



25th Avenue NE Ballinger Creek Flood Reduction Project

Bid Number: #####

Date: December 2019

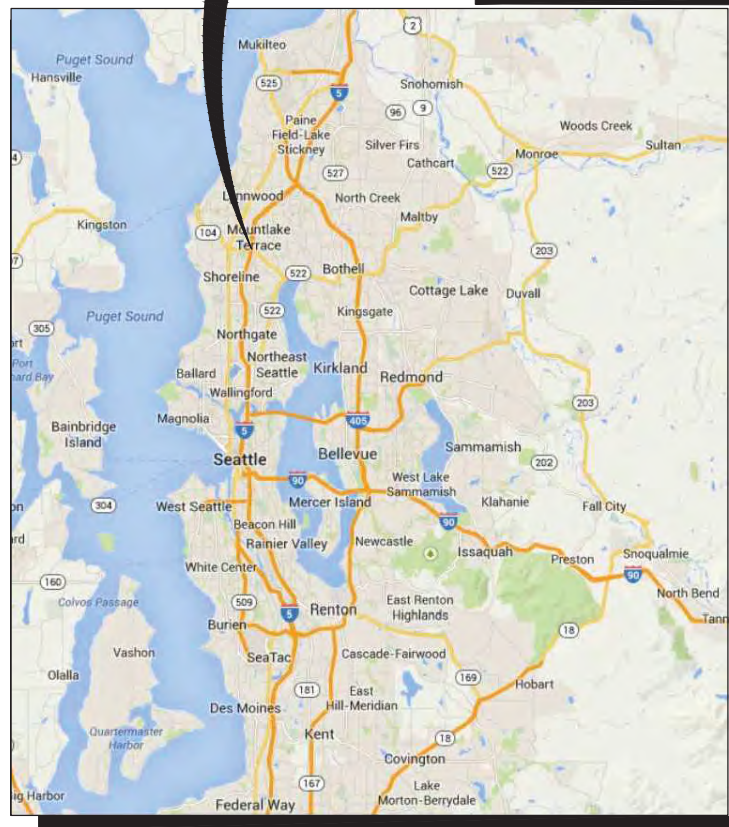
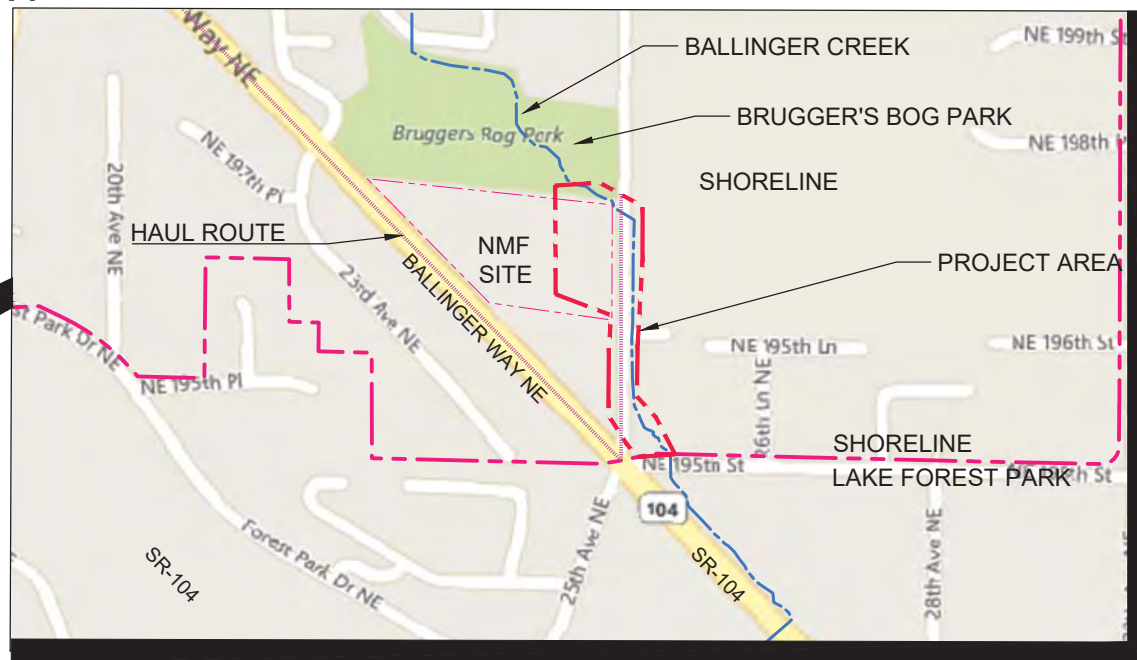
60% DESIGN

17500 Midvale Avenue North
Shoreline, WA 98133
(206) 801-2700

SHORELINE CITY COUNCIL
WILL HALL, MAYOR
DORIS MCCONNELL, DEPUTY MAYOR
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CHRIS ROBERTS
KEITH SCULLY
BETSY ROBERTSON

DIRECTOR OF PUBLIC WORKS
RANDY WITT, PE

PROJECT MANAGER
JOHN FEATHERSTONE, PE



VICINITY MAP

NOT TO SCALE



SERVICES	
ELECTRICAL:	SEATTLE CITY LIGHT (206) 684-3000
NATURAL GAS:	PUGET SOUND ENERGY (888) 225-5773
TELEPHONE:	CENTURY LINK (800) 244-1111 or FRONTIER (877) 462-8188
CABLE:	COMCAST (877) 824-2288 or FRONTIER (877) 462-8188
WASTEWATER (SEWER):	RONALD WASTEWATER DISTRICT (206) 546-2494
WATER (SEE VICINITY MAP FOR SERVICE AREAS):	NORTH CITY WATER DISTRICT (206) 362-8100 and SEATTLE PUBLIC UTILITIES (206) 684-3000
STATION MASTER/ POST OFFICE:	17233 15th Ave NE (800) 275-8777
CALL BEFORE YOU DIG	811

LOCATION MAP

NOT TO SCALE



THIS PLAN SET IS ONE OF TWO DEVELOPED AS PART OF THE CITY OF SHORELINE 25TH AVE NE BALLINGER CREEK FLOOD REDUCTION PROJECT. THE SECOND PLAN SET IS DOWNSTREAM AND INCLUDES THE NE 195TH ST BALLINGER CREEK CULVERT REPLACEMENT.

FUNDED IN PART BY A FLOOD REDUCTION GRANT FROM THE KING COUNTY FLOOD CONTROL DISTRICT

W 1/2 SW 1/4 SEC 08, T26N, R1E, WM

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**60% REVIEW SUBMITTAL
NOT FOR CONSTRUCTION**

APPROVED FOR CONSTRUCTION

TRICIA JUHNKE, P.E., CITY ENGINEER

DATE



Project No. _____

Dwg
G1

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12/31/2019 2:35 PM - PLOT DATE

25TH AVENUE NE BALLINGER CREEK
 FLOOD REDUCTION PROJECT
 60% REVIEW SUBMITTAL
 COVER

Description	Date	Initials	Drawn	Designed	Checked	Revisions	Revisions
	12/31/19	JTE		JTE	MSG		



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1301 Fifth Ave, Ste 1200
Seattle, WA 98101
A WSP Company

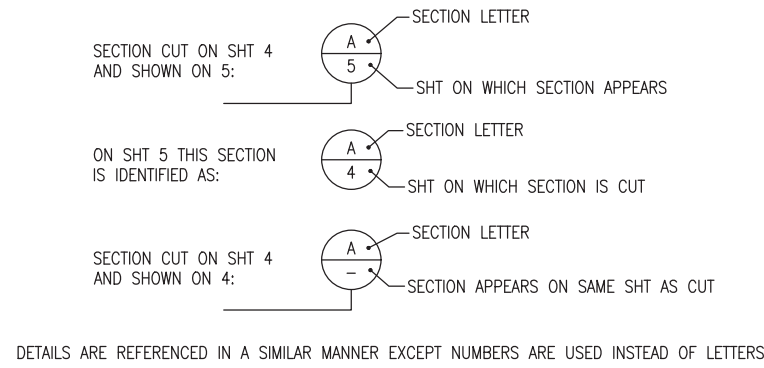


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LEGEND

SYMBOL		DESCRIPTION
EXISTING	NEW	
		FOUND SURVEY MONUMENT
		SURVEY CONTROL STATION
		CB CATCH BASIN
		CBMH CATCH BASIN MANHOLE
		SDMH STORM DRAIN MANHOLE
		SSMH SANITARY SEWER MANHOLE
		CULVERT END
		DISTRIBUTION POLE
		UTILITY POLE WITH LUMINAIRE
		GUY ANCHOR
		EJB ELECTRICAL JUNCTION BOX
		TJB TELEPHONE JUNCTION BOX
		TMH TELEPHONE MANHOLE
		TSJB TRAFFIC SIGNAL JUNCTION BOX
		TRAFFIC SIGNAL POLE
		GV GAS VALVE
		GM GAS METER
		WM WATER METER
		WATER VAULT
		FH FIRE HYDRANT
		WV WATER VALVE
		SCV SPRINKLER CONTROL VALVE
		BOV BLOW OFF VALVE
		WVM WATER VALVE MARKER
		SIGN
		B BOLLARD
		MB MAILBOX
		MW MONITORING WELL
		SOIL LOG / TEST PIT
		DP DATA POINT
		WETLAND FLAG
		SHRUB
		DECIDUOUS TREE
		CONIFEROUS TREE
		RIP RAP
		SLOPE CUT
		ROCKERY
		BUILDING
		BORING
		POT HOLE

TYPICAL SECTION AND DETAIL REFERENCE SYSTEM



MATERIAL SYMBOLS

	HOT MIX ASPHALT REPAIR (PLAN)
	HOT MIX ASPHALT, ASPHALT TREATED BASE (SECTION)
	BALLAST
	CONCRETE
	QUARRY SPALLS
	SUBGRADE, EXIST GROUND, NATIVE SOIL
	TOPSOIL
	CSBC
	STREAMBED GRAVEL
	STREAMBED COBBLE
	DEMOLITION/REMOVAL

LINE TYPES

	UTILITY EASEMENT
	CENTERLINE (ROW, BOX CULVERT)
	EDGE OF ROW
	PROPERTY LINE
	FENCE (EXISTING)
	FENCE (NEW)
	GAS (EXISTING)
	POWER, UNDERGROUND (EXISTING)
	POWER, OVERHEAD (EXISTING)
	SANITARY SEWER (EXISTING)
	TELEPHONE (BURIED) (EXISTING)
	WATER (EXISTING)
	STORM DRAINAGE (EXISTING)
	STORM DRAINAGE (NEW)
	CULVERT
	DITCH/SWALE/STREAM CENTERLINE
	EXISTING GROUND (PROFILE)
	SILT FENCE
	ORANGE BARRIER FENCE
	TEMPORARY CHAIN LINK CONSTRUCTION FENCE
	FIBER OPTIC (BURIED)
	TELEPHONE (BURIED)
	CITY BOUNDARY

ABBREVIATIONS

AC	ASPHALT CONCRETE	S	SOUTH, SLOPE
ACP	ASPHALT CONCRETE PAVEMENT	SCL	SEATTLE CITY LIGHT
APPROX.	APPROXIMATE, APPROXIMATELY	SD	STORM DRAIN
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	SDMH	STORM DRAIN MANHOLE
ATB	ASPHALT TREATED BASE	SE	SOUTHEAST
AVE	AVENUE	SPU	SEATTLE PUBLIC UTILITIES
		SQFT.	SQUARE FEET
		SS	SANITARY SEWER
BFO	BURIED FIBER OPTIC	SSMH	SANITARY SEWER MANHOLE
BOW	BOTTOM OF WALL	ST	STREET
BT	BURIED TELEPHONE	STA	STATION
BTM	BOTTOM	STD	STANDARD
		SW	SOUTHWEST
		T	TANGENT, TOP, TOWNSHIP, TELEPHONE
C	CABLE	TBD	TO BE DETERMINED
CL	CENTERLINE	TOP	TOP, TOP OF PIPE
CB	CATCH BASIN	TOW	TOP OF WALL
CC	COMCAST CABLE CO.	TV	TELEVISION
CDF	CONTROLLED DENSITY FILL	TYP	TYPICAL
CLF	CHAIN LINK FENCE		
CMP	CORRUGATED METAL PIPE		
COMM.	COMMUNICATIONS LINE		
CONC	CONCRETE	UP	UTILITY POLE
CPEP	CORRUGATED POLYETHYLENE PIPE		
CSBC	CRUSHED SURFACING BASE COURSE		
CSTC	CRUSHED SURFACING TOP COURSE	VERT	VERTICAL
CULV	CULVERT		
		W	WEST, WATER
		W/	WITH
		WSDOT	WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
DET	DETAIL		
DI	DUCTILE IRON		
DIA OR DIAM	DIAMETER		
DIST.	DISTRICT		
DWG	DRAWING		
E	EAST		
EL, ELEV	ELEVATION		
ESC	EROSION AND SEDIMENT CONTROL		
EXIST, EX	EXISTING		
FF	FINISHED FLOOR		
FO	FIBER OPTIC		
FT	FOOT OR FEET		
G	GAS		
GE	GRATE ELEVATION		
GIS	GEOGRAPHIC INFORMATION SYSTEM		
HORIZ	HORIZONTAL		
HMA	HOT MIX ASPHALT		
IE	INVERT ELEVATION		
INV.	INVERT		
IN	INCHES		
KC	KING COUNTY		
L	LENGTH, LEFT		
LF	LINEAR FEET		
LFP	LAKE FOREST PARK		
MAX	MAXIMUM		
MFR	MANUFACTURER		
MH	MANHOLE		
MIN	MINIMUM		
MON	MONUMENT		
N	NORTH		
NCWD	NORTH CITY WATER DISTRICT		
NE	NORTHEAST		
NO.	NUMBER		
NTS	NOT TO SCALE		
NW	NORTHWEST		
O.C.	ON CENTER		
PSE	PUGET SOUND ENERGY		
PVC	POLYVINYL CHLORIDE		
PVMT	PAVEMENT		
P	POWER		
R	RIGHT		
RCP	REINFORCED CONCRETE PIPE		
ROW	RIGHT-OF-WAY		
RWD	RONALD WASTEWATER DISTRICT		

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25TH AVENUE NE BALLINGER CREEK
FLOOD REDUCTION PROJECT
60% REVIEW SUBMITTAL
LEGEND AND ABBREVIATIONS

Project No. _____

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G2

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CITY OF SHORELINE STANDARD PLAN NOTES

1. THE CONTRACTOR SHALL ADHERE TO ALL APPLICABLE NOTES UNLESS OTHERWISE DIRECTED BY THESE PLANS, THE ENGINEER OR A CITY OF SHORELINE REPRESENTATIVE.
2. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT PLANS AND SPECIFICATIONS. ALL WORK SHALL COMPLY WITH, IN ORDER OF PRECEDENCE:
 - * THE CITY OF SHORELINE "ENGINEERING DEVELOPMENT MANUAL", 2017 EDITION (SHORELINE STANDARDS AND SHORELINE ENGINEERING DETAILS).
 - * KING COUNTY "KING COUNTY ROAD STANDARDS", 2016.
 - * KING COUNTY "KING COUNTY SURFACE WATER DESIGN MANUAL", 2016.
 - * WSDOT/APWA "2020 STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION" (WSDOT/APWA).
3. THE CONTRACTOR SHALL VERIFY ALL EXISTING DATA SHOWN IN THESE DOCUMENTS AND NOTIFY ENGINEER IMMEDIATELY OF ANY CONFLICTS WITH PROPOSED FEATURES PRIOR TO CONSTRUCTION.
4. ALL COMPACTION METHODS, MATERIALS AND PERFORMANCE CRITERIA SHALL BE IN ACCORDANCE WITH THE PROJECT PLANS AND SPECIFICATIONS.
5. ALL EXISTING AND PROPOSED CATCH BASINS DOWNSTREAM OF DISTURBED AREAS SHALL BE PROTECTED DURING CONSTRUCTION PER DOE BMP C220.
6. ALL PIPE LENGTHS, INVERT ELEVATIONS AND DRAINAGE STRUCTURE LOCATIONS ARE MEASURED AT THE CENTER OF THE DRAINAGE STRUCTURE UNLESS NOTED OTHERWISE.
7. ALL LOCATIONS OF EXISTING UTILITIES SHOWN 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 VERIFY THE ACCURACY OF ALL UTILITY LOCATIONS SHOWN AND AVOID EXISTING UTILITIES, INCLUDING OTHER UTILITIES NOT SHOWN ON THE PLANS. EXISTING UTILITIES SHALL BE PROTECTED, SUPPORTED, AND MAINTAINED DURING CONSTRUCTION.
8. CONTACT THE UNDERGROUND UTILITIES LOCATION SERVICE (811 / WWW.CALL811.COM) AT LEAST 48 HOURS PRIOR TO CONSTRUCTION.
9. ALL WORK SHALL CONFORM TO THESE APPROVED PLANS AND SPECIFICATIONS, THE SHORELINE MUNICIPAL CODE, THE ENGINEERING DEVELOPMENT MANUAL, AND FEDERAL AND STATE REQUIREMENTS.

SITE NOTES (SN)

- SN.1. THE CONTRACTOR SHALL HAVE ANY REQUIRED PERMIT(S) AND THE APPROVED PLANS AVAILABLE AT THE JOB SITE.
- SN.2. ALL INSTALLATION METHODS AND MATERIALS SHALL MEET THE WSDOT/APWA STANDARD SPECIFICATIONS UNLESS SUPERCEDED BY THESE PLANS AND SPECIFICATIONS.
- SN.3. ANY CHANGES FROM THE APPROVED PLANS REQUIRE PRE-APPROVAL FROM THE ENGINEER.
- SN.4. THE CONTRACTOR ASSUMES SOLE RESPONSIBILITY FOR WORKER SAFETY AND DAMAGE FROM CONSTRUCTION OPERATIONS TO STRUCTURES AND OTHER IMPROVEMENTS.
- SN.5. SURVEYING FOR PUBLIC FACILITIES SHALL BE PERFORMED UNDER THE DIRECTION OF A WASHINGTON LICENSED LAND SURVEYOR. VERTICAL DATUM SHALL BE NAVD 1988. HORIZONTAL DATUM SHALL BE WASHINGTON STATE (GRID) COORDINATES, NORTH ZONE, USING NAD 83/91 SURVEY CONTROL AND TO ANY TWO CITY OF SHORELINE HORIZONTAL CONTROL MONUMENTS. FOR PROJECTS WITHIN A FLOOD CONTROL ZONE, THE SURVEYOR SHALL PROVIDE CONVERSION CALCULATIONS TO NGVD 1929.
- SN.6. REPLACE OR RELOCATE ALL SIGNS, STRIPING, POLES AND OTHER ITEMS IN THE RIGHT-OF-WAY THAT ARE DAMAGED OR REMOVED DURING CONSTRUCTION.
- SN.7. RETAIN, REPLACE OR RESTORE ALL VEGETATION IN RIGHTS-OF-WAY, EASEMENTS, AND ACCESS TRACTS DISTURBED DURING CONSTRUCTION.
- SN.8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE SAFEGUARDS, SAFETY DEVICES, PROTECTIVE EQUIPMENT, FLAGGERS, AND ANY OTHER NEEDED ACTIONS TO PROTECT THE LIFE, HEALTH, AND SAFETY OF THE PUBLIC, AND TO PROTECT PROPERTY IN CONNECTION WITH THE PERFORMANCE OF WORK COVERED BY THE CONTRACTOR. ANY WORK WITHIN THE TRAVELED RIGHT-OF-WAY REQUIRES A RIGHT-OF-WAY USE PERMIT, TO BE REVIEWED PRIOR TO CONSTRUCTION AND INSPECTED DURING CONSTRUCTION.
- SN.9. THE CONTRACTOR SHALL RESTORE CRITICAL AREAS AND PUBLIC AND PRIVATE PROPERTY DAMAGED BY CONTRACTOR'S OPERATIONS TO CURRENT STANDARDS.
- SN.10. AT ALL TIMES MAINTAIN ACCESS TO BUILDINGS FOR FIRE, PEDESTRIAN AND VEHICULAR ACCESS.
- SN.11. ALL UTILITY TRENCHES AND ROADWAY SUBGRADES WITHIN CITY RIGHT-OF-WAY SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH KING COUNTY ROAD STANDARDS WITH 100% CRUSHED SURFACING COURSE OR CONTROLLED DENSITY FILL (CDF).

TRAFFIC CONTROL CONDITIONS (TC)

- TC.1. MAINTENANCE OF TRAFFIC: A PRELIMINARY TRAFFIC CONTROL PLAN HAS BEEN PREPARED TO SECURE PROJECT PERMITS AND IS INCLUDED AS PART OF THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TEMPORARY TRAFFIC CONTROL DURING CONSTRUCTION ON OR ALONG TRAVELED ROADS.
- TC.2. ANY CHANGE TO THE TRAFFIC CONTROL PLAN SHALL BE SUBMITTED BY THE CONTRACTOR FOR APPROVAL BY THE CITY OF SHORELINE 10 DAYS PRIOR TO BEGINNING THE WORK. TRAFFIC CONTROL SHALL FOLLOW THE GUIDELINES OF SECTION 1-07.23 OF THE WSDOT/APWA STANDARD SPECIFICATIONS AS AMENDED BY THESE PLANS AND SPECIFICATIONS.
- TC.3. ALL BARRICADES, SIGNS AND FLAGGING SHALL CONFORM TO THE REQUIREMENTS OF THE MUTCD. FOR MORE SPECIFIC REQUIREMENTS FOR BARRICADES, SEE SECTION 5.7 AND DRAWING NO. 5-003 OF KING COUNTY ROAD STANDARDS. SIGNS MUST BE LEGIBLE AND VISIBLE AND SHALL BE REMOVED AT THE END OF EACH WORK DAY IF NOT APPLICABLE AFTER CONSTRUCTION HOURS.
- TC.4. TEMPORARY ROAD CLOSURES AND DETOURS: WHEN TEMPORARY ROAD CLOSURES CANNOT BE AVOIDED THE CONTRACTOR SHALL POST "TO BE CLOSED" SIGNS A MINIMUM OF FIVE DAYS PRIOR TO THE CLOSING. THE TYPES AND LOCATIONS OF THE SIGNS SHALL BE SHOWN ON A DETOUR PLAN.
- TC.5. A DETOUR PLAN MUST BE PREPARED AND SUBMITTED TO THE CITY OF SHORELINE AT LEAST 10 WORKING DAYS IN ADVANCE, AND APPROVED PRIOR TO CLOSING ANY CITY ROAD. IN ADDITION, THE CONTRACTOR MUST NOTIFY, IN WRITING, LOCAL FIRE, SCHOOL, LAW ENFORCEMENT AUTHORITIES, METRO TRANSIT, AND ANY OTHER AFFECTED PERSONS AS DIRECTED BY THE ENGINEER AT LEAST FIVE DAYS PRIOR TO CLOSING.
- TC.6. A HAUL ROUTE PLAN MUST BE SUBMITTED TO THE CITY OF SHORELINE FOR APPROVAL PRIOR TO BEGINNING CONSTRUCTION. THE HAUL ROUTE PLAN SHALL ADDRESS ROUTING, HOURS OF OPERATION, SIGNAGE AND FLAGGING, AND DAILY MAINTENANCE.
- TC.7. IF THE CONTRACTOR'S TRAFFIC FAILS TO USE THE DESIGNATED HAUL ROUTE, THE ENGINEER MAY PROHIBIT OR LIMIT FURTHER WORK ON THE DEVELOPMENT UNTIL SUCH TIME AS THE REQUIREMENTS OF THE HAUL ROUTE ARE COMPLIED WITH.
- TC.8. FLAGGING SHALL BE MAINTAINED BY THE CONTRACTOR FOR THE DURATION OF CONSTRUCTION. INTERRUPTION OF NORMAL TRAFFIC FLOW SHALL REQUIRE TRAFFIC CONTROL.
- TC.9. CONTRACTOR SHALL PROTECT EXISTING TRAFFIC CONTROL SIGNS WITHIN THE LIMITS OF WORK.

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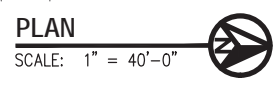
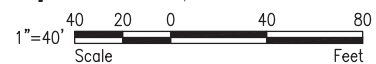
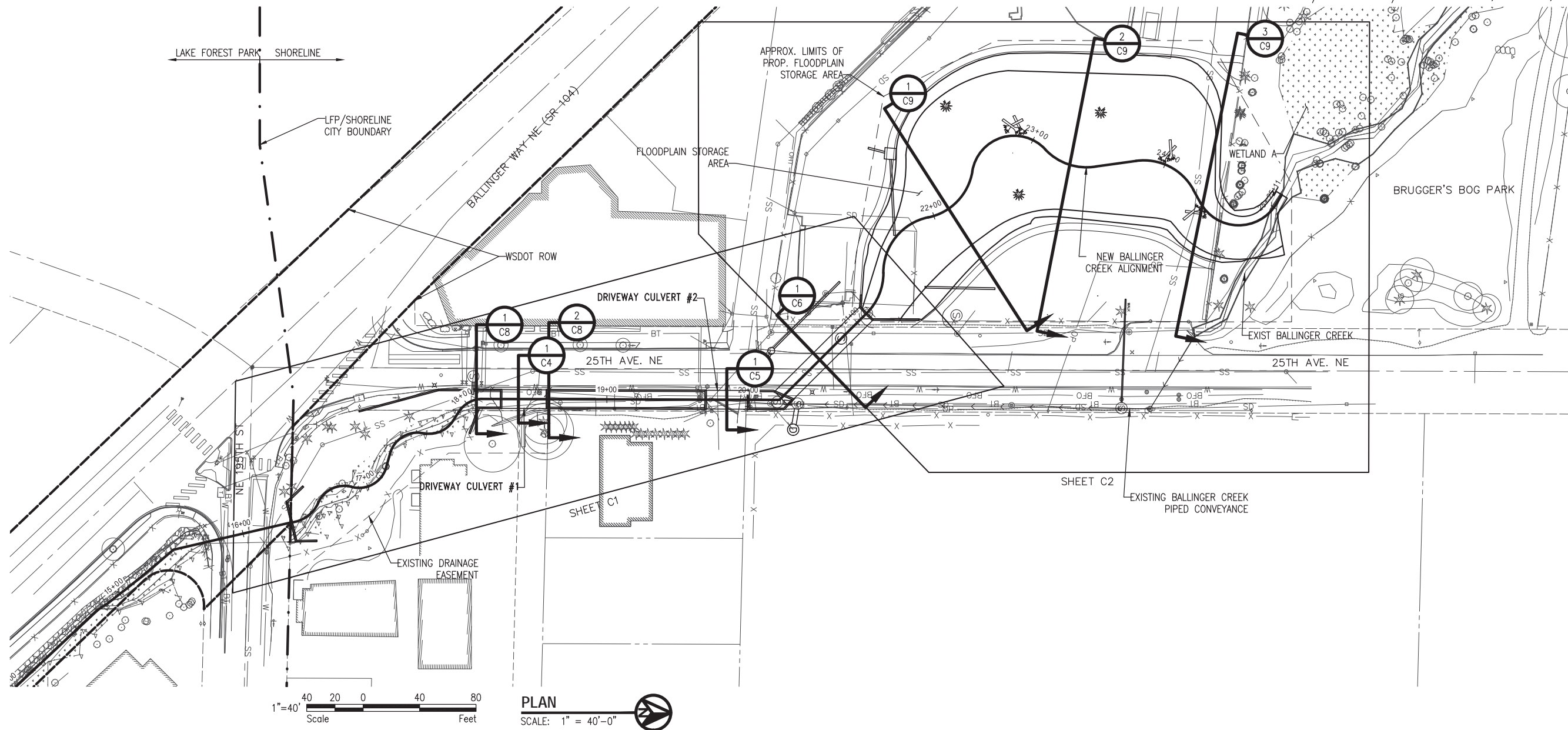
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 GENERAL AND RESTORATION NOTES AND
 CONSTRUCTION SEQUENCE

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DATUM / PROJECT CONTROL

LEGAL DESCRIPTION:

PORTION OF THE W. 1/2 OF THE SW. 1/4 OF SECTION 8, TOWNSHIP 26 NORTH, RANGE 1 EAST, WILLAMETTE MERIDIAN, CITY OF SHORELINE, KING COUNTY, STATE OF WASHINGTON.

HORIZONTAL DATUM / BASIS OF BEARINGS:

NORTH AMERICAN DATUM OF 1983 (ADJUSTED 1991) - NAD83(91). WASHINGTON STATE PLANE COORDINATE SYSTEM - NORTH ZONE.

NORTH 04°21'48" EAST ALONG THE WEST LINE OF THE SW. 1/4 OF SECTION 8 (CENTERLINE OF MERIDIAN AVENUE NORTH).

VERTICAL DATUM / BASIS OF ELEVATIONS:

NORTH AMERICAN VERTICAL DATUM OF 1988 - NAVD88.

DATES OF FIELD SURVEYS: 07/25/2018, 08/06/2018 BY 1ALLIANCE GEOMATICS.

BUILDING OUTLINES HAVE BEEN DIGITIZED FROM GIS AERIAL 2019 AND ARE APPROXIMATE ONLY.

PATH: c:\project\wisebn8\lbgz2014\lbguser\l0308626\GENERAL ARRANGEMENT PLAN AND SURVEY NOTES.dwg

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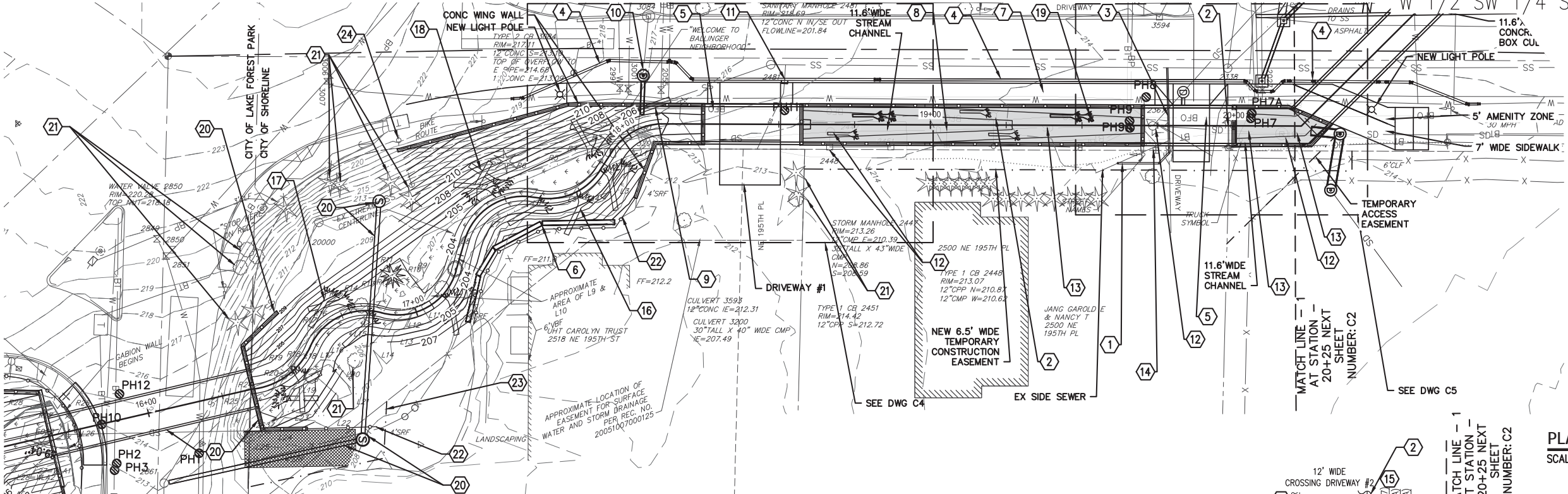
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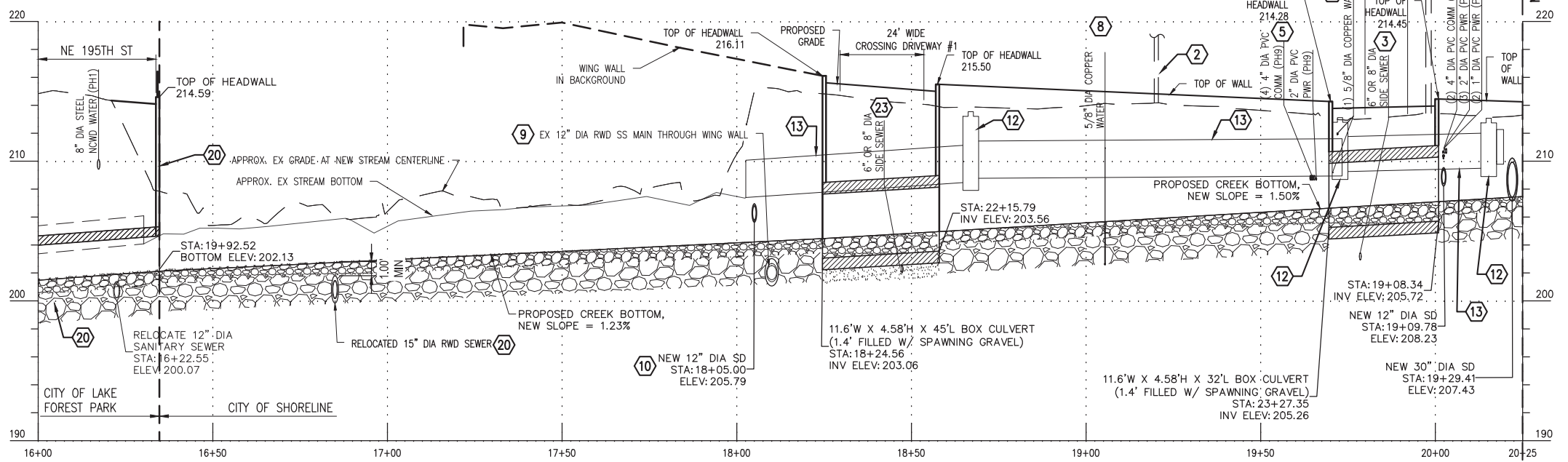
Sheet 4 Of 55



VERIFY SCALE - BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" - IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.



PLAN
SCALE: 1" = 20'-0"



PROFILE PROPOSED BALLINGER CREEK, COS 1, STA 16+00 TO 20+25

1"=20'-0" Scale
1"=5'-0" Scale

KEYED NOTES

- 1 REMOVE AND REPLACE APPROXIMATELY 14 LF OF 6" OR 8" DIAMETER SIDE SEWER AND REALIGN TO CONNECT TO SIDE SEWER WHERE SHOWN WITH TEE CONNECTION. PROVIDE 6" OR 8" CLEAN OUT PER RWD STD DETAIL 8. LOCATIONS TO BE APPROVED BY CITY/RWD.
- 2 SEATTLE CITY LIGHT POLE TO BE RELOCATED BY OTHERS. (TWO LOCATIONS). NEW LOCATIONS TO BE CONFIRMED BY SCL.
- 3 POT HOLE SIDE SEWER TO CONFIRM SIZE (6" OR 8"). REPLACE APPROX 32 LF W/ DI PIPE @ 1.0% SLOPE. INSTALL CLEAN OUT AT CONNECTION TO EXISTING.
- 4 6" DIA NCDW WATER MAIN TO BE REMOVED AND REPLACED BY OTHERS. SIZING IS ASSUMED TO BE 8". SEE PLAN AND PROFILE ON SHEET C10. NOTE THIS ALIGNMENT ASSUMES WATER MUST BE IN SERVICE DURING CHANNEL CONSTRUCTION. IF IT CAN BE OUT OF SERVICE FOR SIX WEEKS, WATER COULD BE REPLACED IN CURRENT ALIGNMENT IN ORDER TO MAINTAIN GREATER SEPARATION FROM SEWER.
- 5 BURIED FIBER OPTIC LINE TO BE RELOCATED BY OTHERS.
- 6 APPROX 68 LF ROCK RETAINING WALL PER COS STD DETAIL 501. TOW EL 210.54. FACE OF WALL AT FINISHED GRADE VARIES EL 205.65 TO EL 210.04.

- 7 SECTION 2 ON DWG C8 ILLUSTRATES SIDEWALK CONFIGURATION ALONG WALLED OPEN SECTION OF STREAM.
- 8 REPLACE EXISTING WATER SERVICE LINE BELOW STREAM CHANNEL. REPLACE WATER METER AND LOCATE IN SIDEWALK. LOCATION TO BE APPROVED BY NCDW.
- 9 INSTALL 20" DIA STEEL CASING ON APPROX 10 LF EX 12" DIA SEWER. SEE DETAIL 2 ON DWG C12.
- 10 CONNECT TO EX. 12" SD WITH NEW SDMH-1. EXTEND NEW 12" SD THROUGH WALL. SEE SECTION 1 ON DWG C8. SDMH-1 TO INCLUDE STORMFILTER TREATMENT CARTRIDGES, SIZING TO BE CONFIRMED IN NEXT SUBMITTAL.
- 11 SIDE SEWER NOT IN USE. CAP AT EDGE OF EXCAVATION.
- 12 REMOVE AND DISPOSE OF EXISTING STORM STRUCTURE.
- 13 REMOVE AND DISPOSE OF EXISTING STORM DRAIN PIPE.

PROFILE
HORIZ SCALE: 1" = 20'-0"
VERT SCALE: 1" = 5'-0"

- 14 REMOVE AND REPLACE WATER SERVICE AND METER TO CROSS ABOVE CULVERT. LOCATION TO BE APPROVED BY NCDW.
- 15 POWER AND COMM TO BE RELOCATED BY OTHERS.
- 16 HABITAT LOG, TYP. SEE DETAIL 1 ON DWG C11. QTY=6.
- 17 HABITAT LOG STRUCTURE TYPE 1, TYP. SEE DETAIL 2 ON DWG C11. QTY=4.
- 18 HABITAT LOG STRUCTURE TYPE 2, TYP. SEE DETAIL 3 ON DWG C11. QTY=2.
- 19 HABITAT LOG STRUCTURE TYPE 3, TYP. SEE DETAIL 5 ON DWG C11. QTY=2.
- 20 THIS PROJECT ELEMENT TO BE CONSTRUCTED AS PART OF NE 195TH ST BALLINGER CREEK CULVERT REPLACEMENT PROJECT. PHASING IS UNDETERMINED AT THIS TIME.
- 21 PROTECT EXISTING TREE.

GENERAL NOTES

- 1. ALL WORK THIS SHEET DURING THIS PHASE IS WITHIN CITY OF SHORELINE.
- 2. LIMIT DISTURBANCE TO ONLY THOSE AREAS NECESSARY FOR CONSTRUCTING THE PROPOSED IMPROVEMENTS.
- 3. SHORING/TRENCH BOXES ARE REQUIRED. CUT SLOPE AT STEEPER THAN 1:1 WILL NOT BE ALLOWED.
- 4. SEE DWG RR1 FOR ROADWAY RESTORATION, SIDEWALKS, HANDRAIL LOCATIONS, AND NEW CENTERLINE ALIGNMENT.
- 5. PROTECT EXISTING LANDSCAPING AND VEGETATION. WHERE DISTURBED OR REMOVED DURING CONSTRUCTION, RESTORE SURFACE FEATURES IN KIND.
- 6. BUILDING OUTLINES HAVE BEEN DIGITIZED FROM GIS AERIAL 2019 AND ARE APPROXIMATE ONLY.

Description	Date	Initials	Drawn	Designed	Checked	Revisions	Revisions
	12/31/19	JTE					
	12/31/19	JTE					
	12/31/19	MSG					

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25TH AVENUE NE BALLINGER CREEK
FLOOD REDUCTION PROJECT
60% REVIEW SUBMITTAL
STREAM AND CULVERT PLAN AND
PROFILE - SHEET 1 OF 3

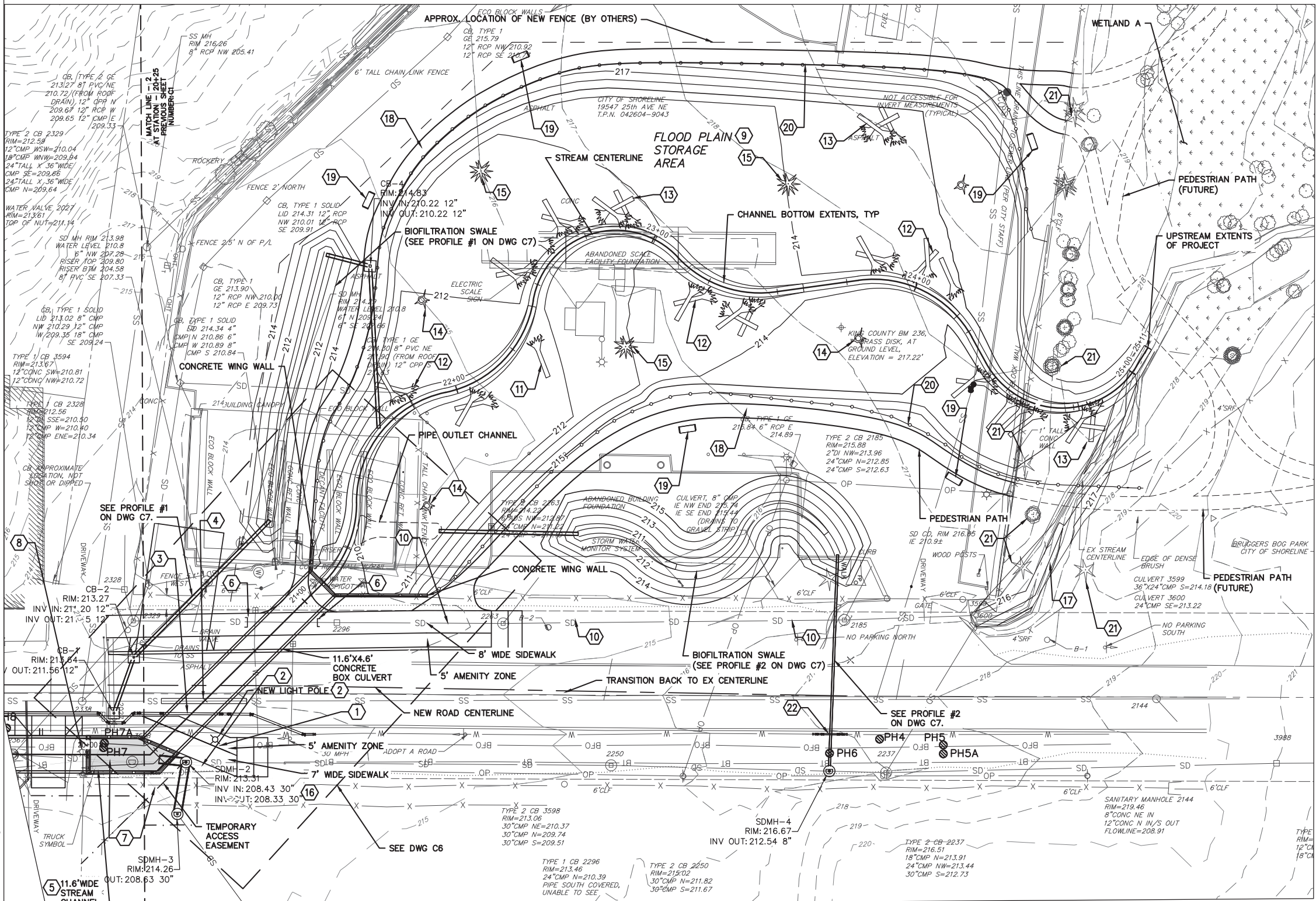
Project No. _____

Dwg
C1



PATH: C:\project\wis\811\2014\louisberger\0309634\STREAM AND CULVERT P&P.dwg

VERIFY SCALE - BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.



PLAN
SCALE: 1" = 20'-0"

1" = 20'-0"
Scale Feet

CONSTRUCTION NOTES

- 1 BURIED FIBER OPTIC TO BE RELOCATED BY OTHERS.
- 2 BURIED TEL TO BE RELOCATED BY OTHERS.
- 3 6" DIA NCWD WATER MAIN TO BE REMOVED AND REPLACED WITH 8" DIA DI PIPE BY OTHERS. SEE PLAN AND PROFILE ON SHEET C10.
- 4 INSTALL 20" DIA STEEL CASING ON APPROX 30 LF EX 12" DIA SEWER. SEE DETAIL 2 ON DWG C12.
- 5 CONNECT NEW SDMH-3 TO EX 30" SD TO NE. SEE PROFILE #3 ON DWG C7.

- 6 PLUG EXISTING 36" X 24" CMP ARCH AT LOCATION SHOWN. REMOVE SD AS NEEDED FOR NEW CULVERT INSTALLATION.
- 7 THIS SECTION OF EXIST STORM DRAIN TO BE REMOVED.
- 8 SCL LIGHT POLE TO BE RELOCATED BY OTHERS.
- 9 FLOODPLAIN STORAGE AREA SHALL BE SLOPED TO DRAIN TO CREEK TO PREVENT FISH STRANDING.
- 10 EXISTING 24" SD TO BE FILLED WITH CDF AND ABANDONED.

- 11 HABITAT LOG, TYP. SEE DETAIL 1 ON DWG C11. QTY=5
- 12 HABITAT LOG STRUCTURE TYPE 1, TYP. SEE DETAIL 2 ON DWG C11. QTY=8
- 13 HABITAT LOG STRUCTURE TYPE 2, TYP. SEE DETAIL 3 ON DWG C11. QTY=4
- 14 STANDING SNAG. SEE DETAIL 4 ON DWG C11. QTY=4
- 15 ROOTWAD. SEE DETAIL 6 ON DWG C11. QTY=3
- 16 CONNECT NEW SDMH-2 TO EX 30" SD TO N. SEE PROFILE #3 ON DWG C7.

- 17 FILL EXISTING STREAM TO CREATE SWALE SLOPING TOWARD BALLINGER CREEK AT 1% SLOPE. DO NOT REMOVE ANY TREES IN THIS AREA.
- 18 5' WIDE PEDESTRIAN PATH PER COS STD DTL 329. APPROX 675 LF.
- 19 BENCH. SEE DETAIL 3 ON DWG C12.
- 20 NEW 4' HIGH SPLIT RAIL FENCE. SEE DETAIL 4 ON DWG C12.
- 21 PROTECT TREE.
- 22 6" DIA NCWD WATER MAIN TO BE REMOVED AND REPLACED BY OTHERS. SEE PLAN AND PROFILE ON SHEET C10.

GENERAL NOTES

1. ALL WORK THIS SHEET IS WITHIN CITY OF SHORELINE.
2. LIMIT DISTURBANCE TO ONLY THOSE AREAS NECESSARY FOR CONSTRUCTING THE PROPOSED IMPROVEMENTS.
3. SHORING/TRENCH BOXES ARE REQUIRED. CUT SLOPE AT LESS THAN 1:1 WILL NOT BE ALLOWED.
4. PATCH FLEXIBLE PAVEMENT PER CITY OF SHORELINE STANDARD DETAIL 802.
5. PROTECT EXISTING LANDSCAPING AND VEGETATION. WHERE DISTURBED OR REMOVED DURING CONSTRUCTION, RESTORE SURFACE FEATURES IN KIND.
6. SEE PROFILE OF THIS SHEET ON SHEET C3.

Description	Date	Initials	Drawn	Designed	Checked	Revisions	Revisions
	12/31/19	JTE					
	12/31/19	JTE					
	12/31/19	MSG					

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**25TH AVENUE NE BALLINGER CREEK
FLOOD REDUCTION PROJECT
60% REVIEW SUBMITTAL
STREAM AND CULVERT PLAN AND
PROFILE - SHEET 2 OF 3**

Project No. _____

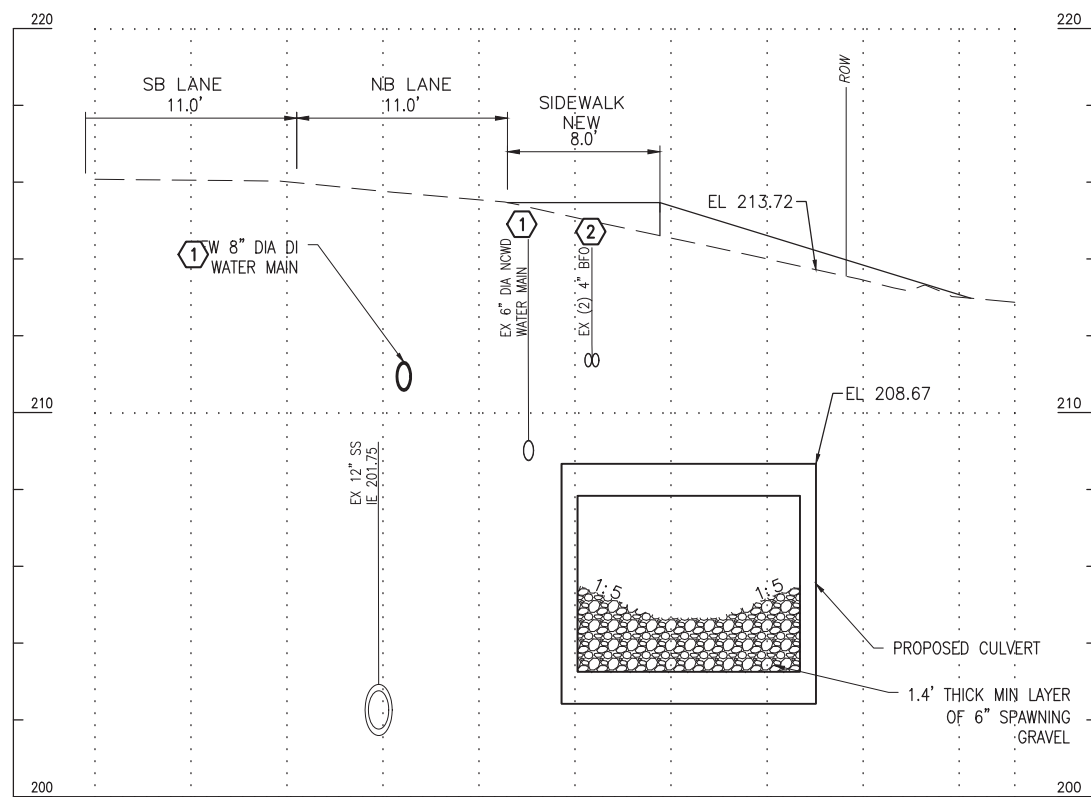
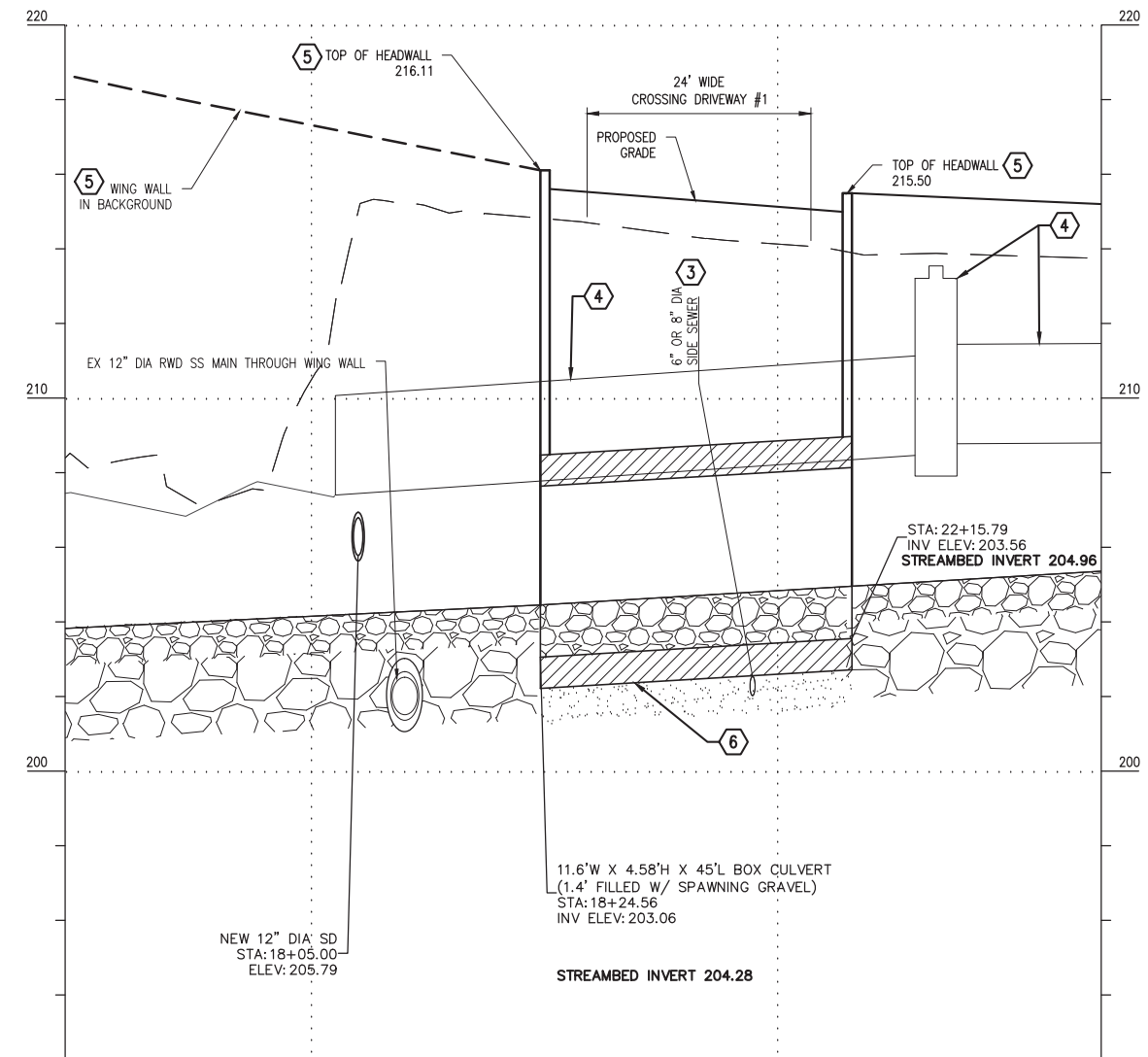
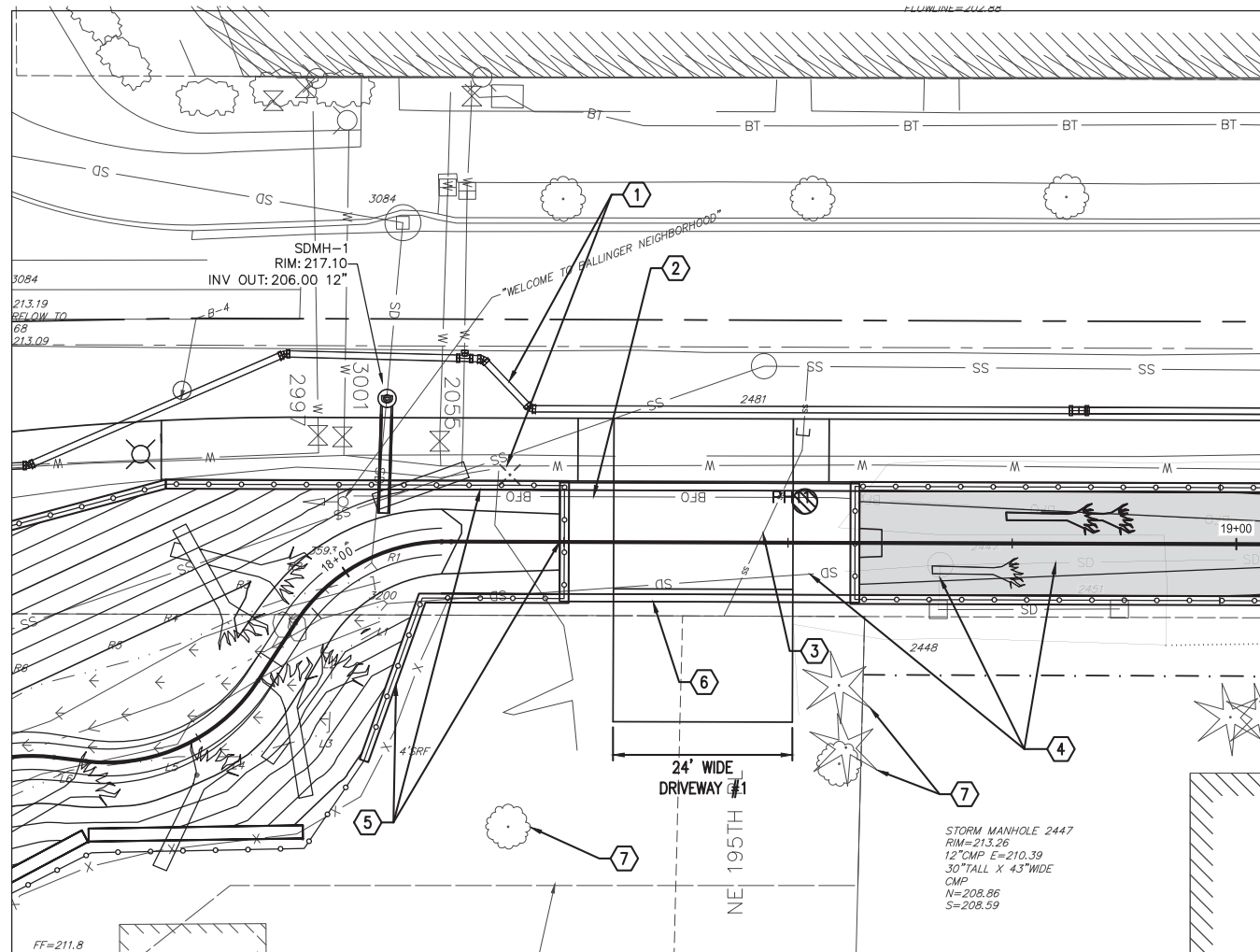
Dwg **C2**

Sheet 6 Of 55



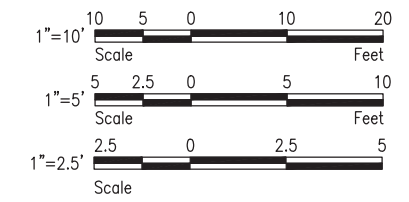
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VERIFY SCALE - BAR IS ONE INCH ON ORIGINAL DRAWING 0" = 1". IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.



KEYED NOTES

- 1 6" DIA NCWD WATER MAIN TO BE RELOCATED BY OTHERS TO ALLOW WALL/CULVERT CONSTRUCTION. SEE PLAN AND PROFILE ON DWG C10.
- 2 BURIED FIBER OPTIC LINE TO BE RELOCATED BY OTHERS.
- 3 SIDE SEWER NOT USED. REMOVE AS NEEDED FOR CONSTRUCTION AND CAP AT EDGE OF EXCAVATION.
- 4 REMOVE AND DISPOSE EXISTING STORM DRAIN PIPES AND STRUCTURES.
- 5 SEE STRUCTURAL DWGS FOR HEADWALL AND WING WALL DETAILS.
- 6 11.6' W X 4.58' H X 45' L CONCRETE BOX CULVERT. SEE DWGS S-1 THROUGH S-21 FOR CULVERT AND WING WALL STRUCTURE PLANS, ELEVATIONS, AND SECTIONS.
- 7 PROTECT TREE.



Description	Date	Initials	Drawn	Designed	Checked	Revisions	Revisions
	12/31/19	JTE					
	12/31/19	JTE					
	12/31/19	MSG					

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25TH AVENUE NE BALLINGER CREEK
FLOOD REDUCTION PROJECT
60% REVIEW SUBMITTAL
DRIVEWAY CULVERT #1 PLAN,
SECTION, AND PROFILE

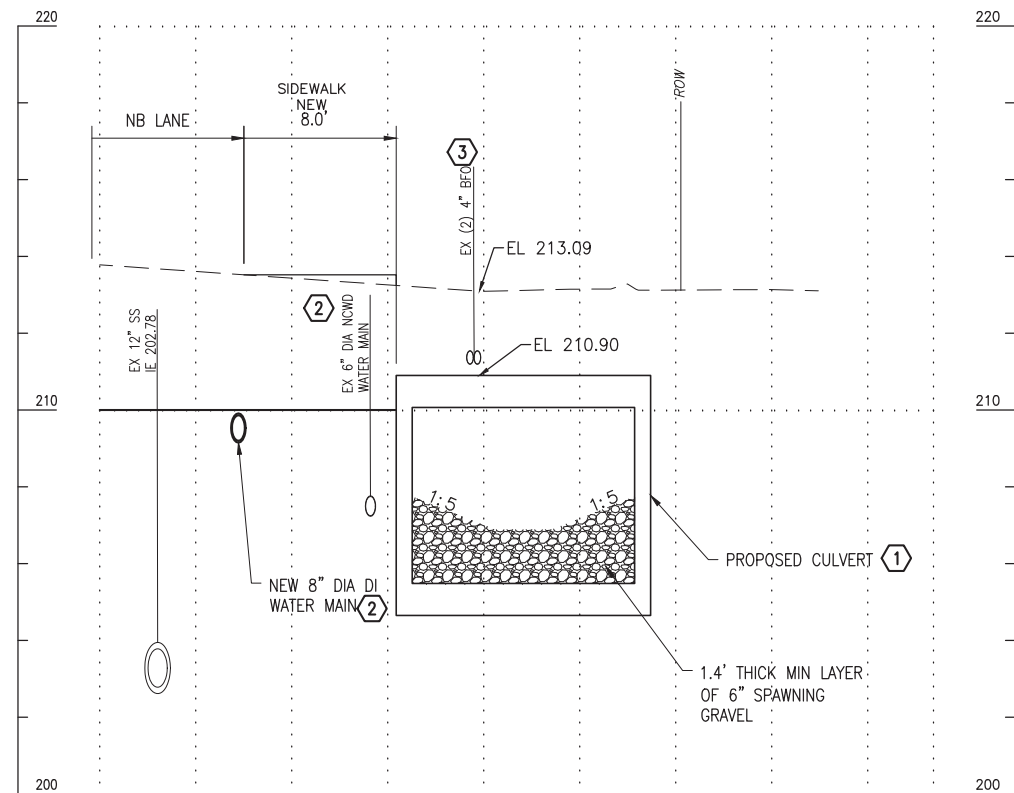
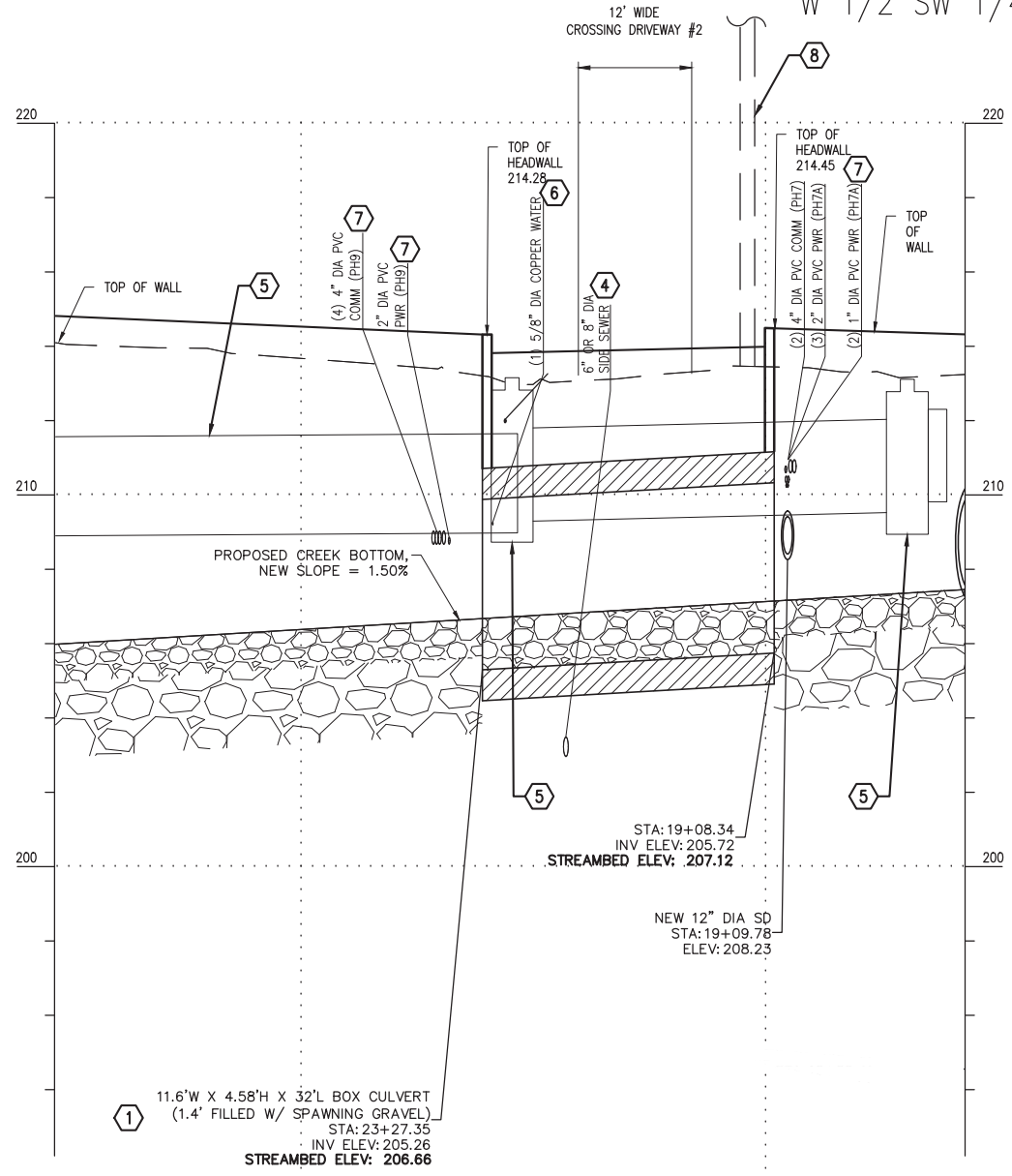
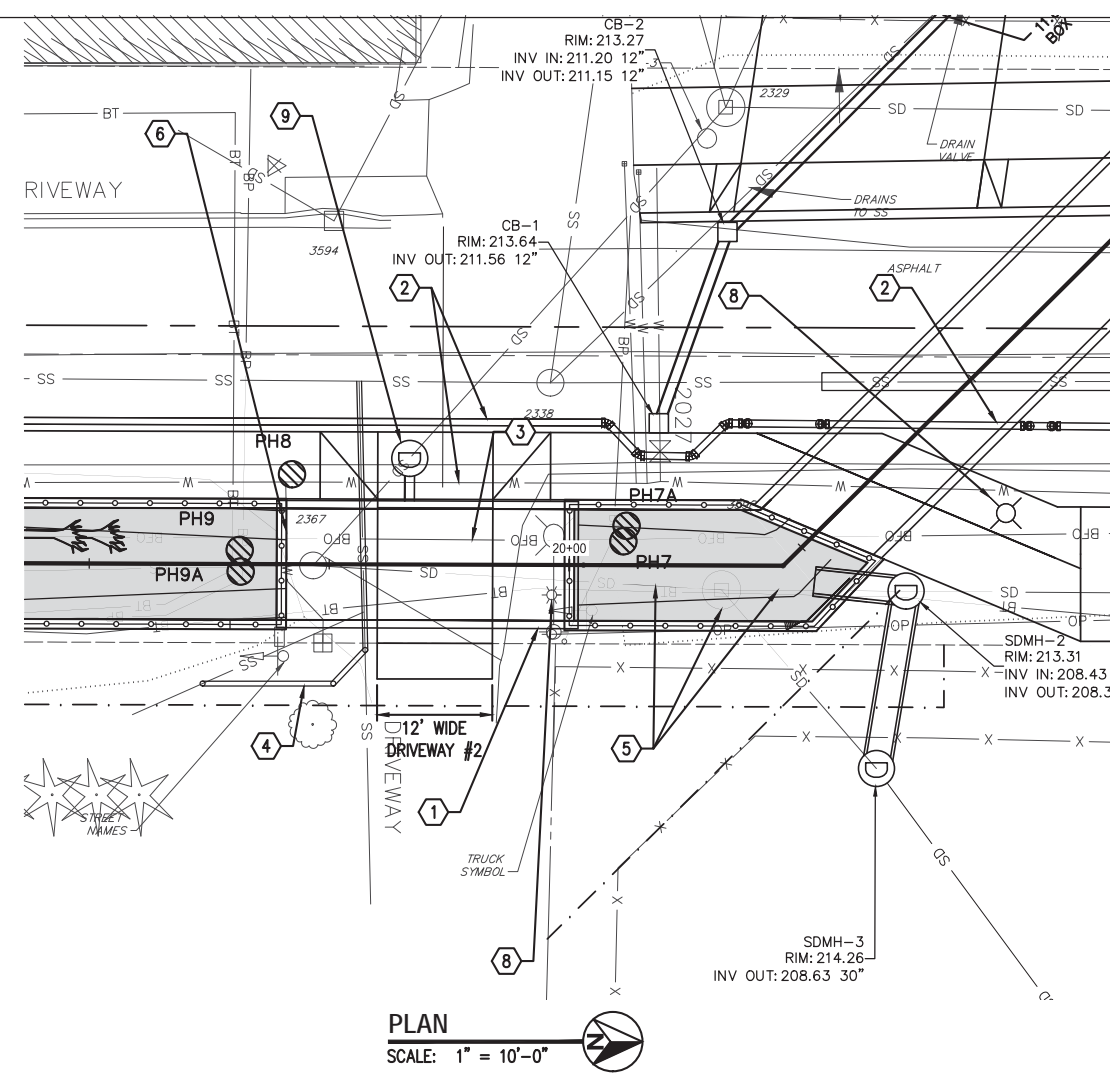
Project No. _____

Dwg **C4**



PATH: C:\project\wise\811\82014\lbguser\0309634\STREAM AND CULVERT P&P.dwg

VERIFY SCALE - BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

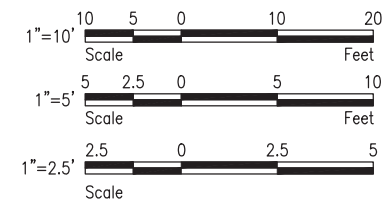


KEYED NOTES

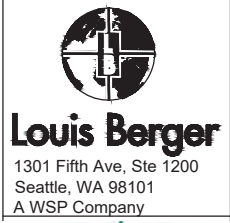
- ① 11.6' W X 4.58' H X 45' L CONCRETE BOX CULVERT. SEE DWGS S-1 THROUGH S-21 FOR CULVERT AND WING WALL STRUCTURE PLANS, ELEVATIONS, AND SECTIONS.
- ② 6" DIA NCWD WATER MAIN TO BE RELOCATED BY OTHERS TO ALLOW WALL/CULVERT CONSTRUCTION. SEE SHEET C10.
- ③ BURIED FIBER OPTIC LINE TO BE RELOCATED BY OTHERS.
- ④ POTHOLE SIDE SEWER TO CONFIRM SIZE (6" OR 8"). REPLACE APPROX 32 LF W/ DI PIPE @ 1.0% SLOPE. INSTALL CLEAN OUT AT CONNECTION TO EXISTING PER RWD STD DTL 8.
- ⑤ REMOVE AND DISPOSE EXISTING STORM DRAIN PIPES AND STRUCTURES.
- ⑥ RELOCATE WATER SERVICE TO CROSS ABOVE CULVERT.
- ⑦ POWER AND COMM TO BE RELOCATED BY OTHERS.
- ⑧ SEATTLE CITY LIGHT POLE TO BE RELOCATED BY OTHERS.
- ⑨ NEW MH TO BE SIZED IN FUTURE PHASE OF DESIGN. EX SD IS 36"x24" ARCH PIPE. SIZE FOLLOWING CONSTRUCTION OF THIS PROJECT AND NMF DETENTION FACILITY WILL BE SIGNIFICANTLY LESS. USE ARCH PIPE AS CARRIER PIPE AND FILL VOID WITH CDF. CONNECT NEW PIPE THROUGH CULVERT WALL.

PROFILE

HORIZ SCALE: 1" = 10'-0"
VERT SCALE: 1" = 2'-6"



Description	Date	Initials	Drawn	Designed	Checked	Revisions	Revisions
	12/31/19	JTE					
	12/31/19	JTE					
	12/31/19	MSG					



25TH AVENUE NE BALLINGER CREEK
 FLOOD REDUCTION PROJECT
 60% REVIEW SUBMITTAL
 DRIVEWAY CULVERT #2 PLAN,
 SECTION, AND PROFILE

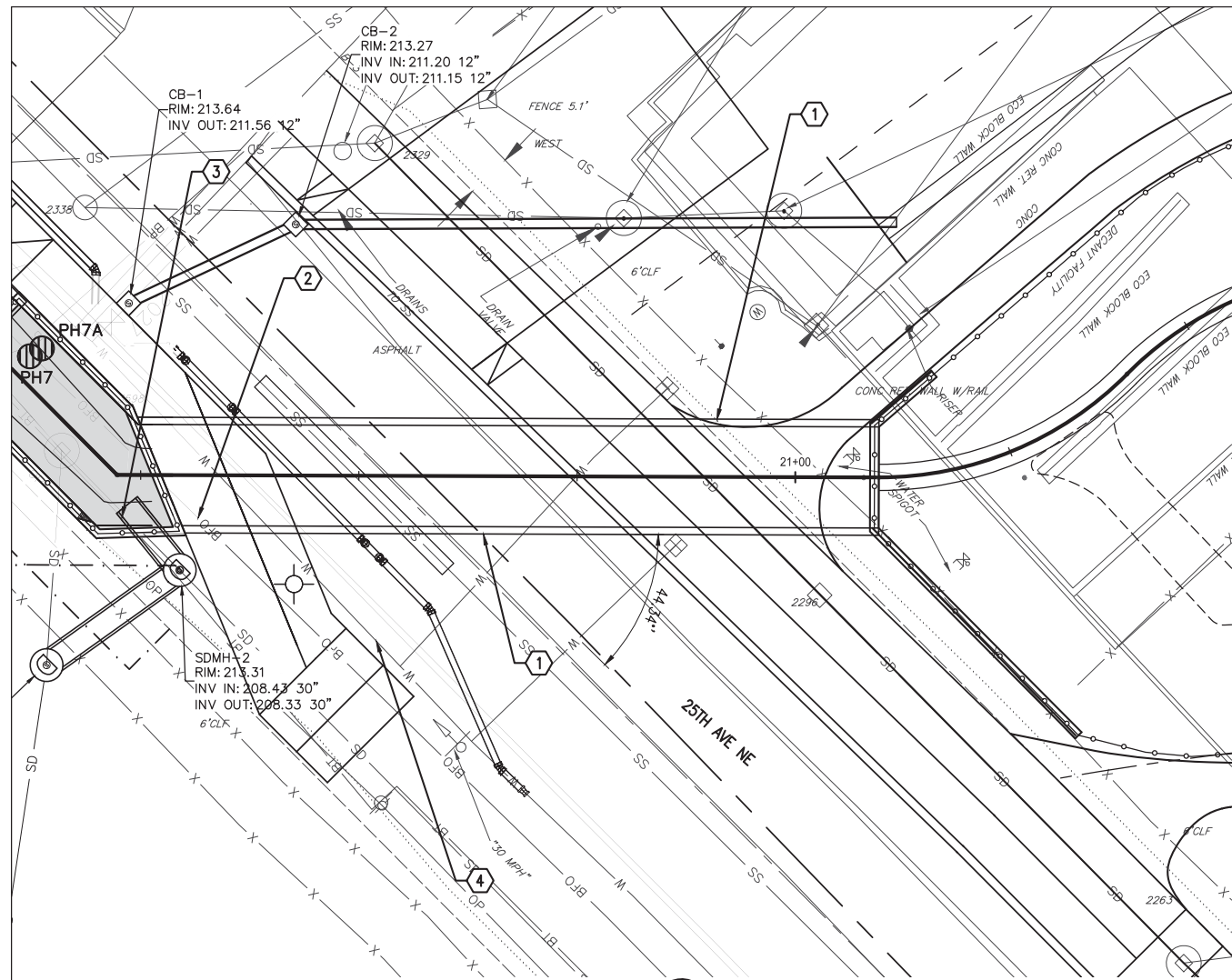
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Dwg **C5**

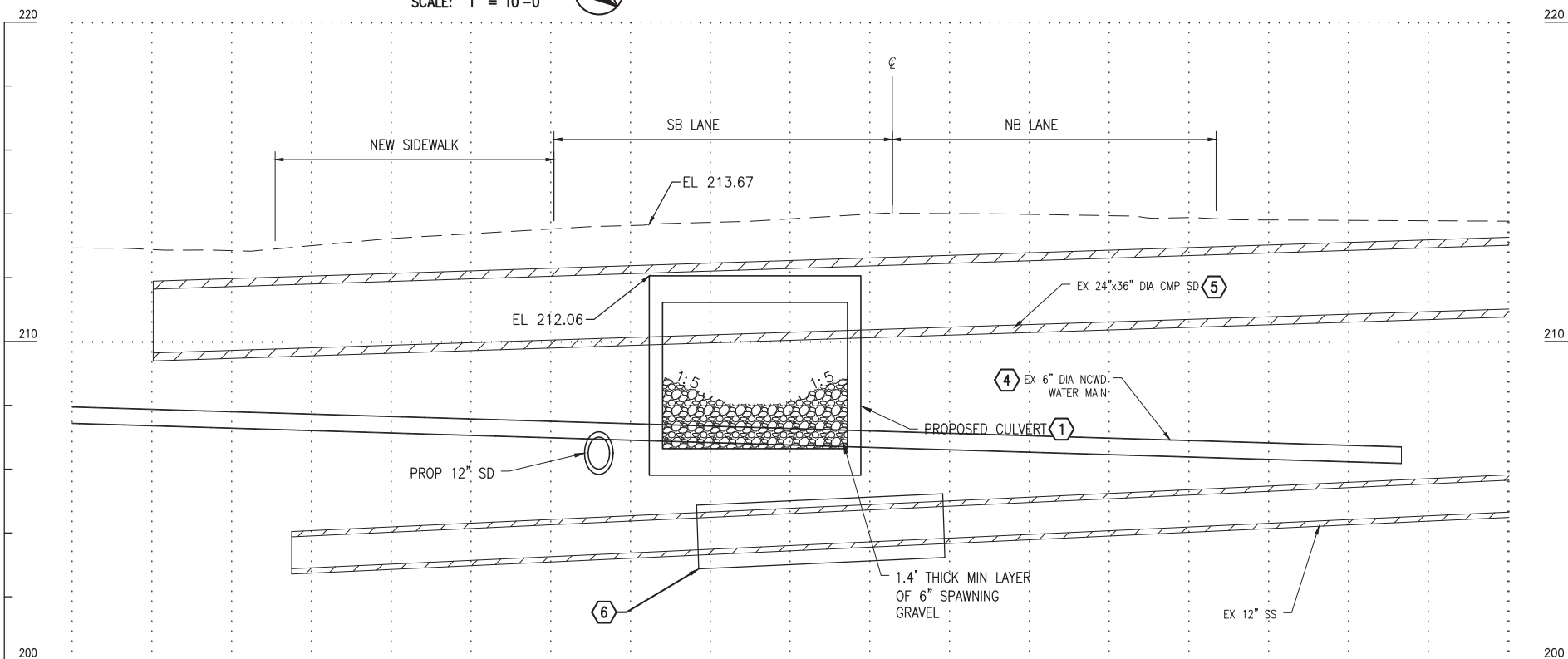
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VERIFY SCALE - BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

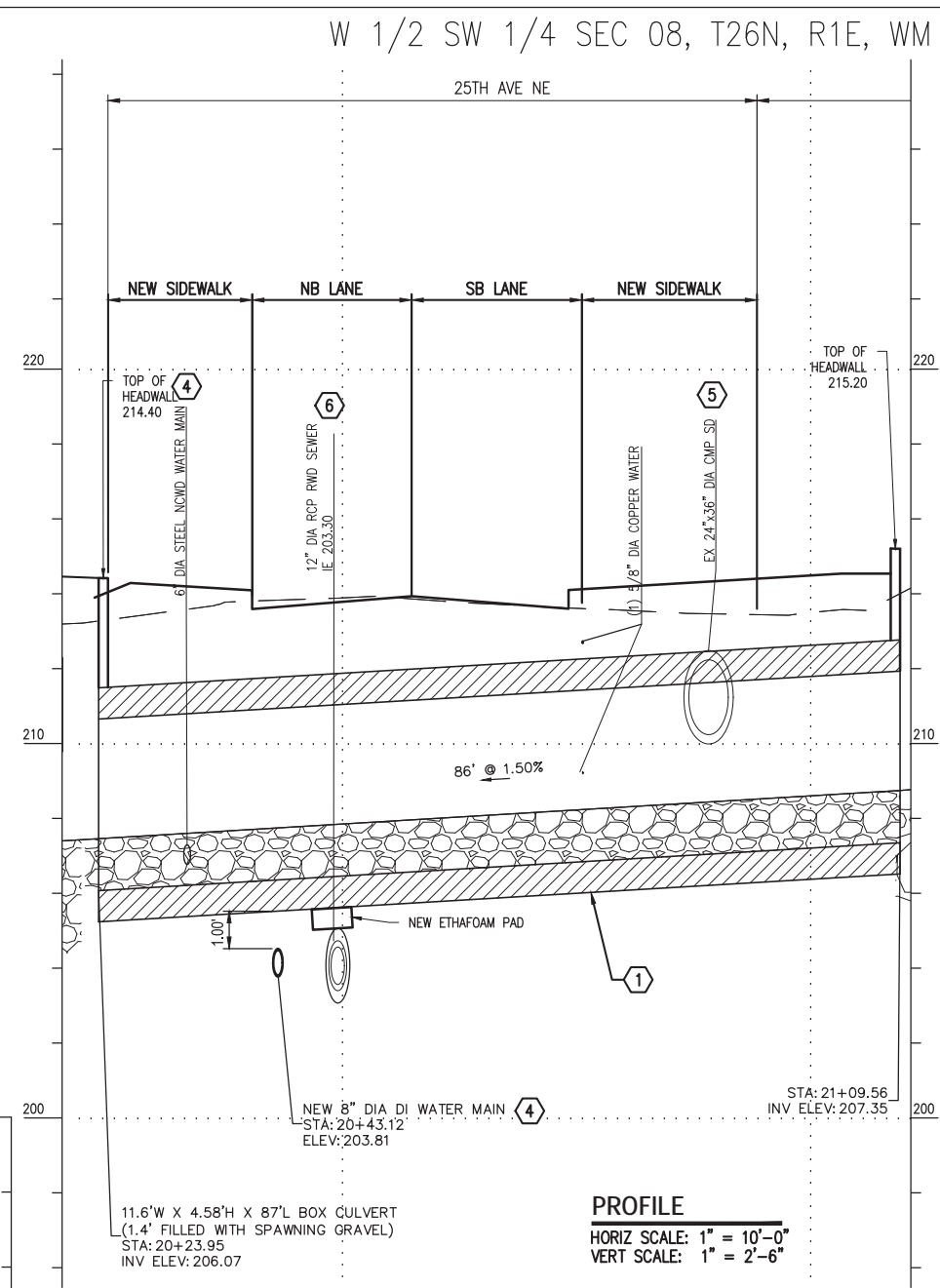




PLAN
SCALE: 1" = 10'-0"



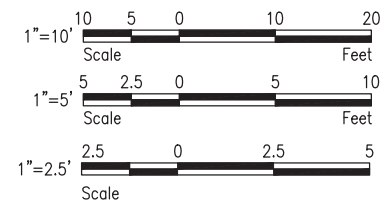
CROSS SECTION
STA 20+62
HORIZ SCALE: 1" = 5'
VERT SCALE: 1" = 2.5'



PROFILE
HORIZ SCALE: 1" = 10'-0"
VERT SCALE: 1" = 2'-6"

CONSTRUCTION NOTES

- ① 11.6' W X 4.58' H X 45' L CONCRETE BOX CULVERT. SEE SHEETS S-1 THROUGH S-21 FOR CULVERT AND WING WALL STRUCTURE PLANS, ELEVATIONS, AND SECTIONS.
- ② BURIED FIBER OPTIC TO BE RELOCATED BY OTHERS.
- ③ BURIED TEL TO BE RELOCATED BY OTHERS.
- ④ RELOCATE 6" DIA NCWD WATER MAIN TO ALLOW CULVERT CONSTRUCTION. SEE SHEET C10.
- ⑤ PLUG EXISTING 36" X 24" CMP ARCH AT LOCATION SHOWN. REMOVE SD AS NEEDED FOR NEW CULVERT INSTALLATION.
- ⑥ INSTALL 20" DIA STEEL CASING ON APPROX 30 LF EX 12" DIA SEWER. SEE DETAIL 2 ON DWG C12.



Description	Date	Initials	Drawn	Designed	Checked	Revisions	Revisions
	12/31/19	JTE					
	12/31/19	JTE					
	12/31/19	MSG					

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**25TH AVENUE NE BALLINGER CREEK
FLOOD REDUCTION PROJECT
60% REVIEW SUBMITTAL
25TH AVE CULVERT PLAN,
SECTION, AND PROFILE**

Project No. _____

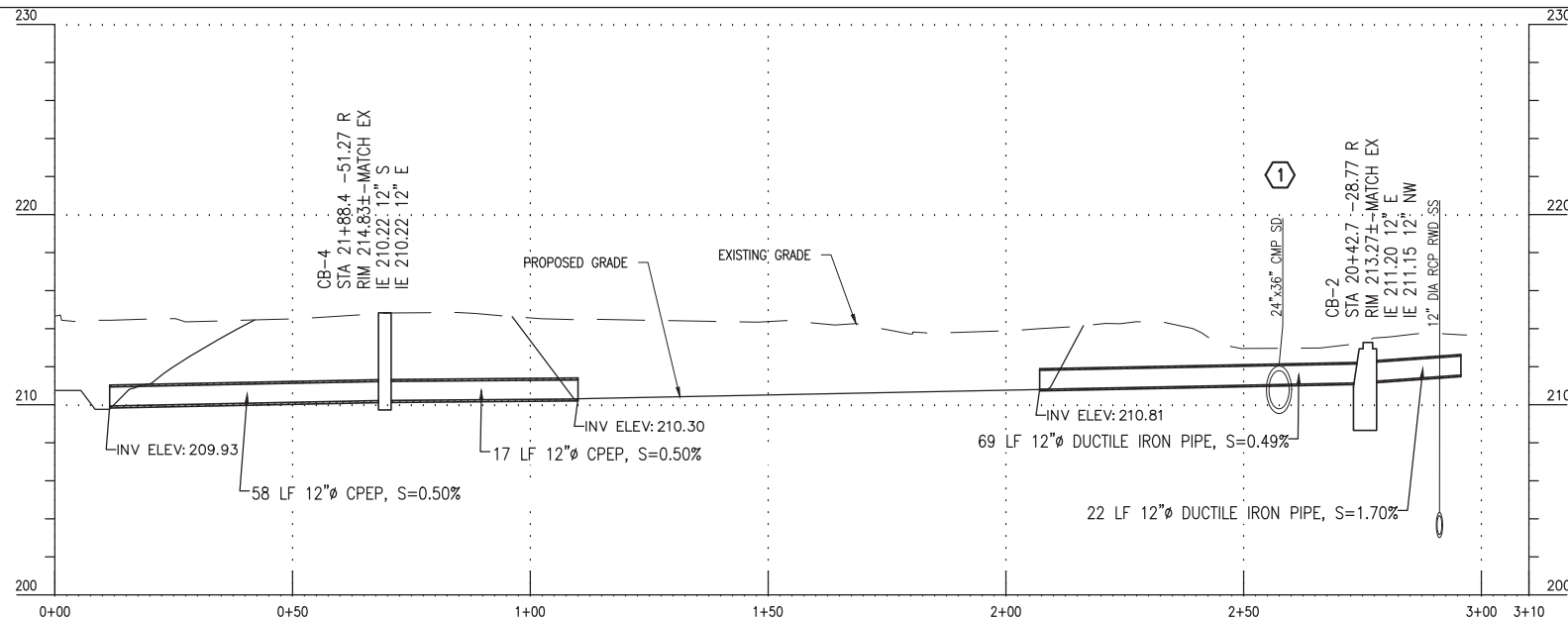
Dwg **C6**

Sheet 10 Of 55



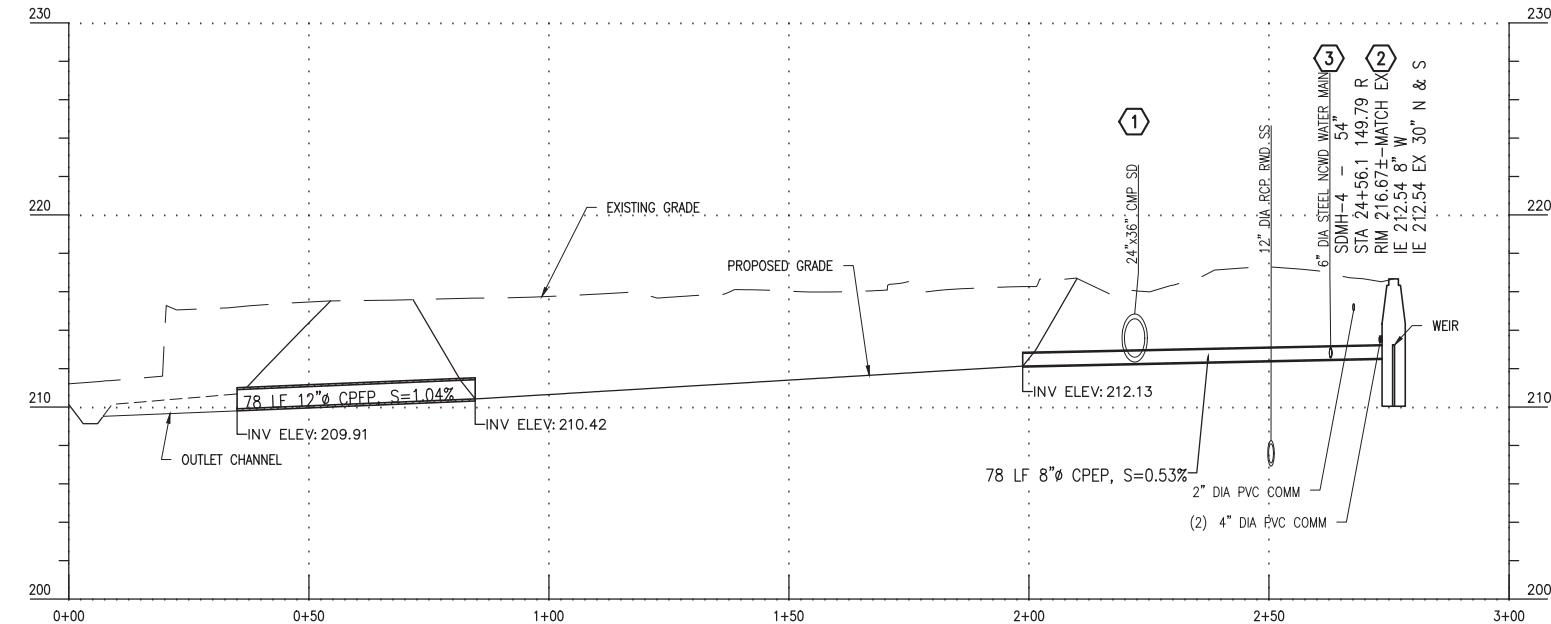
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VERIFY SCALE - BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.



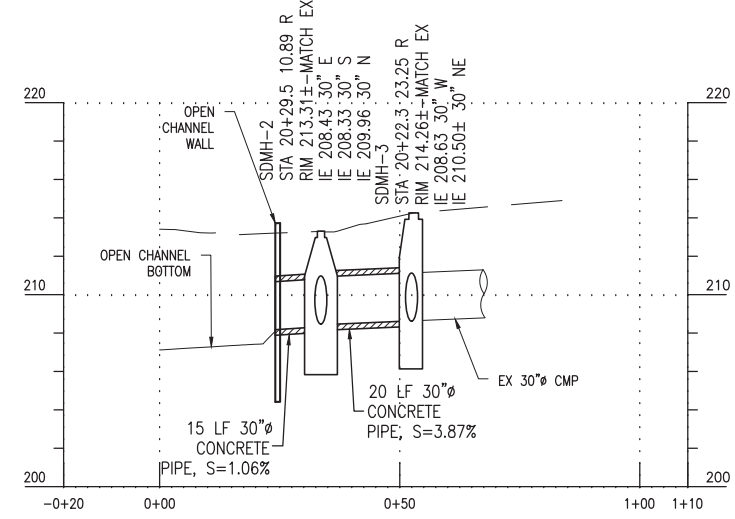
PROFILE #1 - BIOFILTRATION SWALE (SOUTH), STA 0+00 to 3+10

SCALE: 1"=20' HORZ.
1"=5' VERT.



PROFILE #2 - BIOFILTRATION SWALE PROFILE (NORTH), STA 0+00 to 3+00

SCALE: 1"=20' HORZ.
1"=5' VERT.

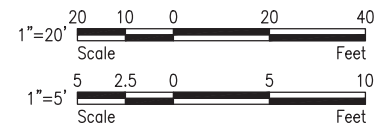


PROFILE #3 - SDMH-2 AND SDMH-3, STA -0+20 to 1+10

SCALE: 1"=20' HORZ.
1"=5' VERT.

CONSTRUCTION NOTES

- ① REMOVE SECTION OF 24"x36" CMP AS NEEDED FOR NEW 8" SD. REMAINDER TO BE FILLED WITH CDF AND ABANDONED.
- ② INSTALL WEIR IN SDMH-4 WITH TOP ELEVATION 213.201 TO DIVERT LOW FLOWS INTO 8" DIA CPEP PIPE.
- ③ REMOVE AND REPLACE APPROX 320 LF 6" STL WATER MAIN (BY OTHERS). SEE PROFILE 2 ON DWG C10.



Initials	Date	Description
JTE	12/31/19	
JTE	12/31/19	
MSG	12/31/19	

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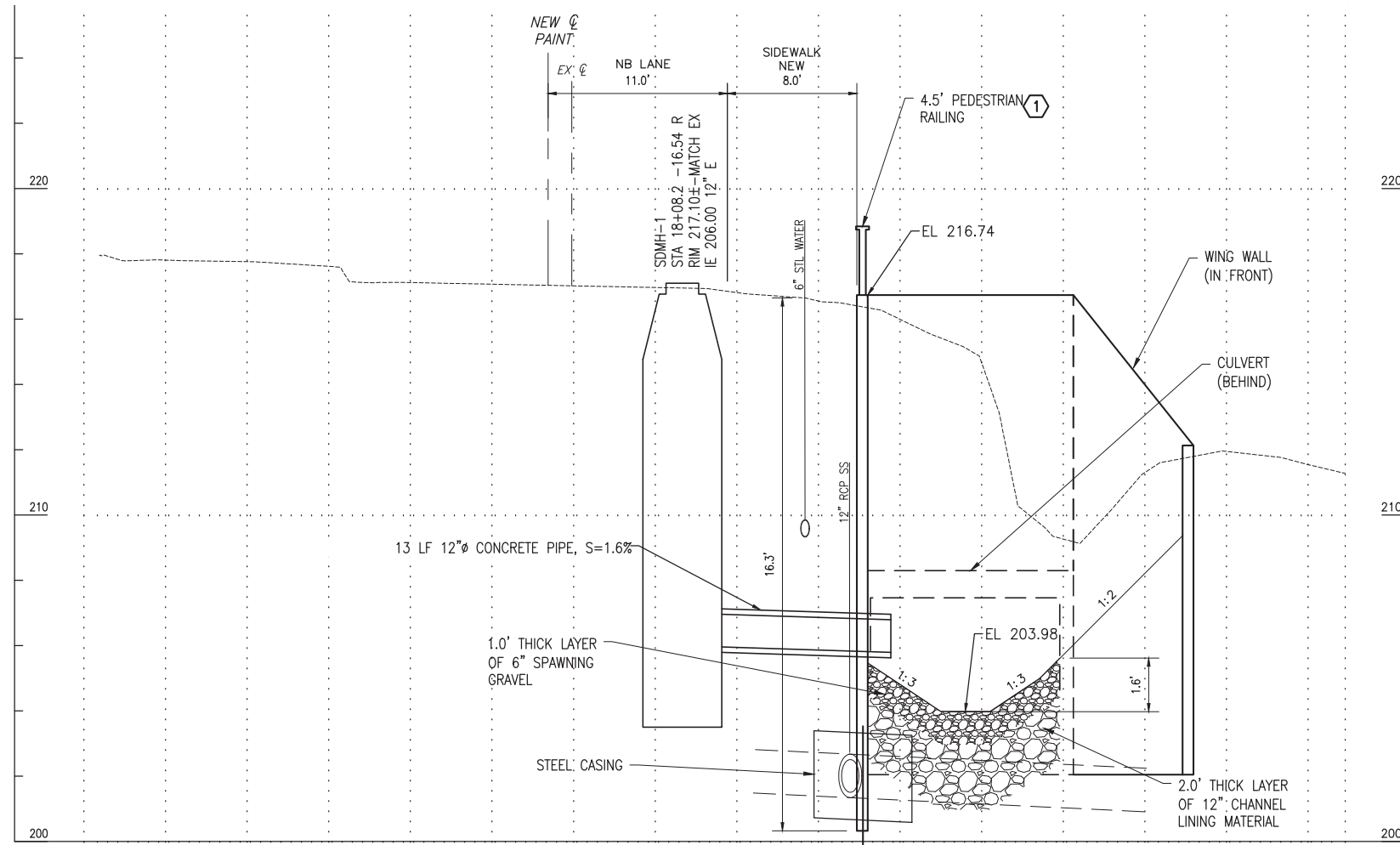
25TH AVENUE NE BALLINGER CREEK
 FLOOD REDUCTION PROJECT
60% REVIEW SUBMITTAL
 STORM SYSTEM IMPROVEMENT
PROFILES

Project No. _____

Dwg **C7**

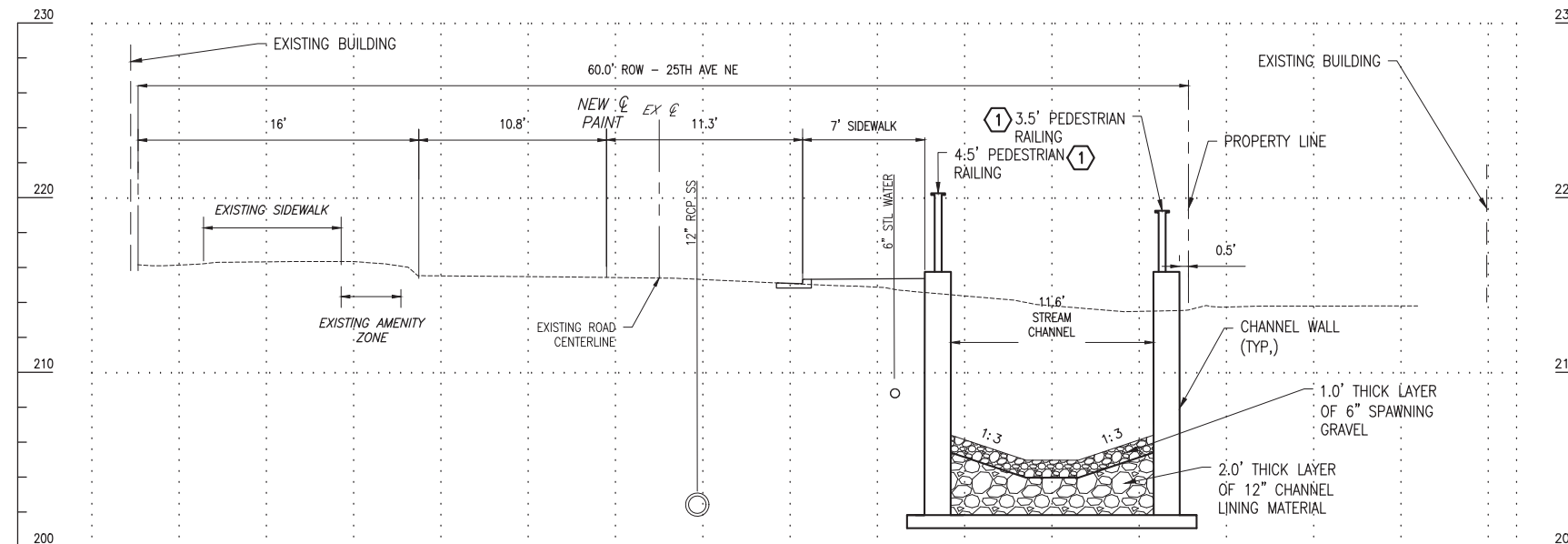
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VERIFY SCALE - BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.



CROSS SECTION

STA 18+08
 HORIZ SCALE: 1"=5'
 VERT SCALE: 1"=2.5'

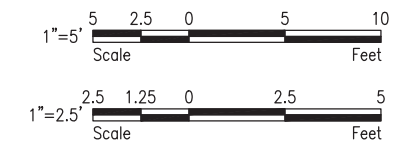


CROSS SECTION

STA 18+59
 HORIZ SCALE: 1"=5'
 VERT SCALE: 1"=5'

CONSTRUCTION NOTES

- 1 CONSTRUCT PEDESTRIAN RAIL PER CITY OF SHORELINE STANDARD DETAIL 324. USE 4.5' HEIGHT FOR RAIL ADJACENT TO SIDEWALK AND DRIVEWAYS. USE 3.5' HEIGHT ELSEWHERE.



Initials	Date	Description
JTE	12/31/19	
JTE	12/31/19	
MSG	12/31/19	



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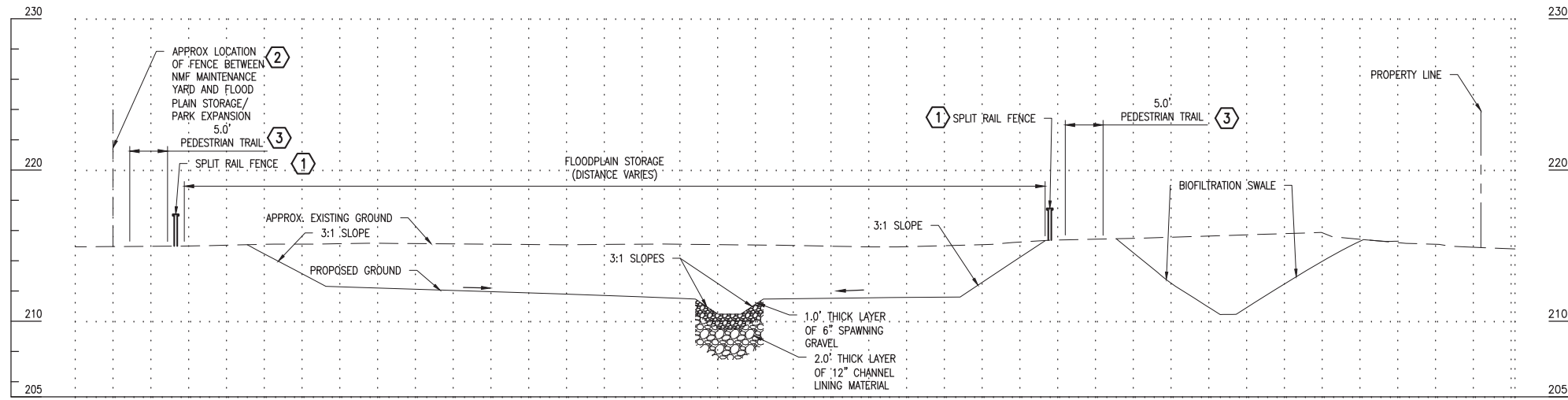
25TH AVENUE NE BALLINGER CREEK
 FLOOD REDUCTION PROJECT
 60% REVIEW SUBMITTAL
 STREAM CROSS SECTIONS - SHEET 1
 OF 2

Project No. _____

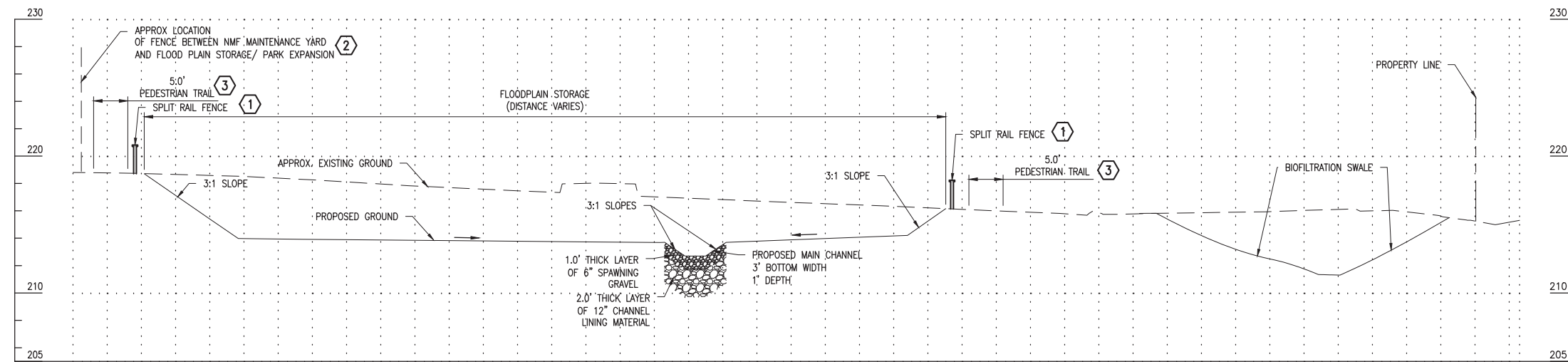
Dwg
C8

Sheet 12 Of 55

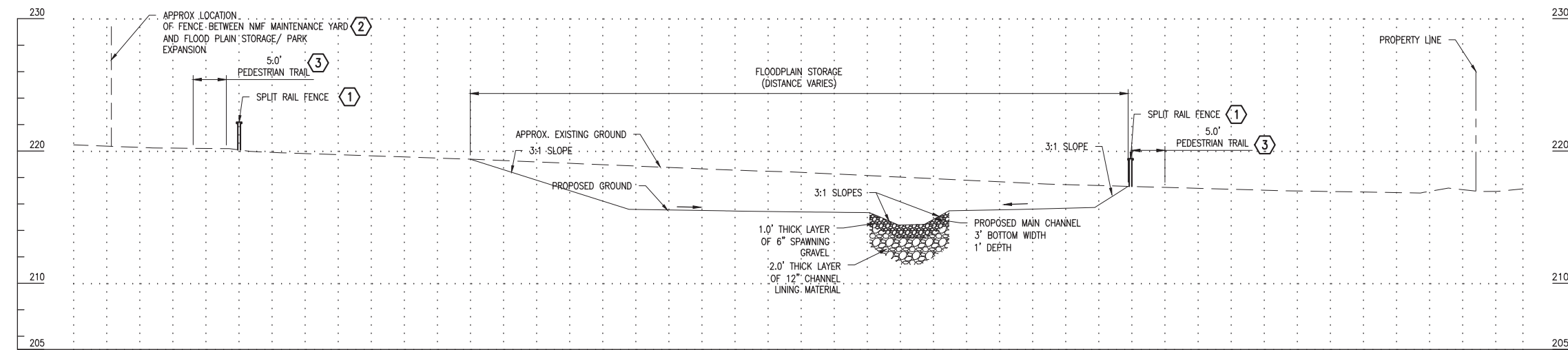




CROSS SECTION
 STA 22+10
 HORIZ SCALE: 1"=10'
 VERT SCALE: 1"=5'



CROSS SECTION
 STA 23+41
 HORIZ SCALE: 1"=10'
 VERT SCALE: 1"=5'



CROSS SECTION
 STA 24+23
 HORIZ SCALE: 1"=10'
 VERT SCALE: 1"=5'

CONSTRUCTION NOTES

- ① CONSTRUCT SPLIT RAIL FENCE PER DETAIL 4 ON DWG C12.
- ② CHAIN LINK FENCE BY OTHERS.
- ③ CONSTRUCT PEDESTRIAN TRAIL PER CITY OF SHORELINE STANDARD DETAIL 329.

Description	Date	Initials	Drawn	Designed	Checked	Revisions	Revisions
	12/31/19	JTE					
	12/31/19	JTE					
	12/31/19	MSG					

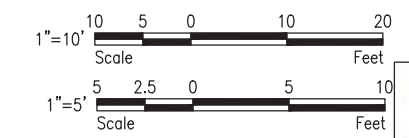


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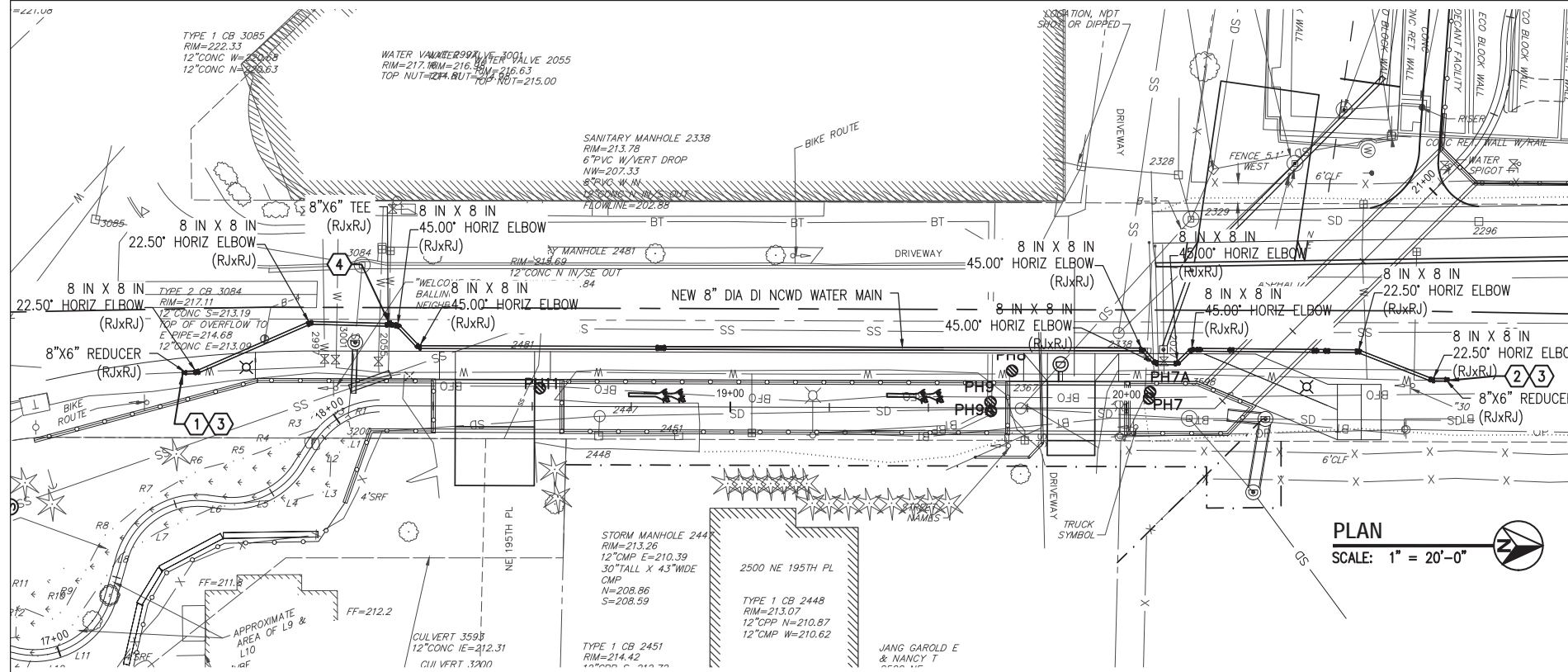
25TH AVENUE NE BALLINGER CREEK
 FLOOD REDUCTION PROJECT
 60% REVIEW SUBMITTAL
 STREAM CROSS SECTIONS - SHEET
 2 OF 2



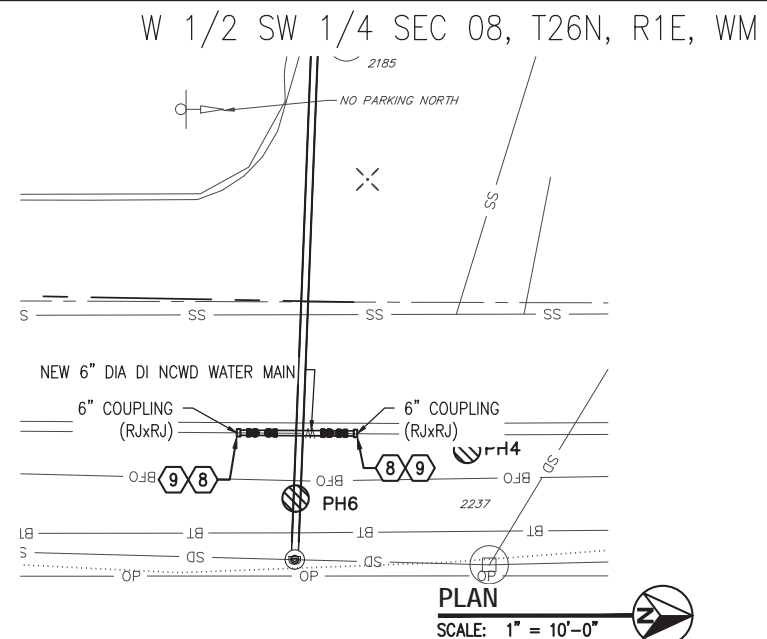
Project No. _____

Dwg **C9**

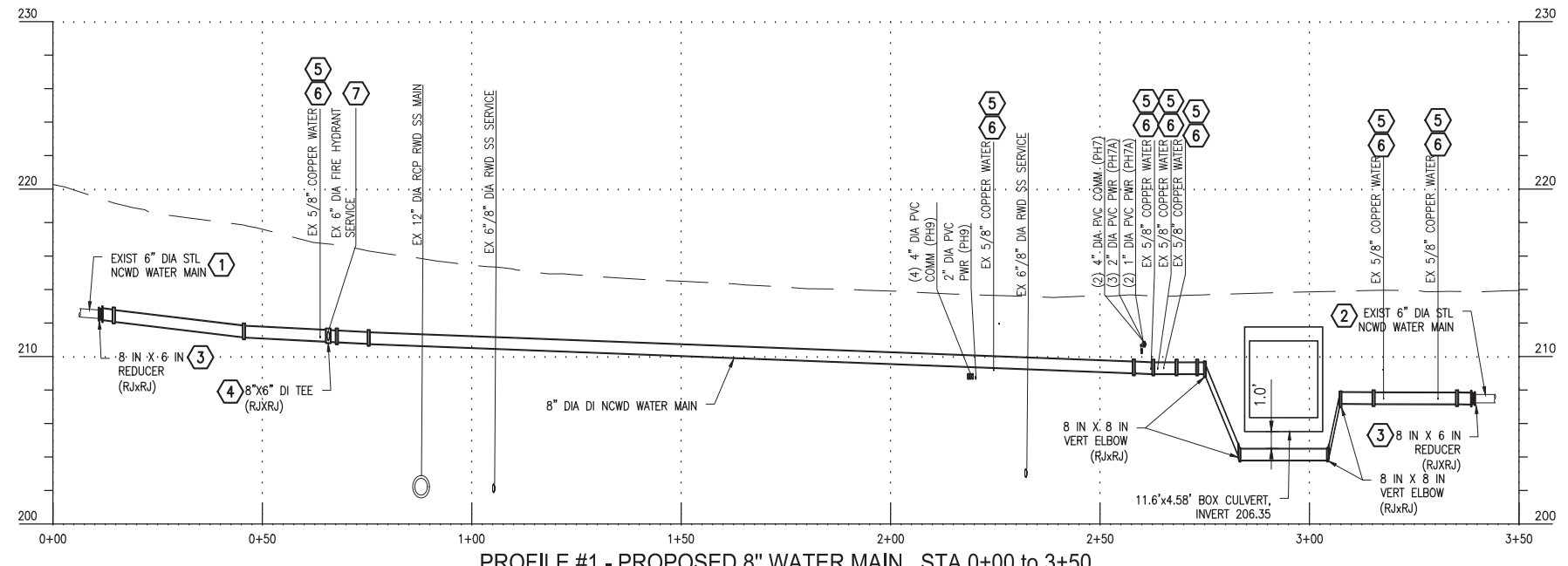
Sheet 13 Of 55



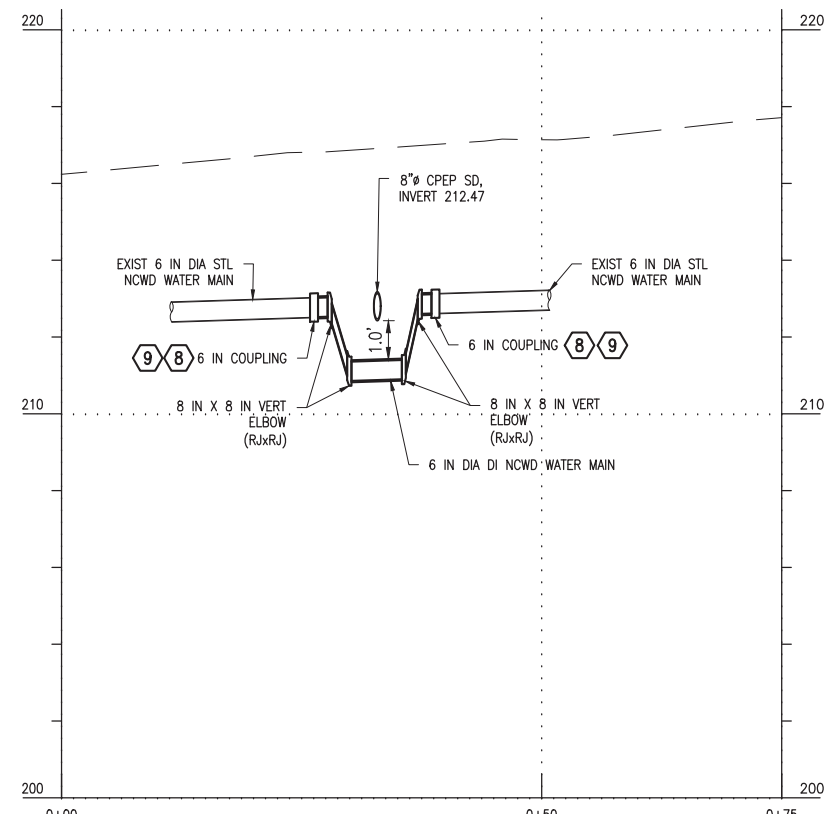
PLAN
SCALE: 1" = 20'-0"



PLAN
SCALE: 1" = 10'-0"



PROFILE #1 - PROPOSED 8" WATER MAIN, STA 0+00 to 3+50
SCALE: 1"=20' HORZ.
1"=5" VERT.



PROFILE #2 - 6" WATER MAIN RELOCATION, STA 0+00 to 0+75
SCALE: 1"=10' HORZ.
1"=2'-6" VERT.

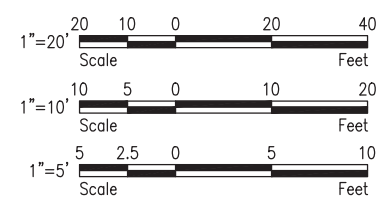
CONSTRUCTION NOTES

- ① CUT EXISTING 6" DIA STL WATER MAIN. REMOVE AS NECESSARY AND ABANDON REMAINING PIPE TO NORTH.
- ② CUT EXISTING 6" DIA STL WATER MAIN. REMOVE AS NECESSARY AND ABANDON REMAINING PIPE TO SOUTH.
- ③ CONNECT NEW 8" DIA DI WATER MAIN TO EXISTING 6" DIA STL WATER MAIN WITH 8"x6" REDUCER.
- ④ INSTALL 8"x6" TEE AND RE-CONNECT EXISTING 6" DIA FIRE HYDRANT SERVICE PER NCWD STD DTL #2.
- ⑤ CONNECT EXISTING WATER SERVICE TO NEW WATER MAIN WITH 1" CORPORATION STOP PER NCWD STD DTL #6. REPLACE VALVE WHERE REQUIRED.
- ⑥ DEPTH UNKNOWN.
- ⑦ DEPTH UNKNOWN. CONTRACTOR TO POTHOLE AND SUBMIT TO CITY FOR APPROVAL PRIOR TO CONSTRUCTION.

- ⑧ CUT EXISTING 6" DIA STL WATER MAIN. REMOVE PIPE IN AREA OF RELOCATION.
- ⑨ CONNECT NEW 6" DIA DI WATER MAIN TO EXISTING 6" DIA STL WATER MAIN WITH 6" COUPLING.

GENERAL NOTES

1. WATER LINE RELOCATION DESIGN AND CONSTRUCTION TO BE PERFORMED BY OTHERS. THIS PRELIMINARY DESIGN FOR RELOCATIONS PRESENTS AN OPTIONAL LOCATION AND DEPTH THAT WILL WORK WITH PROPOSED STREAM AND DRAINAGE IMPROVEMENTS. THE DESIGNER IS FULLY RESPONSIBLE FOR DESIGN OF THE RELOCATION.
2. LIMIT DISTURBANCE TO ONLY THOSE AREAS NECESSARY FOR CONSTRUCTING THE PROPOSED IMPROVEMENTS.
3. SHORING/TRENCH BOXES ARE REQUIRED. CUT SLOPE AT LESS THAN 1:1 WILL NOT BE ALLOWED.
4. PATCH FLEXIBLE PAVEMENT PER CITY OF SHORELINE STANDARD DETAIL 802.
5. PROTECT EXISTING LANDSCAPING AND VEGETATION. WHERE DISTURBED OR REMOVED DURING CONSTRUCTION, RESTORE SURFACE FEATURES IN KIND.
6. ALL NEW WATER MAIN TO BE 8" DIA RESTRAINED JOINT CLASS 52 DUCTILE IRON PIPE
7. MINIMUM PIPE COVER IS 3.0'. MAXIMUM PIPE COVER IS 6.0'.
8. COORDINATE CONNECTIONS TO EXISTING SYSTEM WITH NORTH CITY WATER DISTRICT AT 206-632-8100.
9. NOTE THIS ALIGNMENT ASSUMES WATER MUST BE IN SERVICE DURING CHANNEL CONSTRUCTION. IF IT CAN BE OUT OF SERVICE FOR SIX WEEKS, WATER COULD BE REPLACED IN CURRENT ALIGNMENT IN ORDER TO MAINTAIN GREATER SEPARATION FROM SEWER.



Description	Date	Initials	Drawn	Designed	Checked	Revisions	Revisions
	12/31/19	JTE					
	12/31/19	JTE					
	12/31/19	MSG					

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**25TH AVENUE NE BALLINGER CREEK
FLOOD REDUCTION PROJECT
60% REVIEW SUBMITTAL
WATER MAIN PLANS AND
PROFILES**

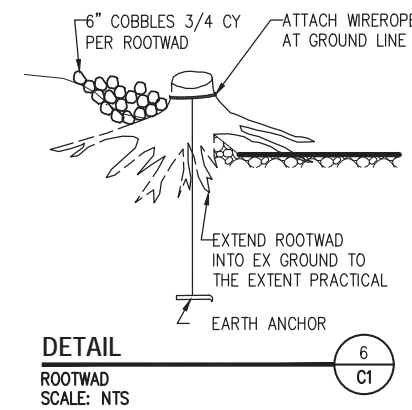
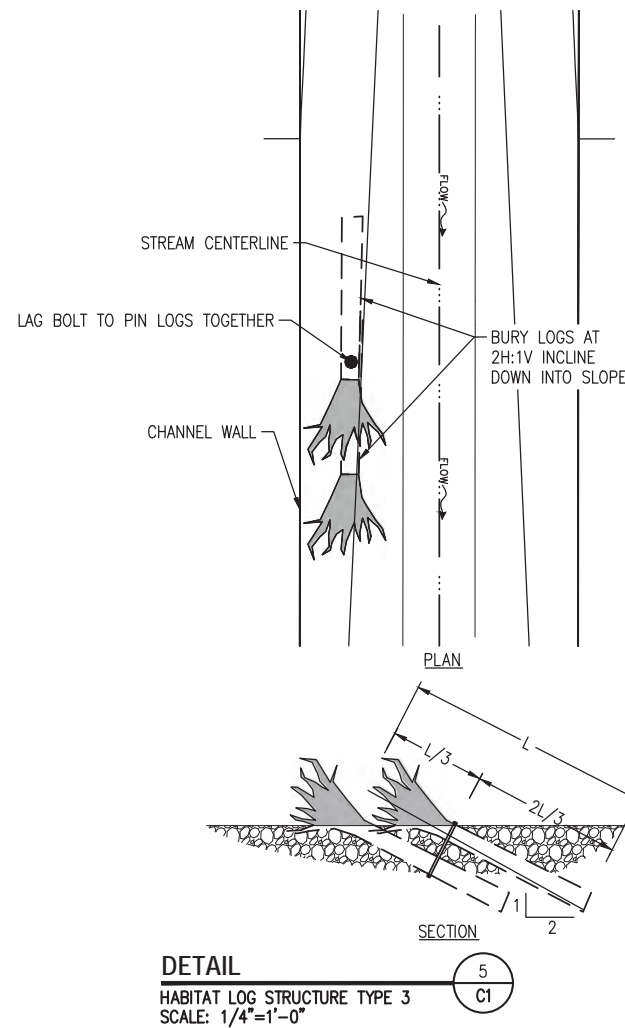
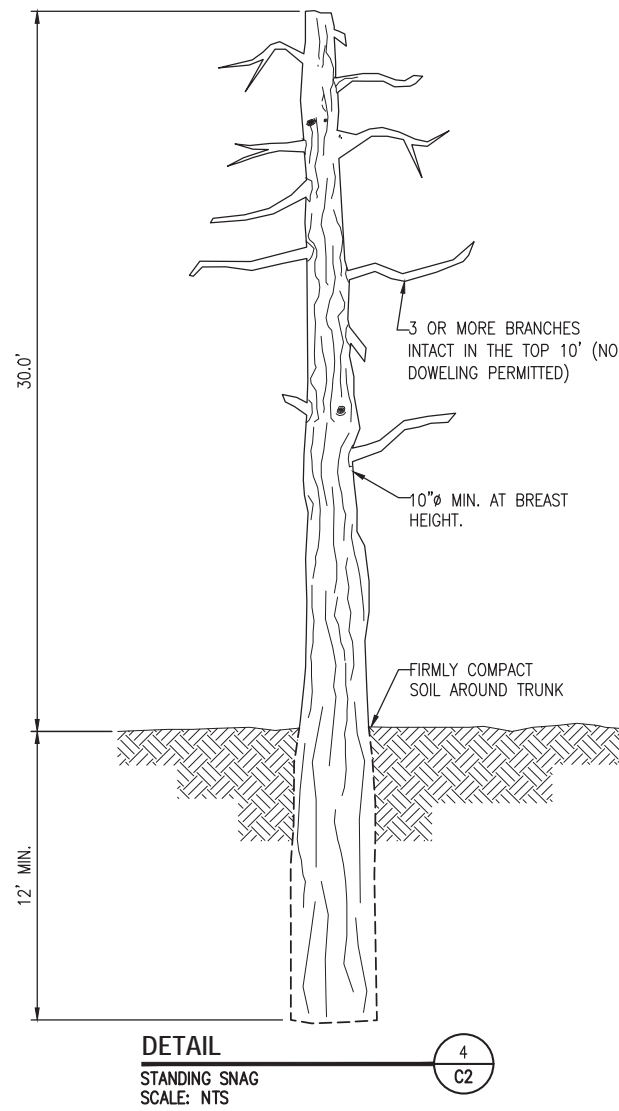
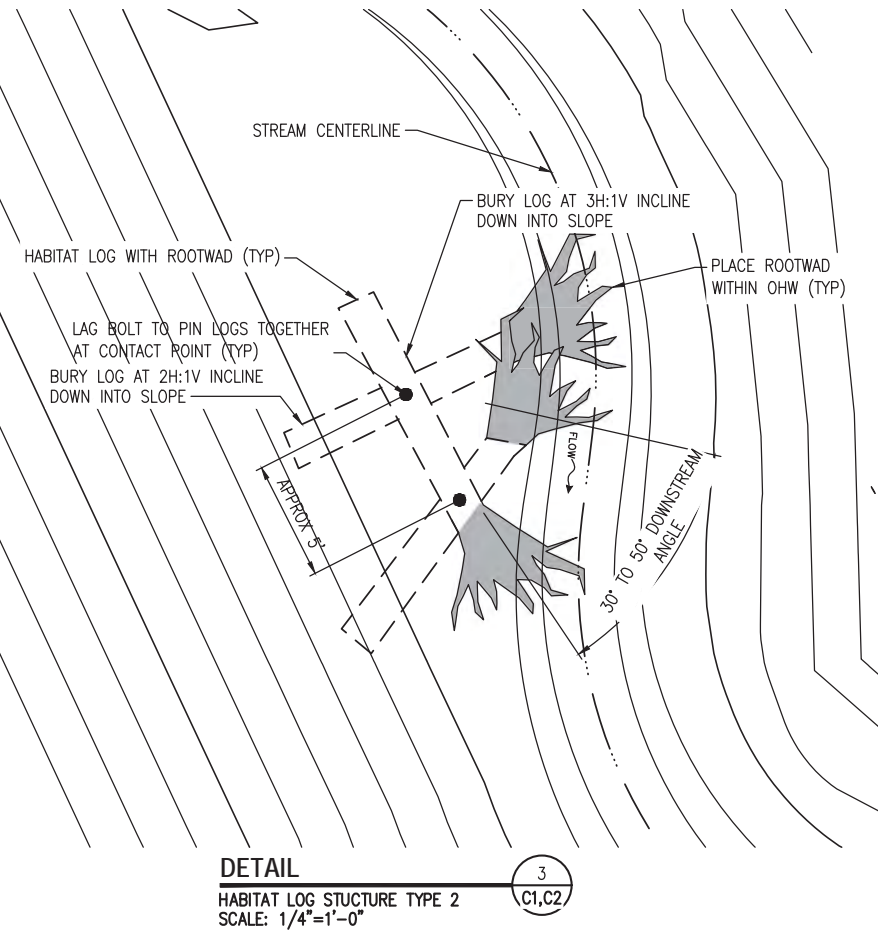
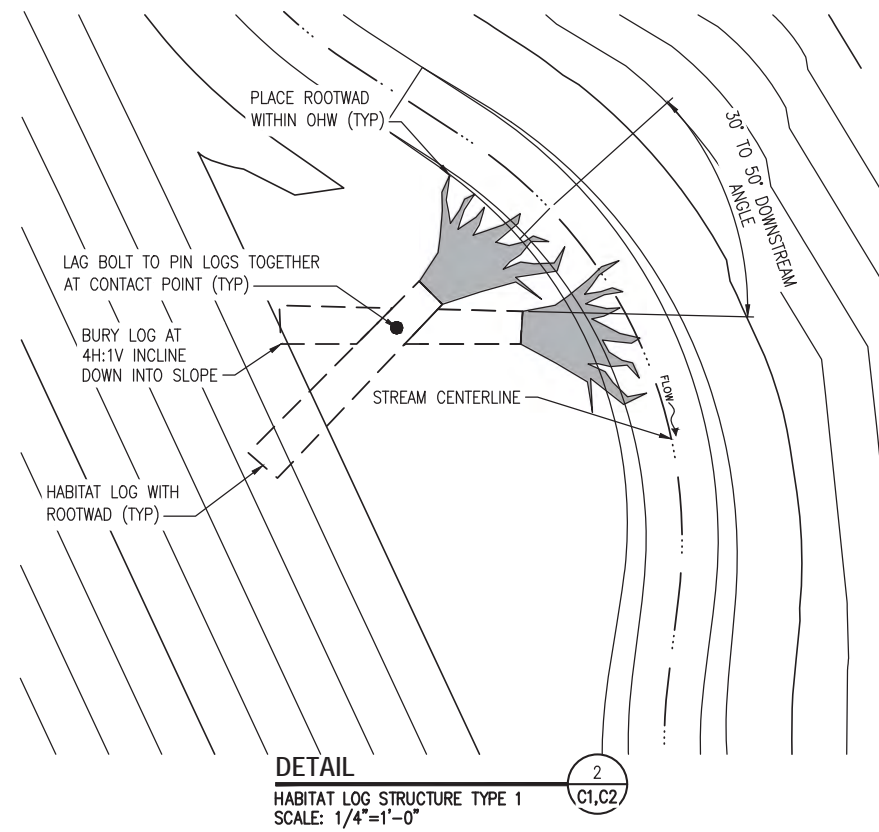
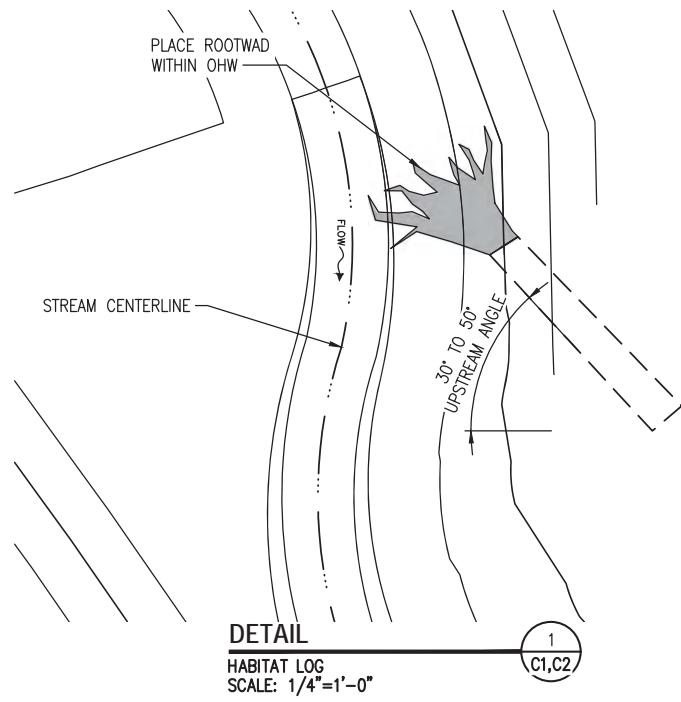
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Dwg **C10**



PATH: C:\projects\wisbn\811\4\lbg\user\d0309634\STREAM AND CULVERT P&P.dwg

VERIFY SCALE - BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.



GENERAL NOTES

- HABITAT LOGS SHALL BE 2/3 EMBEDDED (BY LENGTH) IN STREAM BANK.
- WHERE THERE IS INSUFFICIENT DEPTH WITHIN OPEN CULVERT SECTIONS, LOGS SHALL BE BOLTED TO PRECAST BOTTOM SECTION.



Description	Date	Initials	Drawn	Designed	Checked	Revisions	Revisions
	12/31/19	JTE					
	12/31/19	JTE					
	12/31/19	MSG					



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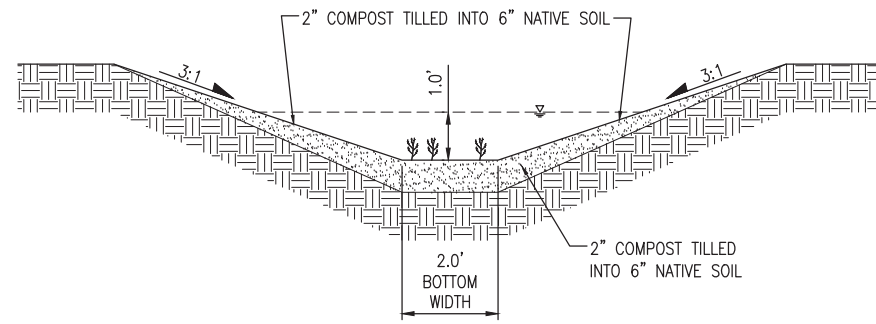
25TH AVENUE NE BALLINGER CREEK
FLOOD REDUCTION PROJECT
60% REVIEW SUBMITTAL
STREAM HABITAT DETAILS

Project No. _____

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C11

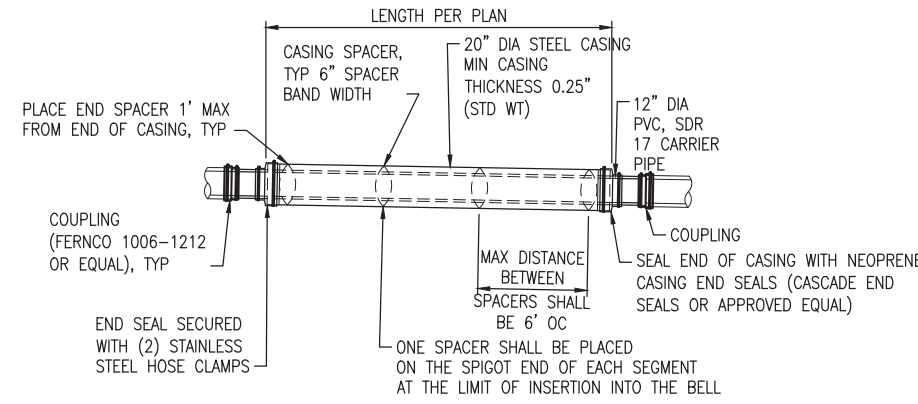
Sheet 15 Of 55





DETAIL
BIOFILTRATION SWALE
SCALE: 1/4"=1'-0"

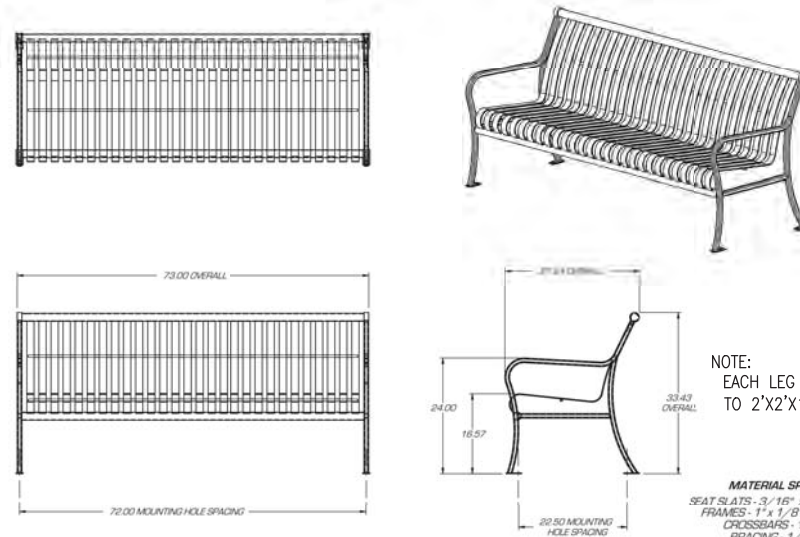
1
C2



DETAIL
STEEL SEWER CASING
SCALE: NTS

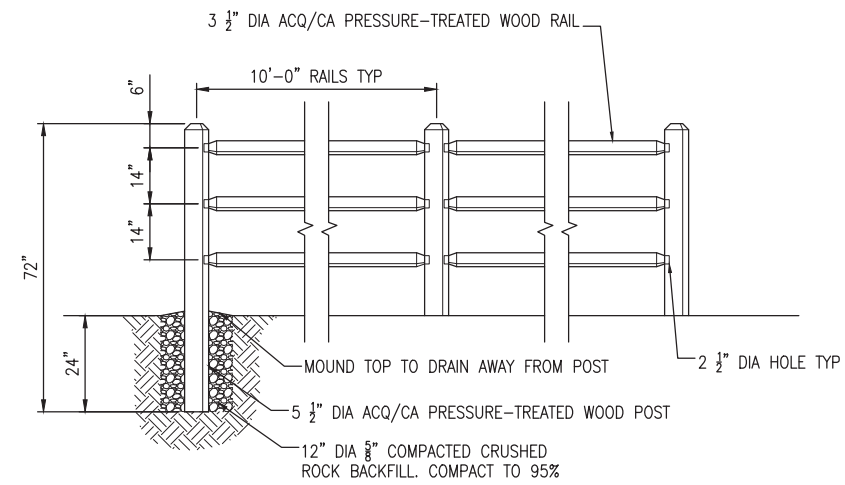
2
C2

- STEEL CASING NOTES:**
- CASING SPACERS SHALL BE "CENTER POSITIONING TYPE". MINIMUM RUNNER WIDTH SHALL BE 2".
 - RUNNER HEIGHT SHALL BE SIZED TO PROVIDE:
 - A. MIN 4" CLEARANCE BETWEEN CARRIER PIPE AND CASING PIPE.
 - B. MIN 1" CLEARANCE BETWEEN RUNNERS AND TOP OF CASING WALL TO PREVENT JAMMING DURING INSTALLATION.
 - STEEL CASING DIAMETER IS OUTSIDE DIAMETER.
 - ANTICORROSIVE COATING THICKNESS CASING - 3 MILLS. HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM A123.



DETAIL
PARK BENCH
SCALE: NTS

3
C2



DETAIL
SPLIT RAIL FENCE
SCALE: NTS

4
C2

Description	Date	Initials	Drawn	Designed	Checked	Revisions	Revisions
	12/31/19	JTE					
	12/31/19	JTE					
	12/31/19	MSG					



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25TH AVENUE NE BALLINGER CREEK
FLOOD REDUCTION PROJECT
60% REVIEW SUBMITTAL
MISCELLANEOUS CIVIL DETAILS



Project No. _____

Dwg
C12

Sheet 16 Of 55

12/31/2019 11:33 AM - PLOT DATE

GENERAL NOTES

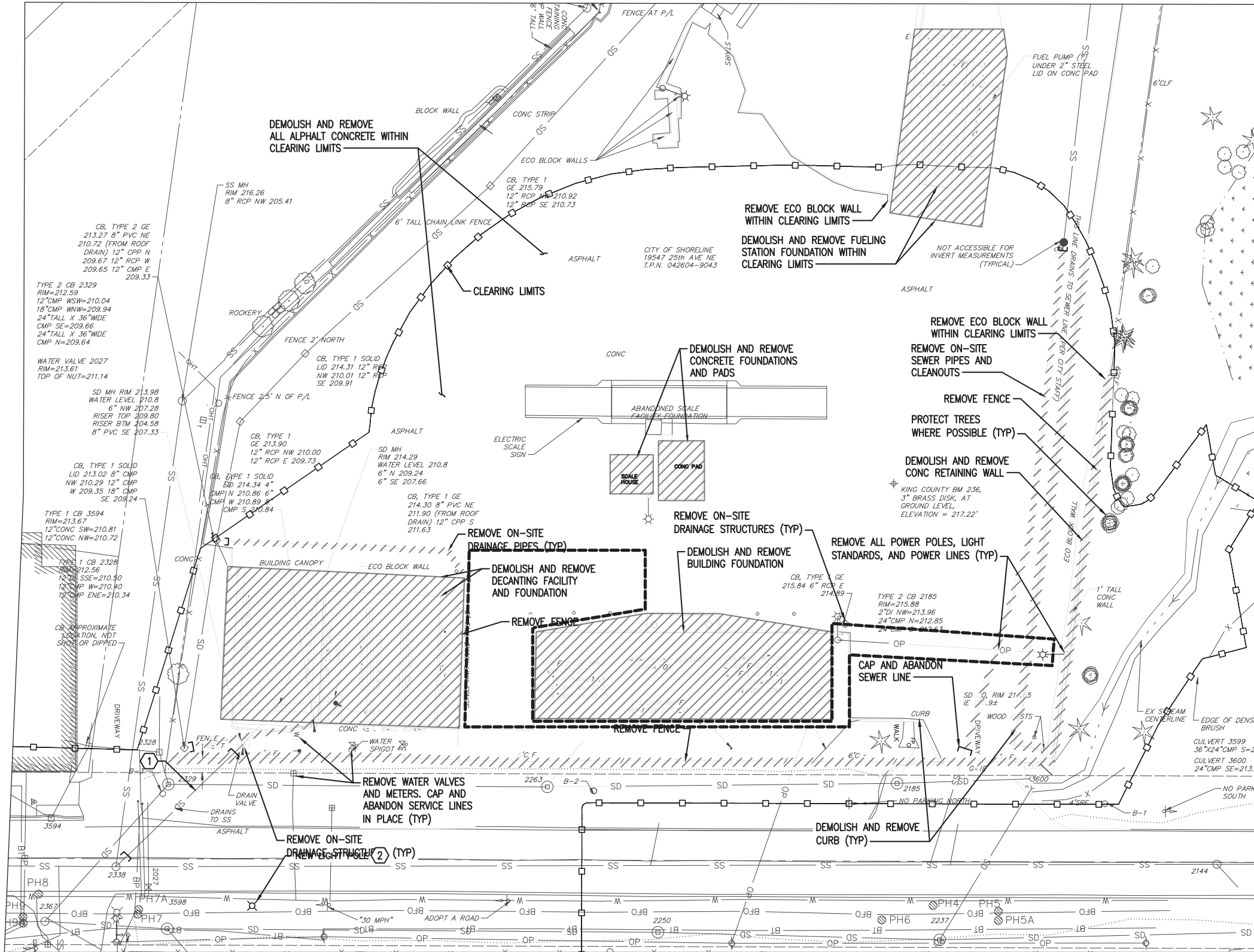
- CONTRACTOR IS ADVISED THAT CONTAMINATED MATERIALS WILL BE ENCOUNTERED WITHIN THE PROPOSED EXCAVATION AREA AND THAT EXISTING BUILDING STRUCTURES CONTAIN REGULATED MATERIALS. REFER TO THE FOLLOWING DOCUMENTS IN APPENDIX A OF THE SPECIFICATIONS.
 - SUPPLEMENTAL ENVIRONMENTAL LIMITED SITE INVESTIGATION (TERRACON, 2017).
 - ENVIRONMENTAL MEDIA MANAGEMENT PLAN (TERRACON, 2019).
 - TARGETED REGULATED BUILDING MATERIAL INSPECTION REPORT (TERRACON, 2019).
- THIS DRAWING IDENTIFIES SOME AREAS WHERE POTENTIAL CONTAMINANTS MAY BE FOUND. OTHER AREAS NOT IDENTIFIED MAY EXIST.
- REFER TO SPECIFICATIONS FOR MONITORING AND SAMPLING REQUIREMENTS.
- REFER TO SPECIFICATIONS FOR DISPOSAL REQUIREMENTS.
- APPENDIX A OF THE CONTRACT SPECIFICATIONS CONTAIN ORIGINAL DESIGN DRAWINGS FOR THE DECANT FACILITY.
- COORDINATE WITH PSE FOR REMOVAL AND DISCONNECTION OF OVERHEAD POWER.
- CONTRACTOR RESPONSIBLE FOR REMOVAL AND DISPOSAL OF ALL SURFACE AND SUBSURFACE STRUCTURES REGARDLESS OF WHETHER THEY ARE SHOWN ON THE SURVEY. CERTAIN UNDERGROUND PIPES MAY BE PLUGGED AND ABANDONED SUBJECT TO ENGINEER APPROVAL.

CONSTRUCTION NOTES

- ABANDON AND FILL W/ CDF.

LEGEND

- POTENTIAL CONTAMINATED AREA BASED ON PRIOR SITE SAMPLING AND OBSERVATIONS.
- DEMOLITION/REMOVAL



PLAN
SCALE: 1" = 20'-0"



Description	Date	Initials	Drawn	Designed	Checked	Revisions	Revisions
	12/31/19	JTE					
	12/31/19	JTE					
	12/31/19	MSG					

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25TH AVENUE NE BALLINGER CREEK
FLOOD REDUCTION PROJECT
60% REVIEW SUBMITTAL
BALLINGER CREEK FLOODPLAIN STORAGE
AREA SITE DEMOLITION PLAN

Project No. _____

Dwg **C13**

Sheet 17 Of 55



EXISTING UTILITY DATA									
POT HOLE #	TYPE OF UTILITY	MATERIAL	SIZE OF UTILITY	GROUND EL	MEASUREMENT TO TOP OF UTILITY	MEASUREMENT TO BOTTOM OF UTILITY	APPROX. EL OF BOTTOM OF UTILITY	DISTANCE FROM FOG LINE/CENTER LINE/CURB	NOTES
3	FIBER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	F.O. NOT FOUND PRESUMED LOCATION IN SIDEWALK. 66" WATER ENCOUNTERED. CITY OF SHORELINE DENIED PERMISSION TO DISTURB SIDEWALK PANEL
4	WATER	STEEL	6"	217.13'	47.0"	53.0"	212.71'	3'9" / 15'4" / N/A	
5	COM	PVC	2"	217.36'	26.0"	28.0"	215.03'	5'9" / 17'5" / N/A	
5A	COM	PVC	(2) 4"	217.40'	34.5"	38.5"	214.19'	8'11" / 20'4" / N/A	
6	COM	PVC	(2) 4"	216.69'	35.5"	40.0"	213.36'	8'10" / 20'6" / N/A	
7	COM	PVC	(2) 4", (3) 2", (2) 1"	213.49'	30.0"	35.0"	210.57'	8'2" / 19'4" / N/A	
7A	PWR	PVC	(3) 2", (1) 1"	213.68'	37.0"	42.0"	210.18'	6'7" / 17'8" / N/A	MISSING REPORT
8	WATER	COPPER	5/8"	213.47'	51.0"	51.6"	209.17'	1" / 12'5" / N/A	
9	COM/POWER	PVC	(4) 4", (1) 2"	213.57'	55.0"	59.0"	208.65'	8'11" / 20'4" / N/A	
9A	STORM	STEEL/CMP	48"	213.56'	23.5"	71.5"	207.60'	11'2" / 22'7" / N/A	
11	COM	PVC	(2) 4"	214.57'	36.0"	40.5"	211.20'	5'1" / 17'2" / N/A	
11A	SEWER								UTILITY NOT FOUND

Description	Date	Initials	Drawn	Designed	Checked	Revisions	Revisions
	12/31/19	JTE					
	12/31/19	JTE					
	12/31/19	MSG					



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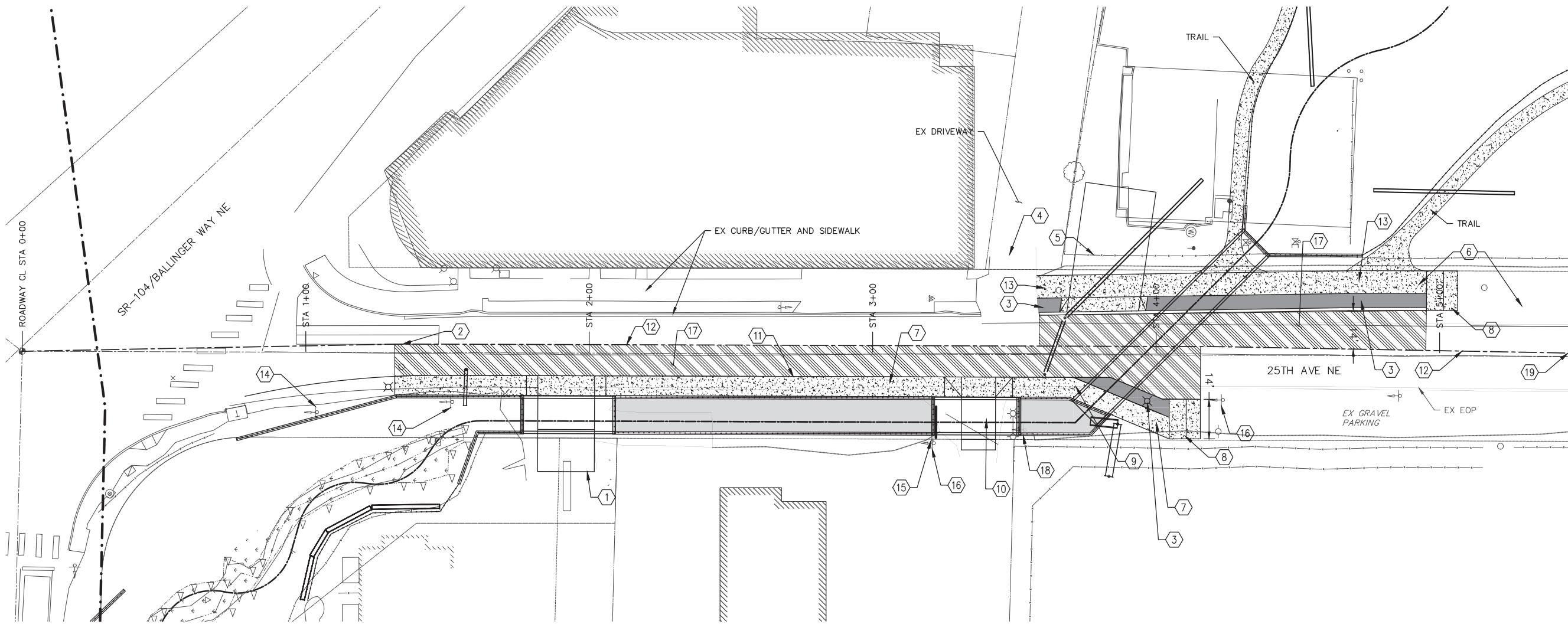
25TH AVENUE NE BALLINGER CREEK
 FLOOD REDUCTION PROJECT
 60% REVIEW SUBMITTAL
 POT HOLE DATA TABLE

Project No. _____

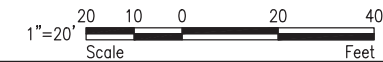
Dwg
C14

Sheet 18 Of 55





PLAN
SCALE: 1" = 20'-0"



KEYED NOTES

- ① REPLACE DRIVEWAY PER COS STD DTL 303. MODIFY WIDTH TO 20'.
- ② SHIFT ROADWAY CENTERLINE PAINT TO WEST OF ROW CENTERLINE. SEE SECTION 4 ON DWG C8 AND TABLE ON THIS DWG.
- ③ 5' WIDE AMENITY ZONE PER COS STD DTL 308.
- ④ EXISTING 20' AC PAVEMENT DRIVEWAY TO REMAIN.
- ⑤ NEW DRIVEWAY TO NMF PER COS STD DTL 301 (WIDTH 25').
- ⑥ SIDEWALK ADJACENT TO NMF SITE TO BE INSTALLED BY NMF PROJECT PRIOR TO THIS PROJECT. REMOVE AND REPLACE AS NECESSARY FOR CULVERT AND STORM DRAIN INSTALLATION.
- ⑦ 7' SIDEWALK (INCLUDING 0.5' CURB).
- ⑧ ASPHALT TRANSITION RAMP TO SHOULDER PER COS STD DTL 311.
- ⑨ SIDEWALK TRANSITIONS FROM 7' WIDE WITH NO AMENITY ZONE TO 7' WIDE WITH 5' AMENITY ZONE
- ⑩ NEW DRIVEWAY PER COS STD DTL 303. MATCH EXISTING WIDTH; APPROX. 12'.
- ⑪ TYPE A CURB AND GUTTER PER COD STD DTL 312 (TYP).
- ⑫ DOUBLE CENTERLINE PER COS STD DTL 403.
- ⑬ 7' SIDEWALK.
- ⑭ PROTECT AND/OR REPLACE ROADWAY SIGN. ALL RELOCATIONS SHALL BE IN ACCORDANCE WITH COS STD DTLS 501, 508, 509, AND 510 AS APPLICABLE.
- ⑮ RELOCATE EXISTING MAILBOX TO NEW LOCATION SHOWN. INSTALL PER COS STD DTL 515.
- ⑯ RELOCATE ROADWAY SIGN TO NEW LOCATION SHOWN. ALL RELOCATIONS SHALL BE IN ACCORDANCE WITH COS STD DTLS 501, 508, 509, AND 510 AS APPLICABLE.
- ⑰ APPROXIMATE AREA OF HMA GRIND AND OVERLAY. EXTENTS TO BE DETERMINED BY ENGINEER. DEPTH OF GRIND SHALL BE 2 INCHES. ALL TRANSITIONS TO EXISTING SHALL BE SAWCUT.
- ⑱ REMOVE AND DISPOSE OF TRUCK WARNING SIGN.
- ⑲ TAPER TO MATCH EXISTING. SEE TABLE 1.

TABLE 1

STA	CL PAINT OFFSET FROM ROW CL
0+00	0'
1+00	2.26'
2+00	3'
3+00	3'
4+00	3'
5+00	1.83'
6+00	0.33'

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Initials	Date	Description
JTE	12/31/19	
JTE	12/31/19	
MSG	12/31/19	

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25TH AVENUE NE BALLINGER CREEK
 FLOOD REDUCTION PROJECT
 60% REVIEW SUBMITTAL
 25TH AVENUE NE ROADWAY
 RESTORATION PLAN

Project No. _____

Dwg **RR1**

Sheet 19 Of 55



VERIFY SCALE - BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" - IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

GENERAL STREAM BYPASS NOTES

1. THIS DRAWING INCLUDES A PRELIMINARY STREAM BYPASS PLAN NECESSARY FOR PERMIT APPROVAL. THIS PLAN REPRESENTS THE MINIMUM WORK NECESSARY TO PROTECT THE WORK AREA AND CONTRACTOR IS RESPONSIBLE FOR DEVELOPING FINAL STREAM BYPASS NEEDED TO PROTECT WORK AREA.
2. CONTRACTOR SHALL CAPTURE AND SAFELY REMOVE AND RELOCATE FISH WITHIN THE TEMPORARY DIVERSION AREA IN ACCORDANCE WITH THE PLANS, SPECIFICATIONS, AND HPA REQUIREMENTS. PRIOR TO INSTALLING TEMPORARY BYPASS, CONTRACTOR SHALL OBTAIN A WASHINGTON DEPARTMENT OF FISH AND WILDLIFE (WDFW) SCIENTIFIC COLLECTING PERMIT PER SPEC SECTION 1-07.6 AND INSTALL FISH BLOCK NETS AND HAND NET FISH FROM WORK AREA PER PERMIT REQUIREMENTS. CONTRACTOR SHALL HAVE A QUALIFIED BIOLOGIST CAPTURE AND SAFELY MOVE FOOD FISH, GAME FISH, AND OTHER FISH LIFE FROM THE JOB SITE. CAPTURED FISH SHALL BE IMMEDIATELY AND SAFELY TRANSFERRED TO FREE FLOWING WATER DOWNSTREAM OF THE PROJECT SITE.
3. ALL WORK MUST BE IN ACCORDANCE WITH THE PROJECT HPA. ALL IN-STREAM WORK MUST BE COMPLETED WITHIN THE ALLOWED FISH WINDOW (JULY 1 THROUGH AUGUST 13).

PRELIMINARY CONSTRUCTION SEQUENCE AND PHASING

NOTE TO 60% REVIEWERS: PHASING AND SEQUENCING IS PRELIMINARY DUE TO UNCERTAINTIES INCLUDING; COORDINATING THE NORTH MAINTENANCE FACILITY (NMF) WORK AND USING THE FLOODPLAIN STORAGE AREA FOR NMF CONSTRUCTION, SEQUENCING BETWEEN THIS PROJECT AND THE DOWNSTREAM PORTION WITHIN LAKE FOREST PARK (IN PARTICULAR THE LOWERING OF THE CHANNEL PROFILE JUST NORTH OF NE 195TH STREET, WHICH WOULD REQUIRE DIFFERENT TRANSITIONS DEPENDING ON WHICH PROJECT IS FIRST).

GENERAL PHASING

- PRIOR TO FISH WINDOW:
- COMPLETE SITE IMPROVEMENTS FOR THE FLOODPLAIN STORAGE AREA OUTSIDE OF BALLINGER CREEK ORDINARY HIGH WATER. THIS MAY INCLUDE WALLS 9 AND 10 AT CONTRACTOR'S DISCRETION.
 - COMPLETE 25TH AVE NE UTILITY RELOCATIONS TO ALLOW CONSTRUCTION OF CHANNELS AND CULVERTS.

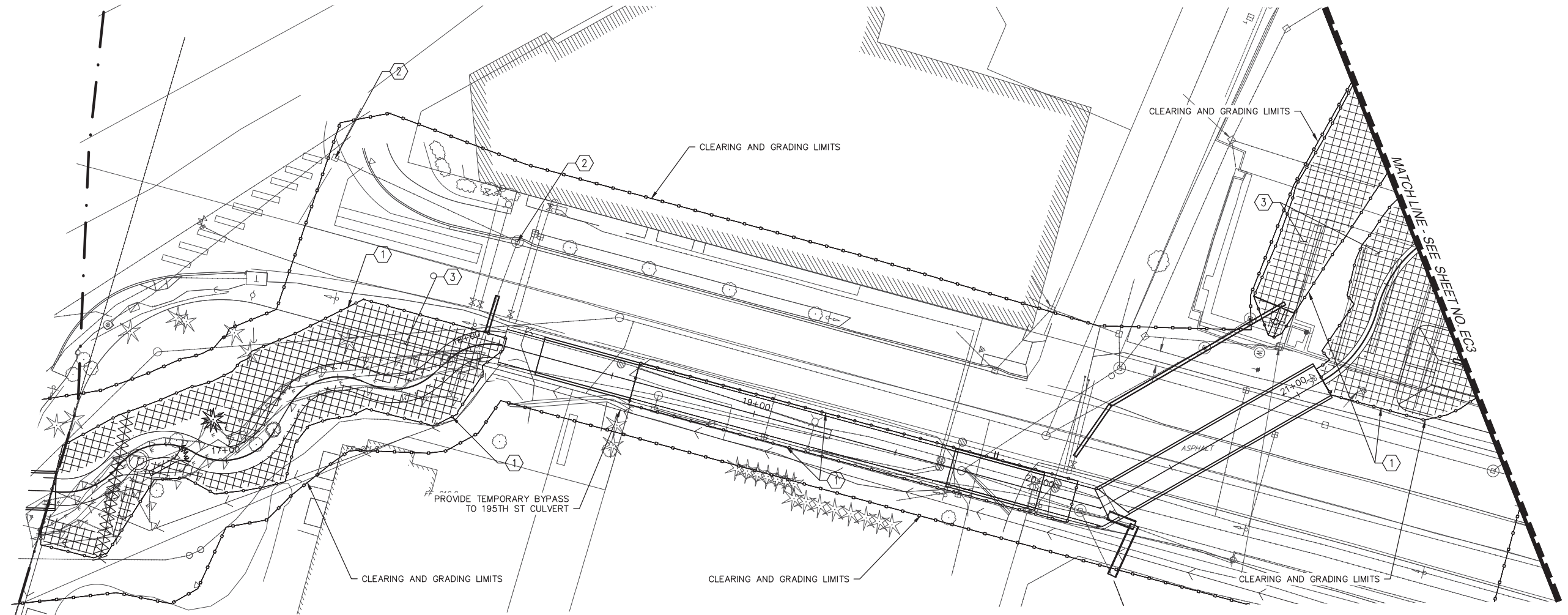
COMPLETE WORK ALONG 25TH AVE NE (PHASE 1) TO INCLUDE IMPROVEMENTS FROM NE 195TH STREET TO AND INCLUDING DRIVEWAY # 2. DURING WORK ASSOCIATED WITH DRIVEWAY #2, CONTRACTOR SHALL PROVIDE TEMPORARY ACCESS TO 2500 NE 195TH PL USING TEMPORARY CONSTRUCTION EASEMENT AS SHOWN.

COMPLETE WORK ALONG 25TH AVE NE (PHASE 2) TO INCLUDE THE 25TH AVENUE NE CULVERT CROSSING AND RELATED WORK. DURING THIS PHASE, DRIVEWAY #2 SHALL BE USED TO PROVIDE ACCESS TO 2500 NE 195TH PL.

PRELIMINARY SEQUENCING

1. SUBMIT REQUIRED CONSTRUCTION SUBMITTALS PER SECTION 1-05.9 INCLUDING BUT NOT LIMITED TO PROJECT SCHEDULE AND SEQUENCE, PRE-CONSTRUCTION PHOTOS, TESC INFORMATION, AND MATERIAL SUBMITTALS.
2. ATTEND PRE-CONSTRUCTION CONFERENCE.
3. PLACE CONSTRUCTION SIGNAGE.
4. BEGIN TEMPORARY TRAFFIC CONTROL MEASURES AND ADJUST MEASURES AS NEEDED FOR SPECIFIC WORK AREAS.
5. IMPLEMENT PHASED TRAFFIC CONTROL PLAN.
6. INSTALL TESC MEASURES FOR ALL AREAS WHERE WORK WILL BE PERFORMED. TESC MEASURES SHALL BE PHASED AND ADVANCED AS WORK PROGRESSES.
7. COMPLETE WORK IN FLOODPLAIN STORAGE AREA (KEEPING AWAY FROM STREAM ORDINARY HIGH WATER. THIS WORK WILL REQUIRE DEWATERING.
8. COMPLETE SOME UTILITY RELOCATIONS, SOLDIER PILES, AND WORK ALONG 25TH AVE NE THAT CAN PROCEED PRIOR TO STREAM DIVERSION AND BEGINNING OF FISH WINDOW.
9. COMPLETE PREPARATIONS FOR 25TH AVENUE NE PHASE 1 IN-STREAM IMPROVEMENTS. THIS INCLUDES INSTALLATION OF DEWATERING, FISH REMOVAL, INSTALLATION OF FISH BARRIERS, AND INSTALLATION OF TEMPORARY STREAM BYPASS.
10. COMPLETE 25TH AVE NE PHASE 1 SITE IMPROVEMENTS INCLUDING DRIVEWAY CULVERTS, WALLS, CHANNEL WORK, AND STORM DRAINS. MODIFY PHASED TRAFFIC CONTROL PLAN AS NEEDED FOR ACTIVE WORK AREA.
11. UPON COMPLETION OF THE PHASE 1 WORK WITHIN THE ORDINARY HIGH WATER AREA, PROCEED TO 25TH AVE NE PHASE 2 WORK INCLUDING THE 25TH AVE NE CULVERT. RE-POSITION STREAM BYPASS AS NEEDED.
12. UPON COMPLETION OF ALL WORK WITHIN THE ORDINARY HIGH WATER, REMOVE TEMPORARY STREAM BYPASS.
13. PERFORM RESTORATION WORK ABOVE ORDINARY HIGH WATER, INCLUDING FINISHED GRADING, PLANTING, AND ROADWAY RESTORATION.
14. RESTORE CHANNELIZATION AND PAVEMENT MARKINGS.
15. REMOVE EROSION CONTROL MEASURES AFTER APPROVAL OF WORK AND WITH CITY APPROVAL.

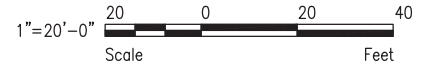
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PLAN
SCALE: 1" = 20'-0"

TESC NOTES

- 1 PROVIDE AND INSTALL SILT FENCE PER ECOLOGY BMP C233.
- 2 PROVIDE AND INSTALL CATCH BASIN INLET PROTECTION PER ECOLOGY BMP C220.
- 3 INSTALL EROSION CONTROL BLANKET PER ECOLOGY BMP C122 ON ALL EXPOSED SURFACES TO REMAIN EXPOSED FOR MORE THAN 7 DAYS DURING THE DRY SEASON, OR 2 DAYS DURING THE RAINY SEASON. EROSION CONTROL BLANKET SHALL BE PLACED OVER 6" AMENDED SOIL UPON SUBSTANTIAL COMPLETION.



Initials	Date	Description
JVE/UE	12/31/19	
JVE/UE	12/31/19	
MBC/UE	12/31/19	

Drawn	Designed	Checked	Revisions	Revisions

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25TH AVENUE NE BALLINGER CREEK
FLOOD REDUCTION PROJECT
60% REVIEW SUBMITTAL
TEMPORARY EROSION AND SEDIMENT
CONTROL PLAN - SHEET 1 OF 2

Project No. _____

Dwg **EC2**

Sheet 21 Of 55

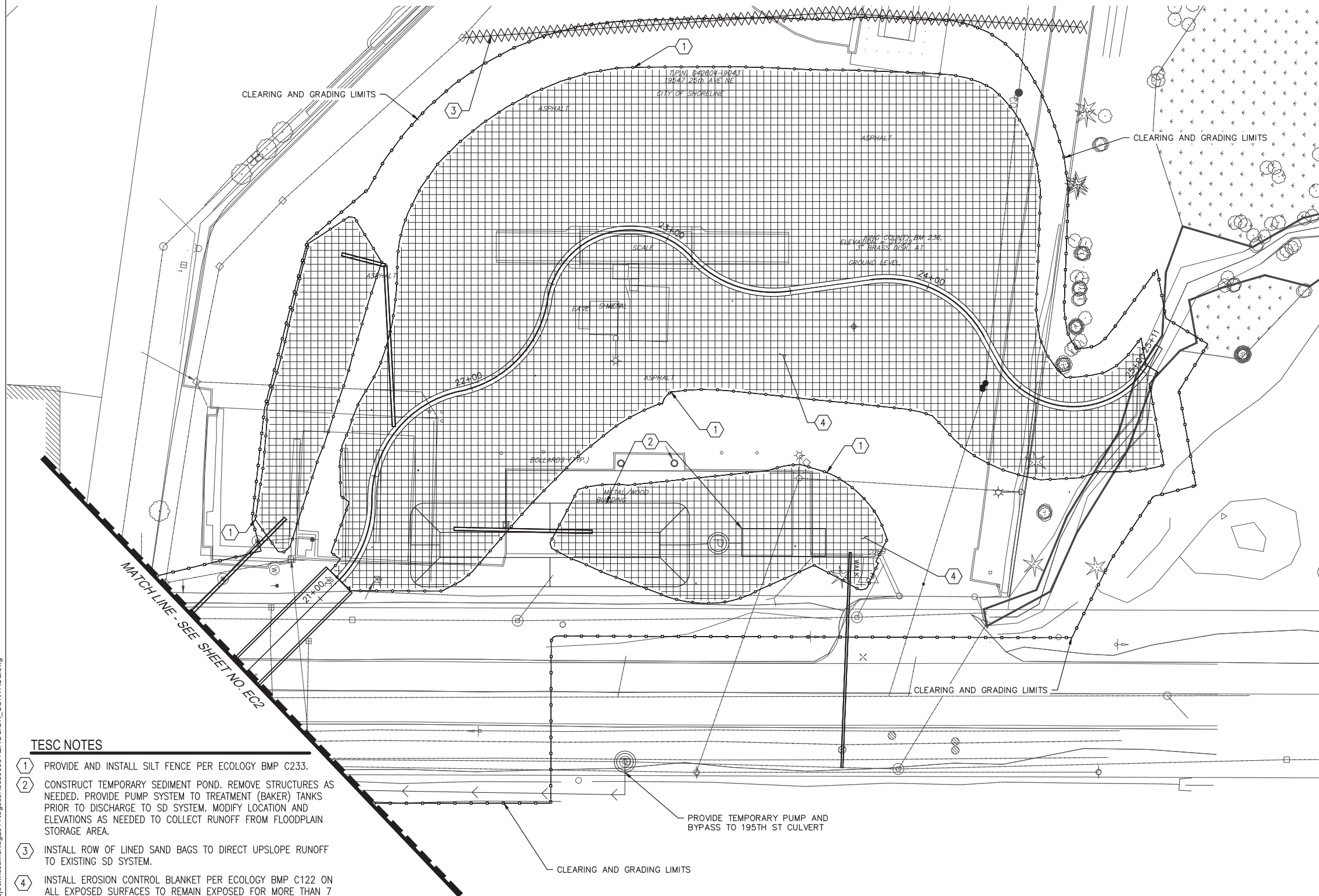
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VERIFY SCALE - BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" = 20'-0" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

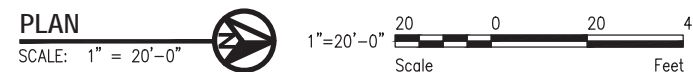
GENERAL STREAM BYPASS NOTES

1. THIS DRAWING INCLUDES A PRELIMINARY STREAM BYPASS PLAN NECESSARY FOR PERMIT APPROVAL. THIS PLAN REPRESENTS THE MINIMUM WORK NECESSARY TO PROTECT THE WORK AREA AND CONTRACTOR IS RESPONSIBLE FOR DEVELOPING FINAL STREAM BYPASS NEEDED TO PROTECT WORK AREA.
2. CONTRACTOR SHALL CAPTURE AND SAFELY REMOVE AND RELOCATE FISH WITHIN THE TEMPORARY DIVERSION AREA IN ACCORDANCE WITH THE PLANS, SPECIFICATIONS, AND HPA REQUIREMENTS. PRIOR TO INSTALLING TEMPORARY BYPASS, CONTRACTOR SHALL OBTAIN A WASHINGTON DEPARTMENT OF FISH AND WILDLIFE (WDFW) SCIENTIFIC COLLECTING PERMIT PER SPEC SECTION 1-07.6 AND INSTALL FISH BLOCK NETS AND HAND NET FISH FROM WORK AREA PER PERMIT REQUIREMENTS. CONTRACTOR SHALL HAVE A QUALIFIED BIOLOGIST CAPTURE AND SAFELY MOVE FOOD FISH, GAME FISH, AND OTHER FISH LIFE FROM THE JOB SITE. CAPTURED FISH SHALL BE IMMEDIATELY AND SAFELY TRANSFERRED TO FREE FLOWING WATER DOWNSTREAM OF THE PROJECT SITE.
3. ALL WORK MUST BE IN ACCORDANCE WITH THE PROJECT HPA. ALL IN-STREAM WORK MUST BE COMPLETED WITHIN THE ALLOWED FISH WINDOW (JULY 1 THROUGH AUGUST 13).



TESC NOTES

- 1 PROVIDE AND INSTALL SILT FENCE PER ECOLOGY BMP C233.
- 2 CONSTRUCT TEMPORARY SEDIMENT POND. REMOVE STRUCTURES AS NEEDED. PROVIDE PUMP SYSTEM TO TREATMENT (BAKER) TANKS PRIOR TO DISCHARGE TO SD SYSTEM. MODIFY LOCATION AND ELEVATIONS AS NEEDED TO COLLECT RUNOFF FROM FLOODPLAIN STORAGE AREA.
- 3 INSTALL ROW OF LINED SAND BAGS TO DIRECT UPSLOPE RUNOFF TO EXISTING SD SYSTEM.
- 4 INSTALL EROSION CONTROL BLANKET PER ECOLOGY BMP C122 ON ALL EXPOSED SURFACES TO REMAIN EXPOSED FOR MORE THAN 7 DAYS DURING THE DRY SEASON, OR 2 DAYS DURING THE RAINY SEASON. EROSION CONTROL BLANKET SHALL BE PLACED OVER 6" AMENDED SOIL UPON SUBSTANTIAL COMPLETION.



Description	Date	Initials	Drawn	Designed	Checked	Revisions	Revisions
	12/31/19	JVLUE					
	12/31/19	JVLUE					
	12/31/19	MBOE					



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25TH AVENUE NE BALLINGER CREEK
FLOOD REDUCTION PROJECT
60% REVIEW SUBMITTAL
TEMPORARY EROSION AND SEDIMENT
CONTROL PLAN - SHEET 2 OF 2

Project No. _____

Dwg
EC3

Sheet 22 Of 55



KEYED NOTES

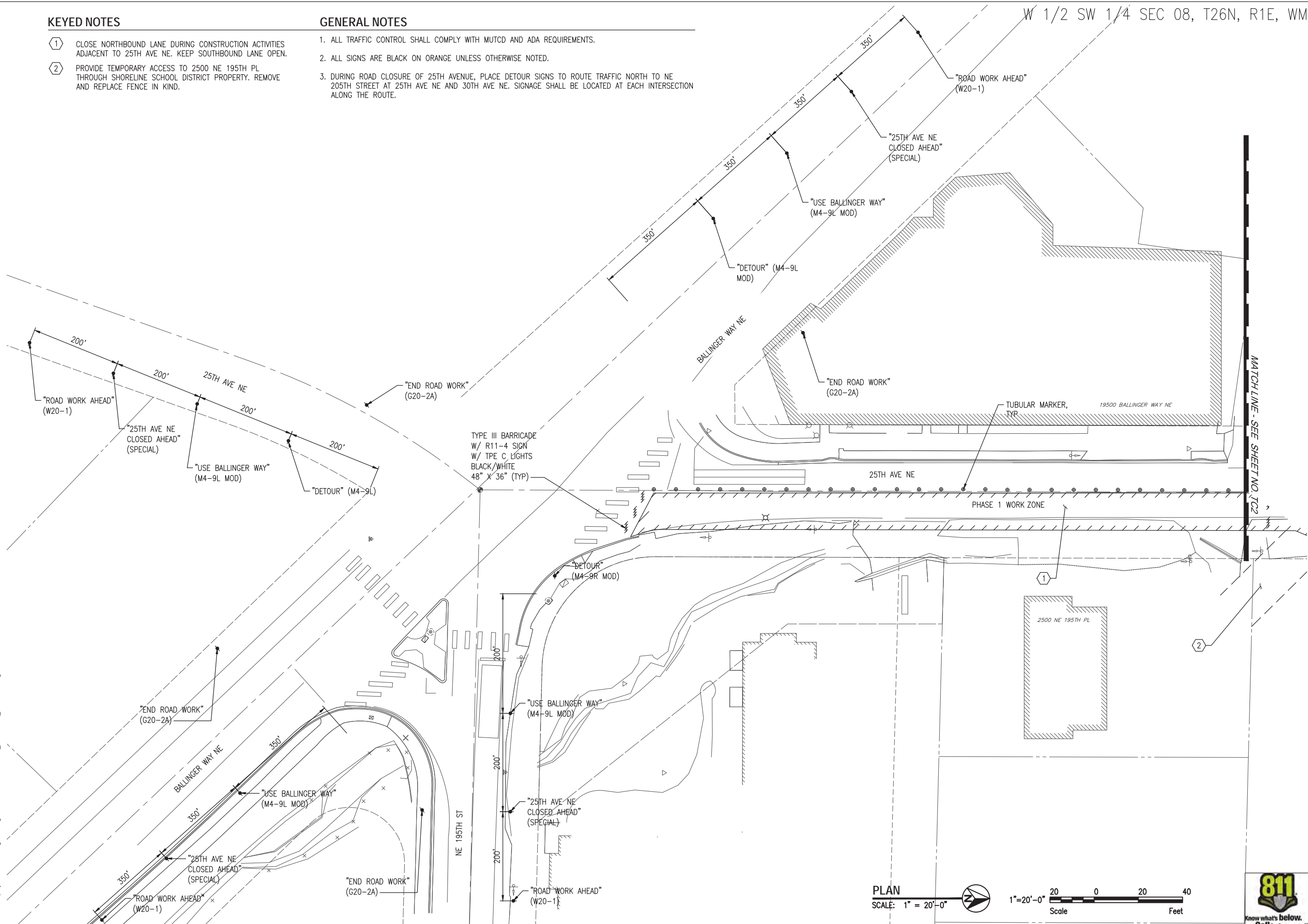
- ① CLOSE NORTHBOUND LANE DURING CONSTRUCTION ACTIVITIES ADJACENT TO 25TH AVE NE. KEEP SOUTHBOUND LANE OPEN.
- ② PROVIDE TEMPORARY ACCESS TO 2500 NE 195TH PL THROUGH SHORELINE SCHOOL DISTRICT PROPERTY. REMOVE AND REPLACE FENCE IN KIND.

GENERAL NOTES

- 1. ALL TRAFFIC CONTROL SHALL COMPLY WITH MUTCD AND ADA REQUIREMENTS.
- 2. ALL SIGNS ARE BLACK ON ORANGE UNLESS OTHERWISE NOTED.
- 3. DURING ROAD CLOSURE OF 25TH AVENUE, PLACE DETOUR SIGNS TO ROUTE TRAFFIC NORTH TO NE 205TH STREET AT 25TH AVE NE AND 30TH AVE NE. SIGNAGE SHALL BE LOCATED AT EACH INTERSECTION ALONG THE ROUTE.

W 1/2 SW 1/4 SEC 08, T26N, R1E, WM

PATH: C:\projects\sho811\201411\user\100309630\TRAFFIC_CONTROL_TC1-TC2.dwg



PLAN

SCALE: 1" = 20'-0"



Project No. _____

Dwg

TC1

Sheet 23 Of 55



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Seattle, WA 98101
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25TH AVENUE NE BALLINGER CREEK
FLOOD REDUCTION PROJECT
60% REVIEW SUBMITTAL
TEMPORARY TRAFFIC CONTROL PLAN
SHEET 1 OF 2

Drawn	Designed	Checked	Revisions	Revisions
JTE	JTE	MSG		
Date	12/31/19	12/31/19	12/31/19	
Initials	JTE	JTE	MSG	
Description				

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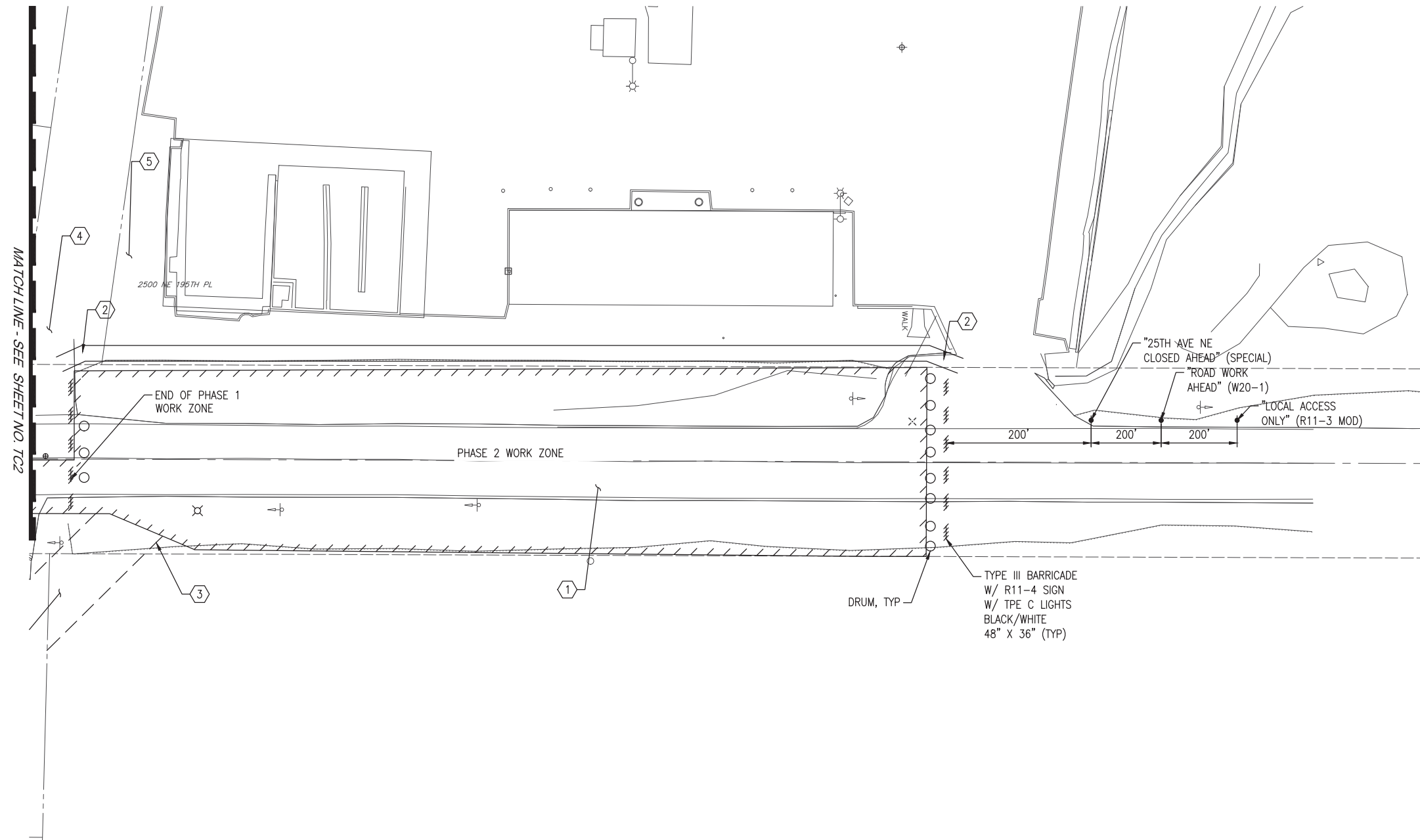
KEYED NOTES

- ① CLOSE NORTHBOUND AND SOUTHBOUND LANES OF 25TH AVE NE DURING CONSTRUCTION OF CULVERT AND PIPE CROSSINGS, AND OTHER ROADWAY IMPROVEMENTS.
- ② MAINTAIN PEDESTRIAN ACCESS THROUGH NMF WITH ADA COMPLIANT CRUSHED ROCK PATH. LOCATION TO BE APPROVED BY ENGINEER.
- ③ PHASE 1 TEMPORARY ACCESS TO 2500 NE 195TH PL. REMOVE AND REPLACE FENCE IN KIND.
- ④ CONTRACTOR SHALL MAINTAIN ACCESS TO 19500 BALLINGER WAY NE AT ALL TIMES.
- ⑤ CONTRACTOR SHALL MAINTAIN ACCESS TO WEST SIDE OF CITY NMF SITE AT ALL TIMES.

GENERAL NOTES

- 1. ALL TRAFFIC CONTROL SHALL COMPLY WITH MUTCD AND ADA REQUIREMENTS.
- 2. ALL SIGNS ARE BLACK ON ORANGE UNLESS OTHERWISE NOTED.
- 3. DURING ROAD CLOSURE OF 25TH AVENUE, PLACE DETOUR SIGNS TO ROUTE TRAFFIC NORTH TO NE 205TH STREET AT 25TH AVE NE AND 30TH AVE NE. SIGNAGE SHALL BE LOCATED AT EACH INTERSECTION ALONG THE ROUTE.

W 1/2 SW 1/4 SEC 08, T26N, R1E, WM



Initials	Date	Description
JTE	12/31/19	
JTE	12/31/19	
MSG	12/31/19	

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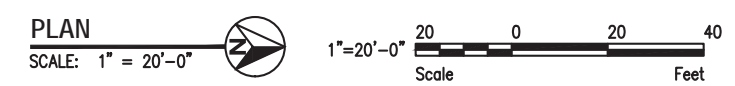
25TH AVENUE NE BALLINGER CREEK
 FLOOD REDUCTION PROJECT
60% REVIEW SUBMITTAL
 TEMPORARY TRAFFIC CONTROL PLAN
 SHEET 2 OF 2

Project No. _____

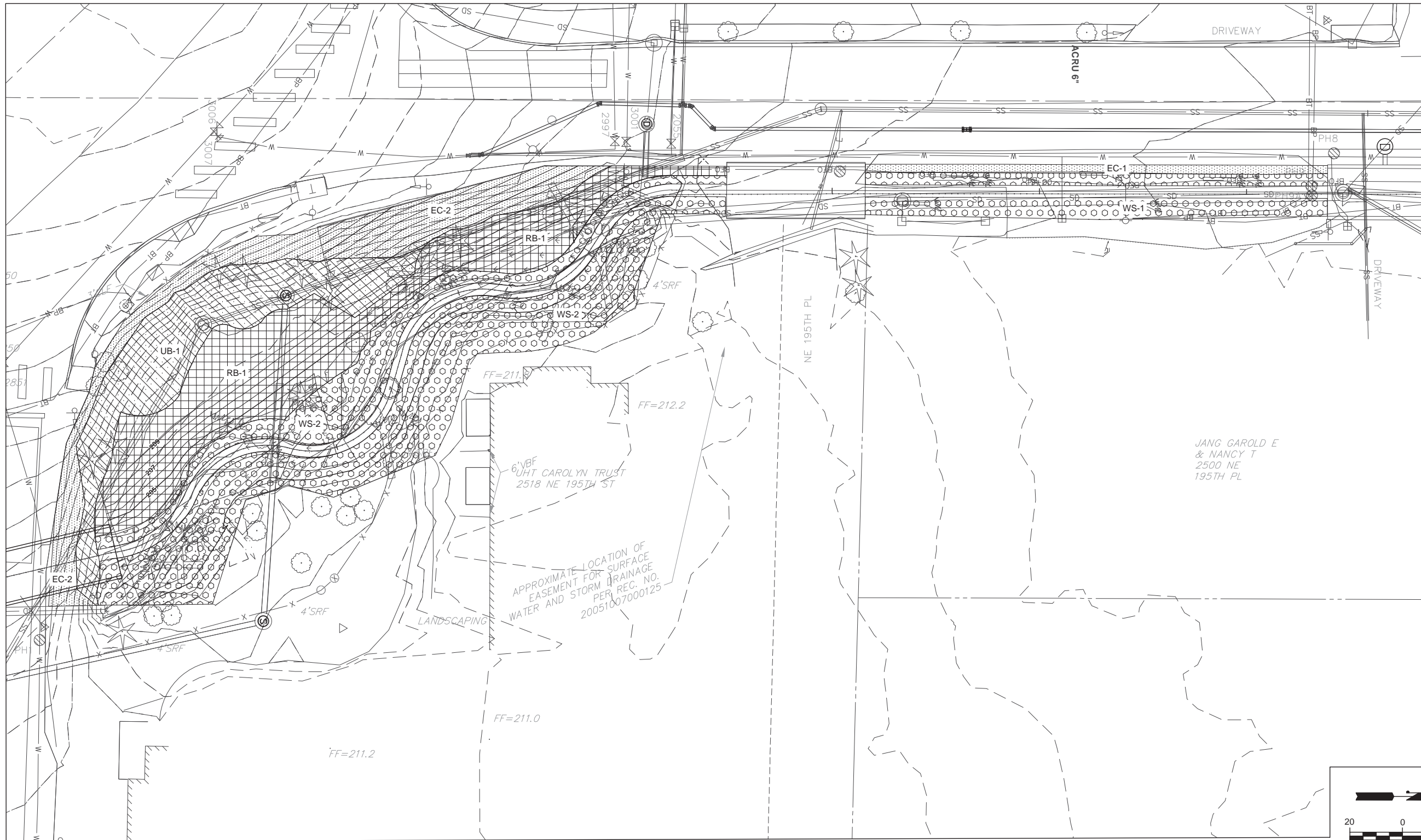
Dwg
TC2

Sheet 24 Of 55

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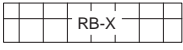
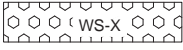




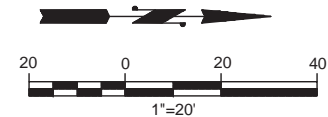
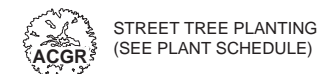
PLAN

GENERAL NOTES

1. WORK WITHIN THIS SHEET IS IN BOTH CITY OF SHORELINE AND LAKE FOREST PARK. WA. WORK ON 25TH AVENUE IS WITHIN CITY OF SHORELINE. WORK ALONG NE 195TH ST AND BALLINGER WAY IS WITHIN LAKE FOREST PARK.
2. LIMIT DISTURBANCE TO ONLY THOSE AREAS NECESSARY FOR CONSTRUCTING THE PROPOSED IMPROVEMENTS.
3. PROTECT EXISTING LANDSCAPING AND VEGETATION. WHERE DISTURBED OR REMOVED DURING CONSTRUCTION, RESTORE SURFACE FEATURES IN KIND.
4. SEE PLANT SCHEDULE ON SHEET XX FOR PLANTING QUANTITIES AND STOCK TYPE SIZES.
5. INVASIVE SPECIES WITHIN THE PLANTING AREAS SHALL BE REMOVED AND TREATED PER CITY CODE PRIOR TO PLANTING. HIMALAYAN BLACKBERRY (RUBUS ARMENIACUS), JAPANESE KNOTWEED (POLYGONUM CUSPIDATUM), ENGLISH IVY (HEDERA HELIX) AND REED CANARYGRASS (PHALARIS ARUNDINACEA) AREA THE PRIMARY INVASIVE WEED SPECIES PRESENT ON SITE.
6. PLANTING PLAN ASSUMES ALL EXISTING NATIVE TREES AND SHRUBS NOT REMOVED DURING CONSTRUCTION ARE PROTECTED.

LEGEND

-  RB-X RIPARIAN BUFFER BARE ROOT TREE/SHRUB MIX (2196 SQUARE FEET)
-  WS-X WETLAND SHRUB LIVE STAKE MIX (3981 SQUARE FEET)
-  UB-X UPLAND BUFFER BARE ROOT SHRUB MIX (1343 SQUARE FEET)
-  ES-X EROSION CONTROL SEED MIX (1879 SQUARE FEET [0.04 ACRES])



Initials	Date	Description
RG	12/31/19	
RG	12/31/19	
KF	12/31/19	



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25TH AVENUE NE BALLINGER CREEK
FLOOD REDUCTION PROJECT
60% REVIEW SUBMITTAL
PLANTING PLAN SHEET 1 OF 2



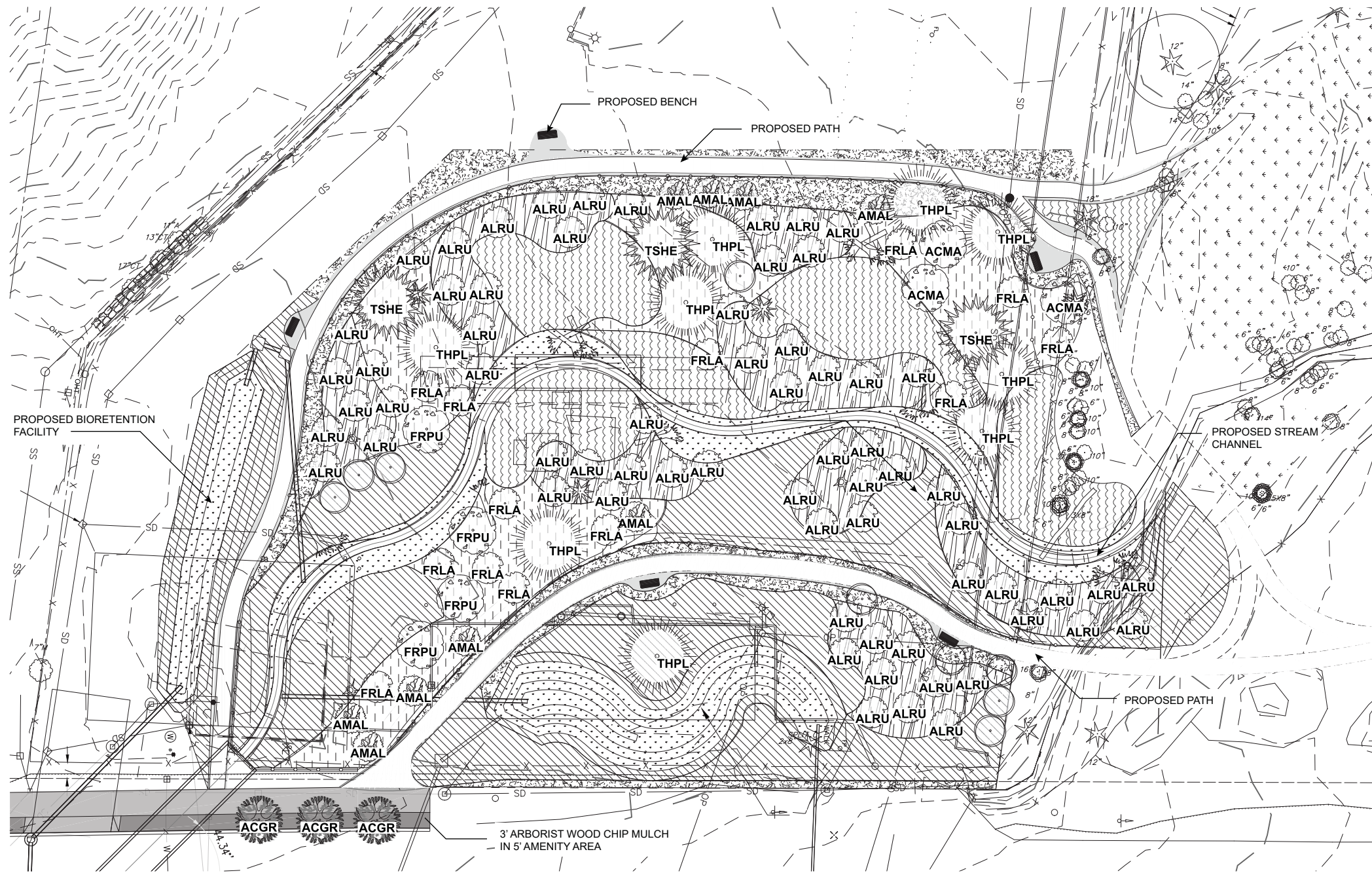
HERRERA
Project No. ####

Sheet **L1**
Sheet 25 Of 55




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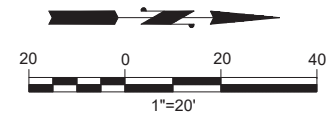


LEGEND

-  ACER MACROPHYLLUM
-  ACER GRANDIDENTATUM 'SCHMIDT'
-  AMELANCHIER ALNIFOLIA
-  ALNUS RUBRA
-  CORYLUS CORNUTA
-  FRANGULA PURSHIANA
-  THUJA PLICATA
-  TSUGA HETEROPHYLLA

PLANTING ZONES
SEE DWG XX FOR PLANT SPECIES AND QUANTITIES PER ZONE

-  ALDER GROVE (8,382 SQ. FT.)
-  EMERGENT ZONE (5,963 SQ. FT.)
-  FLOODPLAIN SHRUB ZONE (8,800 SQ. FT.)
-  FLOODPLAIN FOREST ZONE (15,414 SQ. FT.)
-  TRAIL BORDER (4,534 SQ.FT.)
-  WILLOW ZONE (7,047 SQ.FT.)
-  MULCH BUFFER



Initials	Date	Description
RG	12/31/19	
RG	12/31/19	
KF	12/31/19	



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**25TH AVENUE NE BALLINGER CREEK
FLOOD REDUCTION PROJECT
60% REVIEW SUBMITTAL
PLANTING PLAN SHEET 2 OF 2**

Project No. _____

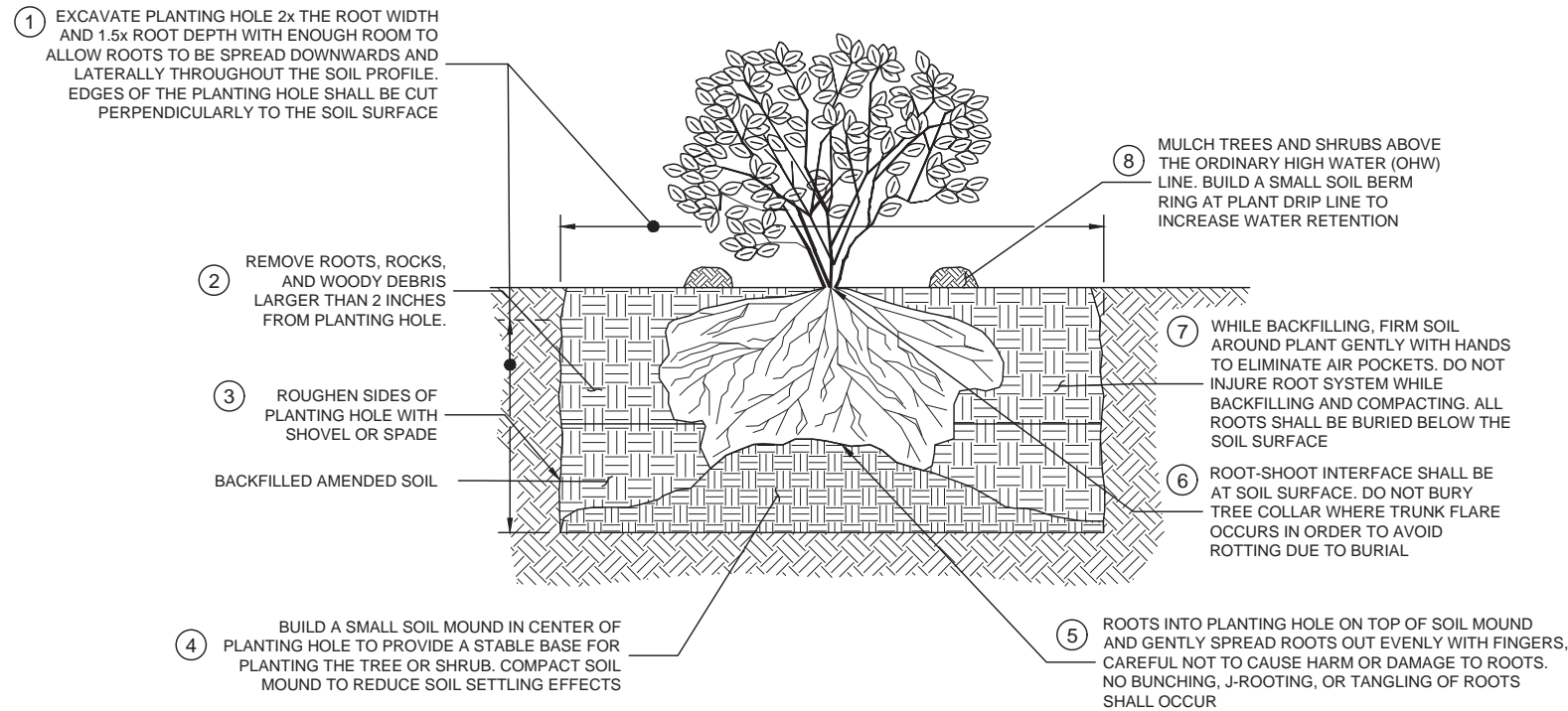
Sheet **L2**

Sheet 26 Of 55



PATH

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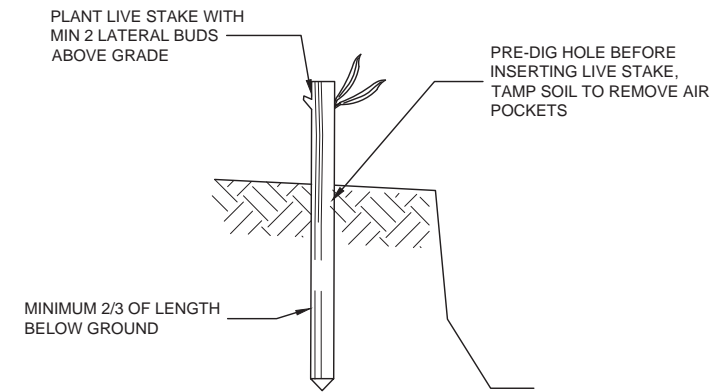
NOTES:

- MULCH TREES AND SHRUBS ABOVE THE ORDINARY HIGH WATER (OHW) LINE. MULCH USING ARBORIST WOOD CHIP MULCH (SEE SPECIFICATIONS).
- STAKE OR MARK OHW LINE IN FIELD PRIOR TO PLANTING TO ENSURE MULCH IS PLACED CORRECTLY.

DETAIL - BAREROOT TREE OR SHRUB PLANTING

SCALE: NTS

1



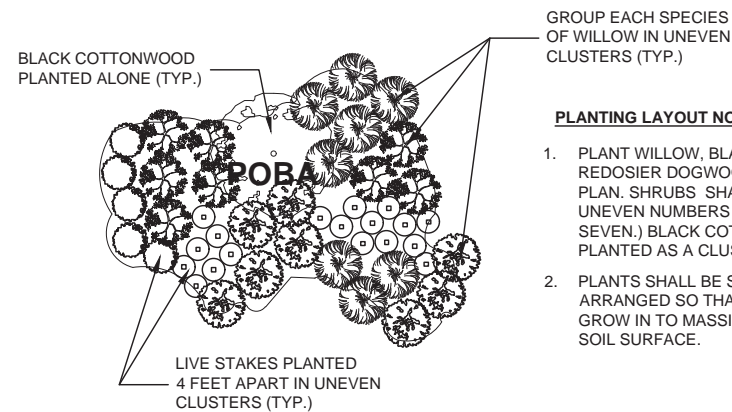
NOTES:

- SOAK BOTTOM 6" OF ALL STAKES IN WATER FOR MINIMUM OF 24 HOURS PRIOR TO PLANTING

LIVE WILLOW STAKE PLANTING DETAIL

SCALE: NTS

2



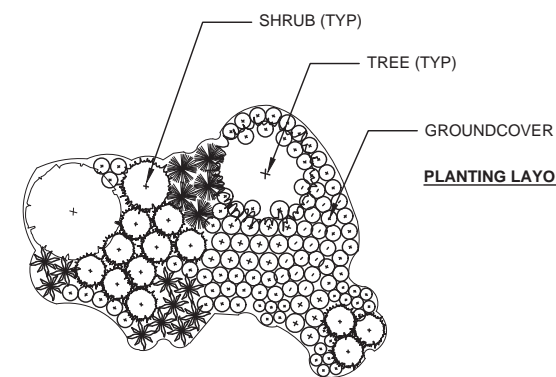
PLANTING LAYOUT NOTES:

- PLANT WILLOW, BLACK COTTONWOOD, AND REDOSIER DOGWOOD STAKES AS SHOWN ON PLAN. SHRUBS SHALL BE IN CLUSTERS OF UNEVEN NUMBERS (E.G. THREE, FIVE, AND SEVEN.) BLACK COTTONWOOD SHALL NOT BE PLANTED AS A CLUSTER.
- PLANTS SHALL BE SPACED 4 FEET APART, ARRANGED SO THAT AS THEY MATURE, THEY GROW IN TO MASSINGS AND FULLY COVER THE SOIL SURFACE.

DETAIL - LIVE STAKE PLANTING LAYOUT, TYP.

SCALE: NTS

3



PLANTING LAYOUT NOTES:

- PLANT GROUNDCOVERS, SHRUBS, AND TREES AS SHOWN IN DETAIL, 3 FEET O.C. GROUNDCOVERS AND SHRUBS SHALL BE IN CLUSTERS OF UNEVEN NUMBERS (E.G. THREE, FIVE, SEVEN, ETC.) IN GROUPINGS NO LARGER THAN NINE.
- PLANTS SHALL BE ARRANGED SO THAT AS THEY MATURE, THEY GROW IN TO MASSINGS AND FULLY COVER THE SOIL SURFACE.
- PLANTS ARE PLANTED CLOSELY TOGETHER TO COMPETE WITH INVASIVE PLANT SPECIES WITH MINIMUM MAINTENANCE.

DETAIL - TREE-SHRUB BARE ROOT PLANTING LAYOUT

SCALE: NTS

4

Initials	Date	Description
RG	12/31/19	
RG	12/31/19	
KF	12/31/19	

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25TH AVENUE NE BALLINGER CREEK
FLOOD REDUCTION PROJECT
60% REVIEW SUBMITTAL
PLANTING DETAILS SHEET 1 OF 4

HERRERA

Project No. ####

Sheet

L3

Sheet 27 Of 55

811
Know what's below.
Call before you dig.

Initials	Date	Description
RG	12/31/19	
RG	12/31/19	
KF	12/31/19	



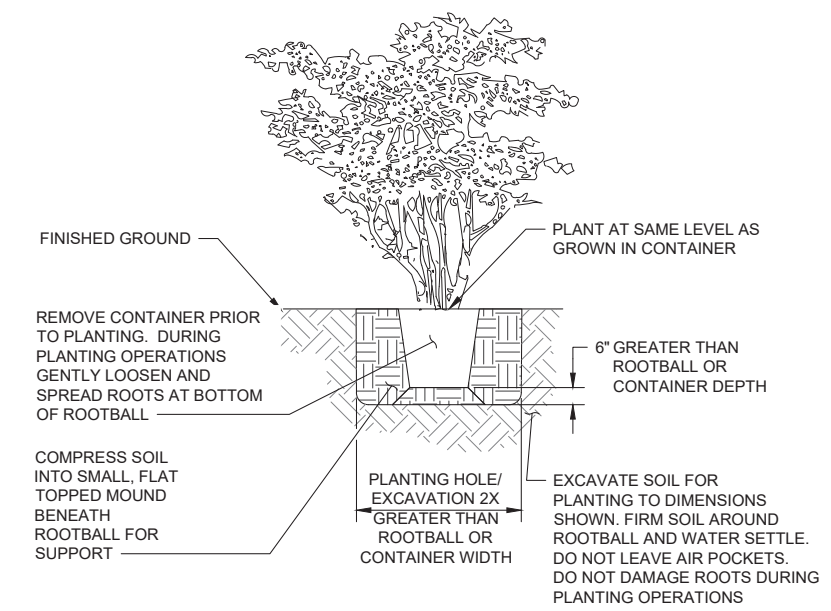
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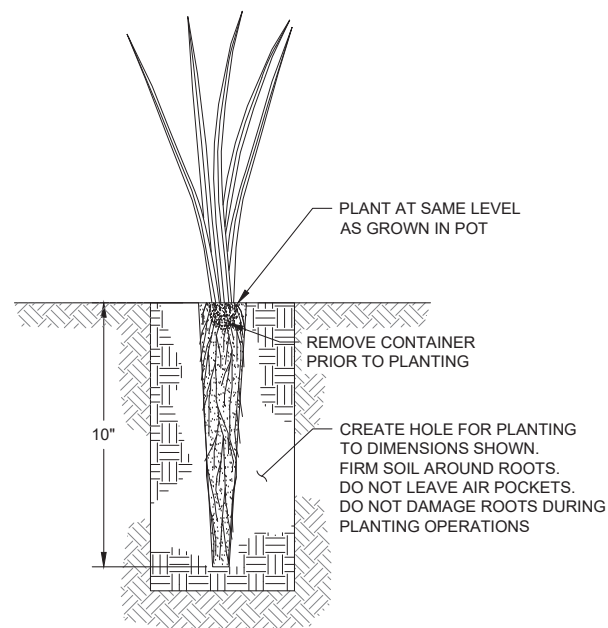
CITY OF SHORELINE

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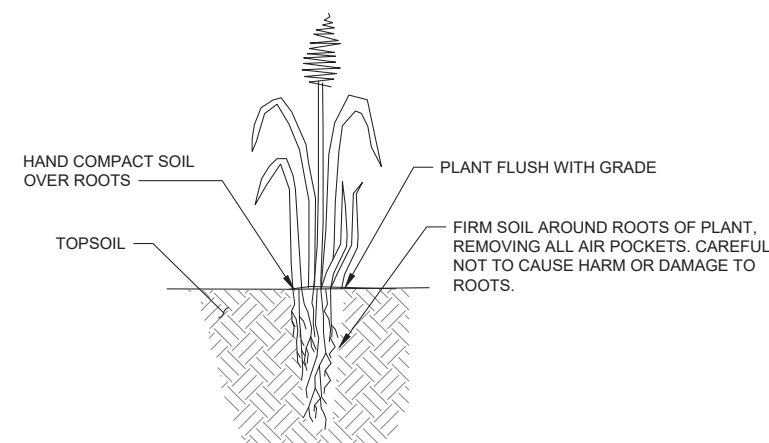
25TH AVENUE NE BALLINGER CREEK
FLOOD REDUCTION PROJECT
60% REVIEW SUBMITTAL
PLANTING DETAILS SHEET 2 OF 4



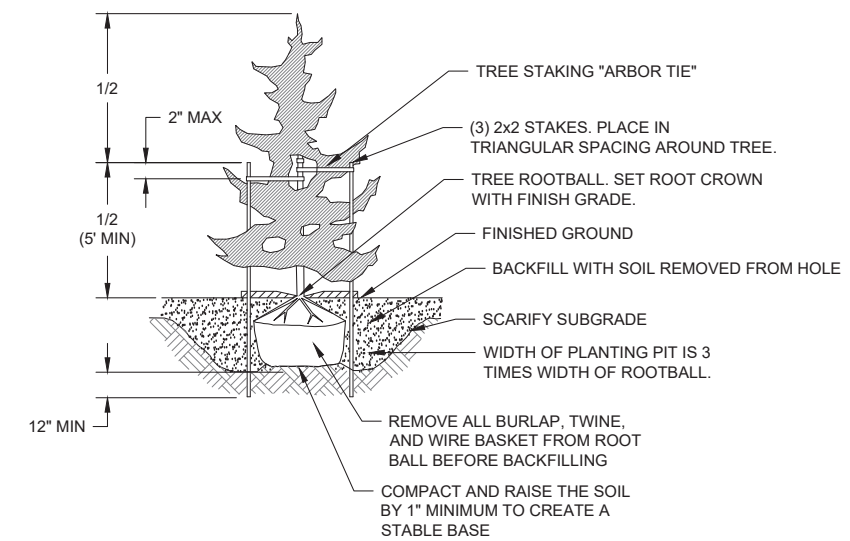
DETAIL - CONTAINER TREE AND SHRUB PLANTING
SCALE: NTS



DETAIL - 10-INCH ROOT DEPTH PLUG PLANTING
SCALE: NTS



DETAIL - BARE ROOT HERBACEOUS PLANTING
SCALE: NTS



DETAIL - BALL AND BURLAP (B&B) PLANTING/STAKING
SCALE: NTS

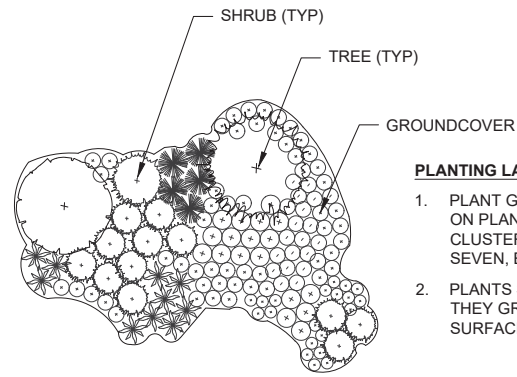
PATH:



Know what's below.
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Project No.	_____
Sheet	L4
Sheet 28	Of 55

1". IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.
VERIFY SCALE - BAR IS ONE INCH ON ORIGINAL DRAWING 0

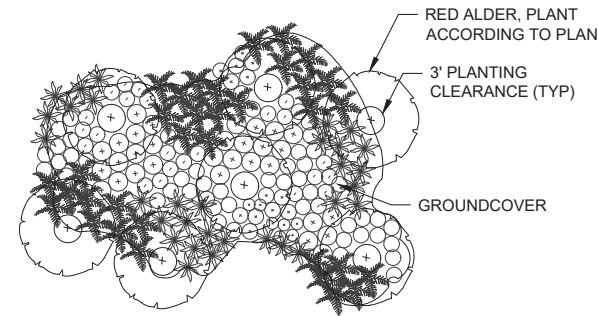


PLANTING LAYOUT NOTES:

1. PLANT GROUNDCOVERS, SHRUBS, AND TREES AS SHOWN ON PLAN. GROUNDCOVERS AND SHRUBS SHALL BE IN CLUSTERS OF UNEVEN NUMBERS (E.G. THREE, FIVE, SEVEN, ETC.) IN GROUPINGS NO LARGER THAN NINE.
2. PLANTS SHALL BE ARRANGED SO THAT AS THEY MATURE, THEY GROW IN TO MASSINGS AND FULLY COVER THE SOIL SURFACE.

DETAIL - FLOODPLAIN FOREST ZONE
PLANTING LAYOUT

SCALE: NTS

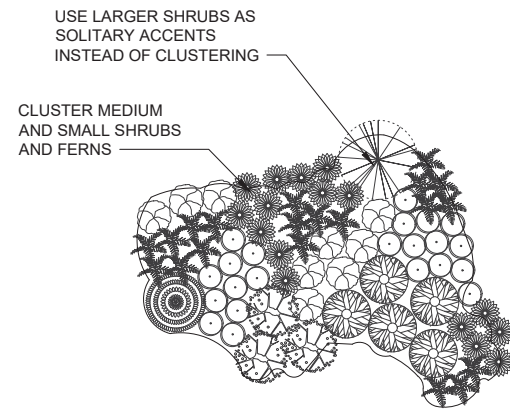


PLANTING LAYOUT NOTES:

1. PLANT GROUNDCOVERS, AND TREES AS SHOWN ON PLAN. GROUNDCOVERS SHALL BE IN CLUSTERS OF UNEVEN NUMBERS (E.G. THREE, FIVE, SEVEN, ETC.) IN GROUPINGS NO LARGER THAN NINE.
2. PLANTS SHALL BE ARRANGED SO THAT AS THEY MATURE, THEY GROW IN TO MASSINGS AND FULLY COVER THE SOIL SURFACE.
3. PLANT ALDERS WITH UNEVEN SPACING TO MIMIC A NATURAL GROVE.
4. PROVIDE A 3 FOOT RADIUS CLEARANCE AROUND EACH TREE.

DETAIL - ALDER GROVE PLANTING LAYOUT

SCALE: NTS

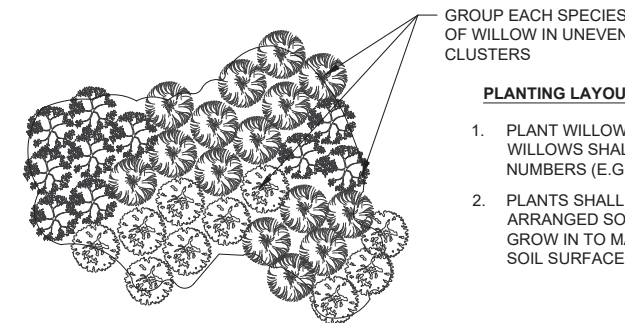


PLANTING LAYOUT NOTES:

1. PLANT FERNS, SHRUBS, AND TREES AS SHOWN ON PLAN. FERNS AND SHRUBS SHALL BE IN CLUSTERS OF UNEVEN NUMBERS (E.G. THREE, FIVE, SEVEN, ETC.) IN GROUPS NO LARGER THAN NINE.
2. PLANTS SHALL BE ARRANGED SO THAT AS THEY MATURE, THEY GROW IN TO MASSINGS AND FULLY COVER THE SOIL SURFACE.

DETAIL - FLOODPLAIN SHRUB ZONE
PLANTING LAYOUT

SCALE: NTS



PLANTING LAYOUT NOTES:

1. PLANT WILLOW STAKES AS SHOWN ON PLAN. WILLOWS SHALL BE IN CLUSTERS OF UNEVEN NUMBERS (E.G. THREE, FIVE, AND SEVEN.)
2. PLANTS SHALL BE SPACED 6 FEET APART, ARRANGED SO THAT AS THEY MATURE, THEY GROW IN TO MASSINGS AND FULLY COVER THE SOIL SURFACE.

DETAIL - WILLOW ZONE PLANTING LAYOUT

SCALE: NTS



Description	Date	Initials	Drawn	Designed	Checked	Revisions	Revisions
	12/31/19	RG					
	12/31/19	RG					
	12/31/19	KF					



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25TH AVENUE NE BALLINGER CREEK
FLOOD REDUCTION PROJECT
60% REVIEW SUBMITTAL
PLANTING DETAILS SHEET 3 OF 4

Project No. _____

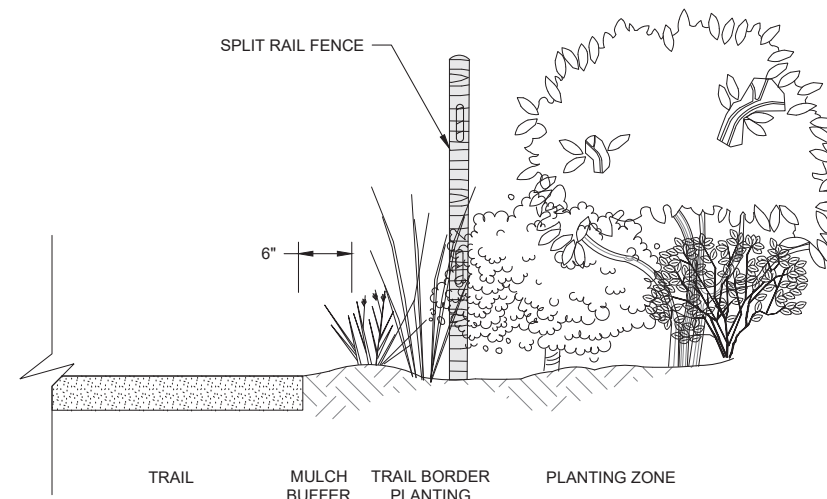
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L5

Sheet 29 Of 55

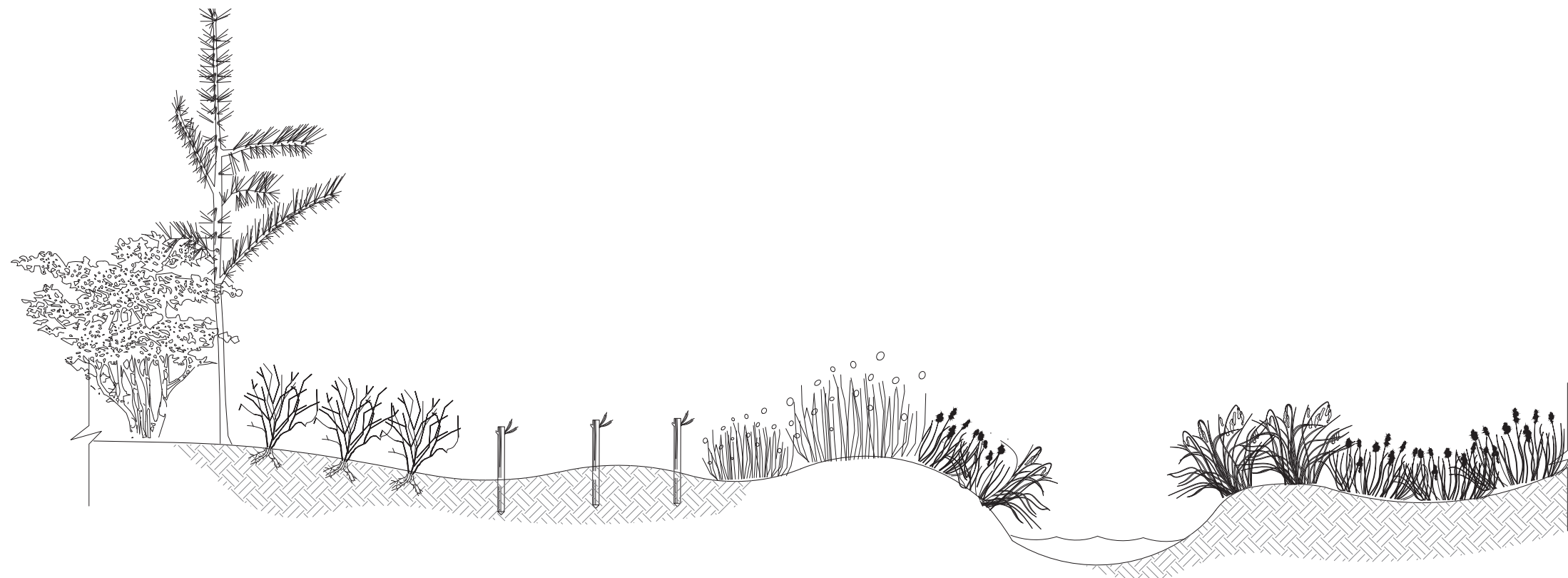


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SECTION - TRAIL AND FENCE
SCALE: NTS

2
-



FOREST FLOODPLAIN ZONE

WILLOW ZONE

EMERGENT ZONE

CHANNEL

EMERGENT ZONE

SECTION - PLANTING ACROSS THE CHANNEL
SCALE: NTS

3
-

Initials	Date	Description
RG	12/31/19	
RG	12/31/19	
KF	12/31/19	

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25TH AVENUE NE BALLINGER CREEK
FLOOD REDUCTION PROJECT
60% REVIEW SUBMITTAL
PLANTING DETAILS SHEET 4 OF 4

Project No. _____

Sheet **L6**

Sheet 30 Of 55



PATH:

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25th Avenue Plant Schedule

LATIN NAME	COMMON NAME	MATURE HEIGHT	STOCK TYPE	SPACING ON CENTER (FEET)	PLANTING ZONES*				QUANTITY
					WS-1 (WETLAND SHRUB)	UB-1 (UPLAND BUFFER)	RB-1 (RIPARIAN BUFFER)	WS-2 (WETLAND SHRUB)	
Trees									
<i>Acer grandidentatum</i> 'Schmidt'	Rocky Mountain Glow maple	25'	1"-1.5" Cal. B&B**	10'					6
<i>Acer macrophyllum</i>	Bigleaf maple	90'	36"+ BRS	10'			4		4
<i>Fraxinus latifolia</i>	Oregon ash	80'	36"+ BRS	10'			4		4
<i>Populus balsamifera</i> ssp. <i>trichocarpa</i>	Black cottonwood	150'	4' Live Stakes	4'				7	7
<i>Pseudotsuga menziesii</i>	Douglas fir	200'	Plug-15	10'			4		4
<i>Thuja plicata</i>	Western redcedar	150'	Plug-15	10'			4		4
<i>Tsuga heterophylla</i>	Western hemlock	150'	Plug-15	10'			4		4
Shrubs									
<i>Amelanchier alnifolia</i>	Saskatoon serviceberry	15'	18"-36" BRS	10'					0
<i>Cornus sericea</i> var. <i>stolonifera</i>	Red-osier dogwood	12'	4' Live Stakes	4'	14			7	21
<i>Lonicera involucrata</i>	Twinberry honeysuckle	6'	18"-36" BRS	4'		8			8
<i>Mahonia aquifolium</i>	Hollyleaved barberry	12'	18"-36" BRS	6'		3	2		5
<i>Mahonia nervosa</i>	Cascade barberry	4'	12-18" BRS	4'		6	12		18
<i>Physocarpus capitatus</i>	Pacific Ninebark	15'	18"-36" BRS	6'		0	2		2
<i>Ribes sanguineum</i>	Red-flowering currant	6'	18"-36" BRS	6'		6	3		9
<i>Rosa nutkana</i> var. <i>nutkana</i>	Nootka rose	8'	18"-36" BRS	4'		6	7		13
<i>Rubus parviflorus</i>	Thimbleberry	6'	18"-36" BRS	4'		4	7		11
<i>Rubus spectabilis</i>	Salmonberry	8'	36"+ BRS	4'			2		2
<i>Salix hookeriana</i>	Dune willow	10'	4' Live Stakes	4'				10	10
<i>Salix lucida</i> ssp. <i>lasianдра</i>	Pacific willow	25'	4' Live Stakes	4'	14			17	31
<i>Salix scouleriana</i>	Scouler willow	25'	4' Live Stakes	4'	28			13	41
<i>Salix sitchensis</i>	Sitka willow	25'	4' Live Stakes	4'				13	13
<i>Symphoricarpos albus</i>	Snowberry	4'	36"+ BRS	4'					0
									217

SEED MIXTURE EC (EROSION CONTROL) 0.04 ACRES				
LATIN NAME	COMMON NAME	MATURE HEIGHT	PERCENT SPECIES COMPOSITION	PLS POUNDS PER ACRE
<i>Achillea millefolium</i>	Yarrow	24"	0.05	0.04
<i>Bromus carinatus</i>	California brome	24"	0.15	6.34
<i>Deschampsia caespitosa</i>	Tufted hairgrass	24"	0.3	0.51
<i>Elymus glaucus</i>	Blue wildrye	12"	0.35	11.91
<i>Lupinus rivularis</i>	Riverbank lupine	12"	0.05	7.50
<i>Triticum aestivum</i>	Regreen	24"	0.1	34.86

PLANTING ZONE AREAS (SQARE FEET)				
	NC (NARROW CHANNEL)	UB1 (UPLAND BUFFER)	RB1 (RIPARIAN BUFFER)	WS1 (WETLAND SHRUB)
TOTAL AREA	862	1343	2196	3119
ESTIMATE OF EXISTING NATIVE VEGETATION TO PRESERVE	86	806	1537	2183
PLANTING AREA (WEED CONTROL AND BARE GROUND)	776	537	659	936

PLANTING NOTES

- SEEDING SHALL BE APPLIED PER SECTION 8.02(3)B. SEEDS SHALL HAVE GOOD SOIL CONTACT.
- SEEDING SHALL OCCUR BETWEEN SEPTEMBER 15TH AND OCTOBER 31ST PRIOR TO INSTALLATION OF PLANT MATERIAL.
- PLANT MATERIAL SHALL BE INSTALLED BETWEEN OCTOBER AND MARCH ACCORDING TO SECTION 9-14.2.
- DUE TO FLOODPLAIN INUNDATION, NO MULCH SHALL BE PLACED BELOW THE ORDINARY HIGH WATER (OHW) LINE (MARKED IN FIELD. ARBORIST WOOD CHIP MULCH SHALL ONLY BE PLACED ABOVE THE OHW LINE.
- INVASIVE SPECIES WITHIN THE PLANTING AREAS SHALL BE REMOVED AND TREATED PER CITY CODE PRIOR TO PLANTING. HIMALAYAN BLACKBERRY (RUBUS ARMENIACUS), JAPANESE KNOTWEED (POLYGONUM CUSPIDATUM), ENGLISH IVY (HEDERA HELIX) AND REED CANARYGRASS (PHALARIS ARUNDINACEA) AREA THE PRIMARY INVASIVE WEED SPECIES PRESENT ON SITE.
- EXISTING TREES SHALL BE PROTECTED DURING CONSTRUCTION. AN APPROVED TREE PROTECTION PLAN SHOULD BE ESTABLISHED PRIOR TO THE START OF THE PROJECT.

* SQUARE FOOTAGE CONSIDERS EXISTING CANOPY COVER OF NATIVE TREE AND SHRUB SPECIES. SQUARE FOOTAGE ON PLANT SCHEDULE REFLECTS THE ESTIMATION OF PLANTING AREA AFTER INVASIVE SPECIES REMOVAL, NOT THE SQUARE FOOTAGE OF THE ENTIRE AREA.
 ** ROCKY MOUNTAIN GLOW MAPLE IS NOT INCLUDED IN ANY ZONES, AS IT IS THE PROPOSED STREET TREE ALONG 25TH AVENUE.

Description			
Date	12/31/19	12/31/19	12/31/19
Initials	RG	RG	KF
Drawn	Designed	Checked	Revisions



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25TH AVENUE NE BALLINGER CREEK
 FLOOD REDUCTION PROJECT
 60% REVIEW SUBMITTAL
 PLANT SCHEDULE SHEET 1 OF 2



HERRERA
 Project No. ###

Sheet
L7
 Sheet 31 Of 55



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VERIFY SCALE - BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" - IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

25th Avenue Plant Schedule												
Species Symbol or ID	LATIN NAME	COMMON NAME	MATURE HEIGHT	STOCK TYPE	SPACING ON CENTER (FEET)	PLANTING ZONE						Quantity
						FOREST FLOODPLAIN ZONE 8,880 SQ. FT.	SHRUB FLOODPLAIN ZONE 15,414 SQ. FT.	ALDER GROVE ZONE 8,382 SQ. FT.	WILLOW ZONE 7047 SQ. FT.	TRAIL BORDER ZONE 4,534 SQ. FT.	EMERGENT ZONE 5963 SQ. FT.	
Trees												
ACMA	<i>Acer macrophyllum</i>	Bigleaf Maple	100'	36"+ BRS	25'	3					3	
ALRU	<i>Alnus rubra</i>	Red Alder	50'	36"+ BRS	12'			55			55	
FRPU	<i>Frangula purshiana</i>	Cascara buckthorn	20'	36"+ BRS	20'	4					4	
FRLA	<i>Fraxinus latifolia</i>	Oregon Ash	60'	36"+ BRS	15'	12					12	
THPL	<i>Thuja plicata</i>	Western redcedar	150'	6' tall	25'	6	1				7	
TSHE	<i>Tsuga heterophylla</i>	Western hemlock	150'	6' tall	25'	3					3	
Shrubs												
AMAL	<i>Amelanchier alnifolia</i>	Sakatoon serviceberry	20'	36"+ BRS	10'	5			3		8	
COSE	<i>Cornus sericea</i>	Redosier dogwood	12'	36"+ BRS	4'		166				166	
COCO	<i>Corylus cornuta</i>	Beaked Hazelhut	25'	36"+ BRS	10'	1	5		3		9	
LOIN	<i>Lonicera involucrata</i>	Twinberry honeysuckle	14'	36"+ BRS	6'	14	49				64	
GASH	<i>Gaultheria shallon</i>	Salal	5'	1 Gallon	3'	115			88		204	
MAAQ	<i>Mahonia aquifolium</i>	Holly-leaved barberry	12'	36"+ BRS	6'	14					14	
MANE	<i>Mahonia nervosa</i>	Cascade barberry	4'	1 Gallon	3'	115			88		204	
OECE	<i>Oemleria cerasiformis</i>	Indian Plum	12'	36"+ BRS	6'	9					9	
PHCA	<i>Physocarpus capitatus</i>	Pacific ninebark	15'	36"+ BRS	6'		74				74	
RONU	<i>Rosa nutkana</i>	Nootka Rose	8'	36"+ BRS	4'	32	111				143	
RUPA	<i>Rubus parviflora</i>	Thimbleberry	8'	36"+ BRS	3'	173					173	
RUSP	<i>Rubus spectabilis</i>	Salmonberry	10'	36"+ BRS	4'		222				222	
SALU	<i>Salix lucida ssp lasianдра</i>	Pacific willow	25'	4' Live Stakes	6'				75		75	
SASC	<i>Salix scouleriana</i>	Scouler's willow	25'	4' Live Stakes	6'				75		75	
SASI	<i>Salix sitchensis</i>	Sitka willow	25'	4' Live Stakes	6'				75		75	
SARA	<i>Sambucus racemosa</i>	Red Elderberry	20'	36"+ BRS	6'		74				74	
SYAL	<i>Symphoricarpos albus</i>	Snowberry	4'	36"+ BRS	4'	109					109	
VAPA	<i>Vaccinium parvifolium</i>	Red huckleberry	5'	1 Gallon	4'	32					32	
Groundcover												
AQFO	<i>Aquilegia formosa</i>	Western columbine	3'	BRS	24"			139		79	217	
ARUV	<i>Arctostaphylos uva-ursi</i>	Kinnikinnick	24"	4 Inch Pot	12"					197	197	
ATFI	<i>Athyrium filix-femina</i>	Common ladyfern	3'	1 Gallon	3'		301	133		29	463	
CALE	<i>Carex leptopoda</i>	Taperfruit shortscale sedge	12"	BRS	24"			59		26	86	
DECE	<i>Deschampsia cespitosa</i>	Tufted hairgrass	24"	BRS	24"					39	39	
DIFO	<i>Dicentra formosa</i>	Pacific bleeding heart	24"	BRS	18"			133		66	199	
ELGL	<i>Elymus glaucus</i>	Blue wildrye	24"	BRS	24"			99		39	138	
FRVI	<i>Fragaria virginiana</i>	Virginia strawberry	6"	BRS	12"					156	156	
GEMA	<i>Geum macrophyllum</i>	Largeleaf avens	3'	BRS	18"			104		69	174	
HYTE	<i>Hydrophyllum tenuipes</i>	Pacific waterleaf	24"	BRS	18"			209		69	278	
LURI	<i>Lupinus rivularis</i>	River lupine	3'	BRS	24"			99		66	165	
PEFR	<i>Petasites frigidus v. palmatus</i>	Western coltsfoot	24"	BRS	24"			99		26	125	
POMU	<i>Polystichum munitum</i>	Western swordfern	4'	1 Gallon	3'	289		178		59	525	
TEGR	<i>Tellima grandiflora</i>	Bigflower tellima	24"	BRS	24"			158		66	224	
TOME	<i>Tolmiea menziesii</i>	Youth on age	24"	BRS	24"			158		79	237	
Emergents												
CAOB	<i>Carex obnupta</i>	Slough sedge	4'	10-Inch root depth plug	24"					259	259	
CAST	<i>Carex stipata</i>	Awlfruit sedge	3'	10-Inch root depth plug	12"					1029	1029	
JUAR	<i>Juncus arcticus ssp littoralis (J. balticus)</i>	Mountain rush	2'	10-Inch root depth plug	12"					1371	1371	
JUEN	<i>Juncus ensifolius</i>	Swordleaf rush	3'	10-Inch root depth plug	12"					1029	1029	
JUPA	<i>Juncus patens</i>	Spreading rush	3'	10-Inch root depth plug	12"					1371	1371	
JUTE	<i>Juncus tenuis</i>	Poverty rush	2'	10-Inch root depth plug	12"					1029	1029	
Totals												
11127												

SEED MIXTURE			
LATIN NAME	COMMON NAME	PERCENT SPECIES COMPOSITION	PLS POUNDS PER ACRE
<i>Beckmannia syzigachne</i>	American sloughgrass	0.1	0.02
<i>Camassia quamash</i>	Common camas	0.1	1.3
<i>Carex obnupta</i>	Slough sedge	0.05	6.5
<i>Danthonia californica</i>	California oatgrass	0.15	0.26
<i>Deschampsia cespitosa</i>	Tufted hairgrass	0.1	2
<i>Erigeron speciosus</i>	Aspen fleabane	0.03	1.5
<i>Festuca rubra var rubra</i>	Red fescue	0.05	0.25
<i>Geum macrophyllum</i>	Largeleaf avens	0.04	2.6

PLANTING NOTES:

1. DUE TO FLOODPLAIN INUNDATION, NO MULCH SHALL BE PLACED WITHIN THE FLOODPLAIN ZONES. ARBORIST WOOD CHIP MULCH SHALL ONLY BE PLACED ADJACENT TO THE PATHS, AND WITHIN THE BIORETENTION FACILITIES, ABOVE THE 12 INCHES ORDINARY HIGH WATER LINE.
2. SEEDING SHALL BE APPLIED PER SECTION 8.02(3)B. SEEDS SHALL HAVE GOOD SOIL CONTACT.
3. SEEDING SHALL OCCUR BETWEEN SEPTEMBER 15TH AND OCTOBER 31ST PRIOR TO INSTALLATION OF PLANT MATERIAL.
4. PLANT MATERIAL SHALL BE INSTALLED BETWEEN OCTOBER AND MARCH ACCORDING TO SECTION 9-14.2. A 2-FOOT RADIUS OF SEEDING AREA SHALL BE SCRAPPED AWAY AND/OR REMOVED PRIOR INSTALLATION OF TREE AND SHRUB PLANT MATERIAL.

Description	Date	Initials
	12/31/19	RG
	12/31/19	RG
	12/31/19	KF



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25TH AVENUE NE BALLINGER CREEK
 FLOOD REDUCTION PROJECT
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 PLANT SCHEDULE SHEET 2 OF 2

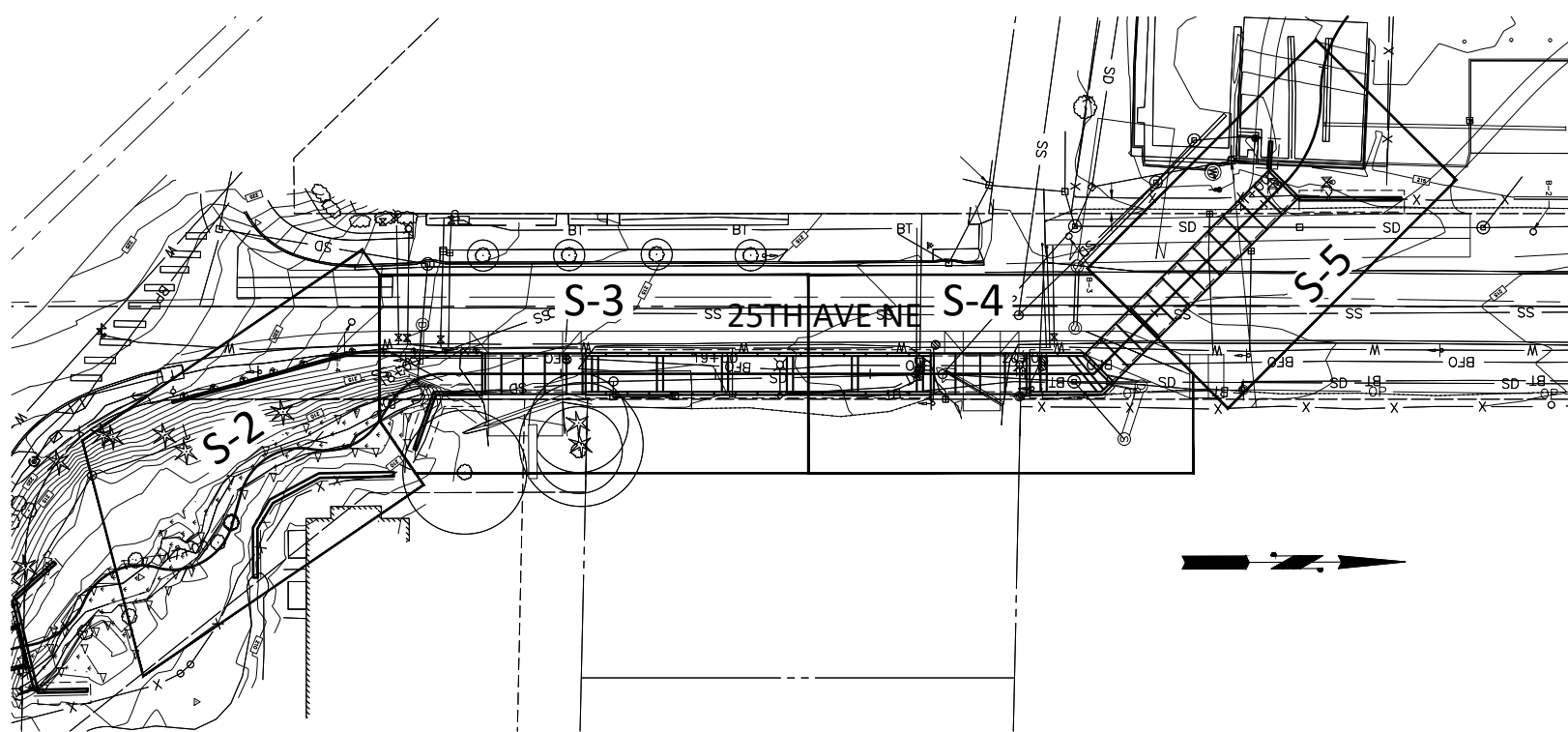
Project No. _____
Sheet _____



Sheet **L8** Of 55

PATH:

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PROJECT LAYOUT - STRUCTURES

GENERAL NOTES

- ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION - DATED 2020, AND AMENDMENT EXCEPT AS NOTED BELOW.
- THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 8TH EDITION, UNLESS NOTED OTHERWISE.
- UNLESS OTHERWISE SHOWN ON THE PLAN, THE CONCRETE COVER MEASURED FROM THE FACE OF THE CONCRETE TO THE FACE OF ANY REINFORCING STEEL SHALL BE 2".
- ALL DIMENSIONS ARE HORIZONTAL AND VERTICAL UNLESS OTHERWISE SHOWN.
- EXISTING GROUND LINE IS APPROXIMATE AND SHALL BE VERIFIED BY THE CONTRACTOR IN THE FIELD.
- EXISTING STRUCTURES ARE SHOWN ON THE PLANS WITH APPROXIMATE LOCATIONS AND DIMENSIONS BASED ON THE AVAILABLE AS-BUILT INFORMATION. THOSE SHALL BE VERIFIED BY THE CONTRACTOR IN THE FIELD. ANY DISCREPANCIES LEADING TO SPATIAL CONFLICTS WITH NEW STRUCTURES SHALL BE REPORTED TO THE ENGINEER FOR REVIEW AND RESOLUTION.
- THE DESIGN IS BASED ON GEOTECHNICAL MEMORANDUM TITLED: DRAFT PRELIMINARY GEOTECHNICAL ENGINEERING REPORT - 25TH AVENUE NE FLOOD REDUCTION, FILE NO. _____, DATED SEPTEMBER 6TH, 2016 AND OTHER CORRISPONDANCES WITH THE PROJECT GEOTECHNICAL ENGINEER, TERRACON CONSULTANTS, INC.
- CONTRACTOR SHALL COORDINATE BOX CULVERT WIDTHS WITH TOTAL WIDTH REQUIRED FOR EACH PHASE OF ELEMENT (OPEN CULVERT, WALL, CULVERTS, ETC.) CONSTRUCTION.

TEMPORARY LAGGING

- SAWN LUMBER SHALL CONFORM TO THE REQUIREMENTS OF THE WEST COAST LUMBER INSPECTION BUREAU (WCLIB), SECTION 123-b. LUMBER SHALL BE UNTREATED AND CONFORM TO THE SPECIES AND GRADE NOTED BELOW:

USE:	SOLDIER PILE WALL LAGGING
GRADE:	DOUGLAS FIR-LARCH NO. 2 OR BETTER
SIZE CLASS:	BEAMS AND STRINGERS
BENDING DESIGN VALUE:	Fb = 900 PSI
THICKNESS:	4x PER GEOTECHNICAL MEMORANDUM EXCEPT AS NOTED OTHERWISE.
- THE CONTRACTOR SHALL EXCAVATE THE WALL FACE AND INSTALL THE LAGGING IN SUCH A MANNER AS TO MAINTAIN A SAFE WORK PLACE AND AVOID EXCESSIVE SLOUGHING AND OVERBREAK. AS A MINIMUM, PRIOR TO PLACING THE SUBSEQUENT SET OF TIMBER LAGGING, THE CONTRACTOR SHALL NOT EXCAVATE MORE THAN 3 FEET BELOW THE CURRENT DEPTH OF LAGGED WALL FACE.
- LAGGING SHALL BE PLACED WITHIN 1 HOUR OF FACE EXCAVATION. OVER-EXCAVATED ZONES BEHIND LAGGING BOARDS SHALL BE BACKFILLED WITH FREE-DRAINING MATERIAL.

STRUCTURAL CONCRETE

CONC CLASS	LOCATION	COMPRESSIVE STRENGTH AT 28 DAYS f'c [PSI]	MIN COMPRESSIVE STRENGTH AT RELEASE
-	PUMPABLE LEAN CONCRETE	-	-
4,000	PRECAST CONCRETE	4,000 PSI	**
4,000	ALL OTHER	4,000 PSI	2,500 PSI *

* SEE STANDARD SPECIFICATIONS FOR MINIMUM CURING TIME
 ** BASED ON CONTRACTOR'S RELEASE & LIFTING DESIGN

REINFORCING STEEL

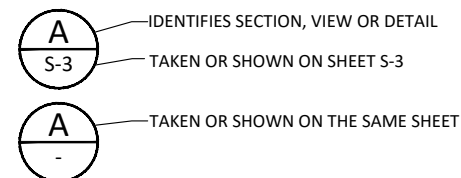
STEEL REINFORCEMENT SHALL CONFORM TO THE FOLLOWING STANDARDS AND SPECIFIED STRENGTH.

REINFORCEMENT	AASHTO STANDARD	GRADE
DEFORMED BARS	M31	60
PLAIN WIRE (WELDED)	M55	70
PRESTRESSED REINFORCEMENT	M203	270

STRUCTURAL STEEL

SECTION	STANDARD	GRADE	STRENGTH
ANGLES & PLATES	ASTM A36	36	Fy=36 KSI
PLATES WHERE INDICATED	ASTM A572	50	Fy=50 KSI
PIPES	ASTM A53	B	Fy=35 KSI
WIDE FLANGE	ASTM A992	50	Fy=50 KSI
ANCHOR RODS	ASTM F1554	36	Fy=36 KSI

LEGEND

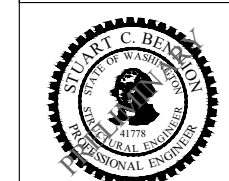


Initials	Date	Description
DRW	12/31/19	
DES	12/31/19	
CHK	12/31/19	



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25TH AVENUE NE BALLINGER CREEK
 FLOOD REDUCTION PROJECT
 60% REVIEW SUBMITTAL
 STRUCTURAL SHEET LAYOUT
 GENERAL NOTES



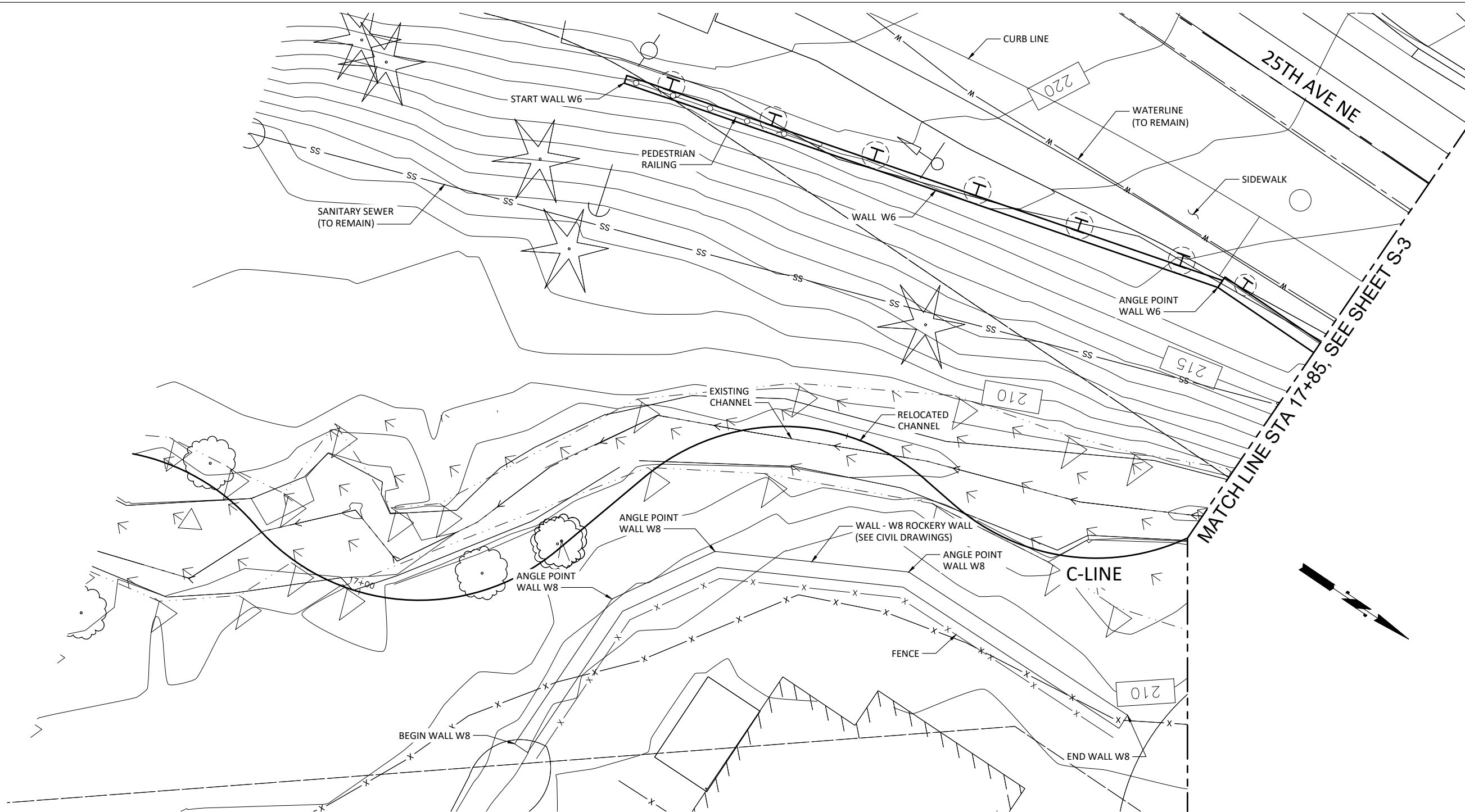
Project No. WA16.0261.00

Sheet **S-1**

Sheet 35 Of 55

PRELIMINARY
 Know what's below. Call before you dig.

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WALL W6 & W8 PLAN VIEW

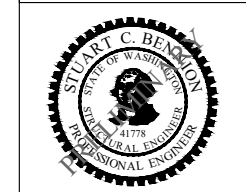


Initials	Date	Description
DRW	12/31/19	
DES	12/31/19	
CHK	12/31/19	

WSP
 WSP USA Inc.
 33301 9th Avenue South
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 Federal Way, WA 98003-2600
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25TH AVENUE NE BALLINGER CREEK
 FLOOD REDUCTION PROJECT
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 STRUCTURAL LAYOUT
 SHEET 1



Project No. WA16.0261.00

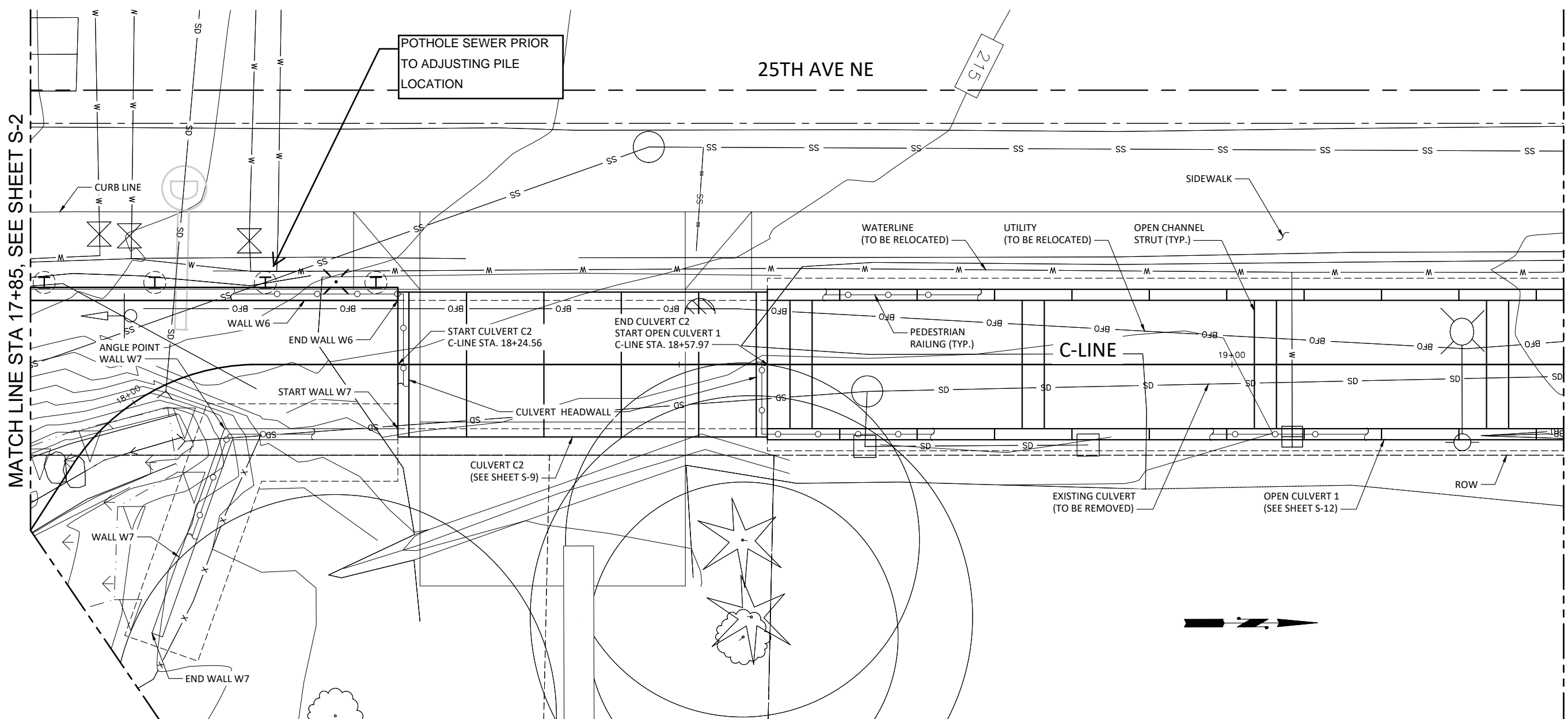
Sheet **S-2**

Sheet 36 Of 55

PRELIMINARY



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OPEN CULVERT 1, CULVERT 2, WALL W7, & WALL W6 PLAN VIEW



NOTES TO DESIGNER (SHEETS S-3 -S-5):

1. SHOW MODIFICATION OF S.S. AT WALL W6.
2. COORDINATE STORM SYSTEM ADJUSTMENTS.
3. DISCUSS HOW TO SHOW TEMP SHORING & ROW IMPACTS.
4. DETERMINE DRAINAGE REQUIREMENTS FOR WALLS AND CULVERTS.
5. HOW IS POWER TAKEN TO NEW CITY LIMITS.

PRELIMINARY

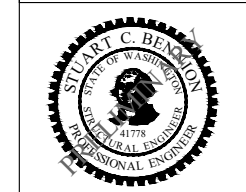


Initials	Date	Description
DRW	12/31/19	
DES	12/31/19	
CHK	12/31/19	

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**25TH AVENUE NE BALLINGER CREEK
FLOOD REDUCTION PROJECT
60% REVIEW SUBMITTAL
STRUCTURAL LAYOUT
SHEET 2**

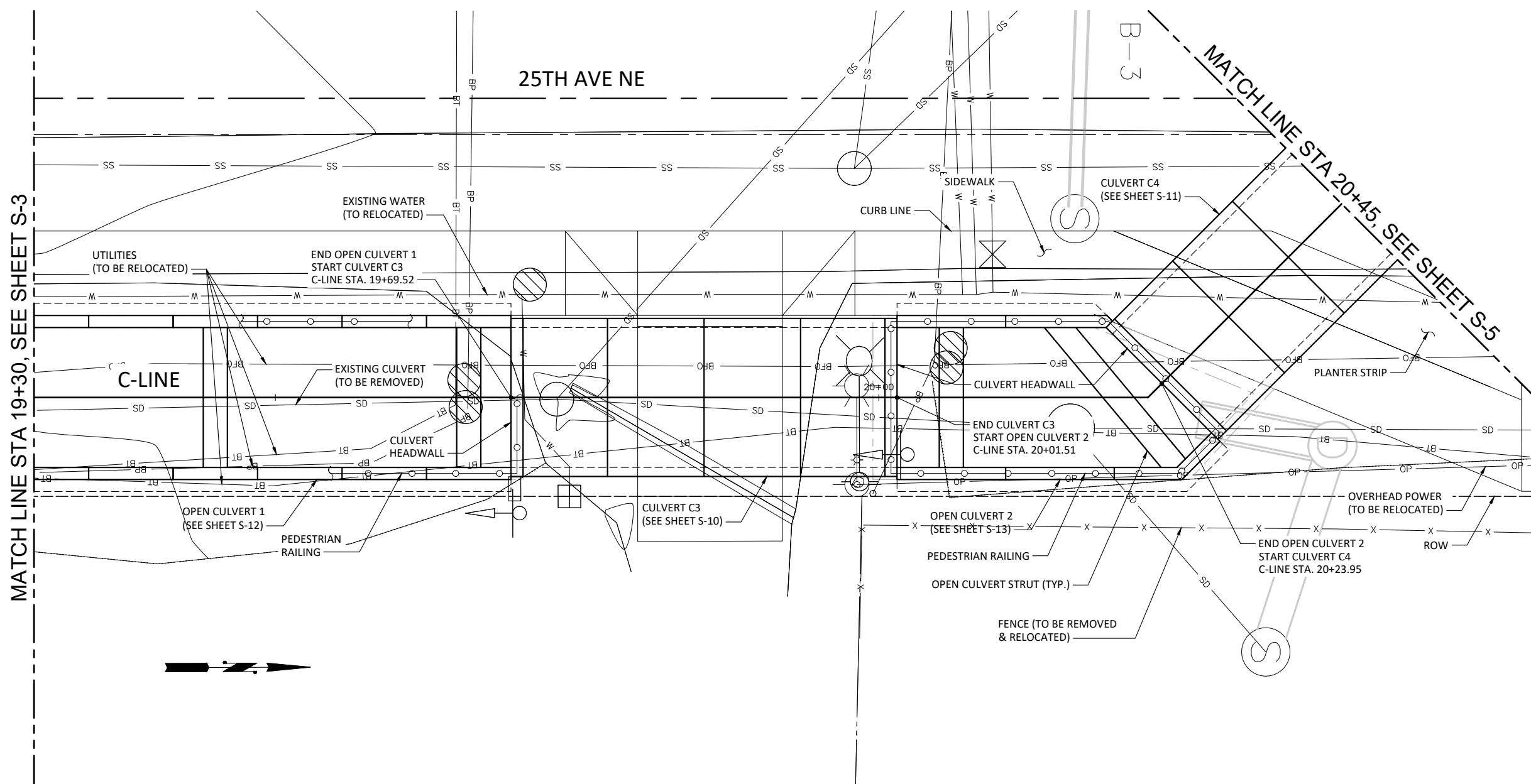


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Sheet **S-3**

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OPEN CULVERTS 1 & 2 AND CULVERTS C3 & C4 PLAN VIEW



Initials	Date	Description
DRW	12/31/19	
DES	12/31/19	
CHK	12/31/19	

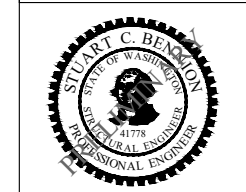
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25TH AVENUE NE BALLINGER CREEK
FLOOD REDUCTION PROJECT
60% REVIEW SUBMITTAL
STRUCTURAL LAYOUT
SHEET 3



Project No. WA16.0261.00

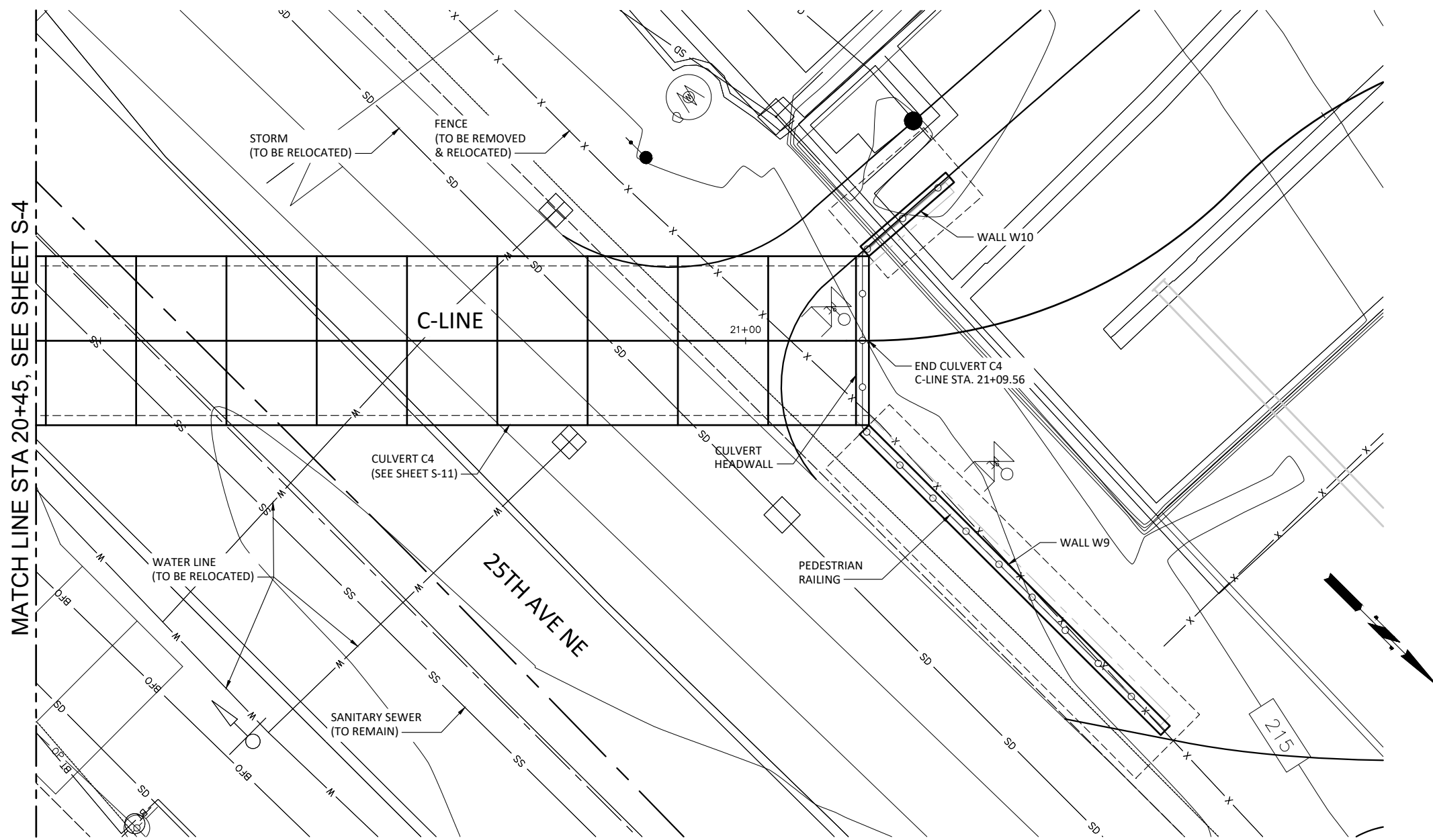
Sheet **S-4**

Sheet 38 Of 55

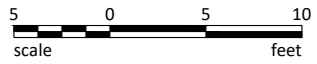
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CULVERT C4 & WALLS W9 & W10 PLAN VIEW



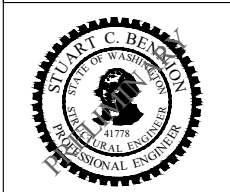
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DRW	12/31/19	
DES	12/31/19	
CHK	12/31/19	

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25TH AVENUE NE BALLINGER CREEK
FLOOD REDUCTION PROJECT
60% REVIEW SUBMITTAL
STRUCTURAL LAYOUT
SHEET 4



Project No. WA16.0261.00

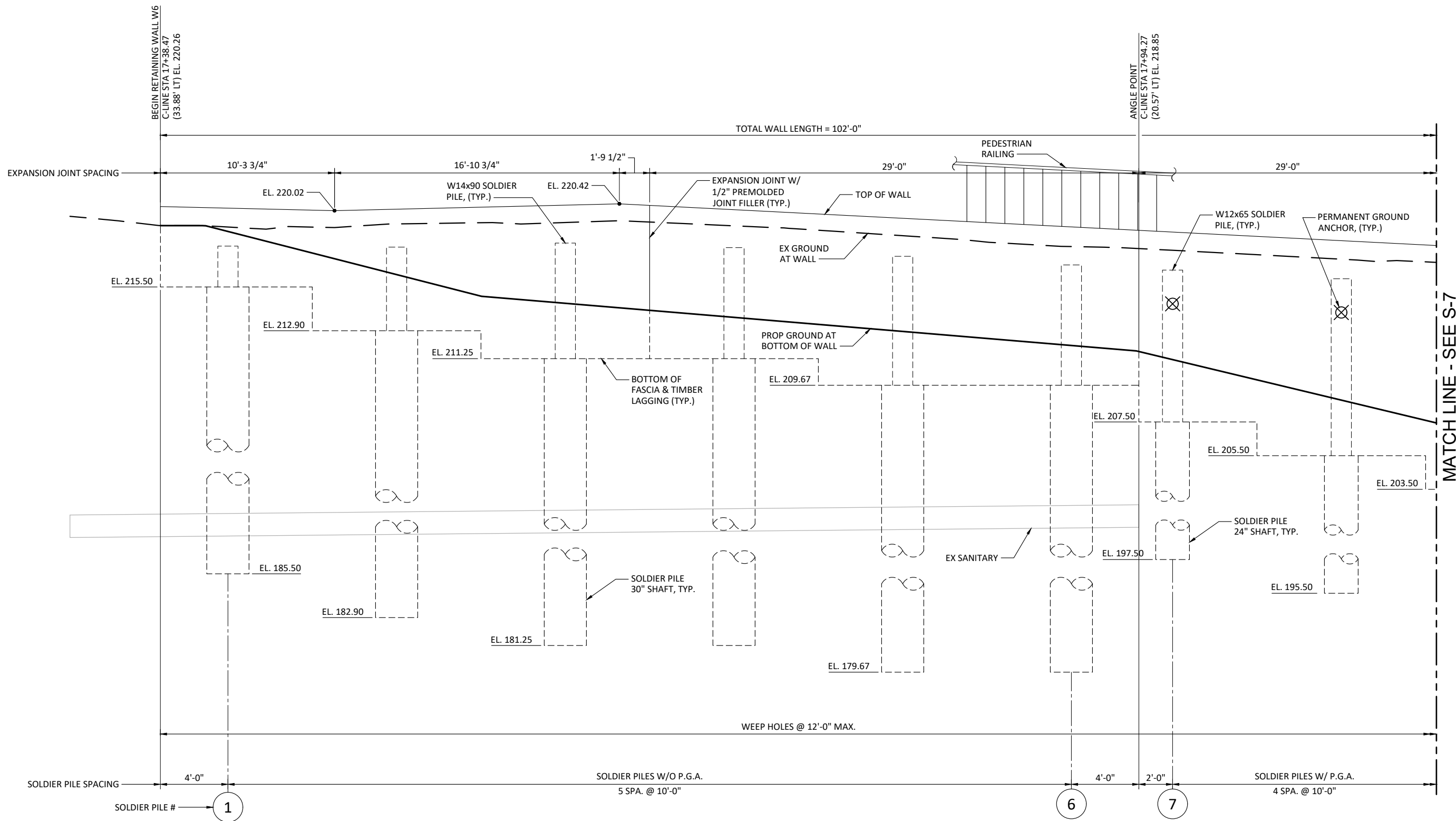
Sheet **S-5**

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PRELIMINARY



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ELEVATION - WALL W6

PRELIMINARY



Initials	Date	Description
DRW	12/31/19	
DES	12/31/19	
CHK	12/31/19	
Revisions		
Revisions		

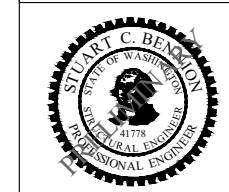


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25TH AVENUE NE BALLINGER CREEK
FLOOD REDUCTION PROJECT
60% REVIEW SUBMITTAL
WALL ELEVATIONS
SHEET 1



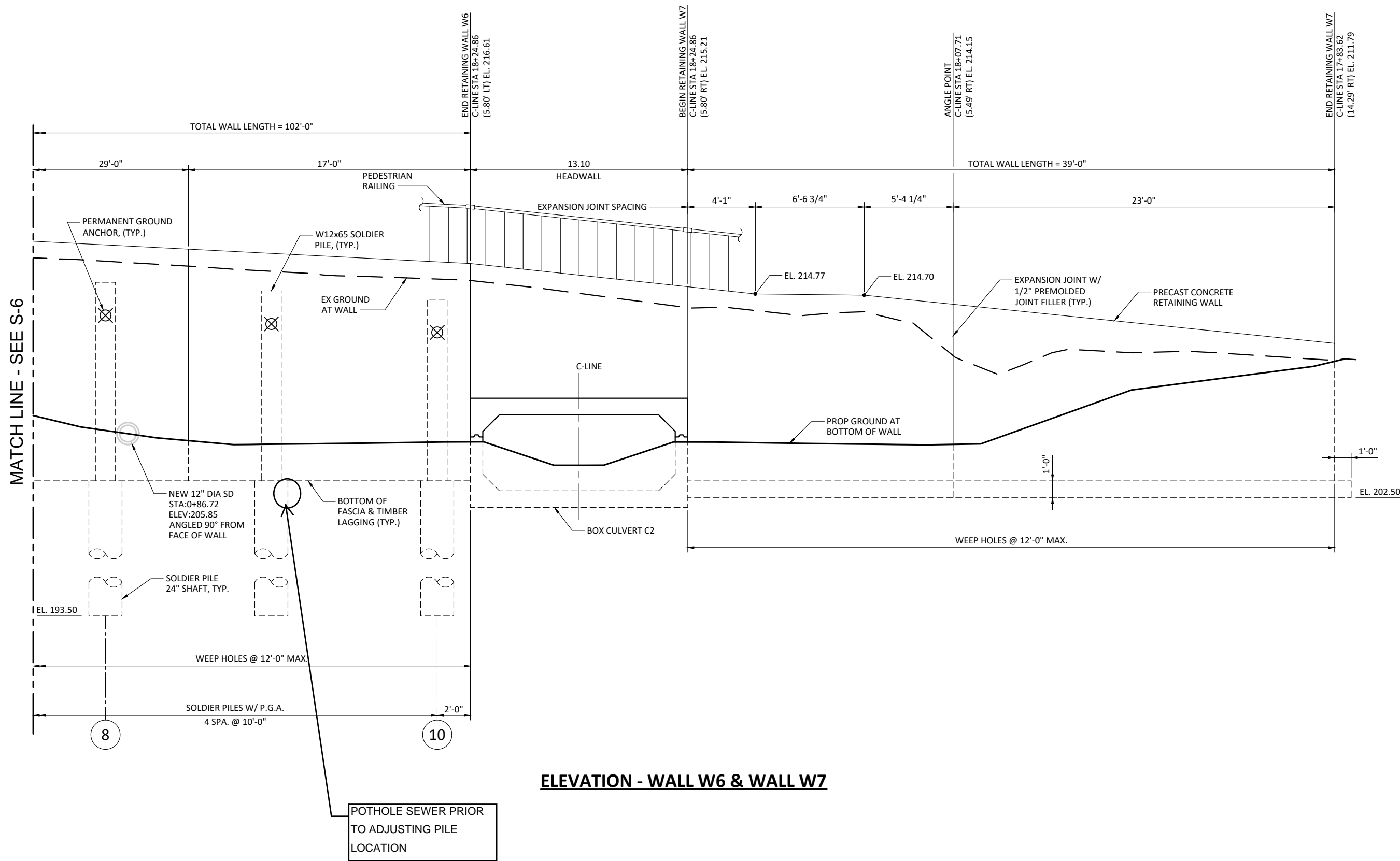
Project No. WA16.0261.00

Sheet **S-6**

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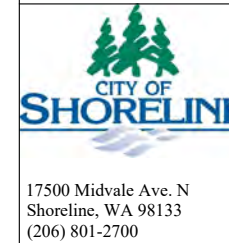
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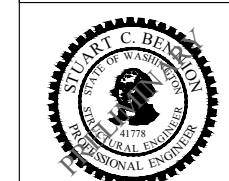


ELEVATION - WALL W6 & WALL W7

Initials	Date	Description
DRW	12/31/19	
DES	12/31/19	
CHK	12/31/19	
		Revisions
		Revisions



25TH AVENUE NE BALLINGER CREEK
FLOOD REDUCTION PROJECT
60% REVIEW SUBMITTAL
WALL ELEVATIONS
SHEET 2



Project No. WA16.0261.00

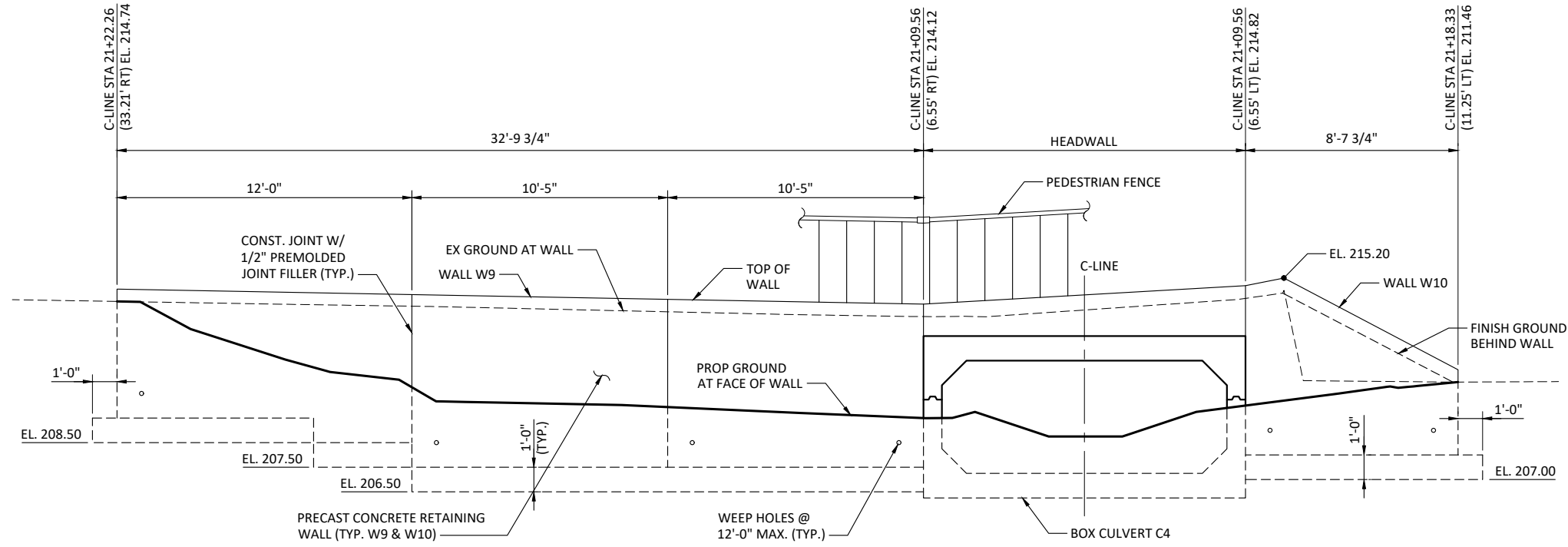
Sheet **S-7**

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PRELIMINARY



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ELEVATION - WALL W9 & WALL W10

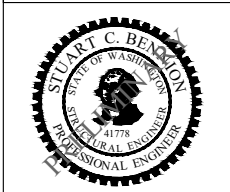
Initials	Date	Description
DRW	12/31/19	
DES	12/31/19	
CHK	12/31/19	

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25TH AVENUE NE BALLINGER CREEK
FLOOD REDUCTION PROJECT
60% REVIEW SUBMITTAL
WALL ELEVATIONS
SHEET 3



Project No. WA16.0261.00

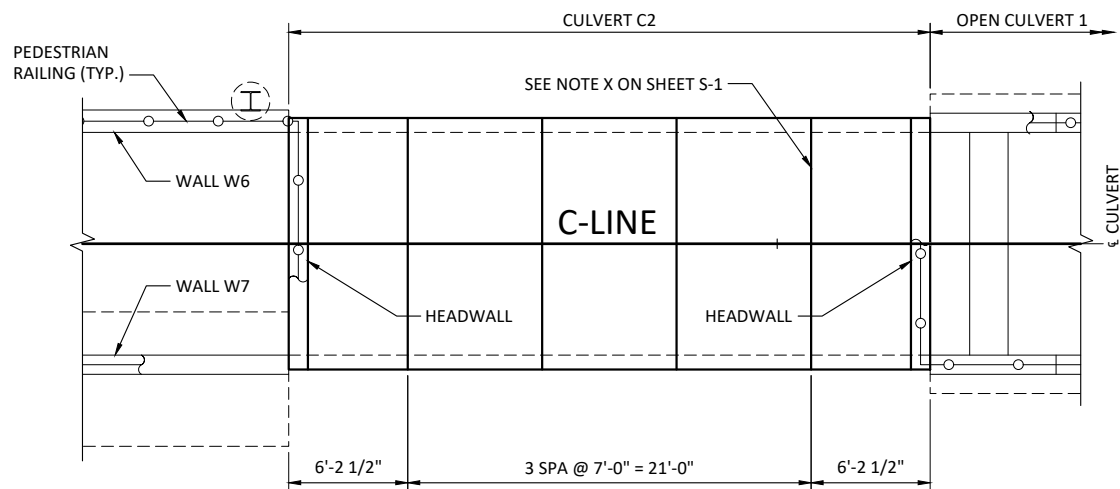
Sheet **S-8**

Sheet 42 Of 55

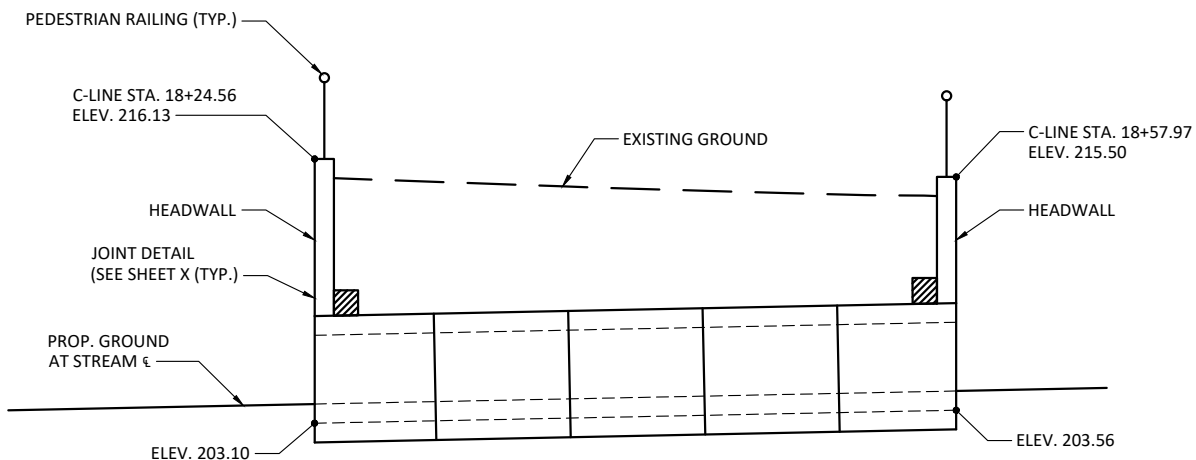
PRELIMINARY



VERIFY SCALE - BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" - IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.



PLAN - CULVERT C2



ELEVATION - CULVERT C2

SEE SHEET S-14 FOR TYPICAL BOX CULVERT SECTION AND SHEET S-21 FOR BOX CULVERT JOINT WATER PROOFING DETAILS.

NOTES TO DESIGNER (SHEETS S-16 - S-18):

1. VERIFY UTILITY IMPACTS TO CULVERTS AND OPEN CULVERTS. SHOW UTILITIES TO REMAIN & NEW UTILITY CONNECTIONS.
2. VERIFY STANDARDS & LOADING TO SHOW ON PLANS OR FABRICATORS.

Initials	Date	Description
DRW	12/31/19	
DES	12/31/19	
CHK	12/31/19	

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25TH AVENUE NE BALLINGER CREEK
 FLOOD REDUCTION PROJECT
 60% REVIEW SUBMITTAL
 CULVERT C2
 PLAN & ELEVATION

STUART C. BENJAMIN
STATE OF WASHINGTON
PROFESSIONAL ENGINEER
41778

Project No. WA16.0261.00

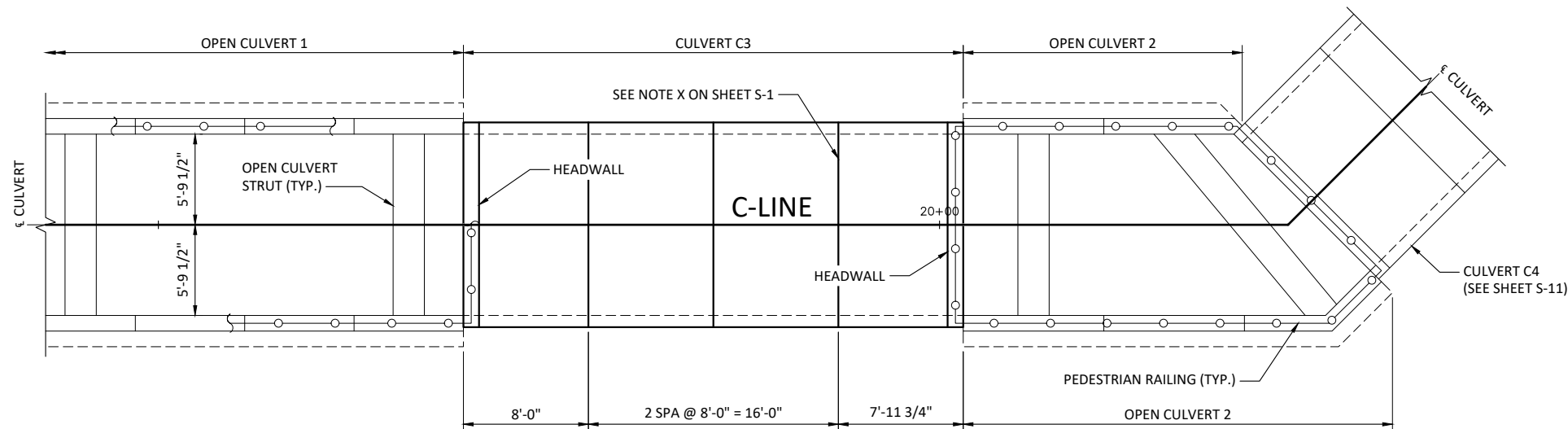
Sheet **S-9**

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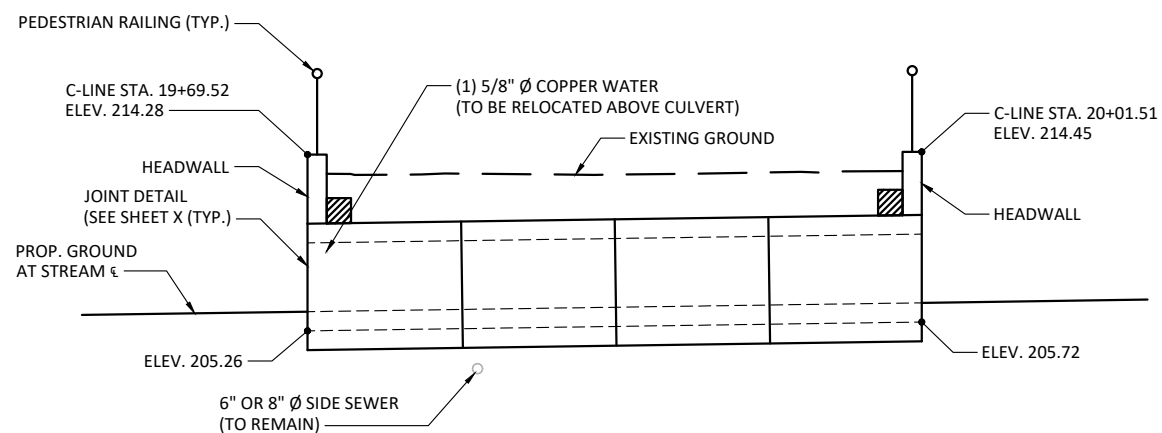
PRELIMINARY



VERIFY SCALE - BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" - IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.



PLAN - CULVERT C3



ELEVATION - CULVERT C3

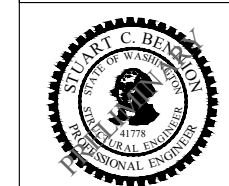
SEE SHEET S-14 FOR TYPICAL BOX CULVERT SECTION AND SHEET S-21 FOR BOX CULVERT JOINT WATER PROOFING DETAILS.

Initials	Date	Description
DRW	12/31/19	
DES	12/31/19	
CHK	12/31/19	

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25TH AVENUE NE BALLINGER CREEK
 FLOOD REDUCTION PROJECT
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 CULVERT C3
 PLAN & ELEVATION



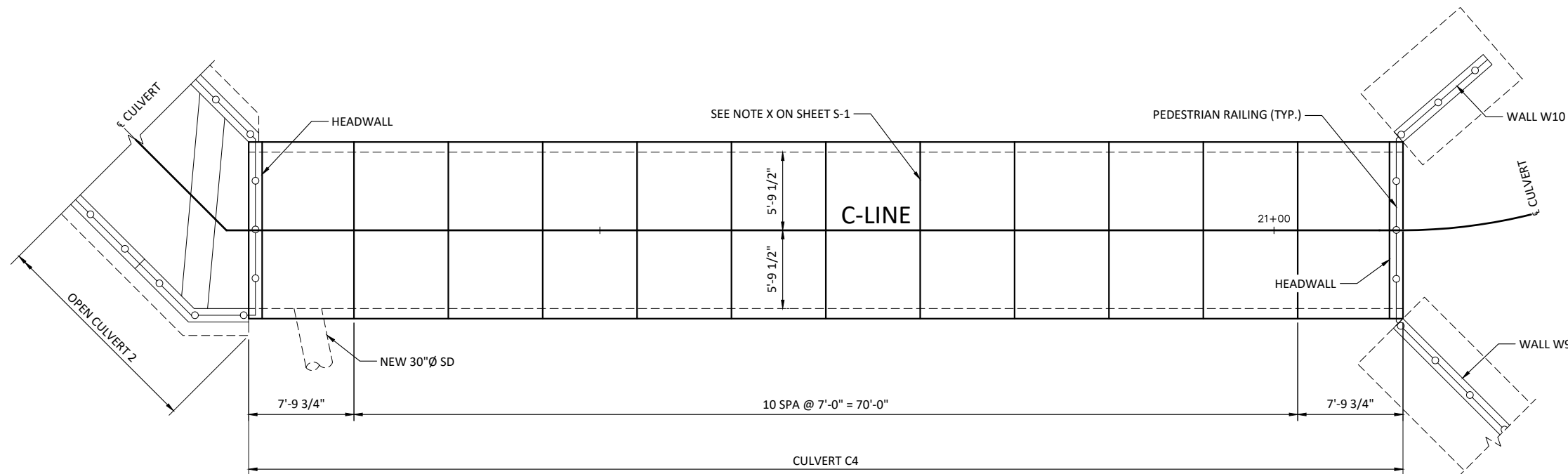
Project No. WA16.0261.00

Sheet **S-10**

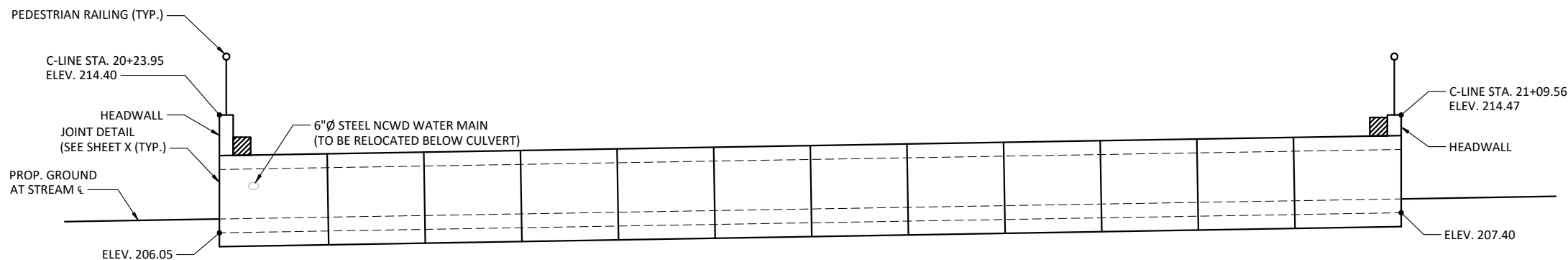
Sheet 44 Of 55

PRELIMINARY





PLAN - CULVERT C4



ELEVATION - CULVERT C4

SEE SHEET S-14 FOR TYPICAL BOX CULVERT SECTION AND SHEET S-21 FOR BOX CULVERT JOINT WATER PROOFING DETAILS.

NOTES TO DESIGNER:

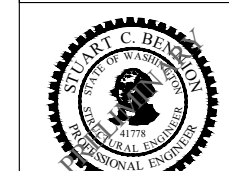
- COORDINATE STORM SYSTEM.
- SHOW ALL UTILITY IMPACTS.

PRELIMINARY



Initials	Date	Description
DRW	12/31/19	
DES	12/31/19	
CHK	12/31/19	

25TH AVENUE NE BALLINGER CREEK
FLOOD REDUCTION PROJECT
60% REVIEW SUBMITTAL
CULVERT C4
PLAN & ELEVATION

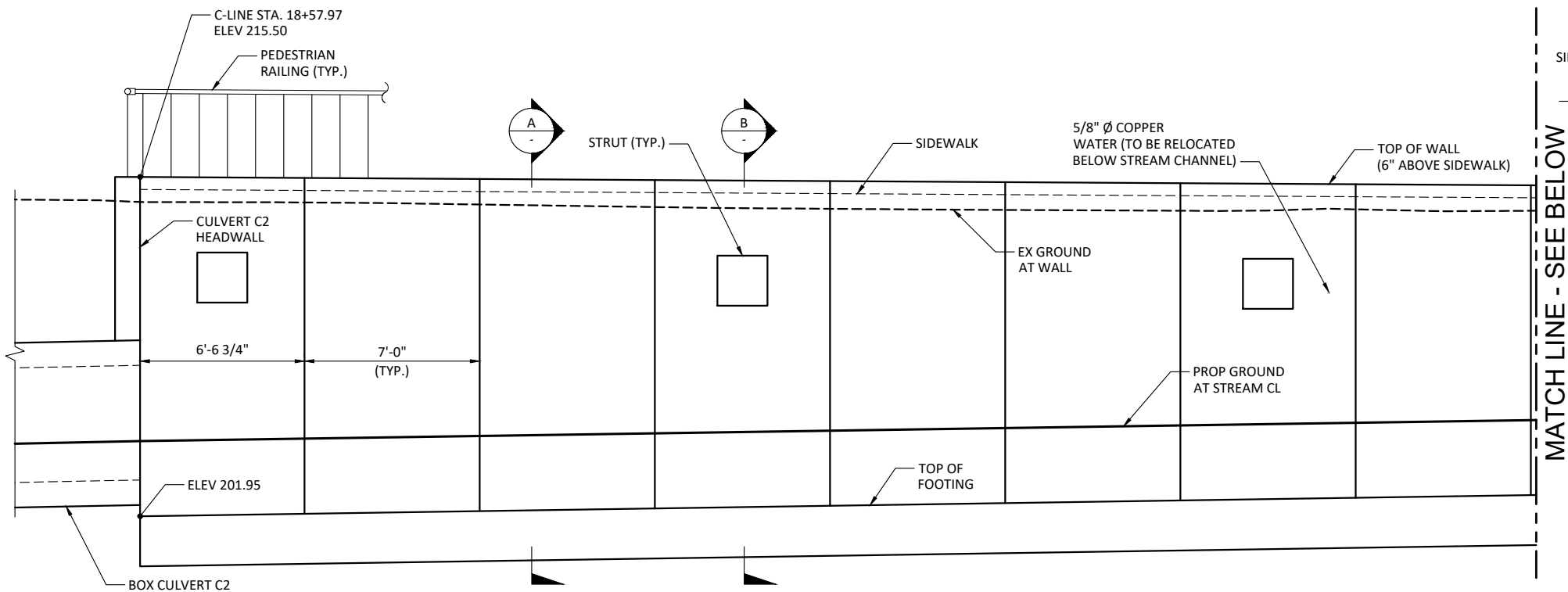


Project No. WA16.0261.00

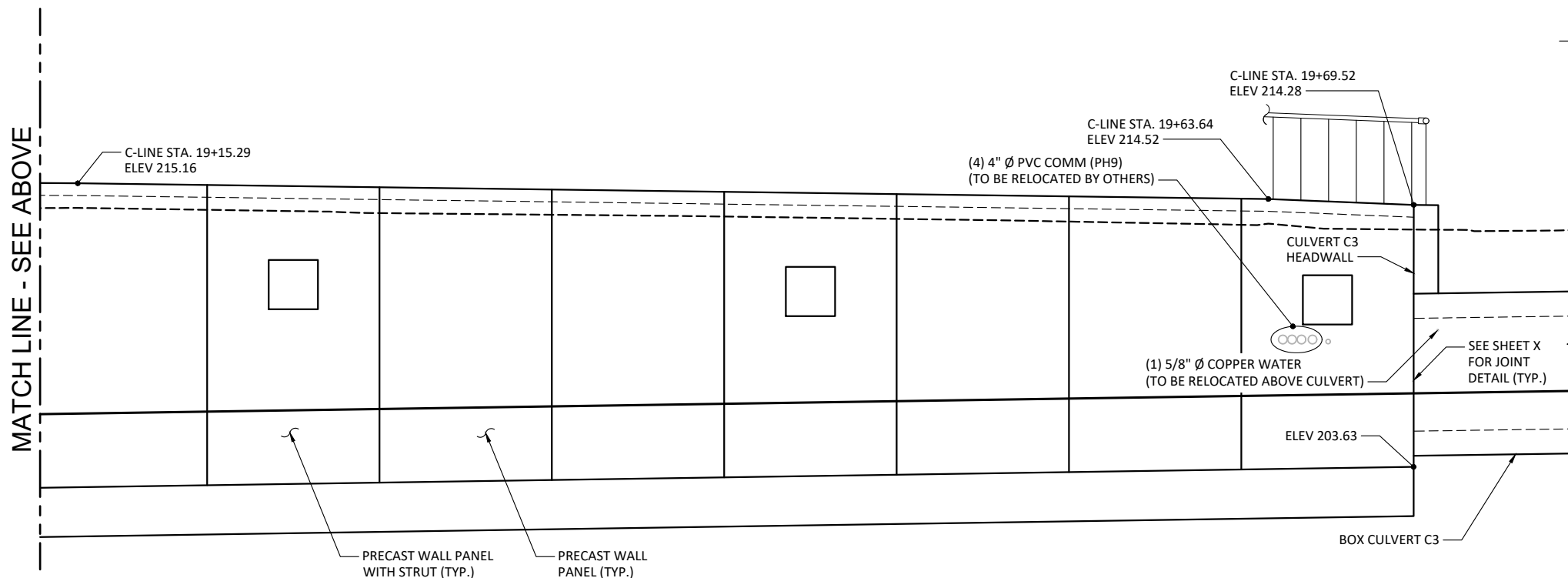
Sheet **S-11**

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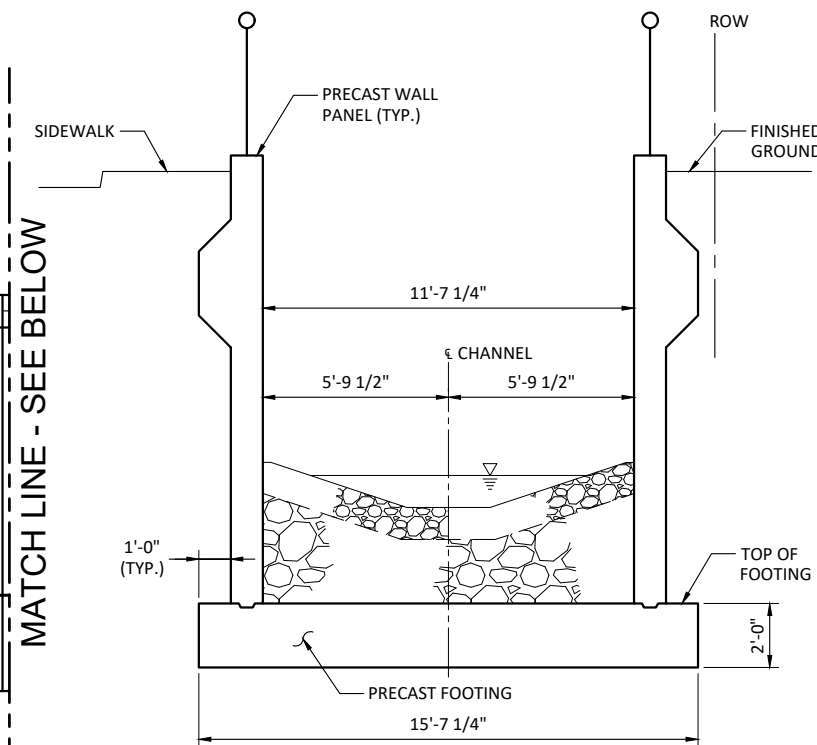
VERIFY SCALE - BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" - IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.



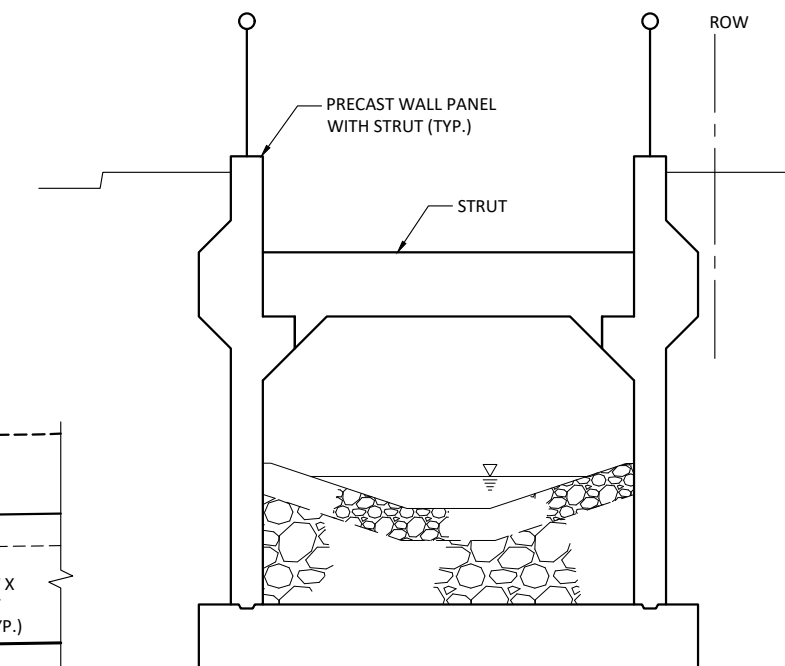
ELEVATION - OPEN CULVERT 1
WEST WALL SHOWN, EAST WALL SIMILAR



ELEVATION - OPEN CULVERT 1
WEST WALL SHOWN, EAST WALL SIMILAR



TYPICAL SECTION
A
-5-13



TYPICAL SECTION AT STRUT
B
-5-13
SEE SECTION A FOR DETAILS NOT SHOWN

Initials	Date	Description
DRW	12/31/19	
DES	12/31/19	
CHK	12/31/19	
Revisions		
Revisions		

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25TH AVENUE NE BALLINGER CREEK
FLOOD REDUCTION PROJECT
60% REVIEW SUBMITTAL
OPEN CULVERT 1
ELEVATION & SECTION

STUART C. BENJON
STATE OF WASHINGTON
41778
PROFESSIONAL ENGINEER

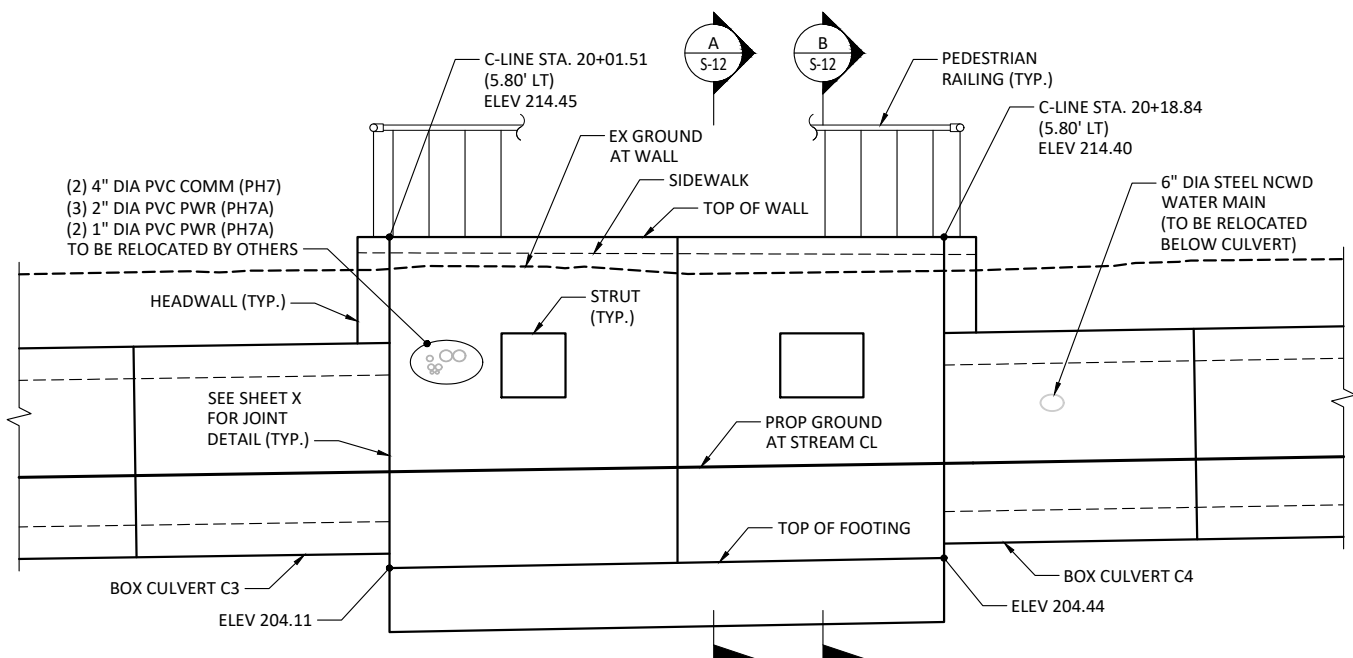
Project No. WA16.0261.00

Sheet **S-12**

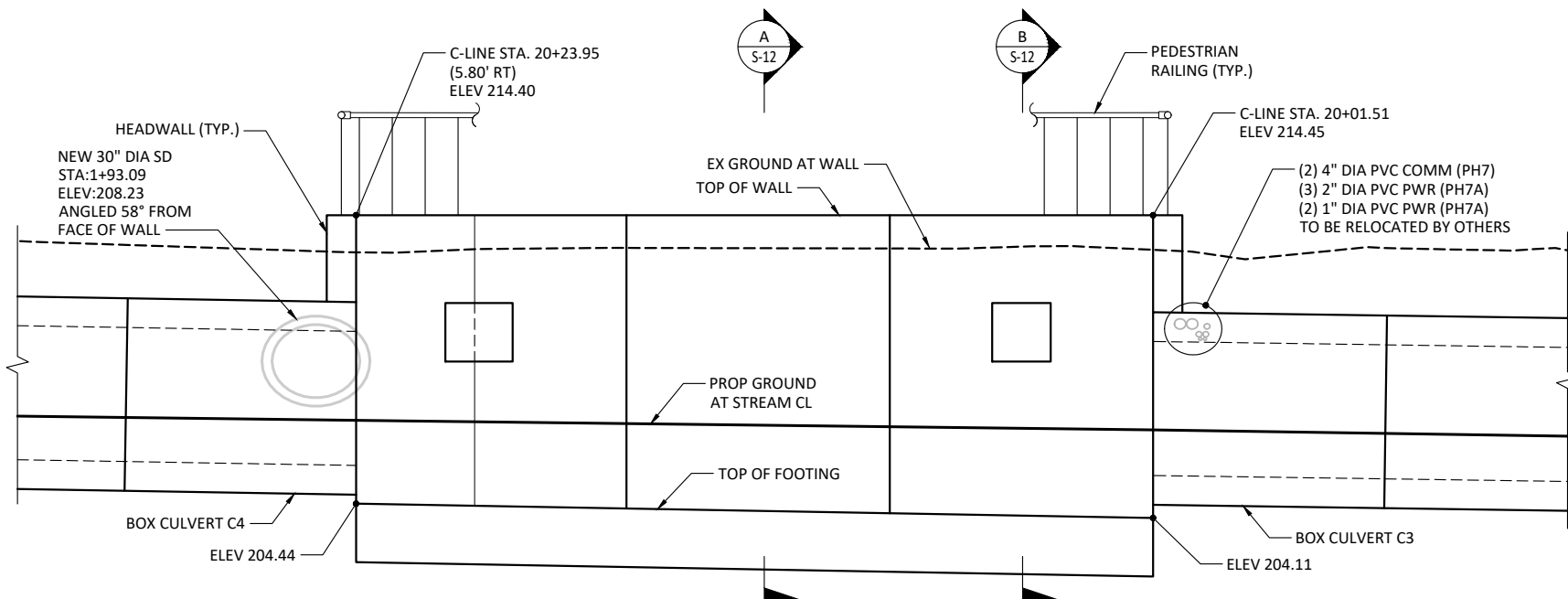
Sheet 46 Of 55

PRELIMINARY

811
Know what's below.
Call before you dig.



ELEVATION - OPEN CULVERT 2 WEST WALL



ELEVATION - OPEN CULVERT 2 EAST WALL

Initials	Date	Description
DRW	12/31/19	
DES	12/31/19	
CHK	12/31/19	

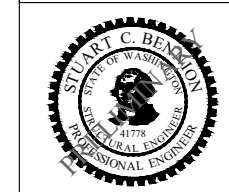
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25TH AVENUE NE BALLINGER CREEK
FLOOD REDUCTION PROJECT
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OPEN CULVERT 2
ELEVATIONS



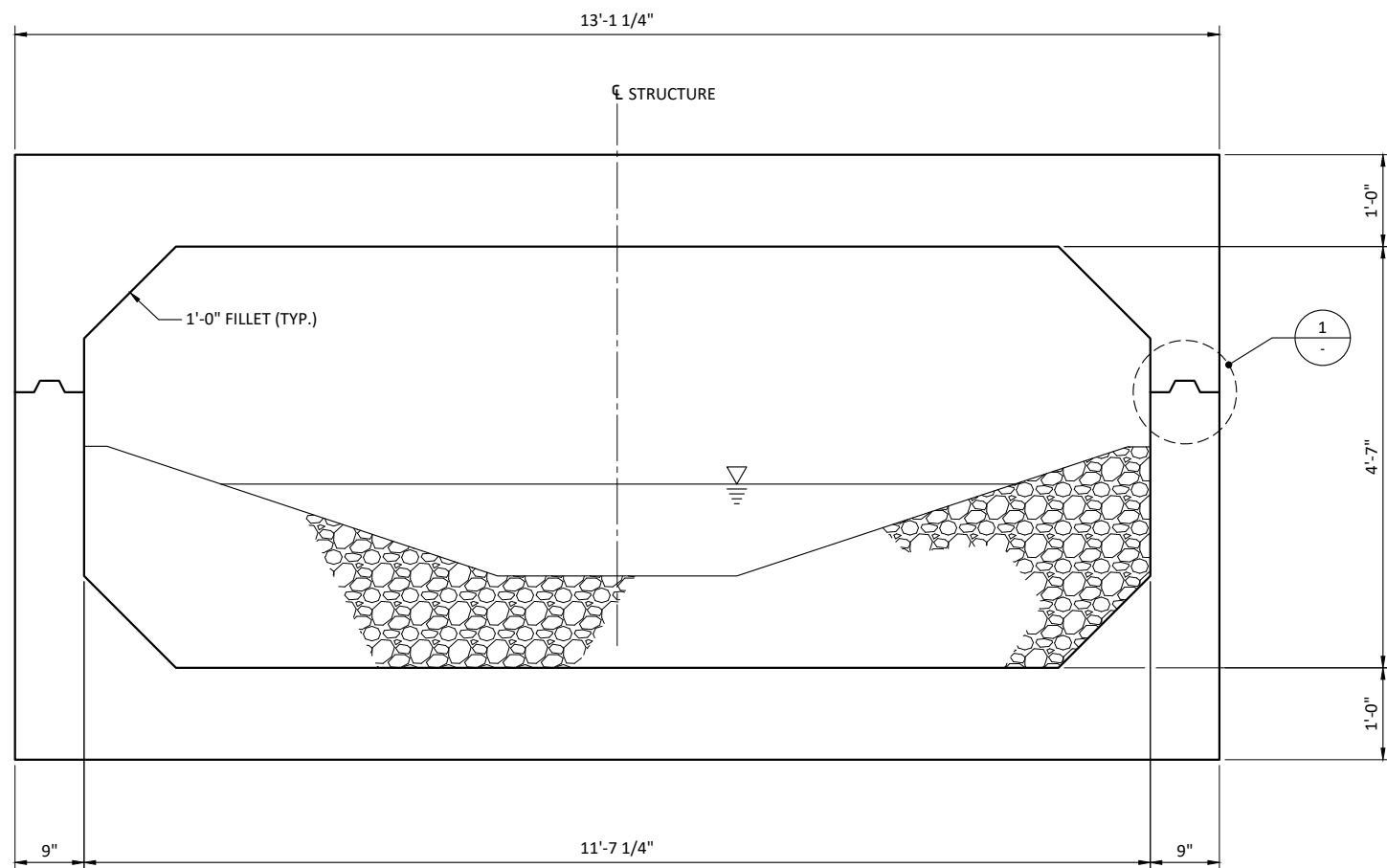
Project No. WA16.0261.00

Sheet **S-13**

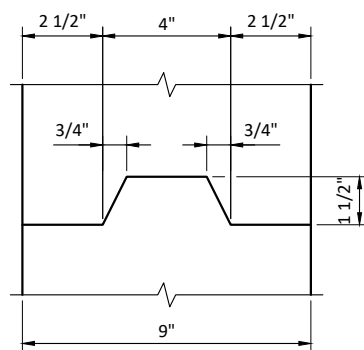
Sheet 47 Of 55

PRELIMINARY

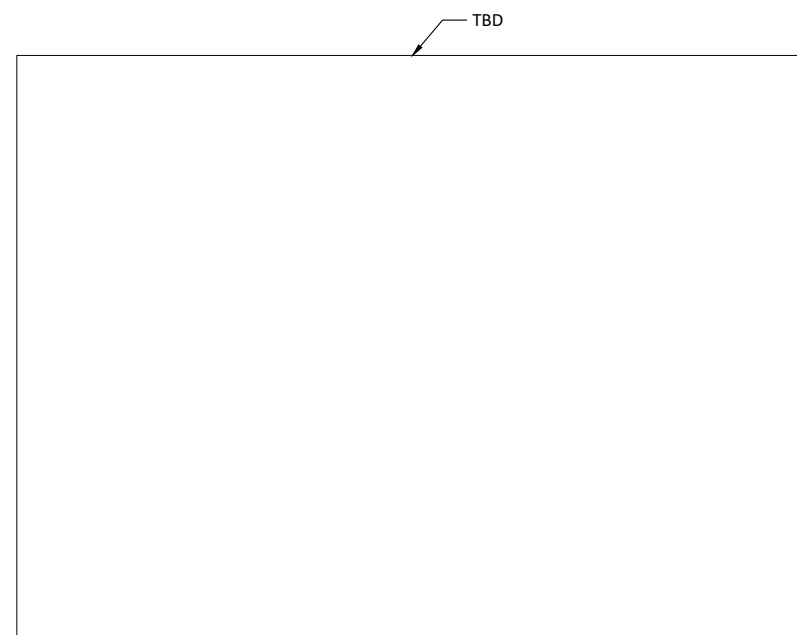




TYPICAL BOX CULVERT



1 SHEAR KEY



TYPICAL SECTION AT HEADWALL

PRELIMINARY

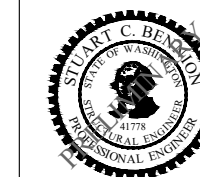


Initials	Date	Description
DRW	12/31/19	
DES	12/31/19	
CHK	12/31/19	

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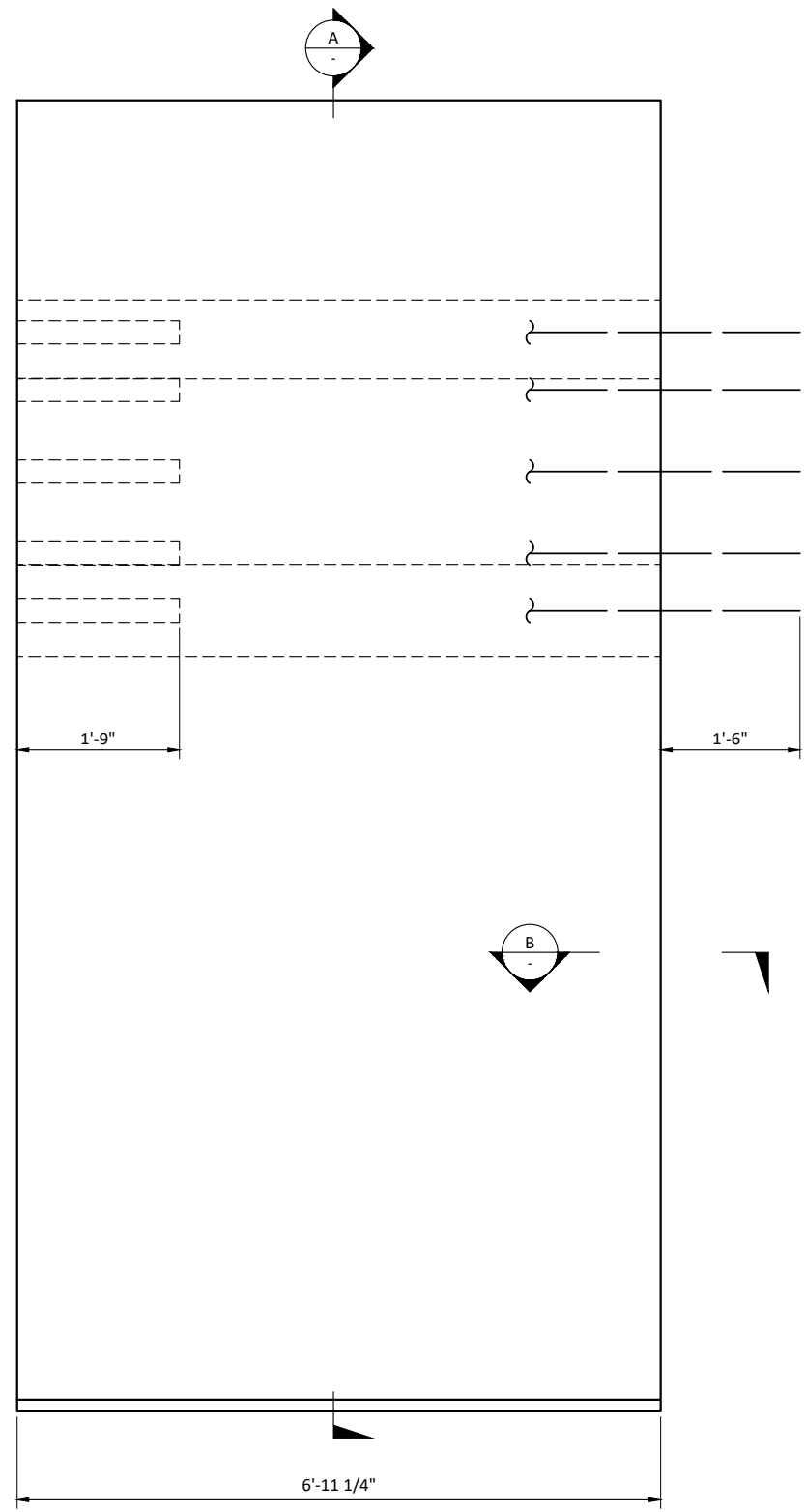
25TH AVENUE NE BALLINGER CREEK
 FLOOD REDUCTION PROJECT
 60% REVIEW SUBMITTAL
 BOX CULVERT TYPICAL SECTION



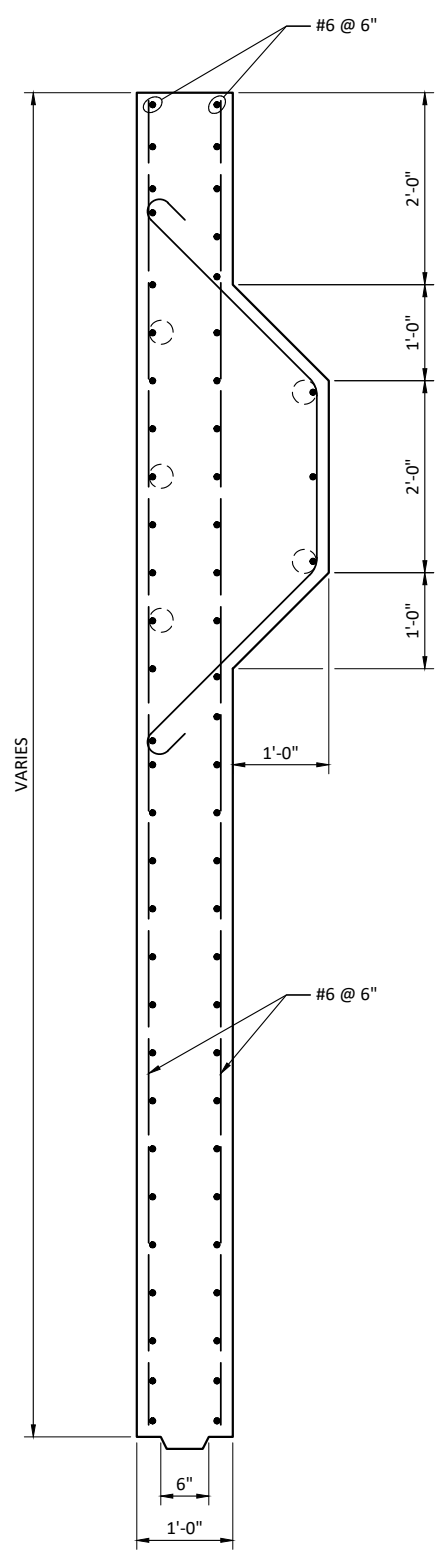
Project No. WA16.0261.00

Sheet **S-14**

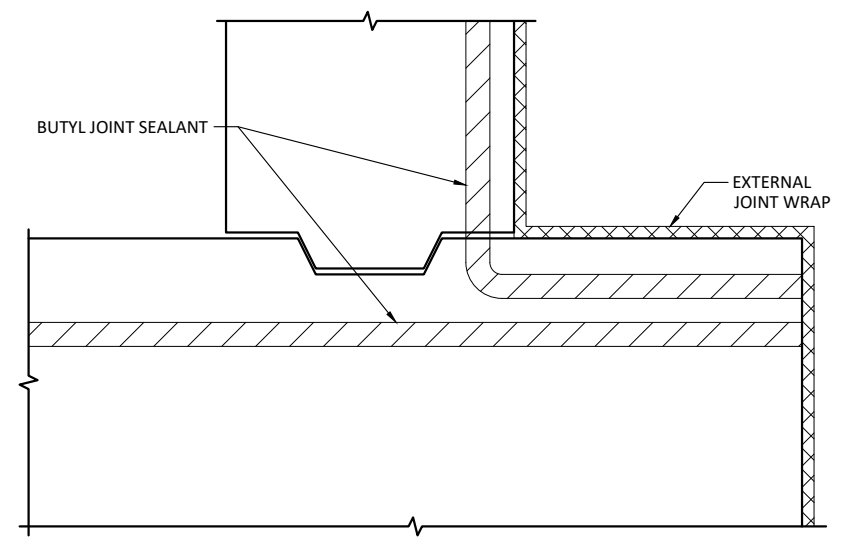
Sheet 48 Of 55



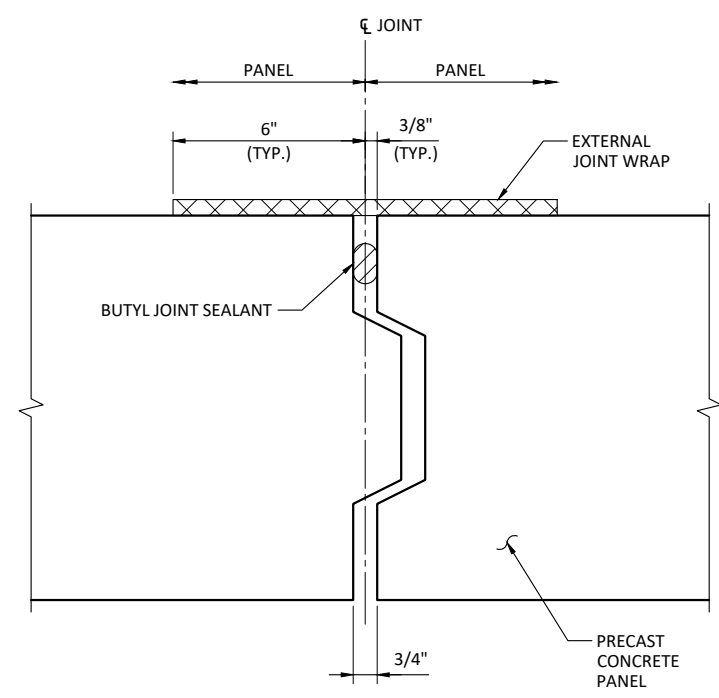
PRECAST WALL PANEL



SECTION



DETAIL



SHEAR KEY

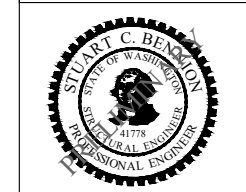
Initials	Date	Description
DRW	12/31/19	
DES	12/31/19	
CHK	12/31/19	
Revisions		
Revisions		

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25TH AVENUE NE BALLINGER CREEK
FLOOD REDUCTION PROJECT
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OPEN CULVERT PANEL DETAILS



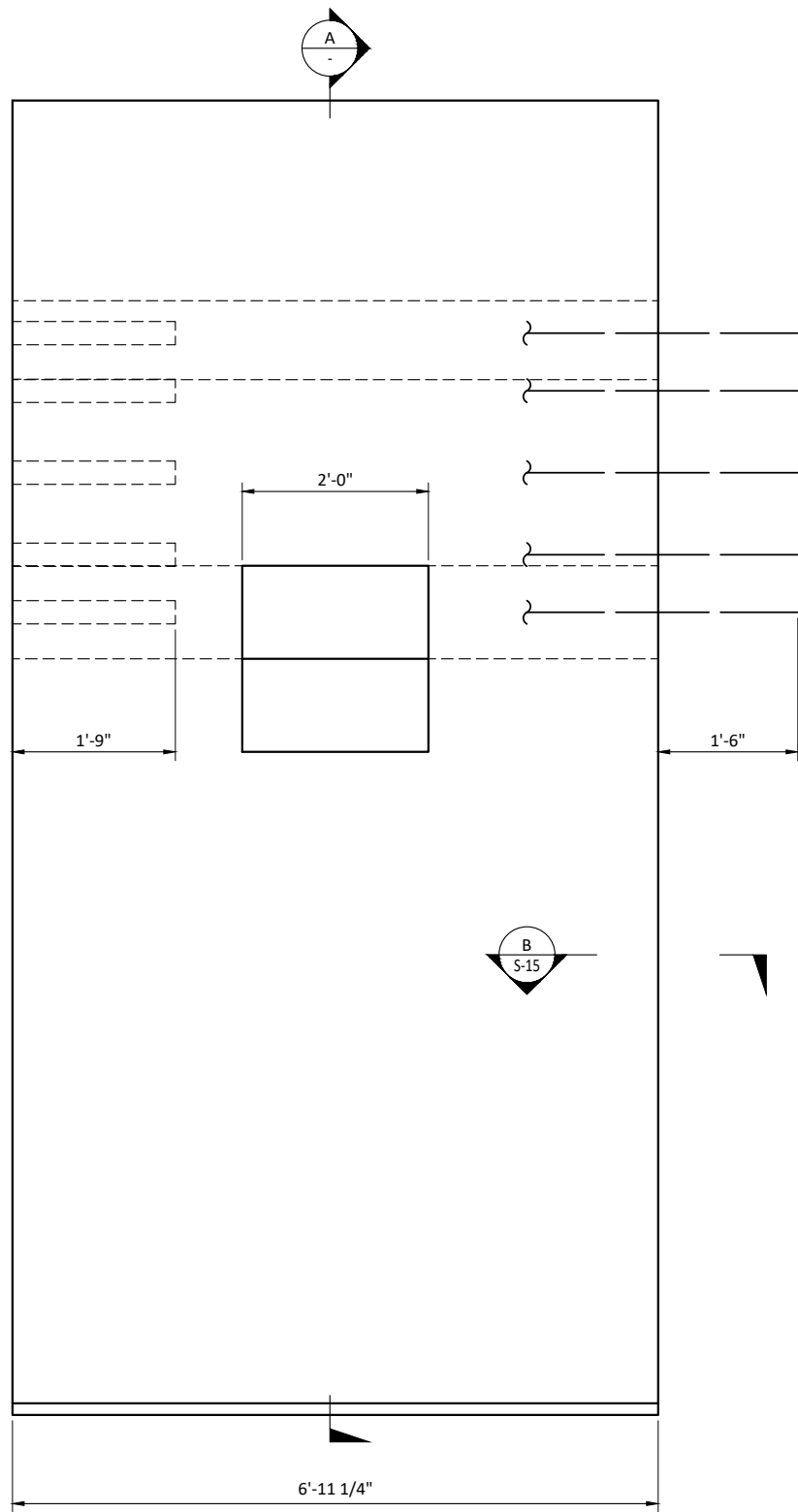
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Sheet **S-15**

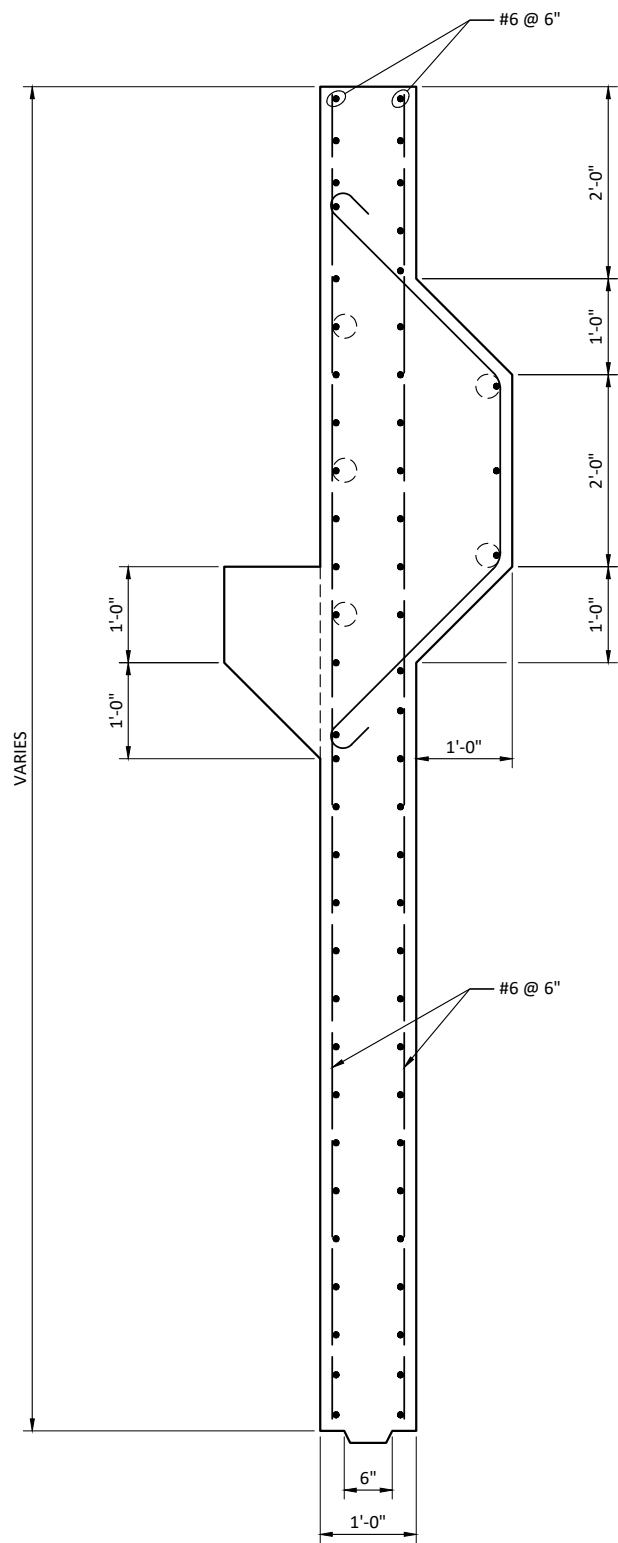
Sheet 49 Of 55

PRELIMINARY

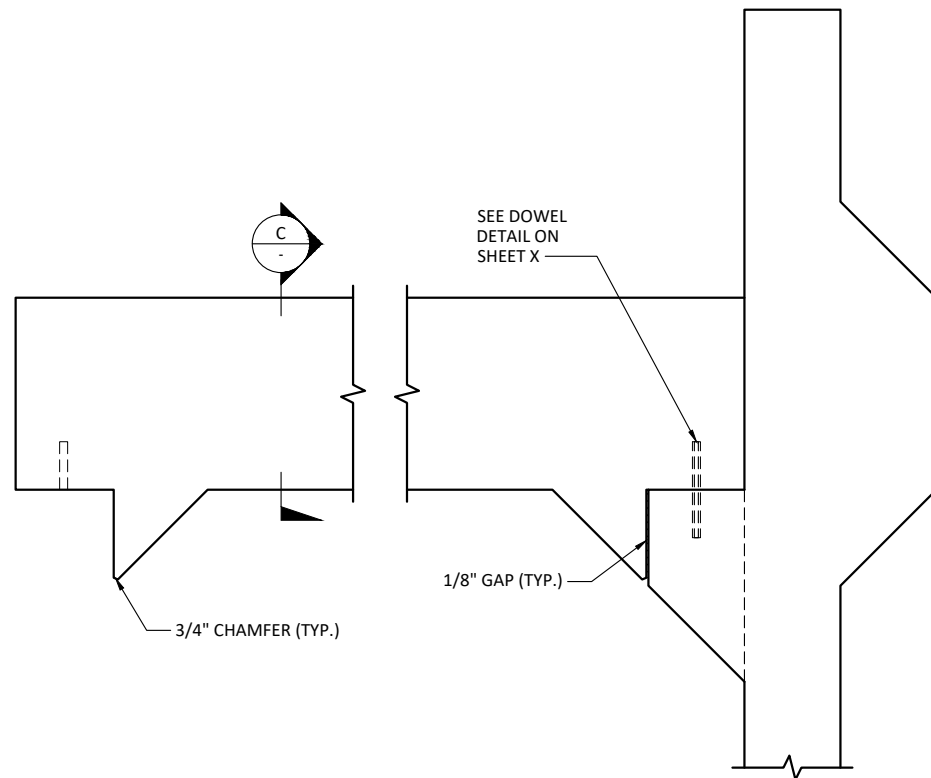




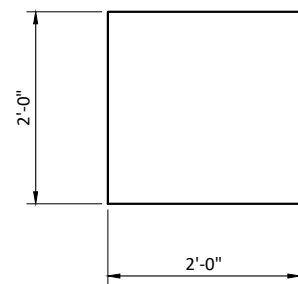
PRECAST WALL PANEL WITH STRUT



SECTION A



STRUT



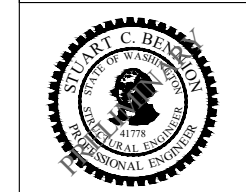
SECTION C

Initials	Date	Description
DRW	12/31/19	
DES	12/31/19	
CHK	12/31/19	

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25TH AVENUE NE BALLINGER CREEK
 FLOOD REDUCTION PROJECT
 60% REVIEW SUBMITTAL
 OPEN CULVERT PANELS W/ STRUT DETAILS



Project No. WA16.0261.00

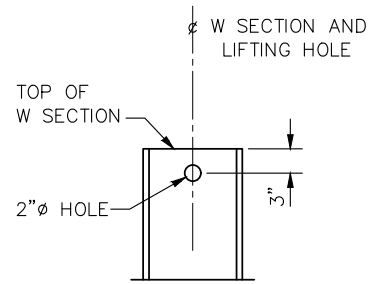
Sheet **S-16**

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PRELIMINARY

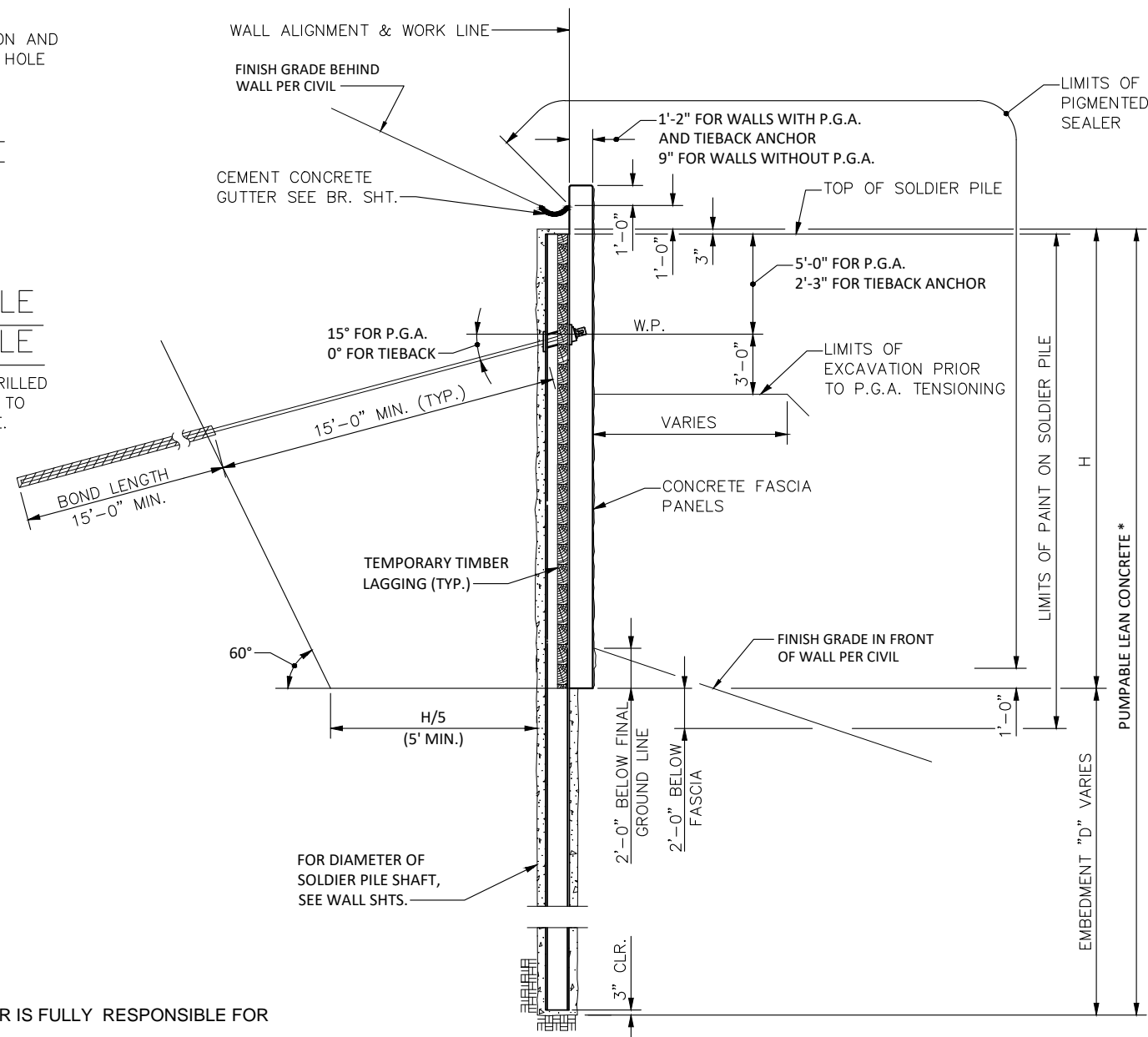


VERIFY SCALE - BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" - IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.



SOLDIER PILE LIFTING HOLE

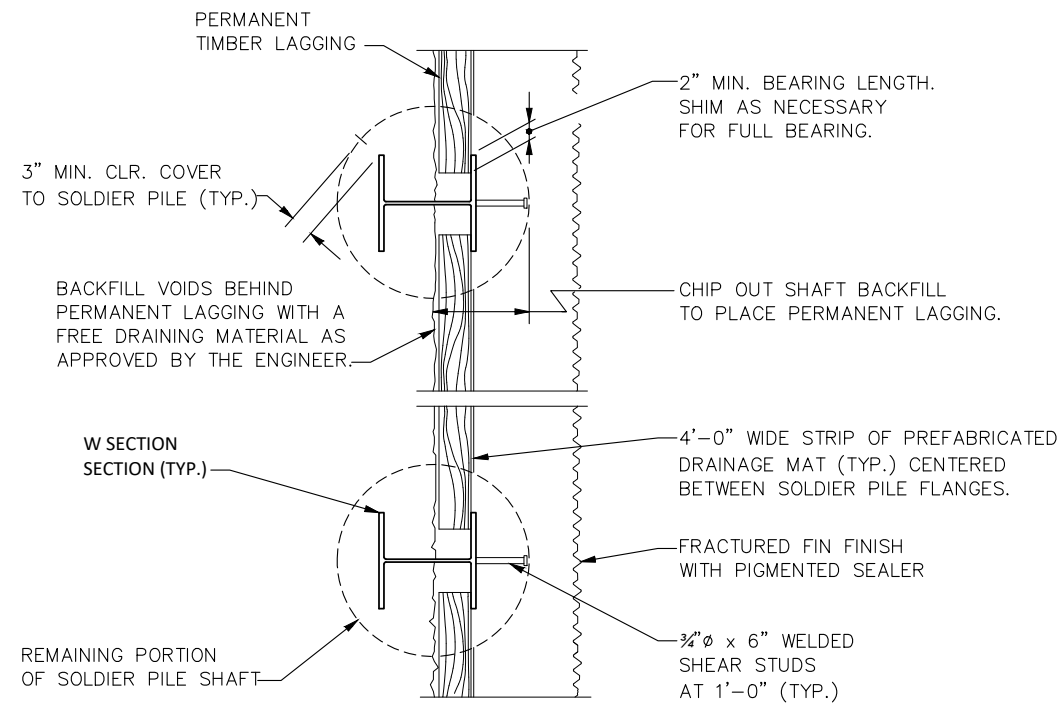
LIFTING HOLE TO BE DRILLED IN THE SHOP PRIOR TO PAINTING THE PILE.



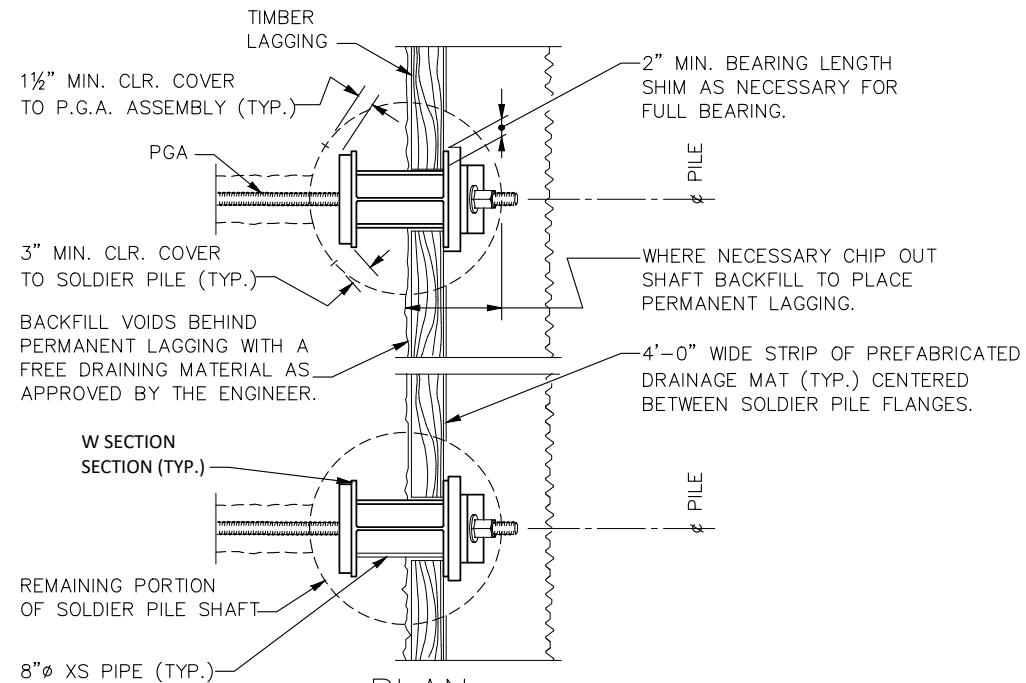
TYPICAL SECTION

SHOWN FOR SOLDIER PILE WITH P.G.A. AND TIEBACK ANCHOR SIMILAR FOR SOLDIER PILE WITHOUT P.G.A.
P.G.A.= PERMANENT GROUND ANCHOR

NOTE: CONTRACTOR IS FULLY RESPONSIBLE FOR POTHLING AND LOCATING UTILITIES FOR THE FULL LENGTH OF THE PGAS AND TAKING MEASURES TO AVOID THESE UTILITIES AND PROVIDE THE MINIMUM CLEARANCE REQUIRED BY THE UTILITY



PLAN SOLDIER PILE WALL WITHOUT P. G. A.



PLAN SOLDIER PILE WALL WITH P. G. A.

Initials	Date	Description
DRW	12/31/19	
DES	12/31/19	
CHK	12/31/19	
Revisions		
Revisions		

25TH AVENUE NE BALLINGER CREEK FLOOD REDUCTION PROJECT
60% REVIEW SUBMITTAL
SOLDIER PILE DETAILS - SHEET 1 OF 4

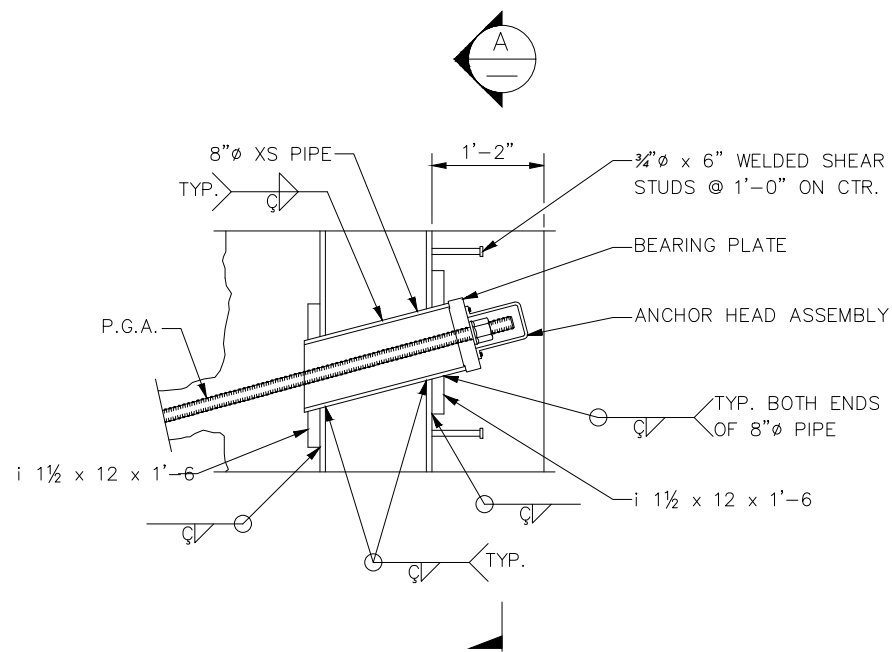
Project No. WA16.0261.00

Sheet **S-17**

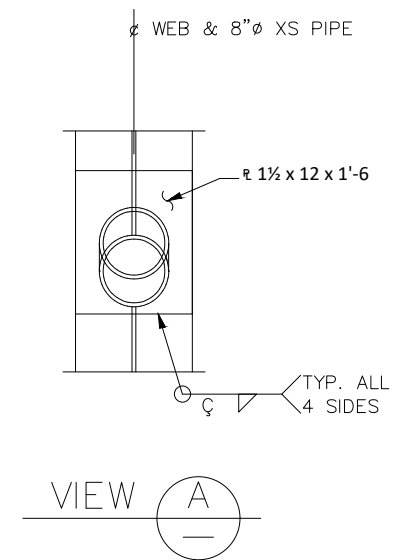
Sheet 51 Of 55

PRELIMINARY

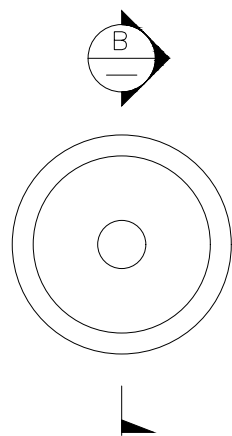
VERIFY SCALE - BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.



ELEVATION – SOLDIER PILE WITH P.G.A. THRU WEB

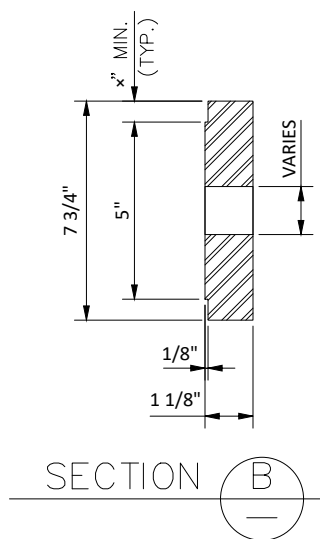


VIEW A



BEARING PLATE

BEARING PLATE SHALL BE SIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATION SECTION 6-17.3(5).



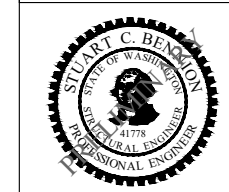
SECTION B

Initials	Date	Description
DRW	12/31/19	
DES	12/31/19	
CHK	12/31/19	

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25TH AVENUE NE BALLINGER CREEK
FLOOD REDUCTION PROJECT
60% REVIEW SUBMITTAL
SOLDIER PILE DETAILS - SHEET 2 OF 4



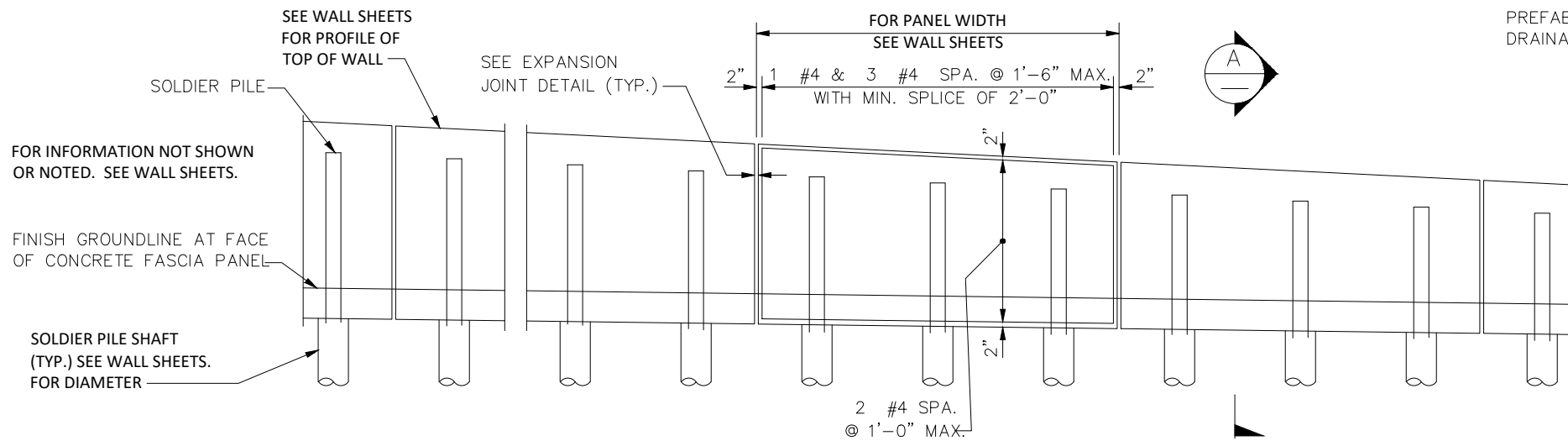
Project No. WA16.0261.00

Sheet S-18

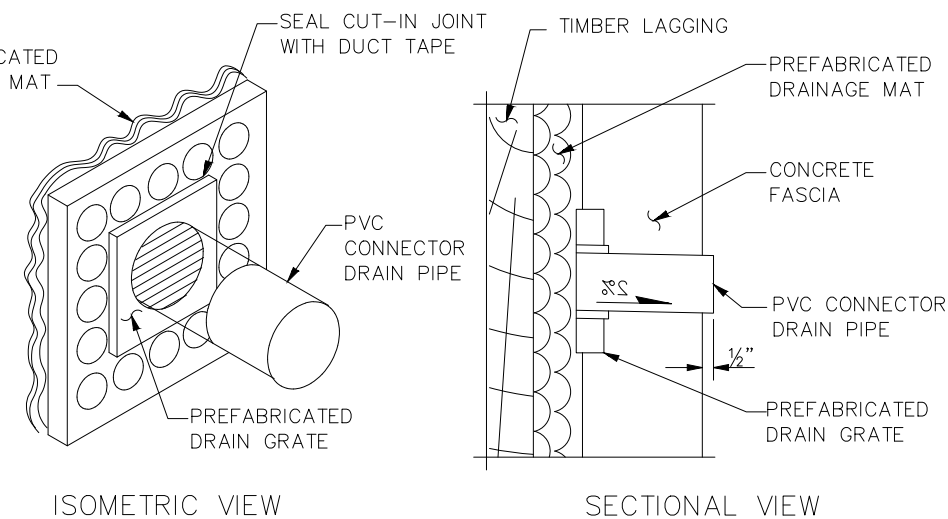
Sheet 52 Of 55

PRELIMINARY



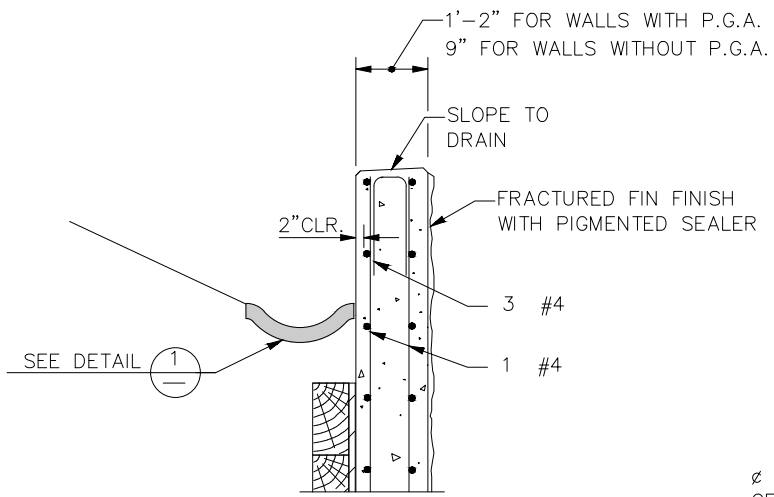


PARTIAL WALL ELEVATION



WEEP HOLE DRAIN DETAILS

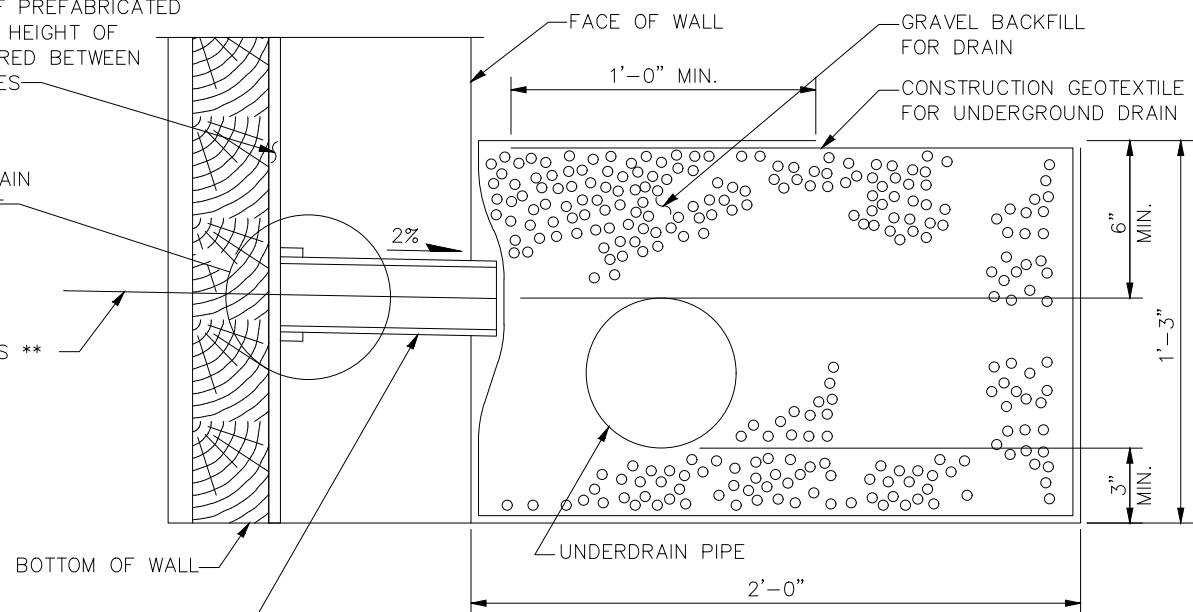
DRAIN GRATE INSTALLATION SHALL NOT DISRUPT PREFABRICATED DRAINAGE MAT



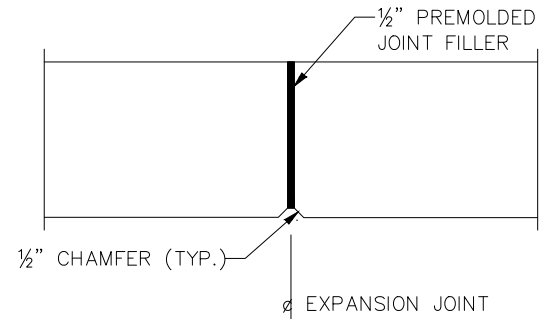
4'-0" WIDE STRIP OF PREFABRICATED DRAINAGE MAT FULL HEIGHT OF LAGGING AND CENTERED BETWEEN SOLDIER PILE FLANGES

SEE "WEEP HOLE DRAIN DETAILS" THIS SHEET

ø 3" PVC WEEPHOLES CENTERED BETWEEN PILES **

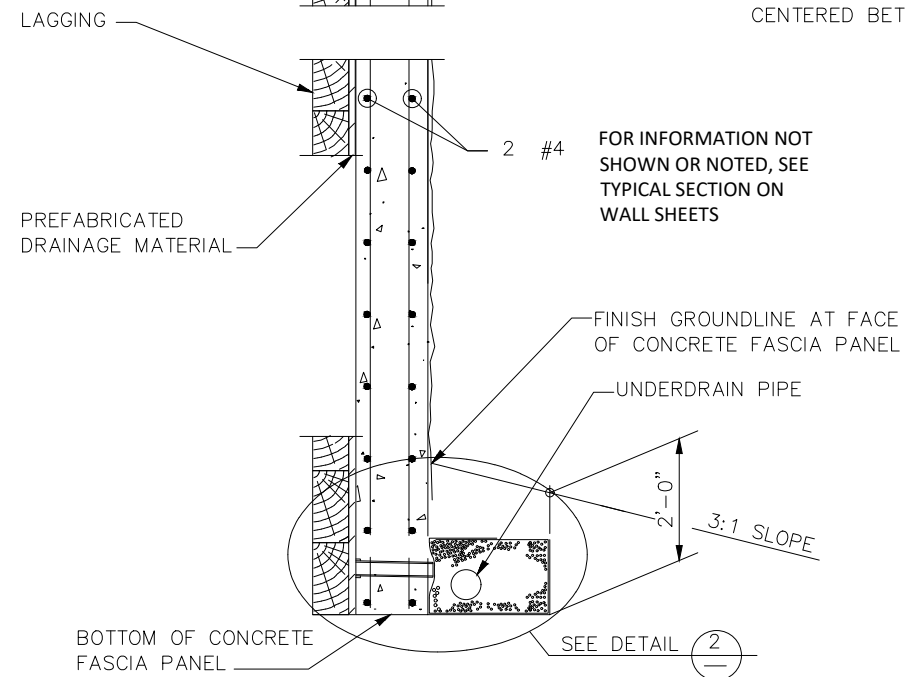


** WEEP HOLES LOCATED AT AN EXPANSION JOINT MAY BE ADJUSTED 6" TO 1'-0" AWAY FROM THE EXPANSION JOINT, BUT REMAIN WITHIN THE MIDDLE HALF OF THE PREFABRICATED DRAINAGE MAT.

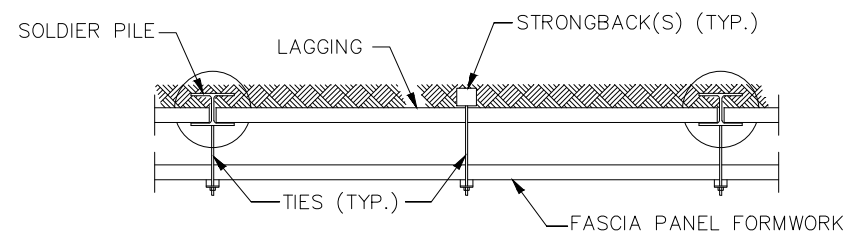


EXPANSION JOINT DETAIL

NOTE: EXPANSION JOINTS SHALL BE LOCATED AS SHOWN ON BRIDGE SHEET



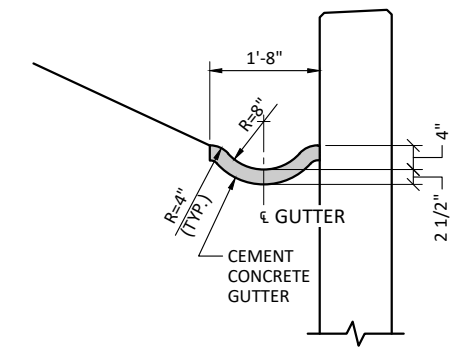
SECTION A



TYPICAL FASCIA PANEL FORMWORK

- SEE SECTION 6-16.3(2) FOR FASCIA PANEL FORMING REQUIREMENTS.

- STRONGBACK(S) AND TIES SPACED AS REQUIRED FOR FORMING.



DETAIL 1

PRELIMINARY



Initials	Date	Description
DRW	12/31/19	
DES	12/31/19	
CHK	12/31/19	
Revisions		
Revisions		

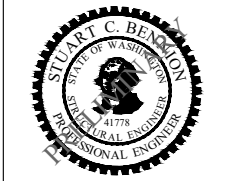


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25TH AVENUE NE BALLINGER CREEK
FLOOD REDUCTION PROJECT
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SOLDIER PILE DETAILS - SHEET 3 OF 4



Project No. WA16.0261.00

Sheet S-19

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