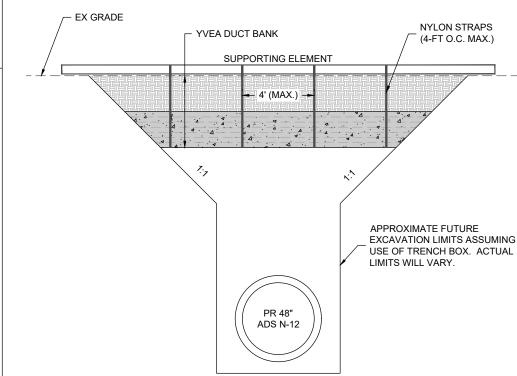


GRADING PLAN LEGEND PROPERTY BOUNDARY $(x_1, x_2, \dots, x_n) = (x_1, x_2, \dots, x_n) = (x_1, \dots, x_n) = (x$ WATER BODY SETBACK __ _ _ _ _ _ PROPOSED STORM SEWER W/ FLARED END SECTION PROPOSED STORM INLET (CURB & AREA) PROPOSED STORM MANHOLE & CLEANOUT EXISTING MAJOR CONTOUR — — — — (6805)— — — — — EXISTING MINOR CONTOUR PROPOSED MAJOR CONTOUR PROPOSED MINOR CONTOUR PROPOSED SWALE FLOOD HAZARD LIMITS 6790.50 PROPOSED OVERLAND FLOW DIRECTION W/ SLOPE FLOW CONVEYANCE DIRECTION \Leftrightarrow

THE SIZE, TYPE AND LOCATION OF ALL KNOWN UNDERGROUND UTILITIES ARE APPROXIMATE WHEN SHOWN ON THESE DRAWINGS. IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER TO VERIFY THE EXISTENCE OF ALL UNDERGROUND UTILITIES IN THE AREA OF THE WORK. BEFORE COMMENCING NEW CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND SHALL BE RESPONSIBLE FOR FOR ALL UNKNOWN UNDERGROUND UTILITIES.

- PROJECT BENCHMARK: RECOVERED NO.5 REBAR W/ YELLOW PLASTIC CAP STAMPED "LS 13221" 0.1' BELOW GRAND, NAVD88 ELEV. = 6784.29
- (SUCH AS PROPOSED GUTTERS ALONG EXISTING ASPHALT) MAY REQUIRE ADJUSTMENT BASED ON ACTUAL CONDITIONS. COORDINATE WITH ENGINEER TO ENSURE A CONSISTENT SECTION WITH SMOOTH TRANSITIONS WHERE NECESSARY
- 4. SEE SOILS REPORT FOR PAVEMENT, SUBGRADE AND MATERIAL PREPARATION, DESIGN AND RECOMMENDATIONS.
- 5. ALL CURB SPOTS SHOWN ARE FLOWLINE ELEVATIONS, UNLESS NOTED OTHERWISE. ALL OTHER SPOTS ARE FINISHED GRADE ELEVATIONS.



YVEA DUCT BANK CROSSING PROTECTION N.T.S.

DISCLAIMER: THIS GRAPHIC IS NOT INTENDED TO SUPERCEDE THE CONTRACTOR'S 'MEANS AND METHODS', BUT TO ILLUSTRATE THE NECESSITY OF, AND A POTENTIAL SOLUTION TO, A STABILIZATION PLAN AT THE CROSSING WITH THE YVEA DUCT BANK. CONTRACTOR SHALL SUBMIT THEIR OWN PLAN TO ENGINEER AND YAMPA VALLEY ELECTRIC ASSOCIATION FOR REVIEW AND APPROVAL PRIOR TO THE DIMENSIONS SHOWN REFLECT GENERAL RELATIONSHIPS BASED ON LANDMARK'S

UNDERSTANDING OF EXISTING AND PROPOSED CONDITIONS. ACTUAL DIMENSIONS WILL VARY BASED ON CONSTRUCTION ACTIVITIES AND SITE CONDITIONS. CONTRACTOR SHALL SEQUENCE WORK SO THAT THE EXISTING DUCT BANK SUPPORT IS NOT REQUIRED OVERNIGHT. CONTRACTOR SHALL EXCAVATE DOWN AND EXPOSE THE TOP HALF OF THE EXISTING DUCT BANK FOR THE ANTICIPATED TRENCH WIDTH. NO REMOVAL OF SUPPORTING MATERIAL SHALL OCCUR PRIOR TO

- PLACEMENT OF ALL SUPPORTS. PLACE THE SURFACE SUPPORTING ELEMENT ACROSS THE LIMITS OF THE TOP OF THE EXCAVATED TRENCH. PROVIDE ADEQUATE BEARING LENGTHS ON BOTH SIDES WITH ALLOWANCES FOR MINOR TRENCH MIGRATION. CONTRACTOR SHALL DEMONSTRATE THAT THE SUPPORTING ELEMENT CAN SUPPORT THE FOLLOWING
- MINIMUM LOAD AT THE CENTER OF THE SPAN: A. IF DUCT BANK IS EXPOSED UP TO 20-FT LONG: 435 LBS B. IF DUCT BANK IS EXPOSED BETWEEN 20-FT AND 25-FT LONG: 546 LBS
 UPON SUCCESSFUL DEMONSTRATION OF SUPPORT STRENGTH, CONTRACTOR SHALL SECURE EXISTING DUCT BANK WITH 2-IN WIDE NYLON (OR SIMILAR/WIDER) STRAPS AT 4-FT O.C. MAXIMUM. CONTRACTOR SHALL ESTABLISH A MONITORING REFERENCE, SUCH AS A STRING LINE, TO OBSERVE
- DUCT BANK POSITION DURING AND THROUGHOUT CONSTRUCTION. CONTRACTOR TO SLOWLY AND CAREFULLY COMMENCE EXCAVATION BELOW THE DUCT BANK AS NECESSARY TO PERFORM HIS WORK.

 DUPON CULVERT INSTALLATION, CONTRACTOR SHALL CONSTRUCT STRUCTURAL BACKFILL (FLOW FILL) SUPPORT AS SHOWN.

PL.	SIZE	I YME	GRAIE	NOIES
MH1	96' I.D.	PRE-CAST CONC.	SOLID	DROP, DEEP BURY (SEE DETAIL 3, SHEET C 501)
MH2	96" I.D.	PRE-CAST CONC	SOUD	STANDARD STORM SELVER MH (SEE DETAILS)
МНЗ	96" I.D.	PRE-CAST CONC.	SOUD	STANDARD STORM SELVER MH (SEE DETAILS)
MH4	96" I.D.	PRE-CAST CONC.	SOUD	DROP, DEEP BURY (SEE DETAIL 3, SHEET C 501)
BASIN 4.1	36" I.D.	NYLOPLAST	SOUD	
BASIN 4.2	24" I.D.	NYLOPLAST	12"X12" GRATE	
MH4.3	24" I.D.	NYLOPLAST	12"X12" GRATE	
MH5	96"1.D.	PRE-CAST CONC.	SOLID	DEEP BURY (SEE DETAIL 2, SHEET C.501)
MH6	96" I.D.	PRE-CAST CONC.	SOLID	DEEP BURY (SEE DETAIL 2, SHEET C.501)
WQS1.1	96" I.D.	CONTECH	SOLID	SEEDETAIL, SHEET C 501
BASIN 1.2A	18" I.D.	NYLOPLAST	12"X12" GRATE	PERFORATED, TRAFFIC RATED (SEE DETAIL 6, SHEET C 502)
BASIN 1.2A 1	8" I.D.	NYLOPLAST	8" DOME	
BASIN 1.3A	18" I.D.	NYLOPLAST	12"X12" GRATE	PERFORATED, TRAFFIC RATED (SEE DETAIL 6, SHEET C 502)
BASIN 1.4A	24" I.D.	NYLOPLAST	12"X12" GRATE	PERFORATED, TRAFFIC RATED (SEE DETAIL 6, SHEET C 502)
BASIN 1,5A	24" I.D.	NYLOPLAST	12"X12" GRATE	PERFORATED, TRAFFICRATED (SEE DETAIL 6, SHEET C.502)
BASIN 1.6A	18" I.D.	NYLOPLAST	12"X12" GRATE	PERFORATED, TRAFFIC RATED (SEE DETAIL 6, SHEET C 502)



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PR STORM MH 1

PR STORM MH 2

PR STORM MH 3

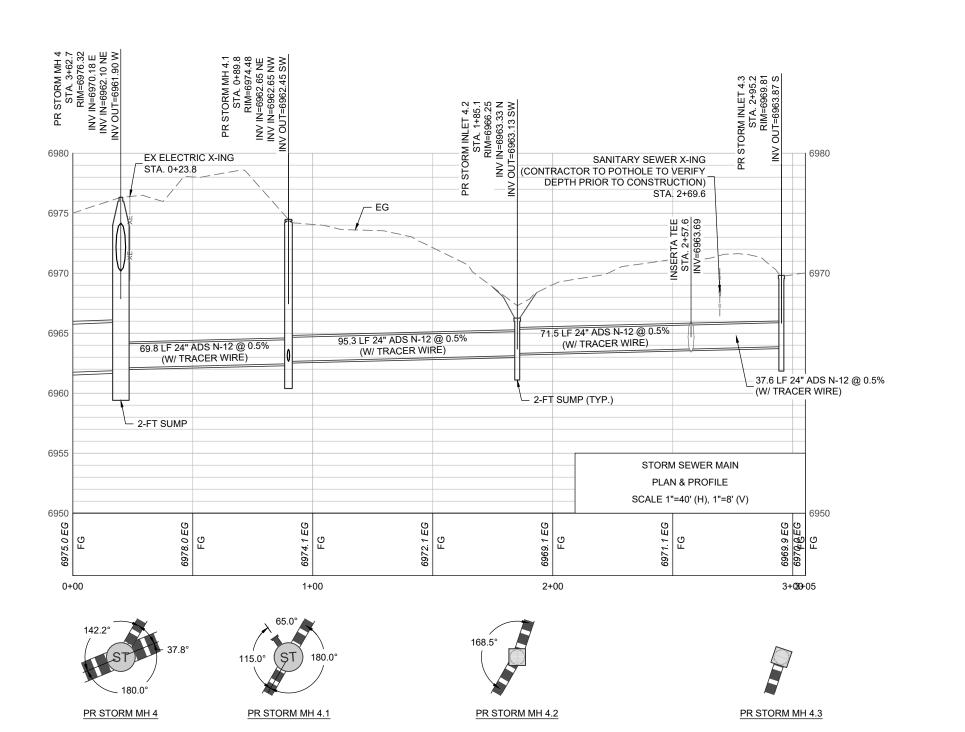
PR STORM MH 4

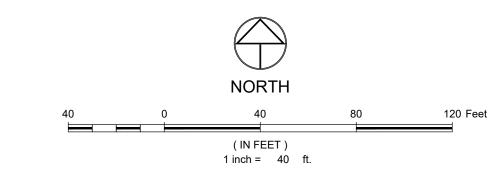
PR STORM MH 5

PR STORM MH 6

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SHEET





FLOW CONVEYANCE DIRECTION

PROPERTY BOUNDARY	
HIGHWATER MARK	
FEMA FLOODWAY	
EDGE OF WATER	
WATER BODY SETBACK	
PROPOSED STORM SEWER W/ FLARED END SECTION	
PROPOSED STORM INLET (CURB & AREA)	
PROPOSED STORM MANHOLE & CLEANOUT	(ST)
EXISTING MAJOR CONTOUR	— — — — — — — — — — — — — — — — — — —
EXISTING MINOR CONTOUR	
PROPOSED MAJOR CONTOUR	6805
PROPOSED MINOR CONTOUR	
PROPOSED SWALE	· · ·
FLOOD HAZARD LIMITS	
SPOT ELEVATION	<u>(6790.50)</u>
PROPOSED OVERLAND FLOW DIRECTION W/ SLOPE	2.0%

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PL	SIZE	TYPE	GRATE	NOTES
MH1	96"1.D.	PRE-CAST CONC.	SOLID	DROP, DEEP BURY (SEE DETAIL 3, SHEET C.50
MH2	96" I.D.	PRE-CAST CONC	SOLID	STANDARD STORM SEMER MH (SEE DETAILS
MH3	96" I.D.	PRE-CAST CONC.	SOUD	STANDARD STORM SEMER MH (SEE DETAILS
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BASIN 4.1	36" I.D.	NYLOPLAST	SOLID	
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WQS1.1	96" I.D.	CONTECH	SOLID	SEE DETAIL, SHEET C 501
BASIN 1.2A	18" I.D.	NYLOPLAST	12'X12' GRATE	PERFORATED, TRAFFIC RATED (SEE DETAIL 6, SHEE
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BASIN 1.4A	24" I.D.	NYLOPLAST	12"X12" GRATE	PERFORATED, TRAFFIC RATED (SEE DETAIL 6, SHEE
BASIN 1.5A	24" I.D.	NYLOPLAST	12"X12" GRATE	PERFORATED, TRAFFIC RATED (SEE DETAIL 6, SHEE
BASIN 1.6A	18" I.D.	NYLOPLAST	12"X12" GRATE	PERFORATED, TRAFFIC RATED (SEE DETAIL 6, SHEE



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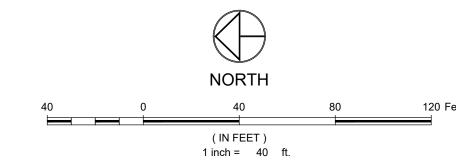
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GRADING PLAN LEGEND:

PROPOSED STORM SEWER W/ FLARED END SECTION PROPOSED STORM INLET (CURB & AREA)

PROPOSED OVERLAND FLOW DIRECTION W/ SLOPE

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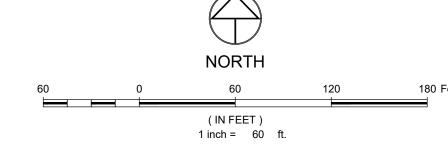
6790.50

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PRE-CAST CONC STANDARD STORM SELVER MH (SEE DETAILS) PRE-CAST CONC. STANDARD STORM SEMERMH (SEEDETAILS) 96" I.D. PRE-CAST CONC. DROP, DEEP BURY (SEE DETAIL 3, SHEET C 501) DEEP BURY (SEE DETAIL 2, SHEET C 501)
SEE DETAIL, SHEET C 501 | 96" I.D. | PRE-CAST CONC | SOLID | DEEP BURY (SEE DETAIL 2, SHEET C. 501) |
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18" I.D.	NYLOPIAST	12"X12" GRATE	PERFORATED, TRAFFIC RATED (SEE DETAIL 6, SHEET C. 502)



SHEET



UTILITY PLAN LEGEND:

PROPOSED SANITARY SEWER W/ MH & C.O. PROPOSED WATER

PROPOSED GV, FH & CS

NOTES:

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- 2. EXISTING UNDERGROUND AND OVERHEAD PUBLIC AND PRIVATE UTILITIES AS SHOWN ARE INDICATED ACCORDING TO THE BEST INFORMATION MADE AVAILABLE TO THE ENGINEER. THE ENGINEER DOES NOT GUARANTEE NOR IS RESPONSIBLE FOR THE ACCURACY OF SUCH INFORMATION. EXISTING UTILITY MAINS AND SERVICES MAY NOT BE STRAIGHT LINES OR AS INDICATED ON THESE DRAWINGS. CONTRACTOR TO VERIFY EXISTING HORIZONTAL AND VERTICAL LOCATIONS PRIOR TO CONSTRUCTION.
- 3. ALL SEWER CONSTRUCTION SHALL BE PER MOUNT WERNER WATER STANDARD SPECIFICATIONS, LATEST EDITION.
- 4. MAINTAIN 10' HORIZONTAL AND 18" VERTICAL MINIMUM SEPARATION BETWEEN ALL SANITARY SEWER MAINS, WATER MAINS & SERVICES.
- 5. MANHOLES LOCATED OUTSIDE OF THE ROADWAY SHALL PROTRUDE 1' ABOVE EXISTING GRADE TO REDUCE INFILTRATION. GRADE SURFACE TO DRAIN AROUND/AWAY FROM MANHOLE RIMS.
- 6. ALL MANHOLES LOCATED IN THE ROADWAY SHALL HAVE RIM ELEVATIONS ADJUSTED TO $\frac{1}{4}$ " BELOW FINISHED GRADE. IF NECESSARY, CONE SECTIONS SHALL BE ROTATED TO PREVENT LIDS BEING LOCATED WITHIN VEHICLE OR BICYCLE WHEEL PATHS.
- 7. SEWER SERVICE SHALL HAVE A MINIMUM OF 4-FT OF COVER.
- 8. WATER SERVICE SHALL HAVE A MINIMUM OF 7-FT OF COVER.
- 9. ALL WATER, SANITARY AND STORM PIPE SHALL BE INSTALLED WITH A #10 SOLID COPPER WIRE COATED WITH 45 MIL POLYETHYLENE FOR LOCATING PURPOSES. "GLENN TEST STATIONS" BY VALVCO, INC TRACER WIRE TEST STATIONS SHALL BE INSTALLED ADJACENT TO ALL FIRE HYDRANTS AND BUILDING ENTRY POINTS. ADDITIONAL LOCATIONS MAY BE REQUIRED.
- 10. ALL MATERIALS USED FOR BACKFILL SHALL BE FREE FROM REFUSE ORGANIC MATERIAL, COBBLES, BOULDERS, LARGE ROCKS OR STONES OR FROZEN SOILS GREATER THAN 6-INCHES IN
- 11. BEDDING AND SHADING MATERIALS SHALL ONLY BE 3/4-INCH WASHED OR SCREENED ROCK. 3/4-INCH MINUS, SQUEEGEE OR REJECT SAND, OR CLASS 6 AGGREGATE BASE COURSE IS NOT
- 12. EXISTING DRY UTILITY RELOCATIONS, ABANDONMENTS AND INSTALLATION TO BE COORDINATED DIRECTLY WITH THE UTILITY PROVIDER.
- 13. CONTRACTOR TO SUBMIT A SEWER BYPASS PLAN THAT ADDRESSES THE FOLLOWING MINIMUM REQUIREMENTS: OBTAIN FLOW DATA FROM MOUNT WERNER WATER FOR BASIS OF PUMP PERFORMANCE
- CONTRACTOR TO HAVE BACKUP PUMPS AVAILABLE IN THE EVENT OF EQUIPMENT FAILURE.
- CONTRACTOR'S BYPASS PLAN TO CONSIDER ENVIRONMENTAL PROTECTIONS AND CONTAINMENT IN THE EVENT OF SPILLAGE. BYPASS PLAN SHALL CONSIDER MANPOWER AND CREW PRODUCTION RATES TO MINIMIZE
- BYPASS ACTIVITIES. ALL EQUIPMENT AND PARTS SHALL BE AVAILABLE PRIOR TO COMMENCING SANITARY SEWER CONSTRUCTION.

THIS SHEET IS NOT INTENDED TO DEFINE MEANS AND METHODS OF CONSTRUCTION. SECTIONS ARE SHOWN FOR REFERENCE ONLY AND ARE INTENDED TO AID IN ANALYZING EXCAVATION OPTIONS FOR THE PURPOSE OF CONSTRUCTION PLANNING/PREPARATION.

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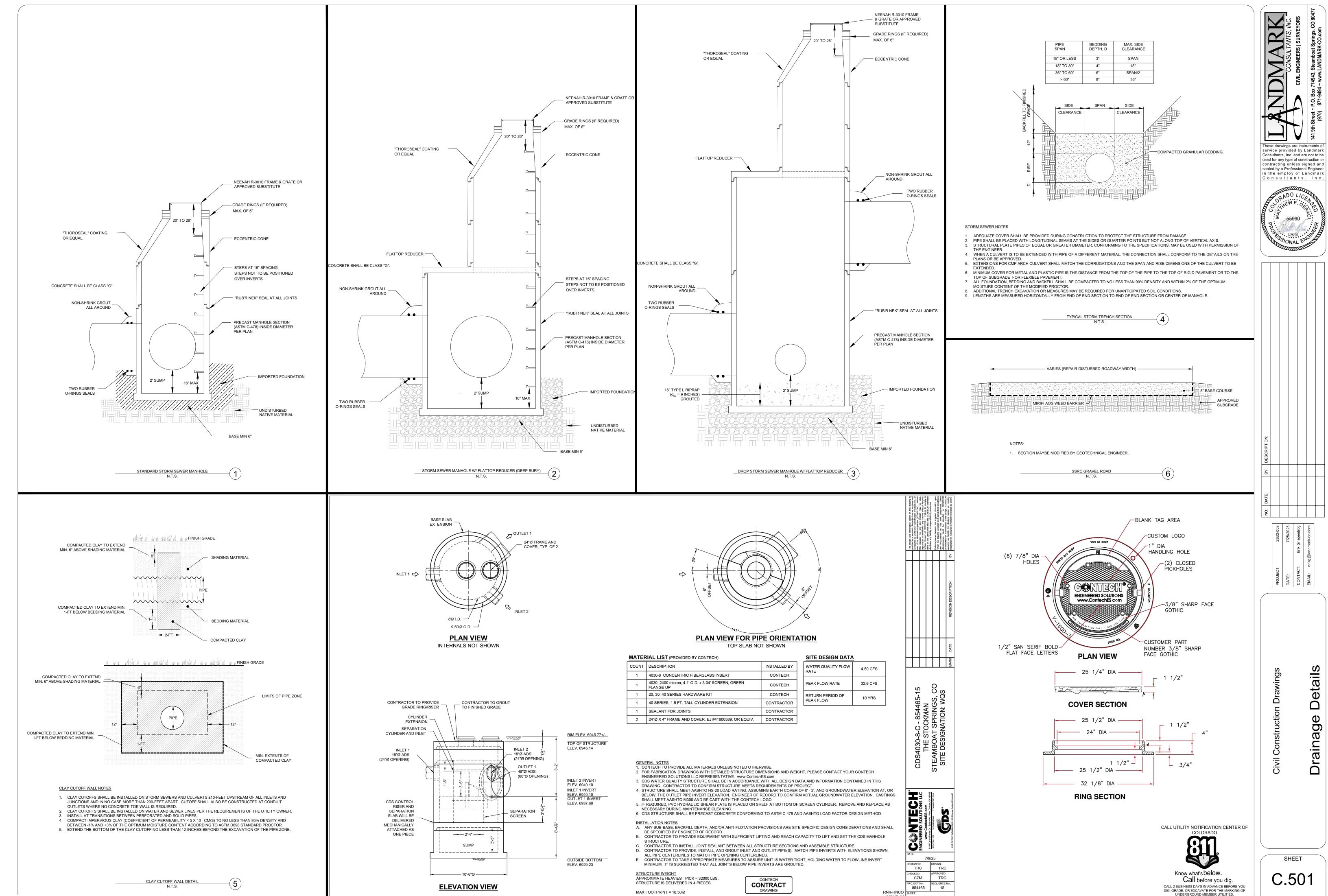
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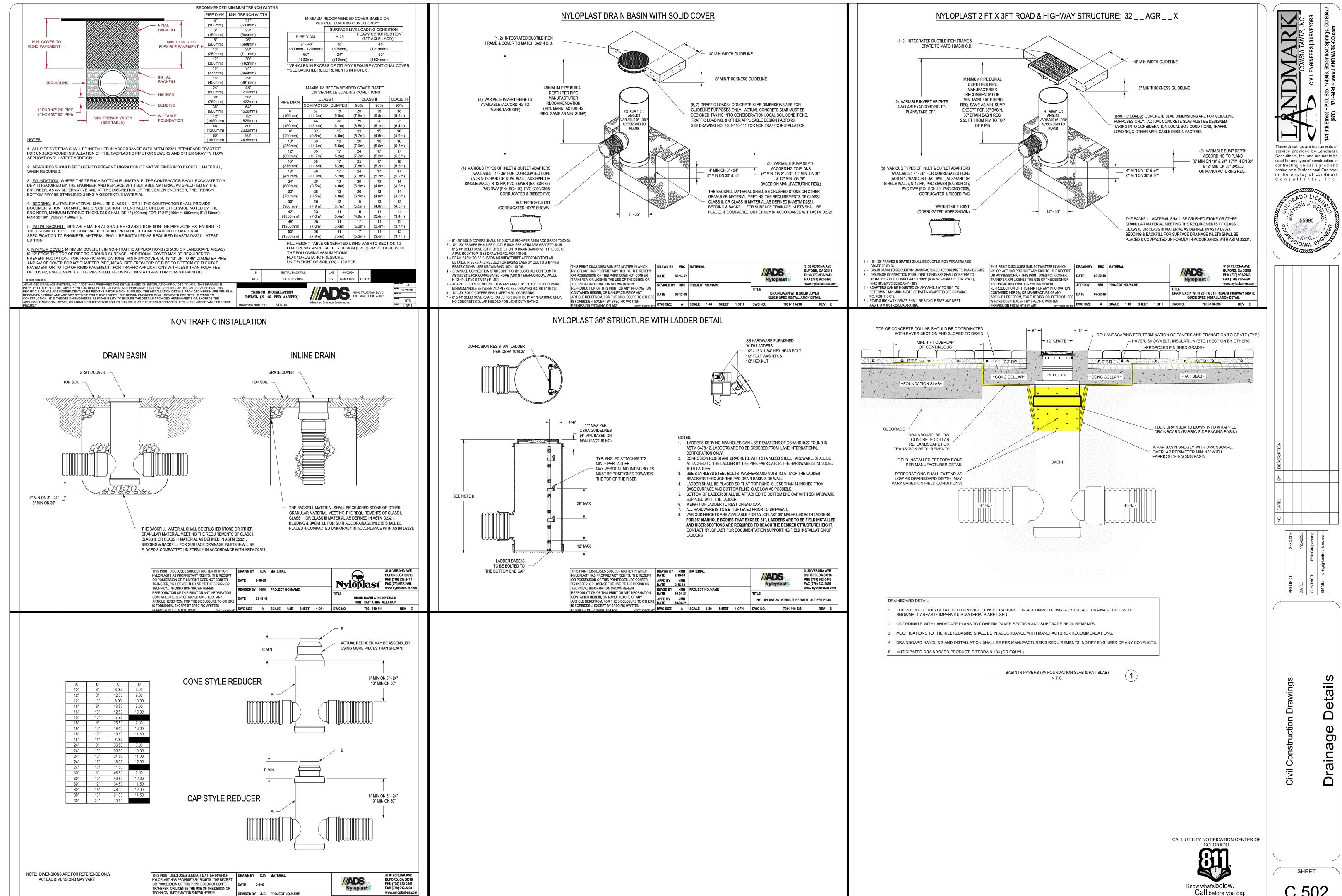
CALL 2 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

SHEET

C.320



SHEET C.501



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PLAST DWG SIZE A SCALE 1:25 SHEET 1 OF 1 DWG NO.

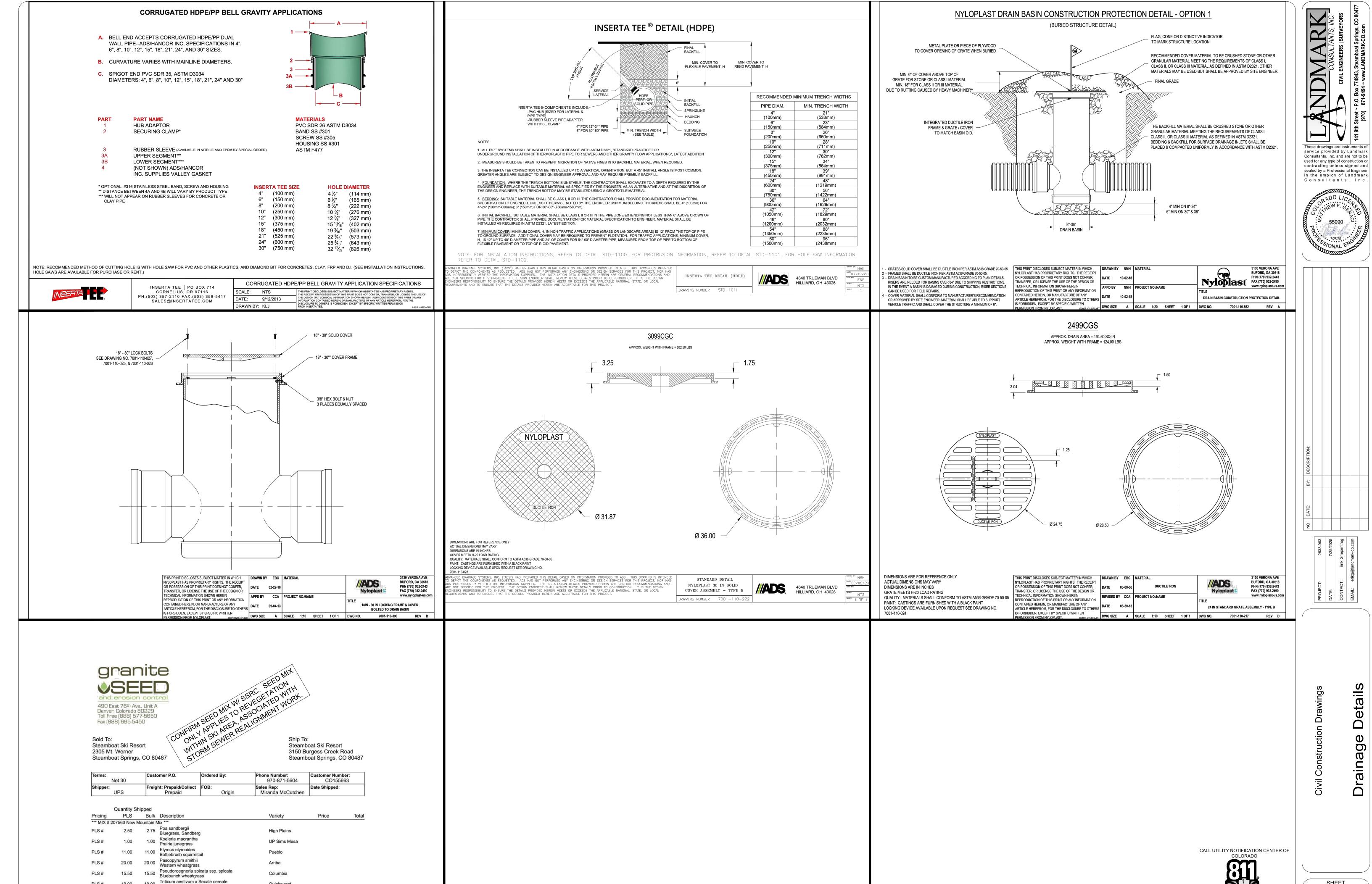
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SHEET C.503