1/4" THICK, UNDER PIPE AT ALL UTILITY SUPPORTS. ADVANTEK FRP BY ADVANTAGE INDUSTRIAL SOLUTIONS OR APPROVED EQUAL.
6. PLACE PIPE BELL JOINT IN MIDDLE OF BRIDGE.
7. MJ GLAND ON EXIST PIPE SHALL BE COMPATIBLE WITH CAST IRON.
8. INSTALL PIPE RESTRAINT GLAND (ROMAC 611 OR EQUAL) ON PIPE. INSTALL (2) EYE BOLTS AT BEND MJ FITTING, ON OPPOSITE SIDES OF THE PIPE. CONNECT PIPE GLAND AND EYE BOLTS WITH (2) 316SS ALL-THREAD, 36" LONG. MATERIALS SHALL BE COMPATIBLE WITH JOINT RESTRAINT SYSTEM.
9. 8" DI SLEEVE (MJxMJ), LONG PATTERN.
10. INSTALL FLEX-TEND SERIES 4408F20B, FORCE BALANCED FLEXIBLE EXPANSION JOINT, OR APPROVED EQUAL.
    STA 41+68± RT (CENTER OF JOINT)
    STA 42+15± RT (CENTER OF JOINT)
11. INSTALL SADDLE PIPE SUPPORT, STANDON MODEL C92 304SS, OR APPROVED EQUAL. ATTACH PIPE SUPPORT BASEPLATE (4"x6") TO TOP OF BRIDGE ABUTMENT/ENDCAP USING 1/2" DAYTON SUPERIOR F64 FERRULE LOOP INSERTS, WITH NC THREADED BOLTS. CONTRACTOR SHALL PROVIDE 2" SCH 40 STAINLESS STEEL EXTENSION PIPE, LENGTH AS REQUIRED, PER MANUFACTURER'S PIPE SUPPORT INSTALLATION GUIDE. WELD EXTENSION PIPE TO BASE AND COLLAR AFTER INSTALLATION, AS NOTED IN THE MANUFACTURER'S PIPE SUPPORT INSTALLATION GUIDE.
12. CUT AND CAP EXISTING WATER MAIN AT BOTH ENDS PRIOR TO THE INSTALLATION OF THE SHEET PILES AND BEFORE STARTING DEMOLITION OF THE EXISTING CONCRETE BOX CULVERT. INSTALL TEMPORARY 2-INCH BLOW-OFF VALVE PER COB STD DETAIL W-2 NEAR THE NEW CAP ON THE EXISTING WATER MAIN, BOTH SIDES.
13. AIR RELEASE VALVE (WATER), SEE 1/-.
14. PROVIDE MIN 7FT LENGTH BETWEEN PIPE BENDS FOR INSTALLATION OF FLEX-TEND EXPANSION JOINT.
15. EXPOSE EXISTING PIPE TO NEXT TWO EXISTING PIPE JOINTS BEYOND CONNECTION. INSTALL JOINT RESTRAINT AT NEXT TWO EXISTING PIPE JOINTS. JOINT RESTRAINT GLANDS SHALL BE ROMAC 611 OR EQUAL.
16. 8" GATE VALVE (MJxMJ)
17. AIR RELEASE VALVE INSULATION, SEE 4/-.



1/– AIR RELEASE VALVE (WATER)
SCALE: NTS



INSULATION NOTE:
THE CONTRACTOR IS ENCOURAGED TO VISIT AND VIEW THE EXISTING INSULATION LOCATED NEAR 8 SKAGIT KEY FOR EXAMPLE OF FINISHED AIR RELEASE VALVE INSULATION.

4/– AIR RELEASE VALVE INSULATION DETAIL
SCALE: NTS

DATUM
NAVD 88

0 5 10 15 20
SCALE IN FEET

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CITY OF BELLEVUE WASHINGTON

City of Bellevue
UTILITIES

FLOOD HAZARD REDUCTION PROJECT
LOWER SKAGIT KEY
WATER LINE PROFILE

S-C3 | SHT 37 OF 54

Path: P:\134271 Lower Coal Creek Ph 2 Early Action\05 C3 Design\CAD\Sheet Files\37 S-C3_LOWER SKAGIT KEY WATER LINE PROF.dwg Plot date: Feb 07, 2019-09:59:01am CAD User: nadine.stock.
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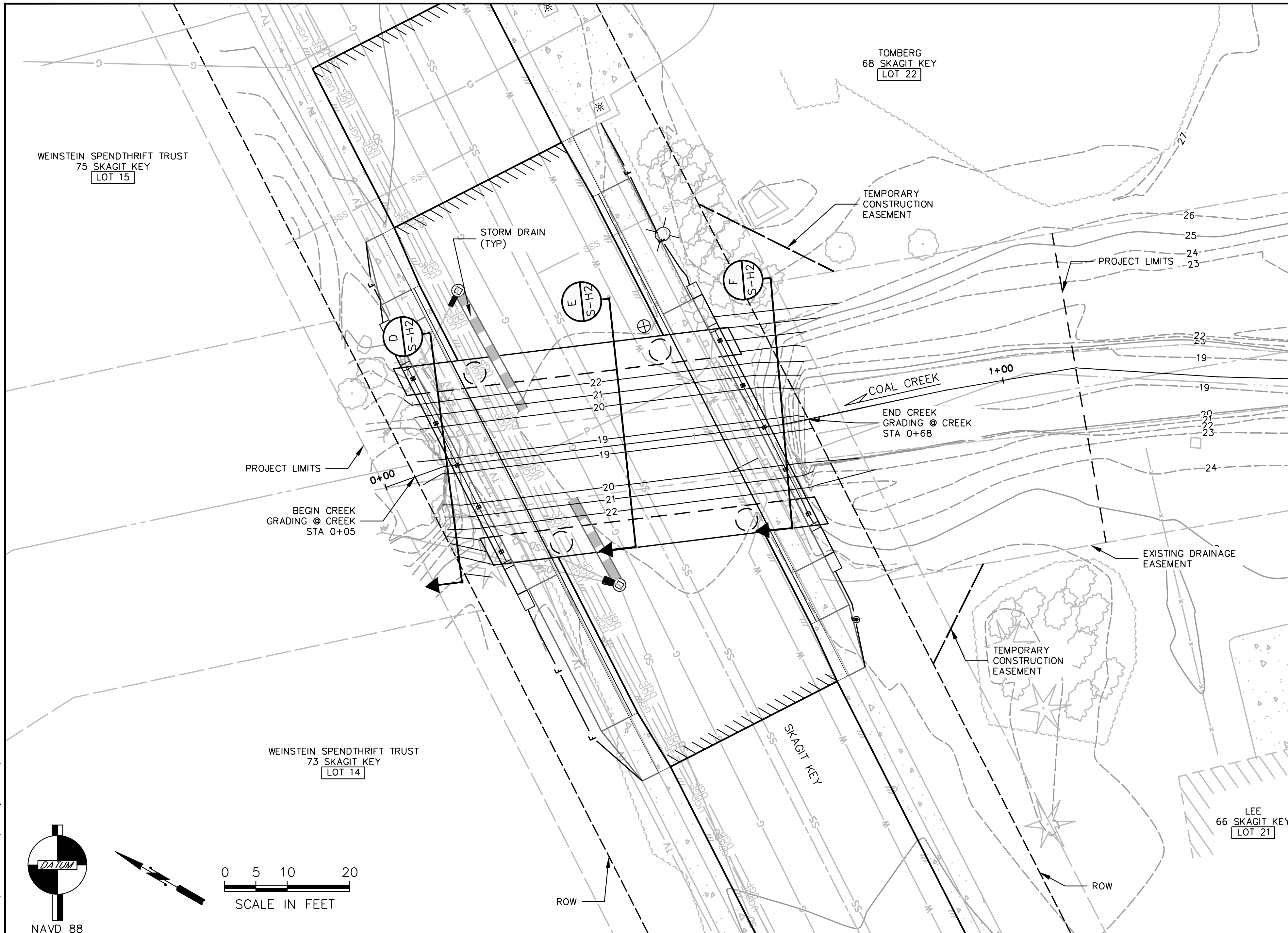

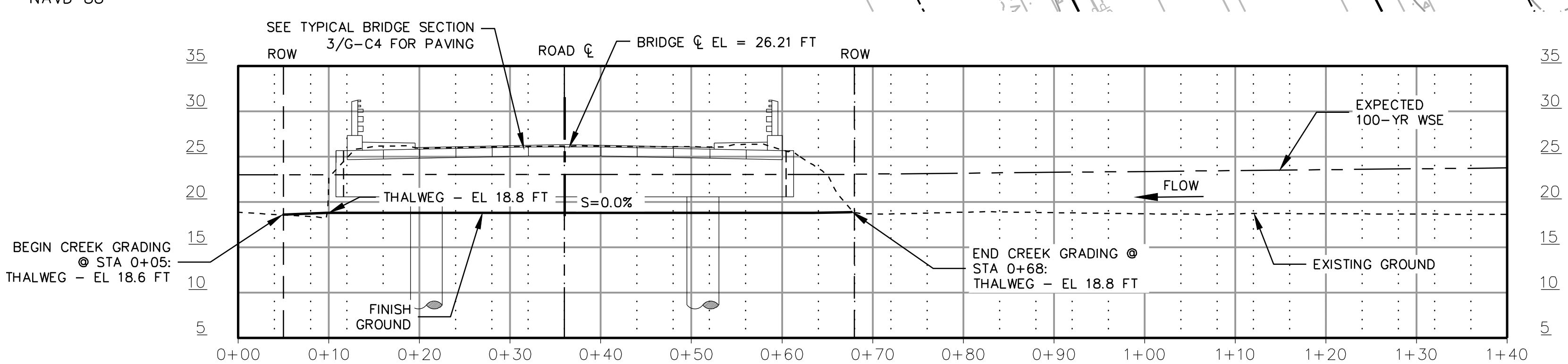

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DESIGNED BY DATE
D. HINTON
DRAWN BY DATE
E. ROWLAND
CHECKED BY DATE

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UTILITIES

FLOOD HAZARD REDUCTION PROJECT

LOWER SKAGIT KEY HABITAT CREEK
GRADING PLAN & PROFILE

S-H1

SHT 38 OF 54

Path: Q:\2003781_LowerCoalCreek_Group3\AC_2003781\dwg\2003781_GlacierSkagit_v2.dwg Plot date: Feb 06, 2019-10:14:13pm CAD User: dhinton.
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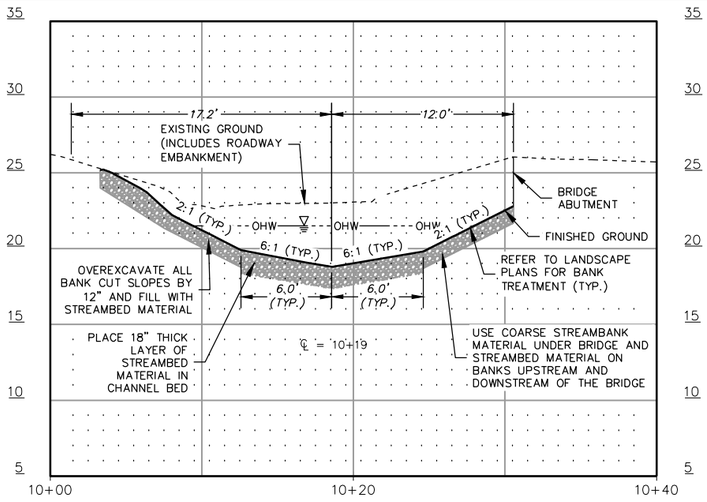
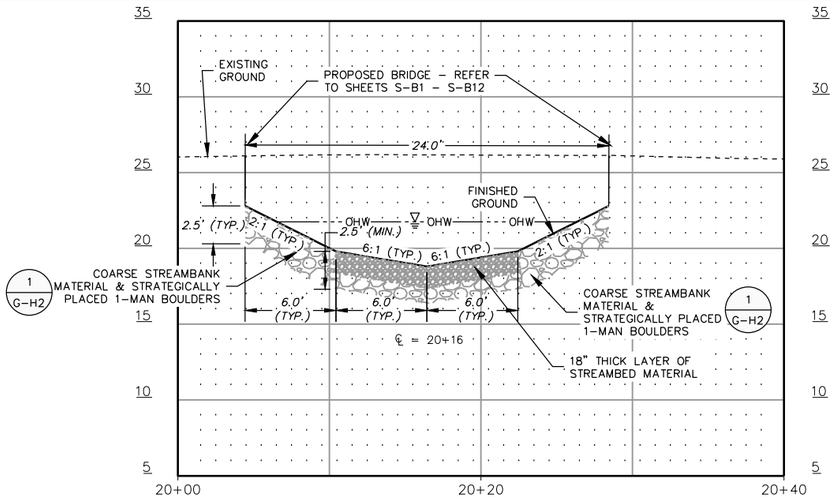


SECTION STA. 0+10

1" = 5' (HORIZ.) 1" = 5' (VERT.)

D / S-H1



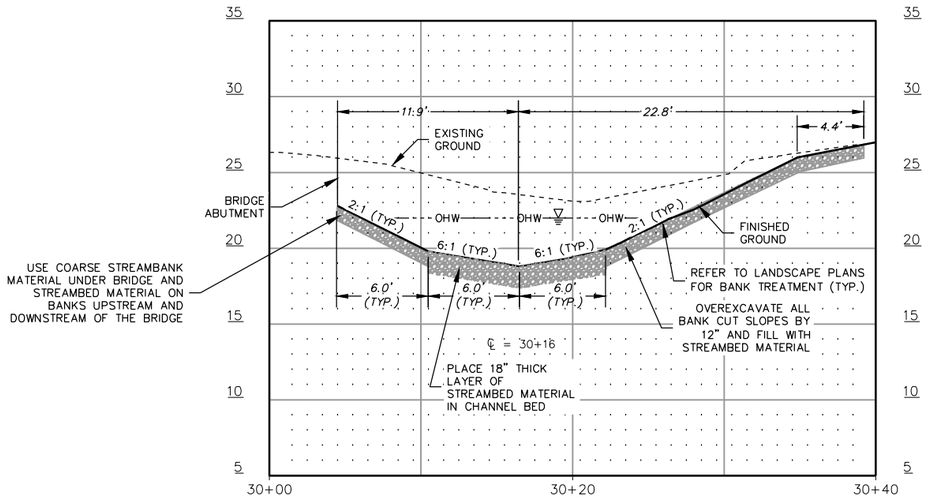
SECTION STA. 0+39

1" = 5' (HORIZ.) 1" = 5' (VERT.)

E / S-H1

NOTE:

1. SECTIONS RELATE TO THE FOLLOWING STATIONS
   - SECTION D: STA. 0+05 TO 0+11 (FACE OF BRIDGE)
   - SECTION E: 0+11 TO 0+62 (FACE OF BRIDGE)
   - SECTION F: 0+62 TO 0+68
2. ALL PORTIONS OF THE CREEK BED AND BANKS REQUIRING EXCAVATION SHALL BE OVER-EXCAVATED BY 12 INCHES AND FILLED WITH STREAMBED GRAVEL



SECTION STA. 0+64

1" = 5' (HORIZ.) 1" = 5' (VERT.)

F / S-H1

DATUM

NAVD 88

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Seattle, WA 98168
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PROJECT MANAGER DATE

D. HINTON DESIGNED BY DATE

D. HINTON DRAWN BY DATE

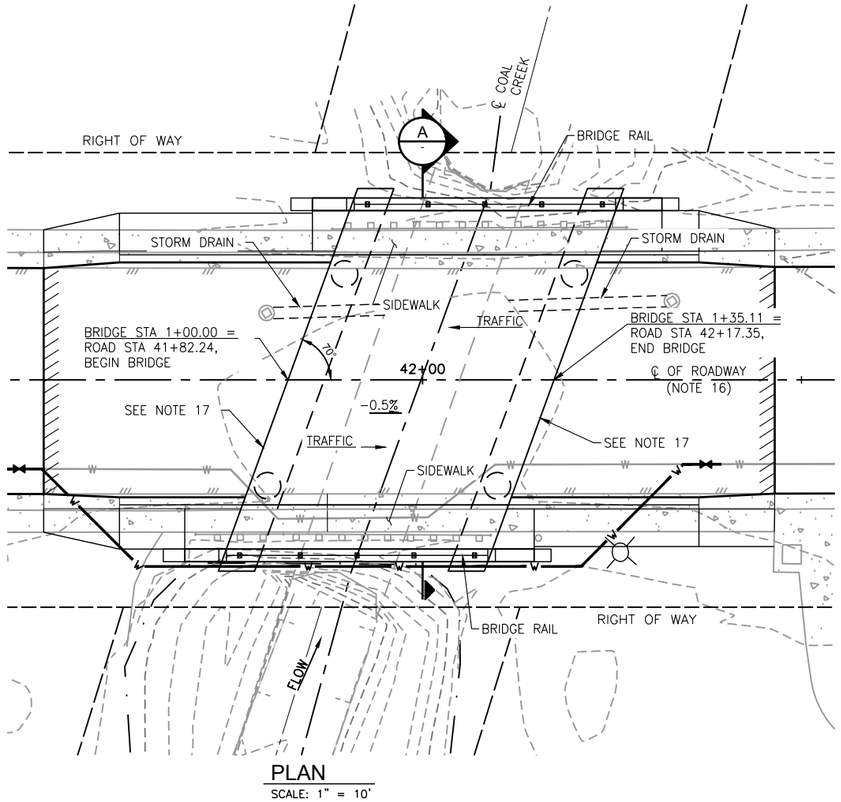
E. ROWLAND CHECKED BY DATE

City of Bellevue
UTILITIES

FLOOD HAZARD REDUCTION PROJECT

LOWER SKAGIT KEY CREEK GRADING SECTION VIEWS

S-H2 | SHT 39 OF 54



PLAN
SCALE: 1" = 10'

EXERCISE CAUTION DURING DRILLING
CONTRACTOR CAUTIONED THAT
EXISTING CULVERT IS IN POOR
CONDITION AND HAS SHALLOW COVER.

GENERAL NOTES:

1. ALL MATERIALS AND WORKMANSHIP FOR STRUCTURAL ELEMENTS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION, DATED 2018 AND AMENDMENTS.
2. THE STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS SEVENTH EDITION – 2017, MODIFIED BY THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION BRIDGE DESIGN MANUAL.
3. SEISMIC DESIGN HAS BEEN DONE USING THE FOLLOWING SEISMIC PARAMETERS:

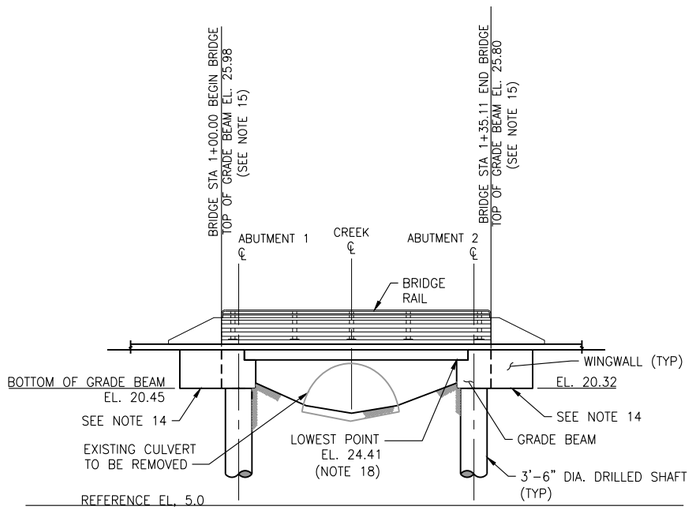
SEISMIC DESIGN PARAMETERS	
SDs	0.91
SD1	0.88
Site Class	E
Site Adjusted PGA, As	0.40

4. BRIDGE RAIL AND ANCHORAGE PROVIDED HAS BEEN CRASH TESTED TO MEET NCHRP 350 TL-4 REQUIREMENTS. CONCRETE REINFORCEMENT IS DETAILED FOR TL-1 PER PROJECT REQUIREMENTS.
5. CONCRETE COMPRESSIVE STRENGTH SHALL BE AS FOLLOWS:

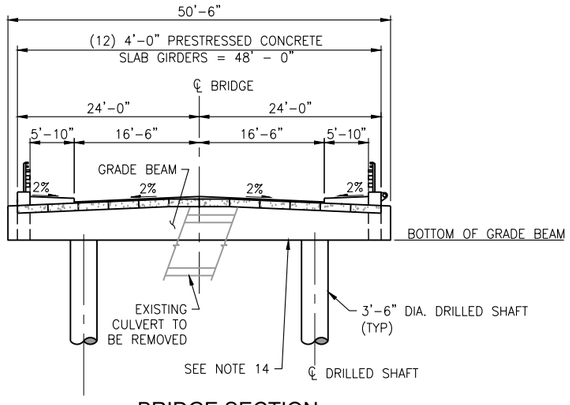
   DRILLED SHAFT.....CLASS 5,000P
   ALL CAST-IN-PLACE.....CLASS 4000
   PRE-STRESSED CONCRETE SLAB GIRDER.....7000 PSI AT 28 DAYS
   .....6000 PSI AT PRE-STRESSED RELEASED
   GROUT.....5000 PSI (SEE SPECIFICATIONS)
6. GRADE BEAM CONCRETE SHALL BE 3,000 PSI PRIOR TO PLACING PRECAST CONCRETE PANELS.
7. UNLESS OTHERWISE SHOWN ON THE PLANS, THE CONCRETE COVER MEASURED FROM THE FACE OF THE CONCRETE TO THE FACE OF ANY REINFORCING BAR SHALL BE AS FOLLOWS:

TOP OF ROADWAY SLAB	2 INCHES
BOTTOM OF ROADWAY SLAB	1-½ INCHES
CONCRETE CAST AGAINST EARTH	3 INCHES
CONCRETE EXPOSED TO EARTH OR WEATHER	
PRIMARY REINFORCEMENT	2 INCHES
SECONDARY REINFORCEMENT (TIES OR STIRRUPS)	1-½ INCHES

8. UNLESS OTHERWISE SHOWN ON THE PLANS, ALL EXTERIOR CORNERS AND EDGES SHALL HAVE ¾" CHAMFER.
9. THE UTILITY CENTERLINES ARE SHOWN FOR REFERENCE ONLY. THE CONTRACTOR SHALL COORDINATE THESE PLANS WITH RELEVANT UTILITY INFORMATION SHOWN ON SHEETS S-C2 AND S-C3.
10. A PIGMENT SEALER SHALL BE APPLIED TO THE EXTERIOR SURFACE OF THE GRADE BEAM, WING WALL, BRIDGE RAIL TERMINAL, EXTERIOR PRESTRESSED CONCRETE SLAB GIRDERS AND THE BRIDGE RAIL PEDESTAL CONCRETE. THE COLOR SHALL BE MT. ST. HELENS GRAY.
11. [XXX] INDICATES BAR MARK NUMBER.
12. ALL STEEL REINFORCING SHALL CONFORM TO ASTM A706 GRADE 60.
13. (E) INDICATES EPOXY COATED BAR.
14. EXCAVATE 6" BELOW GRADE BEAM AND WINGWALL BOTTOM ELEVATION, PLACE 6" CSBC FULL WIDTH AND LENGTH OF GRADE BEAM AND WINGWALL.
15. ELEVATION IS TO TOP OF CONCRETE AT THE CENTERLINE OF BRIDGE. FOR ROADWAY PROFILE, SEE SHEET S-C2. SEE SHEET G-C4 FOR TYPICAL CROSS SECTIONS.
16. SEE SHEET S-EC1 FOR ROADWAY ALIGNMENT DATA.
17. PLACE STRUCTURAL BACKFILL 24'' LATERALLY FROM GRADE BEAM PER CONTRACT SPECS.
18. LOWEST POINT APPLIES TO GIRDERS 1 & 12.



ELEVATION
SCALE: 1" = 10'



A
BRIDGE SECTION
(LOOKING AT ABUTMENT)
SCALE: 1" = 10'

DATUM
NAVD 88

12" PRESTRESSED CONCRETE SLAB GIRDERS
LOADING: HL-93

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TRIAL S. TWITCHELL
STATE OF WASHINGTON
40506
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PROFESSIONAL ENGINEER
2/7/2019

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City of Bellevue
UTILITIES

FLOOD HAZARD REDUCTION PROJECT
LOWER SKAGIT KEY BRIDGE
LAYOUT AND GENERAL NOTES

S-B1 | SHT 40 OF 54

Path: P:\134271 Lower Coal Creek Ph 2 Early Action\05 G3 Design\CAD\Sheet Files\40 S-B1_LOWER SKAGIT KEY BRIDGE LAYOUT AND GENERAL NOTES.dwg Plot date: Feb 07, 2019-09:59:18am CAD User: nadine.stock
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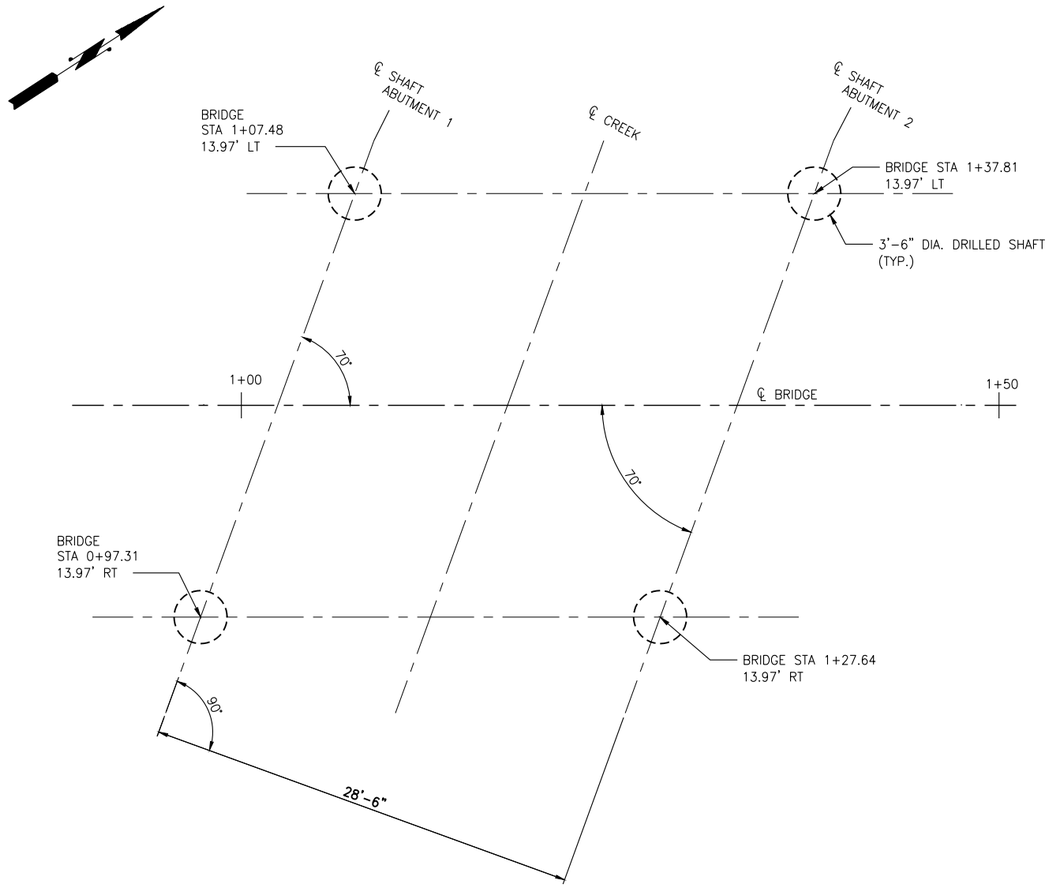
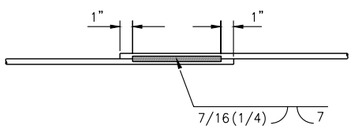


FOUNDATION PLAN

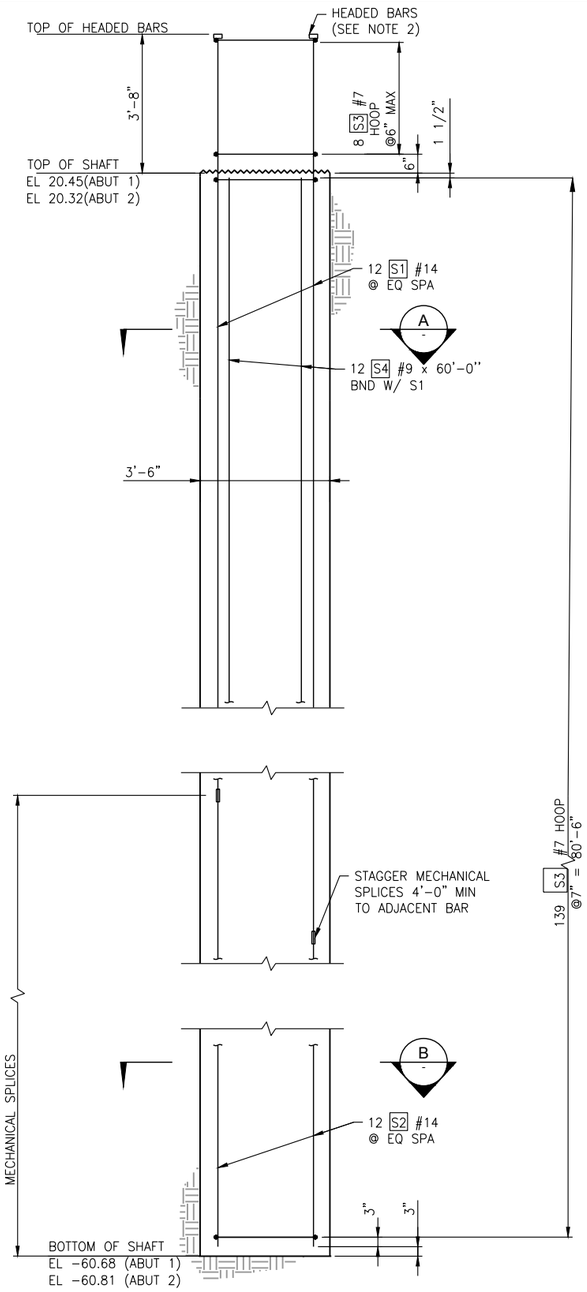
SCALE: 1" = 5'



HOOP WELD SPLICE DETAIL

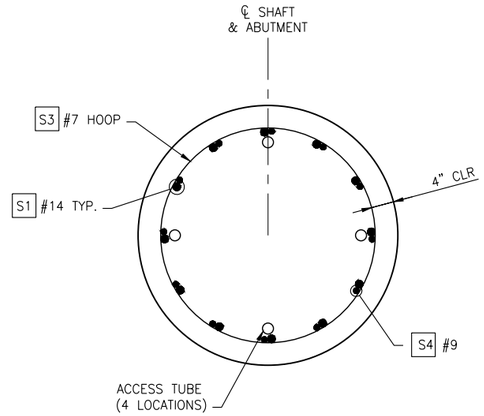
SCALE: NTS

WELDING SHALL MEET THE REQUIREMENTS OF SECTION 6-02.3(24)E WELDING REINFORCING STEEL OF THE STANDARD SPECIFICATIONS.



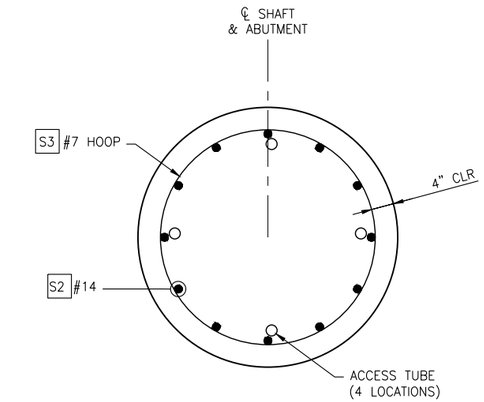
DRILLED SHAFT ELEVATION

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



A SECTION

SCALE: 1" = 1'-0"



B SECTION

SCALE: 1" = 1'-0"

DRILLED SHAFT NOTES:

1. ADDITIONAL SUPPORT OF THE SHAFT SIDEWALLS (SUCH AS CASING OR SLURRY) MAY BE NEEDED TO MITIGATE POTENTIAL CAVING OR SLOUGHING SOILS, ESPECIALLY IN THE UPPER 25 FEET OF THE SOIL PROFILE WHERE SOIL CONDITIONS ARE EXPECTED TO BE VERY LOOSE/SOFT. SEE THE SOIL BORING INFORMATION IN THE GEOTECHNICAL DATA REPORT. IF CONTRACTOR ELECTS TO USE A CASING, VIBRATORY METHODS SHALL NOT BE USED TO INSTALL OR REMOVE THE CASING.
2. HEADED BARS SHALL MEET REQUIREMENTS OF SECTION 9-07.2(1) HEADED STEEL REINFORCING BAR OF THE STANDARD SPECIFICATIONS.

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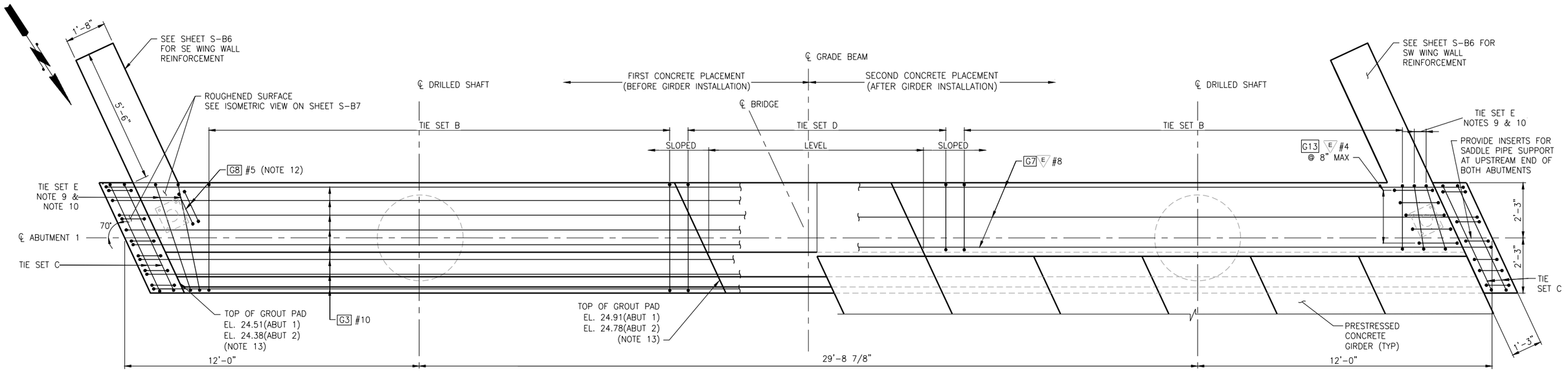
FLOOD HAZARD REDUCTION PROJECT
LOWER SKAGIT KEY BRIDGE
FOUNDATION PLAN AND DETAILS

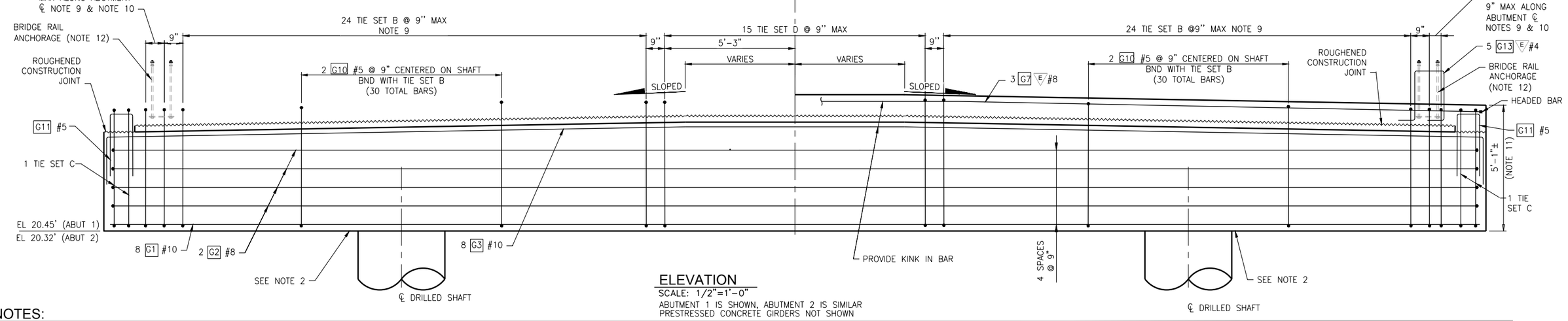
S-B2

SHT 41 OF 54



PLAN

SCALE: 1/2"=1'-0"
ABUTMENT 1 IS SHOWN, ABUTMENT 2 IS SIMILAR



ELEVATION

SCALE: 1/2"=1'-0"
ABUTMENT 1 IS SHOWN, ABUTMENT 2 IS SIMILAR
PRESTRESSED CONCRETE GIRDERS NOT SHOWN

NOTES:

1. TOP OF GROUT PAD ELEVATION AND GRADE BEAM REINFORCEMENT IS SYMMETRICAL ABOUT CENTERLINE OF GRADE BEAM.
2. GRADE BEAM TO DRILLED SHAFT AND GRADE BEAM TO WING WALL CONNECTION DETAILS ARE NOT SHOWN. SEE SHEETS S-B4 AND S-B6.
3. EACH TIE SET B CONSISTS OF 1 G4 #5, 2 G5 #5, 2 G9 #5, 1 G6 E #5, & 1 G24 #5.
4. EACH TIE SET C CONSISTS OF 1 G14 #5, 2 G15 #5, 2 G9 #5, 1 G12 #5, & 1 G23 #5. TIE SET C SHALL BE PARALLEL TO THE ABUTMENT END.
5. EACH TIE SET D CONSISTS OF 1 G16 #5, 2 G17 #5, 2 G25 #5, 1 G6 E #5, & 1 G22 #5.
6. EACH TIE SET E CONSISTS OF 1 G18 #5, 2 G19 #5, 2 G26 #5, 1 G20 E #5, & 1 G21 #5. SPLAY TIE SET E AS SHOWN.
7. SEE SHEETS S-B5 THRU S-B7 FOR SECOND CONCRETE PLACEMENT.
8. BRIDGE RAIL PEDESTAL AND SIDEWALK NOT SHOWN. SEE SHEET S-B11.
9. ADJUST REINFORCEMENT SPACING TO CLEAR SHAFT AND WING WALL REINFORCING.
10. COORDINATE LOCATION OF TIE SET E WITH BRIDGE RAIL POST ANCHORAGE.
11. HEIGHT OF GRADE BEAM IS DEPENDENT ON DEFLECTION OF NEOPRENE RUBBER STRIP DUE TO WEIGHT OF GIRDERS.
12. SEE SHEET S-B11 AND S-B12 FOR ADDITIONAL INFORMATION FOR BRIDGE RAIL ANCHORAGE.
13. SEE SHEET S-B7 FOR GROUT PAD DETAILS.

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FLOOD HAZARD REDUCTION PROJECT
LOWER SKAGIT KEY BRIDGE
ABUTMENT PLAN AND ELEVATION

S-B3 | SHT 42 OF 54

Path: P:\174271 Lower Cost Creek Ph 2 Early Action\05 03 Design\CAD\Sheet Files\V2 S-B3_LOWER SKAGIT KEY BRIDGE ABUTMENT PLAN AND ELEVATION.dwg Plot date: Feb 07, 2019-09:59:48am CAD User: nadine.stock
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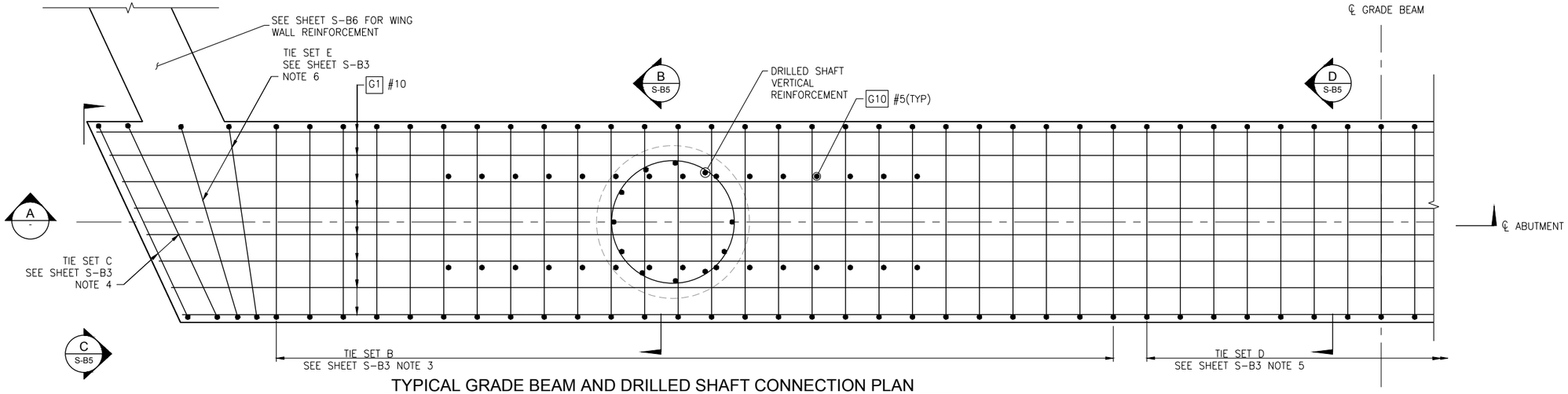
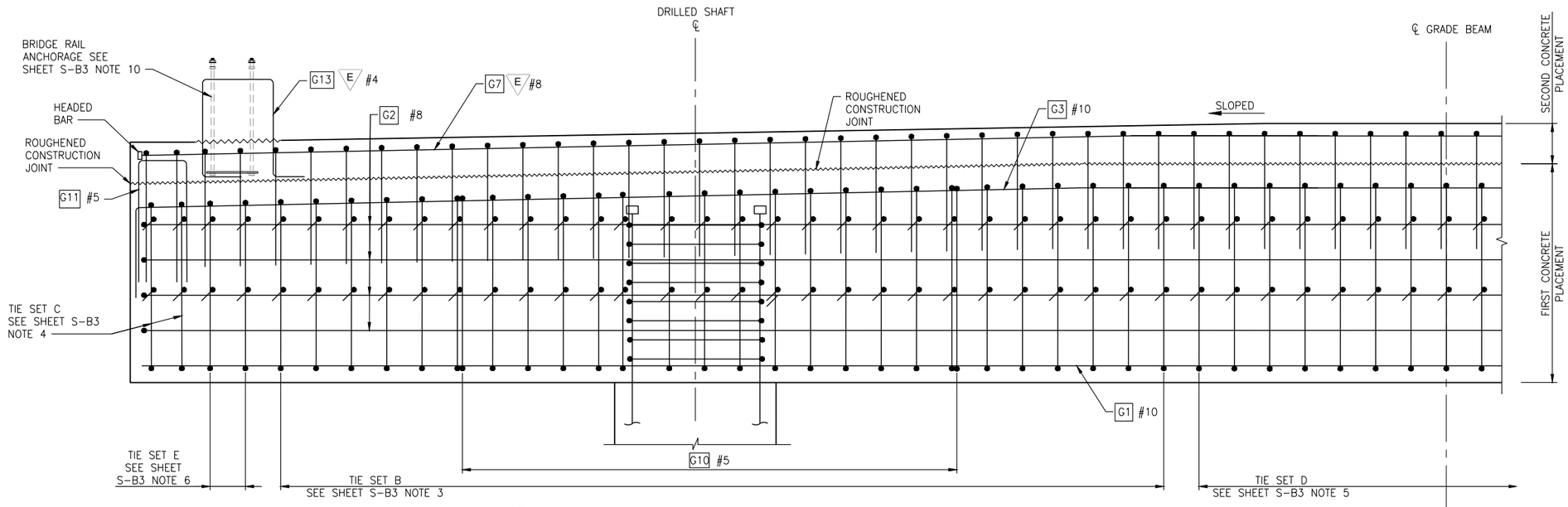


TYPICAL GRADE BEAM AND DRILLED SHAFT CONNECTION PLAN

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



A - SECTION

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

NOTES:

1. FIRST AND SECOND CONCRETE PLACEMENT SHOWN. SEE S-B11 FOR SIDEWALK AND BRIDGE RAIL PEDESTAL REINFORCEMENT.
2. ALTERNATE HOOKS OF HORIZONTAL TIES ALONG LENGTH OF GRADE BEAM.

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NS DRAWN BY DATE
AA CHECKED BY DATE

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FLOOD HAZARD REDUCTION PROJECT
LOWER SKAGIT KEY BRIDGE
ABUTMENT DETAILS 1

S-B4

SHT 43 OF 54

Path: P:\134271 Lower Coal Creek Ph 2 Early Action\05 G3 Design\CAD\Sheet Files\43 S-B4_LOWER SKAGIT KEY BRIDGE ABUTMENT DETAILS 1.dwg Plot date: Feb 07, 2019-09:59:59am CAD User: nodine.stock.
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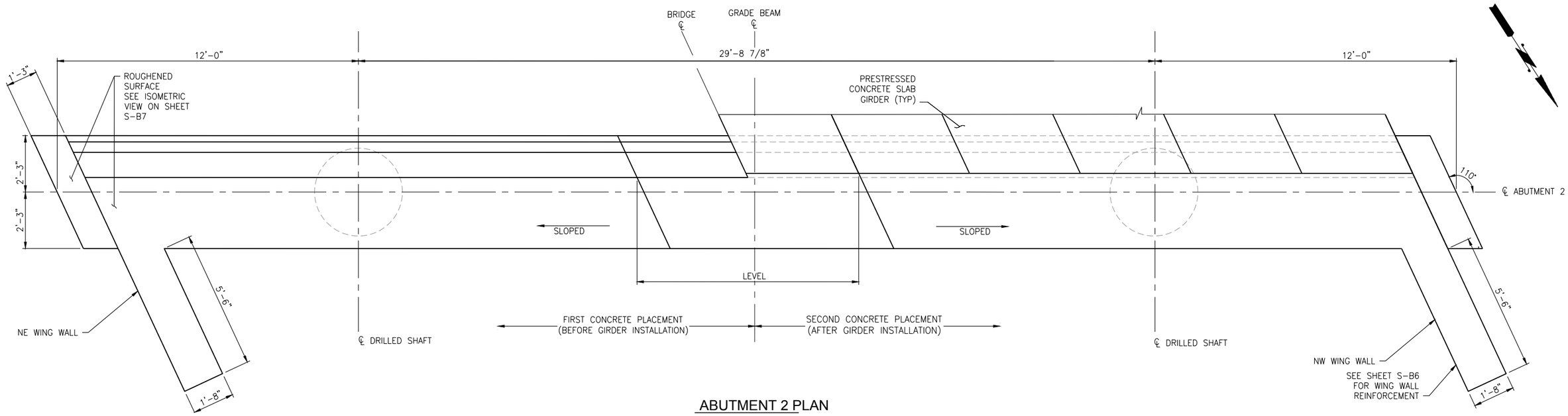
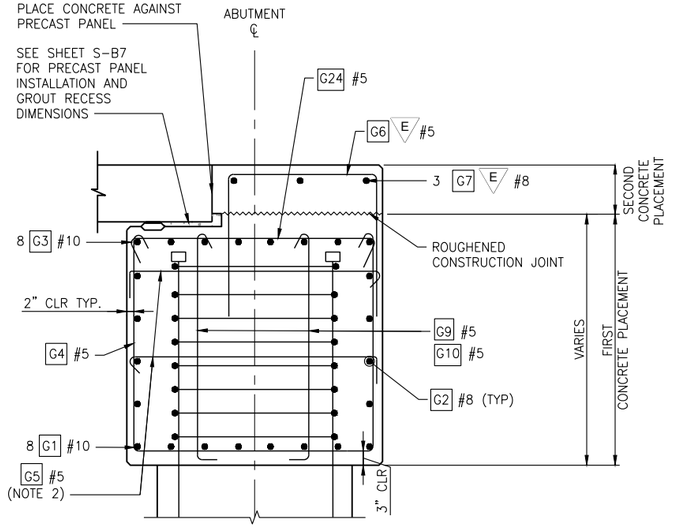


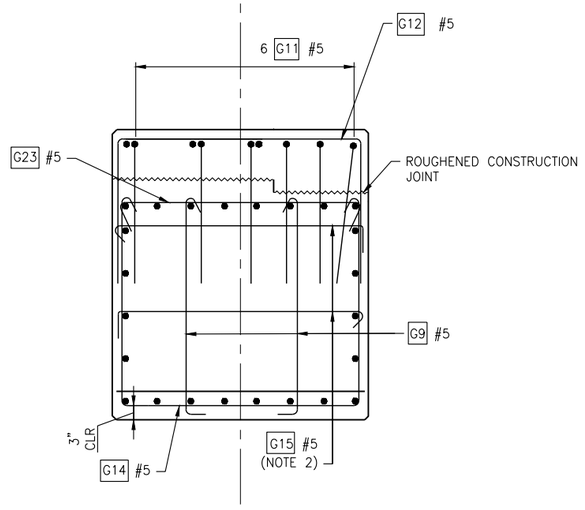
ABUTMENT 2 PLAN

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



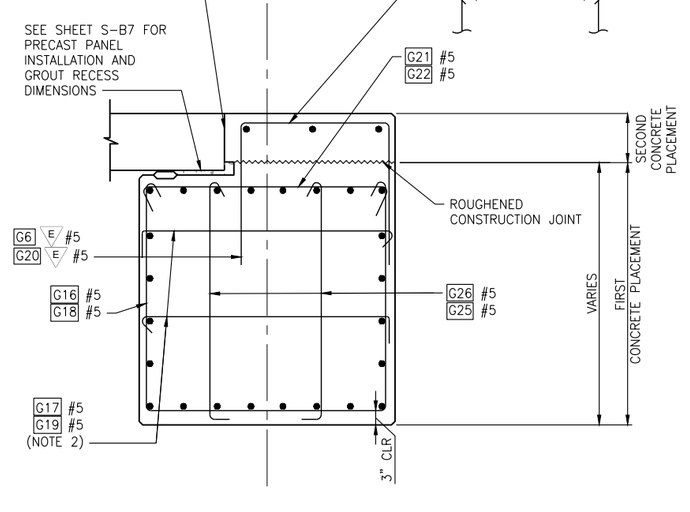
B S-B4 SECTION

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



C S-B4 SECTION

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



D S-B4 SECTION

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

NOTES:

1. FIRST AND SECOND CONCRETE PLACEMENT SHOWN. SEE S-B11 FOR SIDEWALK AND BRIDGE RAIL PEDESTAL REINFORCEMENT.
2. ALTERNATE HOOKS OF HORIZONTAL TIES ALONG LENGTH OF GRADE BEAM.

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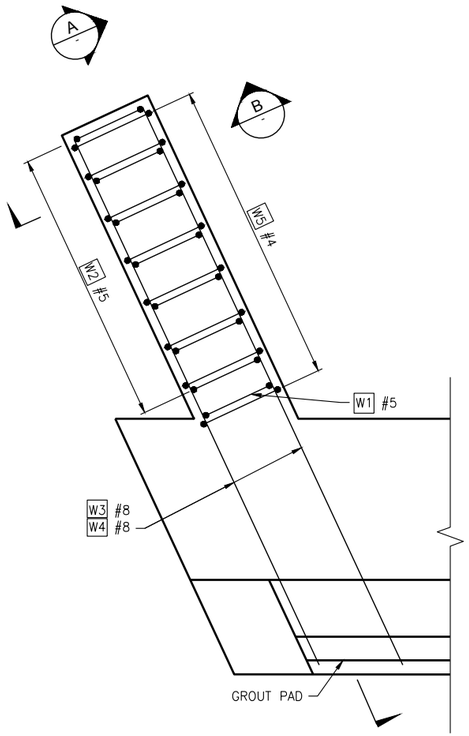
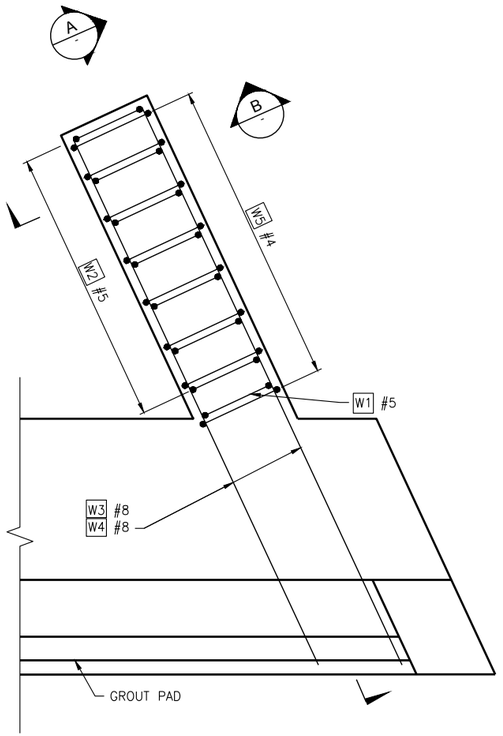
FLOOD HAZARD REDUCTION PROJECT
LOWER SKAGIT KEY BRIDGE
ABUTMENT DETAILS 2

S-B5 | SHT 44 OF 54



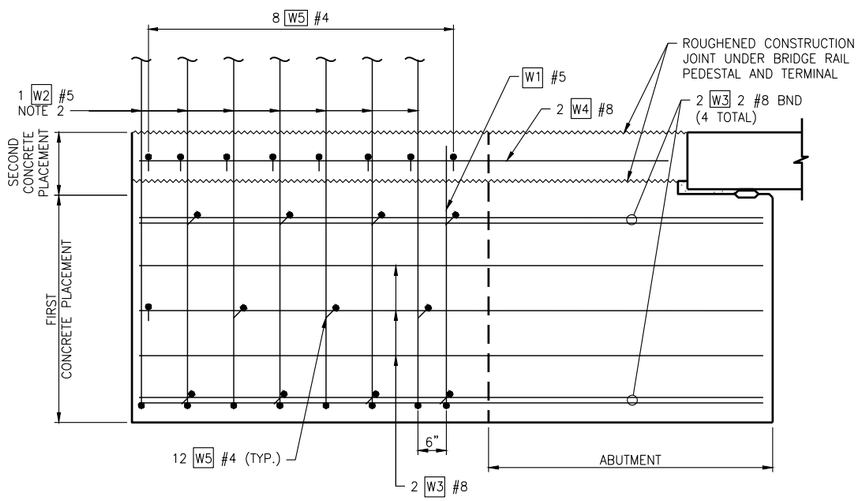
SE WINGWALL PLAN

SCALE: 3/4"=1'-0"
NW WINGWALL SIMILAR
PRESTRESSED GIRDERS NOT SHOWN



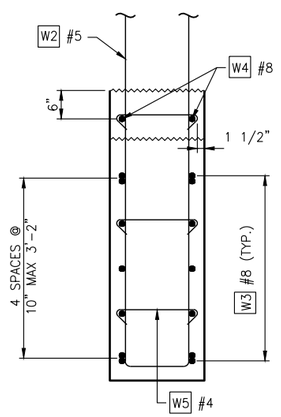
SW WINGWALL PLAN

SCALE: 3/4"=1'-0"
NE WINGWALL SIMILAR
PRESTRESSED GIRDERS NOT SHOWN



A SECTION

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



B SECTION

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

NOTES:

1. ADJUST WINGWALL REINFORCEMENT TO MISS GRADE BEAM REINFORCEMENT.
2. SEE BRIDGE RAIL TERMINAL SHEETS FOR LOCATION OF W2 #5.

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FLOOD HAZARD REDUCTION PROJECT
LOWER SKAGIT KEY BRIDGE
WINGWALL DETAILS

S-B6

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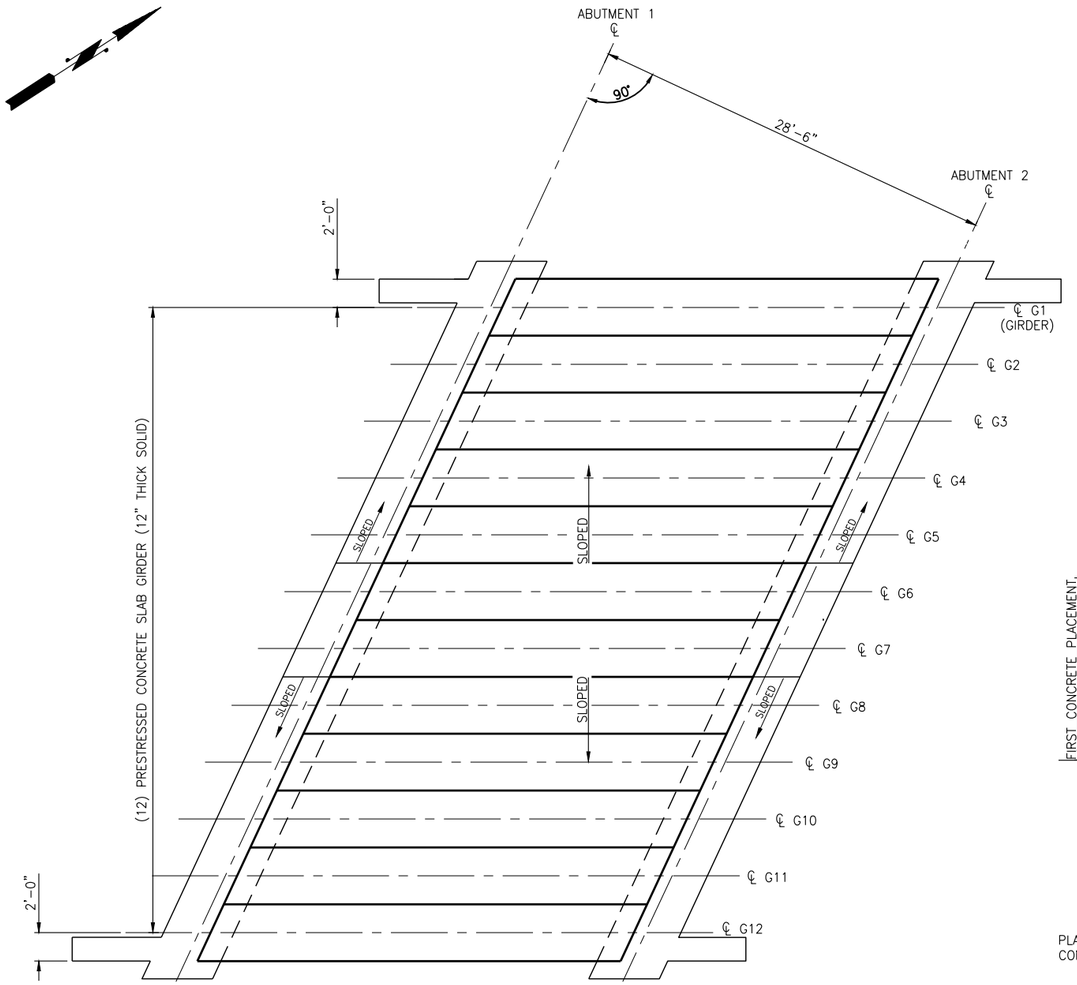
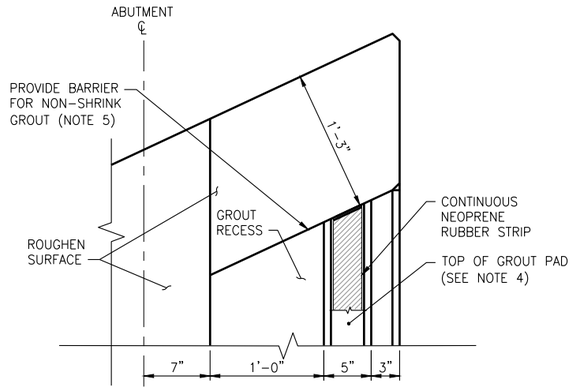


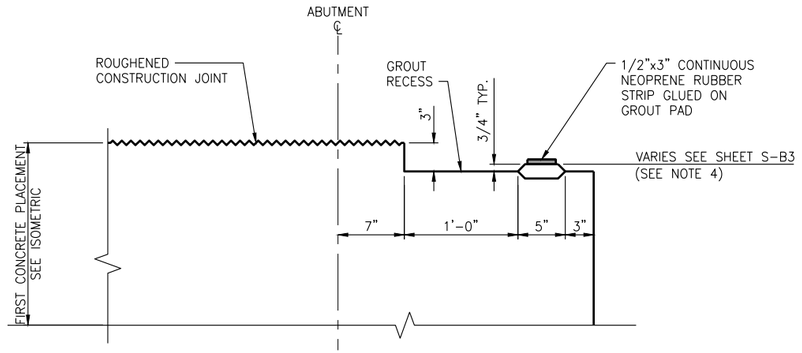
FRAMING PLAN

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



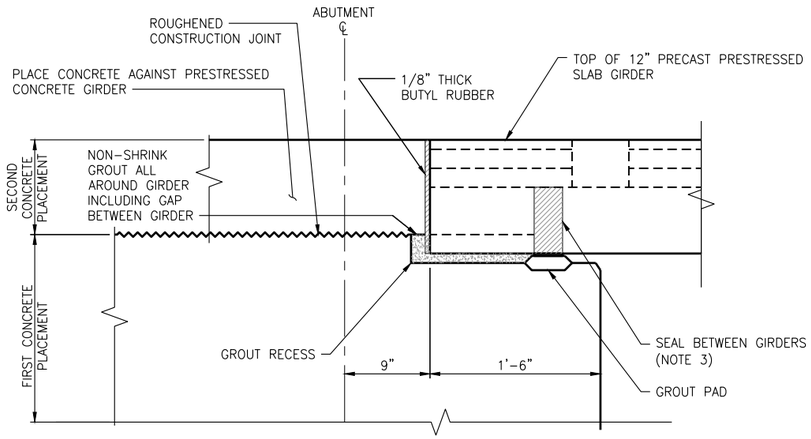
PLAN AT GRADE BEAM END FIRST CONCRETE PLACEMENT

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



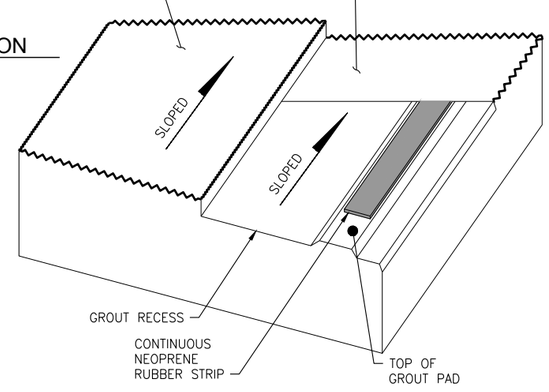
GRADE BEAM SECTION - PREPARATION OF GIRDER INSTALLATION

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



GRADE BEAM SECTION - SECOND CONCRETE PLACEMENT AFTER GIRDER INSTALLATION

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



ISOMETRIC VIEW FIRST CONCRETE PLACMENT

SCALE: NTS

NOTES:

1. GRADE BEAM REINFORCING BARS ARE NOT SHOWN FOR CLARITY.
2. GRADE BEAM PLAN AND SECTION SHOWN ARE TYPICAL GRADE BEAM DETAILS FOR THE BLOCKOUT AT THE PRESTRESSED CONCRETE GIRDER SUPPORT AND SEAL DETAIL FOR THE PREPARATION AND INSTALLATION OF THE PRECAST CONCRETE SLAB GIRDER AT THE FIRST CONCRETE PLACEMENT OF THE GRADE BEAM.
3. THE CONTRACTOR SHALL PROVIDE A SEAL BETWEEN GIRDERS BEFORE GROUTING UNDER THE GIRDERS AND PLACING THE SECOND CONCRETE PLACEMENT OF THE GRADE BEAM.
4. TOP OF GROUT PAD ELEVATION AT THE CONTINUOUS RUBBER STRIP SHALL BE KEPT SMOOTH FOR THE ENTIRE LENGTH OF SLAB GIRDER SUPPORT. THE MAXIMUM GAP UNDER A 10'-0" STRAIGHT EDGE SHALL BE LESS THAN 1/8". PATCH AND GRIND THE TOP OF THE GROUT PAD AS REQUIRED TO PROVIDE THE SMOOTH LEVELED SURFACE.
5. THE CONTRACTOR SHALL PROVIDE A BARRIER FOR PLACING NON-SHRINK GROUT IN THE GROUT RECESS AND SHALL PROVIDE 1/8 INCH THICK BUTYL RUBBER BONDED TO PRECAST CONCRETE SLAB GIRDER OVER THE FULL CONTACT AREA OF THE GRADE BEAM AND PRESTRESSED CONCRETE SLAB GIRDER PRIOR TO PLACING THE REMAINING GRADE BEAM CONCRETE.

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LOWER SKAGIT KEY BRIDGE FRAMING PLAN AND GIRDER INSTALLATION

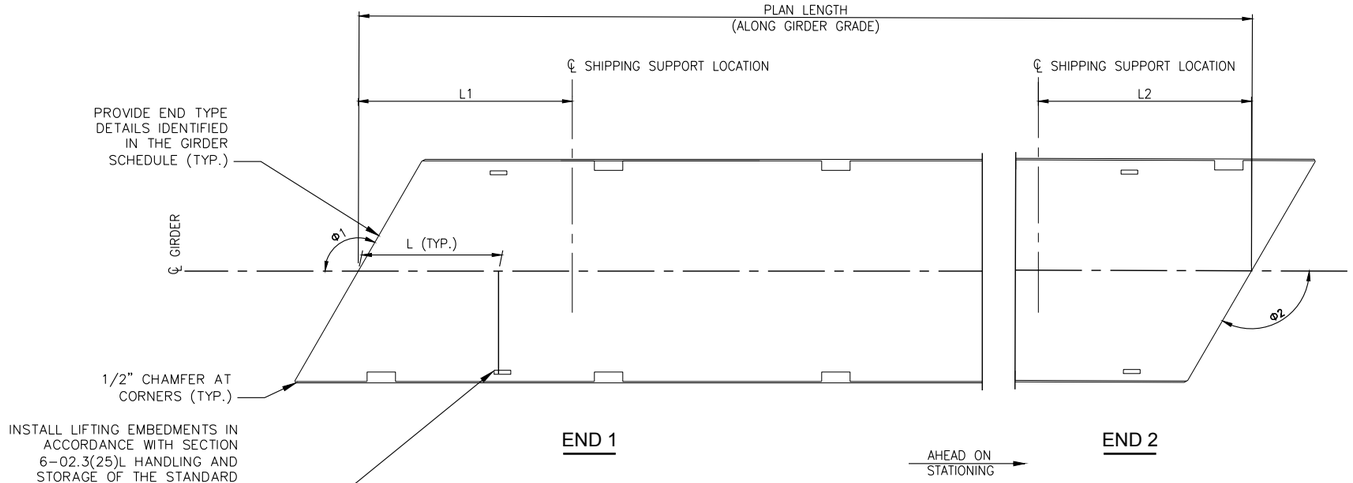
S-B7

SHT 46 OF 54

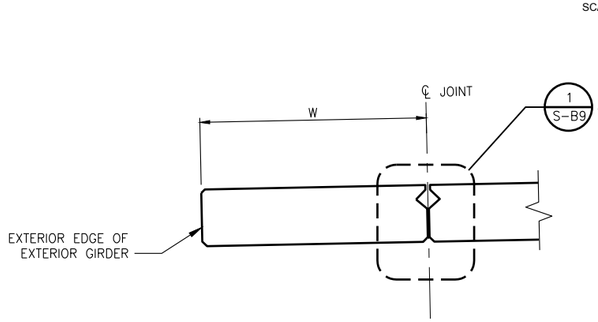
Path: P:\TJ4271 Lower Cost Creek Ph 2 Early Action\05 CD Design\CAD\Sheet Files\46 S-B7_LOWER SKAGIT KEY BRIDGE FRAMING PLAN AND GIRDER INSTALLATION.dwg Plot date: Feb 07, 2019-10:00:40am CAD User: nadina.stock.
Xref Filename: | C-SP-SITE SKAGIT KEY UPPER CASCADE | Group3-border | c-sp-bridge details - Cascade |

GIRDER SCHEDULE

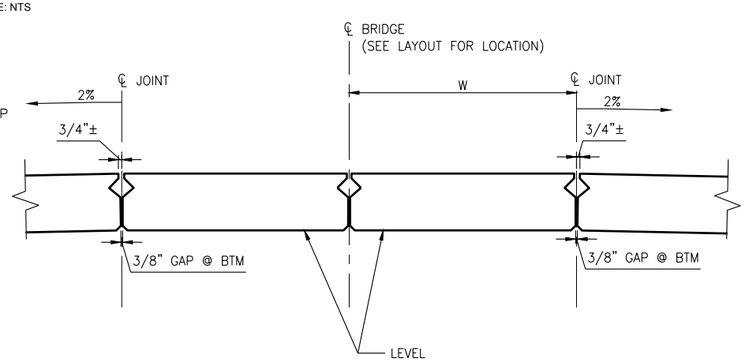
GIRDER	GIRDER HEIGHT H	GIRDER WIDTH W	VOIDS		END 1 TYPE	END 2 TYPE	"A" DIMENSIONS AT ℄ BEARINGS	L	L1	L2	ϕ1	ϕ2	GIRDER LENGTH (ALONG GIRDER GRADE) (SEE GIRDER NOTE 1)	MIN CONC COMP STRENGTH		PRESTRESSING STRANDS (SEE GIRDER NOTES 2–4)					MIDSPAN VERTICAL DISPLACEMENT		TRANSVERSE REINFORCEMENT									LONGITUDINAL REINFORCEMENT			
																ROW 1			TOP ROW				ZONE 1			ZONE 2			ZONE 3			P1		P2	
			NUMBER	DIAMETER										@ 28 DAYS F'C (KSI)	@ RELEASE F'C (KSI)	PERMANENT STRANDS	EXTENDED NUMBER AND LENGTH	DEBONDED NUMBER AND LENGTH	PERMANENT STRANDS	TEMPORARY STRANDS	LOWER BOUND @ 40 DAYS	UPPER BOUND @ 120 DAYS	BAR SIZE	SPACING	LENGTH	BAR SIZE	SPACING	LENGTH	BAR SIZE	SPACING	LENGTH	BAR SIZE	NO. OF BARS	BAR SIZE	NO. OF BARS
ALL	1'–0"	4'–0"	-	-	B	B	–	1'–9"	1'–0"	1'–0"	110°	110°	28'–8 3/4"	7.0	6.0	14	–	–	4	–	3/8"	7/8"	5	3"	1'–0"	5	5"	5'–0"	5	6" MAX	8'–2 7/8"	4	4	4	4



PLAN
SCALE: NTS



EXTERIOR EDGE DETAIL
SCALE: NTS



CROWN DETAIL
SCALE: NTS

GIRDER NOTES:

1. PLAN LENGTH SHALL BE INCREASED AS NECESSARY TO COMPENSATE FOR SHORTENING DUE TO PRESTRESS AND SHRINKAGE.
2. ALL STRANDS SHALL BE 0.6" DIA. AASHTO M203 GRADE 270 LOW RELAXATION STRANDS, JACKED TO 202.5 KSI. STRANDS SHALL BE SYMMETRICAL ABOUT THE GIRDER CENTERLINE. EXTERIOR STRANDS IN EACH ROW SHALL BE FULLY BONDED.
3. STRUCTURAL STEEL SHAPES AND ASSEMBLIES SHALL BE ASTM A36, UNLESS NOTED OTHERWISE. THEY SHALL BE PAINTED WITH A PRIMER COAT IN ACCORDANCE WITH SECTION 6–07.3(9) PAINTING NEW STRUCTURES OF THE STANDARD SPECIFICATIONS. WELD TIES SHALL BE PAINTED WITH A FIELD PRIMER COAT OF AN ORGANIC ZINC PAINT AFTER FILED WELDING.
4. TRANSVERSE REINFORCEMENT ZONES ARE SYMMETRICAL ABOUT MID–SPAN AND MEASURED ALONG THE GIRDER CENTERLINE.
5. CUT ALL STANDS 1" BELOW CONCRETE SURFACE AND GROUT WITH AN APPROVED EPOXY GROUT.

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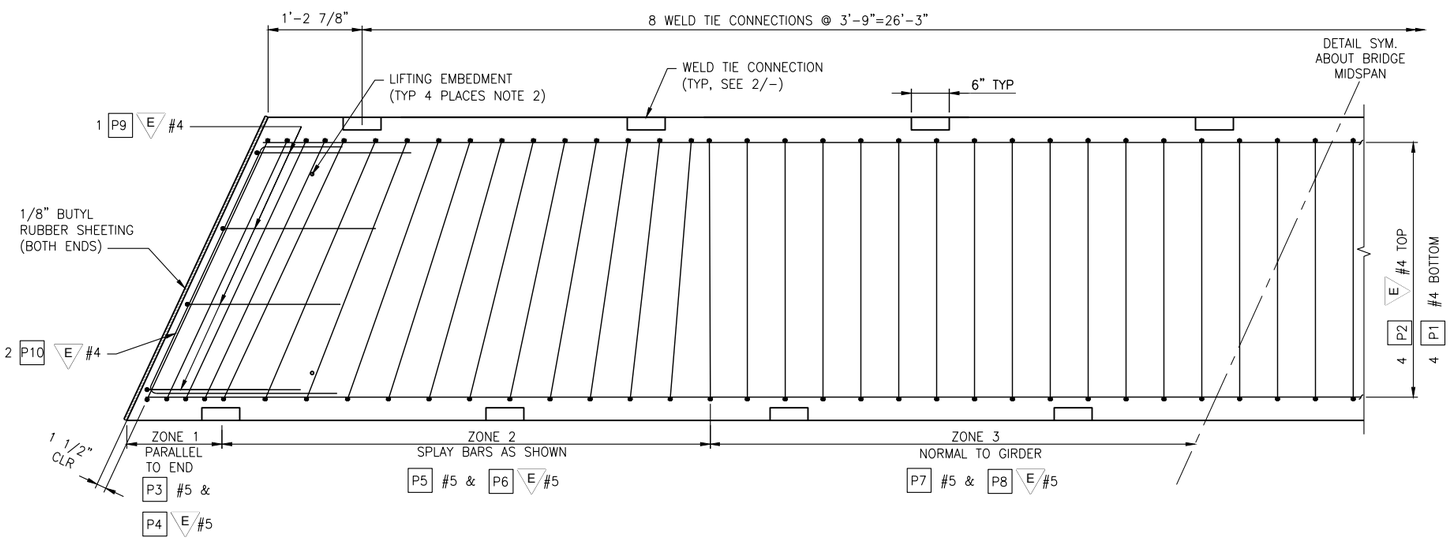
LOWER SKAGIT KEY BRIDGE
PS CONCRETE SLAB GIRDER SCHEDULE

S-B8

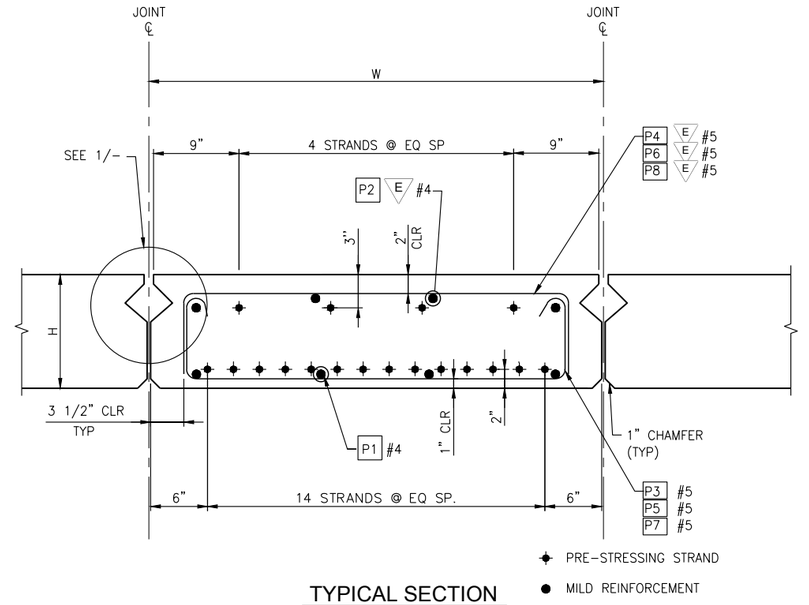
SHT 47 OF 54



PLAN (GIRDERS G2 TO G11)

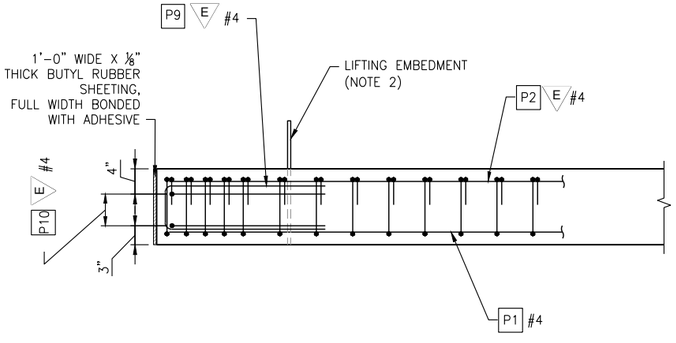
SCALE: 1" = 1'-0"

REINFORCEMENT IS SYMMETRICAL ABOUT MID-SPAN



TYPICAL SECTION

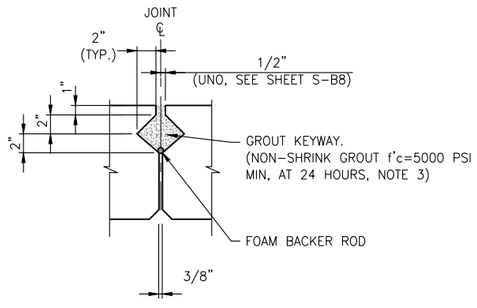
SCALE: 1-1/2" = 1'-0"



ELEVATION

SCALE: 1" = 1'-0"

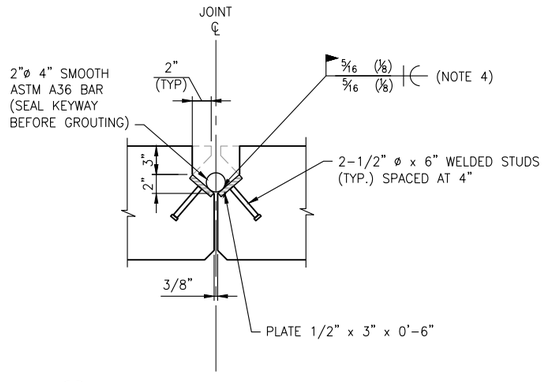
SEE PLAN FOR TRANSVERSE REINFORCEMENT BAR MARKS



1 S-B9 — S-B8 — KEYWAY DETAIL

SCALE: NTS

S-B10



2 S-B9 — WELD TIE CONNECTION DETAIL

SCALE: NTS

S-B10

NOTES:

1. KEYWAY AND WELD TIE CONNECTIONS ARE NOT PROVIDED AT THE EXTERIOR SIDE OF THE EXTERIOR GIRDERS. SEE SHEET S-B10.
2. INSTALL LIFTING EMBEDMENTS IN ACCORDANCE WITH SECTION 6-02.3(25)L HANDLING AND STORAGE OF THE STANDARD SPECIFICATIONS. AFTER ERECTION, CUT OFF LIFTING EMBEDMENTS 1 INCH BELOW TOP OF GIRDER AND FILL WITH APPROVED GROUT.
3. GROUT PRESTRESSED CONCRETE GIRDER CONNECTION AND KEYWAY PER SECTION 6-02.3(25)O GIRDER TO GIRDER CONNECTIONS OF THE STANDARD SPECIFICATIONS. GROUT SHALL BE TYPE 2.
4. WELD TIES SHALL BE PAINTED WITH A FIELD PRIMER COAT OF AN ORGANIC ZINC PAINT AFTER FIELD WELDING PER SECTION 6-07.3(9) PAINTING OF NEW STEEL STRUCTURES OF THE STANDARD SPECIFICATIONS.

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S-B9

SHT 48 OF 54

Path: P:\134271 Lower Coal Creek Ph 2 Early Action\05 03 Design\CAD\Sheet Files\48 S-B9_LOWER SKAGIT KEY BRIDGE PS CONCRETE SLAB GIRDER DETAILS 1.dwg Plot date: Feb 07, 2019-10:01:09am CAD User: nadine.stock.
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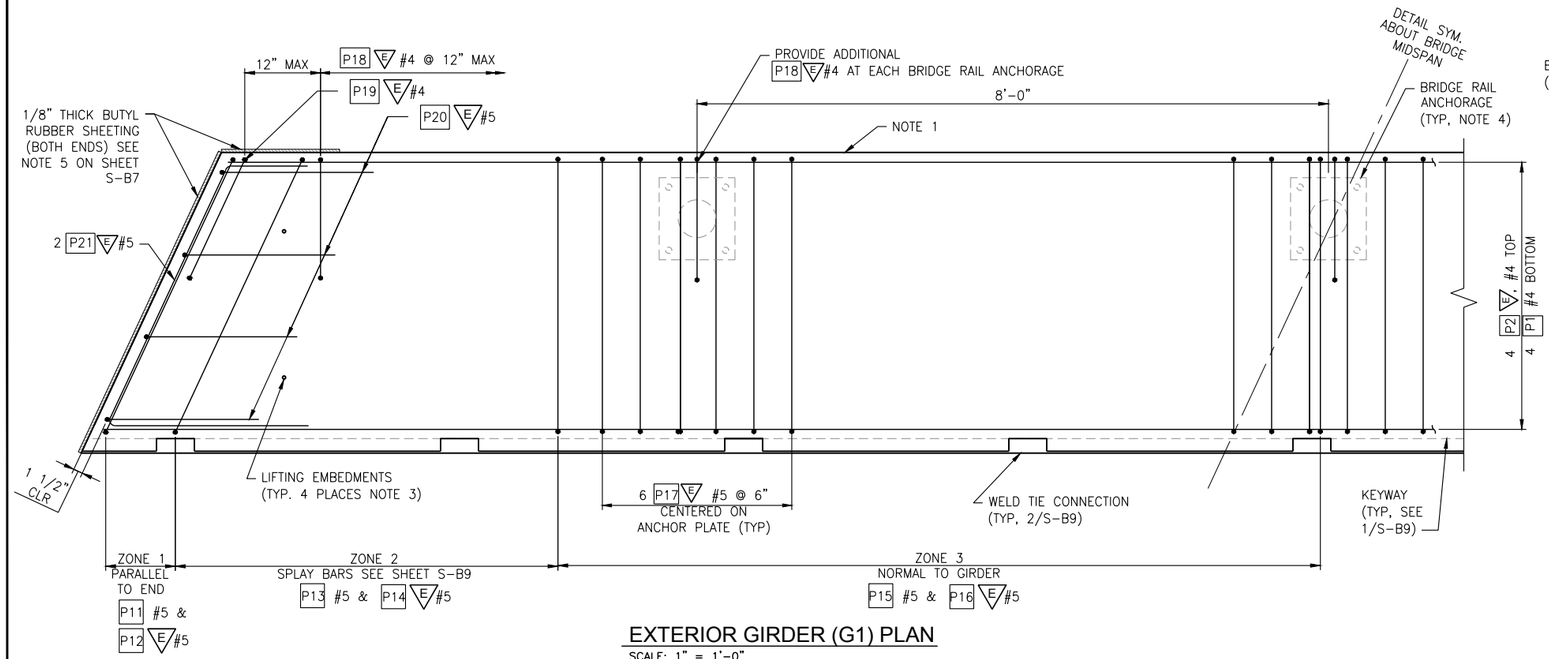
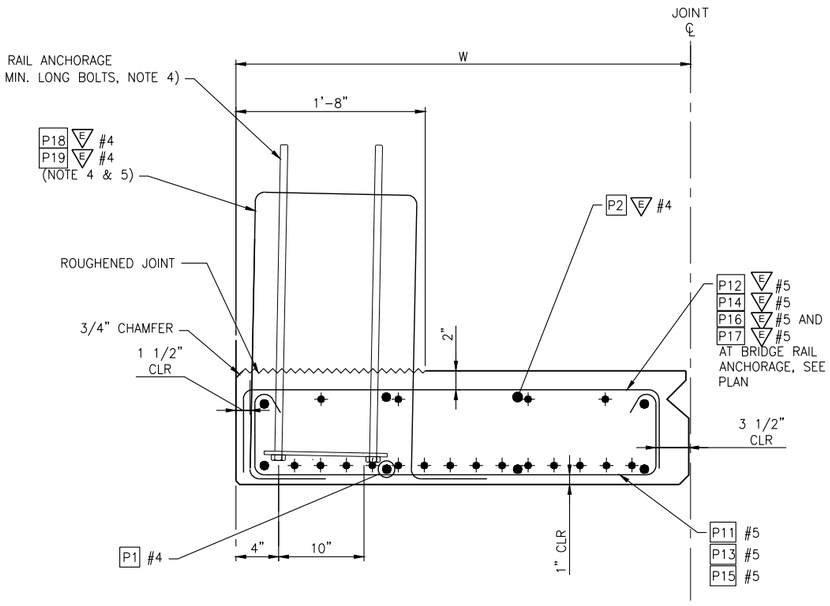


EXTERIOR GIRDER (G1) PLAN

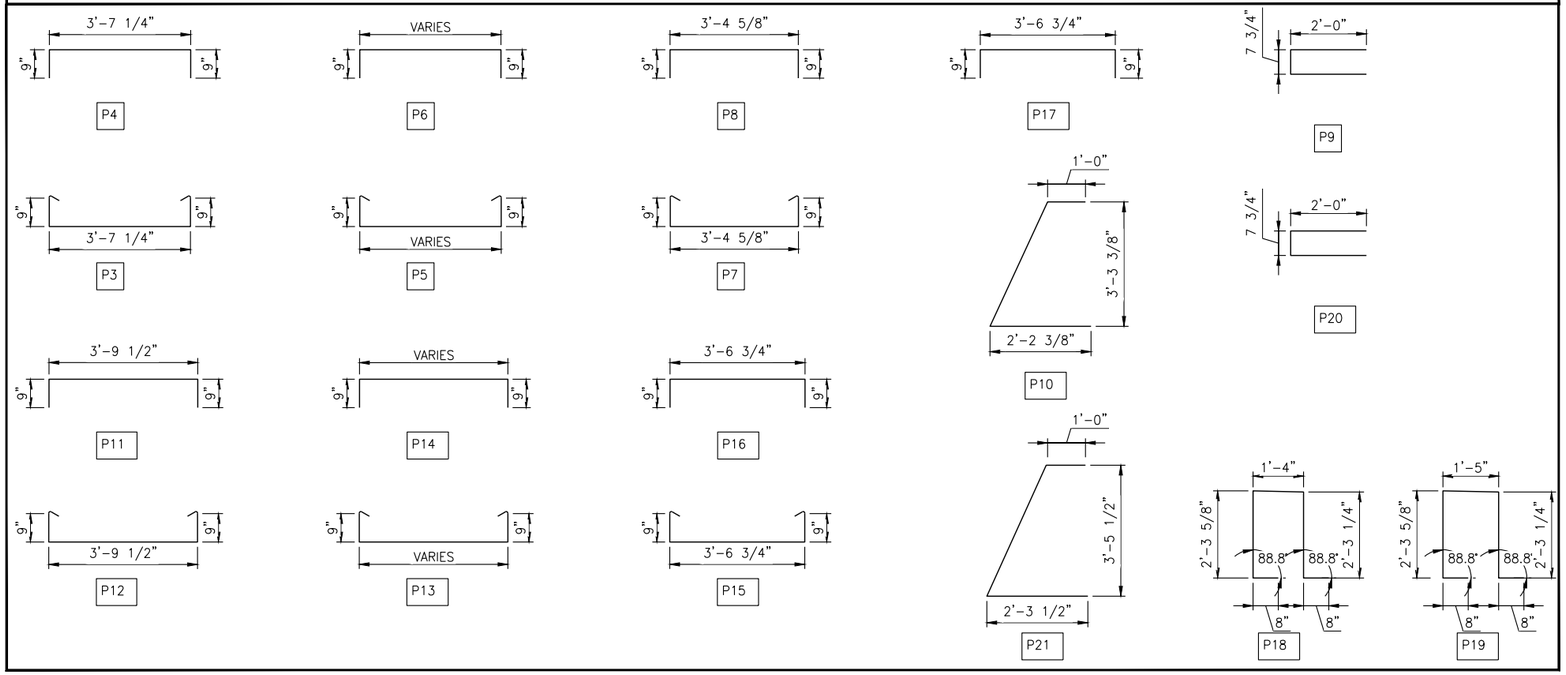
SCALE: 1" = 1'-0"
SEE NOTE 2
(G1 SHOWN G12 SIMILAR)



EXTERIOR GIRDER SECTION AT ANCHOR PLATE

SCALE: 1-1/2" = 1'-0"
SEE SHEET S-B9 FOR INFORMATION NOT SHOWN

BEND DIAGRAM (DIMENSIONS ARE OUT TO OUT)



NOTES:

1. KEYWAY AND WELD TIES ARE NOT PROVIDED AT THE EXTERIOR SIDE OF EXTERIOR GIRDERS G1 AND G12.
2. DETAILS FOR GIRDER G1 SHOWN. DETAILS FOR GIRDER G12 ARE SIMILAR.
3. SEE SHEET S-B9 FOR LOCATIONS AND DETAILS OF LIFTING EMBEDMENTS AND WELD TIES.
4. RAIL ANCHORAGE AND PEDESTAL REINF. SHALL BE INSTALLED WITH ANGLE TO COMPENSATE FOR GIRDER TRANSVERSE SLOPE. SEE SHEET S-B12 FOR BRIDGE RAIL DETAILS.
5. SEE NOTE 3 ON SHEET S-B11.

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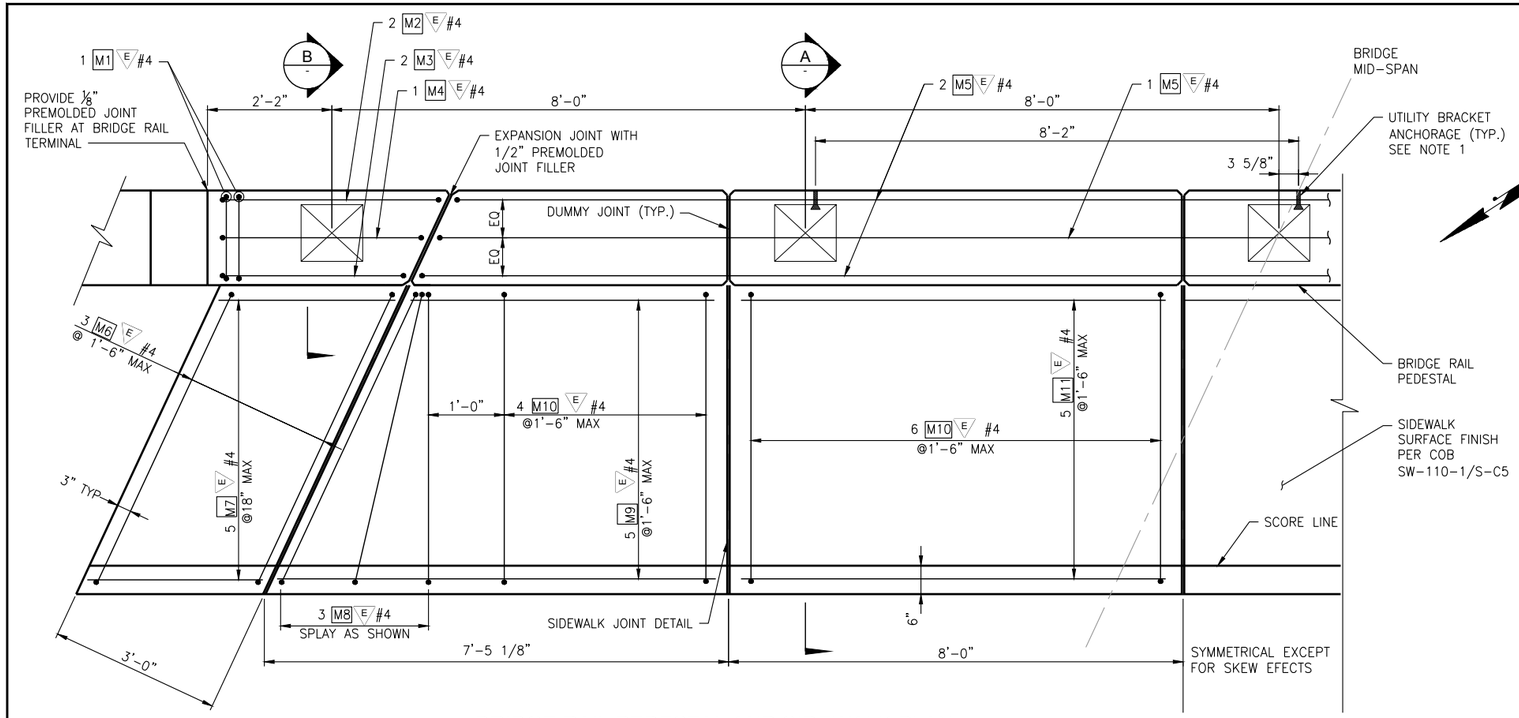
PS CONCRETE SLAB GIRDER DETAILS 2

S-B10

SHT 49 OF 54



BRIDGE RAIL PEDESTAL AND SIDEWALK PLAN

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

NE CORNER SHOWN, OTHERS ARE SIMILAR

SIDEWALK AND BRIDGE RAILING PEDESTAL REINFORCEMENT IS SYMMETRICAL ABOUT THE ROAD CENTERLINE EXCEPT FOR SKEW EFFECTS

UTILITIES G13 E #4 P18 E #4 & P19 E #4 NOT SHOWN

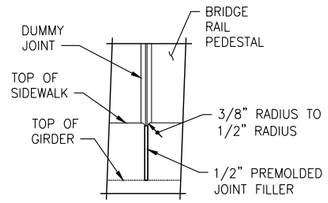
NOTES:

1. UTILITY BRACKET PROVIDED ONLY ON THE UPSTREAM SIDE OF BRIDGE. PROVIDE 13/16" DIA. HOLE FOR 3/4" DIA. BOLT 0'-11" DIRECTLY BELOW TOP HOLE PROVIDED IN UTILITY BRACKET. ANCHORS ARE HOT-DIP GALVANIZED FERRULE LOOP INSERTS WITH CLOSED-BACK FERRULE THREADED TO RECEIVE HOT-DIP GALVANIZED 3/4" DIAMETER BOLTS (ASTM A307).

   MINIMUM INSERT LENGTH = 6"
   MINIMUM SAFEWORKING LOAD IN TENSION = 4,000 POUNDS
   MINIMUM SAFEWORKING LOAD IN SHEAR = 3,000 POUNDS

2. BRIDGE RAIL TERMINAL AND WING WALL NOT SHOWN. SEE SHEET S-B13 AND S-B6 RESPECTIVELY.

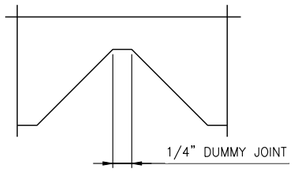
3. CLEAR COVER AT TOP OF BAR IS DEPENDANT ON GIRDER CAMBER. MINIMUM CLEAR COVER SHALL BE 1½ INCHES.



SIDEWALK JOINT DETAIL

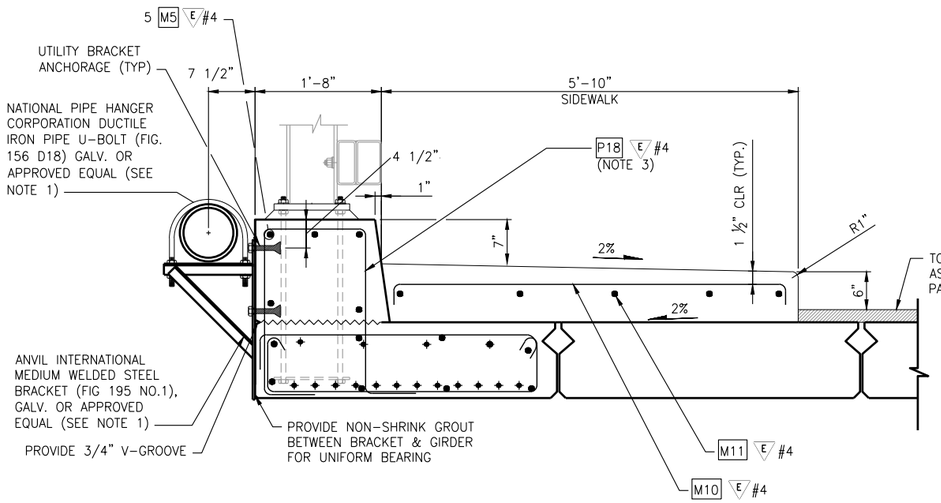
SCALE: NTS

SIDEWALK REINFORCING STEEL NOT SHOWN FOR CLARITY



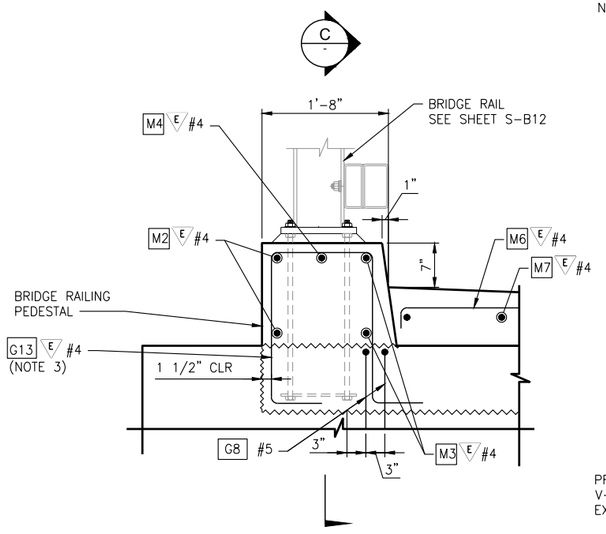
DUMMY JOINT DETAIL

SCALE: NTS



A SECTION

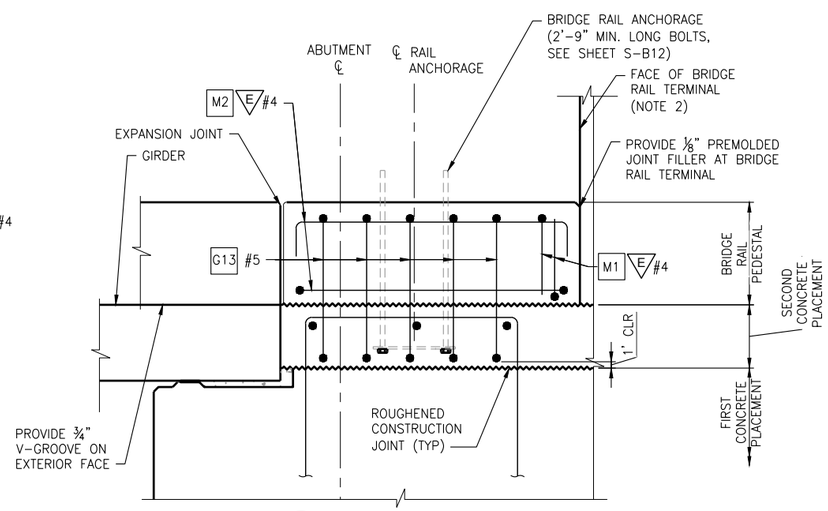
SCALE: 1" = 1'-0"



B SECTION AT GRADE BEAM

SCALE: 1" = 1'-0"

REINFORCEMENT PLACED IN FIRST CONCRETE PLACEMENT AND UTILITIES NOT SHOWN



C BRIDGE RAILING SECTION

SCALE: 1" = 1'-0"

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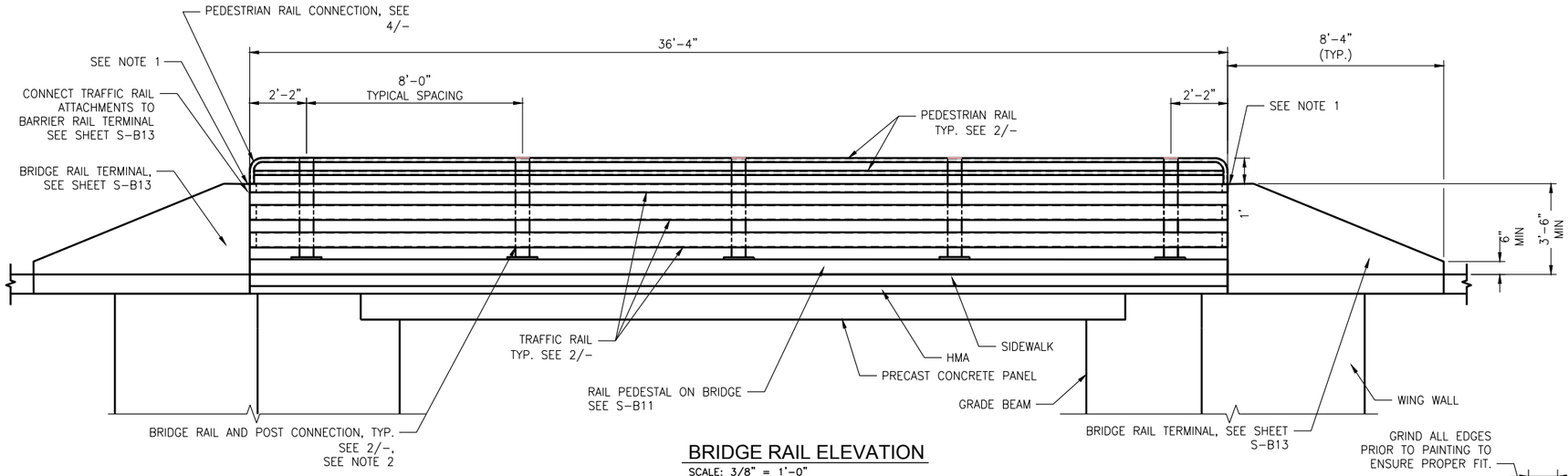
LOWER SKAGIT KEY BRIDGE
SIDEWALK PLAN AND DETAILS

S-B11

SHT 50 OF 54

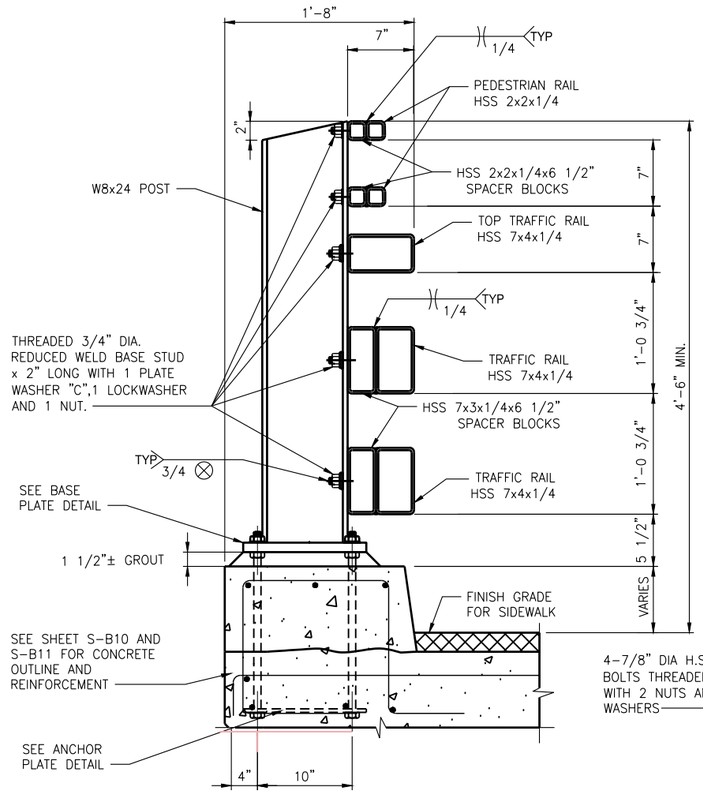


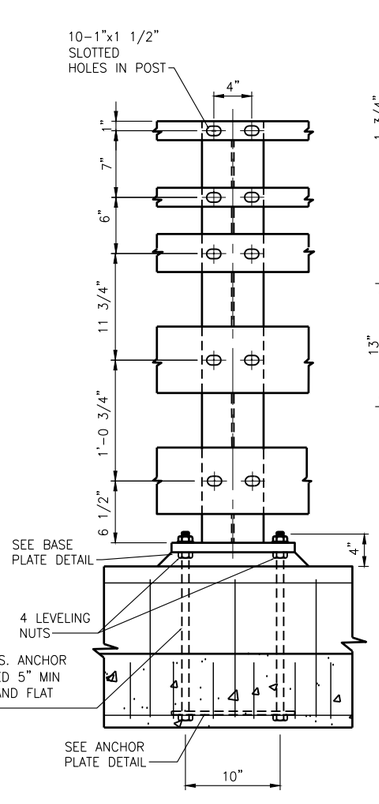
BRIDGE RAIL ELEVATION

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

NOTES:

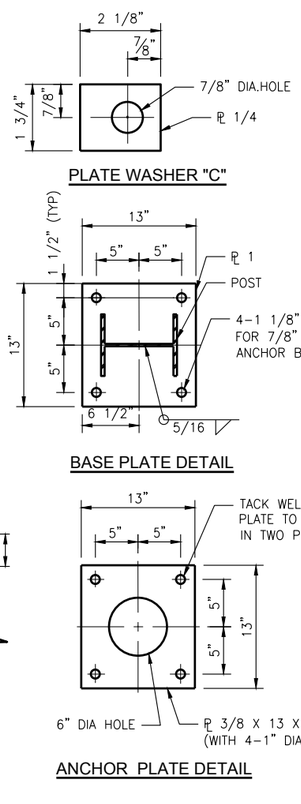
1. ALIGN TOP OF CAST IN PLACE CONCRETE BRIDGE RAIL TERMINAL WITH TOP OF UPPER MOST TRAFFIC RAIL.
2. ALL RAILING POSTS SHALL BE INSTALLED VERTICALLY. WHERE POSTS ARE ON AN INCLINED SURFACE, THE ANGLE OF THE POST SHALL BE ADJUSTED SO THAT THE POST SHALL BE VERTICAL. INSTALL POSTS NORMAL TO GRADE IN LONGITUDINAL DIRECTION.
3. PROVIDE STRUCTURAL TUBING ACCORDING TO AASHTO A500 GRADE B.
4. PROVIDE STEEL POSTS AND PLATES CONFORMING TO AASHTO M183 (ASTM A36) GRADE 36 RESPECTIVELY.
5. PROVIDE HIGH STRENGTH ANCHOR BOLTS ACCORDING TO AASHTO M314 GRADE 105; ASTM F 1554, GRADE 105; OR ASTM A449 TYPE 1.
6. FINISH ALL METAL WITH ONE COAT OF SHOP-APPLIED PRIMER AND FOUR COATS OF INDUSTRIAL GRADE ENAMEL INCLUDING INSIDE OF SPACER BLOCKS. FINISH PAINT COLOR SHALL BE WSDOT CASCADE GREEN. PAINT SHALL BE APPLIED IN ACCORDANCE WITH SECTION 6-07 PAINTING OF THE STANDARD SPECIFICATIONS.

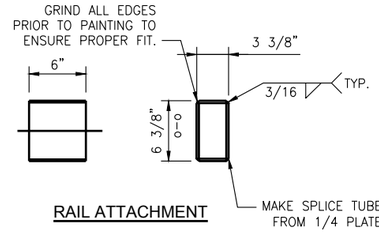




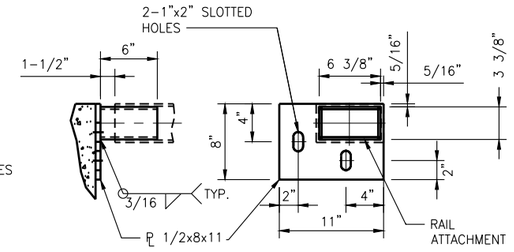
2 BRIDGE RAIL AND POST CONNECTION DETAIL

SCALE: NTS



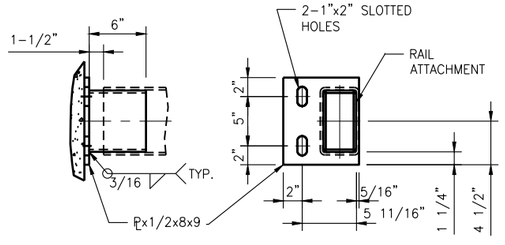


RAIL ATTACHMENT

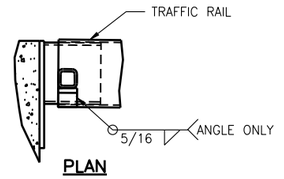


NOTE
RAIL ATTACHMENT BRACKET SHOWN FOR RIGHT SIDE ABUTMENT 1 AND LEFT SIDE ABUTMENT 2. DETAILS FOR OTHER TERMINALS SIMILAR BUT MIRRORED AROUND LEFT EDGE OF PLATE

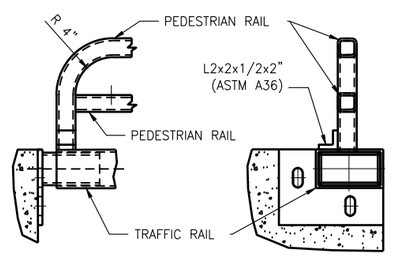
TOP TRAFFIC RAIL ATTACHMENT BRACKET



TRAFFIC RAIL ATTACHMENT BRACKET



PLAN



SECTION AT BARRIER RAIL

SECTION AT BARRIER TERMINAL FACE

4 PEDESTRIAN RAIL CONNECTION DETAIL

SCALE: NTS

3 TRAFFIC RAIL ATTACHMENT BRACKET

S-B13 SCALE: NTS

NO	DATE	BY	APPR	REVISIONS

BRIAN S. TWITCHELL — STATE OF WASHINGTON — 40905 — REGISTERED PROFESSIONAL ENGINEER — 2/7/2019

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GMS DESIGNED BY DATE
NS DRAWN BY DATE
AA CHECKED BY DATE

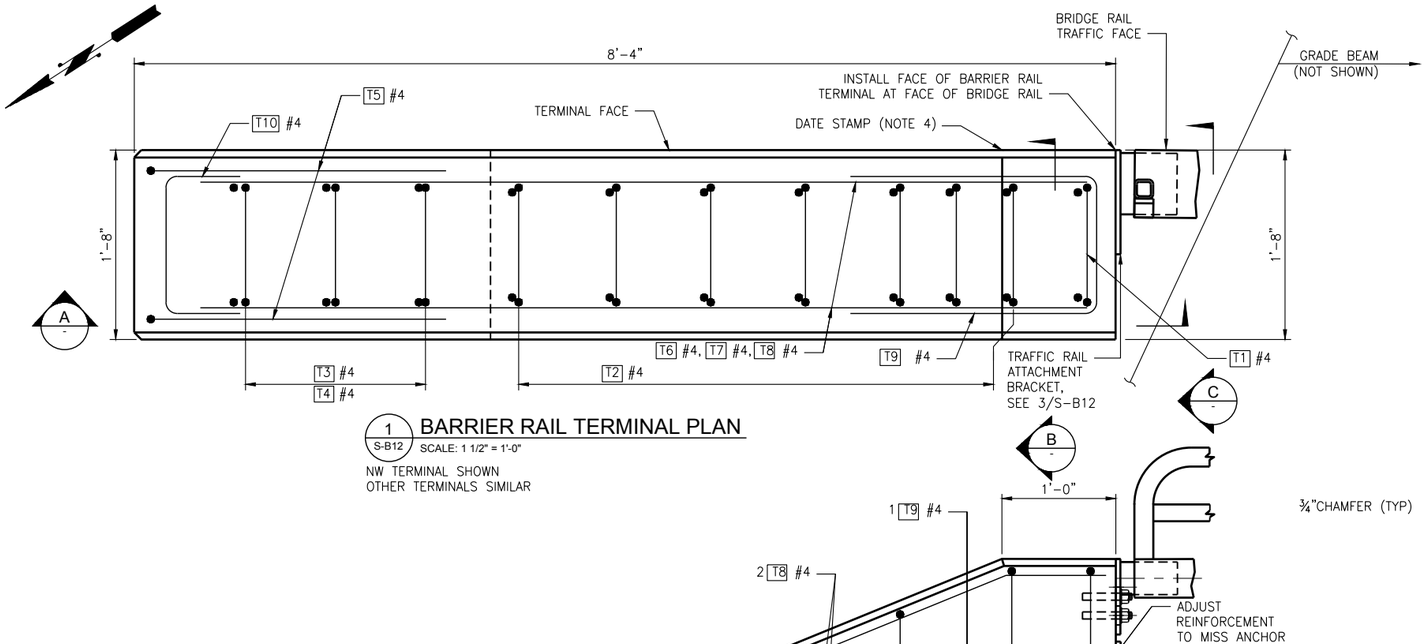
CITY OF BELLEVUE WASHINGTON

City of Bellevue
UTILITIES

FLOOD HAZARD REDUCTION PROJECT
LOWER SKAGIT KEY BRIDGE
RAIL DETAILS

S-B12 SHT 51 OF 54

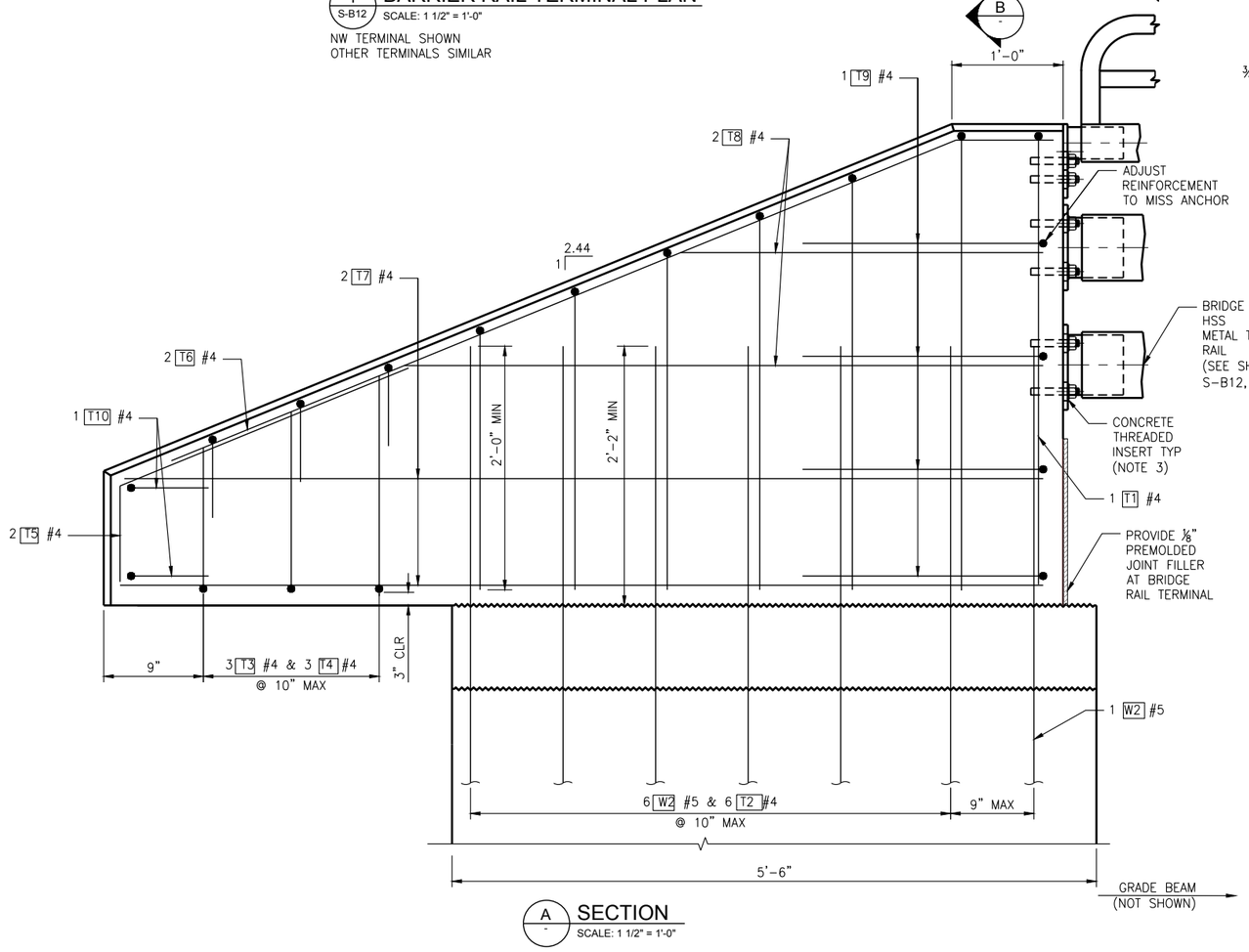
Path: P:\134271 Lower Goat Creek Ph 2 Early Action\05 G3 Design\CAD\Sheet Files\S1 S-B12_LOWER SKAGIT KEY BRIDGE RAIL DETAILS.dwg Plot date: Feb 07, 2019-10:01:52am CAD User: nadine.stock.
Xref Filename: | Group3-border | C-SP-BRIDGE RAIL DETAILS - CASCADE |



1 S-B12 BARRIER RAIL TERMINAL PLAN

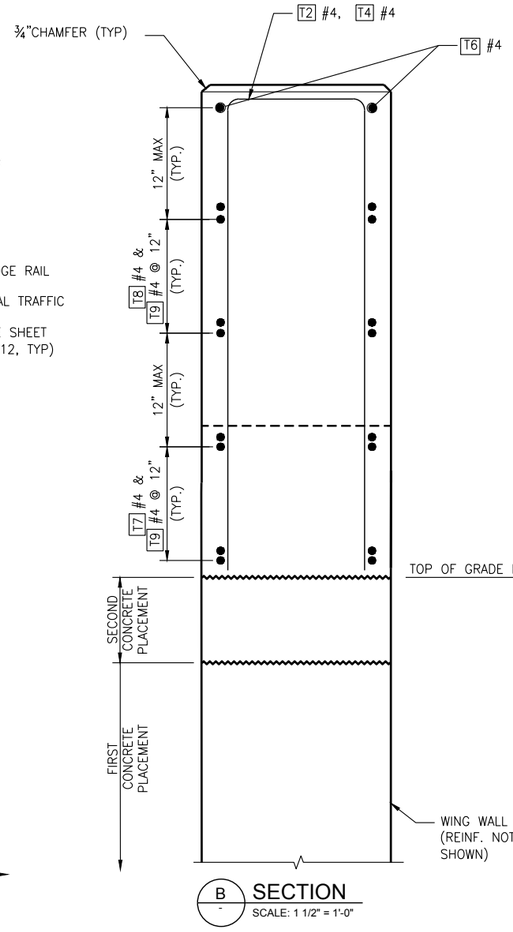
SCALE: 1 1/2" = 1'-0"

NW TERMINAL SHOWN
OTHER TERMINALS SIMILAR



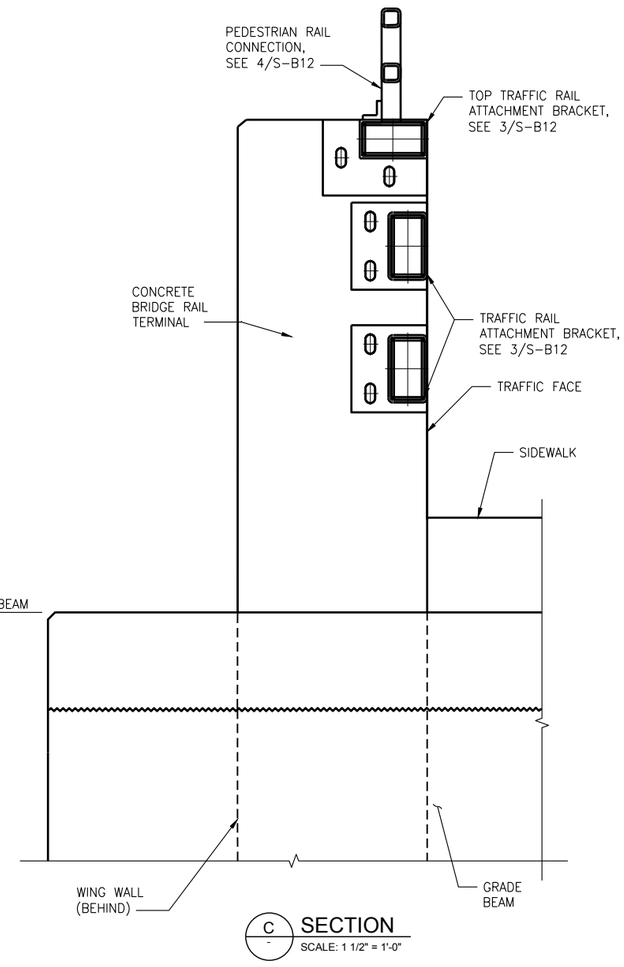
A SECTION

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



B SECTION

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



C SECTION

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

NOTES:

1. SEE NOTES ON S-B12 FOR HARDWARE REQUIREMENTS FOR BRIDGE RAILING.
2. ALL REINFORCEMENT SHALL CONFORM TO ASTM A706 OR AASHTO M31 (ASTM A615) GRADE 60.
3. CONCRETE INSERTS SHALL BE HOT-DIP GALVANIZED FERULE LOOP INSERTS WITH CLOSED-BACK FERULE THREADED TO RECEIVE GALVANIZED 3/4 INCH DIAMETER BOLTS (ASTM A307)
   MINIMUM EMBEDMENT LENGTH = 6"
   MINIMUM SAFE WORKING LOAD IN TENSION = 4000 POUNDS
   MINIMUM SAFE WORKING LOAD IN SHEAR = 4000 POUNDS
4. STAMP BRIDGE YEAR CONSTRUCTION NUMERAL "2019" ON BARRIER FACE PER WSDOT STD PLAN E-1. PLACE CENTER OF DATE STAMP 12" FROM BRIDGE FACE OF BRIDGE RAIL TERMINAL AND 14" FROM TOP OF BRIDGE RAIL TERMINAL.
5. NORTH WEST TERMINAL SHOWN. DETAILS FOR OTHER TERMINALS ARE SIMILAR BUT MIRRORED ABOUT THE CENTERLINE AND MIDSPAN OF THE BRIDGE.

NO	DATE	BY	APPR	REVISIONS

BRIAN S. TWITCHELL — STATE OF WASHINGTON — 40908 — REGISTERED PROFESSIONAL ENGINEER — 2/7/2019

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CHECKED BY	DATE

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FLOOD HAZARD REDUCTION PROJECT
LOWER SKAGIT KEY BRIDGE
RAIL TERMINAL DETAILS 1

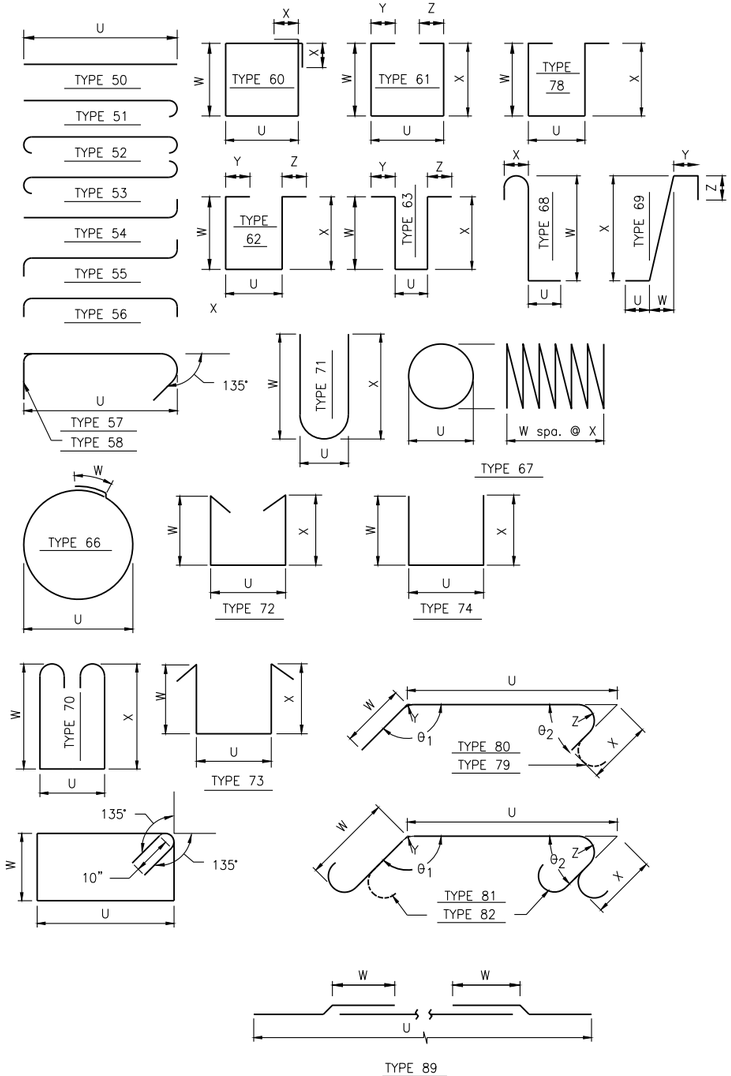
S-B13 | SHT 52 OF 54

Path: P:\174271 Lower Coal Creek Ph 2 Early Action\05 03 Design\CAD\Sheet Files\52 S-B13_LOWER SKAGIT KEY BRIDGE RAIL TERMINAL DETAILS 1.dwg Plot date: Feb 07, 2019-10:01:59am CAD User: nadine.stock.
Xref Filename: | Group3-border | C-SP-BRIDGE RAIL DETAILS - CASCADE |

S = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
L - LUMP SUM QUANTITY
T OR S - FOR TIE & STIRRUP RADIUS
E - FOR EARTHQUAKETAIL WITH TIE & STIRRUP RADIUS
E = BAR IS TO BE EPOXY COATED.
V = BAR DIMENSIONS VARY BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.

NO MARK	LOCATION	SIZE	NO REQ'D	BEND TYPE	BEND RADIUS	LUMP SUM	SUBSTR.	EPOXY COAT	VARIES	NO EACH	DIMENSIONS(OUT TO OUT) U FT	U IN	W FT	W IN	X FT	X IN	Y FT	Y IN	Z FT	Z IN	1 DEG	2 DEG	LENGTH FT	LENGTH IN	WEIGHT LBS
	SHAFT																								
S1	LONGITUDINAL	14	48	50			S		V	24	49	9.5											49	9.5	19017
											53	9.5											53	9.5	
S2	LONGITUDINAL	14	48	50			S		V	24	34	9.0											34	9.0	12025
											30	9.0											30	9.0	
S3	HOOP	7	139	66			S				2	10.0	0	9.0									9	5.1	2677
S4	LONGITUDINAL	9	48	50			S				60	0.0											60	0.0	9792
	GRADE BEAM																								
G1	LONGITUDINAL	10	16	50			S				53	4.9											53	4.9	3677
G2	LONGITUDINAL	8	16	56			S				53	2.3											55	5.3	2368
G3	LONGITUDINAL	10	16	56			S				53	4.9											56	4.7	3883
G4	STIRRUP	5	96	72	T		S		V	4	4	2.0	3	7.3	3	7.3							12	1.1	1244
											4	2.0	3	11.3	3	11.3							12	9.1	
G5	TIE	5	192	58	T		S				4	2.0											4	11.9	1000
G6	U BAR	5	126	74	T		S	E			2	6.5	2	6.0	2	6.0							7	3.9	963
G7	LONGITUDINAL	8	6	50			S	E			53	4.9											53	4.9	856
G8	U BAR	5	8	74	T		S				1	1.0	2	6.0	2	6.0							5	10.4	49
G9	TIE	5	208	58	T		S		V	8	3	7.0											4	4.9	995
											3	11.3											4	9.2	
G10	TIE	5	120	58	T		S		V	8	3	8.1											4	6.0	575
											3	10.4											4	8.3	
G11	GIRDER STOP U BAR	5	24	74	T		S				1	0.5	2	6.0	2	6.0							5	9.9	146
G12	GIRDER STOP U BAR	5	8	74	T		S				4	5.4	2	6.0	2	6.0							9	2.8	77
G13	PEDESTAL BAR	4	20	62	T		S	E			1	5.2	2	1.5	2	1.5	0	8.0	0	8.0			6	8.1	89
G14	STIRRUP	5	8	72	T		S				4	5.4	3	7.0	3	7.0							12	3.9	103
G15	TIE	5	16	58	T		S				4	5.4											5	3.3	88
G16	STIRRUP	5	30	72	T		S				4	2.0	3	11.4	3	11.4							12	9.3	400
G17	TIE	5	60	58	T		S				4	2.0											4	11.9	312
G18	STIRRUP	5	8	72	T		S		V	4	4	2.3	3	7.0	3	7.0							12	0.8	101
											4	3.4	3	7.0	3	7.0							12	1.9	
G19	TIE	5	16	58	T		S		V	4	4	2.3											5	0.2	84
											4	3.4											5	1.3	
G20	U BAR	5	8	74	T		S	E	V	4	2	6.6	2	6.0	2	6.0							7	4.0	61
											2	7.3	2	6.0	2	6.0							7	4.7	
G21	TOP TIE	5	8	72	T		S		V	4	4	2.3	0	0.0	0	0.0							4	2.3	35
											4	3.4	0	0.0	0	0.0							4	3.4	
G22	TOP TIE	5	30	72	T		S				4	2.0	0	0.0	0	0.0							4	2.0	130
G23	TOP TIE	5	8	72	T		S				4	5.4	0	0.0	0	0.0							4	5.4	37
G24	TOP TIE	5	96	72	T		S				4	2.0	0	0.0	0	0.0							4	2.0	417
G25	TIE	5	60	58	T		S				3	11.3											4	9.3	299
G26	TIE	5	16	58	T		S				3	7.3											4	5.2	74
	WING WALL																								
W1	U BAR	5	4	74	T		S				1	2.0	4	8.3	4	8.3							10	4.0	43
W2	U BAR	5	21	74	T		S				1	2.0	7	0.3	7	0.3							15	0.0	329
W3	LONGITUDINAL	8	56	50			S		V	2	10	6.6											10	6.6	1532
											9	11.4											9	11.4	
W4	LONGITUDINAL	8	8	50			S		V	4	8	9.4											8	9.44	181
											8	2.1											8	2.1	
W5	TIE	4	80	72	T		S				1	5.0	0	0.0	0	0.0							1	5.0	76
	SIDEWALK AND RAIL PEDESTAL																								
M1	PEDESTAL TRANSVERSE	4	8	74	T			E			1	4.0	1	3.0	1	3.0							3	7.9	20
M2	PEDESTAL LONGITUDINAL	4	8	56				E			3	9.4											4	10.9	26
M3	PEDESTAL LONGITUDINAL	4	8	56				E			3	1.9											4	3.4	23
M4	PEDESTAL LONGITUDINAL	4	4	56				E			3	5.5											4	7.0	12
M5	PEDESTAL LONGITUDINAL	4	10	56				E			28	4.8											29	6.3	197
M6	SIDEWALK TRANSVERSE	4	12	56	T			E			5	11.4											6	6.3	52
M7	SIDEWALK LONGITUDINAL	4	20	50	T			E			2	11.3											2	11.3	39
M8	SIDEWALK TRANSVERSE	4	12	56	T			E	V	4	5	11.4											6	6.3	51
											5	7.0											6	1.9	
M9	SIDEWALK LONGITUDINAL	4	20	50				E	V	4	7	2.2											7	2.2	82
											5	0.6											5	0.6	
M10	SIDEWALK TRANSVERSE	4	40	56	T			E			5	7.0											6	1.9	165
M11	SIDEWALK LONGITUDINAL	4	20	50				E			7	9.0											7	9.0	104
	BRIDGE RAIL TERMINAL																								
T1	TOP U BAR	4	4	74	T		S				1	3.0	4	1.2	4	1.2							9	3.3	25
T2	TOP U BAR	4	28	74	T		S		V	4	1	3.0	4	1.2	4	1.2							9	3.3	143
											1	3	2	5.5	2	5.5							5	11.9	
T3	BOTTOM U BAR	4	12	74	T		S		V	4	1	3.0	1	3.9	1	3.9							3	8.7	35
											1	3.0	2	0.1	2	0.1							5	1.1	
T4	TOP U BAR	4	12	74	T		S				1	3.0	0	8.0	0	8.0							2	4.9	19
T5	END BAR	4	8	69	T		S				1	0.3	1	0.1	2	5.6	0	0.0	0	0.0			3	7.7	19
T6	TOP BAR	4	8	69	T		S				0	0	6	8.7	2	9.0	0	10.0	0	0			8	1.3	43
T7	LONGITUDINAL	4	16	50			S				8	0.0											8	0.0	85
T8	LONGITUDINAL	4	16	50			S		V	8	5	6.6											5	6.6	48
											3	4.1											3	4.1	
T9	U BAR	4	12	74	T		S				1	4.0	2	2.0	2	2.0							5	5.9	44
T10	END U BAR	4	8	74	T		S				1	4.0	0	8.0	0	8.0							2	5.9	13

BENDING DIAGRAMS



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FLOOD HAZARD REDUCTION PROJECT
LOWER SKAGIT KEY BRIDGE
BAR LIST

S-B14 SHT 53 OF 54

Path: P:\134271 Lower Cost Creek Ph 2 Early Action\05 03 Design\CAD\Sheet Files\S3 S-B14_LOWER SKAGIT KEY BRIDGE BAR LIST.dwg Plot date: Feb 07, 2019-10:02:12am CAD User: nadine.stock.
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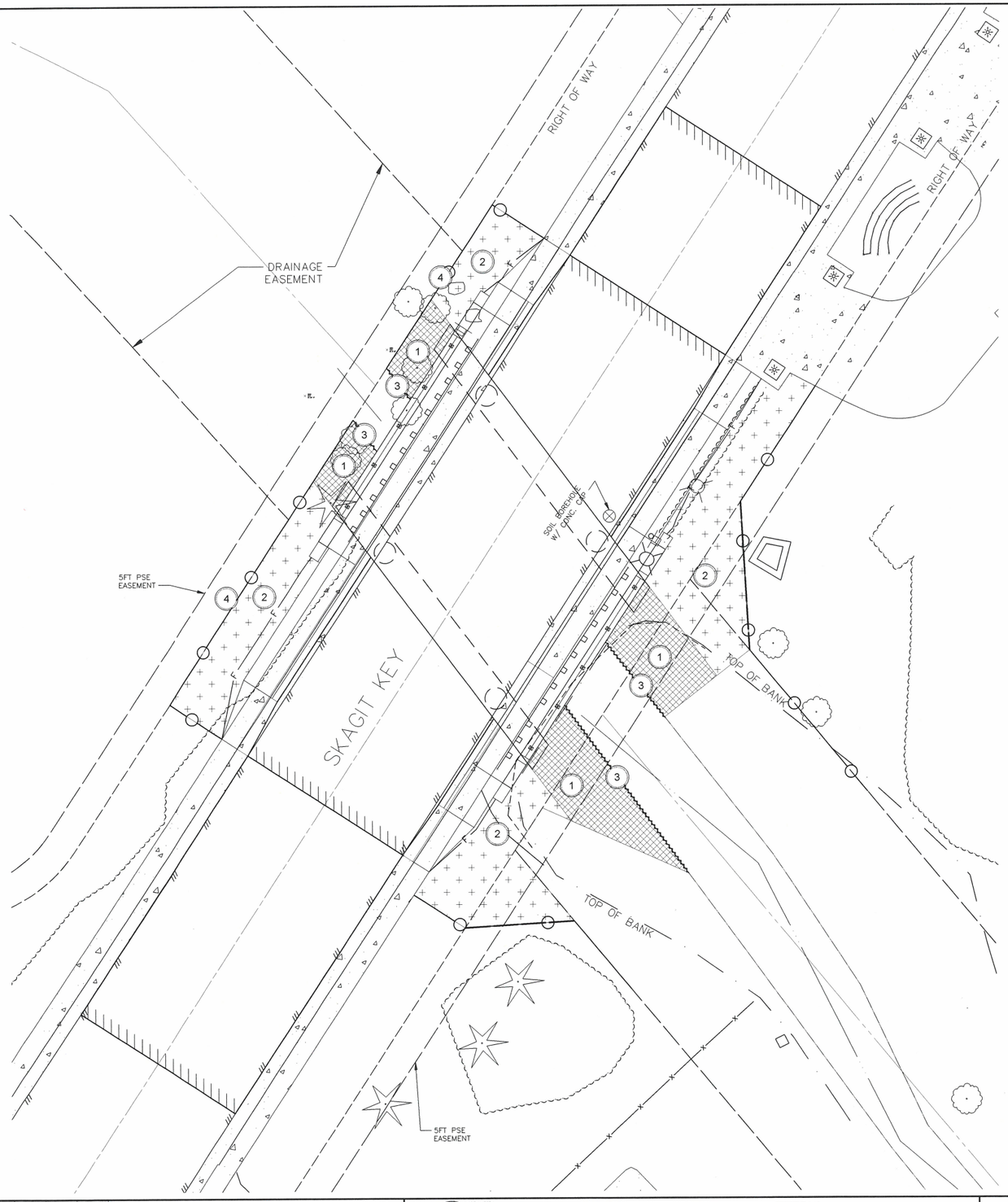
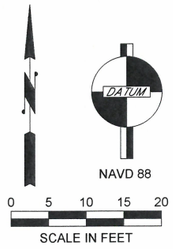


PLANTING LEGEND AND MATERIALS LIST:

	SCIENTIFIC NAME	COMMON NAME	QTY	MIN SIZE / CONDITION	SPACING	NOTES
	ZONE 1 PLANTINGS					
	CORNUS SERICEA	RED OSIER DOGWOOD	98	30" x 1/2" / LIVESTAKE	18" OC	SEE DETAIL 1/C-L2
	SALIX HOOKERIANA	HOOKER'S WILLOW	99	30" x 1/2" / LIVESTAKE	18" OC	
	SALIX SITCHENSIS	SITKA WILLOW	99	30" x 1/2" / LIVESTAKE	18" OC	
	ZONE 2 PLANTINGS					
	CORNUS SERICEA	RED OSIER DOGWOOD	28	12" / #1 CONT	3' OC	SEE DETAIL 2/C-L2
	HOLODISCUS DISCOLOR	OCEANSPRAY	14	12" / #1 CONT	3' OC	
	PHYSOCARPUS CAPITATUS	PACIFIC NINEBARK	14	12" / #1 CONT	3' OC	
	ROSA PISOCARPA	CLUSTERED WILD ROSE	28	12" / #1 CONT	3' OC	
	RUBUS SPECTABILIS	SALMONBERRY	28	12" / #1 CONT	3' OC	
	SYMPHORICARPOS ALBUS	SNOWBERRY	28	12" / #1 CONT	3' OC	
	GAULTHERIA SHALLON	SALAL	14	12" / #1 CONT	3' OC	
	VACCINIUM OVATUM	EVERGREEN HUCKLEBERRY	14	24" / #2 CONT	3' OC	
	COIR LOG PLANTINGS					
	SALIX SITCHENSIS	SITKA WILLOW	28	30" x 1/2" / LIVESTAKE	1' OC	SEE DETAIL 3/C-L2
	CORNUS SERICEA	RED OSIER DOGWOOD	28	30" x 1/2" / LIVESTAKE	1' OC	
	SALIX HOOKERIANA	HOOKER'S WILLOW	28	30" x 1/2" / LIVESTAKE	1' OC	



CONSTRUCTION NOTES:

1. ZONE 1 RIPARIAN RESTORATION, SEE DETAIL 1/C-L2
2. ZONE 2 RIPARIAN RESTORATION, SEE DETAIL 2/C-L2
3. COIR LOG PLANTING, SEE DETAIL 3/C-L2
4. ADJUST PLANT INSTALLATION AROUND RETAINED TREES.

GENERAL NOTES

1. LOCATE AND PROTECT EXISTING LANDSCAPE IRRIGATION. REPAIR OR REPLACE IF DAMAGED.

STATE OF WASHINGTON · JENS REUBEN SWENSON · NO. 856 EXP. 10/31/20 · LANDSCAPE ARCHITECT

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Approved By

DESIGN MANAGER	DATE
PROJECT MANAGER	DATE

JC	01/24/19
DESIGNED BY	DATE
JC	01/24/19
DRAWN BY	DATE
BB	01/24/19
CHECKED BY	DATE

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FLOOD HAZARD REDUCTION PROJECT
LOWER SKAGIT KEY RIPARIAN RESTORATION PLAN

S-L1 | SHT 54 OF 54

Path: U:\PSO\Projects\Clients\4803-LouisBergerGroup\053-4803-015 Group 3 Bridges\95cvs\CADD\DWGS\S_L1_LOWER SKAGIT KEY PLANTING PLAN.dwg Plot date: Jan 24, 2019-01:46:34pm CAD User: cenoljas
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