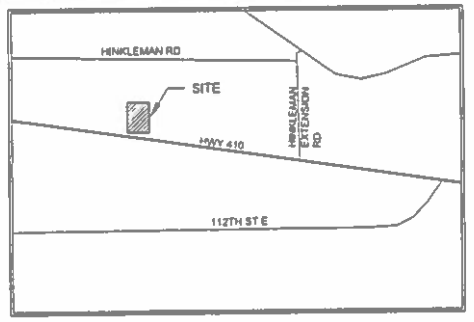
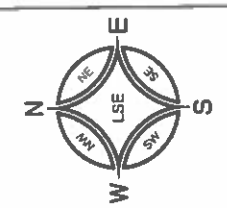
CARBCOM PROPERTIES COMMERCIAL SITE

A PORTION OF THE SE ¼ OF THE SW ¼ OF SECTION 4, TOWNSHIP 19 N, RANGE 06 E, W.M.
BUCKLEY, WASHINGTON



VICINITY MAP
SCALE: 1" = 1000'



GRAPHIC SCALE

30 0 15 30 60 120

1 INCH = 30 FEET

LEGAL DESCRIPTION:
REAL PROPERTY IN THE COUNTY OF PIERCE, STATE OF WASHINGTON, DESCRIBED AS FOLLOWS:

PARCEL A:
LOT 2, PIERCE COUNTY SHORT PLAT NO. 8012290114, ACCORDING TO MAP RECORDED DECEMBER 29, 1980, RECORDS OF PIERCE COUNTY AUDITOR.

PARCEL B:
NON-EXCLUSIVE EASEMENT FOR PRIVATE ROAD AS DELINEATED ON PIERCE COUNTY SHORT PLAT NO. 8012290114, ACCORDING TO MAP RECORDED DECEMBER 29, 1980, AND AS GRANTED BY DOCUMENT RECORDED UNDER RECORDING NO. 201510210273, RECORDS OF PIERCE COUNTY AUDITOR.

SITUATE IN THE CITY OF BUCKLEY, COUNTY OF PIERCE, STATE OF WASHINGTON.

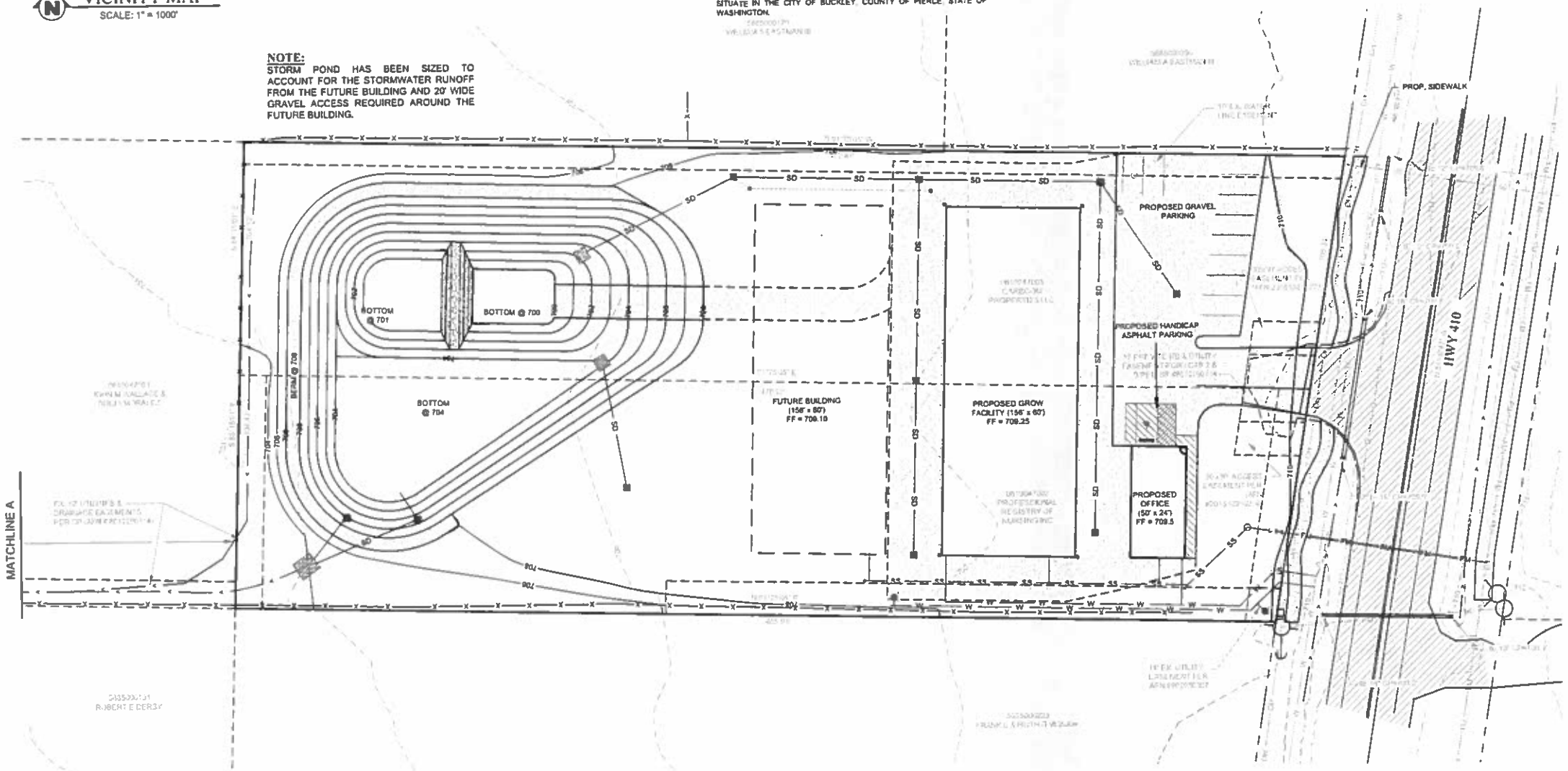
LEGAL DESCRIPTION:
REAL PROPERTY IN THE COUNTY OF PIERCE, STATE OF WASHINGTON, DESCRIBED AS FOLLOWS:

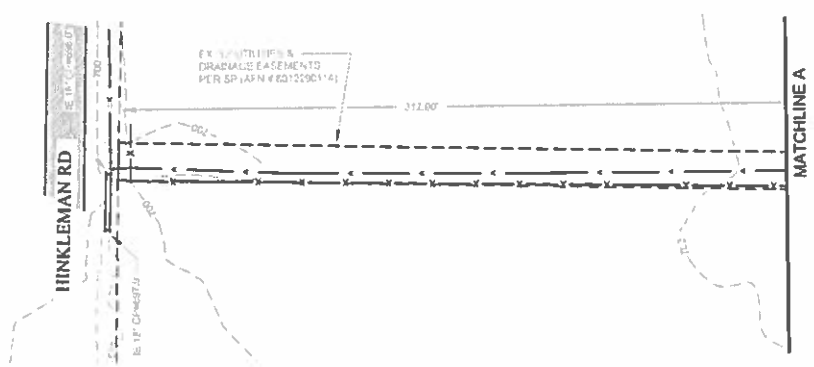
PARCEL A:
LOTS 3, PIERCE COUNTY SHORT PLAT RECORDED DECEMBER 29, 1980 UNDER RECORDING No. 8012290114, RECORDS OF PIERCE COUNTY AUDITOR;

PARCEL B:
NON-EXCLUSIVE EASEMENT FOR PRIVATE ROAD AS DELINEATED ON PIERCE COUNTY SHORT PLAT RECORDED UNDER RECORDING No. 8012290114, RECORDS OF PIERCE COUNTY AUDITOR.

SITUATE IN THE CITY OF BUCKLEY, COUNTY OF PIERCE, STATE OF WASHINGTON.

NOTE:
STORM POND HAS BEEN SIZED TO ACCOUNT FOR THE STORMWATER RUNOFF FROM THE FUTURE BUILDING AND 20' WIDE GRAVEL ACCESS REQUIRED AROUND THE FUTURE BUILDING.





LEGEND

	EXISTING	PROPOSED
2' CONTOURS MAJOR	510	510
2' CONTOURS MINOR	508	508
RIGHT-OF-WAY		
CENTERLINE		
BOUNDARY		
LOT		
BUILDING FOUNDATION		
PAVEMENT HATCH		
GRAVELED AREA		

	EXISTING	PROPOSED
WATER MAIN	W	W
OVERHEAD POWER	OH	
SIDE SEWER LINE	S	SS
SEWER FORCEMAIN	FM	FM
ROOF DRAIN LINE		
STORM LINE	SD	SD
STORM CLEANOUT		
CATCH BASIN, TYPE 1		
CATCH BASIN, TYPE 2		
CLEARING LIMITS		
SILT FENCE		SF

BASIS OF DATUM:

THE HORIZONTAL DATUM IS NAD83/91 BASED ON GPS DERIVED POSITIONS.

THE BASIS OF BEARINGS IS THE WASHINGTON STATE PLANE COORDINATE SYSTEM NORTH ZONE AT:
LAT: N 47°09'35.8"
LON: W 122°02'57.7"

COMBINED USAGE OF GPS EQUIPMENT (LIECA SMARTROVER AND PIERCE COUNTY SPIDER NETWORK) AND CONVENTIONAL SURVEY METHOD. MEETS OR EXCEEDS THE STANDARDS WAC 332-130-090

VERTICAL DATUM-NAVD 88 BASED ON THE PUBLISHED ELEVATION OF 698.58' FOR WSDOT BENCHMARK BM27410-15 THE STATION IS THE TOP OF A WSDOT BRASS DISK IN THE TOP OF A ROUND CONCRETE MONUMENT ON THE WEST SIDE OF MUNDY LOSS ROAD NORTH OF SR 410 AS DESCRIBED IN THE WSDOT REPORT OF SURVEY MARK.

CONTOUR INTERVAL=2 FOOT

UTILITY CONFLICT NOTE – CAUTION:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION, DIMENSION AND DEPTH OF ALL EXISTING UTILITIES WHETHER SHOWN ON THESE PLANS OR NOT BY POTHOLING THE UTILITIES AND SURVEYING THE HORIZONTAL AND VERTICAL LOCATION PRIOR TO CONSTRUCTION. THIS SHALL INCLUDE CALLING UTILITY LOCATE AT 811 AND THEN POTHOLING ALL OF THE EXISTING UTILITIES AT LOCATIONS OF NEW UTILITY CROSSINGS TO PHYSICALLY VERIFY WHETHER OR NOT THESE PLANS ARE BASED UPON UNVERIFIED PUBLIC INFORMATION AND ARE SUBJECT TO VARIATION. IF CONFLICTS SHOULD OCCUR, THE CONTRACTOR SHALL CONSULT LEROY SURVEYORS & ENGINEERS TO RESOLVE ALL PROBLEMS PRIOR TO PROCEEDING WITH CONSTRUCTION.

PARCEL NUMBER: 0619047002
PARCEL AREA: 49,222 S.F. (1.13 AC.)
PARCEL NUMBER: 0619047003
PARCEL AREA: 50,529 S.F. (1.16 AC.)

SHEET INDEX:

1. COVER SHEET
2. HORIZONTAL CONTROL
3. S.W.P.P.P. PLAN
4. S.W.P.P.P NOTES AND DETAILS
5. S.W.P.P.P. NOTES
6. STORM DRAINAGE AND GRADING
7. STORM DRAINAGE PROFILES AND DETAILS
8. UTILITY PLAN
9. UTILITY DETAILS

UTILITIES:

WATER:	CITY OF BUCKLEY
SEWER:	CITY OF BUCKLEY
POWER:	PUGET SOUND ENERGY
NATURAL GAS:	PUGET SOUND ENERGY
TELEPHONE:	CENTURYLINK
CABLE:	COMCAST

PUBLIC SERVICES:

SCHOOL DISTRICT:	WHITE RIVER SCHOOL DISTRICT
FIRE DISTRICT:	CITY OF BUCKLEY FIRE DEPARTMENT
POLICE:	CITY OF BUCKLEY POLICE

SITE ADDRESS:
28403 SR 410 E
BUCKLEY, WA 98321

ZONING:
GC

BUILDING SETBACKS:
REAR: 0 FEET
SIDE: 0 FEET

PROJECT DESCRIPTION:
COMMERCIAL BUILDING AND OFFICE BUILDING

DEVELOPER:
CARBCOM PROPERTIES
12930 PACIFIC HWY S
LAKEWOOD, WA 98499

PROJECT ENGINEER:
LEROY SURVEYORS AND ENGINEERS
P.O. BOX 740
PUYALLUP, WA 98371

IMPERVIOUS AREA (PROPOSED):

OFFICE BUILDING:	1,200 S.F.
GROW FACILITY:	9,360 S.F.
PROPOSED ASPHALT PARKING:	8,415 S.F.
PROPOSED GRAVELED AREA:	11,082 S.F.
TOTAL:	22,118 S.F.

FUTURE IMPERVIOUS AREA:

GROW FACILITY:	9,360 S.F.
PROPOSED GRAVELED AREA:	6,518 S.F.
TOTAL:	15,878 S.F.

EARTH WORK QUANTITIES:
CUT: 747 YARDS
FILL: 5,687 YARDS
NET: 4,940 YARDS
CLEARING LIMITS: 100,900 S.F.

STRIPPINGS: 3,000 C.Y.
RESPREAD STRIPPPINGS: 1,200 C.Y.

1. THESE QUANTITIES ARE FOR THE ESTABLISHMENT OF CLEARING AND GRADING PERMIT ONLY AND SHALL NOT BE CONSTRUED TO INDICATE A BALANCED SITE.
2. GRADING VOLUMES ARE FROM EXISTING GRADE TO FINISHED GRADE AND MAKE NO ALLOWANCE FOR STRIPPINGS, GRAVEL, OR ROAD SECTION MATERIALS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING HIS OWN QUANTITIES FOR BIDDING PURPOSES AND SHALL NOT HOLD THE ENGINEER OR OWNER/DEVELOPER RESPONSIBLE FOR ANY ERRORS IN HIS BID QUANTITIES FOR EXCAVATION

NOTE:
ALL DISTURBED SOILS MUST BE AMENDED OR RESTORED TO EQUAL OR BETTER CONDITION BY UTILIZING STOCKPILED TOPSOIL. SEE NOTES ON SHEET C4.

BEFORE ANY CONSTRUCTION CONTACT:
CALL BEFORE YOU DIG @ 1-800-424-5555

APPROVED FOR CONSTRUCTION

_____ DATE:_____
CITY OF BUCKLEY, CITY ENGINEER

THESE DRAWINGS ARE APPROVED FOR CONSTRUCTION FOR A PERIOD OF 12 MONTHS FROM THE DATE SHOWN HEREON. THE CITY RESERVES THE RIGHT TO MAKE MODIFICATIONS SHOULD THE CONSTRUCTION BE DELAYED BEYOND THIS TIME LIMIT. THE CITY, BY APPROVING THESE DOCUMENTS, IN NO WAY WARRANTS THEIR ACCURACY OR ACKNOWLEDGES ANY OMISSIONS.

RECEIVED
APR 12 2016

04/04/2016 THEODORE L. NELSON 22331 REGISTERED PROFESSIONAL ENGINEER STATE OF WASHINGTON

NO.	DATE	DESCRIPTION
1		
2		
3		
4		
5		
6		

JOB #: 1599
DATE: 04/04/2016
DESIGNED BY: RKP/BW
DRAWN BY: KAH
CHECKED BY: STM
APPROVED BY: STM

LEROY SURVEYORS & ENGINEERS
SURVEYING ENGINEERING GEOLOGY SEPTIC DESIGN GPS GIS MAPPING
LEROY SURVEYORS & ENGINEERS
P.O. Box 740, Puyallup, Washington 98371
(253) 848-6600 Fax: (253) 840-4140
www.lseinc.com

Cover Sheet

CARBCOM PROPERTIES
COMMERCIAL SITE
CARBCOM PROPERTIES
12930 PACIFIC HWY SW
LAKEWOOD, WA 98499
Phone: 253-431-6188

DRAWING
C1
SHEET 01
OF 09

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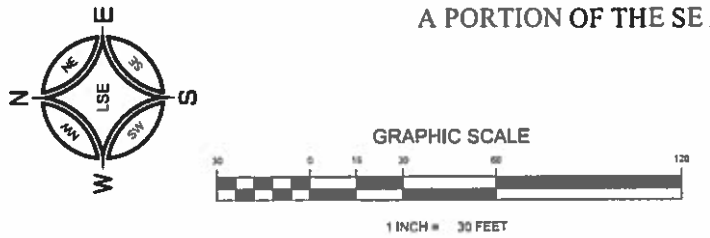
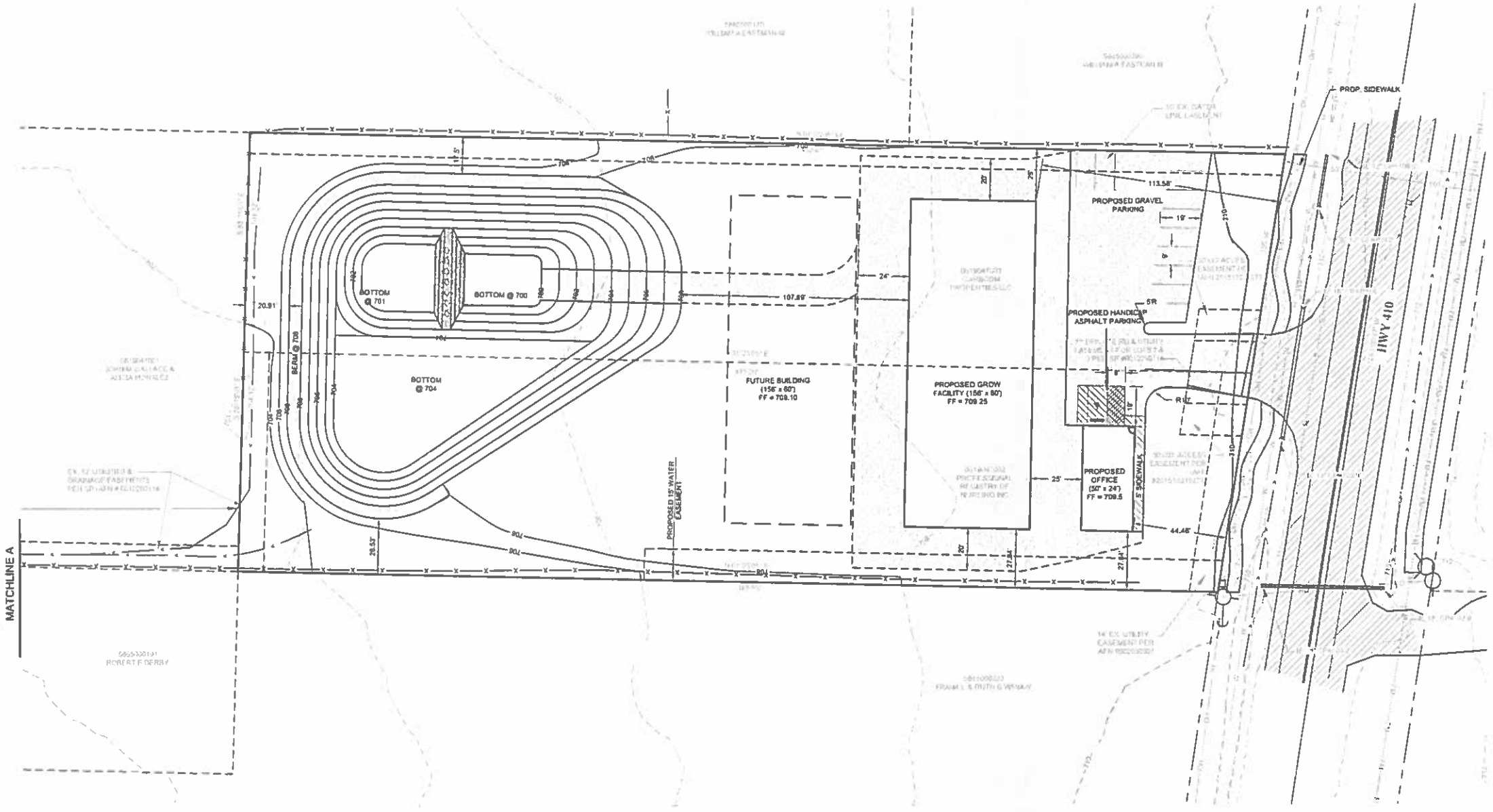
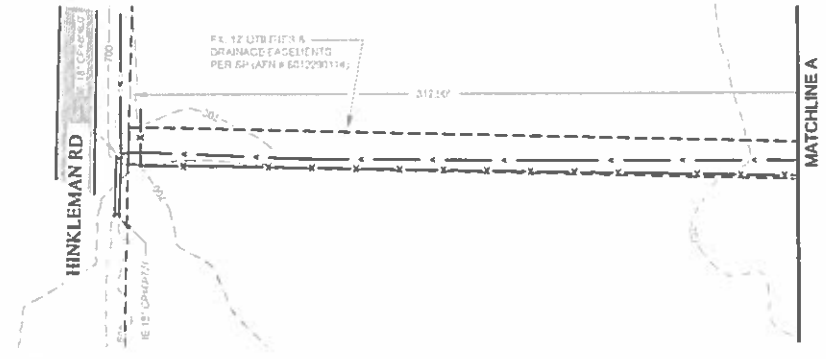
CARBCOM PROPERTIES COMMERCIAL SITE

A PORTION OF THE SE ¼ OF THE SW ¼ OF SECTION 4, TOWNSHIP 19 N, RANGE 06 E, W.M.
BUCKLEY, WASHINGTON







CONSTRUCTION SEQUENCE:

1. CONTACT THE CITY OF BUCKLEY AT 360-829-1921 TO SET UP PRE-CONSTRUCTION MEETING. ATTEND PRE-CONSTRUCTION MEETING
2. FLAG LIMITS OF CLEARING AND GRADING IN THE CONSTRUCTION AREA PER APPROVED PLANS.
3. INSTALL TEMPORARY CONSTRUCTION ENTRANCE AND OTHER EROSION CONTROL MEASURES AS PER THE APPROVED PLANS
4. CALL THE CITY OF BUCKLEY FOR INSPECTION NO. 1, INSTALLATION OF EROSION CONTROL FACILITIES PRIOR TO CLEARING.
5. MARK LOCATIONS WHERE PERMANENT STORM FACILITIES ARE TO BE CONSTRUCTED
6. CLEAR SITE. RETAIN DUFF LAYER (STRIPPINGS) AND NATURAL VEGETATION IN AN UNDISTURBED STATE TO THE MAXIMUM DEGREE PRACTICAL. IF IT IS NOT PRACTICAL TO RETAIN IN-PLACE, THEN STOCKPILE THE STRIPPINGS ON-SITE, COVER TO PREVENT EROSION AND SAVE FOR REPLACEMENT
7. CALL THE CITY OF BUCKLEY FOR INSPECTION NO. 2, COMPLETION OF CLEARING
8. STABILIZE EXPOSED AND UNWORKED SOILS WITH TEMPORARY OR PERMANENT SEEDING OR OTHER MEASURE AS NECESSARY TO ASSURE COMPLIANCE WITH PERMIT CONDITIONS
9. MAINTAIN AND REPAIR ALL TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL BMPS AS NECESSARY DURING CONSTRUCTION PHASE TO ASSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION IN ACCORDANCE WITH BMP SPECIFICATIONS.
10. PROTECT ADJACENT PROPERTIES AND PUBLIC ROAD FROM SEDIMENT RUNOFF. IF SEDIMENT IS TRANSPORTED ONTO THE PAVED SURFACE, THEN THE ROAD SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY
11. MASS GRADE AND CONSTRUCT THE STORMWATER POND IN ACCORDANCE WITH THE APPROVED PLANS AND UTILIZE FOR EROSION CONTROL.
12. INSTALL THE STORMWATER CONVEYANCE SYSTEM IN ACCORDANCE WITH THE APPROVED PLANS
13. CALL THE CITY OF BUCKLEY FOR INSPECTION NO. 3, UPON COMPLETION OF EXCAVATION, FILLING AND EARTHWORK.
14. CONSTRUCT POTABLE WATER SERVICE MAIN EXTENSION AND HYDRANTS ALONG WITH THE INDIVIDUAL WATER SERVICE
15. OBTAIN NECESSARY PERMITS FROM WSDOT FOR BORING THE SEWER SYSTEM UNDERNEATH HIGHWAY 410 AND CONNECT TO THE EXISTING FORCE MAIN
16. CONSTRUCT DRY UTILITIES.
17. PREPARE BUILDING PAD AREAS TO RECEIVE PROPOSED STRUCTURES.
18. CONSTRUCT STRUCTURES
19. CONSTRUCT PARKING AREA AND SIDEWALK ALONG FRONTAGE.
20. PROVIDE SOIL AMENDMENTS PRIOR TO INSTALLATION OF LANDSCAPING.
21. PROVIDE LANDSCAPING PER APPROVED PLANS
22. MAINTAIN EROSION CONTROL FACILITIES DURING CONSTRUCTION PHASE AND AMEND AS NECESSARY TO MAINTAIN SITE IN COMPLIANCE WITH PERMIT CONDITIONS
23. CALL THE CITY OF BUCKLEY FOR INSPECTION NO. 4, COMPLETION OF PROJECT

CALL THE CITY OF BUCKLEY FOR INSPECTION NO. 5, AS NEEDED, TO DETERMINE COMPLIANCE WITH APPROVED PLANS AND/OR SPECIFICATIONS.

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APR 12 2016

BEFORE ANY CONSTRUCTION CONTACT:
CALL BEFORE YOU DIG @ 1-800-424-5555

APPROVED FOR CONSTRUCTION

_____ DATE: _____
CITY OF BUCKLEY CITY ENGINEER

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04/04/2016
STEVE ANDREW NELSON
EXPIRES 10/10/2016
PROFESSIONAL ENGINEER

DRAFT

JOB NO.	15837
DATE	04/04/16
DESIGNED BY:	AWW/STN
DRAWN BY:	KEH
CHECKED BY:	STN
APPROVED BY:	STN

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LEROY SURVEYORS & ENGINEERS
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Horizontal Control

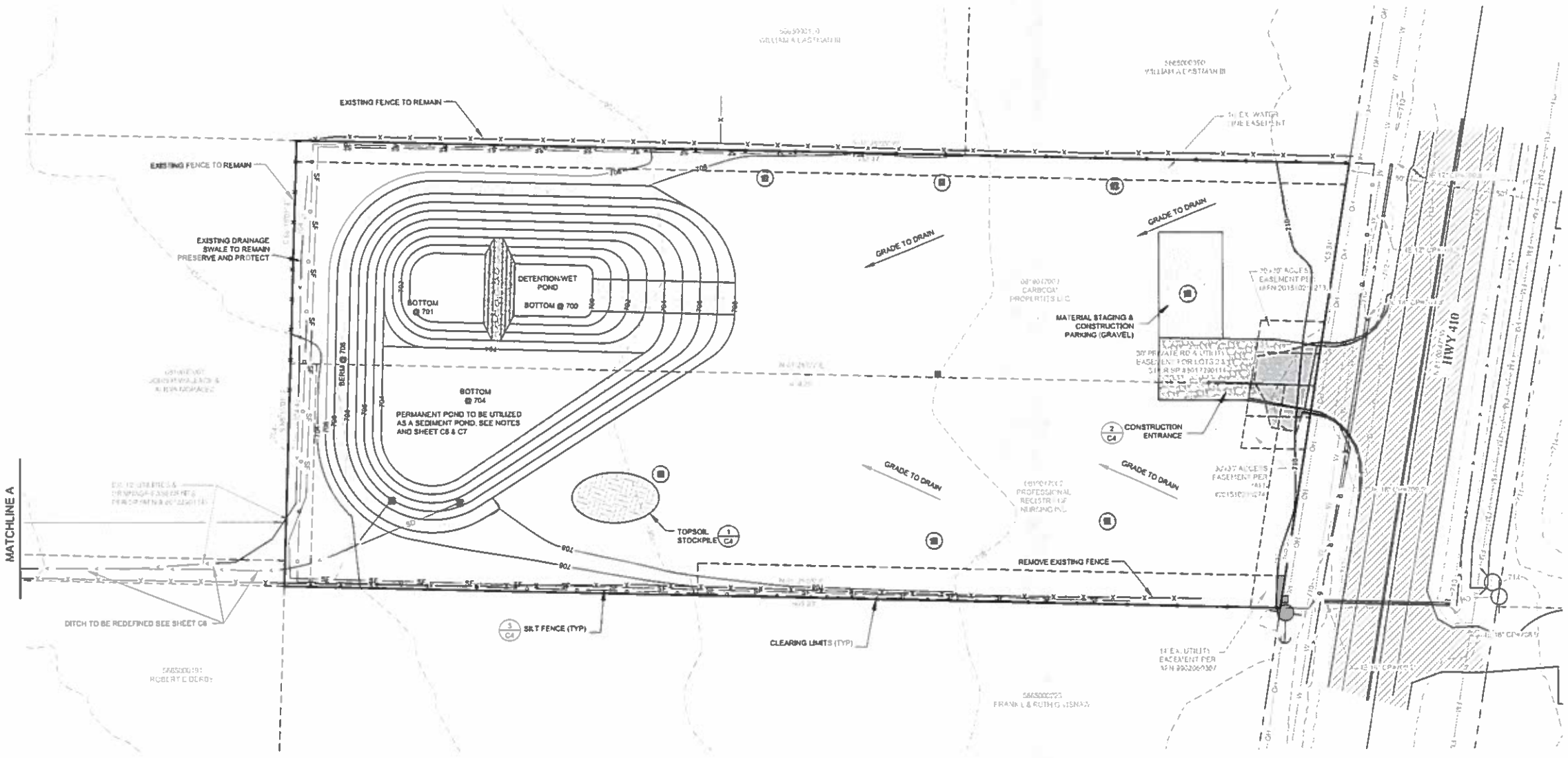
CARBCOM PROPERTIES
COMMERCIAL SITE
CARBCOM PROPERTIES
12930 PACIFIC HWY SW
LAKEWOOD, WA 98499
Phone: 253-431-6188

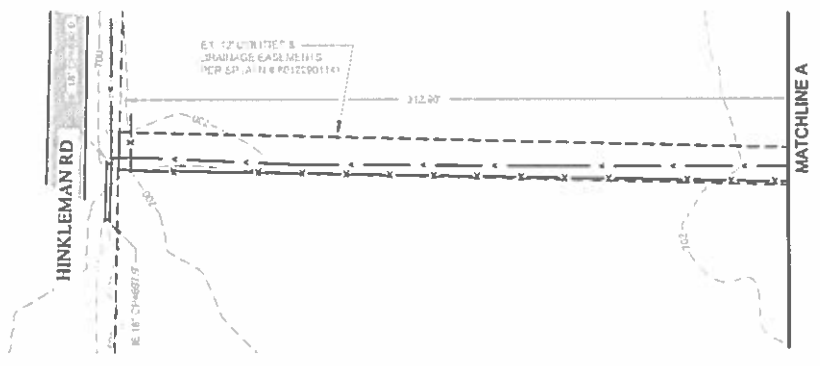
DRAWING
C2
SHEET 02
OF 09

CARBCOM PROPERTIES COMMERCIAL SITE

A PORTION OF THE SE ¼ OF THE SW ¼ OF SECTION 4, TOWNSHIP 19 N, RANGE 06 E, W.M.
BUCKLEY, WASHINGTON

GRAPHIC SCALE
30 0 15 30 60 120
1 INCH = 30 FEET





ESC LEGEND

- CLEARING LIMITS
- SF SILT FENCE (3/C4)
- CONSTRUCTION ENTRANCE (3/C4)
- TOPSOIL STOCKPILE (1/C4)
- INLET PROTECTION (4/C4)
- SOIL LOG

NOTES:

1. SEE SWPPP NOTES AND DETAILS ON SHEETS C3 AND C4.
2. INSTALL SILT FENCE AS SHOWN.
3. INSTALL CONSTRUCTION ENTRANCE AS SHOWN.
4. GRADE DETENTION POND FOR USE AS A SEDIMENT TRAP MINIMUM 3.5 FEET DEEP WITH OVERFLOW TO DITCH BY WAY OF THE OVERFLOW STRUCTURE SHOWN ON SHEET C7.

CONSTRUCTION SEQUENCE:

1. CONTACT THE CITY OF BUCKLEY AT 360-829-1921 TO SET UP PRE-CONSTRUCTION MEETING: ATTEND PRE-CONSTRUCTION MEETING.
2. FLAG LIMITS OF CLEARING AND GRADING IN THE CONSTRUCTION AREA PER APPROVED PLANS.
3. INSTALL TEMPORARY CONSTRUCTION ENTRANCE AND OTHER EROSION CONTROL MEASURES AS PER THE APPROVED PLANS.
4. CALL THE CITY OF BUCKLEY FOR INSPECTION NO. 1, INSTALLATION OF EROSION CONTROL FACILITIES/PRIOR TO CLEARING.
5. MARK LOCATIONS WHERE PERMANENT STORM FACILITIES ARE TO BE CONSTRUCTED.
6. CLEAR SITE. RETAIN DUFF LAYER (STRIPPINGS), AND NATURAL VEGETATION IN AN UNDISTURBED STATE TO THE MAXIMUM DEGREE PRACTICAL. IF IT IS NOT PRACTICAL TO RETAIN IN-PLACE, THEN STOCKPILE THE STRIPPINGS ON-SITE. COVER TO PREVENT EROSION AND SAVE FOR REPLACEMENT.
7. CALL THE CITY OF BUCKLEY FOR INSPECTION NO. 2, COMPLETION OF CLEARING.
8. STABILIZE EXPOSED AND UNWORKED SOILS WITH TEMPORARY OR PERMANENT SEEDING OR OTHER MEASURE AS NECESSARY TO ASSURE COMPLIANCE WITH PERMIT CONDITIONS.
9. MAINTAIN AND REPAIR ALL TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL BMPS AS NECESSARY DURING CONSTRUCTION PHASE TO ASSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION IN ACCORDANCE WITH BMP SPECIFICATIONS.
10. PROTECT ADJACENT PROPERTIES AND PUBLIC ROAD FROM SEDIMENT RUNOFF. IF SEDIMENT IS TRANSPORTED ONTO THE PAVED SURFACE, THEN THE ROAD SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY.
11. MASS GRADE AND CONSTRUCT THE STORMWATER POND IN ACCORDANCE WITH THE APPROVED PLANS AND UTILIZE FOR EROSION CONTROL.
12. INSTALL THE STORMWATER CONVEYANCE SYSTEM IN ACCORDANCE WITH THE APPROVED PLANS.
13. CALL THE CITY OF BUCKLEY FOR INSPECTION NO. 3, UPON COMPLETION OF EXCAVATION, FILLING AND EARTHWORK.
14. CONSTRUCT POTABLE WATER SERVICE MAIN EXTENSION AND HYDRANTS ALONG WITH THE INDIVIDUAL WATER SERVICE.
15. OBTAIN NECESSARY PERMITS FROM WSDOT FOR BORING THE SEWER SYSTEM UNDERNEATH HIGHWAY 410 AND CONNECT TO THE EXISTING FORCE MAIN.
16. CONSTRUCT DRY UTILITIES.
17. PREPARE BUILDING PAD AREAS TO RECEIVE PROPOSED STRUCTURES.
18. CONSTRUCT STRUCTURES.
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20. PROVIDE SOIL AMENDMENTS PRIOR TO INSTALLATION OF LANDSCAPING.
21. PROVIDE LANDSCAPING PER APPROVED PLANS.
22. MAINTAIN EROSION CONTROL FACILITIES DURING CONSTRUCTION PHASE AND AMEND AS NECESSARY TO MAINTAIN SITE IN COMPLIANCE WITH PERMIT CONDITIONS.
23. CALL THE CITY OF BUCKLEY FOR INSPECTION NO. 4, COMPLETION OF PROJECT.
24. CALL THE CITY OF BUCKLEY FOR INSPECTION NO. 5, AS NEEDED, TO DETERMINE COMPLIANCE WITH APPROVED PLANS AND/OR SPECIFICATIONS.

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BEFORE ANY CONSTRUCTION CONTACT:
CALL BEFORE YOU DIG @ 1-800-424-5555

APPROVED FOR CONSTRUCTION

_____ DATE: _____
CITY OF BUCKLEY, CITY ENGINEER

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04/04/2016
TIMOTHY R. NELSON
EXPIRES 12/31/2016
SITE DEVELOPMENT INSPECTION
PROFESSIONAL ENGINEER

DATE
REVISIONS
1 2 3 4 5 6 7 8 9 10

JOB NO. 16037
DATE 04/04/16
DESIGNED BY: KMH/BTN
DRAWN BY: KMH
CHECKED BY: BTN
APPROVED BY: BTN

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S.W.P.P.P. Plan

CARBCOM PROPERTIES
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LAKEWOOD, WA 98499
Phone: 253-431-6188

DRAWING
C3
SHEET 03
OF 09

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CARBCOM PROPERTIES COMMERCIAL SITE

A PORTION OF THE SE ¼ OF THE SW ¼ OF SECTION 4, TOWNSHIP 19 N, RANGE 06 E, W.M.
BUCKLEY, WASHINGTON

SOIL AMENDMENT OPTION 1:

AMEND EXISTING SOILS IN PLACE

SCARIFY OR ROTOTILL EXISTING SUBGRADE TO 4 INCHES DEPTH (OR TO DEPTH NEEDED TO ACHIEVE A TOTAL DEPTH OF 12 INCHES OF UNCOMPACTED SOIL AFTER CALCULATED AMOUNT OF AMENDMENT IS ADDED. SEE SPECIFIC SUBSECTIONS BELOW). ENTIRE SURFACE SHOULD BE DISTURBED BY SCARIFICATION. DO NOT SCARIFY WITHIN DRIP LINE OF EXISTING TREES TO BE RETAINED.

WITHIN *STORMWATER DRAINAGE SYSTEM* LOCATIONS OR *LANDSCAPED AREAS (10 PERCENT ORGANIC CONTENT)* - PLACE AND ROTOTILL 3 INCHES OF COMPOSTED MATERIAL INTO 5 INCHES OF SOIL (A DEPTH OF ABOUT 8.5 INCHES. FOR A SETTLED DEPTH OF 8 INCHES). AS NOTED PREVIOUSLY. SUBSOILS BELOW THIS LAYER SHOULD BE SCARIFIED AT LEAST 4 INCHES, FOR A FINISHED MINIMUM DEPTH OF 12 INCHES OF UNCOMPACTED SOIL. RAKE BEDS TO SMOOTH AND REMOVE ROCKS LARGER THAN 2 INCHES IN DIAMETER. MULCH AREAS WITH 2 INCHES ORGANIC MULCH.

WITHIN LAWN AREAS *(5 PERCENT ORGANIC CONTENT)* - PLACE AND ROTOTILL 1.75 INCHES OF COMPOSTED MATERIAL INTO 6.25 INCHES OF SOIL (A TOTAL AMENDED DEPTH OF ABOUT 9.5 INCHES, FOR A SETTLED DEPTH OF 8 INCHES), AS NOTED PREVIOUSLY. SUBSOILS BELOW THIS LAYER SHOULD BE SCARIFIED AT LEAST 4 INCHES. FOR A FINISHED MINIMUM DEPTH OF 12 INCHES OF UNCOMPACTED SOIL, WATER OR ROLL TO COMPACT SOIL TO 85 PERCENT OF MAXIMUM, RAKE TO LEVEL, AND REMOVE SURFACE WOODY DEBRIS AND ROCKS LARGER THAN 1 INCH IN DIAMETER.

SOIL AMENDMENT OPTION 2:

STOCKPILE SITE TOPSOILS PRIOR TO GRADING FOR REAPPLICATION

IF PLACED TOPSOIL PLUS COMPOST OR OTHER ORGANIC MATERIAL WILL AMOUNT TO LESS THAN 12 INCHES: SCARIFY OR ROTOTILL SUBGRADE TO DEPTH NEEDED TO ACHIEVE 12 INCHES OF LOOSENED SOIL AFTER TOPSOIL AND AMENDMENT ARE PLACED. ENTIRE SURFACE SHOULD BE DISTURBED BY SCARIFICATION. DO NOT SCARIFY WITHIN DRIP LINE OF EXISTING TREES TO BE RETAINED.

STOCKPILE AND COVER SOIL WITH WEED BARRIER MATERIAL THAT SHEDS MOISTURE YET ALLOWS AIR TRANSMISSION, IN APPROVED LOCATION, PRIOR TO GRADING.

REPLACE STOCKPILED TOPSOIL PRIOR TO PLANTING.

WITHIN *STORMWATER DRAINAGE SYSTEM* LOCATIONS OR *LANDSCAPED AREAS (10 PERCENT ORGANIC CONTENT)* - PLACE AND ROTOTILL 3 INCHES OF COMPOSTED MATERIAL INTO 5 INCHES OF REPLACED SOIL (A TOTAL OF ABOUT 8.5 INCHES, FOR A SETTLED DEPTH OF 8 INCHES). SUBSOILS BELOW THIS LAYER SHOULD BE SCARIFIED AT LEAST 4 INCHES. FOR A FINISHED MINIMUM DEPTH OF UNCOMPACTED SOIL. RAKE BEDS TO SMOOTH AND REMOVE ROCKS LARGER THAN 2 INCHES IN DIAMETER. MULCH AREAS WITH 2 INCHES OF ORGANIC MULCH OR STOCKPILED DUFF.

WITHIN *LAWN AREAS (5 PERCENT ORGANIC CONTENT)* - PLACE AND ROTOTILL 1.75 INCHES OF COMPOSTED MATERIAL INTO 6.25 INCHES OF REPLACED SOIL (A TOTAL AMENDED DEPTH OF ABOUT 9.5 INCHES, FOR A SETTLED DEPTH OF 8 INCHES). SUBSOILS BELOW THIS LAYER SHOULD BE SCARIFIED AT LEAST 4 INCHES. FOR A FINISHED MINIMUM DEPTH OF 12 INCHES OF UNCOMPACTED SOIL. WATER OR ROLL TO COMPACT TO 85 PERCENT OF MAXIMUM, RAKE TO LEVEL, AND REMOVE SURFACE OF WOODY DEBRIS AND ROCKS LARGER THAN 1 INCH IN DIAMETER.

SOIL AMENDMENT OPTION 3:

IMPORT TOPSOIL MEETING ORGANIC MATTER CONTENT STANDARDS

SCARIFY OR ROTOTILL SUBGRADE IN TWO DIFFERENT DIRECTIONS TO 6 INCHES DEPTH. ENTIRE SURFACE SHOULD BE DISTURBED BY SCARIFICATION. DO NOT SCARIFY WITHIN DRIP LINE OF EXISTING TREES TO BE RETAINED.

WITHIN *STORMWATER DRAINAGE SYSTEM* LOCATIONS OR *LANDSCAPED AREAS (10 PERCENT ORGANIC CONTENT)* - USE IMPORTED TOPSOIL MIX CONTAINING 10 PERCENT ORGANIC MATTER (TYPICALLY AROUND 40 PERCENT COMPOST). SOIL PORTION MUST BE SAND OR SANDY LOAM AS DEFINED BY THE USDA. PLACE 3 INCHES OF IMPORTED SOIL MIX ON SURFACE AND TILL INTO 2 INCHES OF SOIL. PLACE 3 INCHES OF TOPSOIL MIX ON THE SURFACE AND TILL INTO 2 INCHES OF SOIL. PLACE 3 INCHES OF TOPSOIL MIX ON THE SURFACE. RAKE SMOOTH AND REMOVE SURFACE ROCKS OVER 2 INCHES IN DIAMETER. MULCH PLANTING BEDS WITH 2 INCHES OF ORGANIC MULCH.

WITHIN *LAWN AREAS (5 PERCENT ORGANIC CONTENT)* - USE IMPORTED TOPSOIL MIX CONTAINING 5 PERCENT ORGANIC MATTER (TYPICALLY AROUND 25 PERCENT COMPOST). SOIL PORTION MUST BE SAND OR SANDY LOAM AS DEFINED BY THE USDA. PLACE 3 INCHES OF IMPORTED TOPSOIL MIX ON THE SURFACE AND TILL INTO 2 INCHES OF SOIL. WATER OR ROLL TO COMPACT SOIL TO 85 PERCENT MAXIMUM. RAKE TO LEVEL. AND REMOVE SURFACE ROCKS LARGER THAN 1 INCH IN DIAMETER.

2005 DOE STORMWATER MANUAL BMP C125 TOPSOILING:

NATIVE SOILS SHOULD BE LEFT UNDISTURBED TO THE MAXIMUM EXTENT PRACTICABLE. NATIVE SOILS DISTURBED DURING THE CLEARING AND GRADING SHOULD BE RESTORED, TO THE MAXIMUM EXTENT PRACTICABLE, TO A CONDITION WHERE MOISTURE-HOLDING CAPACITY IS EQUAL TO OR BETTER THAN THE ORIGINAL SITE CONDITIONS. THE CRITERION CAN BE MET BY USING ON-SITE NATIVE TOPSOIL, INCORPORATING AMENDMENTS INTO ON-SITE SOIL, OR IMPORTING BLENDED TOPSOIL.

1/C4 TOPSOIL STOCKPILE DETAIL
SCALE: NTS

COMPOST QUALITY:

COMPOST SHALL BE PREPARED BY THE CONTROLLED DECOMPOSITION OF ORGANIC MATERIALS. ACCEPTABLE FEEDSTOCKS INCLUDE, BUT ARE NOT LIMITED TO, YARD DEBRIS, WOOD WASTE, LAND-CLEARING DEBRIS, BRUSH, BRANCHES, MANURE, BIOSOLIDS, FOOD RESIDUALS, AND FOREST BYPRODUCTS. THE PRODUCT SHALL HAVE A UNIFORM, DARK, SOIL-LIKE APPEARANCE AND AN EARTHY LOAM-LIKE COLOR, NO AMMONIA OR PUTRID SMELLS SHALL BE PRESENT. MINIMUM ORGANIC MATTER SHALL BE 35 PERCENT (DRY-WEIGHT BASIS). PARTICLES SHALL BE 100 PERCENT PASSING THROUGH THE 1 INCH SIEVE. PH RANGE SHALL BE BETWEEN 6.0 AND 8.5 FOR WETLANDS AND STREAMSIDE LOCATIONS, AND 6.0 AND 8.0 FOR OTHER LOCATIONS. FOREIGN MATERIAL SHALL BE NO MORE THAN 2 PERCENT ON A DRY-WEIGHT OR VOLUME BASIS, WHICHEVER PROVIDES THE LEAST FOREIGN MATERIAL. MATERIAL SHALL COME FROM A SOURCE THAT IS PERMITTED BY (OR EXEMPT FROM) TACOMA-PIERCE COUNTY HEALTH DEPARTMENT (TPCHD) RULES.

COMPOST FOR THE APPROVED RATES LISTED ABOVE MUST BE CLASS A COMPOST PER WASHINGTON STATE DEPARTMENT OF ECOLOGY (ECOLOGY) INTERIM COMPOST QUALITY GUIDELINES ("COMPOSTED MATERIALS" DEFINED IN WASHINGTON ADMINISTRATIVE CODE (WAC) CHAPTER 173-350 SECTION 220) OR TOPSOIL MANUFACTURED FROM THESE COMPOSTS PLUS SAND OR SANDY SOIL. PRODUCTS SHOULD BE IDENTIFIED ON THE SITE DEVELOPMENT PLANS AND RECENT PRODUCT TEST SHEETS PROVIDED SHOWING THAT THEY MEET ADDITIONAL REQUIREMENTS FOR ORGANIC MATTER CONTENT AND A CARBON TO NITROGEN RATION BELOW 25:1. THE CARBON TO NITROGEN RATIO MAY BE AS HIGH AS 35:1 FOR PLANTINGS COMPOSED ENTIRELY OF PLANTS ENTIRELY OF PLANTS NATIVE TO THE PUGET SOUND LOWLANDS REGION.

-UTILIZE ALTERNATIVES TO STRAW MULCH, SUCH AS COMPOSTED MULCH OR WOOD-BASED MULCH, FOR CONSTRUCTION EROSION AND SEDIMENT CONTROL.

-APPLY COMPOST ON SLOPES INSTEAD OF HYDROMULCH.

-SOILS AMENDMENTS SHOULD BE INSTALLED POST-CONSTRUCTION, PRIOR TO INSTALLATION OF LANDSCAPING AND TURF, UNLESS USED AS A STEP IN THE LOT PREPARATION PROCESS INVOLVING MINIMAL EXCAVATION FOUNDATION SYSTEM.

NOTE: FILTERS SHALL BE INSPECTED AFTER EACH STORM EVENT AND CLEANED OR REPLACED WHEN 1/3 FULL.

4/C4 INLET PROTECTION
SCALE: NTS

NOTE: PROJECT WILL BE UTILIZING THE STORM DETENTION POND FOR TRAPPING SEDIMENT. THE CONTROL STRUCTURE WILL BE UTILIZED FOR OUTFLOW

5/C4 SEDIMENT TRAP
SCALE: NTS

NOTES:

1. WHERE POSSIBLE, MAINTAIN NATURAL VEGETATION FOR SILT CONTROL
2. TEMPORARY SILTATION TO BE CONSTRUCTED BY PLACING FILTER FABRIC FENCES ACROSS SWALES UTILIZING FILTER SYSTEM PRIOR TO DISCHARGE
3. ALL TEMPORARY SILTATION SHALL BE MAINTAINED IN A SATISFACTORY CONDITION UNTIL SUCH TIME THAT CLEARING AND/OR CONSTRUCTION IS COMPLETED AND SURFACE RESTORATION HAS BEEN COMPLETED
4. RETURN SILTATION CONTROL AREAS TO ORIGINAL GROUND CONDITIONS, UNLESS SPECIFICALLY DIRECTED OTHERWISE BY THE TOWN

SILT FENCE

CITY OF BUCKLEY			
SILT FENCE			
APPROVED: PUBLIC WORKS DEPT.		DATE	DWG. NO. EC-1
DATE: 8/93	DRWN: E.S.T	CHKD: TT.J.O.	SCALE: NONE

3/C4 SILT FENCE DETAIL
SCALE: NTS

2/C4 CONSTRUCTION ENTRANCE ROCK PAD
SCALE: NTS

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RECEIVED
APR 12 2016

BEFORE ANY CONSTRUCTION CONTACT: CALL BEFORE YOU DIG @ 1-800-424-5555

APPROVED FOR CONSTRUCTION

CITY OF BUCKLEY CITY ENGINEER DATE: ____

THESE DRAWINGS ARE APPROVED FOR CONSTRUCTION FOR A PERIOD OF 12 MONTHS FROM THE DATE SHOWN HEREON. THE CITY RESERVES THE RIGHT TO MAKE MODIFICATIONS SHOULD THE CONSTRUCTION BE DELAYED BEYOND THIS TIME LIMIT. THE CITY, BY APPROVING THESE DOCUMENTS, IN NO WAY WARRANTS THEIR ACCURACY OR ACKNOWLEDGES ANY OMISSIONS.

S.W.P.P.P. Notes & Details

STATE OF WASHINGTON — THEODORE NELSON — REGISTERED PROFESSIONAL ENGINEER — 04/04/2016

REVISION / DATE: 1 2 3 4 5 6 7 8 9 10

JOB NO: 16637
DATE: 04/04/2016
DESIGNED BY: KKHSTN
DRAWN BY: KKH
CHECKED BY: STN
APPROVED BY: STN

LEROY SURVEYORS & ENGINEERS
SURVEYING, ENGINEERING, GEOLOGY, SEPTIC DESIGN, GPS, GIS MAPPING
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CARBCOM PROPERTIES COMMERCIAL SITE
CARBCOM PROPERTIES
12930 PACIFIC HWY SW
LAKEWOOD, WA 98499
Phone: 253-431-6188

DRAWING C4
SHEET 04 OF 09

CARBCOM PROPERTIES COMMERCIAL SITE

A PORTION OF THE SE ¼ OF THE SW ¼ OF SECTION 4, TOWNSHIP 19 N, RANGE 06 E, W.M.
BUCKLEY, WASHINGTON

GENERAL NOTES:

1. ALL MATERIALS AND WORKMANSHIP IN THE RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE LATEST STATE OF WASHINGTON DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND THE CITY OF BUCKLEY PUBLIC ROAD STANDARDS AND EMERGENCY VEHICLE ACCESS STANDARDS.
2. IT WILL BE THE APPLICANT'S OR HIS AGENT'S RESPONSIBILITY TO CONTACT ALL UTILITY COMPANIES TO COORDINATE CONSTRUCTION. ALL UTILITY RELOCATION WORK SHALL BE AT THE EXPENSE OF THE APPLICANT AND MUST BE IN ACCORDANCE WITH THE STANDARDS OF THE CITY.
3. BURIED UTILITIES ARE SHOWN IN THEIR APPROXIMATE LOCATION. THE APPLICANT OR HIS CONTRACTOR SHALL HAVE THE UTILITIES VERIFIED ON THE GROUND PRIOR TO ANY CONSTRUCTION.
4. ANY REVISIONS TO THESE PLANS MUST BE REVIEWED AND APPROVED BY THE CITY OF BUCKLEY PUBLIC WORKS PRIOR TO ANY IMPLEMENTATION IN THE FIELD.
5. BEFORE WORKING IN THE COUNTY RIGHT-OF-WAY, THE APPLICANT SHALL:
   A. OBTAIN A GENERAL PERMIT FROM THE CITY.
   B. SUBMIT A FINANCIAL GUARANTEE TO THE CITY TO ASSURE SATISFACTORY COMPLETION OF THE WORK.
   C. PROVIDE PROOF OF LIABILITY INSURANCE IN AN AMOUNT REQUIRED BY THE CITY.
6. THE CONTRACTOR SHALL NOTIFY THE APPLICANT'S ENGINEER IN THE EVENT OR DISCOVERY OF POOR SOILS, STANDING GROUND WATER, OR SEVERE DISCREPANCIES FROM SOIL LOG DESCRIPTIONS AS NOTED ON THESE PLANS.
7. EXCAVATION STANDARDS
   CUT SLOPES
   SLOPES SHALL NOT BE STEEPER THAN 2 HORIZONTAL TO 1 VERTICAL, OR AS RECOMMENDED BY A SOILS ENGINEER. THE CATCH POINT OF THE TOP OF THE SLOPE SHALL BE SET BACK FROM THE SITE BOUNDARY LINE IN ACCORDANCE WITH THE FOLLOWING TABLE, UNLESS A RETAINING WALL IS DESIGNED BY THE ENGINEER AND CONSTRUCTED FOR THE PROJECT.

CUT DEPTH	SET BACK DISTANCE
UNDER 5 FEET	2 FEET
5 - 20 FEET	HEIGHT/2
OVER 20 FEET	10 FEET

8. FILL STANDARDS
   FILL LOCATION
   SLOPES SHALL NOT BE STEEPER THAN 2 HORIZONTAL TO 1 VERTICAL, OR AS RECOMMENDED BY A SOILS ENGINEER. FILL SITES MUST BE APPROVED BY THE ENGINEER AS SUITABLE LOCATIONS FOR THE PROPOSED FILL. THE TOE OR CATCH POINT OF FILL SLOPES SHALL BE SET BACK FROM THE SITE BOUNDARY LINE IN ACCORDANCE WITH THE FOLLOWING TABLE, UNLESS A RETAINING WALL IS DESIGNED BY THE ENGINEER AND CONSTRUCTED FOR THE PROJECT.

FILL DEPTH	SET BACK DISTANCE
UNDER 5 FEET	2 FEET
5 - 40 FEET	HEIGHT/2

9. PREPARATION OF GROUND
   THE GROUND SURFACE FOR FILLS OVER TWO FEET IN HEIGHT SHALL BE PREPARED BY REMOVING VEGETATION, NON COMPLYING FILL, TOPSOIL, AND OTHER UNSUITABLE MATERIALS; SCARIFYING TO PROVIDE A BOND WITH THE NEW FILL; AND, WHERE EXISTING SLOPES ARE STEEPER THAN 5 HORIZONTAL TO 1 VERTICAL, BY BENCHING INTO COMPETENT MATERIAL AS DETERMINED BY THE ENGINEER. THE BENCH UNDER THE TOE OF A FILL ON A SLOPE STEEPER THAN 5 HORIZONTAL TO 1 VERTICAL SHALL BE AT LEAST 10 FEET WIDE, OR AS RECOMMENDED BY A SOILS ENGINEERS.
10. THE CITY IS AUTHORIZED TO MAKE INSPECTIONS AND TAKE SUCH ACTIONS AS REQUIRED TO ENFORCE THESE REGULATIONS. THE CITY REPRESENTATIVE SHALL PRESENT PROPER CREDENTIALS AND MAKE A REASONABLE EFFORT TO CONTACT THE PROPERTY OWNER BEFORE ENTERING ONTO PRIVATE PROPERTY.
11. SHOULD THE CITY BECOME AWARE OF CONDITIONS THAT INVALIDATE THE ORIGINAL DESIGN DATA USED TO OBTAIN THE PERMIT OR DETERMINE THAT THE APPLICANT IS NOT COMPLYING WITH THE CONDITIONS OF THE PERMIT OR APPROVED PLANS, THE CITY MAY REVOKE THE ORIGINAL PERMIT AND/OR ORDER WORK STOPPED ON THE PROJECT. THE CITY MAY REQUIRE THE APPLICANT TO RESUBMIT INFORMATION OR PLANS.

EROSION CONTROL NOTES:

1. ON-SITE EROSION CONTROL MEASURES SHALL BE THE RESPONSIBILITY OF THE DEVELOPER. ANY PROBLEMS OCCURRING BEFORE FINAL ACCEPTANCE OF THE STORM SYSTEM BY THE MUNICIPALITY SHALL BE CORRECTED BY THE APPLICANT AND/OR THE CONTRACTOR.
2. IN CASE EROSION OR SEDIMENTATION OCCURS TO ADJACENT PROPERTY, ALL CONSTRUCTION WORK WITHIN THE DEVELOPMENT THAT WILL AGGRAVATE THE SITUATION MUST CEASE AND THE APPLICANT/CONTRACTOR SHALL IMMEDIATELY COMMENCE RESTORATION OR MITIGATION MEASURES. RESTORATION ACTIVITY SHALL CONTINUE UNTIL SUCH TIME AS THE PROBLEM IS RECTIFIED.
3. ALL EROSION AND SEDIMENTATION CONTROL DEVICES SHOWN ON THIS DRAWING SHALL BE INSTALLED PRIOR TO OR AS THE FIRST STAGE OF SITE PREPARATION.
4. SHOULD THE TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES AS SHOWN ON THIS DRAWING NOT PROVE ADEQUATE TO CONTROL EROSION AND SEDIMENTATION, THE APPLICANT/CONTRACTOR SHALL INSTALL ADDITIONAL FACILITIES AS NECESSARY TO PROTECT ADJACENT PROPERTIES, SENSITIVE AREAS, NATURAL WATER COURSES, AND/OR STORM DRAINAGE SYSTEMS.
5. IN ANY AREA WHICH HAS BEEN STRIPPED OF VEGETATION OR EXPERIENCED LAND DISTURBING ACTIVITIES AND WHERE NO FURTHER WORK IS ANTICIPATED FOR A PERIOD EXCEEDING FIVE DAYS, ALL DISTURBED AREAS MUST BE IMMEDIATELY STABILIZED WITH MULCHING, GRASS PLANTING, OR OTHER APPROVED EROSION CONTROL TREATMENT APPLICABLE TO THE TIME OF YEAR IN QUESTION. GRASS SEEDING ALONE WILL BE ACCEPTABLE ONLY DURING THE MONTHS OF APRIL THROUGH SEPTEMBER, INCLUSIVE. SEEDING MAY PROCEED, HOWEVER, WHENEVER IT IS IN THE INTEREST OF THE APPLICANT/CONTRACTOR, BUT MUST BE AUGMENTED WITH MULCHING, NETTING, OR OTHER TREATMENT.
6. THE PROJECT ENGINEER OR PROJECT SURVEYOR WILL BE RESPONSIBLE FOR FIELD LOCATING THE CLEARING LIMITS AND ESTABLISHING THOSE BOUNDARIES WITH BRIGHT COLORED FLAGGING. THE CONTRACTOR SHALL CLEAR TO THE LIMITS AS ESTABLISHED ON THIS PLAN AND AS FLAGGED IN THE FIELD.
7. THE CITY SHALL BE RESPONSIBLE FOR THE INSPECTION AND ACCEPTANCE OF ALL CLEARING AND GRADING WORK AND EROSION AND SEDIMENTATION CONTROL FACILITIES. THE APPLICANT AND/OR CONTRACTOR SHALL NOTIFY THE CITY FORTY-EIGHT HOURS IN ADVANCE OF EACH REQUIRED EROSION AND SEDIMENT CONTROL INSPECTION.

INSPECTION NO. 1 -	INSTALLATION OF EROSION CONTROL FACILITIES/PRIOR TO CLEARING.
INSPECTION NO. 2 -	COMPLETION OF CLEARING.
INSPECTION NO. 3 -	UPON COMPLETION OF EXCAVATION, FILLING, AND EARTHWORK.
INSPECTION NO. 4 -	COMPLETION OF PROJECT.
INSPECTION NO. 5 -	AS NEEDED TO DETERMINE COMPLIANCE WITH APPROVED PLANS AND/OR SPECIFICATIONS. (DOES NOT REQUIRE ADVANCE NOTICE.)

ALL WORK ASSOCIATED WITH STABILIZING THE DISTURBED AREAS SHALL BE IN ACCORDANCE WITH THE CITY OF BUCKLEY STORMWATER REGULATIONS.

8. ALL NECESSARY FACILITIES SHALL BE MAINTAINED ON SITE TO PREVENT DEBRIS, DUST, AND MUD FROM ACCUMULATING ON THE PUBLIC RIGHT-OF-WAY.

SEED MIXTURE FOR EROSION CONTROL

NAME:	% BY WEIGHT:	% PURITY:	% GERMINATION:
REDTOP (AGROSTIS ALBA)	10 PERCENT	82 PERCENT	90 PERCENT
ANNUAL RYE (LOLIUM MULTIFLORUM)	40 PERCENT	98 PERCENT	90 PERCENT
CHEWING FESCUE (FESTUCA RUBRA COMMUTATA - JAMESTOWN, BANNER, SHADOW, OR KORBET)	40 PERCENT	97 PERCENT	80 PERCENT
WHITE DUTCH CLOVER (TRIFOLIUM REPENS)	10 PERCENT	96 PERCENT	90 PERCENT

SOIL STOCKPILE NOTES:

1. STOCKPILES SHALL BE STABILIZED (WITH PLASTIC COVERING OR OTHER APPROVED DEVICE) DAILY BETWEEN NOVEMBER 1 AND MARCH 31.
2. IN ANY SEASON, SEDIMENT LEACHING FROM STOCK PILES MUST BE PREVENTED.
3. TOPSOIL SHALL NOT BE PLACED WHILE IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBGRADE IS EXCESSIVELY WET, OR WHEN CONDITIONS EXIST THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING OR PROPOSED SODDING OR SEEDING.
4. PREVIOUSLY ESTABLISHED GRADES ON THE AREAS TO BE TOPSOILED SHALL BE MAINTAINED ACCORDING TO THE APPROVED PLAN.
5. STOCKPILES MUST BE LOCATED MORE THAN 50 FEET FROM ALL DRAINAGE FEATURES.

PLASTIC COVERING NOTES:

1. PLASTIC SHEETING SHALL HAVE A MINIMUM THICKNESS OF 6 MILS AND SHALL MEET THE REQUIREMENTS OF THE STATE STANDARD SPECIFICATIONS SECTION 9-14.5.
2. COVERING SHALL BE INSTALLED AND MAINTAINED TIGHTLY IN PLACE BY USING SANDBAGS OR TIRES ON ROPES WITH A MAXIMUM 10-FOOT GRID SPACING IN ALL DIRECTIONS. ALL SEAMS SHALL BE TAPED OR WEIGHTED DOWN FULL LENGTH AND THERE SHALL BE A LEAST A 12 INCH OVERLAP OF ALL SEAMS.
3. CLEAR PLASTIC COVERING SHALL BE INSTALLED IMMEDIATELY ON AREAS SEEDED BETWEEN NOVEMBER 1 AND MARCH 31 AND REMAIN UNTIL VEGETATION IS FIRMLY ESTABLISHED.
4. WHEN THE COVERING IS USED ON UN-SEEDED SLOPES, IT SHALL BE KEPT IN PLACE UNTIL THE NEXT SEEDING PERIOD.
5. PLASTIC COVERING SHEETS SHALL BE BURIED TWO FEET AT THE TOP OF SLOPES IN ORDER TO PREVENT SURFACE WATER FLOW BENEATH SHEETS.
6. PROPER MAINTENANCE INCLUDES REGULAR CHECKS FOR RIPS AND DISLODGED ENDS.

MULCHING NOTES:

1. MULCH MATERIALS USED SHALL BE HAY OR STRAW AND SHALL BE APPLIED AT A RATE OF 75-100 POUNDS PER 1000 SQUARE FEET, OR 90-120 BALES PER ACRE TO A MIN. DEPTH OF 2 INCHES.
2. MULCHES SHALL BE APPLIED IN ALL AREAS WITH EXPOSED SLOPES GREATER THAN 2:1.
3. MULCHING SHALL BE USED IMMEDIATELY AFTER SEEDING OR IN AREAS WHICH CANNOT BE SEEDED BECAUSE OF THE SEASON.
4. ALL AREAS NEEDED MULCH SHALL BE COVERED BY NOVEMBER 1.

SEEDING NOTES:

1. SEED MIXTURE SHALL BE 10% REDTOP (92% PURITY, 90% GERMINATION); 40% ANNUAL RYE (98% PURITY, 90% GERMINATION); 40% CHEWING FESCUE (97% PURITY, 80% GERMINATION); AND 10% WHITE DUTCH CLOVER (96% PURITY, 90% GERMINATION) AND SHALL BE APPLIED AT THE RATE OF 120 POUNDS PER ACRE.
2. SEED BEDS PLANTED BETWEEN MAY 1 AND OCTOBER 31 WILL REQUIRE IRRIGATION AND OTHER MAINTENANCE AS NECESSARY TO FOSTER AND PROTECT THE ROOT STRUCTURE.
3. FOR SEED BEDS PLANTED BETWEEN OCTOBER 31 AND APRIL 30, ARMORING OF THE SEED BED WILL BE NECESSARY. (E.G., GEOTEXTILES, JUTE MAT, CLEAR PLASTIC COVERING).
4. BEFORE SEEDING, INSTALL NEEDED SURFACE RUNOFF CONTROL MEASURES SUCH AS GRADIENT TERRACES, INTERCEPTOR DIKES, SWALES, LEVEL SPREADERS AND SEDIMENT BASINS.
5. THE SEEDBED SHALL BE FIRM WITH A FAIRLY FINE SURFACE, FOLLOWING SURFACE ROUGHENING. PERFORM ALL OPERATION ACROSS OR AT RIGHT ANGLES TO THE SLOPE.
6. FERTILIZERS ARE TO BE USED ACCORDING TO SUPPLIERS RECOMMENDATIONS. AMOUNTS USED SHOULD BE MINIMIZED, ESPECIALLY ADJACENT TO WATER BODIES AND WETLANDS.
7. EROSION CONTROL SEEDING SHALL NOT BE USED IN AREAS SUBJECT TO WEAR BY CONSTRUCTION TRAFFIC.
8. EROSION CONTROL SEEDING MAY BE USED IN ALL AREAS OF 5% OR LESS SLOPE. IN AREAS BETWEEN 5 AND 10% SLOPE, EROSION CONTROL SEEDING MAY BE USED FOR A MAXIMUM HORIZONTAL DISTANCE OF 100 FEET. USE MULCH OR NETTING OR OTHER TREATMENTS FOR STEEPER AND LONGER SLOPES.

SILT FENCE NOTES:

1. FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL AND CUT TO THE LENGTH OF THE BARRIER TO AVOID USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6-INCH OVERLAP, AND SECURELY FASTENED AT BOTH ENDS TO POSTS.
2. POSTS SHALL BE SPACED A MAXIMUM OF 6 FEET APART AND DRIVEN SECURELY INTO THE GROUND (MINIMUM OF 30 INCHES).
3. A TRENCH SHALL BE EXCAVATED APPROXIMATELY 8 INCHES WIDE AND 12 INCHES DEEP ALONG THE LINE OF POSTS AND UPSLOPE FROM THE BARRIER. THIS TRENCH SHALL BE BACKFILLED WITH WASHED GRAVEL.
4. WHEN STANDARD STRENGTH FILTER FABRIC IS USED, A WIRE MESH SUPPORT FENCE SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY-DUTY WIRE STAPLES AT LEAST 1 INCH THE TRENCH A MINIMUM OF 4 INCHES AND SHALL NOT EXTEND MORE THAN 24 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
5. THE STANDARD STRENGTH FILTER FABRIC SHALL BE STAPLED OR WIRED TO THE FENCE, AND 20 INCHES OF THE FABRIC SHALL BE EXTENDED INTO THE TRENCH. THE FABRIC SHALL NOT EXTEND MORE THAN 24 INCHES ABOVE THE ORIGINAL GROUND SURFACE. FILTER FABRIC SHALL NOT BE STAPLED TO EXISTING TREES.
6. WHEN EXTRA-STRENGTH FILTER FABRIC AND CLOSER POST SPACING IS USED, THE WIRE MESH SUPPORT FENCE MAY BE ELIMINATED. IN SUCH A CASE, THE FILTER FABRIC IS STAPLED OR WIRED DIRECTLY TO THE POSTS WITH ALL OTHER PROVISIONS OF ABOVE NOTES APPLYING.
7. FILTER FABRIC FENCES SHALL NOT BE REMOVED BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED.
8. FILTER FABRIC FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
9. SILT FENCES WILL BE INSTALLED PARALLEL TO ANY SLOPE CONTOURS.
10. CONTRIBUTING LENGTH TO FENCE WILL NOT BE GREATER THAN 100 FEET.
11. DO NOT INSTALL BELOW AN OUTLET PIPE OR WIRE.
12. INSTALL DOWNSLOPE OF EXPOSED AREAS.
13. DO NOT DRIVE OVER OR FILL OVER SILT FENCES.

CONSTRUCTION ENTRANCE NOTES:

1. MATERIAL SHALL BE 4 INCH TO 8 INCH QUARRY SPALLS (4 TO 6 INCH FOR RESIDENTIAL SINGLE FAMILY LOTS) AND MAY BE TOP-DRESSED WITH 1 INCH TO 3 INCH ROCK. (STATE STANDARD SPECIFICATIONS, SECTION 8-15)
2. THE ROCK PAD SHALL BE AT LEAST 12 INCHES THICK AND 50 FEET LONG (20 FEET FOR SITES WITH LESS THAN 1 ACRE OF DISTURBED SOIL). WIDTH SHALL BE THE FULL WIDTH OF THE VEHICLE INGRESS AND EGRESS AREA. SMALLER PADS MAY BE APPROVED FOR SINGLE-FAMILY RESIDENTIAL AND SMALL COMMERCIAL SITES.
3. ADDITIONAL ROCK SHALL BE ADDED PERIODICALLY TO MAINTAIN PROPER FUNCTION OF THE PAD.
4. IF THE PAD DOES NOT ADEQUATELY REMOVE THE MUD FROM THE VEHICLE WHEELS, THE WHEELS SHALL BE HOSED OFF BEFORE THE VEHICLE ENTERS A PAVED STREET. THE WASHING SHALL BE DONE ON AN AREA COVERED WITH CRUSHED ROCK AND WASH WATER SHALL DRAIN TO A SEDIMENT RETENTION FACILITY OR THROUGH A SILT FENCE.

INLET PROTECTION NOTES:

FILTER FABRIC FENCE - INSTALLATION PROCEDURE

1. PLACE 2-INCH BY 2-INCH WOODEN STAKES AROUND THE PERIMETER OF THE INLET A MAXIMUM OF 3 FEET APART AND DRIVE THEM AT LEAST 8-INCHES INTO THE GROUND. THE STAKES MUST BE AT LEAST 3 FEET LONG.
2. EXCAVATE A TRENCH APPROXIMATELY 8-INCHES WIDE AND 12-INCHES DEEP AROUND THE OUTSIDE PERIMETER OF THE STAKES.
3. STAPLE THE FILTER FABRIC" TO THE WOODEN STAKES SO THAT 32-INCHES OF THE FABRIC EXTENDS AND CAN BE FORMED INTO THE TRENCH, AND USE HEAVY-DUTY WIRE STAPLES AT LEAST 1/2-INCHES LONG.
4. BACKFILL THE TRENCH WITH 3/4-INCH MINUS WASHED GRAVEL ALL THE WAY AROUND.

TEMPORARY DIKES AND SWALES:

1. SEED AND MULCH SHALL BE APPLIED WITHIN 5 DAYS OF DIKE CONSTRUCTION (SEE VEGETATION).
2. THE UPSLOPE SIDE OF THE DIKE SHALL PROVIDE POSITIVE DRAINAGE TO THE DIKE OUTLET.
3. NO EROSION SHALL OCCUR AT THE DIKE OUTLET. PROVIDE ENERGY DISSIPATION MEASURES AS NECESSARY.
4. SEDIMENT LADEN RUNOFF MUST BE RELEASED THROUGH A SEDIMENT TRAPPING FACILITY SUCH AS A POND, TRAP, OR SILT FENCE AS APPROPRIATE TO DRAINAGE AREA SIZE.

INSPECTION SEQUENCE:

TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES REQUIRING INSPECTION FOR THIS PROJECT:

1. CLEARING AND GRADING LIMITS
2. TEMPORARY CONSTRUCTION ENTRANCE
3. TEMPORARY SILTATION FENCING
4. VEGETATION AND STABILIZATION OF EXPOSED SURFACES
5. STOCKPILE PLASTIC SHEETING
6. STABILIZE EXPOSED SOILS WITH SOIL AMENDMENT OPTIONS. SEE SHEET 2

PERMANENT EROSION AND SEDIMENT CONTROL MEASURES REQUIRED FOR THIS PROJECT:

1. STABILIZE ALL EXPOSED AREAS WITH SOIL AMENDMENTS SEE NOTES
2. SEEDING AND/OR LANDSCAPING OF NON-IMPERVIOUS SURFACES
3. PAVING (ASPHALT OR CONCRETE)
4. SEDIMENT CONTROL AS NOTED IN PLANS

INSPECTION SCHEDULE:

1. SILTATION FENCE - INSPECT: PRIOR TO CLEARING, AFTER MAJOR STORM EVENTS, MONTHLY
2. TEMPORARY CONSTRUCTION ENTRANCE -INSPECT: PRIOR TO CLEARING, AFTER MAJOR STORM EVENTS, MONTHLY
3. STOCKPILES - INSPECT: MONTHLY AND AFTER MAJOR STORM EVENTS FOR RIPPING AND LOOSE SEAMS
4. CATCH BASINS AND STORM DRAINAGE PIPES - INSPECT: MONTHLY AND AFTER MAJOR STORM EVENTS
5. INSPECTIONS SHALL CONTINUE UNTIL SITE HAS STABILIZED.

THE ESC LEAD FOR THIS PROJECT WILL BE DECIDED BY THE CONTRACTOR.

(A "MAJOR STORM EVENT" IS DESCRIBED AS 1 OR MORE INCHES OF RAINFALL IN A PERIOD OF 24 HOURS OR LESS.)

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APPROVED FOR CONSTRUCTION

CITY OF BUCKLEY, CITY ENGINEER　　DATE:________

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STATE OF WASHINGTON · THEODORE NELSON · PROFESSIONAL ENGINEER
04/04/2016

REVISION　DATE

JOB NO: 16537
DATE: 04/04/2016
DESIGNED BY: KOVSTIN
DRAWN BY: KRH
CHECKED BY: STN
APPROVED BY: STN

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S.W.P.P.P Notes

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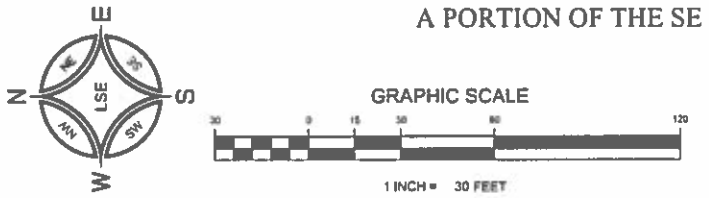
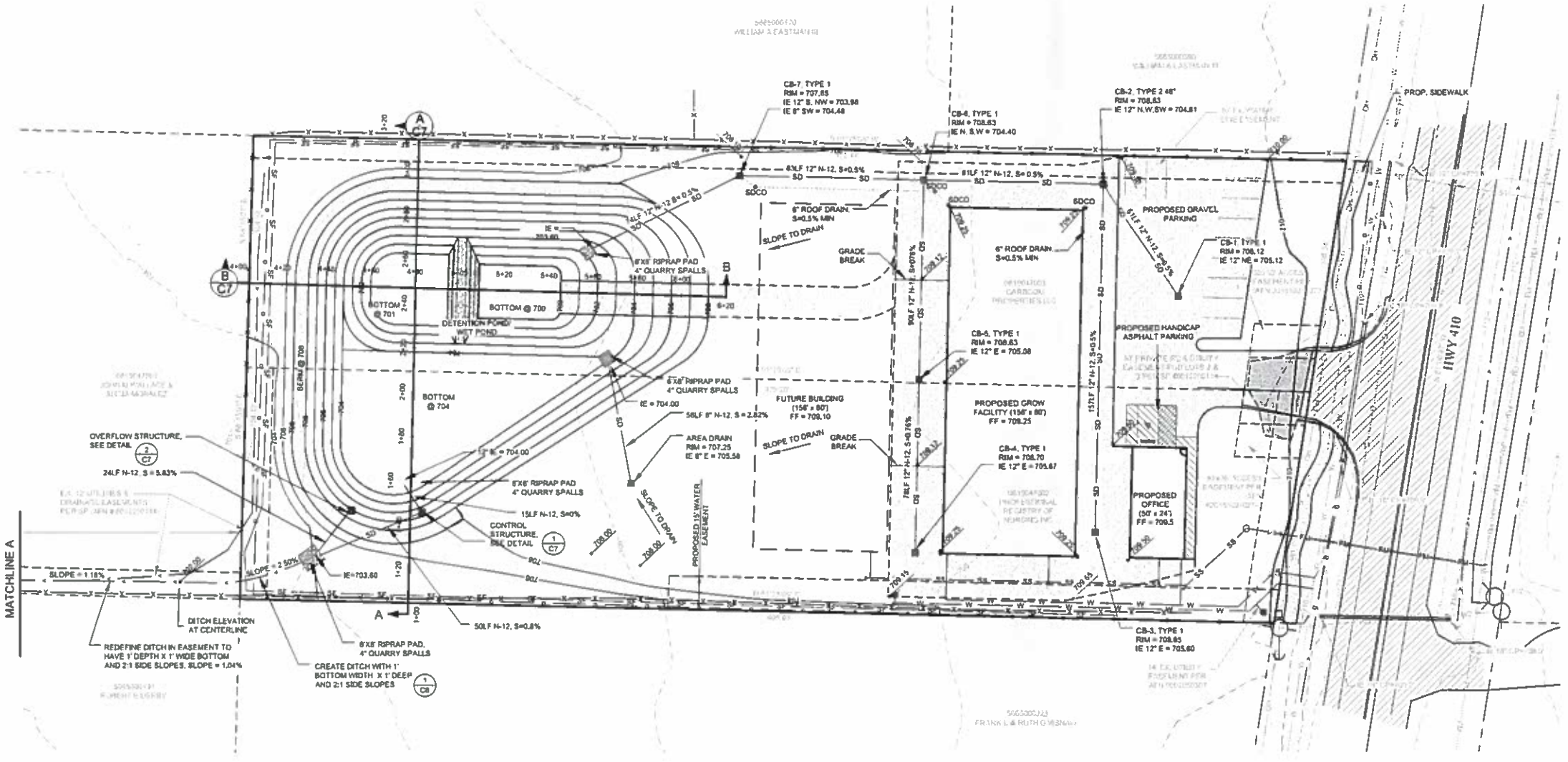
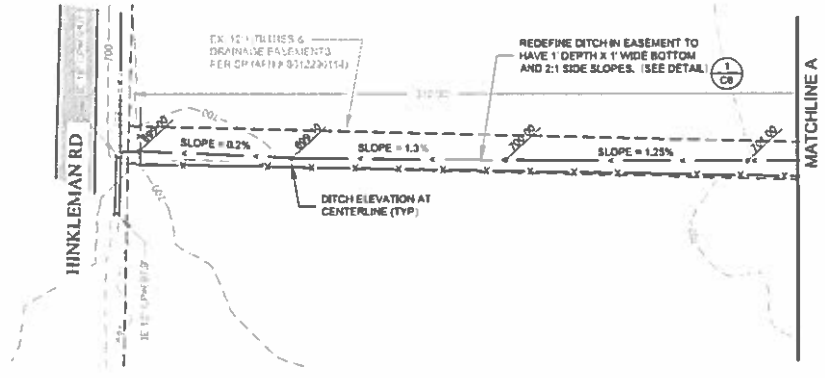
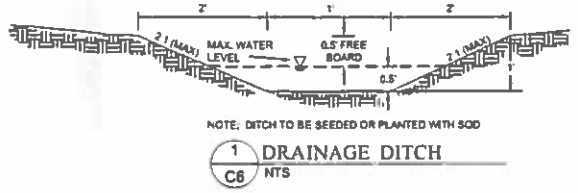
A PORTION OF THE SE ¼ OF THE SW ¼ OF SECTION 4, TOWNSHIP 19 N, RANGE 06 E, W.M.
BUCKLEY, WASHINGTON









1/C6 DRAINAGE DITCH
NTS

NOTES:

1. SEE STORM DETAILS ON SHEETS C7.
2. SLOPES WITHIN HANDICAPPED PARKING AREA NOT TO EXCEED 2% IN ANY DIRECTION.
3. DETENTION POND IS SIZED FOR THE FUTURE BUILDING AND 20' WIDE GRAVELED ACCESS ROAD AROUND THE FUTURE BUILDING.

BUCKLEY STANDARD STORM NOTES:

1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CITY OF BUCKLEY STANDARDS AND THE MOST CURRENT COPY OF THE STATE OF WASHINGTON STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION (WSDOT).
2. TEMPORARY EROSION/WATER POLLUTION MEASURES SHALL BE REQUIRED IN ACCORDANCE WITH SECTION 1-07.15 OF THE STANDARD SPECIFICATIONS.
3. COMPLY WITH ALL OTHER PERMITS AND REQUIREMENTS BY THE CITY OF BUCKLEY OR OTHER GOVERNING AUTHORITY OR AGENCY AS MAY BE APPLICABLE.
4. A PRECONSTRUCTION MEETING SHALL BE HELD WITH THE CITY PUBLIC WORKS DEPARTMENT PRIOR TO THE START OF CONSTRUCTION.
5. ALL STORM MAINS AND RETENTION/DETENTION AREAS SHALL BE STAKED FOR GRADE AND ALIGNMENT BY AN ENGINEERING OR SURVEYING FIRM CAPABLE OF PERFORMING SUCH WORK, AND CURRENTLY LICENSED IN THE STATE OF WASHINGTON TO DO SO.
6. STORM DRAIN PIPE SHALL MEET THE FOLLOWING REQUIREMENTS:
   A. PLAIN CONCRETE PIPE CONFORMING TO THE REQUIREMENTS OF AASHTO M 86, CLASS 2.
   B. REINFORCED CONCRETE PIPE CONFORMING TO THE REQUIREMENTS OF AASHTO M 170.
   C. PVC PIPE SHALL CONFORM TO ASTM D 3034-73 SDR 35 FOR 4" - 15" DIAMETER PVC PIPE AND SHALL CONFORM TO ASTM F679 FOR 18" - 27" DIAMETER PVC PIPE, WITH JOINTS AND GASKETS CONFORMING TO ASTM D 3212 AND ASTM F 477.
   D. DUCTILE IRON PIPE CONFORMING TO THE REQUIREMENTS OF ANSI A21.51, AND AWWA C 151, THICKNESS CLASS AS SHOWN ON THE PLANS.
   E. POLYETHYLENE SMOOTH WALL PIPE PER ADVANCED DRAINAGE SYSTEMS (ADS) N-12 CONSTRUCTED PER WSDOT STANDARD SPECIFICATIONS 7-04. INSPECTION TO ENSURE COMPACTION AROUND THIS PIPE WILL BE MORE RIGOROUS THAN WHEN OTHER TYPES OF APPROVED STORM DRAIN PIPE ARE USED.
7. SPECIAL STRUCTURES, OIL/WATER SEPARATORS AND OUTLET CONTROLS SHALL BE INSTALLED PER PLANS AND MANUFACTURERS RECOMMENDATIONS.
8. PROVIDE TRAFFIC CONTROL PLAN(S) AS REQUIRED IN ACCORDANCE WITH MUTCD.
9. CALL UNDERGROUND LOCATE LINE 1-800-424-5555 MINIMUM 48 HOURS PRIOR TO ANY EXCAVATIONS.
10. WHERE CONNECTIONS REQUIRE "FIELD VERIFICATIONS", CONNECTION POINTS WILL BE EXPOSED BY CONTRACTOR AND FITTINGS VERIFIED 48 HOURS PRIOR TO DISTRIBUTING SHUT-DOWN NOTICES.

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04/04/2016
THEODORE NELSON
EXPIRES 10/12/2016
STATE OF WASHINGTON
PROFESSIONAL ENGINEER

DATE
DESCRIPTION

JOB NO: 16037
DATE: 04/04/16
DESIGNED BY: EXCEL
DRAWN BY: EXCEL
CHECKED BY: STN
APPROVED BY: STN

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ENGINEERING
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Storm Drainage and Grading

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Phone: 253-431-6188

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CARBCOM PROPERTIES COMMERCIAL SITE

A PORTION OF THE SE ¼ OF THE SW ¼ OF SECTION 4, TOWNSHIP 19 N, RANGE 06 E, W.M.
BUCKLEY, WASHINGTON

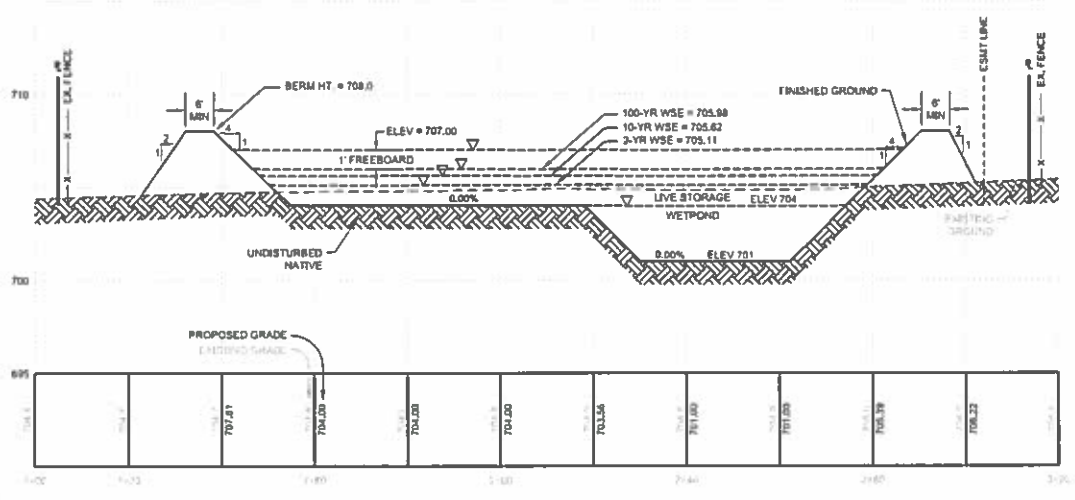
GRAPHIC SCALE

20 0 10 20 40 60

1 INCH = 20 FEET

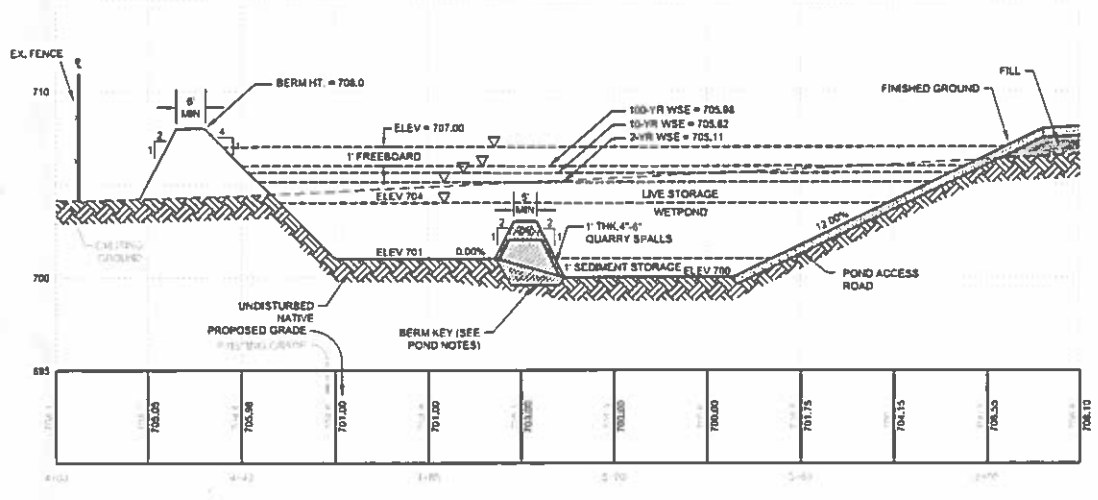
POND NOTES:

1. POND BERM EMBANKMENTS MUST BE CONSTRUCTED ON NATIVE CONSOLIDATED SOIL (OR ADEQUATELY COMPACTED AND STABLE FILL SOILS ANALYZED BY A GEOTECHNICAL ENGINEER) FREE OF LOOSE SURFACE SOIL MATERIALS, ROOTS, AND OTHER ORGANIC DEBRIS.
2. POND BERM EMBANKMENTS GREATER THAN 4 FEET IN HEIGHT MUST BE CONSTRUCTED BY EXCAVATING A KEY EQUAL TO 50 PERCENT OF THE BERM EMBANKMENT CROSS-SECTIONAL HEIGHT AND WIDTH UNLESS SPECIFIED OTHERWISE BY A GEOTECHNICAL ENGINEER.
3. EMBANKMENT COMPACTION SHOULD BE ACCOMPLISHED IN SUCH A MANNER AS TO PRODUCE A DENSE, LOW PERMEABILITY ENGINEERED FILL THAT CAN TOLERATE POST-CONSTRUCTION SETTLEMENTS WITH A MINIMUM OF CRACKING. THE EMBANKMENT FILL SHOULD BE PLACED ON A STABLE SUBGRADE AND COMPACTED TO A MINIMUM OF 95% OF THE STANDARD PROCTOR MAXIMUM DENSITY, ASTM PROCEDURE D698. PLACEMENT MOISTURE CONTENT SHOULD LIE WITHIN 1% DRY TO 3% WET OF THE OPTIMUM MOISTURE CONTENT.
4. THE BERM EMBANKMENT SHOULD BE CONSTRUCTED OF SOILS WITH THE FOLLOWING CHARACTERISTICS PER THE UNITED STATES DEPARTMENT OF AGRICULTURE'S TEXTURAL TRIANGLE: A MINIMUM OF 20% SILT AND CLAY, A MAXIMUM OF 60% SAND, A MAXIMUM OF 62% SILT, WITH NOMINAL GRAVEL AND COBBLE CONTENT.
5. PER DOE 2005 STORMWATER MANUAL THE POND BOTTOM AND INTERIOR SIDE SLOPES SHOULD BE SEEDED OR SODDED WITH AN APPROPRIATE SEED MIXTURE. THE BERM BETWEEN THE TWO CELLS OF THE DETENTION POND DO NOT NEED TO HAVE PLANTINGS.



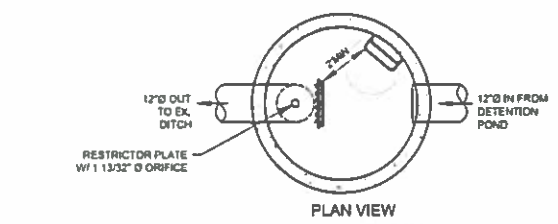
POND VOLUMES:

	CF REQUIRED	CF PROVIDED
WETPOND:	9,016	13,722
DETENTION POND:	26,437	28,083

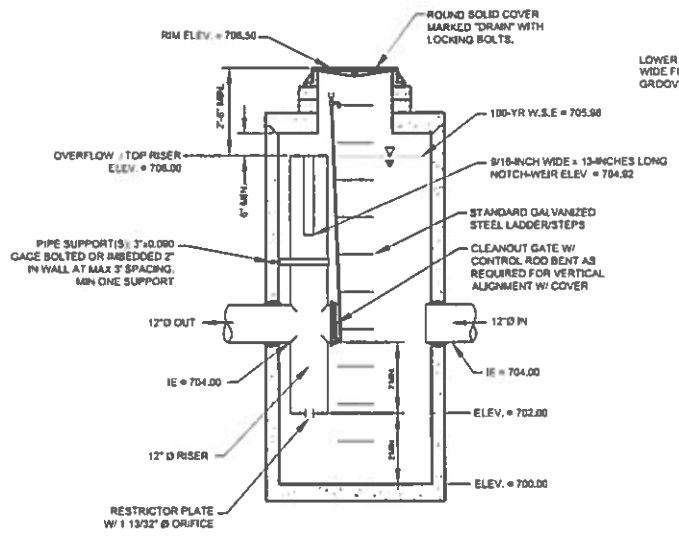


A C6 DETENTION POND - EAST/WEST
SCALE: 1"=20' HORIZONTAL, 1"=5' VERTICAL

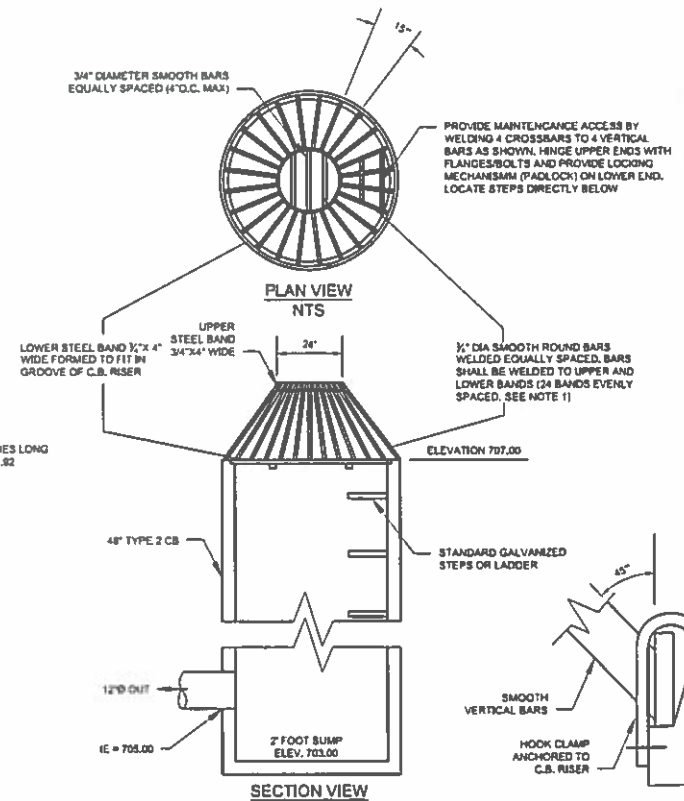
B C6 DETENTION POND - NORTH/SOUTH
SCALE: 1"=20' HORIZONTAL, 1"=5' VERTICAL



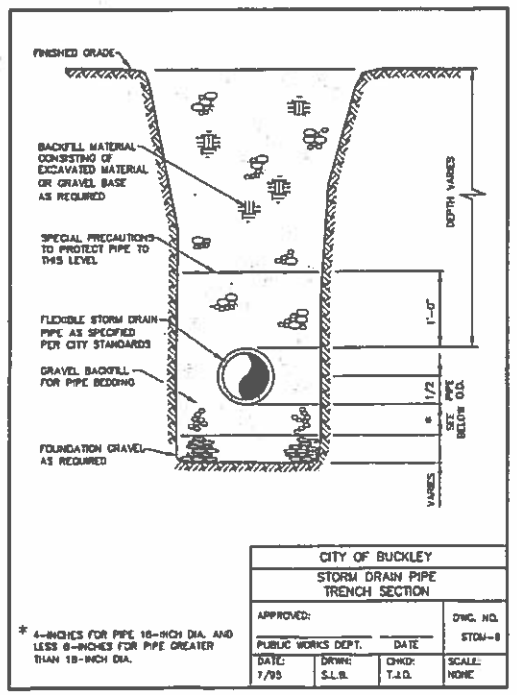
PLAN VIEW



1 C7 CB#4, TYPE 2 - 54"Ø CONTROL STRUCTURE
SCALE: NTS



2 C7 OVERFLOW STRUCTURE
SCALE: NTS



3 C7 STORM DRAIN TRENCH
SCALE: NTS

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04/04/2016 THEODORE NIELSON WASHINGTON STATE PROFESSIONAL ENGINEER

DATE | DESCRIPTION

JOB NO: 16537
DATE: 04/04/16
DESIGNED BY: EARTH
DRAWN BY: KAH
CHECKED BY: STH
APPROVED BY: STH

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Storm Drainage Profiles and Details

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Phone: 253-431-6188

DRAWING C7
SHEET 07 OF 09

CARBCOM PROPERTIES COMMERCIAL SITE

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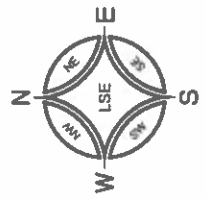
BUCKLEY, WASHINGTON

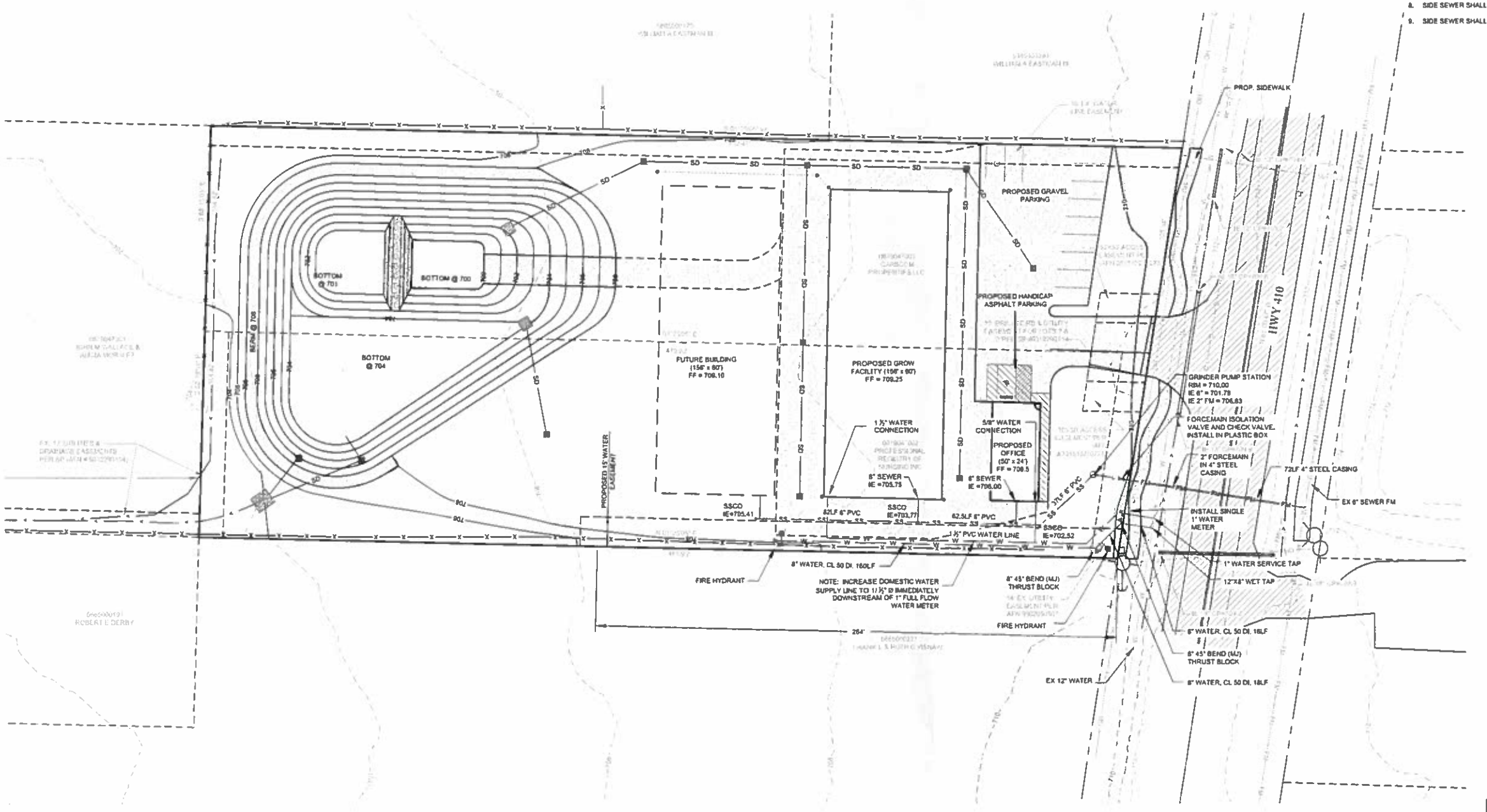


GRAPHIC SCALE

1 INCH = 30 FEET

NOTES:

1. SEE UTILITY DETAILS ON SHEETS C8.
2. POTHOLE TO VERIFY LOCATION AND DEPTH OF EXISTING WATER MAIN AND SEWER FORCEMAIN IN HWY 410 PRIOR TO ORDERING MATERIALS.
3. CONTRACTOR SHALL MAINTAIN OPERATIONAL FIRE HYDRANT SERVICE AND SUITABLE ACCESS THROUGHOUT THE DURATION OF CONSTRUCTION ACTIVITY.
4. ALL OPERATIONAL HYDRANTS SHALL BE PROTECTED FROM DAMAGE DURING GRADING AND CONSTRUCTION ACTIVITIES.
5. SUFFICIENT UNDISTURBED BEARING AREA SHALL BE PROVIDED FOR ALL WATER THRUST BLOCKS IN ACCORDANCE WITH THE CITY OF BUCKLEY STANDARD THRUST BLOCK DETAIL.
6. ALL VALVES WITH OPERATING NUTS LOCATED MORE THAN 42 INCHES BELOW FINISHED GRADE SHALL BE EQUIPPED WITH EXTENSION STEMS TO BRING OPERATING NUT WITHIN 18 INCHES OF THE FINISHED GRADE. SEE CITY OF BUCKLEY STANDARD DETAIL DWG NO. 20, WATER VALVE STEM EXTENSION.
7. GRINDER PUMP DISCHARGE PIPING SHALL BE PVC ASTM D3034 MIN CLASS SDR 35.
8. SIDE SEWER SHALL BE PVC ASTM 3034 AND BE INSTALLED AT 2% MIN SLOPE.
9. SIDE SEWER SHALL BE LOCATED MIN 10' CLEAR FROM WATER LINE.



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04/04/2016
STEVE THEODORE NELSON
STATE OF WASHINGTON
PROFESSIONAL ENGINEER

REVISION	DATE
1	
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JOB NO: 16537
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DRAWN BY: KKH
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Utility Plan

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C8
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OF 09

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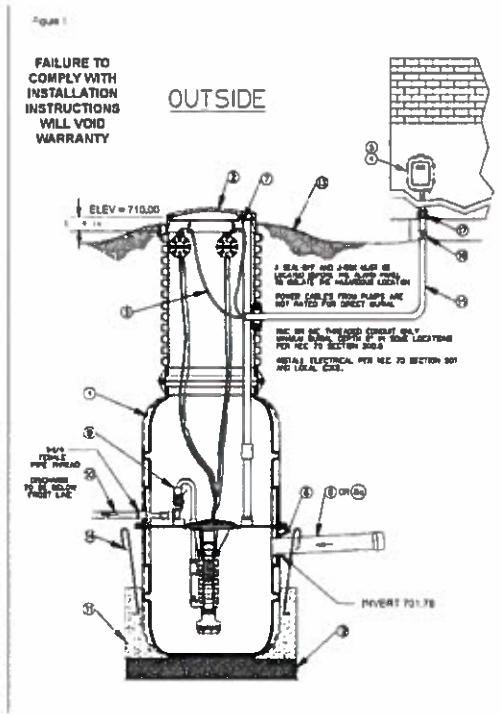
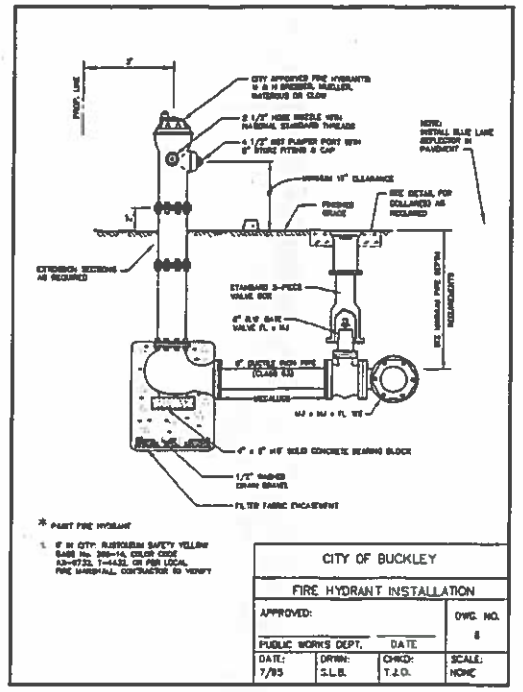


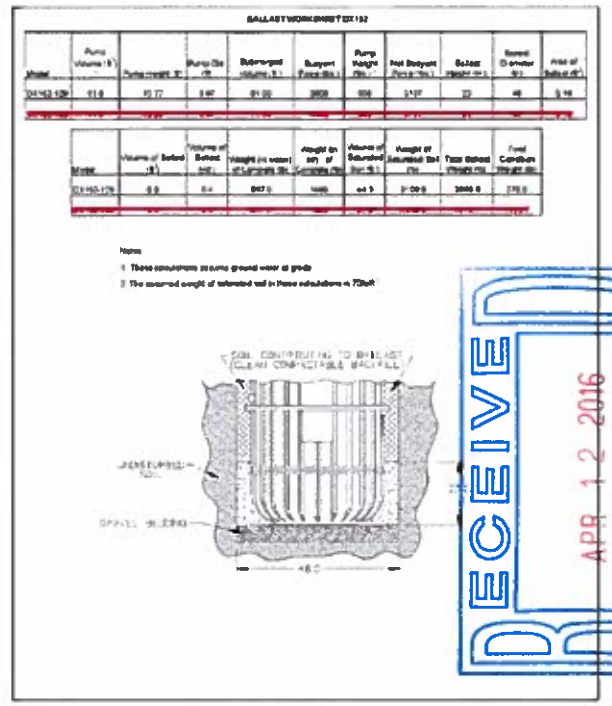
Environment One Grinder Pump Feature Identification

1. **GRINDER PUMP BASIN** – High density polyethylene (HDPE)
2. **ACCESSWAY COVER** – HDPE
3. **POWER AND ALARM CABLE** – Circuits to be installed in accordance with NEC 73 Sec 501 and local codes. Type SOOW cable 14AWG 75' maximum length
4. **ALARM PANEL** (wet explosionproof rated) – NEMA 4X enclosure. Equipped with circuit breakers. Locate according to local codes
5. **ALARM DEVICE** – Every installation is to have an alarm device to alert the homeowner of a potential malfunction. Visual devices should be placed in very conspicuous locations
6. **INLET** – EPDM grommet (4.5" ID). For 4.5" OD DWV pipe (SCH 40 std)
7. **WET WELL VENT** – 2.0" tank vent supplied by factory in units with accessways
8. **GRAVITY SERVICE LINE** – 4" DWV (4.5" OD). Supplied by others (SCH 40 std)
8a. **STUB-OUT** – 4" X 5 Long watertight stub-out to be installed at time of burial unless the gravity service line is connected during installation. Supplied by others
9. **DISCHARGE VALVE** – 1 1/4" Female pipe thread.
10. **DISCHARGE LINE** – 1-1/4" Nominal pipe size. Supplied by others
11. **CONCRETE ANCHOR** – See Ballast Calculations for specific weight for your station height. Supplied by others
12. **BEDDING MATERIAL** – 6" minimum depth, round aggregate (gravel). Supplied by others
13. **FINISHED GRADE** – Grade line to be 1 to 4 inches below removable lid and slope away from the station
14. **REBAR** – Required to lift tank after ballast (concrete anchor) has been attached, 4 places evenly spaced around tank
15. **CONDUIT** – RMC or IMC threaded conduit. Supplied by others
16. **EXPLOSIONPROOF CONDUIT SEAL** – Supplied by others
17. **JUNCTION BOX** – Supplied by others



E/One Grinder Pump Station Ballast Calculations

Any buried vessel that is submerged, or partially submerged, in water will be acted on by an upward buoyant force that attempts to return the vessel to a non submerged state. The magnitude of this buoyant force is equal to the volume of the vessel that is submerged multiplied by the density of water. On most in ground installations a ballast or concrete anchor, of proper volume and weight is required to resist the buoyant force. The amount of ballast required for a given set of installation & site conditions may be calculated as follows



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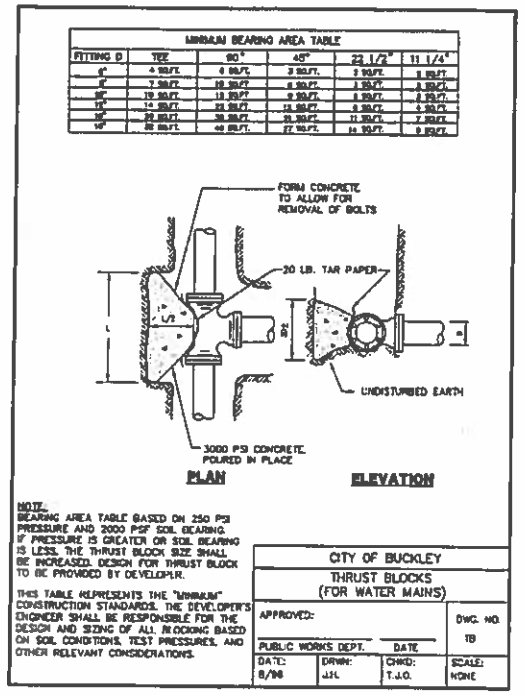
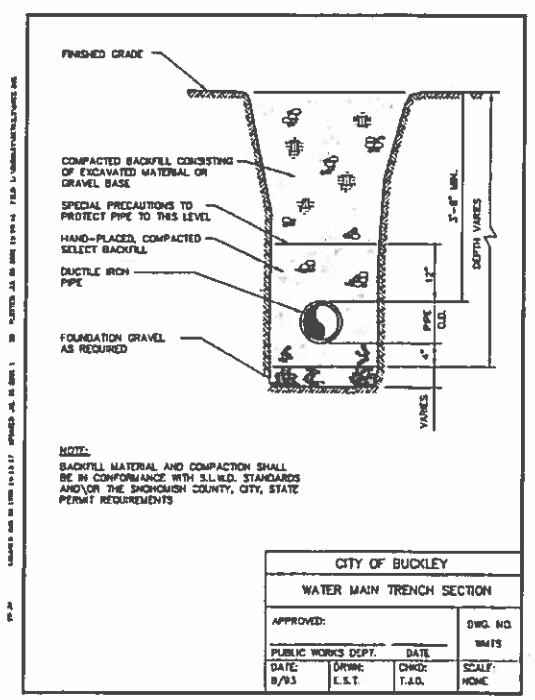
1 GRINDER PUMP DX152-129 INSTALLATION
C9 SCALE: NTS

3 FIRE HYDRANT INSTALLATION
C9 SCALE: NTS

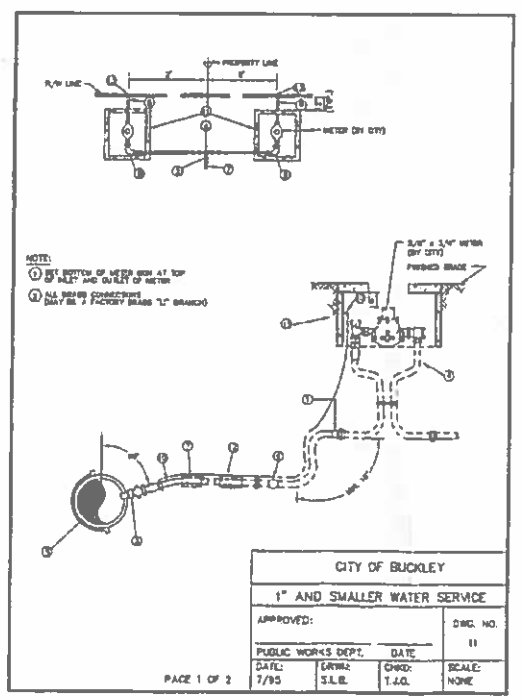
2 GRINDER PUMP BALLAST
C9 SCALE: NTS



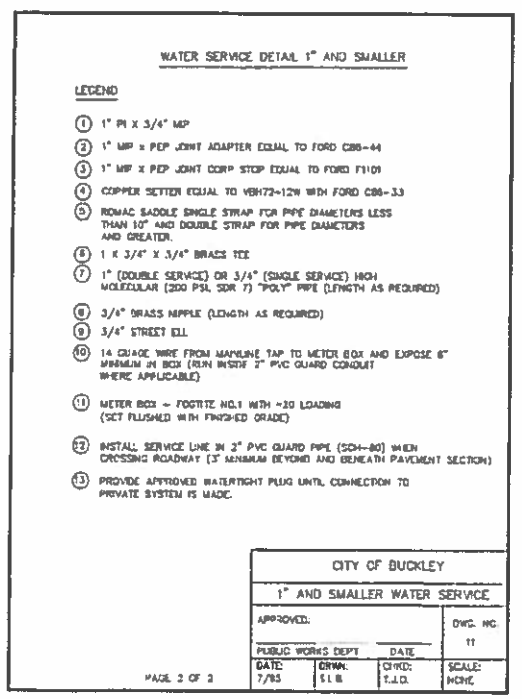
4 WATER MAIN THRUST BLOCKS
C9 SCALE: NTS



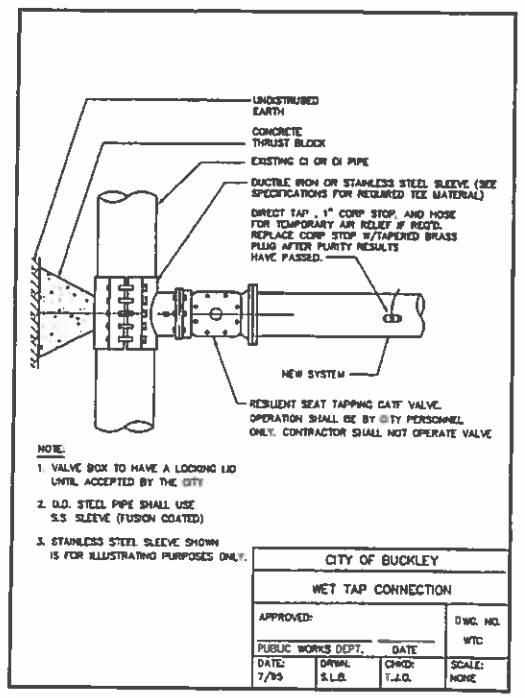
5 WATER MAIN TRENCH
C9 SCALE: NTS



6 WATER METER
C9 SCALE: NTS



7 WET TAP
C9 SCALE: NTS



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04/04/2016
THEODORE NELSON
EXPIRATION 12/12/2016
STATE PROFESSIONAL ENGINEER

DATE
REVISIONS
1 2 3 4 5 6 7 8 9 10

JOB NO. 15017
DATE 04/04/16
DESIGNED BY: ALK/BTN
DRAWN BY: ALK
CHECKED BY: BTN
APPROVED BY: BTN

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