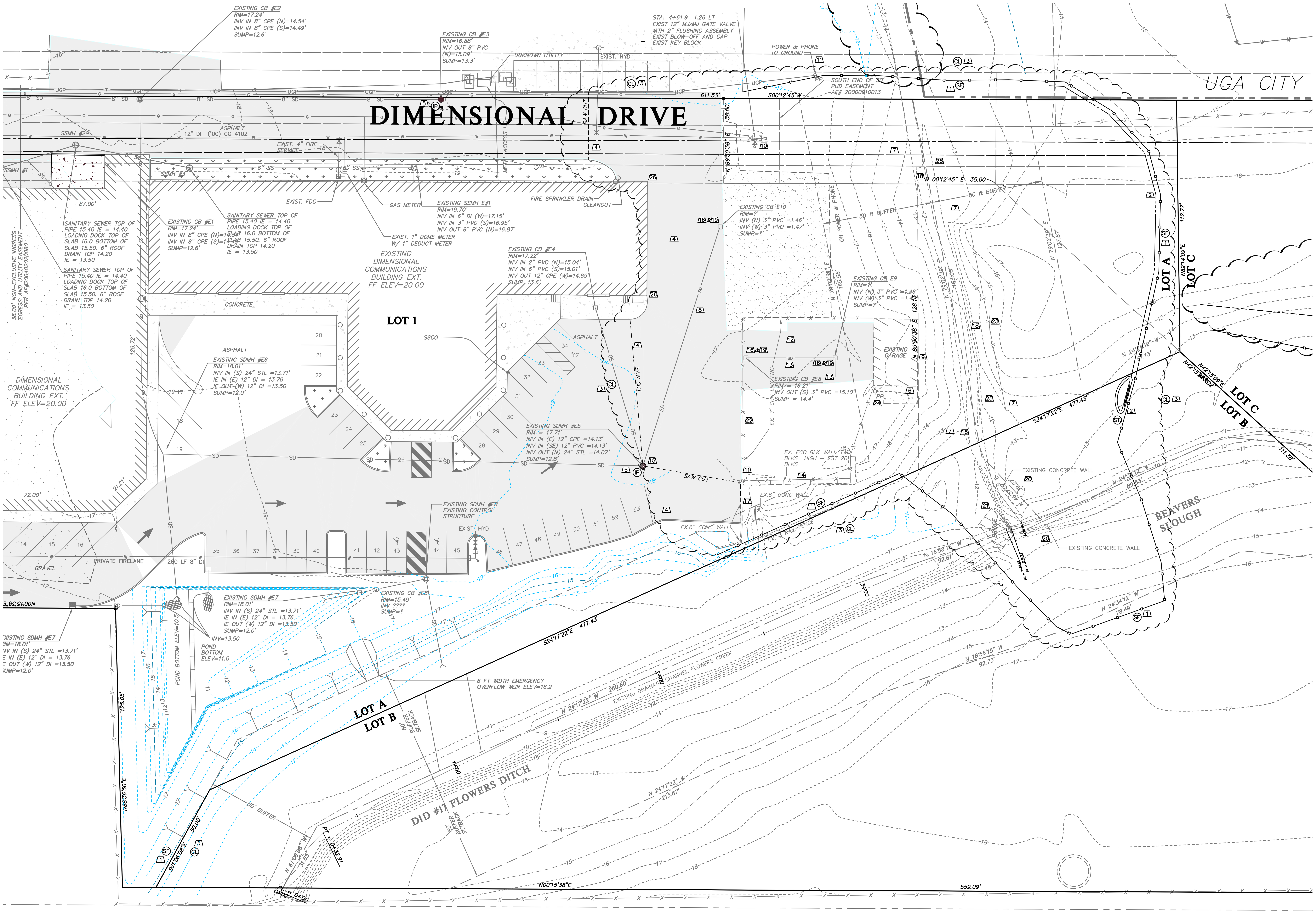
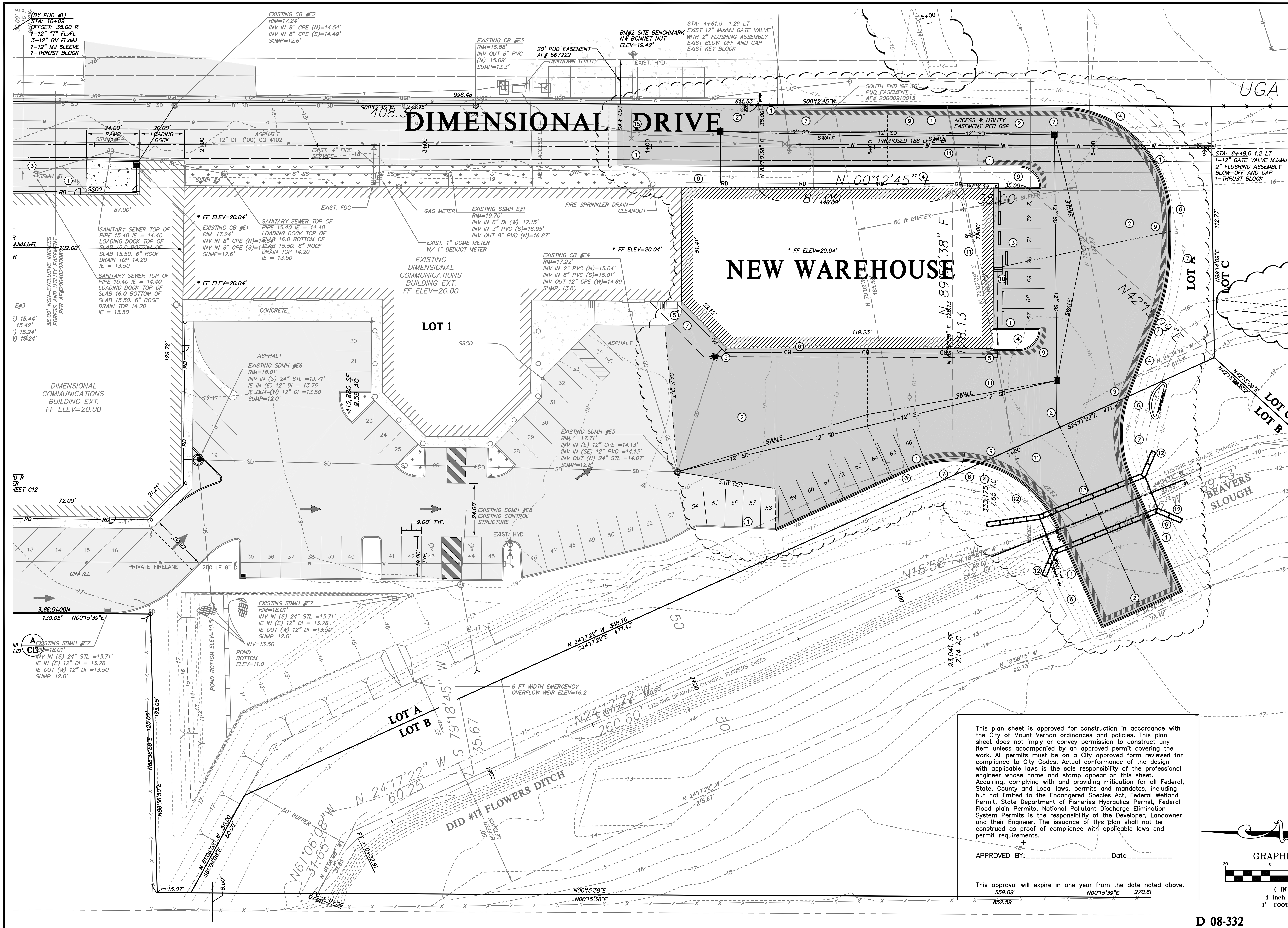

DIMENSIONAL DRIVE
UGA CITY
LOT 1
LOT A
LOT B
LOT C
EXISTING DIMENSIONAL COMMUNICATIONS BUILDING EXT. FF ELEV=20.00
DIMENSIONAL COMMUNICATIONS BUILDING EXT. FF ELEV=20.00
38.00' NON-EXCLUSIVE INGRESS EGRESS AND UTILITY EASEMENT PER AF#200402020080
EXISTING CB #E2 RIM=17.24' INV IN 8" CPE (N)=14.54' INV IN 8" CPE (S)=14.49' SUMP=12.6'
EXISTING CB #E3 RIM=16.88' INV OUT 8" PVC (N)=15.09' SUMP=13.3'
EXISTING CB #E1 RIM=17.24' INV IN 8" CPE (N)=14.54' INV IN 8" CPE (S)=14.49' SUMP=12.6'
SANITARY SEWER TOP OF PIPE 15.40 IE = 14.40 LOADING DOCK TOP OF SLAB 16.0 BOTTOM OF SLAB 15.50. 6" ROOF DRAIN TOP 14.20 IE = 13.50
EXISTING SSMH E#1 RIM=19.70' INV IN 6" DI (W)=17.15' INV IN 3" PVC (S)=16.95' INV OUT 8" PVC (N)=16.87'
EXIST. 1" DOME METER W/ 1" DEDUCT METER
EXISTING CB #E4 RIM=17.22' INV IN 2" PVC (N)=15.04' INV IN 6" PVC (S)=15.01' INV OUT 12" CPE (W)=14.69' SUMP=13.6'
EXISTING SDMH #E5 RIM = 17.71' INV IN (E) 12" CPE =14.13' INV IN (SE) 12" PVC =14.13' INV OUT (N) 24" STL =14.07' SUMP=12.8'
EXISTING SDMH #E6 RIM=18.01' INV IN (S) 24" STL =13.71' IE IN (E) 12" DI = 13.76 IE OUT (W) 12" DI =13.50 SUMP=12.0'
EXISTING SDMH #E7 RIM=18.01' INV IN (S) 24" STL =13.71' IE IN (E) 12" DI = 13.76 IE OUT (W) 12" DI =13.50 SUMP=12.0'
EXISTING SDMH #E8 EXISTING CONTROL STRUCTURE
EXISTING CB #E8 RIM=15.49' INV ???? SUMP=?
EXISTING CB #E8 RIM = 16.21' INV OUT (S) 3" PVC =15.10' SUMP = 14.4'
EXISTING CB E9 RIM=? INV (N) 3" PVC =1.46' INV (W) 3" PVC =1.47' SUMP=?
EXISTING CB E10 RIM=? INV (N) 3" PVC =1.46' INV (W) 3" PVC =1.47' SUMP=?
STA: 4+61.9 1.26 LT EXIST 12" MJxMJ GATE VALVE WITH 2" FLUSHING ASSEMBLY EXIST BLOW-OFF AND CAP EXIST KEY BLOCK
POWER & PHONE TO GROUND
SOUTH END OF 30' PUD EASEMENT AF# 2000910013
UNKNOWN UTILITY
EXIST. HYD
METAL ACCESS LID
EXIST. 4" FIRE SERVICE
EXIST. FDC
GAS METER
FIRE SPRINKLER DRAIN CLEANOUT
SAW CUT
ASPHALT
CONCRETE
SSCO
PRIVATE FIRELANE
GRAVEL
280 LF 8" DI
12" DI ('00) CO 4102
POND BOTTOM ELEV=10.5
POND BOTTOM ELEV=11.0
INV=13.50
6 FT WIDTH EMERGENCY OVERFLOW WEIR ELEV=16.2
50' BUFFER
50' BUFFER SETBACK
50 ft BUFFER
DID #17 FLOWERS DITCH
EXISTING DRAINAGE CHANNEL FLOWERS CREEK
BEAVERS SLOUGH
EXISTING CONCRETE WALL
BRIDGE
EX.6" CONC WALL
EX. 3 RAIL FENCE
EX. 7' CHN LNK FNC
EX. ECO BLK WALL TWO BLKS HIGH - EST 20 BLKS
EXISTING GARAGE
OH POWER & PHONE
N88°36'50"E 125.05'
S61°06'08"E 50.00'
S24°17'22"E 477.43'
N00°15'38"E 559.09'
N 89°50'38" E 38.00'
611.53'
S00°12'45"W
N 00°12'45" E 35.00
N 89°50'38" E 128.13
N 79°02'39" E 165.58'
N 79°02'39" E 163.05'
N 79°02'39" E 127.87'
N89°14'09"E 112.77'
N42°15'09"E 111.38'
N 24°17'22" W 260.60'
N 24°17'22" W 215.67'
N 18°58'15" W 92.61'
N 18°58'15" W 92.73'
N 46°37'07" E 39.27'
N 24°34'12" W 78.49'
N 24°34'12" W 61.13'
N 24°34'12" W 89.53'
N 61°06'08" W 31.65'
PC = 0+00
PT = 0+32.91
PC = 3+68.22
PT = 3+70.54
1+00
2+00
3+00
87.00'
129.72'
72.00'
21.21'

Z:\Projects\2007\07029\dwg\07029.dwg Apr 30, 2018 – 3:53pm

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APPROVED BY:_______________________Date___________

This approval will expire in one year from the date noted above.

## GENERAL CONSTRUCTION NOTES:

1. CONSTRUCT TYPE 6 CONCRETE EXTRUDED CURB PER WSDOT STD F-10.42-00 DETAIL B/C4.03
2. ASPHALT PAVING PER DETAIL D/C4.02
3. WHEEL STOPS PER DETAIL C/C4.02
4. INSTALL LANDSCAPING PER LANDSCAPE ARCHITECT'S LANDSCAPING PLAN SHEET L1
5. INSTALL BOLLARDS PER WSDOT STD PLAN H-60.20-00 DETAIL A/C4.03
6. CUT & FILL SLOPE TO EXISTING GROUND @ 4:1 MAXIMUM SLOPE.
7. INSTALL "NO PARKING FIRE LANE" @ 75' INTERVALS WSDOT MS-2 STYLE SIGN WITH RED LETTERING. (NO PARKING FIRE LANE — MS-2)
8. NOTE NOT USED.
9. PAINT CURBS WHERE INDICATED ON PLANS RED AND STENCIL IN 4" WHITE LETTERING "FIRE LANE NO PARKING" @ 20 FT O.C. STRIPING INDICATES FIRE LANE AREAS.
10. STAIRS AND LANDING PER ARCHITECTURAL PLAN.
11. FILL OLD STREAM TO GRADE AS SHOWN ON SHEET C4.01
12. CONSTRUCT RETAINING WALL PER DETAIL C/C4.04
13. CONSTRUCT BRIDGE PER DETAILS
14. NOTE NOT USED.
15. ADJUST WATER VALVE TO MATCH NEW PAVING.

GRAPHIC SCALE

( IN FEET )
1 inch = 20 ft.
1' FOOT CONTOURS

DOUGLAS E. SCHWIND — STATE OF WASHINGTON — 28023 — REGISTERED PROFESSIONAL ENGINEER

EXPIRES: 12/19/19

D 08-332

CALL 48 HOURS BEFORE YOU DIG 811

| DESCRIPTION | REV | REVISED | BY | CHK |
|---|---|---|---|---|
| REDESIGN OF PARKING LOT | | 4-14-2009 | RAH | DES |
| CHANGE IN WATER PLAN FROM PUD #1 | 2 | 6-16-2009 | RAH | DES |
| WATER AS-BUILTS FROM PUD #1 | | 8-3-2009 | RAH | DES |

**STEALTH MANUFACTURING BLDG SITE PLAN FOR DIMENSIONAL COMMUNICATIONS, INC**

**SECTION 32, T 34 N, R 4 E, W.M.**

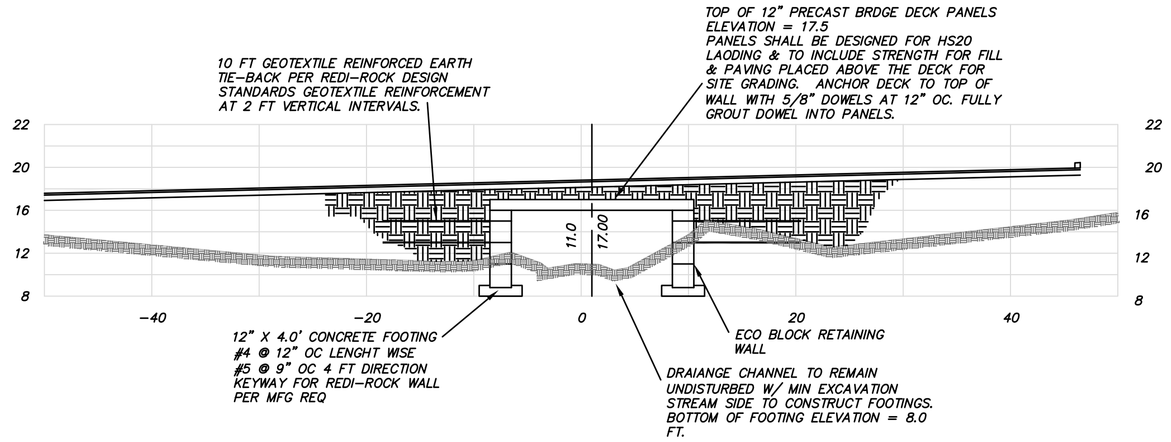
DATE 4/20/2017
SCALE 1" = 20'
DRAWN BY des
CHECKED BY des


**NORTHWEST DATUM & DESIGN, Inc.**
CIVIL ENGINEERING AND SURVEYING SOLUTIONS
2209 MONICA DRIVE
MOUNT VERNON, WASHINGTON 98273
PH: (360) 424-4865 FAX: (360) 424-4866
DOUGLAS E. SCHWIND P.E., P.L.S.

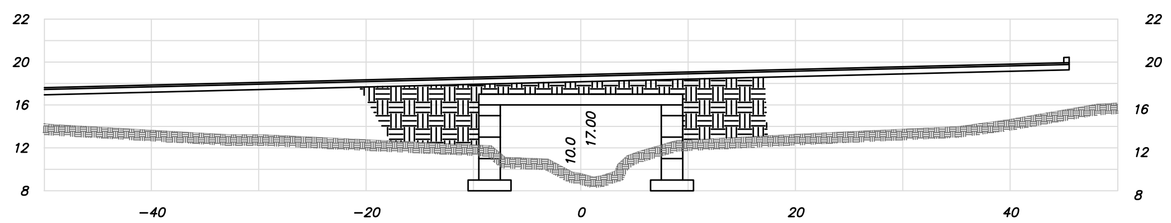

**SITE LAYOUT & DIMENSIONAL PLAN**

PROJECT 07029
DRAWING 07029.dwg

SHEET C3.01 OF C14

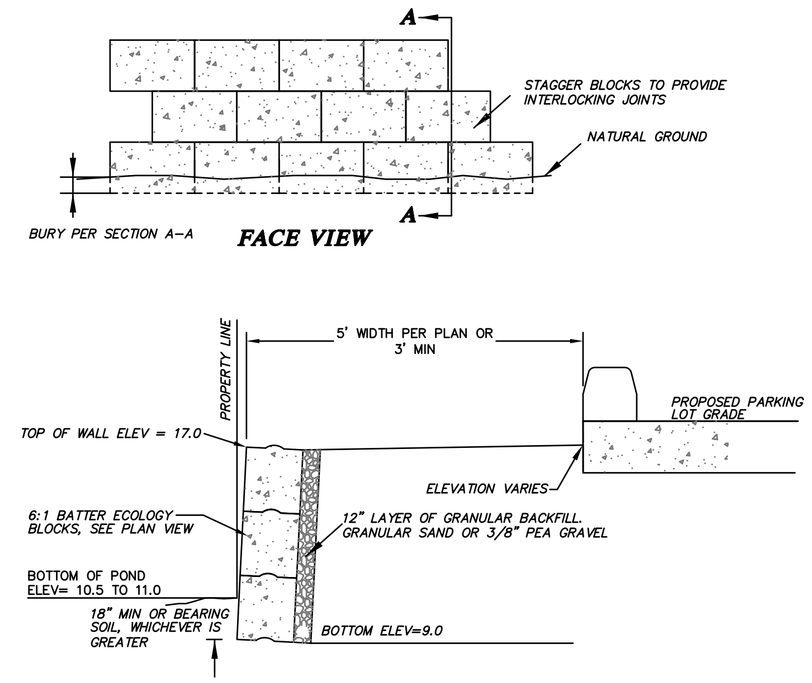



Flowers Sta 3+50 Begining of Bridge




Bever Slough Sta 7+80 End of Bridge

**A** DETAIL BRIDGE CONSTRUCTION NTS

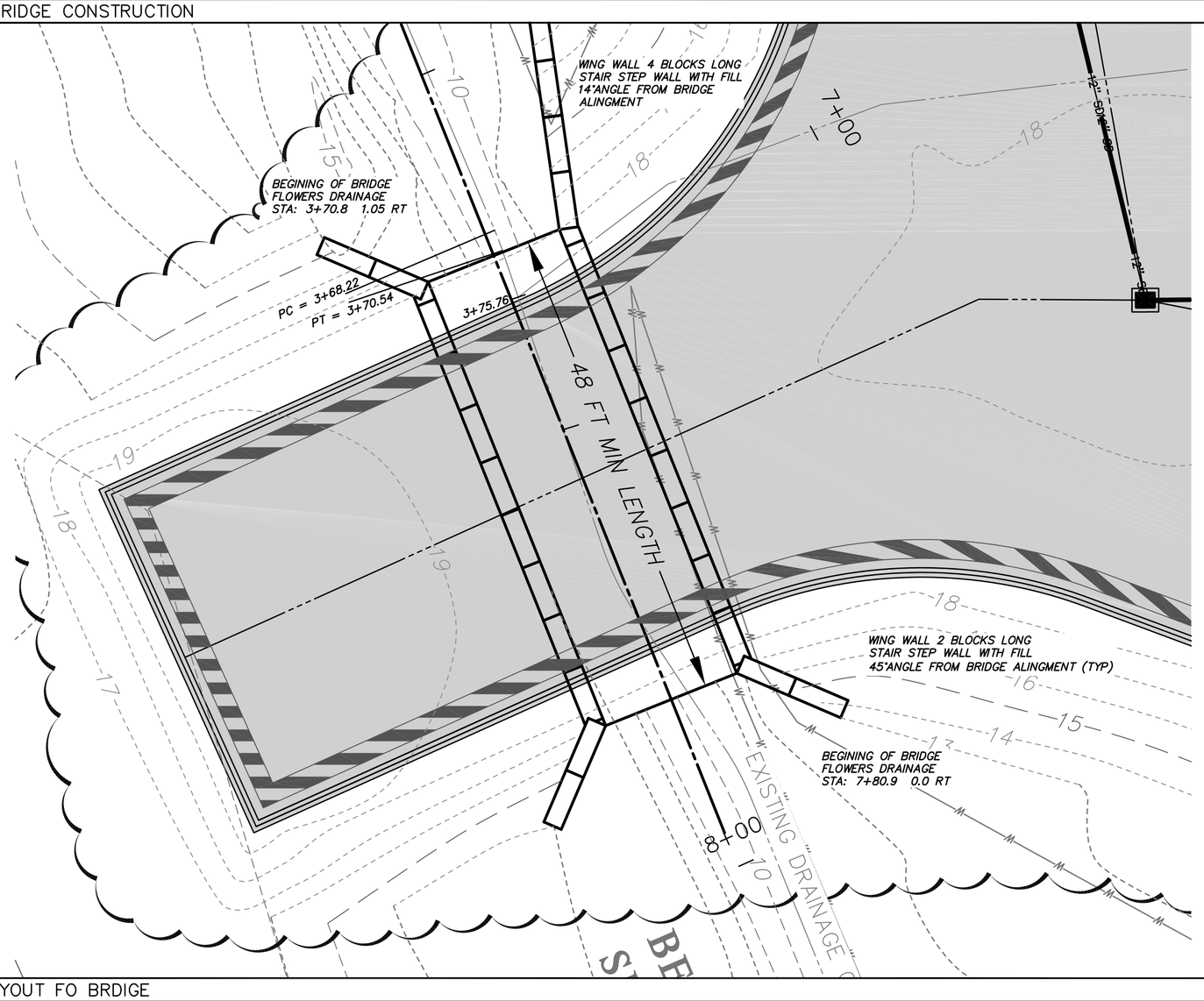



**TYPICAL SECTION - A-A**

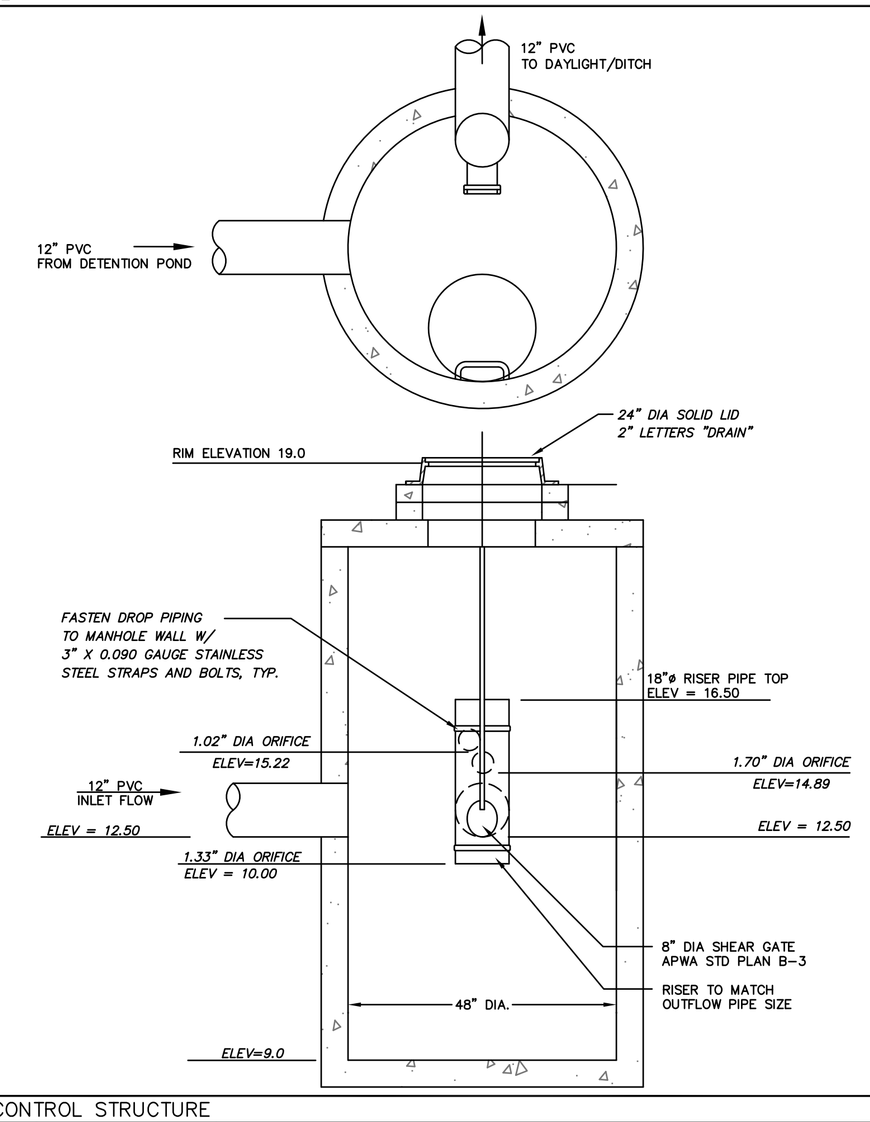
NTS

**C** DETAIL

**E** AT GRADE SINGLE VAN ACCESSIBLE PARKING STALL NTS




**B** PLAN LAYOUT FO BRDIGE NTS




**D** 48" CONTROL STRUCTURE NTS

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APPROVED BY:_____Date_____

This approval will expire in one year from the date noted above.

DOUGLAS E. SCHWIND STATE OF WASHINGTON 28023 REGISTERED PROFESSIONAL ENGINEER

EXPIRES: 12/19/19

**D 08-332**

**CALL 48 HOURS BEFORE YOU DIG 811**

| DESCRIPTION | REV | REVISED | BY | CHK |
|---|---|---|---|---|
| REDESIGN OF PARKING LOT | | 4-14-2009 | RAH | DES |
| CHANGE IN WATER PLAN FROM PUD #1 | 2 | 6-16-2009 | RAH | DES |
| WATER AS-BUILTS FROM PUD #1 | | 8-3-2009 | RAH | DES |

**SOUTH WAREHOUSE ADD SITE PLAN FOR DIMENSIONAL COMMUNICATIONS, INC**

**SECTION 32, T 34 N, R 4 E, W.M.**

DATE 4/20/2017
SCALE N/A
DRAWN BY des
CHECKED BY des


**NORTHWEST DATUM & DESIGN, Inc.**
**CIVIL ENGINEERING AND SURVEYING SOLUTIONS**
2209 MONICA DRIVE
MOUNT VERNON, WASHINGTON 98273
PH: (360) 424-4865 FAX: (360) 424-4866
DOUGLAS E. SCHWIND P.E., P.L.S.


**BRIDGE & STORM DETAILS**

PROJECT 07029
DRAWING 07029.dwg

**SHEET C4.04 OF C13**

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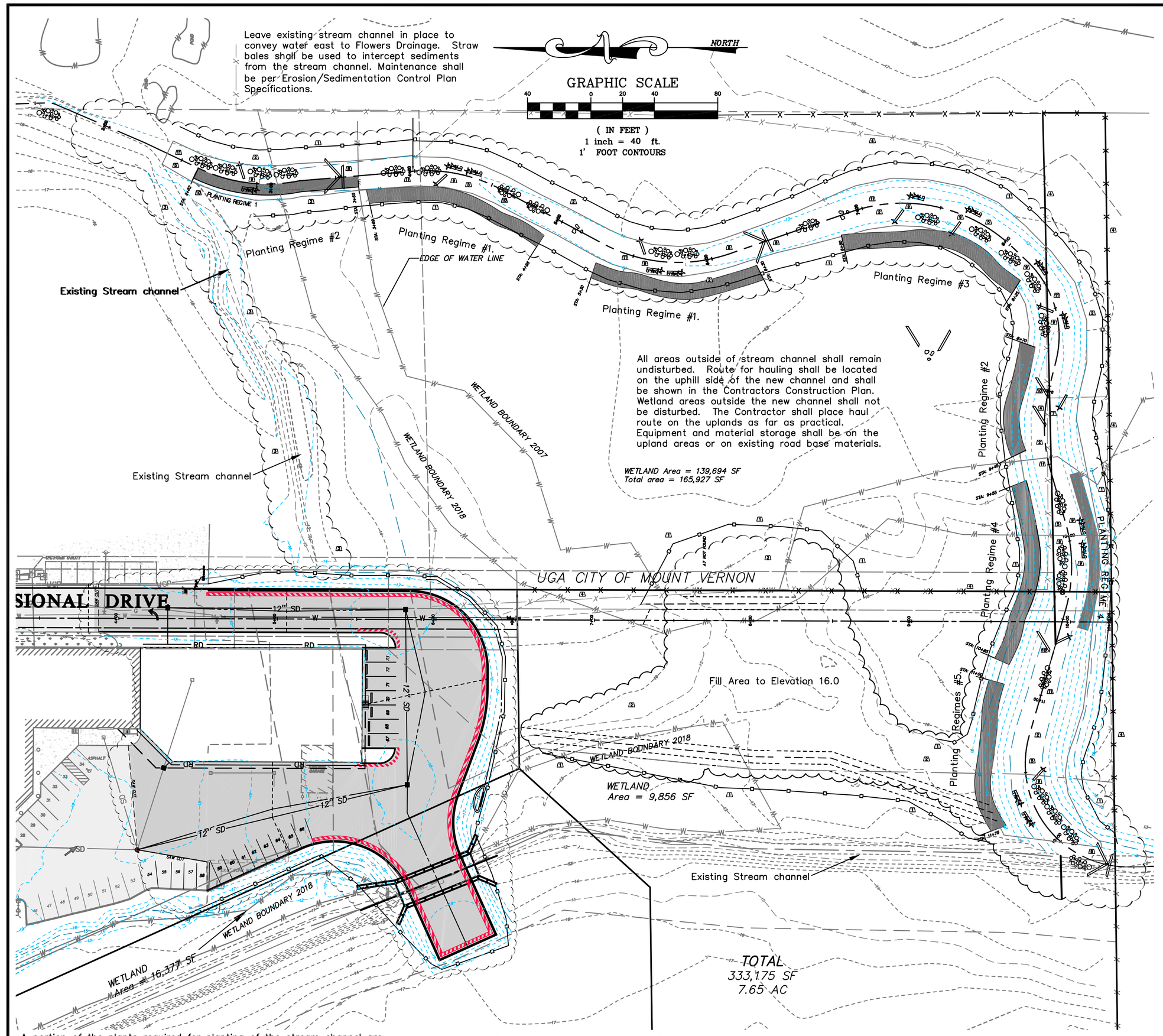
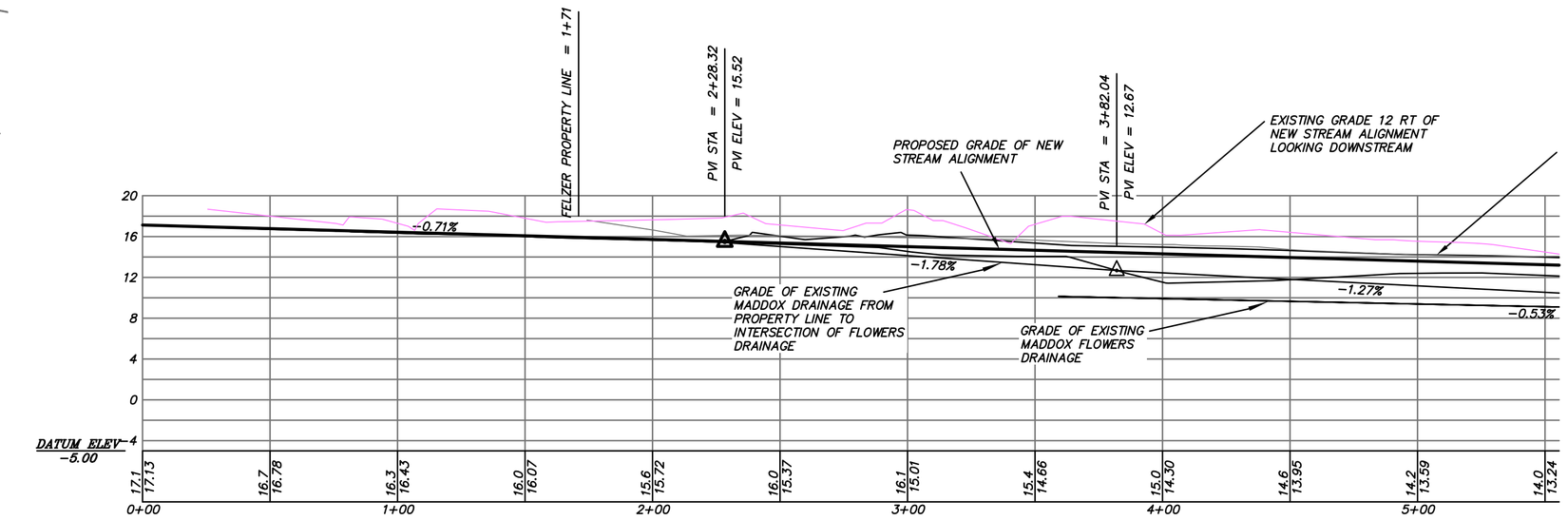
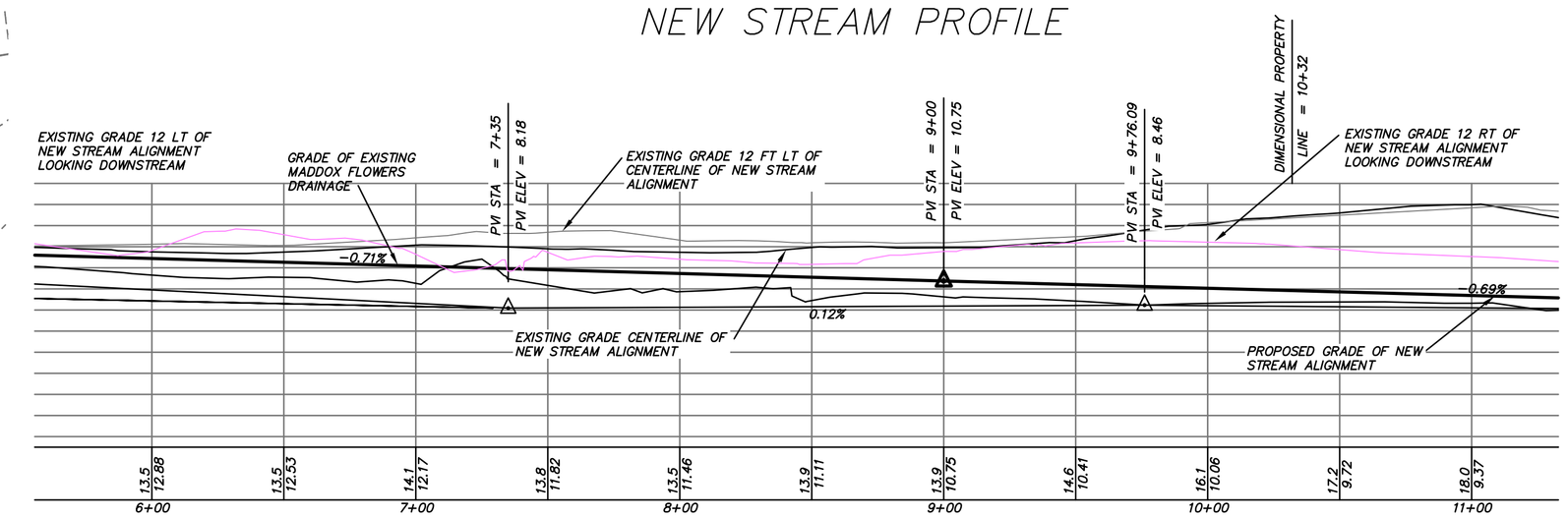
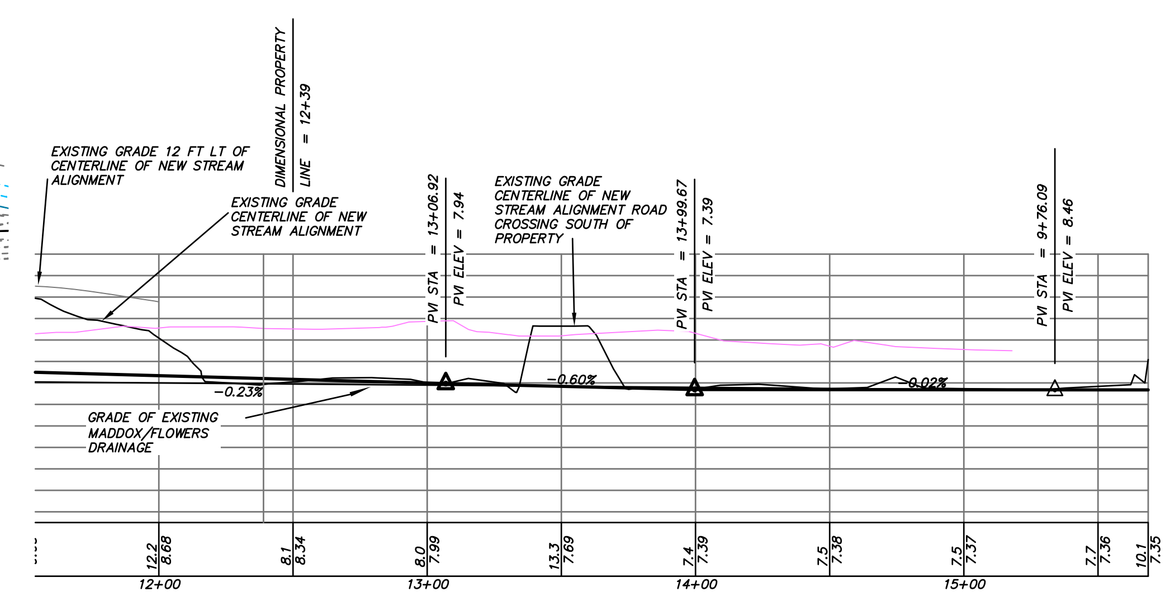



NEW STREAM PROFILE




NEW STREAM PROFILE




NEW STREAM PORFILE

A portion of the plants required for planting of the stream channel are growing on site. Plants designated on the site by the Engineer shall be transplanted to the location shown on the stream landscaping plan and as defined by the planting regime. The Contractor shall plan his construction operation such that plants within the construction corridor are transplanted the same day that they are removed from the construction corridor. The Contractor may be required to excavate the channel, place riprap, and topsoil for the down stream channel so transplanting may occur before proceeding with the next upstream portion of the channel.

Planting Regimes

1. Row 1– Willows planted every 18 inches
   Row 2– Red Osier Dogwood planted 18 inches apart and 18 inches behind and offset from row 1.
   Row 3– Red Osier Dogwood planted every 18 inches and 18 inches behind row 2.

2. Row 1– Willows planted every 18 inches.
   Row 2– Red Osier Dogwood planted 18 inches apart and 18 inches behind and offset from row 1.
   Row 3– Vine Maple planted 4 feet apart and 4 feet behind Row 2.

3. Row 1– Willows planted every 18 inches
   Row 2– Red Osier Dogwood planted 18 inches apart and 18 inches behind and offset from row 1.
   Row 3– Cottonwoods planted 10 feet behind row 2 and 10 feet apart in row.

4. Row 1– Willows planted every 18 inches.
   Row 2– Red Osier Dogwood planted 18 inches apart and 18 inches behind and offset from row 1.
   Row 3– Western Red Cedar planted 10 feet behind row 2 and 10 feet apart in row.

5. Row 1– Willows planted every 18 inches.
   Row 2– Red Osier Dogwood planted 18 inches apart and 18 inches behind and offset from row 1.
   Row 3– Hemlock planted 10 feet behind row 2 and 10 feet apart in row.

Each of the above planting regimes shall be used at locations shown on the plan. Tree & bed preparation and locations of plantings shall be as specified on the plans and Typical sections.

For the Construction of the new stream course place straw bales in the channel to intercept and filter out sediments. A minimum of 3 Rows of bales with each row two bails deep shall be used. More bales may be required and the Contractor shall place additional bails upon the written request of the Engineer. Maintenance shall be per special provisions.

Once New Arch culvert is in place divert existing ditch along Waugh Road to flow into it. The stream shall flow through the old stream course for 1 year while the vegetation grows in on the new channel. During the dry season of the following year the stream shall be diverted into the new channel.

STREAM TESC NOTES:

1. INSTALL SILT FENCE PER DETAIL (B / C8.01)

2. CLEAR & GRUB AREA WITHIN THE BOUNDARY OF THE CLEAR LIMITS AND CONSTRUCTION CORRIDORS. RETAIN SURFACE ELEMENTS OF SITE SPECIFICALLY IDENTIFIED BY "TO REMAIN".

STRIP TOPSOIL WITH IN THE BOUNDS OF THE STREAM CLEARING & GRUBBING LIMITS. TOPSOIL SHALL BE STOCKPILED FOR PLACEMENT ON THE SLOPES OF THE NEWLY GRADED STREAM BANKS. TOPSOIL SHALL BE WALKED INTO THE SLOPES OF THE NEW CHANNEL WITH THE GROUSER OF CAT TO TIE SOIL INTO THE SUBGRADE. TOPSOIL SHALL BE COMPACTED TO 90% OF PROCTOR.

3. CLEAR & GRUB EXISTING DRAINAGE CHANNEL TO STABLE BEARING SOIL & HAVE GEOTECT INSPECT BEFORE BACKFILLING. SOIL REUSE OR DISPOSAL OFFSITE SHALL BE PER ENGINEER'S DIRECTION. BACKFILL STREAM CHANNEL WITH SALVAGE BEARING QUALITY SOIL PER ENGINEER OR PITRUN GRAVEL TO GRADES AS SHOWN ON PLANS.

4. EXITING BARBED WIRE FENCE TO BE REMOVED & DISPOSED OF OFFSITE. FENCING MAY BE MORE EXTENSIVE THAN SHOW ON THE EXISTING CONDITIONS PLAN. INSTALL 1,150 LF OF NEW 4 STRAND BARBED WIRE FENCE W/ METAL POSTS ON PROPERTY LINE.

5. EXCAVATE STREAM BANKS & CHANNEL TO BEARING SOIL & SUBGRADE DEPTH NECESSARY TO PLACE STREAM RESTORATION FILL MATERIALS & STRUCTURES.

6. TREES WITHIN BOUNDARIES OF C&G SHALL BE REMOVED & DISPOSED OF OFFSITE. TREES TO REMAIN ARE SPECIFICALLY IDENTIFIED. TREES THAT MEET THE TYPE AND SIZE REQURIEMENTS OF THE WOODY DRBRUIS STRUCUTRES SHALL BE USED FOR CHANNEL STRUCTURES.

7. INSTALL WOOD DEBRUIS STRUCTURE PER DETAIL (A / C6.02)

8. INSTALL WOOD DEBRUIS STRUCTURE PER DETAIL (B / C6.02)

9. INSTALL WOOD DEBRUIS STRUCTURE PER DETAIL (C / C6.02)

10. INSTALL WOOD DEBRUIS STRUCTURE PER DETAIL (D / C6.02)

11. PLACE GRAVEL & ROCK LINING ALONG THE STREAM CHANNEL PER DETAILS ON SHEET C6.03.

12. STREAM CHANNEL CONSTRUCTION SHALL BE COMPLETED FROM THE DOWNSTREAM END OF THE ALINGMENT & EXTEND UPSTREAM. THE CONTACTOR SHALL INSTALL STRAW BAILS PER SPECS SHEET C6.01 AT 50 FT INERVALS AS CONSTRUCITON EXTENDS UP GRADE. BALES SHALL BE INSTALLED AT THE END OF CONSTRUCITON AT THE END OF EACH DAY.

DOUGLAS E. SCHWIND
STATE OF WASHINGTON
08029
REGISTERED
PROFESSIONAL ENGINEER

D 08-332 EXPIRES: 12/10/18

**CALL 48 HOURS BEFORE YOU DIG 811**

| DESCRIPTION | REV | REVISED | BY | CHK |
|---|---|---|---|---|
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**SOUTH WAREHOUSE ADD SITE PLAN FOR DIMENSIONAL COMMUNICATIONS, INC**

**SECTION 32, T 34 N, R 4 E, W.M.**

DATE 4/20/2017
SCALE 1" = 20'
DRAWN BY des
CHECKED BY des


**NORTHWEST DATUM & DESIGN, Inc.**
CIVIL ENGINEERING AND SURVEYING SOLUTIONS
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MOUNT VERNON, WASHINGTON 98273
PH: (360) 424–4865 FAX: (360) 424–4866
DOUGLAS E. SCHWIND P.E., P.L.S.


**STREAM CONSTRUCITON AND T.E.S.C. PLAN**

PROJECT 07029
DRAWING 07029.dwg

**SHEET C6.01 OF C13**

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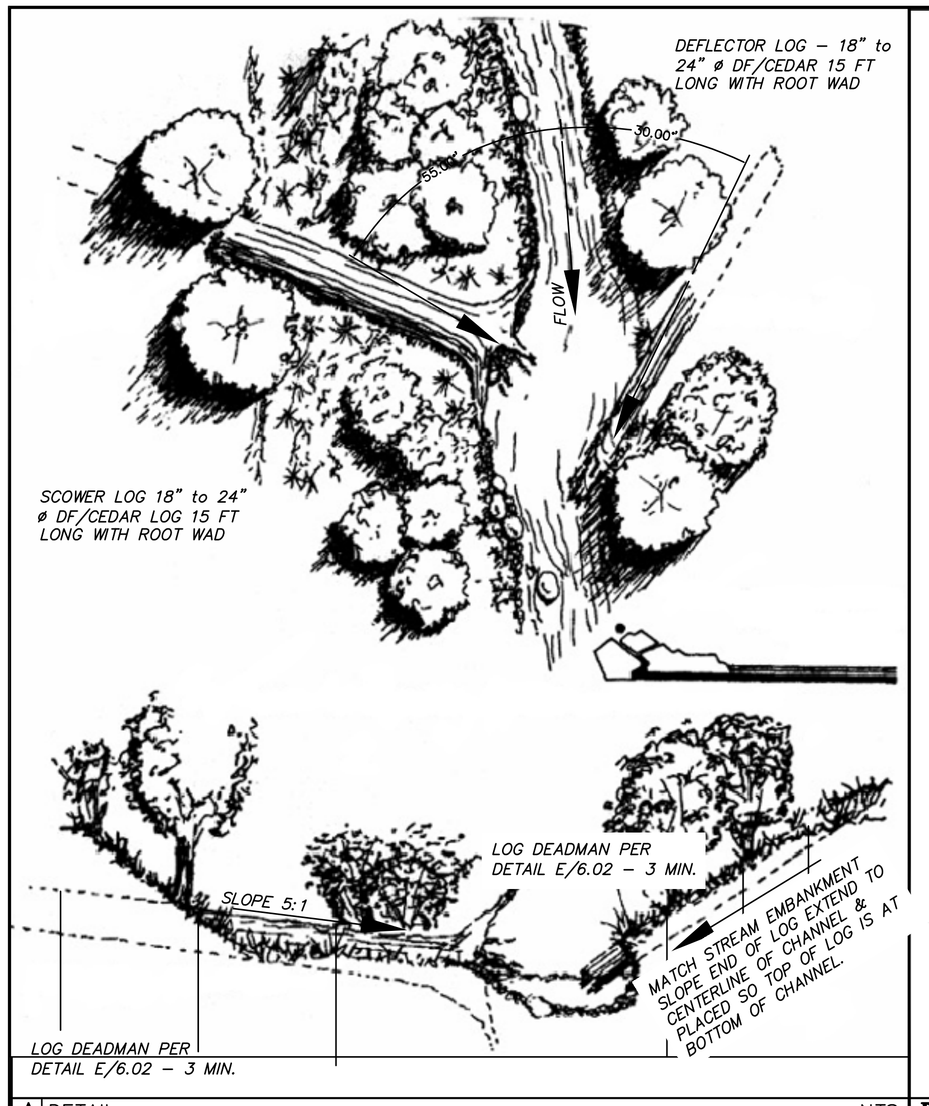
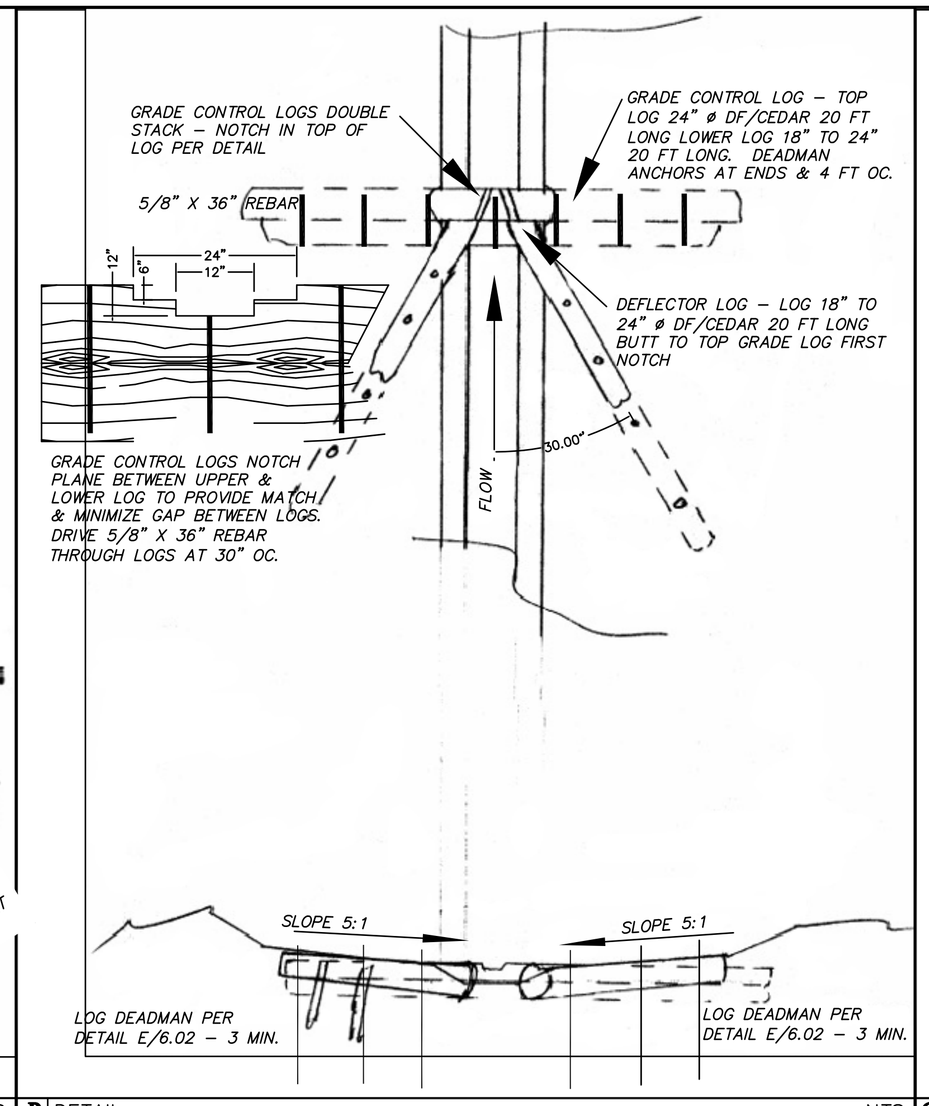
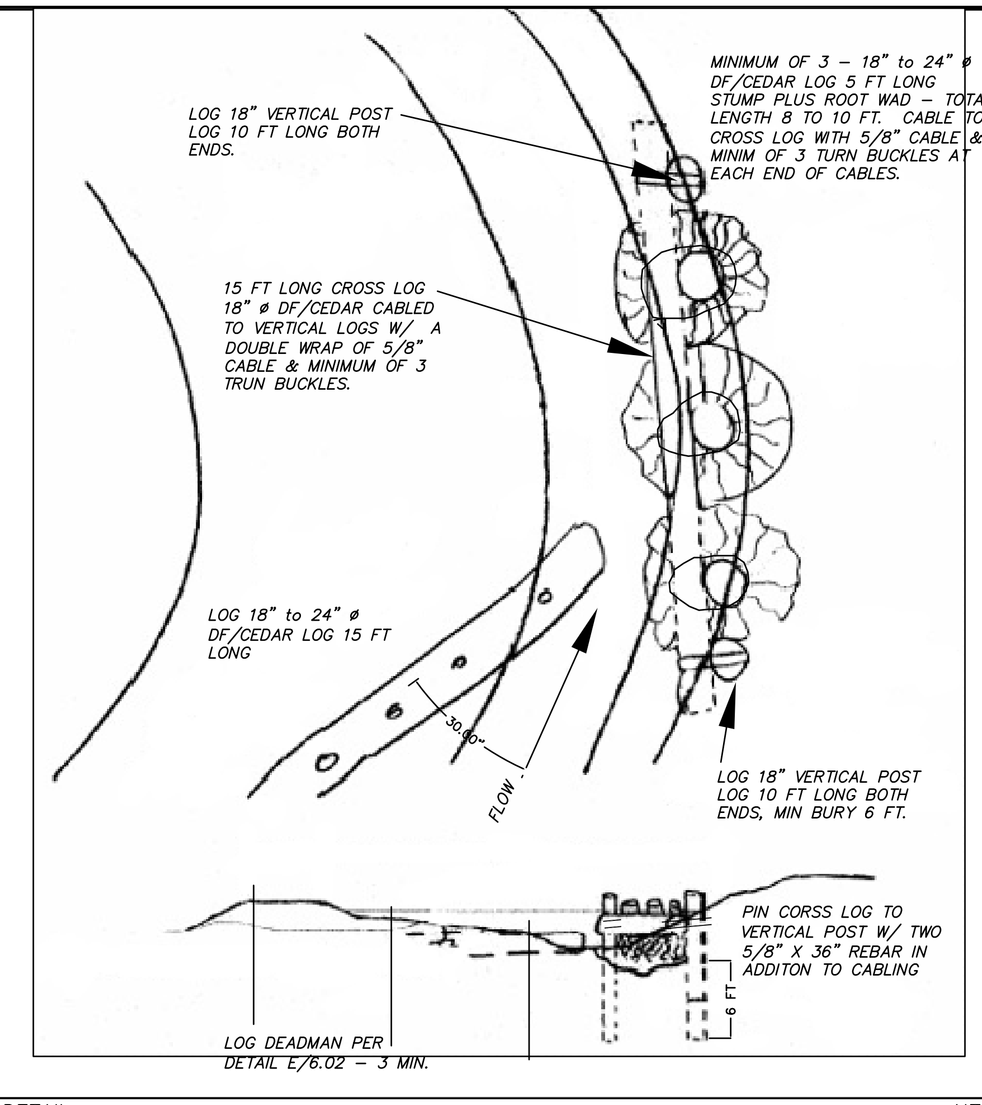


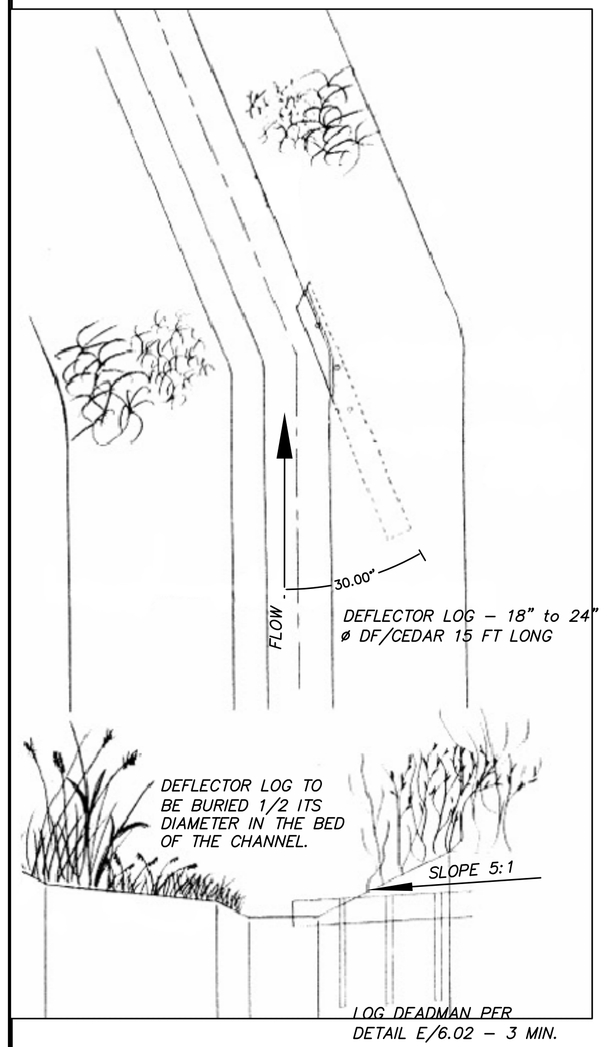

**A** DETAIL NTS



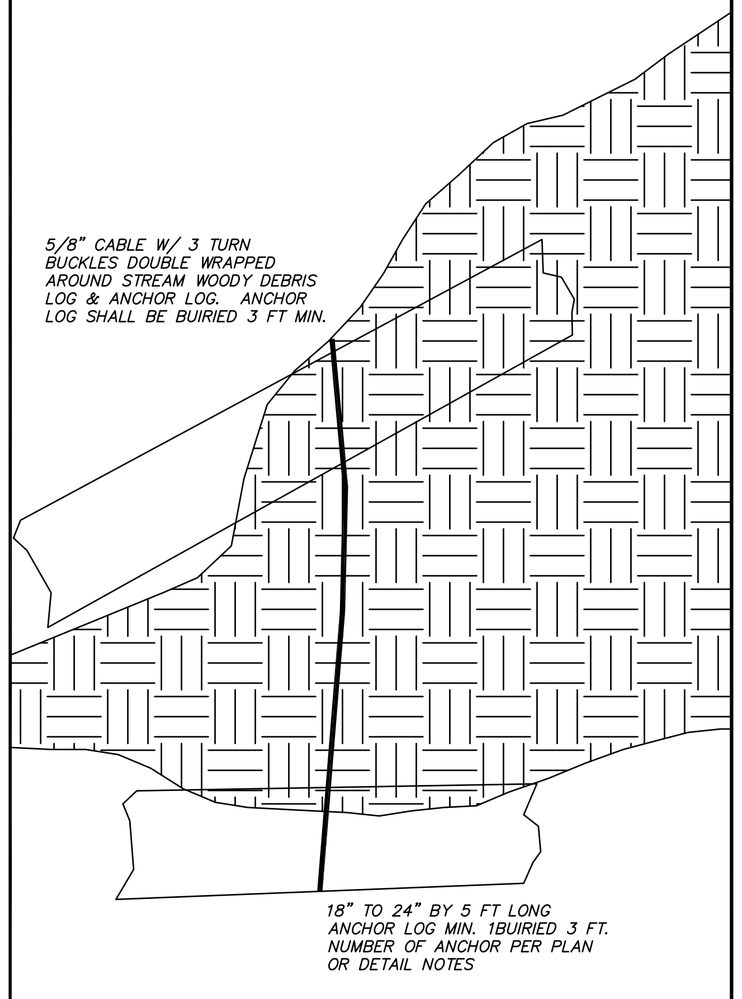

**B** DETAIL NTS




**C** DETAIL NTS




**D** DETAIL NTS




**E** DEADMAN ANCHOR DETAIL NTS

**E** AT GRADE SINGLE VAN ACCESSIBLE PARKING STALL

D 08-332

DOUGLAS E. SCHWIND STATE OF WASHINGTON 28022 REGISTERED PROFESSIONAL ENGINEER
EXPIRES: 12/19/19

**CALL 48 HOURS BEFORE YOU DIG 811**

| DESCRIPTION | REV | REVISED | BY | CHK |
|---|---|---|---|---|
| DEVISION NOTE | | 00-00-2018 | --- | --- |

**SOUTH WAREHOUSE ADD SITE PLAN FOR DIMENSIONAL COMMUNICATIONS, INC**

**SECTION 32, T 34 N, R 4 E, W.M.**

DATE 4/20/2017
SCALE 1" = 20'
DRAWN BY des
CHECKED BY des


**NORTHWEST DATUM & DESIGN, Inc.**
**CIVIL ENGINEERING AND SURVEYING SOLUTIONS**
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MOUNT VERNON, WASHINGTON 98273
PH: (360) 424-4865 FAX: (360) 424-4866
DOUGLAS E. SCHWIND P.E., P.L.S.


**STREAM CONSTRUCITON DETAILS**

PROJECT 07029
DRAWING 07029.dwg

**SHEET C6.02 OF C13**

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STREAM SPECIFICATIONS

Construction General Conditions noted below supplement specifications above. If conflicts arise between Special Provisions and General Specifications the Engineer will provide a written determination of the correct interpretation and requirements of the discrepancy.

The objective of the project is to construct the new stream alignment with minimal disturbance to the existing wetlands. The Contractor is required to submit a construction plan outlining the construction sequence for building of the stream. The plan shall define the tasks to be completed; traffic control plan for the installation of the culvert on Waugh Road; the methods of construction for the stream which shall include how excavation of the stream channel shall be completed and where equipment will be placed for the excavation process; routes to be used for hauling excavated material to disposal areas and to import the necessary filter, rip rap, topsoil, vegetation, and other miscellaneous construction material; sequence of construction for the excavation of gravel base material to be removed in reclamation of the wetlands; and measures to be taken to protect the wetland throughout the site.

Areas are designated on the plans for stockpile of topsoil. If additional stock pile areas are required for construction the Contractor shall define areas in his Construction Plan, whether on-site or off-site, and shall use those sites only after written approval has been received from the Engineer. If private land adjoining the site is used for construction activities the contractor shall supply the Engineer with a written agreement between the contractor and private landowner defining the condition of use. Final approval of the project will be subject to fulfilling the agreement with adjoining land owners who's property was used in the construction of the project.

The construction plan shall include the construction sequence and traffic control plan for the installation of the arch culvert. The plan shall define safety measures implemented to protect the public while the installation of the culvert is in progress (pedestrian traffic). The plans shall outline the length of time for construction, traffic sequencing routing, and signing. The details shall be clearly defined and no construction shall begin before written approval from the Engineer has been received.

The construction for the project shall only begin after the Contractor receives written approval of the construction plan.

Riprap

General

Three types of rock are required for the project; River Rock Riprap, and Angular Riprap and Spawning Gravel. The rock shall meet the Degradation Factor, Los Angeles Wear, and Specific Gravity requirements of APWA Section 9.13. All construction and placement of the riprap shall be completed within the applicable requirements of APWA Section 9.13. Construction, measurement, and payment for riprap shall be in accordance with APWA Section 8-15. Quantities of materials for riprap are specified adjoining the typical sections, and the Contractor shall supply weigh scale receipts to the Engineer to verify quantities placed on the project. Moisture content at time of weighing shall not exceed 2%.

River Rock Riprap River Rock

Riprap shall be used for the construction of the low flow channel of the new stream channel bottom and 2:1 slopes up to a level of 1' above the channel bottom as defined on the typical section in the plans. This rock shall be round smooth rock typified by rock taken from a stream channel. The gradation of River Rock Riprap shall be as follows:

River Rock Riprap

| Sieve Size | Percent Passing |
|---|---|
| 8" | 100 |
| 6" | 75 |
| 4" | 50 |
| 2" | 20 Max |
| 3/4" | 5 Max |

Angular Rip Rap

Riprap for lining 2:1 slopes at end of culverts, at end of biofiltration swale and at other locations as defined on the plans and typical sections shall be angular rock meeting the requirements for APWA, Section 9.13.6, Quarry Spalls. Angular Riprap shall not be placed in the bottom of the stream channel. The gradation of Angular Riprap shall be as follows:

Angular Rip Rap

| Sieve Size | Percent Passing |
|---|---|
| 8" | 100 |
| 3" | 40 Max. |
| 3/4" | 10 Max |

Salmon Spawning Gravel

Spawning Gravel shall be placed in the stream bottom and side slopes at locations shown on the plans. Gravel shall be naturally occurring round river rock meeting the gradations below.

Spawning Gravel

| Sieve Size | Percent By Weight |
|---|---|
| 2 1/2"-4" | 25% |
| 1 1/2"-2 1/2" | 25% |
| 3/4"-1 1/2" | 25% |
| 1/2"-3/4" | 25% |

Topsoil

General

Topsoil shall include the stripping and placement of Topsoil Type B as specified in APWA Section 9-14. Amendments and additional requirements to this specification are as follows.

APWA Section 9-14.1(2) Topsoil shall be remove for the full depth of the friable surface soil.

Topsoil shall be stockpiled at locations shown on the plans, on approved and designated sites noted on the Contractors submitted Construction Plan or as otherwise designated by the Engineer.

Topsoil placement shall be to a minimum depth of 6" unless specified otherwise on the plans. It is assumed topsoil stripped from the site will be in excess of topsoil required for placement on channel slopes. Additional topsoil will be placed at locations designate by the Engineer. A large portion of the topsoil will be placed over areas where the abandoned roadway subgrade has been removed.

Transplanting & Seeding

Transplanting Vegetation

Landscaping and plantings for the project shall be accomplished by salvaging cottonwoods, willows, and dogwood vegetation from on-site and transplanting them at the locations as shown on the Landscaping Plan.

Planting is best done during the late winter or early spring when the plants are still dormant, or during mid spring or late fall when conditions are cool and wet. Excessive drying of plant material must be avoided.

Divide both the plants and the project area into manageable units to avoid over planting some sections at the expense of under planting others. Space the plants according to potential rates of growth and maximum size attainable. Avoid linear alignments of shrubs and trees. Staggering plants up and down the bank presents a more natural appearance and increases habitat complexity.

Excavate holes where the shrubs and trees are to be planted. The holes should be of sufficient size and depth so that root systems of containerized plants are not disturbed, and those of bare-root nursery plants and transplants are not folded or bent during planting. Work should proceed rapidly so that planting holes do not dry out. Plants should be placed in the holes and the roots covered immediately. Large shrubs and small trees can be transported to the project site with a "Hi-Hoe" or backhoe excavator. Plants should be tamped firmly in place and watered immediately.

Use marker stakes to locate small plants that may be overgrown during the first few seasons. Where necessary, provide protection from animals that may trample, eat or otherwise damage the plants. Wire screen can be used around each plant, or where grazing livestock are present, fencing may be required.

Fertilizer and Soil Amendments

Apply fertilizers to herbaceous seedings according to soil tests; or a minimum of 40 lbs/acre of available N, 60 lbs/acre of available Potassium and 60 lbs/acre of available phosphorous. No phosphorus fertilizer shall be used on inside stream channel slopes. The Contractor shall provide testing to determine application rates and all costs for testing shall be born by the Contractor. Fertilizer should be applied either with or after seeding, but before mulching. Fertilizing shall comply with APWA Section 9-14.3, Fertilizer, except as modified herein.

Care should be taken when applying fertilizer adjacent to streams to prevent introduction of the chemicals into the water, whether by direct application, bank erosion, or leaching.

Seeding and Planting

Depth of seeding: Seed should be drilled wherever possible. Seeding depths of 1/4 to 3/4 inch should be used depending on the seed size; the smaller the seed the shallower the depth. Mixtures of different sized seed should achieve a depth to satisfy the smallest seed. Depth regulators on the drill will help in the placement of the seed.

Table 1 Seeding and Planting Rates

A mixture by percent weight of the following seeds shall be used for seeding the project.

| Species | Mixture % by Wt. | lb./acre |
|---|---|---|
| Grasses and Legumes | | |
| Fescue | 5 | 20 |
| Creeping Red Fescue | 20 | 10 |
| Bentgrass | 4 | 1.5 |
| Big Trefoil | 11 | 5 |
| Red Clover | 15 | 8 |
| White Dutch Clover | 15 | 8 |

| Shrubs | Planting Requirements | Spacing in Feet |
|---|---|---|
| Willow | Plant in sandy areas | 1.5 |
| Red Osier Dogwood | | 1.5 |
| Trees Western red cedar | | 10 |
| Western hemlock | | 10 |
| Vine Maple | Plant on higher ground out of wetter soils | 4 |

Planting Dates:

1. Plant both herbaceous and woody species as soon after construction as possible during the periods of March 15 to June 1, or September 1 to October 1. If the plantings can be irrigated during the summer, they may be made anytime during the growing season.

Planting Methods.

1. Drilling. Slopes 3:1 or less may be seeded with a grain drill or a brillion seeder. It is suggested that the area be drilled twice, the second operation at an angle to the first, using one-half the required seed at each drilling.

2. Broadcasting. Hand, mechanical, or hydro-broadcasting seed on steep slopes or inaccessible areas may be necessary. Double the seeding rates given in Table 1. Follow with a light harrowing, brush dragging, or hand raking to bury the seed.

3. Sprigging. Rapid establishment of herbaceous vegetation on inaccessible areas may be achieved by sprigging. This is done by digging rhizomatous species adapted to the intended site and separating the crowns, usually to a single stem with a rhizome attached. Plant the sprigs on one-foot spacings. Spring plantings are most satisfactory.

4. Sodding Immediate establishment of perennial grasses on small critical areas can be achieved by sodding. Sod should be obtained from stands of rhizomatous grasses grown especially for this purpose. Sod from pastures or hay land is unsatisfactory. See PS-342 Critical Area Plantings for establishment methods.

5. Planting woody plants. Woody plants are available in several forms; (a) unrooted stem cuttings, (b) rooted stem cuttings, (c) root cuttings, (d) seedlings, (e) 1-year-old or older nursery stock, (f) transplanted wild stock. Each kind of material requires slightly different handling which should be specified in the plan.

(a) Unrooted stem cuttings are planted in prepared holes to prevent stripping of the bark. No more than two nodes or leaf buds should be exposed above the soil surface. Soil must be tamped firm around the cuttings to eliminate air pockets. Unrooted cuttings should be collected and planted in early spring before leaf-out.

(b) Rooted stem cuttings are planted in prepared holes or spade slits made deep enough to prevent J-rooting. Planting depth is the same as the surface of the growing medium. Soil must be tamped firm around the roots to eliminate air pockets. Prevent drying of exposed roots during the planting operation.

(c) Root cuttings are rarely used, but are required for some species such as quaking aspen. These cuttings are placed horizontally in prepared holes or furrows, and covered with 4 to 6 inches of soil, firmly packed. Occasionally, aerial shoots remain attached to the root and these should be left exposed above the soil surface.

(d) Seedlings are handled and planted the same as (b) rooted stem cuttings.

(e) One-year or older nursery stock is obtained as "bare-root" or "balled and burlapped", the latter with the original ball of soil still around the roots. Holes must be dug that are large enough to accommodate the bare roots in a natural position, or the entire soil-root ball. The burlap is peeled back to at least half the ball and left in the hole. Backfilling the hole must assure good soil contact without air pockets. Larger plants may need to be guied to prevent wind-throw.

(f) Transplanted wild stock should be dug carefully to prevent root damage. Inevitably, some roots will be lost, and the aerial portion of the plant may have to be pruned back to bring the roots and tops of the plant back into balance. Plant the same as for older nursery stock, above.

In all cases, it is essential that the roots of evergreen species be kept moist and protected from sunlight.

Woody plantings should provide bank protection from the normal waterline to well above the high-water line at flood stage. Shrubs should be planted on the bank to within one foot of the normal waterline. Medium sized trees should be planted no closer than 6 feet of the bank, and large trees should be at least 12 feet back from the bank.

Plant in stretches of 100-150 feet or longer before changing to a different planting regime. Planting regimens shall be as shown on the plans.

1. Row 1- Willows planted every 18 inches
   Row 2- Willows planted 18 inches apart in row and 18 inches behind and offset from Row 1.
   Row 3- Red Osier Dogwood planted every 18 inches and 18 inches behind row 2.

2. Row 1- Willows planted every 18 inches.
   Row 2- Red Osier Dogwood planted 18 inches apart and 18 inches behind and offset from Row 1.
   Row 3- Vine Maple planted 4 feet apart and 4 feet behind Row 2.

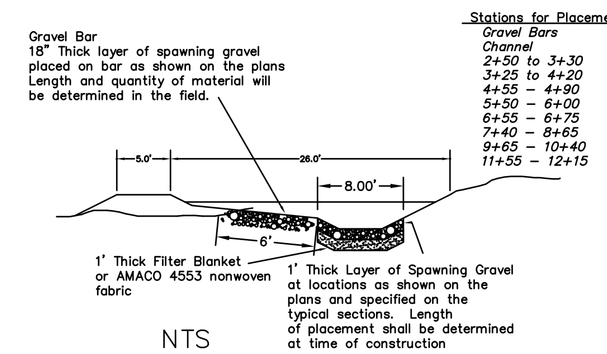
3. Row 1- Willows planted every 18 inches
   Row 2- Red Osier Dogwood planted 18 inches apart and 18 inches behind and offset from Row 1.
   Row 3- Cottonwoods planted 10 feet behind Row 2 and 10 feet apart in row.

4. Row 1- Willows planted every 18 inches.
   Row 2- Red Osier Dogwood planted 18 inches apart and 18 inches behind and offset from Row 1.
   Row 3- Western Red Cedar planted 10 feet behind Row 2 and 10 feet apart in row.

5. Row 1- Willows planted every 18 inches.
   Row 2- Red Osier Dogwood planted 18 inches apart and 18 inches behind and offset from Row 1.
   Row 3- Hemlock planted 10 feet behind Row 2 and 10 feet apart in row.

Mulching

Erosion Control blanket or Jute Matting shall be placed in locations as noted on the plans. Installation of matting shall comply with APWA Section 8-01.3(8), Placing of Matting, Erosion Control Blanket, or Clear Plastic Covering. Erosion Control Blanket shall be North American Green SC150. Substitutions shall be submitted to the Engineer and written approval received before installation.

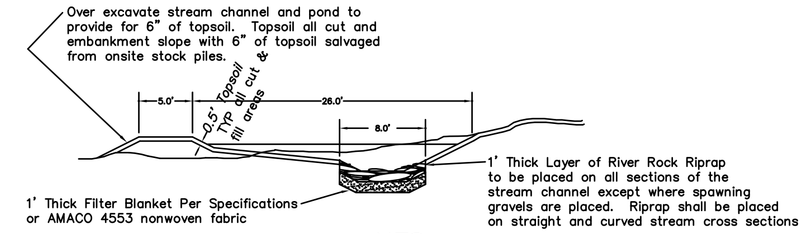



NTS

Spawning Gravel Construction Detail

Stations for Placement of Spawning Gravels

| Gravel Bars Channel | Main |
|---|---|
| 2+50 to 3+30 | Alternate every 20' on straight channel sections. Place 15' length 10' upstream and downstream of all habitat structures. |
| 3+25 to 4+20 | |
| 4+55 - 4+90 | |
| 5+50 - 6+00 | |
| 6+55 - 6+75 | |
| 7+40 - 8+65 | |
| 9+65 - 10+40 | |
| 11+55 - 12+15 | |

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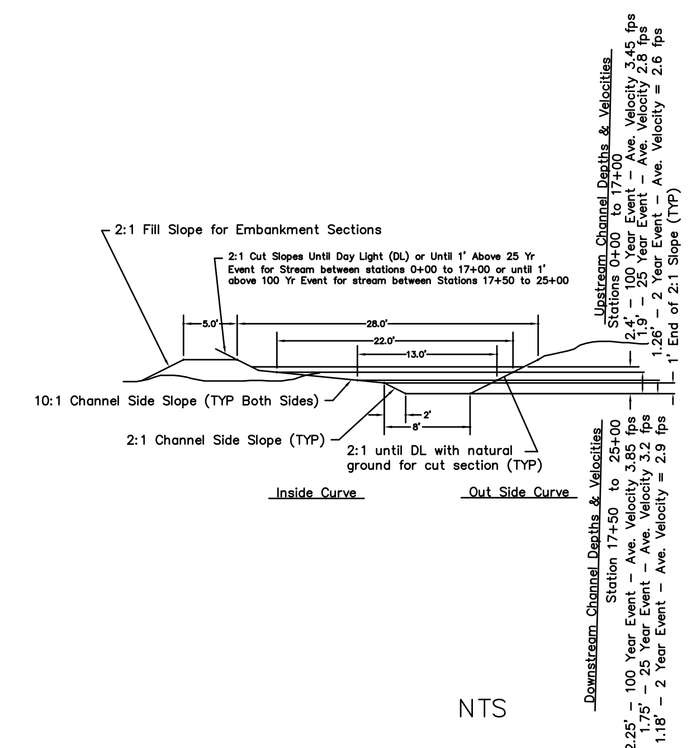
River Rock Riprap & Topsoiling Detail

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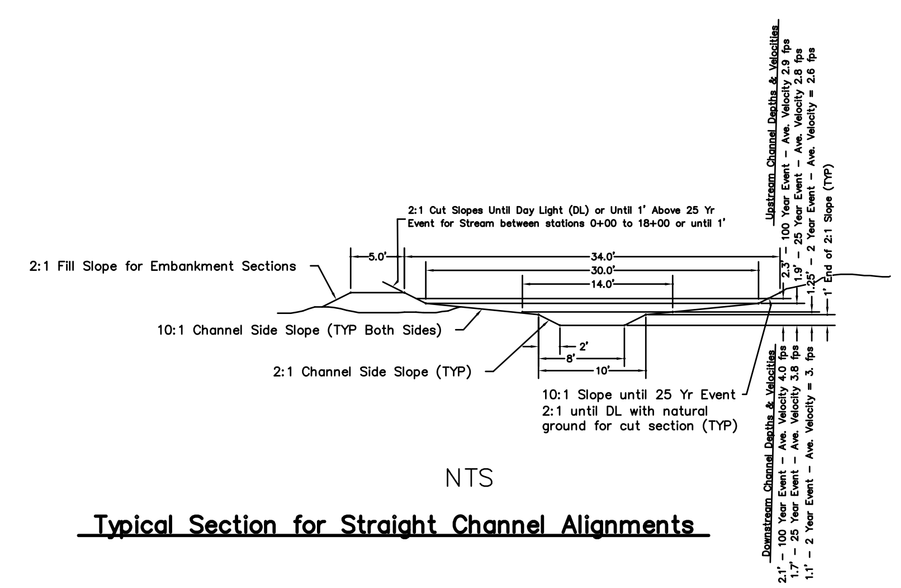
Typical Section for Curved Channel Alignments

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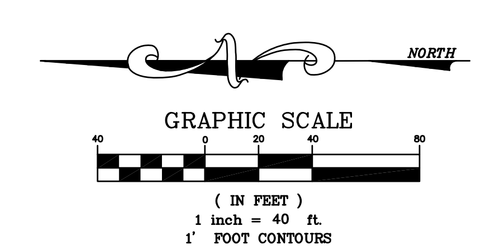
Typical Section for Straight Channel Alignments




D 08-332

| DESCRIPTION | REV | REVISED | BY | CHK |
|---|---|---|---|---|
| REDESIGN OF PARKING LOT | | 4-14-2009 | RAH | DES |
| CHANGE IN WATER PLAN FROM PUD #1 | 2 | 6-16-2009 | RAH | DES |
| WATER AS-BUILTS FROM PUD #1 | | 8-3-2009 | RAH | DES |

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SOUTH WAREHOUSE ADD SITE PLAN FOR DIMENSIONAL COMMUNICATIONS, INC

SECTION 32, T 34 N, R 4 E, W.M.

DATE 4/20/2017
SCALE 1" = 20'
DRAWN BY des
CHECKED BY des

NORTHWEST DATUM & DESIGN, Inc.
CIVIL ENGINEERING AND SURVEYING SOLUTIONS
2209 MONICA DRIVE
MOUNT VERNON, WASHINGTON 98273
PH: (360) 424-4865 FAX: (360) 424-4866
DOUGLAS E. SCHWIND P.E., P.L.S.

STREAM RELOCATION PLAN DETAILS& SPECSIFICATIONS

PROJECT 07029
DRAWING 07029.dwg

SHEET C6.03 OF C13

DOUGLAS E. SCHWIND STATE OF WASHINGTON 28023 REGISTERED PROFESSIONAL ENGINEER
EXPIRES: 12/19/19

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